STORMWATER MANAGEMENT REPORT

FOR

VENUE AT SUMMERS CORNER
MAJOR SUBDIVISION & SITE PLAN

BLOCK 286 LOTS 3, 5 & 6
BLOCK 287 LOTS 5 & 7

LITTLE EGG HARBOR TOWNSHIP
OCEAN COUNTY, NEW JERSEY

April 25, 2025

PREPARED BY:

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I. Introduction

This Stormwater Management Report describes the hydrologic impact of the proposed site for construction of an age-restricted 415-unit residential community with site amenities. The subject property is situated on Block 286, Lots 3, 5 & 6 and Block 287 Lots 5 & 7 in Little Egg Harbor Township, Ocean County, New Jersey. The project drawings entitled "Major Subdivision & Site Plan" consisting of ninety-two (92) sheets, dated April 25, 2025, have been utilized in preparation of this report.

The subject property measures approximately 146.45 acres and has frontage on Center Street (Ocean County Route 103) and U.S. Highway Route 9. Two (2) full movement driveways are proposed on Center St to provide access to the site. No access is provided via Route 9. A roadway stub is proposed along the westerly portion of the site to provide a potential connection to Otis Bog Road.

The entirety of the site is located within a CAFRA Zone (Coastal Suburban Planning Area within a sewer service area, PA-2) and subject to requirements of NJAC 7:7. The development has been designed to limit overall impervious coverage under 30% and preserve over 35% of the existing forested area. The entirety of the existing site is undeveloped, consisting primarily of wooded area. The site is encumbered by limited wetlands and associated transition areas along the westerly and southerly property boundaries. These areas are not disturbed as part of the proposed development.

The Applicant proposes to construct 415 age-restricted residential units (199 single-family and 216 triplex), a clubhouse building and associated site amenities such as landscaping, lighting, roadways, parking and stormwater management facilities. The stormwater management design for this project will include a combination of small-scale infiltration basins, small-scale bioretention basins, drywells and a wet pond, all of which have been designed to comply with NJDEP criteria. Stormwater runoff will be conveyed to these systems via overland flow and a series of subsurface pipes. These design features will be implemented to mitigate the increase in stormwater runoff, degradation of stormwater quality and meet applicable State and Local regulations.

The project meets the definition of a "Major Development" per NJDEP and Township definitions. The net increase in impervious area will be more than ¼ acre and the overall disturbance will exceed one (1) acre; therefore, the project must comply with the Township's Stormwater Management Ordinance (Chapter 212-12.11), the requirements of NJAC 7:8 and the associated Best Management Practices, including the implementation of green infrastructure methodologies. Compliance with these requirements is further outlined in this report.

II. Design Methodology

The pre- and post-development runoff calculations follow the methodology outlined in the Soil Conservation Service Technical Release No. 55 (TR-55). The data to support these calculations was obtained from field survey data, the applicable USGS mapping for the site, and applicable Soil Survey for the site (described further in Section 3 and Appendix C of this report). Appendix 'A' contains figures as follows: Figure 1 – USGS Quad Map and Figure 2 – Tax Map.

The existing and proposed runoff characteristics were modeled using HydroCAD 10.10-7b and utilizes the Delmarva unit hydrograph in accordance with the NRCS New Jersey Technical Bulletin No: 2018-4. The latest 24-hour rainfall frequency data for Ocean County is shown in the table below:

NOAA Atlas 14, Volume 2, Version 3, Distribution - 24 Hour Rainfall Frequency Rate Ocean County

2 Year	3.42 Inches
10 Year	5.33 Inches
100 Year	9.20 Inches

As of July 17, 2023, State regulations have been revised to provide updated precipitation depths based on current and future rainfall projections. Design calculations utilizing both the current and future adjustment factors now must be provided for all major development projects. The designer must multiply the data in the above chart by the adjustment factors provided in N.J.A.C. 7:8-5.7 (c) and (d), to determine the appropriate current and future precipitation depths, respectively. The charts below show the increased depths after the adjustment factors have been implemented:

Current Projected 24-Rainfall Frequency Rate Adjustments based on Table 5-5 in N.J.A.C. 7:8-5.7 (c) for Ocean County

Design Storm	NOAA 24-Hour Rate	Adjustment Factor Per Table 5-5	*Current Precipitation Depth
2 Year	3.42 Inches	1.00	3.42 Inches * 1.00 = 3.42 Inches
10 Year	5.33 Inches	1.01	5.33 Inches * 1.01 = 5.38 Inches
100 Year	9.20 Inches	1.03	9.20 Inches * 1.03 = 9.48 Inches

Future Projected 24-Rainfall Frequency Rate Adjustments based on Table 5-6 in N.J.A.C. 7:8-5.7 (d) for Ocean County

Design Storm	NOAA 24-Hour Rate	Adjustment Factor Per Table 5-6	*Future Precipitation Depth
2 Year	3.42 Inches	1.18	3.42 Inches * 1.18 = 4.04 Inches
10 Year	5.33 Inches	1.19	5.34 Inches * 1.19 = 6.34 Inches
100 Year	9.20 Inches	1.24	9.20 Inches * 1.24 = 11.41 Inches

Hydrograph calculations utilizing the current and future precipitation depths are provided for both the pre- and post-development conditions in the Appendix of this report.

III. Soils

Soils information was taken from the U.S Department of Agriculture, Natural Resources Conservation Service Soil Survey Geographic database for Ocean County, New Jersey. A soils map is included in the figures of Appendix B of this report.

Three (3) soil groups have been identified within the area of the project site, as follows:

Downer loamy sand (DocBO), 0 to 5 percent slopes. This is an "A" type soil as defined by the NRCS.

Hammonton loamy sand, 0 to 5 percent slopes, Northern Tidewater Area. This is a 'B' type soil as defined by the NRCS.

Keyport sandy loam (KemA), 0 to 2 percent slopes. This is an "D" type soil.

Additional soils testing was conducted by Geo-Technology Associates, Inc. in August 2024 and March 2025 with a total of 132 test pit excavations situated throughout the site. The full test pit logs and reports can be found in Appendix C. As shown in these reports, groundwater and mottling indicative of the seasonal high-water table (SHWT) were not observed at any location. Permeability rates were generally indicative of K-5 soils throughout the site. A design permeability rate of ½ of the field-tested rate was utilized for all stormwater quantity and drain time calculations.

IV. Pre-Development Analysis

Overall, in the pre-development condition, stormwater runoff is tributary to two (2) points of analysis. Below please find a summary of each:

- DA Willis Creek – stream along the southerly portion of the property. This area consists of approximately 30 acres of runoff, both wooded and open space areas on site. Also included in this analysis is area from the ROW to be disturbed as part of the proposed road widening and runoff from Center St tributary to any proposed basin.
    - DA Wetlands Depression – this area is an existing impoundment along the westerly boundary of the site. Runoff fills up within this area and spills over and runs overland to Willis Creek.
- DA Tuckerton Creek – a low point along Center Street that drains to a swale within the Sunrise Bay Community. This swale is ultimately tributary to the Tuckerton Creek. Approximately 70 acres of runoff from the northerly portion of the site is tributary to this point of analysis.

All drainage areas have been designated with a maximum sheet flow length of 100 feet. The times of concentration for each point of analysis exceed 60 minutes. The points of analysis have been analyzed separately in this study and remain the same points for which stormwater runoff will be discharged in the post development condition. The delineations for the pre-development drainage areas can be found in Appendix L of this report.

The drainage conditions for the property were analyzed using the method described in Technical Release No. 20 (TR-20), published by the U.S. Soil Conservation Service. Soils information utilized in the calculations was based off the NRCS classifications. The modeling done utilizes Type 'A' soils as the classification of the site provided.

As per N.J.A.C. 7:8-5.6(b).3, the stormwater runoff quantity standards are to be met through demonstration that the post-construction peak runoff rates for the current and projected 2-, 10- and 100-year storm events are 50, 75 and 80 percent, respectively, of the pre-construction runoff rates. The percentages apply only to the post-construction stormwater runoff that is attributable to the portion of the site on which the proposed development or project is to be constructed; therefore, the undisturbed area from the site is not included.

The disturbed and undisturbed flows were utilized to develop the reductions required by the regulations, as summarized in the tables. The hydrographs and calculations for the pre-development conditions can be found in Appendix D.

Summary Table
Current Projected Peak Runoff Flow Rates to DA Willis Creek

Storm Event	Undisturbed Area (5S)	Disturbed Area (4L)	Reduction Requirement In the Post-Development Condition	Allowable Runoff In the Post-Development Condition
	(cfs)	(cfs)	(%)	(cfs)
2 YR	1.16	0.57	50	1.16+(0.57*0.50) =1.445
10 YR	1.83	5.64	75	1.83+(5.64*0.75) =6.060
100 YR	3.24	27.10	80	3.24+(27.10*0.80) =24.92

Summary Table
Current Projected Peak Runoff Flow Rates to DA Tuckerton Creek

Storm Event	Undisturbed Area (7S)	Disturbed Area (5L)	Reduction Requirement In the Post-Development Condition	Allowable Runoff In the Post-Development Condition
	(cfs)	(cfs)	(%)	(cfs)
2 YR	0.00	0.53	50	0.00 + (0.53*0.50) =0.265
10 YR	0.04	0.85	75	0.04+(0.85*0.75) =0.678
100 YR	1.69	13.49	80	1.69+(13.49*0.80) =12.482

Summary Table
Future Projected Peak Runoff Flow Rates to DA Willis Creek

Storm Event	Undisturbed Area (5S)	Disturbed Area (4L)	Reduction Requirement	Allowable Runoff
	(cfs)	(cfs)	(%)	(cfs)
2 YR	1.37	1.76	50	1.37+(1.76*0.50) =2.250
10 YR	2.16	9.58	75	2.16+(9.58*0.75) =9.345
100 YR	3.90	40.26	80	3.90+(40.26*0.80) =36.108

Summary Table
Future Projected Peak Runoff Flow Rates to DA Tuckerton Creek

Storm Event	Undisturbed Area (7S)	Disturbed Area (5L)	Reduction Requirement	Allowable Runoff
	(cfs)	(cfs)	(%)	(cfs)
2 YR	0.00	0.63	50	0.00+(0.63*0.50) =0.315
10 YR	0.14	1.93	75	0.14+(1.31*0.75) =1.123
100 YR	3.71	25.45	80	3.71+(25.45*0.80) =24.07

V. Post-Development Analysis

The proposed development will maintain a similar drainage pattern to pre-development conditions as runoff will continue to drain to the two (2) points of analysis described in Section IV. As with the Pre-Development analysis, the pervious and impervious drainage areas have been routed separately. The Time of Concentration has been determined using the McCuen-Spiess methodology, which reduces the sheet flow length for select pervious flow paths to less than 100 feet. The majority of runoff from the on-site areas will be captured by a series of subsurface inlets along the roadways and yard areas that will convey runoff to the proposed basins. Inlets are also proposed along the Center St frontage to capture runoff from the road widening and improvements within the ROW. Further information regarding the basins is outlined in Section VI of this report.

The following tables represent the post-development runoff calculations and a comparison of the flows to the total allowable runoff rate, as calculated in Section IV of this report. The hydrographs and calculations for the post-development conditions can be found in Appendix E.

Summary Table
Current Projected Peak Runoff Flow Rate Comparison – DA Willis Creek

Storm Event	Allowable Release from Site (Section IV)	Proposed Runoff (15L)	Reduction Met?
	(cfs)	(cfs)	
2 YR	1.445	0.21	YES
10 YR	6.060	2.36	YES
100 YR	24.92	11.55	YES

Summary Table
Current Projected Peak Runoff Flow Rate Comparison – DA Tuckerton Creek

Storm Event	Allowable Release from Site (Section IV)	Proposed Runoff (15L)	Reduction Met?
	(cfs)	(cfs)	
2 YR	0.265	0.260	YES
10 YR	0.678	0.400	YES
100 YR	12.482	11.76	YES

Summary Table
Future Projected Peak Runoff Flow Rate Comparison – DA Willis Creek

Storm Event	Allowable Release from Site (Section IV)	Proposed Runoff (15L)	Reduction Met?
	(cfs)	(cfs)	
2 YR	2.250	0.510	YES
10 YR	9.345	4.660	YES
100 YR	36.108	35.24	YES

Summary Table
Future Projected Peak Runoff Flow Rate Comparison – DA Tuckerton Creek

Storm Event	Allowable Release from Site (Section IV)	Proposed Runoff (87L)	Reduction Met?
	(cfs)	(cfs)	
2 YR	0.315	0.290	YES
10 YR	1.123	0.430	YES
100 YR	24.07	23.22	YES

The information in the above tables indicates that the reduction requirements are satisfied for the 2-, 10- and 100-year storm events for both the current and future projected rainfall data.

VI. Stormwater Management Facilities

Sixteen (16) small-scale infiltration basins, twenty-three (23) small-scale bioretention basins, one (1) wet pond and multiple drywell systems situated within rear yard areas have been designed for this project to mitigate the increased flow rates due to the additional impervious surfaces developed as part of this project. All systems have been designed to meet New Jersey Best Management Practices standards and meet the criteria to be considered "green infrastructure". Below please find a summary of each system:

Small-scale Infiltration Basins:

- Designed as a "small-scale" infiltration basin per NJDEP BMP Chapter 9.8.
- These basins have a 6-inch sand layer at the bottom.
- The lowest elevation of the infiltration basin (the bottom of the sand layer) is at least 2 feet above the seasonal high-water table.
- A factor of safety of 2 was utilized for the design permeability rate (for example, >20"/hour per soils testing, 10.00"/hour used for drain time calculations). Basin systems for which permeability is less than 1.0"/hour will utilize an underdrain system.
- The basins fully drain the 100-year future projected storm within 72 hours.
- The actual contributory drainage area to each basin does not exceed 2.5 acres. Please note that roof area treated by drywells and the basin area itself does not count towards the actual contributary drainage area.
- The bottom of each basin is level and shall not be compacted.
- Each basin has been designed with an outlet control structure with the lowest outlet set at the water quality design storm elevation. The maximum runoff depth is two (2') feet. The higher order storm events are routed to the next downstream basin. Basin 3 has been designed to fully infiltrate the higher order storm events.
- In the case of complete basin failure, each basin is equipped with an emergency spillway to safely route runoff downstream.
- Each basin provides 80% TSS Removal with the capacity to store the entire volume generated by the Water Quality Design Storm tributary to the system.

Small-scale Bioretention Basins:

- Designed as a "small-scale" bioretention basin per NJDEP BMP Chapter 9.7.
- These basins have a 24" soil bed with native wet-tolerant plantings along basin bottom.
- The lowest elevation of the bioretention basin (the bottom of the sand layer) is at least 2 feet above the seasonal high-water table.
- A factor of safety of 2 was utilized for the design permeability rate (for example, >20"/hour per soils testing, 10.00"/hour used for drain time calculations).
- The basins fully drain the 100-year future projected storm within 72 hours.

- The actual contributory drainage area to each basin does not exceed 2.5 acres. Please note that roof area treated by drywells and the basin area itself does not count towards the actual contributary drainage area.
- The bottom of each basin is level and shall not be compacted.
- Each basin has been designed with an outlet control structure with the lowest outlet set at the water quality design storm elevation. The higher order storm events are routed to the next downstream basin.
- In the case of complete basin failure, each basin is equipped with an emergency spillway to safely route runoff downstream.
- Each basin provides 80% TSS Removal with the capacity to store the entire volume generated by the Water Quality Design Storm tributary to the system.

Wet Pond (GI):

- Identified as Basin 26
- This basin has been designed in accordance with Section 10.5 of the NJ BMP.
- The wet pond is solely utilized for stormwater quantity control. All stormwater runoff is pretreated prior to entering the wet pond.
- The contributary drainage area to the wet pond exceeds 20 acres (approximately 75 acres)
- The wet pond has a permanent pool depth of 4.5 feet. The permanent pool volume is greater than the water quality design storm volume tributary to the system.
- The wet pond is equipped with two (2) 6’ safety ledges for access along the system.
- The elevation of the first outlet is set at the permanent pool elevation. Runoff from the wet pond is released at a controlled rate to an inlet on Center St.
- The surface area of the permanent pool exceeds 0.25 acres.

Drywells

- Select buildings have been designed with rear-yard perforated pipe to recharge volume from the Water Quality Storm event. The systems have been designed in accordance with Chapter 9.2 of the NJDEP BMP.
- The higher order storms will fill up the system and overflow through yard inlets and run via overland to the next downstream conveyance system.
- The drywell systems consist of 24” perforated HDPE pipe within a stone trench.

The below chart shows the individual characteristics for each basin:

BASIN SUMMARY CHART				
BASIN #	TYPE	WQ DESIGN STORM EL.	TRIBUTARY TO:	UNDERDRAIN?
1	INFILTRATION	36.93	WILLIS CREEK	NO
2	INFILTRATION	39.52	BASIN 1	NO
3	INFILTRATION	N/A	WILLIS CREEK	NO
4	INFILTRATION	32.86	BASIN 3	NO
5	BIORETENTION	32.63	BASIN 3	NO
6	BIORETENTION	34.84	BASIN 7	NO
7	INFILTRATION	32.79	BASIN 3	NO
8	INFILTRATION	35.67	BASIN 3	NO
9	INFILTRATION	33.93	BASIN 3	NO
10	BIORETENTION	36.97	BASIN 9	NO
11	BIORETENTION	39.00	BASIN 10	NO
12	INFILTRATION	39.17	WILLIS CREEK	NO
13	INFILTRATION	33.50	BASIN 3	YES
14	INFILTRATION	32.32	BASIN 18	NO
15	INFILTRATION	31.94	BASIN 18	NO
16	BIORETENTION	33.50	BASIN 18	NO
17	BIORETENTION	28.63	BASIN 18	NO
18	INFILTRATION	26.11	BASIN 26	NO
19	BIORETENTION	39.69	BASIN 20	NO
20	BIORETENTION	35.81	BASIN 21	NO
21	BIORETENTION	32.81	BASIN 25	NO
22	BIORETENTION	36.78	BASIN 25	NO
23	BIORETENTION	34.69	BASIN 25	NO
24	BIORETENTION	30.71	BASIN 25	NO
25	INFILTRATION	26.00	BASIN 26	NO
26	WET POND	22.58	TUCKERTON CREEK	NO
27	BIORETENTION	33.24	BASIN 25	NO
28	BIORETENTION	29.40	BASIN 26	NO
29	BIORETENTION	34.71	BASIN 30	NO
30	BIORETENTION	33.81	BASIN 31	NO
31	BIORETENTION	33.96	BASIN 26	NO
32	BIORETENTION	36.23	BASIN 33	NO
33	BIORETENTION	31.67	BASIN 26	NO
34	BIORETENTION	36.27	BASIN 37	NO
35	INFILTRATION	39.8	BASIN 39	NO

36	BIORETENTION	40.04	BASIN 39	NO
37	INFILTRATION	34.70	BASIN 39	NO
38	BIORETENTION	34.36	BASIN 26	NO
39	INFILTRATION	N/A	BASIN 26	YES
40	BIORETENTION	31.98	BASIN 26	NO

VII. Water Quality

The project generates a net increase in "regulated motor vehicle surface" of over ¼ acre; therefore, it is subject to the water quality standards of NJAC 7:8-5.5. Per these regulations, the development shall be designed to provide 80% removal of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm. The small-scale infiltration and bioretention basins and the drywells for clean roof runoff provide 80% TSS Removal as they all fully infiltrate the entire water quality storm tributary to each respective system. This TSS Removal Rate is based on the NJDEP Stormwater Best Management Practices (BMP) Manual. Compliance with the "green infrastructure" criteria specified in the BMP is displayed in Section VI above. The water quality calculations for each basin are provided in Appendix F of this report.

VIII. Groundwater Recharge

Groundwater recharge requirements, in accordance with NJ BMP standards, are met by maintaining 100 percent of the site's annual pre-development groundwater recharge volume in the proposed basins. Groundwater recharge calculations are provided in Appendix G of this report and are summarized in the table below:

Summary Table

GROUNDWATER RECHARGE REQUIREMENTS	
PRE-DEVELOPMENT ANNUAL RECHARGE	5,611,226 CF
POST-DEVELOPMENT ANNUAL RECHARGE	3,738,477 CF
POST-DEVELOPMENT ANNUAL RECHARGE DEFICIT	1,872,749 CF
RECHARGE VOLUME PROVIDED (BASIN 3)	935,334 CF
RECHARGE VOLUME PROVIDED (BASIN 18)	475,255 CF
RECHARGE VOLUME PROVIDED (BASIN 25)	587,856 CF
TOTAL POST-DEVELOPMENT ANNUAL RECHARGE	+1,998,454 CF

As shown in the chart above, a total of 1,998,454 cubic feet of recharge is provided in Basins 3, 18 and 25 whereas 1,872,749 cubic feet of recharge is required; therefore, this standard is exceeded.

IX. Groundwater Mounding

Evidence of groundwater or identification of the seasonal high-water table was not found in the total 132 soil profile pits prepared by Geo-Technology Associates. Exfiltration was not utilized in the stormwater quantity calculations found in Appendix D and E; therefore, it can be assumed that mounding will not negatively impact basin functionality.

X. Stormwater Conduit System

A closed conduit pipe system was designed to convey stormwater from the various proposed sub areas to the basin systems. Multiple networks of pipes route stormwater runoff to infall points with scour holes into the proposed basins. The pipe sizing calculations utilize the Rational Method for calculating peak rate of runoff and Manning's Equation to determine capacity. All calculations utilize the 25-year storm event.

XI. Soil Erosion and Sediment Control Design

As required in the New Jersey Soil Erosion and Sediment Control Standards, the site has been provided with soil erosion and sediment control methods to prevent erosion and sedimentation due to the proposed development. Silt fence, stabilized construction access protection, inlet protection and other necessary standards have been incorporated into the design plans. Soil decompaction testing locations and requirements have also been depicted on the plans. At the terminus of each conveyance pipe, conduit outlet protection has been designed to provide a stable area in which the exit velocity from the conduit is reduced to a velocity consistent of a stable condition within the basin and/or downstream channel.

XII. Emergency Spillway Calculations

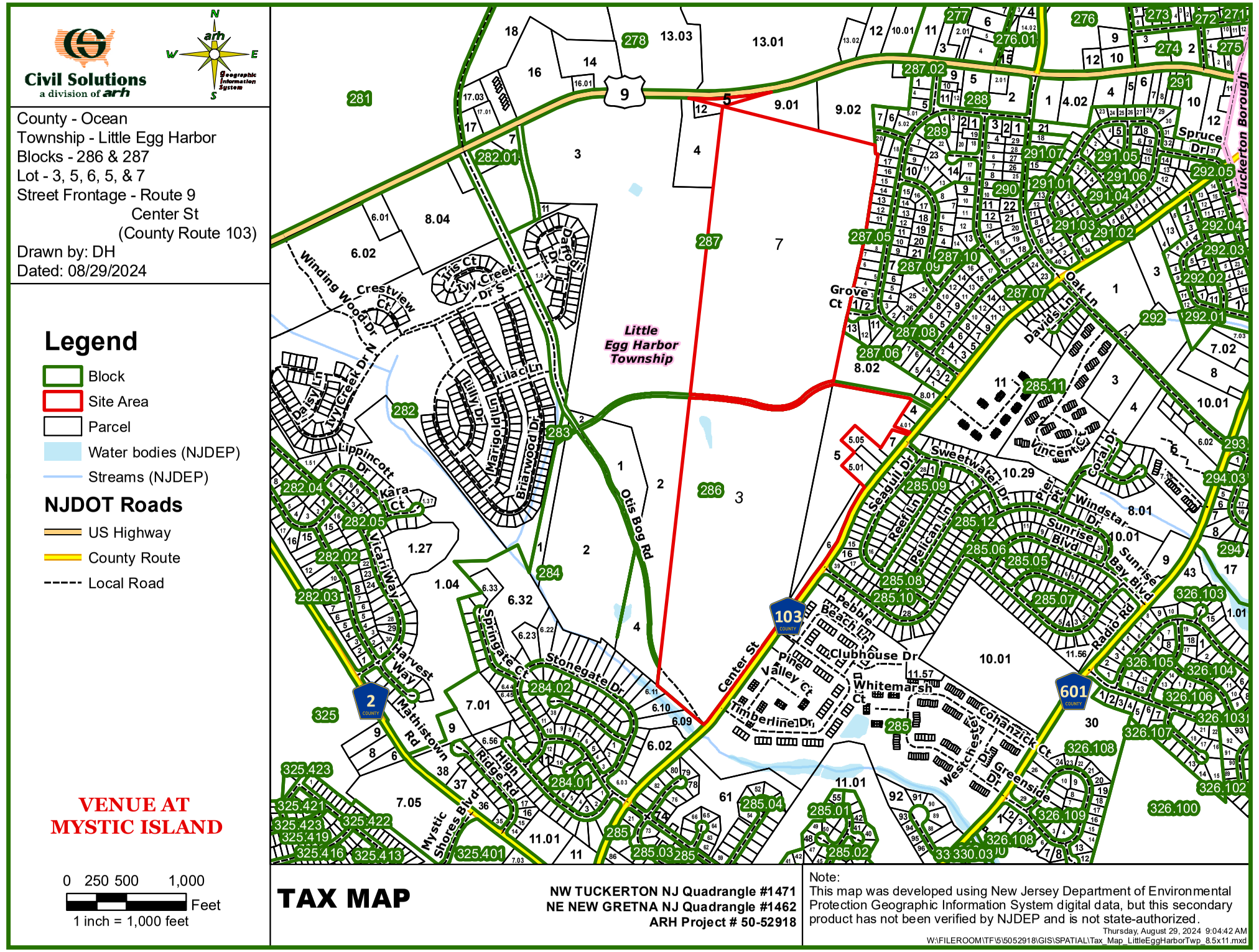
In the event that all means of discharge from the basin have been clogged or rendered ineffective during the 100-year storm event, naturally grassed emergency spillways have been designed for each of the basins. The velocity over the spillway does not exceed 1.8 feet/second, which is the maximum allowable velocity over sandy soils, per New Jersey Soil Erosion and Sediment Control Calculations, Table 12-1.

XIII. Conclusion

As shown in our calculations, the Stormwater Management System meets the NJDEP stormwater current and future projected reductions for the proposed improvements.

Additionally, the calculations demonstrate compliance with the water quality, runoff quantity, and ground water recharge aspects of these regulations. Therefore, the stormwater management system, as designed, complies, and exceeds, all appropriate local, regional and State regulations.

Appendix A – Figures


Civil Solutions
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County - Ocean
Township - Little Egg Harbor
Blocks - 286 & 287
Lot - 3, 5, 6, 5, & 7
Street Frontage - Route 9
Center St
(County Route 103)
Drawn by: DH
Dated: 08/29/2024
Legend
Block
Site Area
Parcel
Water bodies (NJDEP)
Streams (NJDEP)
NJDOT Roads
US Highway
County Route
Local Road
VENUE AT
MYSTIC ISLAND
0 250 500 1,000
Feet
1 inch = 1,000 feet
Little
Egg Harbor
Township
Center St
Otis Bog Rd
Oak Ln
Spruce Dr
Tuckerton Borough
Sweetwater Dr
Seagull Dr
Windstar Dr
Sunrise Blvd
Sunrise Bay Blvd
Radio Rd
Clubhouse Dr
Pebble Beach Dr
Pine Valley Ct
Timberline Dr
Whitemarsh Ct
Cohanzick Ct
Westchester Dr
Greenside Dr
Stonegate Dr
Springate Ct
Harvest Way
Mathistown Rd
High Ridge Rd
Mystic Shores Blvd
Lippincott Dr
Kara Ct
Vicari Way
Ivy Creek Dr N
Ivy Creek Dr S
Crestview Ct
Winding Wood Dr
Daffodil Dr
Daisy Ln
Lilac Ln
Marigold Ln
Lilly Dr
Briarwood Dr
Tris Ct
Grove Ct
Davids Ln
Vincent Ct
Coral Dr
Pier Pt
Reefrun
Pelican Ln
TUCKERTON NJ Quadrangle #1471
NE NEW GRETNA NJ Quadrangle #1462
TAX MAP
NW
ARH Project # 50-52918
Note:
This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.
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Civil Solutions
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County - Ocean
Township - Little Egg Harbor
Blocks - 286 & 287
Lot - 3, 5, 6, 5, & 7
Street Frontage - Route 9
Center St
(County Route 103)
Drawn by: DH
Dated: 08/29/2024

Legend

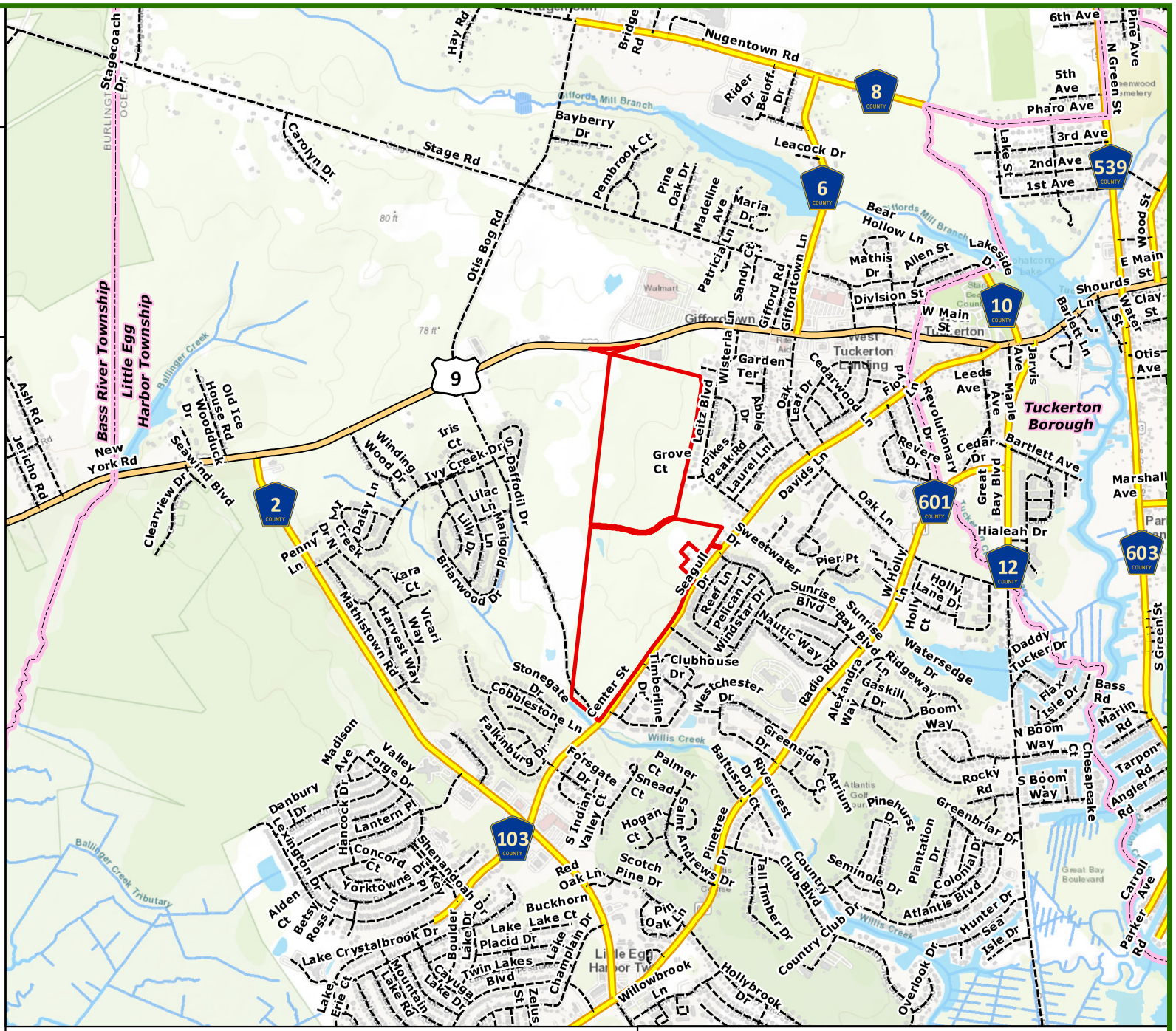
- Site Area
- Municipal Boundary

NJDOT Roads

- US Highway
- County Route
- Local Road

VENUE AT MYSTIC ISLAND

0 1,000 2,000 Feet
1 inch = 2,000 feet



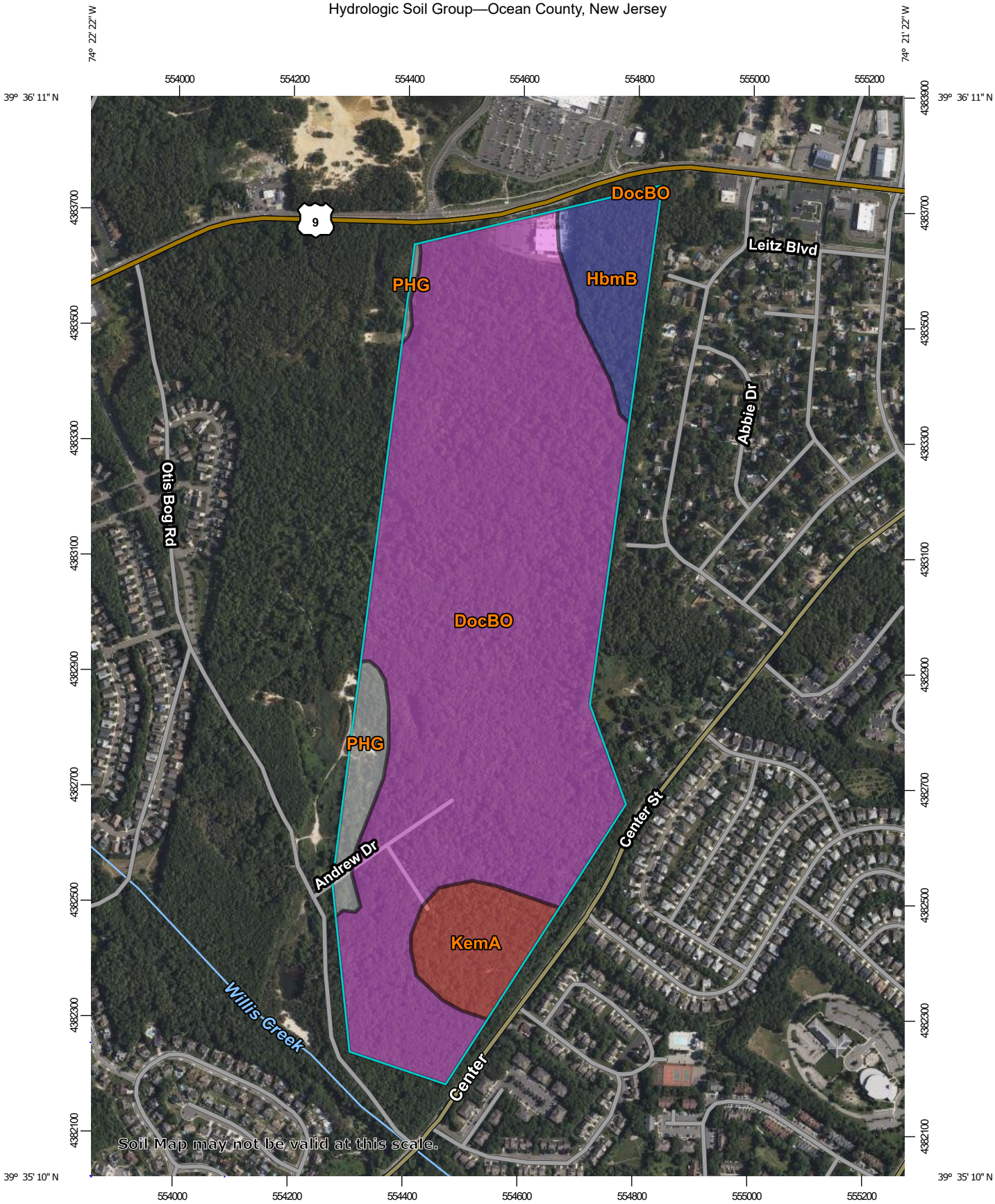
USGS MAP

NW TUCKERTON NJ Quadrangle #1471
NE NEW GRETNA NJ Quadrangle #1462
ARH Project # 50-52918

Note:
This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

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Appendix B – NRCS Web Soil Survey



Map Scale: 1:9,120 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

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: Ocean County, New Jersey
Survey Area Data: Version 21, 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: Apr 13, 2021—Sep 14, 2021

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
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area	A	119.9	82.2%
HbmB	Hammonton loamy sand, 0 to 5 percent slopes	B	10.3	7.1%
KemA	Keyport sandy loam, 0 to 2 percent slopes	D	9.8	6.7%
PHG	Pits, sand and gravel		5.8	4.0%
Totals for Area of Interest			**145.9**	**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

Tie-break Rule: Higher

Appendix C – Soils Analysis

PRELIMINARY GEOTECHNICAL ENGINEERING REPORT

Venue at Mystic Island

Ocean County, New Jersey



August 26, 2024

Prepared for:
US Home, LLC (dba Lennar)
2465 Kuser Road, Floor 3
Hamilton, New Jersey, 08690

Attn: Mr. Wayne Birchler, P.E.

Prepared by:
Geo-Technology Associates, Inc.
Geotechnical and Environmental Consultants

14 Worlds Fair Drive, Suite A
Somerset, New Jersey 08873
(732) 271-9301
www.gtaeng.com

GTA Project No: 31241688

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

August 26, 2024

US Home, LLC (dba Lennar)
2465 Kuser Road, Floor 3
Hamilton, New Jersey 08690

Attn: Mr. Wayne Birchler, P.E.

Re: Preliminary Geotechnical Engineering Report
Venue at Mystic Island
Ocean County, New Jersey

Dear Wayne:

In accordance with our agreement dated May 16, 2024 and executed on July 23, 2024, Geo-Technology Associates, Inc. (GTA) has conducted a geotechnical engineering study in support of a proposed residential development to be constructed in Little Egg Harbor Township, Ocean County, New Jersey. GTA has prepared this report to convey our findings, conclusions, and preliminary recommendations about subsurface conditions that could affect foundation support and related geotechnical considerations for the proposed construction.

Please note that, unless you make other arrangements, GTA will discard all soil samples obtained from the explorations 60 days after the date of this report. If you have any questions or concerns about this report, or if you want additional information, please contact our office at (732) 271-9301.

Sincerely,

GEO-TECHNOLOGY ASSOCIATES, INC.

Kyle T. Plaza, P.E.
Associate

Robert Dykstra, P.E.
Vice President

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Appendix A – Figures

Figure No. 1 Site Location Map
Figure No. 2 Exploration Location Plans

Appendix B – Exploration Logs

Notes for Exploration Logs
Logs of Borings (17 pages)
Logs of Test Pits (33 pages)

Appendix C – Laboratory Test Results

Particle Size Distribution Reports (7 pages)
Liquid and Plastic Limits Test Report (1 page)

1.0 SUMMARY OF FINDINGS AND PRELIMINARY RECOMMENDATIONS

We have prepared this summary for the user's convenience only. Do not rely on it exclusively for any decision-making purpose. Please review the full text of the report which addresses each topic in further detail.

TOPIC	DESCRIPTION
Site Attributes	
Existing Conditions	Subject Site comprises approximately 147.1 acres of land. At the time of our exploration, the site was predominantly wooded.
Proposed Construction	A residential development with 213 single family dwellings and 201 residential units contained within 67 triplex buildings.
Conditions Encountered	
Surficial Materials	Topsoil encountered in all explorations, approximately 6 to 12 in. thick.
Native Soils	Predominantly sands containing varying amounts of silt and gravel interlayered with clay and silt soils. Generally loose in the upper 2 to 6 feet and becomes medium dense with depth.
Groundwater	Observed at about 10 to 15 feet bgs in 8 of 50 explorations.
Recommendations	
Site Preparation	Clearing, grubbing and stripping of topsoil will be required prior to construction.
Groundwater	• Widespread groundwater impacts not anticipated during mass grading. • When available, grading plans should be reviewed to ensure basement levels will not be affected by groundwater. • Perched water may be encountered in localized excavations. • Commonly used temporary dewatering techniques (e.g., sumps, gravity flow trenches) will likely be sufficient to control perched water seepage.
Fill Material Criteria	On-site soils will be suitable for reuse as fill, with some limitations.
Foundations	• Preliminary net allowable soil-bearing pressure: 3,000 psf. • Minimum widths: 24 inches (wall footings); 30 inches (column footings). • Maximum anticipated post-construction settlements: 1 inch total; ½ inch differential between columns. • Frost Depth Embedment – 30 inches, or deeper if required by local ordinance.

*bgs = below existing ground surface

2.0 INTRODUCTION

This report presents the results of a preliminary geotechnical engineering exploration performed by Geo-Technology Associates, Inc. (GTA) for the planning and design of a proposed residential development to be constructed in Little Egg Harbor Township, Ocean County, New Jersey. GTA has performed a geotechnical engineering study and prepared this report for US Home, LLC (dba Lennar) in accordance with our proposal dated May 16, 2024 and executed on July 23, 2024.

2.1 Study Purpose

GTA conducted this study to develop confirmation-dependent geotechnical engineering recommendations for the planned residential development. The scope of GTA's study included a field exploration program consisting of 17 Standard Penetration Test (SPT) borings and 33 test pit excavations throughout the proposed development area. Preliminary infiltration testing was performed adjacent to 12 of the test pit excavations within or adjacent to proposed stormwater management (SWM) basins throughout the site. The Client has also retained GTA to provide environmental services pertaining to this site, which is presented under a separate report.

2.2 Referenced Documents

GTA was provided with a plan prepared by Adams, Rehmann, & Heggan Associates, Inc. (ARH) titled "Conceptual Plan & Project Information" dated March 22, 2024. The plan indicates the site boundaries and the layout of the proposed residential development, roadways, and stormwater management (SWM) basins.

GTA has based our understanding of the project on our review of the provided plan and conversations with the Client. If the referenced document is modified after the date of GTA's initial review, Client should provide the updated version to GTA. Modifications may make it necessary for GTA to revise our preliminary geotechnical engineering recommendations presented in this report.

3.0 PROJECT DESCRIPTION

3.1 Site Location

The approximately 147.1-acre site is located at in Little Egg Harbor Township, Ocean County, New Jersey. The site is located on the southern side of U.S. Route 9, west of Center Street, and is identified as Lots 3, 5, and 6 in Block 286, and Lot 7 in Block 287 on the Little Egg Harbor Township tax map. The Site Location Map, in Appendix A, Figure No. 1, indicates the site location in relation to adjacent properties.

3.2 Existing Site Conditions

At the time of GTA's exploration, the site was predominantly wooded. Access to the site was provided by an unpaved road in the southeastern and southwestern portion of the property leading from Center Street and Dump Road, respectively. No topographic information was provided to GTA at the time this report was prepared. Based on Google Earth topography, existing ground surface elevations generally sloped from about Elevation (EL) 48 feet in the central portion of the site up to about EL 85 to EL 90 feet in the northern and southern portions of the site. Topographical information obtained from Google Earth should be considered *very* approximate.

3.3 Proposed Construction

3.3.1 Site Grading

Proposed site grading was not indicated on the provided plan. However, based on the existing topography of the site and for the purposes of this preliminary report, we anticipate cuts and fills ranging up to about 5 to 10 feet will be required to achieve the proposed building and site grades. Retaining walls are not indicated on the provided plan.

3.3.2 Proposed Residential Buildings

The plan indicates the proposed development will include 201 residential units contained within 67 triplex buildings, and 213 detached single-family home units on individual lots. We anticipate that the single-family homes will contain basements and the basement floor slabs will be established about 10 feet below the ground floor levels. The proposed development will also include amenities such as clubhouse building, swimming pool, and tennis courts.

We anticipate that the structures will be constructed using cast-in-place concrete and wood-frame construction. Based on our experience on projects of similar scope, we anticipate that the buildings will have maximum column, bearing wall, and slab loads of approximately 50 kips, 6 kips per linear foot (klf), and 100 pounds per square foot (psf), respectively.

3.3.3 Subsurface Utilities

We anticipate that public gravity sewer, public water, and private storm drain systems will be installed to service the proposed development and that they will be established approximately 5 to 10 feet below existing site grades.

3.3.4 Stormwater Management (SWM)

The provided plan indicates the proposed development will include 40 SWM basins throughout the site. Proposed basin bottom elevations were not available at the time this report was prepared. GTA performed preliminary infiltration testing in several of the basin areas; however, additional testing will be required to meet Chapter 12 of the NJ Stormwater Best Management Practices (BMP) manual once the basin designs are more complete.

3.3.5 Pavements

The proposed site improvements will include a network of roads to provide access throughout the development. Access and egress to the development will be from one point from the dead end of Otis Bog Road, one point along West Main Street, and two points along Center Street.

4.0 GEOTECHNICAL ENGINEERING STUDY

4.1 Geologic Review

The subject site is situated within the Coastal Plains physiographic province characterized by unconsolidated deposits gently dipping to the southeast. According to the *Surficial Geology of the Tuckerton and Beach Haven Quadrangles, Atlantic and Ocean Counties, New Jersey (OFM147, 2022)*, the site is predominantly mapped within the Cape May Formation (Unit 1). The northwestern portion of the site is mapped as Sand Facies. Generally, these units are described as yellowish-brown, very pale brown, white, brownish-yellow, and reddish-yellow, fine to medium sand, pebble, gravel, minor clayey sand to sandy clay, and coarse sand. The Cape May Formation (Unit 1) and Sand Facies are generally 20 to 190 feet thick, respectively.

Please refer to the referenced publications for more detailed descriptions of the geologic members.

4.2 Subsurface Exploration Scope

GTA performed a subsurface exploration at the site consisting of 17 Standard Penetration Test (SPT) borings and 33 test pit excavations throughout the proposed development area. The borings were performed by Environmental Technical Drilling on August 12 through 14, 2024 using a Geoprobe 7822 and a Diedrich D-50 track-mounted drill rigs and extended to depths ranging from about 15 to 20 feet below the existing surface grades. The test pits were excavated by Neighbors Property Management on August 5, 6, 12 and 13, 2024 using a Bobcat E60 and extended to depths ranging from about 12 to 15 feet below the existing surface grades. Preliminary in-situ infiltration testing was performed adjacent to 12 of the test pits within or adjacent to proposed SWM basin areas at depths ranging from about 4 to 7 feet below the existing surface grades.

The exploration locations were selected by GTA and surveyed in the field by ARH prior to our field visit. The approximate locations of the explorations performed for this study are shown on the Exploration Location Plan, which is included as Figure 2 in Appendix A of this report.

Detailed descriptions of the encountered subsurface conditions are indicated on the Logs of Borings and Logs of Test Pits which are included in Appendix B. The ground surface elevations shown on the exploration logs were obtained from topographic information available on Google Earth and should be considered *very* approximate.

Standard Penetration Testing (SPT) was performed in the borings in accordance with procedures of ASTM D1586. Soil samples were obtained continuously within the boreholes to refusal. The SPT involves driving a 2-inch O.D., 1⅜-inch I.D. split-spoon sampler with a 140- pound hammer free-falling from a height of 30 inches. The number of blows required to drive the sampler was recorded in six-inch intervals. The SPT N-value, given as blows per foot, is defined as the total number of blows required to drive the sampler from the 6- to 18-inch interval.

The soil samples obtained from the explorations were delivered to GTA's laboratory for visual classification and laboratory testing. The classifications shown on the logs are based on the Unified Soil Classification System (USCS) visual/manual methods, supplemented by laboratory testing.

4.3 Subsurface Conditions

The results of the subsurface exploration were consistent with the known site history and geologic mapping of the project site. The specific subsurface conditions at each exploration location are shown on the individual exploration logs within Appendix B. GTA has summarized the subsurface conditions encountered in the following sections.

4.3.1 Surficial Materials

An approximately 6- to 12-inch-thick layer topsoil was encountered at the ground surface in explorations performed for this study, averaging approximately 9 inches. The reported topsoil thicknesses generally represent the upper layer of dark and organic soil.

4.3.2 Native Soils

Beneath the surficial materials, the explorations encountered native soils generally consistent with the geologic mapping of the site. The subsurface profile predominantly consisted of sandy soils with varying gradations and fine contents with interlayered clay and silt soils. The sandy soils were generally very loose to loose in relative density in the upper 2 to 6 feet and became medium dense with depth.

4.3.3 Groundwater

Groundwater was encountered in 8 of the 50 explorations performed for this study at depths ranging from about 10 to 15 feet below the ground surface. Note that groundwater levels can fluctuate with seasonal variations in precipitation and as a result of development activity. Perched or trapped water conditions may develop in localized areas where granular soils are underlain by less permeable, fine-grained soils or within locally porous zones.

4.4 Laboratory Testing

GTA performed laboratory testing on selected soil samples obtained from the explorations, including grain size analyses testing for classification of the soils in accordance with the Unified Soil Classification System (USCS), as well as natural moisture content determinations. Detailed results of the laboratory testing performed for this study are included in Appendix C. The results of the laboratory tests are summarized in the following table:

SUMMARY OF CLASSIFICATION TESTING

Exploration No.	Depth (ft.)	LL (%)	PI (%)	USCS Classification	NMC (%)	Fines (%)
B-4	4	NP	NP	Poorly-graded SAND with silt (SP-SM)	2.8	10.9
B-17	6	NP	NP	Silty SAND (SM)	3.4	14.3
ITP-2	4	NV	NV	SILT with sand (ML)	14.1	82.0
ITP-6	4	NV	NV	Sandy SILT (ML)	10.5	52.2
ITP-8	7½	24.3	8.0	Sandy Lean CLAY (CL)	16.2	59.8
TP-3	5	NP	NP	Poorly-graded SAND (SP)	4.7	0.4
TP-17	4	NP	NP	Silty SAND (SM)	14.8	25.6

Note: LL=Liquid Limit, PI=Plasticity Index, NV=Not Verified, NP=Not Present NMC=Natural Moisture Content, Fines=Material passing #200 sieve

4.5 Preliminary Infiltration Test Results

Preliminary in-situ infiltration testing was performed at Test Pits ITP-1 through ITP-12 for this study using a double-ring infiltrometer in general accordance with Chapter 12 of the NJDEP Stormwater Best Management Practices Manual. The tests were performed at depths ranging from approximately 4 to 7 feet below the existing surface grades. Please note that additional testing will be required to meet Chapter 12 of the NJ Stormwater Best Management Practices (BMP) manual once the basin designs are more complete. The results of the preliminary infiltration tests performed for this study are summarized in the following table.

SUMMARY OF INFILTRATION TEST RESULTS

Exploration Location	Depth (ft.)	USDA Classification [USCS Classification]	Measured Infiltration Rate (in/hr)
ITP-1	4	Sandy Clay [Sandy Lean CLAY (CL)]	0.5
ITP-2	4	Silt Loam [Sandy SILT (ML)]	1
ITP-3	4	Loamy Sand [Poorly-graded SAND with silt (SP-SM)]	30
ITP-4	4	Sandy Loam [Silty SAND (SM)]	18
ITP-5	4	Loamy Sand [Poorly-graded SAND with silt (SP-SM)]	24
ITP-6	4	Silt Loam [Sandy SILT (ML)]	4
ITP-7	4	Loamy Sand [Poorly-graded SAND with silt (SP-SM)]	36
ITP-8	7	Clay [Sandy Lean CLAY (CL)]	0
ITP-9	5	Sandy Loam [Silty SAND (SM)]	21
ITP-10	4	Sandy Loam [Silty SAND (SM)]	36
ITP-11	4	Loamy Sand [Poorly-graded SAND with silt (SP-SM)]	36
ITP-12	4	Gravelly Loamy Sand [Silty GRAVEL with sand (GM)]	36

Note: A factor of safety of at least 2 should be applied to the measured infiltration rates for design purposes.

5.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our geotechnical engineering study, it is GTA's professional opinion that the subsurface conditions at the project site are generally suitable for construction of the proposed development, provided the following geotechnical engineering recommendations are followed, and that applicable standard of care is maintained during construction. GTA's preliminary recommendations for foundations, subsurface utilities, pavements, stormwater management, and other geotechnical considerations are presented in the following paragraphs.

Please note that the information presented herein is based on limited subsurface data and GTA's review of conceptual plans available at the time of this exploration. When detailed site development and grading plans become available, a design-phase review will be necessary and potentially additional explorations to confirm our findings. Additional explorations will be necessary to assist with the design and permitting of SWM facilities to satisfy NJDEP requirements.

5.1 Site Preparation

5.1.1 Stripping

After clearing and grubbing, the site should be stripped of topsoil from within and at least 5 feet beyond the proposed building and pavement areas. The removal of topsoil and unstable surface soils should be performed before controlled fill placement. The actual stripping thickness will depend on the localized topsoil development, soil moisture, disturbance by construction traffic, and contractor care. The stripped topsoil will not be suitable for reuse as controlled compacted fill or backfill within building or pavement areas, or atop utilities. The stripped topsoil can be relocated to proposed landscaped areas to the extent feasible.

5.2 Earthwork

5.2.1 Excavations

As a minimum, all construction excavations should be sloped and shored in accordance with OSHA excavation regulations or stricter local governing safety codes. It is our opinion that the undisturbed natural soils or controlled compacted fill composed of similarly graded materials would generally be classified as "Type C" soils under the OSHA excavation regulations. Significantly flatter excavation side-slopes will be required where groundwater seepage occurs. Permanent slopes should be designed no steeper than three horizontal to one vertical (3H:1V).

5.2.2 Groundwater

The presence of groundwater will not likely affect mass grading activities on a widespread basis. However, GTA should review the site grading plans when they are available to determine if groundwater may be encountered within proposed basement elevations. Additional explorations may be necessary to evaluate the seasonal high water table (SHWT) in relation to proposed basement floor elevations, as groundwater was observed as shallow as 10 feet below the existing ground surface at the time of the exploration.

Also, seepage of perched water may occur where water becomes trapped in granular soils underlain by less-permeable soils, particularly after periods of precipitation. Also, groundwater levels may fluctuate with seasonal variations in precipitation and as a result of development activity. Accordingly, the contractor should be prepared to dewater and shore excavations during construction.

5.2.3 Moisture Sensitivity & Stability

The silty/clayey sands (SM, SC), silts (ML), and clays (CL) encountered near the surface in our explorations had high fines content and may become soft and unstable under construction equipment.

GTA recommends that positive drainage be maintained across the site during construction to prevent ponding of water since the exposed subgrades could destabilize in combination with construction traffic and precipitation. If the subgrade is disturbed by construction traffic and becomes unstable, undercutting and replacement of these surficial materials will be required.

5.2.4 Fill Material Criteria

The soils encountered in the explorations will generally be suitable for reuse as structural fill, with the following limitations:

- Pavement Subgrade Fill: Fine-grained and/or plastic soils, if encountered, will likely be moisture- and disturbance-sensitive. These materials are not recommended for use as fill within the top 18 inches of pavement subgrade, unless chemical stabilization of the pavement subgrade is planned. Refer to the Pavement Subgrade Preparation section for pavement subgrade materials requirements.
- Below-Grade Wall Backfill: Soils used as foundation wall and retaining wall backfill should meet the criteria identified in the Basement Wall Backfill, Drainage & Design section. Such materials will likely be generated during mass-grading excavations and should be segregated and stockpiled for reuse as below-grade wall backfill.
- Imported Fill: Off-site borrow materials, if required, should meet the USCS designation SM, SP, SW, SC, GP, GM, GC, or GW. These materials should be approved by the geotechnical engineer and be tested for their environmental quality before import.

5.2.5 Fill Placement

The areas to receive fill should first be proofrolled with a loaded, tandem-axle dump truck or numerous passes of a large smooth drum vibratory compactor with a static drum weight of at least ten tons under the observation of GTA. Other methods of compaction may be deemed more appropriate for the subgrade evaluation by GTA's on-site representative depending on prevailing weather conditions and space constraints. Any subgrade materials identified as soft/loose, wet, or otherwise unsuitable should be overexcavated to a stable bearing stratum before placement of controlled fill. After a suitable subgrade has been achieved, controlled fill should be placed and compacted in 8- to 12-inch thick lifts (as measured before compaction). The fill should be compacted to the following recommended specifications:

RECOMMENDED COMPACTION SPECIFICATIONS

Fill Location	Compaction Specification
Below foundations, slabs-on-grade, and retaining walls, slopes steeper than 5H:1V, utility and roadway fill within the top 12 inches of pavement subgrade	95% of Maximum Dry Density per the Modified Proctor (ASTM D-1557), Moisture: ± 3% of optimum
Utility and roadway fill greater than 12 inches below pavement subgrade	90% of Maximum Dry Density per the Modified Proctor (ASTM D-1557), Moisture: ± 3% of optimum

5.3 Building Recommendations

5.3.1 Foundation Design

It is GTA's opinion that shallow spread footings will be able to support the proposed residential and amenity buildings, providing the footings are constructed on firm, native materials, on controlled compacted fill or compacted AASHTO No. 57 stone placed directly atop the suitable natural soils. **Footings that are supported on controlled compacted fill and/or natural soils can be proportioned for a net allowable soil-bearing pressure of 3,000 pounds per square foot (psf).** Based on this design, GTA anticipates the foundations will experience maximum post-construction settlements on the order of 1 inch total and ½ inch differential over a 30-foot span. GTA recommends minimum widths of 24 inches for wall footings and 30 inches for column footings, where foundation design based on the recommended allowable soil-bearing pressure would otherwise yield a narrower footing. Exterior footings should be founded at least 30 inches below final exterior grades to protect against the effects of frost, or deeper if required by local ordinance.

5.3.2 Basement Excavations

Barring unanticipated findings, commonly used excavation techniques can likely be used to make basement excavations. Groundwater was encountered in 8 of the 50 explorations performed for this study at depths ranging from about 10 to 15 feet below the ground surface, corresponding to about EL 35 feet to 68 feet. GTA recommends the basement floor levels be established at least 2 feet above groundwater levels. **When grading plans become available, they should be provided to GTA for review.** Potential additional explorations and/or the installation of temporary groundwater monitoring wells may be necessary in portions of the site where basements are planned to determine the SHWT at the site.

5.3.3 Foundation Construction Considerations

The proposed footings will likely be supported on a combination of native soils or controlled compacted fill placed atop the native soils. The native soils encountered during our subsurface exploration were

generally firm enough for foundation support. New fill will be suitable for foundation support only if they are placed directly atop competent natural soils and compacted as recommended in the Fill Placement section.

Before concrete placement, a qualified representative from GTA should evaluate the footing subgrades and perform penetration testing on the exposed footing subgrades to confirm the design allowable bearing capacity. The borings indicate the upper portions of the natural soils are very loose to loose in relative density. Therefore, we recommend that the foundation subgrade soils be thoroughly compacted in-place by numerous passes of a vibratory trench roller, under the observation of GTA, prior to the installation of formwork or rebar to reduce the potential for excessive settlements to occur. Overexcavations should be replaced with lean concrete, controlled compacted fill, or AASHTO No. 57 stone. If overexcavations are replaced with soil fill, they should be placed and compacted as recommended in the Fill Placement section. Alternatively, the footings could be lowered to a competent bearing stratum. Overexcavation and replacement, if required, should be performed as recommended by a licensed geotechnical engineer or a qualified representative based on conditions observed in the field during construction. Footings should be concreted on the day the excavations are made in order to prevent excessive disturbance and/or moisture increase to the subgrades.

5.3.4 Slab Design

Following the earthwork procedures recommended in this report, lowest-level slabs can be designed as concrete slabs-on-grade using a design modulus of subgrade reaction (k) of 150 pounds per cubic inch (pci). To prevent or retard the rise of capillary moisture through the slab, GTA recommends that the slabs be founded on a minimum 4-inch-thick layer of open-graded stone, covered with a polyethylene vapor barrier beneath the slab. The open-graded stone layer should be comprised of imported washed gravel or crushed stone materials with less than 5 percent fines. The vapor barrier should be at least 6-mil thick if it will also serve as a radon gas retarder.

5.3.5 Slab Construction

Before concrete placement, a representative of GTA should evaluate the stability and compaction of natural and compacted fill subgrades for support of the floor slabs. Soft or loose layers should be removed from the slab subgrade and replaced as recommended in the Fill Placement section. Floor slabs should not be rigidly connected to foundation walls, so that wall movements will not affect the slab. Control joints should be provided to control shrinkage cracking of the concrete floor system.

5.4 Lateral Earth Pressures

Basement walls will be subjected to unbalanced lateral-earth pressures and so must be designed to resist such pressures.

For design, GTA recommends the following design parameters and considerations:

Soil Property	On-Site Granular Backfill	AASHTO #57 Clean Stone
Unit Weight, γ	125 pcf	105 pcf
Angle of Internal Friction, Φ	30°	38 °
Coefficient of Active Earth Pressure (Ka)	0.33	0.24
Coefficient of Passive Earth Pressure (Kp)	3.00	4.20
Coefficient of Earth Pressure at Rest (Ko)	0.50	0.38
Base Friction, tan δ	0.36	0.50
Equivalent Fluid Pressure (Unrestrained Top of Wall)	41 psf/ft	25 psf/ft
Equivalent Fluid Pressure (Restrained Top of Wall)	63 psf/ft	40 psf/ft

Hydrostatic pressure is not included in the above values since it is assumed adequate drainage will be provided. Drainage panels and a perimeter drain should be provided behind below grade walls and retaining walls (if included in the final design) to carry away any infiltrating surface water so that hydrostatic pressures do not develop. The perimeter drain should consist of a minimum four-inch diameter slotted or perforated pipe encased in a minimum of six inches of crushed stone that is wrapped by a geotextile filter. The crushed stone should meet the gradational requirements of AASHTO Size No. 57 aggregate. The perimeter drain should tie into a sump pit, stormwater management system, or daylight.

5.4.1 Basement Wall Backfill, Drainage & Design

The soils at this site are generally described as sandy soils with varying gradations and fines contents Fine-grained soils (ML, CL) should not be used as basement wall backfill as these types of soils can exert swell pressures on the walls. Below-grade walls should be designed to resist the lateral soil pressure from the retained backfill. This will be a function of the height of the walls, the differential height of backfill, the type of material, the drainage conditions, and the method of placement and compaction.

The final grades should be designed to maintain positive drainage, and to divert surface water away from proposed construction. Final grades in the vicinity of the foundations should be graded to at least 4 to 5 percent if feasible, and conform to local code. It should be anticipated that seepage of groundwater water may occur in construction excavations extending below the depths to groundwater indicated on the test pit logs, and seepage of perched or trapped water may occur in construction excavations above these depths across the site.

The tables in the 2018 International Residential Code can be used for sizing of basement/below-grade walls based on the material classifications, height of wall, and differential height of backfill. An engineered design is required for walls subject to hydrostatic pressure or supporting over 48 inches of unbalanced backfill that do not have permanent lateral support at the top and bottom.

All below-grade walls should be damp-proofed or water-proofed and include wall drainage connected to the foundation drain. An exterior perimeter drain consisting of a minimum 4-inch diameter perforated PVC pipe should be placed at the base of the walls and should be surrounded by at least 6 inches of open-graded crushed stone or washed gravel wrapped in a non-woven geotextile filter fabric. The perimeter drain should tie into a sump pit or, where possible, should drain by gravity to the storm sewer system or daylight.

Basement wall backfill should be free of organic matter, rocks greater than three inches in diameter, and construction debris. Backfill should be placed and compacted in lifts in a manner that does not damage the foundation, damp- or water-proofing, and drainage system. Foundation wall backfill should not be placed until the concrete has achieved adequate strength, the basement and first floors have been constructed, and the walls have been adequately braced from the interior of the building.

5.5 Utilities

5.5.1 Utility Excavations

Utility excavations can likely be accomplished using standard excavation techniques. If perched water is encountered in utility excavations, dewatering devices like sumps or gravity-flow trenches will likely be sufficient to control the water seepage. We recommend that 8- to 12-inches of AASHTO No. 57 stone be placed below utilities if they will be installed below the groundwater level. Utility excavations should be properly shored and supported in accordance with the latest requirements of OSHA and such other regulatory authorities with jurisdiction.

5.5.2 Utility Support

The native soils and controlled fill placed during mass grading will likely be suitable for supporting the proposed utilities. Any soft/loose or unstable soils encountered at the utility subgrades should be over-excavated and replaced with controlled compacted fill or AASHTO No. 57 stone. To facilitate compaction, provide additional protection for the pipe, and decrease the risk of excessive trench settlement, GTA recommends placing AASHTO No. 57 stone or DGA to at least 6 inches above utility pipes made of plastic or flexible metal (i.e., ductile iron) and to the spring line of rigid pipes.

5.5.3 Utility Trench Backfill

Utilities below pavement and other structural areas should be backfilled with controlled compacted fill. The backfill should be placed and compacted in accordance with project requirements. Utility trenches should be backfilled with the most granular material available. The soils encountered during the subsurface exploration of the project site will generally be suitable for use as utility backfill. The use of fine-grained, plastic soils (if encountered) for utility backfill should be limited to the extent feasible.

Hand-operated equipment should be used for compaction around utility structures. Where hand-operated equipment is used for compaction, lift thicknesses should not exceed 6 inches (as measured before compaction). When backfilling around utility structures, each lift should be uniformly compacted with a sufficient number of passes to obtain the required degree of compaction.

5.6 Pavement

5.6.1 Pavement Subgrade Preparation

The upper 18 inches of pavement subgrade should be constructed of soils meeting the following characteristics:

- Liquid Limit (AASHTO T-89): 30 percent or less
- Plasticity Index (AASHTO T-89, T-90): 14 percent or less
- California Bearing Ratio (ASTM D1883): 5 percent or higher
- Maximum Dry Density (ASTM D1557): 105 pcf or higher

The on-site soils with USCS classifications of GP-GM, SP, SP-SM, SW, SW-SM, and SM will likely meet pavement subgrade criteria. Fine-grained soils, if encountered, may not meet these suggested pavement subgrade criteria and should not be used as fill in the top 18 inches of pavement subgrade.

If soils not meeting pavement-subgrade criteria are encountered, the top 18 inches of pavement subgrade should be undercut and replaced with controlled compacted fill meeting pavement subgrade criteria.

5.6.2 Pavement Construction

GTA should make observations of trafficability during mass grading. GTA recommends that a testing program, including CBR testing, be implemented to develop a suitable pavement section for the project. A CBR value of 7 can be used for preliminary design purposes. The pavement subgrade should be proofrolled using a loaded, tandem-axle dump truck before pavement sections are constructed. An appropriately experienced representative of GTA should observe the entire proofrolling operation to

evaluate stability. Unstable soils or otherwise unsuitable materials, if encountered, should be over-excavated to a stable stratum and replaced with controlled, compacted fill, placed as recommended in the Fill Placement section.

Construction traffic should be controlled in order to limit disturbance of previously approved subgrade, or stone base course, or partially completed asphalt pavements. Too much traffic can result in damage to or premature failure of the pavement. Any damaged pavement areas should be repaired adequately before placing asphalt surface courses. The chemically stabilized subgrade, if used, will provide improved pavement subgrade support and will reduce the potential and extent of pavement damage during construction.

5.7 Slopes

New fills constructed on existing slopes steeper than 5H:1V (horizontal to vertical) should be keyed into existing slopes for stability considerations. All proposed fill slopes steeper than 5H:1V should be placed as structural fill and be controlled and compacted to the densities specified in the Structural Fill and Backfill section of this report. Based upon the surficial fine-grained soils encountered in our exploration, the use of fill slopes steeper than 3H:1V will require additional engineering evaluation, may warrant special erosion protection, and will likely require geosynthetic reinforcement or the use of granular materials.

5.8 Preliminary Stormwater Management Considerations

The primary conditions that affect the capacity to infiltrate water are the soil gradation and density properties and the presence of hydraulically restrictive layers such as silt or clay (fines), rock, or groundwater, each of which would restrict the flow of water into the underlying aquifer. The subsurface profile at the site generally consisted of sandy soils with varying amounts of silt and gravel. Groundwater was encountered in the explorations at depths ranging from about 10 to 15 feet below the ground surface.

We believe the preliminary infiltration test results indicate that infiltration of collected stormwater generally appears feasible at the site. However, scarifying or replacement of the silty/clayey sand, clay and silt soils may be necessary in localized areas during construction depending on the basin design infiltration rate. Additional infiltration testing will be necessary to satisfy NJDEP requirements. We also recommend additional testing be performed at the time of construction to verify the design assumptions. This testing should be performed after the basin subgrades are properly prepared.

6.0 ADDITIONAL SERVICES

As stated previously, only conceptual information regarding the proposed site development was available at the time this report was prepared. A supplemental geotechnical review, and potentially additional explorations and testing, will be required once final site grading and development plans and structural details become available. Additional explorations and infiltration testing will be necessary to satisfy NJDEP requirements when the basin design is complete. We recommended that GTA be retained during construction of the subject project to provide geotechnical consultation and construction observation and testing services as outlined below:

- Review final site and structural plans to evaluate if they conform to the intent of this report. Provide revised recommendations, if necessary, based on this review.
- Perform additional explorations and provide design-phase geotechnical engineering report for the final design and permitting of the proposed improvements and SWM facilities.
- Provide on-site observation of site stripping, subgrade evaluation, and testing of controlled fills.
- Observe excavated footings for compliance with the project drawings and the intent of this geotechnical report.
- Observe the proofrolling of floor slab and pavement subgrades to evaluate stability.
- Perform observation and materials testing during concrete and masonry construction.
- Perform additional SWM testing once the SWM design is finalized.

7.0 LIMITATIONS

This report, including all supporting boring and test pit logs, field data, field notes, laboratory test data, calculations, estimates and other documents prepared by GTA in connection with this project have been prepared for the exclusive use of US Home, LLC (dba Lennar) pursuant to agreement between GTA and US Home, LLC (dba Lennar) dated May 16, 2024 and executed on July 23, 2024 and in accordance with generally accepted engineering practice. All terms and conditions set forth in the Agreement and the General Provisions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein. Use and reproduction of this report by any other person without the expressed written permission of GTA and US Home, LLC (dba Lennar) is unauthorized and such use is at the sole risk of the user.

The analysis and recommendations contained in this report are based on the data obtained from limited observation and testing of the encountered materials. Borings and test pits indicate soil conditions only at specific locations and times and only at the depths penetrated. They do not necessarily reflect strata or variations that may exist between the exploration locations. Consequently, the analysis and recommendations must be considered preliminary until the subsurface conditions can be verified by direct observation at the time of construction. If variations of subsurface conditions from

those described in this report are noted during construction, recommendations in this report may need to be reevaluated.

In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report are verified in writing. GTA is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of Geo-Technology Associates, Inc.

The scope of our services for this geotechnical exploration did not include any environmental assessment or investigation for the presence or absence of wetlands, or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site. Any statements in this report or on the logs regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our client.

This report and the attached logs are instruments of service. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be construed by the reader to imply approval by the writer.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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APPENDIX A

Figures



Note: Site boundary is approximate.

SITE LOCATION MAP

14 Worlds Fair Drive, Suite A
Somerset, New Jersey 08873
(732) 271-9301
fax (732) 271-9306

GEO-TECHNOLOGY ASSOCIATES, INC.

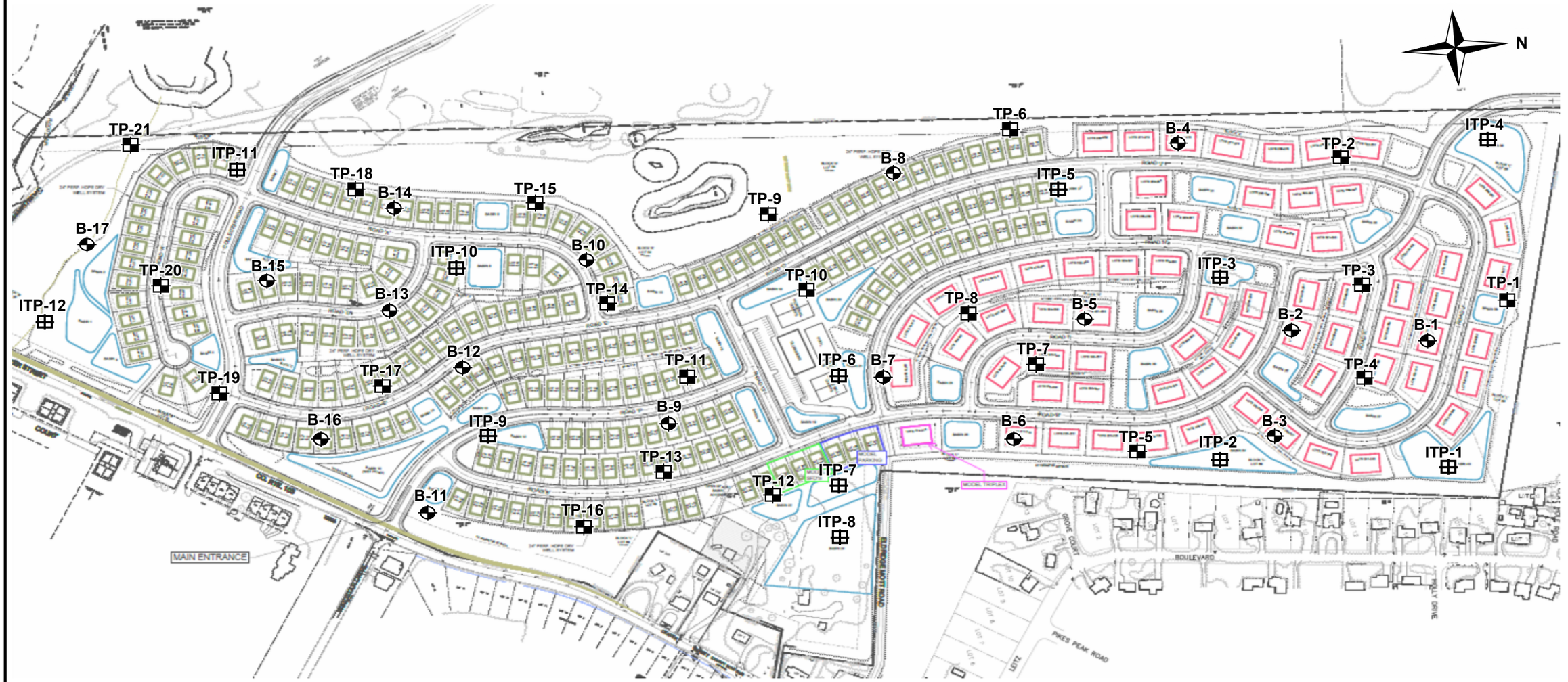
VENUE AT MYSTIC ISLAND

Little Egg Harbor Township,
Ocean County, New Jersey

Prepared For:
US Home Corporation (dba Lennar)

SOURCE: Google Maps		
SCALE: NTS	DATE: AUG. 2024	PROJECT #: 31241688

Figure 1



*Base plan prepared by ARH Associates, titled "Conceptual Plan & Project Information" dated March 22, 2024

LEGEND:

B-X Indicates the numbers and approximate locations of borings performed by GTA for this study.

TP-X Indicates the numbers and approximate locations of test pits performed by GTA for this study.

ITP-X Indicates the numbers and approximate locations of SWM test pits performed by GTA for this study.

EXPLORATION LOCATION PLAN

14 Worlds Fair Drive, Suite A
Somerset, New Jersey 08873
(732) 271-9301
fax (732) 271-9306

GEO-TECHNOLOGY ASSOCIATES, INC.

VENUE AT MYSTIC ISLAND

Little Egg Harbor Township,
Ocean County, New Jersey

Prepared For:
US Home Corporation (dba Lennar)

DESIGN BY: *	DRAWN BY: VP	REVIEWED BY: KTP
SCALE: NTS	DATE: AUG. 2024	PROJECT #: 31241688

Figure 2

APPENDIX B

Exploration Logs

NOTES FOR EXPLORATION LOGS

KEY TO USCS TERMINOLOGY AND GRAPHIC SYMBOLS

MAJOR DIVISIONS (BASED UPON ASTM D 2488)				SYMBOLS GRAPHIC	SYMBOLS LETTER
COARSE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			GW
					GP
		GRAVELS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			GM
					GC
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			SW
					SP
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			SM
					SC
FINE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILT OR CLAY (<15% RETAINED ON THE NO. 200 SIEVE) SILT OR CLAY WITH SAND OR GRAVEL (15% TO 30% RETAINED ON THE NO. 200 SIEVE) SANDY OR GRAVELLY SILT OR CLAY (>30% RETAINED ON THE NO. 200 SIEVE)	SILTS AND LEAN CLAYS LIQUID LIMIT LESS THAN 50			ML
					CL
					OL
		ELASTIC SILTS AND FAT CLAYS LIQUID LIMIT GREATER THAN 50			MH
					CH
					OH
HIGHLY ORGANIC SOILS					PT

NOTE: DUAL SYMBOLS ARE USED TO INDICATE COARSE-GRAINED SOILS WHICH CONTAIN AN ESTIMATED 5 TO 15% FINES BASED ON VISUAL CLASSIFICATION OR BETWEEN 5 AND 12% FINES BASED ON LABORATORY TESTING; AND FINE-GRAINED SOILS WHEN THE PLOT OF LIQUID LIMIT & PLASTICITY INDEX VALUES FALLS IN THE PLASTICITY CHART'S CROSS-HATCHED AREA. FINE-GRAINED SOILS ARE CLASSIFIED AS ORGANIC (OL OR OH) WHEN ENOUGH ORGANIC PARTICLES ARE PRESENT TO INFLUENCE ITS PROPERTIES. LABORATORY TEST RESULTS ARE USED TO SUPPLEMENT SOIL CLASSIFICATION BY THE VISUAL-MANUAL PROCEDURES OF ASTM D 2488.

ADDITIONAL TERMINOLOGY AND GRAPHIC SYMBOLS

	DESCRIPTION		GRAPHIC SYMBOLS
ADDITIONAL DESIGNATIONS	TOPSOIL		
	MAN MADE FILL		
	GLACIAL TILL		
	COBBLES AND BOULDERS		
RESIDUAL SOIL DESIGNATIONS	DESCRIPTION	"N" VALUE	
	HIGHLY WEATHERED ROCK	50 TO 50/1"	
	PARTIALLY WEATHERED ROCK	MORE THAN 50 BLOWS FOR 1" OF PENETRATION OR LESS, AUGER PENETRABLE	

COARSE-GRAINED SOILS
(GRAVEL AND SAND)

DESIGNATION	BLOWS PER FOOT (BPF) "N"
VERY LOOSE	0 - 4
LOOSE	5 - 10
MEDIUM DENSE	11 - 30
DENSE	31 - 50
VERY DENSE	>50

NOTE: "N" VALUE DETERMINED AS PER ASTM D 1586

FINE-GRAINED SOILS
(SILT AND CLAY)

CONSISTENCY	BPF "N"
VERY SOFT	<2
SOFT	2 - 4
MEDIUM STIFF	5 - 8
STIFF	9 - 15
VERY STIFF	16 - 30
HARD	>30

NOTE: ADDITIONAL DESIGNATIONS TO ADVANCE SAMPLER INDICATED IN BLOW COUNT COLUMN:
WOH = WEIGHT OF HAMMER
WOR = WEIGHT OF ROD(S)

SAMPLE TYPE

DESIGNATION	SYMBOL
SOIL SAMPLE	S-
SHELBY TUBE	U-
ROCK CORE	R-

WATER DESIGNATION

DESCRIPTION	SYMBOL
ENCOUNTERED DURING DRILLING	▽
UPON COMPLETION OF DRILLING	▼
24 HOURS AFTER COMPLETION	▼

NOTE: WATER OBSERVATIONS WERE MADE AT THE TIME INDICATED. POROSITY OF SOIL STRATA, WEATHER CONDITIONS, SITE TOPOGRAPHY, ETC. MAY CAUSE WATER LEVEL CHANGES.

LOG OF BORING NO. B-1 (Stake #96)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/14/2024	8/14/2024	8/14/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/14/2024**
DATE COMPLETED: **8/14/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **84 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Diedrich D-50**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	8	2-1-1-5	2	84.0 83.5	0	SM		6 In. Topsoil Dark yellow-brown, moist, very loose, Silty SAND	
2	2.0	17	4-8-15-11	23	82.0		SP-SM		Light yellow-brown, moist, medium dense, Poorly-graded SAND with silt - dense, with gravel at 4 Ft.	
3	4.0	20	9-14-20-14	34		5				
4	6.0	12	19-20-16-16	36	78.0		SM		Yellow-brown, moist, dense, Silty SAND with clay nodules - medium dense at 8 Ft.	
5	8.0	16	13-10-12-8	22		10				
6	13.0	18	4-5-7-6	12	69.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF BORING NO. B-1 (Stake #96)

LOG OF BORING NO. B-2 (Stake #102)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/13/2024	8/13/2024	8/13/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **74 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	19	1-0-1-1	1	74.0	0			6 In. Topsoil	
					73.5		SM		Yellow-brown, moist, very loose, Silty SAND	
2	2.0	18	1-1-2-8	3					- with gravel at 2 Ft.	
					70.0					
3	4.0	20	11-11-14-20	25		5	SP-SM		Yellow-brown, moist, medium dense, Poorly-graded SAND with silt	
					68.0		SM		Light brown, moist, dense, Silty SAND	
4	6.0	18	14-19-22-16	41						
5	8.0	20	11-11-11-14	22					- Yellow-brown, medium dense at 8 Ft.	
						10				
					61.0		SC		Light brown, moist, loose, Clayey SAND with gravel	
6	13.0	17	7-5-4-4	9						
					59.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-2 (Stake #102)

LOG OF BORING NO. B-3 (Stake #103)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	14 Ft.	N/E	N/A
DATE:	8/13/2024	8/13/2024	8/13/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **82 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	20	0-1-1-1	2	82.0	0			6 In. Topsoil	
					81.5		SM		Light brown, very moist, very loose, Silty SAND	
2	2.0	13	1-2-1-3	3	80.0		CL		Yellow-brown, moist, soft, Sandy Lean CLAY	
3	4.0	21	3-4-5-5	9	78.0	5	SM		Yellow-brown, moist, loose, Silty SAND with clay nodules - medium dense at 6 Ft.	
4	6.0	21	5-6-7-7	13						
5	8.0	18	5-8-8-9	16	74.0	10	SC		Yellow-brown, moist, medium dense, CLayey SAND	
6	13.0	20	3-5-6-8	11	69.0		SM		Light brown, moist to wet, medium dense, Silty SAND	▼
					67.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-3 (Stake #103)

LOG OF BORING NO. B-4 (Stake #104)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/14/2024	8/14/2024	8/14/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/14/2024**
DATE COMPLETED: **8/14/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **92 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Diedrich D-50**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	22	0-1-1-1	2	92.0	0	SM		6 In. Topsoil Dark yellow-brown, moist, very loose, Silty SAND with gravel	
2	2.0	17	1-2-2-2	4	91.5				- loose at 2 Ft.	
3	4.0	15	1-1-3-5	4	88.0	5	SP-SM		Light brown, moist, loose, Poorly-graded SAND with silt	- NMC = 2.8%
4	6.0	18	5-7-9-8	16					- medium dense at 6 Ft.	
5	8.0	21	10-8-8-8	16	84.0	10	SP-SC		Light brown, moist, medium dense, Poorly-graded SAND with clay	
6	13.0	20	4-4-4-9	8					- Yellow-brown, loose at 13 Ft.	
					77.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-4 (Stake #104)

LOG OF BORING NO. B-5 (Stake #111)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	15 Ft.	N/E	N/A
DATE:	8/13/2024	8/13/2024	8/13/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **81 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	16	1-0-1-3	1	81.0	0			6 In. Topsoil	
					80.5		SM		Yellow-brown, moist, very loose, Silty SAND	
2	2.0	17	3-3-2-5	5					- Orange-brown, loose at 2 Ft.	
3	4.0	22	10-12-13-11	25		5			- Light yellow-brown, medium dense at 4 Ft.	
4	6.0	21	8-11-14-12	25						
					73.0		SP-SM		Yellow-brown, moist, medium dense, Poorly-graded SAND with silt	
5	8.0	16	8-7-8-5	15		10				
					68.0		SM		Light brown, moist to wet, loose, Silty SAND	
6	13.0	16	3-3-5-4	8						
					66.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-5 (Stake #111)

LOG OF BORING NO. B-6 (Stake #112)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	15 Ft.	N/E	N/A
DATE:	8/13/2024	8/13/2024	8/13/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **76 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	15	6-1-1-2	2	76.0	0			6 In. Topsoil	
					75.5		SM		Brown, moist, very loose, Silty SAND	
2	2.0	18	1-5-3-4	8	74.0		ML		Light yellow-brown, moist, medium stiff, Sandy SILT	
3	4.0	20	4-3-3-3	6		5				
4	6.0	20	5-4-5-4	9	70.0		SM		Pale brown, moist, loose, Silty SAND	
5	8.0	19	3-3-3-5	6		10				
6	13.0	16	2-3-4-4	7	63.0		SP-SM		Yellow-brown, moist, loose, Poorly-graded SAND with silt and gravel	
						15			- wet at 15 Ft.	▽
7	18.0	16	1-5-9-11	14						
					56.0	20			Boring complete at 20 Ft.	
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-6 (Stake #112)

LOG OF BORING NO. B-7 (Stake #114)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	13 Ft.	N/E	N/A
DATE:	8/13/2024	8/13/2024	8/13/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **48 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					48.0	0			6 In. Topsoil	
1	0.0	18	1-1-1-2	2	47.5		SM		Light brown, moist, very loose, Silty SAND	
2	2.0	21	1-3-3-4	6					- loose at 2 Ft.	
3	4.0	20	4-5-4-4	9		5			- Light gray at 4 Ft.	
4	6.0	20	3-4-8-9	12	42.0		SP-SM		Orange-brown, moist, medium dense, Poorly-graded SAND with silt and gravel	
5	8.0	17	8-6-8-8	14					- gravel grades out at 8 Ft.	
						10				
6	13.0	16	5-4-3-2	7					- Light yellow-brown, wet, loose at 13 Ft.	▼
						15				
7	18.0	15	23-9-8-11	17					- Yellow-brown, medium dense at 18 Ft.	
					28.0	20			Boring complete at 20 Ft.	
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-7 (Stake #114)

LOG OF BORING NO. B-8 (Stake #113)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/13/2024	8/13/2024	8/13/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **84 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Diedrich D-50**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	14	0-1-1-1	2	84.0	0			6 In. Topsoil	
					83.5		SM		Dark yellow-brown, moist, very loose, Silty SAND	
2	2.0	16	1-1-1-1	2					- Orange-brown at 2 Ft.	
					80.0		ML		Red-yellow, moist, soft, Sandy SILT	
3	4.0	17	1-1-2-3	3		5				
4	6.0	17	4-3-4-5	7					- medium stiff at 6 Ft.	
					76.0		SM		Yellow-brown, moist, loose, Silty SAND	
5	8.0	17	4-4-6-6	10		10				
6	13.0	23	4-7-16-15	23					- Light-brown, medium dense, with clay nodules at 13 Ft.	
						15				
7	18.0	22	5-8-10-9	18					- Orange-brown at 18 Ft.	
					64.0	20			Boring complete at 20 Ft.	
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-8 (Stake #113)

LOG OF BORING NO. B-9 (Stake #125)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/12/2024	8/12/2024	8/12/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **73 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	19	1-2-2-2	4	73.0	0			6 In. Topsoil	
					72.5		SM		Dark yellow-brown, moist, loose, Silty SAND	
2	2.0	17	2-3-2-5	5					- Orange-brown at 2 Ft.	
					69.0					
3	4.0	20	5-7-9-7	16		5	SP-SC		Orange-brown, moist, medium dense, Poorly-graded SAND with clay	
					67.0					
4	6.0	17	10-9-12-10	21			SP-SM		Orange-brown, moist, medium dense, Poorly-graded SAND with silt	
5	8.0	18	4-10-9-9	19		10				
									- Light yellow-brown at 13 Ft.	
6	13.0	17	5-7-9-10	16						
					58.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-9 (Stake #125)

LOG OF BORING NO. B-10 (Stake #128)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/12/2024	8/12/2024	8/12/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **86 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	18	0-1-2-3	3	86.0 85.5	0	SM		6 In. Topsoil Dark yellow-brown, moist, very loose, Silty SAND with gravel	
2	2.0	21	4-4-1-5	5					- loose, gravel grades out at 2 Ft.	
3	4.0	20	6-8-8-7	16	82.0	5	SP-SM		Yellow-brown, moist, medium dense, Poorly-graded SAND with silt	
4	6.0	20	7-7-9-8	16	80.0		SM		Orange-brown, moist, medium dense, Silty SAND	
5	8.0	21	6-6-7-9	13		10				
					73.0		CL		Light gray to yellow-brown, moist, medium stiff, Lean CLAY	
6	13.0	24	2-5-6-10	11	72.0		SM		Yellow-brown, moist, medium dense, Silty SAND	
					71.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-10 (Stake #128)

LOG OF BORING NO. B-11 (Stake #133)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/12/2024	8/12/2024	8/12/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **87 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	11	1-0-2-3	2	87.0 86.5	0	SM		6 In. Topsoil Dark brown, moist, very loose, Silty SAND	
2	2.0	11	3-5-5-7	10	85.0		SC		Orange-brown, moist, loose, Clayey SAND with gravel	
3	4.0	18	2-3-3-6	6		5			- gravel grades out at 4 Ft.	
4	6.0	21	7-6-11-8	17					- Yellow-brown, medium dense at 6 Ft.	
5	8.0	10	7-7-9-9	16	79.0	10	CL		Light gray, moist, very stiff, Sandy Lean CLAY	
6	13.0	20	5-8-15-20	23					- Yellow-brown at 13 Ft.	
					72.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-11 (Stake #133)

LOG OF BORING NO. B-12 (Stake #132)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	13 Ft.	N/E	N/A
DATE:	8/12/2024	8/12/2024	8/12/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **68 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	15	2-1-3-4	4	68.0	0			6 In. Topsoil	
					67.5		SM		Dark yellow-brown, moist, loose, Silty SAND	
2	2.0	14	4-4-4-6	8						
					64.0					
3	4.0	20	8-17-21-22	38		5	SP-SM		Light brown, moist, dense, Poorly-graded SAND with silt - Orange-brown at 6 Ft.	
4	6.0	21	20-16-18-18	34						
					60.0		ML		White, moist, stiff, SILT	
5	8.0	13	5-12-11-8	23	59.0		SP-SM		Orange-brown, moist, medium dense, Poorly-graded SAND with silt and gravel	
						10				
					55.0					▽
6	13.0	19	8-7-7-15	14			SM		Yellow-brown, wet, medium dense, Silty SAND	
					53.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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LOG OF BORING NO. B-12 (Stake #132)

LOG OF BORING NO. B-13 (Stake #139)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/12/2024	8/12/2024	8/12/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **84 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	15	1-1-1-2	2	84.0	0			6 In. Topsoil	
					83.5		SC		Dark yellow-brown, moist, very loose, Clayey SAND with gravel	
2	2.0	18	3-5-10-18	15	82.0		SM		Yellow-brown, moist, medium dense, Silty SAND	
3	4.0	23	18-25-31-29	56	80.0	5	SP-SM		Yellow-brown, moist, very dense, Poorly-graded SAND with silt and gravel	
4	6.0	20	22-18-8-10	26	78.0		CL		Yellow-brown, moist, very stiff, Sandy Lean CLAY	
5	8.0	20	10-18-20-20	38	76.0		SP-SM		Yellow-brown, moist, dense, Poorly-graded SAND with silt and gravel	
						10				
6	13.0	10	3-4-5-6	9	71.0		CL		Yellow-brown, moist, stiff, Lean CLAY	
						15				
7	18.0	16	3-3-7-10	10					- Light gray at 18 Ft.	
					64.0	20			Boring complete at 20 Ft.	
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF BORING NO. B-13 (Stake #139)

LOG OF BORING NO. B-14 (Stake #140)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/13/2024	8/13/2024	8/13/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **87 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					87.0	0			6 In. Topsoil	
1	0.0	20	2-7-10-7	17	86.5		SM		Light yellow-brown, moist, medium dense, Silty SAND	
2	2.0	13	7-11-19-20	30	85.0		SP-SM		Orange-brown, moist, medium dense, Poorly-graded SAND with silt and gravel	
3	4.0	19	15-16-14-25	30	83.0	5	SC		Yellow-brown, moist, medium dense, Clayey SAND	
4	6.0	21	25-21-26-31	47					- dense at 6 Ft.	
5	8.0	15	14-15-15-17	30					- Light-brown, medium dense at 8 Ft.	
						10				
6	13.0	16	21-10-9-10	19	74.0		SM		Yellow-brown, moist, medium dense, Silty SAND	
					72.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF BORING NO. B-14 (Stake #140)

LOG OF BORING NO. B-15 (Stake #141)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/12/2024	8/12/2024	8/12/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **81 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	18	1-2-3-3	5	81.0	0			6 In. Topsoil	
					80.5		SM		Dark yellow-brown, moist, loose, Silty SAND with gravel	
2	2.0	17	1-1-2-3	3					- Brown, very loose, gravel grades out at 2 Ft.	
3	4.0	24	4-7-14-14	21		5			- Red-yellow, medium dense at 4 Ft.	
4	6.0	24	8-12-14-13	26					- Light yellow-brown at 6 Ft.	
					73.0					
5	8.0	18	11-10-16-14	26			SP-SM		Pale brown, moist, medium dense, Poorly-graded SAND with silt	
						10				
6	13.0	19	7-8-9-10	17						
					66.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF BORING NO. B-15 (Stake #141)

LOG OF BORING NO. B-16 (Stake #137)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	N/E	N/E	N/A
DATE:	8/12/2024	8/12/2024	8/12/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **83 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	16	0-1-3-4	4	83.0	0			6 In. Topsoil	
					82.5		CL		Yellow-brown, moist, medium stiff, Lean CLAY with sand	
2	2.0	14	5-6-10-11	16					- Yellow-brown, very stiff at 2 Ft.	
3	4.0	18	2-2-8-20	10		5			- Light gray, stiff at 4 Ft.	
4	6.0	14	16-15-18-16	33					- hard at 6 Ft.	
5	8.0	18	3-5-8-10	13					- stiff at 8 Ft.	
						10				
					70.0					
6	13.0	12	3-9-11-13	20			SP-SM		Pale red-brown, moist, medium dense, Poorly-graded SAND with silt	
					68.0	15			Boring complete at 15 Ft.	
						20				
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

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14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF BORING NO. B-16 (Stake #137)

LOG OF BORING NO. B-17 (Stake #145)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, New Jersey**

WATER LEVEL (ft):	14.5 Ft.	N/E	N/A
DATE:	8/12/2024	8/12/2024	8/12/2024
CAVED (ft):	In Auger	-	BOC

DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
DRILLING CONTRACTOR: **Environmental Technical Drilling**
DRILLER: **Scott**
DRILLING METHOD: **2-1/4" HSA**
SAMPLING METHOD: **SPT**

GROUND SURFACE ELEVATION: **75 Ft.**
DATUM: **Google Earth**
EQUIPMENT: **Geoprobe**
HAMMER TYPE: **Automatic**
LOGGED BY: **CT**
CHECKED BY: **VP**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					75.0	0			6 In. Topsoil	
1	0.0	14	0-1-3-3	4	74.5		SM		Dark yellow-brown, moist, very loose, Silty SAND with gravel	
2	2.0	16	3-4-4-6	8					- Yellow-brown, loose at 2 Ft.	
3	4.0	19	7-12-8-12	20		5			- Light yellow-brown, moist, medium dense at 4 Ft.	
4	6.0	17	8-10-12-15	22						- NMC = 3.4%
5	8.0	16	11-10-14-15	24		10				
									- Yellow-brown at 13 Ft.	
6	13.0	14	6-9-9-9	18		15			- wet at 14.5 Ft.	▽
7	18.0	24	4-4-7-10	11						
					55.0	20			Boring complete at 20 Ft.	
						25				
						30				

NOTES: **Loacation staked out by project surveyor. Elevation is approximate.**
BOC = Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
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Somerset, NJ 08873

LOG OF BORING NO. B-17 (Stake #145)

LOG OF TEST PIT NO. TP-1 (Stake #95)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **78 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
77.5	0			6 In. of Topsoil	
		SM		Dark yellow-brown, moist, Silty SAND	
75.5	3	SP-SM		Yellow-brown, moist, Poorly-graded SAND with silt	
	6			- Red-yellow at 6-1/2 Ft.	
70.0	9	SP-SC		Dark yellow-brown, moist, Poorly-graded SAND with clay and clay nodules	
67.0	12	SP-SM		Yellow-brown, very moist, Poorly-graded SAND with silt	
63.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. TP-1 (Stake #95)

LOG OF TEST PIT NO. TP-2 (Stake #98)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/13/2024**
GROUND SURFACE ELEVATION: **99 Ft.**
DATE COMPLETED: **8/13/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **VP**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
98.5				6 In. of Topsoil	
		SM		Dark yellow-brown, moist, Silty SAND	
96.5	3	ML		Strong brown, moist, Sandy SILT	
95.0		SM		Brown-yellow, moist, Silty SAND	
	6				
				- Very pale brown at 8 Ft.	
	9				
	12				
84.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. TP-2 (Stake #98)

LOG OF TEST PIT NO. TP-3 (Stake #99)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **82 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
81.5				6 In. of Topsoil	
		SM		Yellow-brown, moist, Silty SAND	
80.0		SP		Strong brown, moist, Poorly-graded SAND	
	3				
					- NMC = 4.7%
	6				
	9				
				- with gravel at 10 Ft.	
70.0	12			Test pit complete at 12 Ft. due to sidewall collapse	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-3 (Stake #99)

LOG OF TEST PIT NO. TP-4 (Stake #100)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/13/2024**
GROUND SURFACE ELEVATION: **86 Ft.**
DATE COMPLETED: **8/13/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **VP**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
85.5				6 In. of Topsoil	
		SM		Dark yellow-brown, moist, Silty SAND with gravel	
83.5		SP-SM		Yellow-brown, moist, Poorly-graded SAND with silt	
	3				
	6				
77.0	9	SP		Red-yellow, moist, Poorly-graded SAND	
	12				
71.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
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Somerset, NJ 08873

LOG OF TEST PIT NO. TP-4 (Stake #100)

LOG OF TEST PIT NO. TP-5 (Stake #108)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **87 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
86.5				6 In. of Topsoil	
		SC		Yellow-brown, moist, Clayey SAND	
84.5	3	SM		Brown-yellow, moist, Silty SAND	
	6				
	9				
	12				
72.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-5 (Stake #108)

LOG OF TEST PIT NO. TP-6 (Stake #109)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/12/2024**
GROUND SURFACE ELEVATION: **75 Ft.**
DATE COMPLETED: **8/12/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **VP**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
74.5	0			6 In. of Topsoil	
		SM		Dark yellow-brown, moist, Silty SAND with gravel	
72.0	3	SP-SM		Yellow-brown, moist, Poorly-graded SAND with silt and gravel	
	6				
67.0		SC		Strong brown, moist, Clayey SAND with clay nodules	
	9				
	12				
60.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
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LOG OF TEST PIT NO. TP-6 (Stake #109)

LOG OF TEST PIT NO. TP-7 (Stake #115)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **71 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			6 In. of Topsoil	
70.5		SM		Yellow-brown, moist, Silty SAND with gravel	
	3			- Light yellow-brown, gravel grades out at 2-1/2 Ft.	
	6				
	9				
				- clay nodules at 10 Ft.	
	12				
56.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. TP-7 (Stake #115)

LOG OF TEST PIT NO. TP-8 (Stake #116)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **82 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
81.5	0			6 In. of Topsoil	
		SM		Dark yellow-brown, moist, Silty SAND with gravel	
79.5	3	SP-SM		Yellow-brown, moist, Poorly-graded SAND with silt	
76.5	6	SM		Yellow-brown, moist, Silty SAND	
	9				
	12			- Pale brown, with clay nodules at 11 Ft.	
67.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
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LOG OF TEST PIT NO. TP-8 (Stake #116)

LOG OF TEST PIT NO. TP-9 (Stake #119)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/6/2024**
DATE COMPLETED: **8/6/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **77 Ft.**
DATUM: **Google Earth**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
76.5				6 In. of Topsoil	
		SM		Yellow-brown, moist, Silty SAND	
74.0	3				
		SP-SM		Dark yellow-brown, moist, Poorly-graded SAND with silt	
72.0					
		SC		Strong brown, moist, Clayey SAND	
	6				
70.0					
		SP-SM		Dark yellow-brown, moist, Poorly-graded SAND	
	9				
	12				
62.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. TP-9 (Stake #119)

LOG OF TEST PIT NO. TP-10 (Stake #120)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/6/2024**
DATE COMPLETED: **8/6/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **65 Ft.**
DATUM: **Google Earth**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			8 In. of Topsoil	
64.3		SM		Yellow-brown, moist, Silty SAND	
	3			- Dark yellow-brown, with gravel at 3 Ft.	
				- Light yellow-brown and yellow-brown at 4 Ft.	
	6				
57.0		CL		Pale brown, moist, Lean CLAY with sand	
	9				
	12				
52.5		SP-SM		Light yellow-brown, moist, Poorly-graded SAND wilt silt	
50.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. TP-10 (Stake #120)

LOG OF TEST PIT NO. TP-11 (Stake #126)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/6/2024**
DATE COMPLETED: **8/6/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **76 Ft.**
DATUM: **Google Earth**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			8 In. of Topsoil	
75.3		SM		Light brown, moist, Silty SAND with gravel	
	3				
				- Yellow-brown and pale brown at 5 Ft.	
	6				
69.0		SP-SM		Dark yellow-brown, moist, Poorly-graded SAND with silt and gravel	
	9			- Yellow-brown, gravel grades out at 9 Ft.	
				- with clay nodules at 10 Ft.	
	12				
61.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-11 (Stake #126)

LOG OF TEST PIT NO. TP-12 (Stake #121)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **29 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
28.5				6 In. of Topsoil	
		SM		Yellow-brown, moist, Silty SAND	
26.5	3	SP-SM		Yellow-brown, moist, Poorly-graded SAND with silt	
	6			- Light yellow-brown at 6-1/2 Ft.	
	9				
17.0	12			Test pit completed at 15 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-12 (Stake #121)

LOG OF TEST PIT NO. TP-13 (Stake #124)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/6/2024**
GROUND SURFACE ELEVATION: **83 Ft.**
DATE COMPLETED: **8/6/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **AFS**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			8 In. of Topsoil	
82.3		SM		Dark yellow-brown, moist, Silty SAND	
80.0	3	SP-SM		Dark yellow-brown, moist, Poorly-graded SAND with silt and gravel	
	6				
76.0		SP-SC		Red-yellow, moist, Poorly-graded SAND with clay	
	9				
				- Brown-yellow at 11 Ft.	
	12				
68.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-13 (Stake #124)

LOG OF TEST PIT NO. TP-14 (Stake #129)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/5/2024**
DATE COMPLETED: **8/5/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **86 Ft.**
DATUM: **Google Earth**
LOGGED BY: **CT**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
85.4				7 In. of Topsoil	
		SM		Dark yellow-brown, moist, Silty SAND	
	3			- Red-brown at 3 Ft.	
80.5					
	6	SP-sM		Yellow-brown, moist, Poorly-graded SAND with silt and gravel	
	9				
	12				
72.0		CL		White, moist, Lean CLAY	
71.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-14 (Stake #129)

LOG OF TEST PIT NO. TP-15 (Stake #135)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/5/2024**
DATE COMPLETED: **8/5/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **14.5 Ft.**
GROUND SURFACE ELEVATION: **56 Ft.**
DATUM: **Google Earth**
LOGGED BY: **CT**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	DESCRIPTION	REMARKS
	0		7 In. of Topsoil	
55.4		SM	Dark yellow-brown, moist, Silty SAND with gravel	
	3		- Strong brown at 3 Ft.	
	6		- Light yellow-brown at 7 Ft.	
	9			
	12			
			- wet at 14-1/2 Ft.	Water seepage at 14-1/2 Ft.
41.0	15		Test pit complete at 15 Ft.	
	18			

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-15 (Stake #135)

LOG OF TEST PIT NO. TP-16 (Stake #130)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **80 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
79.5				6 In. of Topsoil	
		SM		Light brown, moist, Silty SAND	
	3				
76.0					
		SP-SM		Strong brown, moist, Poorly-graded SAND with silt	
	6				
	9				
68.0	12				
		SP-SC		Yellow-brown, moist, Poorly-graded SAND with clay and clay nodules	
65.0	15				
				Test pit completed at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-16 (Stake #130)

LOG OF TEST PIT NO. TP-17 (Stake #136)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/6/2024**
DATE COMPLETED: **8/6/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **80 Ft.**
DATUM: **Google Earth**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
79.5				6 In. of Topsoil	
		SM		Dark yellow-brown, moist, Silty SAND	
				- with gravel at 2 Ft.	
	3				- NMC = 4.8%
74.0	6	CL		Very pale brown and yellow-brown, moist, Lean CLAY with sand	
	9				
	12				
65.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-17 (Stake #136)

LOG OF TEST PIT NO. TP-18 (Stake #142)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/5/2024**
GROUND SURFACE ELEVATION: **93 Ft.**
DATE COMPLETED: **8/5/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **CT**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
92.4				7 In. of Topsoil	
		SC		Dark brown, moist, CLayey SAND with gravel	
90.5		SP-SC		Strong brown, moist, Poorly-graded SAND with clay	
	3				
	6				
85.0		SP		Light yellow-brown, moist, Poorly-graded SAND with gravel	
84.0	9	SC		Strong brown, moist, Clayey SAND	
	12				
78.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-18 (Stake #142)

LOG OF TEST PIT NO. TP-19 (Stake #138)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/6/2024**
GROUND SURFACE ELEVATION: **80 Ft.**
DATE COMPLETED: **8/6/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **AFS**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			8 In. of Topsoil	
79.3		SM		Dark yellow-brown, moist, Silty SAND with gravel	
77.0	3	SP-SM		Yellow-brown, moist, Poorly-graded SAND with silt	
74.0	6	GM		Yellow-brown, moist, Silty GRAVEL with sand	
72.0		SP-SM		Light yellow-brown, moist, Poorly-graded SAND with silt	
	9				
	12				
65.0	15			Test pit complete at 15 Ft.	
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-19 (Stake #138)

LOG OF TEST PIT NO. TP-20 (Stake #147)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/5/2024**
GROUND SURFACE ELEVATION: **76 Ft.**
DATE COMPLETED: **8/5/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **CT**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
75.4				7 In. of Topsoil	
		SM		Yellow-brown, moist, Silty SAND	
	3				
70.0	6	SP-SM		Dark yellow-brown, moist, Poorly-graded SAND with silt and gravel	
	9				
64.0	12			Test pit complete at 12 Ft. due to sidewall collapse.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-20 (Stake #147)

LOG OF TEST PIT NO. TP-21 (Stake #146)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/5/2024**
DATE COMPLETED: **8/5/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **55 Ft.**
DATUM: **Google Earth**
LOGGED BY: **CT**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
54.4				7 In. of Topsoil	
		SM		Light yellow-brown, moist, Silty SAND with gravel	
52.5	3	SP-SM		Yellow-brown, moist, Poorly-graded SAND with silt and gravel	
49.5	6	SP		Light yellow-brown, moist, Poorly-graded SAND	
47.0	9	SP-SM		Dark yellow-brown, moist, Poorly-graded SAND with silt and gravel	
42.0	12			Test pit complete at 13 Ft. due to sidewall collapse.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. TP-21 (Stake #146)

LOG OF TEST PIT NO. ITP-1 (Stake #97)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **84 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
83.5				6 In. of Topsoil	
		SM		Yellow-brown (10YR 5/4), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
81.5	3	CL		Light yellow-brown (10YR 6/4), moist, subangular blocky, friable, Sandy Clay [Sandy Lean CLAY per USCS]	Infiltration Rate = 0.5 in/hr at 4 Ft.
78.5	6	SM		Pale brown (2.5Y 7/3), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
	9				
74.0		SP-SM		Brown-yellow (10YR 6/6), moist, single grain, loose, Loamy Sand [Poorly-graded SAND with silt per USCS]	
72.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-1 (Stake #97)

LOG OF TEST PIT NO. ITP-2 (Stake #106)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/13/2024**
GROUND SURFACE ELEVATION: **82 Ft.**
DATE COMPLETED: **8/13/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **VP**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
81.5	0			6 In. of Topsoil	
		SC		Yellow-brown (10YR 5/5), moist, single grain, loose, Sandy Clay Loam [Clayey SAND per USCS]	
78.5	3	ML		Very pale brown (10YR 7/3), moist, subangular blocky to single grain, friable to loose, Silt Loam [SILT with sand per USCS]	Infiltration Rate = 1 in/hr at 4 Ft. - NMC = 14.1%
74.0	6	SM		Pale brown (2.5Y 7/3), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
70.0	9 12			Test pit complete at 12 Ft.	
	15 18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-2 (Stake #106)

LOG OF TEST PIT NO. ITP-3 (Stake #105)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **56 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
55.5				6 In. of Topsoil	
		SM		Yellow-brown (10YR 5/4), moist, 20% gravel, single grain, loose, Sandy Loam [Silty SAND per USCS]	
53.0	3	SP-SM		Red-yellow (7.5YR 6/6), moist, single grain, loose, Loamy Sand [Poorly-graded SAND with silt per USCS]	Infiltration Rate = 30 in/hr at 4 Ft.
	6				
	9			- Very pale brown (10YR 7/4) at 10 Ft.	
44.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-3 (Stake #105)

LOG OF TEST PIT NO. ITP-4 (Stake #148)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/13/2024**
DATE COMPLETED: **8/13/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **59 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
58.5				6 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
				- Strong brown (7.5YR 5/8) at 2-1/2 Ft.	
	3			- 10% gravel at 3-1/2 Ft.	
					Infiltration Rate = 18 in/hr at 4 Ft.
	6				
	9			- Brown-yellow (10YR 6/8) at 10 Ft.	
47.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-4 (Stake #148)

LOG OF TEST PIT NO. ITP-5 (Stake #110)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/12/2024**
GROUND SURFACE ELEVATION: **91 Ft.**
DATE COMPLETED: **8/12/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **VP**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
90.5				6 In. of Topsoil	Infiltration Rate = 24 in/hr at 4 Ft.
		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
89.0		SP-SM		Red-yellow (7.5YR 6/6), moist, single grain, loose, Loamy Sand [Poorly-graded SAND with silt per USCS]	
	3				
	6				
	9				
79.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-5 (Stake #110)

LOG OF TEST PIT NO. ITP-6 (Stake #118)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **50 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
49.5				6 In. of Topsoil	
		SM		Yellow-brown (10YR 5/4), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
47.0	3	ML		White (2.5Y 8/1), moist, single grain, loose, Silt Loam [Sandy SILT per USCS]	Infiltration Rate = 4 in/hr at 4 Ft. - NMC = 10.5%
	6				
43.0		SP-SM		Strong brown (7.5 5/6), moist, single grain, loose, Loamy Sand [Poorly-graded SAND with silt per USCS]	
	9				
38.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-6 (Stake #118)

LOG OF TEST PIT NO. ITP-7 (Stake #122)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/12/2024**
DATE COMPLETED: **8/12/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **42 Ft.**
DATUM: **Google Earth**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
41.5				6 In. of Topsoil	
		SP-SM		Light yellow-brown (10YR 6/4), moist, 20% gravel, single grain, loose, Loamy Sand [Poorly-graded SAND with silt per USCS]	
	3			- Light olive-brown (2.5YR 5/6), 5% gravel at 2-1/2 Ft.	Infiltration Rate = 36 in/hr at 4 Ft.
37.0		SP		Pale brown (2.5Y 7/4), moist, single grain, loose, Sand [Poorly-graded SAND per USCS]	
	6				
	9				
30.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-7 (Stake #122)

LOG OF TEST PIT NO. ITP-8 (Stake #123)

PROJECT: **Venue at Mystic Island**
PROJECT NO.: **31241688**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
GROUNDWATER ENCOUNTERED: **N/E**
DATE STARTED: **8/12/2024**
GROUND SURFACE ELEVATION: **29 Ft.**
DATE COMPLETED: **8/12/2024**
DATUM: **Google Earth**
CONTRACTOR: **Neighbors Property Management**
LOGGED BY: **VP**
EQUIPMENT: **Bobcat E60**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
				12 In. of Topsoil	
28.0		SC		Dark gray-brown (10YR 4/2), moist, single grain, loose, Sandy Clay Loam [Clayey SAND per USCS]	
26.0	3	SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
	6				
22.0		CL		Light brown-gray (10YR 6/2), moist, subangular blocky, friable, Clay [Sandy Lean CLAY per USCS]	Infiltration Rate = 0 in/hr at 7 Ft. - NMC = 16.2%
20.5	9	SM		Olive-yellow (2.5Y 6/6), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
17.0	12	CL		Light brown-gray (10YR 6/2), moist, subangular blocky, friable, Clay [Sandy Lean CLAY per USCS]	
16.0				Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-8 (Stake #123)

LOG OF TEST PIT NO. ITP-9 (Stake #131)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/6/2024**
DATE COMPLETED: **8/6/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **85 Ft.**
DATUM: **Google Earth**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
84.5				6 In. of Topsoil	
		SM		Yellow-brown (10YR 5/6), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
	3			- Strong brown (7.5YR 5/8), 5% gravel at 4 Ft.	
				- Strong brown (7.5YR 4/6), gravel grades out at 5 Ft.	- Infiltration rate = 21 in/hr at 5 Ft.
	6				
	9				
73.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-9 (Stake #131)

LOG OF TEST PIT NO. ITP-10 (Stake #134)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/5/2024**
DATE COMPLETED: **8/5/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **10 Ft.**
GROUND SURFACE ELEVATION: **76 Ft.**
DATUM: **Google Earth**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			8 In. of Topsoil	
75.3		SM		Strong brown (7.5YR 5/8), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
	3			- Brown-yellow (10YR 6/8) at 3 Ft.	
	6				- Infiltration rate = 36 in/hr at 4 Ft.
	9				
				- wet at 10 Ft.	▼
64.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-10 (Stake #134)

LOG OF TEST PIT NO. ITP-11 (Stake #143)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/5/2024**
DATE COMPLETED: **8/5/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **78 Ft.**
DATUM: **Google Earth**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
77.4				7 In. of Topsoil	
		SM		Yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam [Silty SAND per USCS]	
75.5		SP-SM		Strong brown (7.5YR 4/6), moist, Loamy Sand, 10% gravel, single grain, loose [Poorly-graded SAND with silt per USCS]	
	3				
	6				- Infiltration rate = 36 in/hr at 4 Ft.
				- Brown-yellow (10YR 6/8), 5% gravel at 8 Ft.	
	9			- Brown-yellow (10YR 6/6) at 9 Ft.	
66.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

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14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-11 (Stake #143)

LOG OF TEST PIT NO. ITP-12 (Stake #144)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, Ocean County, New Jersey**
CLIENT: **US Home Corporation (dba Lennar)**
DATE STARTED: **8/6/2024**
DATE COMPLETED: **8/6/2024**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

PROJECT NO.: **31241688**
GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **71 Ft.**
DATUM: **Google Earth**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
70.5				6 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, Sandy Loam, single grain, loose [Silty SAND per USCS]	
68.0	3	GM		Yellow-brown (10YR 5/6), moist, single grain, loose, Gravelly Loamy Sand [Silty GRAVEL with sand per USCS]	- Infiltration rate = 36 in/hr at 4 Ft.
66.0		SP-SM		Very pale brown (10YR 7/4), moist, single grain, loose, Loamy Sand [Poorly-graded Sand with silt per USCS]	
	6				
	9				
59.0	12			Test pit complete at 12 Ft.	
	15				
	18				

NOTES: **Location staked out by project surveyor. Elevation is approximate.**
Backfilled on completion.

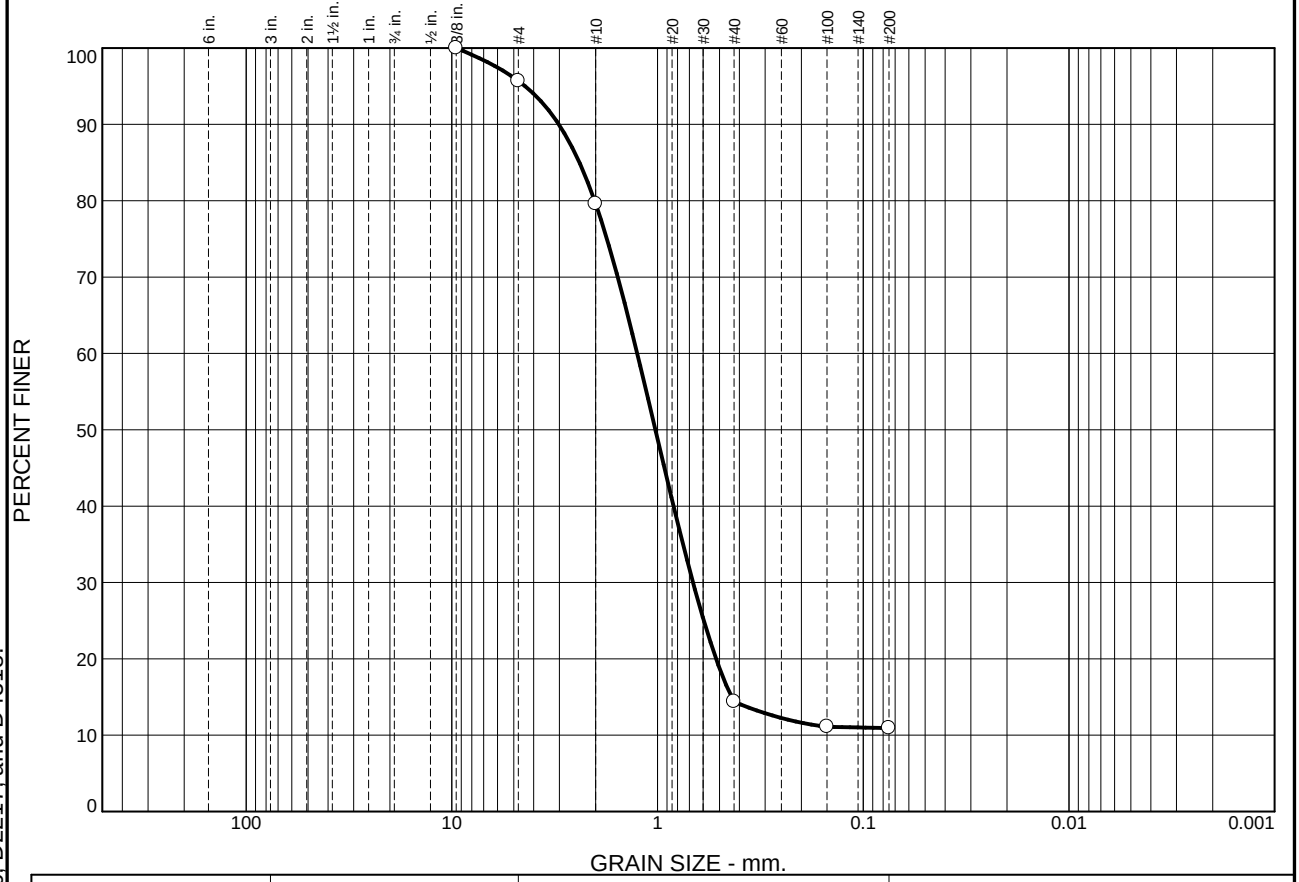
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LOG OF TEST PIT NO. ITP-12 (Stake #144)

APPENDIX C

Laboratory Data

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	4.3	16.1	65.2	3.5	10.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NP	NP	2.3981	1.2562	1.0246	0.6723	0.4365			

Material Description	USCS	AASHTO
○ Poorly-graded SAND with silt	SP-SM	A-1-b

Project No. 31241688 **Client:** US Home Corporation (dba Lennar)

Project: Venue at Mystic Island

○ **Source of Sample:** B-4 **Depth:** 4 **Sample Number:** 3

Remarks:

○NMC = 2.8%

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Somerset, NJ 08873

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: RR **Checked By:** AFS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	6.1	11.7	37.3	30.6	14.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NP	NP	2.3765	0.7100	0.5000	0.2727	0.1185			

Material Description	USCS	AASHTO
○ Silty SAND	SM	A-1-b

Project No. 31241688 **Client:** US Home Corporation (dba Lennar)

Project: Venue at Mystic Island

○ **Source of Sample:** B-17 **Depth:** 6 **Sample Number:** 4

Remarks:

○NMC = 3.4%

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Somerset, NJ 08873

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: RR **Checked By:** AFS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.3	0.6	3.6	12.5	82.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NV	NP	0.1440							

	Material Description	USCS	AASHTO
○	SILT with sand	ML	A-4(0)

Project No. 31241688 **Client:** US Home Corporation (dba Lennar)

Project: Venue at Mystic Island

○ **Source of Sample:** ITP-2 **Depth:** 4

Remarks:

○NMC = 14.1%

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Somerset, NJ 08873

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: RR **Checked By:** AFS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.2	1.0	3.2	43.4	52.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NV	NP	0.2991	0.1383						

Material Description	USCS	AASHTO
○ Sandy SILT	ML	A-4(0)

Project No. 31241688 **Client:** US Home Corporation (dba Lennar)

Project: Venue at Mystic Island

○ **Source of Sample:** ITP-6 **Depth:** 4

Remarks:

○NMC = 10.5%

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Somerset, NJ 08873

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: RR **Checked By:** AFS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.5	39.7	59.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	24.3	16.3	0.2831	0.0784						

Material Description	USCS	AASHTO
○ Sandy Lean CLAY	CL	A-4(2)

Project No. 31241688 **Client:** US Home Corporation (dba Lennar)

Project: Venue at Mystic Island

○ **Source of Sample:** ITP-8 **Depth:** 7.5

Remarks:

○NMC = 16.2%

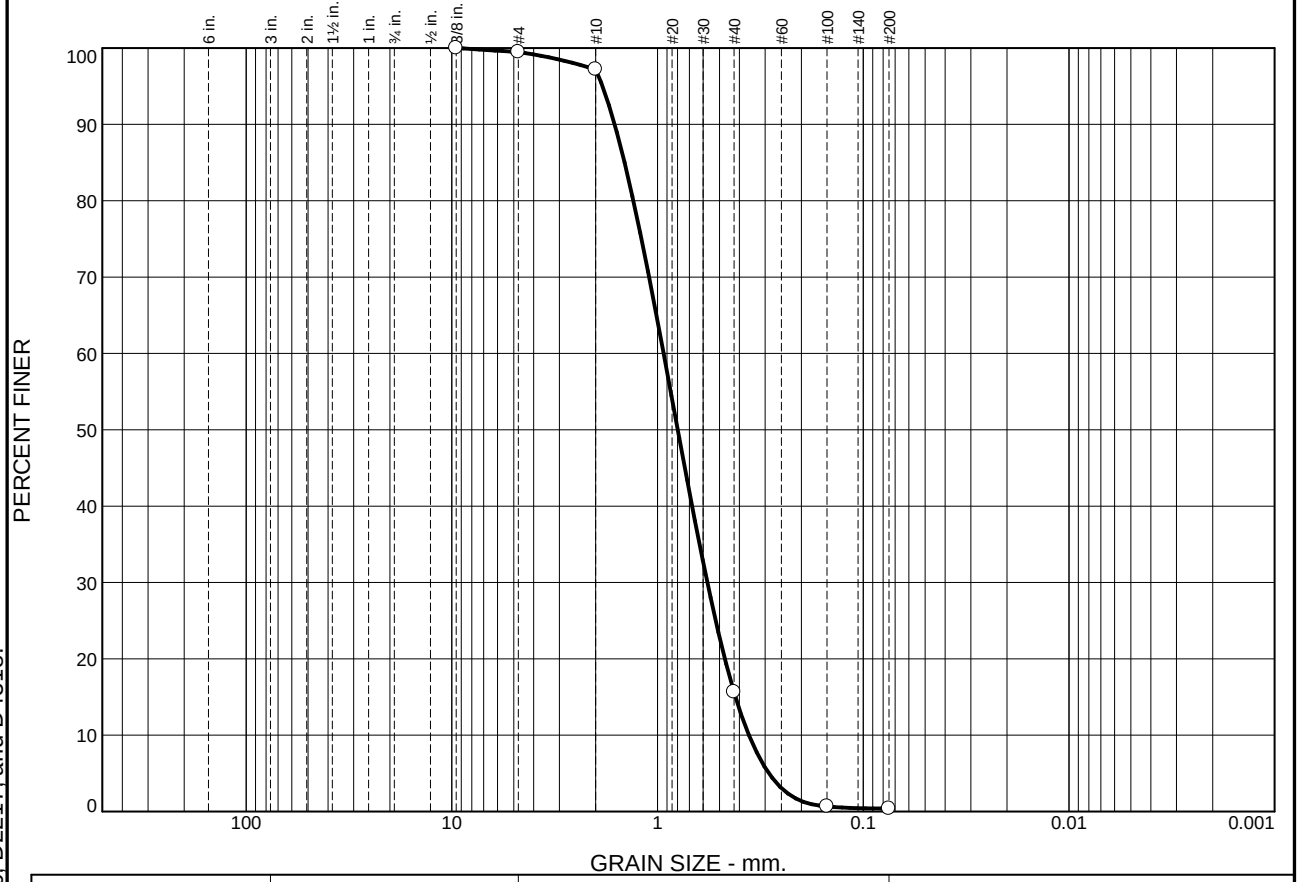
GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: RR **Checked By:** AFS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.5	2.3	81.6	15.2	0.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NP	NP	1.4468	0.9345	0.7977	0.5725	0.4181	0.3595	0.98	2.60

Material Description	USCS	AASHTO
○ Poorly-graded SAND	SP	A-1-b

Project No. 31241688 **Client:** US Home Corporation (dba Lennar)

Project: Venue at Mystic Island

○ **Source of Sample:** TP-3 **Depth:** 5

Remarks:

○NMC = 4.7%

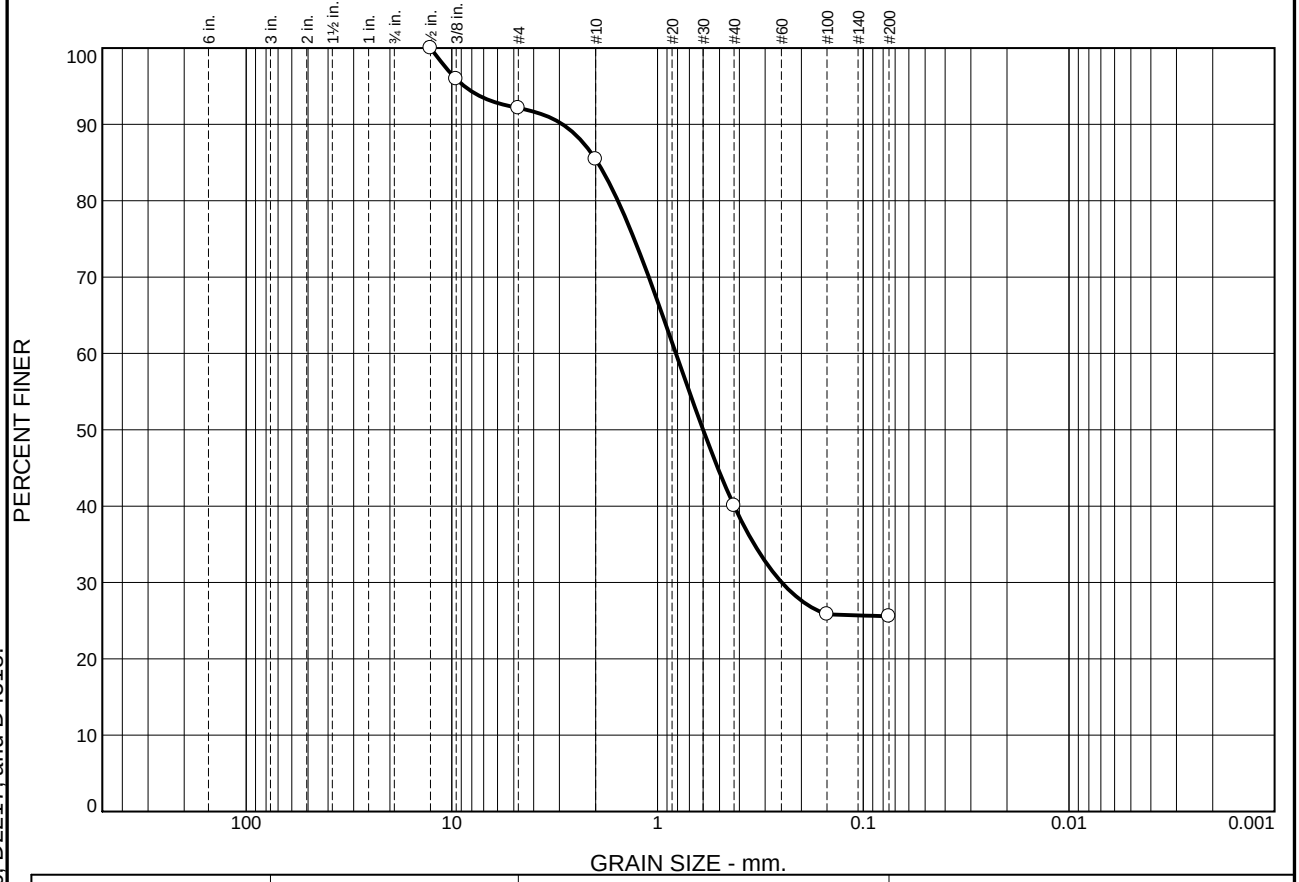
GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: RR **Checked By:** AFS

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	7.9	6.7	45.3	14.5	25.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NP	NP	1.9542	0.8142	0.6004	0.2489				

	Material Description	USCS	AASHTO
○	Silty SAND	SM	A-2-4(0)

Project No. 31241688 **Client:** US Home Corporation (dba Lennar)

Project: Venue at Mystic Island

○ **Source of Sample:** TP-17 **Depth:** 4

Remarks:

○NMC = 4.8%

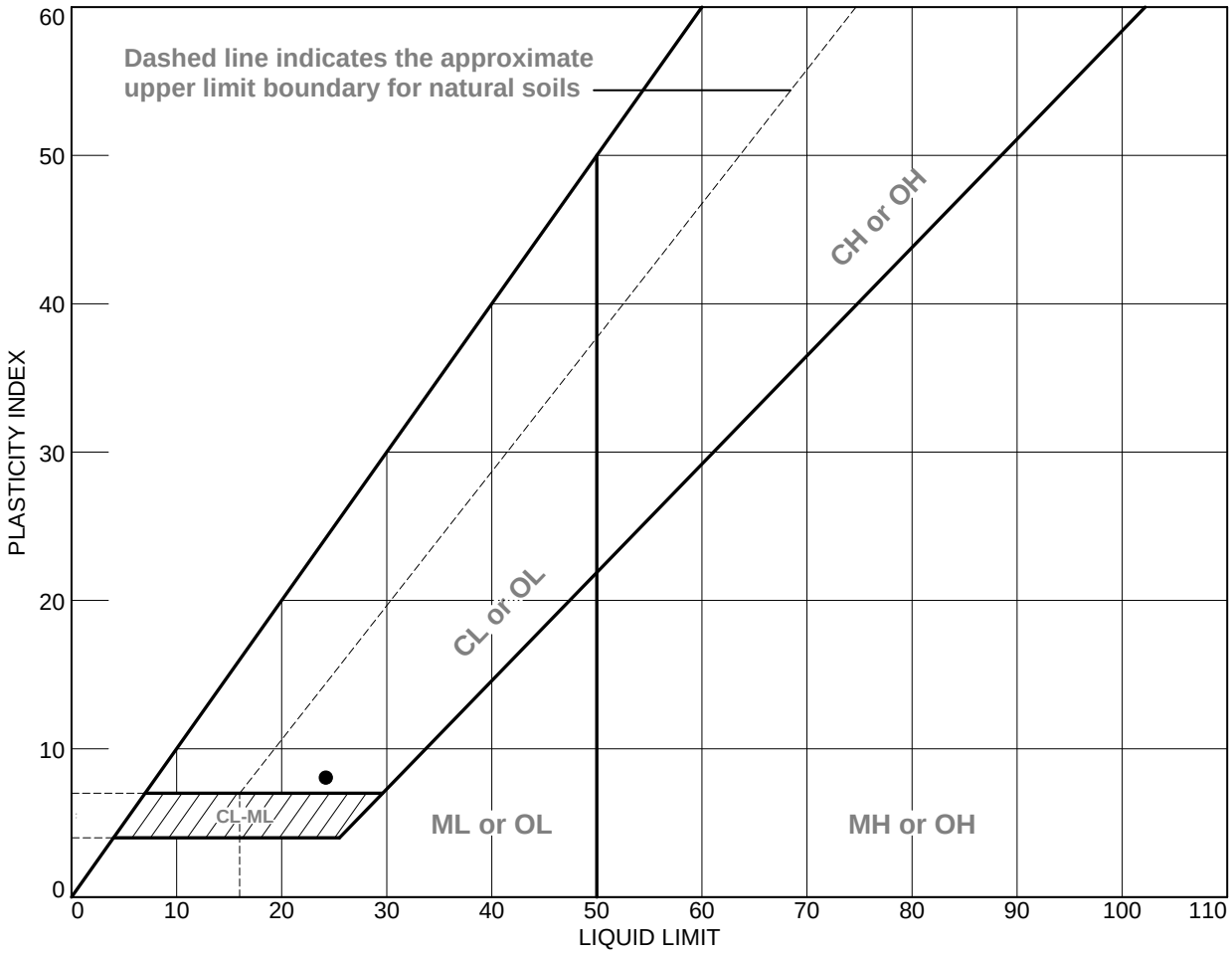
GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: RR **Checked By:** AFS

LIQUID AND PLASTIC LIMITS TEST REPORT - ASTM D4318



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	ITP-8		7.5	16.2	16.3	24.3	8.0	CL

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

Client: US Home Corporation (dba Lennar)
Project: Venue at Mystic Island

Project No.: 31241688 **Figure**

Tested By: RR **Checked By:** AFS

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

April 7, 2025

US Home, LLC (dba Lennar)
2465 Kuser Road, Floor 3
Hamilton, New Jersey 08690

Attn: Mr. Wayne Birchler, PE

Re: Stormwater Management Testing
Venue at Mystic Island
Little Egg Harbor Township, Ocean County, New Jersey

Dear Wayne:

Geo-Technology Associates, Inc. (GTA) was requested by US Home, LLC (dba Lennar; Client) to perform test pits and in-situ infiltration testing for the planning and design of stormwater management (SWM) facilities related to the construction of a proposed residential development in Little Egg Harbor Township, Ocean County, New Jersey. The approximately 147.1-acre site is located on the southern side of U.S Route 9, west of Center Street, and is identified as Lots 3, 5, and 6 in Block 286 and Lot 7 in Block 287 on the Little Egg Harbor Township tax map.

A 60% progress civil plan set prepared by Adams, Rehmann & Heggan Associates, Inc. (ARH), titled "Preliminary & Final Major Site Plan" (66 pages) and 14 sheets titled "Grading Plan" all dated 2025 was provided to GTA. . The plans indicate the site boundaries, existing and proposed topography, and the layout of the proposed site improvements. The proposed development will include 256 single-family dwellings on individual building lots and 162 residential units contained within 54 triplex buildings. The proposed development will also include amenities such as a clubhouse building, swimming pool, pickleball courts, and bocce ball courts. The plans indicate the development will include 41 stormwater management (SWM) basins throughout the site.

The "Overall Layout Plan" was marked up by ARH to show the requested locations of 57 test pits within the proposed SWM basin areas. GTA was also provided with an additional mark up prepared by Lennar on February 20, 2025 indicating the requested locations of 2 additional test pits located near the proposed clubhouse building. Based on our review of the grading plans, GTA recommended an additional 23 test pits within the proposed basin areas throughout the site to meet the testing

requirements outlined in Chapter 12 of the New Jersey Stormwater Best Management Practices Manual.

Test Pit Explorations

In August of 2024, GTA performed a preliminary geotechnical exploration at the site, the results of which were presented in a report dated August 26, 2024. The preliminary exploration included 12 test pits with infiltration testing throughout the site, the results of which are also incorporated into this letter.

Between March 3 and March 21, 2025, GTA observed and logged the excavation of 82 additional test pits within the proposed basin locations throughout the development. At the time of both our explorations, the site was heavily wooded. The test pits were excavated by Neighbors Property Management using a Bobcat E60 excavator and extended to depths ranging from approximately 10 to 17 feet below the existing ground surface. In-situ infiltration testing was performed adjacent to 80 of the 94 total test pit locations using a double-ring infiltrometer. Based on our conversations with ARH, we understand infiltration testing was not required at Test Pits ITP-111, ITP-112, ITP-131, and ITP-132 as these explorations were located within proposed “wet ponds”.

The locations for Test Pits ITP-101 through ITP-157 were selected by ARH, Test Pits ITP-158 and ITP-159 were selected by Lennar, and the remaining test pit locations were selected by GTA. Test Pits ITP-1 though ITP-12 and ITP-101 through ITP-159 were staked in the field by ARH, and the remaining locations were located in the field by GTA using a hand-held GPS unit. The approximate locations of the explorations performed for this study are shown on the attached Test Pit Location Plan. Detailed descriptions of the subsurface conditions encountered in the test pits are indicated on the Logs of Test Pits, which are also attached. The ground surface elevations indicated on the logs were obtained by interpolating between topographic contours shown on the grading plans and should be considered approximate.

Subsurface Conditions

An approximately 6- to 18-inch-thick layer of topsoil was encountered at the ground surface in the test pits performed for our studies. Below the topsoil, the test pits encountered native soils that consisted predominantly of interlayered sandy loams, loamy sands, and sands. Layers of fine-grained clay, sandy clay, sandy clay loam, and silt loam were encountered in 34 of the 82 test pits and generally ranged from about 1 foot to 8 feet in thickness.

Groundwater and mottling indicative of the seasonal high water table (SHWT) were not observed in the test pits performed for this study. Long-term groundwater readings were not obtained because the test pits were backfilled upon completion for safety considerations. Test Pits ITP-101 through ITP-180

were performed during the "wet season" defined by the NJDEP as January through April. Therefore, we believe the depth to the SHWT at the explored locations is below the depths excavated in the test pits.

Infiltration Testing

In-situ infiltration tests were performed at 90 of the 94 test pit locations using a double-ring infiltrometer in general accordance with Chapter 12 of the NJDEP Stormwater Best Management Practices Manual (Chapter 12). A table summarizing the results of the infiltration testing performed for this study is attached.

The primary conditions that affect the capacity of soil to infiltrate water are the soil gradation and density properties and the presence of hydraulically restrictive layers such as silt or clay (fines), or groundwater, each of which would restrict the flow of water into the underlying aquifer. The subsurface profile at the site predominantly consisted of interlayered sandy loam, loamy sand, and sand soils, and less commonly layers of clay, sandy clay, sandy clay loam, and silt loam were encountered in the soil profile.

Please refer to the attached table summarizing the infiltration test results for more detailed information pertaining to the measured infiltration rates at each test pit location.

LIMITATIONS

This letter, including all supporting test pit logs, field data, and other documents prepared by GTA in connection with this project have been prepared for the exclusive use of US Home, LLC (dba Lennar; Client) pursuant to the agreement between GTA and the Client. All terms and conditions set forth in the Agreement and the General Provisions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein. Use and reproduction of this letter by any other person without the expressed written permission of GTA and the Client is unauthorized and such use is at the sole risk of the user. Test pits indicate soil conditions only at specific locations and times and only at the depths penetrated. They do not necessarily reflect strata or variations that may exist between the exploration locations.

GTA is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data without the expressed written authorization of Geo-Technology Associates, Inc.

This letter and the attached logs are instruments of service. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be construed by the reader to imply approval by the writer.

GTA appreciates the opportunity to have been of assistance to you on this project. Please contact our office at (732) 271-9301 if you have questions or require additional information. Please note that, unless you make other arrangements, GTA will discard all soil samples obtained from the explorations 60 days after the date of this report.

Sincerely,

GEO-TECHNOLOGY ASSOCIATES, INC.

Allison Tether, P.G.	Kyle T. Plaza, P.E.	Robert Dykstra, P.E.
Senior Project Manager	Associate	Vice President

Attachments:

Site Location Map
Test Pit Location Plan
Summary of Infiltration Test Results (3 pages)
Logs of Test Pits (94 pages)



Note: Site boundary is approximate.

SITE LOCATION MAP

GEO-TECHNOLOGY ASSOCIATES, INC.

14 Worlds Fair Drive, Suite A
Somerset, New Jersey 08873
(732) 271-9301
fax (732) 271-9306

VENUE AT MYSTIC ISLAND

Little Egg Harbor Township,
Ocean County, New Jersey

Prepared For:
US Home, LLC (Lennar)

SOURCE: Google Maps		
SCALE: NTS	DATE: APR. 2025	PROJECT #: 31241688

Figure 1



*Base plan prepared by Adams, Rehmann & Heggan Associates, Inc., titled "Overall Layout Plan" dated 2025 overlaid in Google Earth.

LEGEND:

ITP-1XX Indicates the numbers and approximate locations of test pits performed for this study.

ITP-X Indicates the numbers and approximate locations of test pits performed as part of preliminary study in August 2024.

TEST PIT LOCATION PLAN

14 Worlds Fair Drive, Suite A
Somerset, New Jersey 08873
(732) 271-9301
fax (732) 271-9306

GEO-TECHNOLOGY ASSOCIATES, INC.

VENUE AT MYSTIC ISLAND

Little Egg Harbor Township,
Ocean County, New Jersey

Prepared For: US Home, LLC (Lennar)

DESIGN BY: *	DRAWN BY: AMT	REVIEWED BY: KTP
SCALE: NTS	DATE: APR. 2025	PROJECT #: 31241688

SUMMARY OF INFILTRATION TEST RESULTS

Test Pit No.	Ground Surface Elevation (ft.)	Basin Bottom Elevation (ft.)	Approximate Test Depth (ft.)	Approximate Test Elevation (ft.)	USDA Classification	Measured Infiltration Rate (in/hr)
ITP-1	32	31	4	28	Sandy Clay	0.5
ITP-2	33	29	4	29	Silt Loam	1.0
ITP-3	40	--	4	36	Loamy Sand	30
ITP-4	55	47	8	47	Sandy Loam	18
ITP-4A	55	47	8	47	Loamy Sand	24
ITP-5	51	48	4	47	Loamy Sand	24
ITP-6	29	30	4	25	Silt Loam	4.0
ITP-7	24	26	4	20	Loamy Sand	36+
ITP-8	24	--	7	17	Clay	0.0
ITP-9	45	38	5	40	Sandy Loam	21
ITP-9A	45	38	7	38	Loamy Sand	24
ITP-10	42	38	4	38	Sandy Loam	36+
ITP-11	34	--	4	30	Loamy Sand	36+
ITP-12	27	--	4	23	Gravelly Loamy Sand	36+
ITP-101	30	30	1.5	28.5	Loamy Sand	18
ITP-102	29	33	1	28	Sandy Loam	6.0
ITP-102	29	33	2	27	Loamy Sand	36+
ITP-103	29	33	1	28	Sandy Loam	6.0
ITP-104	29	26	3	26	Sand	36+
ITP-105	30	26	4	26	Loamy Sand	36+
ITP-106	34	33	7	27	Loamy Sand	2.0
ITP-107	37	35	2	35	Sand	36+
ITP-108	38	35	5	33	Sandy Clay	0.5
ITP-109	39	35	6	33	Sandy Loam	2.0
ITP-110	33	33	4	29	Sandy Clay	0.0
ITP-110	33	33	7	26	Loamy Sand	6.0
ITP-113	39.5	36	4	35.5	Loamy Sand	36+
ITP-113	39.5	36	8	31.5	Sandy Clay	0.0
ITP-114	46	38	8	38	Loamy Sand	36+
ITP-115	47	38	9	38	Loamy Sand	36+
ITP-116	43	38	9	34	Sandy Clay	0.5
ITP-117	39.5	36	4	35.5	Sandy Loam	1.5
ITP-118	37.5	35	4	33.5	Silt Loam	0.0
ITP-119	40	34	6	34	Sand	36+
ITP-120	34	30	4	30	Sand	36+
ITP-121	31	30	1.5	29.5	Loamy Sand	36+
ITP-122	32	34	1.5	30.5	Sandy Loam	4.0
ITP-123	32	33	1.5	30.5	Sandy Loam	18
ITP-124	29	28	1.5	27.5	Sandy Loam	12
ITP-125	28	28	2	26	Loamy Sand	18

Test Pit No.	Ground Surface Elevation (ft.)	Basin Bottom Elevation (ft.)	Approximate Test Depth (ft.)	Approximate Test Elevation (ft.)	USDA Classification	Measured Infiltration Rate (in/hr)
ITP-126	27	30	1.5	25.5	Sandy Loam	9.0
ITP-127	26.5	29	4	22.5	Silt Loam	0.2
ITP-128	25.5	29	4	21.5	Silt Loam	0.5
ITP-129	24	26	1.5	22.5	Sandy Loam	6.0
ITP-130	24	27	1.5	22.5	Sandy Clay Loam	0.2
ITP-133	32	30	2	30	Sandy Loam	9.0
ITP-134	29.5	30	1.5	28	Sandy Loam	6.0
ITP-135	36	35	5	31	Sandy Loam	0.2
ITP-136	55	49	6	49	Sandy Loam	1.5
ITP-137	49	48	2	47	Loamy Sand	36+
ITP-138	43	43	1.5	41.5	Sandy Loam	12
ITP-139	45	43	2	43	Sandy Loam	2.0
ITP-140	37	36	1.5	35.5	Sandy Loam	18
ITP-141	35.5	36	1.5	34	Sandy Loam	6.0
ITP-142	33	34	1.5	31.5	Sandy Loam	9.0
ITP-143	33.5	34	1.5	32	Sandy Loam	6.0
ITP-144	35	29	6	29	Sandy Loam	3.0
ITP-145	35	34	1.5	33.5	Sandy Clay Loam	0.0
ITP-146	31.5	31	5.5	26	Sandy Clay	0.0
ITP-147	32	31	5	27	Sandy Clay	0.0
ITP-148	37	39	1.5	35.5	Sandy Loam	6.0
ITP-149	51	47	4	47	Sandy Loam	12
ITP-150	43	47	1.5	41.5	Loamy Sand	24
ITP-151	46	47	2	44	Sandy Loam	2.0
ITP-152	49	49	1.5	47.5	Sandy Loam	6.0
ITP-153	46	43	3	43	Loamy Sand	18
ITP-154	44	43	1.5	42.5	Loamy Sand	24
ITP-155	41.5	37	4.5	37	Sand	36+
ITP-156	39	38	1.5	37.5	Sandy Loam	3.0
ITP-157	37.5	38	1.5	36	Sandy Loam	12
ITP-158	31.5	--	4	27.5	Silt Loam	0.2
ITP-159	32.5	--	4	28.5	Silt Loam	0.5
ITP-160	41	37	4	37	Loamy Sand	36+
ITP-161	38	34	4	34	Sandy Clay Loam	0.1
ITP-162	39	39	1.5	37.5	Sandy Loam	6.0
ITP-163	46	49	2	44	Sandy Clay Loam	1.0
ITP-163	46	49	5	41	Loamy Sand	36+
ITP-164	55	49	6	49	Loamy Sand	36+
ITP-165	34	35	4	30	Sandy Clay Loam	0.2
ITP-166	37	35	4	33	Silt Loam	0.0
ITP-167	40	34	6	34	Loamy Sand	36+
ITP-168	24	27	4	20	Silt Loam	0.0

Test Pit No.	Ground Surface Elevation (ft.)	Basin Bottom Elevation (ft.)	Approximate Test Depth (ft.)	Approximate Test Elevation (ft.)	USDA Classification	Measured Infiltration Rate (in/hr)
ITP-169	40	36	4	36	Loamy Sand	36+
ITP-169	40	36	9	31	Sandy Clay	0.0
ITP-170	45	38	7	38	Sand	36+
ITP-170	45	38	8	37	Sandy Loam	1.0
ITP-171	46.5	38	8.5	38	Loamy Sand	1.0
ITP-171	46.5	38	13	33.5	Sandy Clay	0.0
ITP-172	46.5	38	8.5	38	Sandy Loam	1.0
ITP-172	46.5	38	12	34.5	Sandy Clay	0.0
ITP-173	39.5	36	4	35.5	Sandy Loam	3.0
ITP-174	33	33	2.5	30.5	Sandy Clay	0.0
ITP-175	36	35	1.5	34.5	Loamy Sand	24
ITP-176	35	33	2	33	Sandy Loam	4.0
ITP-177	29	30	1.5	27.5	Sandy Loam	18
ITP-178	30	26	4	26	Sand	36+
ITP-179	31	30	1	30	Sandy Loam	4.0
ITP-180	30	30	1.5	28.5	Sandy Loam	4.0

Note: A factor of safety of at least 2 should be applied to the measured infiltration rates for design purposes.

LOG OF TEST PIT NO. ITP-1

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/13/24**
DATE COMPLETED: **08/13/24**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **33 Ft.**
DATUM: **TOPO**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
33.0	0				
32.5				6 In. of Topsoil	
		SM		Yellow-brown (10YR 5/4), moist, single grain, loose, Sandy Loam	
30.5		CL		Light yellow-brown (10YR 6/4), moist, subangular blocky, friable, Sandy Clay	- Infiltration Rate = 0.5 in/hr at 4 Ft.
	5				
27.5		SM		Pale brown (2.5Y 7/3), moist, single grain, loose, Sandy Loam	
23.0	10	SP-SM		Brown-yellow (10YR 6/6), moist, single grain, loose, Loamy Sand	
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-2

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/13/25**
DATE COMPLETED: **08/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **33 Ft.**
DATUM: **TOPO**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
33.0	0				
32.5				6 In. of Topsoil	
		SC		Yellow-brown (10YR 5/5), moist, single grain, loose, Sandy Clay Loam	
29.5		ML		Very pale brown (10YR 7/3), moist, subangular blocky to single grain, friable to loose, Silt Loam	- Infiltration Rate = 1.0 in/hr at 4 Ft.
	5				
25.0		SM		Pale brown (2.5Y 7/3), moist, single grain, loose, Sandy Loam	
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-2

LOG OF TEST PIT NO. ITP-3

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/13/25**
DATE COMPLETED: **08/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **40 Ft.**
DATUM: **TOPO**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
40.0	0			6 In. of Topsoil	
39.5		SM		Yellow-brown (10YR 5/4), moist, 20% gravel, single grain, loose, Sandy Loam	
37.0		SP-SM		Red-yellow (7.5YR 6/6), moist, single grain, loose, Loamy Sand	- Infiltration Rate = 30 in/hr at 4 Ft.
	5				
	10			- Very pale brown (10YR 7/4) at 10 Ft.	
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-3

LOG OF TEST PIT NO. ITP-4

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/13/25**
DATE COMPLETED: **08/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **55 Ft.**
DATUM: **TOPO**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
55.0	0			6 In. of Topsoil	
54.5		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
				- Strong brown (7.5YR 5/8) at 2-1/2 Ft.	
				- 10% gravel at 3-1/2 Ft.	
	5				- Infiltration Rate = 18 in/hr at 4 Ft.
	10			- Brown-yellow (10YR 6/8) at 10 Ft.	
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-4A

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/20/25**
DATE COMPLETED: **03/20/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **55 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
55.0	0				
54.5				6 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
52.5		SP-SM		Strong brown (7.5YR 5/8), moist, single grain loose, Loamy Sand	
	5			- Yellow-brown (10YR 5/8) at 5 Ft.	
	10			- Brown-yellow (10YR 6/6) at 12 Ft.	- Infiltration Rate = 24 in/hr at 8 Ft.
	15			Test pit complete at 14-1/2 Ft. due to sidewall collapse.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-5

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/12/25**
DATE COMPLETED: **08/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **51 Ft.**
DATUM: **TOPO**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
51.0	0				
50.5				6 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
49.0		SP-SM		Red-yellow (7.5YR 6/6), moist, single grain, loose, Loamy Sand	- Infiltration Rate = 24 in/hr at 4 Ft.
	5				
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-5

LOG OF TEST PIT NO. ITP-6

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/12/25**
DATE COMPLETED: **08/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **29 Ft.**
DATUM: **TOPO**
LOGGED BY: **VP**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
29.0	0			6 In. of Topsoil	- Infiltration Rate = 4.0 in/hr at 4 Ft.
28.5		SM		Yellow-brown (10YR 5/4), moist, single grain, loose, Sandy Loam	
26.0		ML		White (2.5Y 8/1), moist, single grain, loose, Silt Loam	
	5				
22.0		SP-SM		Strong brown (7.5YR 6/6), moist, single grain, loose, Loamy Sand	
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-7

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/12/25**
DATE COMPLETED: **08/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **24 Ft.**
DATUM: **TOPO**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
24.0	0			6 In. of Topsoil	
23.5		SP-SM		Light yellow-brown (10YR 6/4), moist, 20% gravel, single grain, loose, Loamy Sand - Light olive-brown (2.5YR 5/6), 5% gravel at 2-1/2 Ft.	
19.0	5	SP		Pale brown (2.5Y 7/4), moist, single grain, loose, Sand	- Infiltration Rate = 36+ in/hr at 4 Ft.
	10			Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-8

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/12/25**
DATE COMPLETED: **08/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **24 Ft.**
DATUM: **TOPO**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
24.0	0				
				12 In. of Topsoil	
23.0		SC		Dark gray-brown (10YR 4/2), moist, single grain, loose, Sandy Clay Loam	
21.0		SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Sandy Loam	
	5				
17.0		CL		Light brown-gray (10YR 6/2), moist, subangular blocky, friable, Clay	- Infiltration Rate = 0.0 in/hr at 7 Ft.
15.5		SM		Olive yellow (2.5Y 6/6), moist, single grain, loose, Sandy Loam	
	10				
12.0		CL		Light brown-gray (10YR 6/2), moist, subangular blocky, friable, Clay	
				Test pit complete at 13 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-8

LOG OF TEST PIT NO. ITP-9

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/06/25**
DATE COMPLETED: **08/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **45 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
45.0	0				
44.5				6 In. of Topsoil	
		SM		Yellow-brown (10YR 5/6), moist, single grain, loose, Sandy Loam	
				- Strong brown (7.5YR 5/8), 5% gravel at 4 Ft.	
	5			- Strong brown (7.5YR 4/6) gravel grades out at 5 Ft.	- Infiltration Rate = 21 in/hr at 5 Ft.
	10			Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-9A

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/06/25**
DATE COMPLETED: **03/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **45 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
45.0	0				
44.5				6 In. of Topsoil	
		SM		Yellow-brown (10YR 5/8) , moist, single grain, loose, Sandy Loam	
41.0		SP-SM		Strong brown (7.5YR 5/8), moist, 5% gravel, single grain, loose, Loamy Sand	
	5			- gravel grades out at 5 Ft.	
					- Infiltration Rate = 24 in/hr at 7 Ft.
	10				
				- Yellow-brown (10YR 5/8) at 12 Ft.	
	15			Test pit complete at 15 Ft.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-10

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/05/25**
DATE COMPLETED: **08/05/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **42 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
42.0	0				
41.3				8 In. of Topsoil	
		SM		Strong brown (7.5YR 5/8), moist, single grain, loose, Sandy Loam	
				- Brown-yellow (10YR 6/8) at 3 Ft.	
	5				- Infiltration Rate = 36+ in/hr at 4 Ft.
	10			- wet at 10 Ft.	- Perched water seepage at 10 Ft. Dissipated as excavation advanced.
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-11

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/05/25**
DATE COMPLETED: **08/05/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **34 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
34.0	0				
33.4				7 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
31.5		SP-SM		Strong brown (7.5YR 4/6), moist, 10% gravel, single grain, loose, Loamy Sand	- Infiltration Rate = 36+ in/hr at 4 Ft.
	5				
				- Brown-yellow (10YR 6/8), 5% gravel at 8 Ft.	
				- Brown-yellow (10YR 6/6) at 9 Ft.	
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-11

LOG OF TEST PIT NO. ITP-12

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **08/06/25**
DATE COMPLETED: **08/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **27 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **KTP**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
27.0	0				
26.5				6 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
24.0		GM		Yellow-brown (10YR 5/6), moist, single grain, loose, Gravelly Loamy Sand	- Infiltration Rate = 36+ in/hr at 4 Ft.
22.0	5	SP-SM		Very pale brown (10YR 7/4), moist, single grain, loose, Loamy Sand	
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.

14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-12

LOG OF TEST PIT NO. ITP-101 (Stake #600)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/05/25**
DATE COMPLETED: **03/05/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **30 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
30.0	0				
				18 In. of Topsoil	
28.5		SP-SM		Dark yellow-brown (10YR 3/6), moist, 10% gravel, single grain, loose, Loamy Sand	- Infiltration Rate = 18 in/hr at 1-1/2 Ft.
27.0		SP		Yellow-brown (10YR 5/8), moist, 5% gravel, single grain, loose, Sand	
	5				
	10				
				Test pit complete at 11 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-101 (Stake #600)

LOG OF TEST PIT NO. ITP-102 (Stake #601)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/04/25**
DATE COMPLETED: **03/04/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **29 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
29.0	0				
28.3				8 In. of Topsoil	
		SM		Dark yellow-brown (10YR 3/6), moist, 5% gravel, single grain, loose, Sandy Loam	- Infiltration Rate = 6.0 in/hr at 1 Ft. - Infiltration Rate = 36+ in/hr at 2 Ft.
27.0		SP-SM		Yellow-brown (10YR 5/8), moist, 15% gravel, single grain, loose, Loamy Sand	
24.0	5	SP		Yellow-brown (10YR 5/8), moist, single grain, loose, Sand	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-103 (Stake #602)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/04/25**
DATE COMPLETED: **03/04/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **29 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
29.0	0				
28.3				8 In. of Topsoil	
		SM		Dark yellow-brown (10YR 3/6), moist, 5% gravel, single grain to subangular blocky, Sandy Loam	- Infiltration Rate = 6.0 in/hr at 1 Ft.
26.5		SP-SM		Yellow-brown (10YR 5/8), moist, 15% gravel, single grain, loose, Loamy Sand	
	5				
23.5		SP		Yellow-brown (10YR 5/8), moist, 5% gravel, single grain, loose, Sand - with clay nodules at 9 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-103 (Stake #602)

LOG OF TEST PIT NO. ITP-104 (Stake #603)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/04/25**
DATE COMPLETED: **03/04/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **29 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
29.0	0			10 In. of Topsoil	
28.2		SM		Dark yellow-brown (10YR 3/6), moist, single grain, loose, Sandy Loam	
26.0		SP		Strong brown (7.5YR 5/8), moist, 15% gravel, single grain, loose, Sand	- Infiltration Rate = 36+ in/hr at 3 Ft.
	5			- Light yellow-brown (10YR 6/4), with 5% gravel at 5 Ft.	
	10			- Yellow-brown (10YR 5/8), with clay nodules at 9 Ft.	
				Test pit complete at 11 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-105 (Stake #604)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/04/25**
DATE COMPLETED: **03/04/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **30 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
30.0	0				
29.5				6 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, single grain to subangular blocky, loose, Sandy Loam	
27.0		SP-SM		Dark yellow-brown (10YR 4/6), moist, 15% gravel, single grain, loose, Loamy Sand	- Infiltration Rate = 36+ in/hr at 4 Ft.
24.5	5	SP		Brown-yellow (10YR 6/6), moist, single grain, loose, Sand	
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-105 (Stake #604)

LOG OF TEST PIT NO. ITP-106 (Stake #605)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/03/25**
DATE COMPLETED: **03/03/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **34 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
34.0	0				
33.3				8 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, subangular blocky, loose to friable, Sandy Loam - with 15% gravel at 2 Ft.	
30.0		SP-SM		Brown-yellow (10YR 6/8), moist, single grain, loose, Loamy Sand	
	5			- with cemented sands and clay nodules at 7 Ft. - Yellow (10YR 7/6) at 8 Ft.	- Infiltration Rate = 2.0 in/hr at 7 Ft.
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-106 (Stake #605)

LOG OF TEST PIT NO. ITP-107 (Stake #606)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/05/25**
DATE COMPLETED: **03/05/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **37 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
37.0	0				
				12 In. of Topsoil	
36.0		SM		Dark yellow-brown (10YR 4/6), moist, 10% gravel, single grain to subangular blocky, loose, Sandy Loam	
35.0		SP		Yellow-brown (10YR 5/8), moist, single grain, loose, Sand	- Infiltration Rate = 36+ in/hr at 2 Ft.
	5				
				- with clay nodules at 9 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-107 (Stake #606)

LOG OF TEST PIT NO. ITP-108 (Stake #607)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/03/25**
DATE COMPLETED: **03/03/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **38 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
38.0	0			12 In. of Topsoil	
37.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain to subangular blocky, loose, Sandy Loam	
34.0		SP-SM		Brown-yellow (10YR 6/8), moist, single grain, loose, Loamy Sand	
33.0	5	CL		Brown-yellow (10YR 6/8), moist, massive, firm, Sandy Clay	- Infiltration Rate = 0.5 in/hr at 5 Ft.
30.5		SP-SM		Strong brown (7.5YR 5/8) moist, single grain, loose, Loamy Sand	
	10			Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-108 (Stake #607)

LOG OF TEST PIT NO. ITP-109 (Stake #608)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/03/25**
DATE COMPLETED: **03/03/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **39 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
39.0	0				
38.3				8 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, 5% gravel, single grain to subangular blocky, loose, Sandy Loam - with 15% gravel at 3 Ft.	
	5				
33.0		SM		Strong brown (7.5YR 5/8), moist, single grain, loose, Sandy Loam with clay nodules	- Infiltration Rate = 2.0 in/hr at 6 Ft.
30.0		SP-SM		Brown-yellow (10YR 6/8), moist, single grain, loose, Loamy Sand - Light yellow-brown (10YR 6/4) at 10 Ft.	
	10				
				Test pit complete at 13 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.

14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-109 (Stake #608)

LOG OF TEST PIT NO. ITP-110 (Stake #609)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/03/25**
DATE COMPLETED: **03/03/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **33 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
33.0	0				
32.3				8 In. of Topsoil	
		CL		Yellow-brown (10YR 5/6), moist, subangular blocky, friable, Sandy Clay	
				- Light brown-gray (10YR 6/2), massive, firm at 2-1/2 Ft.	
	5				- Infiltration Rate = 0.0 in/hr at 4 Ft.
27.0		SP-SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Loamy Sand with clay nodules	
25.0		SP		Brown-yellow (10YR 6/8), moist, single grain, loose, Sand	- Infiltration Rate = 6.0 in/hr at 7 Ft.
	10			- with clay nodules at 11 Ft.	
				Test pit complete at 14 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-110 (Stake #609)

LOG OF TEST PIT NO. ITP-111 (Stake #610)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/04/25**
DATE COMPLETED: **03/04/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **37.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
37.5	0			10 In. of Topsoil	
36.7		SM		Dark yellow-brown (10YR 4/6), moist, single grain to subangular blocky, loose, Sandy Loam	
34.5		CL		Light yellow-brown (10YR 6/4) and yellow-brown (10YR 5/8), moist, massive, firm, Clay Loam	
	5				
29.0		ML		Very pale brown (10YR 7/4), moist, subangular blocky, firm, Loam - Brown-yellow (10YR 6/6), friable at 11 Ft.	
	10				
25.5		SP-SM		Brown-yellow (10YR 6/8), moist, single grain, loose, Loamy Sand	
24.5		SP		Brown-yellow (10YR 6/8), moist, single grain, loose, Sand	
	15				
				Test pit complete at 17 Ft.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-112 (Stake #611)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/04/25**
DATE COMPLETED: **03/04/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **39 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
39.0	0			12 In. of Topsoil	
38.0		SM		Dark yellow-brown (10YR 3/6), moist, 15% gravel, single grain, loose, Sandy Loam	
36.0		SP-SM		Dark yellow-brown (10YR 4/6), moist, 20% gravel, single grain, loose, Loamy Sand	
34.0	5	CL		Very pale brown (10YR 7/4) and yellow-brown (10YR 5/8), moist, massive, firm, Sandy Clay	
	10				
28.0		ML		Light yellow-brown (10YR 6/4), moist, subangular blocky, friable, Silt Loam	
27.0		SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Sandy Loam	
25.0		SP-SM		Brown-yellow (10YR 6/6), moist, single grain, loose, Loamy Sand	
	15			Test pit complete at 15-1/2 Ft.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

GEO-TECHNOLOGY ASSOCIATES, INC.
14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-112 (Stake #611)

LOG OF TEST PIT NO. ITP-113 (Stake #612)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/04/25**
DATE COMPLETED: **03/04/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **39.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
39.5	0			12 In. of Topsoil	
38.5		SP-SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Loamy Sand	
				- with 15% gravel at 4 Ft.	- Infiltration Rate = 36+ in/hr at 4 Ft.
34.0	5	SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
31.5		CL		Light gray (10YR 7/1), moist, massive, firm, Sandy Clay	- Infiltration Rate = 0.0 in/hr at 8 Ft.
	10			Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-113 (Stake #612)

LOG OF TEST PIT NO. ITP-114 (Stake #613)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/05/25**
DATE COMPLETED: **03/05/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **46 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
46.0	0			10 In. of Topsoil	
45.2		SM		Dark yellow-brown (10YR 4/6), moist, subangular blocky to single grain, loose, Sandy Loam	
	5				
40.0		SP-SM		Yellow-brown (10YR 6/4), moist, single grain, loose, Loamy Sand - with clay nodules at 7 Ft.	- Infiltration Rate = 36+ in/hr at 8 Ft.
	10				
	15			Test pit complete at 15-1/2 Ft.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-114 (Stake #613)

LOG OF TEST PIT NO. ITP-115 (Stake #614)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/05/25**
DATE COMPLETED: **03/05/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **47 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
47.0	0				
46.3				8 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, single grain to subangular blocky, Sandy Loam	
44.0		SP-SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Loamy Sand	
43.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain to subangular blocky, loose, Sandy Loam	
	5				
40.5		SP-SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Loamy Sand	- Infiltration Rate = 36+ in/hr at 9 Ft.
	10				
33.0		CL		Light yellow-brown (10YR 6/4), moist, massive, firm, Sandy Clay	
	15				
				Test pit complete at 17 Ft.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-115 (Stake #614)

LOG OF TEST PIT NO. ITP-116 (Stake #615)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/06/25**
DATE COMPLETED: **03/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **43 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
43.0	0				
42.3				8 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
				- with 15% gravel at 3 Ft.	
38.0	5	SP-SM		Yellow-brown (10YR 5/8), moist, 10% gravel, single grain, loose, Loamy Sand	
34.0		CL		Light gray (10YR 7/1), moist, subangular blocky, firm, Sandy Clay	- Infiltration Rate = 0.5 in/hr at 9 Ft.
	10				
				Test pit complete at 13 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-116 (Stake #615)

LOG OF TEST PIT NO. ITP-117 (Stake #616)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/06/25**
DATE COMPLETED: **03/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **39.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
39.5	0			8 In. of Topsoil	
38.8		SM		Dark yellow-brown (10YR 4/6), moist, single grain to subangular blocky, loose, Sandy Loam - Brown-yellow (10YR 6/8), 5% gravel, single grain at 2 Ft. - with clay nodules at 4 Ft.	- Infiltration Rate = 1.5 in/hr at 4 Ft.
34.5	5	SP-SM		Yellow-brown (10YR 4/6), moist, 5% gravel, single grain, loose, Loamy Sand	
	10				
28.0		CL		Light gray (10YR 7/1), moist, massive, firm, Sandy Clay Test pit complete at 12 Ft.	- Moderate perched water seepage at 11 Ft.
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-117 (Stake #616)

LOG OF TEST PIT NO. ITP-118 (Stake #617)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/12/25**
DATE COMPLETED: **03/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **37.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
37.5	0			12 In. of Topsoil	- Infiltration Rate = 0.0 in/hr at 4 Ft.
36.5		SM		Yellow-brown (10YR 5/8), moist, single grain to subangular blocky, loose, Sandy Loam	
34.0		ML		Light yellow-brown (10YR 6/4), moist, subangular blocky, friable, Silt Loam	
	5				
30.5		SM		Very pale brown (10YR 7/4), moist, single grain, loose, Sandy Loam with clay nodules	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-118 (Stake #617)

LOG OF TEST PIT NO. ITP-119 (Stake #618)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/13/25**
DATE COMPLETED: **03/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **40 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
40.0	0				
				12 In. of Topsoil	
39.0		SM		Yellow-brown (10YR 5/4), moist, single grain to subangular blocky, loose, Sandy Loam	
	5			- Pale brown (10YR 6/3) subangular blocky, friable at 4 Ft.	
34.0		SP		Light yellow-brown (10YR 6/4), moist, single grain, loose, Sand	- Infiltration Rate = 36+ in/hr at 6 Ft.
	10				
				Test pit complete at 14 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-119 (Stake #618)

LOG OF TEST PIT NO. ITP-120 (Stake #619)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/06/25**
DATE COMPLETED: **03/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **34 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
34.0	0				
33.3				8 In. of Topsoil	
		SP-SM		Dark yellow-brown (10YR 4/6), moist, 5% gravel, single grain, loose, Loamy Sand	
30.0		SP		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sand	- Infiltration Rate = 36+ in/hr at 4 Ft.
	5				
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-120 (Stake #619)

LOG OF TEST PIT NO. ITP-121 (Stake #620)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/06/25**
DATE COMPLETED: **03/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **31 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
31.0	0				
				18 In. of Topsoil	
29.5		SP-SM		Dark yellow-brown (10YR 4/6), moist, 5% gravel, single grain, loose, Loamy Sand	- Infiltration Rate = 36+ in/hr at 1-1/2 Ft.
28.0		SP		Yellow-brown (10YR 5/8), moist, single grain, loose, Sand	
	5			- Brown-yellow (10YR 6/8) at 6 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-121 (Stake #620)

LOG OF TEST PIT NO. ITP-122 (Stake #621)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/12/25**
DATE COMPLETED: **03/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **32 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
32.0	0				
				12 In. of Topsoil	
31.0		SM		Dark yellow-brown (10YR 4/6), moist, subangular blocky, loose to subangular blocky, Sandy Loam	- Infiltration Rate = 4.0 in/hr at 1-1/2 Ft.
	5			- Yellow-brown (10YR 5/8) at 5 Ft.	
25.0		ML		Pale brown (10YR 6/3), moist, subangular blocky, friable, Silt Loam	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-123 (Stake #622)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/12/25**
DATE COMPLETED: **03/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **32 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
32.0	0				
				12 In. of Topsoil	
31.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	- Infiltration Rate = 18 in/hr at 1-1/2 Ft.
29.5		SP-SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Loamy Sand	
28.0		SM		Very pale brown (10YR 7/4), moist, single grain, loose, Sandy Loam	
	5				
26.0		SP		Brown-yellow (10YR 5/8), moist, single grain, loose, Sand	
23.5		SM		Very pale brown (10YR 7/4), moist, subangular blocky, loose, Sandy Loam	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-124 (Stake #623)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/06/25**
DATE COMPLETED: **03/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **29 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
29.0	0				
				18 In. of Topsoil	
27.5		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	- Infiltration Rate = 12.0 in/hr at 1-1/2 Ft.
25.5		SP		Yellow-brown (10YR 5/8), loose, single grain, Sand	
	5			- Strong brown (7.5YR 5/8) at 7 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-124 (Stake #623)

LOG OF TEST PIT NO. ITP-125 (Stake #624)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/06/25**
DATE COMPLETED: **03/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **28 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
28.0	0			12 In. of Topsoil	- Infiltration Rate = 18 in/hr at 2 Ft.
27.0		SP-SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Loamy Sand	
25.0		SP		Yellow-brown (10YR 5/8), moist, single grain, loose, Sand	
	5				
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-126 (Stake #625)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/13/25**
DATE COMPLETED: **03/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **27 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
27.0	0			12 In. of Topsoil	- Infiltration Rate = 9.0 in/hr at 1-1/2 Ft.
26.0		SM		Dark yellow-brown (10YR 3/6), moist, single grain, loose, Sandy Loam - Light yellow-brown (10YR 6/4) at 4 Ft.	
21.5	5	SP		Brown-yellow (10YR 6/8), moist, single grain, loose, Sand	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-127 (Stake #626)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/13/25**
DATE COMPLETED: **03/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **26.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
26.5	0			12 In. of Topsoil	
25.5		SM		Dark yellow-brown (10YR 4/4), moist, single grain to subangular blocky, loose, Sandy Loam	
22.5	5	ML		White (10YR 8/1), moist, subangular blocky, friable, Silt Loam	- Infiltration Rate = 0.2 in/hr at 4 Ft.
20.5		SP		Brown-yellow (10YR 6/8), moist, single grain, loose, Sand - Yellow-brown (10YR 5/8) at 8 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-127 (Stake #626)

LOG OF TEST PIT NO. ITP-128 (Stake #627)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/13/25**
DATE COMPLETED: **03/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **25.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
25.5	0			12 In. of Topsoil	– Infiltration Rate = 0.5 in/hr at 4 Ft.
24.5		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
21.5		ML		Light yellow-brown (10YR 6/4), moist, subangular blocky, friable, Silt Loam	
20.5	5	SP-SM		Brown-yellow (10YR 6/8), moist, single grain, loose, Loamy Sand	
18.5		ML		Brown-yellow (10YR 6/8), moist, subangular blocky, friable, Silt Loam	
17.5		SM		Brown-yellow (10YR 6/8), moist, single grain, loose, Sandy Loam	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-128 (Stake #627)

LOG OF TEST PIT NO. ITP-129 (Stake #628)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/11/25**
DATE COMPLETED: **03/11/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **24 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
24.0	0			8 In. of Topsoil	- Infiltration Rate = 6.0 in/hr at 1-1/2 Ft.
23.3		SM		Dark yellow-brown (10YR 4/6), moist, subangular blocky, loose, Sandy Loam	
20.0	5	SP-SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Loamy Sand	
14.5	10	ML		Light yellow-brown (10YR 6/4), moist, subangular blocky, friable, Silt Loam	
				Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-129 (Stake #628)

LOG OF TEST PIT NO. ITP-130 (Stake #629)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/11/25**
DATE COMPLETED: **03/11/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **24 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
24.0	0			10 In. of Topsoil	- Infiltration Rate = 0.2 in/hr at 1-1/2 Ft.
23.2		SC		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Clay Loam	
21.5		SP-SM		Yellow-brown (10YR 5/8), moist, 5% gravel, single grain, loose, Loamy Sand	
	5			- Light yellow-brown (10YR 6/4) at 8 Ft.	
14.0	10	ML		Pale brown (10YR 6/3), moist, subangular blocky, friable, Silt Loam	
				Test pit complete at 10-1/2 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-130 (Stake #629)

LOG OF TEST PIT NO. ITP-131 (Stake #630)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/11/25**
DATE COMPLETED: **03/11/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **22 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
22.0	0				
				18 In. of Topsoil	
20.5		SP-SM		Dark yellow-brown (10YR 4/6), moist, 15% gravel, single grain, loose, Loamy Sand	
18.5		SP		Yellow-brown (10YR 5/8), moist, single grain, loose, Sand	
	5			- Light gray (10YR 7/1) 5 Ft.	
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-132 (Stake #631)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/11/25**
DATE COMPLETED: **03/11/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **23 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
23.0	0			18 In. of Topsoil	
21.5		SP		Dark yellow-brown (10YR 4/6), moist, 5% gravel, single grain, loose, Sand	
18.0	5	CL		Pale brown (10YR 6/3) and yellow-brown (10YR 5/8), moist, massive, firm, Sandy Clay	- Perched water seepage at 5 Ft.
	10			Test pit complete at 13 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-133 (Stake #632)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/14/25**
DATE COMPLETED: **03/14/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **32 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
32.0	0			12 In. of Topsoil	- Infiltration Rate = 9.0 in/hr at 2 Ft.
31.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
	5			- Yellow-brown (10YR 5/8), with clay nodules at 5 Ft.	
				- Brown-yellow (10YR 6/6) at 7 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-133 (Stake #632)

LOG OF TEST PIT NO. ITP-134 (Stake #633)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/13/25**
DATE COMPLETED: **03/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **29.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
29.5	0				
				12 In. of Topsoil	
28.5		SM		Dark yellow-brown (10YR 4/4), moist, single grain to subangular blocky, loose, Sandy Loam	- Infiltration Rate = 6.0 in/hr at 1-1/2 Ft.
	5			- Yellow-brown (10YR 5/4) at 4 Ft.	
22.5		SP-SM		Pale brown (10YR 6/3), moist, single grain, loose, Loamy Sand	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-135 (Stake #634)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/12/25**
DATE COMPLETED: **03/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **36 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
36.0	0				
				12 In. of Topsoil	
35.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
33.0		SP-SM		Dark yellow-brown (10YR 4/6), moist, 15% gravel, single grain, loose, Loamy Sand	
31.5	5	SM		Light yellow-brown (10YR 6/4), moist, single grain to subangular blocky, loose, Sandy Loam with cemented sands	– Infiltration Rate = 0.2 in/hr at 5 Ft.
28.0		SP-SM		Brown-yellow (10YR 5/8), moist, single grain, loose, Loamy Sand	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-135 (Stake #634)

LOG OF TEST PIT NO. ITP-136 (Stake #635)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/18/25**
DATE COMPLETED: **03/18/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **55 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
55.0	0			12 In. of Topsoil	
54.0		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
				- Brown-yellow (10YR 6/8) at 3 Ft.	
	5			- Strong brown (7.5YR 5/8) at 6 Ft.	– Infiltration Rate = 1.5 in/hr at 6 Ft.
45.0	10	SP		Yellow-brown (10YR 5/6), moist, single grain, loose, Sand	
				Test pit complete at 14 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-136 (Stake #635)

LOG OF TEST PIT NO. ITP-137 (Stake #636)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/18/25**
DATE COMPLETED: **03/18/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **49 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
49.0	0				
				18 In. of Topsoil	
47.5		SP-SM		Yellow-brown (10YR 5/8), moist, 15% gravel, single grain, loose, Loamy Sand	- Infiltration Rate = 36+ in/hr at 2 Ft.
	5			- gravel grades out at 5 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-137 (Stake #636)

LOG OF TEST PIT NO. ITP-138

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/18/25**
DATE COMPLETED: **03/18/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **43 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
43.0	0				
				12 In. of Topsoil	
42.0		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	– Infiltration Rate = 12 in/hr at 1-1/2 Ft.
40.5		SP-SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Loamy Sand	
	5				
	10			Test pit complete at 9 Ft. due to sidewall collapse.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-138

LOG OF TEST PIT NO. ITP-139 (Stake #638)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/18/25**
DATE COMPLETED: **03/18/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **45 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
45.0	0			12 In. of Topsoil	– Infiltration Rate = 2.0 in/hr at 2 Ft.
44.0		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
41.5		SP-SM		Light yellow-brown (10YR 6/4), moist, single grain, loose, Loamy Sand	
	5			- Yellow-brown (10YR 5/6) at 5-1/2 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-139 (Stake #638)

LOG OF TEST PIT NO. ITP-140 (Stake #639)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/17/25**
DATE COMPLETED: **03/17/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **37 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
37.0	0			12 In. of Topsoil	– Infiltration Rate = 18 in/hr and 1-1/2 Ft.
36.0		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
34.0		SP-SM		Yellow-brown (10YR 5/8), moist, 15% gravel, single grain, loose, Loamy Sand	
	5			- with cemented sands at 8 Ft.	
28.0		SM		Very pale brown (10YR 7/4) and and light yellow-brown (10YR 6/4), moist, subangular blocky, loose to friable, Sandy Loam	
	10			Test pit complete at 11 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-140 (Stake #639)

LOG OF TEST PIT NO. ITP-141 (Stake #640)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/14/25**
DATE COMPLETED: **03/14/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **35.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
35.5	0				
				12 In. of Topsoil	
34.5		SM		Dark yellow-brown (10YR 446), moist, single grain to subangular blocky, loose, Sandy Loam	- Infiltration rate = 6.0 in/hr at 1-1/2 Ft.
31.5		SP-SM		Dark yellow-brown (10YR 4/6), moist, 15% gravel, single grain, Loamy Sand	
29.0	5	SM		Pale brown (10YR 6/3), moist, single grain, loose, Sandy Loam with clay nodules	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-141 (Stake #640)

LOG OF TEST PIT NO. ITP-142 (Stake #641)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/14/25**
DATE COMPLETED: **03/14/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **33 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
33.0	0			12 In. of Topsoil	– Infiltration Rate = 9.0 in/hr at 1-1/2 Ft.
32.0		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
	5			- Brown-yellow (10YR 6/8), single grain to subangular blocky at 4 Ft.	
	10			- Strong brown (10YR 5/8) at 8 Ft.	
				Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-142 (Stake #641)

LOG OF TEST PIT NO. ITP-143 (Stake #642)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/14/25**
DATE COMPLETED: **03/14/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **33.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
33.5	0				
				12 In. of Topsoil	
32.5		SM		Dark yellow-brown (10YR 4/6), moist, 5% gravel, single grain, Sandy Loam	– Infiltration Rate = 6.0 in/hr at 1-1/2 Ft.
30.5		SP-SM		Yellow-brown (10YR 5/6), moist, 15% gravel, single grain, Loamy Sand	
	5				
	10			- Very pale brown (10YR 7/4) at 9-1/2 Ft.	
				Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-143 (Stake #642)

LOG OF TEST PIT NO. ITP-144 (Stake #643)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/21/25**
DATE COMPLETED: **03/21/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **35 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
35.0	0				
34.2				10 In. of Topsoil	
		SM		Yellow-brown (10YR 5/8), moist, single grain, Sandy Loam	
				- Dark yellow brown (10YR 4/6), 5% gravel at 3 Ft.	
	5			- Brown-yellow (10YR 6/6) at 5 Ft.	
					– Infiltration Rate = 3.0 in/hr at 6 Ft.
	10				
				Test pit complete at 14 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-145 (Stake #644)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/21/25**
DATE COMPLETED: **03/21/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **35 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
35.0	0				
34.3				8 In. of Topsoil	
		SC		Dark yellow-brown (10YR 4/4), moist, single grain to subangular blocky, loose to friable, Sandy Clay Loam	– Infiltration Rate = 0.0 in/hr at 1-1/2 Ft.
	5				
29.0		SM		Brown-yellow (10YR 6/6), moist, single grain, loose, Sandy Loam	
	10				
				Test pit complete at 11 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-145 (Stake #644)

LOG OF TEST PIT NO. ITP-146 (Stake #645)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/20/25**
DATE COMPLETED: **03/20/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **31.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
31.5	0				
				12 In. of Topsoil	
30.5		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
27.5		SP-SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Loamy Sand	
26.0	5	CL		Light gray (10YR 7/1) and brown-yellow (10YR 6/8), moist, massive, firm, Sandy Clay	– Infiltration Rate = 0.0 in/hr at 5-1/2 Ft.
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-146 (Stake #645)

LOG OF TEST PIT NO. ITP-147 (Stake #646)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/20/25**
DATE COMPLETED: **03/20/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **32 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
32.0	0			10 In. of Topsoil	
31.2		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam - Yellow-red (7.5YR 6/8) at 3 Ft.	
27.5	5	CL		Light gray (10YR 7/1) and brown-yellow (10YR 6/8), moist, subangular blocky, firm, Sandy Clay	– Infiltration Rate = 0.0 in/hr at 5 Ft.
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-147 (Stake #646)

LOG OF TEST PIT NO. ITP-148 (Stake #647)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/20/25**
DATE COMPLETED: **03/20/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **37 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
37.0	0				
				12 In. of Topsoil	
36.0		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	– Infiltration Rate = 6.0 in/hr at 1-1/2 Ft.
				- Dark yellow-brown (10YR 4/6) at 3 Ft.	
	5				
31.5		SP-SM		Brown-yellow (10YR 6/6), moist, single grain, loose, Loamy Sand	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-148 (Stake #647)

LOG OF TEST PIT NO. ITP-149 (Stake #648)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/20/25**
DATE COMPLETED: **03/20/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **51 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
51.0	0			12 In. of Topsoil	– Infiltration Rate = 12 in/hr at 4 Ft.
50.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
	5			- with 15% gravel at 4-1/2 Ft.	
	10			Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-150 (Stake #649)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/19/25**
DATE COMPLETED: **03/19/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **43 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
43.0	0			12 In. of Topsoil	– Infiltration Rate = 24 in/hr at at 1-1/2 Ft.
42.0		SP-SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Loamy Sand	
	5			- Light yellow-brown (10YR 6/4) at 4-1/2 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-150 (Stake #649)

LOG OF TEST PIT NO. ITP-151 (Stake #650)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/19/25**
DATE COMPLETED: **03/19/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **46 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
46.0	0				
45.2				10 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	– Infiltration Rate = 2.0 in/hr at 2 Ft.
42.0		SP-SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Loamy Sand	
	5				
40.0		SM		Light yellow-brown (10YR 6/4), moist, single grain, loose, Sandy Loam	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-151 (Stake #650)

LOG OF TEST PIT NO. ITP-152 (Stake #651)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/19/25**
DATE COMPLETED: **03/19/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **49 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
49.0	0				
				10 In. of Topsoil	
48.2		SM		Dark yellow-brown (10YR 4/4), moist, single grain to subangular blocky, loose, Sandy Loam	– Infiltration Rate = 6.0 in/hr at 1-1/2 Ft.
	5			- Brown-yellow (10YR 6/8), single grain at 4-1/2 Ft.	
42.0		SP-SM		Strong brown (7.5YR 5/8), moist, single grain, loose, Loamy Sand	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-152 (Stake #651)

LOG OF TEST PIT NO. ITP-153 (Stake #652)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/19/25**
DATE COMPLETED: **03/19/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **46 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
46.0	0			10 In. of Topsoil	– Infiltration Rate = 18 in/hr at 3 Ft.
45.2		SM		Dark yellow-brown (10YR 4/4), moist, 10% gravel, single grain, loose, Sandy Loam	
43.5		SP-SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Loamy Sand	
	5				
	10			Test pit complete at 10 Ft. due to sidewall collapse.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-153 (Stake #652)

LOG OF TEST PIT NO. ITP-154 (Stake #653)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/19/25**
DATE COMPLETED: **03/19/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **44 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
44.0	0				
43.3				8 In. of Topsoil	
		SP-SM		Dark yellow-brown (10YR 4/4), moist, 10% gravel, single grain, loose, Loamy Sand	– Infiltration Rate = 24 in/hr at 1-1/2 Ft.
	5			- Yellow-brown (10YR 5/8) at 3 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-154 (Stake #653)

LOG OF TEST PIT NO. ITP-155 (Stake #654)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/17/25**
DATE COMPLETED: **03/17/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **41.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
41.5	0				
				12 In. of Topsoil	
40.5		SM		Yellow-brown (10YR 5/6), moist, single grain, loose, Sandy Loam	
38.5		SP		Strong brown (7.5YR 5/8), moist, 15% gravel, single grain, loose, Sand	– Infiltration Rate = 36+ in/hr at 4-1/2 Ft.
	5				
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-155 (Stake #654)

LOG OF TEST PIT NO. ITP-156 (Stake #655)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/17/25**
DATE COMPLETED: **03/17/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **39 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
39.0	0			12 In. of Topsoil	– Infiltration Rate = 3.0 in/hr and 1-1/2 Ft.
38.0		SM		Yellow-brown (10YR 5/6), moist, single grain, loose, Sandy Loam	
	5				
30.0		SP-SM		Brown-yellow (10YR 6/8), moist, 10% gravel, single grain, loose, Loamy Sand	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-157

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/17/25**
DATE COMPLETED: **03/17/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **37.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
37.5	0			12 In. of Topsoil	– Infiltration Rate = 12 in/hr at 1-1/2 Ft.
36.5		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
34.5		SP-SM		Strong brown (7.5YR 5/6), moist, single grain, loose, Loamy Sand	
	5				
29.5		SM		Strong brown (7.5YR 5/8), moist, single grain, loose, Sandy Loam with clay nodules	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-158 (Stake #657)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/14/25**
DATE COMPLETED: **03/14/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **31.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
31.5	0			12 In. of Topsoil	
30.5		SM		Dark yellow-brown (10YR 4/6), moist, 5% gravel, single grain, Sandy Loam	
27.5	5	ML		Brown-yellow (10YR 6/6), moist, subangular blocky, friable, Silt Loam	– Infiltration Rate = 0.2 in/hr at 4 Ft.
24.5	10	SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Sandy Loam	
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-158 (Stake #657)

LOG OF TEST PIT NO. ITP-159 (Stake #658)

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/14/25**
DATE COMPLETED: **03/14/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **32.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
32.5	0				
				12 In. of Topsoil	
31.5		SM		Dark yellow-brown (10YR 4/4), moist, subangular blocky to single grain, loose, Sandy Loam	
30.0		ML		Brown-yellow (10YR 6/6), moist, subangular blocky, friable, Loam	– Infiltration Rate = 0.5 in/hr at 4 Ft.
	5				
27.0		SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Sandy Loam	
25.0		SP-SM		Very pale brown (10YR 7/3), moist, single grain, loose, Loamy Sand	
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-159 (Stake #658)

LOG OF TEST PIT NO. ITP-160

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/17/25**
DATE COMPLETED: **03/17/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **41 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
41.0	0			12 In. of Topsoil	
40.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
37.0		SP-SM		Dark yellow-brown (10YR 4/6), moist, 15% gravel, loose, Loamy Sand	– Infiltration Rate = 36+ in/hr at 4 Ft.
	5			- Brown-yellow (10YR 6/6) at 8 Ft.	
	10			- 25% gravel at 10 Ft.	
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-160

LOG OF TEST PIT NO. ITP-161

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/21/25**
DATE COMPLETED: **03/21/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **38 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
38.0	0			10 In. of Topsoil	
37.2		SM		Dark yellow-brown (10YR 4/4), moist, single grain to subangular blocky, loose to friable, Sandy Loam	
34.0	5	SC		Yellow-brown (10YR 5/6), moist, subangular blocky, friable, Sandy Clay Loam	- Infiltration Rate = 0.1 in/hr at 4 Ft.
31.0	10	SM		Strong brown (7.5YR 5/8), moist, single grain to subangular blocky, loose to friable, Sandy Loam	
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-161

LOG OF TEST PIT NO. ITP-162

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/20/25**
DATE COMPLETED: **03/20/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **39 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
39.0	0				
				12 In. of Topsoil	
38.0		SM		Dark yellow-brown (10YR 4/4), moist, 5% gravel, single grain, loose, Sandy Loam	– Infiltration Rate = 6.0 in/hr at 1-1/2 Ft.
36.0		SP-SM		Strong brown (7.5YR 5/8), moist, single grain, loose, Loamy Sand	
	5				
31.0		SM		Strong brown (7.5YR 5/8), moist, single grain, loose, Sandy Loam	
29.5		CL		Very pale brown (10YR 7/3), moist, subangular blocky, firm, Sandy Clay	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-163

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/19/25**
DATE COMPLETED: **03/19/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **46 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
46.0	0				
45.5				6 In. of Topsoil	
		SC		Dark yellow-brown (10YR 4/4), moist, subangular blocky, friable, Sandy Clay Loam	– Infiltration Rate = 1.0 in/hr at 2 Ft.
41.0	5	SP-SM		Brown-yellow (10YR 6/6), moist, single grain, loose, Loamy Sand	– Infiltration Rate = 36+ in/hr at 5 Ft.
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-164

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/18/25**
DATE COMPLETED: **03/18/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **55 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
55.0	0				
				12 In. of Topsoil	
54.0		SC		Yellow-brown (10YR 5/8), moist, subangular blocky, friable, Sandy Clay Loam	
51.5		SM		Brown-yellow (10YR 6/6), moist, single grain, loose, Sandy Loam - Very pale brown (10YR 7/3) at 4-1/2 Ft.	
	5				
49.0		SP-SM		Yellow-brown (10YR 5/6), moist, single grain, loose, Loamy Sand - with cemented sands at 7 Ft.	- Infiltration Rate = 36+ in/hr at 6 Ft.
	10				
				Test pit complete at 14 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-164

LOG OF TEST PIT NO. ITP-165

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/12/25**
DATE COMPLETED: **03/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **34 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
34.0	0			12 In. of Topsoil	
33.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
30.0	5	SC		Very pale brown (10YR 7/3), moist, subangular blocky, friable, Sandy Clay Loam	– Infiltration Rate = 0.2 in/hr at 4 Ft.
26.0	10	SM		Very pale brown (10YR 7/3) and brown-yellow (10YR 6/6), moist, single grain, loose, Sandy Loam	
				Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Somerset, NJ 08873

LOG OF TEST PIT NO. ITP-166

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/12/25**
DATE COMPLETED: **03/12/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **37 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
37.0	0				
				12 In. of Topsoil	
36.0		SM		Yellow-brown (10YR 5/8), moist, single grain to subangular blocky, loose, Sandy Loam	
33.0		ML		Light yellow-brown (10YR 6/4), moist, subangular blocky, Silt Loam	- Infiltration Rate = 0.0 in/hr at 4 Ft.
	5				
31.0		SM		White (10YR 8/1), moist, single grain, loose, Sandy Loam with clay nodules	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-166

LOG OF TEST PIT NO. ITP-167

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/13/25**
DATE COMPLETED: **03/13/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **40 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
40.0	0				
				12 In. of Topsoil	
39.0		SM		Yellow-brown (10YR 5/4), moist, single grain to subangular blocky, loose, Sandy Loam	
37.0		SP-SM		Yellow-brown (10YR 5/4), moist, single grain, loose, Loamy Sand	
	5			- Pale brown (10YR 6/3) at 5-1/2 Ft.	- Infiltration Rate = 36+ in/hr at 6 Ft.
32.0		SP		Very pale brown (10YR 7/3), moist, single grain, loose, Sand	
	10				
				Test pit complete at 11 Ft. due to sidewall collapse.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-167

LOG OF TEST PIT NO. ITP-168

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/11/25**
DATE COMPLETED: **03/11/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **24 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
24.0	0				
				18 In. of Topsoil	
22.5		SM		Yellow-brown (10YR 5/8), moist, subangular blocky, loose, Sandy Loam	
20.0		ML		Light yellow-brown (10YR 6/4), moist, subangular blocky, friable, Silt Loam	- Infiltration Rate = 0.0 in/hr at 4 feet
	5				
17.5		SP		White (10YR 8/1), moist, single grain, loose, Sand	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-168

LOG OF TEST PIT NO. ITP-169

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/10/25**
DATE COMPLETED: **03/10/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **40 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
40.0	0				
				12 In. of Topsoil	
39.0		SP-SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Loamy Sand - with 15% gravel at 3 Ft.	- Infiltration Rate = 36+ in/hr at 4 Ft.
	5				
34.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	
31.0		CL		Pale brown (10YR 6/3), moist, massive, firm, Sandy Clay	- Infiltration Rate = 0.0 in/hr at 9 Ft.
	10				
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-169

LOG OF TEST PIT NO. ITP-170

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/11/25**
DATE COMPLETED: **03/11/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **45 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
45.0	0			12 In. of Topsoil	
44.0		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam - Yellow-brown (10YR 5/8) at 4 Ft.	
40.0	5	SP		Yellow-brown (10YR 5/8), moist, 5% gravel, single grain, loose, Sand	- Infiltration Rate = 36+ in/hr at 7 Ft. - Infiltration Rate = 1.0 in/hr at 8 Ft.
37.0	10	SM		Dark yellow-brown (10YR 4/6), moist, subangular blocky, loose to friable, Sandy Loam - Light yellow-brown (10YR 6/4) at 13-1/2 Ft.	
	15			Test pit complete at 15 Ft.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-171

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/10/25**
DATE COMPLETED: **03/10/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **46.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
46.5	0			12 In. of Topsoil	
45.5		SM		Dark yellow-brown (10YR 4/4), moist, 5% gravel, single grain, loose, Sandy Loam - with 20% gravel at 3 Ft. - gravel grades out at 8 Ft.	- Infiltration Rate = 1.0 in/hr at 8-1/2 Ft.
	5				
	10				
35.5		SP-SM		Yellow-brown (10YR 5/8), moist, 10% gravel, single grain, loose, Loamy Sand	
33.5		CL		Pale brown (10YR 6/3), moist, massive, firm, Sandy Clay	- Infiltration Rate = 0.0 in/hr at 13 Ft.
	15			Test pit complete at 16-1/2 Ft.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-172

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/10/25**
DATE COMPLETED: **03/10/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **46.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
46.5	0			12 In. of Topsoil	
45.5		SM		Dark yellow-brown (10YR 4/6), moist, 5% gravel, single grain, loose, Sandy Loam - with 15% gravel at 3 Ft. - with 25% gravel at 5 Ft. - gravel grades out at 8 Ft. - with 15% gravel at 9-1/2 Ft.	- Infiltration Rate = 1.0 in/hr at 8-1/2 Ft.
34.5	10	CL		Very pale brown (10YR 7/3), moist, massive, firm, Sandy Clay	- Infiltration Rate = 0.0 in/hr at 12 Ft.
	15			Test pit complete at 16-1/2 Ft.	
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-173

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/06/25**
DATE COMPLETED: **03/06/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **39.5 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
39.5	0			8 In. of Topsoil	- Infiltration Rate = 3.0 in/hr at 4 Ft.
38.8		SM		Dark yellow-brown (10YR 4/4), moist, single grain to subangular blocky, loose, Sandy Loam	
				- Yellow-brown (10YR 5/8), 5% gravel, single grain, with clay nodules at 3 Ft.	
34.5	5	SP-SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Loamy Sand	
	10				
28.5		CL		Light gray (10YR 7/1), moist, massive, firm, Sandy Clay	
				Test pit complete at 12 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-174

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/10/25**
DATE COMPLETED: **03/10/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **33 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
33.0	0			12 In. of Topsoil	
32.0		CL		Yellow-brown (10YR 5/8), moist, massive, firm, Sandy Clay - Pale brown (10YR 6/3) at 2-1/2 Ft.	- Infiltration Rate = 0.0 in/hr at 2-1/2 Ft.
25.0	5	ML		Light yellow-brown (10YR 6/4), moist, subangular blocky, friable, Silt Loam	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-174

LOG OF TEST PIT NO. ITP-175

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/10/25**
DATE COMPLETED: **03/10/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **36 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
36.0	0				
				18 In. of Topsoil	
34.5		SP-SM		Dark yellow-brown (10YR 4/6), moist, 15% gravel, single grain, loose, Loamy Sand	- Infiltration Rate = 24 in/hr at 1-1/2 Ft.
	5			- gravel grades out at 7 feet	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-176

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/07/25**
DATE COMPLETED: **03/07/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **35 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
35.0	0				
				8 In. of Topsoil	
34.3		CL		Dark yellow-brown (10YR 4/4), moist, massive, firm, Sandy Clay	
33.0		SM		Dark yellow-brown (10YR 4/6), moist, 10% gravel, single grain, loose, Sandy Loam	- Infiltration Rate = 4.0 in/hr at 2 Ft.
30.0	5	SP		Brown-yellow (10YR 6/6), moist, single grain, loose, Sand	
	10			Test pit complete at 10-1/2 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-177

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/10/25**
DATE COMPLETED: **03/10/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **29 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
29.0	0			10 In. of Topsoil	
28.2		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	- Infiltration Rate = 18 in/hr at 1-1/2 Ft.
26.0		SP-SM		Yellow-brown (10YR 5/8), moist, single grain, loose, Loamy Sand - with cemented sands and clay nodules at 6 Ft.	
	5				
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-177

LOG OF TEST PIT NO. ITP-178

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/07/25**
DATE COMPLETED: **03/07/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **30 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
30.0	0				
				8 In. of Topsoil	
29.3		SM		Dark yellow-brown (10YR 4/4), moist, single grain, loose, Sandy Loam	
26.0		SP		Yellow-brown (10YR 5/8), moist, 5% gravel, single grain, loose, Sand	- Infiltration Rate = 36+ in/hr at 4 Ft.
	5			- with 10% gravel and clay nodules at 7 Ft.	
	10			Test pit complete at 11 Ft. due to sidewall collapse.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-179

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/07/25**
DATE COMPLETED: **03/07/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **31 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
31.0	0				
30.3				8 In. of Topsoil	
		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	- Infiltration Rate = 4.0 in/hr at 1 Ft.
28.0		SP-SM		Yellow-brown (10YR 5/8), moist, 5% gravel, single grain, loose, Loamy Sand	
	5			- with clay nodules at 7 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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LOG OF TEST PIT NO. ITP-179

LOG OF TEST PIT NO. ITP-180

PROJECT: **Venue at Mystic Island**
PROJECT LOCATION: **Little Egg Harbor Township, NJ**
CLIENT: **US Home, LLC (Lennar)**

PROJECT NO: **31241688**

DATE STARTED: **03/07/25**
DATE COMPLETED: **03/07/25**
CONTRACTOR: **Neighbors Property Management**
EQUIPMENT: **Bobcat E60**

GROUNDWATER ENCOUNTERED: **N/E**
GROUNDSURFACE ELEVATION: **30 Ft.**
DATUM: **TOPO**
LOGGED BY: **AFS**
CHECKED BY: **AMT**

ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
30.0	0				
				12 In. of Topsoil	
29.0		SM		Dark yellow-brown (10YR 4/6), moist, single grain, loose, Sandy Loam	- Infiltration Rate = 4.0 in/hr at 1-1/2 Ft.
27.0		SP-SM		Yellow-brown (10YR 5/8), moist, 5% gravel, single grain, loose, Loamy Sand	
	5			- with clay nodules at 8 Ft.	
	10			Test pit complete at 10 Ft.	
	15				
	20				

NOTES: **Location and elevation are approximate.**
Backfilled on completion.

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Appendix D – Pre-Development Calculations



Subcat Reach Pond Link

Routing Diagram for Existing Conditions
Prepared by ARH Associates, Printed 4/28/2025
HydroCAD® 10.10-7b s/n 01689 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	C	Default	24.00	1	3.42	2

Summary for Subcatchment 1S: Disrurbed Area to Willis Creek

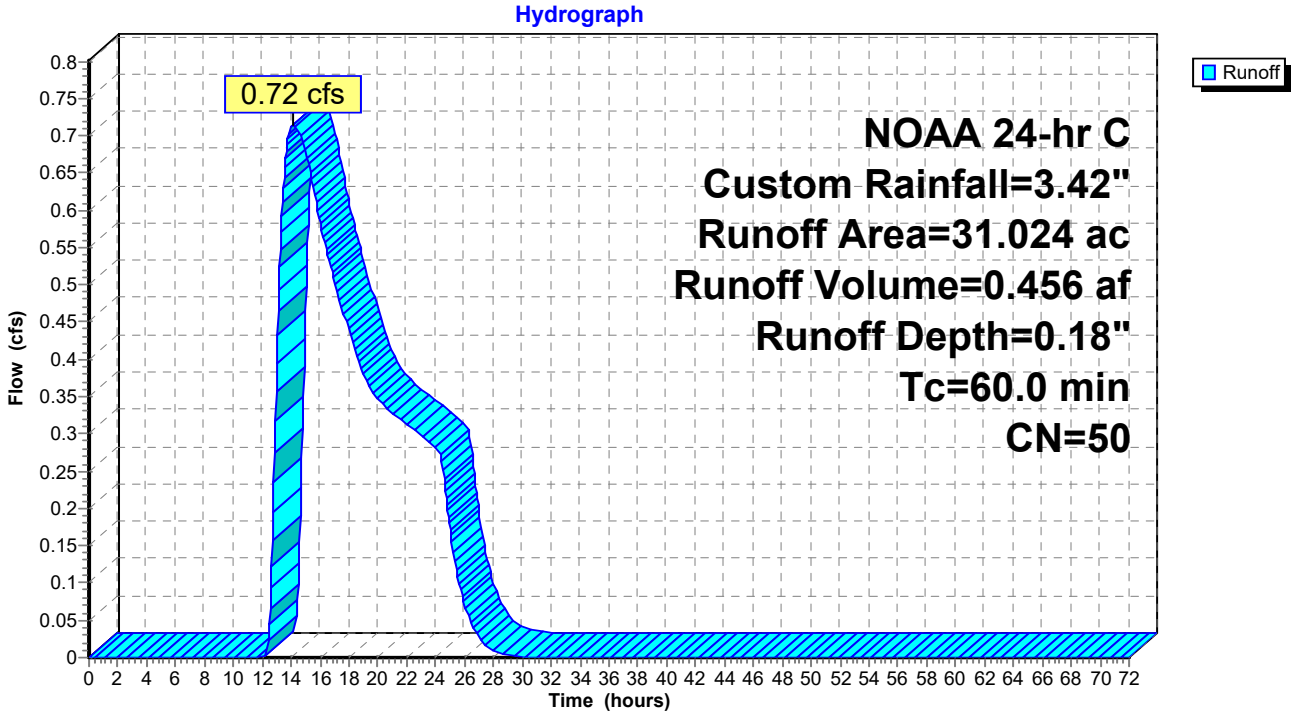
Runoff = 0.72 cfs @ 14.14 hrs, Volume= 0.456 af, Depth= 0.18"
Routed to Link 4L : Total Area to Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=3.42"

Area (ac)	CN	Description
9.133	77	Woods, Good, HSG D
14.020	30	Woods, Good, HSG A
4.977	39	>75% Grass cover, Good, HSG A
2.894	80	>75% Grass cover, Good, HSG D
31.024	50	Weighted Average
31.024		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 1S: Disrurbed Area to Willis Creek



Summary for Subcatchment 2S: Wetlands Depression

[45] Hint: Runoff=Zero

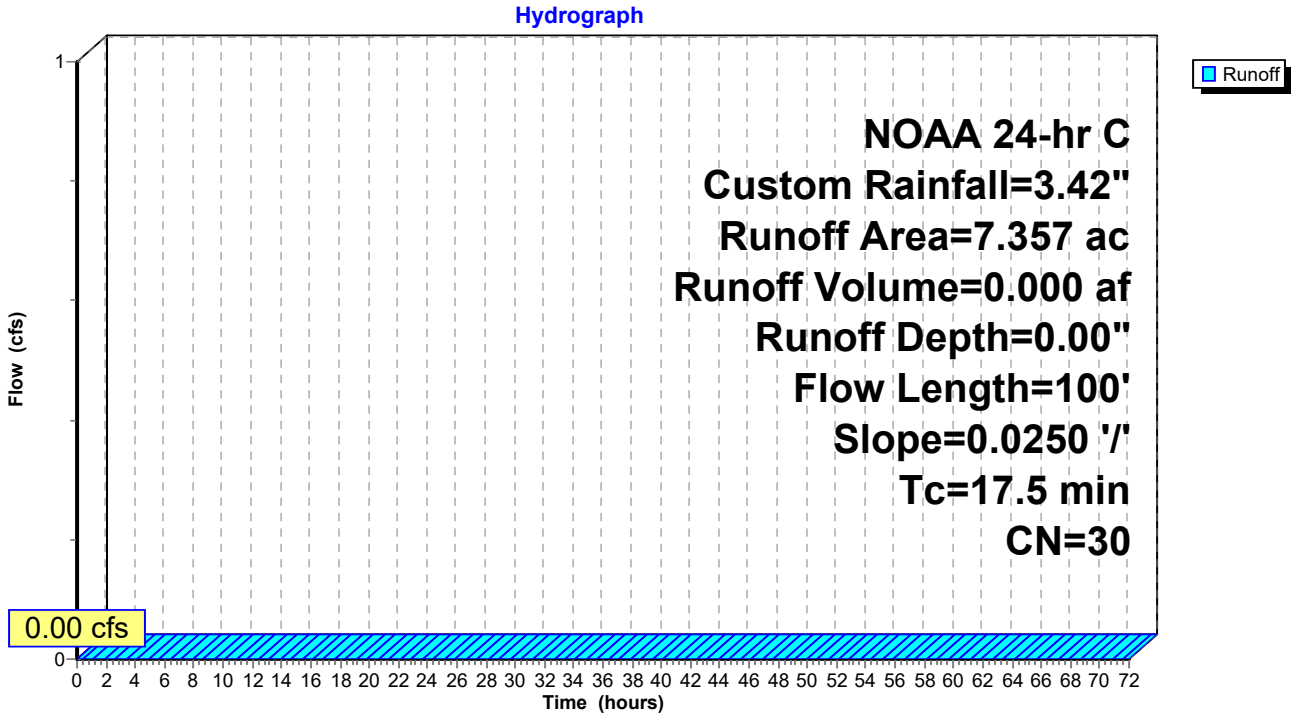
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 3P : Wetlands Depression

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=3.42"

Area (ac)	CN	Description
7.357	30	Woods, Good, HSG A
7.357		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	100	0.0250	0.10		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 4.04"

Subcatchment 2S: Wetlands Depression



Summary for Pond 3P: Wetlands Depression

Inflow Area = 7.357 ac, 0.00% Impervious, Inflow Depth = 0.00" for Custom event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4L : Total Area to Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.00' @ 0.00 hrs Surf.Area= 405 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

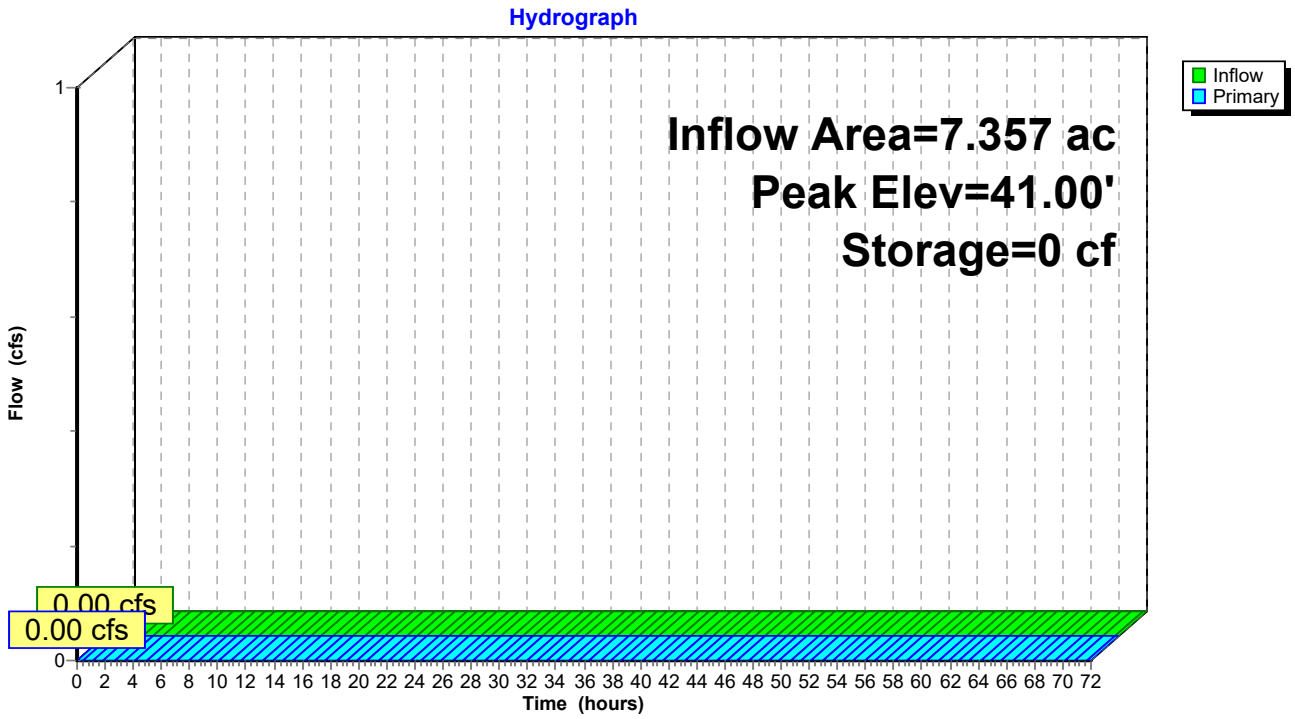
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: Wetlands Depression

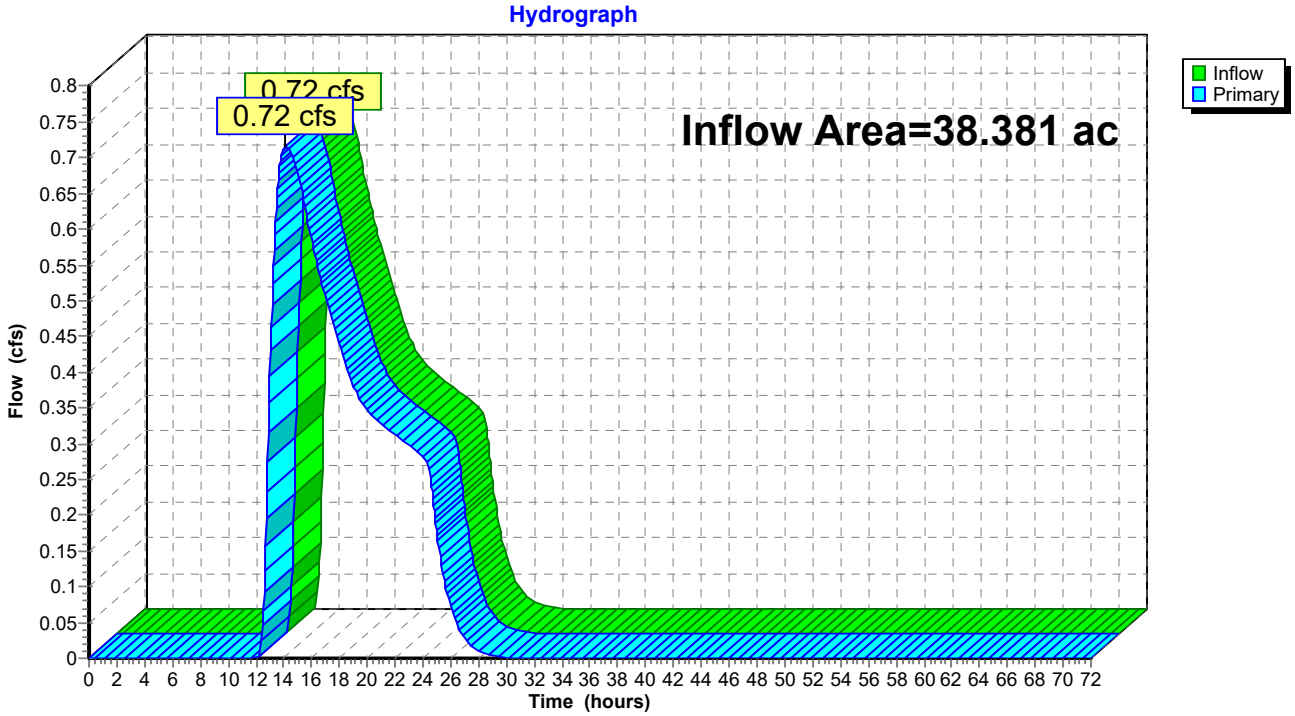


Summary for Link 4L: Total Area to Willis Creek

Inflow Area = 38.381 ac, 0.00% Impervious, Inflow Depth = 0.14" for Custom event
Inflow = 0.72 cfs @ 14.14 hrs, Volume= 0.456 af
Primary = 0.72 cfs @ 14.14 hrs, Volume= 0.456 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: Total Area to Willis Creek

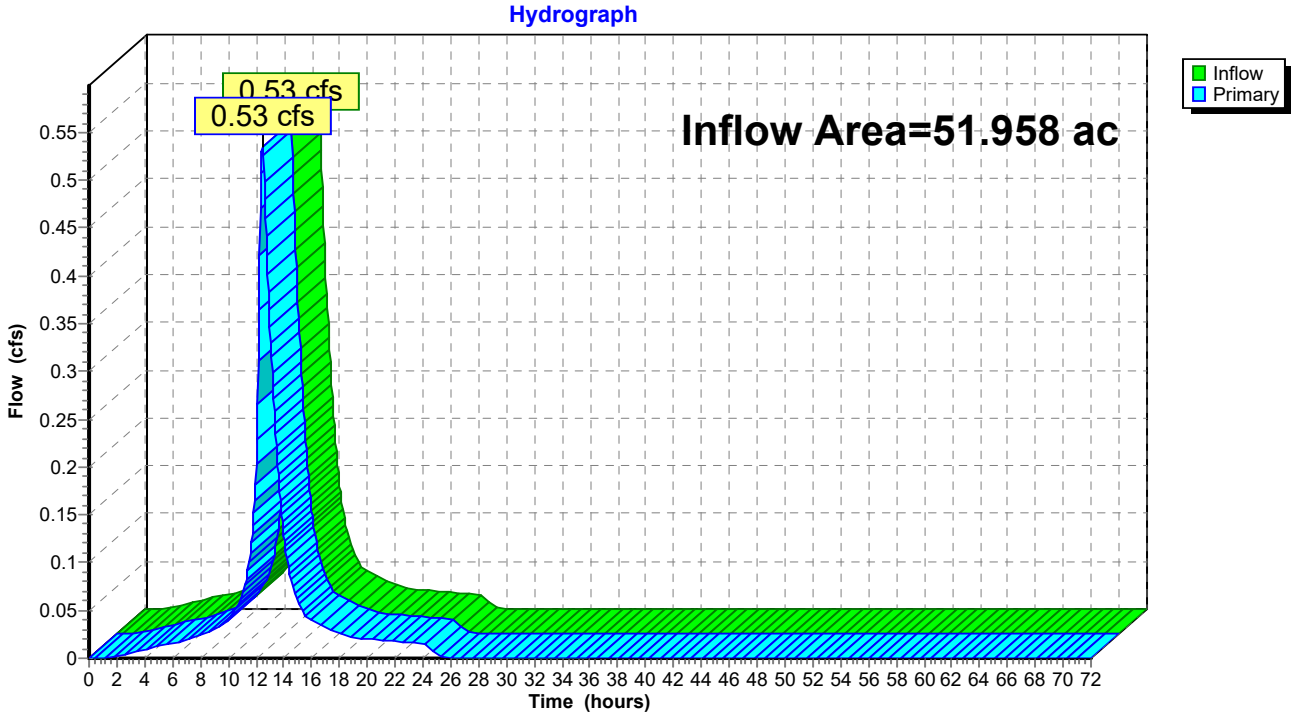


Summary for Link 5L: Total Disturbed Ara to Tuckerton Creek

Inflow Area = 51.958 ac, 0.75% Impervious, Inflow Depth = 0.02" for Custom event
Inflow = 0.53 cfs @ 12.44 hrs, Volume= 0.104 af
Primary = 0.53 cfs @ 12.44 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5L: Total Disturbed Ara to Tuckerton Creek



Summary for Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek

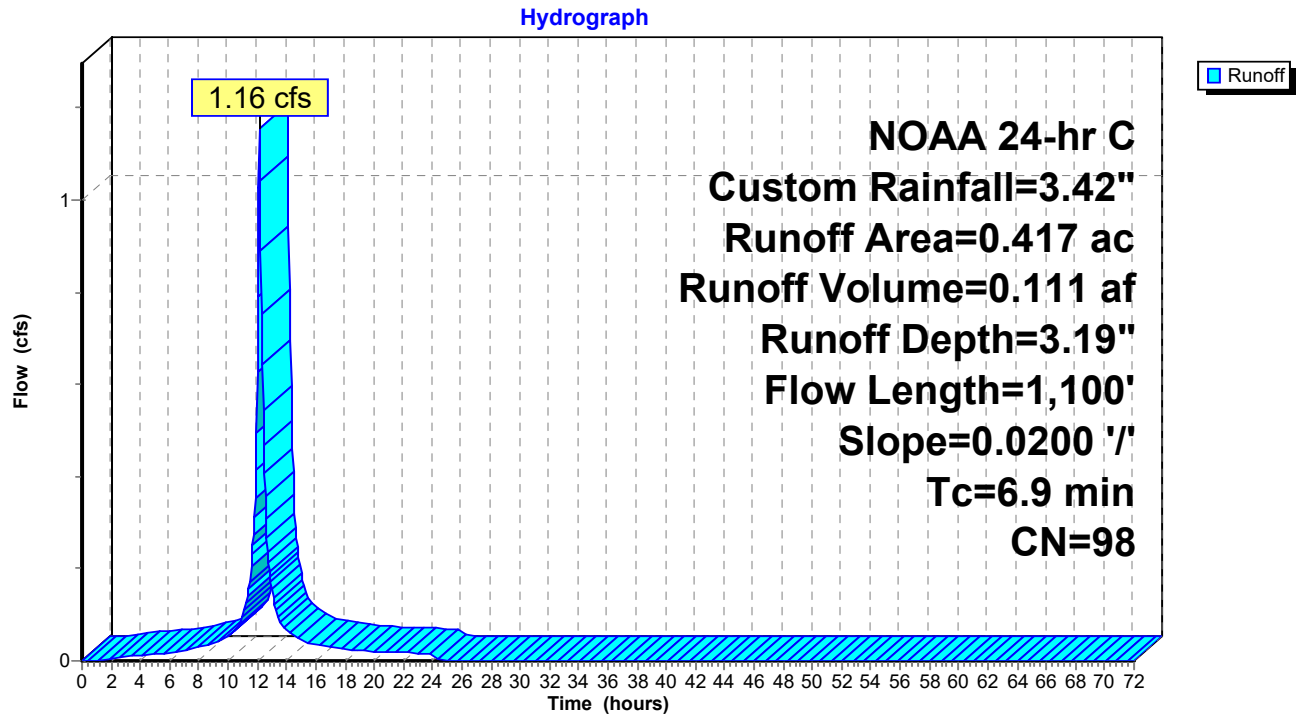
Runoff = 1.16 cfs @ 12.15 hrs, Volume= 0.111 af, Depth= 3.19"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.417	98	Half Width
	0.417		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0200	1.55		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
5.8	1,000	0.0200	2.87		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
6.9	1,100	Total			

Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek



Summary for Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious

[45] Hint: Runoff=Zero

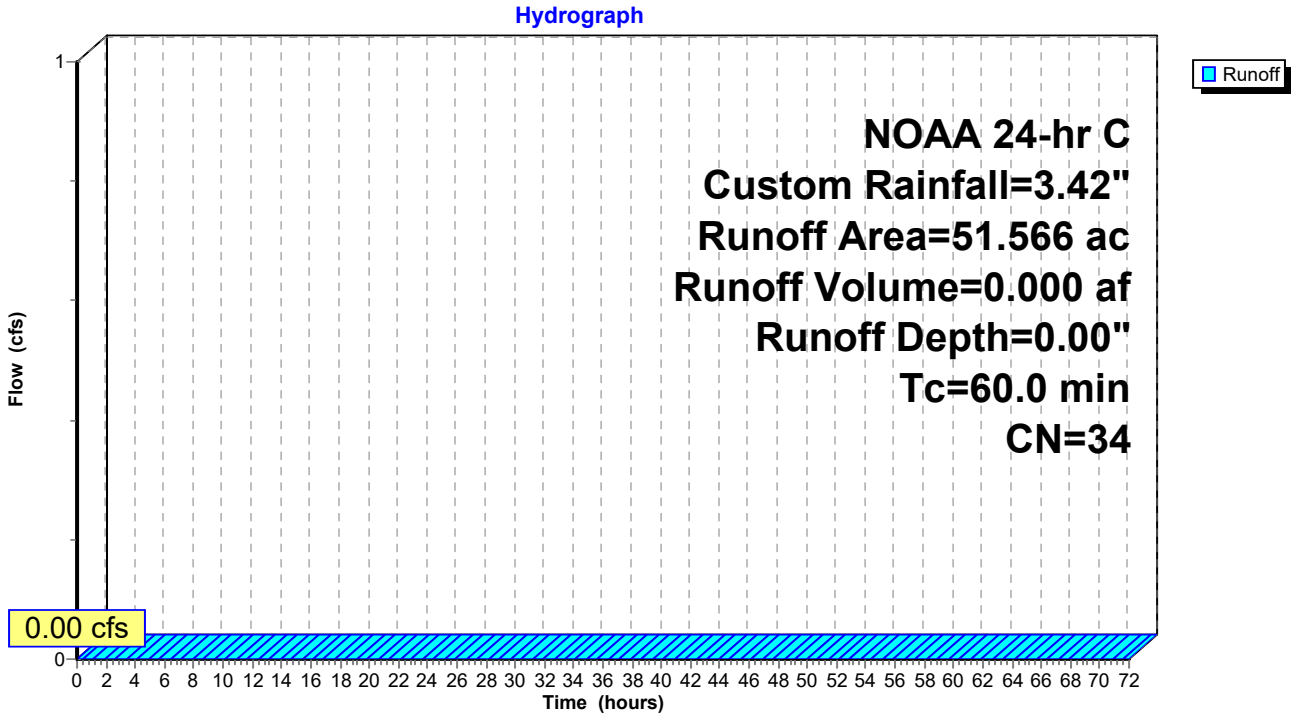
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=3.42"

Area (ac)	CN	Description
34.075	30	Woods, Good, HSG A
14.231	39	>75% Grass cover, Good, HSG A
3.260	55	Woods, Good, HSG B
51.566	34	Weighted Average
51.566		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious



Summary for Subcatchment 7S: Undisturbed Area to Tuckerton Creek

[45] Hint: Runoff=Zero

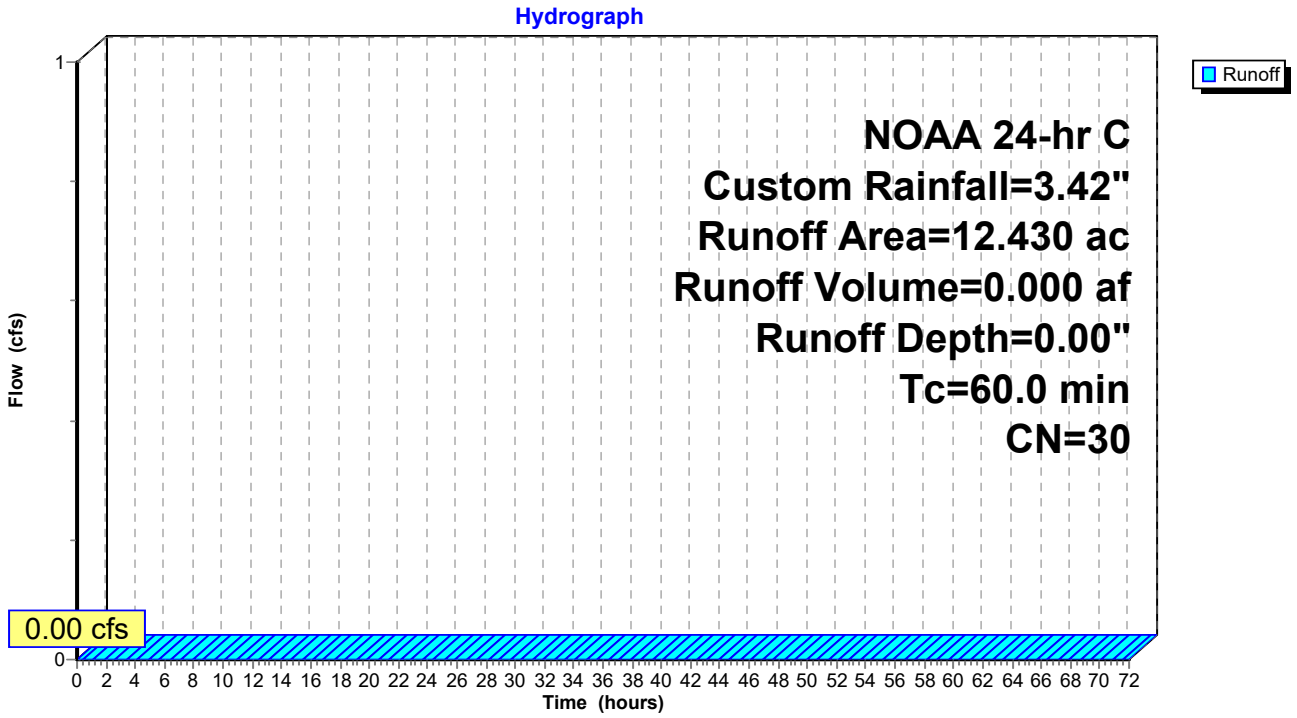
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=3.42"

Area (ac)	CN	Description
12.430	30	Woods, Good, HSG A
12.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 7S: Undisturbed Area to Tuckerton Creek



Summary for Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious

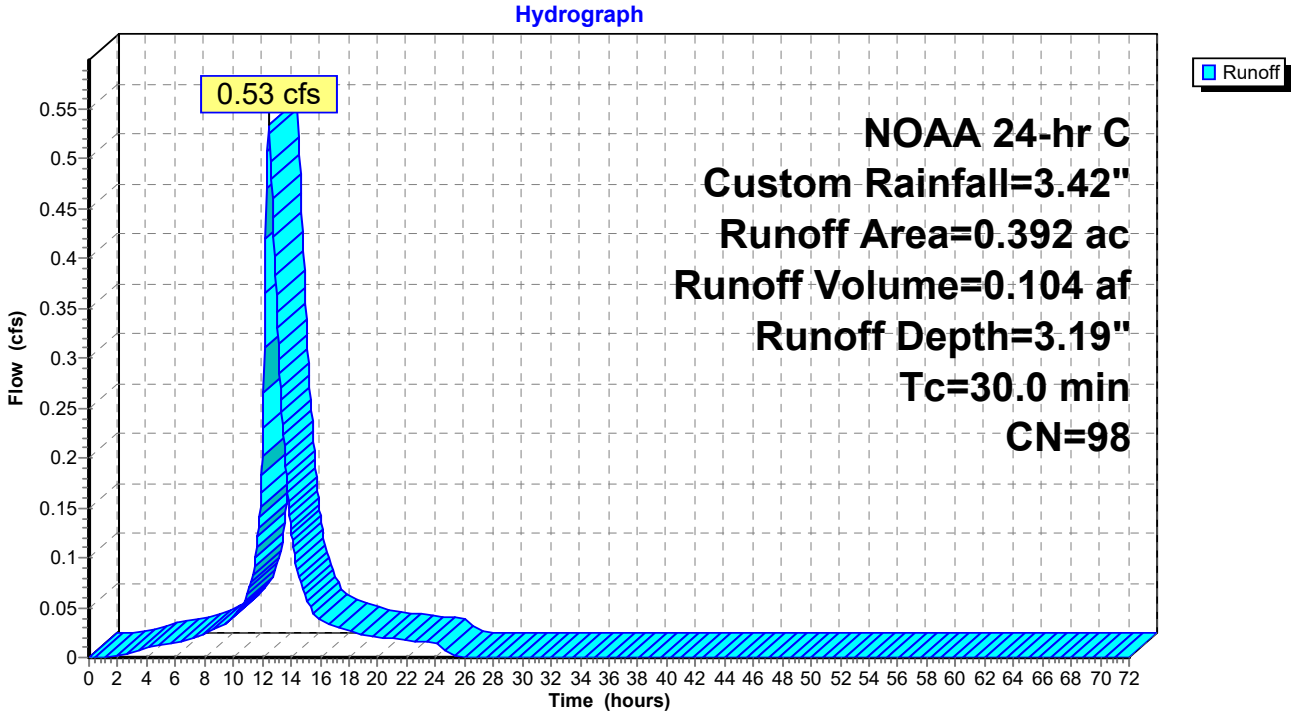
Runoff = 0.53 cfs @ 12.44 hrs, Volume= 0.104 af, Depth= 3.19"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.392	98	Impervious
	0.392		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious





Subcat Reach Pond Link

Routing Diagram for Existing Conditions
Prepared by ARH Associates, Printed 4/28/2025
HydroCAD® 10.10-7b s/n 01689 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	C	Default	24.00	1	4.04	2

Summary for Subcatchment 1S: Disrurbed Area to Willis Creek

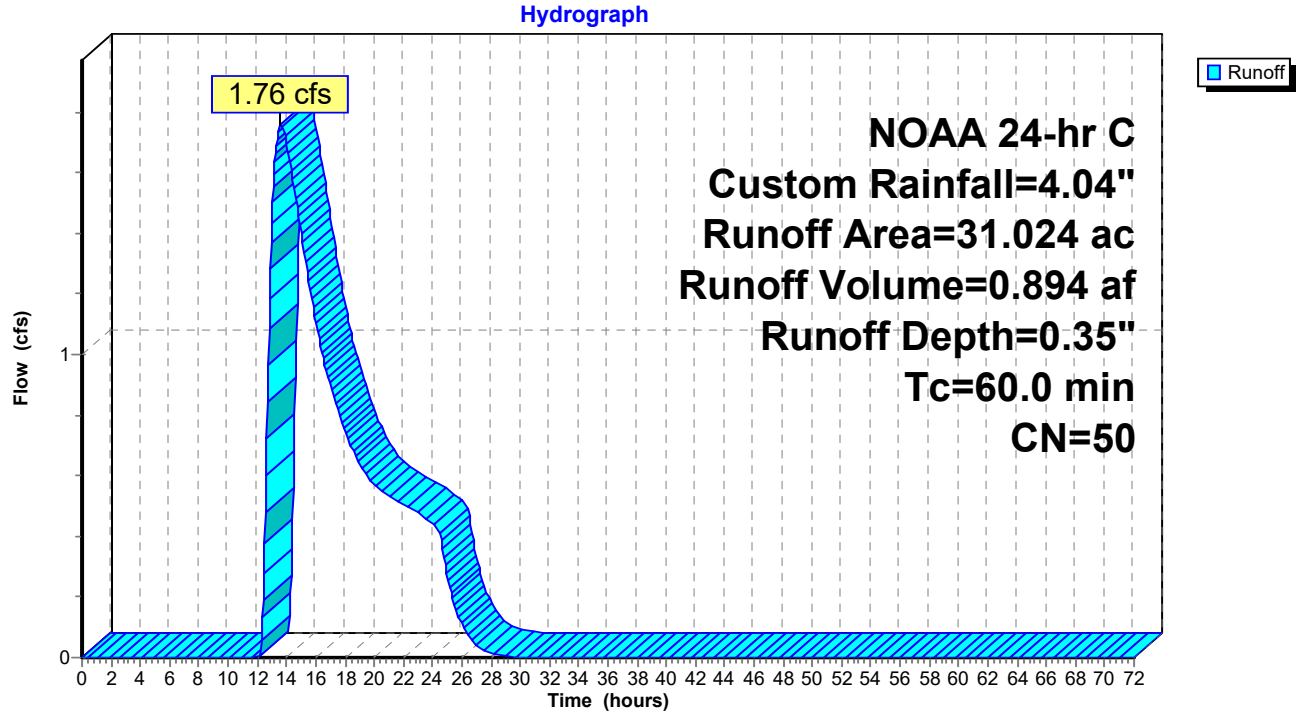
Runoff = 1.76 cfs @ 13.62 hrs, Volume= 0.894 af, Depth= 0.35"
Routed to Link 4L : Total Area to Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

Area (ac)	CN	Description
9.133	77	Woods, Good, HSG D
14.020	30	Woods, Good, HSG A
4.977	39	>75% Grass cover, Good, HSG A
2.894	80	>75% Grass cover, Good, HSG D
31.024	50	Weighted Average
31.024		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 1S: Disrurbed Area to Willis Creek



Summary for Subcatchment 2S: Wetlands Depression

[45] Hint: Runoff=Zero

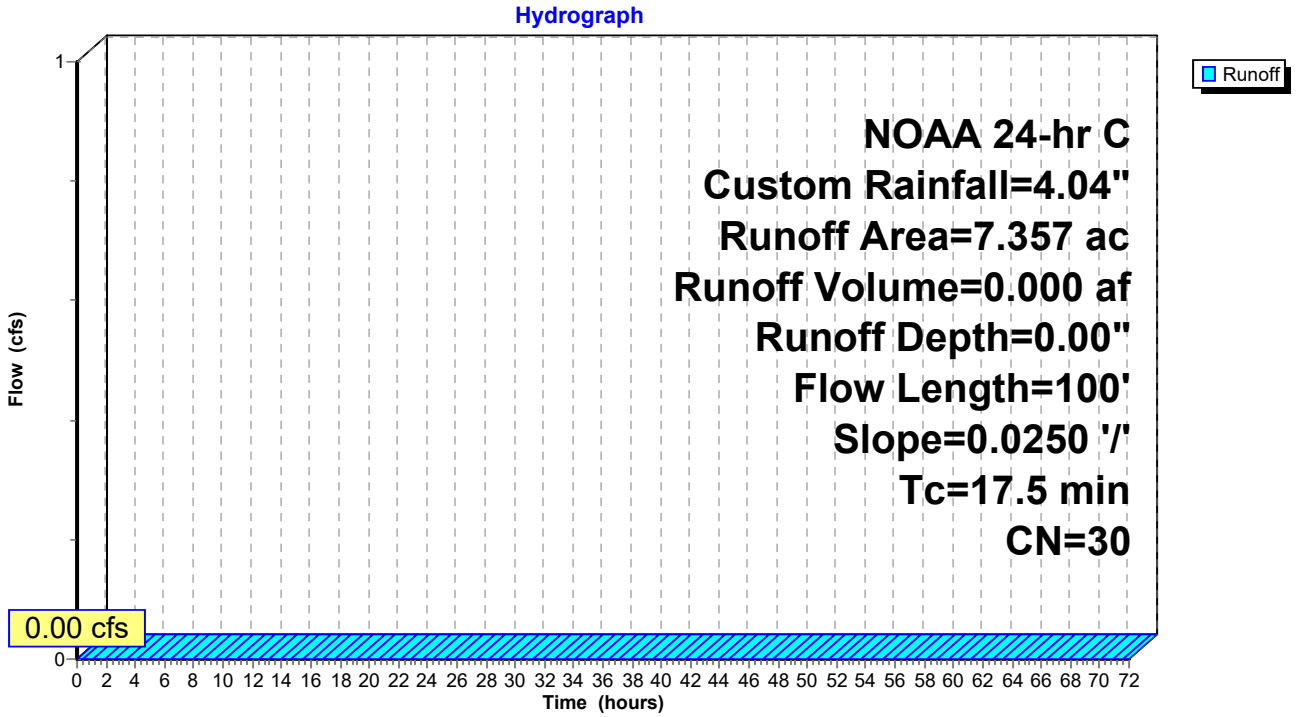
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 3P : Wetlands Depression

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

Area (ac)	CN	Description
7.357	30	Woods, Good, HSG A
7.357		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	100	0.0250	0.10		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 4.04"

Subcatchment 2S: Wetlands Depression



Summary for Pond 3P: Wetlands Depression

Inflow Area = 7.357 ac, 0.00% Impervious, Inflow Depth = 0.00" for Custom event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4L : Total Area to Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.00' @ 0.00 hrs Surf.Area= 405 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

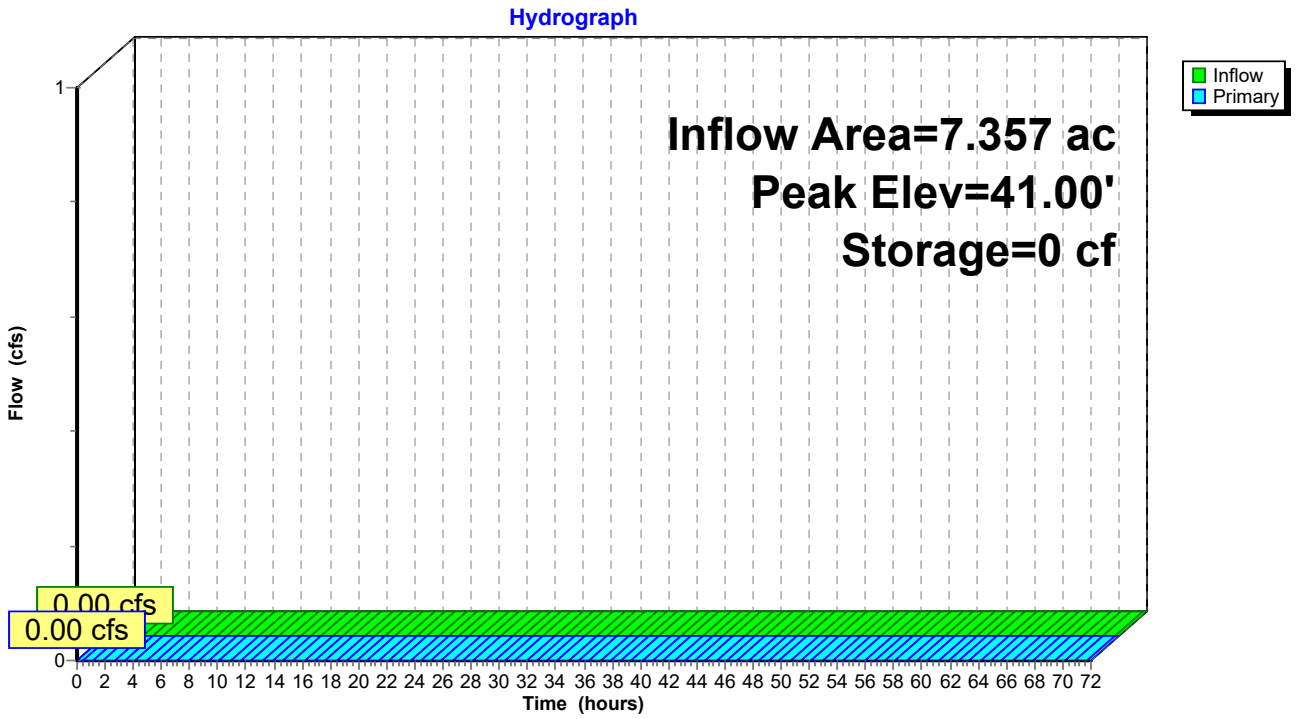
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Wetlands Depression

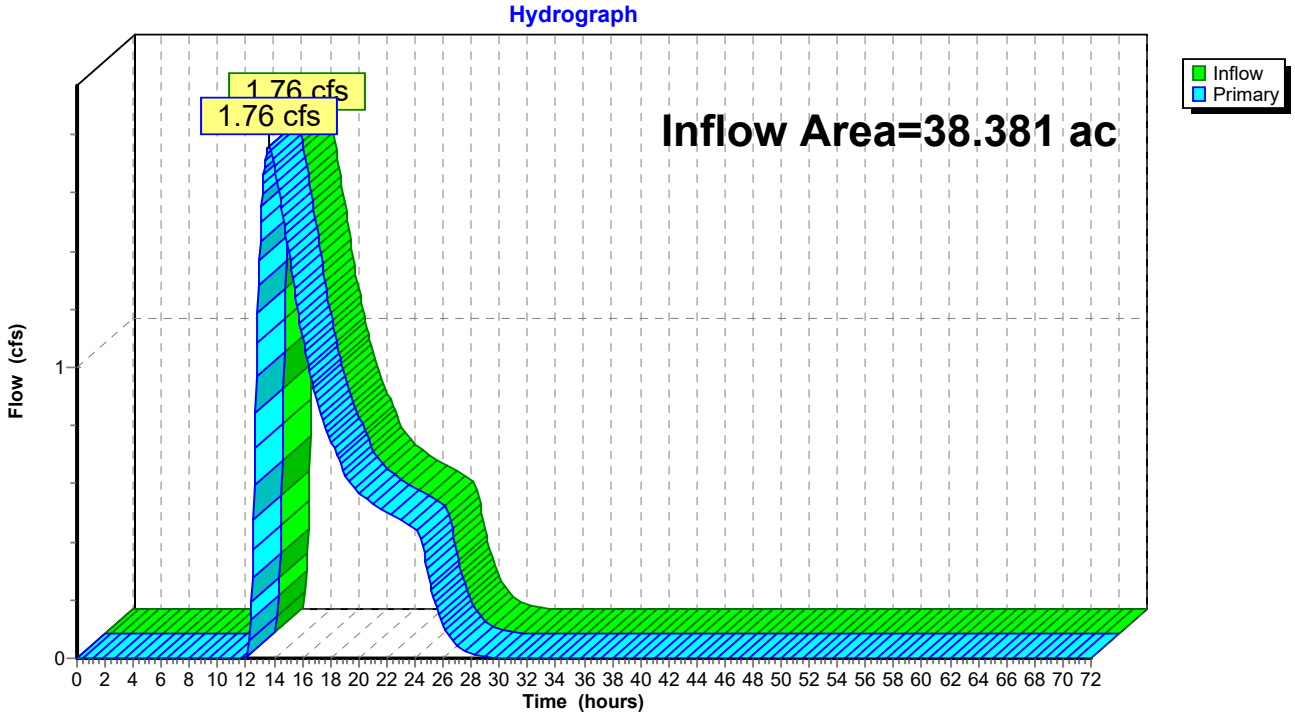


Summary for Link 4L: Total Area to Willis Creek

Inflow Area = 38.381 ac, 0.00% Impervious, Inflow Depth = 0.28" for Custom event
Inflow = 1.76 cfs @ 13.62 hrs, Volume= 0.894 af
Primary = 1.76 cfs @ 13.62 hrs, Volume= 0.894 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: Total Area to Willis Creek

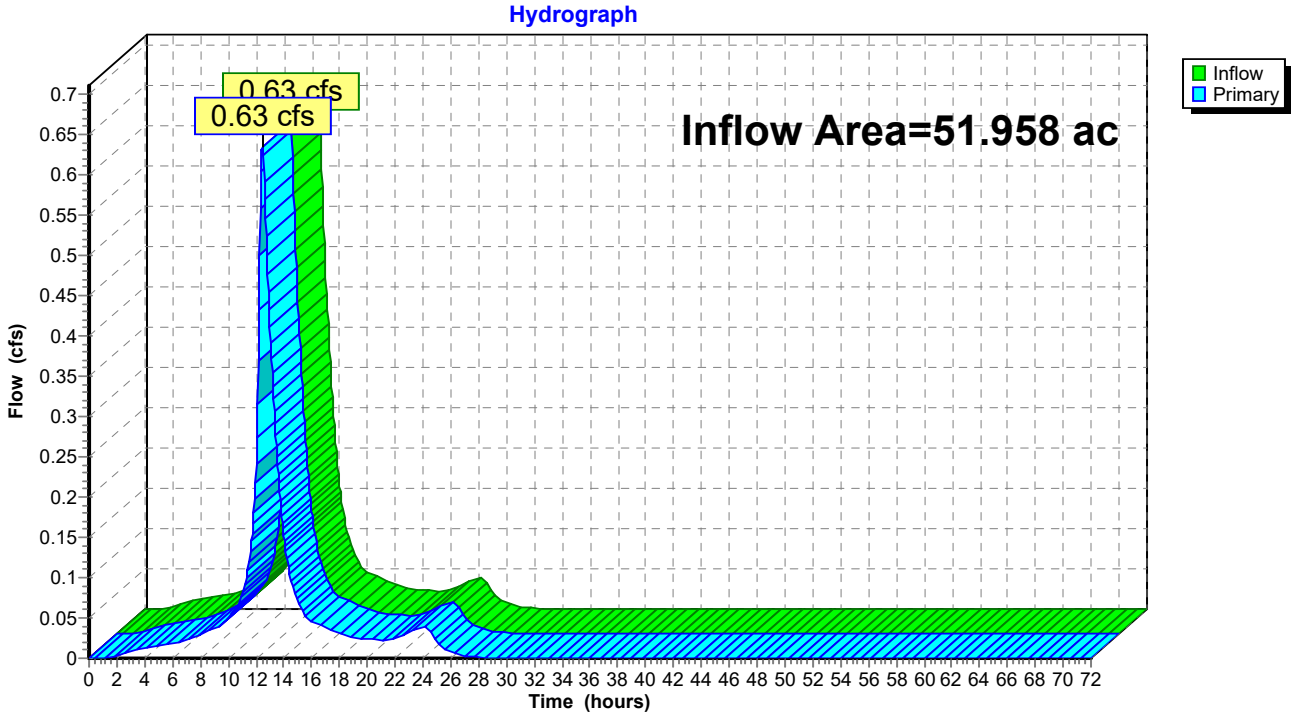


Summary for Link 5L: Total Disturbed Ara to Tuckerton Creek

Inflow Area = 51.958 ac, 0.75% Impervious, Inflow Depth = 0.03" for Custom event
Inflow = 0.63 cfs @ 12.44 hrs, Volume= 0.130 af
Primary = 0.63 cfs @ 12.44 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5L: Total Disturbed Ara to Tuckerton Creek



Summary for Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek

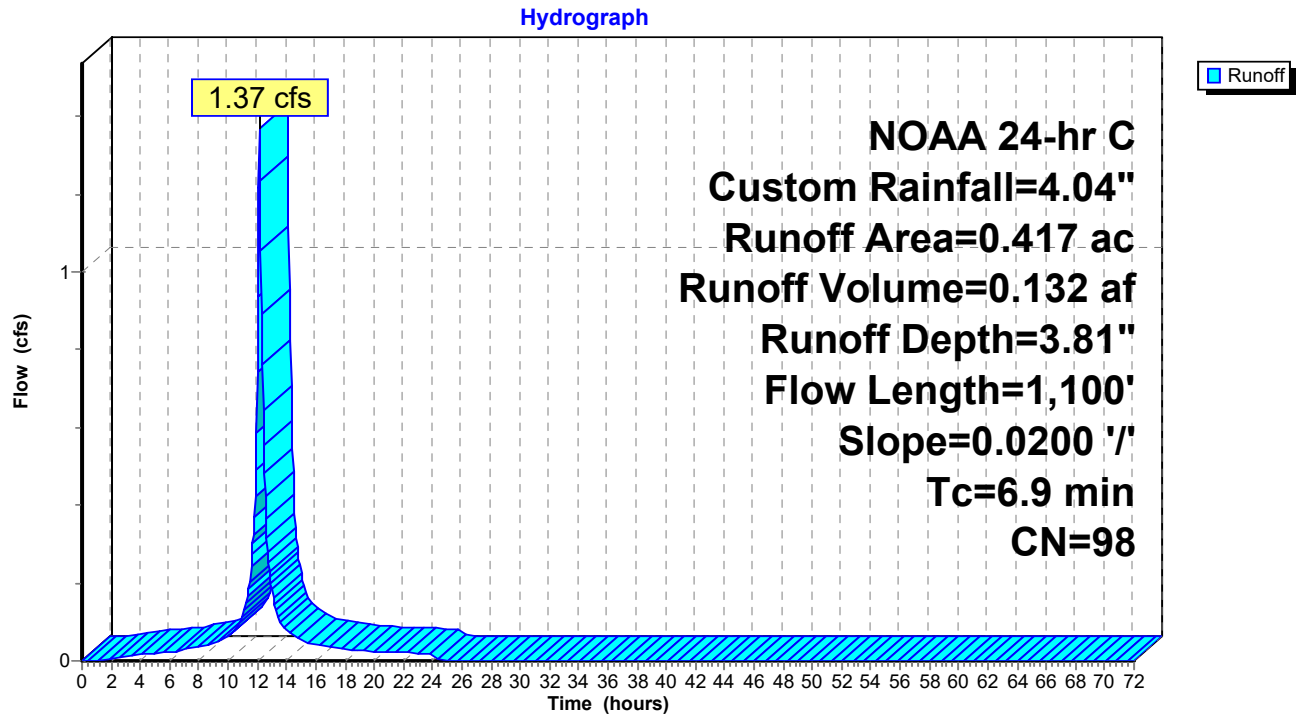
Runoff = 1.37 cfs @ 12.15 hrs, Volume= 0.132 af, Depth= 3.81"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.417	98	Half Width
	0.417		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0200	1.55		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
5.8	1,000	0.0200	2.87		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
6.9	1,100	Total			

Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek



Summary for Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious

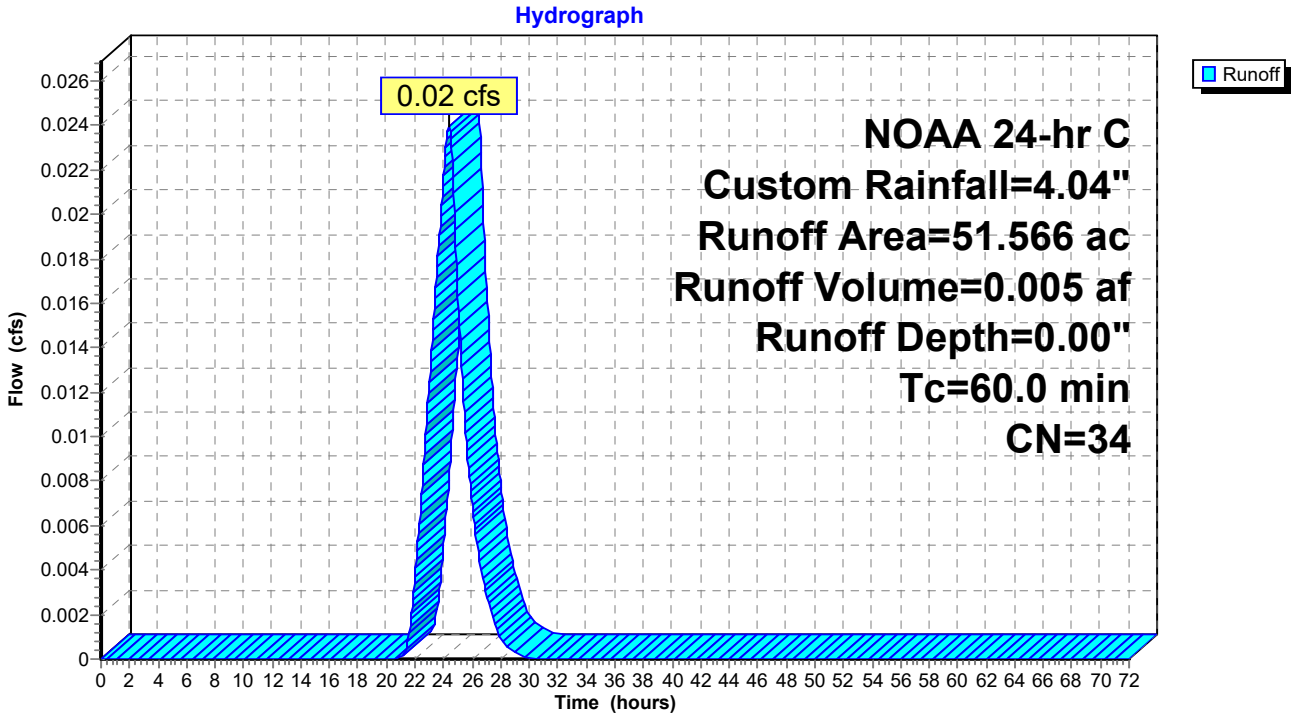
Runoff = 0.02 cfs @ 24.38 hrs, Volume= 0.005 af, Depth= 0.00"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

Area (ac)	CN	Description
34.075	30	Woods, Good, HSG A
14.231	39	>75% Grass cover, Good, HSG A
3.260	55	Woods, Good, HSG B
51.566	34	Weighted Average
51.566		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious



Summary for Subcatchment 7S: Undisturbed Area to Tuckerton Creek

[45] Hint: Runoff=Zero

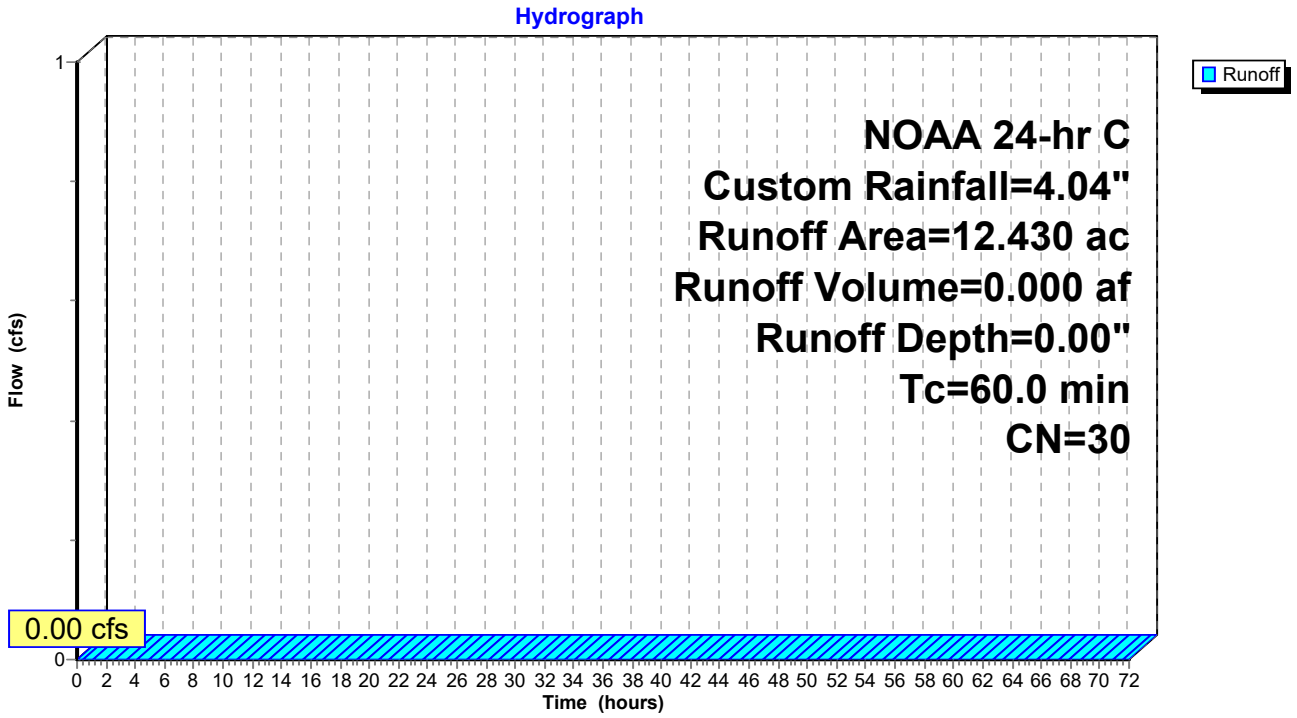
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

Area (ac)	CN	Description
12.430	30	Woods, Good, HSG A
12.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 7S: Undisturbed Area to Tuckerton Creek



Summary for Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious

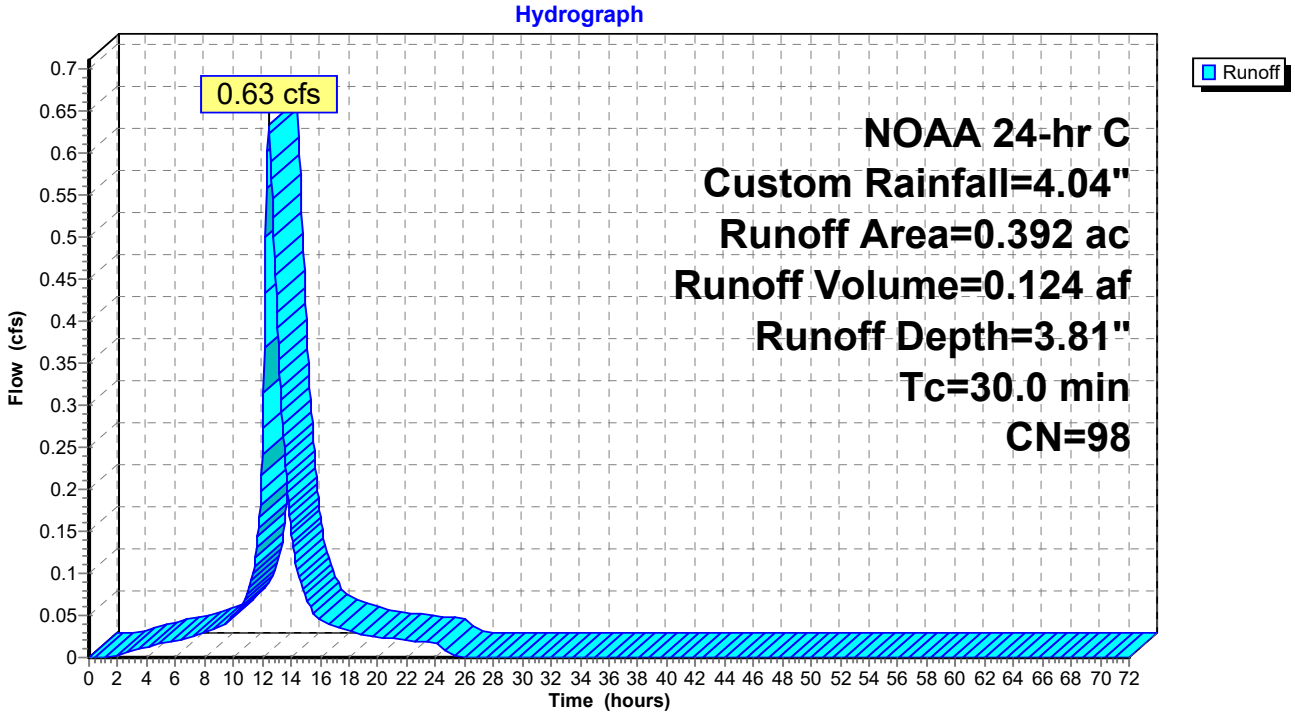
Runoff = 0.63 cfs @ 12.44 hrs, Volume= 0.124 af, Depth= 3.81"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.392	98	Impervious
	0.392		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious





Subcat Reach Pond Link

Routing Diagram for Existing Conditions
Prepared by ARH Associates, Printed 4/28/2025
HydroCAD® 10.10-7b s/n 01689 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	C	Default	24.00	1	5.38	2

Summary for Subcatchment 1S: Disrurbed Area to Willis Creek

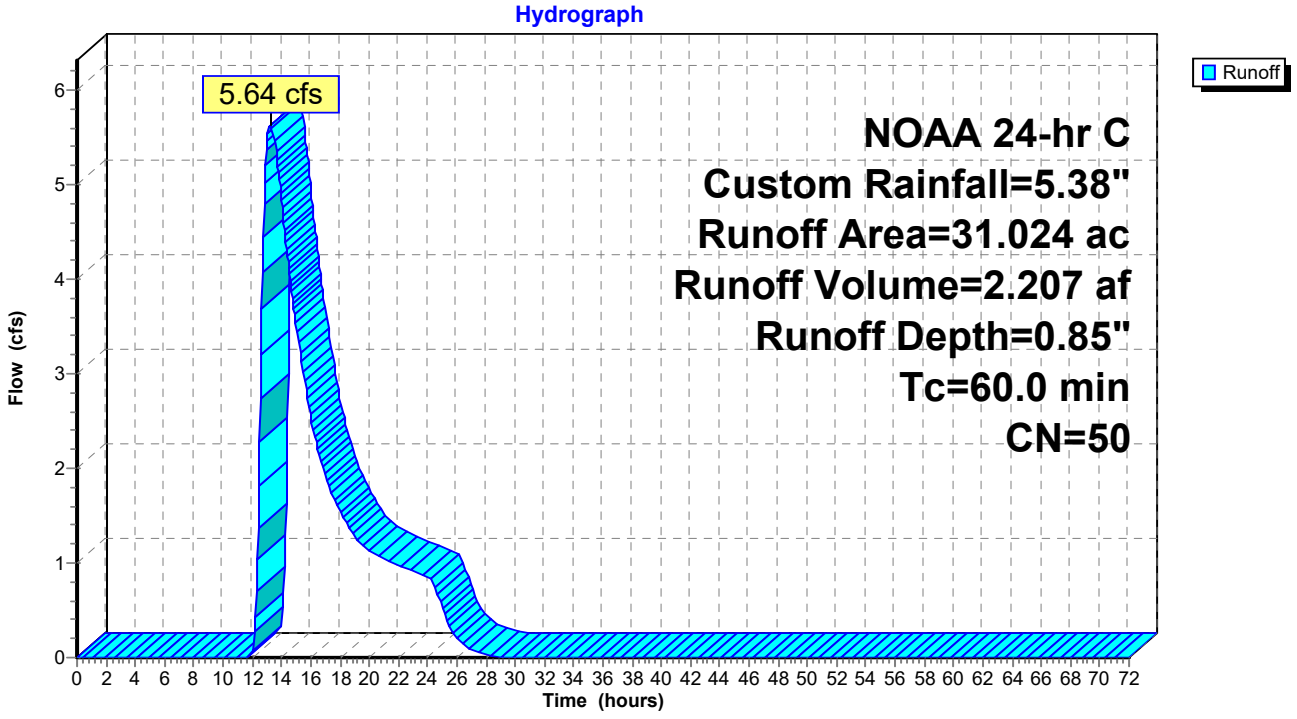
Runoff = 5.64 cfs @ 13.21 hrs, Volume= 2.207 af, Depth= 0.85"
Routed to Link 4L : Total Area to Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=5.38"

Area (ac)	CN	Description
9.133	77	Woods, Good, HSG D
14.020	30	Woods, Good, HSG A
4.977	39	>75% Grass cover, Good, HSG A
2.894	80	>75% Grass cover, Good, HSG D
31.024	50	Weighted Average
31.024		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 1S: Disrurbed Area to Willis Creek



Summary for Subcatchment 2S: Wetlands Depression

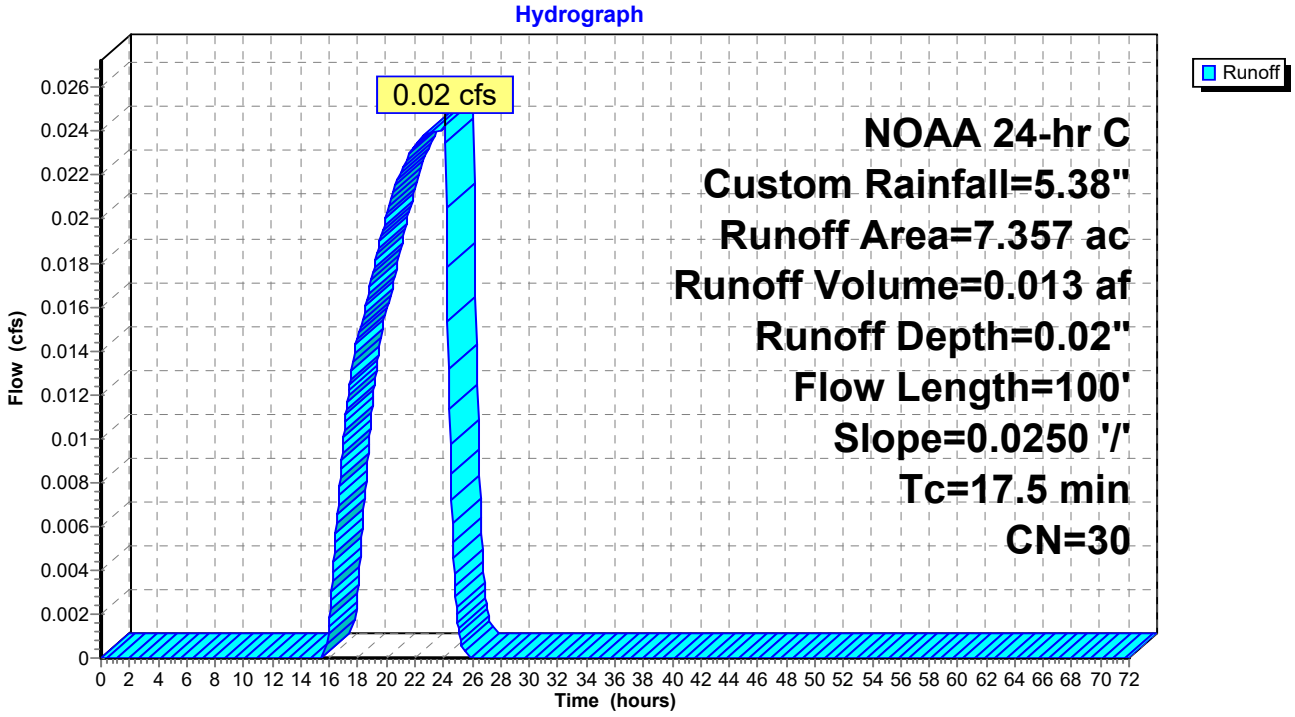
Runoff = 0.02 cfs @ 24.05 hrs, Volume= 0.013 af, Depth= 0.02"
Routed to Pond 3P : Wetlands Depression

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=5.38"

Area (ac)	CN	Description
7.357	30	Woods, Good, HSG A
7.357		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	100	0.0250	0.10		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 4.04"

Subcatchment 2S: Wetlands Depression



Summary for Pond 3P: Wetlands Depression

Inflow Area = 7.357 ac, 0.00% Impervious, Inflow Depth = 0.02" for Custom event
Inflow = 0.02 cfs @ 24.05 hrs, Volume= 0.013 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4L : Total Area to Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.33' @ 26.00 hrs Surf.Area= 2,994 sf Storage= 565 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

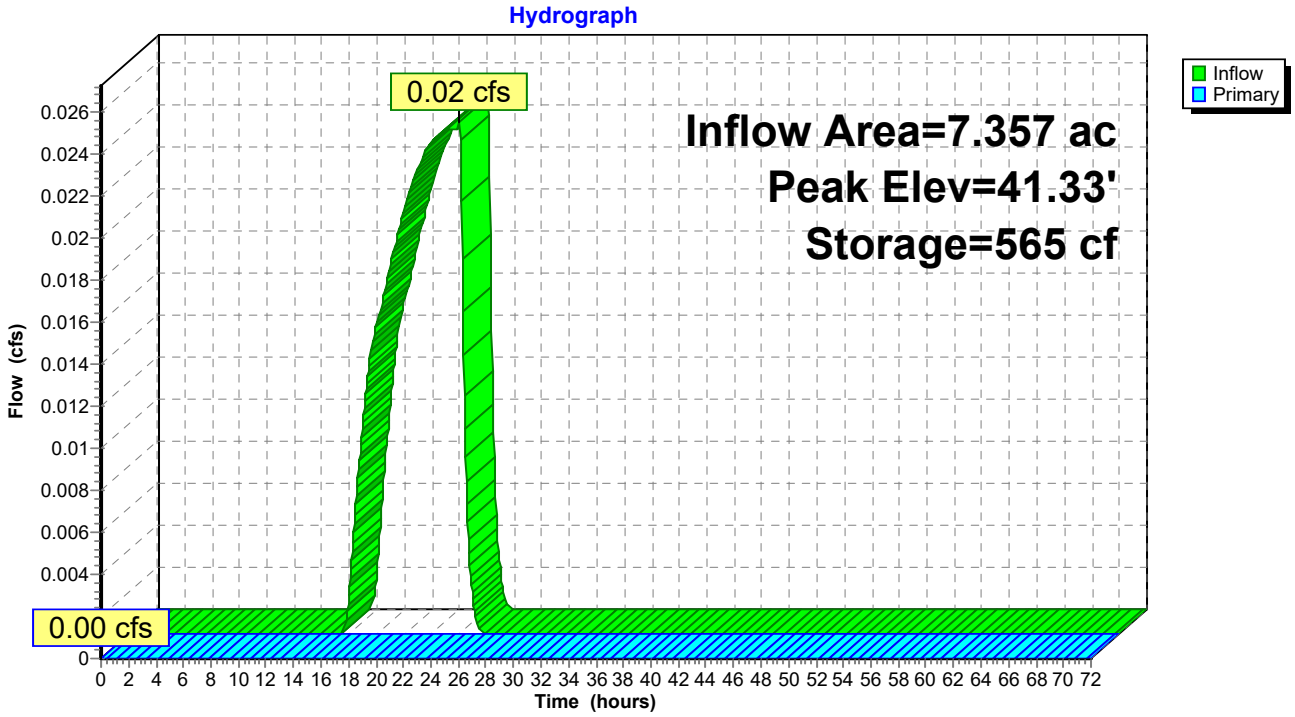
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: Wetlands Depression

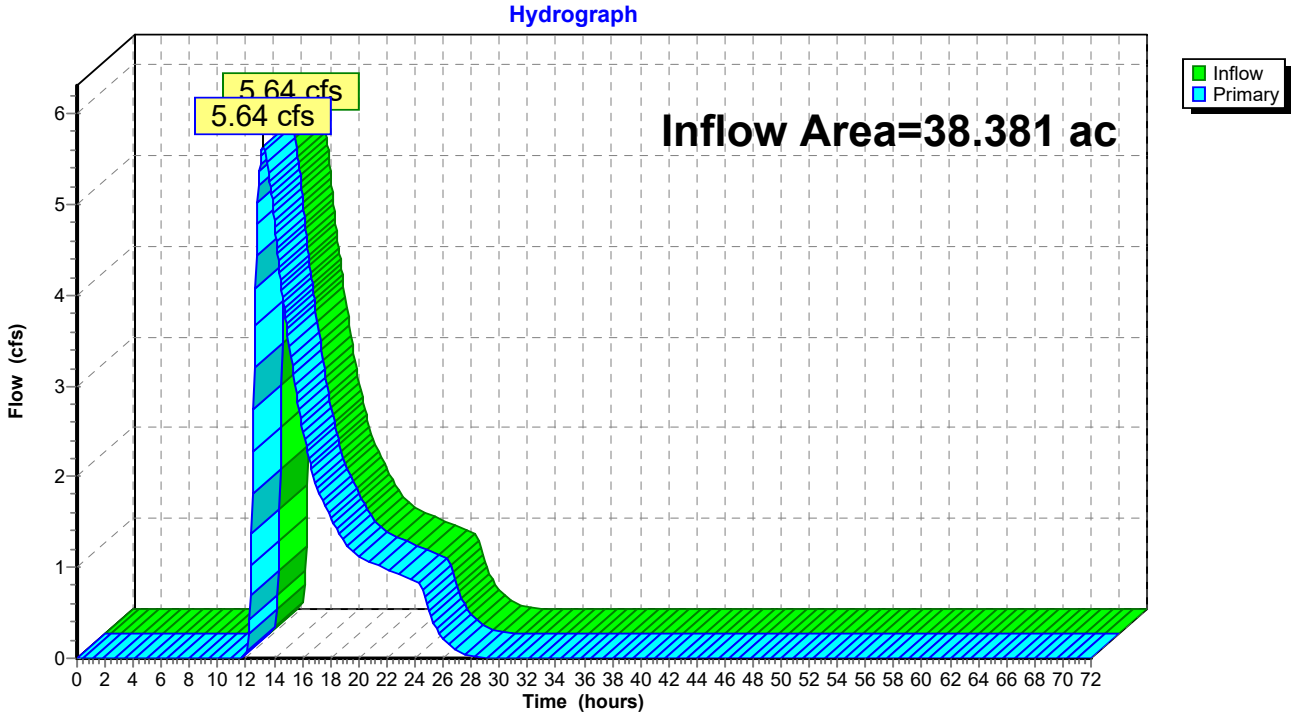


Summary for Link 4L: Total Area to Willis Creek

Inflow Area = 38.381 ac, 0.00% Impervious, Inflow Depth = 0.69" for Custom event
Inflow = 5.64 cfs @ 13.21 hrs, Volume= 2.207 af
Primary = 5.64 cfs @ 13.21 hrs, Volume= 2.207 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: Total Area to Willis Creek

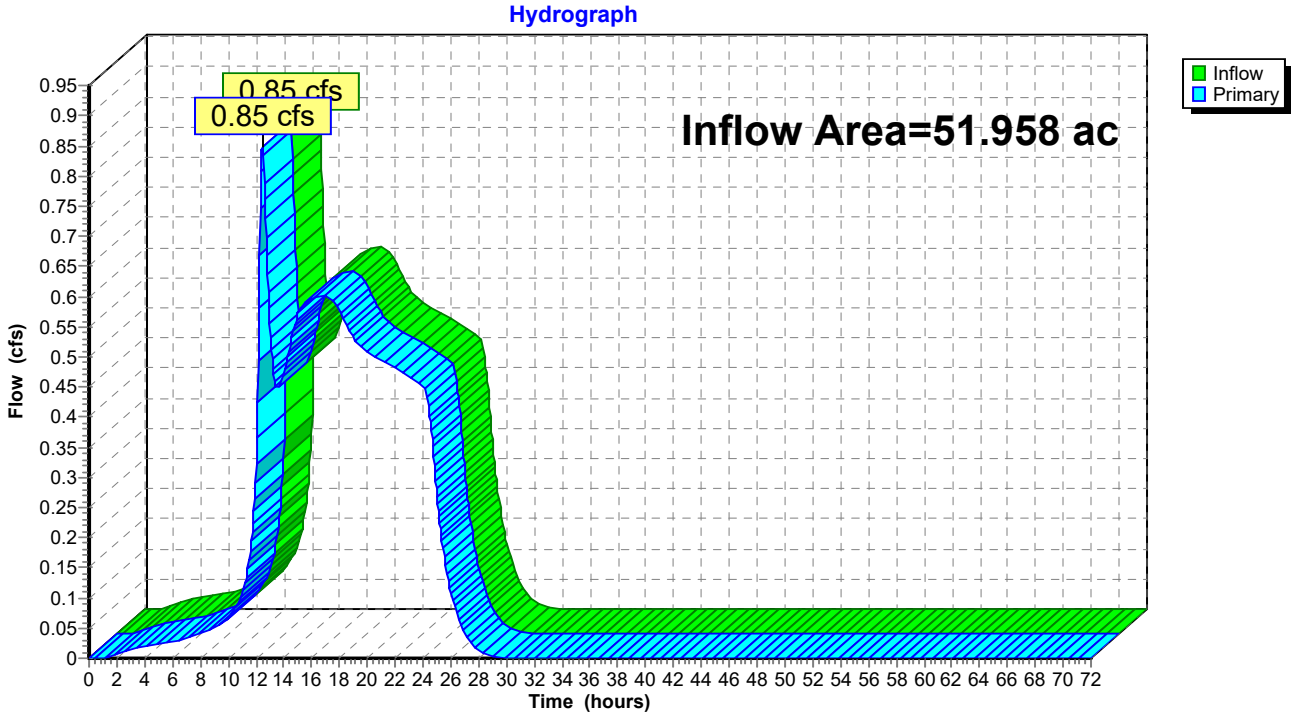


Summary for Link 5L: Total Disturbed Ara to Tuckerton Creek

Inflow Area = 51.958 ac, 0.75% Impervious, Inflow Depth = 0.15" for Custom event
Inflow = 0.85 cfs @ 12.44 hrs, Volume= 0.629 af
Primary = 0.85 cfs @ 12.44 hrs, Volume= 0.629 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5L: Total Disturbed Ara to Tuckerton Creek



Summary for Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek

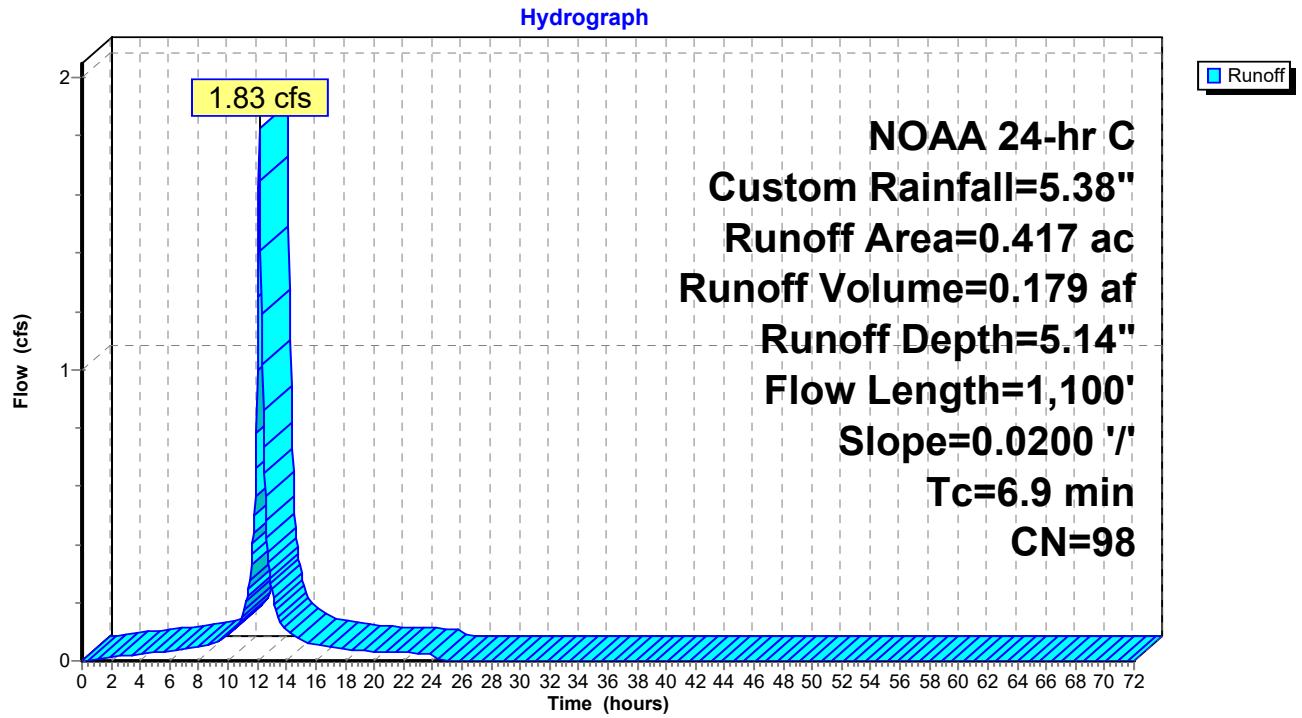
Runoff = 1.83 cfs @ 12.15 hrs, Volume= 0.179 af, Depth= 5.14"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.417	98	Half Width
	0.417		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0200	1.55		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
5.8	1,000	0.0200	2.87		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
6.9	1,100	Total			

Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek



Summary for Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious

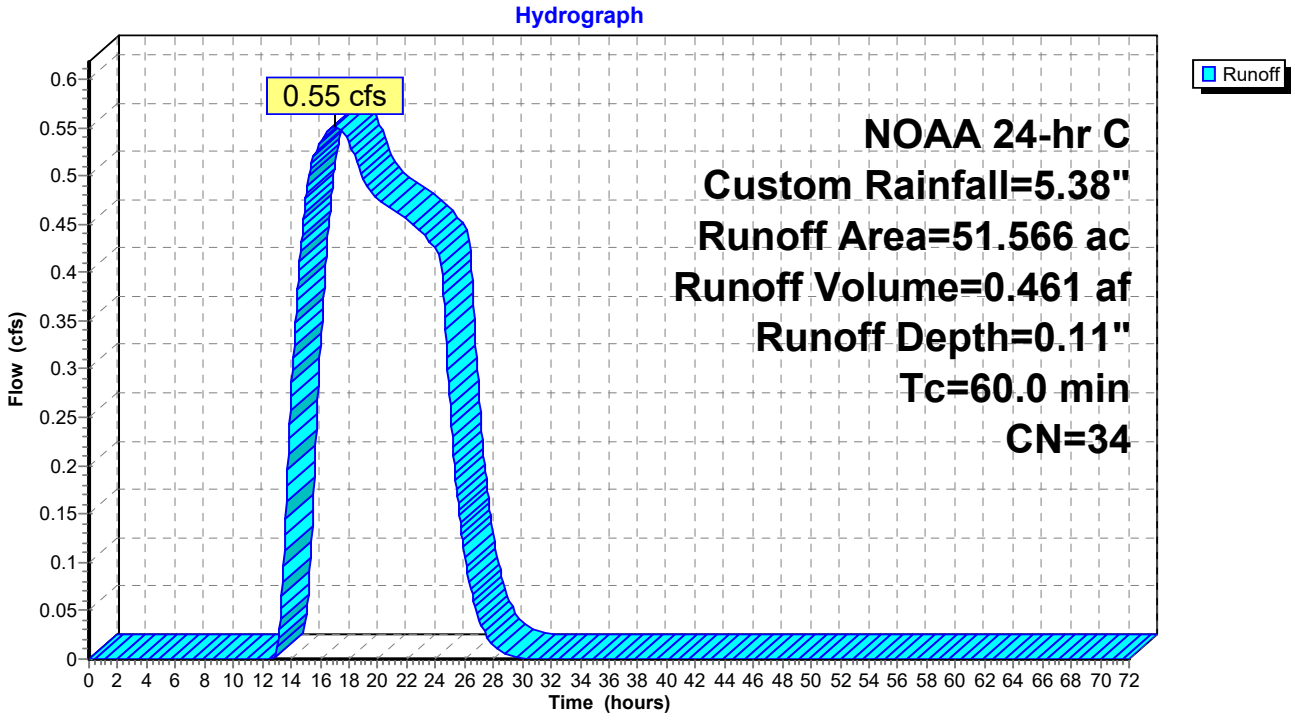
Runoff = 0.55 cfs @ 17.03 hrs, Volume= 0.461 af, Depth= 0.11"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=5.38"

Area (ac)	CN	Description
34.075	30	Woods, Good, HSG A
14.231	39	>75% Grass cover, Good, HSG A
3.260	55	Woods, Good, HSG B
51.566	34	Weighted Average
51.566		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious



Summary for Subcatchment 7S: Undisturbed Area to Tuckerton Creek

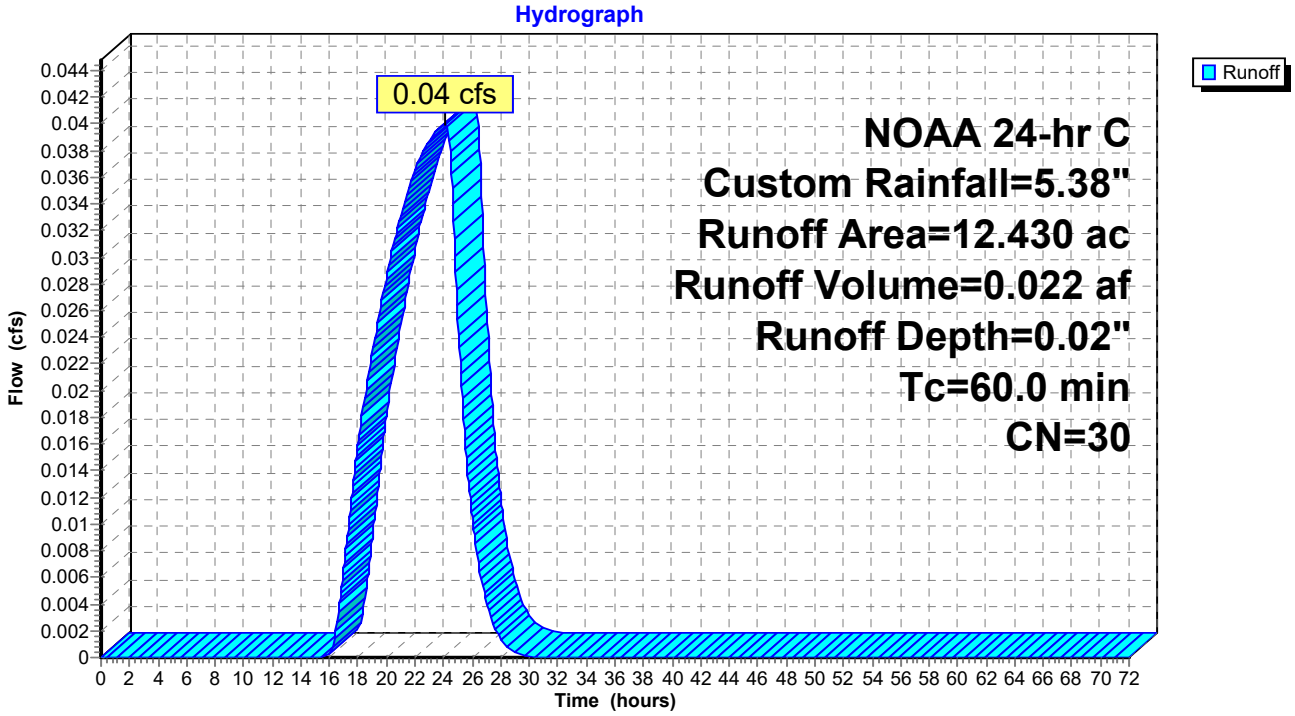
Runoff = 0.04 cfs @ 24.13 hrs, Volume= 0.022 af, Depth= 0.02"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=5.38"

Area (ac)	CN	Description
12.430	30	Woods, Good, HSG A
12.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 7S: Undisturbed Area to Tuckerton Creek



Summary for Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious

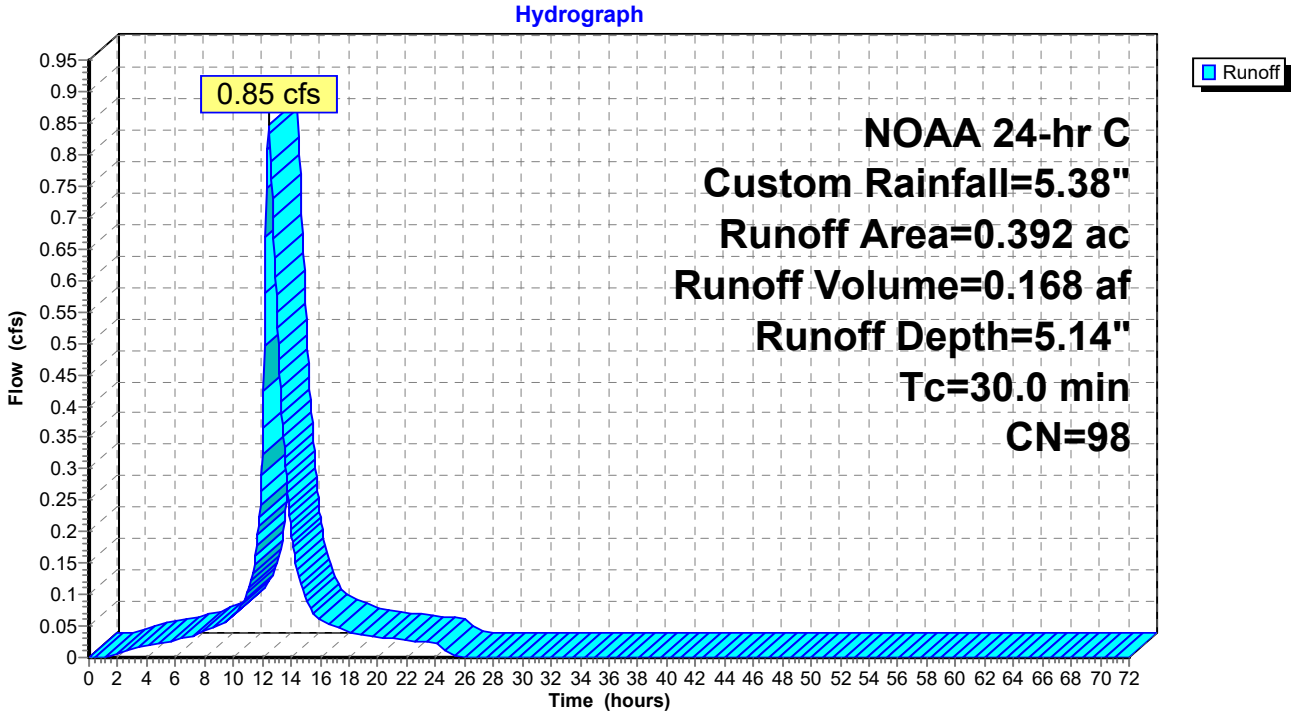
Runoff = 0.85 cfs @ 12.44 hrs, Volume= 0.168 af, Depth= 5.14"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.392	98	Impervious
	0.392		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious





Subcat Reach Pond Link

Routing Diagram for Existing Conditions
Prepared by ARH Associates, Printed 4/28/2025
HydroCAD® 10.10-7b s/n 01689 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	C	Default	24.00	1	6.34	2

Summary for Subcatchment 1S: Disrurbed Area to Willis Creek

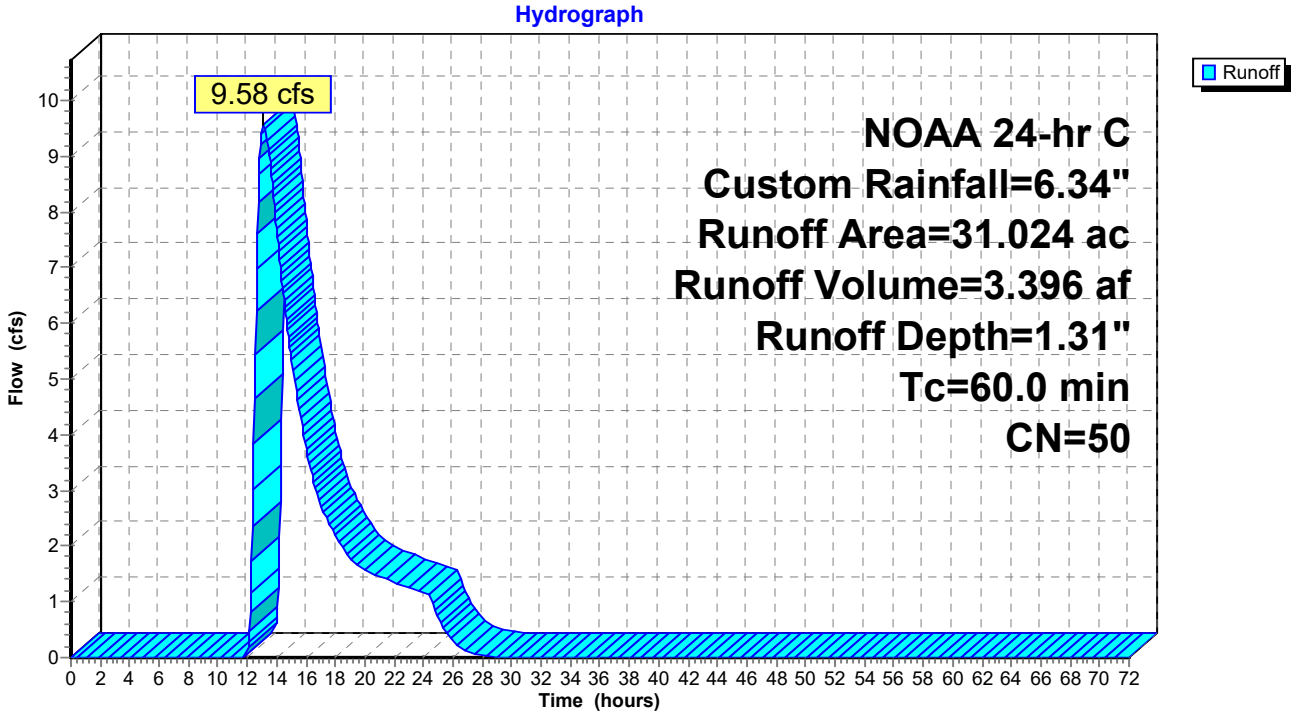
Runoff = 9.58 cfs @ 13.10 hrs, Volume= 3.396 af, Depth= 1.31"
Routed to Link 4L : Total Area to Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=6.34"

Area (ac)	CN	Description
9.133	77	Woods, Good, HSG D
14.020	30	Woods, Good, HSG A
4.977	39	>75% Grass cover, Good, HSG A
2.894	80	>75% Grass cover, Good, HSG D
31.024	50	Weighted Average
31.024		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 1S: Disrurbed Area to Willis Creek



Summary for Subcatchment 2S: Wetlands Depression

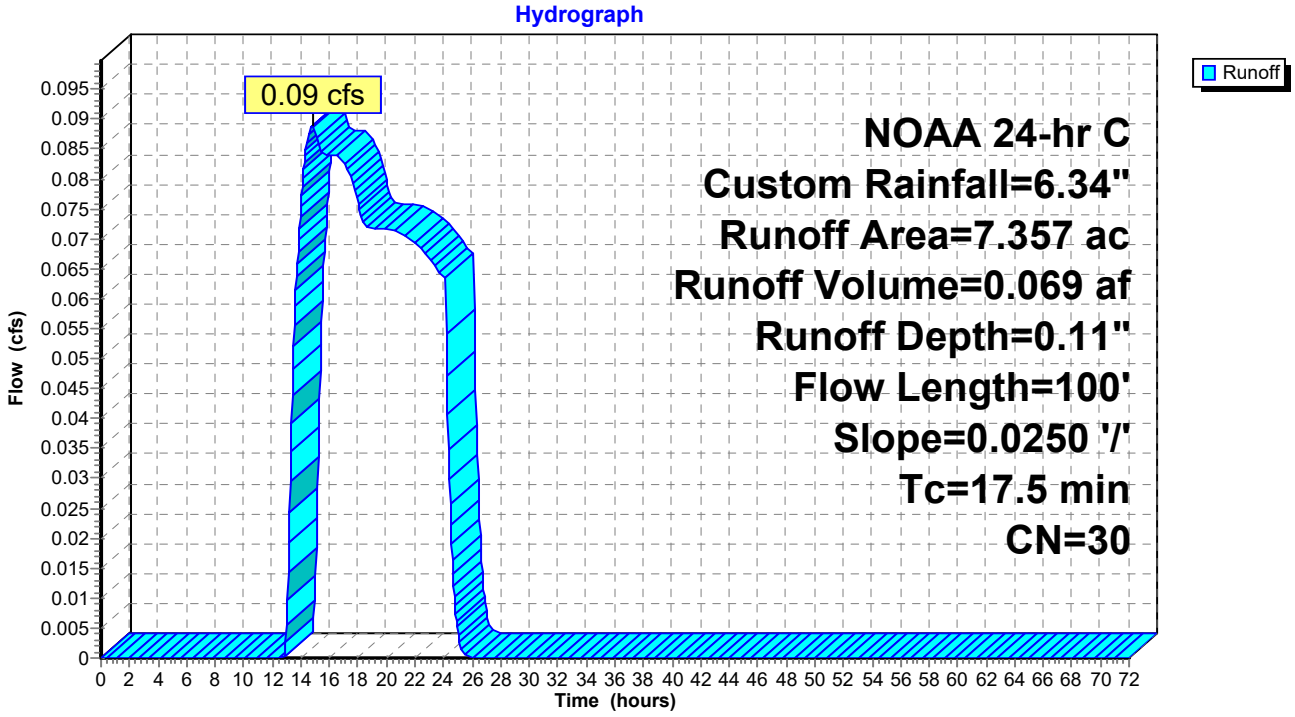
Runoff = 0.09 cfs @ 14.80 hrs, Volume= 0.069 af, Depth= 0.11"
Routed to Pond 3P : Wetlands Depression

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=6.34"

Area (ac)	CN	Description
7.357	30	Woods, Good, HSG A
7.357		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	100	0.0250	0.10		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 4.04"

Subcatchment 2S: Wetlands Depression



Summary for Pond 3P: Wetlands Depression

Inflow Area = 7.357 ac, 0.00% Impervious, Inflow Depth = 0.11" for Custom event
Inflow = 0.09 cfs @ 14.80 hrs, Volume= 0.069 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4L : Total Area to Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.77' @ 26.00 hrs Surf.Area= 9,113 sf Storage= 2,990 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

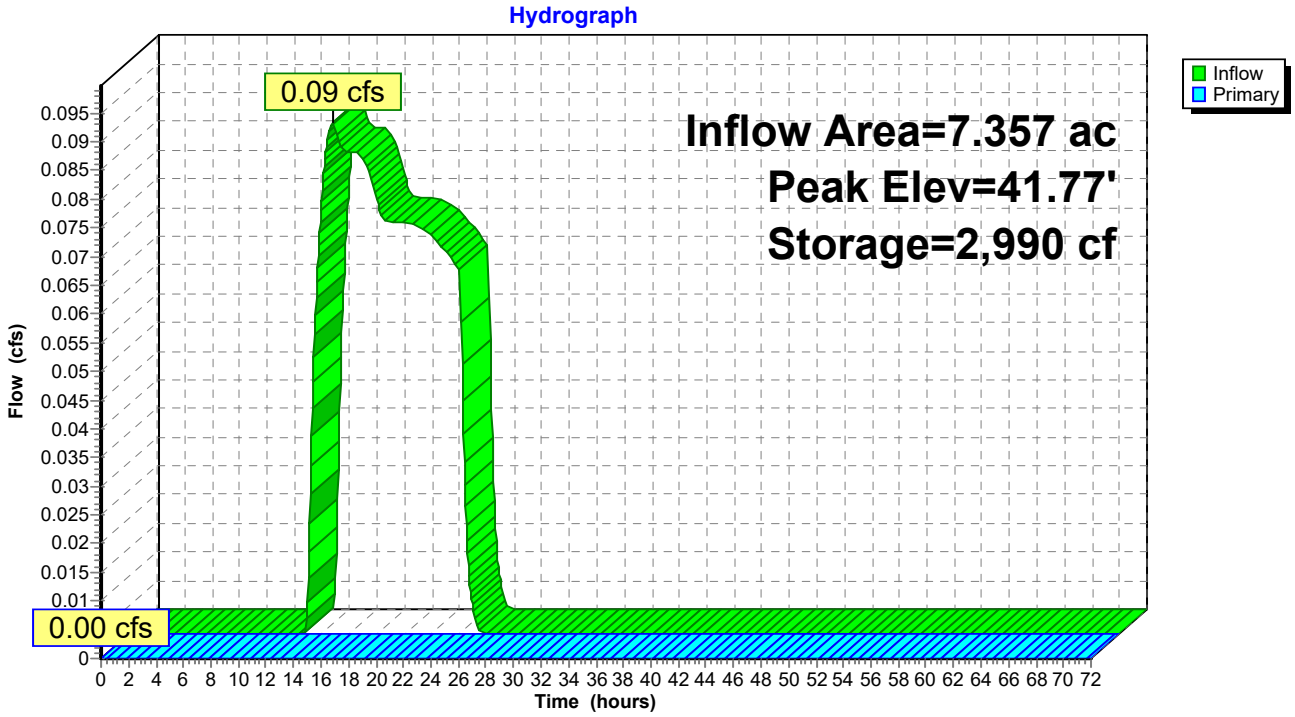
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: Wetlands Depression

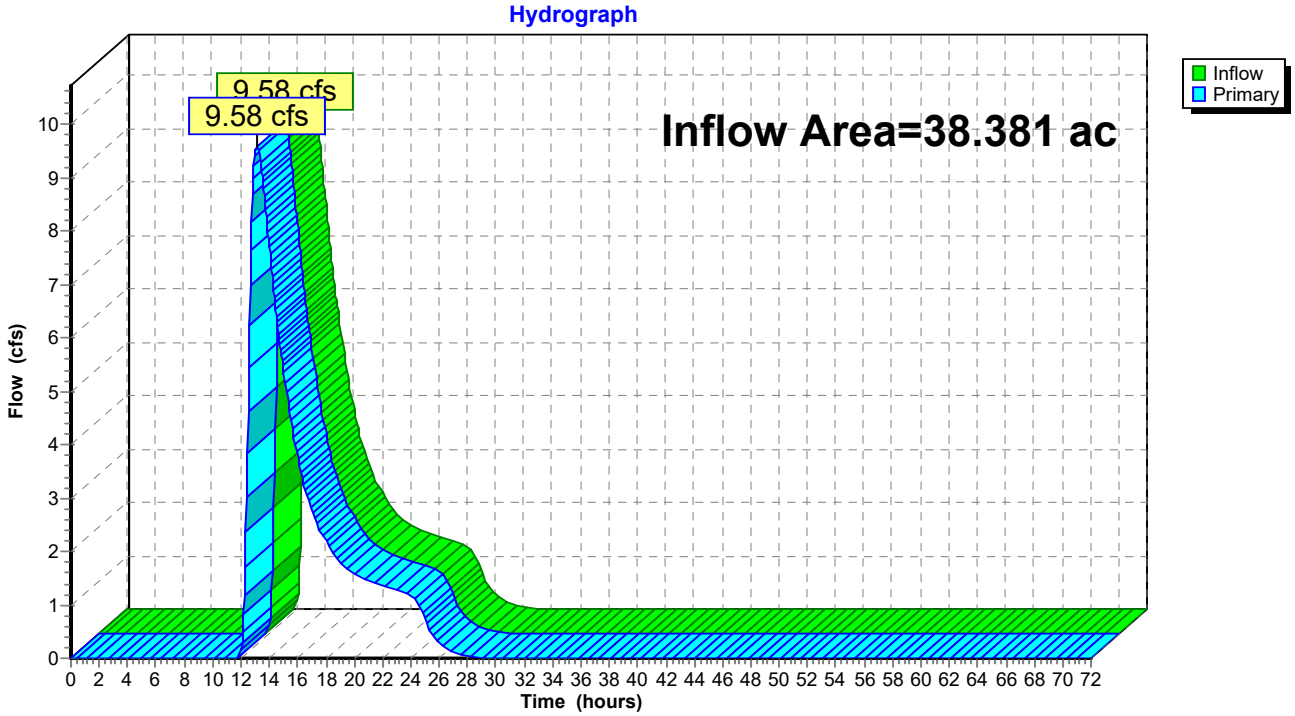


Summary for Link 4L: Total Area to Willis Creek

Inflow Area = 38.381 ac, 0.00% Impervious, Inflow Depth = 1.06" for Custom event
Inflow = 9.58 cfs @ 13.10 hrs, Volume= 3.396 af
Primary = 9.58 cfs @ 13.10 hrs, Volume= 3.396 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: Total Area to Willis Creek

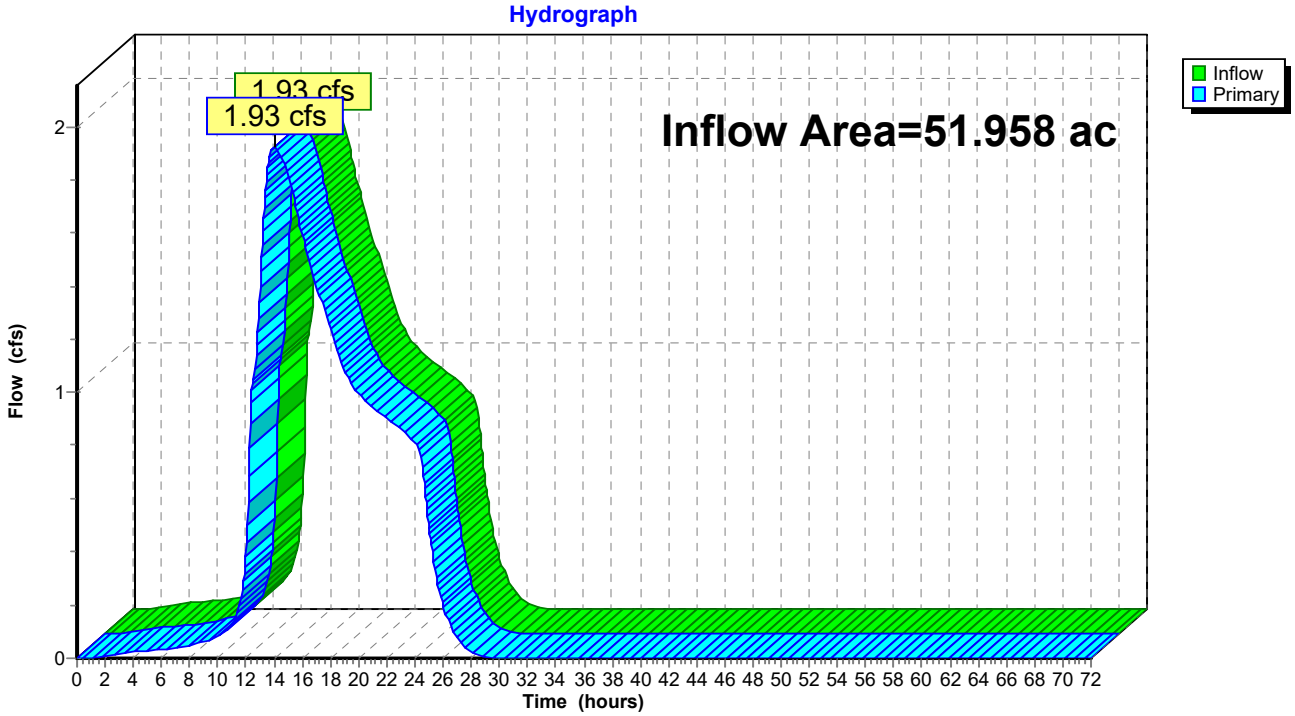


Summary for Link 5L: Total Disturbed Ara to Tuckerton Creek

Inflow Area = 51.958 ac, 0.75% Impervious, Inflow Depth = 0.32" for Custom event
Inflow = 1.93 cfs @ 13.99 hrs, Volume= 1.386 af
Primary = 1.93 cfs @ 13.99 hrs, Volume= 1.386 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5L: Total Disturbed Ara to Tuckerton Creek



Summary for Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek

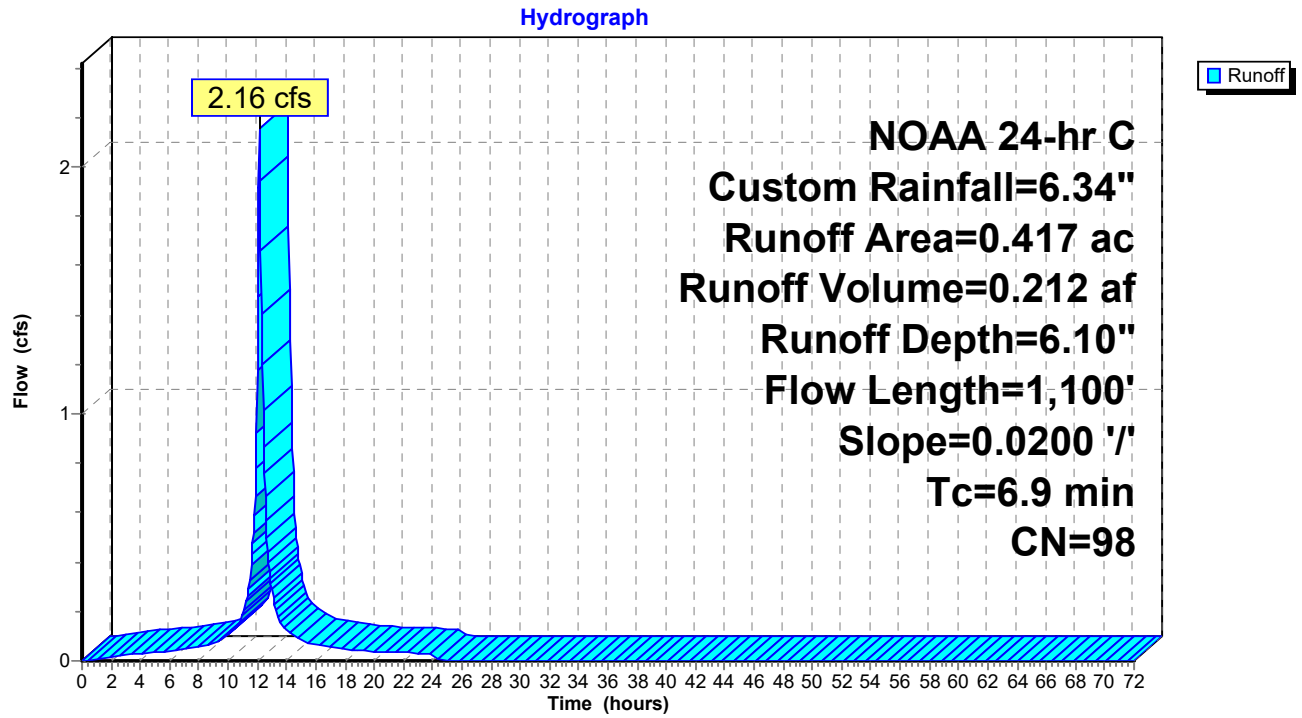
Runoff = 2.16 cfs @ 12.15 hrs, Volume= 0.212 af, Depth= 6.10"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.417	98	Half Width
	0.417		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0200	1.55		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
5.8	1,000	0.0200	2.87		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
6.9	1,100	Total			

Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek



Summary for Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious

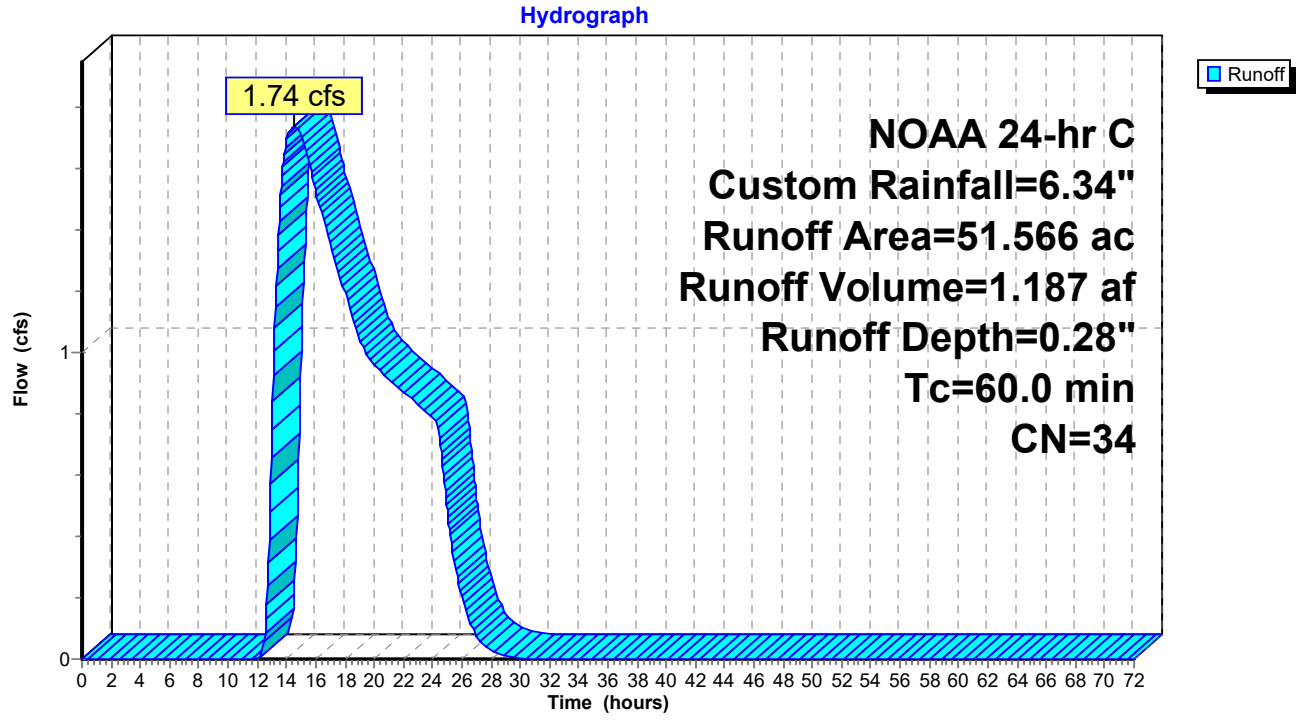
Runoff = 1.74 cfs @ 14.57 hrs, Volume= 1.187 af, Depth= 0.28"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=6.34"

Area (ac)	CN	Description
34.075	30	Woods, Good, HSG A
14.231	39	>75% Grass cover, Good, HSG A
3.260	55	Woods, Good, HSG B
51.566	34	Weighted Average
51.566		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious



Summary for Subcatchment 7S: Undisturbed Area to Tuckerton Creek

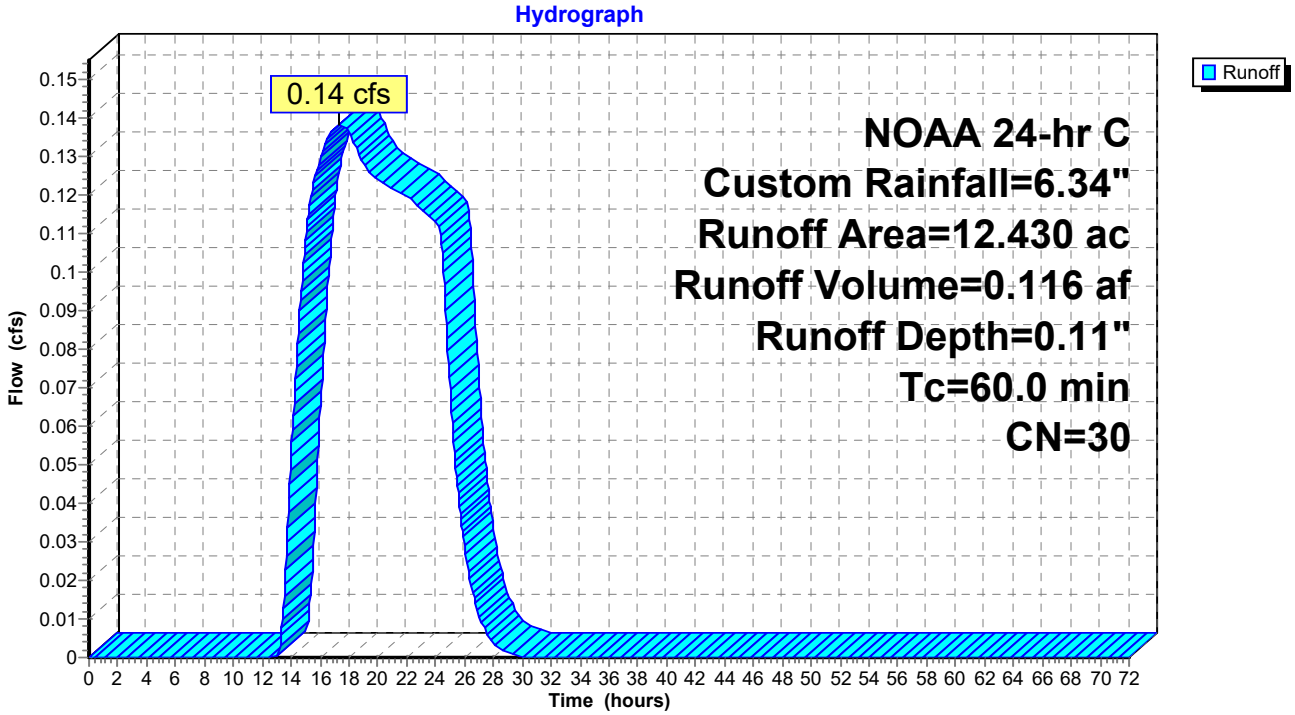
Runoff = 0.14 cfs @ 17.35 hrs, Volume= 0.116 af, Depth= 0.11"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=6.34"

Area (ac)	CN	Description
12.430	30	Woods, Good, HSG A
12.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 7S: Undisturbed Area to Tuckerton Creek



Summary for Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious

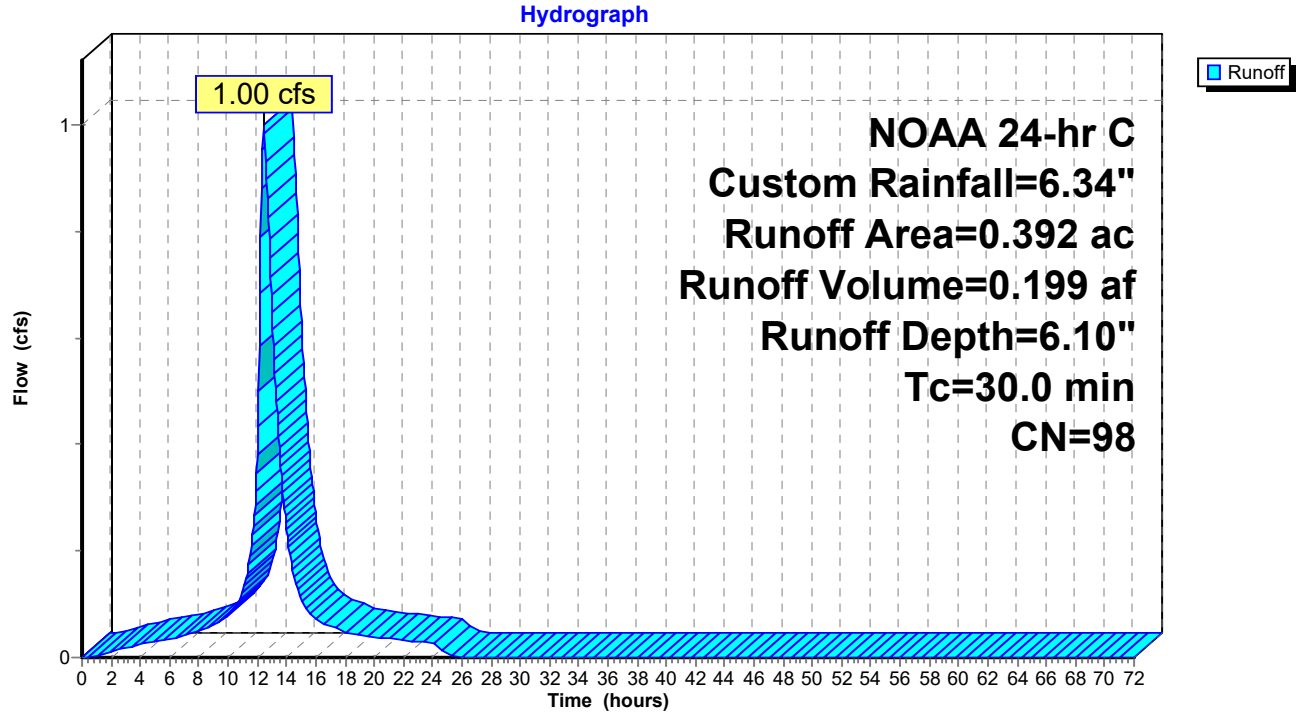
Runoff = 1.00 cfs @ 12.44 hrs, Volume= 0.199 af, Depth= 6.10"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.392	98	Impervious
	0.392		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious





Subcat Reach Pond Link

Routing Diagram for Existing Conditions
Prepared by ARH Associates, Printed 4/28/2025
HydroCAD® 10.10-7b s/n 01689 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	C	Default	24.00	1	4.04	2

Summary for Subcatchment 1S: Disrurbed Area to Willis Creek

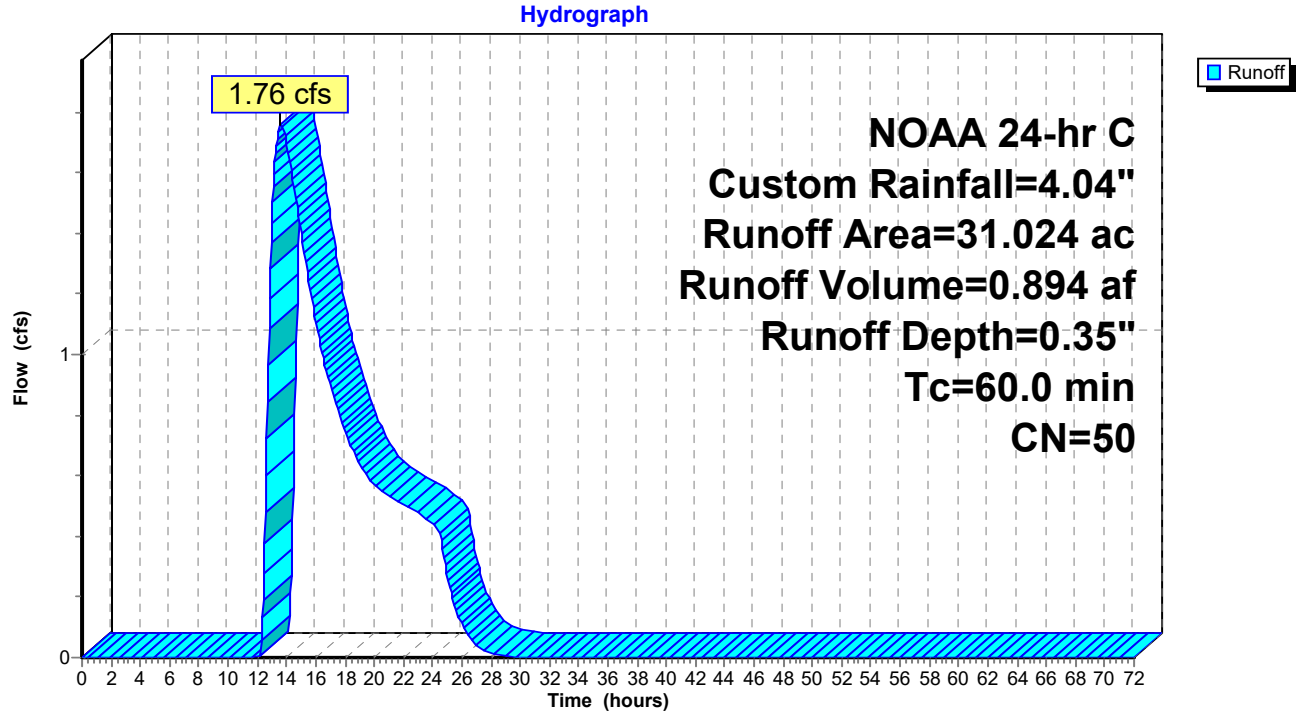
Runoff = 1.76 cfs @ 13.62 hrs, Volume= 0.894 af, Depth= 0.35"
Routed to Link 4L : Total Area to Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

Area (ac)	CN	Description
9.133	77	Woods, Good, HSG D
14.020	30	Woods, Good, HSG A
4.977	39	>75% Grass cover, Good, HSG A
2.894	80	>75% Grass cover, Good, HSG D
31.024	50	Weighted Average
31.024		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 1S: Disrurbed Area to Willis Creek



Summary for Subcatchment 2S: Wetlands Depression

[45] Hint: Runoff=Zero

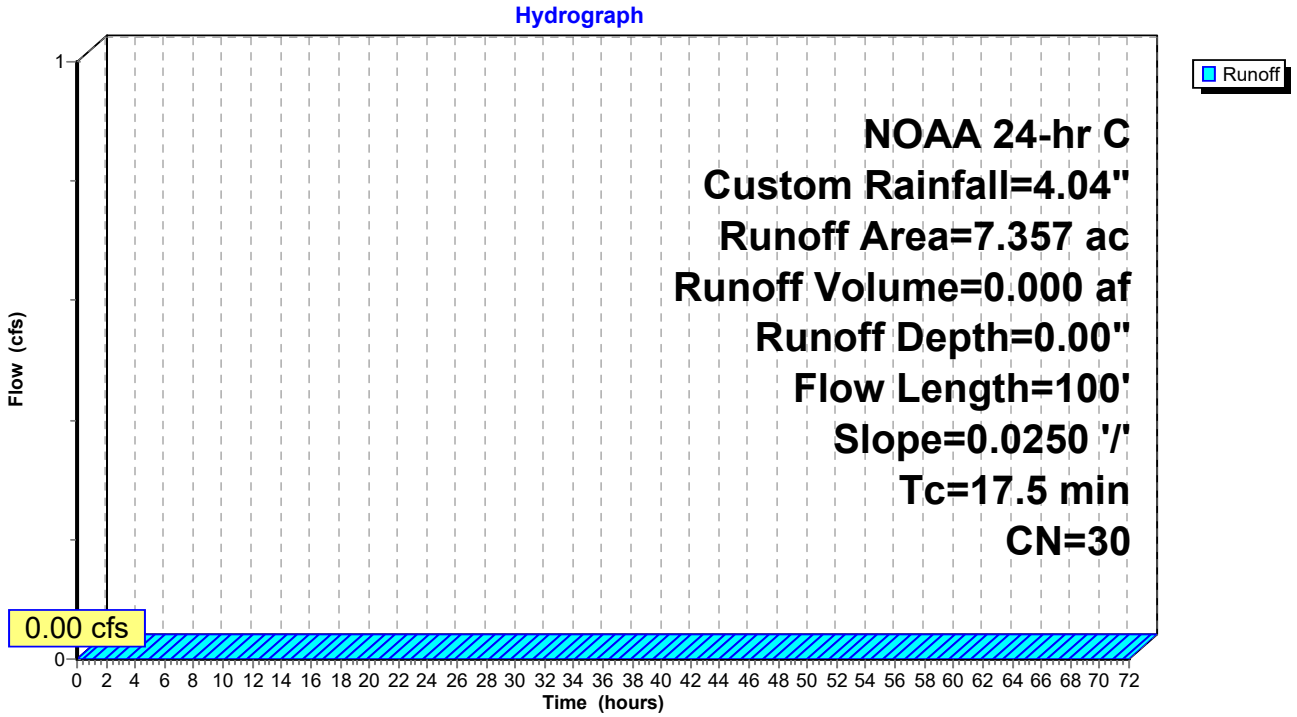
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 3P : Wetlands Depression

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

Area (ac)	CN	Description
7.357	30	Woods, Good, HSG A
7.357		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	100	0.0250	0.10		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 4.04"

Subcatchment 2S: Wetlands Depression



Summary for Pond 3P: Wetlands Depression

Inflow Area = 7.357 ac, 0.00% Impervious, Inflow Depth = 0.00" for Custom event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4L : Total Area to Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.00' @ 0.00 hrs Surf.Area= 405 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

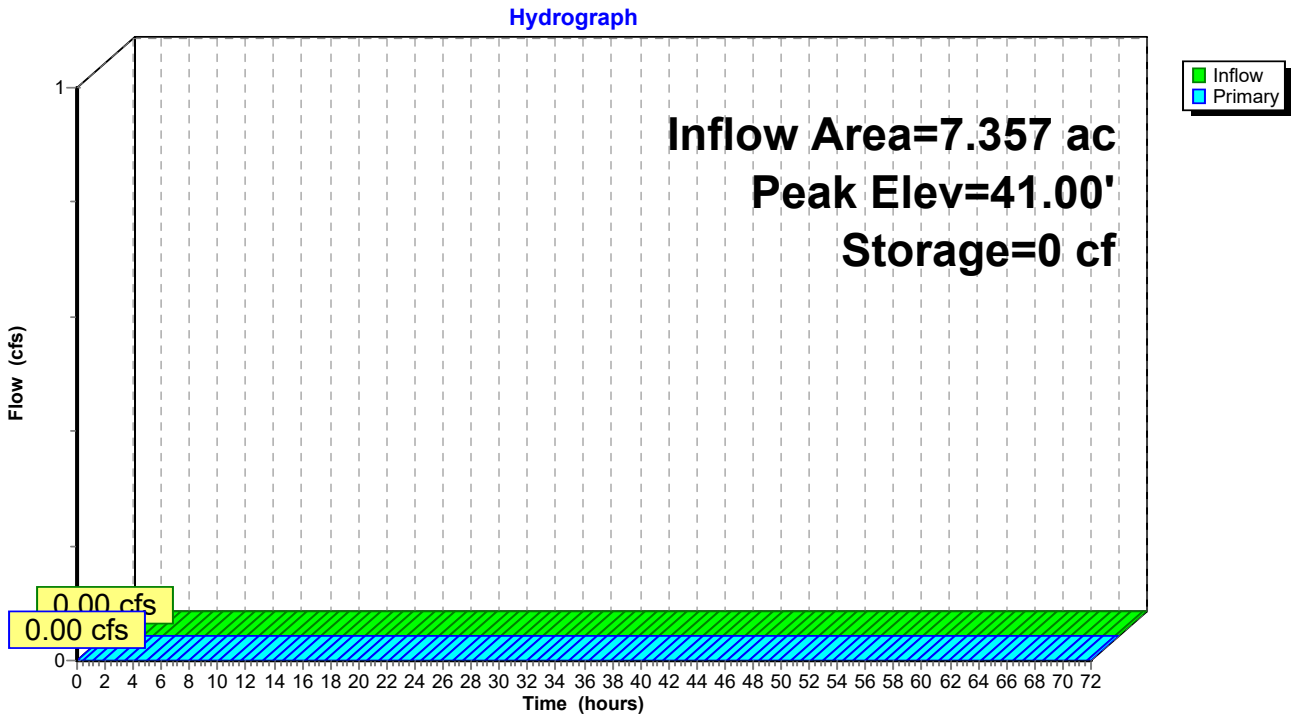
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Wetlands Depression

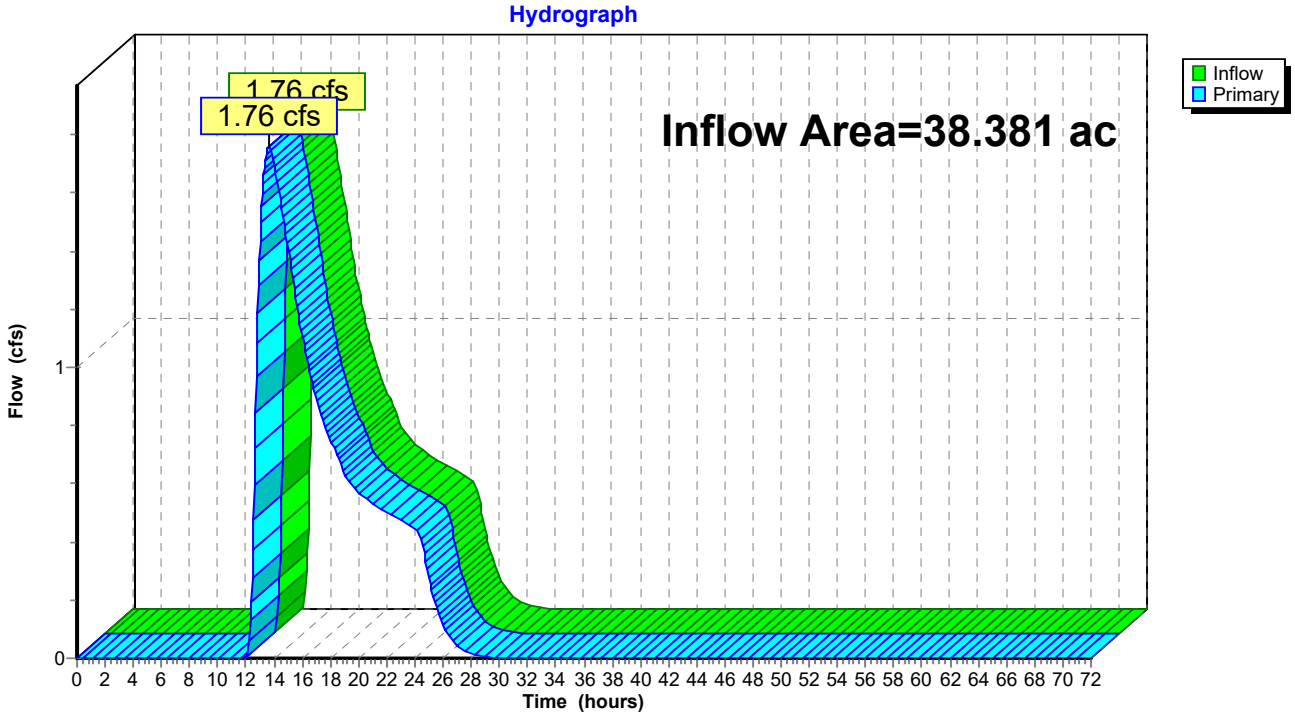


Summary for Link 4L: Total Area to Willis Creek

Inflow Area = 38.381 ac, 0.00% Impervious, Inflow Depth = 0.28" for Custom event
Inflow = 1.76 cfs @ 13.62 hrs, Volume= 0.894 af
Primary = 1.76 cfs @ 13.62 hrs, Volume= 0.894 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: Total Area to Willis Creek

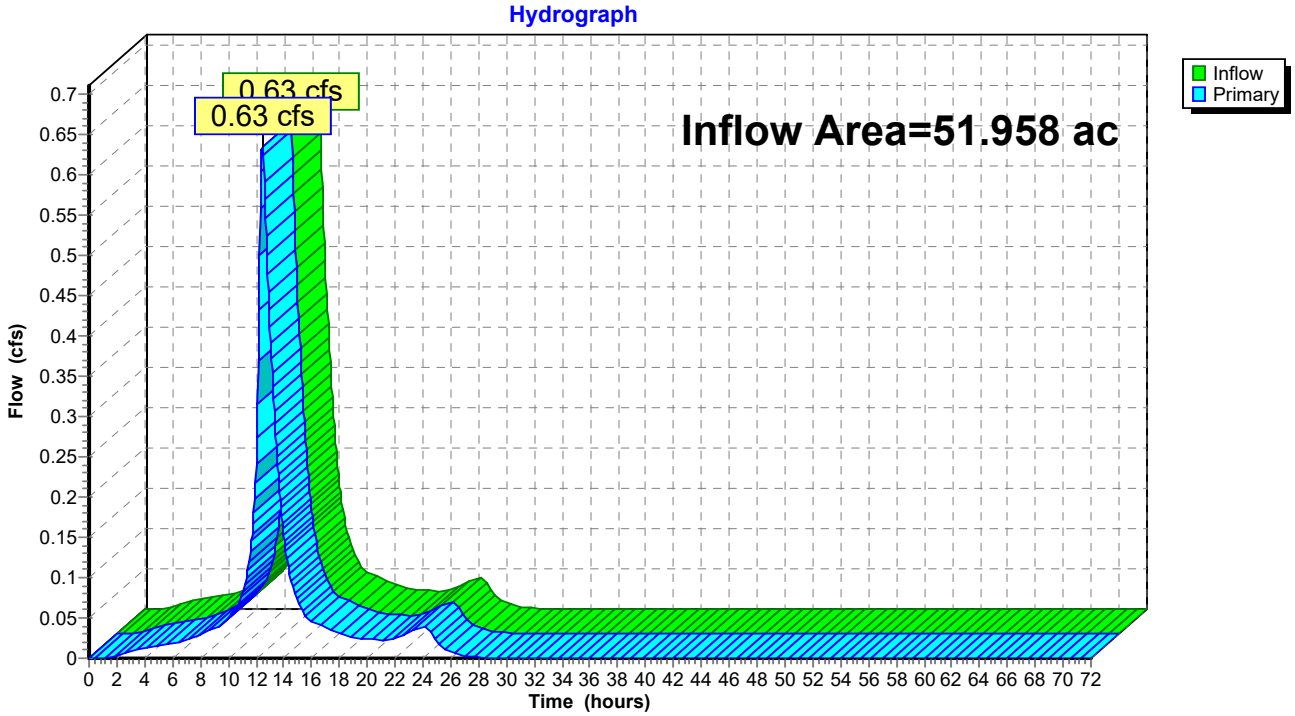


Summary for Link 5L: Total Disturbed Ara to Tuckerton Creek

Inflow Area = 51.958 ac, 0.75% Impervious, Inflow Depth = 0.03" for Custom event
Inflow = 0.63 cfs @ 12.44 hrs, Volume= 0.130 af
Primary = 0.63 cfs @ 12.44 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5L: Total Disturbed Ara to Tuckerton Creek



Summary for Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek

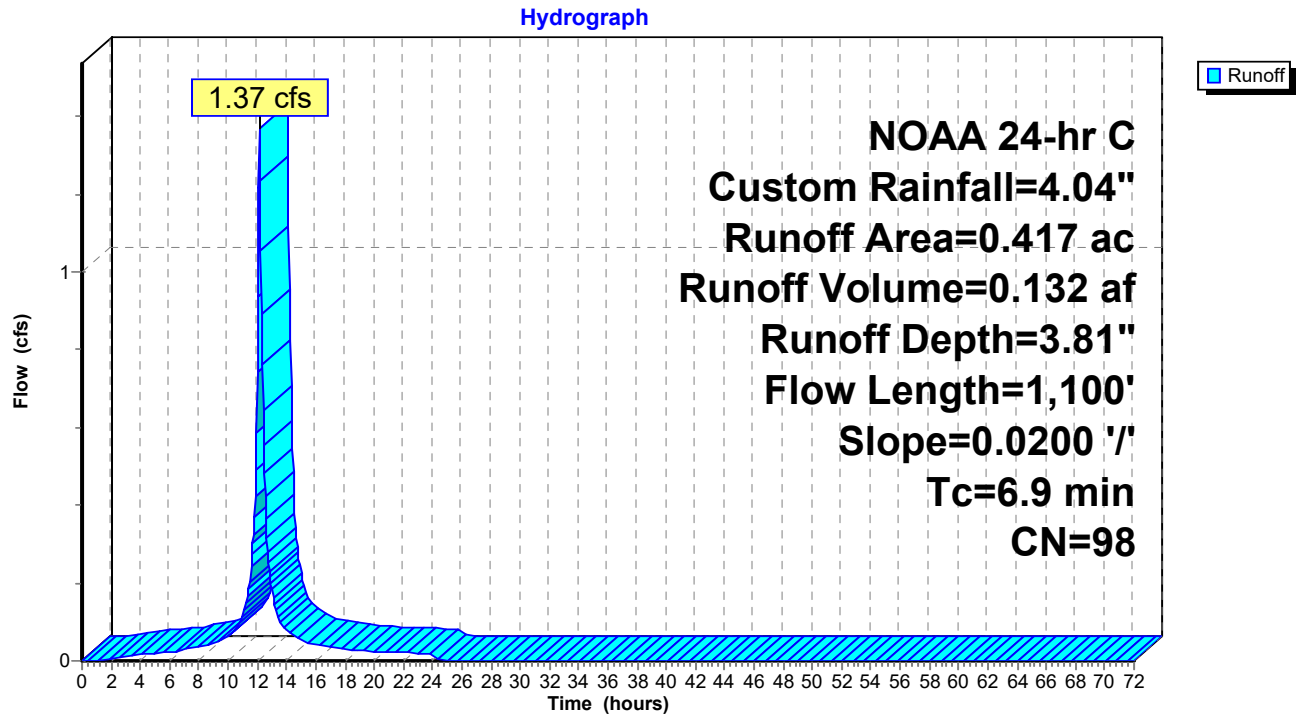
Runoff = 1.37 cfs @ 12.15 hrs, Volume= 0.132 af, Depth= 3.81"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.417	98	Half Width
	0.417		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0200	1.55		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
5.8	1,000	0.0200	2.87		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
6.9	1,100	Total			

Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek



Summary for Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious

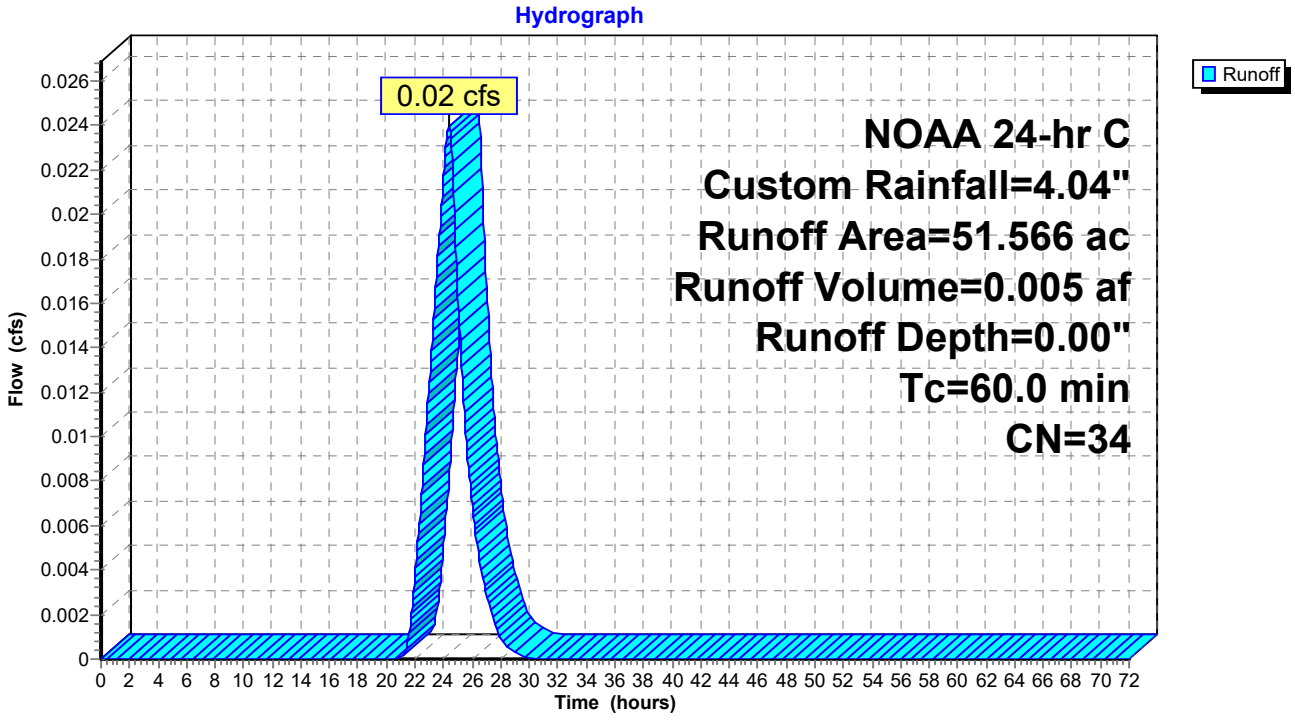
Runoff = 0.02 cfs @ 24.38 hrs, Volume= 0.005 af, Depth= 0.00"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

Area (ac)	CN	Description
34.075	30	Woods, Good, HSG A
14.231	39	>75% Grass cover, Good, HSG A
3.260	55	Woods, Good, HSG B
51.566	34	Weighted Average
51.566		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious



Summary for Subcatchment 7S: Undisturbed Area to Tuckerton Creek

[45] Hint: Runoff=Zero

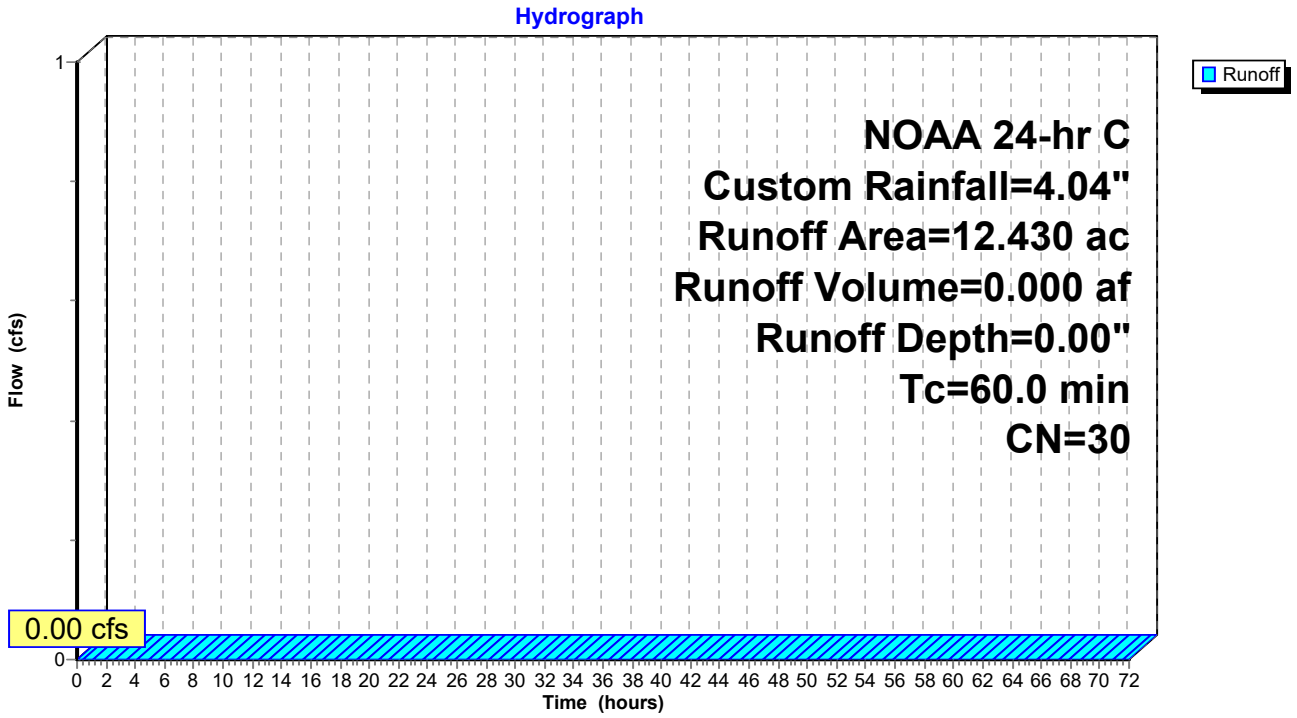
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

Area (ac)	CN	Description
12.430	30	Woods, Good, HSG A
12.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 7S: Undisturbed Area to Tuckerton Creek



Summary for Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious

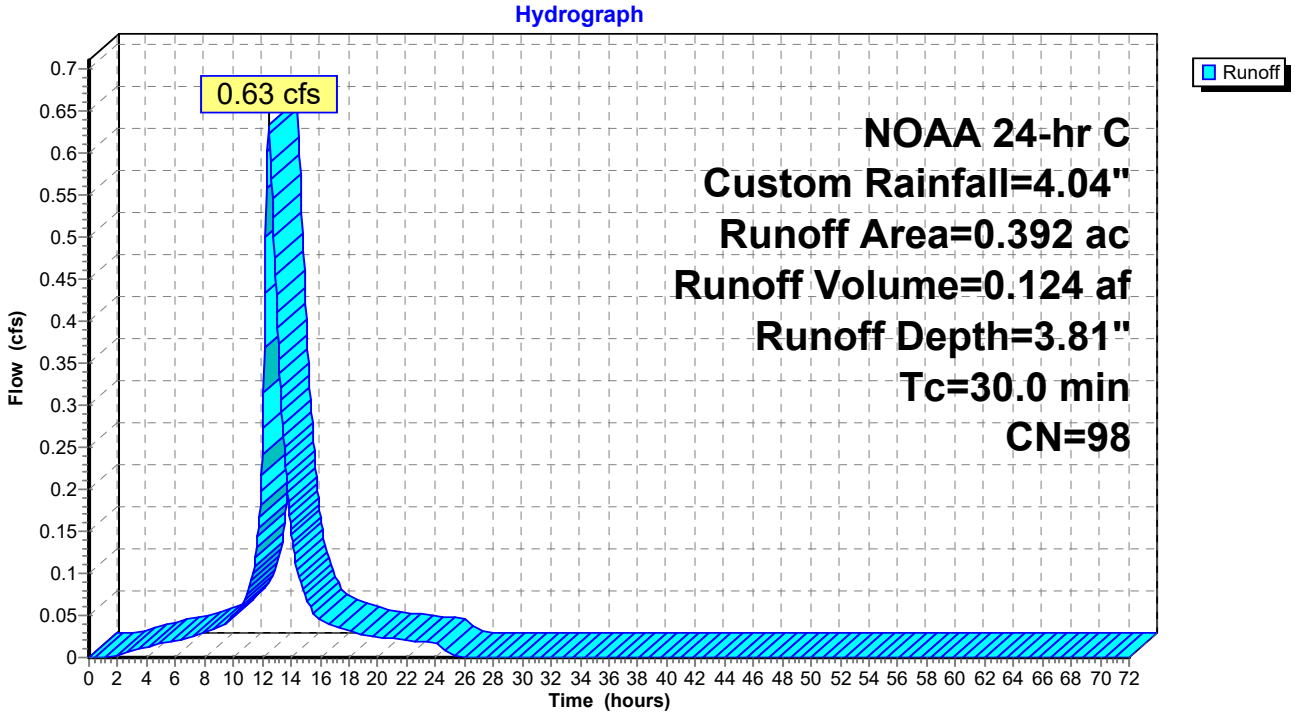
Runoff = 0.63 cfs @ 12.44 hrs, Volume= 0.124 af, Depth= 3.81"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.392	98	Impervious
	0.392		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious





Subcat Reach Pond Link

Routing Diagram for Existing Conditions
Prepared by ARH Associates, Printed 4/28/2025
HydroCAD® 10.10-7b s/n 01689 © 2022 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	C	Default	24.00	1	11.41	2

Summary for Subcatchment 1S: Disrurbed Area to Willis Creek

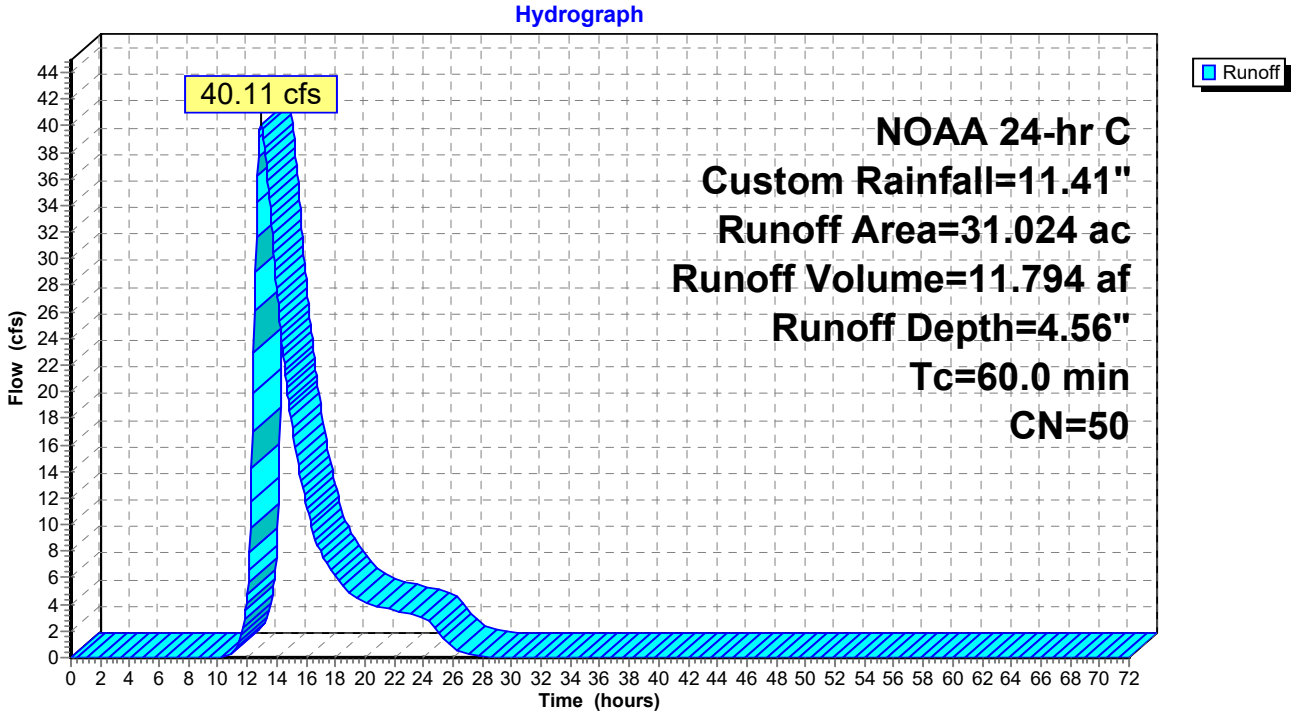
Runoff = 40.11 cfs @ 12.95 hrs, Volume= 11.794 af, Depth= 4.56"
Routed to Link 4L : Total Area to Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=11.41"

Area (ac)	CN	Description
9.133	77	Woods, Good, HSG D
14.020	30	Woods, Good, HSG A
4.977	39	>75% Grass cover, Good, HSG A
2.894	80	>75% Grass cover, Good, HSG D
31.024	50	Weighted Average
31.024		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 1S: Disrurbed Area to Willis Creek



Summary for Subcatchment 2S: Wetlands Depression

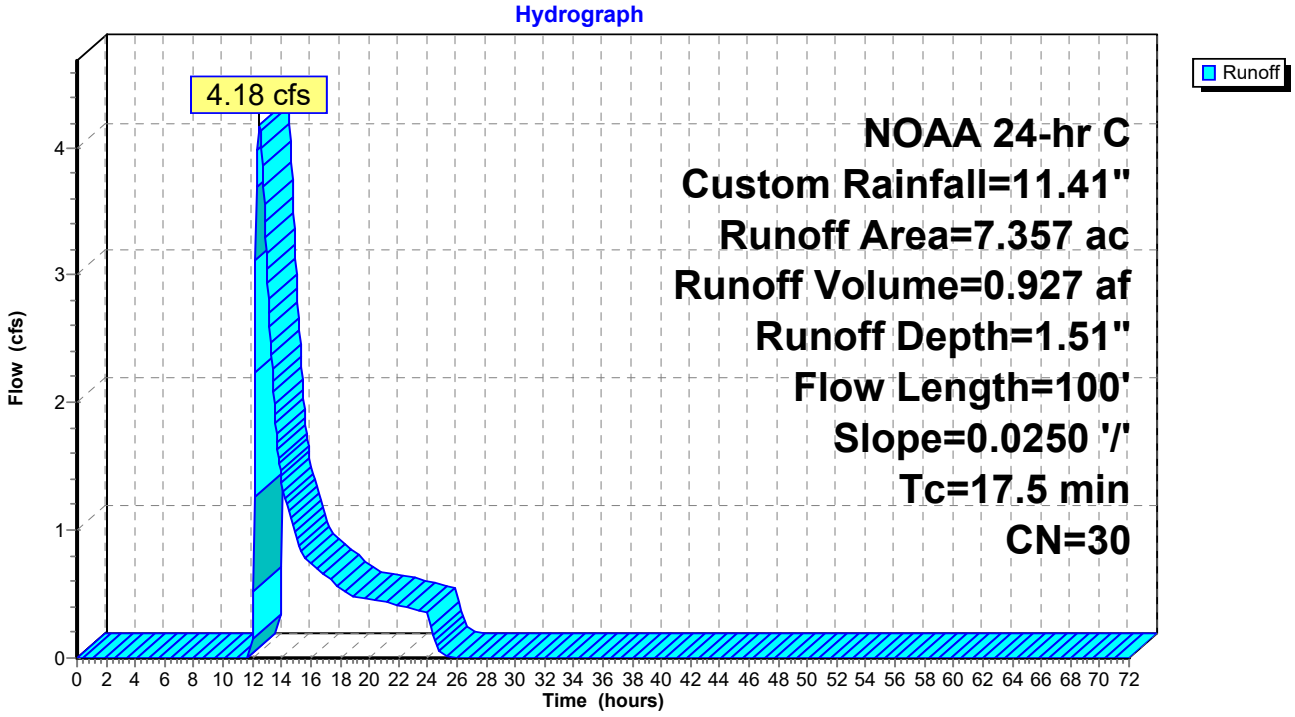
Runoff = 4.18 cfs @ 12.47 hrs, Volume= 0.927 af, Depth= 1.51"
Routed to Pond 3P : Wetlands Depression

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=11.41"

Area (ac)	CN	Description
7.357	30	Woods, Good, HSG A
7.357		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	100	0.0250	0.10		**Sheet Flow, A to B** Woods: Light underbrush n= 0.400 P2= 4.04"

Subcatchment 2S: Wetlands Depression



Summary for Pond 3P: Wetlands Depression

Inflow Area = 7.357 ac, 0.00% Impervious, Inflow Depth = 1.51" for Custom event
Inflow = 4.18 cfs @ 12.47 hrs, Volume= 0.927 af
Outflow = 2.18 cfs @ 13.40 hrs, Volume= 0.671 af, Atten= 48%, Lag= 55.6 min
Primary = 2.18 cfs @ 13.40 hrs, Volume= 0.671 af
Routed to Link 4L : Total Area to Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 42.36' @ 13.40 hrs Surf.Area= 26,569 sf Storage= 12,791 cf

Plug-Flow detention time= 204.1 min calculated for 0.671 af (72% of inflow)
Center-of-Mass det. time= 90.0 min (1,034.3 - 944.4)

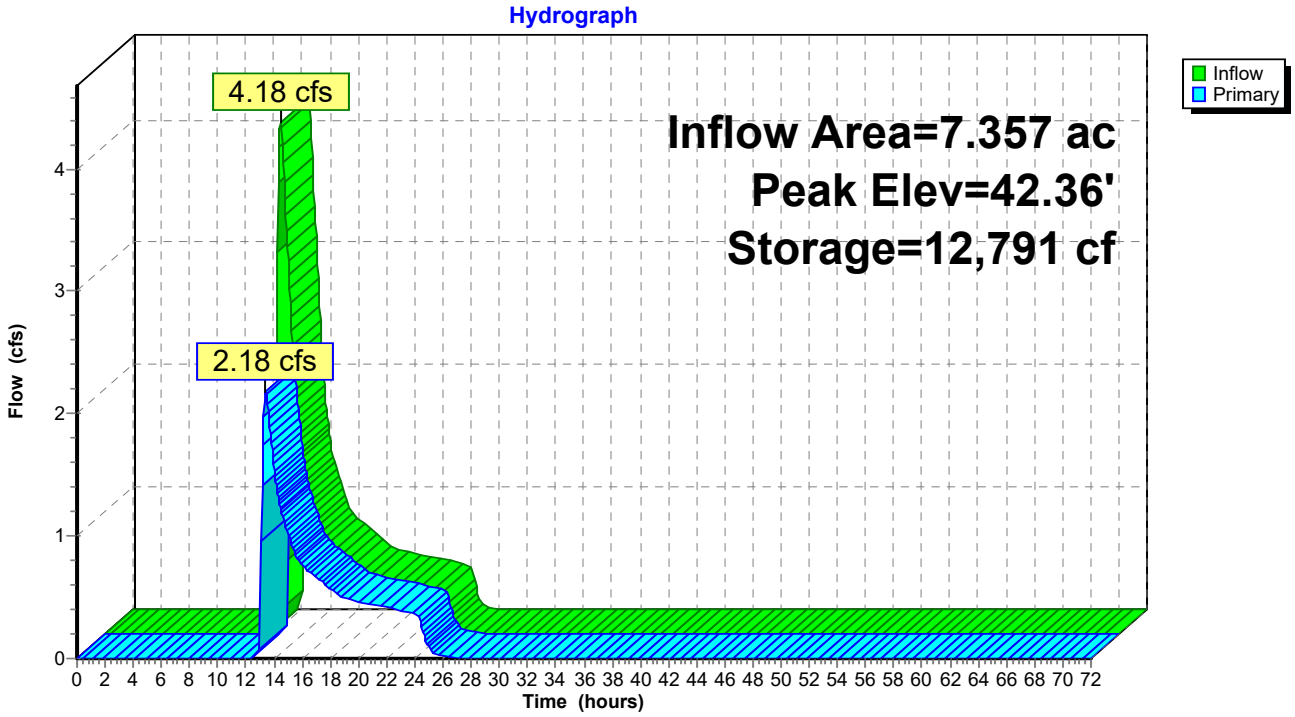
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.17 cfs @ 13.40 hrs HW=42.36' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.17 cfs @ 0.68 fps)

Pond 3P: Wetlands Depression

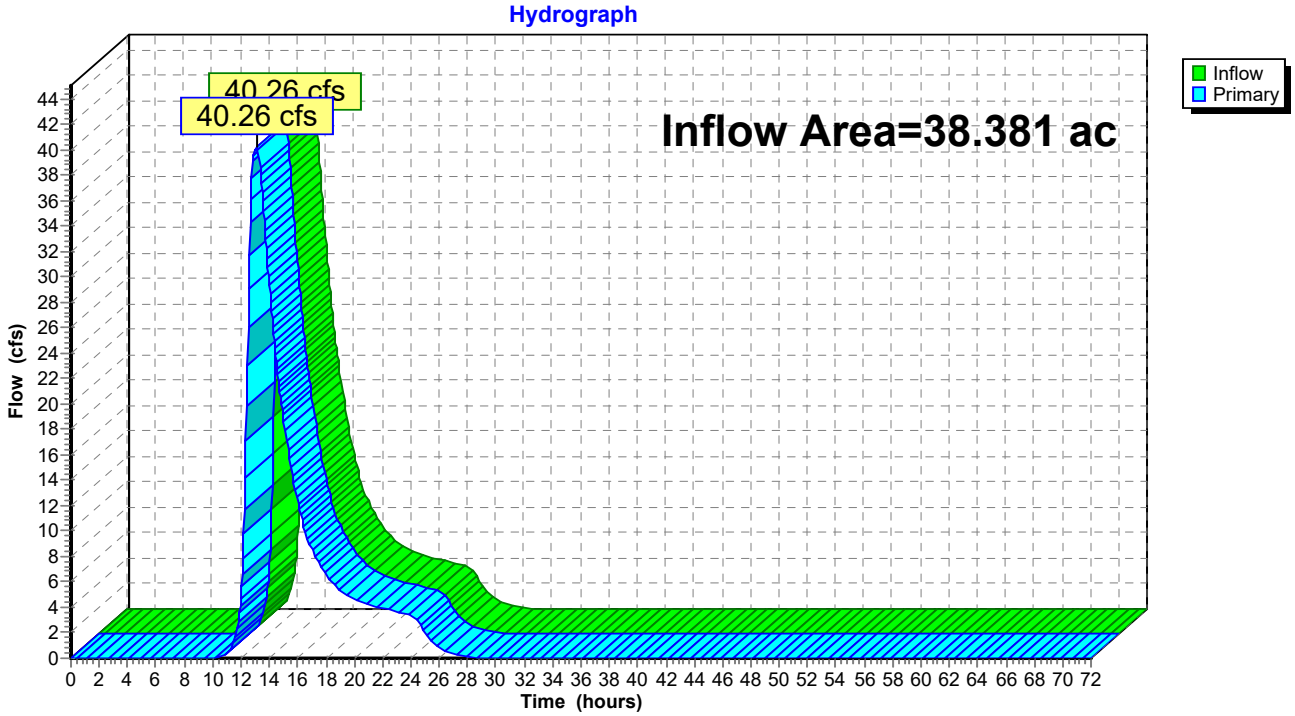


Summary for Link 4L: Total Area to Willis Creek

Inflow Area = 38.381 ac, 0.00% Impervious, Inflow Depth = 3.90" for Custom event
Inflow = 40.26 cfs @ 13.12 hrs, Volume= 12.465 af
Primary = 40.26 cfs @ 13.12 hrs, Volume= 12.465 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: Total Area to Willis Creek

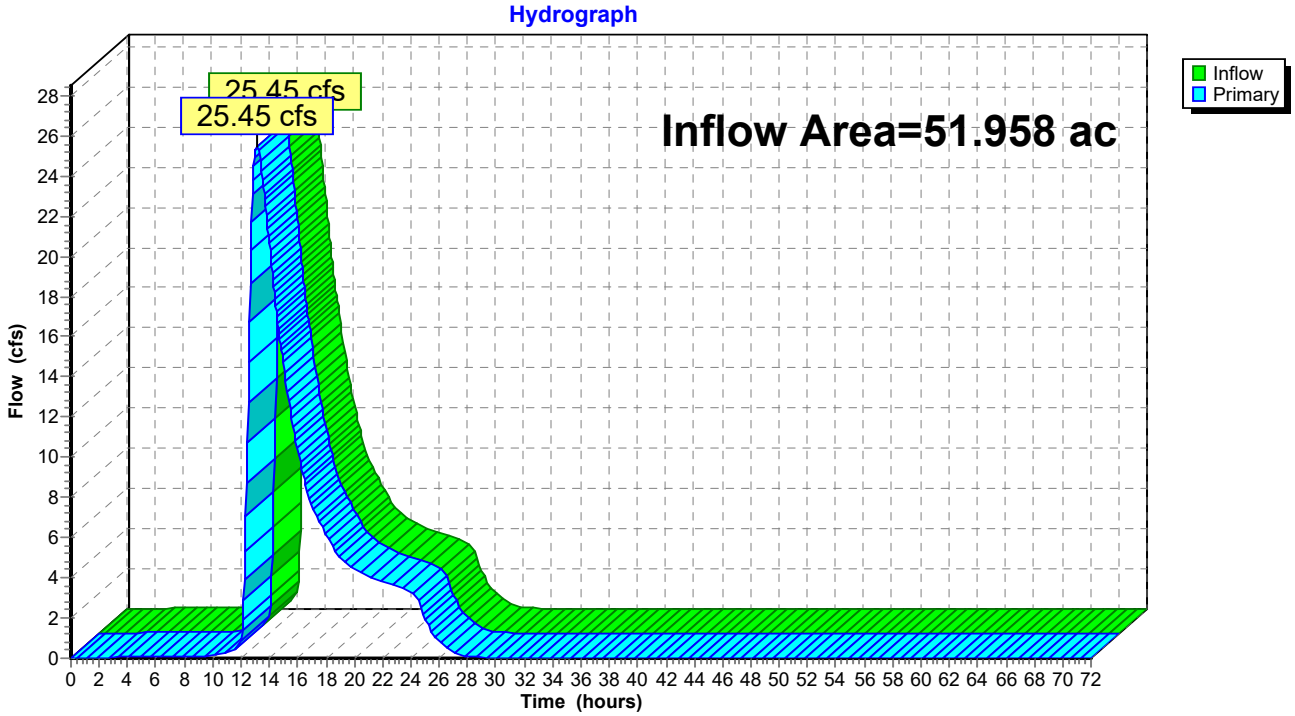


Summary for Link 5L: Total Disturbed Ara to Tuckerton Creek

Inflow Area = 51.958 ac, 0.75% Impervious, Inflow Depth = 2.17" for Custom event
Inflow = 25.45 cfs @ 13.11 hrs, Volume= 9.404 af
Primary = 25.45 cfs @ 13.11 hrs, Volume= 9.404 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 6L

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5L: Total Disturbed Ara to Tuckerton Creek



Summary for Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek

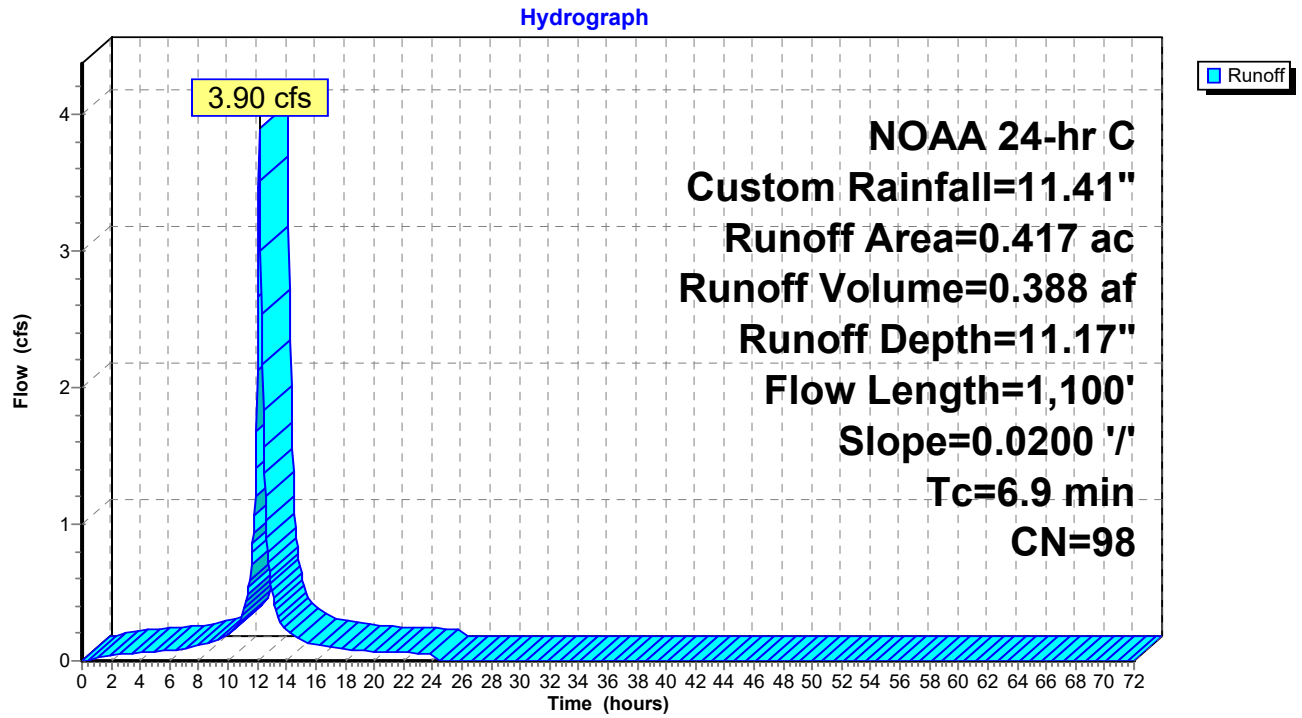
Runoff = 3.90 cfs @ 12.15 hrs, Volume= 0.388 af, Depth=11.17"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.417	98	Half Width
	0.417		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	100	0.0200	1.55		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
5.8	1,000	0.0200	2.87		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
6.9	1,100	Total			

Subcatchment 5S: Undisturbed Pavement - Center St to Willis Creek



Summary for Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious

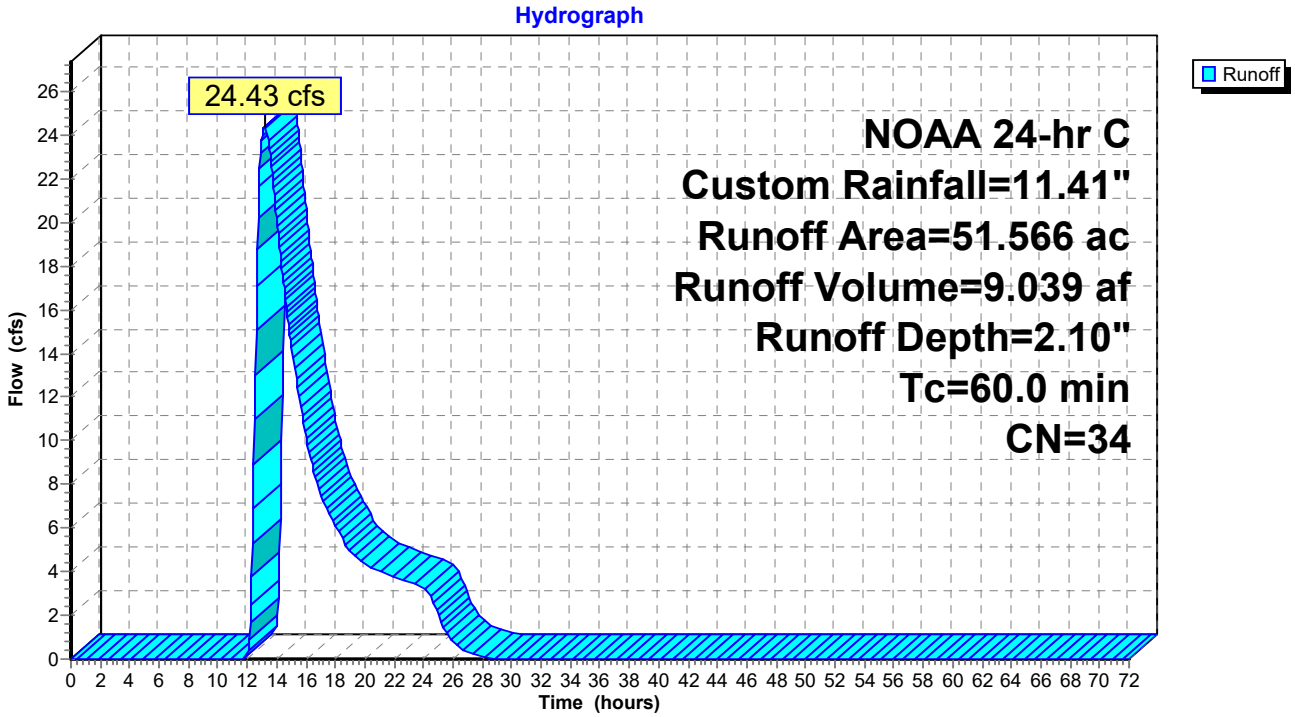
Runoff = 24.43 cfs @ 13.18 hrs, Volume= 9.039 af, Depth= 2.10"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=11.41"

Area (ac)	CN	Description
34.075	30	Woods, Good, HSG A
14.231	39	>75% Grass cover, Good, HSG A
3.260	55	Woods, Good, HSG B
51.566	34	Weighted Average
51.566		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 6S: Disrurbed Area to Tuckerton Creek - Pervious



Summary for Subcatchment 7S: Undisturbed Area to Tuckerton Creek

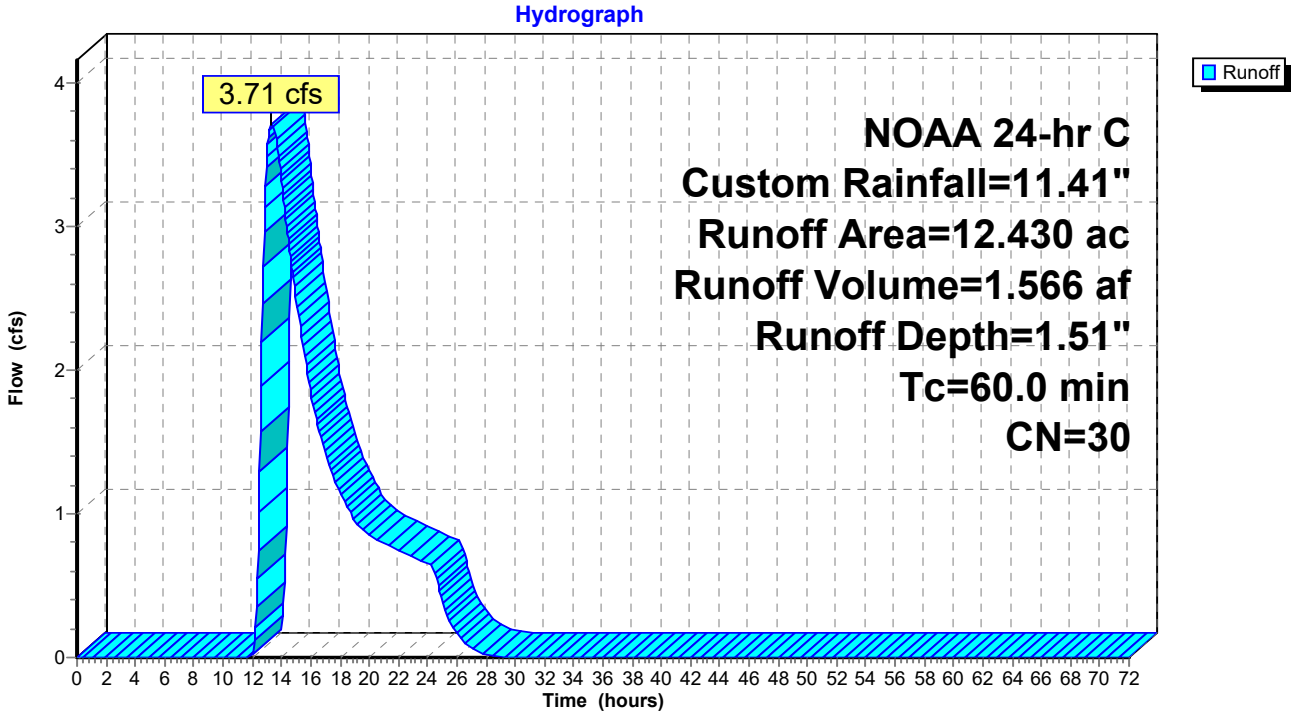
Runoff = 3.71 cfs @ 13.33 hrs, Volume= 1.566 af, Depth= 1.51"
Routed to nonexistent node 6L

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=11.41"

Area (ac)	CN	Description
12.430	30	Woods, Good, HSG A
12.430		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
60.0					**Direct Entry,**

Subcatchment 7S: Undisturbed Area to Tuckerton Creek



Summary for Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious

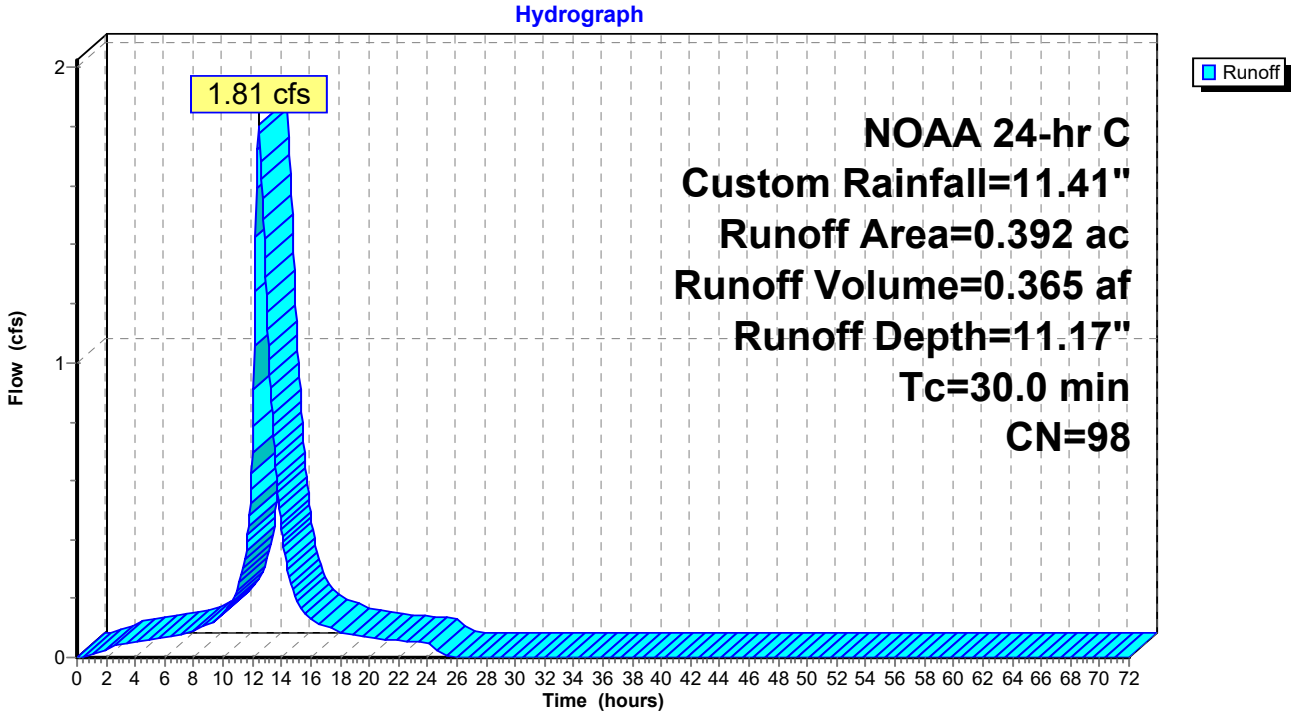
Runoff = 1.81 cfs @ 12.44 hrs, Volume= 0.365 af, Depth=11.17"
Routed to Link 5L : Total Disturbed Ara to Tuckerton Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr C Custom Rainfall=11.41"

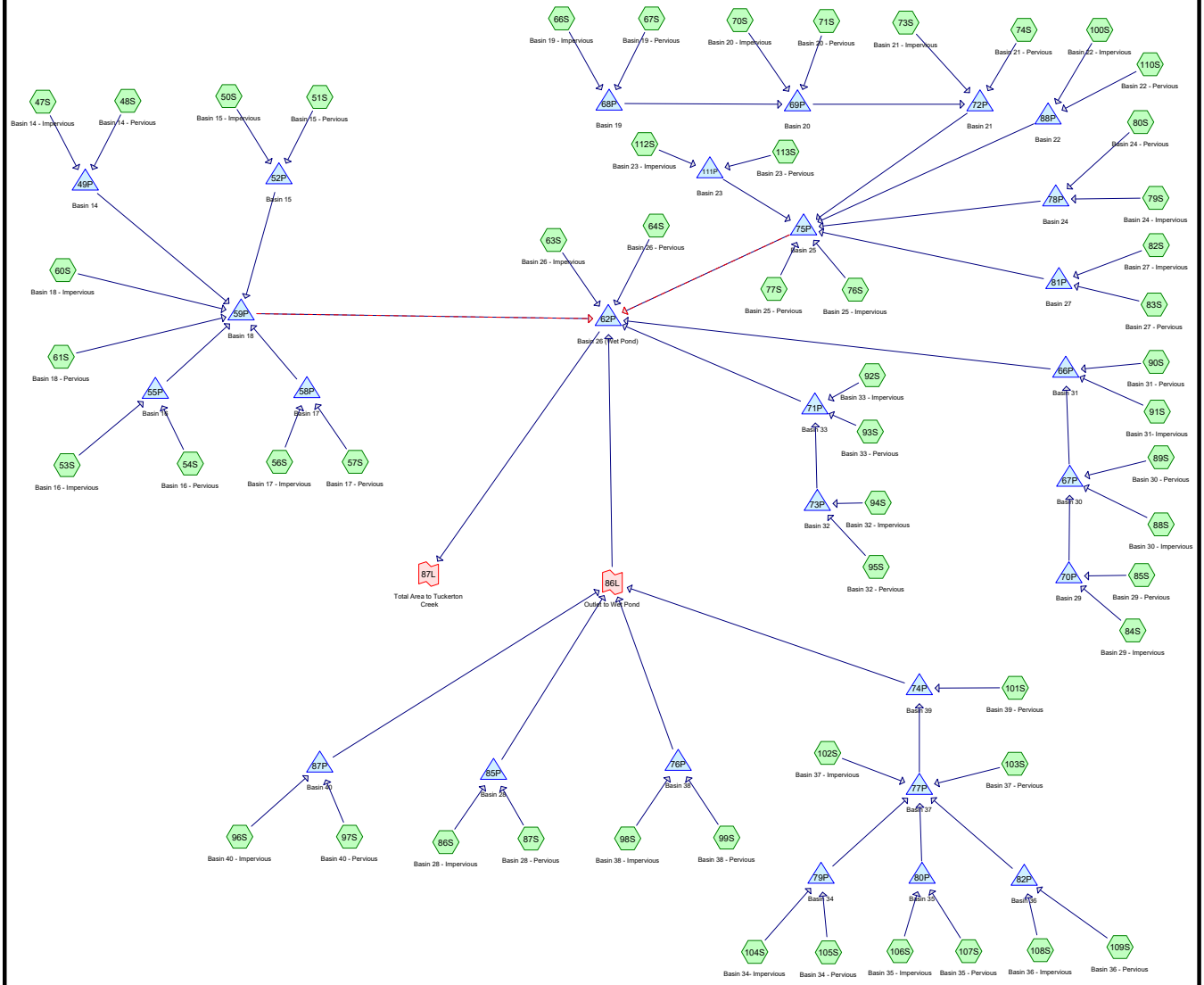
	Area (ac)	CN	Description
*	0.392	98	Impervious
	0.392		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Subcatchment 8S: Disturbed Area to Tuckerton Creek - Impervious



Appendix E – Post-Development Calculations



Subcat Reach Pond Link

Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT (FUTURE) - TUCKERTON CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	3.42	2

Summary for Subcatchment 47S: Basin 14 - Impervious

[49] Hint: Tc<2dt may require smaller dt

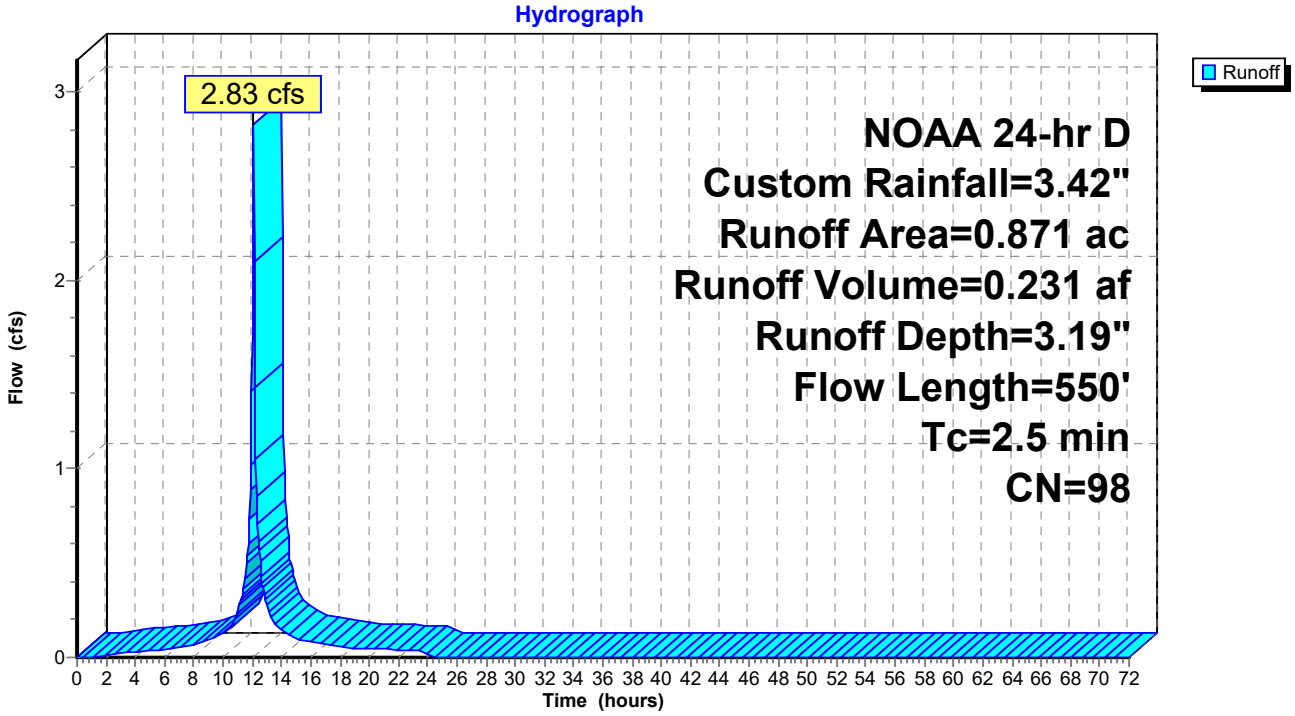
Runoff = 2.83 cfs @ 12.09 hrs, Volume= 0.231 af, Depth= 3.19"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.871	98	Impervious
	0.871		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, A to B** Paved Kv= 20.3 fps
1.5	450	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.5	550	Total			

Subcatchment 47S: Basin 14 - Impervious



Summary for Subcatchment 48S: Basin 14 - Pervious

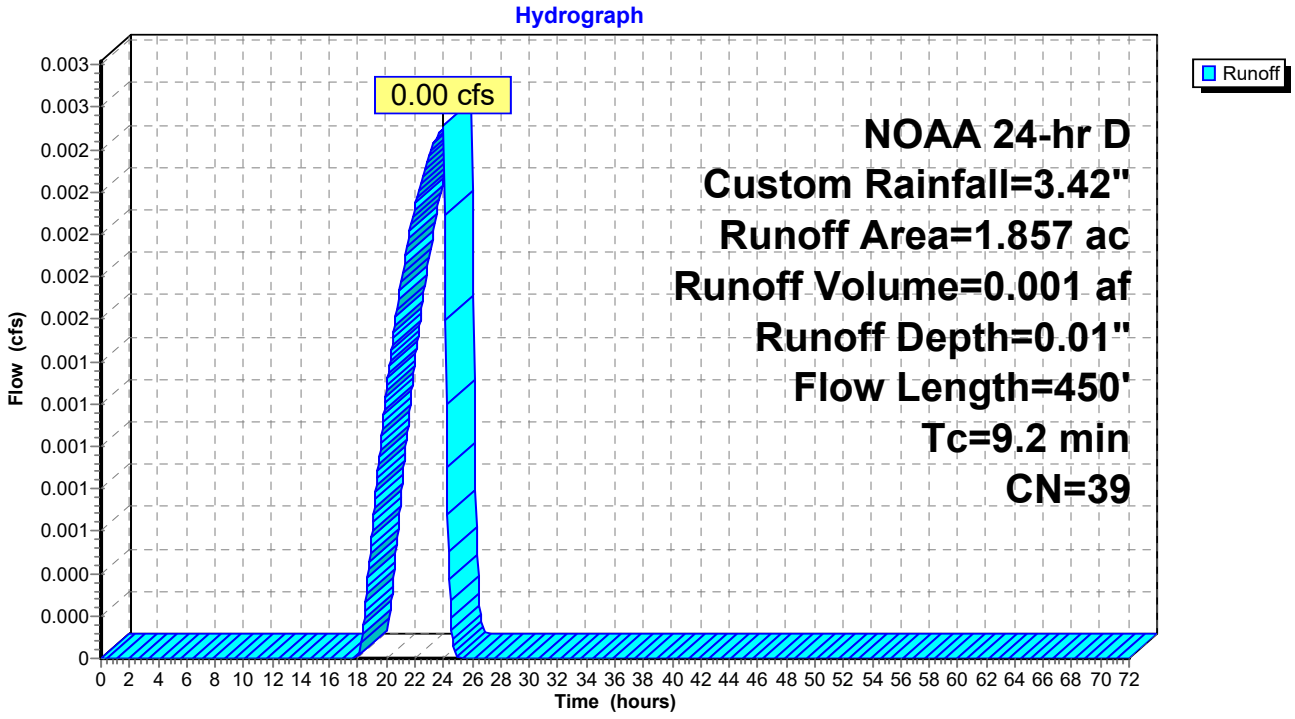
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.857	39	>75% Grass cover, Good, HSG A
1.857		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
9.2	450	Total			

Subcatchment 48S: Basin 14 - Pervious



Summary for Pond 49P: Basin 14

Inflow Area = 2.728 ac, 31.93% Impervious, Inflow Depth = 1.02" for Custom event
Inflow = 2.83 cfs @ 12.09 hrs, Volume= 0.232 af
Outflow = 0.17 cfs @ 13.55 hrs, Volume= 0.156 af, Atten= 94%, Lag= 87.3 min
Primary = 0.17 cfs @ 13.55 hrs, Volume= 0.156 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.99' @ 13.55 hrs Surf.Area= 5,783 sf Storage= 6,762 cf

Plug-Flow detention time= 505.7 min calculated for 0.156 af (67% of inflow)
Center-of-Mass det. time= 398.7 min (1,155.9 - 757.1)

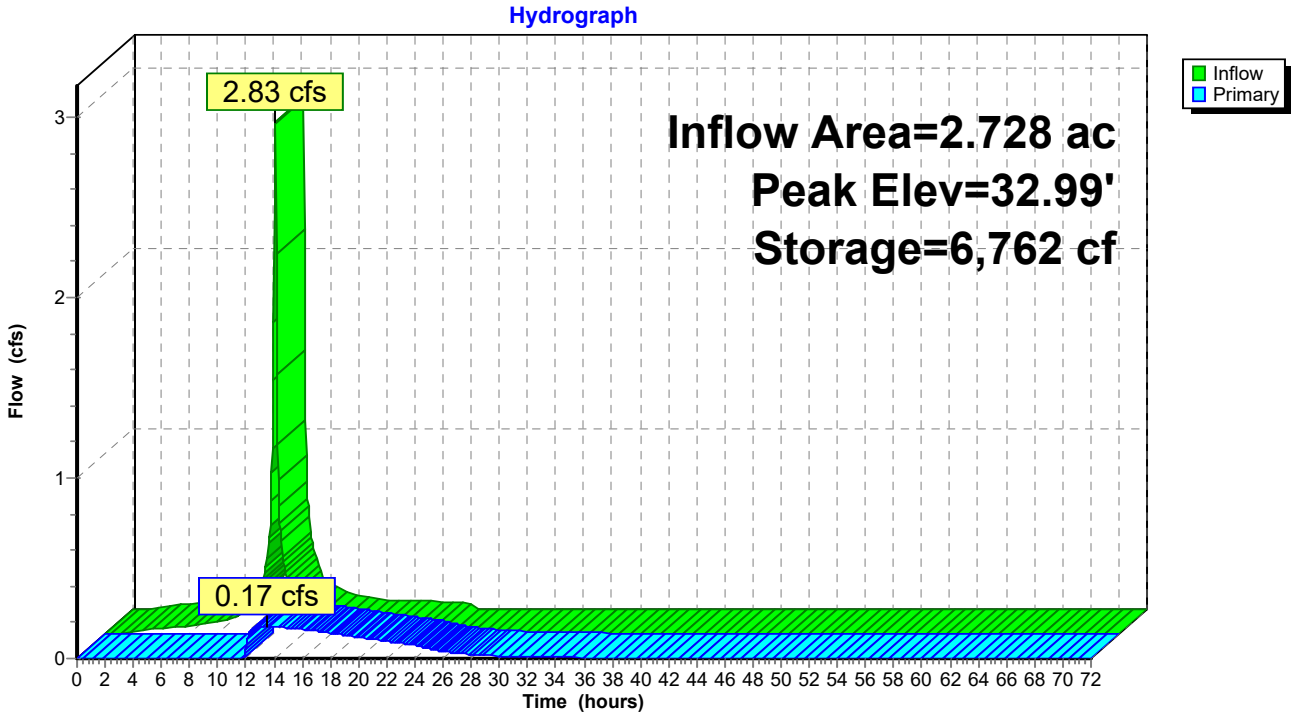
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	22,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,100	0	0
32.00	4,200	1,825	1,825
33.00	5,800	5,000	6,825
34.00	7,400	6,600	13,425
35.00	9,900	8,650	22,075

Device	Routing	Invert	Outlet Devices
#1	Primary	32.32'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 13.55 hrs HW=32.99' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.17 cfs @ 3.55 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 49P: Basin 14



Summary for Subcatchment 50S: Basin 15 - Impervious

[49] Hint: Tc<2dt may require smaller dt

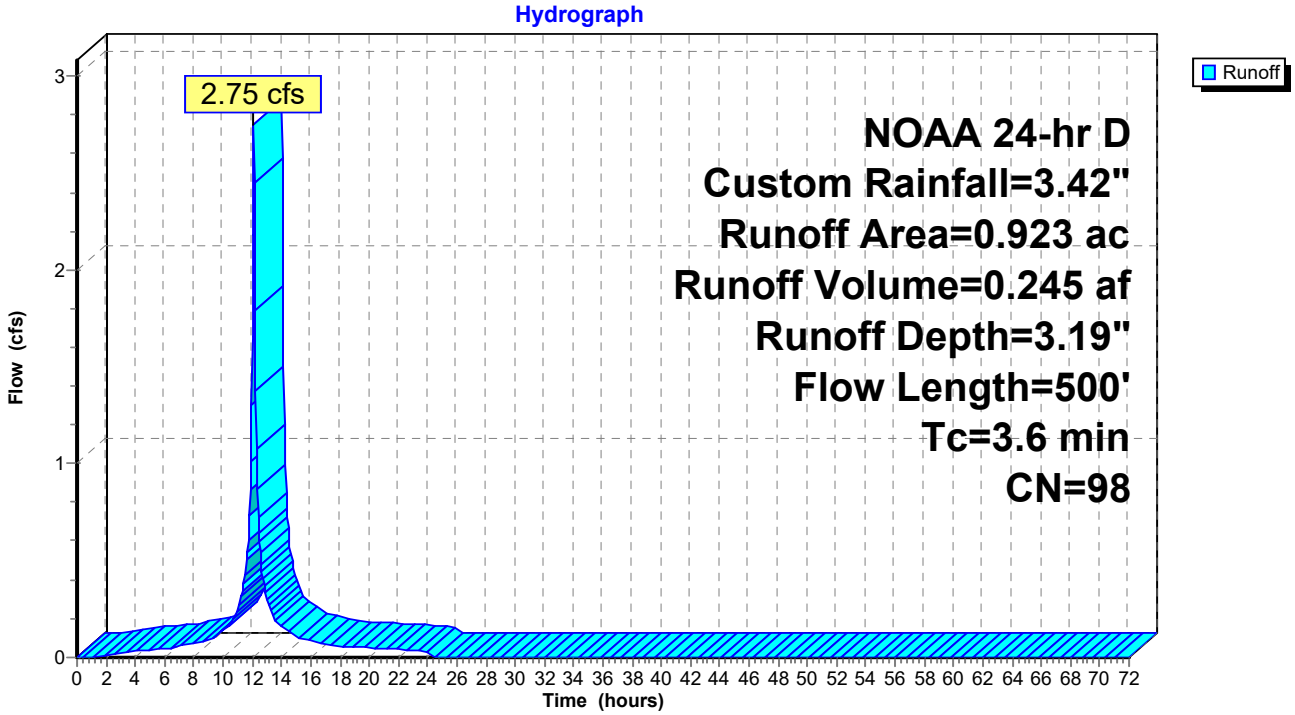
Runoff = 2.75 cfs @ 12.11 hrs, Volume= 0.245 af, Depth= 3.19"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.923	98	Impervious
	0.923		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.6	500	Total			

Subcatchment 50S: Basin 15 - Impervious



Summary for Subcatchment 51S: Basin 15 - Pervious

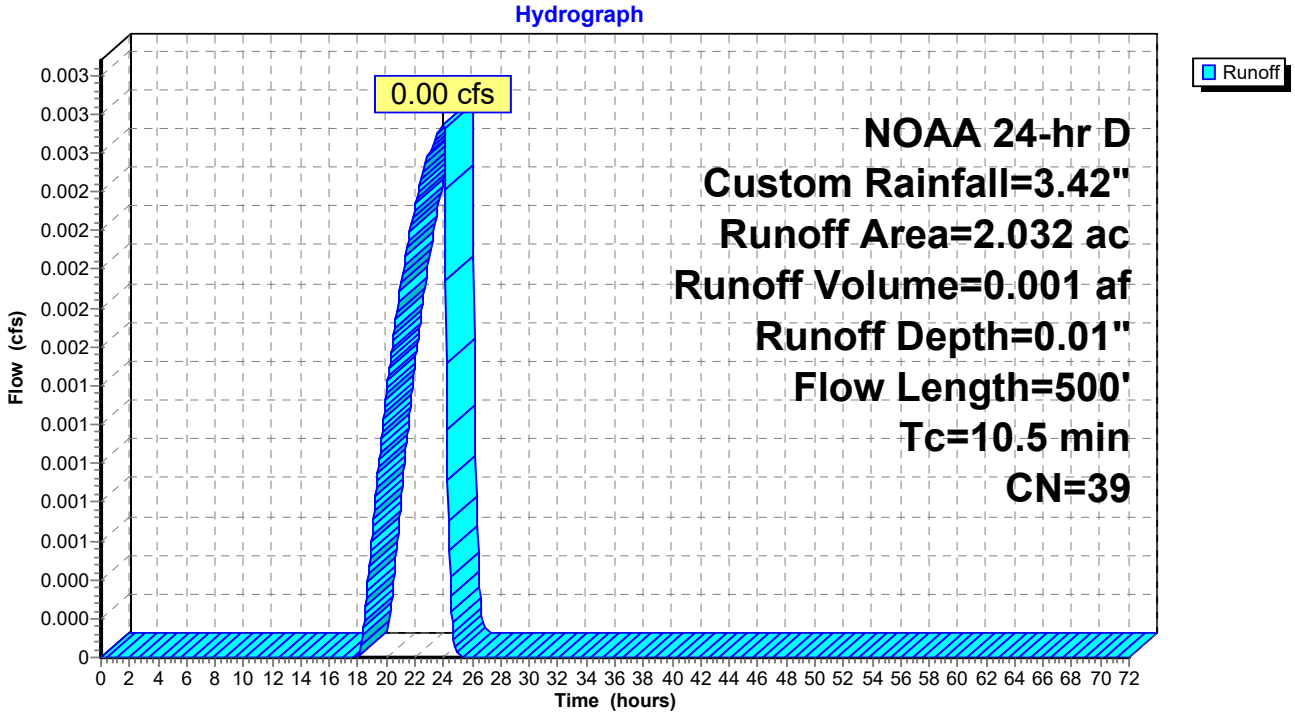
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
2.032	39	>75% Grass cover, Good, HSG A
2.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.5	500	Total			

Subcatchment 51S: Basin 15 - Pervious



Summary for Pond 52P: Basin 15

Inflow Area = 2.955 ac, 31.24% Impervious, Inflow Depth = 1.00" for Custom event
Inflow = 2.75 cfs @ 12.11 hrs, Volume= 0.246 af
Outflow = 0.18 cfs @ 13.58 hrs, Volume= 0.165 af, Atten= 93%, Lag= 88.4 min
Primary = 0.18 cfs @ 13.58 hrs, Volume= 0.165 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.67' @ 13.58 hrs Surf.Area= 5,644 sf Storage= 7,164 cf

Plug-Flow detention time= 500.0 min calculated for 0.165 af (67% of inflow)
Center-of-Mass det. time= 392.6 min (1,151.5 - 758.9)

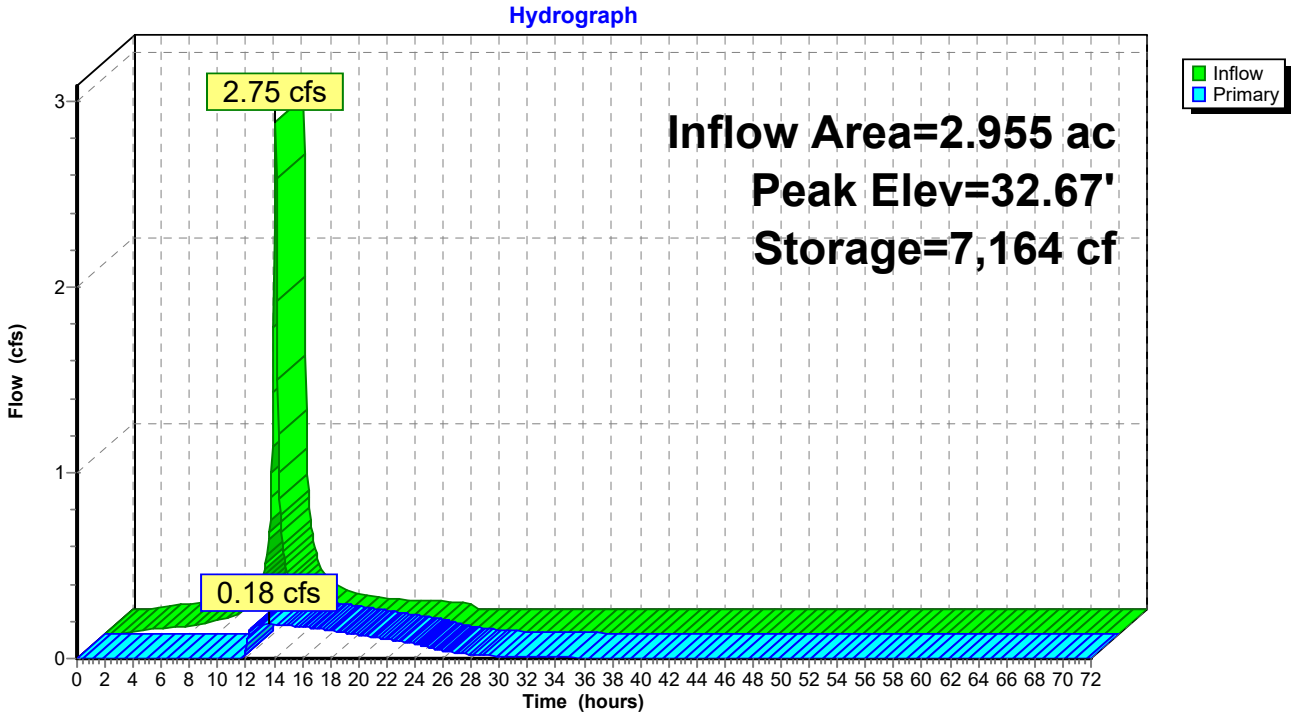
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	20,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,000	0	0
32.00	4,500	3,750	3,750
33.00	6,200	5,350	9,100
34.00	8,000	7,100	16,200
34.50	9,000	4,250	20,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.94'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	33.80'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 13.58 hrs HW=32.67' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.18 cfs @ 3.75 fps)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 52P: Basin 15



Summary for Subcatchment 53S: Basin 16 - Impervious

[49] Hint: Tc<2dt may require smaller dt

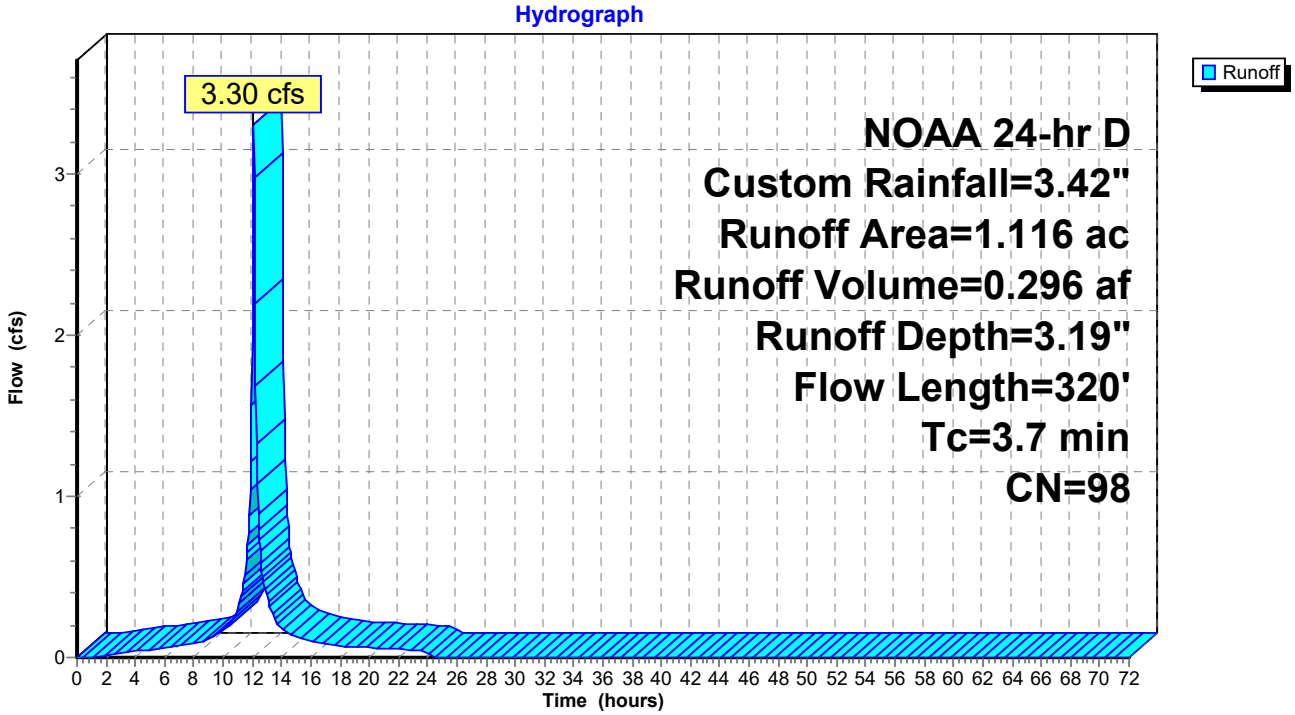
Runoff = 3.30 cfs @ 12.11 hrs, Volume= 0.296 af, Depth= 3.19"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	20	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.7	320	Total			

Subcatchment 53S: Basin 16 - Impervious



Summary for Subcatchment 54S: Basin 16 - Pervious

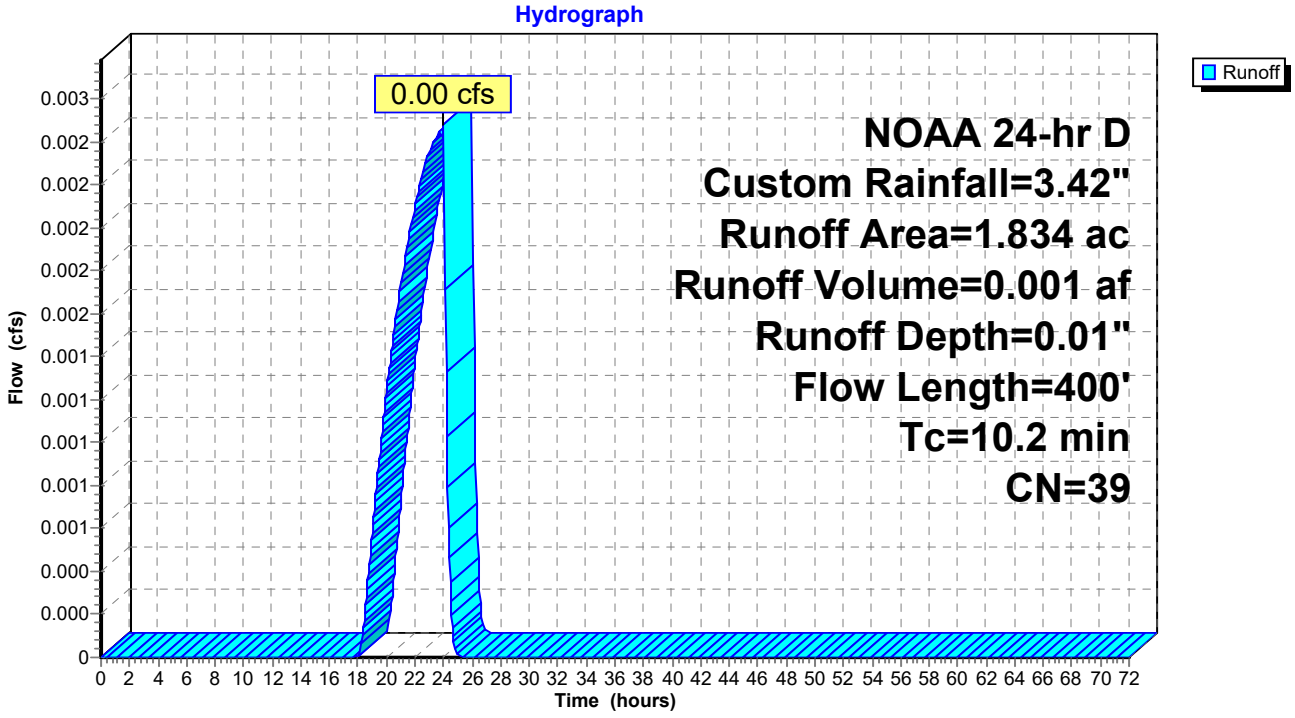
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.834	39	>75% Grass cover, Good, HSG A
1.834		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 54S: Basin 16 - Pervious



Summary for Pond 55P: Basin 16

Inflow Area = 2.950 ac, 37.83% Impervious, Inflow Depth = 1.21" for Custom event
Inflow = 3.30 cfs @ 12.11 hrs, Volume= 0.297 af
Outflow = 3.06 cfs @ 12.15 hrs, Volume= 0.201 af, Atten= 8%, Lag= 2.3 min
Primary = 3.06 cfs @ 12.15 hrs, Volume= 0.201 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.15' @ 12.15 hrs Surf.Area= 4,091 sf Storage= 4,761 cf

Plug-Flow detention time= 207.9 min calculated for 0.201 af (68% of inflow)
Center-of-Mass det. time= 99.7 min (858.2 - 758.5)

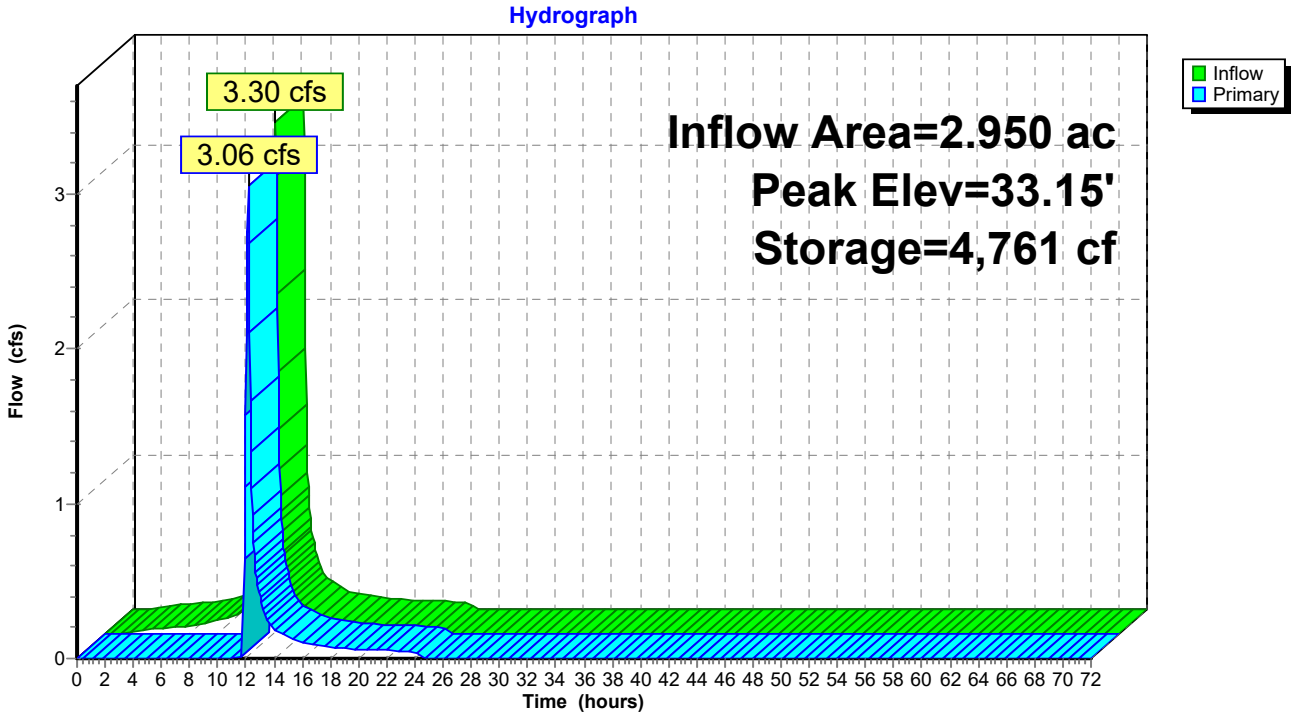
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	6,350 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	1,800	0	0
32.00	2,500	1,075	1,075
33.00	3,700	3,100	4,175
33.50	5,000	2,175	6,350

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.03 cfs @ 12.15 hrs HW=33.15' (Free Discharge)
1=Orifice/Grate (Weir Controls 3.03 cfs @ 1.27 fps)

Pond 55P: Basin 16



Summary for Subcatchment 56S: Basin 17 - Impervious

[49] Hint: Tc<2dt may require smaller dt

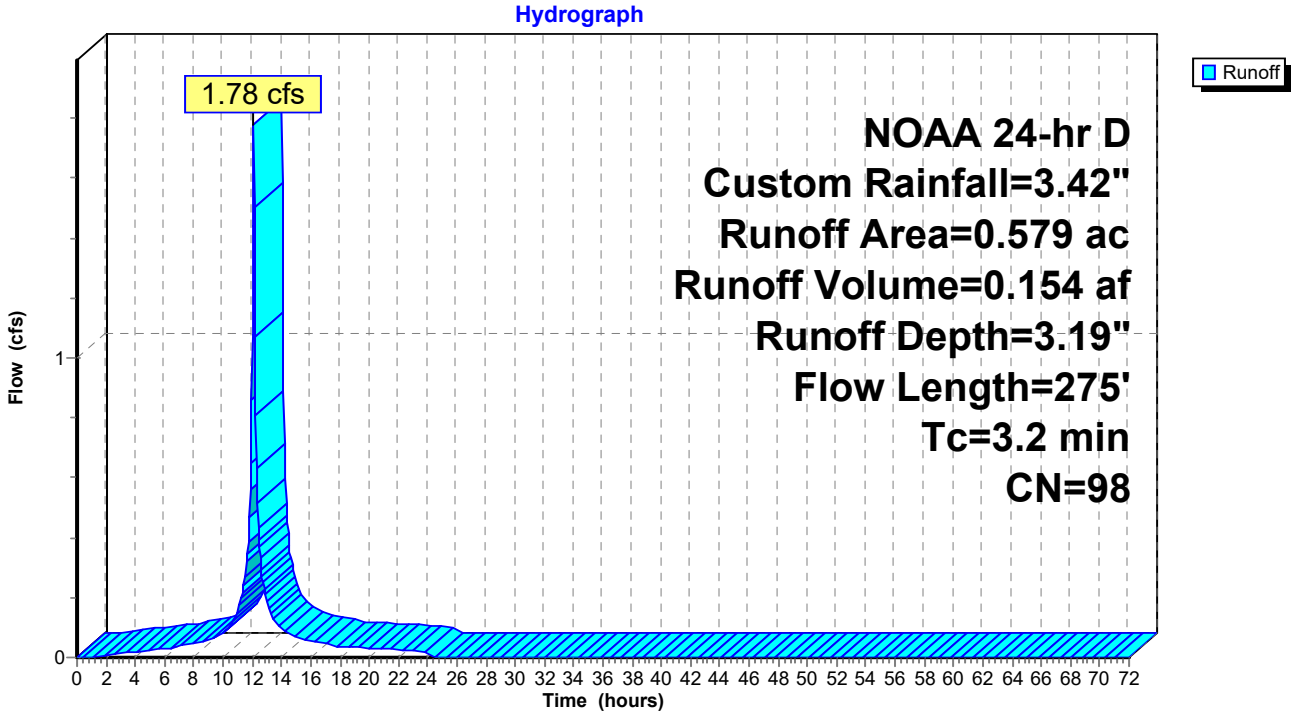
Runoff = 1.78 cfs @ 12.10 hrs, Volume= 0.154 af, Depth= 3.19"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.579	98	Impervious
	0.579		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	25	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	275	Total			

Subcatchment 56S: Basin 17 - Impervious



Summary for Subcatchment 57S: Basin 17 - Pervious

[49] Hint: Tc<2dt may require smaller dt

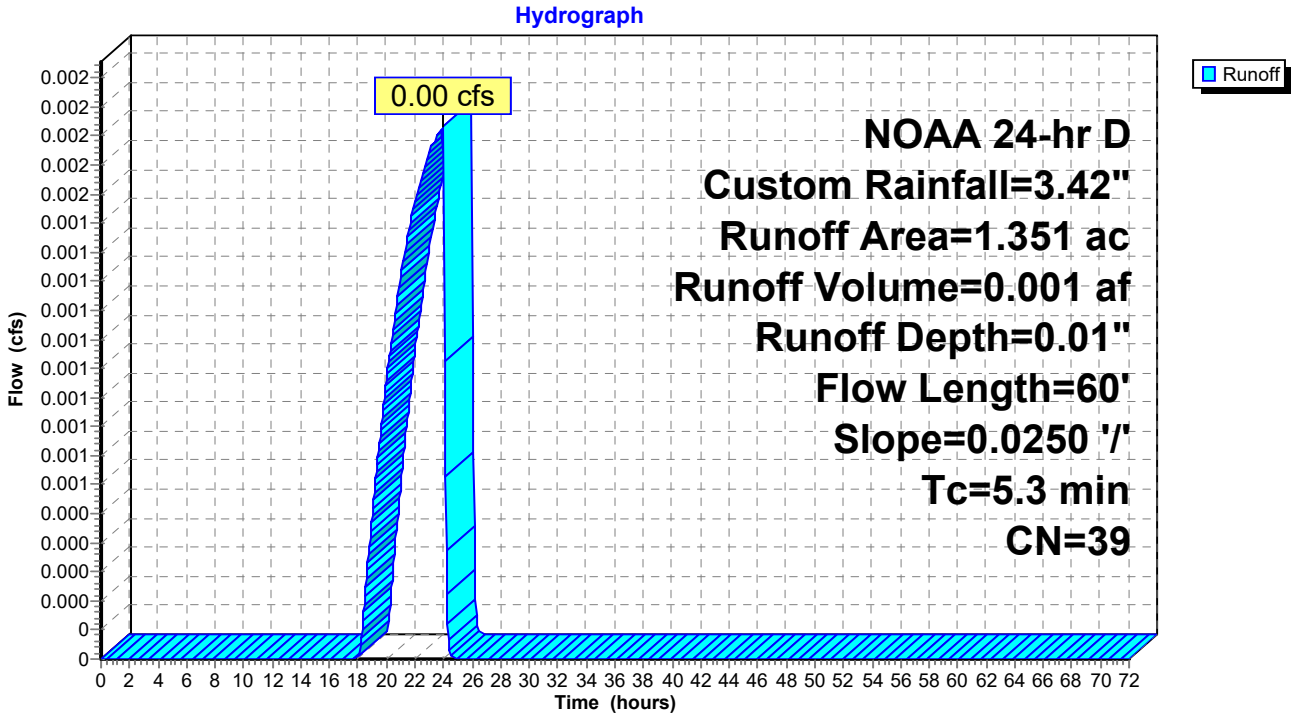
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.351	39	>75% Grass cover, Good, HSG A
1.351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 57S: Basin 17 - Pervious



Summary for Pond 58P: Basin 17

Inflow Area = 1.930 ac, 30.00% Impervious, Inflow Depth = 0.96" for Custom event
Inflow = 1.78 cfs @ 12.10 hrs, Volume= 0.154 af
Outflow = 1.58 cfs @ 12.15 hrs, Volume= 0.104 af, Atten= 12%, Lag= 2.6 min
Primary = 1.58 cfs @ 12.15 hrs, Volume= 0.104 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.73' @ 12.15 hrs Surf.Area= 4,090 sf Storage= 2,576 cf

Plug-Flow detention time= 210.3 min calculated for 0.104 af (67% of inflow)
Center-of-Mass det. time= 101.6 min (860.0 - 758.4)

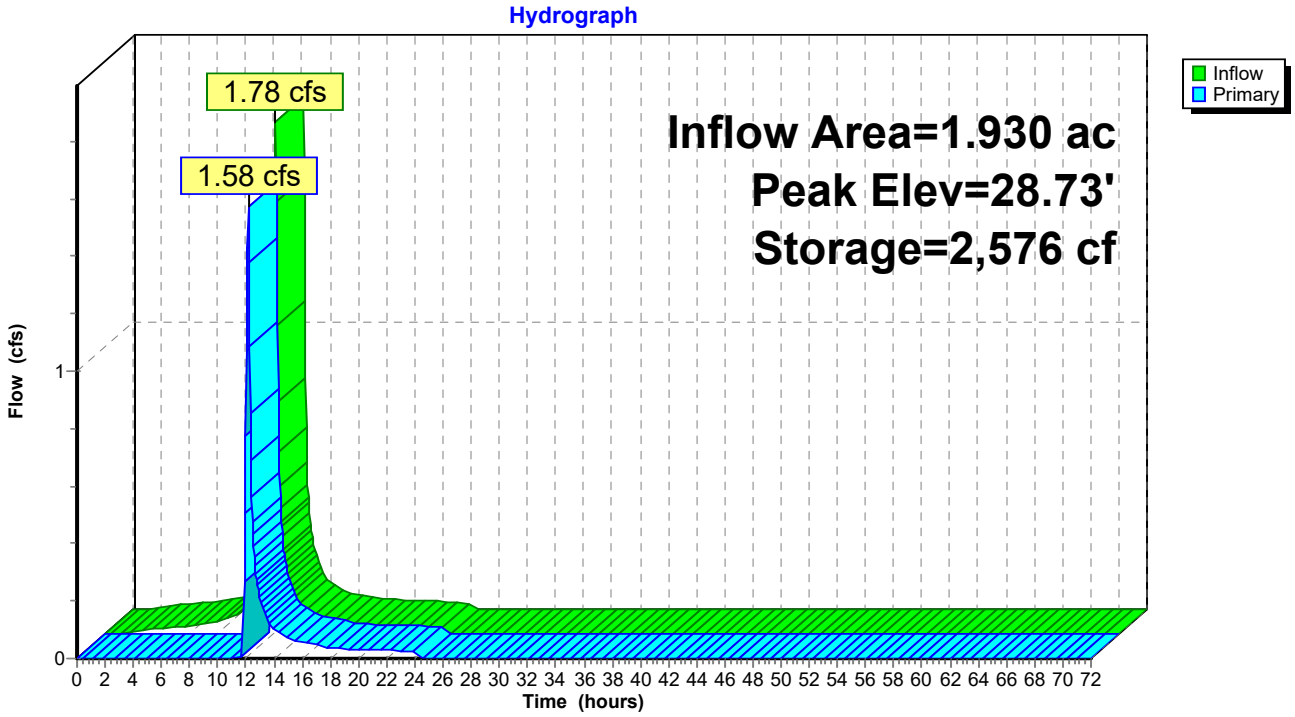
Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	12,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,000	0	0
29.00	4,500	3,750	3,750
30.00	6,200	5,350	9,100
30.50	7,000	3,300	12,400

Device	Routing	Invert	Outlet Devices
#1	Primary	28.63'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.56 cfs @ 12.15 hrs HW=28.73' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 1.56 cfs @ 1.01 fps)

Pond 58P: Basin 17



Summary for Pond 59P: Basin 18

Inflow Area = 13.433 ac, 31.95% Impervious, Inflow Depth = 0.75" for Custom event
Inflow = 7.13 cfs @ 12.12 hrs, Volume= 0.841 af
Outflow = 0.83 cfs @ 13.74 hrs, Volume= 0.769 af, Atten= 88%, Lag= 97.4 min
Primary = 0.83 cfs @ 13.74 hrs, Volume= 0.769 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.03' @ 13.74 hrs Surf.Area= 8,049 sf Storage= 15,668 cf

Plug-Flow detention time= 555.6 min calculated for 0.768 af (91% of inflow)
Center-of-Mass det. time= 487.6 min (1,433.3 - 945.7)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	29,550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

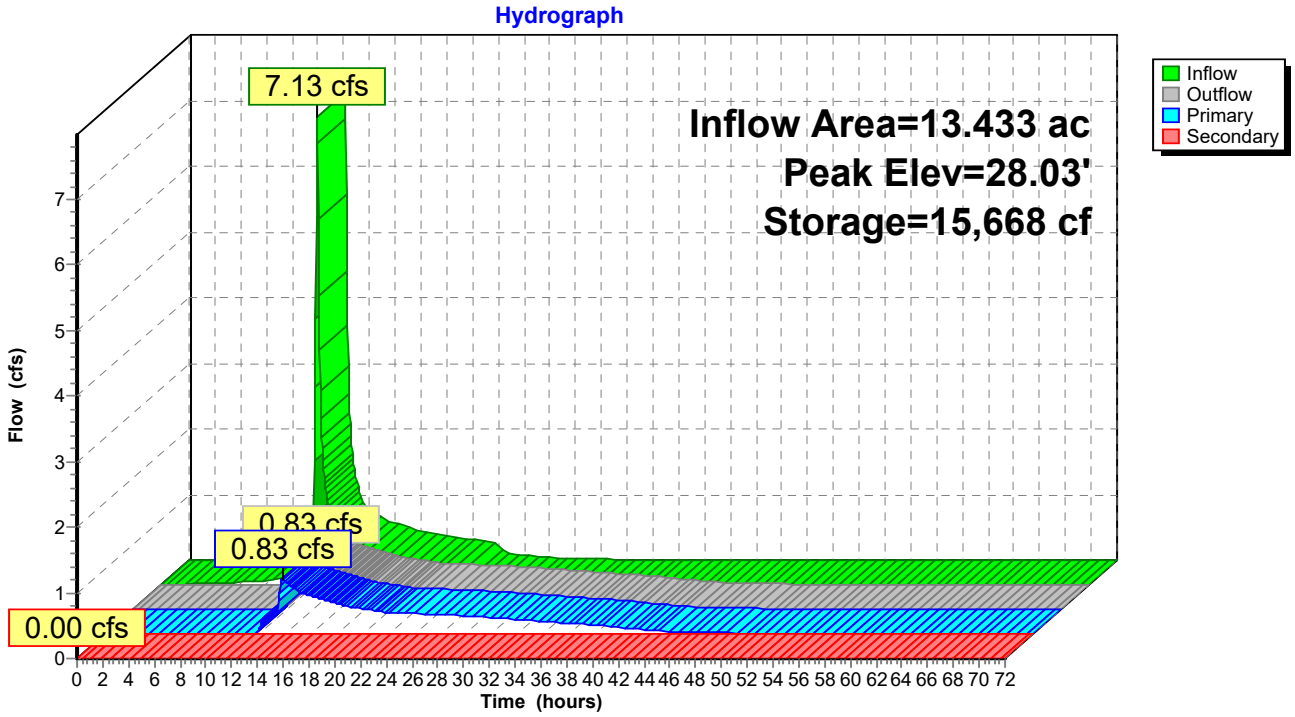
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	4,600	0	0
26.00	5,200	2,450	2,450
27.00	6,400	5,800	8,250
28.00	8,000	7,200	15,450
29.00	9,800	8,900	24,350
29.50	11,000	5,200	29,550

Device	Routing	Invert	Outlet Devices
#1	Primary	26.11'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	28.00'	**48.0" x 48.0" Horiz. Orifice/Grate** X 2 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	28.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.78 cfs @ 13.74 hrs HW=28.03' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.32 cfs @ 6.45 fps)
└**2=Orifice/Grate** (Weir Controls 0.47 cfs @ 0.54 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=25.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 59P: Basin 18



Summary for Subcatchment 60S: Basin 18 - Impervious

[49] Hint: Tc<2dt may require smaller dt

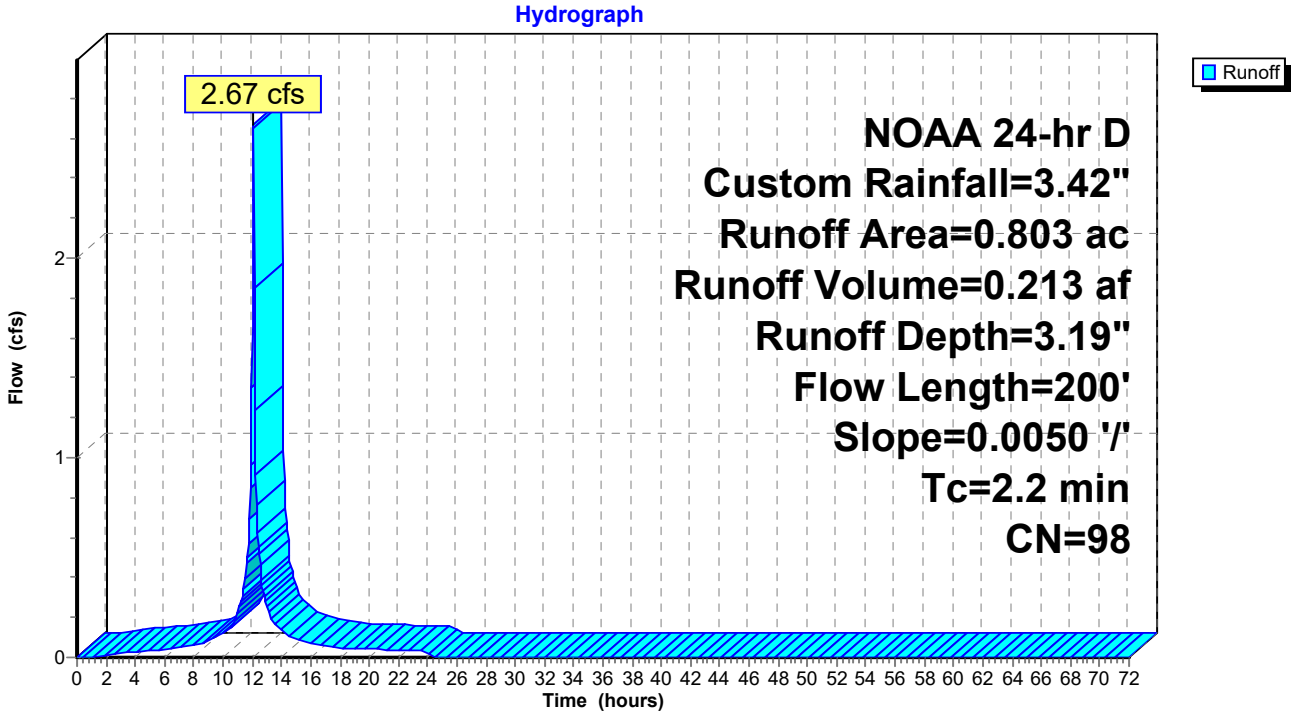
Runoff = 2.67 cfs @ 12.09 hrs, Volume= 0.213 af, Depth= 3.19"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.803	98	Impervious
	0.803		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0050	0.89		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.2	200	Total			

Subcatchment 60S: Basin 18 - Impervious



Summary for Subcatchment 61S: Basin 18 - Pervious

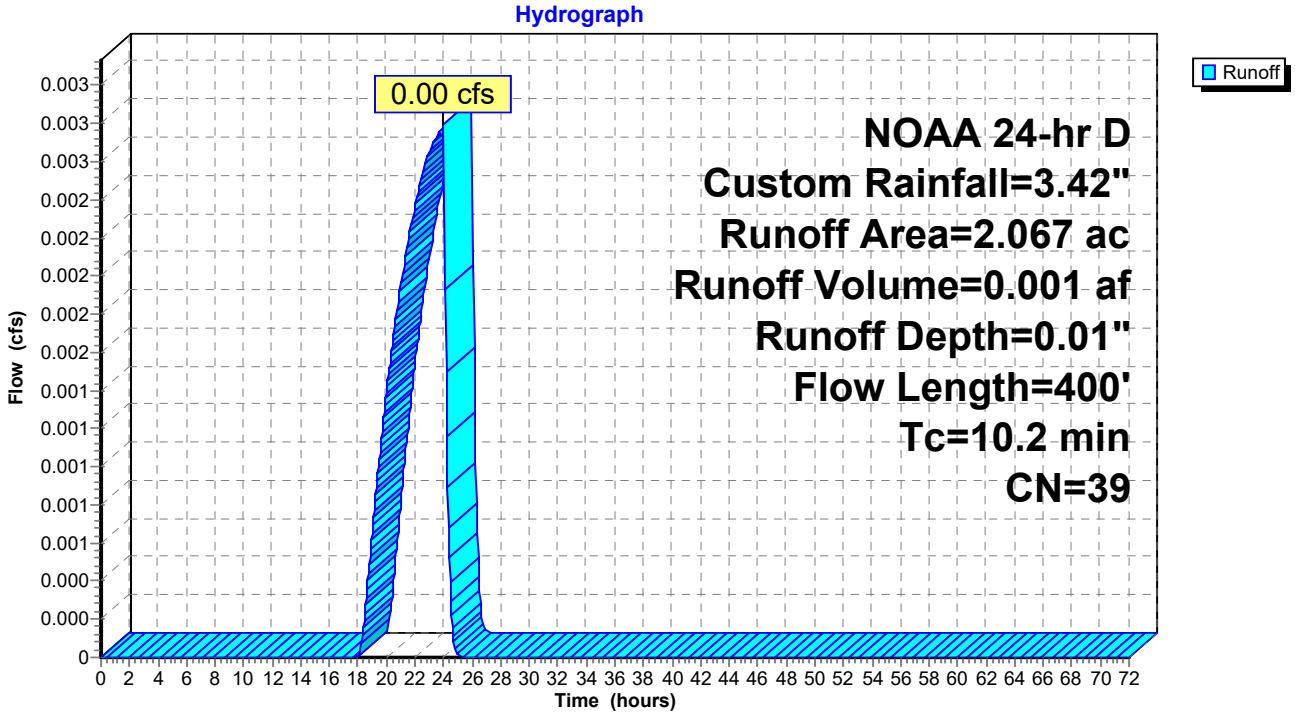
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
2.067	39	>75% Grass cover, Good, HSG A
2.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 61S: Basin 18 - Pervious



Summary for Pond 62P: Basin 26 (Wet Pond)

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 0.56" for Custom event
Inflow = 8.58 cfs @ 12.12 hrs, Volume= 3.522 af
Outflow = 0.26 cfs @ 43.35 hrs, Volume= 1.178 af, Atten= 97%, Lag= 1,873.5 min
Primary = 0.26 cfs @ 43.35 hrs, Volume= 1.178 af
Routed to Link 87L : Total Area to Tuckerton Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 22.50' Surf.Area= 81,675 sf Storage= 279,807 cf
Peak Elev= 23.88' @ 43.35 hrs Surf.Area= 93,062 sf Storage= 400,393 cf (120,586 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,246.3 min (2,631.3 - 1,385.0)

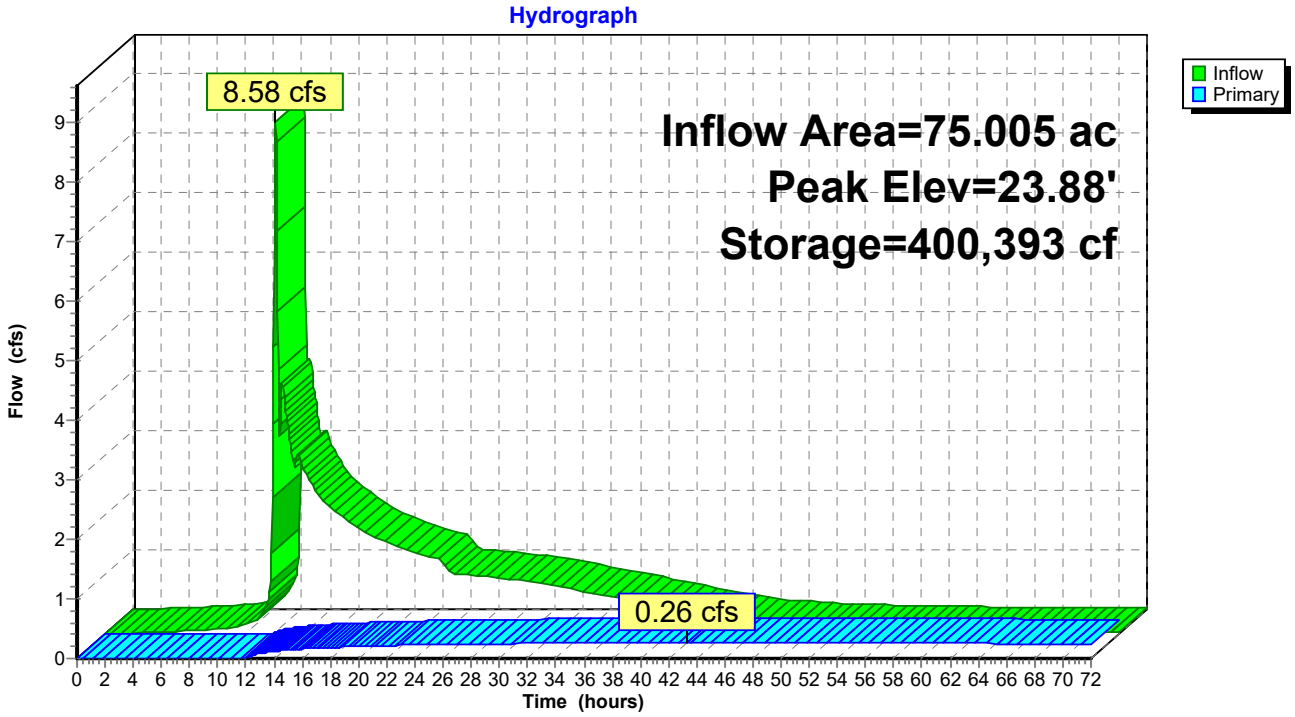
Volume	Invert	Avail.Storage	Storage Description
#1	18.00'	562,535 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
18.00	29,000	0	0
19.00	32,000	30,500	30,500
20.00	35,000	33,500	64,000
21.00	38,000	36,500	100,500
21.01	43,000	405	100,905
22.00	47,000	44,550	145,455
23.00	52,000	49,500	194,955
24.00	57,000	54,500	249,455
24.01	63,000	600	250,055
25.00	69,000	65,340	315,395
26.00	76,000	72,500	387,895
27.00	84,000	80,000	467,895
27.50	90,000	43,500	511,395

Device	Routing	Invert	Outlet Devices
#1	Primary	22.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	26.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 43.35 hrs HW=23.88' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.26 cfs @ 5.39 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 62P: Basin 26 (Wet Pond)



Summary for Subcatchment 63S: Basin 26 - Impervious

[49] Hint: Tc<2dt may require smaller dt

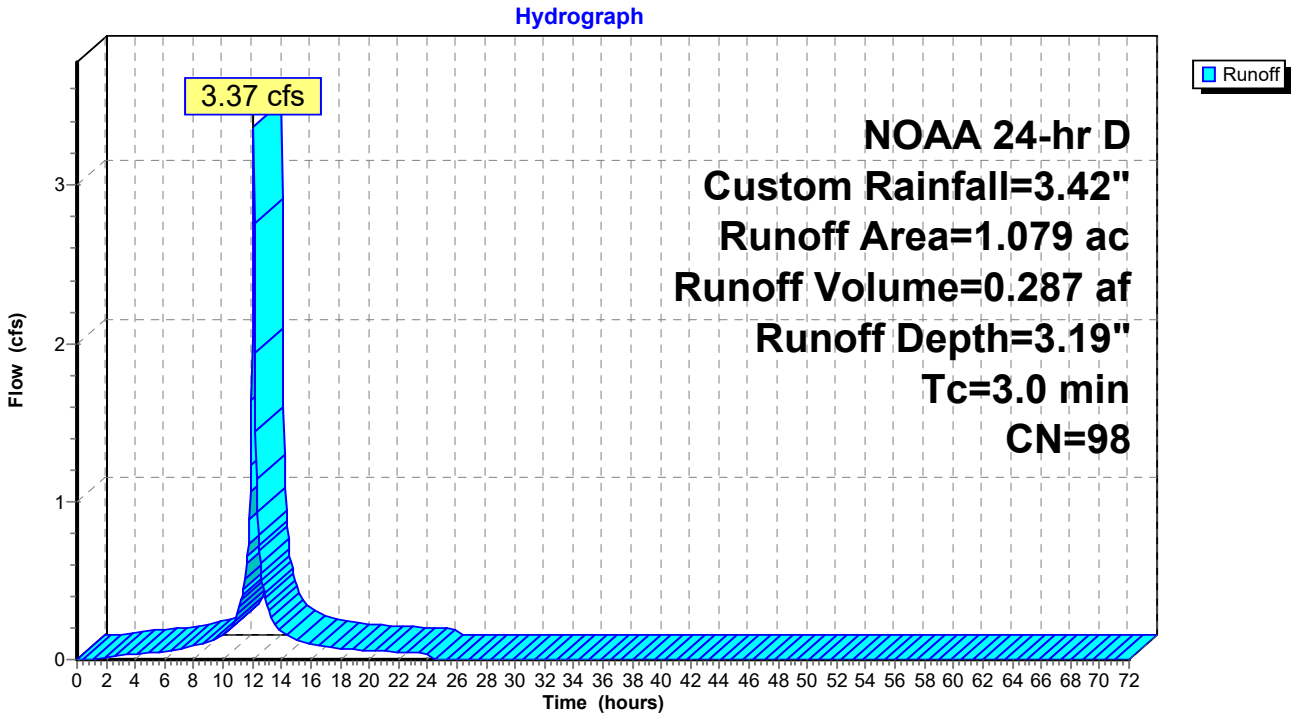
Runoff = 3.37 cfs @ 12.10 hrs, Volume= 0.287 af, Depth= 3.19"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.079	98	Impervious
	1.079		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 63S: Basin 26 - Impervious



Summary for Subcatchment 64S: Basin 26 - Pervious

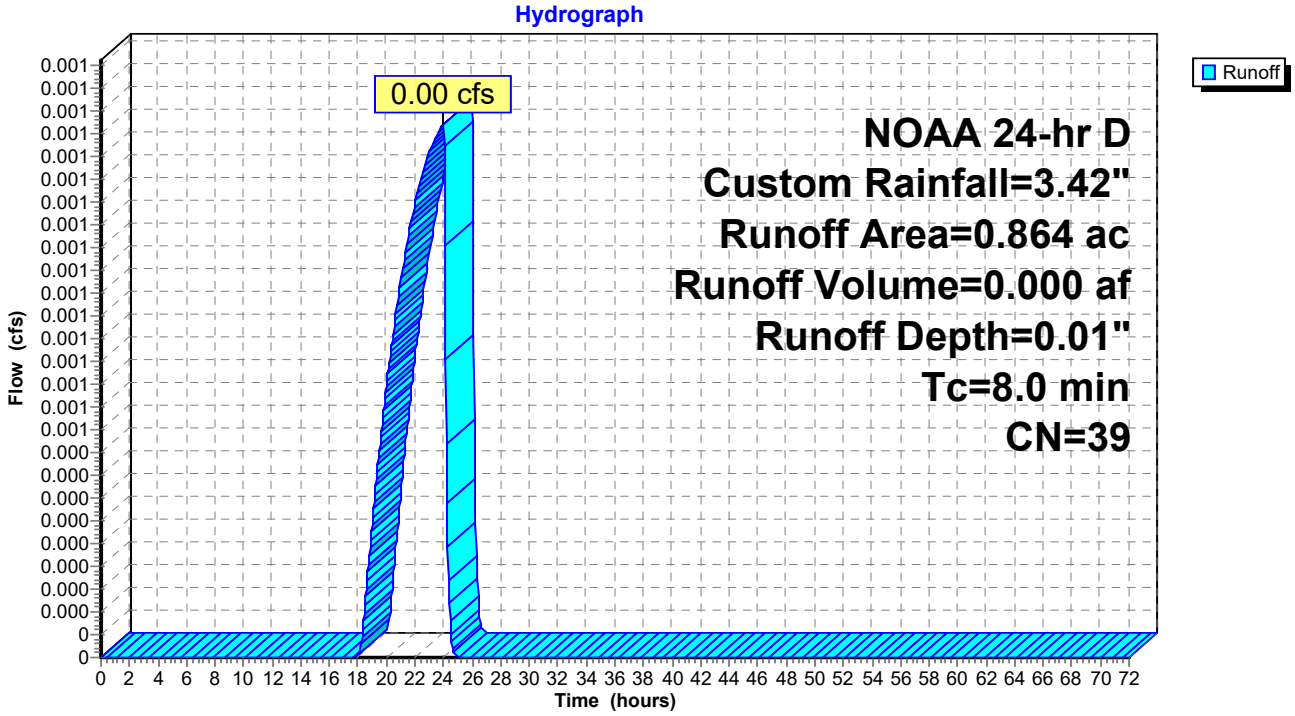
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.01"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
0.864	39	>75% Grass cover, Good, HSG A
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 64S: Basin 26 - Pervious



Summary for Pond 66P: Basin 31

[81] Warning: Exceeded Pond 67P by 0.73' @ 31.35 hrs

Inflow Area = 9.125 ac, 32.14% Impervious, Inflow Depth > 0.81" for Custom event
Inflow = 3.79 cfs @ 12.04 hrs, Volume= 0.614 af
Outflow = 0.24 cfs @ 23.37 hrs, Volume= 0.521 af, Atten= 94%, Lag= 679.5 min
Primary = 0.24 cfs @ 23.37 hrs, Volume= 0.521 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.13' @ 23.37 hrs Surf.Area= 7,191 sf Storage= 10,983 cf

Plug-Flow detention time= 661.3 min calculated for 0.521 af (85% of inflow)
Center-of-Mass det. time= 501.4 min (1,606.6 - 1,105.2)

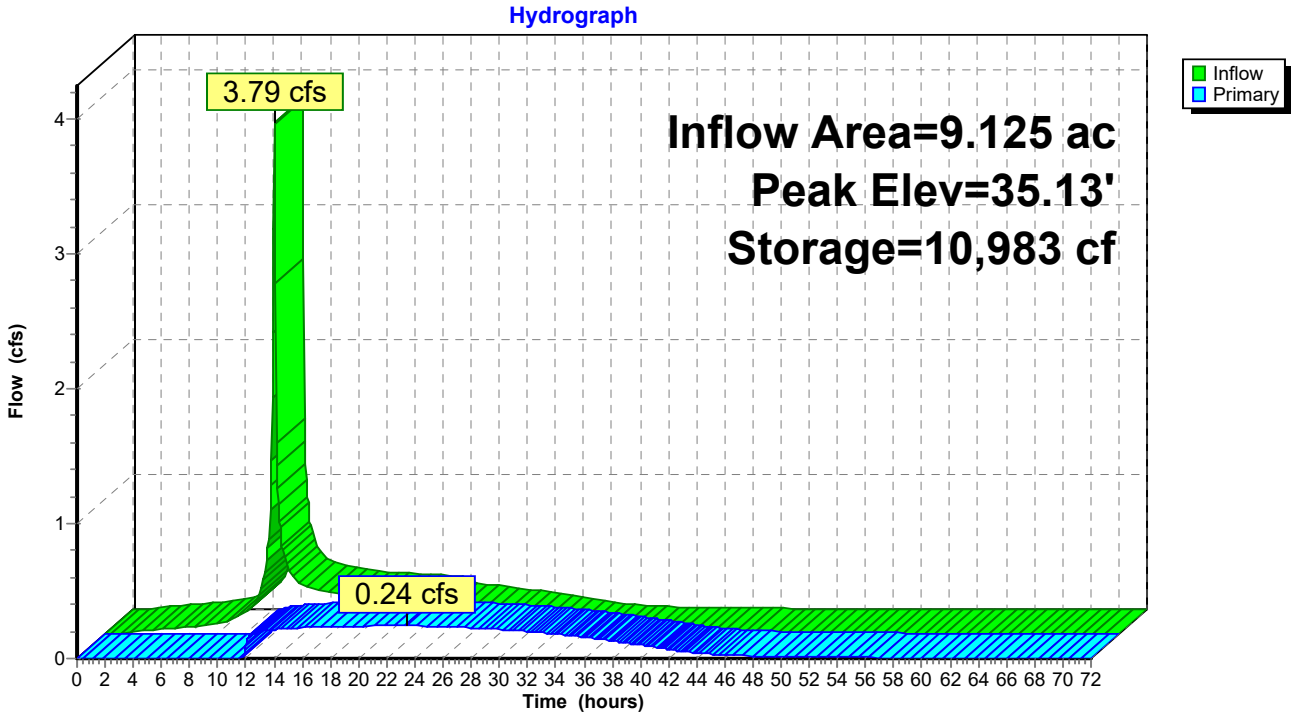
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	13,775 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,200	0	0
34.00	5,000	4,100	4,100
35.00	6,900	5,950	10,050
35.50	8,000	3,725	13,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.96'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.24 cfs @ 23.37 hrs HW=35.13' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.24 cfs @ 4.93 fps)

Pond 66P: Basin 31



Summary for Subcatchment 66S: Basin 19 - Impervious

[49] Hint: Tc<2dt may require smaller dt

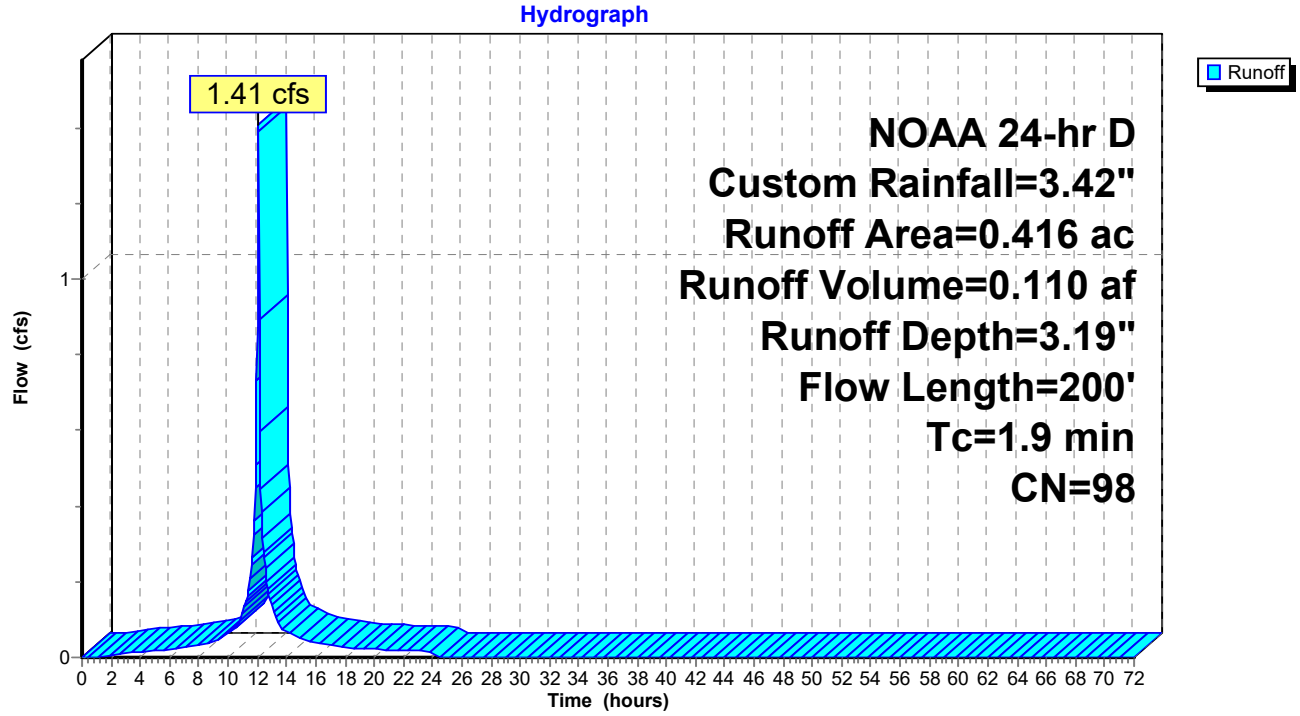
Runoff = 1.41 cfs @ 12.09 hrs, Volume= 0.110 af, Depth= 3.19"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.416	98	Impervious
	0.416		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
1.9	200	Total			

Subcatchment 66S: Basin 19 - Impervious



Summary for Pond 67P: Basin 30

[79] Warning: Submerged Pond 70P Primary device # 1 by 0.04'

Inflow Area = 6.020 ac, 31.43% Impervious, Inflow Depth > 0.84" for Custom event
Inflow = 2.98 cfs @ 12.10 hrs, Volume= 0.419 af
Outflow = 0.21 cfs @ 17.56 hrs, Volume= 0.337 af, Atten= 93%, Lag= 327.5 min
Primary = 0.21 cfs @ 17.56 hrs, Volume= 0.337 af
Routed to Pond 66P : Basin 31

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.75' @ 17.56 hrs Surf.Area= 6,473 sf Storage= 8,822 cf

Plug-Flow detention time= 596.4 min calculated for 0.337 af (80% of inflow)
Center-of-Mass det. time= 449.1 min (1,395.1 - 946.0)

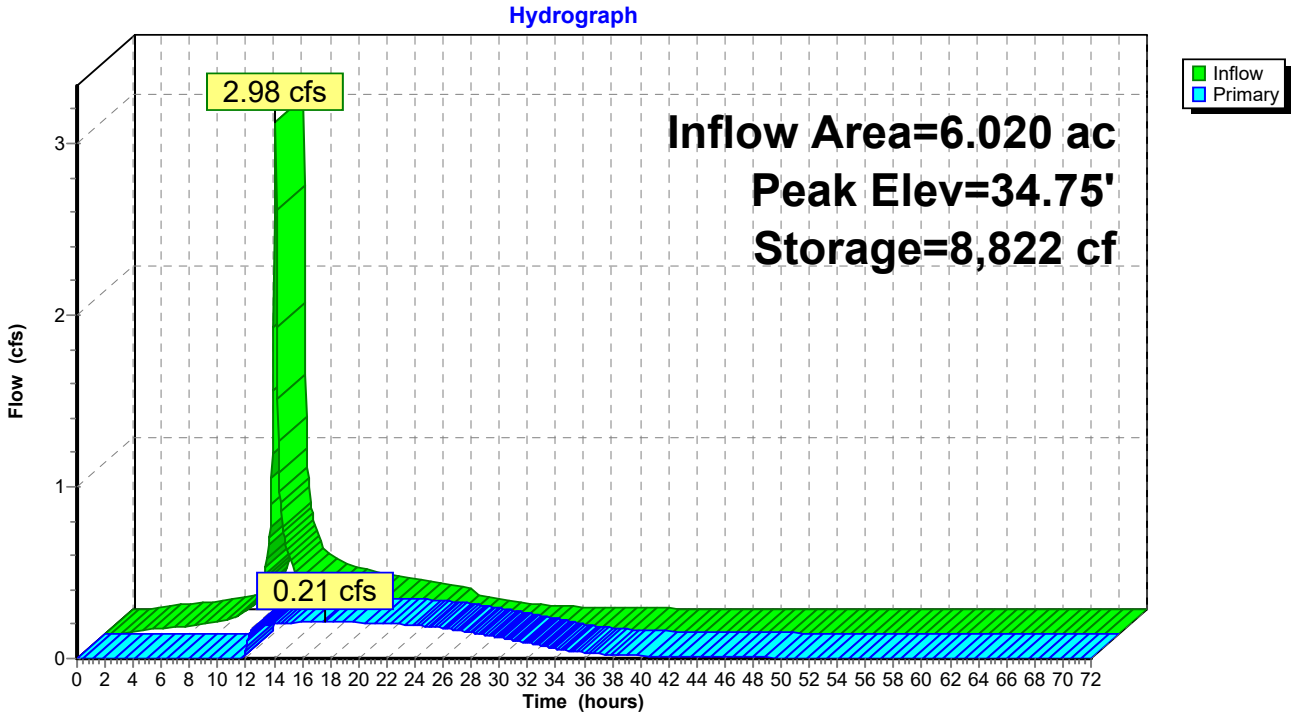
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,775 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,700	0	0
34.00	5,200	4,450	4,450
35.00	6,900	6,050	10,500
36.00	8,500	7,700	18,200
36.50	9,800	4,575	22,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.81'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 17.56 hrs HW=34.75' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.21 cfs @ 4.34 fps)

Pond 67P: Basin 30



Summary for Subcatchment 67S: Basin 19 - Pervious

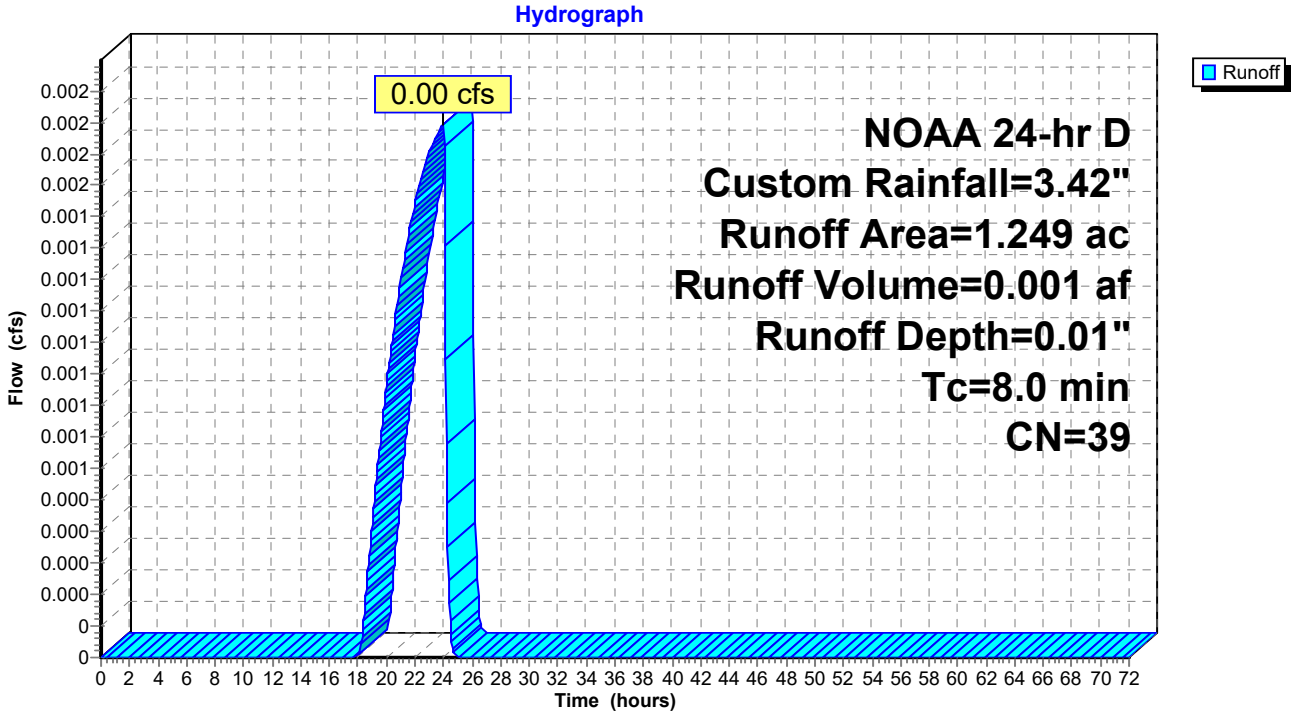
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.249	39	>75% Grass cover, Good, HSG A
1.249		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 67S: Basin 19 - Pervious



Summary for Pond 68P: Basin 19

Inflow Area = 1.665 ac, 24.98% Impervious, Inflow Depth = 0.80" for Custom event
Inflow = 1.41 cfs @ 12.09 hrs, Volume= 0.111 af
Outflow = 0.15 cfs @ 12.91 hrs, Volume= 0.075 af, Atten= 90%, Lag= 49.6 min
Primary = 0.15 cfs @ 12.91 hrs, Volume= 0.075 af
Routed to Pond 69P : Basin 20

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.20' @ 12.91 hrs Surf.Area= 2,977 sf Storage= 2,968 cf

Plug-Flow detention time= 373.0 min calculated for 0.075 af (67% of inflow)
Center-of-Mass det. time= 263.1 min (1,020.2 - 757.0)

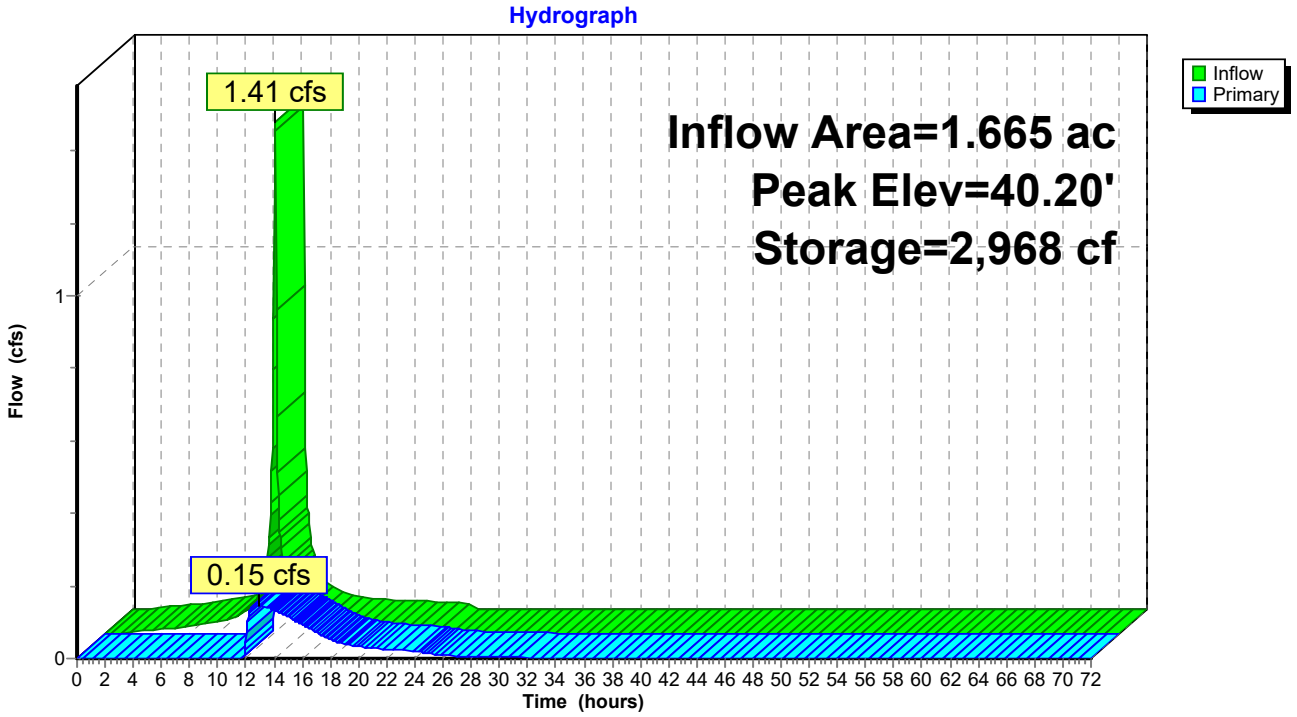
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	12,475 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	2,000	0	0
40.00	2,800	2,400	2,400
41.00	3,700	3,250	5,650
42.00	4,800	4,250	9,900
42.50	5,500	2,575	12,475

Device	Routing	Invert	Outlet Devices
#1	Primary	39.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.15 cfs @ 12.91 hrs HW=40.20' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.15 cfs @ 2.97 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 68P: Basin 19



Summary for Pond 69P: Basin 20

Inflow Area = 4.123 ac, 27.97% Impervious, Inflow Depth = 0.79" for Custom event
Inflow = 2.70 cfs @ 12.05 hrs, Volume= 0.271 af
Outflow = 0.19 cfs @ 15.18 hrs, Volume= 0.207 af, Atten= 93%, Lag= 187.8 min
Primary = 0.19 cfs @ 15.18 hrs, Volume= 0.207 af
Routed to Pond 72P : Basin 21

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.60' @ 15.18 hrs Surf.Area= 6,169 sf Storage= 6,631 cf

Plug-Flow detention time= 500.2 min calculated for 0.207 af (76% of inflow)
Center-of-Mass det. time= 383.3 min (1,210.3 - 827.0)

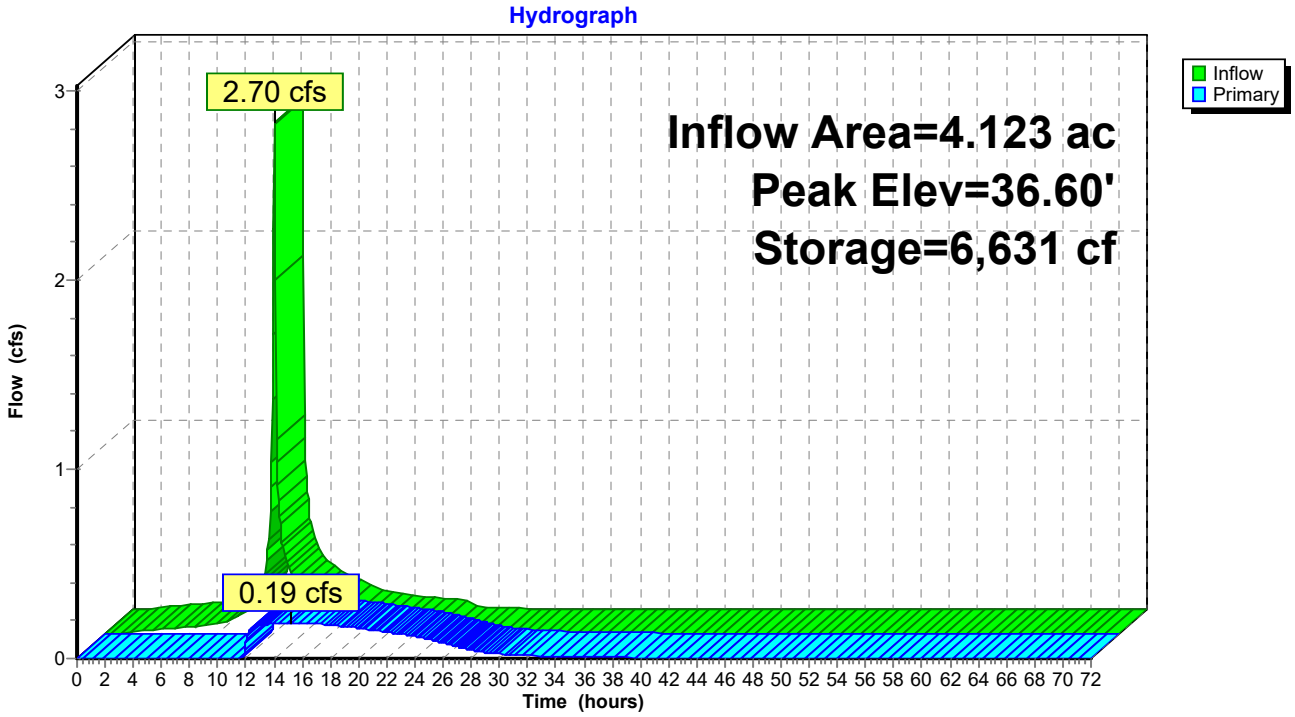
Volume	Invert	Avail.Storage	Storage Description
#1	35.00'	13,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.00	2,400	0	0
36.00	4,500	3,450	3,450
37.00	7,300	5,900	9,350
37.50	9,000	4,075	13,425

Device	Routing	Invert	Outlet Devices
#1	Primary	35.84'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 15.18 hrs HW=36.60' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.19 cfs @ 3.83 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 69P: Basin 20



Summary for Pond 70P: Basin 29

Inflow Area = 2.987 ac, 32.51% Impervious, Inflow Depth = 1.04" for Custom event
Inflow = 3.04 cfs @ 12.10 hrs, Volume= 0.259 af
Outflow = 0.17 cfs @ 13.86 hrs, Volume= 0.174 af, Atten= 94%, Lag= 105.4 min
Primary = 0.17 cfs @ 13.86 hrs, Volume= 0.174 af
Routed to Pond 67P : Basin 30

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.35' @ 13.86 hrs Surf.Area= 7,079 sf Storage= 7,684 cf

Plug-Flow detention time= 563.0 min calculated for 0.174 af (67% of inflow)
Center-of-Mass det. time= 453.6 min (1,211.4 - 757.9)

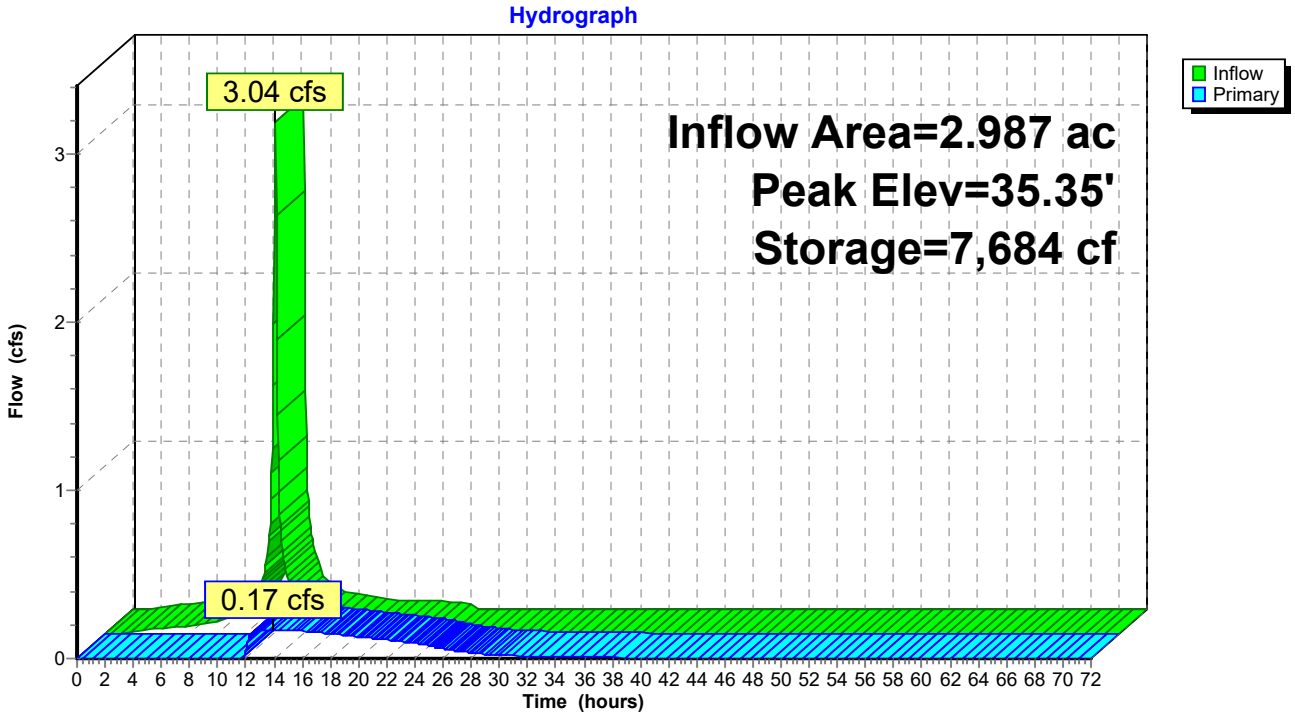
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	12,800 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,500	0	0
35.00	6,200	5,350	5,350
36.00	8,700	7,450	12,800

Device	Routing	Invert	Outlet Devices
#1	Primary	34.71'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 13.86 hrs HW=35.35' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.17 cfs @ 3.46 fps)

Pond 70P: Basin 29



Summary for Subcatchment 70S: Basin 20 - Impervious

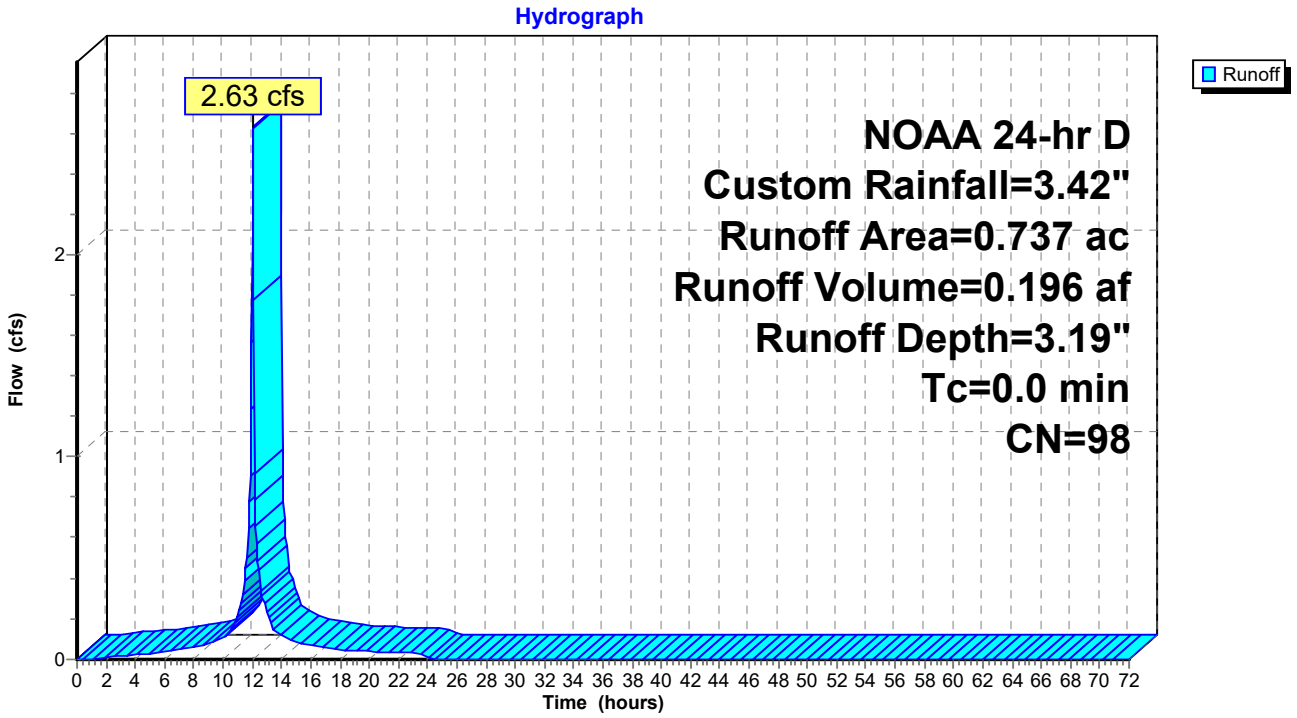
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.63 cfs @ 12.04 hrs, Volume= 0.196 af, Depth= 3.19"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.737	98	Impervious
	0.737		100.00% Impervious Area

Subcatchment 70S: Basin 20 - Impervious



Summary for Pond 71P: Basin 33

Inflow Area = 5.600 ac, 26.93% Impervious, Inflow Depth > 0.71" for Custom event
Inflow = 2.46 cfs @ 12.10 hrs, Volume= 0.332 af
Outflow = 0.17 cfs @ 15.08 hrs, Volume= 0.260 af, Atten= 93%, Lag= 178.7 min
Primary = 0.17 cfs @ 15.08 hrs, Volume= 0.260 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.34' @ 15.08 hrs Surf.Area= 6,015 sf Storage= 6,599 cf

Plug-Flow detention time= 639.9 min calculated for 0.260 af (78% of inflow)
Center-of-Mass det. time= 409.4 min (1,433.0 - 1,023.6)

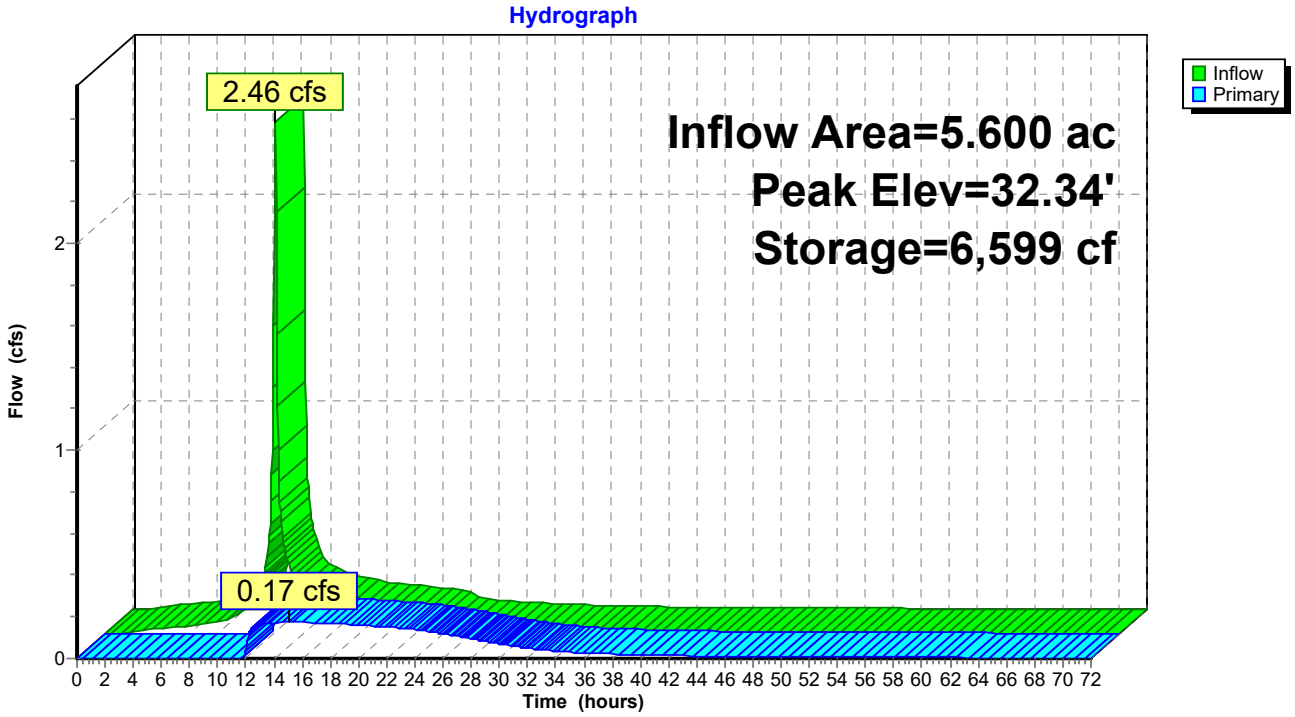
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	41,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,900	0	0
32.00	5,400	4,650	4,650
33.00	7,200	6,300	10,950
34.00	9,400	8,300	19,250
35.00	11,000	10,200	29,450
36.00	13,000	12,000	41,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.67'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 15.08 hrs HW=32.34' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.17 cfs @ 3.56 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 71P: Basin 33



Summary for Subcatchment 71S: Basin 20 - Pervious

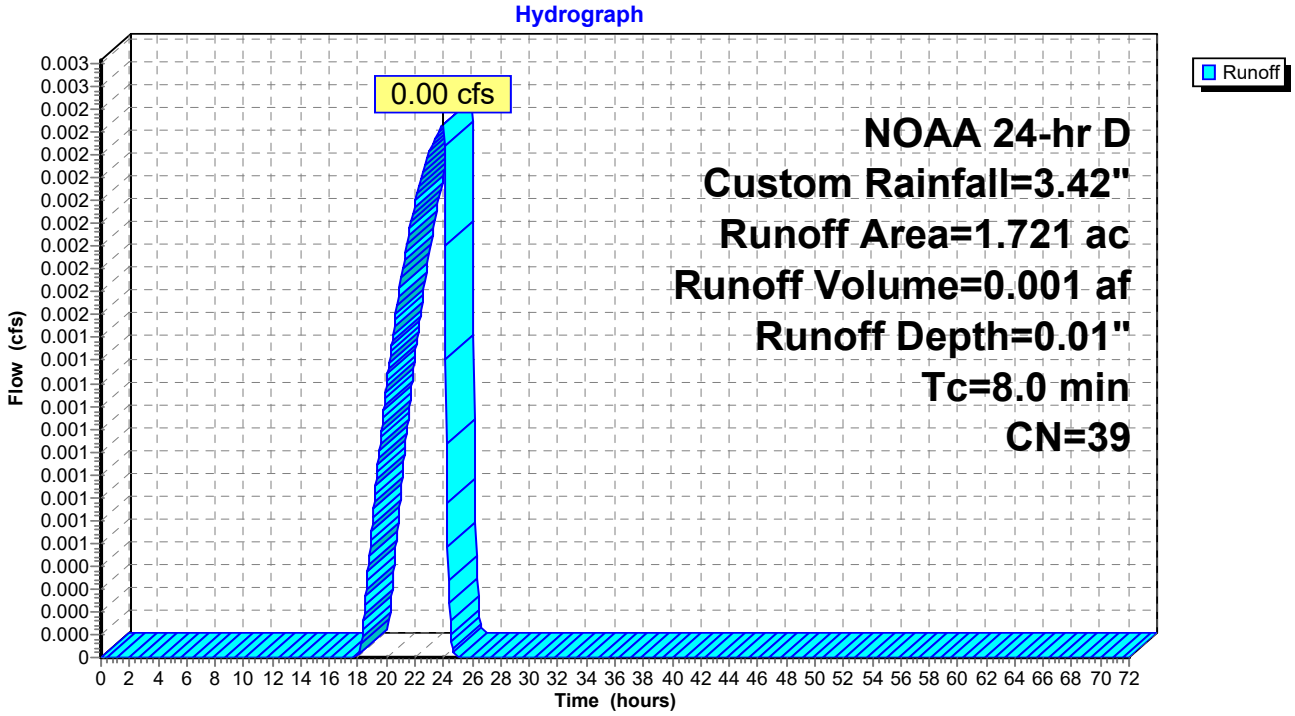
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
1.721		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 71S: Basin 20 - Pervious



Summary for Pond 72P: Basin 21

Inflow Area = 4.621 ac, 35.73% Impervious, Inflow Depth > 0.88" for Custom event
Inflow = 1.65 cfs @ 12.11 hrs, Volume= 0.339 af
Outflow = 1.54 cfs @ 12.14 hrs, Volume= 0.296 af, Atten= 7%, Lag= 2.1 min
Primary = 1.54 cfs @ 12.14 hrs, Volume= 0.296 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.90' @ 12.14 hrs Surf.Area= 2,724 sf Storage= 2,138 cf

Plug-Flow detention time= 182.0 min calculated for 0.296 af (87% of inflow)
Center-of-Mass det. time= 73.8 min (1,107.0 - 1,033.3)

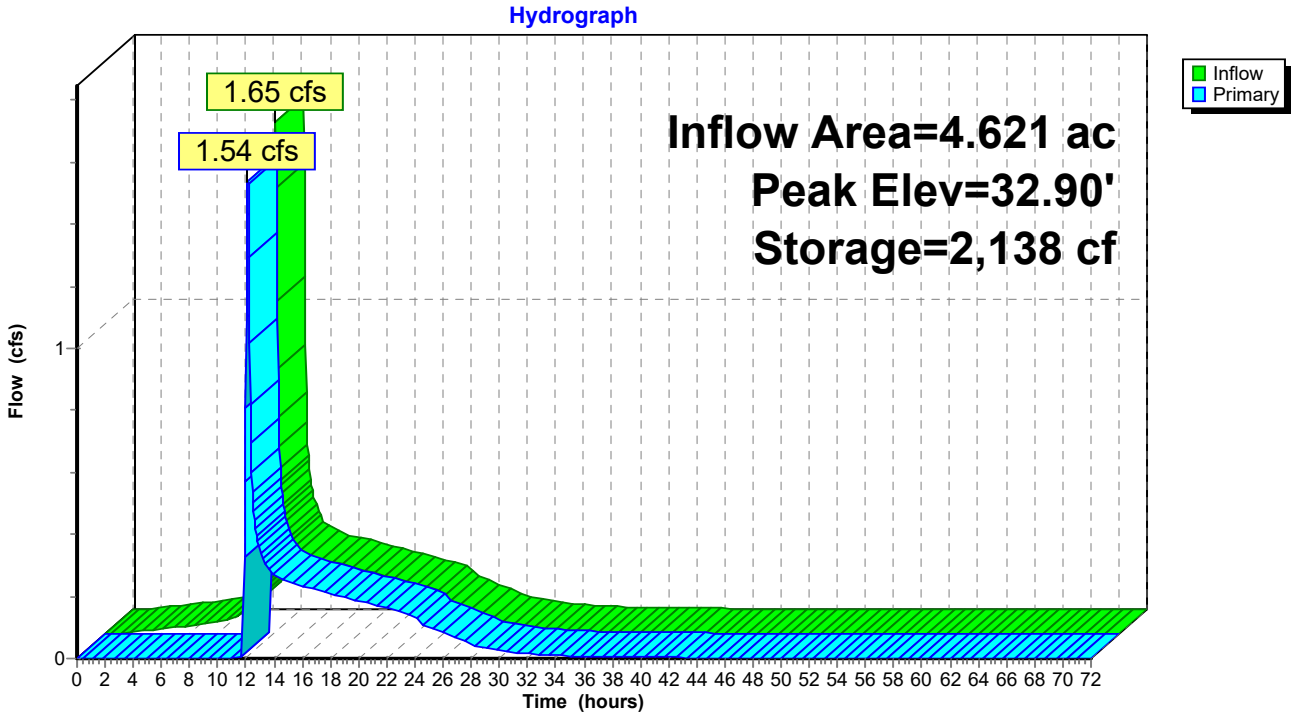
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	8,000 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,000	0	0
33.00	2,800	2,400	2,400
34.00	4,000	3,400	5,800
34.50	4,800	2,200	8,000

Device	Routing	Invert	Outlet Devices
#1	Primary	32.81'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.50 cfs @ 12.14 hrs HW=32.90' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 1.50 cfs @ 1.00 fps)

Pond 72P: Basin 21



Summary for Pond 73P: Basin 32

Inflow Area = 2.998 ac, 24.25% Impervious, Inflow Depth = 0.78" for Custom event
Inflow = 2.27 cfs @ 12.10 hrs, Volume= 0.194 af
Outflow = 0.09 cfs @ 14.80 hrs, Volume= 0.124 af, Atten= 96%, Lag= 162.3 min
Primary = 0.09 cfs @ 14.80 hrs, Volume= 0.124 af
Routed to Pond 71P : Basin 33

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.50' @ 14.80 hrs Surf.Area= 12,750 sf Storage= 6,113 cf

Plug-Flow detention time= 828.0 min calculated for 0.124 af (64% of inflow)
Center-of-Mass det. time= 712.1 min (1,470.9 - 758.8)

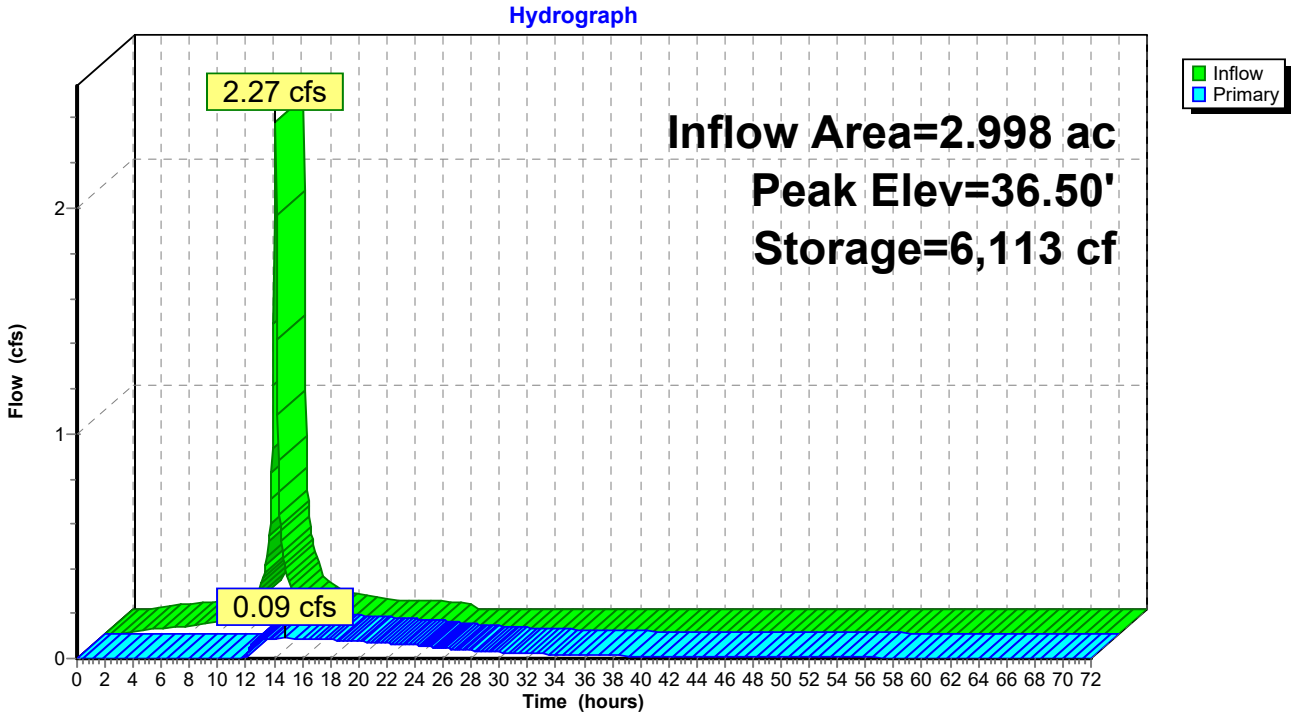
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	54,225 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	11,700	0	0
37.00	13,800	12,750	12,750
38.00	16,200	15,000	27,750
39.00	18,000	17,100	44,850
39.50	19,500	9,375	54,225

Device	Routing	Invert	Outlet Devices
#1	Primary	36.23'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	38.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.09 cfs @ 14.80 hrs HW=36.50' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.09 cfs @ 1.83 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 73P: Basin 32



Summary for Subcatchment 73S: Basin 21 - Impervious

[49] Hint: Tc<2dt may require smaller dt

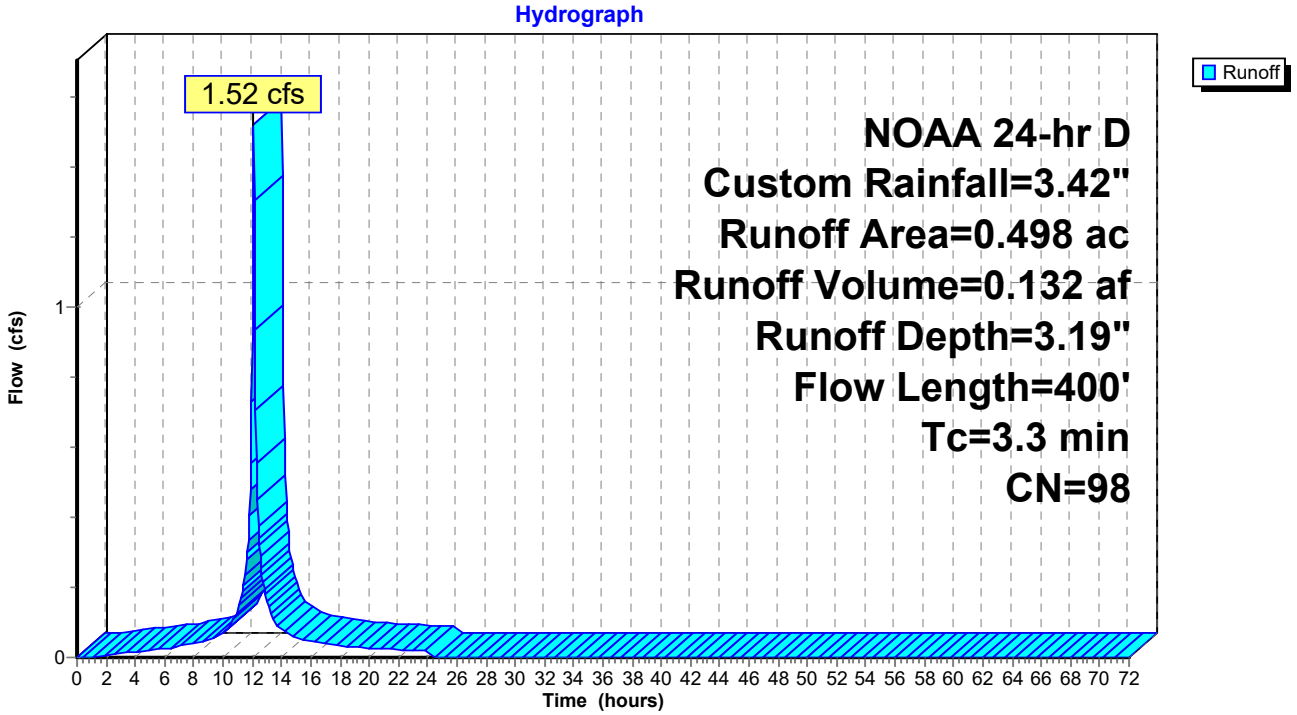
Runoff = 1.52 cfs @ 12.10 hrs, Volume= 0.132 af, Depth= 3.19"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.498	98	Impervious
	0.498		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.3	400	Total			

Subcatchment 73S: Basin 21 - Impervious



Summary for Pond 74P: Basin 39

Inflow Area = 20.988 ac, 20.72% Impervious, Inflow Depth > 0.47" for Custom event
Inflow = 2.25 cfs @ 12.16 hrs, Volume= 0.830 af
Outflow = 0.12 cfs @ 32.64 hrs, Volume= 0.243 af, Atten= 95%, Lag= 1,229.2 min
Primary = 0.12 cfs @ 32.64 hrs, Volume= 0.243 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.38' @ 32.64 hrs Surf.Area= 16,142 sf Storage= 30,376 cf

Plug-Flow detention time= 1,624.1 min calculated for 0.243 af (29% of inflow)
Center-of-Mass det. time= 1,165.4 min (2,423.2 - 1,257.8)

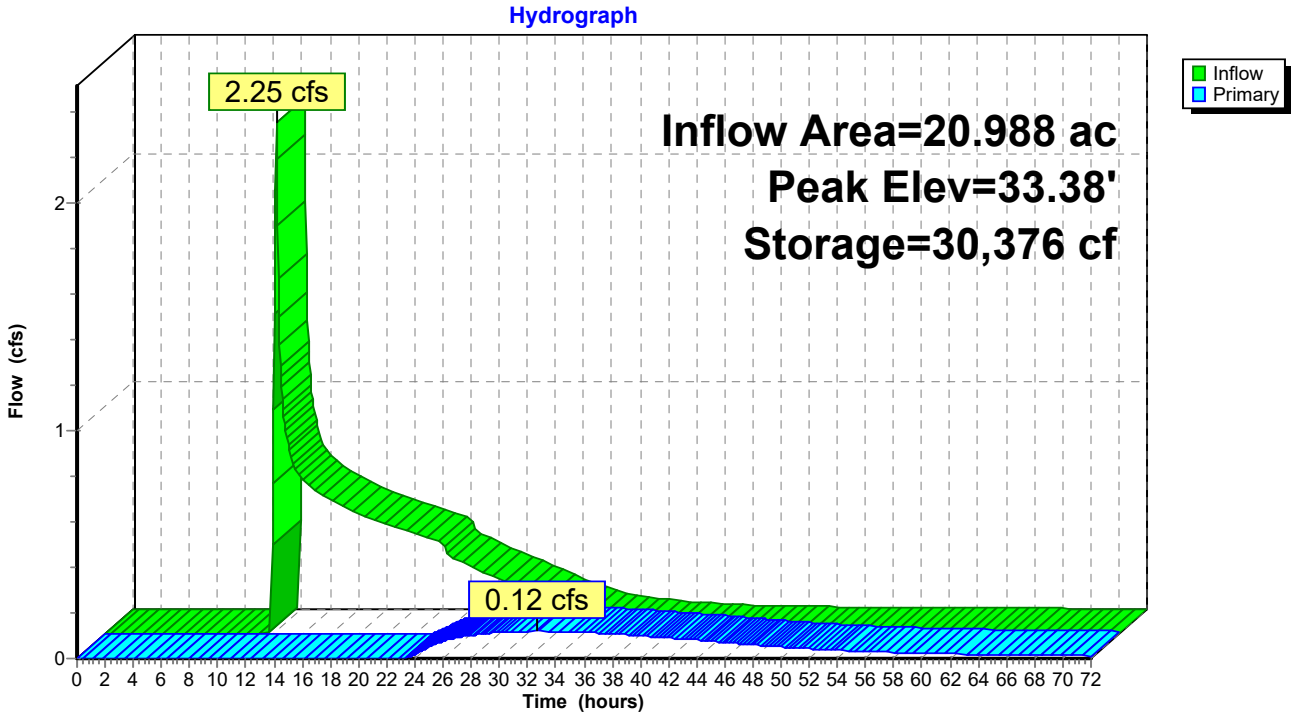
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	50,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	9,900	0	0
32.00	12,000	10,950	10,950
33.00	15,000	13,500	24,450
34.00	18,000	16,500	40,950
34.50	20,000	9,500	50,450

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.12 cfs @ 32.64 hrs HW=33.38' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.12 cfs @ 2.43 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 74P: Basin 39



Summary for Subcatchment 74S: Basin 21 - Pervious

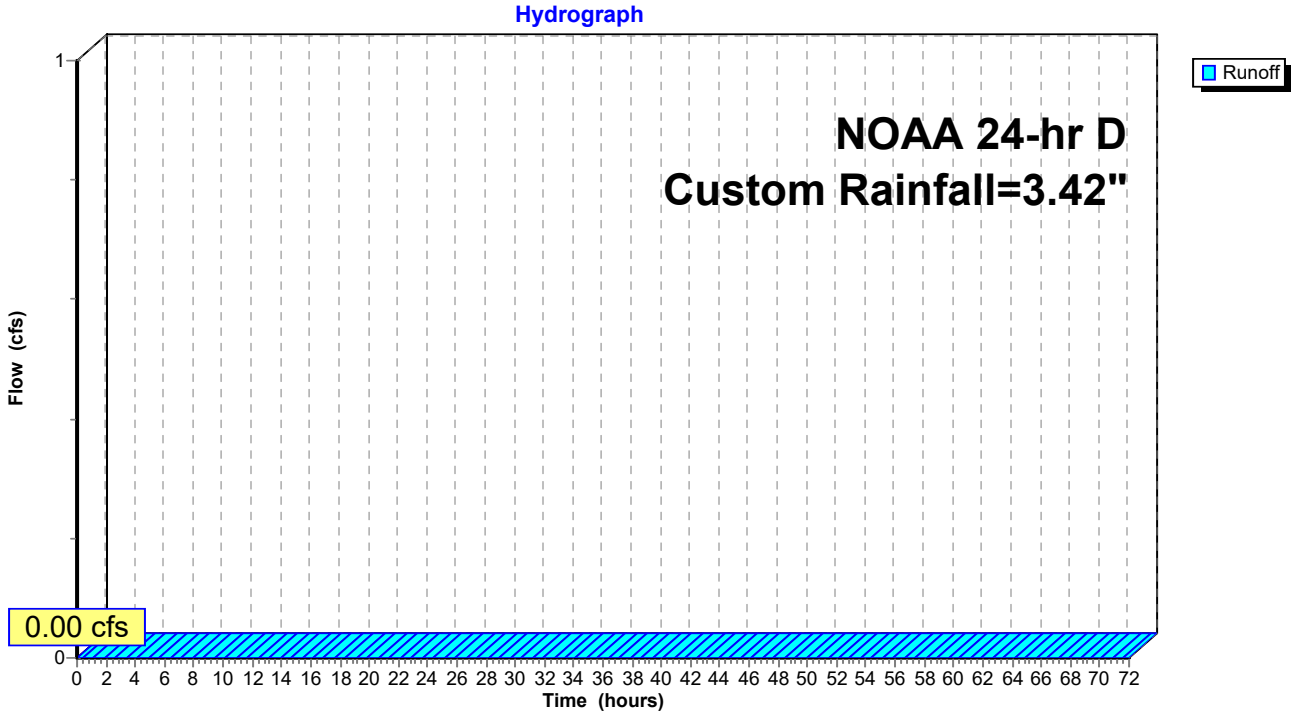
[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 74S: Basin 21 - Pervious



Summary for Pond 75P: Basin 25

Inflow Area = 17.778 ac, 32.79% Impervious, Inflow Depth > 0.76" for Custom event
Inflow = 8.70 cfs @ 12.13 hrs, Volume= 1.127 af
Outflow = 2.02 cfs @ 12.67 hrs, Volume= 1.041 af, Atten= 77%, Lag= 32.8 min
Primary = 2.02 cfs @ 12.67 hrs, Volume= 1.041 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 27.30' @ 12.67 hrs Surf.Area= 9,878 sf Storage= 14,615 cf

Plug-Flow detention time= 420.9 min calculated for 1.041 af (92% of inflow)
Center-of-Mass det. time= 350.5 min (1,332.1 - 981.6)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	28,125 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

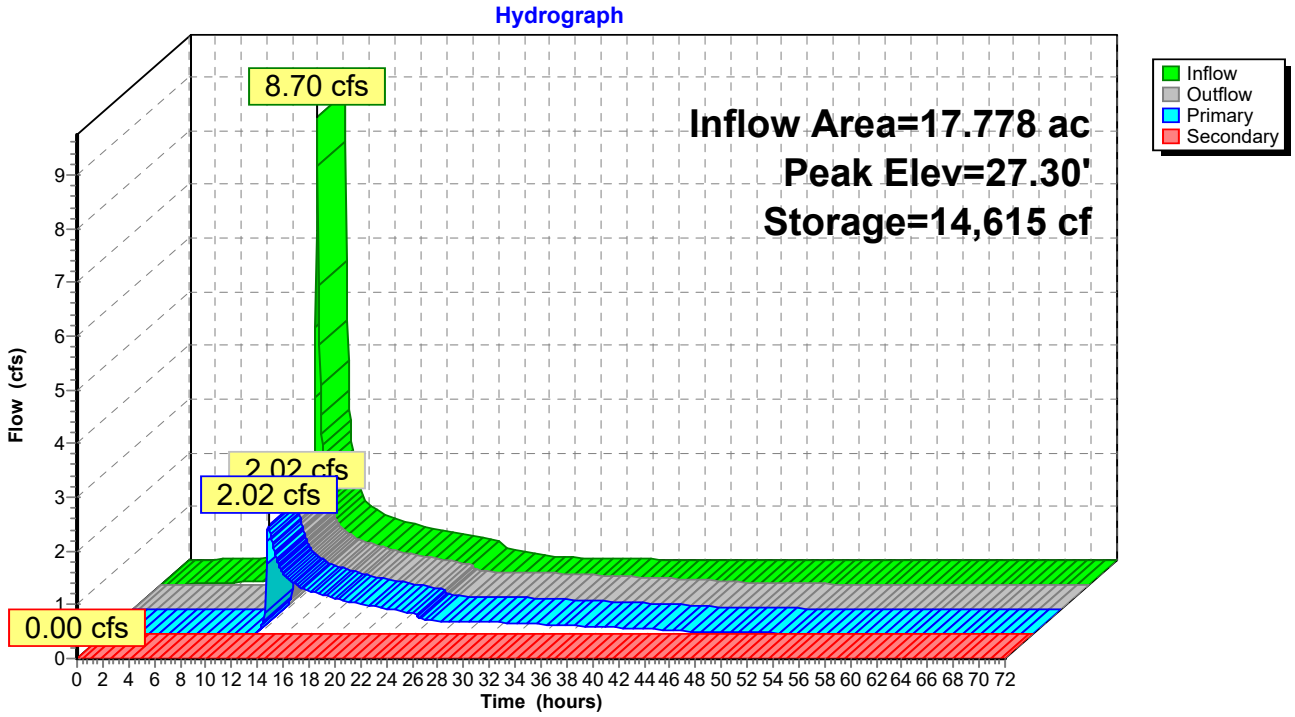
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	6,600	0	0
26.00	7,200	3,450	3,450
27.00	9,300	8,250	11,700
28.00	11,200	10,250	21,950
28.50	13,500	6,175	28,125

Device	Routing	Invert	Outlet Devices
#1	Primary	26.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	27.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	27.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.00 cfs @ 12.67 hrs HW=27.30' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.26 cfs @ 5.23 fps)
└**2=Orifice/Grate** (Weir Controls 1.75 cfs @ 1.05 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=25.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 75P: Basin 25



Summary for Pond 76P: Basin 38

Inflow Area = 1.797 ac, 28.16% Impervious, Inflow Depth = 0.90" for Custom event
Inflow = 1.67 cfs @ 12.09 hrs, Volume= 0.135 af
Outflow = 0.11 cfs @ 13.45 hrs, Volume= 0.090 af, Atten= 93%, Lag= 81.5 min
Primary = 0.11 cfs @ 13.45 hrs, Volume= 0.090 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.70' @ 13.45 hrs Surf.Area= 6,169 sf Storage= 3,901 cf

Plug-Flow detention time= 536.5 min calculated for 0.090 af (67% of inflow)
Center-of-Mass det. time= 426.3 min (1,183.5 - 757.2)

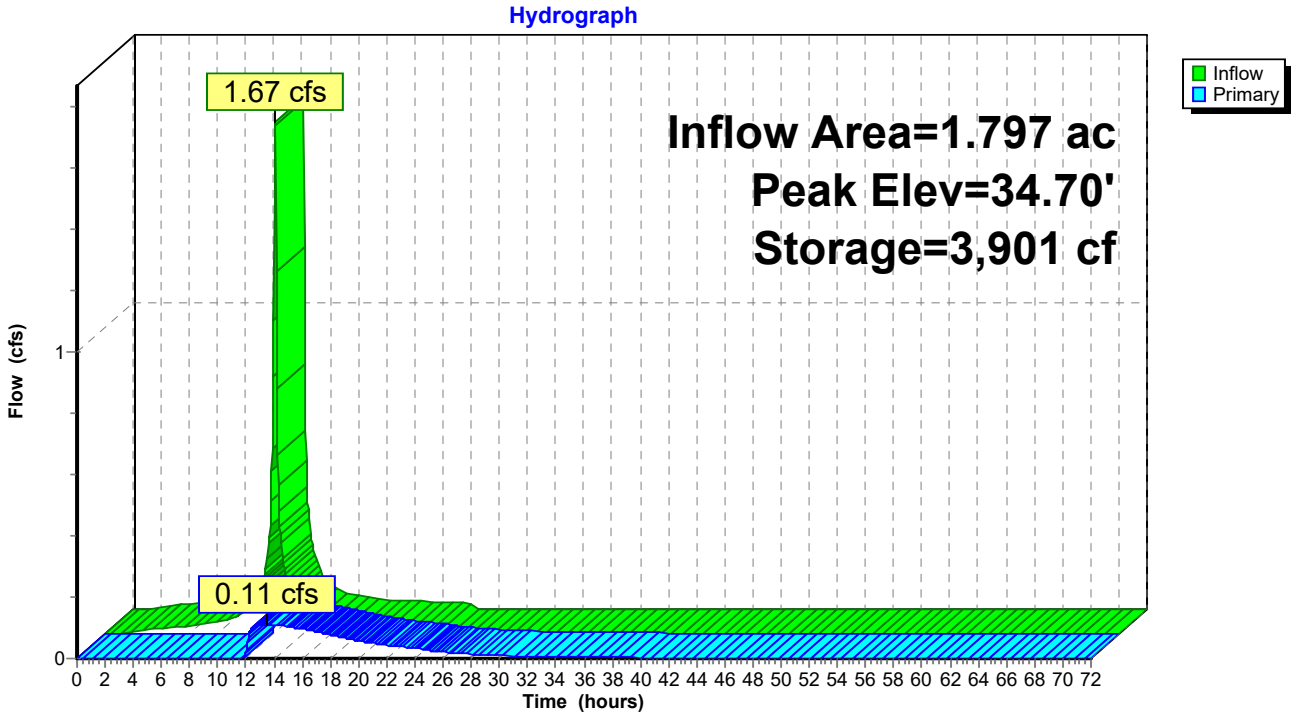
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	18,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,900	0	0
35.00	6,700	5,800	5,800
36.00	9,000	7,850	13,650
36.50	10,200	4,800	18,450

Device	Routing	Invert	Outlet Devices
#1	Primary	34.36'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.11 cfs @ 13.45 hrs HW=34.70' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.11 cfs @ 2.26 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 76P: Basin 38



Summary for Subcatchment 76S: Basin 25 - Impervious

[49] Hint: Tc<2dt may require smaller dt

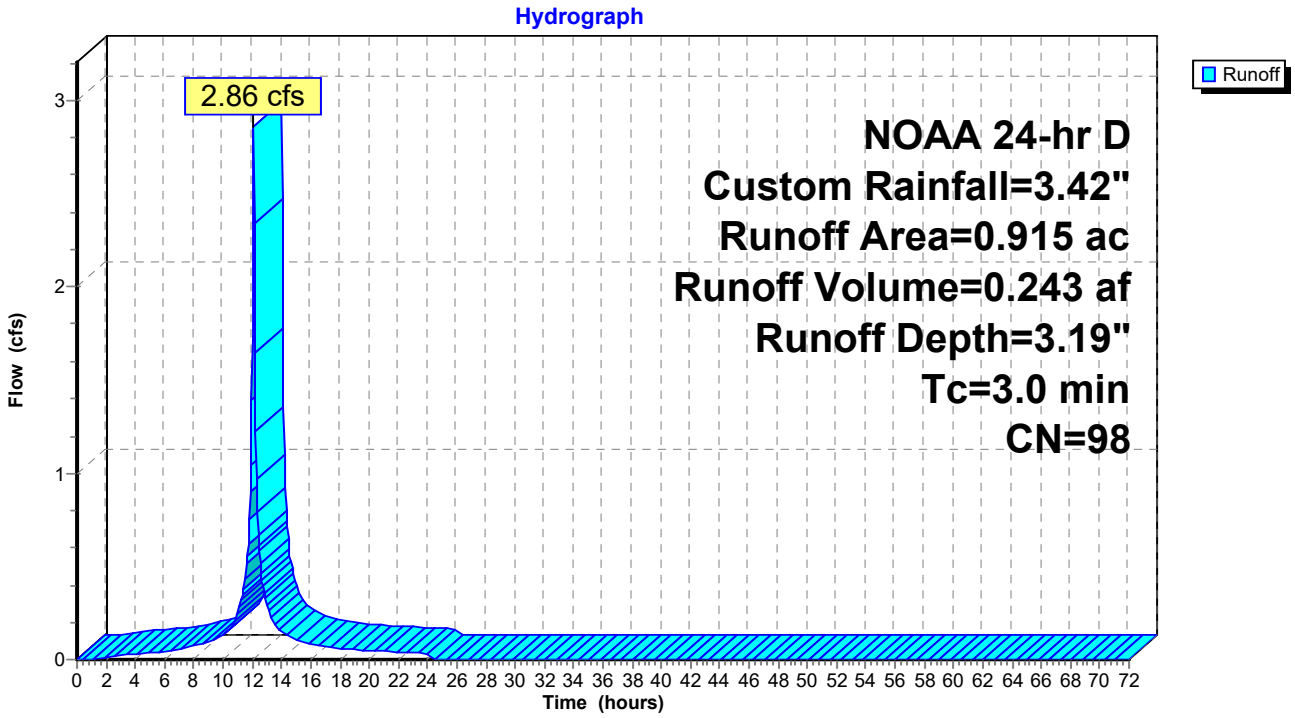
Runoff = 2.86 cfs @ 12.10 hrs, Volume= 0.243 af, Depth= 3.19"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 76S: Basin 25 - Impervious



Summary for Pond 77P: Basin 37

Inflow Area = 20.254 ac, 21.47% Impervious, Inflow Depth > 0.52" for Custom event
Inflow = 2.44 cfs @ 12.11 hrs, Volume= 0.883 af
Outflow = 2.25 cfs @ 12.16 hrs, Volume= 0.829 af, Atten= 8%, Lag= 2.7 min
Primary = 2.25 cfs @ 12.16 hrs, Volume= 0.829 af
Routed to Pond 74P : Basin 39

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.82' @ 12.16 hrs Surf.Area= 3,823 sf Storage= 2,806 cf

Plug-Flow detention time= 134.4 min calculated for 0.829 af (94% of inflow)
Center-of-Mass det. time= 48.0 min (1,257.8 - 1,209.8)

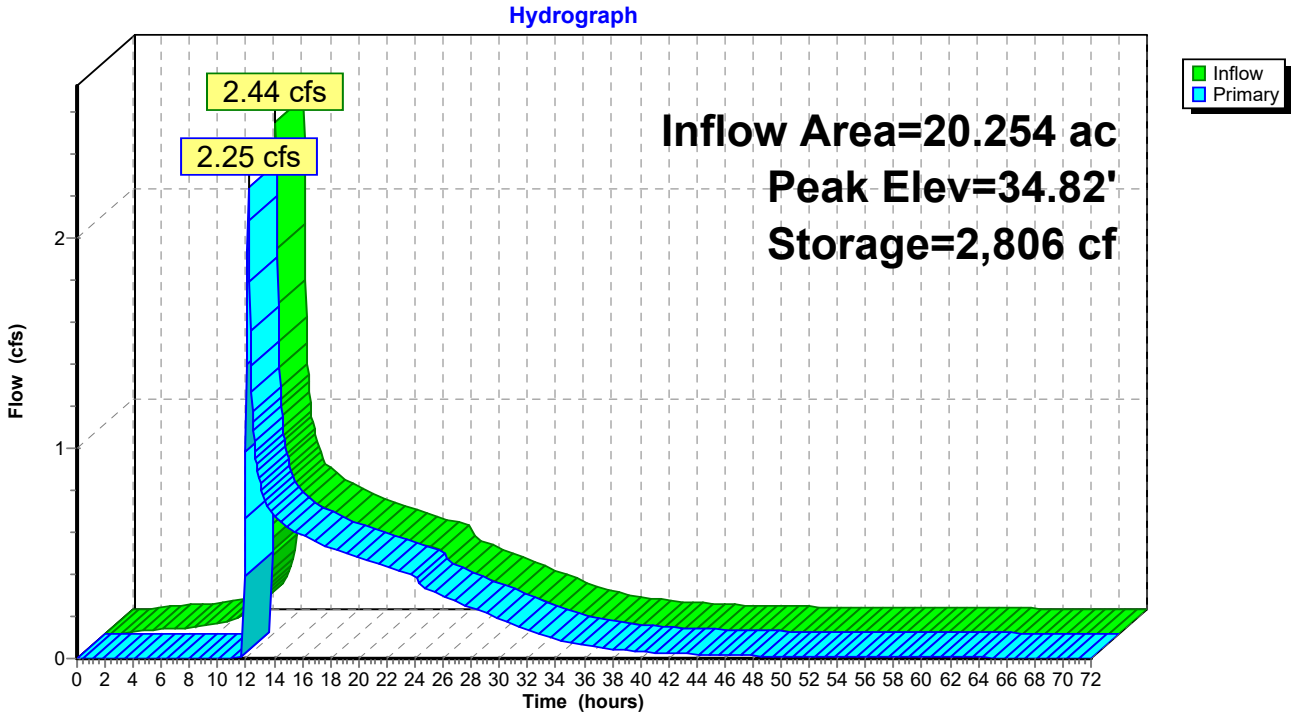
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	5,650 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	3,000	0	0
35.00	4,000	3,500	3,500
35.50	4,600	2,150	5,650

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.21 cfs @ 12.16 hrs HW=34.82' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 2.21 cfs @ 1.14 fps)

Pond 77P: Basin 37



Summary for Subcatchment 77S: Basin 25 - Pervious

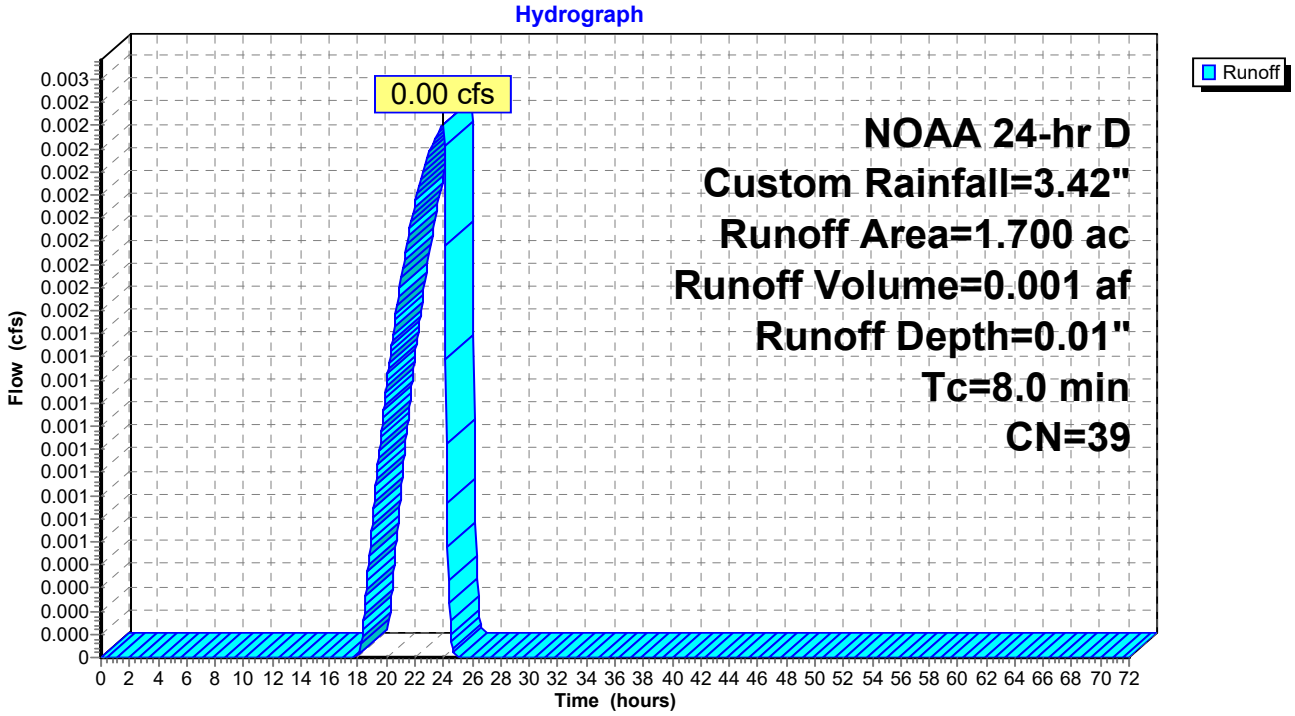
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.700	39	>75% Grass cover, Good, HSG A
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 77S: Basin 25 - Pervious



Summary for Pond 78P: Basin 24

Inflow Area = 2.540 ac, 35.00% Impervious, Inflow Depth = 1.12" for Custom event
Inflow = 2.78 cfs @ 12.10 hrs, Volume= 0.237 af
Outflow = 2.38 cfs @ 12.15 hrs, Volume= 0.161 af, Atten= 14%, Lag= 2.9 min
Primary = 2.38 cfs @ 12.15 hrs, Volume= 0.161 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 30.84' @ 12.15 hrs Surf.Area= 5,591 sf Storage= 4,015 cf

Plug-Flow detention time= 210.8 min calculated for 0.161 af (68% of inflow)
Center-of-Mass det. time= 103.0 min (860.6 - 757.6)

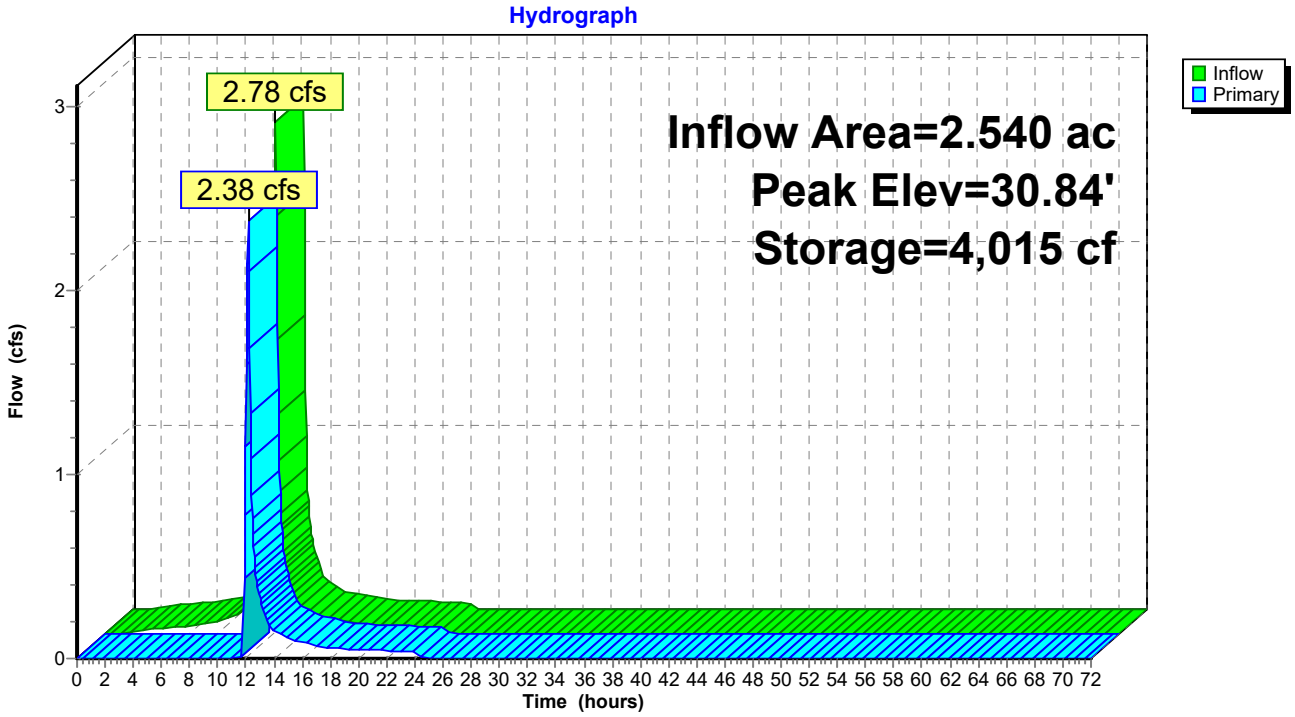
Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	16,275 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	4,000	0	0
31.00	5,900	4,950	4,950
32.00	8,000	6,950	11,900
32.50	9,500	4,375	16,275

Device	Routing	Invert	Outlet Devices
#1	Primary	30.71'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.36 cfs @ 12.15 hrs HW=30.84' (Free Discharge)
1=Orifice/Grate (Weir Controls 2.36 cfs @ 1.16 fps)

Pond 78P: Basin 24



Summary for Pond 79P: Basin 34

[92] Warning: Device #2 is above defined storage

Inflow Area = 1.715 ac, 25.31% Impervious, Inflow Depth = 0.81" for Custom event
Inflow = 1.36 cfs @ 12.10 hrs, Volume= 0.116 af
Outflow = 0.09 cfs @ 13.54 hrs, Volume= 0.076 af, Atten= 93%, Lag= 86.3 min
Primary = 0.09 cfs @ 13.54 hrs, Volume= 0.076 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.54' @ 13.54 hrs Surf.Area= 6,934 sf Storage= 3,390 cf

Plug-Flow detention time= 592.2 min calculated for 0.076 af (66% of inflow)
Center-of-Mass det. time= 480.2 min (1,238.9 - 758.7)

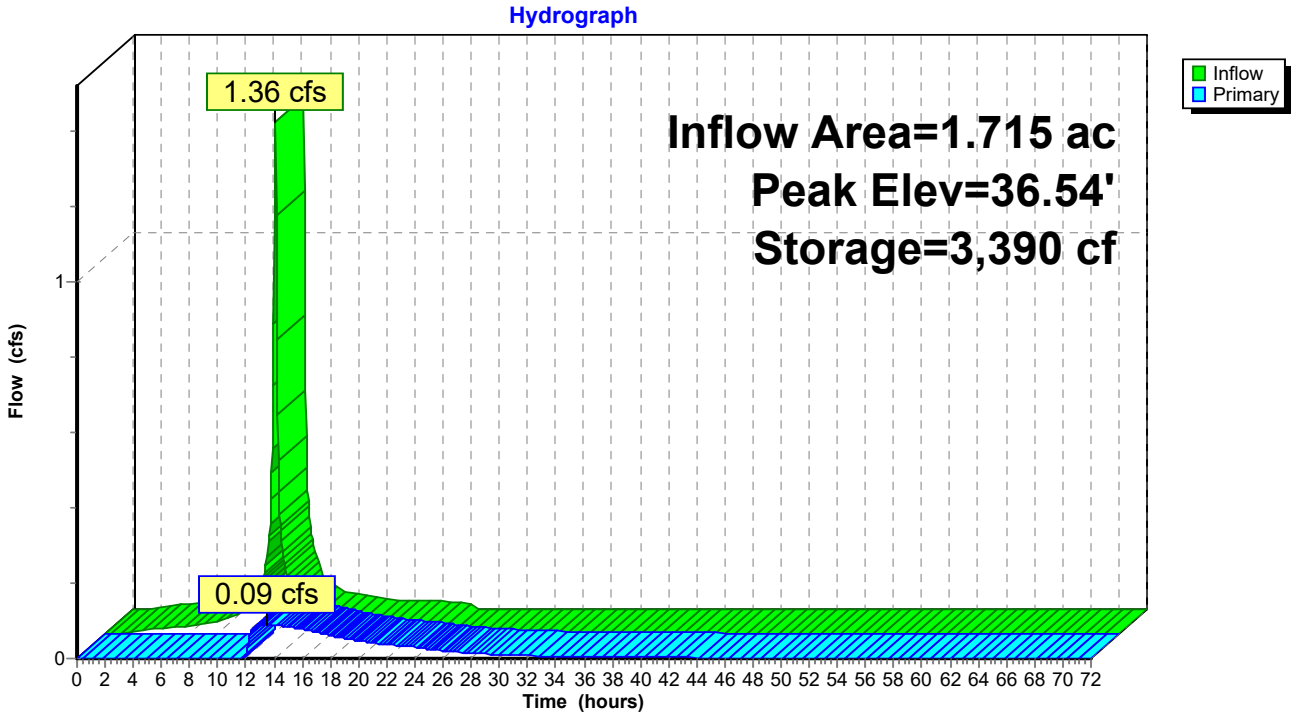
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	11,200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	5,700	0	0
37.00	8,000	6,850	6,850
37.50	9,400	4,350	11,200

Device	Routing	Invert	Outlet Devices
#1	Primary	36.27'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.09 cfs @ 13.54 hrs HW=36.54' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.81 fps)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 79P: Basin 34



Summary for Subcatchment 79S: Basin 24 - Impervious

[49] Hint: Tc<2dt may require smaller dt

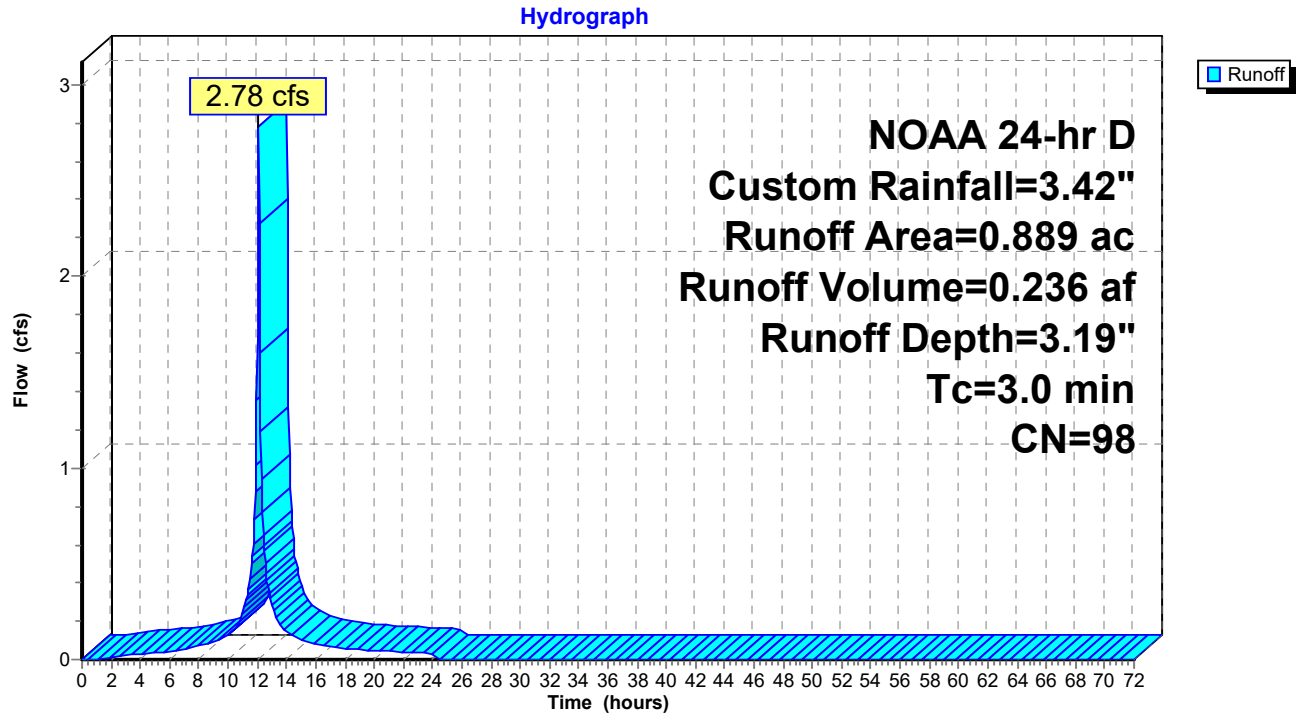
Runoff = 2.78 cfs @ 12.10 hrs, Volume= 0.236 af, Depth= 3.19"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.889	98	Impervious
	0.889		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 79S: Basin 24 - Impervious



Summary for Pond 80P: Basin 35

Inflow Area = 14.918 ac, 10.66% Impervious, Inflow Depth = 0.34" for Custom event
Inflow = 4.61 cfs @ 12.11 hrs, Volume= 0.423 af
Outflow = 0.20 cfs @ 14.84 hrs, Volume= 0.281 af, Atten= 96%, Lag= 163.9 min
Primary = 0.20 cfs @ 14.84 hrs, Volume= 0.281 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.61' @ 14.84 hrs Surf.Area= 9,878 sf Storage= 13,274 cf

Plug-Flow detention time= 726.9 min calculated for 0.281 af (66% of inflow)
Center-of-Mass det. time= 619.9 min (1,377.3 - 757.4)

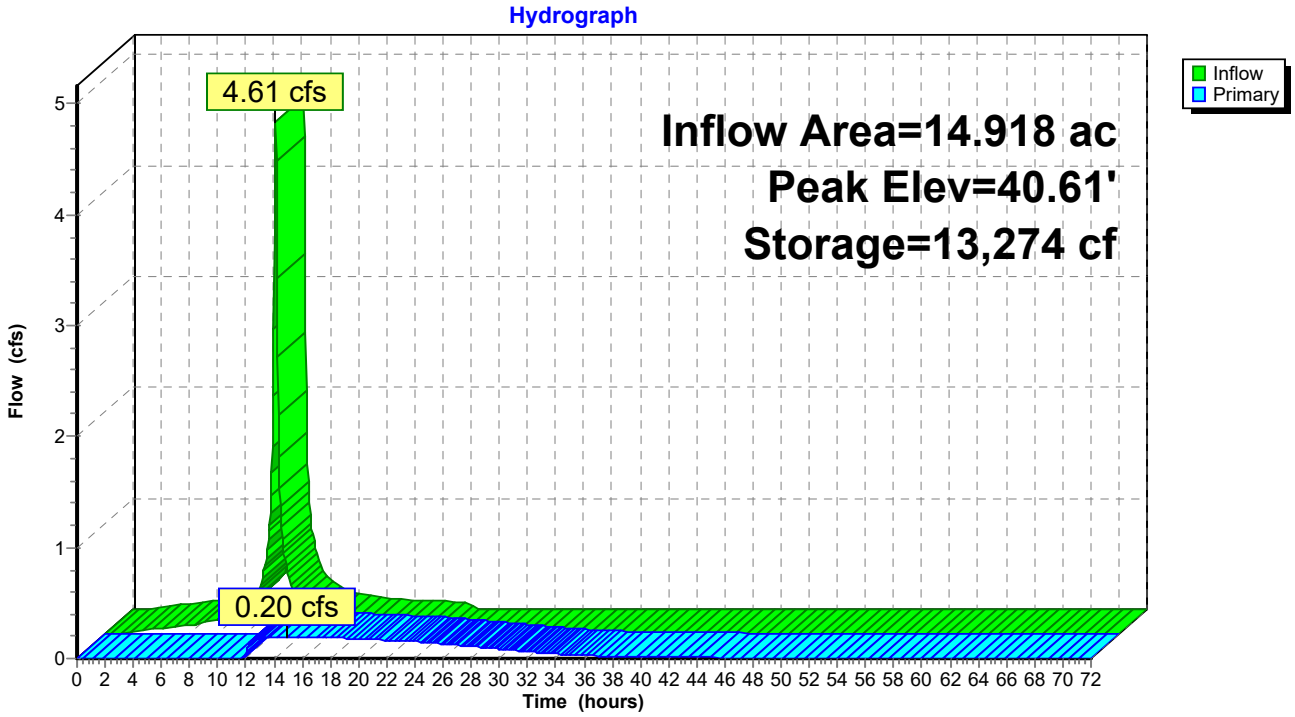
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	22,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	6,700	0	0
40.00	8,600	7,650	7,650
41.00	10,700	9,650	17,300
41.50	12,000	5,675	22,975

Device	Routing	Invert	Outlet Devices
#1	Primary	39.80'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 14.84 hrs HW=40.61' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.20 cfs @ 3.98 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 80P: Basin 35



Summary for Subcatchment 80S: Basin 24 - Pervious

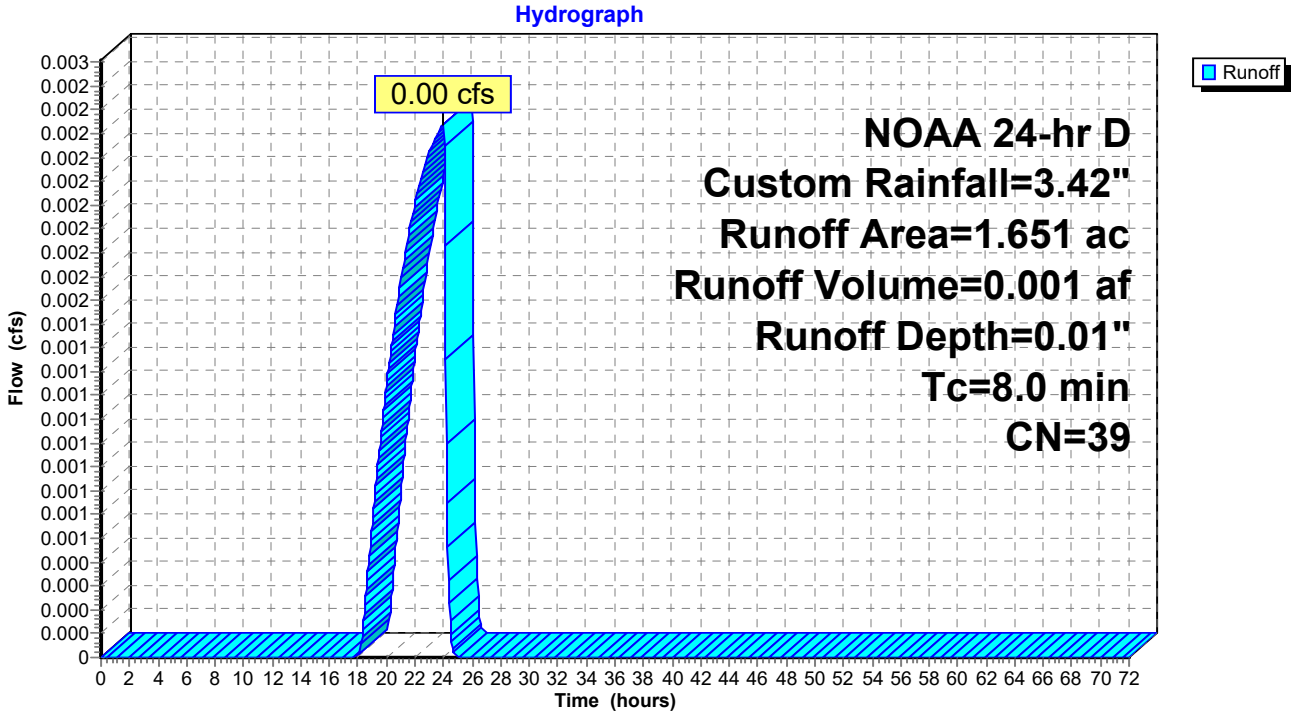
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.651	39	>75% Grass cover, Good, HSG A
1.651		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 80S: Basin 24 - Pervious



Summary for Pond 81P: Basin 27

Inflow Area = 3.012 ac, 25.00% Impervious, Inflow Depth = 0.80" for Custom event
Inflow = 2.36 cfs @ 12.10 hrs, Volume= 0.201 af
Outflow = 0.16 cfs @ 13.48 hrs, Volume= 0.135 af, Atten= 93%, Lag= 82.7 min
Primary = 0.16 cfs @ 13.48 hrs, Volume= 0.135 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.84' @ 13.48 hrs Surf.Area= 5,499 sf Storage= 5,781 cf

Plug-Flow detention time= 484.5 min calculated for 0.135 af (67% of inflow)
Center-of-Mass det. time= 376.9 min (1,135.6 - 758.7)

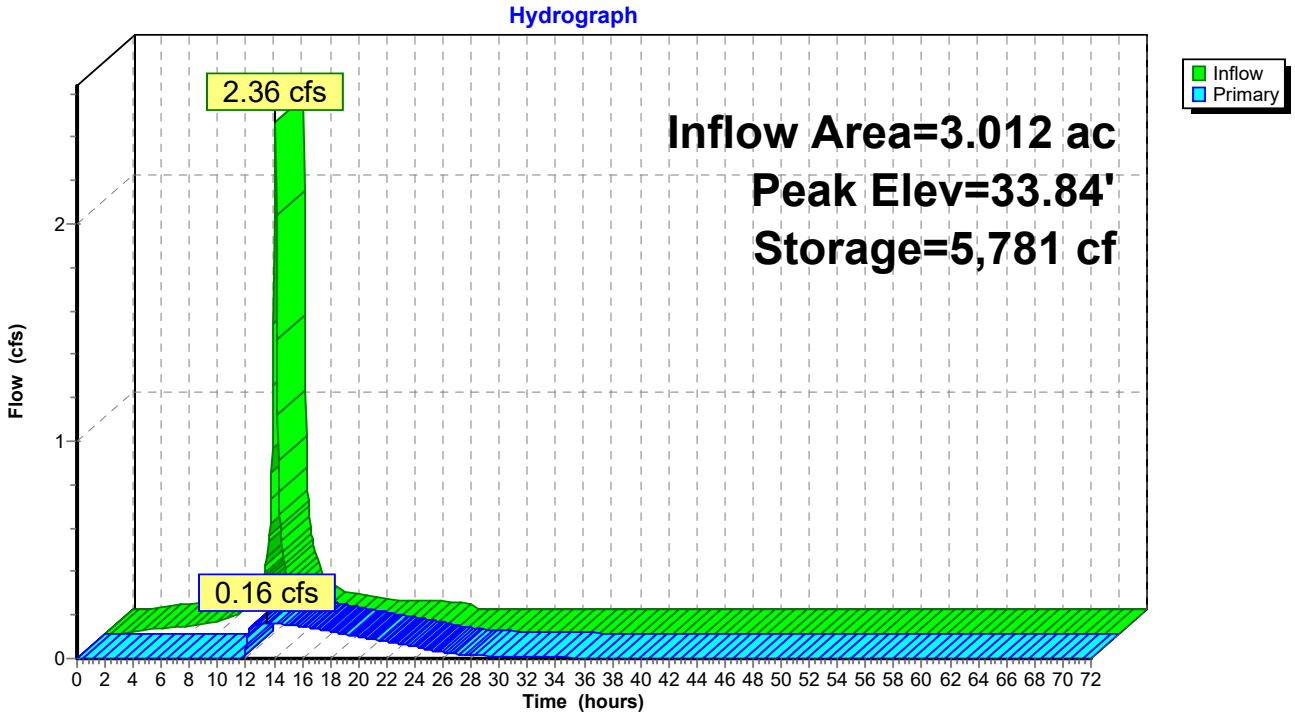
Volume	Invert	Avail.Storage	Storage Description
#1	32.50'	9,875 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.50	3,400	0	0
33.00	3,900	1,825	1,825
34.00	5,800	4,850	6,675
34.50	7,000	3,200	9,875

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 13.48 hrs HW=33.84' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.16 cfs @ 3.32 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 81P: Basin 27



Summary for Pond 82P: Basin 36

Inflow Area = 1.697 ac,100.00% Impervious, Inflow Depth = 3.19" for Custom event
Inflow = 4.45 cfs @ 12.11 hrs, Volume= 0.451 af
Outflow = 0.21 cfs @ 14.81 hrs, Volume= 0.301 af, Atten= 95%, Lag= 161.7 min
Primary = 0.21 cfs @ 14.81 hrs, Volume= 0.301 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.99' @ 14.81 hrs Surf.Area= 9,182 sf Storage= 14,077 cf

Plug-Flow detention time= 697.8 min calculated for 0.301 af (67% of inflow)
Center-of-Mass det. time= 591.2 min (1,350.7 - 759.5)

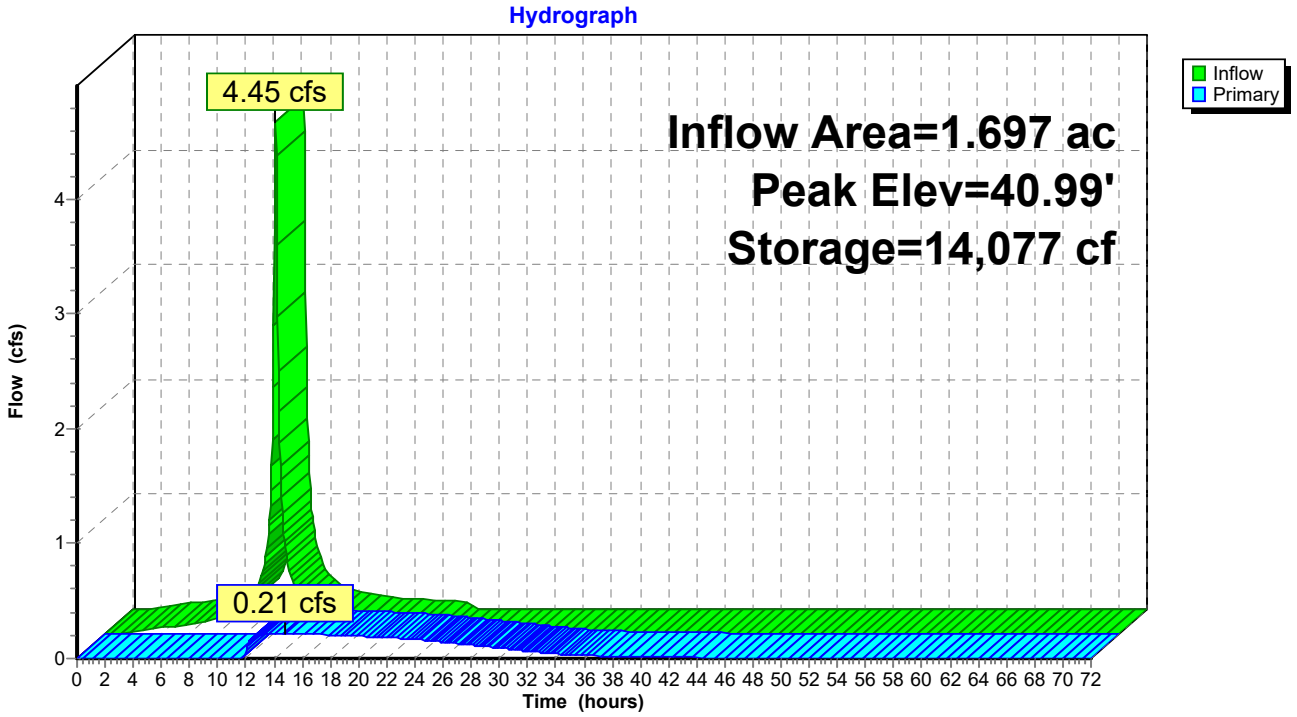
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	18,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	5,300	0	0
40.00	6,900	6,100	6,100
41.00	9,200	8,050	14,150
41.50	10,100	4,825	18,975

Device	Routing	Invert	Outlet Devices
#1	Primary	40.04'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 14.81 hrs HW=40.99' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.21 cfs @ 4.38 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 82P: Basin 36



Summary for Subcatchment 82S: Basin 27 - Impervious

[49] Hint: Tc<2dt may require smaller dt

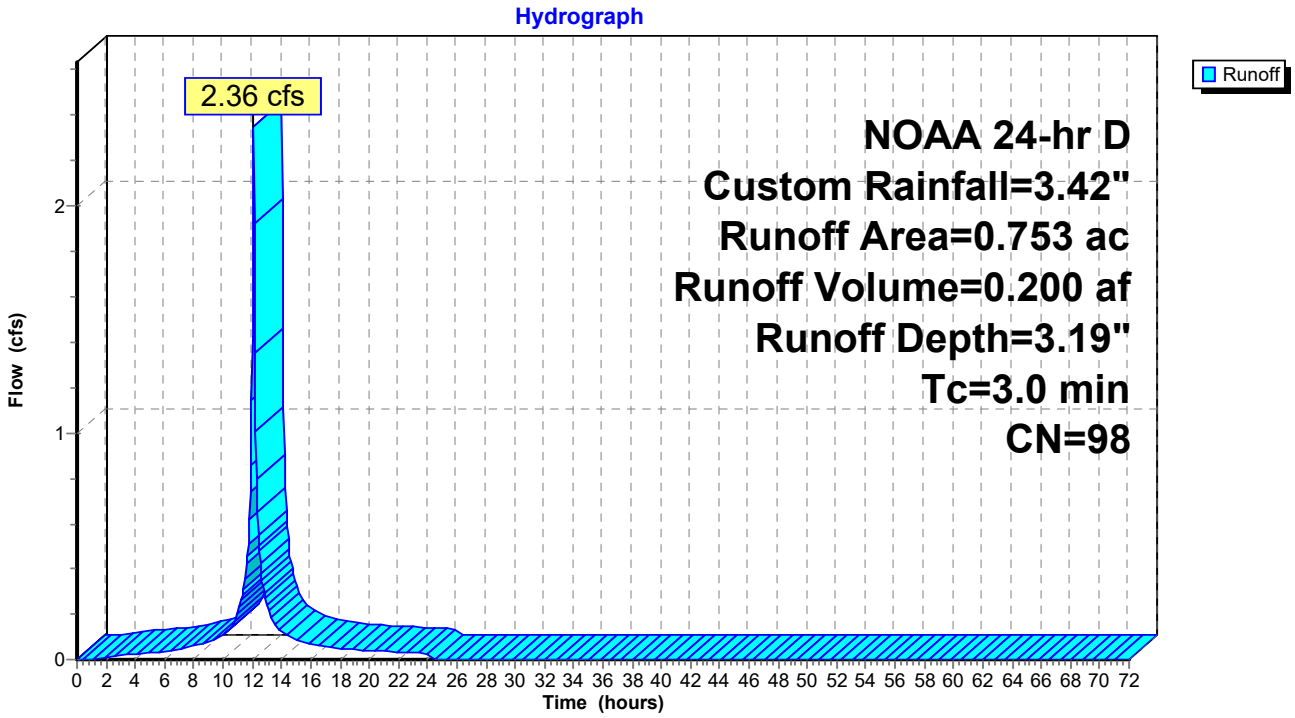
Runoff = 2.36 cfs @ 12.10 hrs, Volume= 0.200 af, Depth= 3.19"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.753	98	
	0.753		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 82S: Basin 27 - Impervious



Summary for Subcatchment 83S: Basin 27 - Pervious

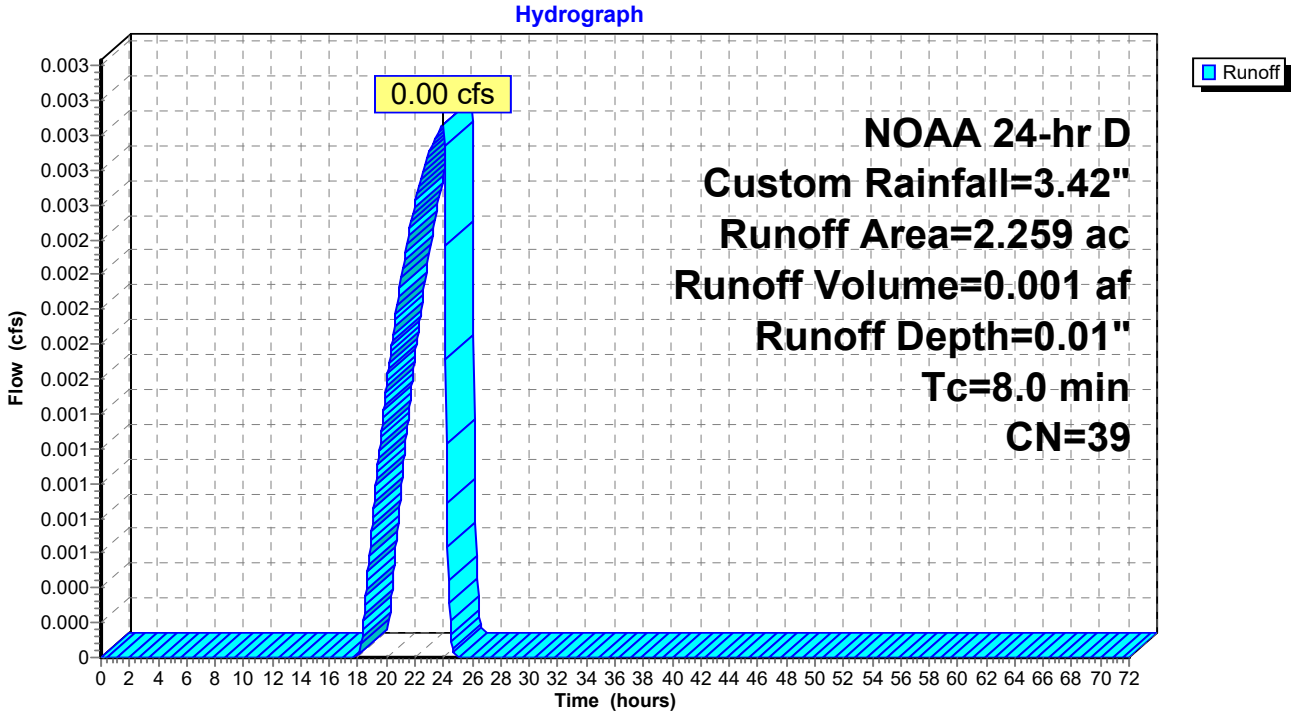
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
2.259	39	>75% Grass cover, Good, HSG A
2.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 83S: Basin 27 - Pervious



Summary for Subcatchment 84S: Basin 29 - Impervious

[49] Hint: Tc<2dt may require smaller dt

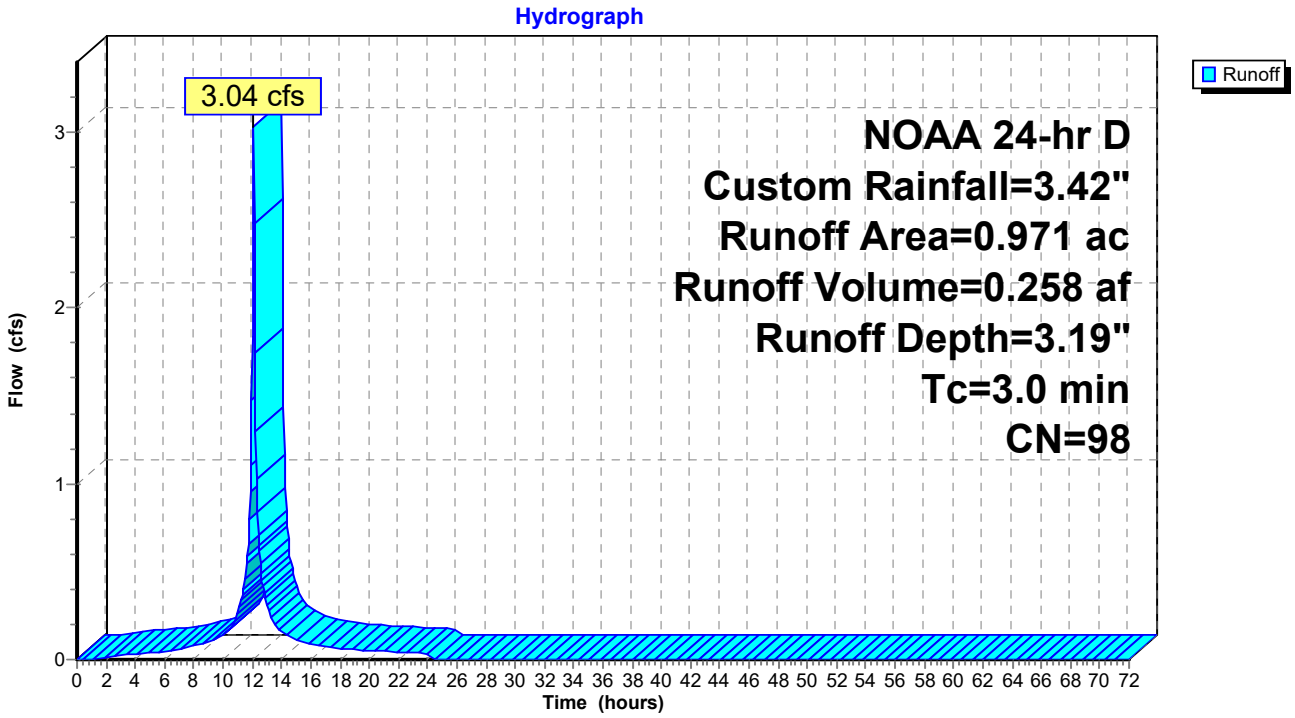
Runoff = 3.04 cfs @ 12.10 hrs, Volume= 0.258 af, Depth= 3.19"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.971	98	Impervious
	0.971		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 84S: Basin 29 - Impervious



Summary for Pond 85P: Basin 28

Inflow Area = 1.744 ac, 35.03% Impervious, Inflow Depth = 1.12" for Custom event
Inflow = 1.88 cfs @ 12.10 hrs, Volume= 0.163 af
Outflow = 1.72 cfs @ 12.14 hrs, Volume= 0.110 af, Atten= 9%, Lag= 2.2 min
Primary = 1.72 cfs @ 12.14 hrs, Volume= 0.110 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.50' @ 12.14 hrs Surf.Area= 3,203 sf Storage= 2,608 cf

Plug-Flow detention time= 207.2 min calculated for 0.110 af (68% of inflow)
Center-of-Mass det. time= 99.3 min (857.2 - 757.9)

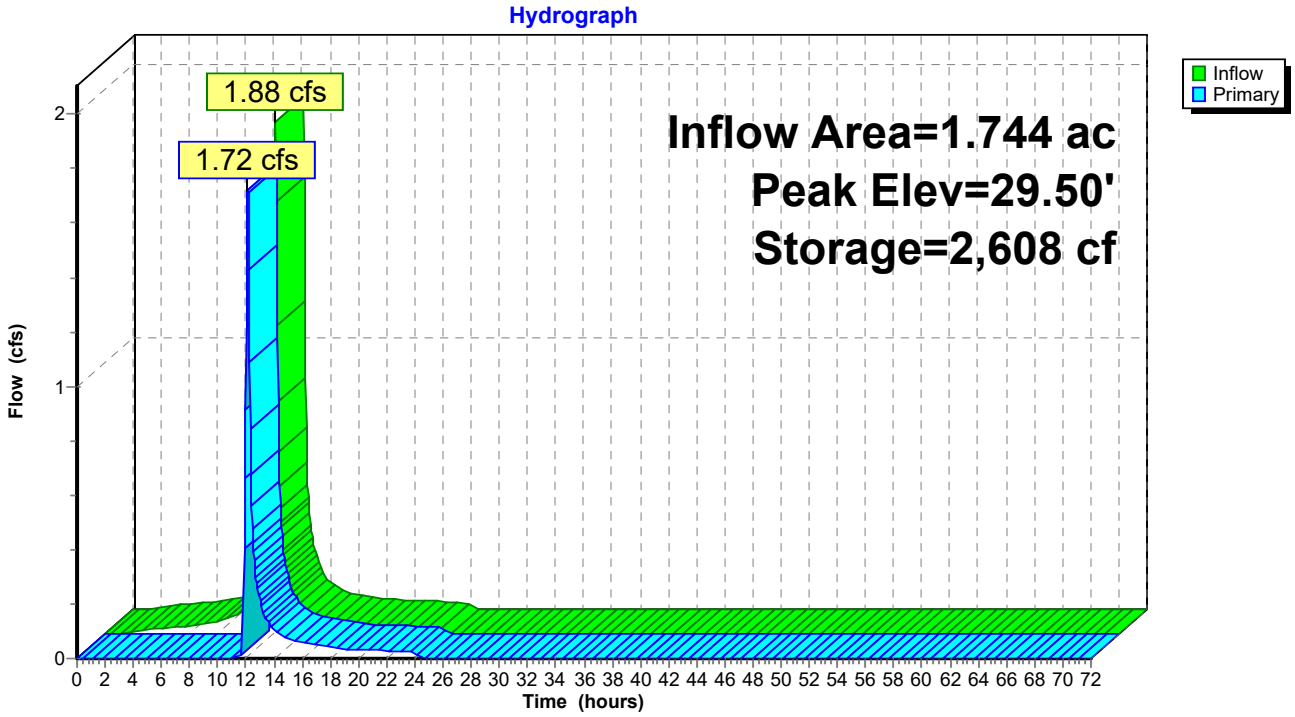
Volume	Invert	Avail.Storage	Storage Description
#1	28.50'	6,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.50	2,000	0	0
29.00	2,600	1,150	1,150
30.00	3,800	3,200	4,350
30.50	4,600	2,100	6,450

Device	Routing	Invert	Outlet Devices
#1	Primary	29.40'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.68 cfs @ 12.14 hrs HW=29.50' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 1.68 cfs @ 1.04 fps)

Pond 85P: Basin 28



Summary for Subcatchment 85S: Basin 29 - Pervious

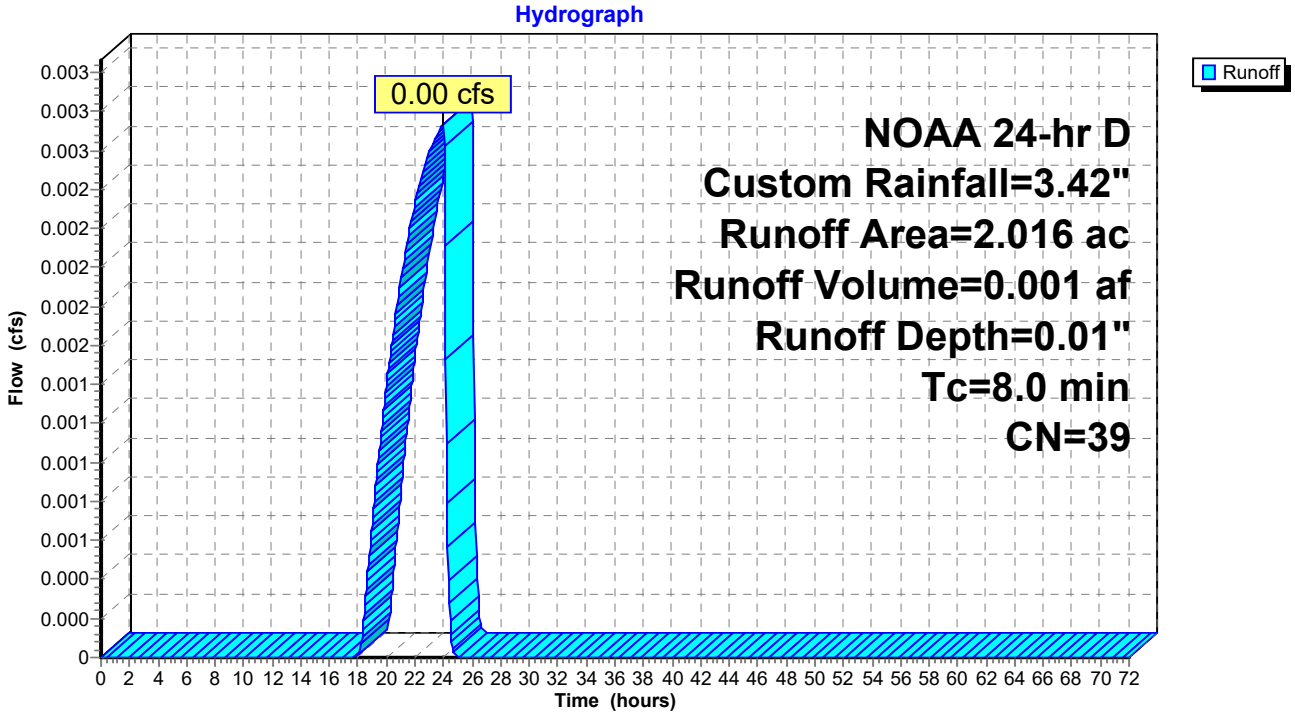
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
2.016	39	>75% Grass cover, Good, HSG A
2.016		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 85S: Basin 29 - Pervious

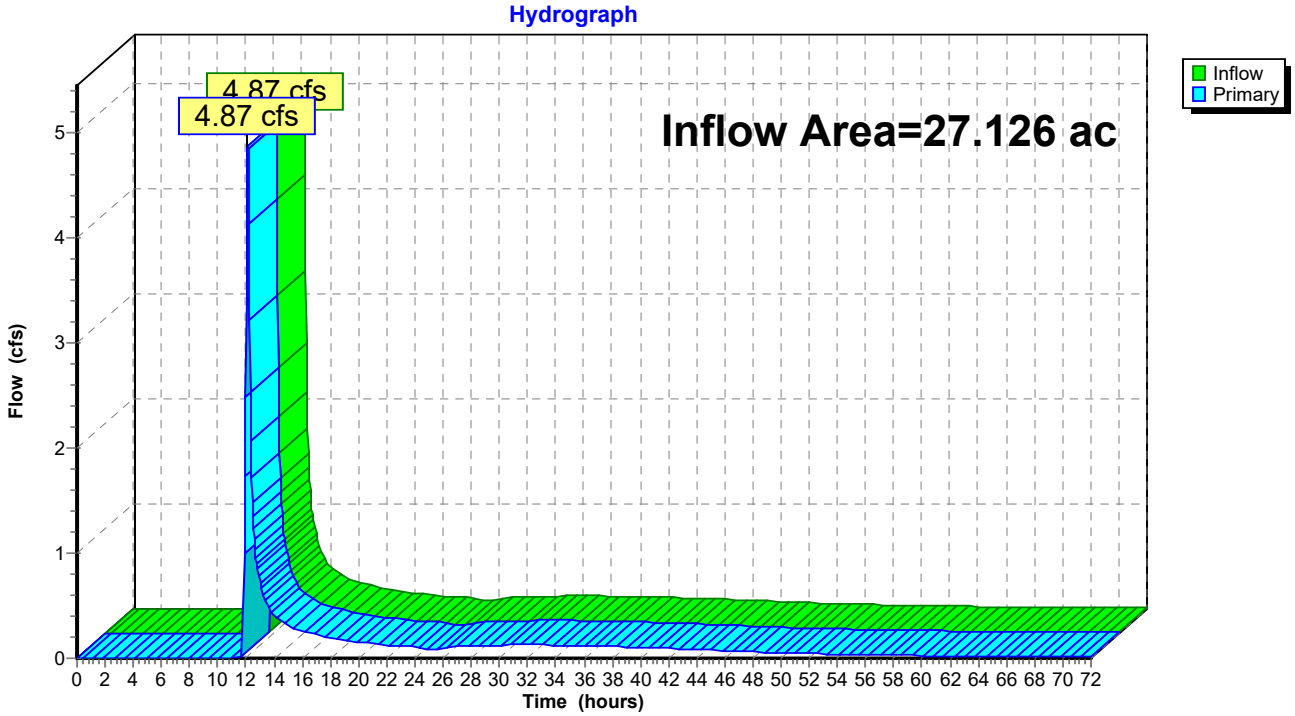


Summary for Link 86L: Outlet to Wet Pond

Inflow Area = 27.126 ac, 24.26% Impervious, Inflow Depth > 0.28" for Custom event
Inflow = 4.87 cfs @ 12.14 hrs, Volume= 0.644 af
Primary = 4.87 cfs @ 12.14 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 62P : Basin 26 (Wet Pond)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 86L: Outlet to Wet Pond



Summary for Subcatchment 86S: Basin 28 - Impervious

[49] Hint: Tc<2dt may require smaller dt

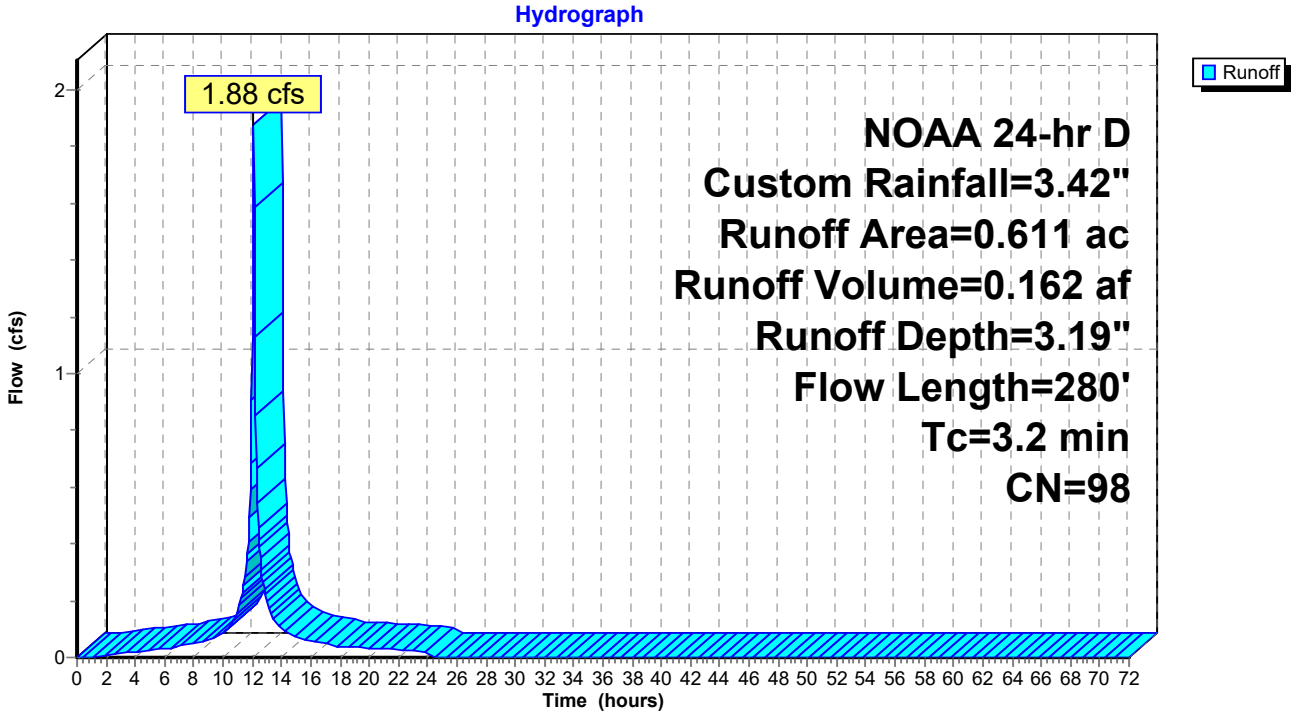
Runoff = 1.88 cfs @ 12.10 hrs, Volume= 0.162 af, Depth= 3.19"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.611	98	Impervious
	0.611		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	280	Total			

Subcatchment 86S: Basin 28 - Impervious

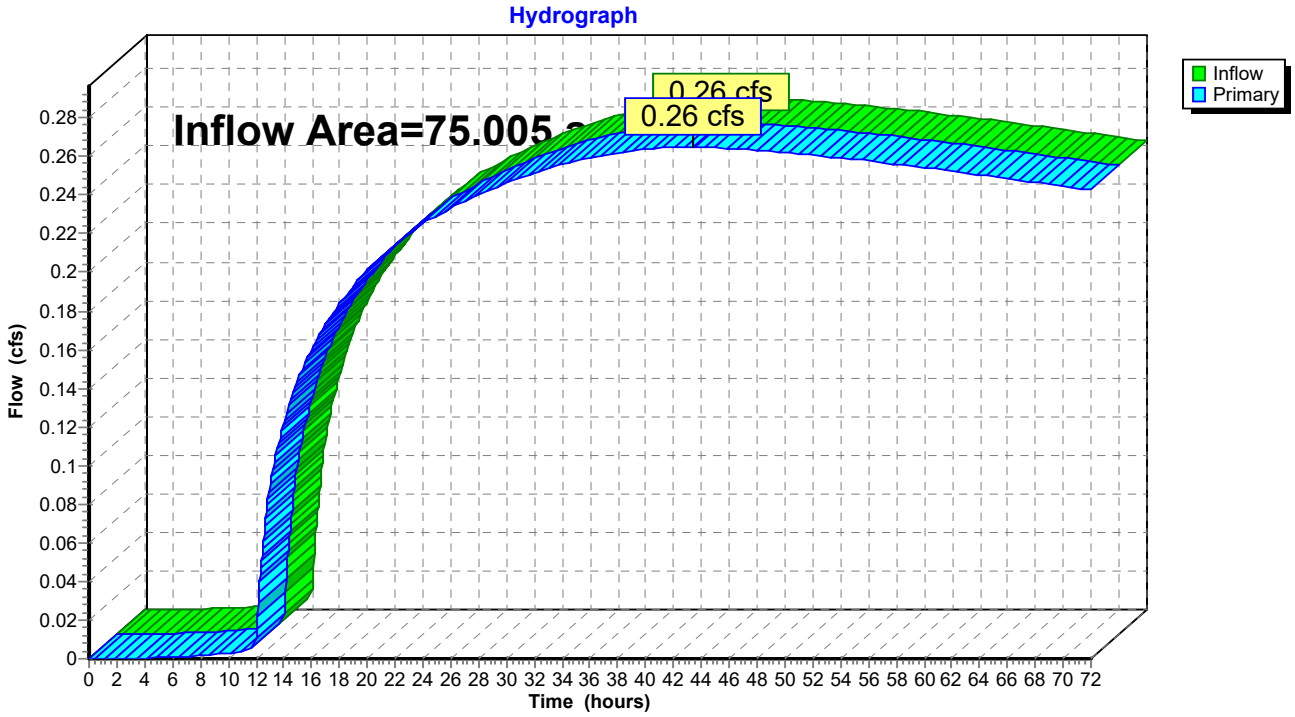


Summary for Link 87L: Total Area to Tuckerton Creek

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 0.19" for Custom event
Inflow = 0.26 cfs @ 43.35 hrs, Volume= 1.178 af
Primary = 0.26 cfs @ 43.35 hrs, Volume= 1.178 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 87L: Total Area to Tuckerton Creek



Summary for Pond 87P: Basin 40

Inflow Area = 2.597 ac, 42.97% Impervious, Inflow Depth = 1.37" for Custom event
Inflow = 3.49 cfs @ 12.10 hrs, Volume= 0.297 af
Outflow = 3.08 cfs @ 12.14 hrs, Volume= 0.201 af, Atten= 12%, Lag= 2.5 min
Primary = 3.08 cfs @ 12.14 hrs, Volume= 0.201 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.13' @ 12.14 hrs Surf.Area= 5,044 sf Storage= 4,952 cf

Plug-Flow detention time= 209.7 min calculated for 0.200 af (67% of inflow)
Center-of-Mass det. time= 101.8 min (859.0 - 757.2)

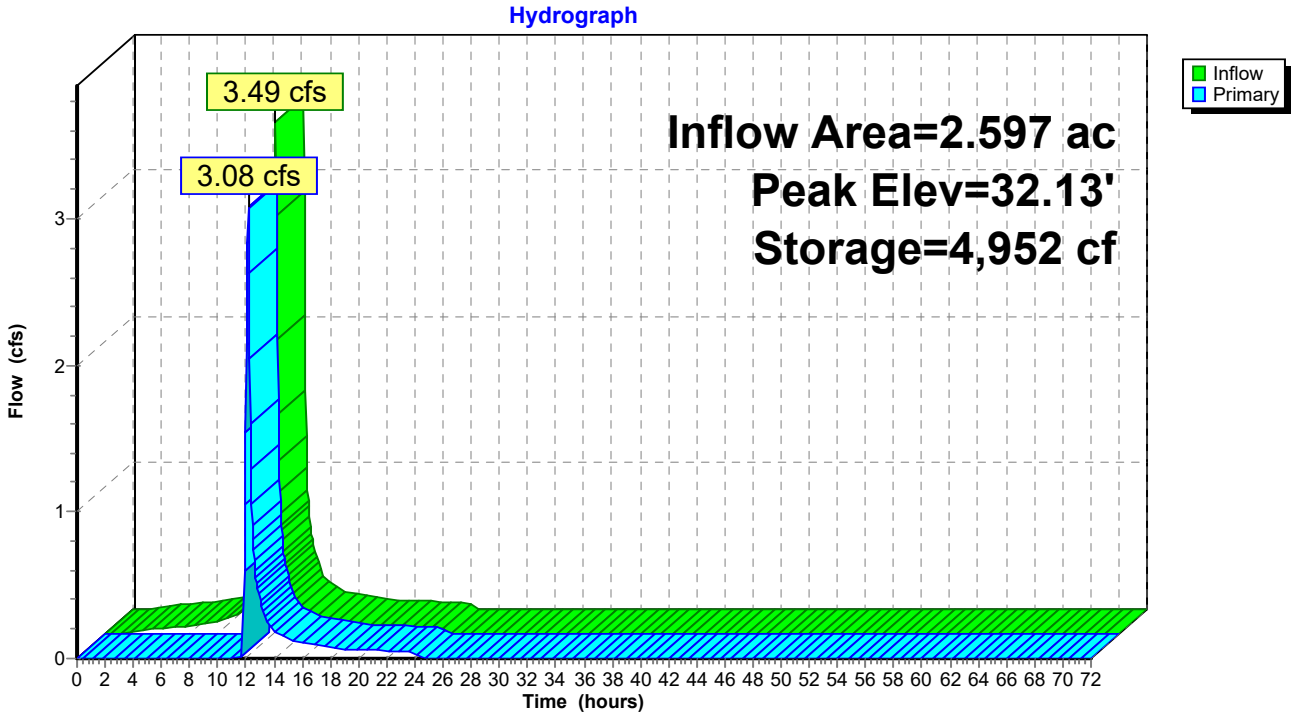
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	12,950 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,700	0	0
32.00	4,900	4,300	4,300
33.00	6,000	5,450	9,750
33.50	6,800	3,200	12,950

Device	Routing	Invert	Outlet Devices
#1	Primary	31.98'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.03 cfs @ 12.14 hrs HW=32.13' (Free Discharge)
1=Orifice/Grate (Weir Controls 3.03 cfs @ 1.27 fps)

Pond 87P: Basin 40



Summary for Subcatchment 87S: Basin 28 - Pervious

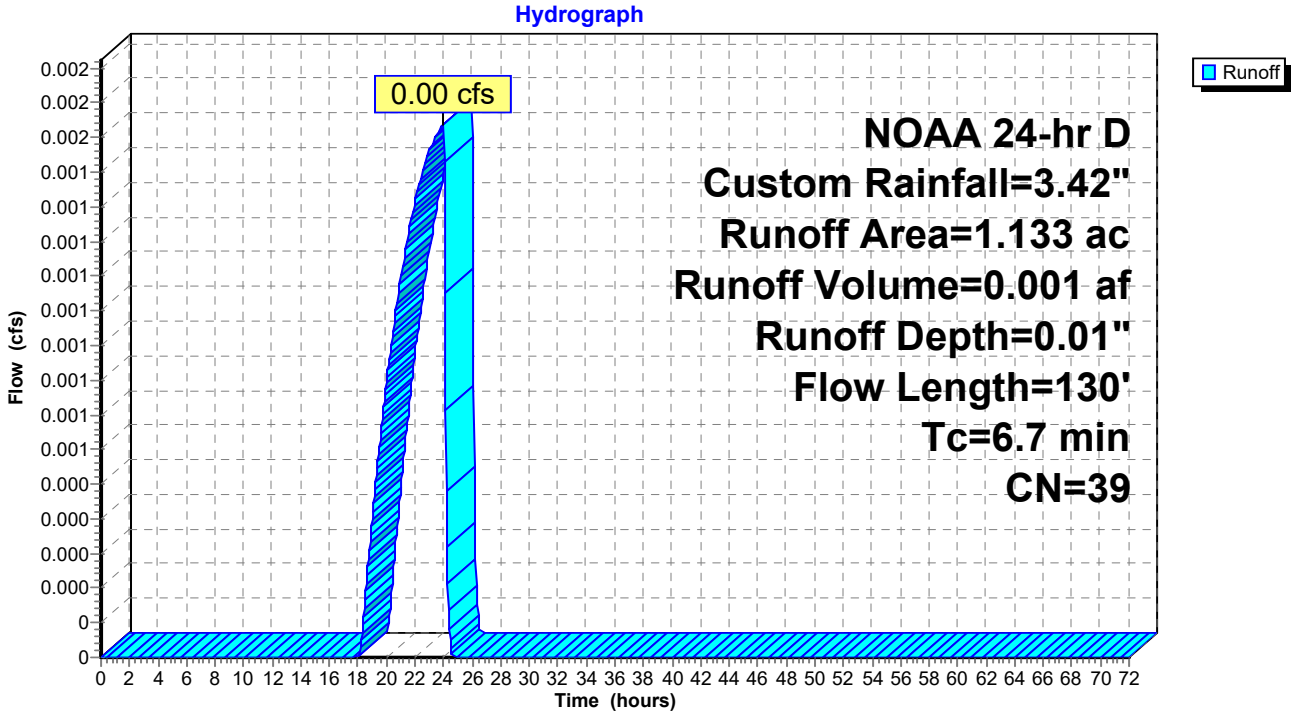
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.133	39	>75% Grass cover, Good, HSG A
1.133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	130	Total			

Subcatchment 87S: Basin 28 - Pervious



Summary for Pond 88P: Basin 22

Inflow Area = 2.491 ac, 29.99% Impervious, Inflow Depth = 0.96" for Custom event
Inflow = 2.34 cfs @ 12.10 hrs, Volume= 0.199 af
Outflow = 2.05 cfs @ 12.14 hrs, Volume= 0.135 af, Atten= 12%, Lag= 2.6 min
Primary = 2.05 cfs @ 12.14 hrs, Volume= 0.135 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.90' @ 12.14 hrs Surf.Area= 4,512 sf Storage= 3,318 cf

Plug-Flow detention time= 210.5 min calculated for 0.135 af (68% of inflow)
Center-of-Mass det. time= 101.6 min (859.7 - 758.1)

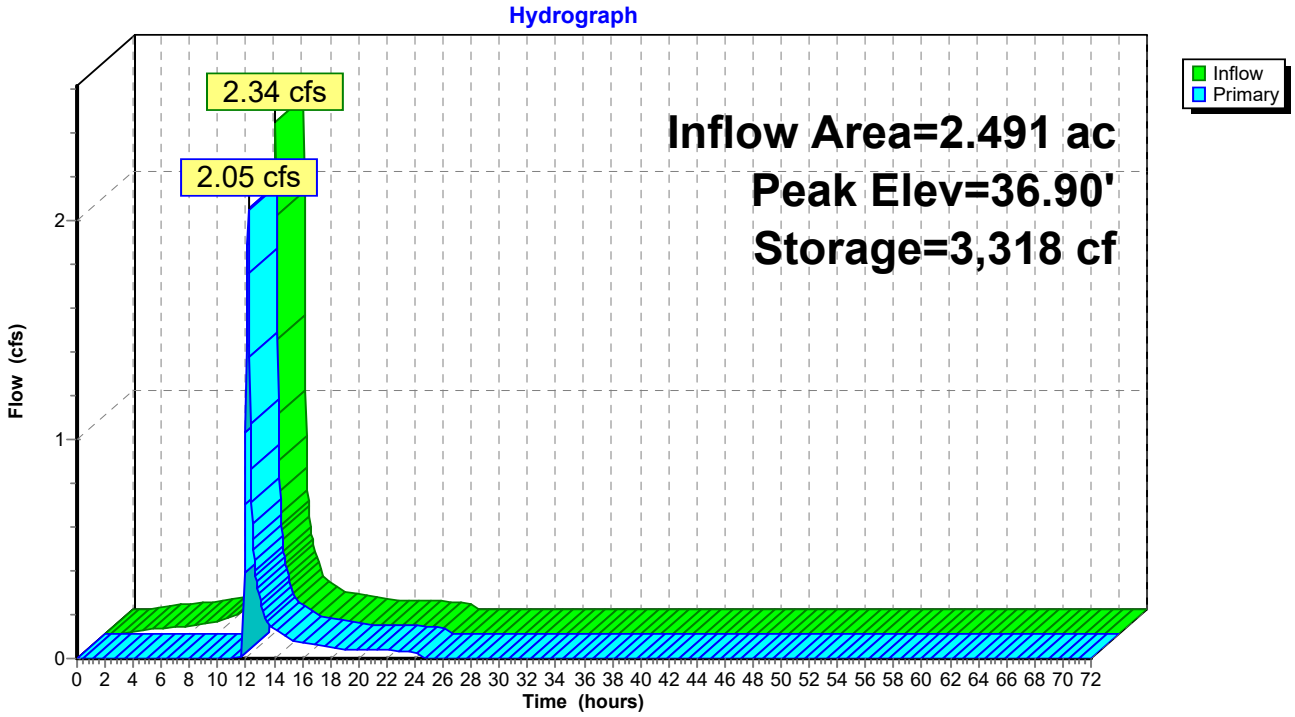
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	9,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,900	0	0
37.00	4,700	3,800	3,800
38.00	6,500	5,600	9,400

Device	Routing	Invert	Outlet Devices
#1	Primary	36.78'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.02 cfs @ 12.14 hrs HW=36.89' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 2.02 cfs @ 1.11 fps)

Pond 88P: Basin 22



Summary for Subcatchment 88S: Basin 30 - Impervious

[49] Hint: Tc<2dt may require smaller dt

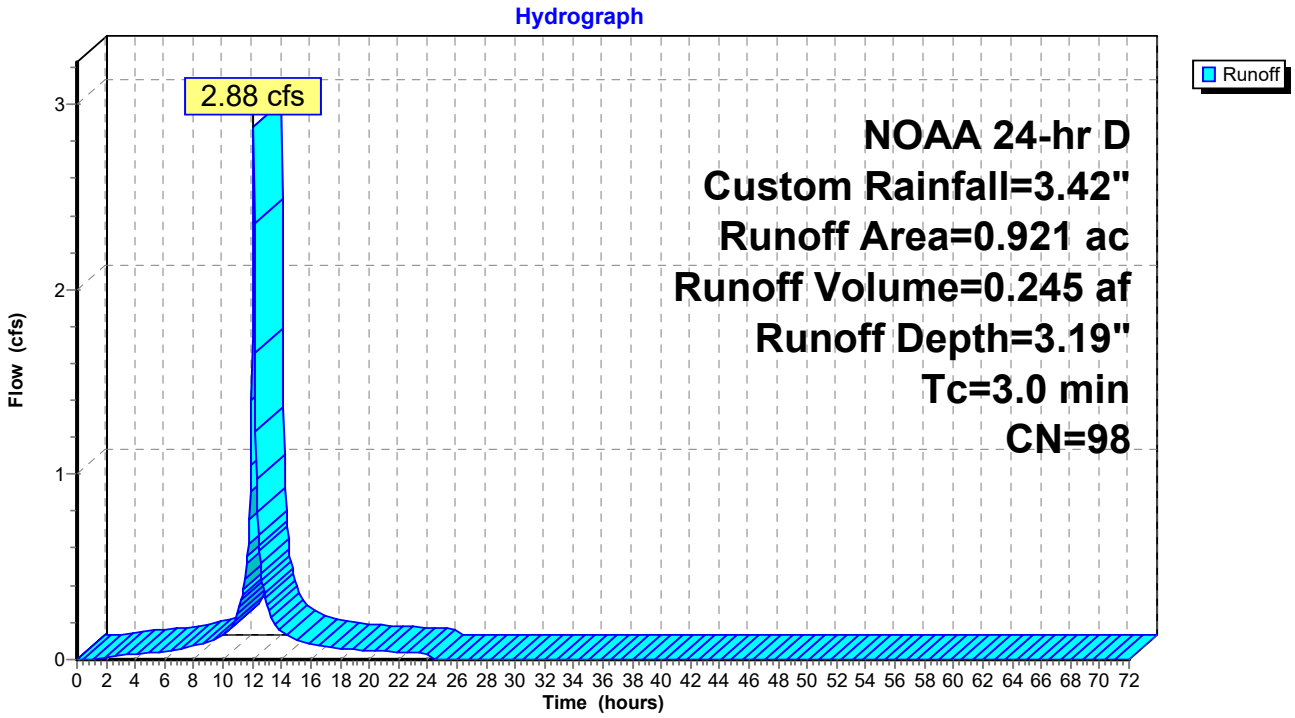
Runoff = 2.88 cfs @ 12.10 hrs, Volume= 0.245 af, Depth= 3.19"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.921	98	Impervious
	0.921		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 88S: Basin 30 - Impervious



Summary for Subcatchment 89S: Basin 30 - Pervious

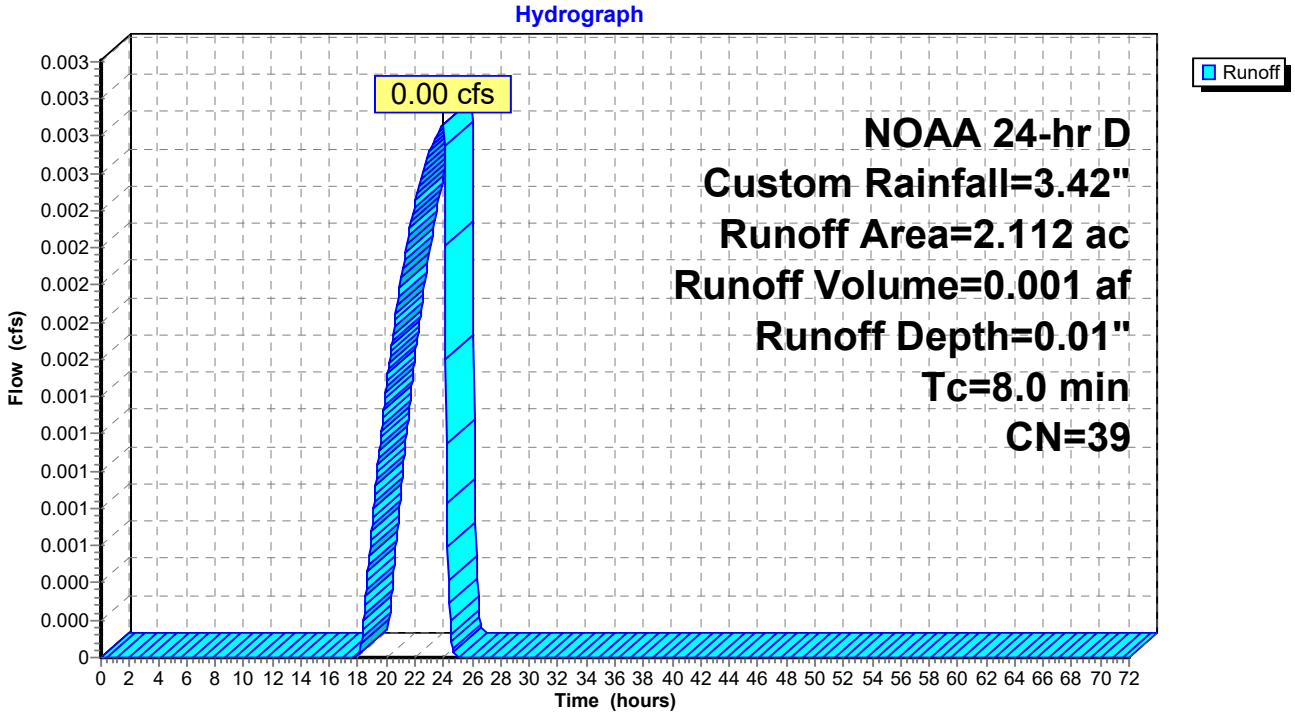
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
2.112	39	>75% Grass cover, Good, HSG A
2.112		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 89S: Basin 30 - Pervious



Summary for Subcatchment 90S: Basin 31 - Pervious

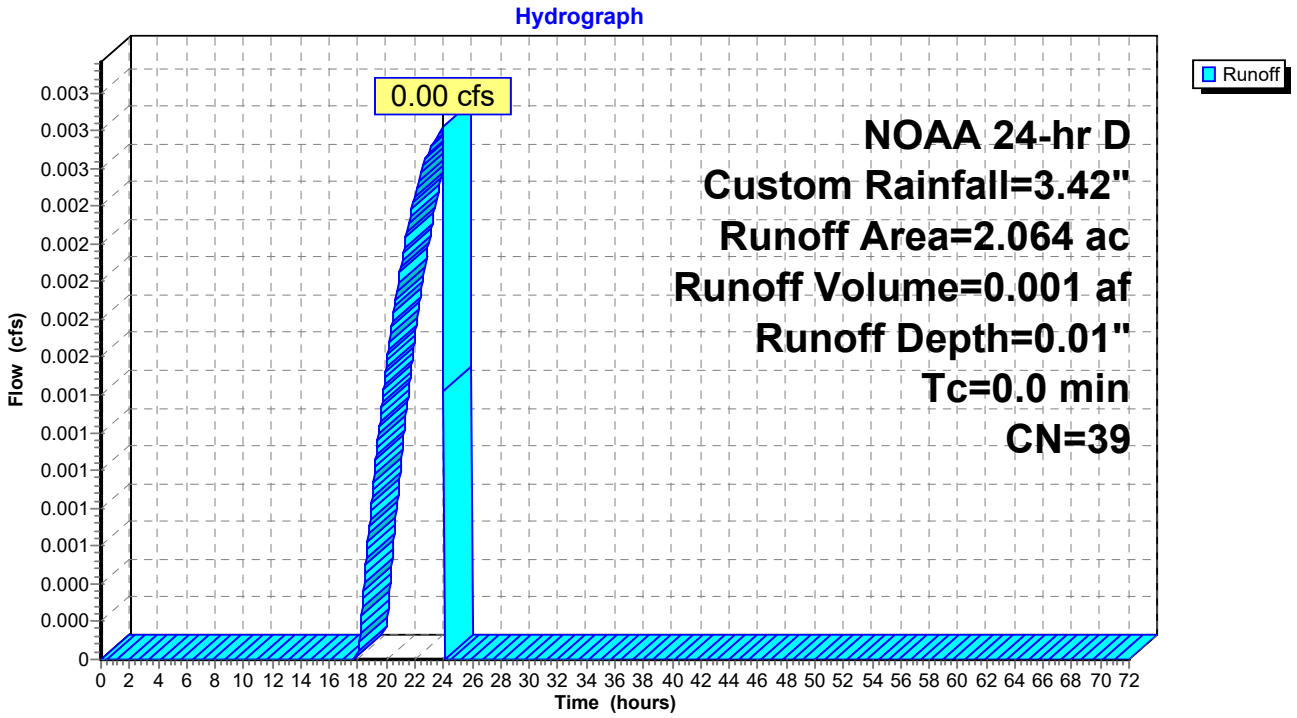
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.00 cfs @ 23.95 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
2.064	39	>75% Grass cover, Good, HSG A
2.064		100.00% Pervious Area

Subcatchment 90S: Basin 31 - Pervious



Summary for Subcatchment 91S: Basin 31- Impervious

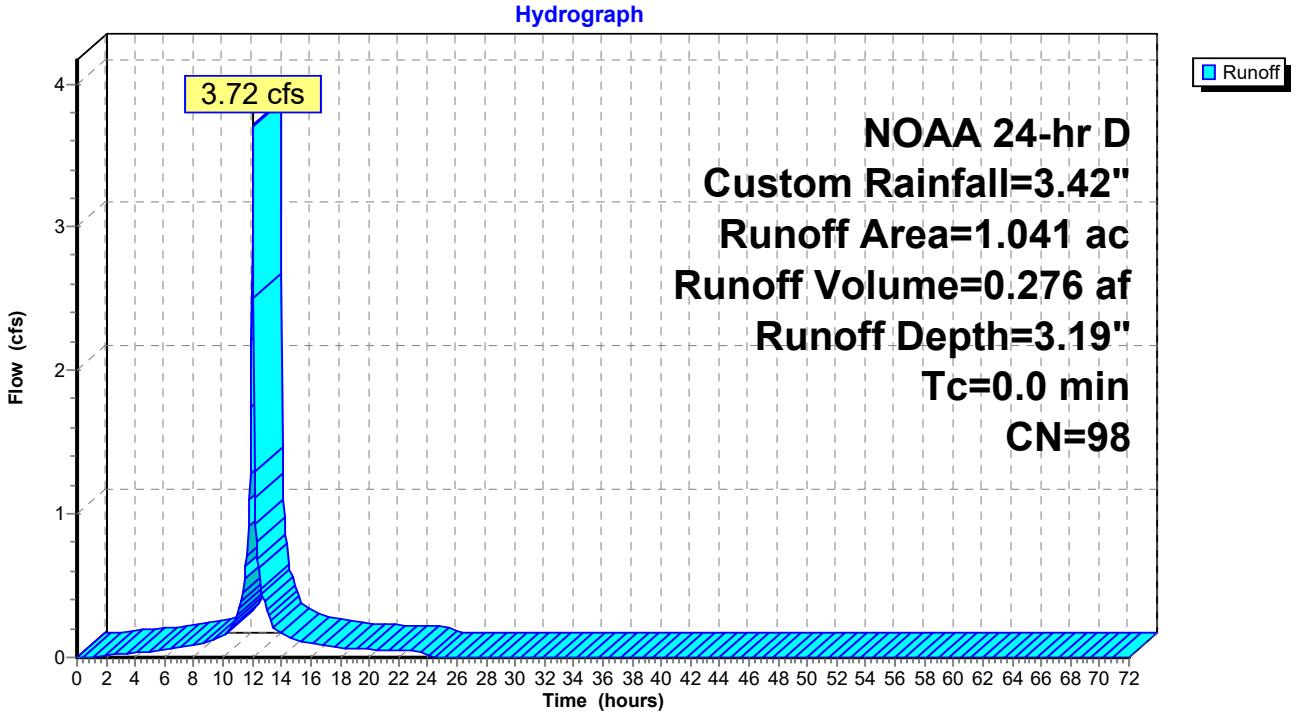
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.72 cfs @ 12.04 hrs, Volume= 0.276 af, Depth= 3.19"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.041	98	Impervious
	1.041		100.00% Impervious Area

Subcatchment 91S: Basin 31- Impervious



Summary for Subcatchment 92S: Basin 33 - Impervious

[49] Hint: Tc<2dt may require smaller dt

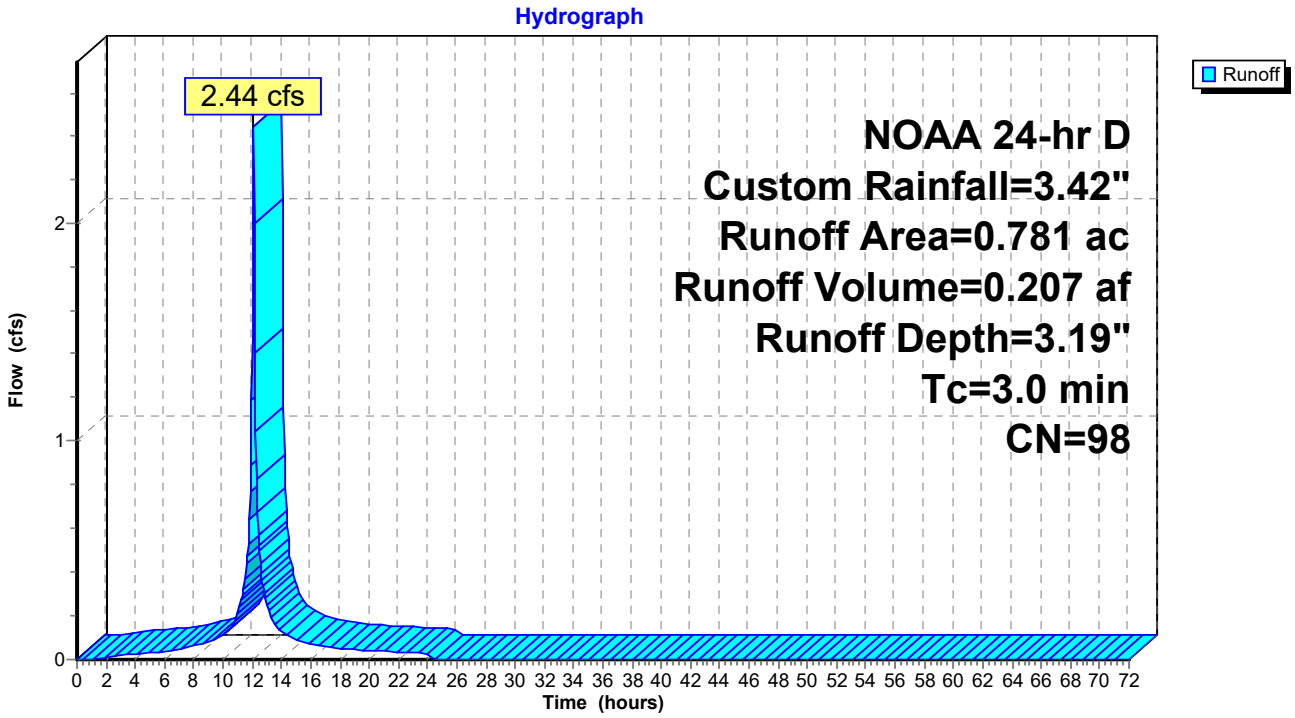
Runoff = 2.44 cfs @ 12.10 hrs, Volume= 0.207 af, Depth= 3.19"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.781	98	Impervious
	0.781		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 92S: Basin 33 - Impervious



Summary for Subcatchment 93S: Basin 33 - Pervious

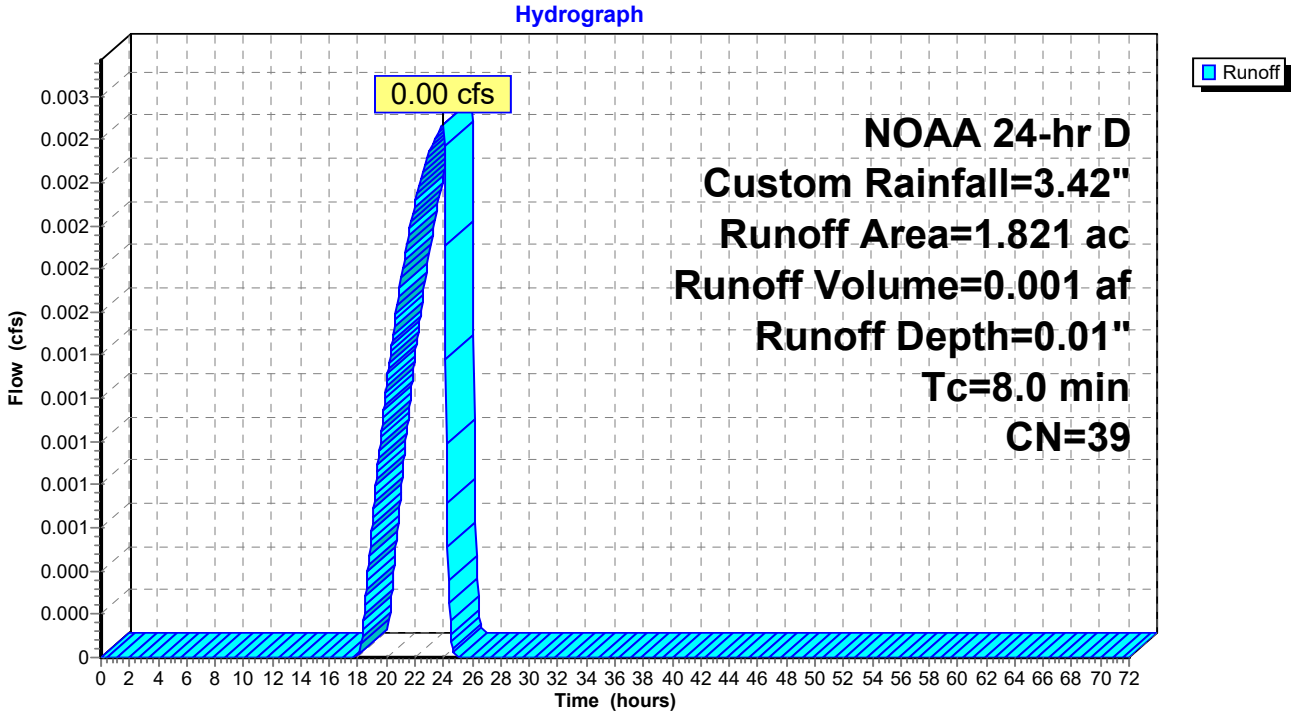
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.821	39	>75% Grass cover, Good, HSG A
1.821		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 93S: Basin 33 - Pervious



Summary for Subcatchment 94S: Basin 32 - Impervious

[49] Hint: Tc<2dt may require smaller dt

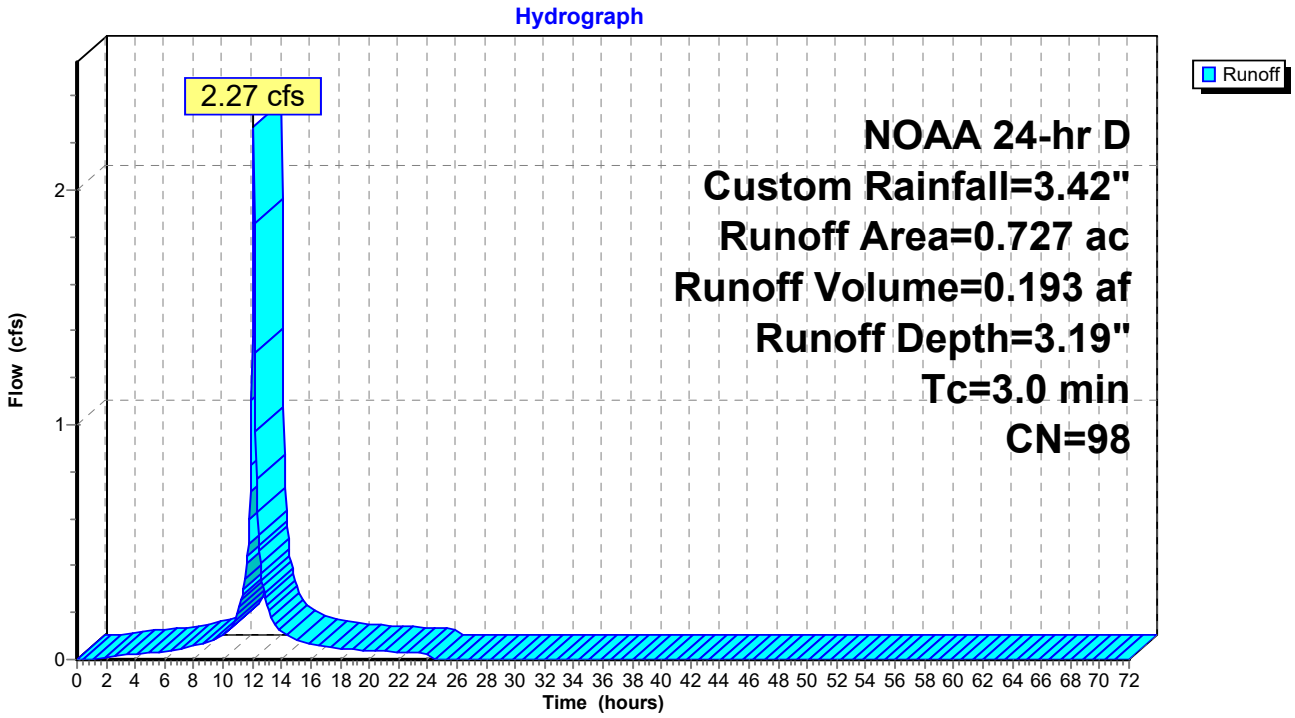
Runoff = 2.27 cfs @ 12.10 hrs, Volume= 0.193 af, Depth= 3.19"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.727	98	Impervious
	0.727		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 94S: Basin 32 - Impervious



Summary for Subcatchment 95S: Basin 32 - Pervious

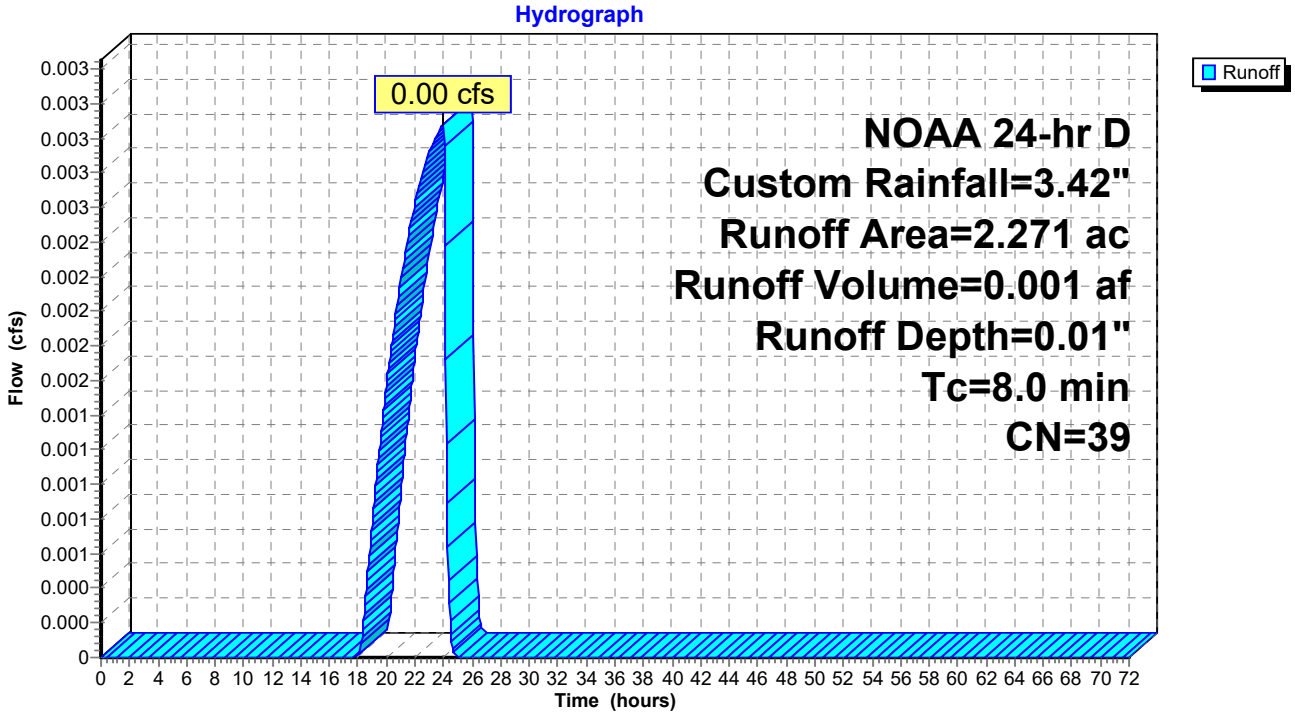
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
2.271	39	>75% Grass cover, Good, HSG A
2.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 95S: Basin 32 - Pervious



Summary for Subcatchment 96S: Basin 40 - Impervious

[49] Hint: Tc<2dt may require smaller dt

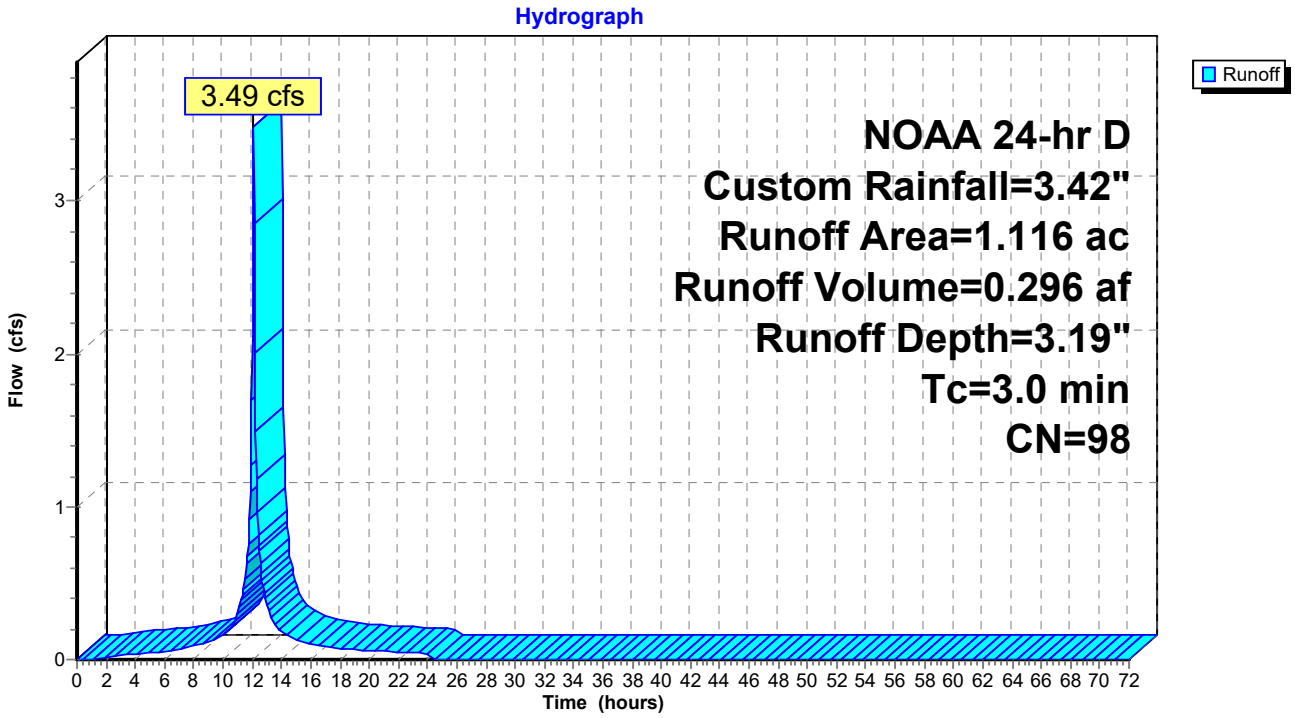
Runoff = 3.49 cfs @ 12.10 hrs, Volume= 0.296 af, Depth= 3.19"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 96S: Basin 40 - Impervious



Summary for Subcatchment 97S: Basin 40 - Pervious

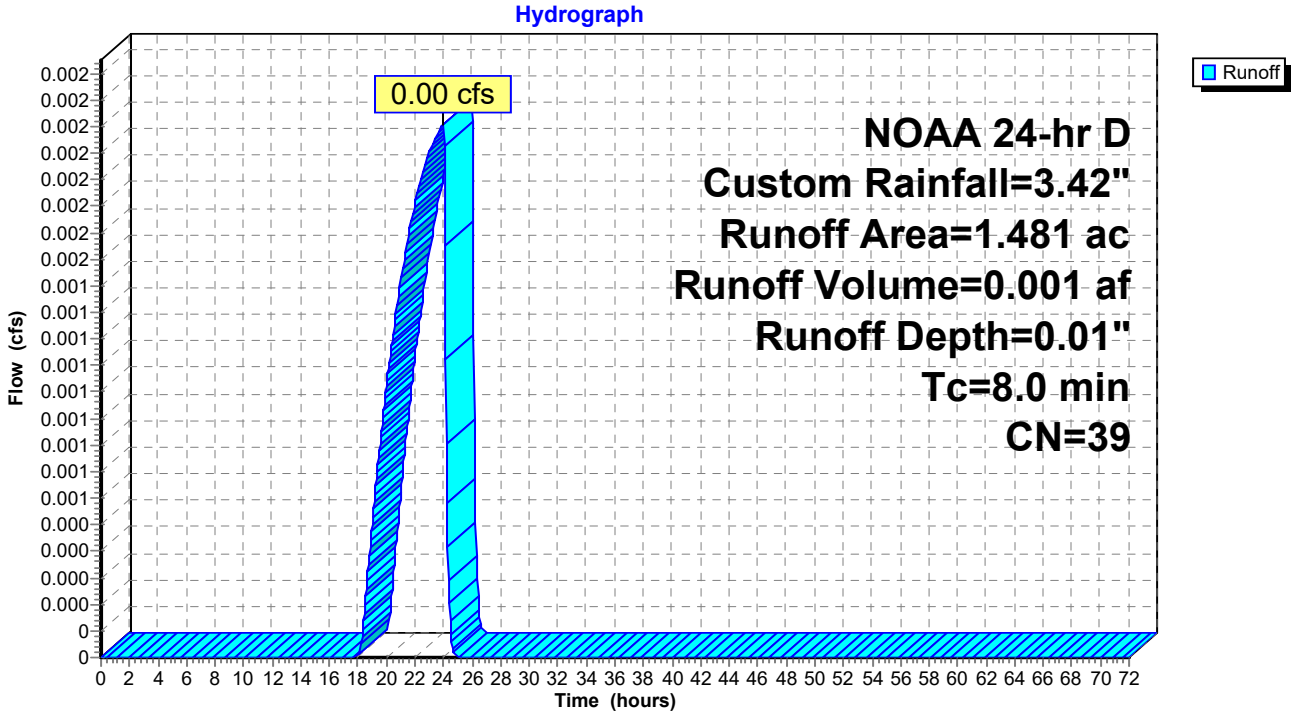
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.481	39	>75% Grass cover, Good, HSG A
1.481		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 97S: Basin 40 - Pervious



Summary for Subcatchment 98S: Basin 38 - Impervious

[49] Hint: Tc<2dt may require smaller dt

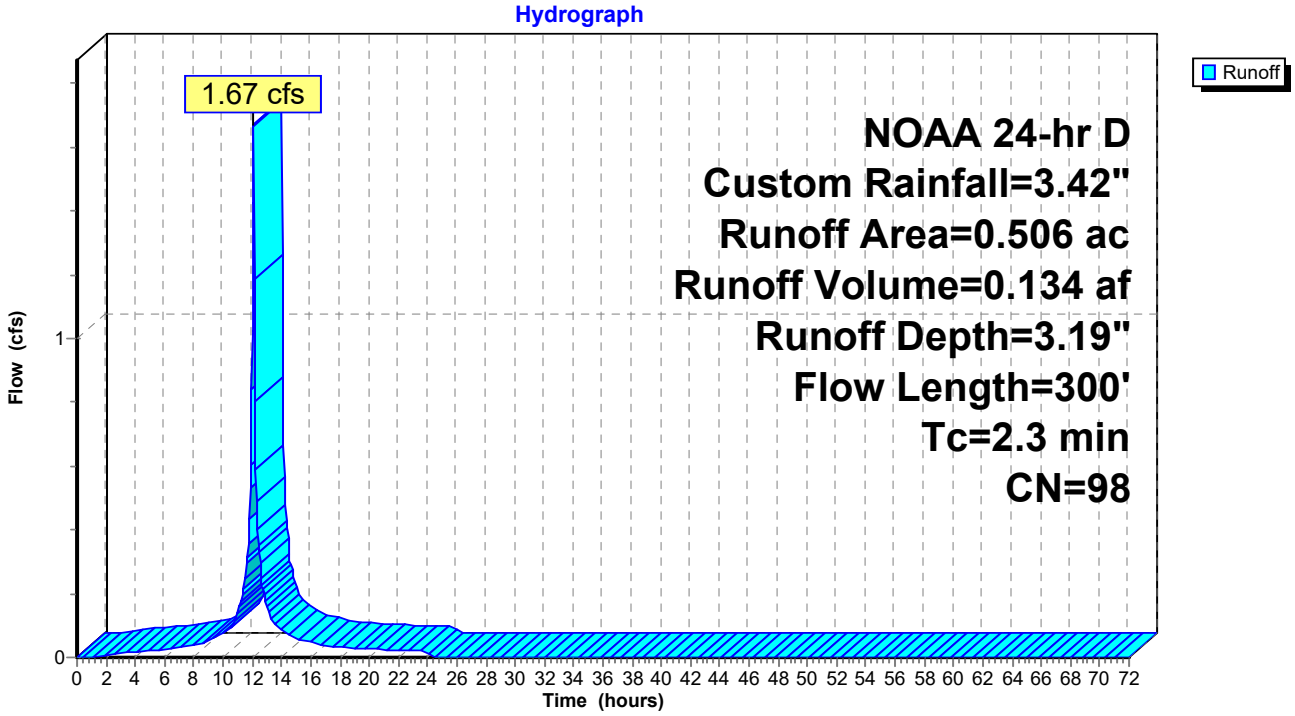
Runoff = 1.67 cfs @ 12.09 hrs, Volume= 0.134 af, Depth= 3.19"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.506	98	Impervious
	0.506		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	200	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	300	Total			

Subcatchment 98S: Basin 38 - Impervious



Summary for Subcatchment 99S: Basin 38 - Pervious

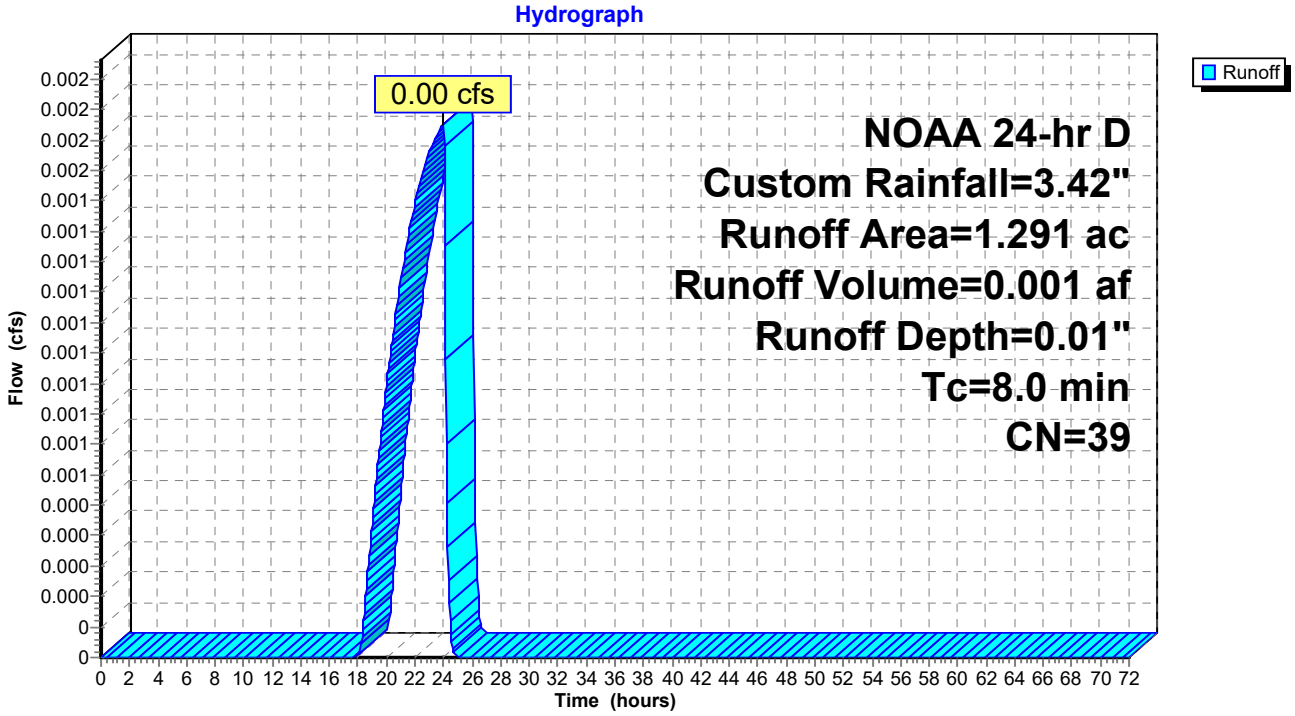
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.291	39	>75% Grass cover, Good, HSG A
1.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 99S: Basin 38 - Pervious



Summary for Subcatchment 100S: Basin 22 - Impervious

[49] Hint: Tc<2dt may require smaller dt

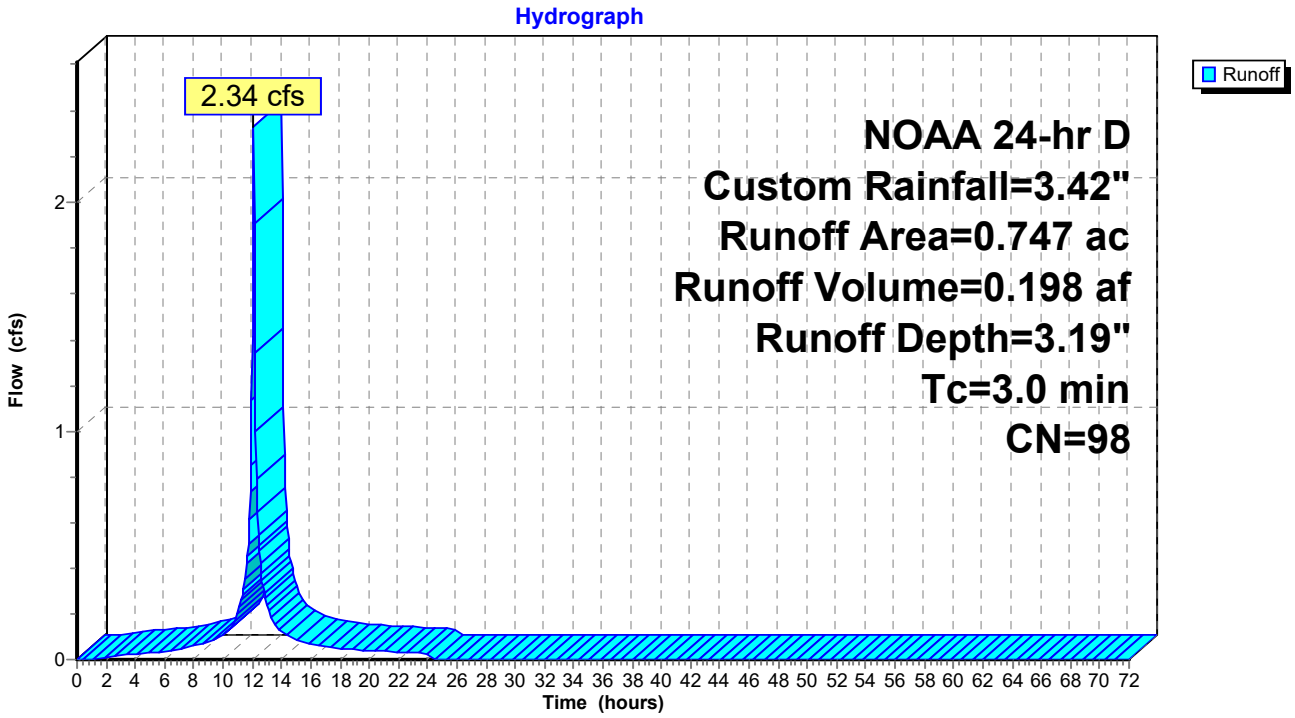
Runoff = 2.34 cfs @ 12.10 hrs, Volume= 0.198 af, Depth= 3.19"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.747	98	Impervious
	0.747		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 100S: Basin 22 - Impervious



Summary for Subcatchment 101S: Basin 39 - Pervious

[49] Hint: Tc<2dt may require smaller dt

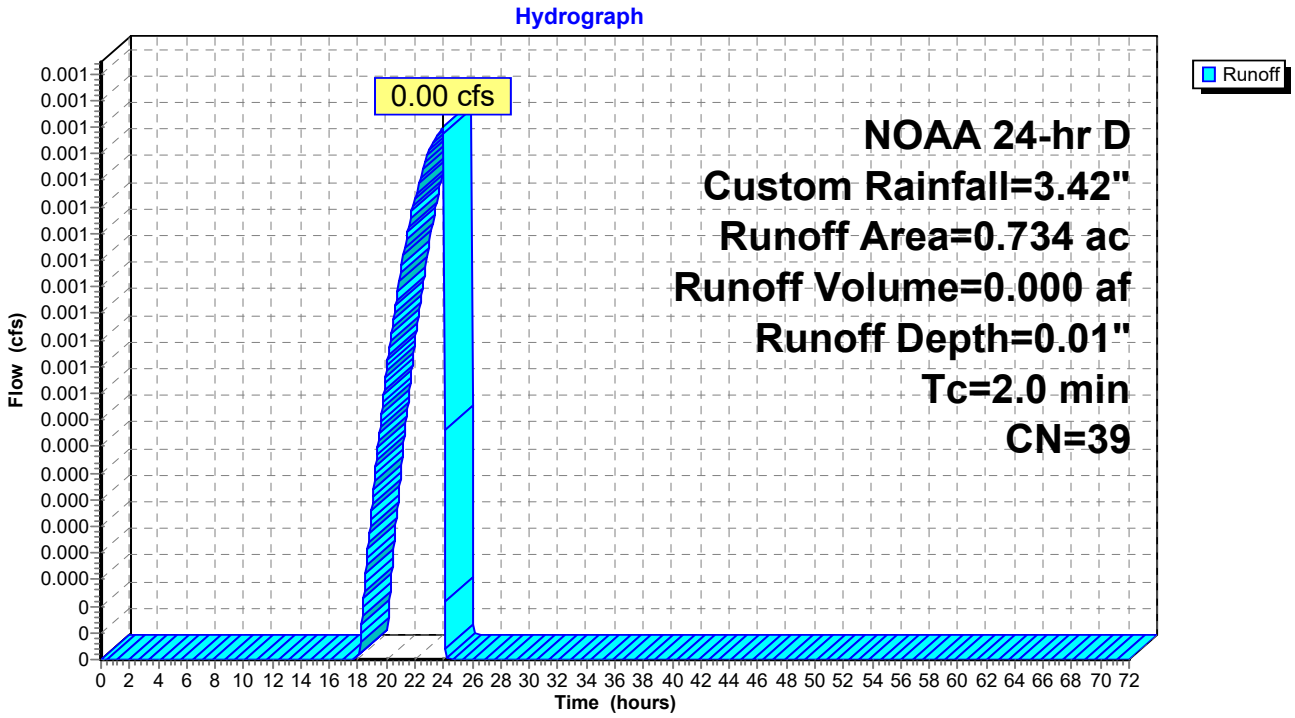
Runoff = 0.00 cfs @ 23.95 hrs, Volume= 0.000 af, Depth= 0.01"
Routed to Pond 74P : Basin 39

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
0.734	39	>75% Grass cover, Good, HSG A
0.734		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 101S: Basin 39 - Pervious



Summary for Subcatchment 102S: Basin 37 - Impervious

[49] Hint: Tc<2dt may require smaller dt

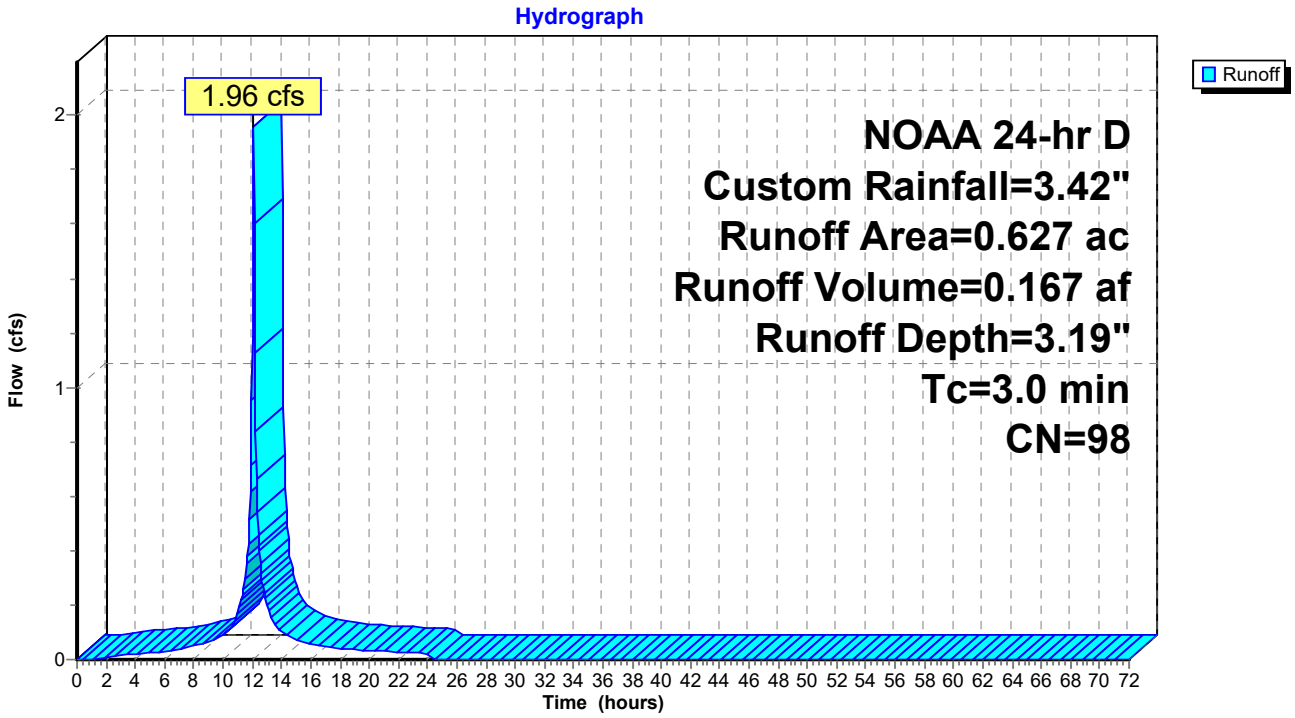
Runoff = 1.96 cfs @ 12.10 hrs, Volume= 0.167 af, Depth= 3.19"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 102S: Basin 37 - Impervious



Summary for Subcatchment 103S: Basin 37 - Pervious

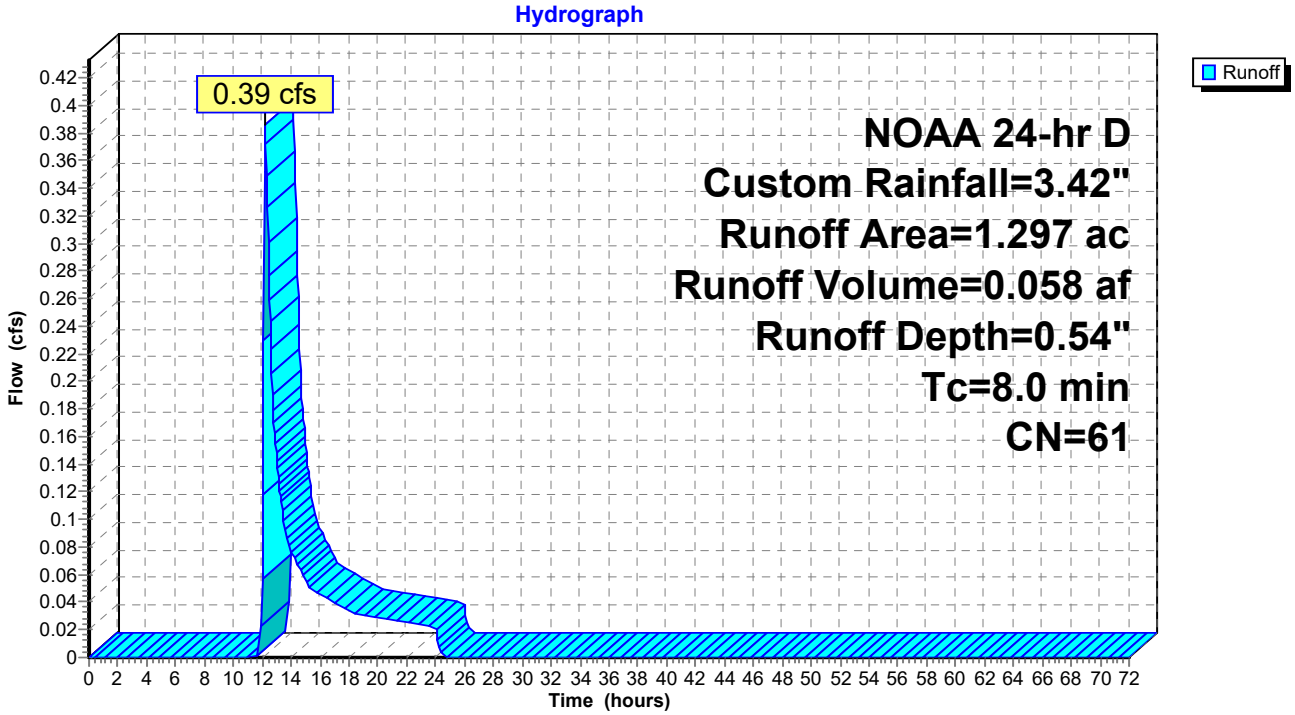
Runoff = 0.39 cfs @ 12.21 hrs, Volume= 0.058 af, Depth= 0.54"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.297	61	>75% Grass cover, Good, HSG B
1.297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 103S: Basin 37 - Pervious



Summary for Subcatchment 104S: Basin 34- Impervious

[49] Hint: Tc<2dt may require smaller dt

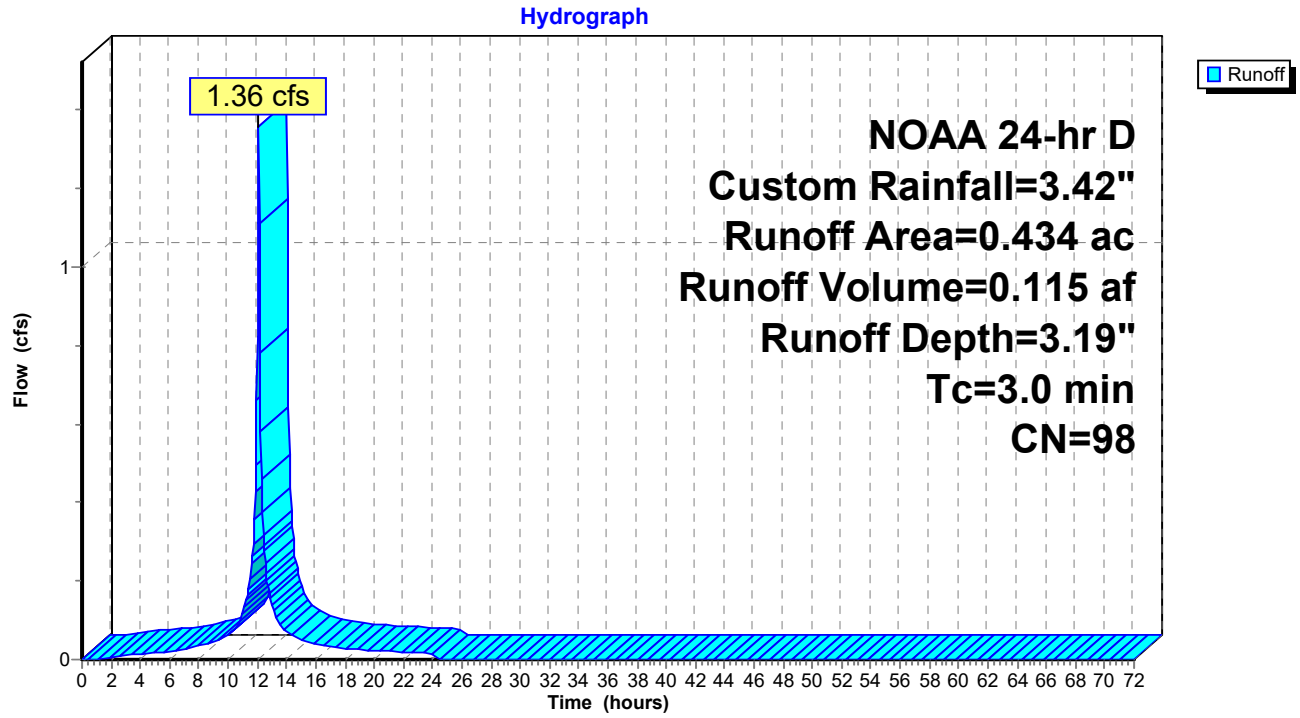
Runoff = 1.36 cfs @ 12.10 hrs, Volume= 0.115 af, Depth= 3.19"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.434	98	Impervious
	0.434		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 104S: Basin 34- Impervious



Summary for Subcatchment 105S: Basin 34 - Pervious

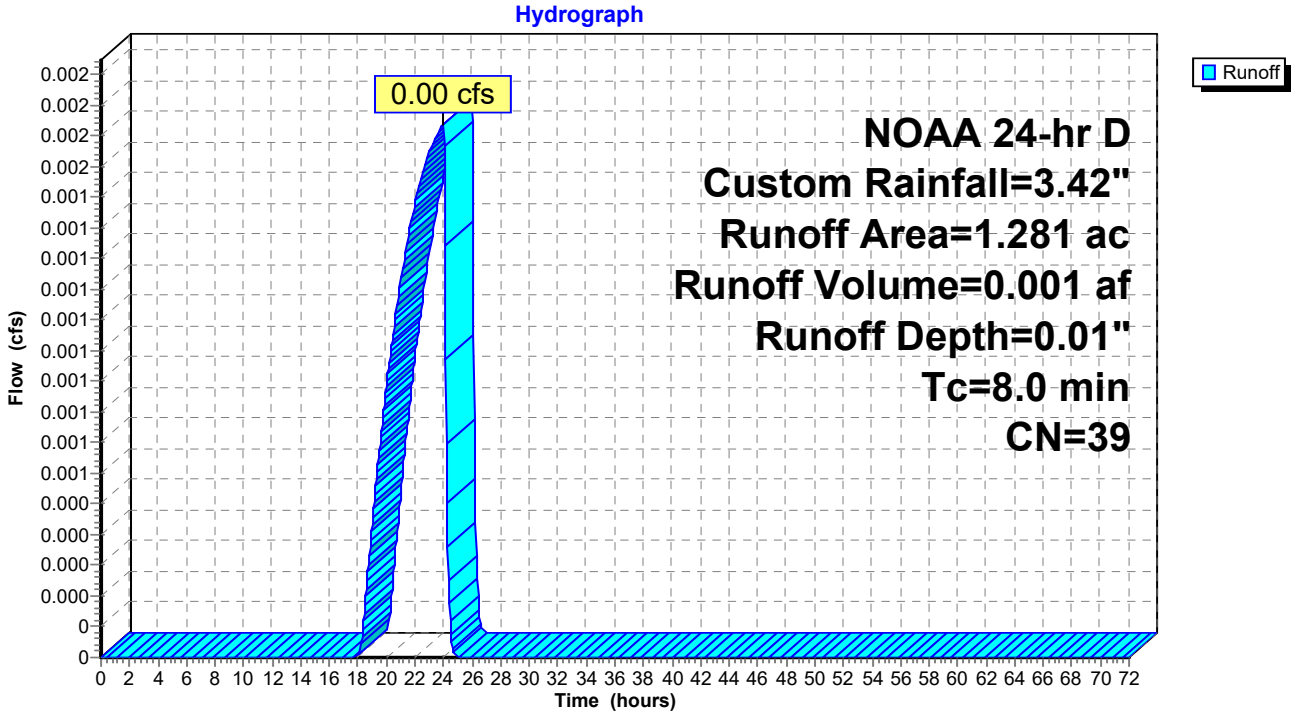
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.281	39	>75% Grass cover, Good, HSG A
1.281		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 105S: Basin 34 - Pervious



Summary for Subcatchment 106S: Basin 35 - Impervious

[49] Hint: Tc<2dt may require smaller dt

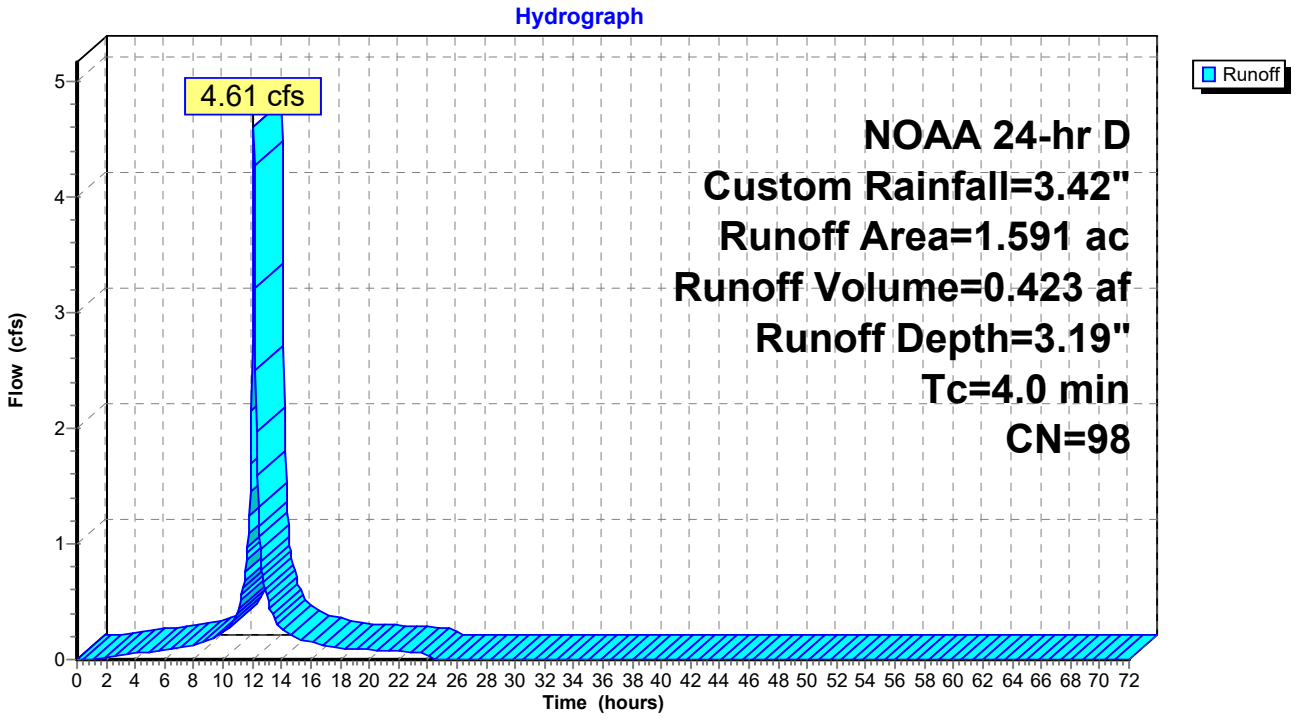
Runoff = 4.61 cfs @ 12.11 hrs, Volume= 0.423 af, Depth= 3.19"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.591	98	Impervious
	1.591		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment 106S: Basin 35 - Impervious



Summary for Subcatchment 107S: Basin 35 - Pervious

[45] Hint: Runoff=Zero

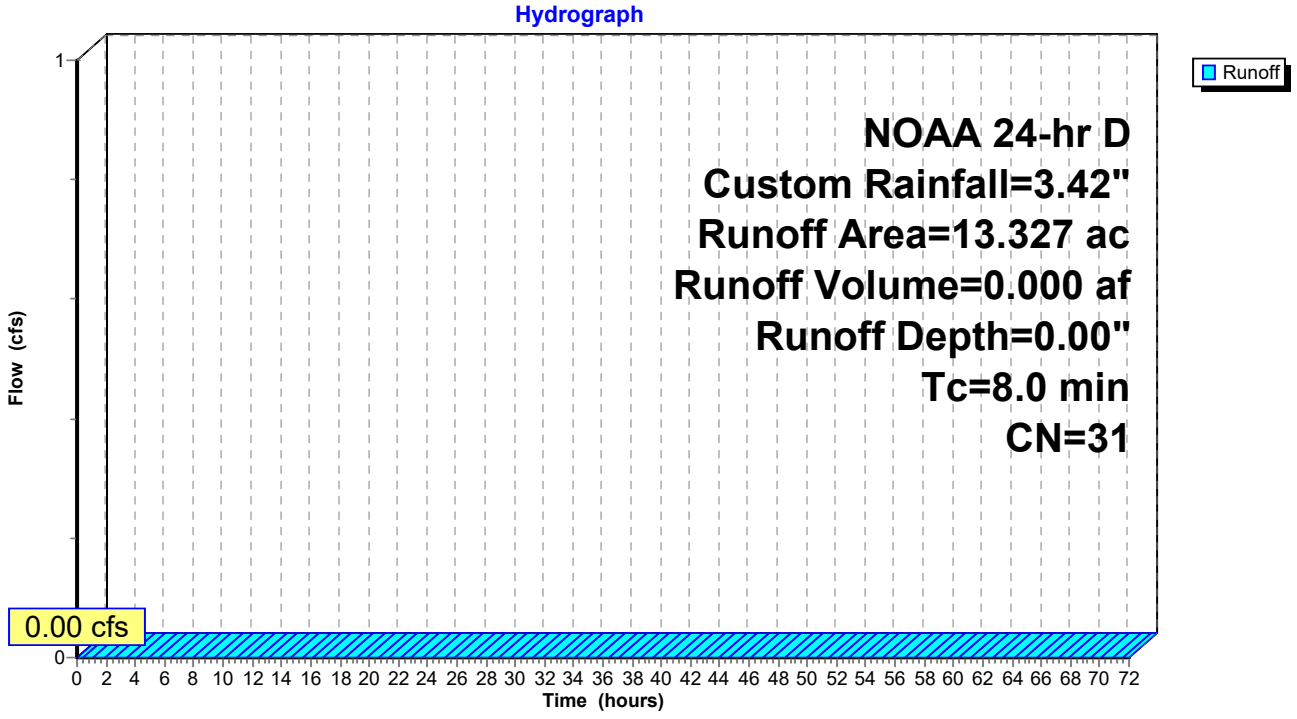
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
0.907	39	>75% Grass cover, Good, HSG A
12.420	30	Woods, Good, HSG A
13.327	31	Weighted Average
13.327		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 107S: Basin 35 - Pervious



Summary for Subcatchment 108S: Basin 36 - Impervious

[49] Hint: Tc<2dt may require smaller dt

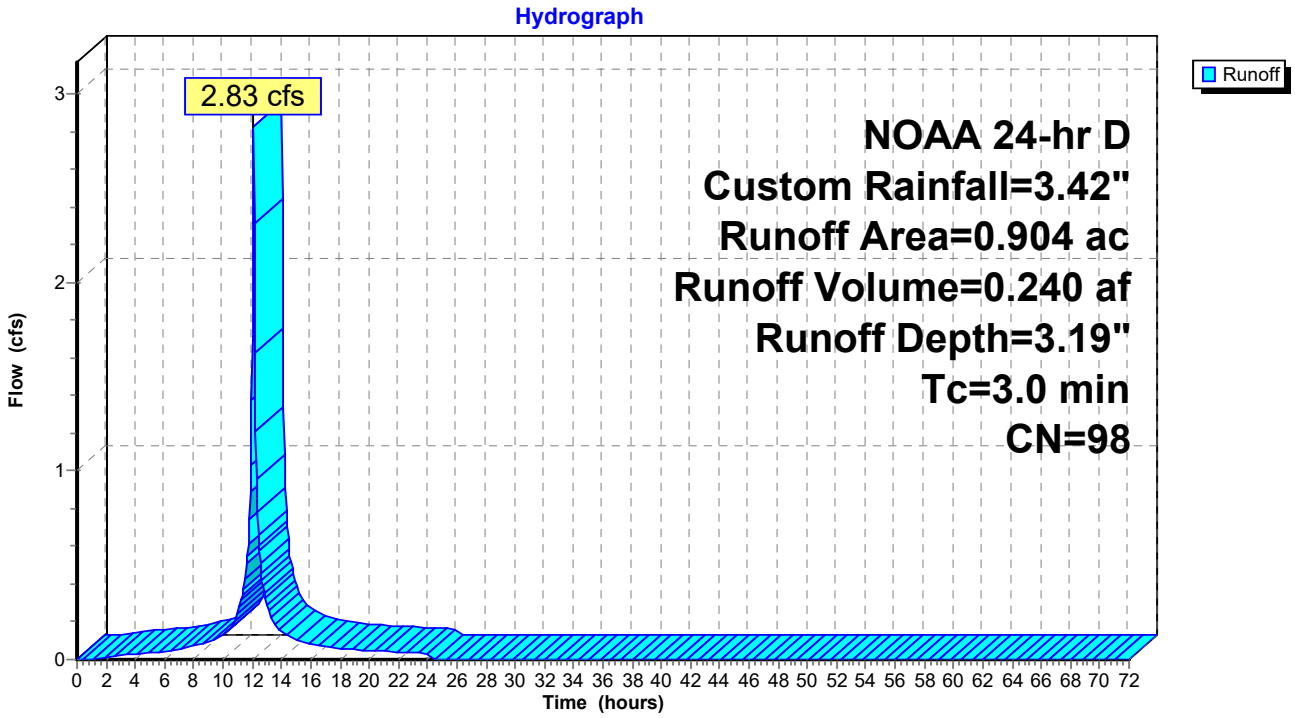
Runoff = 2.83 cfs @ 12.10 hrs, Volume= 0.240 af, Depth= 3.19"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.904	98	Impervious
	0.904		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 108S: Basin 36 - Impervious



Summary for Subcatchment 109S: Basin 36 - Pervious

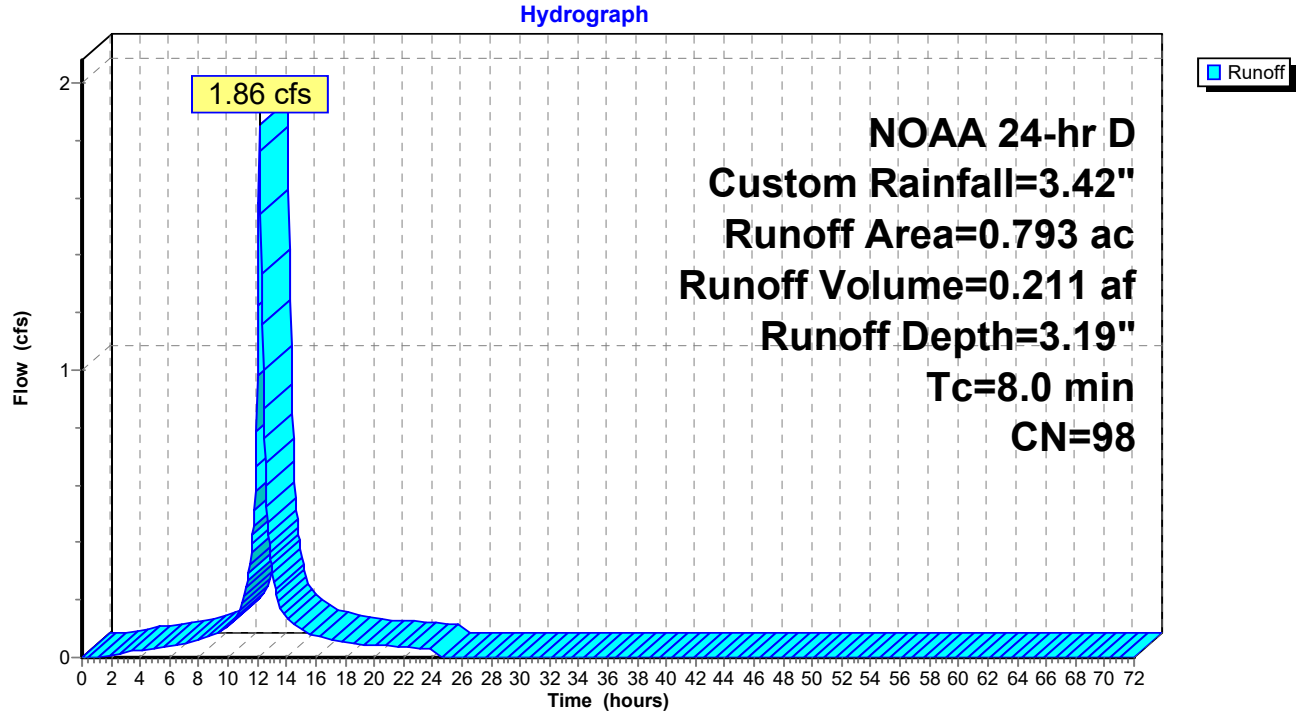
Runoff = 1.86 cfs @ 12.16 hrs, Volume= 0.211 af, Depth= 3.19"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.793	98	Impervious
	0.793		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 109S: Basin 36 - Pervious



Summary for Subcatchment 110S: Basin 22 - Pervious

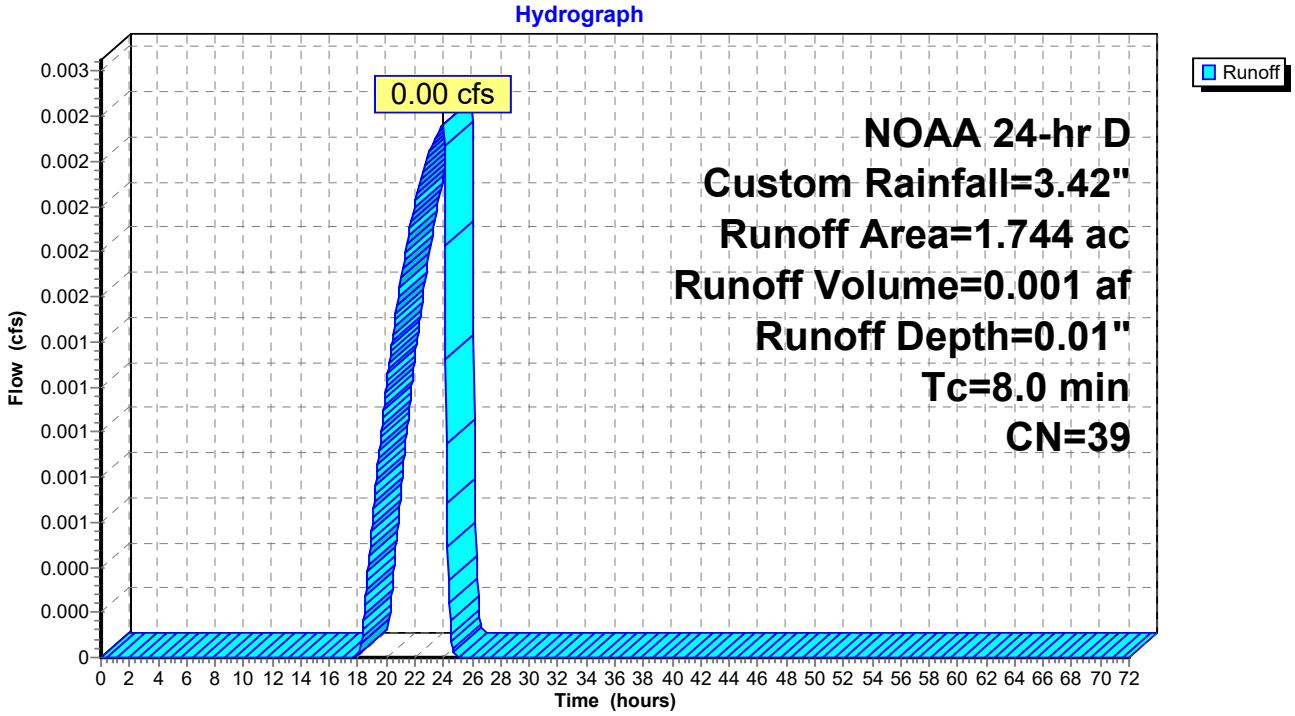
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.744	39	>75% Grass cover, Good, HSG A
1.744		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 110S: Basin 22 - Pervious



Summary for Pond 111P: Basin 23

Inflow Area = 2.499 ac, 35.01% Impervious, Inflow Depth = 1.12" for Custom event
Inflow = 2.74 cfs @ 12.10 hrs, Volume= 0.233 af
Outflow = 0.16 cfs @ 13.64 hrs, Volume= 0.157 af, Atten= 94%, Lag= 92.7 min
Primary = 0.16 cfs @ 13.64 hrs, Volume= 0.157 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.30' @ 13.64 hrs Surf.Area= 6,465 sf Storage= 6,854 cf

Plug-Flow detention time= 538.3 min calculated for 0.157 af (67% of inflow)
Center-of-Mass det. time= 431.2 min (1,188.9 - 757.6)

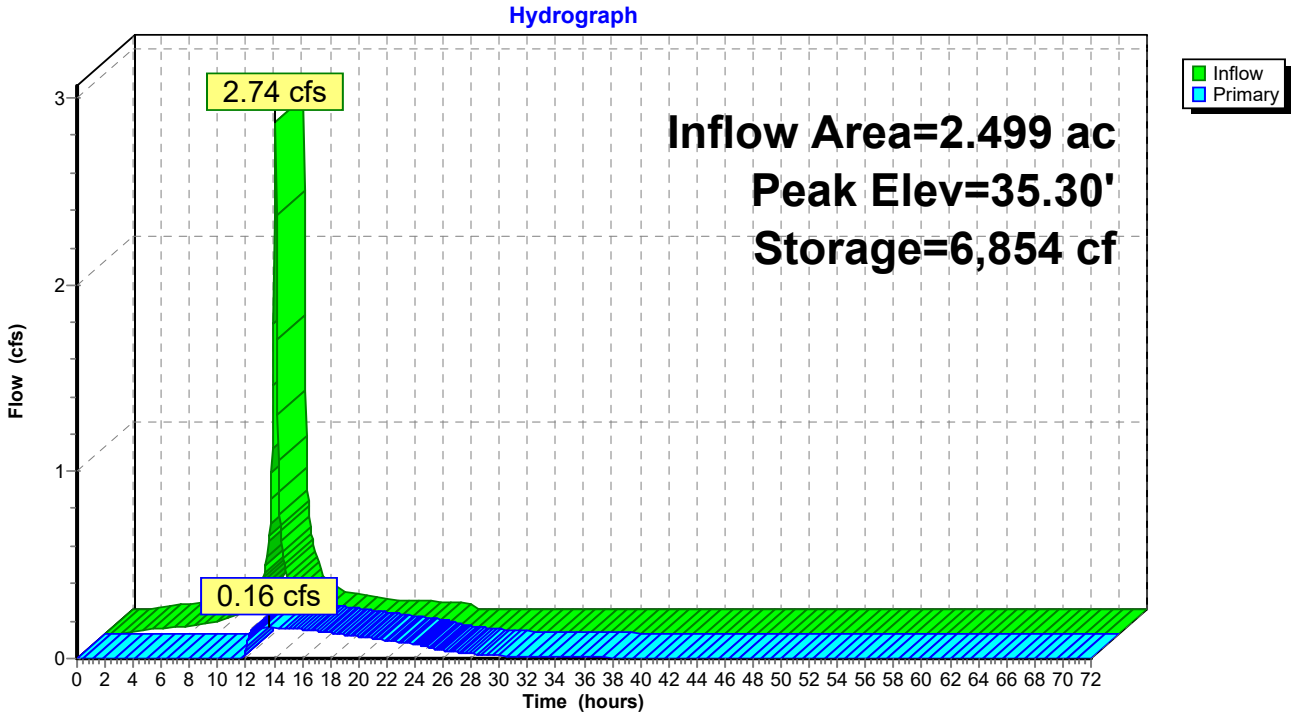
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	21,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,200	0	0
35.00	5,800	5,000	5,000
36.00	8,000	6,900	11,900
37.00	10,800	9,400	21,300

Device	Routing	Invert	Outlet Devices
#1	Primary	34.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 13.64 hrs HW=35.30' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.16 cfs @ 3.36 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 111P: Basin 23



Summary for Subcatchment 112S: Basin 23 - Impervious

[49] Hint: Tc<2dt may require smaller dt

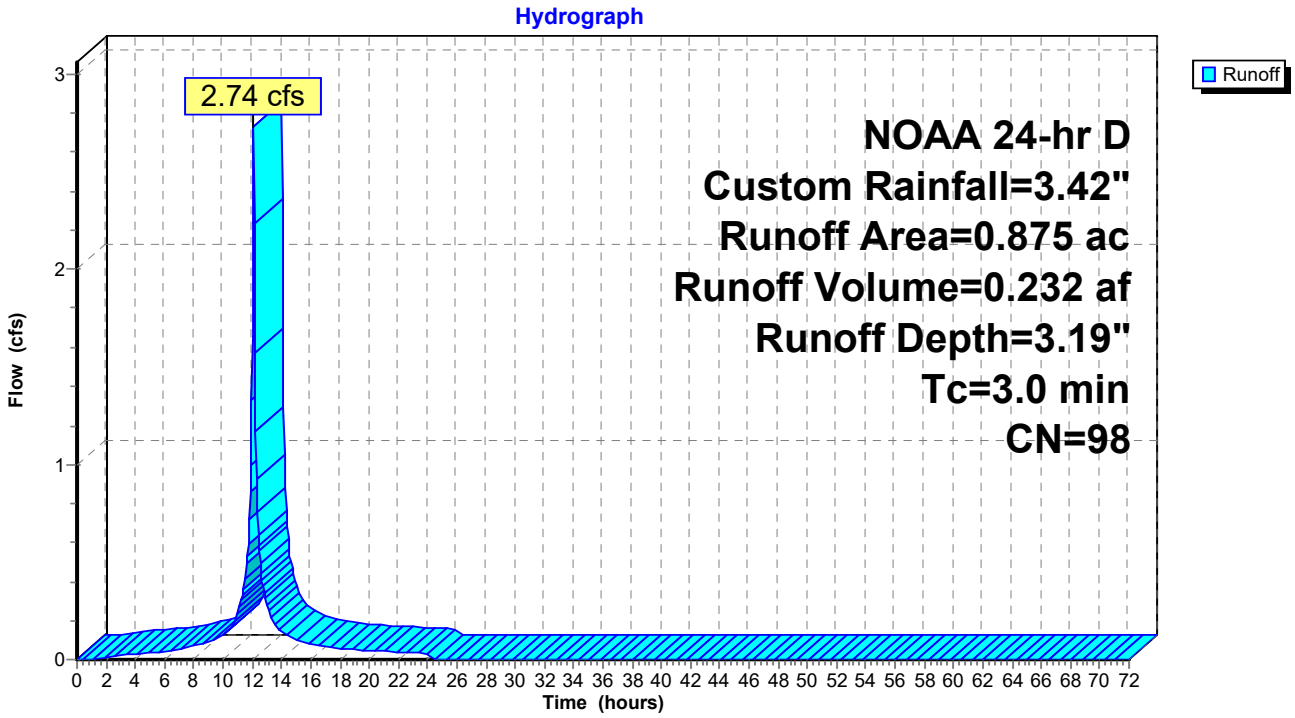
Runoff = 2.74 cfs @ 12.10 hrs, Volume= 0.232 af, Depth= 3.19"
Routed to Pond 111P : Basin 23

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.875	98	Impervious
	0.875		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 112S: Basin 23 - Impervious



Summary for Subcatchment 113S: Basin 23 - Pervious

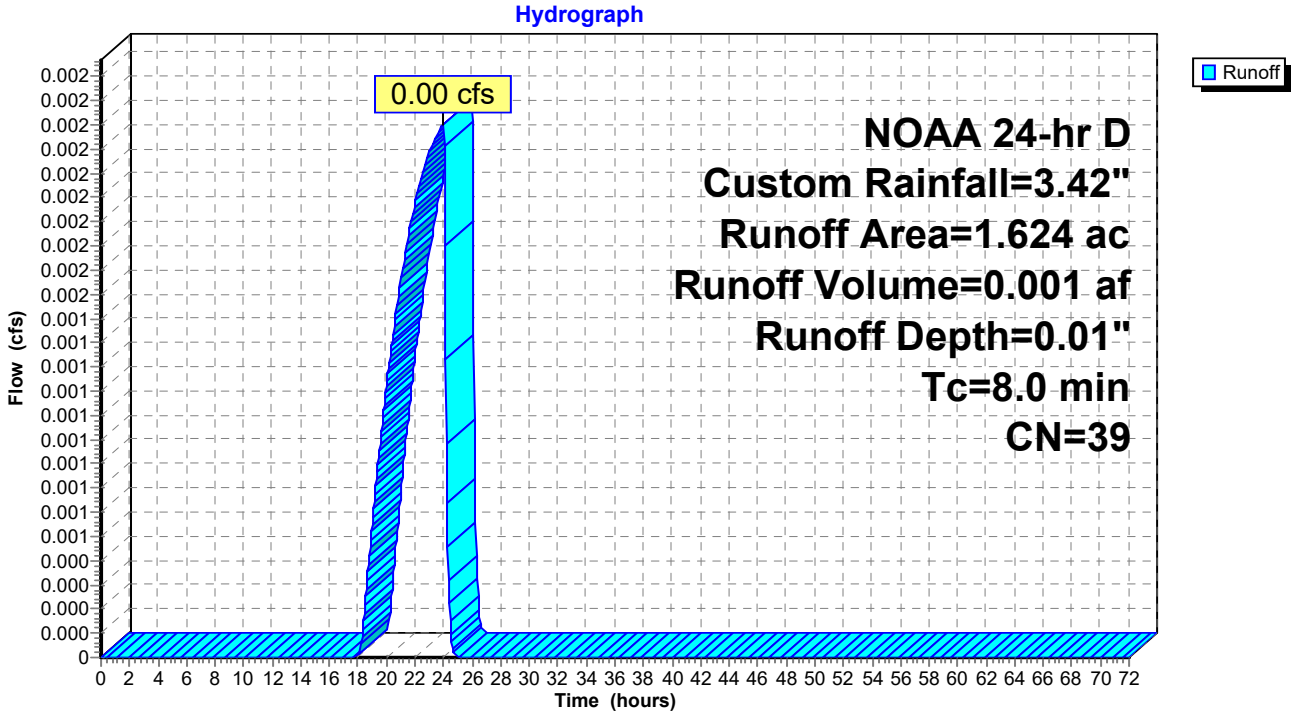
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 111P : Basin 23

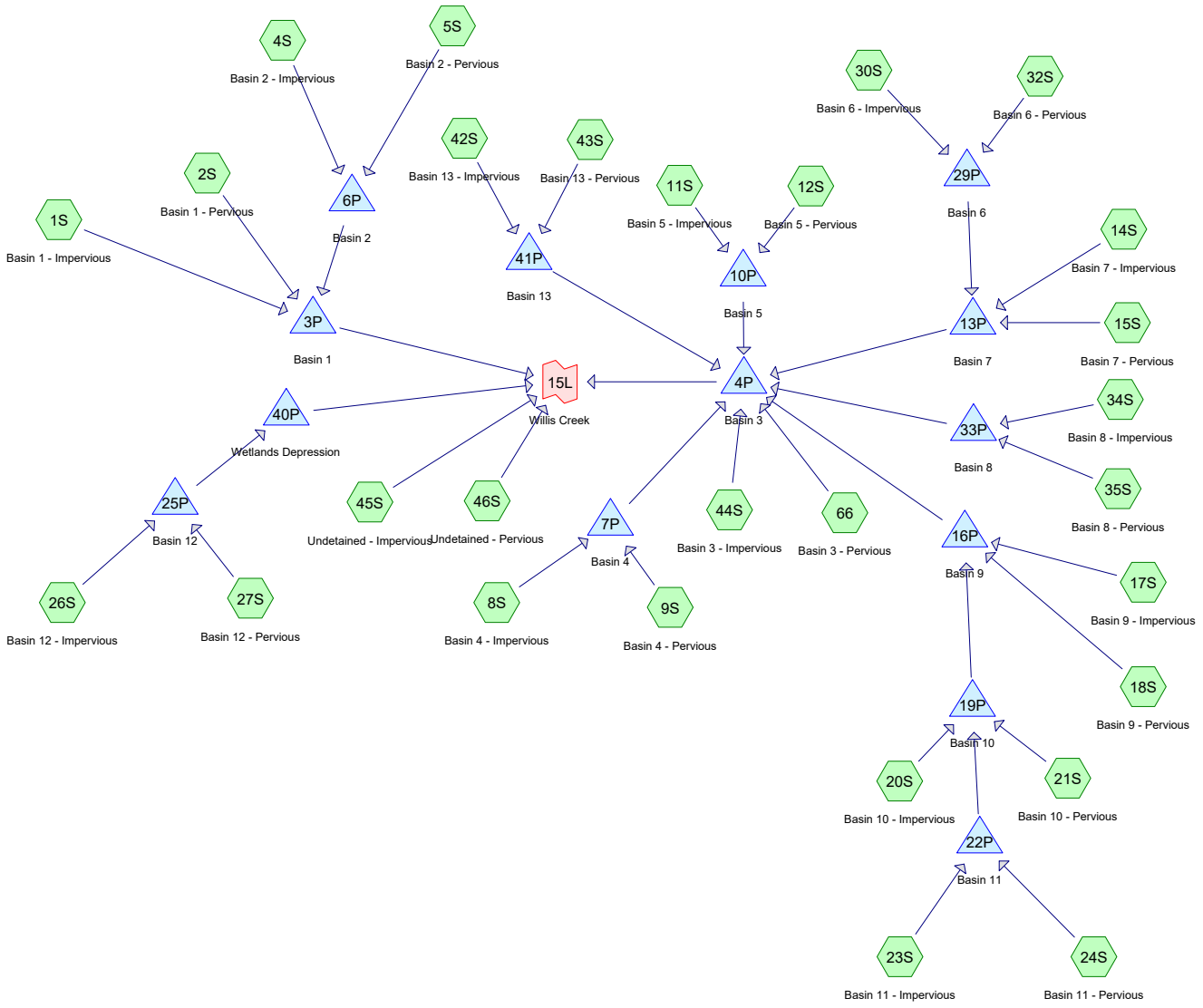
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.624	39	>75% Grass cover, Good, HSG A
1.624		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 113S: Basin 23 - Pervious





Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT - WILLS CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	3.42	2

Summary for Subcatchment 1S: Basin 1 - Impervious

[49] Hint: Tc<2dt may require smaller dt

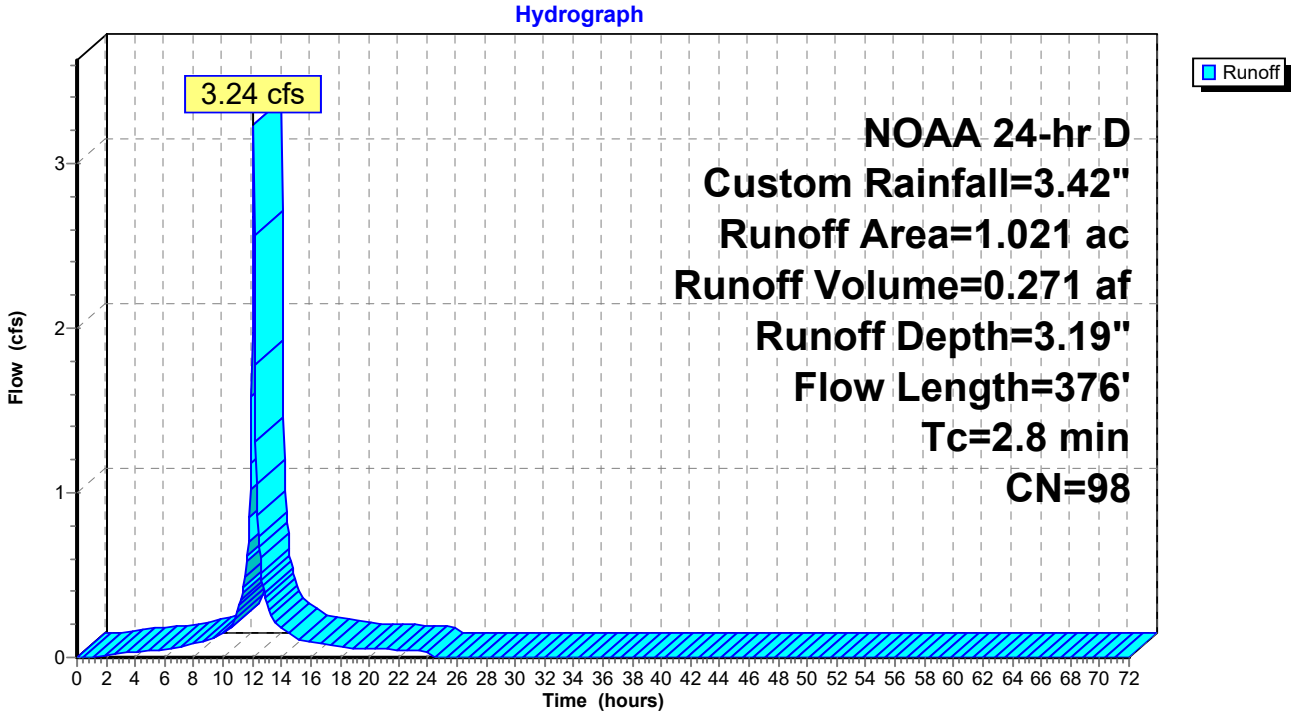
Runoff = 3.24 cfs @ 12.10 hrs, Volume= 0.271 af, Depth= 3.19"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.021	98	
	1.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	86	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	190	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.8	376	Total			

Subcatchment 1S: Basin 1 - Impervious



Summary for Subcatchment 2S: Basin 1 - Pervious

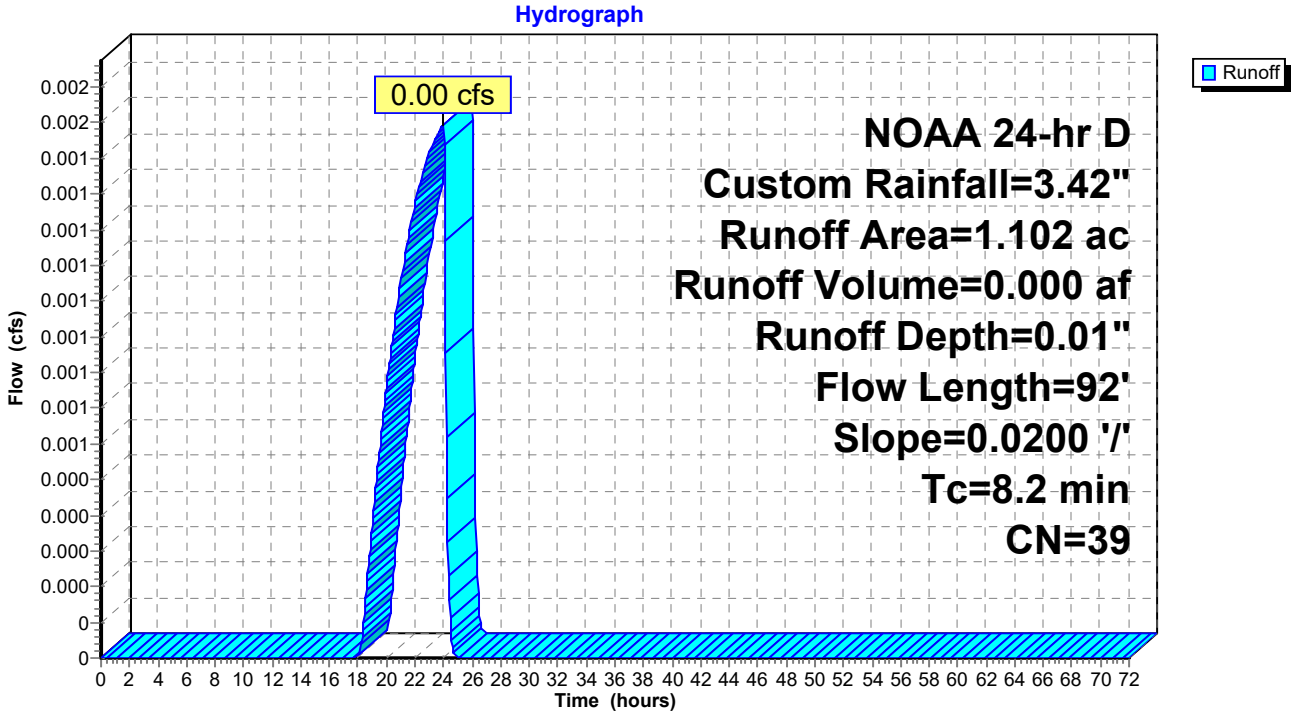
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.01"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.102	39	>75% Grass cover, Good, HSG A
1.102		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	92	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 2S: Basin 1 - Pervious



Summary for Pond 3P: Basin 1

Inflow Area = 4.367 ac, 43.78% Impervious, Inflow Depth > 1.18" for Custom event
Inflow = 3.32 cfs @ 12.10 hrs, Volume= 0.430 af
Outflow = 0.21 cfs @ 17.00 hrs, Volume= 0.338 af, Atten= 94%, Lag= 294.0 min
Primary = 0.21 cfs @ 17.00 hrs, Volume= 0.338 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.86' @ 17.00 hrs Surf.Area= 6,895 sf Storage= 9,362 cf

Plug-Flow detention time= 631.8 min calculated for 0.338 af (79% of inflow)
Center-of-Mass det. time= 464.6 min (1,407.7 - 943.1)

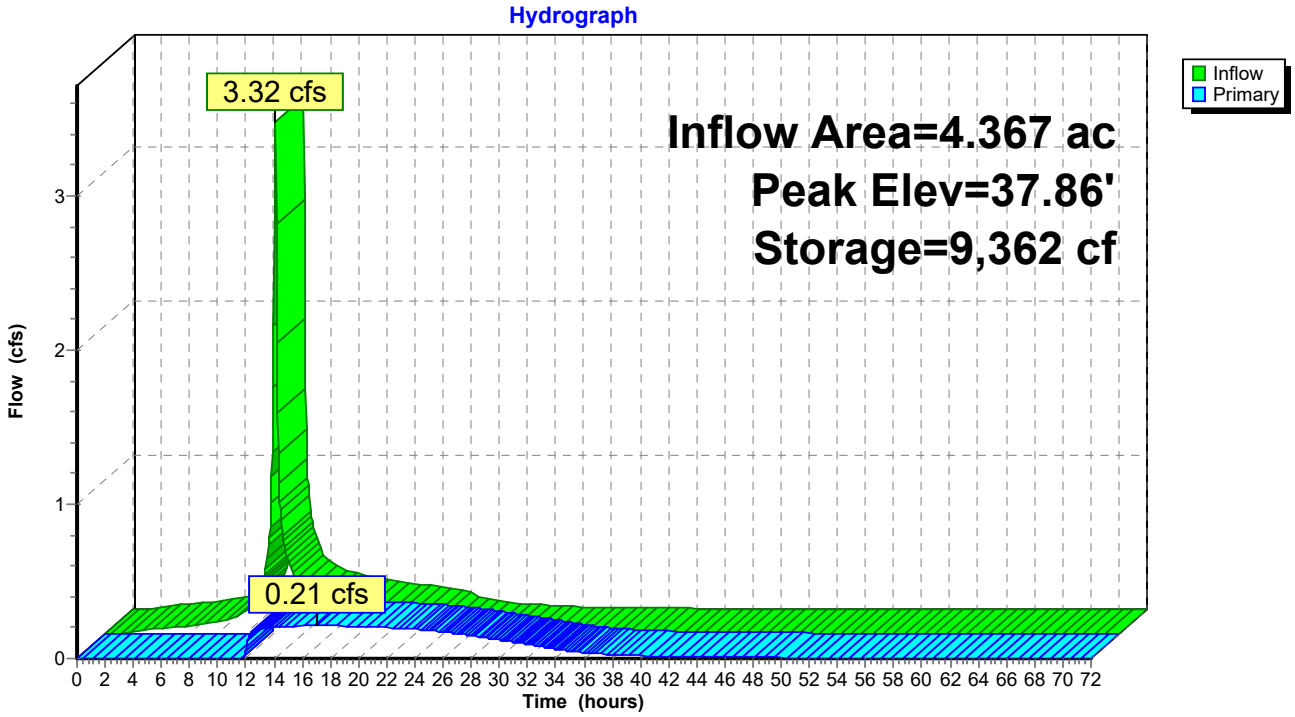
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	14,397 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,311	0	0
37.00	5,097	4,204	4,204
38.00	7,187	6,142	10,346
38.50	9,017	4,051	14,397

Device	Routing	Invert	Outlet Devices
#1	Primary	36.93'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.90'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 17.00 hrs HW=37.86' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.21 cfs @ 4.32 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 3

Inflow Area = 21.738 ac, 39.68% Impervious, Inflow Depth = 1.23" for Custom event
Inflow = 17.77 cfs @ 12.17 hrs, Volume= 2.222 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 27.55' @ 72.00 hrs Surf.Area= 32,653 sf Storage= 96,800 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

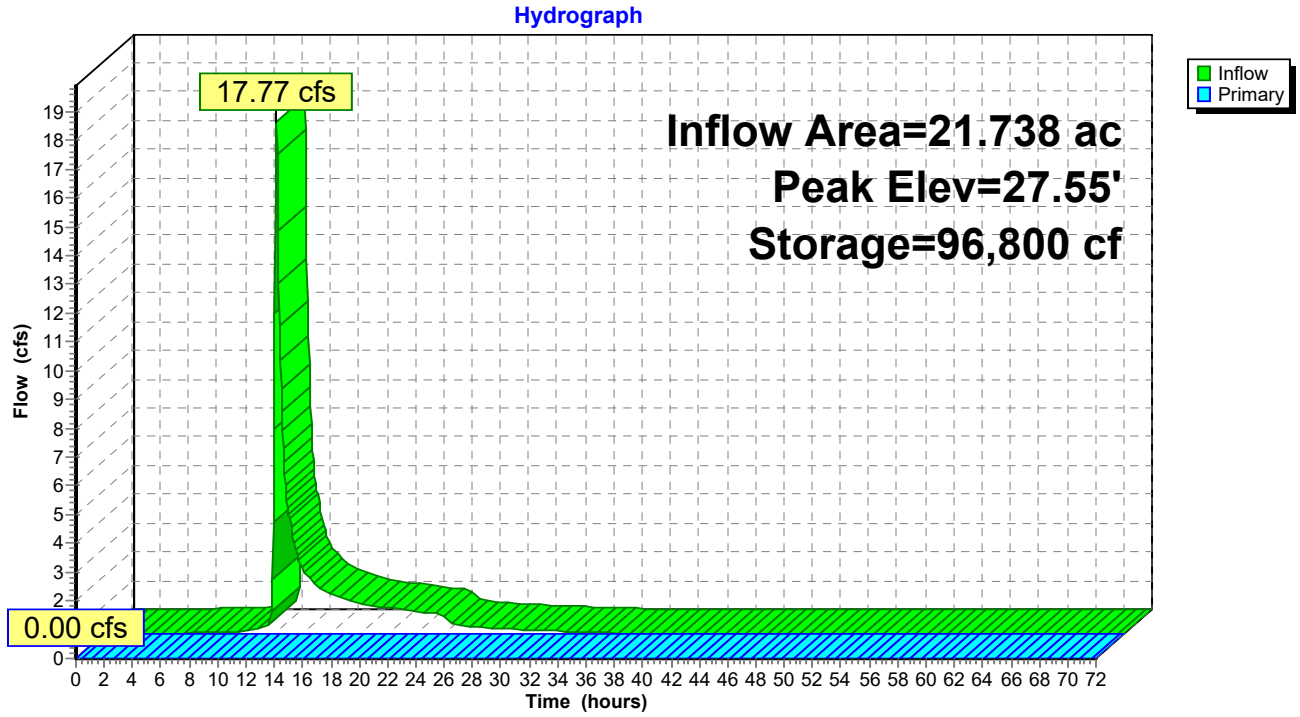
Volume	Invert	Avail.Storage	Storage Description
#1	24.01'	206,265 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.01	22,000	0	0
25.00	25,000	23,265	23,265
26.00	28,000	26,500	49,765
27.00	31,000	29,500	79,265
28.00	34,000	32,500	111,765
29.00	37,000	35,500	147,265
30.00	40,000	38,500	185,765
30.50	42,000	20,500	206,265

Device	Routing	Invert	Outlet Devices
#1	Primary	29.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=24.01' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4P: Basin 3



Summary for Subcatchment 4S: Basin 2 - Impervious

[49] Hint: Tc<2dt may require smaller dt

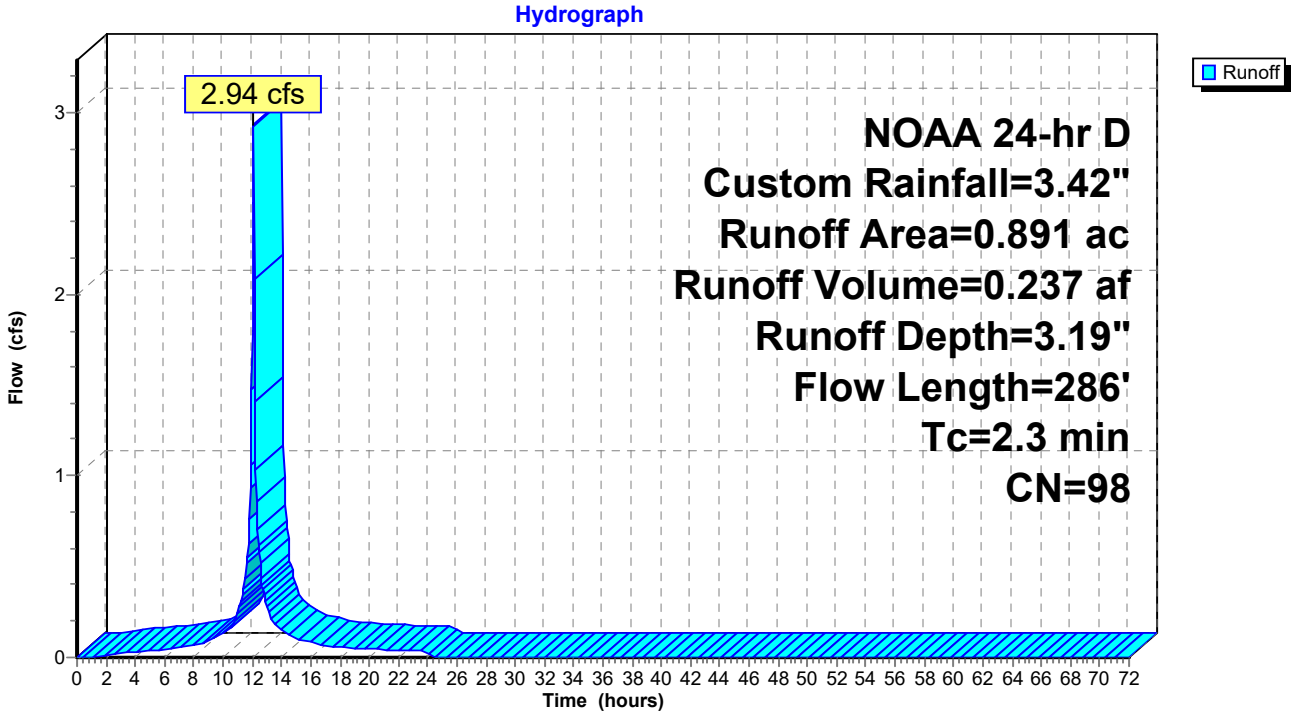
Runoff = 2.94 cfs @ 12.09 hrs, Volume= 0.237 af, Depth= 3.19"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.891	98	Impervious
	0.891		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	56	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	286	Total			

Subcatchment 4S: Basin 2 - Impervious



Summary for Subcatchment 5S: Basin 2 - Pervious

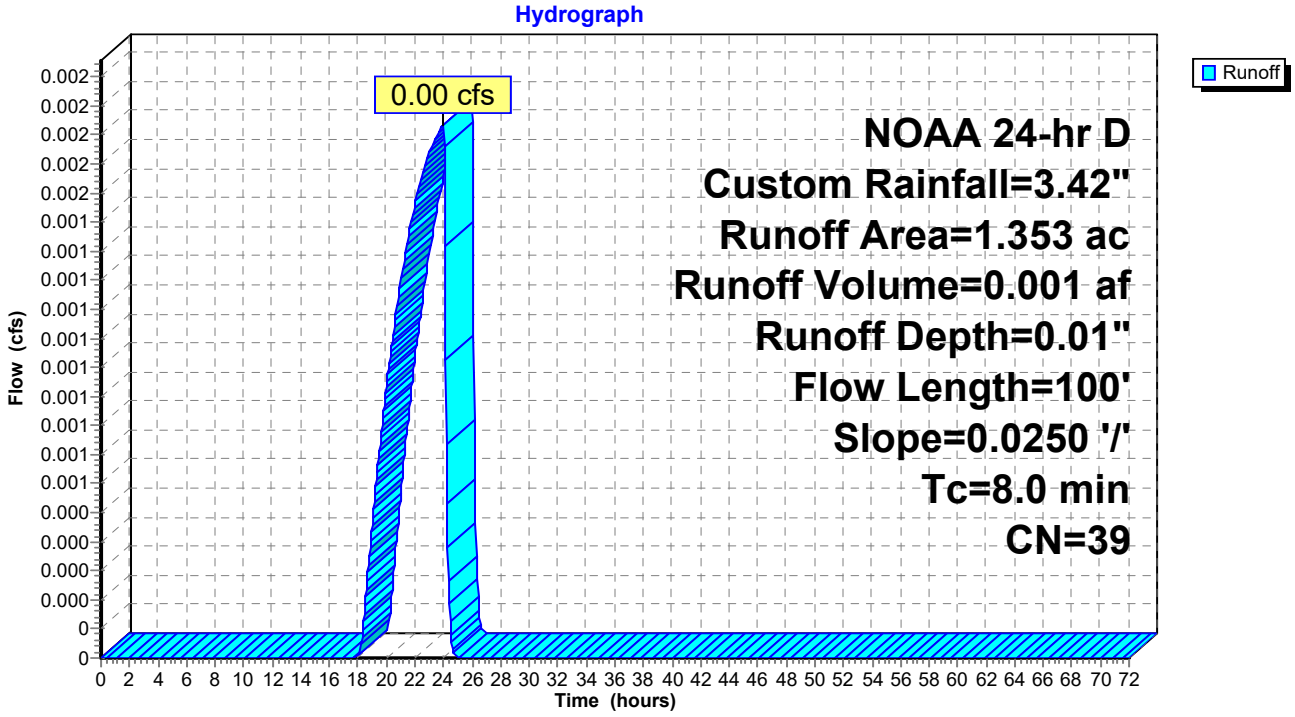
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.353	39	>75% Grass cover, Good, HSG A
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 5S: Basin 2 - Pervious



Summary for Pond 6P: Basin 2

Inflow Area = 2.244 ac, 39.71% Impervious, Inflow Depth = 1.27" for Custom event
Inflow = 2.94 cfs @ 12.09 hrs, Volume= 0.237 af
Outflow = 0.14 cfs @ 14.07 hrs, Volume= 0.158 af, Atten= 95%, Lag= 118.4 min
Primary = 0.14 cfs @ 14.07 hrs, Volume= 0.158 af
Routed to Pond 3P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.02' @ 14.07 hrs Surf.Area= 0.188 ac Storage= 0.164 af

Plug-Flow detention time= 616.9 min calculated for 0.158 af (67% of inflow)
Center-of-Mass det. time= 507.1 min (1,263.4 - 756.3)

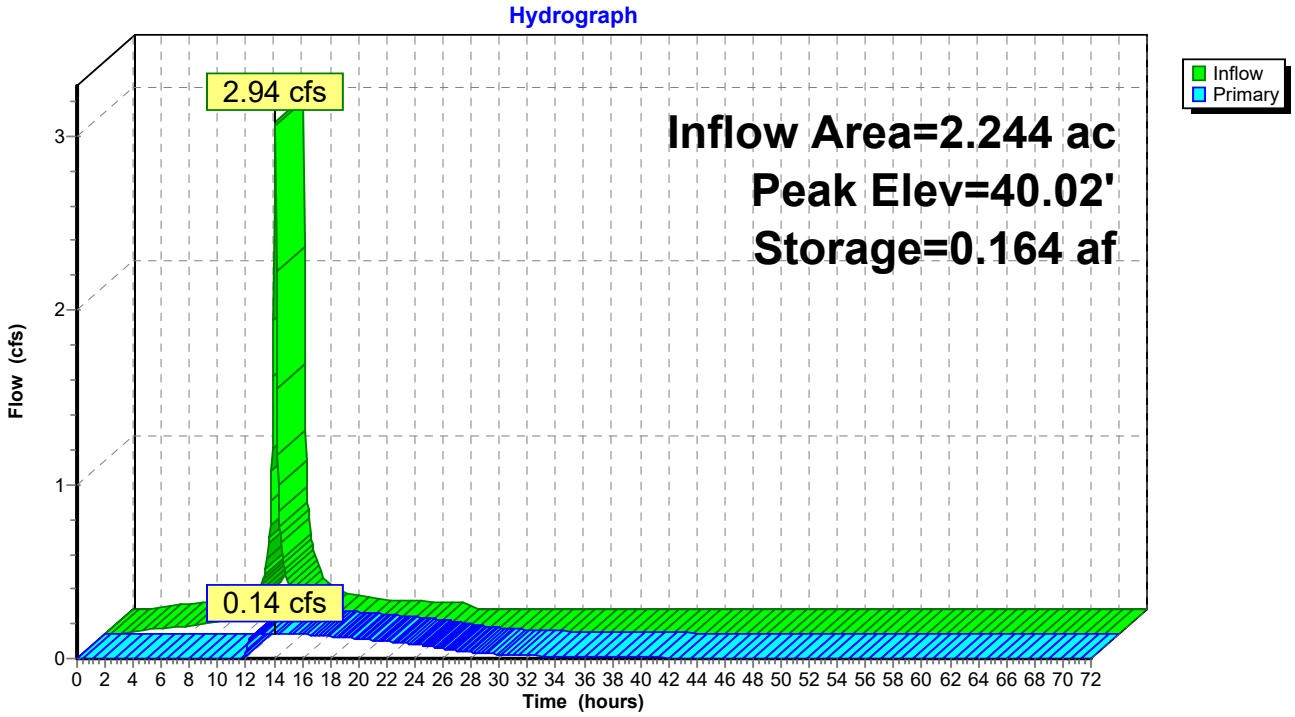
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	0.512 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
39.00	0.133	0.000	0.000
40.00	0.187	0.160	0.160
41.00	0.245	0.216	0.376
41.50	0.297	0.135	0.512

Device	Routing	Invert	Outlet Devices
#1	Primary	39.52'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.14 cfs @ 14.07 hrs HW=40.02' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.14 cfs @ 2.95 fps)

Pond 6P: Basin 2



Summary for Pond 7P: Basin 4

Inflow Area = 2.526 ac, 46.36% Impervious, Inflow Depth = 1.48" for Custom event
Inflow = 3.55 cfs @ 12.11 hrs, Volume= 0.312 af
Outflow = 3.05 cfs @ 12.16 hrs, Volume= 0.210 af, Atten= 14%, Lag= 3.1 min
Primary = 3.05 cfs @ 12.16 hrs, Volume= 0.210 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.01' @ 12.16 hrs Surf.Area= 6,344 sf Storage= 5,374 cf

Plug-Flow detention time= 212.8 min calculated for 0.209 af (67% of inflow)
Center-of-Mass det. time= 104.6 min (862.2 - 757.6)

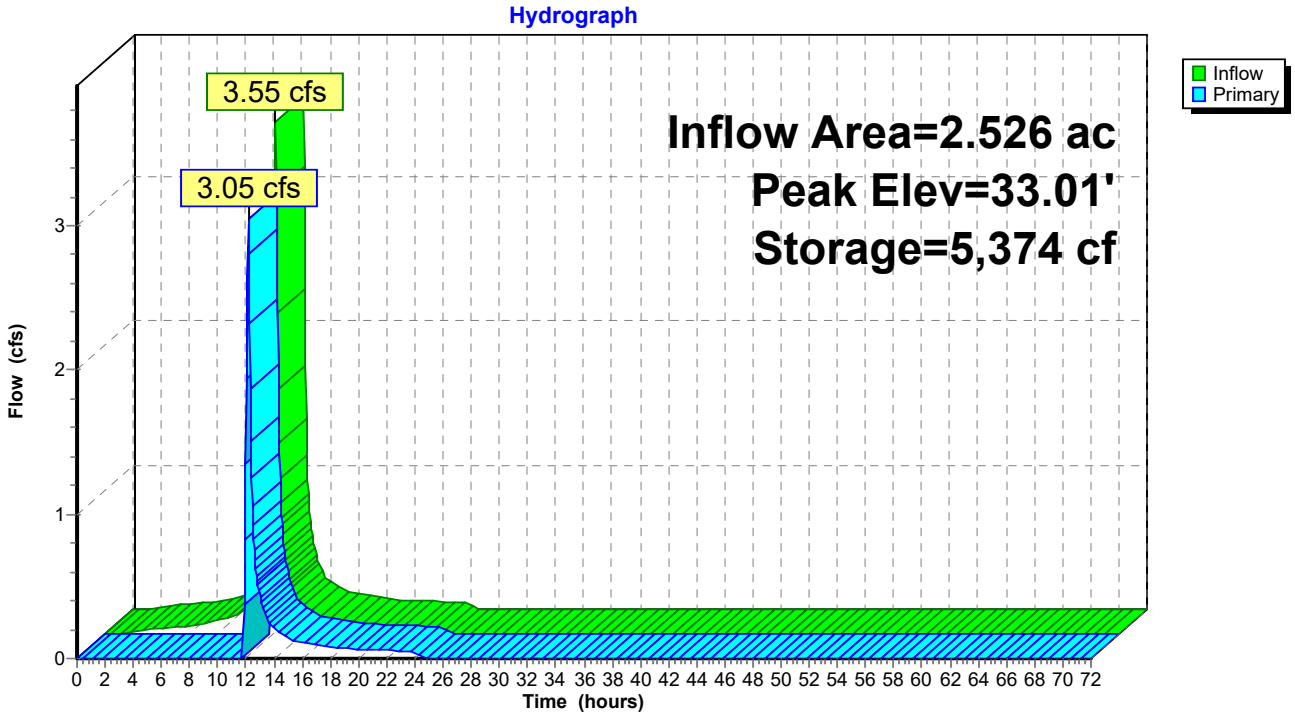
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	17,795 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	4,300	0	0
33.00	6,320	5,310	5,310
34.00	8,700	7,510	12,820
34.50	11,200	4,975	17,795

Device	Routing	Invert	Outlet Devices
#1	Primary	32.86'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.01 cfs @ 12.16 hrs HW=33.01' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.01 cfs @ 1.26 fps)

Pond 7P: Basin 4



Summary for Subcatchment 8S: Basin 4 - Impervious

[49] Hint: Tc<2dt may require smaller dt

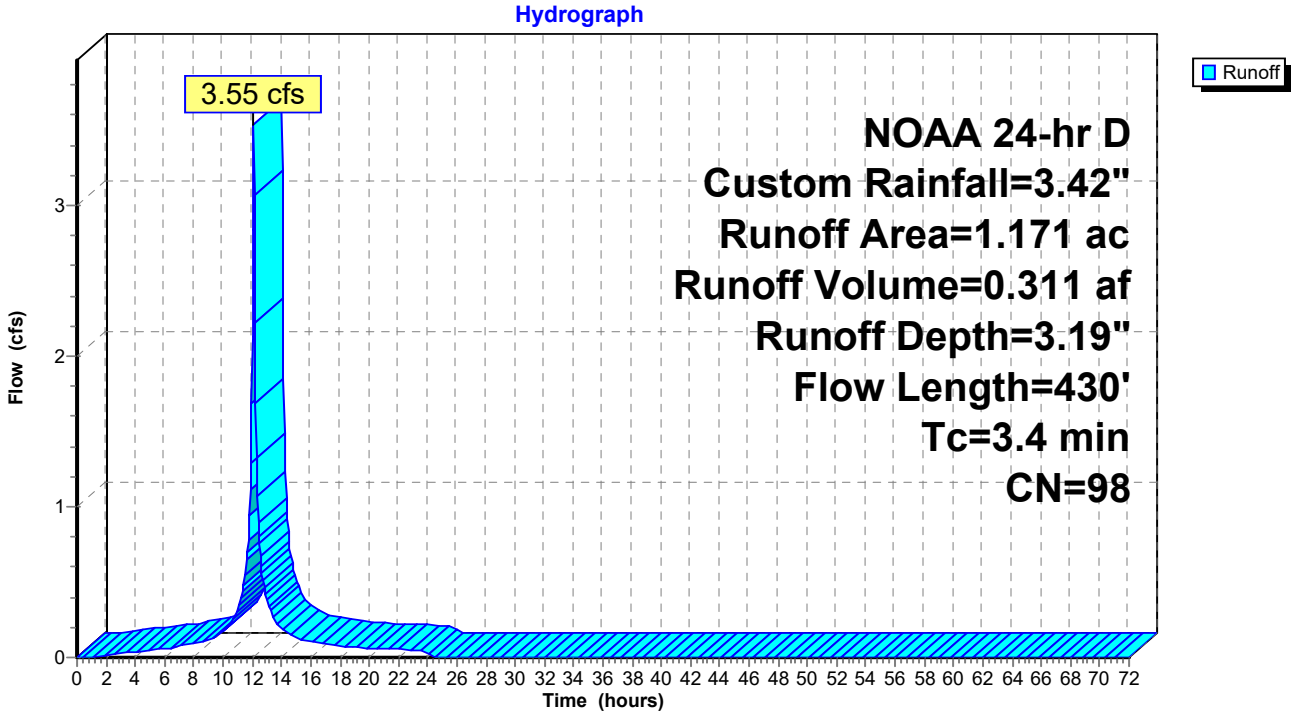
Runoff = 3.55 cfs @ 12.11 hrs, Volume= 0.311 af, Depth= 3.19"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.171	98	Impervious
	1.171		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.4	430	Total			

Subcatchment 8S: Basin 4 - Impervious



Summary for Subcatchment 9S: Basin 4 - Pervious

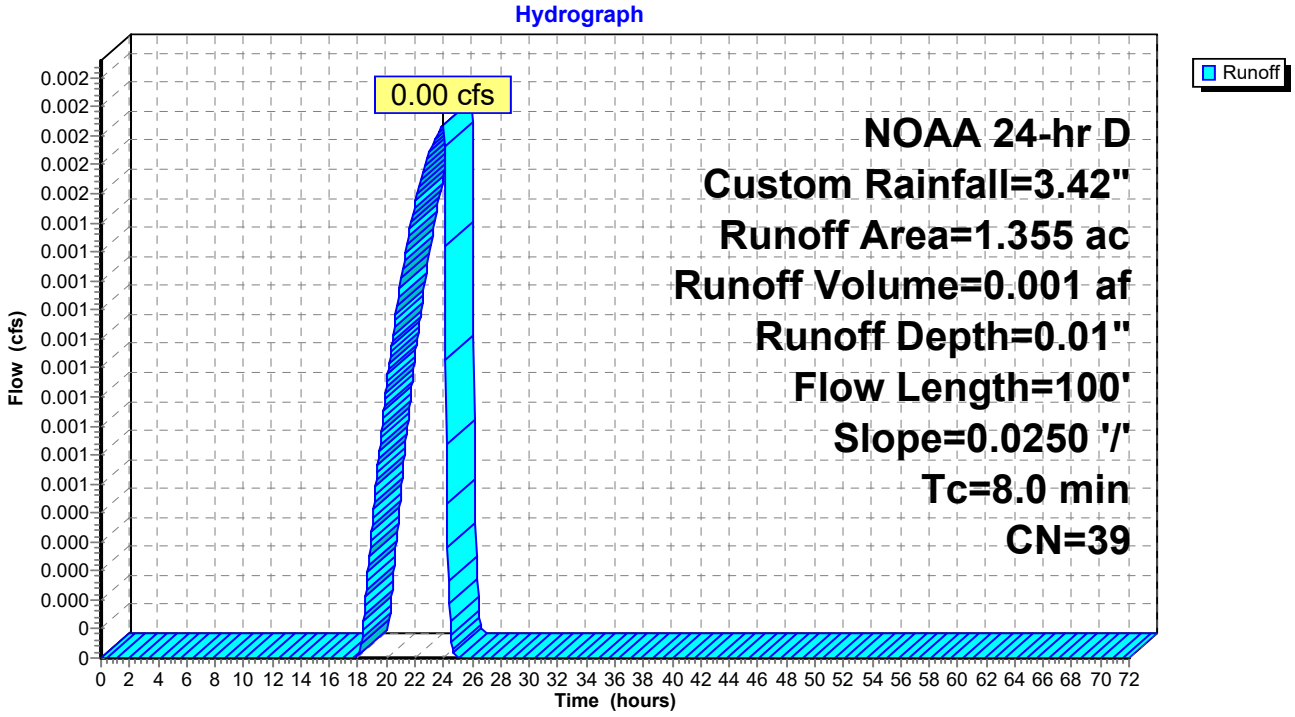
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.355	39	>75% Grass cover, Good, HSG A
1.355		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 9S: Basin 4 - Pervious



Summary for Pond 10P: Basin 5

Inflow Area = 1.373 ac, 35.40% Impervious, Inflow Depth = 1.26" for Custom event
Inflow = 1.47 cfs @ 12.11 hrs, Volume= 0.144 af
Outflow = 0.15 cfs @ 13.34 hrs, Volume= 0.102 af, Atten= 90%, Lag= 74.0 min
Primary = 0.15 cfs @ 13.34 hrs, Volume= 0.102 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.14' @ 13.34 hrs Surf.Area= 3,977 sf Storage= 3,698 cf

Plug-Flow detention time= 417.1 min calculated for 0.102 af (71% of inflow)
Center-of-Mass det. time= 305.7 min (1,087.4 - 781.7)

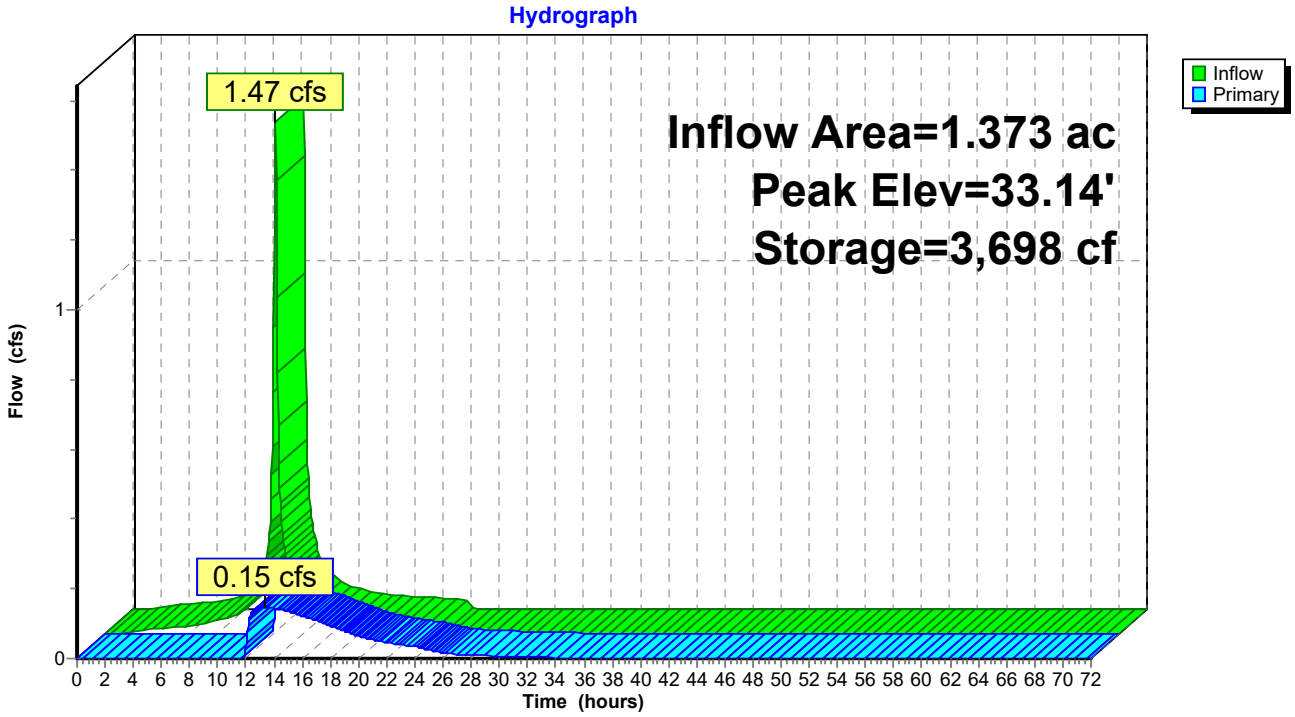
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	35,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,500	0	0
33.00	3,780	3,140	3,140
34.00	5,150	4,465	7,605
35.00	6,490	5,820	13,425
36.00	8,300	7,395	20,820
37.00	9,700	9,000	29,820
37.50	11,500	5,300	35,120

Device	Routing	Invert	Outlet Devices
#1	Primary	32.63'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.15 cfs @ 13.34 hrs HW=33.14' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.15 cfs @ 3.00 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 10P: Basin 5



Summary for Subcatchment 11S: Basin 5 - Impervious

[49] Hint: Tc<2dt may require smaller dt

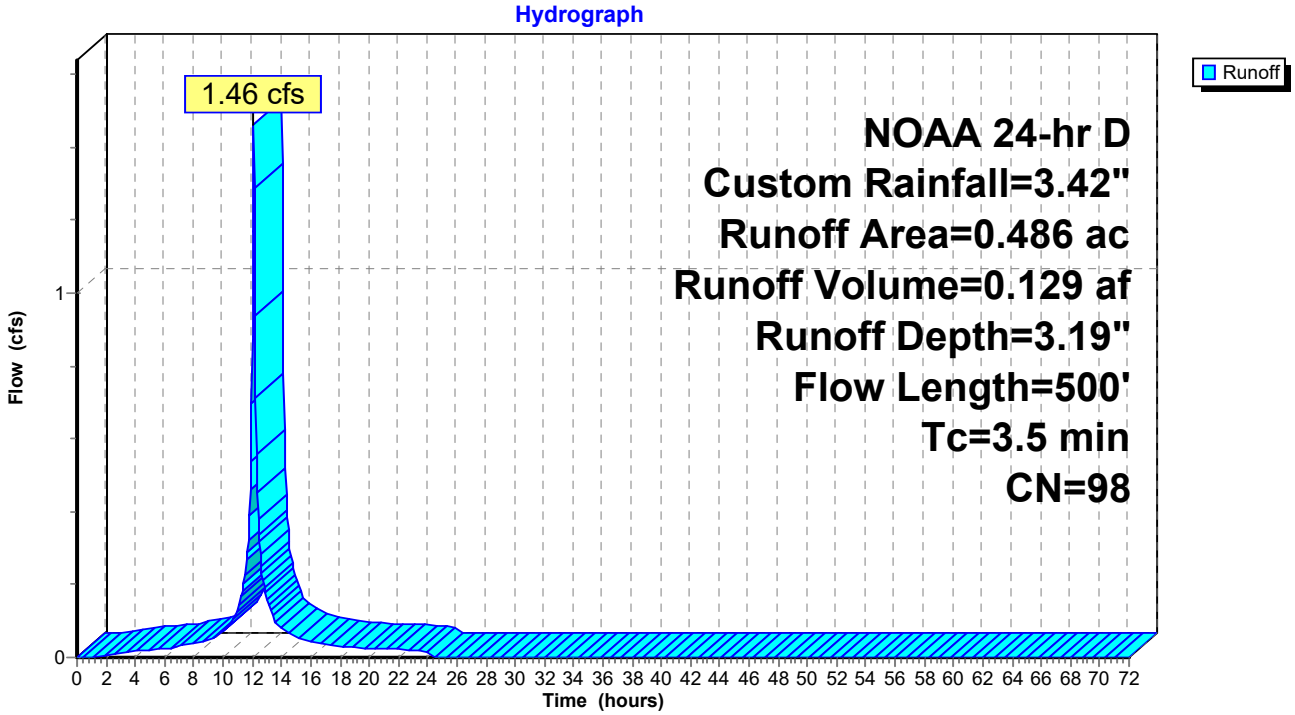
Runoff = 1.46 cfs @ 12.11 hrs, Volume= 0.129 af, Depth= 3.19"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.486	98	Impervious
	0.486		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.5	500	Total			

Subcatchment 11S: Basin 5 - Impervious



Summary for Subcatchment 12S: Basin 5 - Pervious

[49] Hint: Tc<2dt may require smaller dt

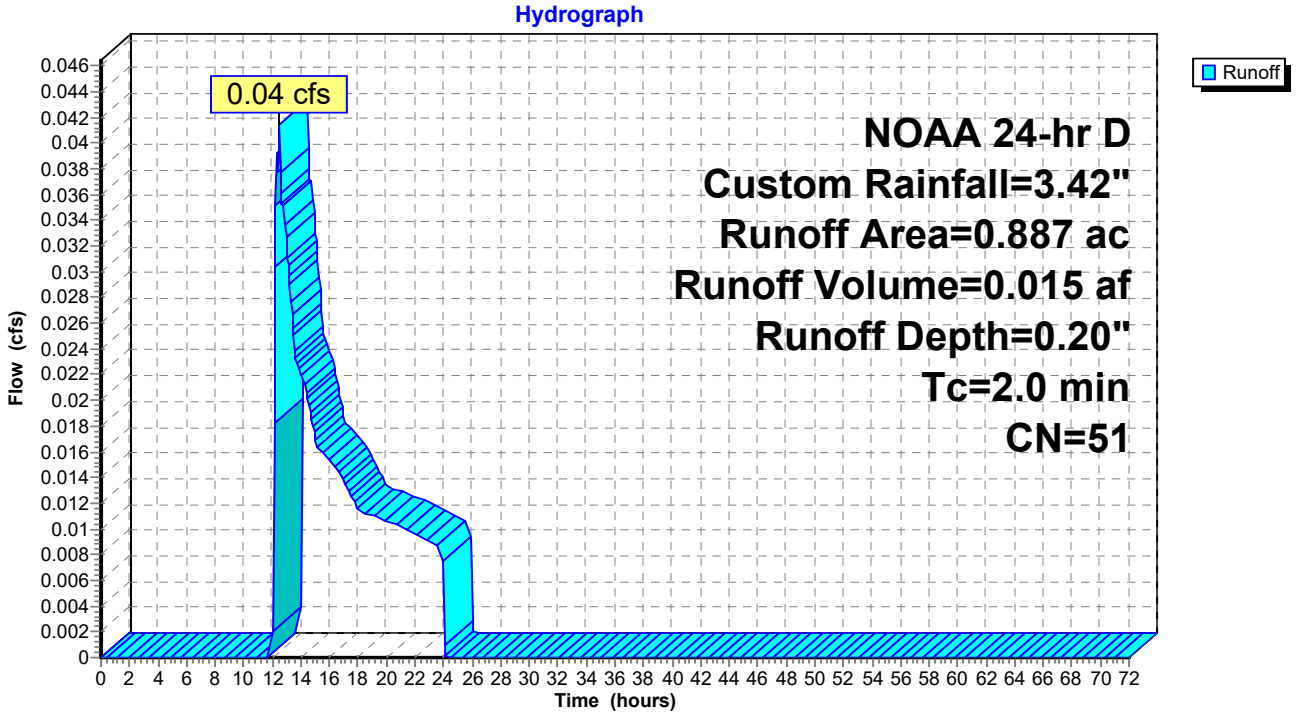
Runoff = 0.04 cfs @ 12.49 hrs, Volume= 0.015 af, Depth= 0.20"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
0.621	39	>75% Grass cover, Good, HSG A
0.266	80	>75% Grass cover, Good, HSG D
0.887	51	Weighted Average
0.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 12S: Basin 5 - Pervious



Summary for Pond 13P: Basin 7

Inflow Area = 3.928 ac, 40.63% Impervious, Inflow Depth = 1.91" for Custom event
Inflow = 5.88 cfs @ 12.17 hrs, Volume= 0.625 af
Outflow = 5.57 cfs @ 12.22 hrs, Volume= 0.510 af, Atten= 5%, Lag= 3.0 min
Primary = 5.57 cfs @ 12.22 hrs, Volume= 0.510 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.01' @ 12.22 hrs Surf.Area= 5,632 sf Storage= 6,256 cf

Plug-Flow detention time= 142.1 min calculated for 0.510 af (81% of inflow)
Center-of-Mass det. time= 59.2 min (878.5 - 819.3)

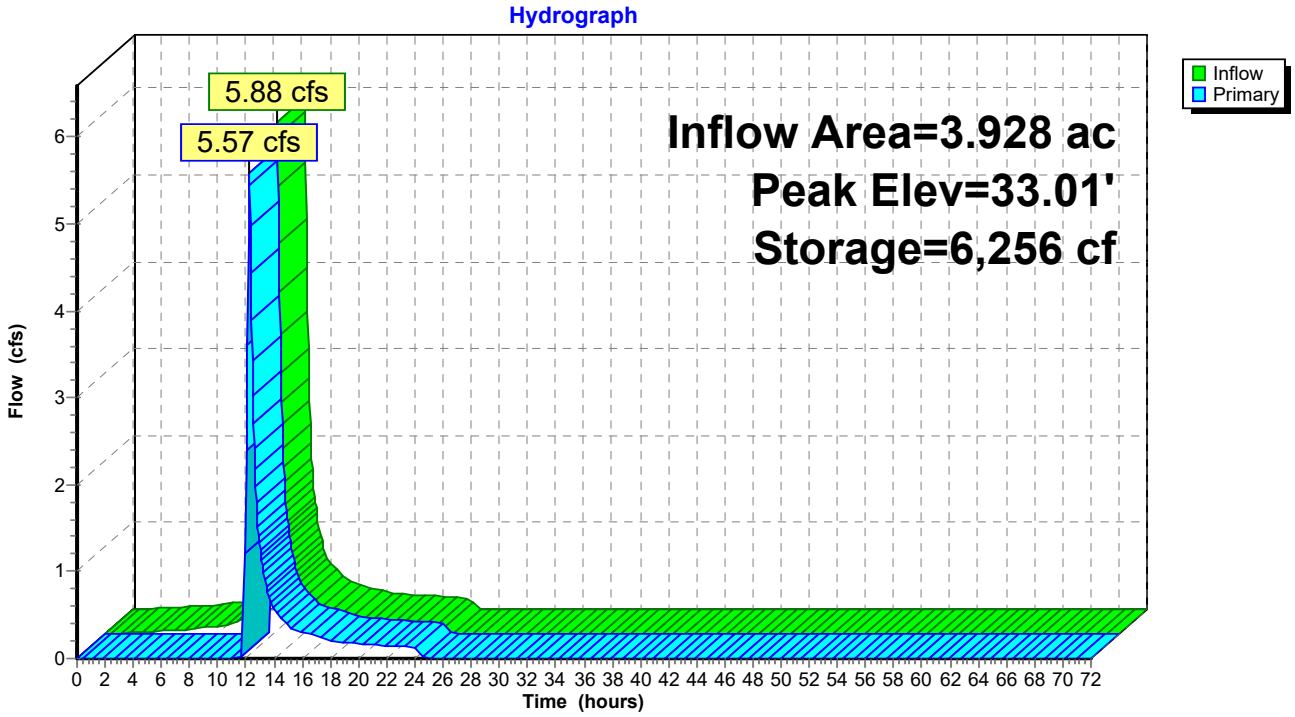
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	17,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,000	0	0
32.00	3,500	1,625	1,625
33.00	5,600	4,550	6,175
34.00	7,800	6,700	12,875
34.50	9,400	4,300	17,175

Device	Routing	Invert	Outlet Devices
#1	Primary	32.79'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.47 cfs @ 12.22 hrs HW=33.01' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 5.47 cfs @ 1.54 fps)

Pond 13P: Basin 7



Summary for Subcatchment 14S: Basin 7 - Impervious

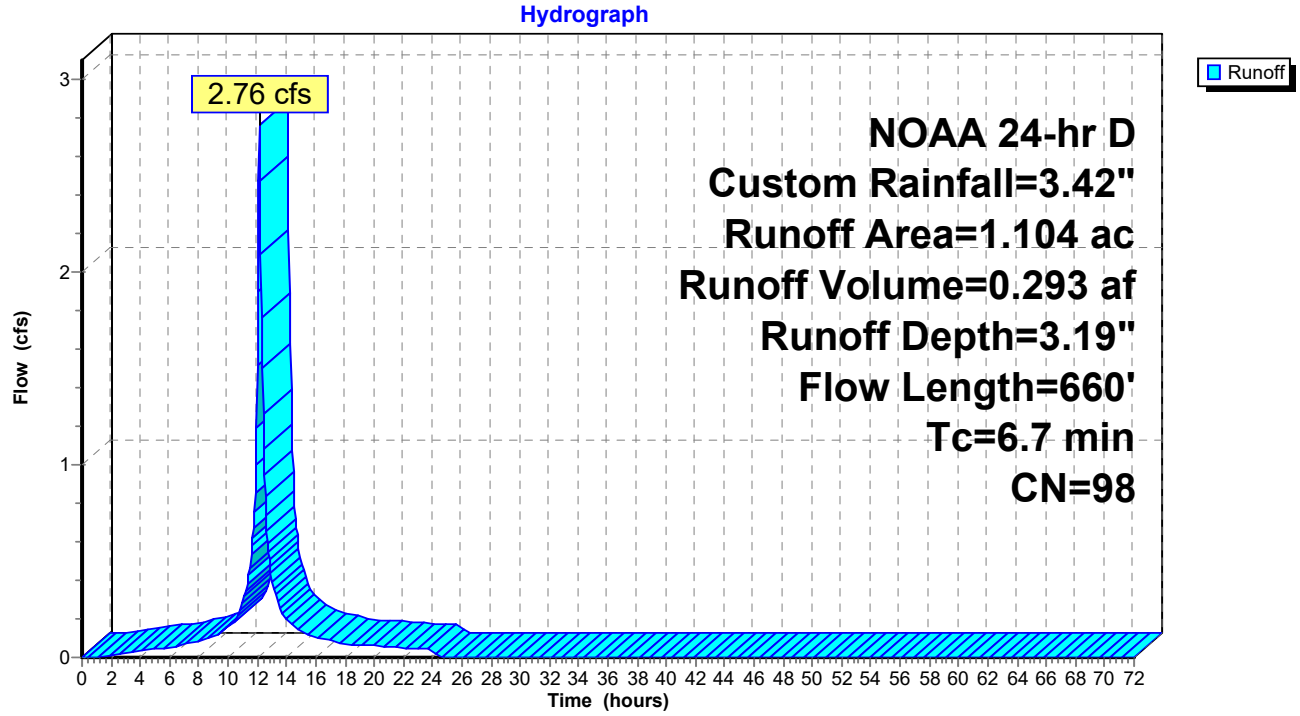
Runoff = 2.76 cfs @ 12.15 hrs, Volume= 0.293 af, Depth= 3.19"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.104	98	Impervious
	1.104		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
4.9	500	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	60	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	660	Total			

Subcatchment 14S: Basin 7 - Impervious

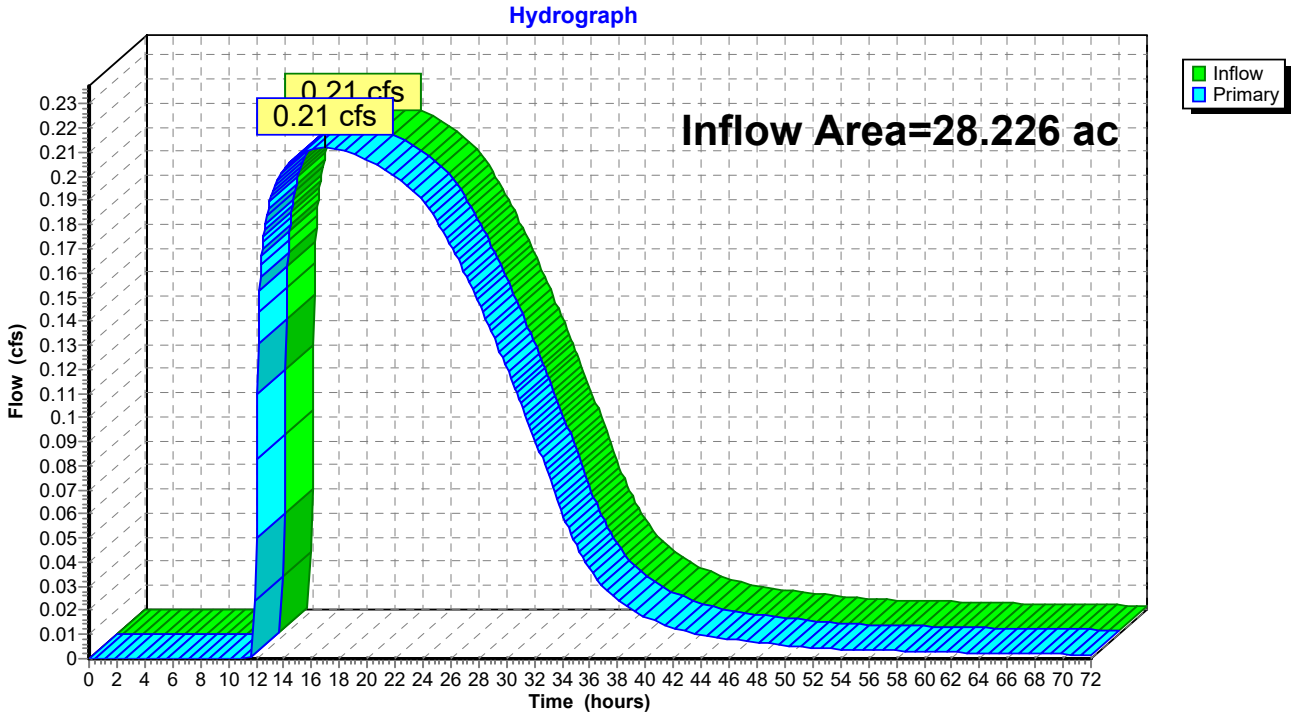


Summary for Link 15L: Willis Creek

Inflow Area = 28.226 ac, 38.93% Impervious, Inflow Depth > 0.14" for Custom event
Inflow = 0.21 cfs @ 17.00 hrs, Volume= 0.338 af
Primary = 0.21 cfs @ 17.00 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 15L: Willis Creek



Summary for Subcatchment 15S: Basin 7 - Pervious

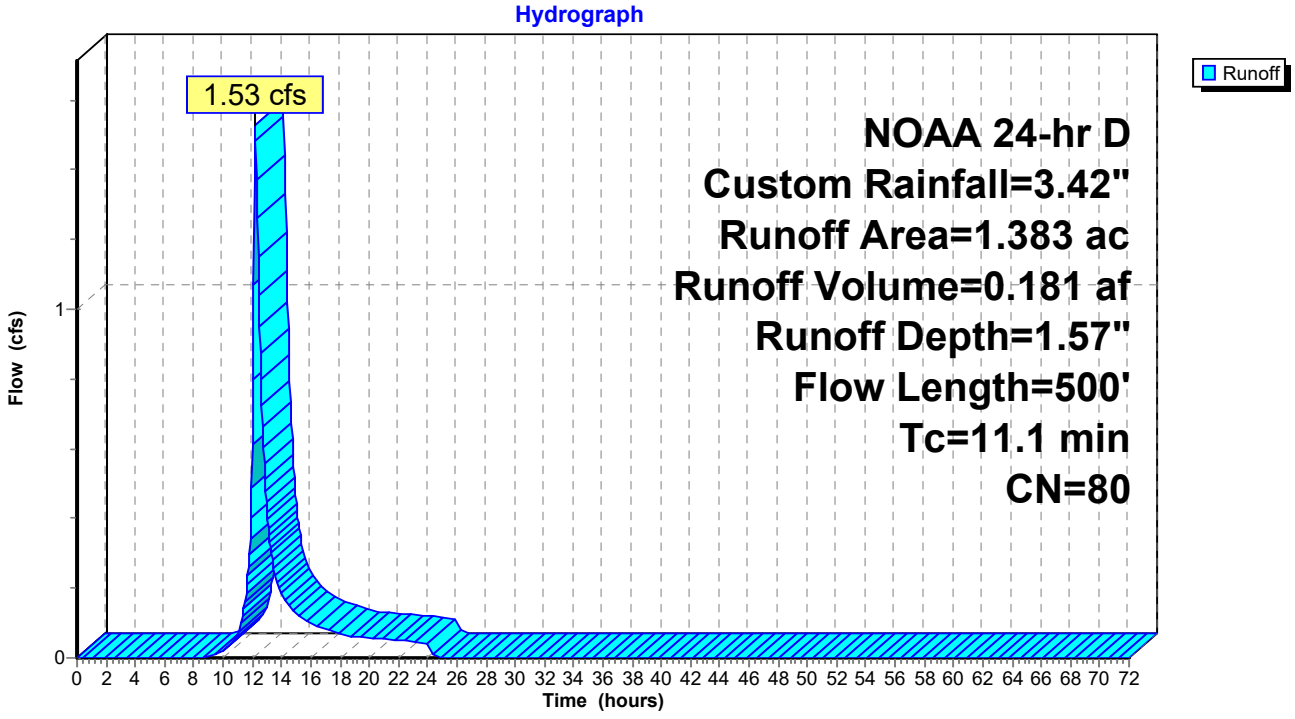
Runoff = 1.53 cfs @ 12.21 hrs, Volume= 0.181 af, Depth= 1.57"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.383	80	>75% Grass cover, Good, HSG D
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	80	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	20	0.0070	0.74		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
3.9	400	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
11.1	500	Total			

Subcatchment 15S: Basin 7 - Pervious



Summary for Pond 16P: Basin 9

Inflow Area = 7.133 ac, 41.50% Impervious, Inflow Depth > 1.33" for Custom event
Inflow = 4.20 cfs @ 12.11 hrs, Volume= 0.789 af
Outflow = 3.79 cfs @ 12.16 hrs, Volume= 0.691 af, Atten= 10%, Lag= 2.8 min
Primary = 3.79 cfs @ 12.16 hrs, Volume= 0.691 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.10' @ 12.16 hrs Surf.Area= 5,424 sf Storage= 5,155 cf

Plug-Flow detention time= 185.4 min calculated for 0.691 af (88% of inflow)
Center-of-Mass det. time= 73.5 min (1,106.1 - 1,032.6)

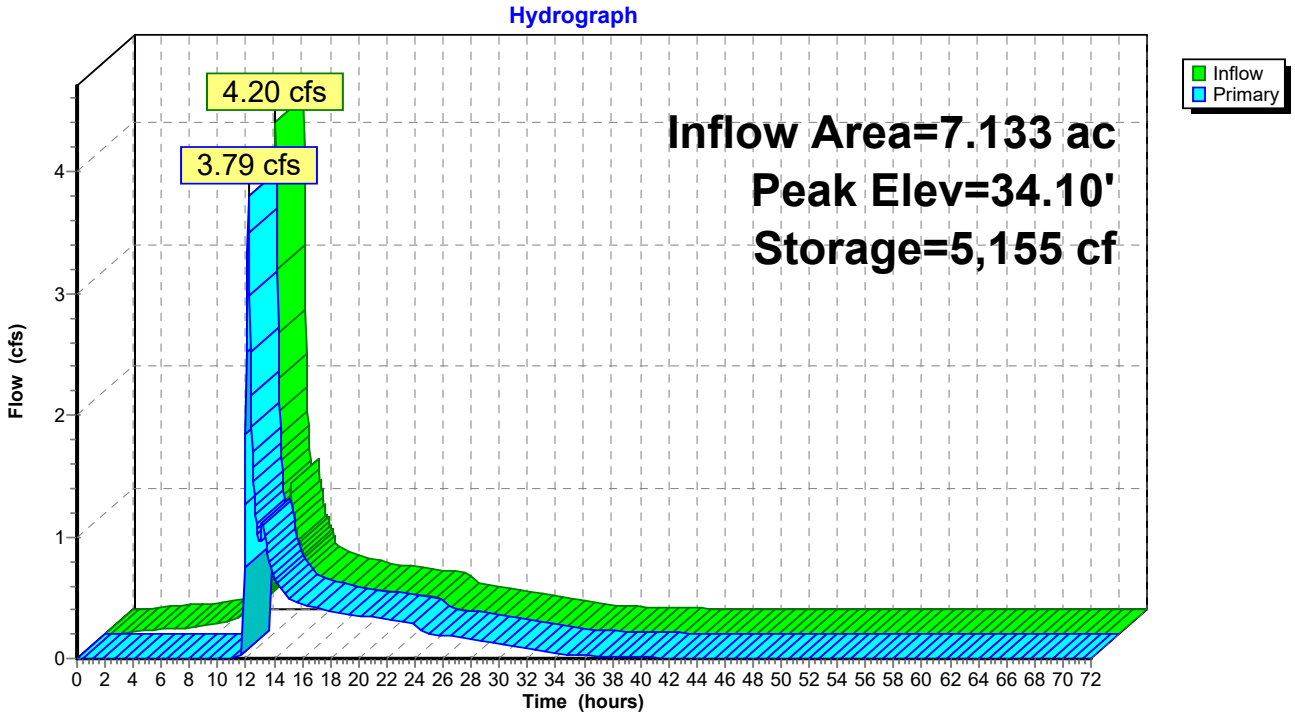
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,900	0	0
34.00	5,300	4,600	4,600
35.00	6,500	5,900	10,500
36.00	8,000	7,250	17,750
36.50	9,700	4,425	22,175

Device	Routing	Invert	Outlet Devices
#1	Primary	33.93'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.74 cfs @ 12.16 hrs HW=34.10' (Free Discharge)
1=Orifice/Grate (Weir Controls 3.74 cfs @ 1.36 fps)

Pond 16P: Basin 9



Summary for Subcatchment 17S: Basin 9 - Impervious

[49] Hint: Tc<2dt may require smaller dt

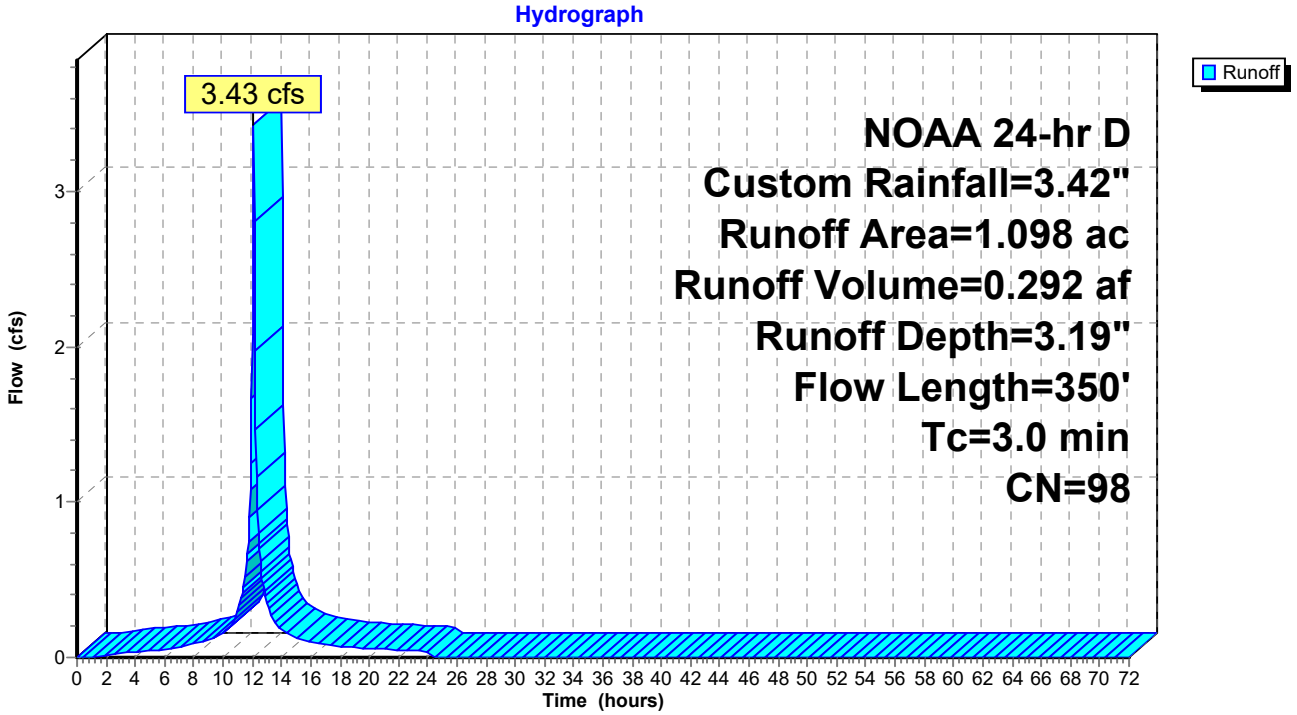
Runoff = 3.43 cfs @ 12.10 hrs, Volume= 0.292 af, Depth= 3.19"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.098	98	Impervious
	1.098		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.0	350	Total			

Subcatchment 17S: Basin 9 - Impervious



Summary for Subcatchment 18S: Basin 9 - Pervious

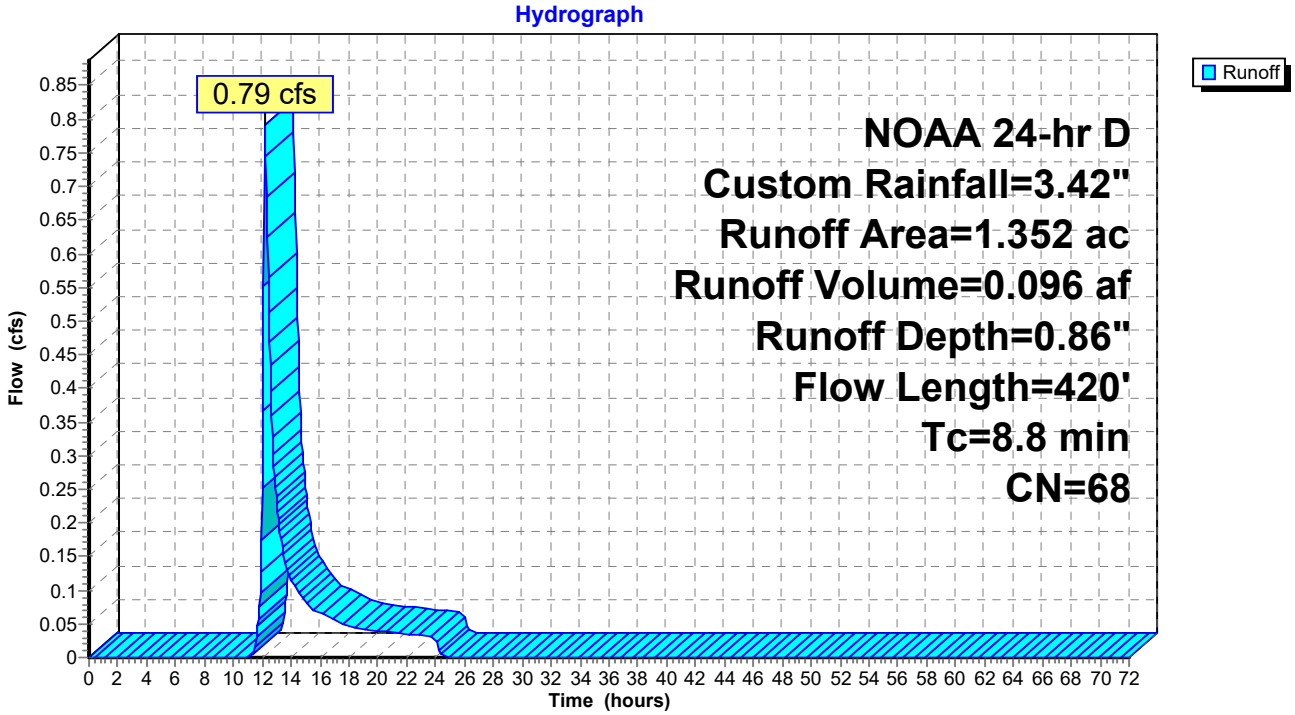
Runoff = 0.79 cfs @ 12.20 hrs, Volume= 0.096 af, Depth= 0.86"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
0.946	80	>75% Grass cover, Good, HSG D
0.406	39	>75% Grass cover, Good, HSG A
1.352	68	Weighted Average
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
1.7	170	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, D to E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	420	Total			

Subcatchment 18S: Basin 9 - Pervious



Summary for Pond 19P: Basin 10

[93] Warning: Storage range exceeded by 9.67'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=13)
[81] Warning: Exceeded Pond 22P by 9.56' @ 13.05 hrs

Inflow Area = 4.683 ac, 39.76% Impervious, Inflow Depth = 1.23" for Custom event
Inflow = 5.26 cfs @ 12.11 hrs, Volume= 0.480 af
Outflow = 0.79 cfs @ 13.06 hrs, Volume= 0.401 af, Atten= 85%, Lag= 56.6 min
Primary = 0.79 cfs @ 13.06 hrs, Volume= 0.401 af
Routed to Pond 16P : Basin 9

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 48.17' @ 13.05 hrs Surf.Area= 8,000 sf Storage= 12,700 cf

Plug-Flow detention time= 545.2 min calculated for 0.401 af (83% of inflow)
Center-of-Mass det. time= 468.8 min (1,265.8 - 797.0)

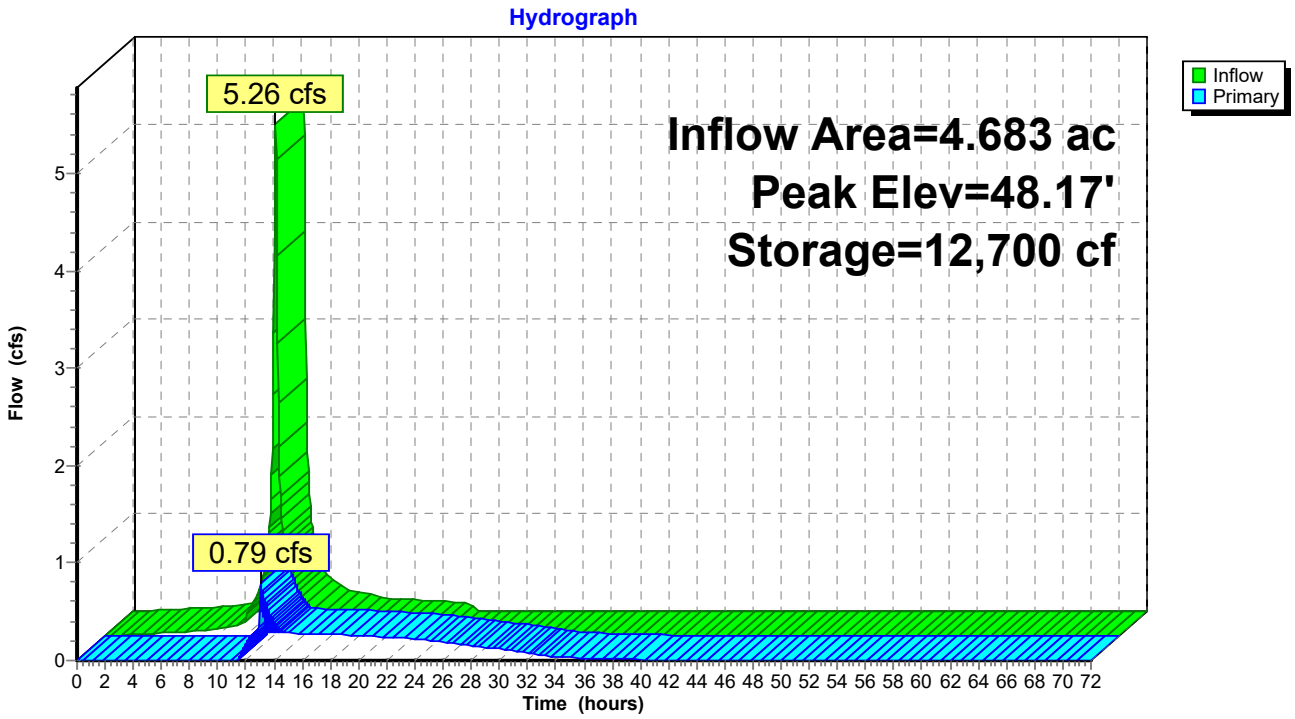
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	12,700 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,700	0	0
37.00	4,400	3,550	3,550
38.00	6,600	5,500	9,050
38.50	8,000	3,650	12,700

Device	Routing	Invert	Outlet Devices
#1	Primary	36.97'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.75 cfs @ 13.06 hrs HW=47.19' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.75 cfs @ 15.30 fps)

Pond 19P: Basin 10



Summary for Subcatchment 20S: Basin 10 - Impervious

[49] Hint: Tc<2dt may require smaller dt

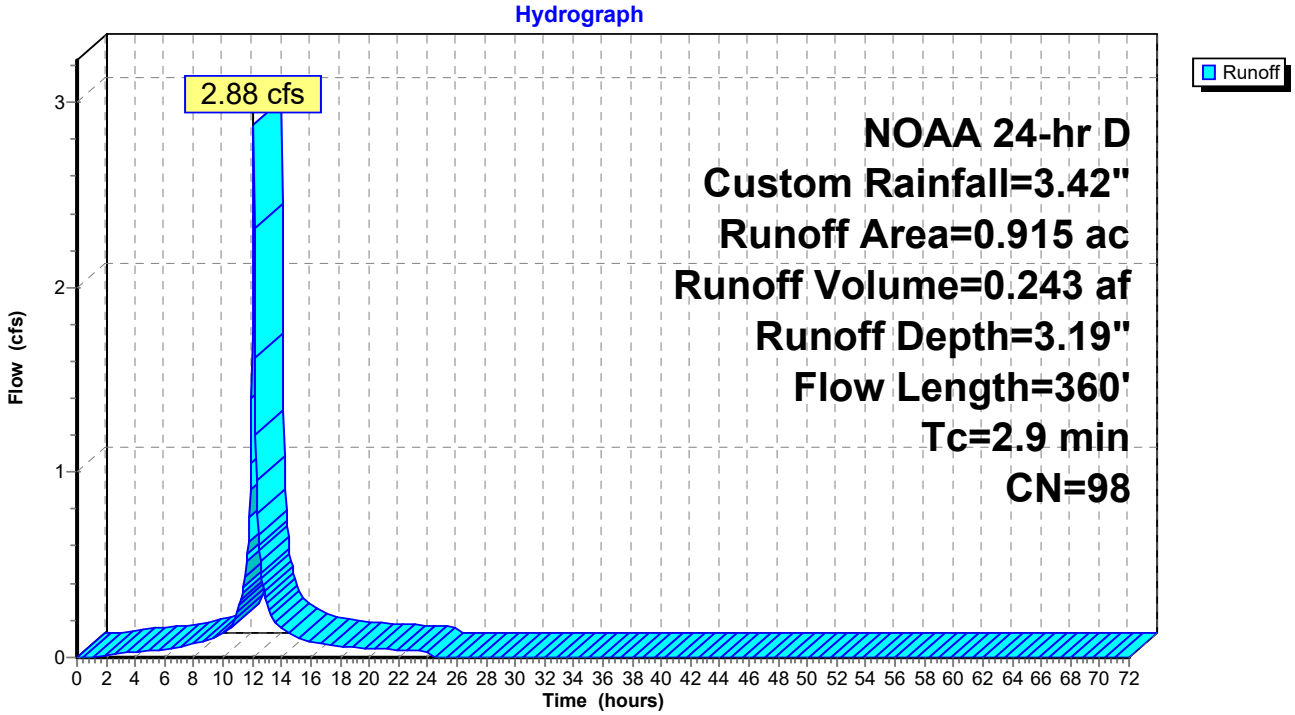
Runoff = 2.88 cfs @ 12.10 hrs, Volume= 0.243 af, Depth= 3.19"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.6	60	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	360	Total			

Subcatchment 20S: Basin 10 - Impervious



Summary for Subcatchment 21S: Basin 10 - Pervious

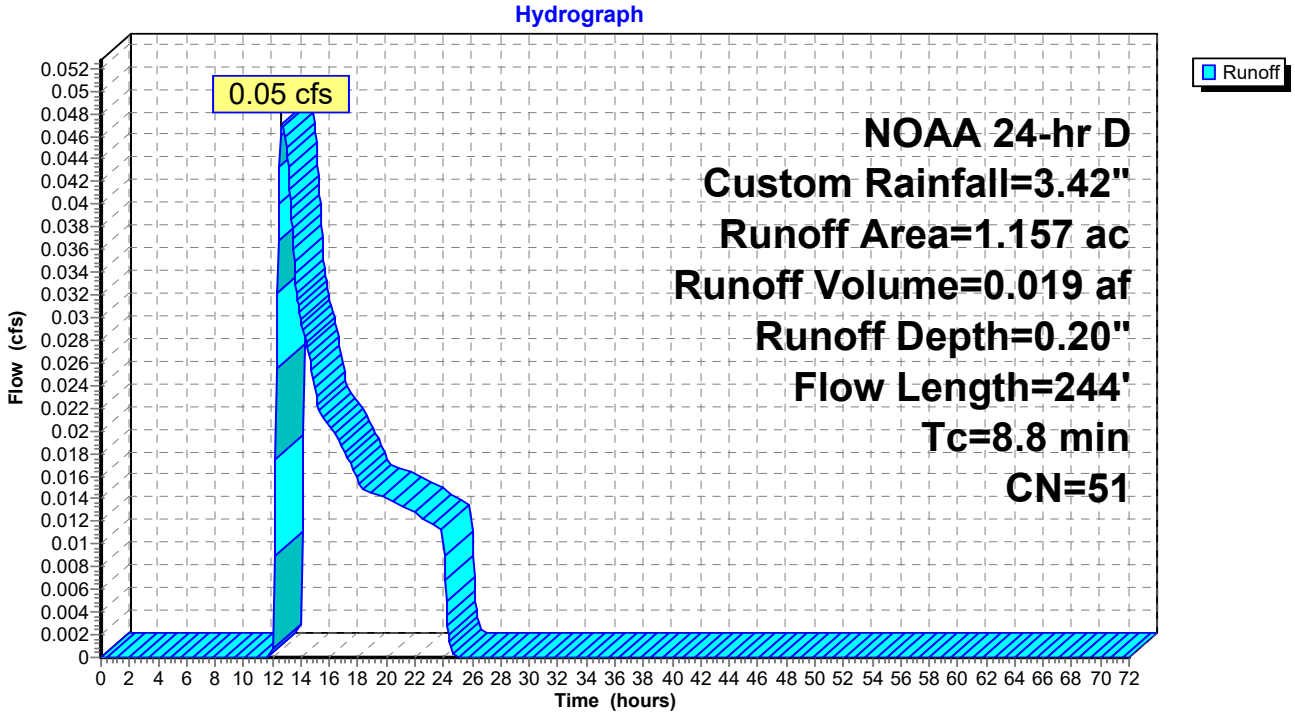
Runoff = 0.05 cfs @ 12.60 hrs, Volume= 0.019 af, Depth= 0.20"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
0.347	80	>75% Grass cover, Good, HSG D
0.810	39	>75% Grass cover, Good, HSG A
1.157	51	Weighted Average
1.157		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	150	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	244	Total			

Subcatchment 21S: Basin 10 - Pervious



Summary for Pond 22P: Basin 11

Inflow Area = 2.611 ac, 36.27% Impervious, Inflow Depth = 1.17" for Custom event
Inflow = 2.78 cfs @ 12.11 hrs, Volume= 0.254 af
Outflow = 2.59 cfs @ 12.15 hrs, Volume= 0.217 af, Atten= 7%, Lag= 2.2 min
Primary = 2.59 cfs @ 12.15 hrs, Volume= 0.217 af
Routed to Pond 19P : Basin 10

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.63' @ 12.15 hrs Surf.Area= 3,766 sf Storage= 2,096 cf

Plug-Flow detention time= 132.9 min calculated for 0.217 af (86% of inflow)
Center-of-Mass det. time= 62.1 min (824.2 - 762.1)

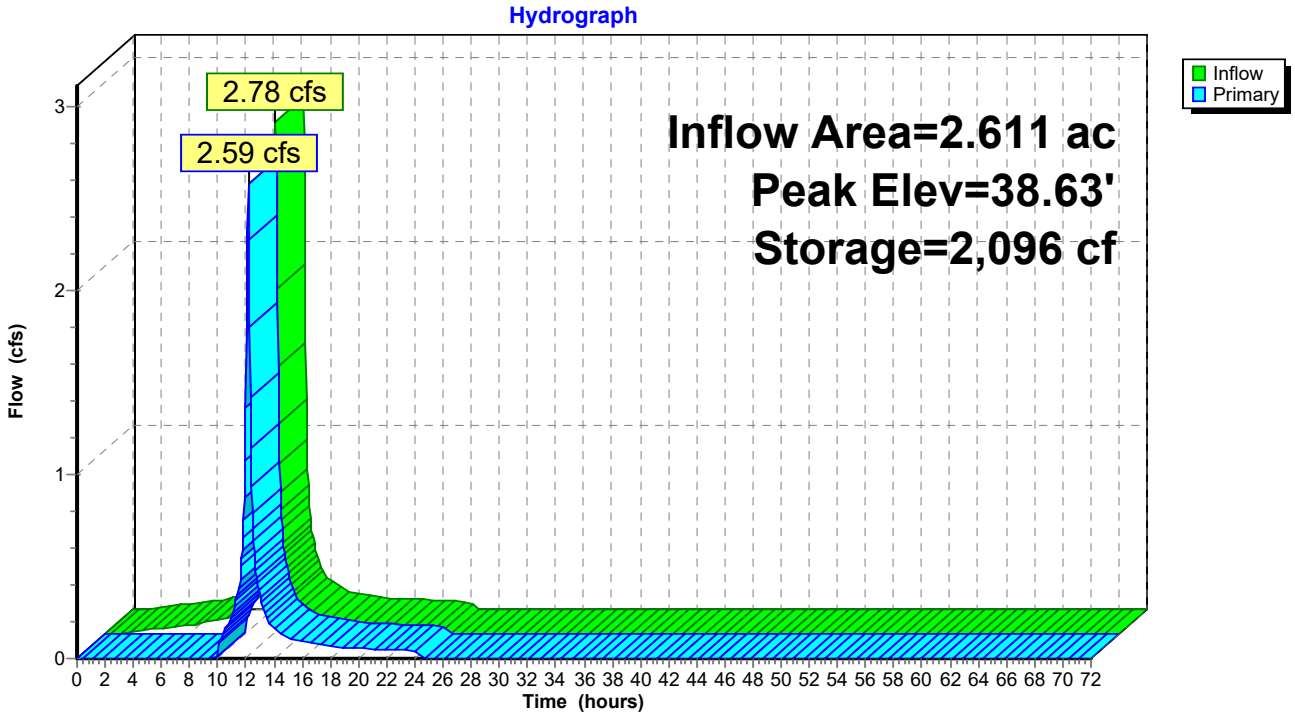
Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	9,170 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	2,840	0	0
39.00	4,300	3,570	3,570
40.00	6,900	5,600	9,170

Device	Routing	Invert	Outlet Devices
#1	Primary	38.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.57 cfs @ 12.15 hrs HW=38.63' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 2.57 cfs @ 1.20 fps)

Pond 22P: Basin 11



Summary for Subcatchment 23S: Basin 11 - Impervious

[49] Hint: Tc<2dt may require smaller dt

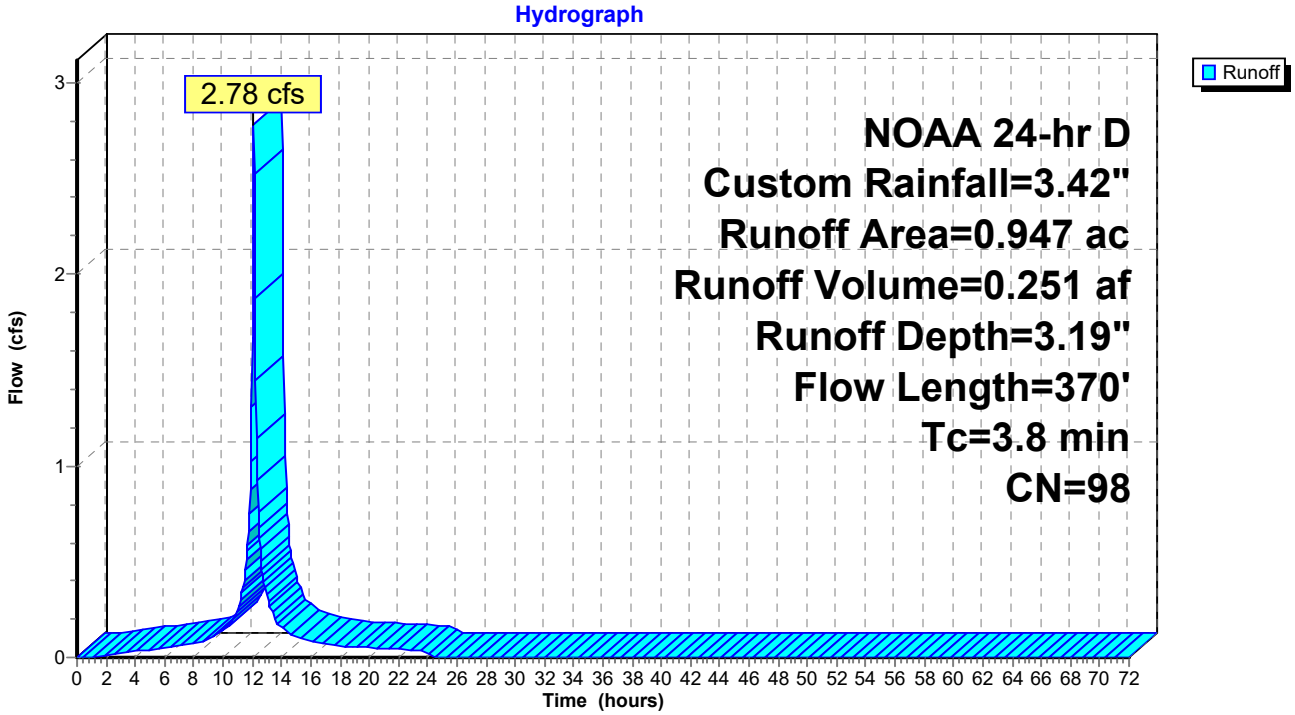
Runoff = 2.78 cfs @ 12.11 hrs, Volume= 0.251 af, Depth= 3.19"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.947	98	Impervious
	0.947		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	70	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.8	370	Total			

Subcatchment 23S: Basin 11 - Impervious



Summary for Subcatchment 24S: Basin 11 - Pervious

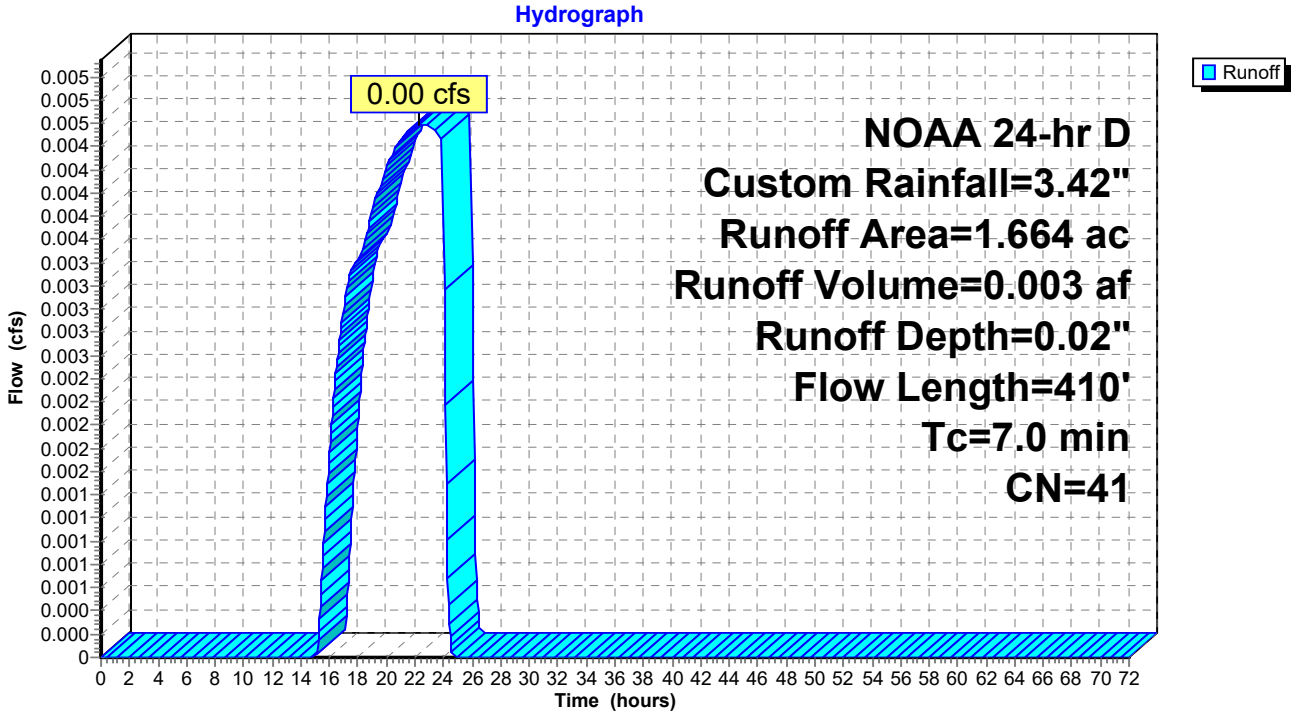
Runoff = 0.00 cfs @ 22.26 hrs, Volume= 0.003 af, Depth= 0.02"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
0.083	80	>75% Grass cover, Good, HSG D
1.581	39	>75% Grass cover, Good, HSG A
1.664	41	Weighted Average
1.664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	60	0.0200	0.17		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.0	410	Total			

Subcatchment 24S: Basin 11 - Pervious



Summary for Pond 25P: Basin 12

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 0.68" for Custom event
Inflow = 1.42 cfs @ 12.10 hrs, Volume= 0.120 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 40P : Wetlands Depression

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 39.50' @ 25.05 hrs Surf.Area= 11,133 sf Storage= 5,238 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

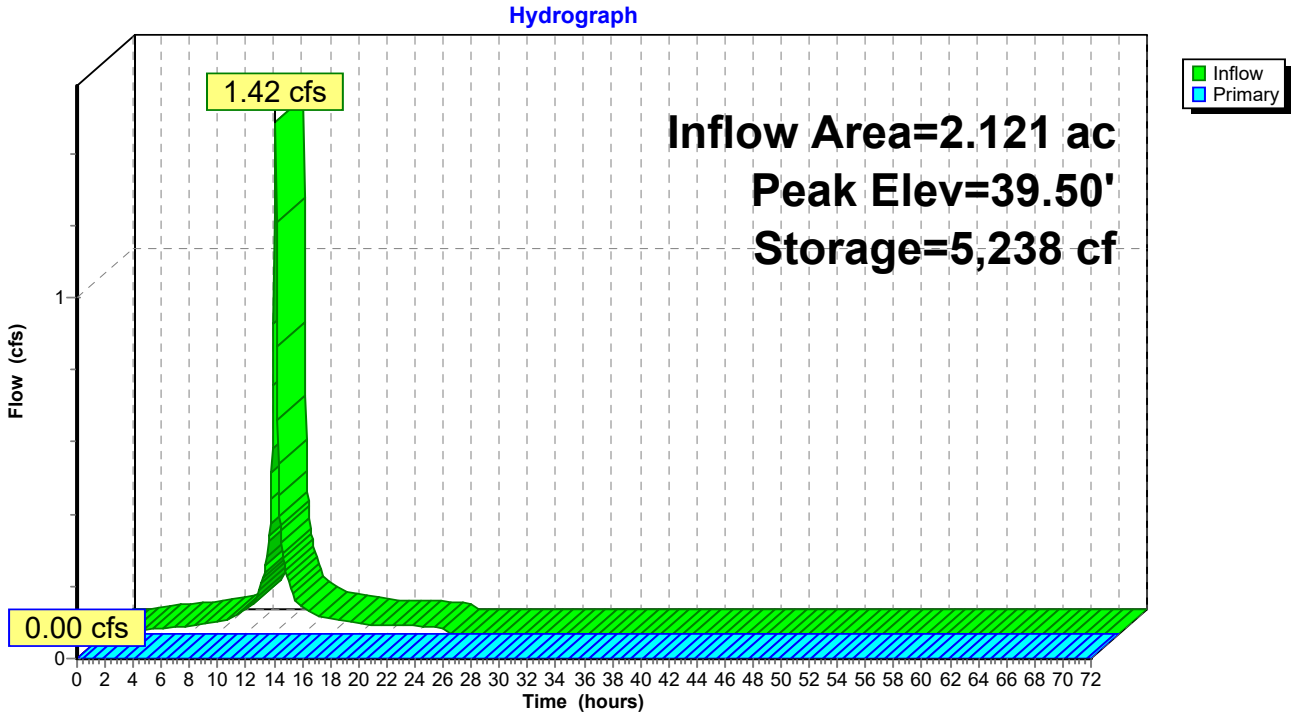
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	52,425 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	9,700	0	0
40.00	12,550	11,125	11,125
41.00	15,600	14,075	25,200
42.00	18,900	17,250	42,450
42.50	21,000	9,975	52,425

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=39.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 25P: Basin 12



Summary for Subcatchment 26S: Basin 12 - Impervious

[49] Hint: Tc<2dt may require smaller dt

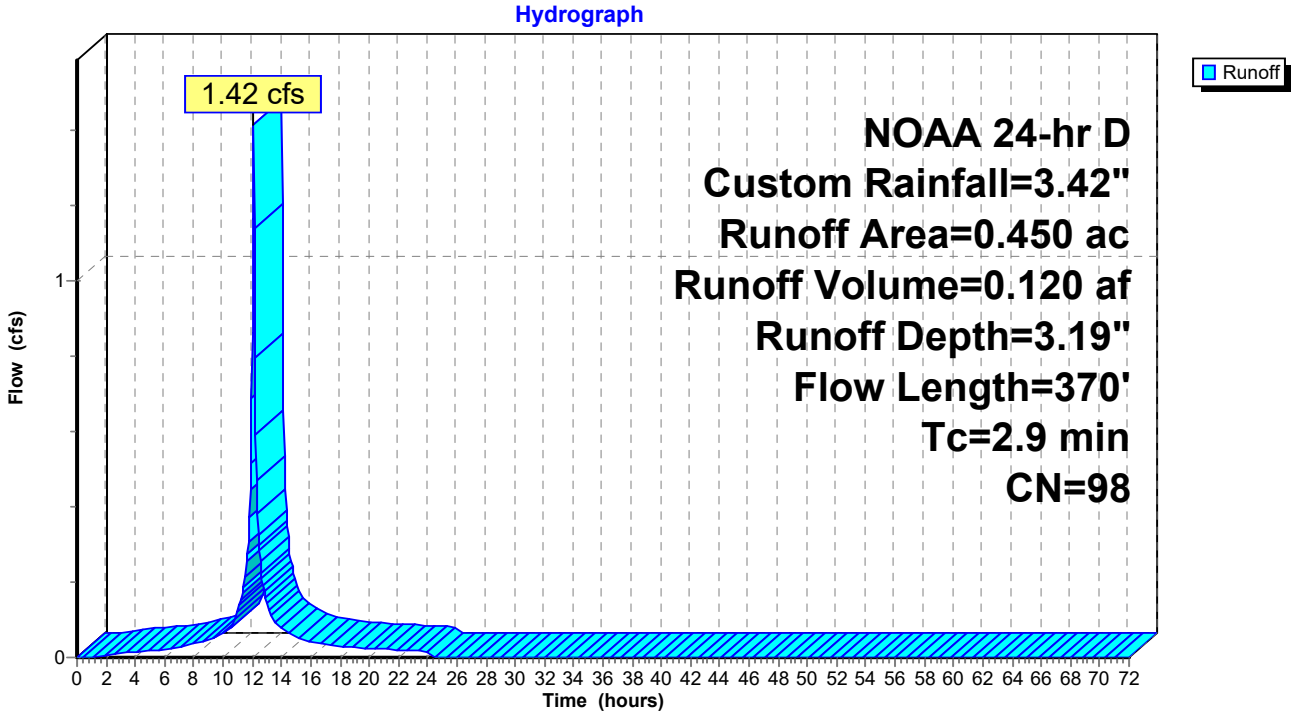
Runoff = 1.42 cfs @ 12.10 hrs, Volume= 0.120 af, Depth= 3.19"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.450	98	Impervious
	0.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	50	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.8	220	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	370	Total			

Subcatchment 26S: Basin 12 - Impervious



Summary for Subcatchment 27S: Basin 12 - Pervious

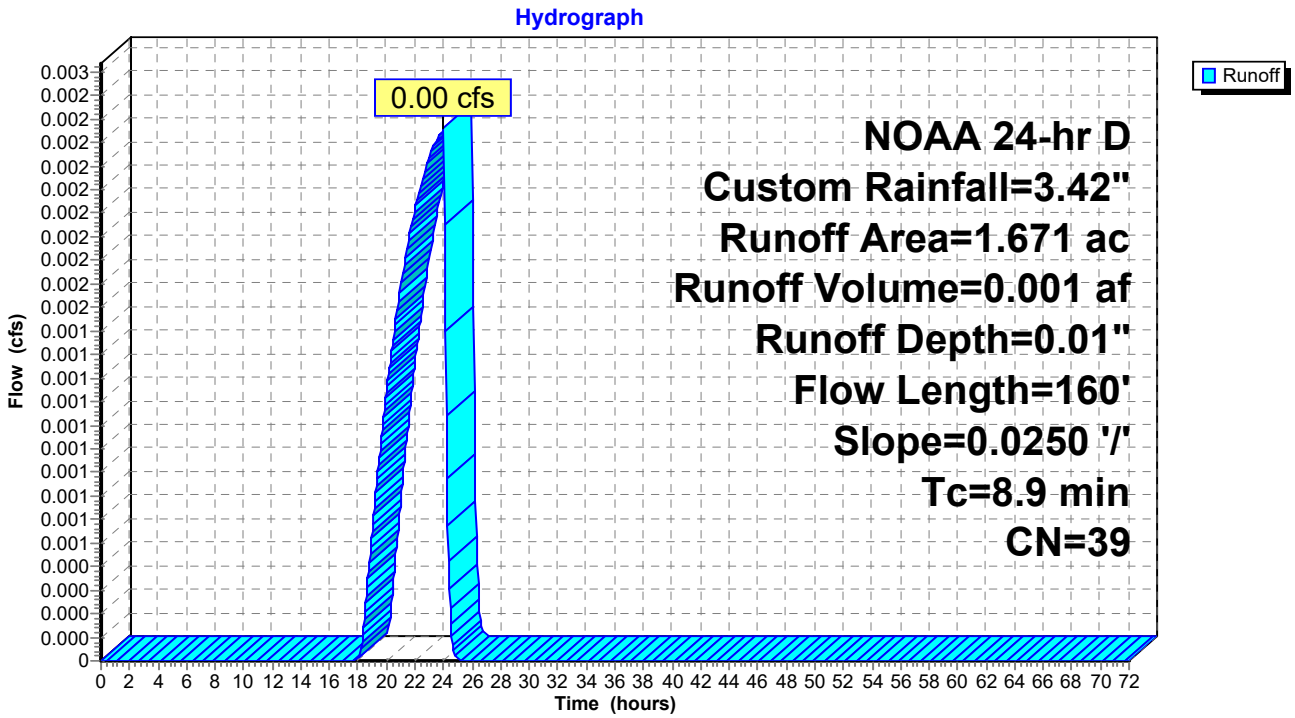
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.671	39	>75% Grass cover, Good, HSG A
1.671		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.9	60	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
8.9	160	Total			

Subcatchment 27S: Basin 12 - Pervious



Summary for Pond 29P: Basin 6

Inflow Area = 1.441 ac, 34.14% Impervious, Inflow Depth = 1.62" for Custom event
Inflow = 1.84 cfs @ 12.15 hrs, Volume= 0.194 af
Outflow = 1.74 cfs @ 12.19 hrs, Volume= 0.151 af, Atten= 5%, Lag= 2.2 min
Primary = 1.74 cfs @ 12.19 hrs, Volume= 0.151 af
Routed to Pond 13P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.94' @ 12.19 hrs Surf.Area= 2,882 sf Storage= 2,184 cf

Plug-Flow detention time= 169.7 min calculated for 0.151 af (78% of inflow)
Center-of-Mass det. time= 73.5 min (880.5 - 807.0)

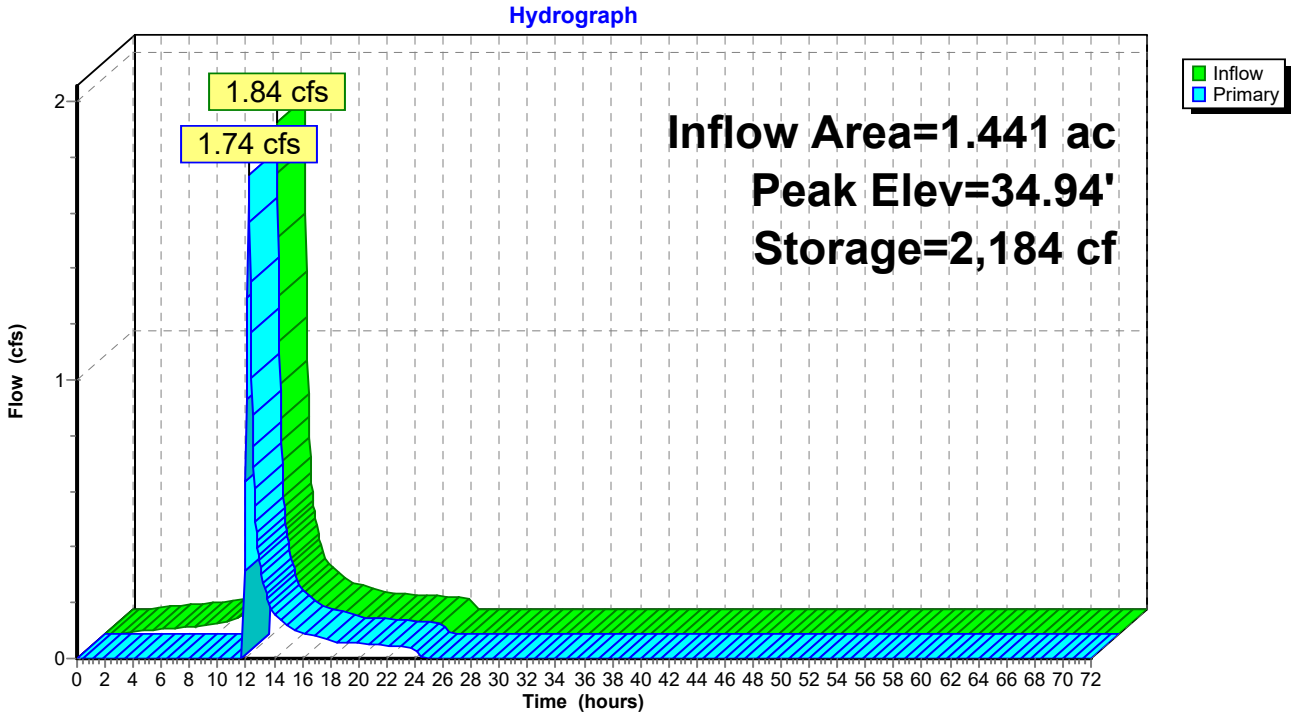
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	4,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	1,750	0	0
35.00	2,950	2,350	2,350
35.50	3,700	1,663	4,013

Device	Routing	Invert	Outlet Devices
#1	Primary	34.84'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.72 cfs @ 12.19 hrs HW=34.94' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 1.72 cfs @ 1.05 fps)

Pond 29P: Basin 6



Summary for Subcatchment 30S: Basin 6 - Impervious

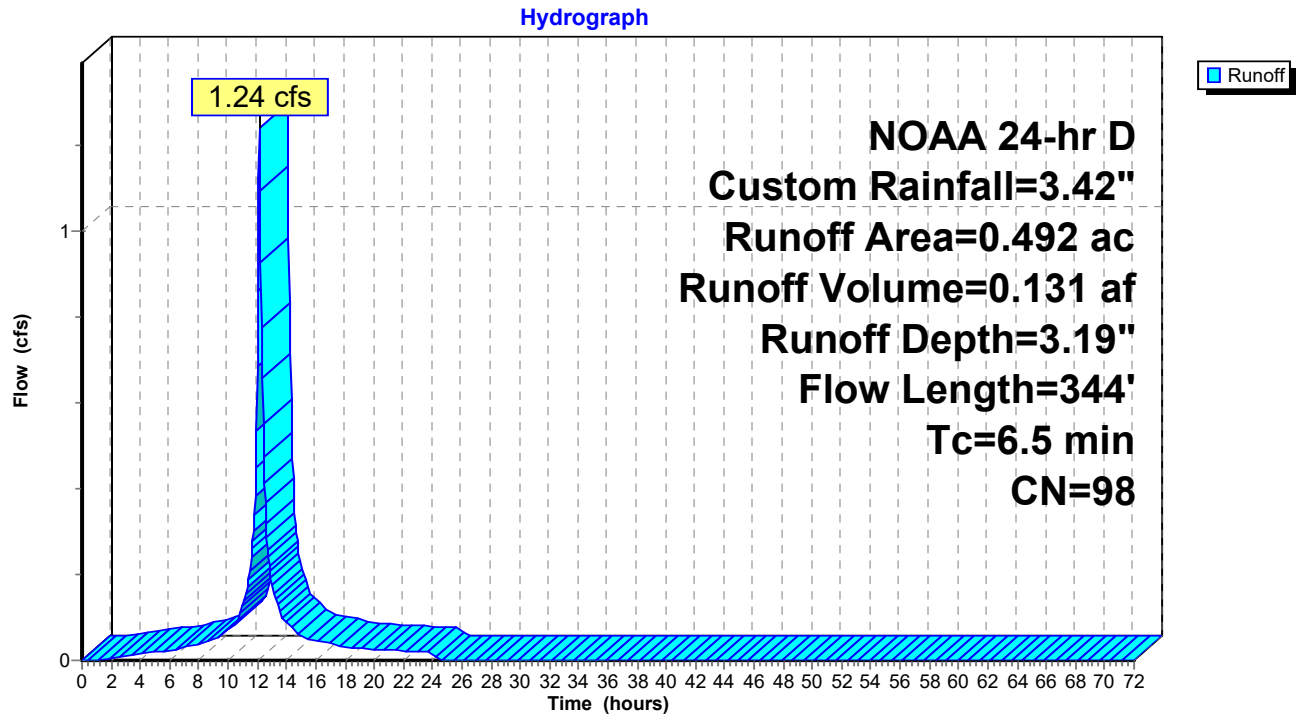
Runoff = 1.24 cfs @ 12.15 hrs, Volume= 0.131 af, Depth= 3.19"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.492	98	Impervious
	0.492		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 30S: Basin 6 - Impervious



Summary for Subcatchment 32S: Basin 6 - Pervious

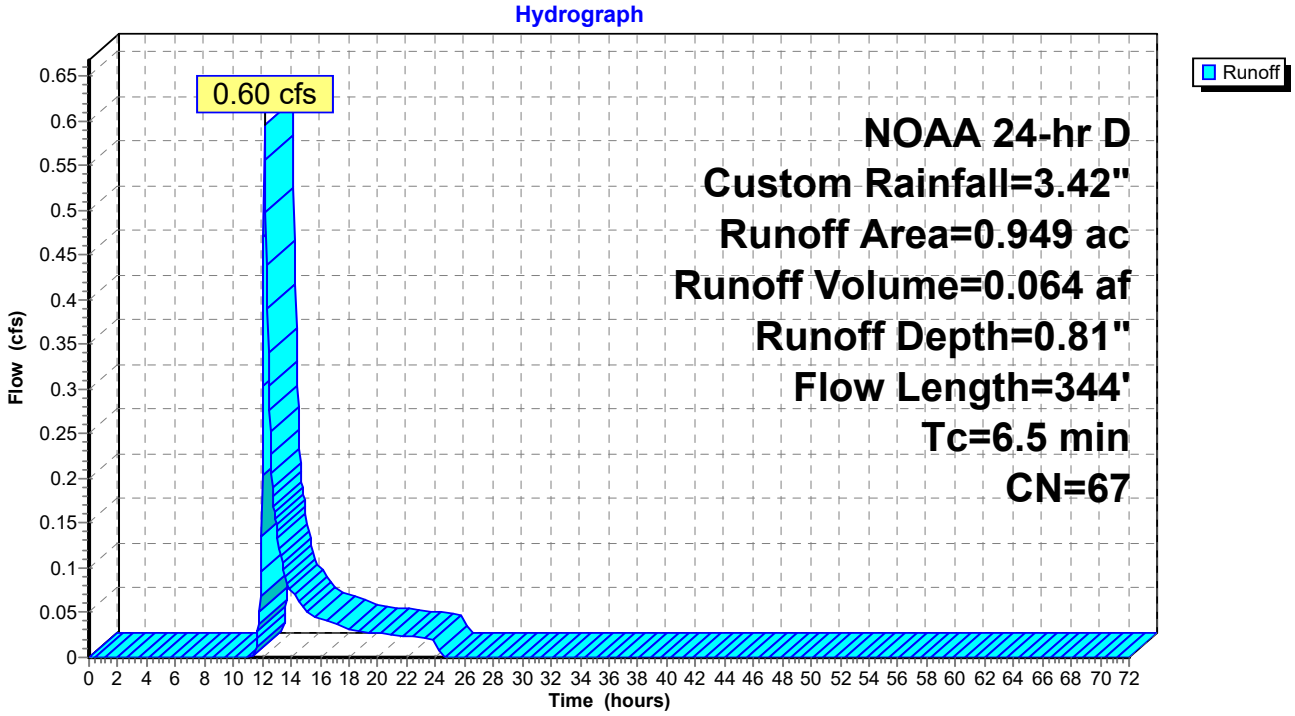
Runoff = 0.60 cfs @ 12.16 hrs, Volume= 0.064 af, Depth= 0.81"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
0.637	80	>75% Grass cover, Good, HSG D
0.312	39	>75% Grass cover, Good, HSG A
0.949	67	Weighted Average
0.949		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 32S: Basin 6 - Pervious



Summary for Pond 33P: Basin 8

Inflow Area = 3.061 ac, 36.82% Impervious, Inflow Depth = 2.17" for Custom event
Inflow = 4.89 cfs @ 12.14 hrs, Volume= 0.553 af
Outflow = 4.54 cfs @ 12.20 hrs, Volume= 0.426 af, Atten= 7%, Lag= 3.3 min
Primary = 4.54 cfs @ 12.20 hrs, Volume= 0.426 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.87' @ 12.20 hrs Surf.Area= 5,972 sf Storage= 6,659 cf

Plug-Flow detention time= 165.3 min calculated for 0.426 af (77% of inflow)
Center-of-Mass det. time= 71.5 min (877.3 - 805.8)

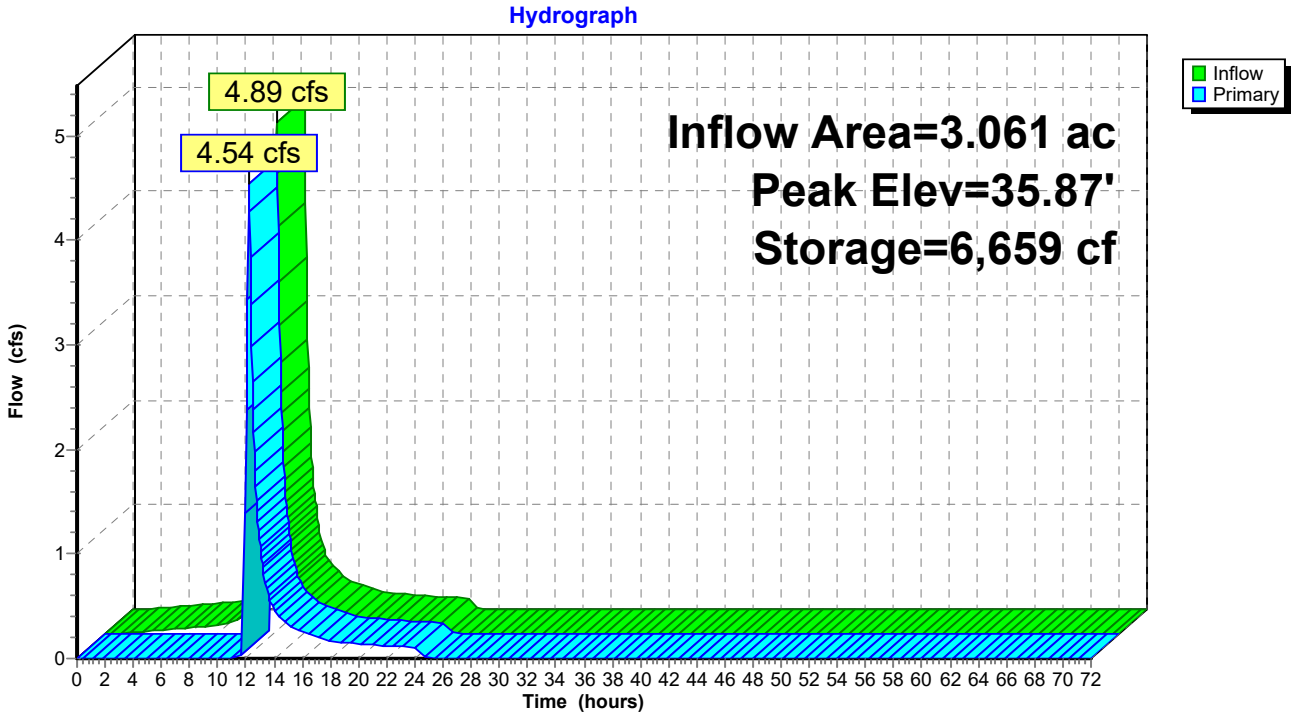
Volume	Invert	Avail.Storage	Storage Description
#1	34.50'	10,825 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.50	4,000	0	0
35.00	4,500	2,125	2,125
36.00	6,200	5,350	7,475
36.50	7,200	3,350	10,825

Device	Routing	Invert	Outlet Devices
#1	Primary	35.67'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.53 cfs @ 12.20 hrs HW=35.87' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 4.53 cfs @ 1.45 fps)

Pond 33P: Basin 8



Summary for Subcatchment 34S: Basin 8 - Impervious

[49] Hint: Tc<2dt may require smaller dt

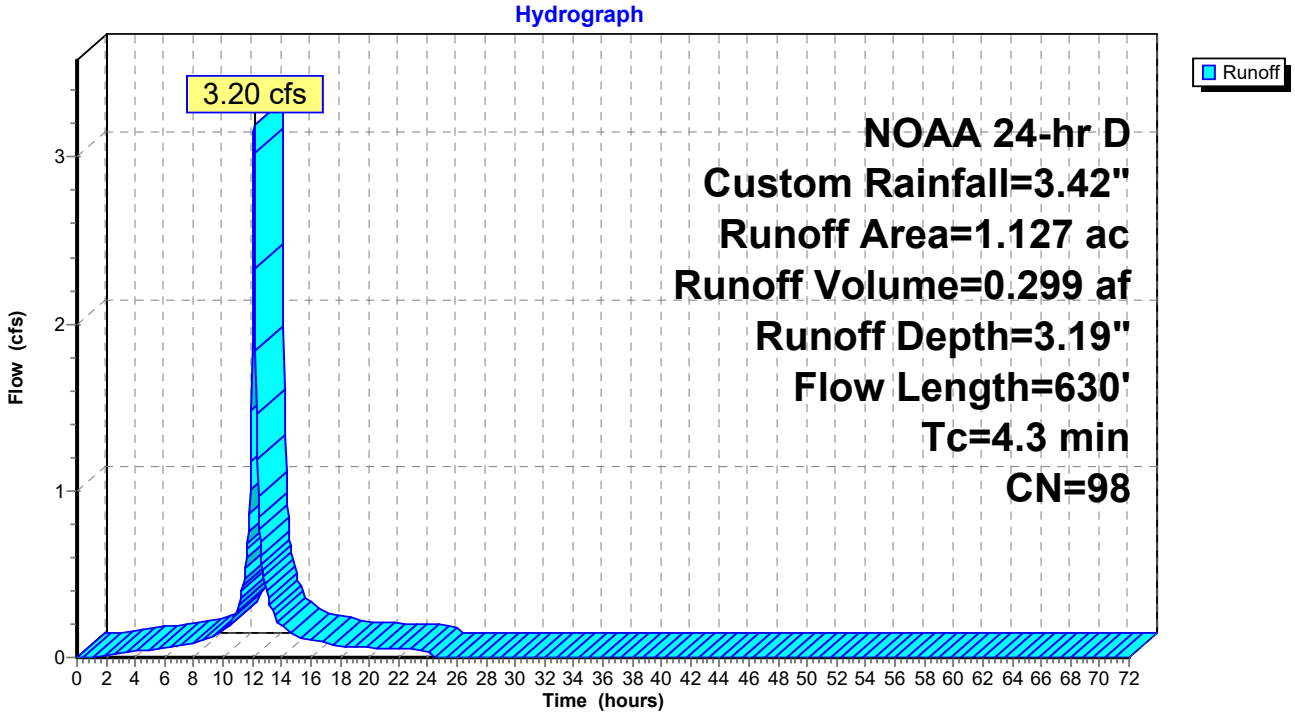
Runoff = 3.20 cfs @ 12.12 hrs, Volume= 0.299 af, Depth= 3.19"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	1.127	98	Impervious
	1.127		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.3	130	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.3	630	Total			

Subcatchment 34S: Basin 8 - Impervious



Summary for Subcatchment 35S: Basin 8 - Pervious

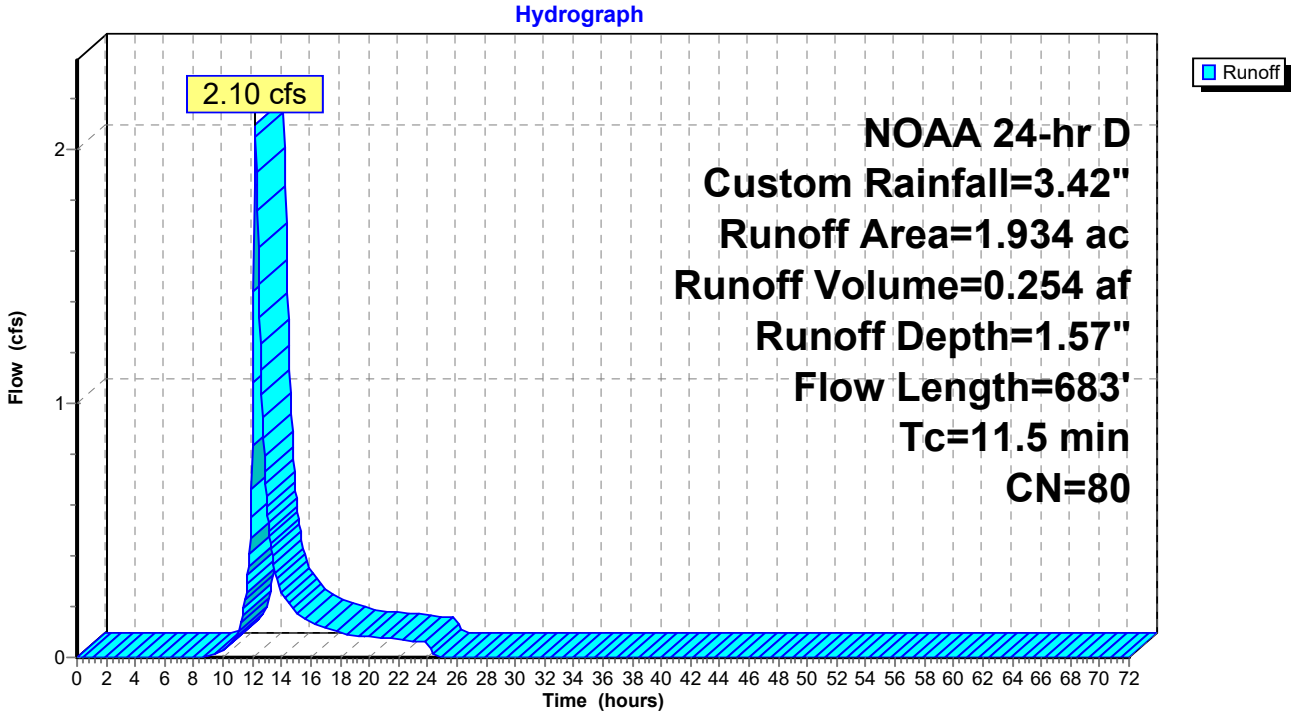
Runoff = 2.10 cfs @ 12.22 hrs, Volume= 0.254 af, Depth= 1.57"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.934	80	>75% Grass cover, Good, HSG D
1.934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	89	0.0200	0.99		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.7	500	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
11.5	683	Total			

Subcatchment 35S: Basin 8 - Pervious



Summary for Pond 40P: Wetlands Depression

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 0.00" for Custom event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.00' @ 0.00 hrs Surf.Area= 405 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

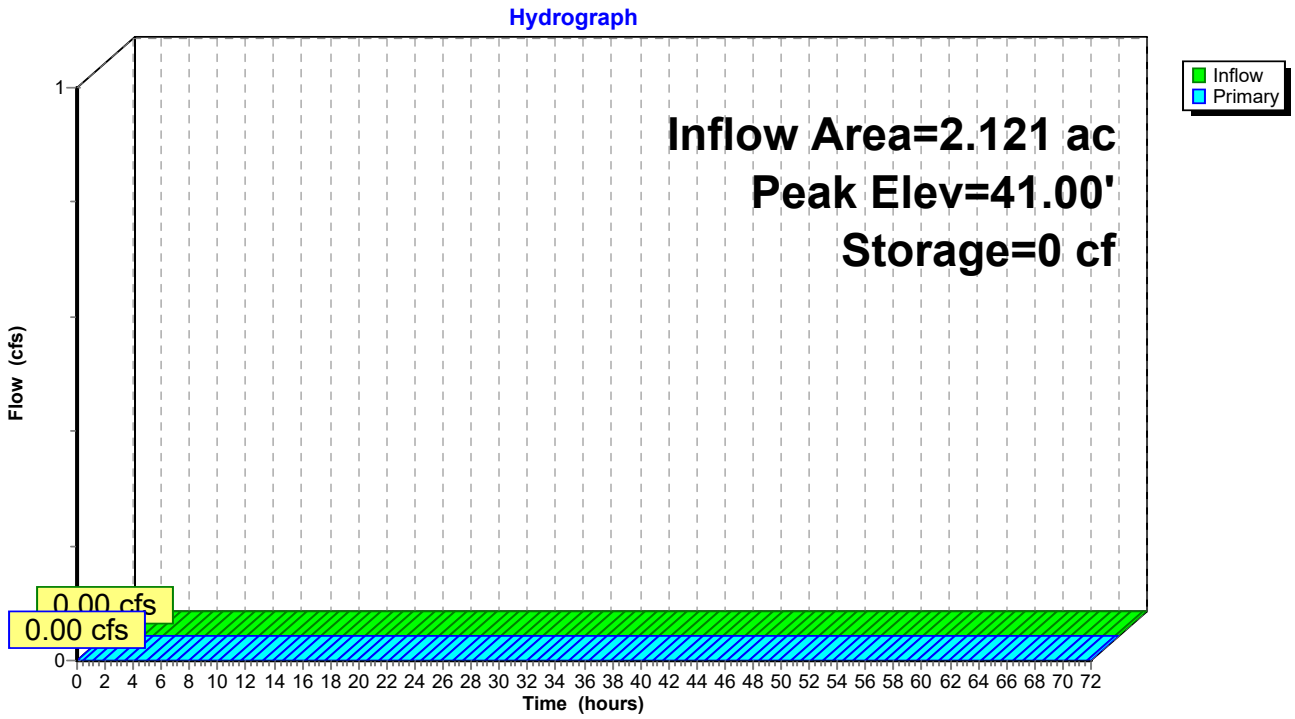
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 40P: Wetlands Depression



Summary for Pond 41P: Basin 13

Inflow Area = 2.042 ac, 32.27% Impervious, Inflow Depth = 1.03" for Custom event
Inflow = 1.81 cfs @ 12.13 hrs, Volume= 0.176 af
Outflow = 0.13 cfs @ 13.60 hrs, Volume= 0.117 af, Atten= 93%, Lag= 88.6 min
Primary = 0.13 cfs @ 13.60 hrs, Volume= 0.117 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.94' @ 13.60 hrs Surf.Area= 6,384 sf Storage= 5,127 cf

Plug-Flow detention time= 534.6 min calculated for 0.117 af (66% of inflow)
Center-of-Mass det. time= 426.1 min (1,186.7 - 760.6)

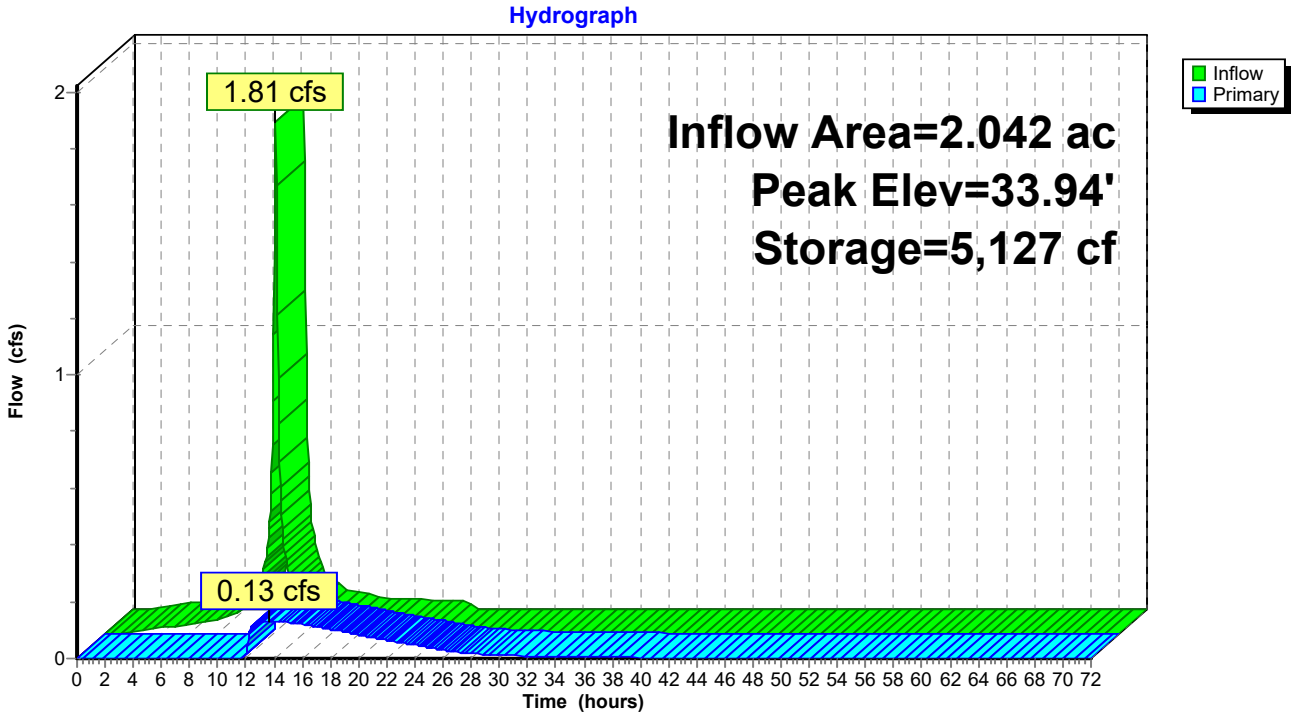
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	23,100 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	4,500	0	0
34.00	6,500	5,500	5,500
35.00	8,700	7,600	13,100
36.00	11,300	10,000	23,100

Device	Routing	Invert	Outlet Devices
#1	Primary	33.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.13 cfs @ 13.60 hrs HW=33.94' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.13 cfs @ 2.71 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 41P: Basin 13



Summary for Subcatchment 42S: Basin 13 - Impervious

[49] Hint: Tc<2dt may require smaller dt

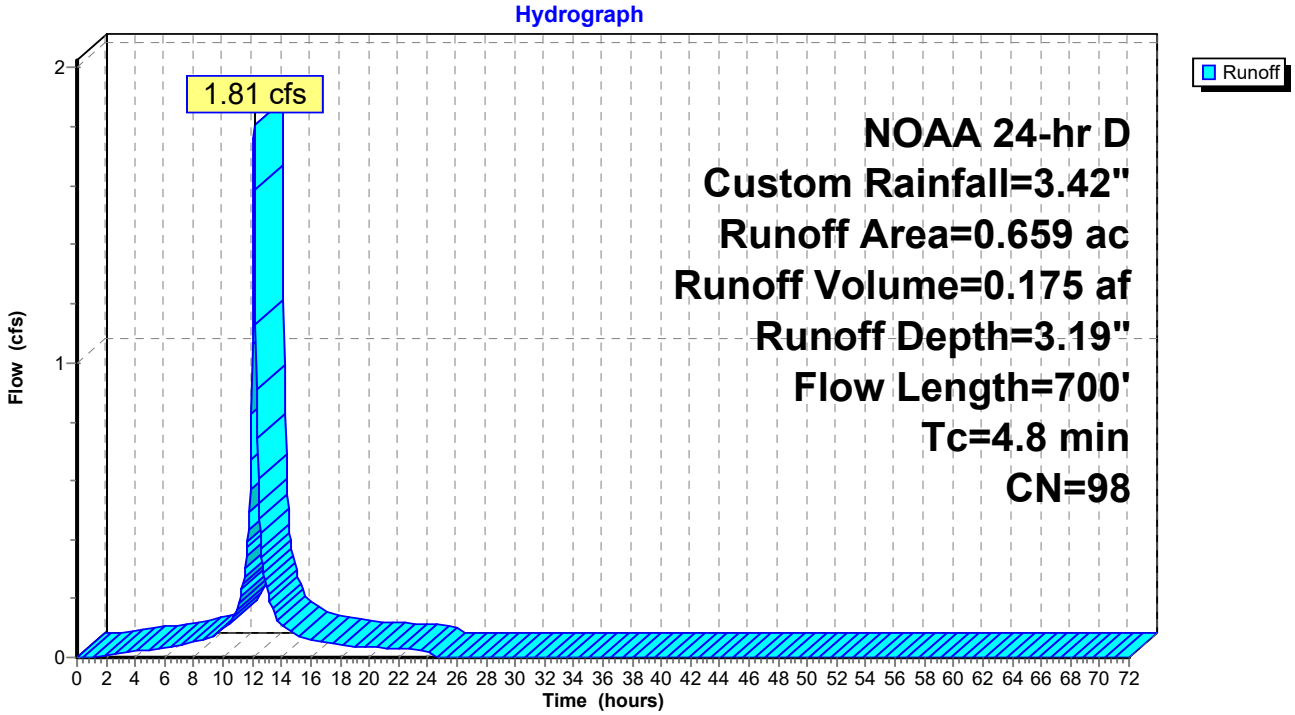
Runoff = 1.81 cfs @ 12.13 hrs, Volume= 0.175 af, Depth= 3.19"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.659	98	Impervious
	0.659		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.8	200	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.8	700	Total			

Subcatchment 42S: Basin 13 - Impervious



Summary for Subcatchment 43S: Basin 13 - Pervious

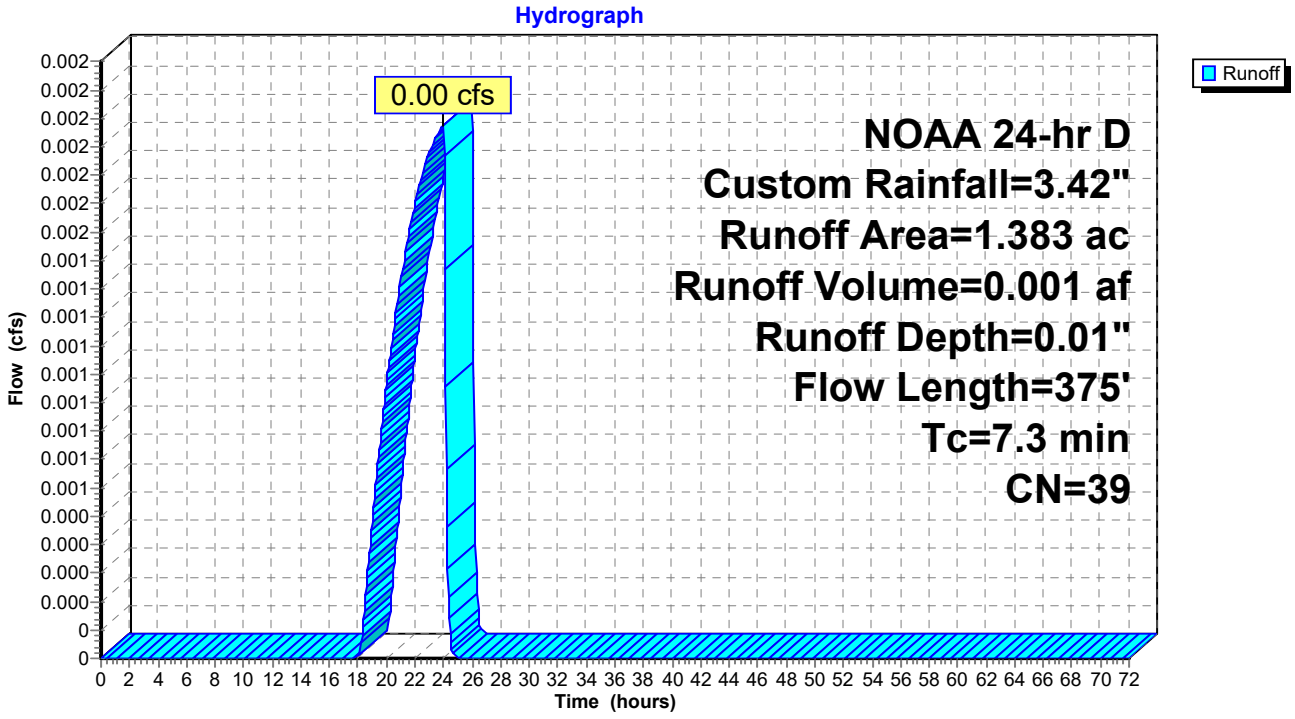
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.383	39	>75% Grass cover, Good, HSG A
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	75	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	300	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.3	375	Total			

Subcatchment 43S: Basin 13 - Pervious



Summary for Subcatchment 44S: Basin 3 - Impervious

[49] Hint: Tc<2dt may require smaller dt

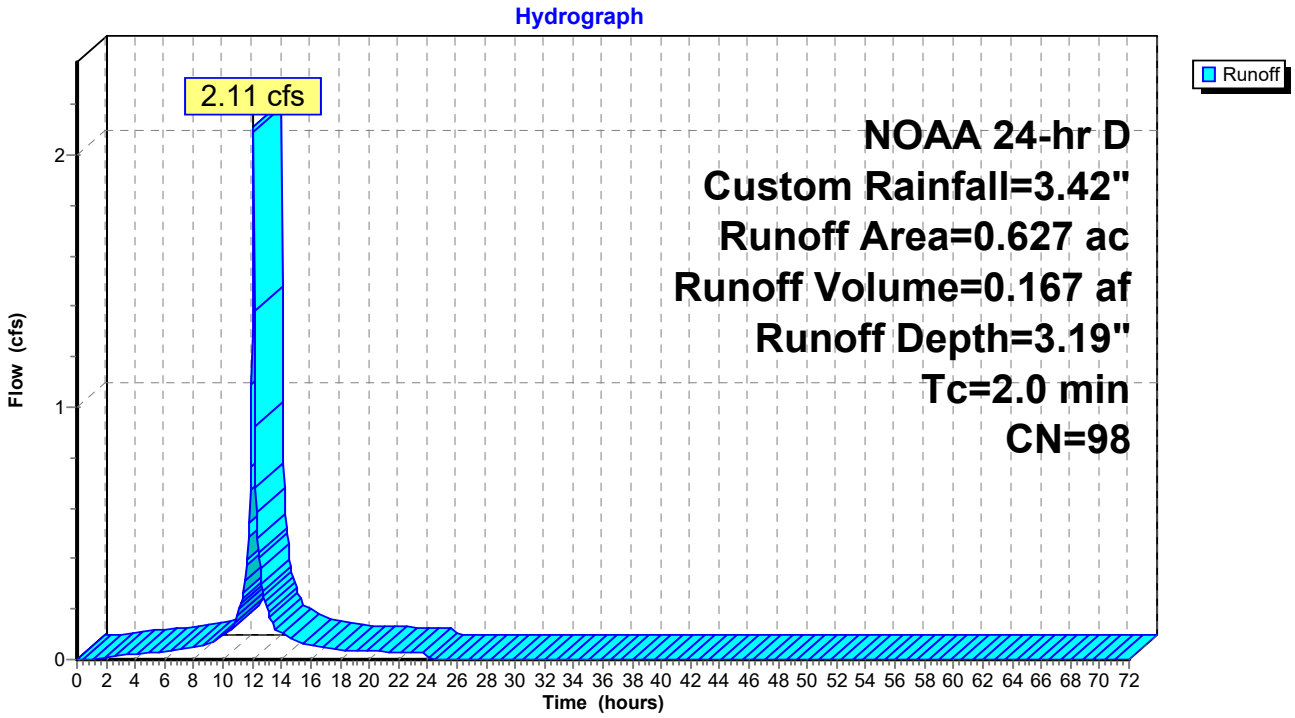
Runoff = 2.11 cfs @ 12.09 hrs, Volume= 0.167 af, Depth= 3.19"
Routed to Pond 4P : Basin 3

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 44S: Basin 3 - Impervious



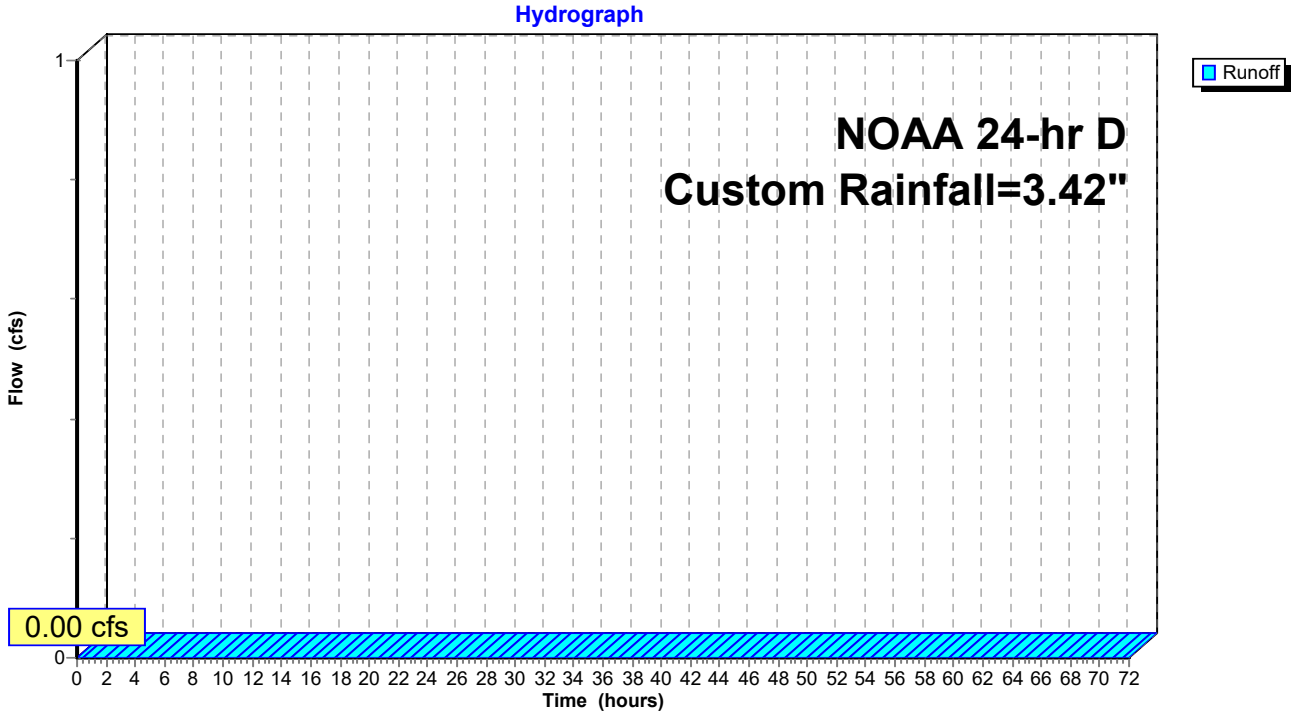
Summary for Subcatchment 45S: Undetained - Impervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Subcatchment 45S: Undetained - Impervious



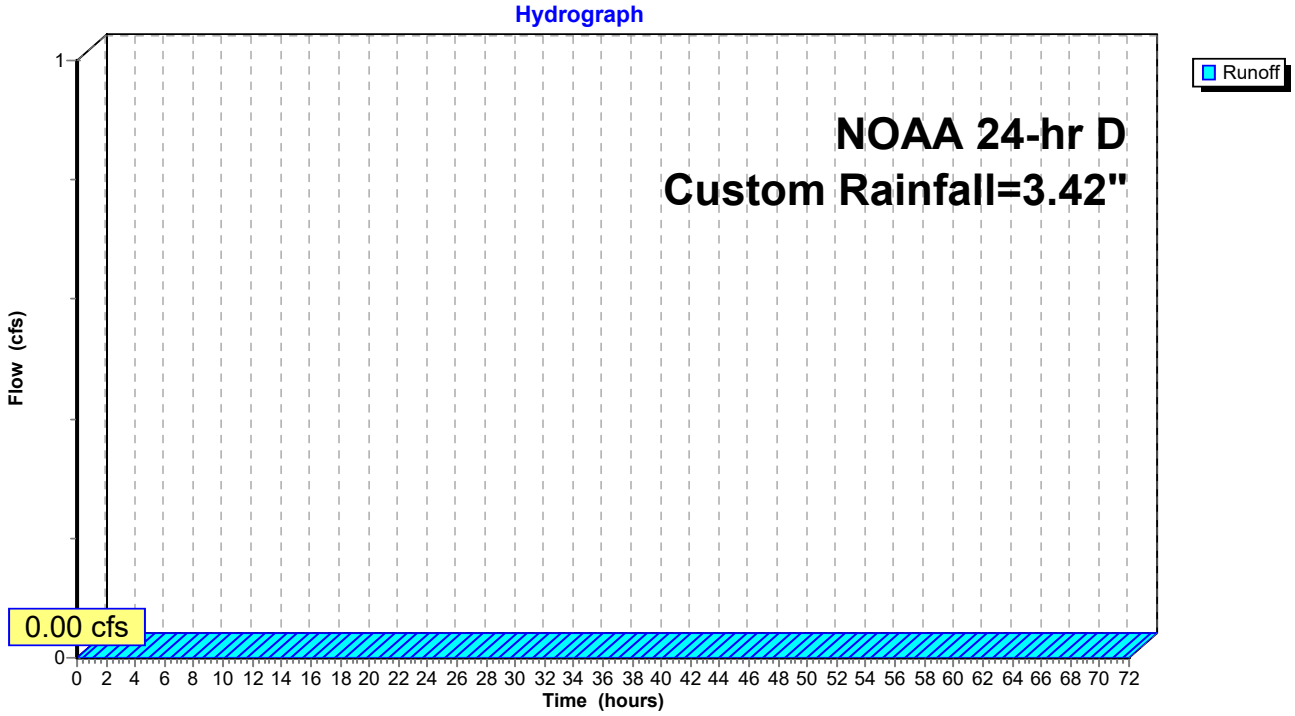
Summary for Subcatchment 46S: Undetained - Pervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Subcatchment 46S: Undetained - Pervious



Summary for Subcatchment 66: Basin 3 - Pervious

[49] Hint: Tc<2dt may require smaller dt

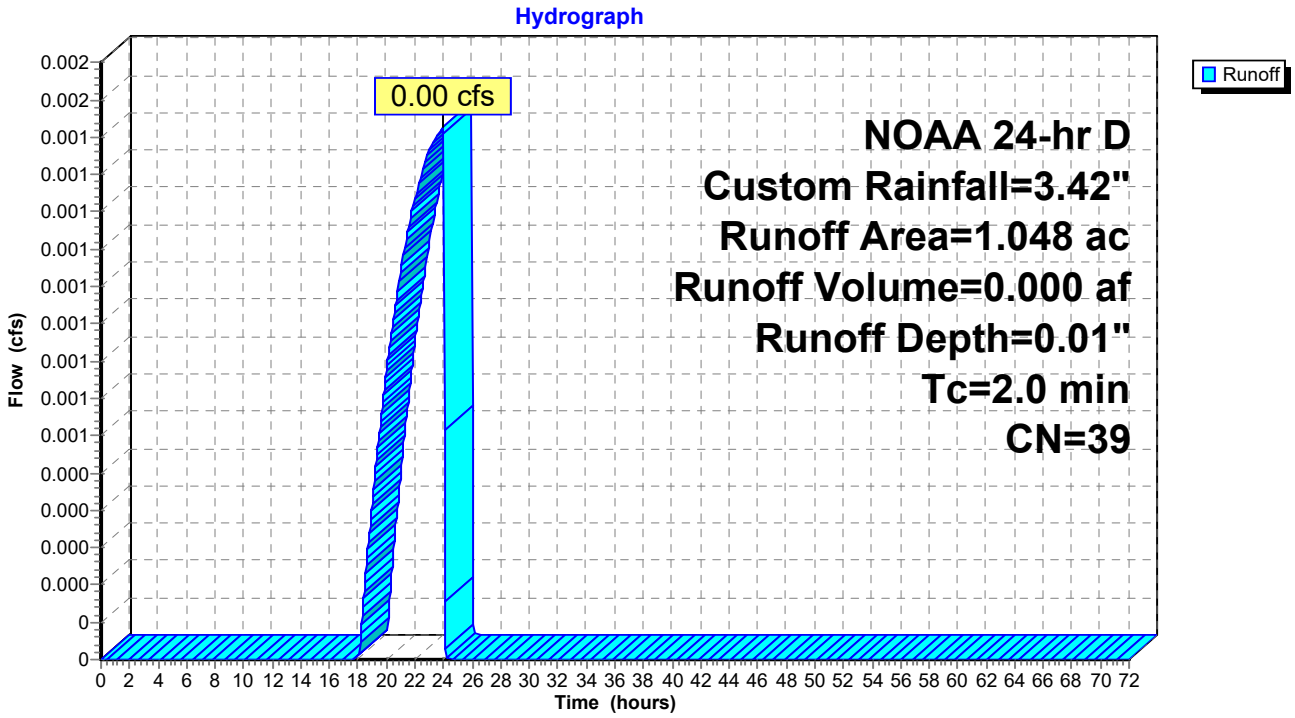
Runoff = 0.00 cfs @ 23.95 hrs, Volume= 0.000 af, Depth= 0.01"
Routed to Pond 4P : Basin 3

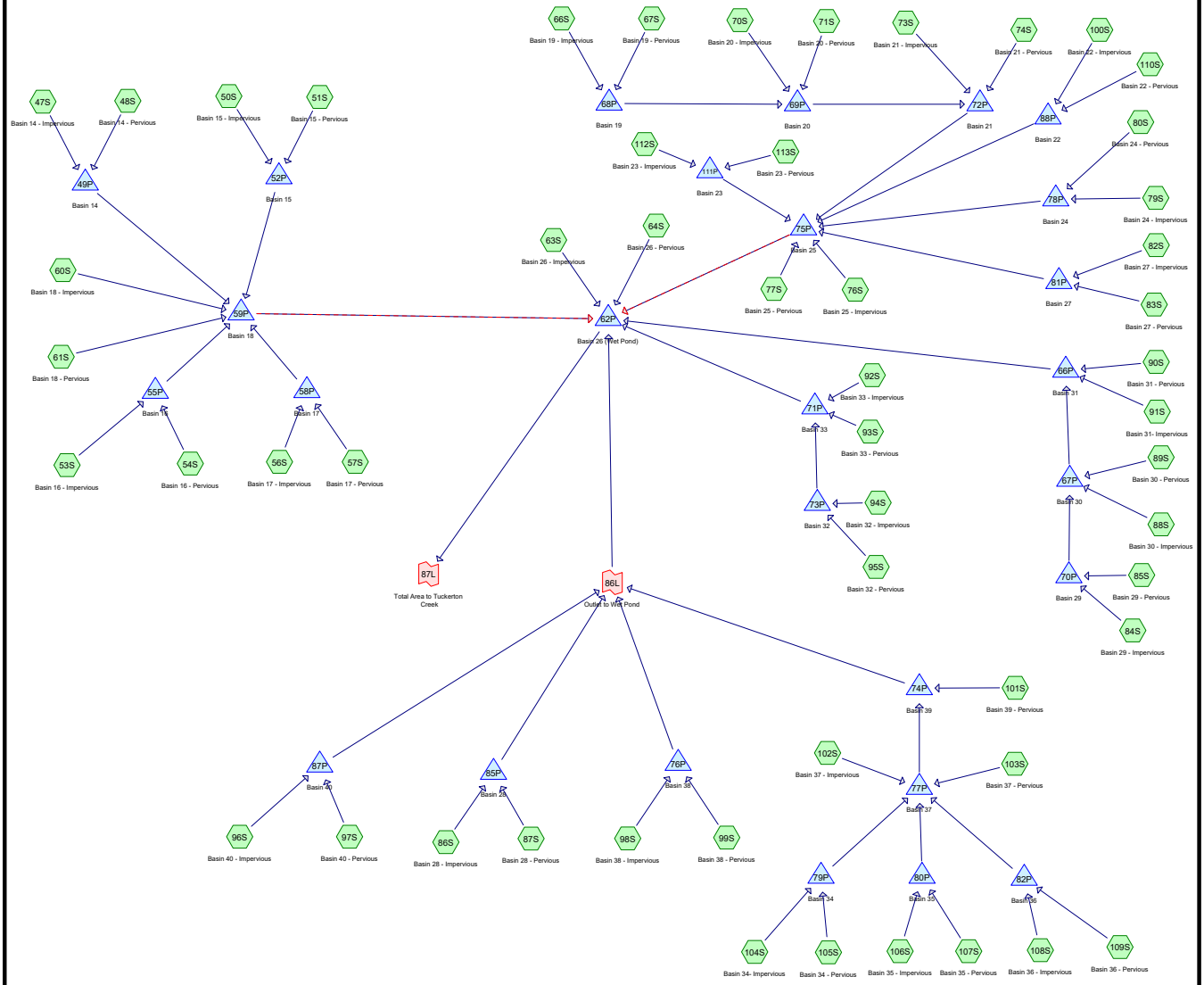
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=3.42"

Area (ac)	CN	Description
1.048	39	>75% Grass cover, Good, HSG A
1.048		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 66: Basin 3 - Pervious





Subcat Reach Pond Link

Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT (FUTURE) - TUCKERTON CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	4.04	2

Summary for Subcatchment 47S: Basin 14 - Impervious

[49] Hint: Tc<2dt may require smaller dt

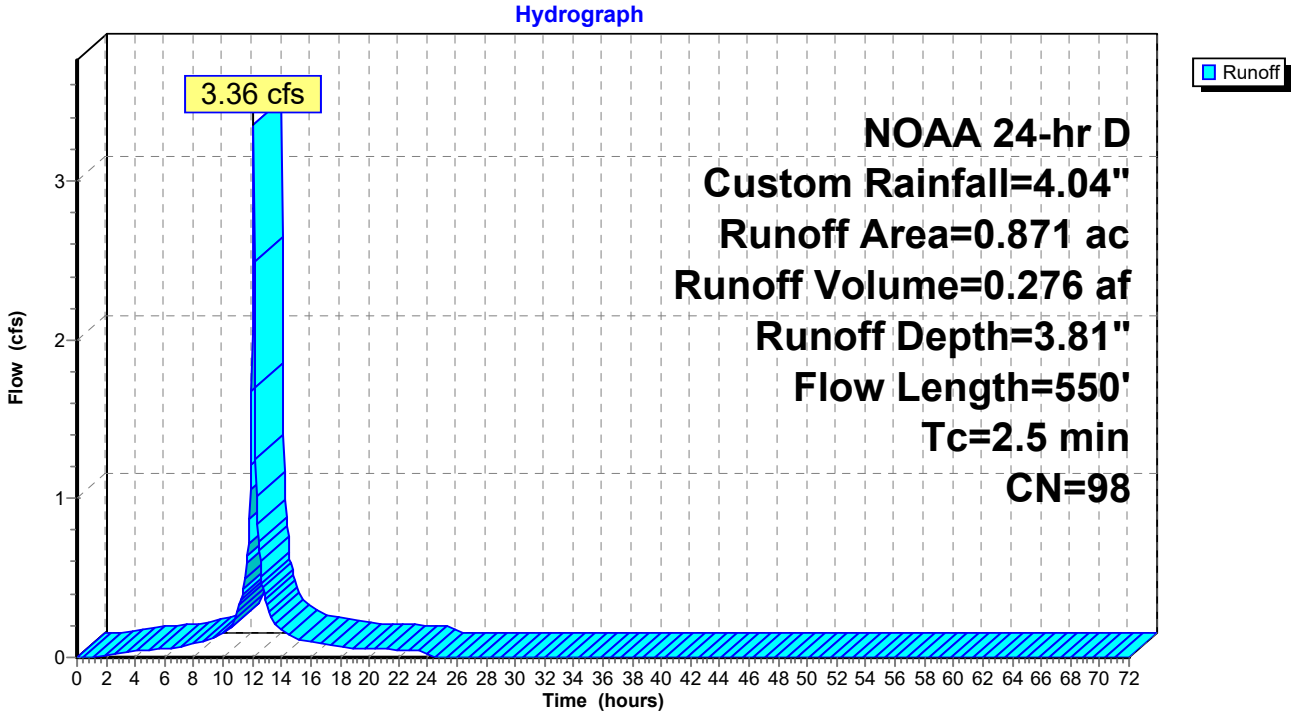
Runoff = 3.36 cfs @ 12.09 hrs, Volume= 0.276 af, Depth= 3.81"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.871	98	Impervious
	0.871		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, A to B** Paved Kv= 20.3 fps
1.5	450	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.5	550	Total			

Subcatchment 47S: Basin 14 - Impervious



Summary for Subcatchment 48S: Basin 14 - Pervious

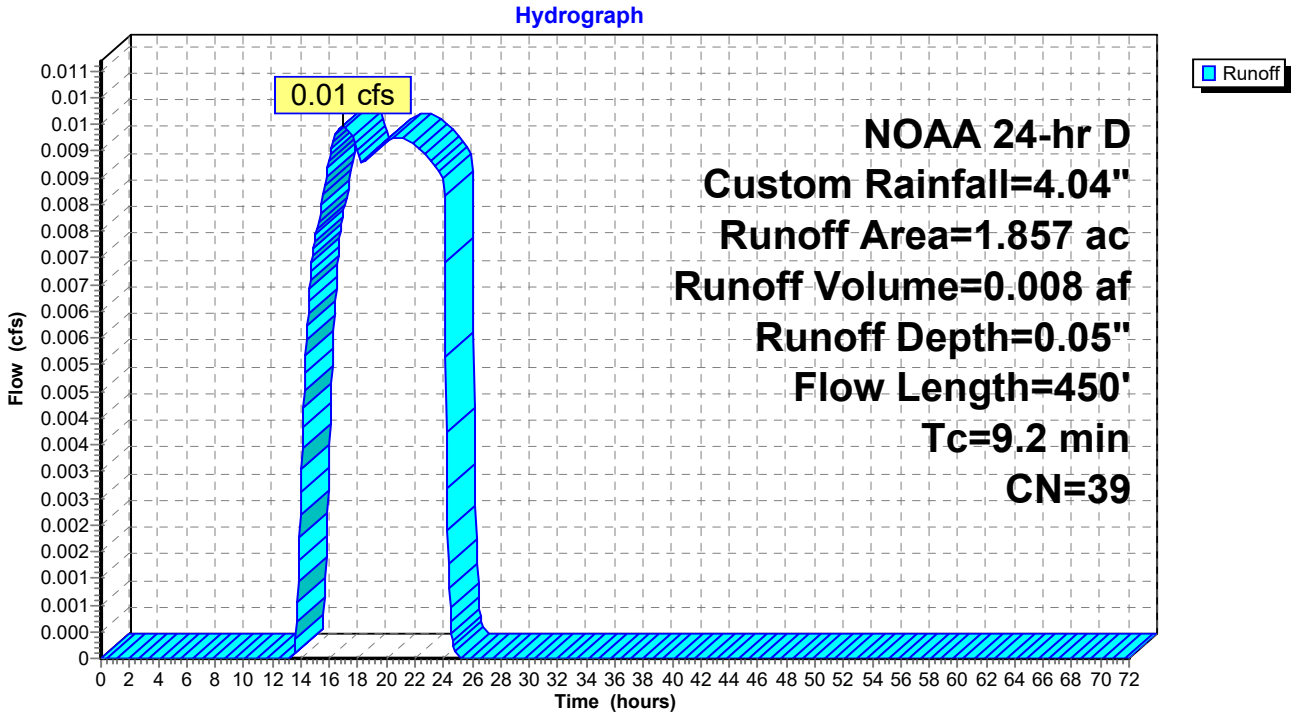
Runoff = 0.01 cfs @ 16.99 hrs, Volume= 0.008 af, Depth= 0.05"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.857	39	>75% Grass cover, Good, HSG A
1.857		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
9.2	450	Total			

Subcatchment 48S: Basin 14 - Pervious



Summary for Pond 49P: Basin 14

Inflow Area = 2.728 ac, 31.93% Impervious, Inflow Depth = 1.25" for Custom event
Inflow = 3.36 cfs @ 12.09 hrs, Volume= 0.284 af
Outflow = 0.21 cfs @ 13.55 hrs, Volume= 0.208 af, Atten= 94%, Lag= 87.5 min
Primary = 0.21 cfs @ 13.55 hrs, Volume= 0.208 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.20' @ 13.55 hrs Surf.Area= 6,125 sf Storage= 8,036 cf

Plug-Flow detention time= 520.5 min calculated for 0.208 af (73% of inflow)
Center-of-Mass det. time= 417.6 min (1,180.3 - 762.7)

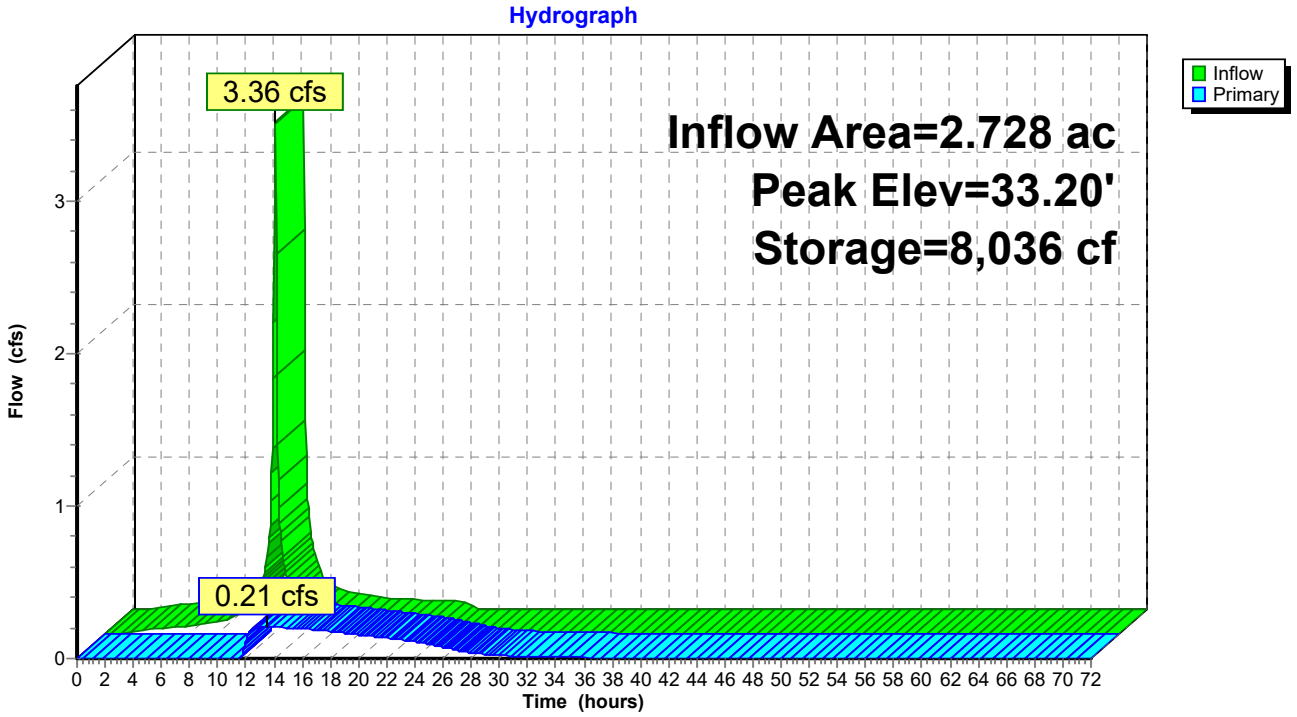
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	22,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,100	0	0
32.00	4,200	1,825	1,825
33.00	5,800	5,000	6,825
34.00	7,400	6,600	13,425
35.00	9,900	8,650	22,075

Device	Routing	Invert	Outlet Devices
#1	Primary	32.32'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 13.55 hrs HW=33.20' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.21 cfs @ 4.19 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 49P: Basin 14



Summary for Subcatchment 50S: Basin 15 - Impervious

[49] Hint: Tc<2dt may require smaller dt

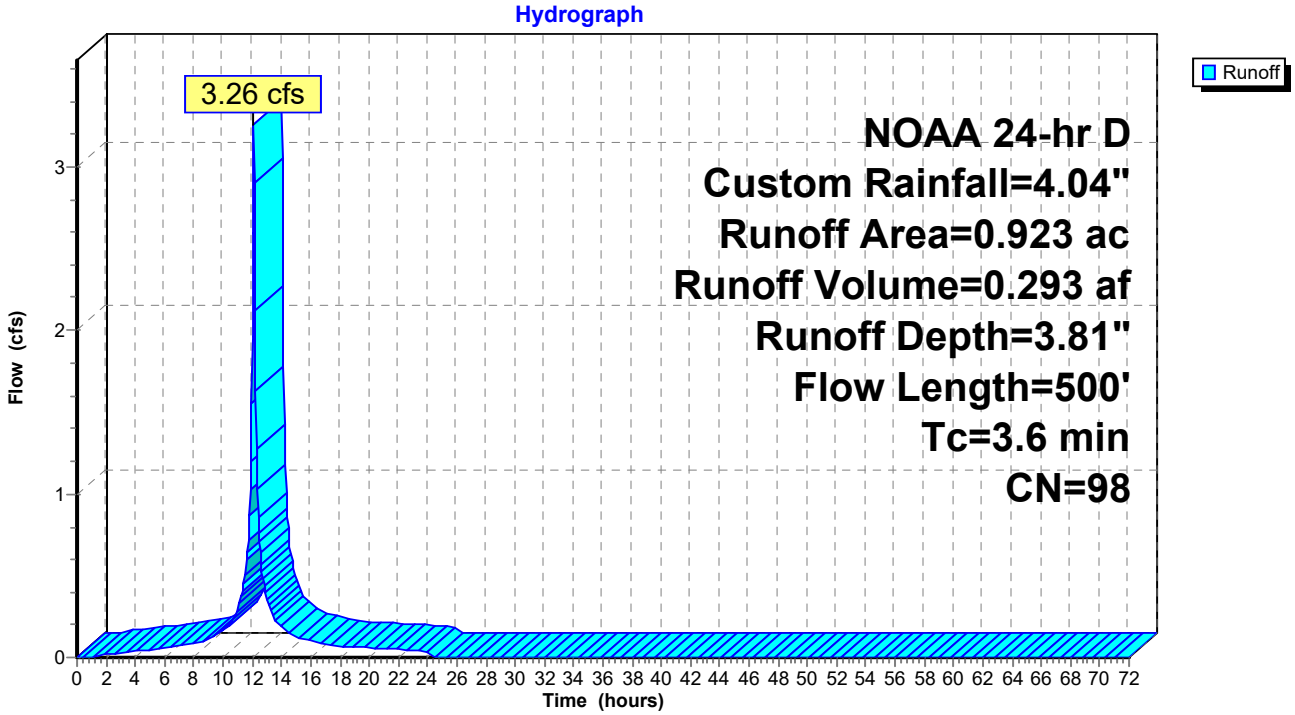
Runoff = 3.26 cfs @ 12.11 hrs, Volume= 0.293 af, Depth= 3.81"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.923	98	Impervious
	0.923		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.6	500	Total			

Subcatchment 50S: Basin 15 - Impervious



Summary for Subcatchment 51S: Basin 15 - Pervious

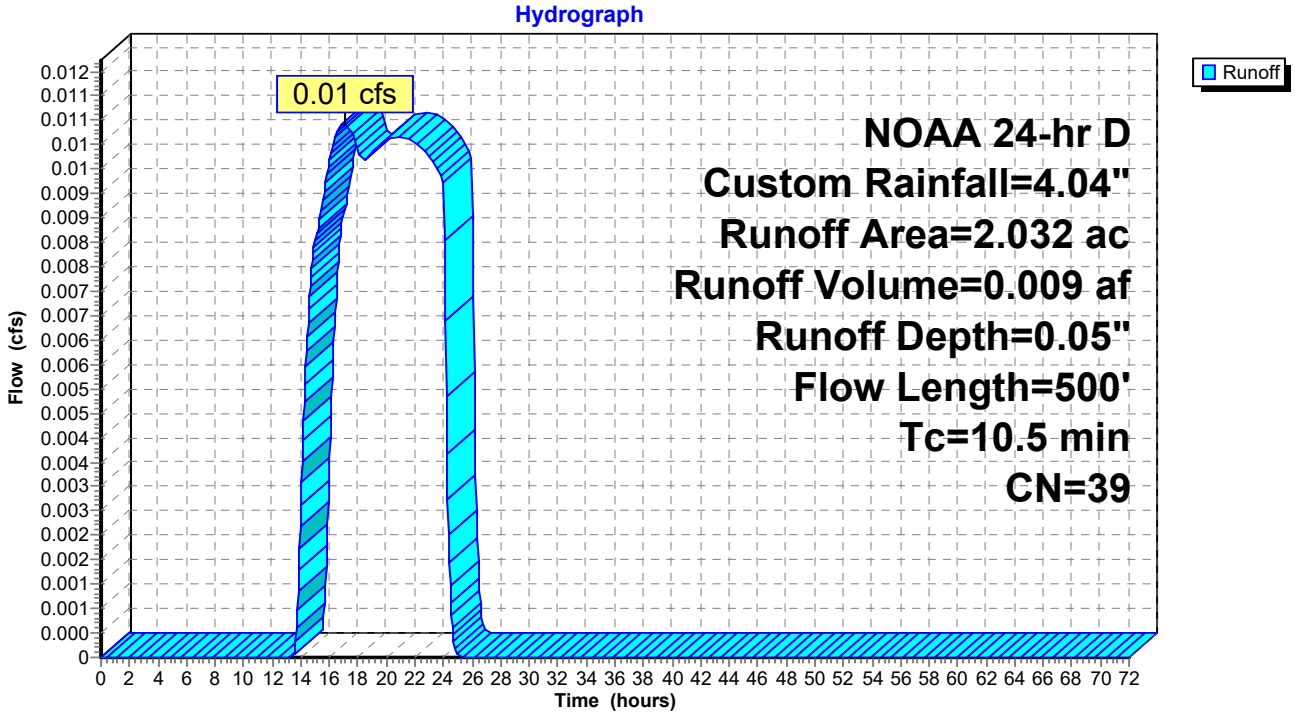
Runoff = 0.01 cfs @ 17.02 hrs, Volume= 0.009 af, Depth= 0.05"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
2.032	39	>75% Grass cover, Good, HSG A
2.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.5	500	Total			

Subcatchment 51S: Basin 15 - Pervious



Summary for Pond 52P: Basin 15

Inflow Area = 2.955 ac, 31.24% Impervious, Inflow Depth = 1.22" for Custom event
Inflow = 3.26 cfs @ 12.11 hrs, Volume= 0.301 af
Outflow = 0.22 cfs @ 13.59 hrs, Volume= 0.221 af, Atten= 93%, Lag= 89.0 min
Primary = 0.22 cfs @ 13.59 hrs, Volume= 0.221 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.90' @ 13.59 hrs Surf.Area= 6,038 sf Storage= 8,518 cf

Plug-Flow detention time= 518.0 min calculated for 0.220 af (73% of inflow)
Center-of-Mass det. time= 414.7 min (1,179.4 - 764.7)

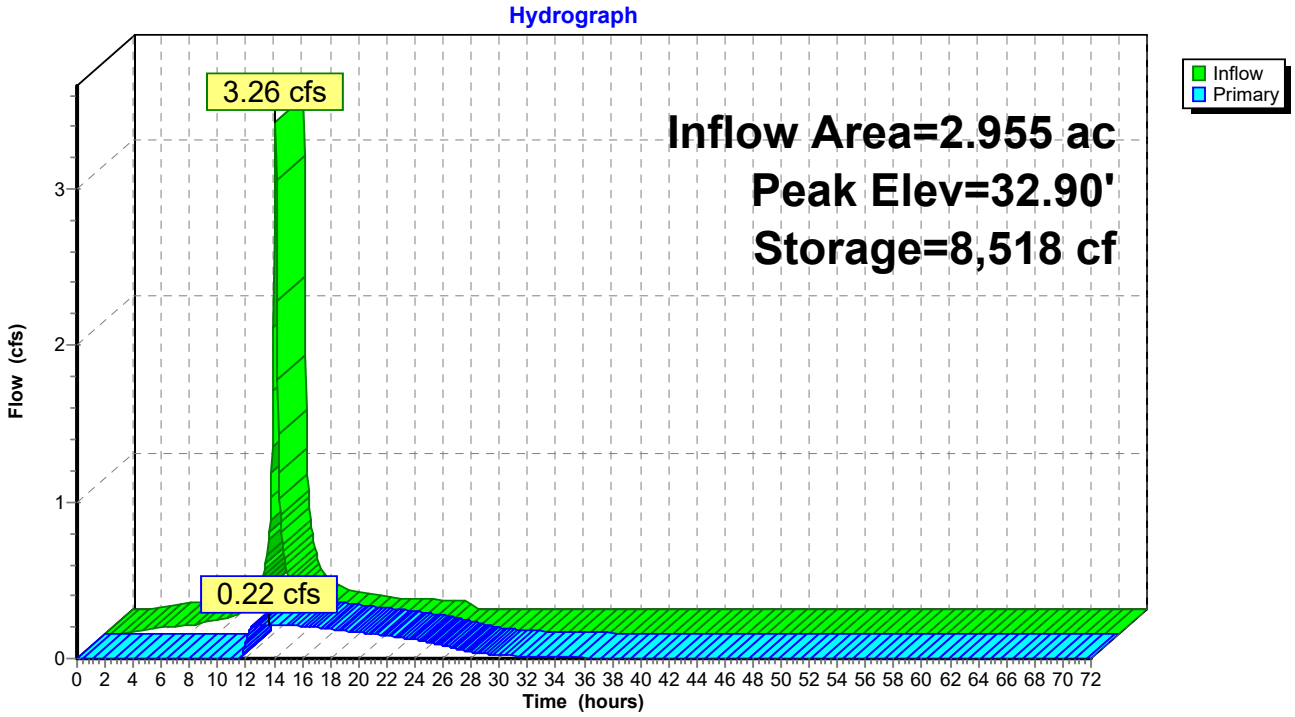
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	20,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,000	0	0
32.00	4,500	3,750	3,750
33.00	6,200	5,350	9,100
34.00	8,000	7,100	16,200
34.50	9,000	4,250	20,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.94'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	33.80'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 13.59 hrs HW=32.90' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.22 cfs @ 4.41 fps)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 52P: Basin 15



Summary for Subcatchment 53S: Basin 16 - Impervious

[49] Hint: Tc<2dt may require smaller dt

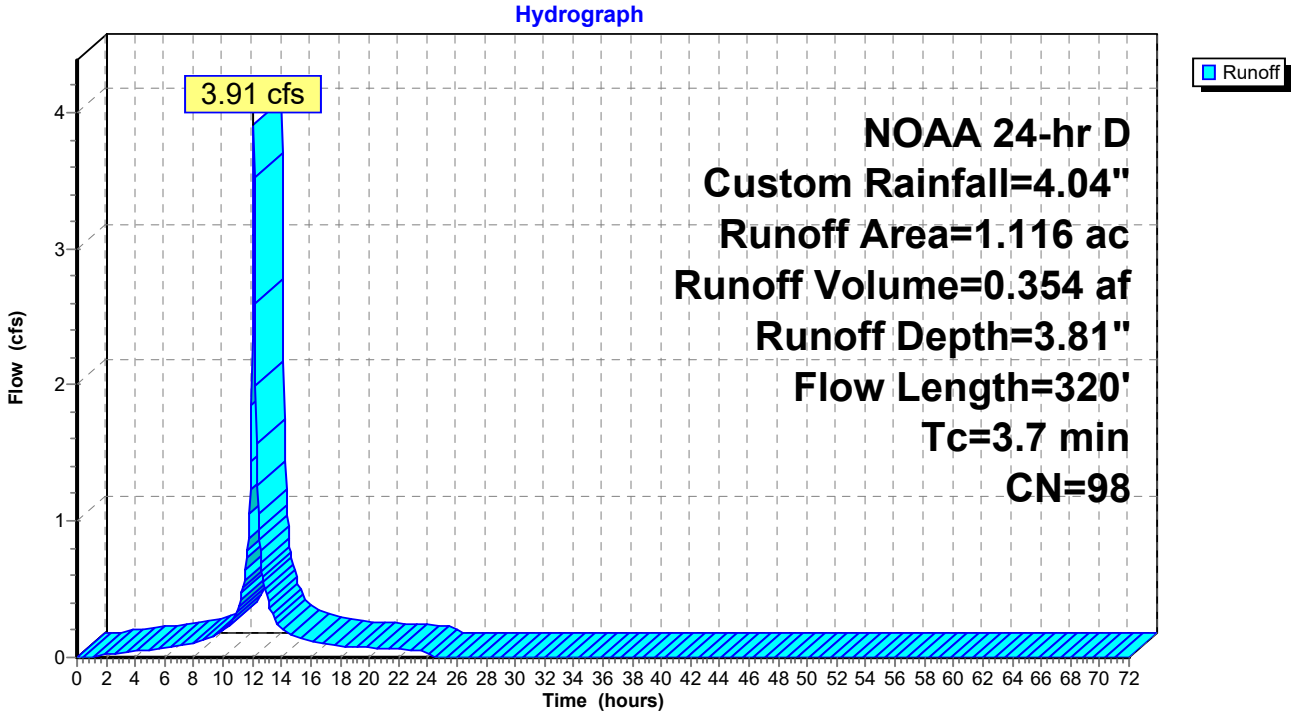
Runoff = 3.91 cfs @ 12.11 hrs, Volume= 0.354 af, Depth= 3.81"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	20	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.7	320	Total			

Subcatchment 53S: Basin 16 - Impervious



Summary for Subcatchment 54S: Basin 16 - Pervious

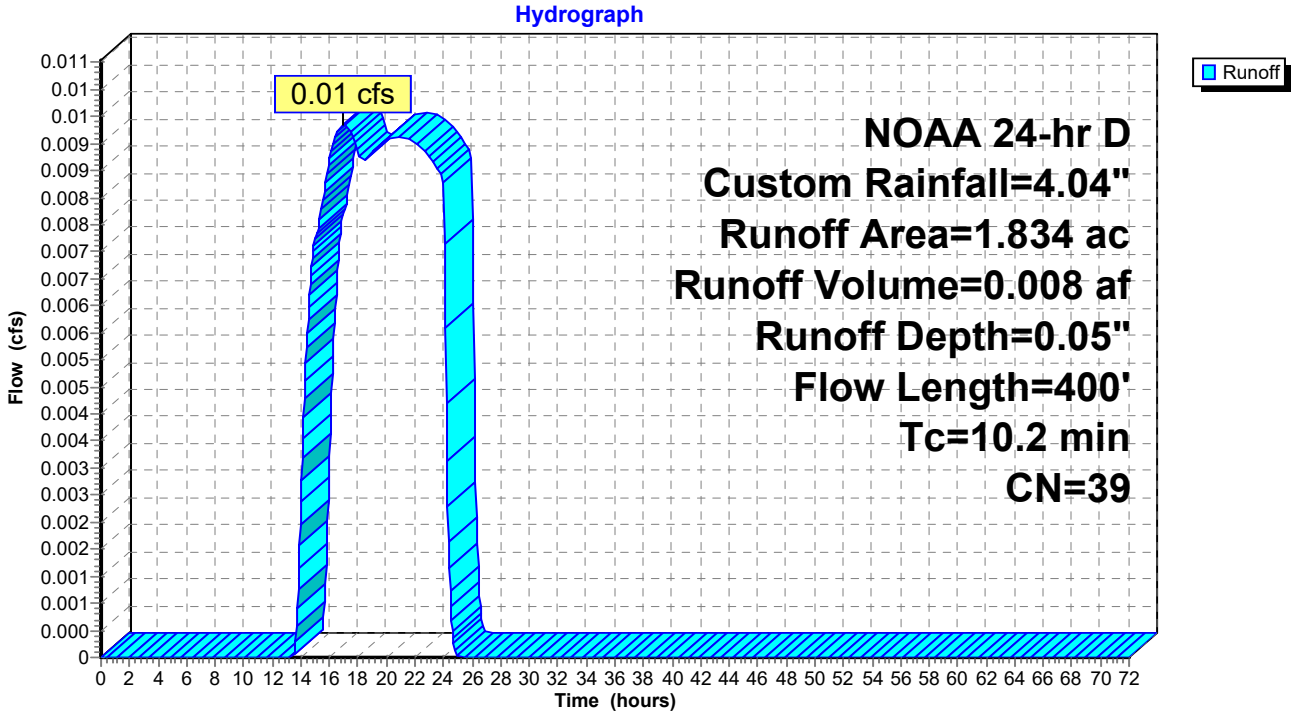
Runoff = 0.01 cfs @ 17.02 hrs, Volume= 0.008 af, Depth= 0.05"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.834	39	>75% Grass cover, Good, HSG A
1.834		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 54S: Basin 16 - Pervious



Summary for Pond 55P: Basin 16

Inflow Area = 2.950 ac, 37.83% Impervious, Inflow Depth = 1.47" for Custom event
Inflow = 3.91 cfs @ 12.11 hrs, Volume= 0.362 af
Outflow = 3.64 cfs @ 12.15 hrs, Volume= 0.266 af, Atten= 7%, Lag= 2.2 min
Primary = 3.64 cfs @ 12.15 hrs, Volume= 0.266 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.17' @ 12.15 hrs Surf.Area= 4,139 sf Storage= 4,837 cf

Plug-Flow detention time= 194.3 min calculated for 0.266 af (73% of inflow)
Center-of-Mass det. time= 91.3 min (853.3 - 762.0)

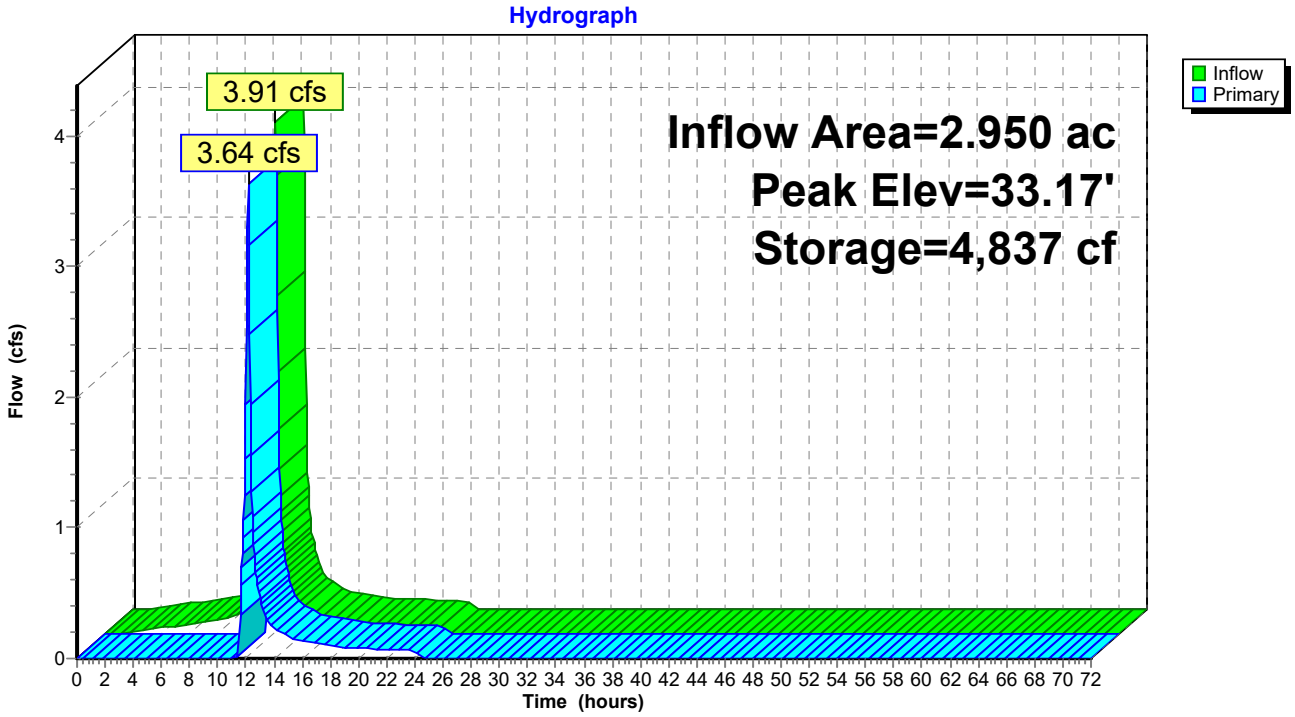
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	6,350 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	1,800	0	0
32.00	2,500	1,075	1,075
33.00	3,700	3,100	4,175
33.50	5,000	2,175	6,350

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.60 cfs @ 12.15 hrs HW=33.17' (Free Discharge)
1=Orifice/Grate (Weir Controls 3.60 cfs @ 1.34 fps)

Pond 55P: Basin 16



Summary for Subcatchment 56S: Basin 17 - Impervious

[49] Hint: Tc<2dt may require smaller dt

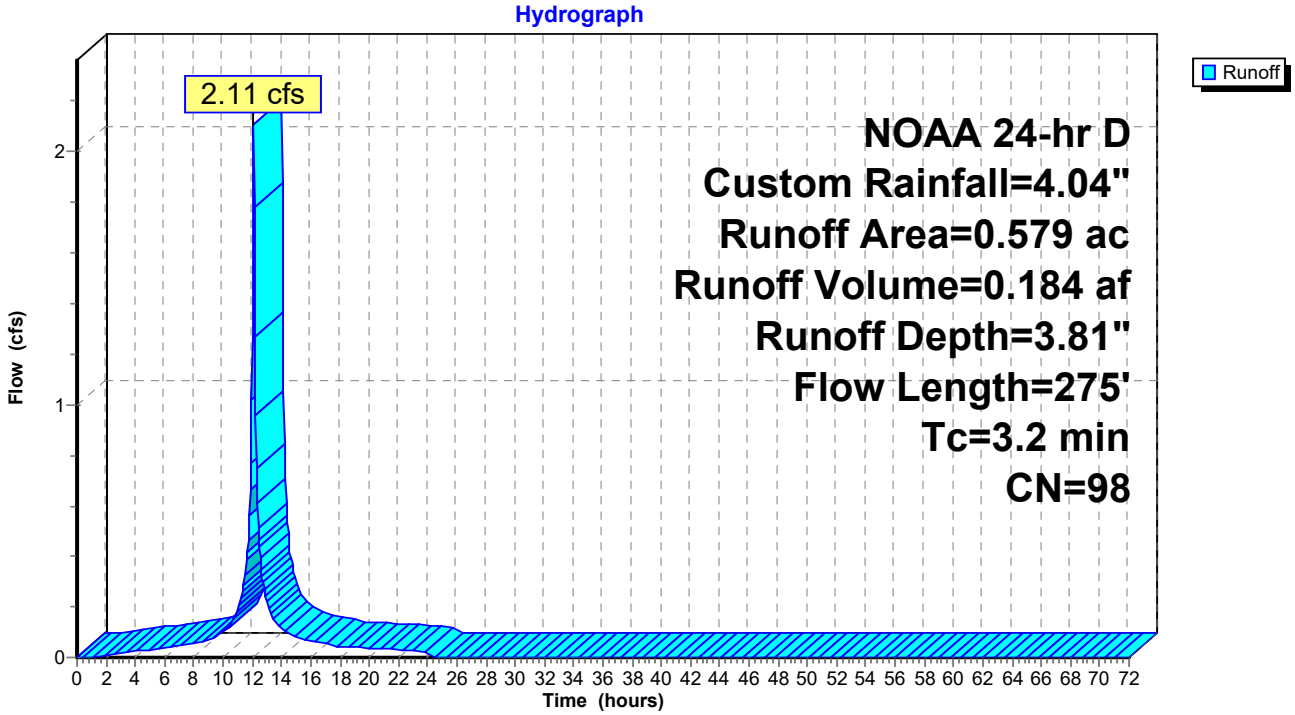
Runoff = 2.11 cfs @ 12.10 hrs, Volume= 0.184 af, Depth= 3.81"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.579	98	Impervious
	0.579		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	25	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	275	Total			

Subcatchment 56S: Basin 17 - Impervious



Summary for Subcatchment 57S: Basin 17 - Pervious

[49] Hint: Tc<2dt may require smaller dt

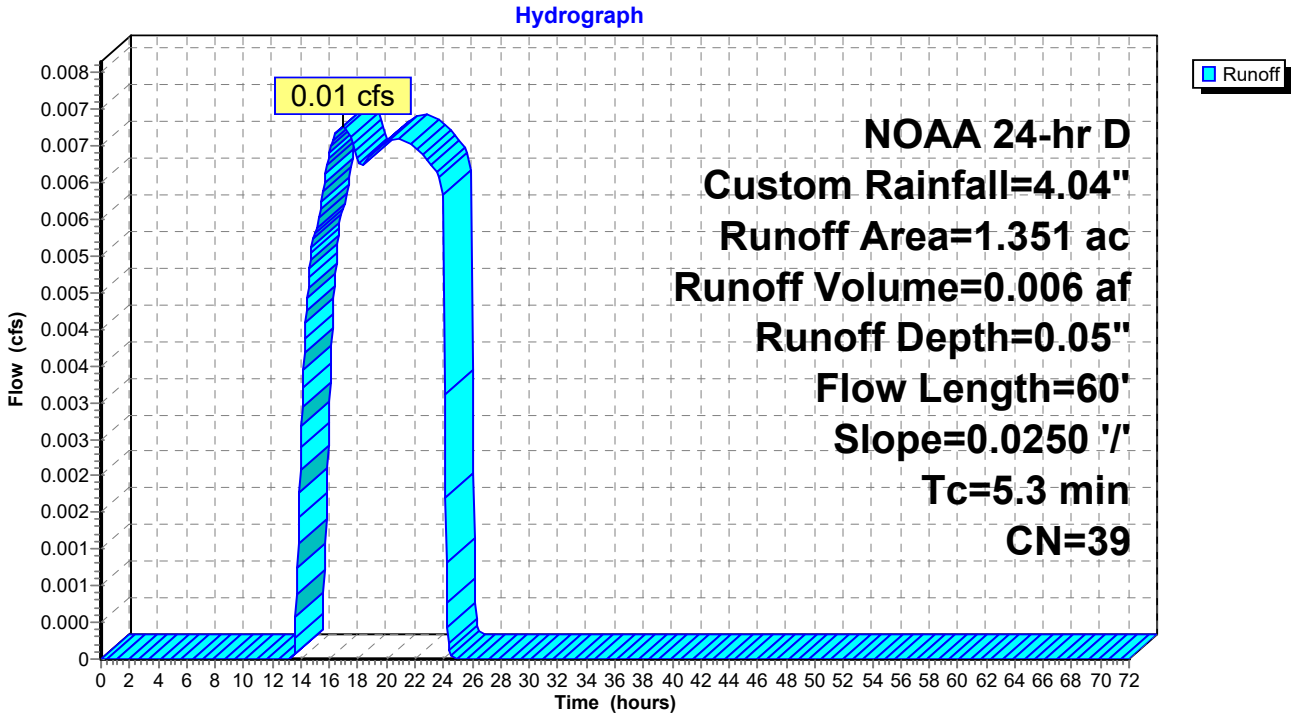
Runoff = 0.01 cfs @ 16.94 hrs, Volume= 0.006 af, Depth= 0.05"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.351	39	>75% Grass cover, Good, HSG A
1.351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 57S: Basin 17 - Pervious



Summary for Pond 58P: Basin 17

Inflow Area = 1.930 ac, 30.00% Impervious, Inflow Depth = 1.18" for Custom event
Inflow = 2.11 cfs @ 12.10 hrs, Volume= 0.189 af
Outflow = 1.89 cfs @ 12.14 hrs, Volume= 0.139 af, Atten= 11%, Lag= 2.5 min
Primary = 1.89 cfs @ 12.14 hrs, Volume= 0.139 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.74' @ 12.14 hrs Surf.Area= 4,108 sf Storage= 2,626 cf

Plug-Flow detention time= 198.1 min calculated for 0.139 af (73% of inflow)
Center-of-Mass det. time= 93.1 min (857.6 - 764.6)

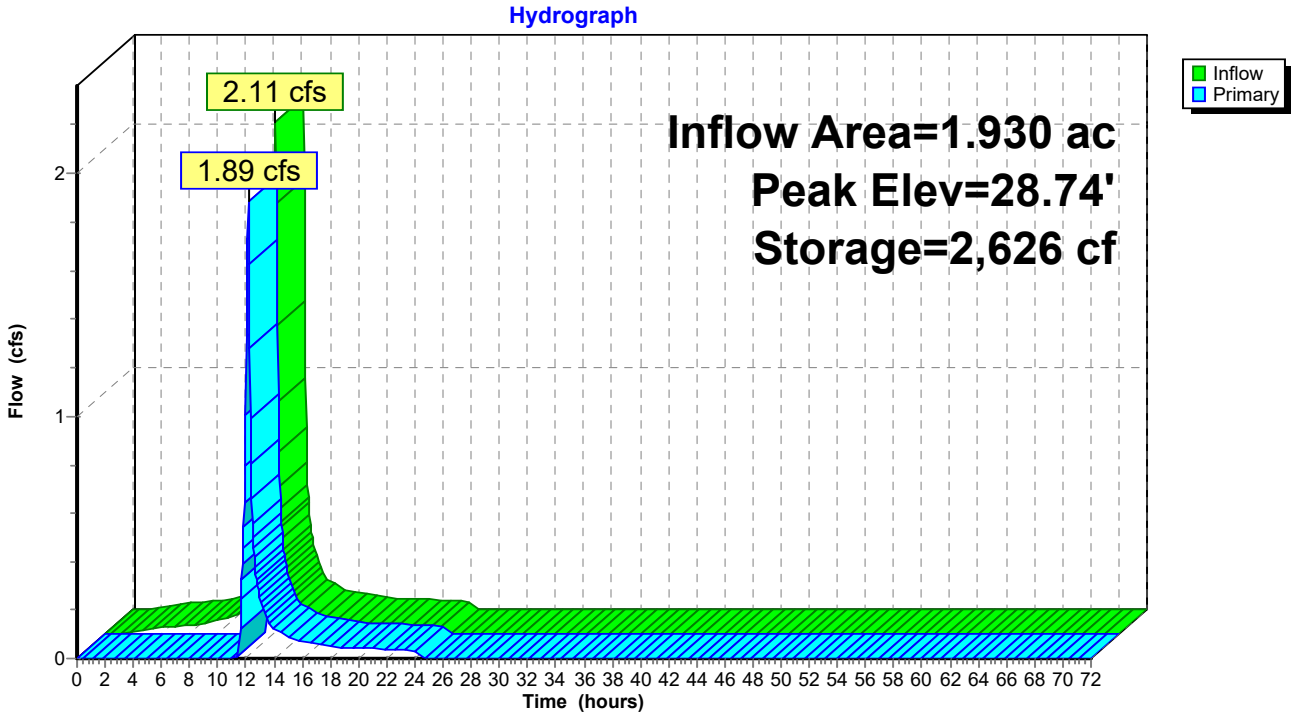
Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	12,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,000	0	0
29.00	4,500	3,750	3,750
30.00	6,200	5,350	9,100
30.50	7,000	3,300	12,400

Device	Routing	Invert	Outlet Devices
#1	Primary	28.63'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.86 cfs @ 12.14 hrs HW=28.74' (Free Discharge)
1=Orifice/Grate (Weir Controls 1.86 cfs @ 1.07 fps)

Pond 58P: Basin 17



Summary for Pond 59P: Basin 18

Inflow Area = 13.433 ac, 31.95% Impervious, Inflow Depth = 0.98" for Custom event
Inflow = 8.54 cfs @ 12.11 hrs, Volume= 1.097 af
Outflow = 1.96 cfs @ 12.65 hrs, Volume= 1.024 af, Atten= 77%, Lag= 32.1 min
Primary = 1.96 cfs @ 12.65 hrs, Volume= 1.024 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.06' @ 12.65 hrs Surf.Area= 8,112 sf Storage= 15,952 cf

Plug-Flow detention time= 455.5 min calculated for 1.023 af (93% of inflow)
Center-of-Mass det. time= 398.2 min (1,358.4 - 960.2)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	29,550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

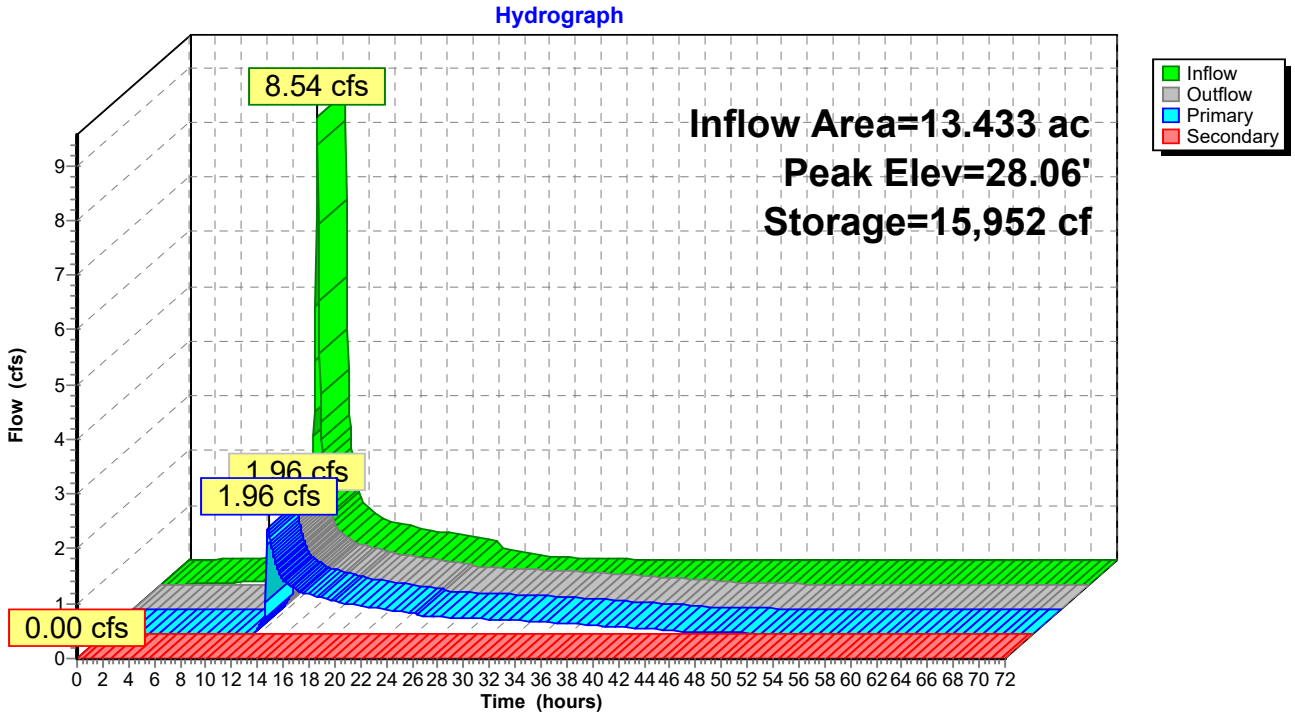
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	4,600	0	0
26.00	5,200	2,450	2,450
27.00	6,400	5,800	8,250
28.00	8,000	7,200	15,450
29.00	9,800	8,900	24,350
29.50	11,000	5,200	29,550

Device	Routing	Invert	Outlet Devices
#1	Primary	26.11'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	28.00'	**48.0" x 48.0" Horiz. Orifice/Grate** X 2 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	28.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.95 cfs @ 12.65 hrs HW=28.06' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.32 cfs @ 6.51 fps)
└**2=Orifice/Grate** (Weir Controls 1.63 cfs @ 0.82 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=25.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 59P: Basin 18



Summary for Subcatchment 60S: Basin 18 - Impervious

[49] Hint: Tc<2dt may require smaller dt

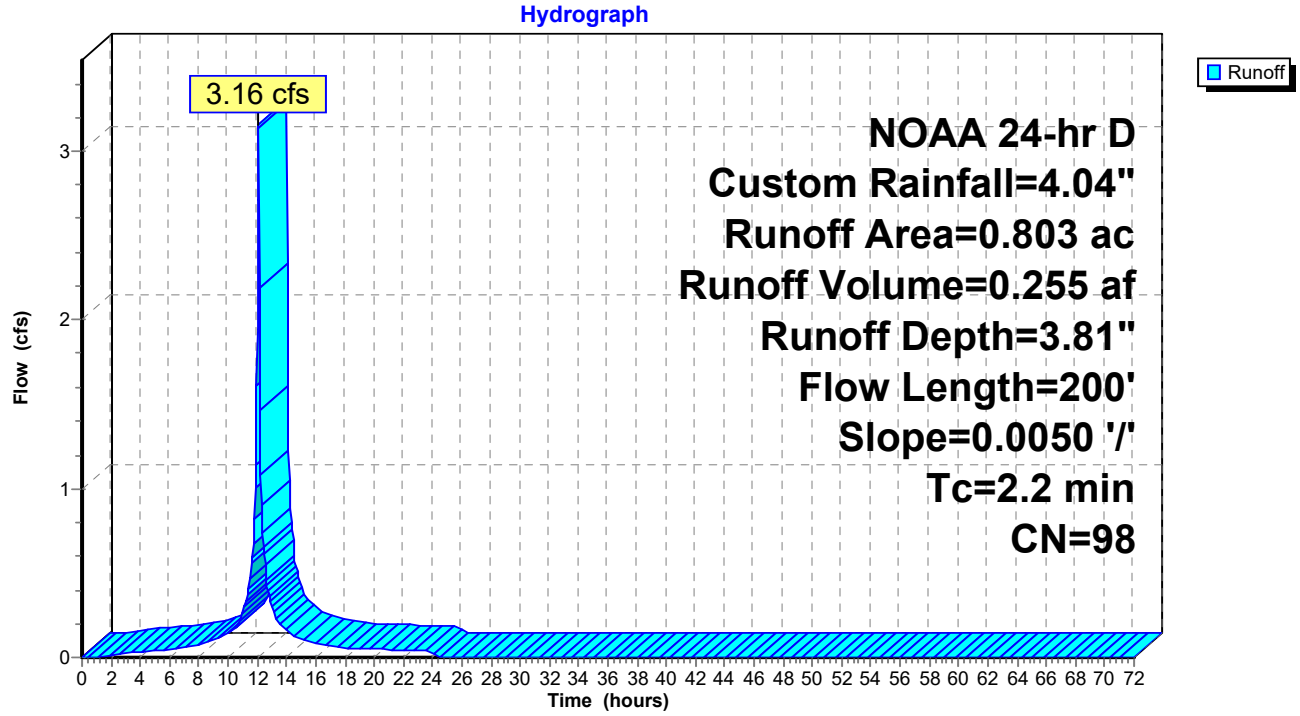
Runoff = 3.16 cfs @ 12.09 hrs, Volume= 0.255 af, Depth= 3.81"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.803	98	Impervious
	0.803		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0050	0.89		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.2	200	Total			

Subcatchment 60S: Basin 18 - Impervious



Summary for Subcatchment 61S: Basin 18 - Pervious

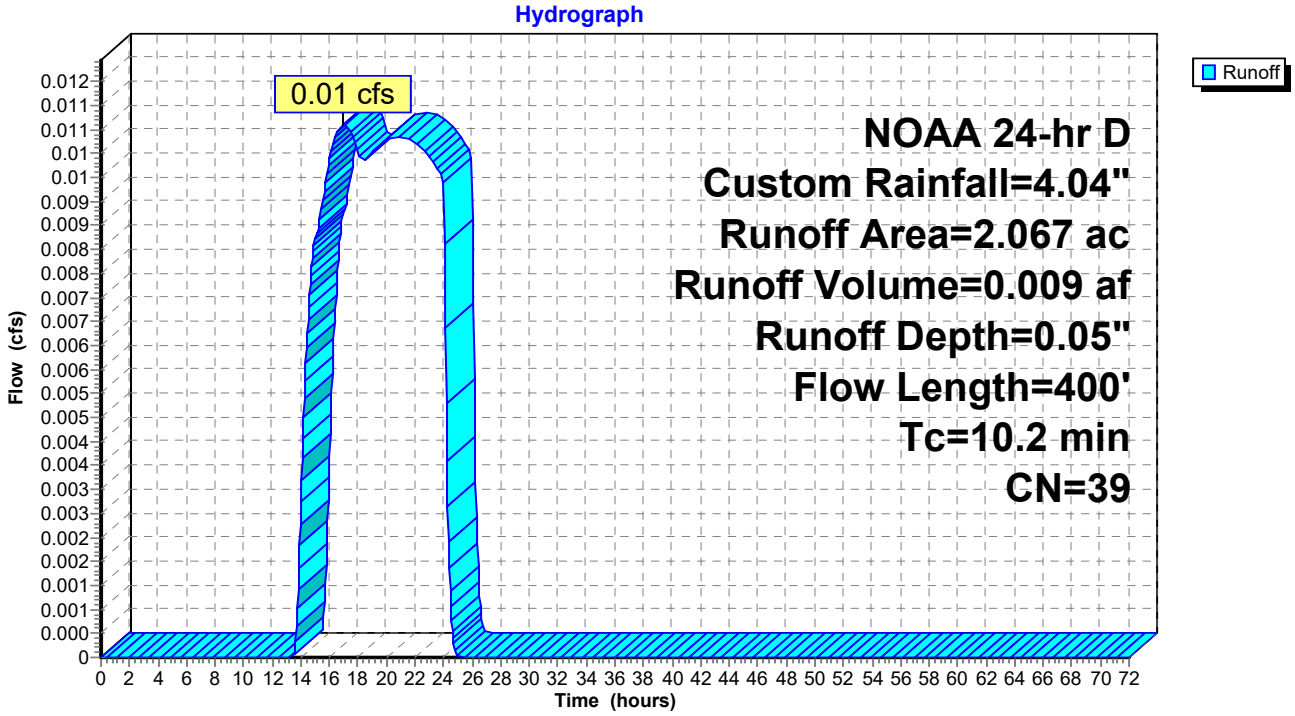
Runoff = 0.01 cfs @ 17.02 hrs, Volume= 0.009 af, Depth= 0.05"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
2.067	39	>75% Grass cover, Good, HSG A
2.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 61S: Basin 18 - Pervious



Summary for Pond 62P: Basin 26 (Wet Pond)

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 0.77" for Custom event
Inflow = 10.34 cfs @ 12.12 hrs, Volume= 4.829 af
Outflow = 0.29 cfs @ 47.17 hrs, Volume= 1.320 af, Atten= 97%, Lag= 2,103.1 min
Primary = 0.29 cfs @ 47.17 hrs, Volume= 1.320 af
Routed to Link 87L : Total Area to Tuckerton Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 22.50' Surf.Area= 92,813 sf Storage= 317,963 cf
Peak Elev= 24.16' @ 47.17 hrs Surf.Area= 119,853 sf Storage= 486,951 cf (168,988 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,225.4 min (2,636.0 - 1,410.6)

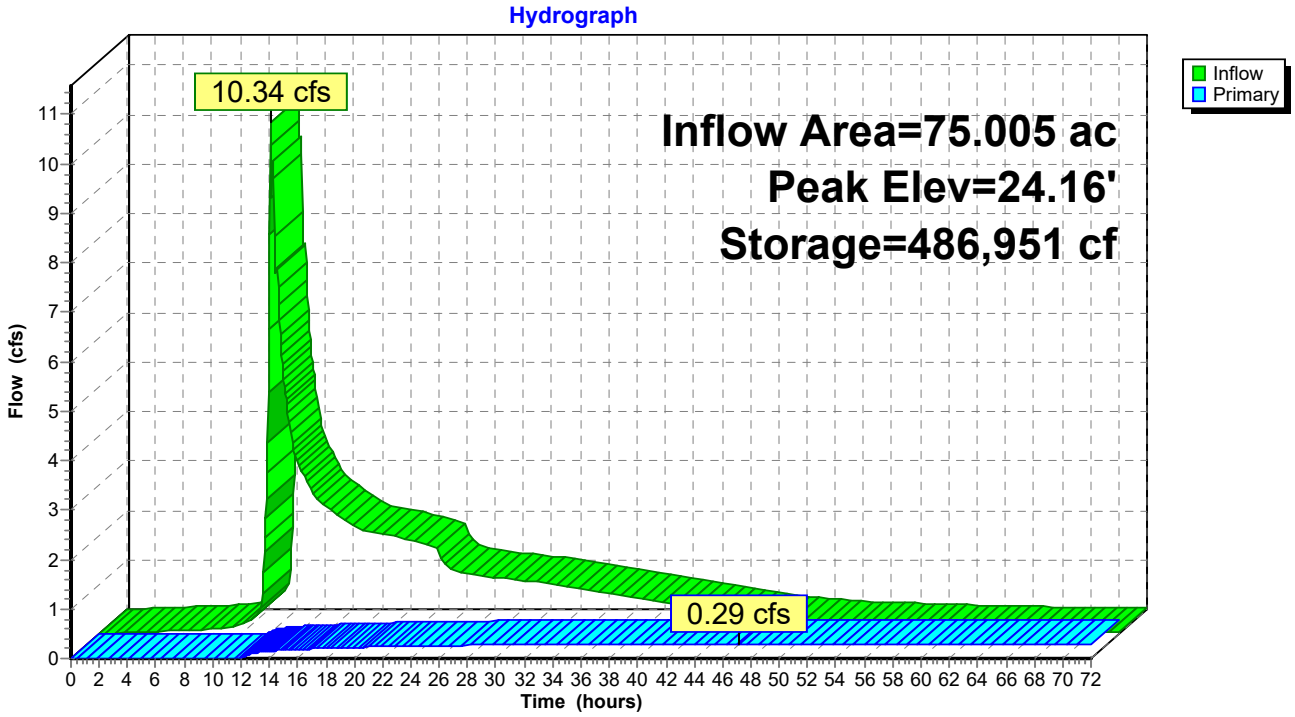
Volume	Invert	Avail.Storage	Storage Description
#1	18.00'	639,244 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
18.00	29,000	0	0
19.00	32,000	30,500	30,500
20.00	35,000	33,500	64,000
21.00	38,000	36,500	100,500
21.01	43,000	405	100,905
22.00	47,000	44,550	145,455
23.00	52,000	49,500	194,955
24.00	57,000	54,500	249,455
24.01	63,000	600	250,055
25.00	69,000	65,340	315,395
26.00	76,000	72,500	387,895
27.00	84,000	80,000	467,895
27.50	90,000	43,500	511,395

Device	Routing	Invert	Outlet Devices
#1	Primary	22.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	26.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.29 cfs @ 47.17 hrs HW=24.16' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.29 cfs @ 5.97 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 62P: Basin 26 (Wet Pond)



Summary for Subcatchment 63S: Basin 26 - Impervious

[49] Hint: Tc<2dt may require smaller dt

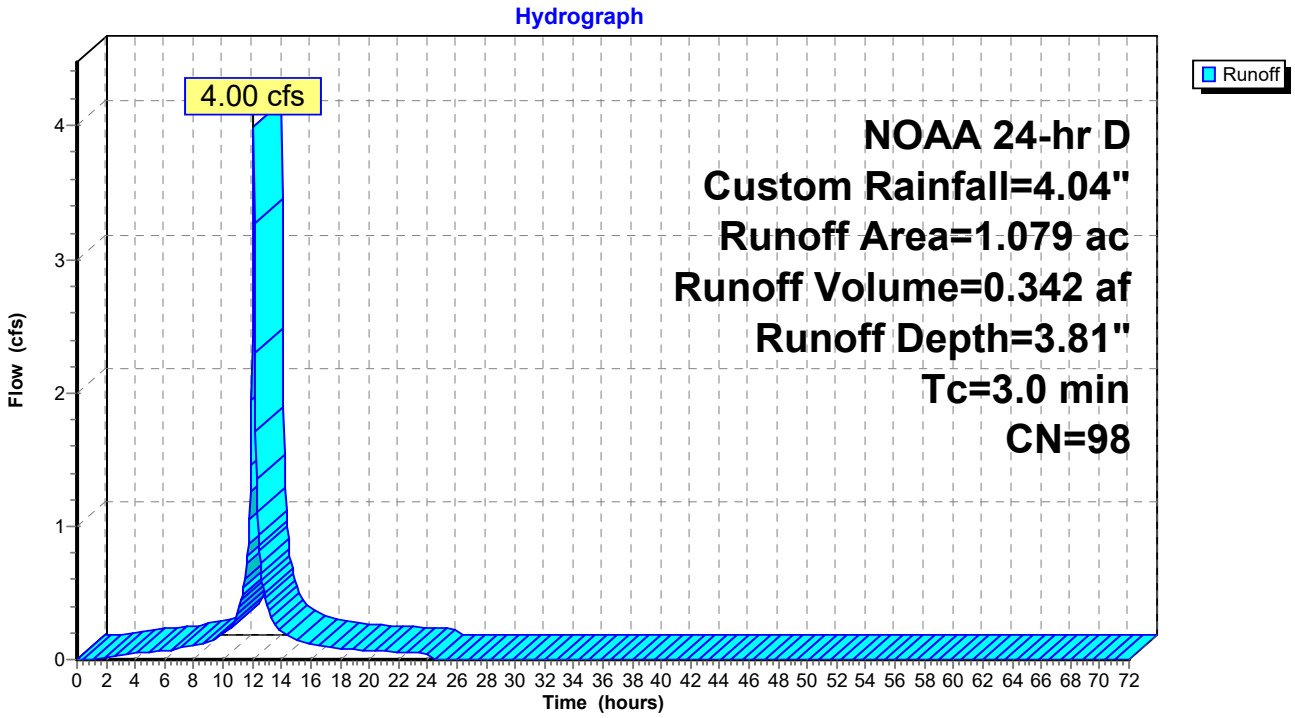
Runoff = 4.00 cfs @ 12.10 hrs, Volume= 0.342 af, Depth= 3.81"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.079	98	Impervious
	1.079		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 63S: Basin 26 - Impervious



Summary for Subcatchment 64S: Basin 26 - Pervious

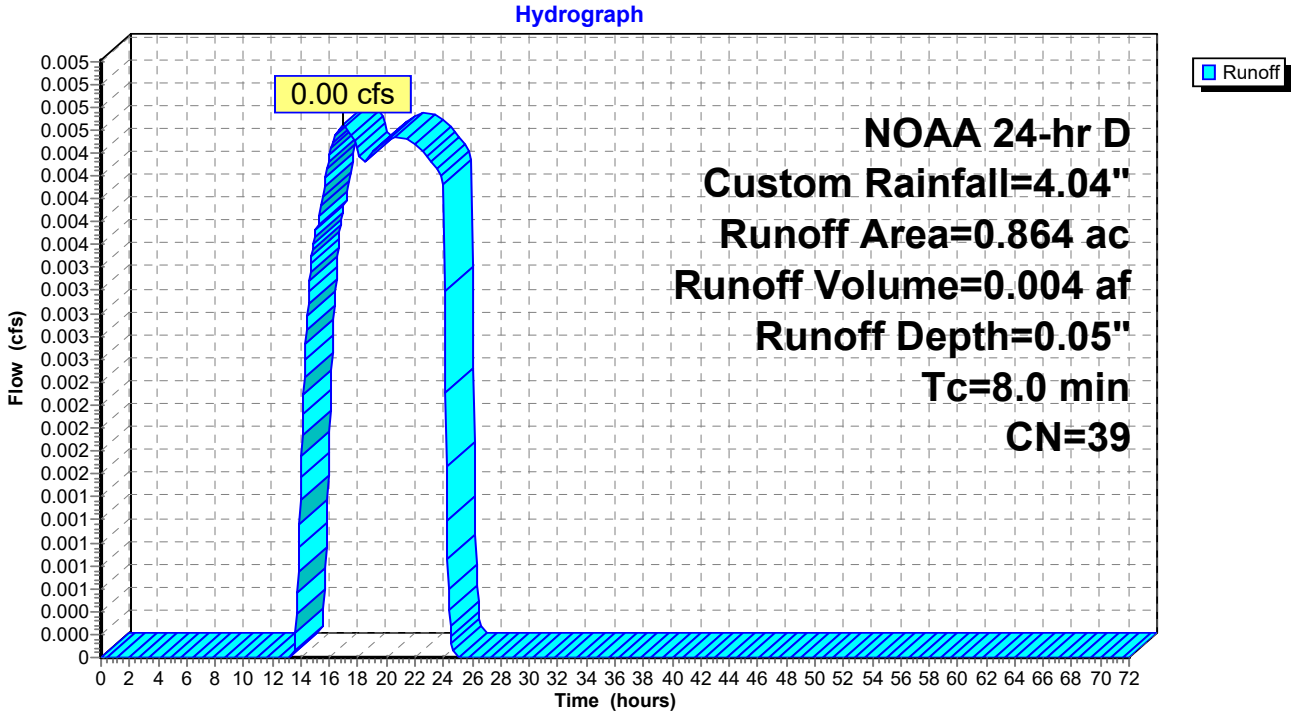
Runoff = 0.00 cfs @ 16.96 hrs, Volume= 0.004 af, Depth= 0.05"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
0.864	39	>75% Grass cover, Good, HSG A
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 64S: Basin 26 - Pervious



Summary for Pond 66P: Basin 31

[81] Warning: Exceeded Pond 67P by 0.93' @ 34.85 hrs

Inflow Area = 9.125 ac, 32.14% Impervious, Inflow Depth > 1.04" for Custom event
Inflow = 4.53 cfs @ 12.04 hrs, Volume= 0.788 af
Outflow = 0.28 cfs @ 23.98 hrs, Volume= 0.694 af, Atten= 94%, Lag= 716.0 min
Primary = 0.28 cfs @ 23.98 hrs, Volume= 0.694 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.49' @ 23.98 hrs Surf.Area= 7,985 sf Storage= 13,721 cf

Plug-Flow detention time= 700.2 min calculated for 0.694 af (88% of inflow)
Center-of-Mass det. time= 559.9 min (1,720.1 - 1,160.1)

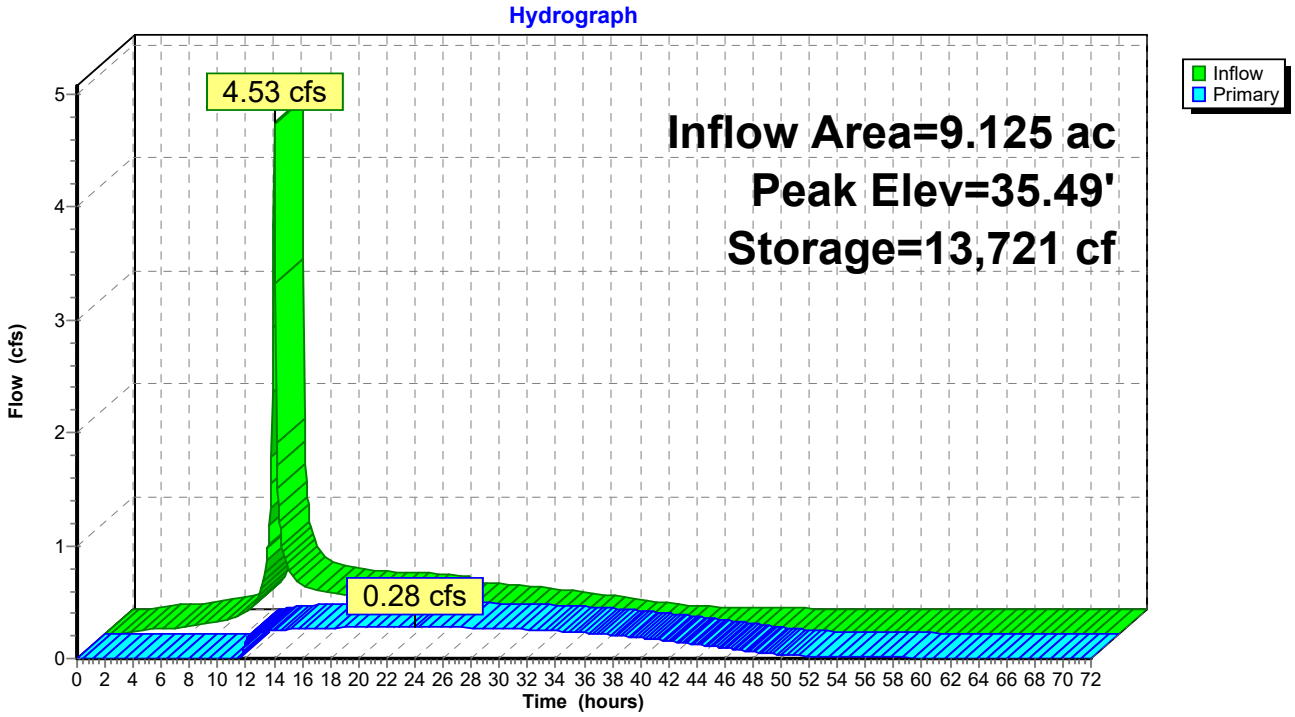
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	13,775 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,200	0	0
34.00	5,000	4,100	4,100
35.00	6,900	5,950	10,050
35.50	8,000	3,725	13,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.96'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.28 cfs @ 23.98 hrs HW=35.49' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.28 cfs @ 5.71 fps)

Pond 66P: Basin 31



Summary for Subcatchment 66S: Basin 19 - Impervious

[49] Hint: Tc<2dt may require smaller dt

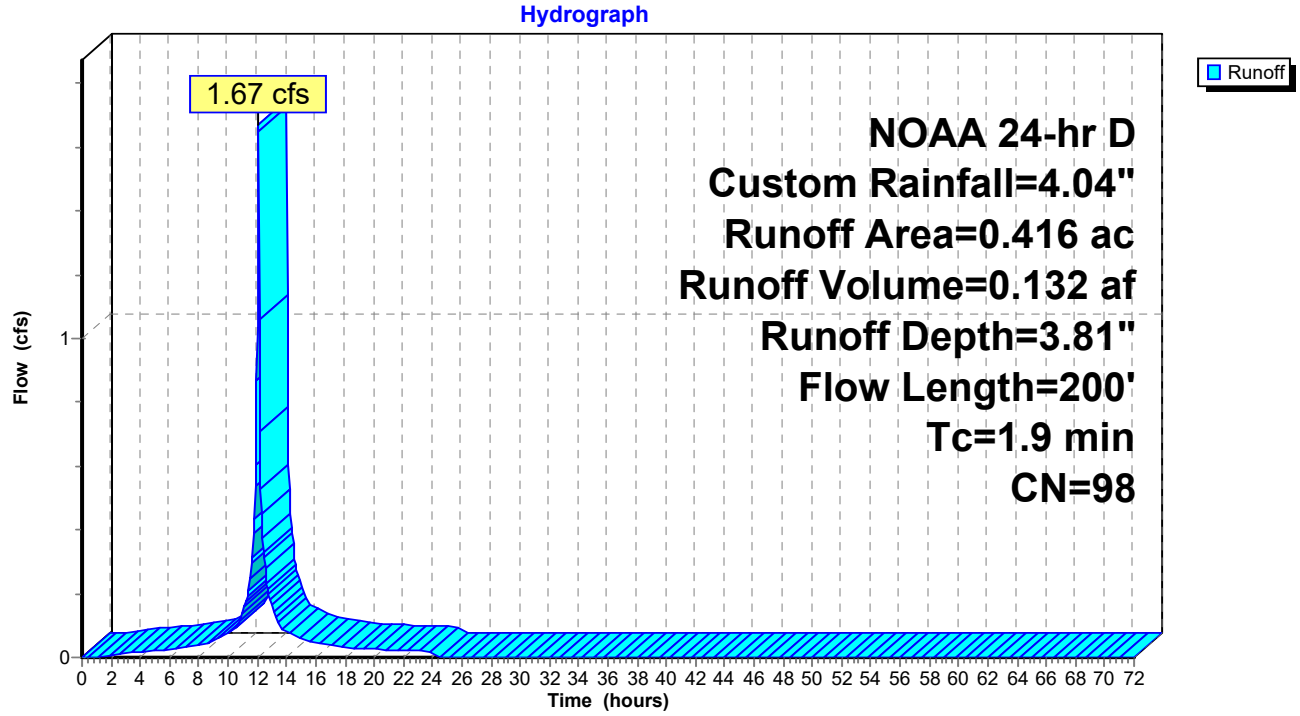
Runoff = 1.67 cfs @ 12.09 hrs, Volume= 0.132 af, Depth= 3.81"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.416	98	Impervious
	0.416		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
1.9	200	Total			

Subcatchment 66S: Basin 19 - Impervious



Summary for Pond 67P: Basin 30

[79] Warning: Submerged Pond 70P Primary device # 1 by 0.33'

Inflow Area = 6.020 ac, 31.43% Impervious, Inflow Depth > 1.06" for Custom event
Inflow = 3.55 cfs @ 12.10 hrs, Volume= 0.532 af
Outflow = 0.25 cfs @ 18.66 hrs, Volume= 0.449 af, Atten= 93%, Lag= 393.6 min
Primary = 0.25 cfs @ 18.66 hrs, Volume= 0.449 af
Routed to Pond 66P : Basin 31

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.04' @ 18.66 hrs Surf.Area= 6,971 sf Storage= 10,809 cf

Plug-Flow detention time= 619.6 min calculated for 0.449 af (84% of inflow)
Center-of-Mass det. time= 491.5 min (1,463.4 - 971.9)

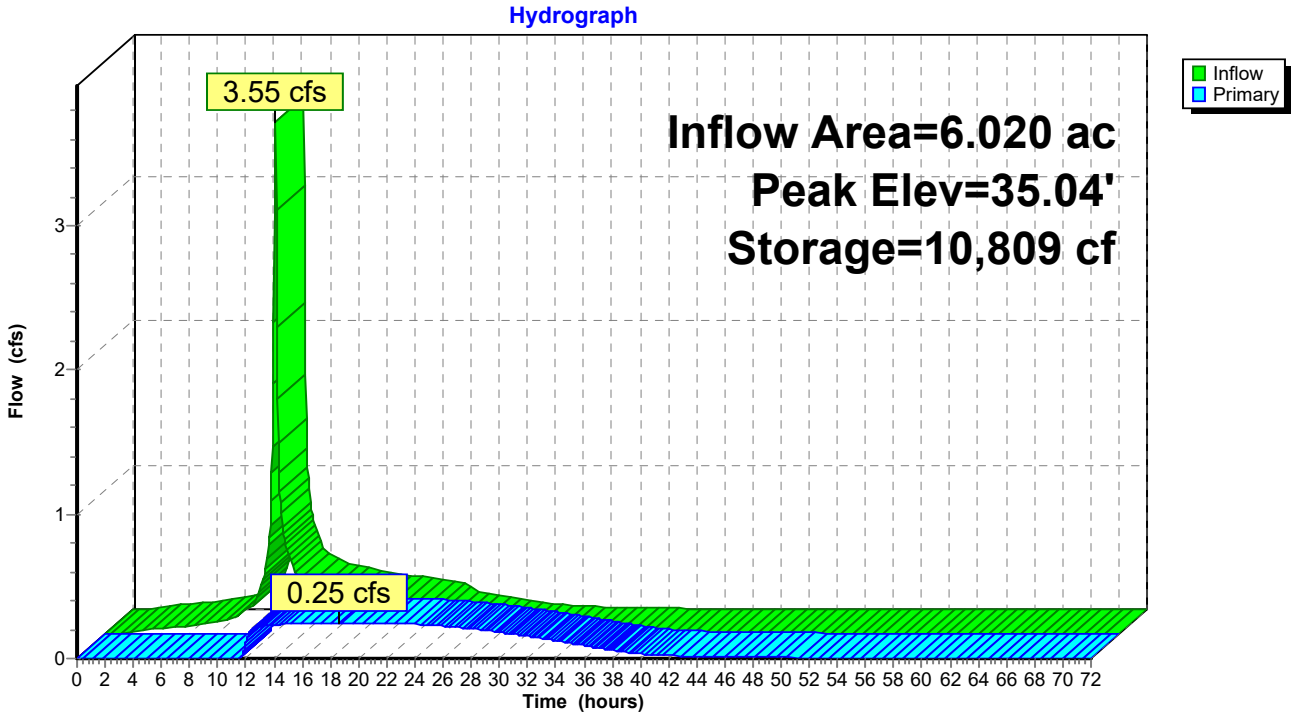
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,775 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,700	0	0
34.00	5,200	4,450	4,450
35.00	6,900	6,050	10,500
36.00	8,500	7,700	18,200
36.50	9,800	4,575	22,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.81'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 18.66 hrs HW=35.04' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.25 cfs @ 5.07 fps)

Pond 67P: Basin 30



Summary for Subcatchment 67S: Basin 19 - Pervious

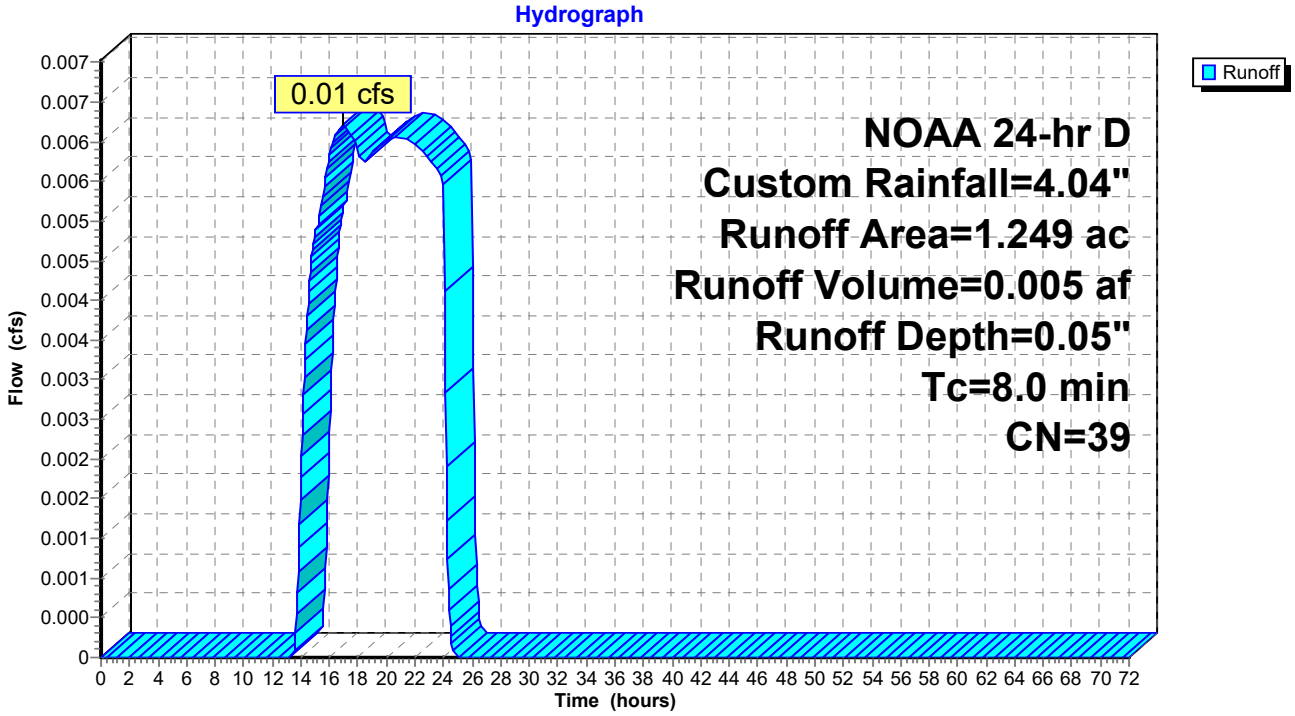
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.005 af, Depth= 0.05"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.249	39	>75% Grass cover, Good, HSG A
1.249		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 67S: Basin 19 - Pervious



Summary for Pond 68P: Basin 19

Inflow Area = 1.665 ac, 24.98% Impervious, Inflow Depth = 0.99" for Custom event
Inflow = 1.67 cfs @ 12.09 hrs, Volume= 0.137 af
Outflow = 0.18 cfs @ 12.90 hrs, Volume= 0.101 af, Atten= 89%, Lag= 48.5 min
Primary = 0.18 cfs @ 12.90 hrs, Volume= 0.101 af
Routed to Pond 69P : Basin 20

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.37' @ 12.90 hrs Surf.Area= 3,132 sf Storage= 3,494 cf

Plug-Flow detention time= 363.5 min calculated for 0.101 af (74% of inflow)
Center-of-Mass det. time= 256.4 min (1,022.5 - 766.1)

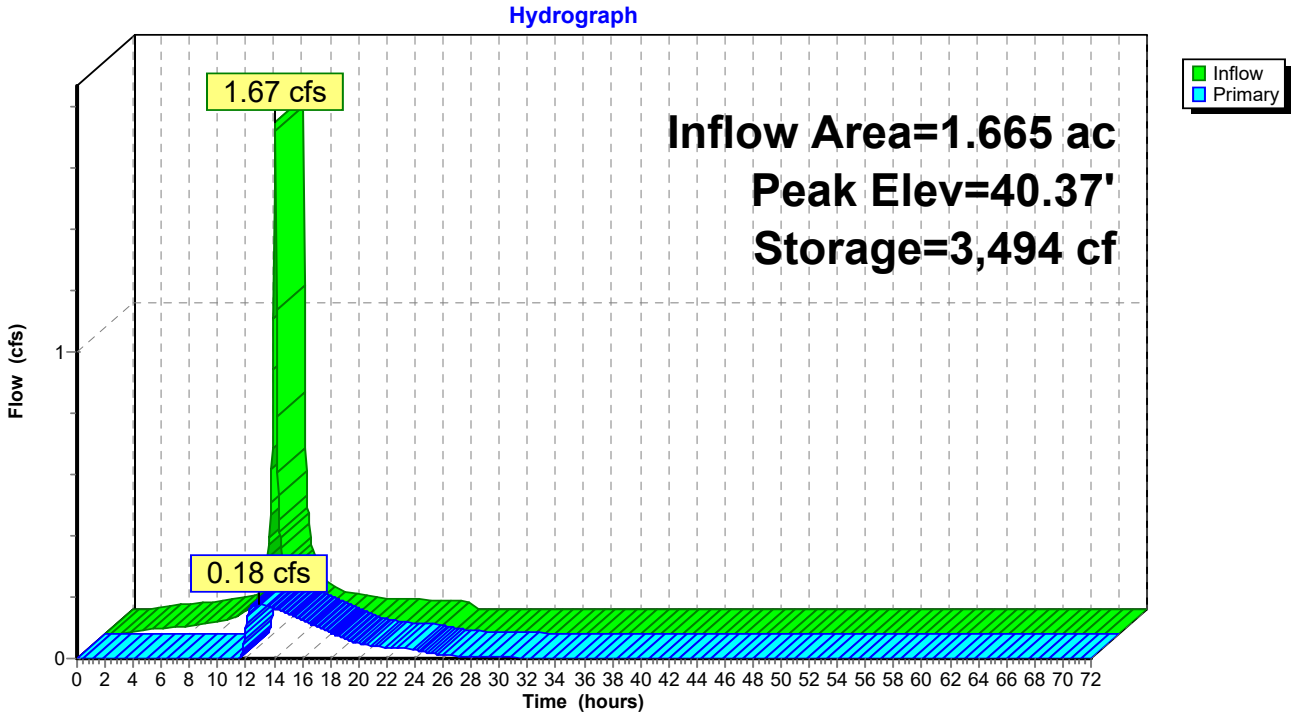
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	12,475 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	2,000	0	0
40.00	2,800	2,400	2,400
41.00	3,700	3,250	5,650
42.00	4,800	4,250	9,900
42.50	5,500	2,575	12,475

Device	Routing	Invert	Outlet Devices
#1	Primary	39.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 12.90 hrs HW=40.37' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.18 cfs @ 3.58 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 68P: Basin 19



Summary for Pond 69P: Basin 20

Inflow Area = 4.123 ac, 27.97% Impervious, Inflow Depth = 0.99" for Custom event
Inflow = 3.23 cfs @ 12.04 hrs, Volume= 0.342 af
Outflow = 0.36 cfs @ 13.42 hrs, Volume= 0.277 af, Atten= 89%, Lag= 82.7 min
Primary = 0.36 cfs @ 13.42 hrs, Volume= 0.277 af
Routed to Pond 72P : Basin 21

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.72' @ 13.42 hrs Surf.Area= 6,512 sf Storage= 7,406 cf

Plug-Flow detention time= 474.7 min calculated for 0.277 af (81% of inflow)
Center-of-Mass det. time= 374.9 min (1,212.3 - 837.4)

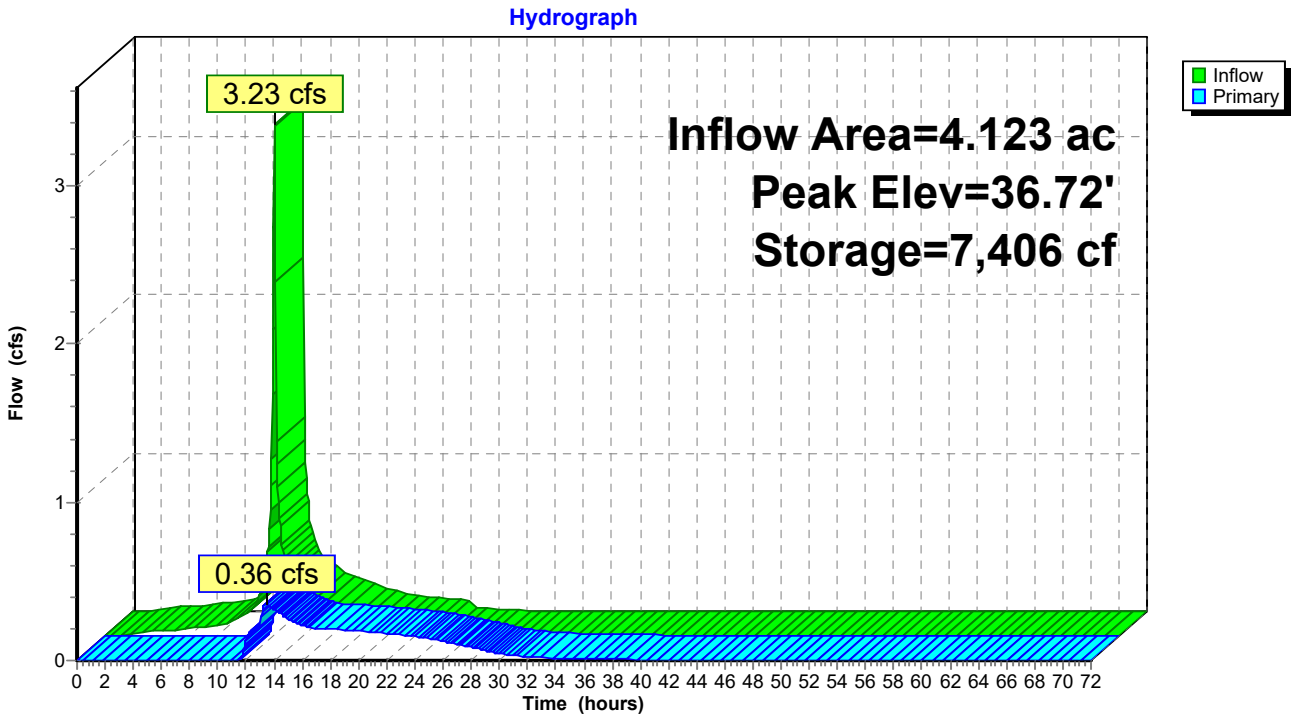
Volume	Invert	Avail.Storage	Storage Description
#1	35.00'	13,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.00	2,400	0	0
36.00	4,500	3,450	3,450
37.00	7,300	5,900	9,350
37.50	9,000	4,075	13,425

Device	Routing	Invert	Outlet Devices
#1	Primary	35.84'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.34 cfs @ 13.42 hrs HW=36.72' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.21 cfs @ 4.18 fps)
2=Orifice/Grate (Weir Controls 0.13 cfs @ 0.44 fps)

Pond 69P: Basin 20



Summary for Pond 70P: Basin 29

Inflow Area = 2.987 ac, 32.51% Impervious, Inflow Depth = 1.27" for Custom event
Inflow = 3.60 cfs @ 12.10 hrs, Volume= 0.316 af
Outflow = 0.20 cfs @ 13.92 hrs, Volume= 0.231 af, Atten= 94%, Lag= 108.9 min
Primary = 0.20 cfs @ 13.92 hrs, Volume= 0.231 af
Routed to Pond 67P : Basin 30

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.55' @ 13.92 hrs Surf.Area= 7,578 sf Storage= 9,146 cf

Plug-Flow detention time= 582.1 min calculated for 0.231 af (73% of inflow)
Center-of-Mass det. time= 479.0 min (1,242.1 - 763.1)

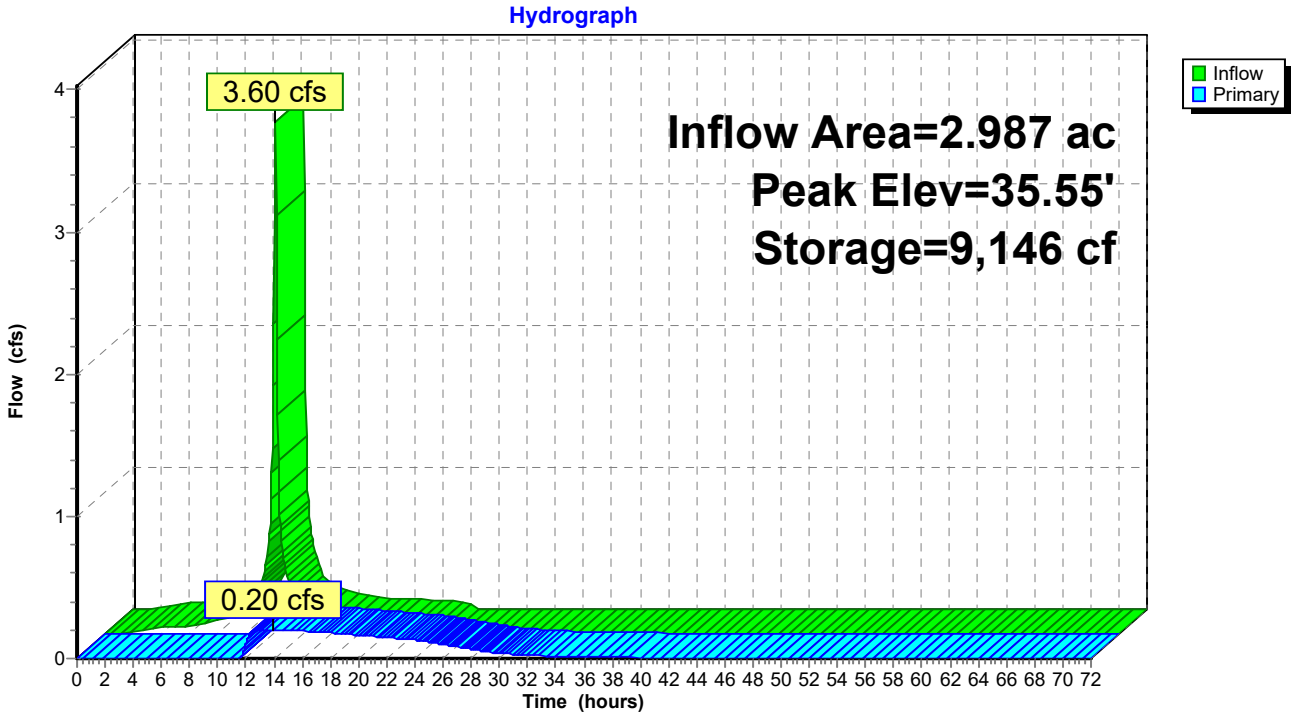
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	12,800 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,500	0	0
35.00	6,200	5,350	5,350
36.00	8,700	7,450	12,800

Device	Routing	Invert	Outlet Devices
#1	Primary	34.71'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 13.92 hrs HW=35.55' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.20 cfs @ 4.07 fps)

Pond 70P: Basin 29



Summary for Subcatchment 70S: Basin 20 - Impervious

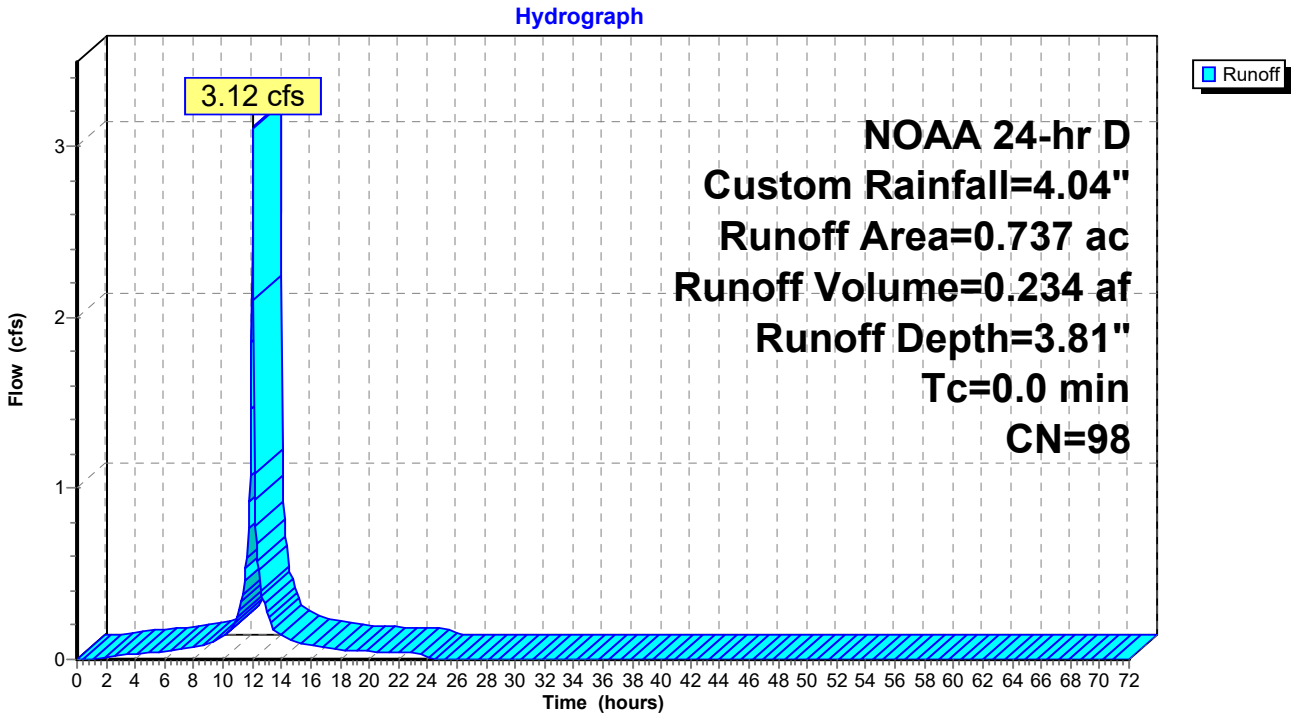
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.12 cfs @ 12.04 hrs, Volume= 0.234 af, Depth= 3.81"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.737	98	Impervious
	0.737		100.00% Impervious Area

Subcatchment 70S: Basin 20 - Impervious



Summary for Pond 71P: Basin 33

Inflow Area = 5.600 ac, 26.93% Impervious, Inflow Depth > 0.91" for Custom event
Inflow = 2.94 cfs @ 12.10 hrs, Volume= 0.424 af
Outflow = 0.21 cfs @ 15.98 hrs, Volume= 0.352 af, Atten= 93%, Lag= 232.9 min
Primary = 0.21 cfs @ 15.98 hrs, Volume= 0.352 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.57' @ 15.98 hrs Surf.Area= 6,422 sf Storage= 8,004 cf

Plug-Flow detention time= 629.4 min calculated for 0.352 af (83% of inflow)
Center-of-Mass det. time= 430.0 min (1,473.3 - 1,043.3)

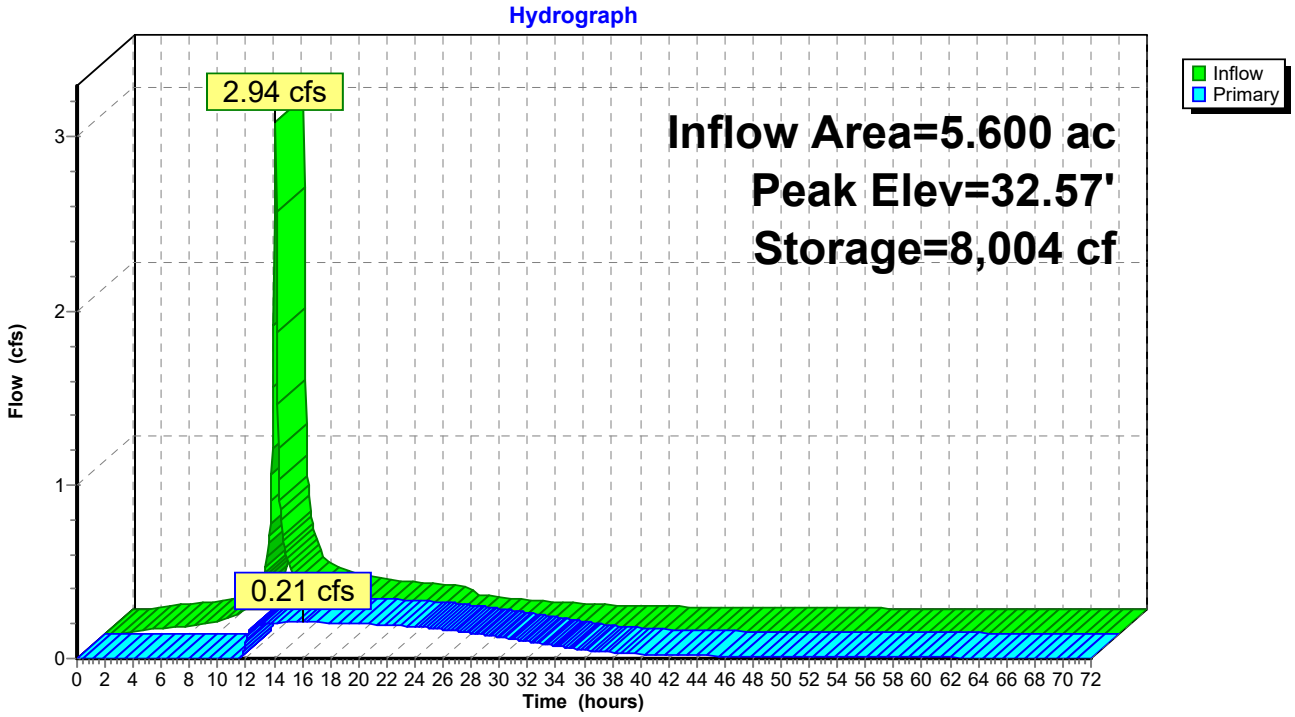
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	41,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,900	0	0
32.00	5,400	4,650	4,650
33.00	7,200	6,300	10,950
34.00	9,400	8,300	19,250
35.00	11,000	10,200	29,450
36.00	13,000	12,000	41,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.67'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 15.98 hrs HW=32.57' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.21 cfs @ 4.23 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 71P: Basin 33



Summary for Subcatchment 71S: Basin 20 - Pervious

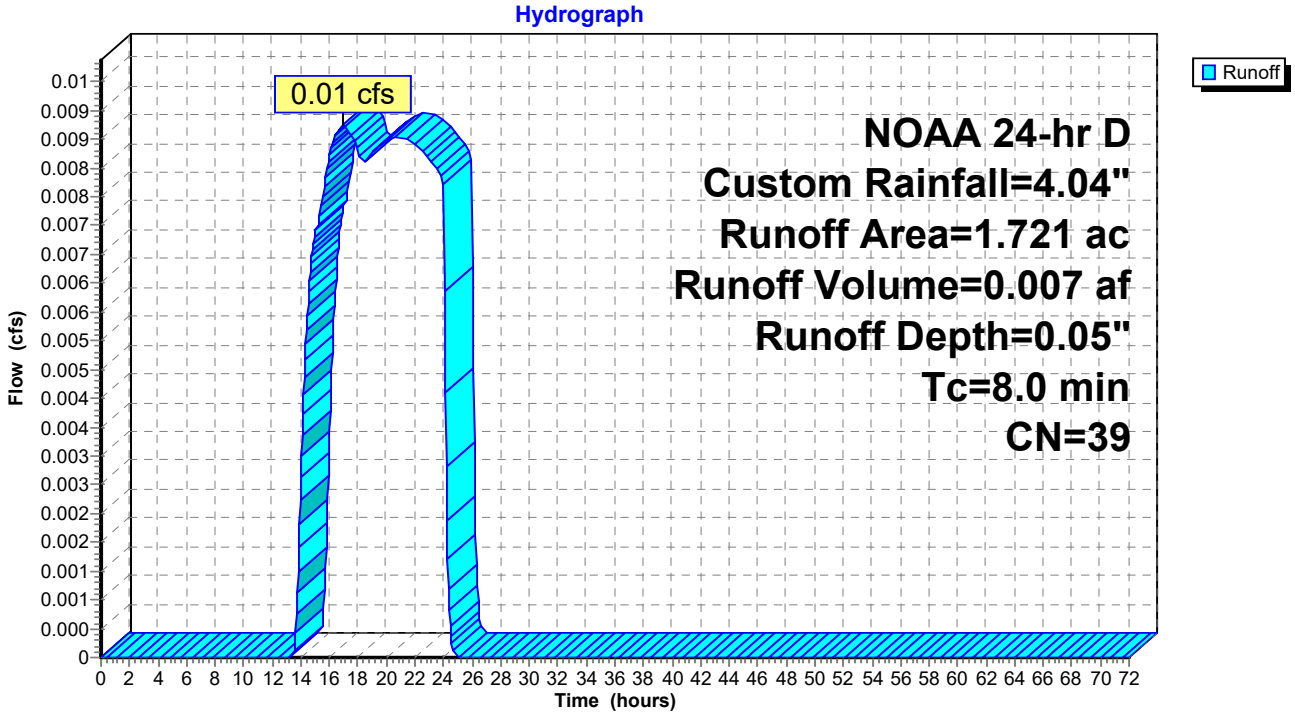
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.007 af, Depth= 0.05"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
1.721		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 71S: Basin 20 - Pervious



Summary for Pond 72P: Basin 21

Inflow Area = 4.621 ac, 35.73% Impervious, Inflow Depth > 1.13" for Custom event
Inflow = 1.96 cfs @ 12.10 hrs, Volume= 0.435 af
Outflow = 1.84 cfs @ 12.14 hrs, Volume= 0.392 af, Atten= 6%, Lag= 1.9 min
Primary = 1.84 cfs @ 12.14 hrs, Volume= 0.392 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.92' @ 12.14 hrs Surf.Area= 2,734 sf Storage= 2,170 cf

Plug-Flow detention time= 152.5 min calculated for 0.392 af (90% of inflow)
Center-of-Mass det. time= 62.0 min (1,107.6 - 1,045.6)

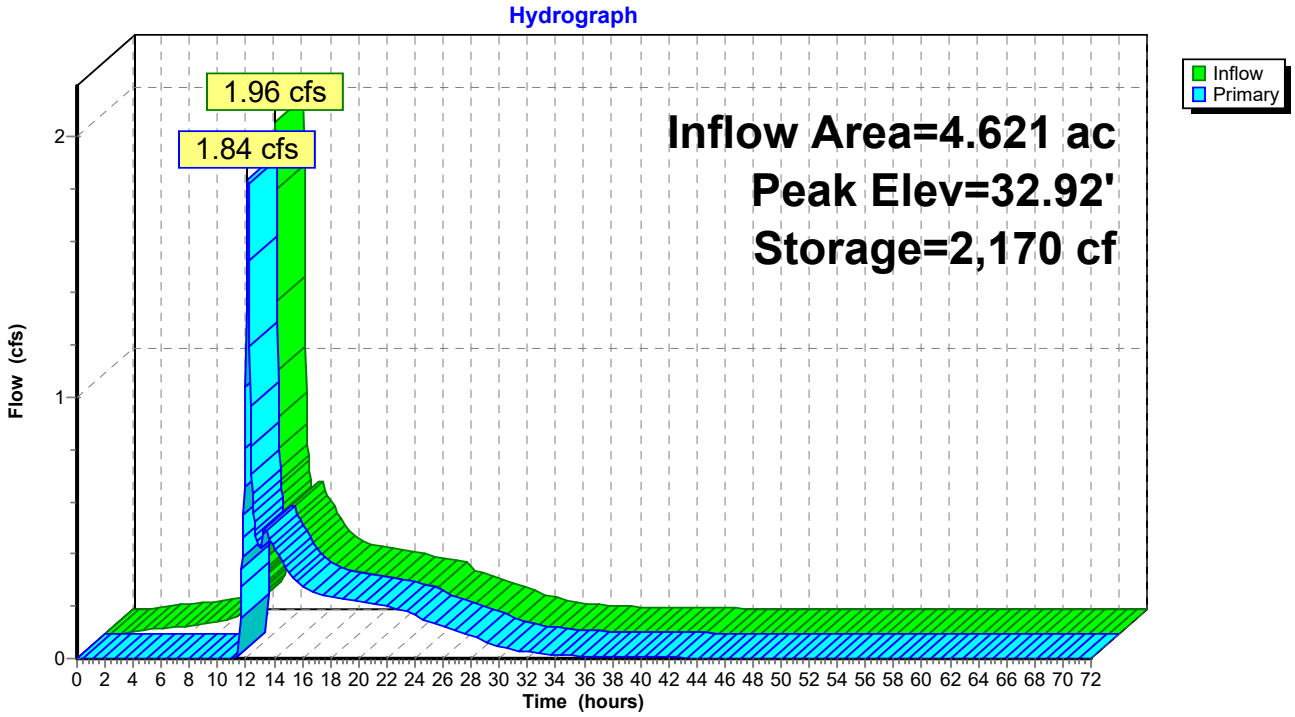
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	8,000 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,000	0	0
33.00	2,800	2,400	2,400
34.00	4,000	3,400	5,800
34.50	4,800	2,200	8,000

Device	Routing	Invert	Outlet Devices
#1	Primary	32.81'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.79 cfs @ 12.14 hrs HW=32.92' (Free Discharge)
1=Orifice/Grate (Weir Controls 1.79 cfs @ 1.06 fps)

Pond 72P: Basin 21



Summary for Pond 73P: Basin 32

Inflow Area = 2.998 ac, 24.25% Impervious, Inflow Depth = 0.96" for Custom event
Inflow = 2.69 cfs @ 12.10 hrs, Volume= 0.240 af
Outflow = 0.11 cfs @ 14.85 hrs, Volume= 0.169 af, Atten= 96%, Lag= 164.8 min
Primary = 0.11 cfs @ 14.85 hrs, Volume= 0.169 af
Routed to Pond 71P : Basin 33

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.59' @ 14.85 hrs Surf.Area= 12,933 sf Storage= 7,229 cf

Plug-Flow detention time= 810.3 min calculated for 0.169 af (70% of inflow)
Center-of-Mass det. time= 696.6 min (1,464.9 - 768.3)

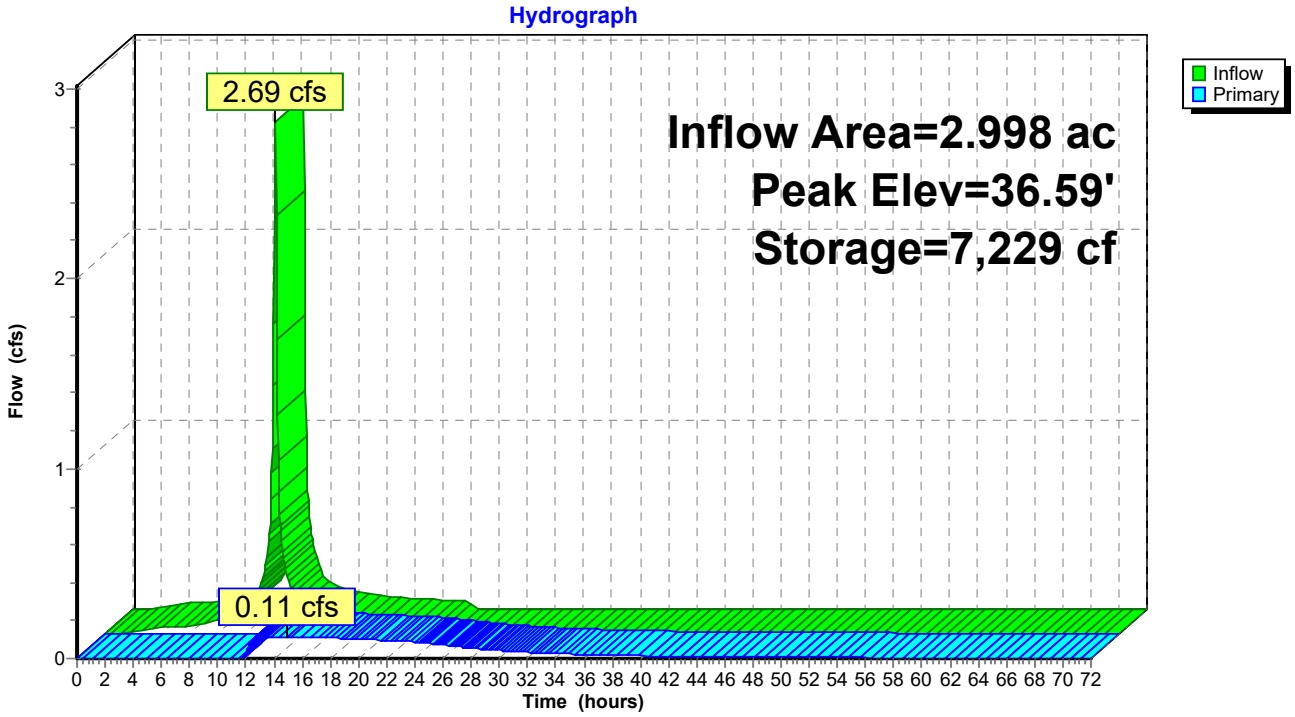
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	54,225 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	11,700	0	0
37.00	13,800	12,750	12,750
38.00	16,200	15,000	27,750
39.00	18,000	17,100	44,850
39.50	19,500	9,375	54,225

Device	Routing	Invert	Outlet Devices
#1	Primary	36.23'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	38.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.11 cfs @ 14.85 hrs HW=36.59' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.11 cfs @ 2.32 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 73P: Basin 32



Summary for Subcatchment 73S: Basin 21 - Impervious

[49] Hint: Tc<2dt may require smaller dt

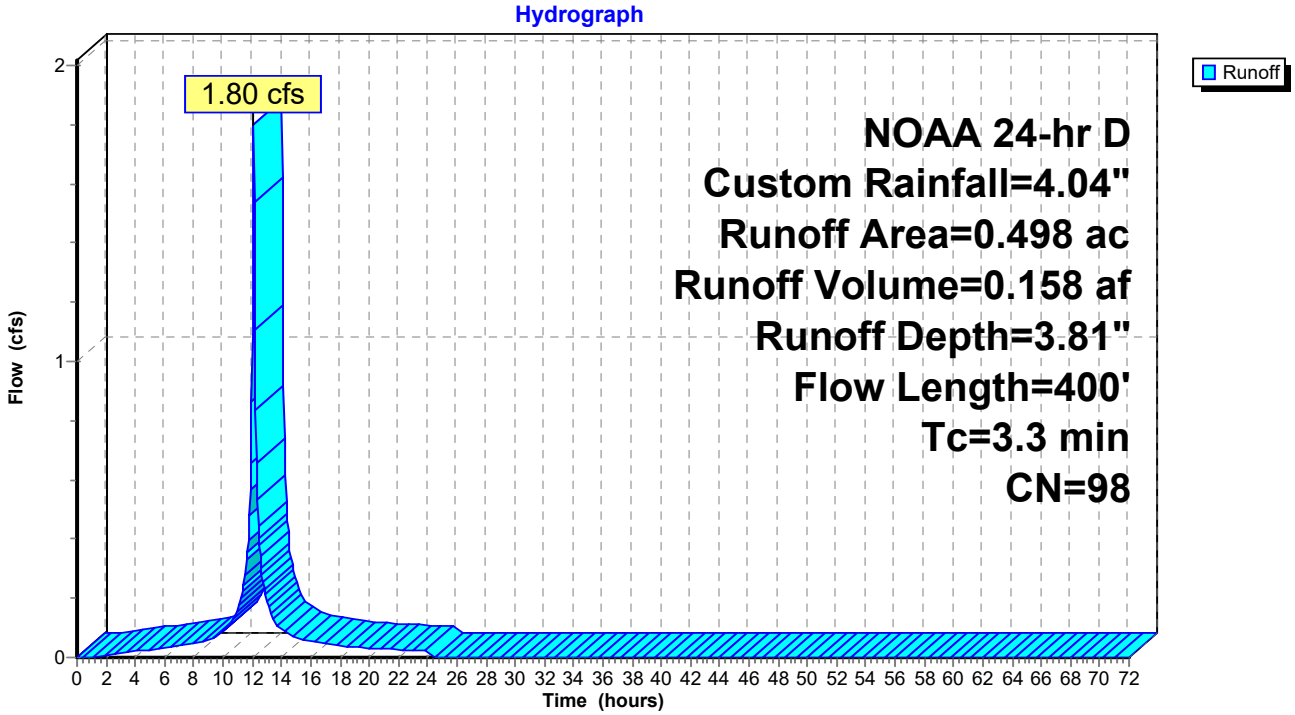
Runoff = 1.80 cfs @ 12.10 hrs, Volume= 0.158 af, Depth= 3.81"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.498	98	Impervious
	0.498		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.3	400	Total			

Subcatchment 73S: Basin 21 - Impervious



Summary for Pond 74P: Basin 39

Inflow Area = 20.988 ac, 20.72% Impervious, Inflow Depth > 0.62" for Custom event
Inflow = 3.00 cfs @ 12.16 hrs, Volume= 1.093 af
Outflow = 0.19 cfs @ 32.09 hrs, Volume= 0.496 af, Atten= 94%, Lag= 1,196.0 min
Primary = 0.19 cfs @ 32.09 hrs, Volume= 0.496 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.74' @ 32.09 hrs Surf.Area= 17,235 sf Storage= 36,455 cf

Plug-Flow detention time= 1,544.7 min calculated for 0.496 af (45% of inflow)
Center-of-Mass det. time= 1,150.3 min (2,382.3 - 1,232.1)

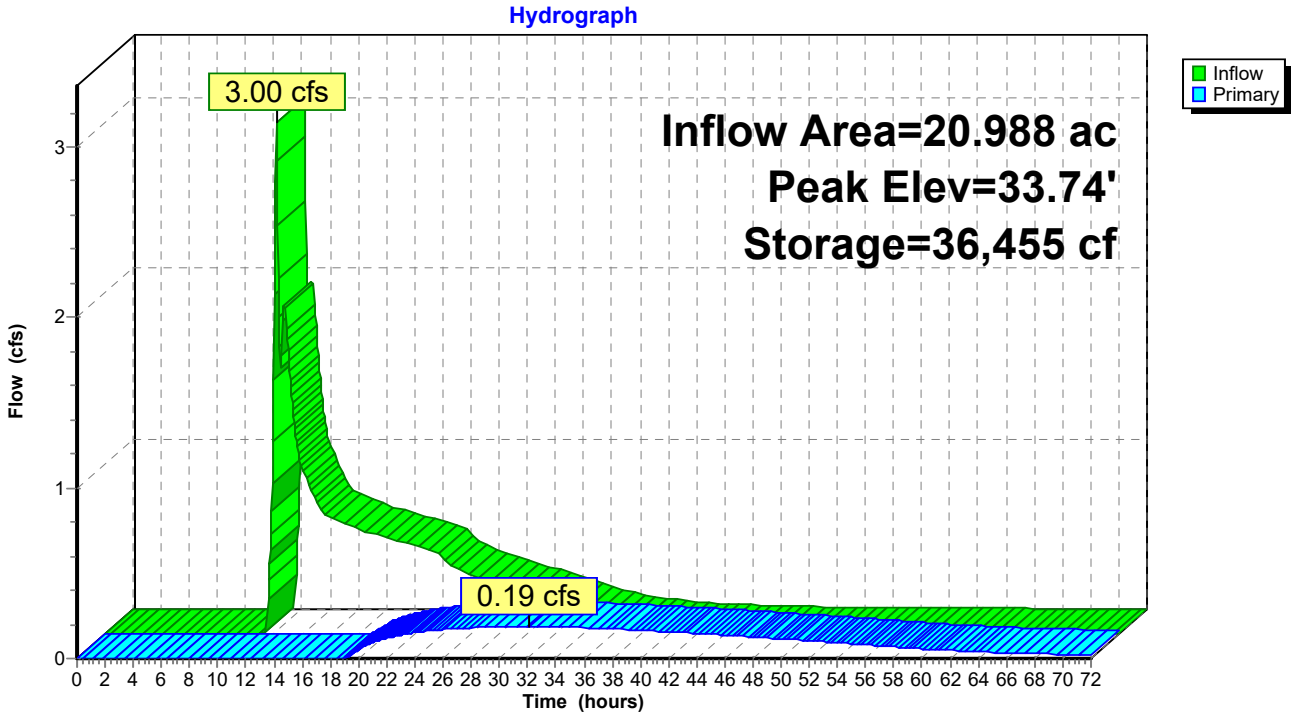
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	50,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	9,900	0	0
32.00	12,000	10,950	10,950
33.00	15,000	13,500	24,450
34.00	18,000	16,500	40,950
34.50	20,000	9,500	50,450

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 32.09 hrs HW=33.74' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.19 cfs @ 3.79 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 74P: Basin 39



Summary for Subcatchment 74S: Basin 21 - Pervious

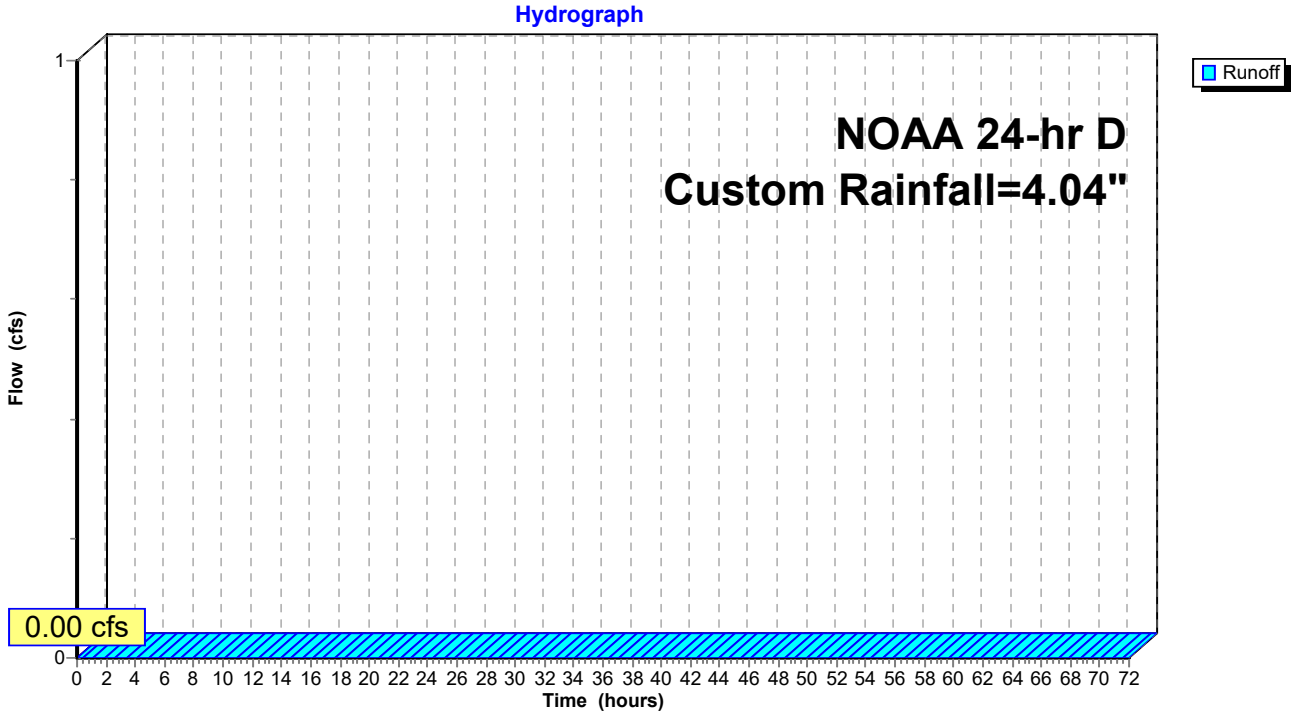
[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 74S: Basin 21 - Pervious



Summary for Pond 75P: Basin 25

Inflow Area = 17.778 ac, 32.79% Impervious, Inflow Depth > 0.99" for Custom event
Inflow = 10.52 cfs @ 12.12 hrs, Volume= 1.472 af
Outflow = 4.69 cfs @ 12.34 hrs, Volume= 1.386 af, Atten= 55%, Lag= 13.0 min
Primary = 4.69 cfs @ 12.34 hrs, Volume= 1.386 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 27.39' @ 12.34 hrs Surf.Area= 10,046 sf Storage= 15,497 cf

Plug-Flow detention time= 346.7 min calculated for 1.386 af (94% of inflow)
Center-of-Mass det. time= 287.6 min (1,278.3 - 990.6)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	28,125 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

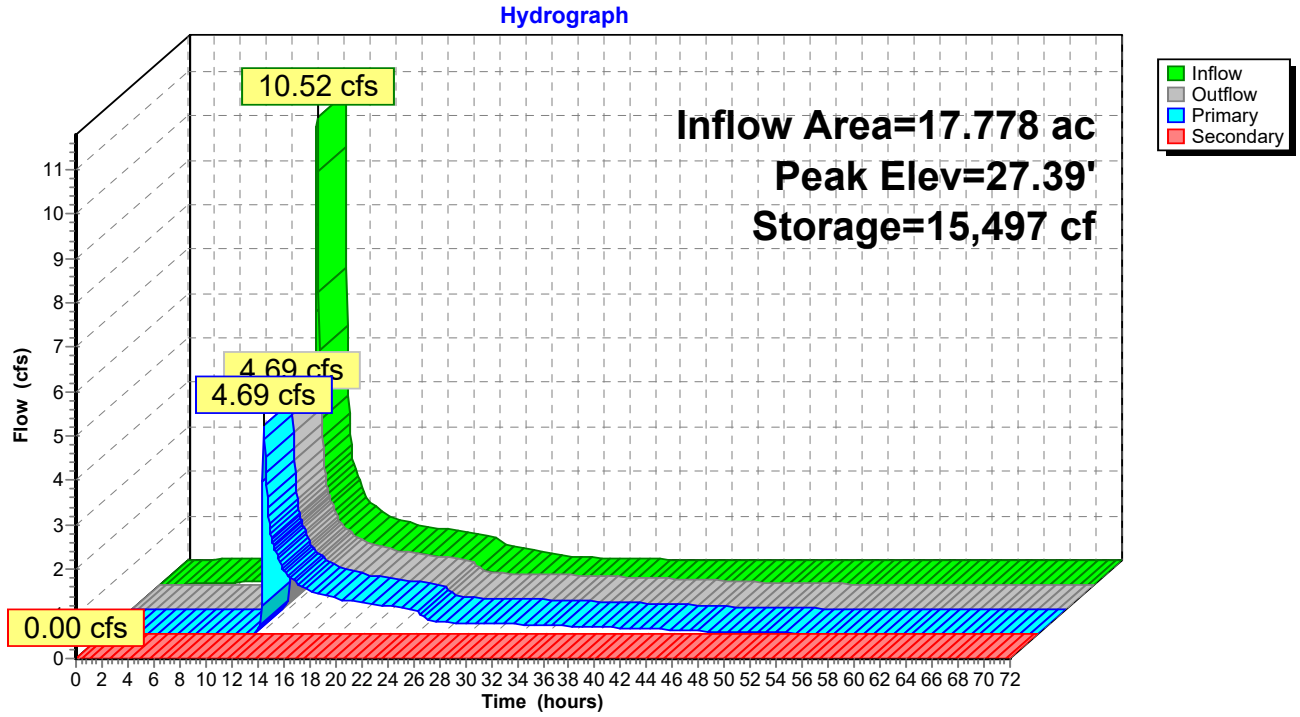
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	6,600	0	0
26.00	7,200	3,450	3,450
27.00	9,300	8,250	11,700
28.00	11,200	10,250	21,950
28.50	13,500	6,175	28,125

Device	Routing	Invert	Outlet Devices
#1	Primary	26.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	27.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	27.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.65 cfs @ 12.34 hrs HW=27.39' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.27 cfs @ 5.42 fps)
└**2=Orifice/Grate** (Weir Controls 4.39 cfs @ 1.43 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=25.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 75P: Basin 25



Summary for Pond 76P: Basin 38

Inflow Area = 1.797 ac, 28.16% Impervious, Inflow Depth = 1.11" for Custom event
Inflow = 1.98 cfs @ 12.09 hrs, Volume= 0.166 af
Outflow = 0.14 cfs @ 13.41 hrs, Volume= 0.121 af, Atten= 93%, Lag= 78.8 min
Primary = 0.14 cfs @ 13.41 hrs, Volume= 0.121 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.82' @ 13.41 hrs Surf.Area= 6,372 sf Storage= 4,608 cf

Plug-Flow detention time= 520.0 min calculated for 0.121 af (73% of inflow)
Center-of-Mass det. time= 415.3 min (1,179.7 - 764.4)

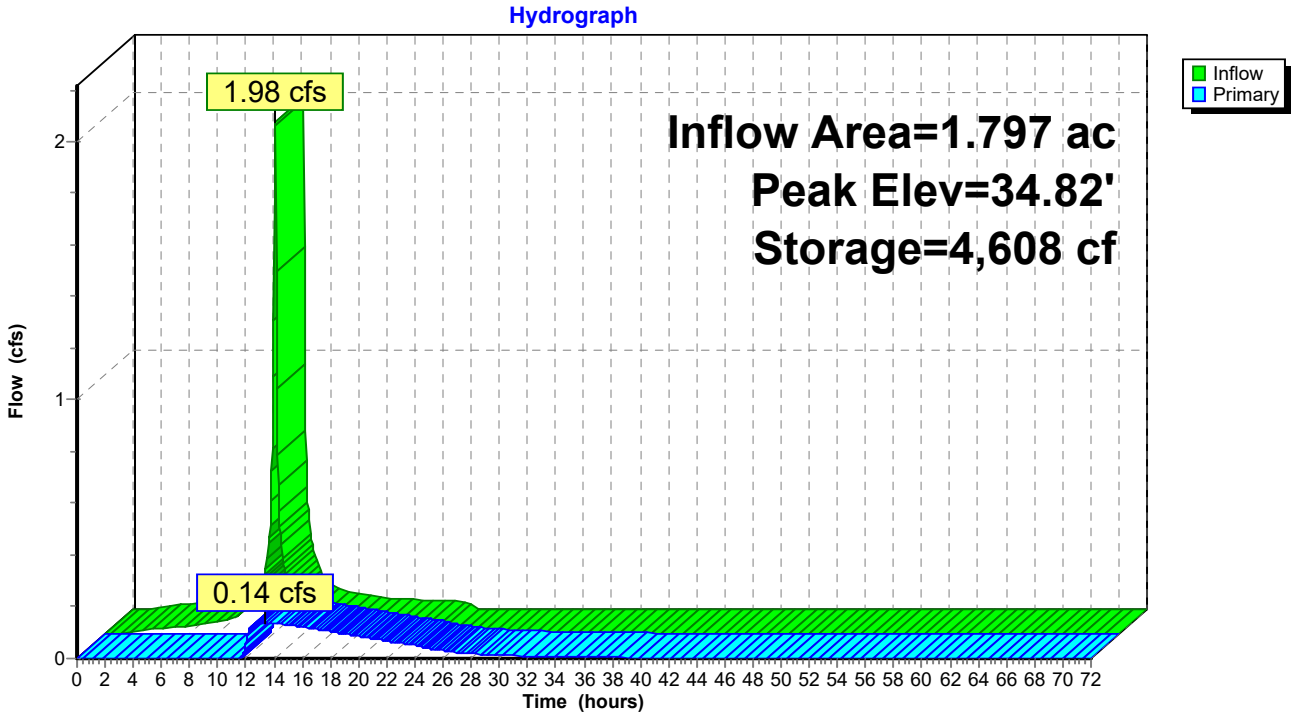
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	18,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,900	0	0
35.00	6,700	5,800	5,800
36.00	9,000	7,850	13,650
36.50	10,200	4,800	18,450

Device	Routing	Invert	Outlet Devices
#1	Primary	34.36'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.14 cfs @ 13.41 hrs HW=34.82' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.14 cfs @ 2.78 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 76P: Basin 38



Summary for Subcatchment 76S: Basin 25 - Impervious

[49] Hint: Tc<2dt may require smaller dt

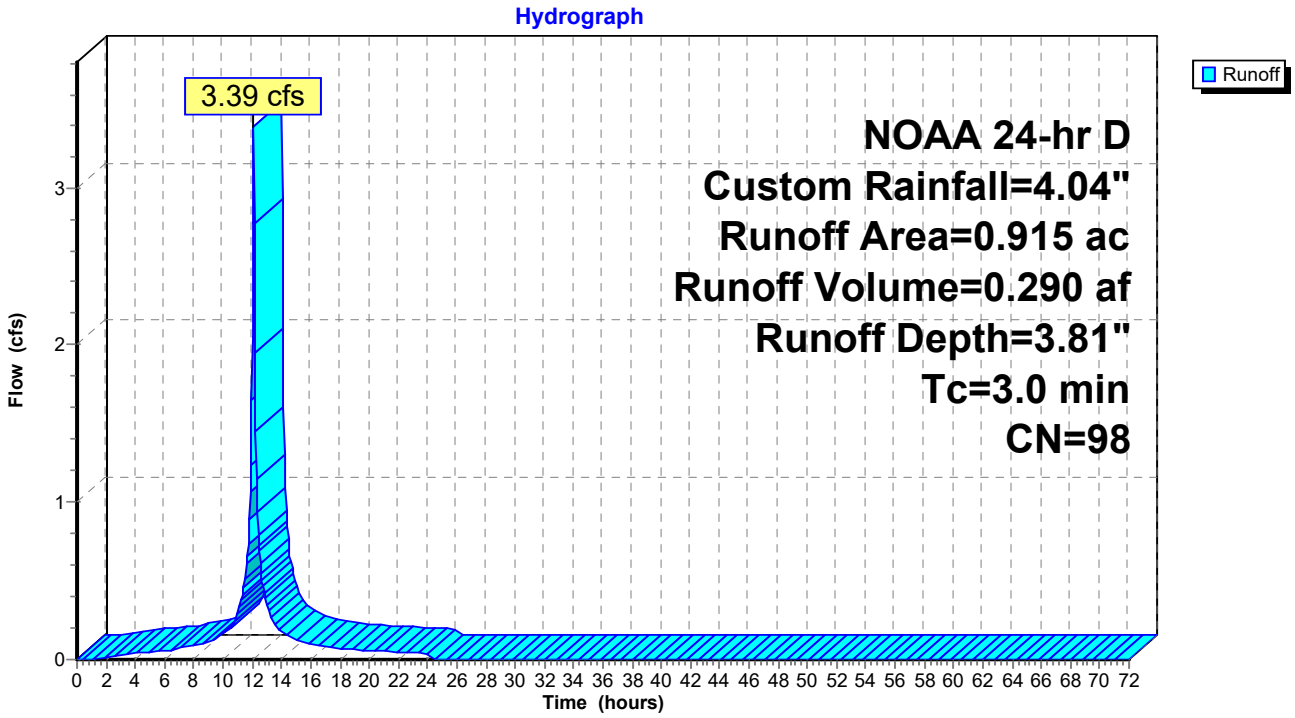
Runoff = 3.39 cfs @ 12.10 hrs, Volume= 0.290 af, Depth= 3.81"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 76S: Basin 25 - Impervious



Summary for Pond 77P: Basin 37

Inflow Area = 20.254 ac, 21.47% Impervious, Inflow Depth > 0.68" for Custom event
Inflow = 3.20 cfs @ 12.11 hrs, Volume= 1.144 af
Outflow = 3.00 cfs @ 12.16 hrs, Volume= 1.090 af, Atten= 6%, Lag= 2.5 min
Primary = 3.00 cfs @ 12.16 hrs, Volume= 1.090 af
Routed to Pond 74P : Basin 39

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.85' @ 12.16 hrs Surf.Area= 3,849 sf Storage= 2,906 cf

Plug-Flow detention time= 111.6 min calculated for 1.090 af (95% of inflow)
Center-of-Mass det. time= 38.5 min (1,232.3 - 1,193.8)

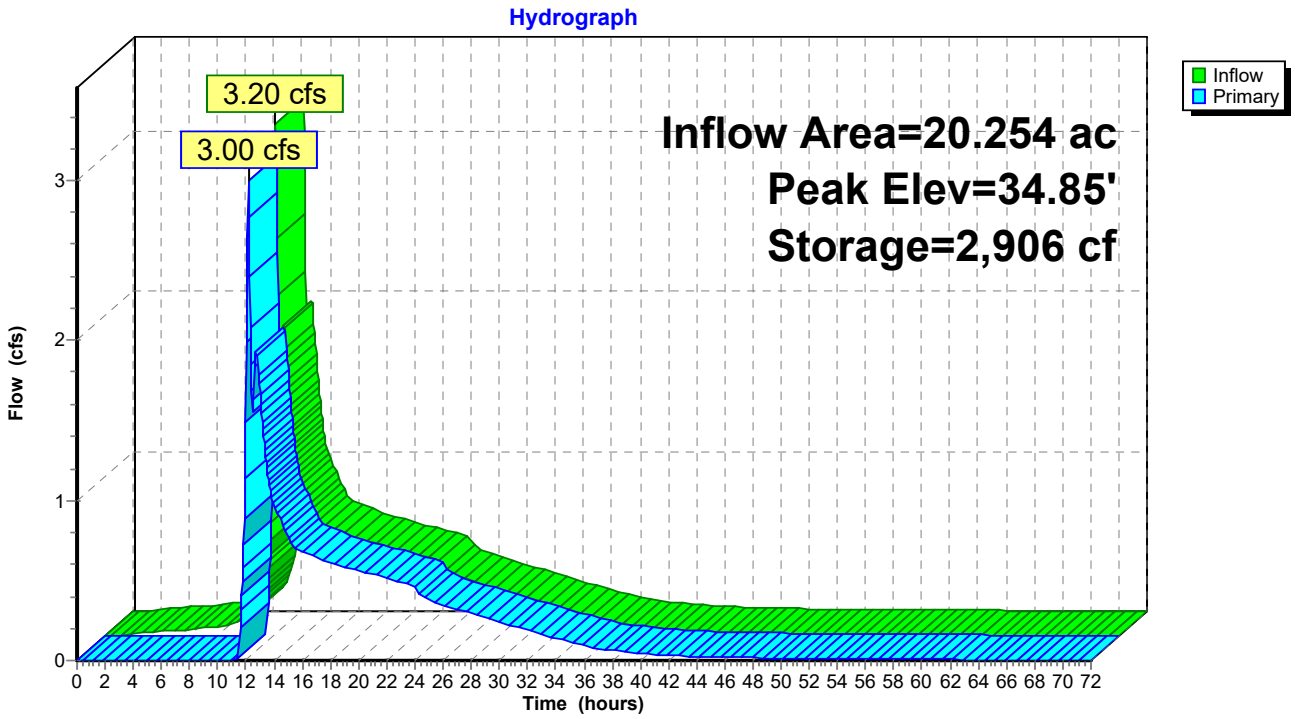
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	5,650 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	3,000	0	0
35.00	4,000	3,500	3,500
35.50	4,600	2,150	5,650

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.97 cfs @ 12.16 hrs HW=34.85' (Free Discharge)
1=Orifice/Grate (Weir Controls 2.97 cfs @ 1.26 fps)

Pond 77P: Basin 37



Summary for Subcatchment 77S: Basin 25 - Pervious

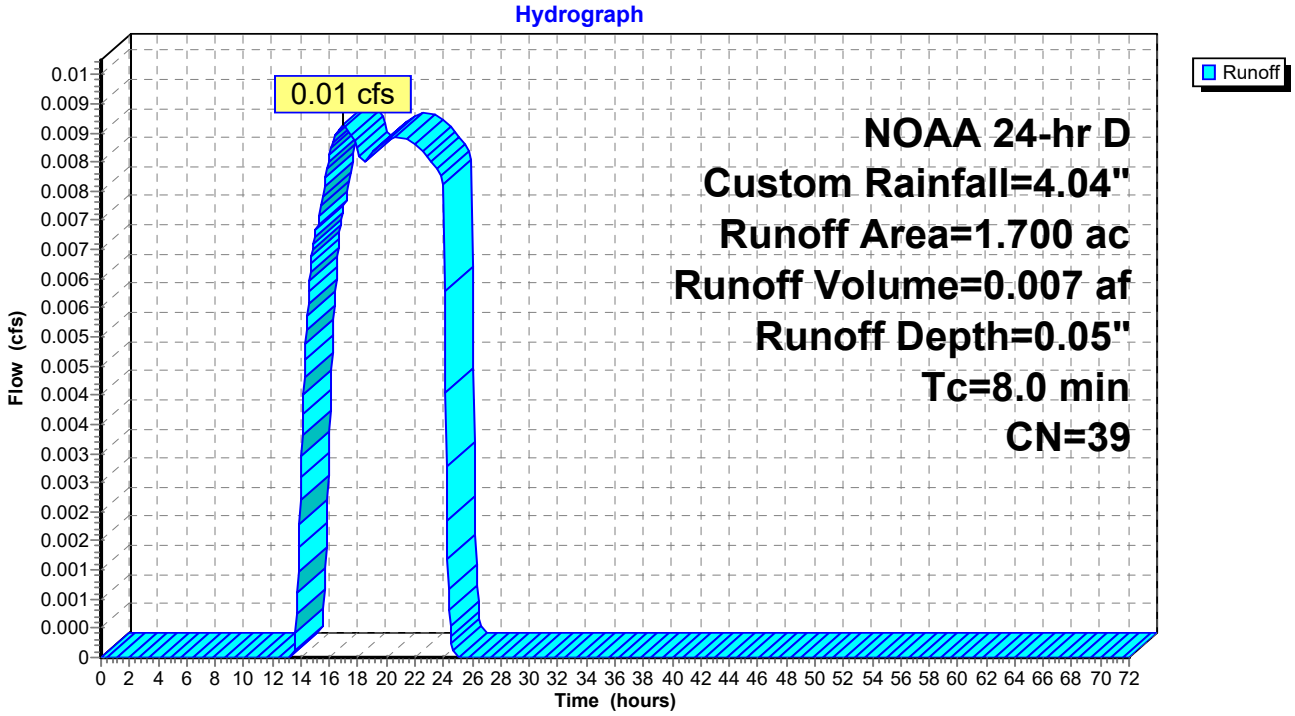
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.007 af, Depth= 0.05"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.700	39	>75% Grass cover, Good, HSG A
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 77S: Basin 25 - Pervious



Summary for Pond 78P: Basin 24

Inflow Area = 2.540 ac, 35.00% Impervious, Inflow Depth = 1.36" for Custom event
Inflow = 3.29 cfs @ 12.10 hrs, Volume= 0.289 af
Outflow = 2.86 cfs @ 12.15 hrs, Volume= 0.213 af, Atten= 13%, Lag= 2.7 min
Primary = 2.86 cfs @ 12.15 hrs, Volume= 0.213 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 30.85' @ 12.15 hrs Surf.Area= 5,622 sf Storage= 4,108 cf

Plug-Flow detention time= 197.4 min calculated for 0.212 af (74% of inflow)
Center-of-Mass det. time= 94.4 min (856.4 - 762.0)

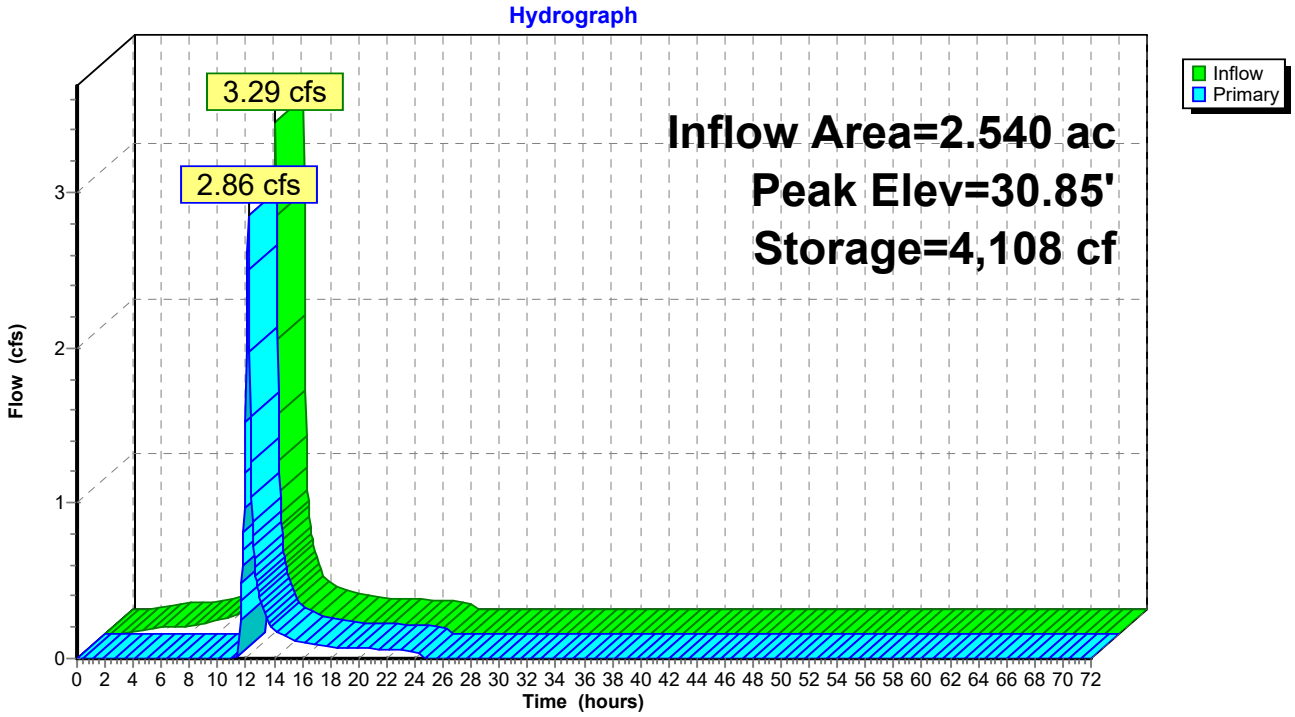
Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	16,275 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	4,000	0	0
31.00	5,900	4,950	4,950
32.00	8,000	6,950	11,900
32.50	9,500	4,375	16,275

Device	Routing	Invert	Outlet Devices
#1	Primary	30.71'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.83 cfs @ 12.15 hrs HW=30.85' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 2.83 cfs @ 1.24 fps)

Pond 78P: Basin 24



Summary for Pond 79P: Basin 34

[92] Warning: Device #2 is above defined storage

Inflow Area = 1.715 ac, 25.31% Impervious, Inflow Depth = 1.00" for Custom event
Inflow = 1.61 cfs @ 12.10 hrs, Volume= 0.143 af
Outflow = 0.11 cfs @ 13.47 hrs, Volume= 0.104 af, Atten= 93%, Lag= 82.0 min
Primary = 0.11 cfs @ 13.47 hrs, Volume= 0.104 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.62' @ 13.47 hrs Surf.Area= 7,130 sf Storage= 3,989 cf

Plug-Flow detention time= 562.2 min calculated for 0.103 af (72% of inflow)
Center-of-Mass det. time= 455.1 min (1,222.6 - 767.4)

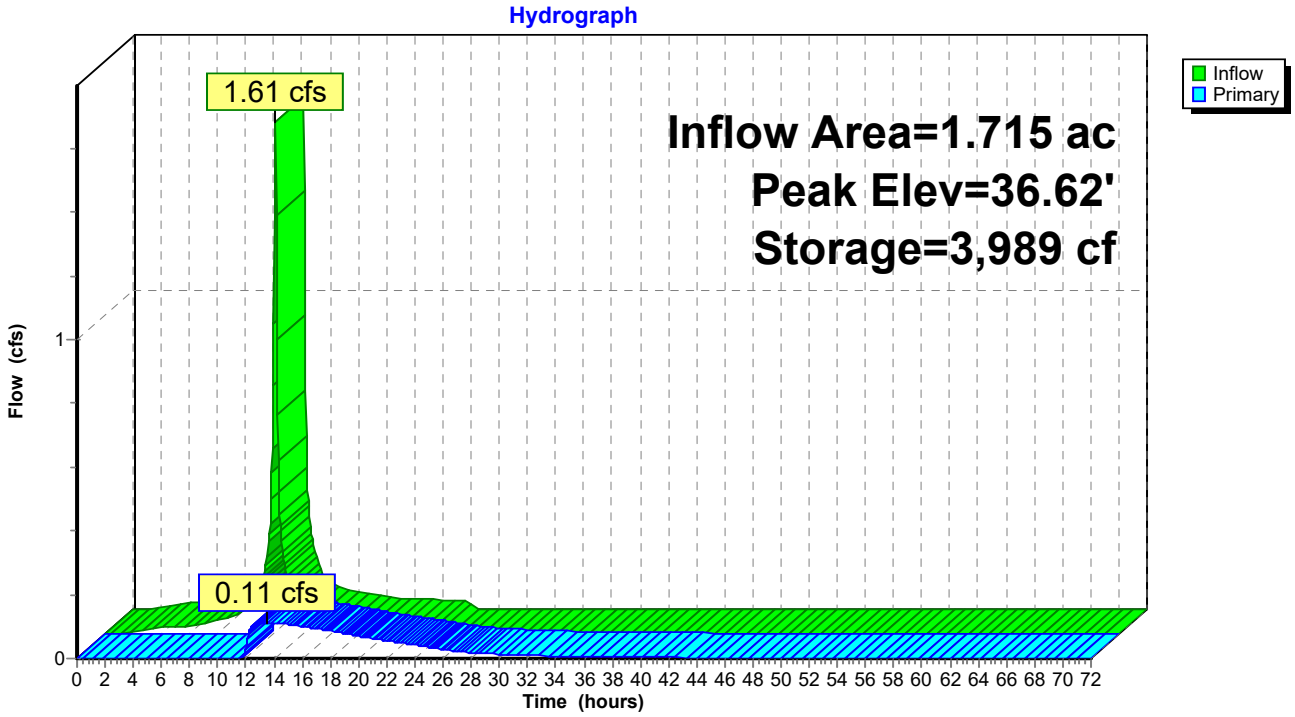
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	11,200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	5,700	0	0
37.00	8,000	6,850	6,850
37.50	9,400	4,350	11,200

Device	Routing	Invert	Outlet Devices
#1	Primary	36.27'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.11 cfs @ 13.47 hrs HW=36.62' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.11 cfs @ 2.29 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 79P: Basin 34



Summary for Subcatchment 79S: Basin 24 - Impervious

[49] Hint: Tc<2dt may require smaller dt

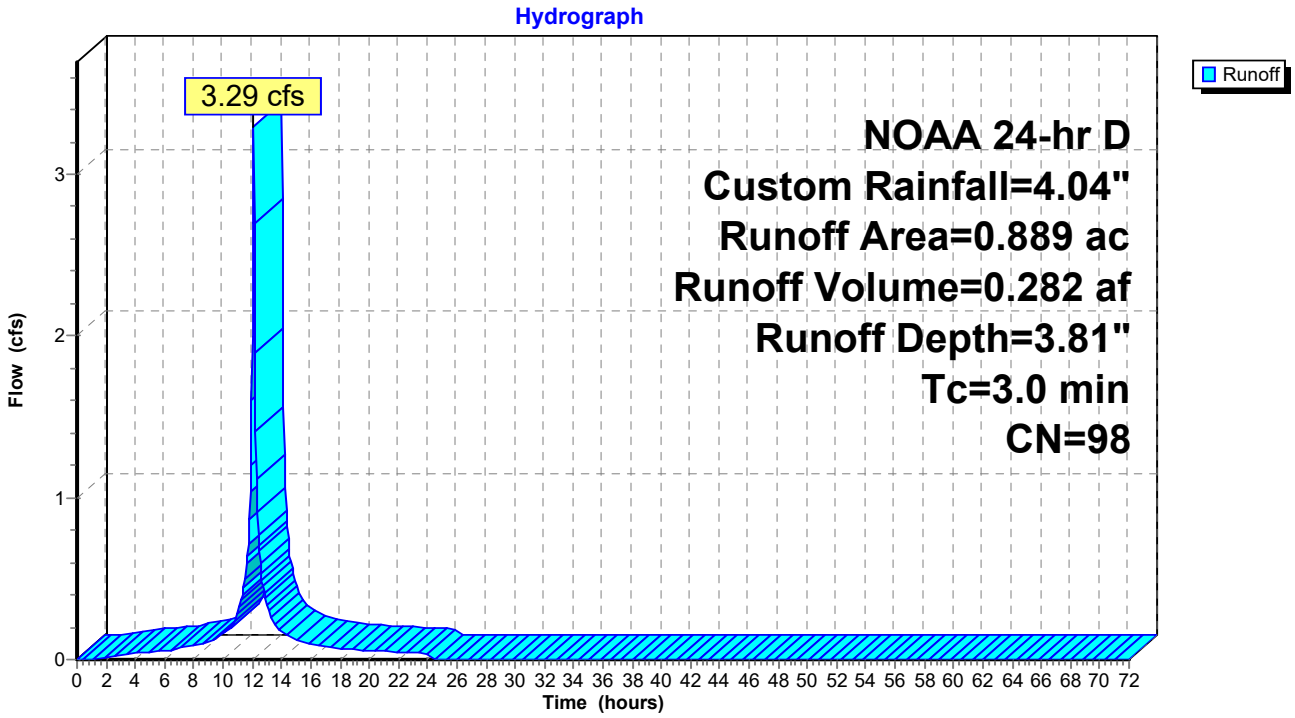
Runoff = 3.29 cfs @ 12.10 hrs, Volume= 0.282 af, Depth= 3.81"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.889	98	Impervious
	0.889		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 79S: Basin 24 - Impervious



Summary for Pond 80P: Basin 35

Inflow Area = 14.918 ac, 10.66% Impervious, Inflow Depth = 0.41" for Custom event
Inflow = 5.46 cfs @ 12.11 hrs, Volume= 0.504 af
Outflow = 0.23 cfs @ 14.87 hrs, Volume= 0.363 af, Atten= 96%, Lag= 165.2 min
Primary = 0.23 cfs @ 14.87 hrs, Volume= 0.363 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.86' @ 14.87 hrs Surf.Area= 10,409 sf Storage= 15,840 cf

Plug-Flow detention time= 768.7 min calculated for 0.363 af (72% of inflow)
Center-of-Mass det. time= 668.4 min (1,422.3 - 753.9)

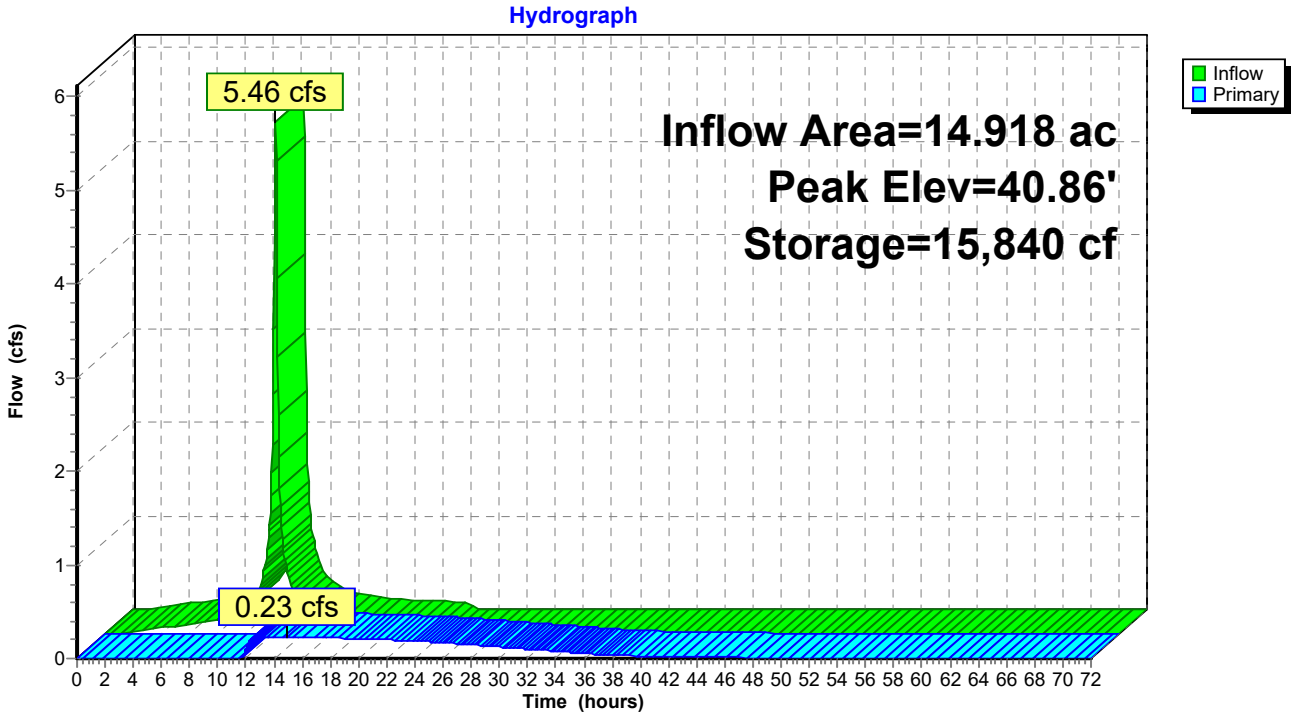
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	22,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	6,700	0	0
40.00	8,600	7,650	7,650
41.00	10,700	9,650	17,300
41.50	12,000	5,675	22,975

Device	Routing	Invert	Outlet Devices
#1	Primary	39.80'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.23 cfs @ 14.87 hrs HW=40.86' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.23 cfs @ 4.66 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 80P: Basin 35



Summary for Subcatchment 80S: Basin 24 - Pervious

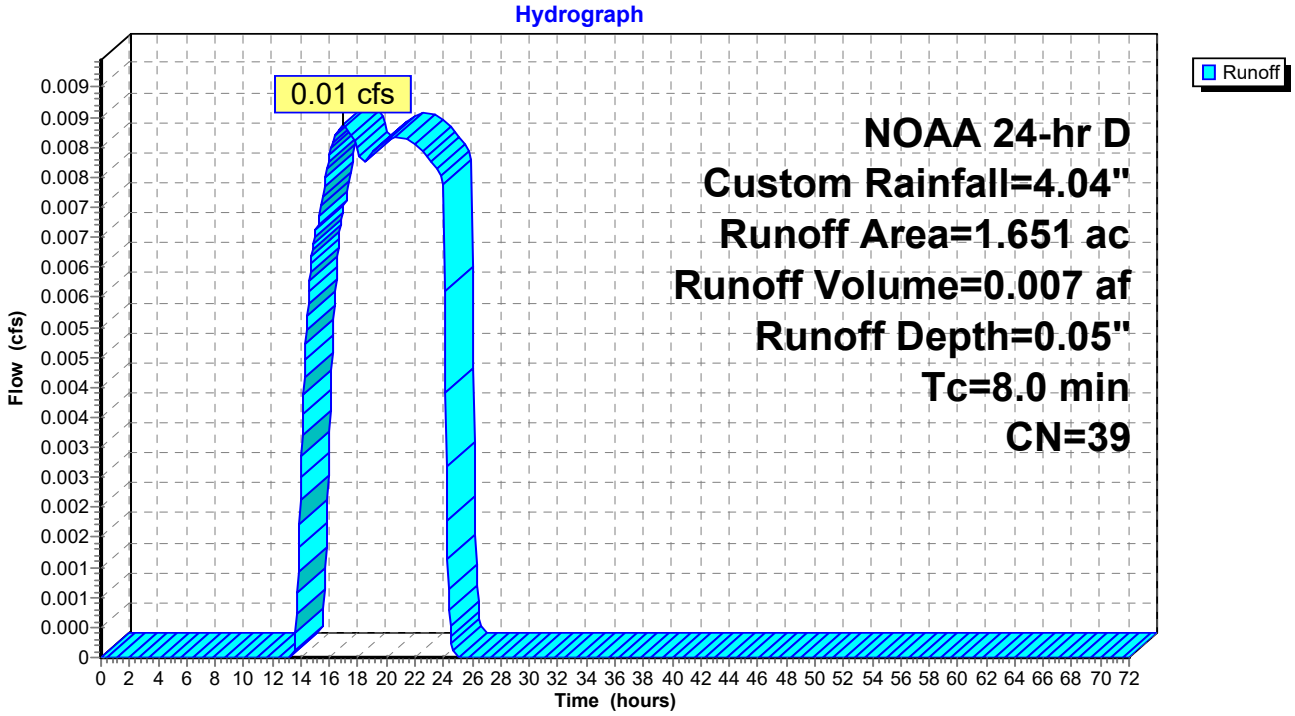
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.007 af, Depth= 0.05"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.651	39	>75% Grass cover, Good, HSG A
1.651		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 80S: Basin 24 - Pervious



Summary for Pond 81P: Basin 27

Inflow Area = 3.012 ac, 25.00% Impervious, Inflow Depth = 0.99" for Custom event
Inflow = 2.79 cfs @ 12.10 hrs, Volume= 0.248 af
Outflow = 0.28 cfs @ 13.06 hrs, Volume= 0.183 af, Atten= 90%, Lag= 57.5 min
Primary = 0.28 cfs @ 13.06 hrs, Volume= 0.183 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.01' @ 13.06 hrs Surf.Area= 5,828 sf Storage= 6,744 cf

Plug-Flow detention time= 484.9 min calculated for 0.183 af (74% of inflow)
Center-of-Mass det. time= 380.1 min (1,147.8 - 767.7)

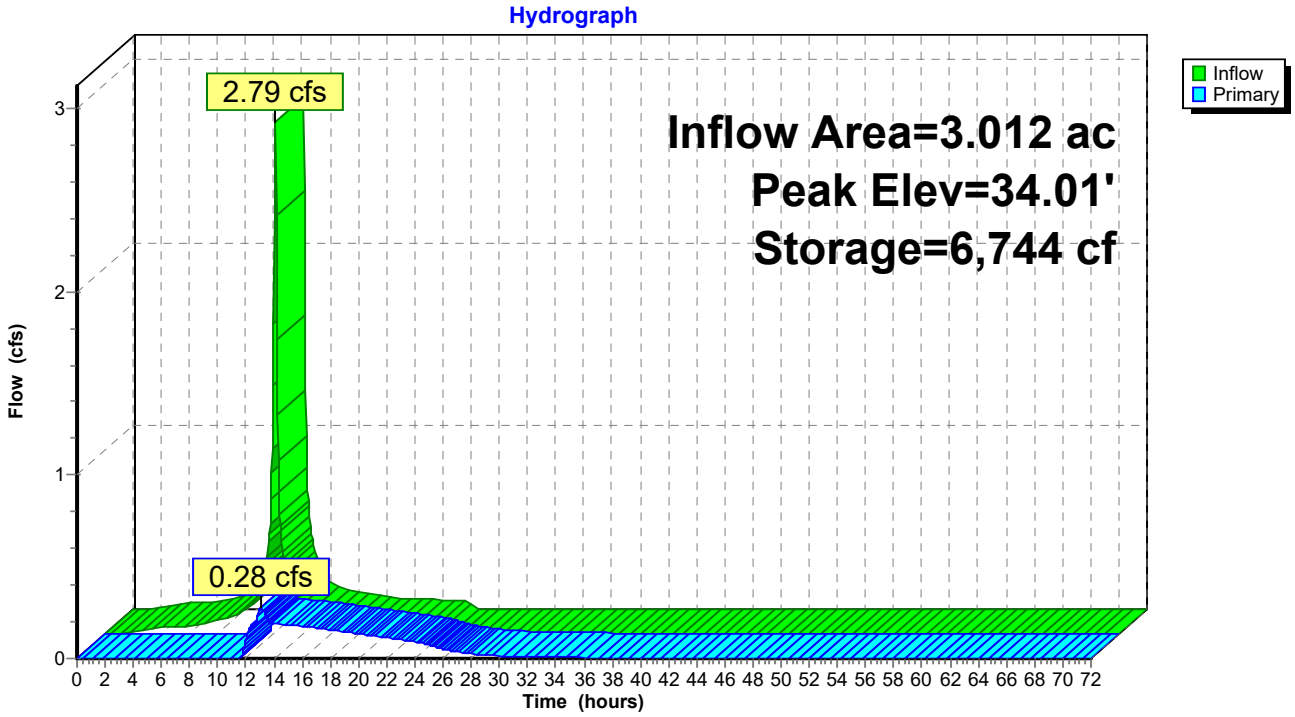
Volume	Invert	Avail.Storage	Storage Description
#1	32.50'	9,875 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.50	3,400	0	0
33.00	3,900	1,825	1,825
34.00	5,800	4,850	6,675
34.50	7,000	3,200	9,875

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 13.06 hrs HW=34.01' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.19 cfs @ 3.87 fps)
2=Orifice/Grate (Weir Controls 0.07 cfs @ 0.36 fps)

Pond 81P: Basin 27



Summary for Pond 82P: Basin 36

Inflow Area = 1.697 ac,100.00% Impervious, Inflow Depth = 3.81" for Custom event
Inflow = 5.28 cfs @ 12.11 hrs, Volume= 0.538 af
Outflow = 1.02 cfs @ 12.71 hrs, Volume= 0.389 af, Atten= 81%, Lag= 36.0 min
Primary = 1.02 cfs @ 12.71 hrs, Volume= 0.389 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.06' @ 12.71 hrs Surf.Area= 9,309 sf Storage= 14,711 cf

Plug-Flow detention time= 605.9 min calculated for 0.388 af (72% of inflow)
Center-of-Mass det. time= 508.1 min (1,264.0 - 756.0)

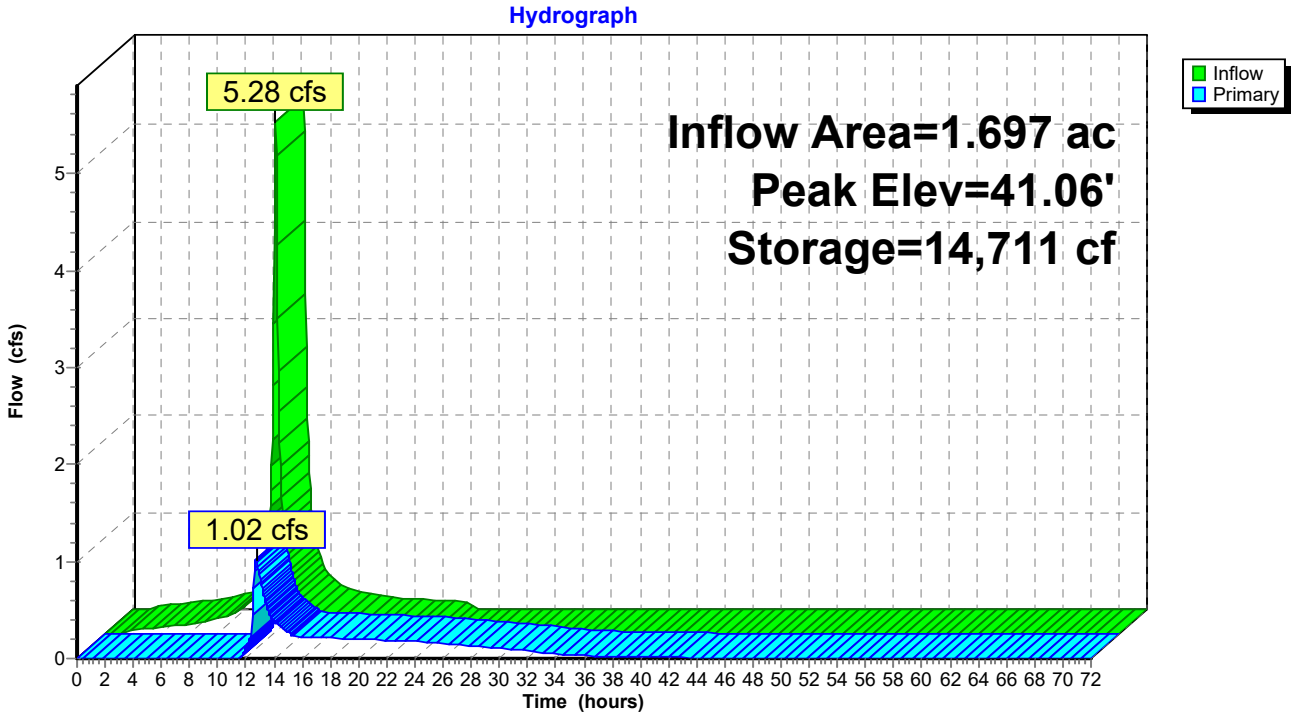
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	18,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	5,300	0	0
40.00	6,900	6,100	6,100
41.00	9,200	8,050	14,150
41.50	10,100	4,825	18,975

Device	Routing	Invert	Outlet Devices
#1	Primary	40.04'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.00 cfs @ 12.71 hrs HW=41.06' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.22 cfs @ 4.56 fps)
2=Orifice/Grate (Weir Controls 0.78 cfs @ 0.80 fps)

Pond 82P: Basin 36



Summary for Subcatchment 82S: Basin 27 - Impervious

[49] Hint: Tc<2dt may require smaller dt

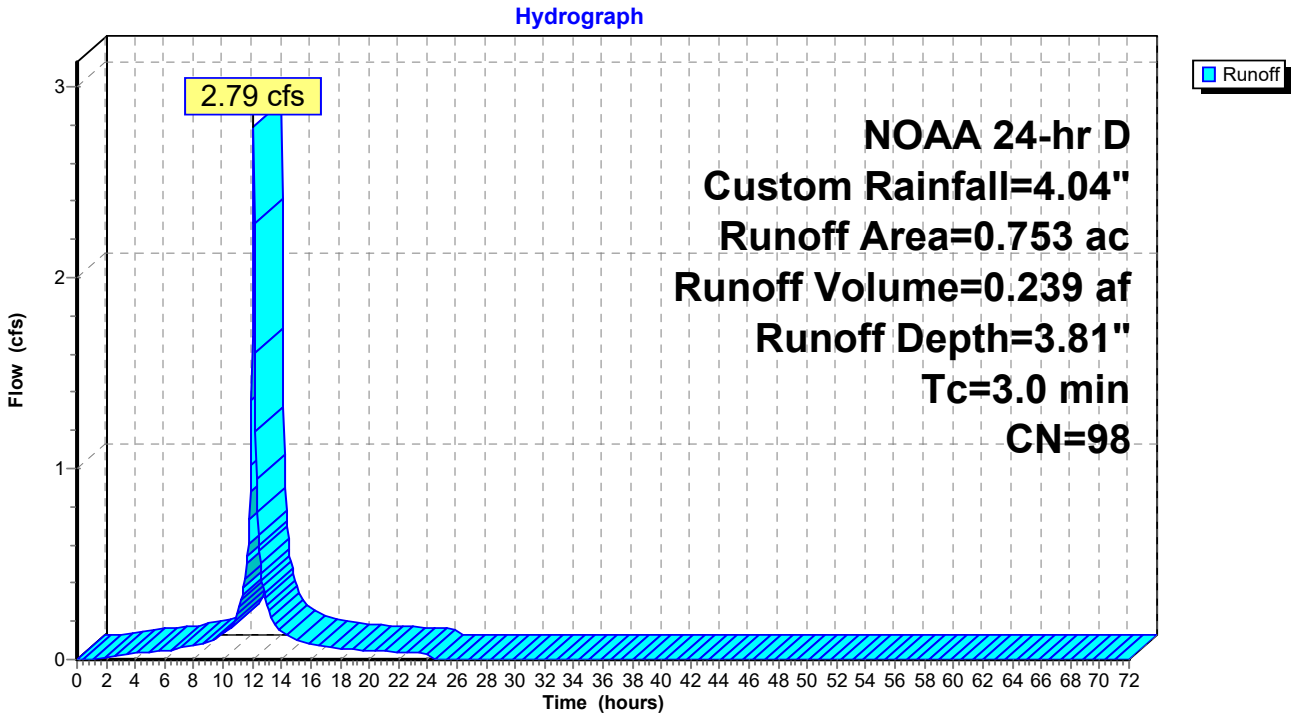
Runoff = 2.79 cfs @ 12.10 hrs, Volume= 0.239 af, Depth= 3.81"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.753	98	
	0.753		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 82S: Basin 27 - Impervious



Summary for Subcatchment 83S: Basin 27 - Pervious

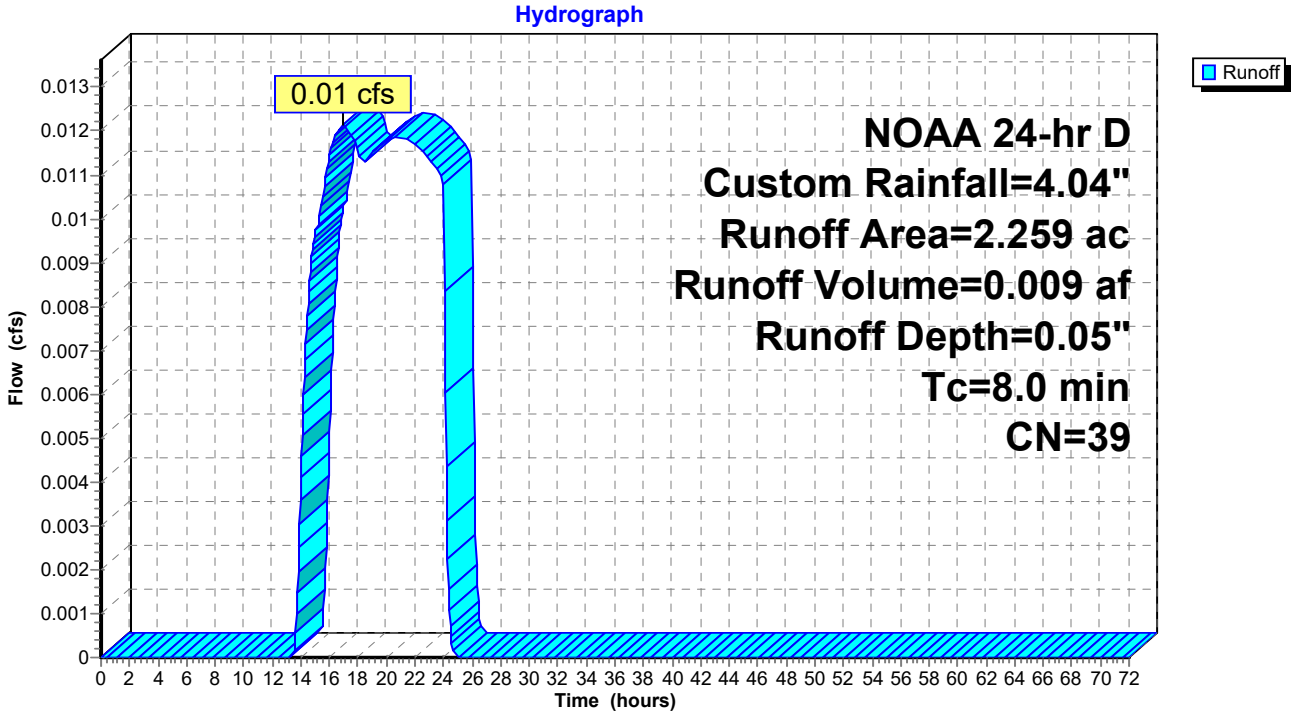
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.009 af, Depth= 0.05"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
2.259	39	>75% Grass cover, Good, HSG A
2.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 83S: Basin 27 - Pervious



Summary for Subcatchment 84S: Basin 29 - Impervious

[49] Hint: Tc<2dt may require smaller dt

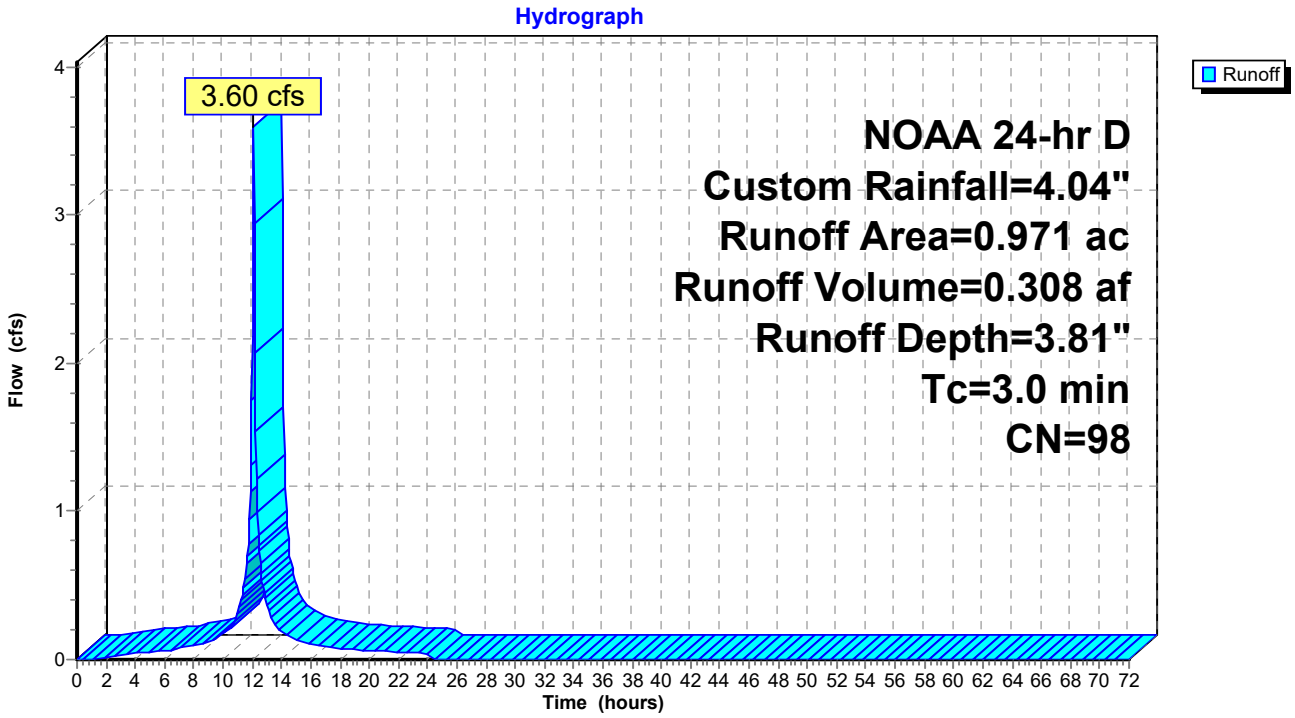
Runoff = 3.60 cfs @ 12.10 hrs, Volume= 0.308 af, Depth= 3.81"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.971	98	Impervious
	0.971		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 84S: Basin 29 - Impervious



Summary for Pond 85P: Basin 28

Inflow Area = 1.744 ac, 35.03% Impervious, Inflow Depth = 1.37" for Custom event
Inflow = 2.23 cfs @ 12.10 hrs, Volume= 0.198 af
Outflow = 2.05 cfs @ 12.14 hrs, Volume= 0.146 af, Atten= 8%, Lag= 2.1 min
Primary = 2.05 cfs @ 12.14 hrs, Volume= 0.146 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.52' @ 12.14 hrs Surf.Area= 3,218 sf Storage= 2,649 cf

Plug-Flow detention time= 194.3 min calculated for 0.146 af (74% of inflow)
Center-of-Mass det. time= 90.9 min (853.1 - 762.2)

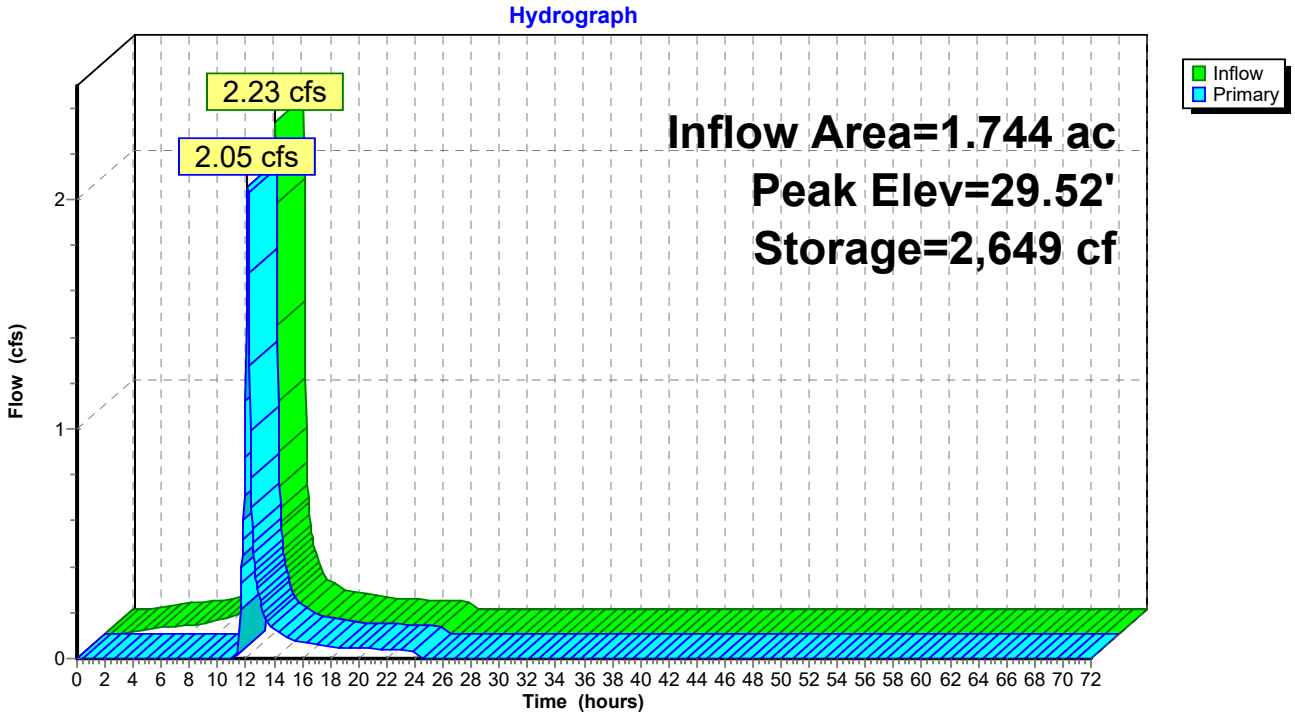
Volume	Invert	Avail.Storage	Storage Description
#1	28.50'	6,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.50	2,000	0	0
29.00	2,600	1,150	1,150
30.00	3,800	3,200	4,350
30.50	4,600	2,100	6,450

Device	Routing	Invert	Outlet Devices
#1	Primary	29.40'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.00 cfs @ 12.14 hrs HW=29.51' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 2.00 cfs @ 1.10 fps)

Pond 85P: Basin 28



Summary for Subcatchment 85S: Basin 29 - Pervious

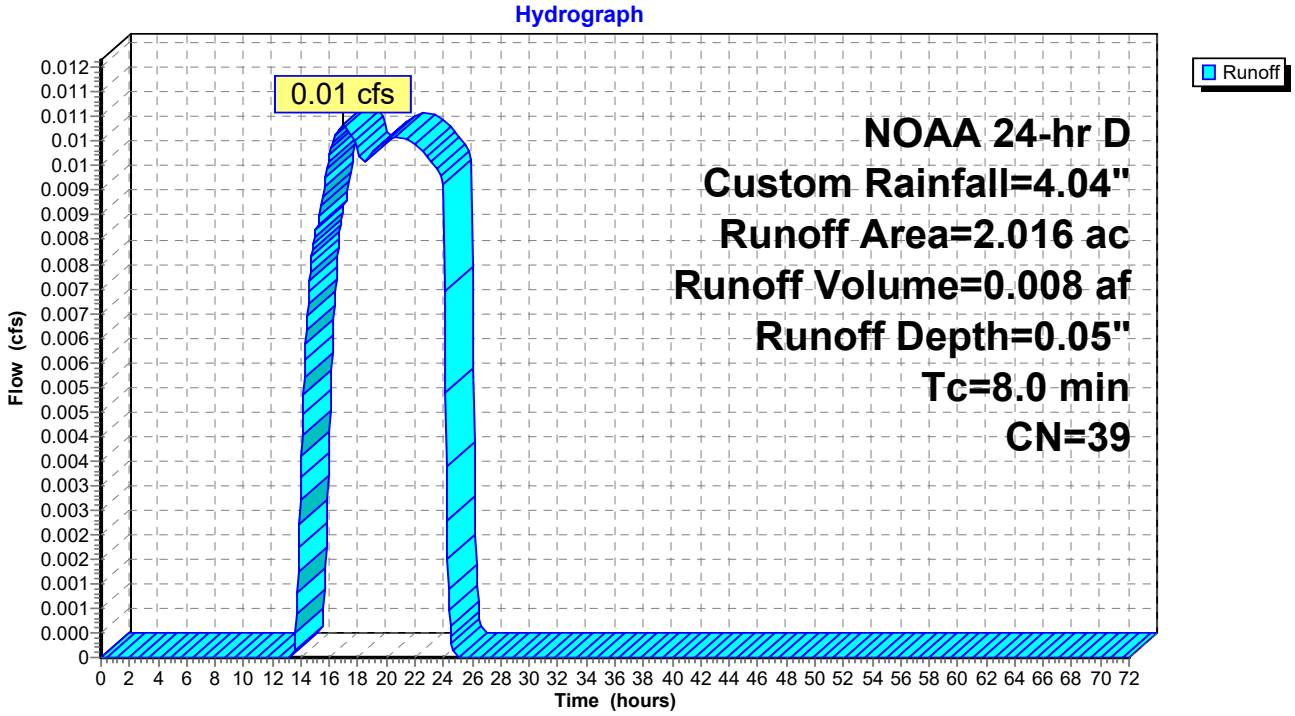
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.008 af, Depth= 0.05"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
2.016	39	>75% Grass cover, Good, HSG A
2.016		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 85S: Basin 29 - Pervious

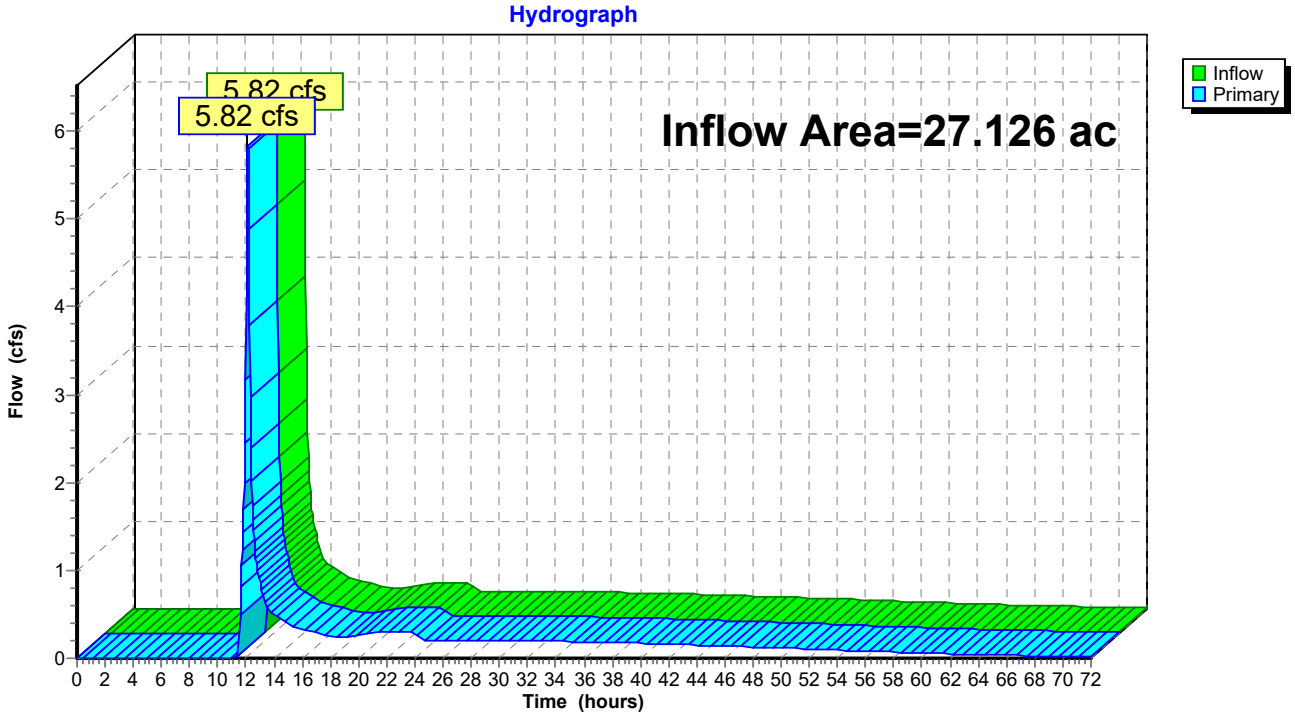


Summary for Link 86L: Outlet to Wet Pond

Inflow Area = 27.126 ac, 24.26% Impervious, Inflow Depth > 0.45" for Custom event
Inflow = 5.82 cfs @ 12.14 hrs, Volume= 1.027 af
Primary = 5.82 cfs @ 12.14 hrs, Volume= 1.027 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 62P : Basin 26 (Wet Pond)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 86L: Outlet to Wet Pond



Summary for Subcatchment 86S: Basin 28 - Impervious

[49] Hint: Tc<2dt may require smaller dt

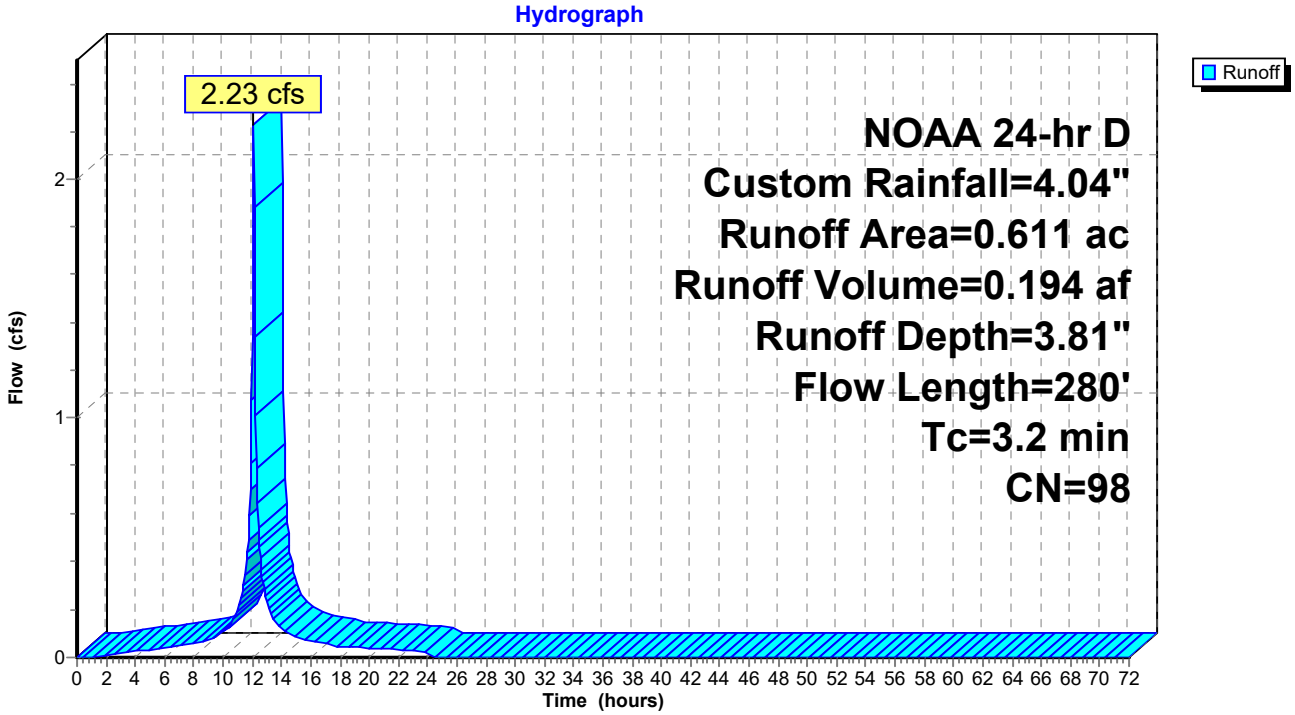
Runoff = 2.23 cfs @ 12.10 hrs, Volume= 0.194 af, Depth= 3.81"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.611	98	Impervious
	0.611		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	280	Total			

Subcatchment 86S: Basin 28 - Impervious

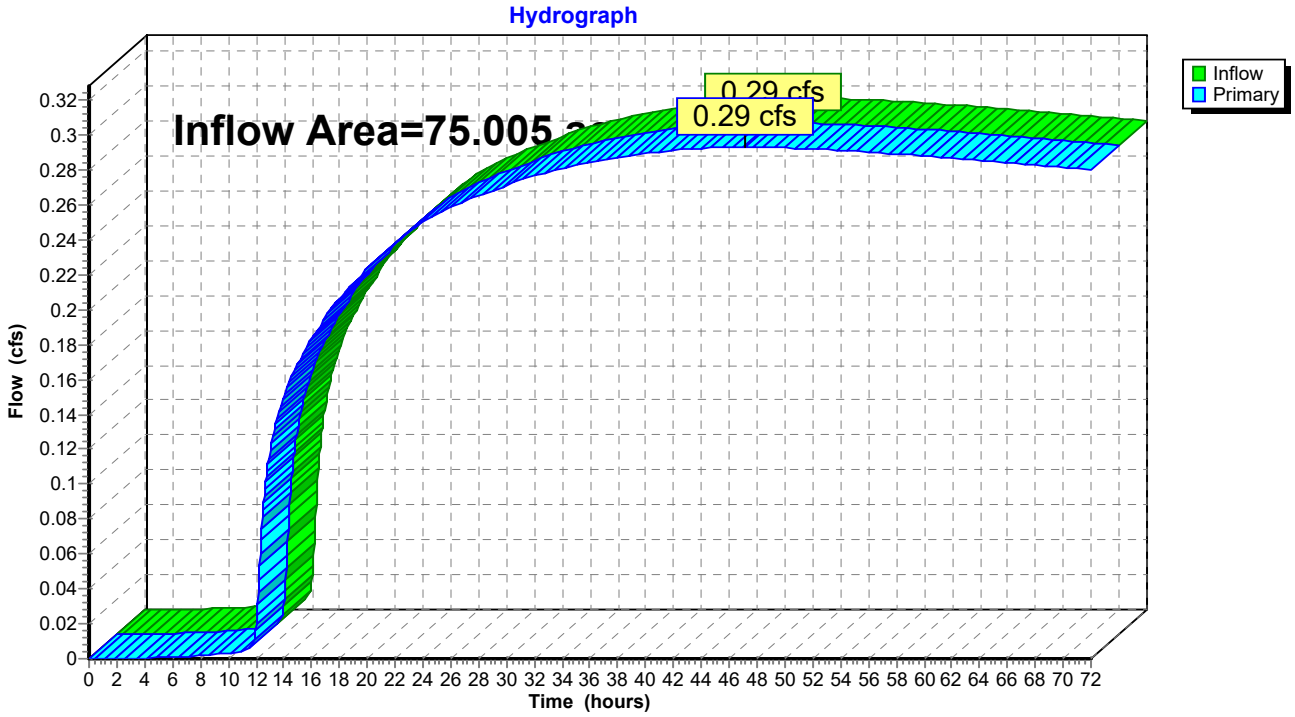


Summary for Link 87L: Total Area to Tuckerton Creek

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 0.21" for Custom event
Inflow = 0.29 cfs @ 47.17 hrs, Volume= 1.320 af
Primary = 0.29 cfs @ 47.17 hrs, Volume= 1.320 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 87L: Total Area to Tuckerton Creek



Summary for Pond 87P: Basin 40

Inflow Area = 2.597 ac, 42.97% Impervious, Inflow Depth = 1.66" for Custom event
Inflow = 4.14 cfs @ 12.10 hrs, Volume= 0.360 af
Outflow = 3.68 cfs @ 12.14 hrs, Volume= 0.264 af, Atten= 11%, Lag= 2.4 min
Primary = 3.68 cfs @ 12.14 hrs, Volume= 0.264 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.15' @ 12.14 hrs Surf.Area= 5,065 sf Storage= 5,049 cf

Plug-Flow detention time= 195.2 min calculated for 0.263 af (73% of inflow)
Center-of-Mass det. time= 93.2 min (852.5 - 759.3)

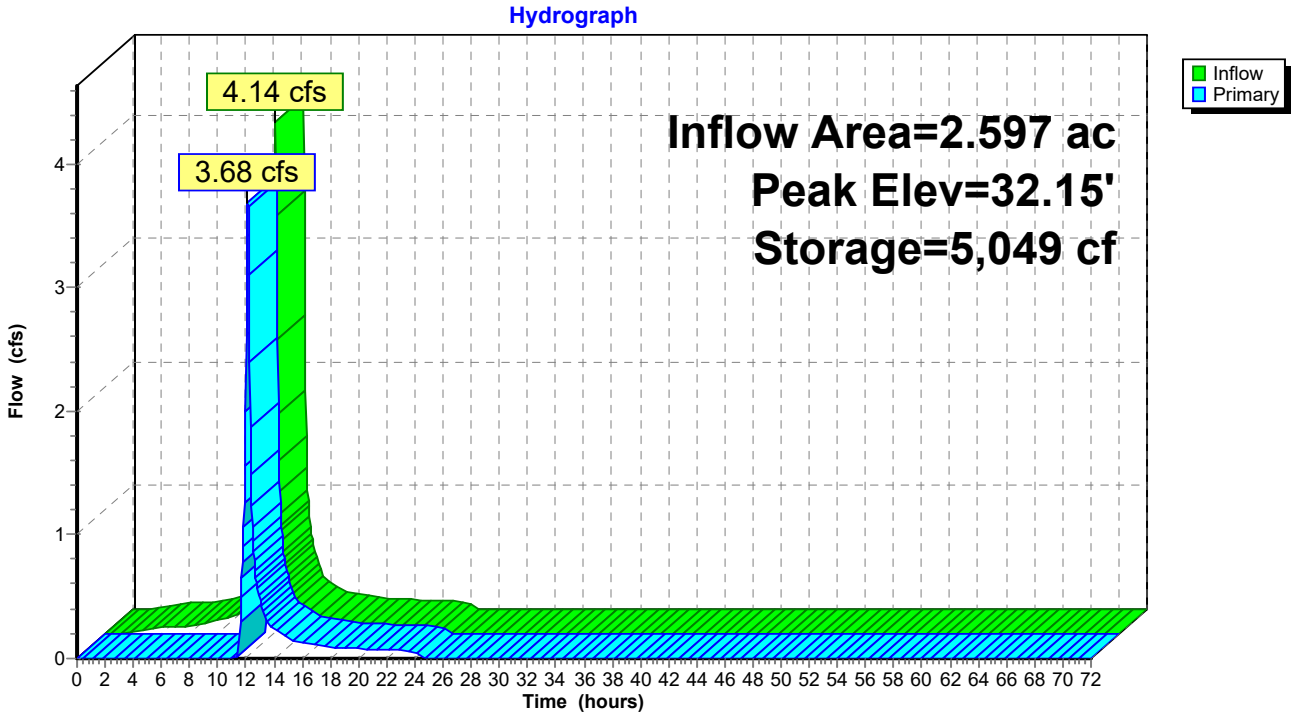
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	12,950 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,700	0	0
32.00	4,900	4,300	4,300
33.00	6,000	5,450	9,750
33.50	6,800	3,200	12,950

Device	Routing	Invert	Outlet Devices
#1	Primary	31.98'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.61 cfs @ 12.14 hrs HW=32.15' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.61 cfs @ 1.34 fps)

Pond 87P: Basin 40



Summary for Subcatchment 87S: Basin 28 - Pervious

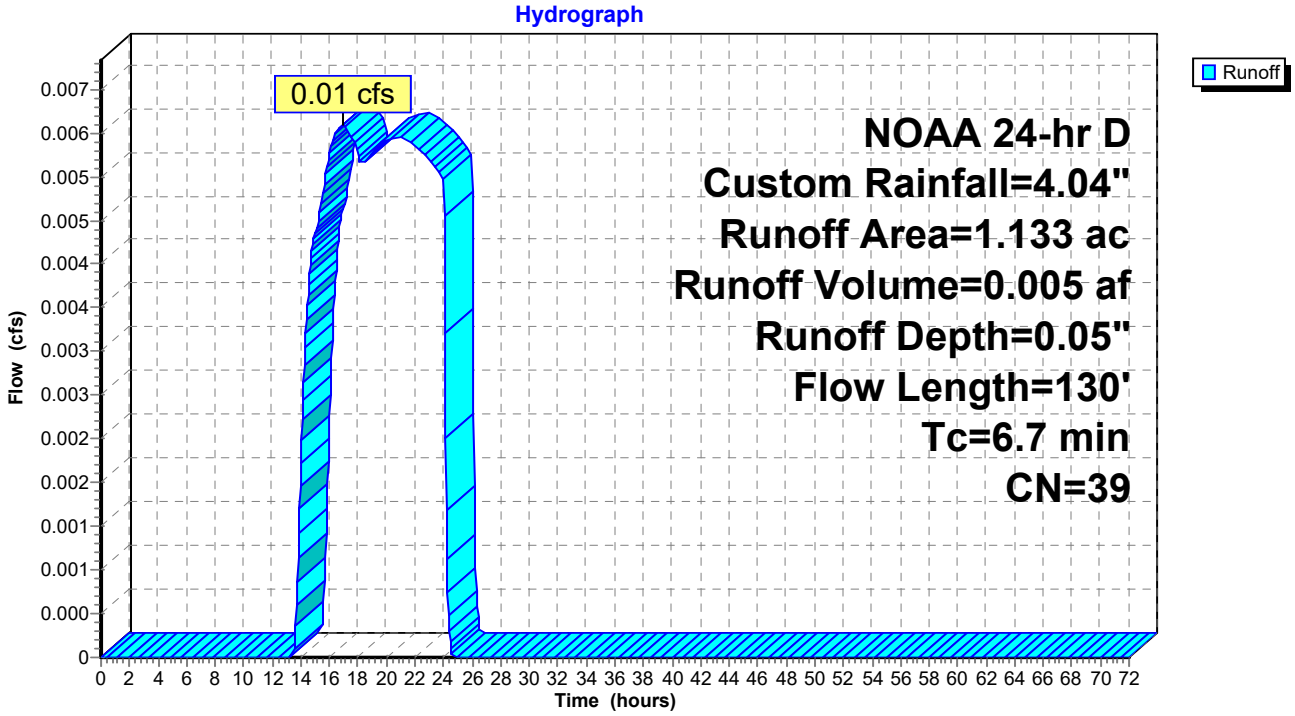
Runoff = 0.01 cfs @ 16.95 hrs, Volume= 0.005 af, Depth= 0.05"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.133	39	>75% Grass cover, Good, HSG A
1.133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	130	Total			

Subcatchment 87S: Basin 28 - Pervious



Summary for Pond 88P: Basin 22

Inflow Area = 2.491 ac, 29.99% Impervious, Inflow Depth = 1.18" for Custom event
Inflow = 2.77 cfs @ 12.10 hrs, Volume= 0.244 af
Outflow = 2.46 cfs @ 12.14 hrs, Volume= 0.180 af, Atten= 11%, Lag= 2.4 min
Primary = 2.46 cfs @ 12.14 hrs, Volume= 0.180 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.91' @ 12.14 hrs Surf.Area= 4,538 sf Storage= 3,384 cf

Plug-Flow detention time= 198.1 min calculated for 0.180 af (74% of inflow)
Center-of-Mass det. time= 93.2 min (857.6 - 764.4)

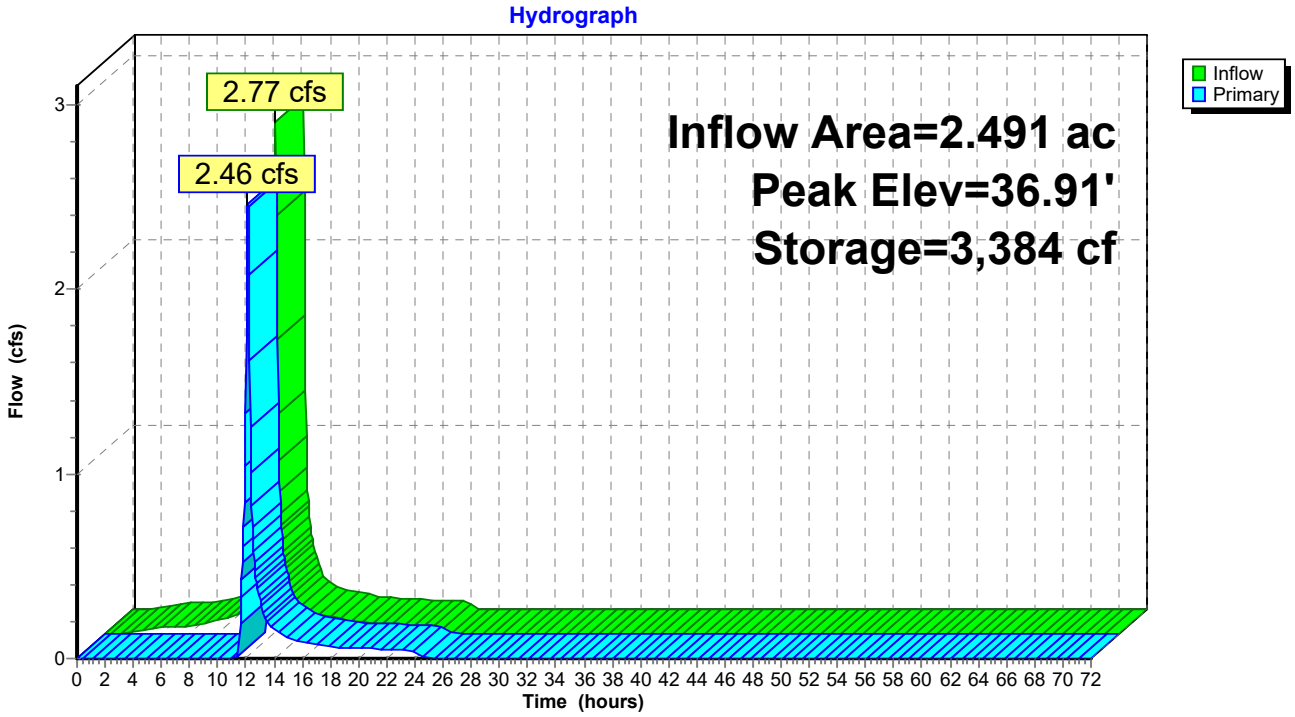
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	9,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,900	0	0
37.00	4,700	3,800	3,800
38.00	6,500	5,600	9,400

Device	Routing	Invert	Outlet Devices
#1	Primary	36.78'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.41 cfs @ 12.14 hrs HW=36.91' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 2.41 cfs @ 1.17 fps)

Pond 88P: Basin 22



Summary for Subcatchment 88S: Basin 30 - Impervious

[49] Hint: Tc<2dt may require smaller dt

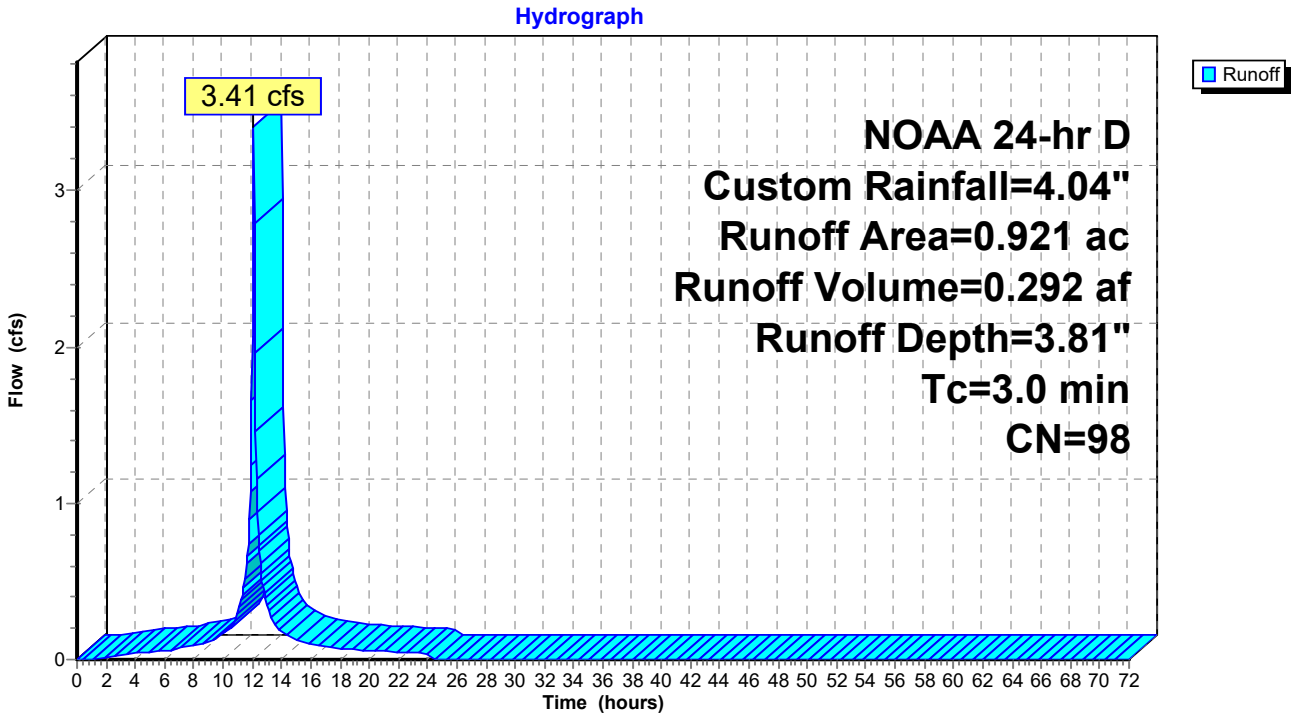
Runoff = 3.41 cfs @ 12.10 hrs, Volume= 0.292 af, Depth= 3.81"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.921	98	Impervious
	0.921		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 88S: Basin 30 - Impervious



Summary for Subcatchment 89S: Basin 30 - Pervious

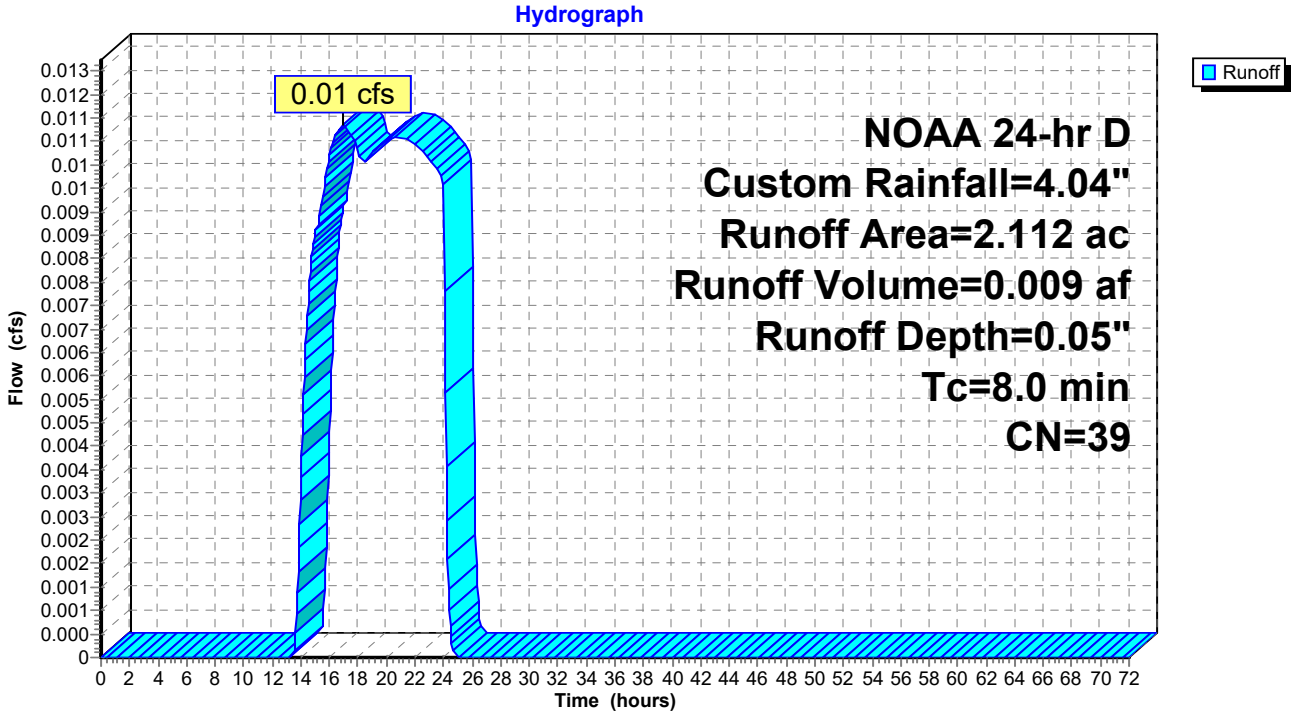
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.009 af, Depth= 0.05"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
2.112	39	>75% Grass cover, Good, HSG A
2.112		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 89S: Basin 30 - Pervious



Summary for Subcatchment 90S: Basin 31 - Pervious

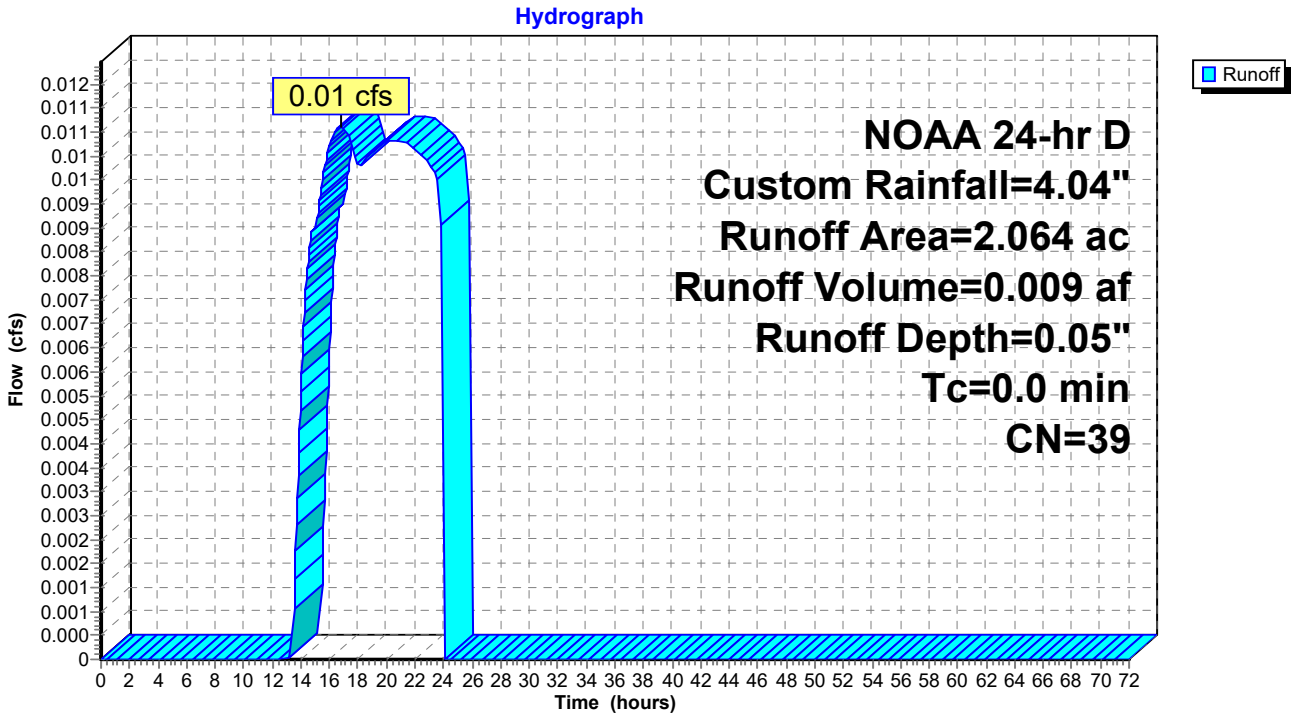
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.01 cfs @ 16.84 hrs, Volume= 0.009 af, Depth= 0.05"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
2.064	39	>75% Grass cover, Good, HSG A
2.064		100.00% Pervious Area

Subcatchment 90S: Basin 31 - Pervious



Summary for Subcatchment 91S: Basin 31- Impervious

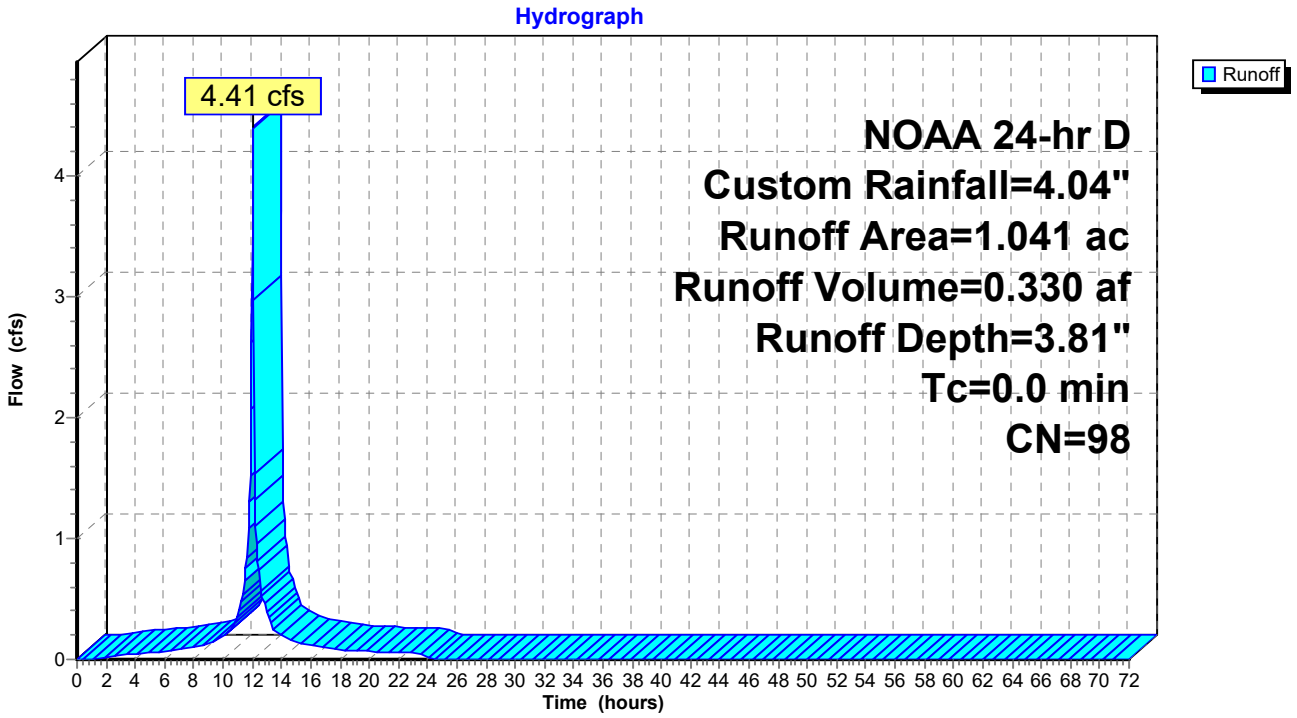
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 4.41 cfs @ 12.04 hrs, Volume= 0.330 af, Depth= 3.81"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.041	98	Impervious
	1.041		100.00% Impervious Area

Subcatchment 91S: Basin 31- Impervious



Summary for Subcatchment 92S: Basin 33 - Impervious

[49] Hint: Tc<2dt may require smaller dt

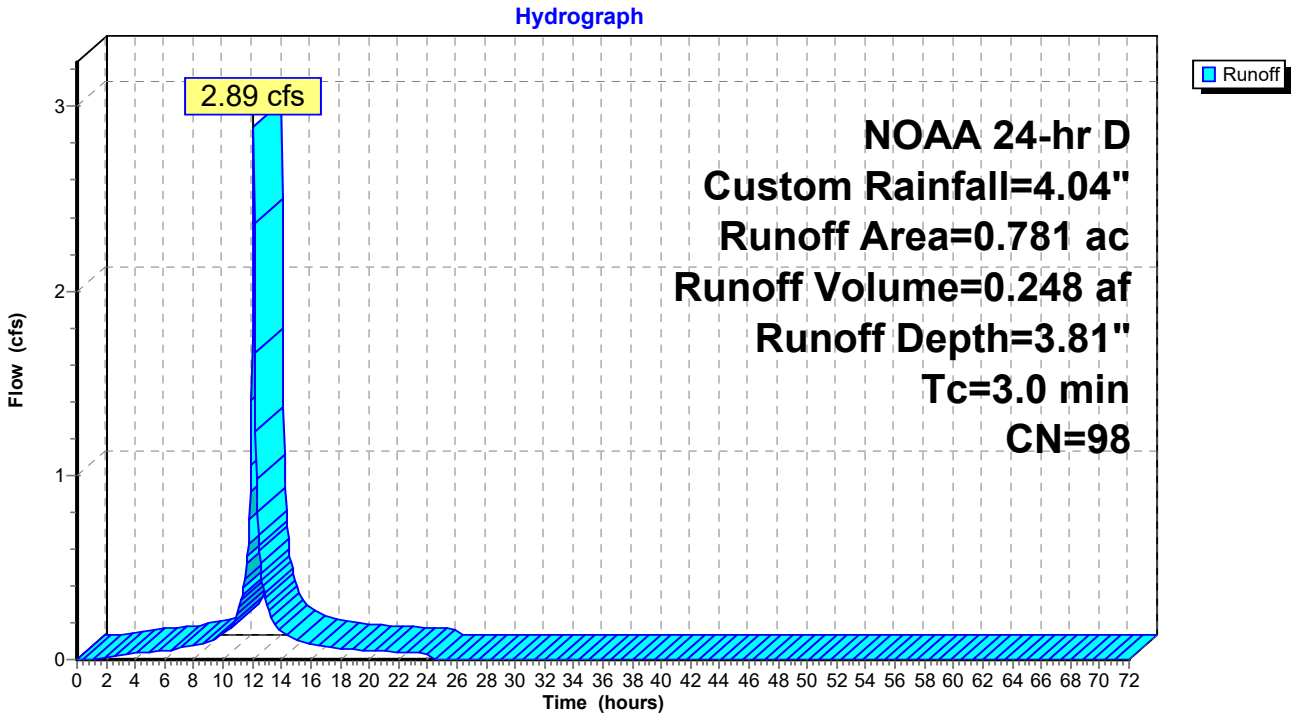
Runoff = 2.89 cfs @ 12.10 hrs, Volume= 0.248 af, Depth= 3.81"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.781	98	Impervious
	0.781		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 92S: Basin 33 - Impervious



Summary for Subcatchment 93S: Basin 33 - Pervious

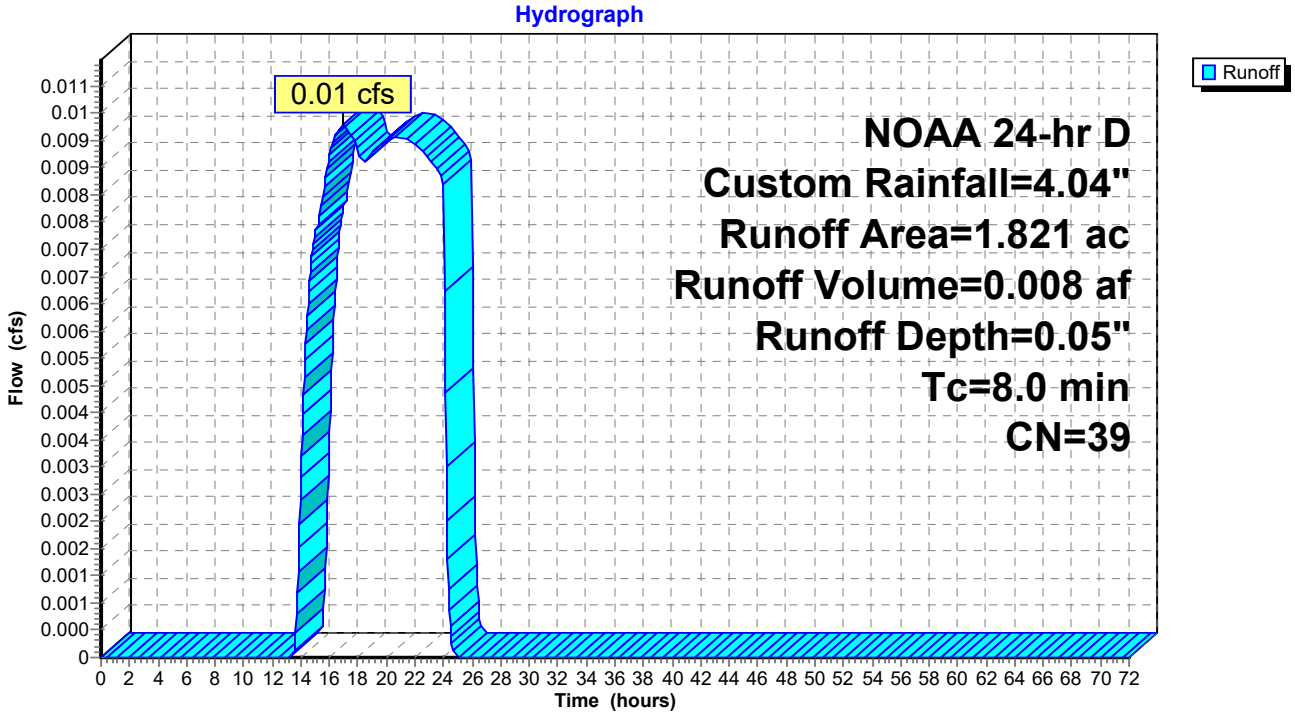
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.008 af, Depth= 0.05"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.821	39	>75% Grass cover, Good, HSG A
1.821		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 93S: Basin 33 - Pervious



Summary for Subcatchment 94S: Basin 32 - Impervious

[49] Hint: Tc<2dt may require smaller dt

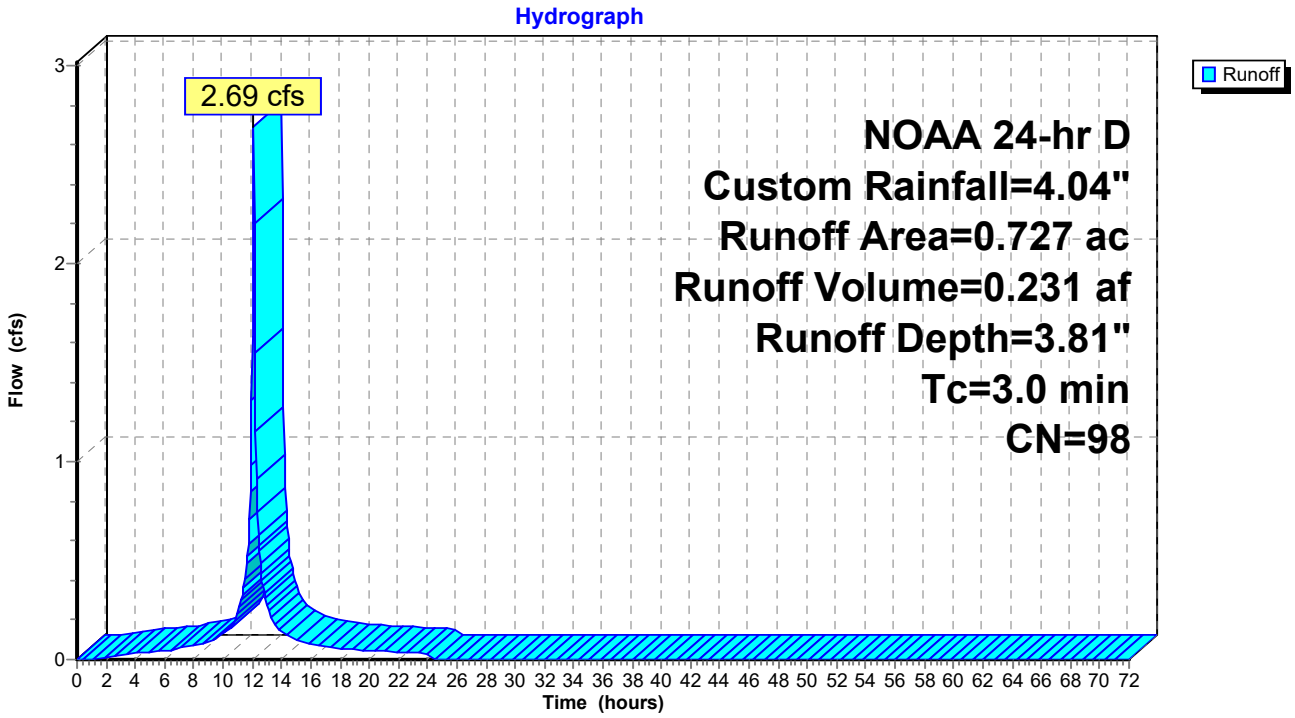
Runoff = 2.69 cfs @ 12.10 hrs, Volume= 0.231 af, Depth= 3.81"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.727	98	Impervious
	0.727		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 94S: Basin 32 - Impervious



Summary for Subcatchment 95S: Basin 32 - Pervious

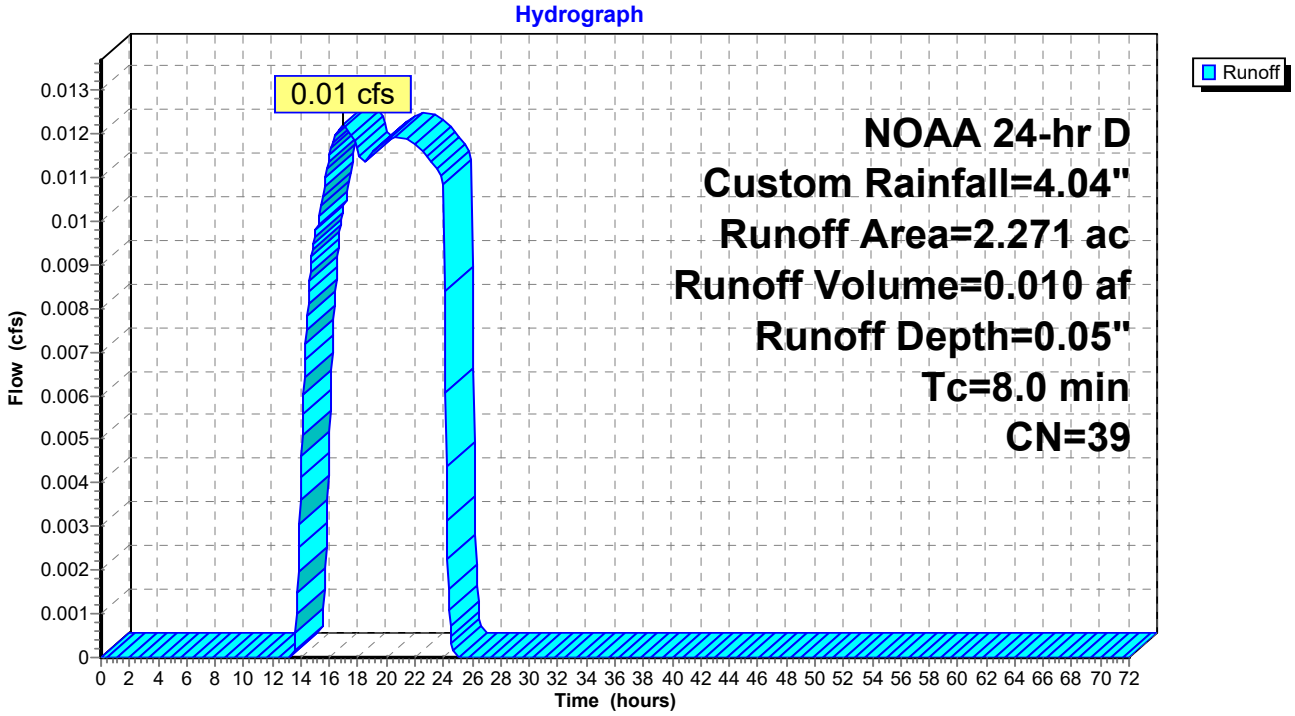
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.010 af, Depth= 0.05"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
2.271	39	>75% Grass cover, Good, HSG A
2.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 95S: Basin 32 - Pervious



Summary for Subcatchment 96S: Basin 40 - Impervious

[49] Hint: Tc<2dt may require smaller dt

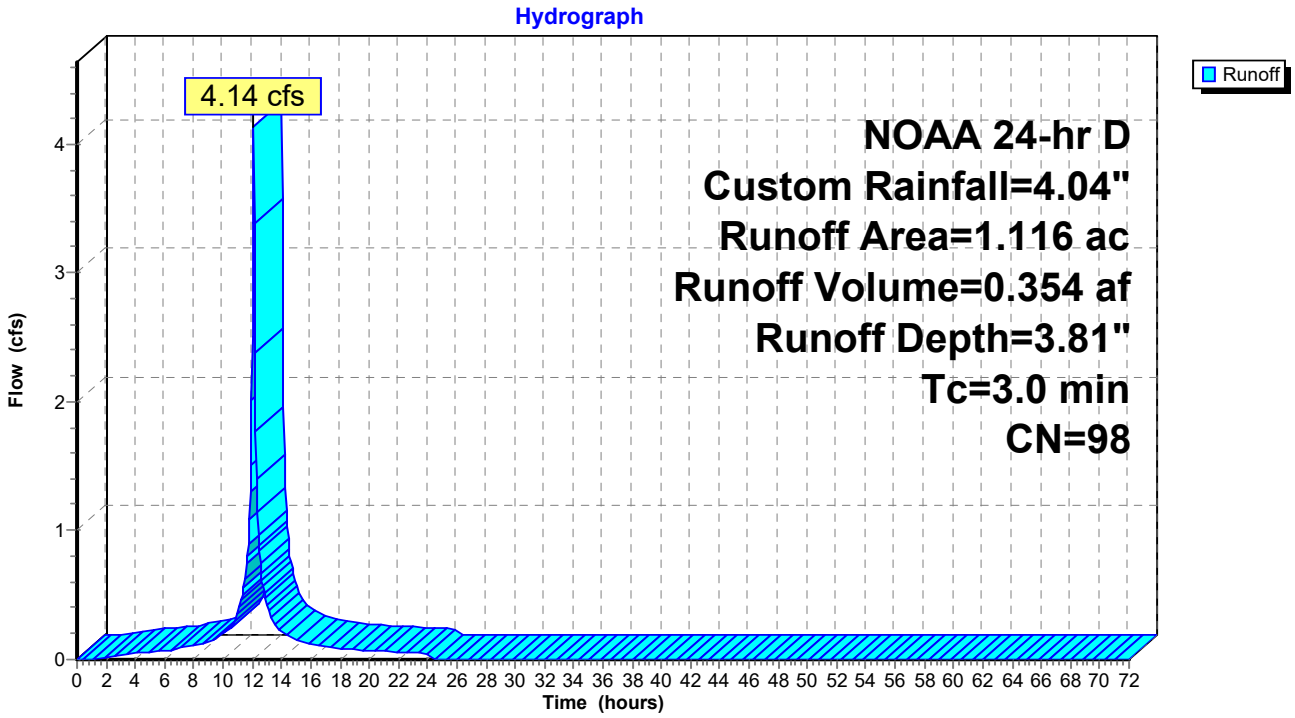
Runoff = 4.14 cfs @ 12.10 hrs, Volume= 0.354 af, Depth= 3.81"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 96S: Basin 40 - Impervious



Summary for Subcatchment 97S: Basin 40 - Pervious

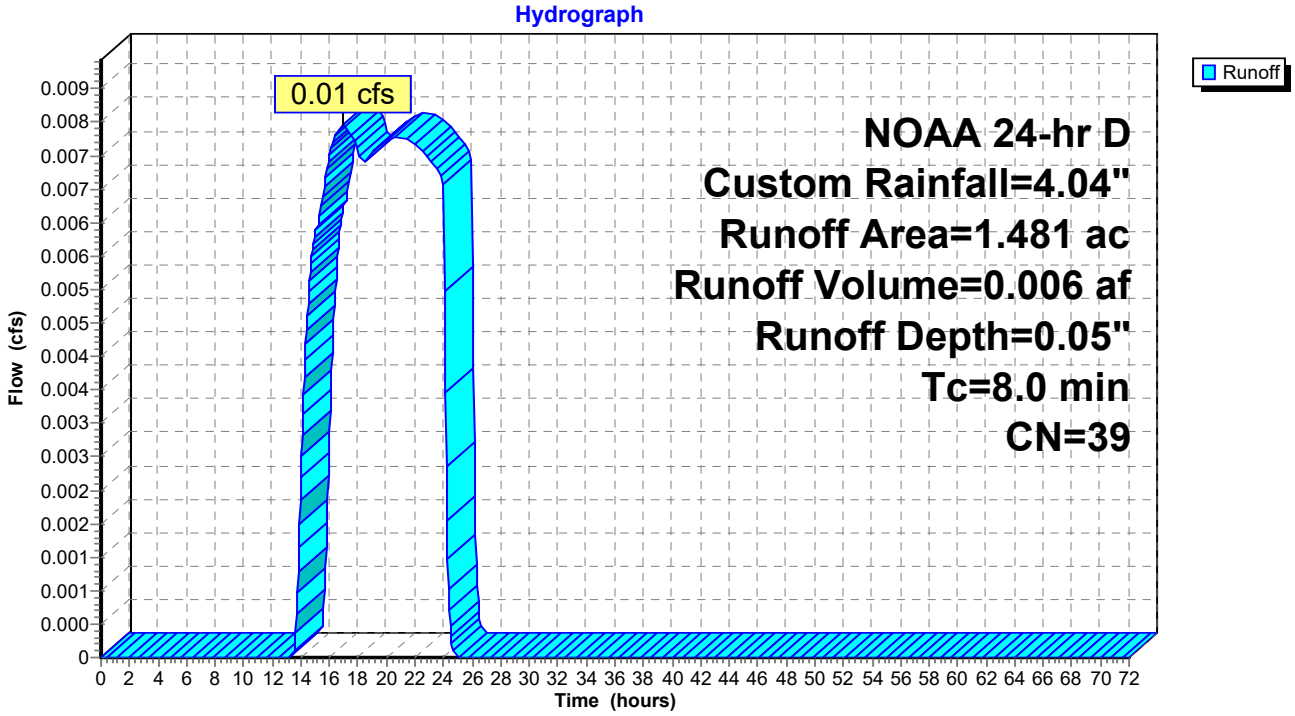
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.006 af, Depth= 0.05"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.481	39	>75% Grass cover, Good, HSG A
1.481		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 97S: Basin 40 - Pervious



Summary for Subcatchment 98S: Basin 38 - Impervious

[49] Hint: Tc<2dt may require smaller dt

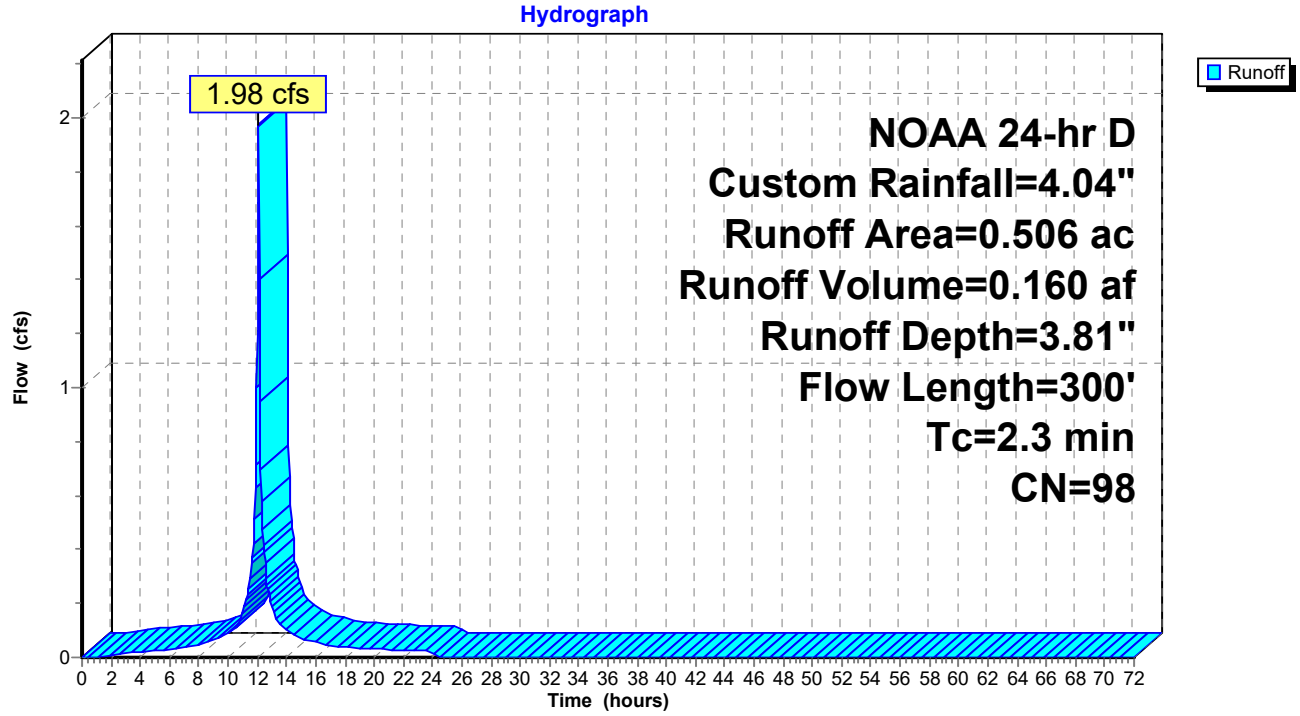
Runoff = 1.98 cfs @ 12.09 hrs, Volume= 0.160 af, Depth= 3.81"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.506	98	Impervious
	0.506		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	200	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	300	Total			

Subcatchment 98S: Basin 38 - Impervious



Summary for Subcatchment 99S: Basin 38 - Pervious

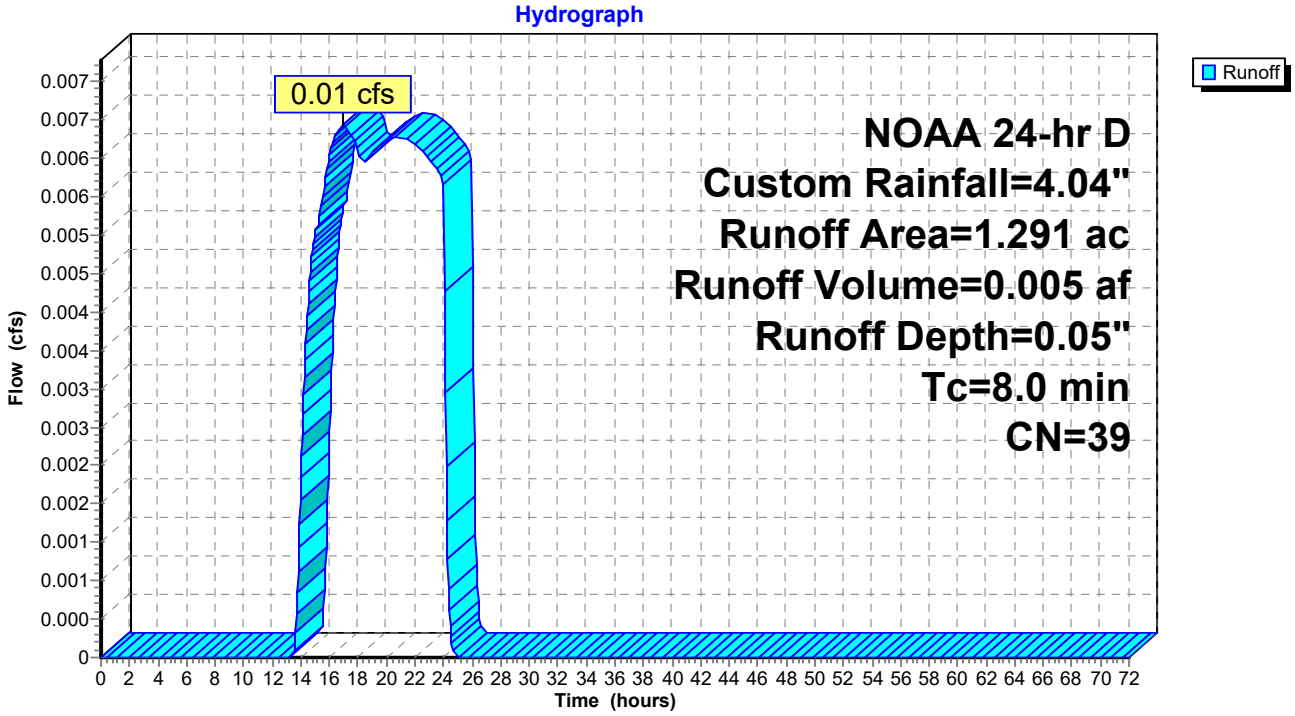
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.005 af, Depth= 0.05"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.291	39	>75% Grass cover, Good, HSG A
1.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 99S: Basin 38 - Pervious



Summary for Subcatchment 100S: Basin 22 - Impervious

[49] Hint: Tc<2dt may require smaller dt

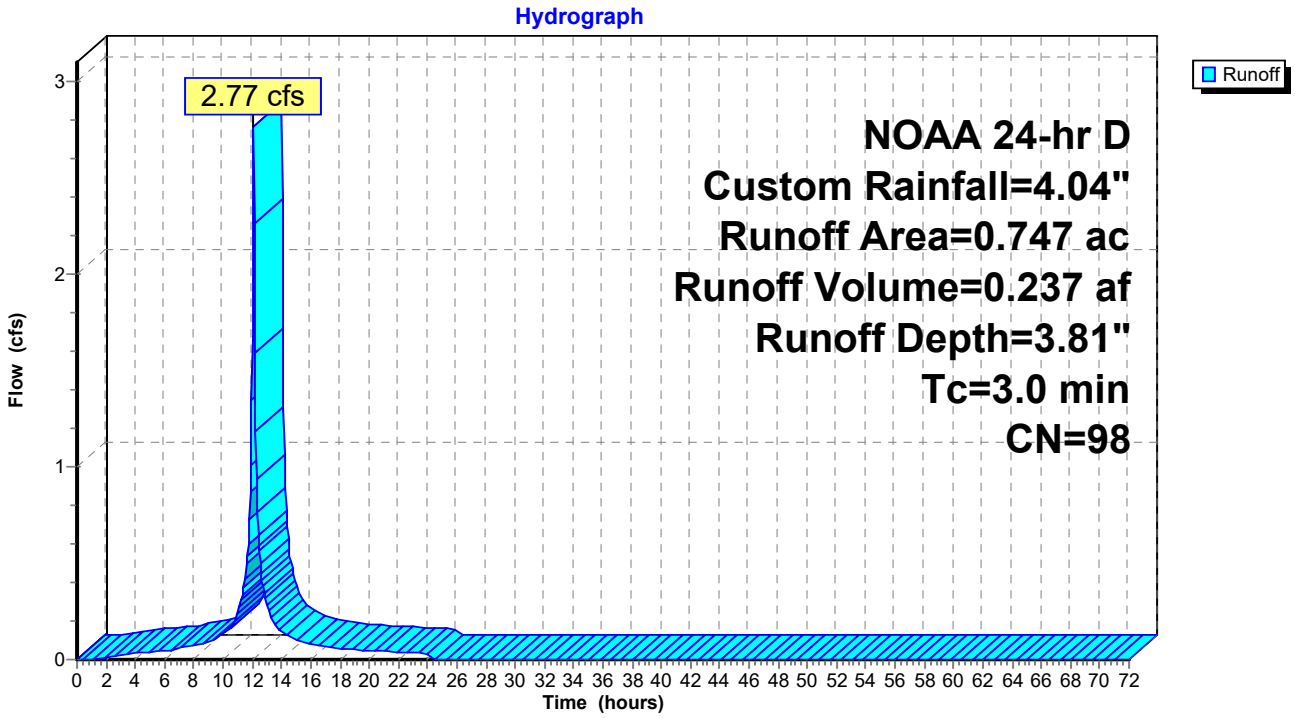
Runoff = 2.77 cfs @ 12.10 hrs, Volume= 0.237 af, Depth= 3.81"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.747	98	Impervious
	0.747		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 100S: Basin 22 - Impervious



Summary for Subcatchment 101S: Basin 39 - Pervious

[49] Hint: Tc<2dt may require smaller dt

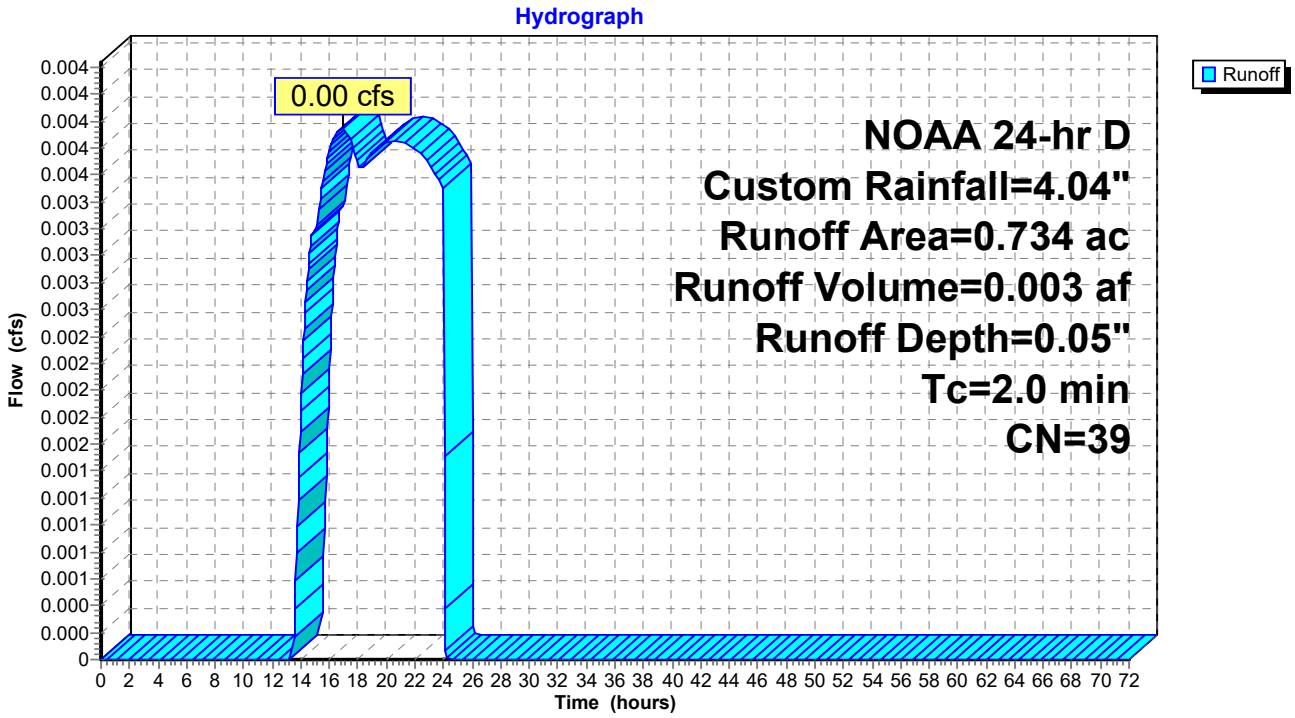
Runoff = 0.00 cfs @ 16.90 hrs, Volume= 0.003 af, Depth= 0.05"
Routed to Pond 74P : Basin 39

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
0.734	39	>75% Grass cover, Good, HSG A
0.734		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 101S: Basin 39 - Pervious



Summary for Subcatchment 102S: Basin 37 - Impervious

[49] Hint: Tc<2dt may require smaller dt

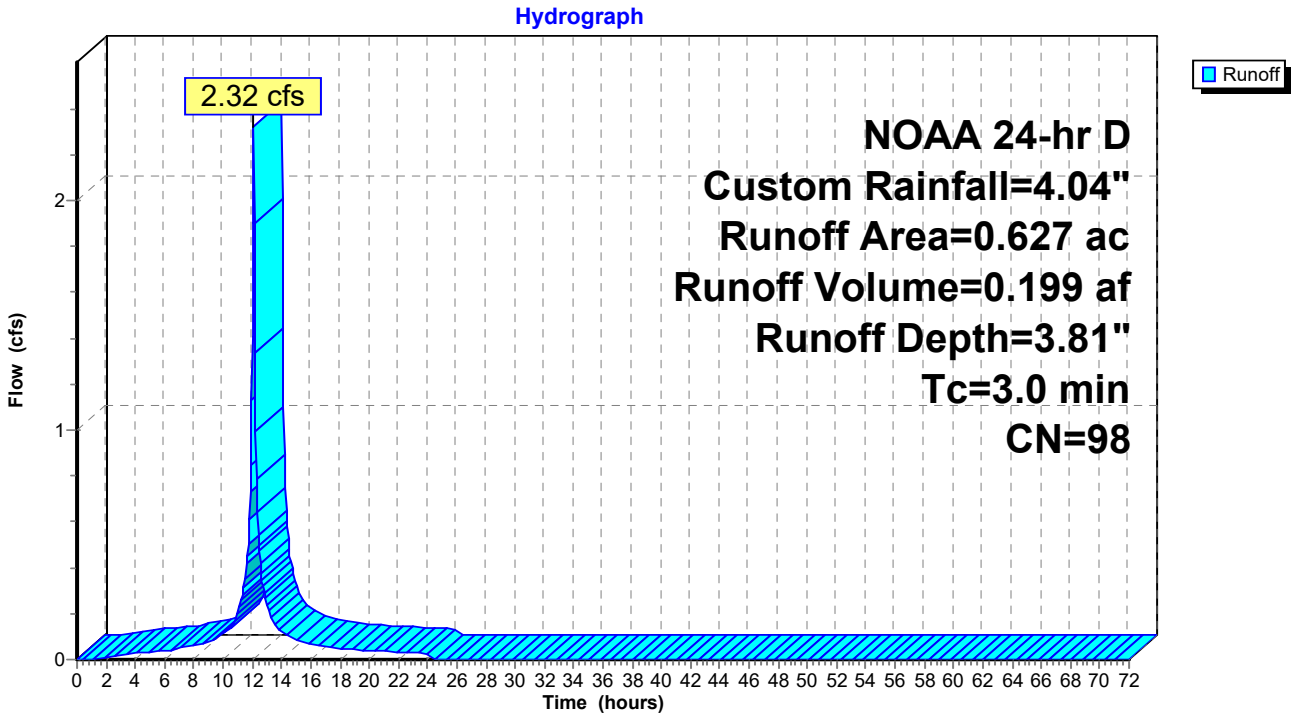
Runoff = 2.32 cfs @ 12.10 hrs, Volume= 0.199 af, Depth= 3.81"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 102S: Basin 37 - Impervious



Summary for Subcatchment 103S: Basin 37 - Pervious

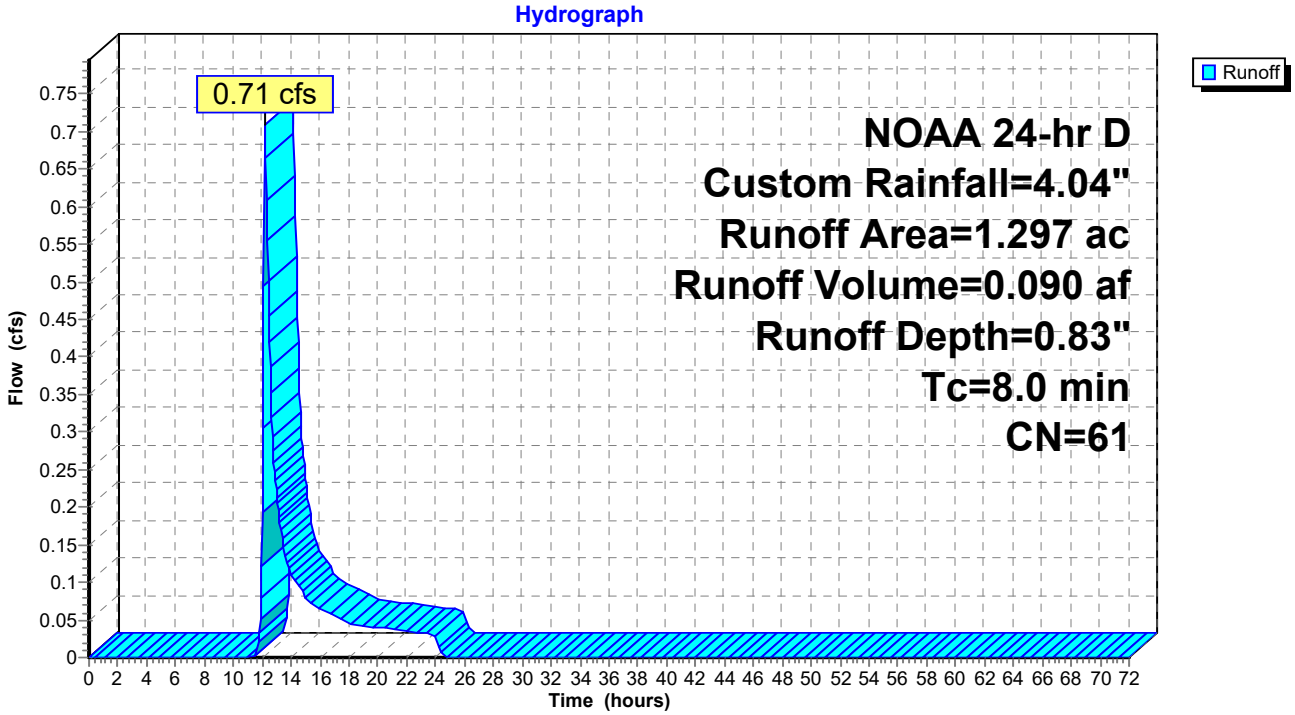
Runoff = 0.71 cfs @ 12.20 hrs, Volume= 0.090 af, Depth= 0.83"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.297	61	>75% Grass cover, Good, HSG B
1.297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 103S: Basin 37 - Pervious



Summary for Subcatchment 104S: Basin 34- Impervious

[49] Hint: Tc<2dt may require smaller dt

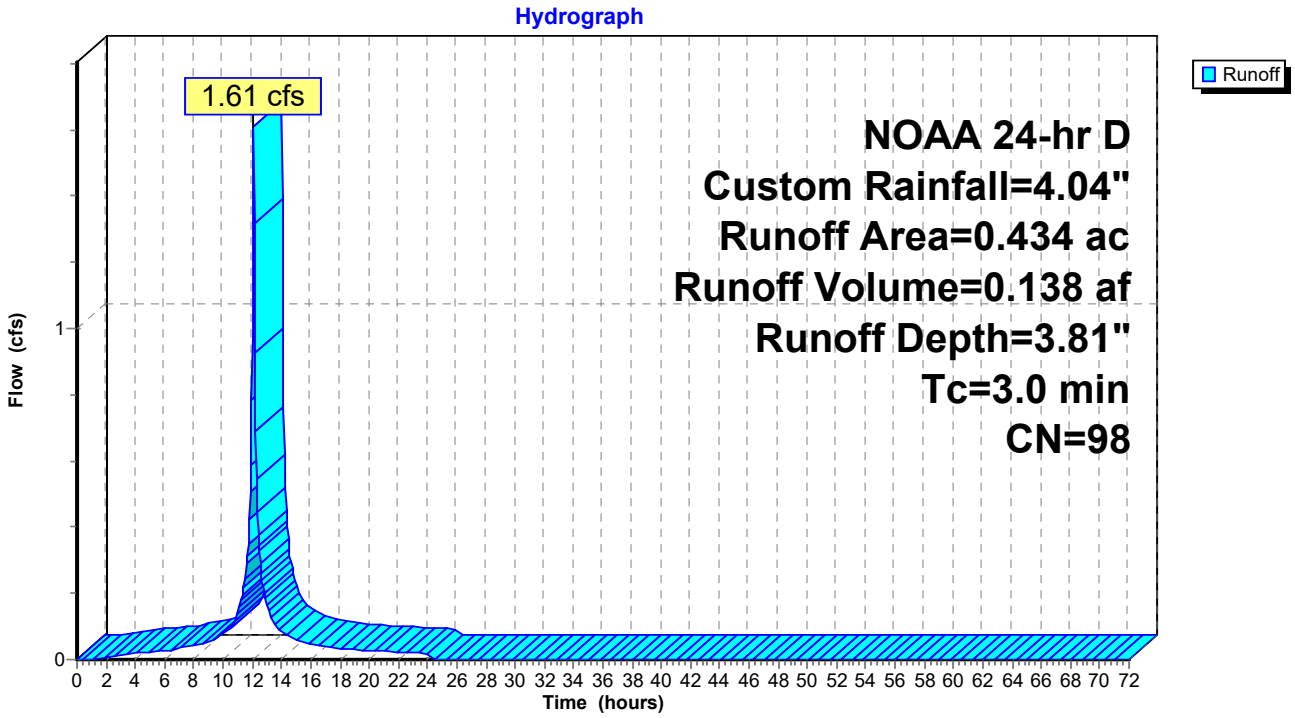
Runoff = 1.61 cfs @ 12.10 hrs, Volume= 0.138 af, Depth= 3.81"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.434	98	Impervious
	0.434		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 104S: Basin 34- Impervious



Summary for Subcatchment 105S: Basin 34 - Pervious

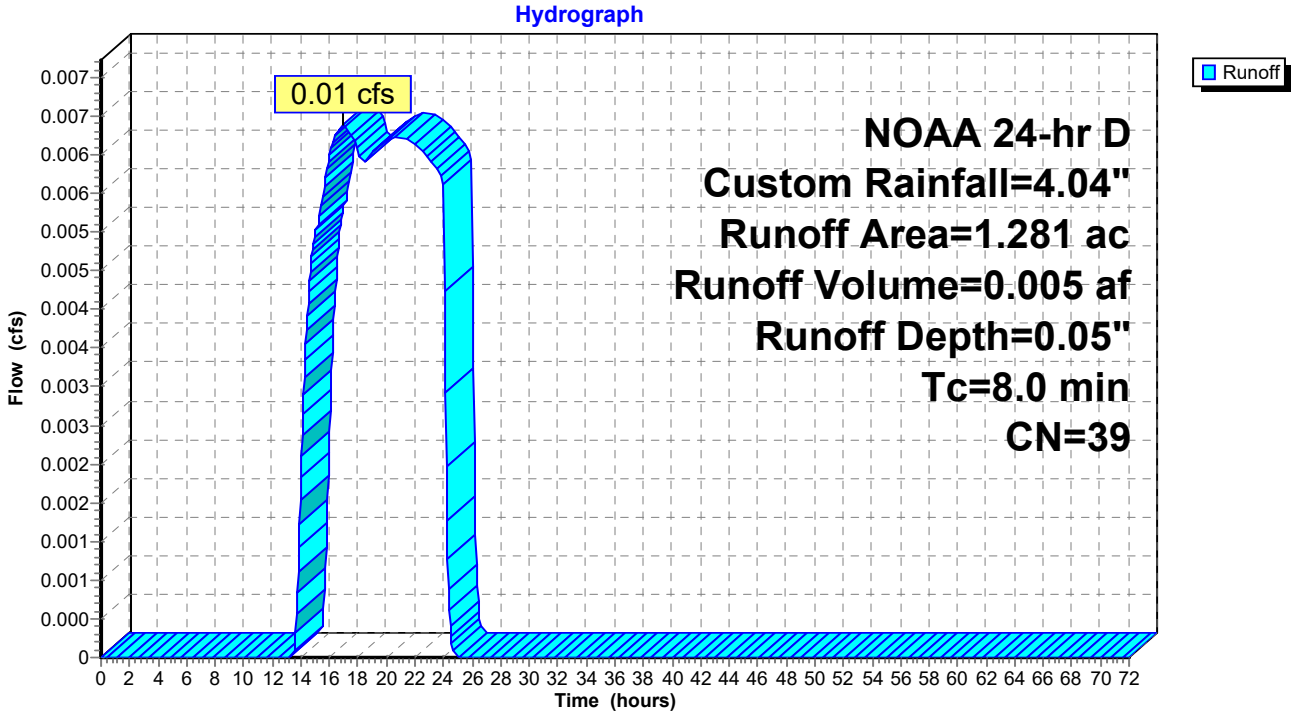
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.005 af, Depth= 0.05"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.281	39	>75% Grass cover, Good, HSG A
1.281		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 105S: Basin 34 - Pervious



Summary for Subcatchment 106S: Basin 35 - Impervious

[49] Hint: Tc<2dt may require smaller dt

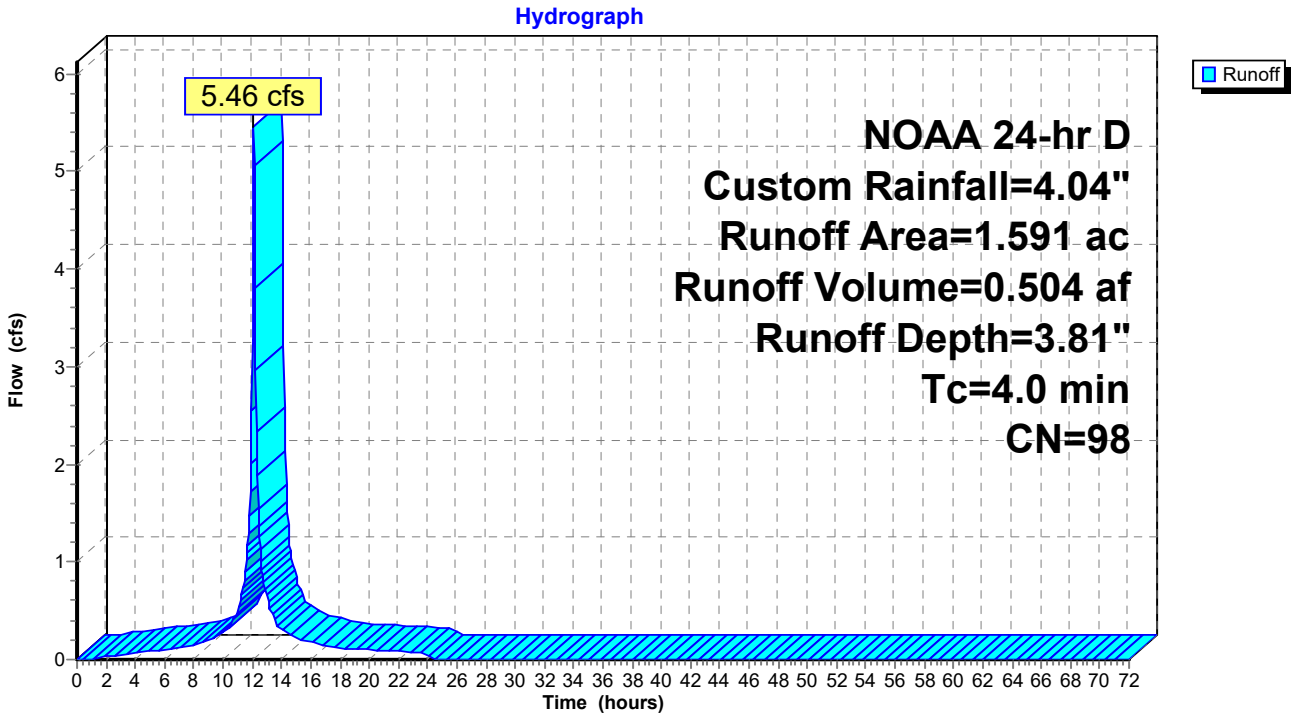
Runoff = 5.46 cfs @ 12.11 hrs, Volume= 0.504 af, Depth= 3.81"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.591	98	Impervious
	1.591		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment 106S: Basin 35 - Impervious



Summary for Subcatchment 107S: Basin 35 - Pervious

[45] Hint: Runoff=Zero

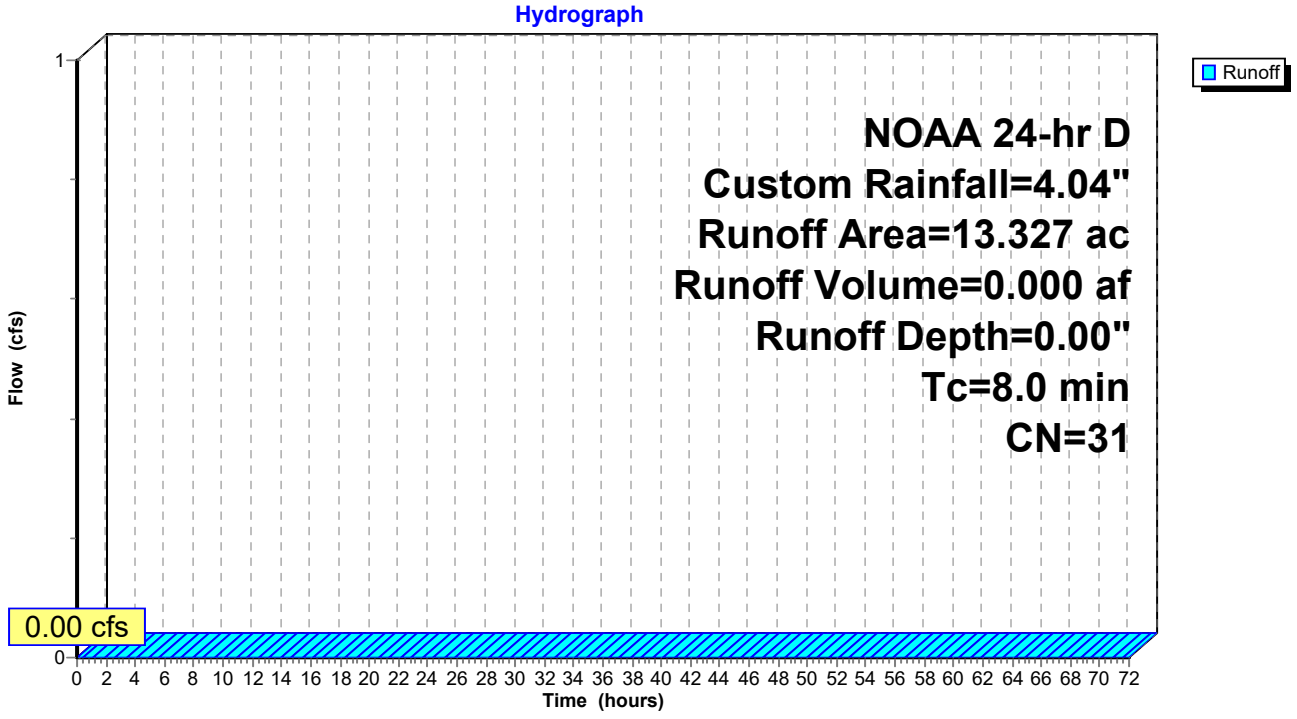
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
0.907	39	>75% Grass cover, Good, HSG A
12.420	30	Woods, Good, HSG A
13.327	31	Weighted Average
13.327		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 107S: Basin 35 - Pervious



Summary for Subcatchment 108S: Basin 36 - Impervious

[49] Hint: Tc<2dt may require smaller dt

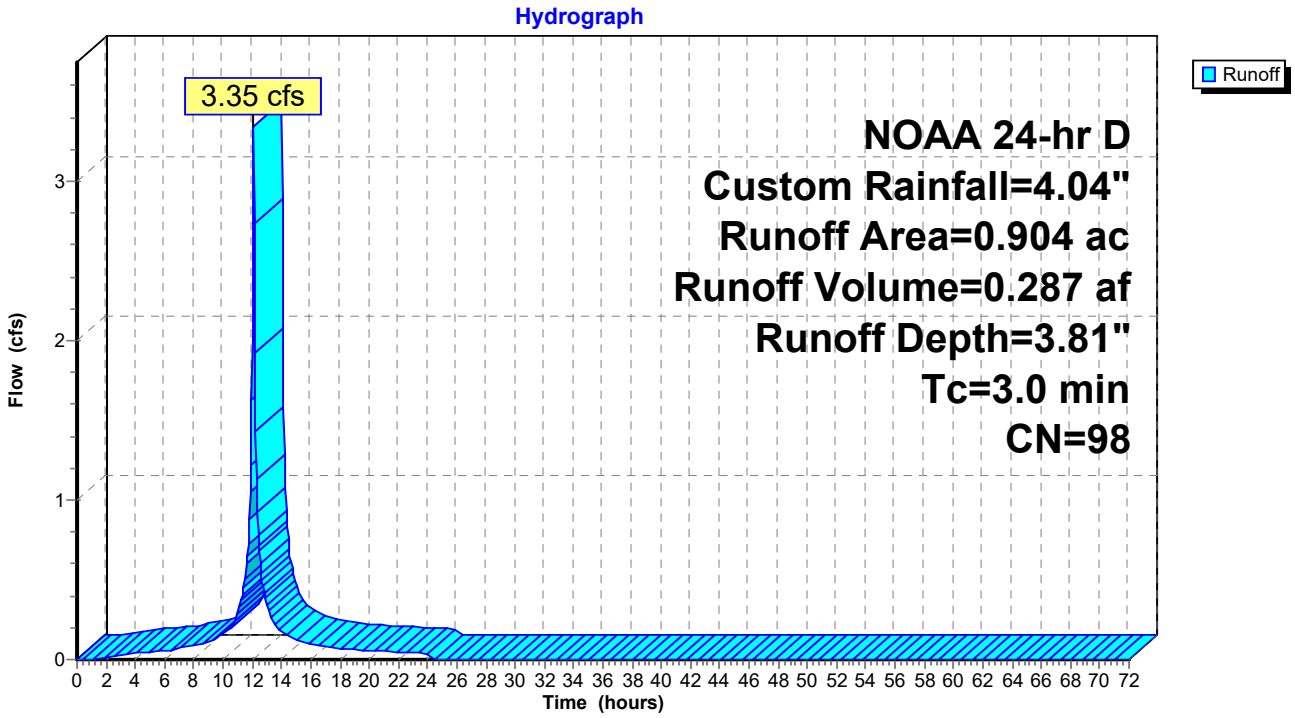
Runoff = 3.35 cfs @ 12.10 hrs, Volume= 0.287 af, Depth= 3.81"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.904	98	Impervious
	0.904		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 108S: Basin 36 - Impervious



Summary for Subcatchment 109S: Basin 36 - Pervious

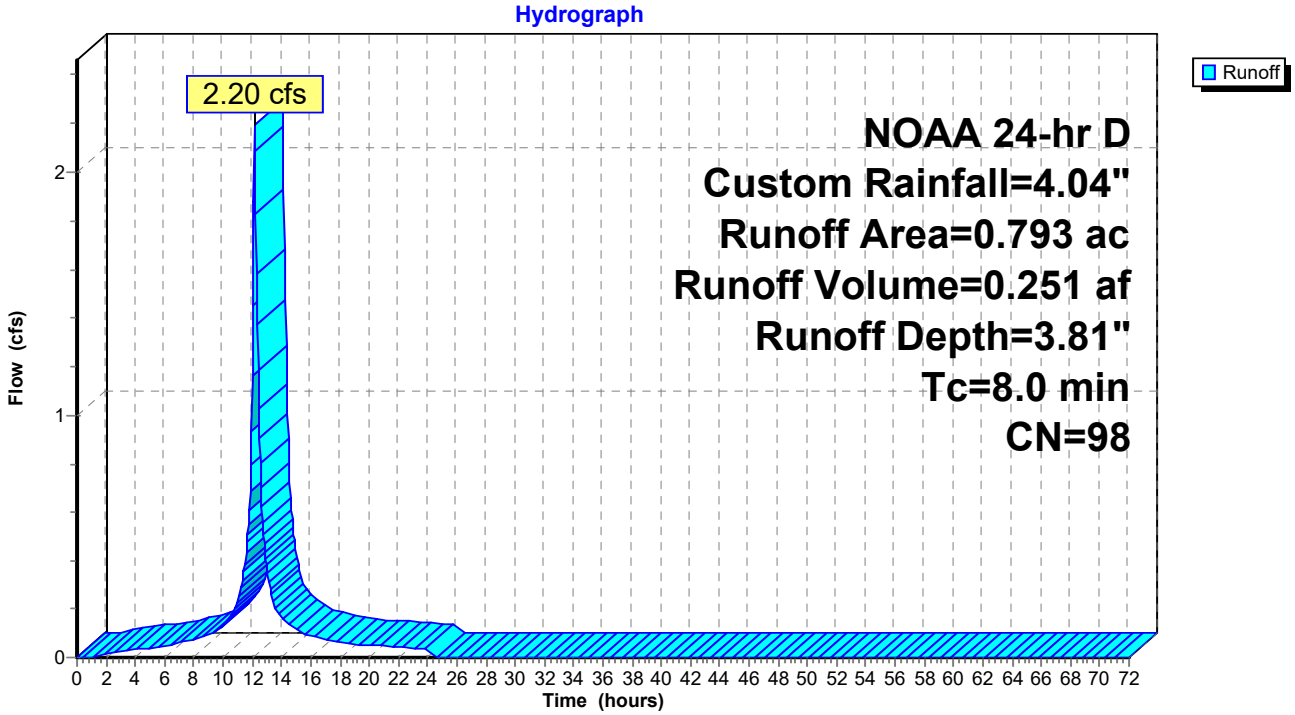
Runoff = 2.20 cfs @ 12.16 hrs, Volume= 0.251 af, Depth= 3.81"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.793	98	Impervious
	0.793		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 109S: Basin 36 - Pervious



Summary for Subcatchment 110S: Basin 22 - Pervious

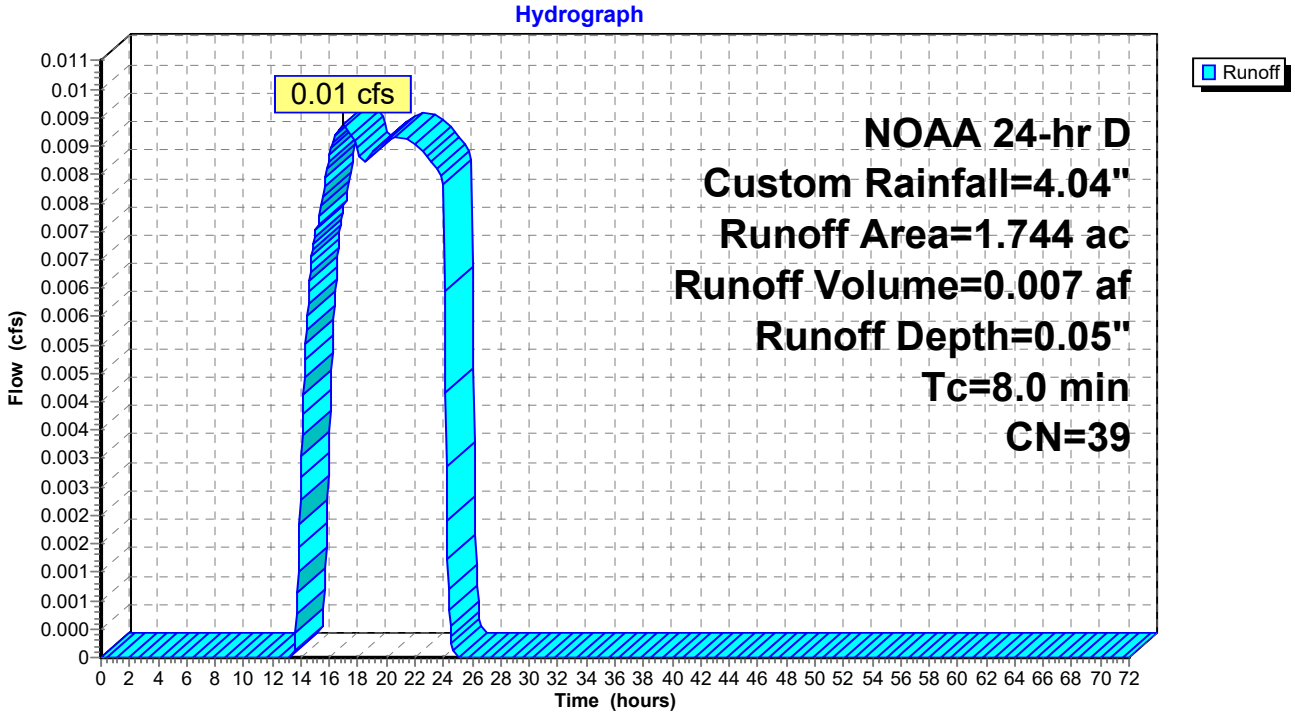
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.007 af, Depth= 0.05"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.744	39	>75% Grass cover, Good, HSG A
1.744		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 110S: Basin 22 - Pervious



Summary for Pond 111P: Basin 23

Inflow Area = 2.499 ac, 35.01% Impervious, Inflow Depth = 1.36" for Custom event
Inflow = 3.24 cfs @ 12.10 hrs, Volume= 0.284 af
Outflow = 0.20 cfs @ 13.65 hrs, Volume= 0.208 af, Atten= 94%, Lag= 93.0 min
Primary = 0.20 cfs @ 13.65 hrs, Volume= 0.208 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.50' @ 13.65 hrs Surf.Area= 6,892 sf Storage= 8,149 cf

Plug-Flow detention time= 553.7 min calculated for 0.208 af (73% of inflow)
Center-of-Mass det. time= 449.3 min (1,211.3 - 762.0)

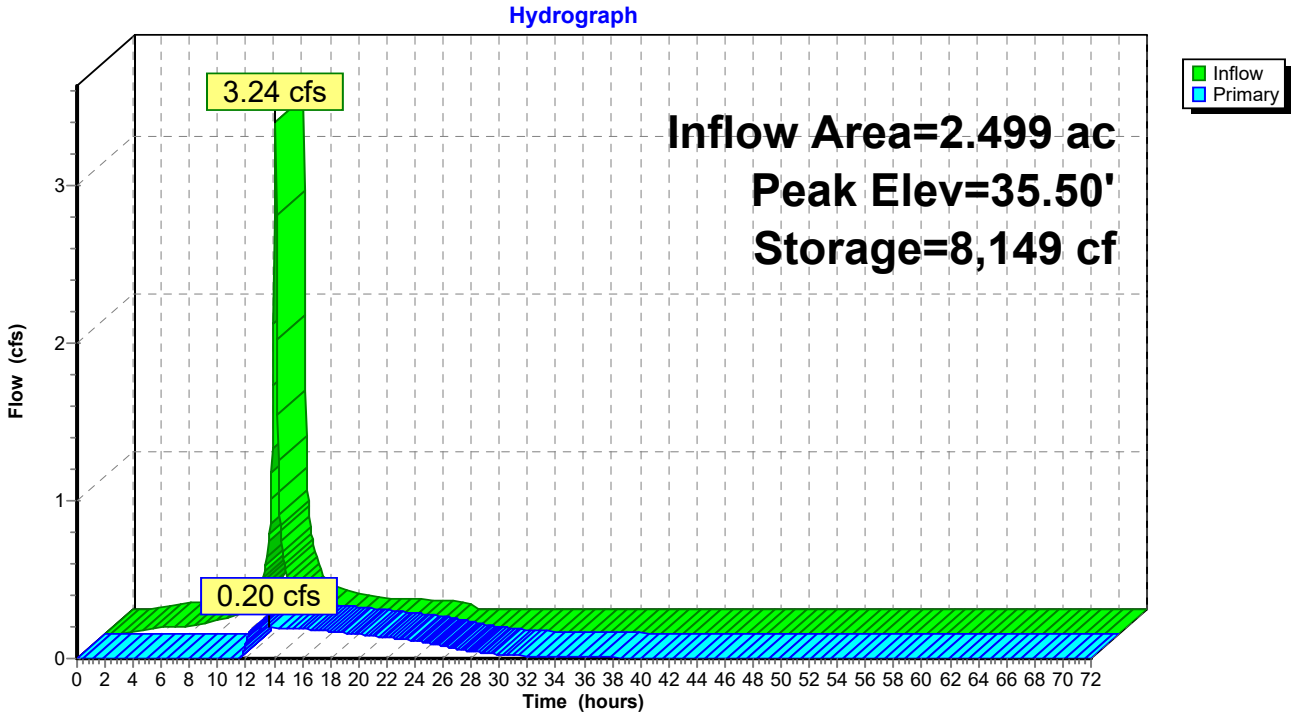
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	21,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,200	0	0
35.00	5,800	5,000	5,000
36.00	8,000	6,900	11,900
37.00	10,800	9,400	21,300

Device	Routing	Invert	Outlet Devices
#1	Primary	34.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 13.65 hrs HW=35.50' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.20 cfs @ 3.97 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 111P: Basin 23



Summary for Subcatchment 112S: Basin 23 - Impervious

[49] Hint: Tc<2dt may require smaller dt

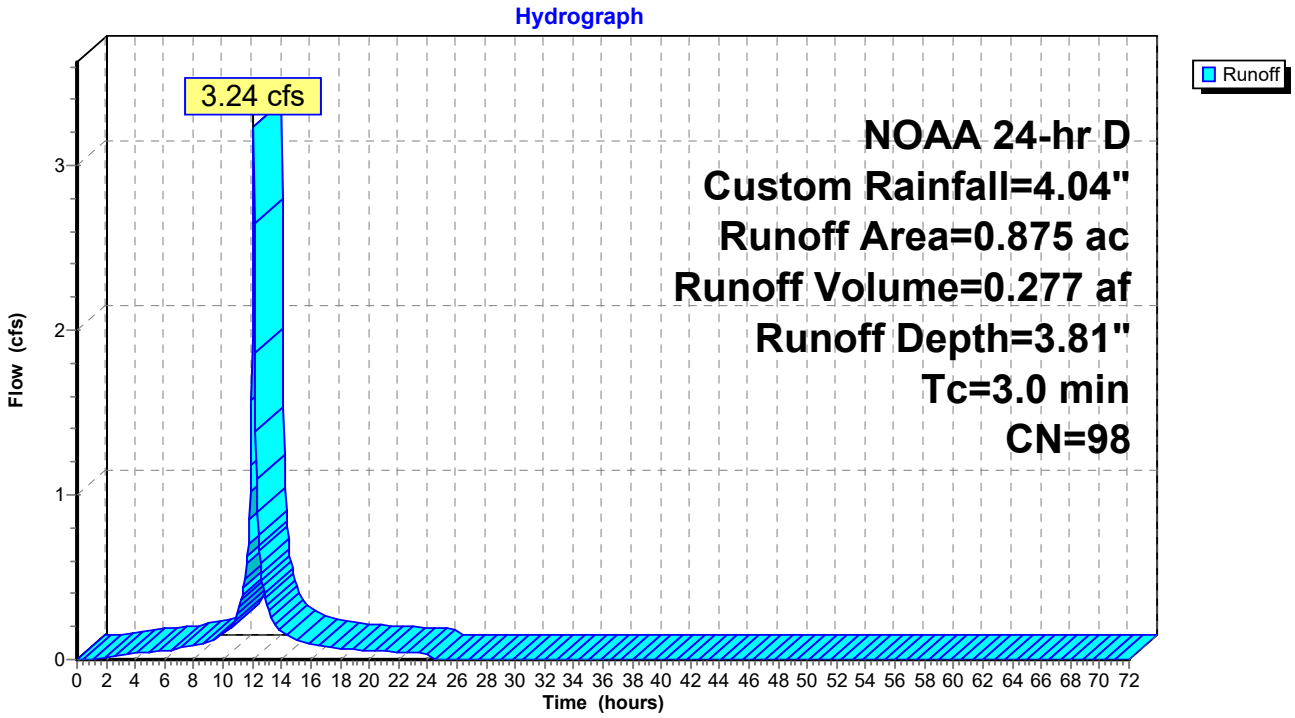
Runoff = 3.24 cfs @ 12.10 hrs, Volume= 0.277 af, Depth= 3.81"
Routed to Pond 111P : Basin 23

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.875	98	Impervious
	0.875		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 112S: Basin 23 - Impervious



Summary for Subcatchment 113S: Basin 23 - Pervious

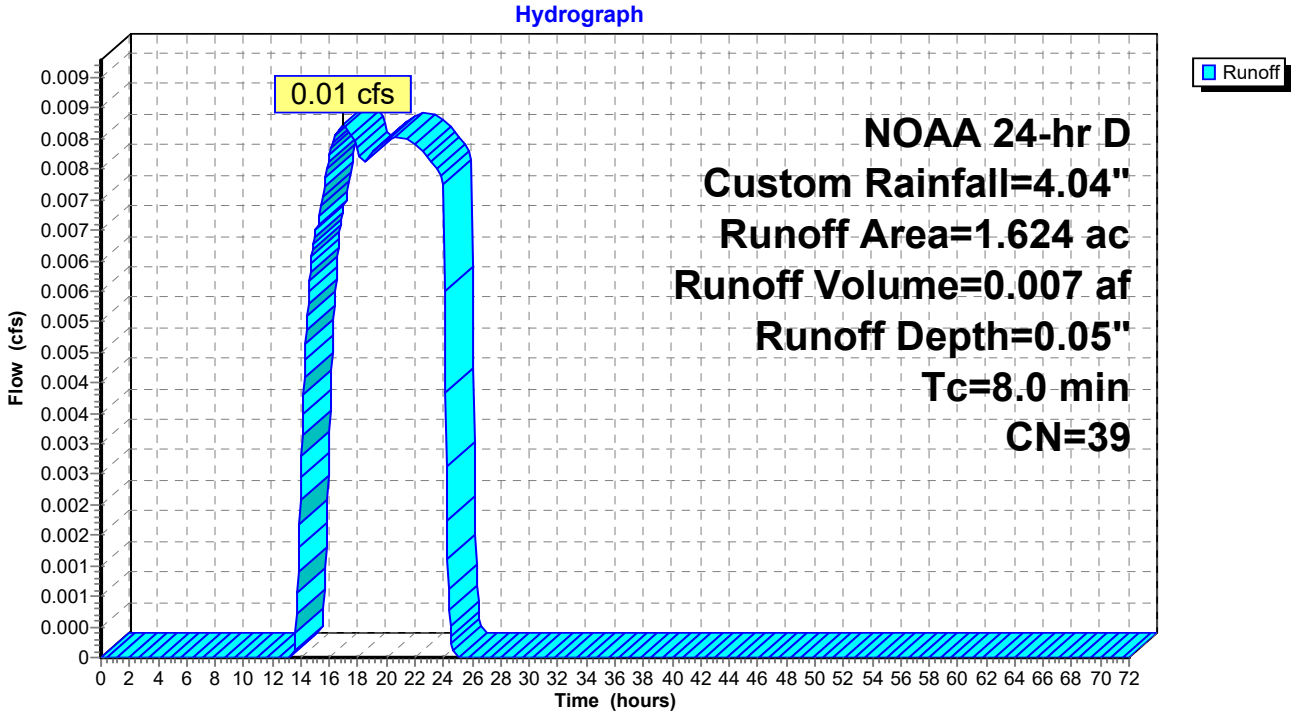
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.007 af, Depth= 0.05"
Routed to Pond 111P : Basin 23

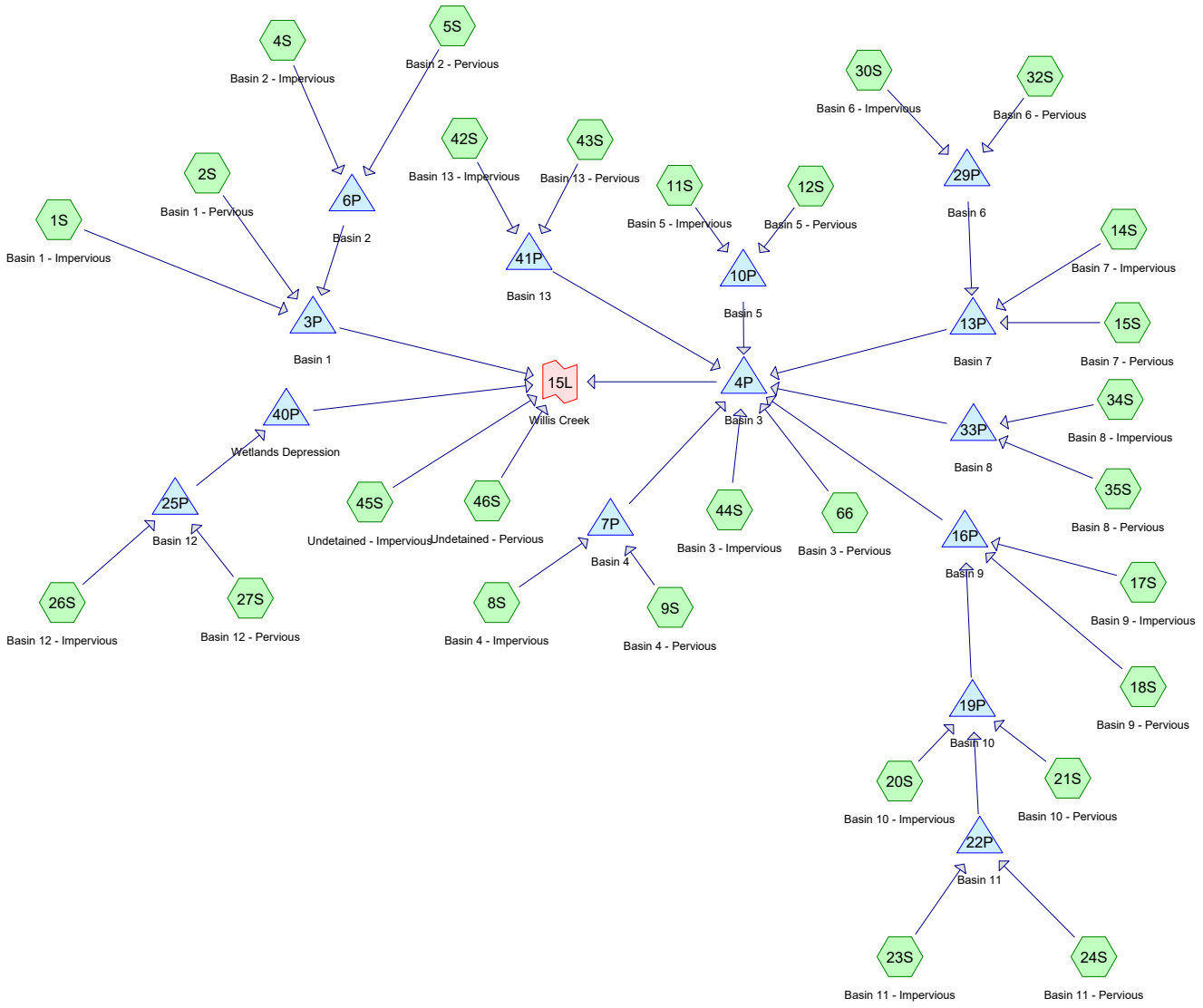
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.624	39	>75% Grass cover, Good, HSG A
1.624		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 113S: Basin 23 - Pervious





Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT - WILLS CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	4.04	2

Summary for Subcatchment 1S: Basin 1 - Impervious

[49] Hint: Tc<2dt may require smaller dt

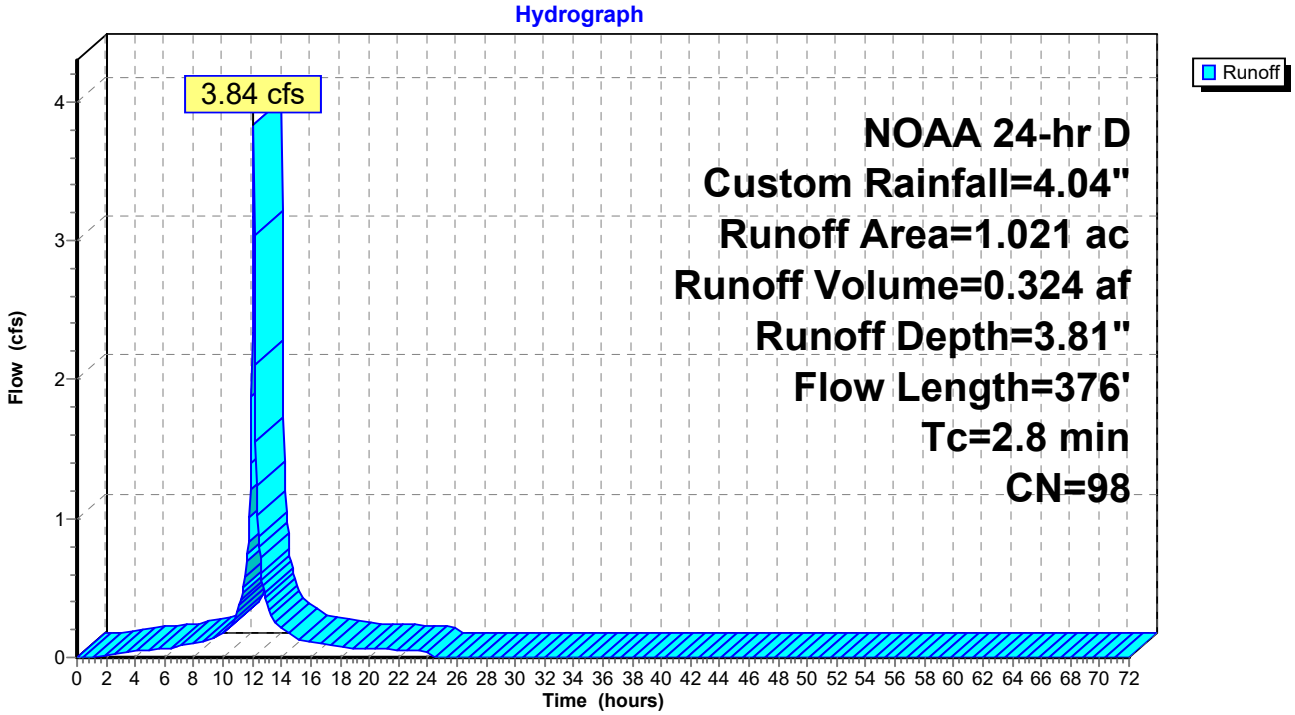
Runoff = 3.84 cfs @ 12.10 hrs, Volume= 0.324 af, Depth= 3.81"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.021	98	
	1.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	86	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	190	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.8	376	Total			

Subcatchment 1S: Basin 1 - Impervious



Summary for Subcatchment 2S: Basin 1 - Pervious

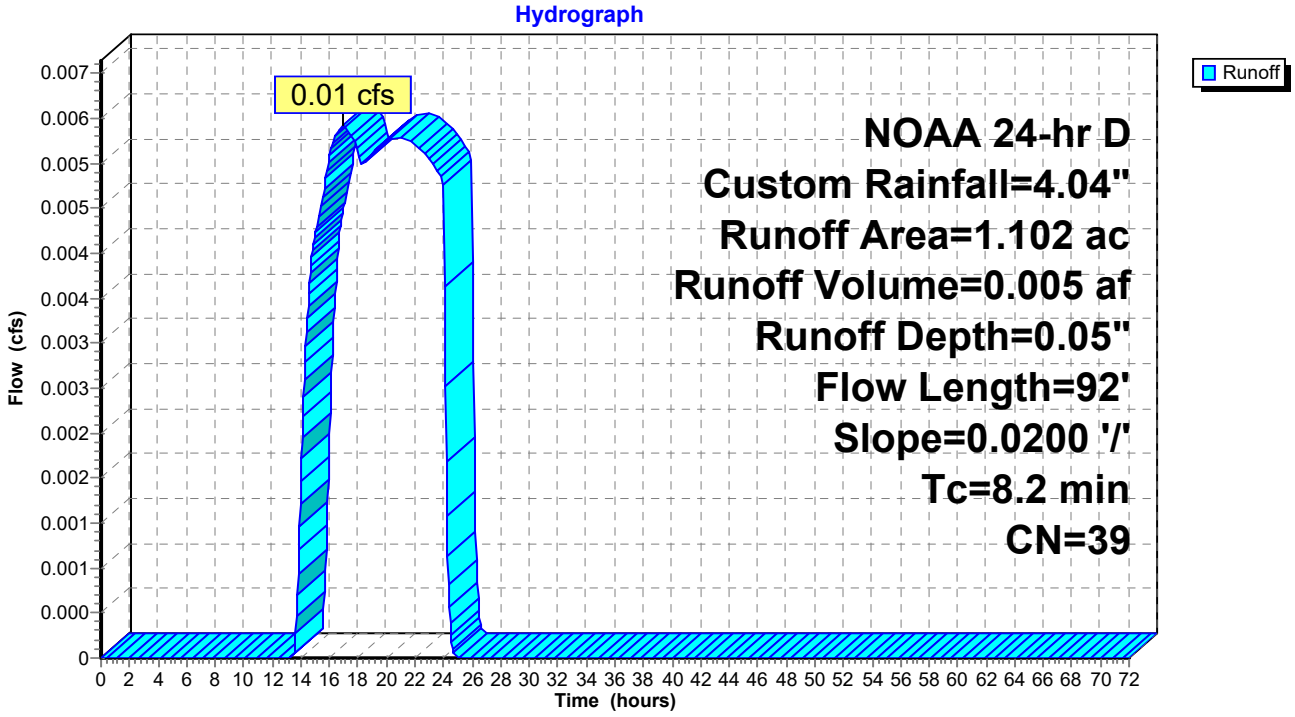
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.005 af, Depth= 0.05"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.102	39	>75% Grass cover, Good, HSG A
1.102		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	92	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 2S: Basin 1 - Pervious



Summary for Pond 3P: Basin 1

Inflow Area = 4.367 ac, 43.78% Impervious, Inflow Depth > 1.48" for Custom event
Inflow = 3.95 cfs @ 12.10 hrs, Volume= 0.537 af
Outflow = 0.51 cfs @ 13.17 hrs, Volume= 0.446 af, Atten= 87%, Lag= 64.0 min
Primary = 0.51 cfs @ 13.17 hrs, Volume= 0.446 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.93' @ 13.17 hrs Surf.Area= 7,041 sf Storage= 9,850 cf

Plug-Flow detention time= 576.3 min calculated for 0.446 af (83% of inflow)
Center-of-Mass det. time= 427.4 min (1,389.8 - 962.4)

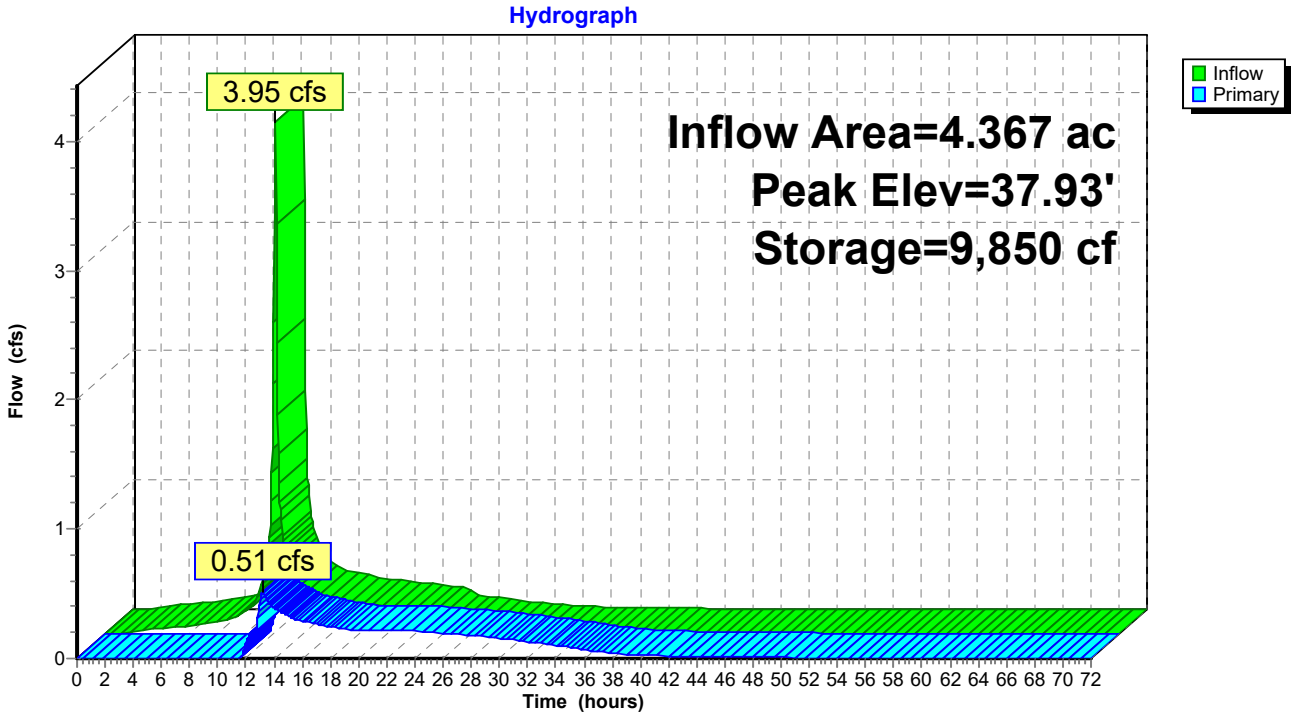
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	14,397 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,311	0	0
37.00	5,097	4,204	4,204
38.00	7,187	6,142	10,346
38.50	9,017	4,051	14,397

Device	Routing	Invert	Outlet Devices
#1	Primary	36.93'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.90'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 13.17 hrs HW=37.93' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.22 cfs @ 4.50 fps)
2=Orifice/Grate (Weir Controls 0.28 cfs @ 0.57 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 3

Inflow Area = 21.738 ac, 39.68% Impervious, Inflow Depth = 1.62" for Custom event
Inflow = 22.26 cfs @ 12.17 hrs, Volume= 2.930 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.46' @ 72.00 hrs Surf.Area= 35,373 sf Storage= 127,644 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

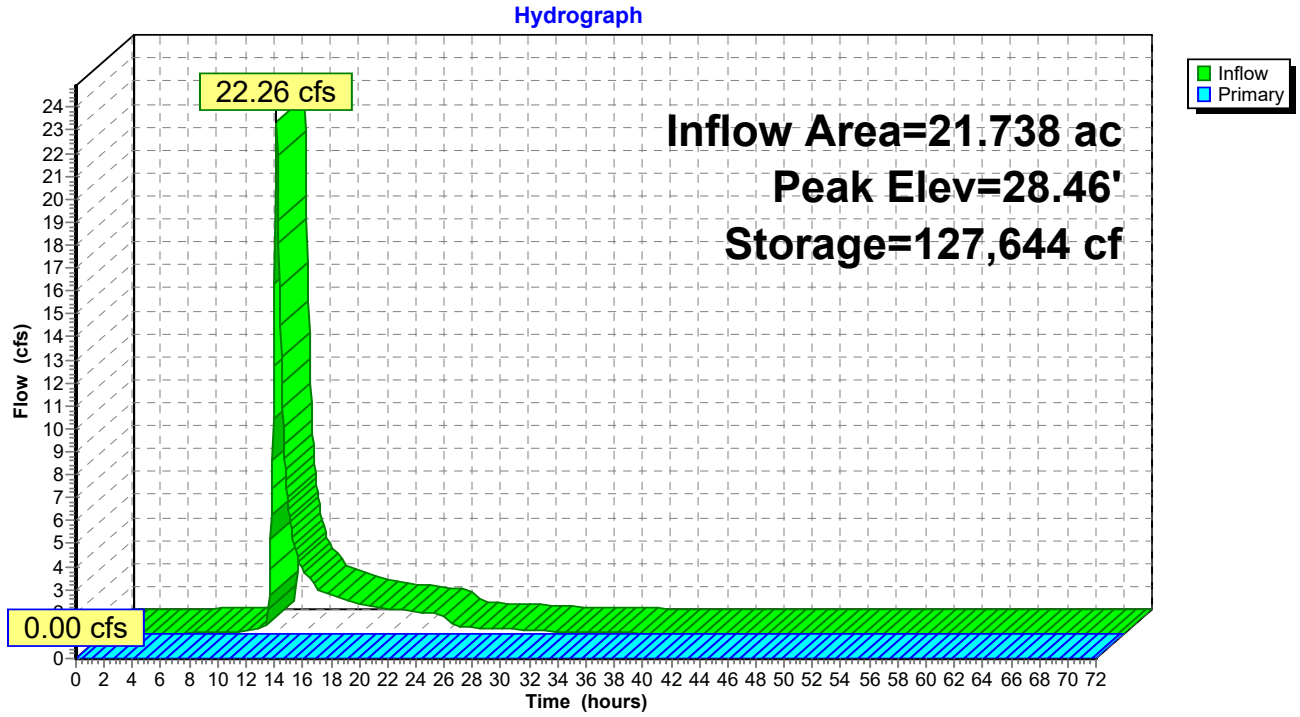
Volume	Invert	Avail.Storage	Storage Description
#1	24.01'	206,265 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.01	22,000	0	0
25.00	25,000	23,265	23,265
26.00	28,000	26,500	49,765
27.00	31,000	29,500	79,265
28.00	34,000	32,500	111,765
29.00	37,000	35,500	147,265
30.00	40,000	38,500	185,765
30.50	42,000	20,500	206,265

Device	Routing	Invert	Outlet Devices
#1	Primary	29.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=24.01' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4P: Basin 3



Summary for Subcatchment 4S: Basin 2 - Impervious

[49] Hint: Tc<2dt may require smaller dt

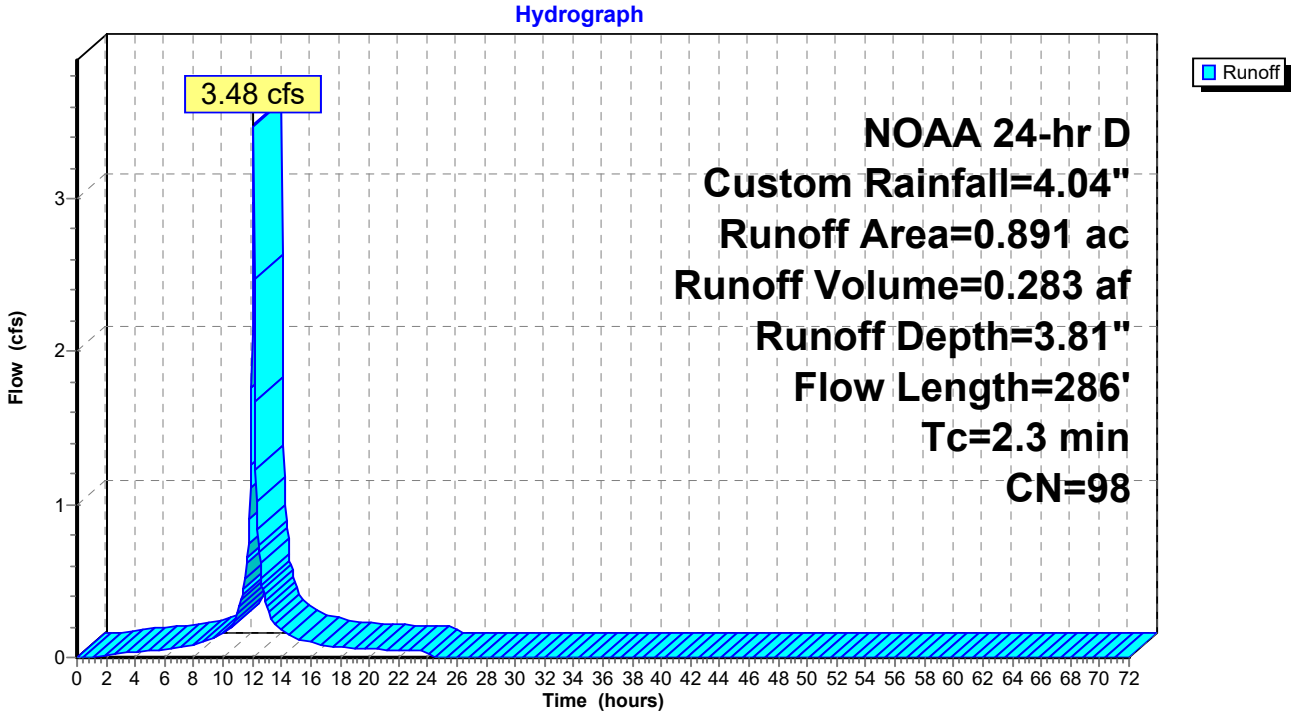
Runoff = 3.48 cfs @ 12.09 hrs, Volume= 0.283 af, Depth= 3.81"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.891	98	Impervious
	0.891		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	56	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	286	Total			

Subcatchment 4S: Basin 2 - Impervious



Summary for Subcatchment 5S: Basin 2 - Pervious

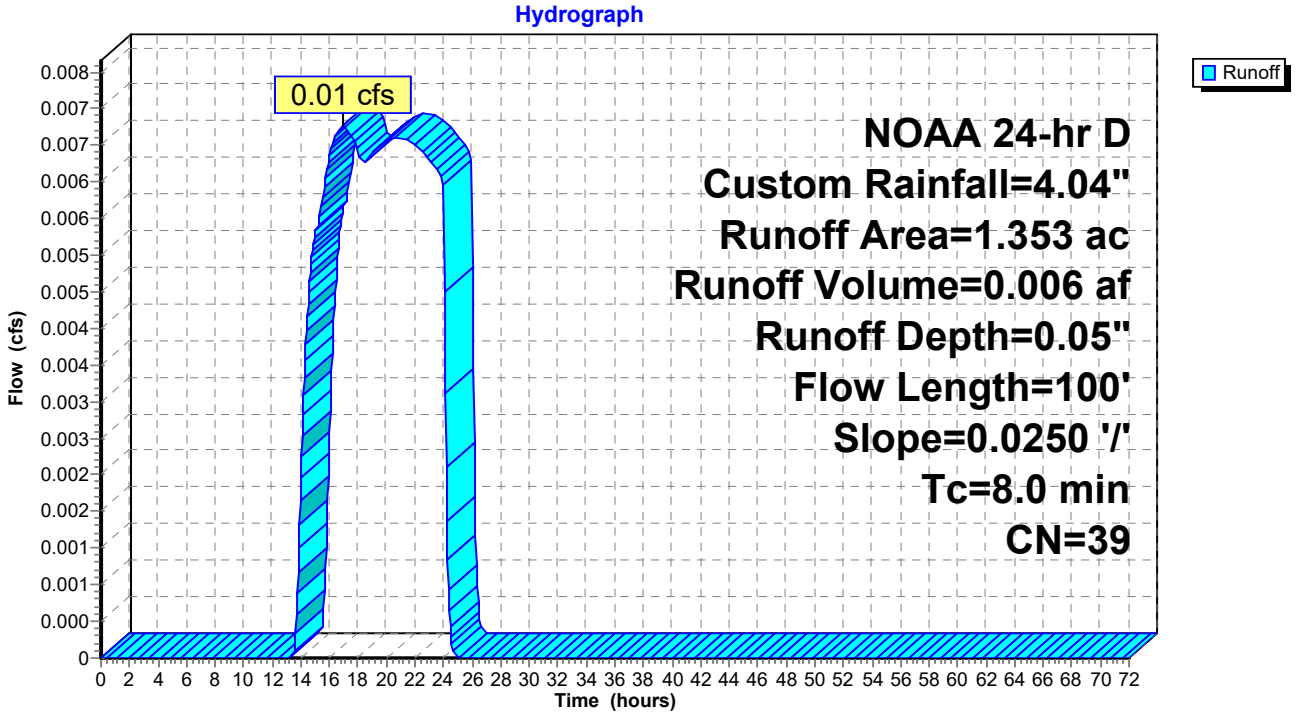
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.006 af, Depth= 0.05"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.353	39	>75% Grass cover, Good, HSG A
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 5S: Basin 2 - Pervious



Summary for Pond 6P: Basin 2

Inflow Area = 2.244 ac, 39.71% Impervious, Inflow Depth = 1.54" for Custom event
Inflow = 3.48 cfs @ 12.09 hrs, Volume= 0.288 af
Outflow = 0.17 cfs @ 14.09 hrs, Volume= 0.209 af, Atten= 95%, Lag= 119.7 min
Primary = 0.17 cfs @ 14.09 hrs, Volume= 0.209 af
Routed to Pond 3P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.18' @ 14.09 hrs Surf.Area= 0.198 ac Storage= 0.195 af

Plug-Flow detention time= 629.3 min calculated for 0.209 af (73% of inflow)
Center-of-Mass det. time= 524.9 min (1,284.1 - 759.2)

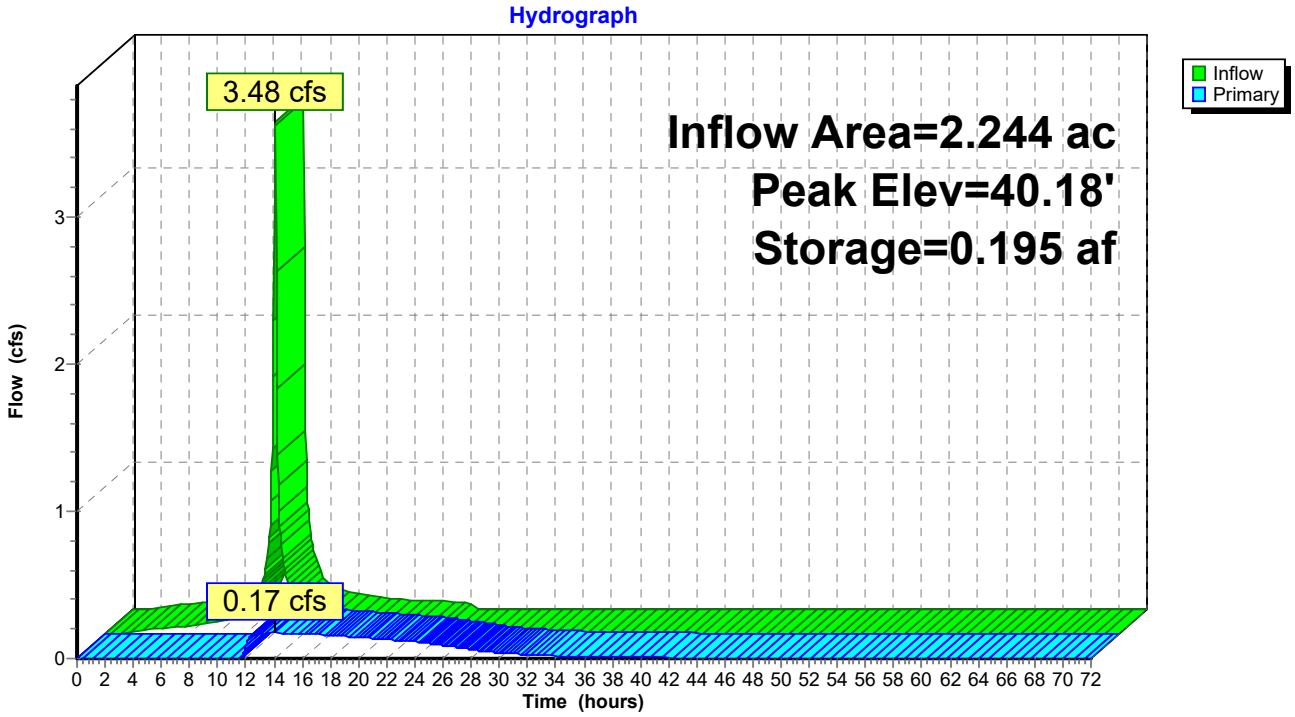
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	0.512 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
39.00	0.133	0.000	0.000
40.00	0.187	0.160	0.160
41.00	0.245	0.216	0.376
41.50	0.297	0.135	0.512

Device	Routing	Invert	Outlet Devices
#1	Primary	39.52'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 14.09 hrs HW=40.18' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.17 cfs @ 3.53 fps)

Pond 6P: Basin 2



Summary for Pond 7P: Basin 4

Inflow Area = 2.526 ac, 46.36% Impervious, Inflow Depth = 1.79" for Custom event
Inflow = 4.20 cfs @ 12.11 hrs, Volume= 0.377 af
Outflow = 3.67 cfs @ 12.15 hrs, Volume= 0.275 af, Atten= 13%, Lag= 2.9 min
Primary = 3.67 cfs @ 12.15 hrs, Volume= 0.275 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.03' @ 12.15 hrs Surf.Area= 6,391 sf Storage= 5,500 cf

Plug-Flow detention time= 198.0 min calculated for 0.275 af (73% of inflow)
Center-of-Mass det. time= 95.5 min (854.6 - 759.0)

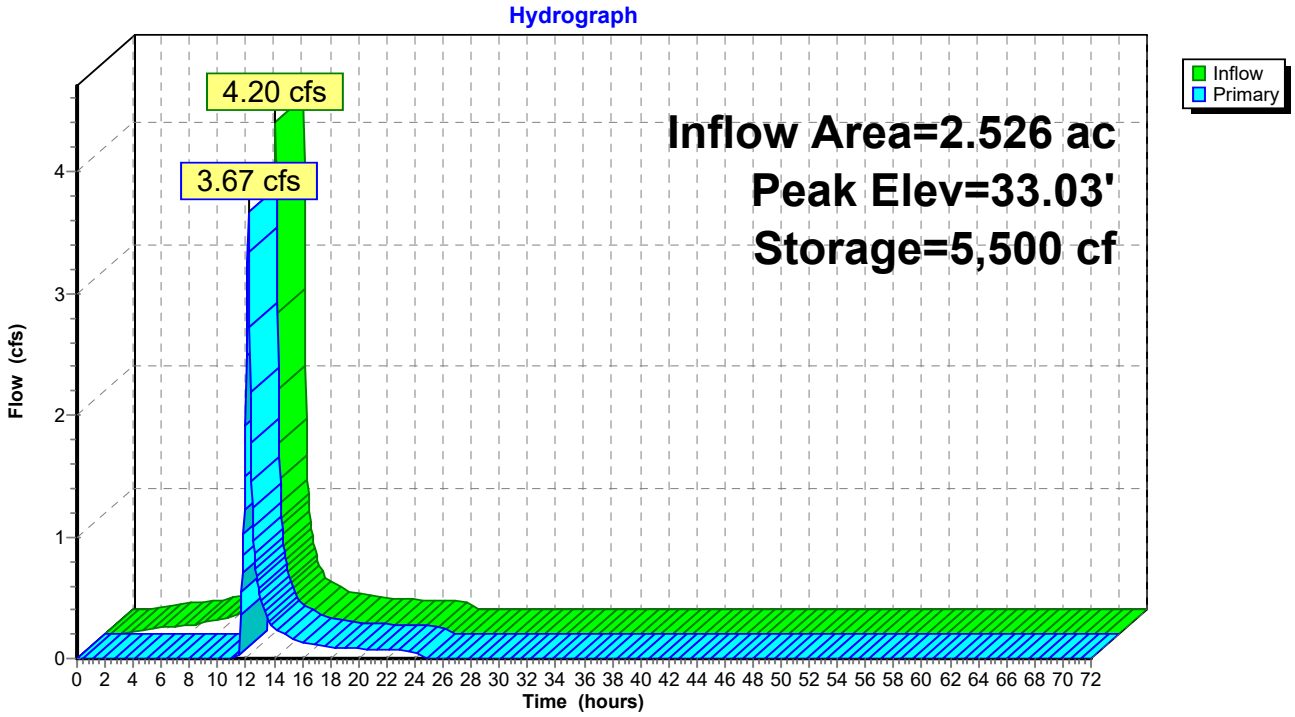
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	17,795 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	4,300	0	0
33.00	6,320	5,310	5,310
34.00	8,700	7,510	12,820
34.50	11,200	4,975	17,795

Device	Routing	Invert	Outlet Devices
#1	Primary	32.86'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.64 cfs @ 12.15 hrs HW=33.03' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.64 cfs @ 1.35 fps)

Pond 7P: Basin 4



Summary for Subcatchment 8S: Basin 4 - Impervious

[49] Hint: Tc<2dt may require smaller dt

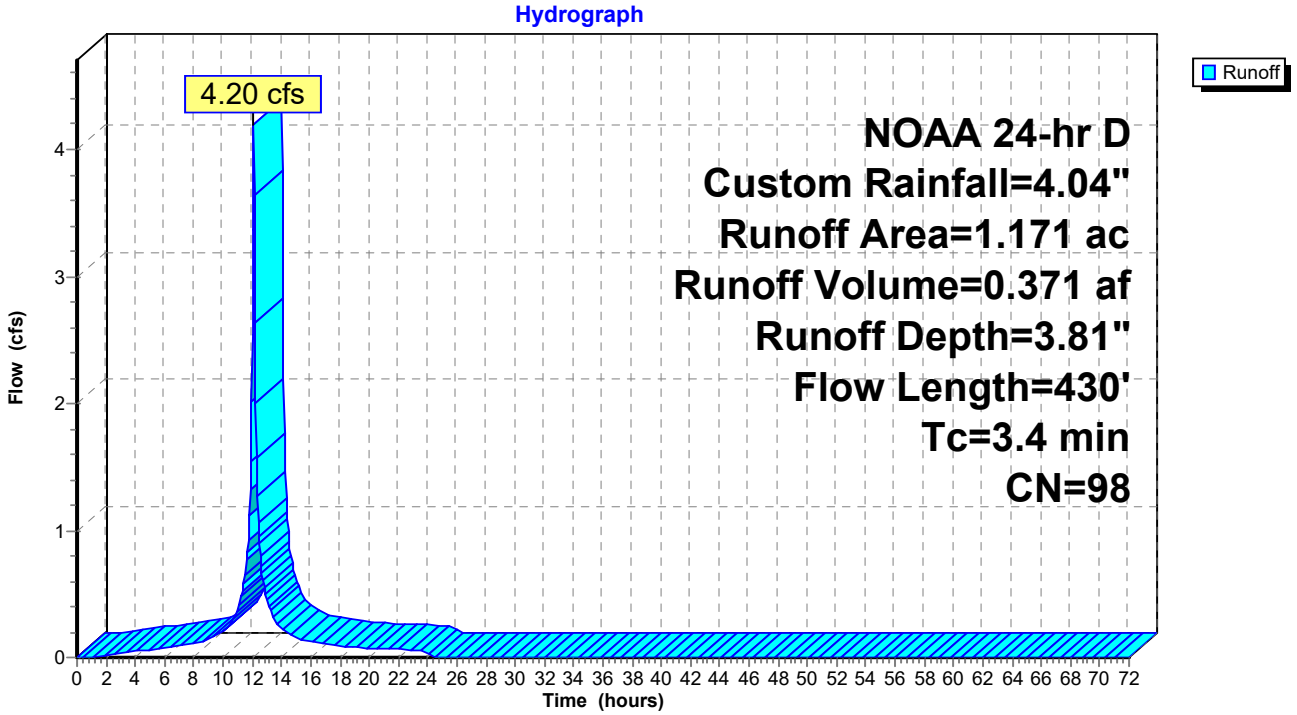
Runoff = 4.20 cfs @ 12.11 hrs, Volume= 0.371 af, Depth= 3.81"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.171	98	Impervious
	1.171		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.4	430	Total			

Subcatchment 8S: Basin 4 - Impervious



Summary for Subcatchment 9S: Basin 4 - Pervious

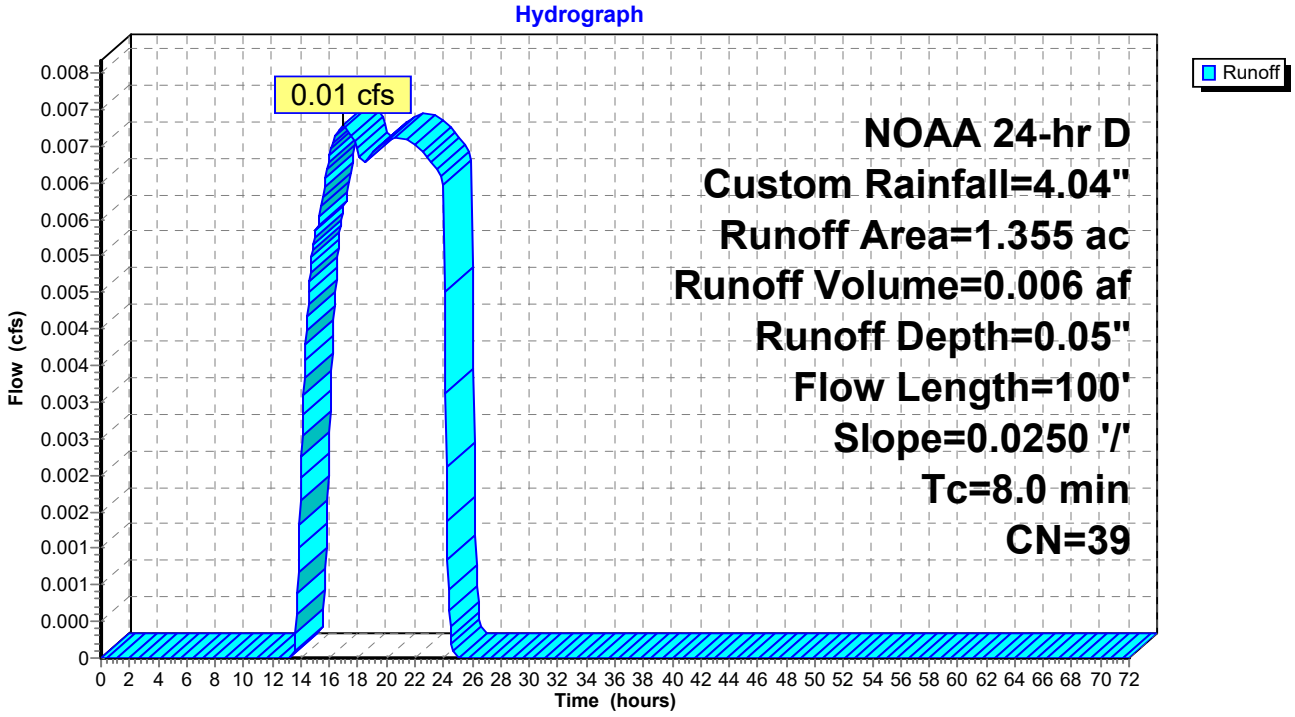
Runoff = 0.01 cfs @ 16.96 hrs, Volume= 0.006 af, Depth= 0.05"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.355	39	>75% Grass cover, Good, HSG A
1.355		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 9S: Basin 4 - Pervious



Summary for Pond 10P: Basin 5

Inflow Area = 1.373 ac, 35.40% Impervious, Inflow Depth = 1.59" for Custom event
Inflow = 1.90 cfs @ 12.11 hrs, Volume= 0.182 af
Outflow = 0.18 cfs @ 13.41 hrs, Volume= 0.140 af, Atten= 90%, Lag= 78.0 min
Primary = 0.18 cfs @ 13.41 hrs, Volume= 0.140 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.36' @ 13.41 hrs Surf.Area= 4,267 sf Storage= 4,571 cf

Plug-Flow detention time= 404.5 min calculated for 0.140 af (77% of inflow)
Center-of-Mass det. time= 304.4 min (1,089.5 - 785.0)

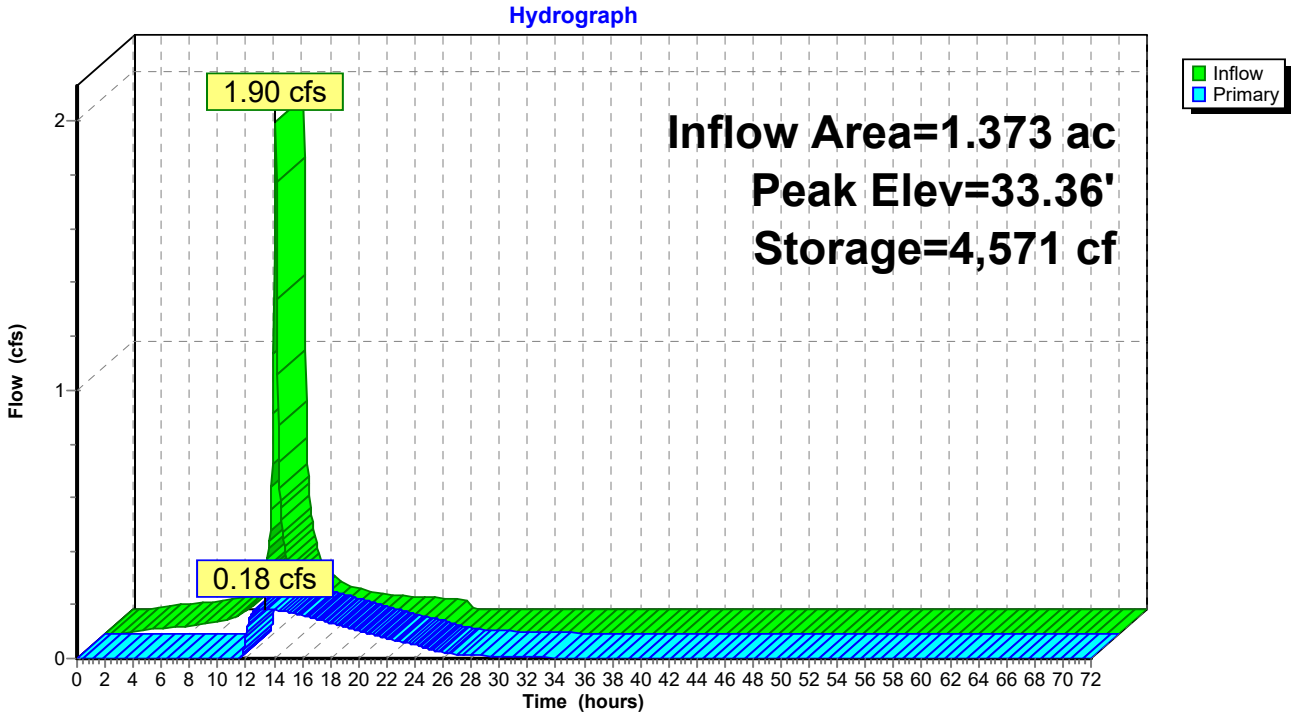
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	35,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,500	0	0
33.00	3,780	3,140	3,140
34.00	5,150	4,465	7,605
35.00	6,490	5,820	13,425
36.00	8,300	7,395	20,820
37.00	9,700	9,000	29,820
37.50	11,500	5,300	35,120

Device	Routing	Invert	Outlet Devices
#1	Primary	32.63'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 13.41 hrs HW=33.36' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.18 cfs @ 3.73 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Basin 5



Summary for Subcatchment 11S: Basin 5 - Impervious

[49] Hint: Tc<2dt may require smaller dt

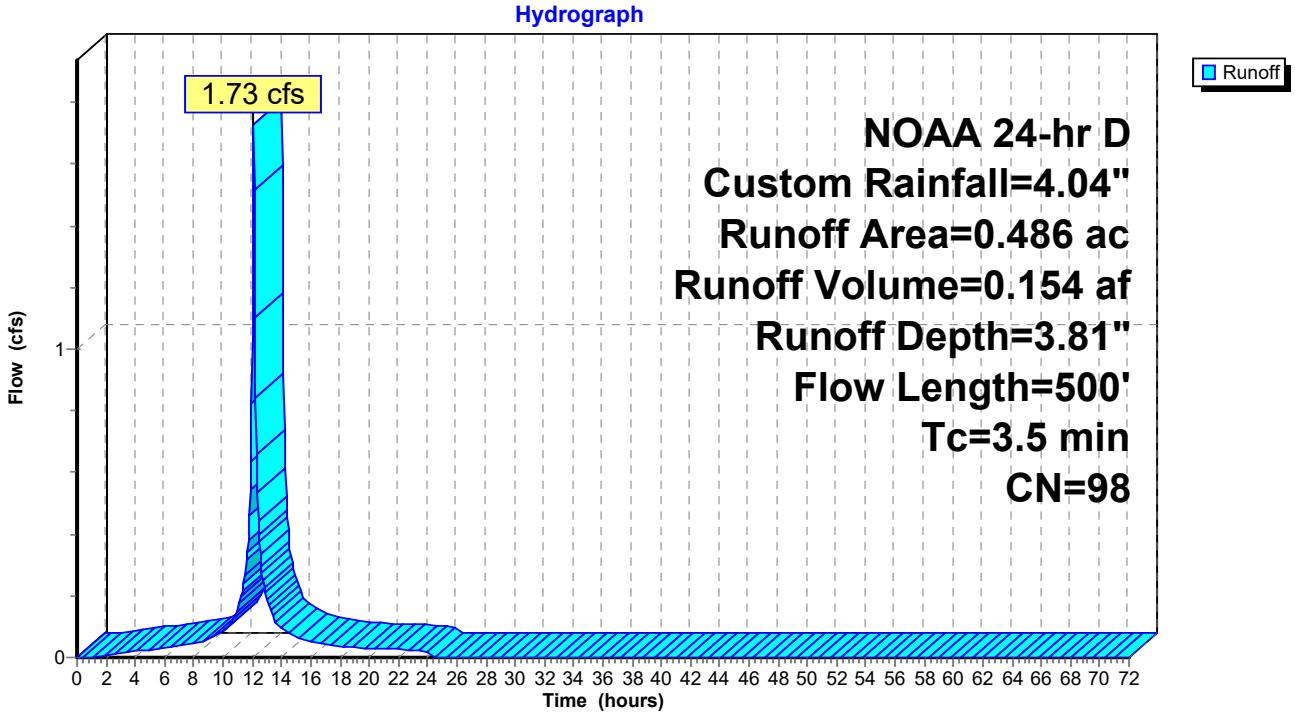
Runoff = 1.73 cfs @ 12.11 hrs, Volume= 0.154 af, Depth= 3.81"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.486	98	Impervious
	0.486		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.5	500	Total			

Subcatchment 11S: Basin 5 - Impervious



Summary for Subcatchment 12S: Basin 5 - Pervious

[49] Hint: Tc<2dt may require smaller dt

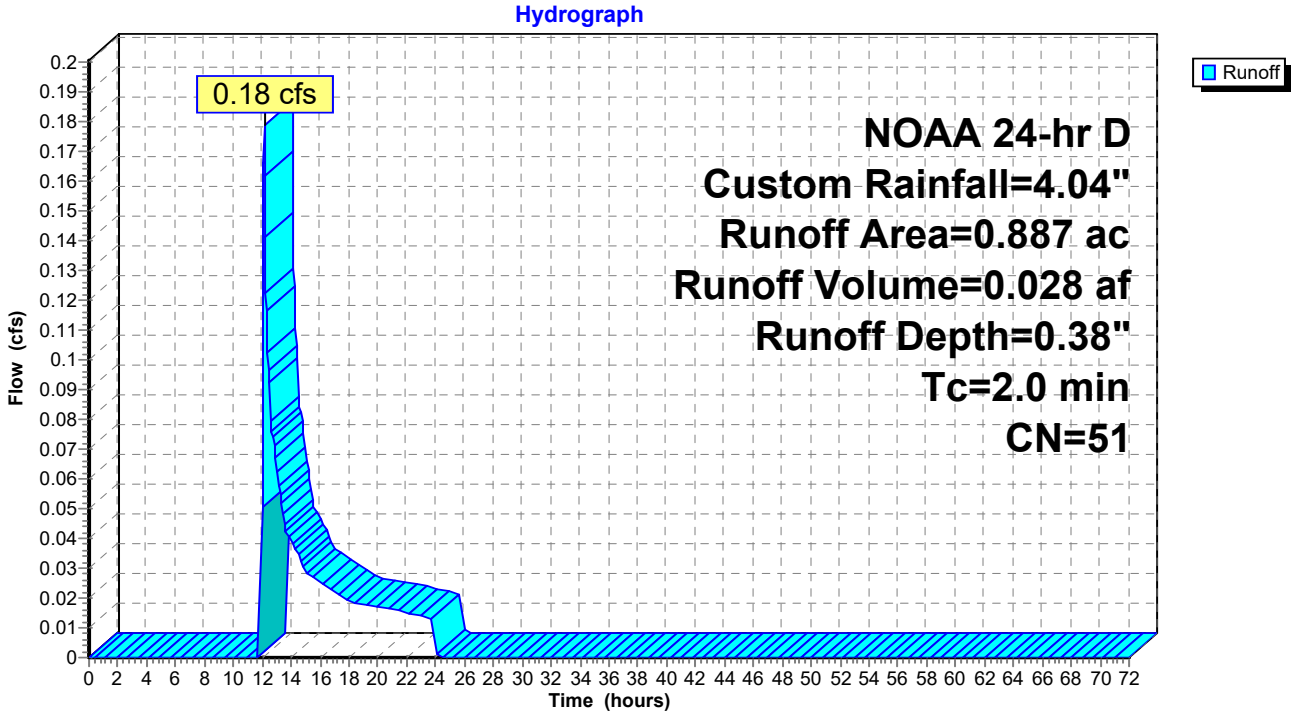
Runoff = 0.18 cfs @ 12.12 hrs, Volume= 0.028 af, Depth= 0.38"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
0.621	39	>75% Grass cover, Good, HSG A
0.266	80	>75% Grass cover, Good, HSG D
0.887	51	Weighted Average
0.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 12S: Basin 5 - Pervious



Summary for Pond 13P: Basin 7

Inflow Area = 3.928 ac, 40.63% Impervious, Inflow Depth = 2.43" for Custom event
Inflow = 7.42 cfs @ 12.17 hrs, Volume= 0.794 af
Outflow = 7.08 cfs @ 12.22 hrs, Volume= 0.678 af, Atten= 5%, Lag= 2.7 min
Primary = 7.08 cfs @ 12.22 hrs, Volume= 0.678 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.05' @ 12.22 hrs Surf.Area= 5,717 sf Storage= 6,477 cf

Plug-Flow detention time= 120.6 min calculated for 0.678 af (85% of inflow)
Center-of-Mass det. time= 50.9 min (866.0 - 815.1)

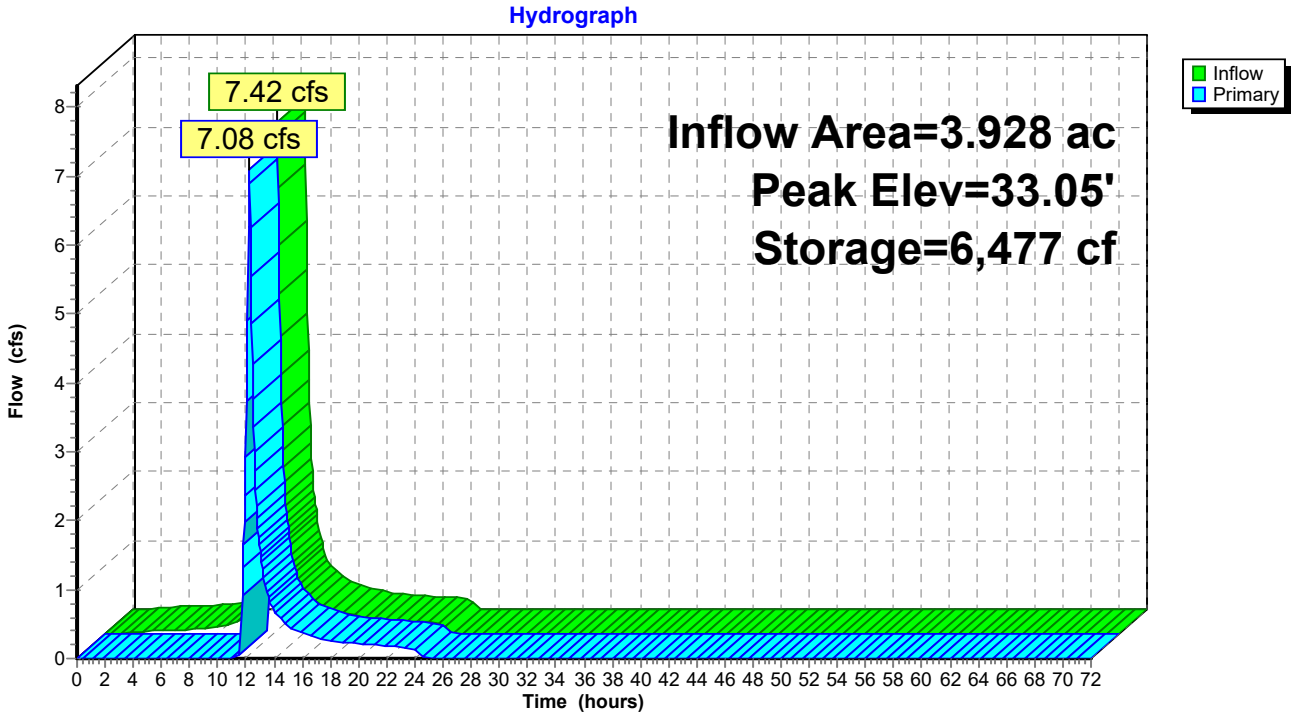
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	17,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,000	0	0
32.00	3,500	1,625	1,625
33.00	5,600	4,550	6,175
34.00	7,800	6,700	12,875
34.50	9,400	4,300	17,175

Device	Routing	Invert	Outlet Devices
#1	Primary	32.79'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.97 cfs @ 12.22 hrs HW=33.05' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 6.97 cfs @ 1.67 fps)

Pond 13P: Basin 7



Summary for Subcatchment 14S: Basin 7 - Impervious

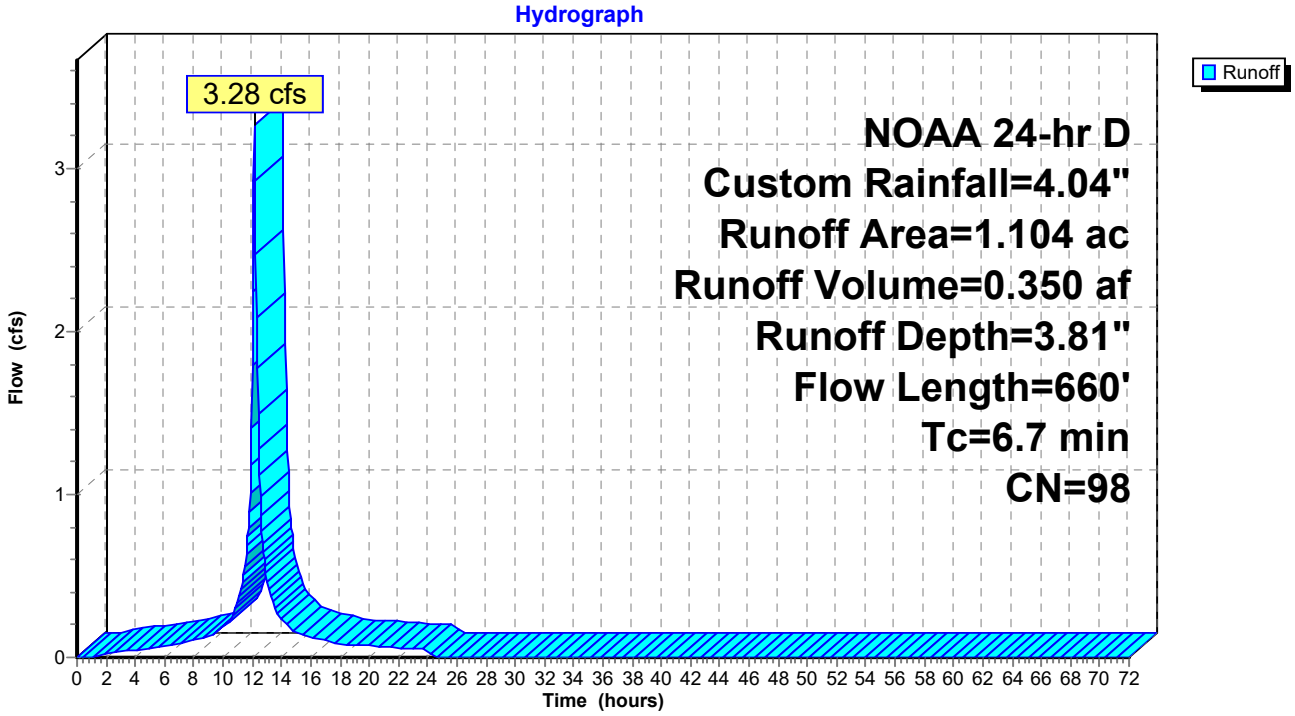
Runoff = 3.28 cfs @ 12.15 hrs, Volume= 0.350 af, Depth= 3.81"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.104	98	Impervious
	1.104		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
4.9	500	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	60	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	660	Total			

Subcatchment 14S: Basin 7 - Impervious

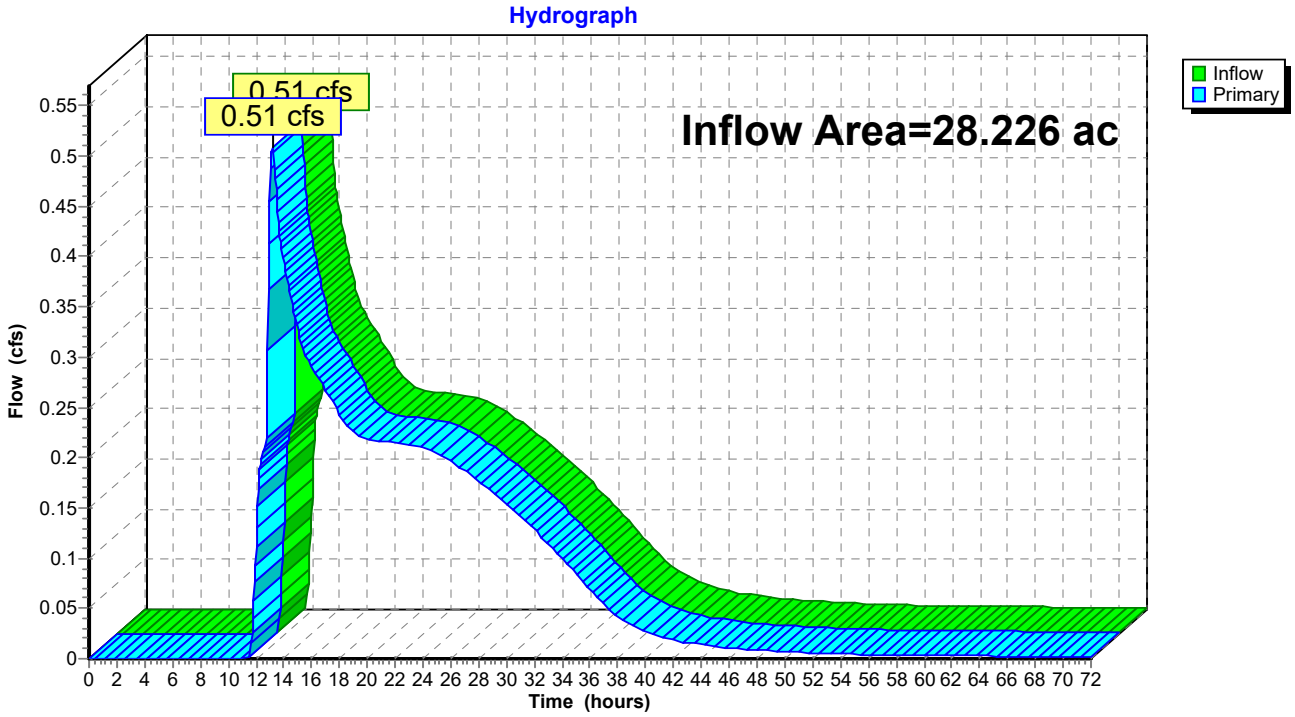


Summary for Link 15L: Willis Creek

Inflow Area = 28.226 ac, 38.93% Impervious, Inflow Depth > 0.19" for Custom event
Inflow = 0.51 cfs @ 13.17 hrs, Volume= 0.446 af
Primary = 0.51 cfs @ 13.17 hrs, Volume= 0.446 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 15L: Willis Creek



Summary for Subcatchment 15S: Basin 7 - Pervious

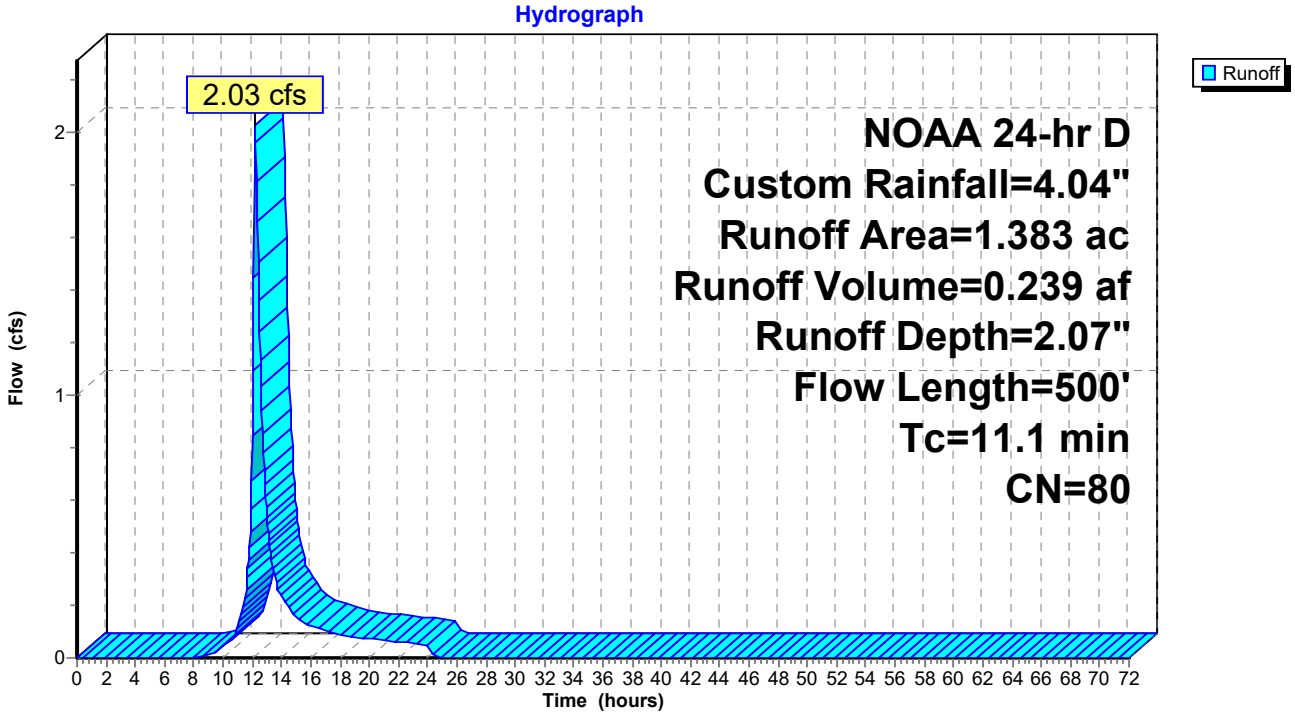
Runoff = 2.03 cfs @ 12.21 hrs, Volume= 0.239 af, Depth= 2.07"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.383	80	>75% Grass cover, Good, HSG D
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	80	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	20	0.0070	0.74		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
3.9	400	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
11.1	500	Total			

Subcatchment 15S: Basin 7 - Pervious



Summary for Pond 16P: Basin 9

Inflow Area = 7.133 ac, 41.50% Impervious, Inflow Depth > 1.70" for Custom event
Inflow = 5.35 cfs @ 12.34 hrs, Volume= 1.010 af
Outflow = 4.77 cfs @ 12.15 hrs, Volume= 0.913 af, Atten= 11%, Lag= 0.0 min
Primary = 4.77 cfs @ 12.15 hrs, Volume= 0.913 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.13' @ 12.15 hrs Surf.Area= 5,459 sf Storage= 5,311 cf

Plug-Flow detention time= 157.4 min calculated for 0.913 af (90% of inflow)
Center-of-Mass det. time= 58.2 min (1,066.7 - 1,008.6)

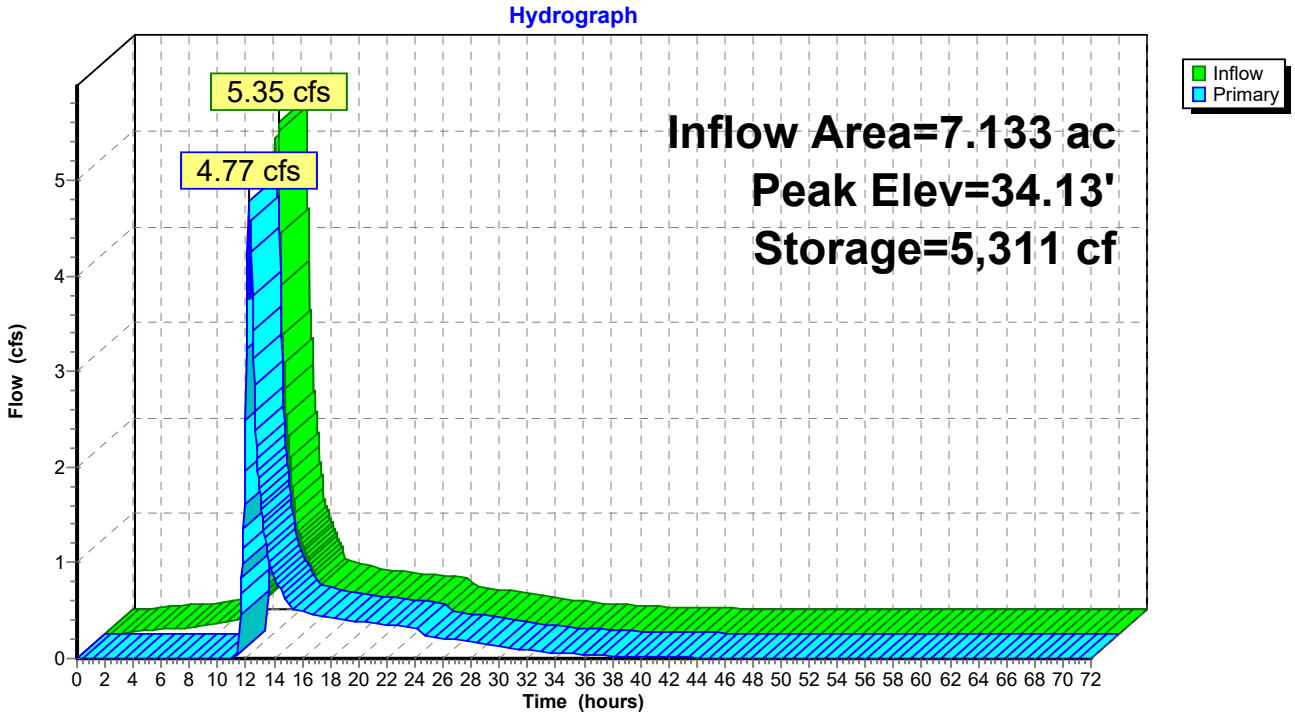
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,900	0	0
34.00	5,300	4,600	4,600
35.00	6,500	5,900	10,500
36.00	8,000	7,250	17,750
36.50	9,700	4,425	22,175

Device	Routing	Invert	Outlet Devices
#1	Primary	33.93'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.72 cfs @ 12.15 hrs HW=34.13' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 4.72 cfs @ 1.47 fps)

Pond 16P: Basin 9



Summary for Subcatchment 17S: Basin 9 - Impervious

[49] Hint: Tc<2dt may require smaller dt

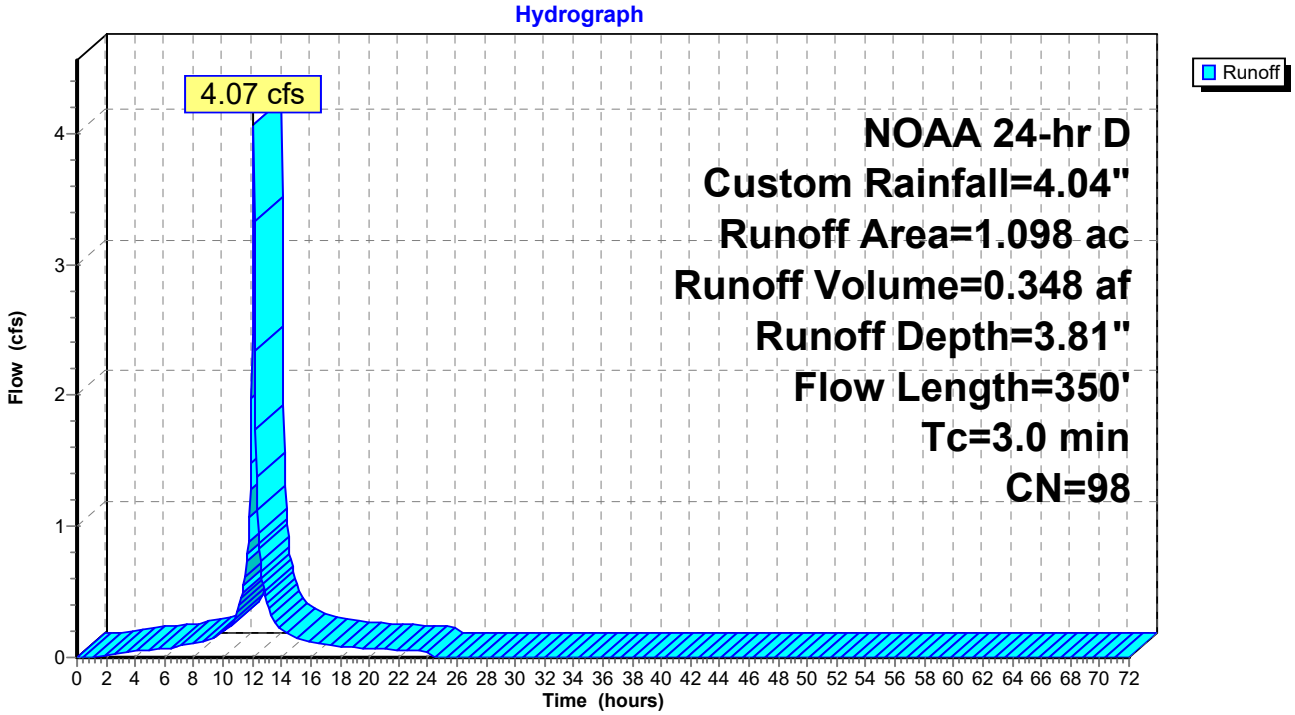
Runoff = 4.07 cfs @ 12.10 hrs, Volume= 0.348 af, Depth= 3.81"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.098	98	Impervious
	1.098		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.0	350	Total			

Subcatchment 17S: Basin 9 - Impervious



Summary for Subcatchment 18S: Basin 9 - Pervious

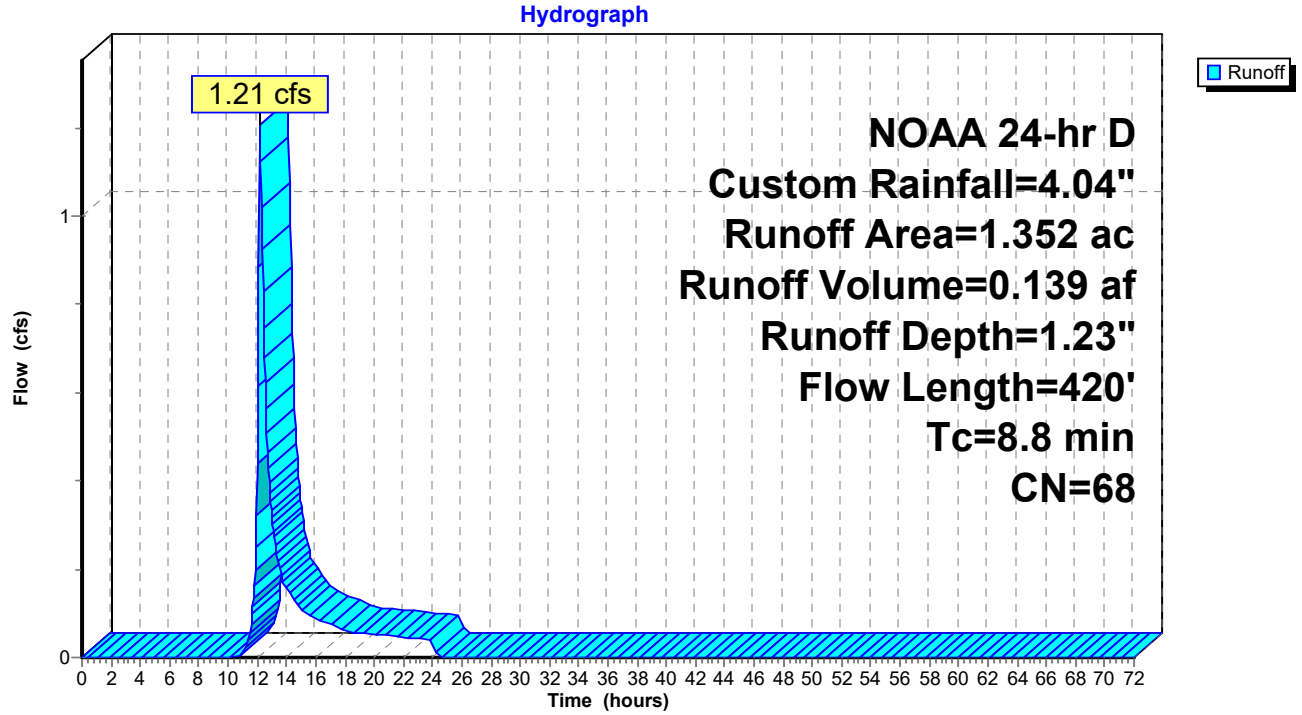
Runoff = 1.21 cfs @ 12.19 hrs, Volume= 0.139 af, Depth= 1.23"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
0.946	80	>75% Grass cover, Good, HSG D
0.406	39	>75% Grass cover, Good, HSG A
1.352	68	Weighted Average
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
1.7	170	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, D to E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	420	Total			

Subcatchment 18S: Basin 9 - Pervious



Summary for Pond 19P: Basin 10

[93] Warning: Storage range exceeded by 183.22'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=26)
[81] Warning: Exceeded Pond 22P by 181.67' @ 12.35 hrs

Inflow Area = 4.683 ac, 39.76% Impervious, Inflow Depth = 1.54" for Custom event
Inflow = 6.29 cfs @ 12.12 hrs, Volume= 0.603 af
Outflow = 3.23 cfs @ 12.34 hrs, Volume= 0.523 af, Atten= 49%, Lag= 13.6 min
Primary = 3.23 cfs @ 12.34 hrs, Volume= 0.523 af
Routed to Pond 16P : Basin 9

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 221.72' @ 12.34 hrs Surf.Area= 8,000 sf Storage= 12,700 cf

Plug-Flow detention time= 479.3 min calculated for 0.523 af (87% of inflow)
Center-of-Mass det. time= 413.1 min (1,211.2 - 798.1)

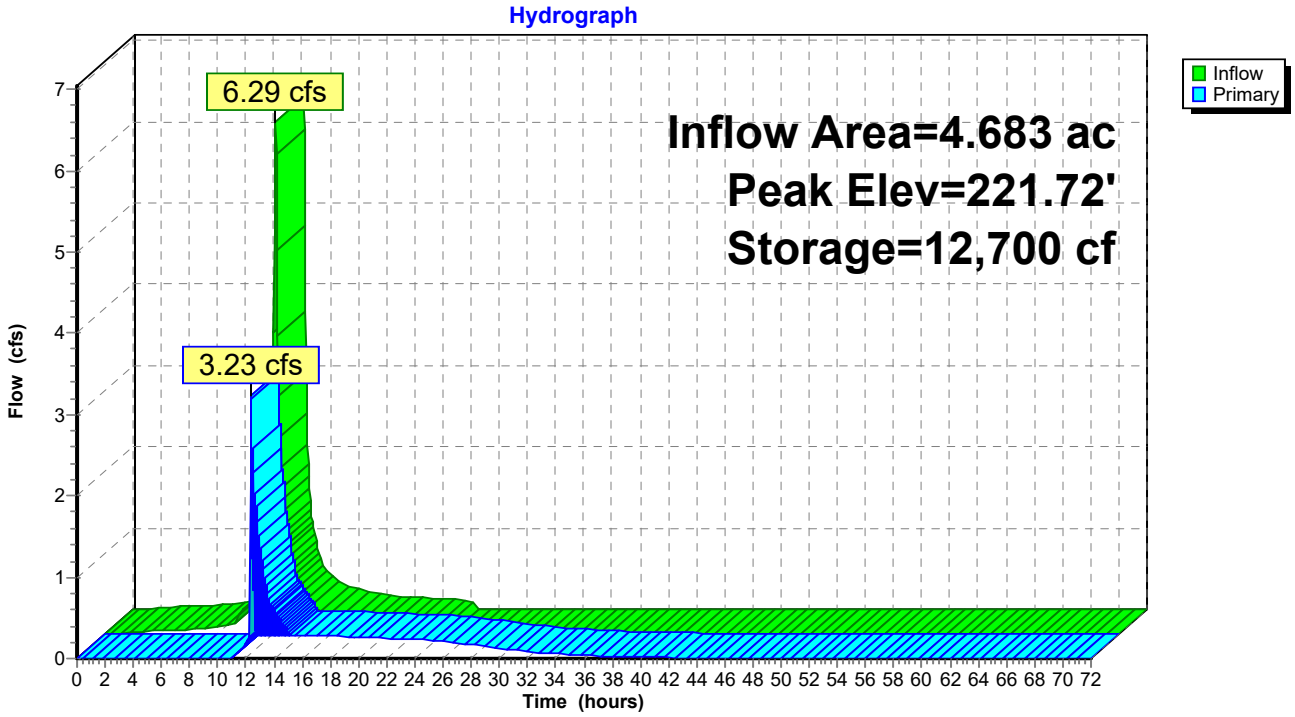
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	12,700 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,700	0	0
37.00	4,400	3,550	3,550
38.00	6,600	5,500	9,050
38.50	8,000	3,650	12,700

Device	Routing	Invert	Outlet Devices
#1	Primary	36.97'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.06 cfs @ 12.34 hrs HW=205.04' (Free Discharge)
1=Orifice/Grate (Orifice Controls 3.06 cfs @ 62.40 fps)

Pond 19P: Basin 10



Summary for Subcatchment 20S: Basin 10 - Impervious

[49] Hint: Tc<2dt may require smaller dt

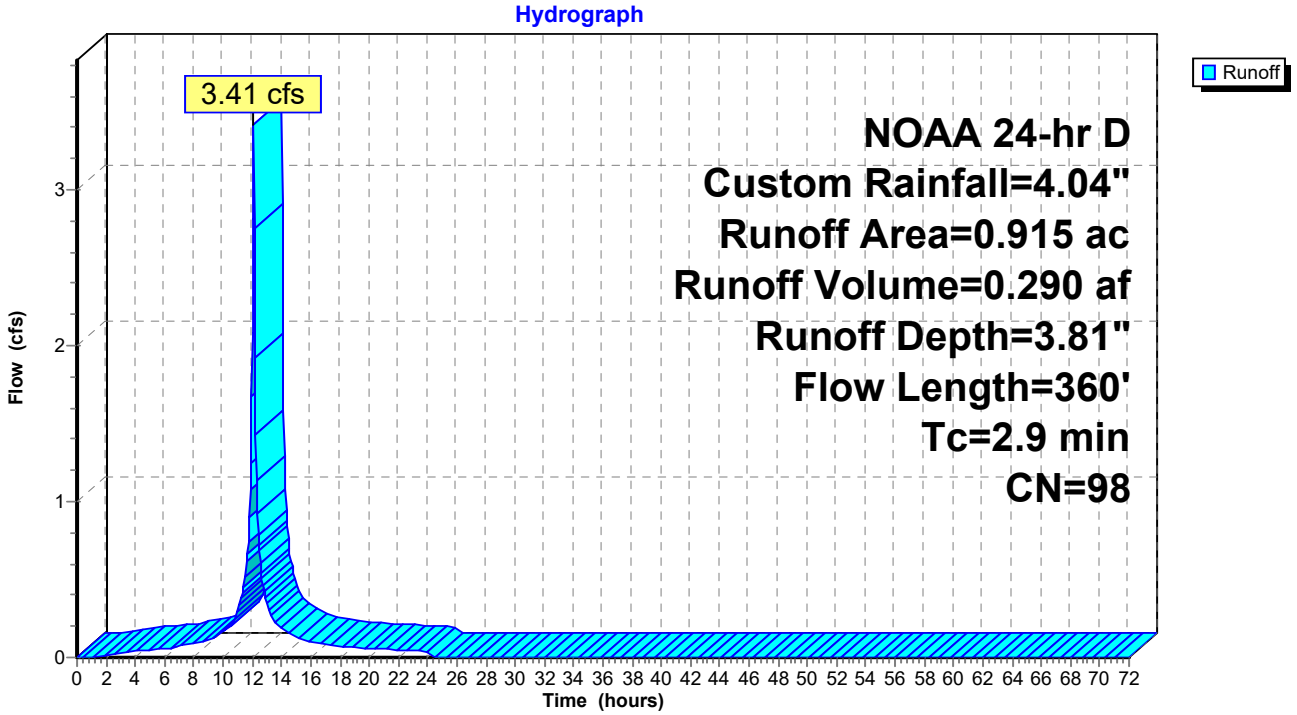
Runoff = 3.41 cfs @ 12.10 hrs, Volume= 0.290 af, Depth= 3.81"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.6	60	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	360	Total			

Subcatchment 20S: Basin 10 - Impervious



Summary for Subcatchment 21S: Basin 10 - Pervious

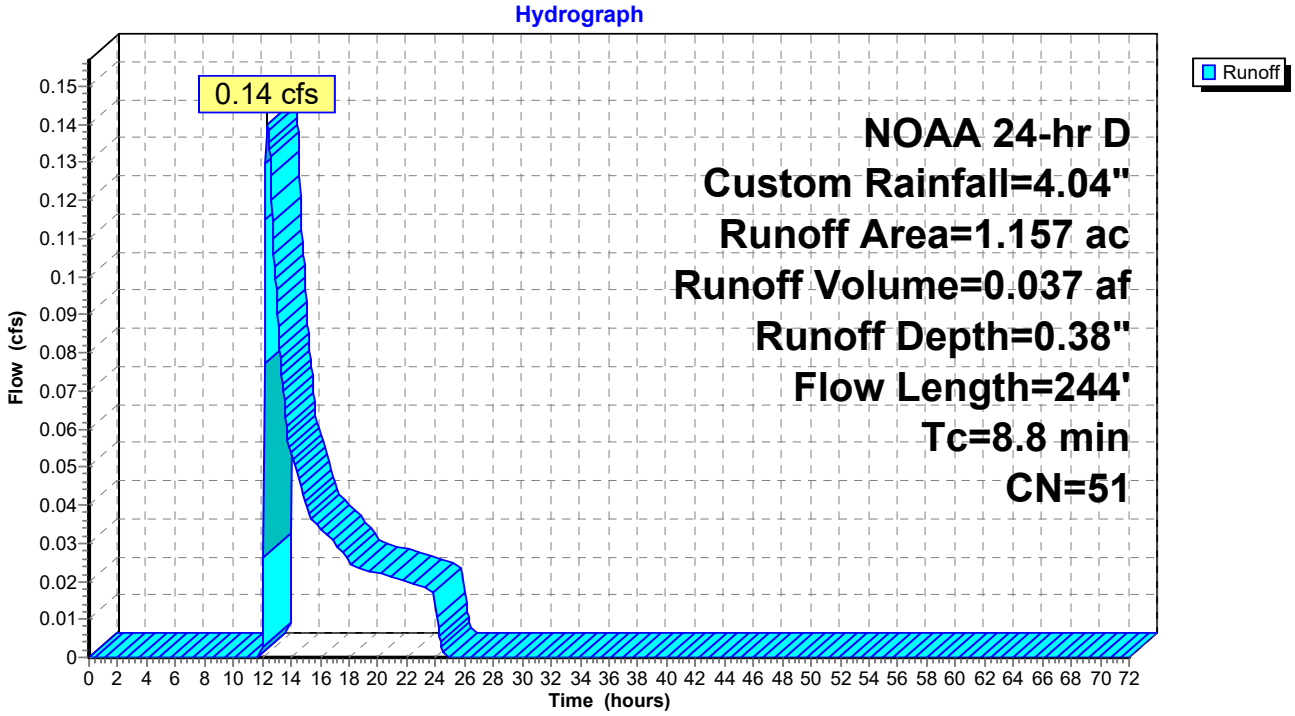
Runoff = 0.14 cfs @ 12.36 hrs, Volume= 0.037 af, Depth= 0.38"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
0.347	80	>75% Grass cover, Good, HSG D
0.810	39	>75% Grass cover, Good, HSG A
1.157	51	Weighted Average
1.157		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	150	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	244	Total			

Subcatchment 21S: Basin 10 - Pervious



Summary for Pond 22P: Basin 11

Inflow Area = 2.611 ac, 36.27% Impervious, Inflow Depth = 1.44" for Custom event
Inflow = 3.30 cfs @ 12.11 hrs, Volume= 0.312 af
Outflow = 3.08 cfs @ 12.15 hrs, Volume= 0.276 af, Atten= 7%, Lag= 2.2 min
Primary = 3.08 cfs @ 12.15 hrs, Volume= 0.276 af
Routed to Pond 19P : Basin 10

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.65' @ 12.15 hrs Surf.Area= 3,791 sf Storage= 2,159 cf

Plug-Flow detention time= 119.1 min calculated for 0.276 af (88% of inflow)
Center-of-Mass det. time= 56.6 min (823.6 - 767.0)

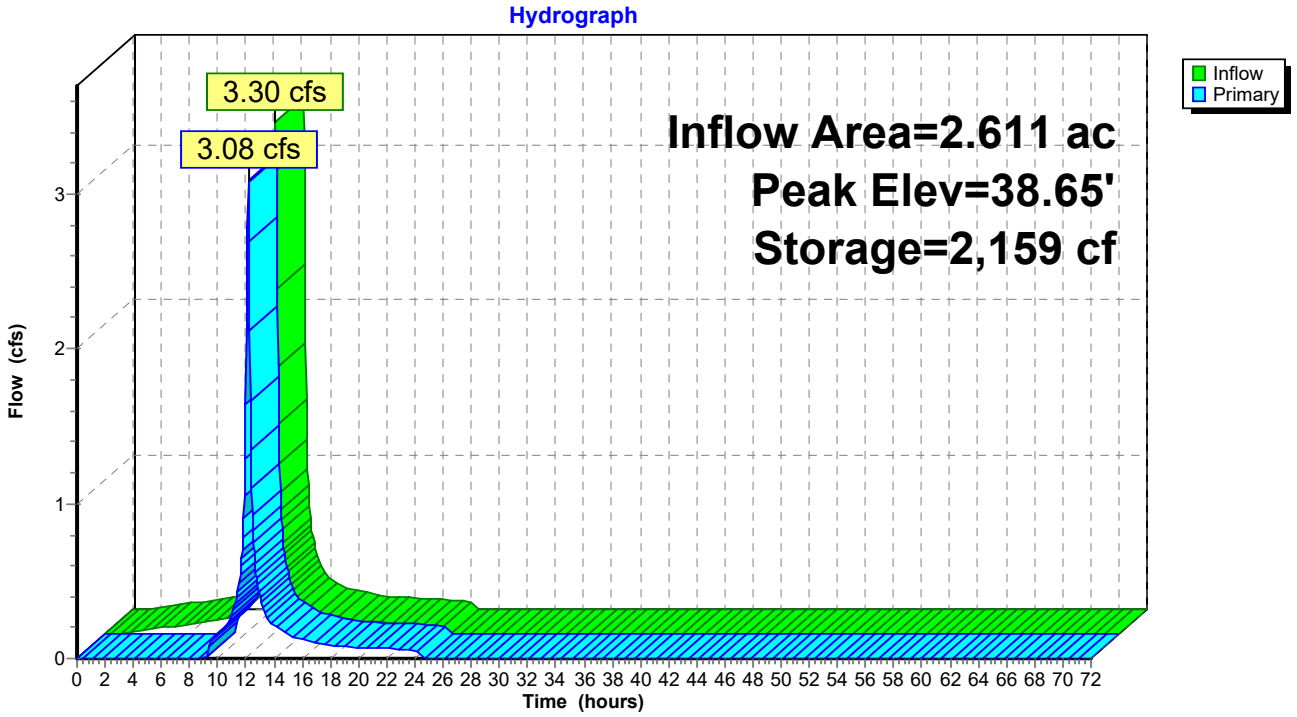
Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	9,170 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	2,840	0	0
39.00	4,300	3,570	3,570
40.00	6,900	5,600	9,170

Device	Routing	Invert	Outlet Devices
#1	Primary	38.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.05 cfs @ 12.15 hrs HW=38.65' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.05 cfs @ 1.27 fps)

Pond 22P: Basin 11



Summary for Subcatchment 23S: Basin 11 - Impervious

[49] Hint: Tc<2dt may require smaller dt

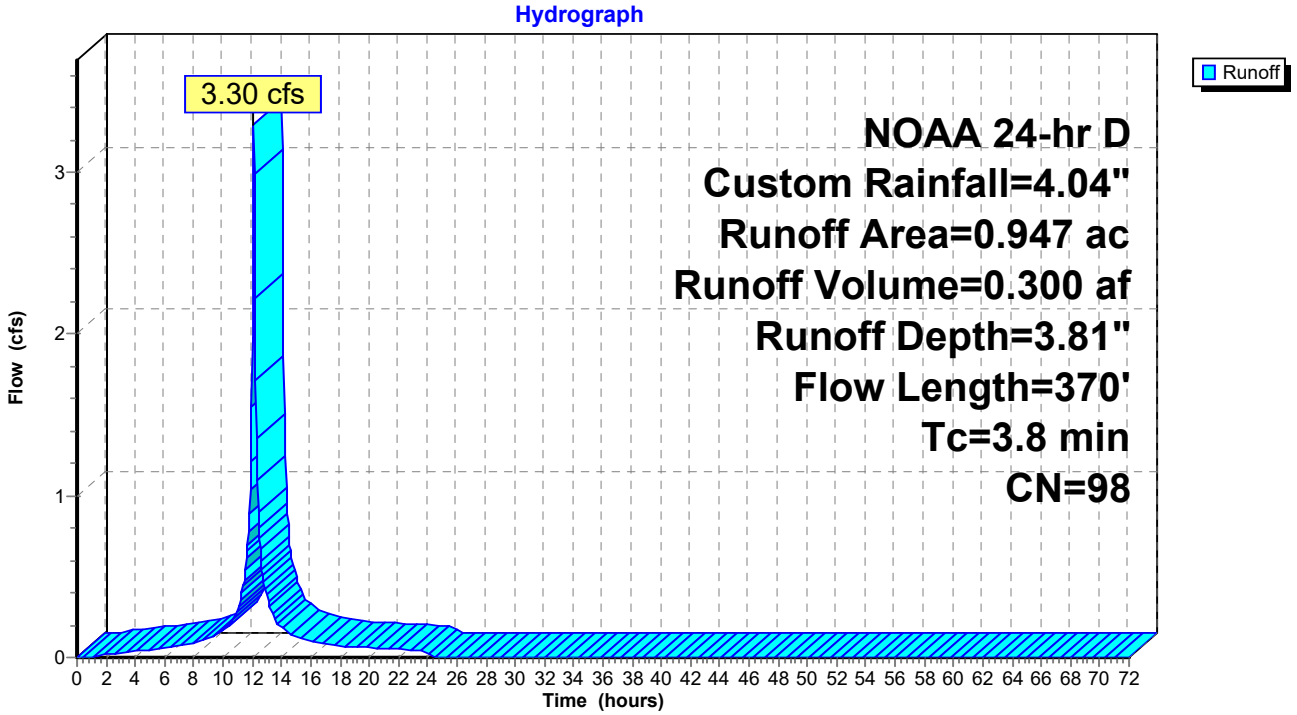
Runoff = 3.30 cfs @ 12.11 hrs, Volume= 0.300 af, Depth= 3.81"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.947	98	Impervious
	0.947		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	70	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.8	370	Total			

Subcatchment 23S: Basin 11 - Impervious



Summary for Subcatchment 24S: Basin 11 - Pervious

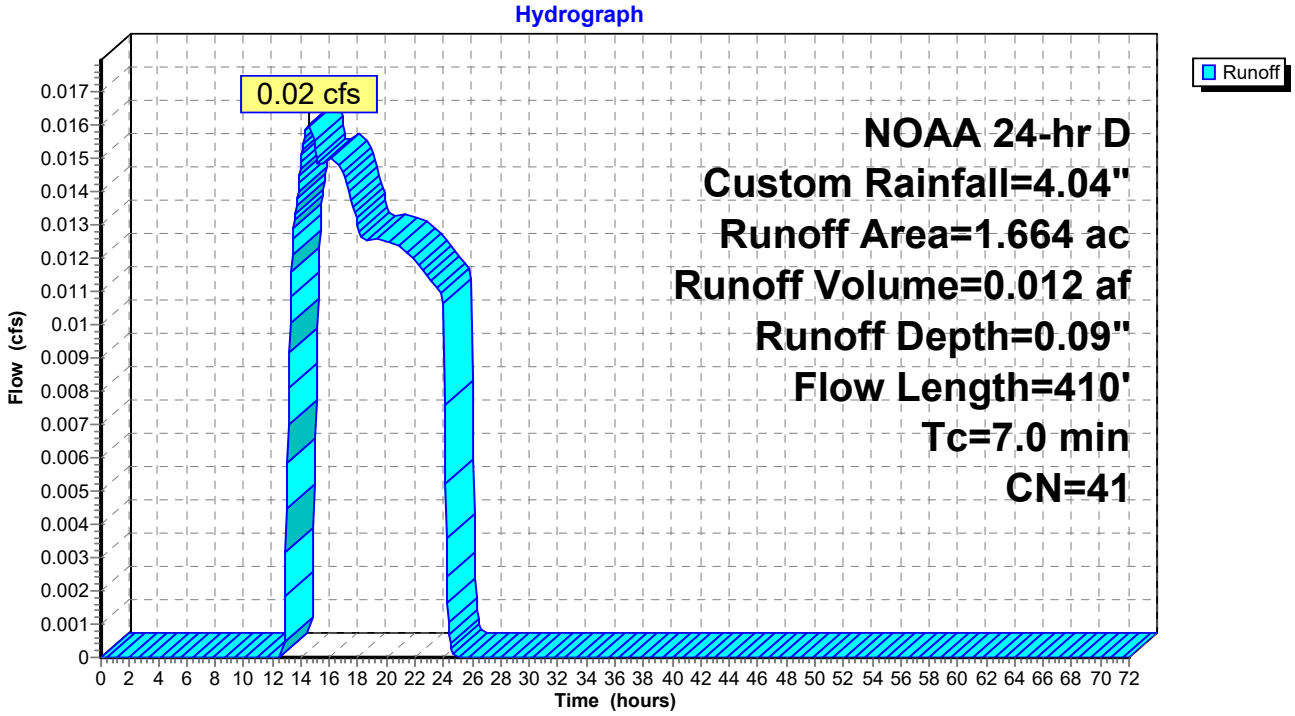
Runoff = 0.02 cfs @ 14.55 hrs, Volume= 0.012 af, Depth= 0.09"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
0.083	80	>75% Grass cover, Good, HSG D
1.581	39	>75% Grass cover, Good, HSG A
1.664	41	Weighted Average
1.664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	60	0.0200	0.17		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.0	410	Total			

Subcatchment 24S: Basin 11 - Pervious



Summary for Pond 25P: Basin 12

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 0.85" for Custom event
Inflow = 1.68 cfs @ 12.10 hrs, Volume= 0.150 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 40P : Wetlands Depression

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 39.62' @ 25.05 hrs Surf.Area= 11,457 sf Storage= 6,520 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

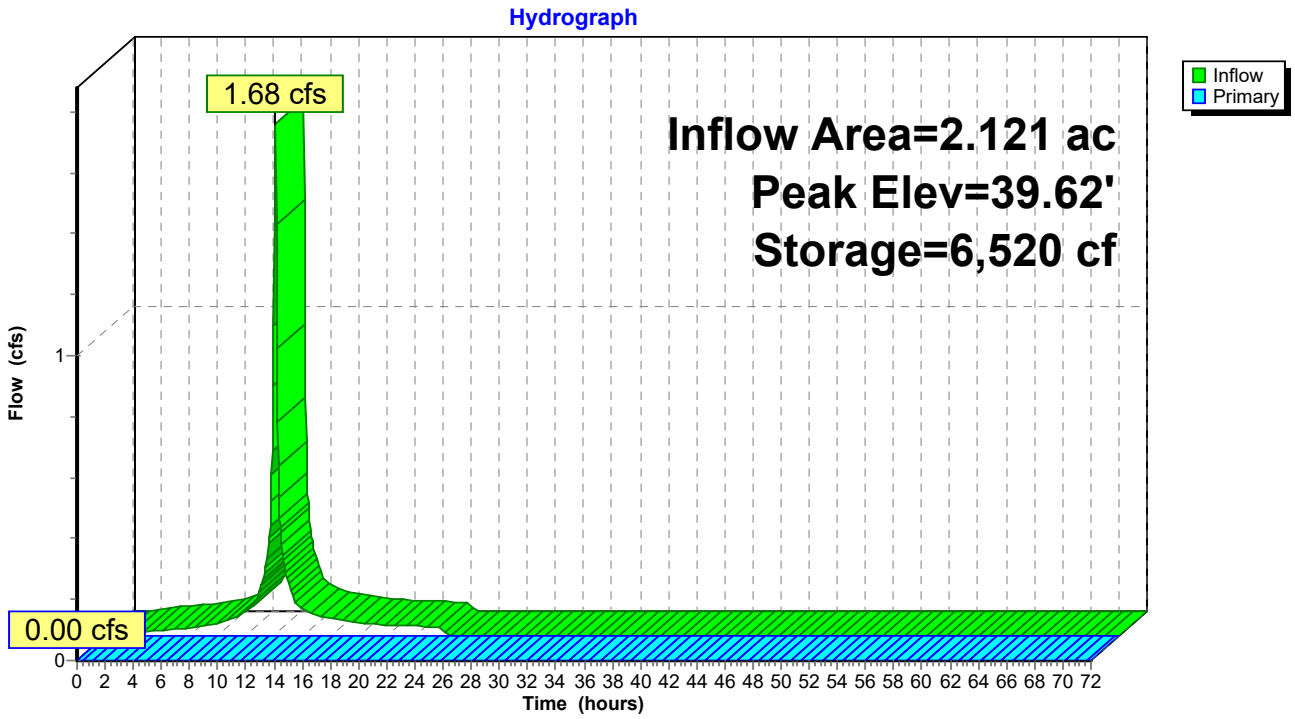
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	52,425 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	9,700	0	0
40.00	12,550	11,125	11,125
41.00	15,600	14,075	25,200
42.00	18,900	17,250	42,450
42.50	21,000	9,975	52,425

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=39.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 25P: Basin 12



Summary for Subcatchment 26S: Basin 12 - Impervious

[49] Hint: Tc<2dt may require smaller dt

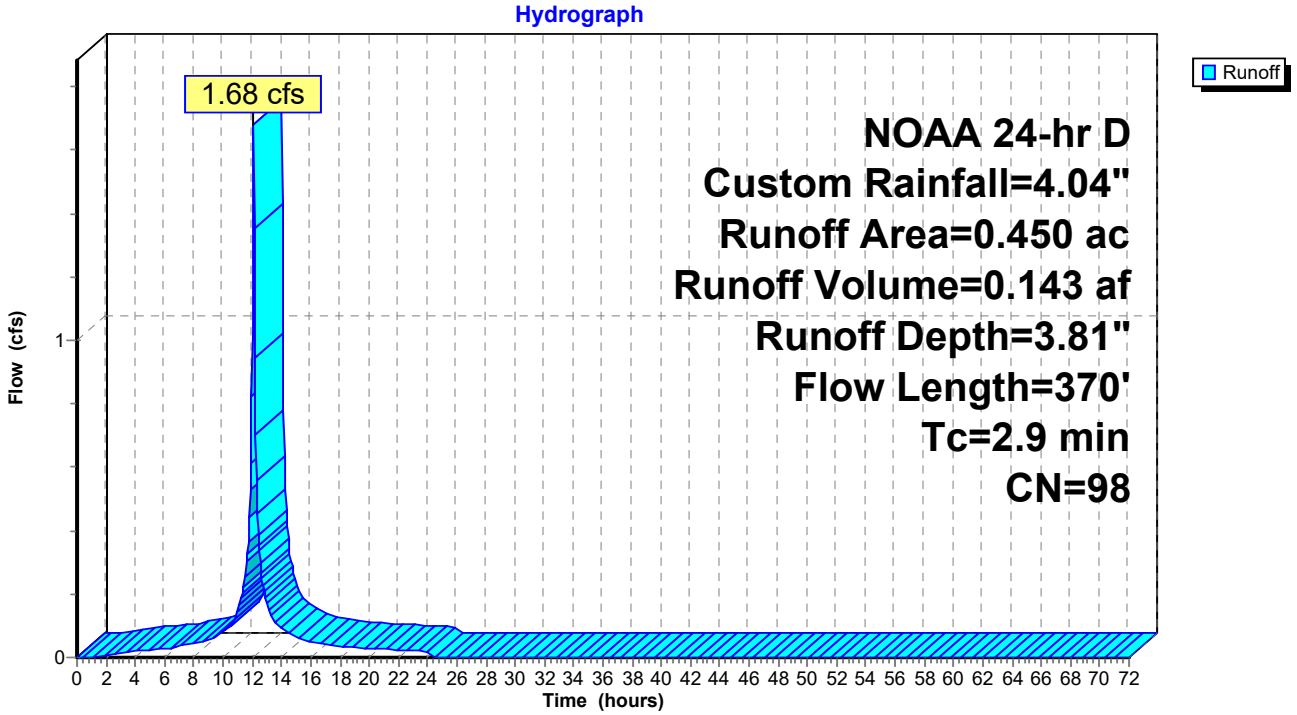
Runoff = 1.68 cfs @ 12.10 hrs, Volume= 0.143 af, Depth= 3.81"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.450	98	Impervious
	0.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	50	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.8	220	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	370	Total			

Subcatchment 26S: Basin 12 - Impervious



Summary for Subcatchment 27S: Basin 12 - Pervious

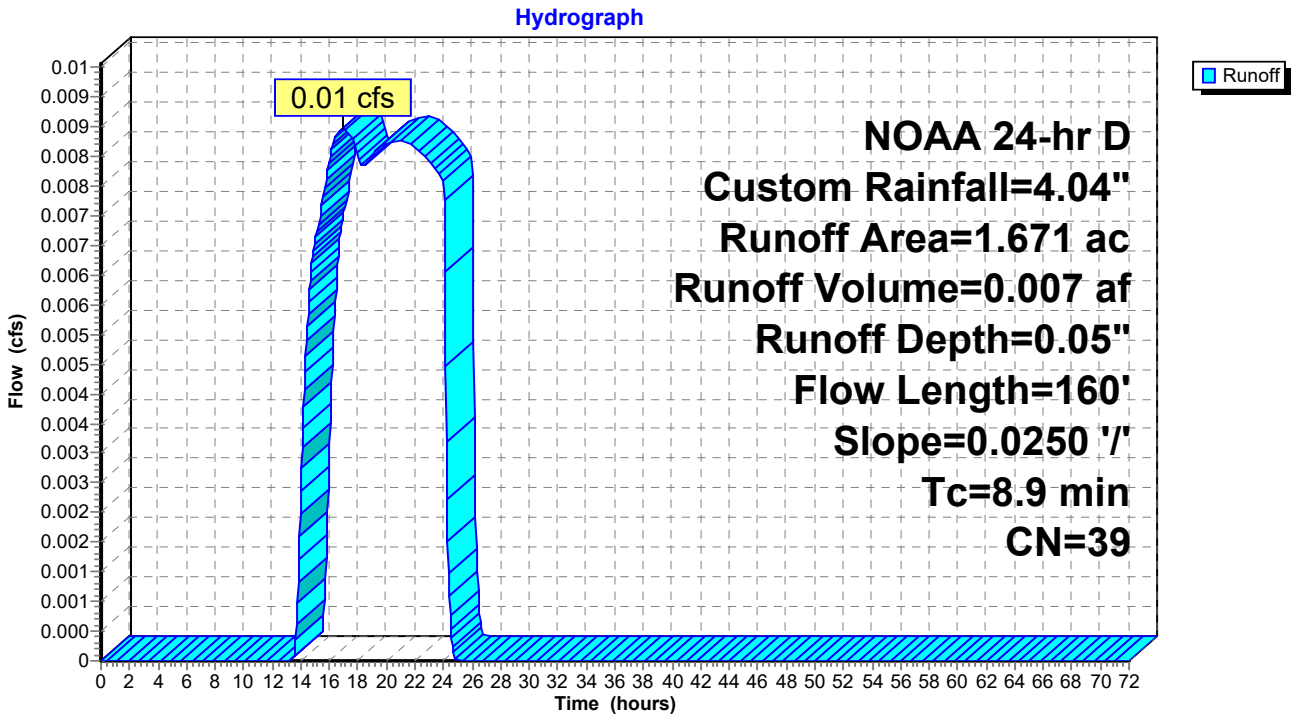
Runoff = 0.01 cfs @ 16.97 hrs, Volume= 0.007 af, Depth= 0.05"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.671	39	>75% Grass cover, Good, HSG A
1.671		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.9	60	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
8.9	160	Total			

Subcatchment 27S: Basin 12 - Pervious



Summary for Pond 29P: Basin 6

Inflow Area = 1.441 ac, 34.14% Impervious, Inflow Depth = 2.07" for Custom event
Inflow = 2.39 cfs @ 12.15 hrs, Volume= 0.248 af
Outflow = 2.28 cfs @ 12.19 hrs, Volume= 0.205 af, Atten= 5%, Lag= 2.1 min
Primary = 2.28 cfs @ 12.19 hrs, Volume= 0.205 af
Routed to Pond 13P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.96' @ 12.19 hrs Surf.Area= 2,906 sf Storage= 2,244 cf

Plug-Flow detention time= 144.0 min calculated for 0.205 af (83% of inflow)
Center-of-Mass det. time= 62.6 min (868.5 - 805.9)

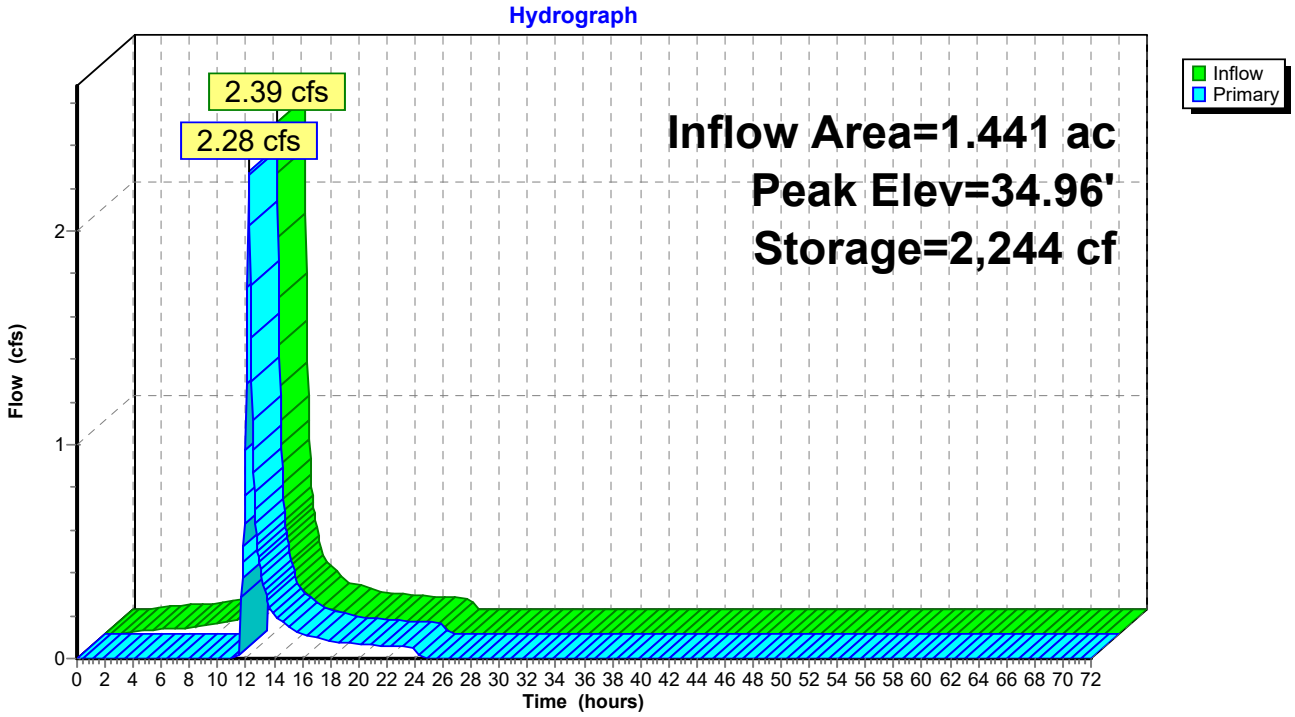
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	4,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	1,750	0	0
35.00	2,950	2,350	2,350
35.50	3,700	1,663	4,013

Device	Routing	Invert	Outlet Devices
#1	Primary	34.84'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.24 cfs @ 12.19 hrs HW=34.96' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 2.24 cfs @ 1.14 fps)

Pond 29P: Basin 6



Summary for Subcatchment 30S: Basin 6 - Impervious

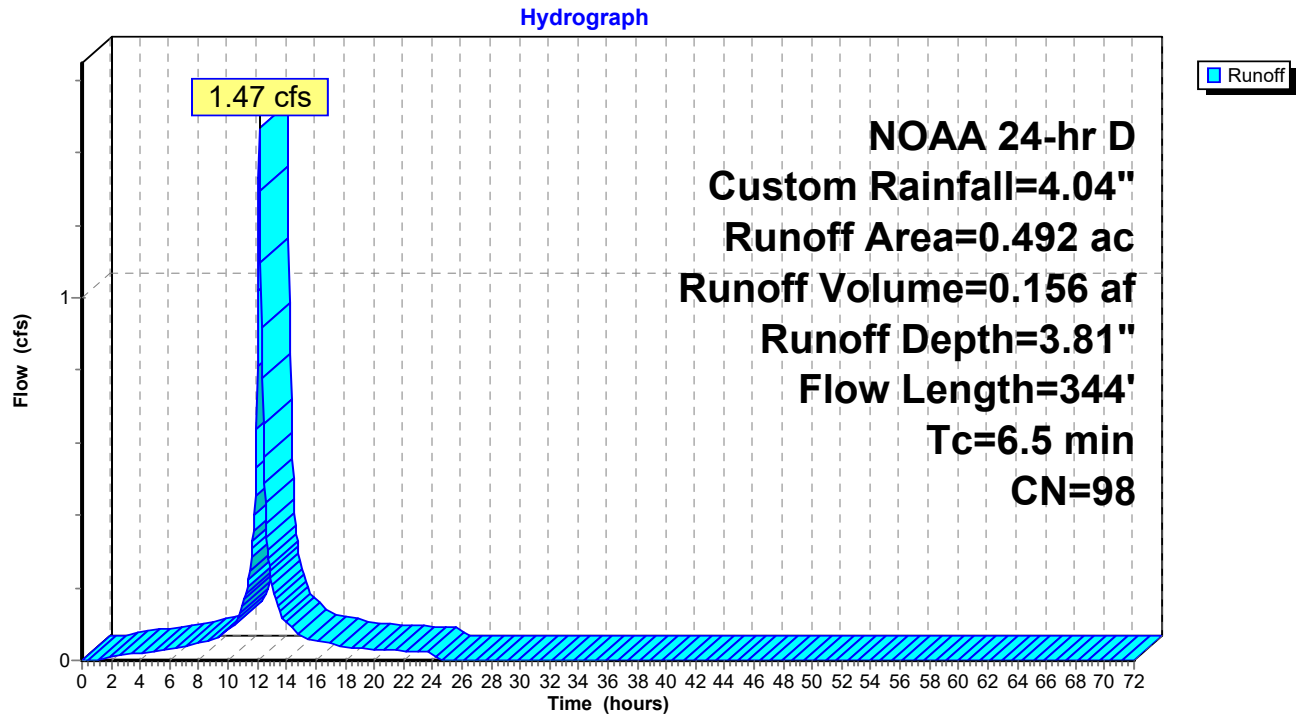
Runoff = 1.47 cfs @ 12.15 hrs, Volume= 0.156 af, Depth= 3.81"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.492	98	Impervious
	0.492		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 30S: Basin 6 - Impervious



Summary for Subcatchment 32S: Basin 6 - Pervious

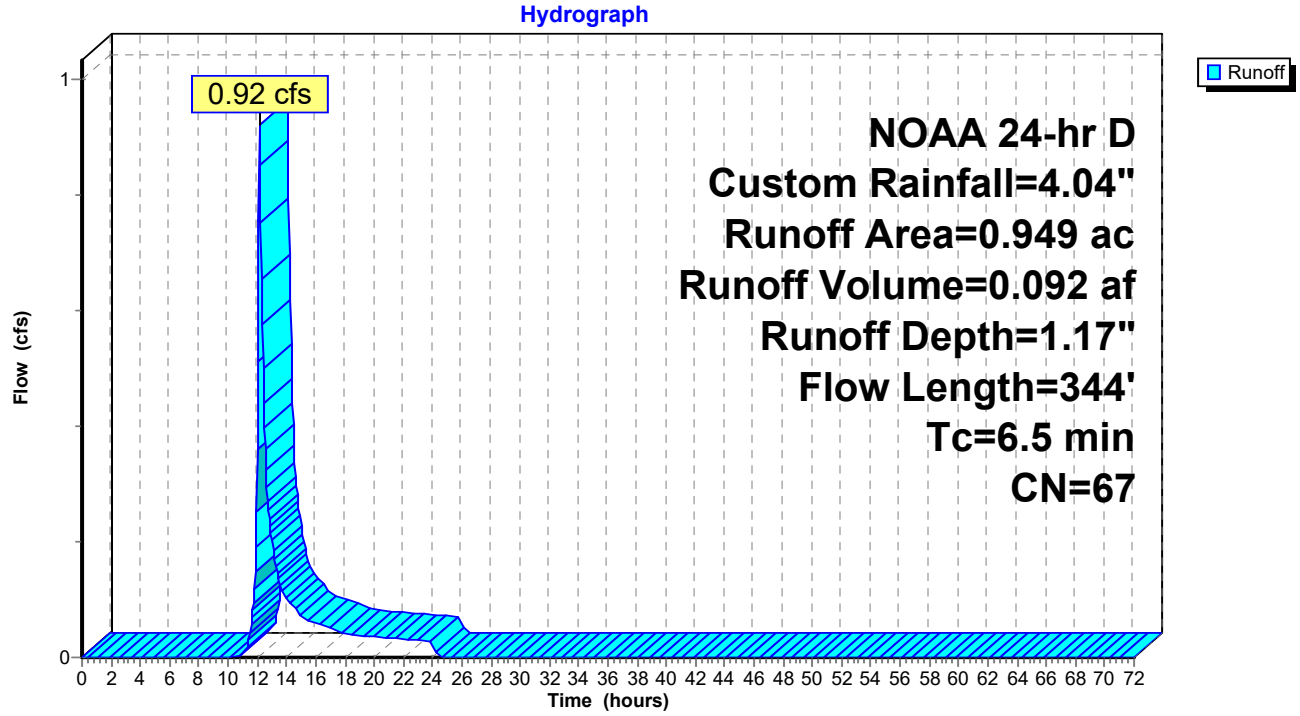
Runoff = 0.92 cfs @ 12.16 hrs, Volume= 0.092 af, Depth= 1.17"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
0.637	80	>75% Grass cover, Good, HSG D
0.312	39	>75% Grass cover, Good, HSG A
0.949	67	Weighted Average
0.949		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 32S: Basin 6 - Pervious



Summary for Pond 33P: Basin 8

Inflow Area = 3.061 ac, 36.82% Impervious, Inflow Depth = 2.71" for Custom event
Inflow = 6.08 cfs @ 12.15 hrs, Volume= 0.692 af
Outflow = 5.71 cfs @ 12.20 hrs, Volume= 0.565 af, Atten= 6%, Lag= 2.9 min
Primary = 5.71 cfs @ 12.20 hrs, Volume= 0.565 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.90' @ 12.20 hrs Surf.Area= 6,027 sf Storage= 6,854 cf

Plug-Flow detention time= 144.0 min calculated for 0.565 af (82% of inflow)
Center-of-Mass det. time= 62.2 min (864.5 - 802.3)

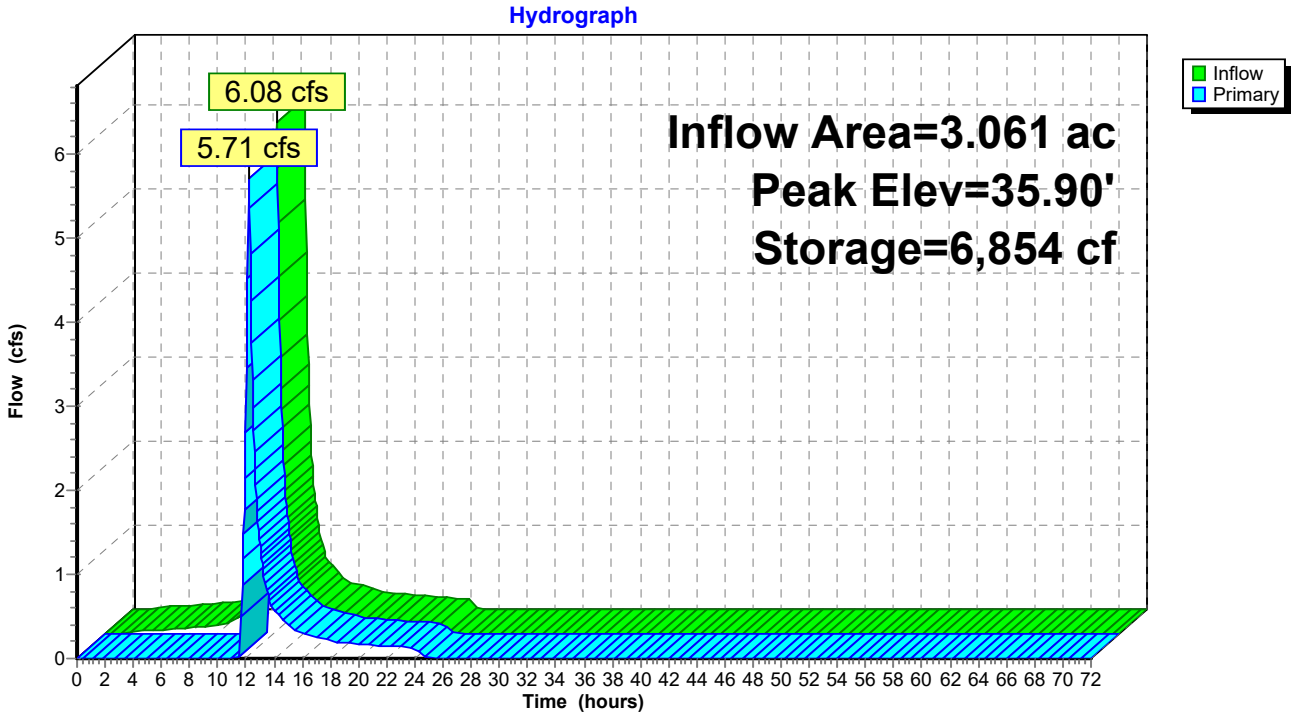
Volume	Invert	Avail.Storage	Storage Description
#1	34.50'	10,825 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.50	4,000	0	0
35.00	4,500	2,125	2,125
36.00	6,200	5,350	7,475
36.50	7,200	3,350	10,825

Device	Routing	Invert	Outlet Devices
#1	Primary	35.67'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.69 cfs @ 12.20 hrs HW=35.90' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 5.69 cfs @ 1.56 fps)

Pond 33P: Basin 8



Summary for Subcatchment 34S: Basin 8 - Impervious

[49] Hint: Tc<2dt may require smaller dt

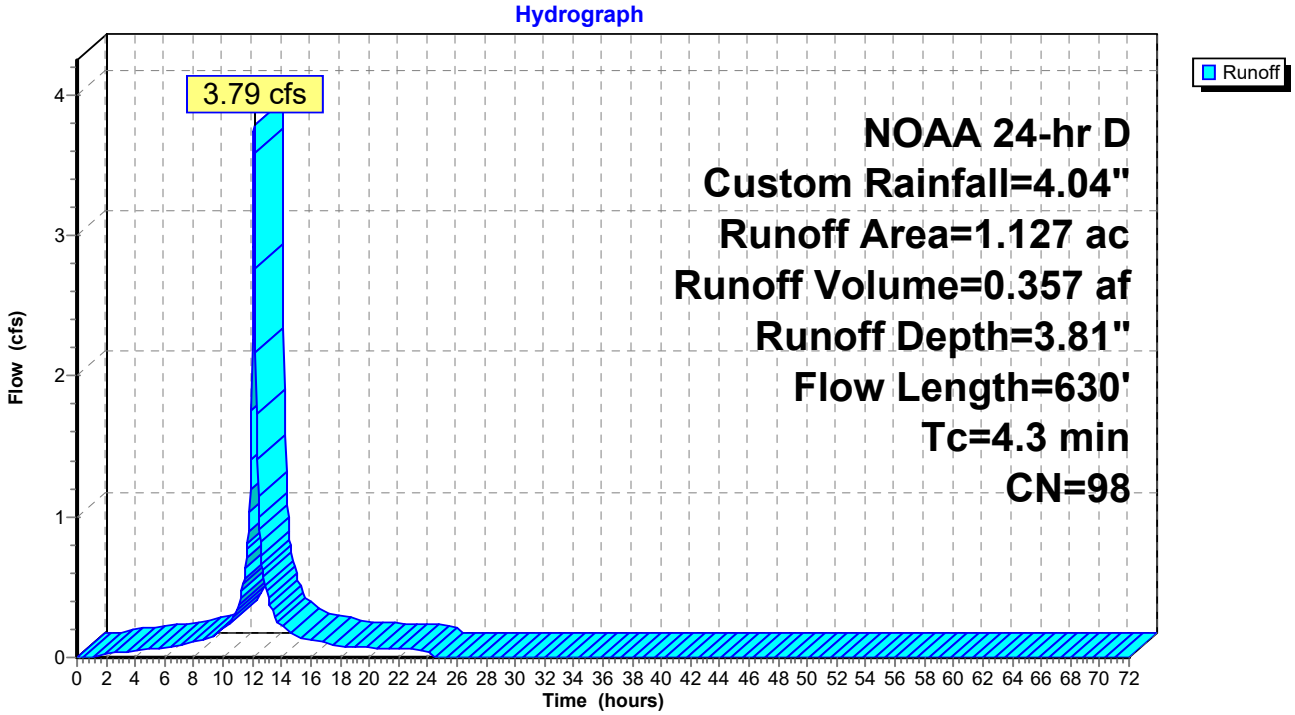
Runoff = 3.79 cfs @ 12.12 hrs, Volume= 0.357 af, Depth= 3.81"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	1.127	98	Impervious
	1.127		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.3	130	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.3	630	Total			

Subcatchment 34S: Basin 8 - Impervious



Summary for Subcatchment 35S: Basin 8 - Pervious

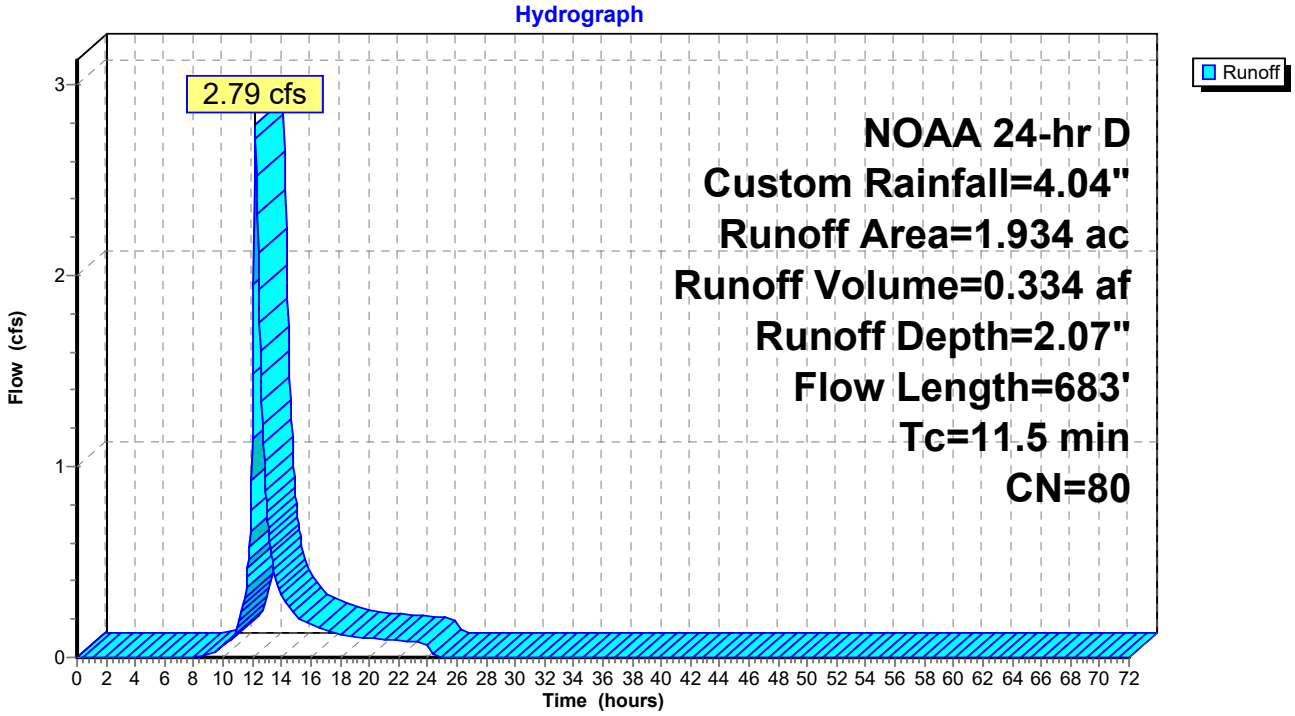
Runoff = 2.79 cfs @ 12.22 hrs, Volume= 0.334 af, Depth= 2.07"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.934	80	>75% Grass cover, Good, HSG D
1.934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	89	0.0200	0.99		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.7	500	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
11.5	683	Total			

Subcatchment 35S: Basin 8 - Pervious



Summary for Pond 40P: Wetlands Depression

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 0.00" for Custom event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.00' @ 0.00 hrs Surf.Area= 405 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

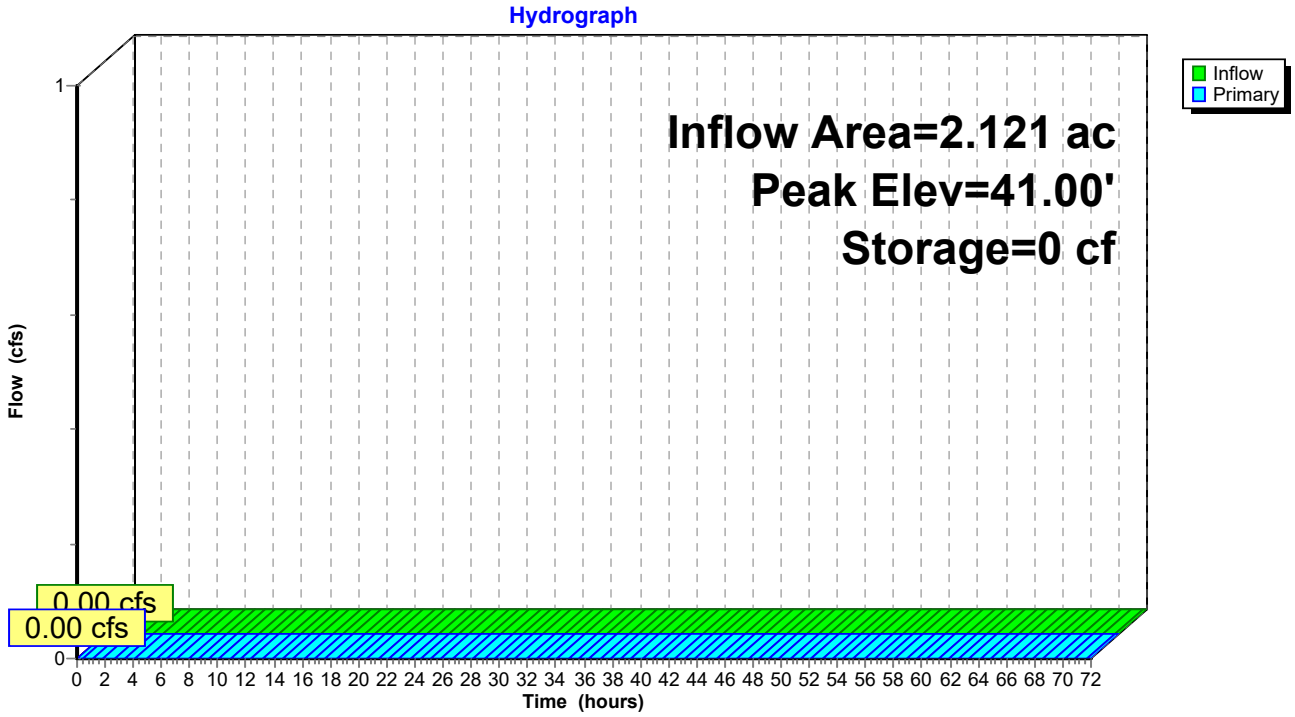
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 40P: Wetlands Depression



Summary for Pond 41P: Basin 13

Inflow Area = 2.042 ac, 32.27% Impervious, Inflow Depth = 1.26" for Custom event
Inflow = 2.14 cfs @ 12.13 hrs, Volume= 0.215 af
Outflow = 0.16 cfs @ 13.58 hrs, Volume= 0.156 af, Atten= 92%, Lag= 87.2 min
Primary = 0.16 cfs @ 13.58 hrs, Volume= 0.156 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.09' @ 13.58 hrs Surf.Area= 6,692 sf Storage= 6,076 cf

Plug-Flow detention time= 533.9 min calculated for 0.156 af (73% of inflow)
Center-of-Mass det. time= 429.9 min (1,195.7 - 765.9)

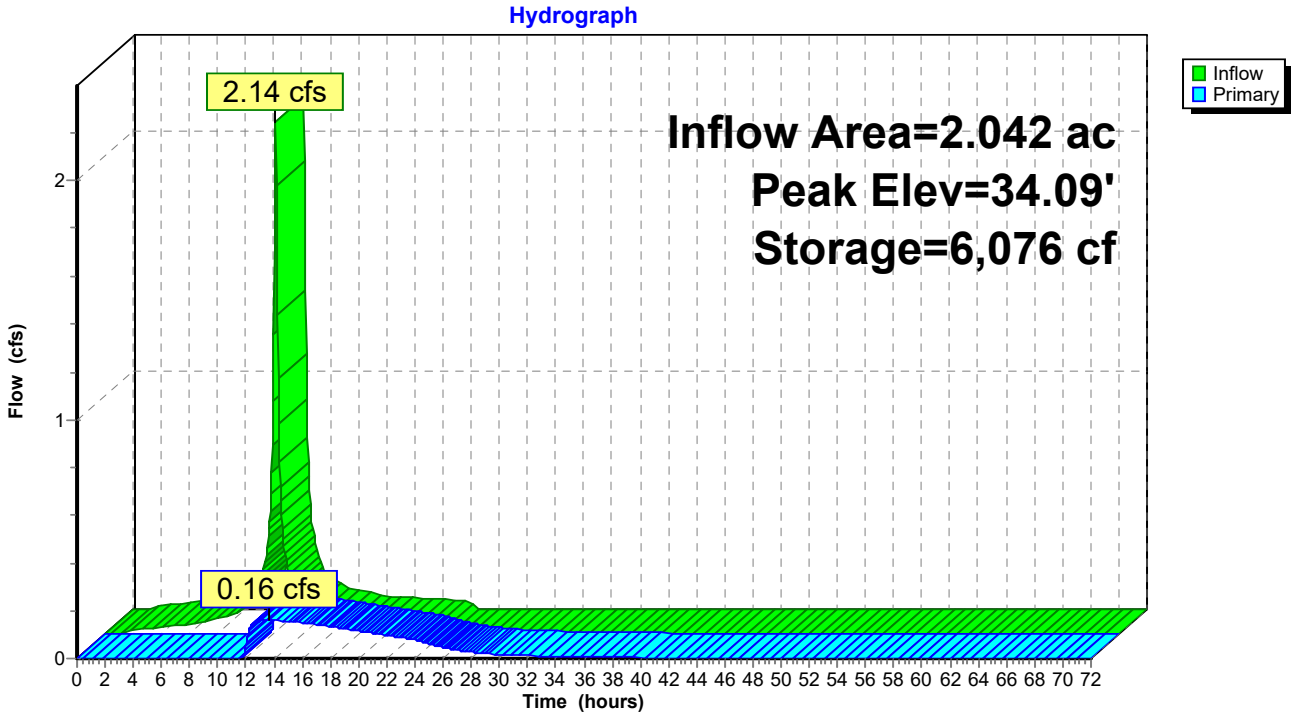
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	23,100 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	4,500	0	0
34.00	6,500	5,500	5,500
35.00	8,700	7,600	13,100
36.00	11,300	10,000	23,100

Device	Routing	Invert	Outlet Devices
#1	Primary	33.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 13.58 hrs HW=34.09' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.16 cfs @ 3.27 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 41P: Basin 13



Summary for Subcatchment 42S: Basin 13 - Impervious

[49] Hint: Tc<2dt may require smaller dt

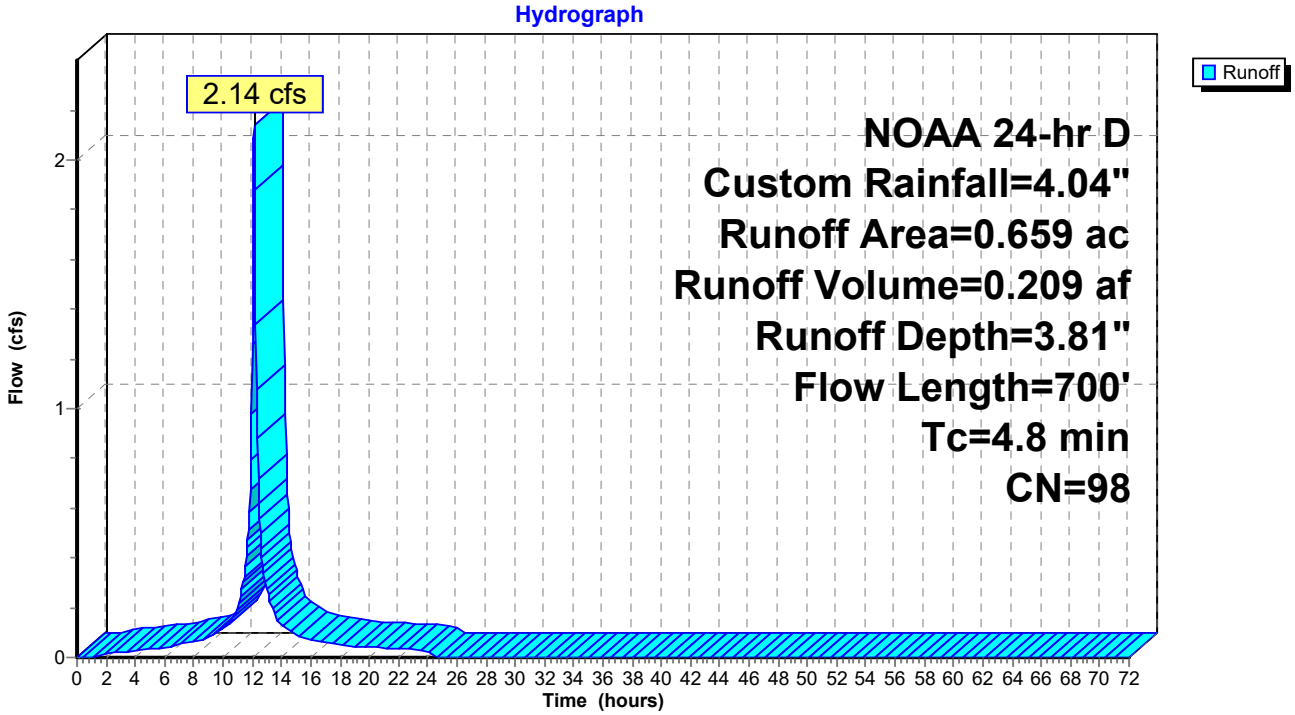
Runoff = 2.14 cfs @ 12.13 hrs, Volume= 0.209 af, Depth= 3.81"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.659	98	Impervious
	0.659		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.8	200	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.8	700	Total			

Subcatchment 42S: Basin 13 - Impervious



Summary for Subcatchment 43S: Basin 13 - Pervious

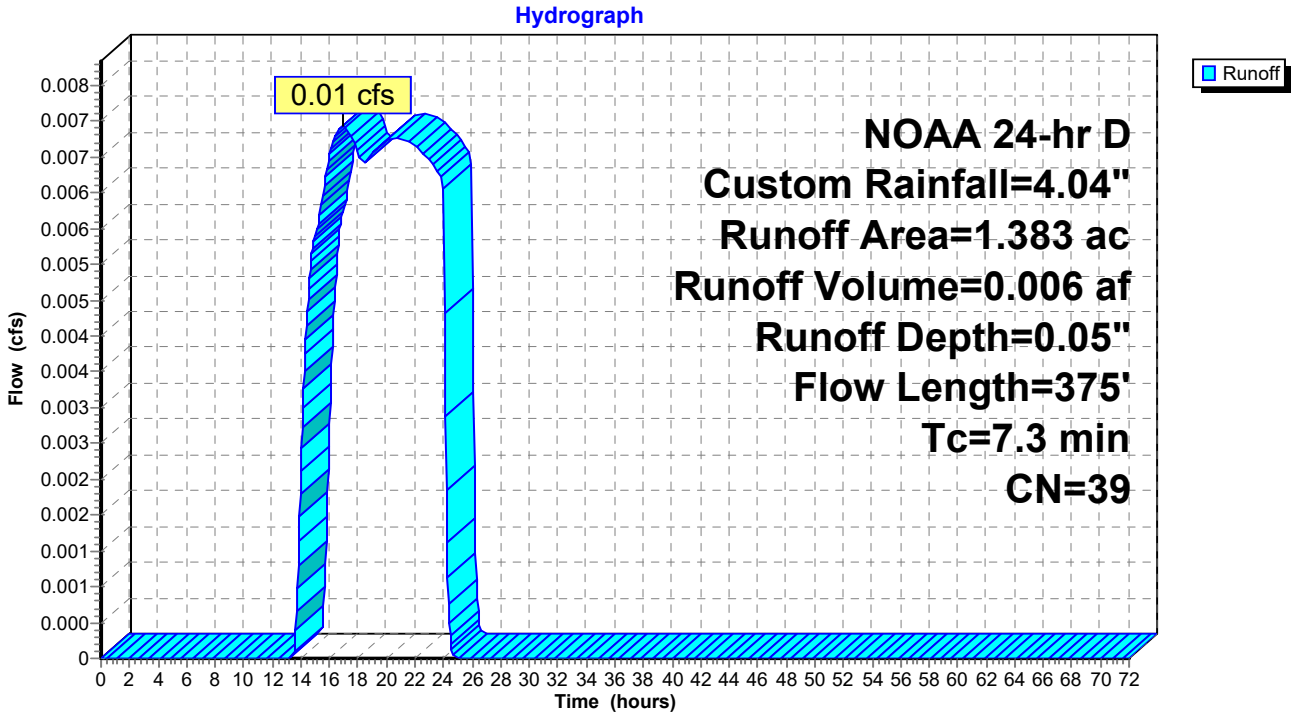
Runoff = 0.01 cfs @ 16.95 hrs, Volume= 0.006 af, Depth= 0.05"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.383	39	>75% Grass cover, Good, HSG A
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	75	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	300	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.3	375	Total			

Subcatchment 43S: Basin 13 - Pervious



Summary for Subcatchment 44S: Basin 3 - Impervious

[49] Hint: Tc<2dt may require smaller dt

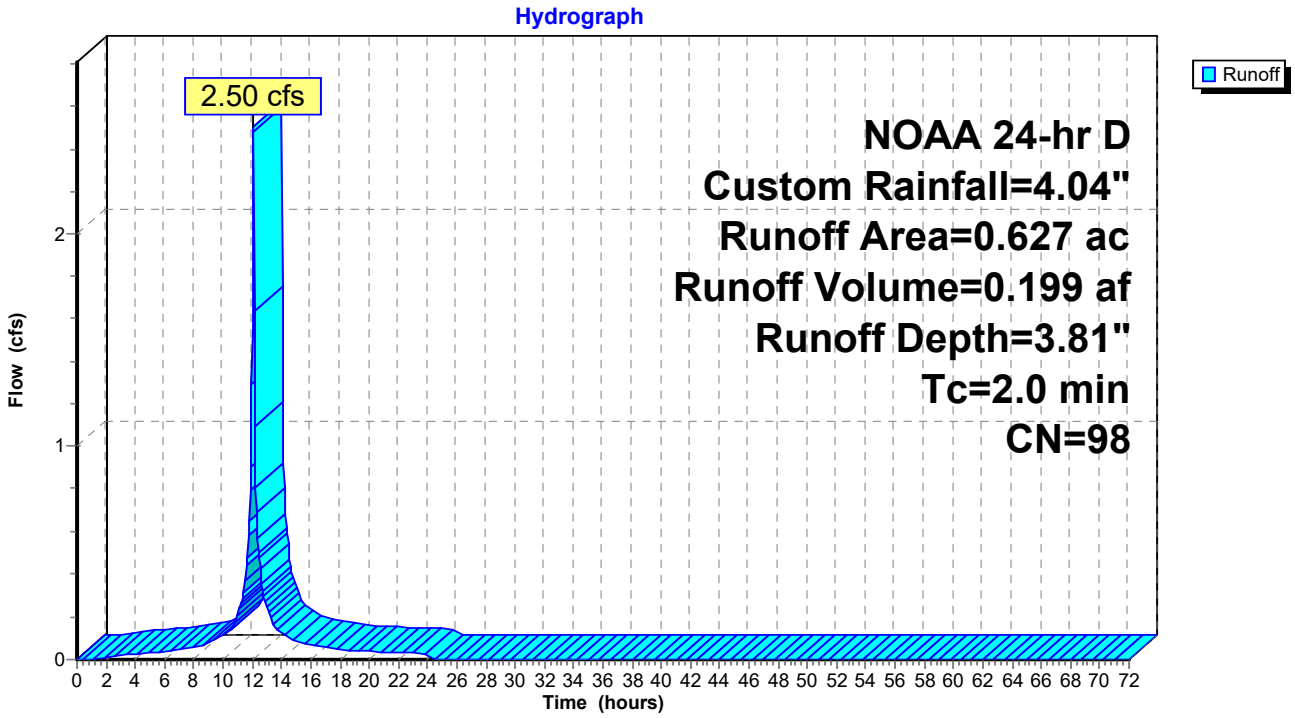
Runoff = 2.50 cfs @ 12.09 hrs, Volume= 0.199 af, Depth= 3.81"
Routed to Pond 4P : Basin 3

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 44S: Basin 3 - Impervious



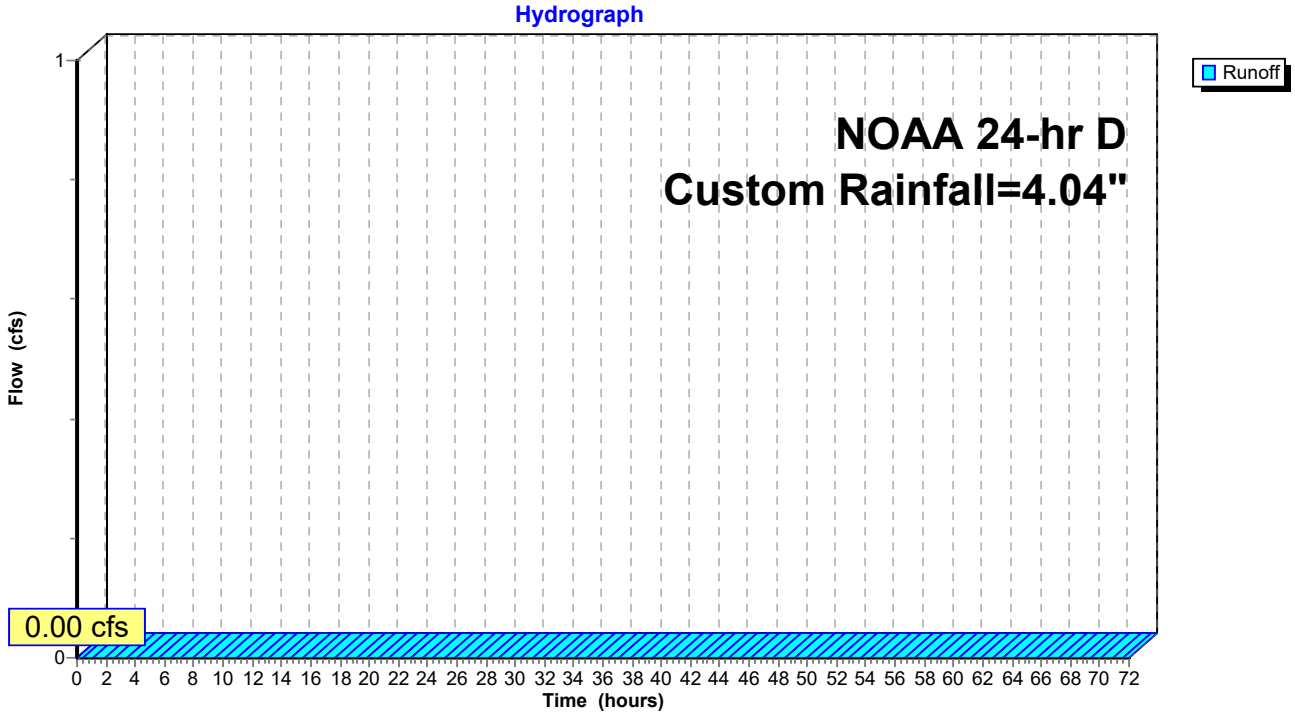
Summary for Subcatchment 45S: Undetained - Impervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Subcatchment 45S: Undetained - Impervious



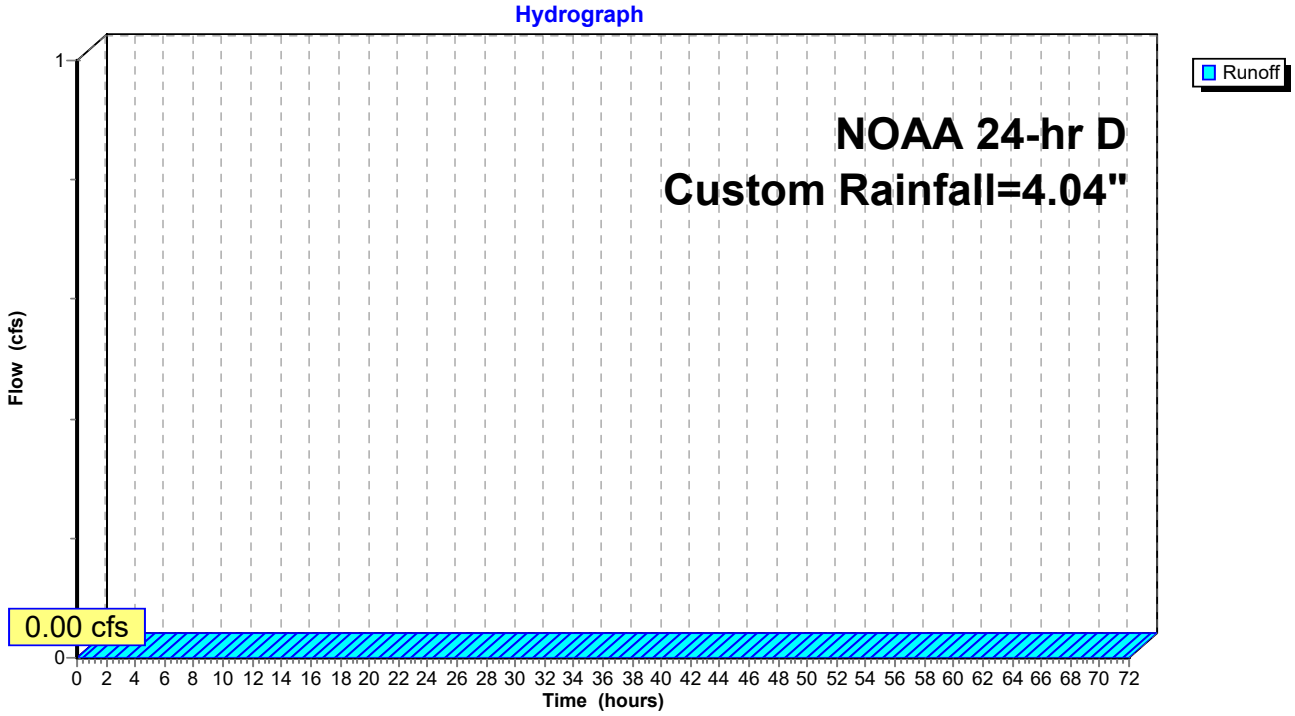
Summary for Subcatchment 46S: Undetained - Pervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Subcatchment 46S: Undetained - Pervious



Summary for Subcatchment 66: Basin 3 - Pervious

[49] Hint: Tc<2dt may require smaller dt

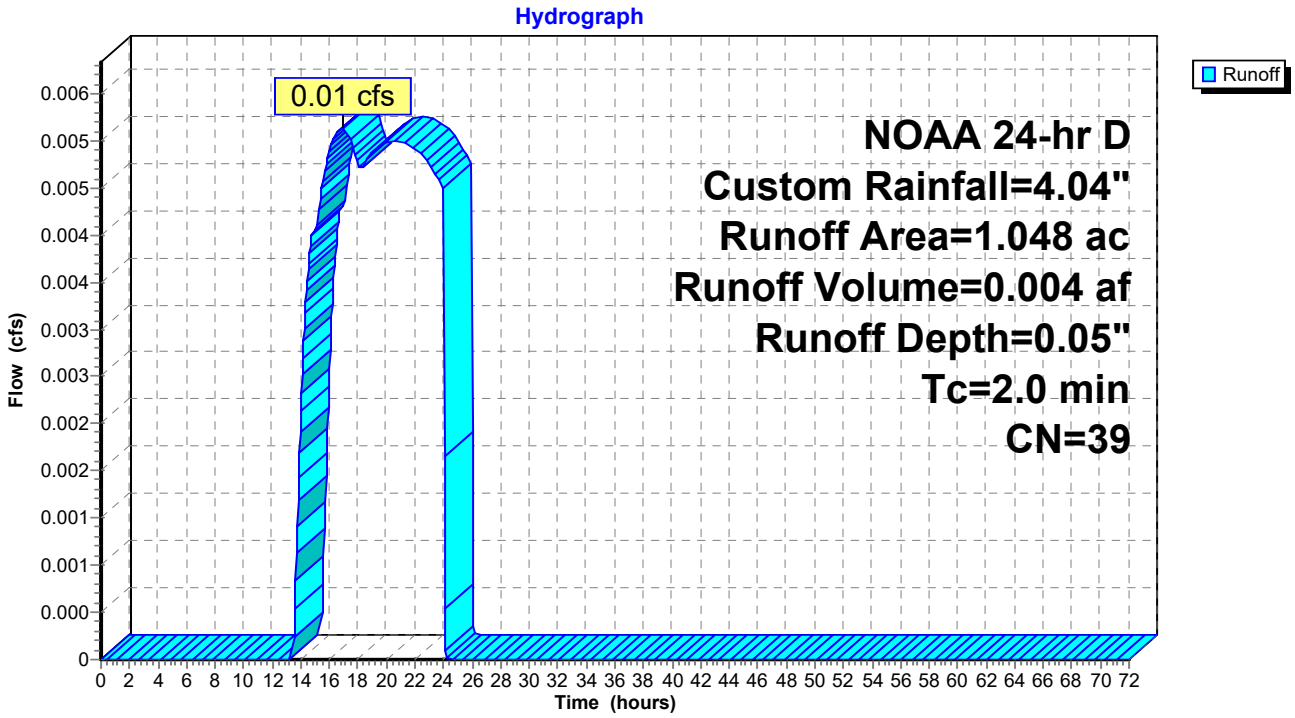
Runoff = 0.01 cfs @ 16.90 hrs, Volume= 0.004 af, Depth= 0.05"
Routed to Pond 4P : Basin 3

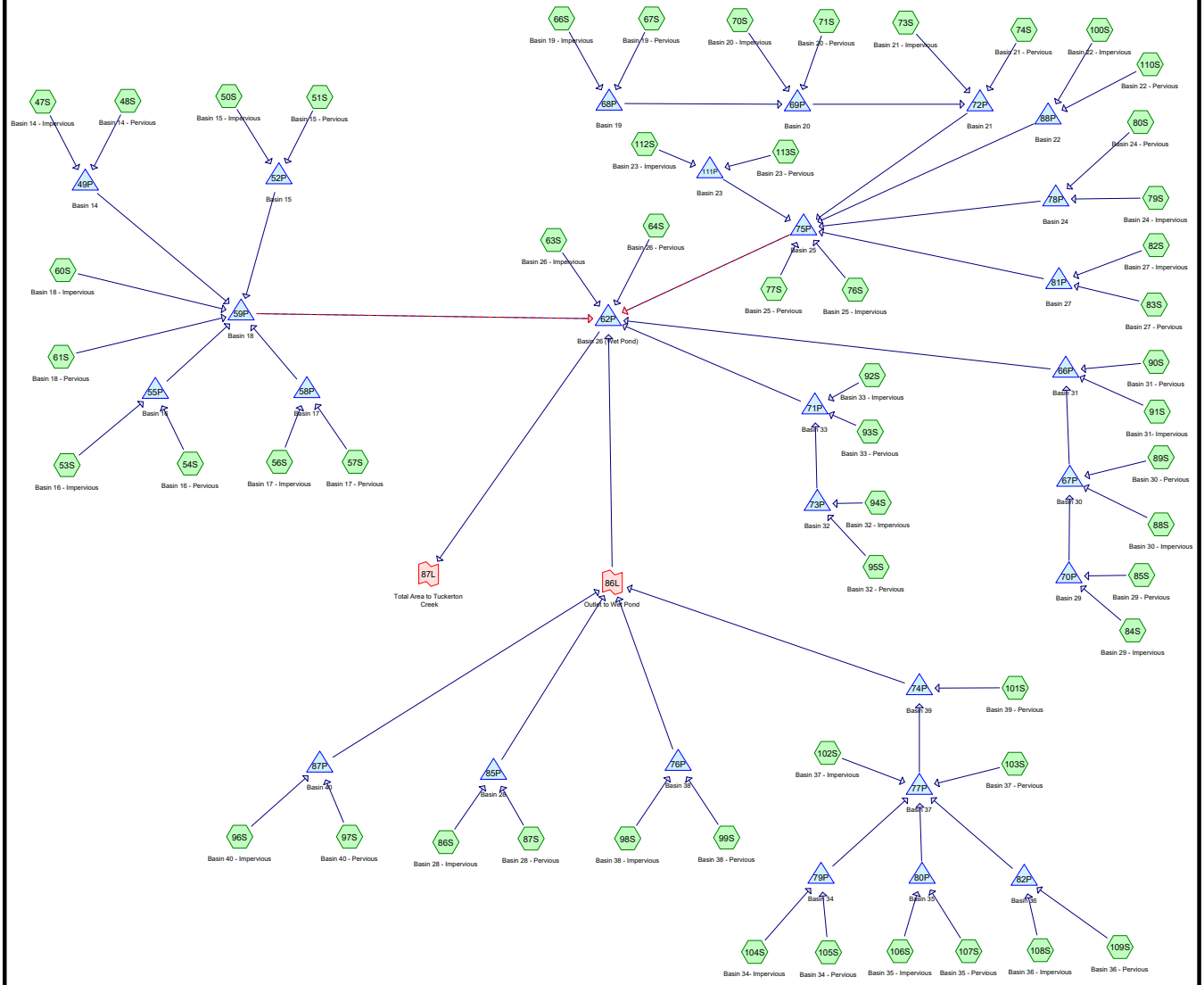
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=4.04"

Area (ac)	CN	Description
1.048	39	>75% Grass cover, Good, HSG A
1.048		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 66: Basin 3 - Pervious





Subcat Reach Pond Link

Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT (FUTURE) - TUCKERTON CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	5.38	2

Summary for Subcatchment 47S: Basin 14 - Impervious

[49] Hint: Tc<2dt may require smaller dt

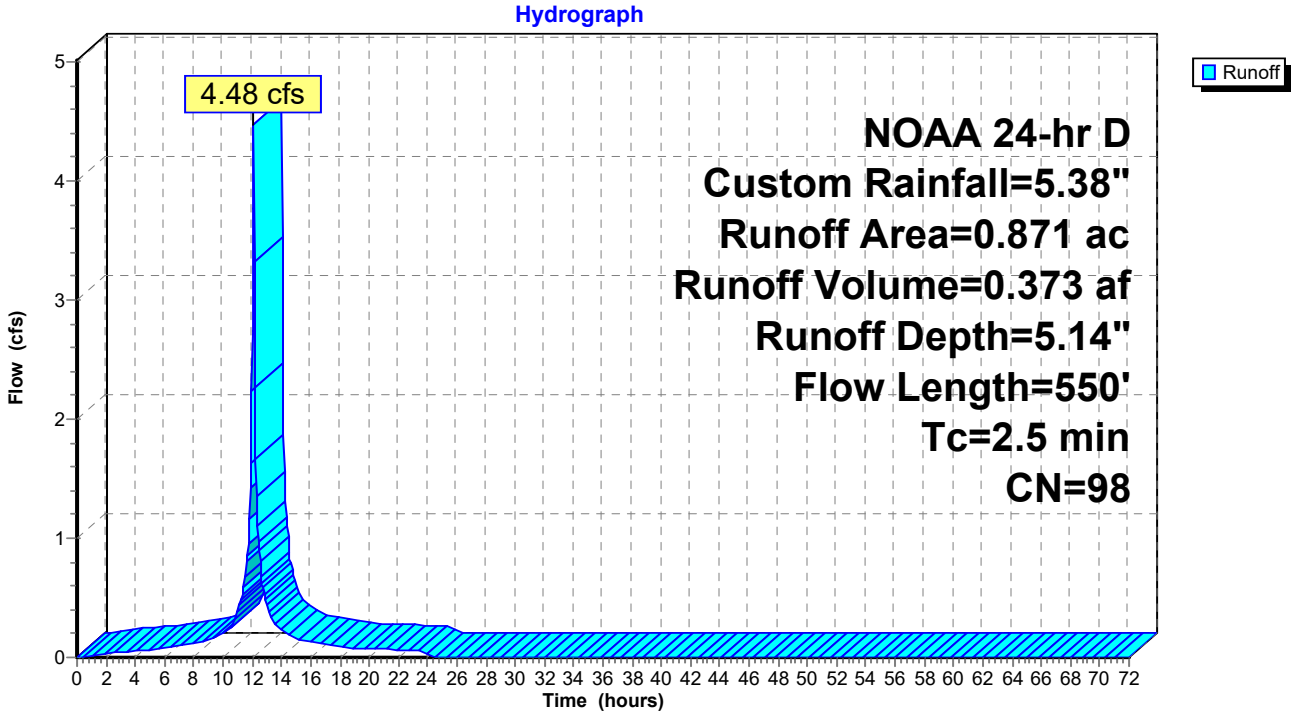
Runoff = 4.48 cfs @ 12.09 hrs, Volume= 0.373 af, Depth= 5.14"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.871	98	Impervious
	0.871		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, A to B** Paved Kv= 20.3 fps
1.5	450	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.5	550	Total			

Subcatchment 47S: Basin 14 - Impervious



Summary for Subcatchment 48S: Basin 14 - Pervious

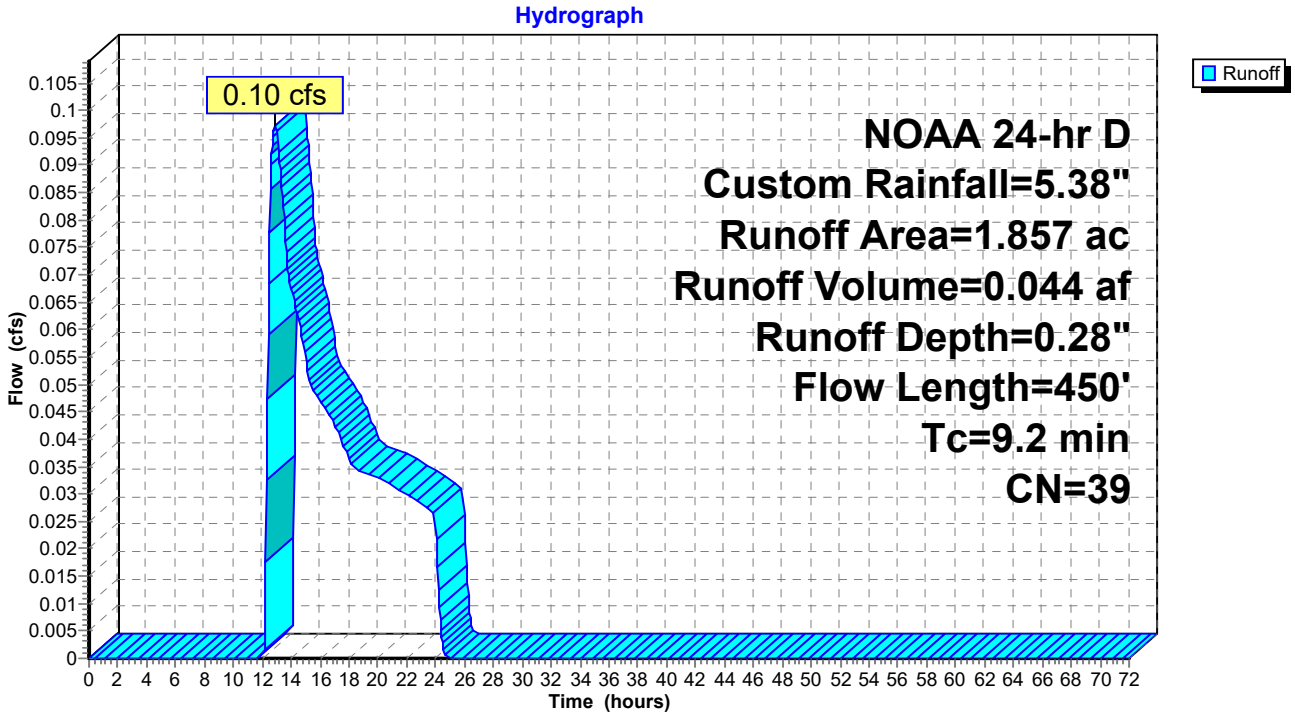
Runoff = 0.10 cfs @ 12.91 hrs, Volume= 0.044 af, Depth= 0.28"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.857	39	>75% Grass cover, Good, HSG A
1.857		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
9.2	450	Total			

Subcatchment 48S: Basin 14 - Pervious



Summary for Pond 49P: Basin 14

Inflow Area = 2.728 ac, 31.93% Impervious, Inflow Depth = 1.83" for Custom event
Inflow = 4.48 cfs @ 12.09 hrs, Volume= 0.417 af
Outflow = 0.26 cfs @ 14.37 hrs, Volume= 0.341 af, Atten= 94%, Lag= 136.5 min
Primary = 0.26 cfs @ 14.37 hrs, Volume= 0.341 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.70' @ 14.37 hrs Surf.Area= 6,919 sf Storage= 11,271 cf

Plug-Flow detention time= 564.1 min calculated for 0.341 af (82% of inflow)
Center-of-Mass det. time= 478.4 min (1,253.4 - 775.0)

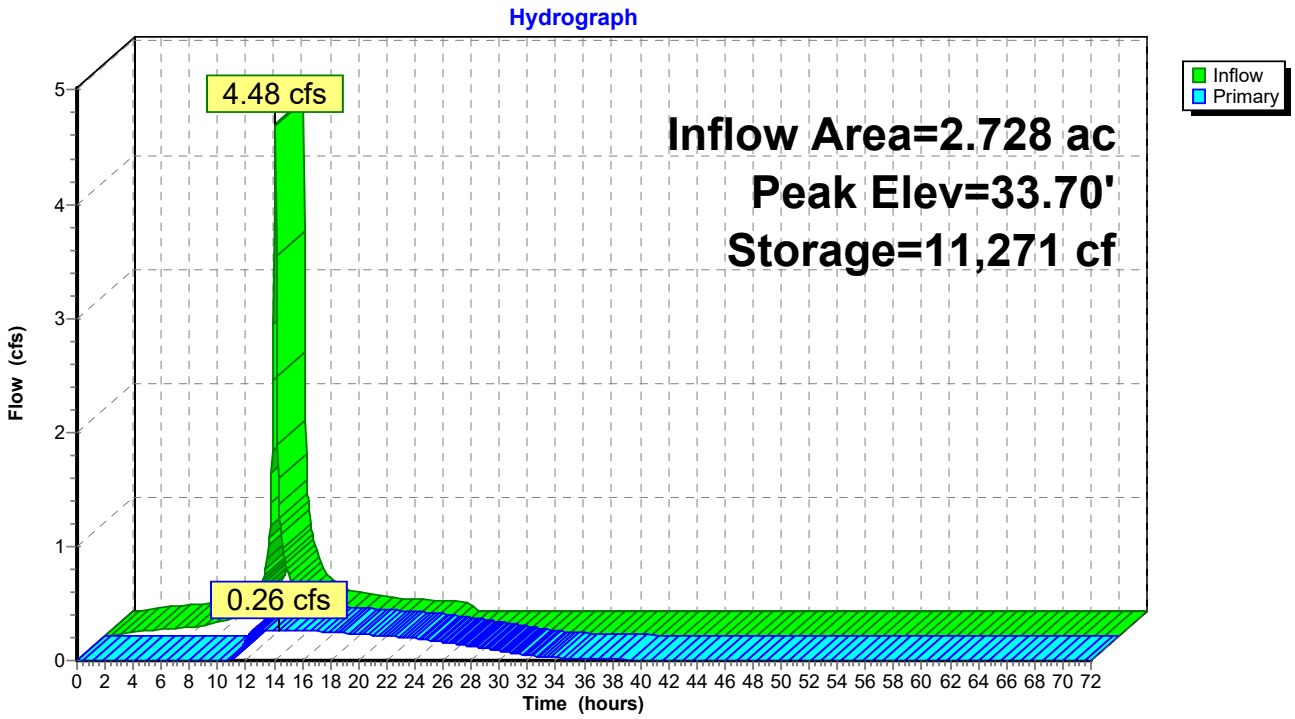
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	22,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,100	0	0
32.00	4,200	1,825	1,825
33.00	5,800	5,000	6,825
34.00	7,400	6,600	13,425
35.00	9,900	8,650	22,075

Device	Routing	Invert	Outlet Devices
#1	Primary	32.32'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 14.37 hrs HW=33.70' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.26 cfs @ 5.39 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 49P: Basin 14



Summary for Subcatchment 50S: Basin 15 - Impervious

[49] Hint: Tc<2dt may require smaller dt

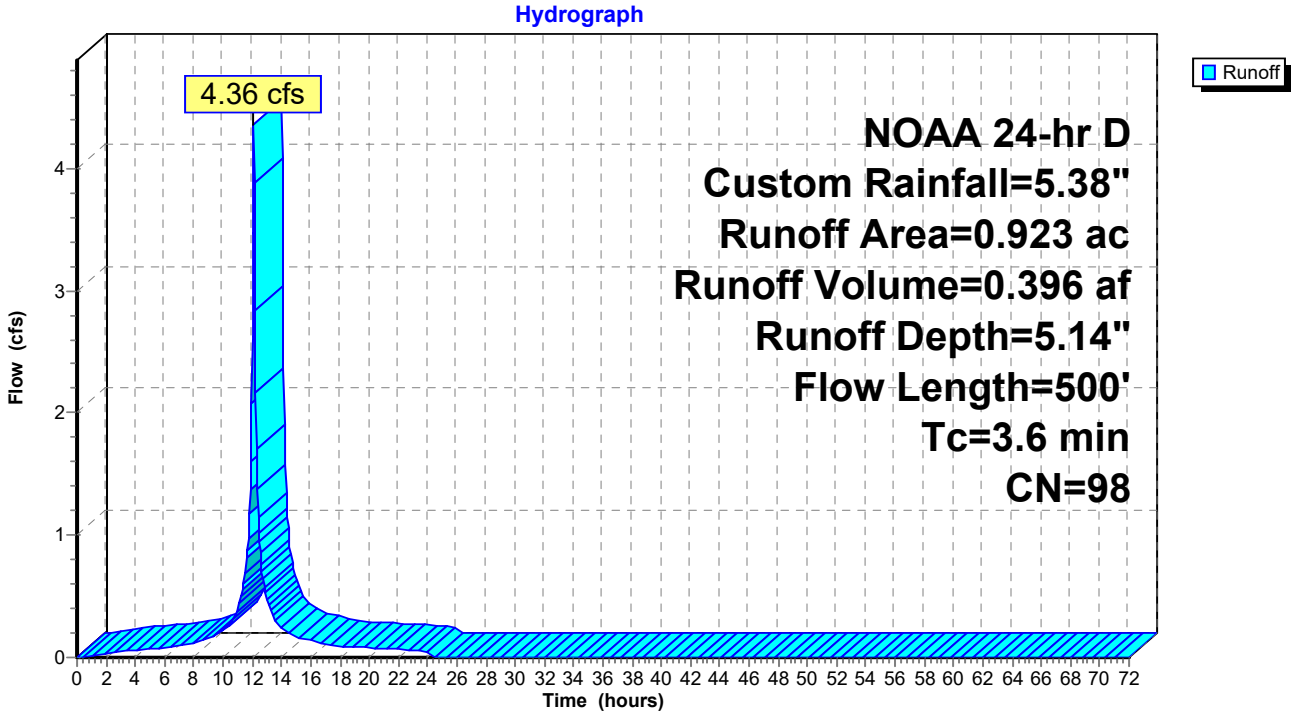
Runoff = 4.36 cfs @ 12.11 hrs, Volume= 0.396 af, Depth= 5.14"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.923	98	Impervious
	0.923		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.6	500	Total			

Subcatchment 50S: Basin 15 - Impervious



Summary for Subcatchment 51S: Basin 15 - Pervious

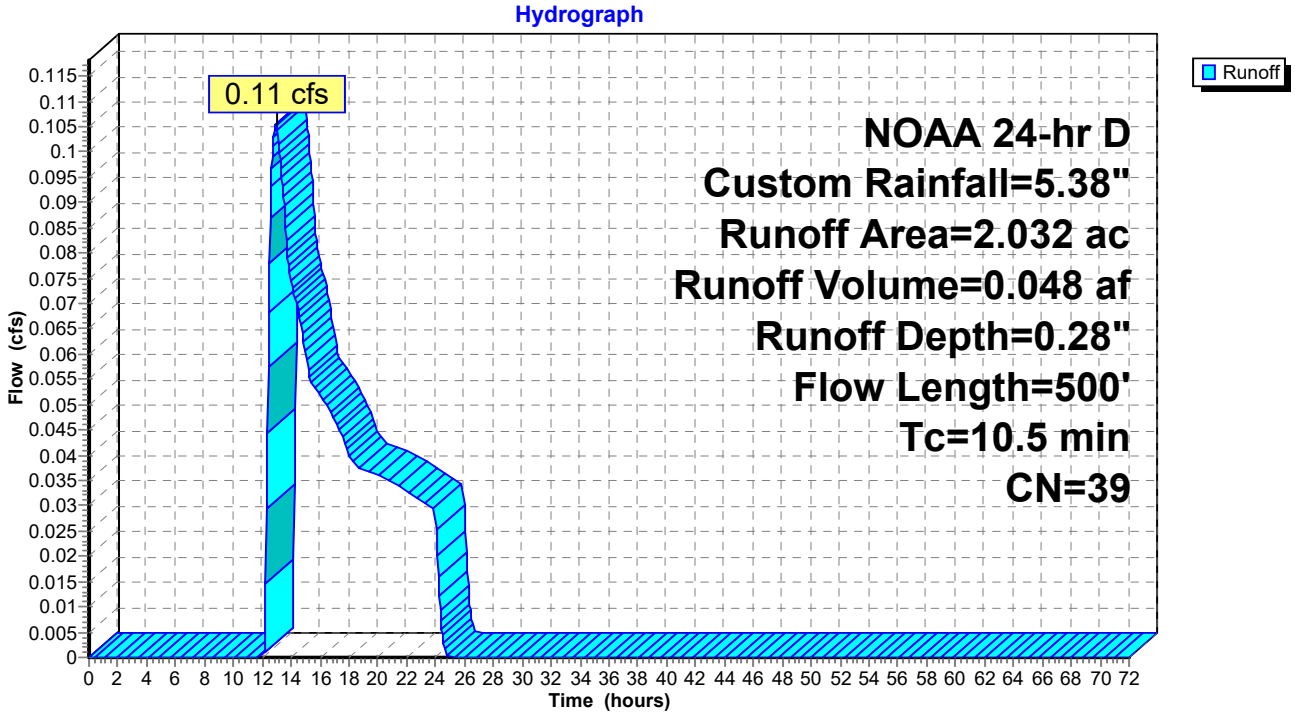
Runoff = 0.11 cfs @ 12.95 hrs, Volume= 0.048 af, Depth= 0.28"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
2.032	39	>75% Grass cover, Good, HSG A
2.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.5	500	Total			

Subcatchment 51S: Basin 15 - Pervious



Summary for Pond 52P: Basin 15

Inflow Area = 2.955 ac, 31.24% Impervious, Inflow Depth = 1.80" for Custom event
Inflow = 4.36 cfs @ 12.11 hrs, Volume= 0.444 af
Outflow = 0.28 cfs @ 14.46 hrs, Volume= 0.363 af, Atten= 94%, Lag= 141.2 min
Primary = 0.28 cfs @ 14.46 hrs, Volume= 0.363 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.44' @ 14.46 hrs Surf.Area= 6,988 sf Storage= 11,986 cf

Plug-Flow detention time= 567.3 min calculated for 0.362 af (82% of inflow)
Center-of-Mass det. time= 481.5 min (1,259.0 - 777.5)

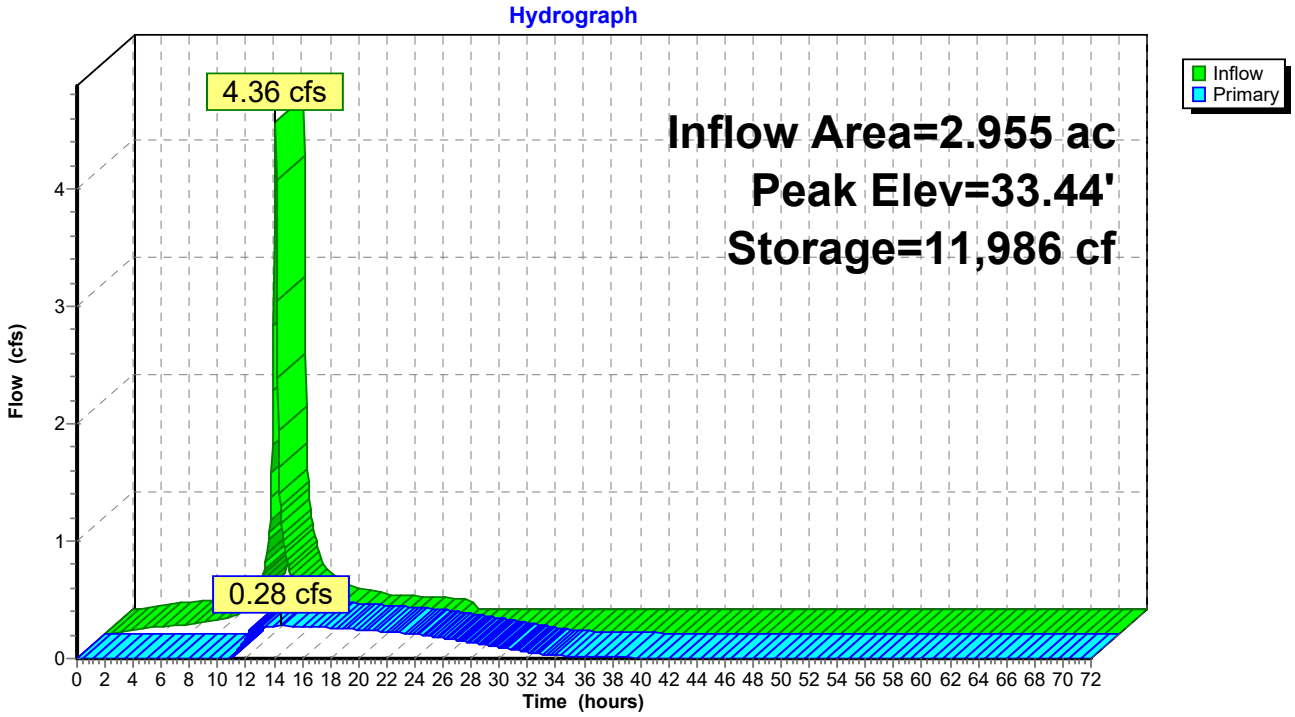
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	20,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,000	0	0
32.00	4,500	3,750	3,750
33.00	6,200	5,350	9,100
34.00	8,000	7,100	16,200
34.50	9,000	4,250	20,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.94'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	33.80'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.28 cfs @ 14.46 hrs HW=33.44' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.28 cfs @ 5.64 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 52P: Basin 15



Summary for Subcatchment 53S: Basin 16 - Impervious

[49] Hint: Tc<2dt may require smaller dt

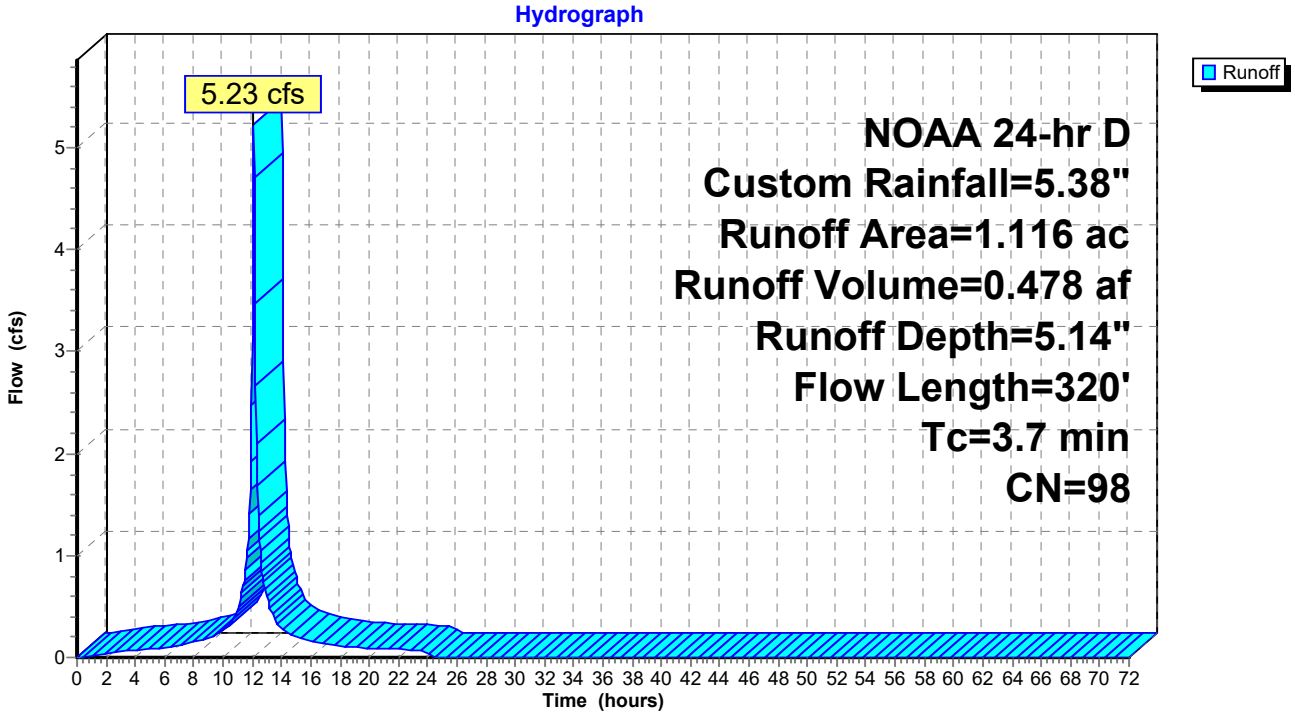
Runoff = 5.23 cfs @ 12.11 hrs, Volume= 0.478 af, Depth= 5.14"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	20	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.7	320	Total			

Subcatchment 53S: Basin 16 - Impervious



Summary for Subcatchment 54S: Basin 16 - Pervious

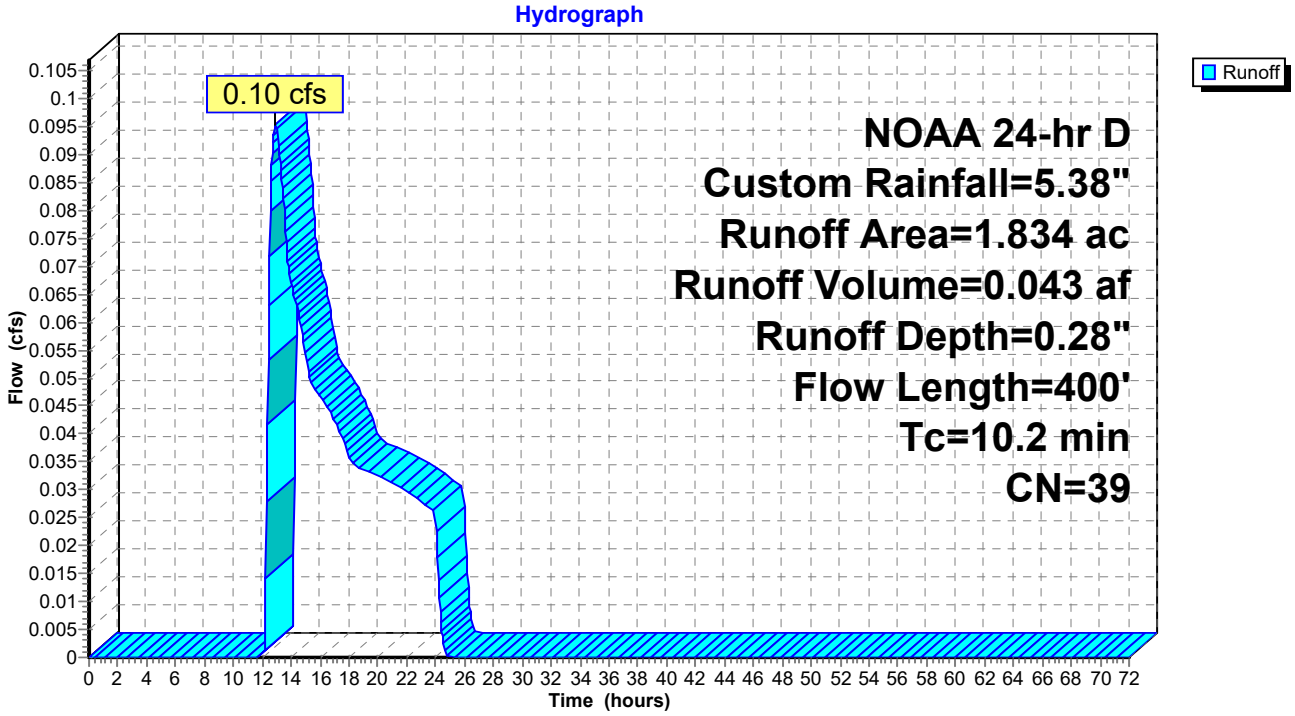
Runoff = 0.10 cfs @ 12.94 hrs, Volume= 0.043 af, Depth= 0.28"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.834	39	>75% Grass cover, Good, HSG A
1.834		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 54S: Basin 16 - Pervious



Summary for Pond 55P: Basin 16

Inflow Area = 2.950 ac, 37.83% Impervious, Inflow Depth = 2.12" for Custom event
Inflow = 5.23 cfs @ 12.11 hrs, Volume= 0.522 af
Outflow = 4.89 cfs @ 12.14 hrs, Volume= 0.426 af, Atten= 7%, Lag= 2.1 min
Primary = 4.89 cfs @ 12.14 hrs, Volume= 0.426 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.21' @ 12.14 hrs Surf.Area= 4,235 sf Storage= 4,992 cf

Plug-Flow detention time= 163.5 min calculated for 0.426 af (82% of inflow)
Center-of-Mass det. time= 76.4 min (847.2 - 770.8)

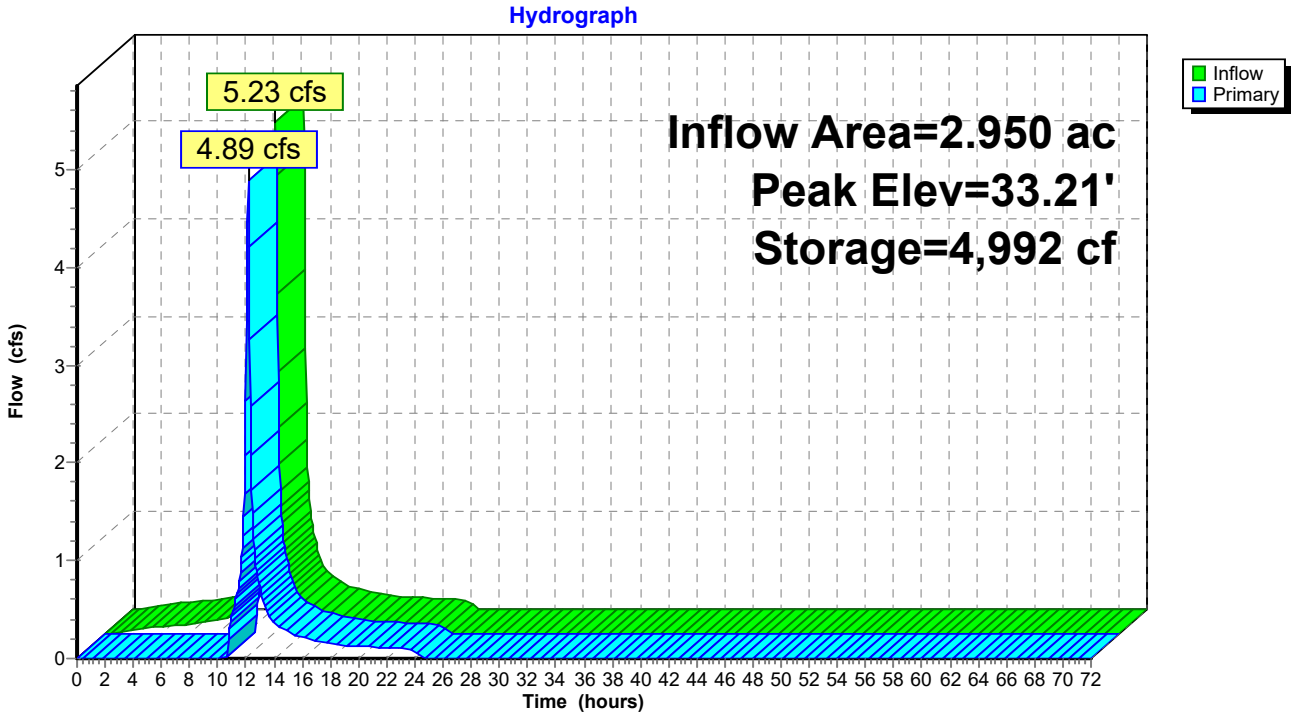
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	6,350 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	1,800	0	0
32.00	2,500	1,075	1,075
33.00	3,700	3,100	4,175
33.50	5,000	2,175	6,350

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.83 cfs @ 12.14 hrs HW=33.20' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 4.83 cfs @ 1.48 fps)

Pond 55P: Basin 16



Summary for Subcatchment 56S: Basin 17 - Impervious

[49] Hint: Tc<2dt may require smaller dt

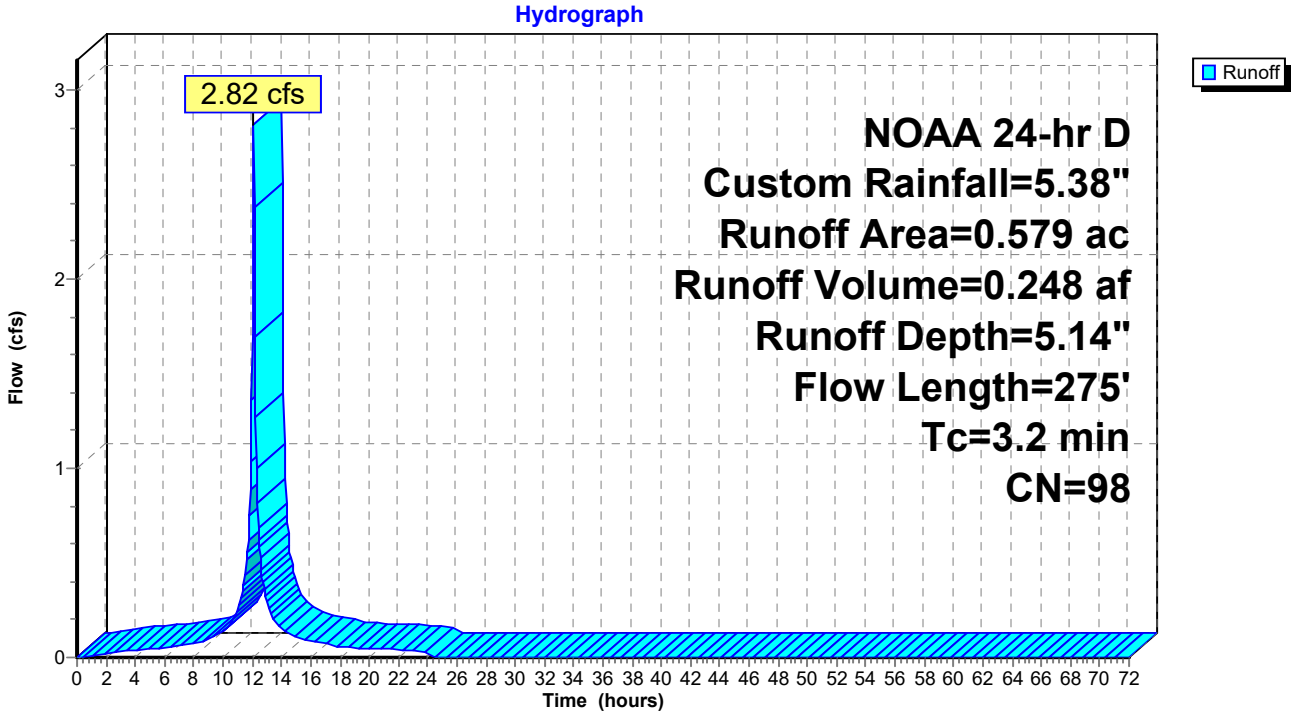
Runoff = 2.82 cfs @ 12.10 hrs, Volume= 0.248 af, Depth= 5.14"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.579	98	Impervious
	0.579		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	25	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	275	Total			

Subcatchment 56S: Basin 17 - Impervious



Summary for Subcatchment 57S: Basin 17 - Pervious

[49] Hint: Tc<2dt may require smaller dt

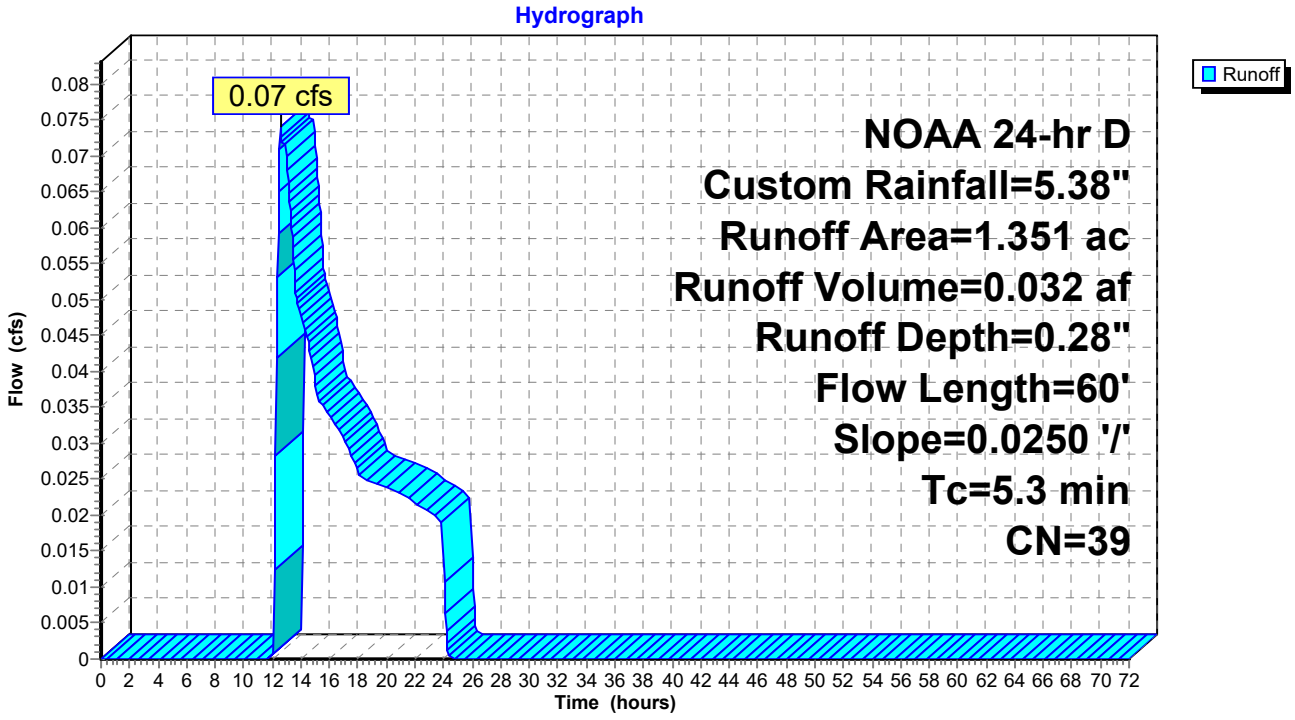
Runoff = 0.07 cfs @ 12.56 hrs, Volume= 0.032 af, Depth= 0.28"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.351	39	>75% Grass cover, Good, HSG A
1.351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 57S: Basin 17 - Pervious



Summary for Pond 58P: Basin 17

Inflow Area = 1.930 ac, 30.00% Impervious, Inflow Depth = 1.74" for Custom event
Inflow = 2.82 cfs @ 12.10 hrs, Volume= 0.280 af
Outflow = 2.55 cfs @ 12.14 hrs, Volume= 0.230 af, Atten= 10%, Lag= 2.3 min
Primary = 2.55 cfs @ 12.14 hrs, Volume= 0.230 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.76' @ 12.14 hrs Surf.Area= 4,145 sf Storage= 2,726 cf

Plug-Flow detention time= 163.7 min calculated for 0.230 af (82% of inflow)
Center-of-Mass det. time= 76.8 min (854.4 - 777.6)

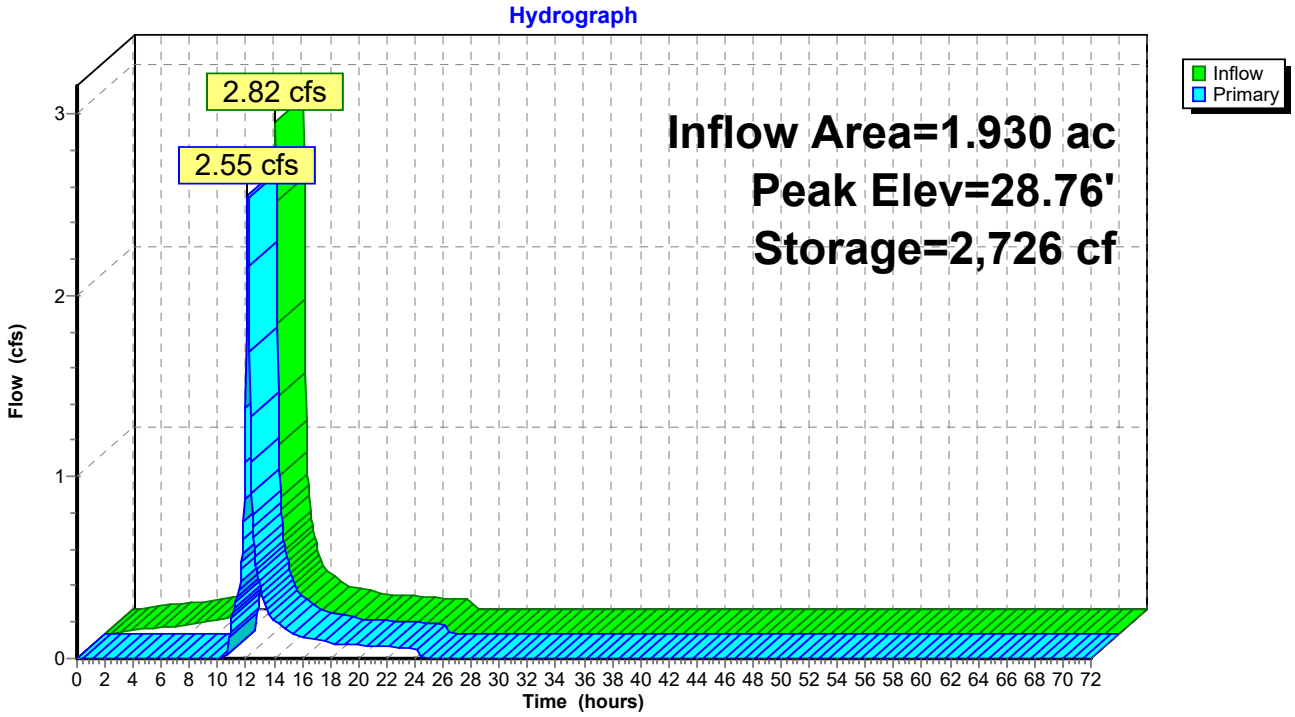
Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	12,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,000	0	0
29.00	4,500	3,750	3,750
30.00	6,200	5,350	9,100
30.50	7,000	3,300	12,400

Device	Routing	Invert	Outlet Devices
#1	Primary	28.63'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.50 cfs @ 12.14 hrs HW=28.76' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 2.50 cfs @ 1.19 fps)

Pond 58P: Basin 17



Summary for Pond 59P: Basin 18

Inflow Area = 13.433 ac, 31.95% Impervious, Inflow Depth = 1.57" for Custom event
Inflow = 11.52 cfs @ 12.11 hrs, Volume= 1.752 af
Outflow = 9.20 cfs @ 12.21 hrs, Volume= 1.679 af, Atten= 20%, Lag= 6.0 min
Primary = 9.20 cfs @ 12.21 hrs, Volume= 1.679 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.19' @ 12.21 hrs Surf.Area= 8,347 sf Storage= 17,026 cf

Plug-Flow detention time= 338.9 min calculated for 1.678 af (96% of inflow)
Center-of-Mass det. time= 294.3 min (1,291.7 - 997.4)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	29,550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

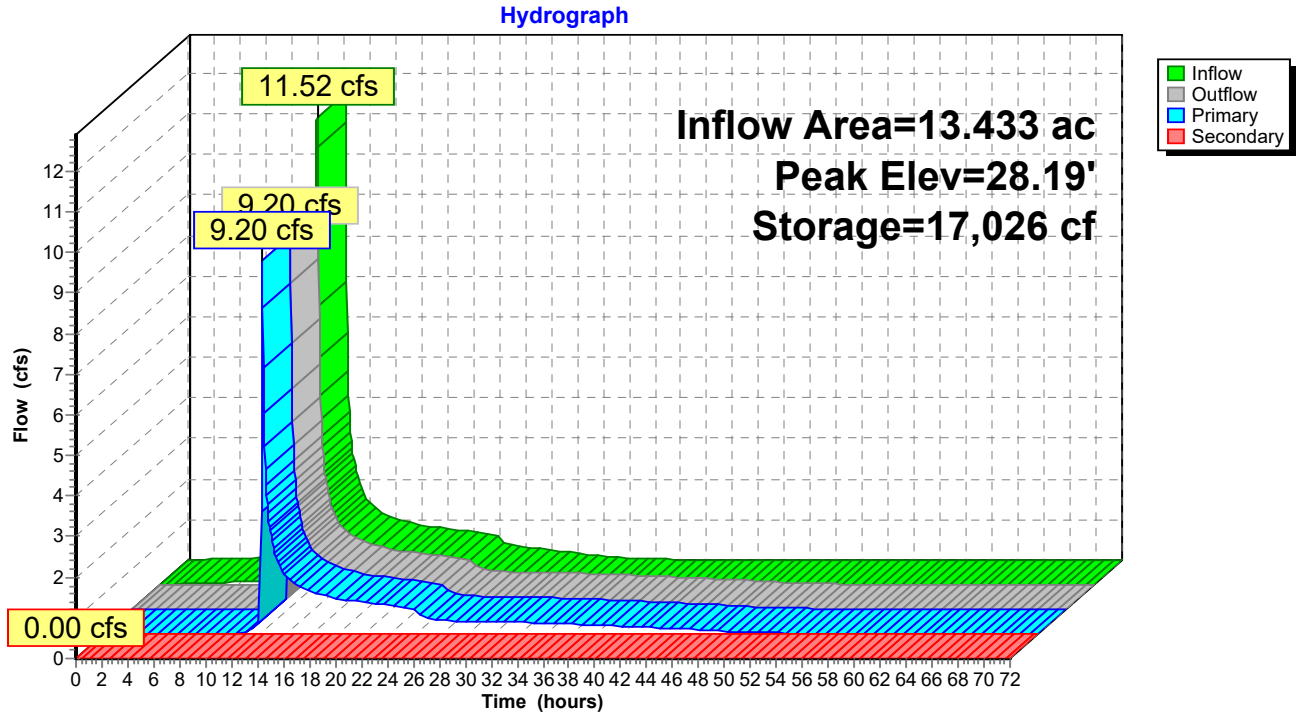
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	4,600	0	0
26.00	5,200	2,450	2,450
27.00	6,400	5,800	8,250
28.00	8,000	7,200	15,450
29.00	9,800	8,900	24,350
29.50	11,000	5,200	29,550

Device	Routing	Invert	Outlet Devices
#1	Primary	26.11'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	28.00'	**48.0" x 48.0" Horiz. Orifice/Grate** X 2 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	28.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=8.75 cfs @ 12.21 hrs HW=28.19' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.33 cfs @ 6.73 fps)
└**2=Orifice/Grate** (Weir Controls 8.42 cfs @ 1.41 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=25.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 59P: Basin 18



Summary for Subcatchment 60S: Basin 18 - Impervious

[49] Hint: Tc<2dt may require smaller dt

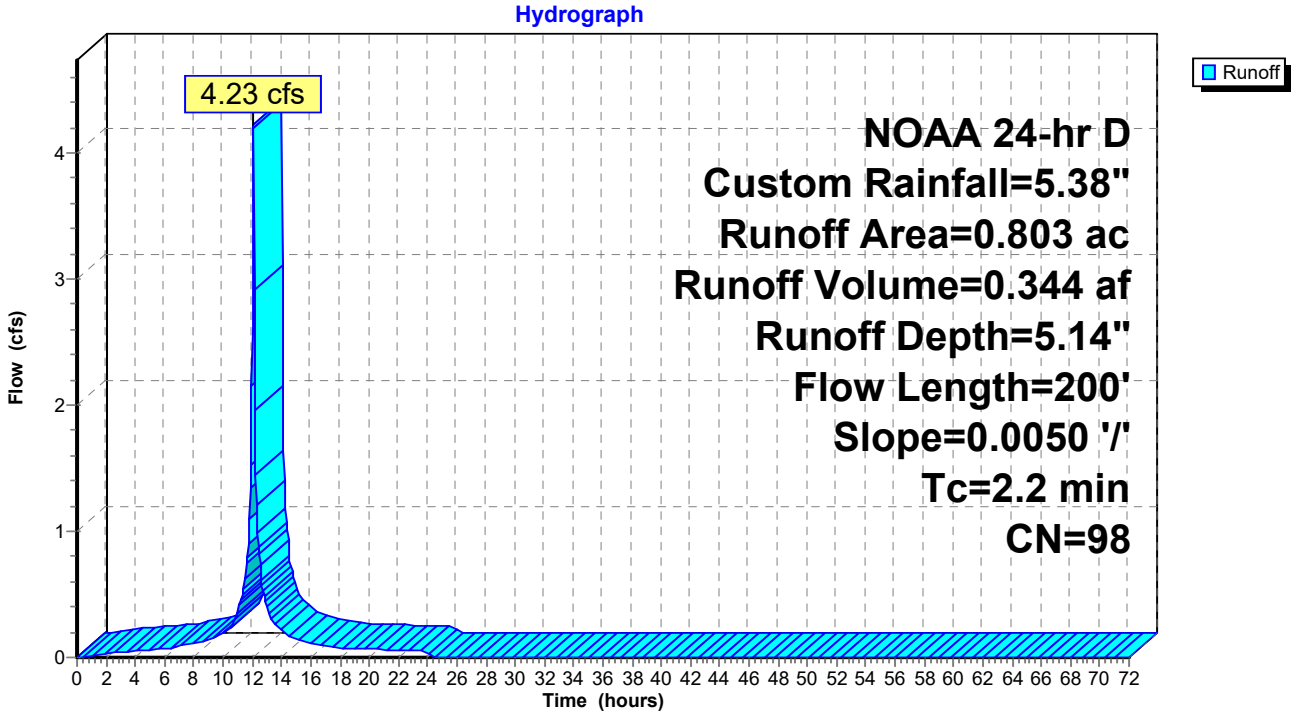
Runoff = 4.23 cfs @ 12.09 hrs, Volume= 0.344 af, Depth= 5.14"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.803	98	Impervious
	0.803		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0050	0.89		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.2	200	Total			

Subcatchment 60S: Basin 18 - Impervious



Summary for Subcatchment 61S: Basin 18 - Pervious

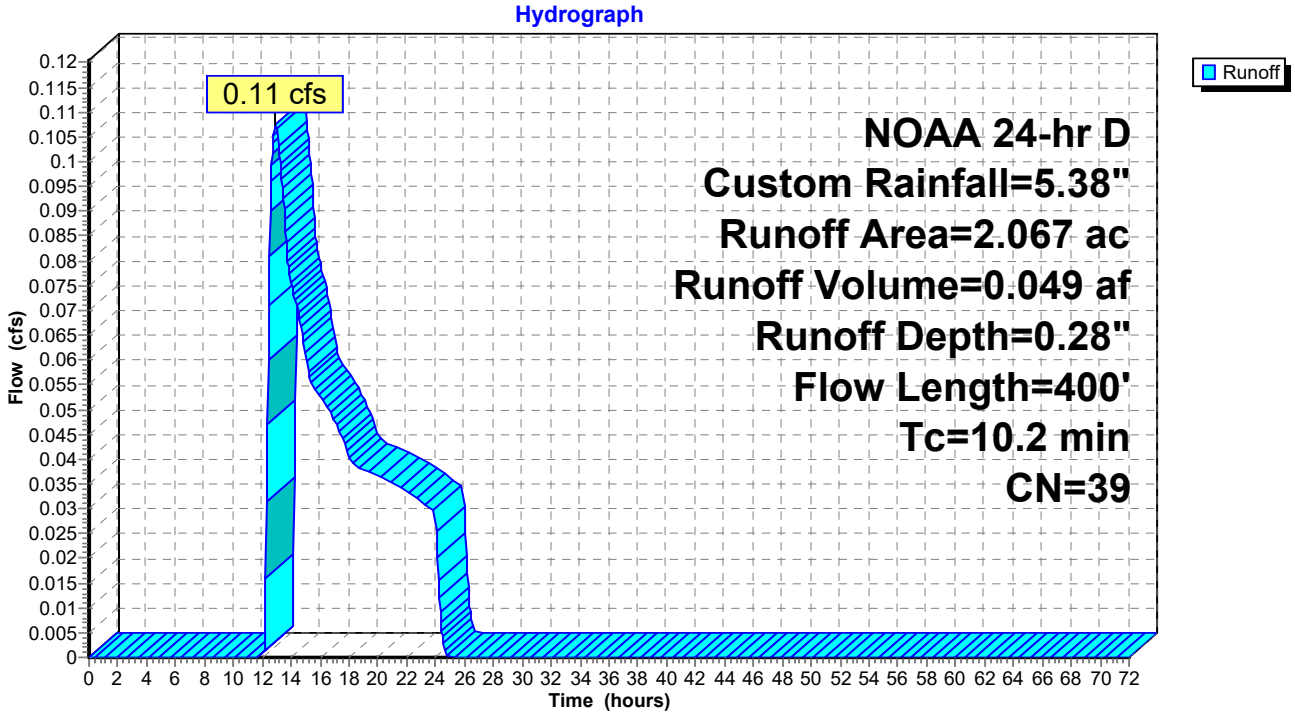
Runoff = 0.11 cfs @ 12.94 hrs, Volume= 0.049 af, Depth= 0.28"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
2.067	39	>75% Grass cover, Good, HSG A
2.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 61S: Basin 18 - Pervious



Summary for Pond 62P: Basin 26 (Wet Pond)

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 1.30" for Custom event
Inflow = 33.39 cfs @ 12.19 hrs, Volume= 8.149 af
Outflow = 0.40 cfs @ 51.20 hrs, Volume= 1.825 af, Atten= 99%, Lag= 2,340.4 min
Primary = 0.40 cfs @ 51.20 hrs, Volume= 1.825 af
Routed to Link 87L : Total Area to Tuckerton Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 22.50' Surf.Area= 81,675 sf Storage= 279,807 cf
Peak Elev= 25.44' @ 51.20 hrs Surf.Area= 118,962 sf Storage= 571,919 cf (292,112 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,230.1 min (2,615.5 - 1,385.4)

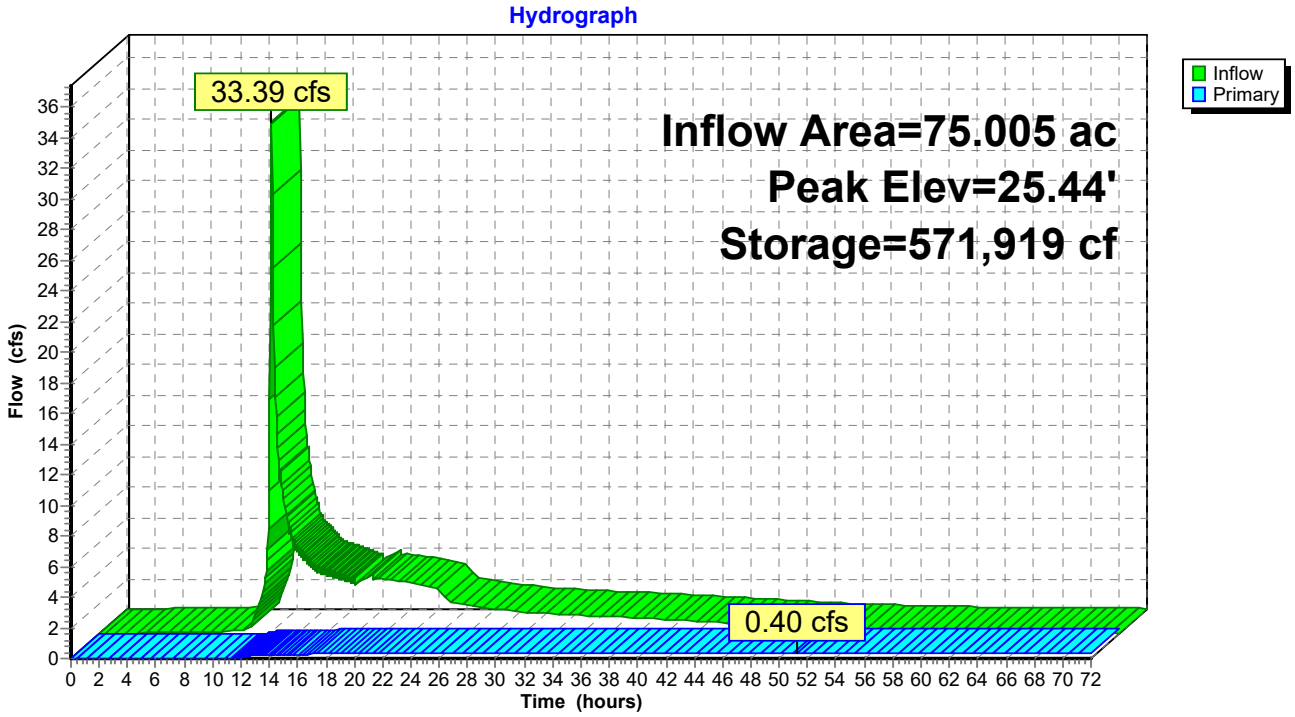
Volume	Invert	Avail.Storage	Storage Description
#1	18.00'	562,535 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
18.00	29,000	0	0
19.00	32,000	30,500	30,500
20.00	35,000	33,500	64,000
21.00	38,000	36,500	100,500
21.01	43,000	405	100,905
22.00	47,000	44,550	145,455
23.00	52,000	49,500	194,955
24.00	57,000	54,500	249,455
24.01	63,000	600	250,055
25.00	69,000	65,340	315,395
26.00	76,000	72,500	387,895
27.00	84,000	80,000	467,895
27.50	90,000	43,500	511,395

Device	Routing	Invert	Outlet Devices
#1	Primary	22.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	26.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.40 cfs @ 51.20 hrs HW=25.44' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.40 cfs @ 8.08 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 62P: Basin 26 (Wet Pond)



Summary for Subcatchment 63S: Basin 26 - Impervious

[49] Hint: Tc<2dt may require smaller dt

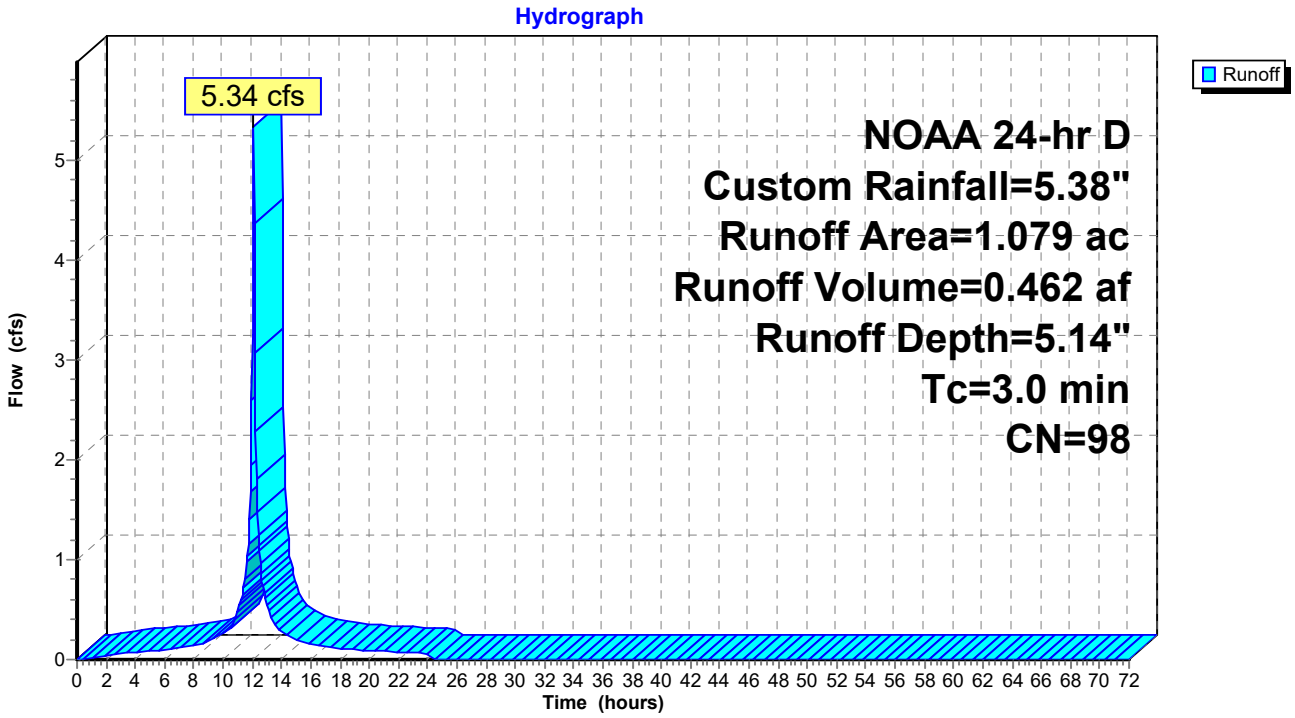
Runoff = 5.34 cfs @ 12.10 hrs, Volume= 0.462 af, Depth= 5.14"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.079	98	Impervious
	1.079		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 63S: Basin 26 - Impervious



Summary for Subcatchment 64S: Basin 26 - Pervious

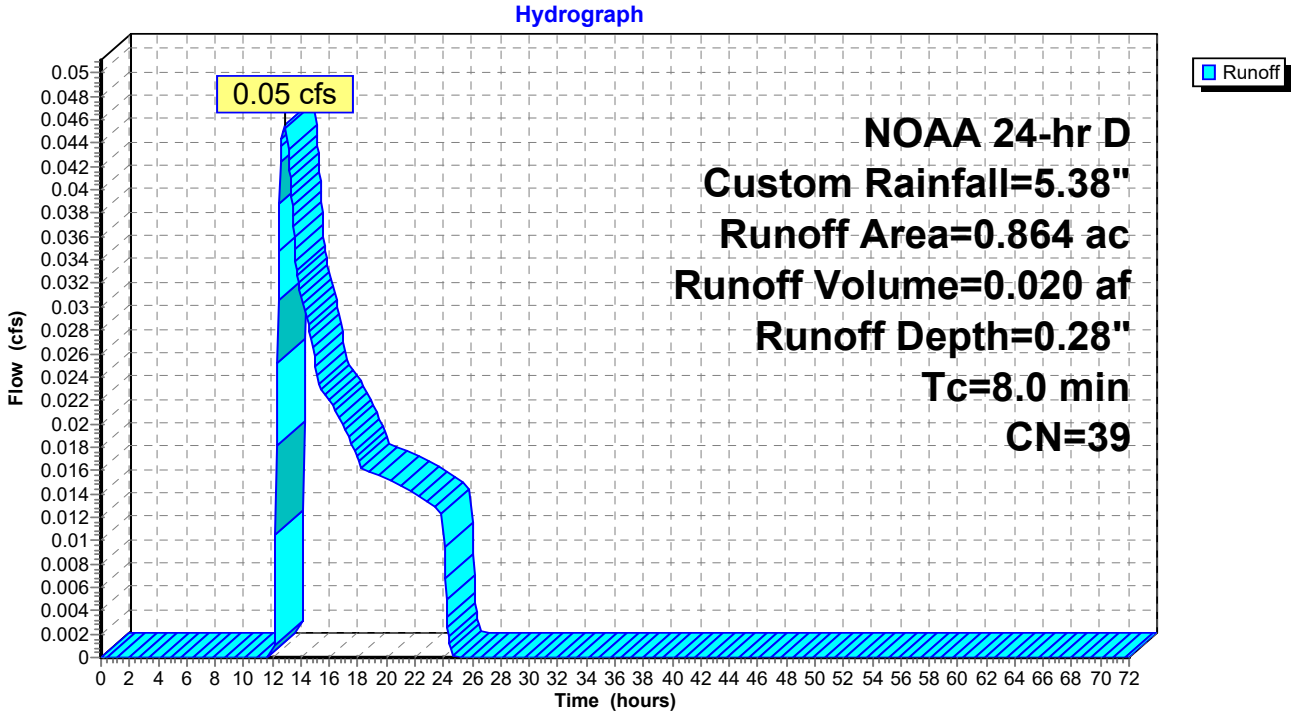
Runoff = 0.05 cfs @ 12.86 hrs, Volume= 0.020 af, Depth= 0.28"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
0.864	39	>75% Grass cover, Good, HSG A
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 64S: Basin 26 - Pervious



Summary for Pond 66P: Basin 31

[93] Warning: Storage range exceeded by 27.58'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=171)
[81] Warning: Exceeded Pond 67P by 27.73' @ 12.80 hrs

Inflow Area = 9.125 ac, 32.14% Impervious, Inflow Depth > 1.62" for Custom event
Inflow = 6.07 cfs @ 12.04 hrs, Volume= 1.235 af
Outflow = 1.28 cfs @ 12.81 hrs, Volume= 1.141 af, Atten= 79%, Lag= 45.7 min
Primary = 1.28 cfs @ 12.81 hrs, Volume= 1.141 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 63.08' @ 12.80 hrs Surf.Area= 8,000 sf Storage= 13,775 cf

Plug-Flow detention time= 595.4 min calculated for 1.141 af (92% of inflow)
Center-of-Mass det. time= 480.4 min (1,767.7 - 1,287.3)

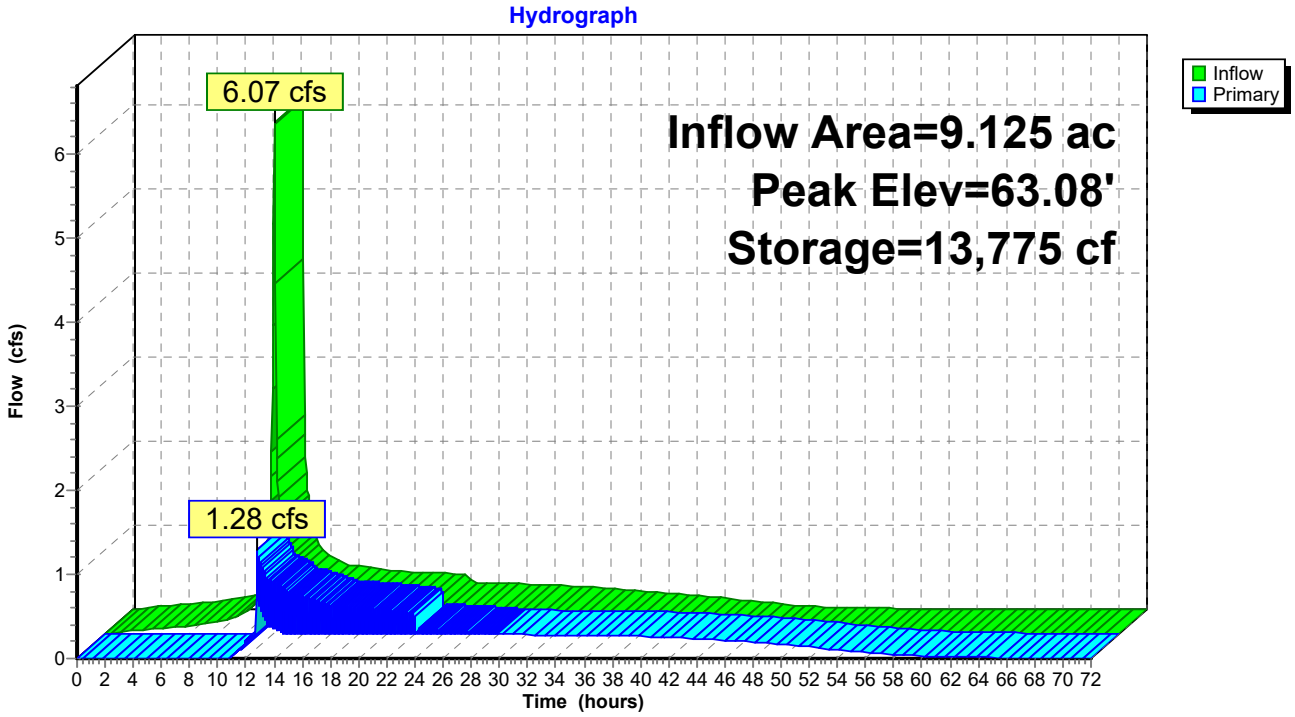
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	13,775 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,200	0	0
34.00	5,000	4,100	4,100
35.00	6,900	5,950	10,050
35.50	8,000	3,725	13,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.96'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.21 cfs @ 12.81 hrs HW=60.33' (Free Discharge)
1=Orifice/Grate (Orifice Controls 1.21 cfs @ 24.67 fps)

Pond 66P: Basin 31



Summary for Subcatchment 66S: Basin 19 - Impervious

[49] Hint: Tc<2dt may require smaller dt

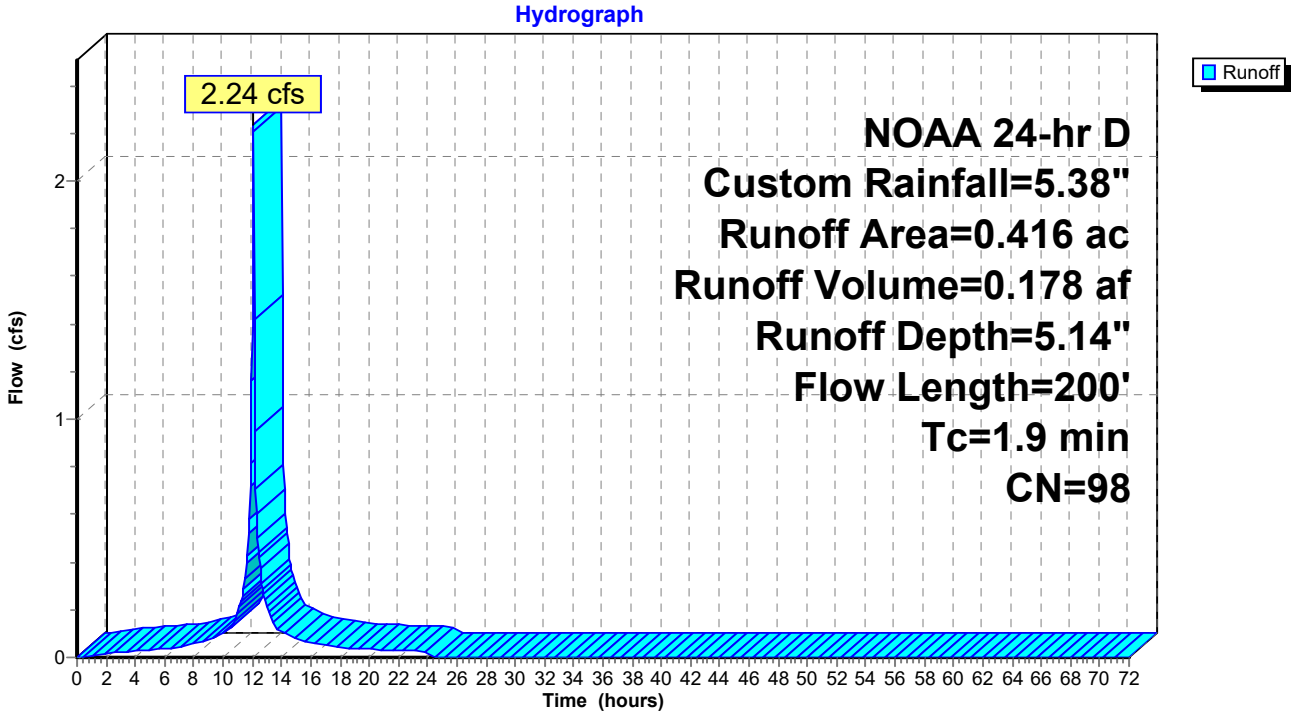
Runoff = 2.24 cfs @ 12.09 hrs, Volume= 0.178 af, Depth= 5.14"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.416	98	Impervious
	0.416		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
1.9	200	Total			

Subcatchment 66S: Basin 19 - Impervious



Summary for Pond 67P: Basin 30

[81] Warning: Exceeded Pond 70P by 0.31' @ 28.95 hrs

Inflow Area = 6.020 ac, 31.43% Impervious, Inflow Depth > 1.64" for Custom event
Inflow = 4.75 cfs @ 12.10 hrs, Volume= 0.823 af
Outflow = 0.32 cfs @ 21.85 hrs, Volume= 0.740 af, Atten= 93%, Lag= 585.3 min
Primary = 0.32 cfs @ 21.85 hrs, Volume= 0.740 af
Routed to Pond 66P : Basin 31

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.80' @ 21.85 hrs Surf.Area= 8,175 sf Storage= 16,505 cf

Plug-Flow detention time= 712.6 min calculated for 0.740 af (90% of inflow)
Center-of-Mass det. time= 604.9 min (1,634.4 - 1,029.5)

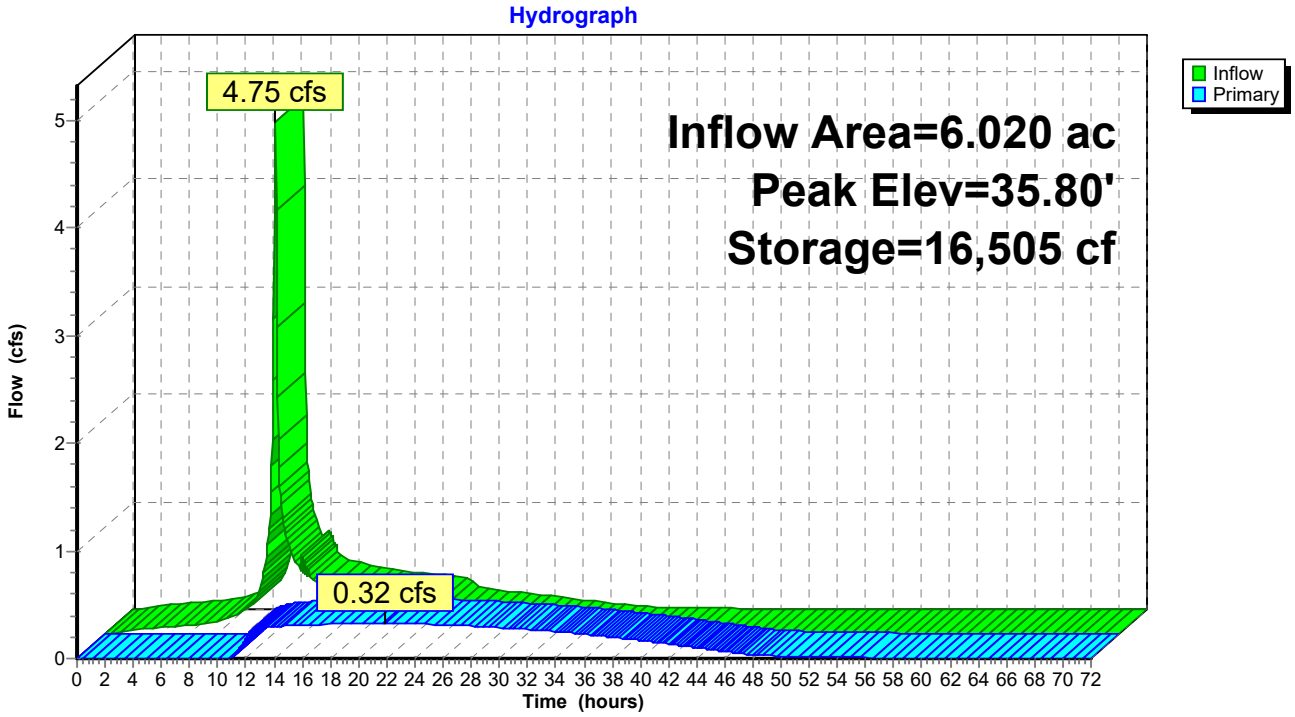
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,775 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,700	0	0
34.00	5,200	4,450	4,450
35.00	6,900	6,050	10,500
36.00	8,500	7,700	18,200
36.50	9,800	4,575	22,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.81'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.32 cfs @ 21.85 hrs HW=35.80' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.32 cfs @ 6.57 fps)

Pond 67P: Basin 30



Summary for Subcatchment 67S: Basin 19 - Pervious

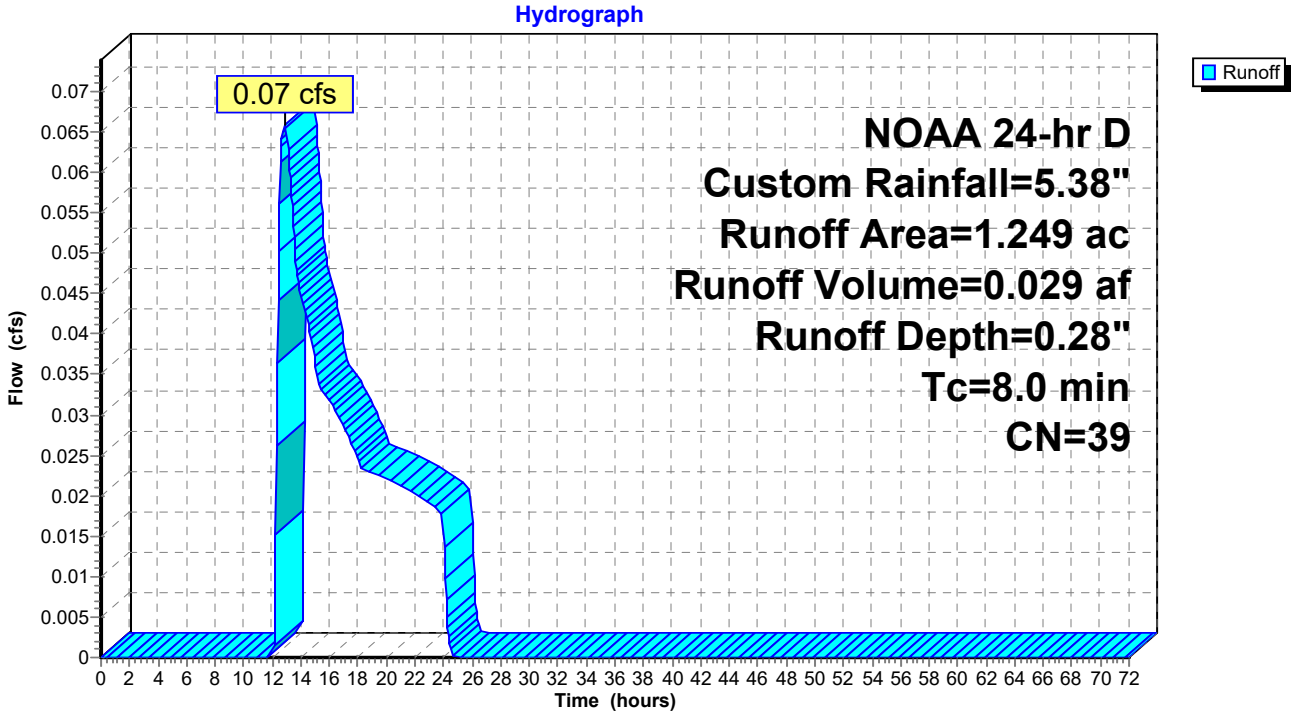
Runoff = 0.07 cfs @ 12.86 hrs, Volume= 0.029 af, Depth= 0.28"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.249	39	>75% Grass cover, Good, HSG A
1.249		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 67S: Basin 19 - Pervious



Summary for Pond 68P: Basin 19

Inflow Area = 1.665 ac, 24.98% Impervious, Inflow Depth = 1.50" for Custom event
Inflow = 2.24 cfs @ 12.09 hrs, Volume= 0.208 af
Outflow = 0.23 cfs @ 13.24 hrs, Volume= 0.171 af, Atten= 90%, Lag= 69.3 min
Primary = 0.23 cfs @ 13.24 hrs, Volume= 0.171 af
Routed to Pond 69P : Basin 20

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.75' @ 13.24 hrs Surf.Area= 3,478 sf Storage= 4,767 cf

Plug-Flow detention time= 346.9 min calculated for 0.171 af (83% of inflow)
Center-of-Mass det. time= 260.3 min (1,044.2 - 784.0)

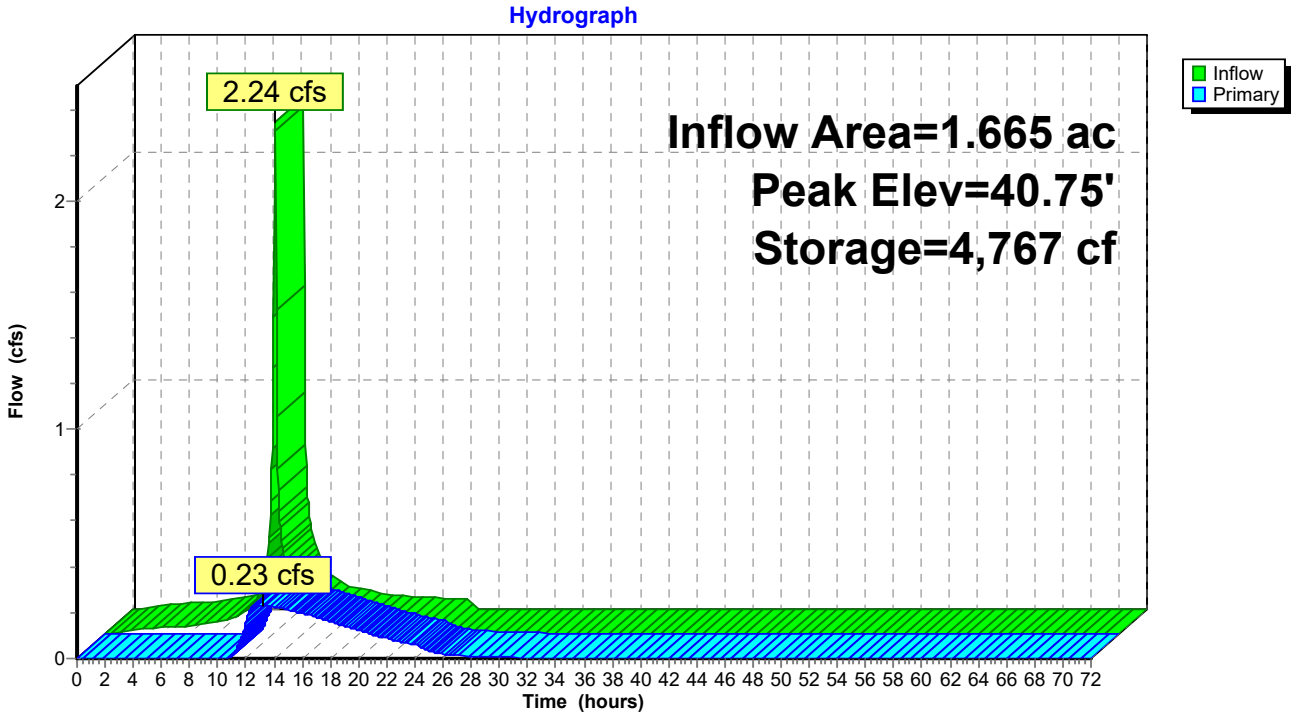
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	12,475 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	2,000	0	0
40.00	2,800	2,400	2,400
41.00	3,700	3,250	5,650
42.00	4,800	4,250	9,900
42.50	5,500	2,575	12,475

Device	Routing	Invert	Outlet Devices
#1	Primary	39.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.23 cfs @ 13.24 hrs HW=40.75' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.23 cfs @ 4.67 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 68P: Basin 19



Summary for Pond 69P: Basin 20

Inflow Area = 4.123 ac, 27.97% Impervious, Inflow Depth = 1.54" for Custom event
Inflow = 4.33 cfs @ 12.04 hrs, Volume= 0.528 af
Outflow = 1.42 cfs @ 12.22 hrs, Volume= 0.463 af, Atten= 67%, Lag= 10.4 min
Primary = 1.42 cfs @ 12.22 hrs, Volume= 0.463 af
Routed to Pond 72P : Basin 21

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.78' @ 12.22 hrs Surf.Area= 6,686 sf Storage= 7,817 cf

Plug-Flow detention time= 358.6 min calculated for 0.463 af (88% of inflow)
Center-of-Mass det. time= 287.5 min (1,149.1 - 861.6)

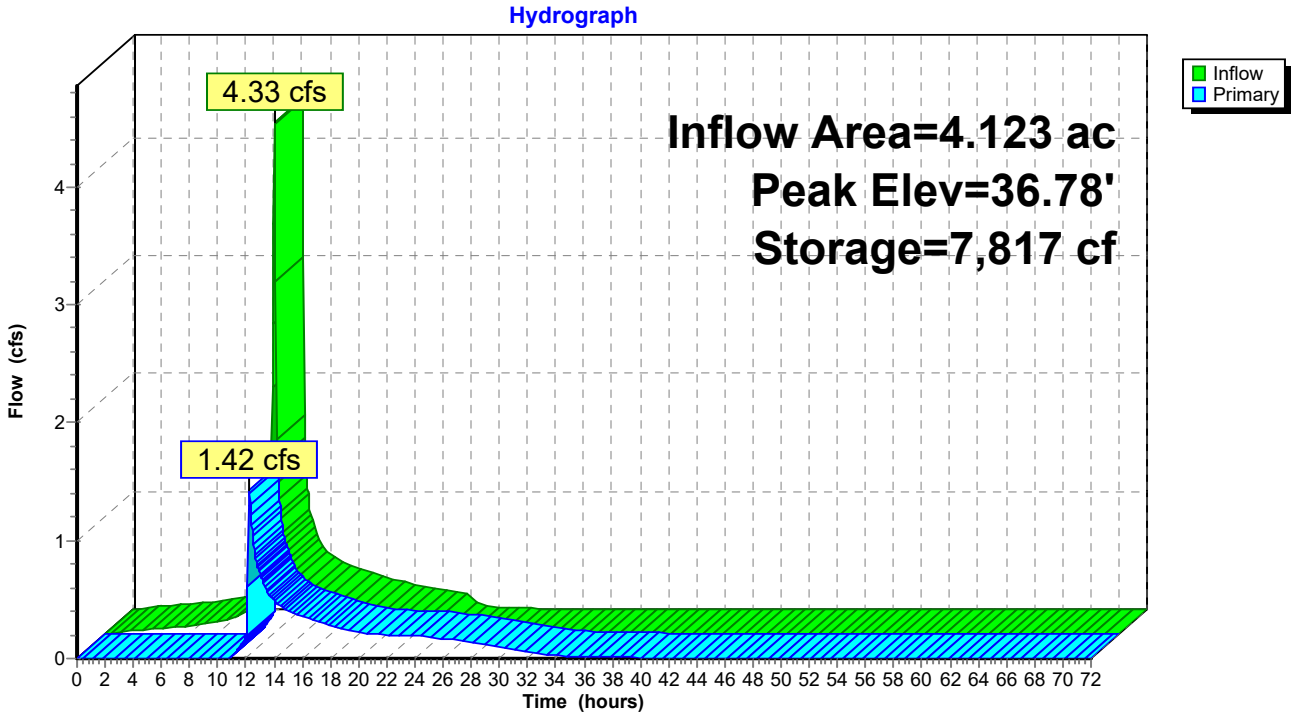
Volume	Invert	Avail.Storage	Storage Description
#1	35.00'	13,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.00	2,400	0	0
36.00	4,500	3,450	3,450
37.00	7,300	5,900	9,350
37.50	9,000	4,075	13,425

Device	Routing	Invert	Outlet Devices
#1	Primary	35.84'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.40 cfs @ 12.22 hrs HW=36.78' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.21 cfs @ 4.35 fps)
└**2=Orifice/Grate** (Weir Controls 1.18 cfs @ 0.93 fps)

Pond 69P: Basin 20



Summary for Pond 70P: Basin 29

[93] Warning: Storage range exceeded by 2.23'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=6)

Inflow Area = 2.987 ac, 32.51% Impervious, Inflow Depth = 1.86" for Custom event
Inflow = 4.81 cfs @ 12.10 hrs, Volume= 0.464 af
Outflow = 0.44 cfs @ 13.85 hrs, Volume= 0.379 af, Atten= 91%, Lag= 105.0 min
Primary = 0.44 cfs @ 13.85 hrs, Volume= 0.379 af
Routed to Pond 67P : Basin 30

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.23' @ 13.85 hrs Surf.Area= 8,700 sf Storage= 12,800 cf

Plug-Flow detention time= 638.2 min calculated for 0.379 af (82% of inflow)
Center-of-Mass det. time= 550.6 min (1,325.4 - 774.8)

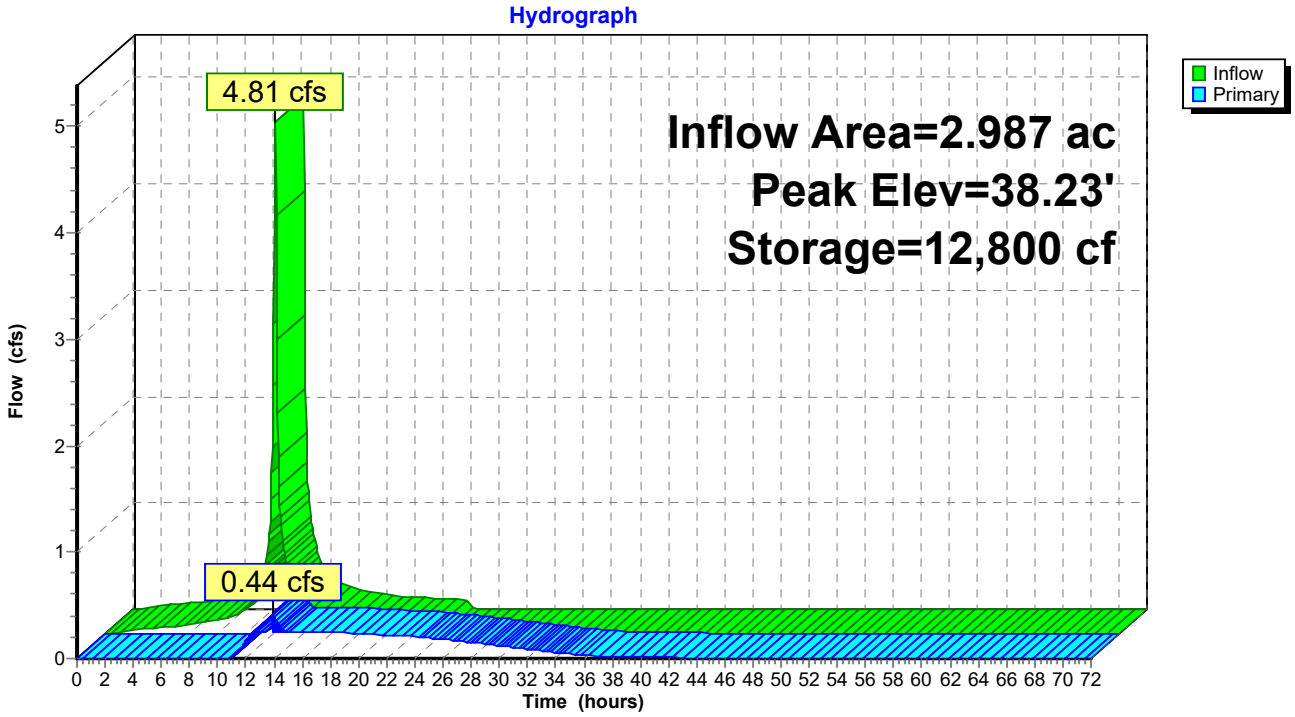
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	12,800 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,500	0	0
35.00	6,200	5,350	5,350
36.00	8,700	7,450	12,800

Device	Routing	Invert	Outlet Devices
#1	Primary	34.71'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.44 cfs @ 13.85 hrs HW=38.23' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.44 cfs @ 8.87 fps)

Pond 70P: Basin 29



Summary for Subcatchment 70S: Basin 20 - Impervious

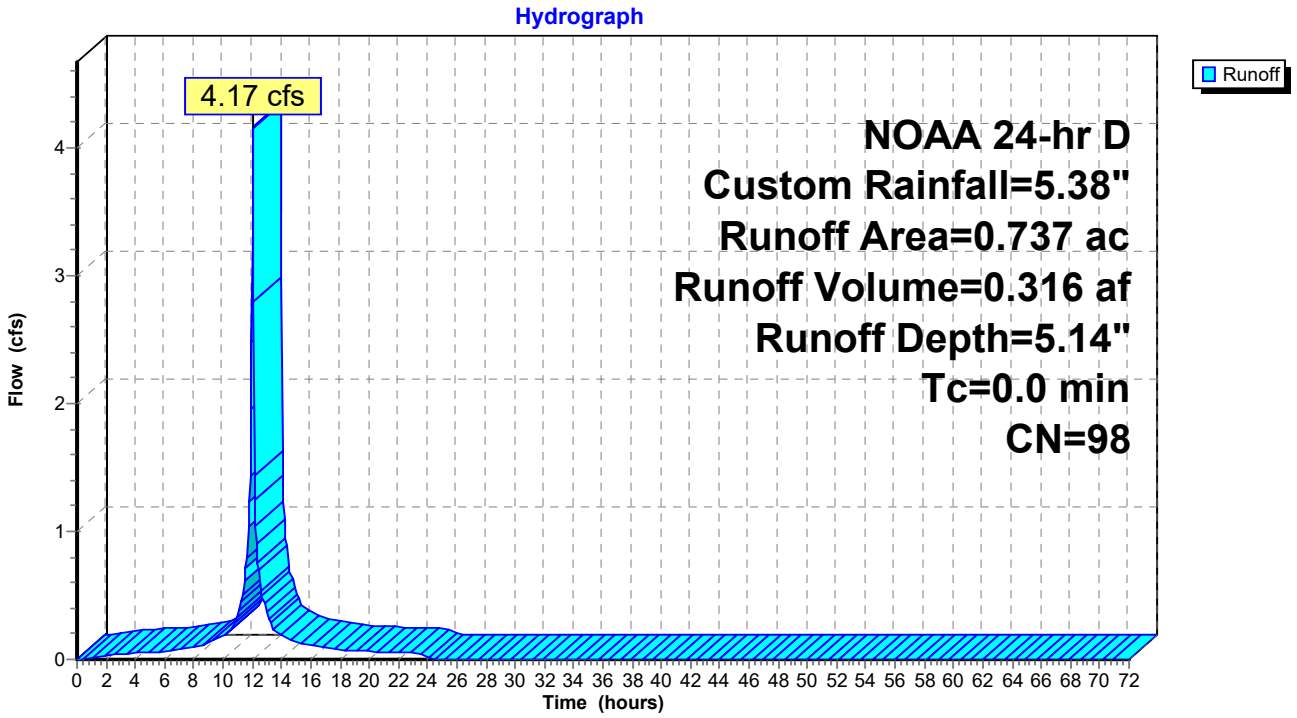
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 4.17 cfs @ 12.04 hrs, Volume= 0.316 af, Depth= 5.14"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.737	98	Impervious
	0.737		100.00% Impervious Area

Subcatchment 70S: Basin 20 - Impervious



Summary for Pond 71P: Basin 33

Inflow Area = 5.600 ac, 26.93% Impervious, Inflow Depth > 1.44" for Custom event
Inflow = 3.97 cfs @ 12.10 hrs, Volume= 0.670 af
Outflow = 0.27 cfs @ 17.98 hrs, Volume= 0.598 af, Atten= 93%, Lag= 352.7 min
Primary = 0.27 cfs @ 17.98 hrs, Volume= 0.598 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.15' @ 17.98 hrs Surf.Area= 7,522 sf Storage= 12,028 cf

Plug-Flow detention time= 665.8 min calculated for 0.598 af (89% of inflow)
Center-of-Mass det. time= 508.8 min (1,611.8 - 1,102.9)

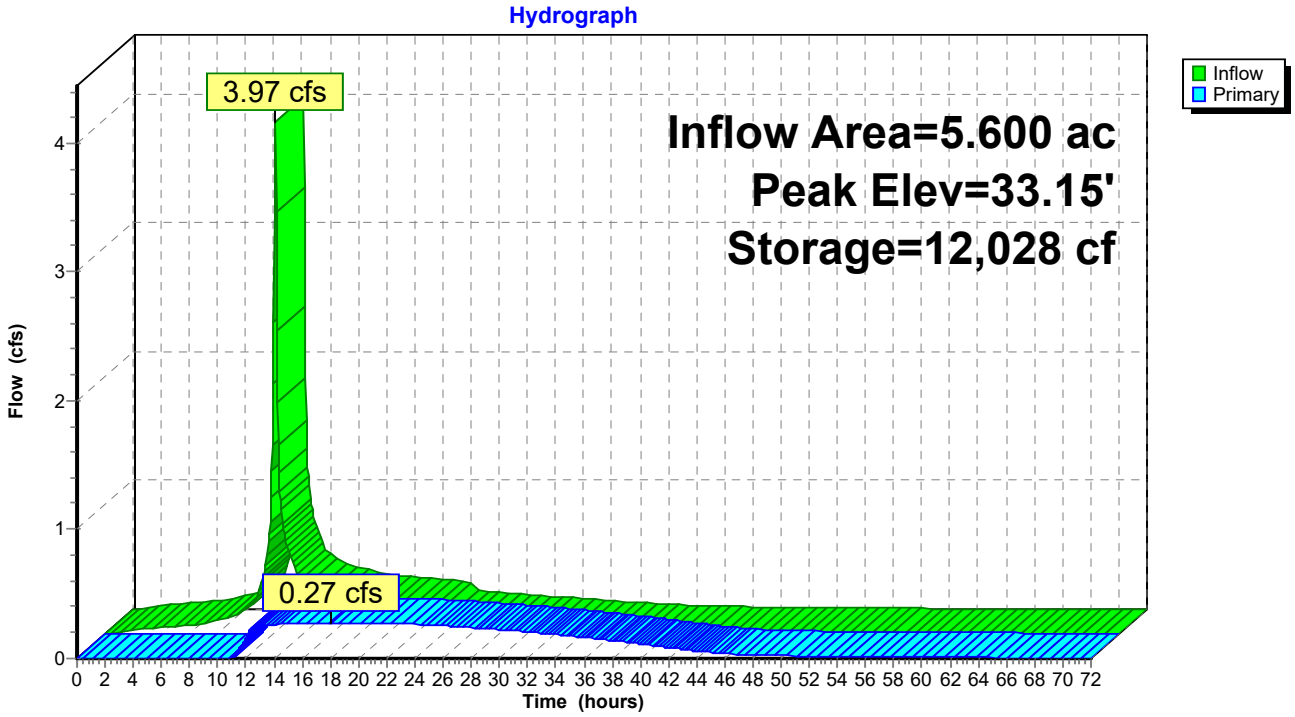
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	41,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,900	0	0
32.00	5,400	4,650	4,650
33.00	7,200	6,300	10,950
34.00	9,400	8,300	19,250
35.00	11,000	10,200	29,450
36.00	13,000	12,000	41,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.67'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.27 cfs @ 17.98 hrs HW=33.15' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.27 cfs @ 5.60 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 71P: Basin 33



Summary for Subcatchment 71S: Basin 20 - Pervious

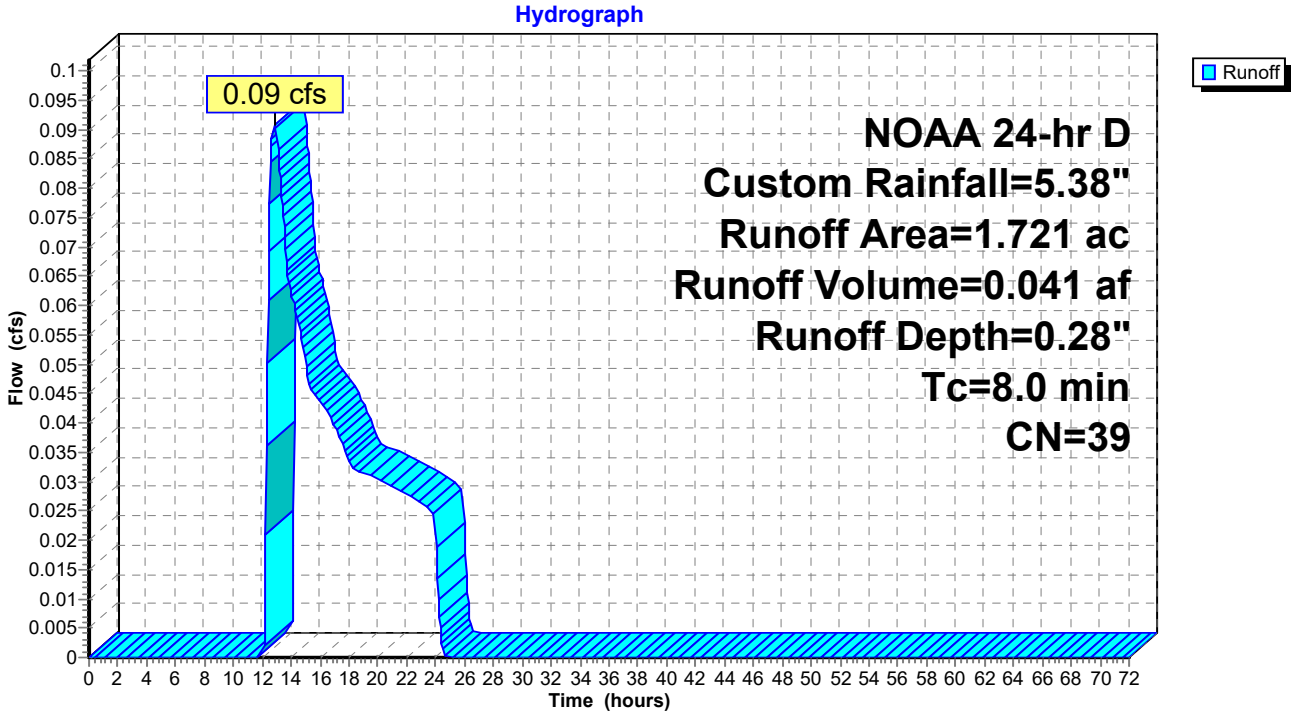
Runoff = 0.09 cfs @ 12.86 hrs, Volume= 0.041 af, Depth= 0.28"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
1.721		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 71S: Basin 20 - Pervious



Summary for Pond 72P: Basin 21

Inflow Area = 4.621 ac, 35.73% Impervious, Inflow Depth > 1.76" for Custom event
Inflow = 3.35 cfs @ 12.15 hrs, Volume= 0.677 af
Outflow = 3.23 cfs @ 12.17 hrs, Volume= 0.634 af, Atten= 3%, Lag= 1.5 min
Primary = 3.23 cfs @ 12.17 hrs, Volume= 0.634 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.97' @ 12.17 hrs Surf.Area= 2,773 sf Storage= 2,306 cf

Plug-Flow detention time= 111.0 min calculated for 0.634 af (94% of inflow)
Center-of-Mass det. time= 42.7 min (1,065.2 - 1,022.5)

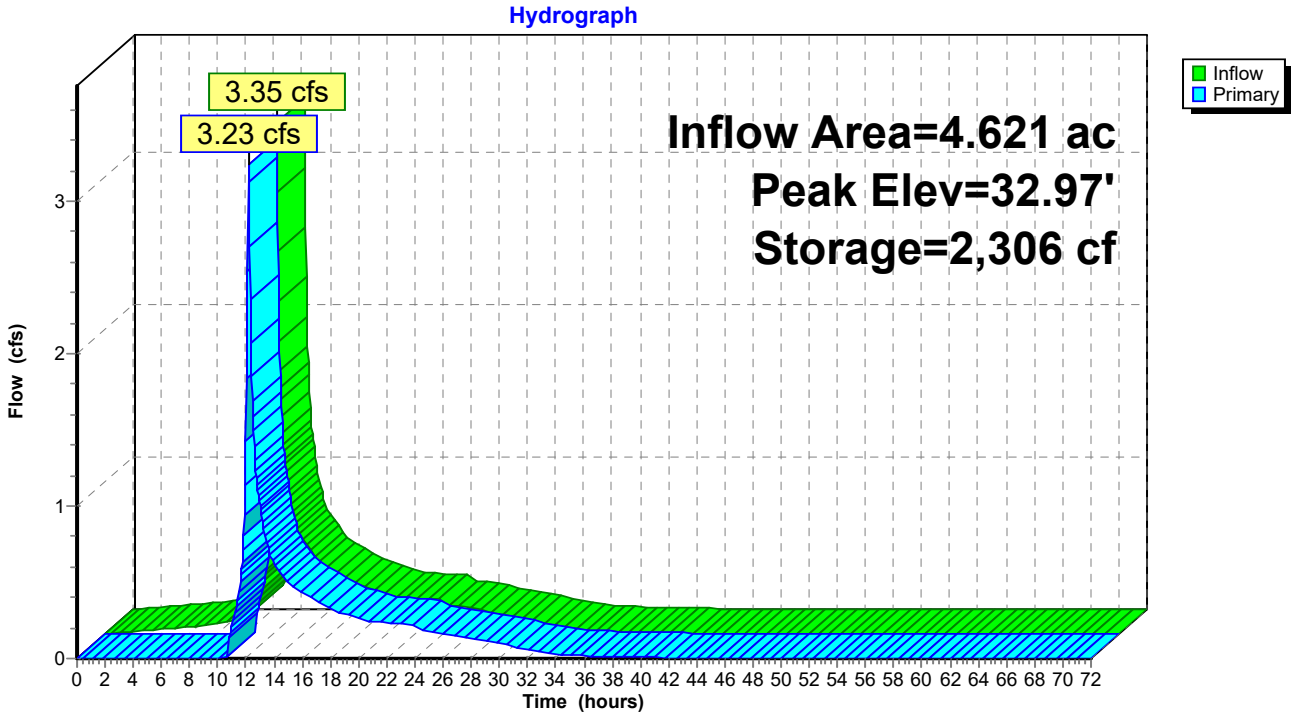
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	8,000 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,000	0	0
33.00	2,800	2,400	2,400
34.00	4,000	3,400	5,800
34.50	4,800	2,200	8,000

Device	Routing	Invert	Outlet Devices
#1	Primary	32.81'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.14 cfs @ 12.17 hrs HW=32.96' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.14 cfs @ 1.28 fps)

Pond 72P: Basin 21



Summary for Pond 73P: Basin 32

Inflow Area = 2.998 ac, 24.25% Impervious, Inflow Depth = 1.46" for Custom event
Inflow = 3.60 cfs @ 12.10 hrs, Volume= 0.365 af
Outflow = 0.16 cfs @ 15.99 hrs, Volume= 0.292 af, Atten= 95%, Lag= 233.3 min
Primary = 0.16 cfs @ 15.99 hrs, Volume= 0.292 af
Routed to Pond 71P : Basin 33

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.84' @ 15.99 hrs Surf.Area= 13,458 sf Storage= 10,531 cf

Plug-Flow detention time= 831.3 min calculated for 0.292 af (80% of inflow)
Center-of-Mass det. time= 736.3 min (1,523.0 - 786.7)

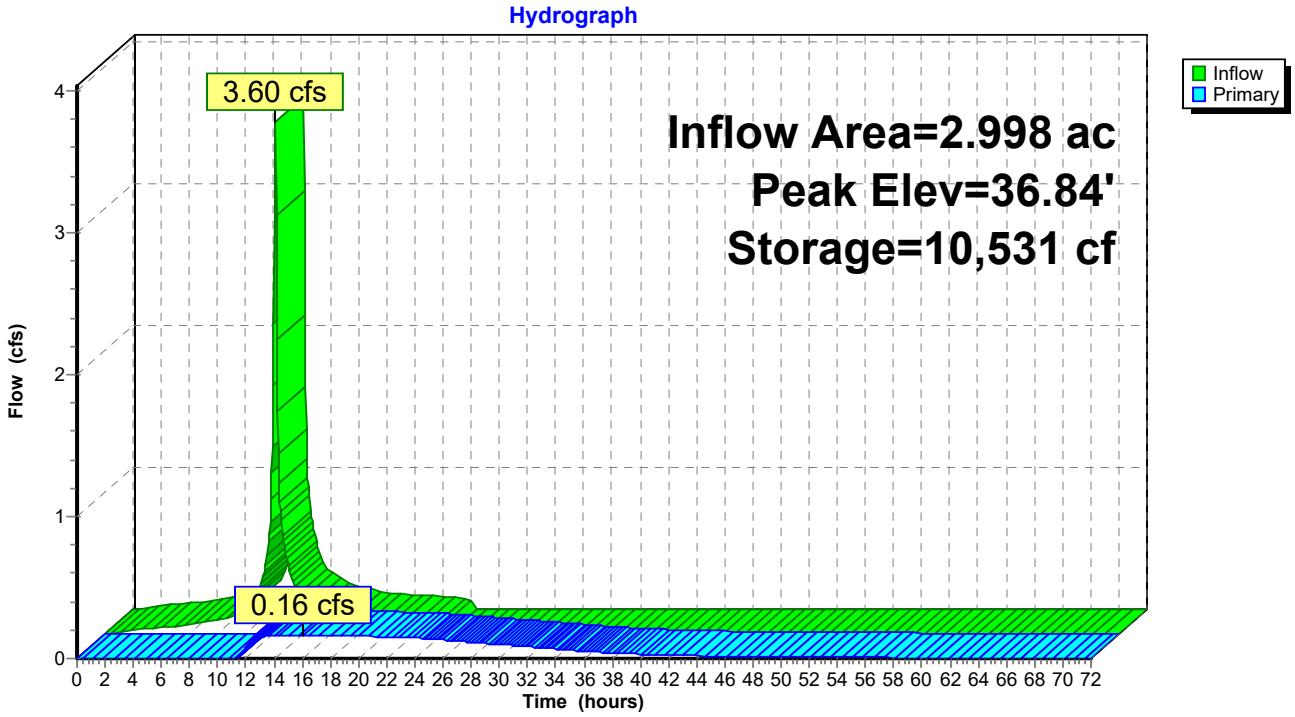
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	54,225 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	11,700	0	0
37.00	13,800	12,750	12,750
38.00	16,200	15,000	27,750
39.00	18,000	17,100	44,850
39.50	19,500	9,375	54,225

Device	Routing	Invert	Outlet Devices
#1	Primary	36.23'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	38.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 15.99 hrs HW=36.84' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.16 cfs @ 3.34 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 73P: Basin 32



Summary for Subcatchment 73S: Basin 21 - Impervious

[49] Hint: Tc<2dt may require smaller dt

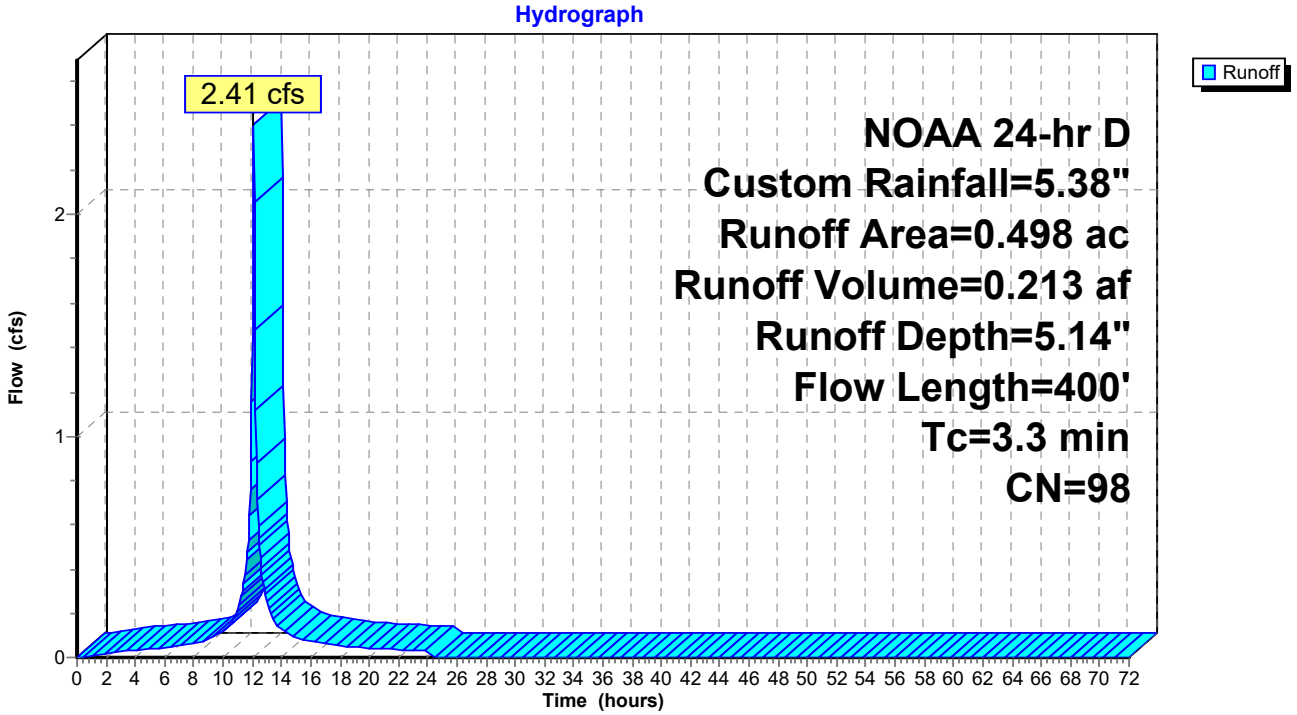
Runoff = 2.41 cfs @ 12.10 hrs, Volume= 0.213 af, Depth= 5.14"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.498	98	Impervious
	0.498		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.3	400	Total			

Subcatchment 73S: Basin 21 - Impervious



Summary for Pond 74P: Basin 39

Inflow Area = 20.988 ac, 20.72% Impervious, Inflow Depth > 1.00" for Custom event
Inflow = 7.18 cfs @ 12.27 hrs, Volume= 1.740 af
Outflow = 0.71 cfs @ 20.00 hrs, Volume= 1.127 af, Atten= 90%, Lag= 464.1 min
Primary = 0.71 cfs @ 20.00 hrs, Volume= 1.127 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.04' @ 20.00 hrs Surf.Area= 18,174 sf Storage= 41,738 cf

Plug-Flow detention time= 1,161.9 min calculated for 1.126 af (65% of inflow)
Center-of-Mass det. time= 857.2 min (2,025.1 - 1,168.0)

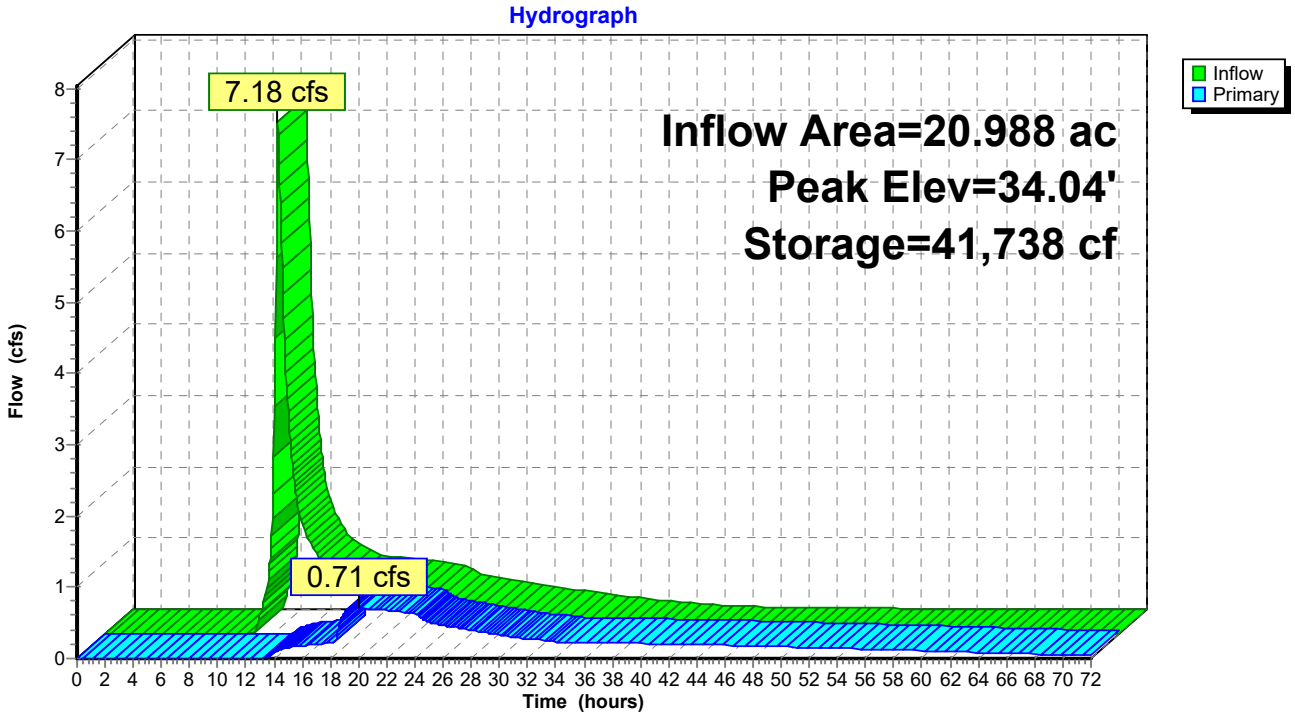
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	50,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	9,900	0	0
32.00	12,000	10,950	10,950
33.00	15,000	13,500	24,450
34.00	18,000	16,500	40,950
34.50	20,000	9,500	50,450

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.70 cfs @ 20.00 hrs HW=34.04' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.23 cfs @ 4.61 fps)
2=Orifice/Grate (Weir Controls 0.48 cfs @ 0.68 fps)

Pond 74P: Basin 39



Summary for Subcatchment 74S: Basin 21 - Pervious

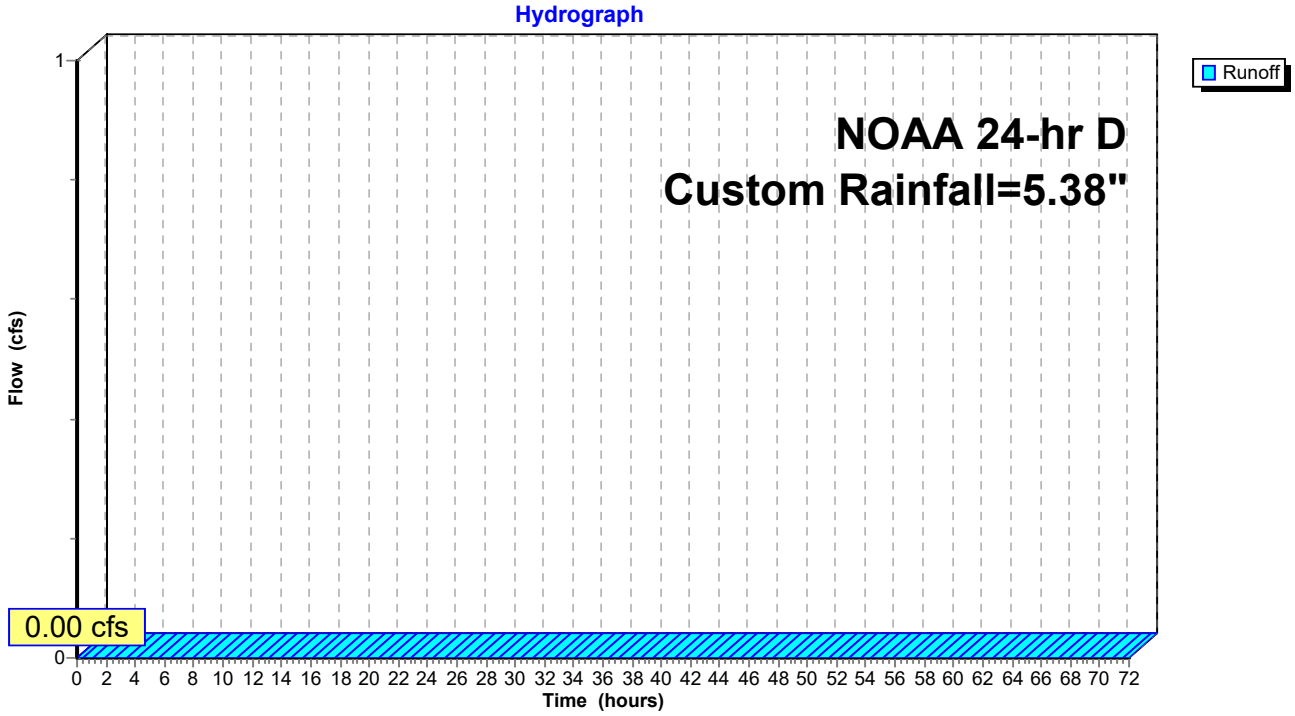
[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 74S: Basin 21 - Pervious



Summary for Pond 75P: Basin 25

Inflow Area = 17.778 ac, 32.79% Impervious, Inflow Depth > 1.59" for Custom event
Inflow = 15.23 cfs @ 12.15 hrs, Volume= 2.354 af
Outflow = 14.20 cfs @ 12.20 hrs, Volume= 2.267 af, Atten= 7%, Lag= 3.2 min
Primary = 12.52 cfs @ 12.20 hrs, Volume= 2.247 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 1.69 cfs @ 12.20 hrs, Volume= 0.019 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 27.58' @ 12.20 hrs Surf.Area= 10,401 sf Storage= 17,407 cf

Plug-Flow detention time= 244.0 min calculated for 2.265 af (96% of inflow)
Center-of-Mass det. time= 202.2 min (1,189.4 - 987.2)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	28,125 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

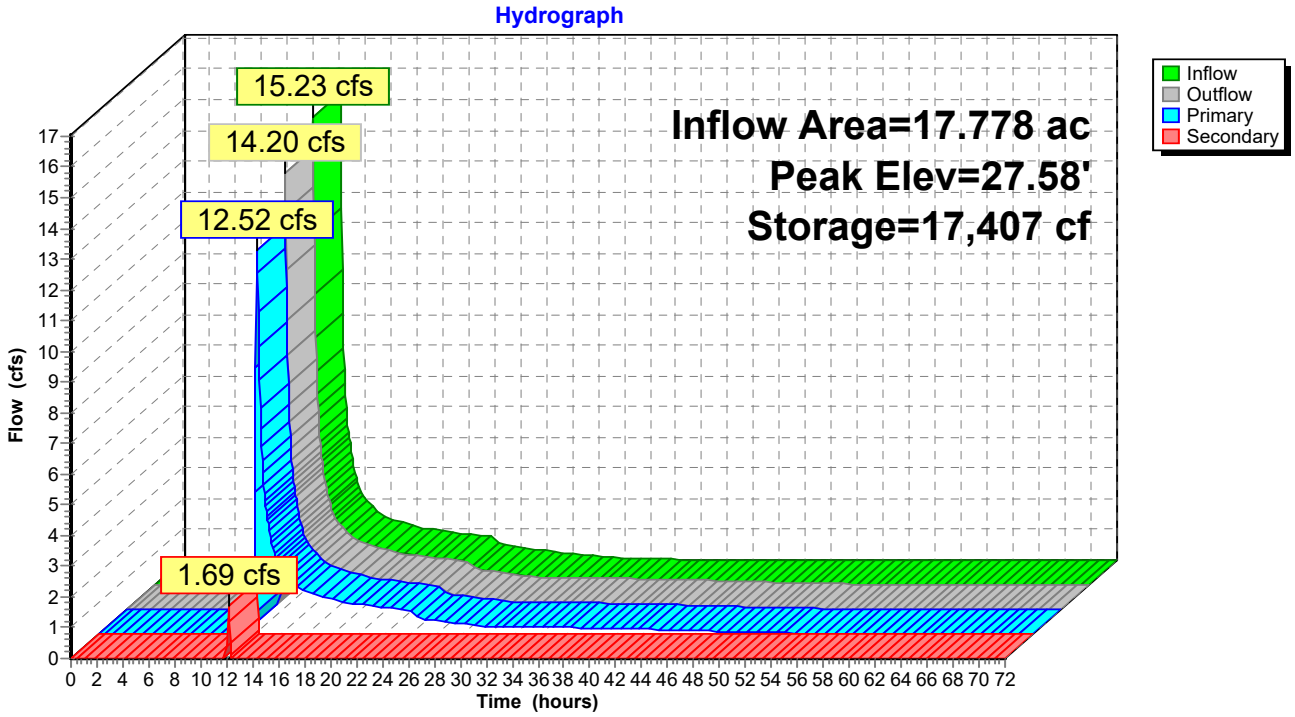
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	6,600	0	0
26.00	7,200	3,450	3,450
27.00	9,300	8,250	11,700
28.00	11,200	10,250	21,950
28.50	13,500	6,175	28,125

Device	Routing	Invert	Outlet Devices
#1	Primary	26.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	27.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	27.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=12.51 cfs @ 12.20 hrs HW=27.58' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.29 cfs @ 5.81 fps)
└**2=Orifice/Grate** (Weir Controls 12.22 cfs @ 2.01 fps)

Secondary OutFlow Max=1.67 cfs @ 12.20 hrs HW=27.58' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 1.67 cfs @ 0.70 fps)

Pond 75P: Basin 25



Summary for Pond 76P: Basin 38

Inflow Area = 1.797 ac, 28.16% Impervious, Inflow Depth = 1.65" for Custom event
Inflow = 2.64 cfs @ 12.09 hrs, Volume= 0.247 af
Outflow = 0.18 cfs @ 13.90 hrs, Volume= 0.202 af, Atten= 93%, Lag= 108.4 min
Primary = 0.18 cfs @ 13.90 hrs, Volume= 0.202 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.09' @ 13.90 hrs Surf.Area= 6,911 sf Storage= 6,425 cf

Plug-Flow detention time= 520.2 min calculated for 0.202 af (82% of inflow)
Center-of-Mass det. time= 432.1 min (1,211.5 - 779.4)

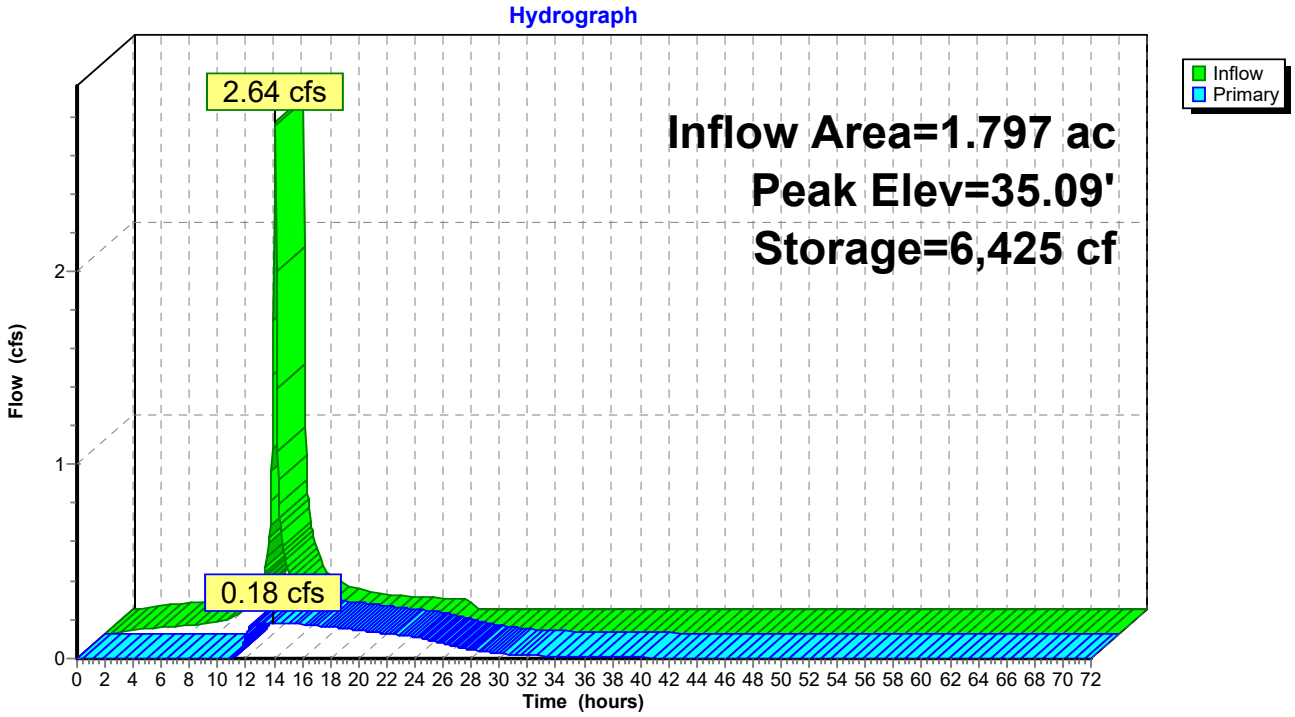
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	18,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,900	0	0
35.00	6,700	5,800	5,800
36.00	9,000	7,850	13,650
36.50	10,200	4,800	18,450

Device	Routing	Invert	Outlet Devices
#1	Primary	34.36'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 13.90 hrs HW=35.09' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.18 cfs @ 3.75 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 76P: Basin 38



Summary for Subcatchment 76S: Basin 25 - Impervious

[49] Hint: Tc<2dt may require smaller dt

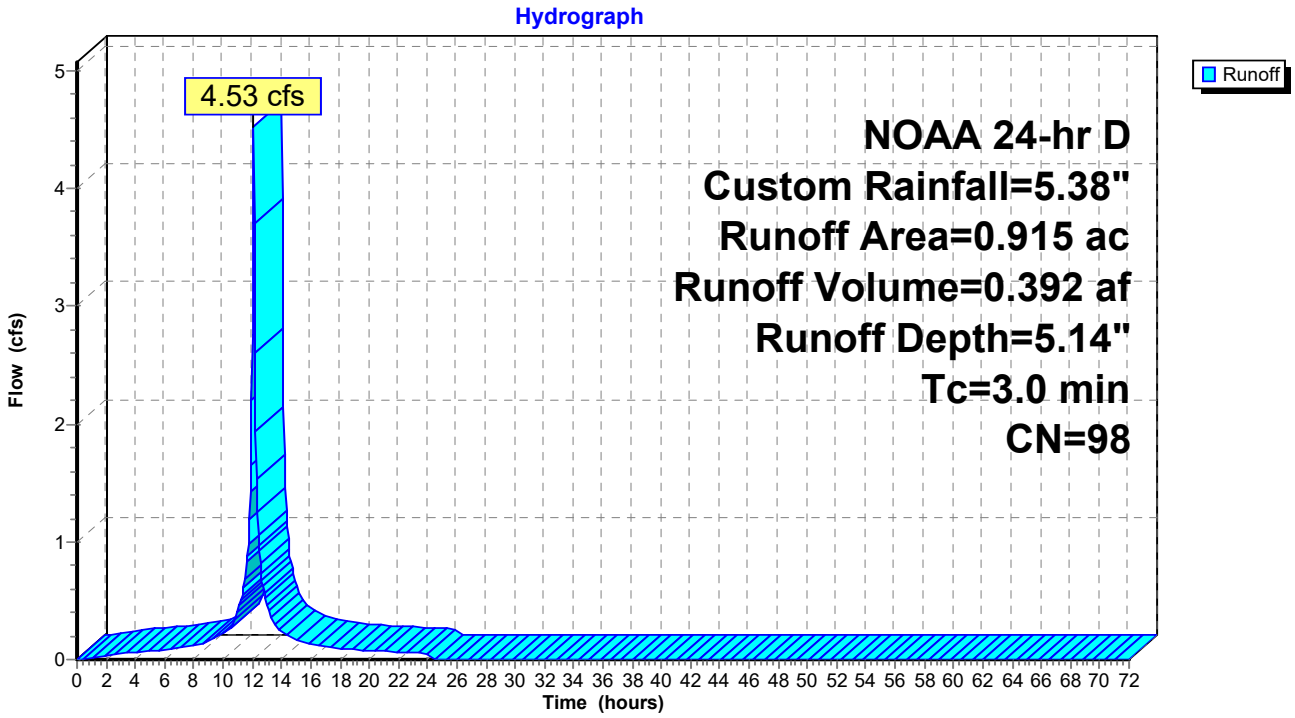
Runoff = 4.53 cfs @ 12.10 hrs, Volume= 0.392 af, Depth= 5.14"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 76S: Basin 25 - Impervious



Summary for Pond 77P: Basin 37

Inflow Area = 20.254 ac, 21.47% Impervious, Inflow Depth > 1.05" for Custom event
Inflow = 7.22 cfs @ 12.23 hrs, Volume= 1.777 af
Outflow = 7.15 cfs @ 12.27 hrs, Volume= 1.723 af, Atten= 1%, Lag= 2.0 min
Primary = 7.15 cfs @ 12.27 hrs, Volume= 1.723 af
Routed to Pond 74P : Basin 39

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.97' @ 12.27 hrs Surf.Area= 3,965 sf Storage= 3,361 cf

Plug-Flow detention time= 79.3 min calculated for 1.723 af (97% of inflow)
Center-of-Mass det. time= 26.1 min (1,169.6 - 1,143.4)

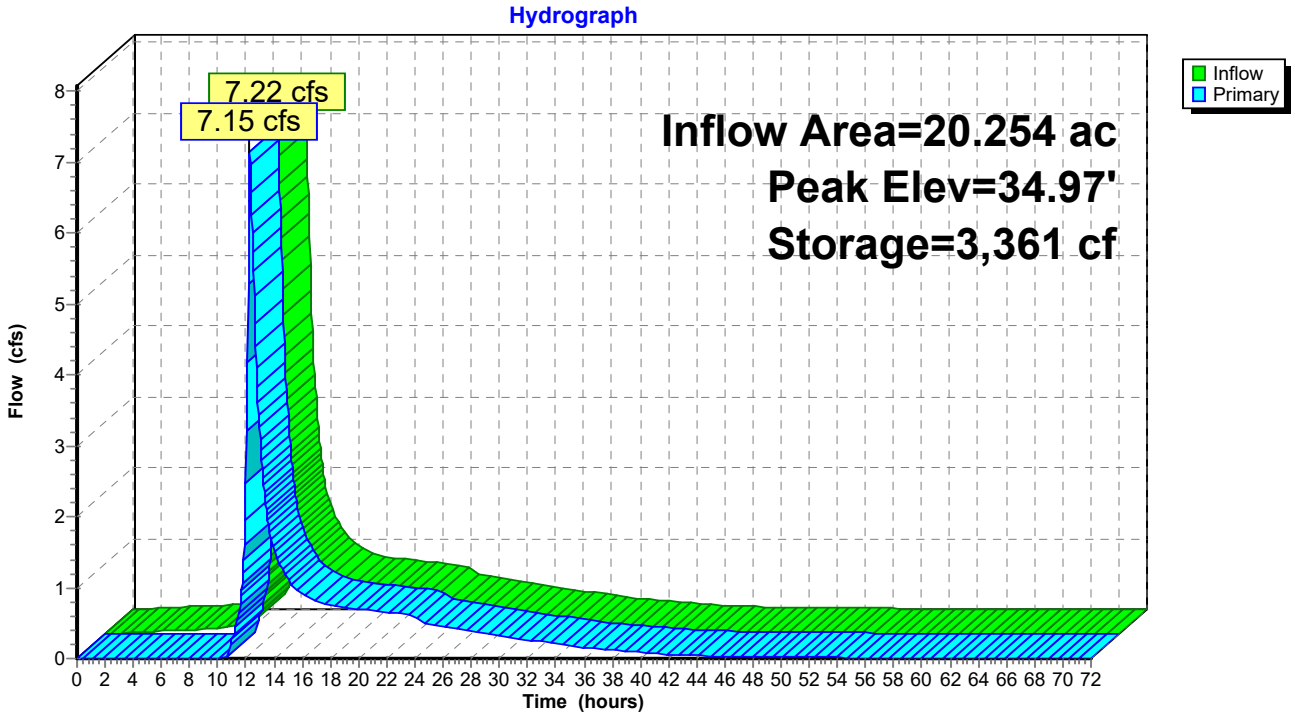
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	5,650 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	3,000	0	0
35.00	4,000	3,500	3,500
35.50	4,600	2,150	5,650

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.06 cfs @ 12.27 hrs HW=34.96' (Free Discharge)
1=Orifice/Grate (Weir Controls 7.06 cfs @ 1.68 fps)

Pond 77P: Basin 37



Summary for Subcatchment 77S: Basin 25 - Pervious

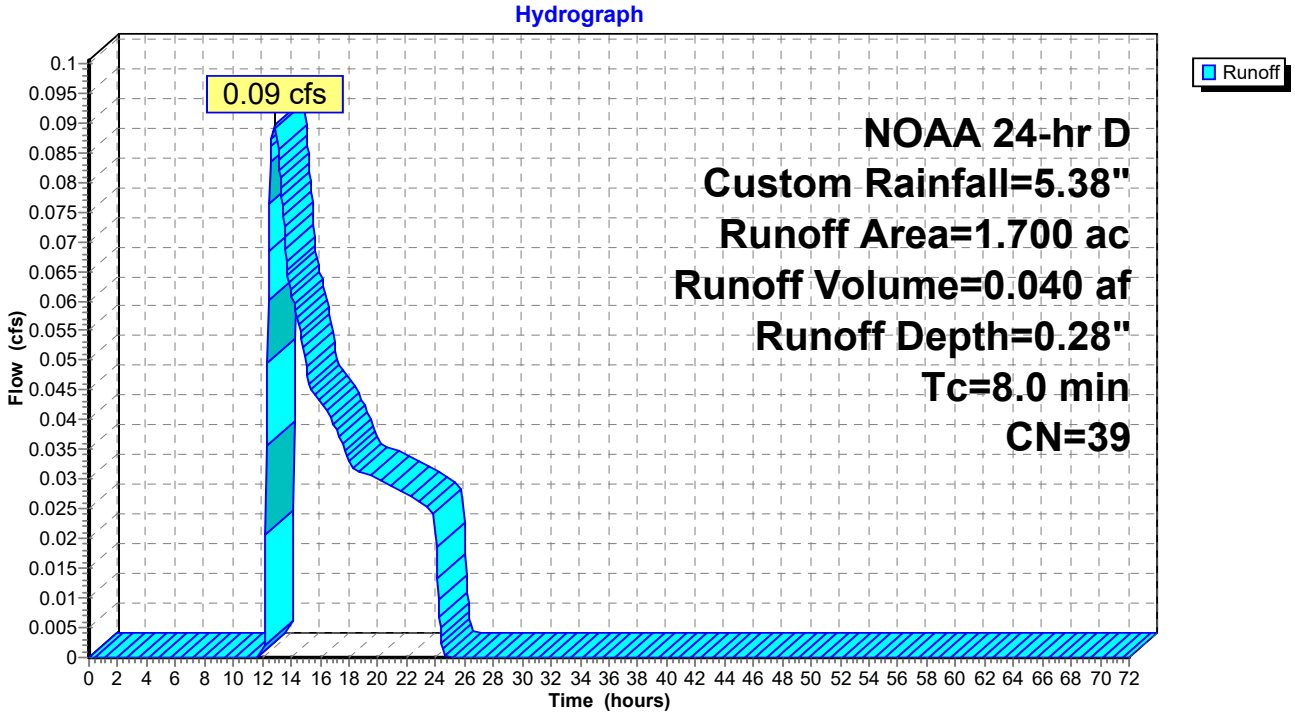
Runoff = 0.09 cfs @ 12.86 hrs, Volume= 0.040 af, Depth= 0.28"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.700	39	>75% Grass cover, Good, HSG A
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 77S: Basin 25 - Pervious



Summary for Pond 78P: Basin 24

Inflow Area = 2.540 ac, 35.00% Impervious, Inflow Depth = 1.98" for Custom event
Inflow = 4.40 cfs @ 12.10 hrs, Volume= 0.420 af
Outflow = 3.87 cfs @ 12.14 hrs, Volume= 0.344 af, Atten= 12%, Lag= 2.6 min
Primary = 3.87 cfs @ 12.14 hrs, Volume= 0.344 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 30.89' @ 12.14 hrs Surf.Area= 5,684 sf Storage= 4,291 cf

Plug-Flow detention time= 165.4 min calculated for 0.344 af (82% of inflow)
Center-of-Mass det. time= 78.8 min (851.0 - 772.1)

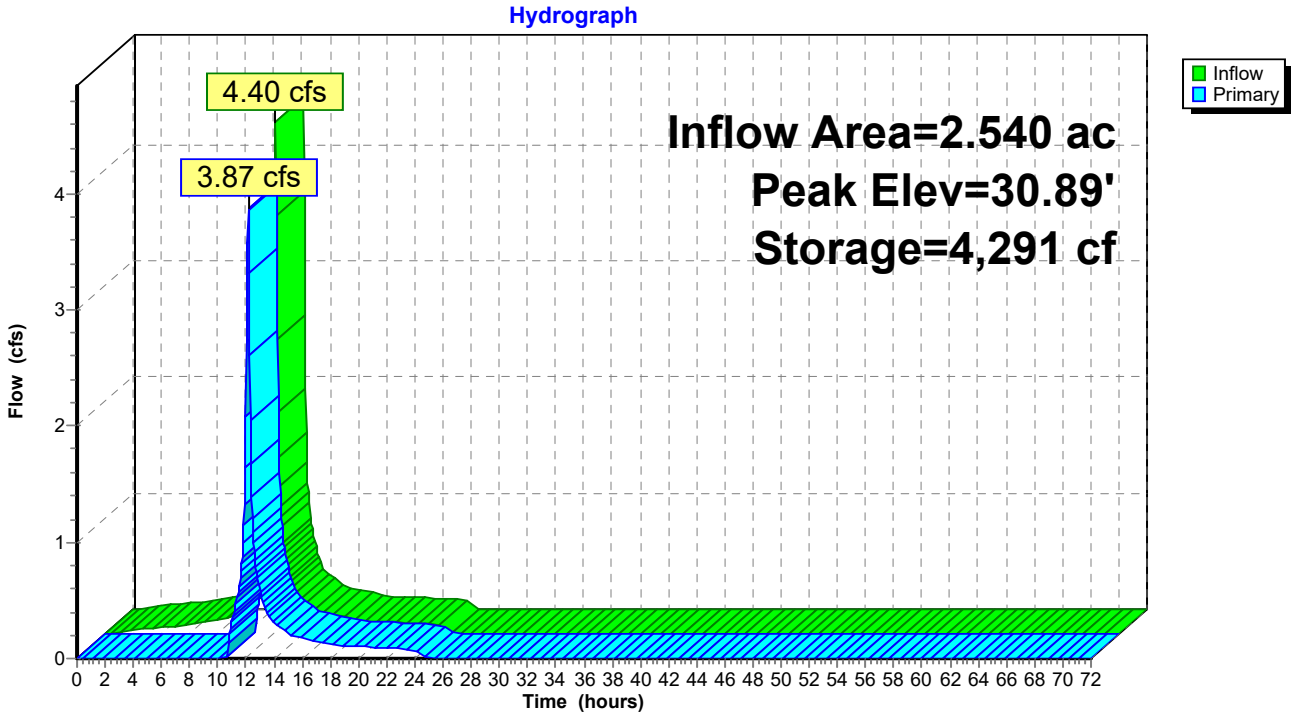
Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	16,275 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	4,000	0	0
31.00	5,900	4,950	4,950
32.00	8,000	6,950	11,900
32.50	9,500	4,375	16,275

Device	Routing	Invert	Outlet Devices
#1	Primary	30.71'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.82 cfs @ 12.14 hrs HW=30.88' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.82 cfs @ 1.37 fps)

Pond 78P: Basin 24



Summary for Pond 79P: Basin 34

[92] Warning: Device #2 is above defined storage

Inflow Area = 1.715 ac, 25.31% Impervious, Inflow Depth = 1.51" for Custom event
Inflow = 2.15 cfs @ 12.10 hrs, Volume= 0.216 af
Outflow = 0.16 cfs @ 14.07 hrs, Volume= 0.177 af, Atten= 93%, Lag= 117.9 min
Primary = 0.16 cfs @ 14.07 hrs, Volume= 0.177 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.84' @ 14.07 hrs Surf.Area= 7,632 sf Storage= 5,600 cf

Plug-Flow detention time= 542.2 min calculated for 0.177 af (82% of inflow)
Center-of-Mass det. time= 454.8 min (1,239.7 - 784.8)

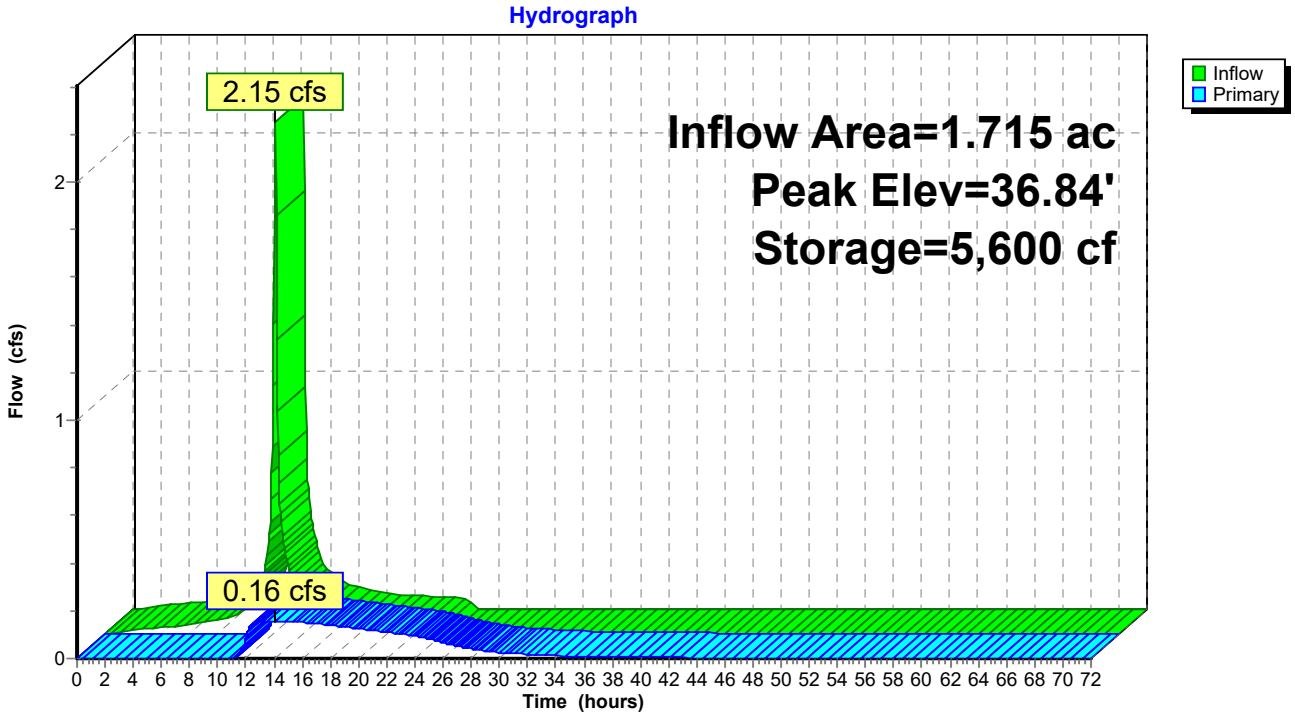
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	11,200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	5,700	0	0
37.00	8,000	6,850	6,850
37.50	9,400	4,350	11,200

Device	Routing	Invert	Outlet Devices
#1	Primary	36.27'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 14.07 hrs HW=36.84' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.16 cfs @ 3.21 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 79P: Basin 34



Summary for Subcatchment 79S: Basin 24 - Impervious

[49] Hint: Tc<2dt may require smaller dt

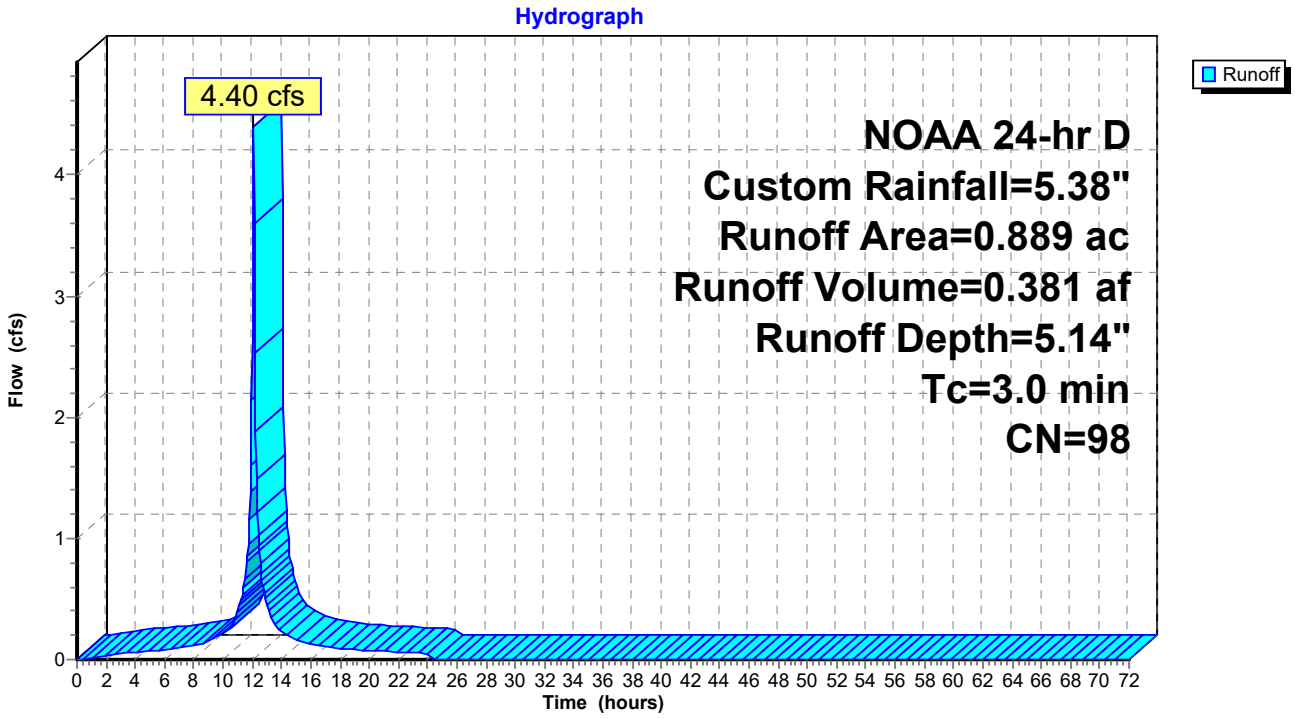
Runoff = 4.40 cfs @ 12.10 hrs, Volume= 0.381 af, Depth= 5.14"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.889	98	Impervious
	0.889		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 79S: Basin 24 - Impervious



Summary for Pond 80P: Basin 35

Inflow Area = 14.918 ac, 10.66% Impervious, Inflow Depth = 0.58" for Custom event
Inflow = 7.30 cfs @ 12.11 hrs, Volume= 0.723 af
Outflow = 1.45 cfs @ 12.57 hrs, Volume= 0.581 af, Atten= 80%, Lag= 27.6 min
Primary = 1.45 cfs @ 12.57 hrs, Volume= 0.581 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.08' @ 12.57 hrs Surf.Area= 10,908 sf Storage= 18,165 cf

Plug-Flow detention time= 693.2 min calculated for 0.580 af (80% of inflow)
Center-of-Mass det. time= 598.3 min (1,373.1 - 774.8)

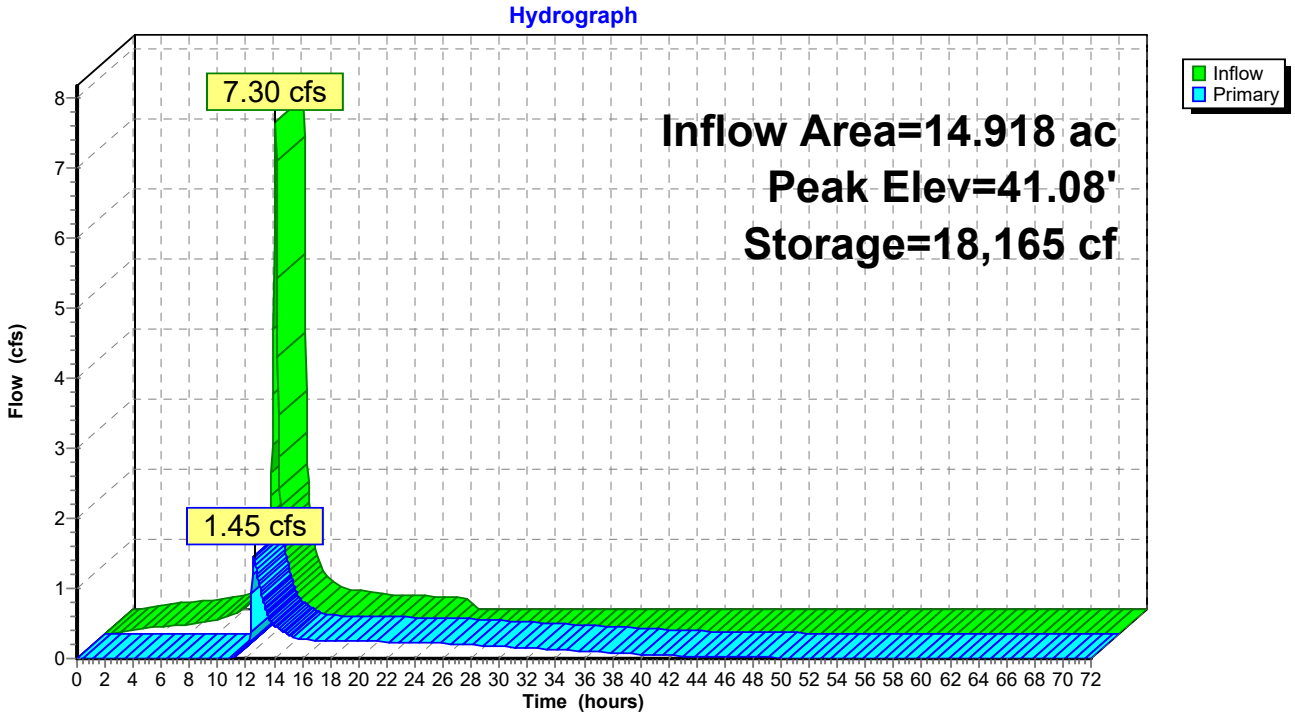
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	22,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	6,700	0	0
40.00	8,600	7,650	7,650
41.00	10,700	9,650	17,300
41.50	12,000	5,675	22,975

Device	Routing	Invert	Outlet Devices
#1	Primary	39.80'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.43 cfs @ 12.57 hrs HW=41.08' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.25 cfs @ 5.17 fps)
└**2=Orifice/Grate** (Weir Controls 1.18 cfs @ 0.92 fps)

Pond 80P: Basin 35



Summary for Subcatchment 80S: Basin 24 - Pervious

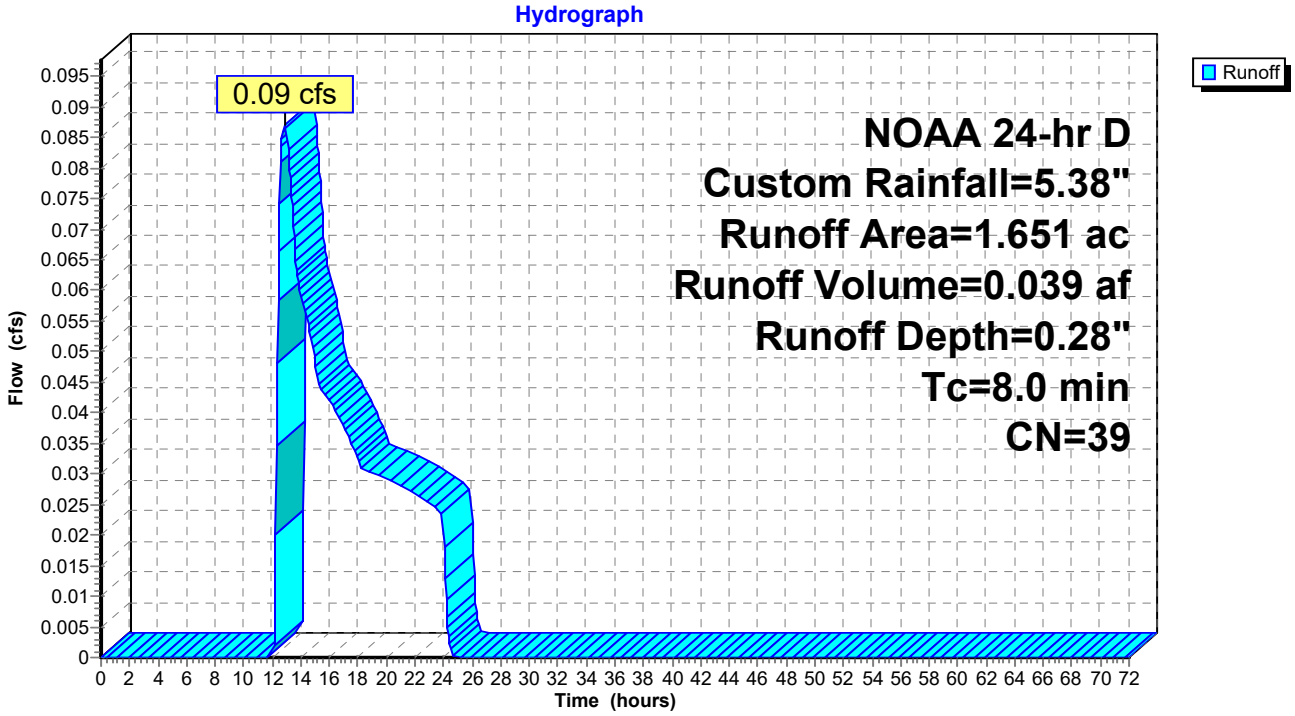
Runoff = 0.09 cfs @ 12.86 hrs, Volume= 0.039 af, Depth= 0.28"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.651	39	>75% Grass cover, Good, HSG A
1.651		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 80S: Basin 24 - Pervious



Summary for Pond 81P: Basin 27

Inflow Area = 3.012 ac, 25.00% Impervious, Inflow Depth = 1.50" for Custom event
Inflow = 3.73 cfs @ 12.10 hrs, Volume= 0.376 af
Outflow = 1.85 cfs @ 12.23 hrs, Volume= 0.310 af, Atten= 50%, Lag= 8.1 min
Primary = 1.85 cfs @ 12.23 hrs, Volume= 0.310 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.10' @ 12.23 hrs Surf.Area= 6,040 sf Storage= 7,266 cf

Plug-Flow detention time= 383.1 min calculated for 0.310 af (82% of inflow)
Center-of-Mass det. time= 298.7 min (1,084.0 - 785.4)

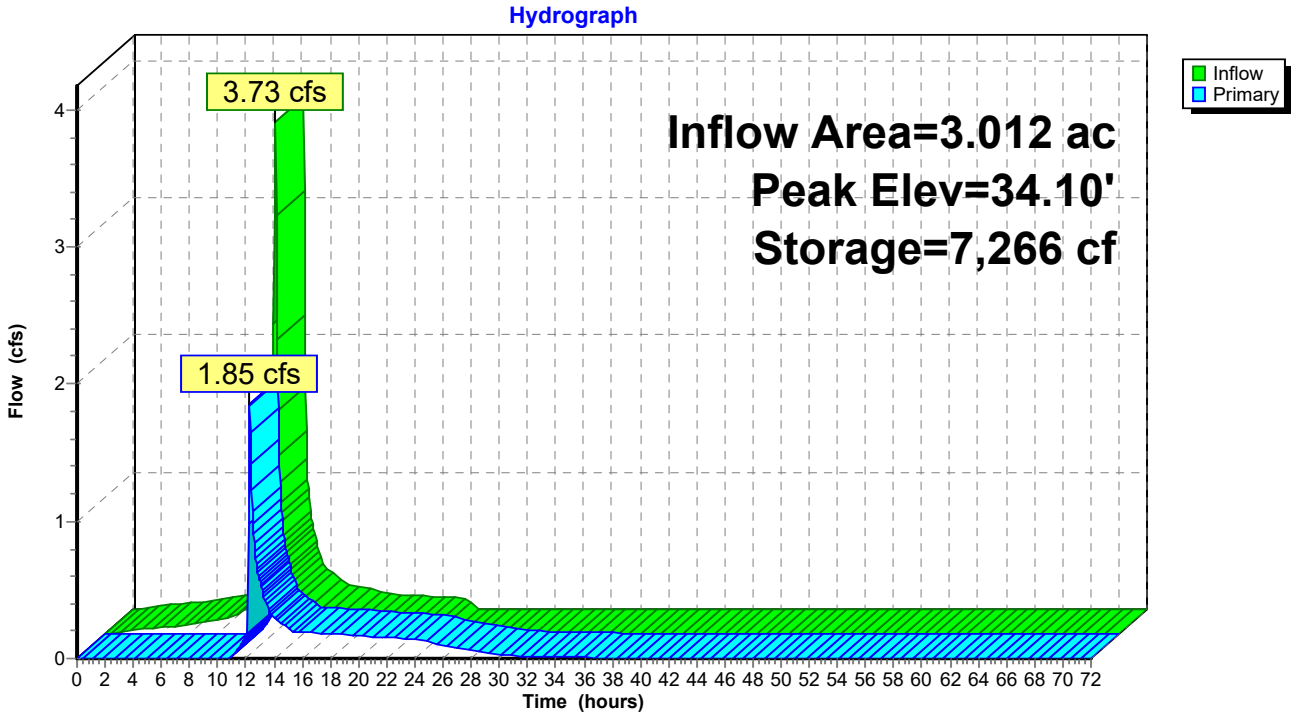
Volume	Invert	Avail.Storage	Storage Description
#1	32.50'	9,875 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.50	3,400	0	0
33.00	3,900	1,825	1,825
34.00	5,800	4,850	6,675
34.50	7,000	3,200	9,875

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.82 cfs @ 12.23 hrs HW=34.10' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.20 cfs @ 4.12 fps)
2=Orifice/Grate (Weir Controls 1.62 cfs @ 1.03 fps)

Pond 81P: Basin 27



Summary for Pond 82P: Basin 36

Inflow Area = 1.697 ac,100.00% Impervious, Inflow Depth = 5.14" for Custom event
Inflow = 7.05 cfs @ 12.11 hrs, Volume= 0.727 af
Outflow = 4.15 cfs @ 12.27 hrs, Volume= 0.578 af, Atten= 41%, Lag= 9.5 min
Primary = 4.15 cfs @ 12.27 hrs, Volume= 0.578 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.18' @ 12.27 hrs Surf.Area= 9,520 sf Storage= 15,812 cf

Plug-Flow detention time= 479.4 min calculated for 0.578 af (79% of inflow)
Center-of-Mass det. time= 393.6 min (1,144.2 - 750.6)

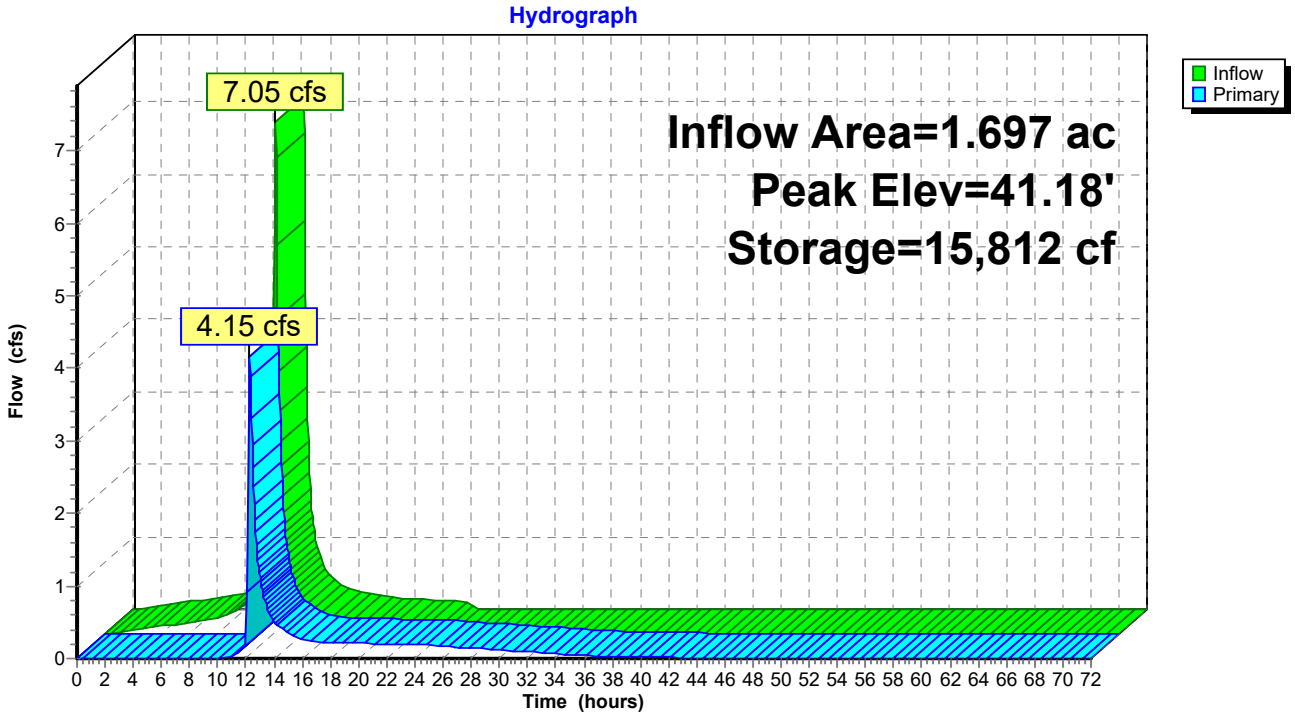
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	18,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	5,300	0	0
40.00	6,900	6,100	6,100
41.00	9,200	8,050	14,150
41.50	10,100	4,825	18,975

Device	Routing	Invert	Outlet Devices
#1	Primary	40.04'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.06 cfs @ 12.27 hrs HW=41.17' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.24 cfs @ 4.84 fps)
2=Orifice/Grate (Weir Controls 3.82 cfs @ 1.37 fps)

Pond 82P: Basin 36



Summary for Subcatchment 82S: Basin 27 - Impervious

[49] Hint: Tc<2dt may require smaller dt

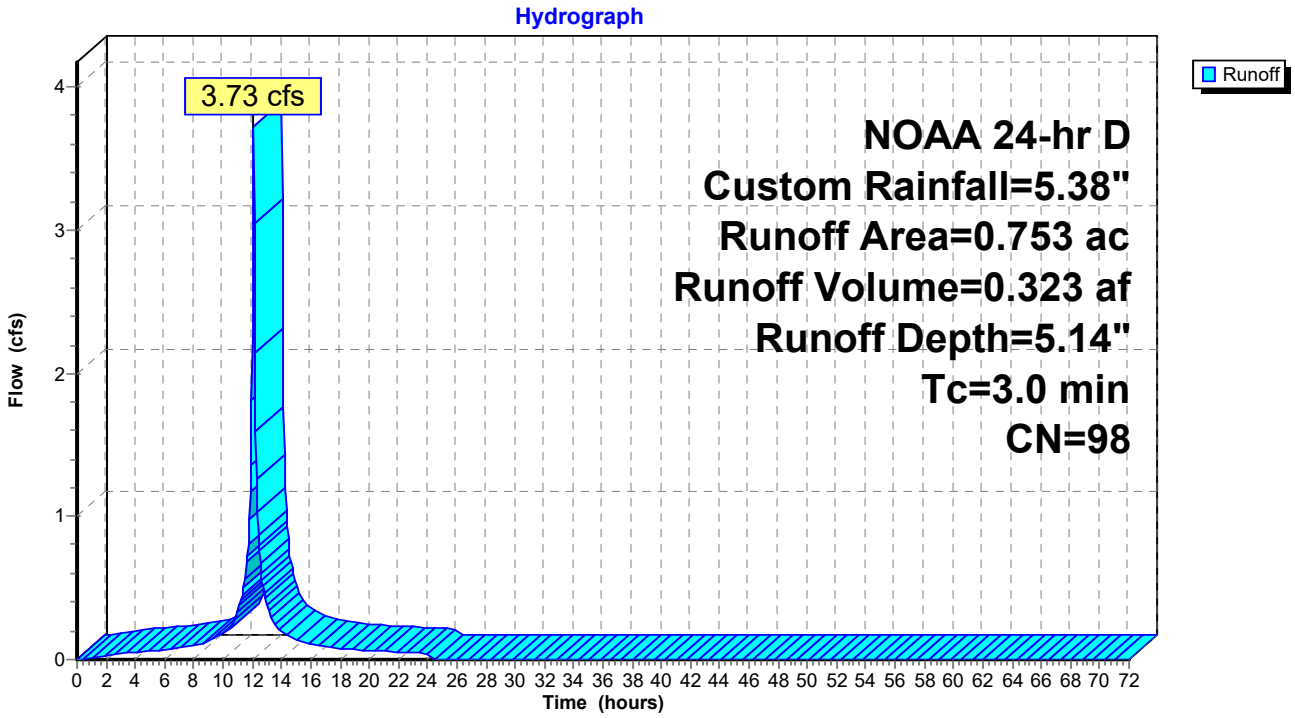
Runoff = 3.73 cfs @ 12.10 hrs, Volume= 0.323 af, Depth= 5.14"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.753	98	
	0.753		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 82S: Basin 27 - Impervious



Summary for Subcatchment 83S: Basin 27 - Pervious

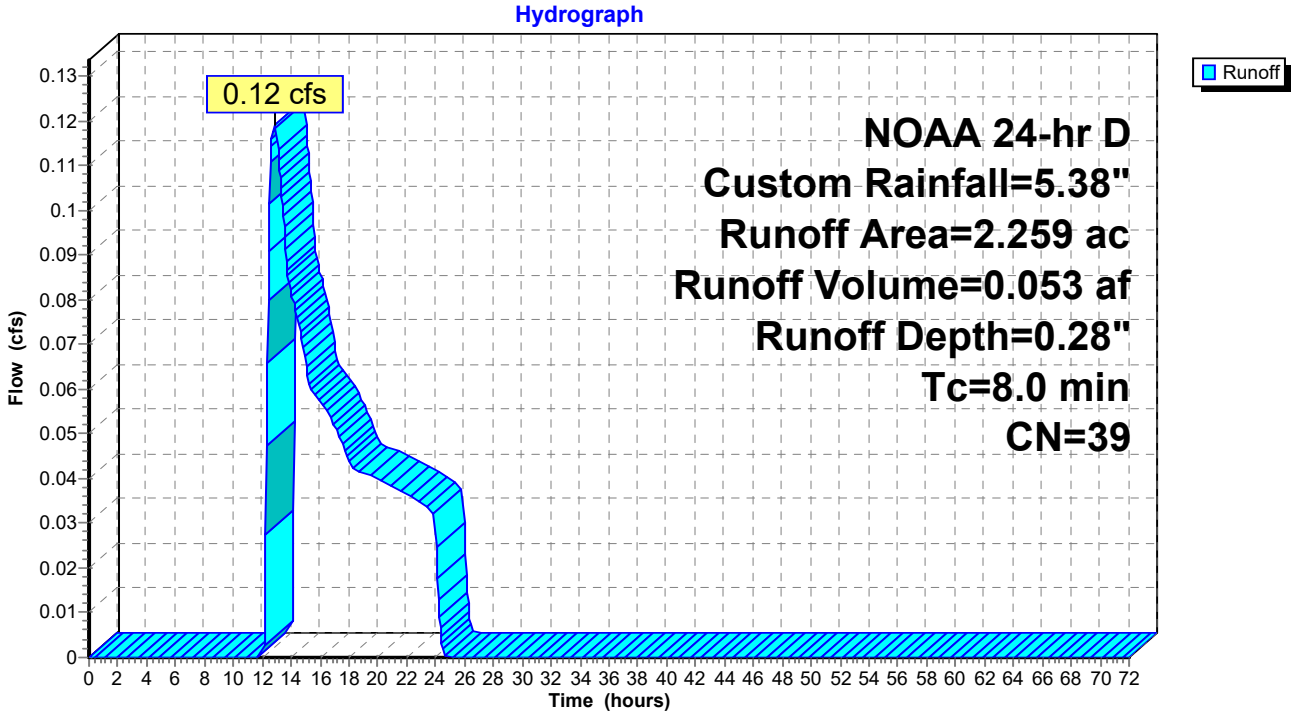
Runoff = 0.12 cfs @ 12.86 hrs, Volume= 0.053 af, Depth= 0.28"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
2.259	39	>75% Grass cover, Good, HSG A
2.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 83S: Basin 27 - Pervious



Summary for Subcatchment 84S: Basin 29 - Impervious

[49] Hint: Tc<2dt may require smaller dt

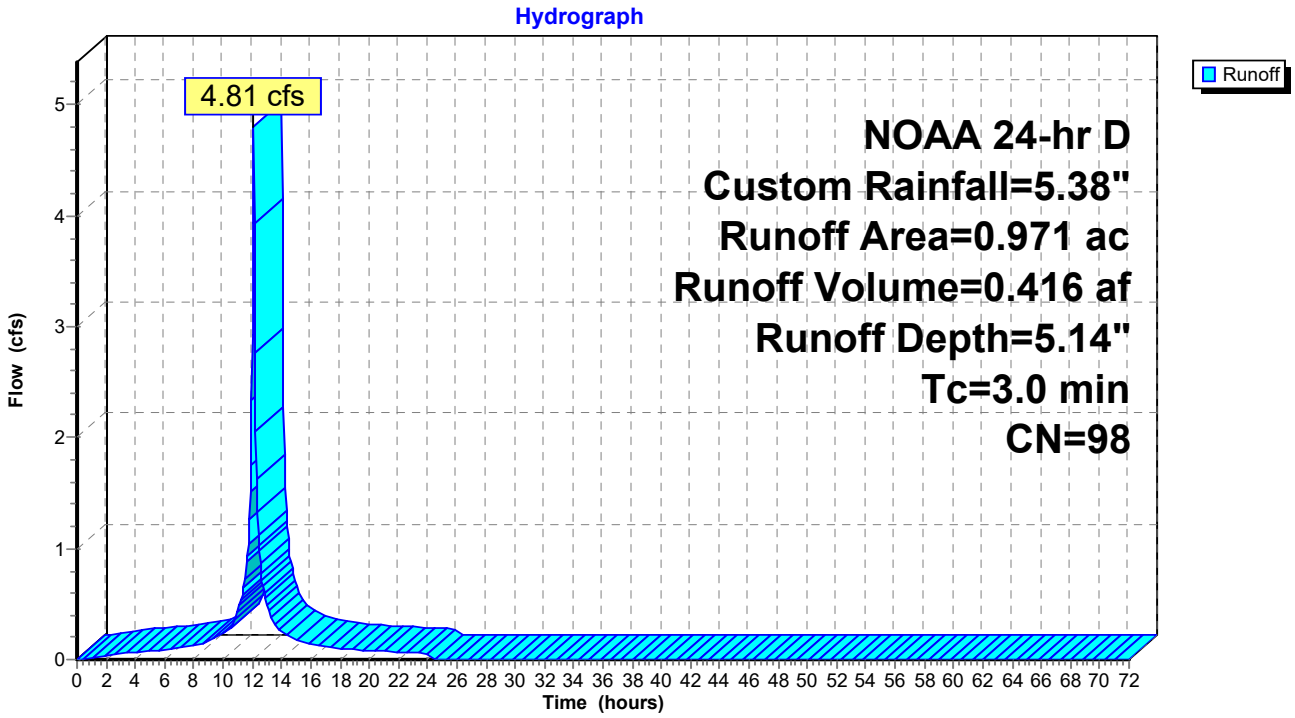
Runoff = 4.81 cfs @ 12.10 hrs, Volume= 0.416 af, Depth= 5.14"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.971	98	Impervious
	0.971		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 84S: Basin 29 - Impervious



Summary for Pond 85P: Basin 28

Inflow Area = 1.744 ac, 35.03% Impervious, Inflow Depth = 1.99" for Custom event
Inflow = 2.98 cfs @ 12.10 hrs, Volume= 0.289 af
Outflow = 2.76 cfs @ 12.13 hrs, Volume= 0.236 af, Atten= 7%, Lag= 1.9 min
Primary = 2.76 cfs @ 12.13 hrs, Volume= 0.236 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.54' @ 12.13 hrs Surf.Area= 3,249 sf Storage= 2,731 cf

Plug-Flow detention time= 162.3 min calculated for 0.236 af (82% of inflow)
Center-of-Mass det. time= 75.7 min (847.9 - 772.2)

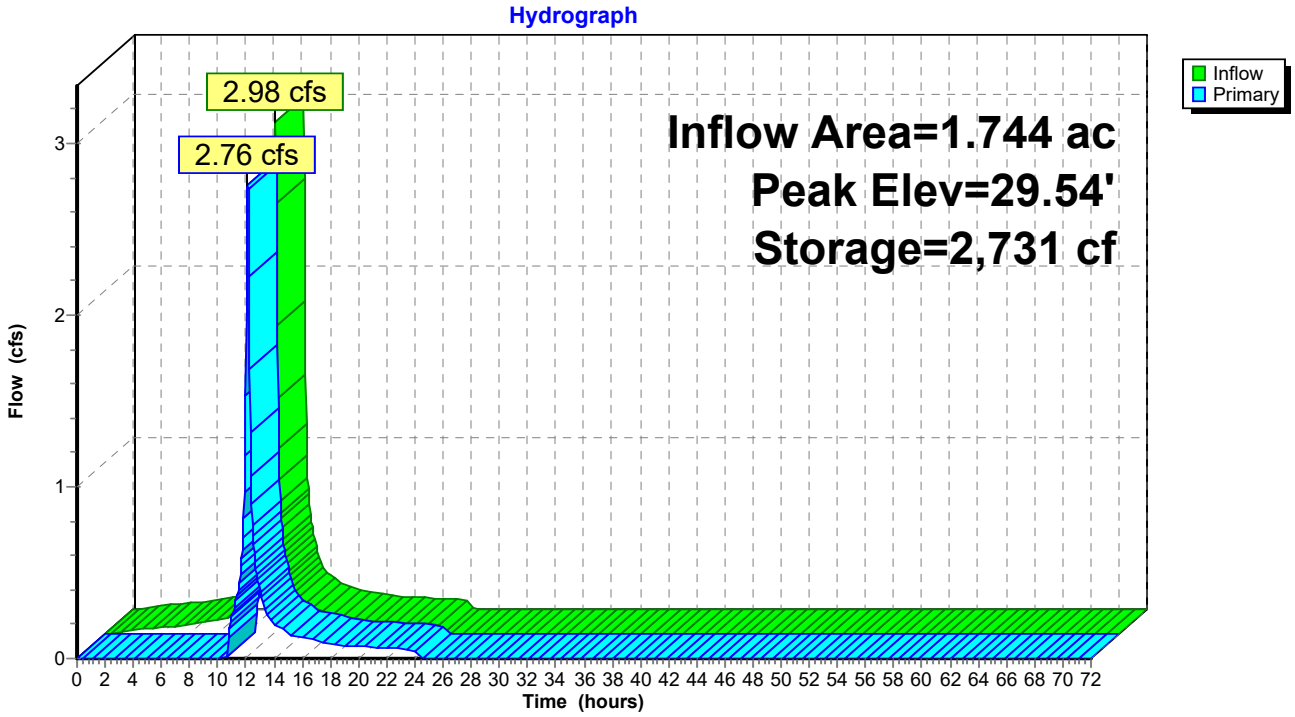
Volume	Invert	Avail.Storage	Storage Description
#1	28.50'	6,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.50	2,000	0	0
29.00	2,600	1,150	1,150
30.00	3,800	3,200	4,350
30.50	4,600	2,100	6,450

Device	Routing	Invert	Outlet Devices
#1	Primary	29.40'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.69 cfs @ 12.13 hrs HW=29.54' (Free Discharge)
1=Orifice/Grate (Weir Controls 2.69 cfs @ 1.22 fps)

Pond 85P: Basin 28



Summary for Subcatchment 85S: Basin 29 - Pervious

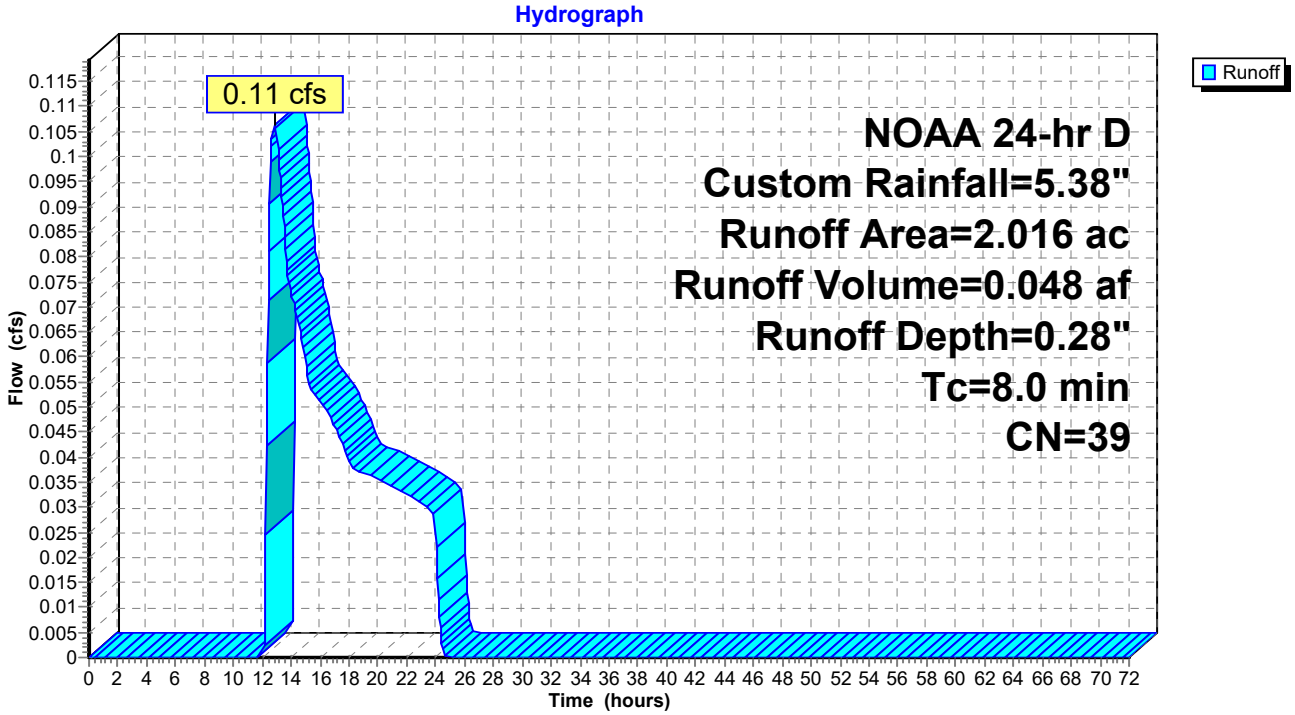
Runoff = 0.11 cfs @ 12.86 hrs, Volume= 0.048 af, Depth= 0.28"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
2.016	39	>75% Grass cover, Good, HSG A
2.016		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 85S: Basin 29 - Pervious

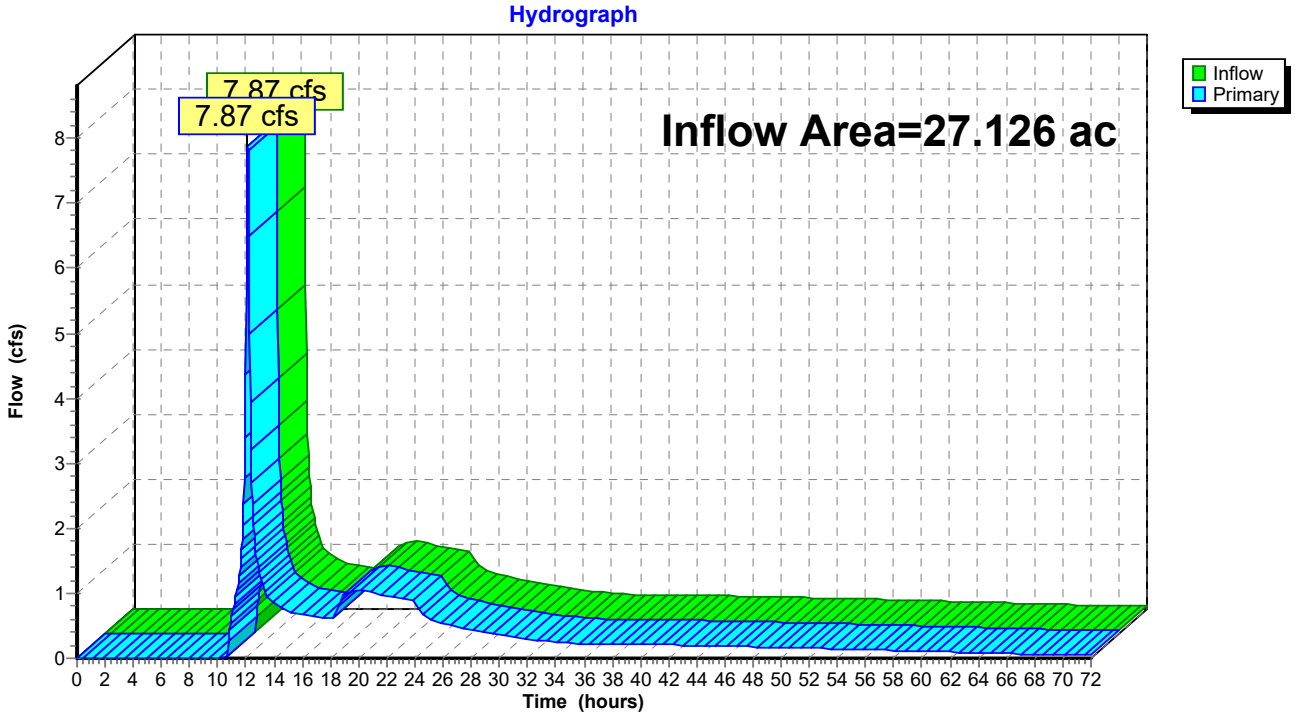


Summary for Link 86L: Outlet to Wet Pond

Inflow Area = 27.126 ac, 24.26% Impervious, Inflow Depth > 0.88" for Custom event
Inflow = 7.87 cfs @ 12.14 hrs, Volume= 1.982 af
Primary = 7.87 cfs @ 12.14 hrs, Volume= 1.982 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 62P : Basin 26 (Wet Pond)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 86L: Outlet to Wet Pond



Summary for Subcatchment 86S: Basin 28 - Impervious

[49] Hint: Tc<2dt may require smaller dt

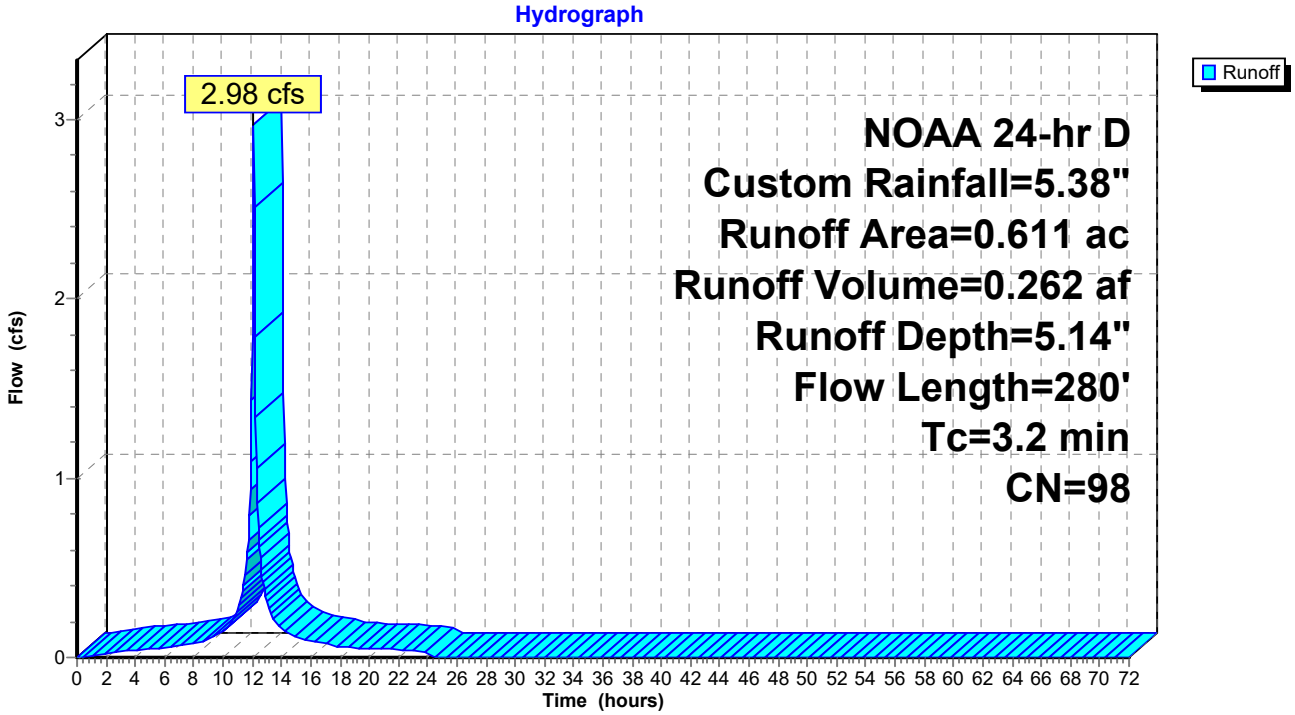
Runoff = 2.98 cfs @ 12.10 hrs, Volume= 0.262 af, Depth= 5.14"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.611	98	Impervious
	0.611		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	280	Total			

Subcatchment 86S: Basin 28 - Impervious

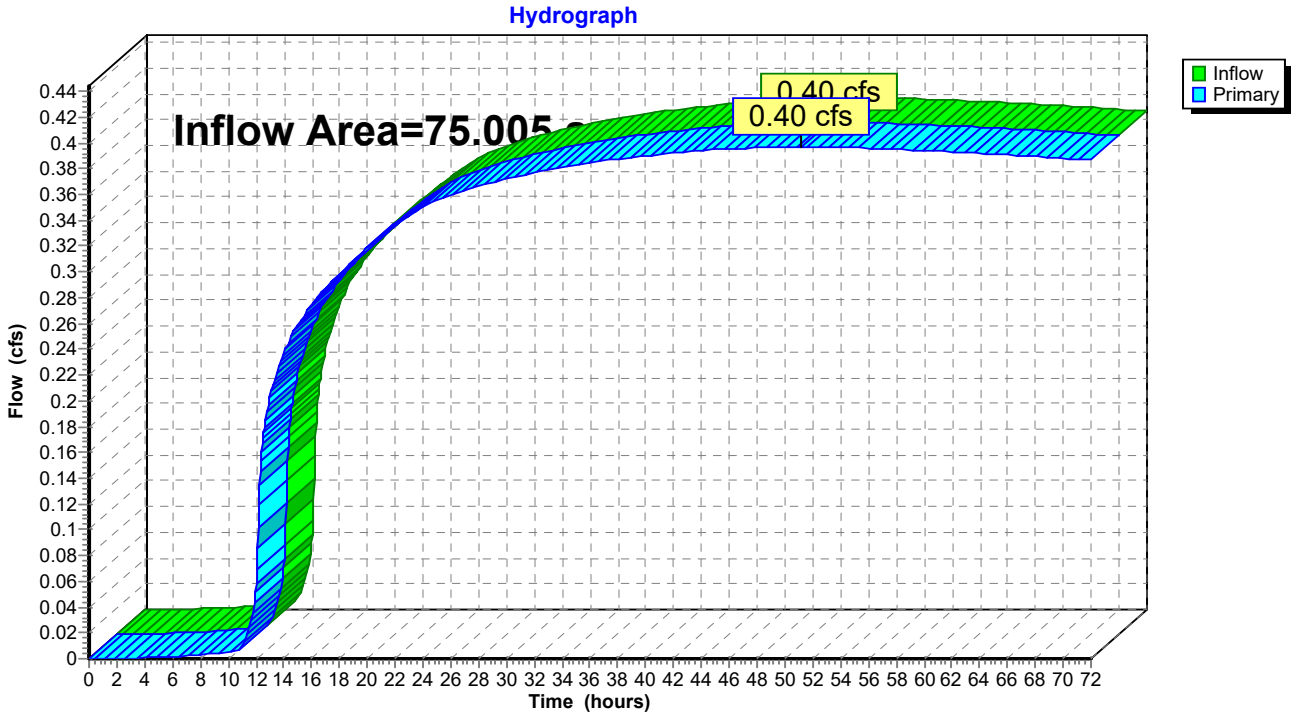


Summary for Link 87L: Total Area to Tuckerton Creek

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 0.29" for Custom event
Inflow = 0.40 cfs @ 51.20 hrs, Volume= 1.825 af
Primary = 0.40 cfs @ 51.20 hrs, Volume= 1.825 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 87L: Total Area to Tuckerton Creek



Summary for Pond 87P: Basin 40

Inflow Area = 2.597 ac, 42.97% Impervious, Inflow Depth = 2.37" for Custom event
Inflow = 5.53 cfs @ 12.10 hrs, Volume= 0.513 af
Outflow = 4.97 cfs @ 12.14 hrs, Volume= 0.417 af, Atten= 10%, Lag= 2.3 min
Primary = 4.97 cfs @ 12.14 hrs, Volume= 0.417 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.19' @ 12.14 hrs Surf.Area= 5,107 sf Storage= 5,241 cf

Plug-Flow detention time= 165.4 min calculated for 0.416 af (81% of inflow)
Center-of-Mass det. time= 78.7 min (844.2 - 765.5)

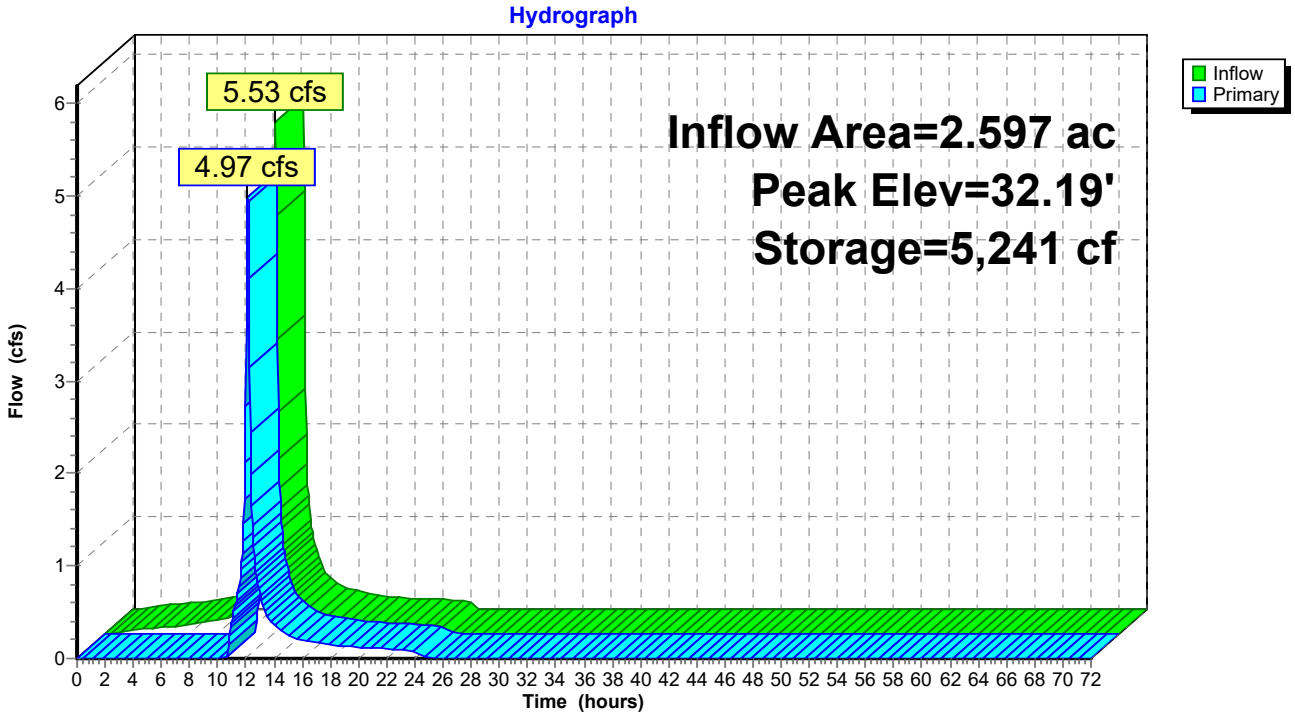
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	12,950 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,700	0	0
32.00	4,900	4,300	4,300
33.00	6,000	5,450	9,750
33.50	6,800	3,200	12,950

Device	Routing	Invert	Outlet Devices
#1	Primary	31.98'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.86 cfs @ 12.14 hrs HW=32.19' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 4.86 cfs @ 1.48 fps)

Pond 87P: Basin 40



Summary for Subcatchment 87S: Basin 28 - Pervious

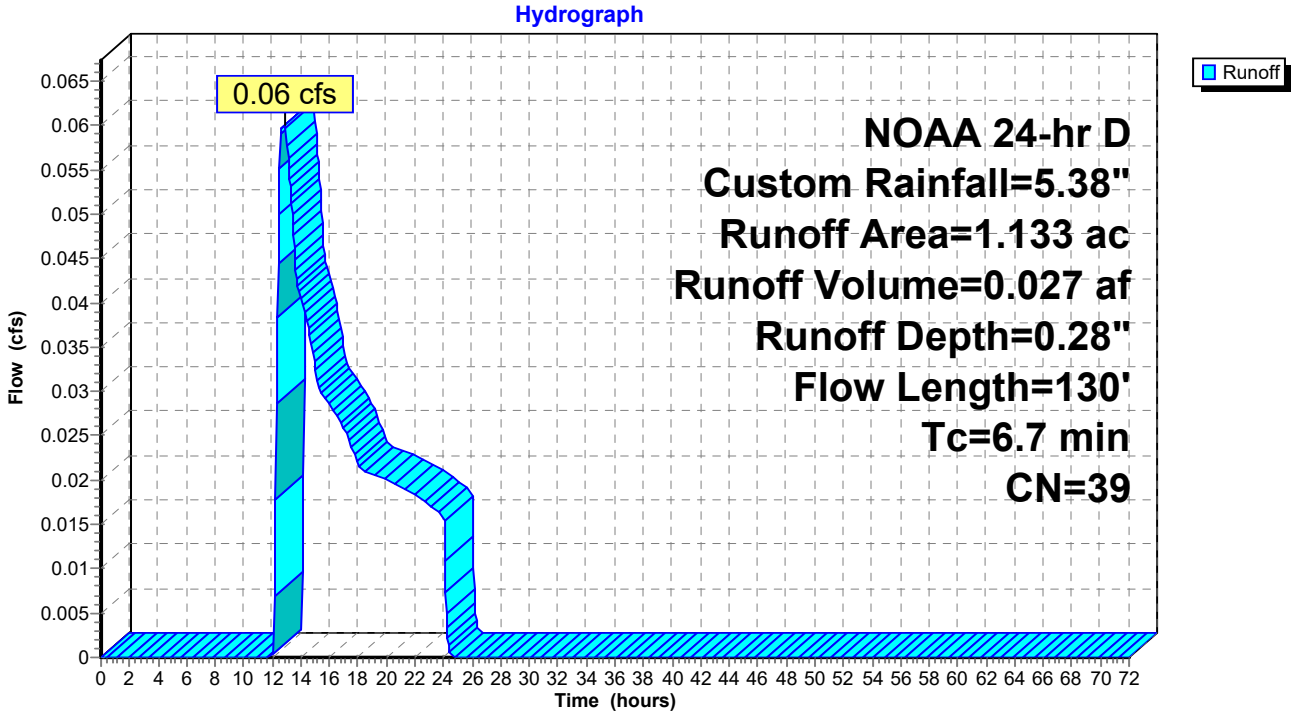
Runoff = 0.06 cfs @ 12.83 hrs, Volume= 0.027 af, Depth= 0.28"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.133	39	>75% Grass cover, Good, HSG A
1.133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	130	Total			

Subcatchment 87S: Basin 28 - Pervious



Summary for Pond 88P: Basin 22

Inflow Area = 2.491 ac, 29.99% Impervious, Inflow Depth = 1.74" for Custom event
Inflow = 3.70 cfs @ 12.10 hrs, Volume= 0.361 af
Outflow = 3.32 cfs @ 12.14 hrs, Volume= 0.297 af, Atten= 10%, Lag= 2.3 min
Primary = 3.32 cfs @ 12.14 hrs, Volume= 0.297 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.94' @ 12.14 hrs Surf.Area= 4,590 sf Storage= 3,516 cf

Plug-Flow detention time= 163.7 min calculated for 0.297 af (82% of inflow)
Center-of-Mass det. time= 77.0 min (854.8 - 777.8)

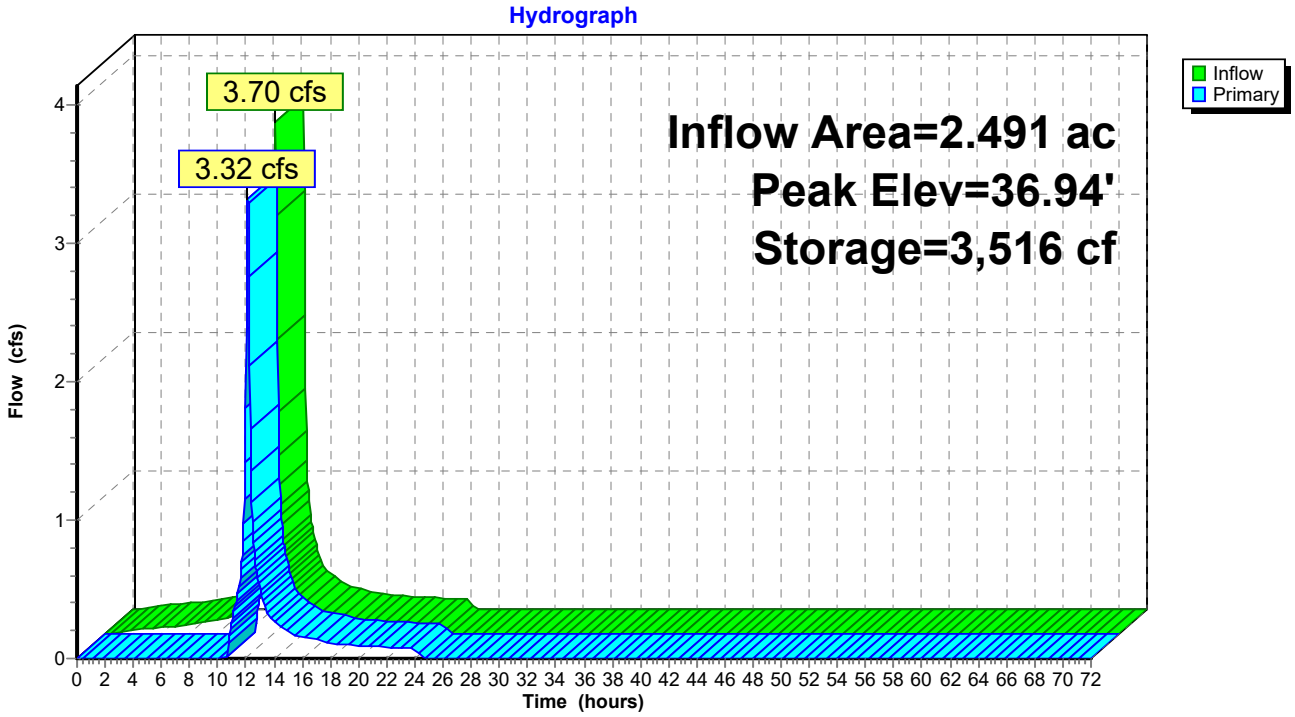
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	9,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,900	0	0
37.00	4,700	3,800	3,800
38.00	6,500	5,600	9,400

Device	Routing	Invert	Outlet Devices
#1	Primary	36.78'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.25 cfs @ 12.14 hrs HW=36.94' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 3.25 cfs @ 1.29 fps)

Pond 88P: Basin 22



Summary for Subcatchment 88S: Basin 30 - Impervious

[49] Hint: Tc<2dt may require smaller dt

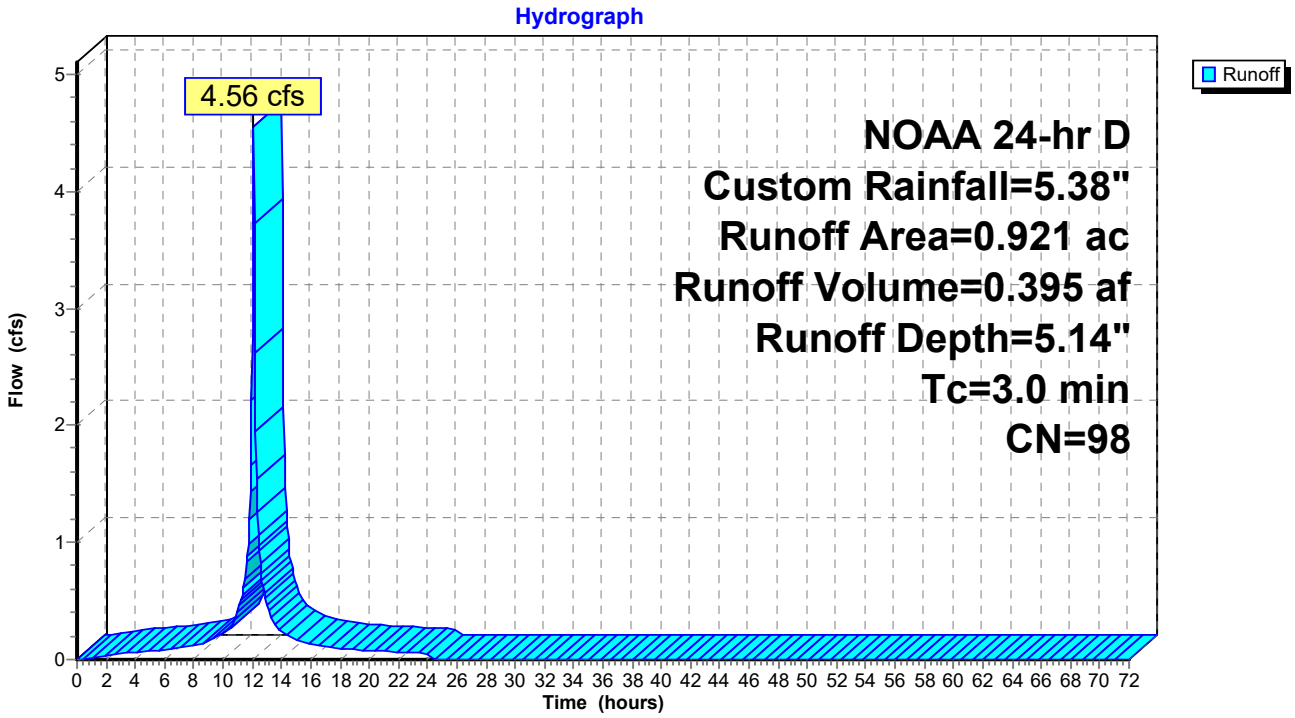
Runoff = 4.56 cfs @ 12.10 hrs, Volume= 0.395 af, Depth= 5.14"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.921	98	Impervious
	0.921		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 88S: Basin 30 - Impervious



Summary for Subcatchment 89S: Basin 30 - Pervious

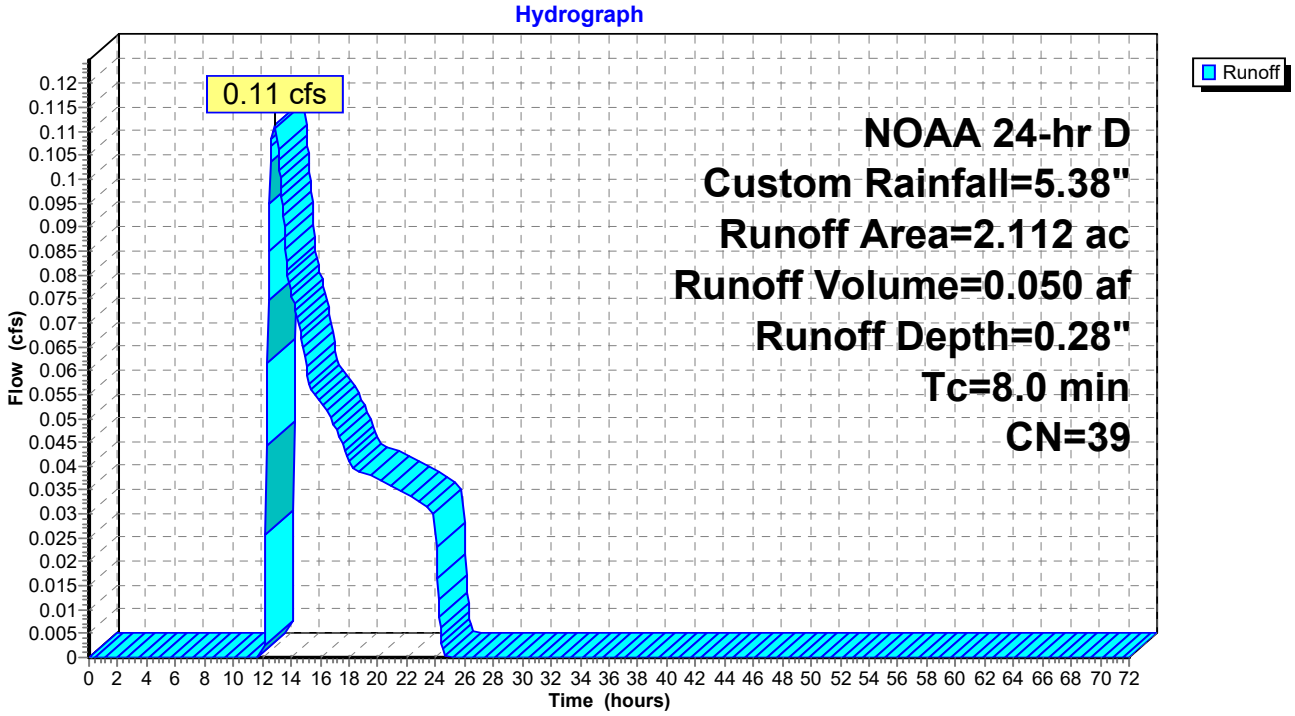
Runoff = 0.11 cfs @ 12.86 hrs, Volume= 0.050 af, Depth= 0.28"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
2.112	39	>75% Grass cover, Good, HSG A
2.112		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 89S: Basin 30 - Pervious



Summary for Subcatchment 90S: Basin 31 - Pervious

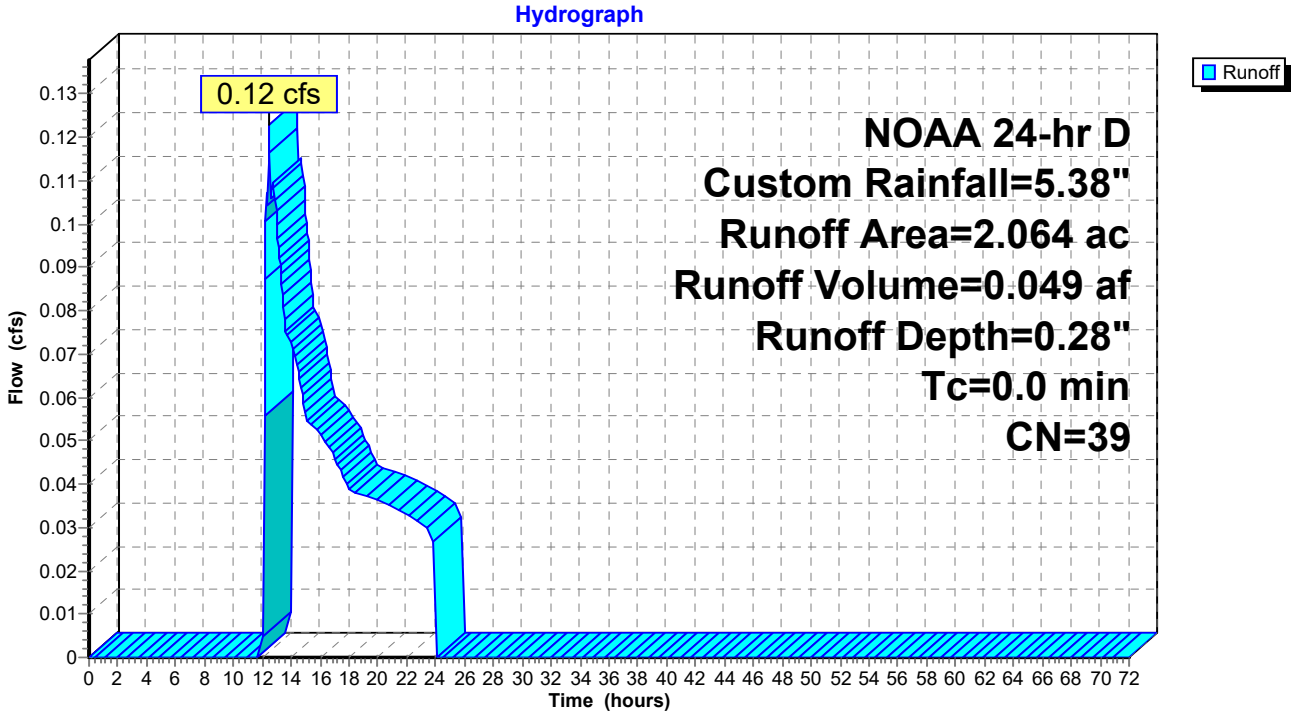
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.12 cfs @ 12.45 hrs, Volume= 0.049 af, Depth= 0.28"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
2.064	39	>75% Grass cover, Good, HSG A
2.064		100.00% Pervious Area

Subcatchment 90S: Basin 31 - Pervious



Summary for Subcatchment 91S: Basin 31- Impervious

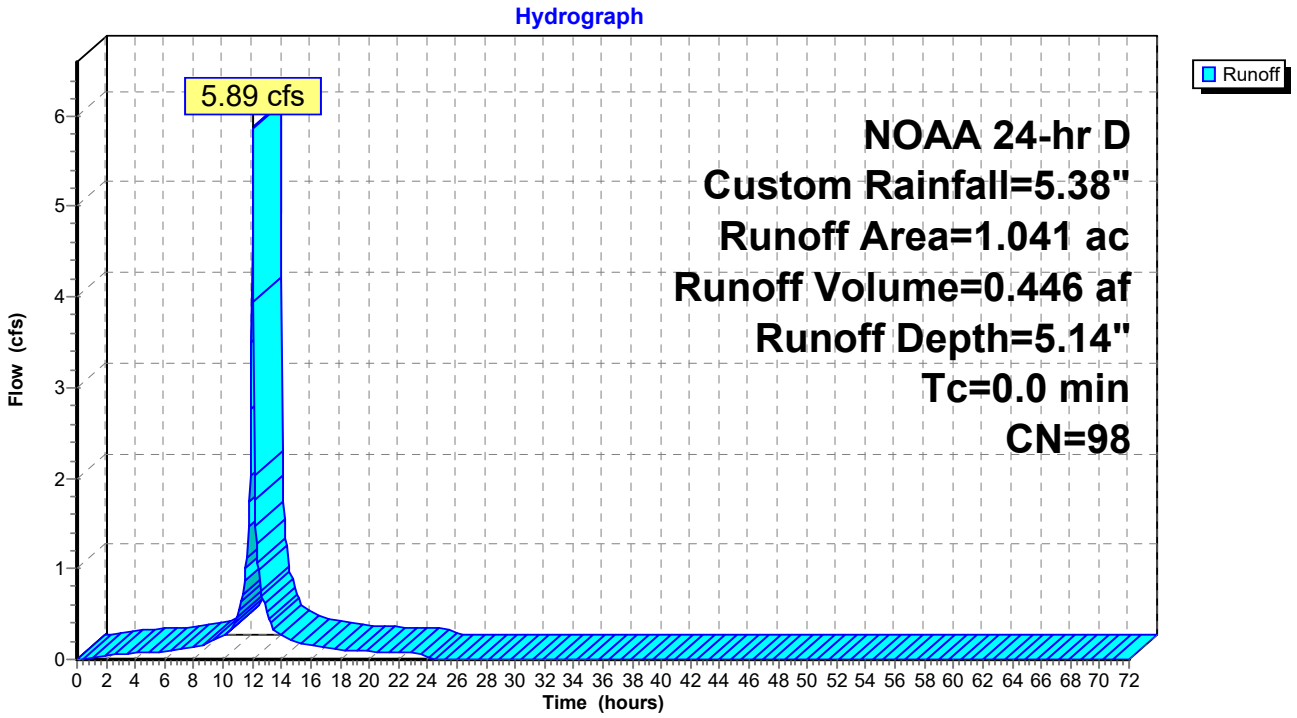
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 5.89 cfs @ 12.04 hrs, Volume= 0.446 af, Depth= 5.14"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.041	98	Impervious
	1.041		100.00% Impervious Area

Subcatchment 91S: Basin 31- Impervious



Summary for Subcatchment 92S: Basin 33 - Impervious

[49] Hint: Tc<2dt may require smaller dt

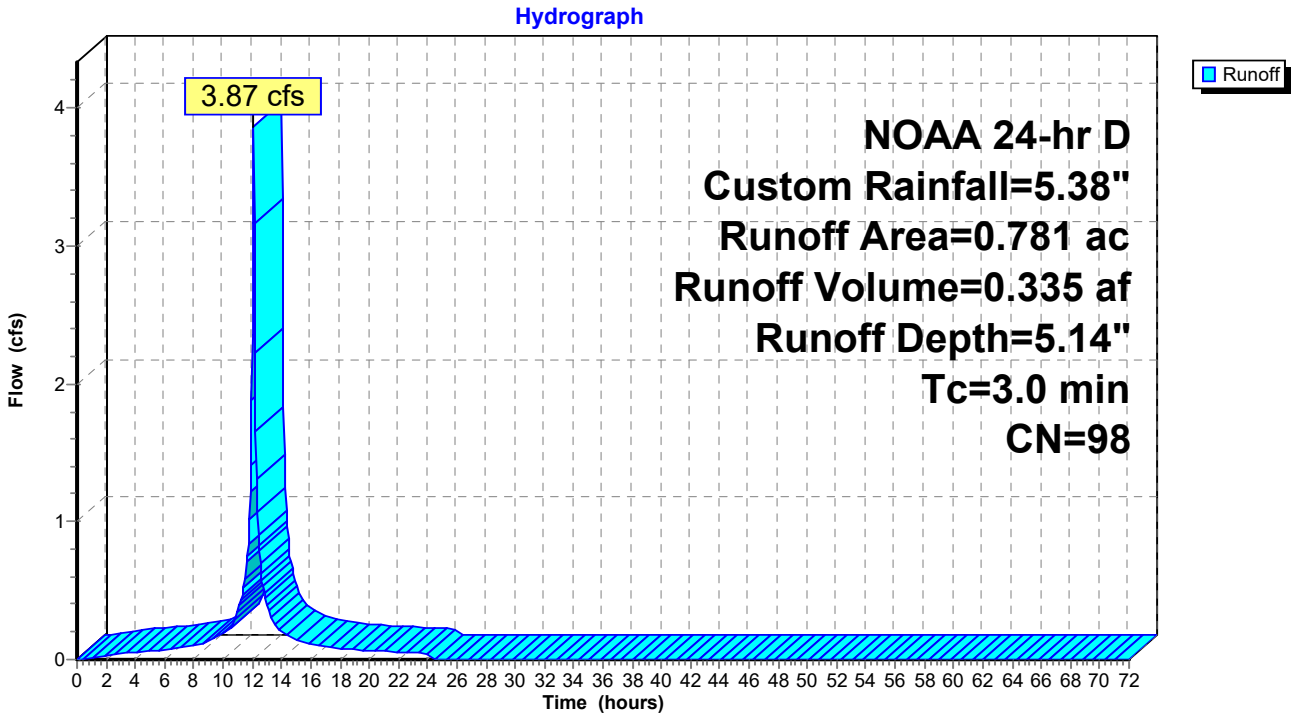
Runoff = 3.87 cfs @ 12.10 hrs, Volume= 0.335 af, Depth= 5.14"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.781	98	Impervious
	0.781		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 92S: Basin 33 - Impervious



Summary for Subcatchment 93S: Basin 33 - Pervious

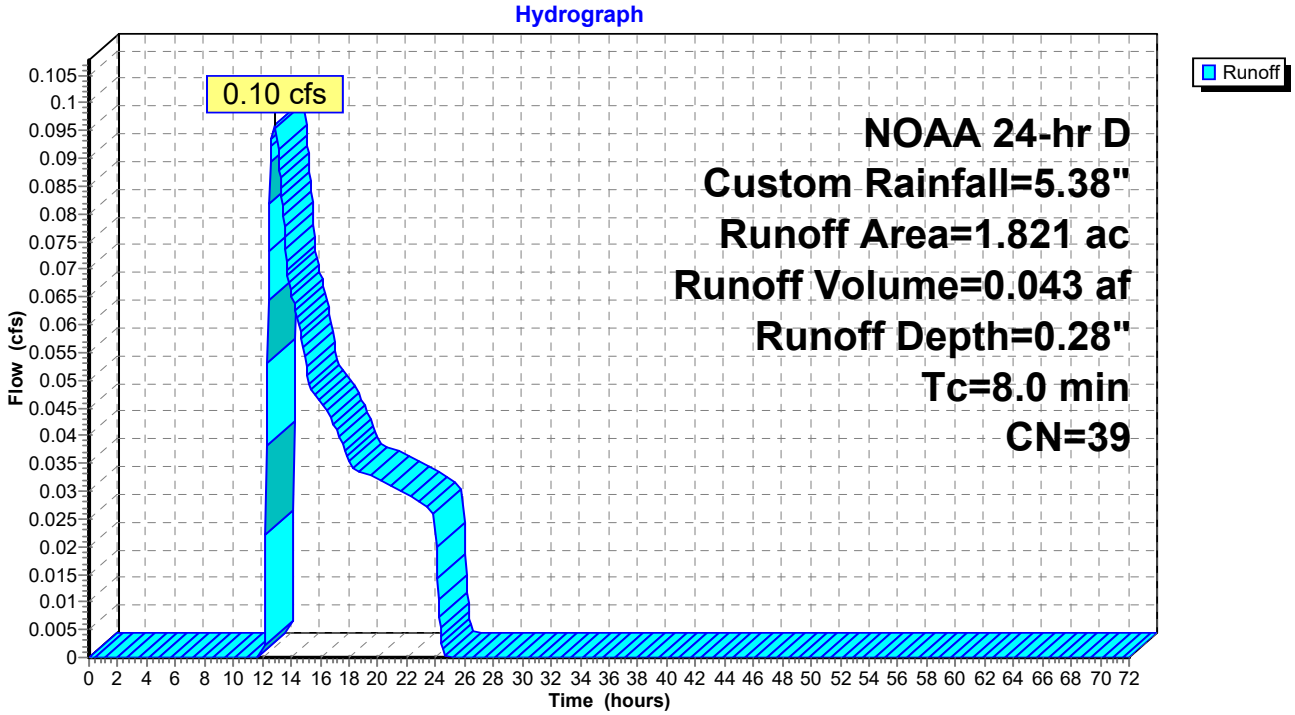
Runoff = 0.10 cfs @ 12.86 hrs, Volume= 0.043 af, Depth= 0.28"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.821	39	>75% Grass cover, Good, HSG A
1.821		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 93S: Basin 33 - Pervious



Summary for Subcatchment 94S: Basin 32 - Impervious

[49] Hint: Tc<2dt may require smaller dt

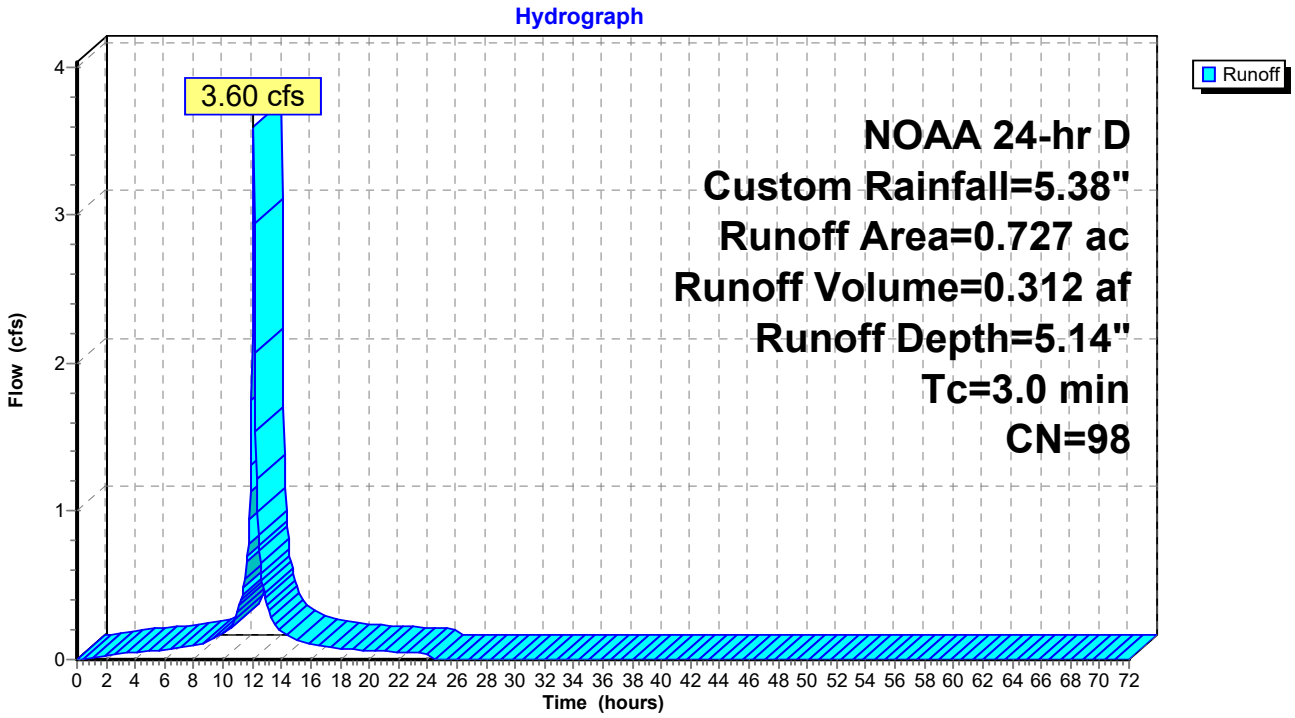
Runoff = 3.60 cfs @ 12.10 hrs, Volume= 0.312 af, Depth= 5.14"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.727	98	Impervious
	0.727		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 94S: Basin 32 - Impervious



Summary for Subcatchment 95S: Basin 32 - Pervious

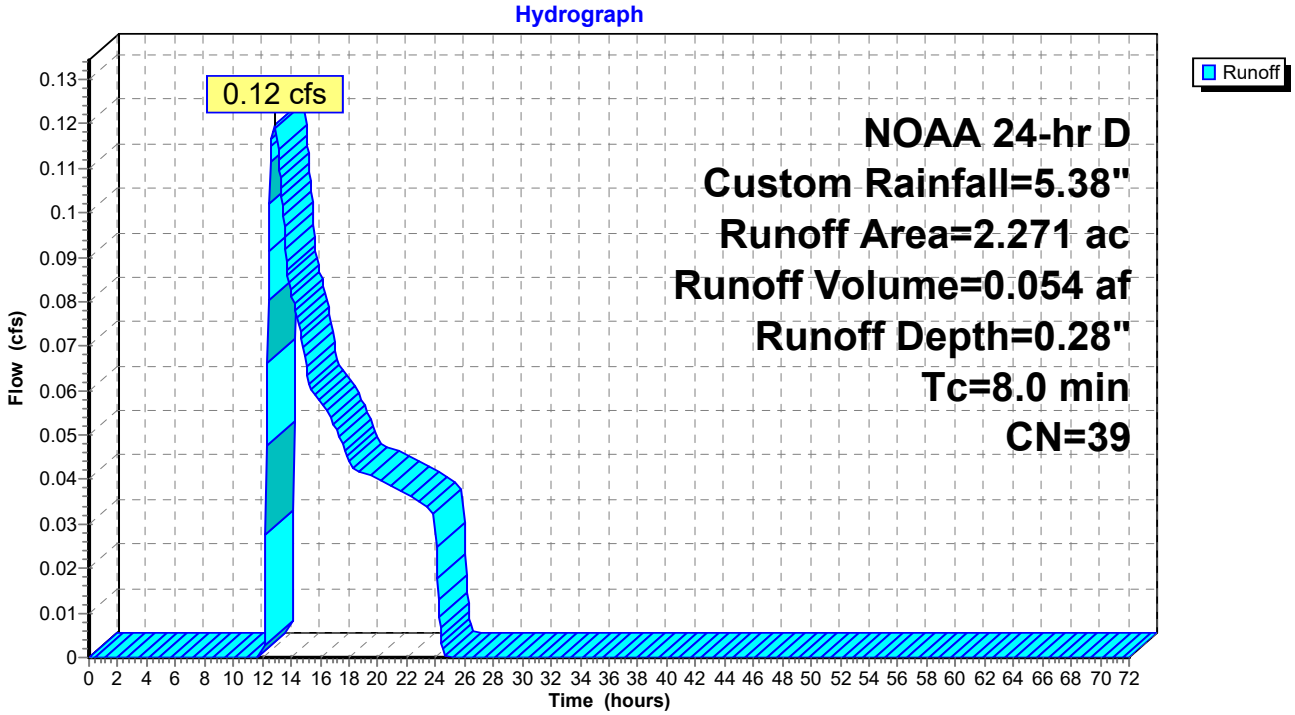
Runoff = 0.12 cfs @ 12.86 hrs, Volume= 0.054 af, Depth= 0.28"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
2.271	39	>75% Grass cover, Good, HSG A
2.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 95S: Basin 32 - Pervious



Summary for Subcatchment 96S: Basin 40 - Impervious

[49] Hint: Tc<2dt may require smaller dt

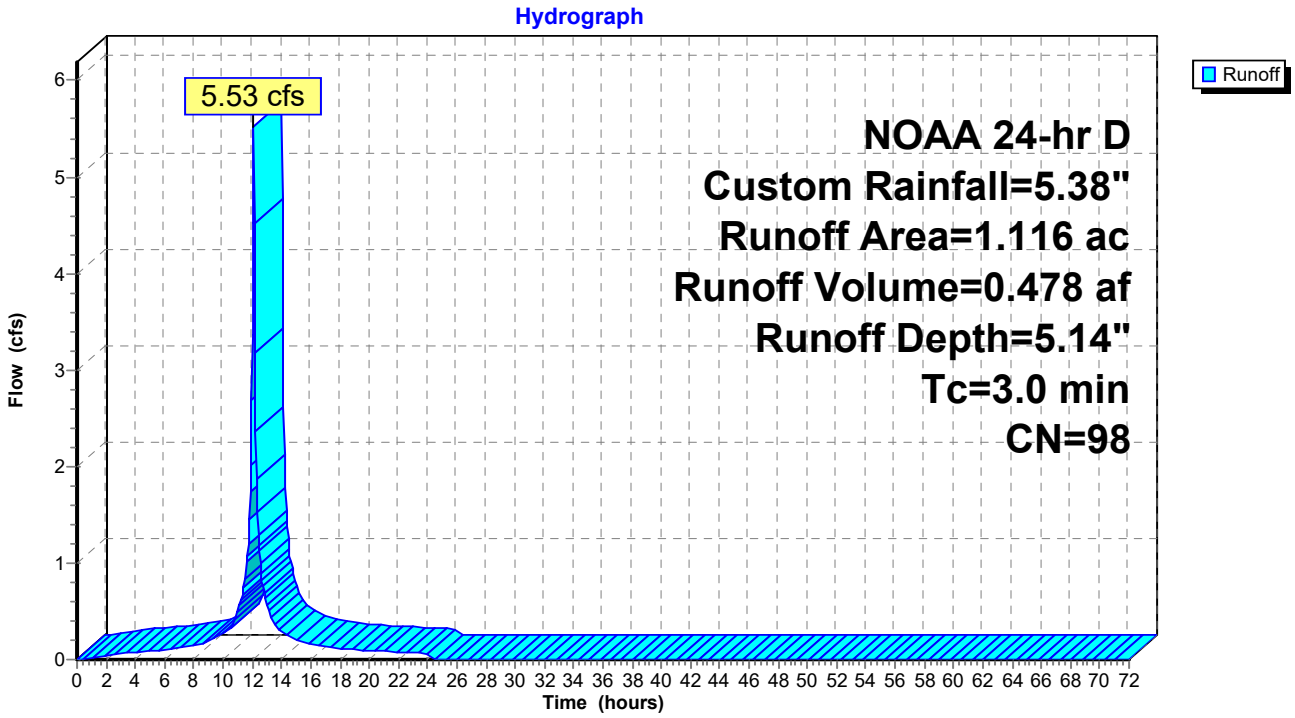
Runoff = 5.53 cfs @ 12.10 hrs, Volume= 0.478 af, Depth= 5.14"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 96S: Basin 40 - Impervious



Summary for Subcatchment 97S: Basin 40 - Pervious

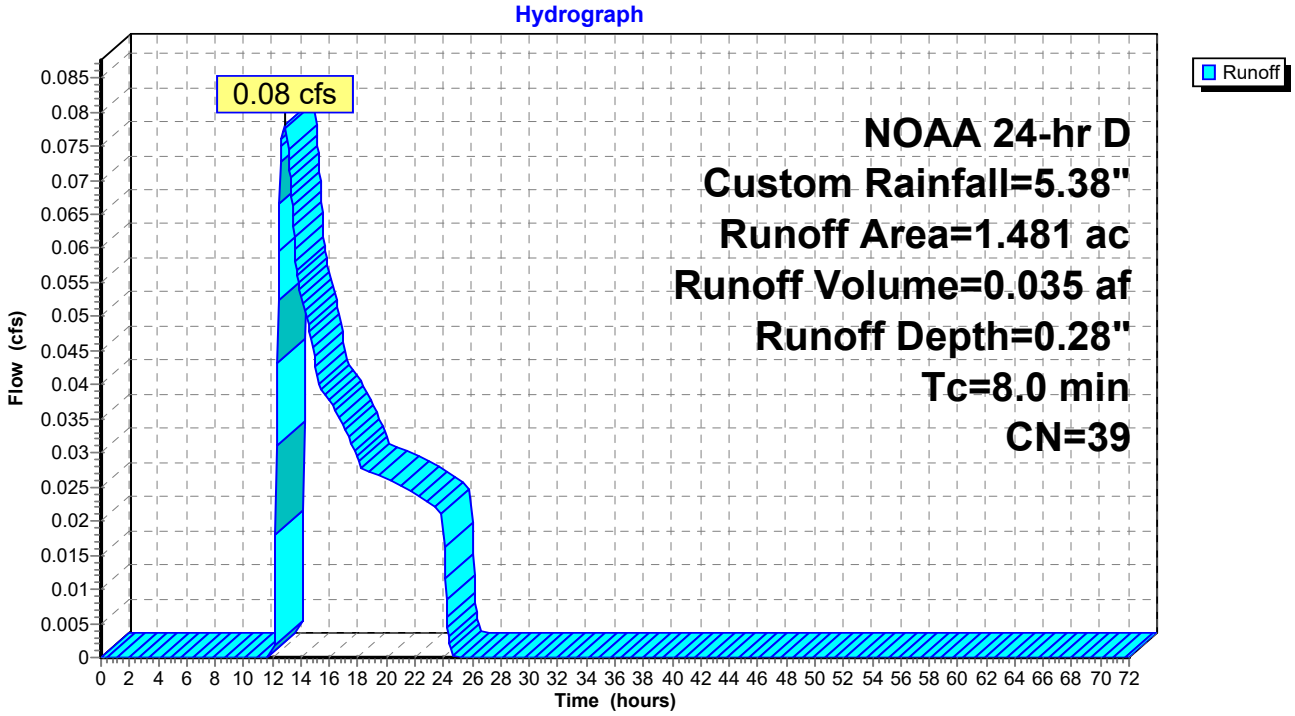
Runoff = 0.08 cfs @ 12.86 hrs, Volume= 0.035 af, Depth= 0.28"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.481	39	>75% Grass cover, Good, HSG A
1.481		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 97S: Basin 40 - Pervious



Summary for Subcatchment 98S: Basin 38 - Impervious

[49] Hint: Tc<2dt may require smaller dt

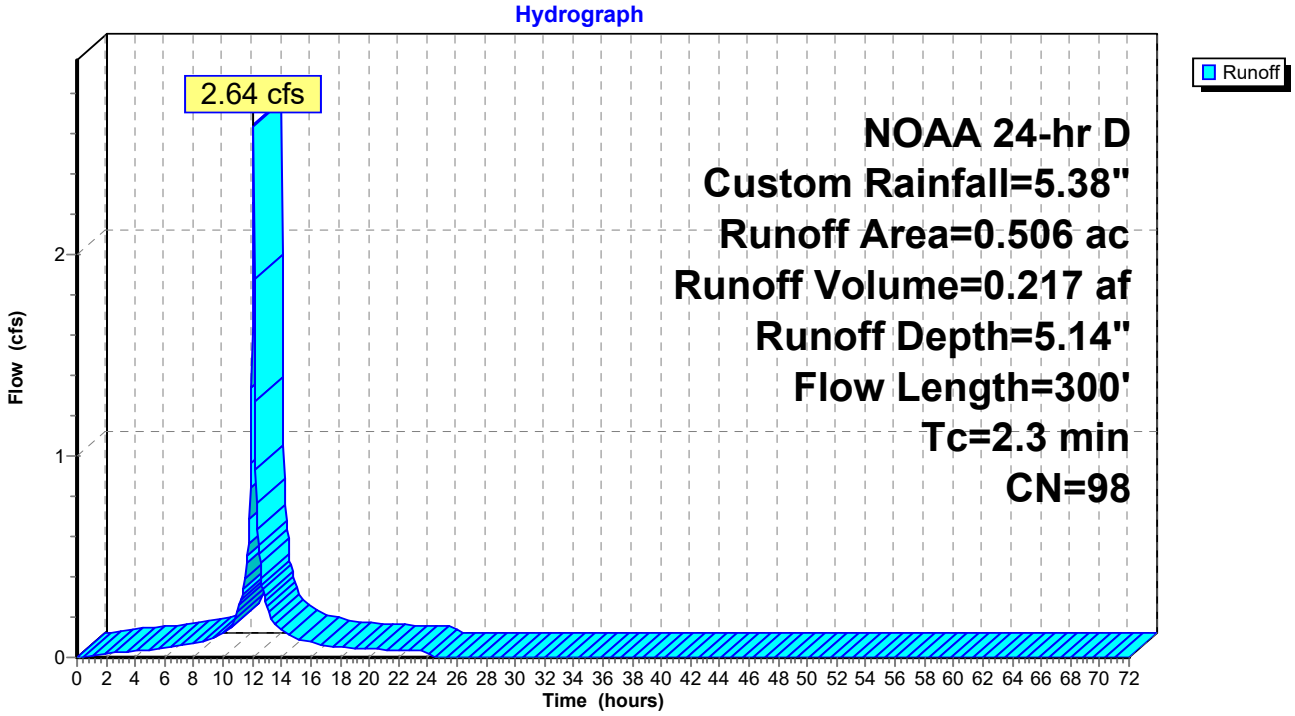
Runoff = 2.64 cfs @ 12.09 hrs, Volume= 0.217 af, Depth= 5.14"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.506	98	Impervious
	0.506		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	200	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	300	Total			

Subcatchment 98S: Basin 38 - Impervious



Summary for Subcatchment 99S: Basin 38 - Pervious

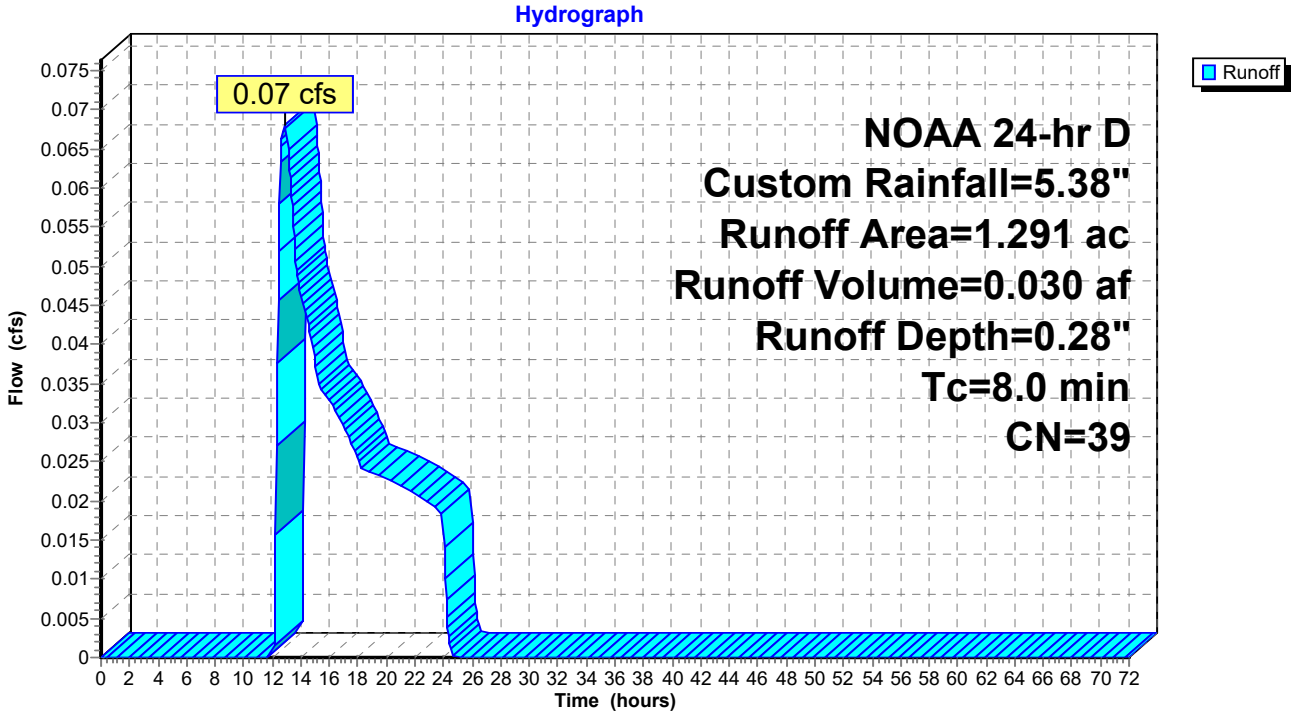
Runoff = 0.07 cfs @ 12.86 hrs, Volume= 0.030 af, Depth= 0.28"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.291	39	>75% Grass cover, Good, HSG A
1.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 99S: Basin 38 - Pervious



Summary for Subcatchment 100S: Basin 22 - Impervious

[49] Hint: Tc<2dt may require smaller dt

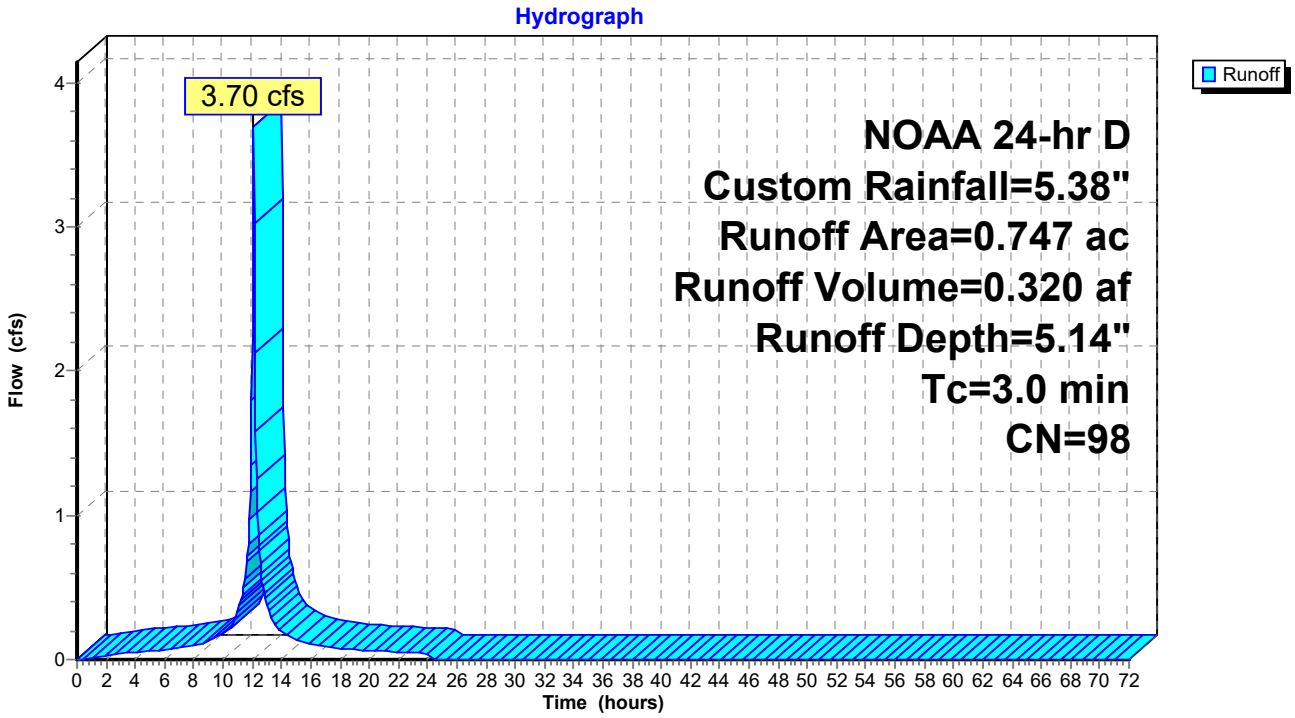
Runoff = 3.70 cfs @ 12.10 hrs, Volume= 0.320 af, Depth= 5.14"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.747	98	Impervious
	0.747		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 100S: Basin 22 - Impervious



Summary for Subcatchment 101S: Basin 39 - Pervious

[49] Hint: Tc<2dt may require smaller dt

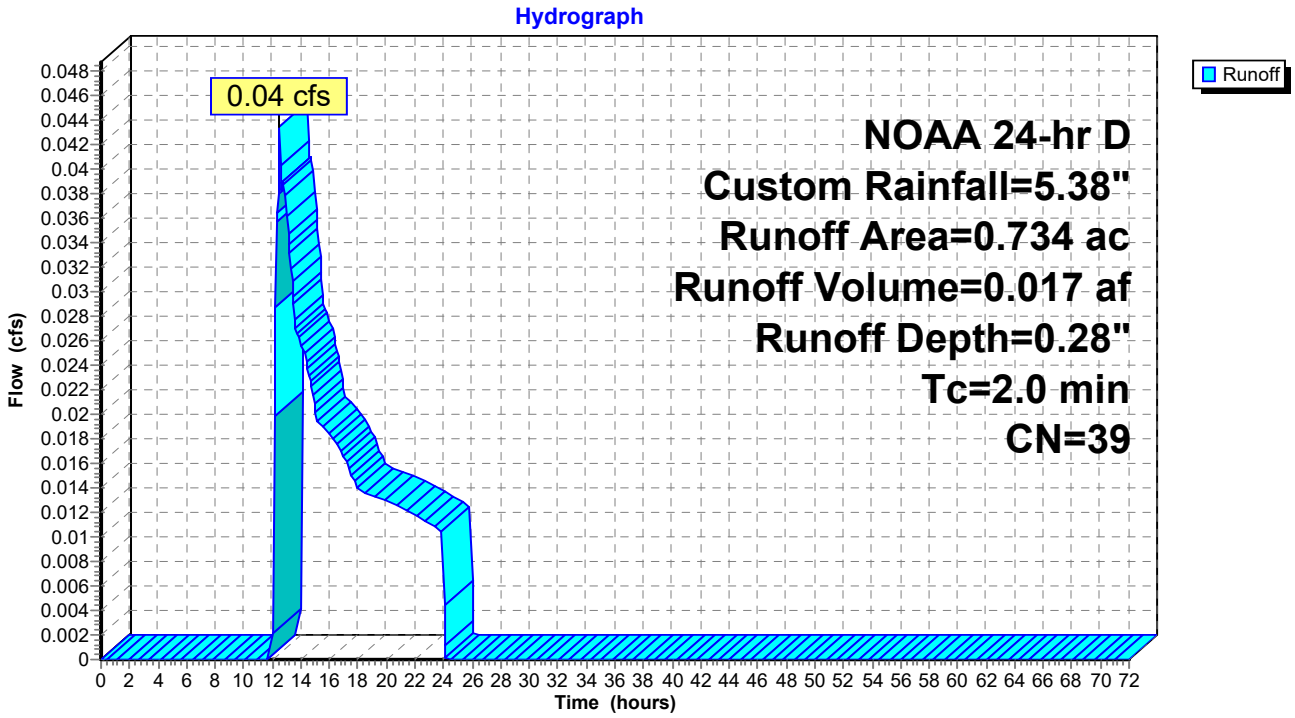
Runoff = 0.04 cfs @ 12.50 hrs, Volume= 0.017 af, Depth= 0.28"
Routed to Pond 74P : Basin 39

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
0.734	39	>75% Grass cover, Good, HSG A
0.734		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 101S: Basin 39 - Pervious



Summary for Subcatchment 102S: Basin 37 - Impervious

[49] Hint: Tc<2dt may require smaller dt

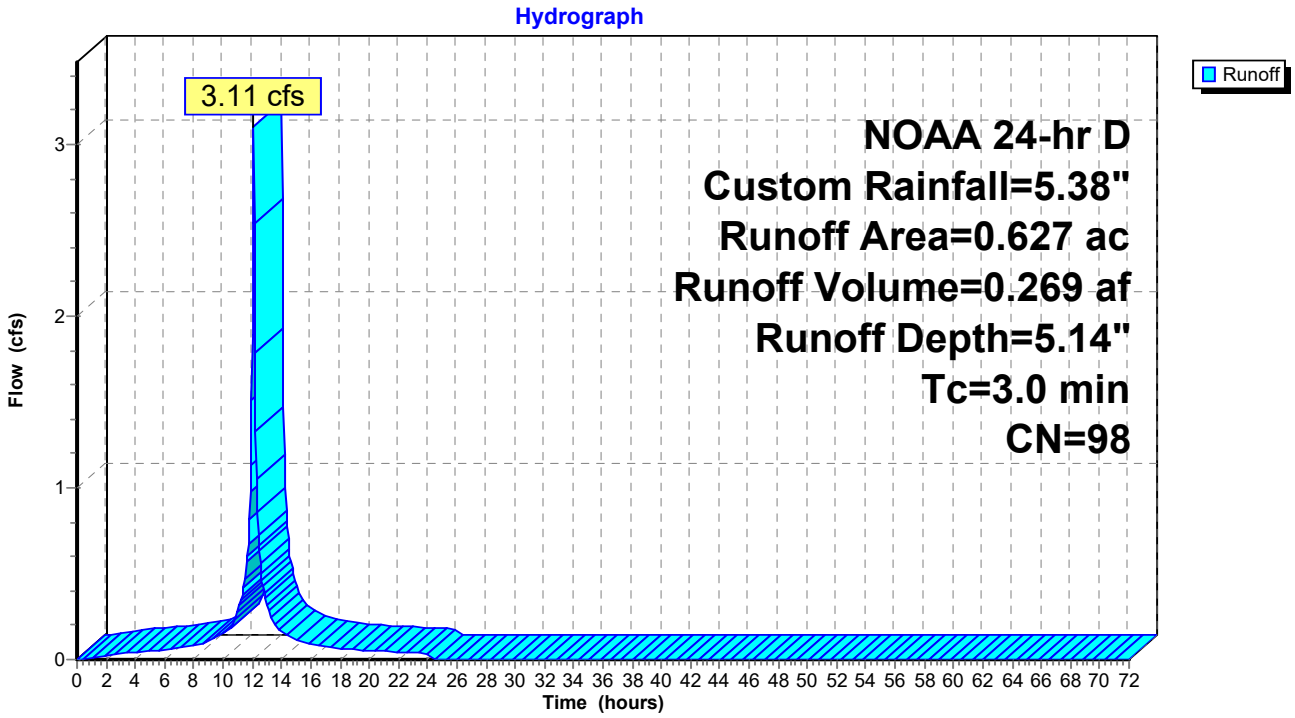
Runoff = 3.11 cfs @ 12.10 hrs, Volume= 0.269 af, Depth= 5.14"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 102S: Basin 37 - Impervious



Summary for Subcatchment 103S: Basin 37 - Pervious

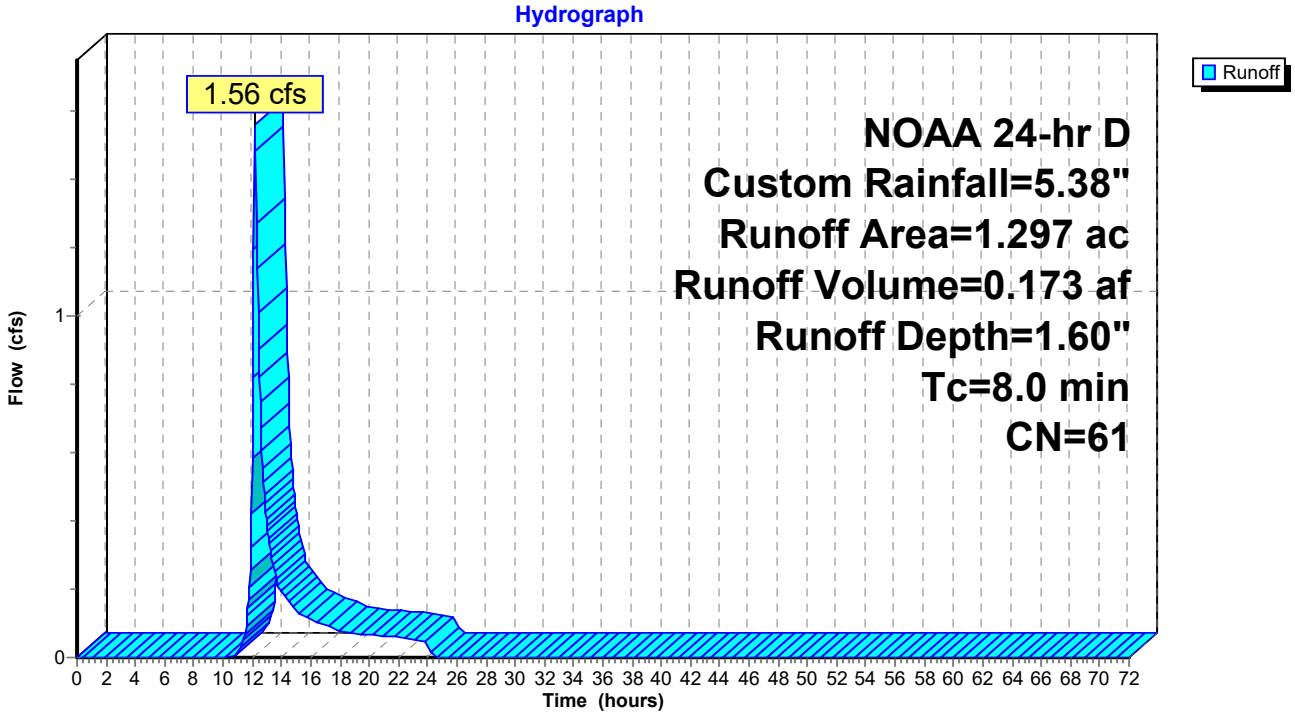
Runoff = 1.56 cfs @ 12.18 hrs, Volume= 0.173 af, Depth= 1.60"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.297	61	>75% Grass cover, Good, HSG B
1.297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 103S: Basin 37 - Pervious



Summary for Subcatchment 104S: Basin 34- Impervious

[49] Hint: Tc<2dt may require smaller dt

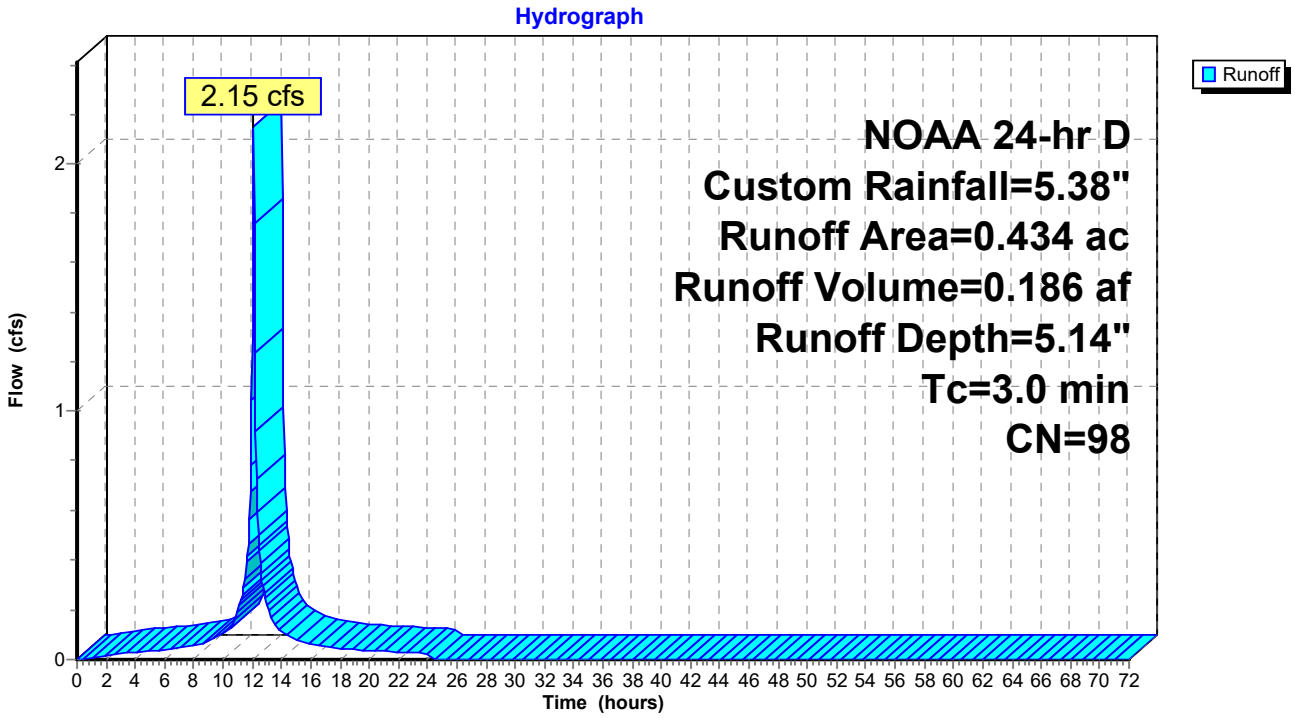
Runoff = 2.15 cfs @ 12.10 hrs, Volume= 0.186 af, Depth= 5.14"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.434	98	Impervious
	0.434		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 104S: Basin 34- Impervious



Summary for Subcatchment 105S: Basin 34 - Pervious

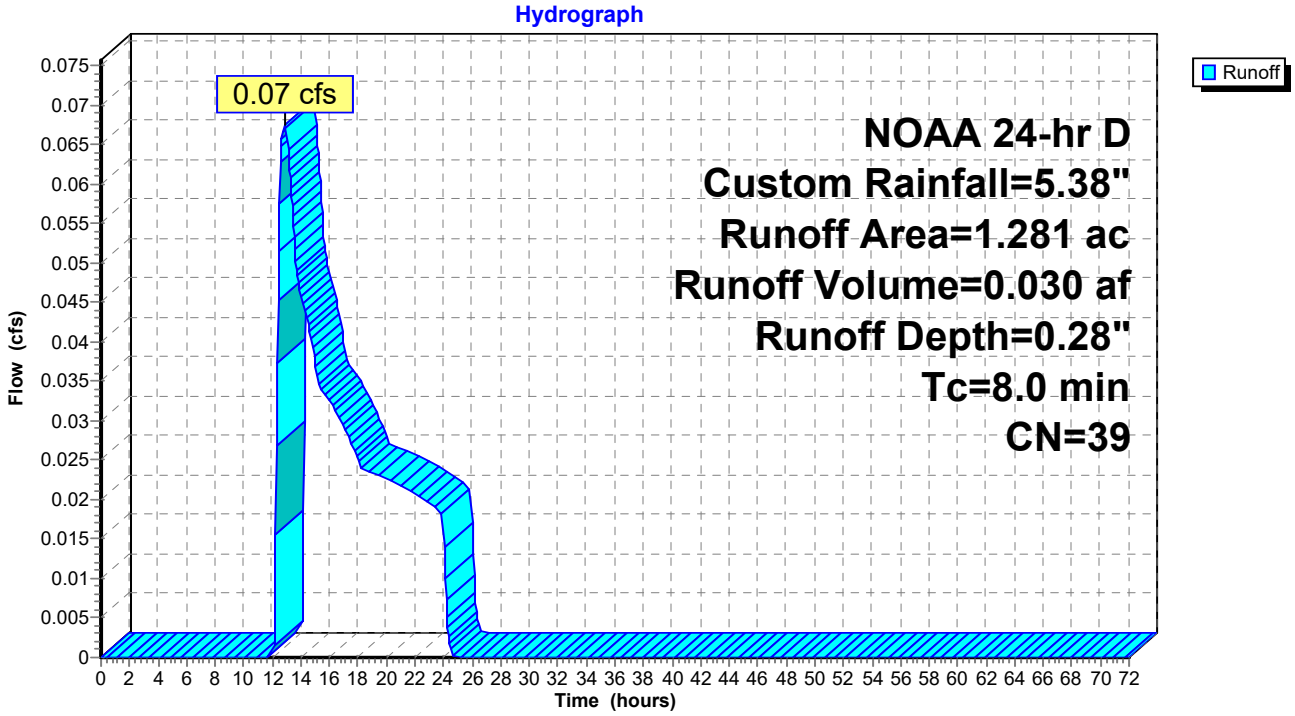
Runoff = 0.07 cfs @ 12.86 hrs, Volume= 0.030 af, Depth= 0.28"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.281	39	>75% Grass cover, Good, HSG A
1.281		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 105S: Basin 34 - Pervious



Summary for Subcatchment 106S: Basin 35 - Impervious

[49] Hint: Tc<2dt may require smaller dt

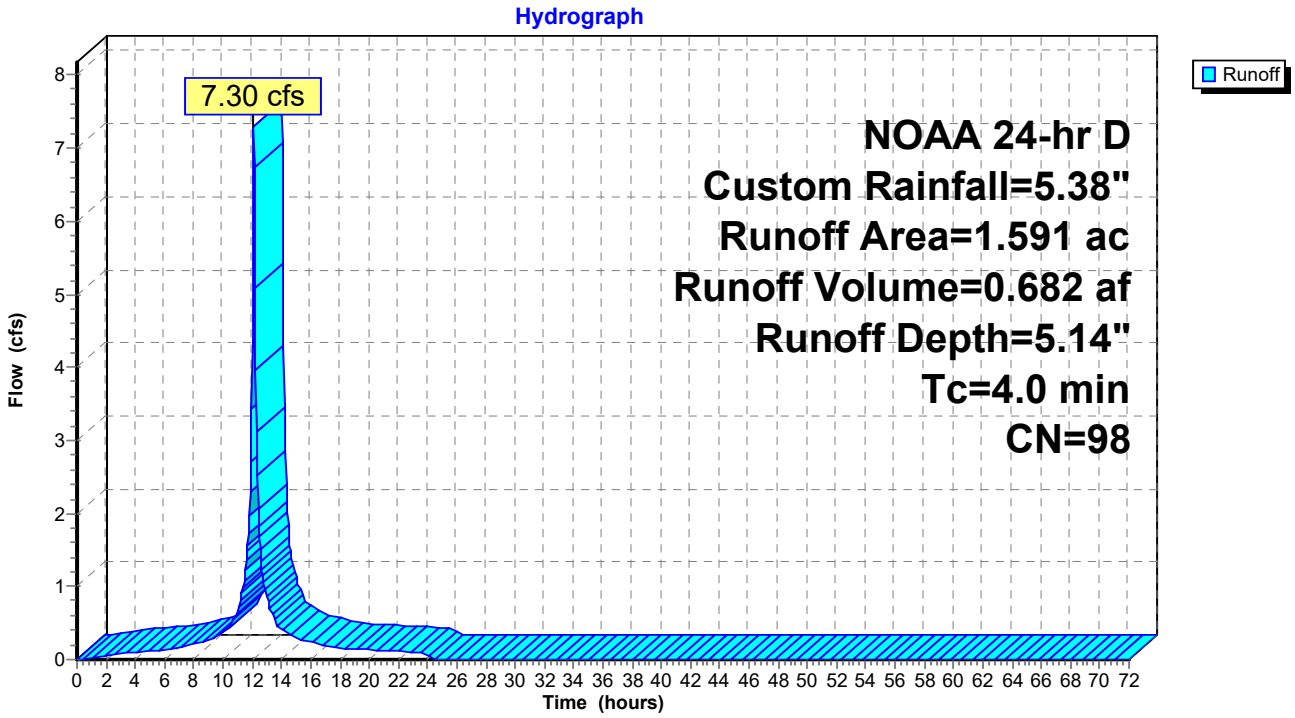
Runoff = 7.30 cfs @ 12.11 hrs, Volume= 0.682 af, Depth= 5.14"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.591	98	Impervious
	1.591		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment 106S: Basin 35 - Impervious



Summary for Subcatchment 107S: Basin 35 - Pervious

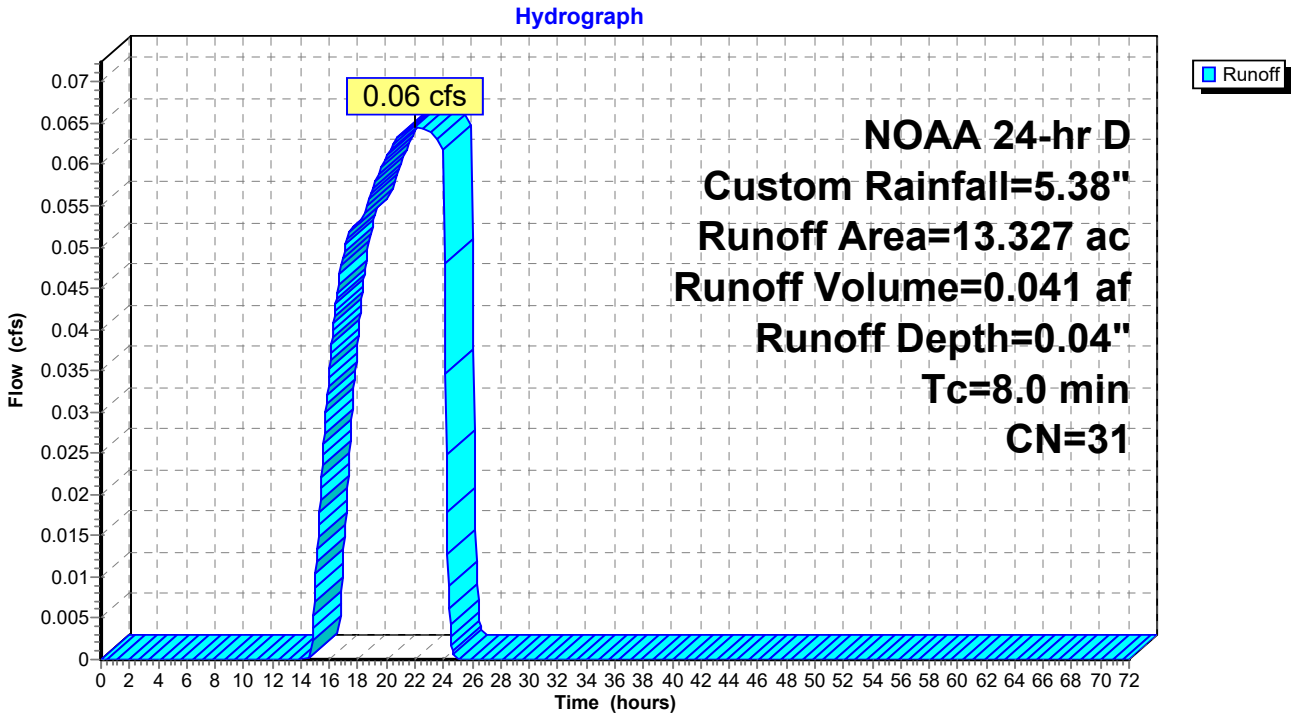
Runoff = 0.06 cfs @ 22.04 hrs, Volume= 0.041 af, Depth= 0.04"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
0.907	39	>75% Grass cover, Good, HSG A
12.420	30	Woods, Good, HSG A
13.327	31	Weighted Average
13.327		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 107S: Basin 35 - Pervious



Summary for Subcatchment 108S: Basin 36 - Impervious

[49] Hint: Tc<2dt may require smaller dt

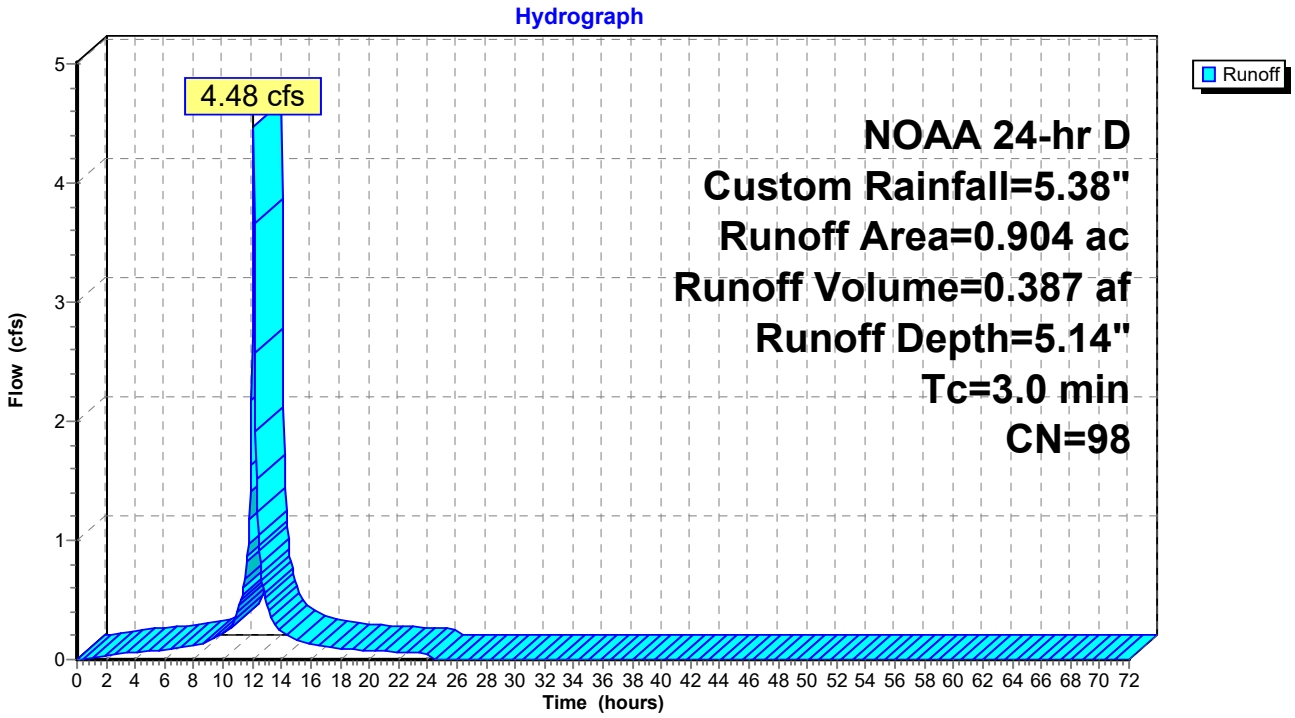
Runoff = 4.48 cfs @ 12.10 hrs, Volume= 0.387 af, Depth= 5.14"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.904	98	Impervious
	0.904		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 108S: Basin 36 - Impervious



Summary for Subcatchment 109S: Basin 36 - Pervious

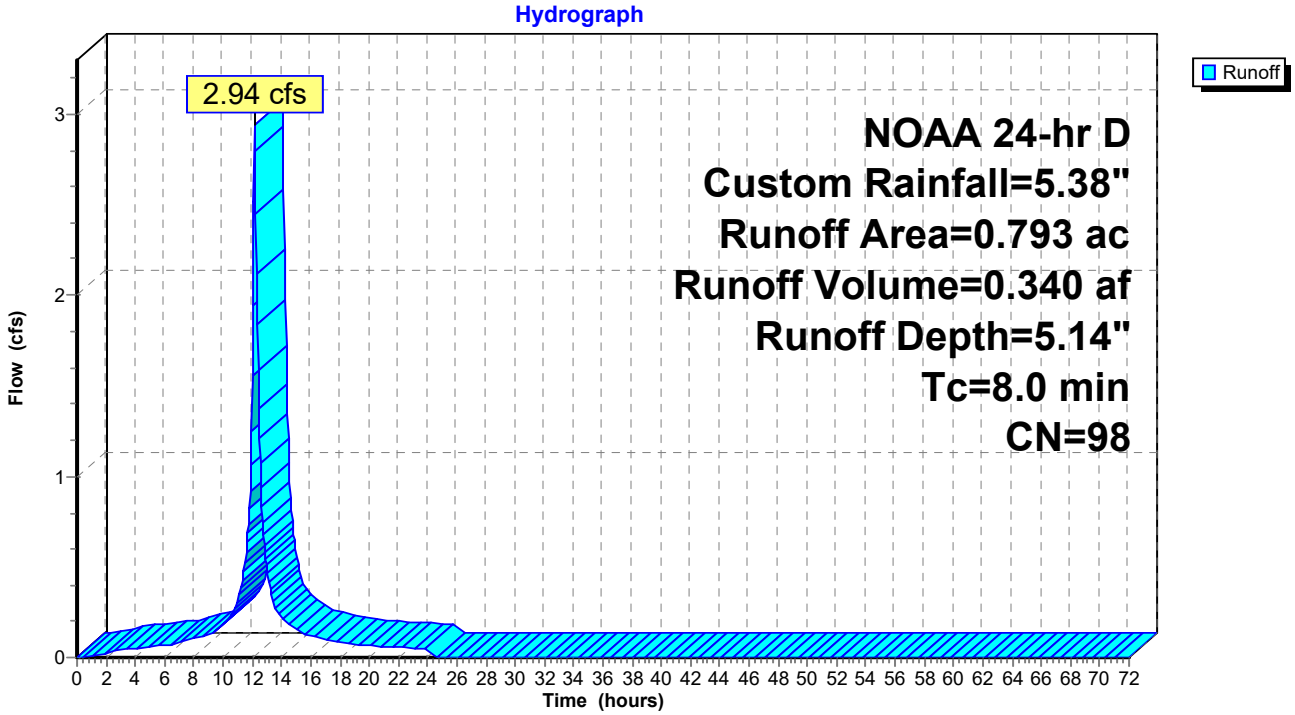
Runoff = 2.94 cfs @ 12.16 hrs, Volume= 0.340 af, Depth= 5.14"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.793	98	Impervious
	0.793		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 109S: Basin 36 - Pervious



Summary for Subcatchment 110S: Basin 22 - Pervious

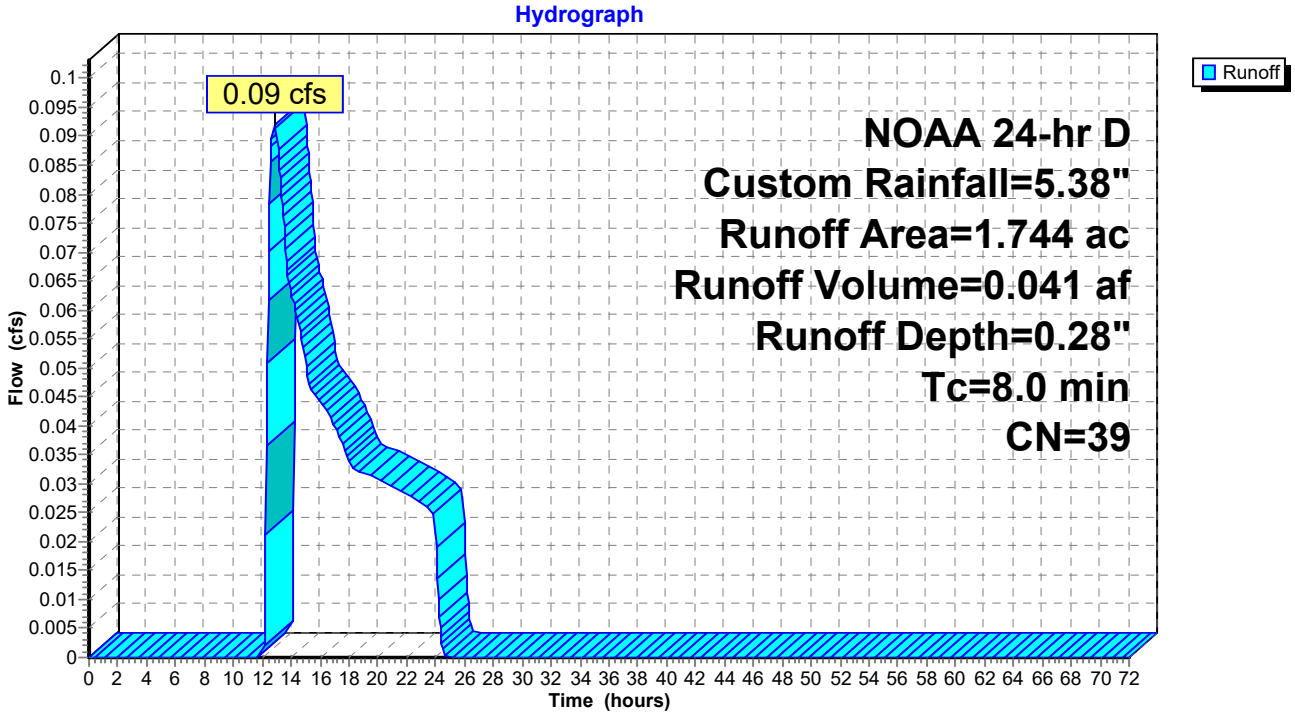
Runoff = 0.09 cfs @ 12.86 hrs, Volume= 0.041 af, Depth= 0.28"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.744	39	>75% Grass cover, Good, HSG A
1.744		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 110S: Basin 22 - Pervious



Summary for Pond 111P: Basin 23

Inflow Area = 2.499 ac, 35.01% Impervious, Inflow Depth = 1.98" for Custom event
Inflow = 4.33 cfs @ 12.10 hrs, Volume= 0.413 af
Outflow = 0.25 cfs @ 14.46 hrs, Volume= 0.337 af, Atten= 94%, Lag= 141.6 min
Primary = 0.25 cfs @ 14.46 hrs, Volume= 0.337 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.94' @ 14.46 hrs Surf.Area= 7,865 sf Storage= 11,413 cf

Plug-Flow detention time= 598.8 min calculated for 0.337 af (81% of inflow)
Center-of-Mass det. time= 511.0 min (1,283.1 - 772.1)

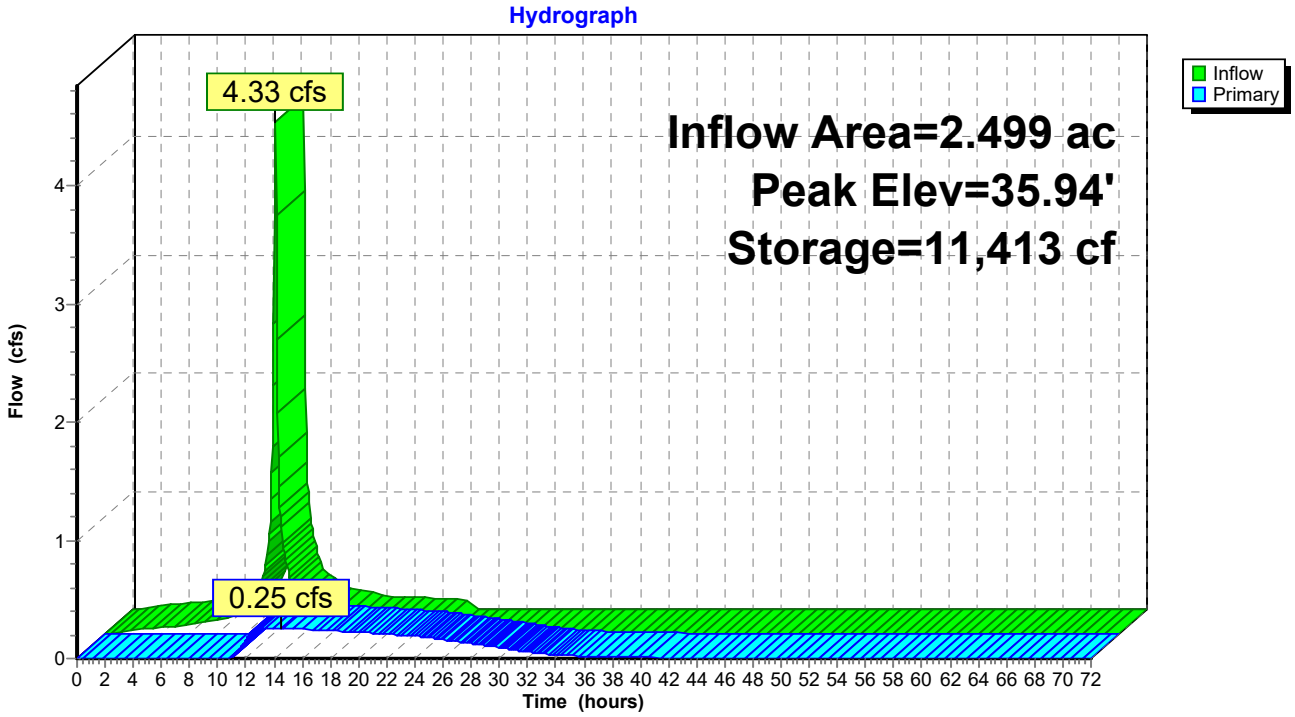
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	21,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,200	0	0
35.00	5,800	5,000	5,000
36.00	8,000	6,900	11,900
37.00	10,800	9,400	21,300

Device	Routing	Invert	Outlet Devices
#1	Primary	34.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 14.46 hrs HW=35.94' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.25 cfs @ 5.10 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 111P: Basin 23



Summary for Subcatchment 112S: Basin 23 - Impervious

[49] Hint: Tc<2dt may require smaller dt

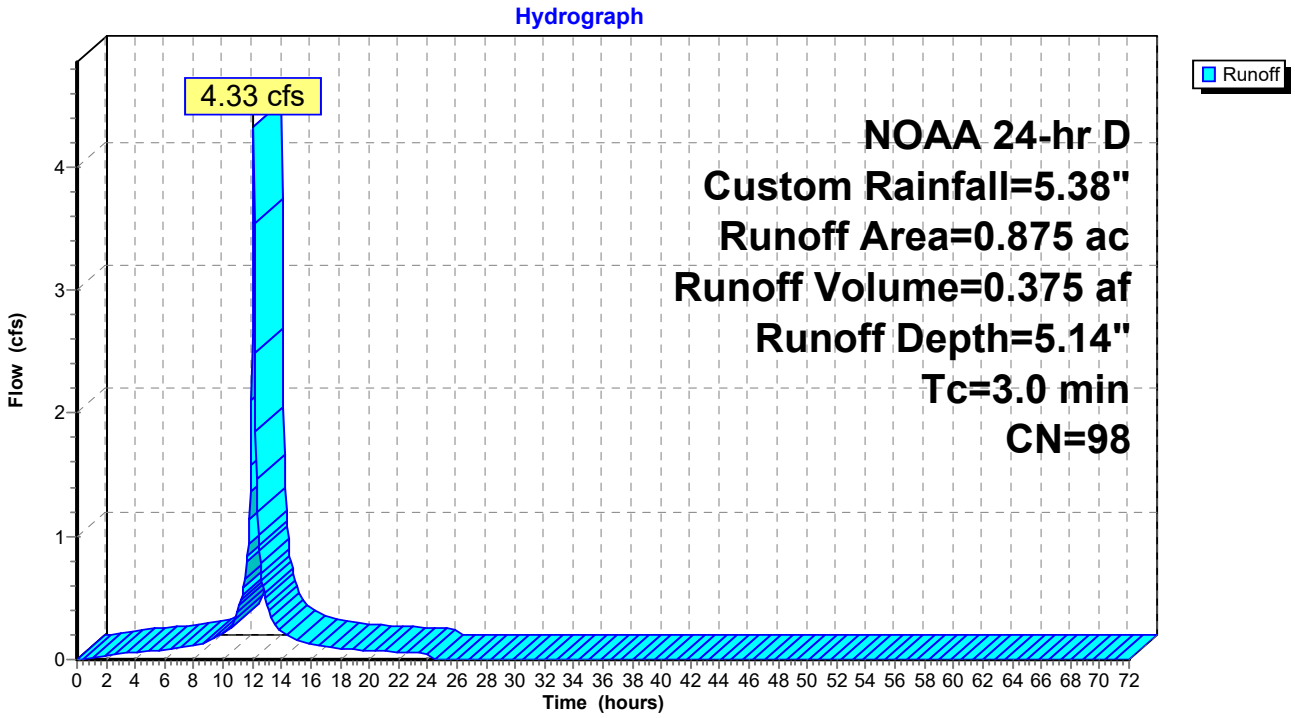
Runoff = 4.33 cfs @ 12.10 hrs, Volume= 0.375 af, Depth= 5.14"
Routed to Pond 111P : Basin 23

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.875	98	Impervious
	0.875		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 112S: Basin 23 - Impervious



Summary for Subcatchment 113S: Basin 23 - Pervious

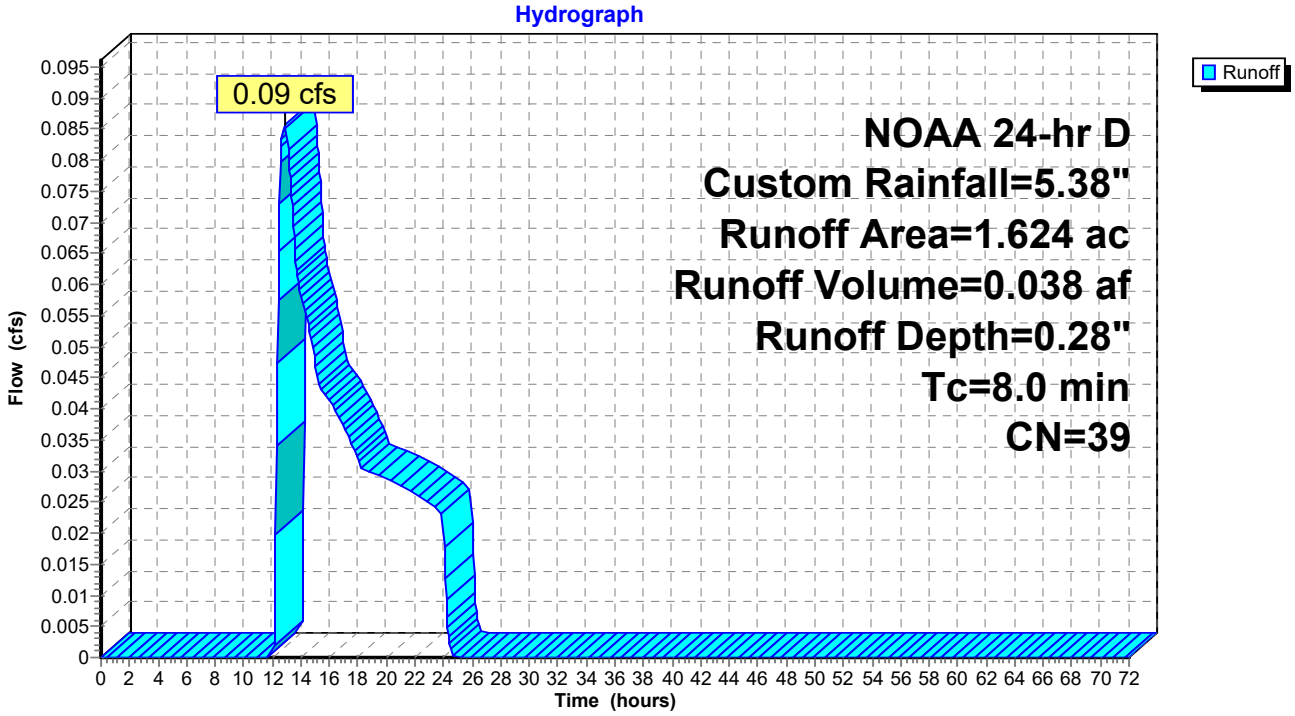
Runoff = 0.09 cfs @ 12.86 hrs, Volume= 0.038 af, Depth= 0.28"
Routed to Pond 111P : Basin 23

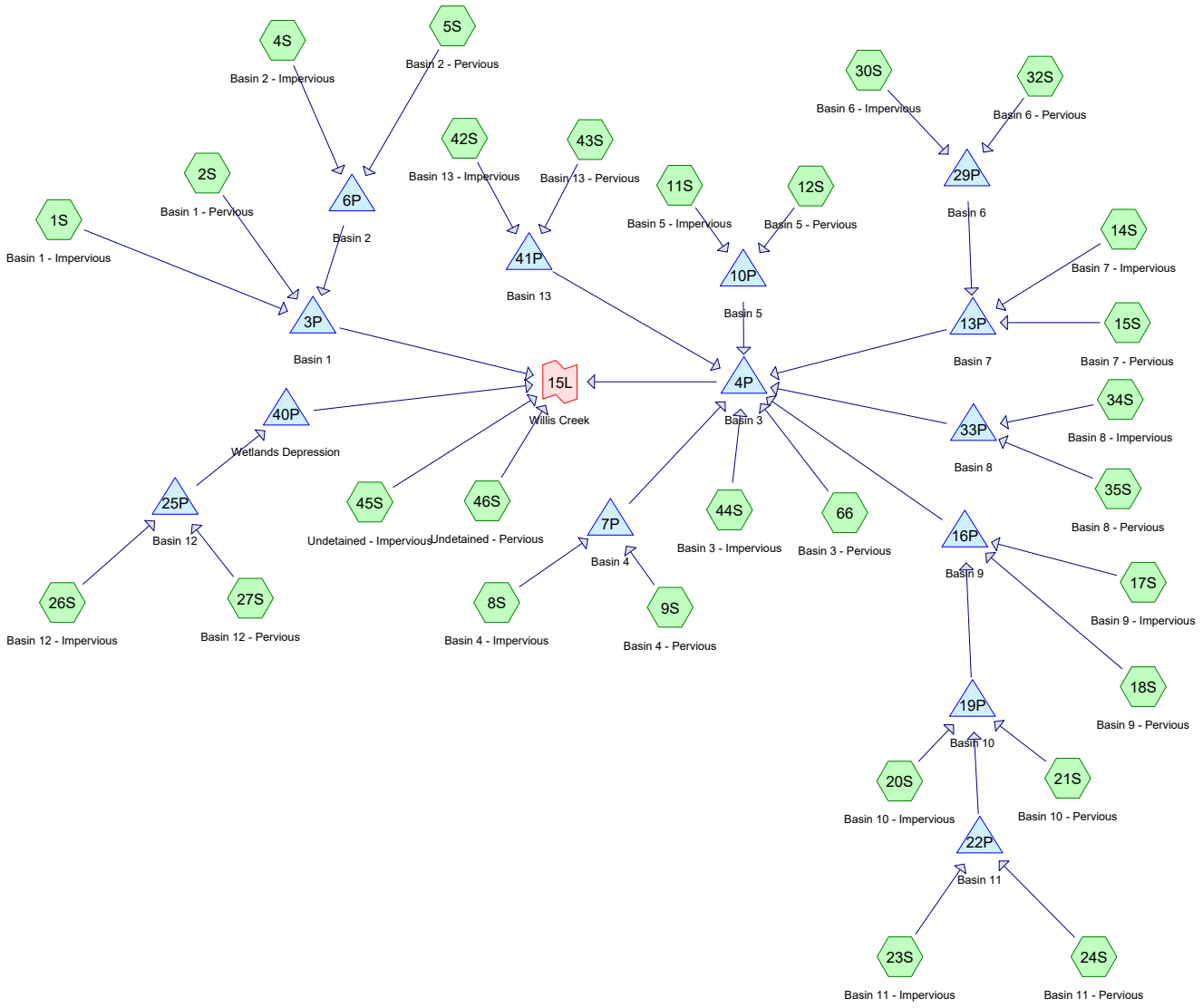
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.624	39	>75% Grass cover, Good, HSG A
1.624		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 113S: Basin 23 - Pervious





Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT - WILLS CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	5.38	2

Summary for Subcatchment 1S: Basin 1 - Impervious

[49] Hint: Tc<2dt may require smaller dt

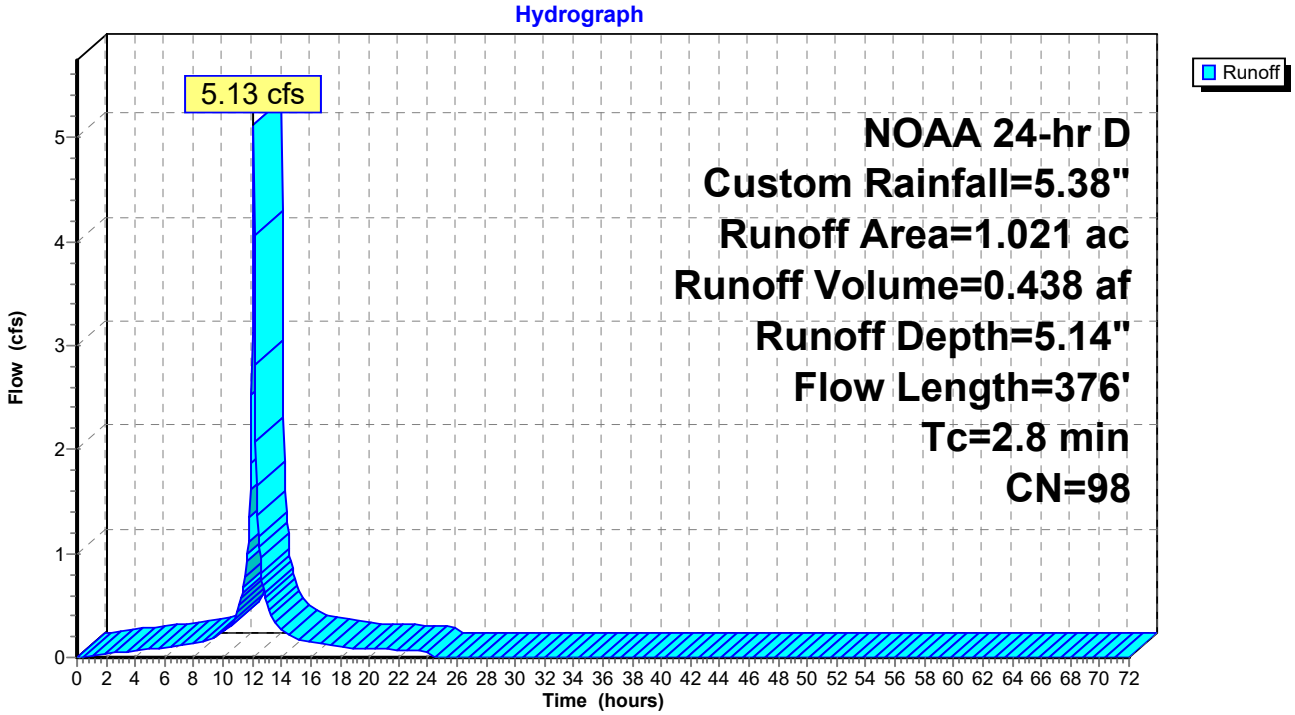
Runoff = 5.13 cfs @ 12.10 hrs, Volume= 0.438 af, Depth= 5.14"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.021	98	
	1.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	86	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	190	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.8	376	Total			

Subcatchment 1S: Basin 1 - Impervious



Summary for Subcatchment 2S: Basin 1 - Pervious

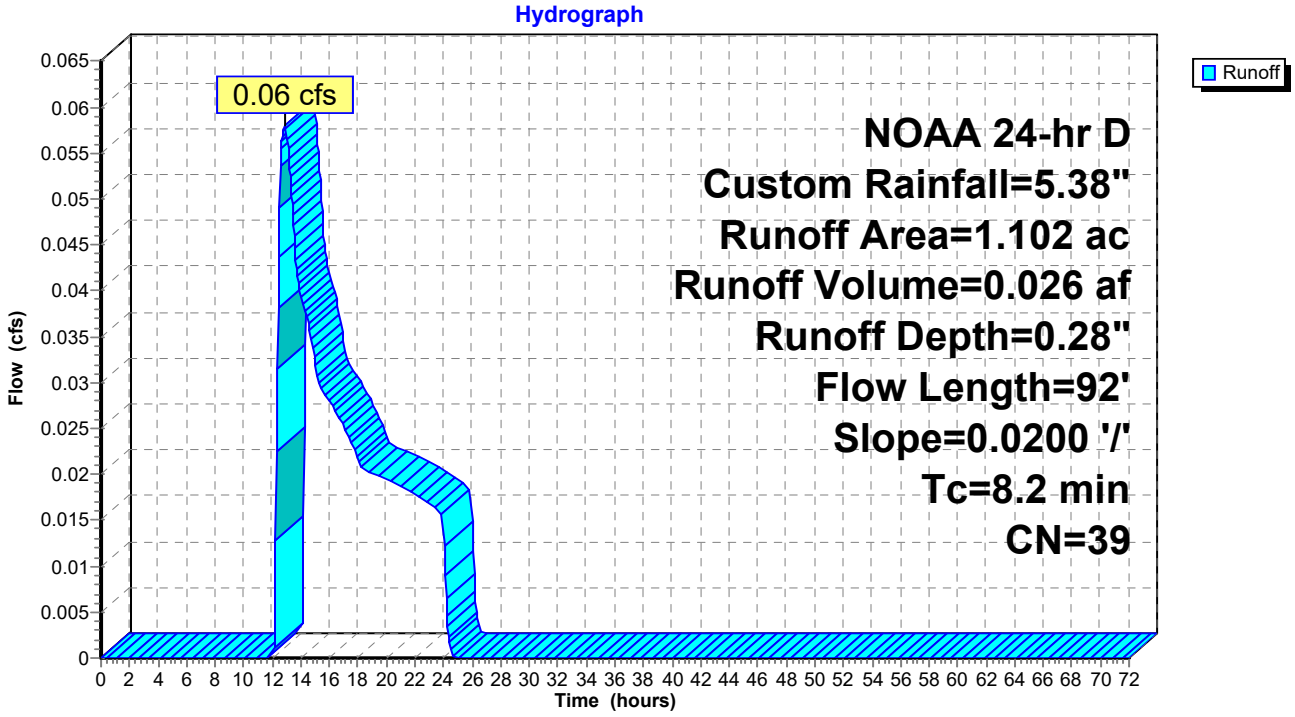
Runoff = 0.06 cfs @ 12.86 hrs, Volume= 0.026 af, Depth= 0.28"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.102	39	>75% Grass cover, Good, HSG A
1.102		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	92	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 2S: Basin 1 - Pervious



Summary for Pond 3P: Basin 1

Inflow Area = 4.367 ac, 43.78% Impervious, Inflow Depth > 2.19" for Custom event
Inflow = 5.30 cfs @ 12.10 hrs, Volume= 0.798 af
Outflow = 2.36 cfs @ 12.26 hrs, Volume= 0.706 af, Atten= 55%, Lag= 9.6 min
Primary = 2.36 cfs @ 12.26 hrs, Volume= 0.706 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.02' @ 12.26 hrs Surf.Area= 7,253 sf Storage= 10,477 cf

Plug-Flow detention time= 458.8 min calculated for 0.706 af (88% of inflow)
Center-of-Mass det. time= 332.7 min (1,343.3 - 1,010.6)

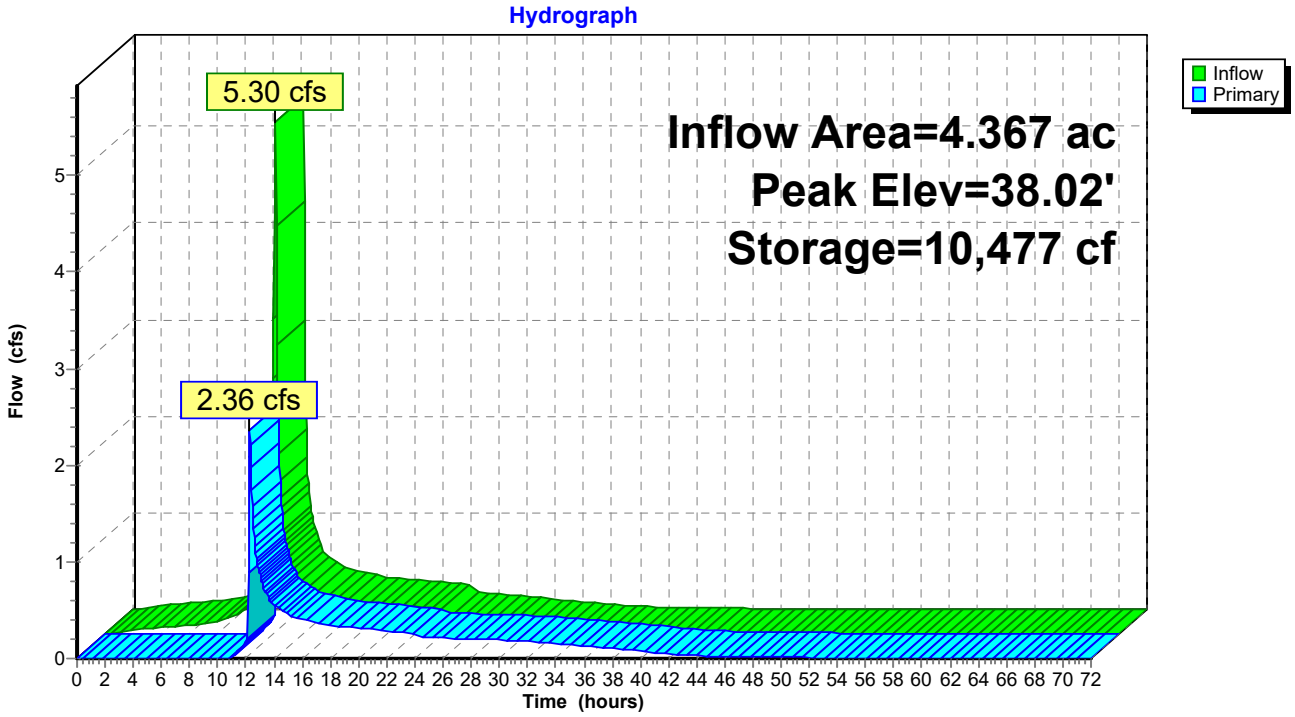
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	14,397 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,311	0	0
37.00	5,097	4,204	4,204
38.00	7,187	6,142	10,346
38.50	9,017	4,051	14,397

Device	Routing	Invert	Outlet Devices
#1	Primary	36.93'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.90'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.33 cfs @ 12.26 hrs HW=38.02' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.23 cfs @ 4.72 fps)
2=Orifice/Grate (Weir Controls 2.10 cfs @ 1.12 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 3

Inflow Area = 21.738 ac, 39.68% Impervious, Inflow Depth = 2.53" for Custom event
Inflow = 40.19 cfs @ 12.17 hrs, Volume= 4.589 af
Outflow = 1.41 cfs @ 21.53 hrs, Volume= 0.775 af, Atten= 96%, Lag= 561.9 min
Primary = 1.41 cfs @ 21.53 hrs, Volume= 0.775 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.57' @ 21.53 hrs Surf.Area= 38,701 sf Storage= 168,726 cf

Plug-Flow detention time= 861.1 min calculated for 0.774 af (17% of inflow)
Center-of-Mass det. time= 619.5 min (1,548.5 - 929.0)

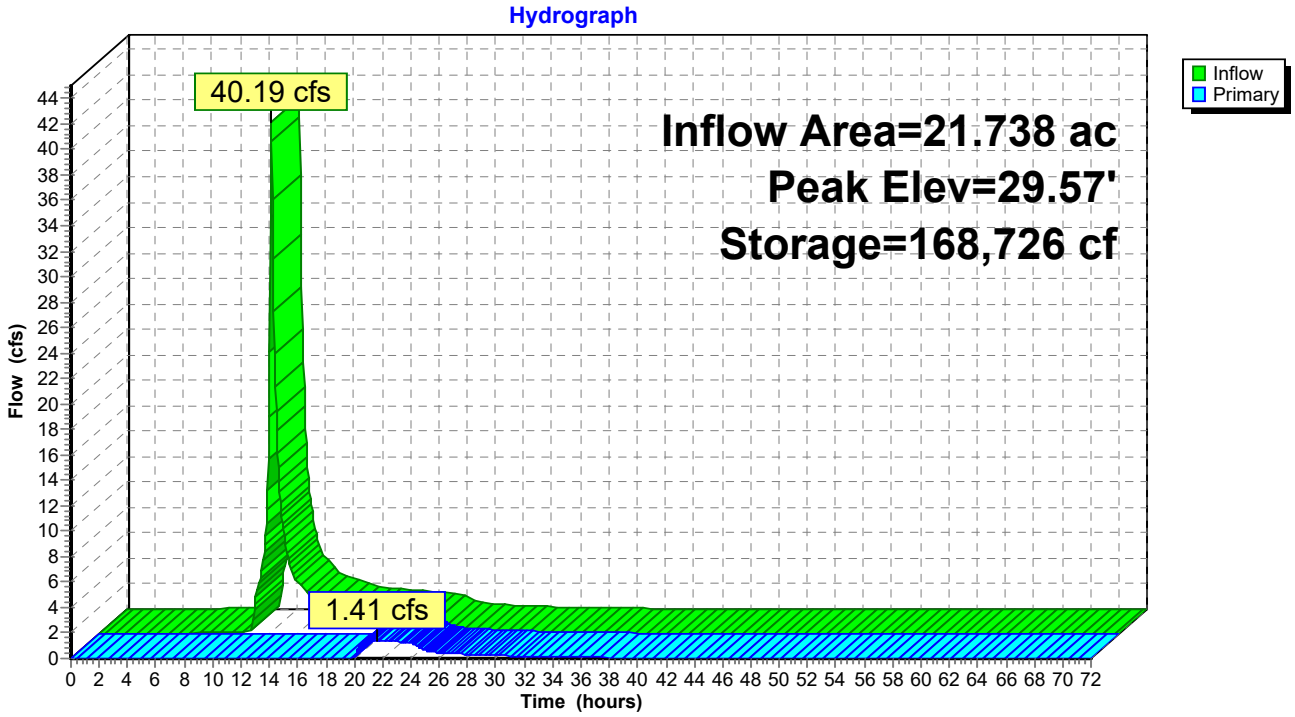
Volume	Invert	Avail.Storage	Storage Description
#1	24.01'	206,265 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.01	22,000	0	0
25.00	25,000	23,265	23,265
26.00	28,000	26,500	49,765
27.00	31,000	29,500	79,265
28.00	34,000	32,500	111,765
29.00	37,000	35,500	147,265
30.00	40,000	38,500	185,765
30.50	42,000	20,500	206,265

Device	Routing	Invert	Outlet Devices
#1	Primary	29.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.30 cfs @ 21.53 hrs HW=29.57' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.30 cfs @ 0.64 fps)

Pond 4P: Basin 3



Summary for Subcatchment 4S: Basin 2 - Impervious

[49] Hint: Tc<2dt may require smaller dt

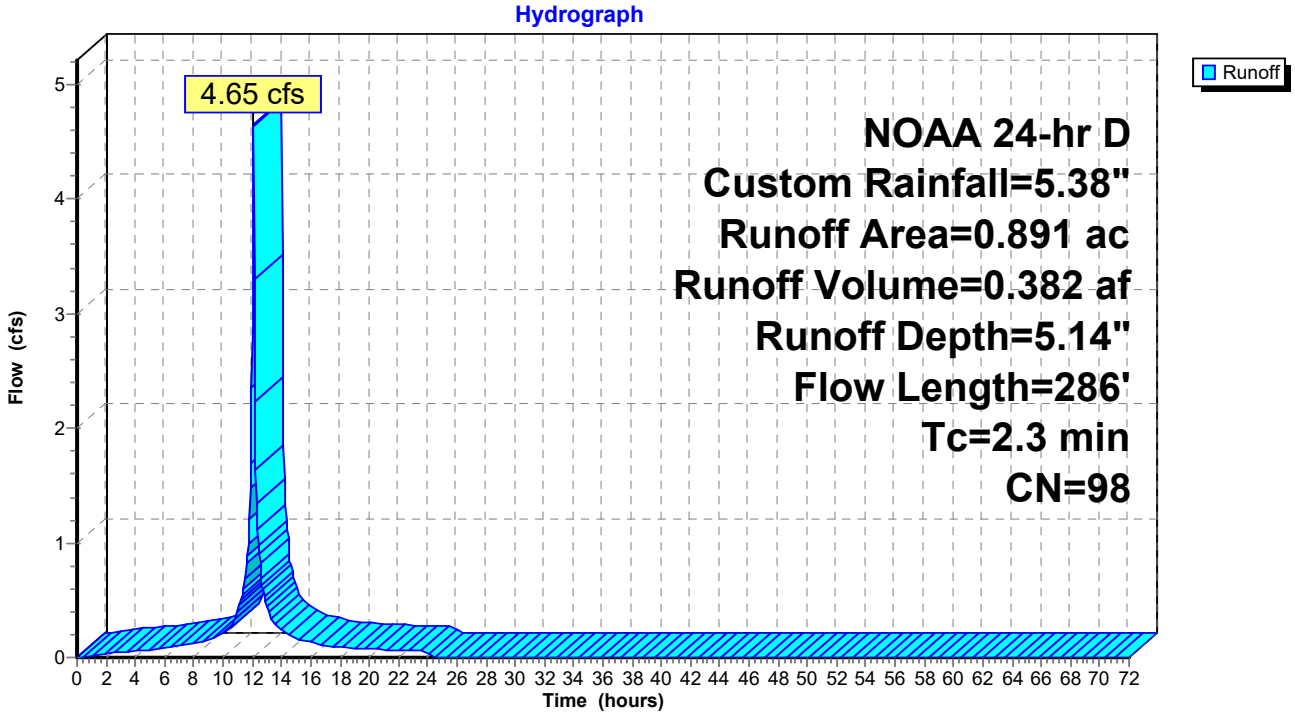
Runoff = 4.65 cfs @ 12.09 hrs, Volume= 0.382 af, Depth= 5.14"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.891	98	Impervious
	0.891		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	56	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	286	Total			

Subcatchment 4S: Basin 2 - Impervious



Summary for Subcatchment 5S: Basin 2 - Pervious

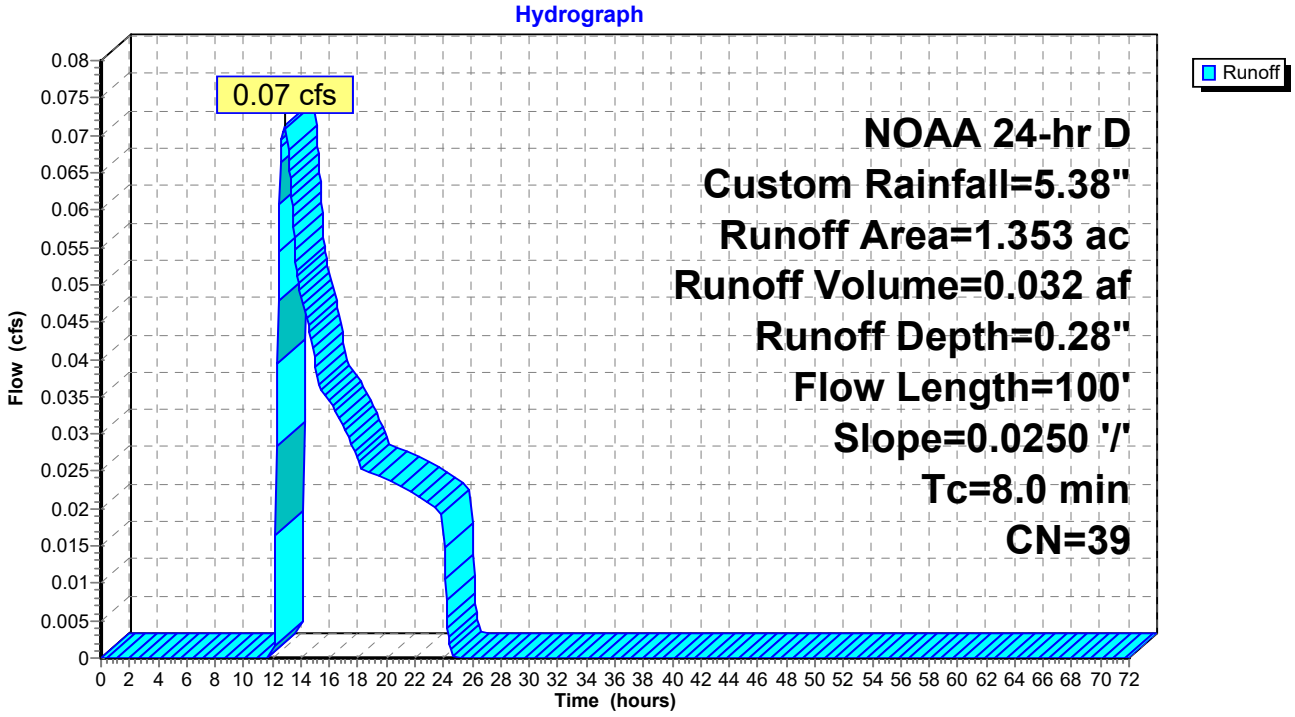
Runoff = 0.07 cfs @ 12.86 hrs, Volume= 0.032 af, Depth= 0.28"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.353	39	>75% Grass cover, Good, HSG A
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 5S: Basin 2 - Pervious



Summary for Pond 6P: Basin 2

Inflow Area = 2.244 ac, 39.71% Impervious, Inflow Depth = 2.21" for Custom event
Inflow = 4.65 cfs @ 12.09 hrs, Volume= 0.414 af
Outflow = 0.23 cfs @ 14.68 hrs, Volume= 0.334 af, Atten= 95%, Lag= 155.1 min
Primary = 0.23 cfs @ 14.68 hrs, Volume= 0.334 af
Routed to Pond 3P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.55' @ 14.68 hrs Surf.Area= 0.219 ac Storage= 0.272 af

Plug-Flow detention time= 677.8 min calculated for 0.334 af (81% of inflow)
Center-of-Mass det. time= 588.8 min (1,355.7 - 766.9)

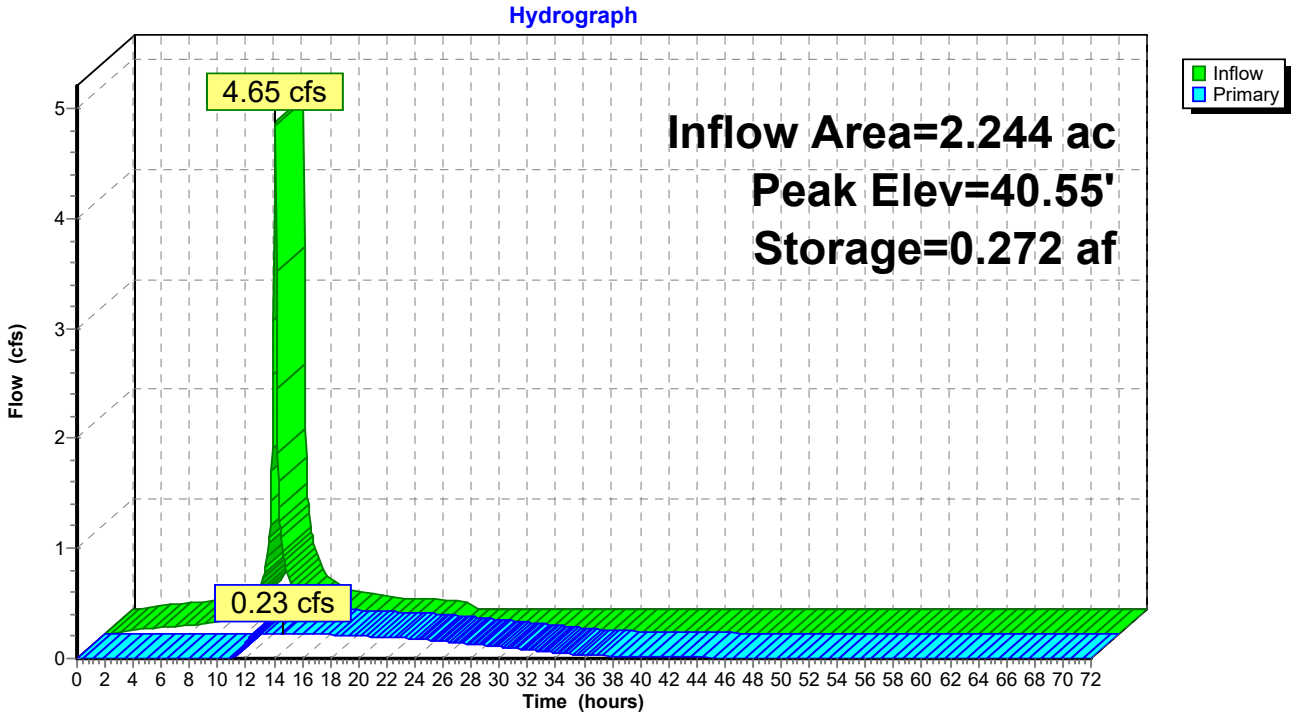
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	0.512 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
39.00	0.133	0.000	0.000
40.00	0.187	0.160	0.160
41.00	0.245	0.216	0.376
41.50	0.297	0.135	0.512

Device	Routing	Invert	Outlet Devices
#1	Primary	39.52'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.23 cfs @ 14.68 hrs HW=40.55' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.23 cfs @ 4.59 fps)

Pond 6P: Basin 2



Summary for Pond 7P: Basin 4

Inflow Area = 2.526 ac, 46.36% Impervious, Inflow Depth = 2.54" for Custom event
Inflow = 5.62 cfs @ 12.11 hrs, Volume= 0.534 af
Outflow = 4.97 cfs @ 12.15 hrs, Volume= 0.432 af, Atten= 11%, Lag= 2.7 min
Primary = 4.97 cfs @ 12.15 hrs, Volume= 0.432 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.07' @ 12.15 hrs Surf.Area= 6,482 sf Storage= 5,746 cf

Plug-Flow detention time= 168.4 min calculated for 0.432 af (81% of inflow)
Center-of-Mass det. time= 81.0 min (844.8 - 763.8)

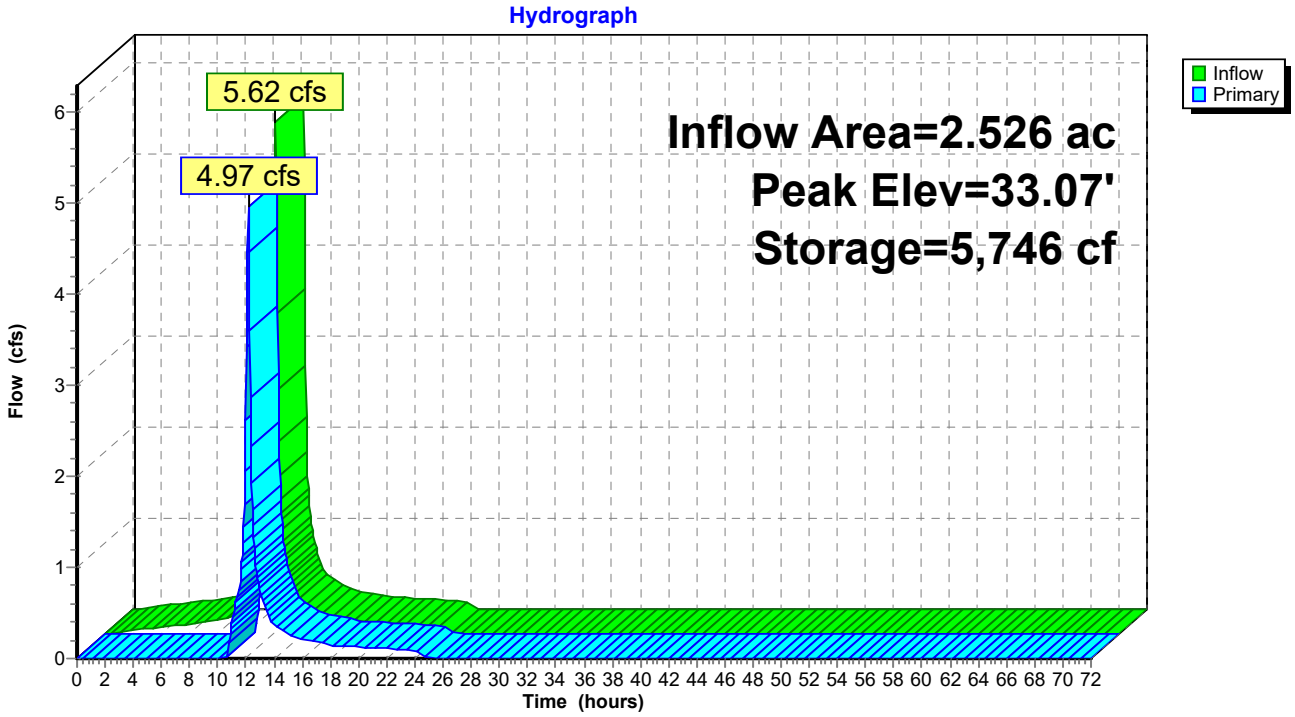
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	17,795 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	4,300	0	0
33.00	6,320	5,310	5,310
34.00	8,700	7,510	12,820
34.50	11,200	4,975	17,795

Device	Routing	Invert	Outlet Devices
#1	Primary	32.86'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.97 cfs @ 12.15 hrs HW=33.07' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 4.97 cfs @ 1.49 fps)

Pond 7P: Basin 4



Summary for Subcatchment 8S: Basin 4 - Impervious

[49] Hint: Tc<2dt may require smaller dt

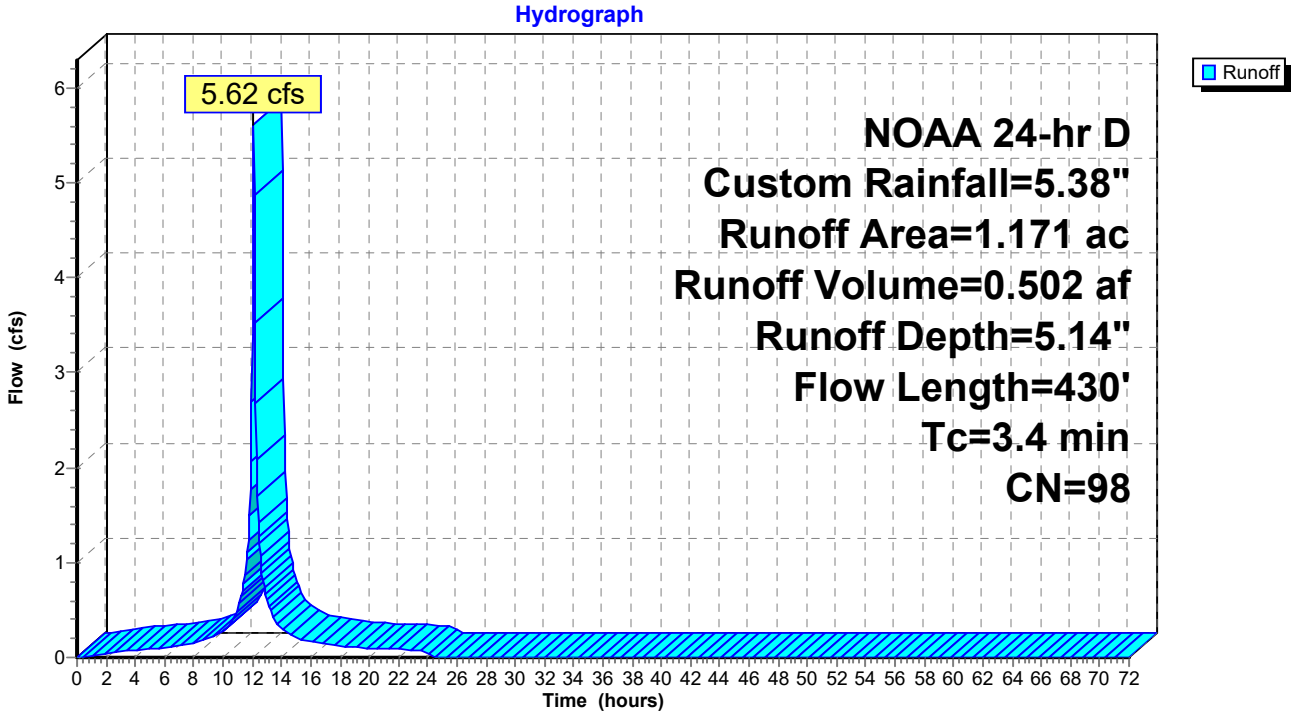
Runoff = 5.62 cfs @ 12.10 hrs, Volume= 0.502 af, Depth= 5.14"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.171	98	Impervious
	1.171		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.4	430	Total			

Subcatchment 8S: Basin 4 - Impervious



Summary for Subcatchment 9S: Basin 4 - Pervious

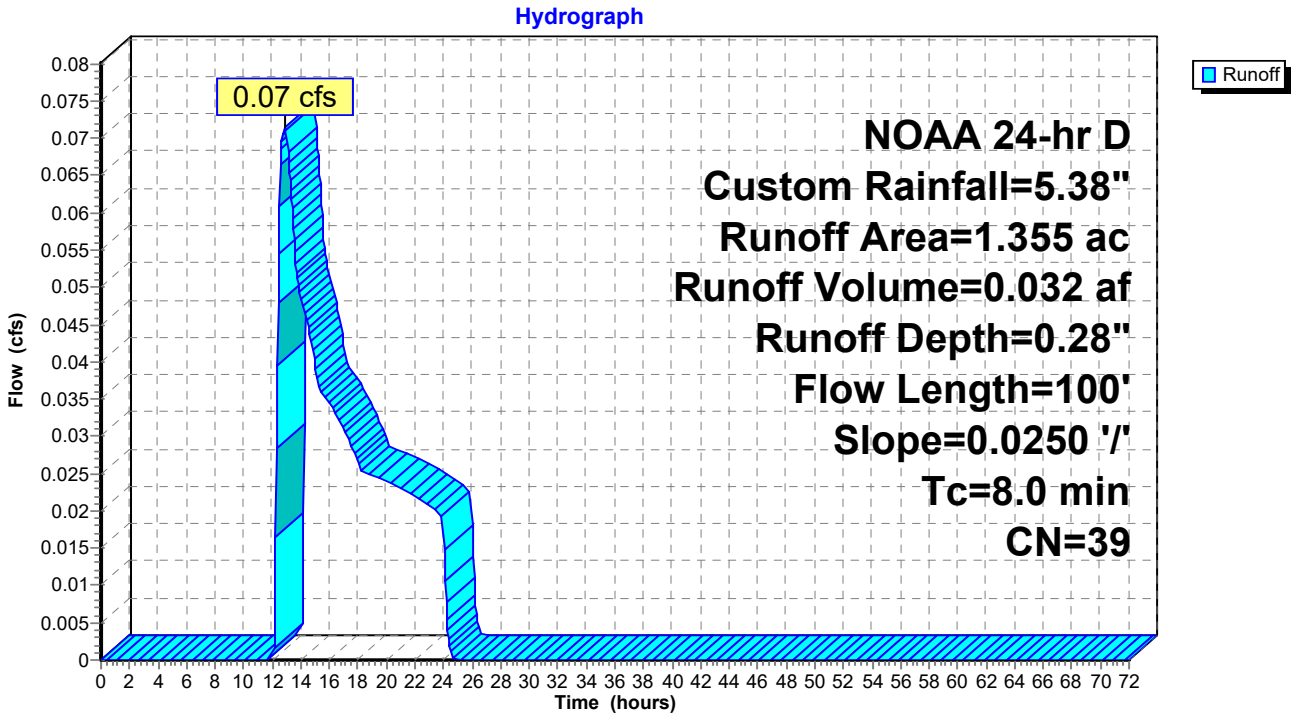
Runoff = 0.07 cfs @ 12.86 hrs, Volume= 0.032 af, Depth= 0.28"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.355	39	>75% Grass cover, Good, HSG A
1.355		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 9S: Basin 4 - Pervious



Summary for Pond 10P: Basin 5

Inflow Area = 1.373 ac, 35.40% Impervious, Inflow Depth = 2.41" for Custom event
Inflow = 3.12 cfs @ 12.11 hrs, Volume= 0.276 af
Outflow = 0.25 cfs @ 13.58 hrs, Volume= 0.234 af, Atten= 92%, Lag= 88.3 min
Primary = 0.25 cfs @ 13.58 hrs, Volume= 0.234 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.84' @ 13.58 hrs Surf.Area= 4,933 sf Storage= 6,808 cf

Plug-Flow detention time= 409.5 min calculated for 0.234 af (85% of inflow)
Center-of-Mass det. time= 335.5 min (1,124.5 - 789.0)

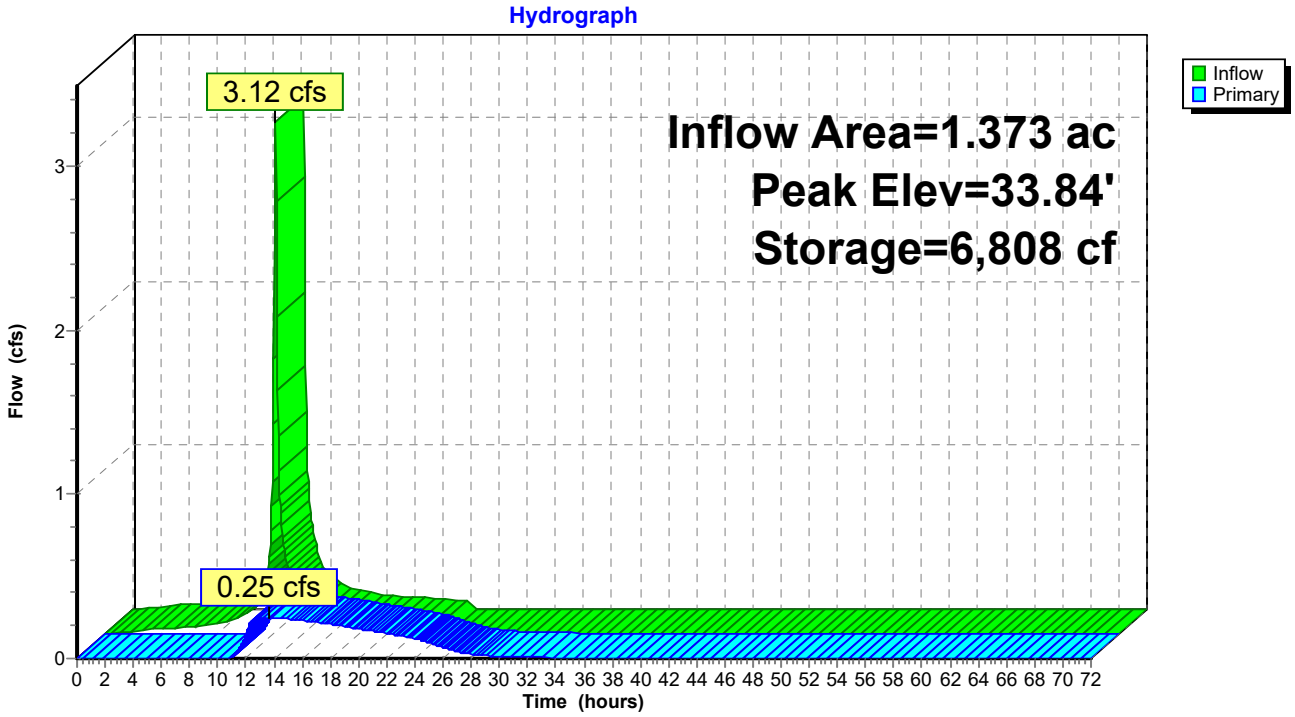
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	35,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,500	0	0
33.00	3,780	3,140	3,140
34.00	5,150	4,465	7,605
35.00	6,490	5,820	13,425
36.00	8,300	7,395	20,820
37.00	9,700	9,000	29,820
37.50	11,500	5,300	35,120

Device	Routing	Invert	Outlet Devices
#1	Primary	32.63'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 13.58 hrs HW=33.84' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.25 cfs @ 5.02 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Basin 5



Summary for Subcatchment 11S: Basin 5 - Impervious

[49] Hint: Tc<2dt may require smaller dt

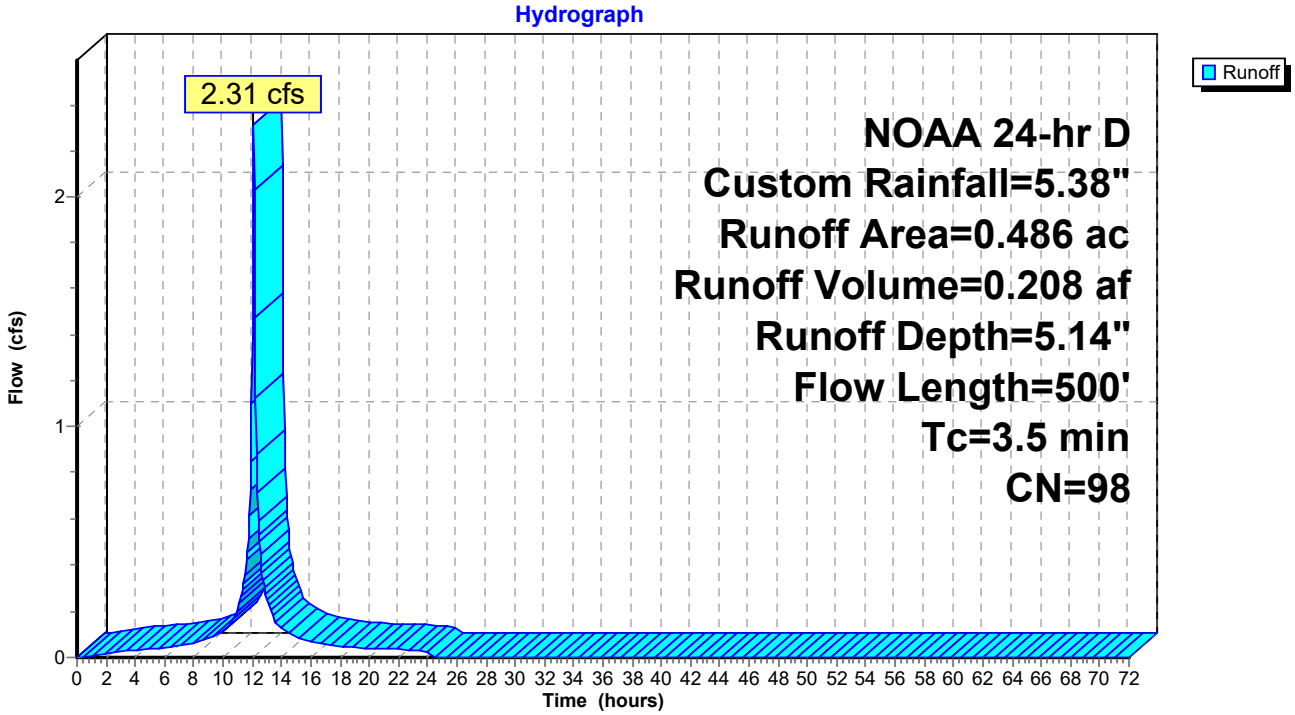
Runoff = 2.31 cfs @ 12.11 hrs, Volume= 0.208 af, Depth= 5.14"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.486	98	Impervious
	0.486		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.5	500	Total			

Subcatchment 11S: Basin 5 - Impervious



Summary for Subcatchment 12S: Basin 5 - Pervious

[49] Hint: Tc<2dt may require smaller dt

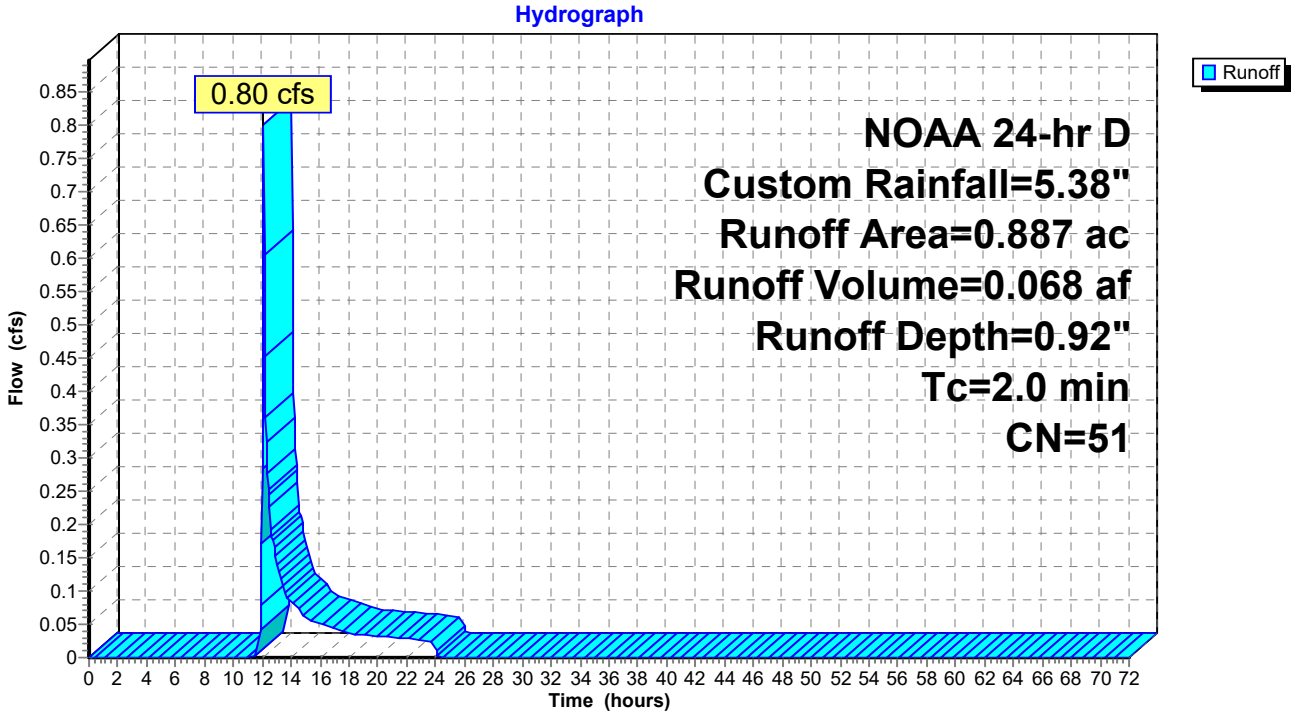
Runoff = 0.80 cfs @ 12.10 hrs, Volume= 0.068 af, Depth= 0.92"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
0.621	39	>75% Grass cover, Good, HSG A
0.266	80	>75% Grass cover, Good, HSG D
0.887	51	Weighted Average
0.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 12S: Basin 5 - Pervious



Summary for Pond 13P: Basin 7

Inflow Area = 3.928 ac, 40.63% Impervious, Inflow Depth = 3.59" for Custom event
Inflow = 10.88 cfs @ 12.17 hrs, Volume= 1.176 af
Outflow = 10.45 cfs @ 12.21 hrs, Volume= 1.060 af, Atten= 4%, Lag= 2.5 min
Primary = 10.45 cfs @ 12.21 hrs, Volume= 1.060 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.13' @ 12.21 hrs Surf.Area= 5,889 sf Storage= 6,931 cf

Plug-Flow detention time= 93.2 min calculated for 1.060 af (90% of inflow)
Center-of-Mass det. time= 40.9 min (848.7 - 807.8)

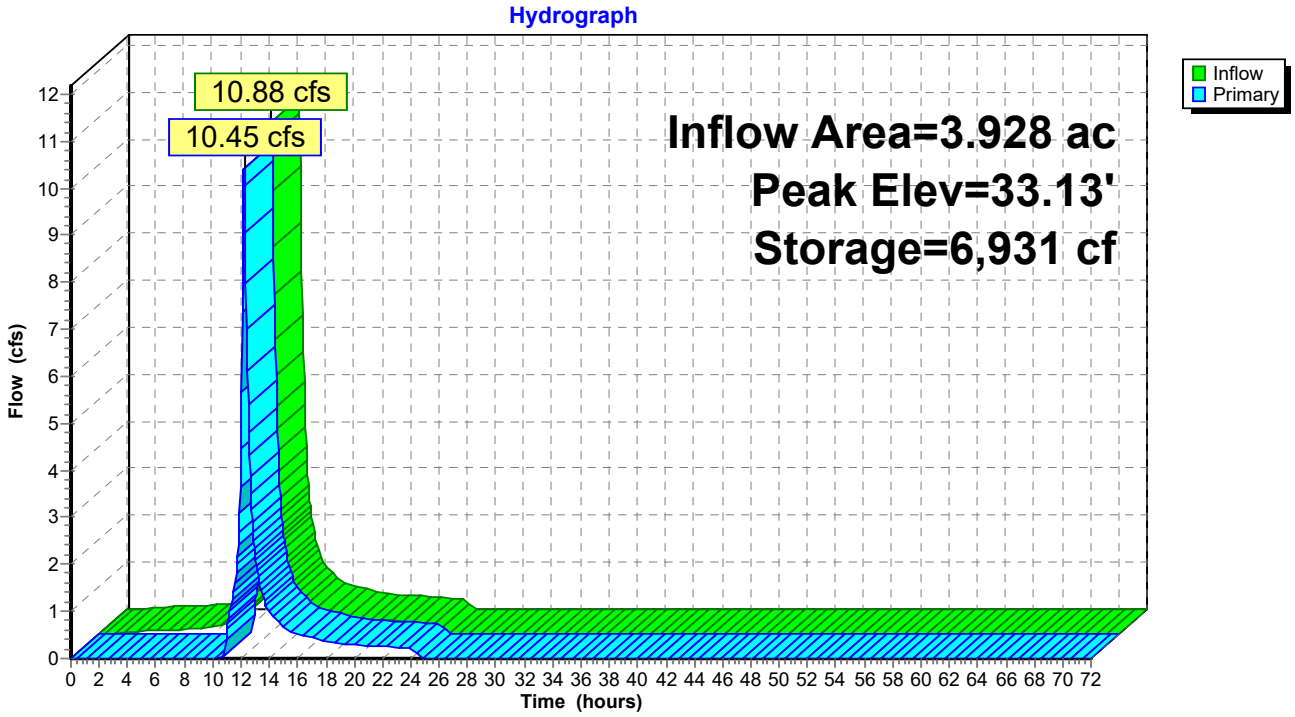
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	17,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,000	0	0
32.00	3,500	1,625	1,625
33.00	5,600	4,550	6,175
34.00	7,800	6,700	12,875
34.50	9,400	4,300	17,175

Device	Routing	Invert	Outlet Devices
#1	Primary	32.79'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.31 cfs @ 12.21 hrs HW=33.13' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 10.31 cfs @ 1.90 fps)

Pond 13P: Basin 7



Summary for Subcatchment 14S: Basin 7 - Impervious

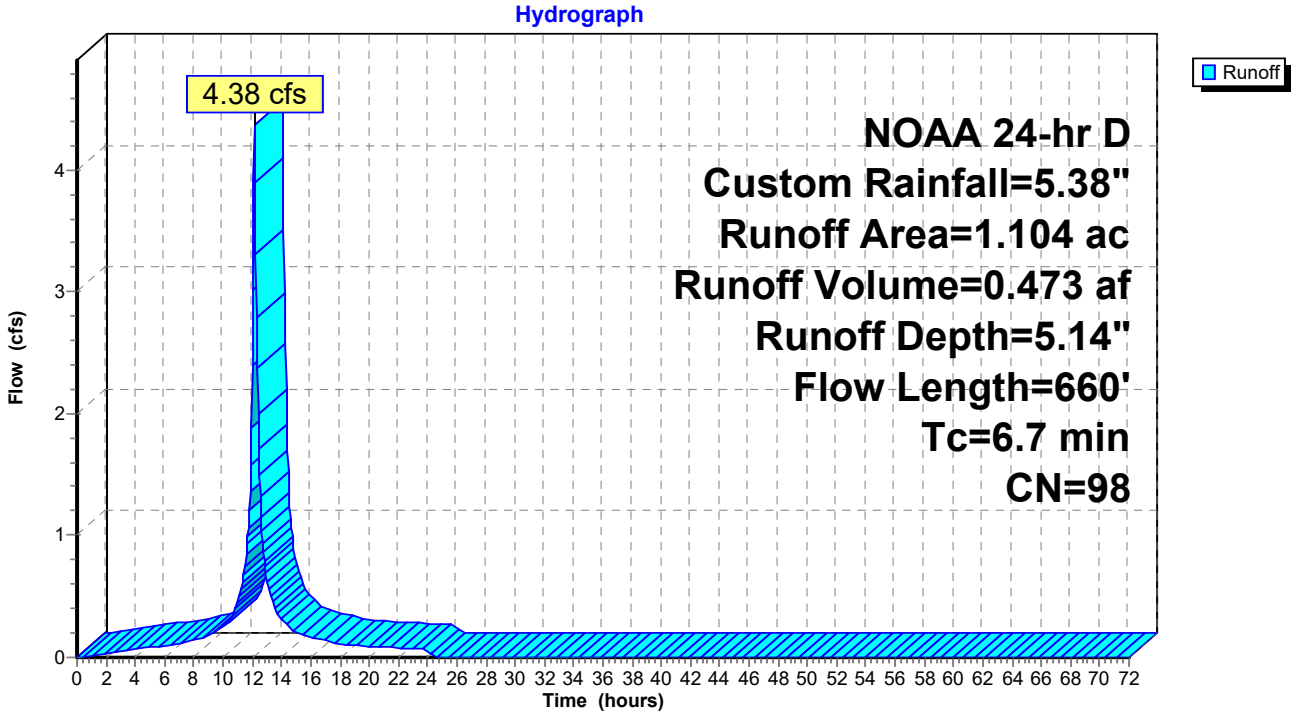
Runoff = 4.38 cfs @ 12.15 hrs, Volume= 0.473 af, Depth= 5.14"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.104	98	Impervious
	1.104		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
4.9	500	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	60	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	660	Total			

Subcatchment 14S: Basin 7 - Impervious

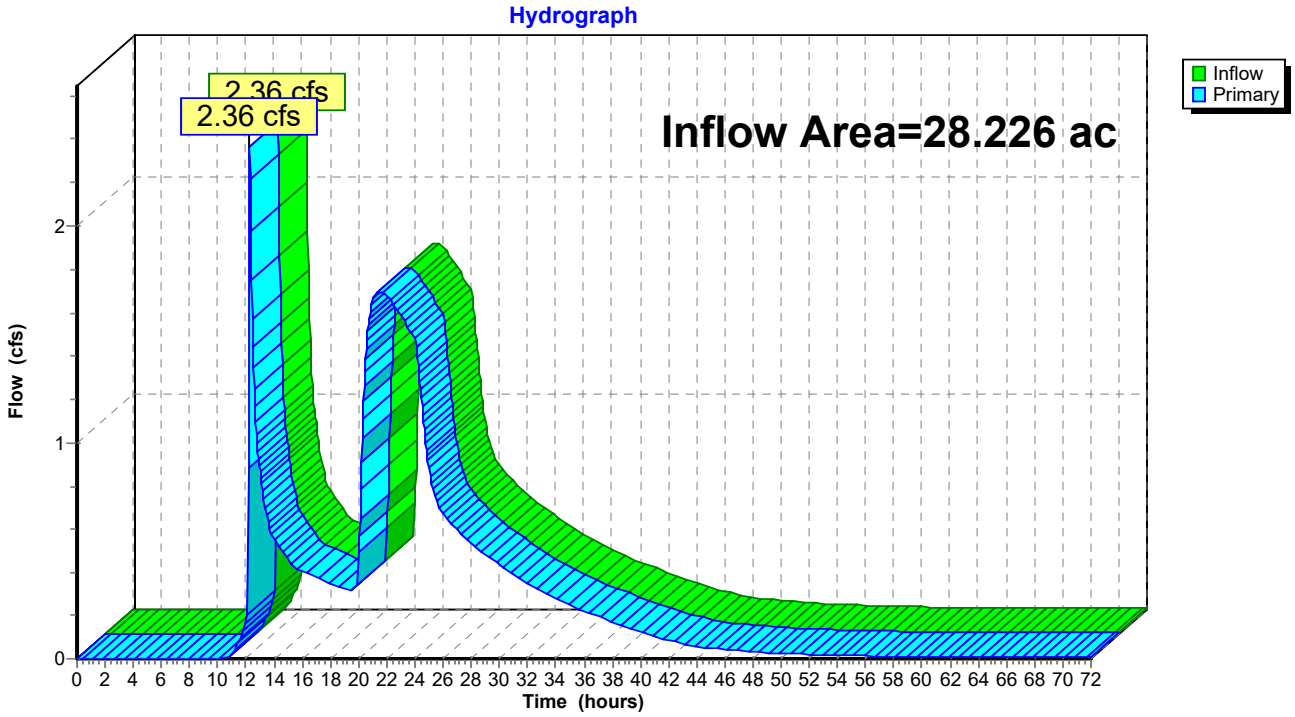


Summary for Link 15L: Willis Creek

Inflow Area = 28.226 ac, 38.93% Impervious, Inflow Depth > 0.63" for Custom event
Inflow = 2.36 cfs @ 12.26 hrs, Volume= 1.480 af
Primary = 2.36 cfs @ 12.26 hrs, Volume= 1.480 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 15L: Willis Creek



Summary for Subcatchment 15S: Basin 7 - Pervious

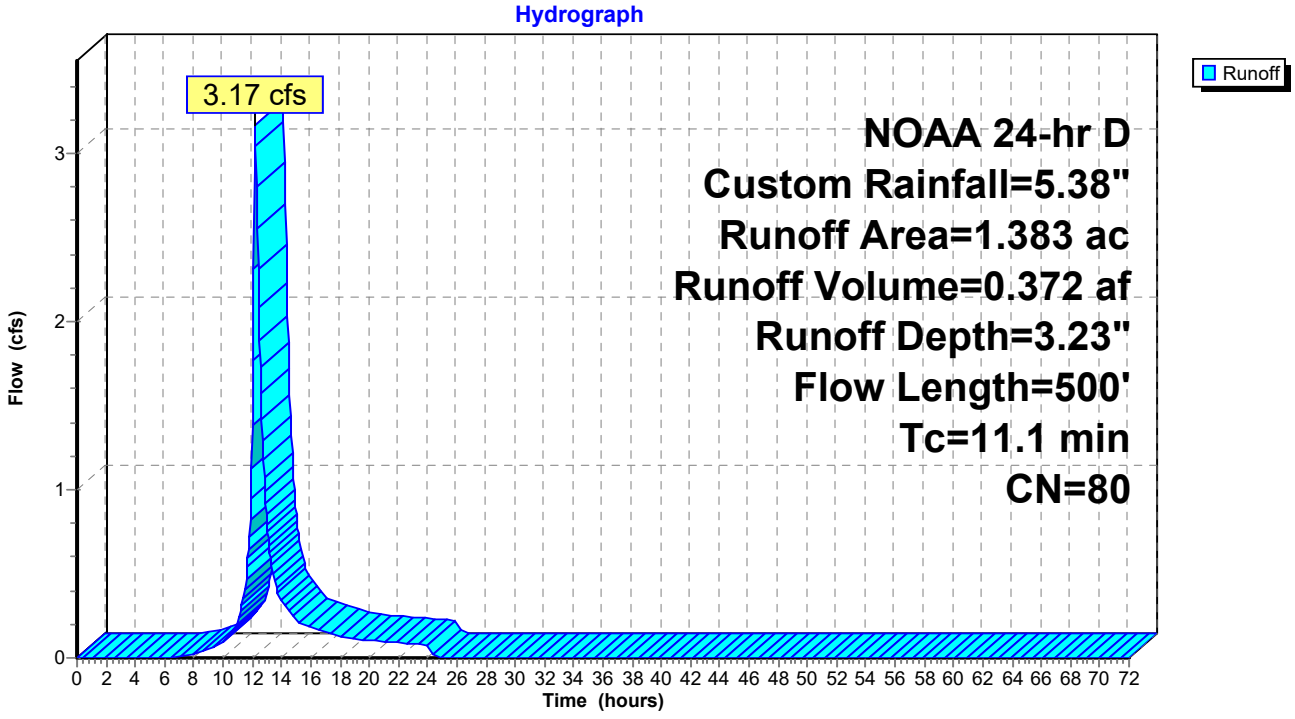
Runoff = 3.17 cfs @ 12.21 hrs, Volume= 0.372 af, Depth= 3.23"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.383	80	>75% Grass cover, Good, HSG D
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	80	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	20	0.0070	0.74		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
3.9	400	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
11.1	500	Total			

Subcatchment 15S: Basin 7 - Pervious



Summary for Pond 16P: Basin 9

Inflow Area = 7.133 ac, 41.50% Impervious, Inflow Depth = 2.58" for Custom event
Inflow = 18.61 cfs @ 12.11 hrs, Volume= 1.534 af
Outflow = 15.00 cfs @ 12.16 hrs, Volume= 1.437 af, Atten= 19%, Lag= 3.3 min
Primary = 15.00 cfs @ 12.16 hrs, Volume= 1.437 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.37' @ 12.16 hrs Surf.Area= 5,738 sf Storage= 6,616 cf

Plug-Flow detention time= 120.0 min calculated for 1.437 af (94% of inflow)
Center-of-Mass det. time= 40.4 min (1,008.1 - 967.7)

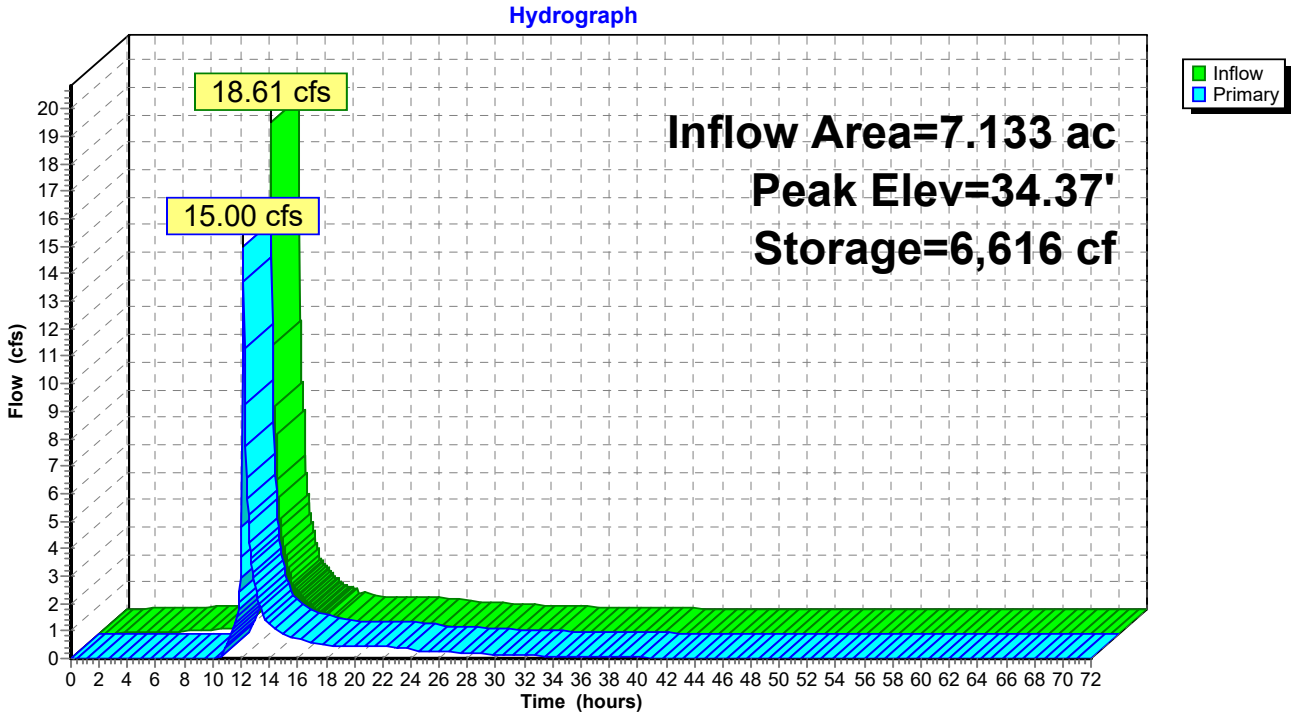
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,900	0	0
34.00	5,300	4,600	4,600
35.00	6,500	5,900	10,500
36.00	8,000	7,250	17,750
36.50	9,700	4,425	22,175

Device	Routing	Invert	Outlet Devices
#1	Primary	33.93'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=14.46 cfs @ 12.16 hrs HW=34.35' (Free Discharge)
1=Orifice/Grate (Weir Controls 14.46 cfs @ 2.13 fps)

Pond 16P: Basin 9



Summary for Subcatchment 17S: Basin 9 - Impervious

[49] Hint: Tc<2dt may require smaller dt

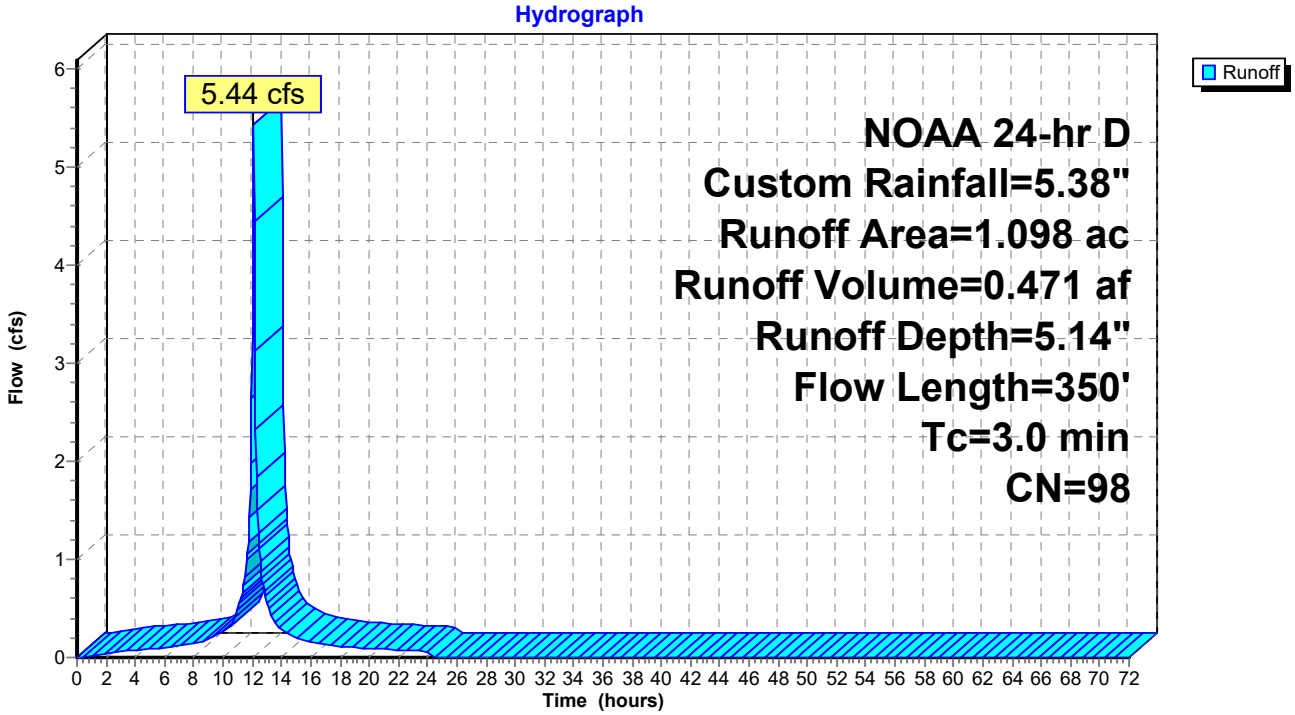
Runoff = 5.44 cfs @ 12.10 hrs, Volume= 0.471 af, Depth= 5.14"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.098	98	Impervious
	1.098		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.0	350	Total			

Subcatchment 17S: Basin 9 - Impervious



Summary for Subcatchment 18S: Basin 9 - Pervious

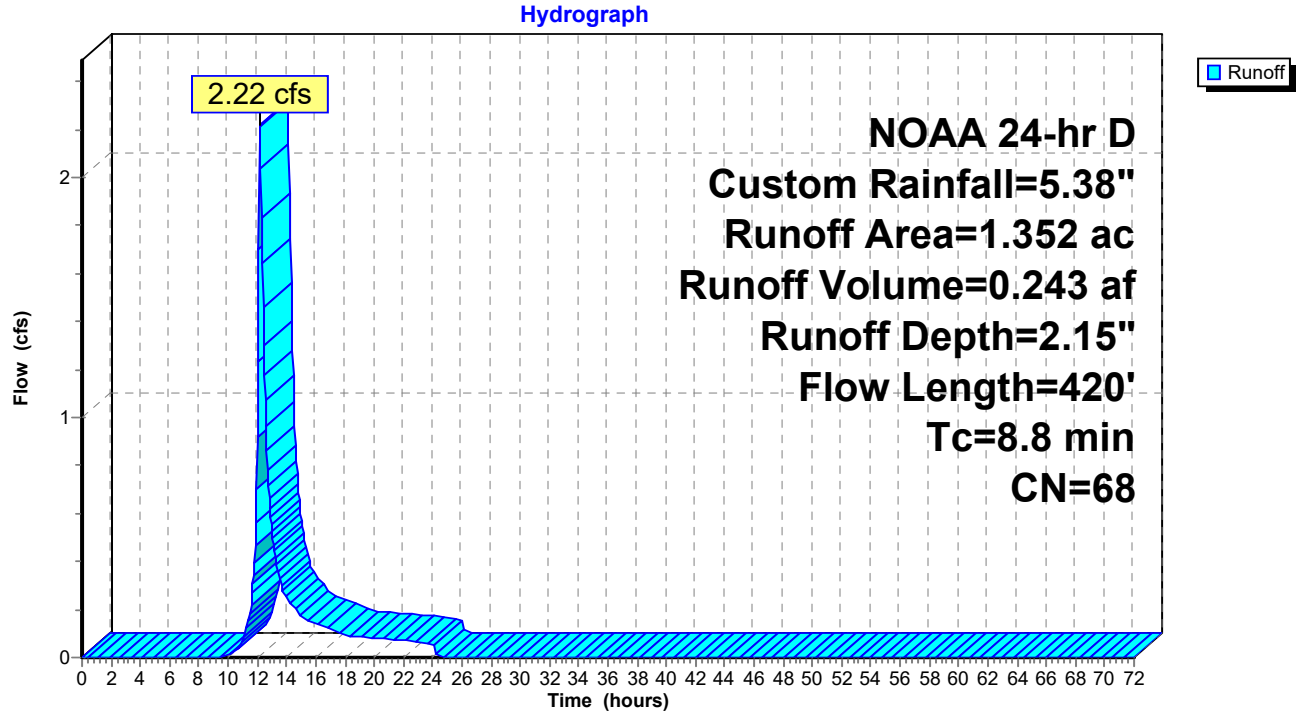
Runoff = 2.22 cfs @ 12.19 hrs, Volume= 0.243 af, Depth= 2.15"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
0.946	80	>75% Grass cover, Good, HSG D
0.406	39	>75% Grass cover, Good, HSG A
1.352	68	Weighted Average
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
1.7	170	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, D to E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	420	Total			

Subcatchment 18S: Basin 9 - Pervious



Summary for Pond 19P: Basin 10

[93] Warning: Storage range exceeded by 2,248.99'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=51)
[81] Warning: Exceeded Pond 22P by 2,236.65' @ 12.10 hrs

Inflow Area = 4.683 ac, 39.76% Impervious, Inflow Depth = 2.31" for Custom event
Inflow = 8.82 cfs @ 12.12 hrs, Volume= 0.901 af
Outflow = 11.42 cfs @ 12.11 hrs, Volume= 0.821 af, Atten= 0%, Lag= 0.0 min
Primary = 11.42 cfs @ 12.11 hrs, Volume= 0.821 af
Routed to Pond 16P : Basin 9

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 2,287.49' @ 12.10 hrs Surf.Area= 8,000 sf Storage= 12,700 cf

Plug-Flow detention time= 373.1 min calculated for 0.821 af (91% of inflow)
Center-of-Mass det. time= 324.3 min (1,123.5 - 799.3)

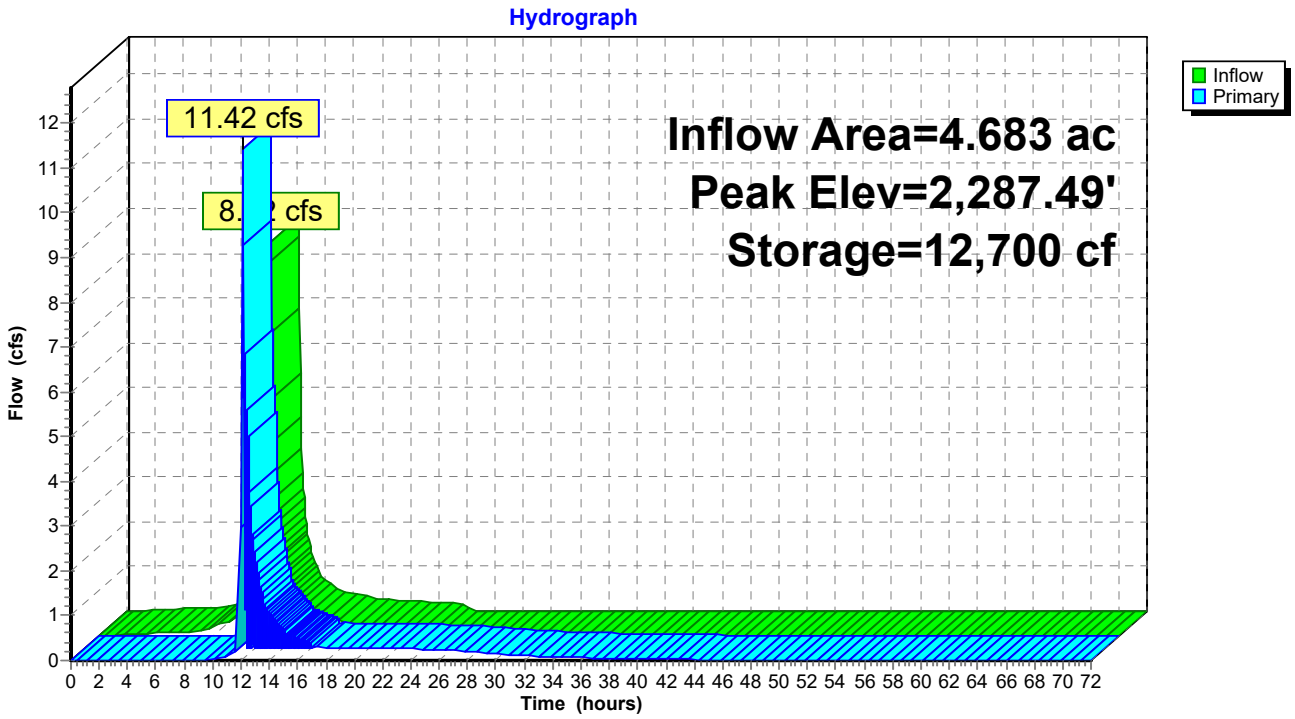
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	12,700 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,700	0	0
37.00	4,400	3,550	3,550
38.00	6,600	5,500	9,050
38.50	8,000	3,650	12,700

Device	Routing	Invert	Outlet Devices
#1	Primary	36.97'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.46 cfs @ 12.11 hrs HW=1,995.97' (Free Discharge)
1=Orifice/Grate (Orifice Controls 10.46 cfs @ 213.11 fps)

Pond 19P: Basin 10



Summary for Subcatchment 20S: Basin 10 - Impervious

[49] Hint: Tc<2dt may require smaller dt

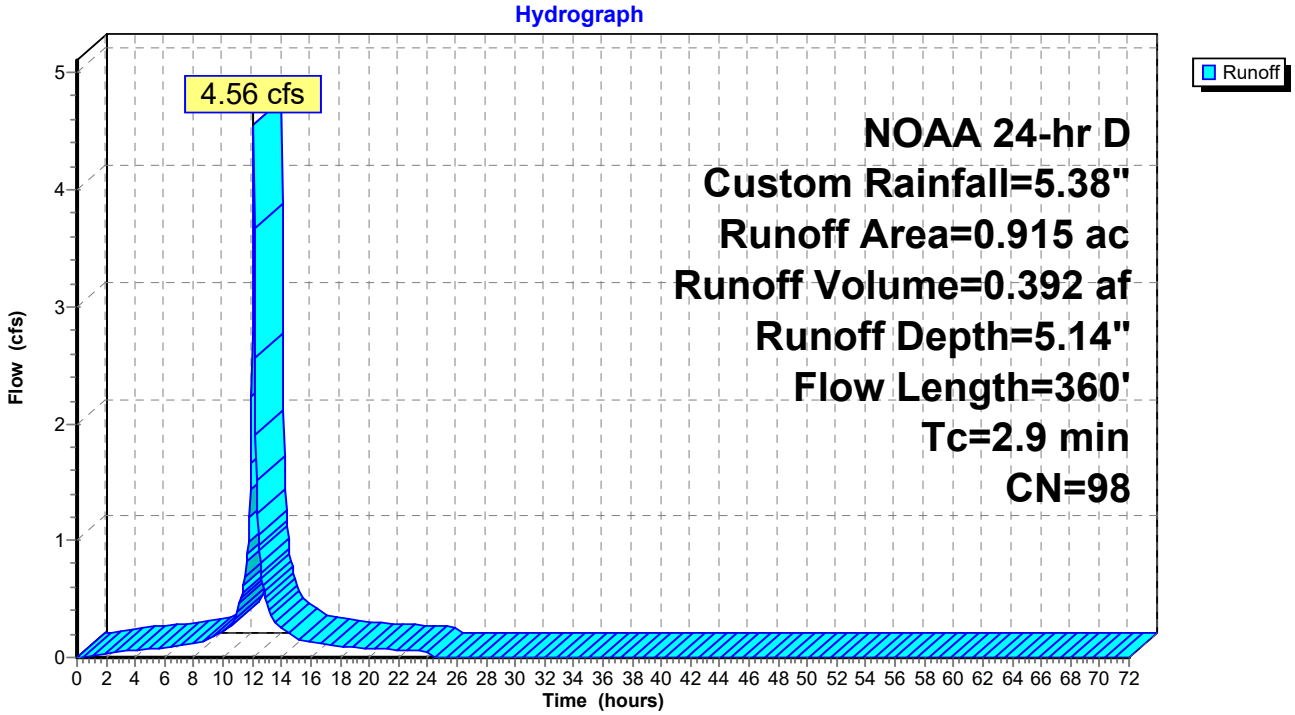
Runoff = 4.56 cfs @ 12.10 hrs, Volume= 0.392 af, Depth= 5.14"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.6	60	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	360	Total			

Subcatchment 20S: Basin 10 - Impervious



Summary for Subcatchment 21S: Basin 10 - Pervious

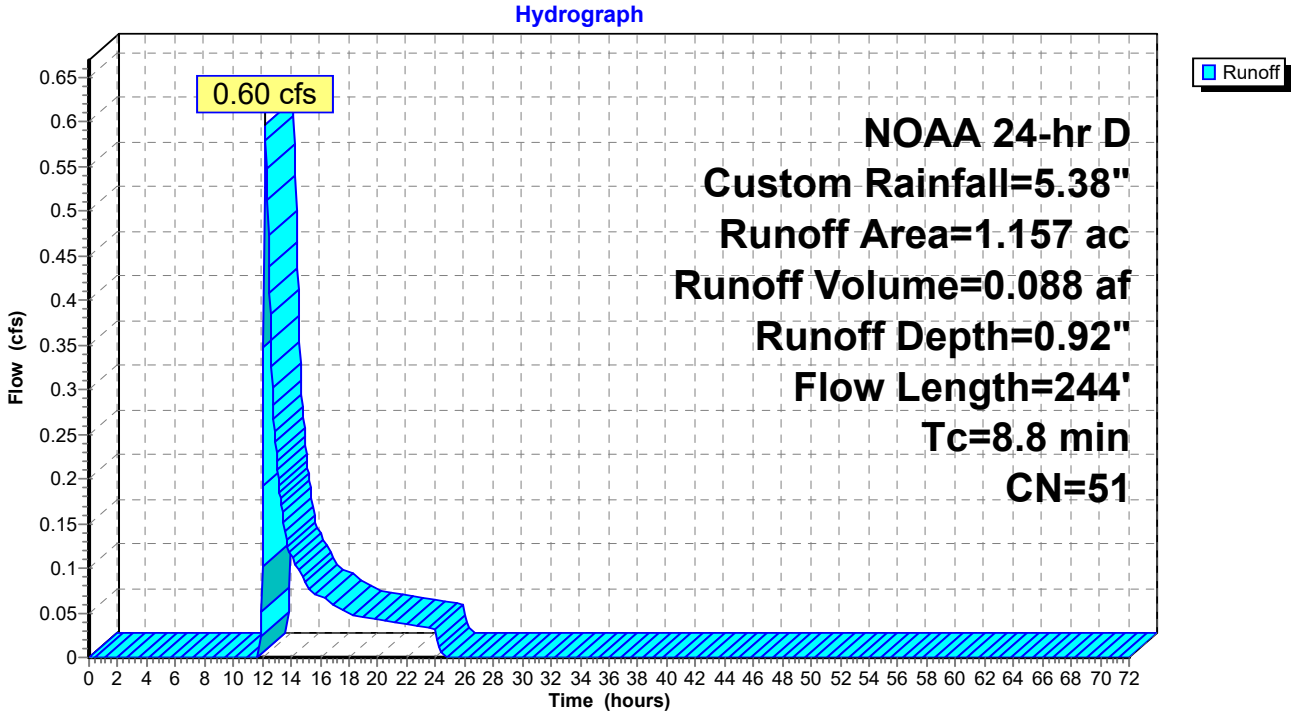
Runoff = 0.60 cfs @ 12.22 hrs, Volume= 0.088 af, Depth= 0.92"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
0.347	80	>75% Grass cover, Good, HSG D
0.810	39	>75% Grass cover, Good, HSG A
1.157	51	Weighted Average
1.157		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	150	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	244	Total			

Subcatchment 21S: Basin 10 - Pervious



Summary for Pond 22P: Basin 11

Inflow Area = 2.611 ac, 36.27% Impervious, Inflow Depth = 2.10" for Custom event
Inflow = 4.42 cfs @ 12.11 hrs, Volume= 0.457 af
Outflow = 4.16 cfs @ 12.15 hrs, Volume= 0.420 af, Atten= 6%, Lag= 2.1 min
Primary = 4.16 cfs @ 12.15 hrs, Volume= 0.420 af
Routed to Pond 19P : Basin 10

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.68' @ 12.15 hrs Surf.Area= 3,840 sf Storage= 2,288 cf

Plug-Flow detention time= 91.9 min calculated for 0.420 af (92% of inflow)
Center-of-Mass det. time= 45.7 min (821.5 - 775.7)

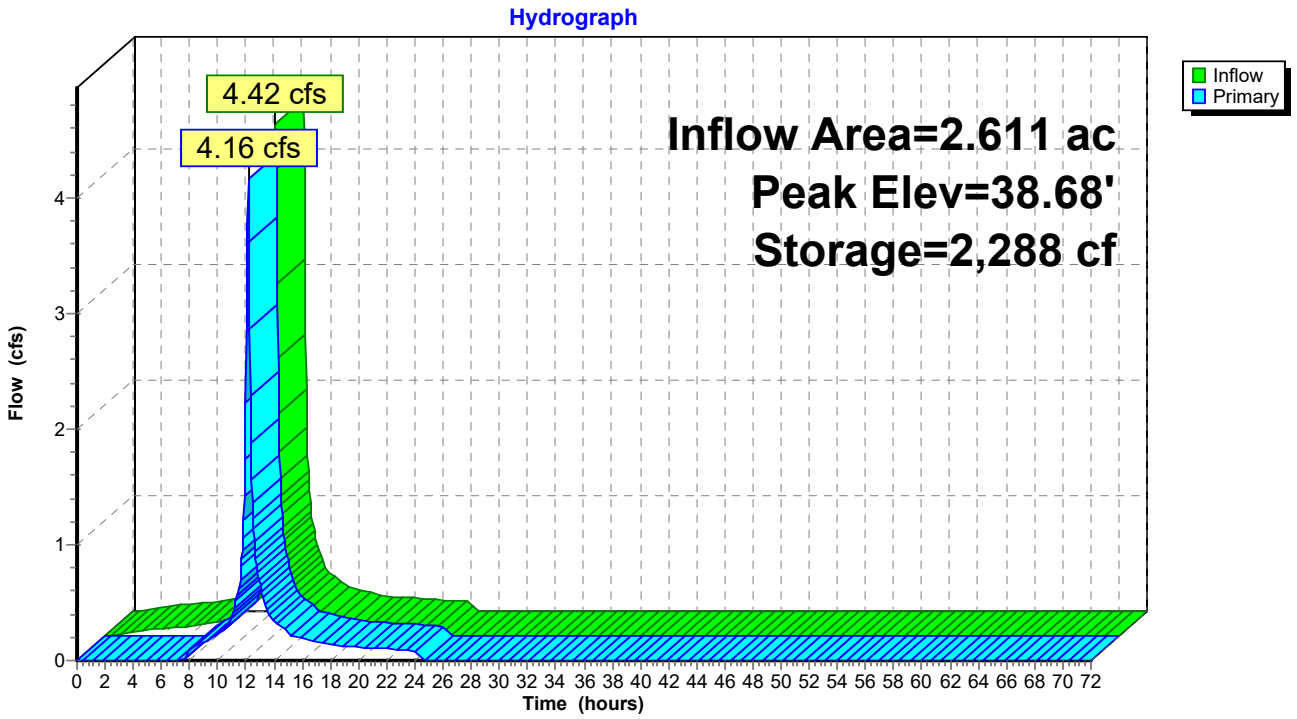
Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	9,170 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	2,840	0	0
39.00	4,300	3,570	3,570
40.00	6,900	5,600	9,170

Device	Routing	Invert	Outlet Devices
#1	Primary	38.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.13 cfs @ 12.15 hrs HW=38.68' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 4.13 cfs @ 1.40 fps)

Pond 22P: Basin 11



Summary for Subcatchment 23S: Basin 11 - Impervious

[49] Hint: Tc<2dt may require smaller dt

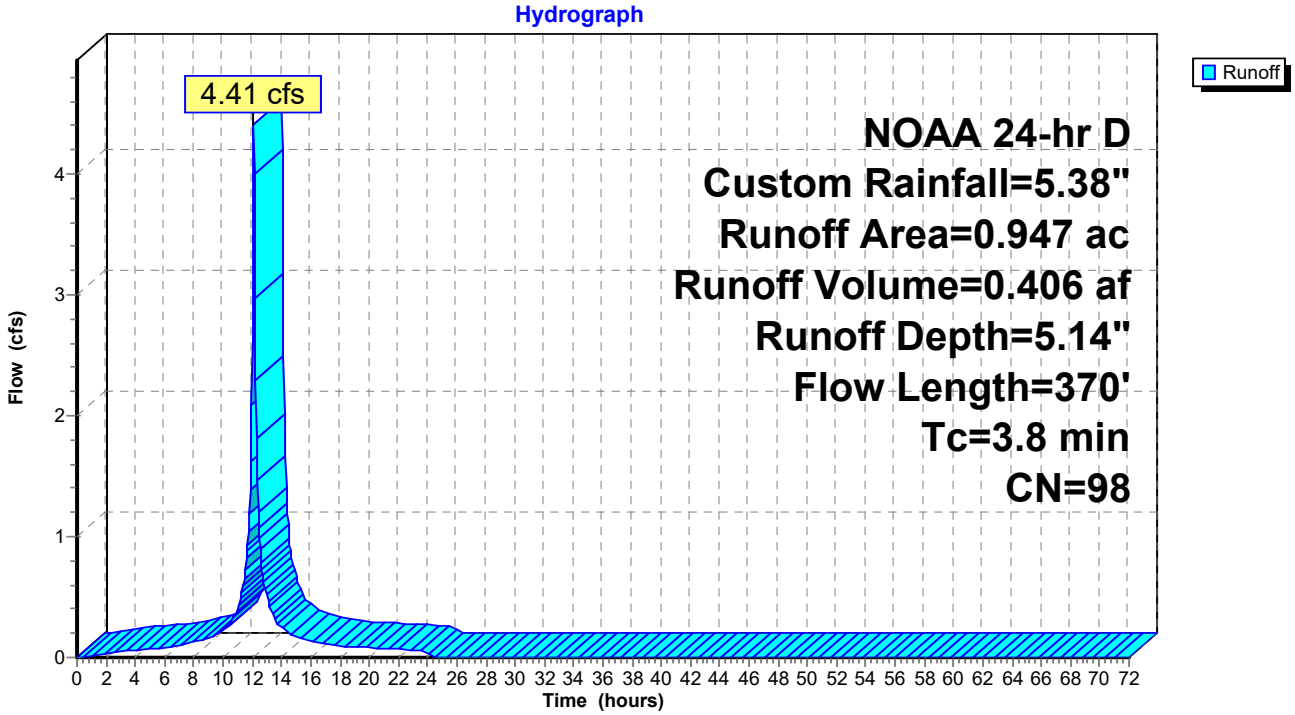
Runoff = 4.41 cfs @ 12.11 hrs, Volume= 0.406 af, Depth= 5.14"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.947	98	Impervious
	0.947		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	70	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.8	370	Total			

Subcatchment 23S: Basin 11 - Impervious



Summary for Subcatchment 24S: Basin 11 - Pervious

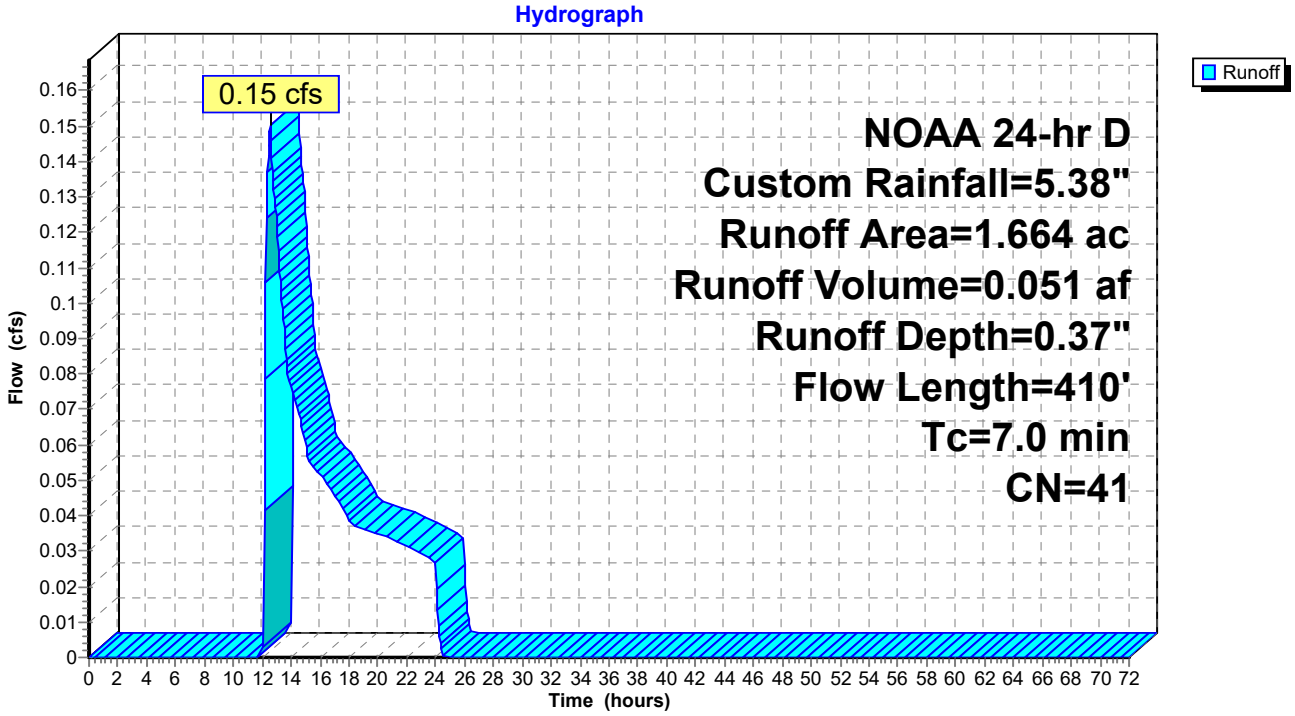
Runoff = 0.15 cfs @ 12.54 hrs, Volume= 0.051 af, Depth= 0.37"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
0.083	80	>75% Grass cover, Good, HSG D
1.581	39	>75% Grass cover, Good, HSG A
1.664	41	Weighted Average
1.664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	60	0.0200	0.17		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.0	410	Total			

Subcatchment 24S: Basin 11 - Pervious



Summary for Pond 25P: Basin 12

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 1.31" for Custom event
Inflow = 2.24 cfs @ 12.10 hrs, Volume= 0.232 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 40P : Wetlands Depression

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 39.92' @ 25.05 hrs Surf.Area= 12,319 sf Storage= 10,119 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

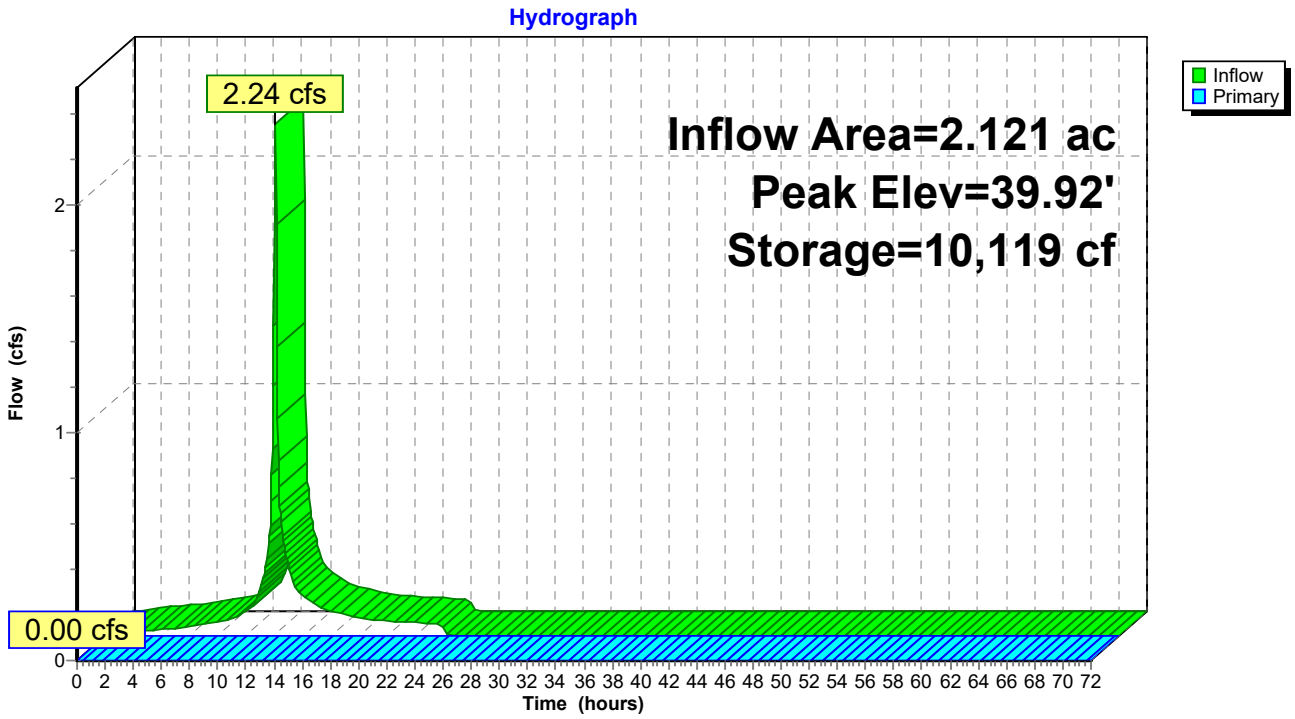
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	52,425 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	9,700	0	0
40.00	12,550	11,125	11,125
41.00	15,600	14,075	25,200
42.00	18,900	17,250	42,450
42.50	21,000	9,975	52,425

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=39.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 25P: Basin 12



Summary for Subcatchment 26S: Basin 12 - Impervious

[49] Hint: Tc<2dt may require smaller dt

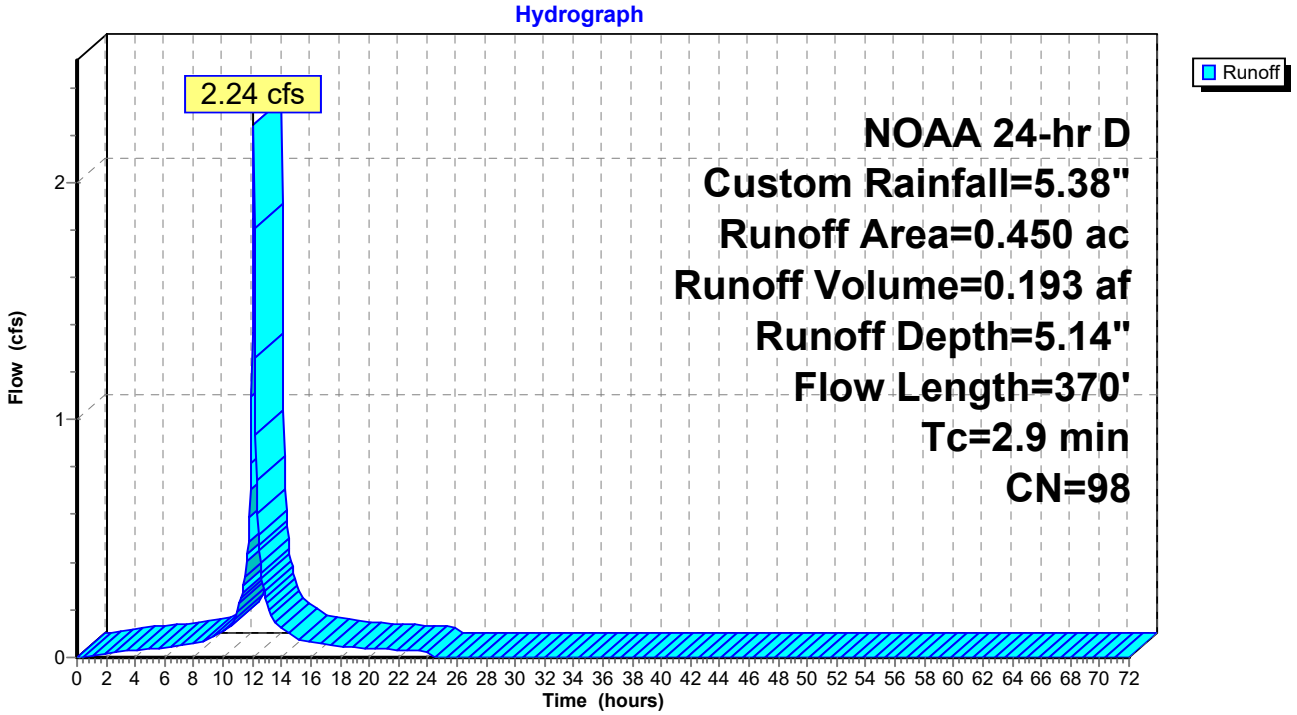
Runoff = 2.24 cfs @ 12.10 hrs, Volume= 0.193 af, Depth= 5.14"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.450	98	Impervious
	0.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	50	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.8	220	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	370	Total			

Subcatchment 26S: Basin 12 - Impervious



Summary for Subcatchment 27S: Basin 12 - Pervious

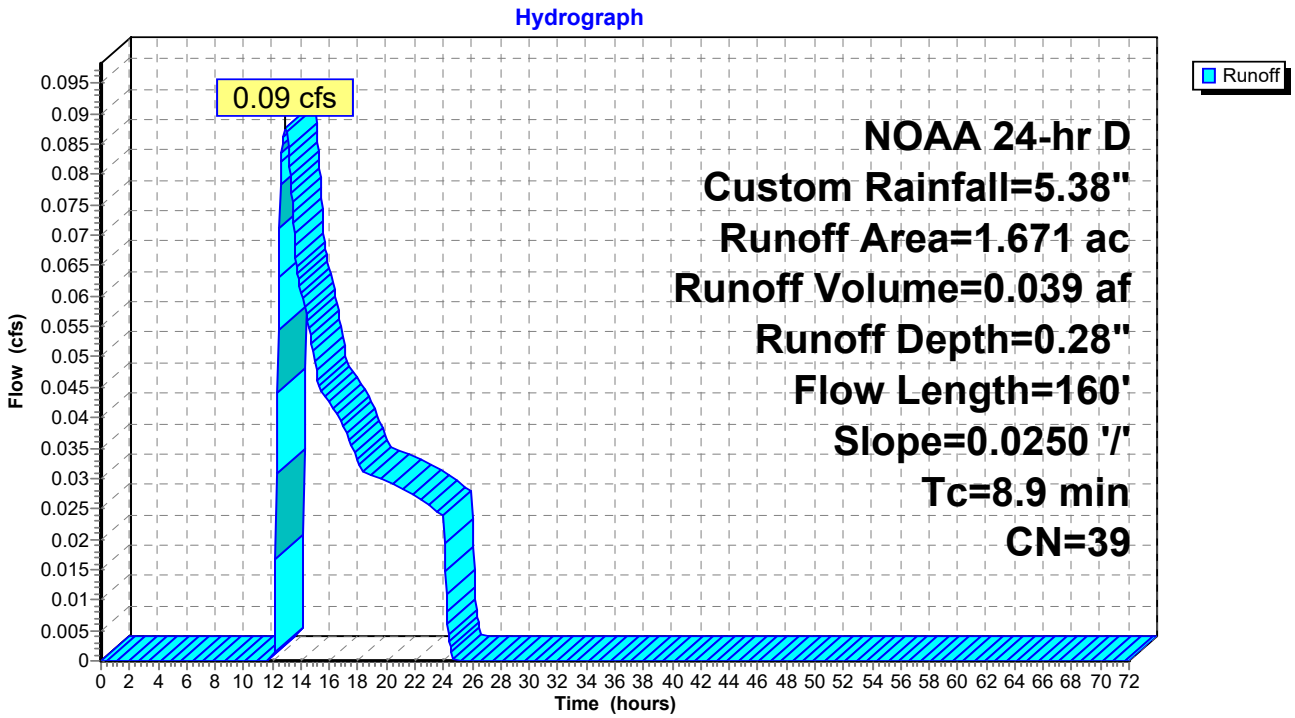
Runoff = 0.09 cfs @ 12.89 hrs, Volume= 0.039 af, Depth= 0.28"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.671	39	>75% Grass cover, Good, HSG A
1.671		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.9	60	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
8.9	160	Total			

Subcatchment 27S: Basin 12 - Pervious



Summary for Pond 29P: Basin 6

Inflow Area = 1.441 ac, 34.14% Impervious, Inflow Depth = 3.12" for Custom event
Inflow = 3.69 cfs @ 12.15 hrs, Volume= 0.375 af
Outflow = 3.53 cfs @ 12.18 hrs, Volume= 0.331 af, Atten= 4%, Lag= 1.7 min
Primary = 3.53 cfs @ 12.18 hrs, Volume= 0.331 af
Routed to Pond 13P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.01' @ 12.18 hrs Surf.Area= 2,959 sf Storage= 2,367 cf

Plug-Flow detention time= 108.6 min calculated for 0.331 af (88% of inflow)
Center-of-Mass det. time= 48.7 min (851.6 - 802.9)

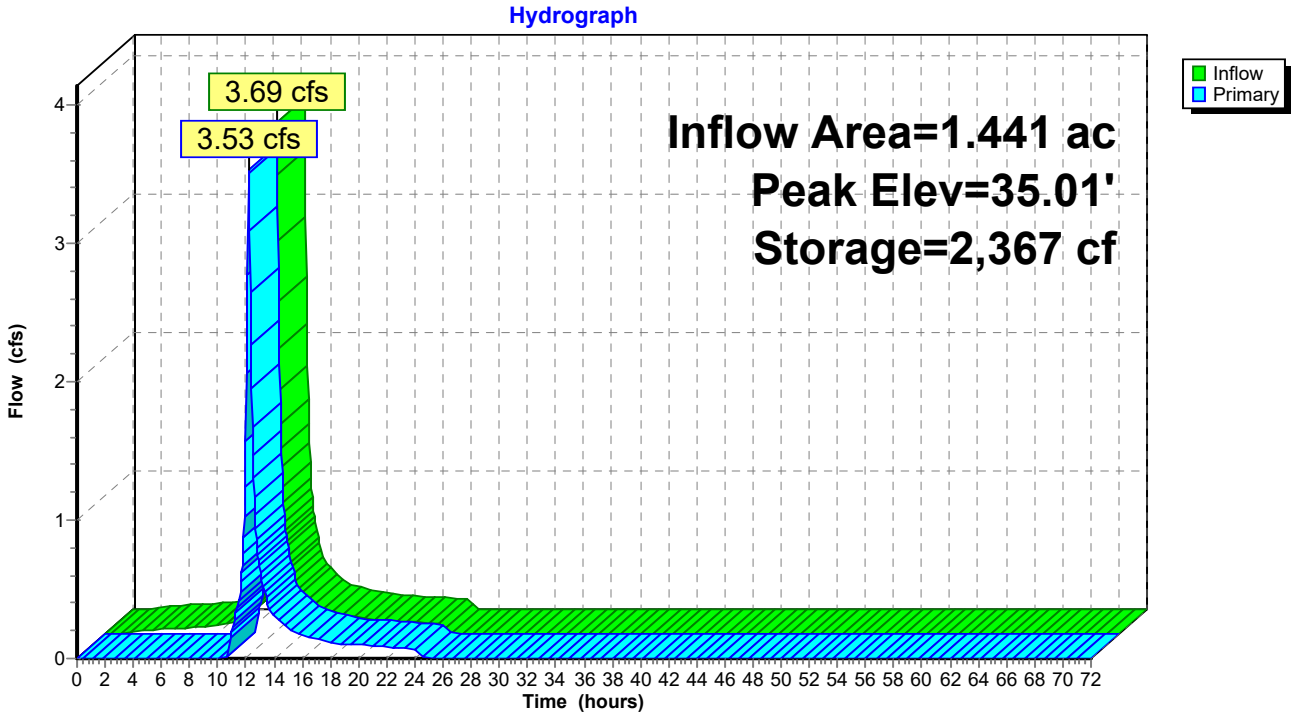
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	4,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	1,750	0	0
35.00	2,950	2,350	2,350
35.50	3,700	1,663	4,013

Device	Routing	Invert	Outlet Devices
#1	Primary	34.84'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.48 cfs @ 12.18 hrs HW=35.00' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.48 cfs @ 1.32 fps)

Pond 29P: Basin 6



Summary for Subcatchment 30S: Basin 6 - Impervious

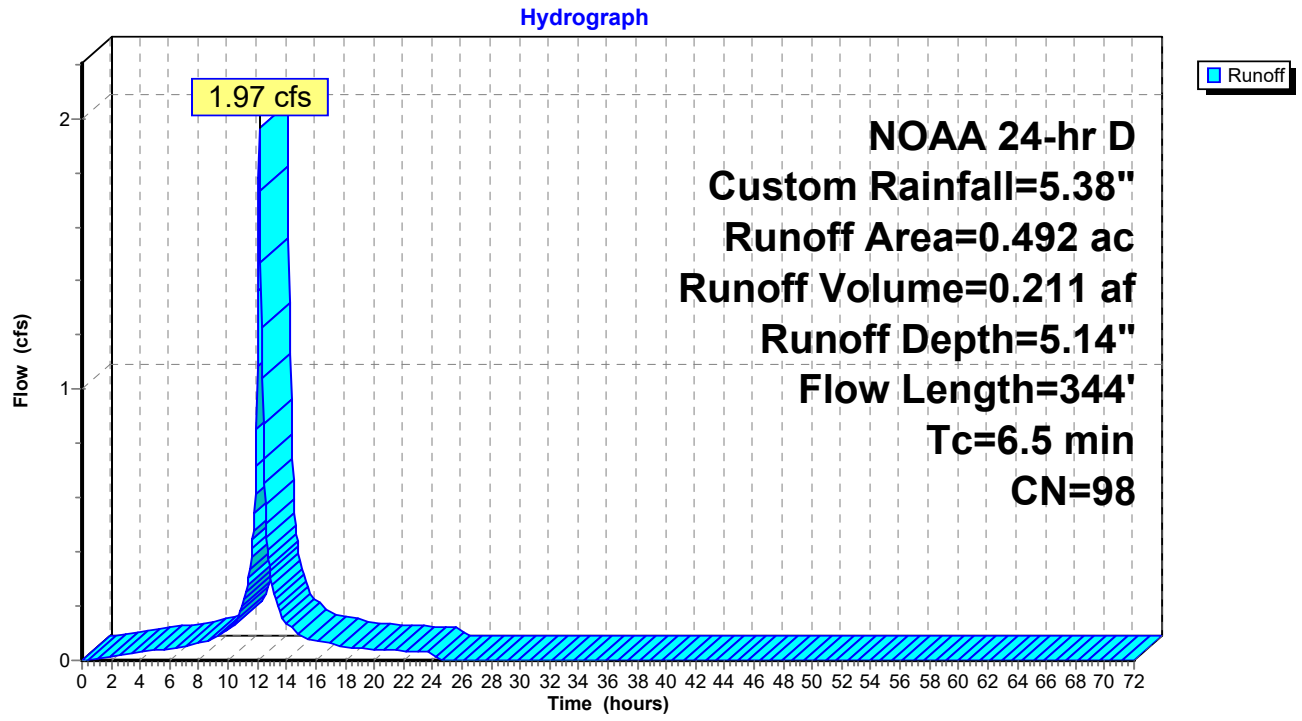
Runoff = 1.97 cfs @ 12.15 hrs, Volume= 0.211 af, Depth= 5.14"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.492	98	Impervious
	0.492		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 30S: Basin 6 - Impervious



Summary for Subcatchment 32S: Basin 6 - Pervious

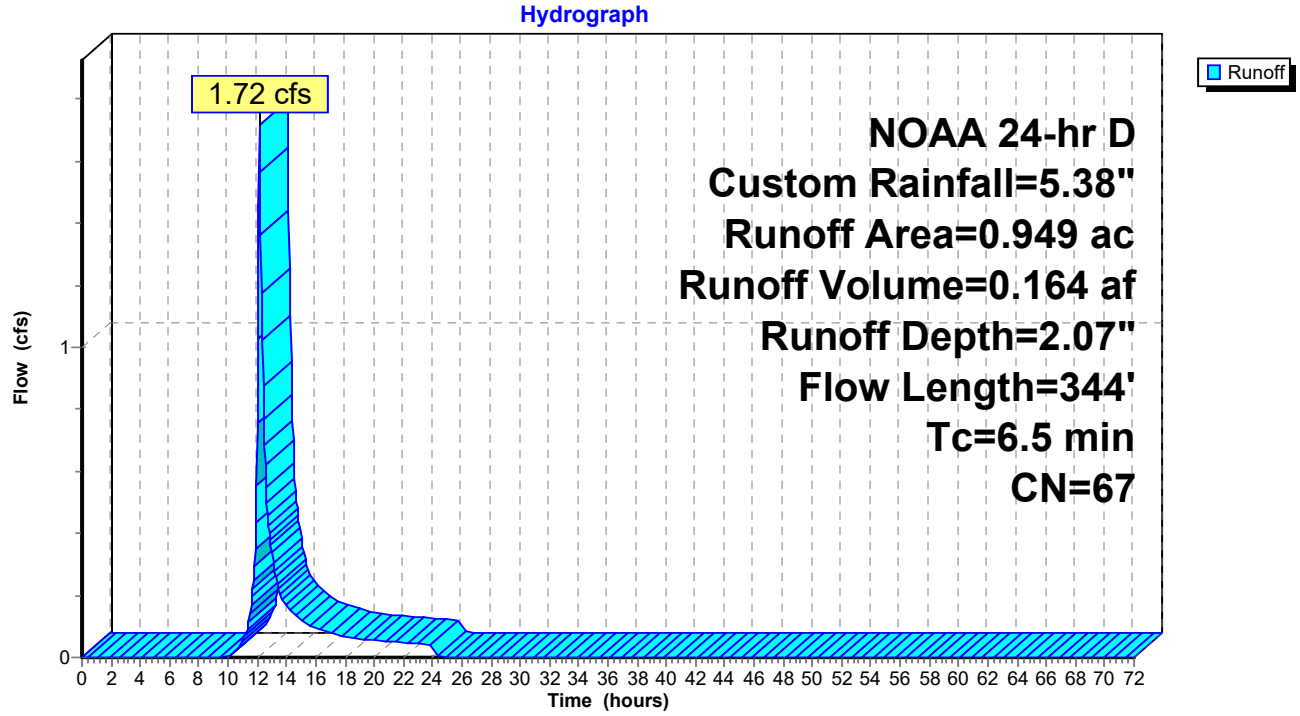
Runoff = 1.72 cfs @ 12.16 hrs, Volume= 0.164 af, Depth= 2.07"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
0.637	80	>75% Grass cover, Good, HSG D
0.312	39	>75% Grass cover, Good, HSG A
0.949	67	Weighted Average
0.949		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 32S: Basin 6 - Pervious



Summary for Pond 33P: Basin 8

Inflow Area = 3.061 ac, 36.82% Impervious, Inflow Depth = 3.93" for Custom event
Inflow = 8.73 cfs @ 12.15 hrs, Volume= 1.003 af
Outflow = 8.29 cfs @ 12.19 hrs, Volume= 0.876 af, Atten= 5%, Lag= 2.7 min
Primary = 8.29 cfs @ 12.19 hrs, Volume= 0.876 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.96' @ 12.19 hrs Surf.Area= 6,137 sf Storage= 7,245 cf

Plug-Flow detention time= 113.8 min calculated for 0.876 af (87% of inflow)
Center-of-Mass det. time= 50.9 min (846.8 - 795.9)

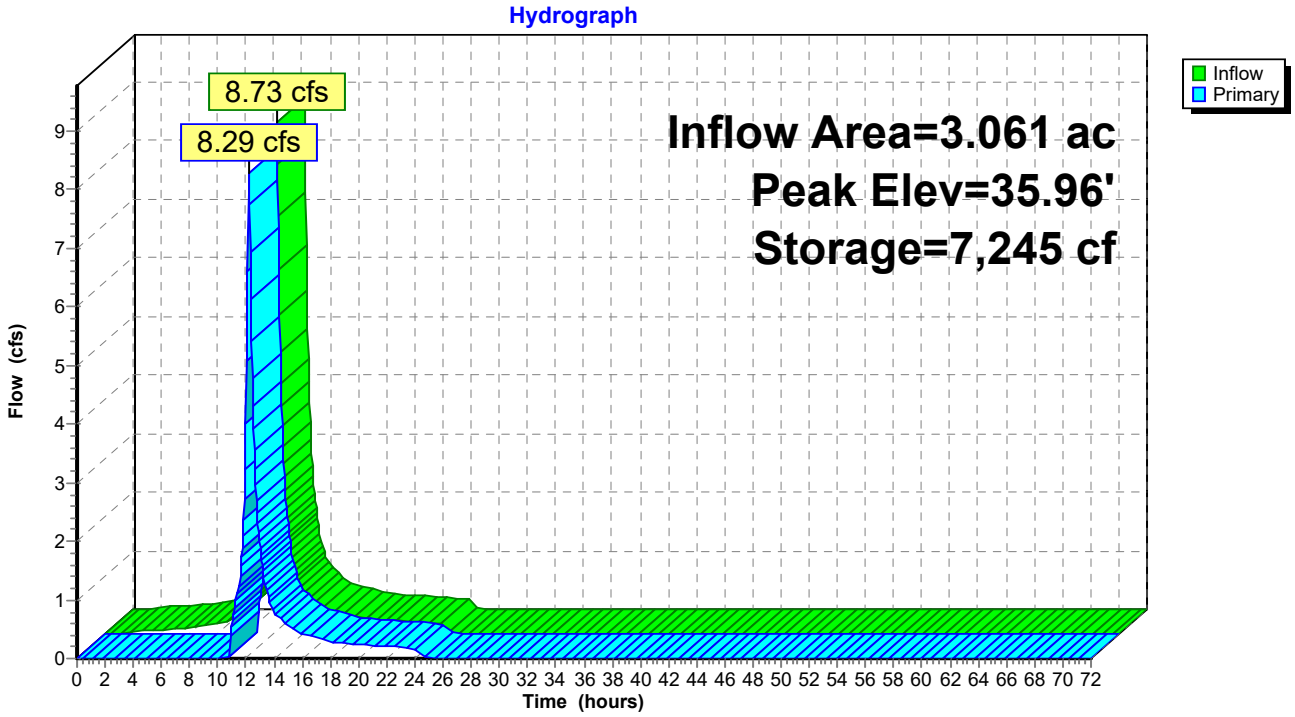
Volume	Invert	Avail.Storage	Storage Description
#1	34.50'	10,825 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.50	4,000	0	0
35.00	4,500	2,125	2,125
36.00	6,200	5,350	7,475
36.50	7,200	3,350	10,825

Device	Routing	Invert	Outlet Devices
#1	Primary	35.67'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.24 cfs @ 12.19 hrs HW=35.96' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 8.24 cfs @ 1.77 fps)

Pond 33P: Basin 8



Summary for Subcatchment 34S: Basin 8 - Impervious

[49] Hint: Tc<2dt may require smaller dt

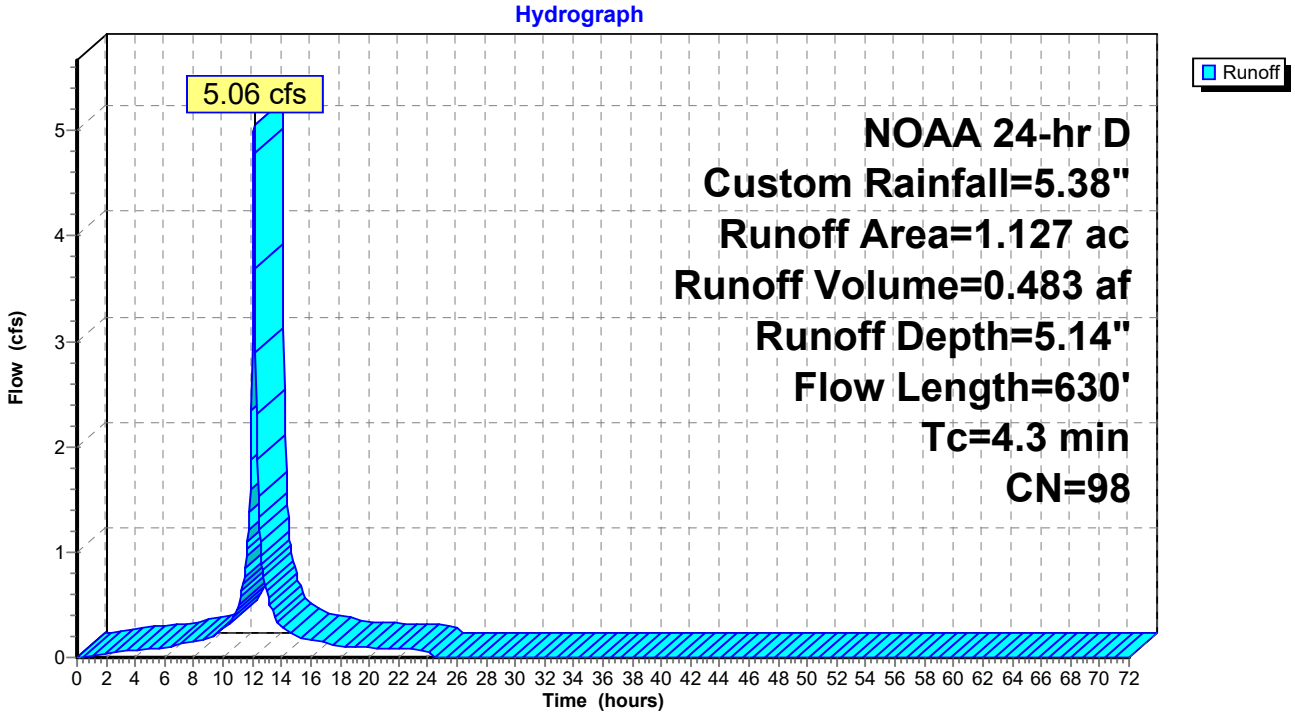
Runoff = 5.06 cfs @ 12.12 hrs, Volume= 0.483 af, Depth= 5.14"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	1.127	98	Impervious
	1.127		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.3	130	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.3	630	Total			

Subcatchment 34S: Basin 8 - Impervious



Summary for Subcatchment 35S: Basin 8 - Pervious

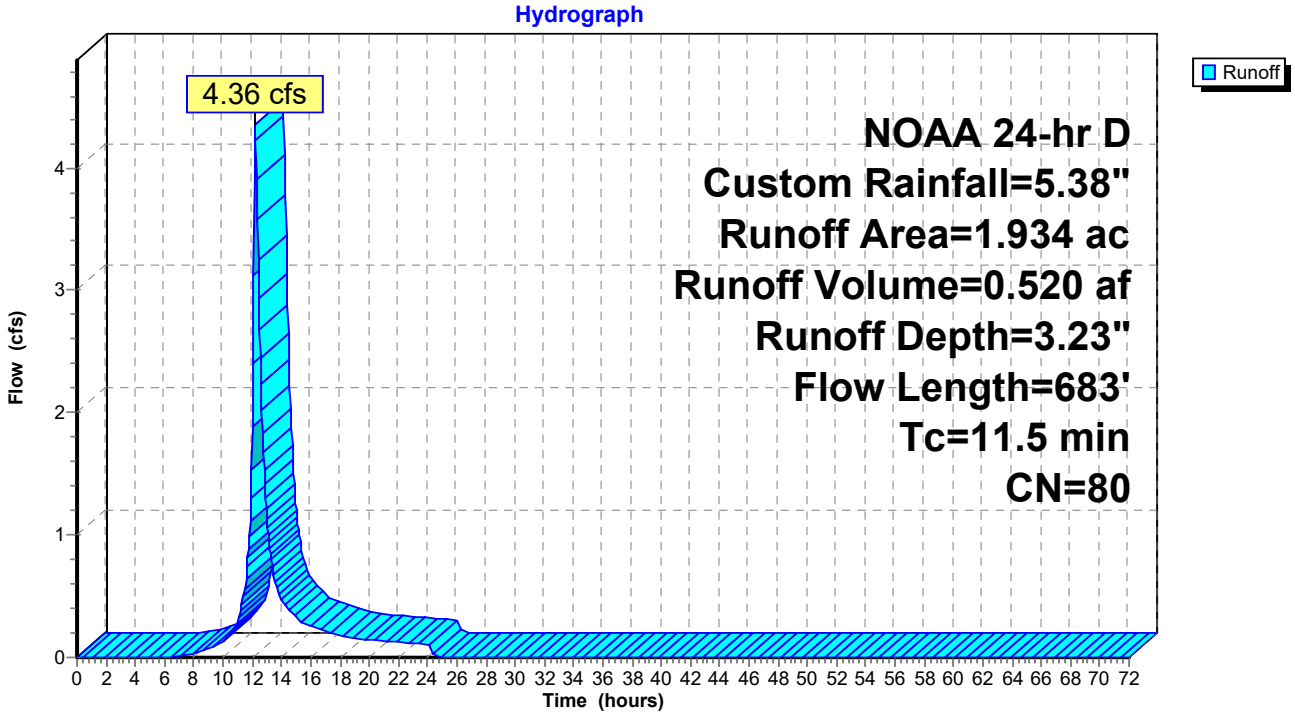
Runoff = 4.36 cfs @ 12.21 hrs, Volume= 0.520 af, Depth= 3.23"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.934	80	>75% Grass cover, Good, HSG D
1.934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	89	0.0200	0.99		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.7	500	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
11.5	683	Total			

Subcatchment 35S: Basin 8 - Pervious



Summary for Pond 40P: Wetlands Depression

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 0.00" for Custom event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.00' @ 0.00 hrs Surf.Area= 405 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

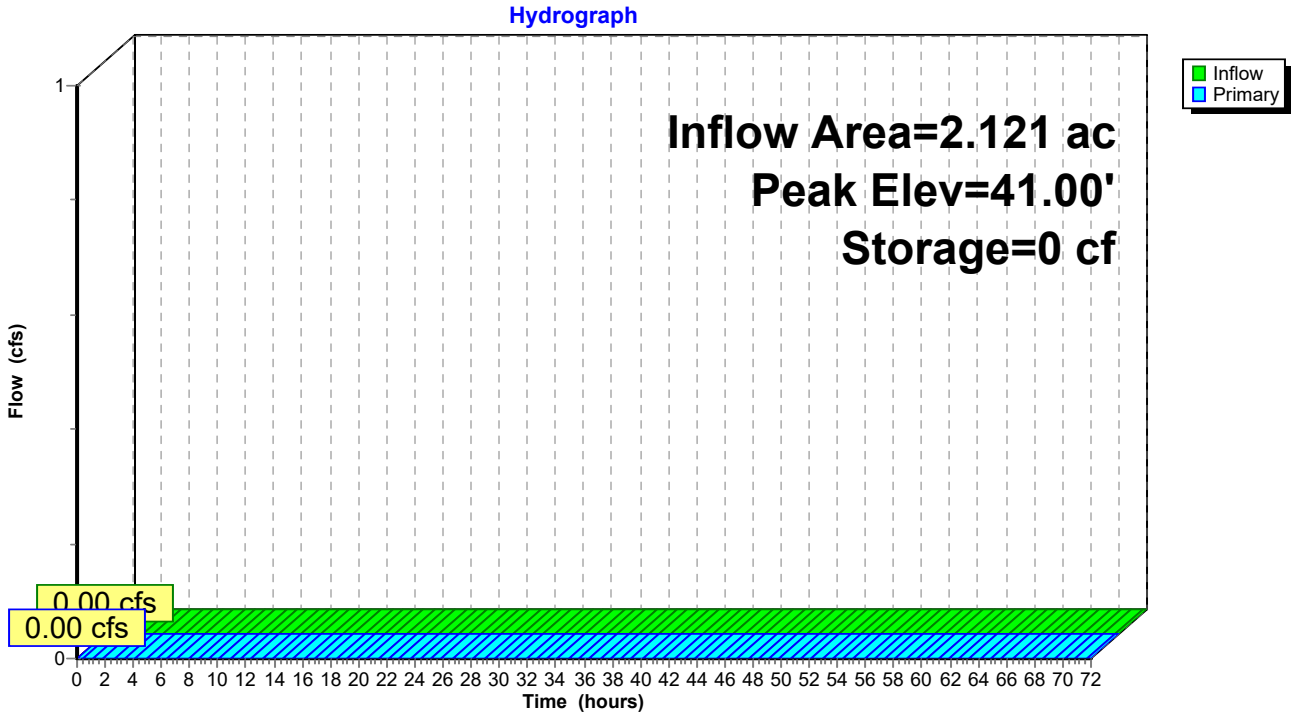
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 40P: Wetlands Depression



Summary for Pond 41P: Basin 13

Inflow Area = 2.042 ac, 32.27% Impervious, Inflow Depth = 1.85" for Custom event
Inflow = 2.86 cfs @ 12.13 hrs, Volume= 0.315 af
Outflow = 0.21 cfs @ 14.22 hrs, Volume= 0.256 af, Atten= 93%, Lag= 125.8 min
Primary = 0.21 cfs @ 14.22 hrs, Volume= 0.256 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.43' @ 14.22 hrs Surf.Area= 7,443 sf Storage= 8,489 cf

Plug-Flow detention time= 558.4 min calculated for 0.256 af (81% of inflow)
Center-of-Mass det. time= 469.6 min (1,247.0 - 777.4)

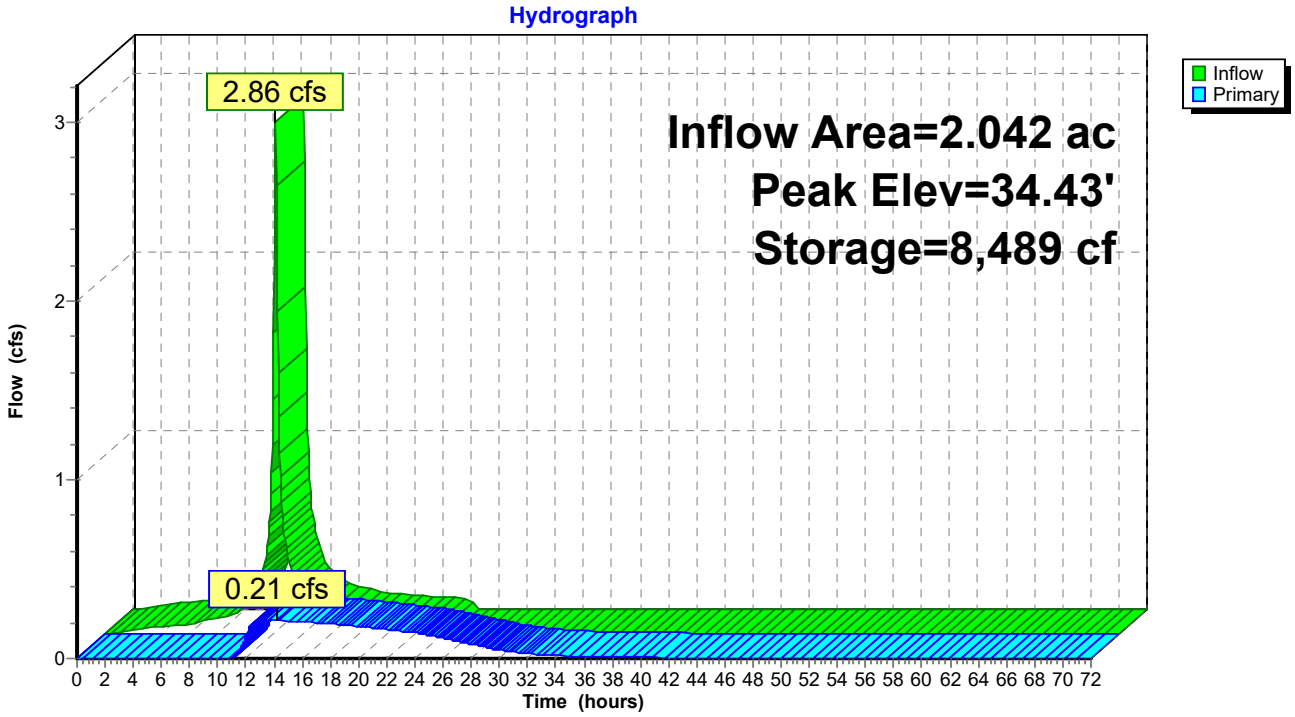
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	23,100 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	4,500	0	0
34.00	6,500	5,500	5,500
35.00	8,700	7,600	13,100
36.00	11,300	10,000	23,100

Device	Routing	Invert	Outlet Devices
#1	Primary	33.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 14.22 hrs HW=34.43' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.21 cfs @ 4.32 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 41P: Basin 13



Summary for Subcatchment 42S: Basin 13 - Impervious

[49] Hint: Tc<2dt may require smaller dt

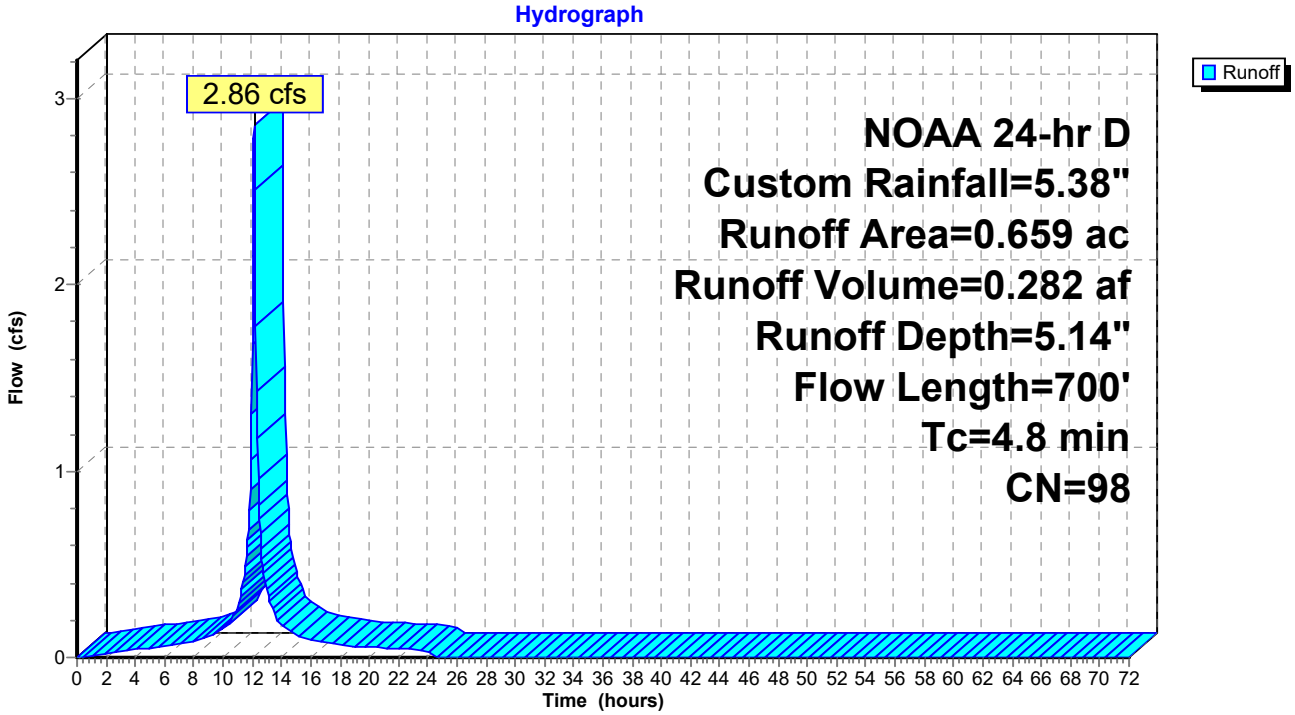
Runoff = 2.86 cfs @ 12.13 hrs, Volume= 0.282 af, Depth= 5.14"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.659	98	Impervious
	0.659		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.8	200	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.8	700	Total			

Subcatchment 42S: Basin 13 - Impervious



Summary for Subcatchment 43S: Basin 13 - Pervious

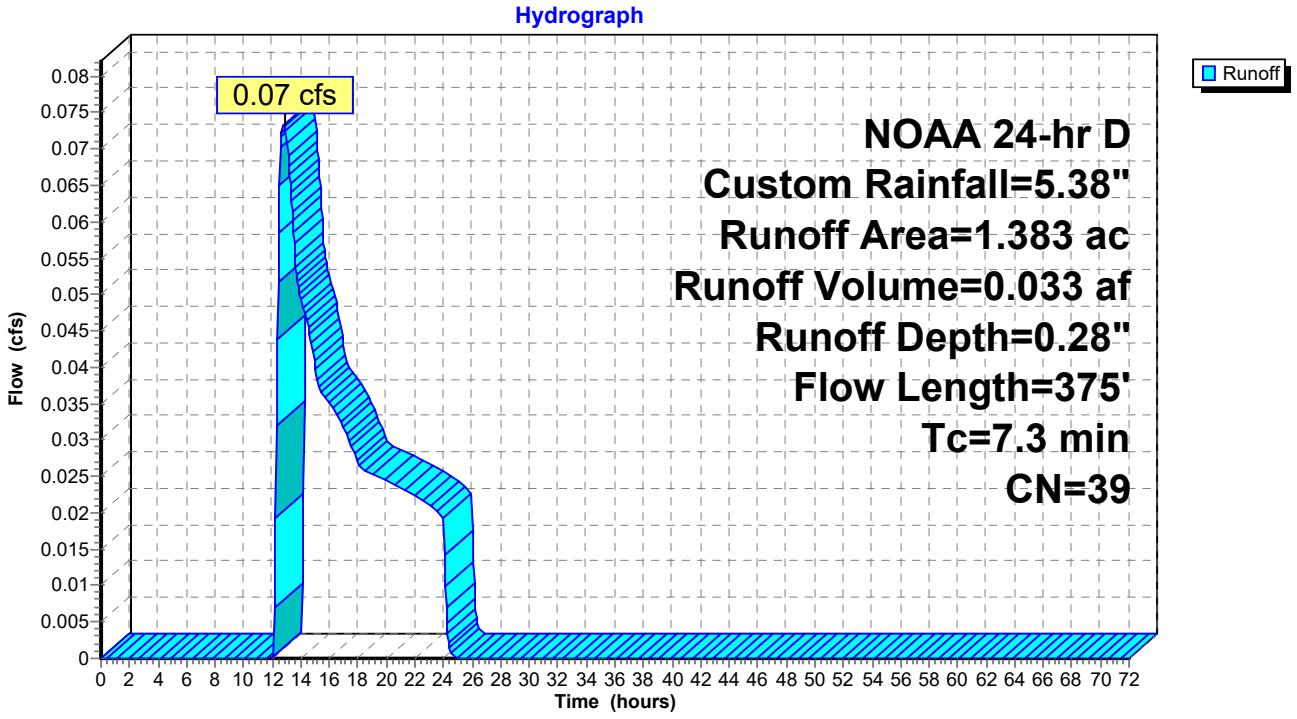
Runoff = 0.07 cfs @ 12.84 hrs, Volume= 0.033 af, Depth= 0.28"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.383	39	>75% Grass cover, Good, HSG A
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	75	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	300	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.3	375	Total			

Subcatchment 43S: Basin 13 - Pervious



Summary for Subcatchment 44S: Basin 3 - Impervious

[49] Hint: Tc<2dt may require smaller dt

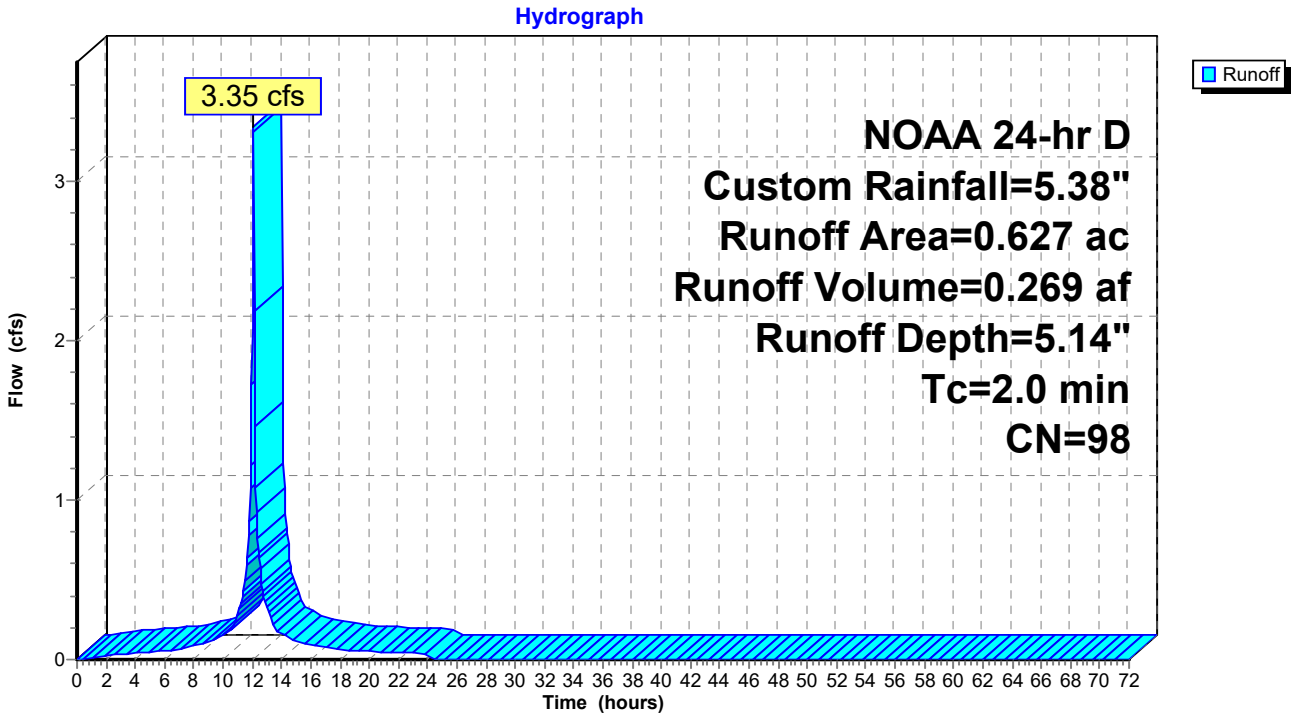
Runoff = 3.35 cfs @ 12.09 hrs, Volume= 0.269 af, Depth= 5.14"
Routed to Pond 4P : Basin 3

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 44S: Basin 3 - Impervious



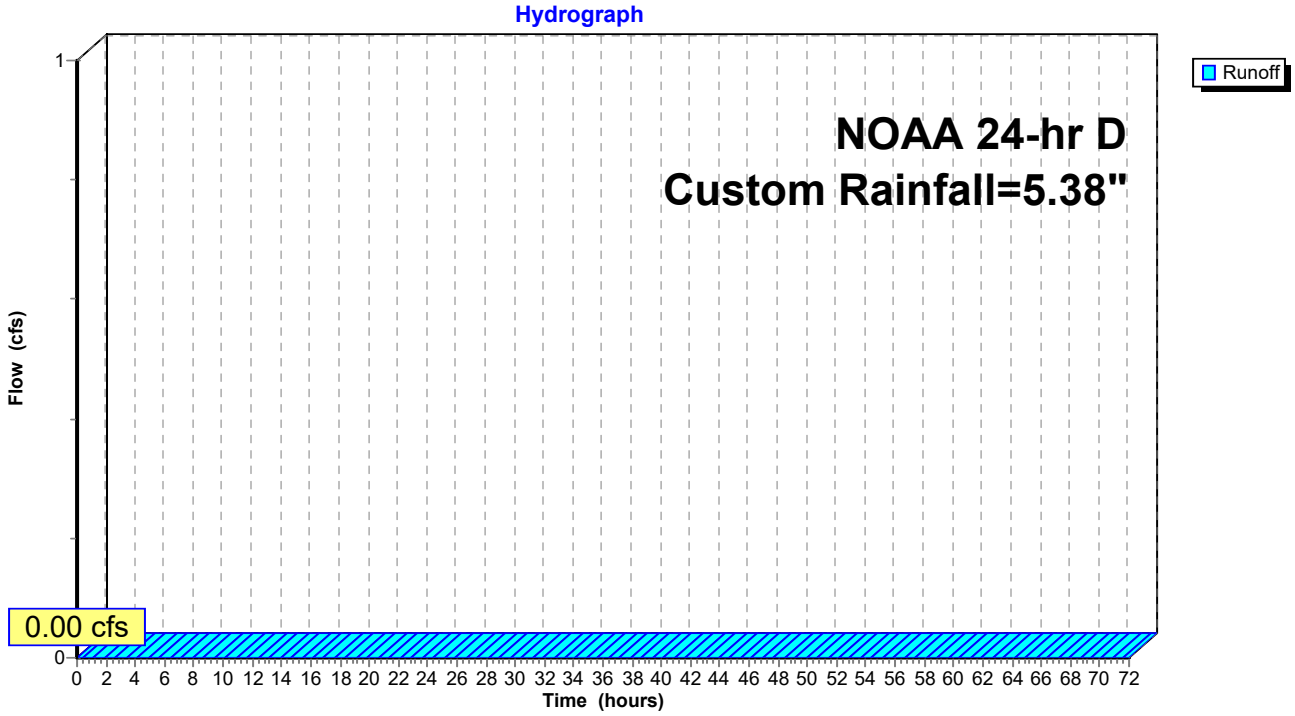
Summary for Subcatchment 45S: Undetained - Impervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Subcatchment 45S: Undetained - Impervious



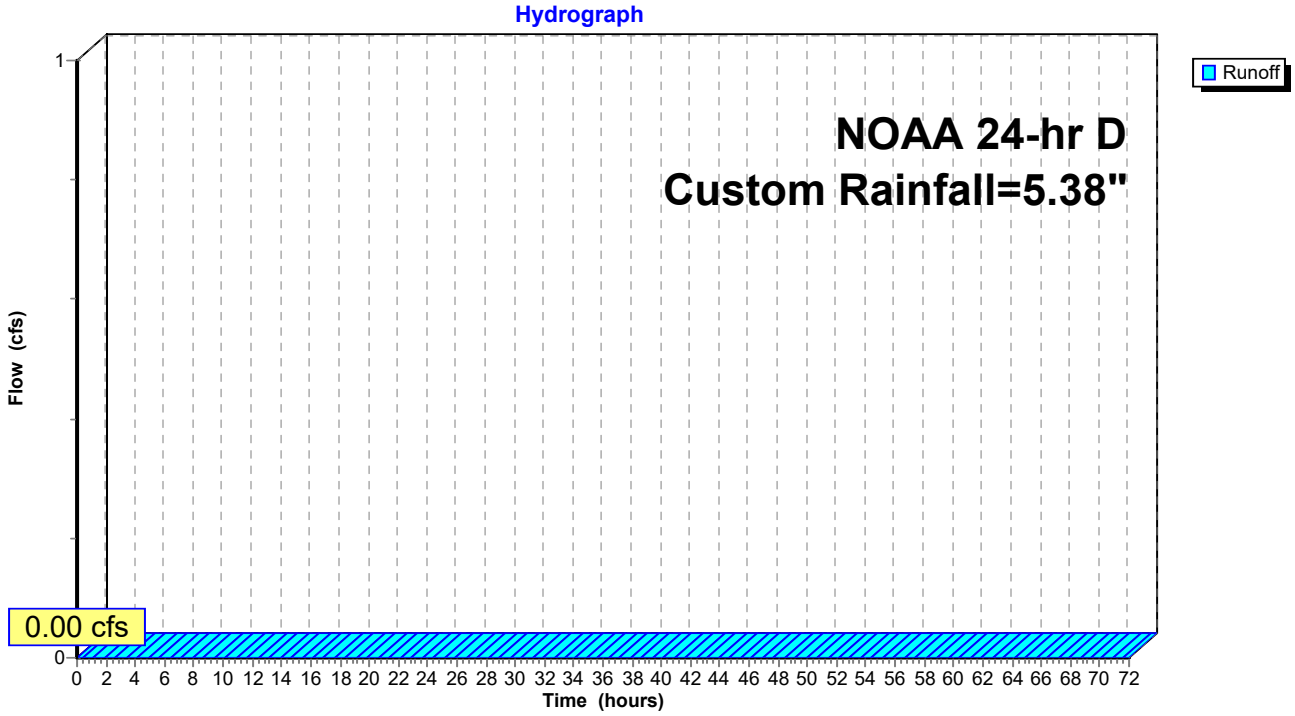
Summary for Subcatchment 46S: Undetained - Pervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Subcatchment 46S: Undetained - Pervious



Summary for Subcatchment 66: Basin 3 - Pervious

[49] Hint: Tc<2dt may require smaller dt

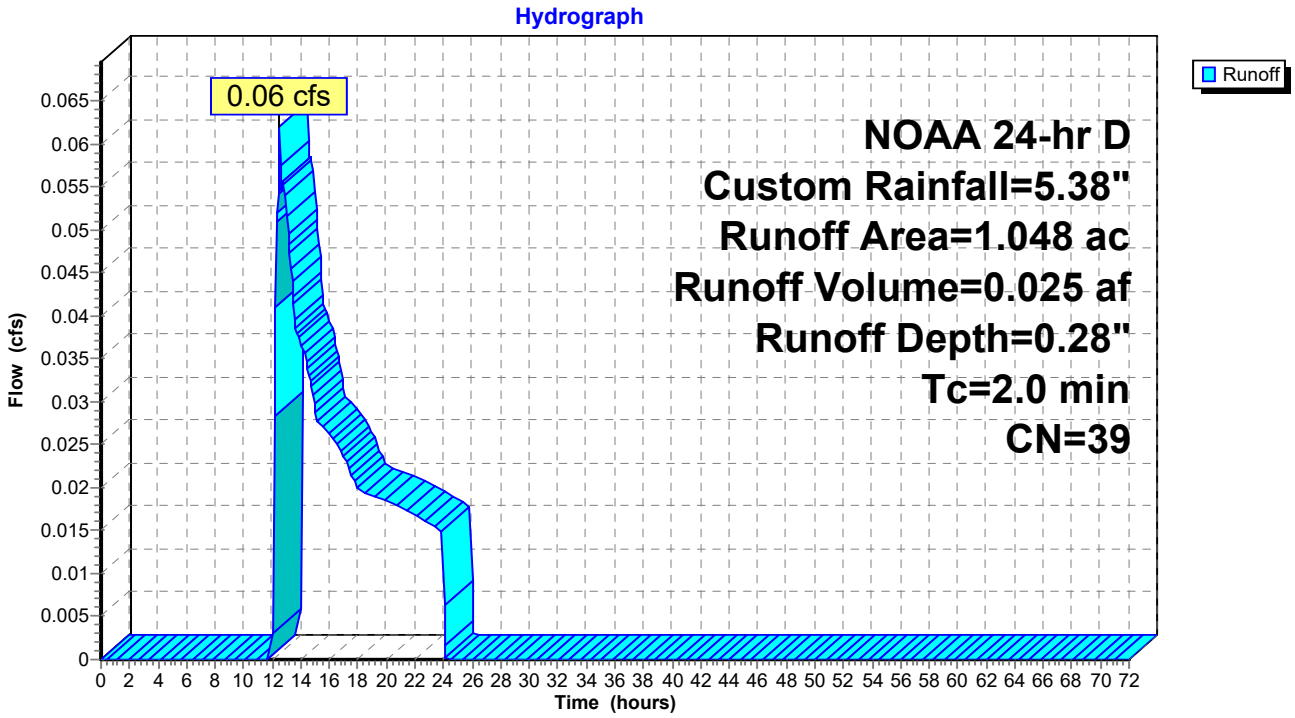
Runoff = 0.06 cfs @ 12.50 hrs, Volume= 0.025 af, Depth= 0.28"
Routed to Pond 4P : Basin 3

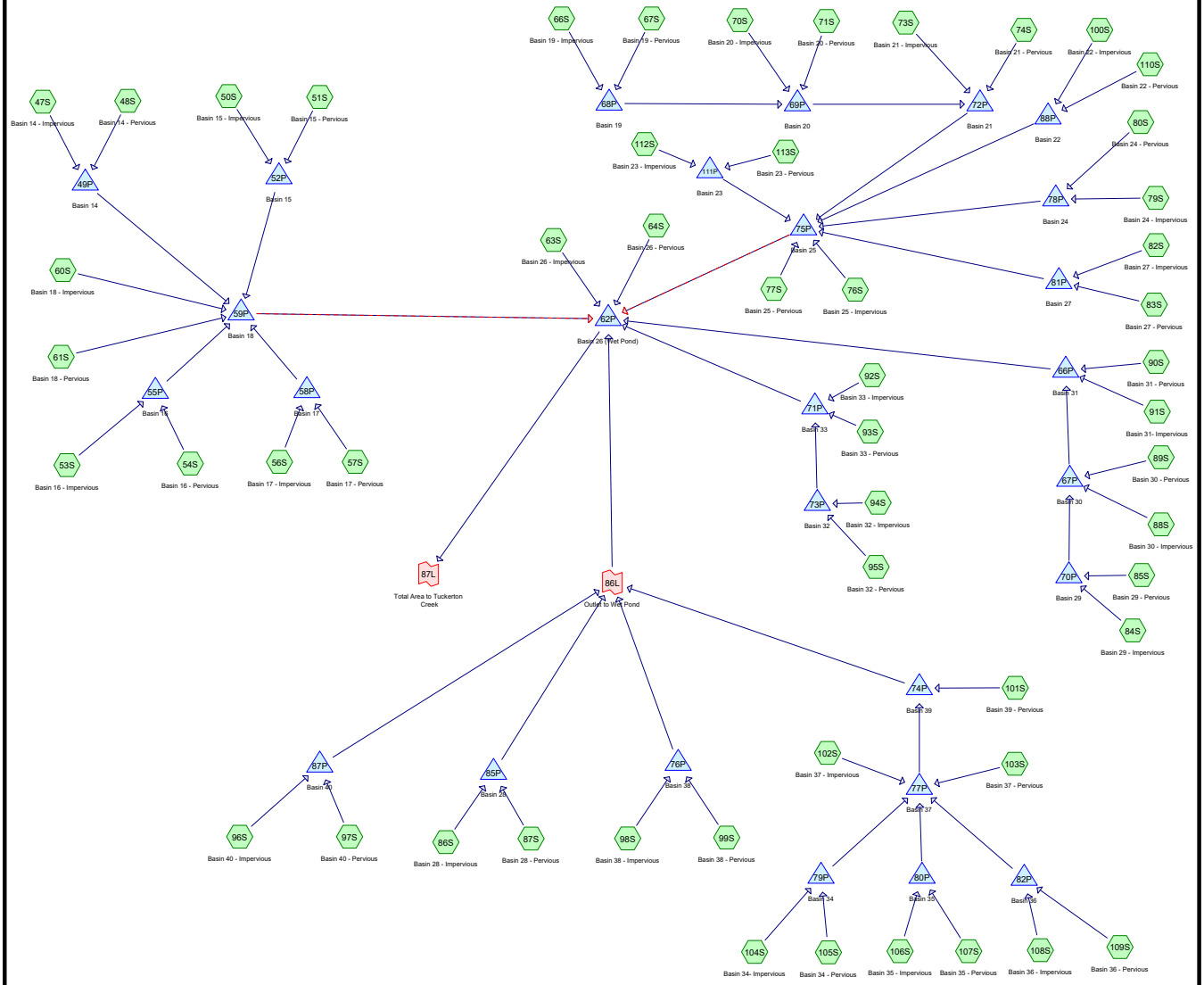
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=5.38"

Area (ac)	CN	Description
1.048	39	>75% Grass cover, Good, HSG A
1.048		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 66: Basin 3 - Pervious





Subcat Reach Pond Link

Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT (FUTURE) - TUCKERTON CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	6.34	2

Summary for Subcatchment 47S: Basin 14 - Impervious

[49] Hint: Tc<2dt may require smaller dt

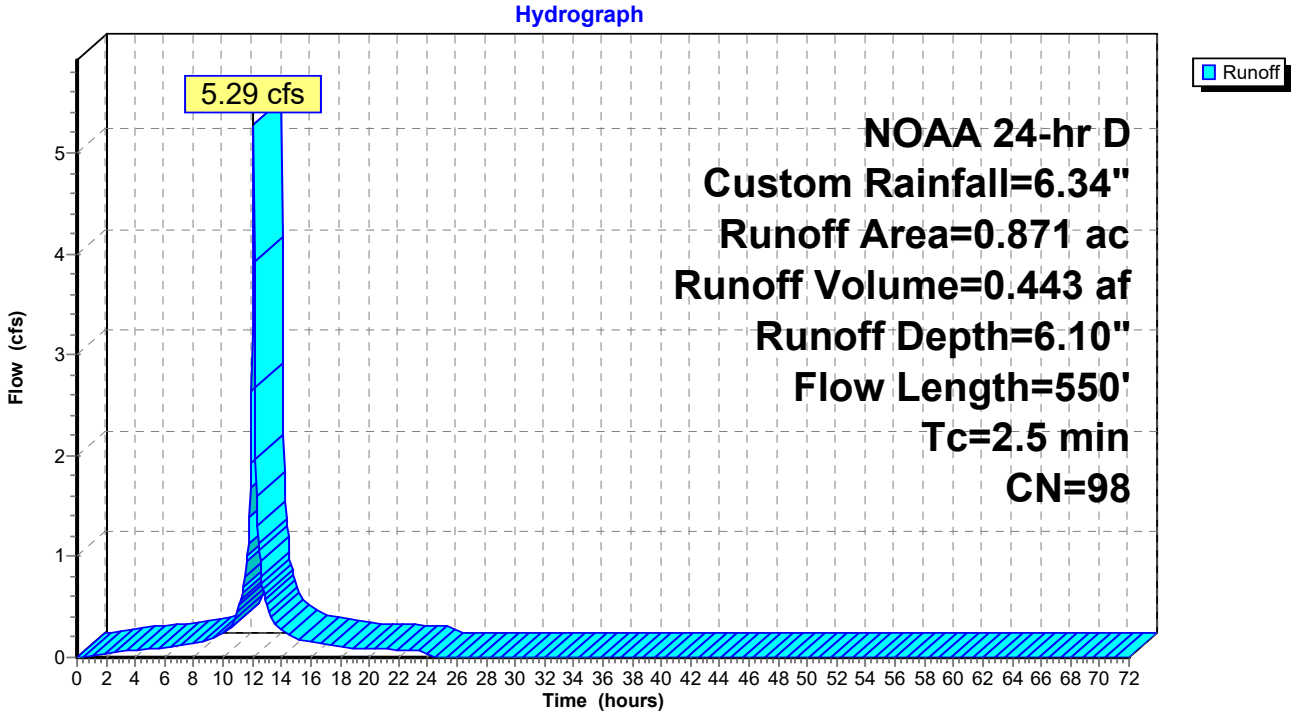
Runoff = 5.29 cfs @ 12.09 hrs, Volume= 0.443 af, Depth= 6.10"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.871	98	Impervious
	0.871		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, A to B** Paved Kv= 20.3 fps
1.5	450	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.5	550	Total			

Subcatchment 47S: Basin 14 - Impervious



Summary for Subcatchment 48S: Basin 14 - Pervious

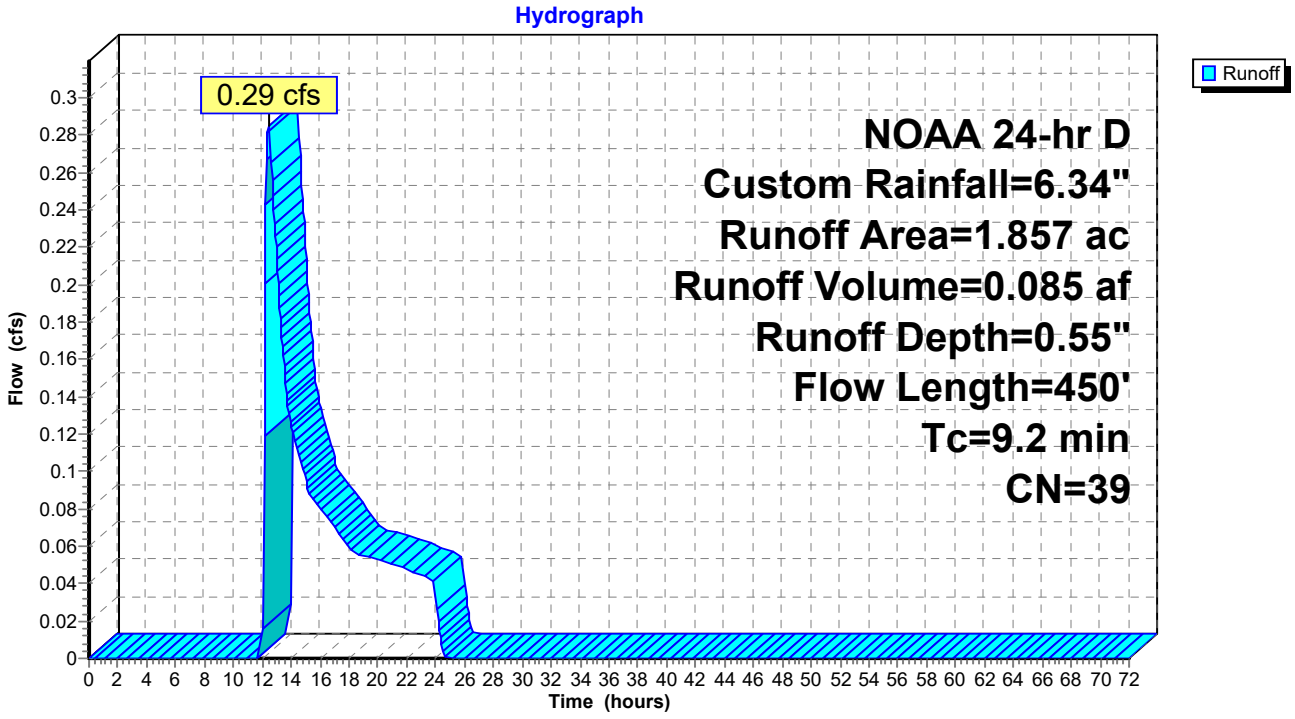
Runoff = 0.29 cfs @ 12.41 hrs, Volume= 0.085 af, Depth= 0.55"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.857	39	>75% Grass cover, Good, HSG A
1.857		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
9.2	450	Total			

Subcatchment 48S: Basin 14 - Pervious



Summary for Pond 49P: Basin 14

Inflow Area = 2.728 ac, 31.93% Impervious, Inflow Depth = 2.32" for Custom event
Inflow = 5.32 cfs @ 12.10 hrs, Volume= 0.528 af
Outflow = 0.51 cfs @ 13.47 hrs, Volume= 0.451 af, Atten= 90%, Lag= 82.2 min
Primary = 0.51 cfs @ 13.47 hrs, Volume= 0.451 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.02' @ 13.47 hrs Surf.Area= 7,461 sf Storage= 13,608 cf

Plug-Flow detention time= 575.2 min calculated for 0.451 af (86% of inflow)
Center-of-Mass det. time= 502.6 min (1,283.7 - 781.1)

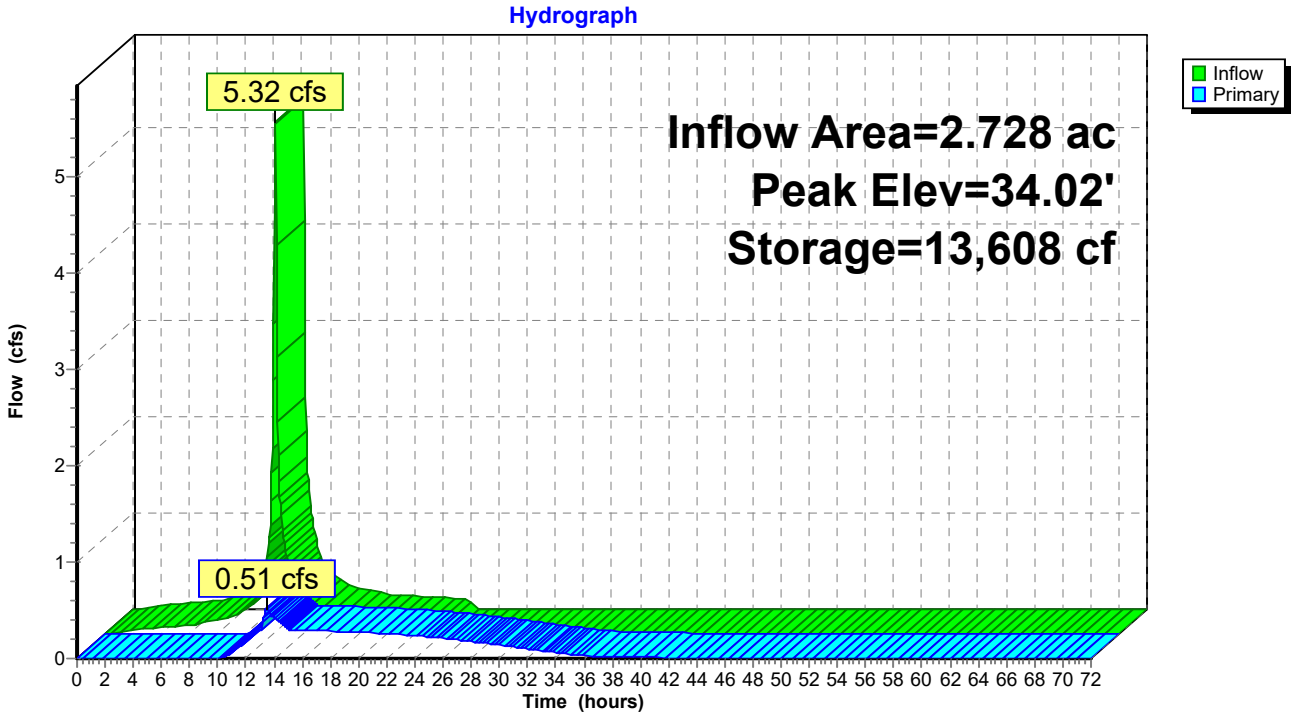
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	22,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,100	0	0
32.00	4,200	1,825	1,825
33.00	5,800	5,000	6,825
34.00	7,400	6,600	13,425
35.00	9,900	8,650	22,075

Device	Routing	Invert	Outlet Devices
#1	Primary	32.32'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 13.47 hrs HW=34.02' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.30 cfs @ 6.05 fps)
2=Orifice/Grate (Weir Controls 0.20 cfs @ 0.51 fps)

Pond 49P: Basin 14



Summary for Subcatchment 50S: Basin 15 - Impervious

[49] Hint: Tc<2dt may require smaller dt

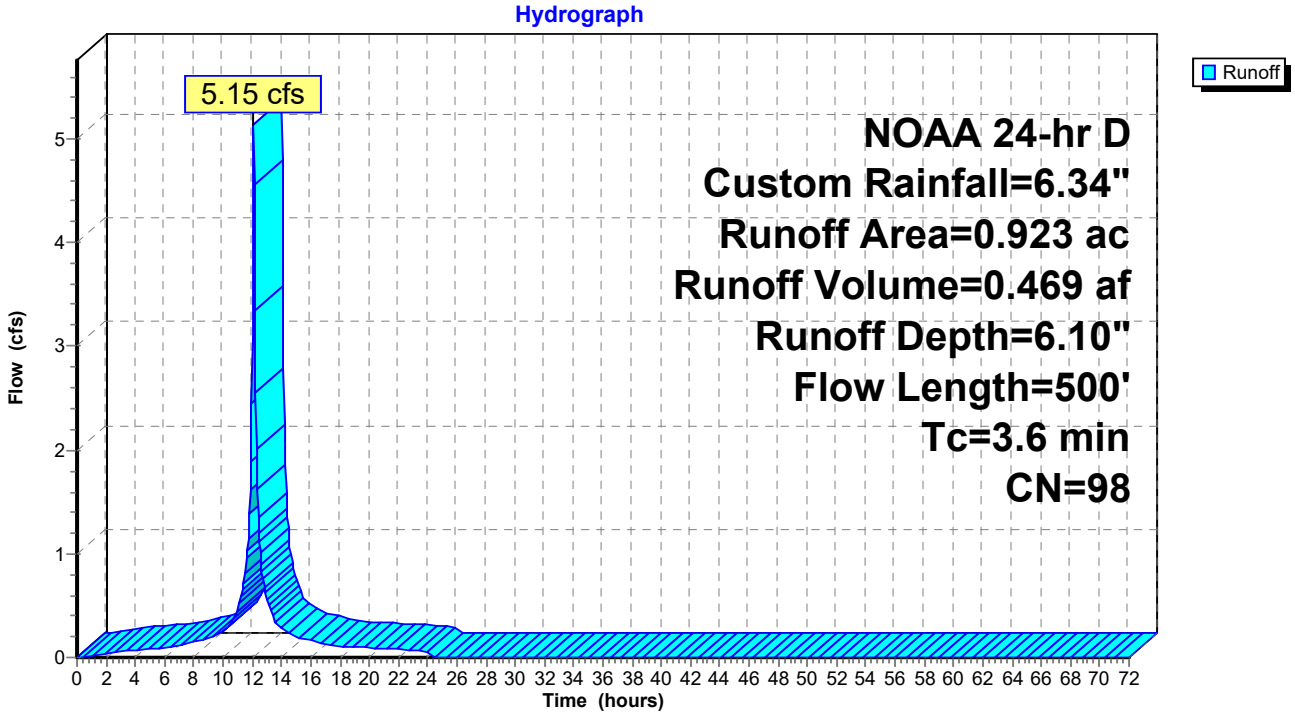
Runoff = 5.15 cfs @ 12.11 hrs, Volume= 0.469 af, Depth= 6.10"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.923	98	Impervious
	0.923		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.6	500	Total			

Subcatchment 50S: Basin 15 - Impervious



Summary for Subcatchment 51S: Basin 15 - Pervious

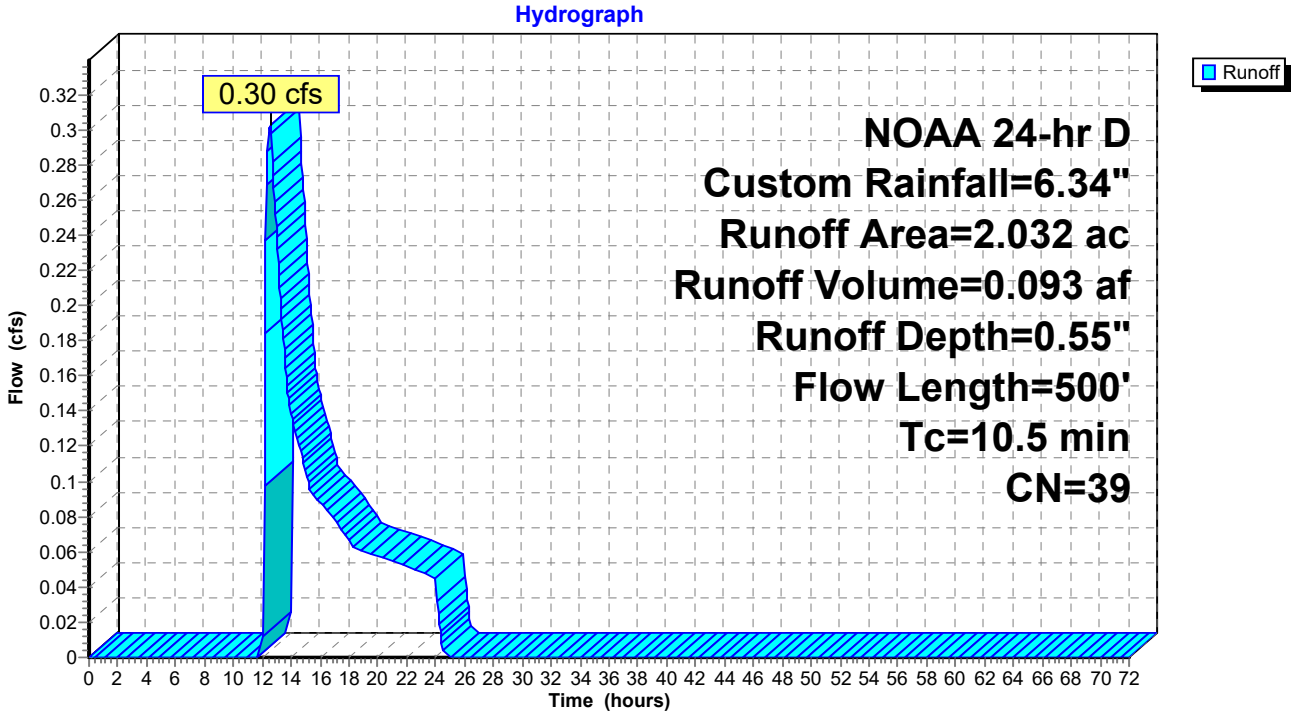
Runoff = 0.30 cfs @ 12.54 hrs, Volume= 0.093 af, Depth= 0.55"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
2.032	39	>75% Grass cover, Good, HSG A
2.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.5	500	Total			

Subcatchment 51S: Basin 15 - Pervious



Summary for Pond 52P: Basin 15

Inflow Area = 2.955 ac, 31.24% Impervious, Inflow Depth = 2.28" for Custom event
Inflow = 5.18 cfs @ 12.11 hrs, Volume= 0.562 af
Outflow = 0.45 cfs @ 13.86 hrs, Volume= 0.481 af, Atten= 91%, Lag= 104.8 min
Primary = 0.45 cfs @ 13.86 hrs, Volume= 0.481 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.81' @ 13.86 hrs Surf.Area= 7,665 sf Storage= 14,741 cf

Plug-Flow detention time= 593.9 min calculated for 0.481 af (86% of inflow)
Center-of-Mass det. time= 521.2 min (1,305.1 - 783.9)

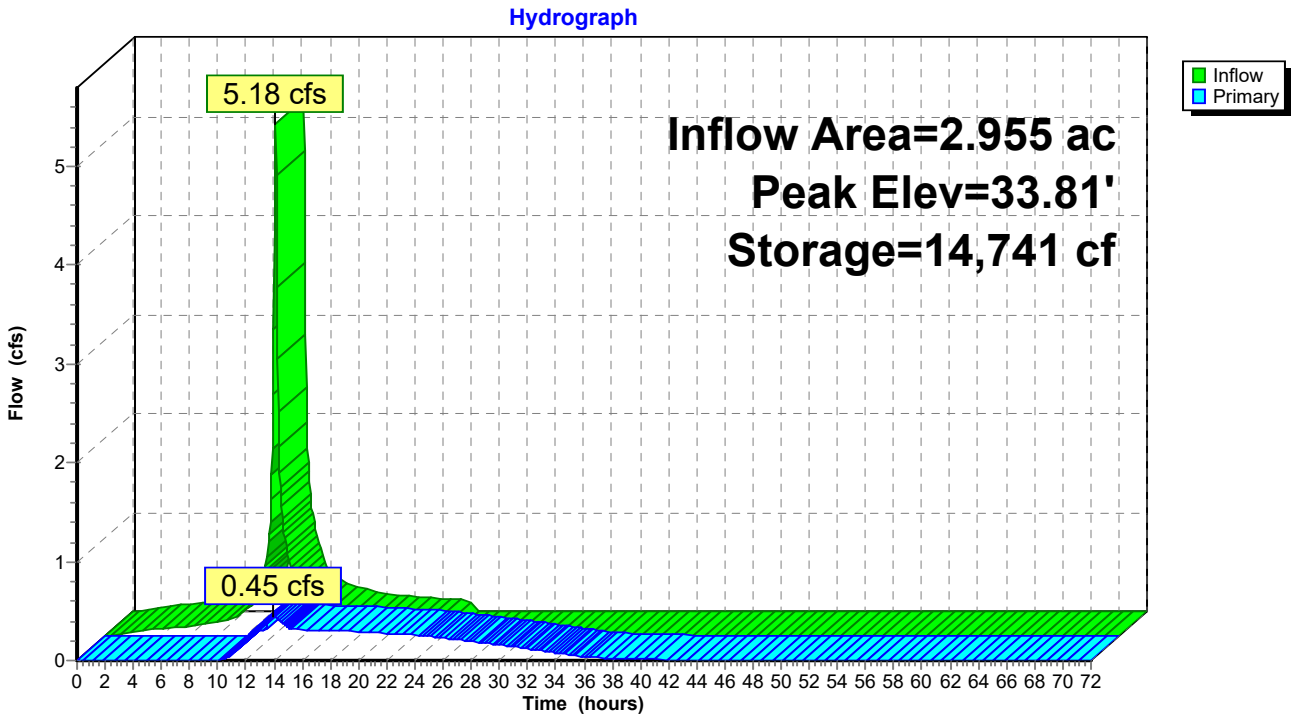
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	20,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,000	0	0
32.00	4,500	3,750	3,750
33.00	6,200	5,350	9,100
34.00	8,000	7,100	16,200
34.50	9,000	4,250	20,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.94'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	33.80'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.40 cfs @ 13.86 hrs HW=33.81' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.31 cfs @ 6.37 fps)
└—**2=Orifice/Grate** (Weir Controls 0.08 cfs @ 0.38 fps)

Pond 52P: Basin 15



Summary for Subcatchment 53S: Basin 16 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 104% of capacity of segment #3

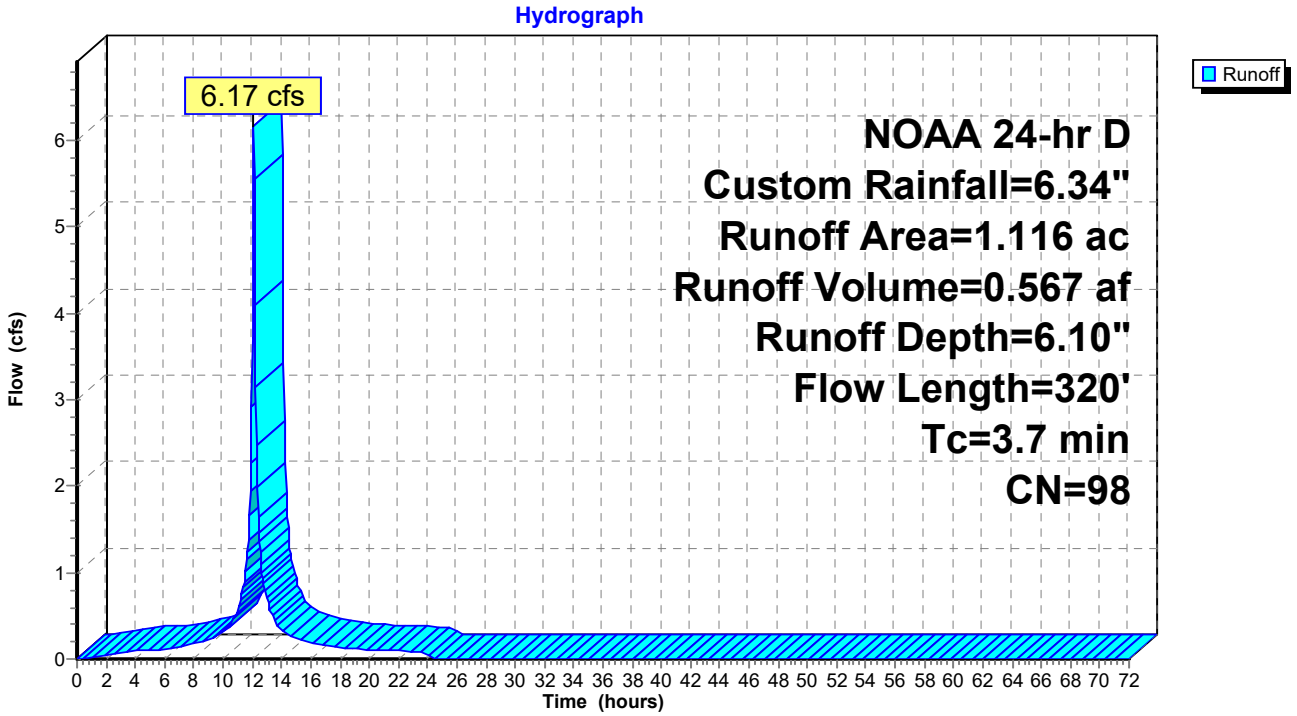
Runoff = 6.17 cfs @ 12.11 hrs, Volume= 0.567 af, Depth= 6.10"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	20	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.7	320	Total			

Subcatchment 53S: Basin 16 - Impervious



Summary for Subcatchment 54S: Basin 16 - Pervious

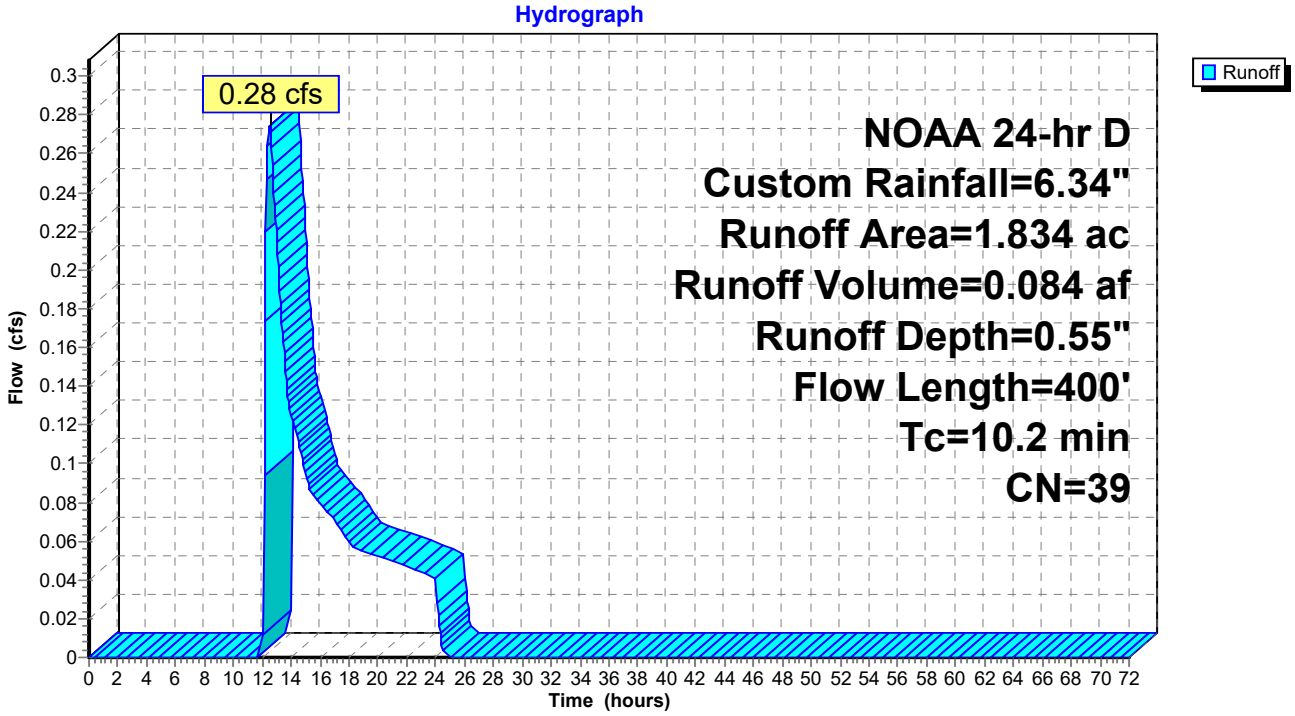
Runoff = 0.28 cfs @ 12.53 hrs, Volume= 0.084 af, Depth= 0.55"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.834	39	>75% Grass cover, Good, HSG A
1.834		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 54S: Basin 16 - Pervious



Summary for Pond 55P: Basin 16

Inflow Area = 2.950 ac, 37.83% Impervious, Inflow Depth = 2.65" for Custom event
Inflow = 6.21 cfs @ 12.11 hrs, Volume= 0.651 af
Outflow = 5.84 cfs @ 12.15 hrs, Volume= 0.555 af, Atten= 6%, Lag= 2.1 min
Primary = 5.84 cfs @ 12.15 hrs, Volume= 0.555 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.23' @ 12.14 hrs Surf.Area= 4,302 sf Storage= 5,102 cf

Plug-Flow detention time= 142.3 min calculated for 0.555 af (85% of inflow)
Center-of-Mass det. time= 67.6 min (843.1 - 775.4)

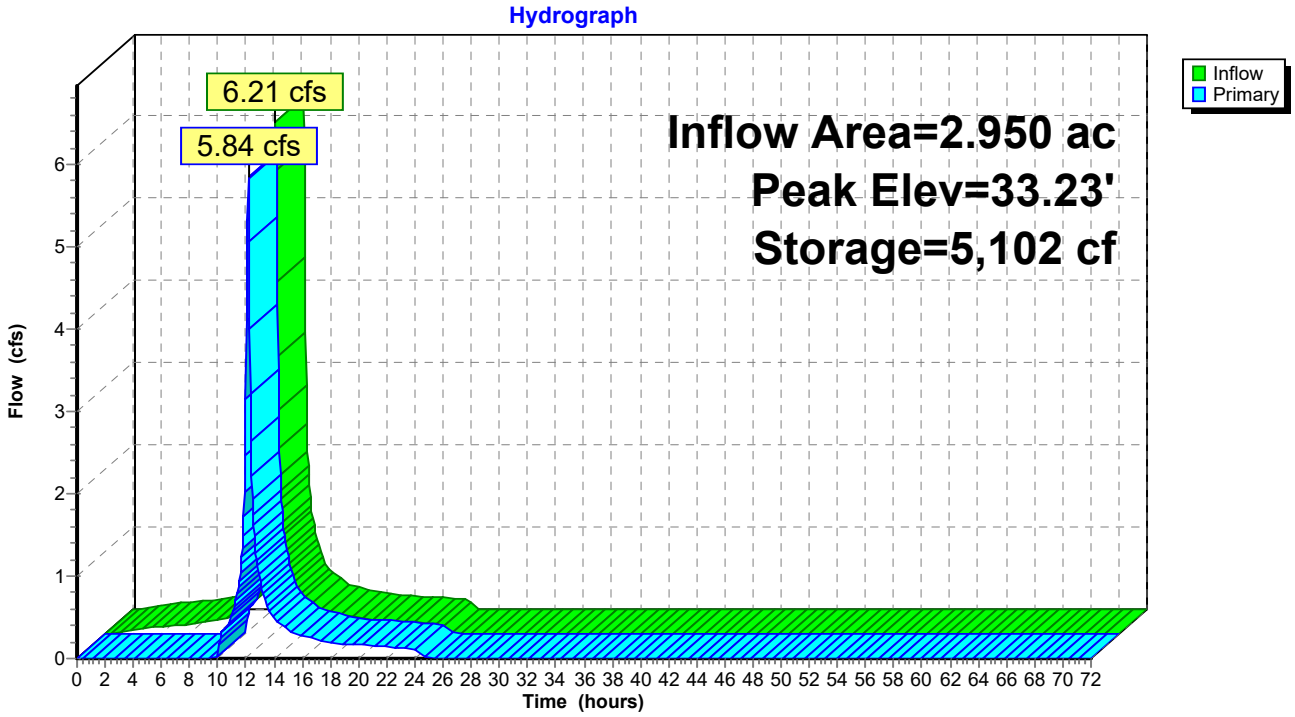
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	6,350 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	1,800	0	0
32.00	2,500	1,075	1,075
33.00	3,700	3,100	4,175
33.50	5,000	2,175	6,350

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.78 cfs @ 12.15 hrs HW=33.23' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 5.78 cfs @ 1.57 fps)

Pond 55P: Basin 16



Summary for Subcatchment 56S: Basin 17 - Impervious

[49] Hint: Tc<2dt may require smaller dt

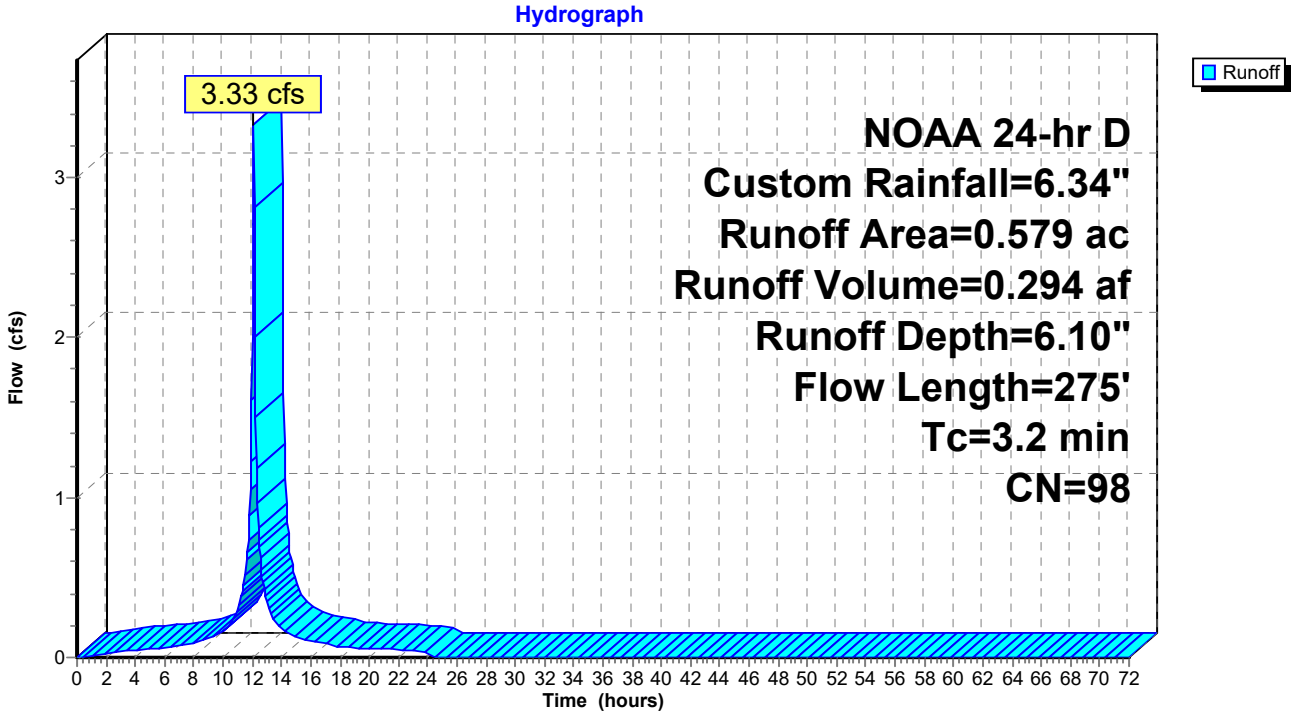
Runoff = 3.33 cfs @ 12.10 hrs, Volume= 0.294 af, Depth= 6.10"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.579	98	Impervious
	0.579		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	25	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	275	Total			

Subcatchment 56S: Basin 17 - Impervious



Summary for Subcatchment 57S: Basin 17 - Pervious

[49] Hint: Tc<2dt may require smaller dt

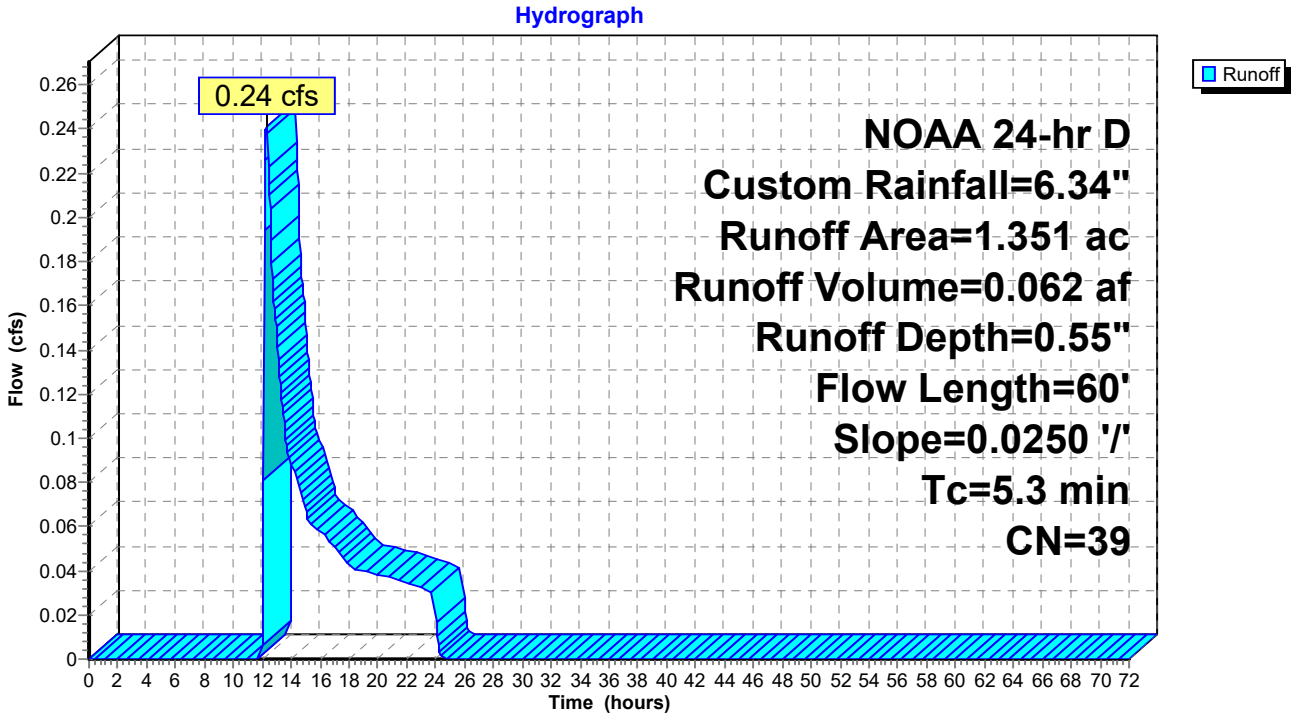
Runoff = 0.24 cfs @ 12.27 hrs, Volume= 0.062 af, Depth= 0.55"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.351	39	>75% Grass cover, Good, HSG A
1.351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 57S: Basin 17 - Pervious



Summary for Pond 58P: Basin 17

Inflow Area = 1.930 ac, 30.00% Impervious, Inflow Depth = 2.21" for Custom event
Inflow = 3.42 cfs @ 12.11 hrs, Volume= 0.356 af
Outflow = 3.13 cfs @ 12.15 hrs, Volume= 0.306 af, Atten= 8%, Lag= 2.3 min
Primary = 3.13 cfs @ 12.15 hrs, Volume= 0.306 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.78' @ 12.15 hrs Surf.Area= 4,174 sf Storage= 2,808 cf

Plug-Flow detention time= 140.1 min calculated for 0.306 af (86% of inflow)
Center-of-Mass det. time= 67.0 min (850.9 - 783.9)

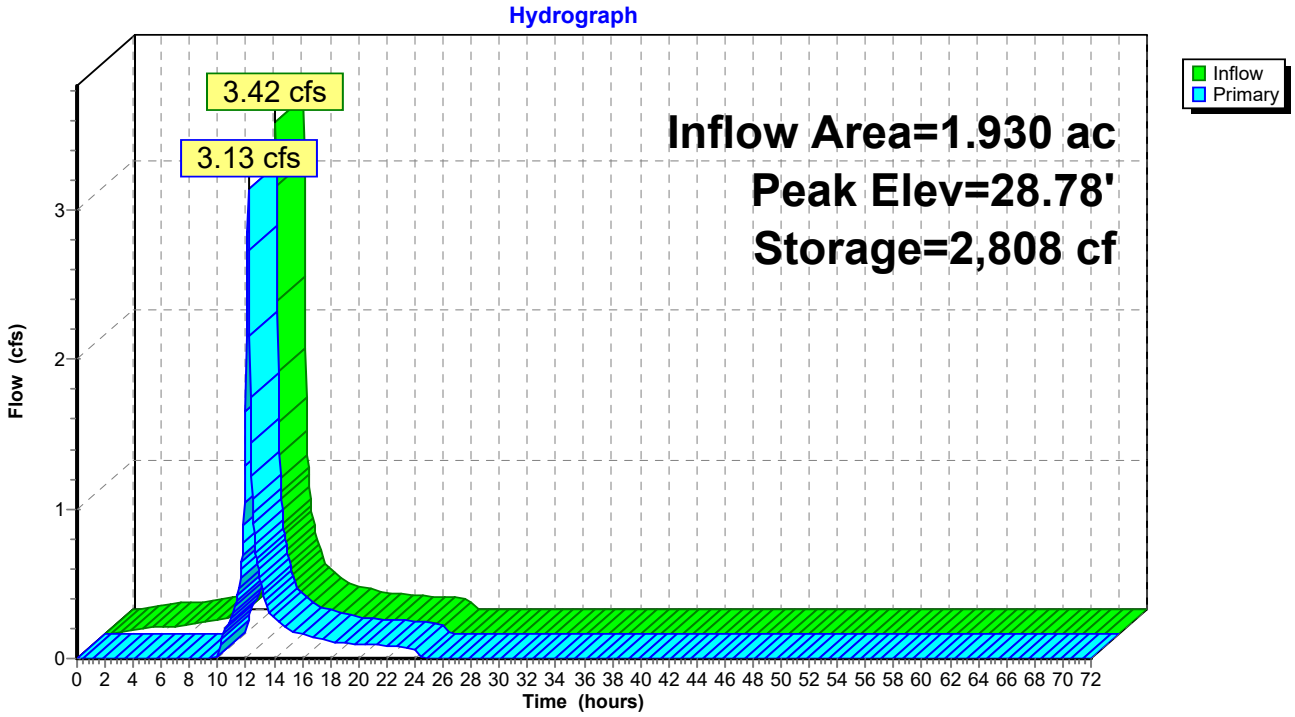
Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	12,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,000	0	0
29.00	4,500	3,750	3,750
30.00	6,200	5,350	9,100
30.50	7,000	3,300	12,400

Device	Routing	Invert	Outlet Devices
#1	Primary	28.63'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.10 cfs @ 12.15 hrs HW=28.78' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.10 cfs @ 1.27 fps)

Pond 58P: Basin 17



Summary for Pond 59P: Basin 18

Inflow Area = 13.433 ac, 31.95% Impervious, Inflow Depth = 2.05" for Custom event
Inflow = 13.76 cfs @ 12.12 hrs, Volume= 2.296 af
Outflow = 13.13 cfs @ 12.16 hrs, Volume= 2.222 af, Atten= 5%, Lag= 2.4 min
Primary = 13.13 cfs @ 12.16 hrs, Volume= 2.222 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.25' @ 12.16 hrs Surf.Area= 8,443 sf Storage= 17,472 cf

Plug-Flow detention time= 289.5 min calculated for 2.222 af (97% of inflow)
Center-of-Mass det. time= 249.5 min (1,264.9 - 1,015.4)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	29,550 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

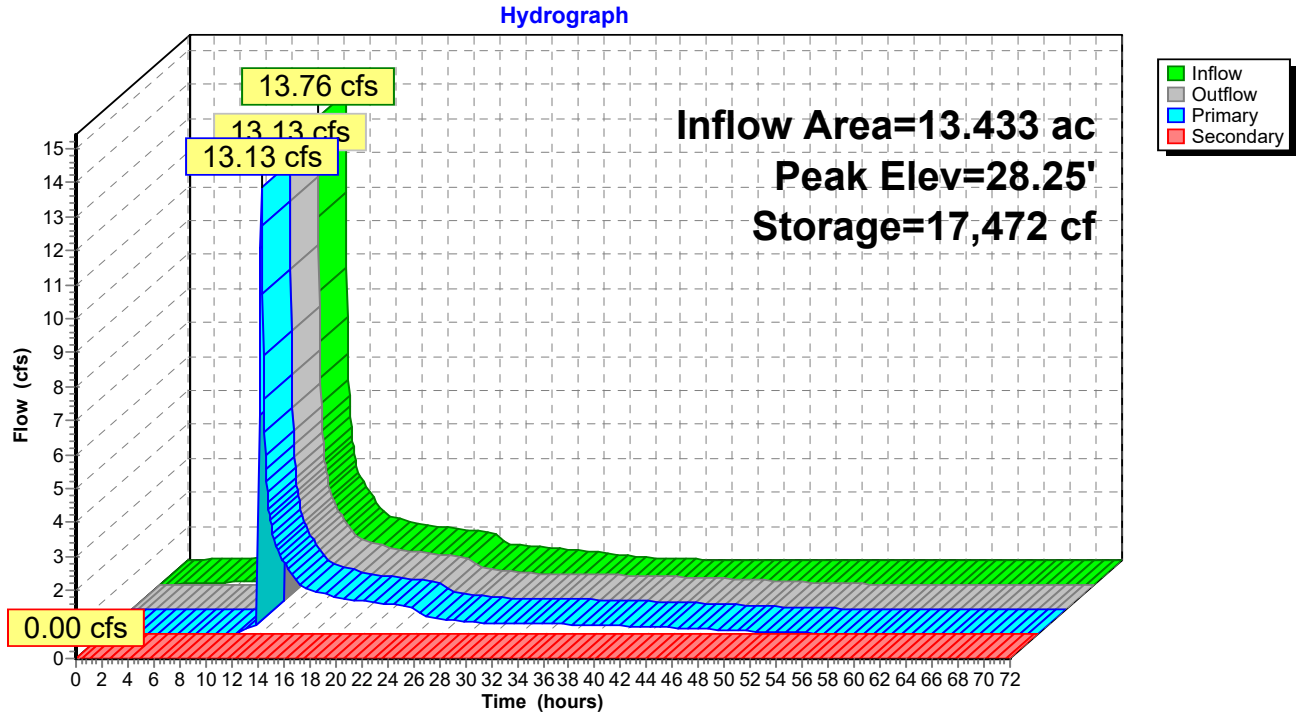
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	4,600	0	0
26.00	5,200	2,450	2,450
27.00	6,400	5,800	8,250
28.00	8,000	7,200	15,450
29.00	9,800	8,900	24,350
29.50	11,000	5,200	29,550

Device	Routing	Invert	Outlet Devices
#1	Primary	26.11'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	28.00'	**48.0" x 48.0" Horiz. Orifice/Grate** X 2 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	28.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=12.95 cfs @ 12.16 hrs HW=28.24' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.34 cfs @ 6.82 fps)
└**2=Orifice/Grate** (Weir Controls 12.61 cfs @ 1.62 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=25.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 59P: Basin 18



Summary for Subcatchment 60S: Basin 18 - Impervious

[49] Hint: Tc<2dt may require smaller dt

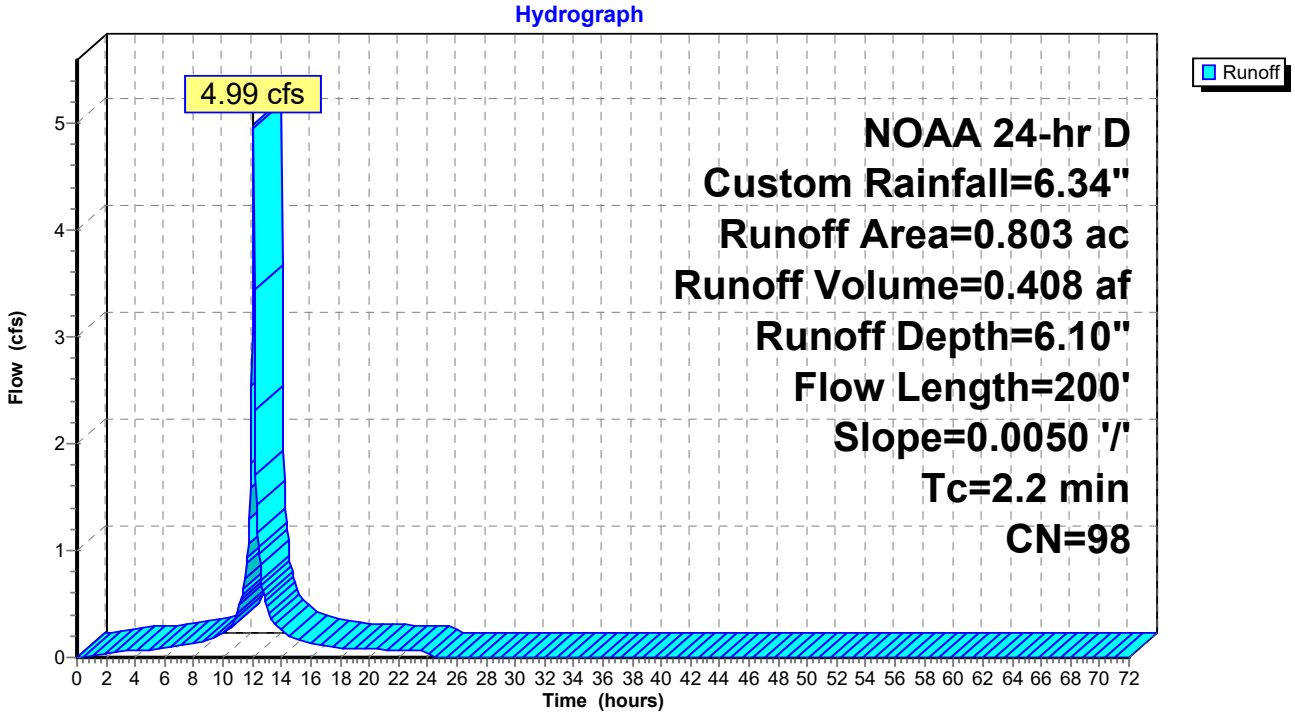
Runoff = 4.99 cfs @ 12.09 hrs, Volume= 0.408 af, Depth= 6.10"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.803	98	Impervious
	0.803		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0050	0.89		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.2	200	Total			

Subcatchment 60S: Basin 18 - Impervious



Summary for Subcatchment 61S: Basin 18 - Pervious

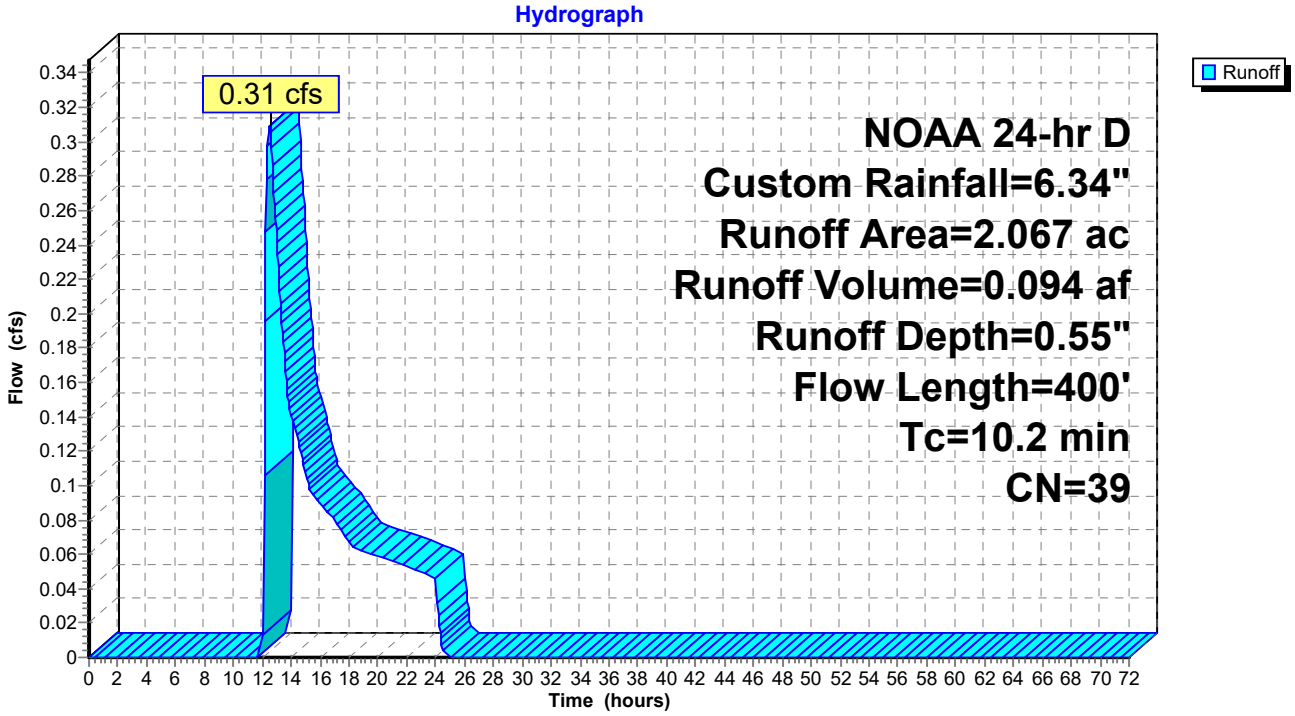
Runoff = 0.31 cfs @ 12.53 hrs, Volume= 0.094 af, Depth= 0.55"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
2.067	39	>75% Grass cover, Good, HSG A
2.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 61S: Basin 18 - Pervious



Summary for Pond 62P: Basin 26 (Wet Pond)

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 1.75" for Custom event
Inflow = 51.57 cfs @ 12.18 hrs, Volume= 10.939 af
Outflow = 0.43 cfs @ 53.35 hrs, Volume= 2.002 af, Atten= 99%, Lag= 2,470.7 min
Primary = 0.43 cfs @ 53.35 hrs, Volume= 2.002 af
Routed to Link 87L : Total Area to Tuckerton Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 22.50' Surf.Area= 92,813 sf Storage= 317,963 cf
Peak Elev= 25.96' @ 53.35 hrs Surf.Area= 142,028 sf Storage= 722,190 cf (404,228 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,260.3 min (2,607.1 - 1,346.8)

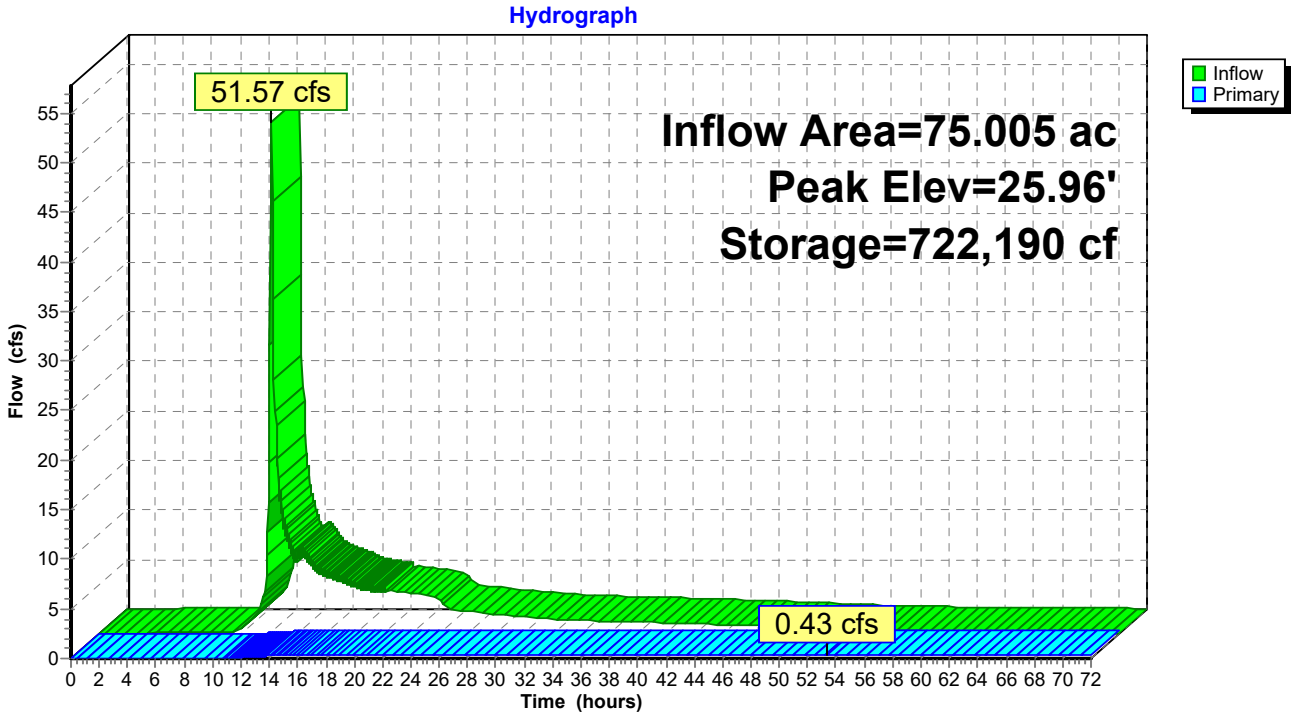
Volume	Invert	Avail.Storage	Storage Description
#1	18.00'	639,244 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
18.00	29,000	0	0
19.00	32,000	30,500	30,500
20.00	35,000	33,500	64,000
21.00	38,000	36,500	100,500
21.01	43,000	405	100,905
22.00	47,000	44,550	145,455
23.00	52,000	49,500	194,955
24.00	57,000	54,500	249,455
24.01	63,000	600	250,055
25.00	69,000	65,340	315,395
26.00	76,000	72,500	387,895
27.00	84,000	80,000	467,895
27.50	90,000	43,500	511,395

Device	Routing	Invert	Outlet Devices
#1	Primary	22.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	26.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.43 cfs @ 53.35 hrs HW=25.96' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.43 cfs @ 8.80 fps)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 62P: Basin 26 (Wet Pond)



Summary for Subcatchment 63S: Basin 26 - Impervious

[49] Hint: Tc<2dt may require smaller dt

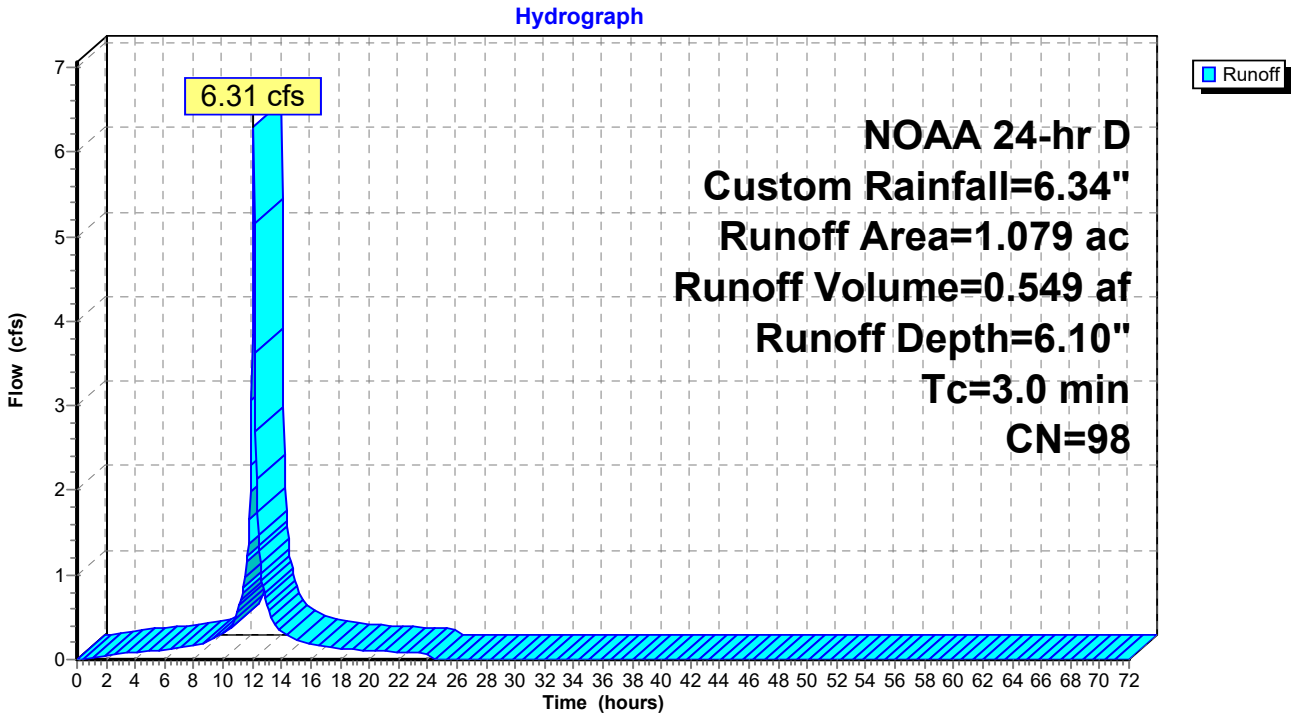
Runoff = 6.31 cfs @ 12.10 hrs, Volume= 0.549 af, Depth= 6.10"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.079	98	Impervious
	1.079		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 63S: Basin 26 - Impervious



Summary for Subcatchment 64S: Basin 26 - Pervious

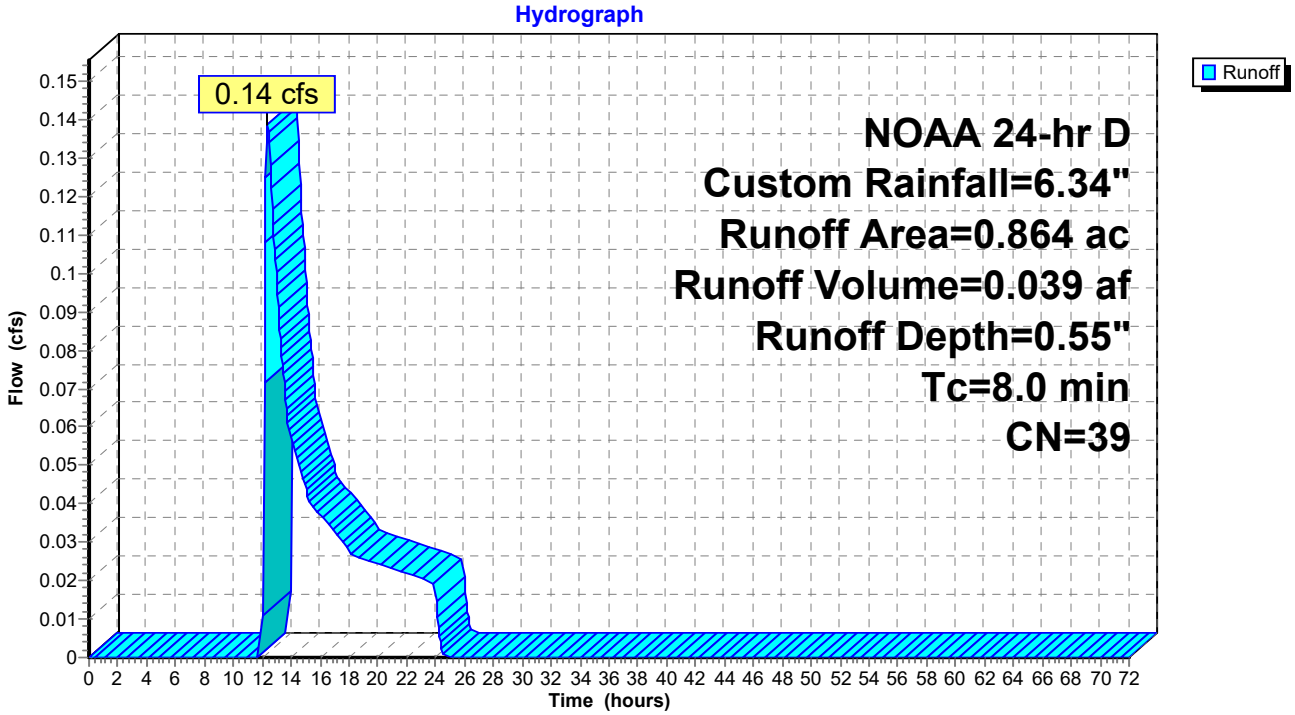
Runoff = 0.14 cfs @ 12.37 hrs, Volume= 0.039 af, Depth= 0.55"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
0.864	39	>75% Grass cover, Good, HSG A
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 64S: Basin 26 - Pervious



Summary for Pond 66P: Basin 31

[93] Warning: Storage range exceeded by 501.73'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=205)
[81] Warning: Exceeded Pond 67P by 502.08' @ 12.20 hrs

Inflow Area = 9.125 ac, 32.14% Impervious, Inflow Depth > 2.11" for Custom event
Inflow = 7.56 cfs @ 12.05 hrs, Volume= 1.607 af
Outflow = 5.30 cfs @ 12.20 hrs, Volume= 1.504 af, Atten= 30%, Lag= 9.1 min
Primary = 5.30 cfs @ 12.20 hrs, Volume= 1.504 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 537.23' @ 12.20 hrs Surf.Area= 8,000 sf Storage= 13,775 cf

Plug-Flow detention time= 520.4 min calculated for 1.504 af (94% of inflow)
Center-of-Mass det. time= 413.1 min (1,763.1 - 1,350.0)

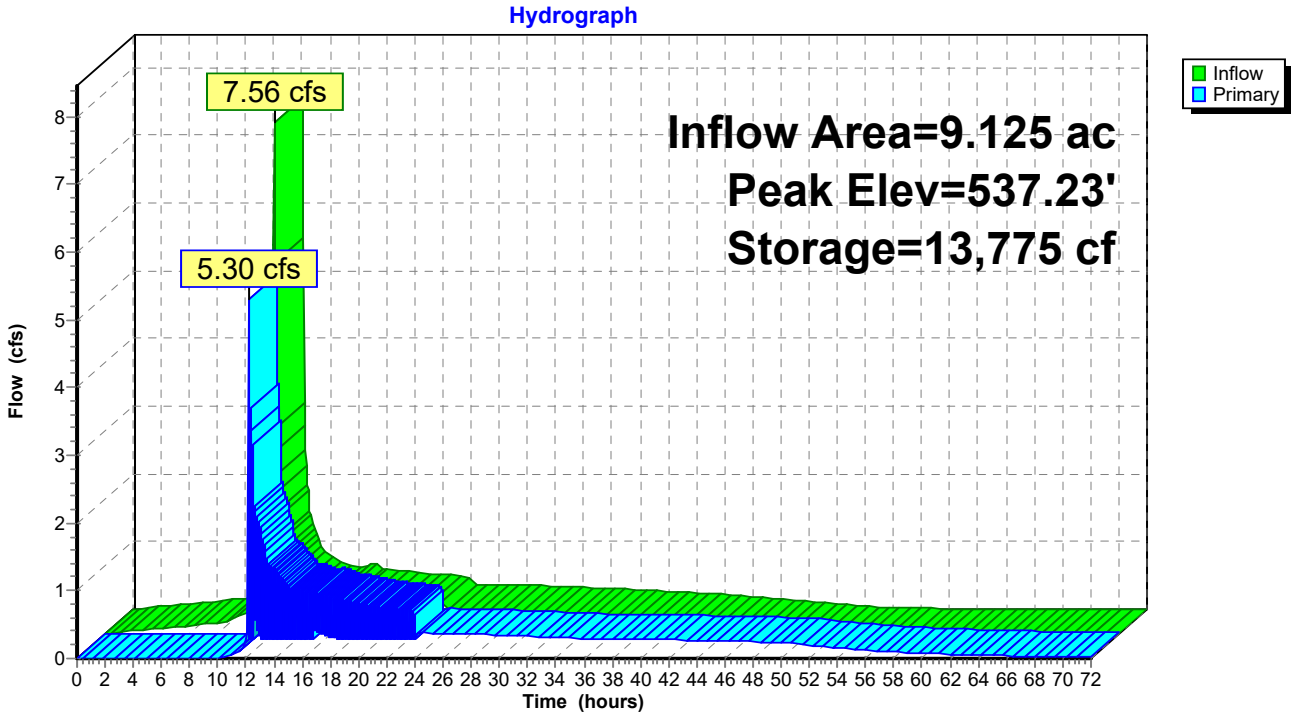
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	13,775 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,200	0	0
34.00	5,000	4,100	4,100
35.00	6,900	5,950	10,050
35.50	8,000	3,725	13,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.96'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.28 cfs @ 12.20 hrs HW=532.49' (Free Discharge)
1=Orifice/Grate (Orifice Controls 5.28 cfs @ 107.49 fps)

Pond 66P: Basin 31



Summary for Subcatchment 66S: Basin 19 - Impervious

[49] Hint: Tc<2dt may require smaller dt

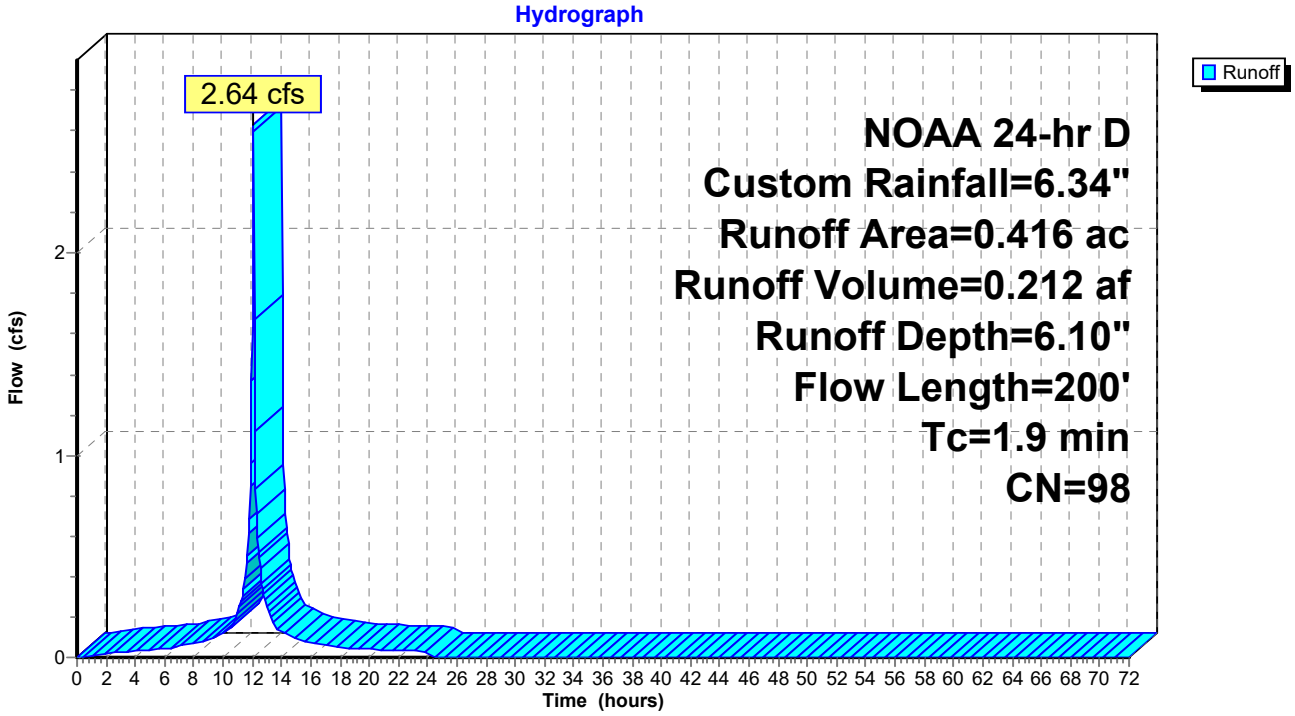
Runoff = 2.64 cfs @ 12.09 hrs, Volume= 0.212 af, Depth= 6.10"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.416	98	Impervious
	0.416		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
1.9	200	Total			

Subcatchment 66S: Basin 19 - Impervious



Summary for Pond 67P: Basin 30

[93] Warning: Storage range exceeded by 2.09'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=4)
[81] Warning: Exceeded Pond 70P by 2.60' @ 16.85 hrs

Inflow Area = 6.020 ac, 31.43% Impervious, Inflow Depth = 2.13" for Custom event
Inflow = 5.64 cfs @ 12.10 hrs, Volume= 1.067 af
Outflow = 0.51 cfs @ 16.85 hrs, Volume= 0.984 af, Atten= 91%, Lag= 284.8 min
Primary = 0.51 cfs @ 16.85 hrs, Volume= 0.984 af
Routed to Pond 66P : Basin 31

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.59' @ 16.85 hrs Surf.Area= 9,800 sf Storage= 22,775 cf

Plug-Flow detention time= 799.1 min calculated for 0.984 af (92% of inflow)
Center-of-Mass det. time= 709.7 min (1,715.2 - 1,005.5)

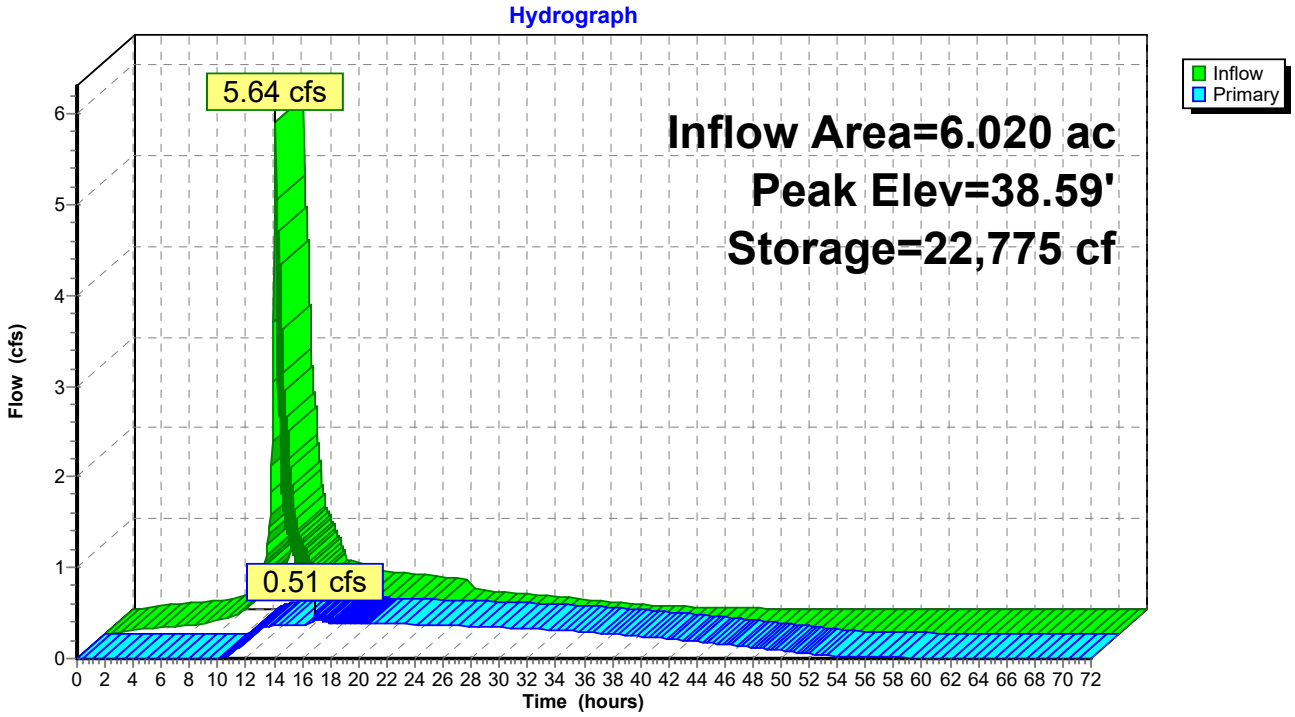
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,775 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,700	0	0
34.00	5,200	4,450	4,450
35.00	6,900	6,050	10,500
36.00	8,500	7,700	18,200
36.50	9,800	4,575	22,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.81'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.51 cfs @ 16.85 hrs HW=38.59' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.51 cfs @ 10.39 fps)

Pond 67P: Basin 30



Summary for Subcatchment 67S: Basin 19 - Pervious

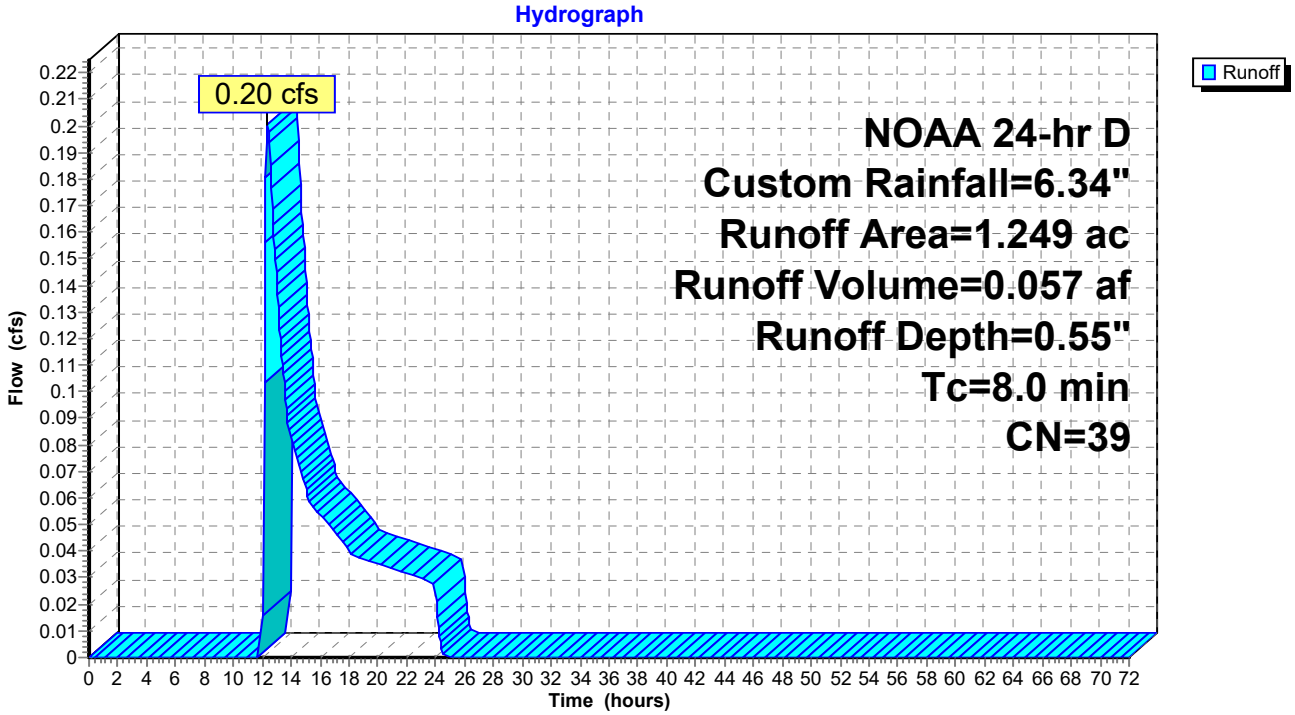
Runoff = 0.20 cfs @ 12.37 hrs, Volume= 0.057 af, Depth= 0.55"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.249	39	>75% Grass cover, Good, HSG A
1.249		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 67S: Basin 19 - Pervious



Summary for Pond 68P: Basin 19

Inflow Area = 1.665 ac, 24.98% Impervious, Inflow Depth = 1.93" for Custom event
Inflow = 2.66 cfs @ 12.09 hrs, Volume= 0.268 af
Outflow = 0.27 cfs @ 13.48 hrs, Volume= 0.232 af, Atten= 90%, Lag= 83.8 min
Primary = 0.27 cfs @ 13.48 hrs, Volume= 0.232 af
Routed to Pond 69P : Basin 20

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.09' @ 13.48 hrs Surf.Area= 3,801 sf Storage= 5,995 cf

Plug-Flow detention time= 346.8 min calculated for 0.232 af (86% of inflow)
Center-of-Mass det. time= 277.0 min (1,069.1 - 792.1)

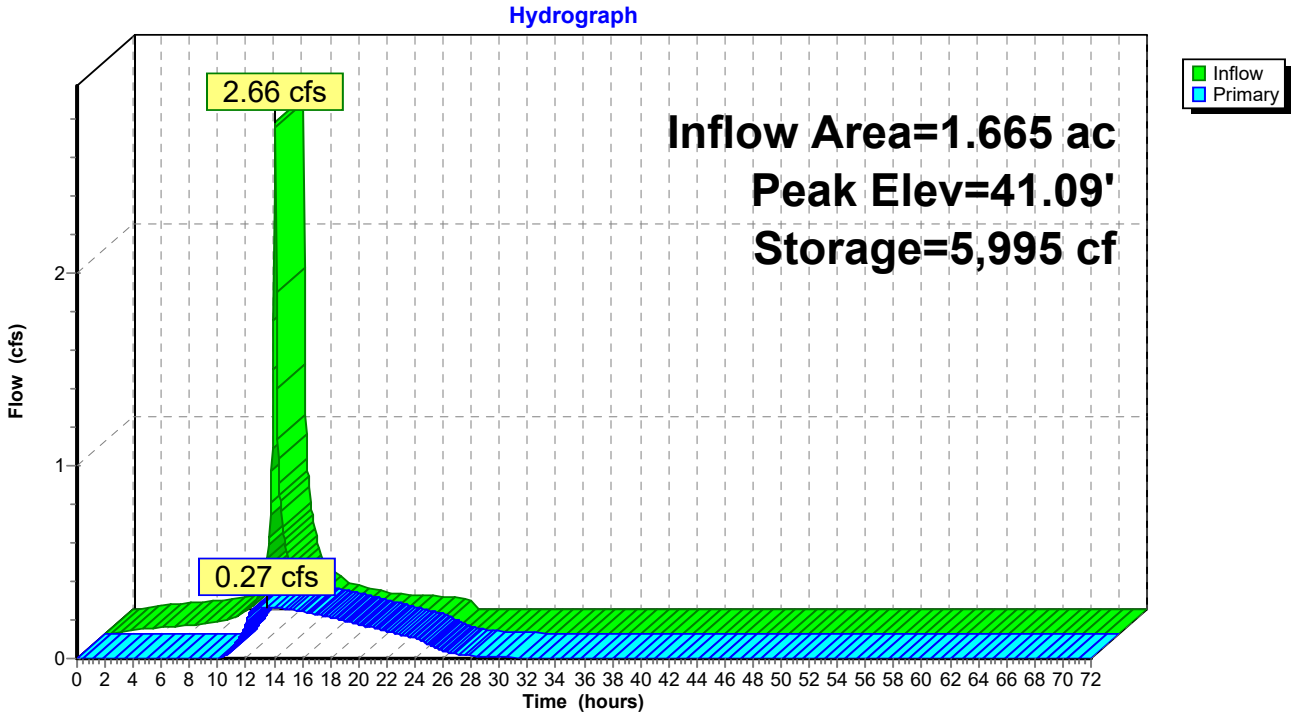
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	12,475 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	2,000	0	0
40.00	2,800	2,400	2,400
41.00	3,700	3,250	5,650
42.00	4,800	4,250	9,900
42.50	5,500	2,575	12,475

Device	Routing	Invert	Outlet Devices
#1	Primary	39.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.27 cfs @ 13.48 hrs HW=41.09' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.27 cfs @ 5.44 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 68P: Basin 19



Summary for Pond 69P: Basin 20

Inflow Area = 4.123 ac, 27.97% Impervious, Inflow Depth = 1.99" for Custom event
Inflow = 5.11 cfs @ 12.04 hrs, Volume= 0.685 af
Outflow = 3.44 cfs @ 12.11 hrs, Volume= 0.621 af, Atten= 33%, Lag= 4.2 min
Primary = 3.44 cfs @ 12.11 hrs, Volume= 0.621 af
Routed to Pond 72P : Basin 21

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.86' @ 12.11 hrs Surf.Area= 6,896 sf Storage= 8,327 cf

Plug-Flow detention time= 297.1 min calculated for 0.621 af (91% of inflow)
Center-of-Mass det. time= 237.4 min (1,115.6 - 878.3)

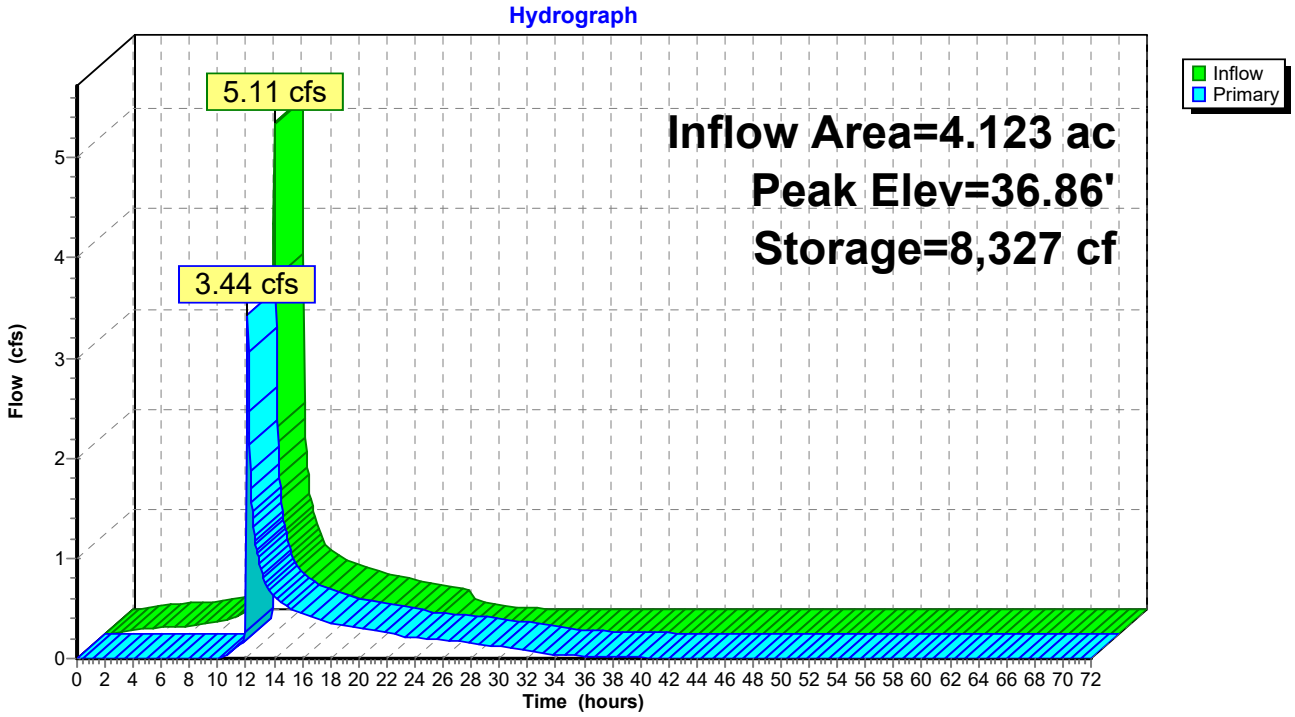
Volume	Invert	Avail.Storage	Storage Description
#1	35.00'	13,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.00	2,400	0	0
36.00	4,500	3,450	3,450
37.00	7,300	5,900	9,350
37.50	9,000	4,075	13,425

Device	Routing	Invert	Outlet Devices
#1	Primary	35.84'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.28 cfs @ 12.11 hrs HW=36.85' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.22 cfs @ 4.53 fps)
└**2=Orifice/Grate** (Weir Controls 3.06 cfs @ 1.27 fps)

Pond 69P: Basin 20



Summary for Pond 70P: Basin 29

[93] Warning: Storage range exceeded by 144.03'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=32)

Inflow Area = 2.987 ac, 32.51% Impervious, Inflow Depth = 2.35" for Custom event
Inflow = 5.72 cfs @ 12.10 hrs, Volume= 0.586 af
Outflow = 2.85 cfs @ 12.40 hrs, Volume= 0.502 af, Atten= 50%, Lag= 17.8 min
Primary = 2.85 cfs @ 12.40 hrs, Volume= 0.502 af
Routed to Pond 67P : Basin 30

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 180.03' @ 12.40 hrs Surf.Area= 8,700 sf Storage= 12,800 cf

Plug-Flow detention time= 546.0 min calculated for 0.502 af (86% of inflow)
Center-of-Mass det. time= 474.0 min (1,254.7 - 780.6)

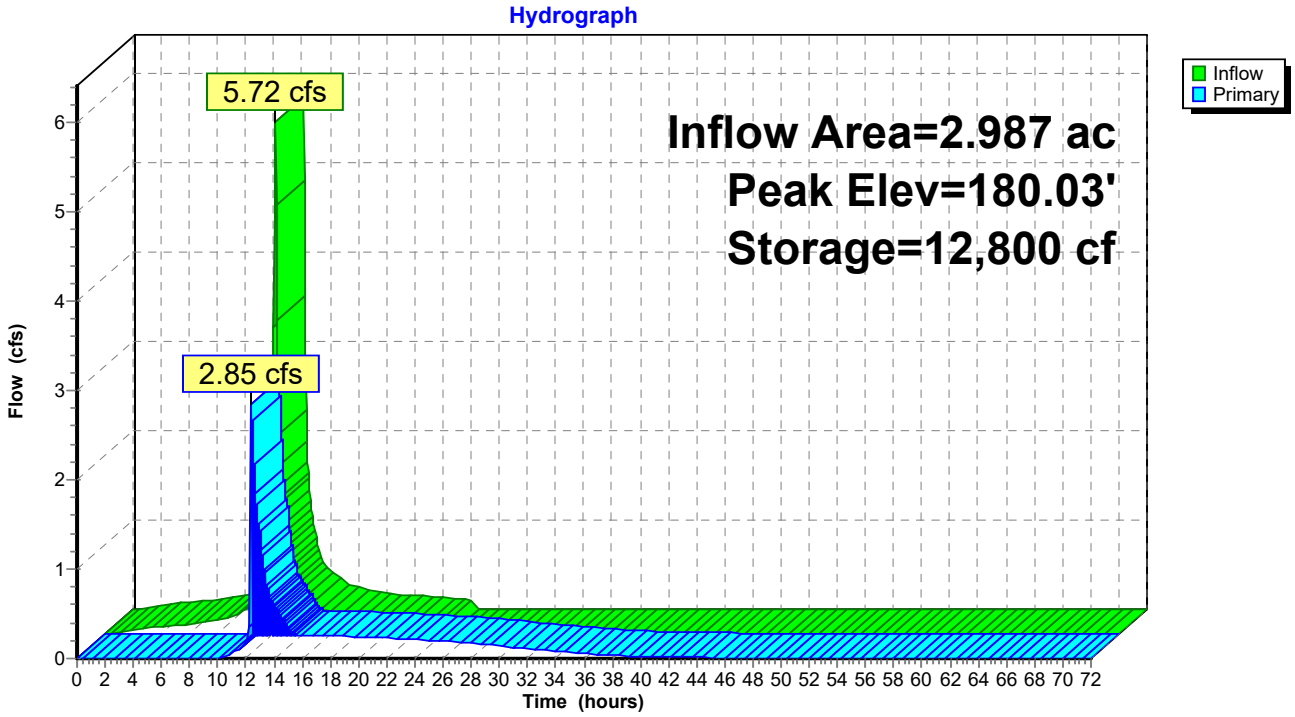
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	12,800 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,500	0	0
35.00	6,200	5,350	5,350
36.00	8,700	7,450	12,800

Device	Routing	Invert	Outlet Devices
#1	Primary	34.71'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.80 cfs @ 12.40 hrs HW=174.73' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 2.80 cfs @ 56.95 fps)

Pond 70P: Basin 29



Summary for Subcatchment 70S: Basin 20 - Impervious

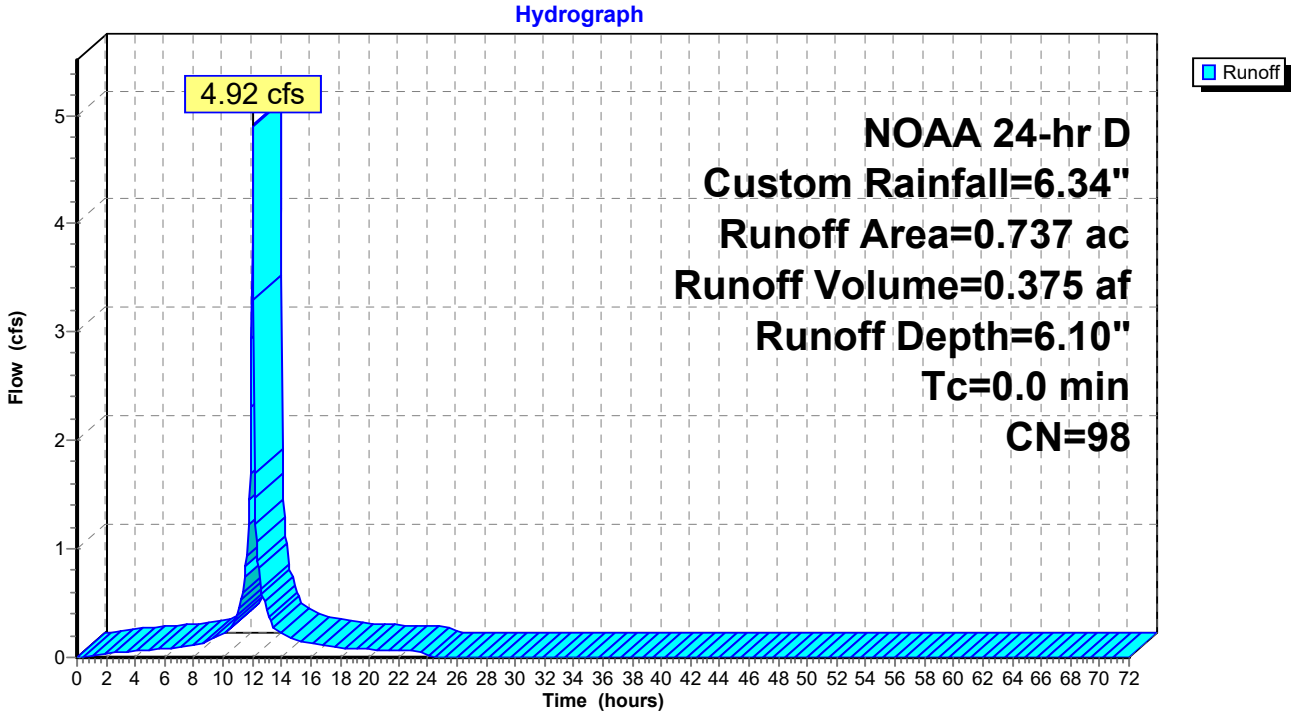
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 4.92 cfs @ 12.04 hrs, Volume= 0.375 af, Depth= 6.10"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.737	98	Impervious
	0.737		100.00% Impervious Area

Subcatchment 70S: Basin 20 - Impervious



Summary for Pond 71P: Basin 33

Inflow Area = 5.600 ac, 26.93% Impervious, Inflow Depth > 1.88" for Custom event
Inflow = 4.73 cfs @ 12.10 hrs, Volume= 0.879 af
Outflow = 0.32 cfs @ 20.47 hrs, Volume= 0.806 af, Atten= 93%, Lag= 501.9 min
Primary = 0.32 cfs @ 20.47 hrs, Volume= 0.806 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.61' @ 20.47 hrs Surf.Area= 8,536 sf Storage= 15,726 cf

Plug-Flow detention time= 717.8 min calculated for 0.806 af (92% of inflow)
Center-of-Mass det. time= 581.0 min (1,730.6 - 1,149.6)

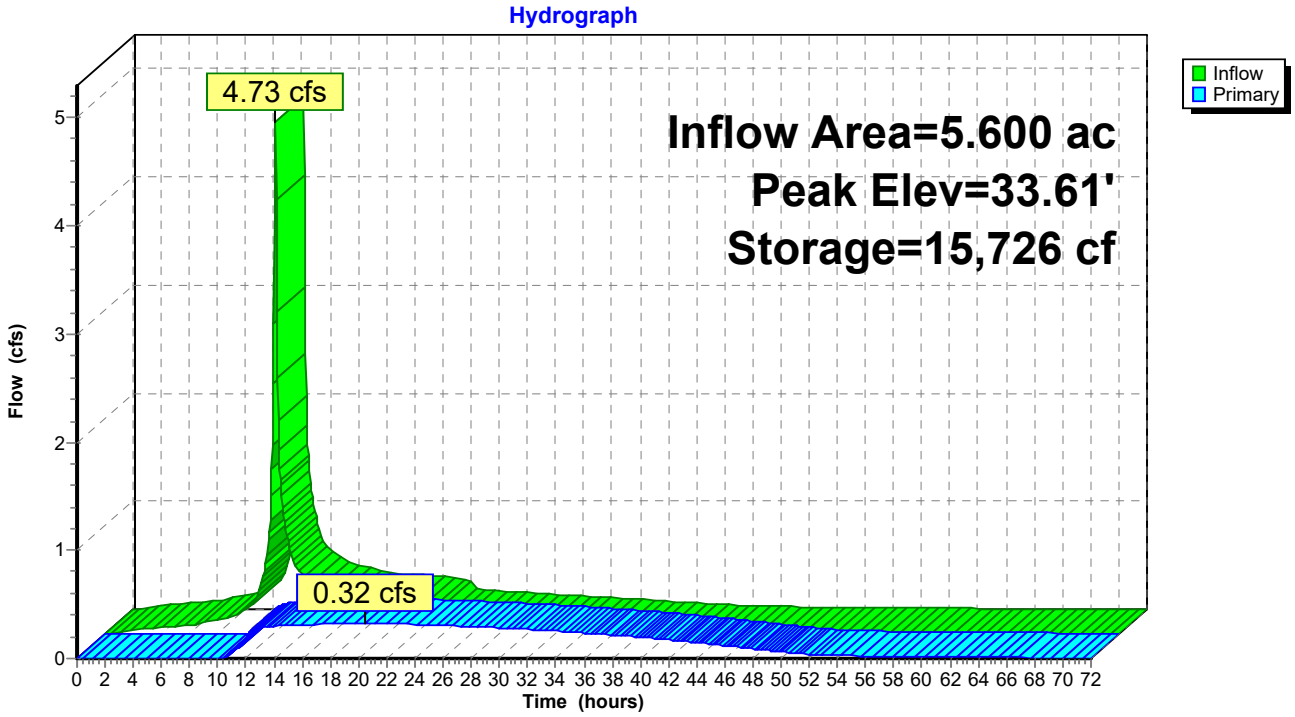
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	41,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,900	0	0
32.00	5,400	4,650	4,650
33.00	7,200	6,300	10,950
34.00	9,400	8,300	19,250
35.00	11,000	10,200	29,450
36.00	13,000	12,000	41,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.67'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.32 cfs @ 20.47 hrs HW=33.61' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.32 cfs @ 6.48 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 71P: Basin 33



Summary for Subcatchment 71S: Basin 20 - Pervious

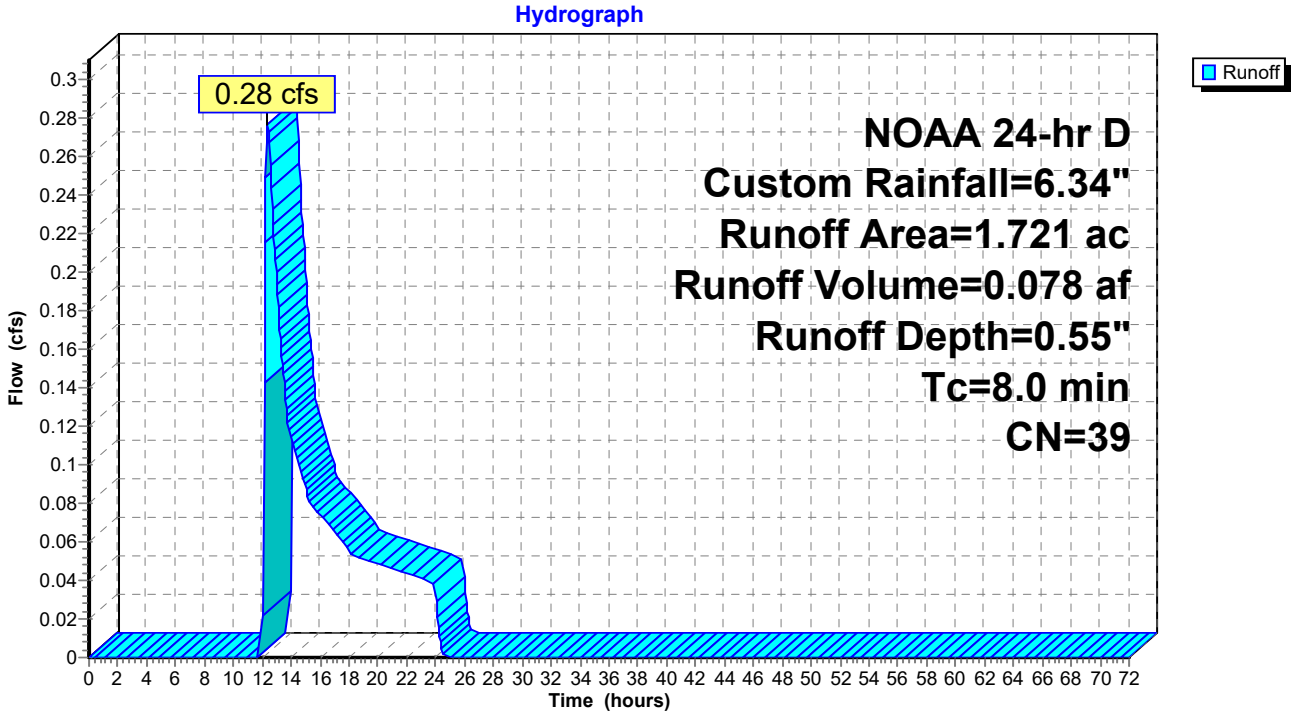
Runoff = 0.28 cfs @ 12.37 hrs, Volume= 0.078 af, Depth= 0.55"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
1.721		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 71S: Basin 20 - Pervious



Summary for Pond 72P: Basin 21

Inflow Area = 4.621 ac, 35.73% Impervious, Inflow Depth = 2.27" for Custom event
Inflow = 6.27 cfs @ 12.11 hrs, Volume= 0.874 af
Outflow = 5.93 cfs @ 12.14 hrs, Volume= 0.831 af, Atten= 5%, Lag= 1.7 min
Primary = 5.93 cfs @ 12.14 hrs, Volume= 0.831 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.04' @ 12.14 hrs Surf.Area= 2,853 sf Storage= 2,524 cf

Plug-Flow detention time= 91.0 min calculated for 0.831 af (95% of inflow)
Center-of-Mass det. time= 34.7 min (1,042.9 - 1,008.2)

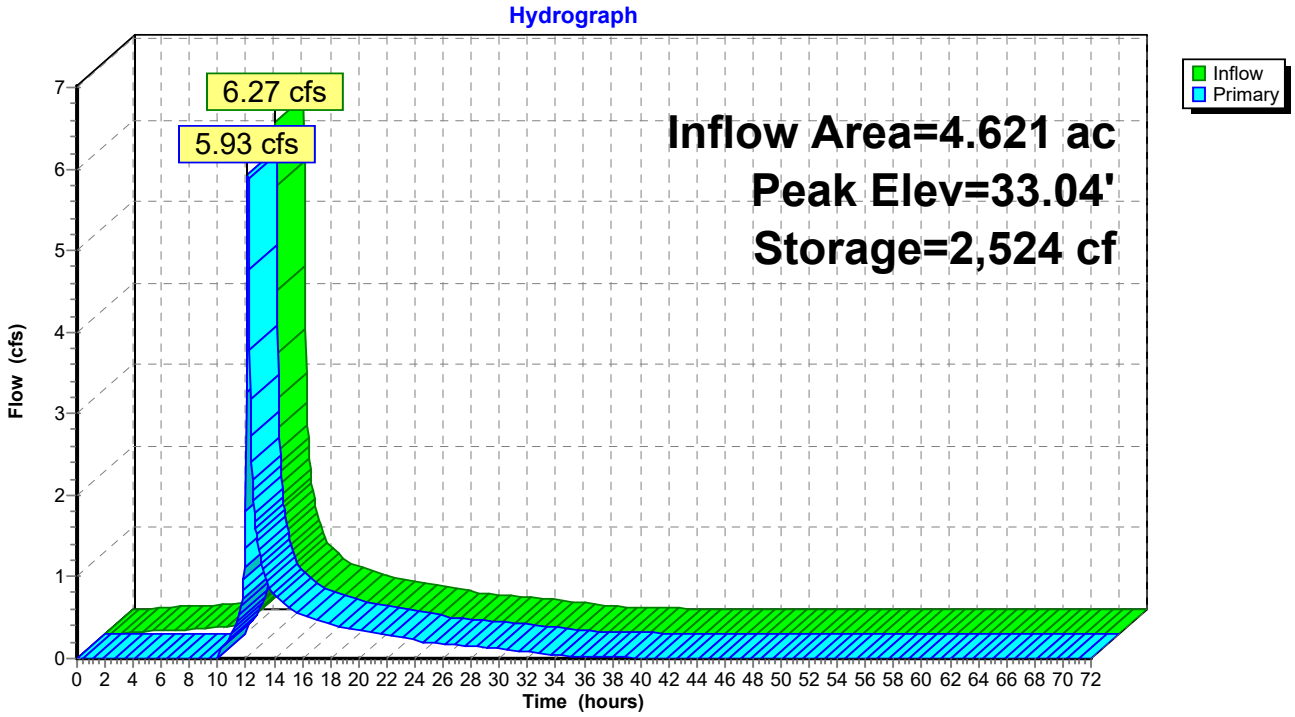
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	8,000 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,000	0	0
33.00	2,800	2,400	2,400
34.00	4,000	3,400	5,800
34.50	4,800	2,200	8,000

Device	Routing	Invert	Outlet Devices
#1	Primary	32.81'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.79 cfs @ 12.14 hrs HW=33.04' (Free Discharge)
1=Orifice/Grate (Weir Controls 5.79 cfs @ 1.57 fps)

Pond 72P: Basin 21



Summary for Pond 73P: Basin 32

Inflow Area = 2.998 ac, 24.25% Impervious, Inflow Depth = 1.89" for Custom event
Inflow = 4.31 cfs @ 12.10 hrs, Volume= 0.473 af
Outflow = 0.20 cfs @ 16.76 hrs, Volume= 0.399 af, Atten= 95%, Lag= 279.5 min
Primary = 0.20 cfs @ 16.76 hrs, Volume= 0.399 af
Routed to Pond 71P : Basin 33

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.06' @ 16.76 hrs Surf.Area= 13,955 sf Storage= 13,644 cf

Plug-Flow detention time= 874.6 min calculated for 0.399 af (84% of inflow)
Center-of-Mass det. time= 794.5 min (1,589.4 - 794.9)

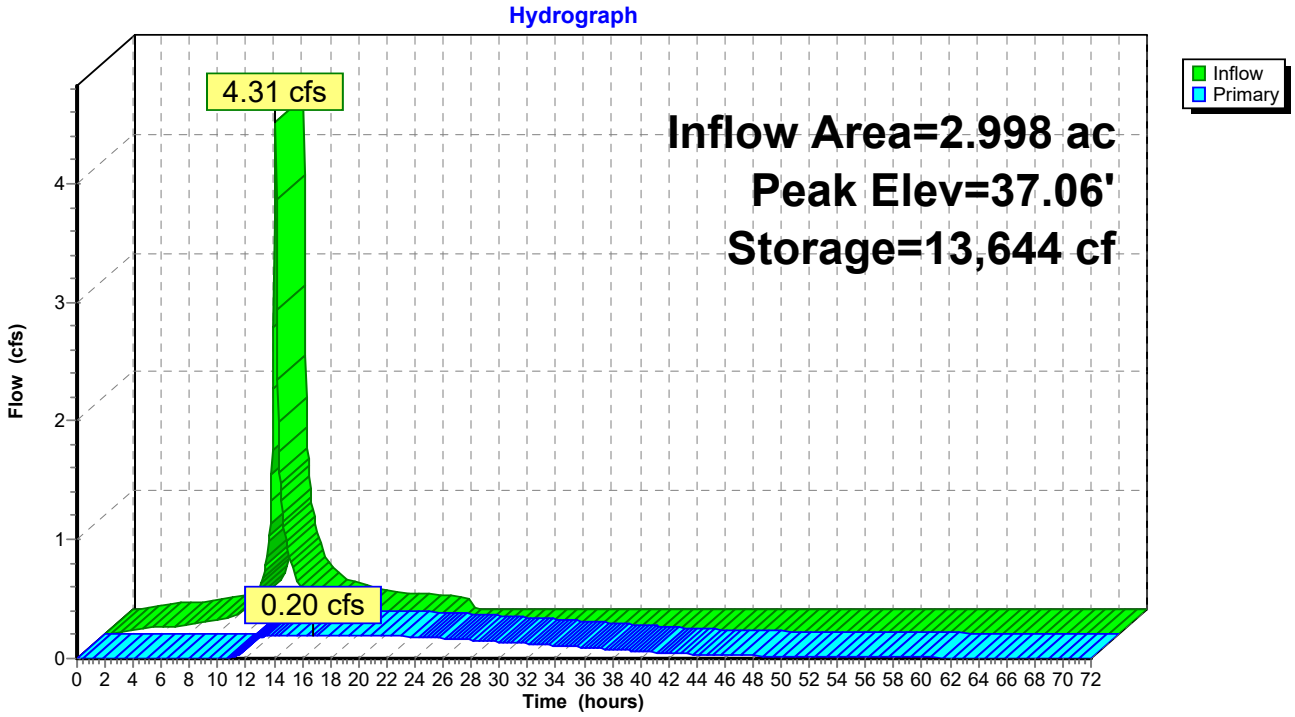
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	54,225 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	11,700	0	0
37.00	13,800	12,750	12,750
38.00	16,200	15,000	27,750
39.00	18,000	17,100	44,850
39.50	19,500	9,375	54,225

Device	Routing	Invert	Outlet Devices
#1	Primary	36.23'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	38.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 16.76 hrs HW=37.06' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.20 cfs @ 4.06 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 73P: Basin 32



Summary for Subcatchment 73S: Basin 21 - Impervious

[49] Hint: Tc<2dt may require smaller dt

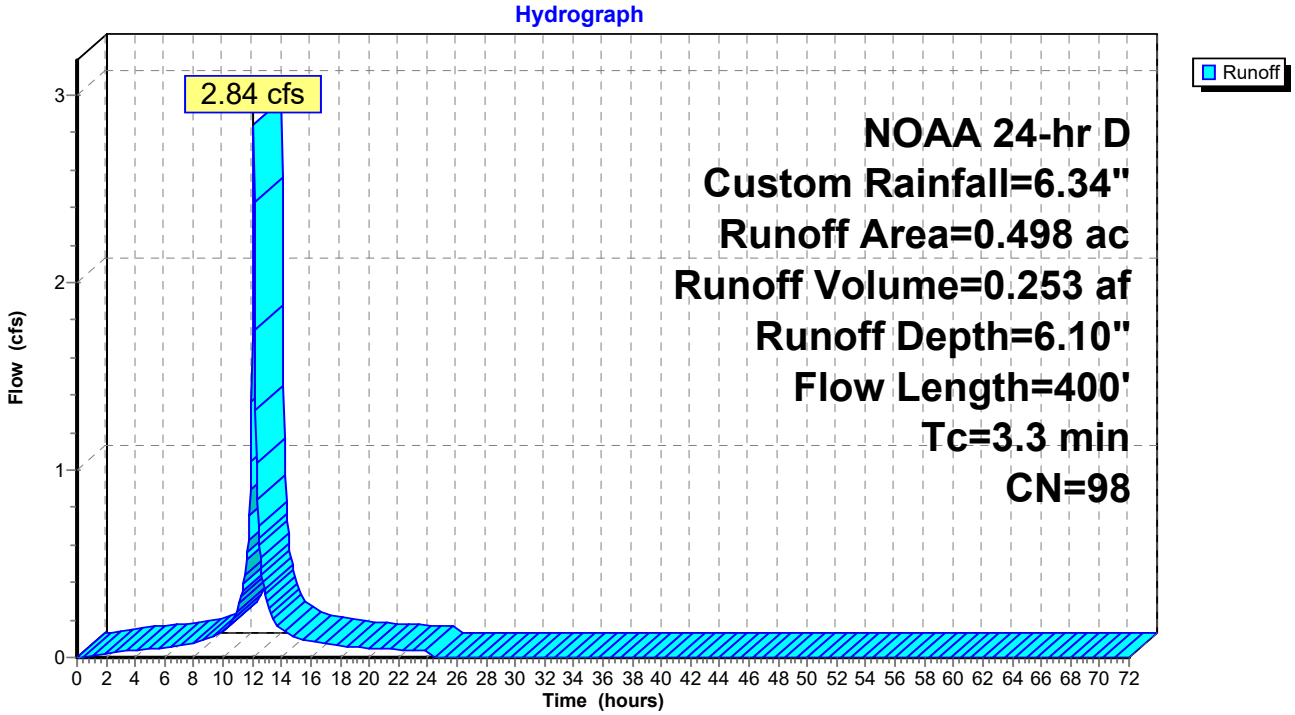
Runoff = 2.84 cfs @ 12.10 hrs, Volume= 0.253 af, Depth= 6.10"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.498	98	Impervious
	0.498		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.3	400	Total			

Subcatchment 73S: Basin 21 - Impervious



Summary for Pond 74P: Basin 39

Inflow Area = 20.988 ac, 20.72% Impervious, Inflow Depth > 1.33" for Custom event
Inflow = 13.32 cfs @ 12.25 hrs, Volume= 2.323 af
Outflow = 1.73 cfs @ 14.61 hrs, Volume= 1.705 af, Atten= 87%, Lag= 141.6 min
Primary = 1.73 cfs @ 14.61 hrs, Volume= 1.705 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.09' @ 14.61 hrs Surf.Area= 18,372 sf Storage= 42,639 cf

Plug-Flow detention time= 848.0 min calculated for 1.705 af (73% of inflow)
Center-of-Mass det. time= 600.0 min (1,723.8 - 1,123.8)

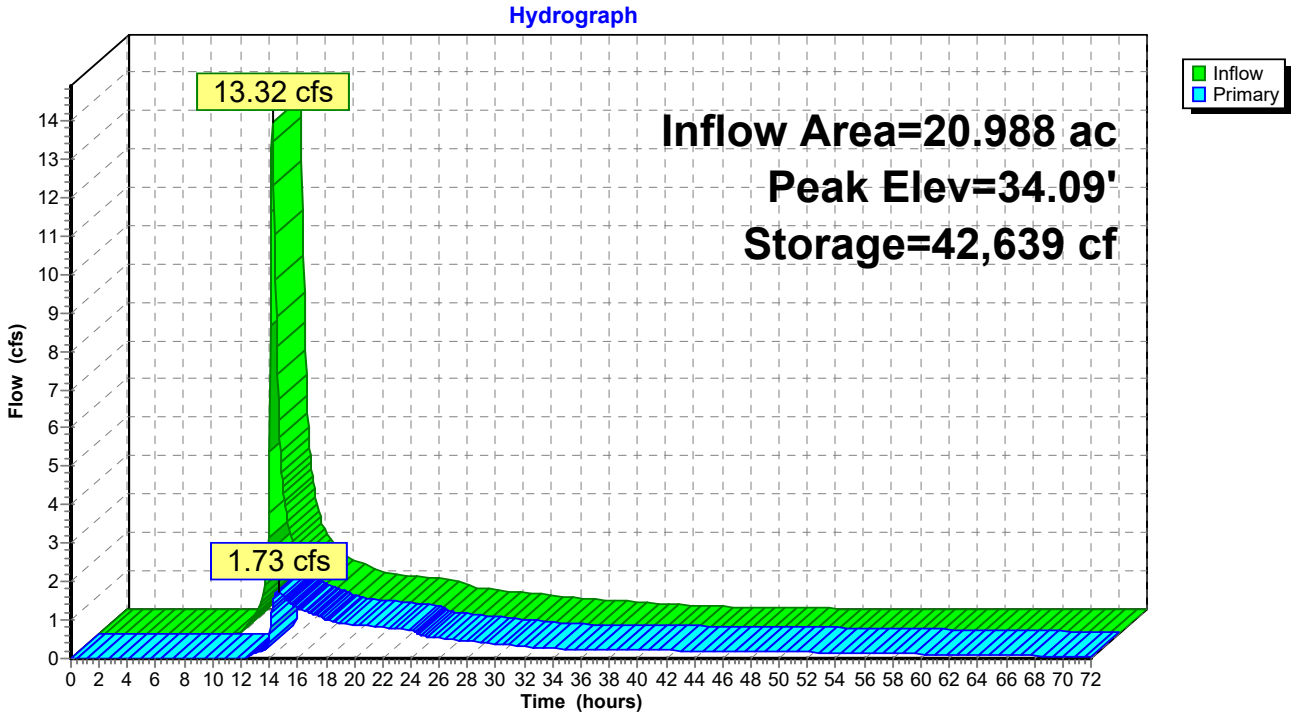
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	50,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	9,900	0	0
32.00	12,000	10,950	10,950
33.00	15,000	13,500	24,450
34.00	18,000	16,500	40,950
34.50	20,000	9,500	50,450

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.71 cfs @ 14.61 hrs HW=34.09' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.23 cfs @ 4.74 fps)
└**2=Orifice/Grate** (Weir Controls 1.48 cfs @ 1.00 fps)

Pond 74P: Basin 39



Summary for Subcatchment 74S: Basin 21 - Pervious

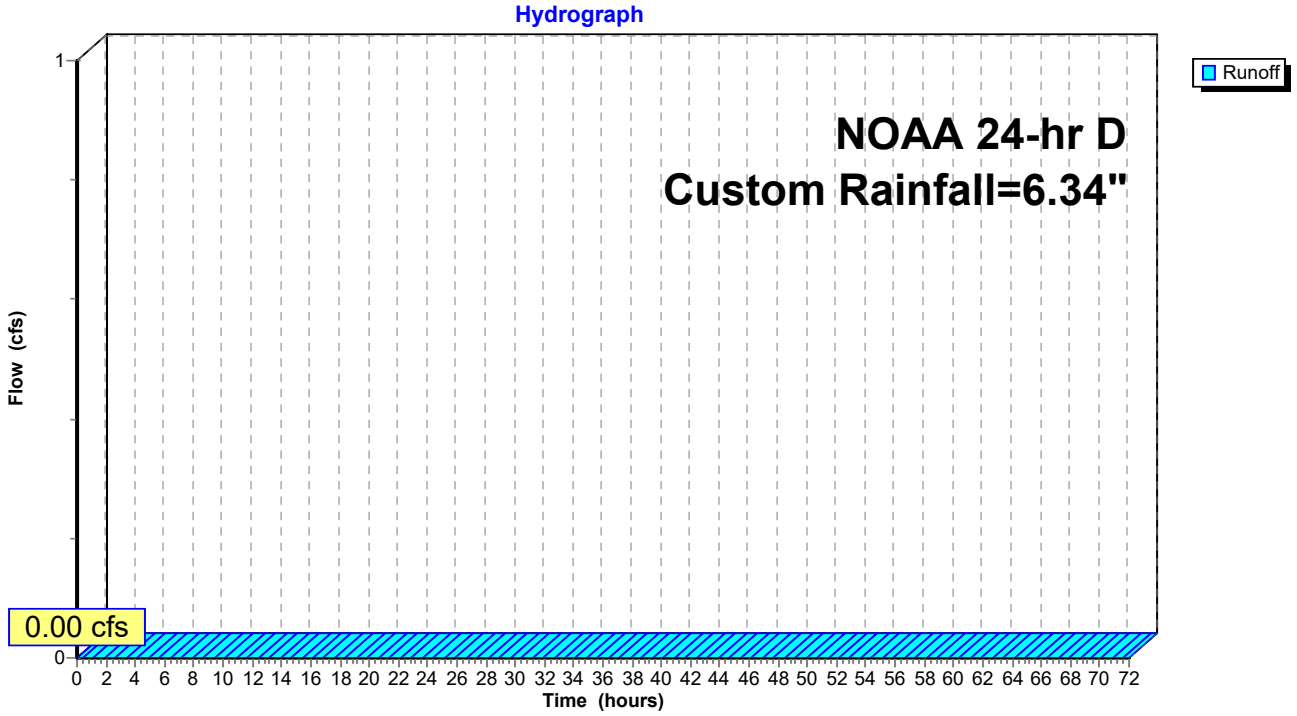
[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 74S: Basin 21 - Pervious



Summary for Pond 75P: Basin 25

Inflow Area = 17.778 ac, 32.79% Impervious, Inflow Depth = 2.08" for Custom event
Inflow = 22.78 cfs @ 12.14 hrs, Volume= 3.082 af
Outflow = 21.81 cfs @ 12.17 hrs, Volume= 2.994 af, Atten= 4%, Lag= 2.0 min
Primary = 16.85 cfs @ 12.17 hrs, Volume= 2.918 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 4.96 cfs @ 12.17 hrs, Volume= 0.076 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 27.66' @ 12.17 hrs Surf.Area= 10,563 sf Storage= 18,300 cf

Plug-Flow detention time= 202.0 min calculated for 2.994 af (97% of inflow)
Center-of-Mass det. time= 165.7 min (1,148.0 - 982.4)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	28,125 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

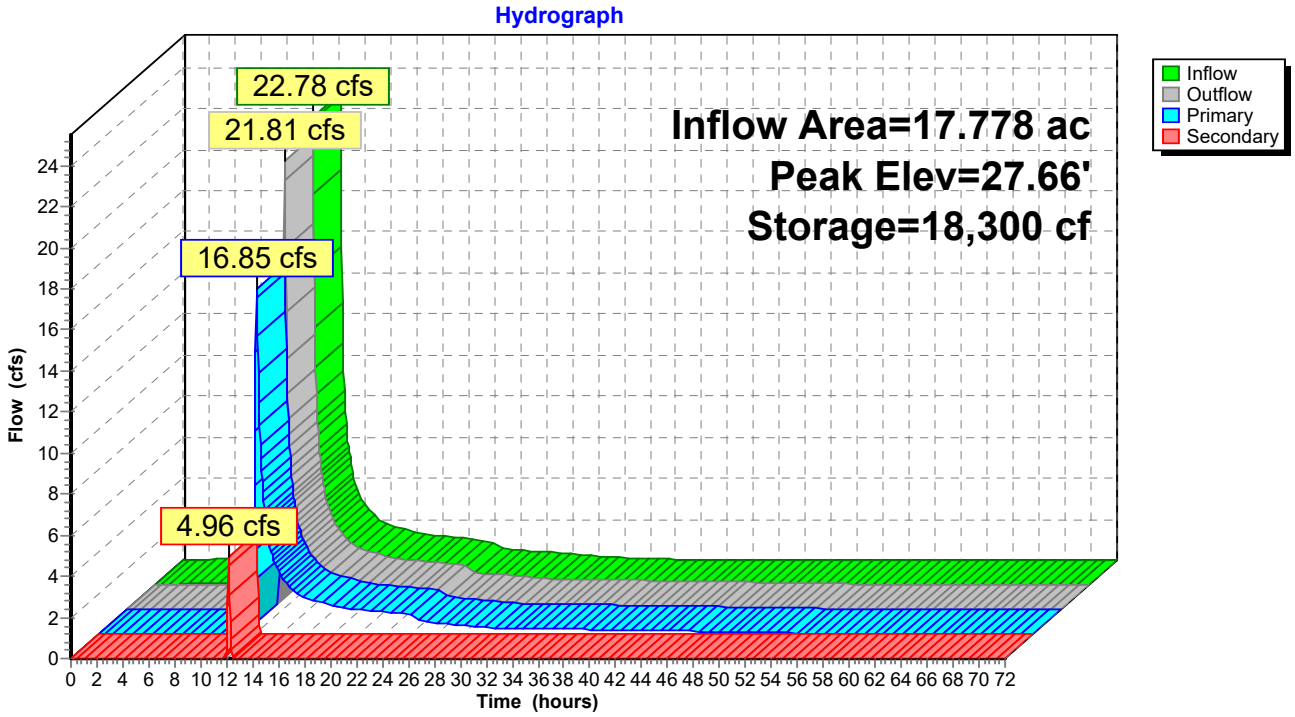
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	6,600	0	0
26.00	7,200	3,450	3,450
27.00	9,300	8,250	11,700
28.00	11,200	10,250	21,950
28.50	13,500	6,175	28,125

Device	Routing	Invert	Outlet Devices
#1	Primary	26.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	27.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	27.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=16.48 cfs @ 12.17 hrs HW=27.66' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.29 cfs @ 5.96 fps)
└**2=Orifice/Grate** (Weir Controls 16.19 cfs @ 2.21 fps)

Secondary OutFlow Max=4.67 cfs @ 12.17 hrs HW=27.66' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 4.67 cfs @ 0.99 fps)

Pond 75P: Basin 25



Summary for Pond 76P: Basin 38

Inflow Area = 1.797 ac, 28.16% Impervious, Inflow Depth = 2.11" for Custom event
Inflow = 3.14 cfs @ 12.09 hrs, Volume= 0.316 af
Outflow = 0.22 cfs @ 14.37 hrs, Volume= 0.271 af, Atten= 93%, Lag= 136.6 min
Primary = 0.22 cfs @ 14.37 hrs, Volume= 0.271 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.33' @ 14.37 hrs Surf.Area= 7,448 sf Storage= 8,102 cf

Plug-Flow detention time= 536.1 min calculated for 0.271 af (86% of inflow)
Center-of-Mass det. time= 462.1 min (1,248.7 - 786.5)

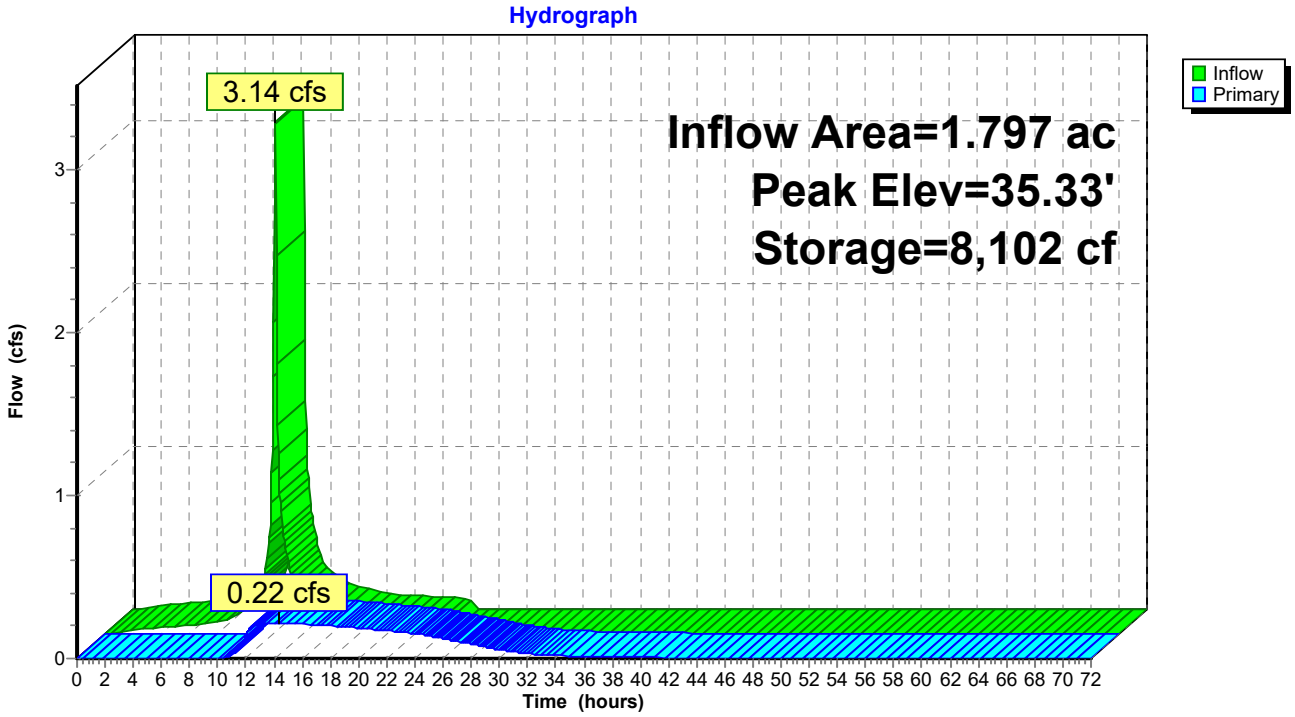
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	18,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,900	0	0
35.00	6,700	5,800	5,800
36.00	9,000	7,850	13,650
36.50	10,200	4,800	18,450

Device	Routing	Invert	Outlet Devices
#1	Primary	34.36'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 14.37 hrs HW=35.33' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.22 cfs @ 4.41 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 76P: Basin 38



Summary for Subcatchment 76S: Basin 25 - Impervious

[49] Hint: Tc<2dt may require smaller dt

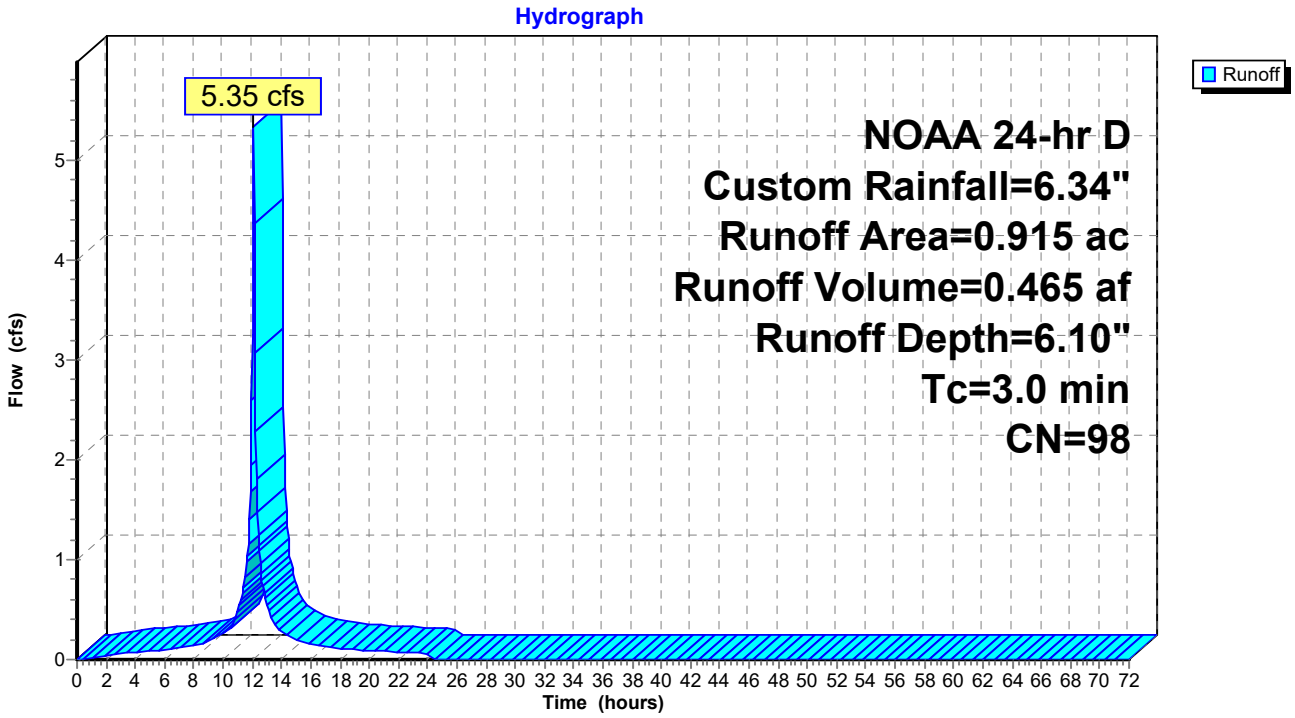
Runoff = 5.35 cfs @ 12.10 hrs, Volume= 0.465 af, Depth= 6.10"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 76S: Basin 25 - Impervious



Summary for Pond 77P: Basin 37

Inflow Area = 20.254 ac, 21.47% Impervious, Inflow Depth > 1.39" for Custom event
Inflow = 13.27 cfs @ 12.23 hrs, Volume= 2.343 af
Outflow = 13.18 cfs @ 12.25 hrs, Volume= 2.289 af, Atten= 1%, Lag= 1.7 min
Primary = 13.18 cfs @ 12.25 hrs, Volume= 2.289 af
Routed to Pond 74P : Basin 39

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.10' @ 12.25 hrs Surf.Area= 4,119 sf Storage= 3,901 cf

Plug-Flow detention time= 62.9 min calculated for 2.289 af (98% of inflow)
Center-of-Mass det. time= 20.4 min (1,126.1 - 1,105.7)

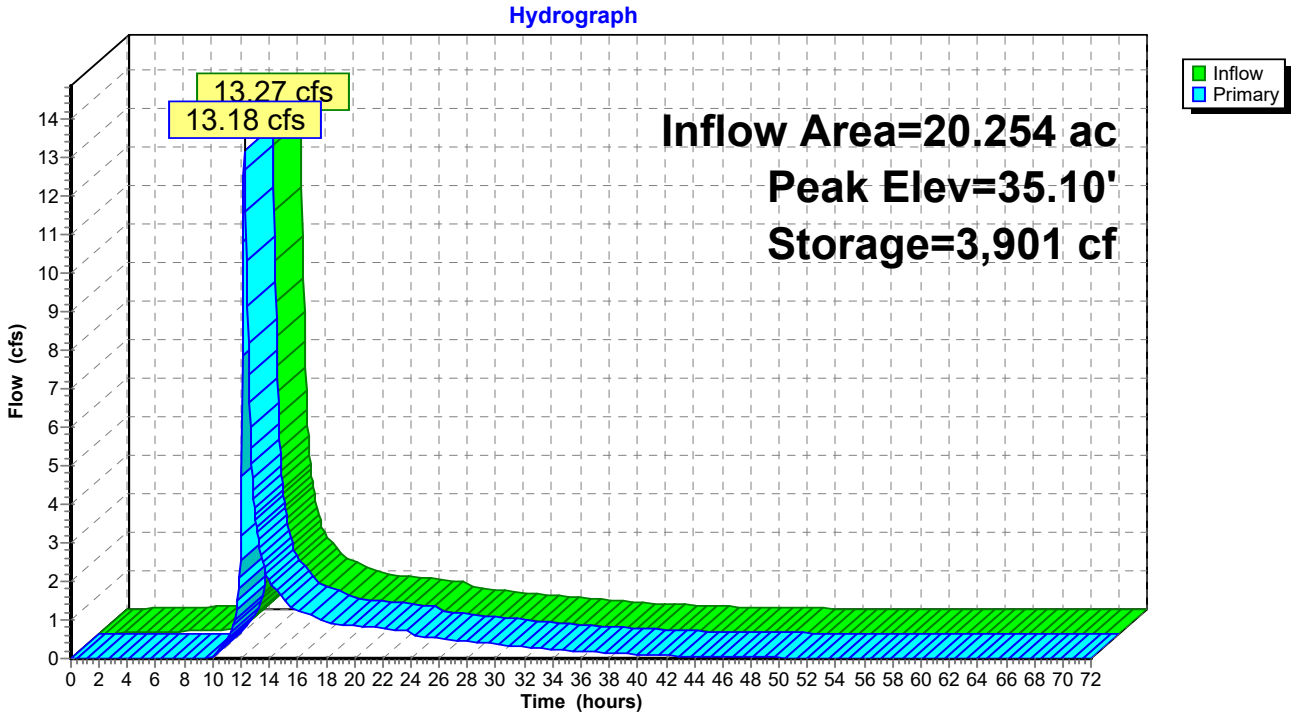
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	5,650 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	3,000	0	0
35.00	4,000	3,500	3,500
35.50	4,600	2,150	5,650

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.14 cfs @ 12.25 hrs HW=35.10' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 13.14 cfs @ 2.06 fps)

Pond 77P: Basin 37



Summary for Subcatchment 77S: Basin 25 - Pervious

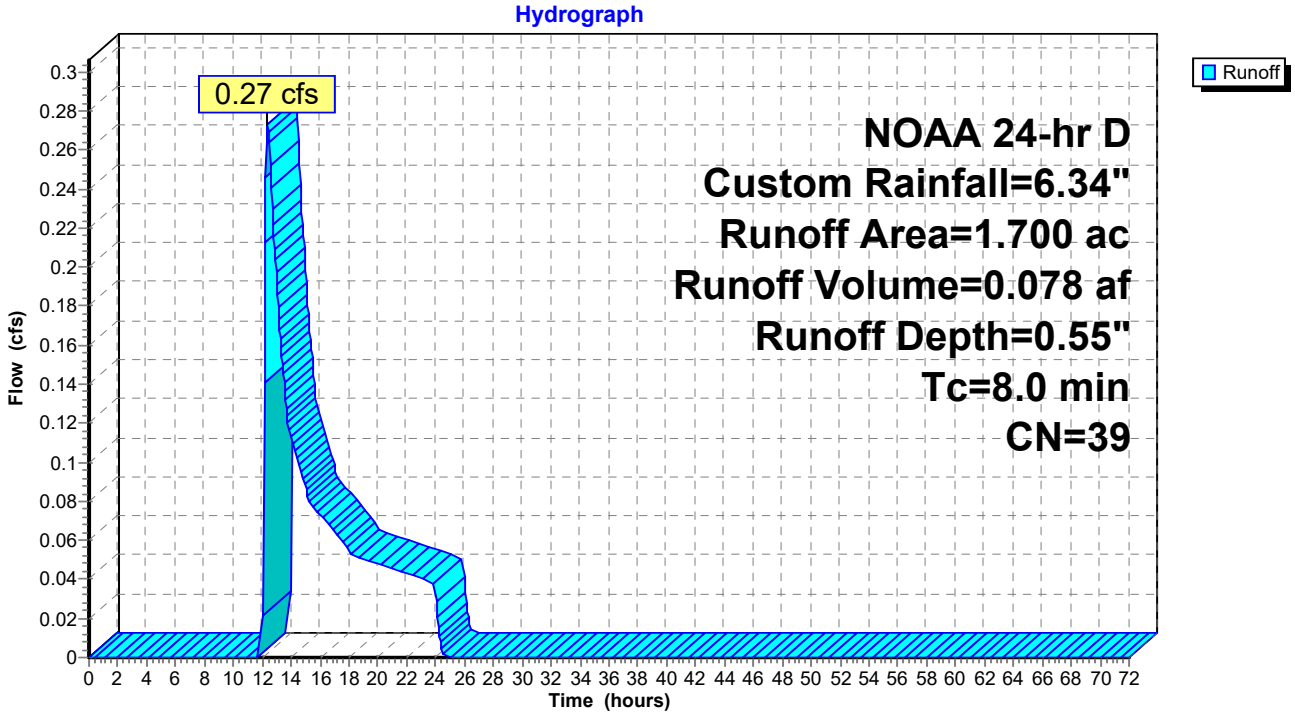
Runoff = 0.27 cfs @ 12.37 hrs, Volume= 0.078 af, Depth= 0.55"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.700	39	>75% Grass cover, Good, HSG A
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 77S: Basin 25 - Pervious



Summary for Pond 78P: Basin 24

Inflow Area = 2.540 ac, 35.00% Impervious, Inflow Depth = 2.49" for Custom event
Inflow = 5.24 cfs @ 12.10 hrs, Volume= 0.527 af
Outflow = 4.66 cfs @ 12.14 hrs, Volume= 0.451 af, Atten= 11%, Lag= 2.5 min
Primary = 4.66 cfs @ 12.14 hrs, Volume= 0.451 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 30.91' @ 12.14 hrs Surf.Area= 5,728 sf Storage= 4,422 cf

Plug-Flow detention time= 143.6 min calculated for 0.451 af (86% of inflow)
Center-of-Mass det. time= 69.5 min (846.8 - 777.4)

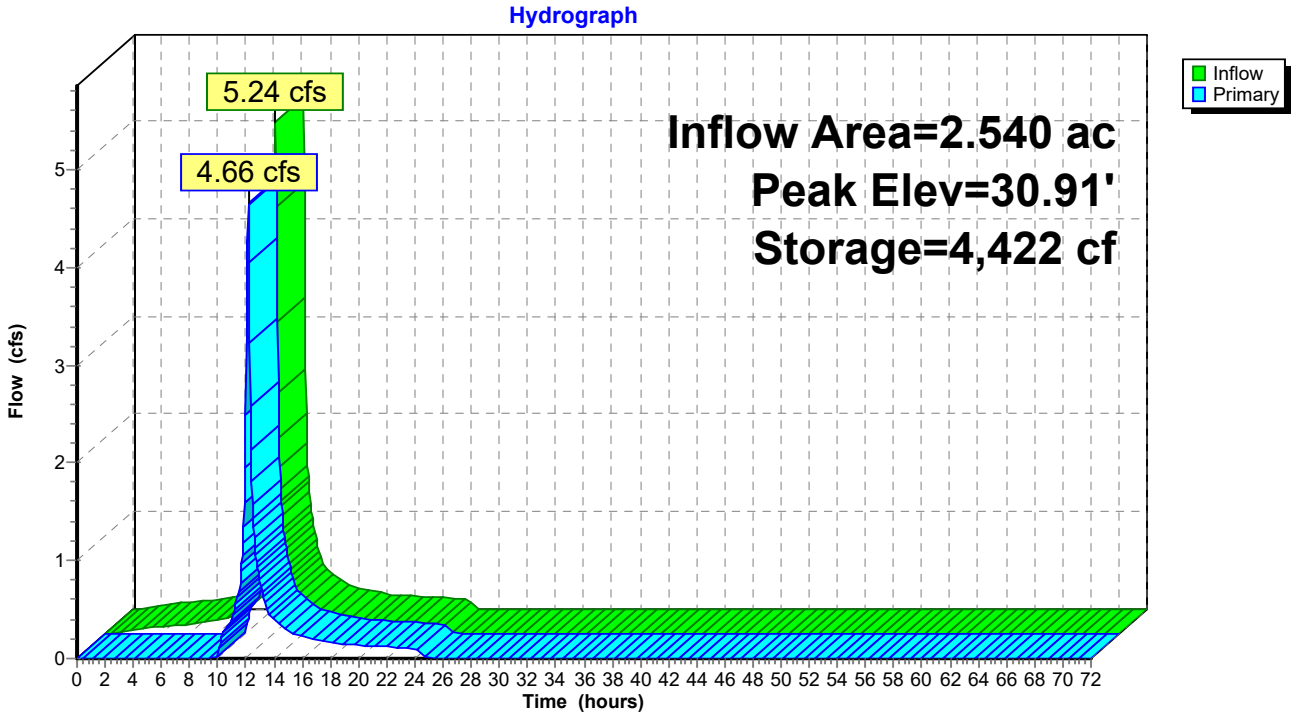
Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	16,275 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	4,000	0	0
31.00	5,900	4,950	4,950
32.00	8,000	6,950	11,900
32.50	9,500	4,375	16,275

Device	Routing	Invert	Outlet Devices
#1	Primary	30.71'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.60 cfs @ 12.14 hrs HW=30.91' (Free Discharge)
1=Orifice/Grate (Weir Controls 4.60 cfs @ 1.45 fps)

Pond 78P: Basin 24



Summary for Pond 79P: Basin 34

[92] Warning: Device #2 is above defined storage

Inflow Area = 1.715 ac, 25.31% Impervious, Inflow Depth = 1.95" for Custom event
Inflow = 2.57 cfs @ 12.10 hrs, Volume= 0.279 af
Outflow = 0.19 cfs @ 14.50 hrs, Volume= 0.239 af, Atten= 93%, Lag= 144.0 min
Primary = 0.19 cfs @ 14.50 hrs, Volume= 0.239 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.03' @ 14.50 hrs Surf.Area= 8,097 sf Storage= 7,128 cf

Plug-Flow detention time= 551.8 min calculated for 0.239 af (86% of inflow)
Center-of-Mass det. time= 479.5 min (1,272.2 - 792.7)

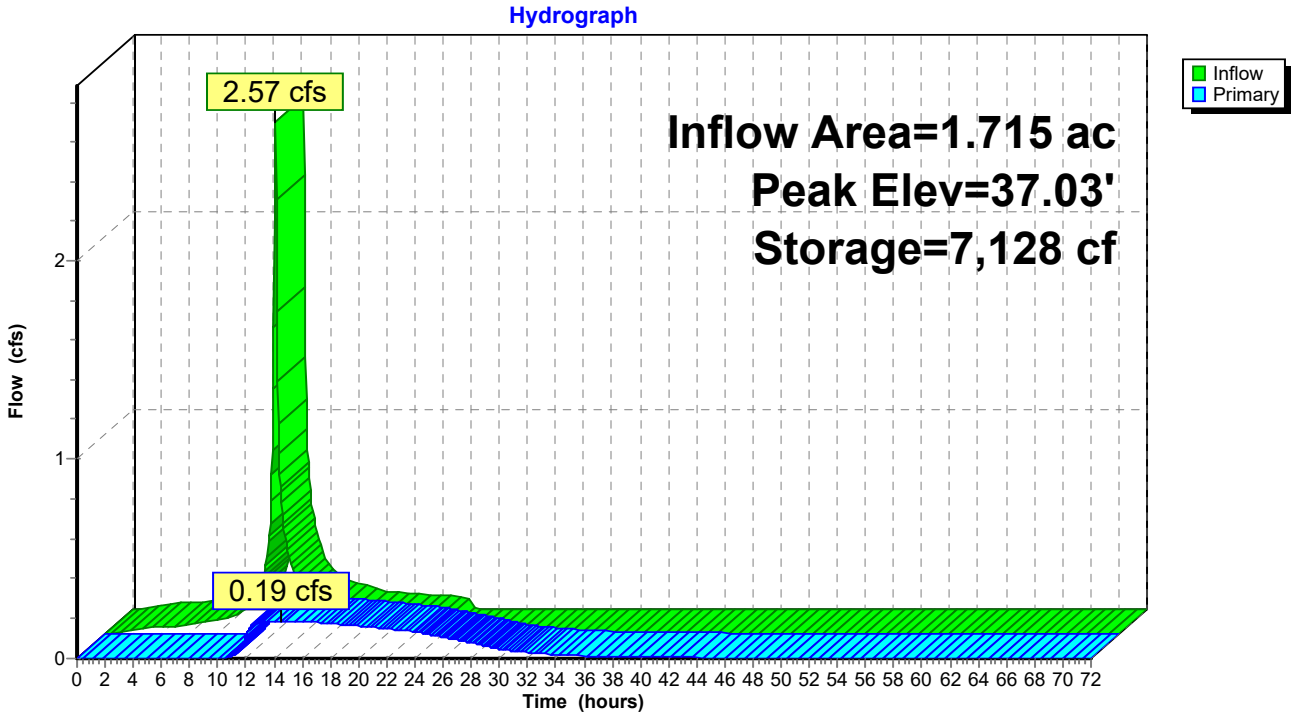
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	11,200 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	5,700	0	0
37.00	8,000	6,850	6,850
37.50	9,400	4,350	11,200

Device	Routing	Invert	Outlet Devices
#1	Primary	36.27'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 14.50 hrs HW=37.03' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.19 cfs @ 3.85 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 79P: Basin 34



Summary for Subcatchment 79S: Basin 24 - Impervious

[49] Hint: Tc<2dt may require smaller dt

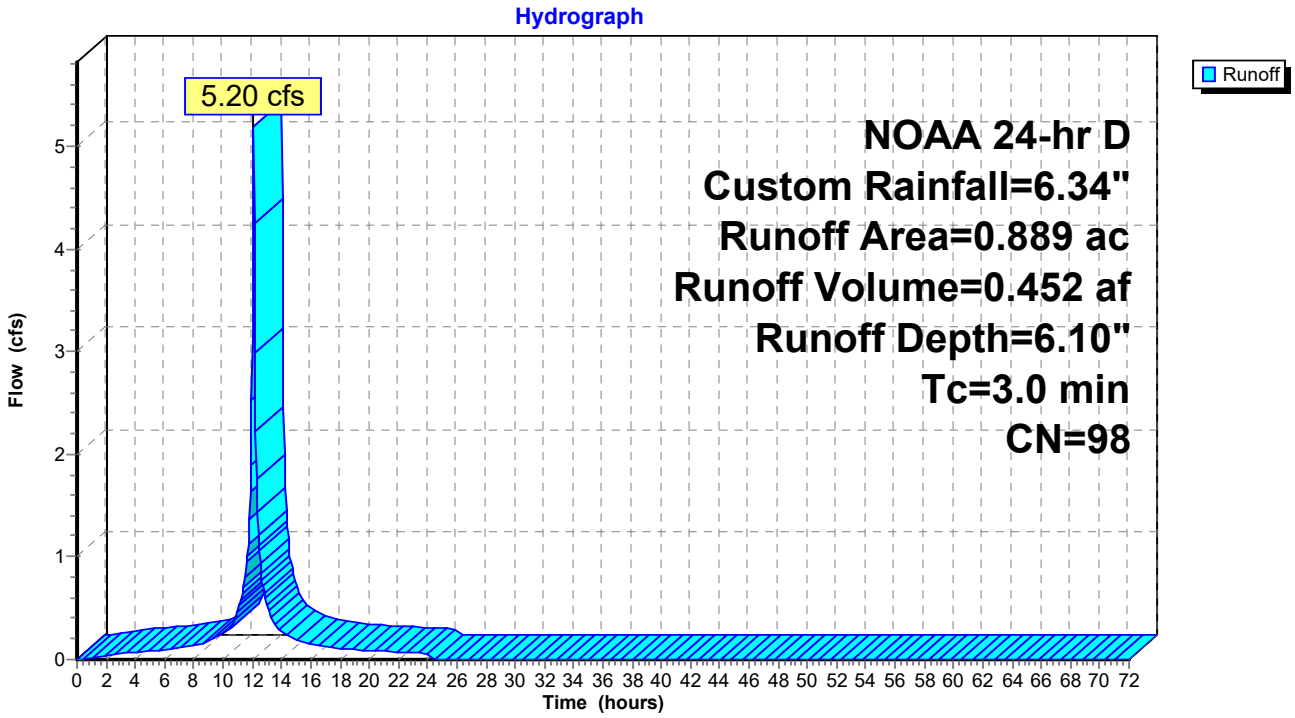
Runoff = 5.20 cfs @ 12.10 hrs, Volume= 0.452 af, Depth= 6.10"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.889	98	Impervious
	0.889		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 79S: Basin 24 - Impervious



Summary for Pond 80P: Basin 35

Inflow Area = 14.918 ac, 10.66% Impervious, Inflow Depth = 0.78" for Custom event
Inflow = 8.62 cfs @ 12.11 hrs, Volume= 0.973 af
Outflow = 3.66 cfs @ 12.31 hrs, Volume= 0.830 af, Atten= 57%, Lag= 11.9 min
Primary = 3.66 cfs @ 12.31 hrs, Volume= 0.830 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.16' @ 12.31 hrs Surf.Area= 11,120 sf Storage= 19,061 cf

Plug-Flow detention time= 549.3 min calculated for 0.830 af (85% of inflow)
Center-of-Mass det. time= 469.7 min (1,274.3 - 804.5)

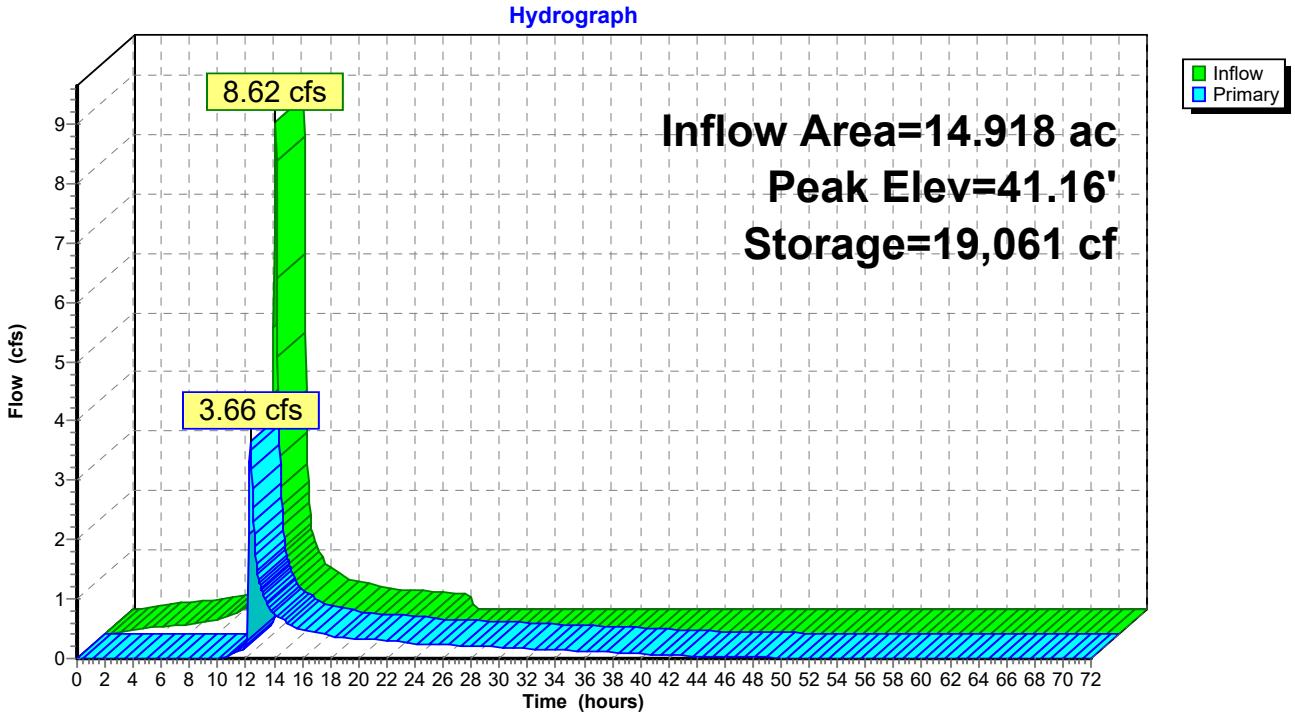
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	22,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	6,700	0	0
40.00	8,600	7,650	7,650
41.00	10,700	9,650	17,300
41.50	12,000	5,675	22,975

Device	Routing	Invert	Outlet Devices
#1	Primary	39.80'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.61 cfs @ 12.31 hrs HW=41.16' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.26 cfs @ 5.35 fps)
2=Orifice/Grate (Weir Controls 3.35 cfs @ 1.31 fps)

Pond 80P: Basin 35



Summary for Subcatchment 80S: Basin 24 - Pervious

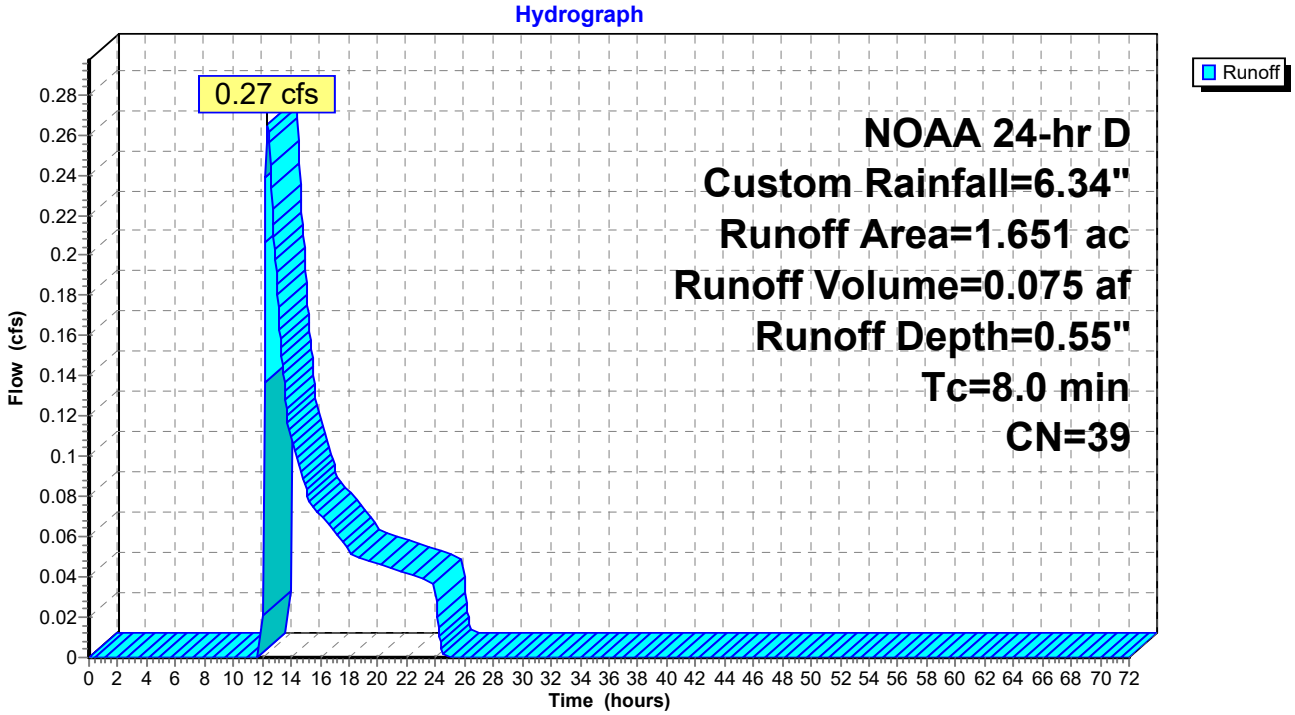
Runoff = 0.27 cfs @ 12.37 hrs, Volume= 0.075 af, Depth= 0.55"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.651	39	>75% Grass cover, Good, HSG A
1.651		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 80S: Basin 24 - Pervious



Summary for Pond 81P: Basin 27

Inflow Area = 3.012 ac, 25.00% Impervious, Inflow Depth = 1.94" for Custom event
Inflow = 4.46 cfs @ 12.10 hrs, Volume= 0.486 af
Outflow = 3.51 cfs @ 12.17 hrs, Volume= 0.420 af, Atten= 21%, Lag= 4.2 min
Primary = 3.51 cfs @ 12.17 hrs, Volume= 0.420 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.16' @ 12.17 hrs Surf.Area= 6,180 sf Storage= 7,624 cf

Plug-Flow detention time= 323.6 min calculated for 0.420 af (86% of inflow)
Center-of-Mass det. time= 254.2 min (1,047.6 - 793.4)

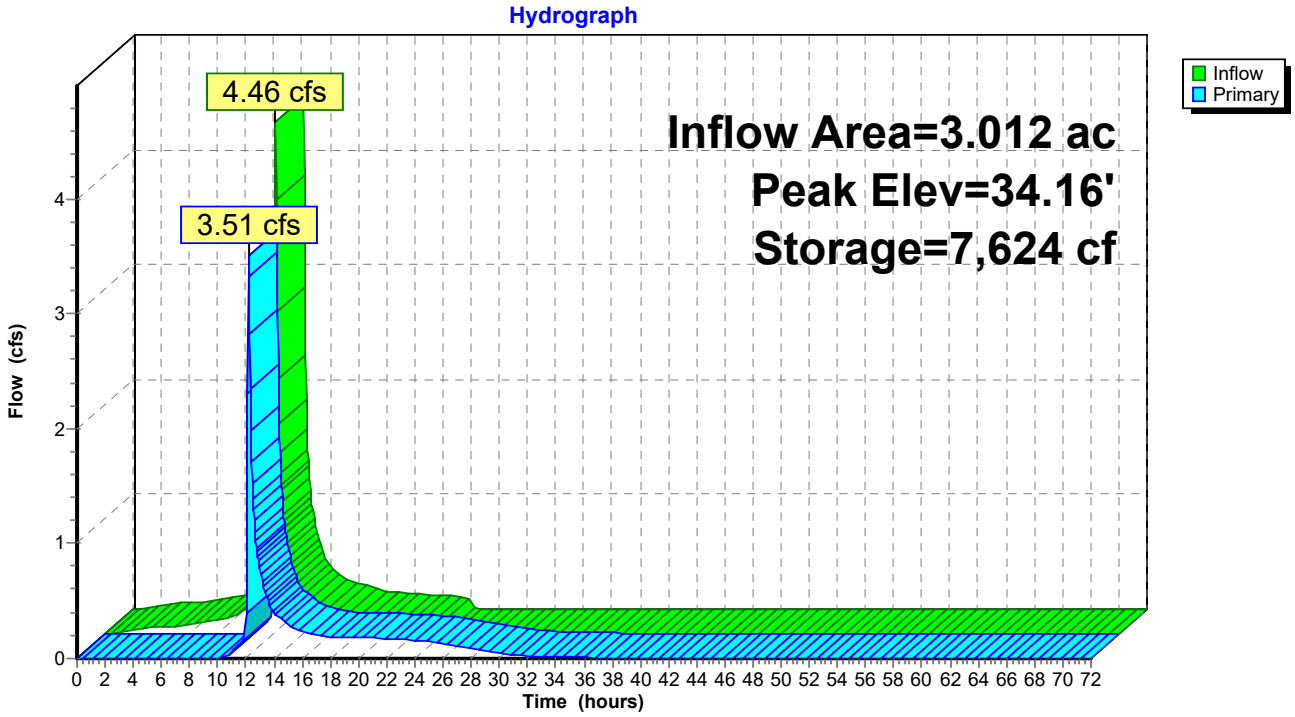
Volume	Invert	Avail.Storage	Storage Description
#1	32.50'	9,875 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.50	3,400	0	0
33.00	3,900	1,825	1,825
34.00	5,800	4,850	6,675
34.50	7,000	3,200	9,875

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.36 cfs @ 12.17 hrs HW=34.15' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.21 cfs @ 4.28 fps)
└**2=Orifice/Grate** (Weir Controls 3.15 cfs @ 1.28 fps)

Pond 81P: Basin 27



Summary for Pond 82P: Basin 36

Inflow Area = 1.697 ac,100.00% Impervious, Inflow Depth = 6.10" for Custom event
Inflow = 8.32 cfs @ 12.11 hrs, Volume= 0.863 af
Outflow = 6.58 cfs @ 12.20 hrs, Volume= 0.713 af, Atten= 21%, Lag= 5.3 min
Primary = 6.58 cfs @ 12.20 hrs, Volume= 0.713 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.24' @ 12.20 hrs Surf.Area= 9,641 sf Storage= 16,456 cf

Plug-Flow detention time= 422.8 min calculated for 0.713 af (83% of inflow)
Center-of-Mass det. time= 344.8 min (1,092.8 - 748.0)

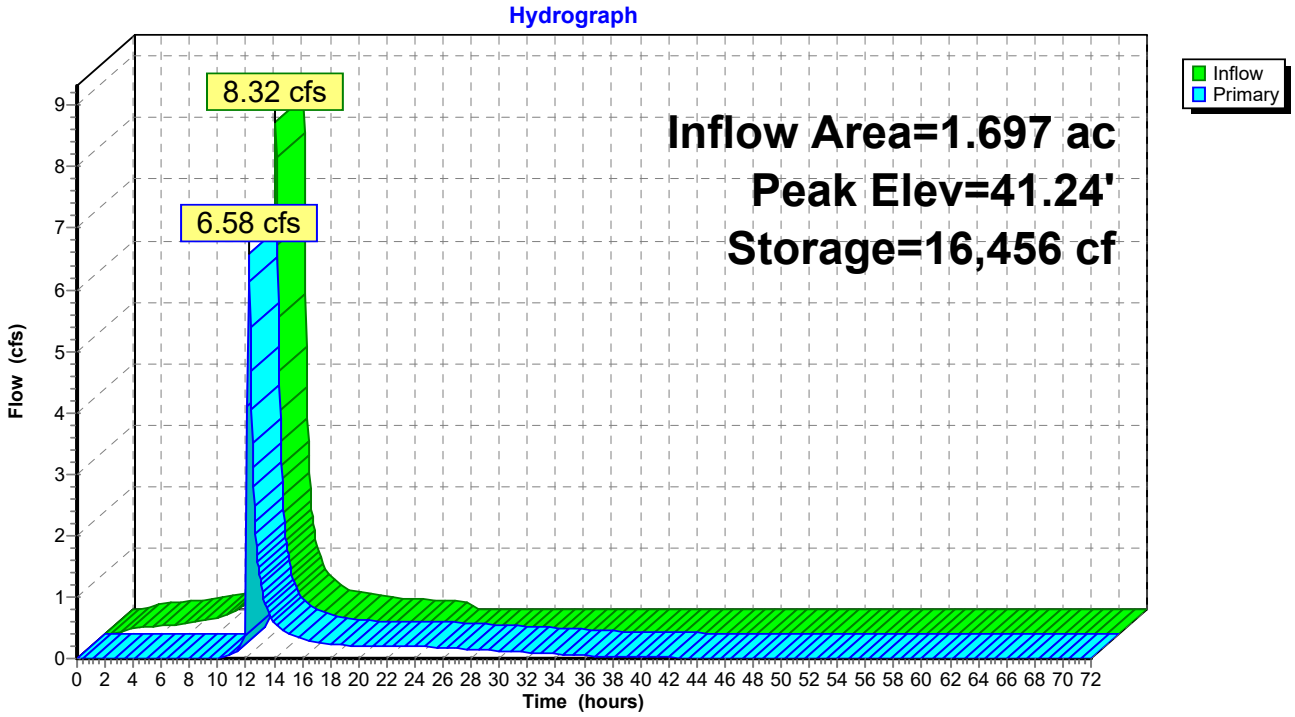
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	18,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	5,300	0	0
40.00	6,900	6,100	6,100
41.00	9,200	8,050	14,150
41.50	10,100	4,825	18,975

Device	Routing	Invert	Outlet Devices
#1	Primary	40.04'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.56 cfs @ 12.20 hrs HW=41.24' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.25 cfs @ 5.00 fps)
2=Orifice/Grate (Weir Controls 6.32 cfs @ 1.62 fps)

Pond 82P: Basin 36



Summary for Subcatchment 82S: Basin 27 - Impervious

[49] Hint: Tc<2dt may require smaller dt

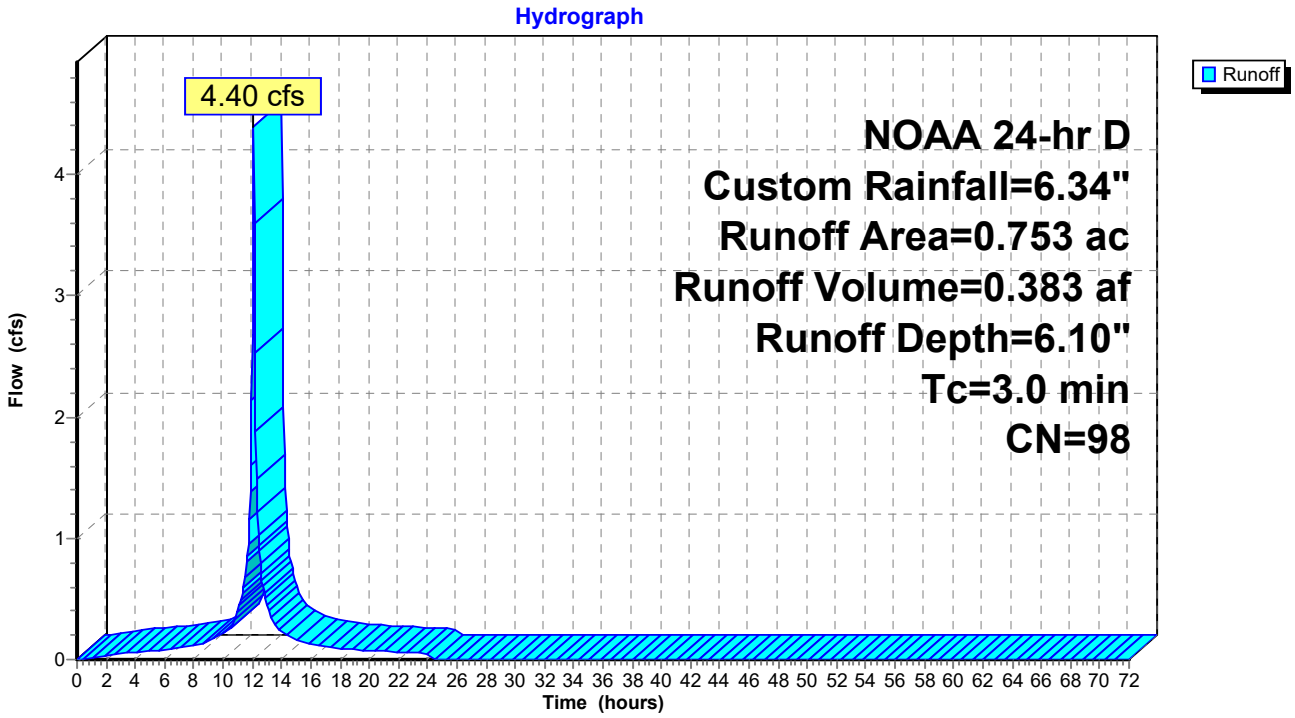
Runoff = 4.40 cfs @ 12.10 hrs, Volume= 0.383 af, Depth= 6.10"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.753	98	
	0.753		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 82S: Basin 27 - Impervious



Summary for Subcatchment 83S: Basin 27 - Pervious

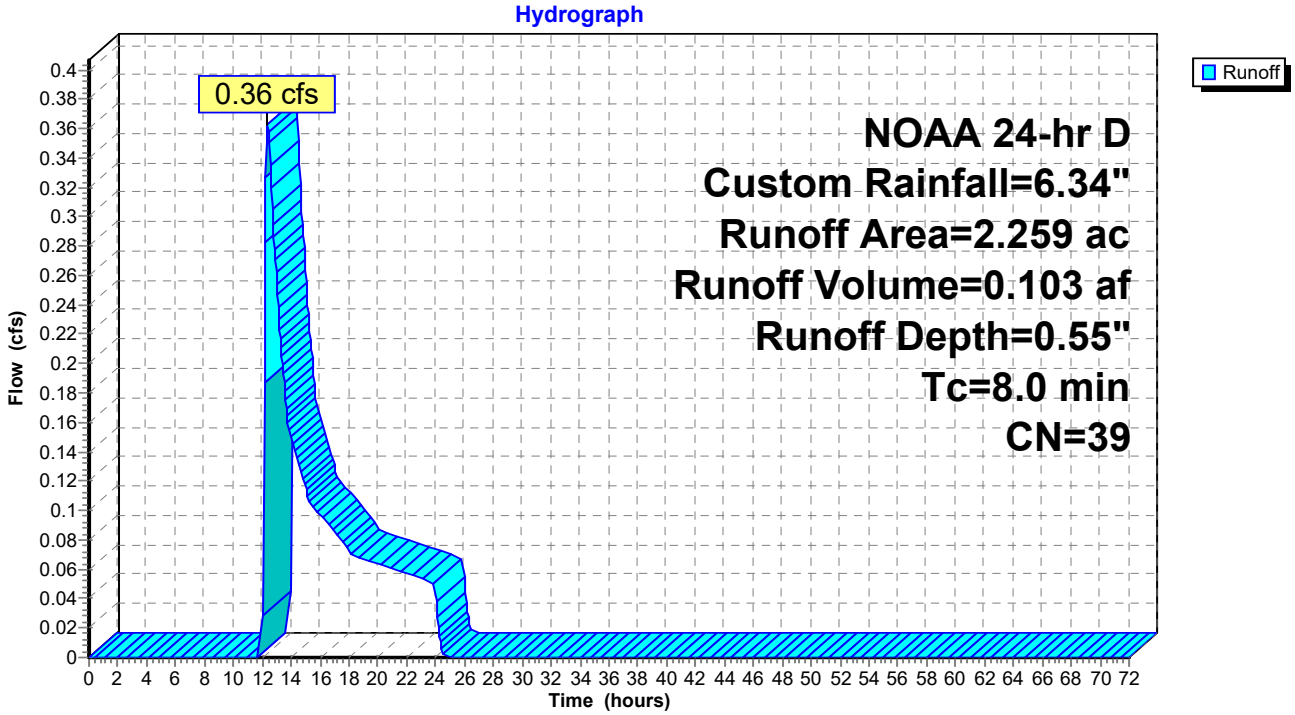
Runoff = 0.36 cfs @ 12.37 hrs, Volume= 0.103 af, Depth= 0.55"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
2.259	39	>75% Grass cover, Good, HSG A
2.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 83S: Basin 27 - Pervious



Summary for Subcatchment 84S: Basin 29 - Impervious

[49] Hint: Tc<2dt may require smaller dt

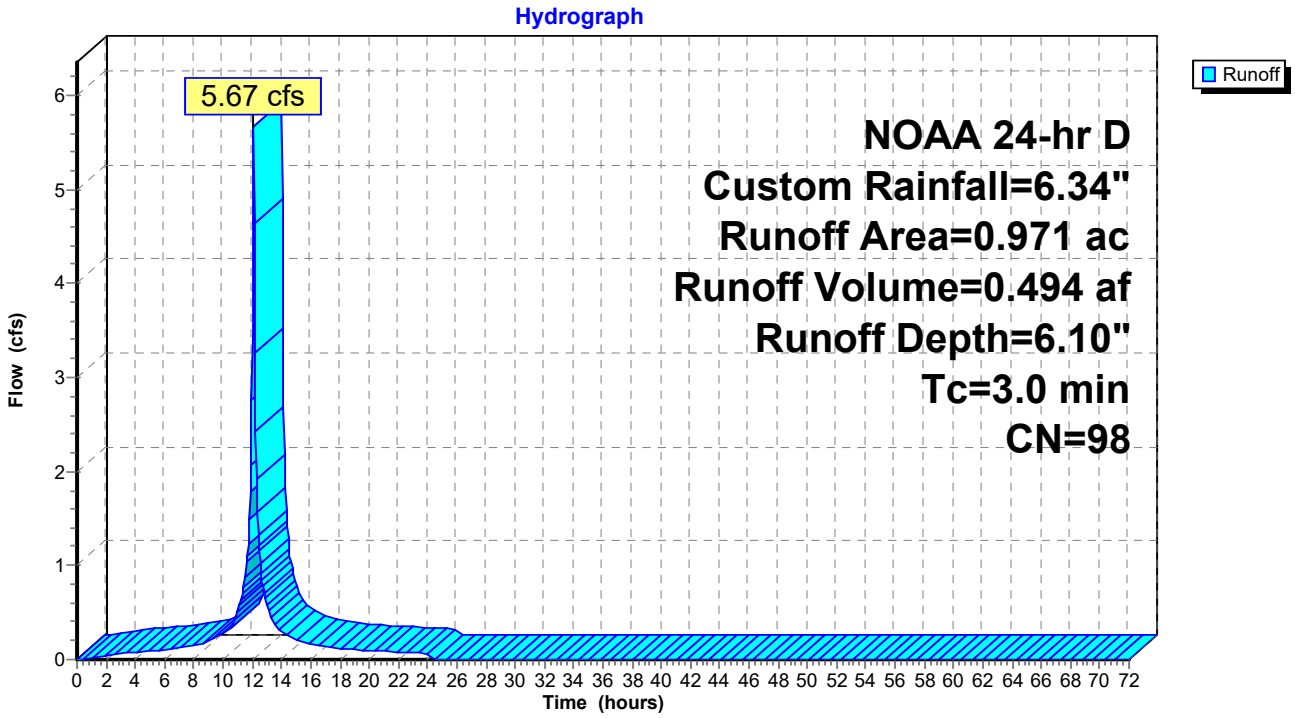
Runoff = 5.67 cfs @ 12.10 hrs, Volume= 0.494 af, Depth= 6.10"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.971	98	Impervious
	0.971		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 84S: Basin 29 - Impervious



Summary for Pond 85P: Basin 28

Inflow Area = 1.744 ac, 35.03% Impervious, Inflow Depth = 2.49" for Custom event
Inflow = 3.56 cfs @ 12.11 hrs, Volume= 0.362 af
Outflow = 3.33 cfs @ 12.14 hrs, Volume= 0.310 af, Atten= 7%, Lag= 1.9 min
Primary = 3.33 cfs @ 12.14 hrs, Volume= 0.310 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.56' @ 12.14 hrs Surf.Area= 3,271 sf Storage= 2,792 cf

Plug-Flow detention time= 141.8 min calculated for 0.310 af (86% of inflow)
Center-of-Mass det. time= 66.7 min (844.0 - 777.3)

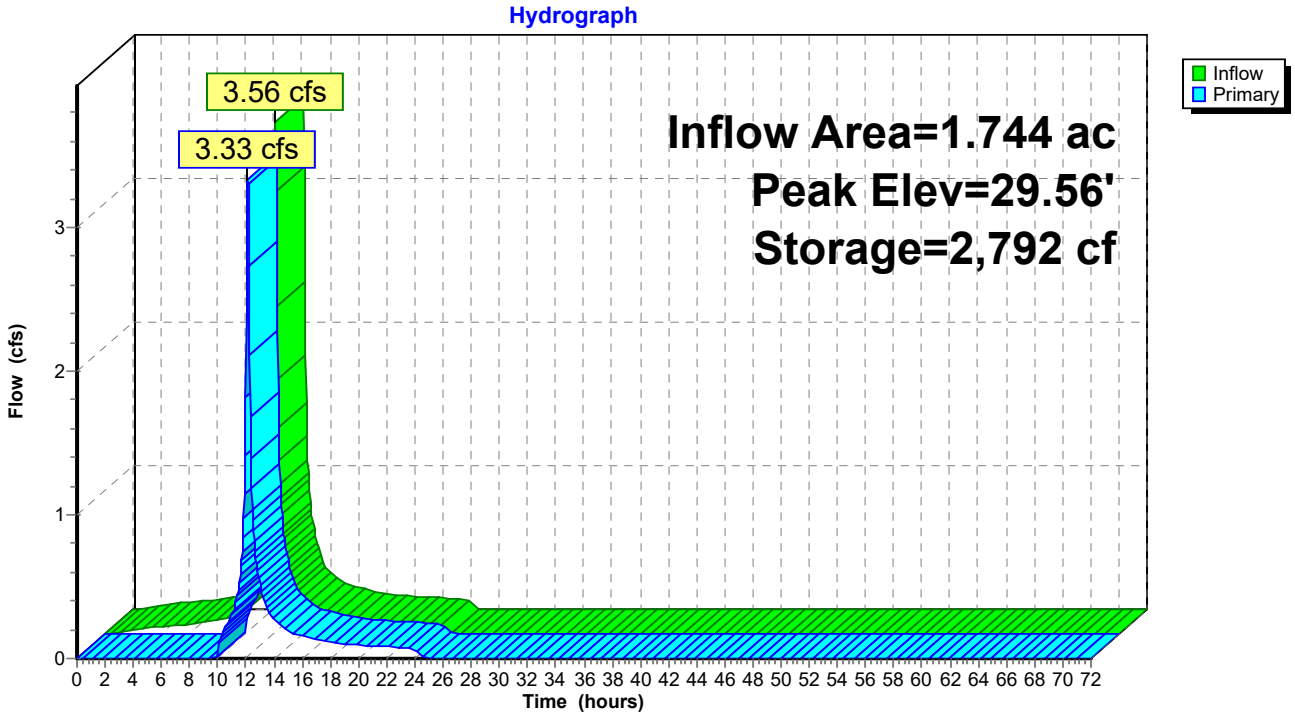
Volume	Invert	Avail.Storage	Storage Description
#1	28.50'	6,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.50	2,000	0	0
29.00	2,600	1,150	1,150
30.00	3,800	3,200	4,350
30.50	4,600	2,100	6,450

Device	Routing	Invert	Outlet Devices
#1	Primary	29.40'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.25 cfs @ 12.14 hrs HW=29.56' (Free Discharge)
1=Orifice/Grate (Weir Controls 3.25 cfs @ 1.30 fps)

Pond 85P: Basin 28



Summary for Subcatchment 85S: Basin 29 - Pervious

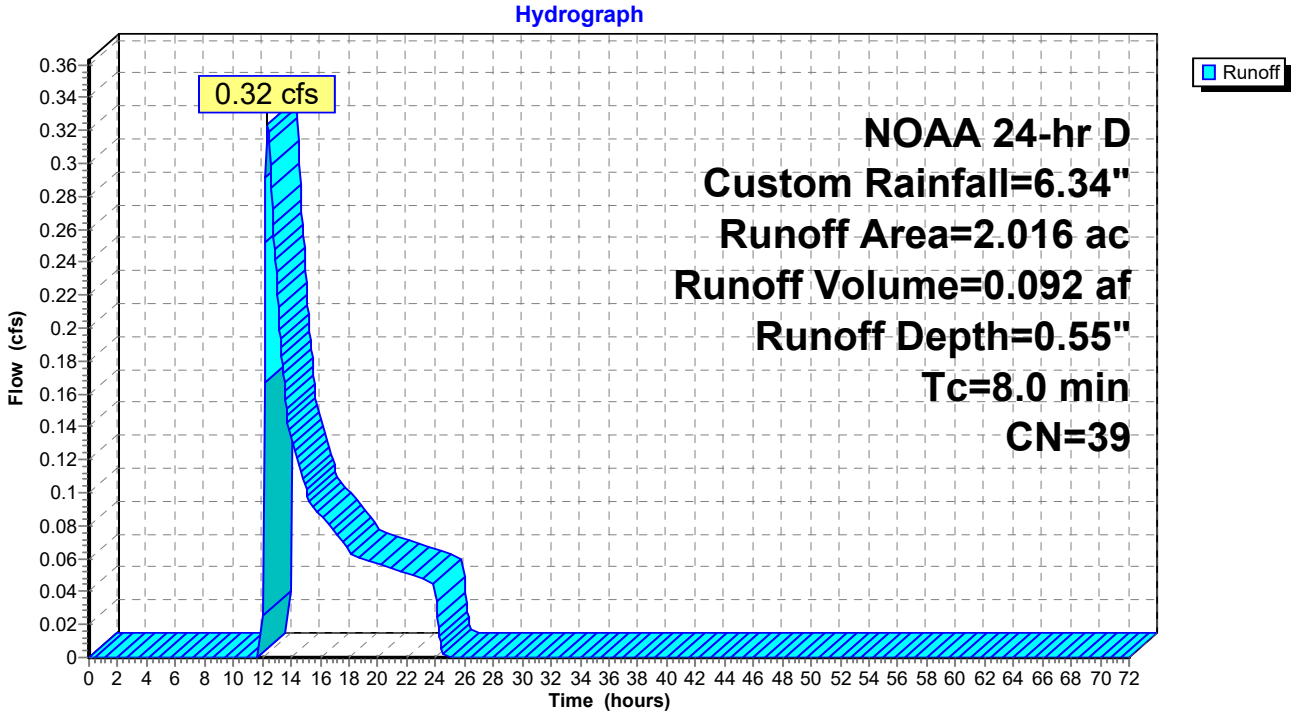
Runoff = 0.32 cfs @ 12.37 hrs, Volume= 0.092 af, Depth= 0.55"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
2.016	39	>75% Grass cover, Good, HSG A
2.016		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 85S: Basin 29 - Pervious

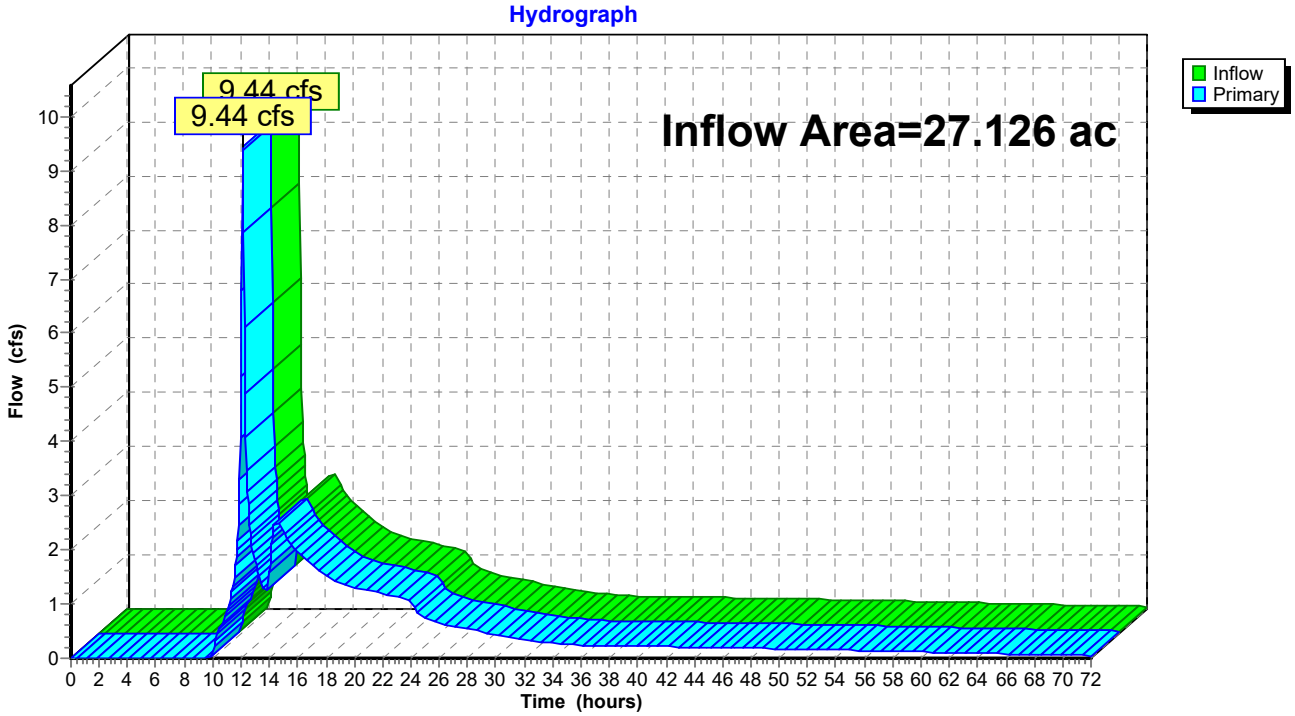


Summary for Link 86L: Outlet to Wet Pond

Inflow Area = 27.126 ac, 24.26% Impervious, Inflow Depth > 1.25" for Custom event
Inflow = 9.44 cfs @ 12.14 hrs, Volume= 2.825 af
Primary = 9.44 cfs @ 12.14 hrs, Volume= 2.825 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 62P : Basin 26 (Wet Pond)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 86L: Outlet to Wet Pond



Summary for Subcatchment 86S: Basin 28 - Impervious

[49] Hint: Tc<2dt may require smaller dt

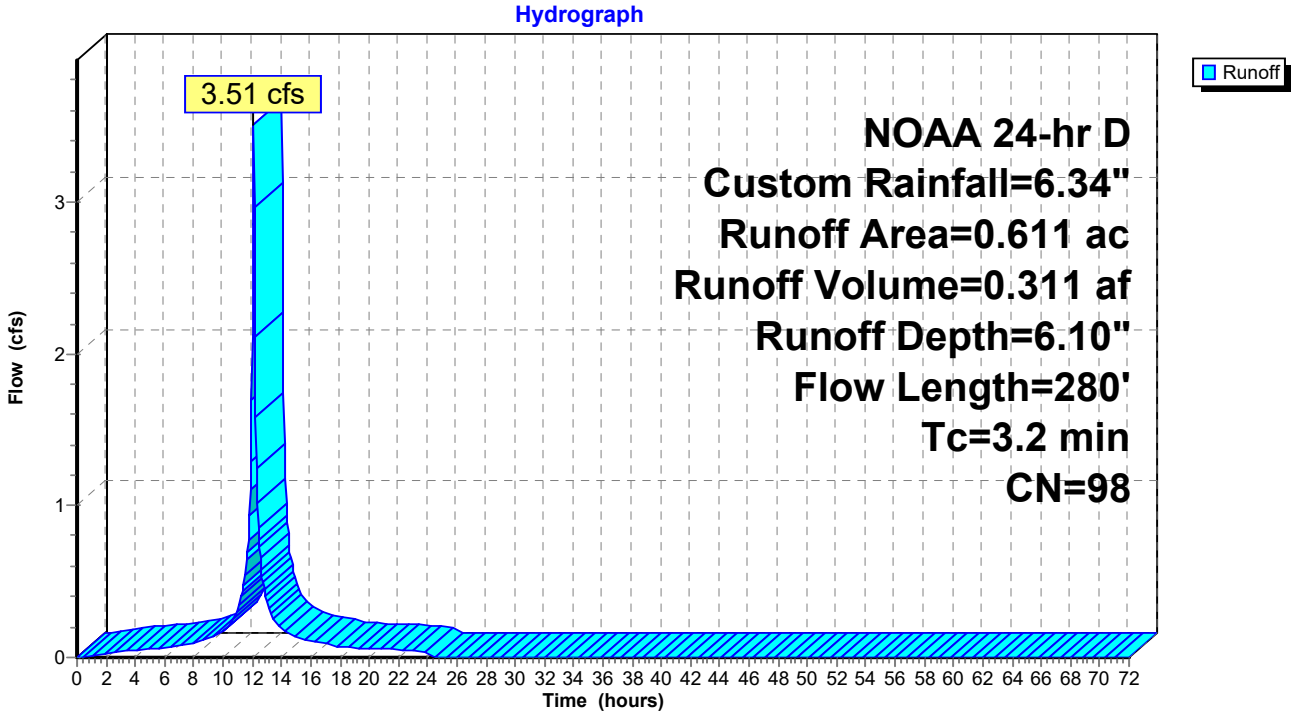
Runoff = 3.51 cfs @ 12.10 hrs, Volume= 0.311 af, Depth= 6.10"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.611	98	Impervious
	0.611		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	280	Total			

Subcatchment 86S: Basin 28 - Impervious

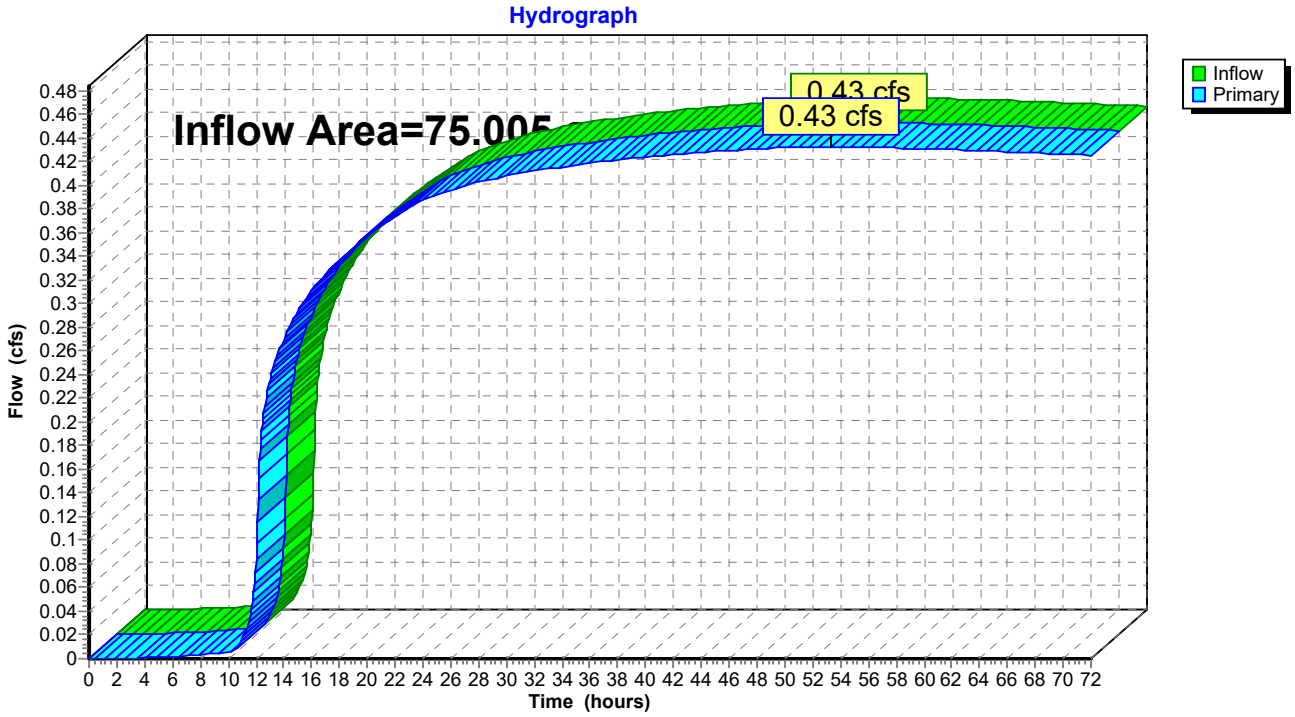


Summary for Link 87L: Total Area to Tuckerton Creek

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 0.32" for Custom event
Inflow = 0.43 cfs @ 53.35 hrs, Volume= 2.002 af
Primary = 0.43 cfs @ 53.35 hrs, Volume= 2.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 87L: Total Area to Tuckerton Creek



Summary for Pond 87P: Basin 40

Inflow Area = 2.597 ac, 42.97% Impervious, Inflow Depth = 2.93" for Custom event
Inflow = 6.56 cfs @ 12.10 hrs, Volume= 0.635 af
Outflow = 5.95 cfs @ 12.14 hrs, Volume= 0.538 af, Atten= 9%, Lag= 2.2 min
Primary = 5.95 cfs @ 12.14 hrs, Volume= 0.538 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.21' @ 12.14 hrs Surf.Area= 5,136 sf Storage= 5,377 cf

Plug-Flow detention time= 146.8 min calculated for 0.538 af (85% of inflow)
Center-of-Mass det. time= 70.3 min (839.2 - 769.0)

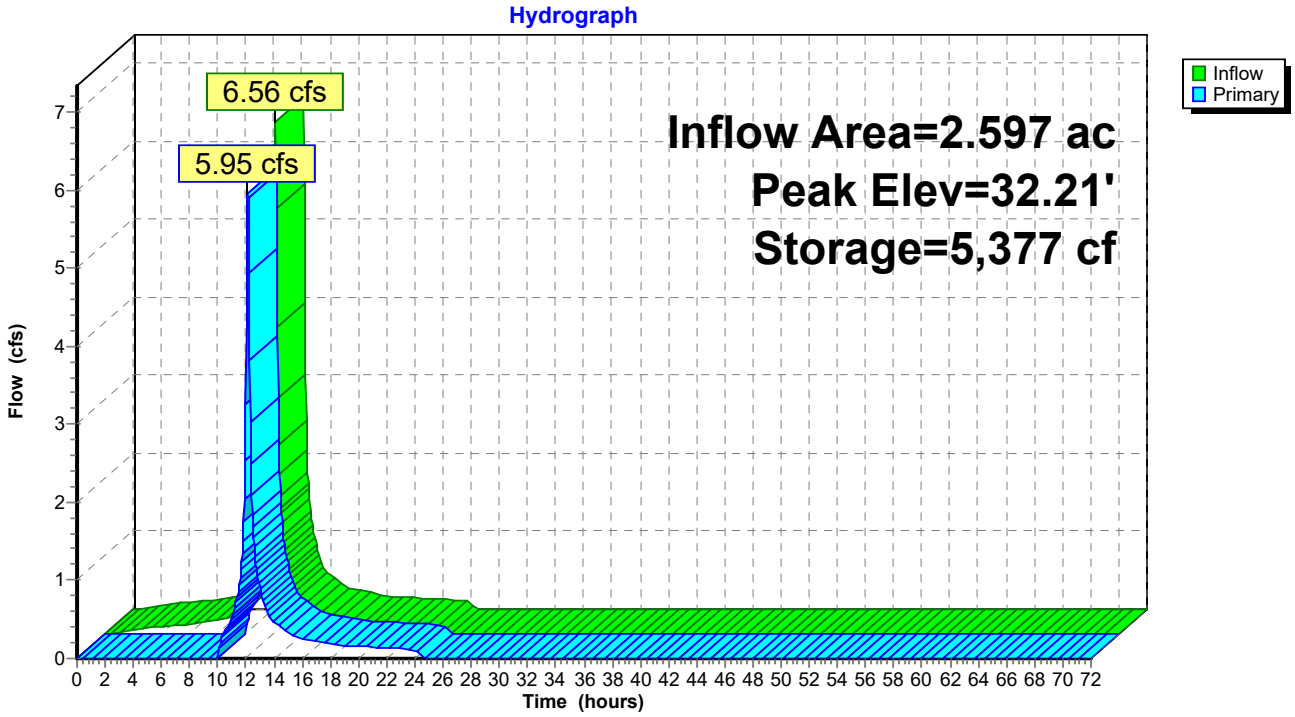
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	12,950 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,700	0	0
32.00	4,900	4,300	4,300
33.00	6,000	5,450	9,750
33.50	6,800	3,200	12,950

Device	Routing	Invert	Outlet Devices
#1	Primary	31.98'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.83 cfs @ 12.14 hrs HW=32.21' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 5.83 cfs @ 1.57 fps)

Pond 87P: Basin 40



Summary for Subcatchment 87S: Basin 28 - Pervious

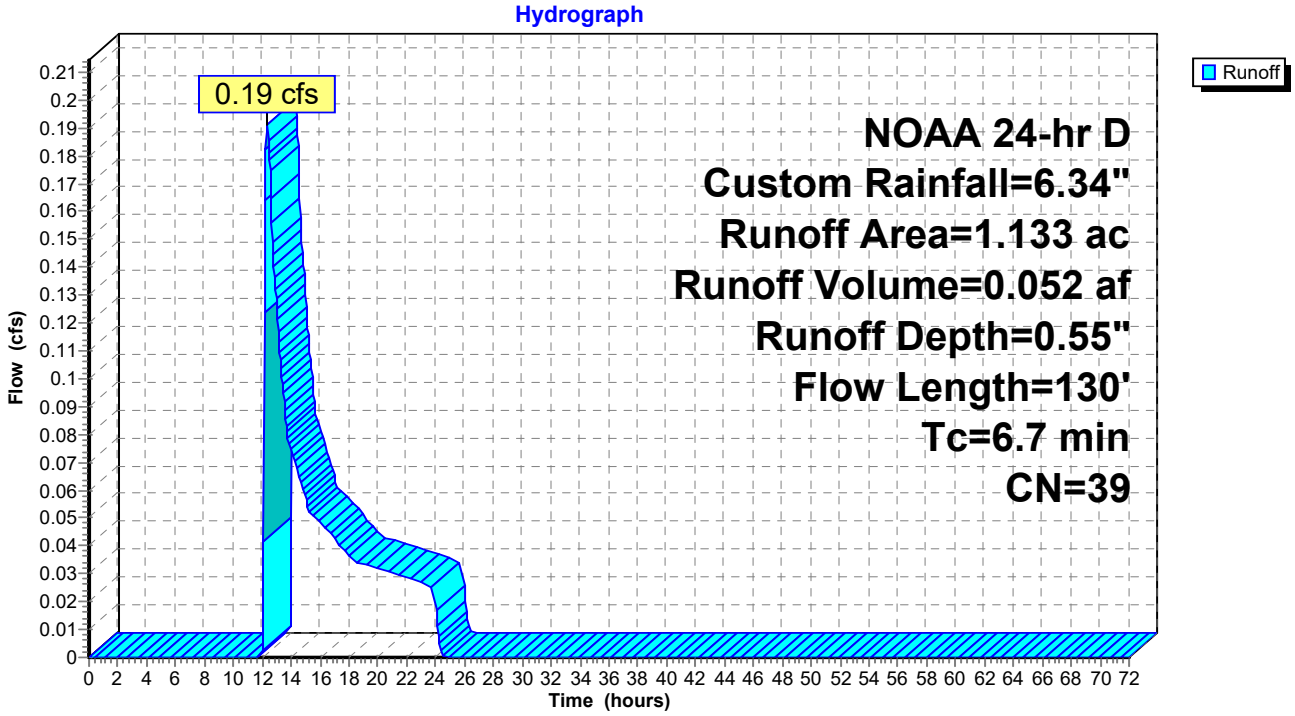
Runoff = 0.19 cfs @ 12.34 hrs, Volume= 0.052 af, Depth= 0.55"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.133	39	>75% Grass cover, Good, HSG A
1.133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	130	Total			

Subcatchment 87S: Basin 28 - Pervious



Summary for Pond 88P: Basin 22

Inflow Area = 2.491 ac, 29.99% Impervious, Inflow Depth = 2.21" for Custom event
Inflow = 4.41 cfs @ 12.10 hrs, Volume= 0.459 af
Outflow = 4.00 cfs @ 12.14 hrs, Volume= 0.395 af, Atten= 9%, Lag= 2.3 min
Primary = 4.00 cfs @ 12.14 hrs, Volume= 0.395 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.96' @ 12.14 hrs Surf.Area= 4,628 sf Storage= 3,614 cf

Plug-Flow detention time= 140.2 min calculated for 0.395 af (86% of inflow)
Center-of-Mass det. time= 67.1 min (851.5 - 784.4)

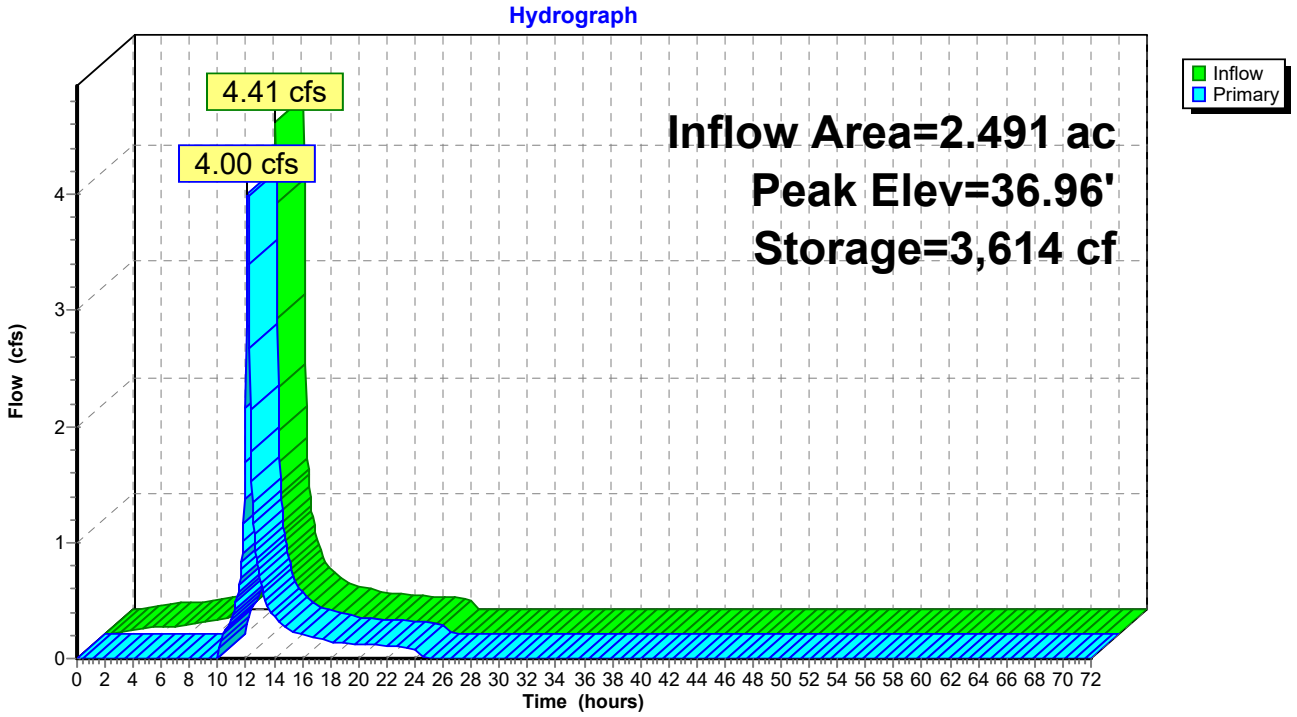
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	9,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,900	0	0
37.00	4,700	3,800	3,800
38.00	6,500	5,600	9,400

Device	Routing	Invert	Outlet Devices
#1	Primary	36.78'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.93 cfs @ 12.14 hrs HW=36.96' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 3.93 cfs @ 1.38 fps)

Pond 88P: Basin 22



Summary for Subcatchment 88S: Basin 30 - Impervious

[49] Hint: Tc<2dt may require smaller dt

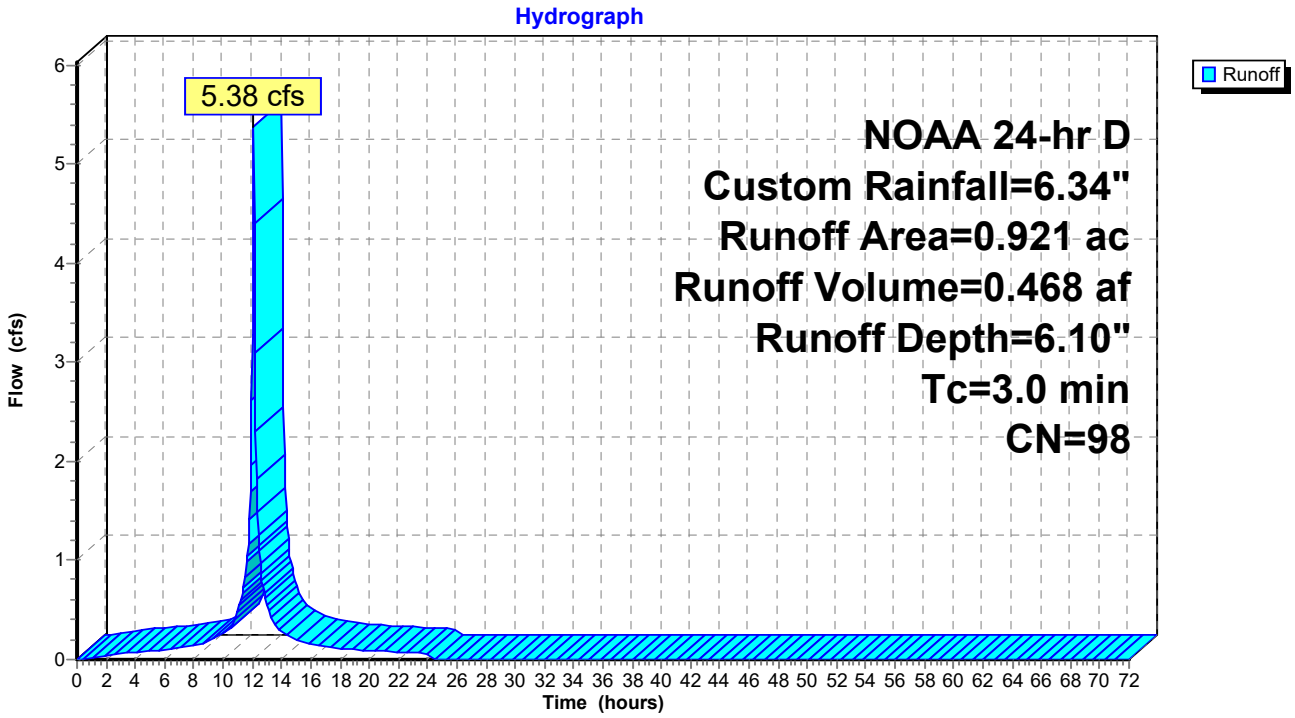
Runoff = 5.38 cfs @ 12.10 hrs, Volume= 0.468 af, Depth= 6.10"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.921	98	Impervious
	0.921		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 88S: Basin 30 - Impervious



Summary for Subcatchment 89S: Basin 30 - Pervious

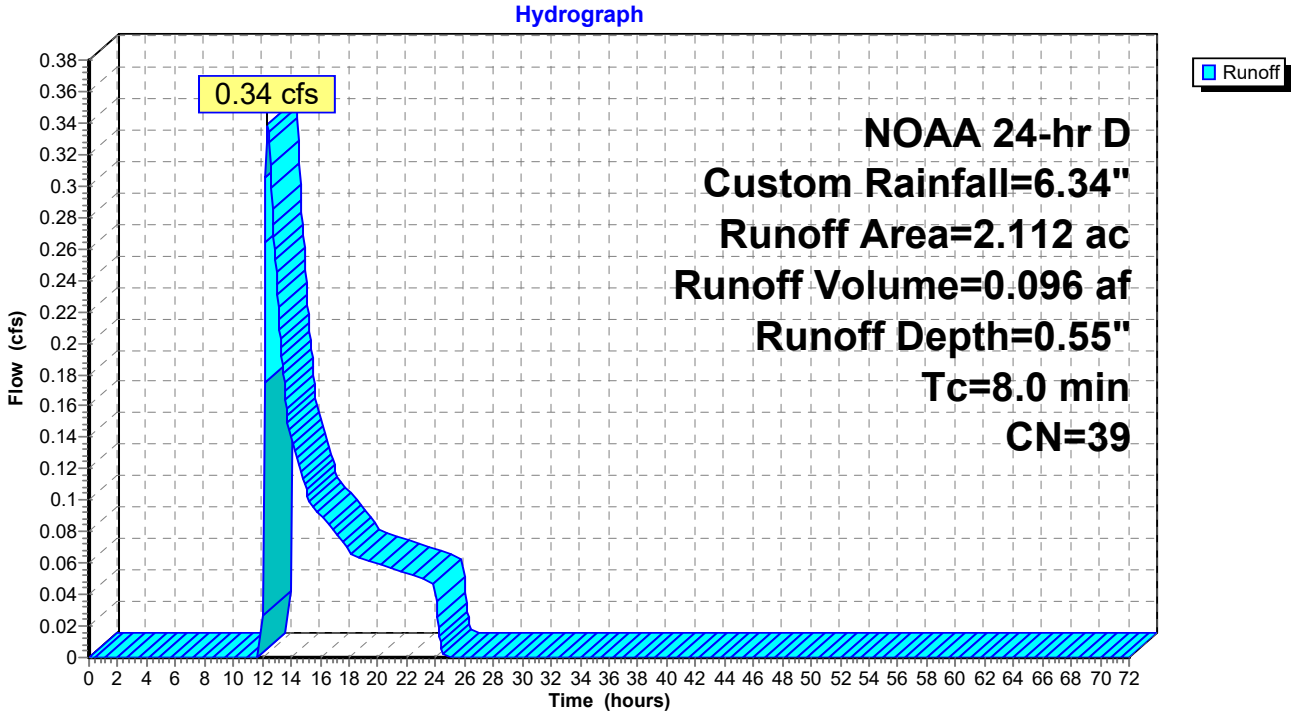
Runoff = 0.34 cfs @ 12.37 hrs, Volume= 0.096 af, Depth= 0.55"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
2.112	39	>75% Grass cover, Good, HSG A
2.112		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 89S: Basin 30 - Pervious



Summary for Subcatchment 90S: Basin 31 - Pervious

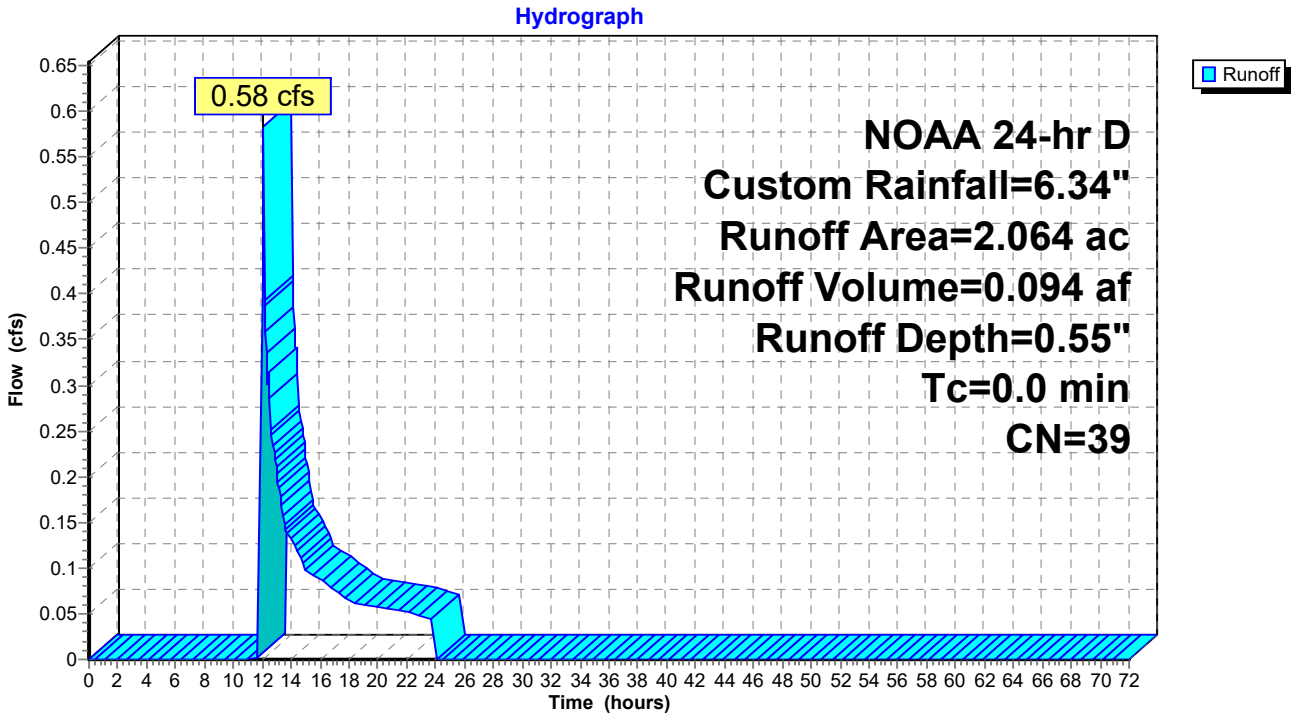
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.58 cfs @ 12.10 hrs, Volume= 0.094 af, Depth= 0.55"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
2.064	39	>75% Grass cover, Good, HSG A
2.064		100.00% Pervious Area

Subcatchment 90S: Basin 31 - Pervious



Summary for Subcatchment 91S: Basin 31- Impervious

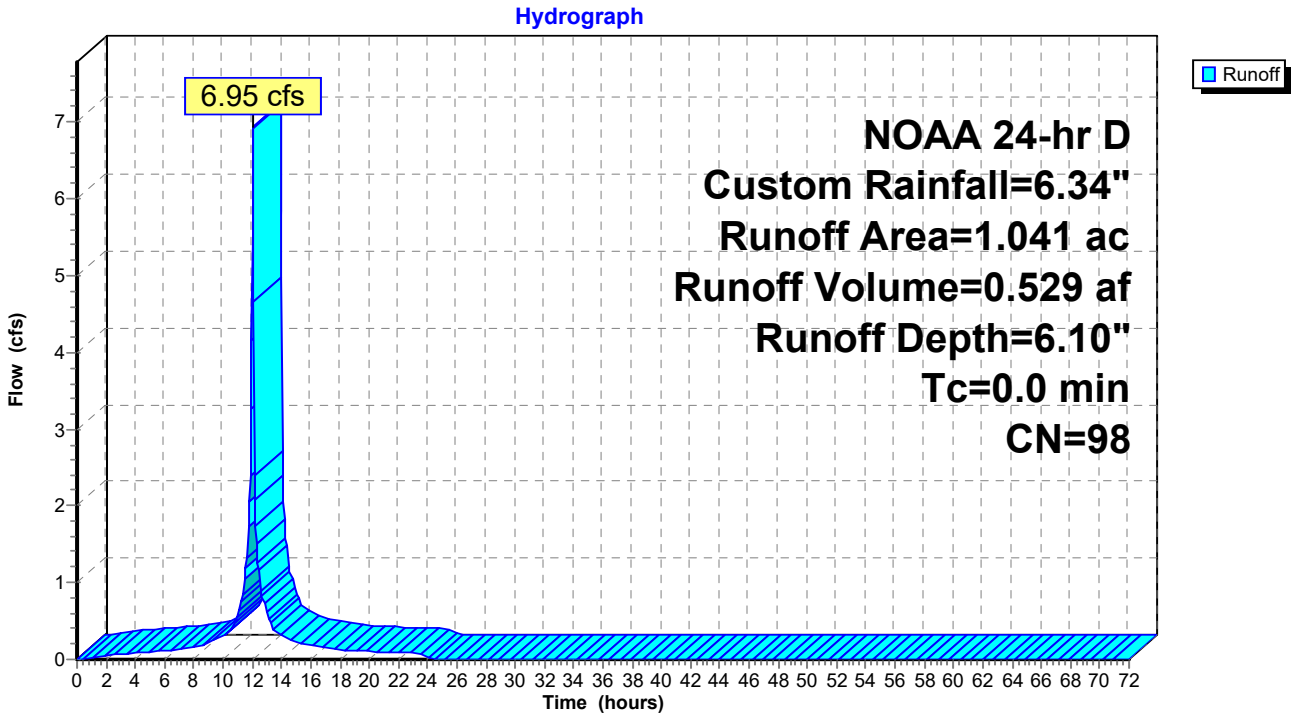
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 6.95 cfs @ 12.04 hrs, Volume= 0.529 af, Depth= 6.10"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.041	98	Impervious
	1.041		100.00% Impervious Area

Subcatchment 91S: Basin 31- Impervious



Summary for Subcatchment 92S: Basin 33 - Impervious

[49] Hint: Tc<2dt may require smaller dt

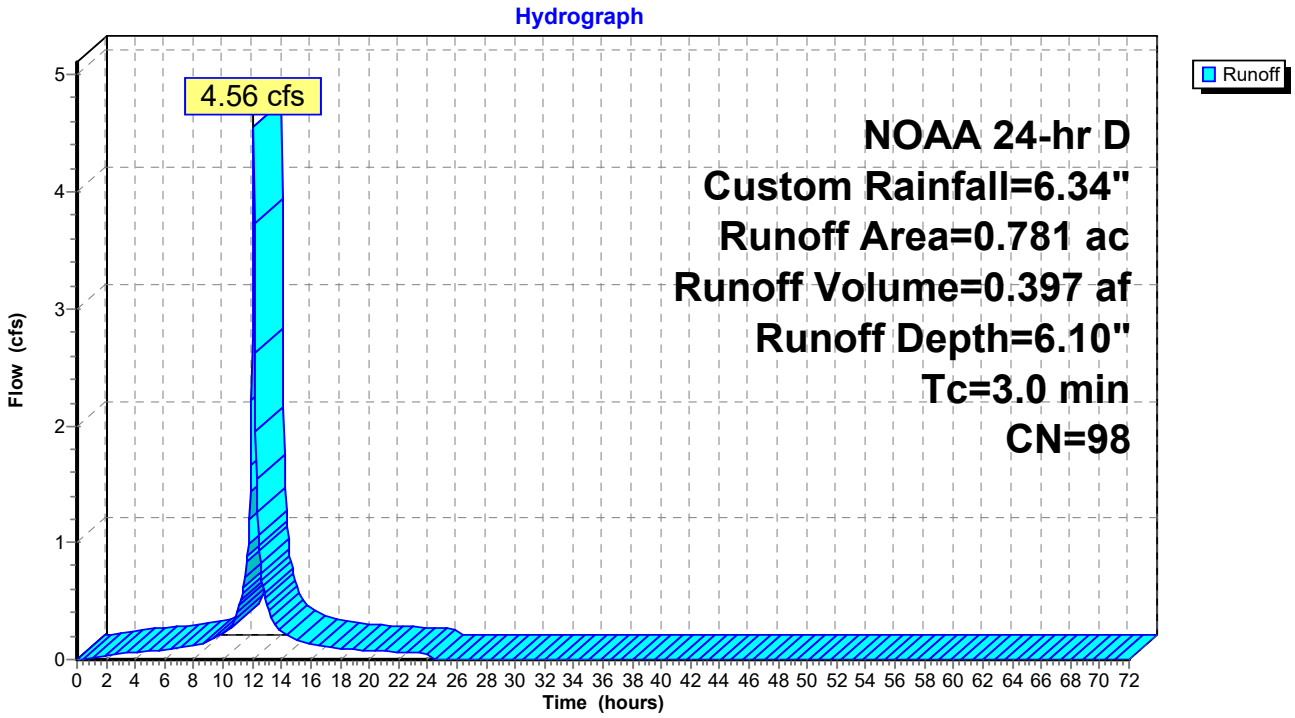
Runoff = 4.56 cfs @ 12.10 hrs, Volume= 0.397 af, Depth= 6.10"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.781	98	Impervious
	0.781		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 92S: Basin 33 - Impervious



Summary for Subcatchment 93S: Basin 33 - Pervious

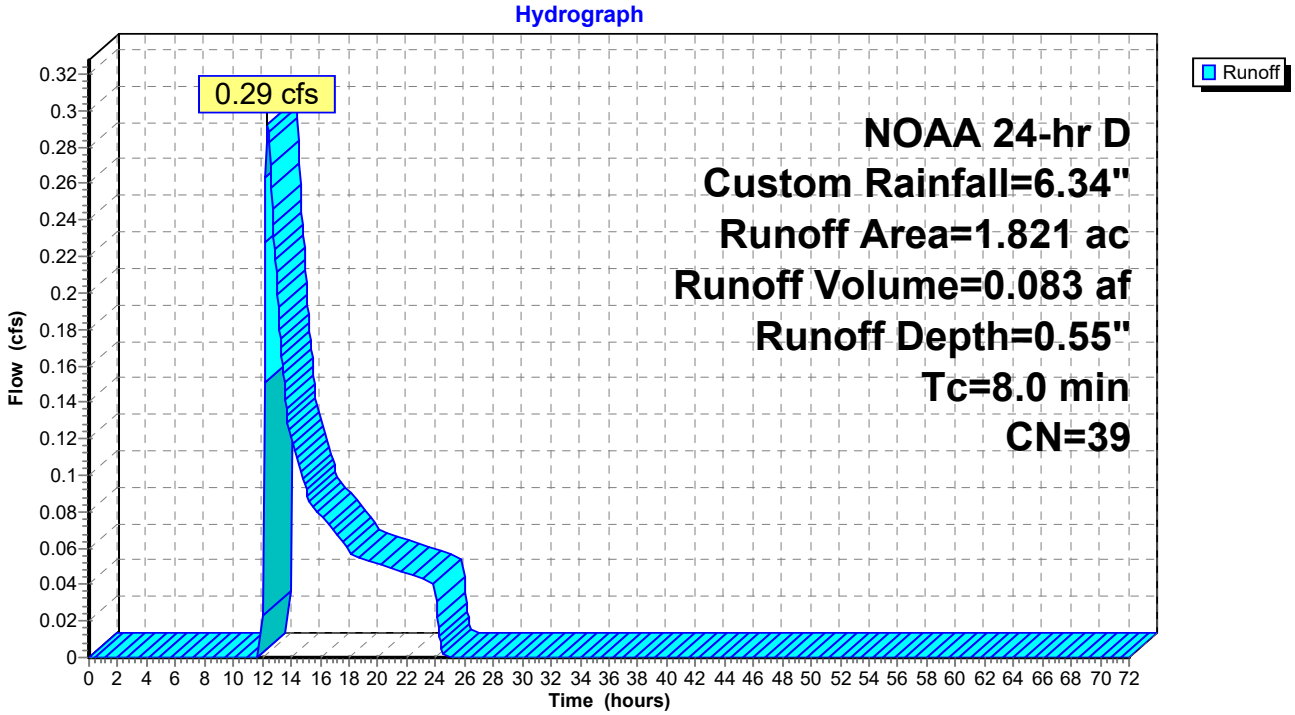
Runoff = 0.29 cfs @ 12.37 hrs, Volume= 0.083 af, Depth= 0.55"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.821	39	>75% Grass cover, Good, HSG A
1.821		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 93S: Basin 33 - Pervious



Summary for Subcatchment 94S: Basin 32 - Impervious

[49] Hint: Tc<2dt may require smaller dt

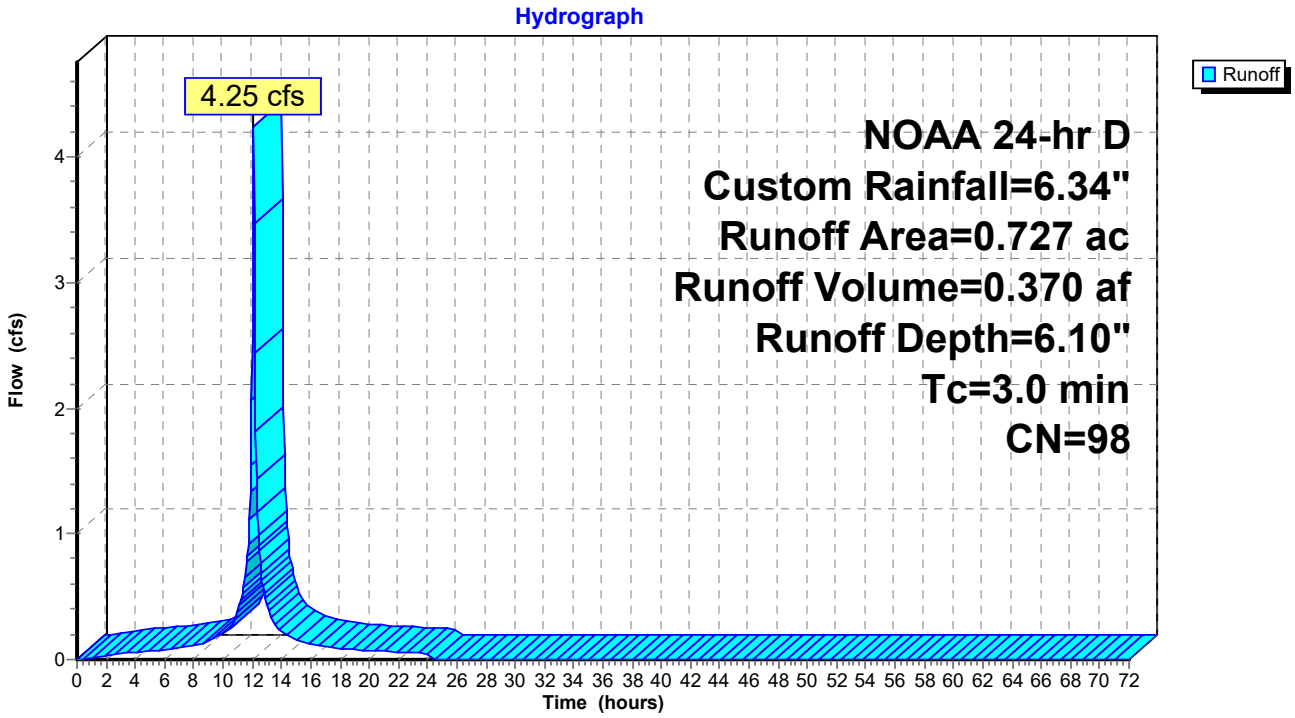
Runoff = 4.25 cfs @ 12.10 hrs, Volume= 0.370 af, Depth= 6.10"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.727	98	Impervious
	0.727		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 94S: Basin 32 - Impervious



Summary for Subcatchment 95S: Basin 32 - Pervious

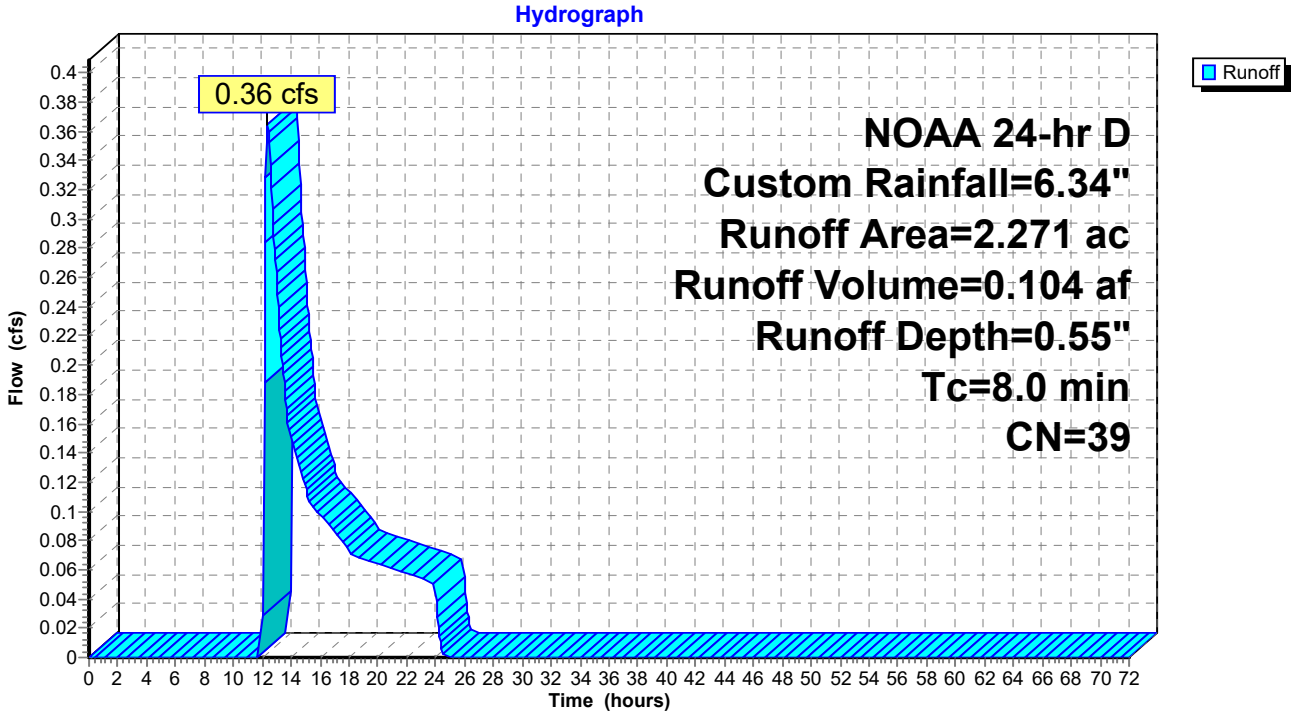
Runoff = 0.36 cfs @ 12.37 hrs, Volume= 0.104 af, Depth= 0.55"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
2.271	39	>75% Grass cover, Good, HSG A
2.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 95S: Basin 32 - Pervious



Summary for Subcatchment 96S: Basin 40 - Impervious

[49] Hint: Tc<2dt may require smaller dt

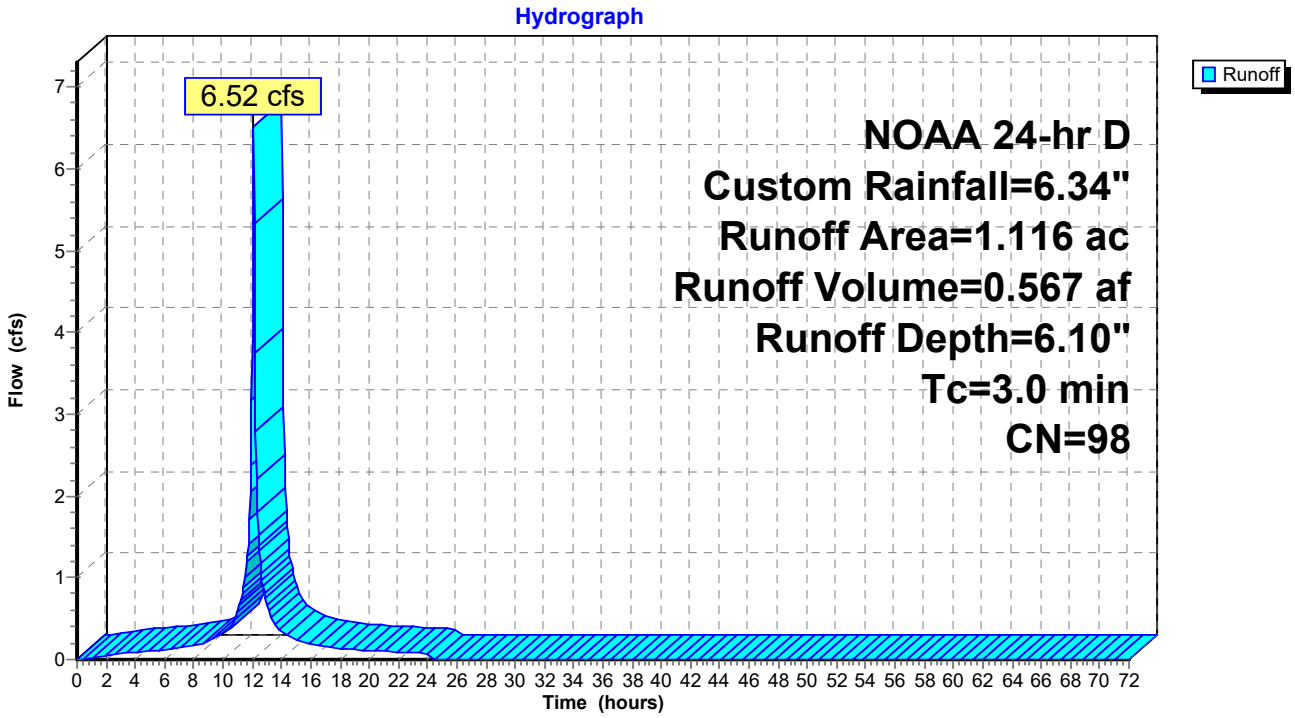
Runoff = 6.52 cfs @ 12.10 hrs, Volume= 0.567 af, Depth= 6.10"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 96S: Basin 40 - Impervious



Summary for Subcatchment 97S: Basin 40 - Pervious

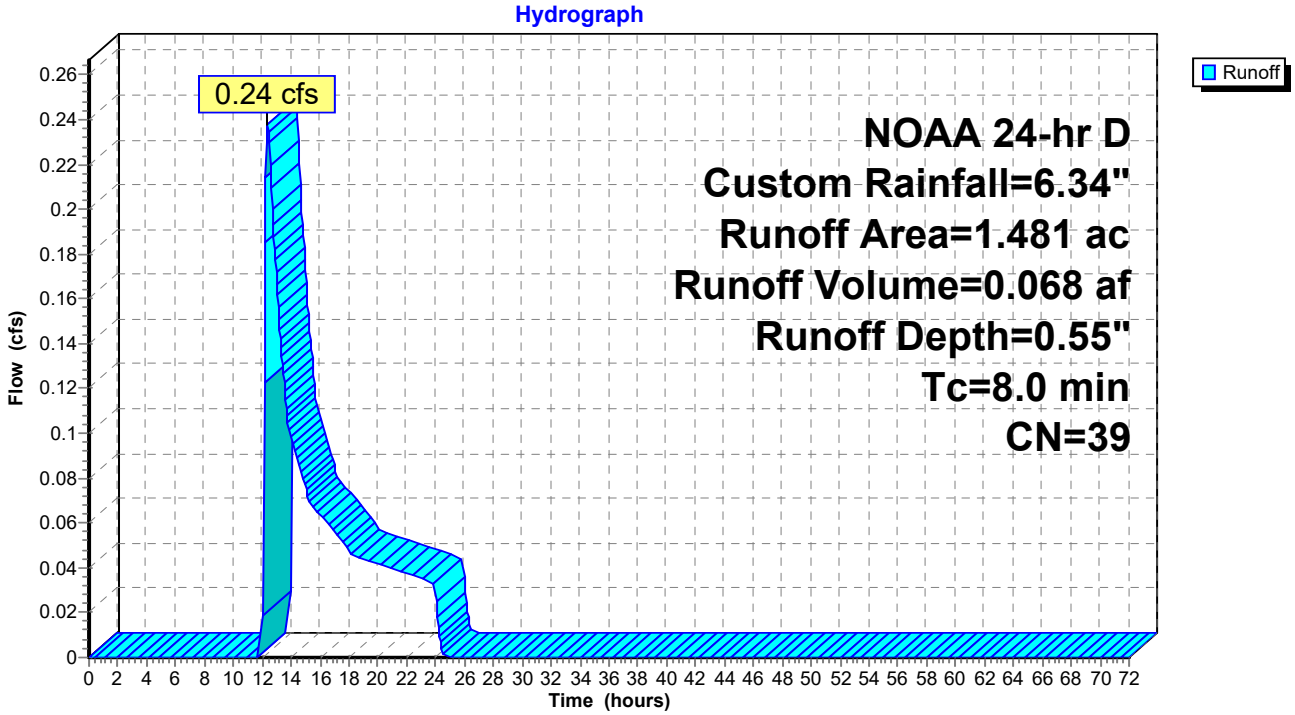
Runoff = 0.24 cfs @ 12.37 hrs, Volume= 0.068 af, Depth= 0.55"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.481	39	>75% Grass cover, Good, HSG A
1.481		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 97S: Basin 40 - Pervious



Summary for Subcatchment 98S: Basin 38 - Impervious

[49] Hint: Tc<2dt may require smaller dt

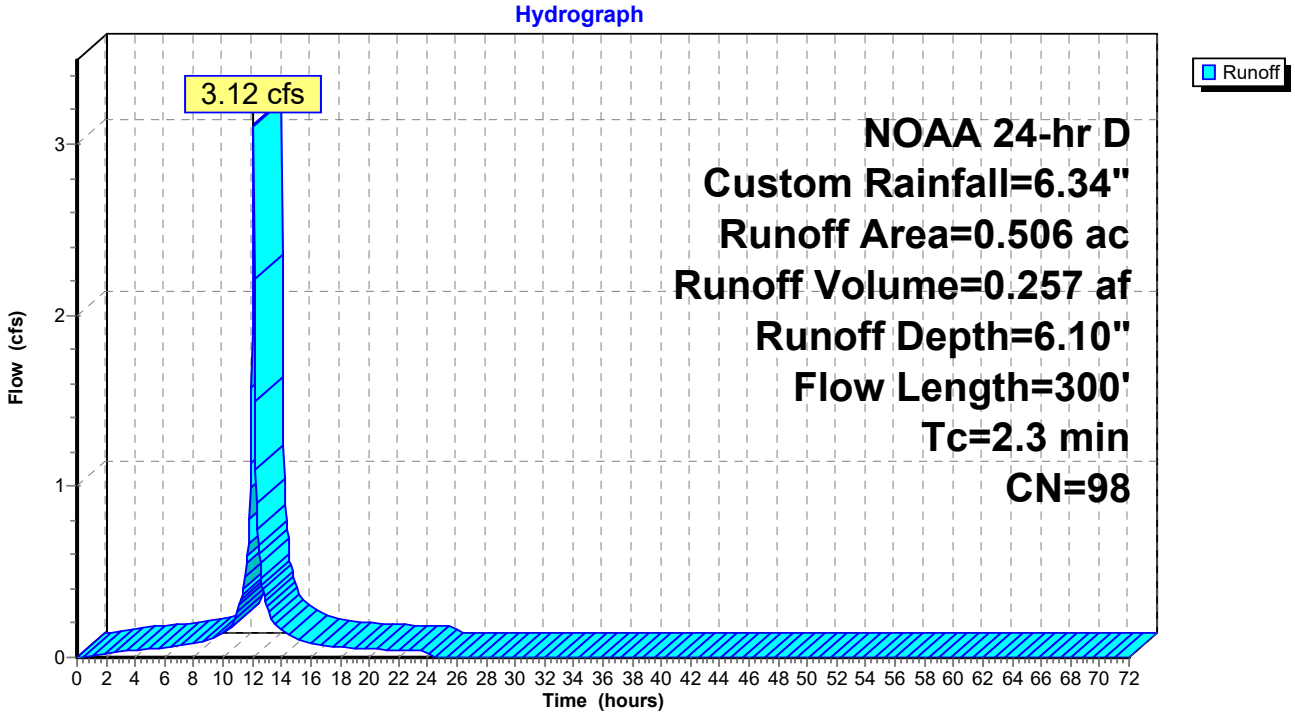
Runoff = 3.12 cfs @ 12.09 hrs, Volume= 0.257 af, Depth= 6.10"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.506	98	Impervious
	0.506		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	200	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	300	Total			

Subcatchment 98S: Basin 38 - Impervious



Summary for Subcatchment 99S: Basin 38 - Pervious

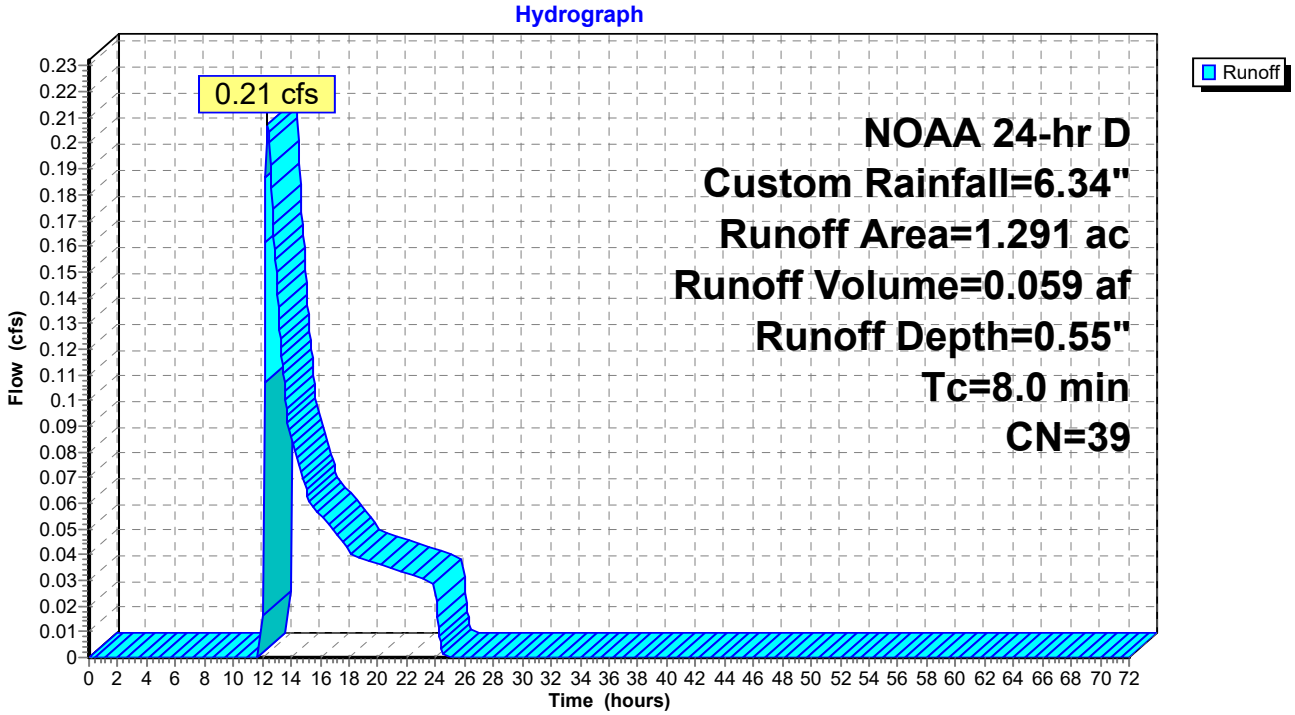
Runoff = 0.21 cfs @ 12.37 hrs, Volume= 0.059 af, Depth= 0.55"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.291	39	>75% Grass cover, Good, HSG A
1.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 99S: Basin 38 - Pervious



Summary for Subcatchment 100S: Basin 22 - Impervious

[49] Hint: Tc<2dt may require smaller dt

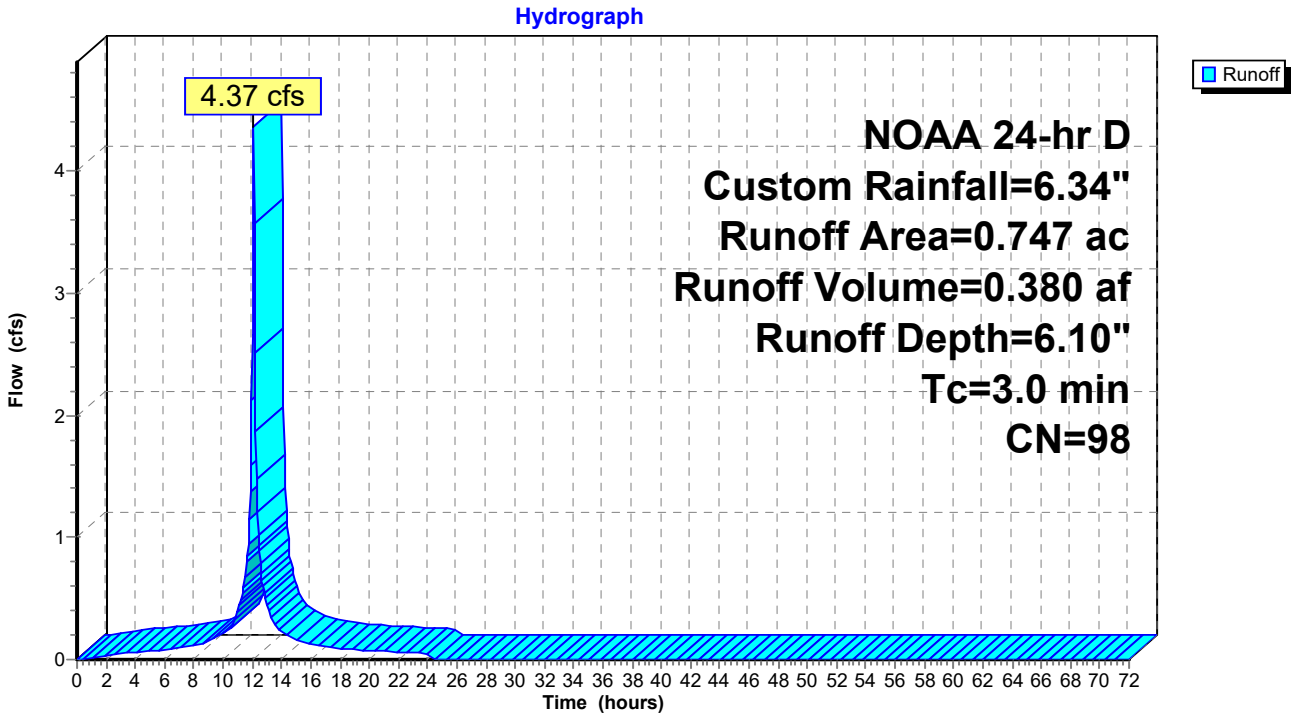
Runoff = 4.37 cfs @ 12.10 hrs, Volume= 0.380 af, Depth= 6.10"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.747	98	Impervious
	0.747		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 100S: Basin 22 - Impervious



Summary for Subcatchment 101S: Basin 39 - Pervious

[49] Hint: Tc<2dt may require smaller dt

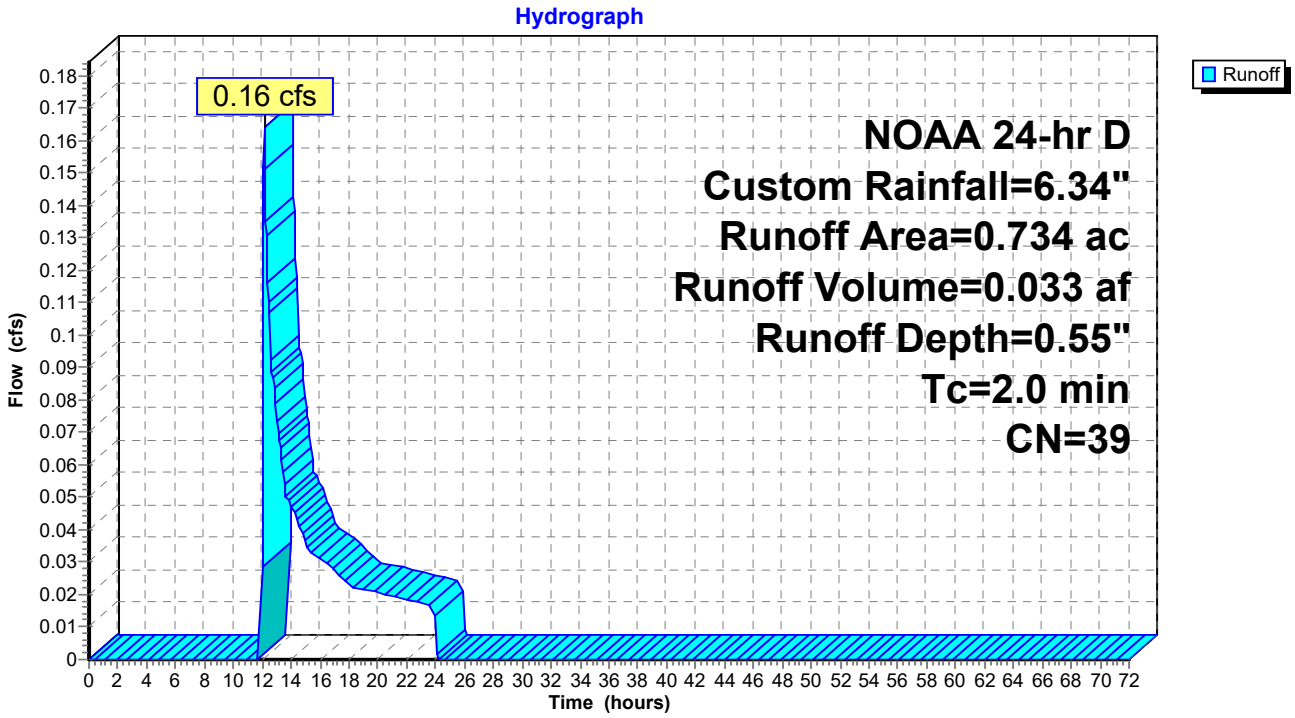
Runoff = 0.16 cfs @ 12.15 hrs, Volume= 0.033 af, Depth= 0.55"
Routed to Pond 74P : Basin 39

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
0.734	39	>75% Grass cover, Good, HSG A
0.734		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 101S: Basin 39 - Pervious



Summary for Subcatchment 102S: Basin 37 - Impervious

[49] Hint: Tc<2dt may require smaller dt

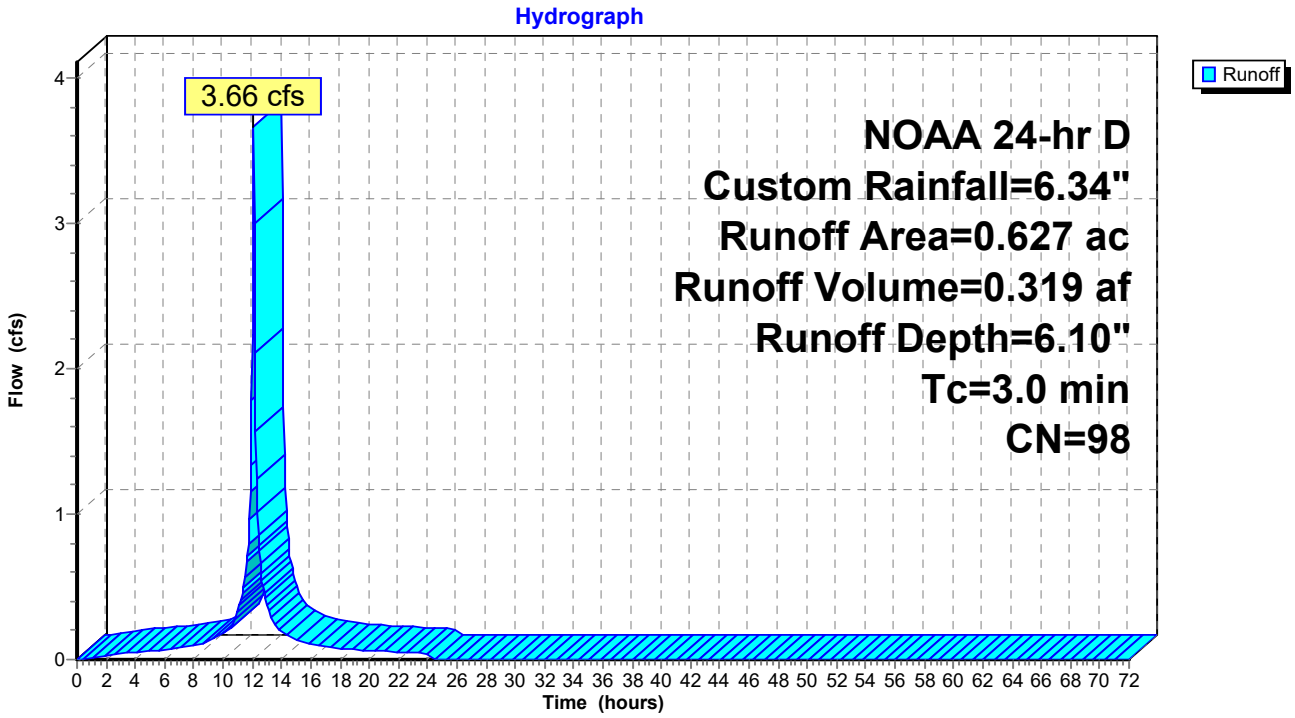
Runoff = 3.66 cfs @ 12.10 hrs, Volume= 0.319 af, Depth= 6.10"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 102S: Basin 37 - Impervious



Summary for Subcatchment 103S: Basin 37 - Pervious

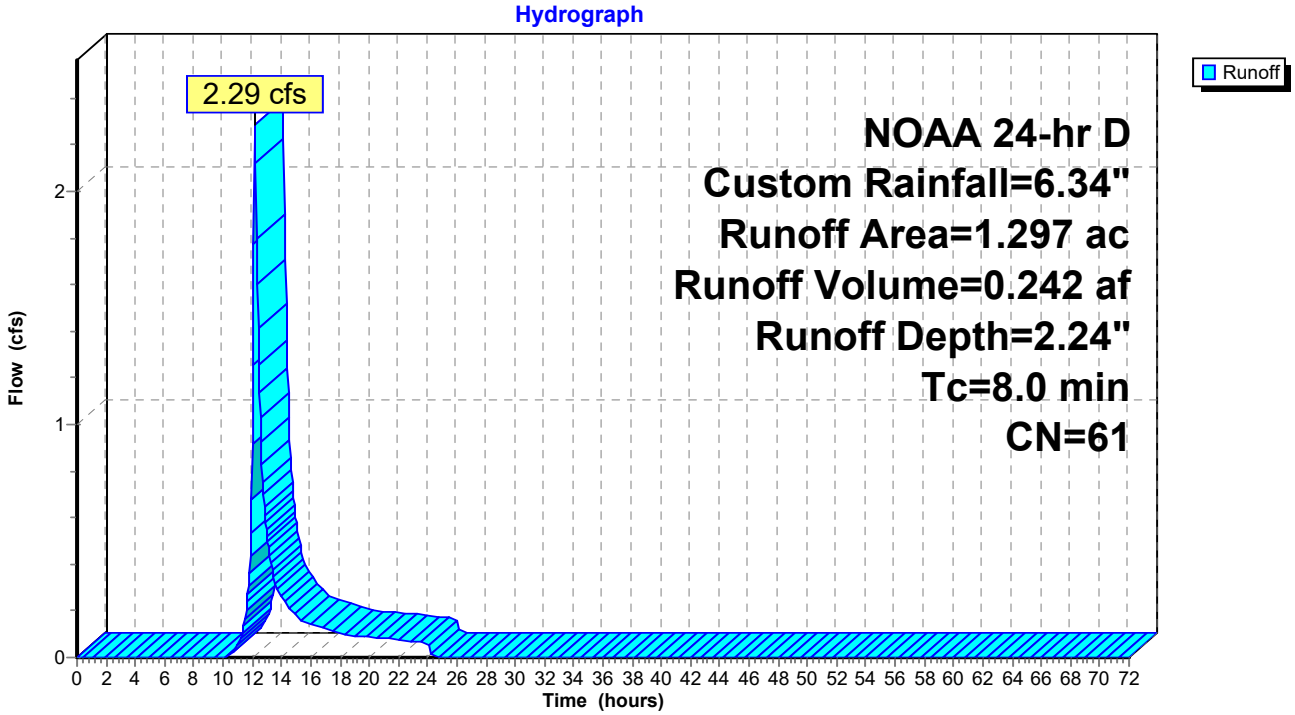
Runoff = 2.29 cfs @ 12.17 hrs, Volume= 0.242 af, Depth= 2.24"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.297	61	>75% Grass cover, Good, HSG B
1.297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 103S: Basin 37 - Pervious



Summary for Subcatchment 104S: Basin 34- Impervious

[49] Hint: Tc<2dt may require smaller dt

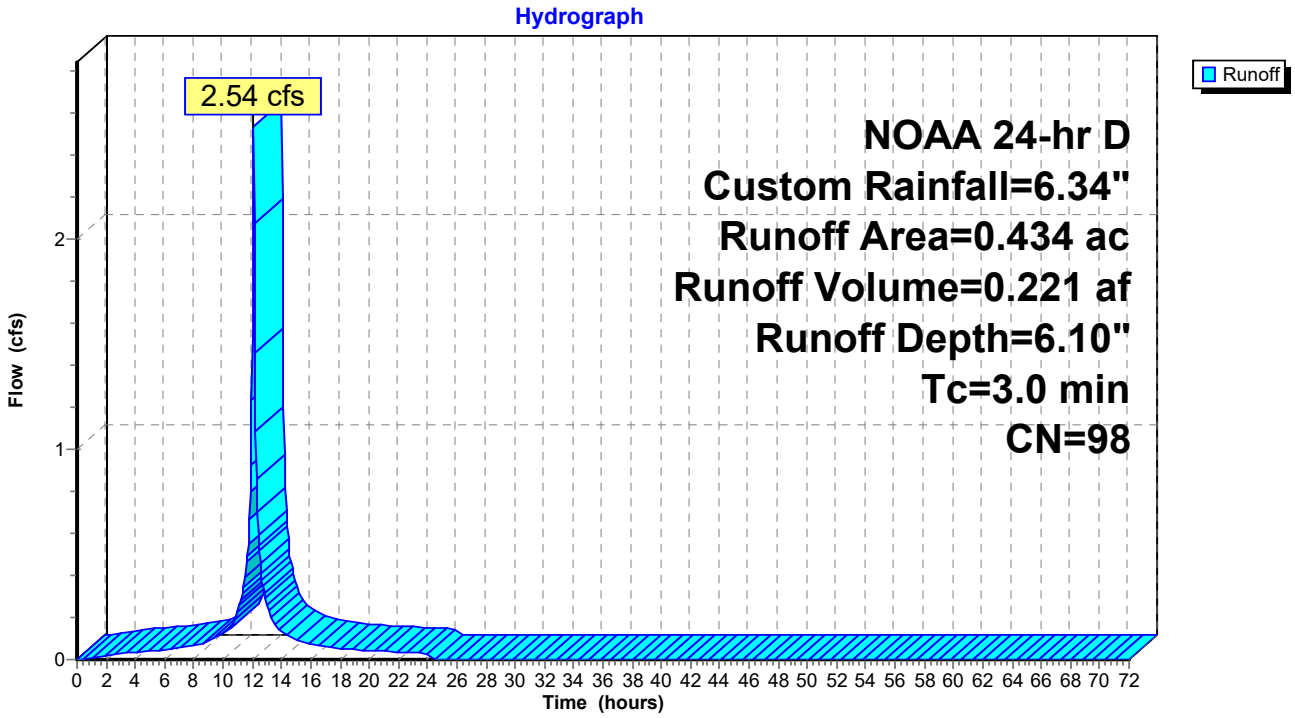
Runoff = 2.54 cfs @ 12.10 hrs, Volume= 0.221 af, Depth= 6.10"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.434	98	Impervious
	0.434		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 104S: Basin 34- Impervious



Summary for Subcatchment 105S: Basin 34 - Pervious

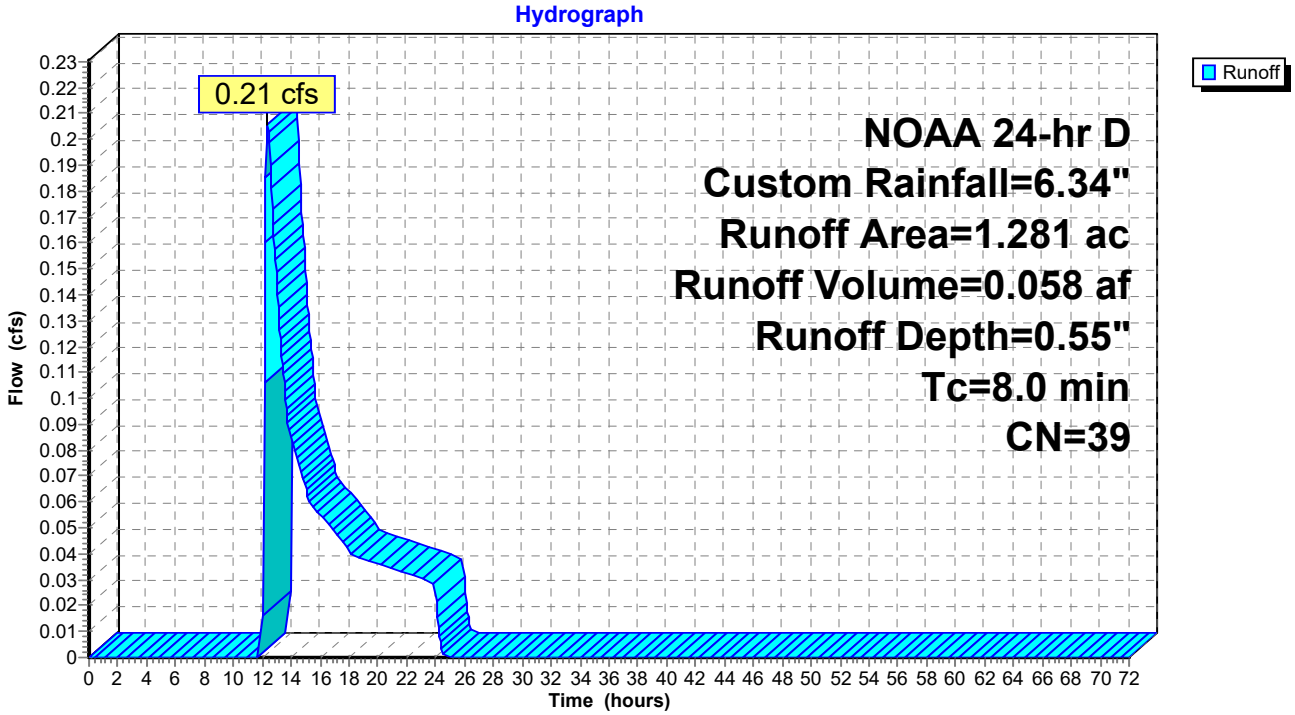
Runoff = 0.21 cfs @ 12.37 hrs, Volume= 0.058 af, Depth= 0.55"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.281	39	>75% Grass cover, Good, HSG A
1.281		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 105S: Basin 34 - Pervious



Summary for Subcatchment 106S: Basin 35 - Impervious

[49] Hint: Tc<2dt may require smaller dt

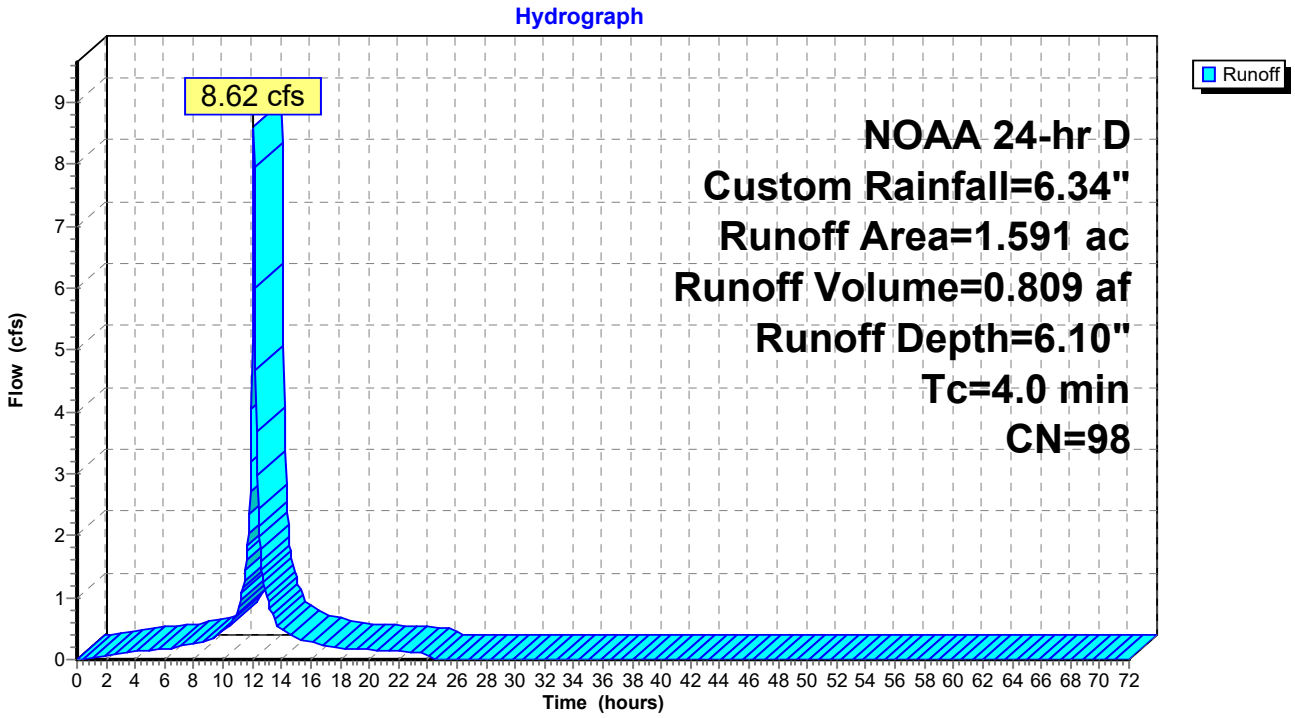
Runoff = 8.62 cfs @ 12.11 hrs, Volume= 0.809 af, Depth= 6.10"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.591	98	Impervious
	1.591		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment 106S: Basin 35 - Impervious



Summary for Subcatchment 107S: Basin 35 - Pervious

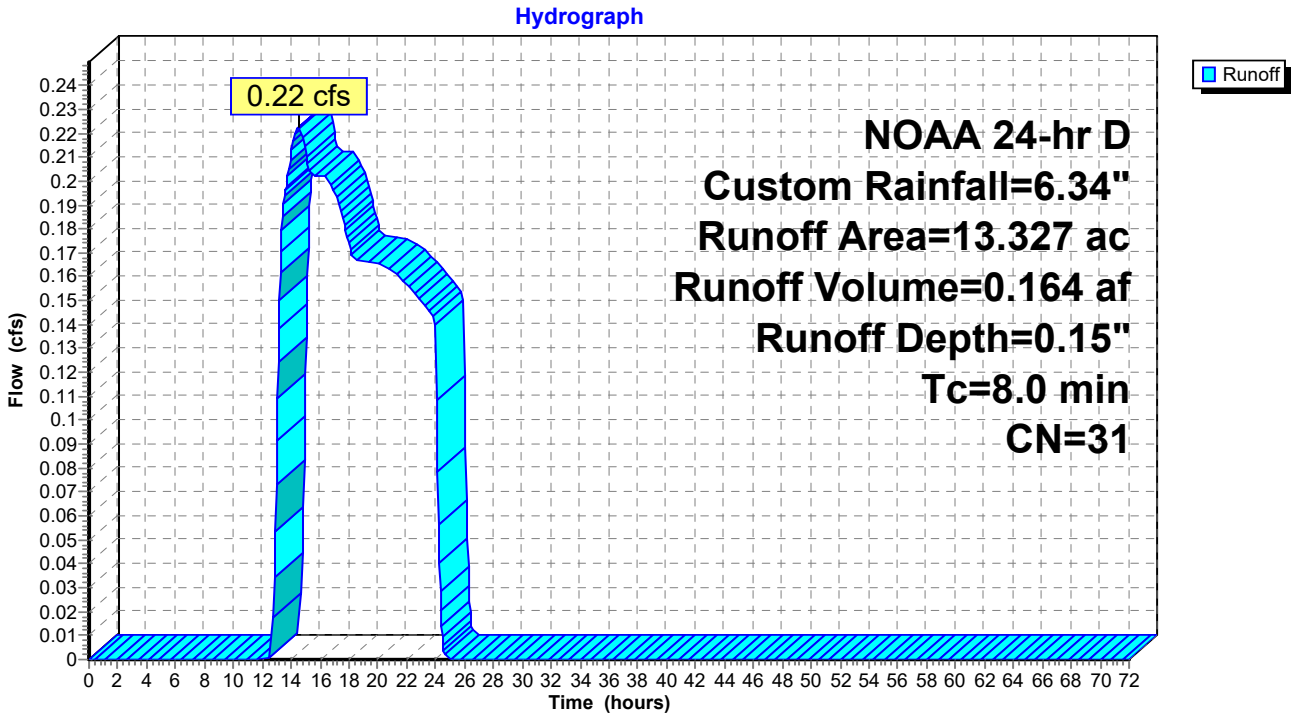
Runoff = 0.22 cfs @ 14.47 hrs, Volume= 0.164 af, Depth= 0.15"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
0.907	39	>75% Grass cover, Good, HSG A
12.420	30	Woods, Good, HSG A
13.327	31	Weighted Average
13.327		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 107S: Basin 35 - Pervious



Summary for Subcatchment 108S: Basin 36 - Impervious

[49] Hint: Tc<2dt may require smaller dt

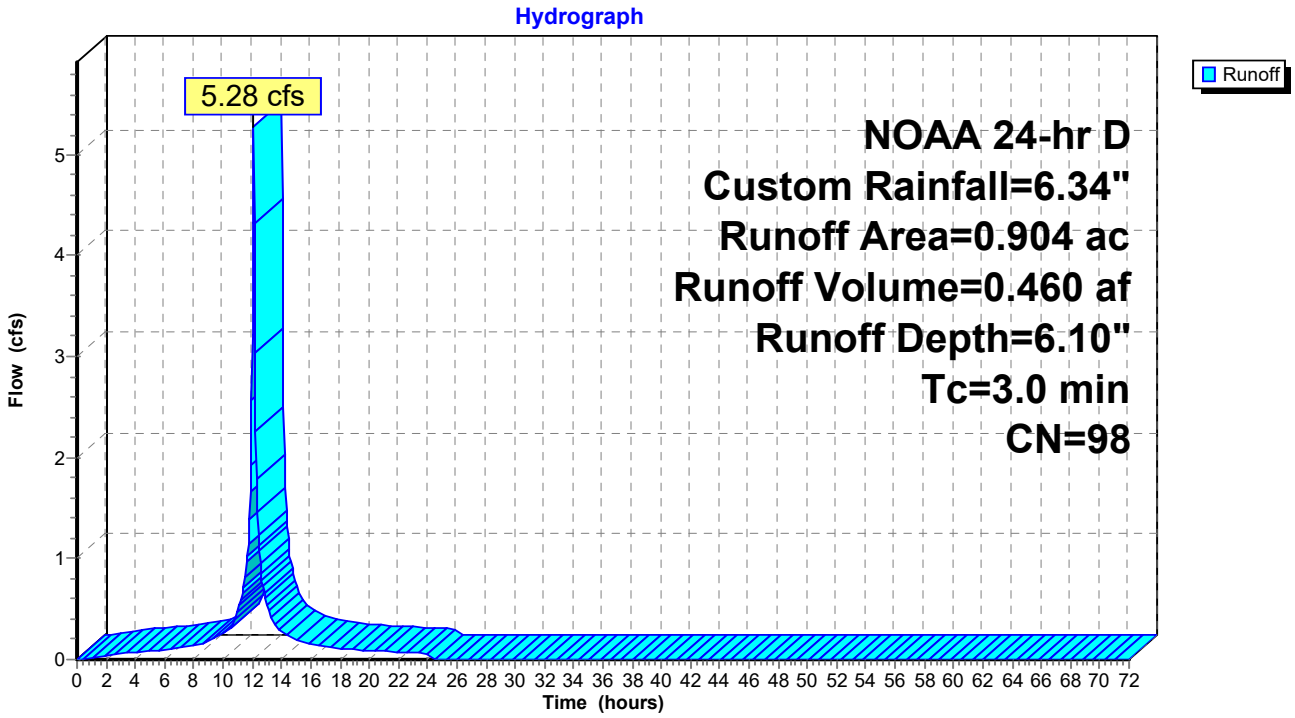
Runoff = 5.28 cfs @ 12.10 hrs, Volume= 0.460 af, Depth= 6.10"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.904	98	Impervious
	0.904		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 108S: Basin 36 - Impervious



Summary for Subcatchment 109S: Basin 36 - Pervious

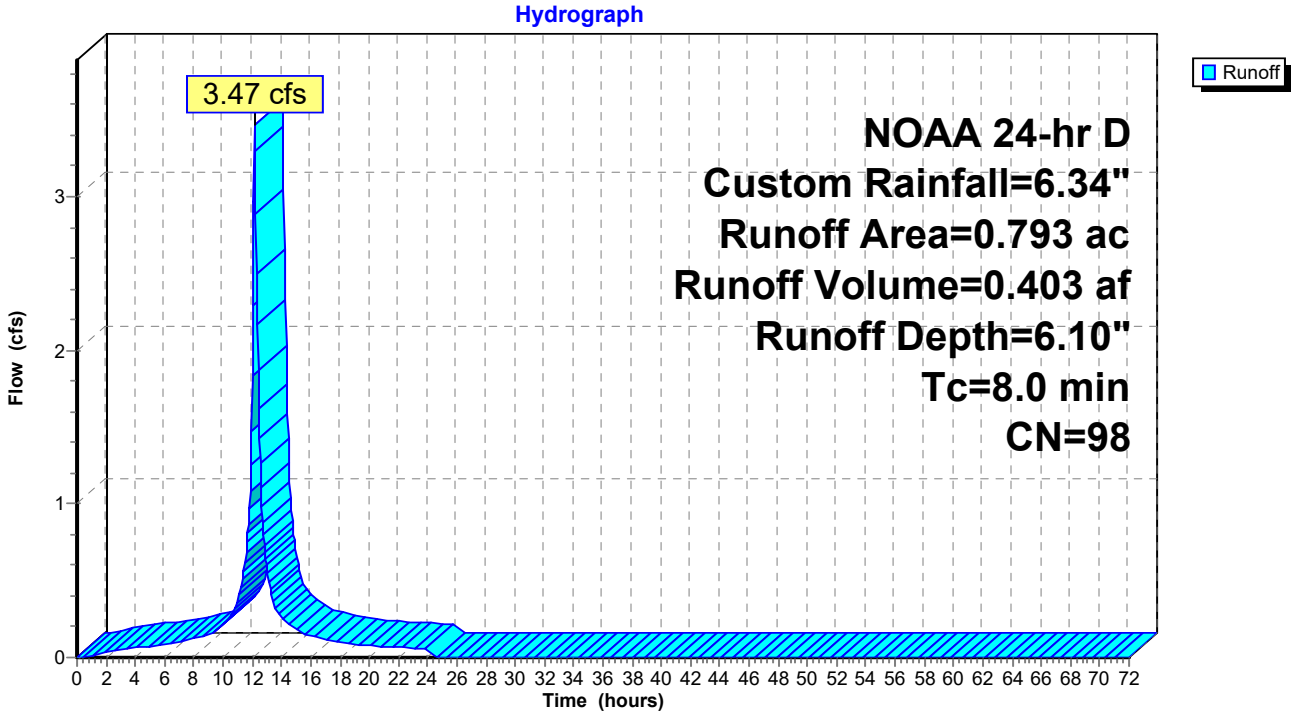
Runoff = 3.47 cfs @ 12.16 hrs, Volume= 0.403 af, Depth= 6.10"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.793	98	Impervious
	0.793		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 109S: Basin 36 - Pervious



Summary for Subcatchment 110S: Basin 22 - Pervious

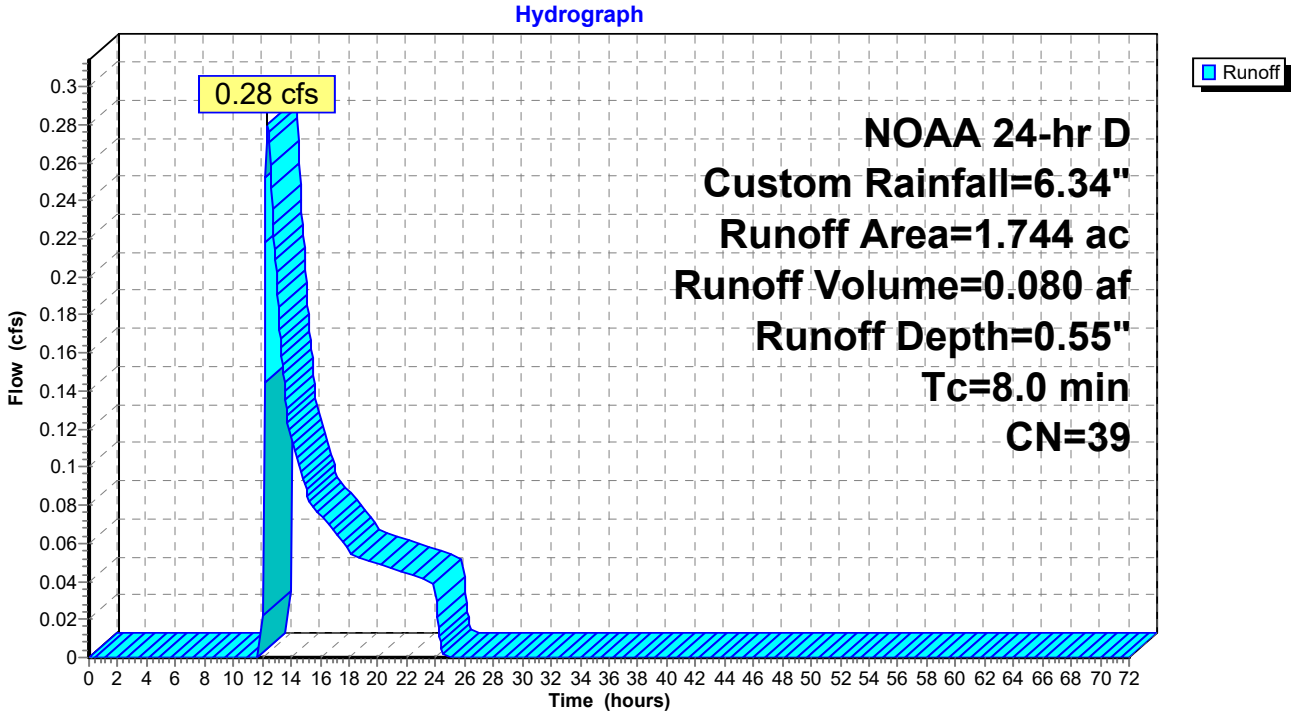
Runoff = 0.28 cfs @ 12.37 hrs, Volume= 0.080 af, Depth= 0.55"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.744	39	>75% Grass cover, Good, HSG A
1.744		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 110S: Basin 22 - Pervious



Summary for Pond 111P: Basin 23

Inflow Area = 2.499 ac, 35.01% Impervious, Inflow Depth = 2.49" for Custom event
Inflow = 5.15 cfs @ 12.10 hrs, Volume= 0.519 af
Outflow = 0.46 cfs @ 13.55 hrs, Volume= 0.442 af, Atten= 91%, Lag= 86.9 min
Primary = 0.46 cfs @ 13.55 hrs, Volume= 0.442 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.22' @ 13.55 hrs Surf.Area= 8,622 sf Storage= 13,747 cf

Plug-Flow detention time= 611.7 min calculated for 0.442 af (85% of inflow)
Center-of-Mass det. time= 536.3 min (1,313.6 - 777.4)

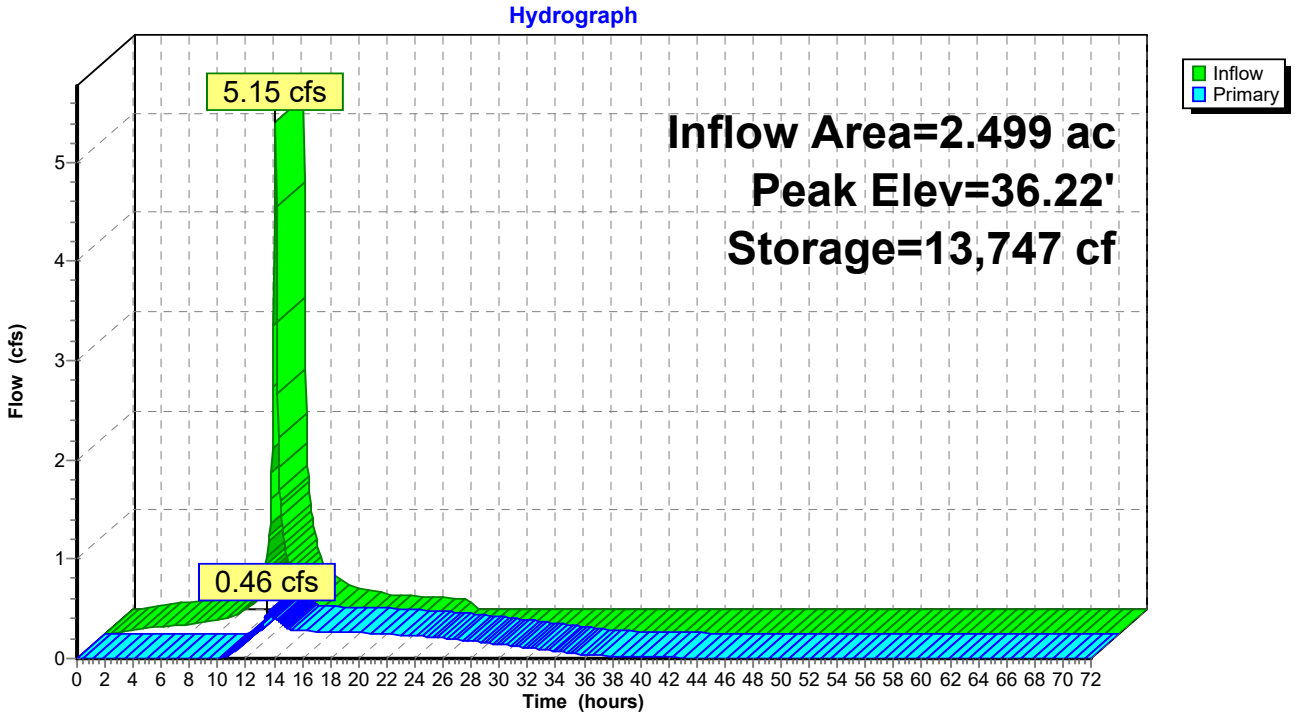
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	21,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,200	0	0
35.00	5,800	5,000	5,000
36.00	8,000	6,900	11,900
37.00	10,800	9,400	21,300

Device	Routing	Invert	Outlet Devices
#1	Primary	34.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.45 cfs @ 13.55 hrs HW=36.22' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.28 cfs @ 5.71 fps)
2=Orifice/Grate (Weir Controls 0.17 cfs @ 0.49 fps)

Pond 111P: Basin 23



Summary for Subcatchment 112S: Basin 23 - Impervious

[49] Hint: Tc<2dt may require smaller dt

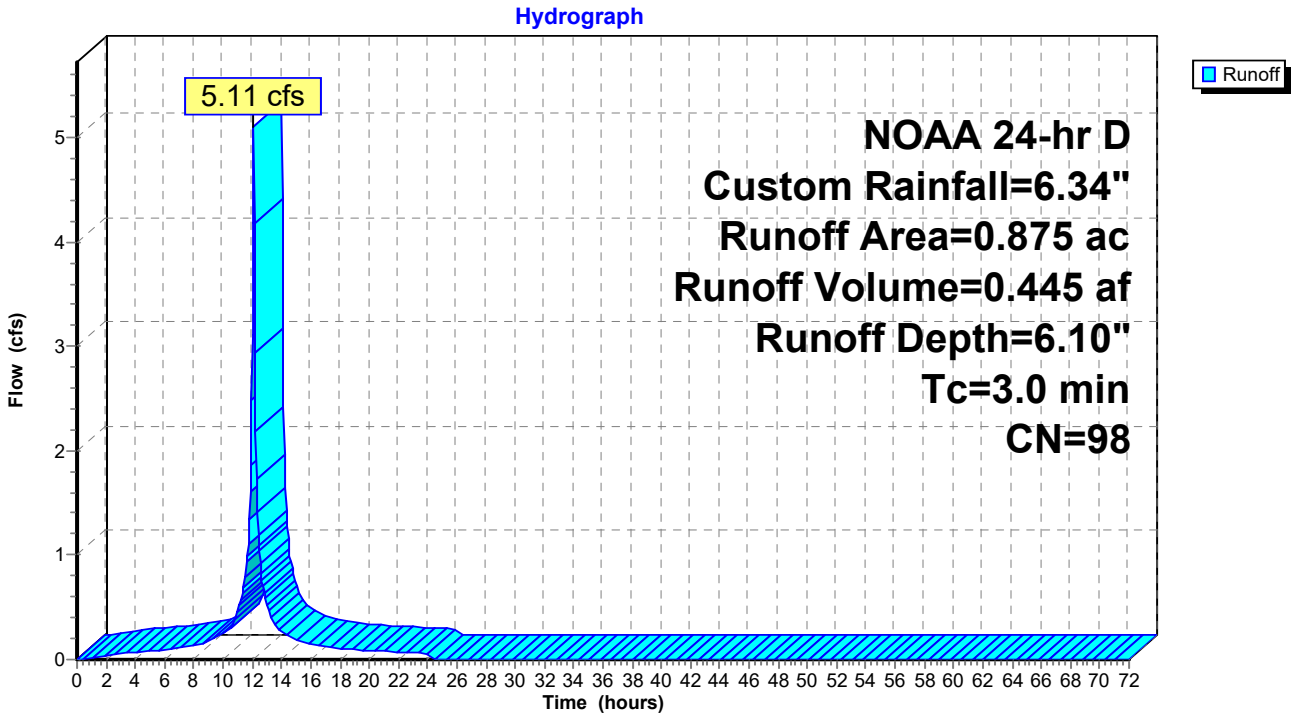
Runoff = 5.11 cfs @ 12.10 hrs, Volume= 0.445 af, Depth= 6.10"
Routed to Pond 111P : Basin 23

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.875	98	Impervious
	0.875		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 112S: Basin 23 - Impervious



Summary for Subcatchment 113S: Basin 23 - Pervious

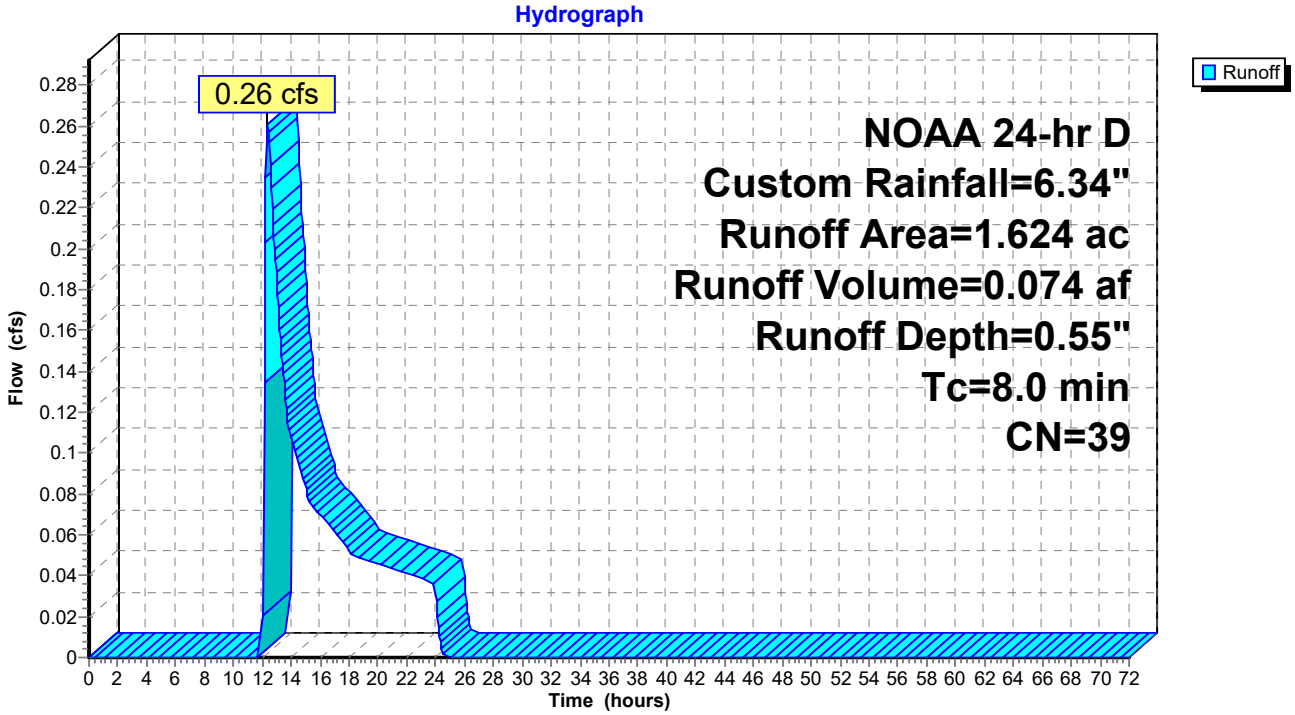
Runoff = 0.26 cfs @ 12.37 hrs, Volume= 0.074 af, Depth= 0.55"
Routed to Pond 111P : Basin 23

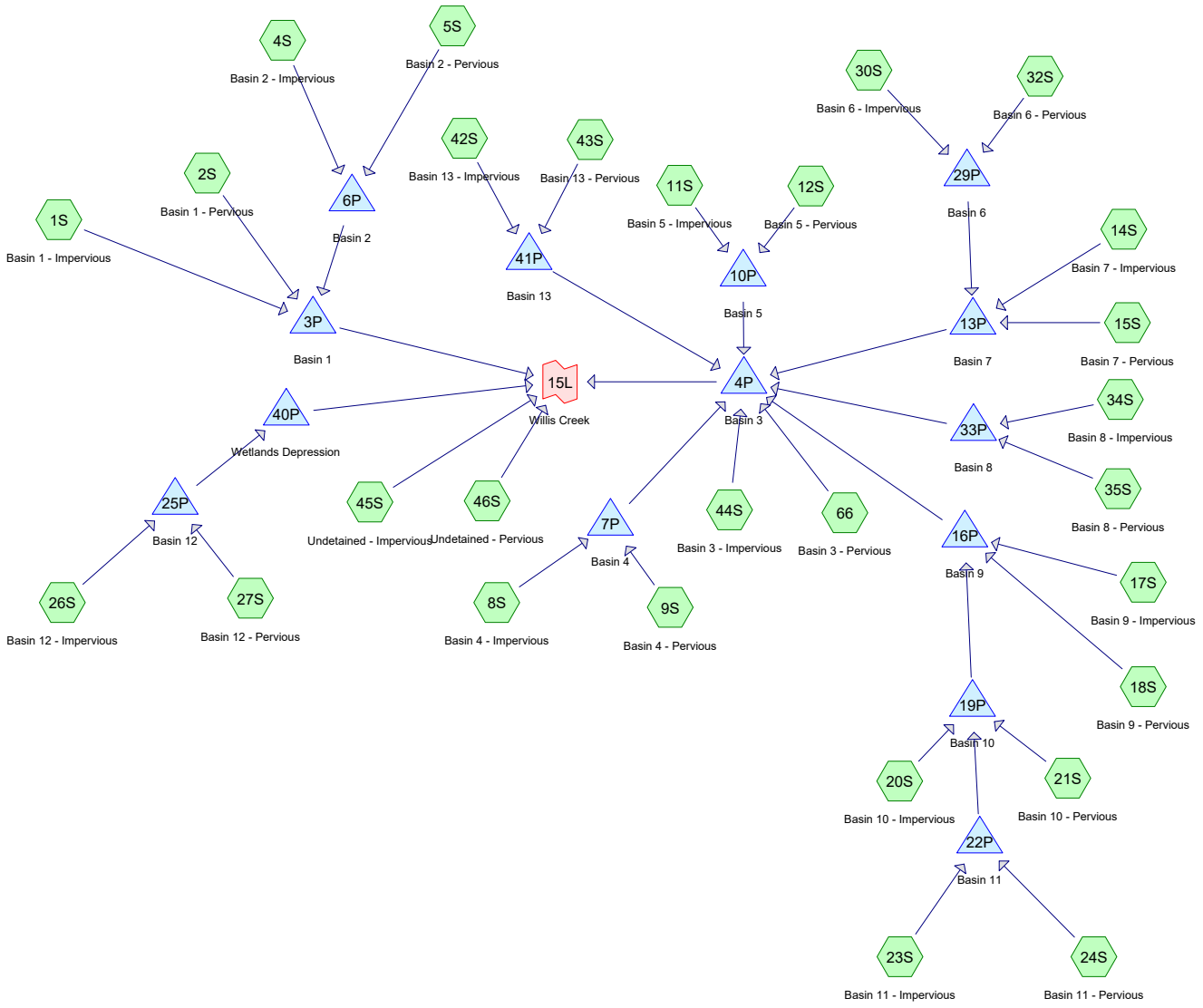
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.624	39	>75% Grass cover, Good, HSG A
1.624		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 113S: Basin 23 - Pervious





Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT - WILLS CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	6.34	2

Summary for Subcatchment 1S: Basin 1 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 102% of capacity of segment #3

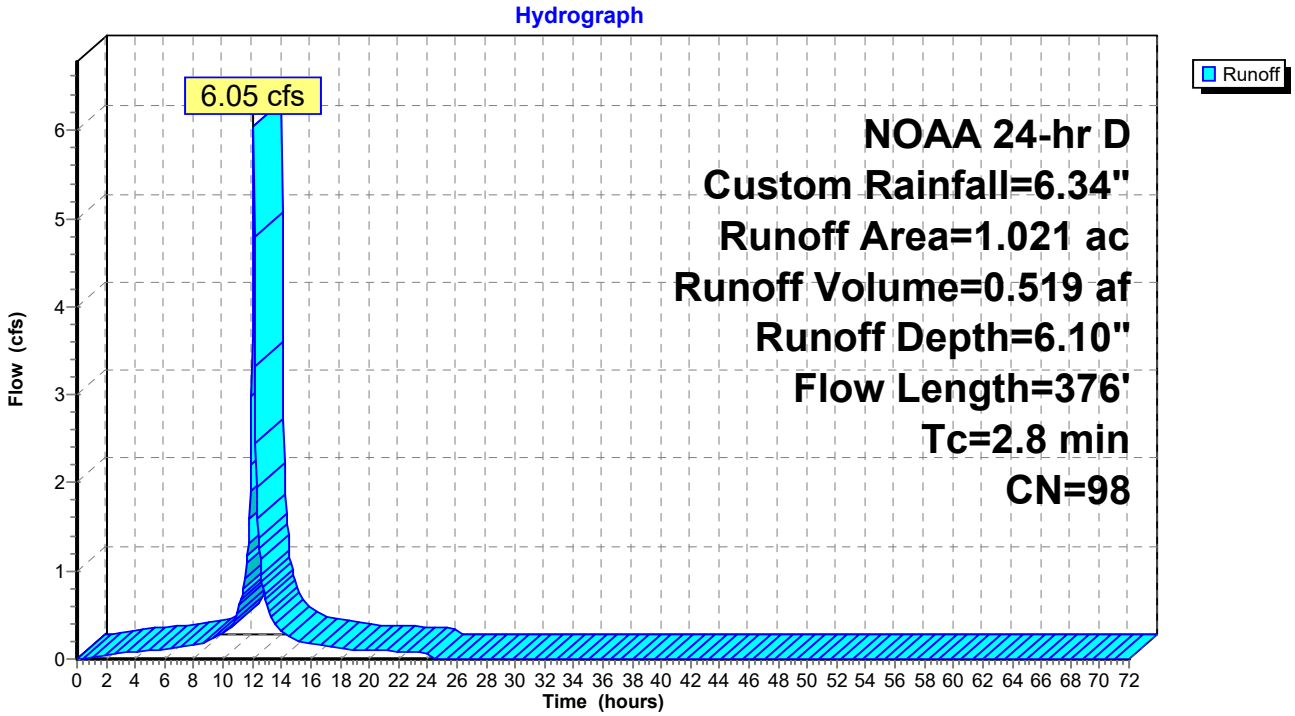
Runoff = 6.05 cfs @ 12.10 hrs, Volume= 0.519 af, Depth= 6.10"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.021	98	
	1.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	86	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	190	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.8	376	Total			

Subcatchment 1S: Basin 1 - Impervious



Summary for Subcatchment 2S: Basin 1 - Pervious

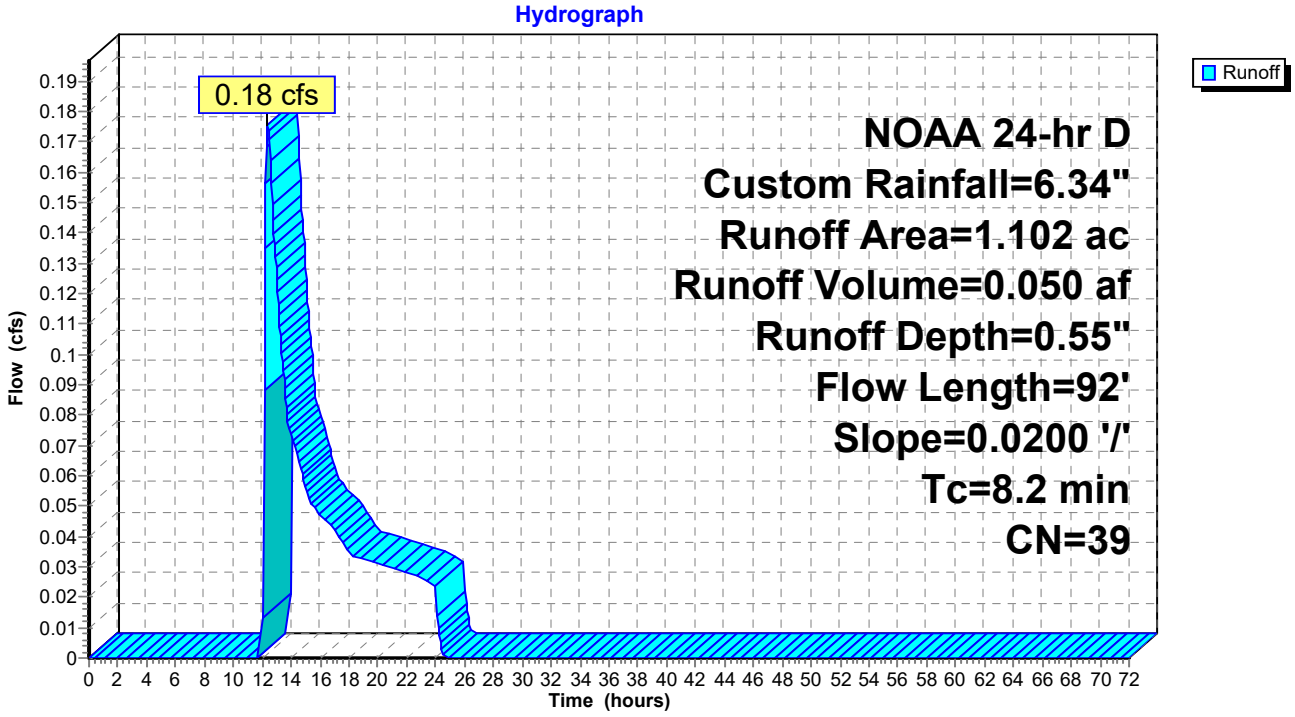
Runoff = 0.18 cfs @ 12.37 hrs, Volume= 0.050 af, Depth= 0.55"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.102	39	>75% Grass cover, Good, HSG A
1.102		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	92	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 2S: Basin 1 - Pervious



Summary for Pond 3P: Basin 1

Inflow Area = 4.367 ac, 43.78% Impervious, Inflow Depth > 2.76" for Custom event
Inflow = 6.27 cfs @ 12.10 hrs, Volume= 1.004 af
Outflow = 4.66 cfs @ 12.17 hrs, Volume= 0.912 af, Atten= 26%, Lag= 4.4 min
Primary = 4.66 cfs @ 12.17 hrs, Volume= 0.912 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.09' @ 12.17 hrs Surf.Area= 7,527 sf Storage= 11,029 cf

Plug-Flow detention time= 409.3 min calculated for 0.911 af (91% of inflow)
Center-of-Mass det. time= 295.1 min (1,341.5 - 1,046.3)

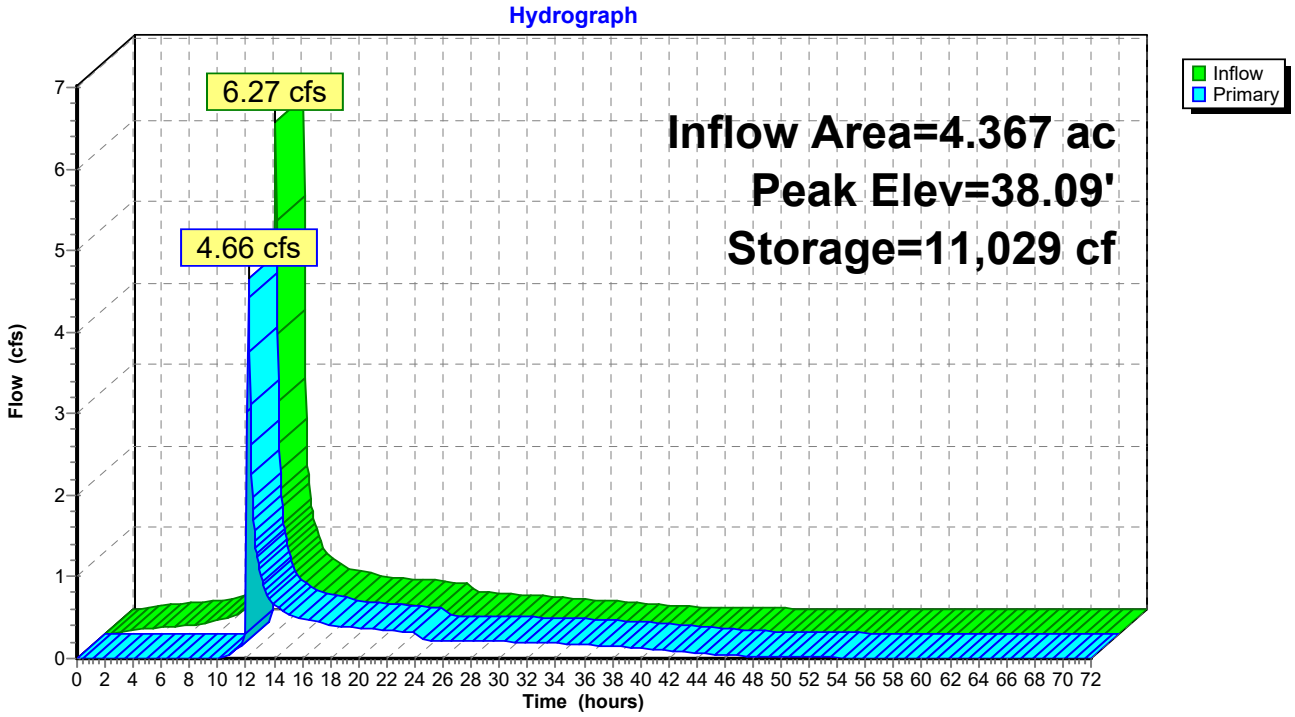
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	14,397 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,311	0	0
37.00	5,097	4,204	4,204
38.00	7,187	6,142	10,346
38.50	9,017	4,051	14,397

Device	Routing	Invert	Outlet Devices
#1	Primary	36.93'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.90'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.47 cfs @ 12.17 hrs HW=38.09' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.24 cfs @ 4.89 fps)
2=Orifice/Grate (Weir Controls 4.23 cfs @ 1.41 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 3

Inflow Area = 21.738 ac, 39.68% Impervious, Inflow Depth = 3.24" for Custom event
Inflow = 49.77 cfs @ 12.16 hrs, Volume= 5.861 af
Outflow = 3.06 cfs @ 15.73 hrs, Volume= 2.047 af, Atten= 94%, Lag= 214.0 min
Primary = 3.06 cfs @ 15.73 hrs, Volume= 2.047 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.62' @ 15.73 hrs Surf.Area= 38,850 sf Storage= 170,655 cf

Plug-Flow detention time= 577.7 min calculated for 2.046 af (35% of inflow)
Center-of-Mass det. time= 362.8 min (1,283.7 - 920.8)

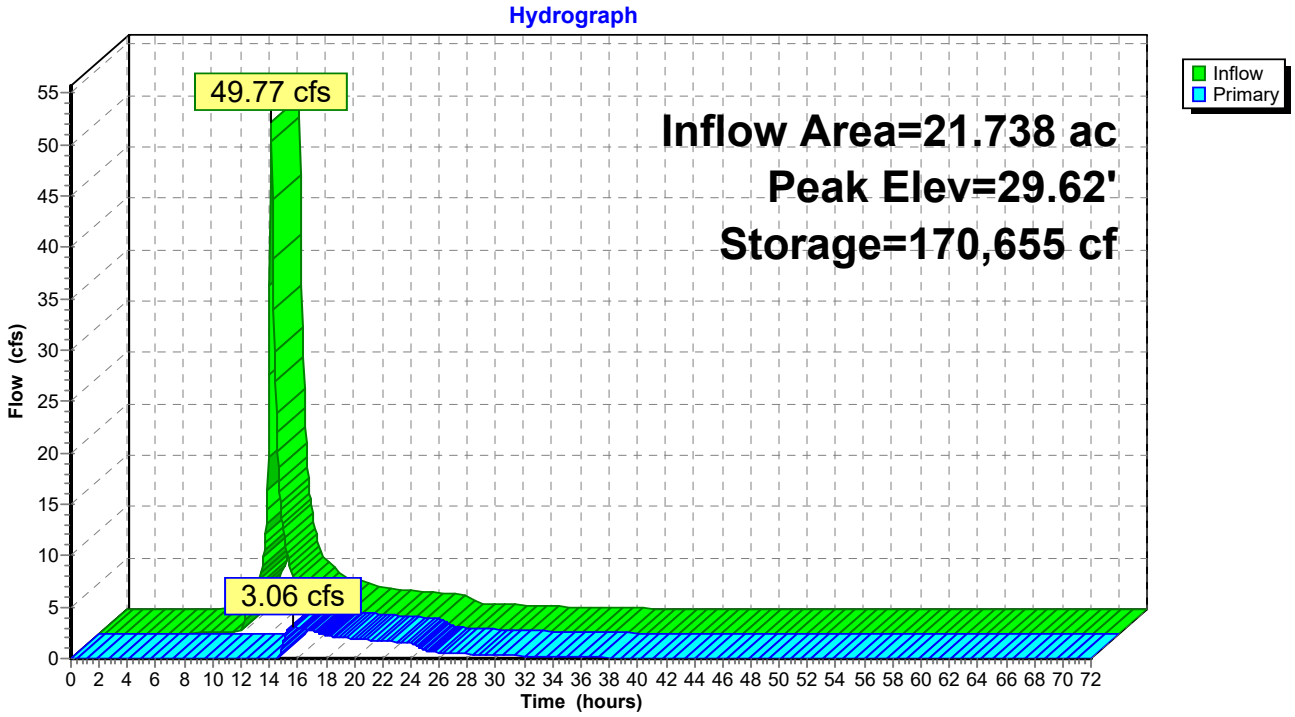
Volume	Invert	Avail.Storage	Storage Description
#1	24.01'	206,265 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.01	22,000	0	0
25.00	25,000	23,265	23,265
26.00	28,000	26,500	49,765
27.00	31,000	29,500	79,265
28.00	34,000	32,500	111,765
29.00	37,000	35,500	147,265
30.00	40,000	38,500	185,765
30.50	42,000	20,500	206,265

Device	Routing	Invert	Outlet Devices
#1	Primary	29.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.98 cfs @ 15.73 hrs HW=29.62' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.98 cfs @ 0.85 fps)

Pond 4P: Basin 3



Summary for Subcatchment 4S: Basin 2 - Impervious

[49] Hint: Tc<2dt may require smaller dt

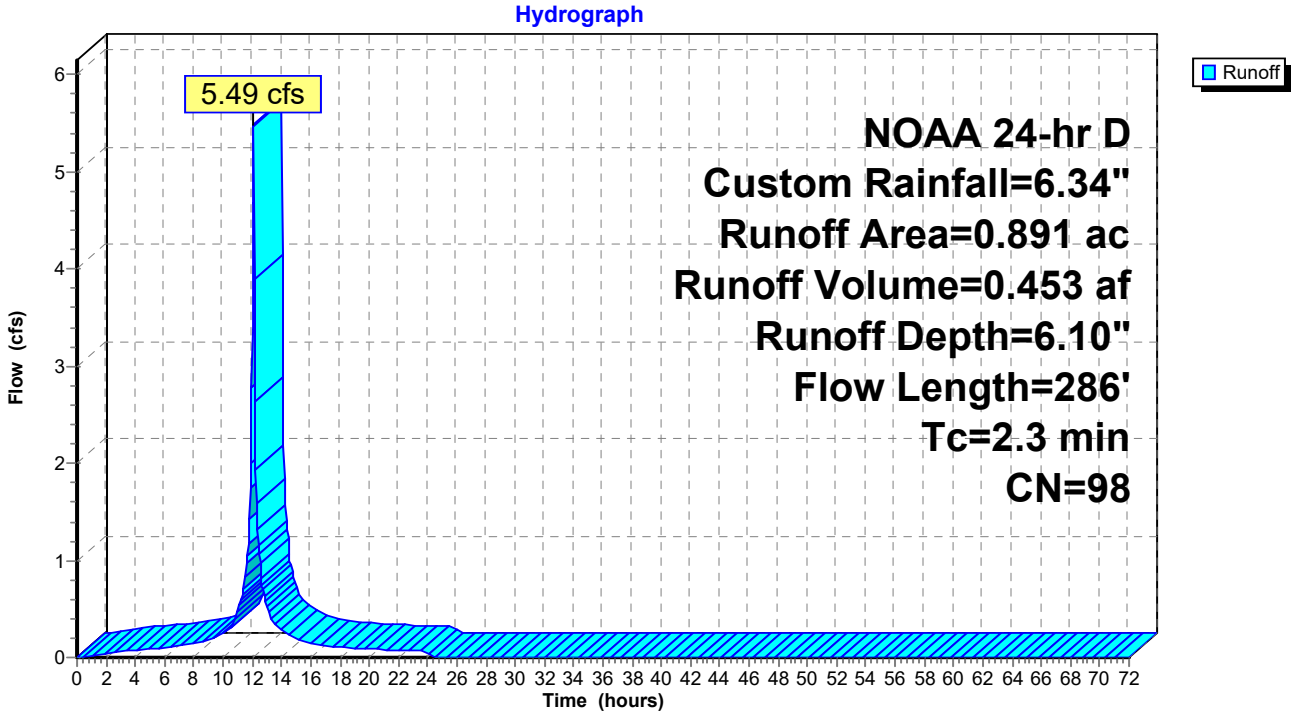
Runoff = 5.49 cfs @ 12.09 hrs, Volume= 0.453 af, Depth= 6.10"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.891	98	Impervious
	0.891		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	56	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	286	Total			

Subcatchment 4S: Basin 2 - Impervious



Summary for Subcatchment 5S: Basin 2 - Pervious

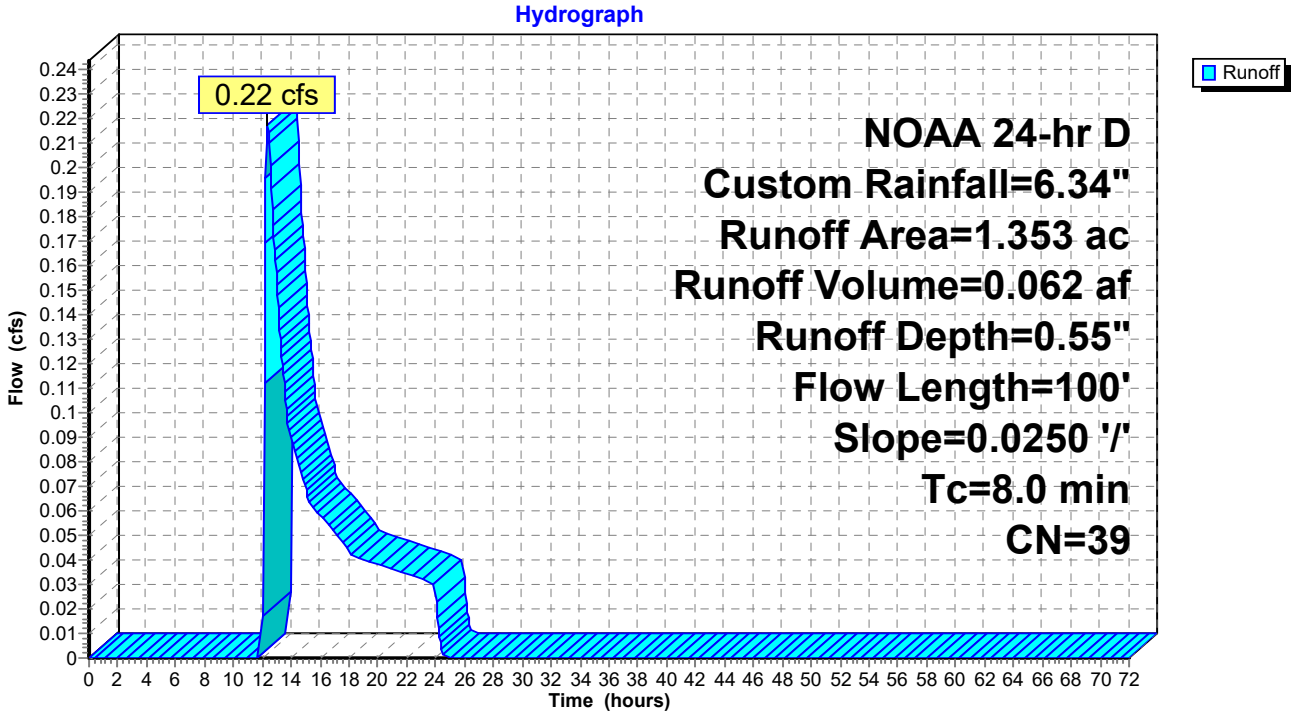
Runoff = 0.22 cfs @ 12.37 hrs, Volume= 0.062 af, Depth= 0.55"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.353	39	>75% Grass cover, Good, HSG A
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 5S: Basin 2 - Pervious



Summary for Pond 6P: Basin 2

Inflow Area = 2.244 ac, 39.71% Impervious, Inflow Depth = 2.75" for Custom event
Inflow = 5.51 cfs @ 12.09 hrs, Volume= 0.515 af
Outflow = 0.26 cfs @ 14.97 hrs, Volume= 0.435 af, Atten= 95%, Lag= 172.4 min
Primary = 0.26 cfs @ 14.97 hrs, Volume= 0.435 af
Routed to Pond 3P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.84' @ 14.97 hrs Surf.Area= 0.236 ac Storage= 0.337 af

Plug-Flow detention time= 720.2 min calculated for 0.434 af (84% of inflow)
Center-of-Mass det. time= 644.3 min (1,415.5 - 771.1)

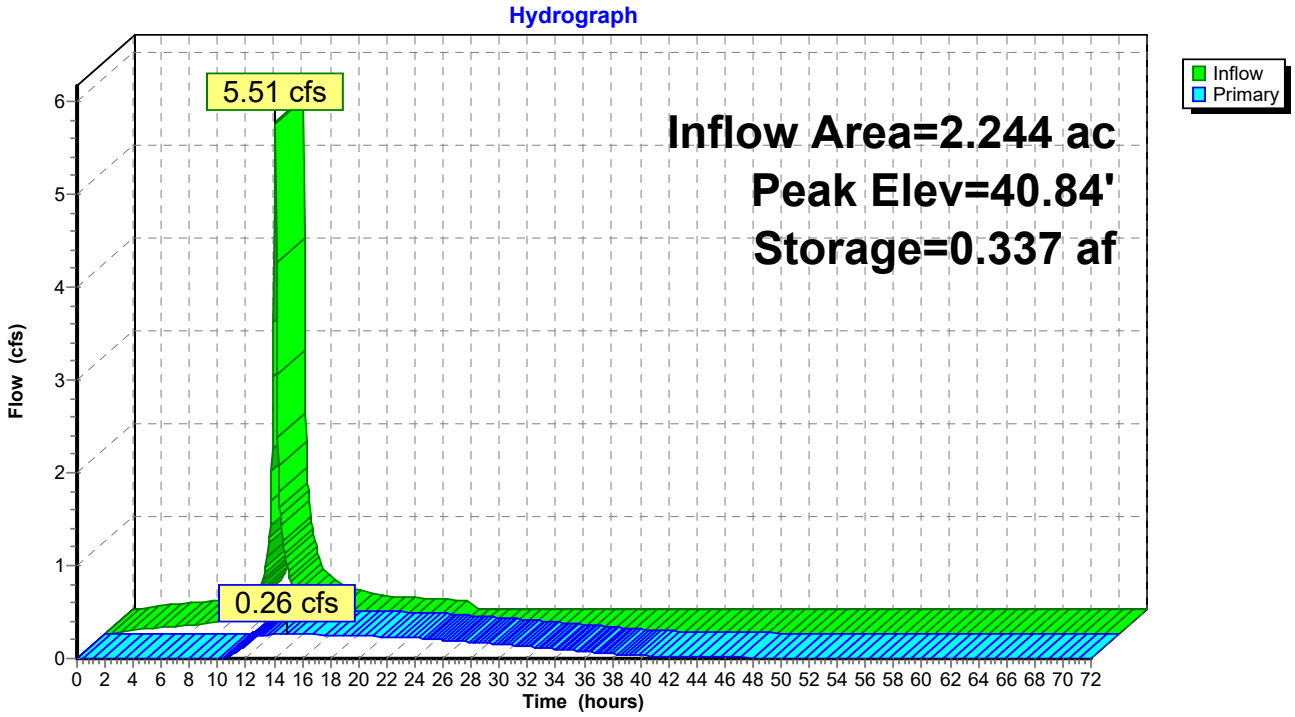
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	0.512 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
39.00	0.133	0.000	0.000
40.00	0.187	0.160	0.160
41.00	0.245	0.216	0.376
41.50	0.297	0.135	0.512

Device	Routing	Invert	Outlet Devices
#1	Primary	39.52'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 14.97 hrs HW=40.84' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.26 cfs @ 5.26 fps)

Pond 6P: Basin 2



Summary for Pond 7P: Basin 4

Inflow Area = 2.526 ac, 46.36% Impervious, Inflow Depth = 3.12" for Custom event
Inflow = 6.67 cfs @ 12.11 hrs, Volume= 0.657 af
Outflow = 5.96 cfs @ 12.15 hrs, Volume= 0.555 af, Atten= 11%, Lag= 2.7 min
Primary = 5.96 cfs @ 12.15 hrs, Volume= 0.555 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.09' @ 12.15 hrs Surf.Area= 6,546 sf Storage= 5,920 cf

Plug-Flow detention time= 149.9 min calculated for 0.555 af (84% of inflow)
Center-of-Mass det. time= 72.6 min (839.2 - 766.7)

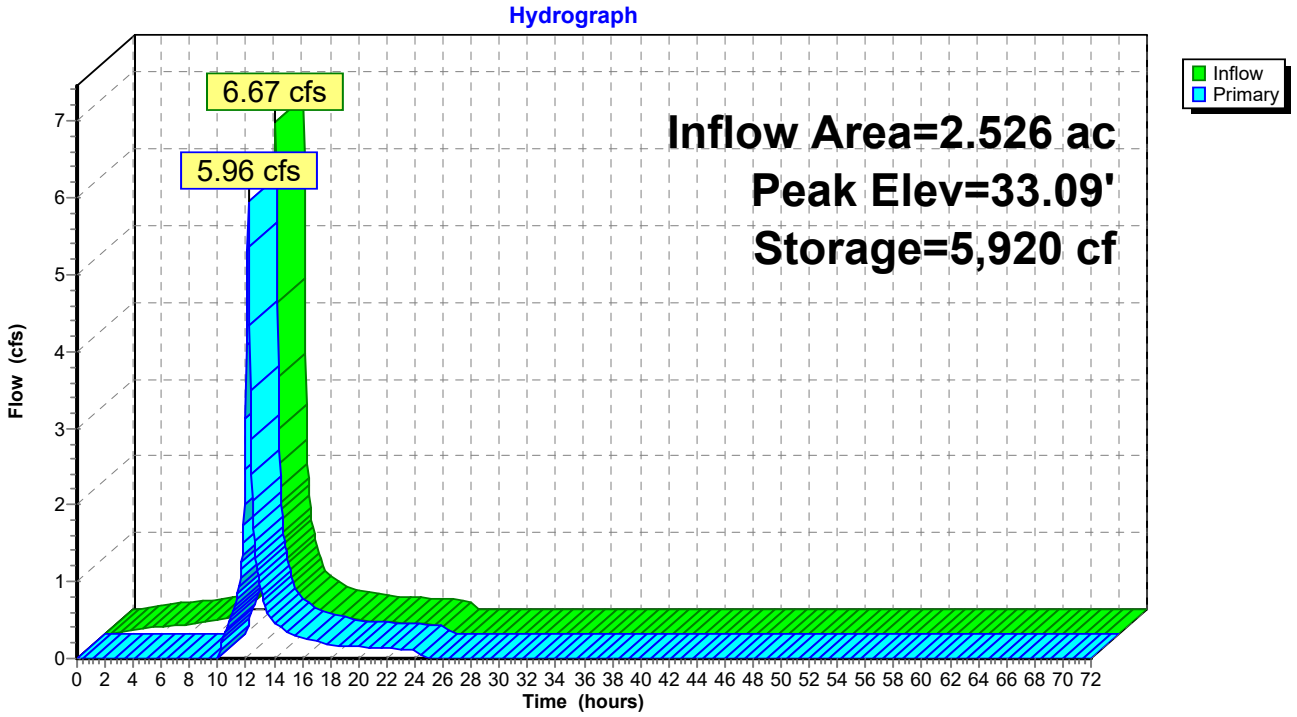
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	17,795 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	4,300	0	0
33.00	6,320	5,310	5,310
34.00	8,700	7,510	12,820
34.50	11,200	4,975	17,795

Device	Routing	Invert	Outlet Devices
#1	Primary	32.86'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.94 cfs @ 12.15 hrs HW=33.09' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 5.94 cfs @ 1.58 fps)

Pond 7P: Basin 4



Summary for Subcatchment 8S: Basin 4 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 112% of capacity of segment #3

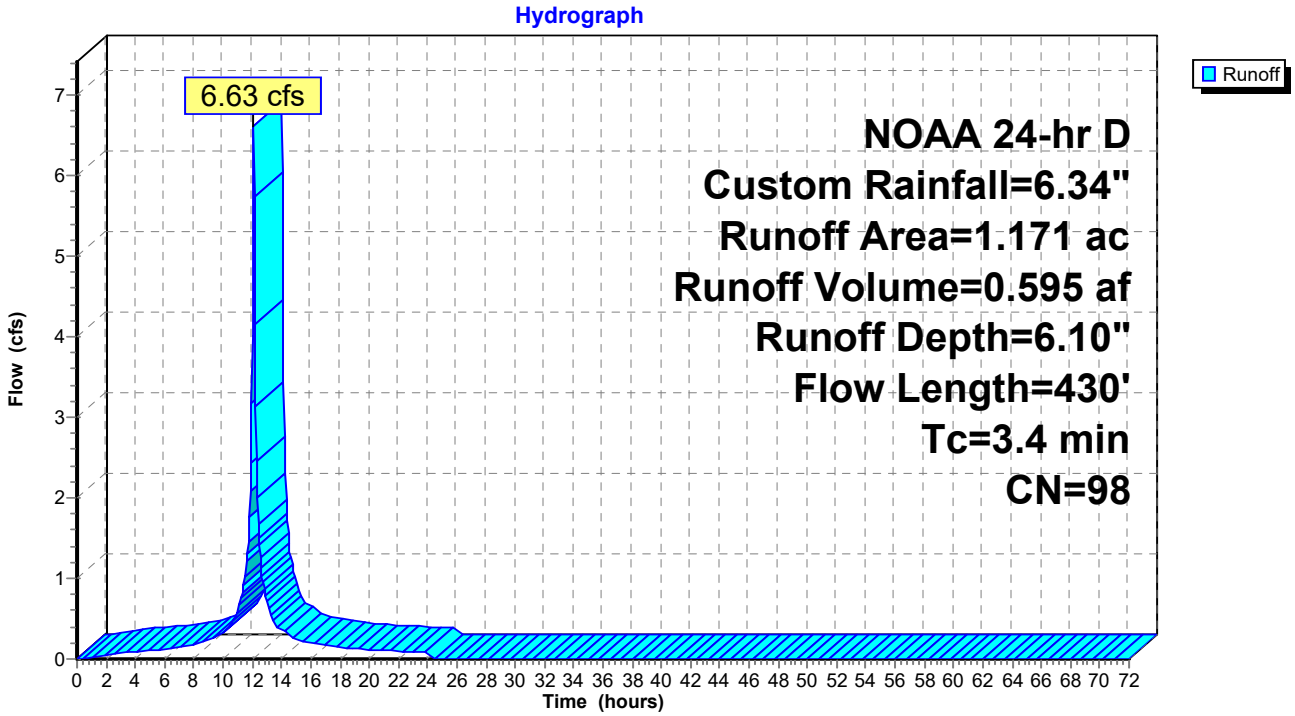
Runoff = 6.63 cfs @ 12.10 hrs, Volume= 0.595 af, Depth= 6.10"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.171	98	Impervious
	1.171		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.4	430	Total			

Subcatchment 8S: Basin 4 - Impervious



Summary for Subcatchment 9S: Basin 4 - Pervious

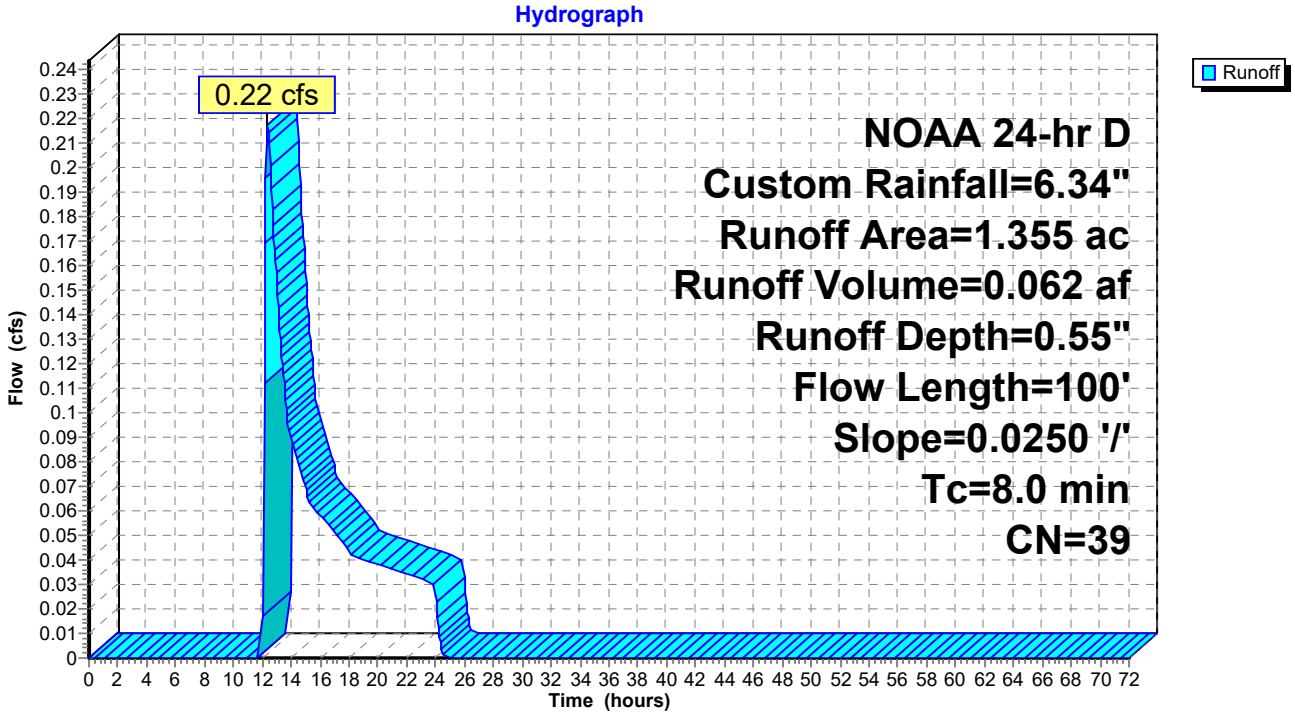
Runoff = 0.22 cfs @ 12.37 hrs, Volume= 0.062 af, Depth= 0.55"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.355	39	>75% Grass cover, Good, HSG A
1.355		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 9S: Basin 4 - Pervious



Summary for Pond 10P: Basin 5

Inflow Area = 1.373 ac, 35.40% Impervious, Inflow Depth = 3.06" for Custom event
Inflow = 4.08 cfs @ 12.10 hrs, Volume= 0.350 af
Outflow = 0.28 cfs @ 13.83 hrs, Volume= 0.308 af, Atten= 93%, Lag= 103.4 min
Primary = 0.28 cfs @ 13.83 hrs, Volume= 0.308 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.20' @ 13.83 hrs Surf.Area= 5,418 sf Storage= 8,660 cf

Plug-Flow detention time= 431.8 min calculated for 0.308 af (88% of inflow)
Center-of-Mass det. time= 368.6 min (1,158.8 - 790.2)

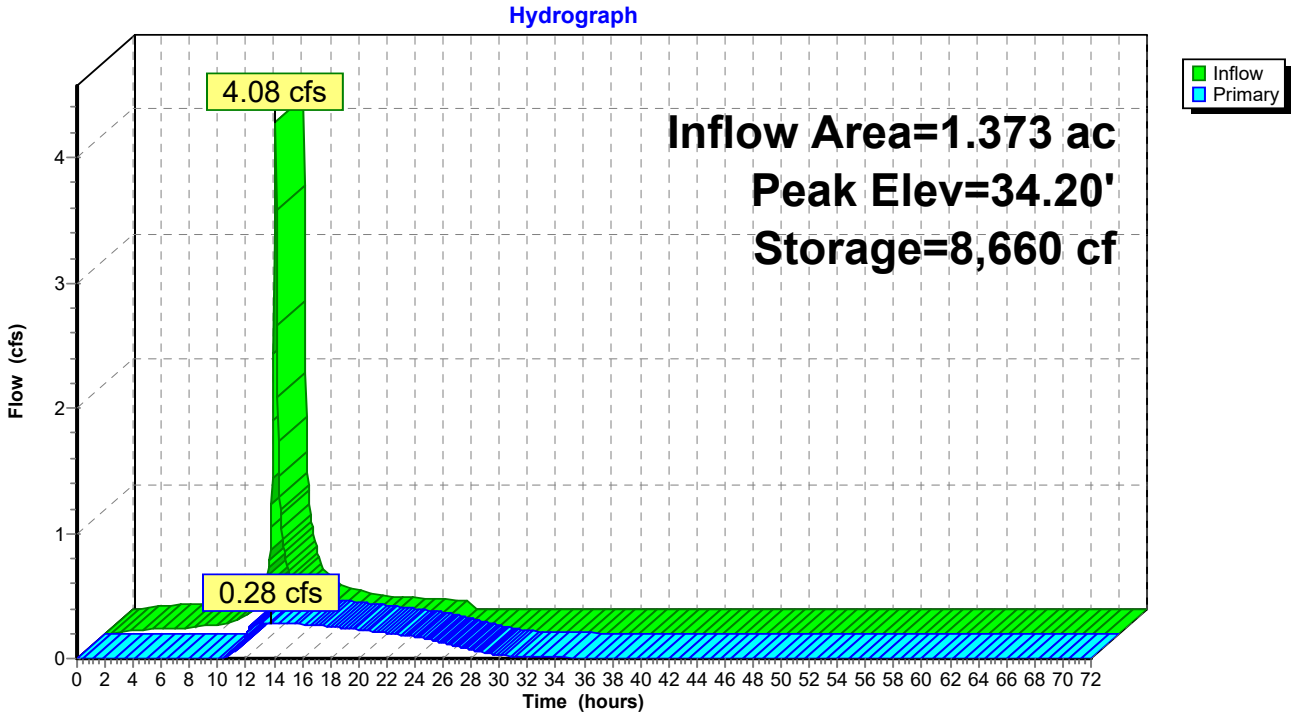
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	35,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,500	0	0
33.00	3,780	3,140	3,140
34.00	5,150	4,465	7,605
35.00	6,490	5,820	13,425
36.00	8,300	7,395	20,820
37.00	9,700	9,000	29,820
37.50	11,500	5,300	35,120

Device	Routing	Invert	Outlet Devices
#1	Primary	32.63'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.28 cfs @ 13.83 hrs HW=34.20' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.28 cfs @ 5.79 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Basin 5



Summary for Subcatchment 11S: Basin 5 - Impervious

[49] Hint: Tc<2dt may require smaller dt

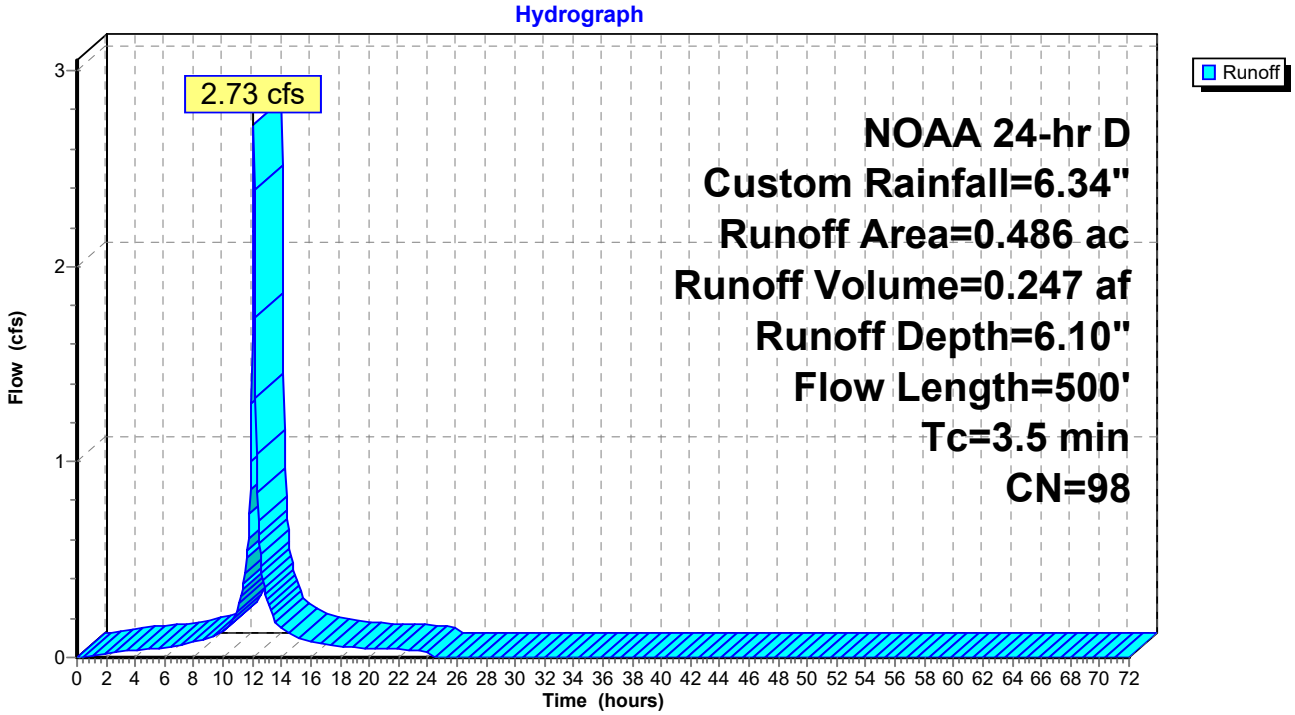
Runoff = 2.73 cfs @ 12.11 hrs, Volume= 0.247 af, Depth= 6.10"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.486	98	Impervious
	0.486		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.5	500	Total			

Subcatchment 11S: Basin 5 - Impervious



Summary for Subcatchment 12S: Basin 5 - Pervious

[49] Hint: Tc<2dt may require smaller dt

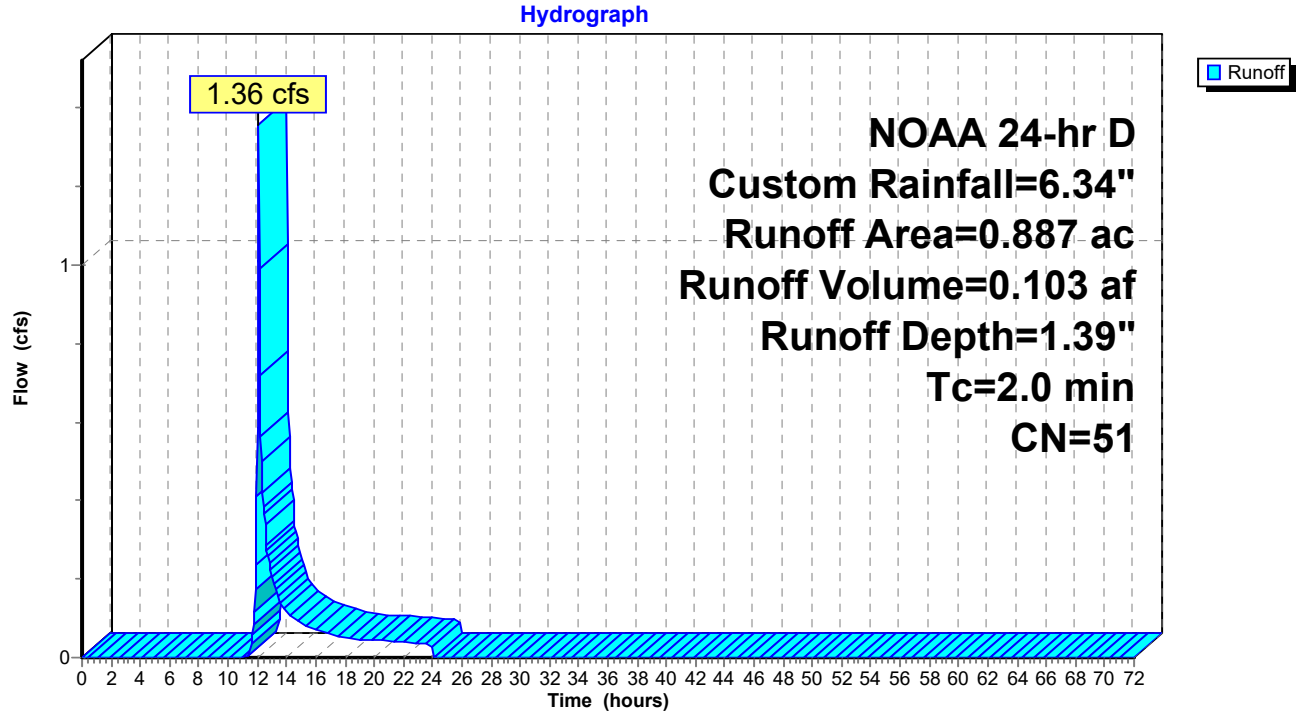
Runoff = 1.36 cfs @ 12.10 hrs, Volume= 0.103 af, Depth= 1.39"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
0.621	39	>75% Grass cover, Good, HSG A
0.266	80	>75% Grass cover, Good, HSG D
0.887	51	Weighted Average
0.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 12S: Basin 5 - Pervious



Summary for Pond 13P: Basin 7

Inflow Area = 3.928 ac, 40.63% Impervious, Inflow Depth = 4.46" for Custom event
Inflow = 13.43 cfs @ 12.17 hrs, Volume= 1.460 af
Outflow = 12.94 cfs @ 12.21 hrs, Volume= 1.344 af, Atten= 4%, Lag= 2.4 min
Primary = 12.94 cfs @ 12.21 hrs, Volume= 1.344 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.18' @ 12.21 hrs Surf.Area= 6,005 sf Storage= 7,243 cf

Plug-Flow detention time= 79.7 min calculated for 1.343 af (92% of inflow)
Center-of-Mass det. time= 36.4 min (839.9 - 803.5)

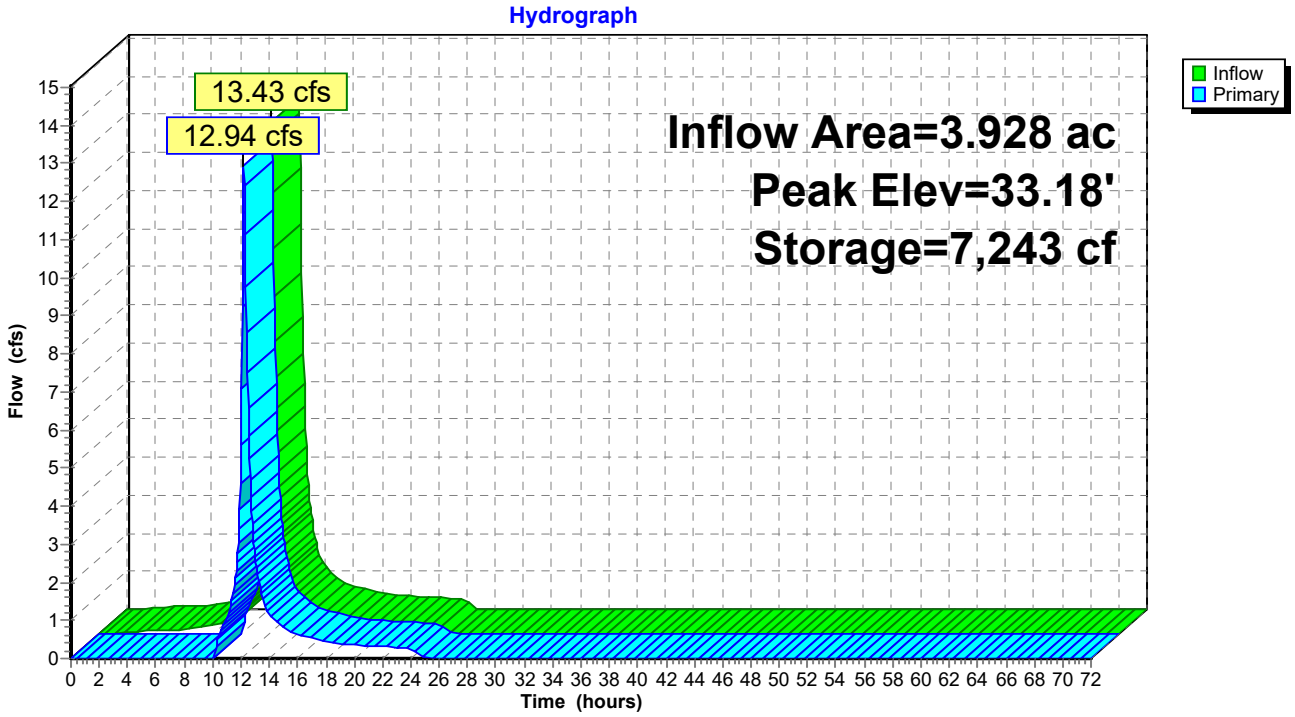
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	17,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,000	0	0
32.00	3,500	1,625	1,625
33.00	5,600	4,550	6,175
34.00	7,800	6,700	12,875
34.50	9,400	4,300	17,175

Device	Routing	Invert	Outlet Devices
#1	Primary	32.79'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.79 cfs @ 12.21 hrs HW=33.18' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 12.79 cfs @ 2.04 fps)

Pond 13P: Basin 7



Summary for Subcatchment 14S: Basin 7 - Impervious

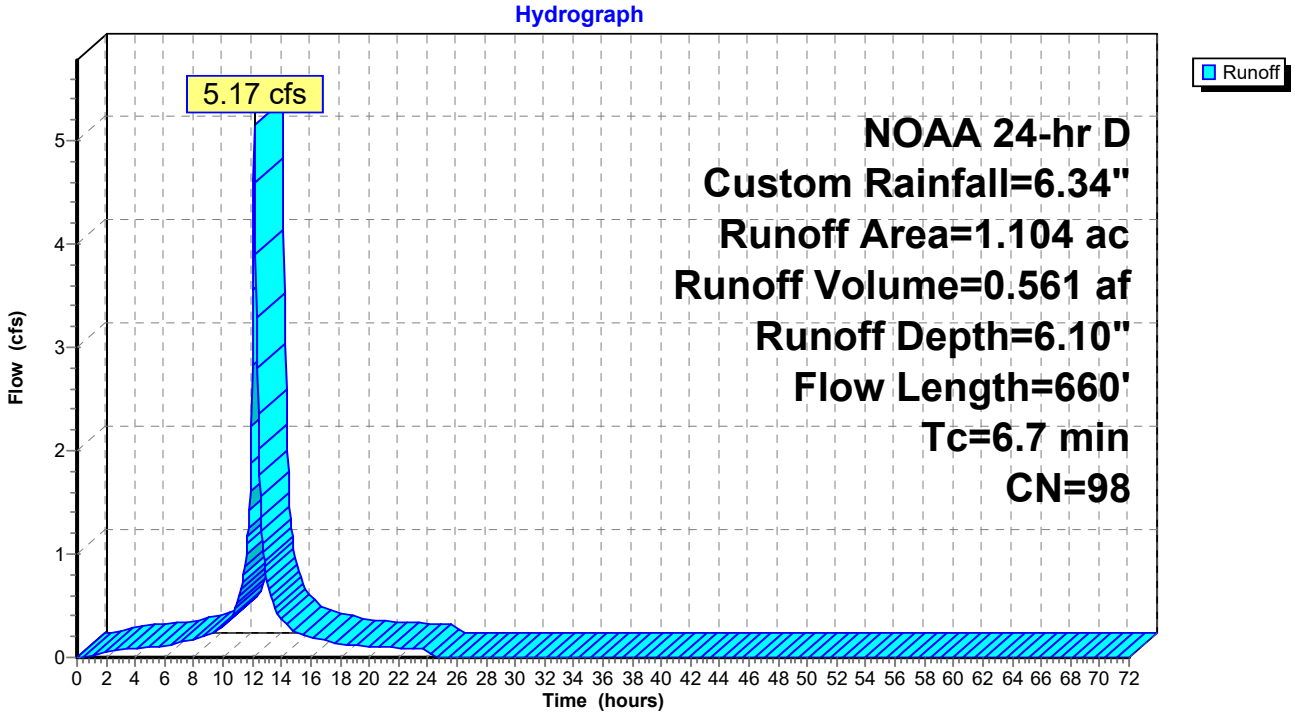
Runoff = 5.17 cfs @ 12.15 hrs, Volume= 0.561 af, Depth= 6.10"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.104	98	Impervious
	1.104		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
4.9	500	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	60	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	660	Total			

Subcatchment 14S: Basin 7 - Impervious

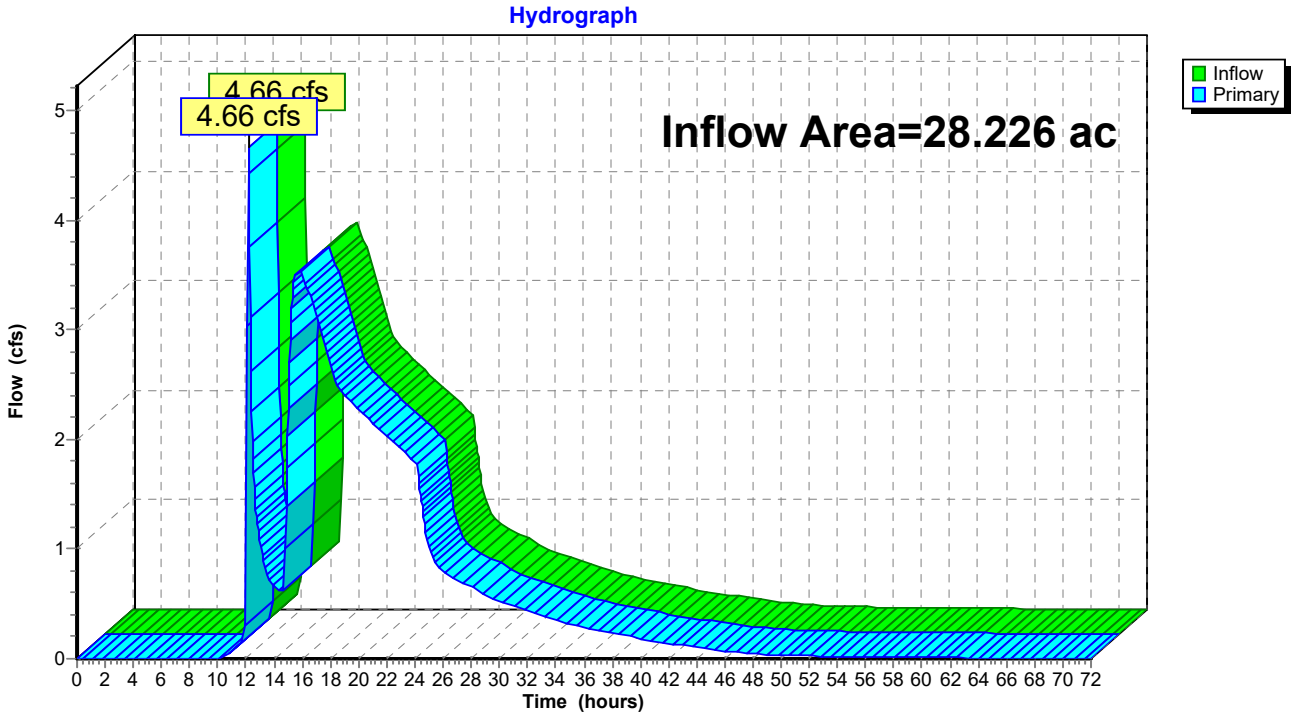


Summary for Link 15L: Willis Creek

Inflow Area = 28.226 ac, 38.93% Impervious, Inflow Depth > 1.26" for Custom event
Inflow = 4.66 cfs @ 12.17 hrs, Volume= 2.959 af
Primary = 4.66 cfs @ 12.17 hrs, Volume= 2.959 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 15L: Willis Creek



Summary for Subcatchment 15S: Basin 7 - Pervious

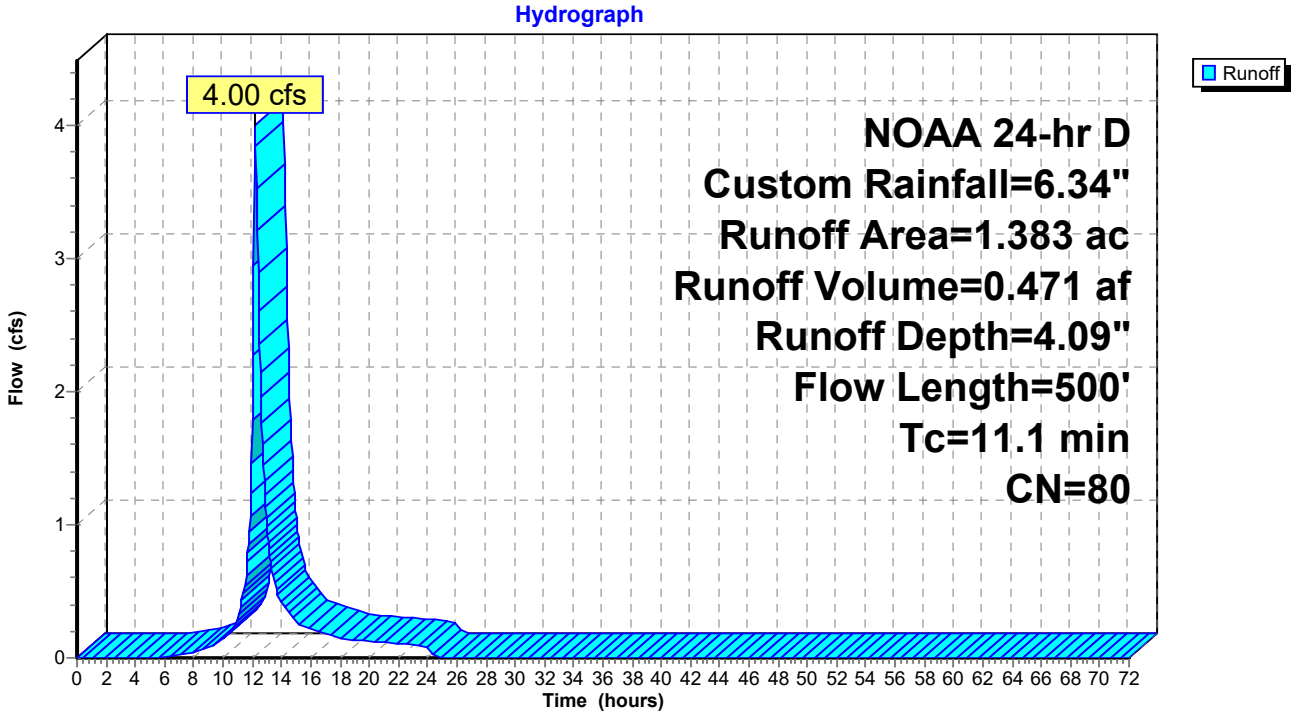
Runoff = 4.00 cfs @ 12.21 hrs, Volume= 0.471 af, Depth= 4.09"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.383	80	>75% Grass cover, Good, HSG D
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	80	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	20	0.0070	0.74		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
3.9	400	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
11.1	500	Total			

Subcatchment 15S: Basin 7 - Pervious



Summary for Pond 16P: Basin 9

Inflow Area = 7.133 ac, 41.50% Impervious, Inflow Depth = 3.26" for Custom event
Inflow = 23.80 cfs @ 12.10 hrs, Volume= 1.940 af
Outflow = 18.87 cfs @ 12.15 hrs, Volume= 1.843 af, Atten= 21%, Lag= 2.9 min
Primary = 18.87 cfs @ 12.15 hrs, Volume= 1.843 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.44' @ 12.15 hrs Surf.Area= 5,824 sf Storage= 7,028 cf

Plug-Flow detention time= 99.4 min calculated for 1.843 af (95% of inflow)
Center-of-Mass det. time= 33.2 min (975.3 - 942.1)

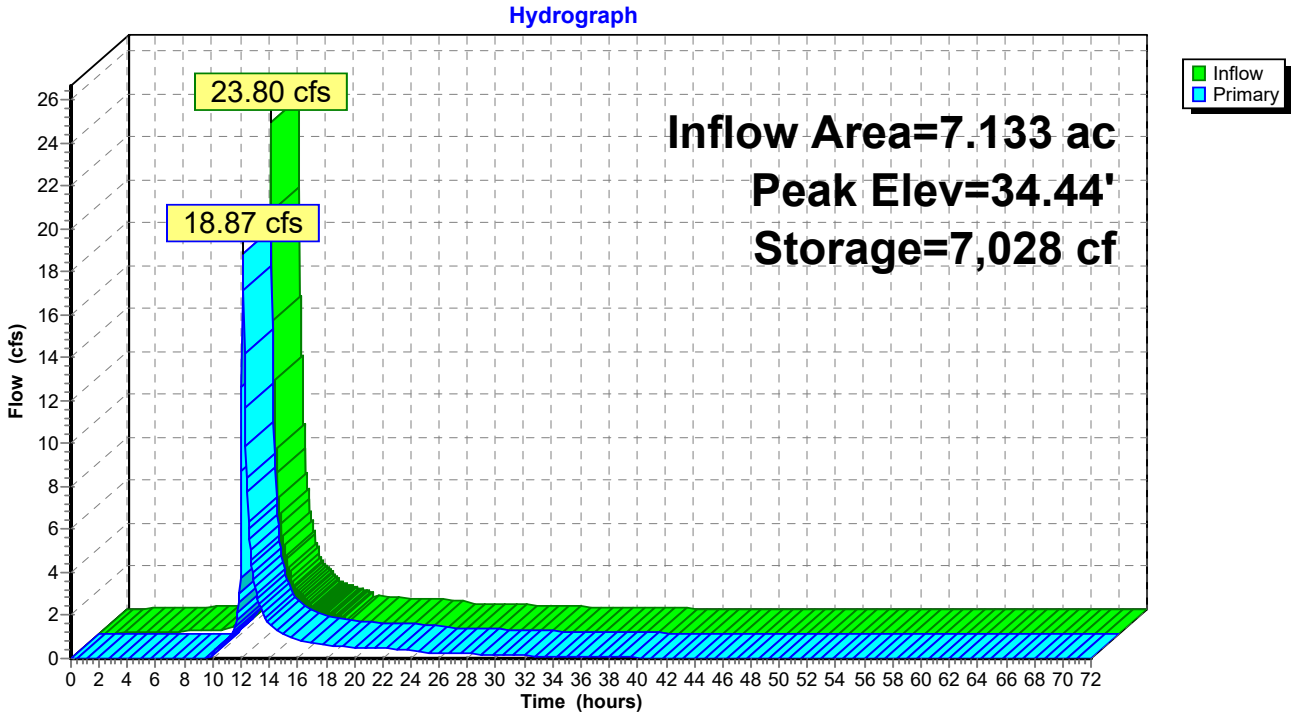
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,900	0	0
34.00	5,300	4,600	4,600
35.00	6,500	5,900	10,500
36.00	8,000	7,250	17,750
36.50	9,700	4,425	22,175

Device	Routing	Invert	Outlet Devices
#1	Primary	33.93'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=18.80 cfs @ 12.15 hrs HW=34.44' (Free Discharge)
1=Orifice/Grate (Weir Controls 18.80 cfs @ 2.32 fps)

Pond 16P: Basin 9



Summary for Subcatchment 17S: Basin 9 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 108% of capacity of segment #3

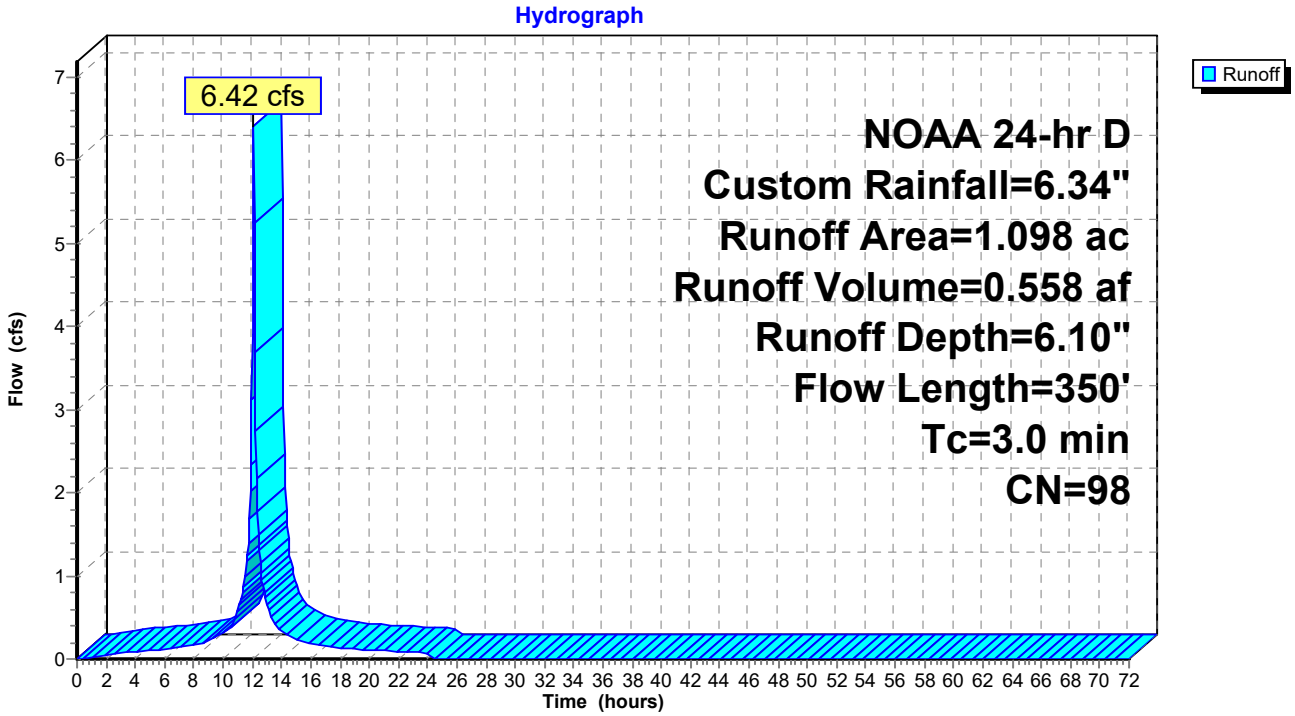
Runoff = 6.42 cfs @ 12.10 hrs, Volume= 0.558 af, Depth= 6.10"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.098	98	Impervious
	1.098		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.0	350	Total			

Subcatchment 17S: Basin 9 - Impervious



Summary for Subcatchment 18S: Basin 9 - Pervious

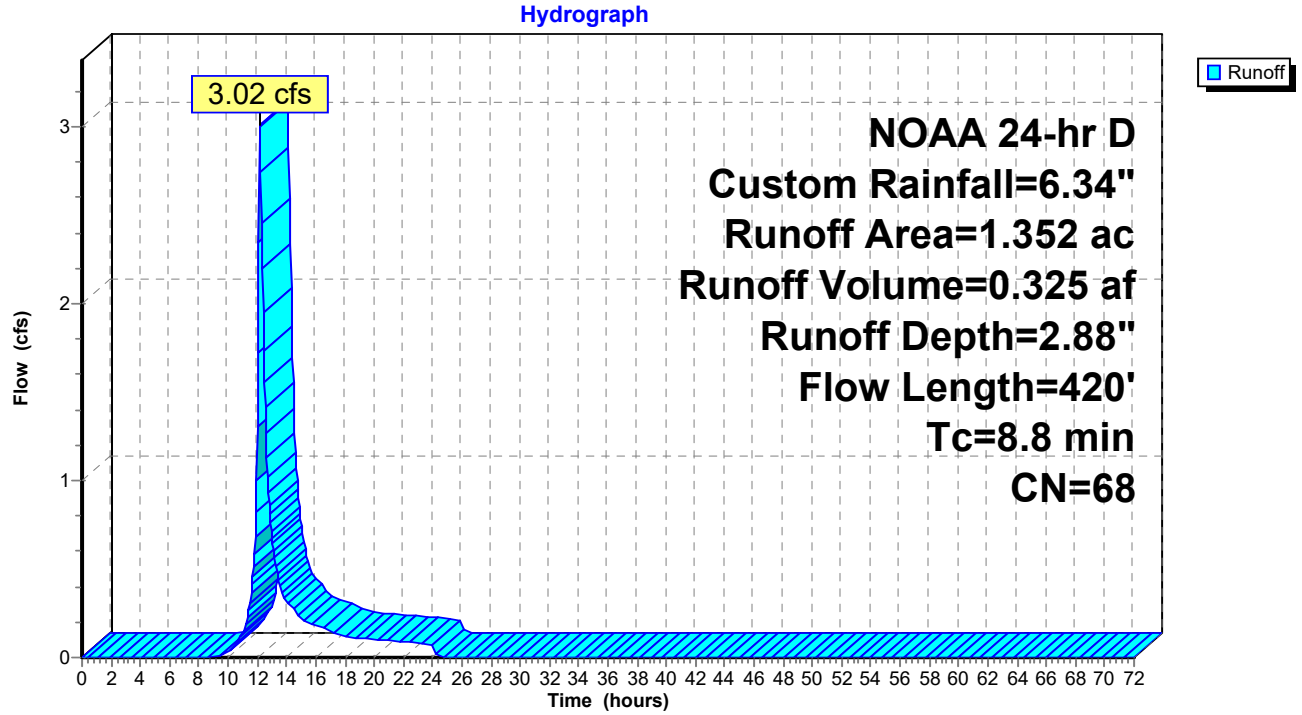
Runoff = 3.02 cfs @ 12.18 hrs, Volume= 0.325 af, Depth= 2.88"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
0.946	80	>75% Grass cover, Good, HSG D
0.406	39	>75% Grass cover, Good, HSG A
1.352	68	Weighted Average
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
1.7	170	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, D to E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	420	Total			

Subcatchment 18S: Basin 9 - Pervious



Summary for Pond 19P: Basin 10

[93] Warning: Storage range exceeded by 4,009.60'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=66)
[81] Warning: Exceeded Pond 22P by 4,006.76' @ 12.10 hrs

Inflow Area = 4.683 ac, 39.76% Impervious, Inflow Depth = 2.91" for Custom event
Inflow = 10.89 cfs @ 12.12 hrs, Volume= 1.137 af
Outflow = 14.99 cfs @ 12.10 hrs, Volume= 1.057 af, Atten= 0%, Lag= 0.0 min
Primary = 14.99 cfs @ 12.10 hrs, Volume= 1.057 af
Routed to Pond 16P : Basin 9

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 4,048.10' @ 12.10 hrs Surf.Area= 8,000 sf Storage= 12,700 cf

Plug-Flow detention time= 312.9 min calculated for 1.057 af (93% of inflow)
Center-of-Mass det. time= 272.7 min (1,072.0 - 799.3)

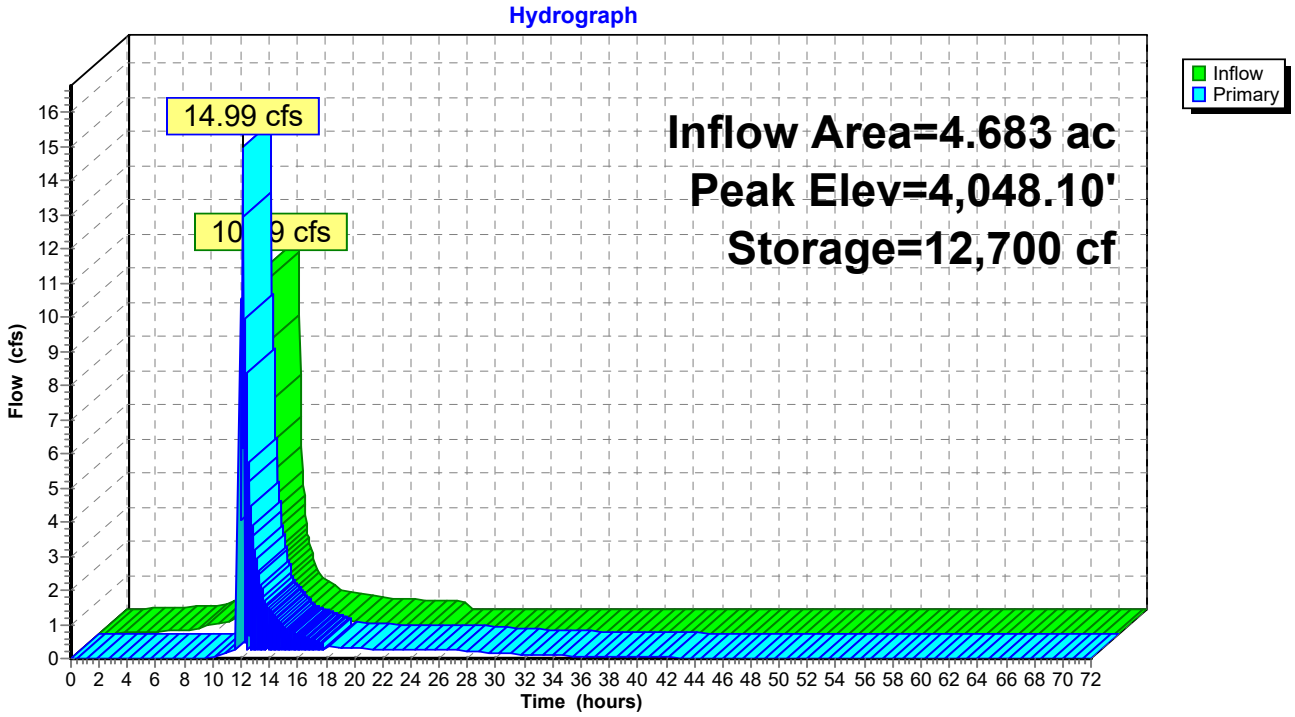
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	12,700 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,700	0	0
37.00	4,400	3,550	3,550
38.00	6,600	5,500	9,050
38.50	8,000	3,650	12,700

Device	Routing	Invert	Outlet Devices
#1	Primary	36.97'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=14.63 cfs @ 12.10 hrs HW=3,867.08' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 14.63 cfs @ 297.98 fps)

Pond 19P: Basin 10



Summary for Subcatchment 20S: Basin 10 - Impervious

[49] Hint: Tc<2dt may require smaller dt

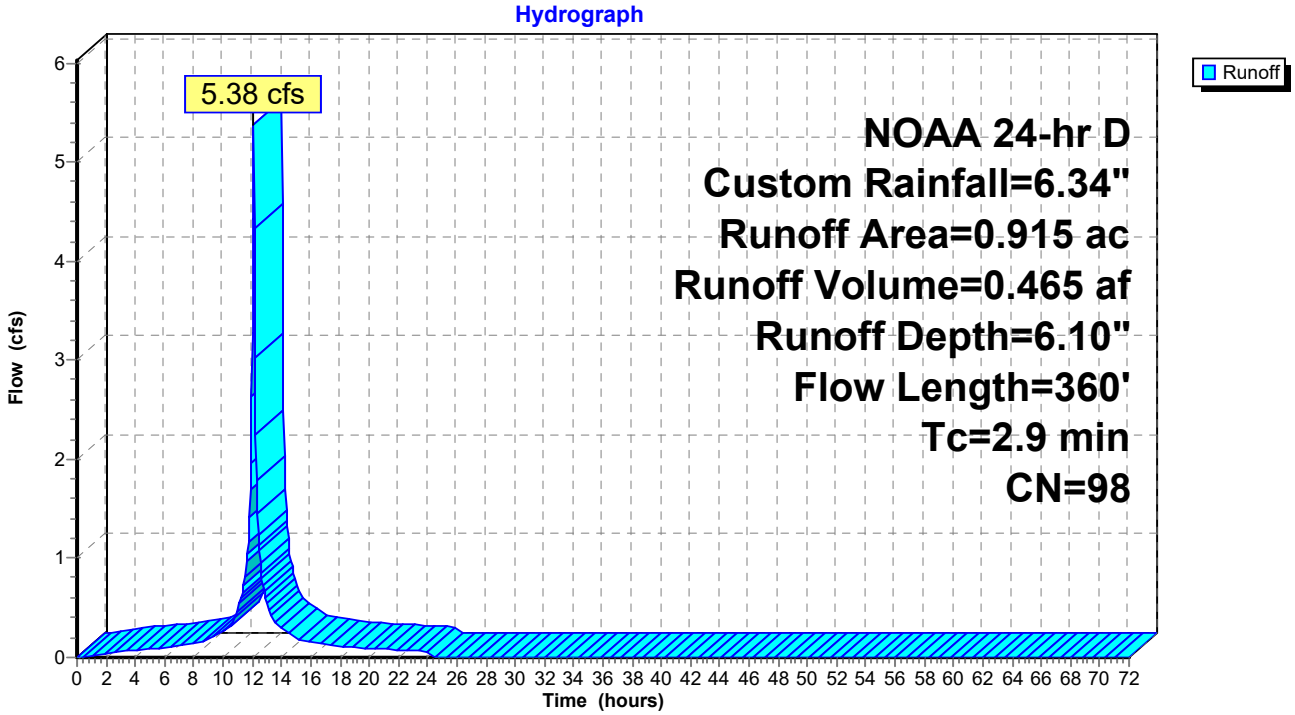
Runoff = 5.38 cfs @ 12.10 hrs, Volume= 0.465 af, Depth= 6.10"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.6	60	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	360	Total			

Subcatchment 20S: Basin 10 - Impervious



Summary for Subcatchment 21S: Basin 10 - Pervious

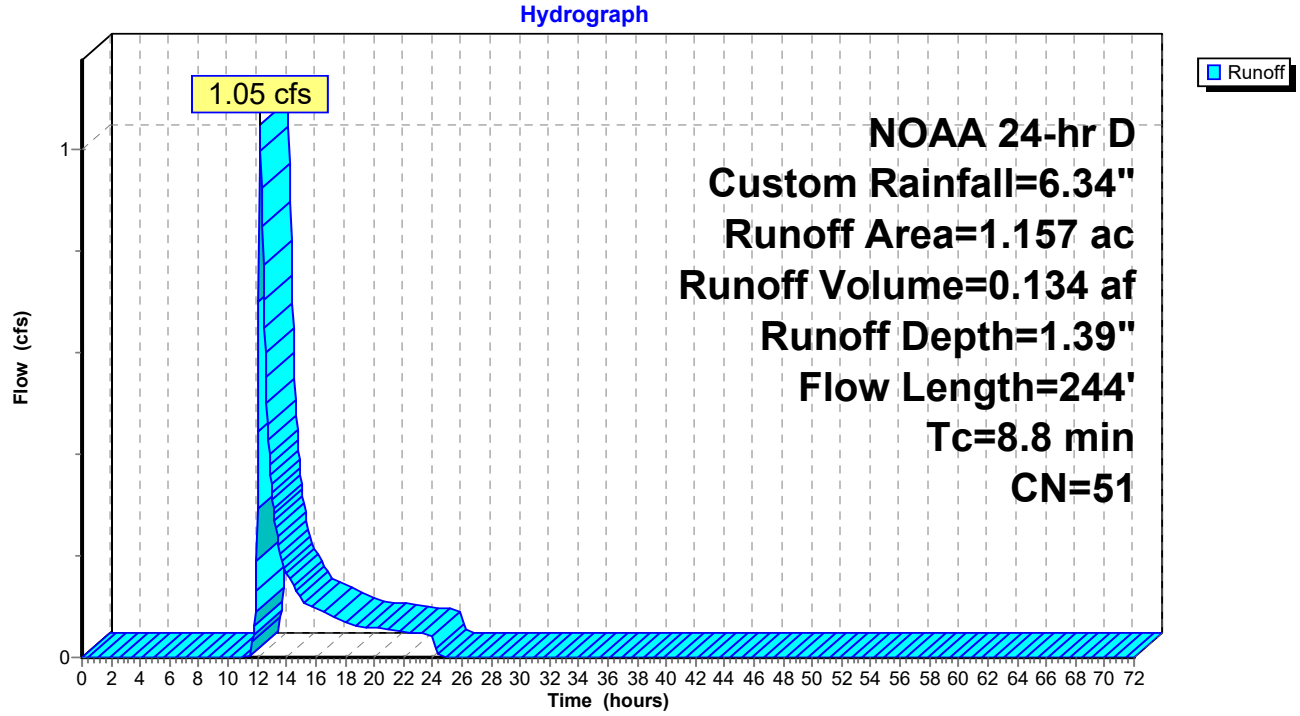
Runoff = 1.05 cfs @ 12.20 hrs, Volume= 0.134 af, Depth= 1.39"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
0.347	80	>75% Grass cover, Good, HSG D
0.810	39	>75% Grass cover, Good, HSG A
1.157	51	Weighted Average
1.157		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	150	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	244	Total			

Subcatchment 21S: Basin 10 - Pervious



Summary for Pond 22P: Basin 11

Inflow Area = 2.611 ac, 36.27% Impervious, Inflow Depth = 2.64" for Custom event
Inflow = 5.42 cfs @ 12.12 hrs, Volume= 0.575 af
Outflow = 5.16 cfs @ 12.15 hrs, Volume= 0.538 af, Atten= 5%, Lag= 2.0 min
Primary = 5.16 cfs @ 12.15 hrs, Volume= 0.538 af
Routed to Pond 19P : Basin 10

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.71' @ 12.15 hrs Surf.Area= 3,881 sf Storage= 2,397 cf

Plug-Flow detention time= 77.3 min calculated for 0.537 af (94% of inflow)
Center-of-Mass det. time= 39.5 min (819.5 - 780.0)

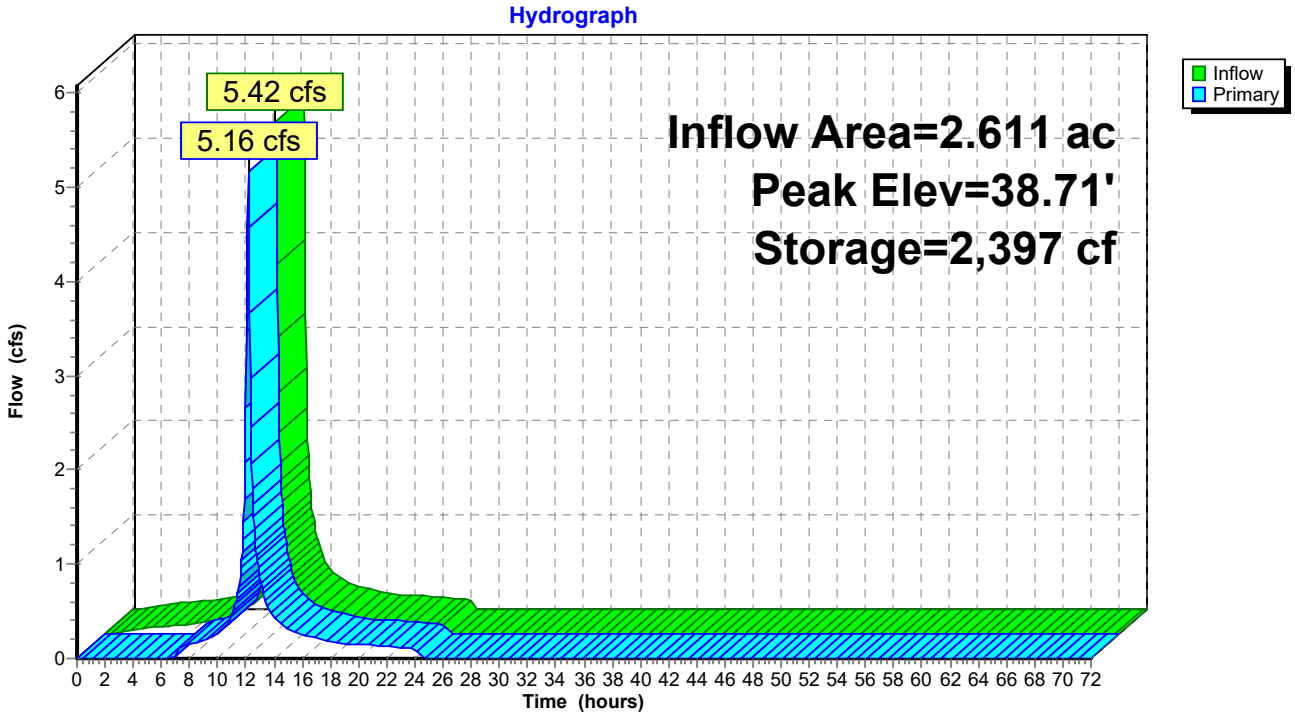
Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	9,170 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	2,840	0	0
39.00	4,300	3,570	3,570
40.00	6,900	5,600	9,170

Device	Routing	Invert	Outlet Devices
#1	Primary	38.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.15 cfs @ 12.15 hrs HW=38.71' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 5.15 cfs @ 1.51 fps)

Pond 22P: Basin 11



Summary for Subcatchment 23S: Basin 11 - Impervious

[49] Hint: Tc<2dt may require smaller dt

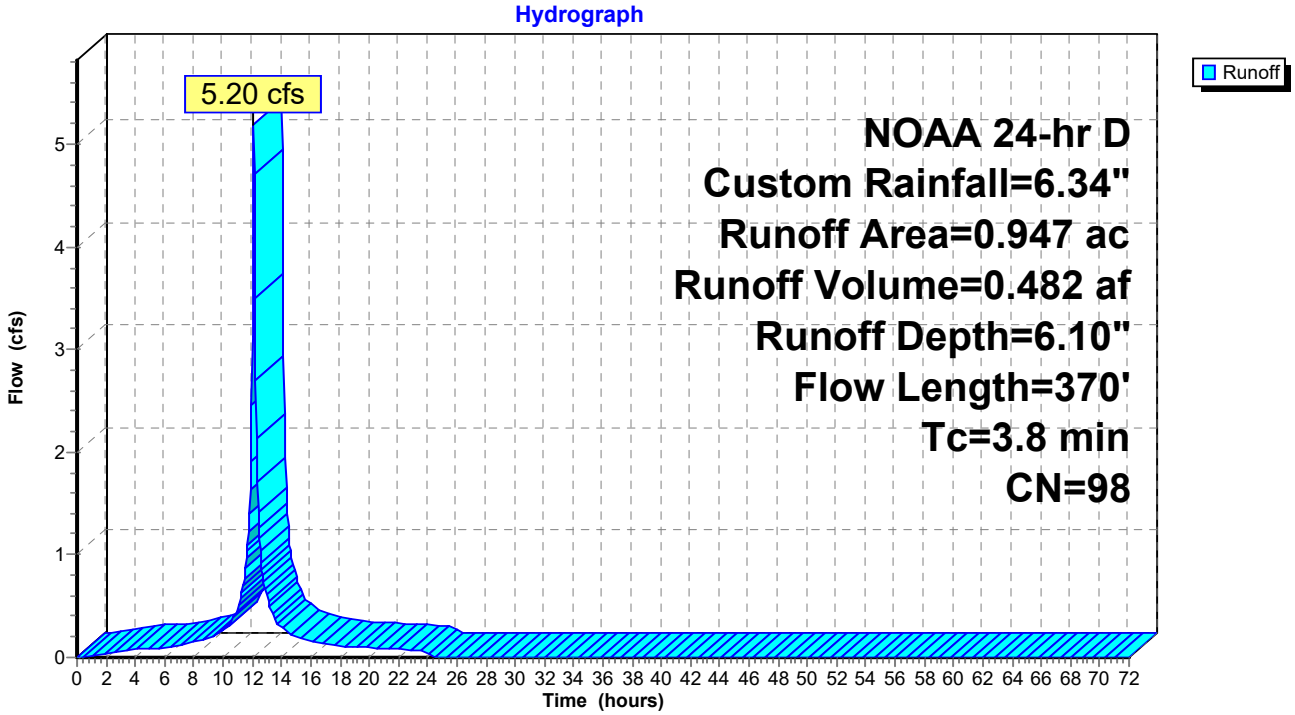
Runoff = 5.20 cfs @ 12.11 hrs, Volume= 0.482 af, Depth= 6.10"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.947	98	Impervious
	0.947		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	70	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.8	370	Total			

Subcatchment 23S: Basin 11 - Impervious



Summary for Subcatchment 24S: Basin 11 - Pervious

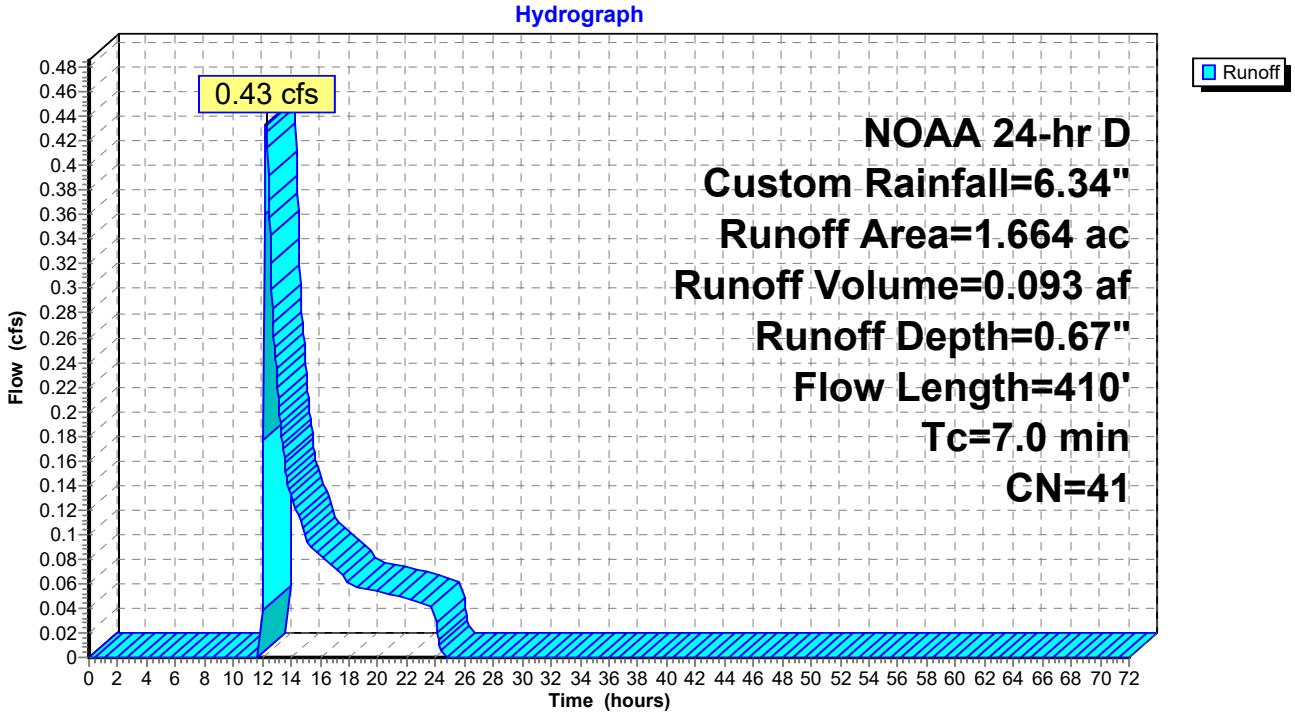
Runoff = 0.43 cfs @ 12.26 hrs, Volume= 0.093 af, Depth= 0.67"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
0.083	80	>75% Grass cover, Good, HSG D
1.581	39	>75% Grass cover, Good, HSG A
1.664	41	Weighted Average
1.664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	60	0.0200	0.17		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.0	410	Total			

Subcatchment 24S: Basin 11 - Pervious



Summary for Pond 25P: Basin 12

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 1.73" for Custom event
Inflow = 2.68 cfs @ 12.10 hrs, Volume= 0.305 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 40P : Wetlands Depression

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 40.17' @ 25.05 hrs Surf.Area= 13,064 sf Storage= 13,285 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

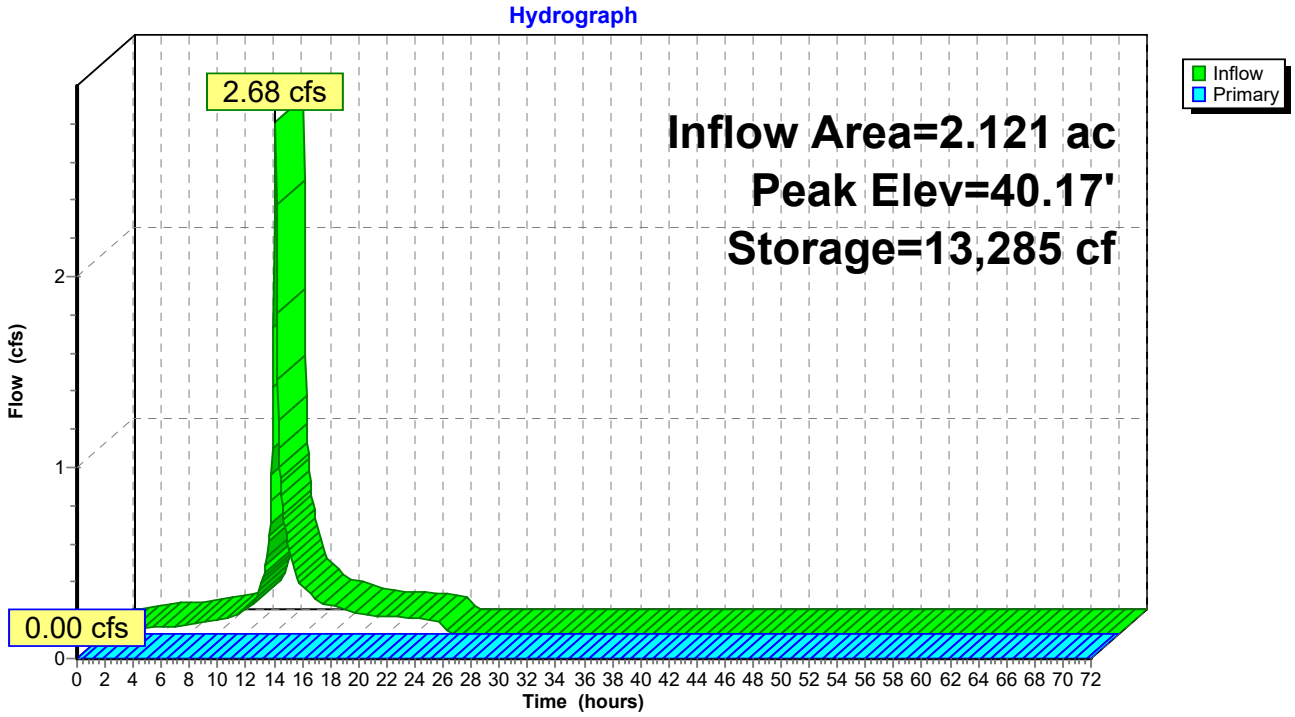
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	52,425 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	9,700	0	0
40.00	12,550	11,125	11,125
41.00	15,600	14,075	25,200
42.00	18,900	17,250	42,450
42.50	21,000	9,975	52,425

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=39.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 25P: Basin 12



Summary for Subcatchment 26S: Basin 12 - Impervious

[49] Hint: Tc<2dt may require smaller dt

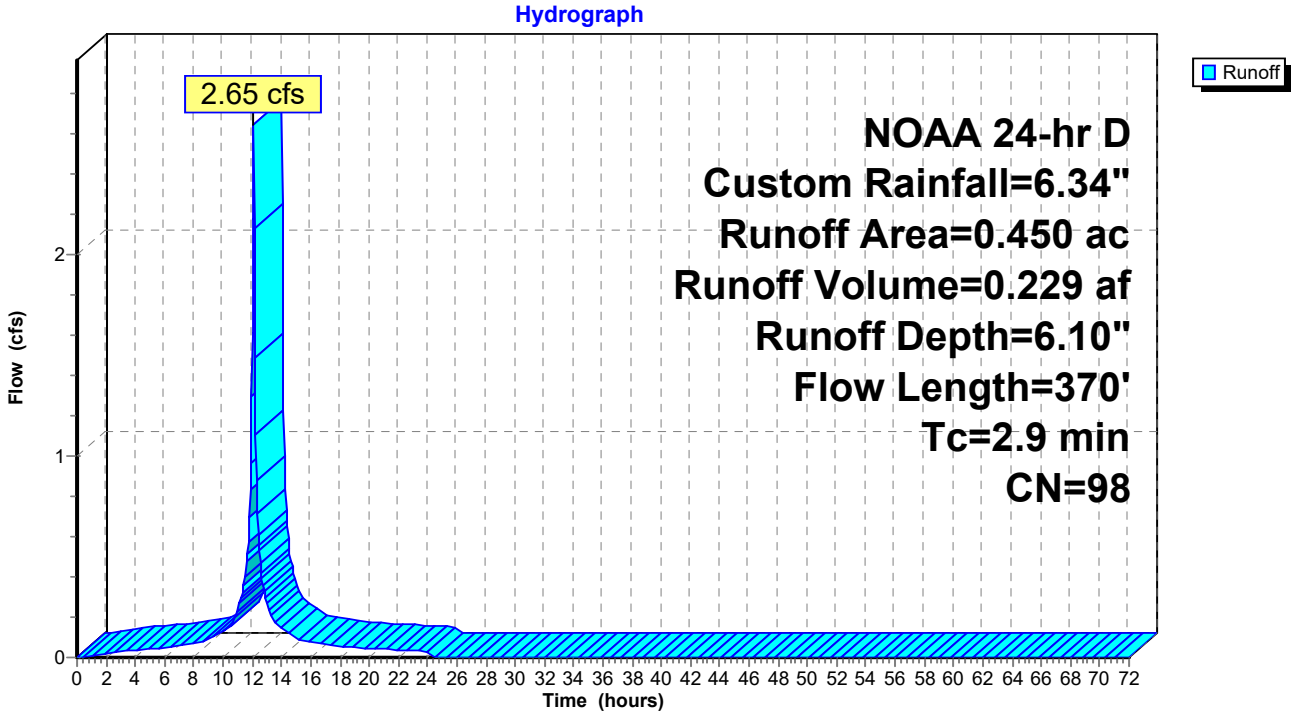
Runoff = 2.65 cfs @ 12.10 hrs, Volume= 0.229 af, Depth= 6.10"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.450	98	Impervious
	0.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	50	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.8	220	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	370	Total			

Subcatchment 26S: Basin 12 - Impervious



Summary for Subcatchment 27S: Basin 12 - Pervious

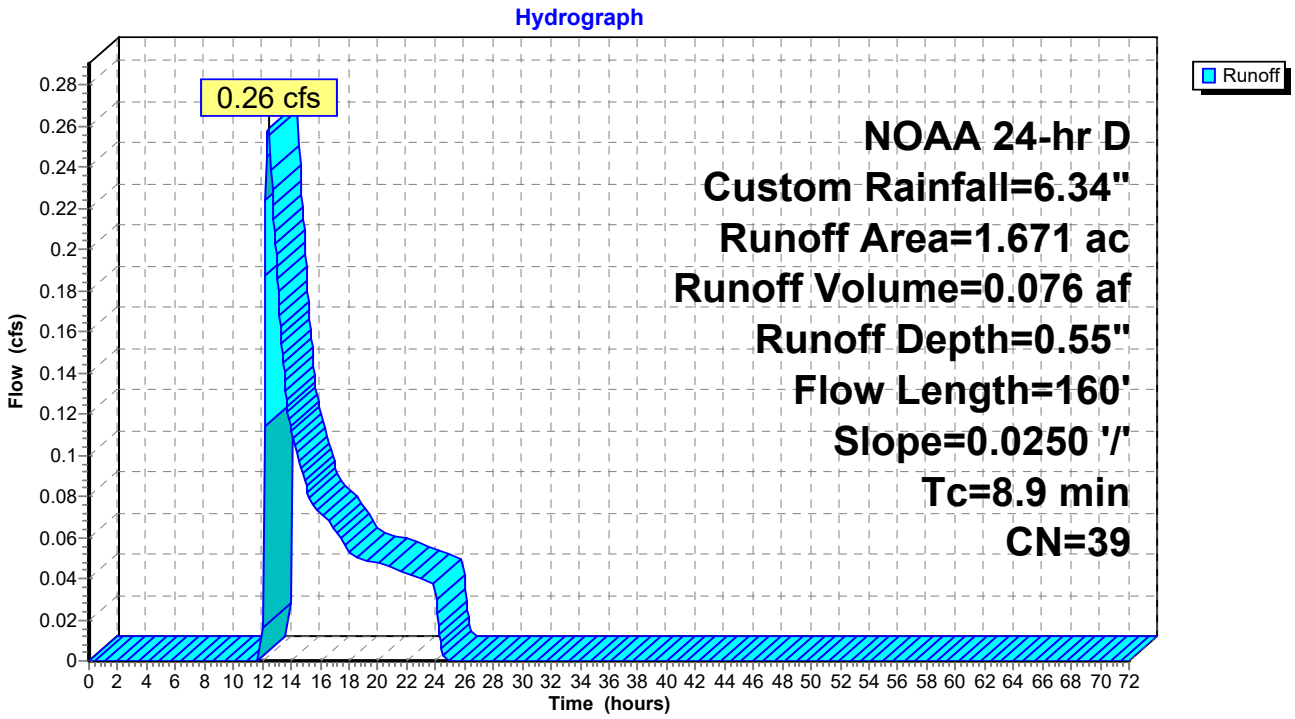
Runoff = 0.26 cfs @ 12.40 hrs, Volume= 0.076 af, Depth= 0.55"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.671	39	>75% Grass cover, Good, HSG A
1.671		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.9	60	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
8.9	160	Total			

Subcatchment 27S: Basin 12 - Pervious



Summary for Pond 29P: Basin 6

Inflow Area = 1.441 ac, 34.14% Impervious, Inflow Depth = 3.92" for Custom event
Inflow = 4.67 cfs @ 12.15 hrs, Volume= 0.471 af
Outflow = 4.49 cfs @ 12.18 hrs, Volume= 0.427 af, Atten= 4%, Lag= 1.6 min
Primary = 4.49 cfs @ 12.18 hrs, Volume= 0.427 af
Routed to Pond 13P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.03' @ 12.18 hrs Surf.Area= 3,002 sf Storage= 2,453 cf

Plug-Flow detention time= 92.1 min calculated for 0.427 af (91% of inflow)
Center-of-Mass det. time= 42.5 min (843.0 - 800.5)

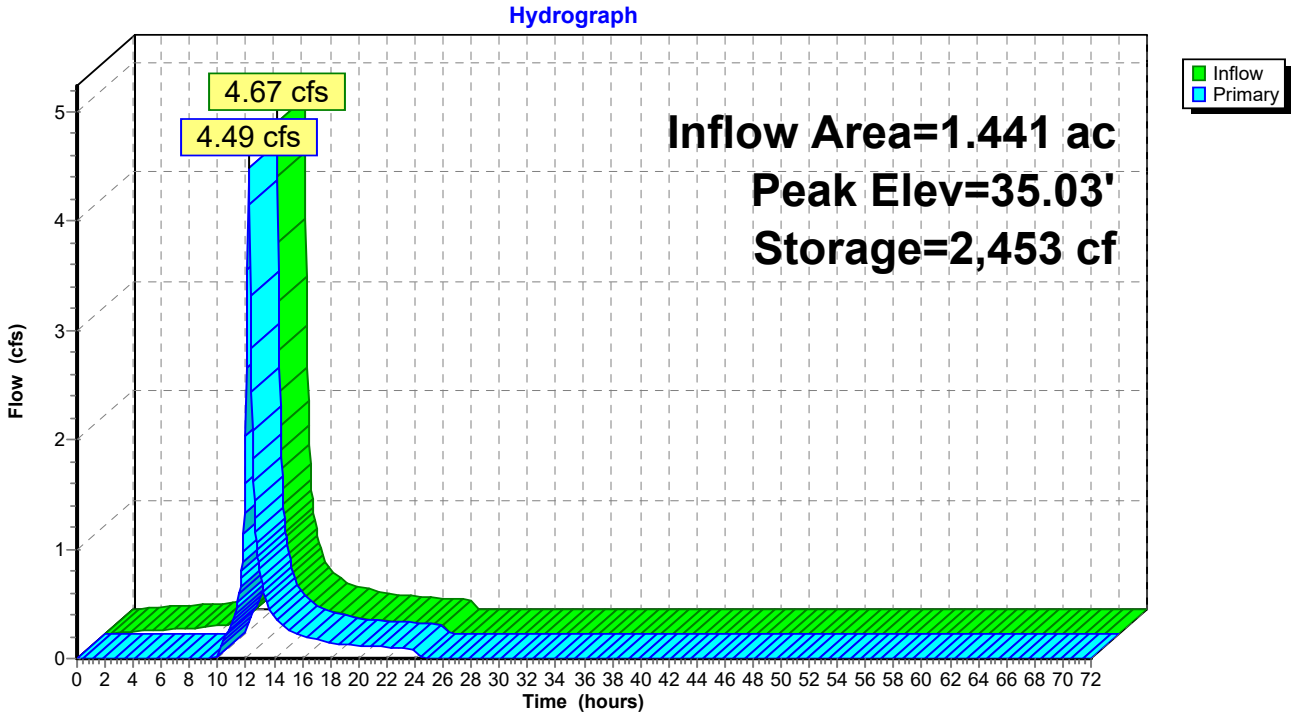
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	4,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	1,750	0	0
35.00	2,950	2,350	2,350
35.50	3,700	1,663	4,013

Device	Routing	Invert	Outlet Devices
#1	Primary	34.84'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.41 cfs @ 12.18 hrs HW=35.03' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 4.41 cfs @ 1.43 fps)

Pond 29P: Basin 6



Summary for Subcatchment 30S: Basin 6 - Impervious

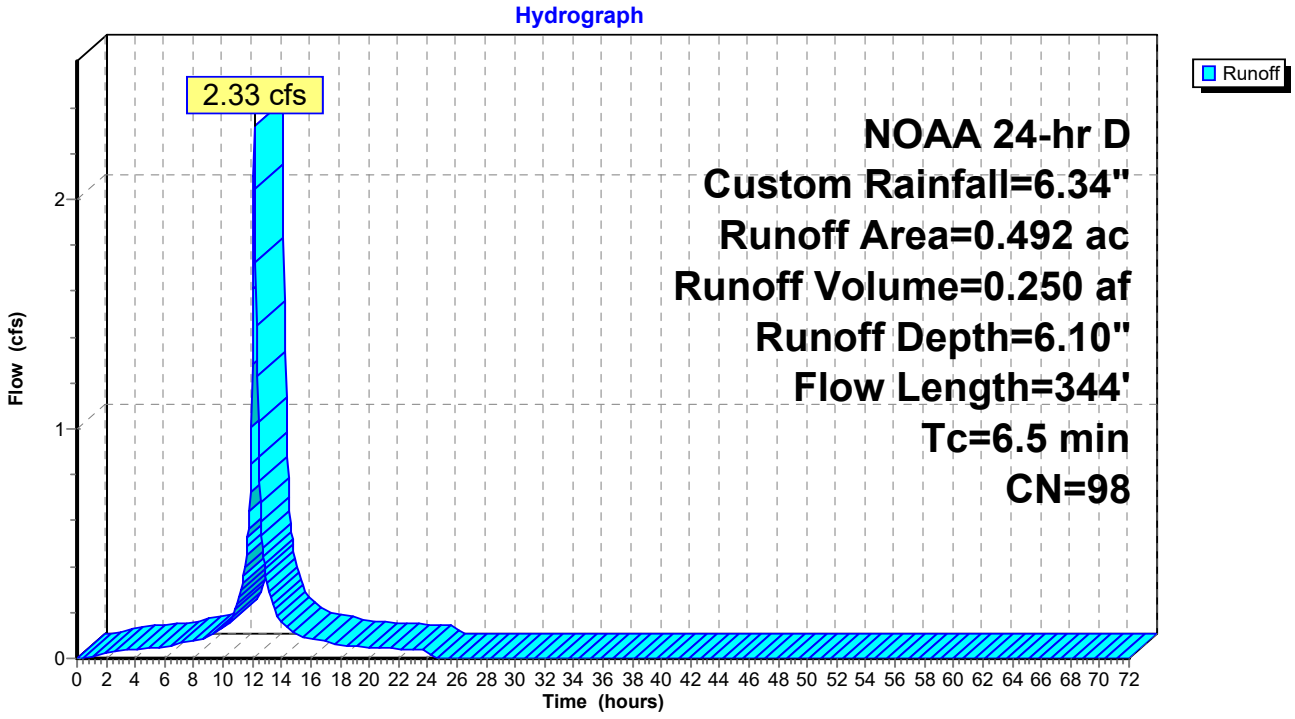
Runoff = 2.33 cfs @ 12.15 hrs, Volume= 0.250 af, Depth= 6.10"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.492	98	Impervious
	0.492		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 30S: Basin 6 - Impervious



Summary for Subcatchment 32S: Basin 6 - Pervious

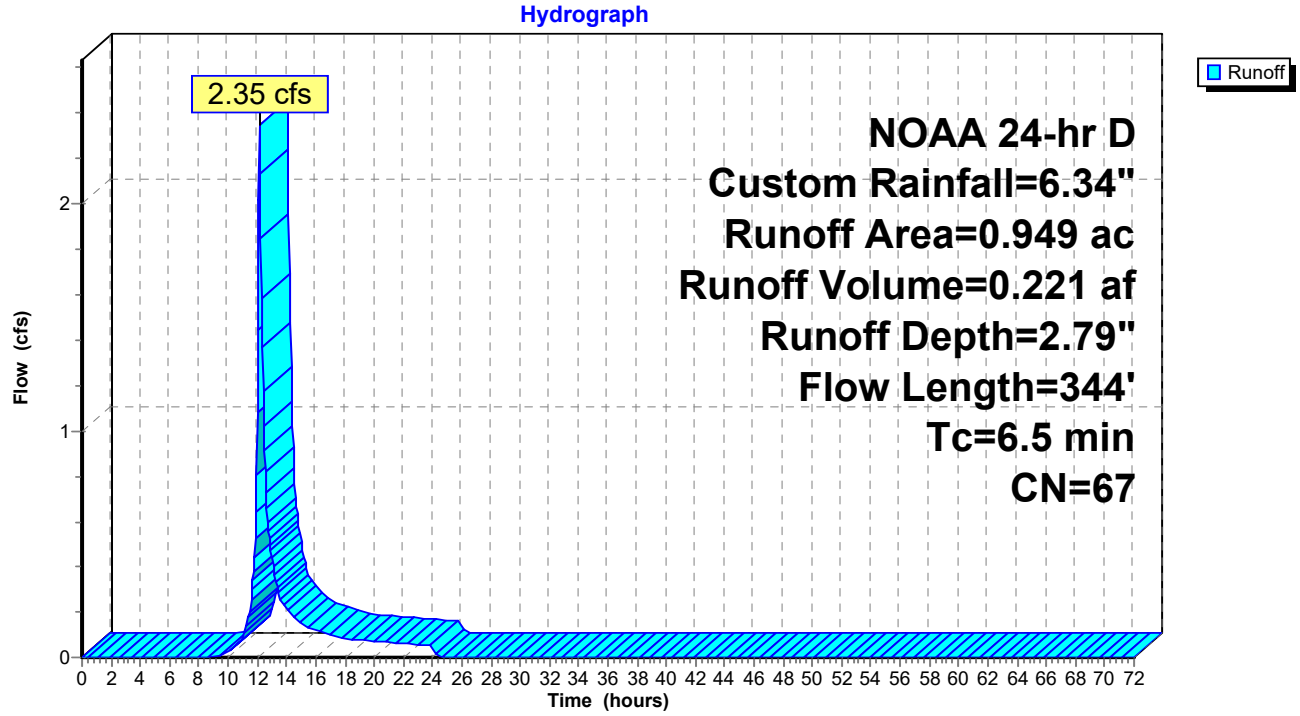
Runoff = 2.35 cfs @ 12.16 hrs, Volume= 0.221 af, Depth= 2.79"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
0.637	80	>75% Grass cover, Good, HSG D
0.312	39	>75% Grass cover, Good, HSG A
0.949	67	Weighted Average
0.949		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 32S: Basin 6 - Pervious



Summary for Pond 33P: Basin 8

Inflow Area = 3.061 ac, 36.82% Impervious, Inflow Depth = 4.83" for Custom event
Inflow = 10.65 cfs @ 12.15 hrs, Volume= 1.232 af
Outflow = 10.16 cfs @ 12.19 hrs, Volume= 1.105 af, Atten= 5%, Lag= 2.6 min
Primary = 10.16 cfs @ 12.19 hrs, Volume= 1.105 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.01' @ 12.19 hrs Surf.Area= 6,211 sf Storage= 7,508 cf

Plug-Flow detention time= 100.1 min calculated for 1.105 af (90% of inflow)
Center-of-Mass det. time= 45.7 min (837.9 - 792.2)

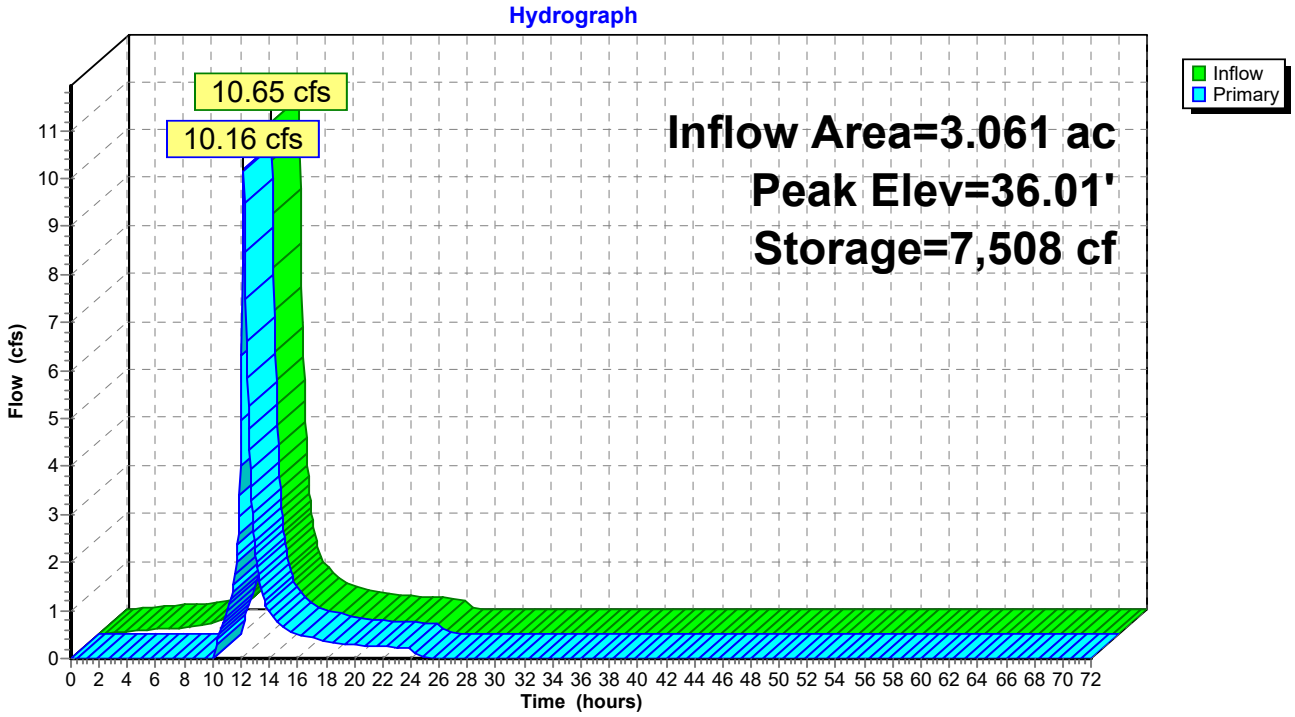
Volume	Invert	Avail.Storage	Storage Description
#1	34.50'	10,825 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.50	4,000	0	0
35.00	4,500	2,125	2,125
36.00	6,200	5,350	7,475
36.50	7,200	3,350	10,825

Device	Routing	Invert	Outlet Devices
#1	Primary	35.67'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.09 cfs @ 12.19 hrs HW=36.00' (Free Discharge)
1=Orifice/Grate (Weir Controls 10.09 cfs @ 1.89 fps)

Pond 33P: Basin 8



Summary for Subcatchment 34S: Basin 8 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 101% of capacity of segment #3

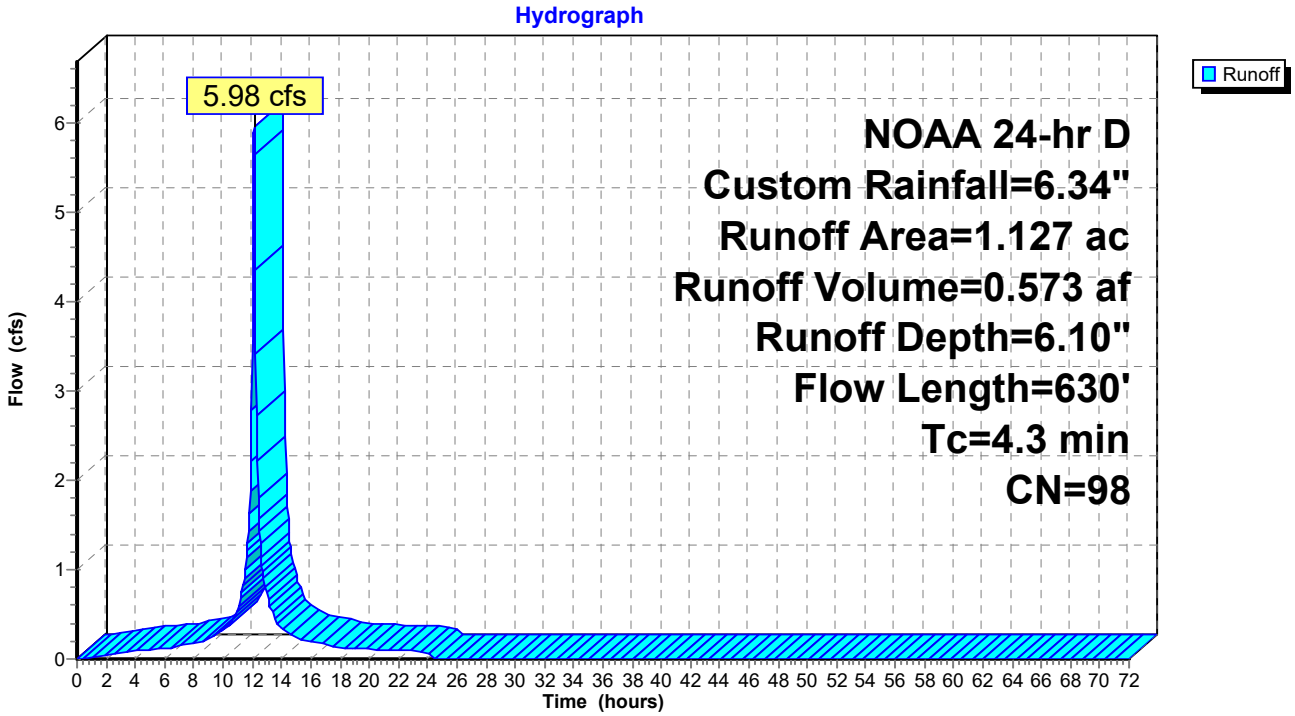
Runoff = 5.98 cfs @ 12.12 hrs, Volume= 0.573 af, Depth= 6.10"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	1.127	98	Impervious
	1.127		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.3	130	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.3	630	Total			

Subcatchment 34S: Basin 8 - Impervious



Summary for Subcatchment 35S: Basin 8 - Pervious

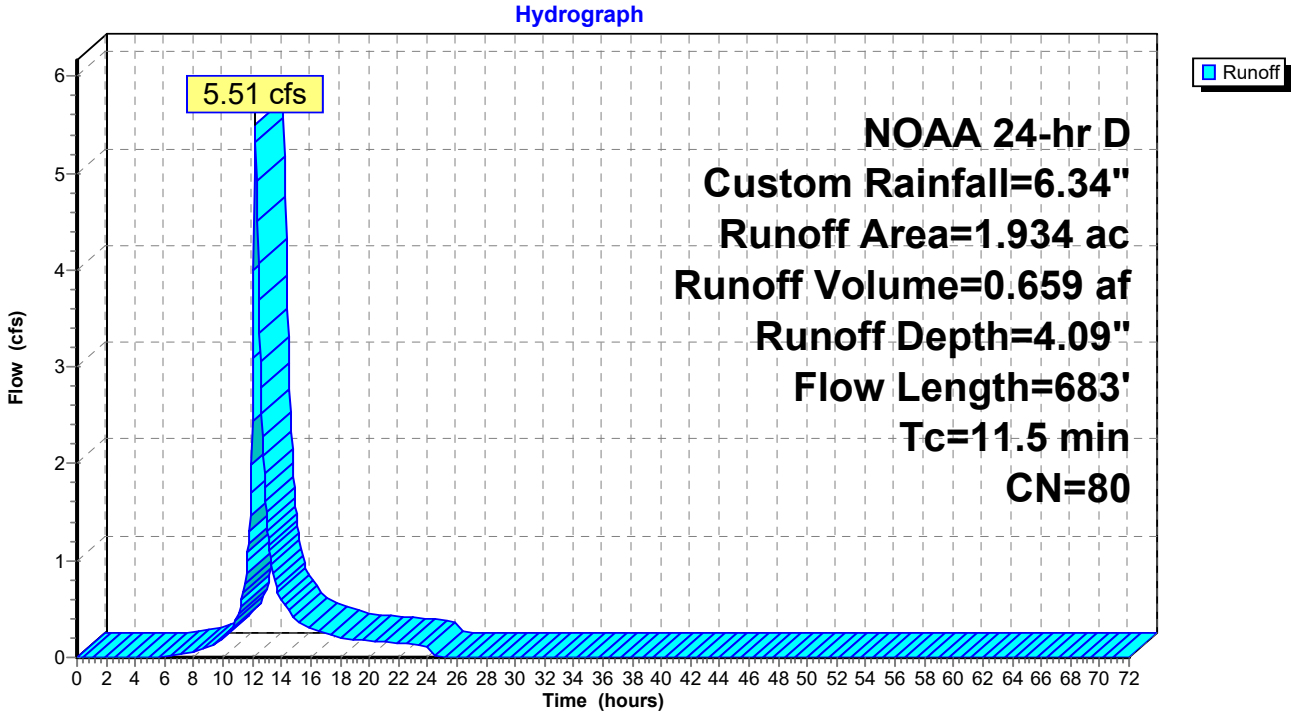
Runoff = 5.51 cfs @ 12.21 hrs, Volume= 0.659 af, Depth= 4.09"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.934	80	>75% Grass cover, Good, HSG D
1.934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	89	0.0200	0.99		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.7	500	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
11.5	683	Total			

Subcatchment 35S: Basin 8 - Pervious



Summary for Pond 40P: Wetlands Depression

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 0.00" for Custom event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.00' @ 0.00 hrs Surf.Area= 405 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

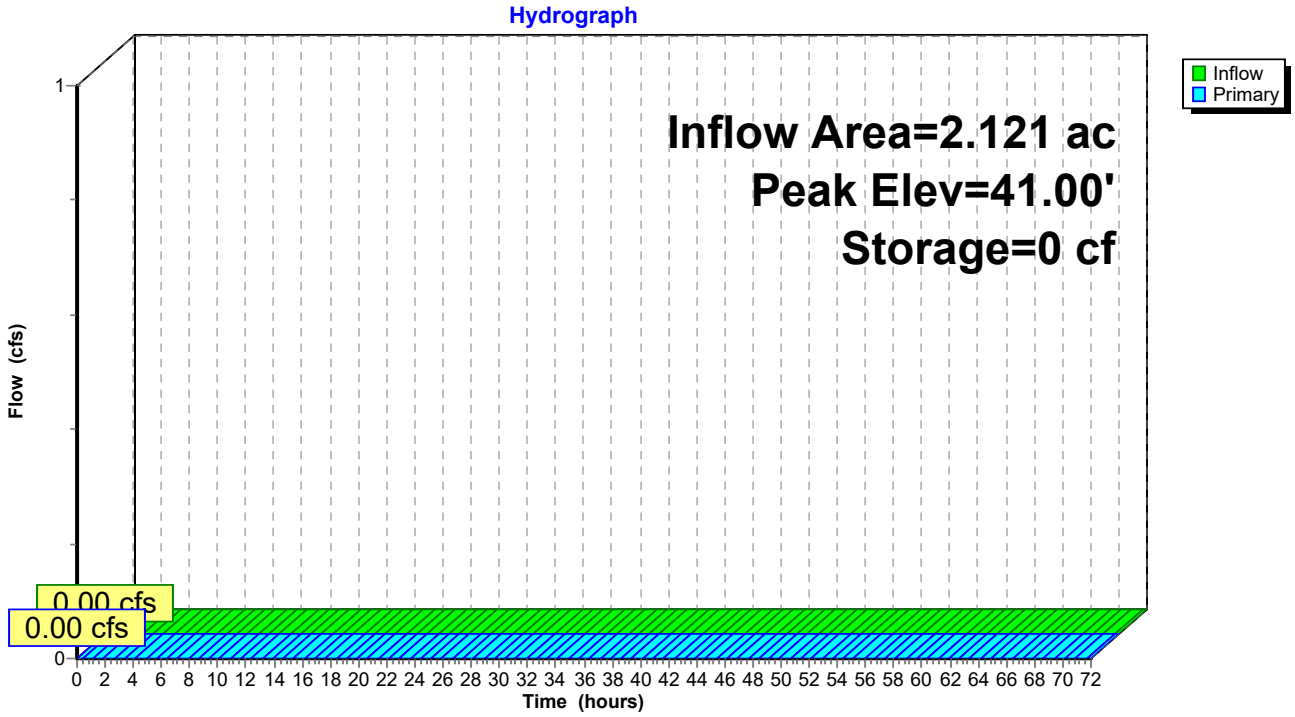
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 40P: Wetlands Depression



Summary for Pond 41P: Basin 13

Inflow Area = 2.042 ac, 32.27% Impervious, Inflow Depth = 2.34" for Custom event
Inflow = 3.48 cfs @ 12.13 hrs, Volume= 0.398 af
Outflow = 0.25 cfs @ 14.62 hrs, Volume= 0.339 af, Atten= 93%, Lag= 149.4 min
Primary = 0.25 cfs @ 14.62 hrs, Volume= 0.339 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.71' @ 14.62 hrs Surf.Area= 8,052 sf Storage= 10,634 cf

Plug-Flow detention time= 586.7 min calculated for 0.339 af (85% of inflow)
Center-of-Mass det. time= 511.0 min (1,294.2 - 783.1)

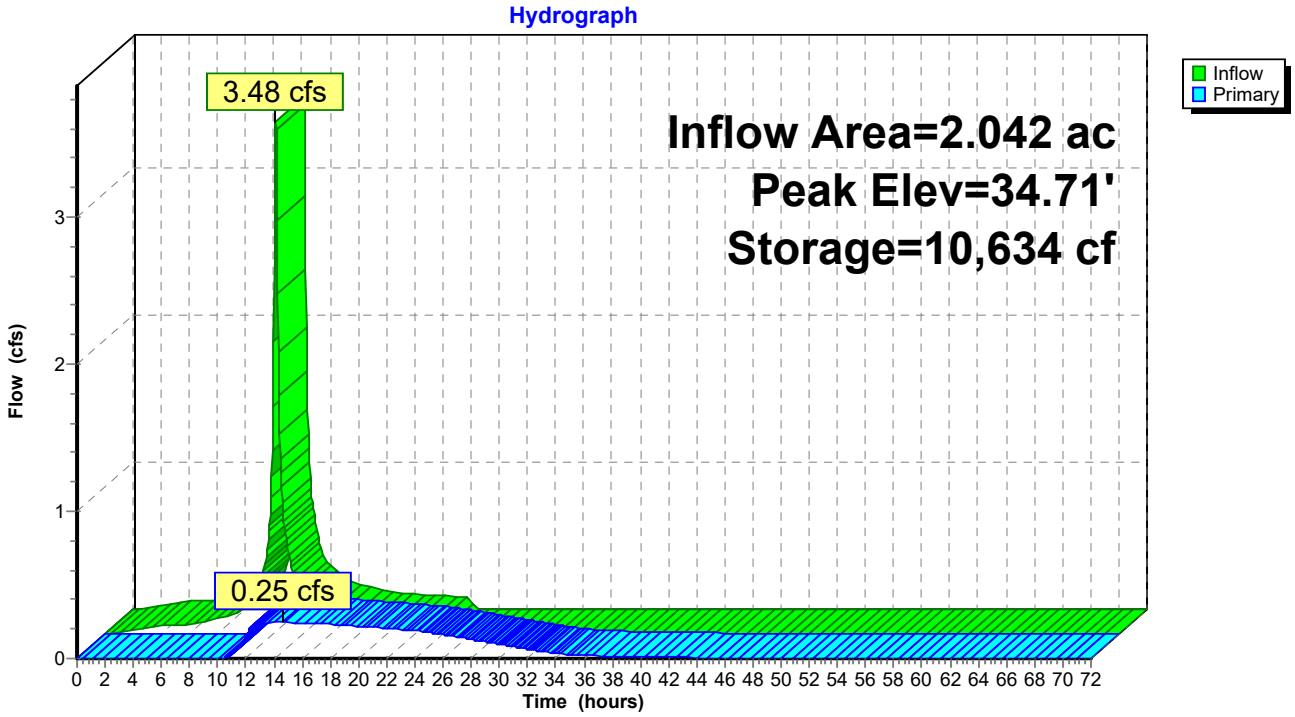
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	23,100 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	4,500	0	0
34.00	6,500	5,500	5,500
35.00	8,700	7,600	13,100
36.00	11,300	10,000	23,100

Device	Routing	Invert	Outlet Devices
#1	Primary	33.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 14.62 hrs HW=34.71' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.25 cfs @ 5.01 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Pond 41P: Basin 13



Summary for Subcatchment 42S: Basin 13 - Impervious

[49] Hint: Tc<2dt may require smaller dt

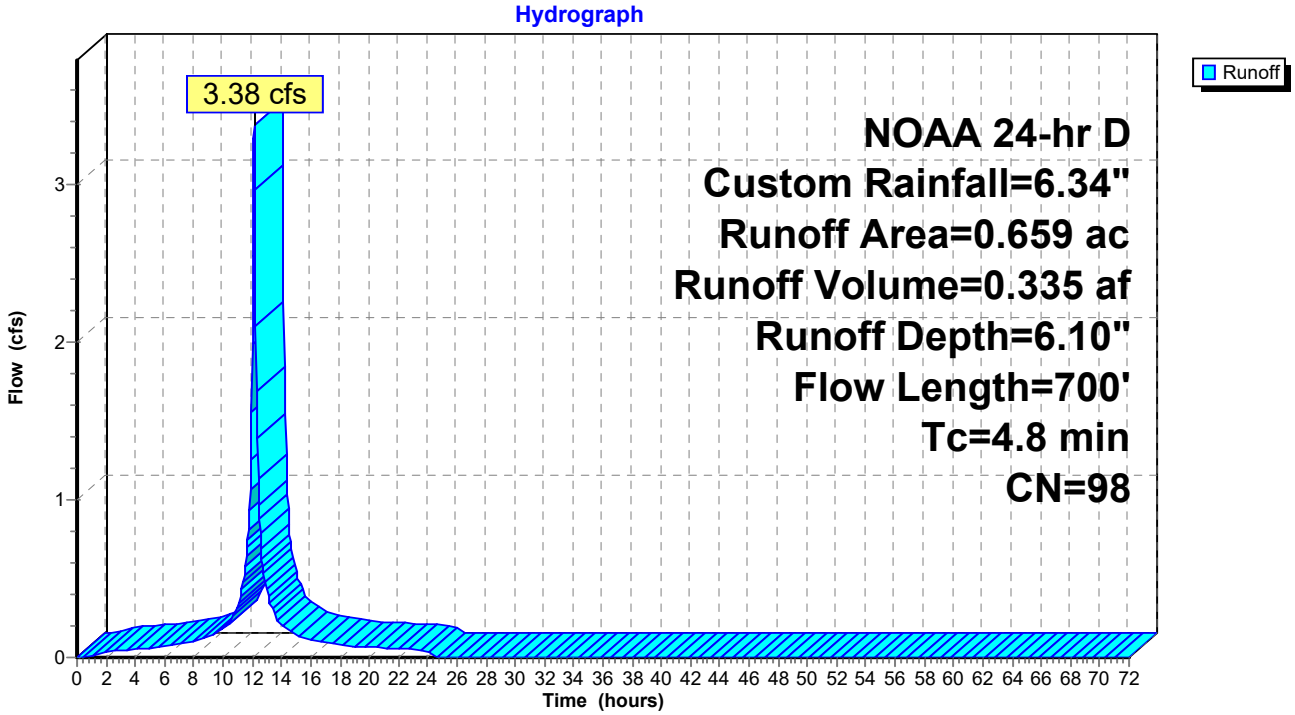
Runoff = 3.38 cfs @ 12.13 hrs, Volume= 0.335 af, Depth= 6.10"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.659	98	Impervious
	0.659		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.8	200	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.8	700	Total			

Subcatchment 42S: Basin 13 - Impervious



Summary for Subcatchment 43S: Basin 13 - Pervious

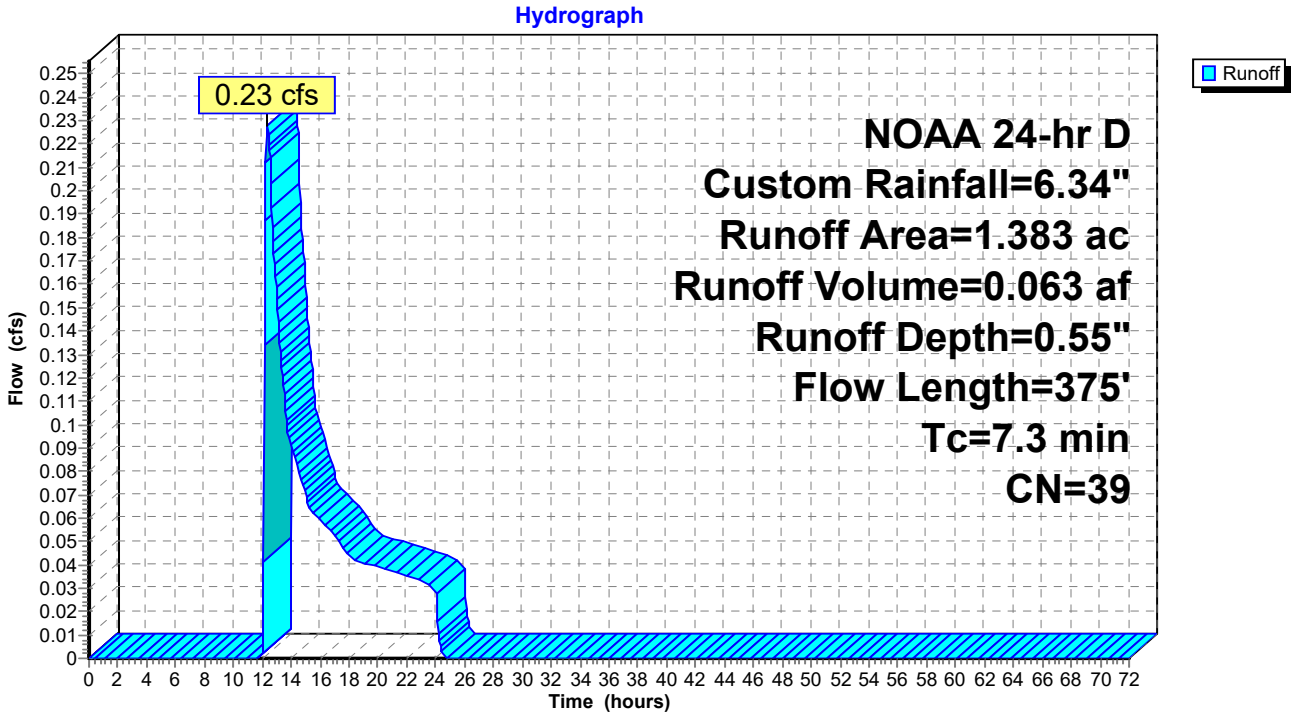
Runoff = 0.23 cfs @ 12.35 hrs, Volume= 0.063 af, Depth= 0.55"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.383	39	>75% Grass cover, Good, HSG A
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	75	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	300	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.3	375	Total			

Subcatchment 43S: Basin 13 - Pervious



Summary for Subcatchment 44S: Basin 3 - Impervious

[49] Hint: Tc<2dt may require smaller dt

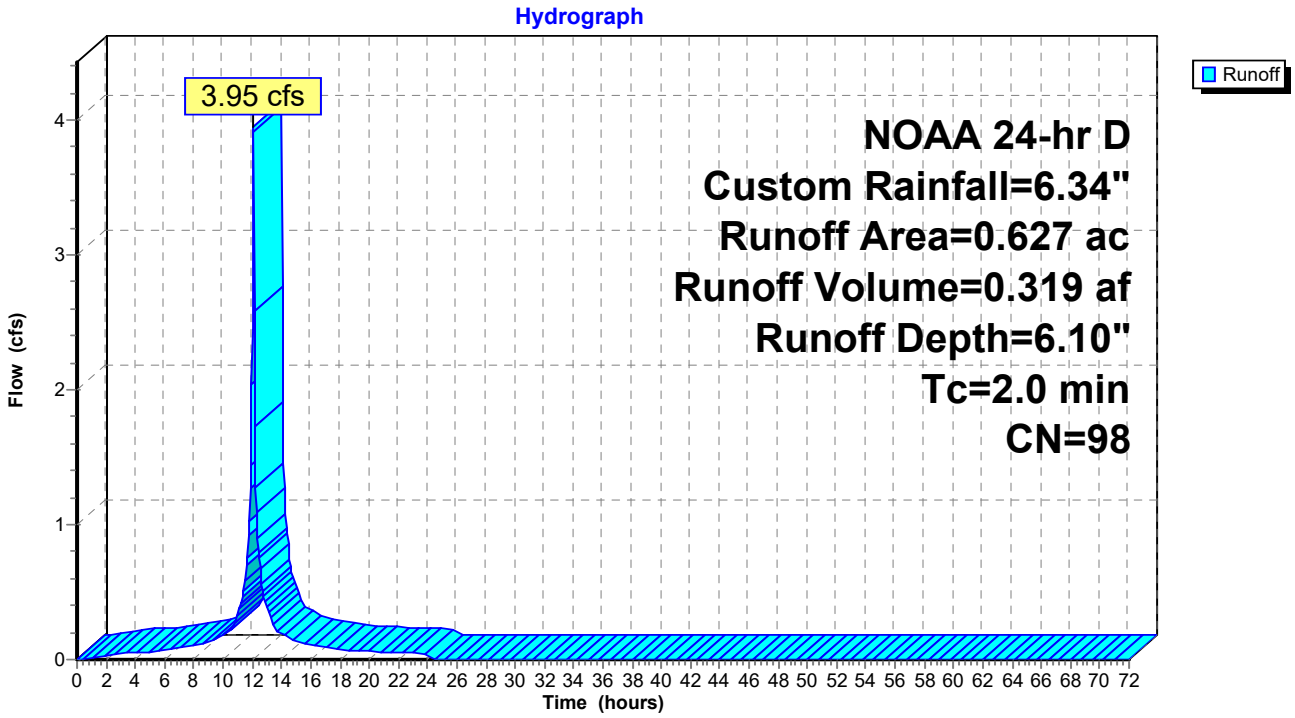
Runoff = 3.95 cfs @ 12.09 hrs, Volume= 0.319 af, Depth= 6.10"
Routed to Pond 4P : Basin 3

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 44S: Basin 3 - Impervious



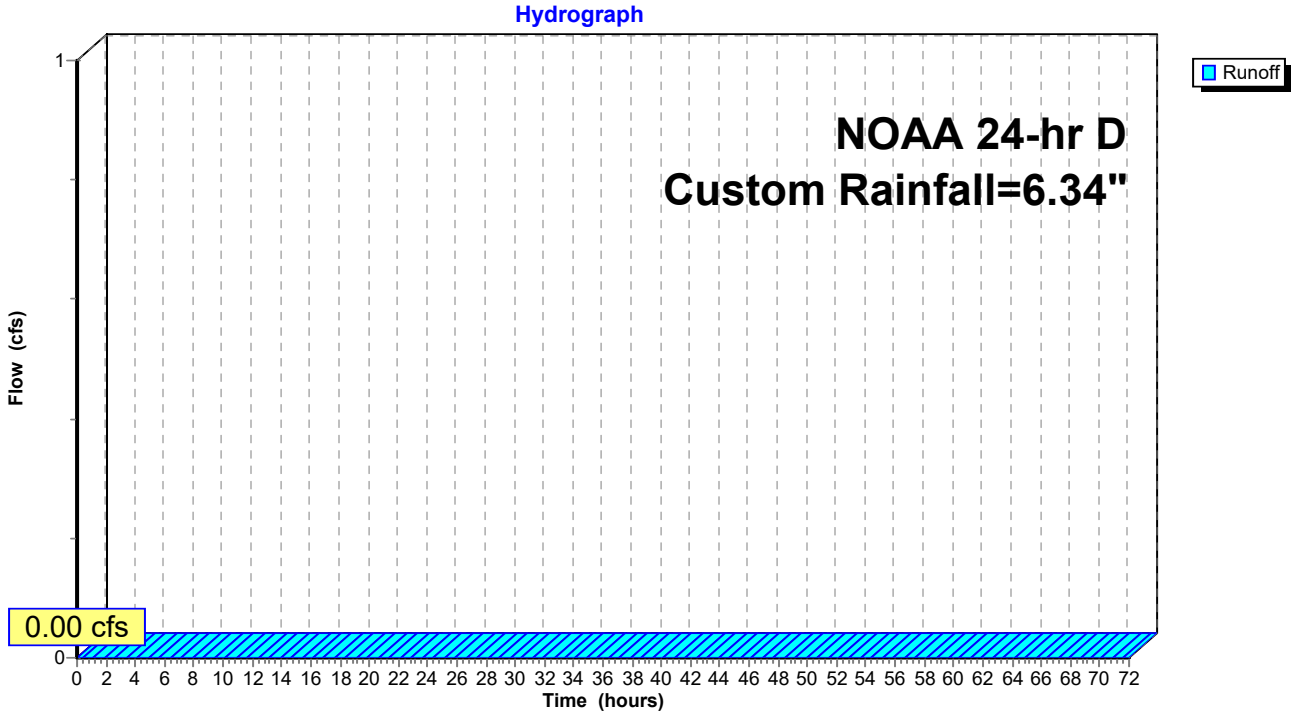
Summary for Subcatchment 45S: Undetained - Impervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Subcatchment 45S: Undetained - Impervious



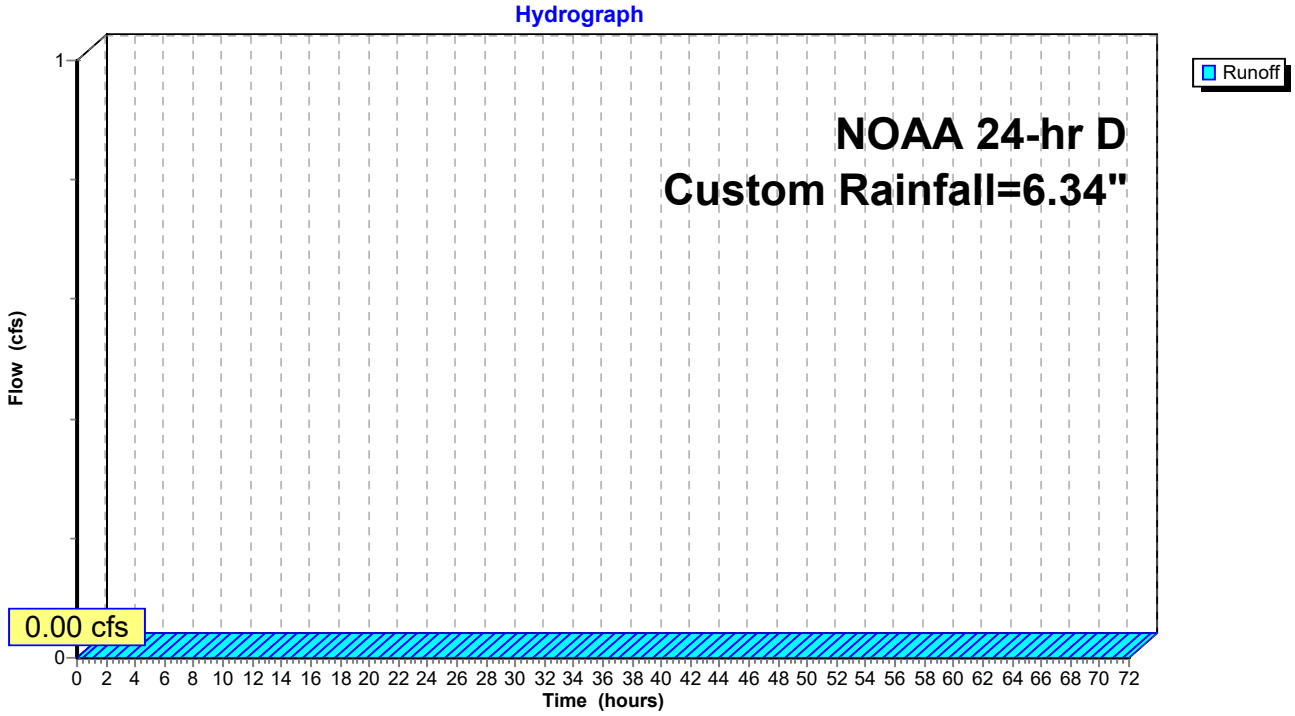
Summary for Subcatchment 46S: Undetained - Pervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Subcatchment 46S: Undetained - Pervious



Summary for Subcatchment 66: Basin 3 - Pervious

[49] Hint: Tc<2dt may require smaller dt

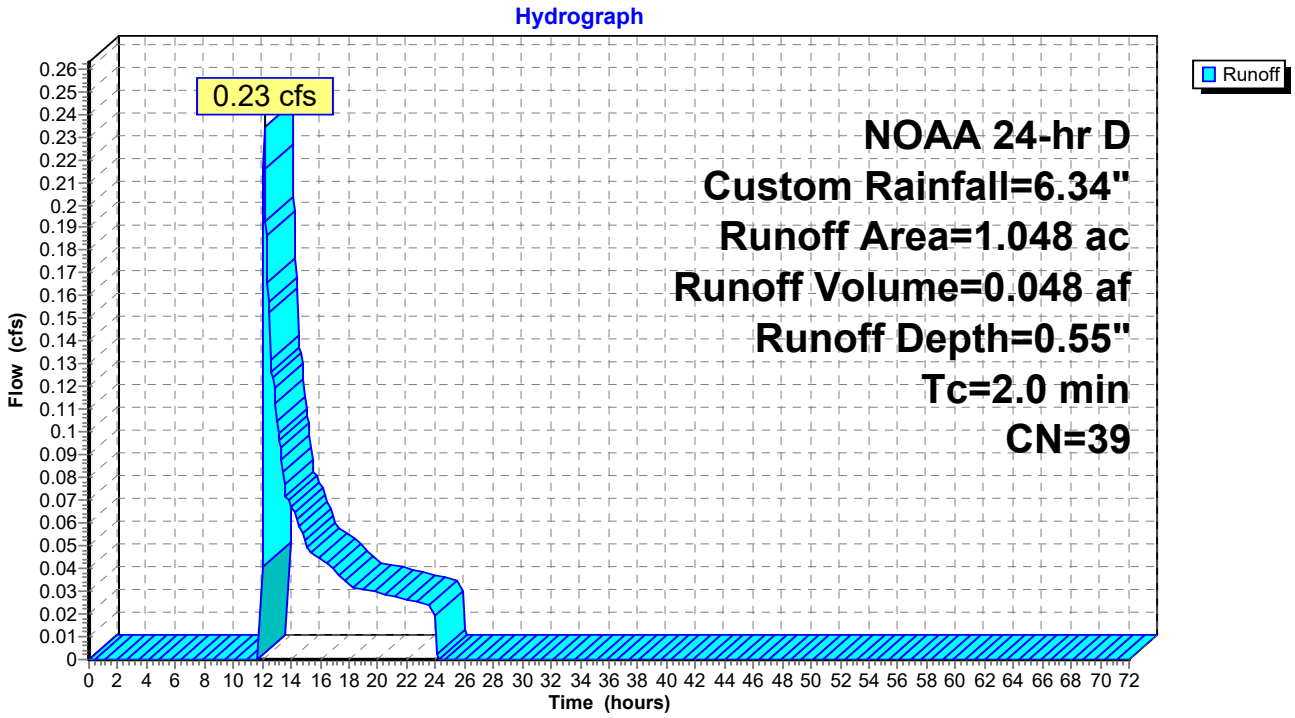
Runoff = 0.23 cfs @ 12.15 hrs, Volume= 0.048 af, Depth= 0.55"
Routed to Pond 4P : Basin 3

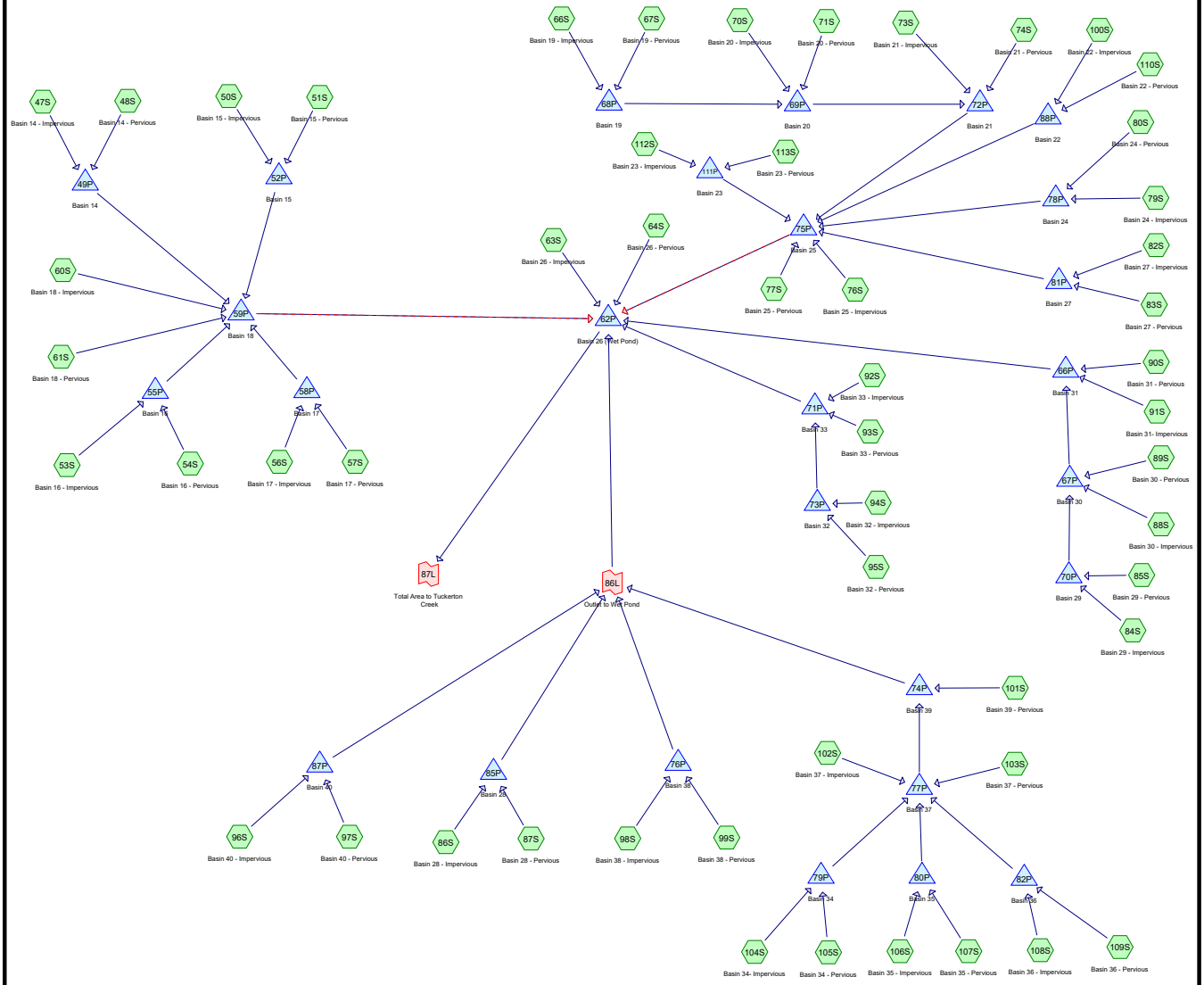
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=6.34"

Area (ac)	CN	Description
1.048	39	>75% Grass cover, Good, HSG A
1.048		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 66: Basin 3 - Pervious





Subcat Reach Pond Link

Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT (FUTURE) - TUCKERTON CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	9.48	2

Summary for Subcatchment 47S: Basin 14 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 133% of capacity of segment #2

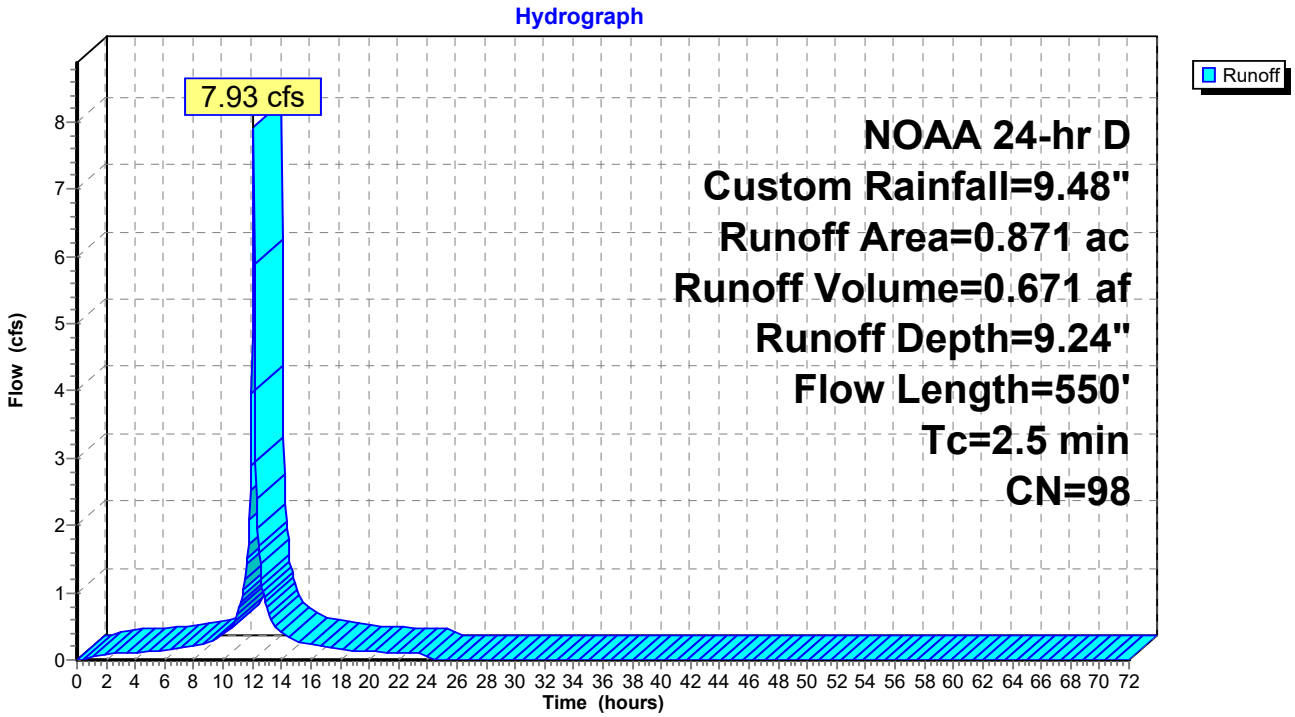
Runoff = 7.93 cfs @ 12.09 hrs, Volume= 0.671 af, Depth= 9.24"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.871	98	Impervious
	0.871		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, A to B** Paved Kv= 20.3 fps
1.5	450	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.5	550	Total			

Subcatchment 47S: Basin 14 - Impervious



Summary for Subcatchment 48S: Basin 14 - Pervious

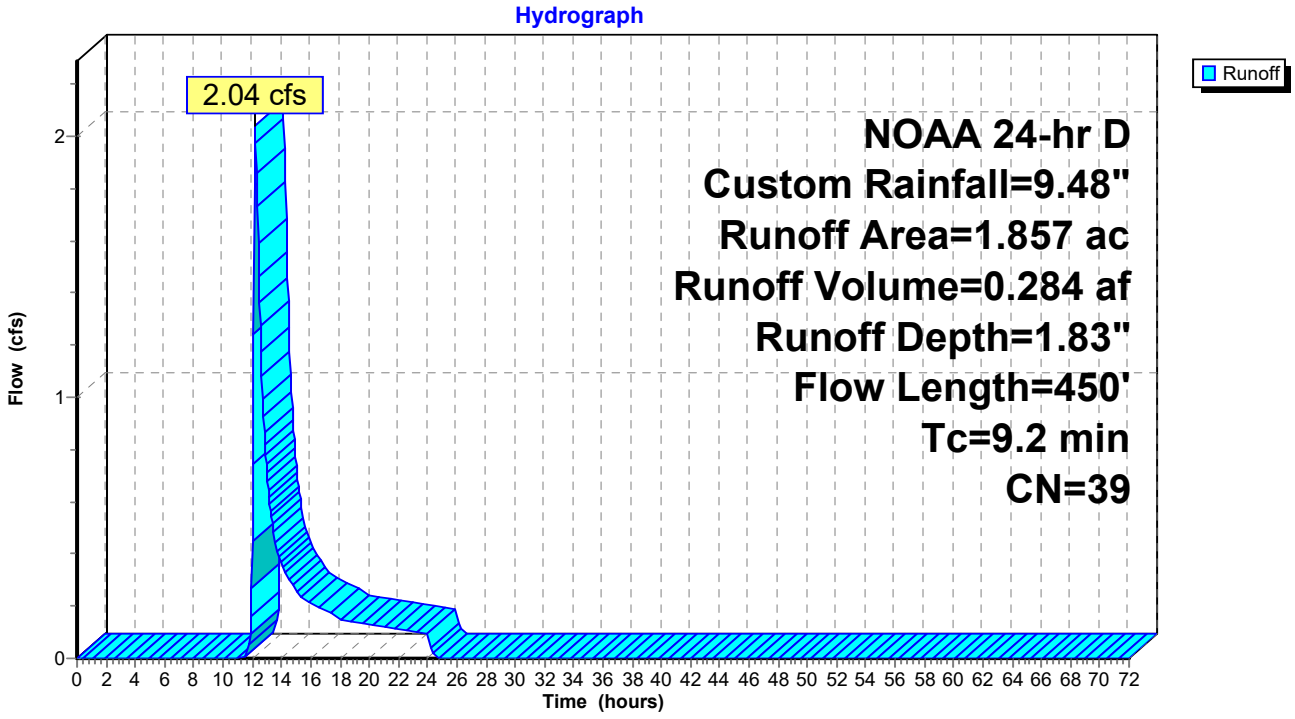
Runoff = 2.04 cfs @ 12.21 hrs, Volume= 0.284 af, Depth= 1.83"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.857	39	>75% Grass cover, Good, HSG A
1.857		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
9.2	450	Total			

Subcatchment 48S: Basin 14 - Pervious



Summary for Pond 49P: Basin 14

Inflow Area = 2.728 ac, 31.93% Impervious, Inflow Depth = 4.20" for Custom event
Inflow = 9.15 cfs @ 12.10 hrs, Volume= 0.955 af
Outflow = 5.83 cfs @ 12.22 hrs, Volume= 0.878 af, Atten= 36%, Lag= 7.2 min
Primary = 5.83 cfs @ 12.22 hrs, Volume= 0.878 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.22' @ 12.22 hrs Surf.Area= 7,958 sf Storage= 15,139 cf

Plug-Flow detention time= 379.4 min calculated for 0.878 af (92% of inflow)
Center-of-Mass det. time= 335.5 min (1,127.2 - 791.7)

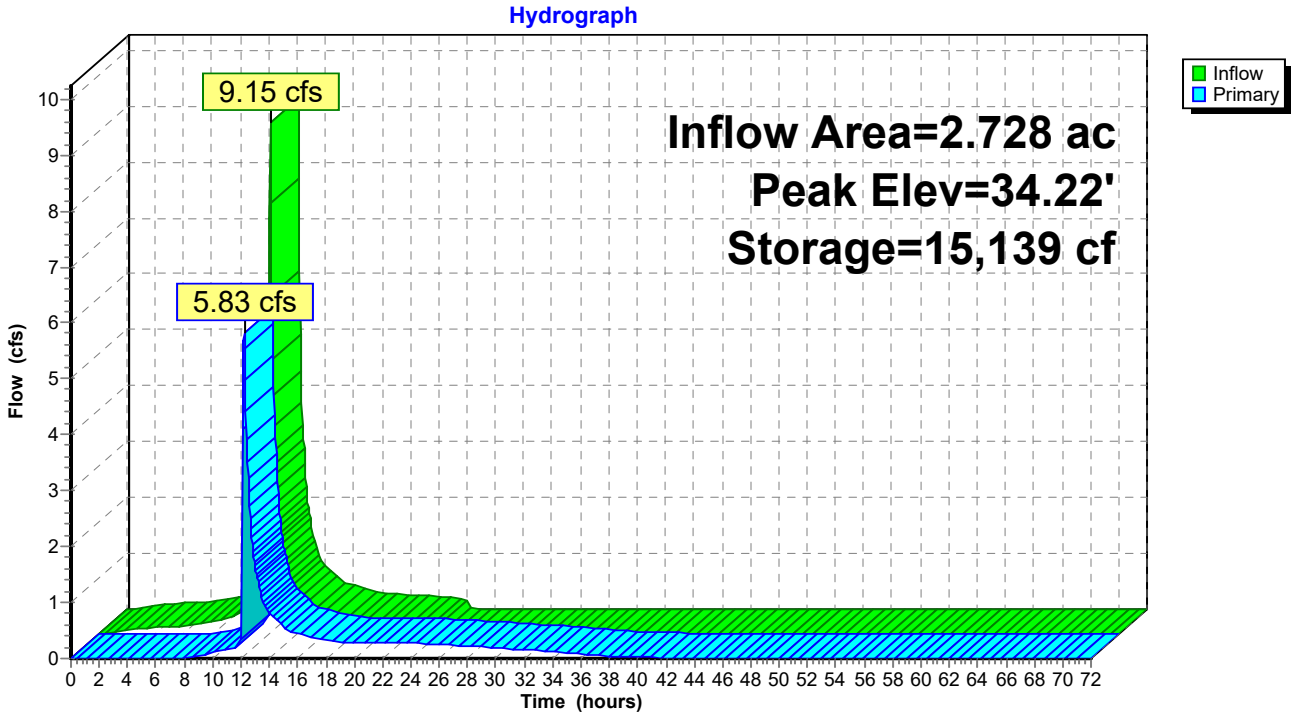
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	22,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,100	0	0
32.00	4,200	1,825	1,825
33.00	5,800	5,000	6,825
34.00	7,400	6,600	13,425
35.00	9,900	8,650	22,075

Device	Routing	Invert	Outlet Devices
#1	Primary	32.32'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.61 cfs @ 12.22 hrs HW=34.22' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.31 cfs @ 6.41 fps)
└—**2=Orifice/Grate** (Weir Controls 5.30 cfs @ 1.52 fps)

Pond 49P: Basin 14



Summary for Subcatchment 50S: Basin 15 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 130% of capacity of segment #3

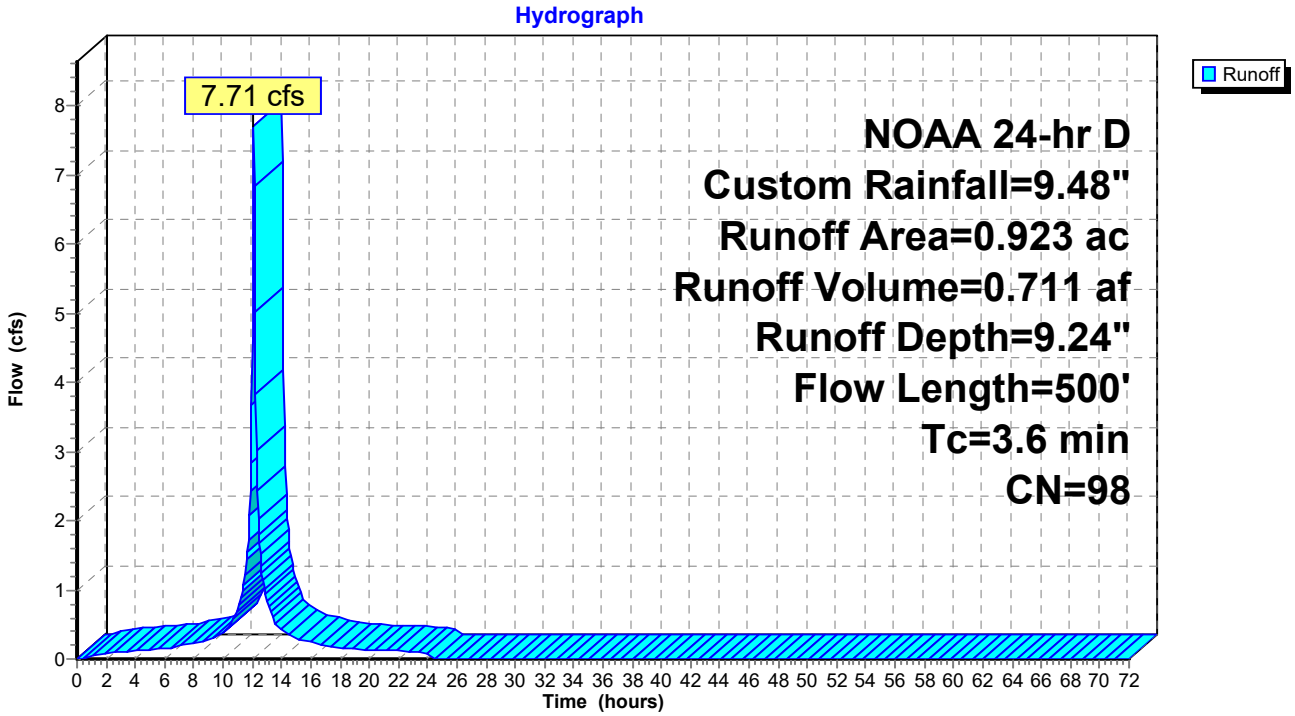
Runoff = 7.71 cfs @ 12.11 hrs, Volume= 0.711 af, Depth= 9.24"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.923	98	Impervious
	0.923		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.6	500	Total			

Subcatchment 50S: Basin 15 - Impervious



Summary for Subcatchment 51S: Basin 15 - Pervious

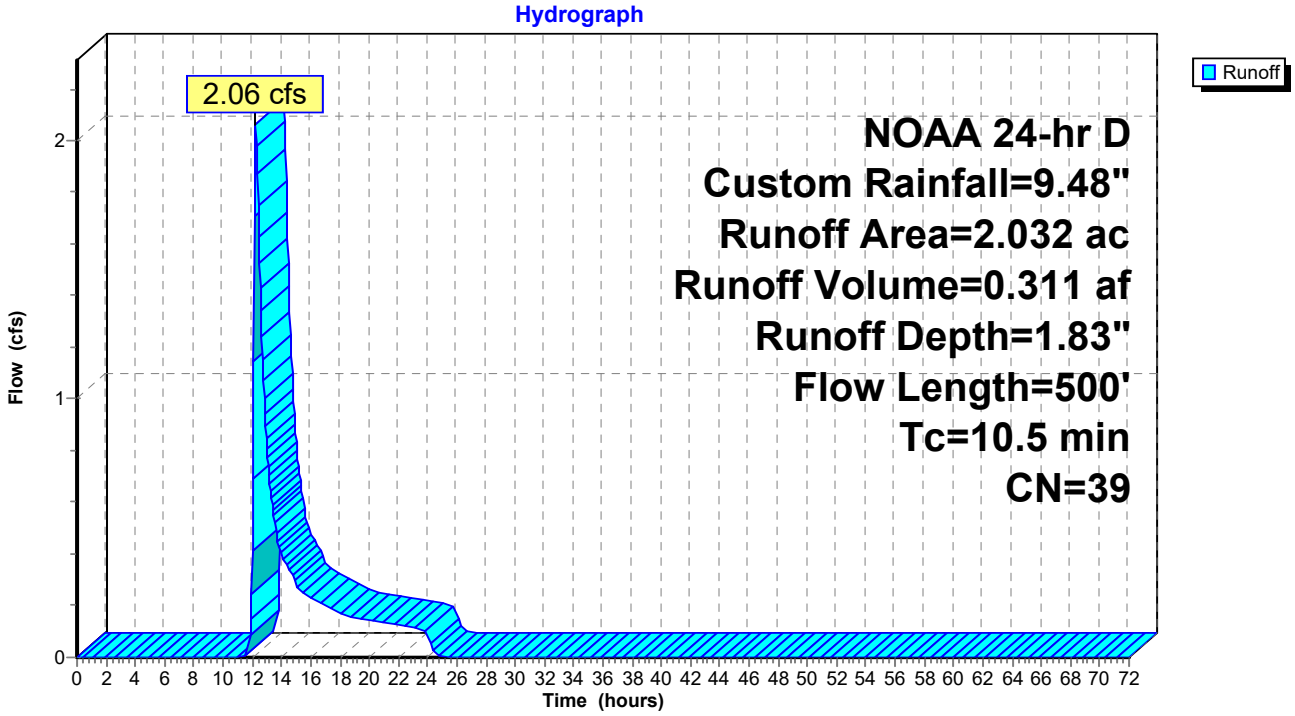
Runoff = 2.06 cfs @ 12.24 hrs, Volume= 0.311 af, Depth= 1.83"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
2.032	39	>75% Grass cover, Good, HSG A
2.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.5	500	Total			

Subcatchment 51S: Basin 15 - Pervious



Summary for Pond 52P: Basin 15

Inflow Area = 2.955 ac, 31.24% Impervious, Inflow Depth = 4.15" for Custom event
Inflow = 8.99 cfs @ 12.12 hrs, Volume= 1.021 af
Outflow = 5.71 cfs @ 12.27 hrs, Volume= 0.940 af, Atten= 37%, Lag= 9.1 min
Primary = 5.71 cfs @ 12.27 hrs, Volume= 0.940 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.02' @ 12.27 hrs Surf.Area= 8,039 sf Storage= 16,355 cf

Plug-Flow detention time= 391.8 min calculated for 0.940 af (92% of inflow)
Center-of-Mass det. time= 346.5 min (1,141.1 - 794.7)

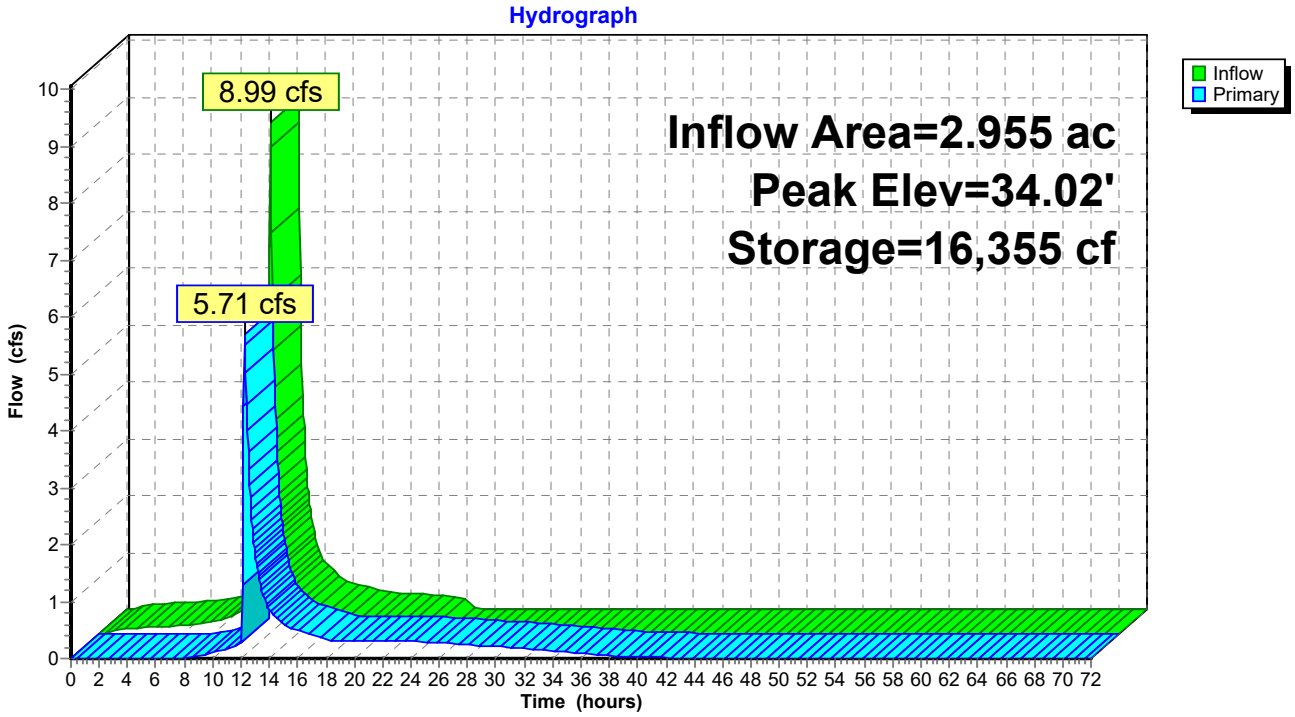
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	20,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,000	0	0
32.00	4,500	3,750	3,750
33.00	6,200	5,350	9,100
34.00	8,000	7,100	16,200
34.50	9,000	4,250	20,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.94'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	33.80'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.55 cfs @ 12.27 hrs HW=34.02' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.33 cfs @ 6.72 fps)
└—**2=Orifice/Grate** (Weir Controls 5.22 cfs @ 1.52 fps)

Pond 52P: Basin 15



Summary for Subcatchment 53S: Basin 16 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 156% of capacity of segment #3

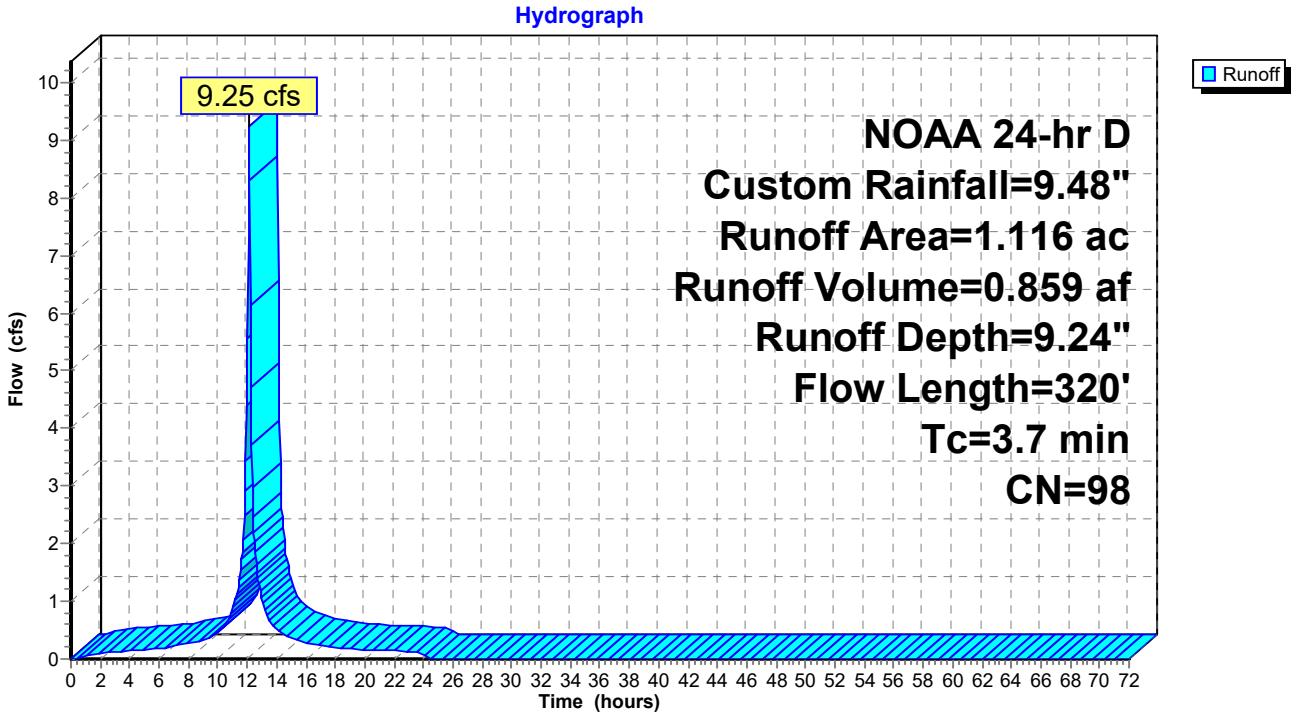
Runoff = 9.25 cfs @ 12.11 hrs, Volume= 0.859 af, Depth= 9.24"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	20	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.7	320	Total			

Subcatchment 53S: Basin 16 - Impervious



Summary for Subcatchment 54S: Basin 16 - Pervious

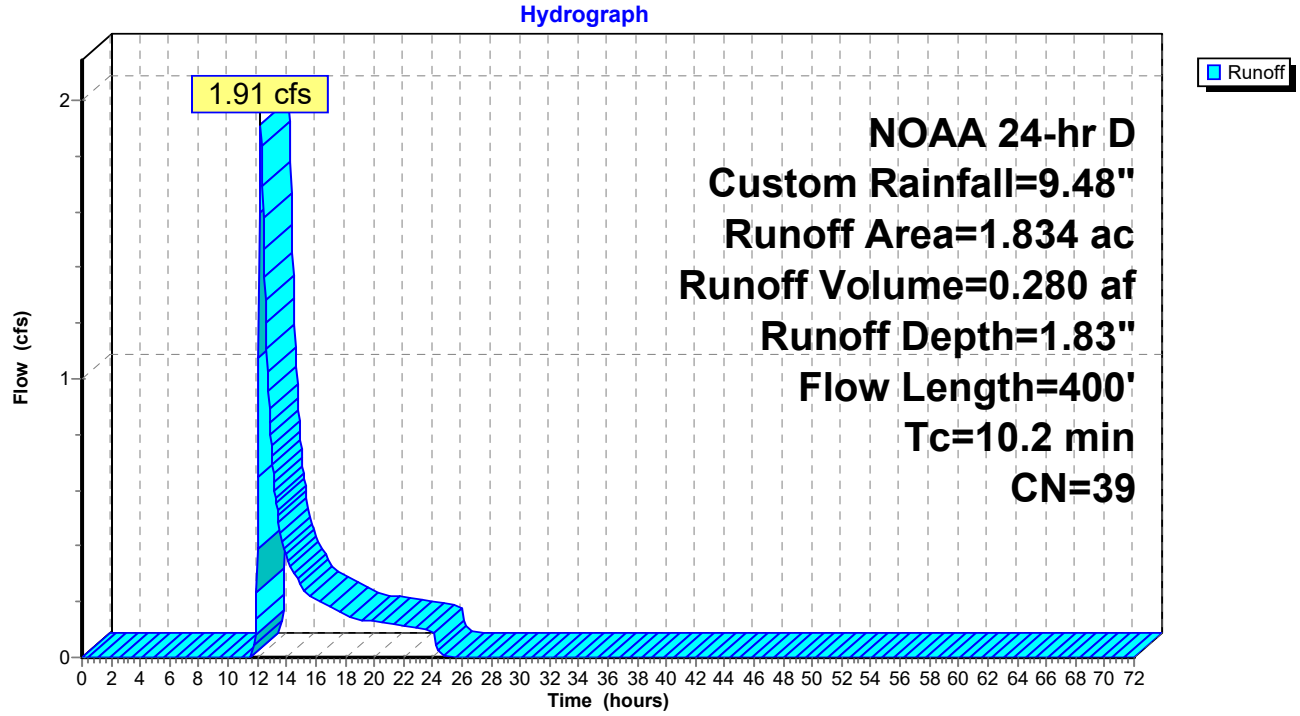
Runoff = 1.91 cfs @ 12.22 hrs, Volume= 0.280 af, Depth= 1.83"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.834	39	>75% Grass cover, Good, HSG A
1.834		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 54S: Basin 16 - Pervious



Summary for Pond 55P: Basin 16

Inflow Area = 2.950 ac, 37.83% Impervious, Inflow Depth = 4.64" for Custom event
Inflow = 10.45 cfs @ 12.12 hrs, Volume= 1.140 af
Outflow = 10.02 cfs @ 12.15 hrs, Volume= 1.044 af, Atten= 4%, Lag= 2.0 min
Primary = 10.02 cfs @ 12.15 hrs, Volume= 1.044 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.33' @ 12.15 hrs Surf.Area= 4,564 sf Storage= 5,547 cf

Plug-Flow detention time= 95.2 min calculated for 1.043 af (92% of inflow)
Center-of-Mass det. time= 47.5 min (831.7 - 784.2)

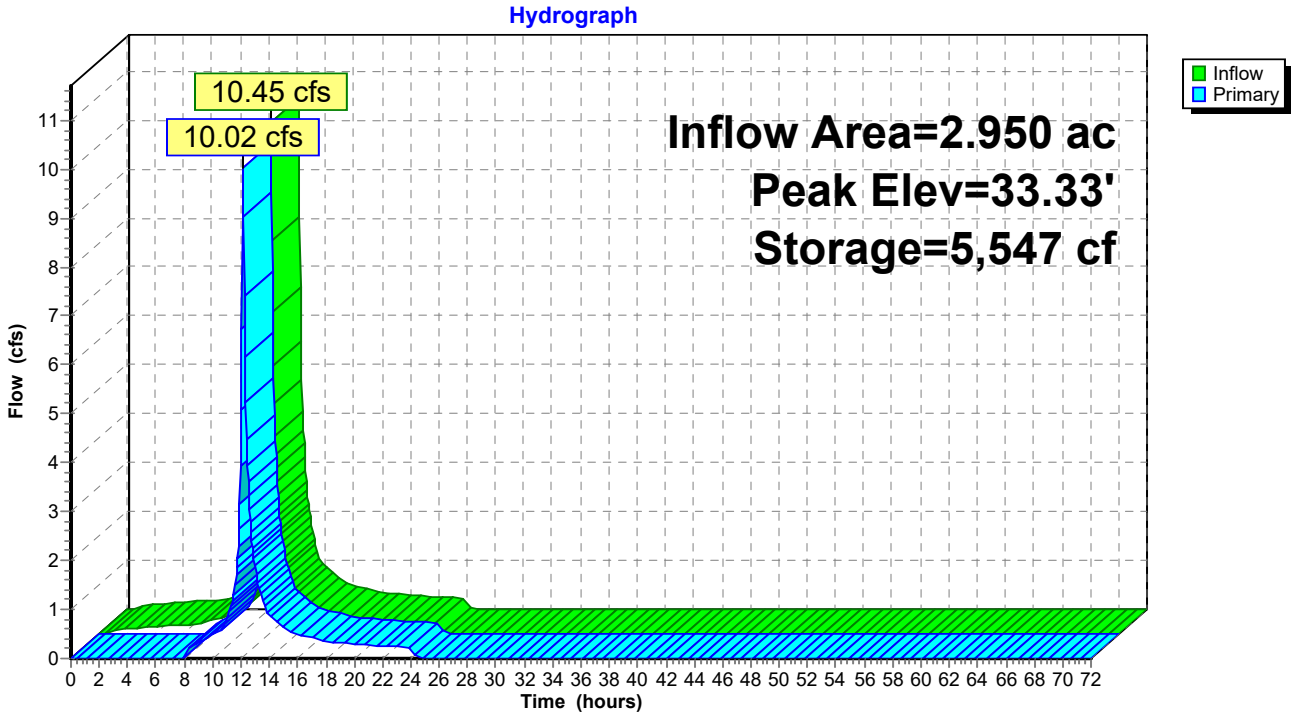
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	6,350 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	1,800	0	0
32.00	2,500	1,075	1,075
33.00	3,700	3,100	4,175
33.50	5,000	2,175	6,350

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.99 cfs @ 12.15 hrs HW=33.33' (Free Discharge)
1=Orifice/Grate (Weir Controls 9.99 cfs @ 1.88 fps)

Pond 55P: Basin 16



Summary for Subcatchment 56S: Basin 17 - Impervious

[49] Hint: Tc<2dt may require smaller dt

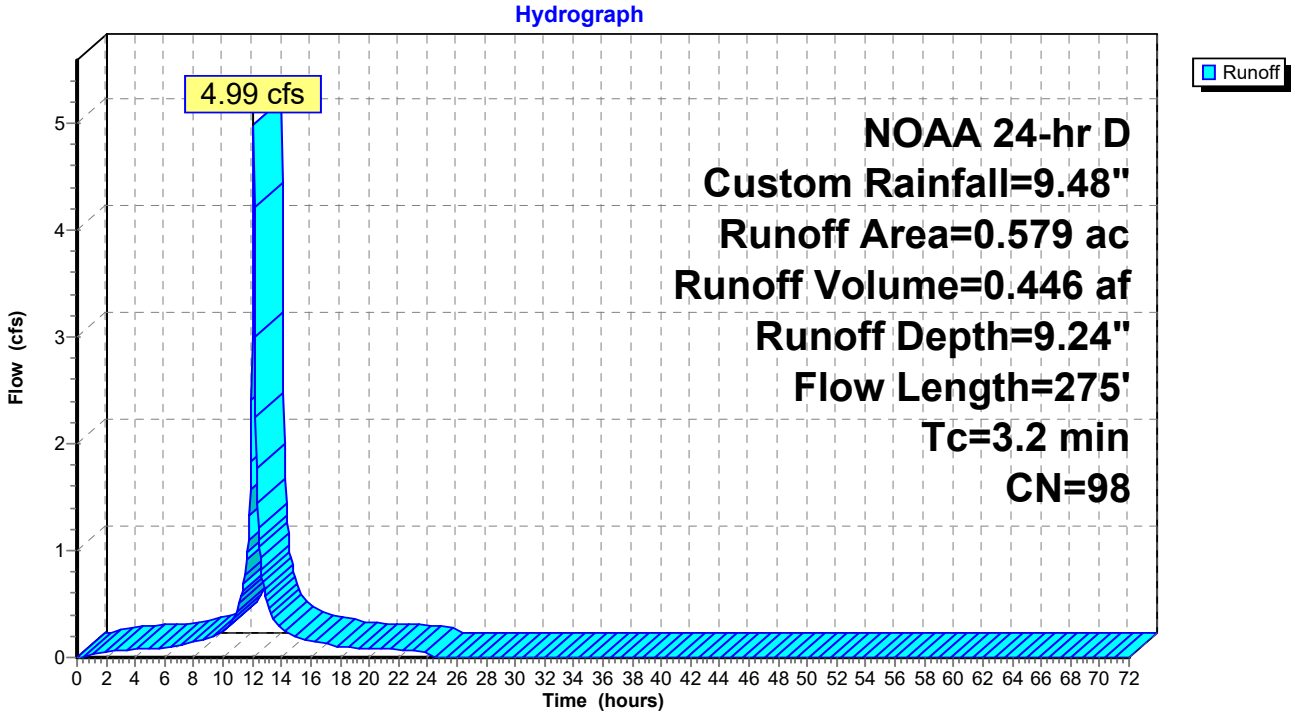
Runoff = 4.99 cfs @ 12.10 hrs, Volume= 0.446 af, Depth= 9.24"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.579	98	Impervious
	0.579		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	25	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	275	Total			

Subcatchment 56S: Basin 17 - Impervious



Summary for Subcatchment 57S: Basin 17 - Pervious

[49] Hint: Tc<2dt may require smaller dt

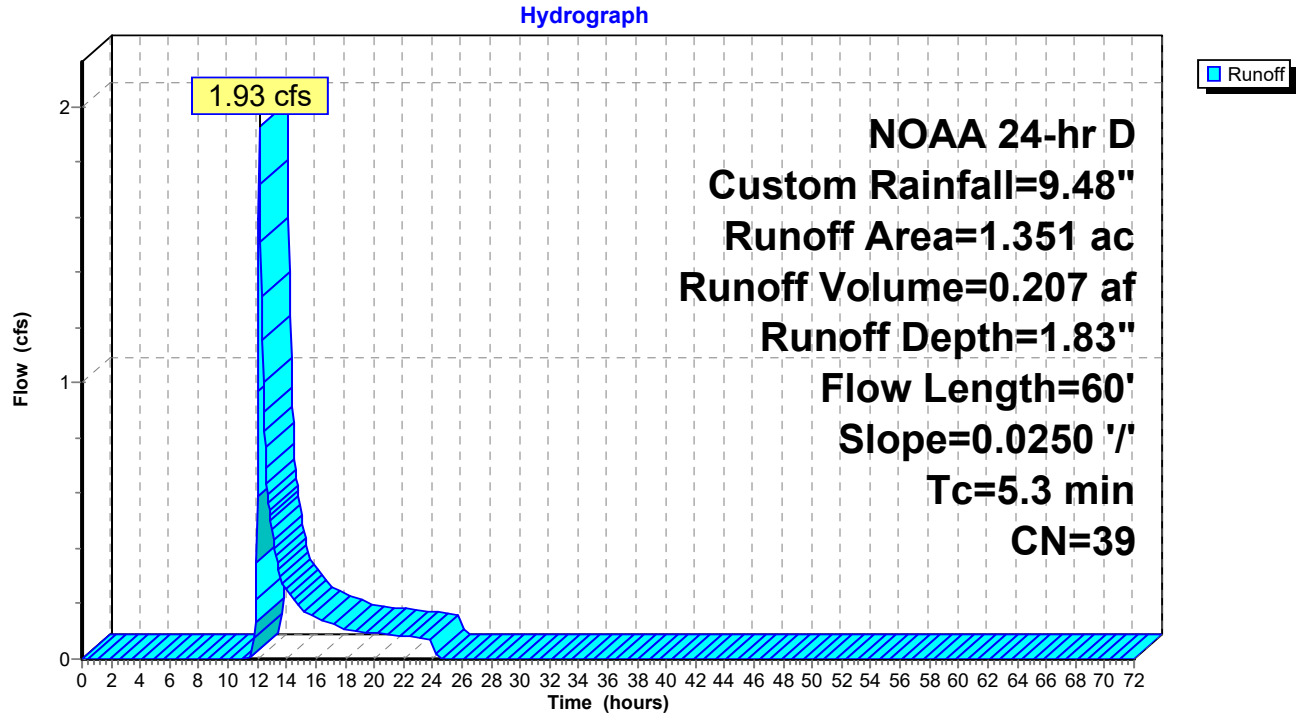
Runoff = 1.93 cfs @ 12.16 hrs, Volume= 0.207 af, Depth= 1.83"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.351	39	>75% Grass cover, Good, HSG A
1.351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 57S: Basin 17 - Pervious



Summary for Pond 58P: Basin 17

Inflow Area = 1.930 ac, 30.00% Impervious, Inflow Depth = 4.06" for Custom event
Inflow = 6.66 cfs @ 12.11 hrs, Volume= 0.652 af
Outflow = 6.26 cfs @ 12.15 hrs, Volume= 0.602 af, Atten= 6%, Lag= 2.1 min
Primary = 6.26 cfs @ 12.15 hrs, Volume= 0.602 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.87' @ 12.15 hrs Surf.Area= 4,309 sf Storage= 3,190 cf

Plug-Flow detention time= 89.1 min calculated for 0.602 af (92% of inflow)
Center-of-Mass det. time= 45.3 min (839.3 - 794.0)

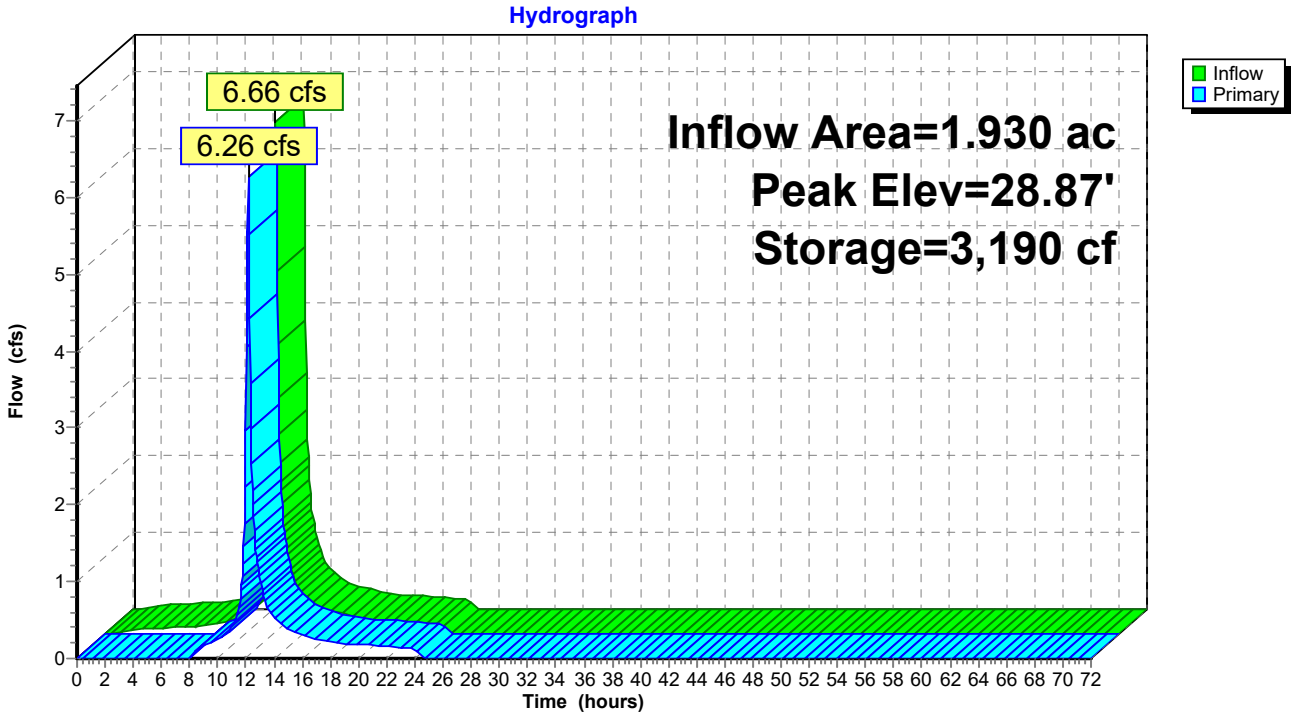
Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	12,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,000	0	0
29.00	4,500	3,750	3,750
30.00	6,200	5,350	9,100
30.50	7,000	3,300	12,400

Device	Routing	Invert	Outlet Devices
#1	Primary	28.63'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.25 cfs @ 12.15 hrs HW=28.87' (Free Discharge)
1=Orifice/Grate (Weir Controls 6.25 cfs @ 1.61 fps)

Pond 58P: Basin 17



Summary for Pond 59P: Basin 18

Inflow Area = 13.433 ac, 31.95% Impervious, Inflow Depth = 3.93" for Custom event
Inflow = 30.27 cfs @ 12.19 hrs, Volume= 4.399 af
Outflow = 29.73 cfs @ 12.22 hrs, Volume= 4.324 af, Atten= 2%, Lag= 1.4 min
Primary = 29.73 cfs @ 12.22 hrs, Volume= 4.324 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.43' @ 12.22 hrs Surf.Area= 8,772 sf Storage= 19,046 cf

Plug-Flow detention time= 169.3 min calculated for 4.321 af (98% of inflow)
Center-of-Mass det. time= 146.0 min (1,097.0 - 951.0)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	29,550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

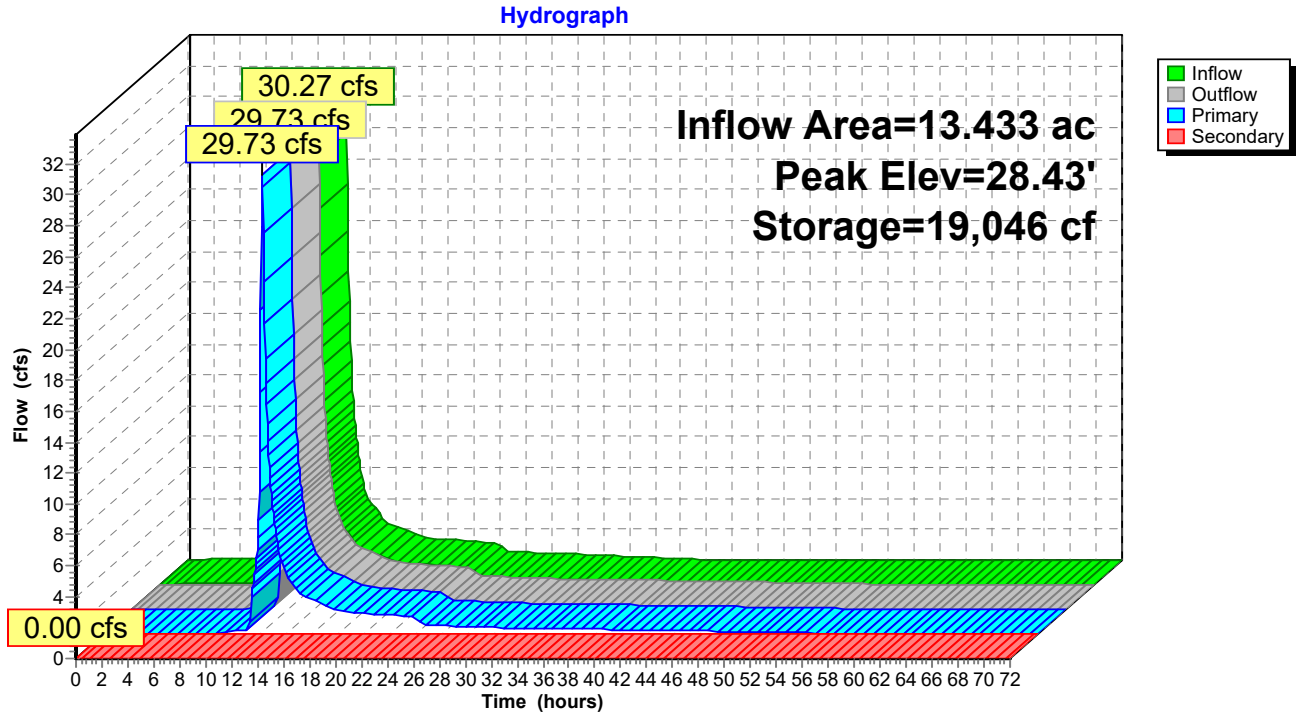
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	4,600	0	0
26.00	5,200	2,450	2,450
27.00	6,400	5,800	8,250
28.00	8,000	7,200	15,450
29.00	9,800	8,900	24,350
29.50	11,000	5,200	29,550

Device	Routing	Invert	Outlet Devices
#1	Primary	26.11'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	28.00'	**48.0" x 48.0" Horiz. Orifice/Grate** X 2 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	28.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=29.29 cfs @ 12.22 hrs HW=28.42' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.35 cfs @ 7.12 fps)
└**2=Orifice/Grate** (Weir Controls 28.94 cfs @ 2.13 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=25.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 59P: Basin 18



Summary for Subcatchment 60S: Basin 18 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 126% of capacity of segment #2

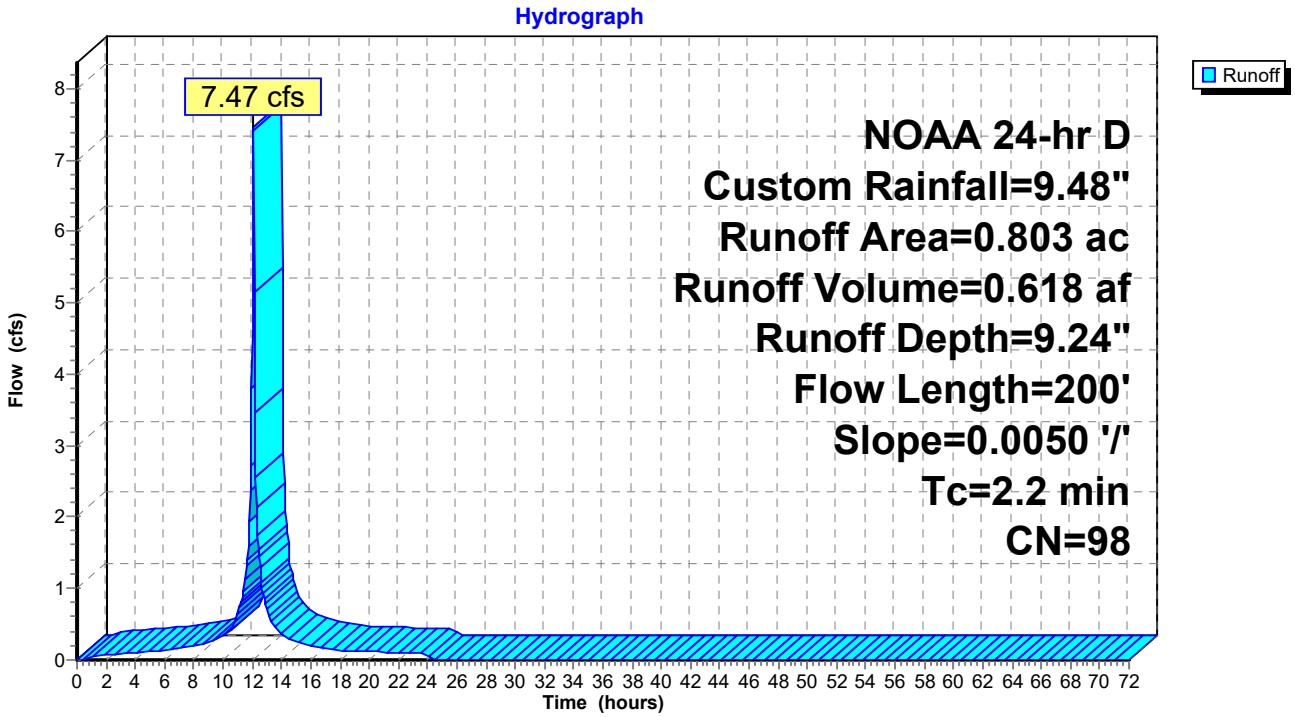
Runoff = 7.47 cfs @ 12.09 hrs, Volume= 0.618 af, Depth= 9.24"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.803	98	Impervious
	0.803		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0050	0.89		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.2	200	Total			

Subcatchment 60S: Basin 18 - Impervious



Summary for Subcatchment 61S: Basin 18 - Pervious

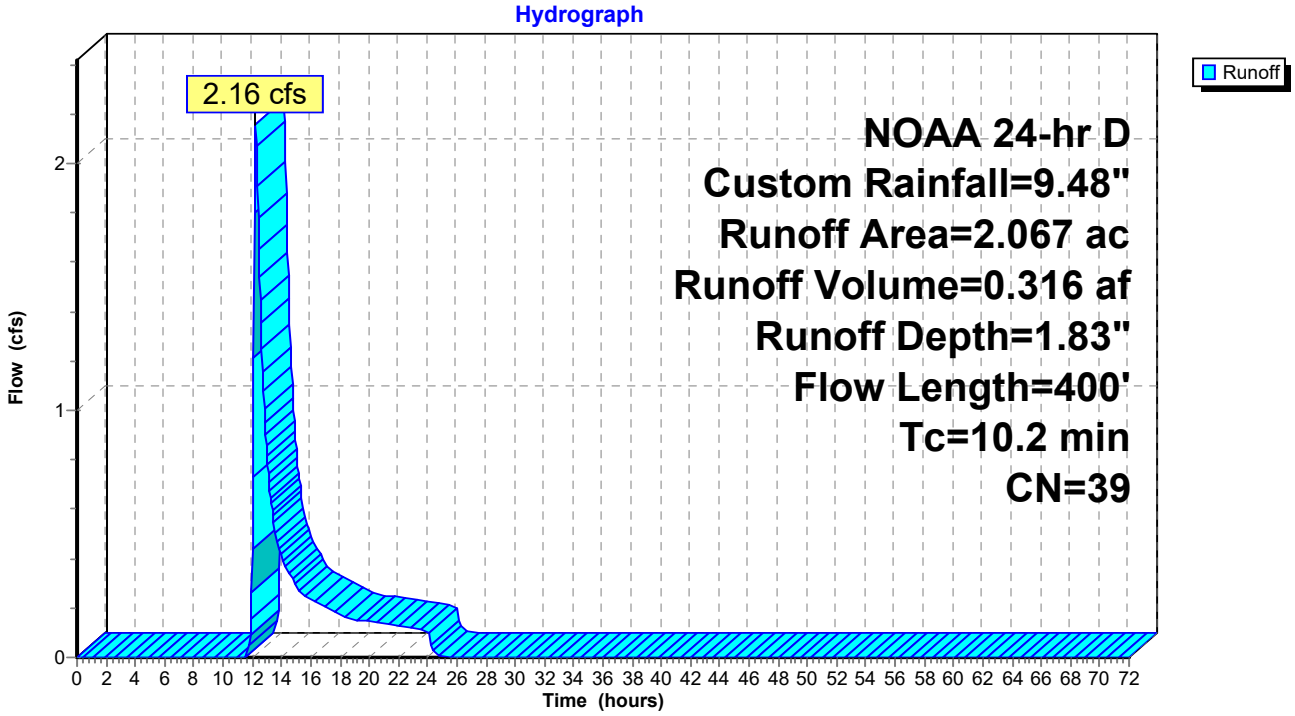
Runoff = 2.16 cfs @ 12.22 hrs, Volume= 0.316 af, Depth= 1.83"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
2.067	39	>75% Grass cover, Good, HSG A
2.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 61S: Basin 18 - Pervious



Summary for Pond 62P: Basin 26 (Wet Pond)

[79] Warning: Submerged Pond 59P Primary device # 1 by 0.25'
[79] Warning: Submerged Pond 75P Primary device # 1 by 0.36'

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 3.51" for Custom event
Inflow = 120.35 cfs @ 12.20 hrs, Volume= 21.936 af
Outflow = 11.76 cfs @ 15.65 hrs, Volume= 12.681 af, Atten= 90%, Lag= 207.2 min
Primary = 11.76 cfs @ 15.65 hrs, Volume= 12.681 af
Routed to Link 87L : Total Area to Tuckerton Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 22.50' Surf.Area= 92,813 sf Storage= 317,963 cf
Peak Elev= 26.36' @ 15.65 hrs Surf.Area= 147,901 sf Storage= 779,584 cf (461,621 cf above start)

Plug-Flow detention time= 1,651.6 min calculated for 5.378 af (25% of inflow)
Center-of-Mass det. time= 453.6 min (1,644.5 - 1,190.9)

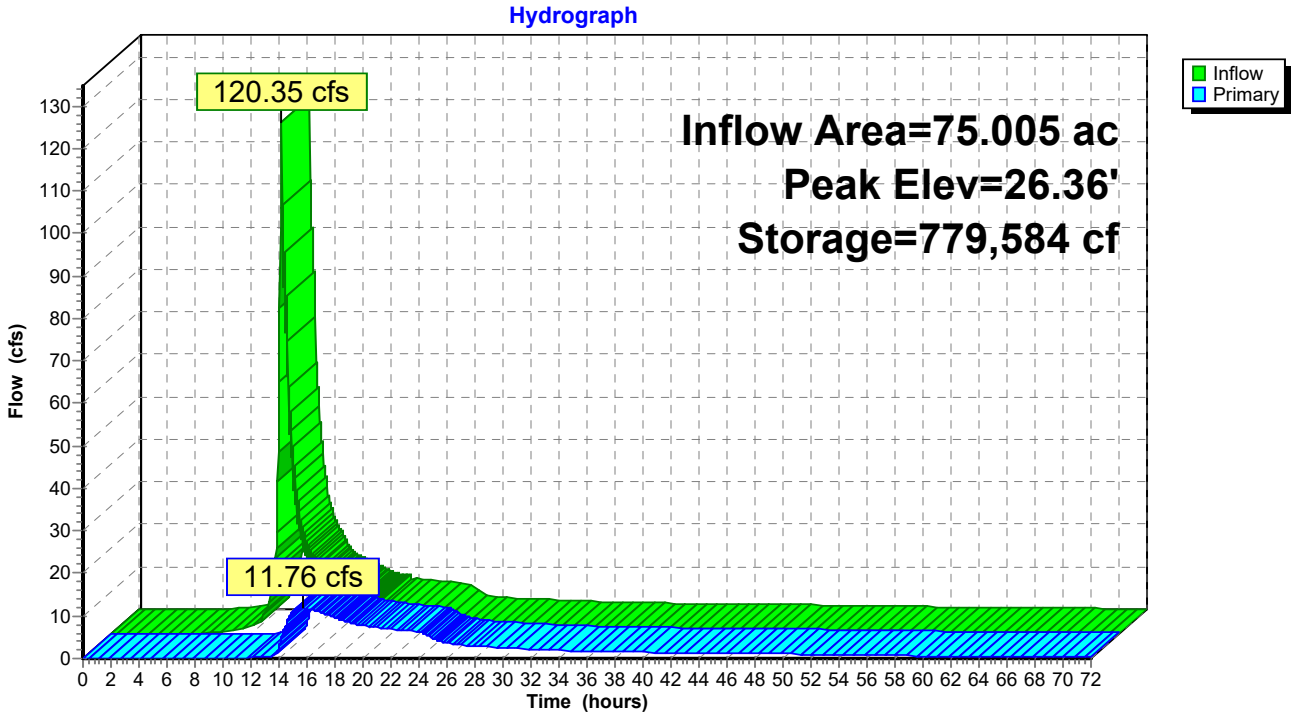
Volume	Invert	Avail.Storage	Storage Description
#1	18.00'	639,244 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
18.00	29,000	0	0
19.00	32,000	30,500	30,500
20.00	35,000	33,500	64,000
21.00	38,000	36,500	100,500
21.01	43,000	405	100,905
22.00	47,000	44,550	145,455
23.00	52,000	49,500	194,955
24.00	57,000	54,500	249,455
24.01	63,000	600	250,055
25.00	69,000	65,340	315,395
26.00	76,000	72,500	387,895
27.00	84,000	80,000	467,895
27.50	90,000	43,500	511,395

Device	Routing	Invert	Outlet Devices
#1	Primary	22.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	26.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.76 cfs @ 15.65 hrs HW=26.36' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.46 cfs @ 9.31 fps)
└**2=Orifice/Grate** (Weir Controls 11.30 cfs @ 1.96 fps)

Pond 62P: Basin 26 (Wet Pond)



Summary for Subcatchment 63S: Basin 26 - Impervious

[49] Hint: Tc<2dt may require smaller dt

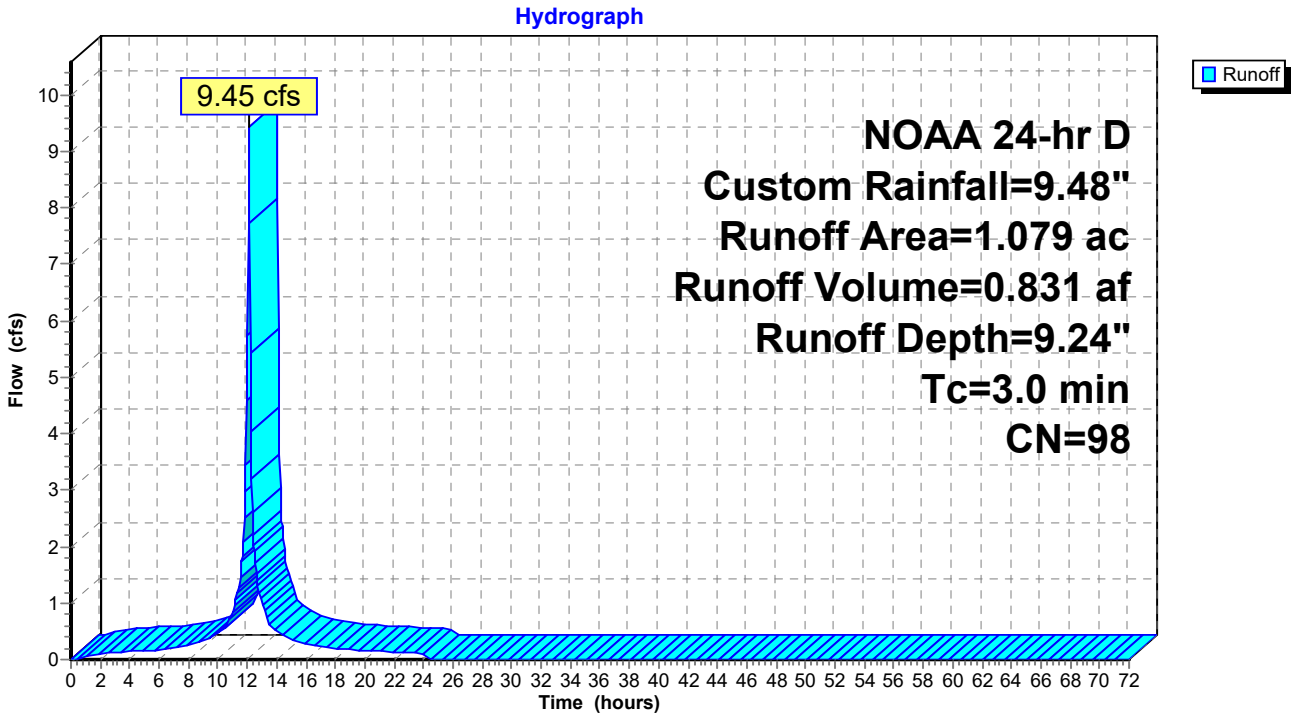
Runoff = 9.45 cfs @ 12.10 hrs, Volume= 0.831 af, Depth= 9.24"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.079	98	Impervious
	1.079		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 63S: Basin 26 - Impervious



Summary for Subcatchment 64S: Basin 26 - Pervious

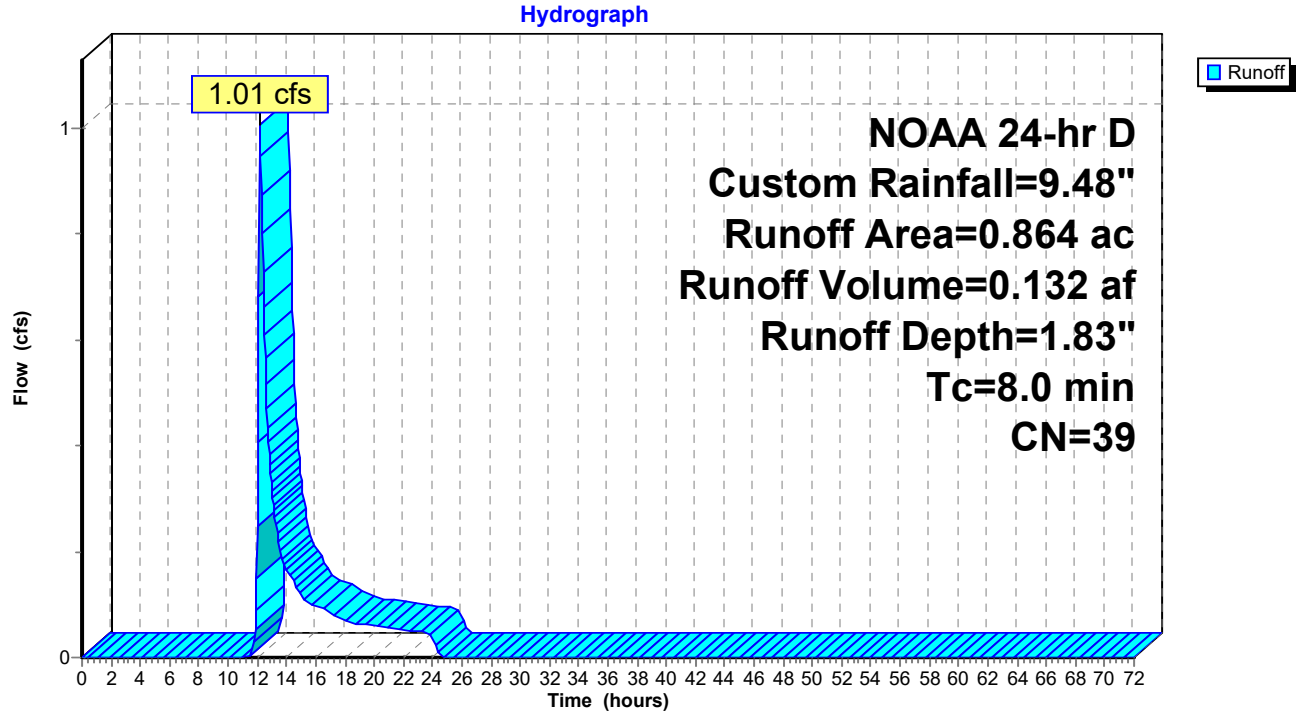
Runoff = 1.01 cfs @ 12.20 hrs, Volume= 0.132 af, Depth= 1.83"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
0.864	39	>75% Grass cover, Good, HSG A
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 64S: Basin 26 - Pervious



Summary for Pond 66P: Basin 31

[93] Warning: Storage range exceeded by 12,076.94'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=64)
[81] Warning: Exceeded Pond 67P by 4,982.17' @ 12.20 hrs

Inflow Area = 9.125 ac, 32.14% Impervious, Inflow Depth = 4.00" for Custom event
Inflow = 24.77 cfs @ 12.20 hrs, Volume= 3.041 af
Outflow = 26.03 cfs @ 12.20 hrs, Volume= 2.933 af, Atten= 0%, Lag= 0.0 min
Primary = 26.03 cfs @ 12.20 hrs, Volume= 2.933 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 12,112.44' @ 12.20 hrs Surf.Area= 8,000 sf Storage= 13,775 cf

Plug-Flow detention time= 287.4 min calculated for 2.933 af (96% of inflow)
Center-of-Mass det. time= 214.3 min (1,356.3 - 1,142.0)

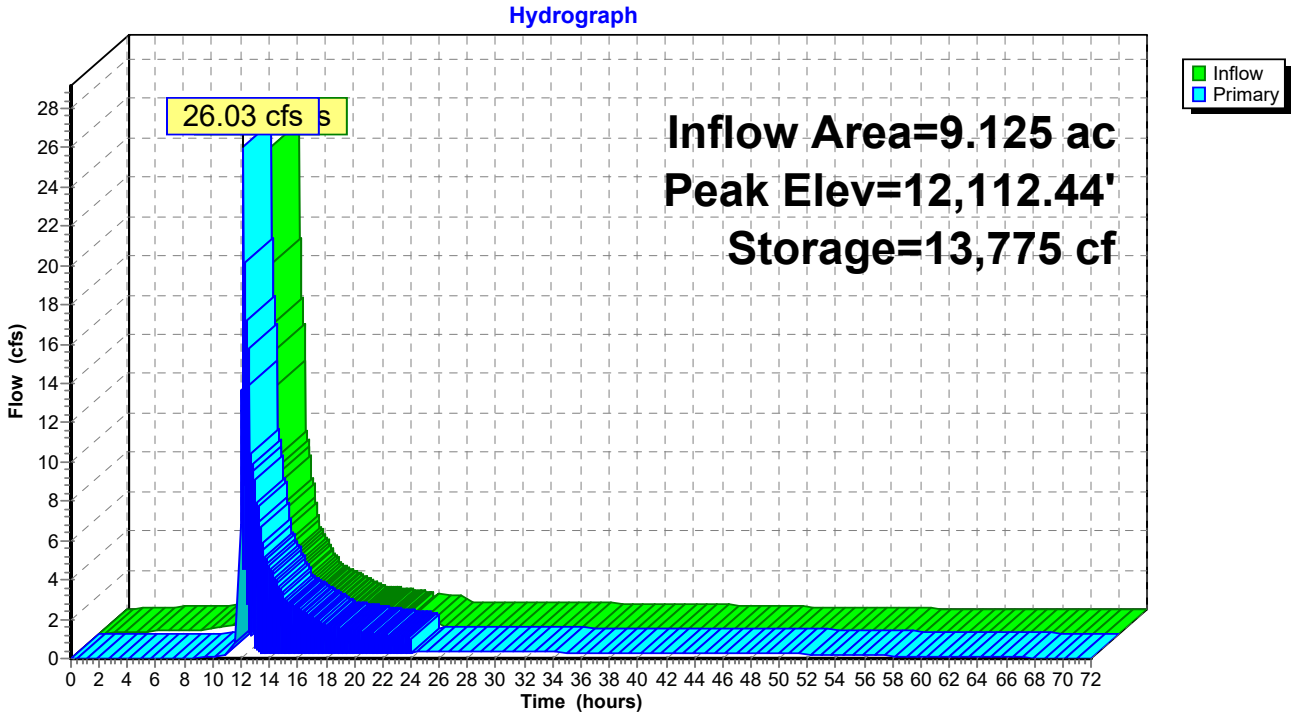
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	13,775 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,200	0	0
34.00	5,000	4,100	4,100
35.00	6,900	5,950	10,050
35.50	8,000	3,725	13,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.96'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=25.33 cfs @ 12.20 hrs HW=11,519.13' (Free Discharge)
1=Orifice/Grate (Orifice Controls 25.33 cfs @ 516.01 fps)

Pond 66P: Basin 31



Summary for Subcatchment 66S: Basin 19 - Impervious

[49] Hint: Tc<2dt may require smaller dt

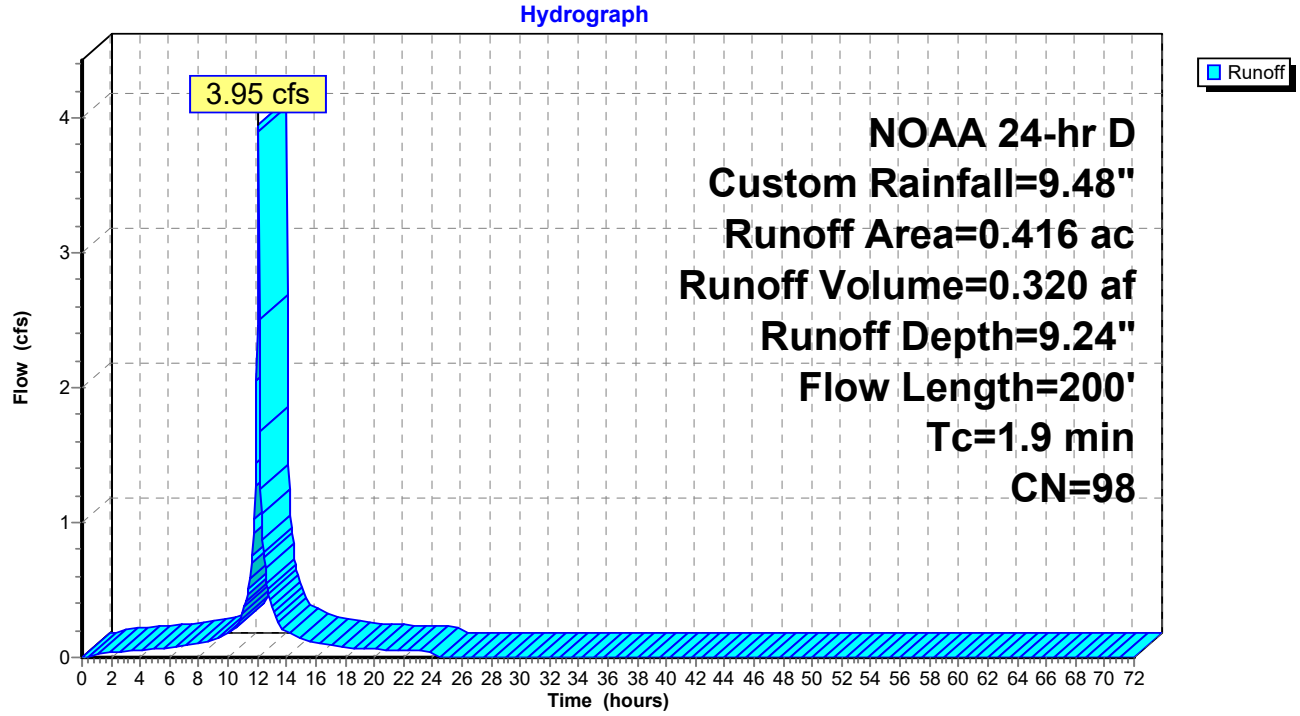
Runoff = 3.95 cfs @ 12.09 hrs, Volume= 0.320 af, Depth= 9.24"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.416	98	Impervious
	0.416		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
1.9	200	Total			

Subcatchment 66S: Basin 19 - Impervious



Summary for Pond 67P: Basin 30

[93] Warning: Storage range exceeded by 7,091.85'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=51)
[81] Warning: Exceeded Pond 70P by 6,764.99' @ 12.20 hrs

Inflow Area = 6.020 ac, 31.43% Impervious, Inflow Depth = 4.00" for Custom event
Inflow = 21.34 cfs @ 12.14 hrs, Volume= 2.005 af
Outflow = 20.02 cfs @ 12.20 hrs, Volume= 1.924 af, Atten= 6%, Lag= 3.8 min
Primary = 20.02 cfs @ 12.20 hrs, Volume= 1.924 af
Routed to Pond 66P : Basin 31

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 7,128.35' @ 12.20 hrs Surf.Area= 9,800 sf Storage= 22,775 cf

Plug-Flow detention time= 463.4 min calculated for 1.922 af (96% of inflow)
Center-of-Mass det. time= 408.9 min (1,350.9 - 942.0)

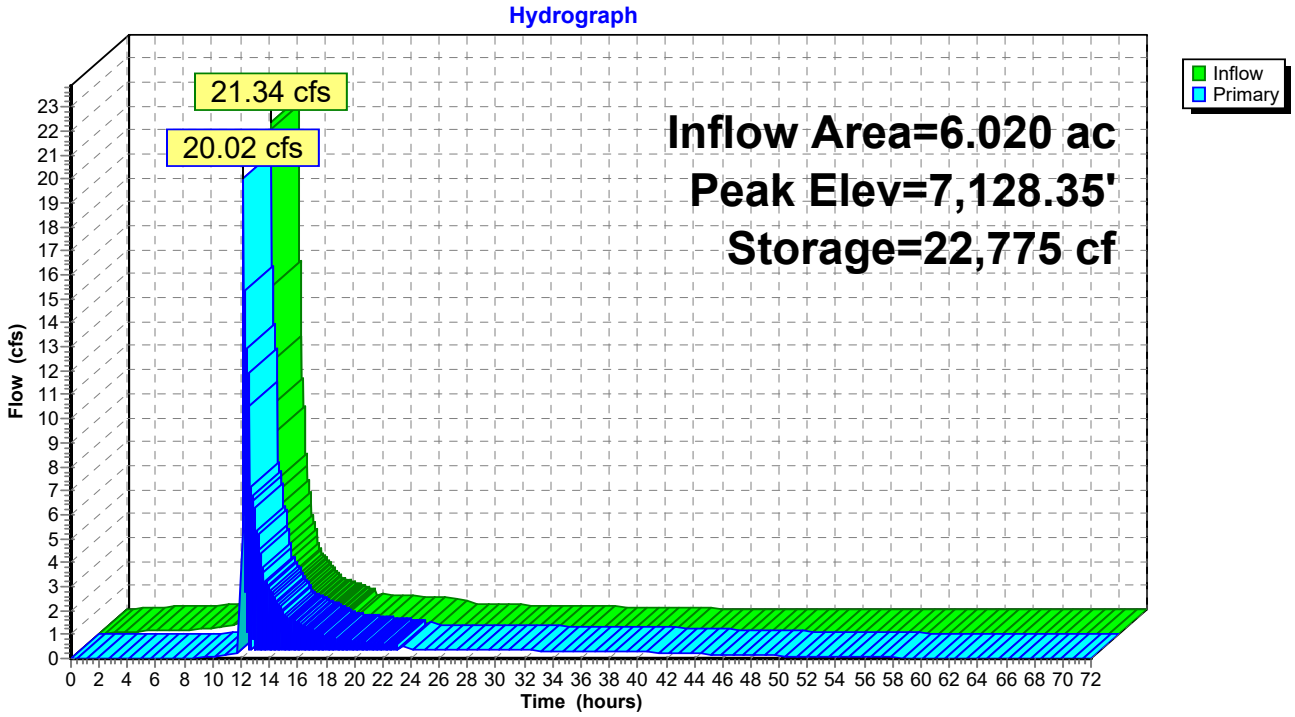
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,775 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,700	0	0
34.00	5,200	4,450	4,450
35.00	6,900	6,050	10,500
36.00	8,500	7,700	18,200
36.50	9,800	4,575	22,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.81'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=19.12 cfs @ 12.20 hrs HW=6,579.77' (Free Discharge)
1=Orifice/Grate (Orifice Controls 19.12 cfs @ 389.56 fps)

Pond 67P: Basin 30



Summary for Subcatchment 67S: Basin 19 - Pervious

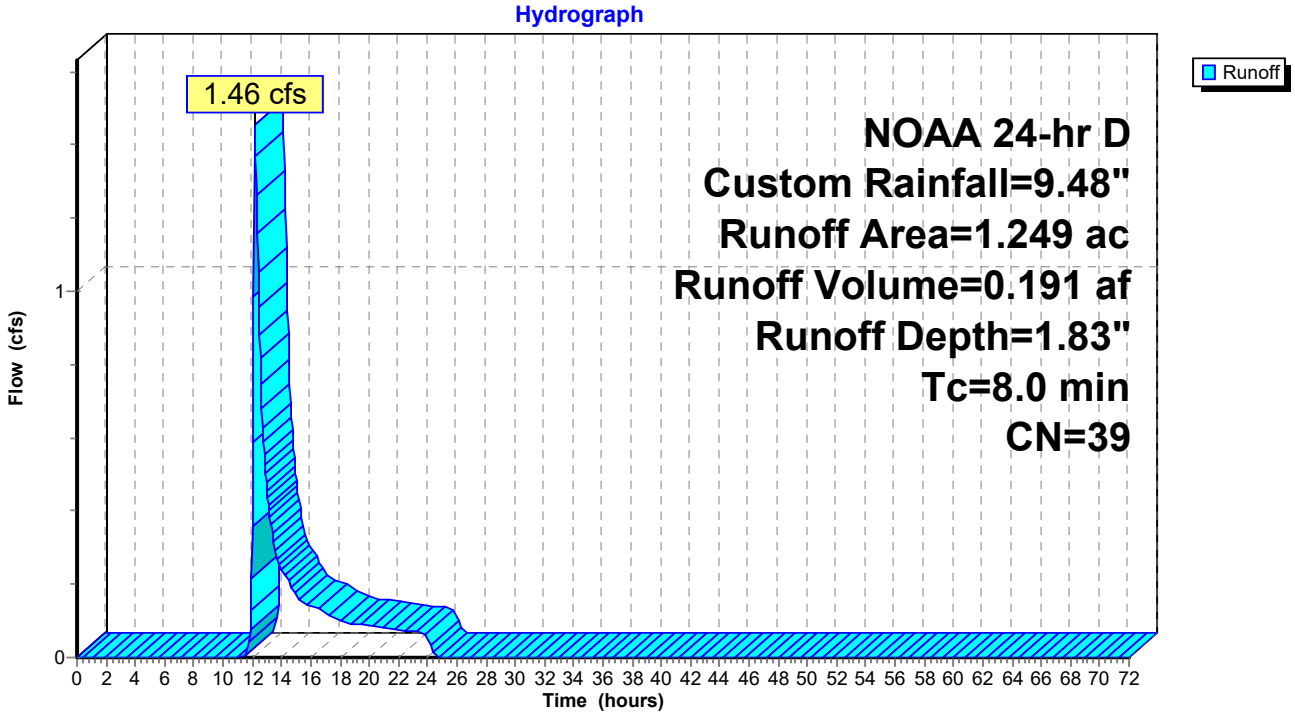
Runoff = 1.46 cfs @ 12.20 hrs, Volume= 0.191 af, Depth= 1.83"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.249	39	>75% Grass cover, Good, HSG A
1.249		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 67S: Basin 19 - Pervious



Summary for Pond 68P: Basin 19

Inflow Area = 1.665 ac, 24.98% Impervious, Inflow Depth = 3.68" for Custom event
Inflow = 4.88 cfs @ 12.10 hrs, Volume= 0.511 af
Outflow = 1.03 cfs @ 12.78 hrs, Volume= 0.475 af, Atten= 79%, Lag= 41.1 min
Primary = 1.03 cfs @ 12.78 hrs, Volume= 0.475 af
Routed to Pond 69P : Basin 20

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 42.05' @ 12.78 hrs Surf.Area= 4,876 sf Storage= 10,162 cf

Plug-Flow detention time= 357.1 min calculated for 0.475 af (93% of inflow)
Center-of-Mass det. time= 316.2 min (1,120.3 - 804.1)

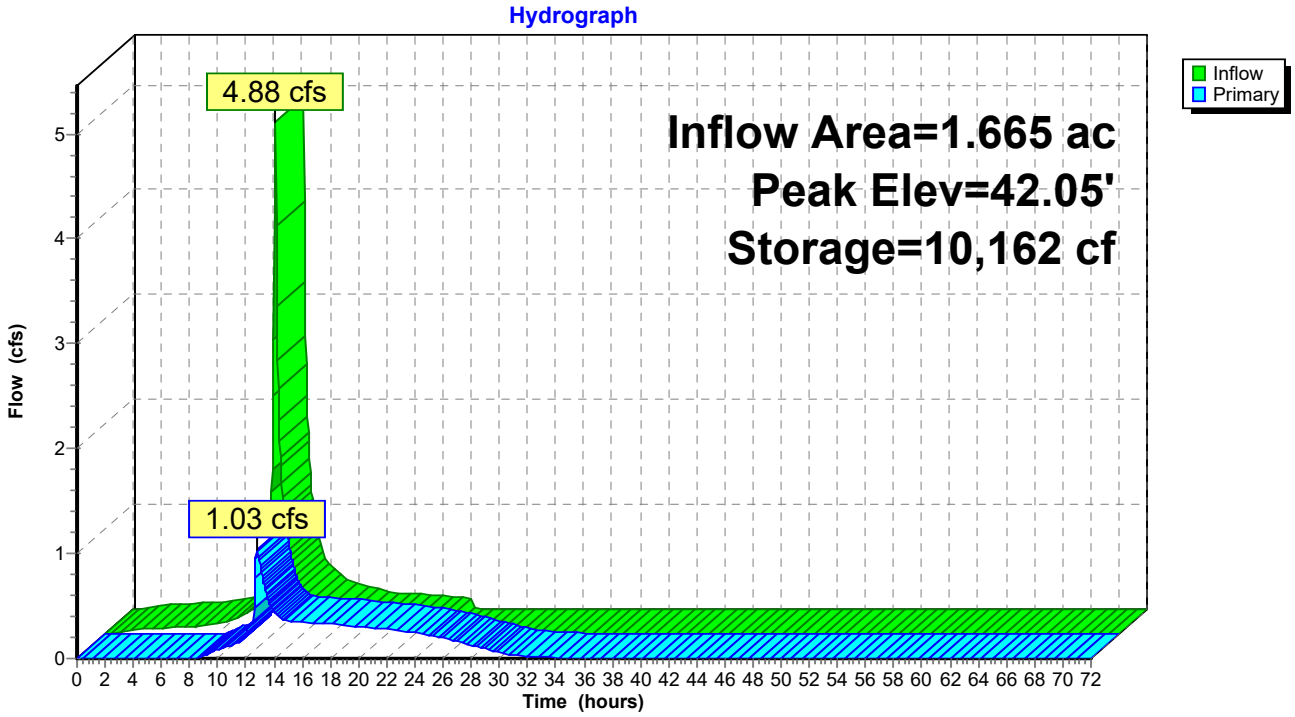
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	12,475 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	2,000	0	0
40.00	2,800	2,400	2,400
41.00	3,700	3,250	5,650
42.00	4,800	4,250	9,900
42.50	5,500	2,575	12,475

Device	Routing	Invert	Outlet Devices
#1	Primary	39.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.01 cfs @ 12.78 hrs HW=42.05' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.35 cfs @ 7.20 fps)
2=Orifice/Grate (Weir Controls 0.66 cfs @ 0.76 fps)

Pond 68P: Basin 19



Summary for Pond 69P: Basin 20

Inflow Area = 4.123 ac, 27.97% Impervious, Inflow Depth = 3.80" for Custom event
Inflow = 8.41 cfs @ 12.05 hrs, Volume= 1.305 af
Outflow = 7.21 cfs @ 12.09 hrs, Volume= 1.241 af, Atten= 14%, Lag= 2.6 min
Primary = 7.21 cfs @ 12.09 hrs, Volume= 1.241 af
Routed to Pond 72P : Basin 21

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.96' @ 12.09 hrs Surf.Area= 7,190 sf Storage= 9,066 cf

Plug-Flow detention time= 193.2 min calculated for 1.241 af (95% of inflow)
Center-of-Mass det. time= 152.2 min (1,063.6 - 911.4)

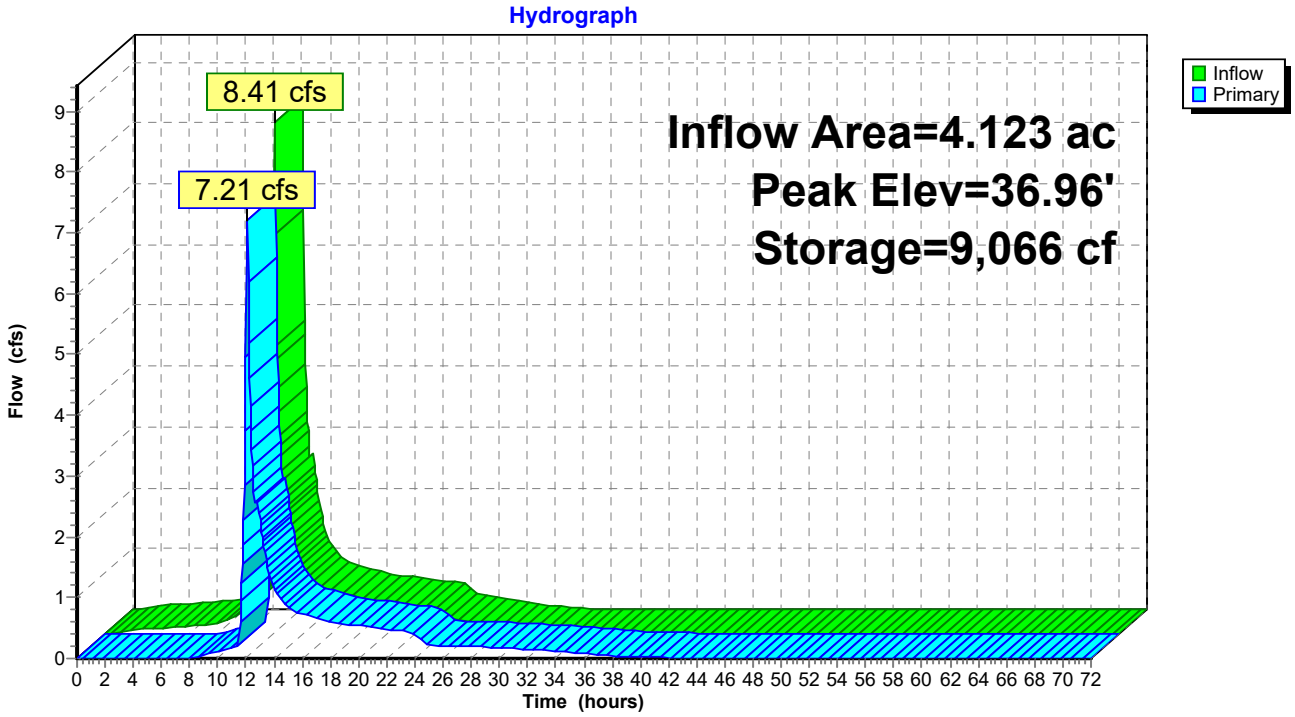
Volume	Invert	Avail.Storage	Storage Description
#1	35.00'	13,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.00	2,400	0	0
36.00	4,500	3,450	3,450
37.00	7,300	5,900	9,350
37.50	9,000	4,075	13,425

Device	Routing	Invert	Outlet Devices
#1	Primary	35.84'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.11 cfs @ 12.09 hrs HW=36.96' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.24 cfs @ 4.80 fps)
2=Orifice/Grate (Weir Controls 6.88 cfs @ 1.66 fps)

Pond 69P: Basin 20



Summary for Pond 70P: Basin 29

[93] Warning: Storage range exceeded by 2,649.68'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=76)

Inflow Area = 2.987 ac, 32.51% Impervious, Inflow Depth = 4.24" for Custom event
Inflow = 10.16 cfs @ 12.11 hrs, Volume= 1.056 af
Outflow = 12.22 cfs @ 12.14 hrs, Volume= 0.973 af, Atten= 0%, Lag= 2.1 min
Primary = 12.22 cfs @ 12.14 hrs, Volume= 0.973 af
Routed to Pond 67P : Basin 30

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 2,685.68' @ 12.15 hrs Surf.Area= 8,700 sf Storage= 12,800 cf

Plug-Flow detention time= 353.0 min calculated for 0.973 af (92% of inflow)
Center-of-Mass det. time= 307.9 min (1,098.5 - 790.7)

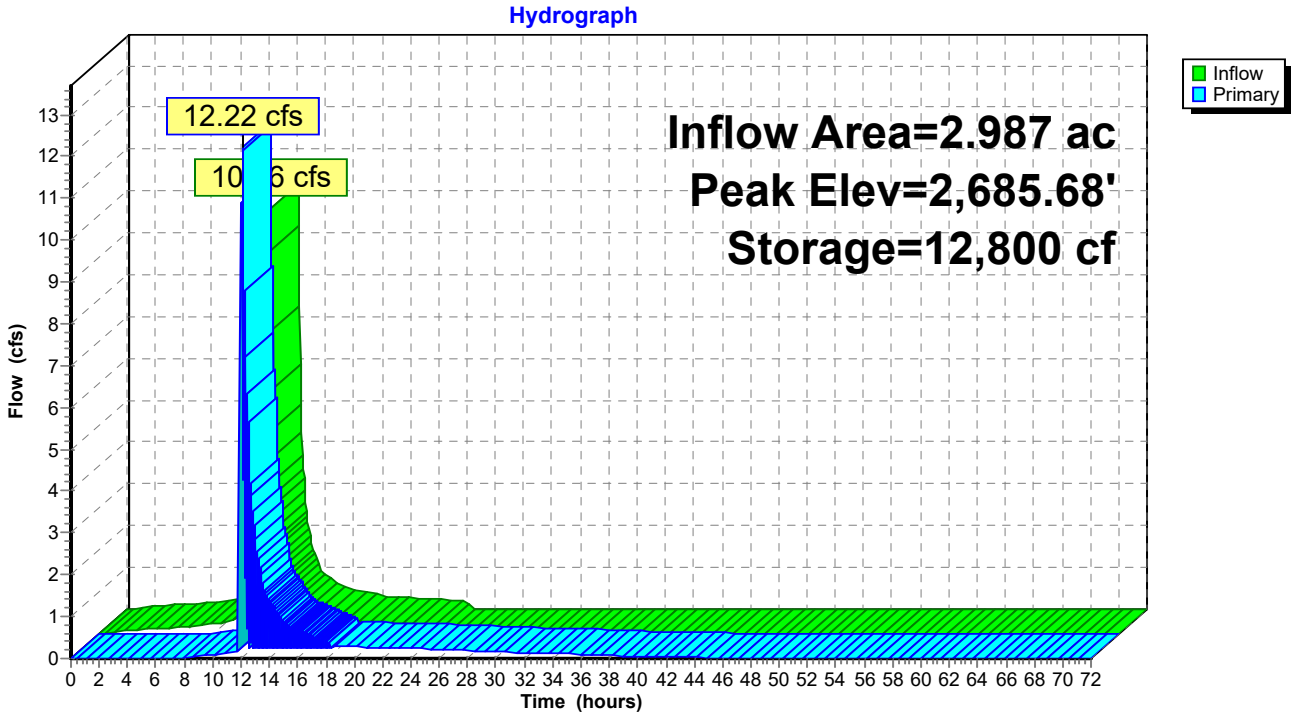
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	12,800 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,500	0	0
35.00	6,200	5,350	5,350
36.00	8,700	7,450	12,800

Device	Routing	Invert	Outlet Devices
#1	Primary	34.71'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.69 cfs @ 12.14 hrs HW=2,483.10' (Free Discharge)
1=Orifice/Grate (Orifice Controls 11.69 cfs @ 238.24 fps)

Pond 70P: Basin 29



Summary for Subcatchment 70S: Basin 20 - Impervious

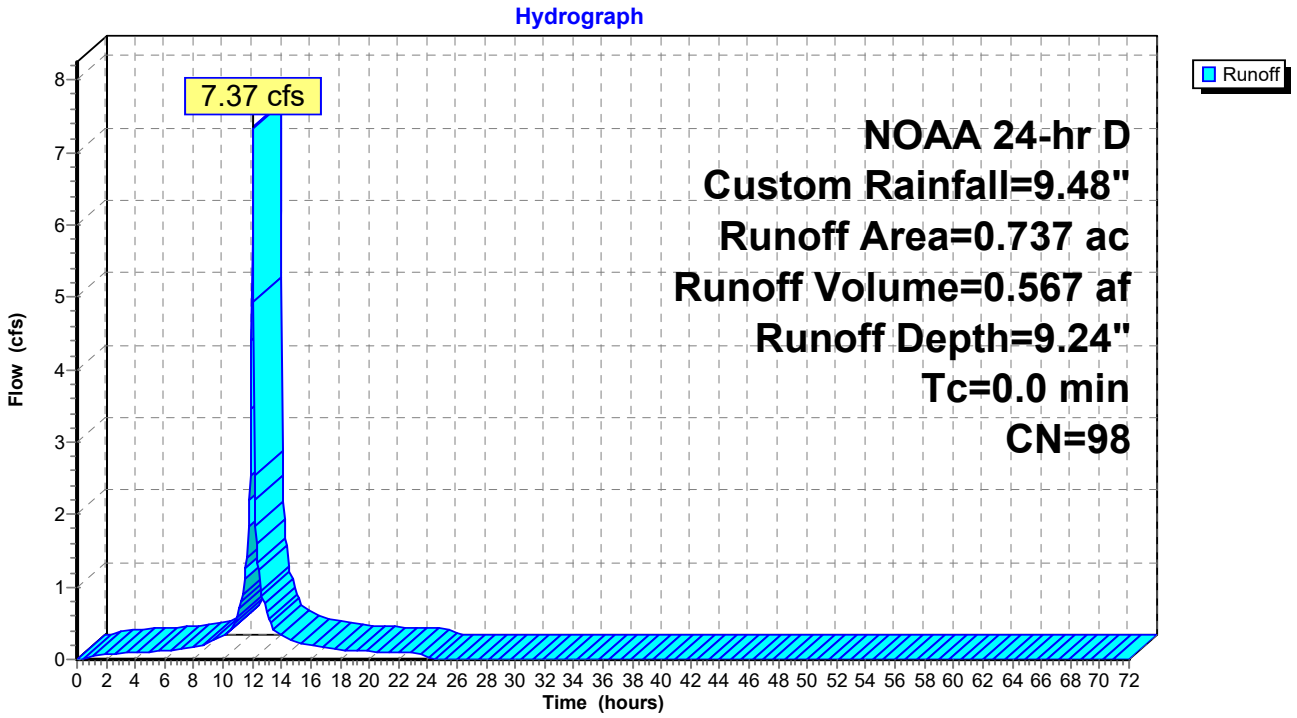
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 7.37 cfs @ 12.04 hrs, Volume= 0.567 af, Depth= 9.24"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.737	98	Impervious
	0.737		100.00% Impervious Area

Subcatchment 70S: Basin 20 - Impervious



Summary for Pond 71P: Basin 33

Inflow Area = 5.600 ac, 26.93% Impervious, Inflow Depth > 3.65" for Custom event
Inflow = 8.53 cfs @ 12.11 hrs, Volume= 1.704 af
Outflow = 0.60 cfs @ 17.76 hrs, Volume= 1.621 af, Atten= 93%, Lag= 339.1 min
Primary = 0.60 cfs @ 17.76 hrs, Volume= 1.621 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.01' @ 17.76 hrs Surf.Area= 11,030 sf Storage= 29,614 cf

Plug-Flow detention time= 892.6 min calculated for 1.620 af (95% of inflow)
Center-of-Mass det. time= 786.8 min (2,091.4 - 1,304.6)

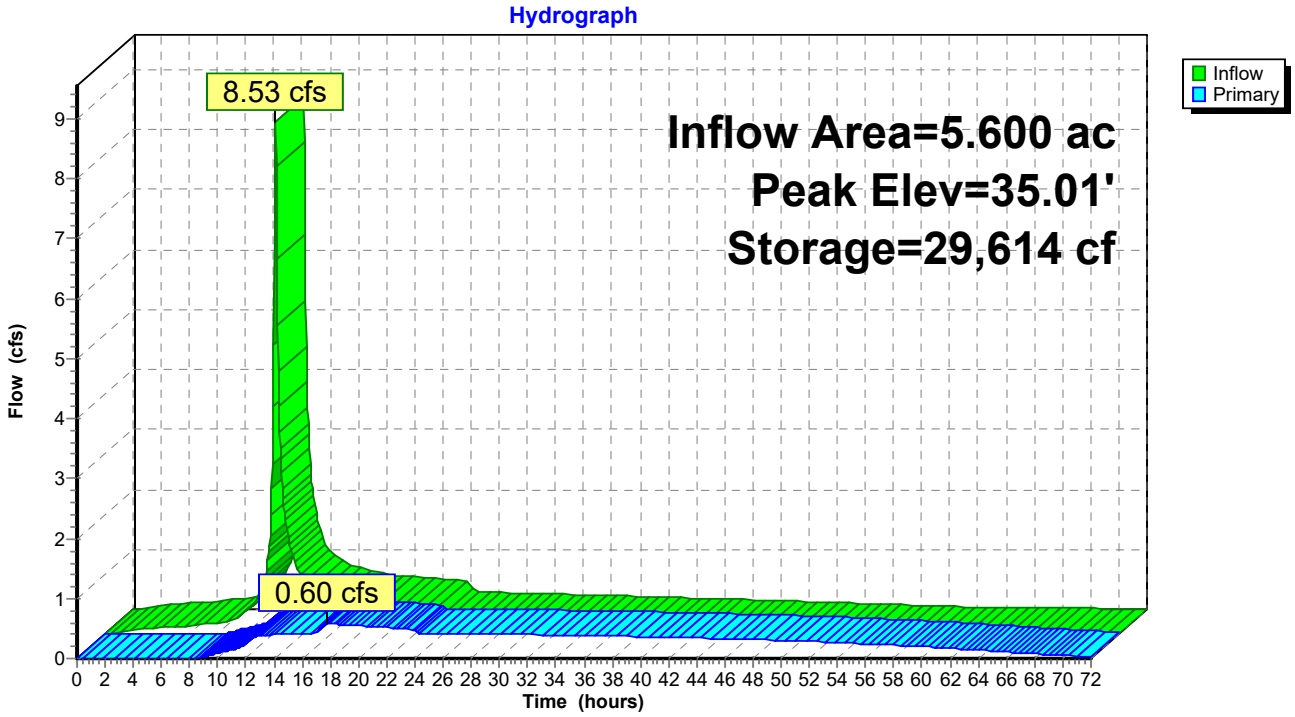
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	41,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,900	0	0
32.00	5,400	4,650	4,650
33.00	7,200	6,300	10,950
34.00	9,400	8,300	19,250
35.00	11,000	10,200	29,450
36.00	13,000	12,000	41,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.67'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.52 cfs @ 17.76 hrs HW=35.01' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.42 cfs @ 8.64 fps)
2=Orifice/Grate (Weir Controls 0.09 cfs @ 0.40 fps)

Pond 71P: Basin 33



Summary for Subcatchment 71S: Basin 20 - Pervious

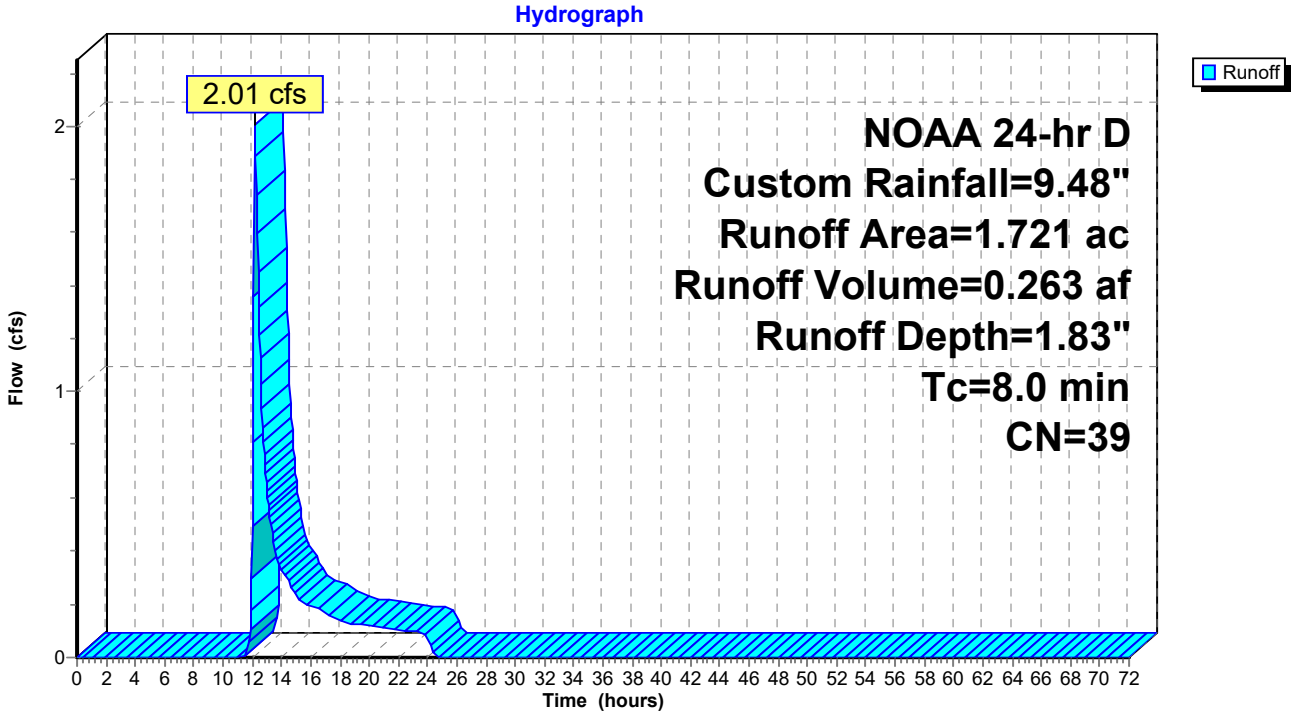
Runoff = 2.01 cfs @ 12.20 hrs, Volume= 0.263 af, Depth= 1.83"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
1.721		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 71S: Basin 20 - Pervious



Summary for Pond 72P: Basin 21

Inflow Area = 4.621 ac, 35.73% Impervious, Inflow Depth = 4.22" for Custom event
Inflow = 11.45 cfs @ 12.10 hrs, Volume= 1.624 af
Outflow = 11.13 cfs @ 12.12 hrs, Volume= 1.581 af, Atten= 3%, Lag= 1.1 min
Primary = 11.13 cfs @ 12.12 hrs, Volume= 1.581 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.17' @ 12.12 hrs Surf.Area= 3,000 sf Storage= 2,882 cf

Plug-Flow detention time= 56.7 min calculated for 1.580 af (97% of inflow)
Center-of-Mass det. time= 21.5 min (1,008.6 - 987.1)

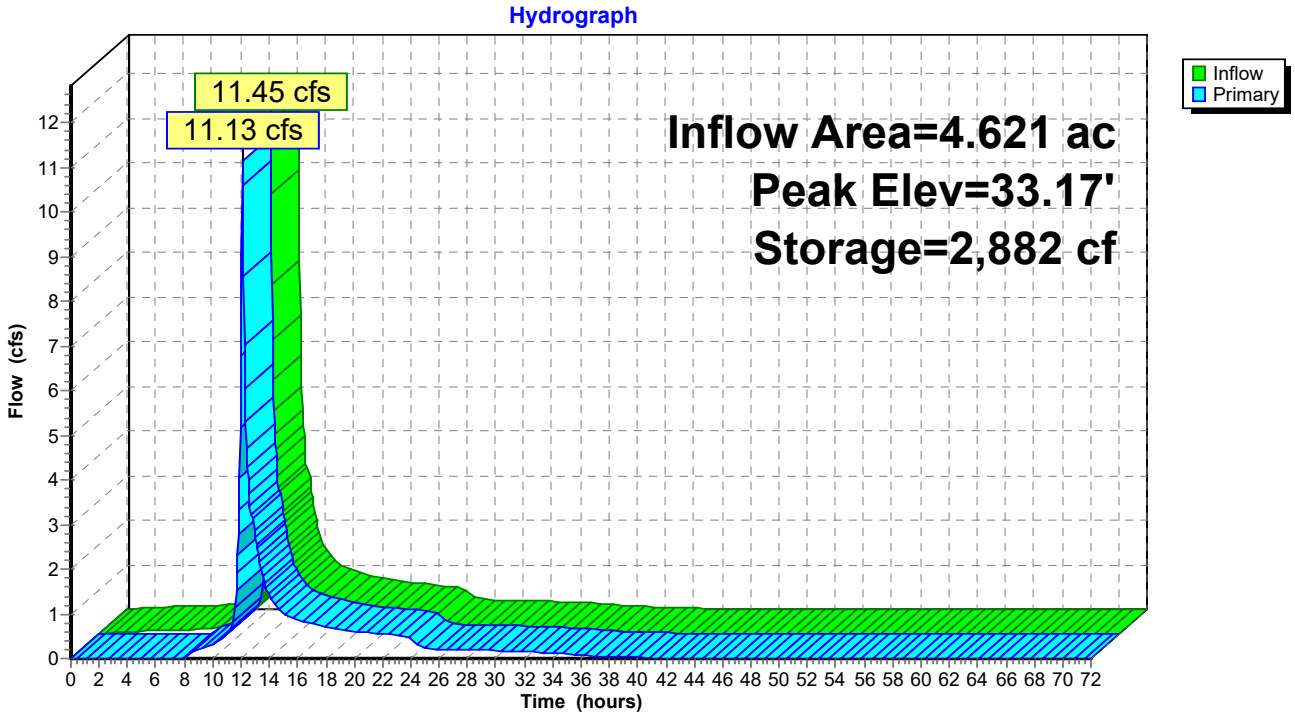
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	8,000 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,000	0	0
33.00	2,800	2,400	2,400
34.00	4,000	3,400	5,800
34.50	4,800	2,200	8,000

Device	Routing	Invert	Outlet Devices
#1	Primary	32.81'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.86 cfs @ 12.12 hrs HW=33.16' (Free Discharge)
1=Orifice/Grate (Weir Controls 10.86 cfs @ 1.94 fps)

Pond 72P: Basin 21



Summary for Pond 73P: Basin 32

Inflow Area = 2.998 ac, 24.25% Impervious, Inflow Depth = 3.63" for Custom event
Inflow = 8.27 cfs @ 12.12 hrs, Volume= 0.907 af
Outflow = 0.30 cfs @ 18.13 hrs, Volume= 0.824 af, Atten= 96%, Lag= 360.6 min
Primary = 0.30 cfs @ 18.13 hrs, Volume= 0.824 af
Routed to Pond 71P : Basin 33

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.97' @ 18.13 hrs Surf.Area= 16,135 sf Storage= 27,313 cf

Plug-Flow detention time= 1,092.5 min calculated for 0.824 af (91% of inflow)
Center-of-Mass det. time= 1,041.8 min (1,848.6 - 806.8)

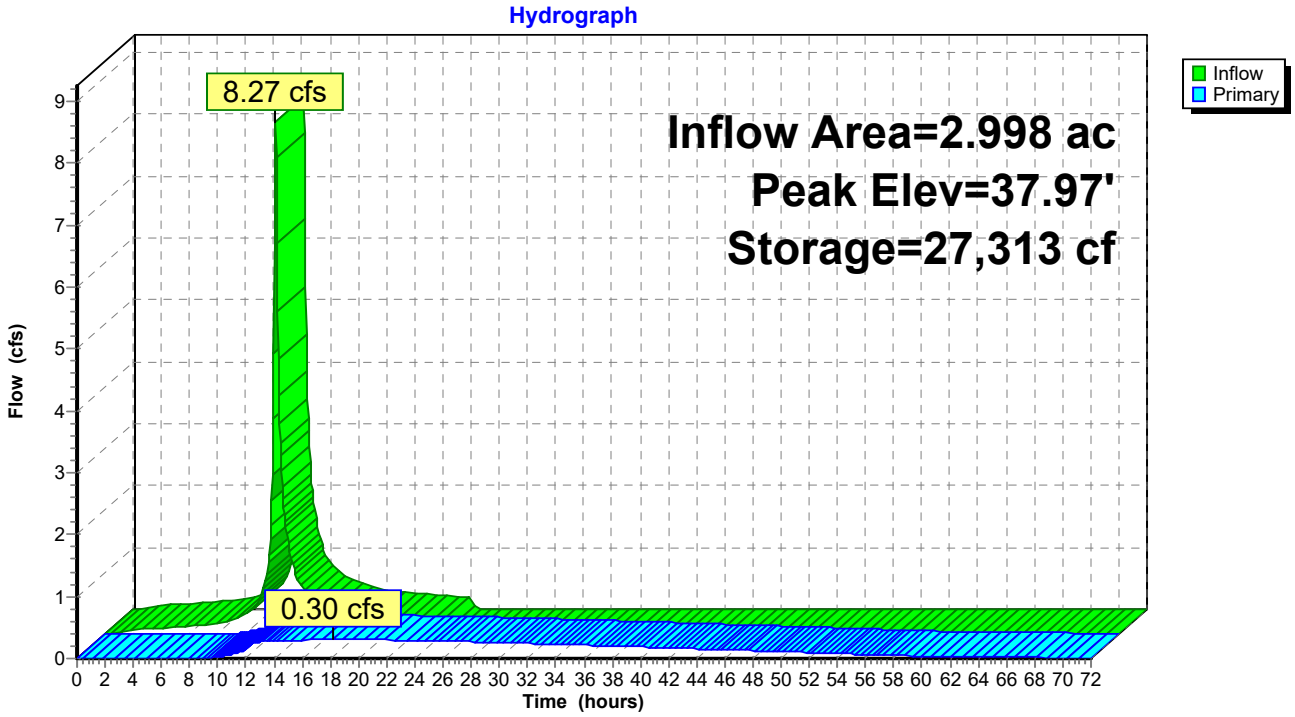
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	54,225 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	11,700	0	0
37.00	13,800	12,750	12,750
38.00	16,200	15,000	27,750
39.00	18,000	17,100	44,850
39.50	19,500	9,375	54,225

Device	Routing	Invert	Outlet Devices
#1	Primary	36.23'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	38.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.30 cfs @ 18.13 hrs HW=37.97' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.30 cfs @ 6.12 fps)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 73P: Basin 32



Summary for Subcatchment 73S: Basin 21 - Impervious

[49] Hint: Tc<2dt may require smaller dt

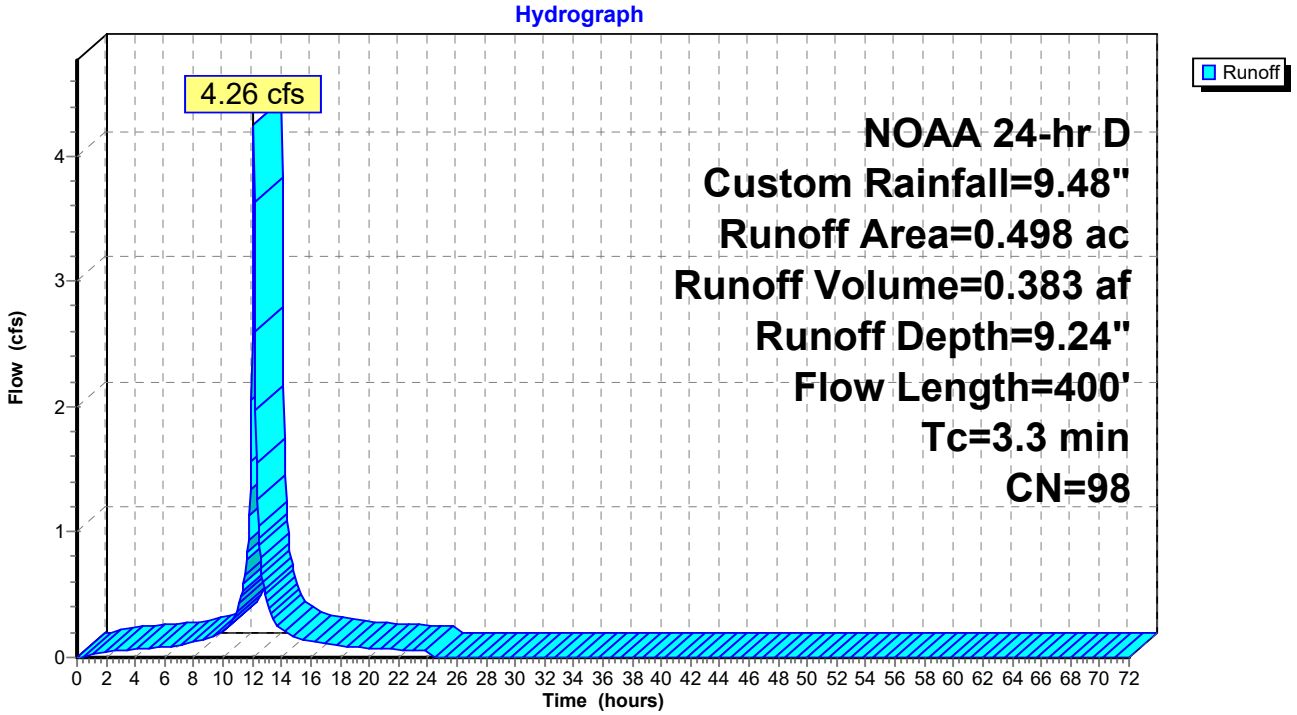
Runoff = 4.26 cfs @ 12.10 hrs, Volume= 0.383 af, Depth= 9.24"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.498	98	Impervious
	0.498		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.3	400	Total			

Subcatchment 73S: Basin 21 - Impervious



Summary for Pond 74P: Basin 39

Inflow Area = 20.988 ac, 20.72% Impervious, Inflow Depth > 2.74" for Custom event
Inflow = 32.97 cfs @ 12.19 hrs, Volume= 4.797 af
Outflow = 18.37 cfs @ 12.47 hrs, Volume= 4.174 af, Atten= 44%, Lag= 16.6 min
Primary = 18.37 cfs @ 12.47 hrs, Volume= 4.174 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.49' @ 12.47 hrs Surf.Area= 19,970 sf Storage= 50,300 cf

Plug-Flow detention time= 382.6 min calculated for 4.171 af (87% of inflow)
Center-of-Mass det. time= 249.5 min (1,268.3 - 1,018.8)

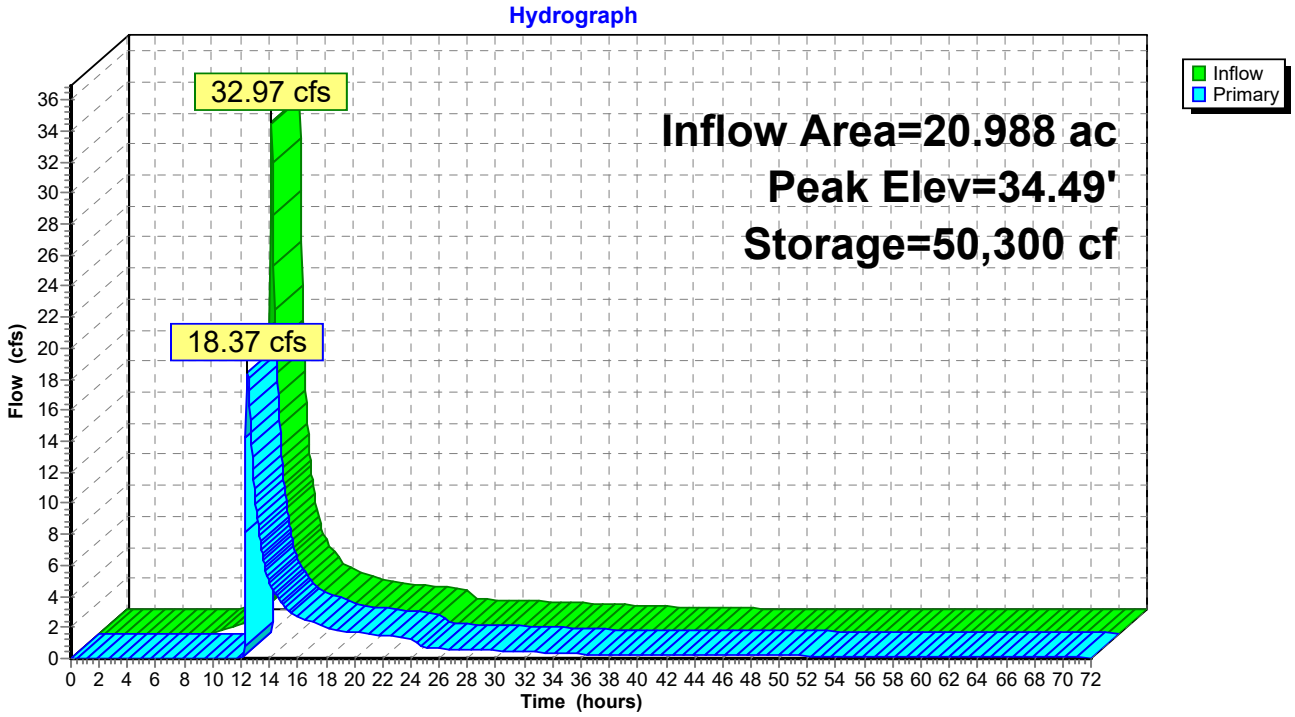
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	50,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	9,900	0	0
32.00	12,000	10,950	10,950
33.00	15,000	13,500	24,450
34.00	18,000	16,500	40,950
34.50	20,000	9,500	50,450

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=18.23 cfs @ 12.47 hrs HW=34.49' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.28 cfs @ 5.63 fps)
2=Orifice/Grate (Weir Controls 17.96 cfs @ 2.29 fps)

Pond 74P: Basin 39



Summary for Subcatchment 74S: Basin 21 - Pervious

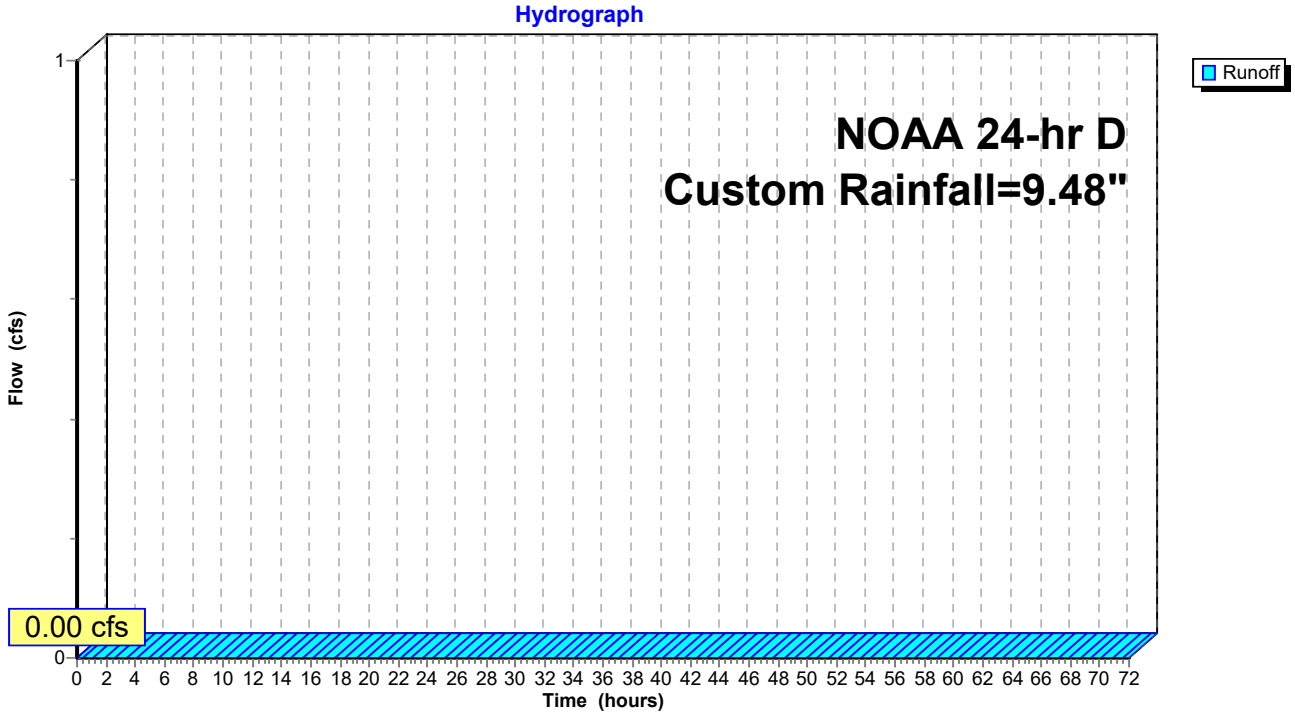
[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 74S: Basin 21 - Pervious



Summary for Pond 75P: Basin 25

Inflow Area = 17.778 ac, 32.79% Impervious, Inflow Depth = 3.97" for Custom event
Inflow = 45.66 cfs @ 12.15 hrs, Volume= 5.887 af
Outflow = 44.64 cfs @ 12.17 hrs, Volume= 5.799 af, Atten= 2%, Lag= 1.4 min
Primary = 28.26 cfs @ 12.17 hrs, Volume= 5.292 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 16.38 cfs @ 12.17 hrs, Volume= 0.508 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 27.86' @ 12.17 hrs Surf.Area= 10,931 sf Storage= 20,384 cf

Plug-Flow detention time= 121.2 min calculated for 5.799 af (99% of inflow)
Center-of-Mass det. time= 98.9 min (1,036.4 - 937.5)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	28,125 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

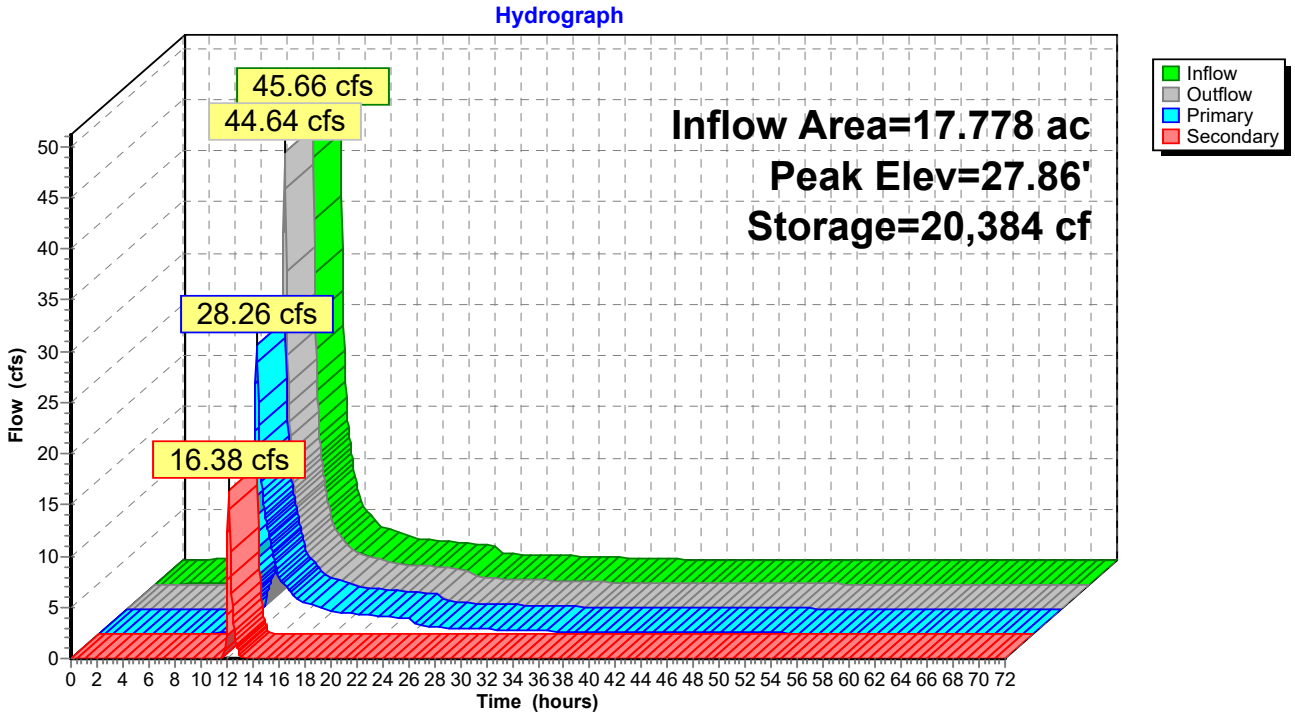
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	6,600	0	0
26.00	7,200	3,450	3,450
27.00	9,300	8,250	11,700
28.00	11,200	10,250	21,950
28.50	13,500	6,175	28,125

Device	Routing	Invert	Outlet Devices
#1	Primary	26.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	27.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	27.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=27.82 cfs @ 12.17 hrs HW=27.85' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.31 cfs @ 6.33 fps)
└—**2=Orifice/Grate** (Weir Controls 27.51 cfs @ 2.64 fps)

Secondary OutFlow Max=15.90 cfs @ 12.17 hrs HW=27.85' (Free Discharge)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 15.90 cfs @ 1.51 fps)

Pond 75P: Basin 25



Summary for Pond 76P: Basin 38

Inflow Area = 1.797 ac, 28.16% Impervious, Inflow Depth = 3.92" for Custom event
Inflow = 5.66 cfs @ 12.10 hrs, Volume= 0.587 af
Outflow = 1.55 cfs @ 12.57 hrs, Volume= 0.542 af, Atten= 73%, Lag= 28.3 min
Primary = 1.55 cfs @ 12.57 hrs, Volume= 0.542 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.78' @ 12.57 hrs Surf.Area= 8,503 sf Storage= 11,759 cf

Plug-Flow detention time= 470.0 min calculated for 0.542 af (92% of inflow)
Center-of-Mass det. time= 426.0 min (1,223.8 - 797.8)

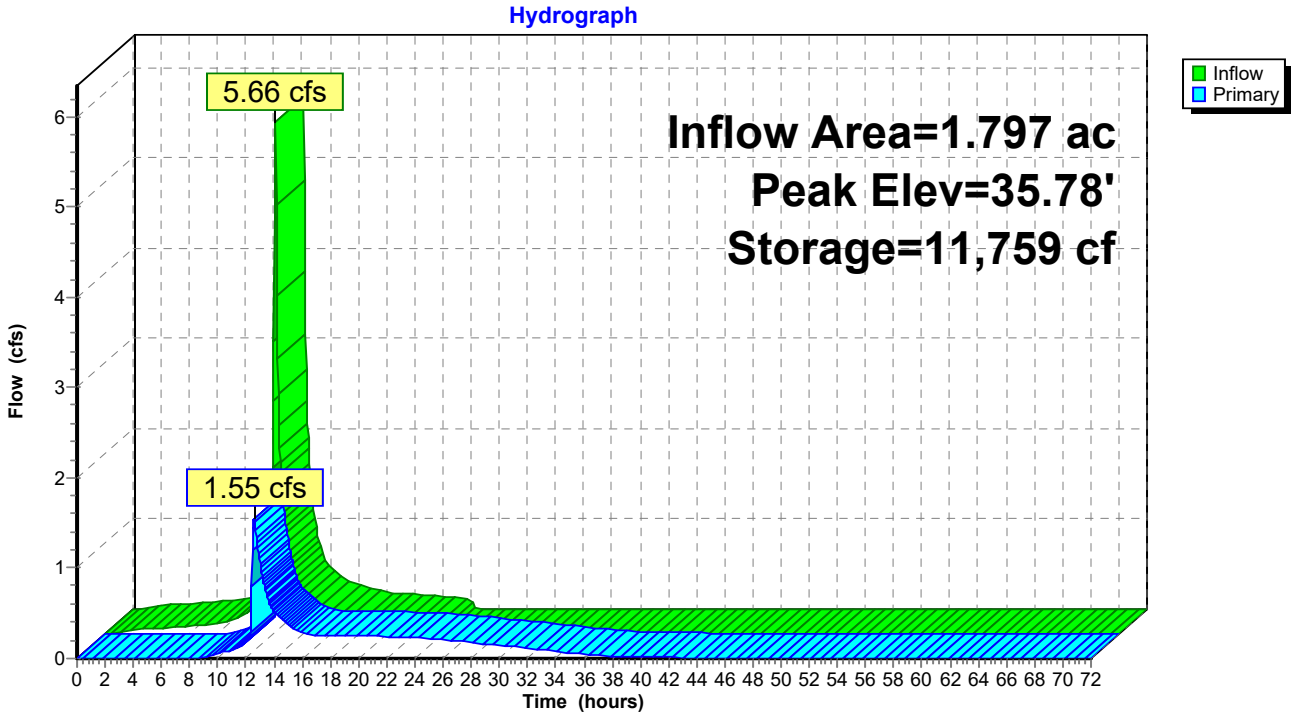
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	18,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,900	0	0
35.00	6,700	5,800	5,800
36.00	9,000	7,850	13,650
36.50	10,200	4,800	18,450

Device	Routing	Invert	Outlet Devices
#1	Primary	34.36'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.53 cfs @ 12.57 hrs HW=35.78' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.27 cfs @ 5.49 fps)
└**2=Orifice/Grate** (Weir Controls 1.26 cfs @ 0.94 fps)

Pond 76P: Basin 38



Summary for Subcatchment 76S: Basin 25 - Impervious

[49] Hint: Tc<2dt may require smaller dt

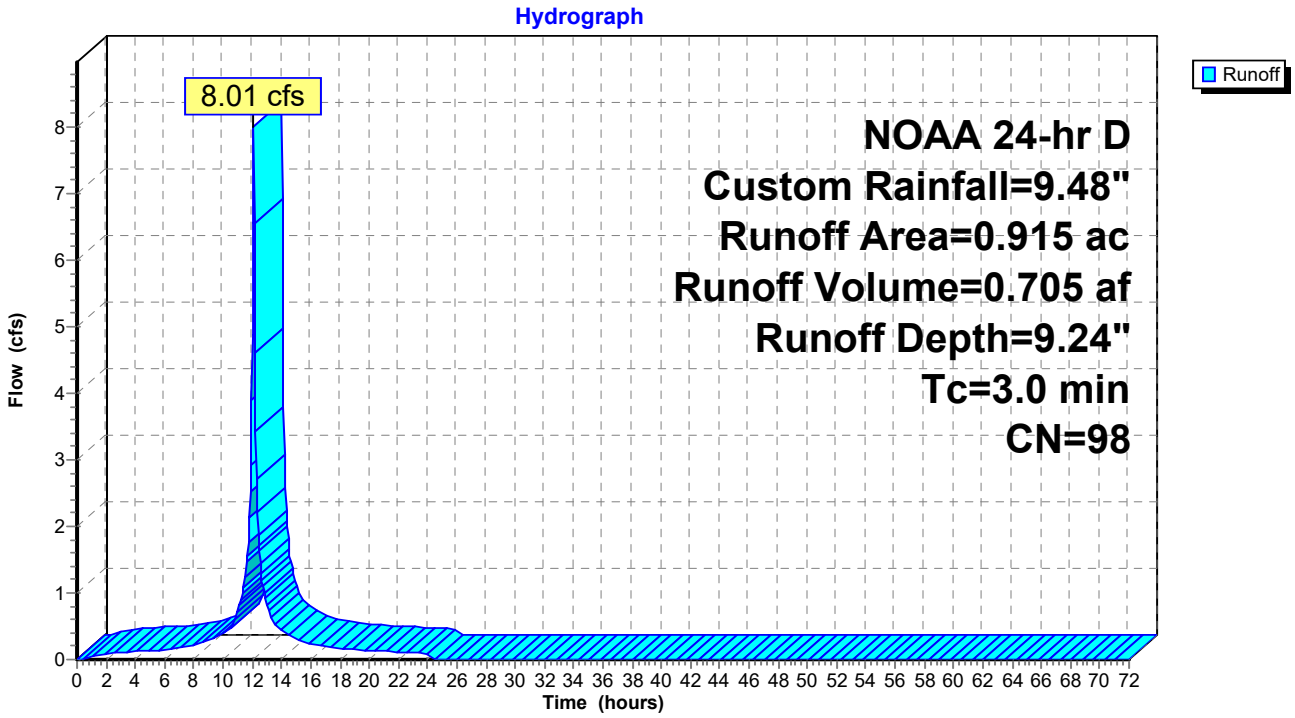
Runoff = 8.01 cfs @ 12.10 hrs, Volume= 0.705 af, Depth= 9.24"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 76S: Basin 25 - Impervious



Summary for Pond 77P: Basin 37

Inflow Area = 20.254 ac, 21.47% Impervious, Inflow Depth > 2.81" for Custom event
Inflow = 32.59 cfs @ 12.17 hrs, Volume= 4.739 af
Outflow = 32.15 cfs @ 12.19 hrs, Volume= 4.685 af, Atten= 1%, Lag= 1.5 min
Primary = 32.15 cfs @ 12.19 hrs, Volume= 4.685 af
Routed to Pond 74P : Basin 39

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.42' @ 12.19 hrs Surf.Area= 4,507 sf Storage= 5,299 cf

Plug-Flow detention time= 33.8 min calculated for 4.685 af (99% of inflow)
Center-of-Mass det. time= 11.2 min (1,021.5 - 1,010.3)

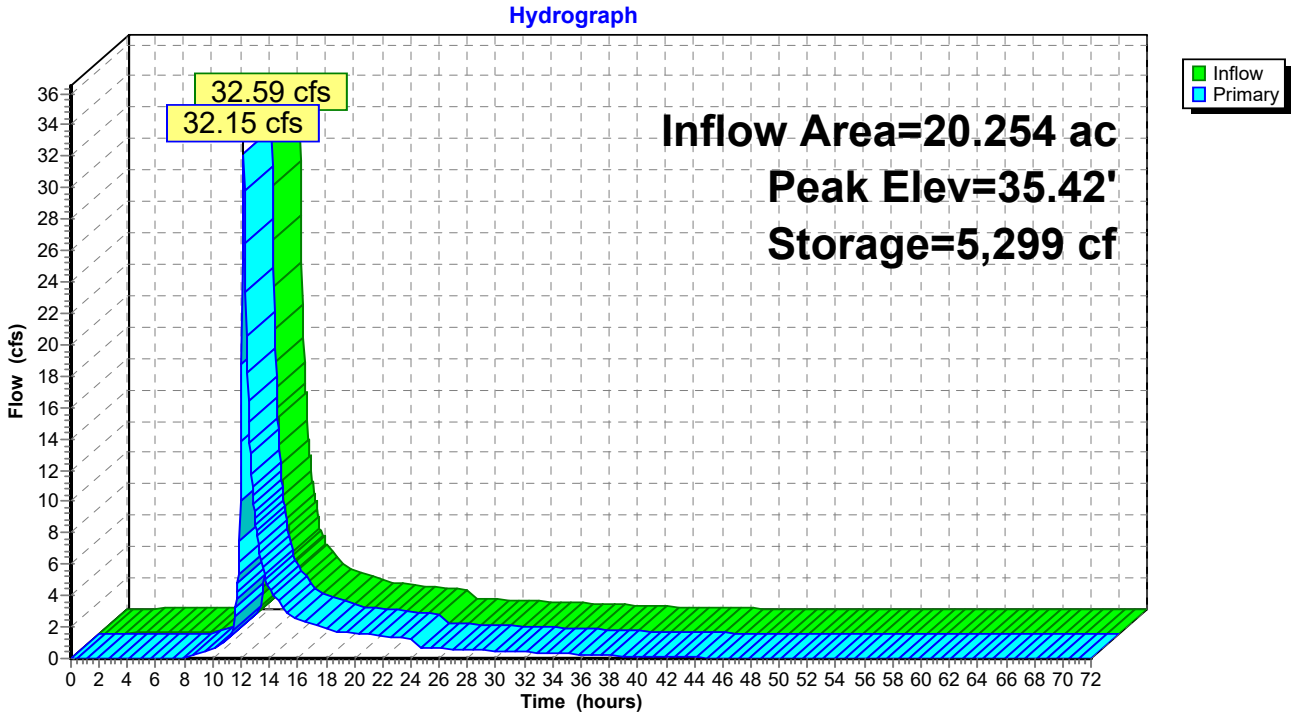
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	5,650 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	3,000	0	0
35.00	4,000	3,500	3,500
35.50	4,600	2,150	5,650

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=31.92 cfs @ 12.19 hrs HW=35.42' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 31.92 cfs @ 2.77 fps)

Pond 77P: Basin 37



Summary for Subcatchment 77S: Basin 25 - Pervious

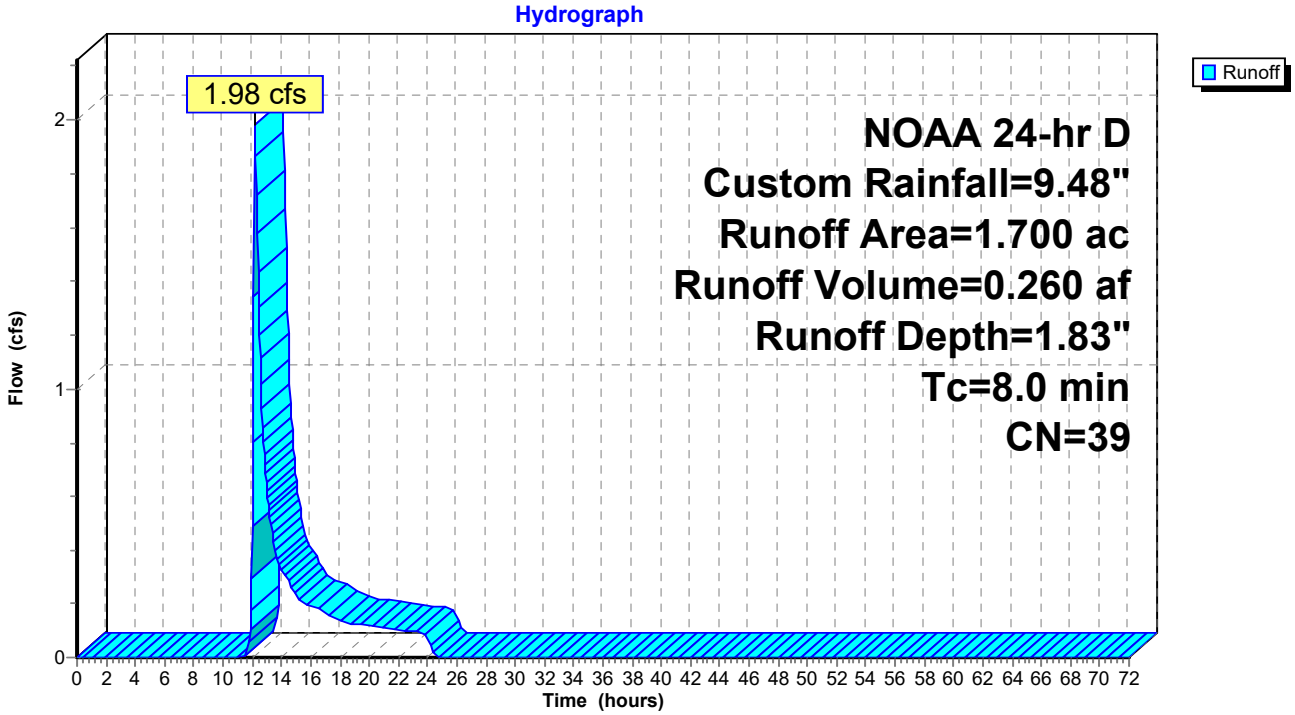
Runoff = 1.98 cfs @ 12.20 hrs, Volume= 0.260 af, Depth= 1.83"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.700	39	>75% Grass cover, Good, HSG A
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 77S: Basin 25 - Pervious



Summary for Pond 78P: Basin 24

Inflow Area = 2.540 ac, 35.00% Impervious, Inflow Depth = 4.43" for Custom event
Inflow = 9.13 cfs @ 12.11 hrs, Volume= 0.937 af
Outflow = 8.38 cfs @ 12.15 hrs, Volume= 0.861 af, Atten= 8%, Lag= 2.5 min
Primary = 8.38 cfs @ 12.15 hrs, Volume= 0.861 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 31.00' @ 12.15 hrs Surf.Area= 5,910 sf Storage= 4,979 cf

Plug-Flow detention time= 94.6 min calculated for 0.860 af (92% of inflow)
Center-of-Mass det. time= 48.5 min (835.2 - 786.7)

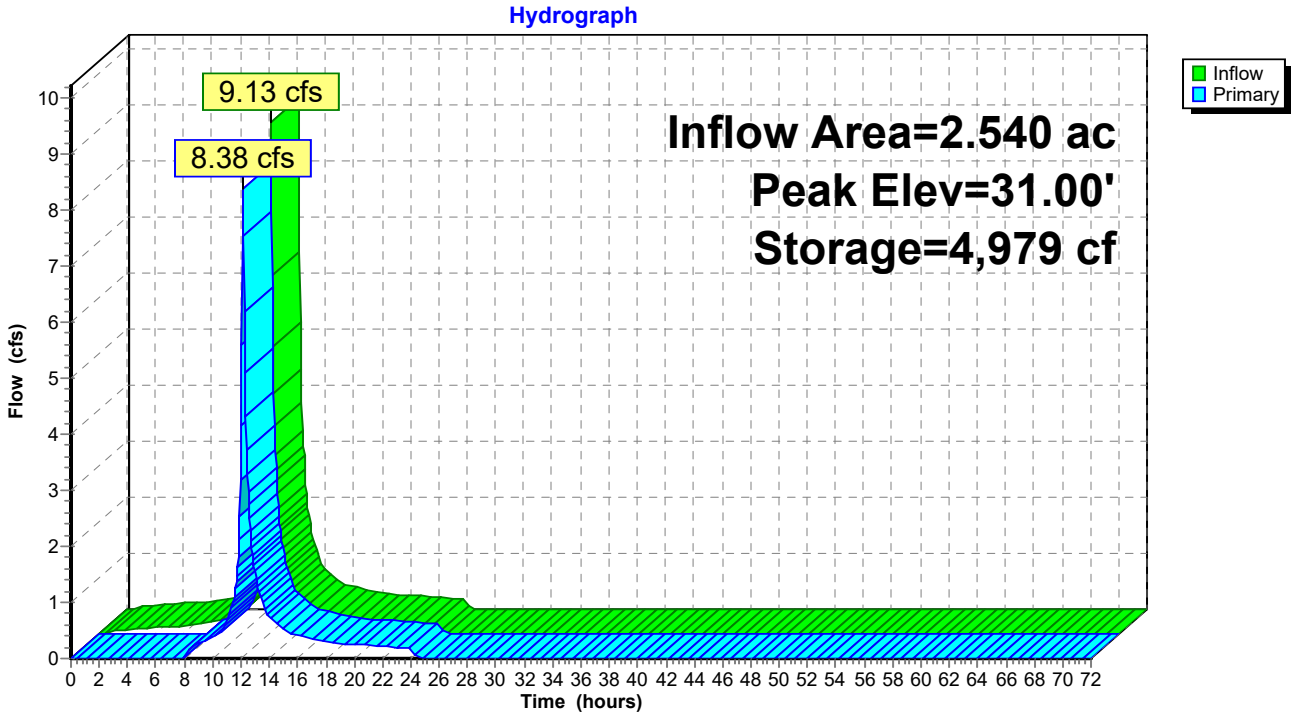
Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	16,275 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	4,000	0	0
31.00	5,900	4,950	4,950
32.00	8,000	6,950	11,900
32.50	9,500	4,375	16,275

Device	Routing	Invert	Outlet Devices
#1	Primary	30.71'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.37 cfs @ 12.15 hrs HW=31.00' (Free Discharge)
1=Orifice/Grate (Weir Controls 8.37 cfs @ 1.78 fps)

Pond 78P: Basin 24



Summary for Pond 79P: Basin 34

[92] Warning: Device #2 is above defined storage
[93] Warning: Storage range exceeded by 0.10'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=32)

Inflow Area = 1.715 ac, 25.31% Impervious, Inflow Depth = 3.71" for Custom event
Inflow = 4.87 cfs @ 12.11 hrs, Volume= 0.530 af
Outflow = 1.97 cfs @ 12.65 hrs, Volume= 0.490 af, Atten= 60%, Lag= 32.2 min
Primary = 1.97 cfs @ 12.65 hrs, Volume= 0.490 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.60' @ 12.65 hrs Surf.Area= 9,400 sf Storage= 11,200 cf

Plug-Flow detention time= 532.3 min calculated for 0.489 af (92% of inflow)
Center-of-Mass det. time= 490.8 min (1,295.2 - 804.4)

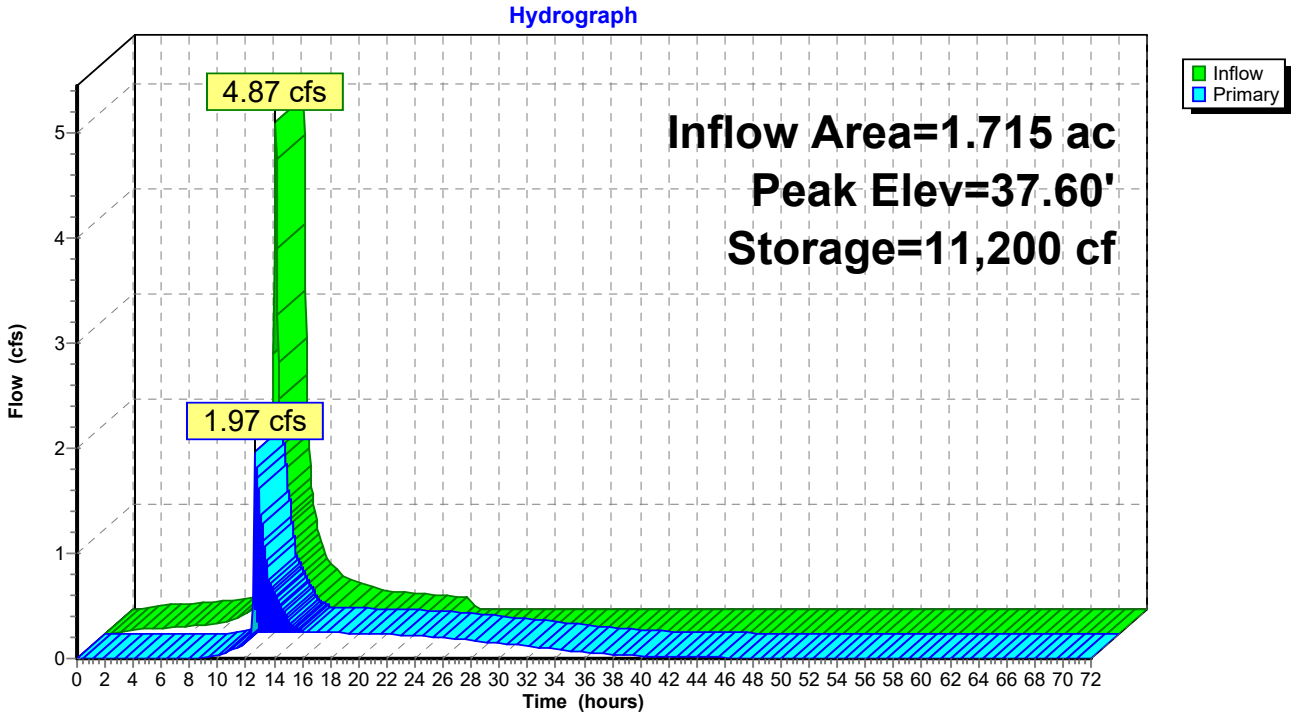
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	11,200 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	5,700	0	0
37.00	8,000	6,850	6,850
37.50	9,400	4,350	11,200

Device	Routing	Invert	Outlet Devices
#1	Primary	36.27'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.90 cfs @ 12.65 hrs HW=37.60' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.26 cfs @ 5.28 fps)
2=Orifice/Grate (Weir Controls 1.64 cfs @ 1.03 fps)

Pond 79P: Basin 34



Summary for Subcatchment 79S: Basin 24 - Impervious

[49] Hint: Tc<2dt may require smaller dt

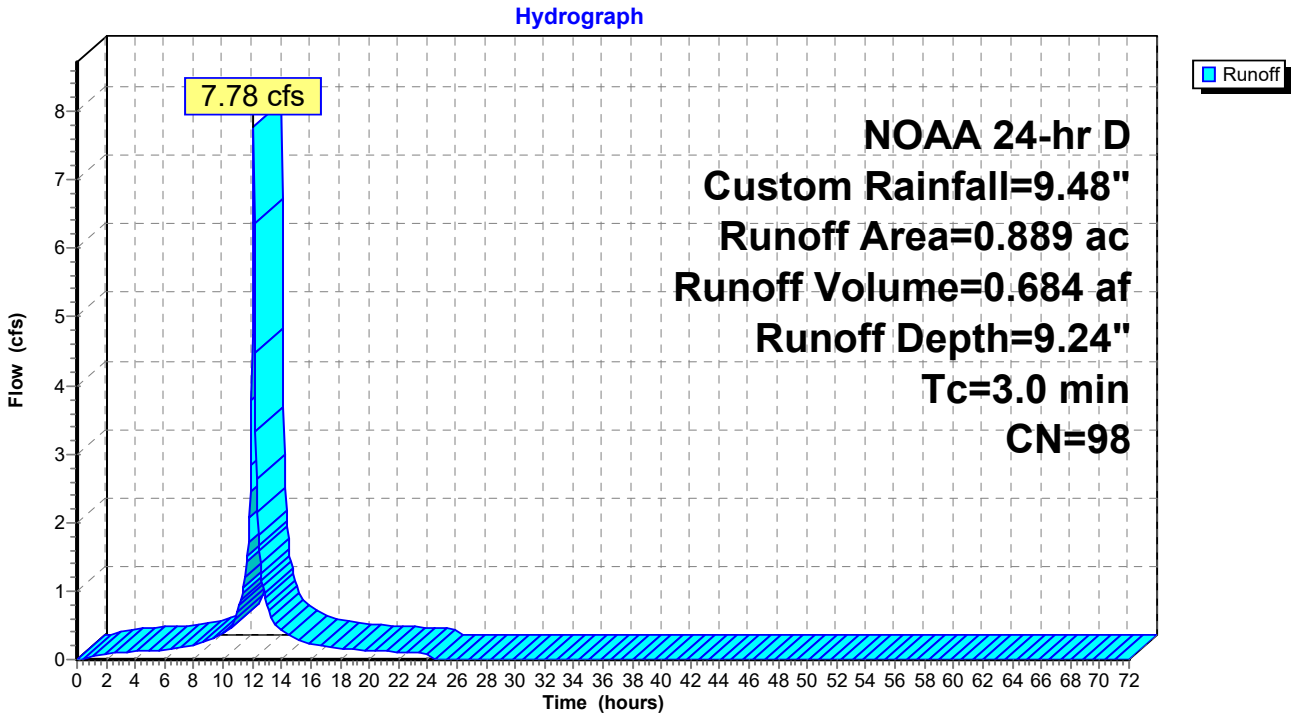
Runoff = 7.78 cfs @ 12.10 hrs, Volume= 0.684 af, Depth= 9.24"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.889	98	Impervious
	0.889		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 79S: Basin 24 - Impervious



Summary for Pond 80P: Basin 35

Inflow Area = 14.918 ac, 10.66% Impervious, Inflow Depth = 1.81" for Custom event
Inflow = 14.74 cfs @ 12.14 hrs, Volume= 2.254 af
Outflow = 12.86 cfs @ 12.21 hrs, Volume= 2.111 af, Atten= 13%, Lag= 4.1 min
Primary = 12.86 cfs @ 12.21 hrs, Volume= 2.111 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.39' @ 12.21 hrs Surf.Area= 11,705 sf Storage= 21,628 cf

Plug-Flow detention time= 242.3 min calculated for 2.110 af (94% of inflow)
Center-of-Mass det. time= 208.3 min (1,051.5 - 843.2)

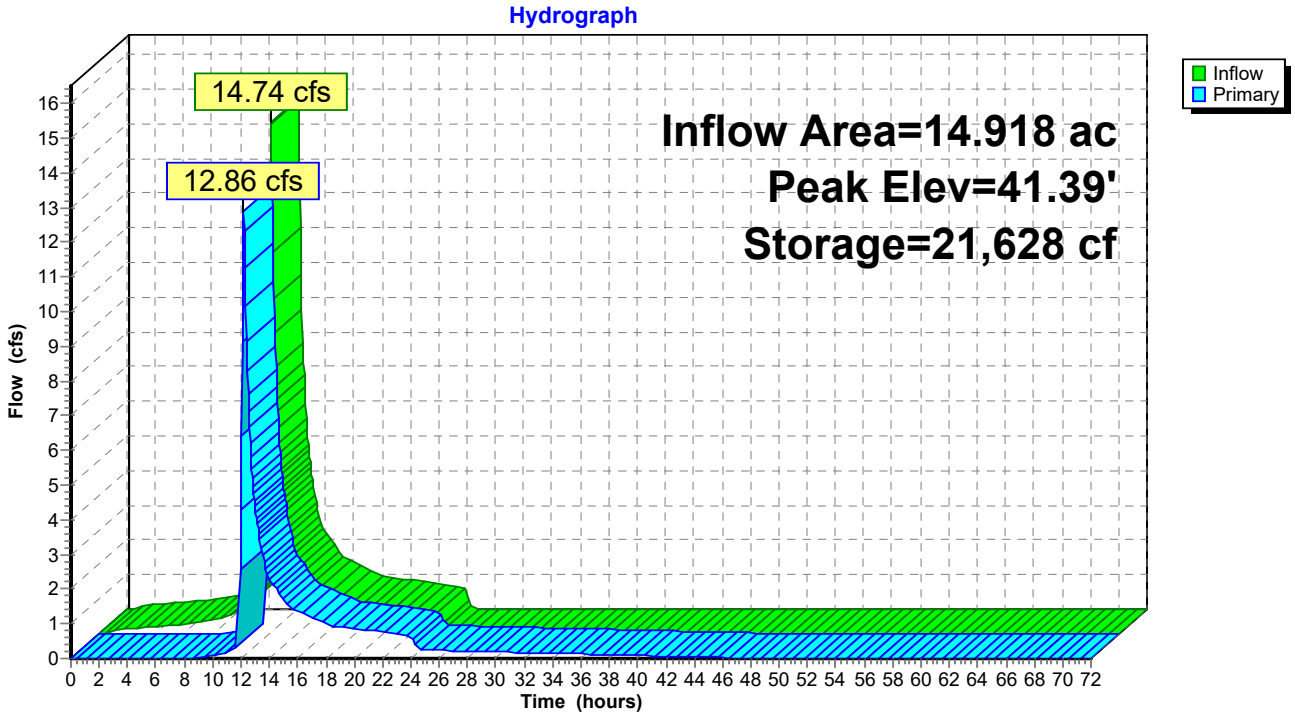
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	22,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	6,700	0	0
40.00	8,600	7,650	7,650
41.00	10,700	9,650	17,300
41.50	12,000	5,675	22,975

Device	Routing	Invert	Outlet Devices
#1	Primary	39.80'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.75 cfs @ 12.21 hrs HW=41.38' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.29 cfs @ 5.82 fps)
└**2=Orifice/Grate** (Weir Controls 12.47 cfs @ 2.03 fps)

Pond 80P: Basin 35



Summary for Subcatchment 80S: Basin 24 - Pervious

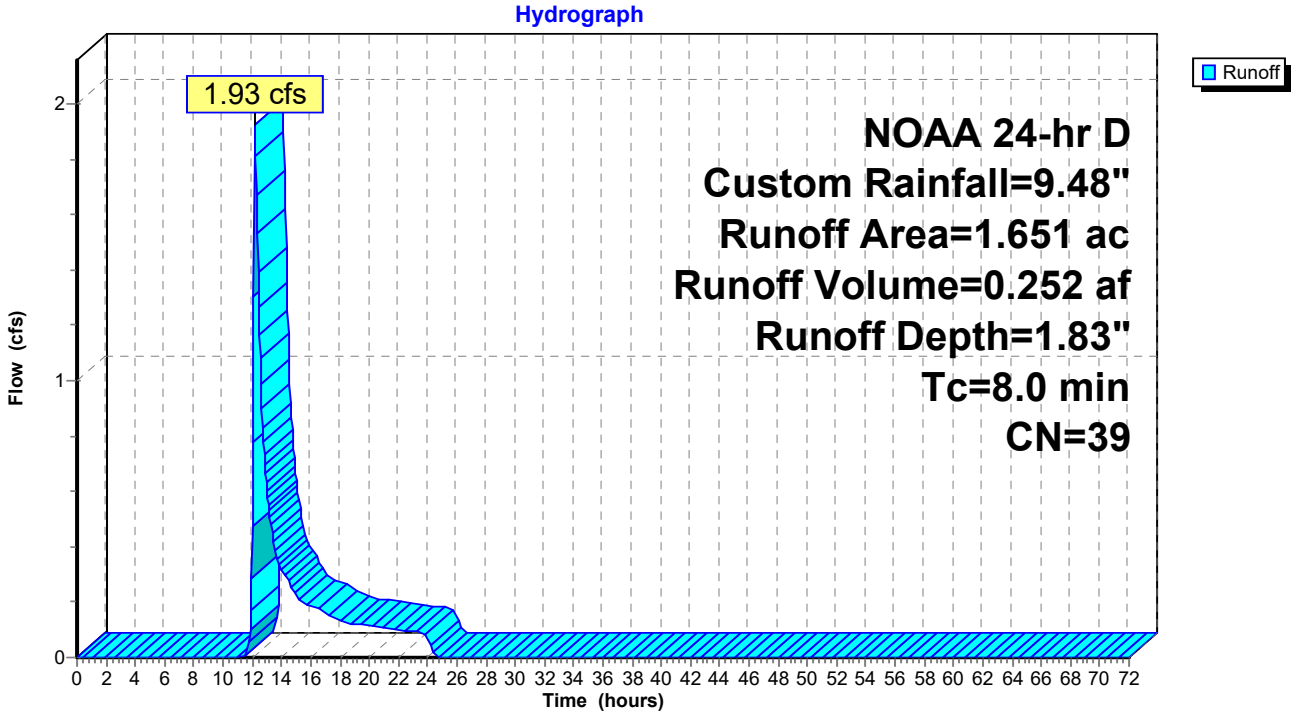
Runoff = 1.93 cfs @ 12.20 hrs, Volume= 0.252 af, Depth= 1.83"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.651	39	>75% Grass cover, Good, HSG A
1.651		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 80S: Basin 24 - Pervious



Summary for Pond 81P: Basin 27

Inflow Area = 3.012 ac, 25.00% Impervious, Inflow Depth = 3.69" for Custom event
Inflow = 8.48 cfs @ 12.11 hrs, Volume= 0.925 af
Outflow = 7.75 cfs @ 12.16 hrs, Volume= 0.859 af, Atten= 9%, Lag= 2.8 min
Primary = 7.75 cfs @ 12.16 hrs, Volume= 0.859 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.27' @ 12.16 hrs Surf.Area= 6,459 sf Storage= 8,357 cf

Plug-Flow detention time= 196.5 min calculated for 0.859 af (93% of inflow)
Center-of-Mass det. time= 155.7 min (960.8 - 805.1)

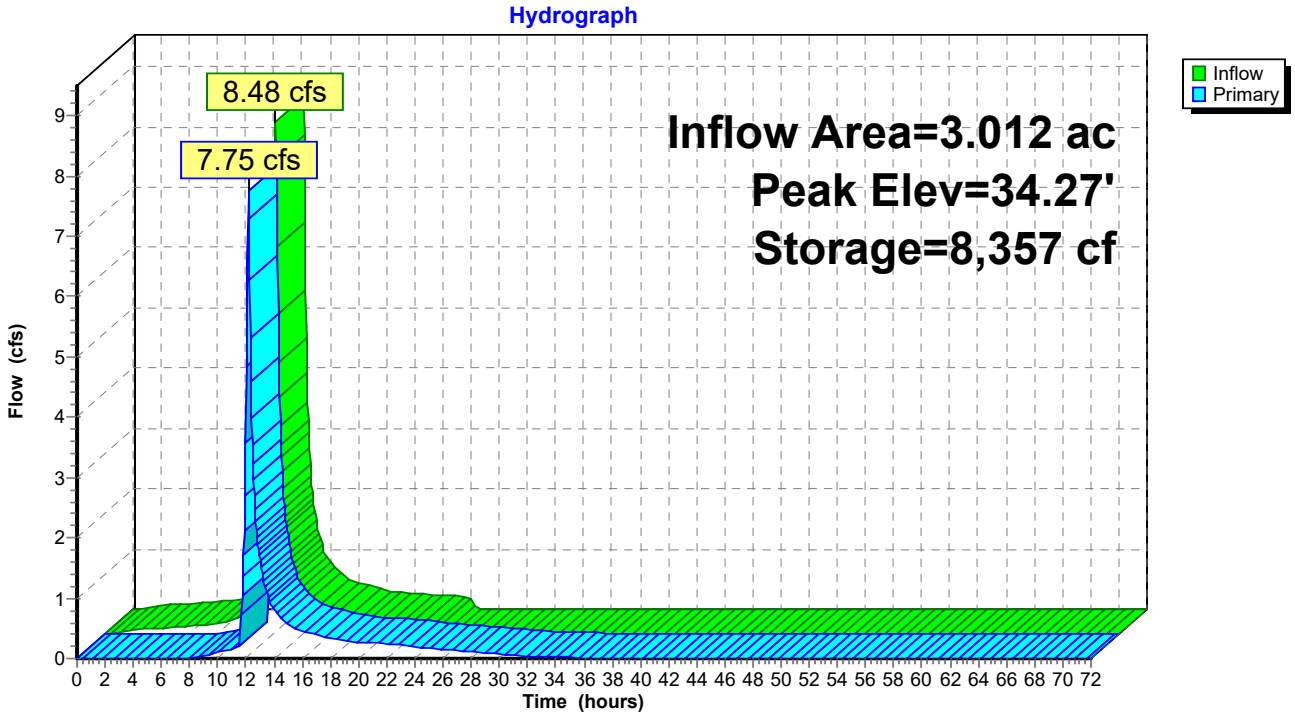
Volume	Invert	Avail.Storage	Storage Description
#1	32.50'	9,875 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.50	3,400	0	0
33.00	3,900	1,825	1,825
34.00	5,800	4,850	6,675
34.50	7,000	3,200	9,875

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.61 cfs @ 12.16 hrs HW=34.27' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.22 cfs @ 4.58 fps)
2=Orifice/Grate (Weir Controls 7.39 cfs @ 1.70 fps)

Pond 81P: Basin 27



Summary for Pond 82P: Basin 36

Inflow Area = 1.697 ac,100.00% Impervious, Inflow Depth = 9.24" for Custom event
Inflow = 12.47 cfs @ 12.11 hrs, Volume= 1.307 af
Outflow = 11.06 cfs @ 12.17 hrs, Volume= 1.157 af, Atten= 11%, Lag= 3.3 min
Primary = 11.06 cfs @ 12.17 hrs, Volume= 1.157 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.35' @ 12.17 hrs Surf.Area= 9,829 sf Storage= 17,475 cf

Plug-Flow detention time= 312.7 min calculated for 1.157 af (89% of inflow)
Center-of-Mass det. time= 252.9 min (995.5 - 742.5)

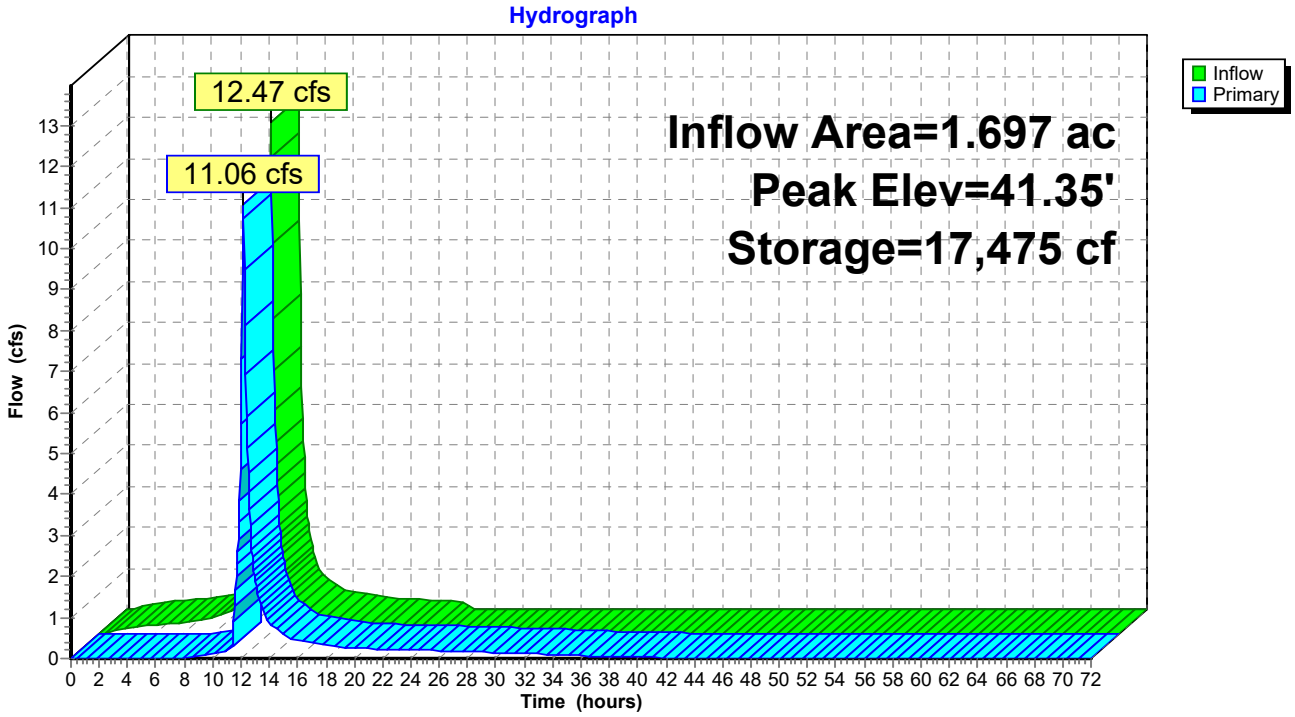
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	18,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	5,300	0	0
40.00	6,900	6,100	6,100
41.00	9,200	8,050	14,150
41.50	10,100	4,825	18,975

Device	Routing	Invert	Outlet Devices
#1	Primary	40.04'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.86 cfs @ 12.17 hrs HW=41.35' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.26 cfs @ 5.23 fps)
2=Orifice/Grate (Weir Controls 10.61 cfs @ 1.92 fps)

Pond 82P: Basin 36



Summary for Subcatchment 82S: Basin 27 - Impervious

[49] Hint: Tc<2dt may require smaller dt

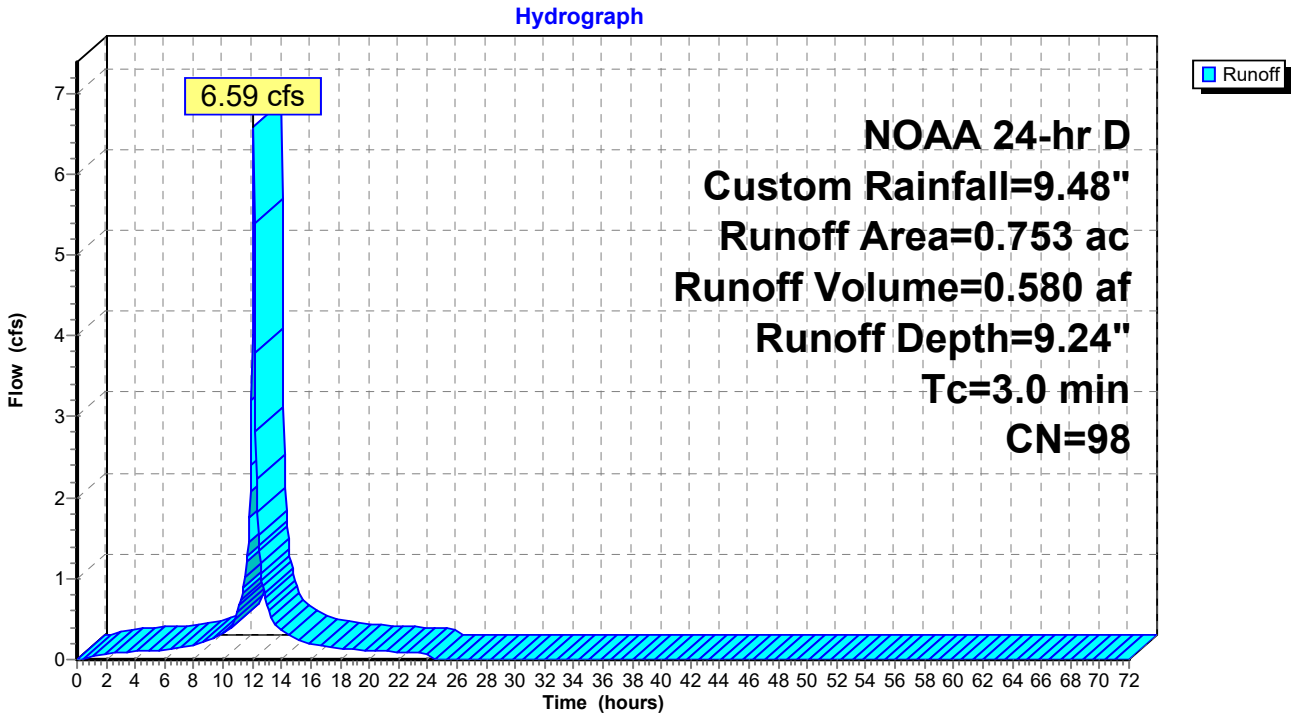
Runoff = 6.59 cfs @ 12.10 hrs, Volume= 0.580 af, Depth= 9.24"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.753	98	
	0.753		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 82S: Basin 27 - Impervious



Summary for Subcatchment 83S: Basin 27 - Pervious

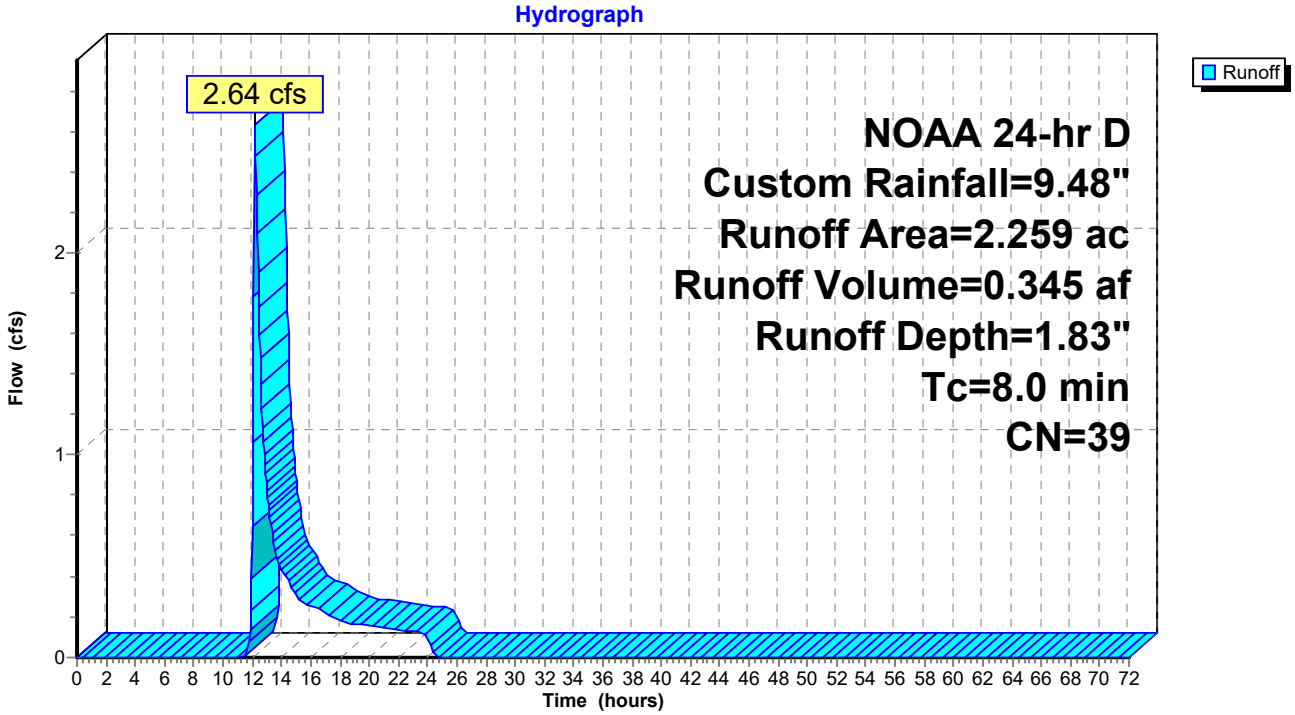
Runoff = 2.64 cfs @ 12.20 hrs, Volume= 0.345 af, Depth= 1.83"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
2.259	39	>75% Grass cover, Good, HSG A
2.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 83S: Basin 27 - Pervious



Summary for Subcatchment 84S: Basin 29 - Impervious

[49] Hint: Tc<2dt may require smaller dt

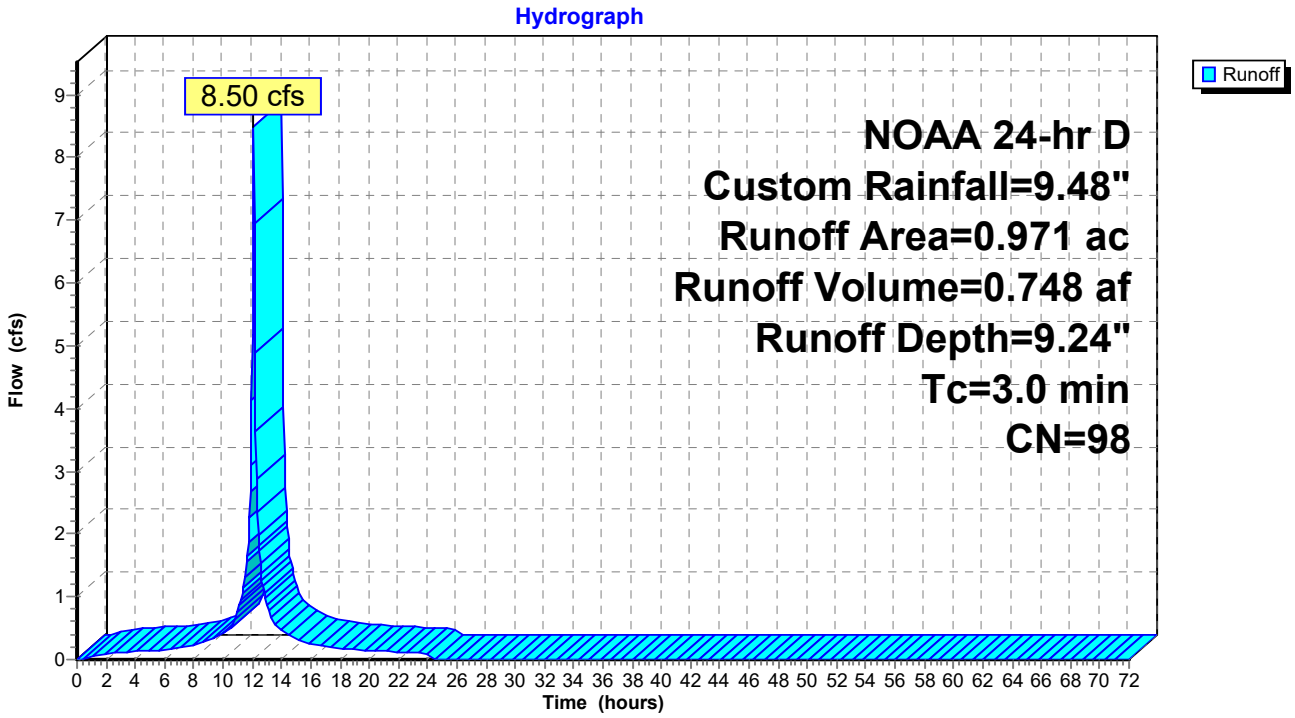
Runoff = 8.50 cfs @ 12.10 hrs, Volume= 0.748 af, Depth= 9.24"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.971	98	Impervious
	0.971		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 84S: Basin 29 - Impervious



Summary for Pond 85P: Basin 28

Inflow Area = 1.744 ac, 35.03% Impervious, Inflow Depth = 4.43" for Custom event
Inflow = 6.40 cfs @ 12.11 hrs, Volume= 0.644 af
Outflow = 6.12 cfs @ 12.14 hrs, Volume= 0.591 af, Atten= 4%, Lag= 1.8 min
Primary = 6.12 cfs @ 12.14 hrs, Volume= 0.591 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.64' @ 12.14 hrs Surf.Area= 3,367 sf Storage= 3,057 cf

Plug-Flow detention time= 93.1 min calculated for 0.591 af (92% of inflow)
Center-of-Mass det. time= 46.2 min (832.6 - 786.3)

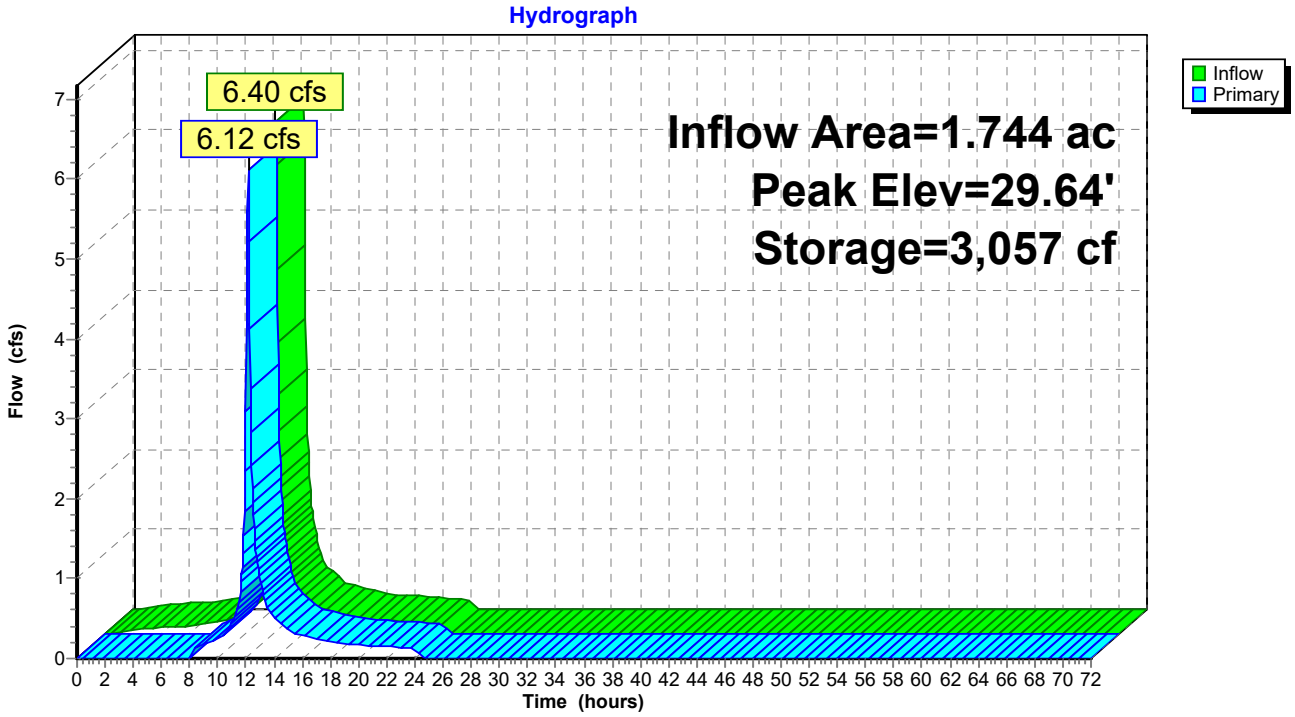
Volume	Invert	Avail.Storage	Storage Description
#1	28.50'	6,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.50	2,000	0	0
29.00	2,600	1,150	1,150
30.00	3,800	3,200	4,350
30.50	4,600	2,100	6,450

Device	Routing	Invert	Outlet Devices
#1	Primary	29.40'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.04 cfs @ 12.14 hrs HW=29.64' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 6.04 cfs @ 1.59 fps)

Pond 85P: Basin 28



Summary for Subcatchment 85S: Basin 29 - Pervious

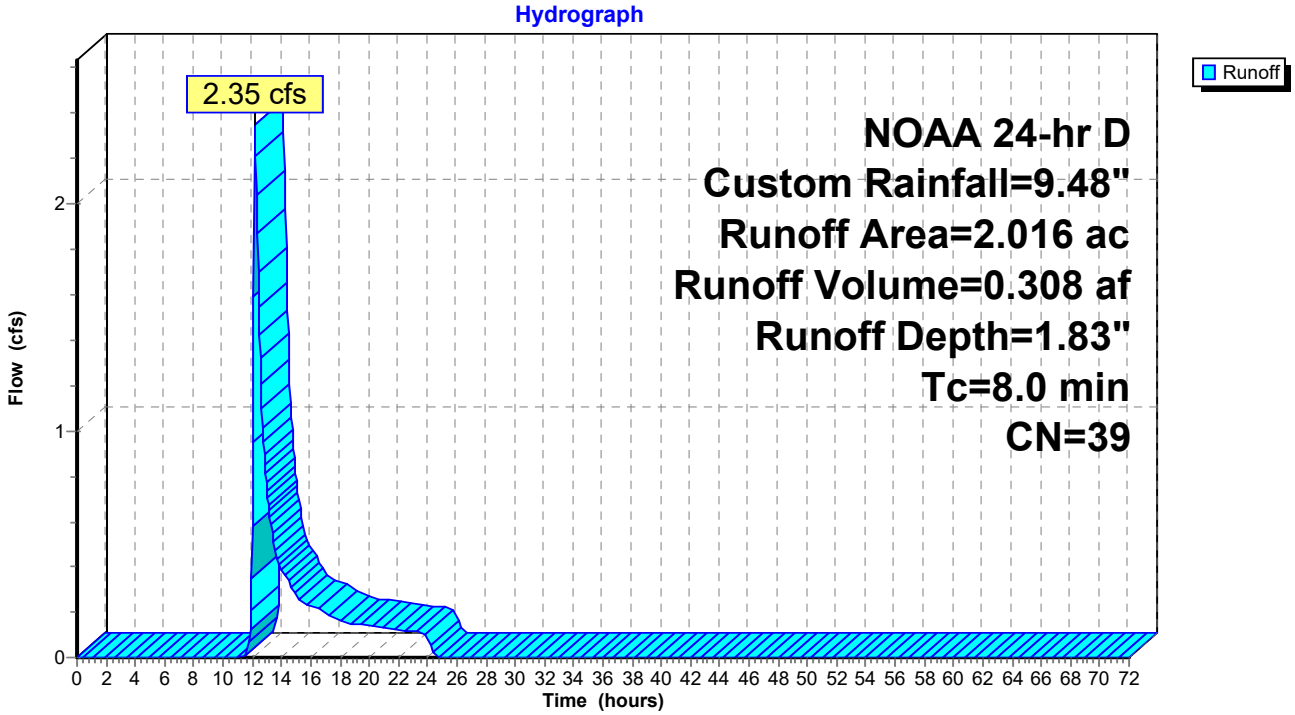
Runoff = 2.35 cfs @ 12.20 hrs, Volume= 0.308 af, Depth= 1.83"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
2.016	39	>75% Grass cover, Good, HSG A
2.016		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 85S: Basin 29 - Pervious

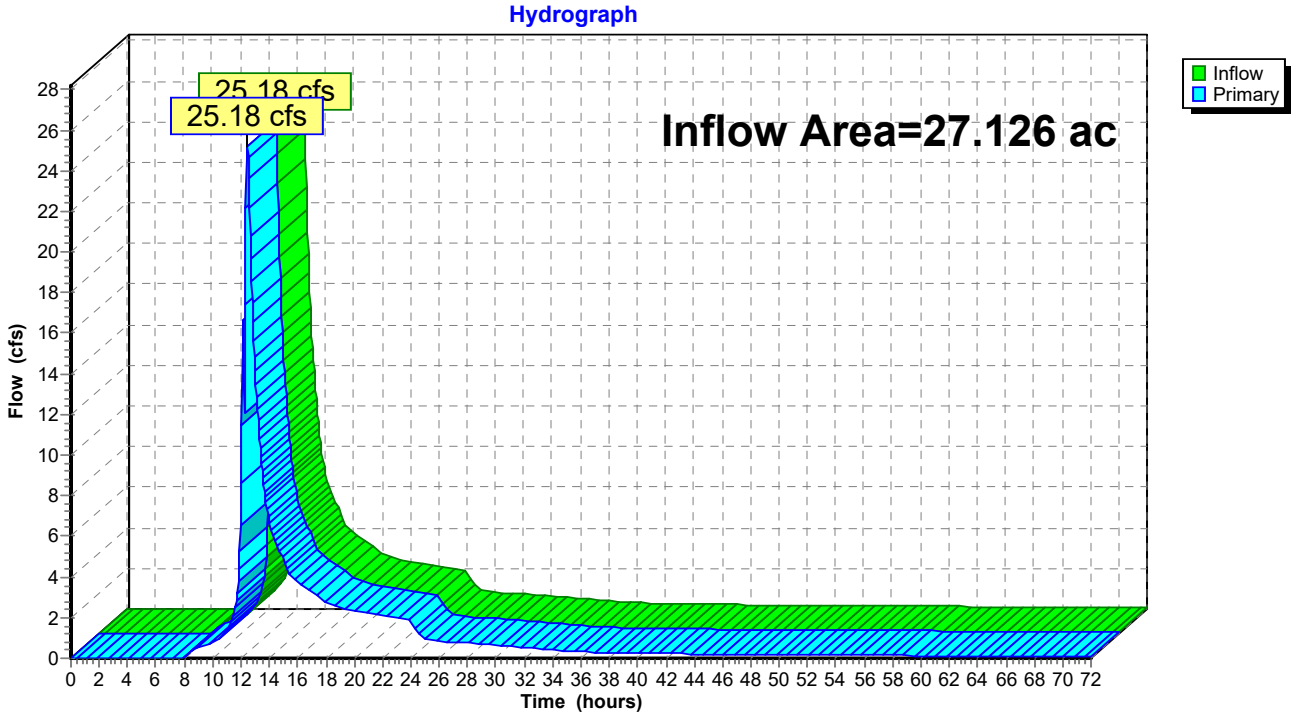


Summary for Link 86L: Outlet to Wet Pond

Inflow Area = 27.126 ac, 24.26% Impervious, Inflow Depth > 2.79" for Custom event
Inflow = 25.18 cfs @ 12.45 hrs, Volume= 6.296 af
Primary = 25.18 cfs @ 12.45 hrs, Volume= 6.296 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 62P : Basin 26 (Wet Pond)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 86L: Outlet to Wet Pond



Summary for Subcatchment 86S: Basin 28 - Impervious

[49] Hint: Tc<2dt may require smaller dt

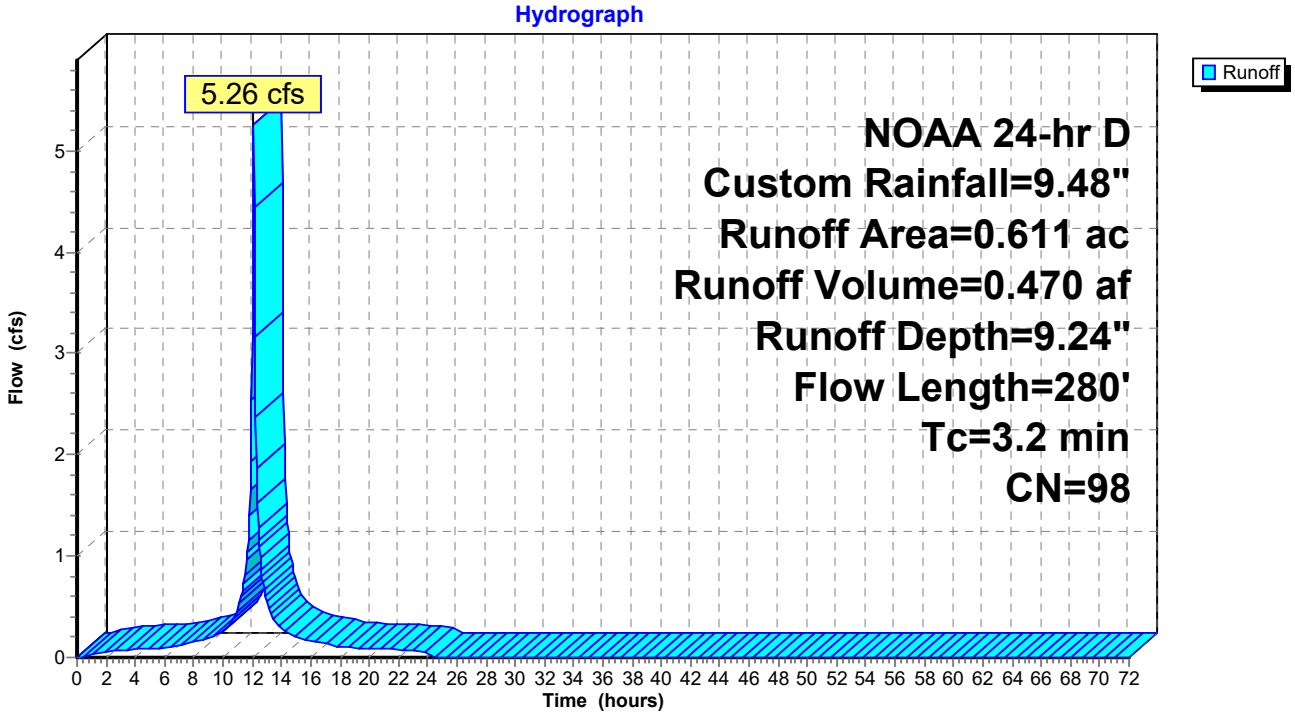
Runoff = 5.26 cfs @ 12.10 hrs, Volume= 0.470 af, Depth= 9.24"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.611	98	Impervious
	0.611		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	280	Total			

Subcatchment 86S: Basin 28 - Impervious

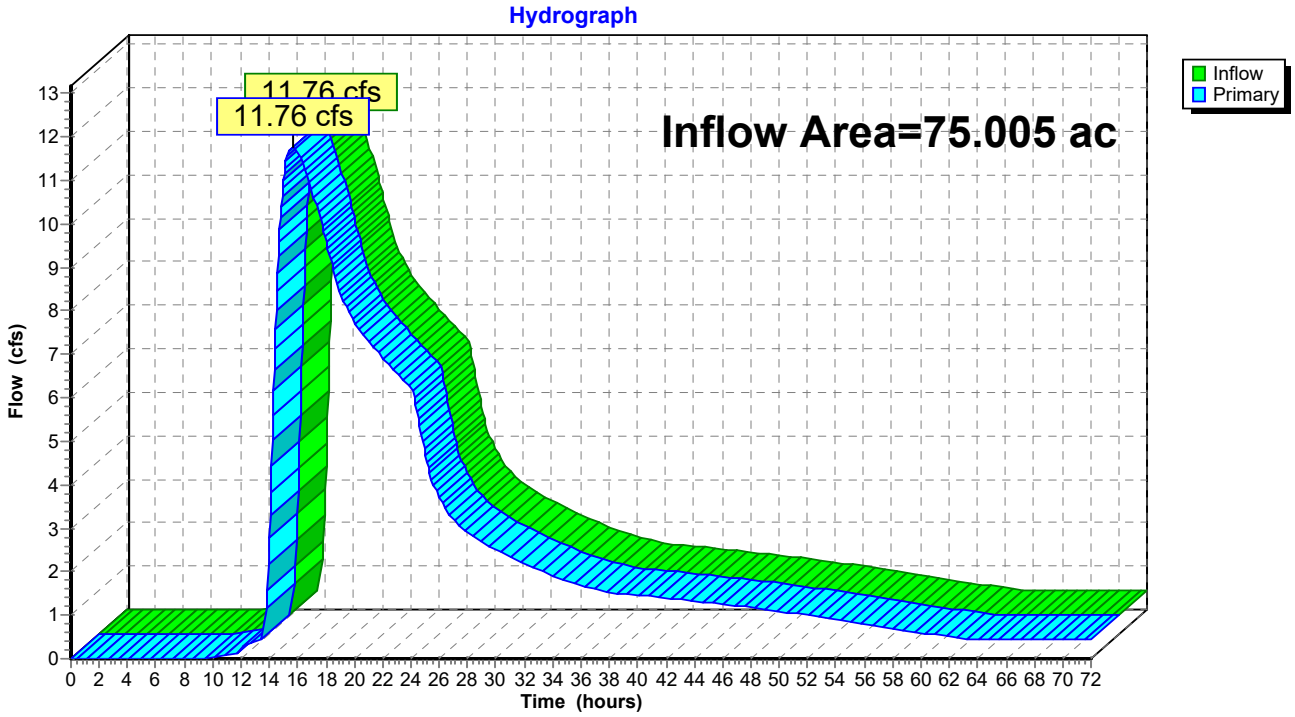


Summary for Link 87L: Total Area to Tuckerton Creek

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 2.03" for Custom event
Inflow = 11.76 cfs @ 15.65 hrs, Volume= 12.681 af
Primary = 11.76 cfs @ 15.65 hrs, Volume= 12.681 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 87L: Total Area to Tuckerton Creek



Summary for Pond 87P: Basin 40

Inflow Area = 2.597 ac, 42.97% Impervious, Inflow Depth = 5.02" for Custom event
Inflow = 10.97 cfs @ 12.11 hrs, Volume= 1.086 af
Outflow = 10.19 cfs @ 12.14 hrs, Volume= 0.989 af, Atten= 7%, Lag= 2.1 min
Primary = 10.19 cfs @ 12.14 hrs, Volume= 0.989 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.32' @ 12.14 hrs Surf.Area= 5,248 sf Storage= 5,903 cf

Plug-Flow detention time= 100.8 min calculated for 0.989 af (91% of inflow)
Center-of-Mass det. time= 50.7 min (826.6 - 775.9)

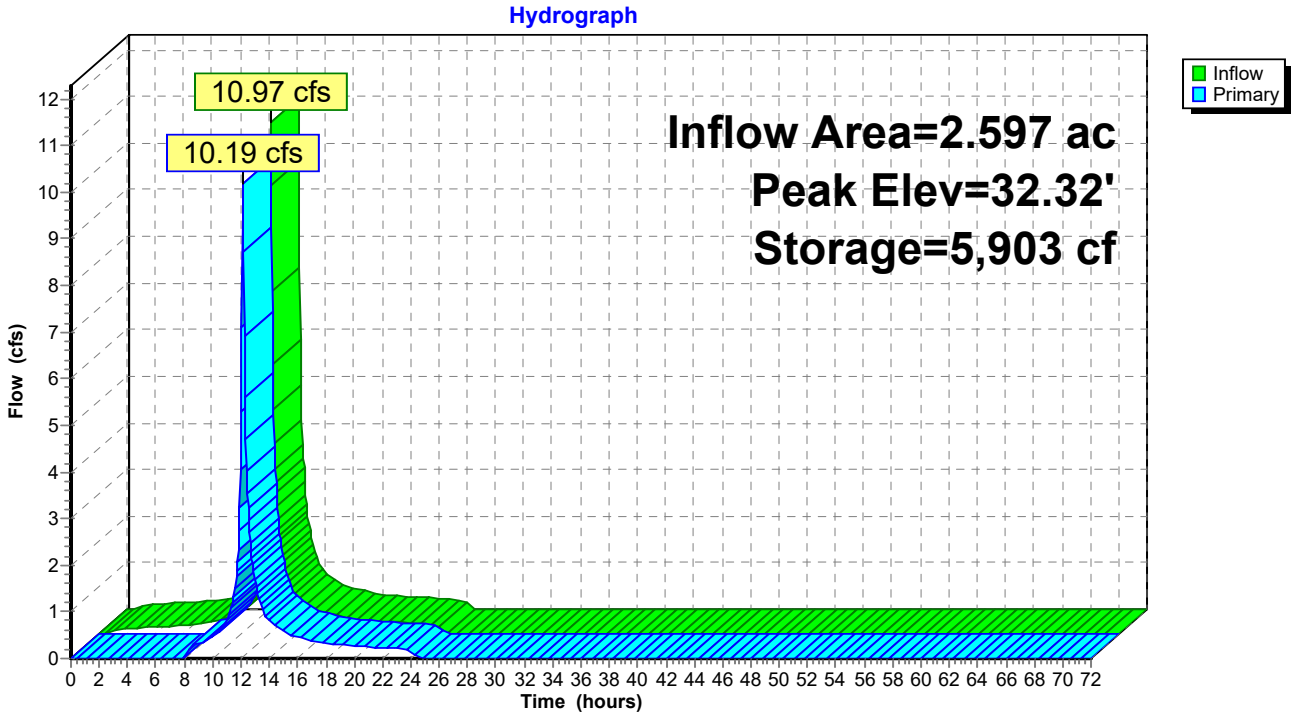
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	12,950 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,700	0	0
32.00	4,900	4,300	4,300
33.00	6,000	5,450	9,750
33.50	6,800	3,200	12,950

Device	Routing	Invert	Outlet Devices
#1	Primary	31.98'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.04 cfs @ 12.14 hrs HW=32.31' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 10.04 cfs @ 1.89 fps)

Pond 87P: Basin 40



Summary for Subcatchment 87S: Basin 28 - Pervious

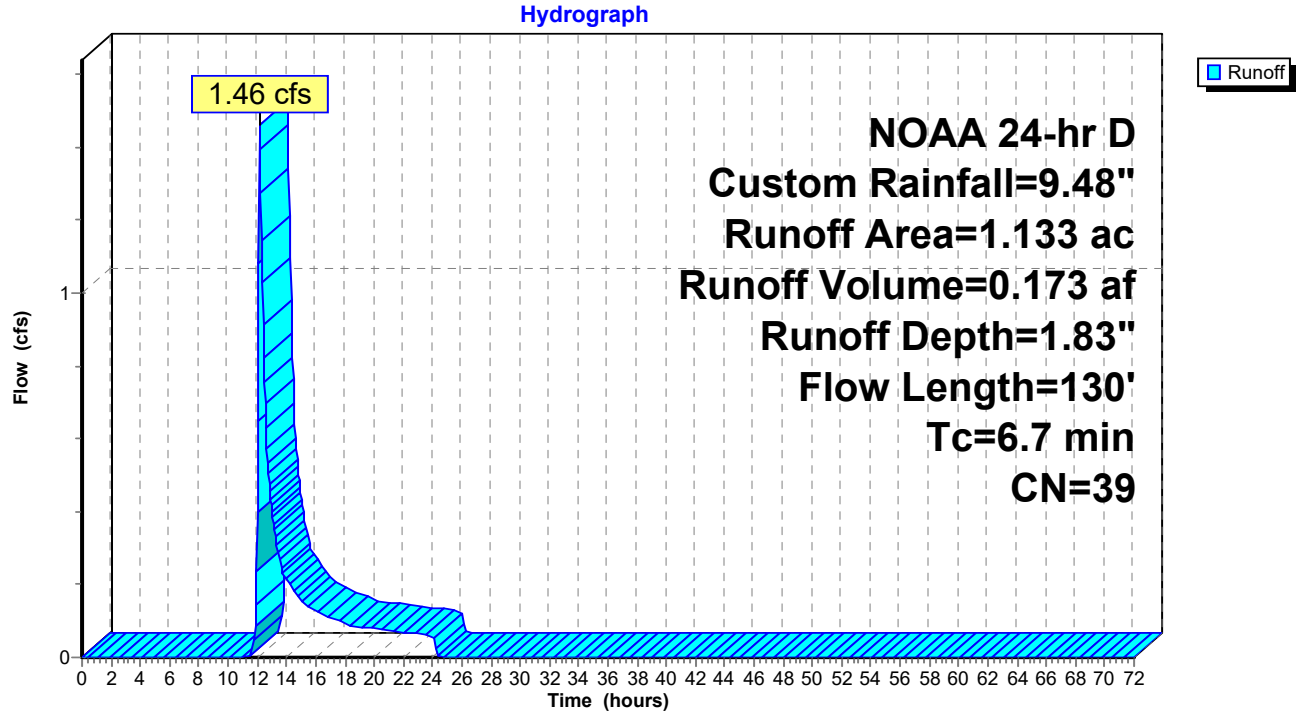
Runoff = 1.46 cfs @ 12.17 hrs, Volume= 0.173 af, Depth= 1.83"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.133	39	>75% Grass cover, Good, HSG A
1.133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	130	Total			

Subcatchment 87S: Basin 28 - Pervious



Summary for Pond 88P: Basin 22

Inflow Area = 2.491 ac, 29.99% Impervious, Inflow Depth = 4.06" for Custom event
Inflow = 7.98 cfs @ 12.11 hrs, Volume= 0.842 af
Outflow = 7.47 cfs @ 12.15 hrs, Volume= 0.777 af, Atten= 6%, Lag= 2.3 min
Primary = 7.47 cfs @ 12.15 hrs, Volume= 0.777 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.05' @ 12.15 hrs Surf.Area= 4,796 sf Storage= 4,052 cf

Plug-Flow detention time= 89.1 min calculated for 0.777 af (92% of inflow)
Center-of-Mass det. time= 45.4 min (840.5 - 795.1)

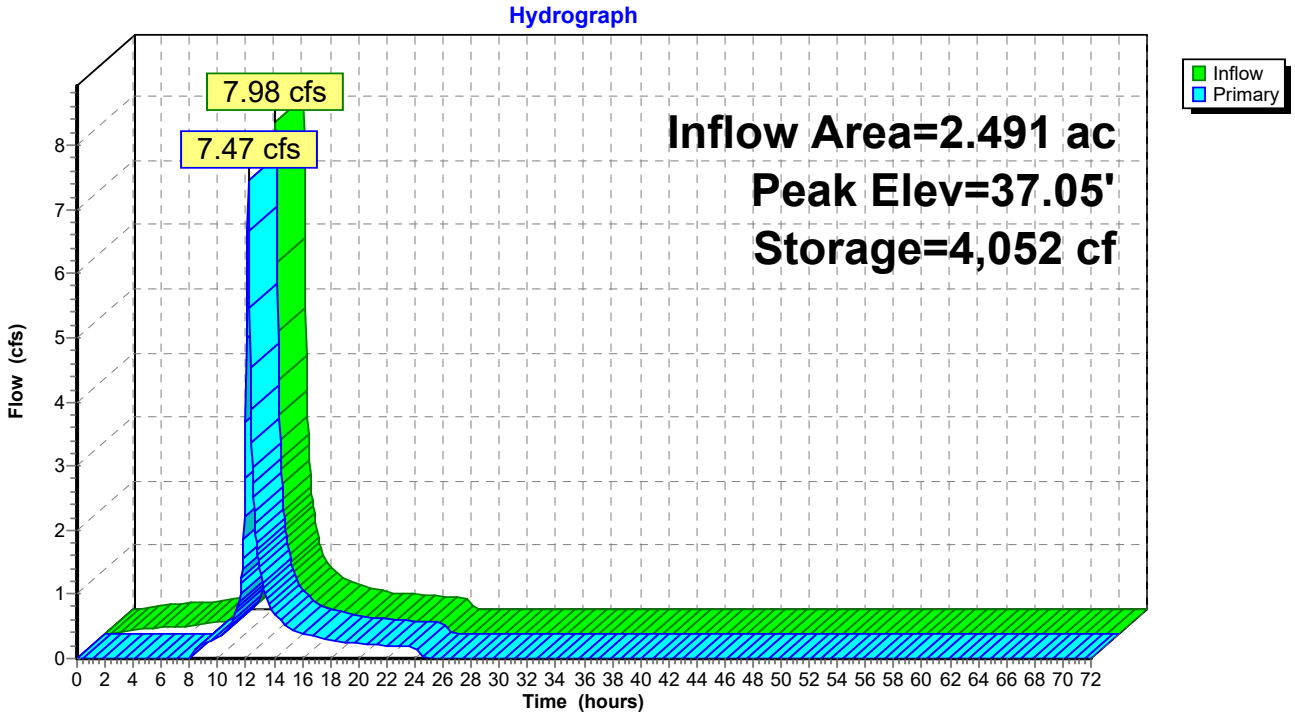
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	9,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,900	0	0
37.00	4,700	3,800	3,800
38.00	6,500	5,600	9,400

Device	Routing	Invert	Outlet Devices
#1	Primary	36.78'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.46 cfs @ 12.15 hrs HW=37.05' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 7.46 cfs @ 1.71 fps)

Pond 88P: Basin 22



Summary for Subcatchment 88S: Basin 30 - Impervious

[49] Hint: Tc<2dt may require smaller dt

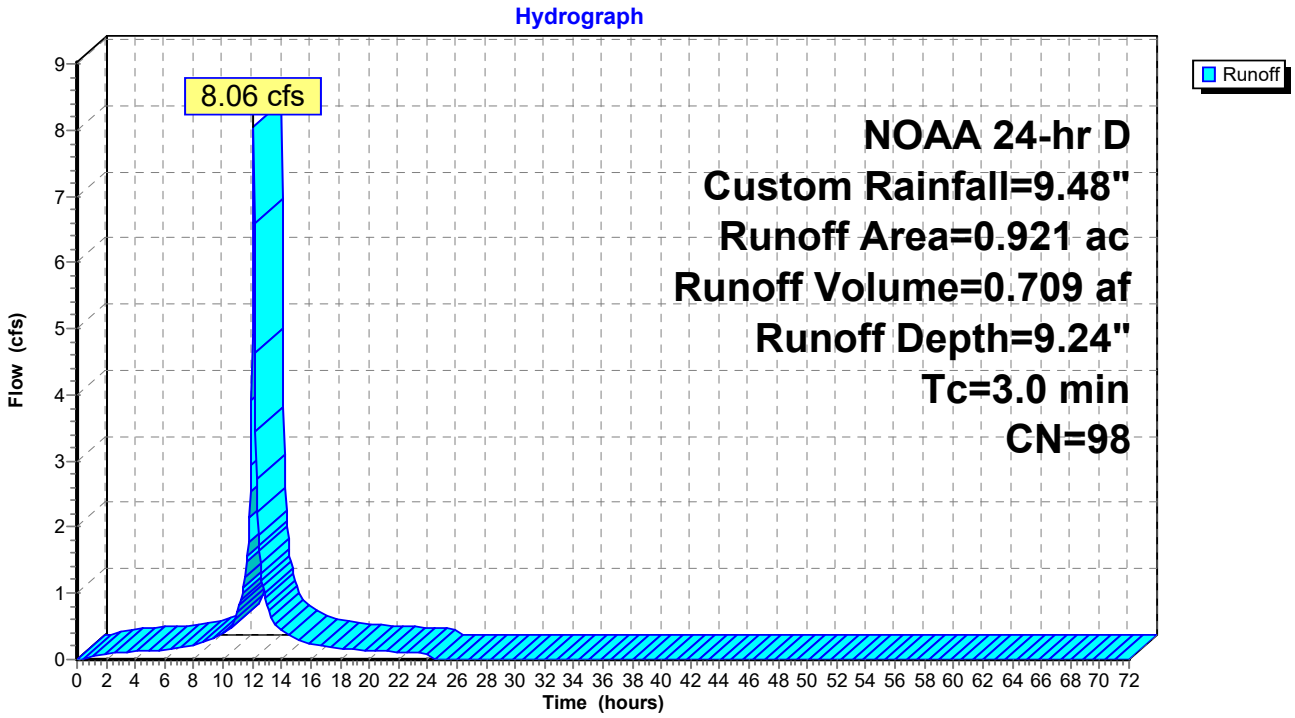
Runoff = 8.06 cfs @ 12.10 hrs, Volume= 0.709 af, Depth= 9.24"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.921	98	Impervious
	0.921		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 88S: Basin 30 - Impervious



Summary for Subcatchment 89S: Basin 30 - Pervious

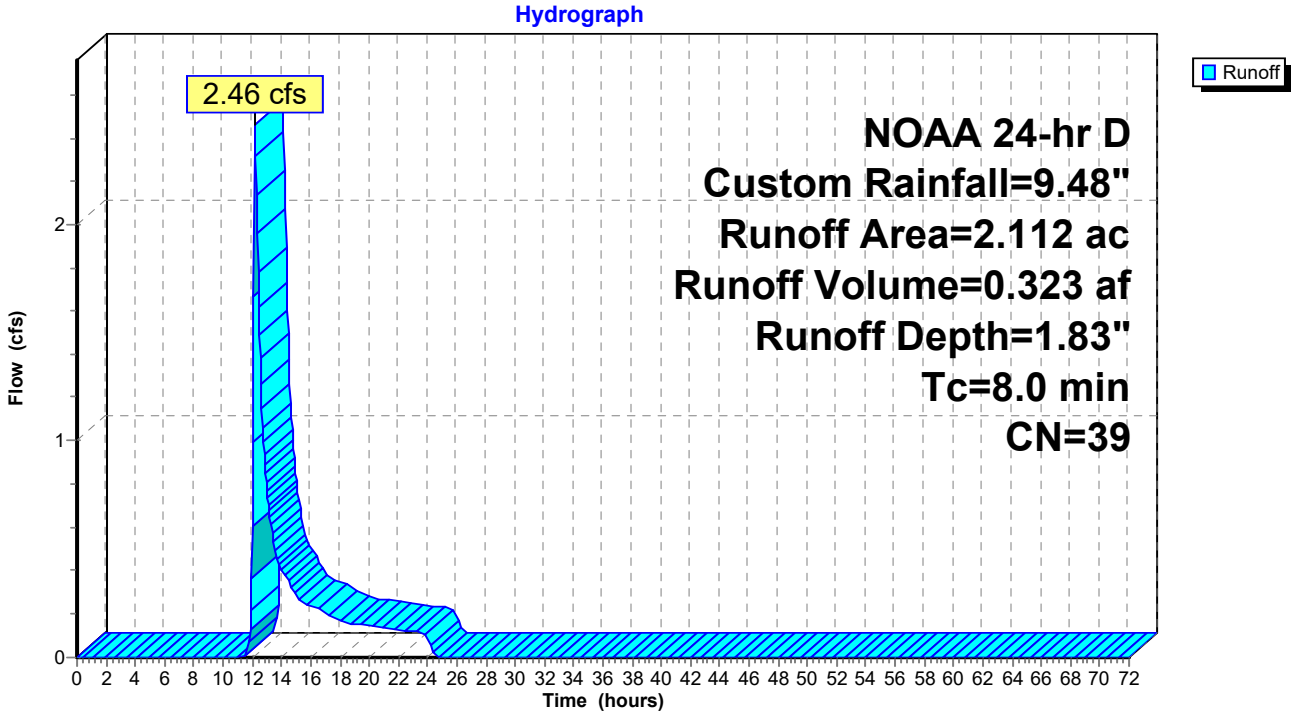
Runoff = 2.46 cfs @ 12.20 hrs, Volume= 0.323 af, Depth= 1.83"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
2.112	39	>75% Grass cover, Good, HSG A
2.112		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 89S: Basin 30 - Pervious



Summary for Subcatchment 90S: Basin 31 - Pervious

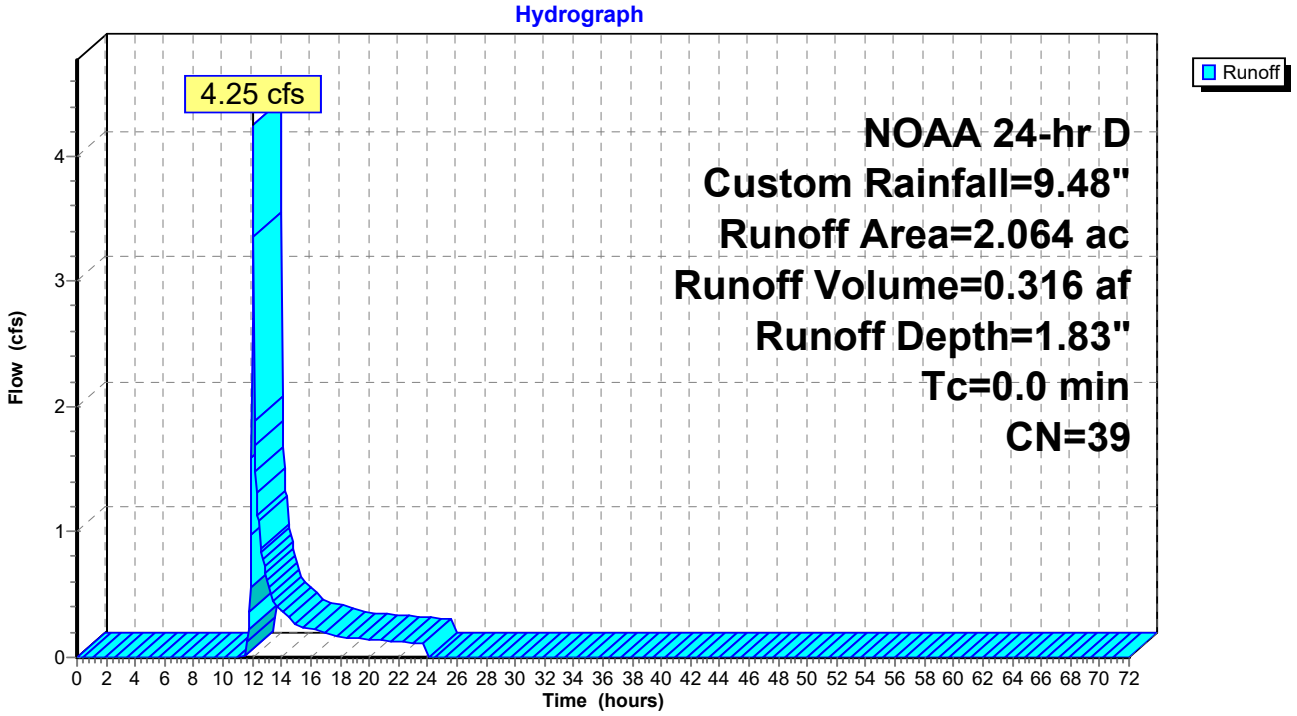
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 4.25 cfs @ 12.06 hrs, Volume= 0.316 af, Depth= 1.83"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
2.064	39	>75% Grass cover, Good, HSG A
2.064		100.00% Pervious Area

Subcatchment 90S: Basin 31 - Pervious



Summary for Subcatchment 91S: Basin 31- Impervious

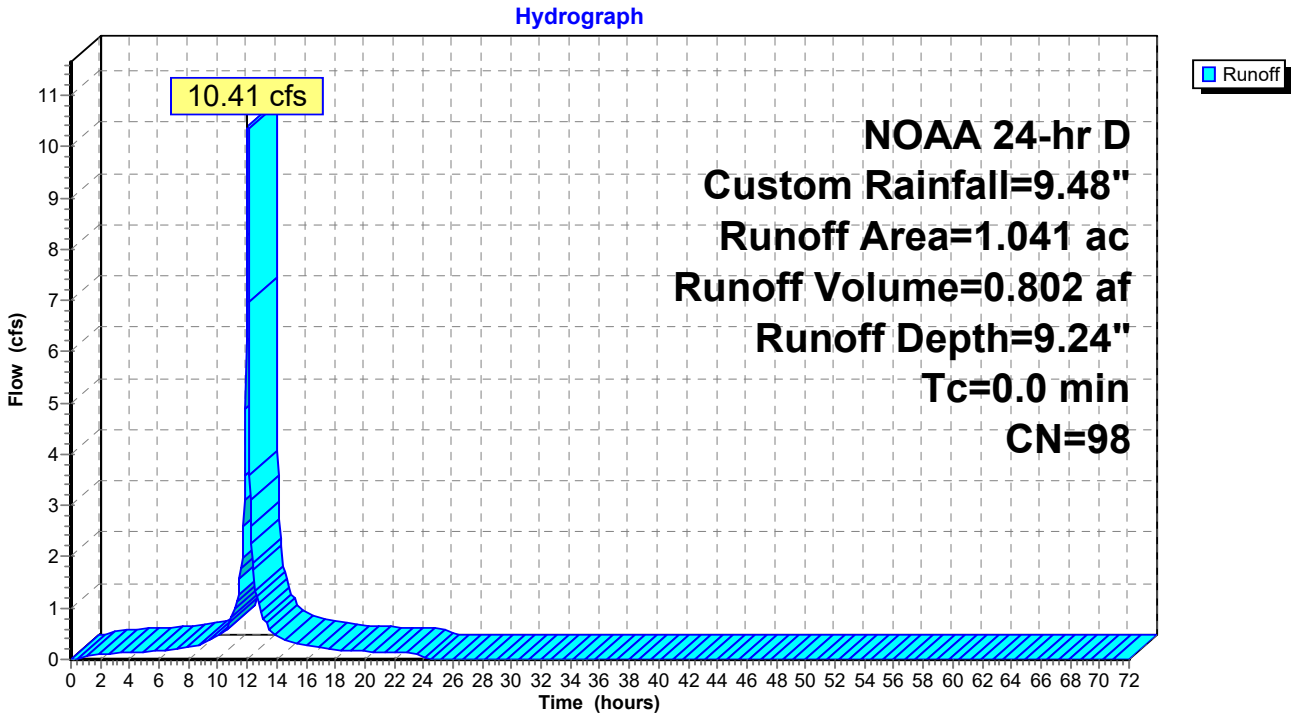
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 10.41 cfs @ 12.04 hrs, Volume= 0.802 af, Depth= 9.24"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.041	98	Impervious
	1.041		100.00% Impervious Area

Subcatchment 91S: Basin 31- Impervious



Summary for Subcatchment 92S: Basin 33 - Impervious

[49] Hint: Tc<2dt may require smaller dt

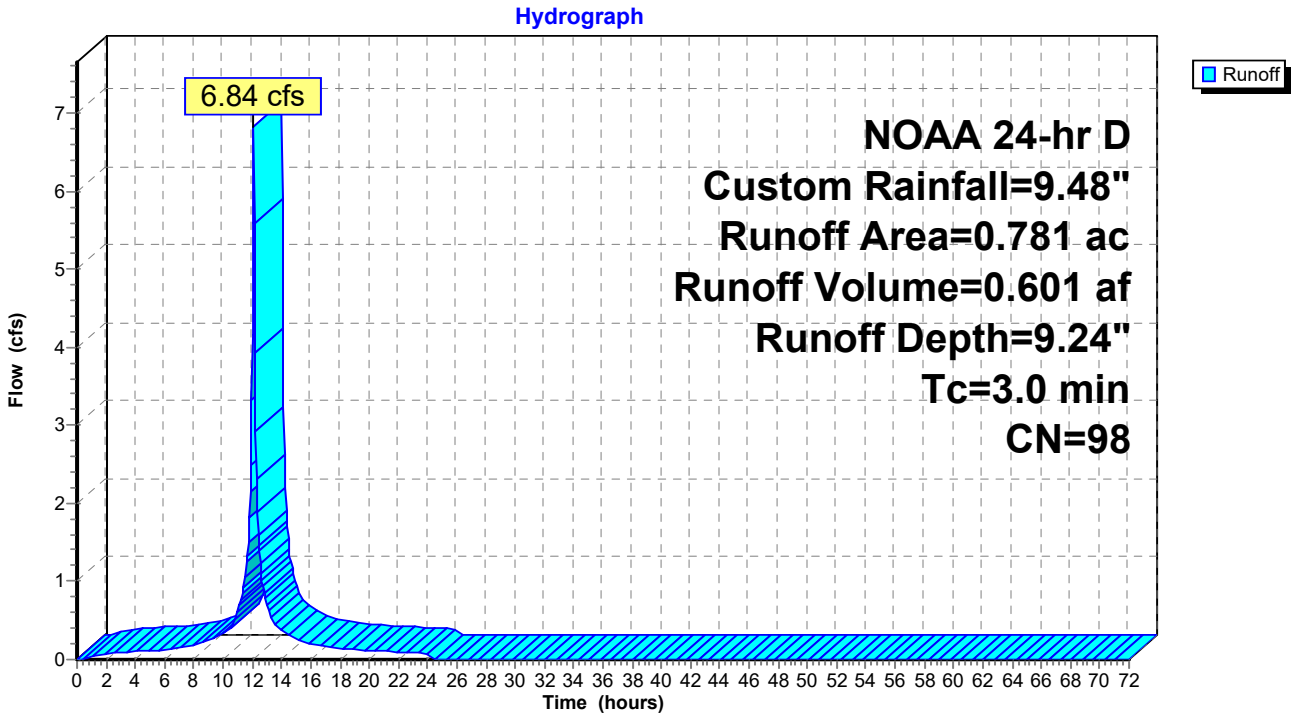
Runoff = 6.84 cfs @ 12.10 hrs, Volume= 0.601 af, Depth= 9.24"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.781	98	Impervious
	0.781		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 92S: Basin 33 - Impervious



Summary for Subcatchment 93S: Basin 33 - Pervious

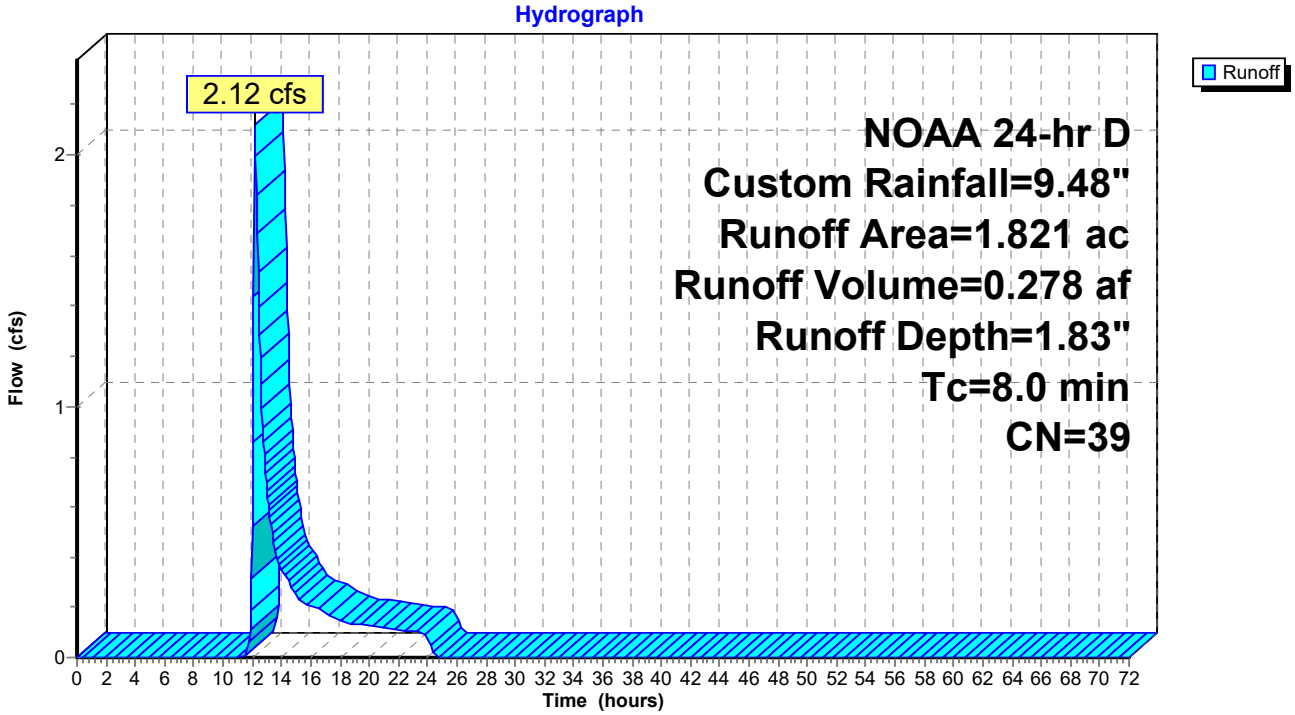
Runoff = 2.12 cfs @ 12.20 hrs, Volume= 0.278 af, Depth= 1.83"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.821	39	>75% Grass cover, Good, HSG A
1.821		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 93S: Basin 33 - Pervious



Summary for Subcatchment 94S: Basin 32 - Impervious

[49] Hint: Tc<2dt may require smaller dt

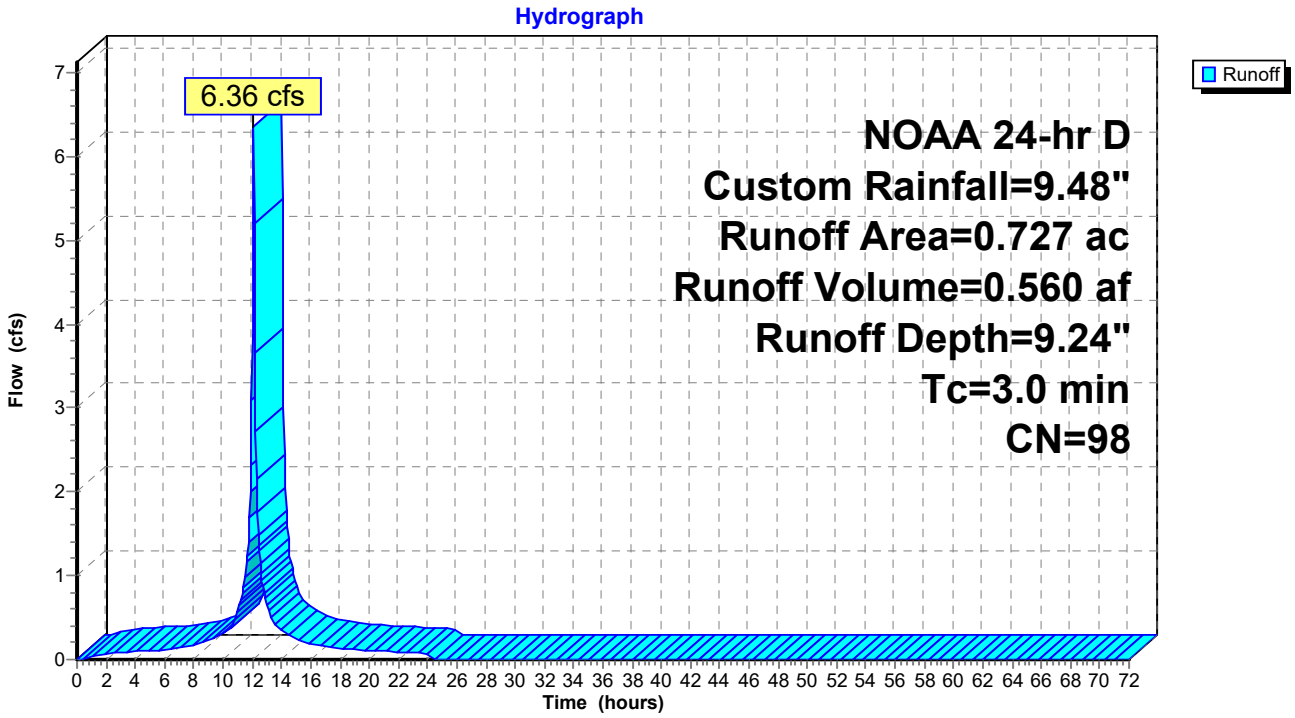
Runoff = 6.36 cfs @ 12.10 hrs, Volume= 0.560 af, Depth= 9.24"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.727	98	Impervious
	0.727		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 94S: Basin 32 - Impervious



Summary for Subcatchment 95S: Basin 32 - Pervious

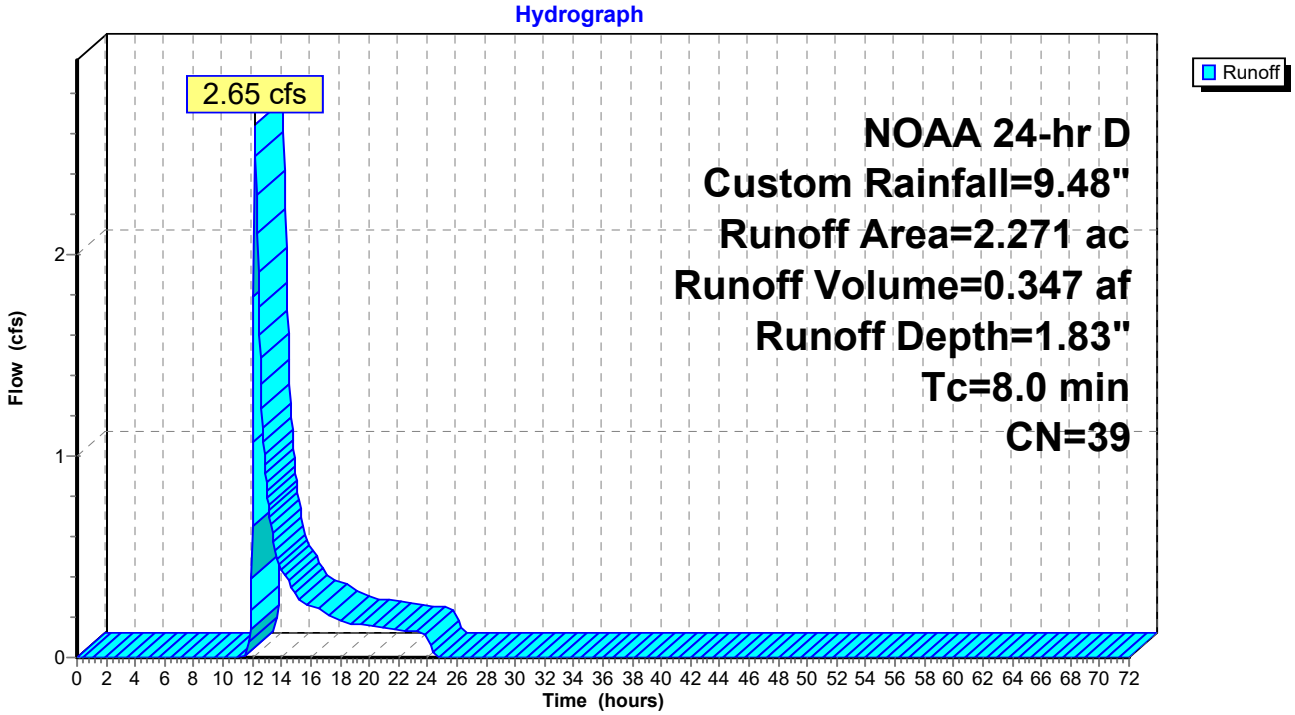
Runoff = 2.65 cfs @ 12.20 hrs, Volume= 0.347 af, Depth= 1.83"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
2.271	39	>75% Grass cover, Good, HSG A
2.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 95S: Basin 32 - Pervious



Summary for Subcatchment 96S: Basin 40 - Impervious

[49] Hint: Tc<2dt may require smaller dt

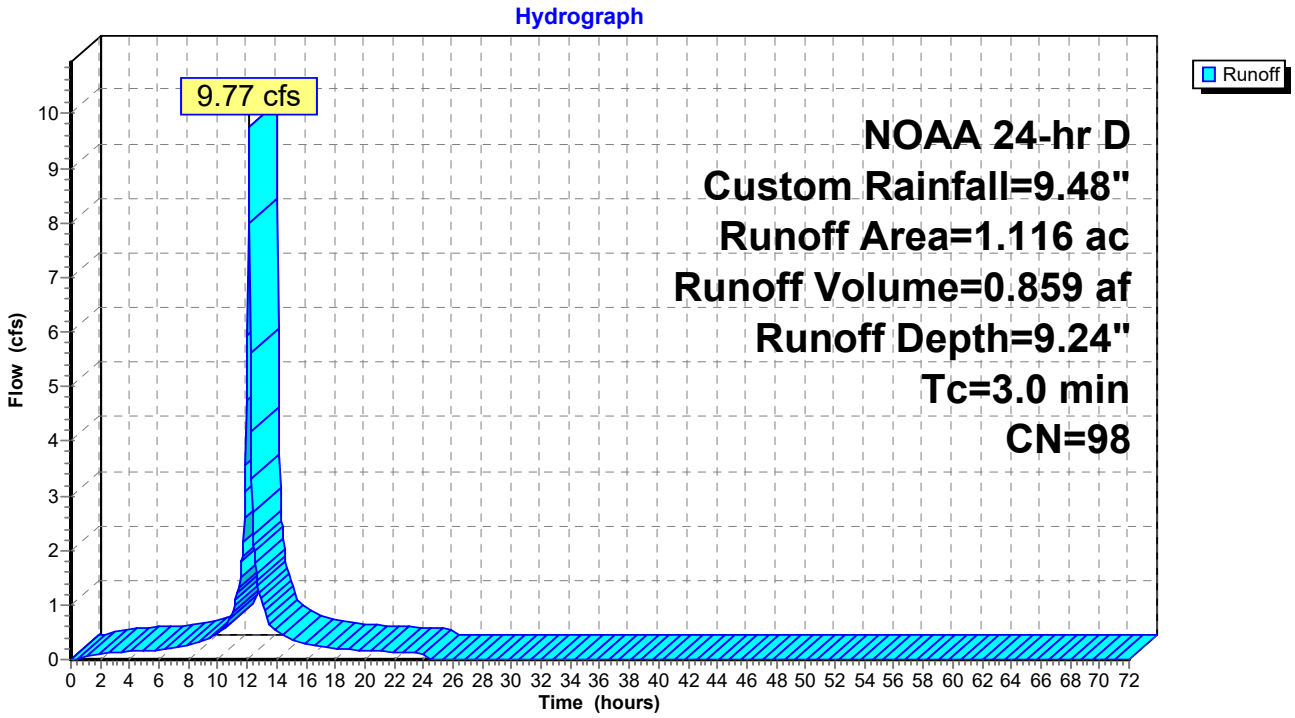
Runoff = 9.77 cfs @ 12.10 hrs, Volume= 0.859 af, Depth= 9.24"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 96S: Basin 40 - Impervious



Summary for Subcatchment 97S: Basin 40 - Pervious

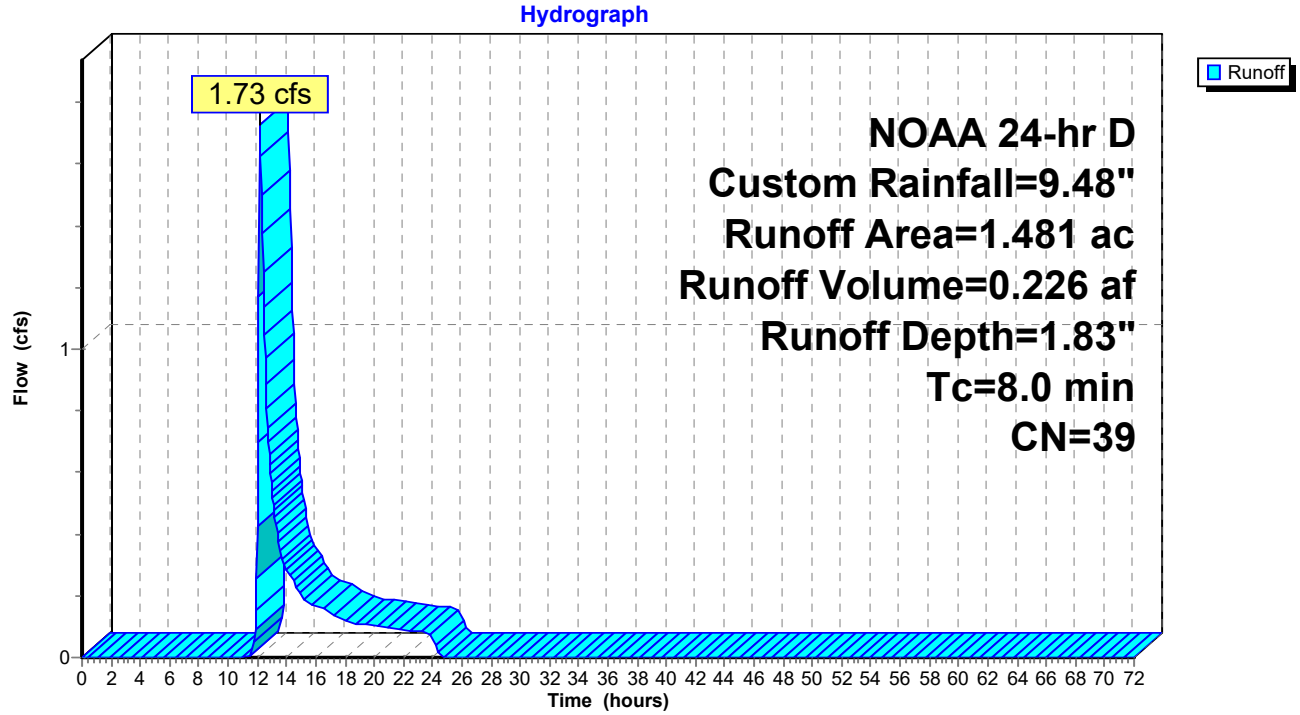
Runoff = 1.73 cfs @ 12.20 hrs, Volume= 0.226 af, Depth= 1.83"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.481	39	>75% Grass cover, Good, HSG A
1.481		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 97S: Basin 40 - Pervious



Summary for Subcatchment 98S: Basin 38 - Impervious

[49] Hint: Tc<2dt may require smaller dt

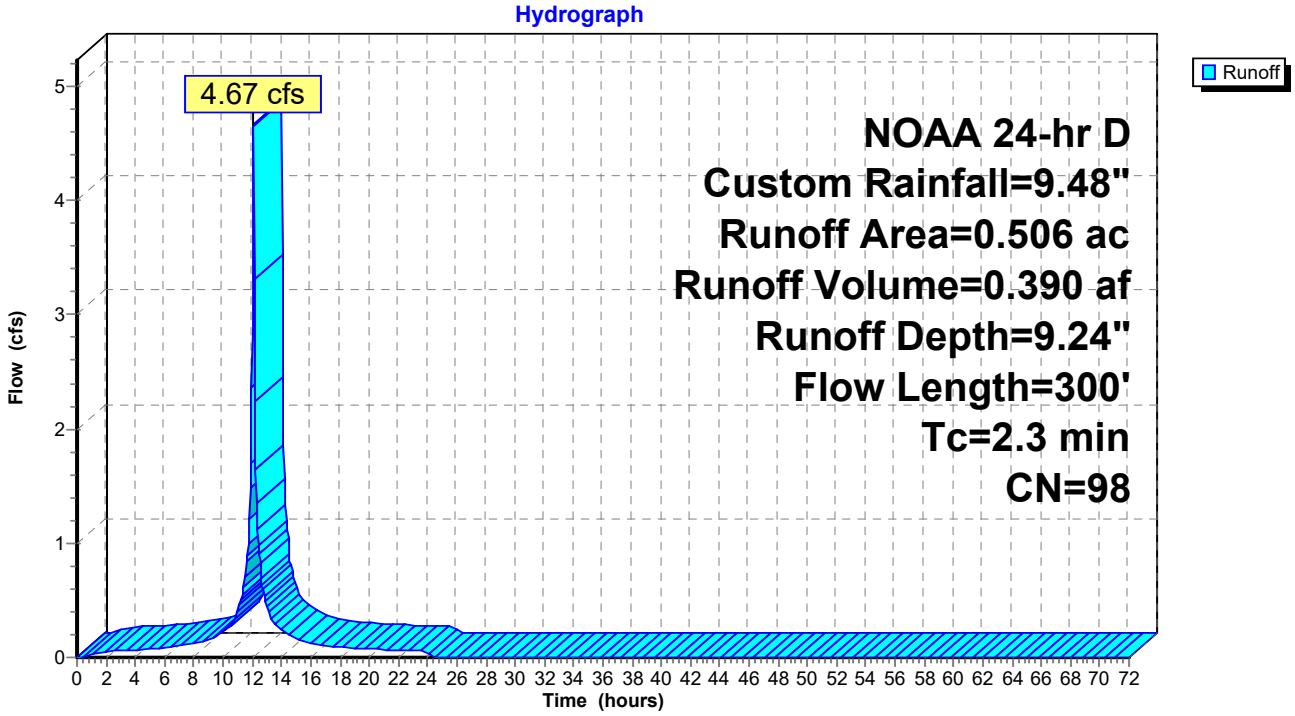
Runoff = 4.67 cfs @ 12.09 hrs, Volume= 0.390 af, Depth= 9.24"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.506	98	Impervious
	0.506		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	200	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	300	Total			

Subcatchment 98S: Basin 38 - Impervious



Summary for Subcatchment 99S: Basin 38 - Pervious

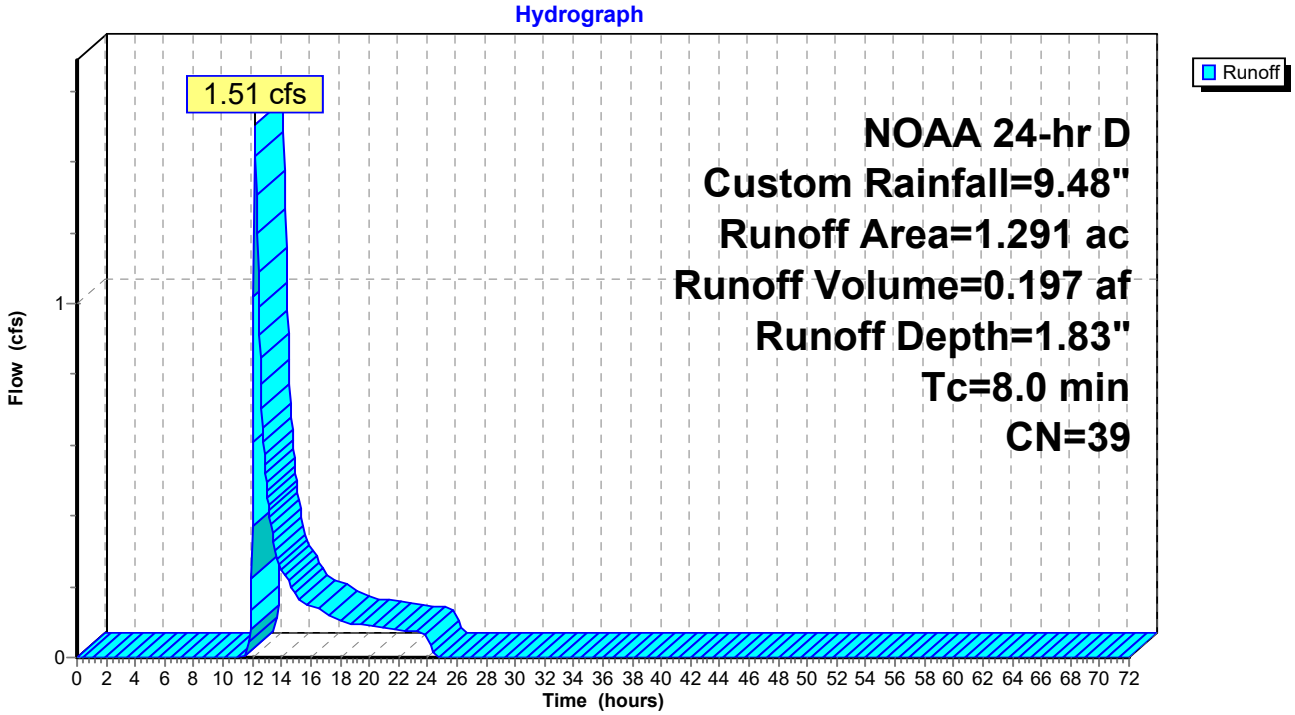
Runoff = 1.51 cfs @ 12.20 hrs, Volume= 0.197 af, Depth= 1.83"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.291	39	>75% Grass cover, Good, HSG A
1.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 99S: Basin 38 - Pervious



Summary for Subcatchment 100S: Basin 22 - Impervious

[49] Hint: Tc<2dt may require smaller dt

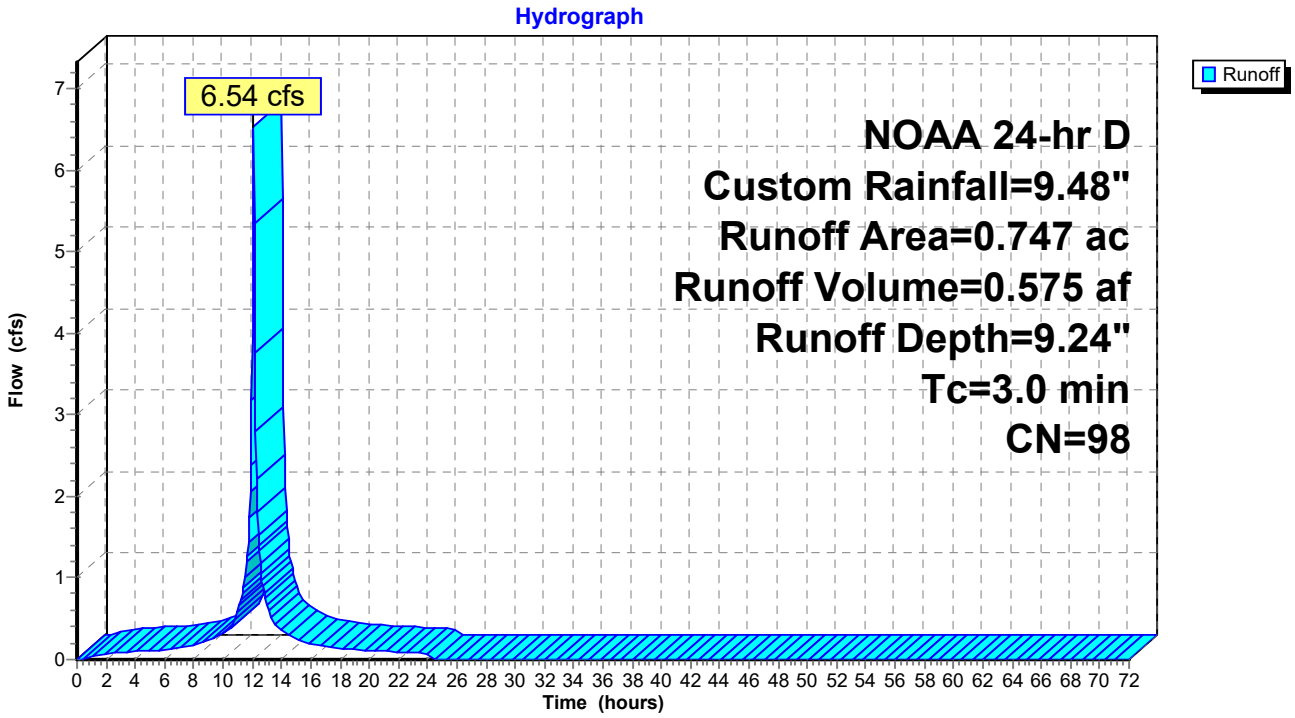
Runoff = 6.54 cfs @ 12.10 hrs, Volume= 0.575 af, Depth= 9.24"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.747	98	Impervious
	0.747		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 100S: Basin 22 - Impervious



Summary for Subcatchment 101S: Basin 39 - Pervious

[49] Hint: Tc<2dt may require smaller dt

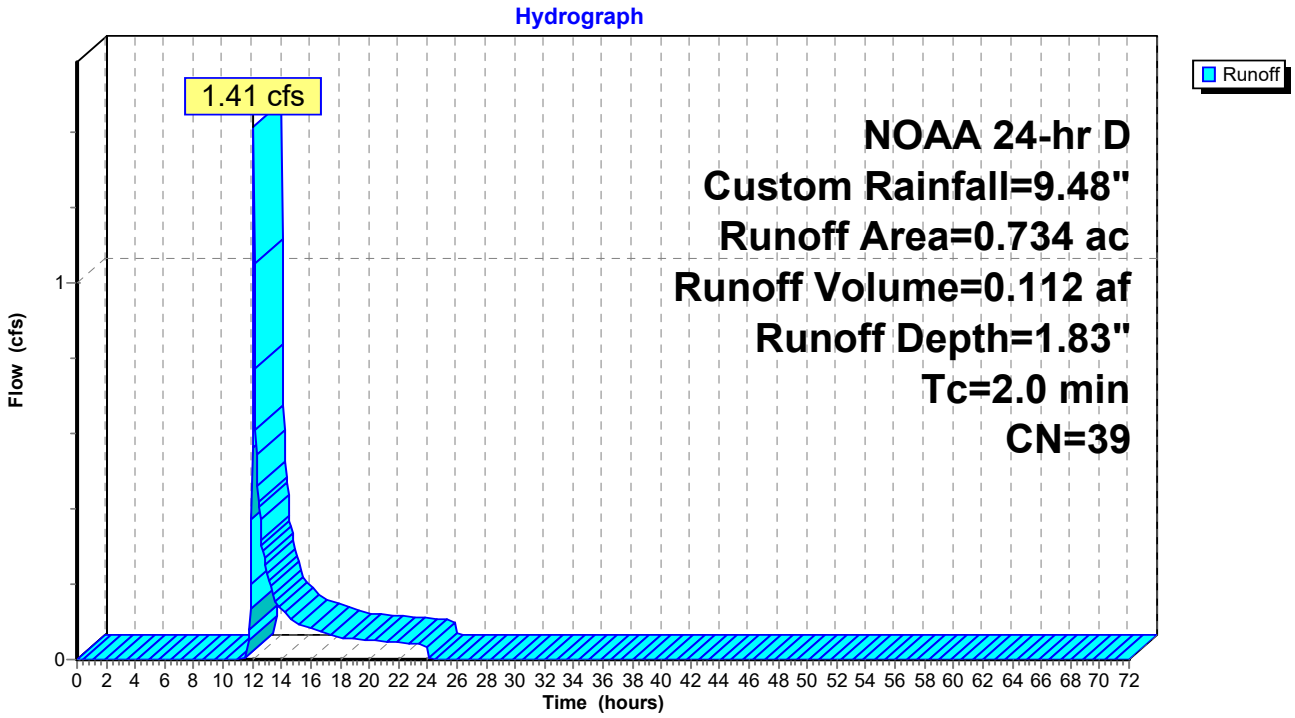
Runoff = 1.41 cfs @ 12.10 hrs, Volume= 0.112 af, Depth= 1.83"
Routed to Pond 74P : Basin 39

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
0.734	39	>75% Grass cover, Good, HSG A
0.734		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 101S: Basin 39 - Pervious



Summary for Subcatchment 102S: Basin 37 - Impervious

[49] Hint: Tc<2dt may require smaller dt

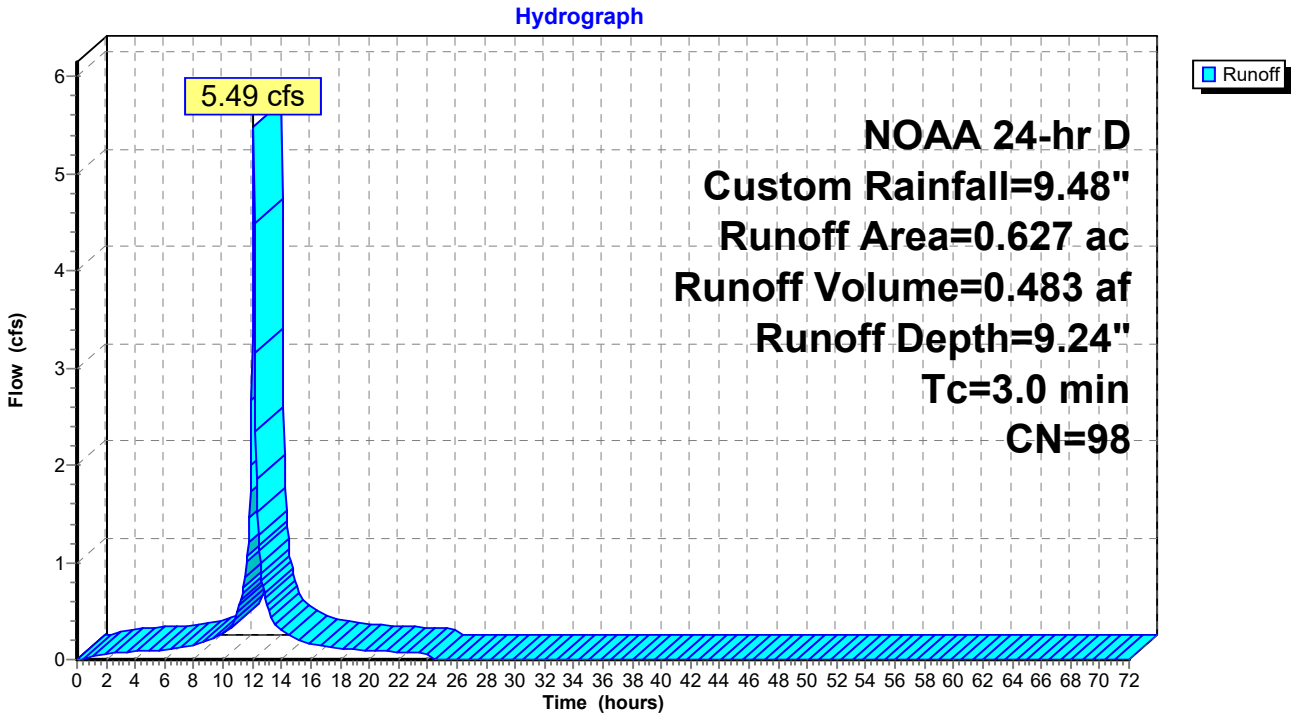
Runoff = 5.49 cfs @ 12.10 hrs, Volume= 0.483 af, Depth= 9.24"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 102S: Basin 37 - Impervious



Summary for Subcatchment 103S: Basin 37 - Pervious

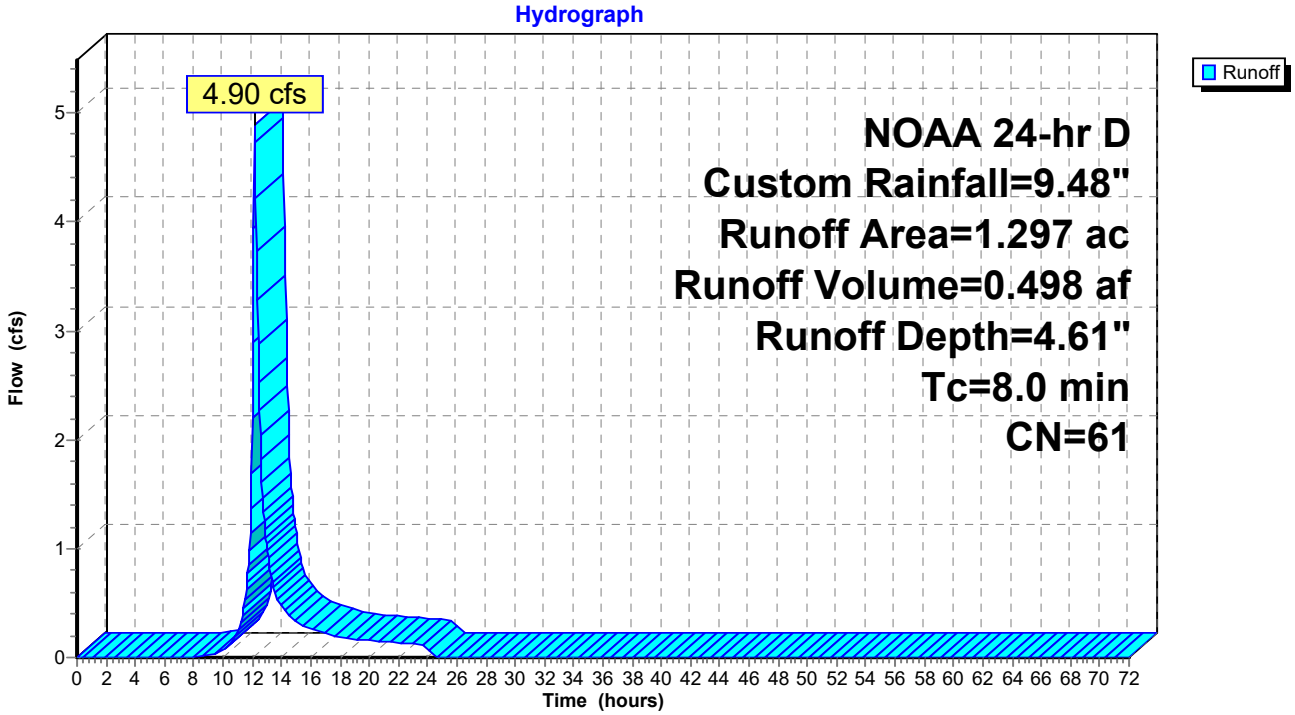
Runoff = 4.90 cfs @ 12.17 hrs, Volume= 0.498 af, Depth= 4.61"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.297	61	>75% Grass cover, Good, HSG B
1.297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 103S: Basin 37 - Pervious



Summary for Subcatchment 104S: Basin 34- Impervious

[49] Hint: Tc<2dt may require smaller dt

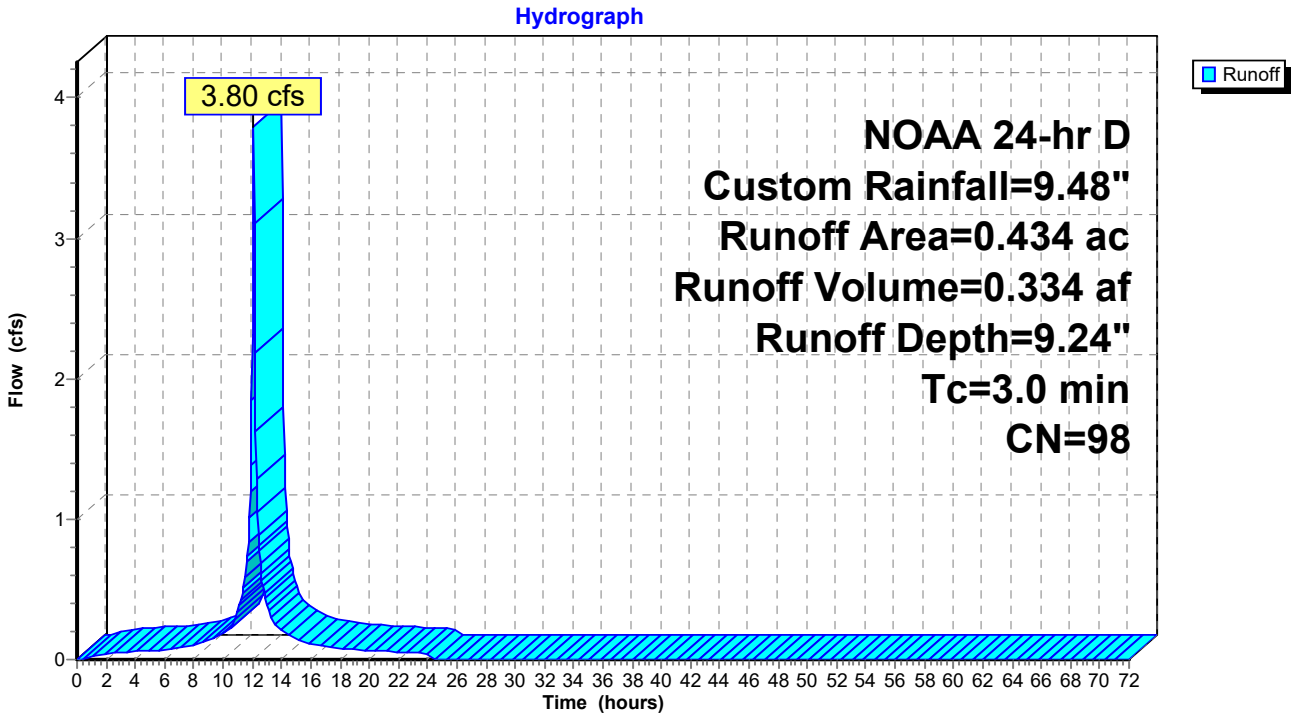
Runoff = 3.80 cfs @ 12.10 hrs, Volume= 0.334 af, Depth= 9.24"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.434	98	Impervious
	0.434		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 104S: Basin 34- Impervious



Summary for Subcatchment 105S: Basin 34 - Pervious

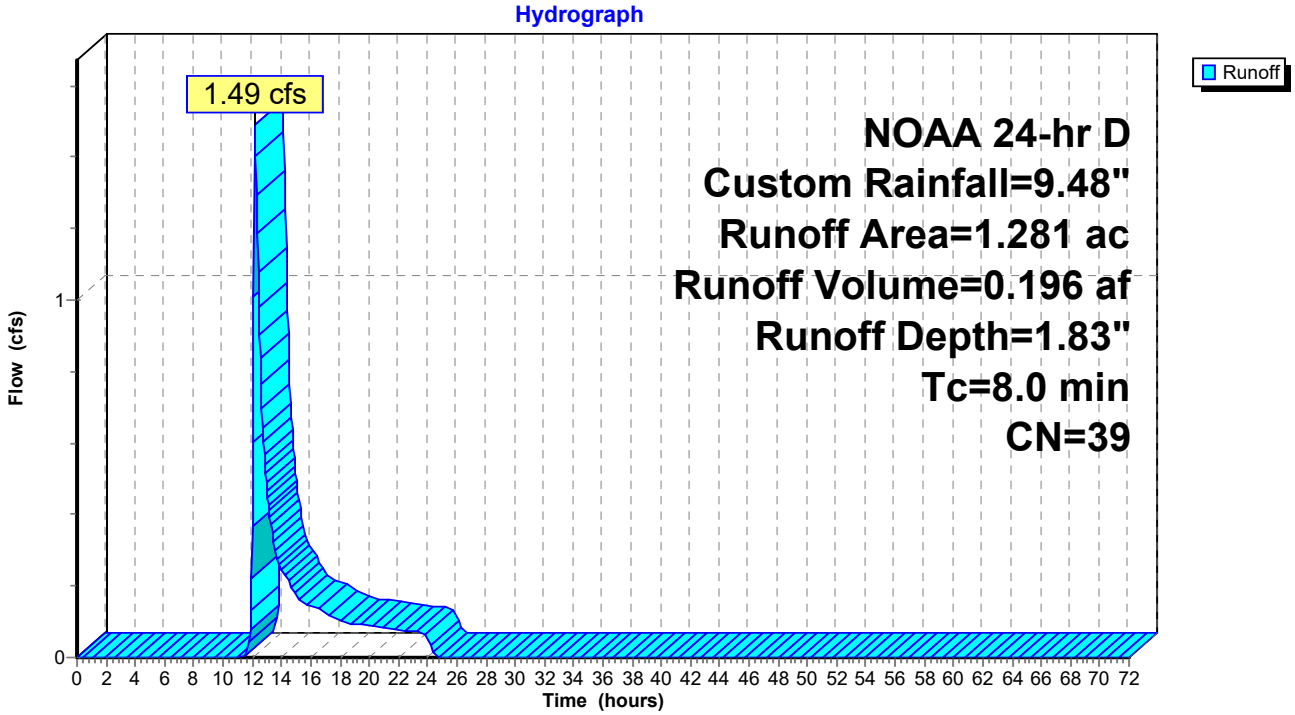
Runoff = 1.49 cfs @ 12.20 hrs, Volume= 0.196 af, Depth= 1.83"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.281	39	>75% Grass cover, Good, HSG A
1.281		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 105S: Basin 34 - Pervious



Summary for Subcatchment 106S: Basin 35 - Impervious

[49] Hint: Tc<2dt may require smaller dt

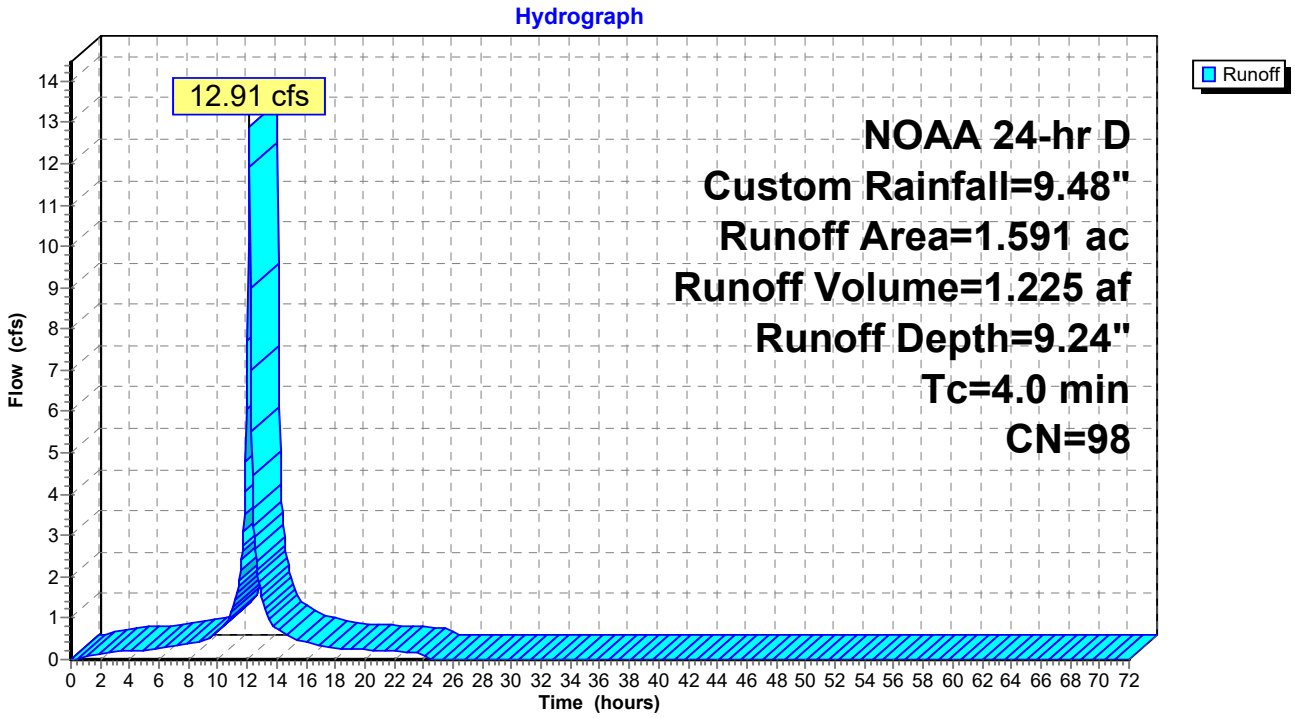
Runoff = 12.91 cfs @ 12.11 hrs, Volume= 1.225 af, Depth= 9.24"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.591	98	Impervious
	1.591		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment 106S: Basin 35 - Impervious



Summary for Subcatchment 107S: Basin 35 - Pervious

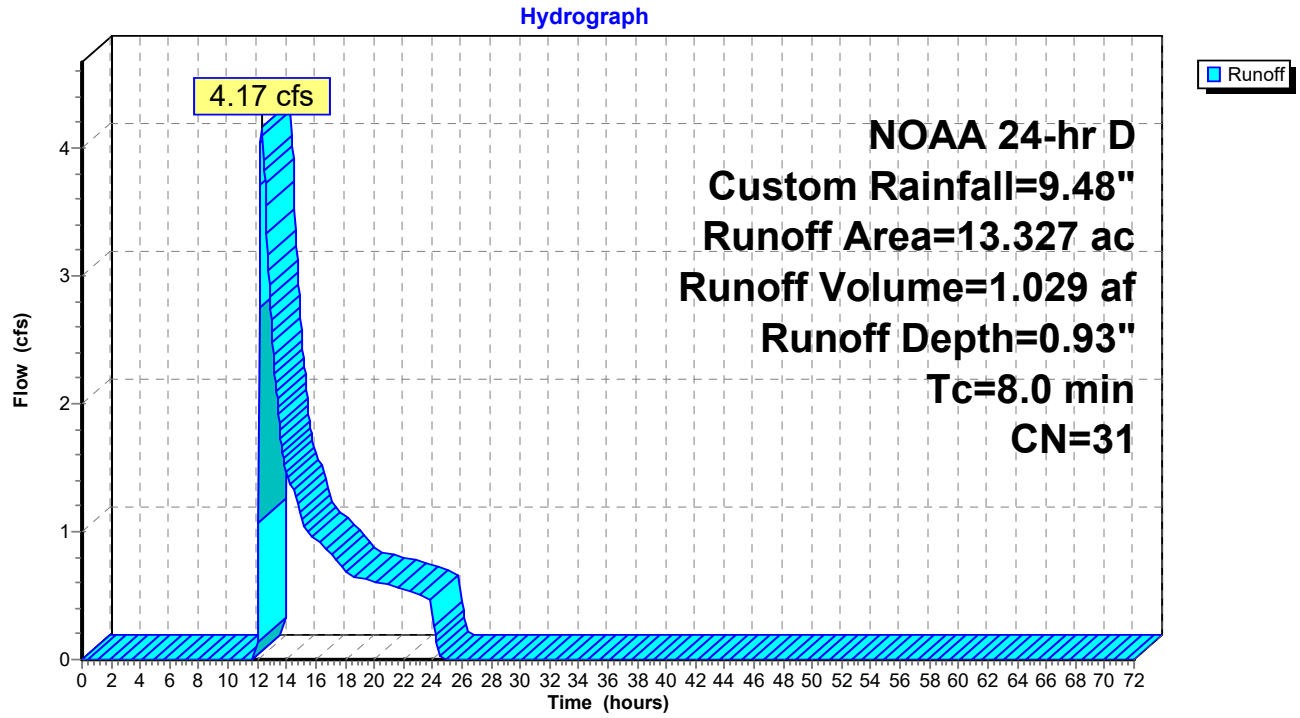
Runoff = 4.17 cfs @ 12.33 hrs, Volume= 1.029 af, Depth= 0.93"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
0.907	39	>75% Grass cover, Good, HSG A
12.420	30	Woods, Good, HSG A
13.327	31	Weighted Average
13.327		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 107S: Basin 35 - Pervious



Summary for Subcatchment 108S: Basin 36 - Impervious

[49] Hint: Tc<2dt may require smaller dt

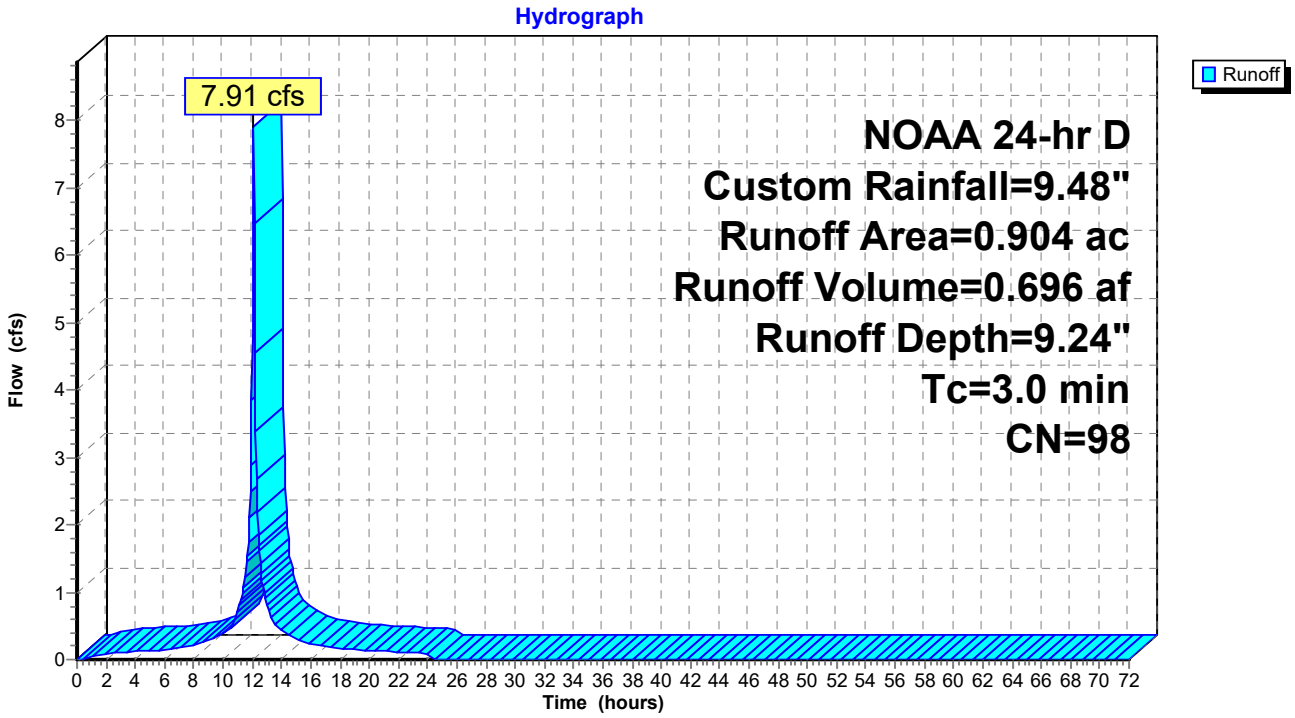
Runoff = 7.91 cfs @ 12.10 hrs, Volume= 0.696 af, Depth= 9.24"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.904	98	Impervious
	0.904		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 108S: Basin 36 - Impervious



Summary for Subcatchment 109S: Basin 36 - Pervious

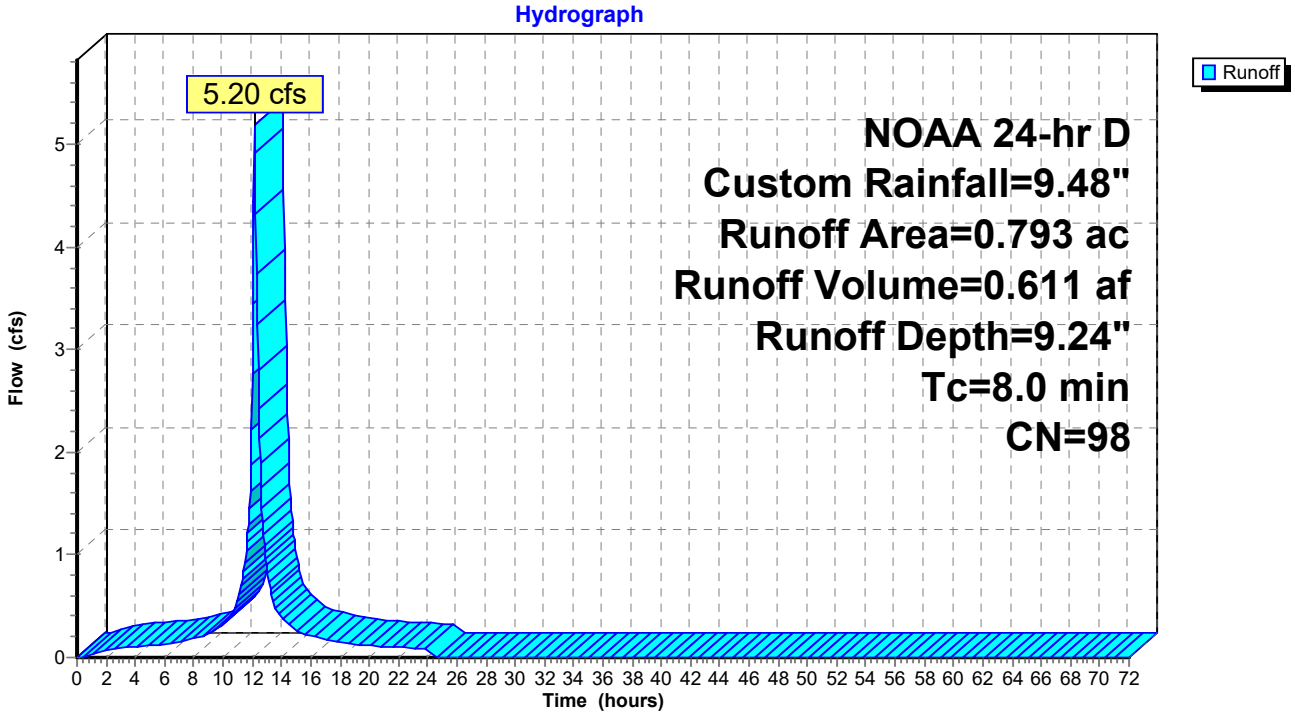
Runoff = 5.20 cfs @ 12.16 hrs, Volume= 0.611 af, Depth= 9.24"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.793	98	Impervious
	0.793		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 109S: Basin 36 - Pervious



Summary for Subcatchment 110S: Basin 22 - Pervious

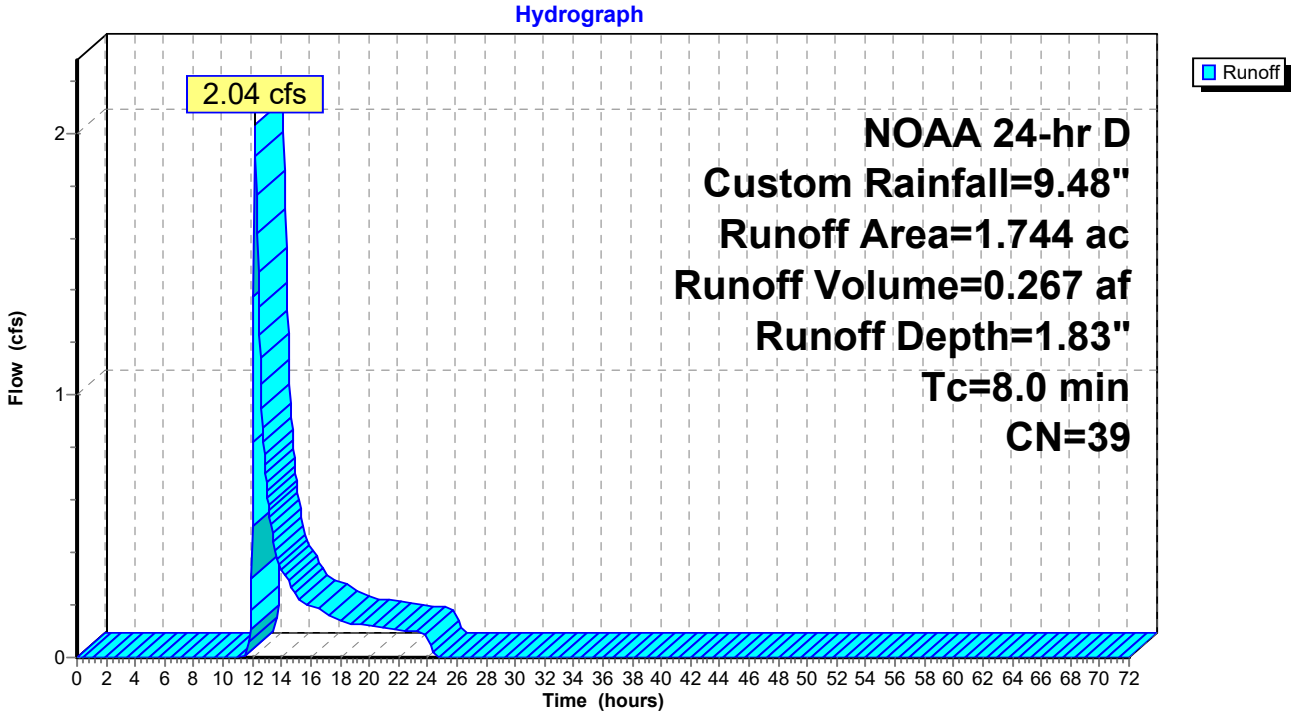
Runoff = 2.04 cfs @ 12.20 hrs, Volume= 0.267 af, Depth= 1.83"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.744	39	>75% Grass cover, Good, HSG A
1.744		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 110S: Basin 22 - Pervious



Summary for Pond 111P: Basin 23

Inflow Area = 2.499 ac, 35.01% Impervious, Inflow Depth = 4.43" for Custom event
Inflow = 8.99 cfs @ 12.11 hrs, Volume= 0.922 af
Outflow = 5.40 cfs @ 12.25 hrs, Volume= 0.845 af, Atten= 40%, Lag= 8.3 min
Primary = 5.40 cfs @ 12.25 hrs, Volume= 0.845 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.41' @ 12.25 hrs Surf.Area= 9,152 sf Storage= 15,430 cf

Plug-Flow detention time= 405.2 min calculated for 0.844 af (92% of inflow)
Center-of-Mass det. time= 359.5 min (1,146.2 - 786.7)

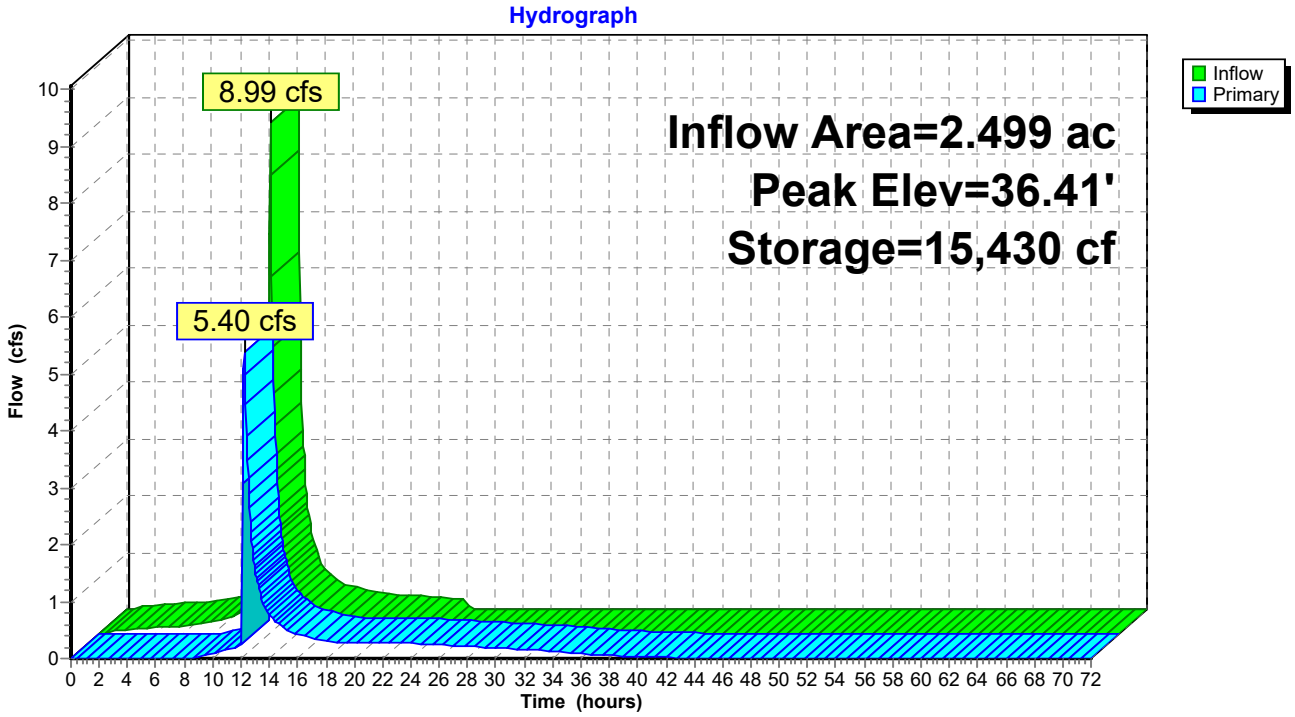
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	21,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,200	0	0
35.00	5,800	5,000	5,000
36.00	8,000	6,900	11,900
37.00	10,800	9,400	21,300

Device	Routing	Invert	Outlet Devices
#1	Primary	34.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.37 cfs @ 12.25 hrs HW=36.41' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.30 cfs @ 6.08 fps)
2=Orifice/Grate (Weir Controls 5.07 cfs @ 1.50 fps)

Pond 111P: Basin 23



Summary for Subcatchment 112S: Basin 23 - Impervious

[49] Hint: Tc<2dt may require smaller dt

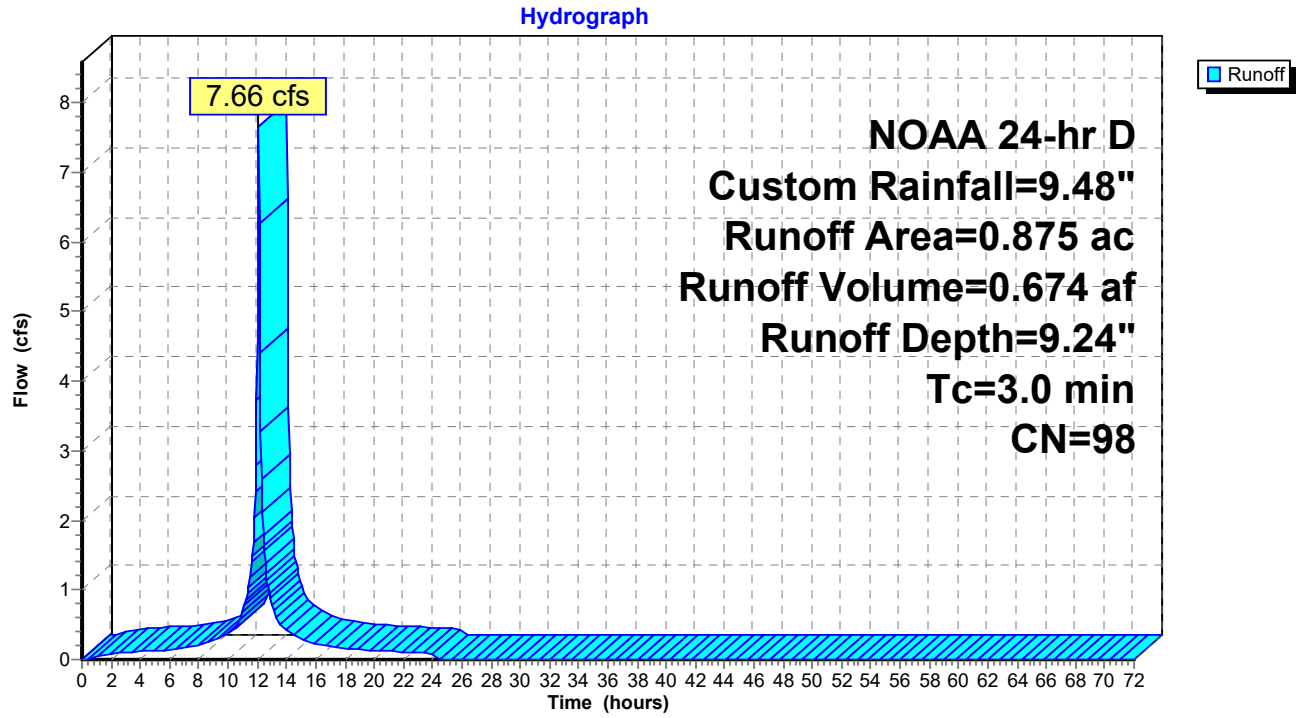
Runoff = 7.66 cfs @ 12.10 hrs, Volume= 0.674 af, Depth= 9.24"
Routed to Pond 111P : Basin 23

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.875	98	Impervious
	0.875		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 112S: Basin 23 - Impervious



Summary for Subcatchment 113S: Basin 23 - Pervious

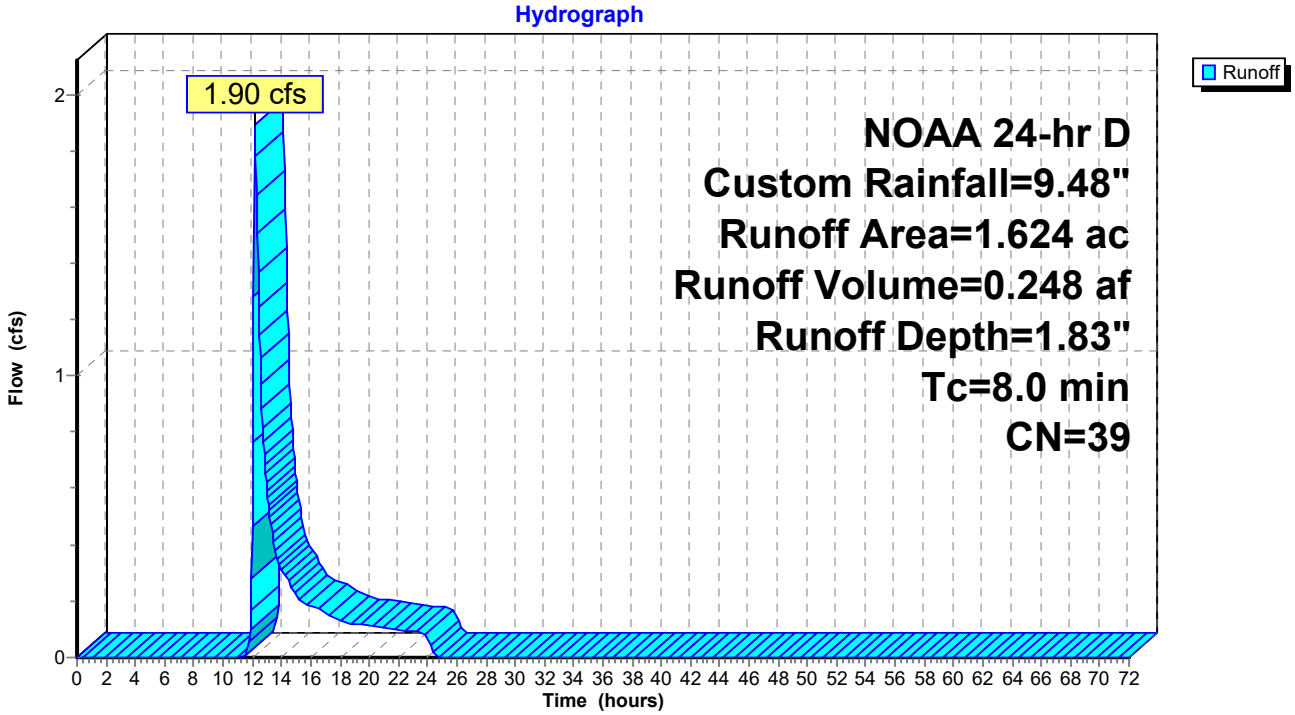
Runoff = 1.90 cfs @ 12.20 hrs, Volume= 0.248 af, Depth= 1.83"
Routed to Pond 111P : Basin 23

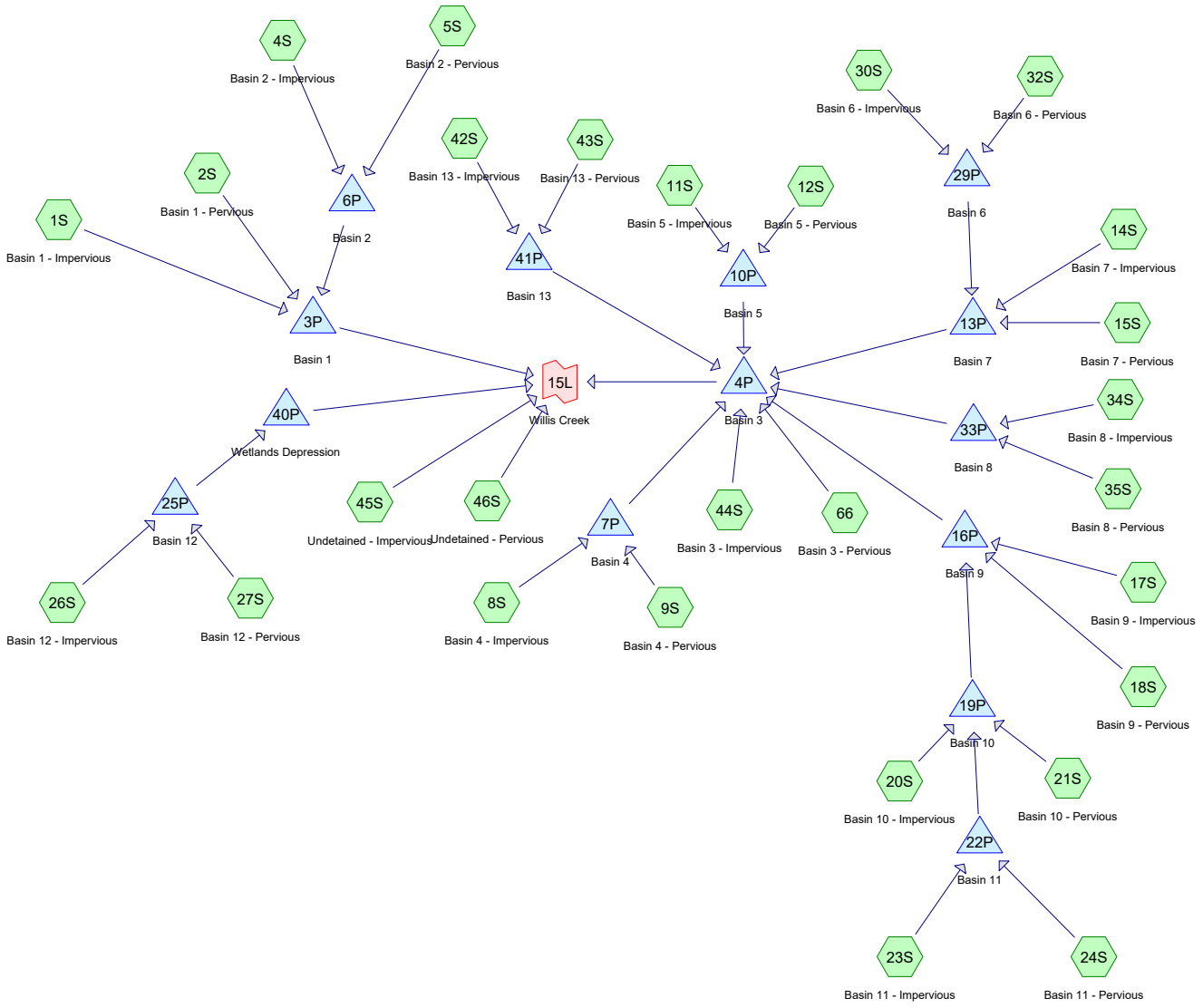
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.624	39	>75% Grass cover, Good, HSG A
1.624		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 113S: Basin 23 - Pervious





Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT - WILLS CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	9.48	2

Summary for Subcatchment 1S: Basin 1 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 153% of capacity of segment #3

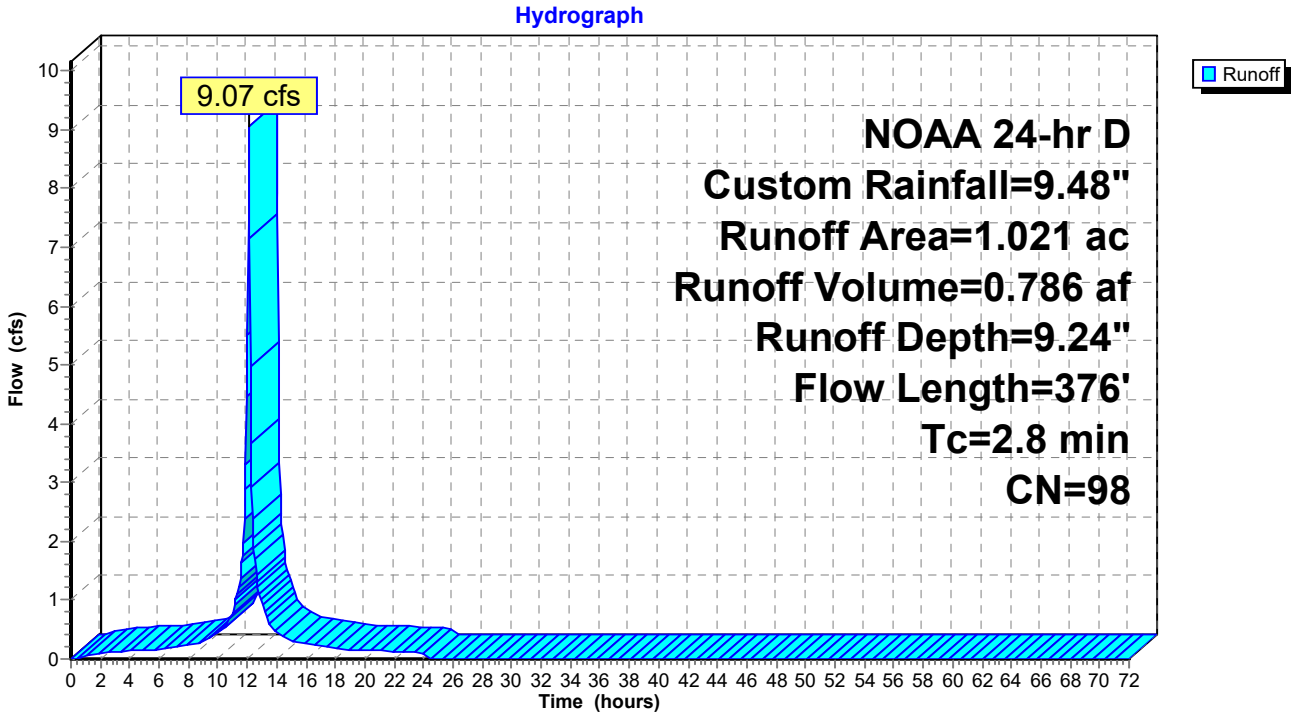
Runoff = 9.07 cfs @ 12.10 hrs, Volume= 0.786 af, Depth= 9.24"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.021	98	
	1.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	86	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	190	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.8	376	Total			

Subcatchment 1S: Basin 1 - Impervious



Summary for Subcatchment 2S: Basin 1 - Pervious

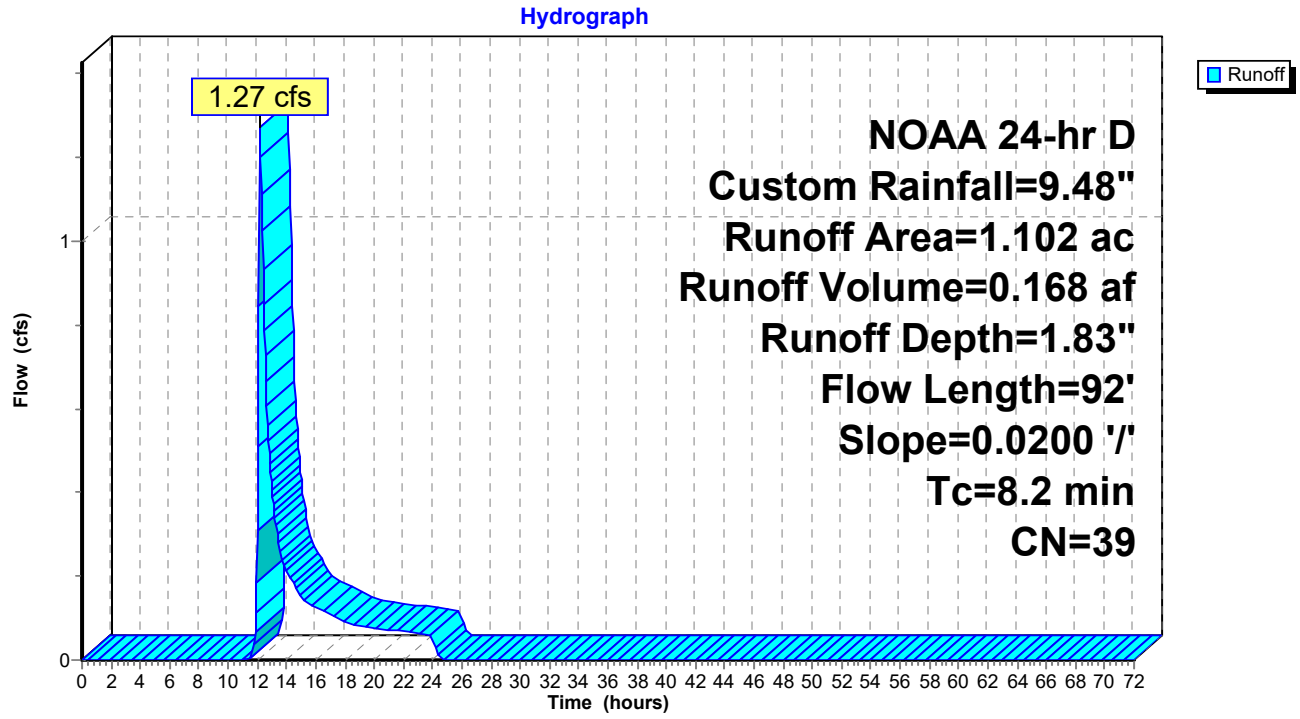
Runoff = 1.27 cfs @ 12.20 hrs, Volume= 0.168 af, Depth= 1.83"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.102	39	>75% Grass cover, Good, HSG A
1.102		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	92	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 2S: Basin 1 - Pervious



Summary for Pond 3P: Basin 1

Inflow Area = 4.367 ac, 43.78% Impervious, Inflow Depth = 4.87" for Custom event
Inflow = 10.17 cfs @ 12.10 hrs, Volume= 1.771 af
Outflow = 8.94 cfs @ 12.15 hrs, Volume= 1.677 af, Atten= 12%, Lag= 2.8 min
Primary = 8.94 cfs @ 12.15 hrs, Volume= 1.677 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.20' @ 12.15 hrs Surf.Area= 7,927 sf Storage= 11,874 cf

Plug-Flow detention time= 305.3 min calculated for 1.676 af (95% of inflow)
Center-of-Mass det. time= 216.2 min (1,320.3 - 1,104.0)

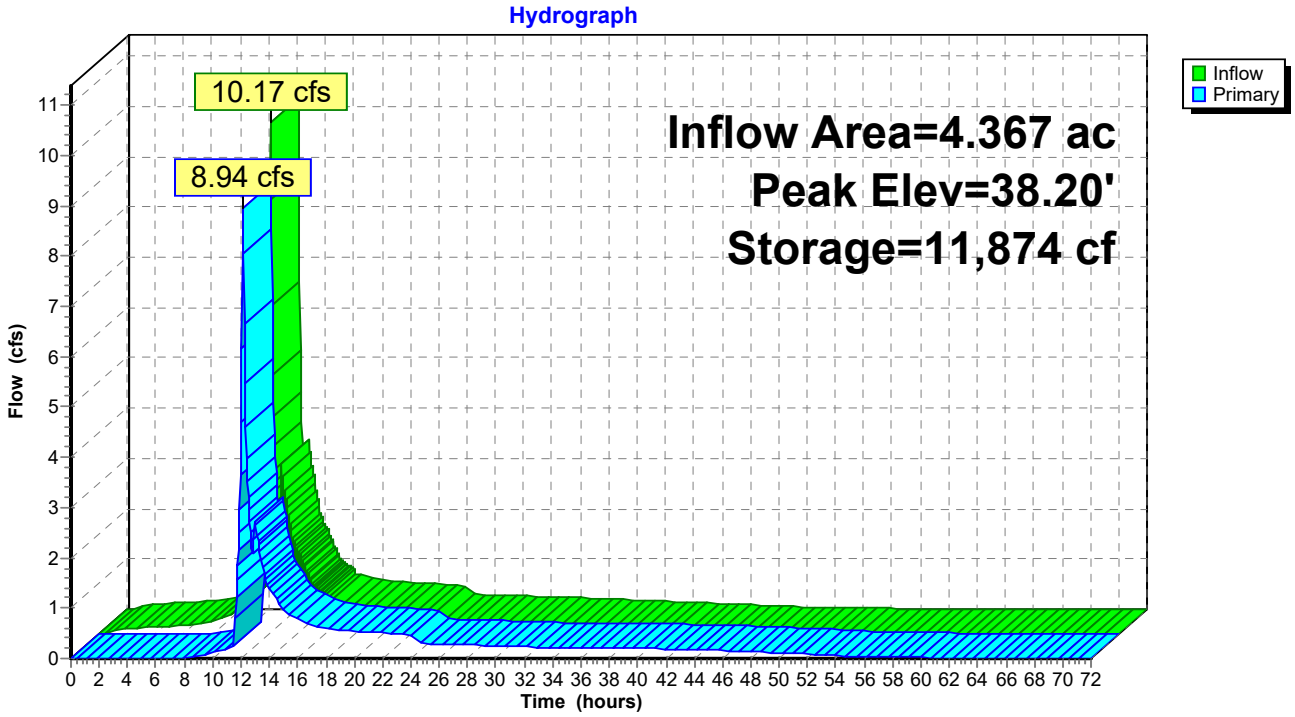
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	14,397 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,311	0	0
37.00	5,097	4,204	4,204
38.00	7,187	6,142	10,346
38.50	9,017	4,051	14,397

Device	Routing	Invert	Outlet Devices
#1	Primary	36.93'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.90'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.93 cfs @ 12.15 hrs HW=38.20' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.25 cfs @ 5.16 fps)
2=Orifice/Grate (Weir Controls 8.68 cfs @ 1.80 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 3

Inflow Area = 21.738 ac, 39.68% Impervious, Inflow Depth = 5.72" for Custom event
Inflow = 84.37 cfs @ 12.16 hrs, Volume= 10.358 af
Outflow = 9.88 cfs @ 13.66 hrs, Volume= 4.637 af, Atten= 88%, Lag= 89.6 min
Primary = 9.88 cfs @ 13.66 hrs, Volume= 4.637 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.76' @ 13.66 hrs Surf.Area= 58,907 sf Storage= 264,208 cf

Plug-Flow detention time= 466.9 min calculated for 4.637 af (45% of inflow)
Center-of-Mass det. time= 267.6 min (1,164.3 - 896.7)

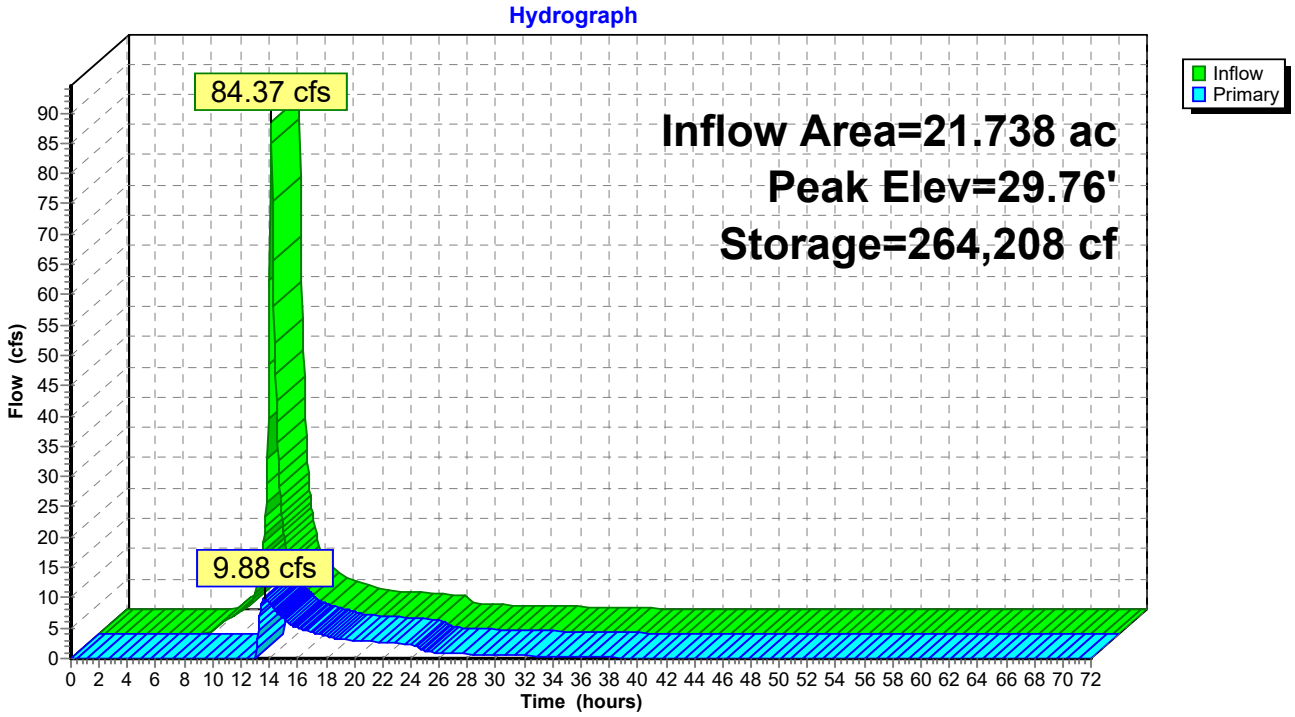
Volume	Invert	Avail.Storage	Storage Description
#1	24.01'	309,397 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.01	22,000	0	0
25.00	25,000	23,265	23,265
26.00	28,000	26,500	49,765
27.00	31,000	29,500	79,265
28.00	34,000	32,500	111,765
29.00	37,000	35,500	147,265
30.00	40,000	38,500	185,765
30.50	42,000	20,500	206,265

Device	Routing	Invert	Outlet Devices
#1	Primary	29.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=9.81 cfs @ 13.66 hrs HW=29.76' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 9.81 cfs @ 1.27 fps)

Pond 4P: Basin 3



Summary for Subcatchment 4S: Basin 2 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 138% of capacity of segment #3

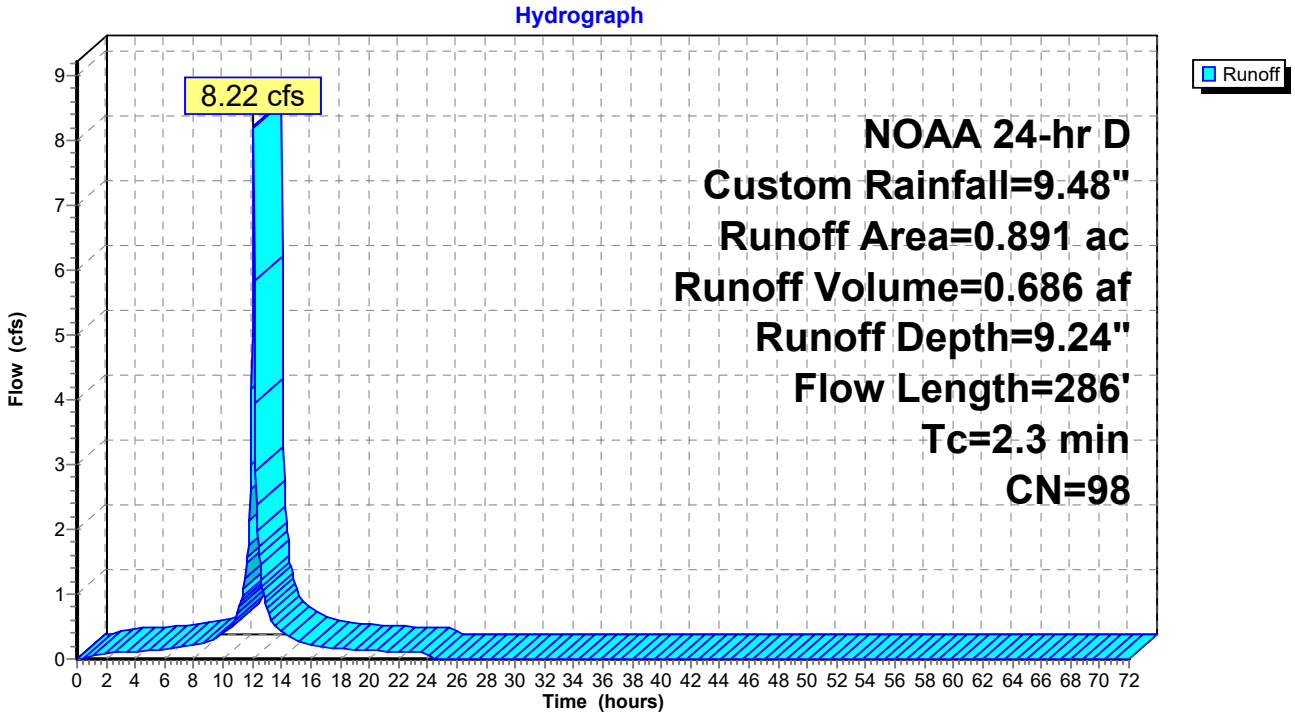
Runoff = 8.22 cfs @ 12.09 hrs, Volume= 0.686 af, Depth= 9.24"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.891	98	Impervious
	0.891		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	56	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	286	Total			

Subcatchment 4S: Basin 2 - Impervious



Summary for Subcatchment 5S: Basin 2 - Pervious

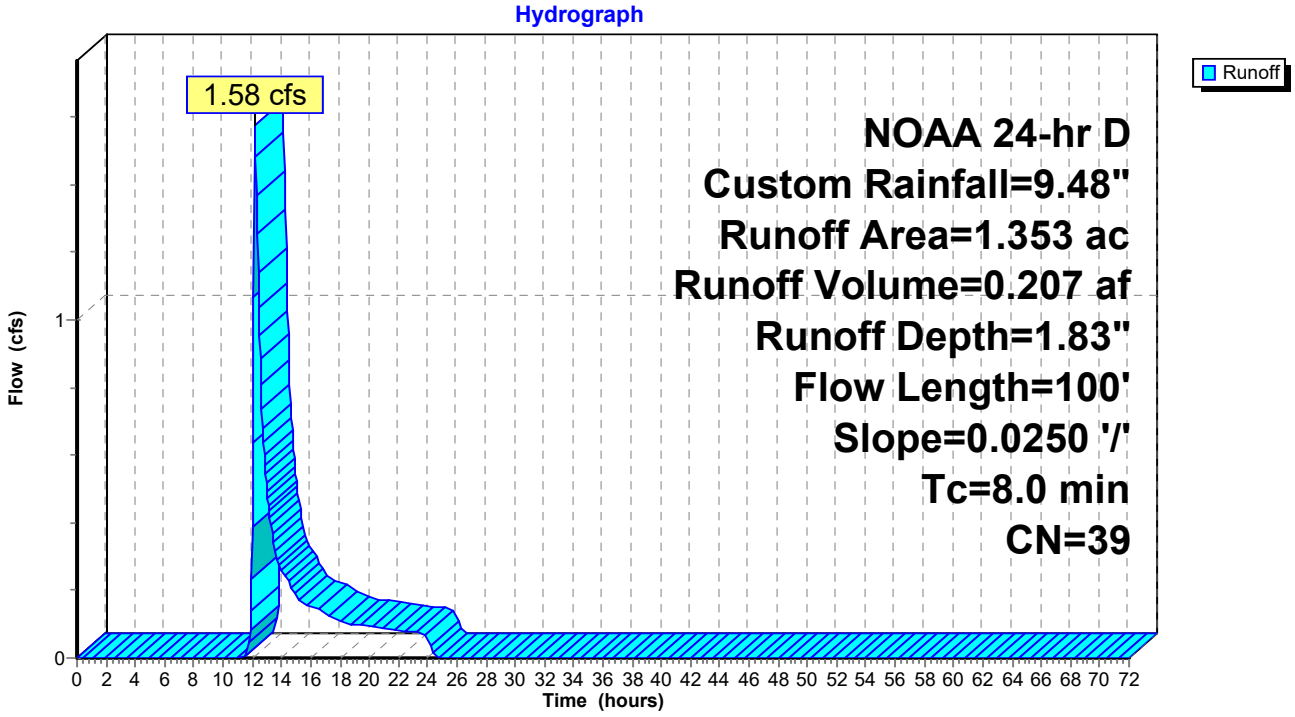
Runoff = 1.58 cfs @ 12.20 hrs, Volume= 0.207 af, Depth= 1.83"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.353	39	>75% Grass cover, Good, HSG A
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 5S: Basin 2 - Pervious



Summary for Pond 6P: Basin 2

[93] Warning: Storage range exceeded by 63.39'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=38)

Inflow Area = 2.244 ac, 39.71% Impervious, Inflow Depth = 4.77" for Custom event
Inflow = 9.25 cfs @ 12.10 hrs, Volume= 0.893 af
Outflow = 1.91 cfs @ 12.90 hrs, Volume= 0.816 af, Atten= 79%, Lag= 48.0 min
Primary = 1.91 cfs @ 12.90 hrs, Volume= 0.816 af
Routed to Pond 3P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 104.89' @ 12.90 hrs Surf.Area= 0.297 ac Storage= 0.512 af

Plug-Flow detention time= 764.4 min calculated for 0.816 af (91% of inflow)
Center-of-Mass det. time= 715.6 min (1,494.8 - 779.2)

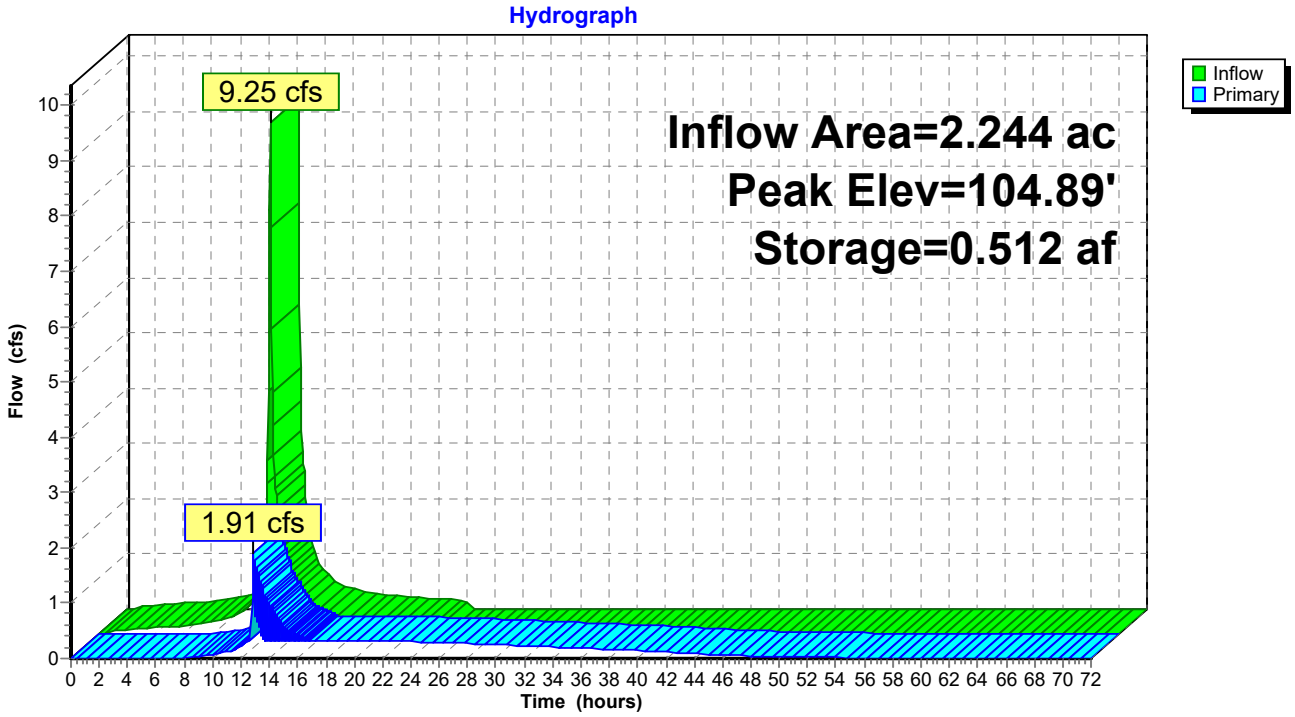
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	0.512 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
39.00	0.133	0.000	0.000
40.00	0.187	0.160	0.160
41.00	0.245	0.216	0.376
41.50	0.297	0.135	0.512

Device	Routing	Invert	Outlet Devices
#1	Primary	39.52'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.88 cfs @ 12.90 hrs HW=103.17' (Free Discharge)
1=Orifice/Grate (Orifice Controls 1.88 cfs @ 38.38 fps)

Pond 6P: Basin 2



Summary for Pond 7P: Basin 4

Inflow Area = 2.526 ac, 46.36% Impervious, Inflow Depth = 5.27" for Custom event
Inflow = 11.07 cfs @ 12.11 hrs, Volume= 1.109 af
Outflow = 10.14 cfs @ 12.15 hrs, Volume= 1.007 af, Atten= 8%, Lag= 2.5 min
Primary = 10.14 cfs @ 12.15 hrs, Volume= 1.007 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.19' @ 12.15 hrs Surf.Area= 6,784 sf Storage= 6,586 cf

Plug-Flow detention time= 104.9 min calculated for 1.007 af (91% of inflow)
Center-of-Mass det. time= 53.2 min (825.8 - 772.6)

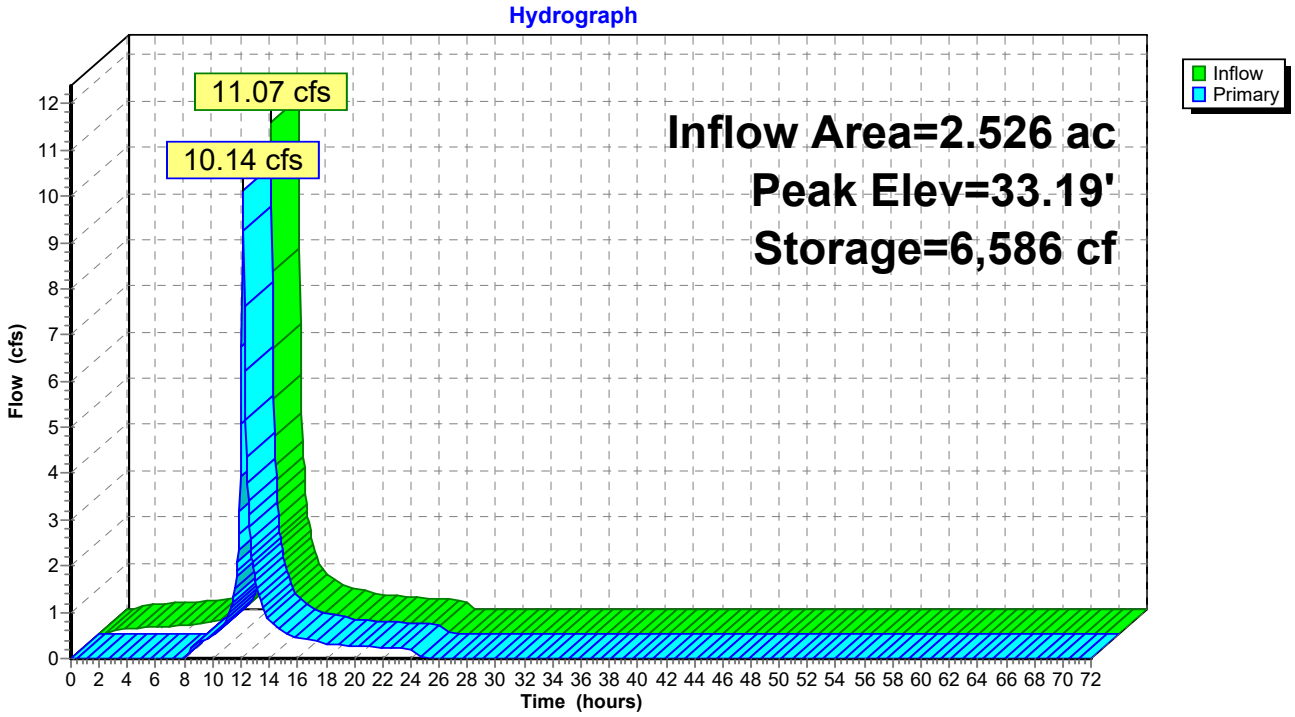
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	17,795 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	4,300	0	0
33.00	6,320	5,310	5,310
34.00	8,700	7,510	12,820
34.50	11,200	4,975	17,795

Device	Routing	Invert	Outlet Devices
#1	Primary	32.86'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.06 cfs @ 12.15 hrs HW=33.19' (Free Discharge)
1=Orifice/Grate (Weir Controls 10.06 cfs @ 1.89 fps)

Pond 7P: Basin 4



Summary for Subcatchment 8S: Basin 4 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 167% of capacity of segment #3

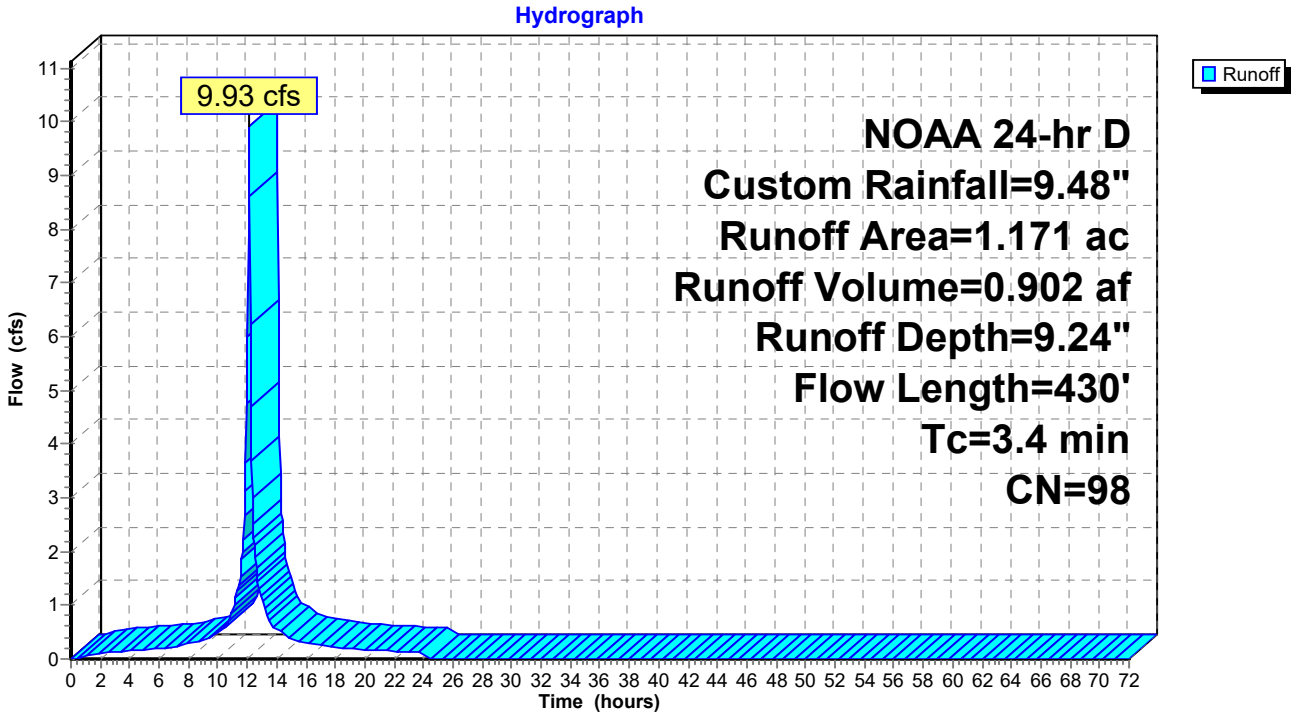
Runoff = 9.93 cfs @ 12.10 hrs, Volume= 0.902 af, Depth= 9.24"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.171	98	Impervious
	1.171		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.4	430	Total			

Subcatchment 8S: Basin 4 - Impervious



Summary for Subcatchment 9S: Basin 4 - Pervious

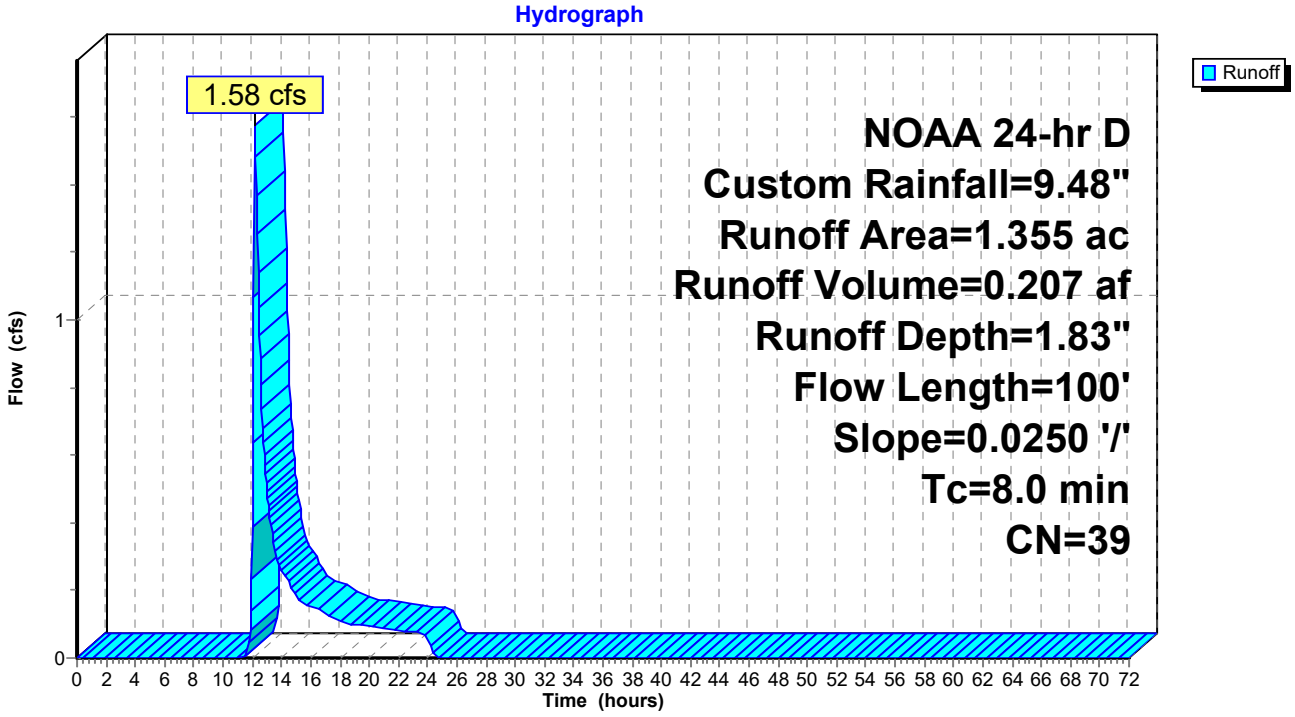
Runoff = 1.58 cfs @ 12.20 hrs, Volume= 0.207 af, Depth= 1.83"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.355	39	>75% Grass cover, Good, HSG A
1.355		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 9S: Basin 4 - Pervious



Summary for Pond 10P: Basin 5

Inflow Area = 1.373 ac, 35.40% Impervious, Inflow Depth = 5.42" for Custom event
Inflow = 7.64 cfs @ 12.10 hrs, Volume= 0.620 af
Outflow = 0.38 cfs @ 14.62 hrs, Volume= 0.578 af, Atten= 95%, Lag= 151.4 min
Primary = 0.38 cfs @ 14.62 hrs, Volume= 0.578 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.37' @ 14.62 hrs Surf.Area= 7,164 sf Storage= 15,967 cf

Plug-Flow detention time= 531.3 min calculated for 0.577 af (93% of inflow)
Center-of-Mass det. time= 493.8 min (1,284.2 - 790.3)

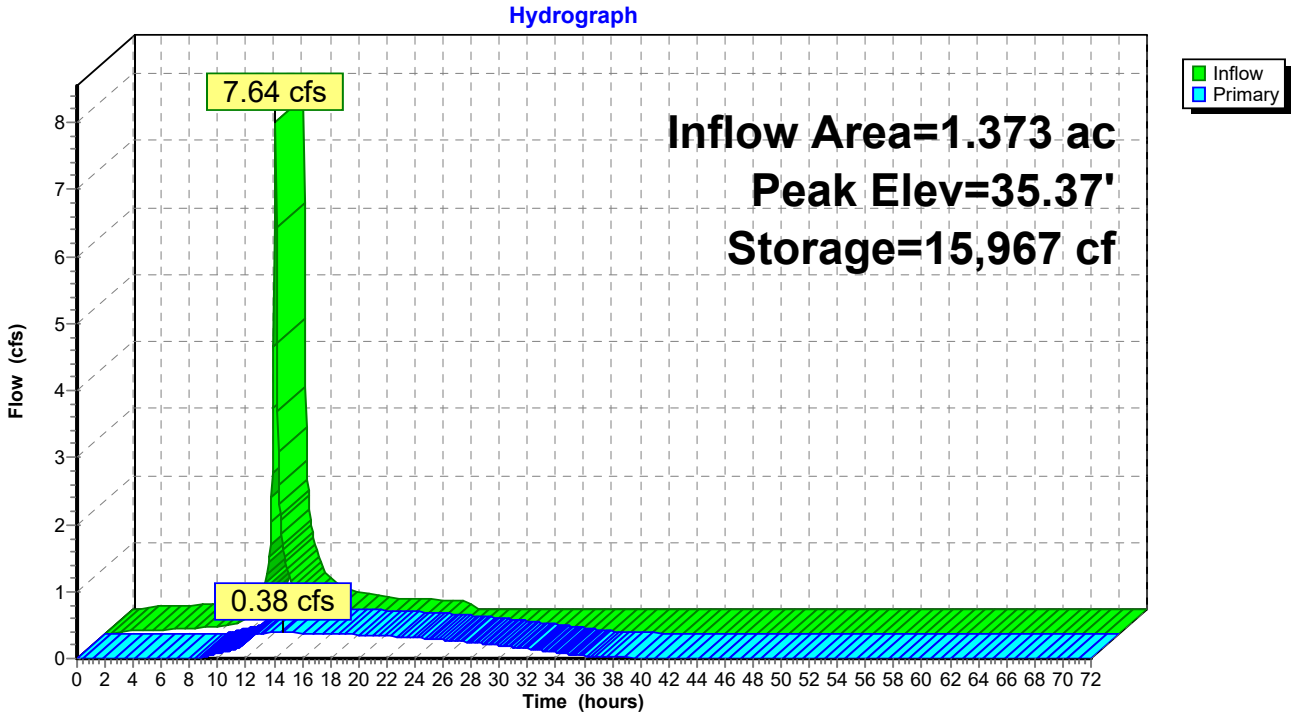
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	35,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,500	0	0
33.00	3,780	3,140	3,140
34.00	5,150	4,465	7,605
35.00	6,490	5,820	13,425
36.00	8,300	7,395	20,820
37.00	9,700	9,000	29,820
37.50	11,500	5,300	35,120

Device	Routing	Invert	Outlet Devices
#1	Primary	32.63'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.38 cfs @ 14.62 hrs HW=35.37' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.38 cfs @ 7.79 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Basin 5



Summary for Subcatchment 11S: Basin 5 - Impervious

[49] Hint: Tc<2dt may require smaller dt

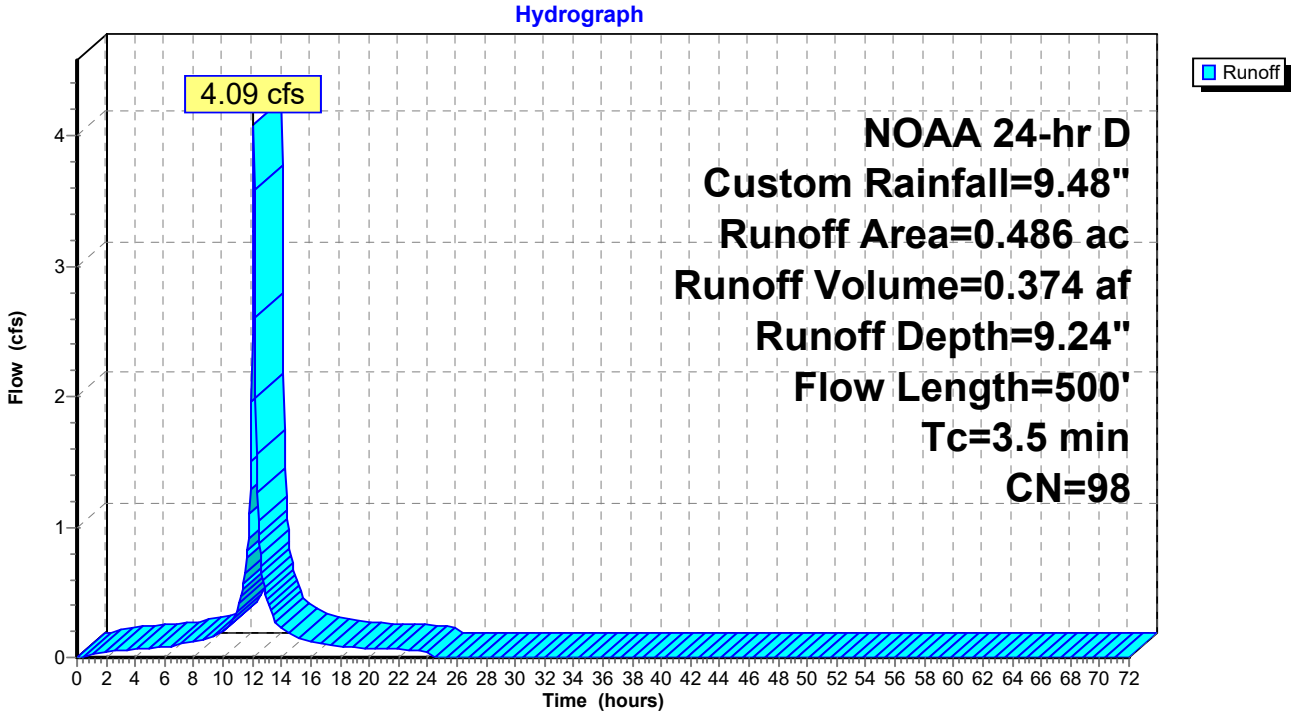
Runoff = 4.09 cfs @ 12.11 hrs, Volume= 0.374 af, Depth= 9.24"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.486	98	Impervious
	0.486		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.5	500	Total			

Subcatchment 11S: Basin 5 - Impervious



Summary for Subcatchment 12S: Basin 5 - Pervious

[49] Hint: Tc<2dt may require smaller dt

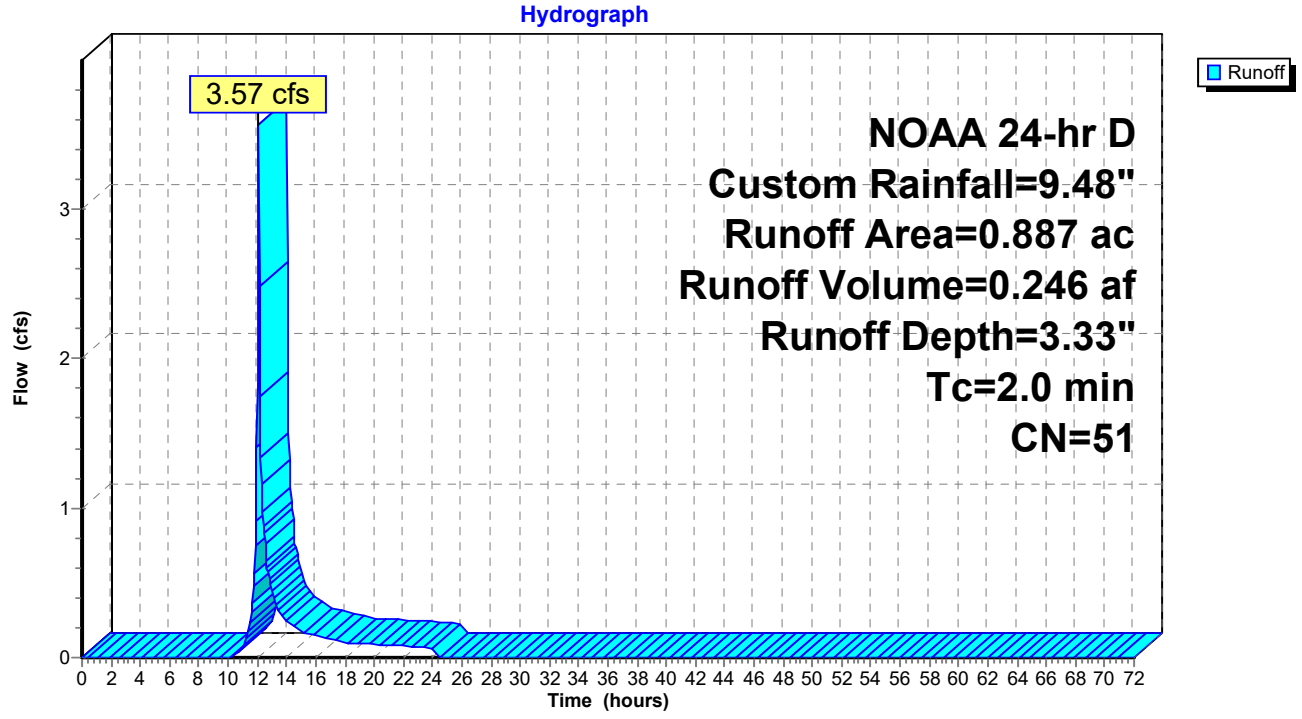
Runoff = 3.57 cfs @ 12.09 hrs, Volume= 0.246 af, Depth= 3.33"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
0.621	39	>75% Grass cover, Good, HSG A
0.266	80	>75% Grass cover, Good, HSG D
0.887	51	Weighted Average
0.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 12S: Basin 5 - Pervious



Summary for Pond 13P: Basin 7

Inflow Area = 3.928 ac, 40.63% Impervious, Inflow Depth = 7.39" for Custom event
Inflow = 21.98 cfs @ 12.17 hrs, Volume= 2.420 af
Outflow = 21.30 cfs @ 12.21 hrs, Volume= 2.304 af, Atten= 3%, Lag= 2.2 min
Primary = 21.30 cfs @ 12.21 hrs, Volume= 2.304 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.34' @ 12.21 hrs Surf.Area= 6,346 sf Storage= 8,201 cf

Plug-Flow detention time= 55.6 min calculated for 2.304 af (95% of inflow)
Center-of-Mass det. time= 27.3 min (820.2 - 792.8)

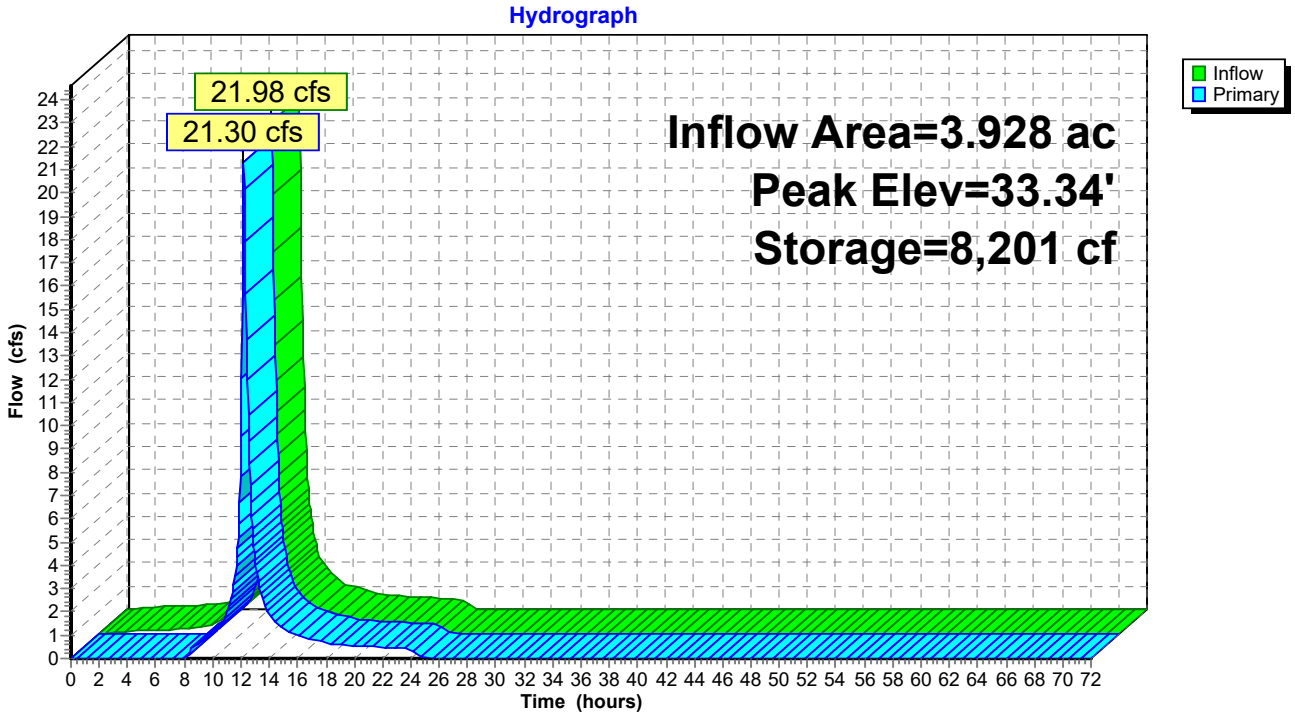
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	17,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,000	0	0
32.00	3,500	1,625	1,625
33.00	5,600	4,550	6,175
34.00	7,800	6,700	12,875
34.50	9,400	4,300	17,175

Device	Routing	Invert	Outlet Devices
#1	Primary	32.79'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=21.14 cfs @ 12.21 hrs HW=33.34' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 21.14 cfs @ 2.42 fps)

Pond 13P: Basin 7



Summary for Subcatchment 14S: Basin 7 - Impervious

[47] Hint: Peak is 130% of capacity of segment #3

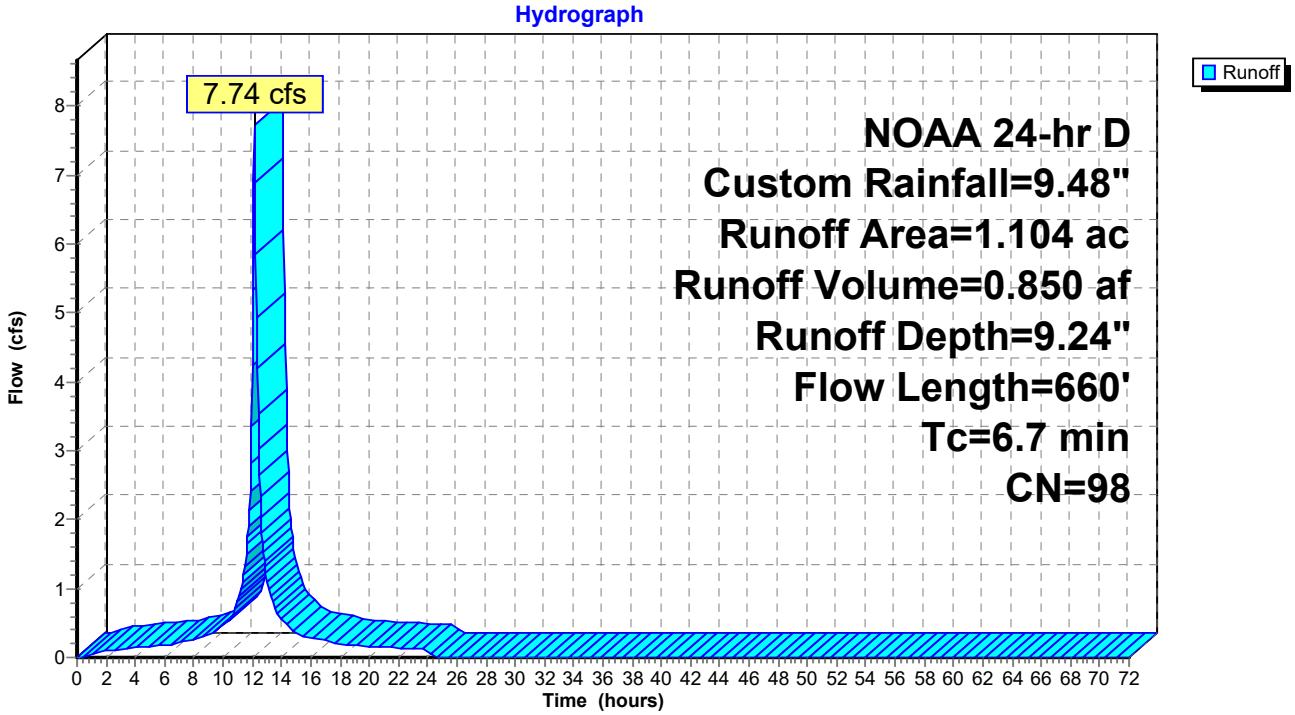
Runoff = 7.74 cfs @ 12.15 hrs, Volume= 0.850 af, Depth= 9.24"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.104	98	Impervious
	1.104		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
4.9	500	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	60	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	660	Total			

Subcatchment 14S: Basin 7 - Impervious

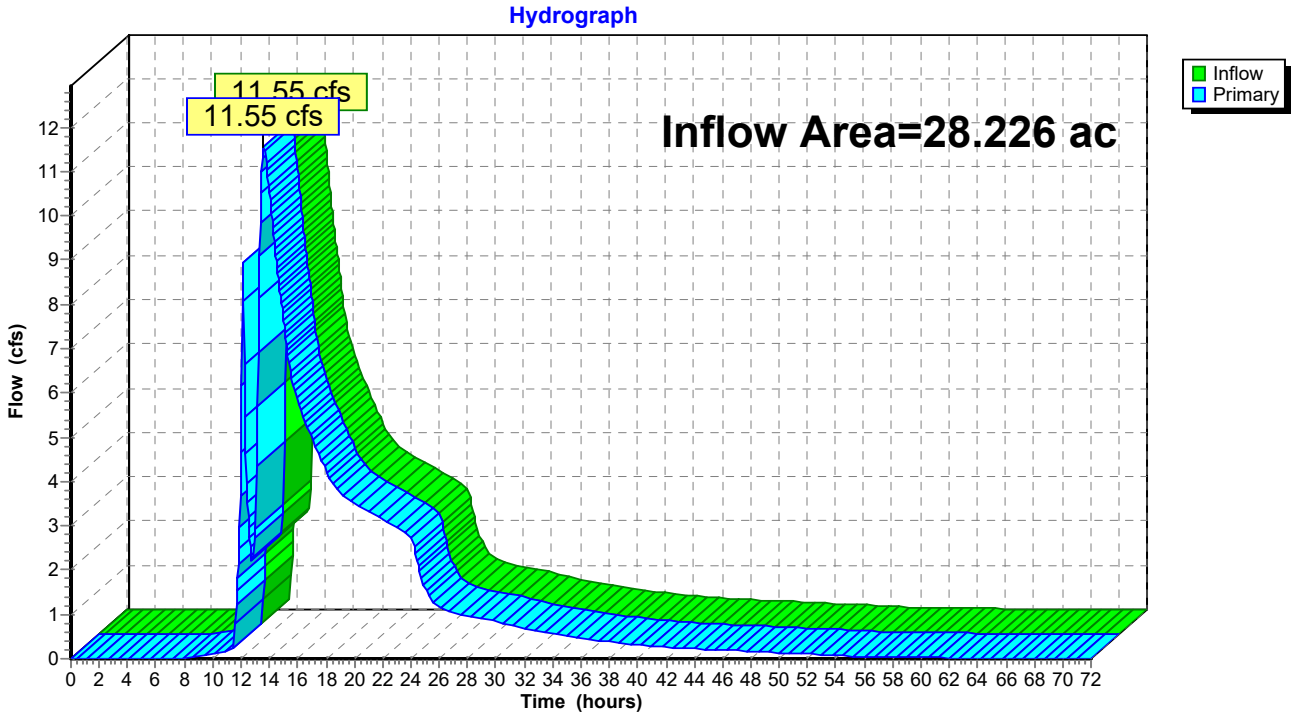


Summary for Link 15L: Willis Creek

Inflow Area = 28.226 ac, 38.93% Impervious, Inflow Depth > 2.68" for Custom event
Inflow = 11.55 cfs @ 13.61 hrs, Volume= 6.314 af
Primary = 11.55 cfs @ 13.61 hrs, Volume= 6.314 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 15L: Willis Creek



Summary for Subcatchment 15S: Basin 7 - Pervious

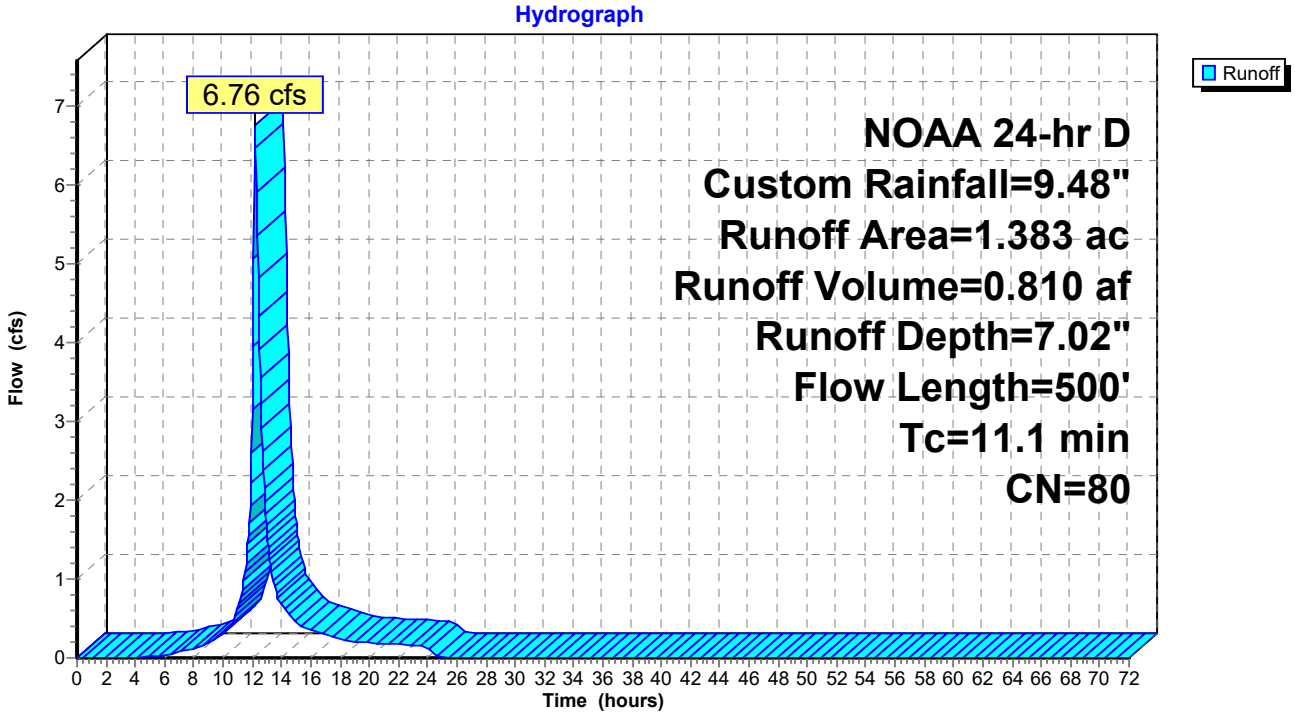
Runoff = 6.76 cfs @ 12.21 hrs, Volume= 0.810 af, Depth= 7.02"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.383	80	>75% Grass cover, Good, HSG D
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	80	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	20	0.0070	0.74		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
3.9	400	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
11.1	500	Total			

Subcatchment 15S: Basin 7 - Pervious



Summary for Pond 16P: Basin 9

Inflow Area = 7.133 ac, 41.50% Impervious, Inflow Depth = 5.71" for Custom event
Inflow = 34.27 cfs @ 12.14 hrs, Volume= 3.391 af
Outflow = 32.64 cfs @ 12.15 hrs, Volume= 3.294 af, Atten= 5%, Lag= 1.0 min
Primary = 32.64 cfs @ 12.15 hrs, Volume= 3.294 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.66' @ 12.15 hrs Surf.Area= 6,092 sf Storage= 8,359 cf

Plug-Flow detention time= 60.7 min calculated for 3.294 af (97% of inflow)
Center-of-Mass det. time= 21.3 min (905.8 - 884.5)

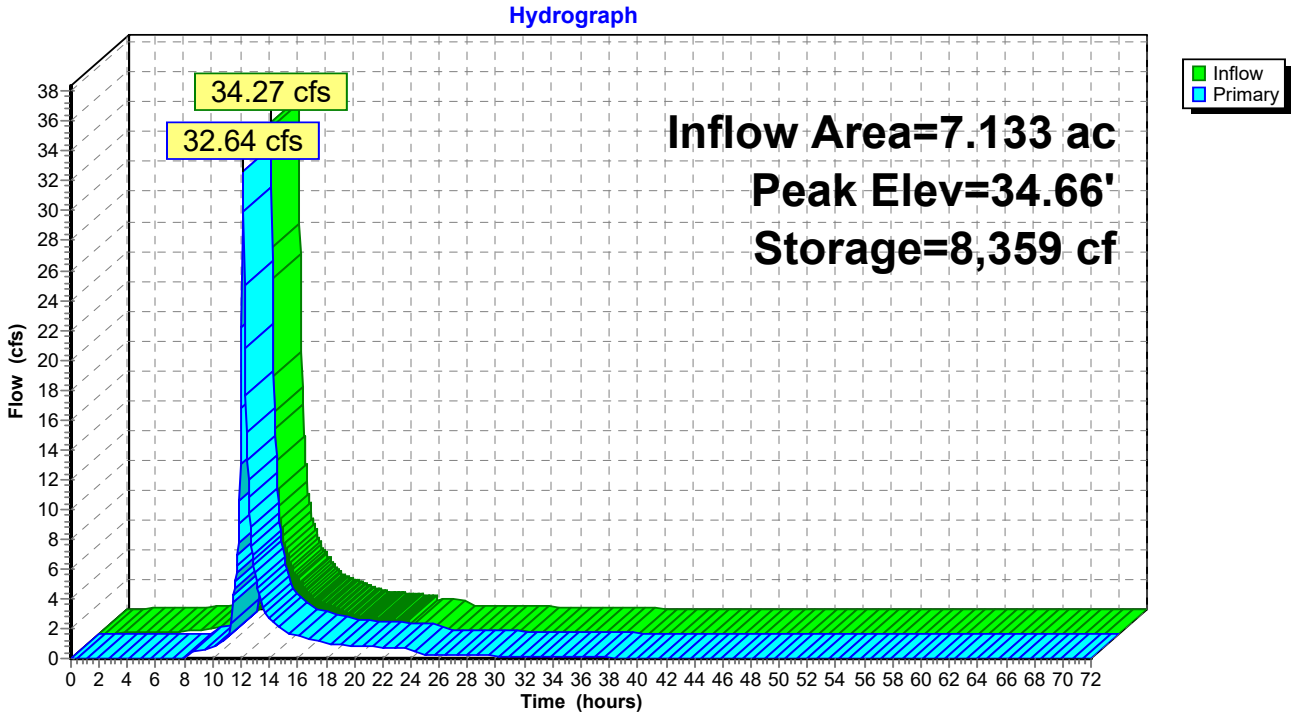
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,900	0	0
34.00	5,300	4,600	4,600
35.00	6,500	5,900	10,500
36.00	8,000	7,250	17,750
36.50	9,700	4,425	22,175

Device	Routing	Invert	Outlet Devices
#1	Primary	33.93'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=32.44 cfs @ 12.15 hrs HW=34.66' (Free Discharge)
1=Orifice/Grate (Weir Controls 32.44 cfs @ 2.79 fps)

Pond 16P: Basin 9



Summary for Subcatchment 17S: Basin 9 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 162% of capacity of segment #3

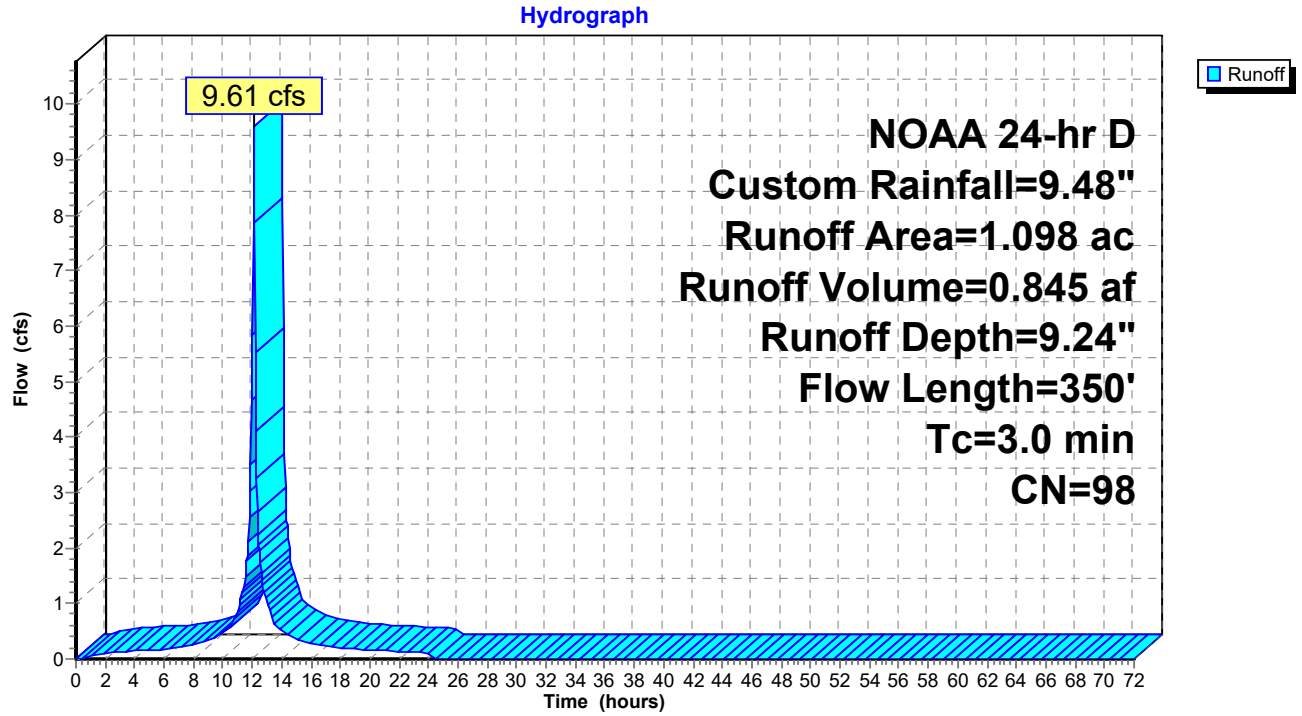
Runoff = 9.61 cfs @ 12.10 hrs, Volume= 0.845 af, Depth= 9.24"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.098	98	Impervious
	1.098		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.0	350	Total			

Subcatchment 17S: Basin 9 - Impervious



Summary for Subcatchment 18S: Basin 9 - Pervious

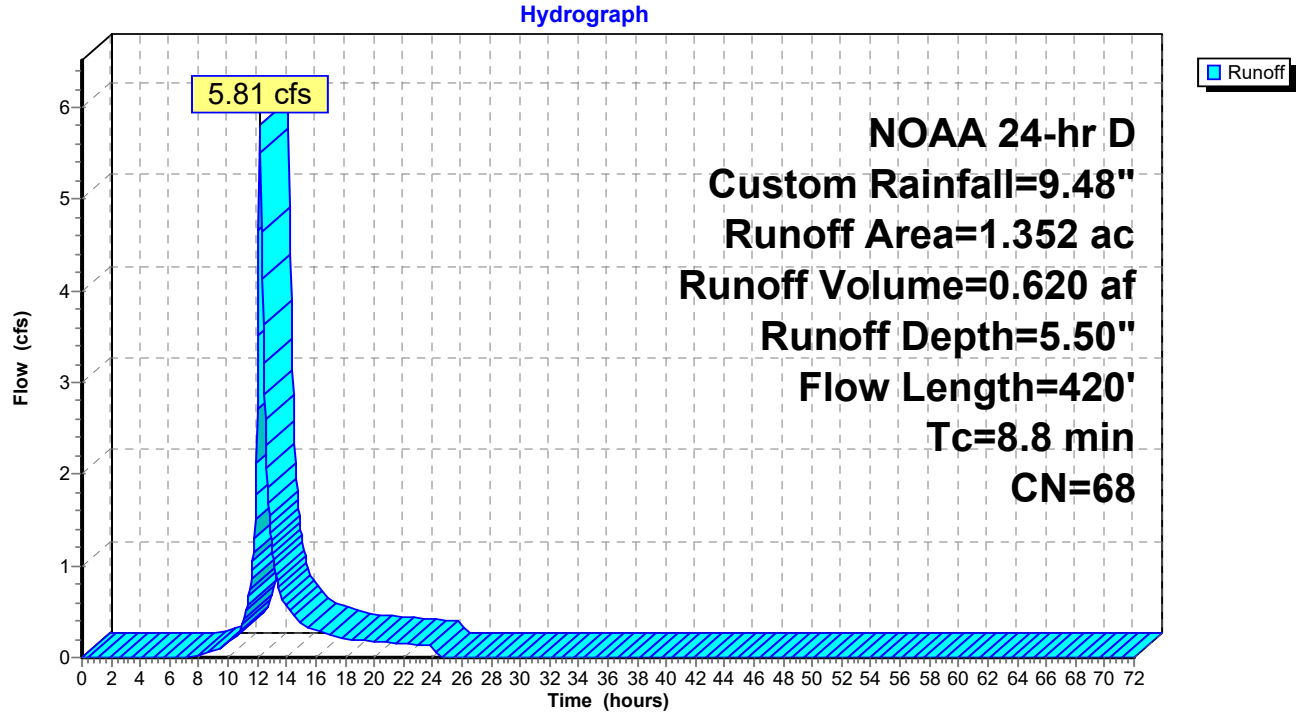
Runoff = 5.81 cfs @ 12.18 hrs, Volume= 0.620 af, Depth= 5.50"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
0.946	80	>75% Grass cover, Good, HSG D
0.406	39	>75% Grass cover, Good, HSG A
1.352	68	Weighted Average
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
1.7	170	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, D to E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	420	Total			

Subcatchment 18S: Basin 9 - Pervious



Summary for Pond 19P: Basin 10

[93] Warning: Storage range exceeded by 7,445.02'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=123)
[81] Warning: Exceeded Pond 22P by 7,396.97' @ 12.15 hrs

Inflow Area = 4.683 ac, 39.76% Impervious, Inflow Depth = 5.14" for Custom event
Inflow = 19.13 cfs @ 12.13 hrs, Volume= 2.006 af
Outflow = 20.43 cfs @ 12.14 hrs, Volume= 1.926 af, Atten= 0%, Lag= 0.9 min
Primary = 20.43 cfs @ 12.14 hrs, Volume= 1.926 af
Routed to Pond 16P : Basin 9

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 7,483.52' @ 12.14 hrs Surf.Area= 8,000 sf Storage= 12,700 cf

Plug-Flow detention time= 189.8 min calculated for 1.926 af (96% of inflow)
Center-of-Mass det. time= 165.7 min (963.3 - 797.6)

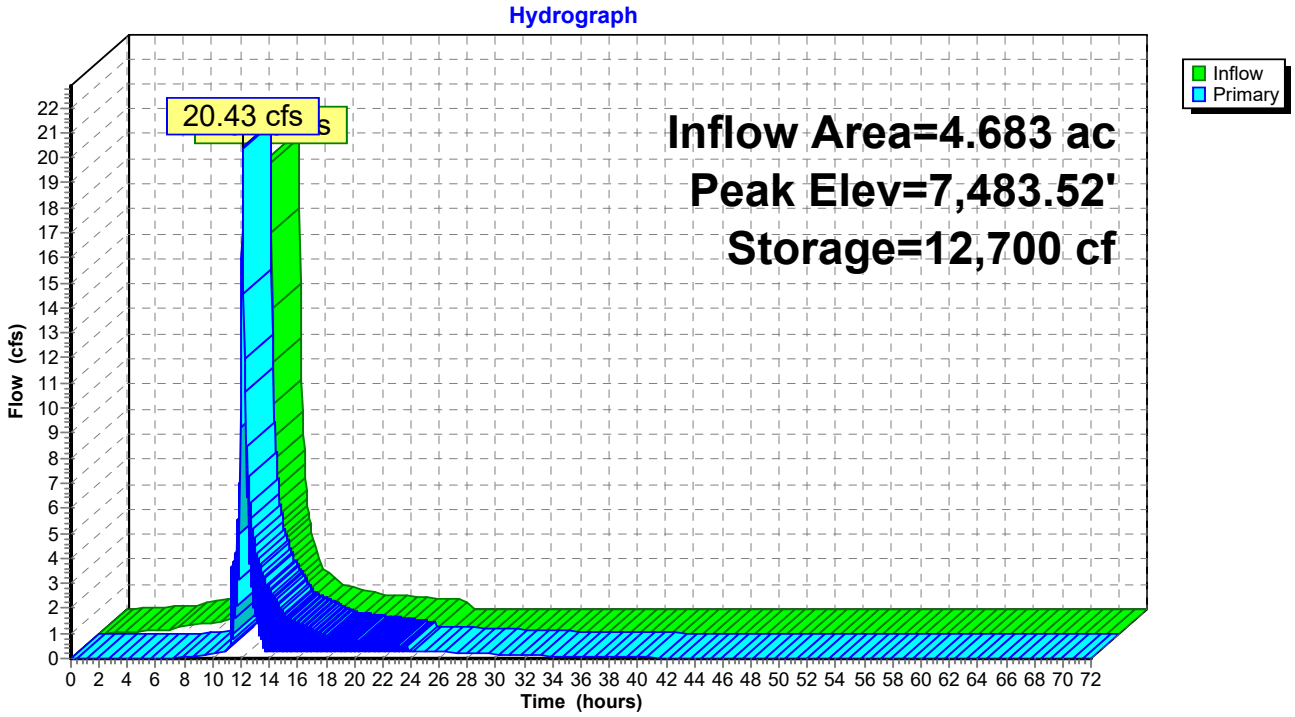
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	12,700 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,700	0	0
37.00	4,400	3,550	3,550
38.00	6,600	5,500	9,050
38.50	8,000	3,650	12,700

Device	Routing	Invert	Outlet Devices
#1	Primary	36.97'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=19.90 cfs @ 12.14 hrs HW=7,125.18' (Free Discharge)
1=Orifice/Grate (Orifice Controls 19.90 cfs @ 405.38 fps)

Pond 19P: Basin 10



Summary for Subcatchment 20S: Basin 10 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 136% of capacity of segment #3

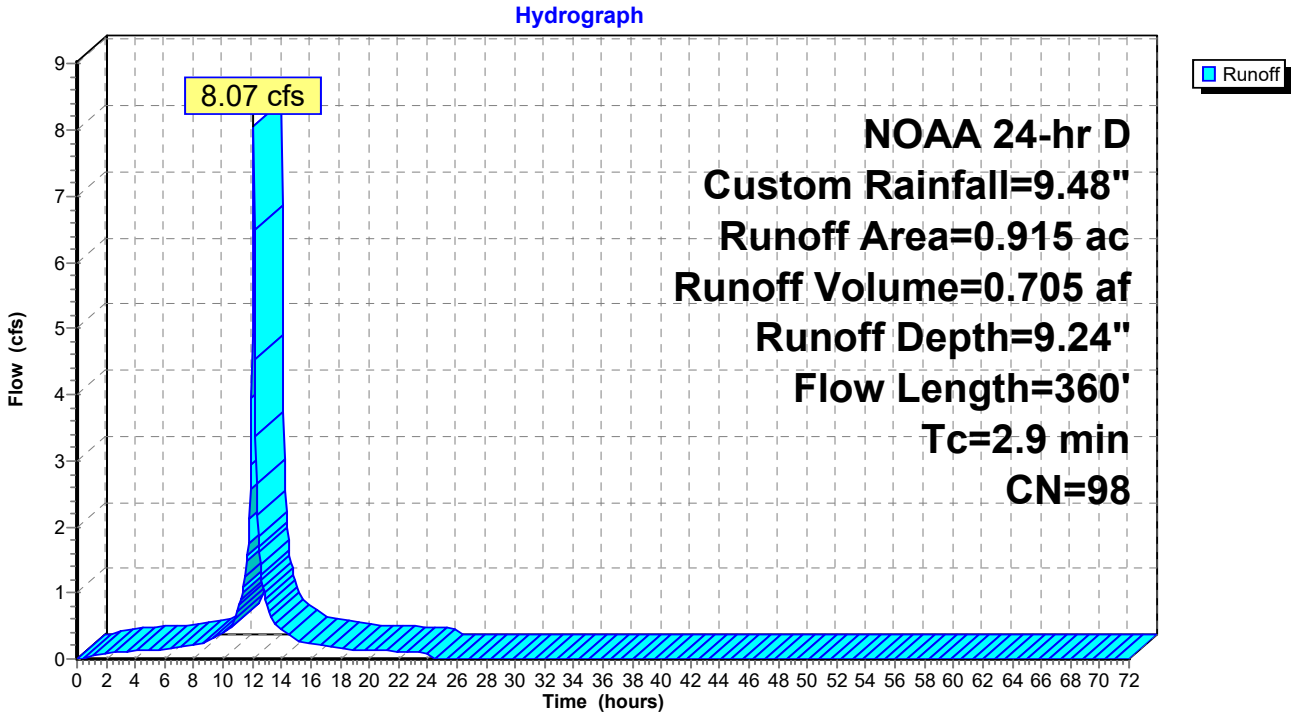
Runoff = 8.07 cfs @ 12.10 hrs, Volume= 0.705 af, Depth= 9.24"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.6	60	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	360	Total			

Subcatchment 20S: Basin 10 - Impervious



Summary for Subcatchment 21S: Basin 10 - Pervious

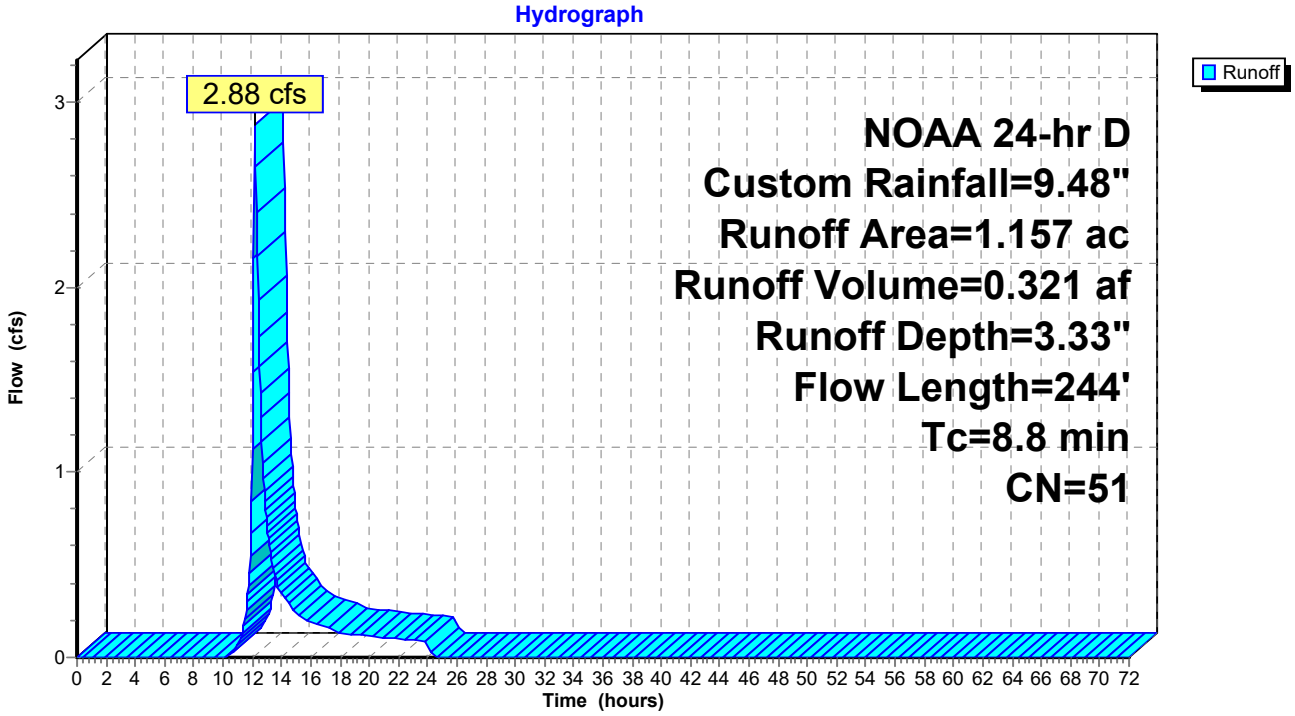
Runoff = 2.88 cfs @ 12.19 hrs, Volume= 0.321 af, Depth= 3.33"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
0.347	80	>75% Grass cover, Good, HSG D
0.810	39	>75% Grass cover, Good, HSG A
1.157	51	Weighted Average
1.157		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	150	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	244	Total			

Subcatchment 21S: Basin 10 - Pervious



Summary for Pond 22P: Basin 11

Inflow Area = 2.611 ac, 36.27% Impervious, Inflow Depth = 4.67" for Custom event
Inflow = 9.90 cfs @ 12.12 hrs, Volume= 1.017 af
Outflow = 9.59 cfs @ 12.15 hrs, Volume= 0.980 af, Atten= 3%, Lag= 1.8 min
Primary = 9.59 cfs @ 12.15 hrs, Volume= 0.980 af
Routed to Pond 19P : Basin 10

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.82' @ 12.15 hrs Surf.Area= 4,041 sf Storage= 2,830 cf

Plug-Flow detention time= 48.8 min calculated for 0.980 af (96% of inflow)
Center-of-Mass det. time= 26.4 min (813.7 - 787.2)

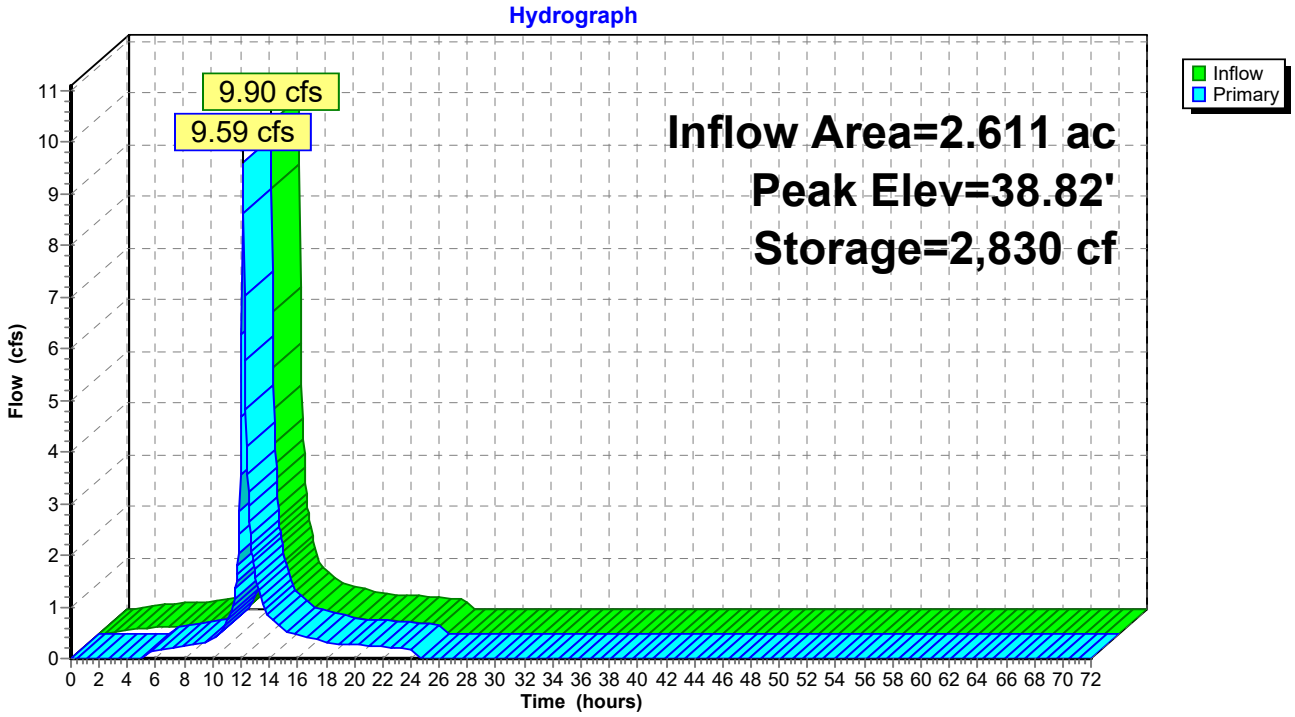
Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	9,170 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	2,840	0	0
39.00	4,300	3,570	3,570
40.00	6,900	5,600	9,170

Device	Routing	Invert	Outlet Devices
#1	Primary	38.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.53 cfs @ 12.15 hrs HW=38.82' (Free Discharge)
1=Orifice/Grate (Weir Controls 9.53 cfs @ 1.85 fps)

Pond 22P: Basin 11



Summary for Subcatchment 23S: Basin 11 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 131% of capacity of segment #3

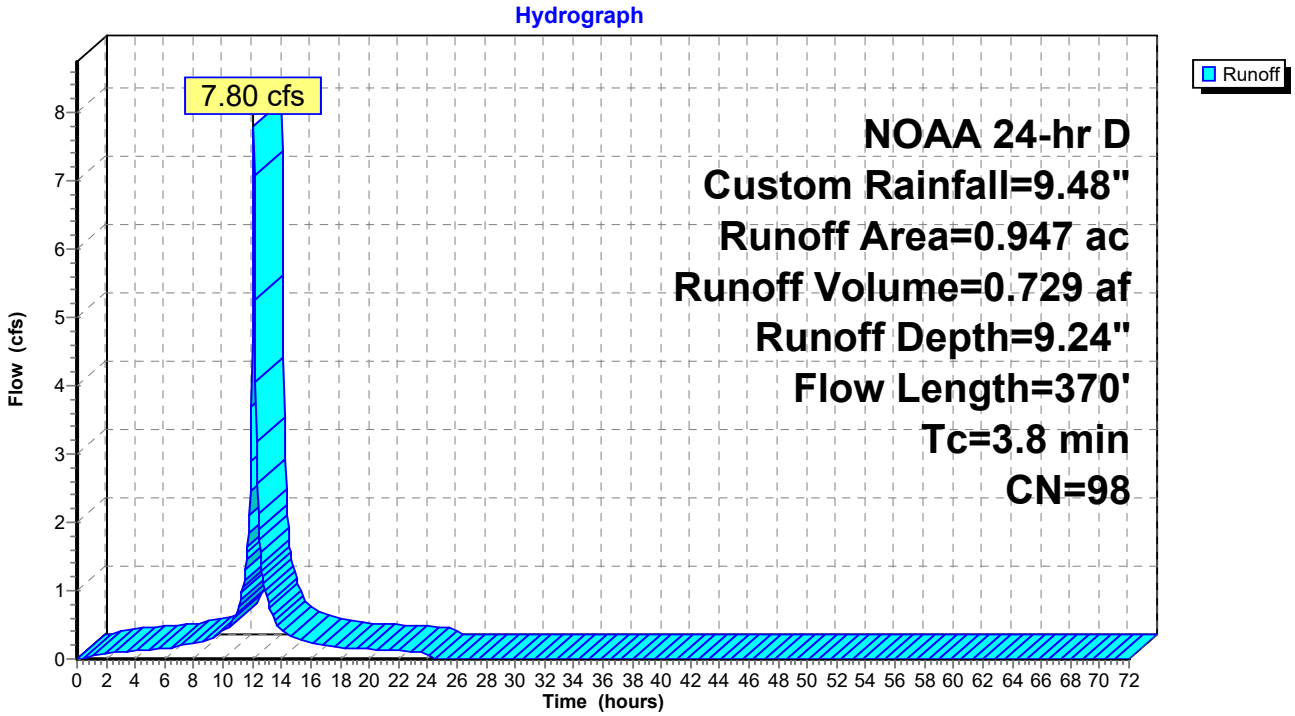
Runoff = 7.80 cfs @ 12.11 hrs, Volume= 0.729 af, Depth= 9.24"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.947	98	Impervious
	0.947		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	70	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.8	370	Total			

Subcatchment 23S: Basin 11 - Impervious



Summary for Subcatchment 24S: Basin 11 - Pervious

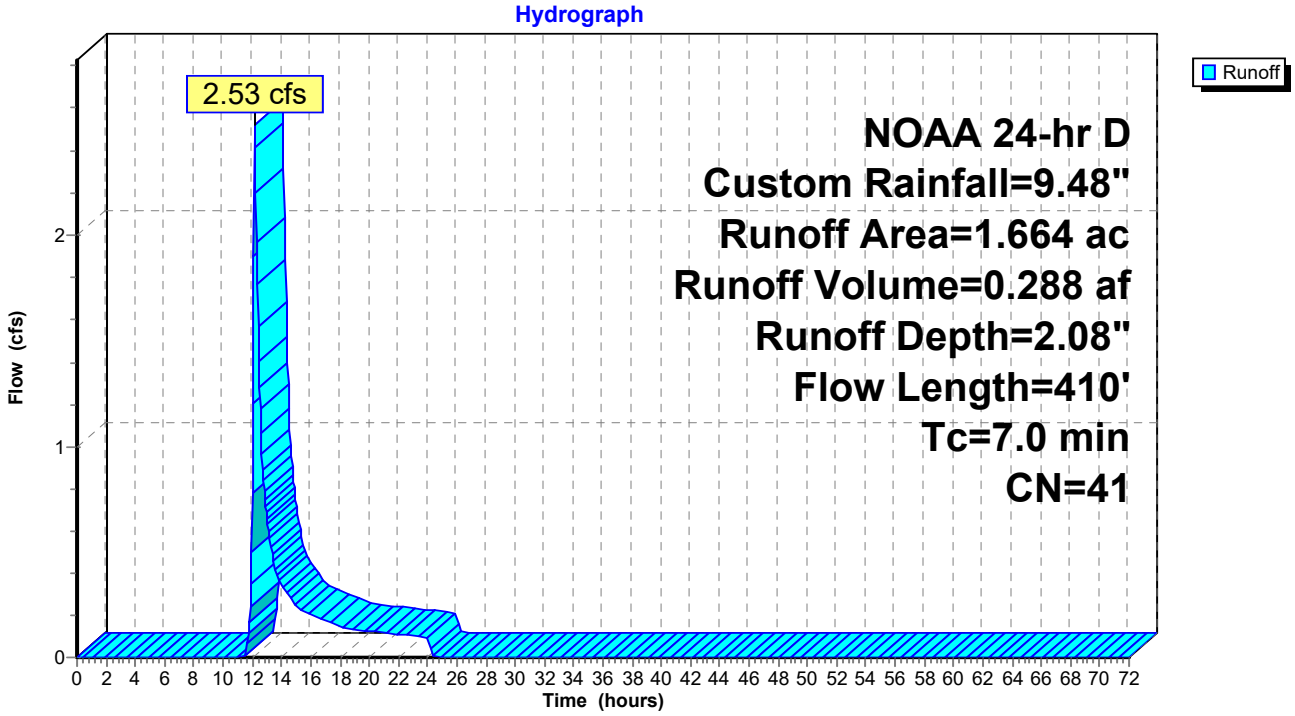
Runoff = 2.53 cfs @ 12.17 hrs, Volume= 0.288 af, Depth= 2.08"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
0.083	80	>75% Grass cover, Good, HSG D
1.581	39	>75% Grass cover, Good, HSG A
1.664	41	Weighted Average
1.664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	60	0.0200	0.17		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.0	410	Total			

Subcatchment 24S: Basin 11 - Pervious



Summary for Pond 25P: Basin 12

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 3.41" for Custom event
Inflow = 5.20 cfs @ 12.12 hrs, Volume= 0.602 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 40P : Wetlands Depression

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.06' @ 25.05 hrs Surf.Area= 15,814 sf Storage= 26,220 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

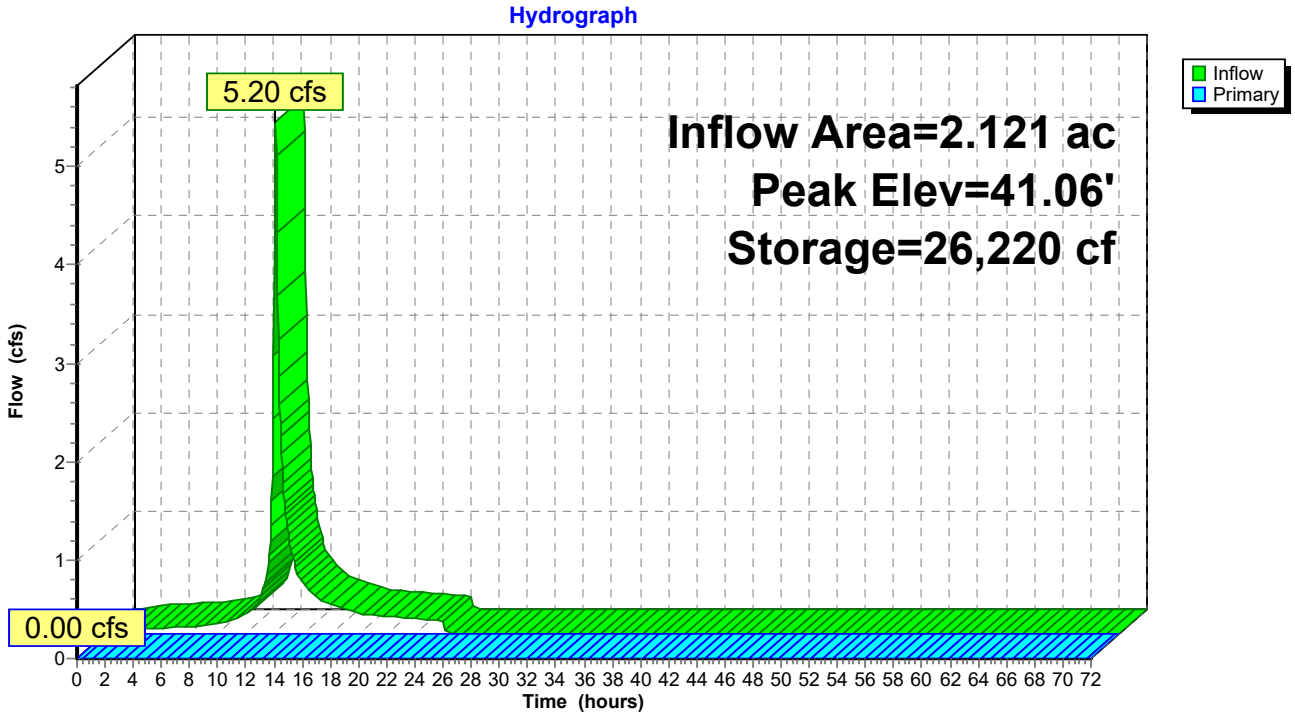
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	52,425 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	9,700	0	0
40.00	12,550	11,125	11,125
41.00	15,600	14,075	25,200
42.00	18,900	17,250	42,450
42.50	21,000	9,975	52,425

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=39.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 25P: Basin 12



Summary for Subcatchment 26S: Basin 12 - Impervious

[49] Hint: Tc<2dt may require smaller dt

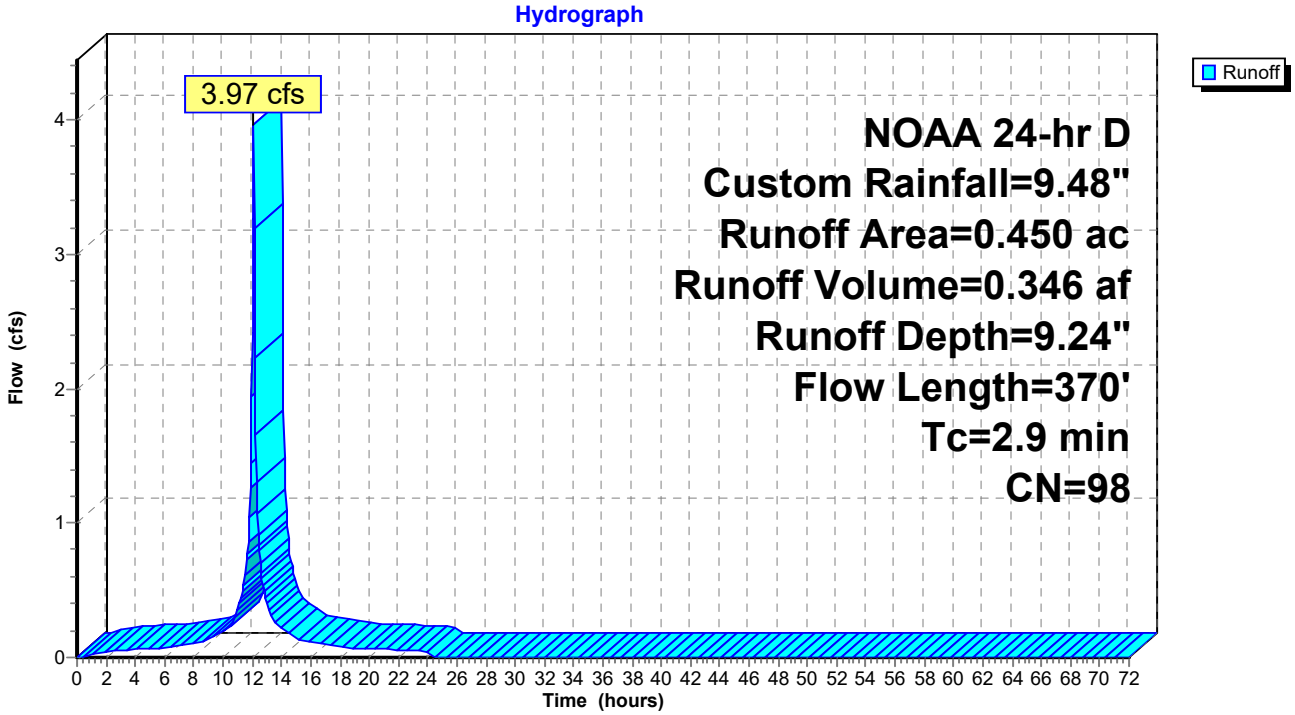
Runoff = 3.97 cfs @ 12.10 hrs, Volume= 0.346 af, Depth= 9.24"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.450	98	Impervious
	0.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	50	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.8	220	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	370	Total			

Subcatchment 26S: Basin 12 - Impervious



Summary for Subcatchment 27S: Basin 12 - Pervious

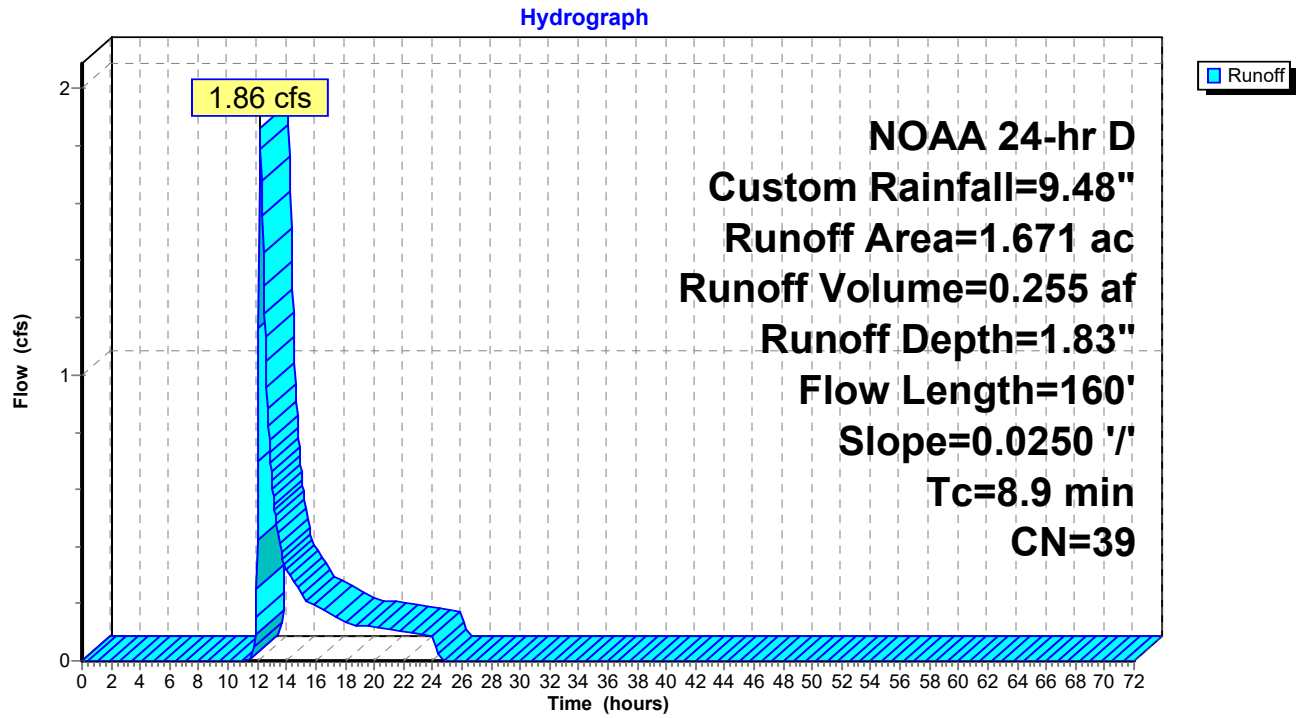
Runoff = 1.86 cfs @ 12.21 hrs, Volume= 0.255 af, Depth= 1.83"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.671	39	>75% Grass cover, Good, HSG A
1.671		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.9	60	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
8.9	160	Total			

Subcatchment 27S: Basin 12 - Pervious



Summary for Pond 29P: Basin 6

Inflow Area = 1.441 ac, 34.14% Impervious, Inflow Depth = 6.70" for Custom event
Inflow = 8.05 cfs @ 12.15 hrs, Volume= 0.804 af
Outflow = 7.83 cfs @ 12.17 hrs, Volume= 0.761 af, Atten= 3%, Lag= 1.3 min
Primary = 7.83 cfs @ 12.17 hrs, Volume= 0.761 af
Routed to Pond 13P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.12' @ 12.17 hrs Surf.Area= 3,133 sf Storage= 2,721 cf

Plug-Flow detention time= 61.8 min calculated for 0.761 af (95% of inflow)
Center-of-Mass det. time= 30.3 min (823.7 - 793.4)

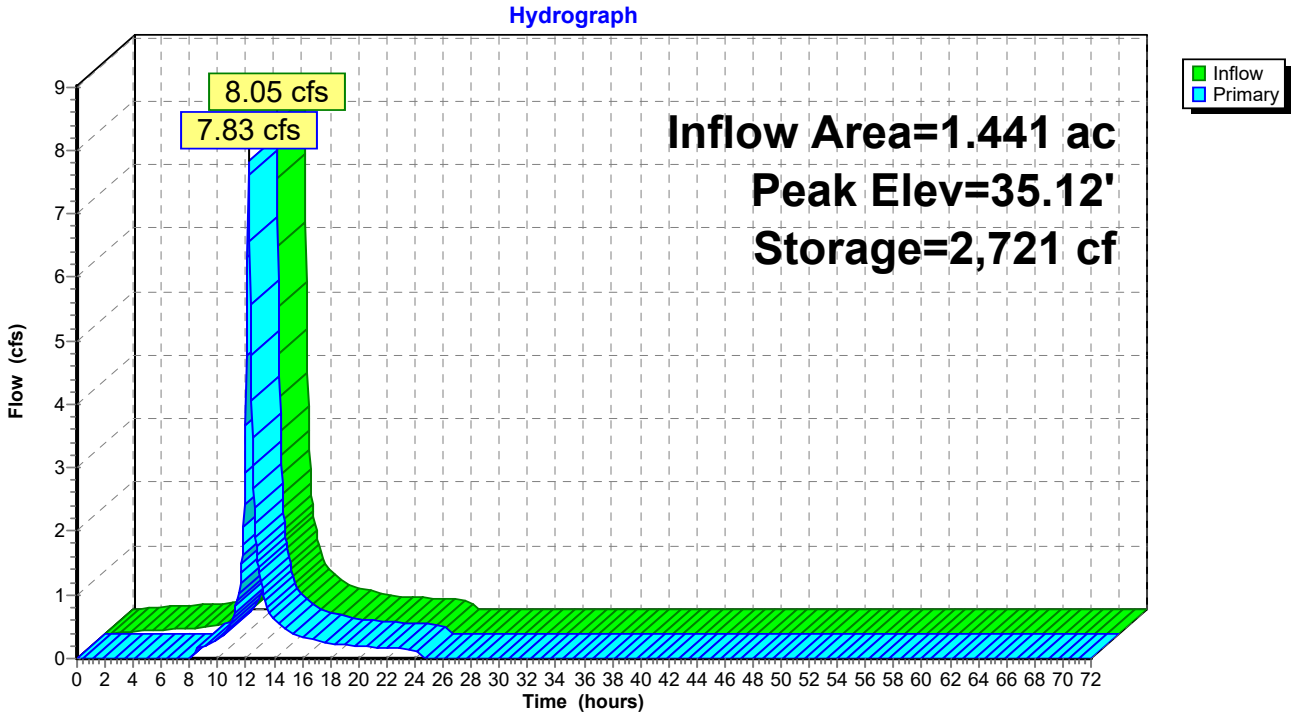
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	4,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	1,750	0	0
35.00	2,950	2,350	2,350
35.50	3,700	1,663	4,013

Device	Routing	Invert	Outlet Devices
#1	Primary	34.84'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.65 cfs @ 12.17 hrs HW=35.12' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 7.65 cfs @ 1.72 fps)

Pond 29P: Basin 6



Summary for Subcatchment 30S: Basin 6 - Impervious

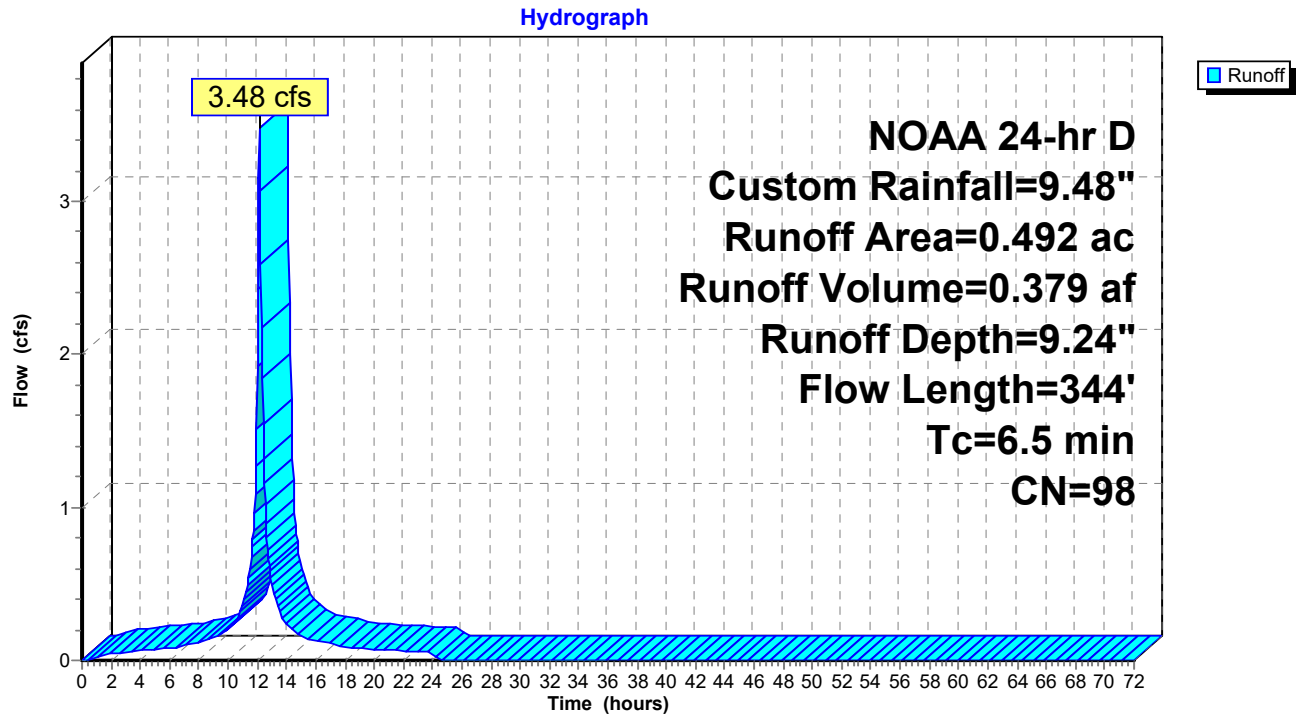
Runoff = 3.48 cfs @ 12.15 hrs, Volume= 0.379 af, Depth= 9.24"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.492	98	Impervious
	0.492		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 30S: Basin 6 - Impervious



Summary for Subcatchment 32S: Basin 6 - Pervious

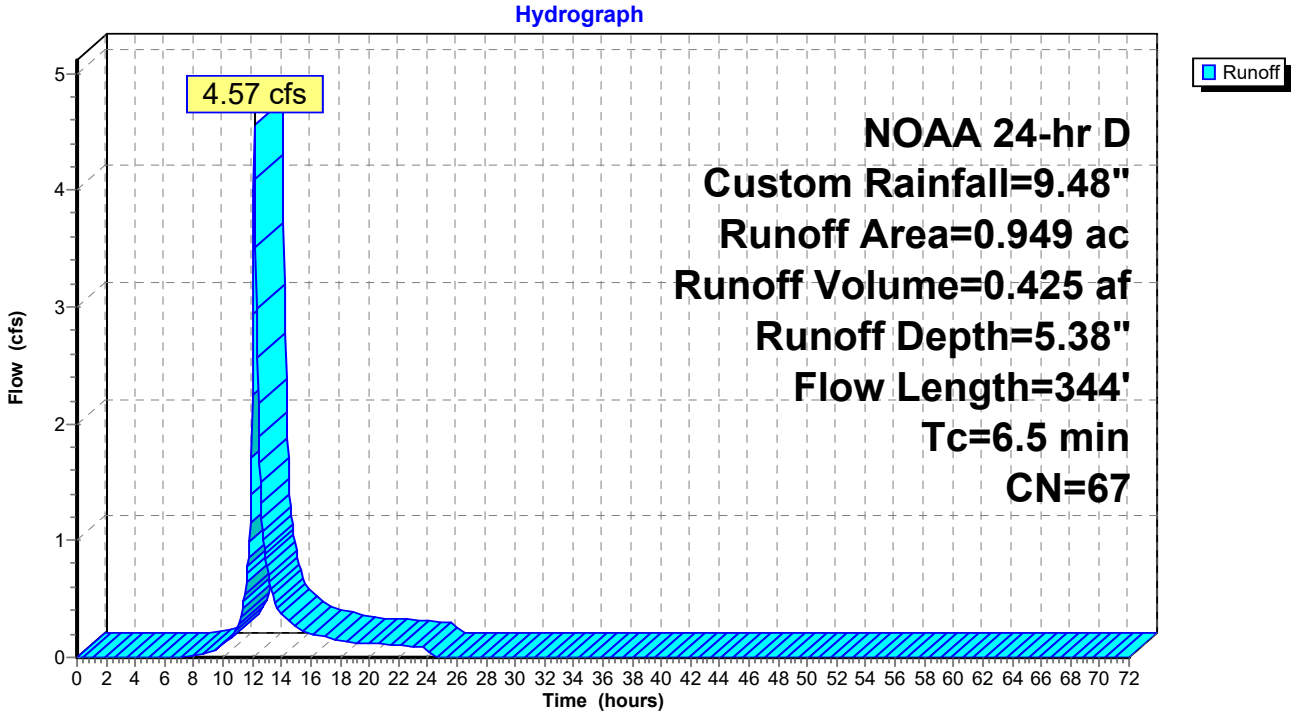
Runoff = 4.57 cfs @ 12.15 hrs, Volume= 0.425 af, Depth= 5.38"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
0.637	80	>75% Grass cover, Good, HSG D
0.312	39	>75% Grass cover, Good, HSG A
0.949	67	Weighted Average
0.949		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 32S: Basin 6 - Pervious



Summary for Pond 33P: Basin 8

Inflow Area = 3.061 ac, 36.82% Impervious, Inflow Depth = 7.84" for Custom event
Inflow = 16.99 cfs @ 12.15 hrs, Volume= 2.000 af
Outflow = 16.35 cfs @ 12.19 hrs, Volume= 1.873 af, Atten= 4%, Lag= 2.3 min
Primary = 16.35 cfs @ 12.19 hrs, Volume= 1.873 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.13' @ 12.19 hrs Surf.Area= 6,461 sf Storage= 8,301 cf

Plug-Flow detention time= 71.6 min calculated for 1.873 af (94% of inflow)
Center-of-Mass det. time= 35.1 min (817.9 - 782.9)

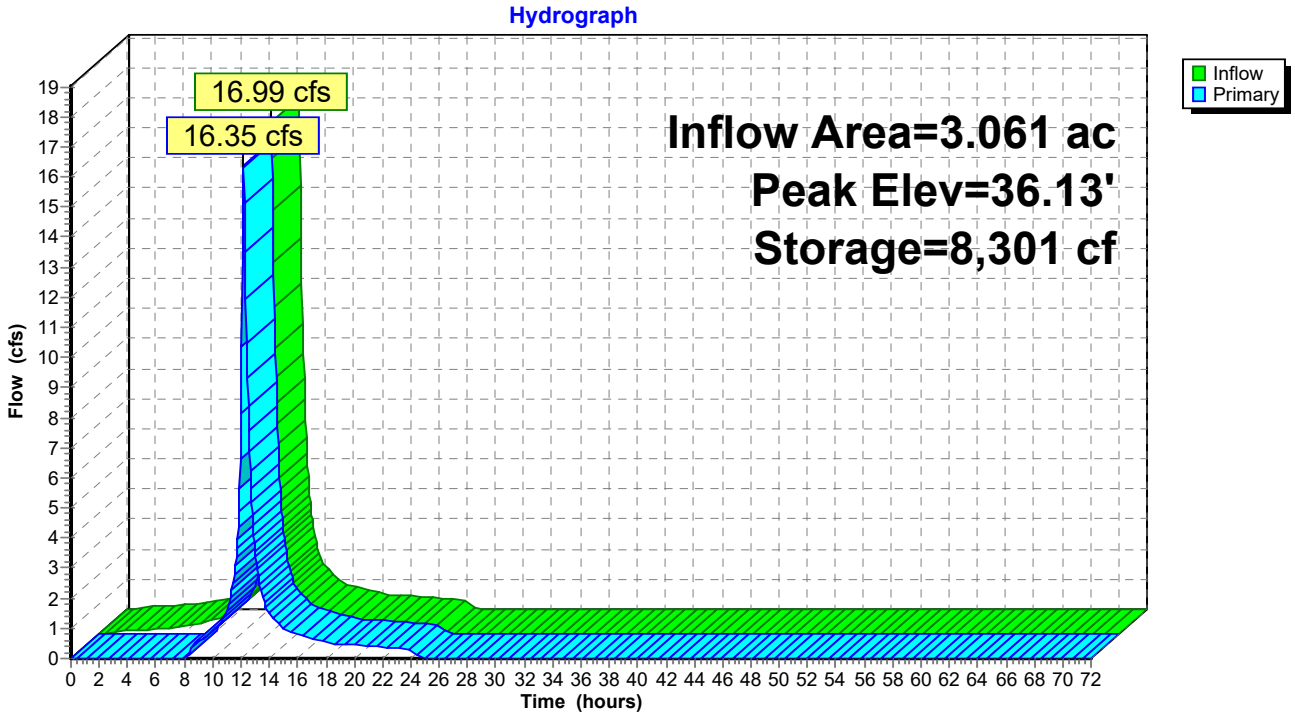
Volume	Invert	Avail.Storage	Storage Description
#1	34.50'	10,825 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.50	4,000	0	0
35.00	4,500	2,125	2,125
36.00	6,200	5,350	7,475
36.50	7,200	3,350	10,825

Device	Routing	Invert	Outlet Devices
#1	Primary	35.67'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=16.21 cfs @ 12.19 hrs HW=36.13' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 16.21 cfs @ 2.21 fps)

Pond 33P: Basin 8



Summary for Subcatchment 34S: Basin 8 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 151% of capacity of segment #3

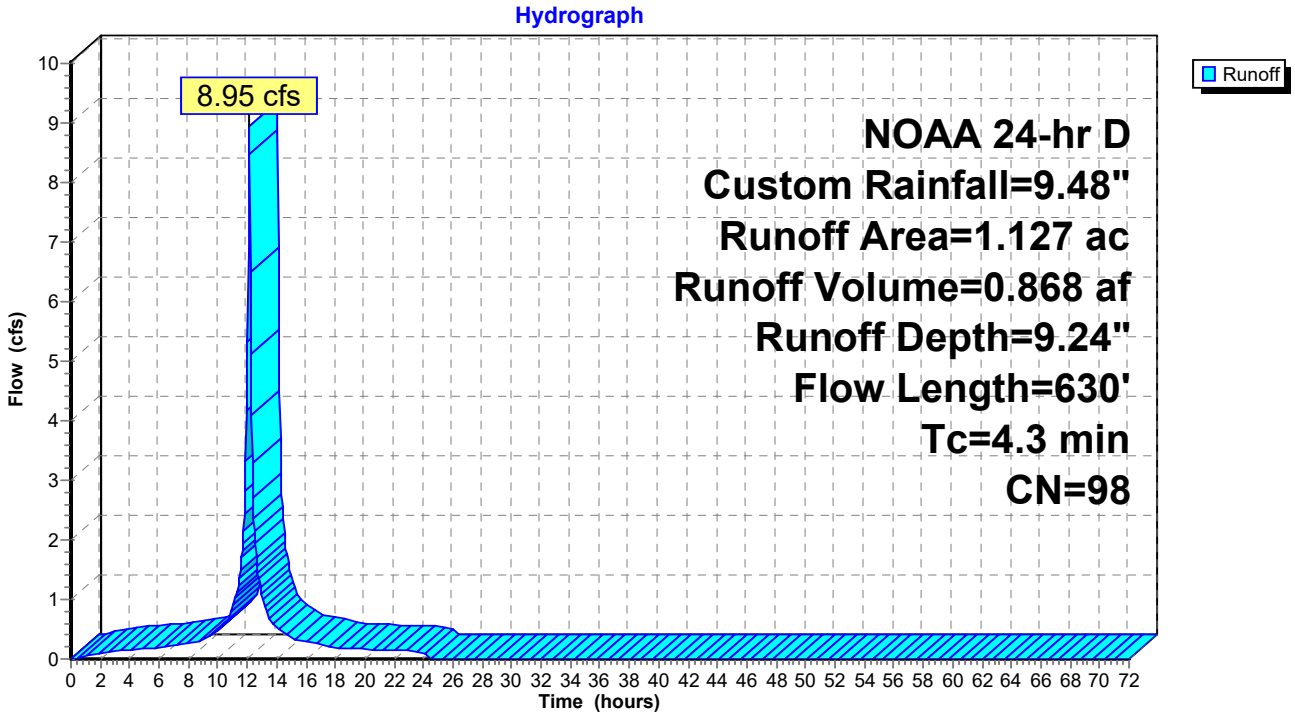
Runoff = 8.95 cfs @ 12.12 hrs, Volume= 0.868 af, Depth= 9.24"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	1.127	98	Impervious
	1.127		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.3	130	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.3	630	Total			

Subcatchment 34S: Basin 8 - Impervious



Summary for Subcatchment 35S: Basin 8 - Pervious

[47] Hint: Peak is 157% of capacity of segment #3

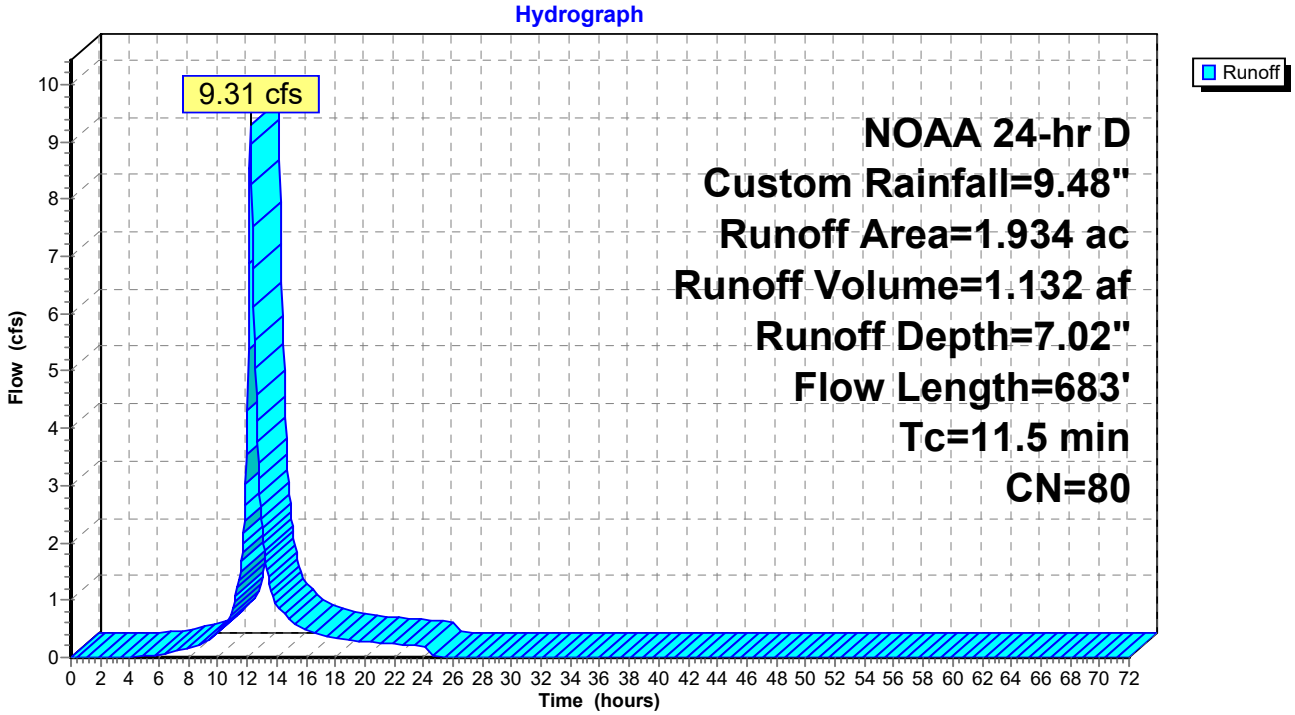
Runoff = 9.31 cfs @ 12.21 hrs, Volume= 1.132 af, Depth= 7.02"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.934	80	>75% Grass cover, Good, HSG D
1.934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	89	0.0200	0.99		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.7	500	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
11.5	683	Total			

Subcatchment 35S: Basin 8 - Pervious



Summary for Pond 40P: Wetlands Depression

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 0.00" for Custom event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.00' @ 0.00 hrs Surf.Area= 405 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

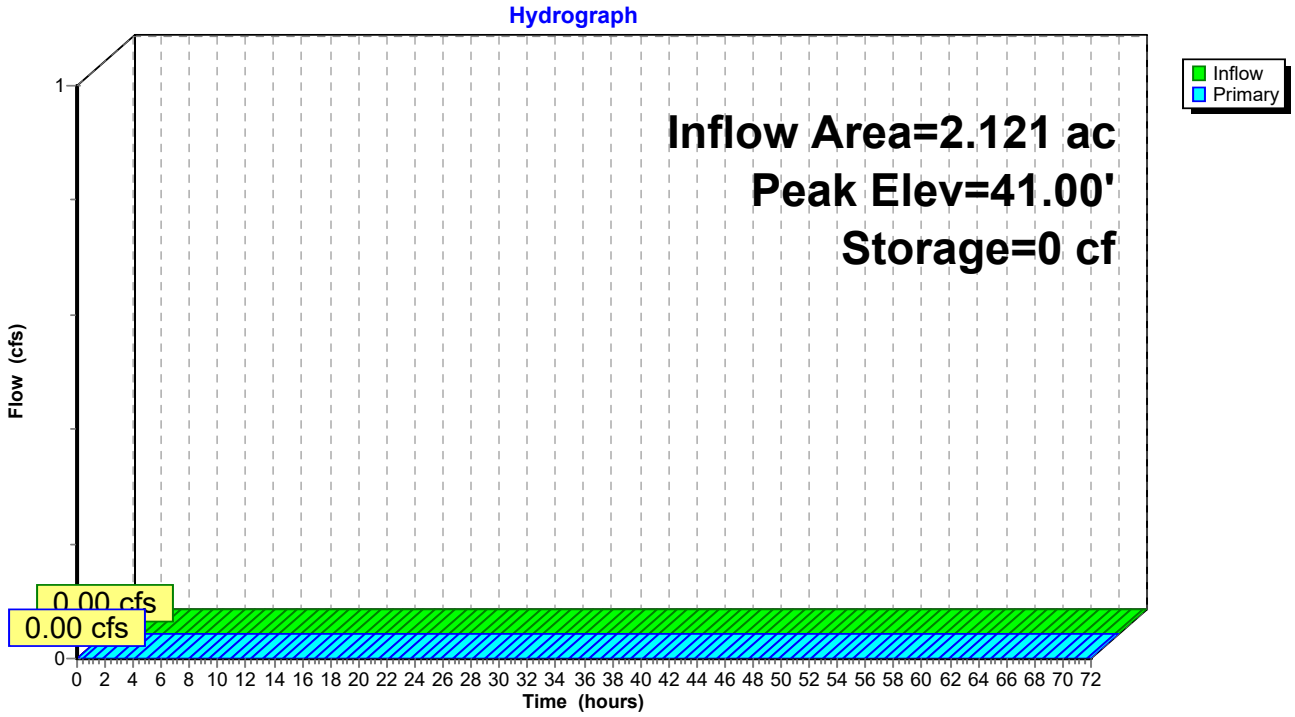
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 40P: Wetlands Depression



Summary for Pond 41P: Basin 13

Inflow Area = 2.042 ac, 32.27% Impervious, Inflow Depth = 4.22" for Custom event
Inflow = 6.61 cfs @ 12.14 hrs, Volume= 0.719 af
Outflow = 2.35 cfs @ 12.48 hrs, Volume= 0.659 af, Atten= 64%, Lag= 20.6 min
Primary = 2.35 cfs @ 12.48 hrs, Volume= 0.659 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.12' @ 12.48 hrs Surf.Area= 9,000 sf Storage= 14,120 cf

Plug-Flow detention time= 477.8 min calculated for 0.659 af (92% of inflow)
Center-of-Mass det. time= 432.8 min (1,225.5 - 792.7)

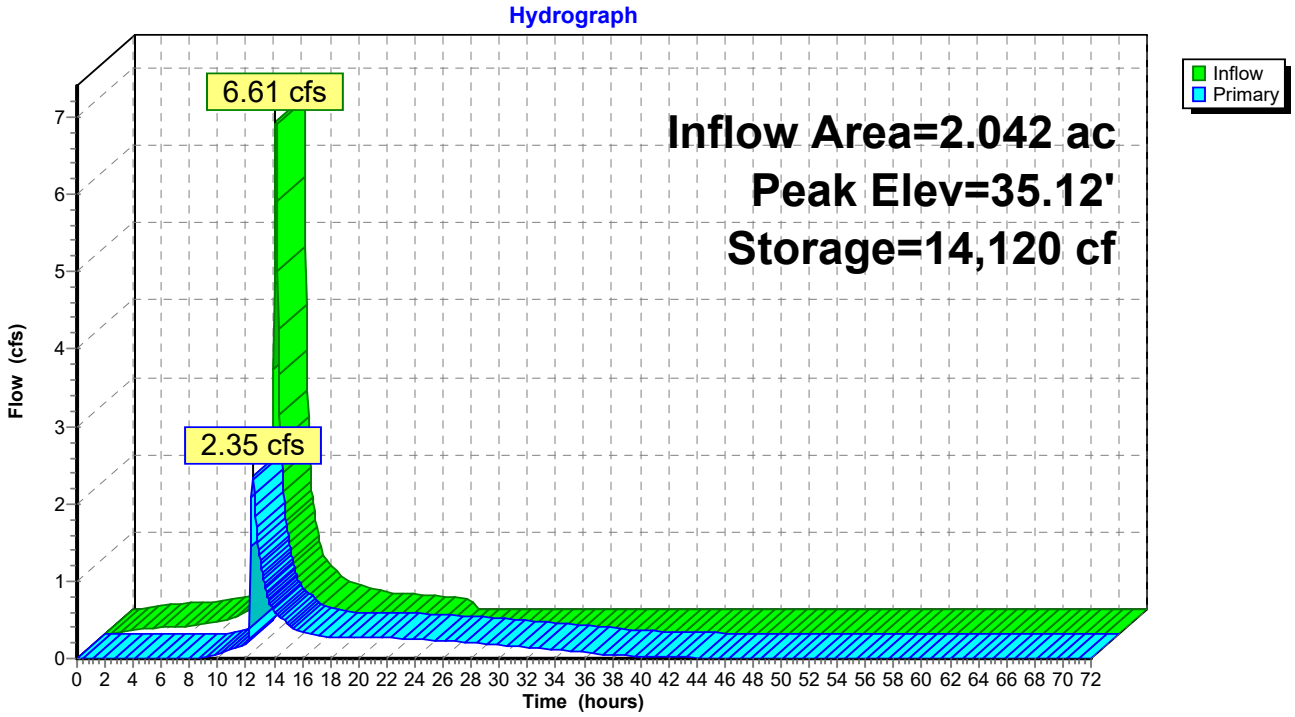
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	23,100 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	4,500	0	0
34.00	6,500	5,500	5,500
35.00	8,700	7,600	13,100
36.00	11,300	10,000	23,100

Device	Routing	Invert	Outlet Devices
#1	Primary	33.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.33 cfs @ 12.48 hrs HW=35.11' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.29 cfs @ 5.88 fps)
└**2=Orifice/Grate** (Weir Controls 2.04 cfs @ 1.11 fps)

Pond 41P: Basin 13



Summary for Subcatchment 42S: Basin 13 - Impervious

[49] Hint: Tc<2dt may require smaller dt

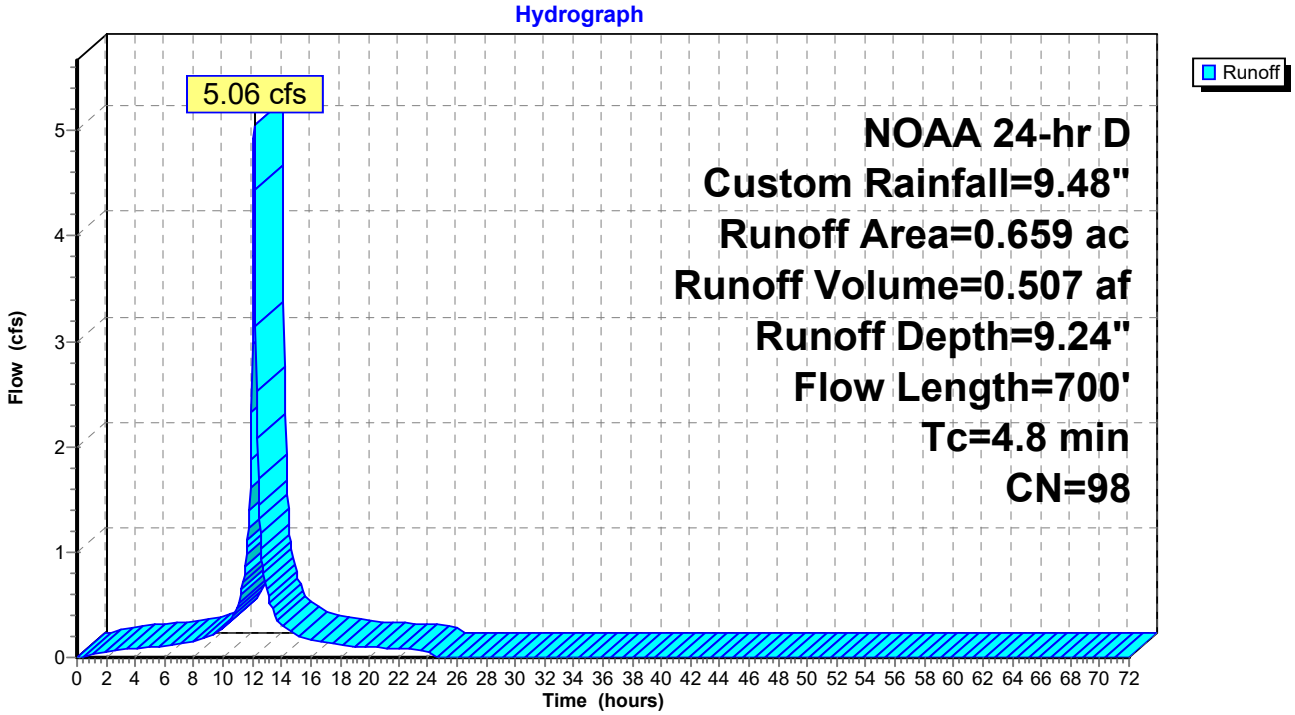
Runoff = 5.06 cfs @ 12.13 hrs, Volume= 0.507 af, Depth= 9.24"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.659	98	Impervious
	0.659		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.8	200	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.8	700	Total			

Subcatchment 42S: Basin 13 - Impervious



Summary for Subcatchment 43S: Basin 13 - Pervious

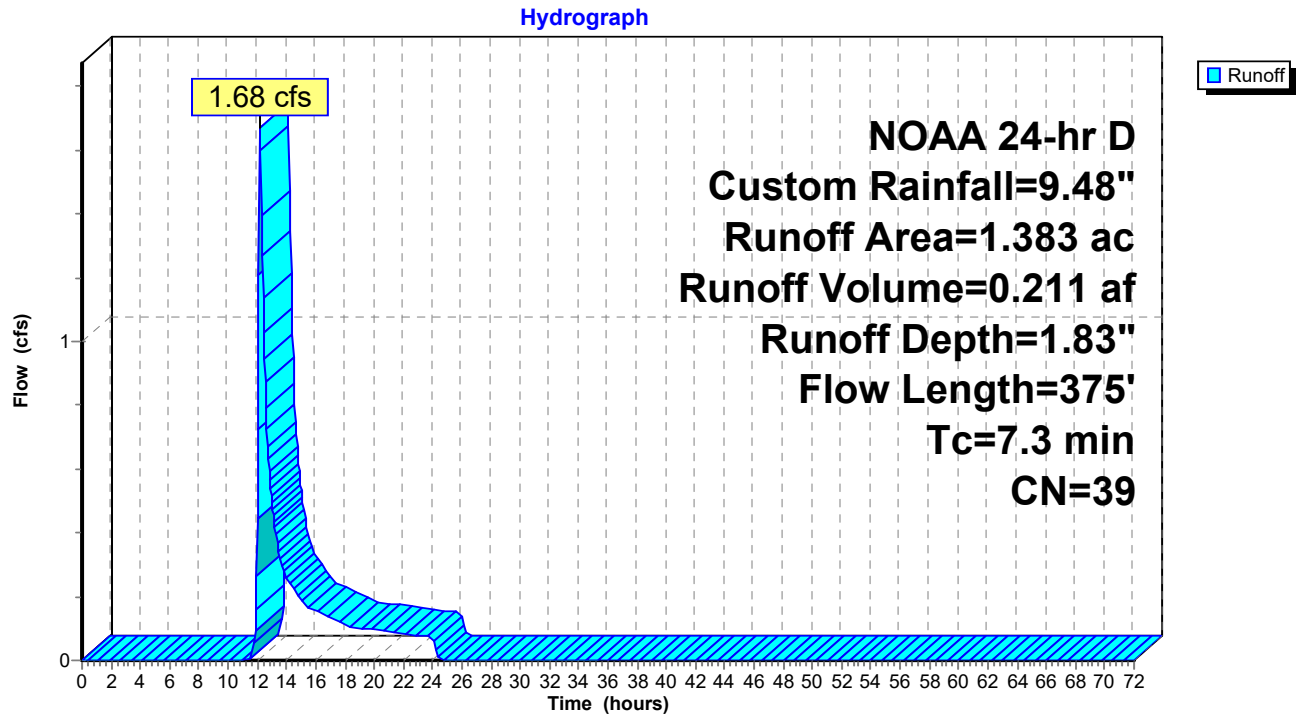
Runoff = 1.68 cfs @ 12.18 hrs, Volume= 0.211 af, Depth= 1.83"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.383	39	>75% Grass cover, Good, HSG A
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	75	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	300	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.3	375	Total			

Subcatchment 43S: Basin 13 - Pervious



Summary for Subcatchment 44S: Basin 3 - Impervious

[49] Hint: Tc<2dt may require smaller dt

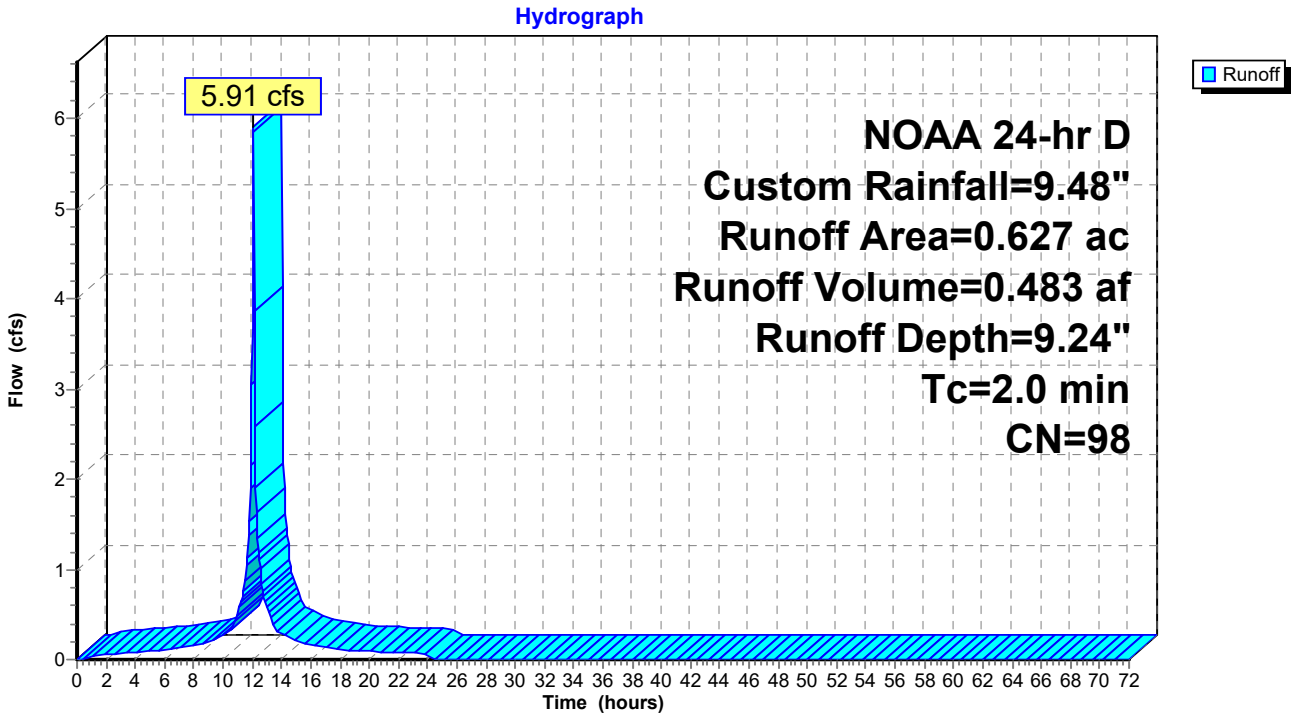
Runoff = 5.91 cfs @ 12.09 hrs, Volume= 0.483 af, Depth= 9.24"
Routed to Pond 4P : Basin 3

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 44S: Basin 3 - Impervious



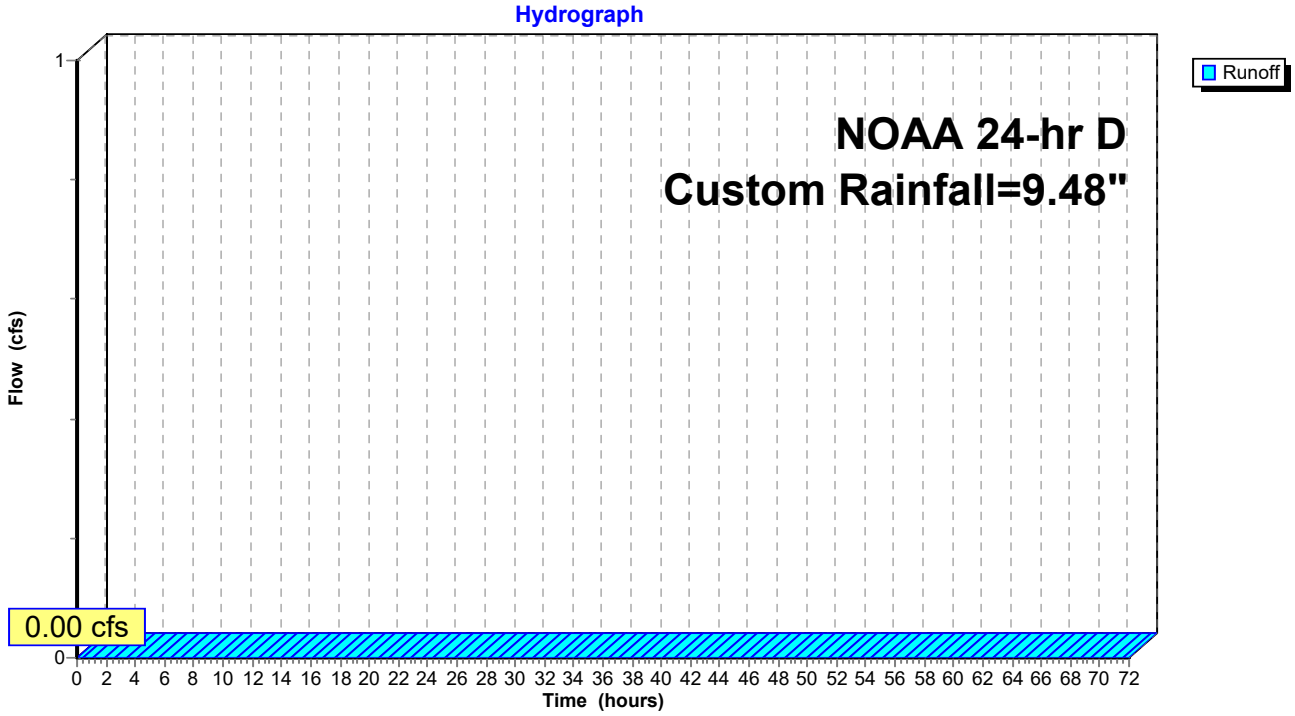
Summary for Subcatchment 45S: Undetained - Impervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Subcatchment 45S: Undetained - Impervious



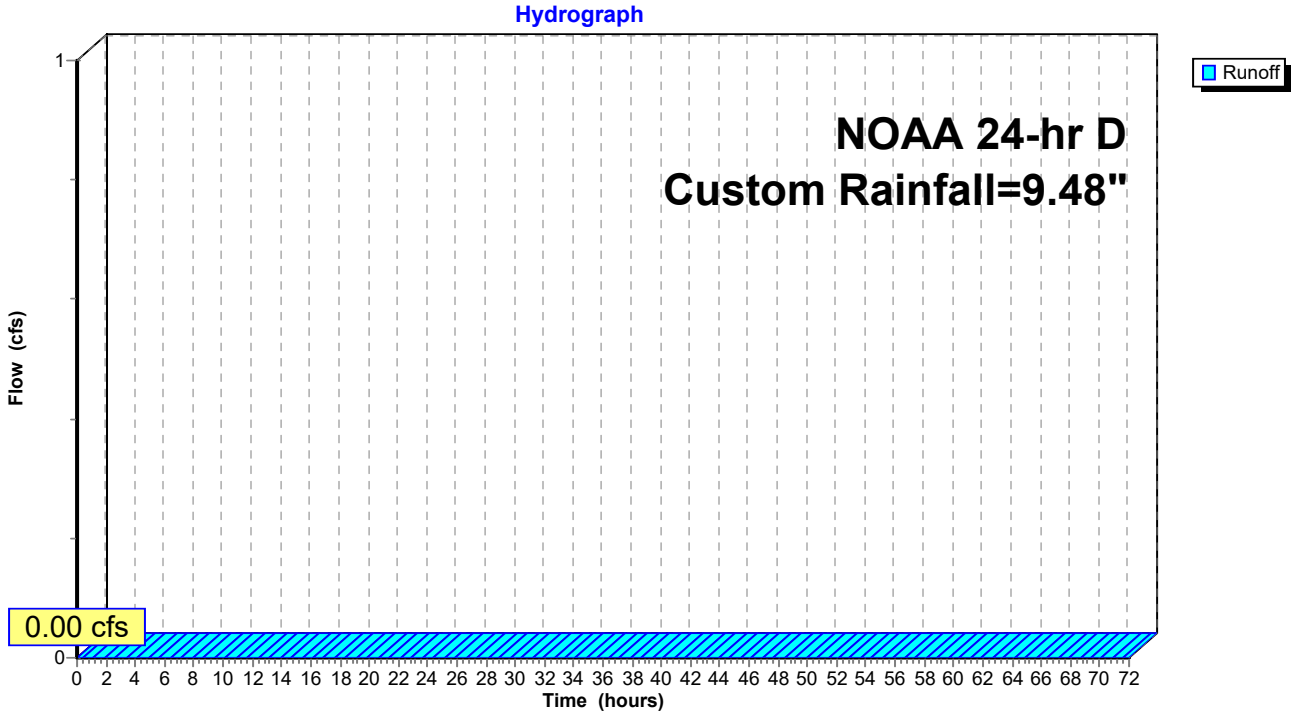
Summary for Subcatchment 46S: Undetained - Pervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Subcatchment 46S: Undetained - Pervious



Summary for Subcatchment 66: Basin 3 - Pervious

[49] Hint: Tc<2dt may require smaller dt

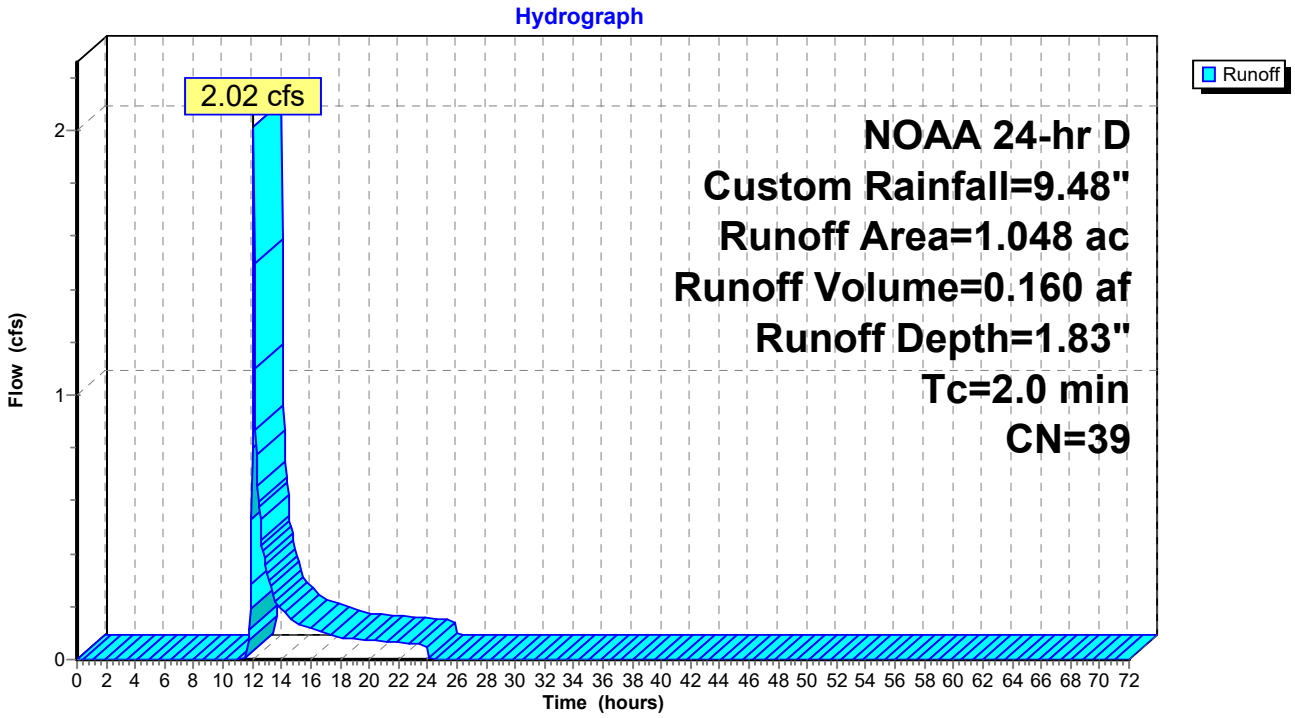
Runoff = 2.02 cfs @ 12.10 hrs, Volume= 0.160 af, Depth= 1.83"
Routed to Pond 4P : Basin 3

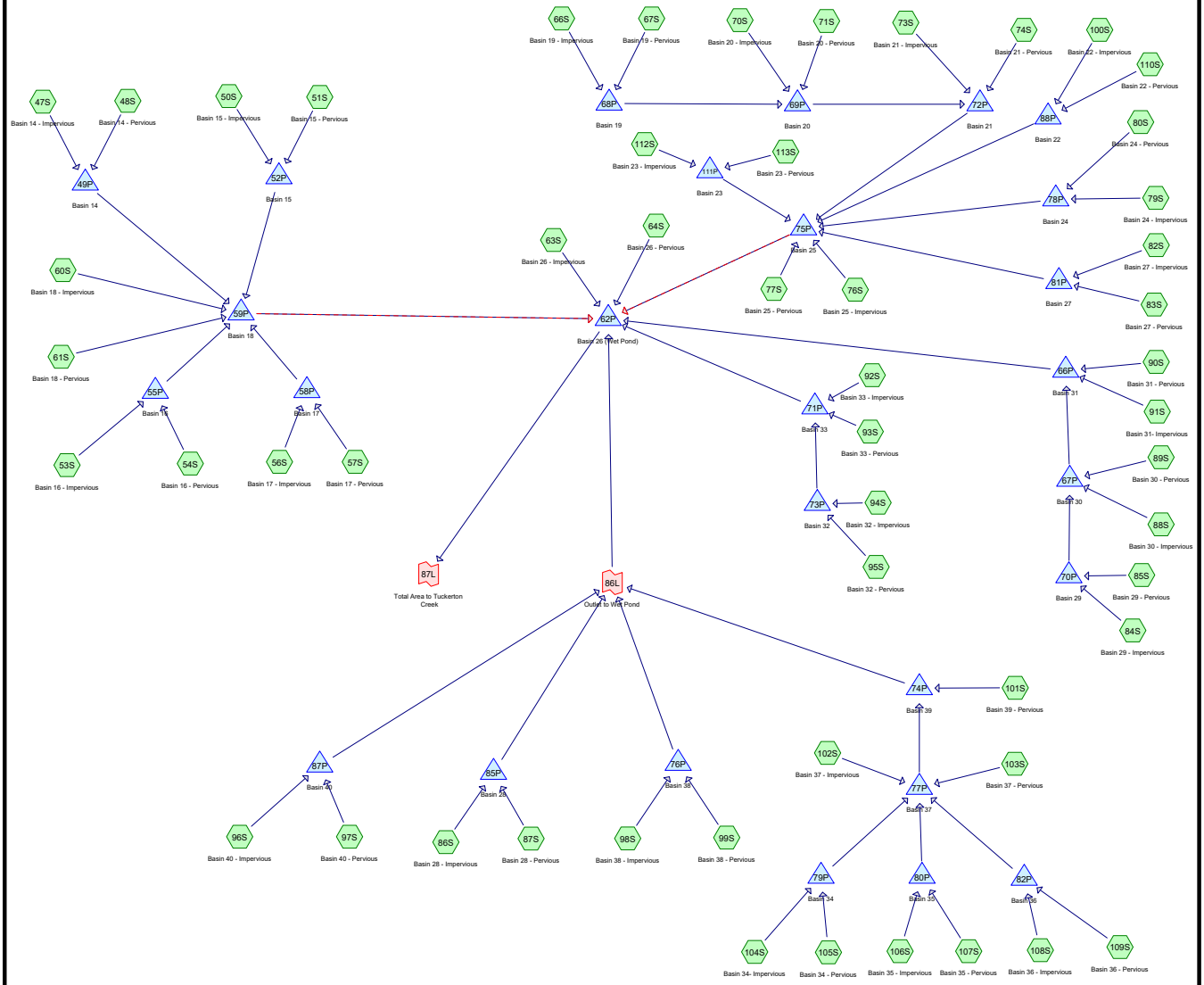
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=9.48"

Area (ac)	CN	Description
1.048	39	>75% Grass cover, Good, HSG A
1.048		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 66: Basin 3 - Pervious





Subcat Reach Pond Link

Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT (FUTURE) - TUCKERTON CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	11.41	2

Summary for Subcatchment 47S: Basin 14 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 161% of capacity of segment #2

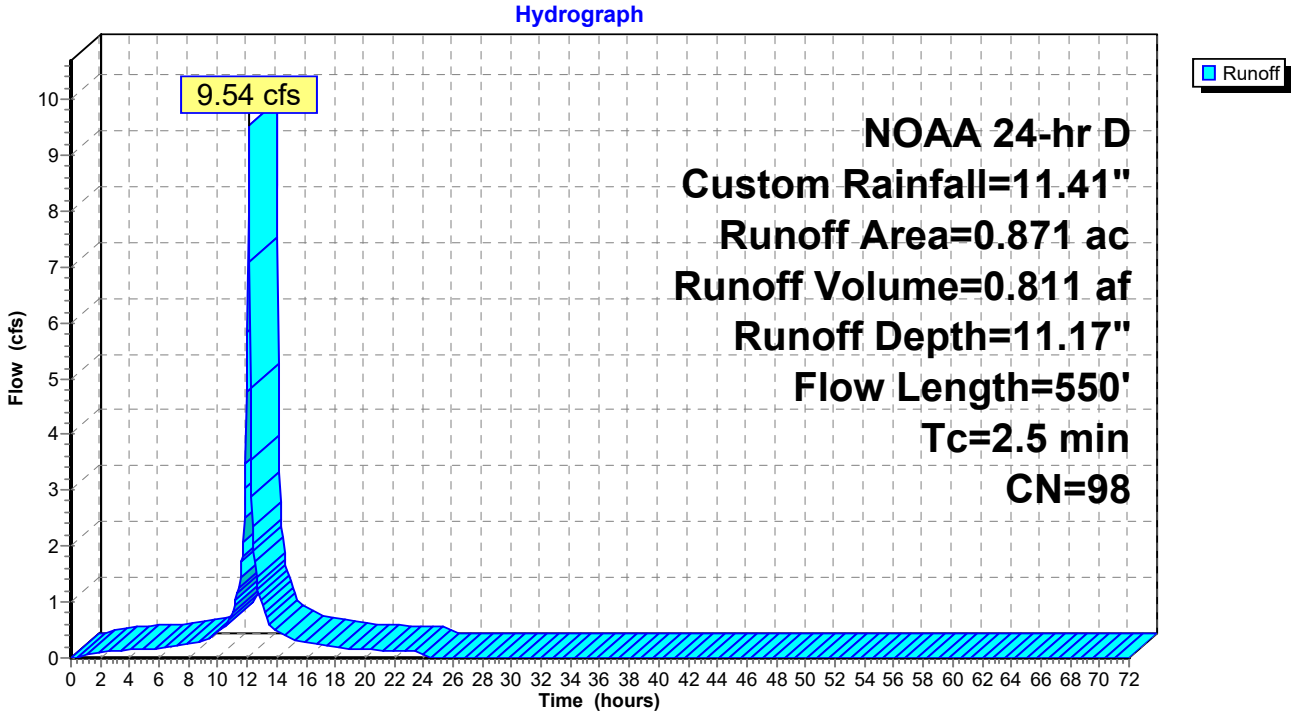
Runoff = 9.54 cfs @ 12.09 hrs, Volume= 0.811 af, Depth=11.17"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.871	98	Impervious
	0.871		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, A to B** Paved Kv= 20.3 fps
1.5	450	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.5	550	Total			

Subcatchment 47S: Basin 14 - Impervious



Summary for Subcatchment 48S: Basin 14 - Pervious

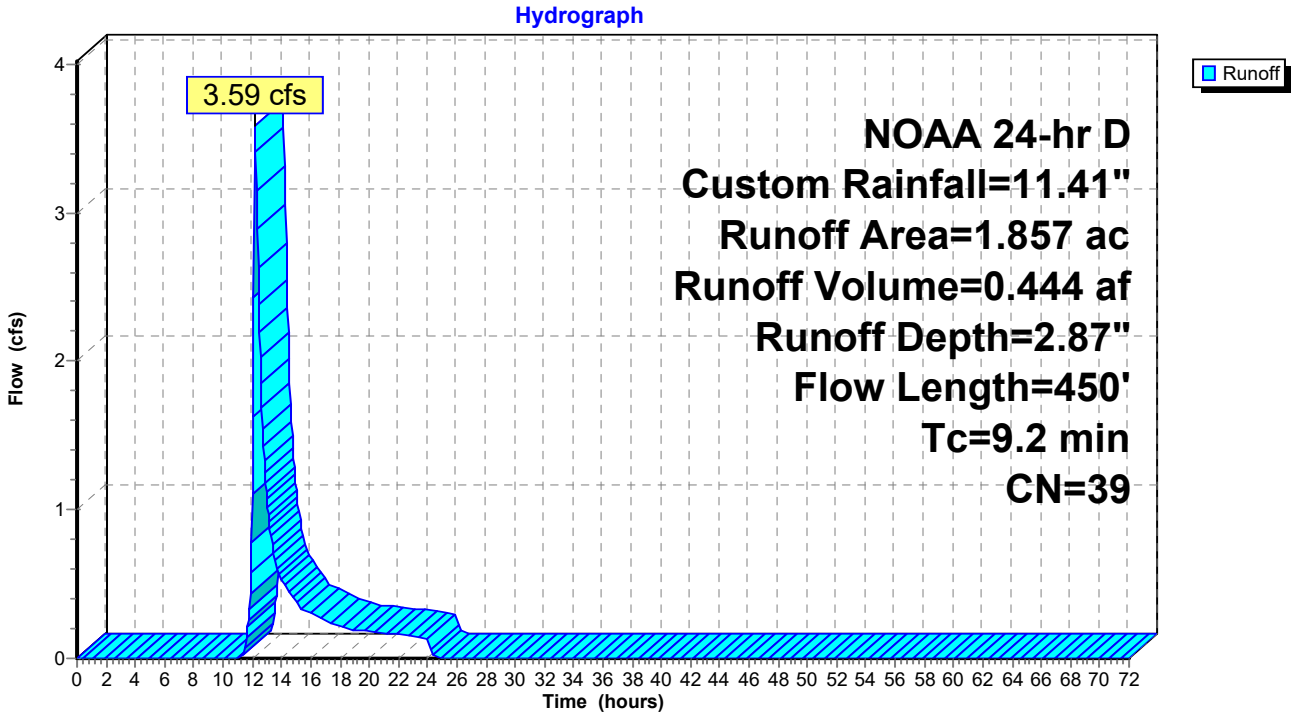
Runoff = 3.59 cfs @ 12.21 hrs, Volume= 0.444 af, Depth= 2.87"
Routed to Pond 49P : Basin 14

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.857	39	>75% Grass cover, Good, HSG A
1.857		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
9.2	450	Total			

Subcatchment 48S: Basin 14 - Pervious



Summary for Pond 49P: Basin 14

Inflow Area = 2.728 ac, 31.93% Impervious, Inflow Depth = 5.52" for Custom event
Inflow = 11.97 cfs @ 12.10 hrs, Volume= 1.254 af
Outflow = 10.21 cfs @ 12.17 hrs, Volume= 1.178 af, Atten= 15%, Lag= 3.7 min
Primary = 10.21 cfs @ 12.17 hrs, Volume= 1.178 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.33' @ 12.17 hrs Surf.Area= 8,223 sf Storage= 15,997 cf

Plug-Flow detention time= 307.0 min calculated for 1.178 af (94% of inflow)
Center-of-Mass det. time= 271.4 min (1,065.7 - 794.3)

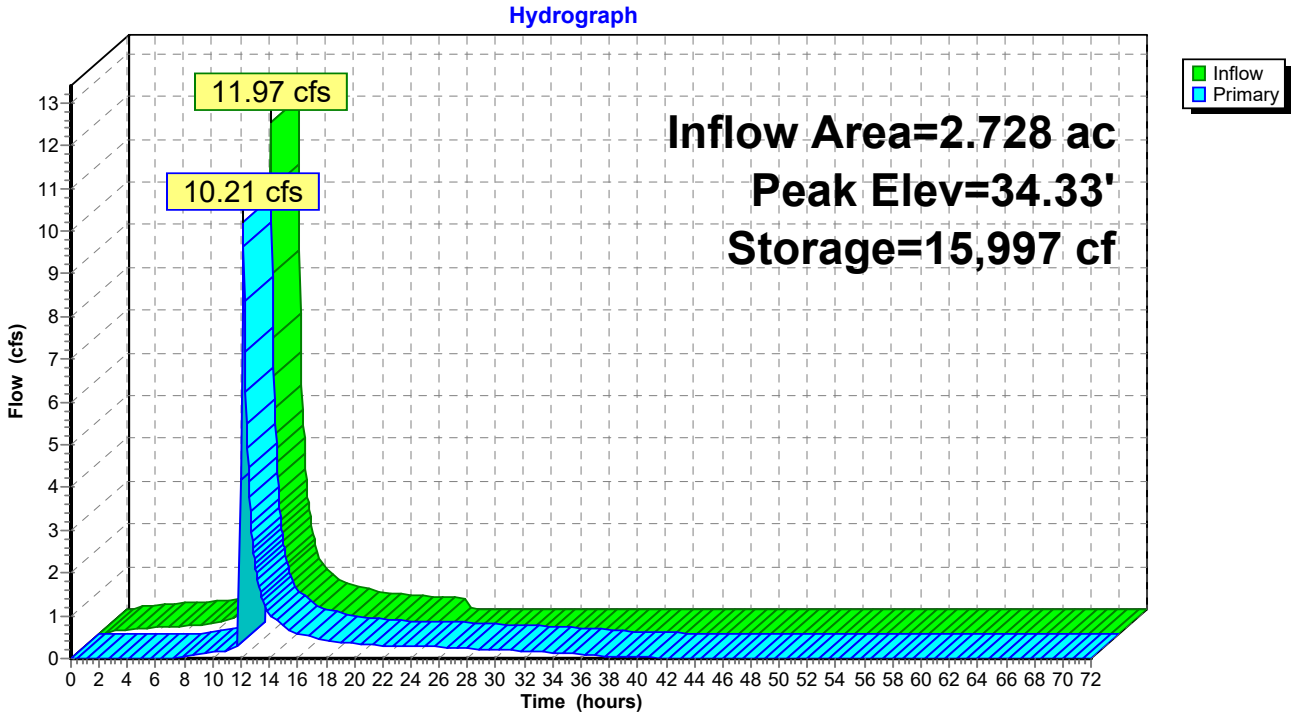
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	22,075 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,100	0	0
32.00	4,200	1,825	1,825
33.00	5,800	5,000	6,825
34.00	7,400	6,600	13,425
35.00	9,900	8,650	22,075

Device	Routing	Invert	Outlet Devices
#1	Primary	32.32'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.94 cfs @ 12.17 hrs HW=34.32' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.32 cfs @ 6.60 fps)
└—**2=Orifice/Grate** (Weir Controls 9.61 cfs @ 1.86 fps)

Pond 49P: Basin 14



Summary for Subcatchment 50S: Basin 15 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 156% of capacity of segment #3

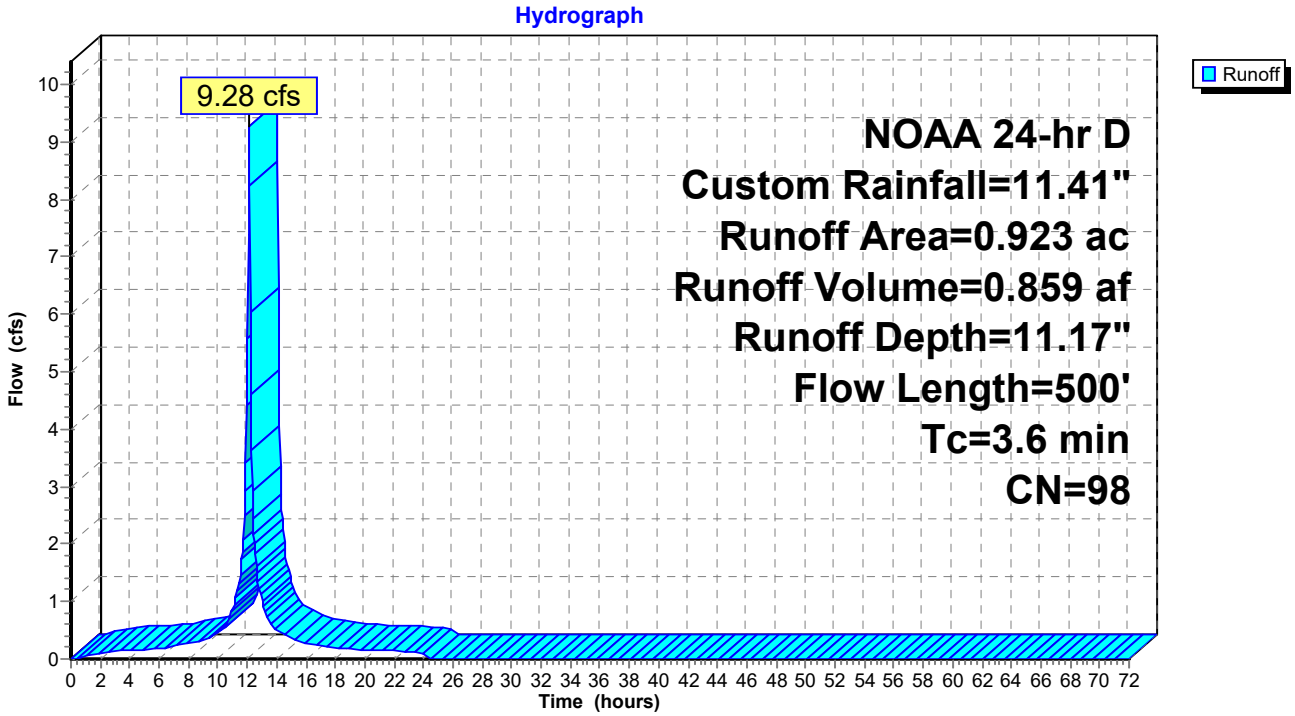
Runoff = 9.28 cfs @ 12.11 hrs, Volume= 0.859 af, Depth=11.17"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.923	98	Impervious
	0.923		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.6	500	Total			

Subcatchment 50S: Basin 15 - Impervious



Summary for Subcatchment 51S: Basin 15 - Pervious

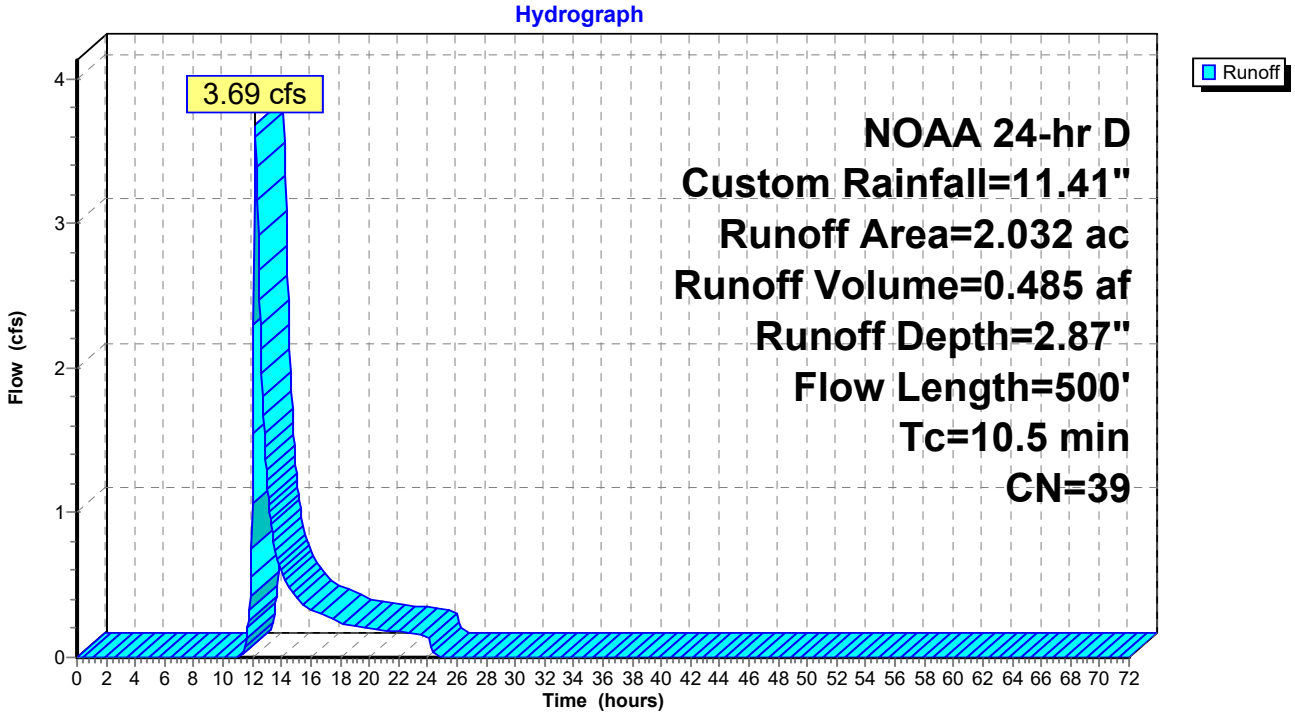
Runoff = 3.69 cfs @ 12.22 hrs, Volume= 0.485 af, Depth= 2.87"
Routed to Pond 52P : Basin 15

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
2.032	39	>75% Grass cover, Good, HSG A
2.032		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.5	500	Total			

Subcatchment 51S: Basin 15 - Pervious



Summary for Pond 52P: Basin 15

Inflow Area = 2.955 ac, 31.24% Impervious, Inflow Depth = 5.46" for Custom event
Inflow = 11.84 cfs @ 12.12 hrs, Volume= 1.345 af
Outflow = 10.16 cfs @ 12.20 hrs, Volume= 1.263 af, Atten= 14%, Lag= 4.6 min
Primary = 10.16 cfs @ 12.20 hrs, Volume= 1.263 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.13' @ 12.20 hrs Surf.Area= 8,255 sf Storage= 17,238 cf

Plug-Flow detention time= 314.0 min calculated for 1.263 af (94% of inflow)
Center-of-Mass det. time= 278.6 min (1,076.0 - 797.3)

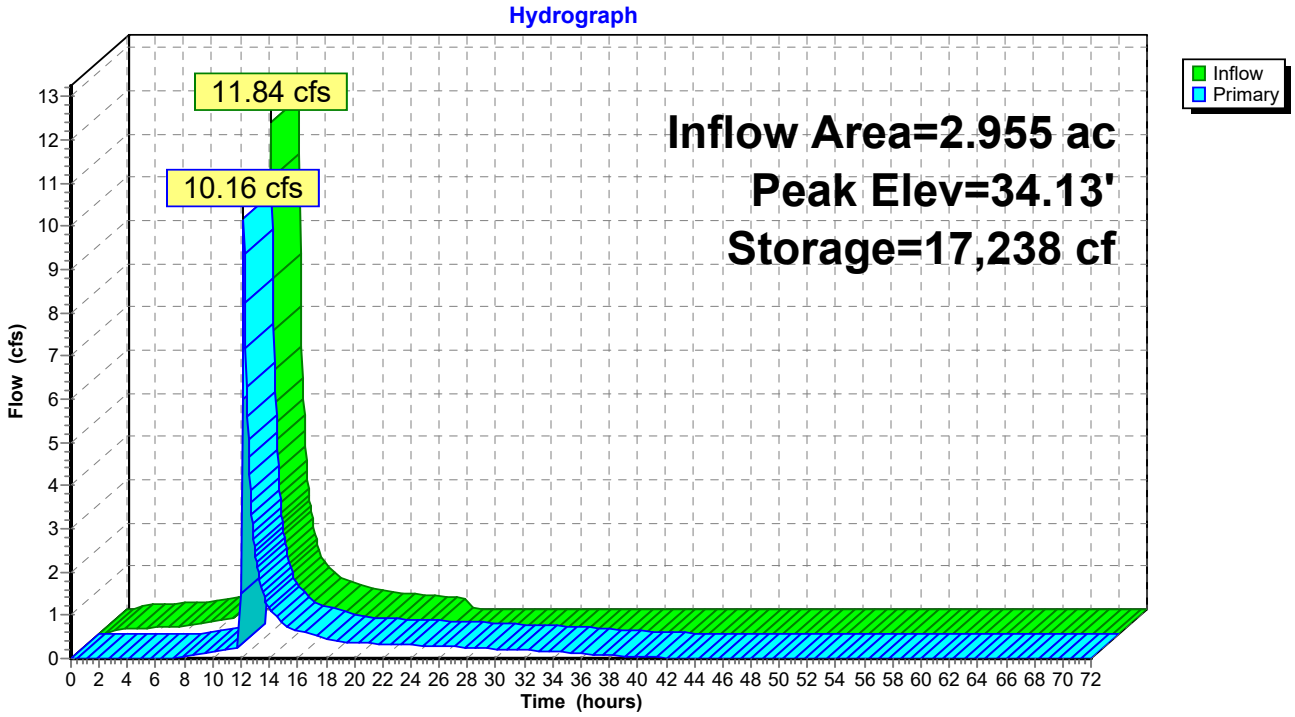
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	20,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,000	0	0
32.00	4,500	3,750	3,750
33.00	6,200	5,350	9,100
34.00	8,000	7,100	16,200
34.50	9,000	4,250	20,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.94'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	33.80'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.14 cfs @ 12.20 hrs HW=34.13' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.34 cfs @ 6.91 fps)
└—**2=Orifice/Grate** (Weir Controls 9.80 cfs @ 1.87 fps)

Pond 52P: Basin 15



Summary for Subcatchment 53S: Basin 16 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 188% of capacity of segment #3

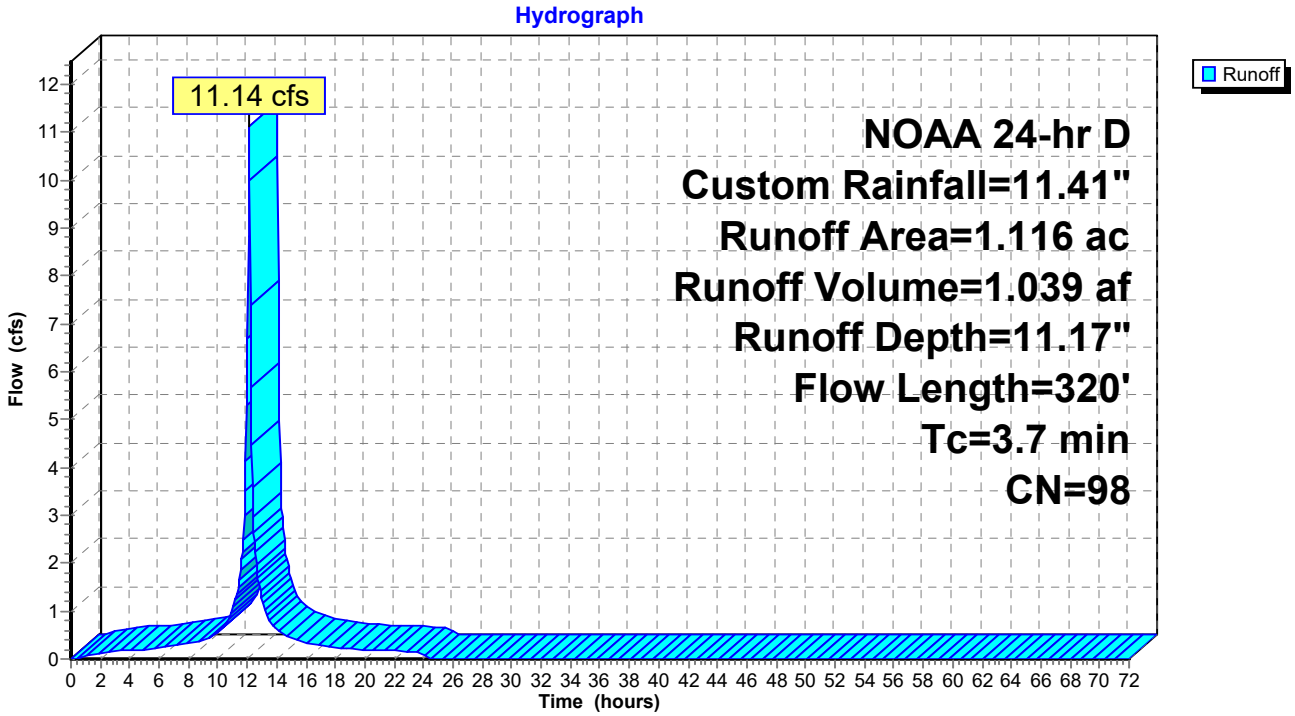
Runoff = 11.14 cfs @ 12.11 hrs, Volume= 1.039 af, Depth=11.17"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	20	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.7	320	Total			

Subcatchment 53S: Basin 16 - Impervious



Summary for Subcatchment 54S: Basin 16 - Pervious

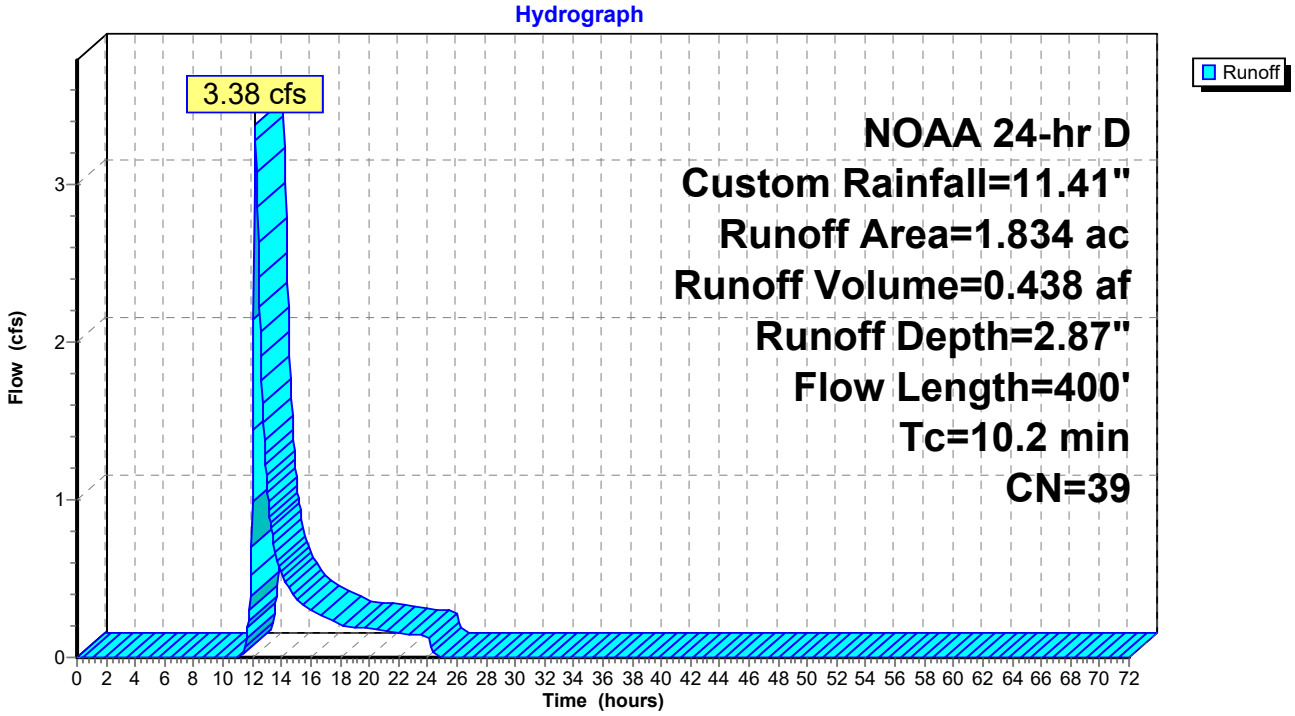
Runoff = 3.38 cfs @ 12.22 hrs, Volume= 0.438 af, Depth= 2.87"
Routed to Pond 55P : Basin 16

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.834	39	>75% Grass cover, Good, HSG A
1.834		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 54S: Basin 16 - Pervious



Summary for Pond 55P: Basin 16

Inflow Area = 2.950 ac, 37.83% Impervious, Inflow Depth = 6.01" for Custom event
Inflow = 13.52 cfs @ 12.12 hrs, Volume= 1.477 af
Outflow = 13.05 cfs @ 12.15 hrs, Volume= 1.381 af, Atten= 3%, Lag= 1.9 min
Primary = 13.05 cfs @ 12.15 hrs, Volume= 1.381 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.40' @ 12.15 hrs Surf.Area= 4,730 sf Storage= 5,845 cf

Plug-Flow detention time= 77.6 min calculated for 1.380 af (93% of inflow)
Center-of-Mass det. time= 39.7 min (826.4 - 786.7)

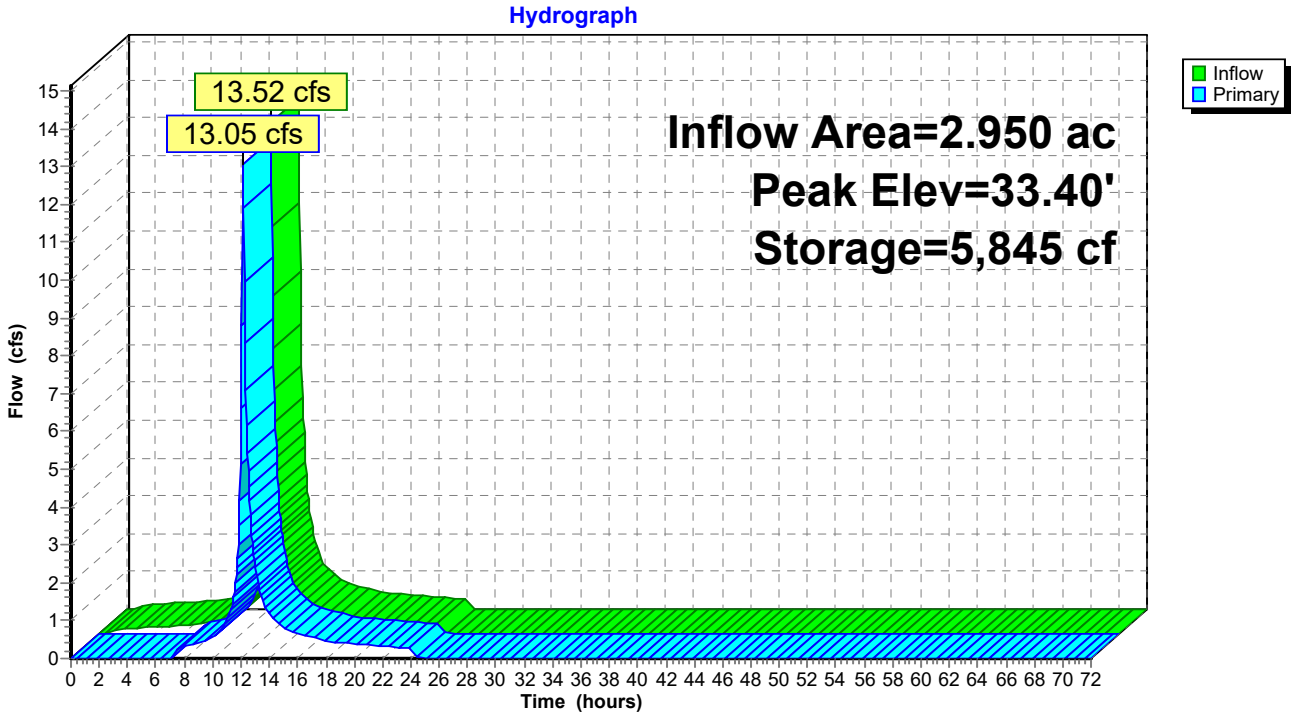
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	6,350 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	1,800	0	0
32.00	2,500	1,075	1,075
33.00	3,700	3,100	4,175
33.50	5,000	2,175	6,350

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.97 cfs @ 12.15 hrs HW=33.39' (Free Discharge)
1=Orifice/Grate (Weir Controls 12.97 cfs @ 2.05 fps)

Pond 55P: Basin 16



Summary for Subcatchment 56S: Basin 17 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 101% of capacity of segment #3

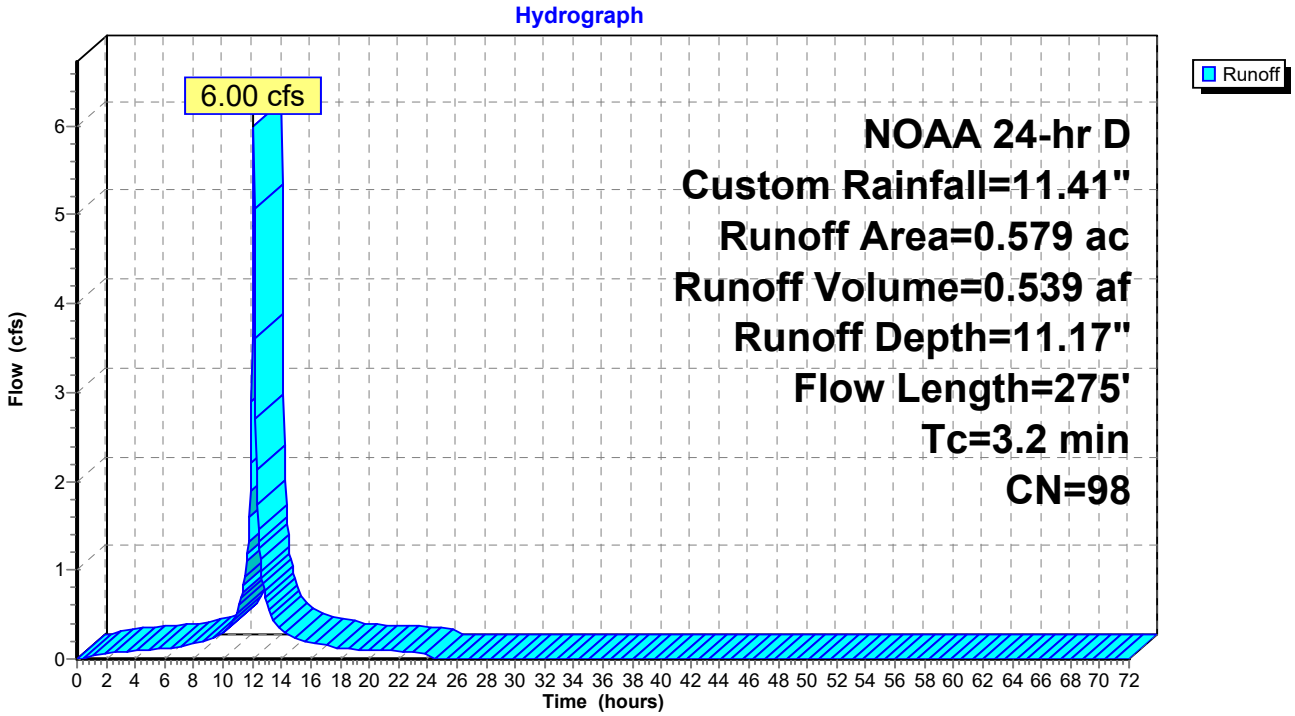
Runoff = 6.00 cfs @ 12.10 hrs, Volume= 0.539 af, Depth=11.17"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.579	98	Impervious
	0.579		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	25	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	275	Total			

Subcatchment 56S: Basin 17 - Impervious



Summary for Subcatchment 57S: Basin 17 - Pervious

[49] Hint: Tc<2dt may require smaller dt

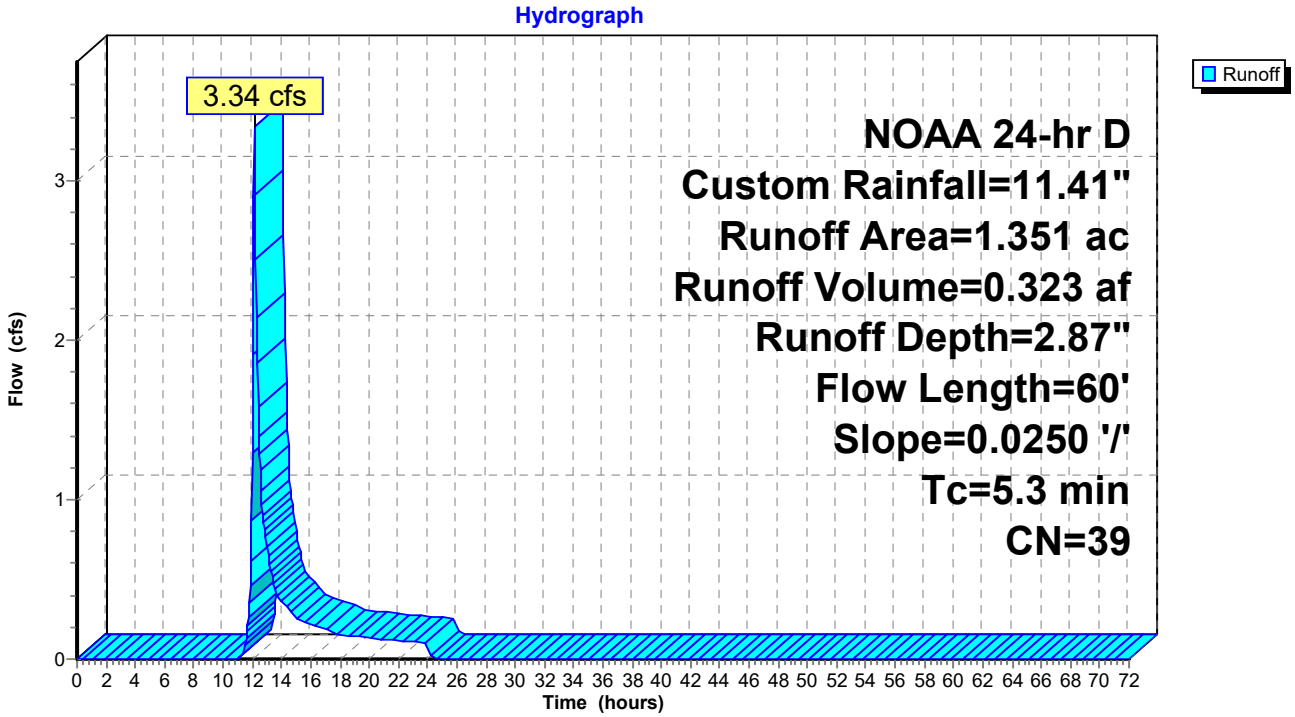
Runoff = 3.34 cfs @ 12.15 hrs, Volume= 0.323 af, Depth= 2.87"
Routed to Pond 58P : Basin 17

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.351	39	>75% Grass cover, Good, HSG A
1.351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 57S: Basin 17 - Pervious



Summary for Pond 58P: Basin 17

Inflow Area = 1.930 ac, 30.00% Impervious, Inflow Depth = 5.36" for Custom event
Inflow = 9.03 cfs @ 12.12 hrs, Volume= 0.862 af
Outflow = 8.58 cfs @ 12.15 hrs, Volume= 0.811 af, Atten= 5%, Lag= 2.0 min
Primary = 8.58 cfs @ 12.15 hrs, Volume= 0.811 af
Routed to Pond 59P : Basin 18

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.93' @ 12.15 hrs Surf.Area= 4,394 sf Storage= 3,436 cf

Plug-Flow detention time= 71.4 min calculated for 0.811 af (94% of inflow)
Center-of-Mass det. time= 37.3 min (833.5 - 796.2)

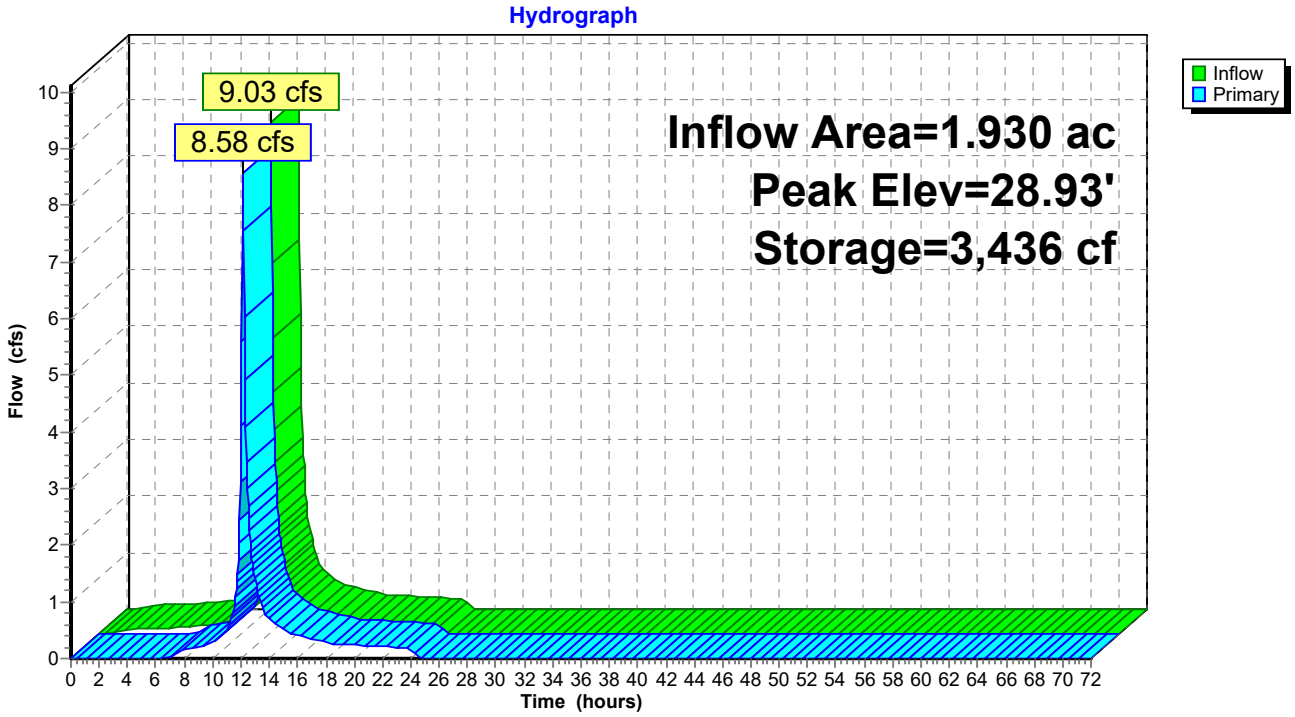
Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	12,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.00	3,000	0	0
29.00	4,500	3,750	3,750
30.00	6,200	5,350	9,100
30.50	7,000	3,300	12,400

Device	Routing	Invert	Outlet Devices
#1	Primary	28.63'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.56 cfs @ 12.15 hrs HW=28.93' (Free Discharge)
1=Orifice/Grate (Weir Controls 8.56 cfs @ 1.79 fps)

Pond 58P: Basin 17



Summary for Pond 59P: Basin 18

Inflow Area = 13.433 ac, 31.95% Impervious, Inflow Depth = 5.25" for Custom event
Inflow = 50.77 cfs @ 12.16 hrs, Volume= 5.875 af
Outflow = 50.56 cfs @ 12.17 hrs, Volume= 5.801 af, Atten= 0%, Lag= 1.0 min
Primary = 48.73 cfs @ 12.17 hrs, Volume= 5.785 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 1.83 cfs @ 12.17 hrs, Volume= 0.016 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.60' @ 12.17 hrs Surf.Area= 9,077 sf Storage= 20,557 cf

Plug-Flow detention time= 132.4 min calculated for 5.797 af (99% of inflow)
Center-of-Mass det. time= 114.3 min (1,038.1 - 923.9)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	29,550 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

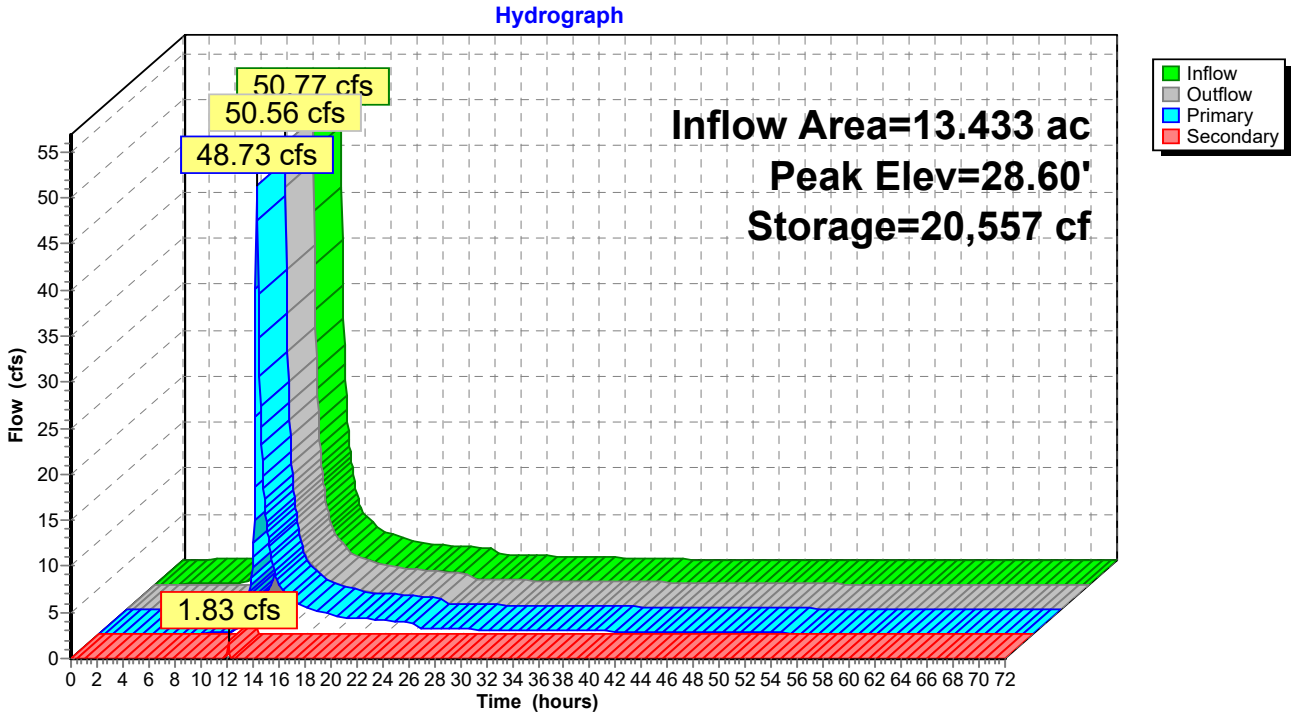
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	4,600	0	0
26.00	5,200	2,450	2,450
27.00	6,400	5,800	8,250
28.00	8,000	7,200	15,450
29.00	9,800	8,900	24,350
29.50	11,000	5,200	29,550

Device	Routing	Invert	Outlet Devices
#1	Primary	26.11'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	28.00'	**48.0" x 48.0" Horiz. Orifice/Grate** X 2 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	28.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=47.42 cfs @ 12.17 hrs HW=28.59' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.36 cfs @ 7.38 fps)
└**2=Orifice/Grate** (Weir Controls 47.06 cfs @ 2.51 fps)

Secondary OutFlow Max=1.60 cfs @ 12.17 hrs HW=28.59' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 1.60 cfs @ 0.73 fps)

Pond 59P: Basin 18



Summary for Subcatchment 60S: Basin 18 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 152% of capacity of segment #2

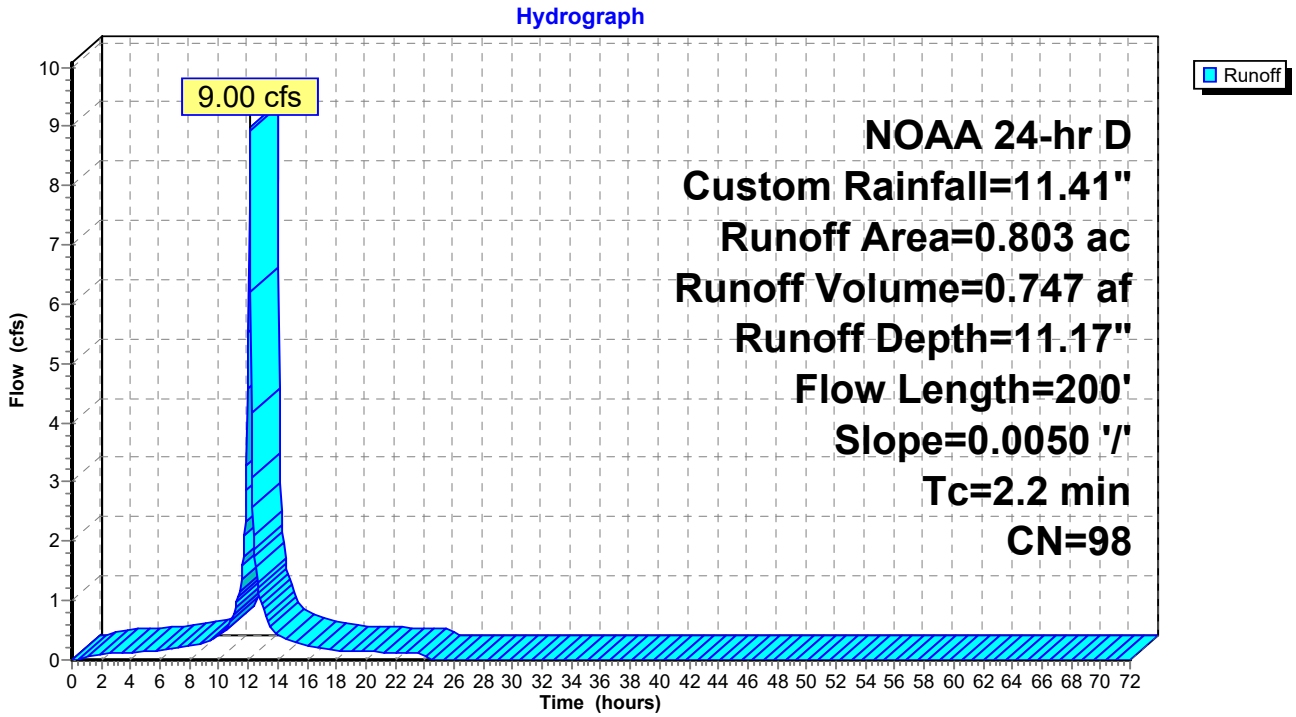
Runoff = 9.00 cfs @ 12.09 hrs, Volume= 0.747 af, Depth=11.17"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.803	98	Impervious
	0.803		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0050	0.89		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.2	200	Total			

Subcatchment 60S: Basin 18 - Impervious



Summary for Subcatchment 61S: Basin 18 - Pervious

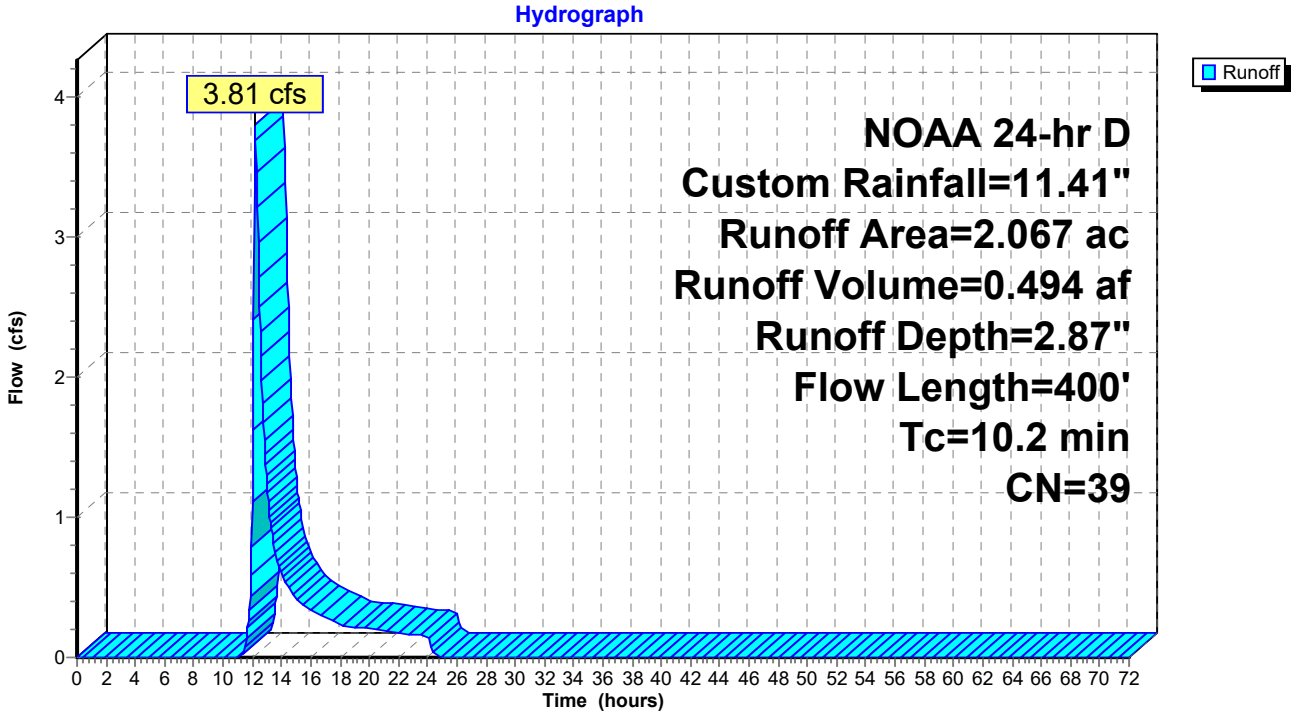
Runoff = 3.81 cfs @ 12.22 hrs, Volume= 0.494 af, Depth= 2.87"
Routed to Pond 59P : Basin 18

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
2.067	39	>75% Grass cover, Good, HSG A
2.067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	100	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
10.2	400	Total			

Subcatchment 61S: Basin 18 - Pervious



Summary for Pond 62P: Basin 26 (Wet Pond)

[79] Warning: Submerged Pond 59P Primary device # 1 by 0.46'
[79] Warning: Submerged Pond 75P Primary device # 1 by 0.57'

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 4.76" for Custom event
Inflow = 234.29 cfs @ 12.20 hrs, Volume= 29.771 af
Outflow = 23.22 cfs @ 14.52 hrs, Volume= 17.524 af, Atten= 90%, Lag= 139.2 min
Primary = 23.22 cfs @ 14.52 hrs, Volume= 17.524 af
Routed to Link 87L : Total Area to Tuckerton Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 22.50' Surf.Area= 71,250 sf Storage= 188,438 cf
Peak Elev= 26.57' @ 14.52 hrs Surf.Area= 151,099 sf Storage= 811,461 cf (623,023 cf above start)

Plug-Flow detention time= 940.9 min calculated for 13.189 af (44% of inflow)
Center-of-Mass det. time= 369.2 min (1,476.5 - 1,107.3)

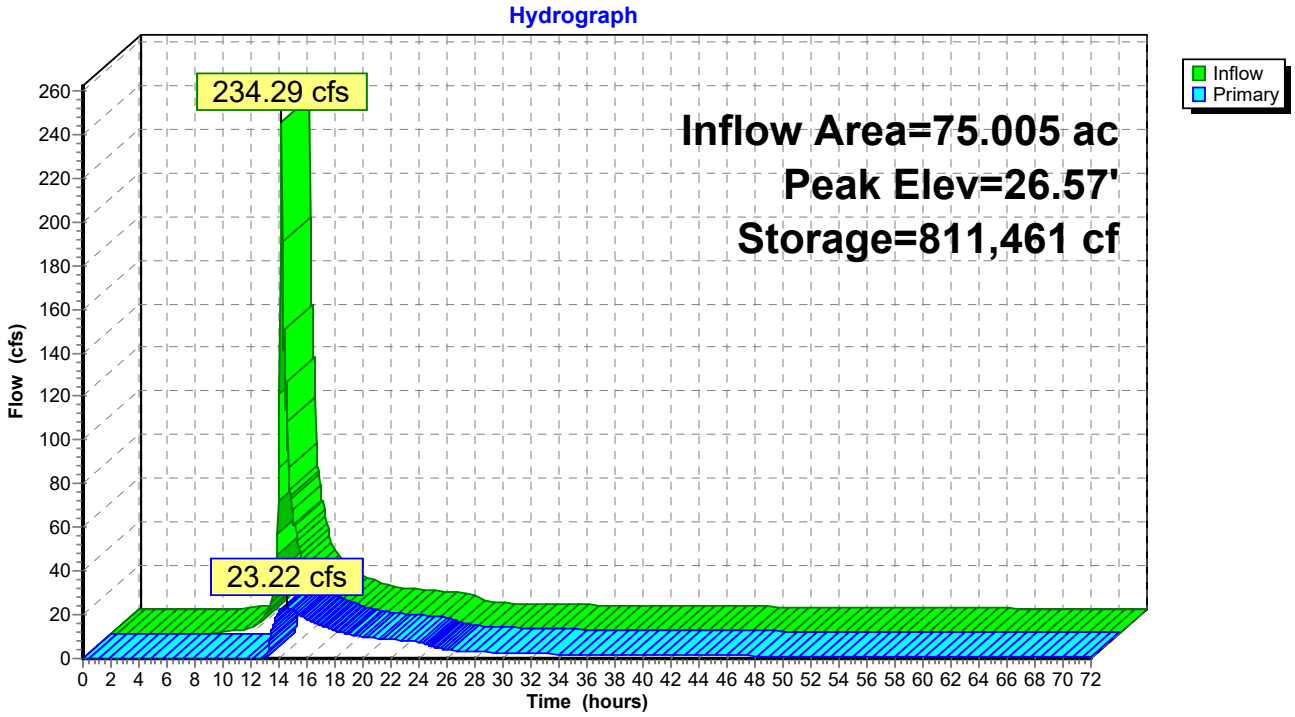
Volume	Invert	Avail.Storage	Storage Description
#1	18.00'	639,244 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
18.00	29,000	0	0
19.00	32,000	30,500	30,500
20.00	35,000	33,500	64,000
21.00	38,000	36,500	100,500
21.01	43,000	405	100,905
22.00	47,000	44,550	145,455
23.00	52,000	49,500	194,955
24.00	57,000	54,500	249,455
24.01	63,000	600	250,055
25.00	69,000	65,340	315,395
26.00	76,000	72,500	387,895
27.00	84,000	80,000	467,895
27.50	90,000	43,500	511,395

Device	Routing	Invert	Outlet Devices
#1	Primary	22.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	26.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=23.18 cfs @ 14.52 hrs HW=26.57' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.47 cfs @ 9.57 fps)
└**2=Orifice/Grate** (Weir Controls 22.71 cfs @ 2.48 fps)

Pond 62P: Basin 26 (Wet Pond)



Summary for Subcatchment 63S: Basin 26 - Impervious

[49] Hint: Tc<2dt may require smaller dt

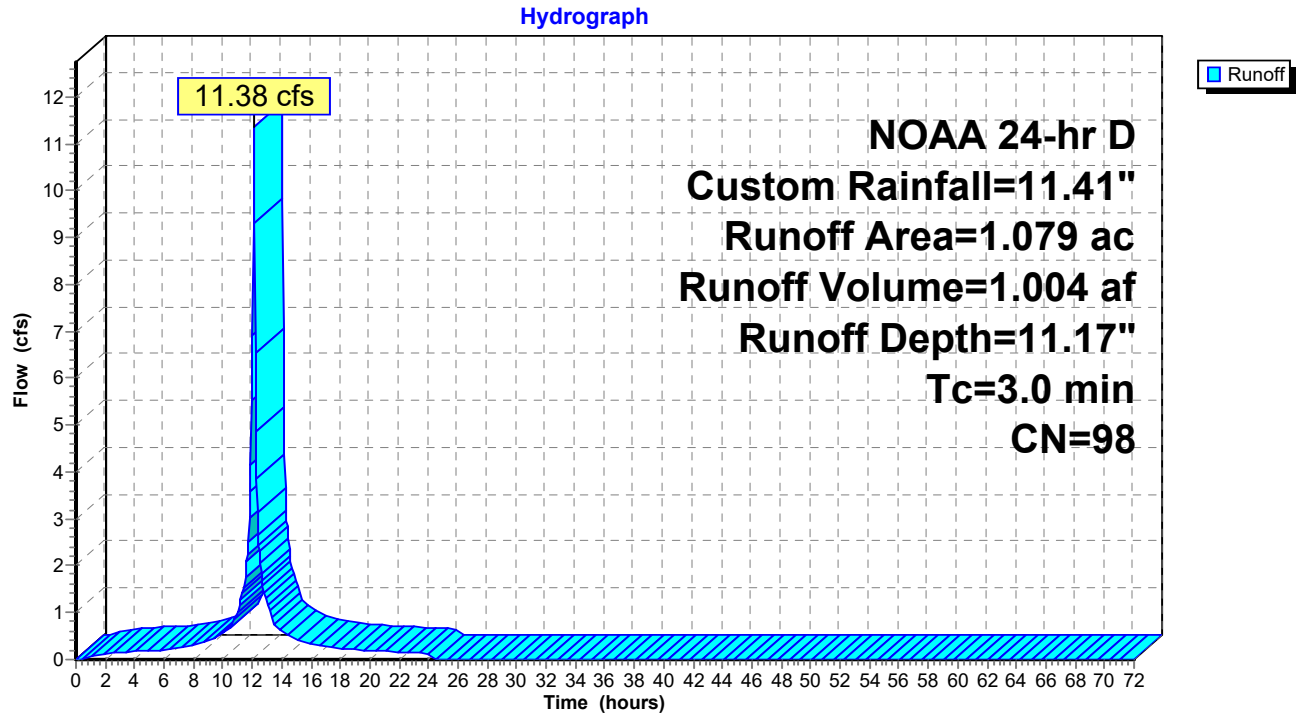
Runoff = 11.38 cfs @ 12.10 hrs, Volume= 1.004 af, Depth=11.17"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.079	98	Impervious
	1.079		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 63S: Basin 26 - Impervious



Summary for Subcatchment 64S: Basin 26 - Pervious

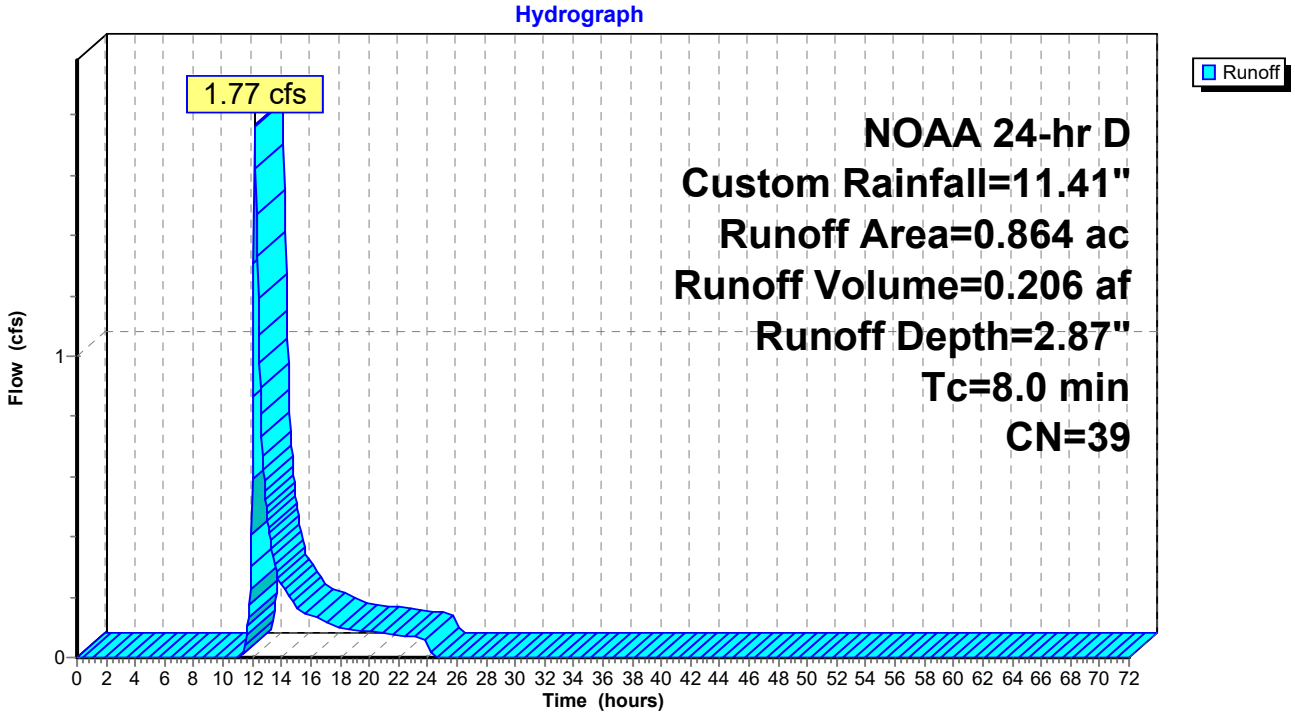
Runoff = 1.77 cfs @ 12.19 hrs, Volume= 0.206 af, Depth= 2.87"
Routed to Pond 62P : Basin 26 (Wet Pond)

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
0.864	39	>75% Grass cover, Good, HSG A
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 64S: Basin 26 - Pervious



Summary for Pond 66P: Basin 31

[93] Warning: Storage range exceeded by 51,115.31'
[81] Warning: Exceeded Pond 67P by 20,728.01' @ 12.10 hrs

Inflow Area = 9.125 ac, 32.14% Impervious, Inflow Depth = 5.32" for Custom event
Inflow = 55.10 cfs @ 12.10 hrs, Volume= 4.045 af
Outflow = 53.45 cfs @ 12.10 hrs, Volume= 3.936 af, Atten= 3%, Lag= 0.0 min
Primary = 53.45 cfs @ 12.10 hrs, Volume= 3.936 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 51,150.81' @ 12.10 hrs Surf.Area= 8,000 sf Storage= 13,775 cf

Plug-Flow detention time= 217.9 min calculated for 3.936 af (97% of inflow)
Center-of-Mass det. time= 160.8 min (1,225.0 - 1,064.2)

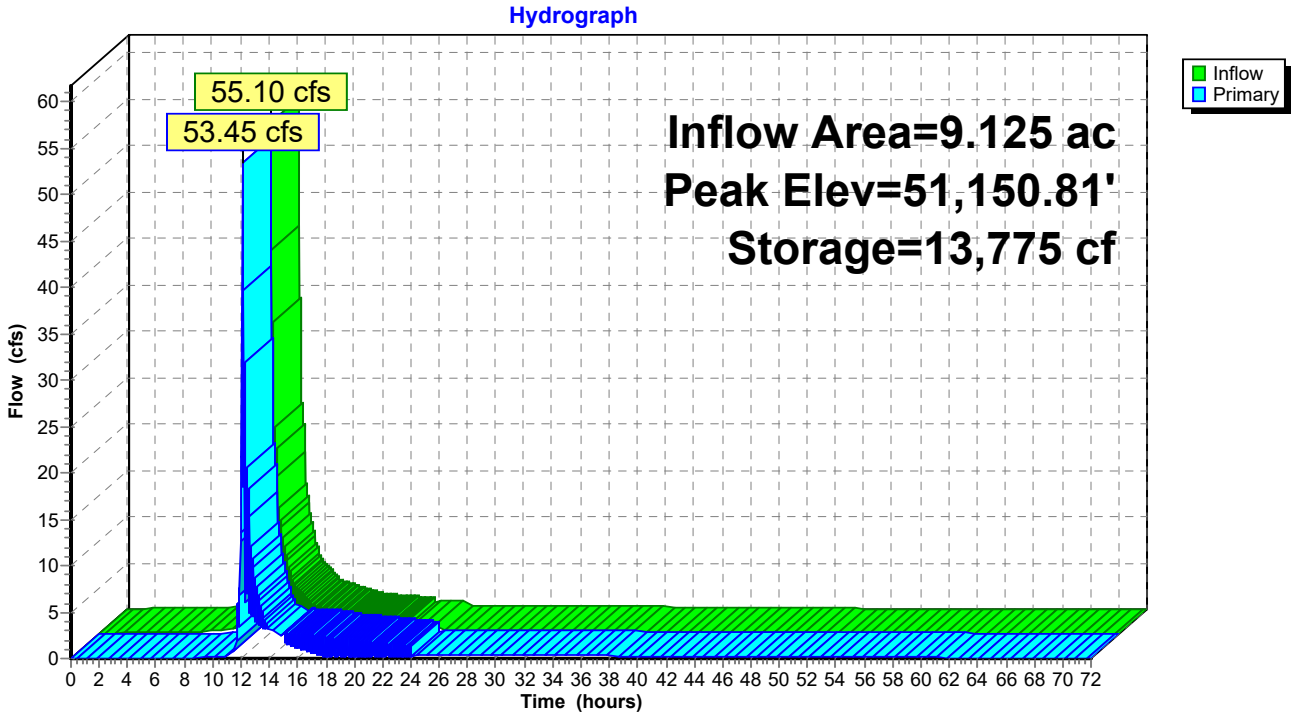
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	13,775 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,200	0	0
34.00	5,000	4,100	4,100
35.00	6,900	5,950	10,050
35.50	8,000	3,725	13,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.96'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=52.89 cfs @ 12.10 hrs HW=50,112.83' (Free Discharge)
1=Orifice/Grate (Orifice Controls 52.89 cfs @ 1,077.51 fps)

Pond 66P: Basin 31



Summary for Subcatchment 66S: Basin 19 - Impervious

[49] Hint: Tc<2dt may require smaller dt

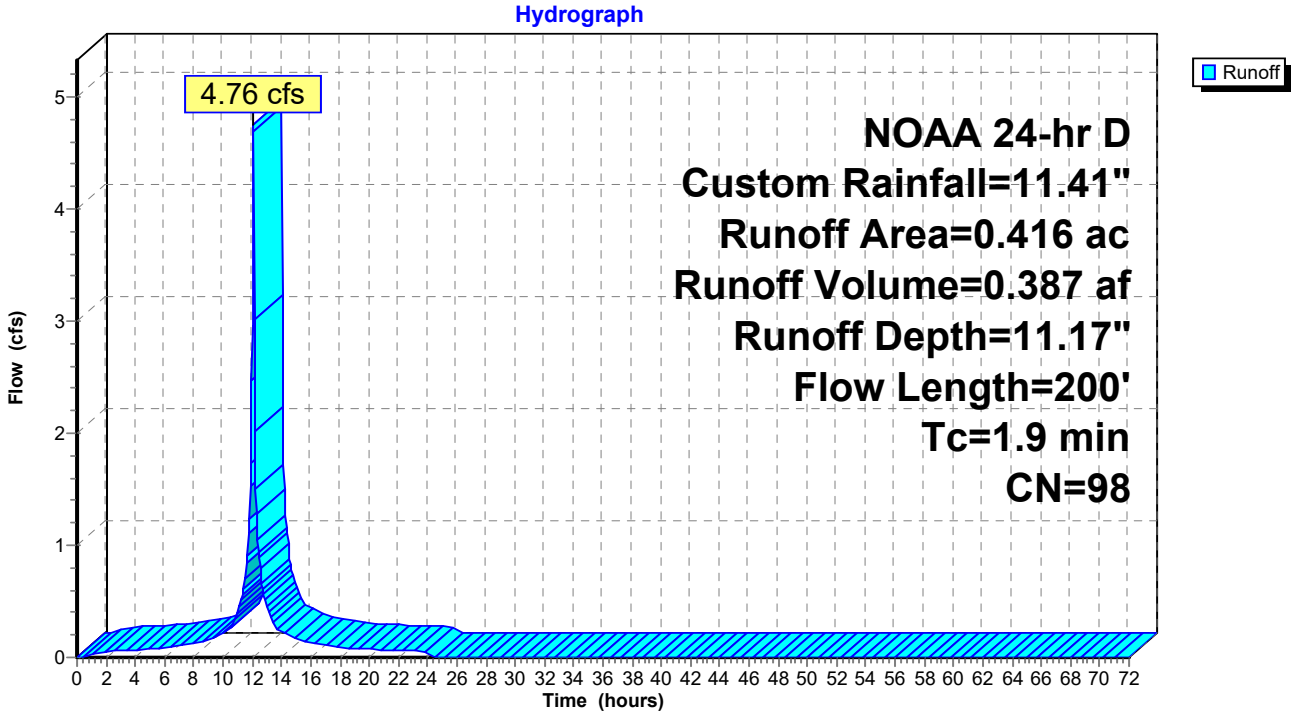
Runoff = 4.76 cfs @ 12.09 hrs, Volume= 0.387 af, Depth=11.17"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.416	98	Impervious
	0.416		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.3	100	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
1.9	200	Total			

Subcatchment 66S: Basin 19 - Impervious



Summary for Pond 67P: Basin 30

[93] Warning: Storage range exceeded by 30,384.17'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=20)
[81] Warning: Exceeded Pond 70P by 25,560.30' @ 12.10 hrs

Inflow Area = 6.020 ac, 31.43% Impervious, Inflow Depth = 5.31" for Custom event
Inflow = 29.42 cfs @ 12.11 hrs, Volume= 2.664 af
Outflow = 41.34 cfs @ 12.10 hrs, Volume= 2.583 af, Atten= 0%, Lag= 0.0 min
Primary = 41.34 cfs @ 12.10 hrs, Volume= 2.583 af
Routed to Pond 66P : Basin 31

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 30,420.67' @ 12.10 hrs Surf.Area= 9,800 sf Storage= 22,775 cf

Plug-Flow detention time= 351.7 min calculated for 2.581 af (97% of inflow)
Center-of-Mass det. time= 310.1 min (1,222.6 - 912.5)

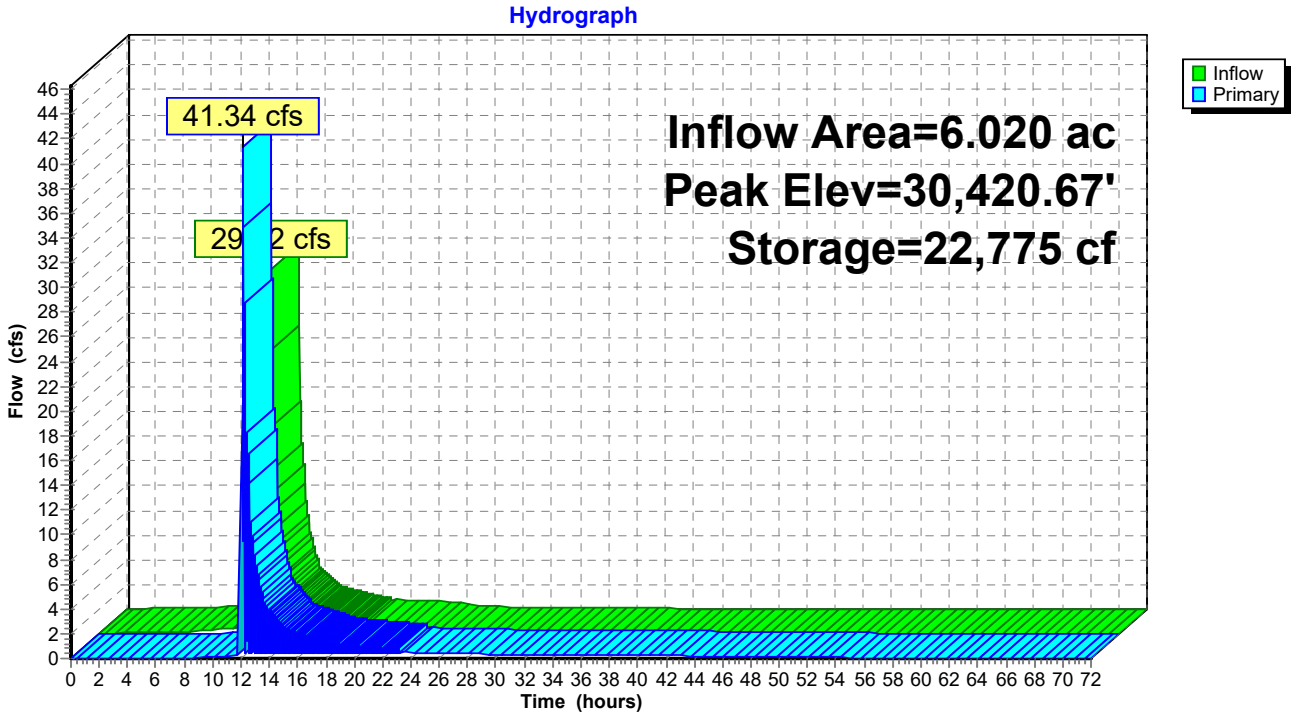
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,775 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,700	0	0
34.00	5,200	4,450	4,450
35.00	6,900	6,050	10,500
36.00	8,500	7,700	18,200
36.50	9,800	4,575	22,775

Device	Routing	Invert	Outlet Devices
#1	Primary	33.81'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=39.95 cfs @ 12.10 hrs HW=28,603.69' (Free Discharge)
1=Orifice/Grate (Orifice Controls 39.95 cfs @ 813.86 fps)

Pond 67P: Basin 30



Summary for Subcatchment 67S: Basin 19 - Pervious

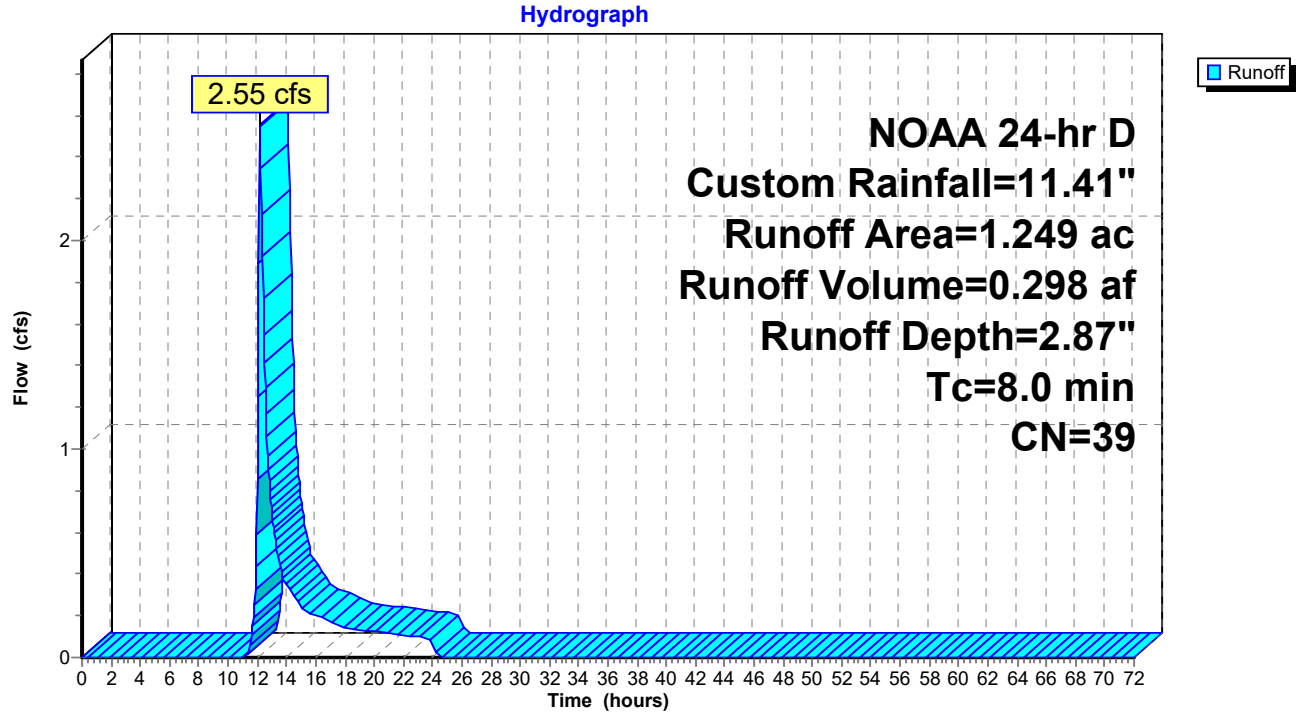
Runoff = 2.55 cfs @ 12.19 hrs, Volume= 0.298 af, Depth= 2.87"
Routed to Pond 68P : Basin 19

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.249	39	>75% Grass cover, Good, HSG A
1.249		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 67S: Basin 19 - Pervious



Summary for Pond 68P: Basin 19

Inflow Area = 1.665 ac, 24.98% Impervious, Inflow Depth = 4.94" for Custom event
Inflow = 6.57 cfs @ 12.10 hrs, Volume= 0.686 af
Outflow = 3.18 cfs @ 12.33 hrs, Volume= 0.649 af, Atten= 52%, Lag= 14.0 min
Primary = 3.18 cfs @ 12.33 hrs, Volume= 0.649 af
Routed to Pond 69P : Basin 20

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 42.14' @ 12.33 hrs Surf.Area= 4,999 sf Storage= 10,597 cf

Plug-Flow detention time= 298.3 min calculated for 0.649 af (95% of inflow)
Center-of-Mass det. time= 267.0 min (1,073.4 - 806.4)

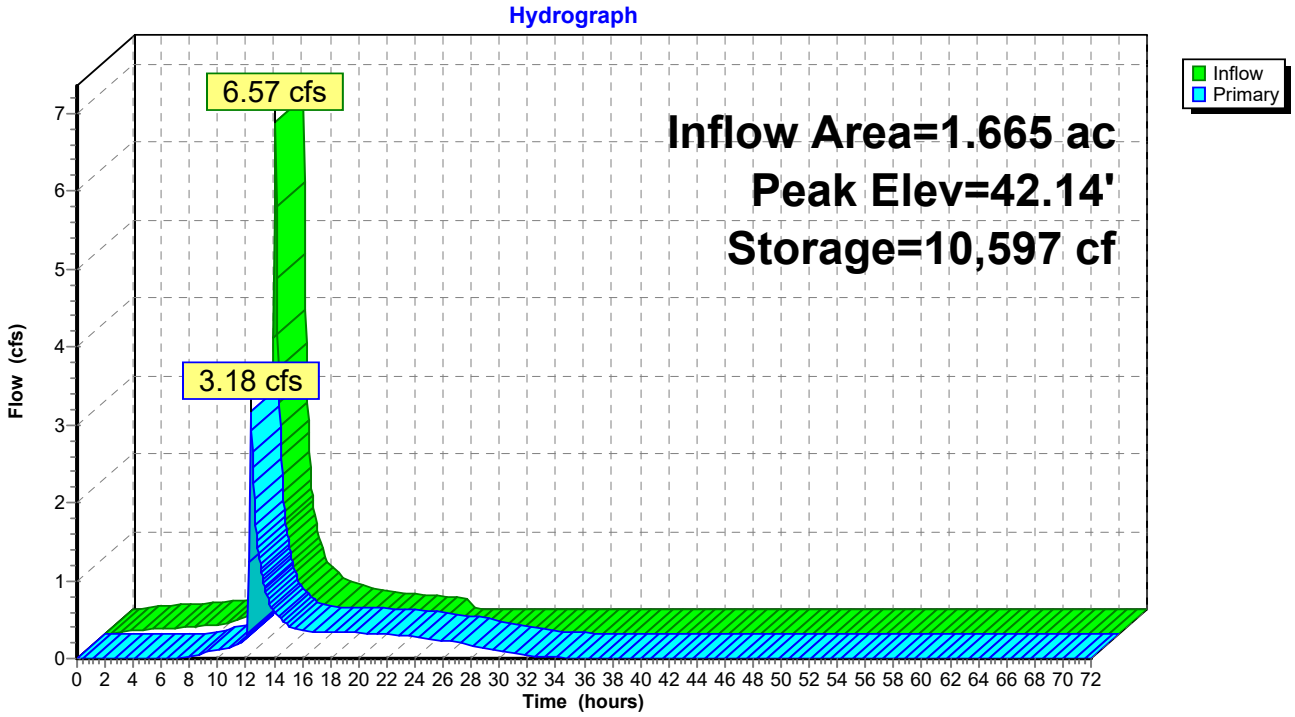
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	12,475 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	2,000	0	0
40.00	2,800	2,400	2,400
41.00	3,700	3,250	5,650
42.00	4,800	4,250	9,900
42.50	5,500	2,575	12,475

Device	Routing	Invert	Outlet Devices
#1	Primary	39.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	42.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.14 cfs @ 12.33 hrs HW=42.14' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.36 cfs @ 7.34 fps)
2=Orifice/Grate (Weir Controls 2.78 cfs @ 1.23 fps)

Pond 68P: Basin 19



Summary for Pond 69P: Basin 20

Inflow Area = 4.123 ac, 27.97% Impervious, Inflow Depth = 5.08" for Custom event
Inflow = 10.86 cfs @ 12.05 hrs, Volume= 1.746 af
Outflow = 9.51 cfs @ 12.10 hrs, Volume= 1.682 af, Atten= 12%, Lag= 2.6 min
Primary = 9.51 cfs @ 12.10 hrs, Volume= 1.682 af
Routed to Pond 72P : Basin 21

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.02' @ 12.10 hrs Surf.Area= 7,352 sf Storage= 9,462 cf

Plug-Flow detention time= 155.3 min calculated for 1.682 af (96% of inflow)
Center-of-Mass det. time= 121.7 min (1,020.0 - 898.3)

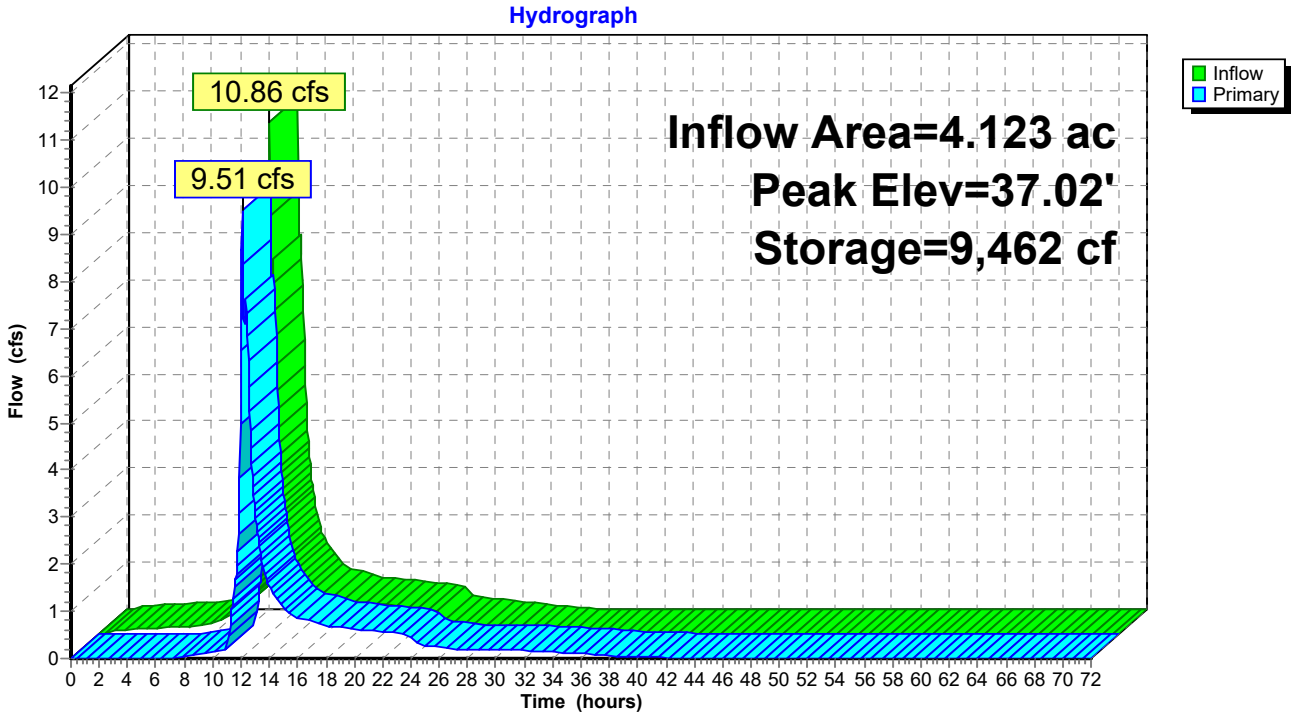
Volume	Invert	Avail.Storage	Storage Description
#1	35.00'	13,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
35.00	2,400	0	0
36.00	4,500	3,450	3,450
37.00	7,300	5,900	9,350
37.50	9,000	4,075	13,425

Device	Routing	Invert	Outlet Devices
#1	Primary	35.84'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.43 cfs @ 12.10 hrs HW=37.01' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.24 cfs @ 4.93 fps)
2=Orifice/Grate (Weir Controls 9.19 cfs @ 1.83 fps)

Pond 69P: Basin 20



Summary for Pond 70P: Basin 29

[93] Warning: Storage range exceeded by 4,824.90'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=108)

Inflow Area = 2.987 ac, 32.51% Impervious, Inflow Depth = 5.57" for Custom event
Inflow = 13.42 cfs @ 12.11 hrs, Volume= 1.385 af
Outflow = 16.44 cfs @ 12.10 hrs, Volume= 1.302 af, Atten= 0%, Lag= 0.0 min
Primary = 16.44 cfs @ 12.10 hrs, Volume= 1.302 af
Routed to Pond 67P : Basin 30

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 4,860.90' @ 12.10 hrs Surf.Area= 8,700 sf Storage= 12,800 cf

Plug-Flow detention time= 274.1 min calculated for 1.301 af (94% of inflow)
Center-of-Mass det. time= 240.3 min (1,033.5 - 793.2)

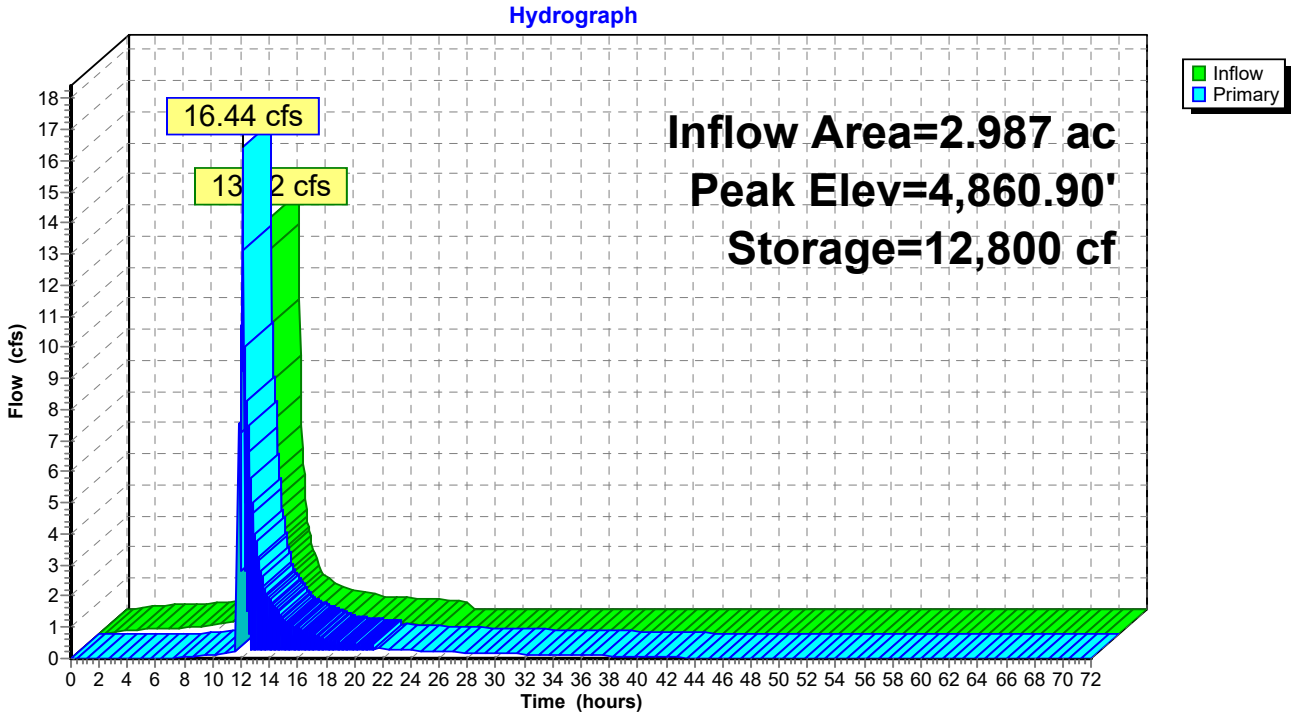
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	12,800 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,500	0	0
35.00	6,200	5,350	5,350
36.00	8,700	7,450	12,800

Device	Routing	Invert	Outlet Devices
#1	Primary	34.71'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=16.06 cfs @ 12.10 hrs HW=4,653.77' (Free Discharge)
1=Orifice/Grate (Orifice Controls 16.06 cfs @ 327.24 fps)

Pond 70P: Basin 29



Summary for Subcatchment 70S: Basin 20 - Impervious

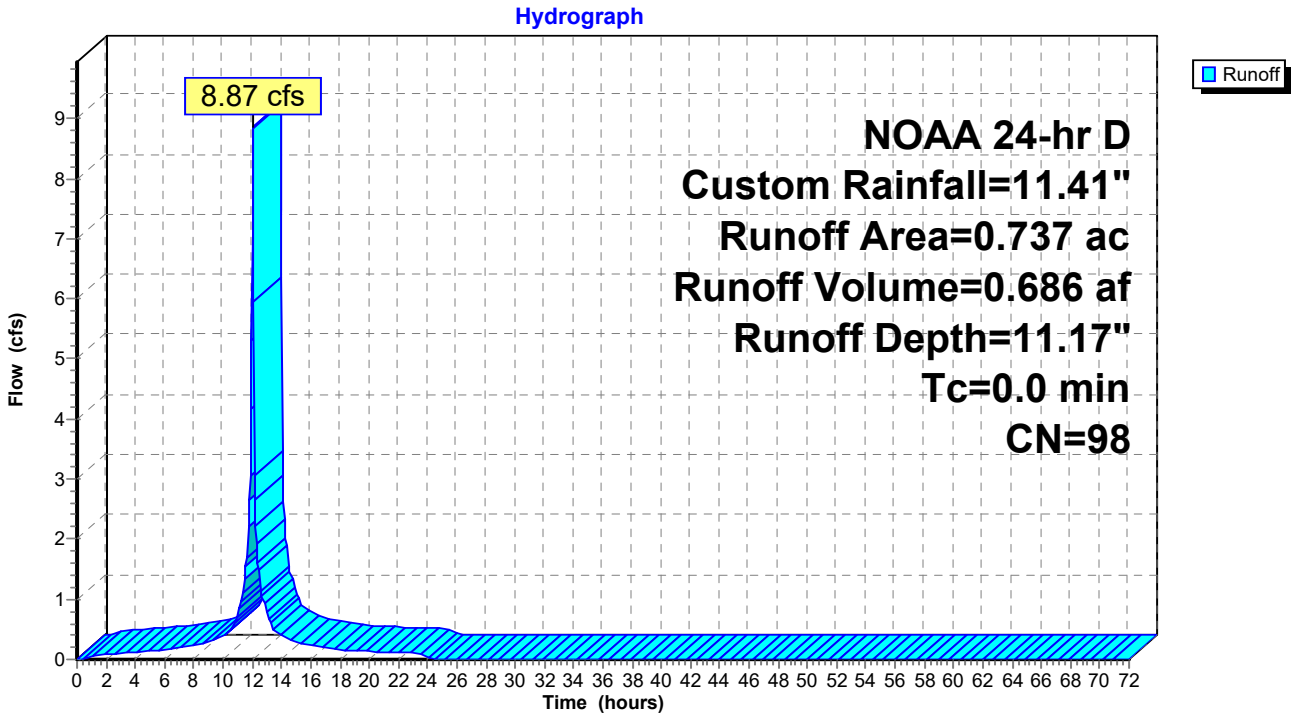
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 8.87 cfs @ 12.04 hrs, Volume= 0.686 af, Depth=11.17"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.737	98	Impervious
	0.737		100.00% Impervious Area

Subcatchment 70S: Basin 20 - Impervious



Summary for Pond 71P: Basin 33

Inflow Area = 5.600 ac, 26.93% Impervious, Inflow Depth > 4.92" for Custom event
Inflow = 11.34 cfs @ 12.11 hrs, Volume= 2.297 af
Outflow = 3.13 cfs @ 13.30 hrs, Volume= 2.212 af, Atten= 72%, Lag= 71.4 min
Primary = 3.13 cfs @ 13.30 hrs, Volume= 2.212 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.14' @ 13.30 hrs Surf.Area= 11,275 sf Storage= 30,984 cf

Plug-Flow detention time= 684.3 min calculated for 2.211 af (96% of inflow)
Center-of-Mass det. time= 599.5 min (1,810.7 - 1,211.3)

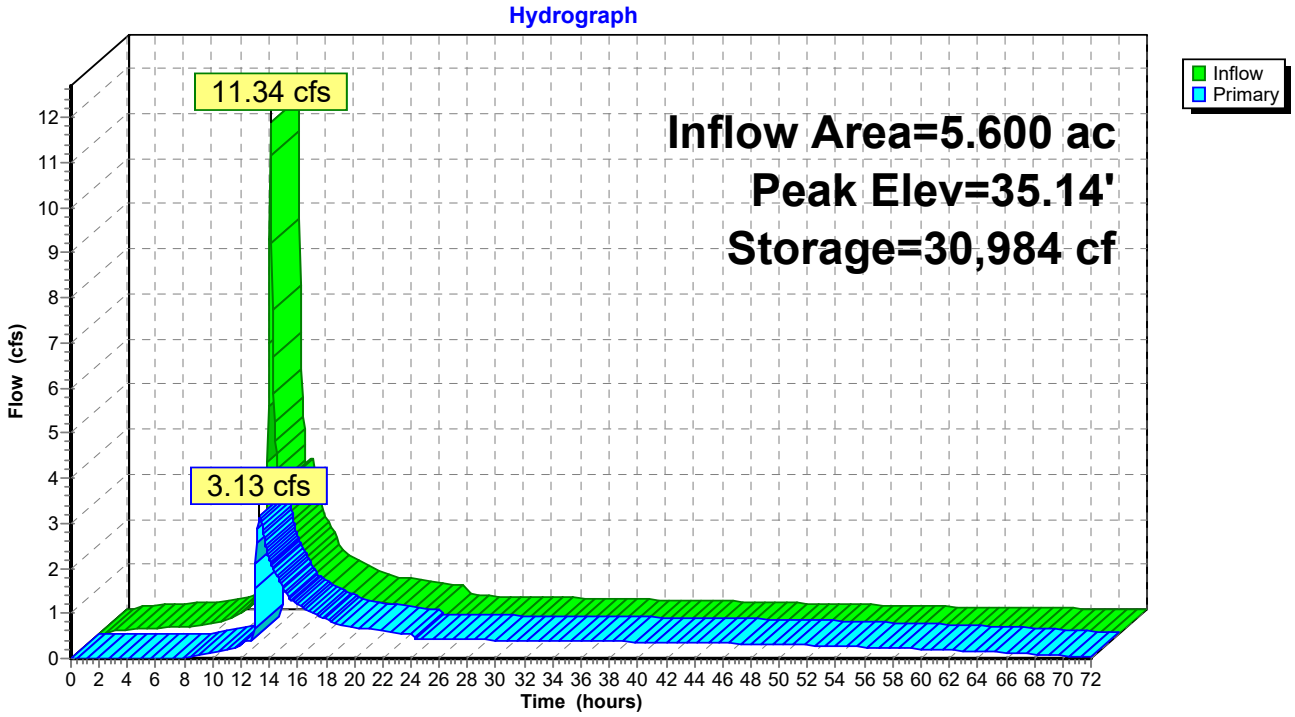
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	41,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,900	0	0
32.00	5,400	4,650	4,650
33.00	7,200	6,300	10,950
34.00	9,400	8,300	19,250
35.00	11,000	10,200	29,450
36.00	13,000	12,000	41,450

Device	Routing	Invert	Outlet Devices
#1	Primary	31.67'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.10 cfs @ 13.30 hrs HW=35.14' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.43 cfs @ 8.80 fps)
2=Orifice/Grate (Weir Controls 2.67 cfs @ 1.21 fps)

Pond 71P: Basin 33



Summary for Subcatchment 71S: Basin 20 - Pervious

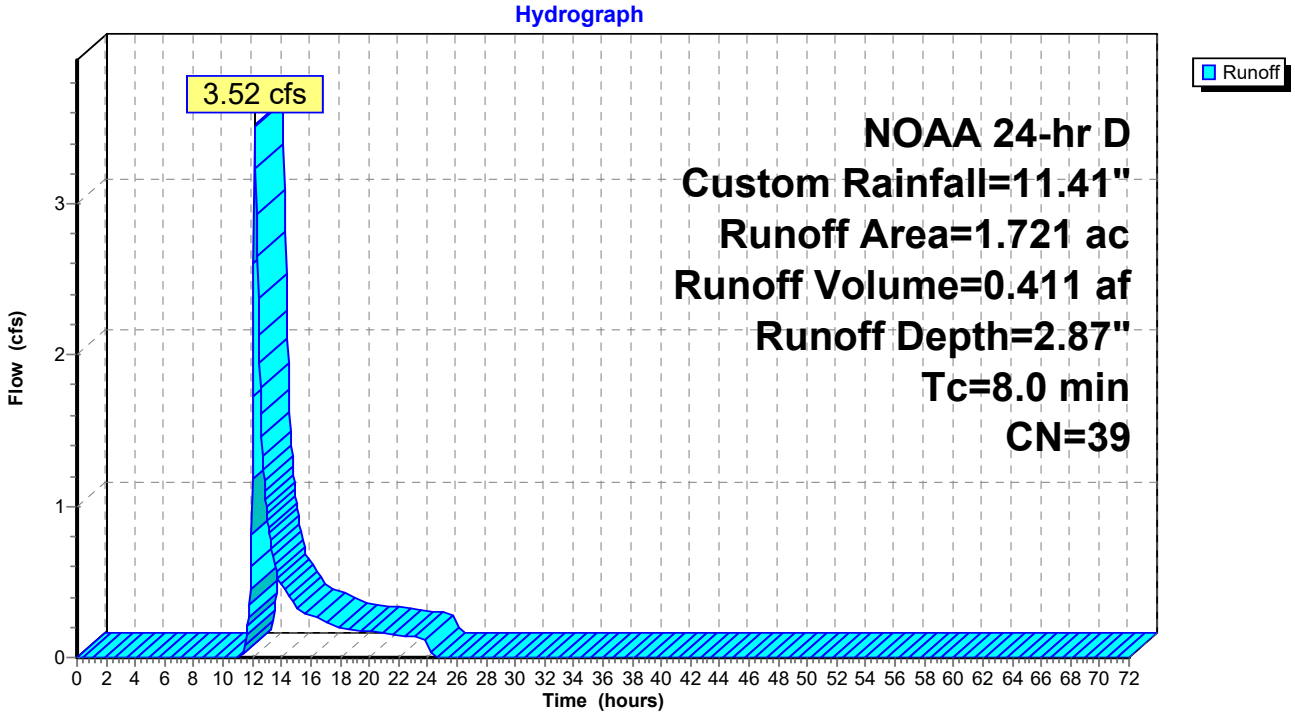
Runoff = 3.52 cfs @ 12.19 hrs, Volume= 0.411 af, Depth= 2.87"
Routed to Pond 69P : Basin 20

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
1.721		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 71S: Basin 20 - Pervious



Summary for Pond 72P: Basin 21

Inflow Area = 4.621 ac, 35.73% Impervious, Inflow Depth = 5.57" for Custom event
Inflow = 14.63 cfs @ 12.10 hrs, Volume= 2.145 af
Outflow = 14.27 cfs @ 12.12 hrs, Volume= 2.102 af, Atten= 2%, Lag= 1.0 min
Primary = 14.27 cfs @ 12.12 hrs, Volume= 2.102 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.23' @ 12.12 hrs Surf.Area= 3,077 sf Storage= 3,078 cf

Plug-Flow detention time= 46.4 min calculated for 2.102 af (98% of inflow)
Center-of-Mass det. time= 16.9 min (975.9 - 958.9)

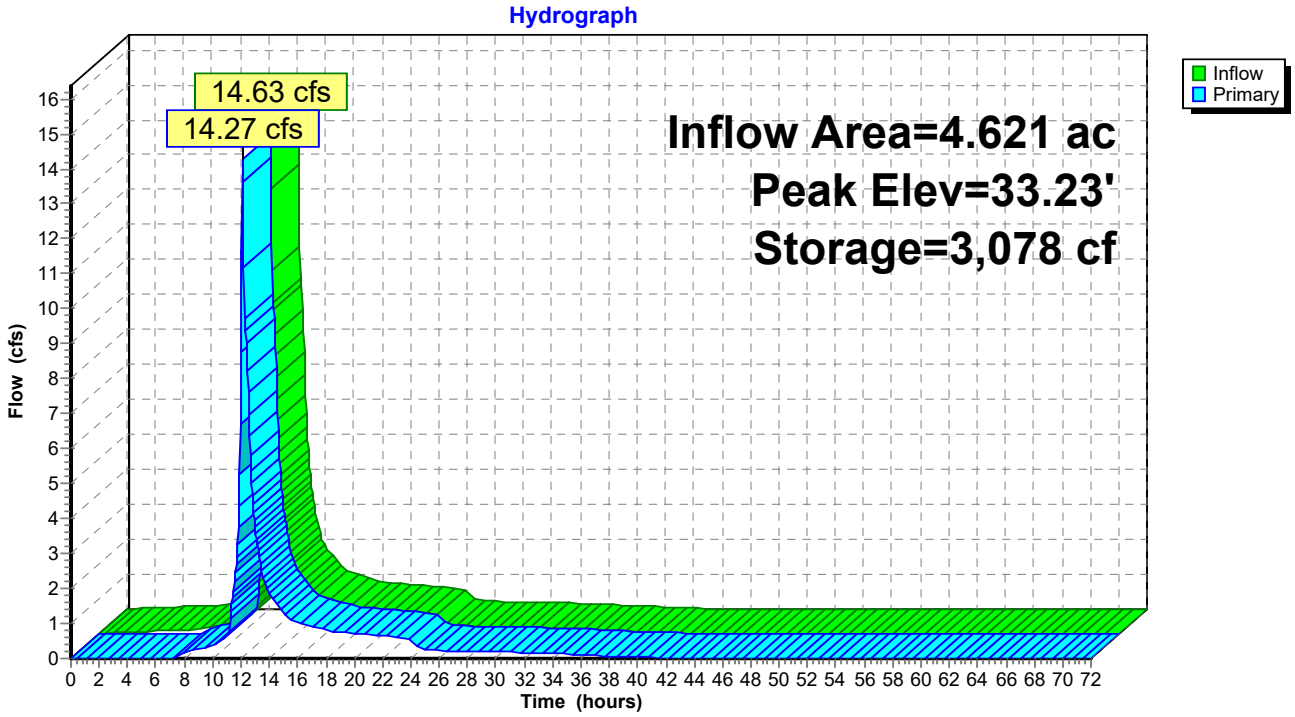
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	8,000 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,000	0	0
33.00	2,800	2,400	2,400
34.00	4,000	3,400	5,800
34.50	4,800	2,200	8,000

Device	Routing	Invert	Outlet Devices
#1	Primary	32.81'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.93 cfs @ 12.12 hrs HW=33.22' (Free Discharge)
1=Orifice/Grate (Weir Controls 13.93 cfs @ 2.10 fps)

Pond 72P: Basin 21



Summary for Pond 73P: Basin 32

Inflow Area = 2.998 ac, 24.25% Impervious, Inflow Depth = 4.88" for Custom event
Inflow = 11.32 cfs @ 12.12 hrs, Volume= 1.219 af
Outflow = 1.74 cfs @ 13.18 hrs, Volume= 1.135 af, Atten= 85%, Lag= 63.6 min
Primary = 1.74 cfs @ 13.18 hrs, Volume= 1.135 af
Routed to Pond 71P : Basin 33

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.09' @ 13.18 hrs Surf.Area= 16,362 sf Storage= 29,212 cf

Plug-Flow detention time= 863.8 min calculated for 1.134 af (93% of inflow)
Center-of-Mass det. time= 825.9 min (1,634.9 - 808.9)

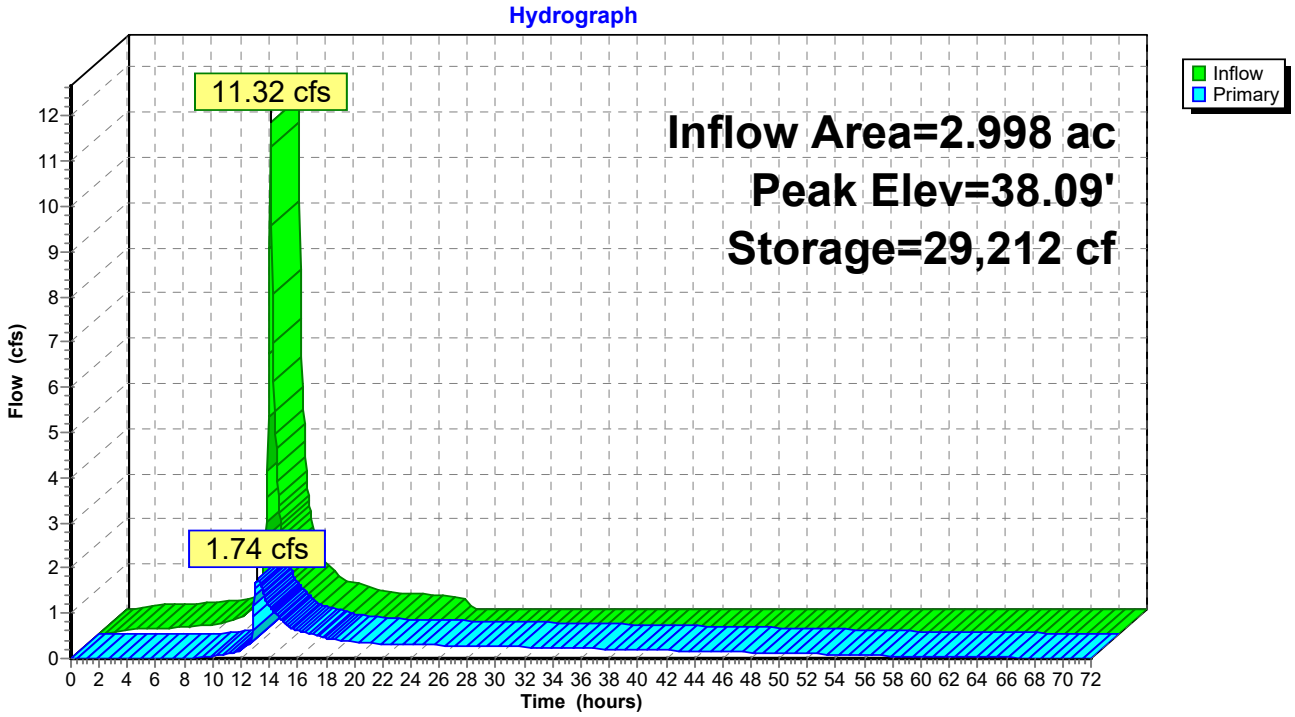
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	54,225 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	11,700	0	0
37.00	13,800	12,750	12,750
38.00	16,200	15,000	27,750
39.00	18,000	17,100	44,850
39.50	19,500	9,375	54,225

Device	Routing	Invert	Outlet Devices
#1	Primary	36.23'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	38.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.72 cfs @ 13.18 hrs HW=38.09' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.31 cfs @ 6.34 fps)
└**2=Orifice/Grate** (Weir Controls 1.41 cfs @ 0.98 fps)

Pond 73P: Basin 32



Summary for Subcatchment 73S: Basin 21 - Impervious

[49] Hint: Tc<2dt may require smaller dt

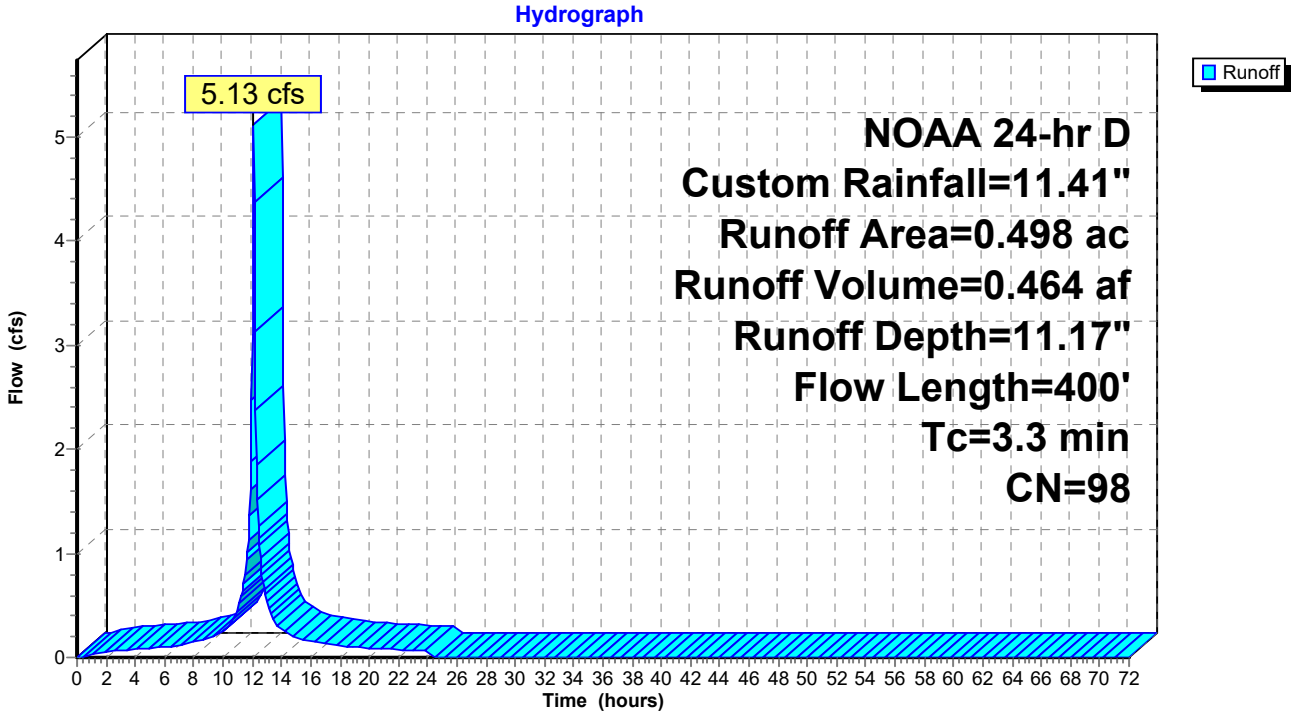
Runoff = 5.13 cfs @ 12.10 hrs, Volume= 0.464 af, Depth=11.17"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.498	98	Impervious
	0.498		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.0	100	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.3	400	Total			

Subcatchment 73S: Basin 21 - Impervious



Summary for Pond 74P: Basin 39

[93] Warning: Storage range exceeded by 0.55'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=3)
[79] Warning: Submerged Pond 77P Primary device # 1 by 0.31'

Inflow Area = 20.988 ac, 20.72% Impervious, Inflow Depth = 3.80" for Custom event
Inflow = 51.28 cfs @ 12.17 hrs, Volume= 6.654 af
Outflow = 55.62 cfs @ 12.21 hrs, Volume= 6.029 af, Atten= 0%, Lag= 2.6 min
Primary = 55.62 cfs @ 12.21 hrs, Volume= 6.029 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.05' @ 12.21 hrs Surf.Area= 20,000 sf Storage= 50,450 cf

Plug-Flow detention time= 272.8 min calculated for 6.025 af (91% of inflow)
Center-of-Mass det. time= 173.9 min (1,149.0 - 975.1)

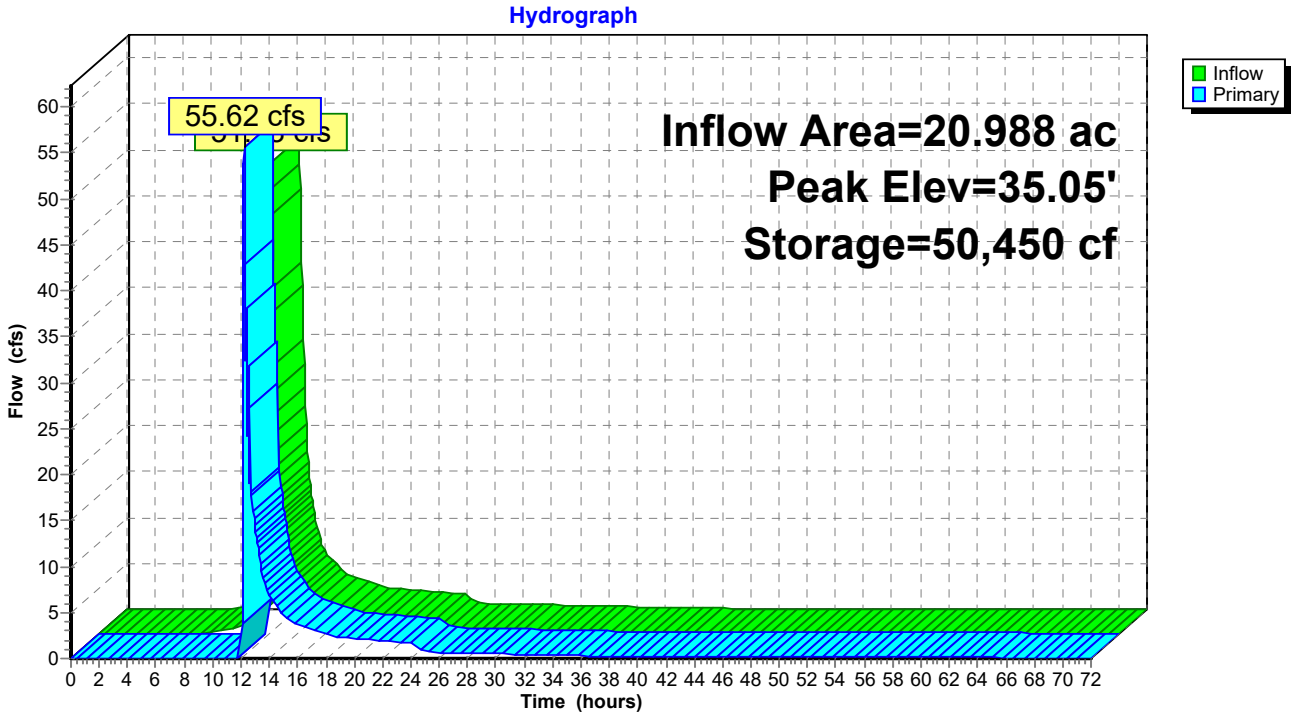
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	50,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	9,900	0	0
32.00	12,000	10,950	10,950
33.00	15,000	13,500	24,450
34.00	18,000	16,500	40,950
34.50	20,000	9,500	50,450

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=50.05 cfs @ 12.21 hrs HW=34.97' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.32 cfs @ 6.53 fps)
2=Orifice/Grate (Weir Controls 49.73 cfs @ 3.22 fps)

Pond 74P: Basin 39



Summary for Subcatchment 74S: Basin 21 - Pervious

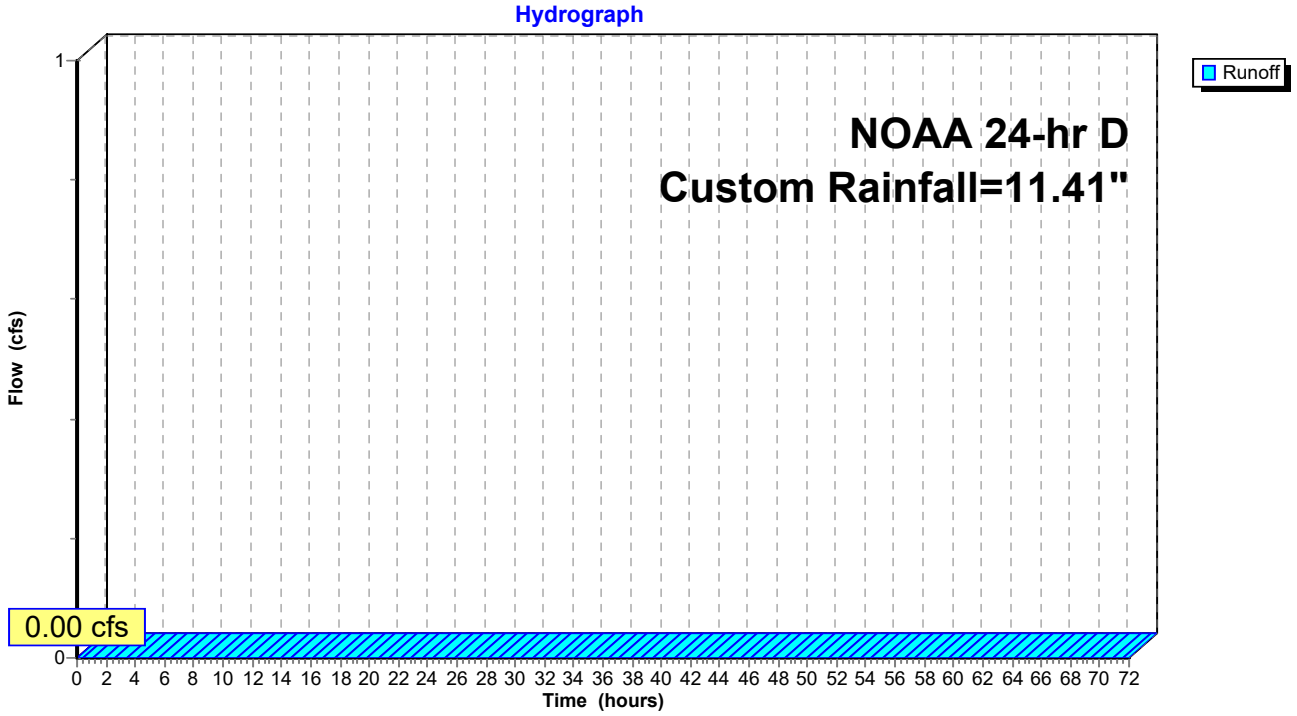
[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 72P : Basin 21

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 74S: Basin 21 - Pervious



Summary for Pond 75P: Basin 25

Inflow Area = 17.778 ac, 32.79% Impervious, Inflow Depth = 5.30" for Custom event
Inflow = 66.20 cfs @ 12.15 hrs, Volume= 7.853 af
Outflow = 65.44 cfs @ 12.17 hrs, Volume= 7.764 af, Atten= 1%, Lag= 1.2 min
Primary = 37.67 cfs @ 12.17 hrs, Volume= 6.785 af
Routed to Pond 62P : Basin 26 (Wet Pond)
Secondary = 27.77 cfs @ 12.17 hrs, Volume= 0.979 af
Routed to Pond 62P : Basin 26 (Wet Pond)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 28.00' @ 12.17 hrs Surf.Area= 11,198 sf Storage= 21,937 cf

Plug-Flow detention time= 95.7 min calculated for 7.764 af (99% of inflow)
Center-of-Mass det. time= 78.1 min (992.0 - 913.9)

Volume	Invert	Avail.Storage	Storage Description
#1	25.50'	28,125 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

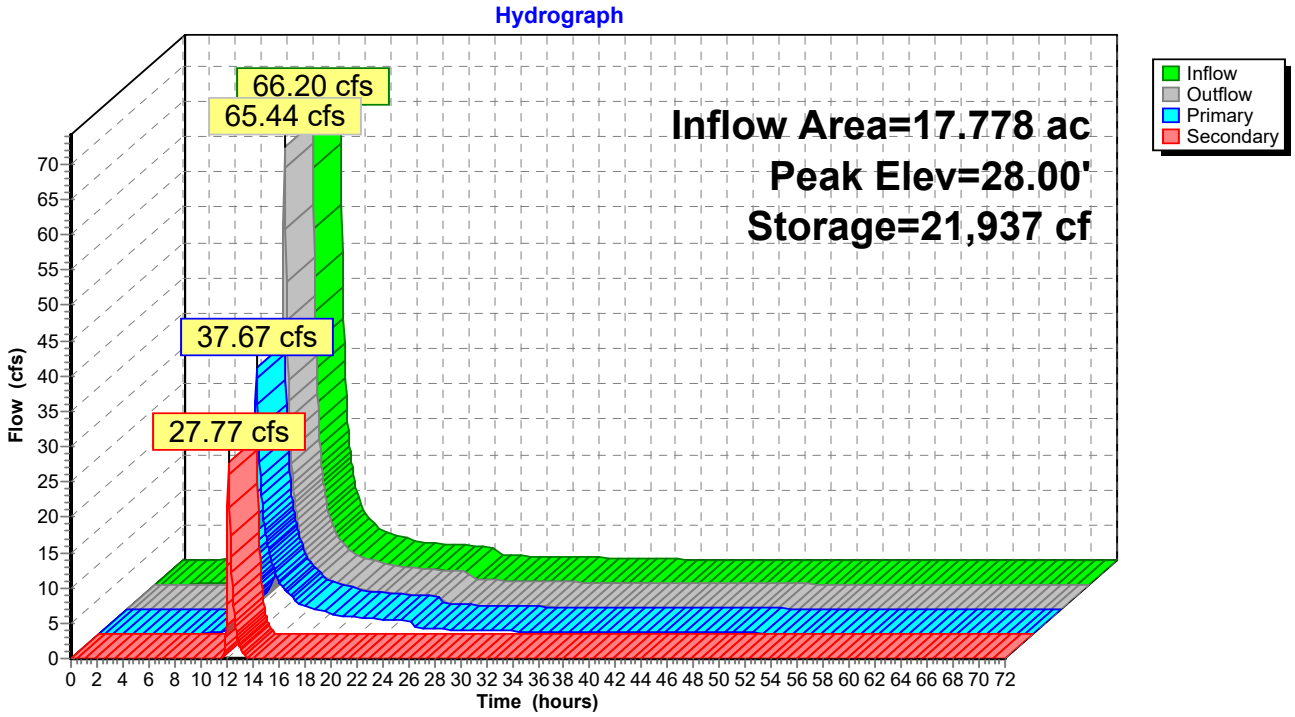
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
25.50	6,600	0	0
26.00	7,200	3,450	3,450
27.00	9,300	8,250	11,700
28.00	11,200	10,250	21,950
28.50	13,500	6,175	28,125

Device	Routing	Invert	Outlet Devices
#1	Primary	26.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	27.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	27.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=37.05 cfs @ 12.17 hrs HW=27.99' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.32 cfs @ 6.58 fps)
└**2=Orifice/Grate** (Weir Controls 36.72 cfs @ 2.91 fps)

Secondary OutFlow Max=26.98 cfs @ 12.17 hrs HW=27.99' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 26.98 cfs @ 1.84 fps)

Pond 75P: Basin 25



Summary for Pond 76P: Basin 38

Inflow Area = 1.797 ac, 28.16% Impervious, Inflow Depth = 5.20" for Custom event
Inflow = 7.55 cfs @ 12.10 hrs, Volume= 0.779 af
Outflow = 3.92 cfs @ 12.30 hrs, Volume= 0.734 af, Atten= 48%, Lag= 11.8 min
Primary = 3.92 cfs @ 12.30 hrs, Volume= 0.734 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.87' @ 12.30 hrs Surf.Area= 8,699 sf Storage= 12,492 cf

Plug-Flow detention time= 382.8 min calculated for 0.734 af (94% of inflow)
Center-of-Mass det. time= 348.8 min (1,149.2 - 800.3)

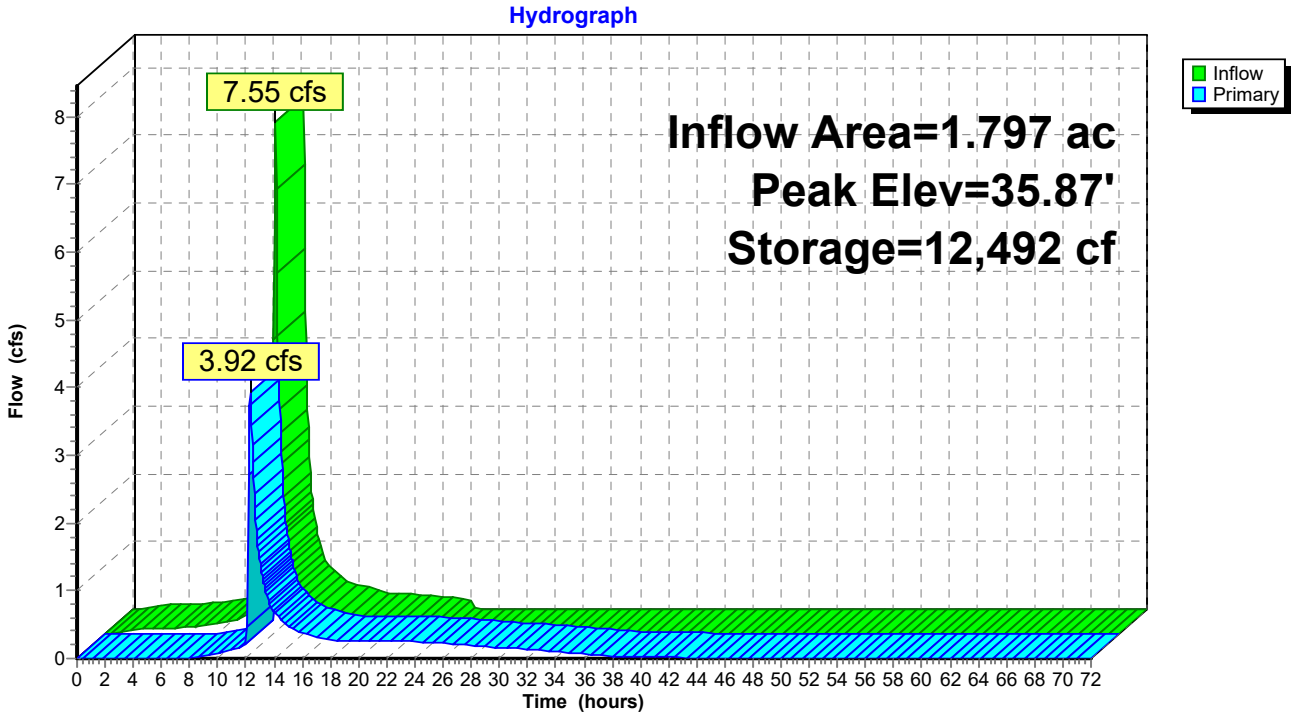
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	18,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,900	0	0
35.00	6,700	5,800	5,800
36.00	9,000	7,850	13,650
36.50	10,200	4,800	18,450

Device	Routing	Invert	Outlet Devices
#1	Primary	34.36'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.91 cfs @ 12.30 hrs HW=35.87' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.28 cfs @ 5.66 fps)
2=Orifice/Grate (Weir Controls 3.63 cfs @ 1.34 fps)

Pond 76P: Basin 38



Summary for Subcatchment 76S: Basin 25 - Impervious

[49] Hint: Tc<2dt may require smaller dt

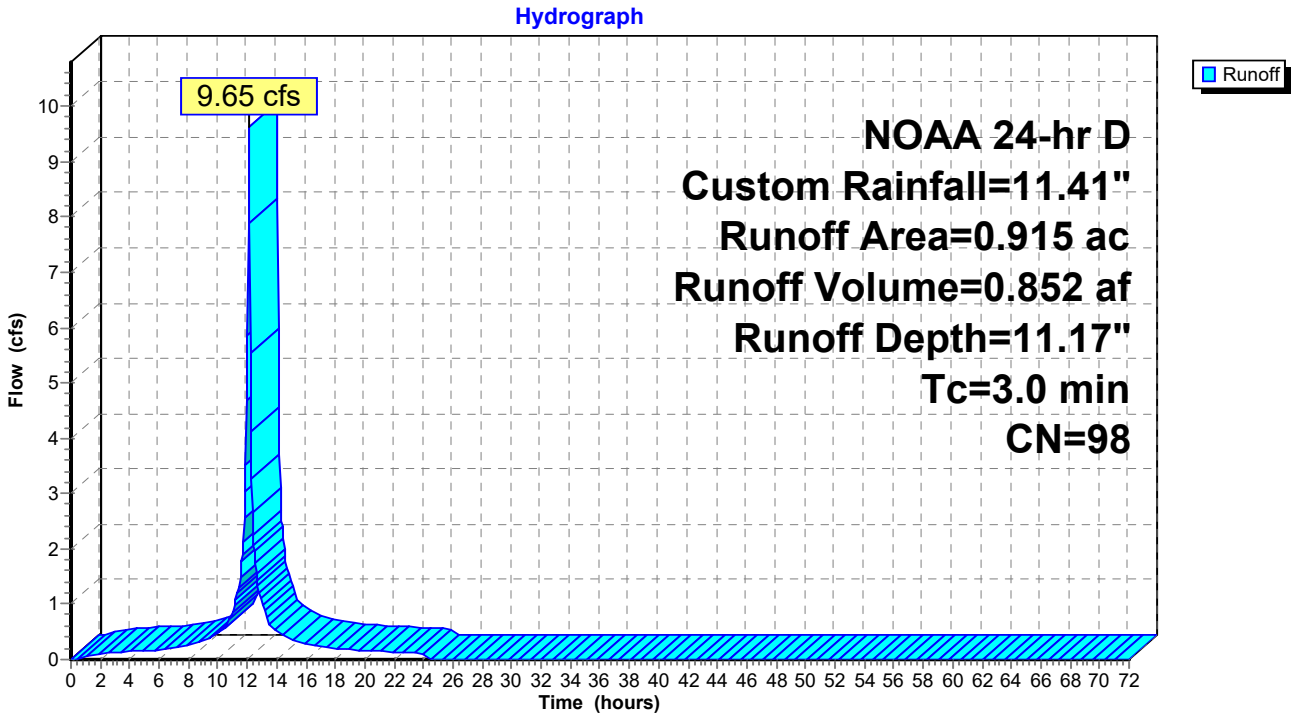
Runoff = 9.65 cfs @ 12.10 hrs, Volume= 0.852 af, Depth=11.17"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 76S: Basin 25 - Impervious



Summary for Pond 77P: Basin 37

[93] Warning: Storage range exceeded by 0.17'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 20.254 ac, 21.47% Impervious, Inflow Depth = 3.87" for Custom event
Inflow = 49.11 cfs @ 12.19 hrs, Volume= 6.533 af
Outflow = 49.77 cfs @ 12.17 hrs, Volume= 6.479 af, Atten= 0%, Lag= 0.0 min
Primary = 49.77 cfs @ 12.17 hrs, Volume= 6.479 af
Routed to Pond 74P : Basin 39

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.67' @ 12.17 hrs Surf.Area= 4,600 sf Storage= 5,650 cf

Plug-Flow detention time= 25.4 min calculated for 6.479 af (99% of inflow)
Center-of-Mass det. time= 8.6 min (977.5 - 968.9)

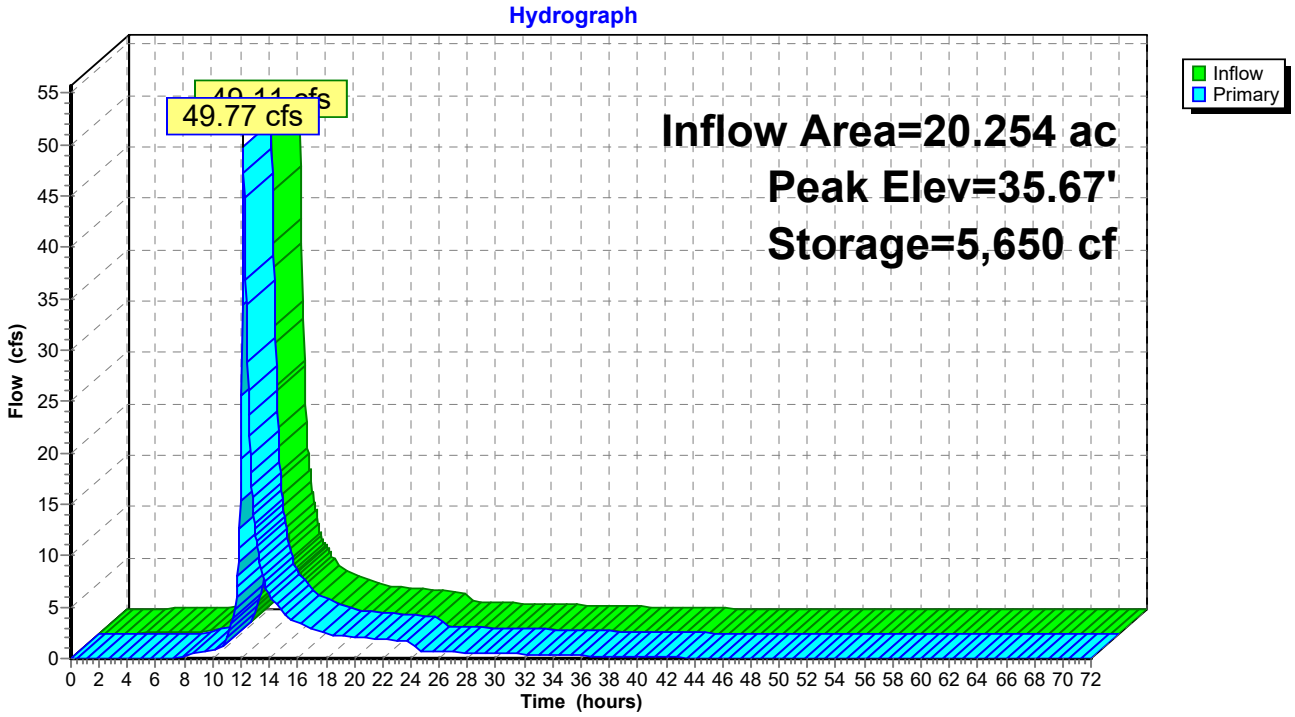
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	5,650 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	3,000	0	0
35.00	4,000	3,500	3,500
35.50	4,600	2,150	5,650

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=47.92 cfs @ 12.17 hrs HW=35.64' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 47.92 cfs @ 3.18 fps)

Pond 77P: Basin 37



Summary for Subcatchment 77S: Basin 25 - Pervious

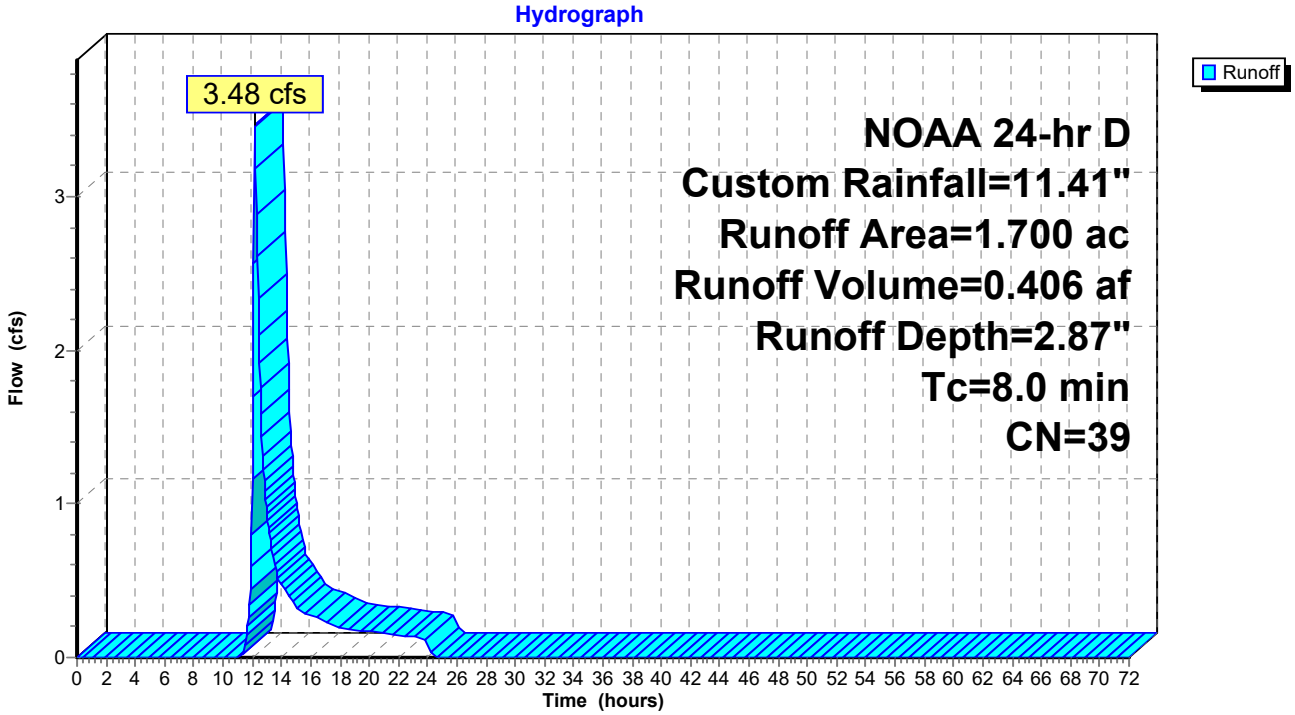
Runoff = 3.48 cfs @ 12.19 hrs, Volume= 0.406 af, Depth= 2.87"
Routed to Pond 75P : Basin 25

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.700	39	>75% Grass cover, Good, HSG A
1.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 77S: Basin 25 - Pervious



Summary for Pond 78P: Basin 24

Inflow Area = 2.540 ac, 35.00% Impervious, Inflow Depth = 5.77" for Custom event
Inflow = 11.96 cfs @ 12.11 hrs, Volume= 1.222 af
Outflow = 11.14 cfs @ 12.15 hrs, Volume= 1.146 af, Atten= 7%, Lag= 2.4 min
Primary = 11.14 cfs @ 12.15 hrs, Volume= 1.146 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 31.07' @ 12.15 hrs Surf.Area= 6,039 sf Storage= 5,346 cf

Plug-Flow detention time= 77.1 min calculated for 1.146 af (94% of inflow)
Center-of-Mass det. time= 40.4 min (829.6 - 789.2)

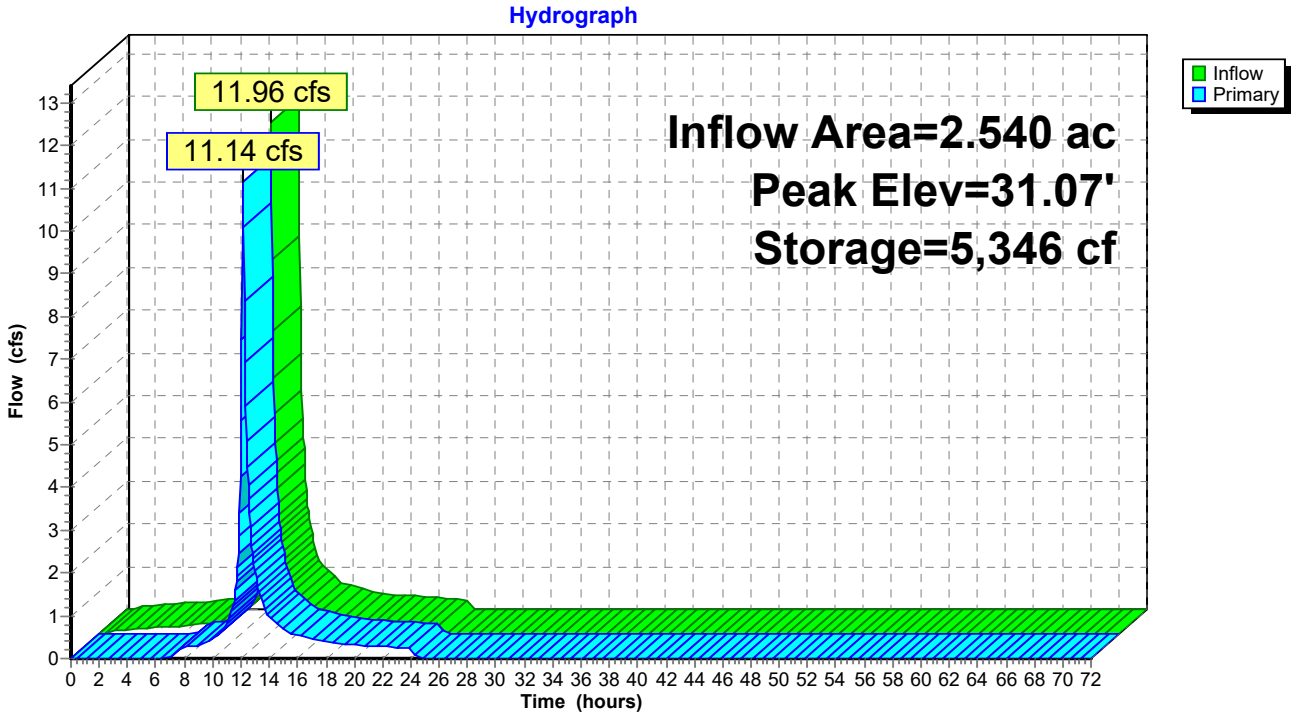
Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	16,275 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	4,000	0	0
31.00	5,900	4,950	4,950
32.00	8,000	6,950	11,900
32.50	9,500	4,375	16,275

Device	Routing	Invert	Outlet Devices
#1	Primary	30.71'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.10 cfs @ 12.15 hrs HW=31.07' (Free Discharge)
1=Orifice/Grate (Weir Controls 11.10 cfs @ 1.95 fps)

Pond 78P: Basin 24



Summary for Pond 79P: Basin 34

[92] Warning: Device #2 is above defined storage
[93] Warning: Storage range exceeded by 0.22'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=51)

Inflow Area = 1.715 ac, 25.31% Impervious, Inflow Depth = 4.97" for Custom event
Inflow = 6.63 cfs @ 12.12 hrs, Volume= 0.710 af
Outflow = 5.29 cfs @ 12.26 hrs, Volume= 0.670 af, Atten= 20%, Lag= 8.5 min
Primary = 5.29 cfs @ 12.26 hrs, Volume= 0.670 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.72' @ 12.26 hrs Surf.Area= 9,400 sf Storage= 11,200 cf

Plug-Flow detention time= 429.1 min calculated for 0.670 af (94% of inflow)
Center-of-Mass det. time= 396.0 min (1,202.7 - 806.7)

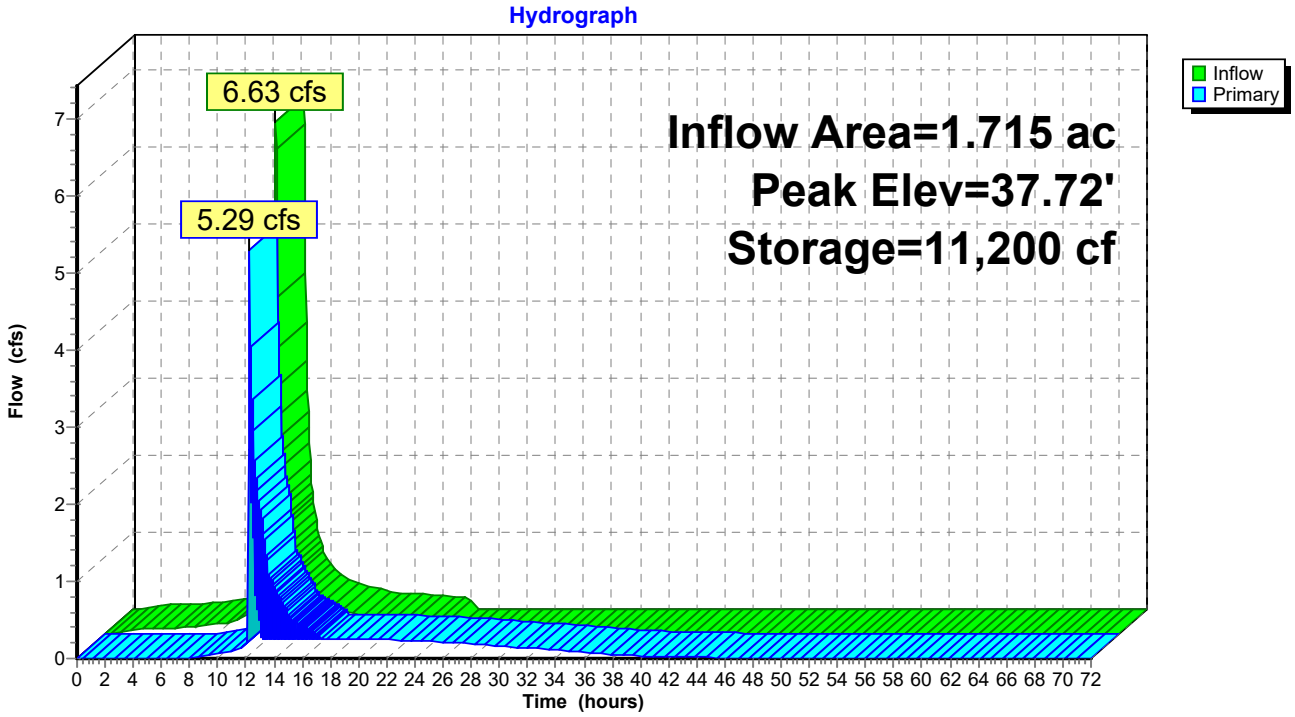
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	11,200 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	5,700	0	0
37.00	8,000	6,850	6,850
37.50	9,400	4,350	11,200

Device	Routing	Invert	Outlet Devices
#1	Primary	36.27'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.71 cfs @ 12.26 hrs HW=37.69' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.27 cfs @ 5.49 fps)
2=Orifice/Grate (Weir Controls 4.44 cfs @ 1.44 fps)

Pond 79P: Basin 34



Summary for Subcatchment 79S: Basin 24 - Impervious

[49] Hint: Tc<2dt may require smaller dt

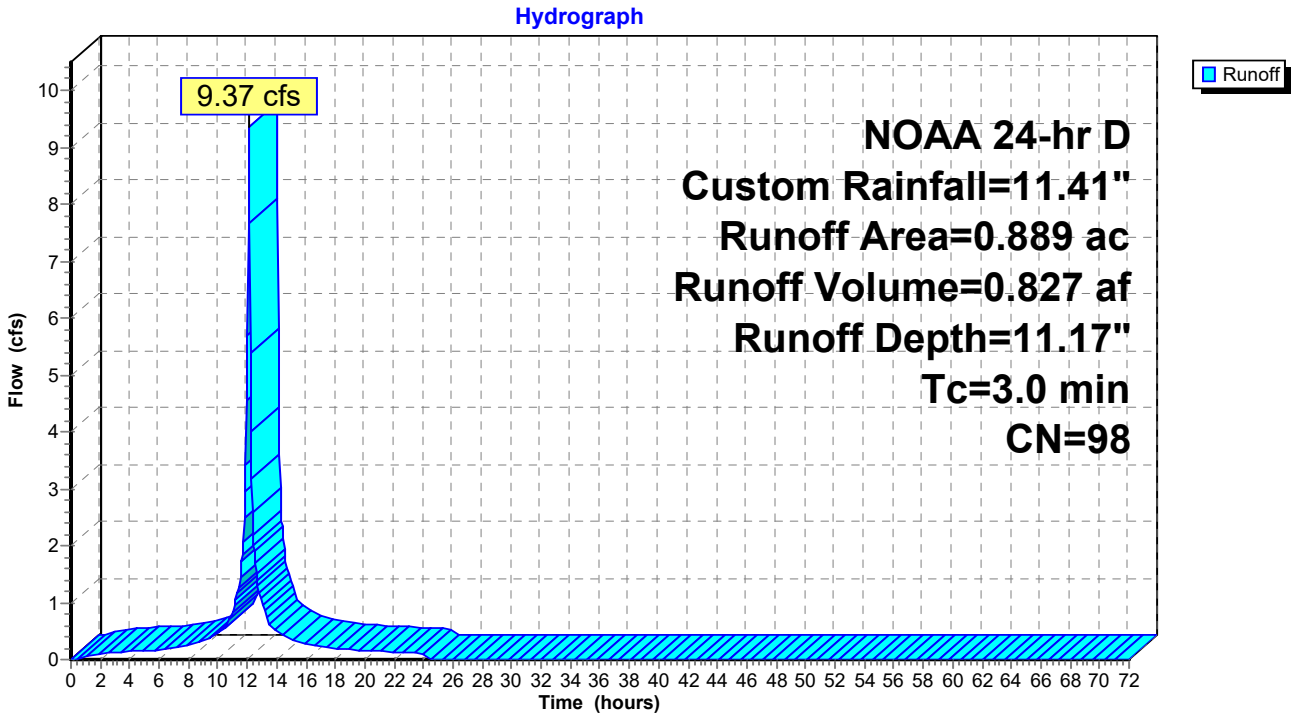
Runoff = 9.37 cfs @ 12.10 hrs, Volume= 0.827 af, Depth=11.17"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.889	98	Impervious
	0.889		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 79S: Basin 24 - Impervious



Summary for Pond 80P: Basin 35

[93] Warning: Storage range exceeded by 0.12'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 14.918 ac, 10.66% Impervious, Inflow Depth = 2.67" for Custom event
Inflow = 24.56 cfs @ 12.15 hrs, Volume= 3.321 af
Outflow = 25.64 cfs @ 12.19 hrs, Volume= 3.179 af, Atten= 0%, Lag= 2.5 min
Primary = 25.64 cfs @ 12.19 hrs, Volume= 3.179 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.62' @ 12.19 hrs Surf.Area= 12,000 sf Storage= 22,975 cf

Plug-Flow detention time= 168.6 min calculated for 3.176 af (96% of inflow)
Center-of-Mass det. time= 145.9 min (993.8 - 847.9)

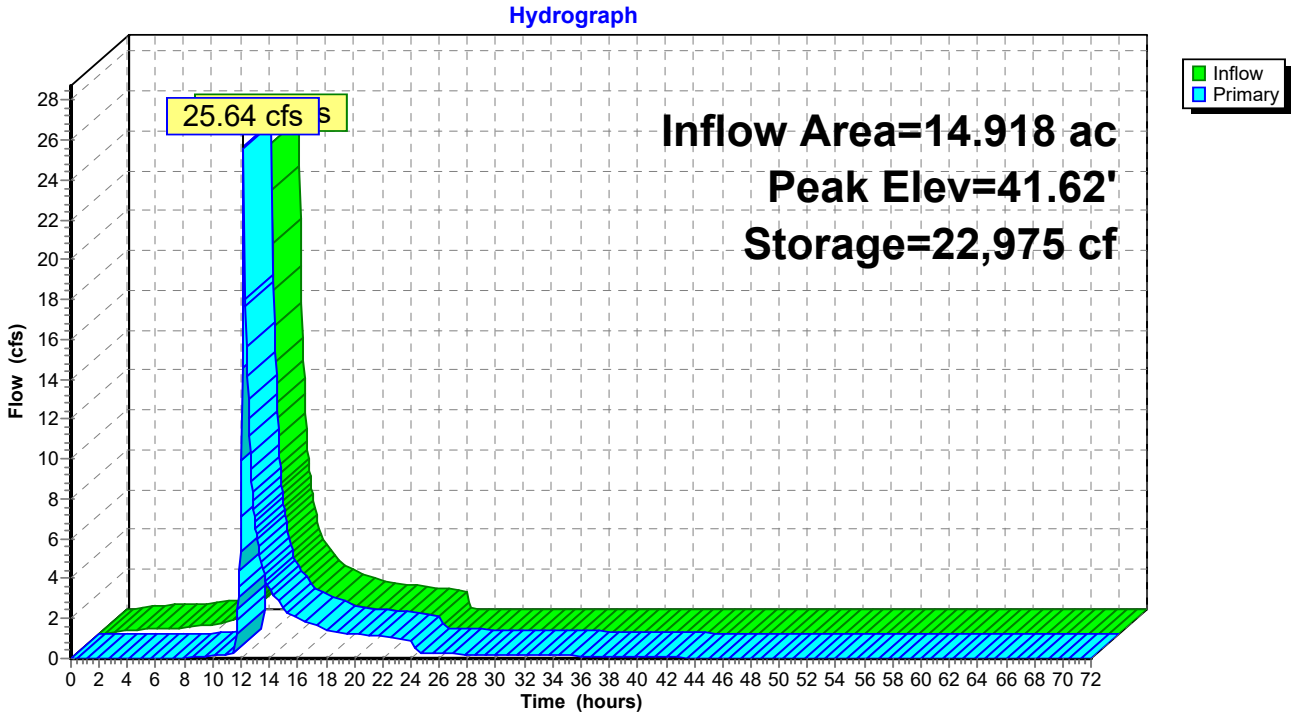
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	22,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	6,700	0	0
40.00	8,600	7,650	7,650
41.00	10,700	9,650	17,300
41.50	12,000	5,675	22,975

Device	Routing	Invert	Outlet Devices
#1	Primary	39.80'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=24.93 cfs @ 12.19 hrs HW=41.61' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.31 cfs @ 6.24 fps)
2=Orifice/Grate (Weir Controls 24.63 cfs @ 2.54 fps)

Pond 80P: Basin 35



Summary for Subcatchment 80S: Basin 24 - Pervious

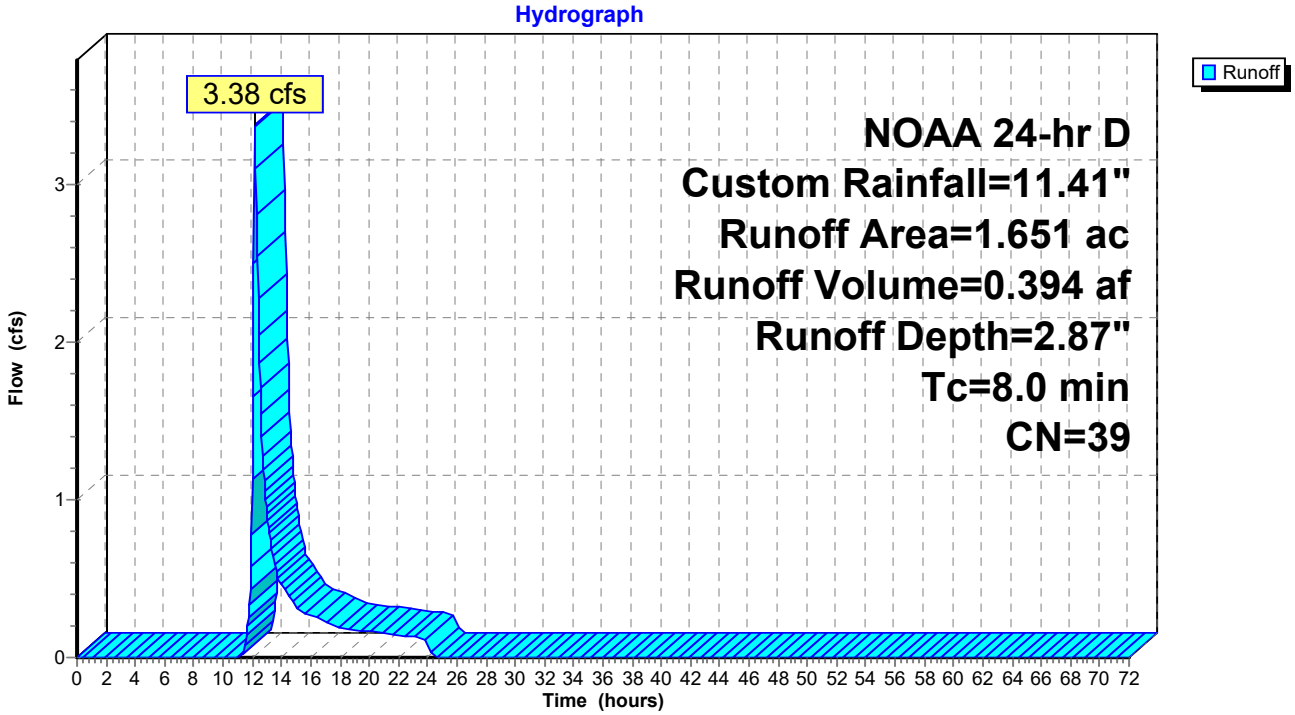
Runoff = 3.38 cfs @ 12.19 hrs, Volume= 0.394 af, Depth= 2.87"
Routed to Pond 78P : Basin 24

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.651	39	>75% Grass cover, Good, HSG A
1.651		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 80S: Basin 24 - Pervious



Summary for Pond 81P: Basin 27

Inflow Area = 3.012 ac, 25.00% Impervious, Inflow Depth = 4.94" for Custom event
Inflow = 11.56 cfs @ 12.12 hrs, Volume= 1.241 af
Outflow = 10.76 cfs @ 12.16 hrs, Volume= 1.175 af, Atten= 7%, Lag= 2.7 min
Primary = 10.76 cfs @ 12.16 hrs, Volume= 1.175 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.34' @ 12.16 hrs Surf.Area= 6,624 sf Storage= 8,808 cf

Plug-Flow detention time= 152.2 min calculated for 1.175 af (95% of inflow)
Center-of-Mass det. time= 121.1 min (928.5 - 807.3)

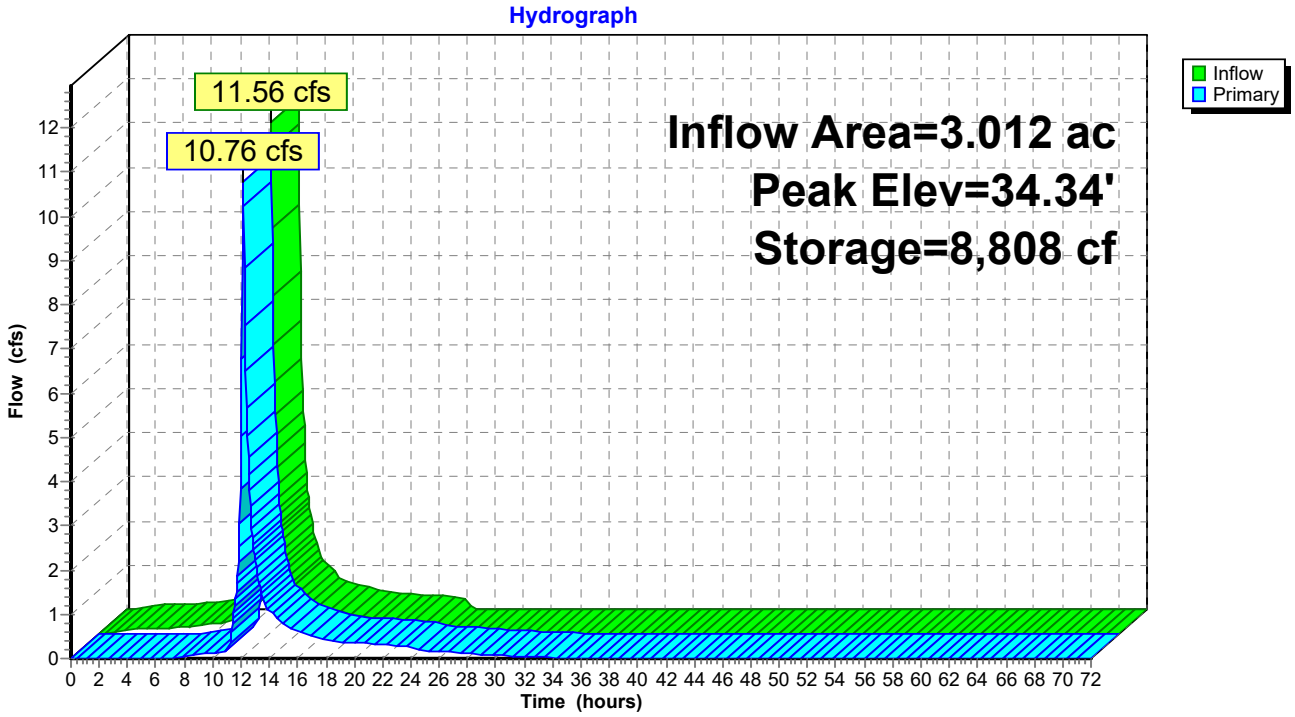
Volume	Invert	Avail.Storage	Storage Description
#1	32.50'	9,875 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.50	3,400	0	0
33.00	3,900	1,825	1,825
34.00	5,800	4,850	6,675
34.50	7,000	3,200	9,875

Device	Routing	Invert	Outlet Devices
#1	Primary	33.24'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	34.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.57 cfs @ 12.16 hrs HW=34.34' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.23 cfs @ 4.75 fps)
└**2=Orifice/Grate** (Weir Controls 10.33 cfs @ 1.90 fps)

Pond 81P: Basin 27



Summary for Pond 82P: Basin 36

Inflow Area = 1.697 ac,100.00% Impervious, Inflow Depth = 11.17" for Custom event
Inflow = 15.02 cfs @ 12.11 hrs, Volume= 1.579 af
Outflow = 13.44 cfs @ 12.17 hrs, Volume= 1.429 af, Atten= 11%, Lag= 3.1 min
Primary = 13.44 cfs @ 12.17 hrs, Volume= 1.429 af
Routed to Pond 77P : Basin 37

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.40' @ 12.17 hrs Surf.Area= 9,918 sf Storage= 17,963 cf

Plug-Flow detention time= 269.4 min calculated for 1.429 af (91% of inflow)
Center-of-Mass det. time= 217.2 min (957.7 - 740.5)

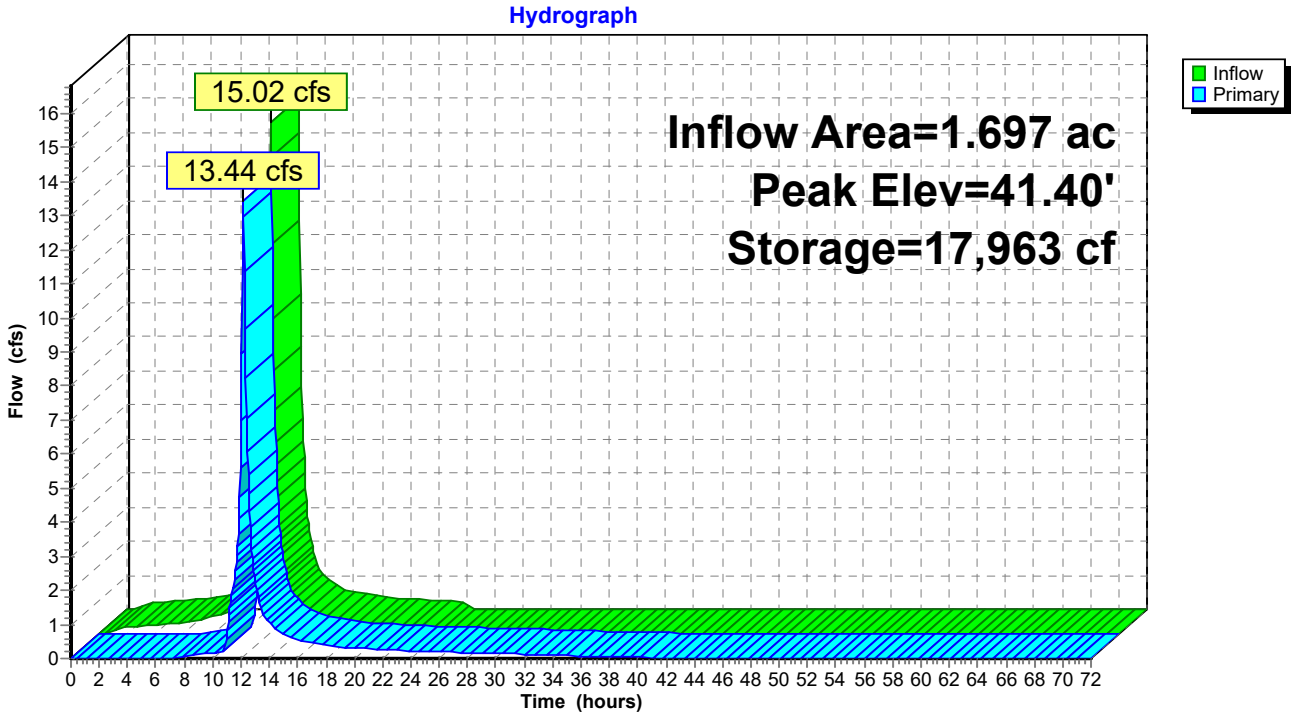
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	18,975 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	5,300	0	0
40.00	6,900	6,100	6,100
41.00	9,200	8,050	14,150
41.50	10,100	4,825	18,975

Device	Routing	Invert	Outlet Devices
#1	Primary	40.04'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	41.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.20 cfs @ 12.17 hrs HW=41.39' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.26 cfs @ 5.34 fps)
2=Orifice/Grate (Weir Controls 12.94 cfs @ 2.05 fps)

Pond 82P: Basin 36



Summary for Subcatchment 82S: Basin 27 - Impervious

[49] Hint: Tc<2dt may require smaller dt

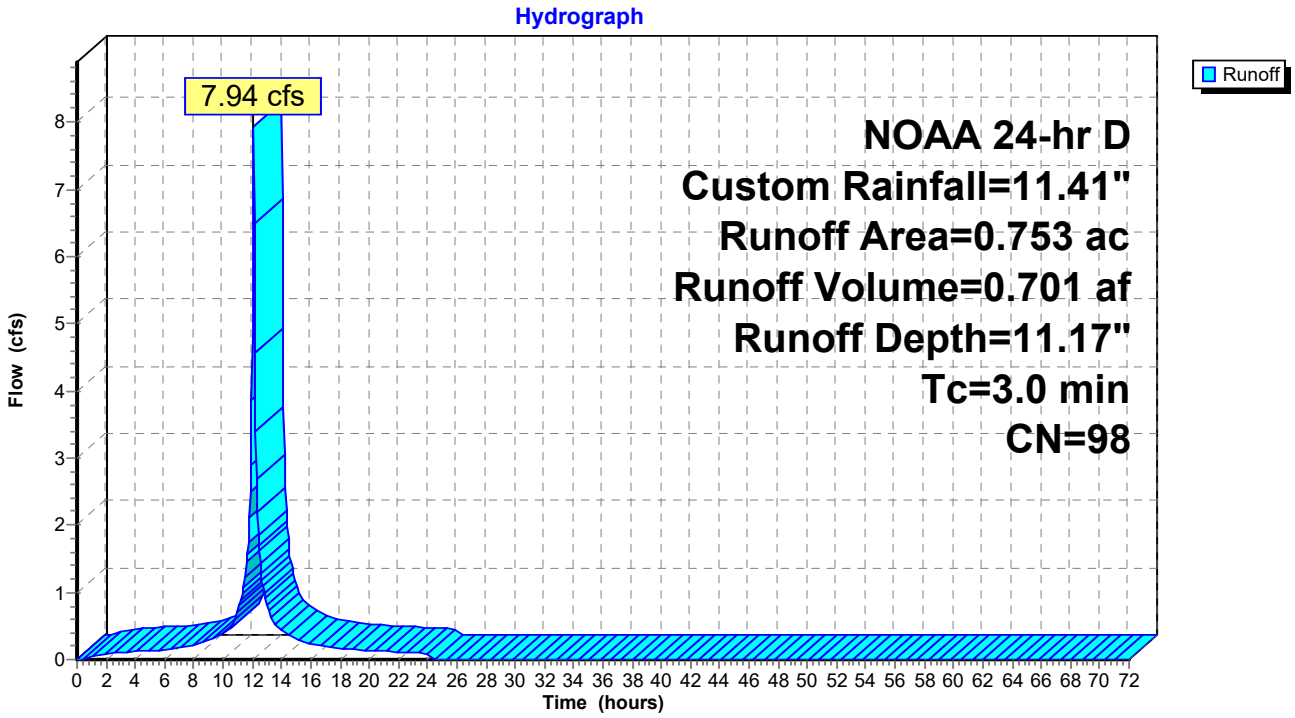
Runoff = 7.94 cfs @ 12.10 hrs, Volume= 0.701 af, Depth=11.17"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.753	98	
	0.753		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 82S: Basin 27 - Impervious



Summary for Subcatchment 83S: Basin 27 - Pervious

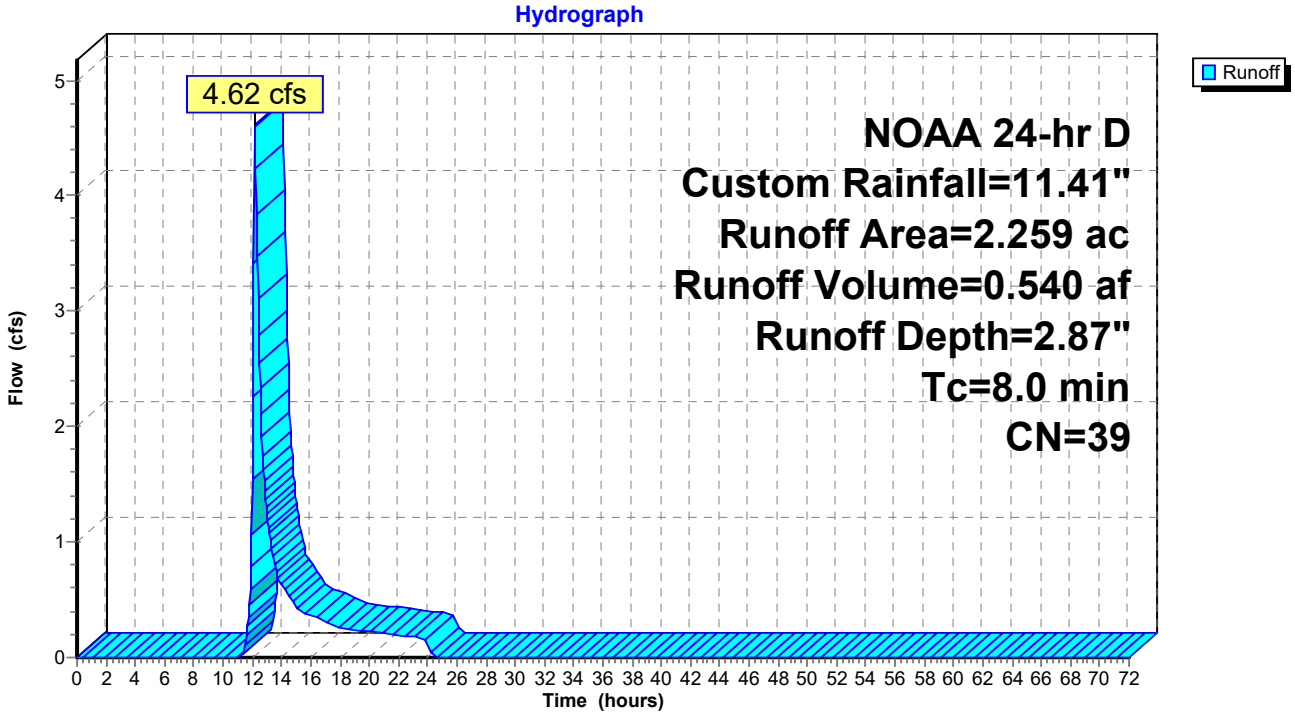
Runoff = 4.62 cfs @ 12.19 hrs, Volume= 0.540 af, Depth= 2.87"
Routed to Pond 81P : Basin 27

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
2.259	39	>75% Grass cover, Good, HSG A
2.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 83S: Basin 27 - Pervious



Summary for Subcatchment 84S: Basin 29 - Impervious

[49] Hint: Tc<2dt may require smaller dt

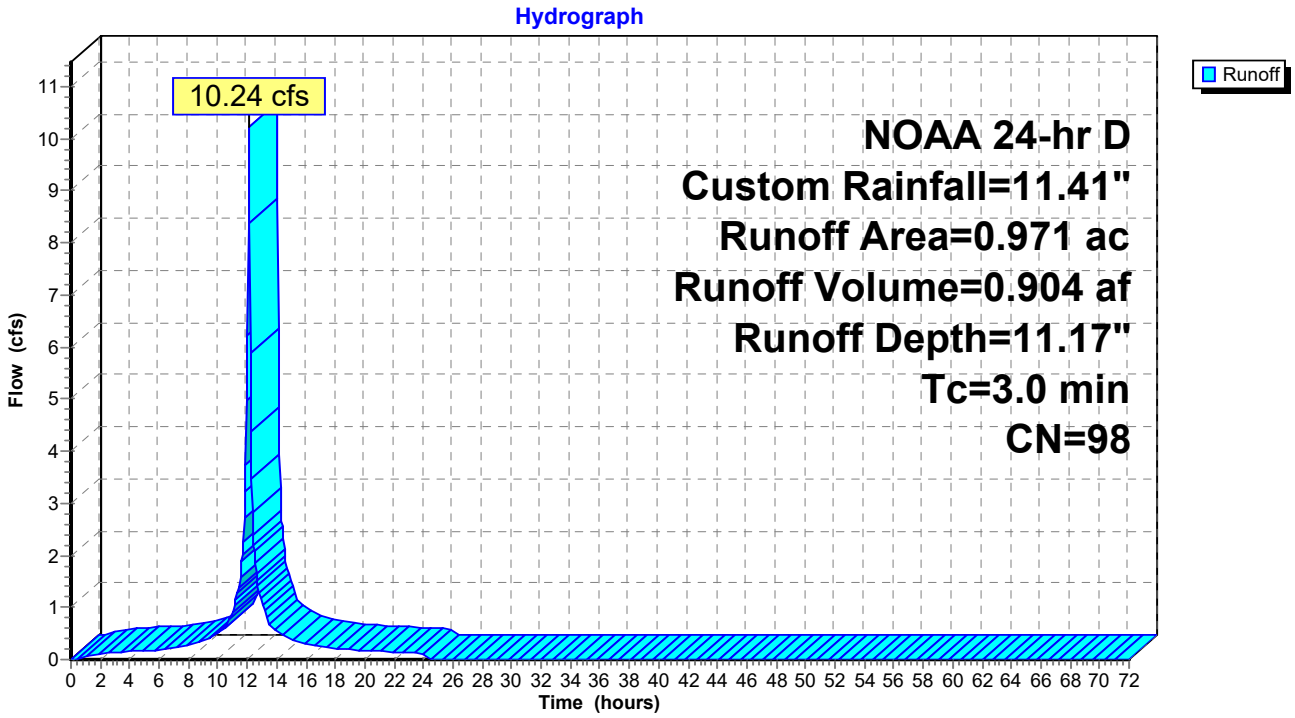
Runoff = 10.24 cfs @ 12.10 hrs, Volume= 0.904 af, Depth=11.17"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.971	98	Impervious
	0.971		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 84S: Basin 29 - Impervious



Summary for Pond 85P: Basin 28

Inflow Area = 1.744 ac, 35.03% Impervious, Inflow Depth = 5.78" for Custom event
Inflow = 8.46 cfs @ 12.11 hrs, Volume= 0.839 af
Outflow = 8.16 cfs @ 12.14 hrs, Volume= 0.787 af, Atten= 4%, Lag= 1.7 min
Primary = 8.16 cfs @ 12.14 hrs, Volume= 0.787 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 29.69' @ 12.14 hrs Surf.Area= 3,428 sf Storage= 3,228 cf

Plug-Flow detention time= 75.0 min calculated for 0.787 af (94% of inflow)
Center-of-Mass det. time= 38.4 min (827.1 - 788.7)

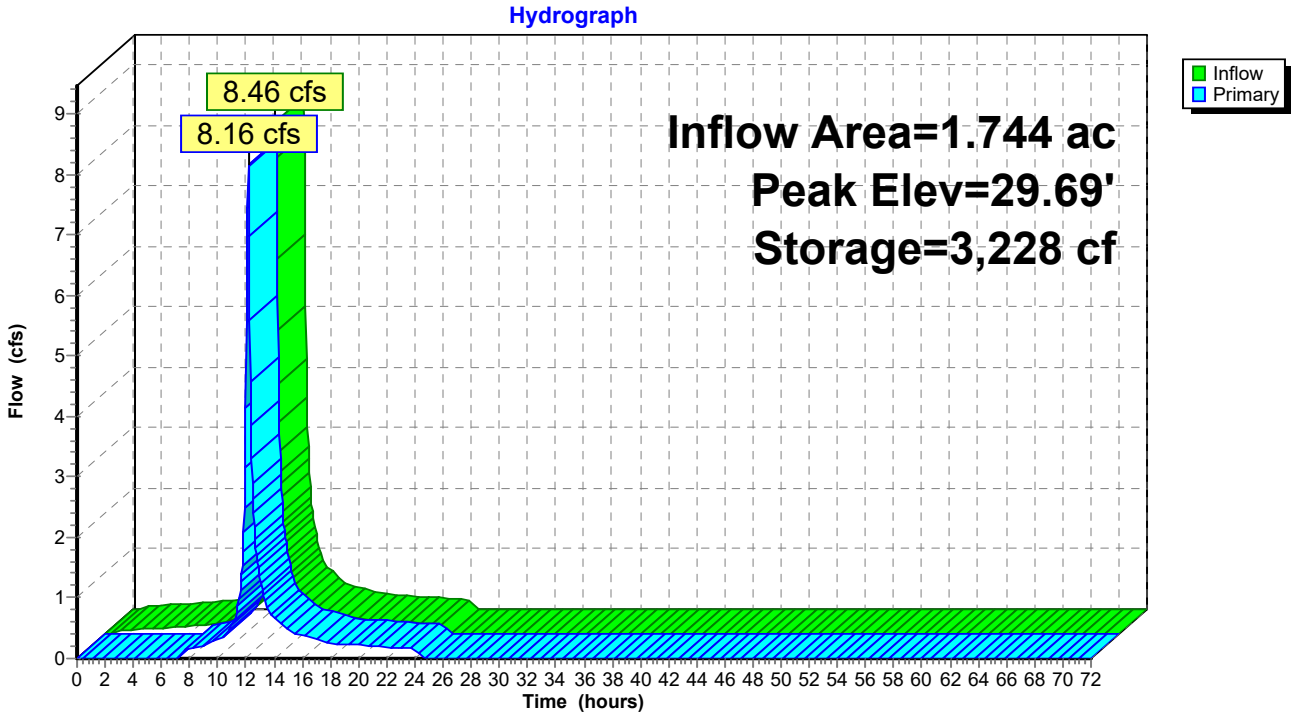
Volume	Invert	Avail.Storage	Storage Description
#1	28.50'	6,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
28.50	2,000	0	0
29.00	2,600	1,150	1,150
30.00	3,800	3,200	4,350
30.50	4,600	2,100	6,450

Device	Routing	Invert	Outlet Devices
#1	Primary	29.40'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.05 cfs @ 12.14 hrs HW=29.69' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 8.05 cfs @ 1.75 fps)

Pond 85P: Basin 28



Summary for Subcatchment 85S: Basin 29 - Pervious

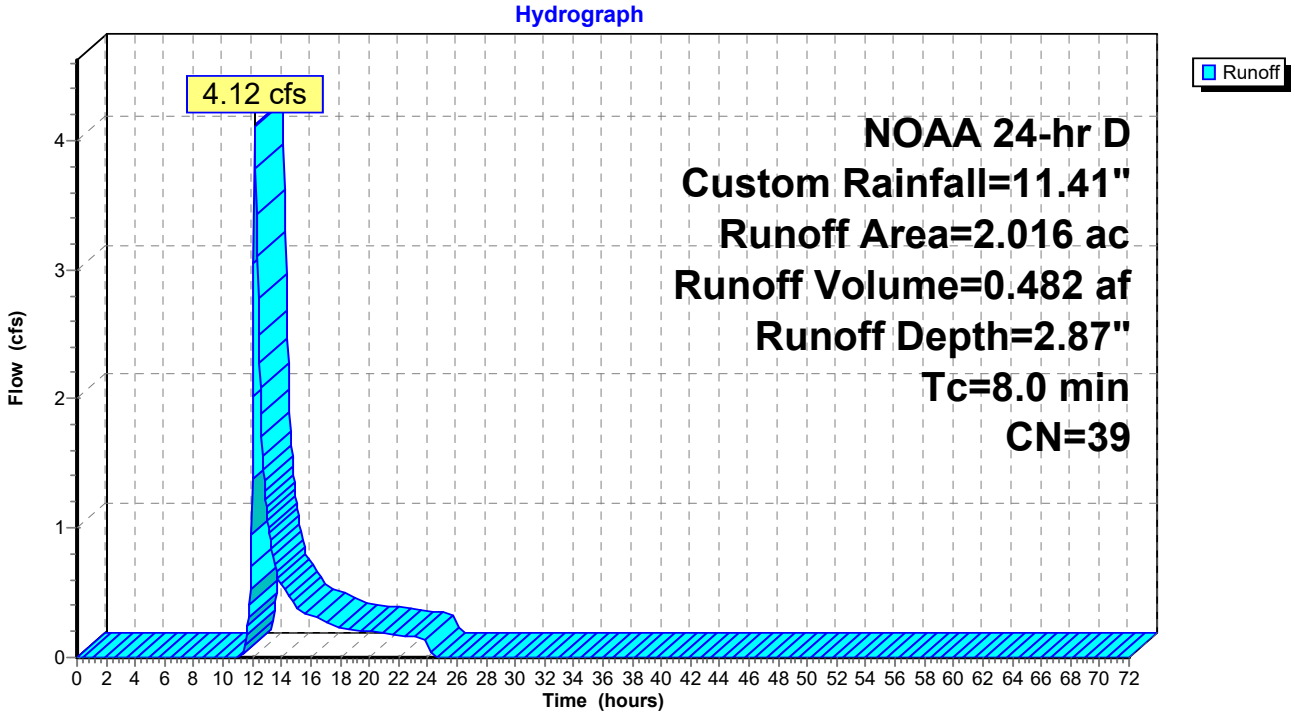
Runoff = 4.12 cfs @ 12.19 hrs, Volume= 0.482 af, Depth= 2.87"
Routed to Pond 70P : Basin 29

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
2.016	39	>75% Grass cover, Good, HSG A
2.016		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 85S: Basin 29 - Pervious

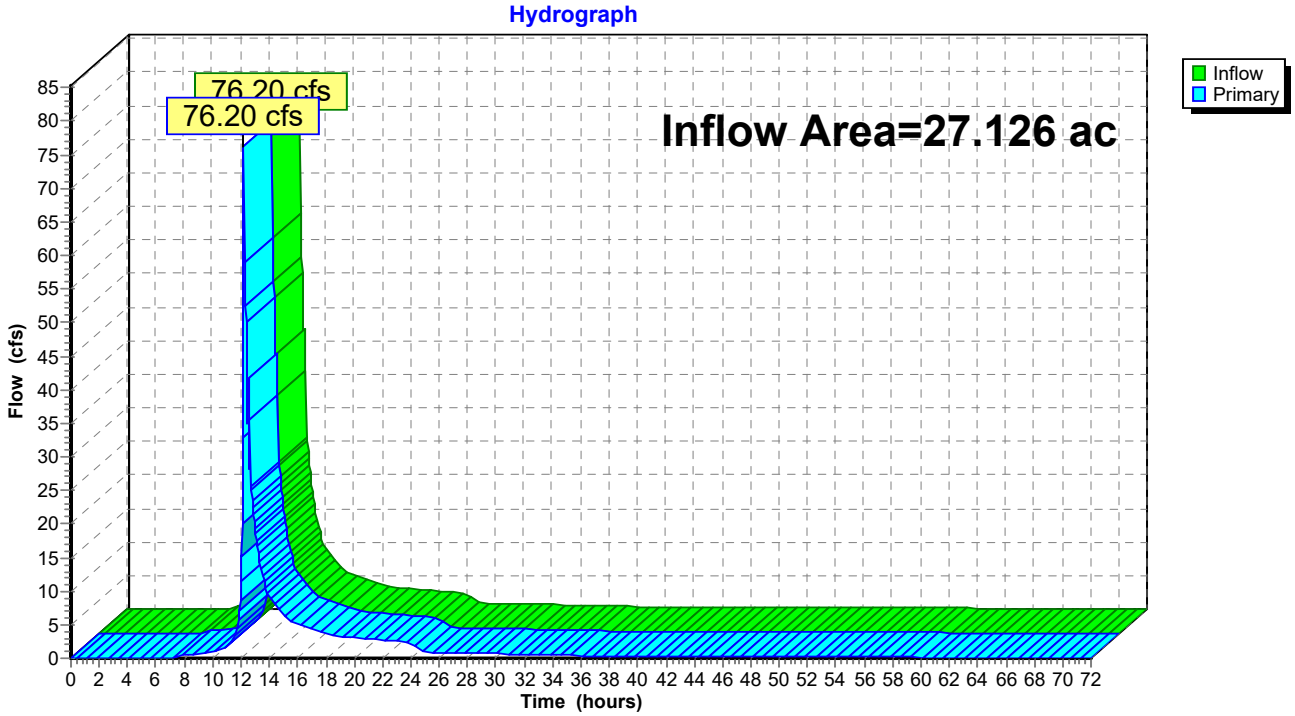


Summary for Link 86L: Outlet to Wet Pond

Inflow Area = 27.126 ac, 24.26% Impervious, Inflow Depth > 3.91" for Custom event
Inflow = 76.20 cfs @ 12.21 hrs, Volume= 8.846 af
Primary = 76.20 cfs @ 12.21 hrs, Volume= 8.846 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 62P : Basin 26 (Wet Pond)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 86L: Outlet to Wet Pond



Summary for Subcatchment 86S: Basin 28 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 107% of capacity of segment #3

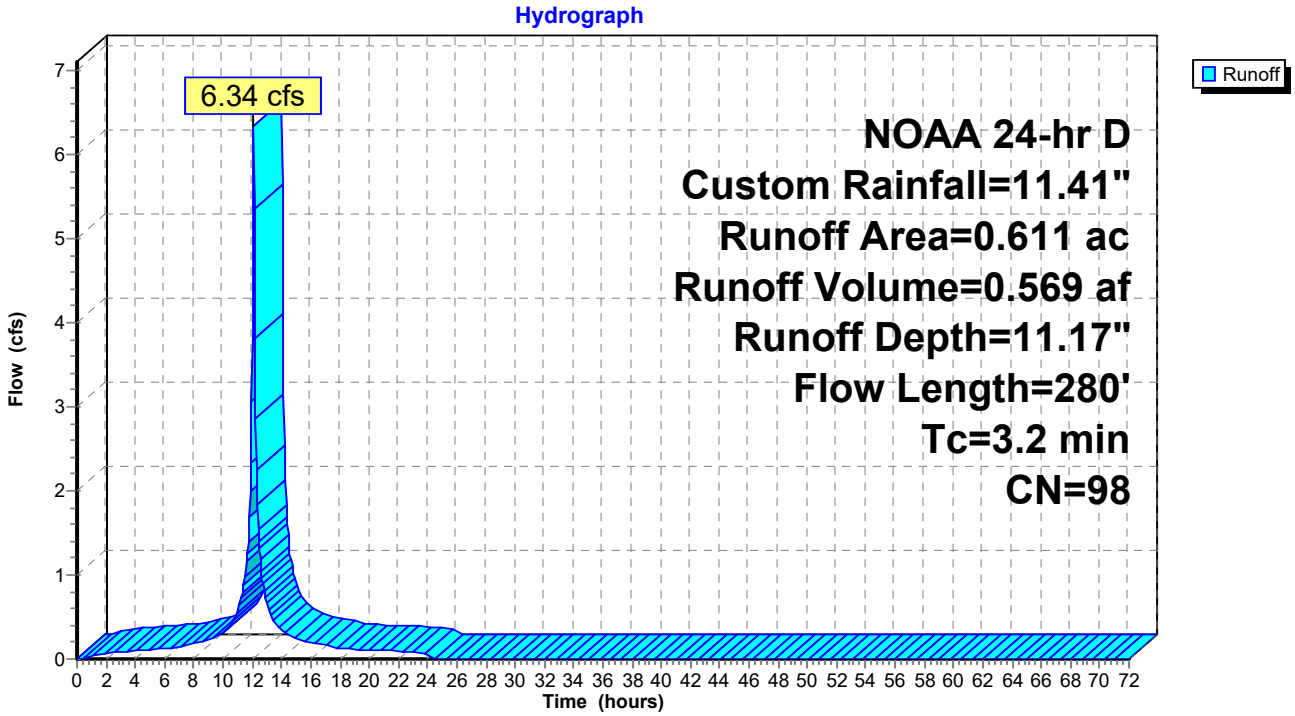
Runoff = 6.34 cfs @ 12.10 hrs, Volume= 0.569 af, Depth=11.17"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.611	98	Impervious
	0.611		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.5	150	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.2	280	Total			

Subcatchment 86S: Basin 28 - Impervious

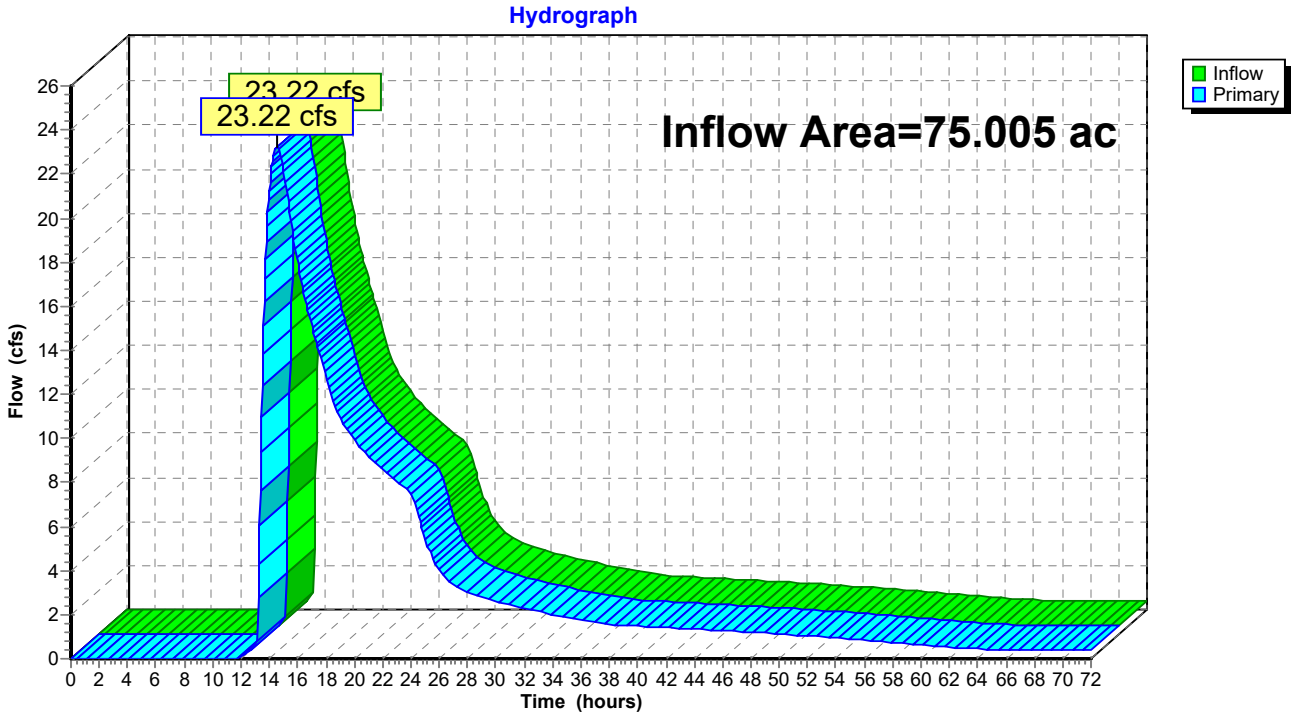


Summary for Link 87L: Total Area to Tuckerton Creek

Inflow Area = 75.005 ac, 29.63% Impervious, Inflow Depth > 2.80" for Custom event
Inflow = 23.22 cfs @ 14.52 hrs, Volume= 17.524 af
Primary = 23.22 cfs @ 14.52 hrs, Volume= 17.524 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 87L: Total Area to Tuckerton Creek



Summary for Pond 87P: Basin 40

Inflow Area = 2.597 ac, 42.97% Impervious, Inflow Depth = 6.43" for Custom event
Inflow = 14.07 cfs @ 12.11 hrs, Volume= 1.393 af
Outflow = 13.21 cfs @ 12.14 hrs, Volume= 1.296 af, Atten= 6%, Lag= 2.1 min
Primary = 13.21 cfs @ 12.14 hrs, Volume= 1.296 af
Routed to Link 86L : Outlet to Wet Pond

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 32.38' @ 12.14 hrs Surf.Area= 5,317 sf Storage= 6,238 cf

Plug-Flow detention time= 83.1 min calculated for 1.295 af (93% of inflow)
Center-of-Mass det. time= 42.8 min (820.9 - 778.0)

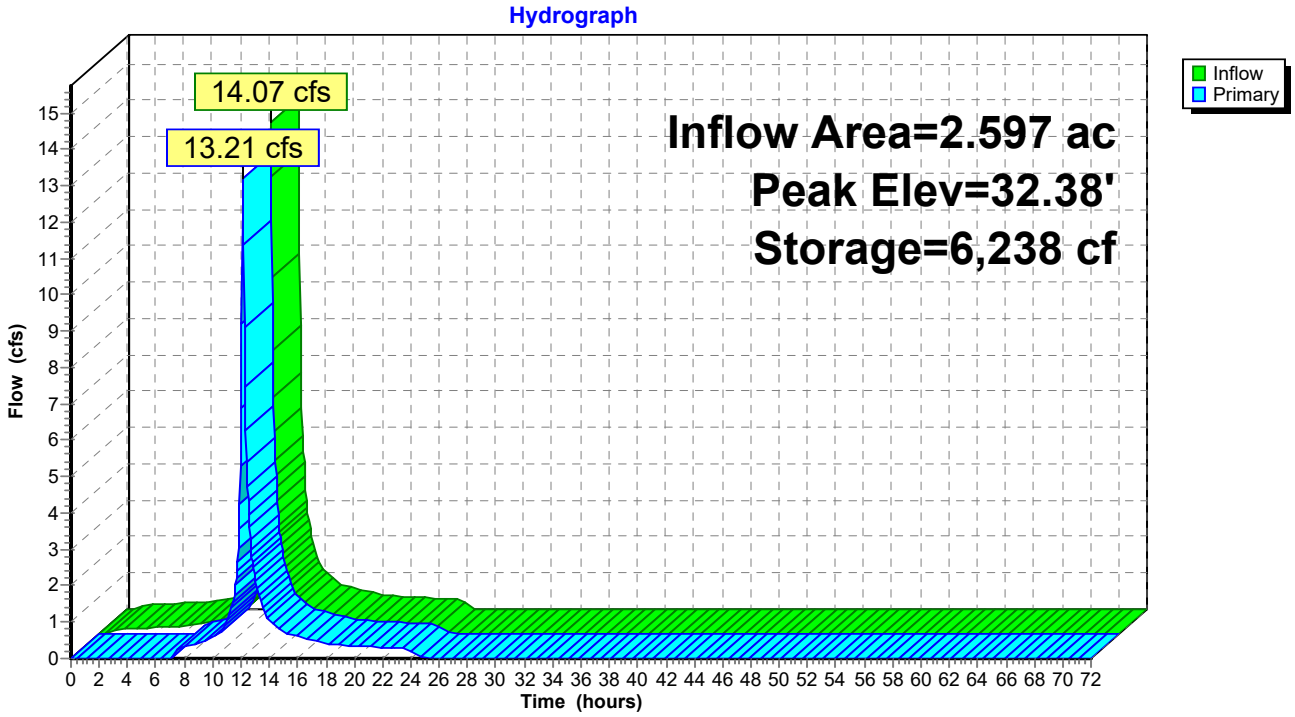
Volume	Invert	Avail.Storage	Storage Description
#1	31.00'	12,950 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.00	3,700	0	0
32.00	4,900	4,300	4,300
33.00	6,000	5,450	9,750
33.50	6,800	3,200	12,950

Device	Routing	Invert	Outlet Devices
#1	Primary	31.98'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.03 cfs @ 12.14 hrs HW=32.38' (Free Discharge)
1=Orifice/Grate (Weir Controls 13.03 cfs @ 2.06 fps)

Pond 87P: Basin 40



Summary for Subcatchment 87S: Basin 28 - Pervious

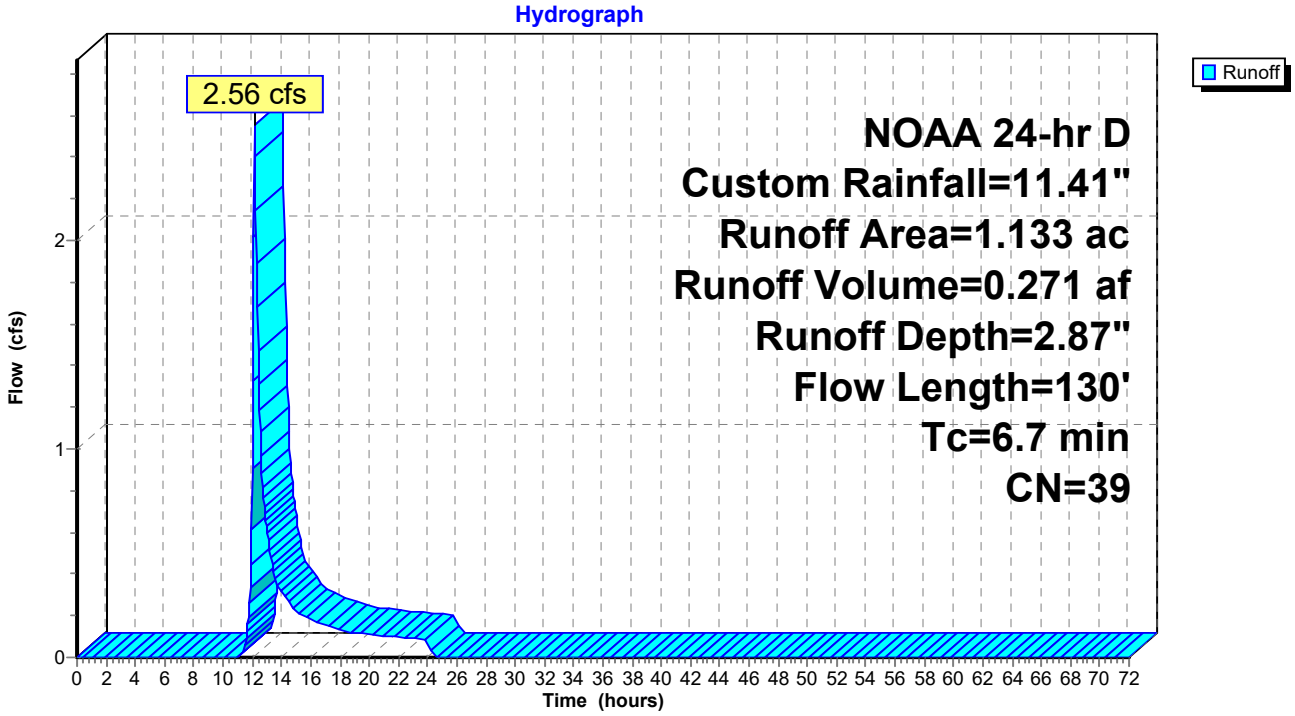
Runoff = 2.56 cfs @ 12.16 hrs, Volume= 0.271 af, Depth= 2.87"
Routed to Pond 85P : Basin 28

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.133	39	>75% Grass cover, Good, HSG A
1.133		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
0.1	30	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	130	Total			

Subcatchment 87S: Basin 28 - Pervious



Summary for Pond 88P: Basin 22

Inflow Area = 2.491 ac, 29.99% Impervious, Inflow Depth = 5.36" for Custom event
Inflow = 10.64 cfs @ 12.11 hrs, Volume= 1.112 af
Outflow = 10.09 cfs @ 12.15 hrs, Volume= 1.047 af, Atten= 5%, Lag= 2.2 min
Primary = 10.09 cfs @ 12.15 hrs, Volume= 1.047 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 37.11' @ 12.15 hrs Surf.Area= 4,905 sf Storage= 4,347 cf

Plug-Flow detention time= 71.2 min calculated for 1.047 af (94% of inflow)
Center-of-Mass det. time= 37.3 min (834.9 - 797.6)

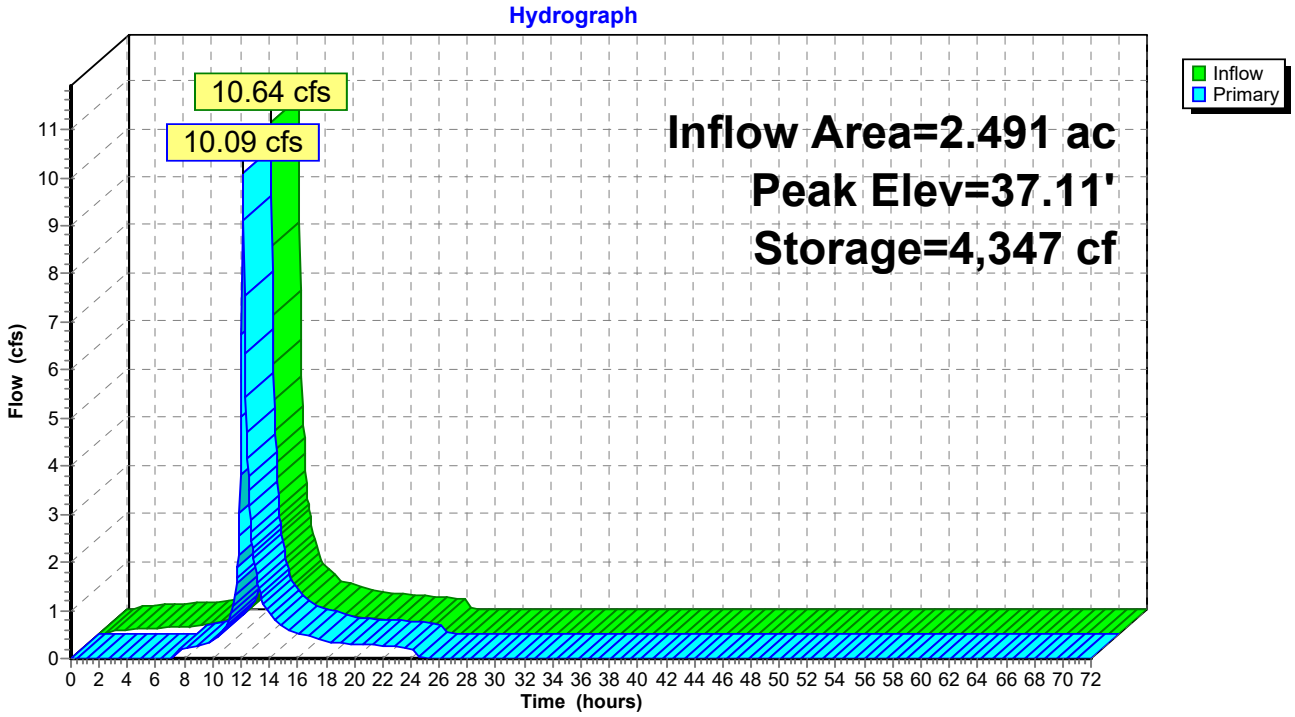
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	9,400 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,900	0	0
37.00	4,700	3,800	3,800
38.00	6,500	5,600	9,400

Device	Routing	Invert	Outlet Devices
#1	Primary	36.78'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.07 cfs @ 12.15 hrs HW=37.11' (Free Discharge)
1=Orifice/Grate (Weir Controls 10.07 cfs @ 1.89 fps)

Pond 88P: Basin 22



Summary for Subcatchment 88S: Basin 30 - Impervious

[49] Hint: Tc<2dt may require smaller dt

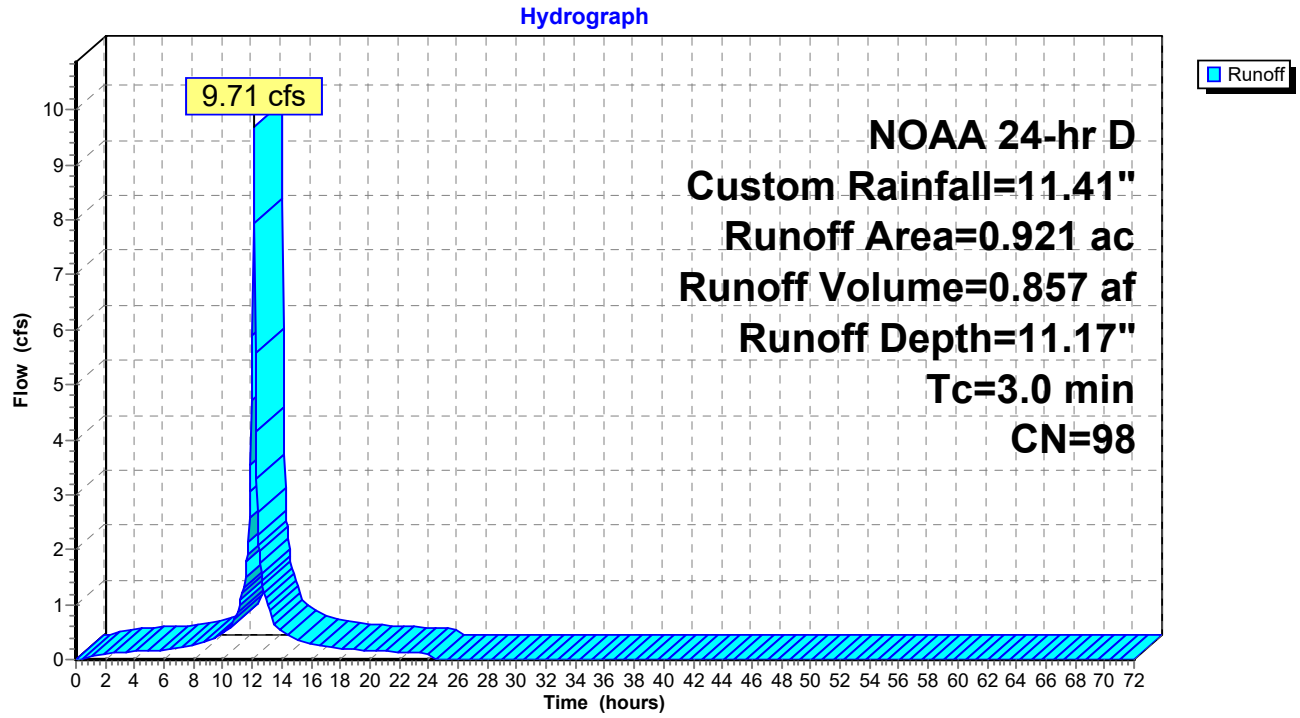
Runoff = 9.71 cfs @ 12.10 hrs, Volume= 0.857 af, Depth=11.17"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.921	98	Impervious
	0.921		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 88S: Basin 30 - Impervious



Summary for Subcatchment 89S: Basin 30 - Pervious

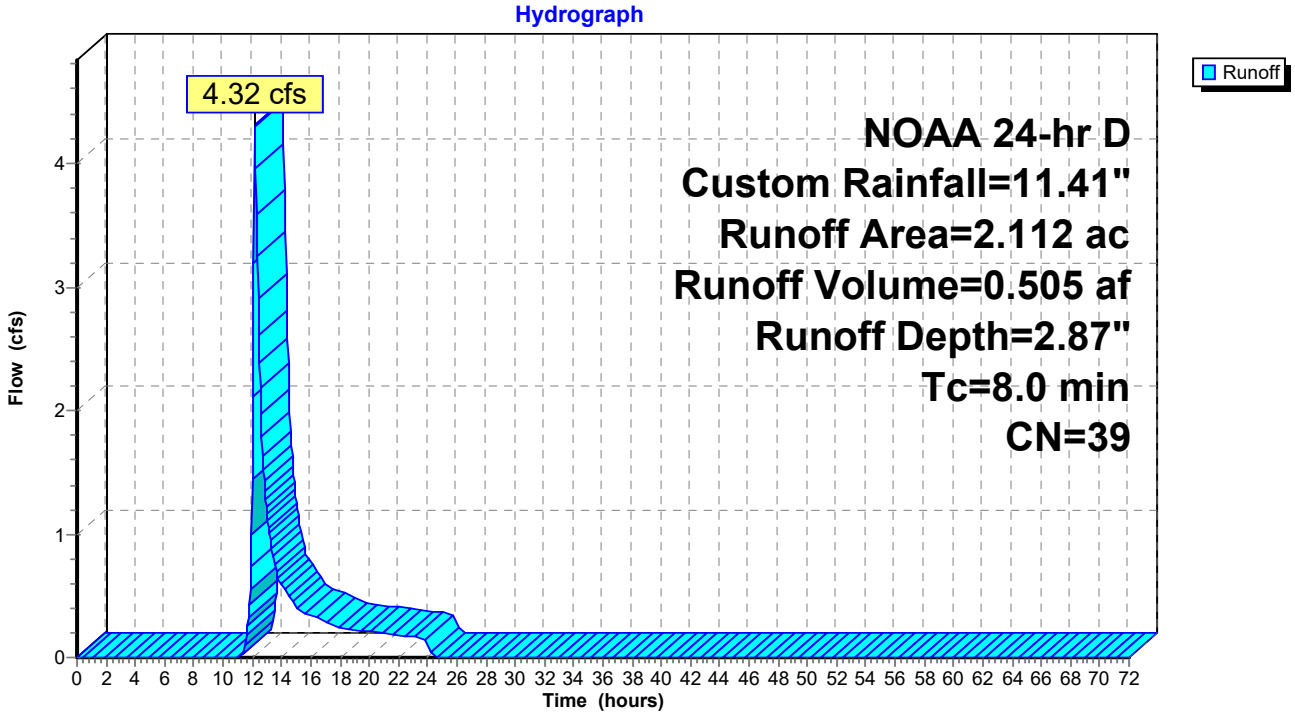
Runoff = 4.32 cfs @ 12.19 hrs, Volume= 0.505 af, Depth= 2.87"
Routed to Pond 67P : Basin 30

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
2.112	39	>75% Grass cover, Good, HSG A
2.112		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 89S: Basin 30 - Pervious



Summary for Subcatchment 90S: Basin 31 - Pervious

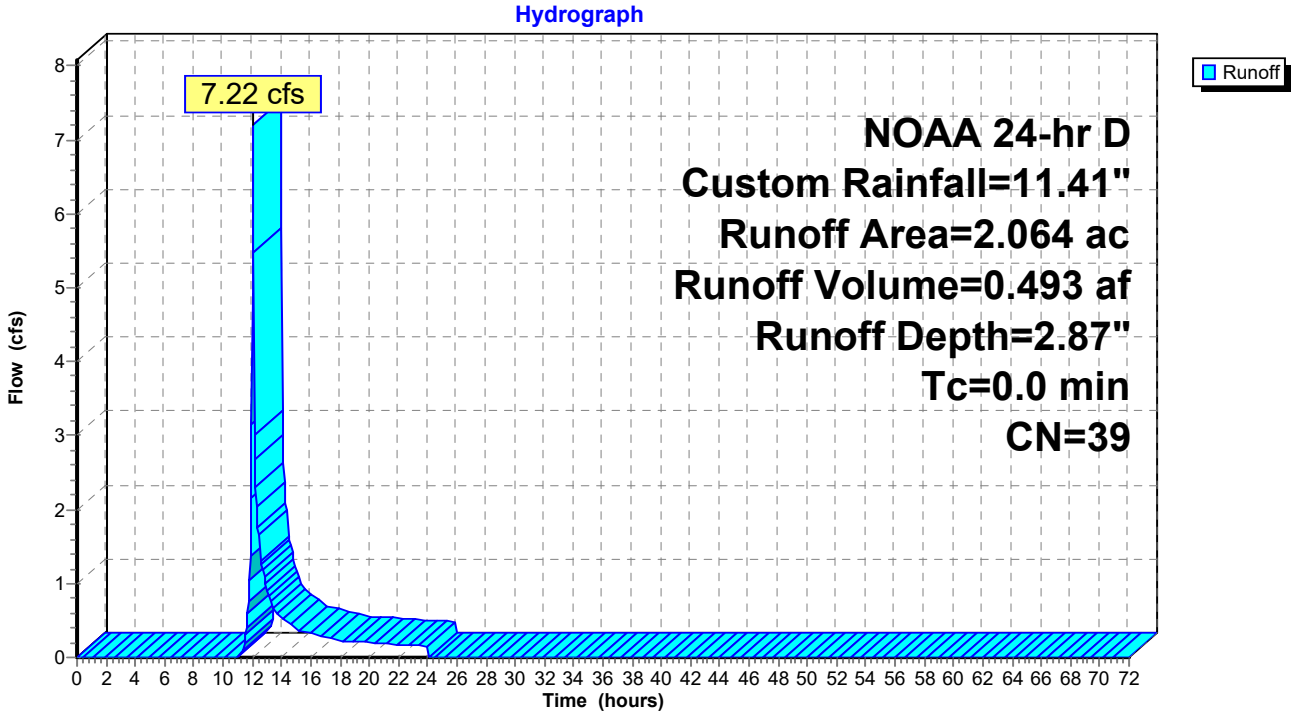
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 7.22 cfs @ 12.05 hrs, Volume= 0.493 af, Depth= 2.87"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
2.064	39	>75% Grass cover, Good, HSG A
2.064		100.00% Pervious Area

Subcatchment 90S: Basin 31 - Pervious



Summary for Subcatchment 91S: Basin 31- Impervious

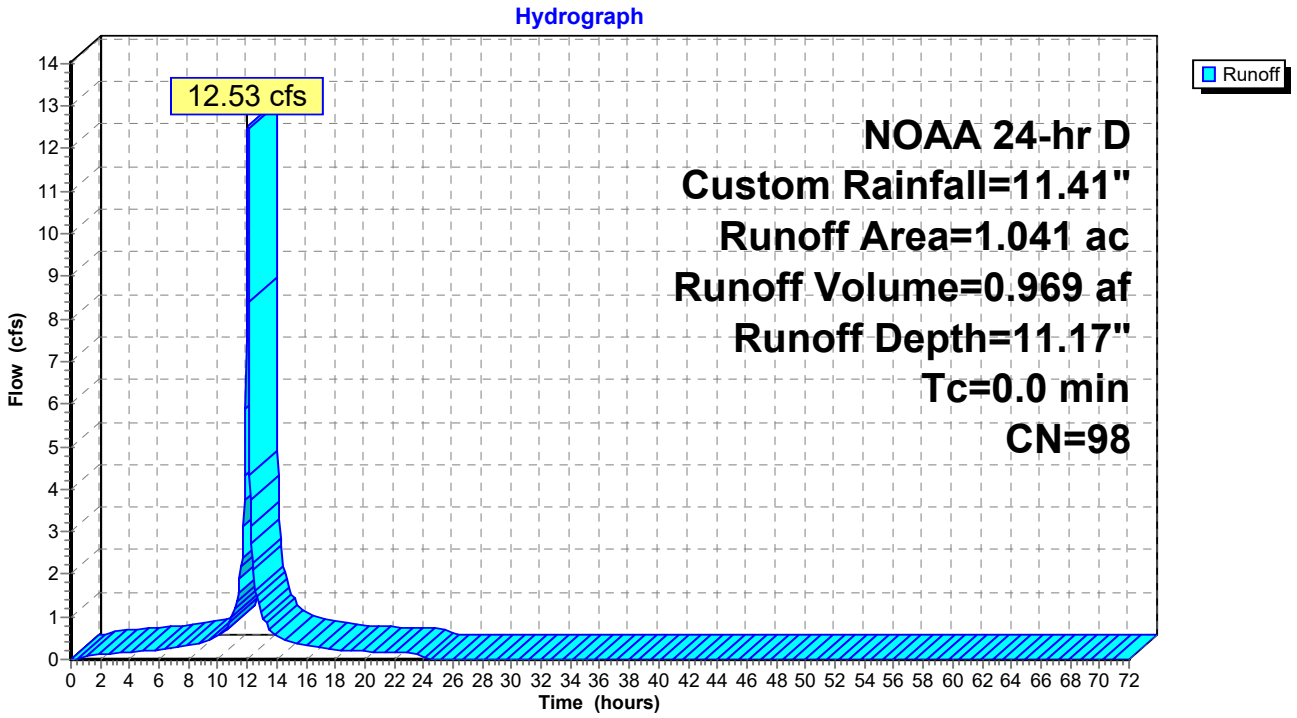
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 12.53 cfs @ 12.04 hrs, Volume= 0.969 af, Depth=11.17"
Routed to Pond 66P : Basin 31

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.041	98	Impervious
	1.041		100.00% Impervious Area

Subcatchment 91S: Basin 31- Impervious



Summary for Subcatchment 92S: Basin 33 - Impervious

[49] Hint: Tc<2dt may require smaller dt

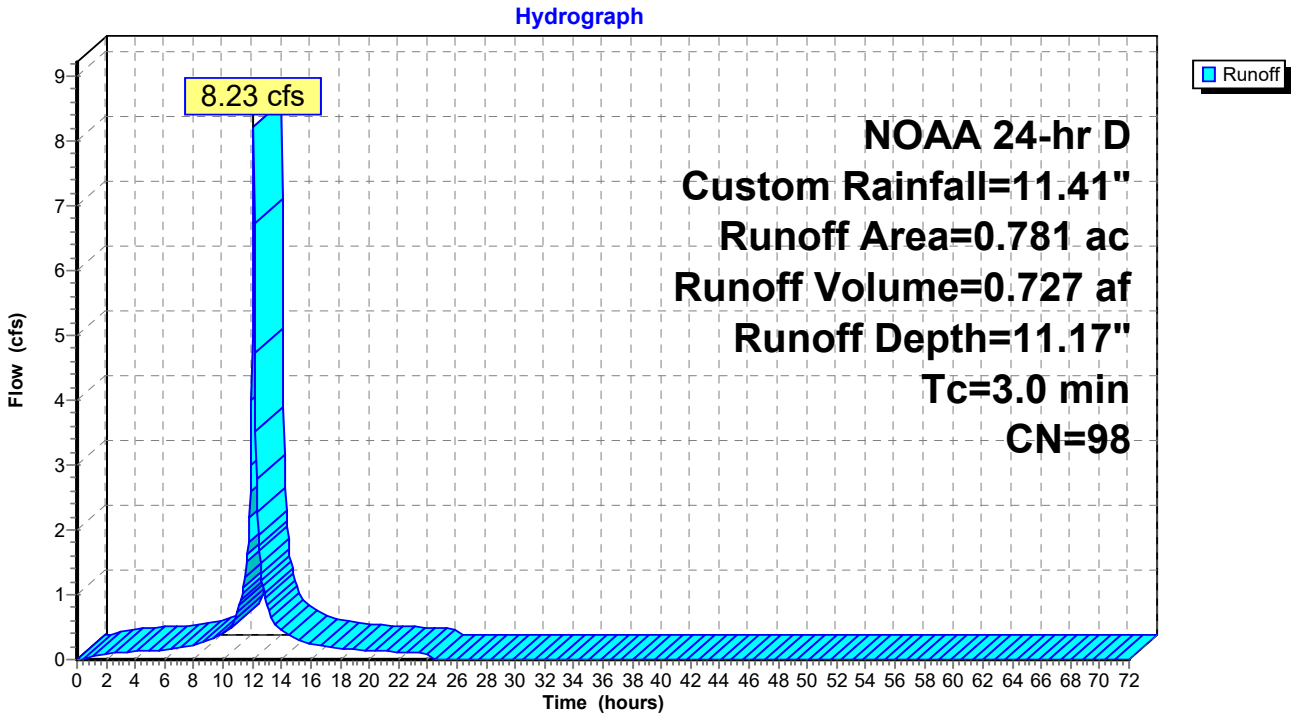
Runoff = 8.23 cfs @ 12.10 hrs, Volume= 0.727 af, Depth=11.17"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.781	98	Impervious
	0.781		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 92S: Basin 33 - Impervious



Summary for Subcatchment 93S: Basin 33 - Pervious

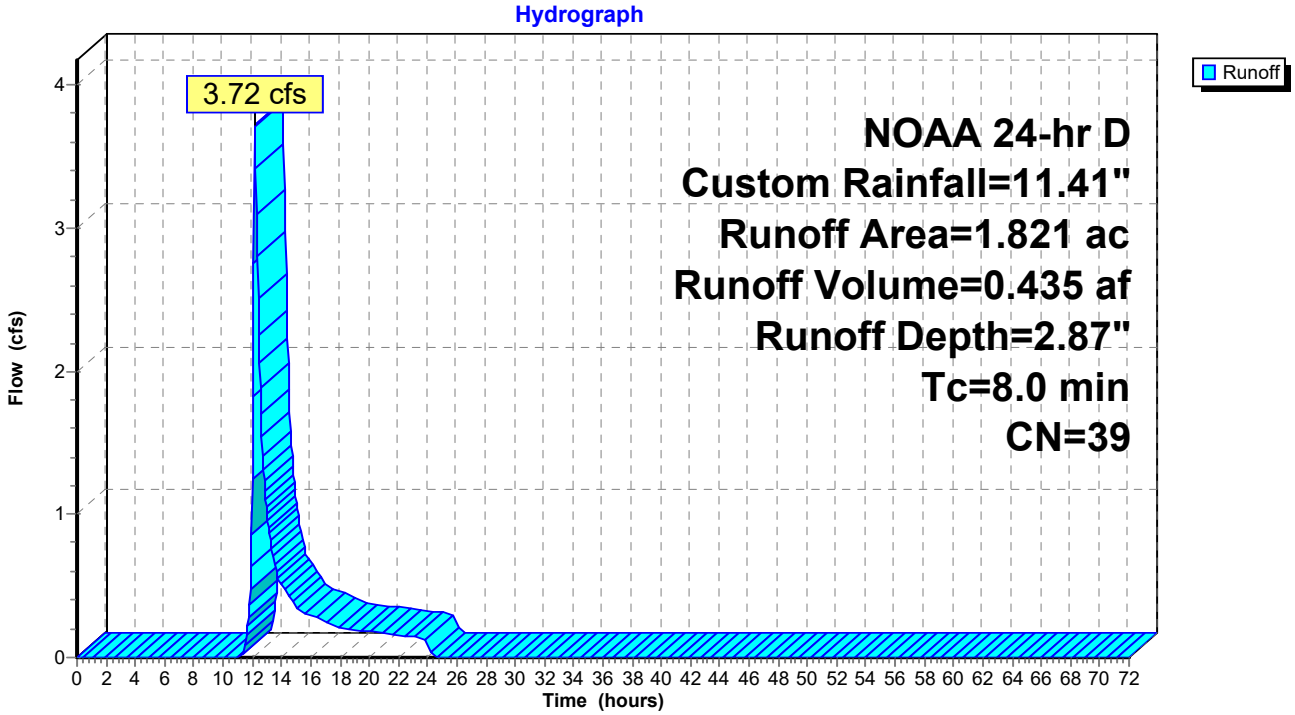
Runoff = 3.72 cfs @ 12.19 hrs, Volume= 0.435 af, Depth= 2.87"
Routed to Pond 71P : Basin 33

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.821	39	>75% Grass cover, Good, HSG A
1.821		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 93S: Basin 33 - Pervious



Summary for Subcatchment 94S: Basin 32 - Impervious

[49] Hint: Tc<2dt may require smaller dt

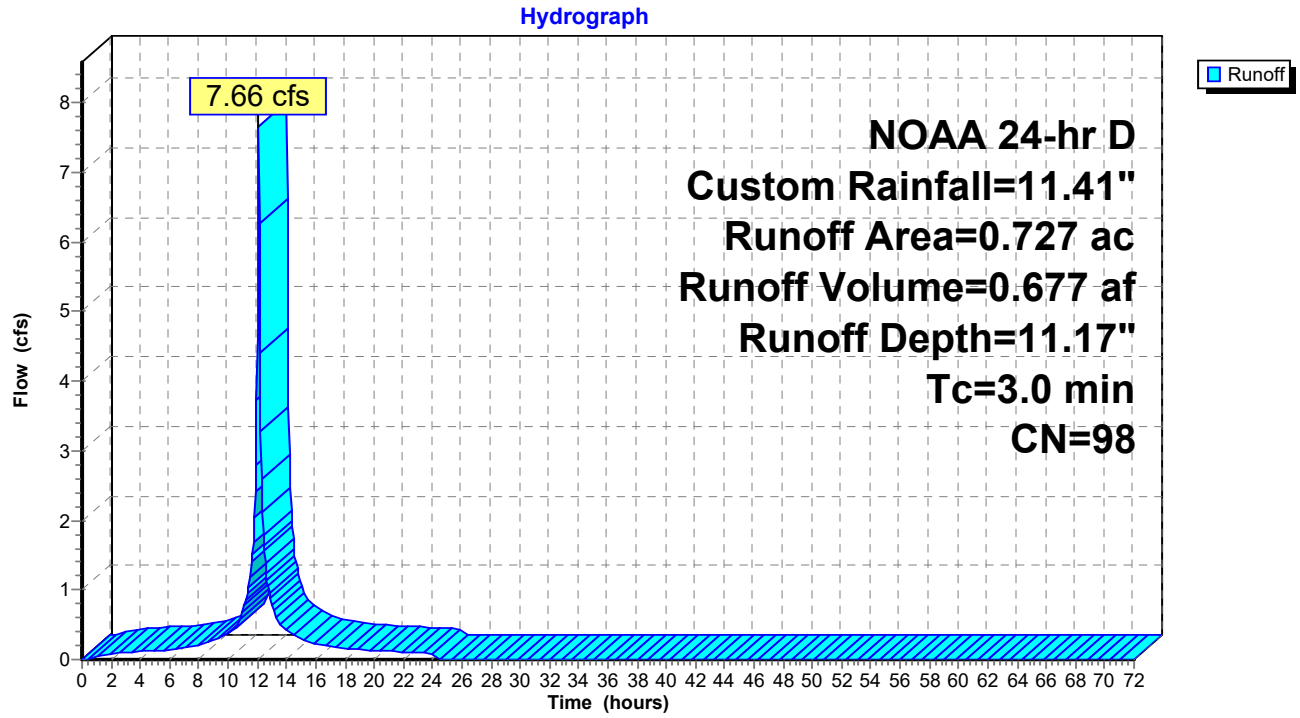
Runoff = 7.66 cfs @ 12.10 hrs, Volume= 0.677 af, Depth=11.17"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.727	98	Impervious
	0.727		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 94S: Basin 32 - Impervious



Summary for Subcatchment 95S: Basin 32 - Pervious

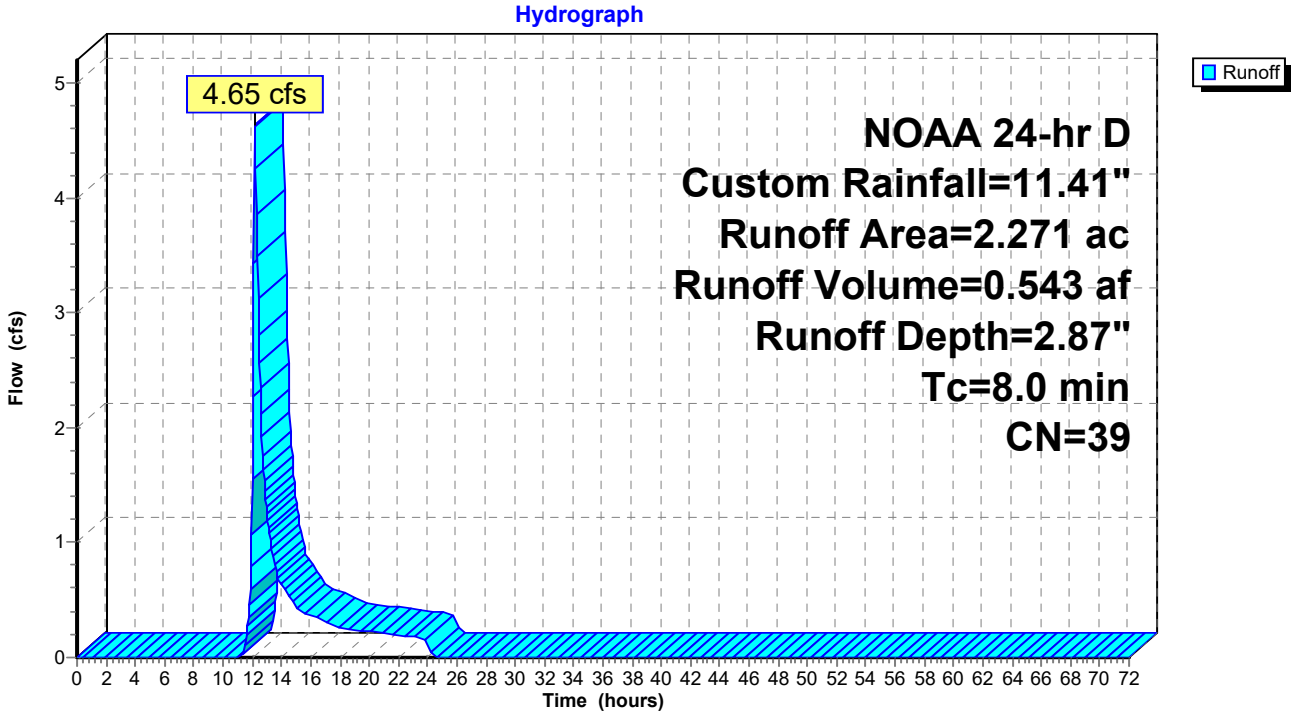
Runoff = 4.65 cfs @ 12.19 hrs, Volume= 0.543 af, Depth= 2.87"
Routed to Pond 73P : Basin 32

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
2.271	39	>75% Grass cover, Good, HSG A
2.271		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 95S: Basin 32 - Pervious



Summary for Subcatchment 96S: Basin 40 - Impervious

[49] Hint: Tc<2dt may require smaller dt

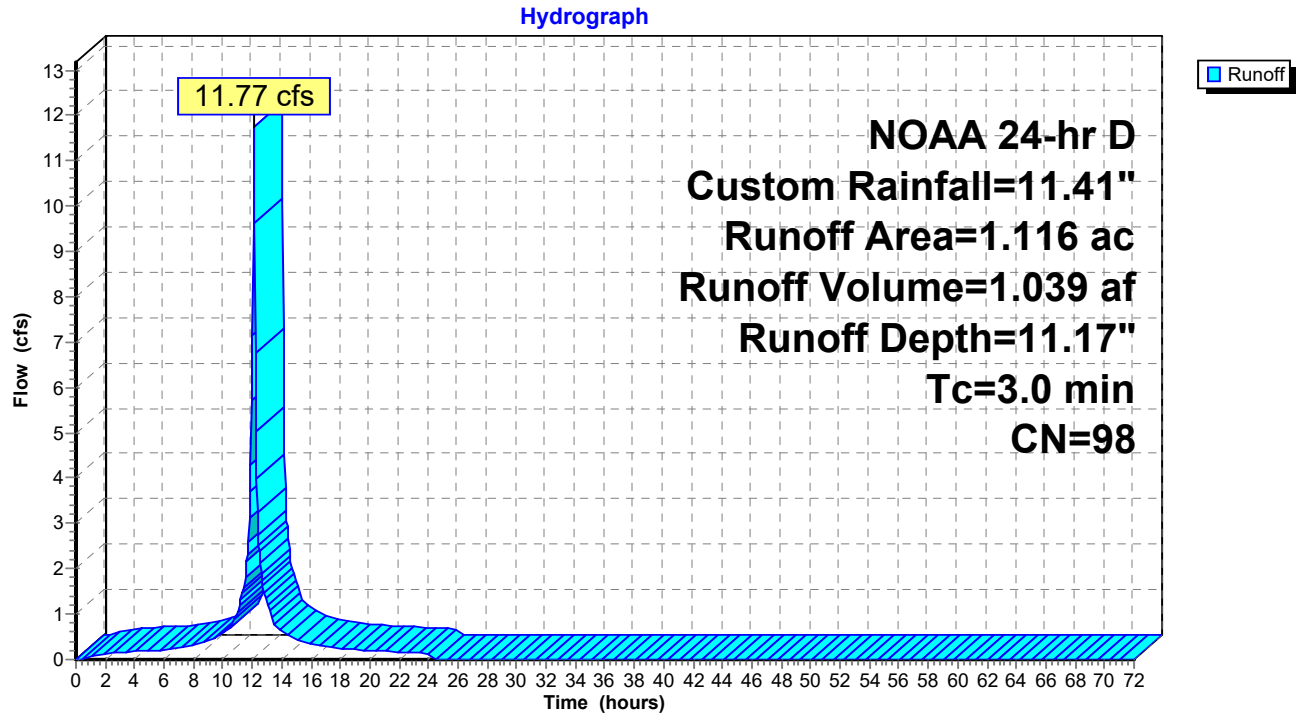
Runoff = 11.77 cfs @ 12.10 hrs, Volume= 1.039 af, Depth=11.17"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.116	98	Impervious
	1.116		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 96S: Basin 40 - Impervious



Summary for Subcatchment 97S: Basin 40 - Pervious

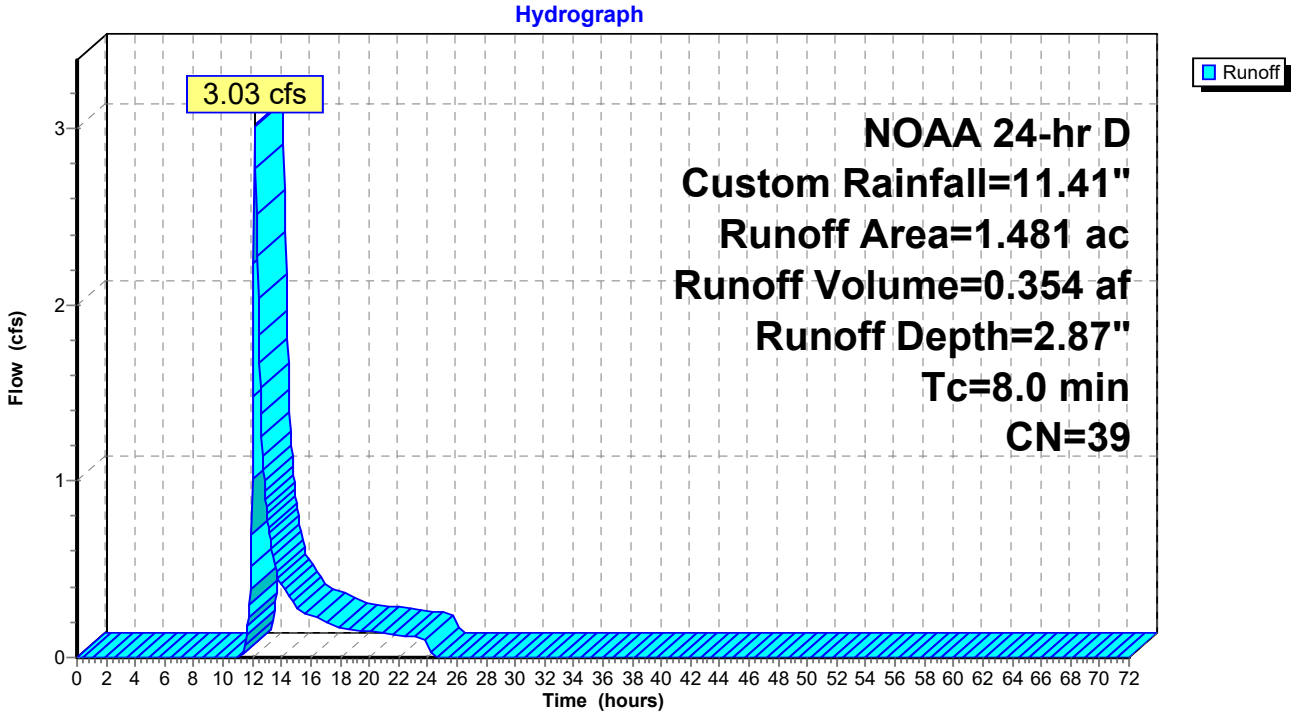
Runoff = 3.03 cfs @ 12.19 hrs, Volume= 0.354 af, Depth= 2.87"
Routed to Pond 87P : Basin 40

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.481	39	>75% Grass cover, Good, HSG A
1.481		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 97S: Basin 40 - Pervious



Summary for Subcatchment 98S: Basin 38 - Impervious

[49] Hint: Tc<2dt may require smaller dt

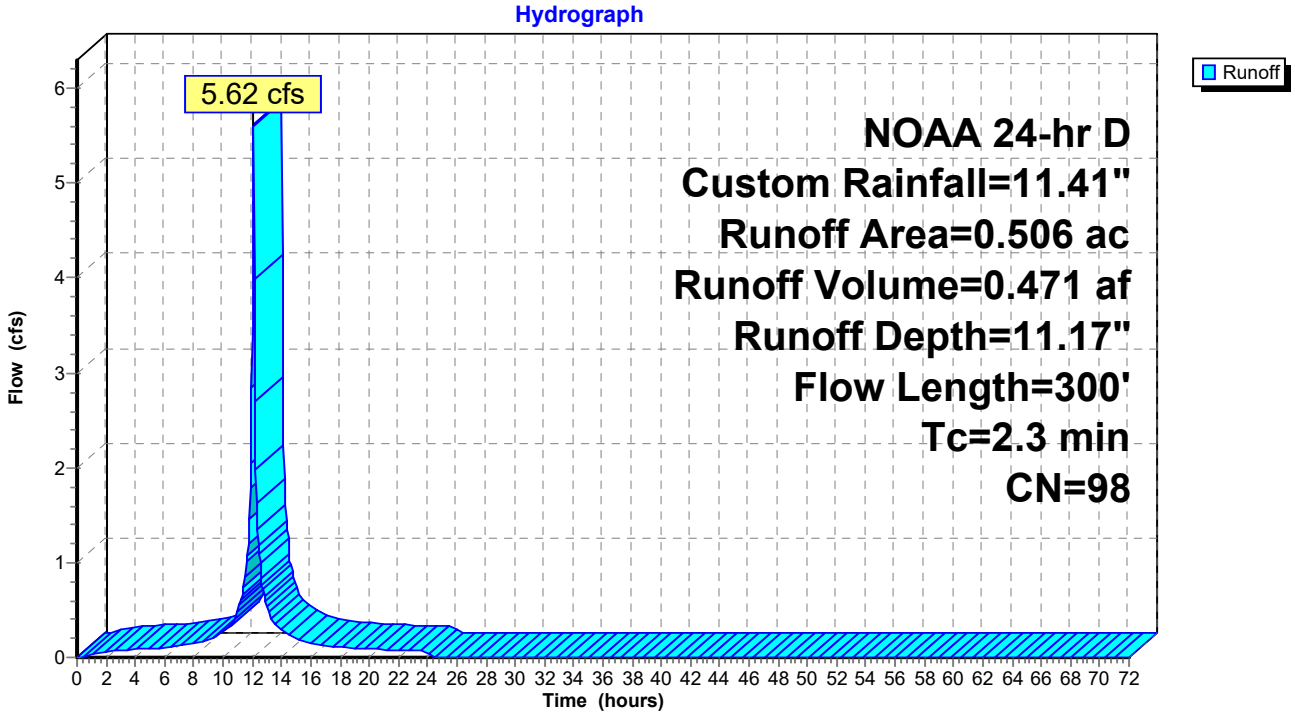
Runoff = 5.62 cfs @ 12.09 hrs, Volume= 0.471 af, Depth=11.17"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.506	98	Impervious
	0.506		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	200	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	300	Total			

Subcatchment 98S: Basin 38 - Impervious



Summary for Subcatchment 99S: Basin 38 - Pervious

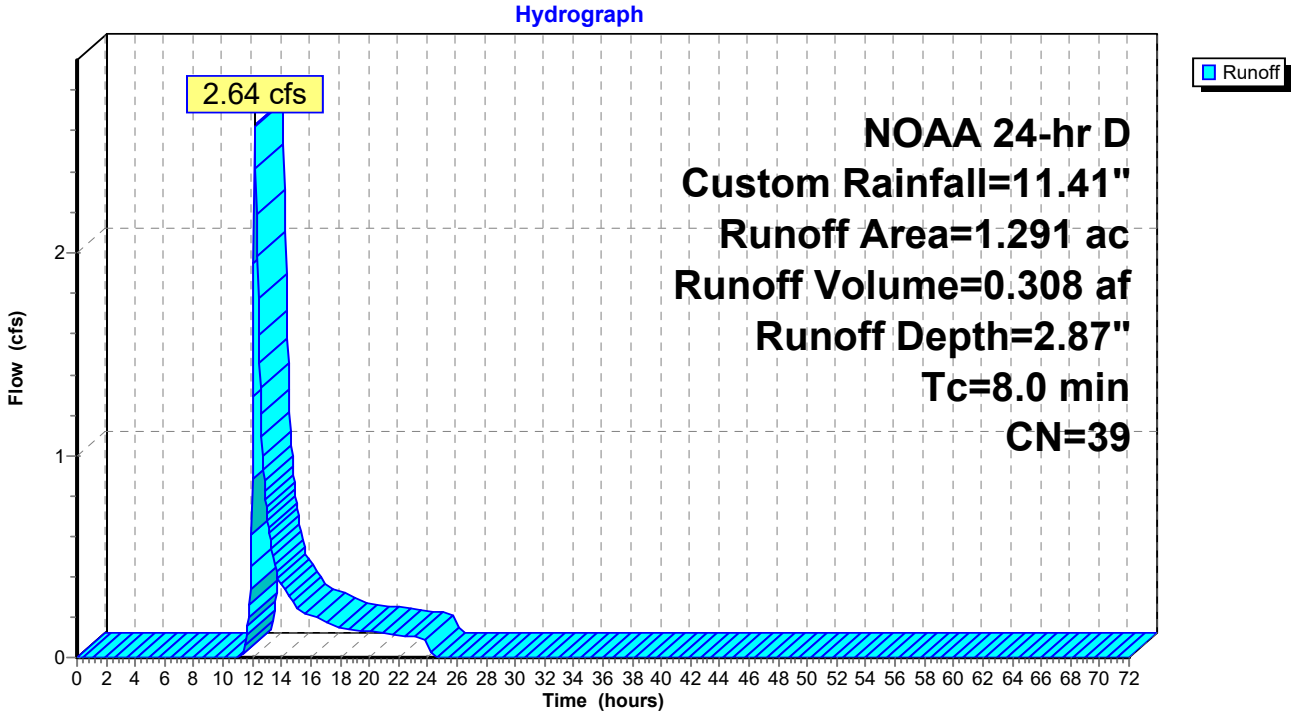
Runoff = 2.64 cfs @ 12.19 hrs, Volume= 0.308 af, Depth= 2.87"
Routed to Pond 76P : Basin 38

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.291	39	>75% Grass cover, Good, HSG A
1.291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 99S: Basin 38 - Pervious



Summary for Subcatchment 100S: Basin 22 - Impervious

[49] Hint: Tc<2dt may require smaller dt

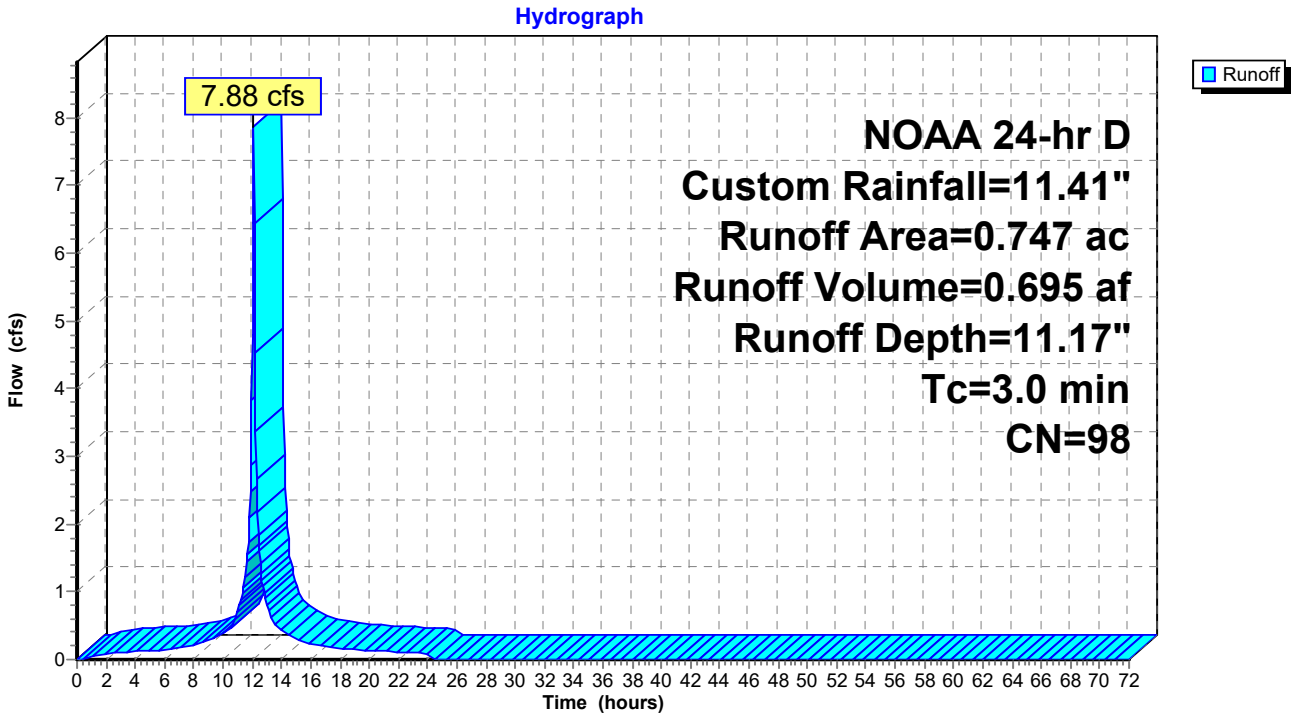
Runoff = 7.88 cfs @ 12.10 hrs, Volume= 0.695 af, Depth=11.17"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.747	98	Impervious
	0.747		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 100S: Basin 22 - Impervious



Summary for Subcatchment 101S: Basin 39 - Pervious

[49] Hint: Tc<2dt may require smaller dt

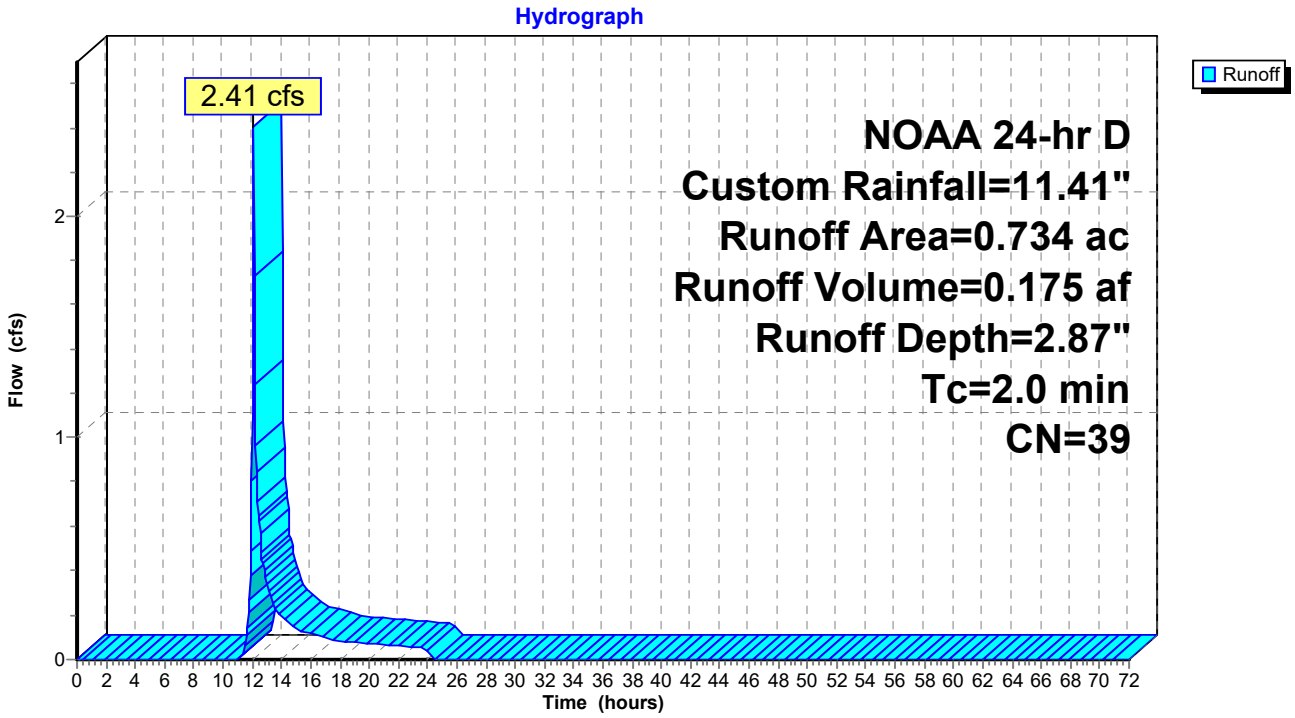
Runoff = 2.41 cfs @ 12.10 hrs, Volume= 0.175 af, Depth= 2.87"
Routed to Pond 74P : Basin 39

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
0.734	39	>75% Grass cover, Good, HSG A
0.734		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 101S: Basin 39 - Pervious



Summary for Subcatchment 102S: Basin 37 - Impervious

[49] Hint: Tc<2dt may require smaller dt

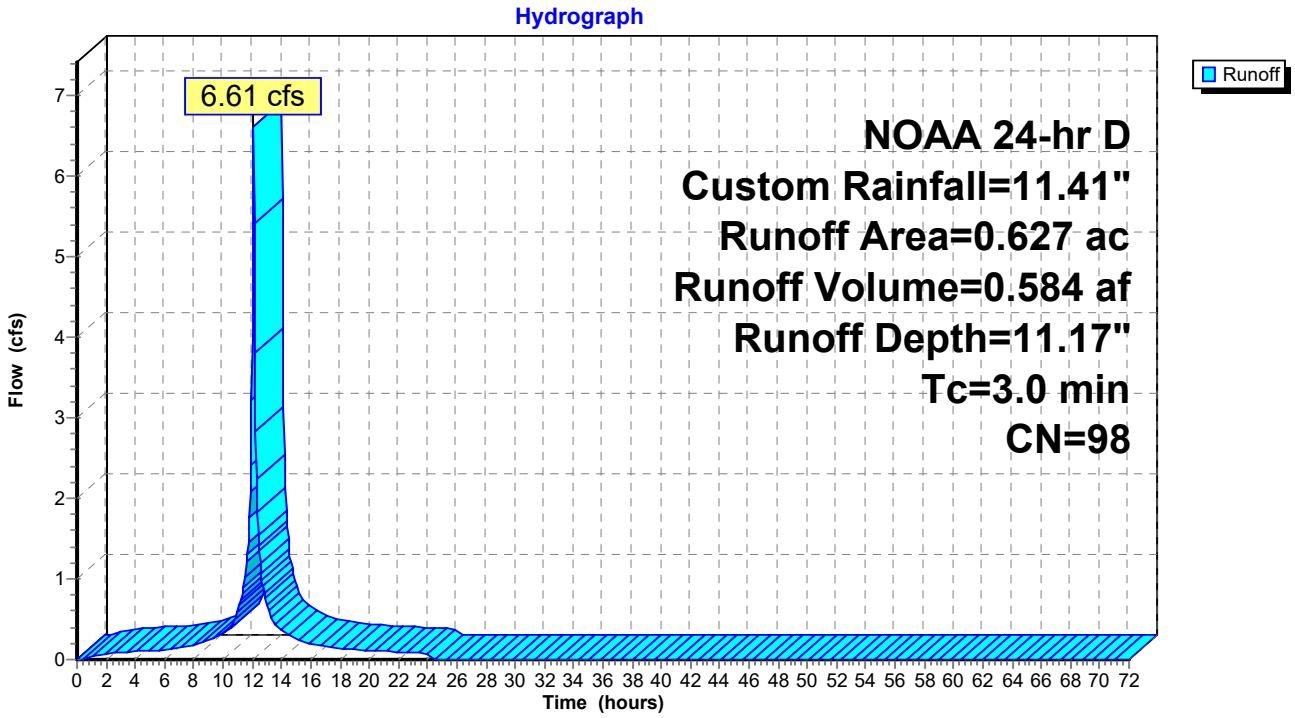
Runoff = 6.61 cfs @ 12.10 hrs, Volume= 0.584 af, Depth=11.17"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 102S: Basin 37 - Impervious



Summary for Subcatchment 103S: Basin 37 - Pervious

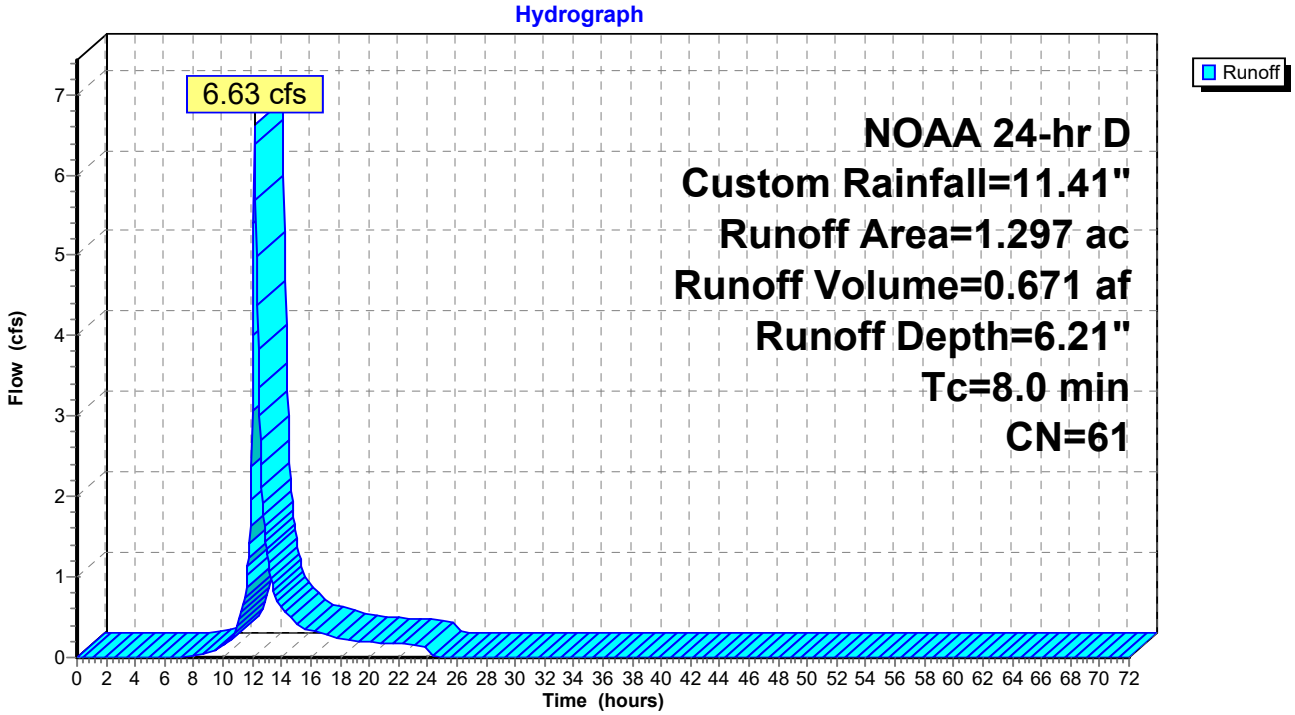
Runoff = 6.63 cfs @ 12.17 hrs, Volume= 0.671 af, Depth= 6.21"
Routed to Pond 77P : Basin 37

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.297	61	>75% Grass cover, Good, HSG B
1.297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 103S: Basin 37 - Pervious



Summary for Subcatchment 104S: Basin 34- Impervious

[49] Hint: Tc<2dt may require smaller dt

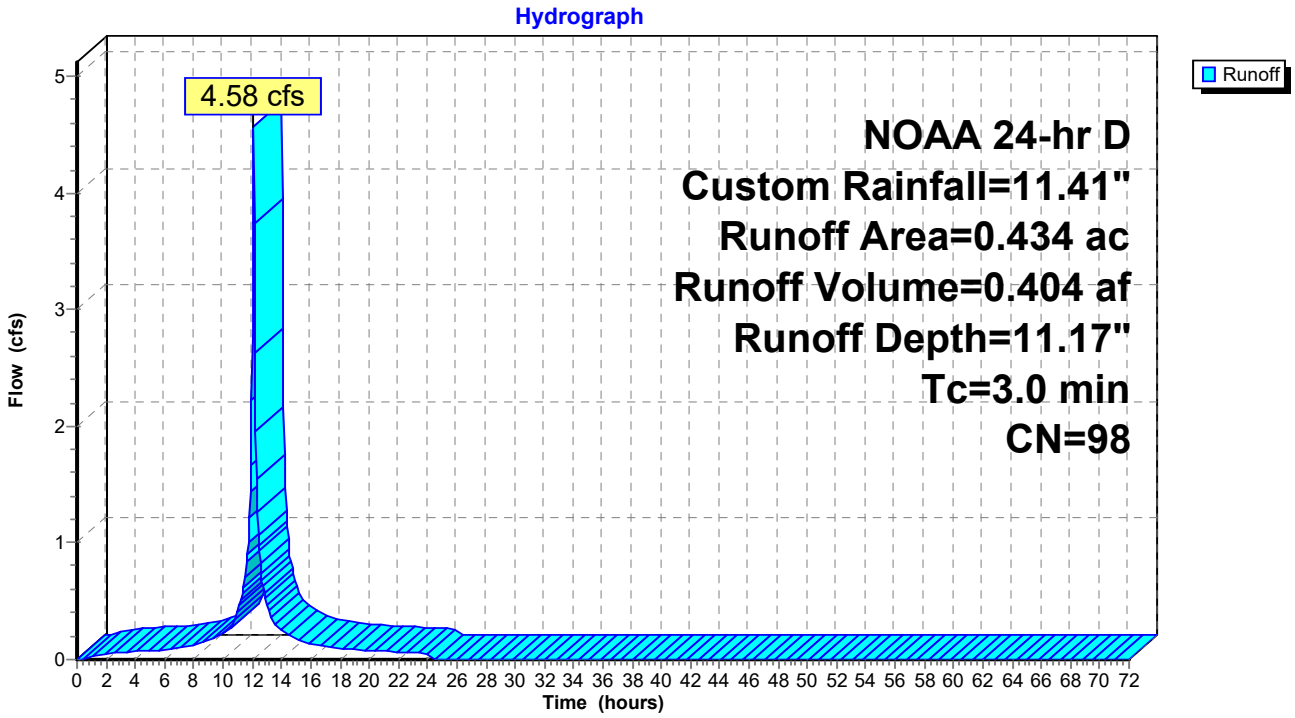
Runoff = 4.58 cfs @ 12.10 hrs, Volume= 0.404 af, Depth=11.17"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.434	98	Impervious
	0.434		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 104S: Basin 34- Impervious



Summary for Subcatchment 105S: Basin 34 - Pervious

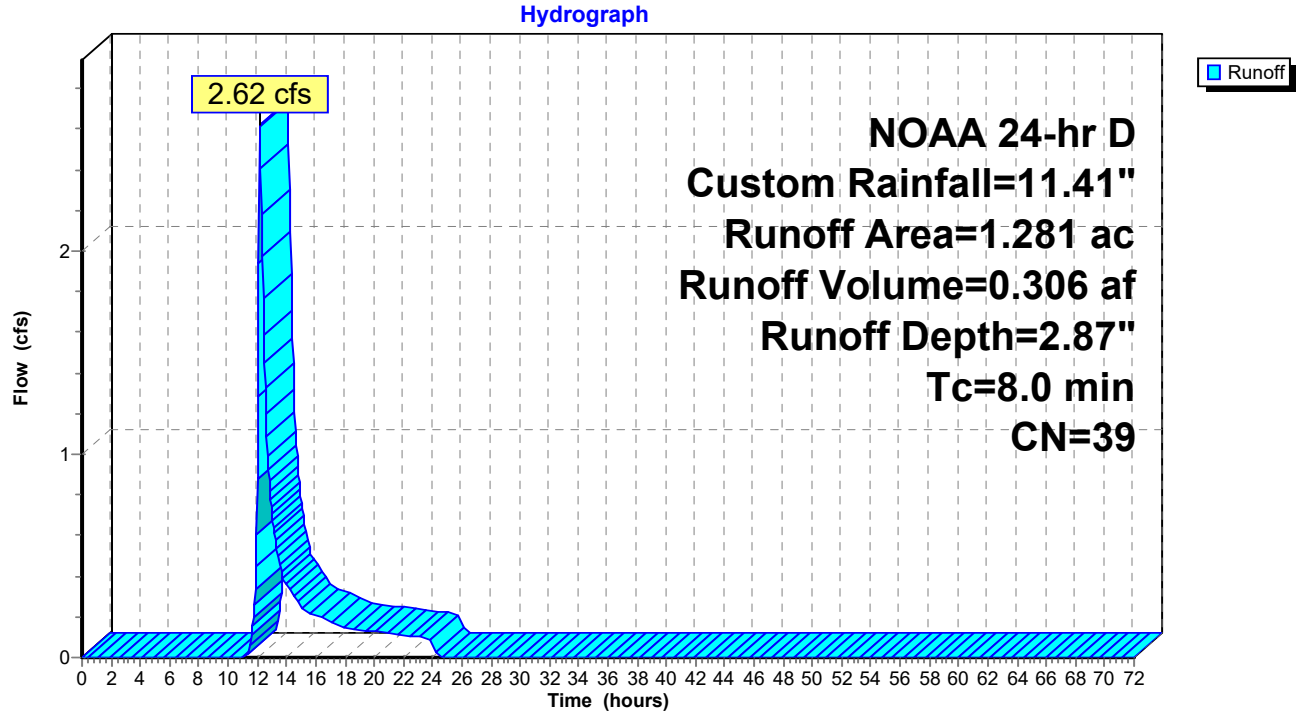
Runoff = 2.62 cfs @ 12.19 hrs, Volume= 0.306 af, Depth= 2.87"
Routed to Pond 79P : Basin 34

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.281	39	>75% Grass cover, Good, HSG A
1.281		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 105S: Basin 34 - Pervious



Summary for Subcatchment 106S: Basin 35 - Impervious

[49] Hint: Tc<2dt may require smaller dt

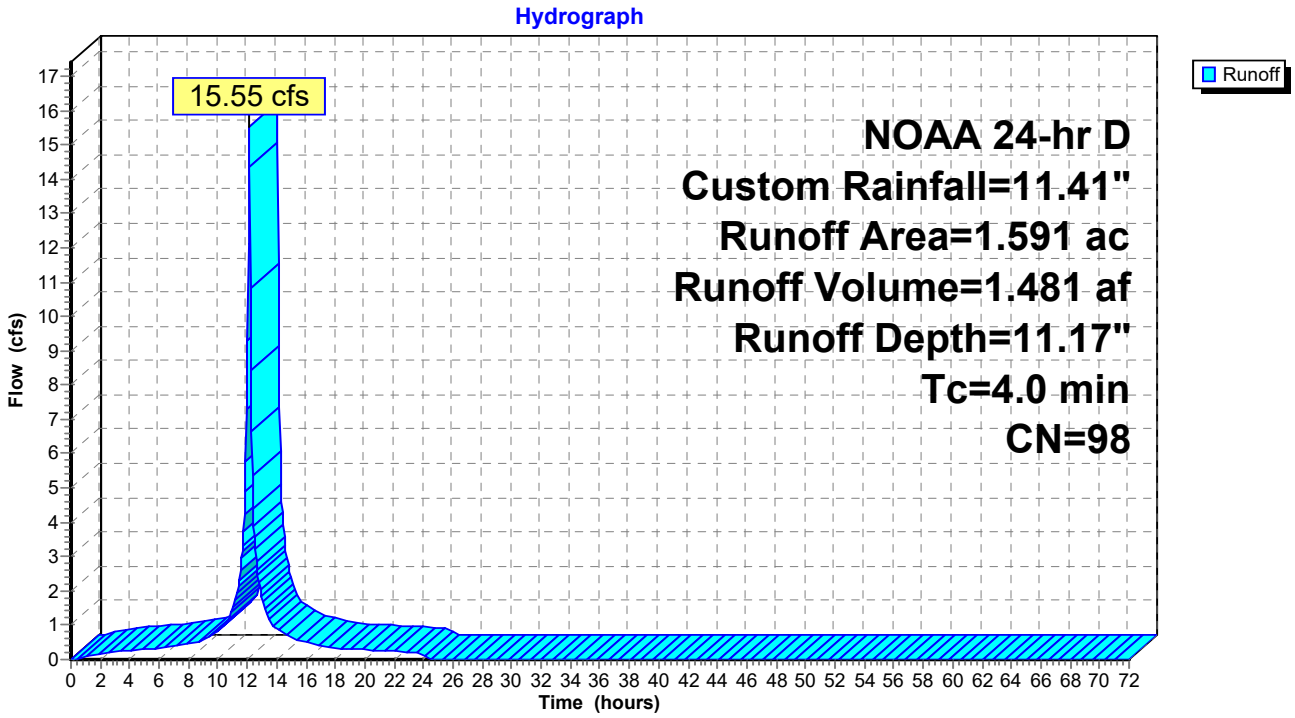
Runoff = 15.55 cfs @ 12.11 hrs, Volume= 1.481 af, Depth=11.17"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.591	98	Impervious
	1.591		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment 106S: Basin 35 - Impervious



Summary for Subcatchment 107S: Basin 35 - Pervious

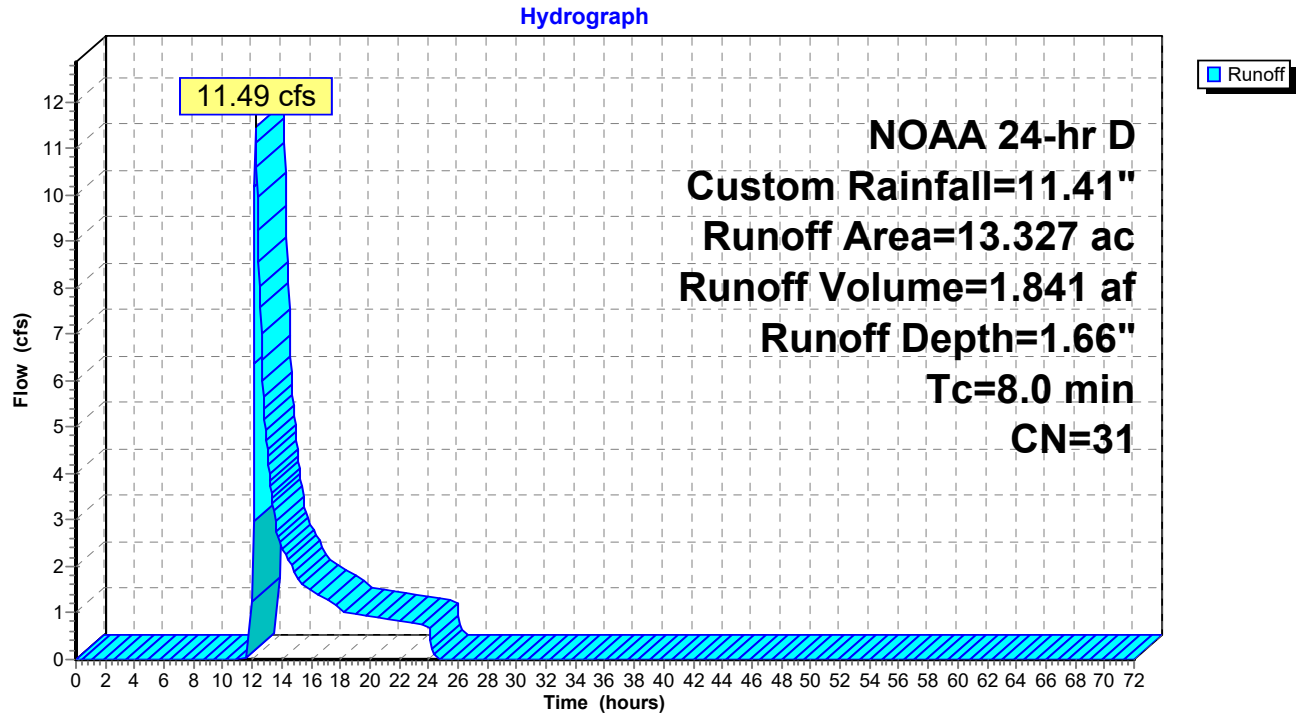
Runoff = 11.49 cfs @ 12.22 hrs, Volume= 1.841 af, Depth= 1.66"
Routed to Pond 80P : Basin 35

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
0.907	39	>75% Grass cover, Good, HSG A
12.420	30	Woods, Good, HSG A
13.327	31	Weighted Average
13.327		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 107S: Basin 35 - Pervious



Summary for Subcatchment 108S: Basin 36 - Impervious

[49] Hint: Tc<2dt may require smaller dt

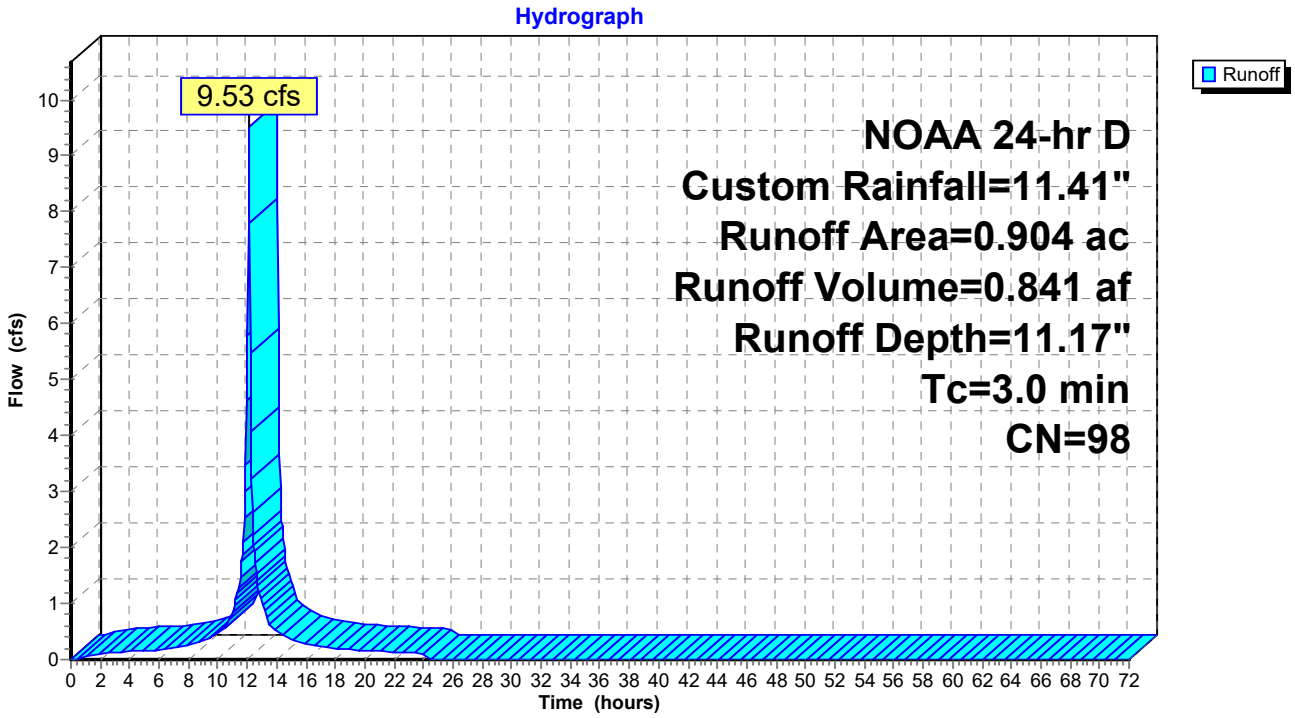
Runoff = 9.53 cfs @ 12.10 hrs, Volume= 0.841 af, Depth=11.17"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.904	98	Impervious
	0.904		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 108S: Basin 36 - Impervious



Summary for Subcatchment 109S: Basin 36 - Pervious

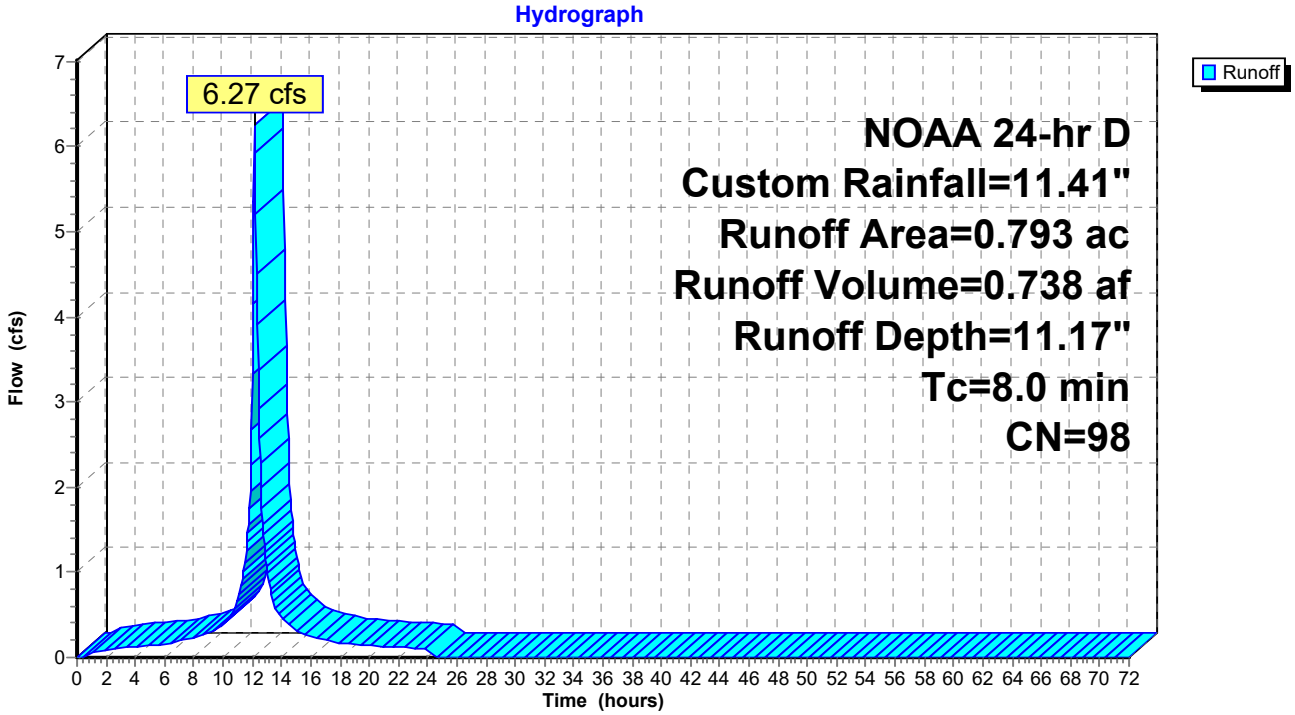
Runoff = 6.27 cfs @ 12.16 hrs, Volume= 0.738 af, Depth=11.17"
Routed to Pond 82P : Basin 36

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.793	98	Impervious
	0.793		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 109S: Basin 36 - Pervious



Summary for Subcatchment 110S: Basin 22 - Pervious

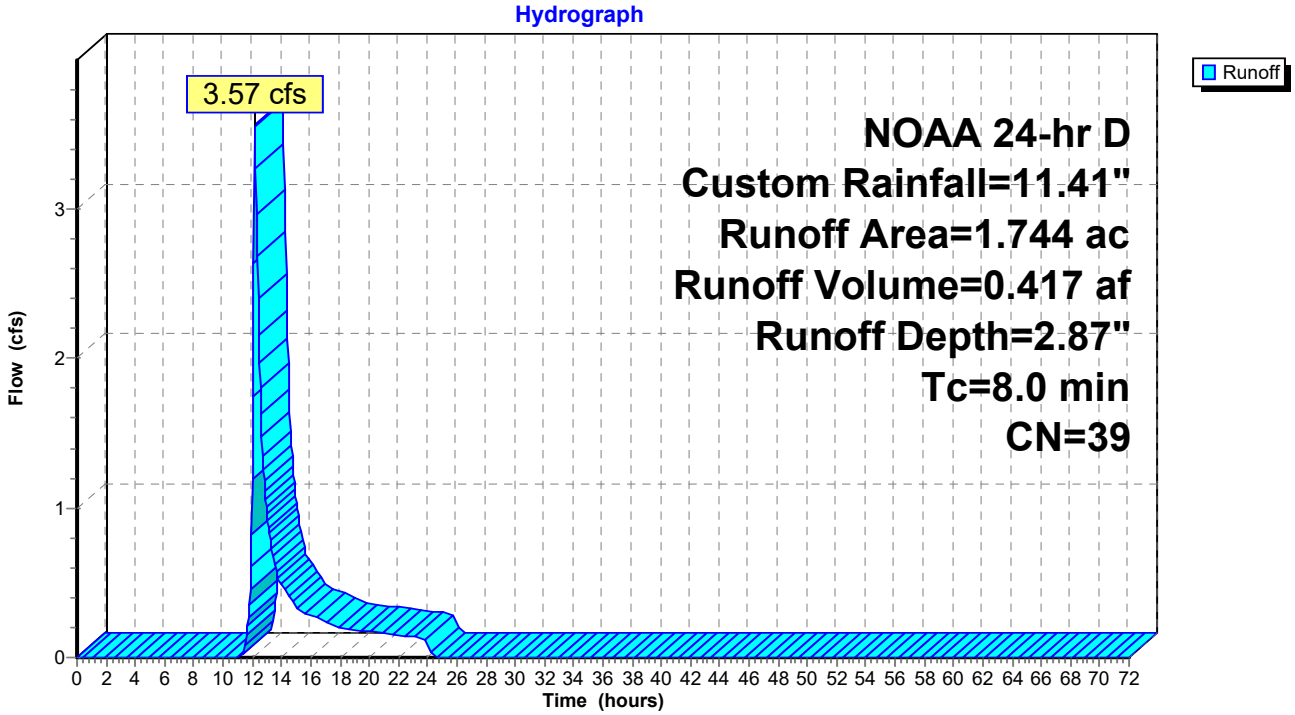
Runoff = 3.57 cfs @ 12.19 hrs, Volume= 0.417 af, Depth= 2.87"
Routed to Pond 88P : Basin 22

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.744	39	>75% Grass cover, Good, HSG A
1.744		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 110S: Basin 22 - Pervious



Summary for Pond 111P: Basin 23

Inflow Area = 2.499 ac, 35.01% Impervious, Inflow Depth = 5.77" for Custom event
Inflow = 11.77 cfs @ 12.11 hrs, Volume= 1.202 af
Outflow = 9.62 cfs @ 12.18 hrs, Volume= 1.125 af, Atten= 18%, Lag= 4.3 min
Primary = 9.62 cfs @ 12.18 hrs, Volume= 1.125 af
Routed to Pond 75P : Basin 25

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.52' @ 12.18 hrs Surf.Area= 9,446 sf Storage= 16,405 cf

Plug-Flow detention time= 328.1 min calculated for 1.124 af (94% of inflow)
Center-of-Mass det. time= 292.4 min (1,081.5 - 789.1)

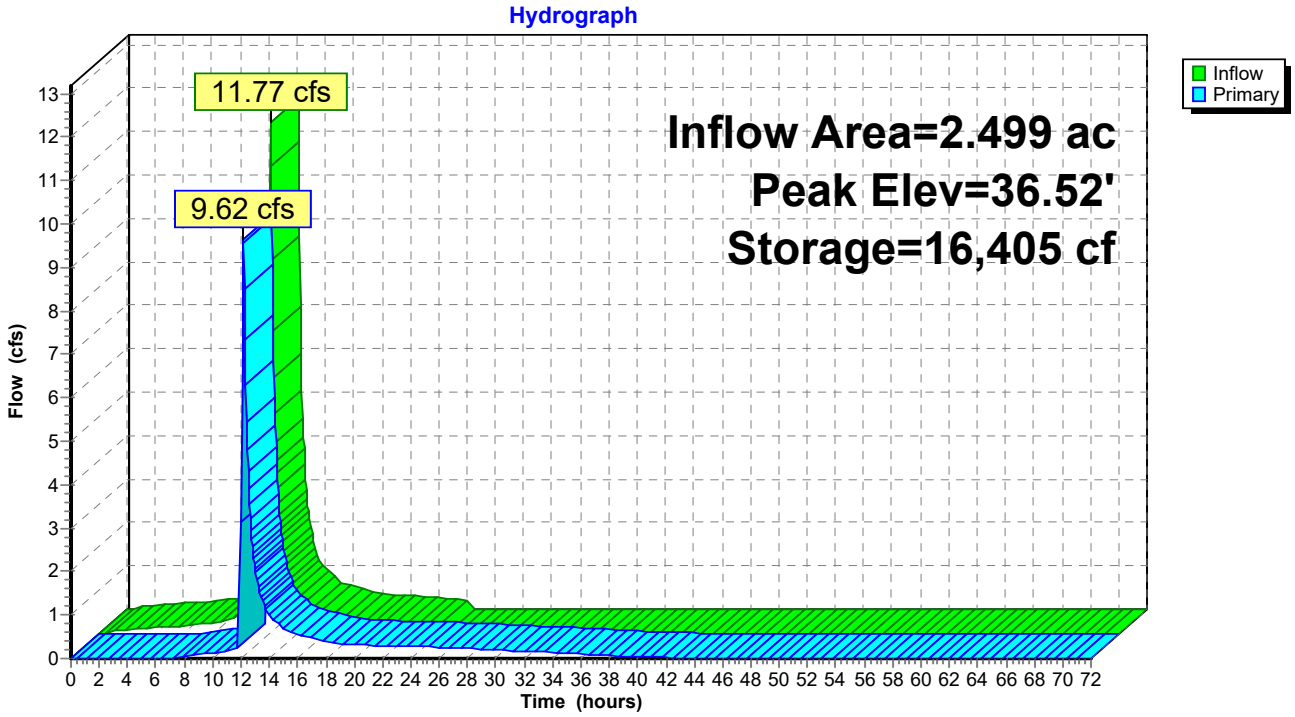
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	21,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	4,200	0	0
35.00	5,800	5,000	5,000
36.00	8,000	6,900	11,900
37.00	10,800	9,400	21,300

Device	Routing	Invert	Outlet Devices
#1	Primary	34.69'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.20'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.48 cfs @ 12.18 hrs HW=36.51' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.31 cfs @ 6.27 fps)
└**2=Orifice/Grate** (Weir Controls 9.17 cfs @ 1.83 fps)

Pond 111P: Basin 23



Summary for Subcatchment 112S: Basin 23 - Impervious

[49] Hint: Tc<2dt may require smaller dt

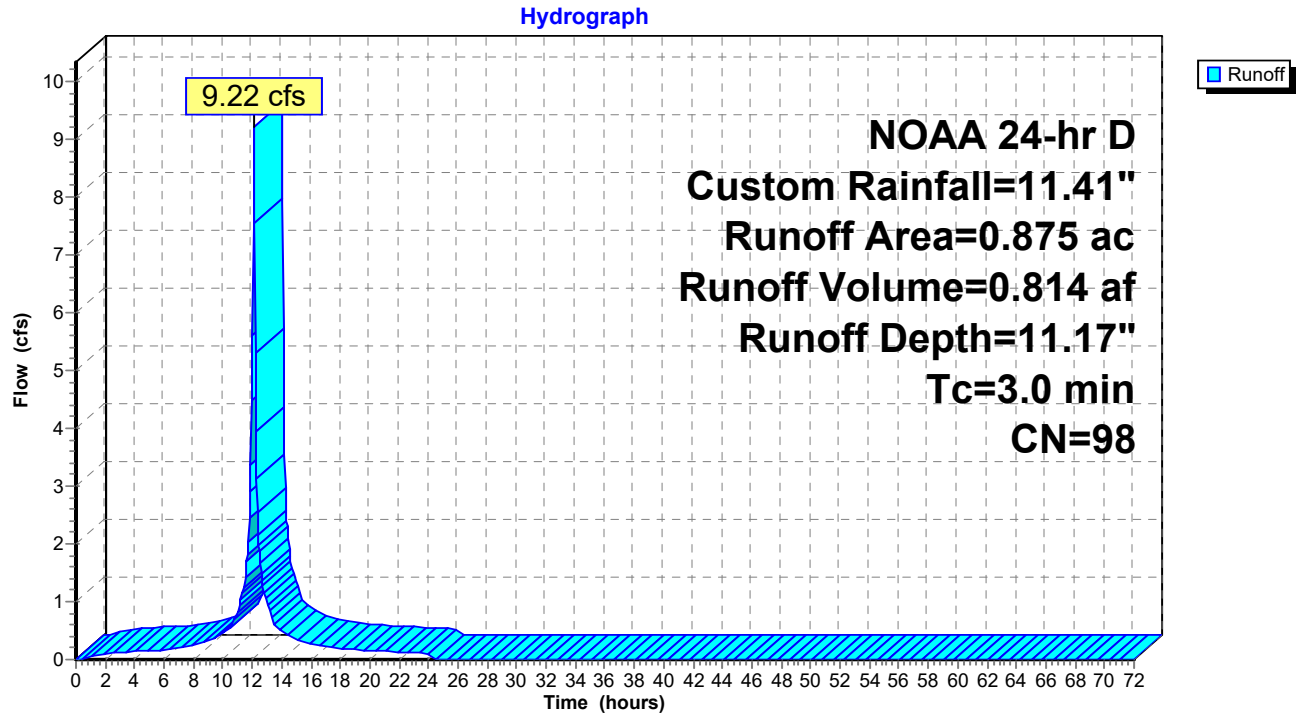
Runoff = 9.22 cfs @ 12.10 hrs, Volume= 0.814 af, Depth=11.17"
Routed to Pond 111P : Basin 23

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.875	98	Impervious
	0.875		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0					**Direct Entry,**

Subcatchment 112S: Basin 23 - Impervious



Summary for Subcatchment 113S: Basin 23 - Pervious

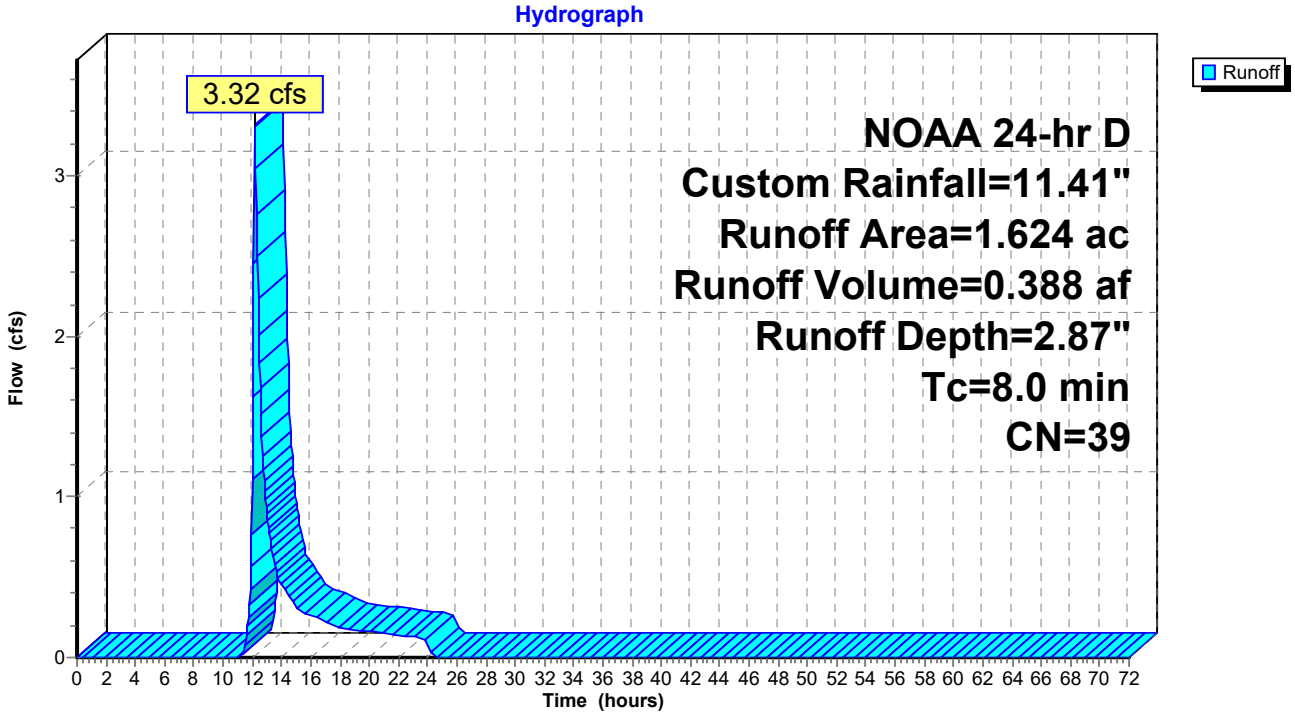
Runoff = 3.32 cfs @ 12.19 hrs, Volume= 0.388 af, Depth= 2.87"
Routed to Pond 111P : Basin 23

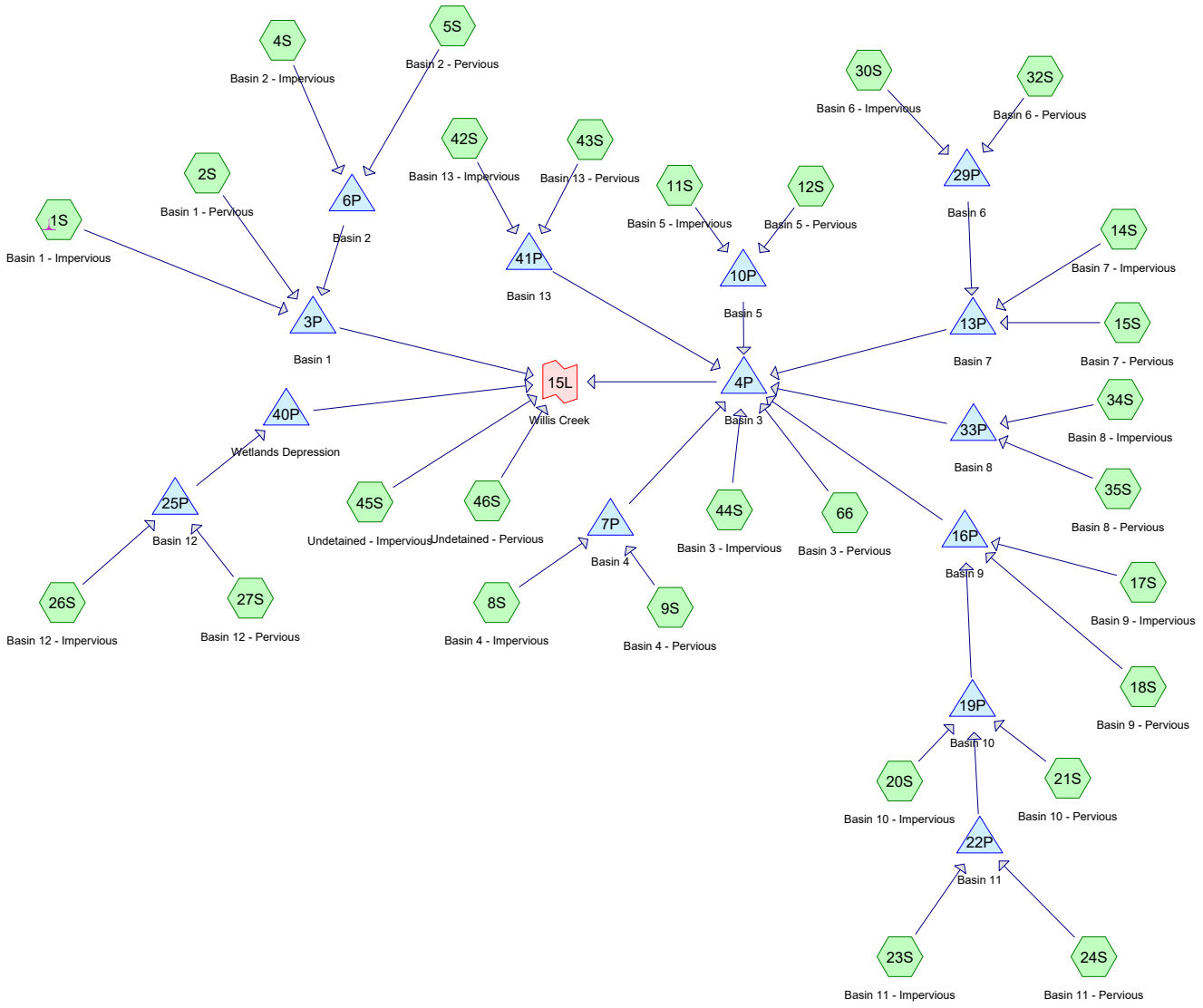
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.624	39	>75% Grass cover, Good, HSG A
1.624		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment 113S: Basin 23 - Pervious





Routing Diagram for 2, 10 & 100 - YR POST-DEVELOPMENT - WILLS CREEK

Prepared by ARH Associates, Printed 4/28/2025

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	Custom	NOAA 24-hr	D	Default	24.00	1	11.41	2

Summary for Subcatchment 1S: Basin 1 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 184% of capacity of segment #3

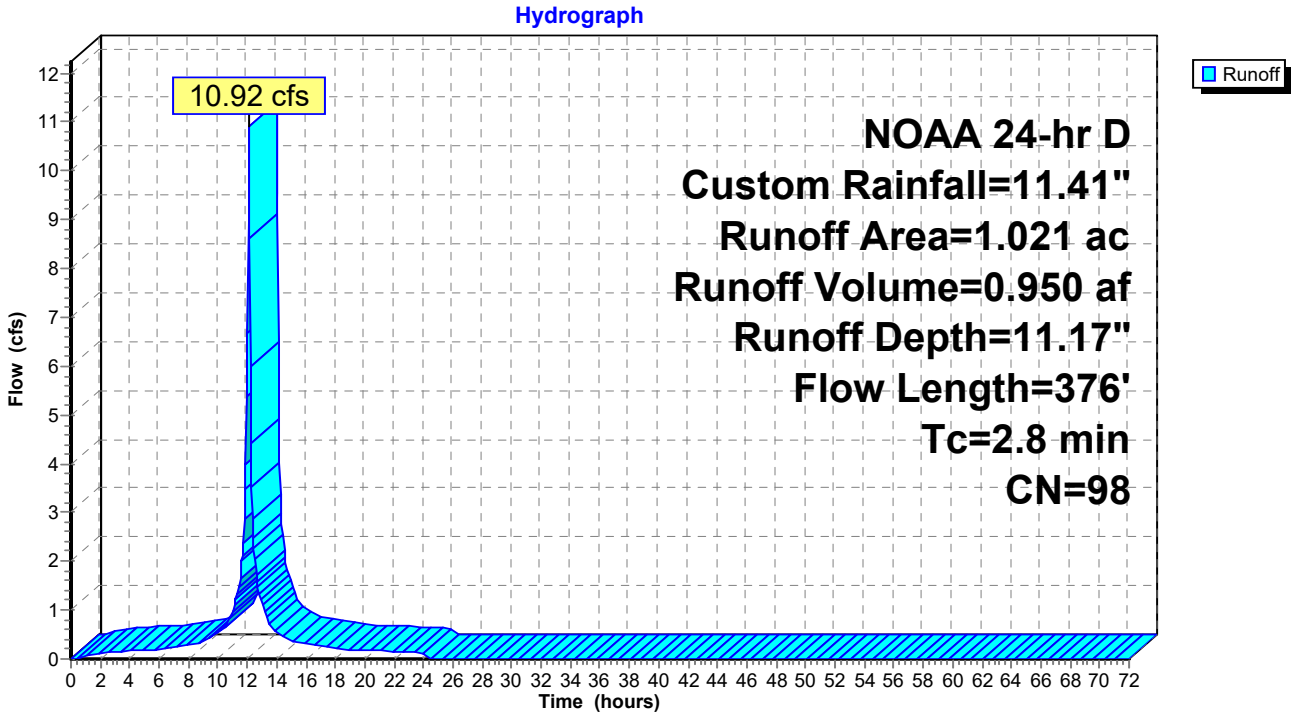
Runoff = 10.92 cfs @ 12.10 hrs, Volume= 0.950 af, Depth=11.17"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.021	98	
	1.021		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.7	86	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	190	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.8	376	Total			

Subcatchment 1S: Basin 1 - Impervious



Summary for Subcatchment 2S: Basin 1 - Pervious

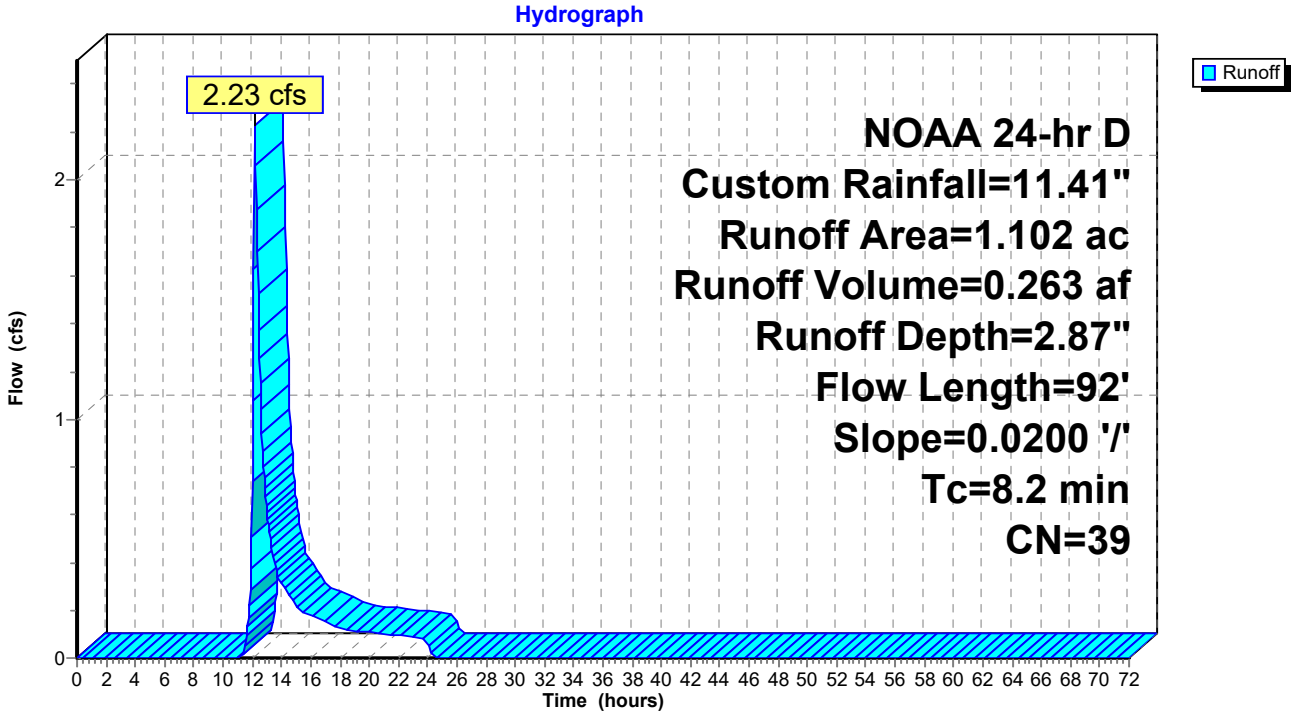
Runoff = 2.23 cfs @ 12.19 hrs, Volume= 0.263 af, Depth= 2.87"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.102	39	>75% Grass cover, Good, HSG A
1.102		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	92	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 2S: Basin 1 - Pervious



Summary for Pond 3P: Basin 1

Inflow Area = 4.367 ac, 43.78% Impervious, Inflow Depth > 6.29" for Custom event
Inflow = 14.21 cfs @ 12.29 hrs, Volume= 2.288 af
Outflow = 11.45 cfs @ 12.15 hrs, Volume= 2.194 af, Atten= 19%, Lag= 0.0 min
Primary = 11.45 cfs @ 12.15 hrs, Volume= 2.194 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.26' @ 12.15 hrs Surf.Area= 8,129 sf Storage= 12,318 cf

Plug-Flow detention time= 248.0 min calculated for 2.194 af (96% of inflow)
Center-of-Mass det. time= 170.9 min (1,226.0 - 1,055.2)

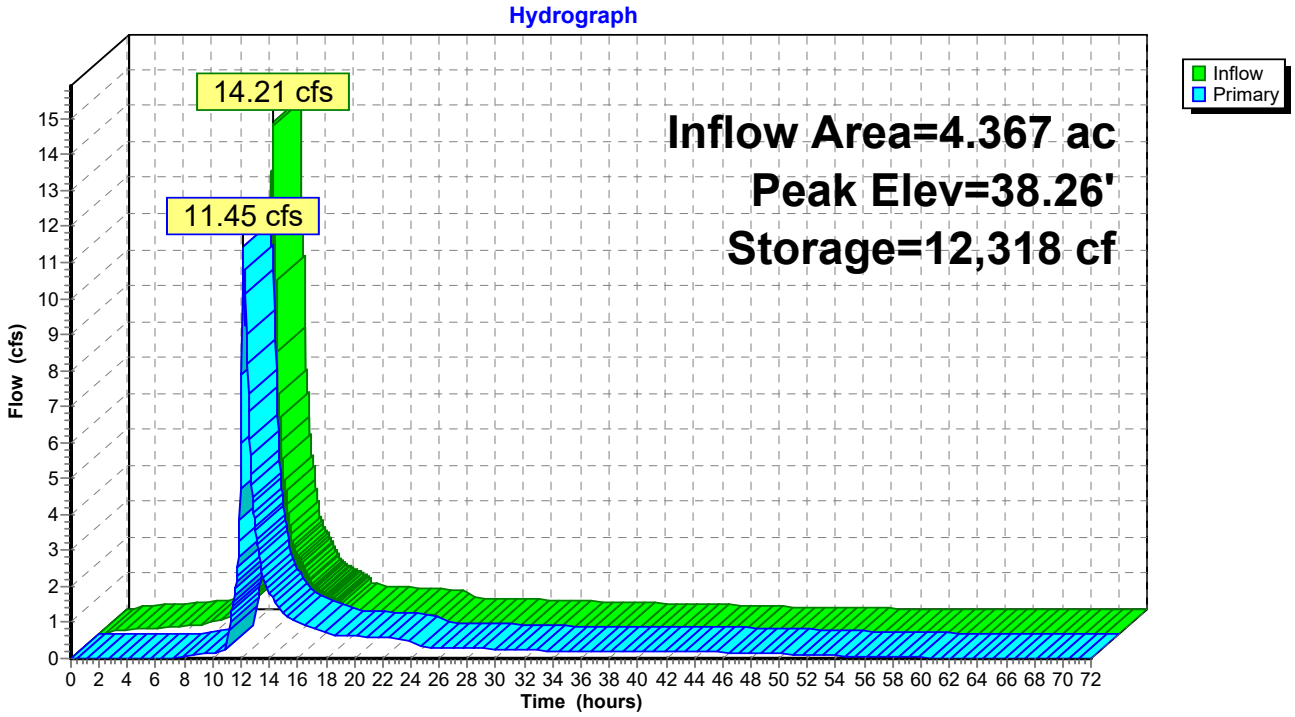
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	14,397 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,311	0	0
37.00	5,097	4,204	4,204
38.00	7,187	6,142	10,346
38.50	9,017	4,051	14,397

Device	Routing	Invert	Outlet Devices
#1	Primary	36.93'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	37.90'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.44 cfs @ 12.15 hrs HW=38.26' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.26 cfs @ 5.28 fps)
└**2=Orifice/Grate** (Weir Controls 11.18 cfs @ 1.95 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 3

Inflow Area = 21.738 ac, 39.68% Impervious, Inflow Depth = 7.34" for Custom event
Inflow = 108.05 cfs @ 12.17 hrs, Volume= 13.299 af
Outflow = 30.40 cfs @ 12.76 hrs, Volume= 7.578 af, Atten= 72%, Lag= 35.1 min
Primary = 30.40 cfs @ 12.76 hrs, Volume= 7.578 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 30.03' @ 12.76 hrs Surf.Area= 60,160 sf Storage= 280,251 cf

Plug-Flow detention time= 360.9 min calculated for 7.573 af (57% of inflow)
Center-of-Mass det. time= 181.0 min (1,067.5 - 886.5)

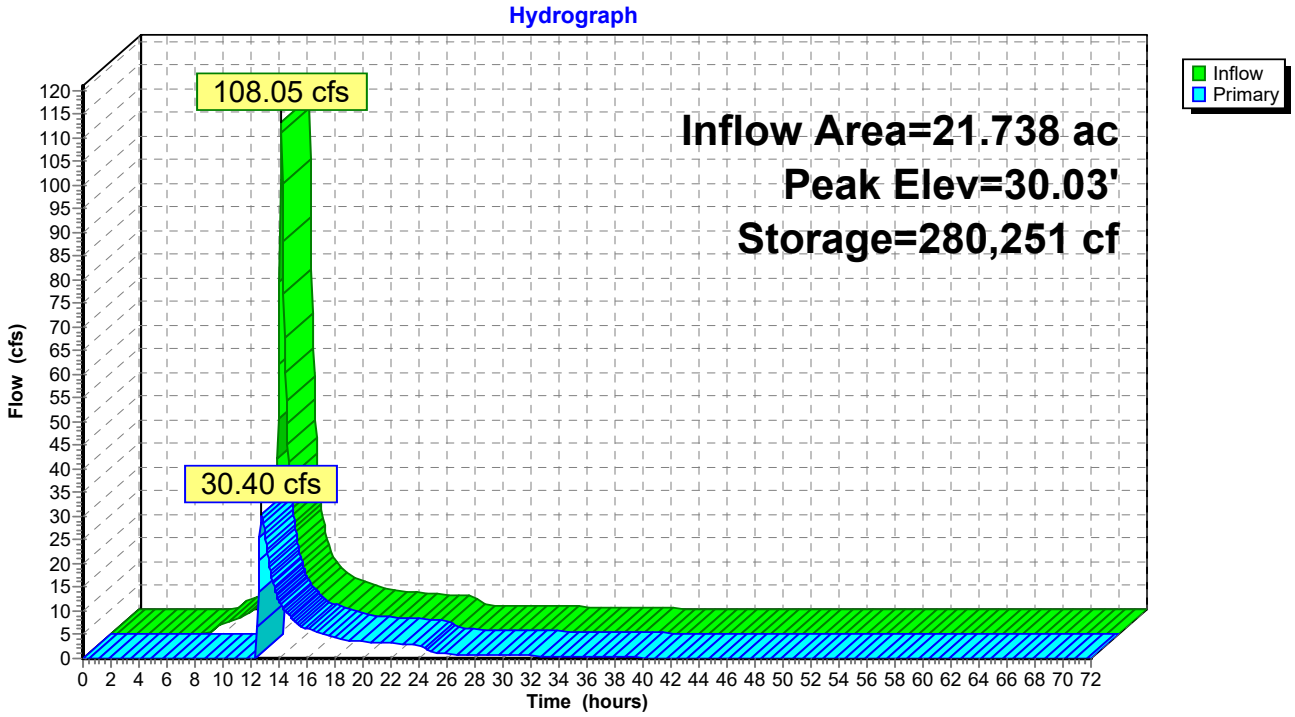
Volume	Invert	Avail.Storage	Storage Description
#1	24.01'	309,397 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.01	22,000	0	0
25.00	25,000	23,265	23,265
26.00	28,000	26,500	49,765
27.00	31,000	29,500	79,265
28.00	34,000	32,500	111,765
29.00	37,000	35,500	147,265
30.00	40,000	38,500	185,765
30.50	42,000	20,500	206,265

Device	Routing	Invert	Outlet Devices
#1	Primary	29.50'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=30.34 cfs @ 12.76 hrs HW=30.03' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 30.34 cfs @ 1.92 fps)

Pond 4P: Basin 3



Summary for Subcatchment 4S: Basin 2 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 167% of capacity of segment #3

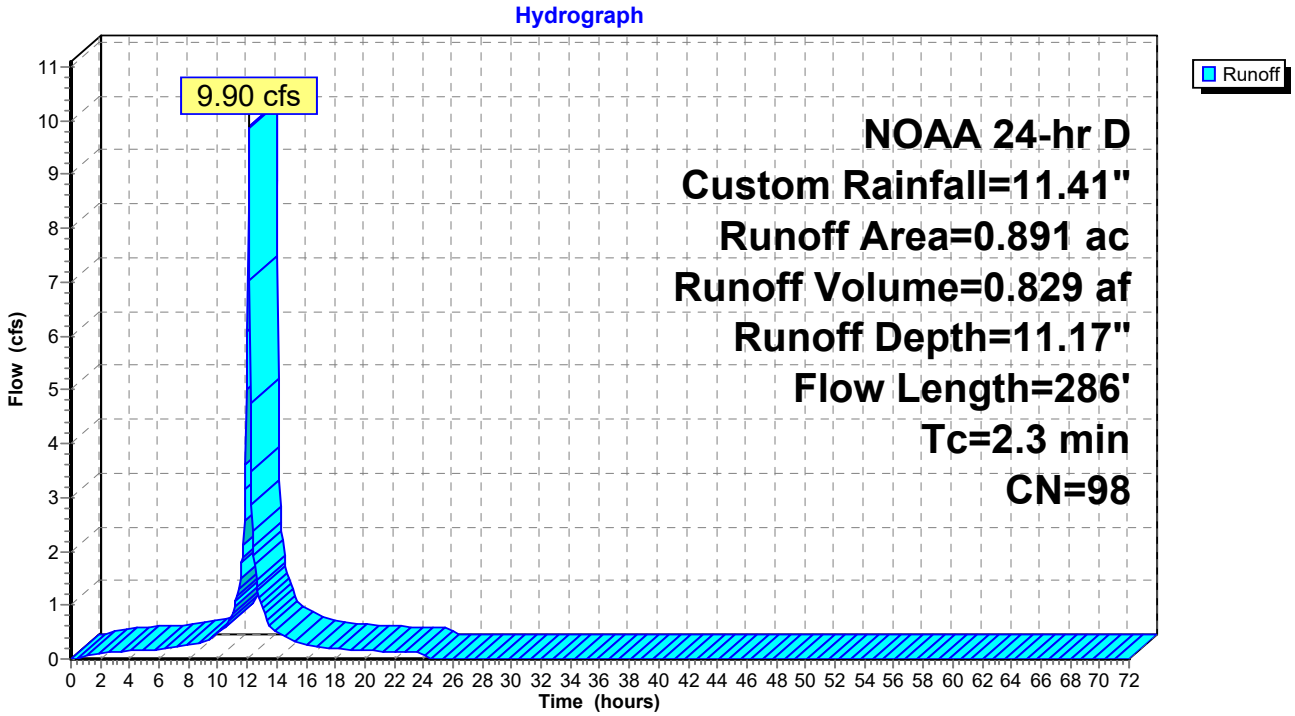
Runoff = 9.90 cfs @ 12.09 hrs, Volume= 0.829 af, Depth=11.17"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.891	98	Impervious
	0.891		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	56	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.3	286	Total			

Subcatchment 4S: Basin 2 - Impervious



Summary for Subcatchment 5S: Basin 2 - Pervious

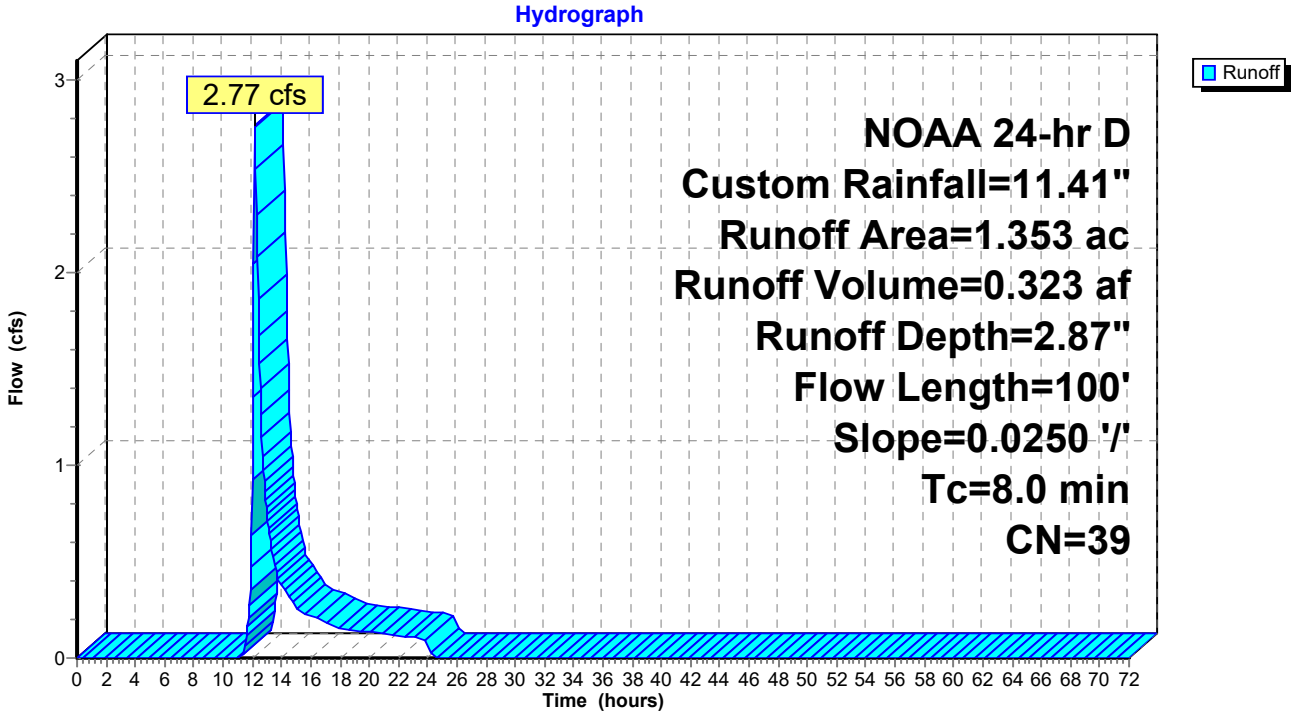
Runoff = 2.77 cfs @ 12.19 hrs, Volume= 0.323 af, Depth= 2.87"
Routed to Pond 6P : Basin 2

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.353	39	>75% Grass cover, Good, HSG A
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 5S: Basin 2 - Pervious



Summary for Pond 6P: Basin 2

[93] Warning: Storage range exceeded by 1,354.93'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=54)

Inflow Area = 2.244 ac, 39.71% Impervious, Inflow Depth = 6.16" for Custom event
Inflow = 11.89 cfs @ 12.10 hrs, Volume= 1.153 af
Outflow = 8.73 cfs @ 12.30 hrs, Volume= 1.075 af, Atten= 27%, Lag= 11.9 min
Primary = 8.73 cfs @ 12.30 hrs, Volume= 1.075 af
Routed to Pond 3P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 1,396.43' @ 12.30 hrs Surf.Area= 0.297 ac Storage= 0.512 af

Plug-Flow detention time= 631.2 min calculated for 1.074 af (93% of inflow)
Center-of-Mass det. time= 593.5 min (1,375.0 - 781.5)

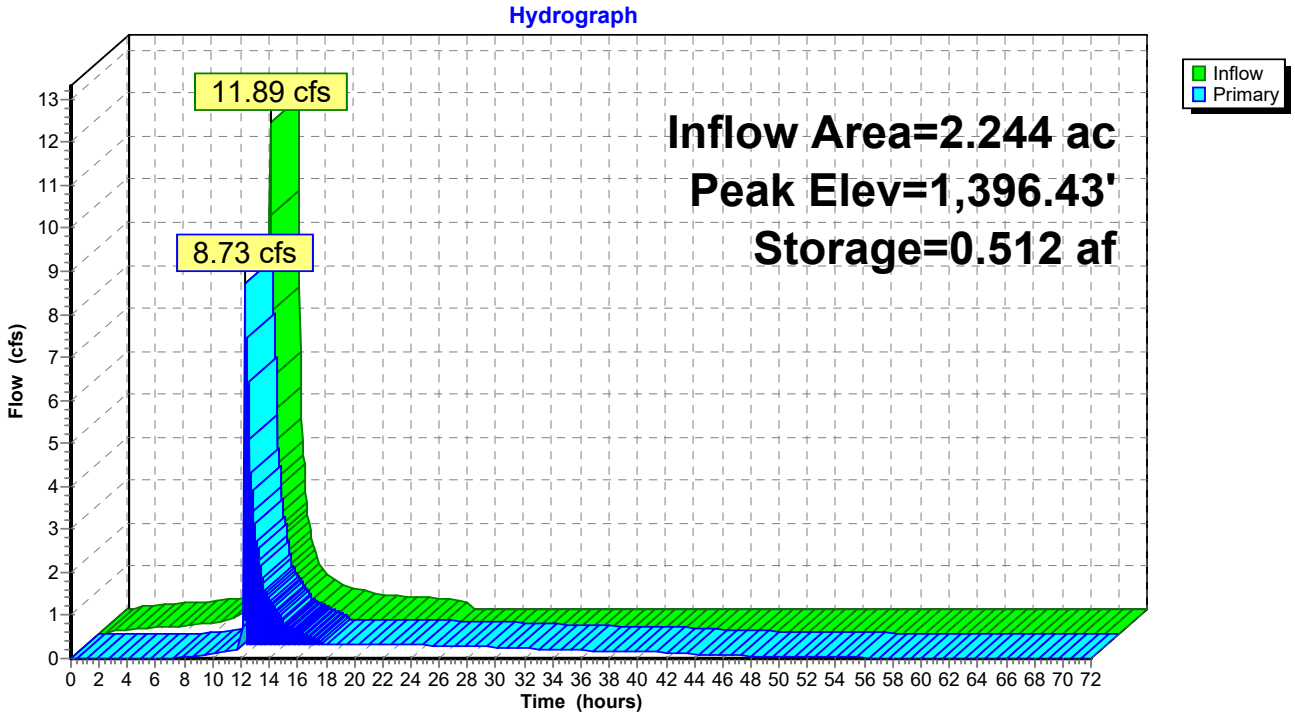
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	0.512 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
39.00	0.133	0.000	0.000
40.00	0.187	0.160	0.160
41.00	0.245	0.216	0.376
41.50	0.297	0.135	0.512

Device	Routing	Invert	Outlet Devices
#1	Primary	39.52'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.48 cfs @ 12.30 hrs HW=1,326.33' (Free Discharge)
1=Orifice/Grate (Orifice Controls 8.48 cfs @ 172.71 fps)

Pond 6P: Basin 2



Summary for Pond 7P: Basin 4

Inflow Area = 2.526 ac, 46.36% Impervious, Inflow Depth = 6.72" for Custom event
Inflow = 14.13 cfs @ 12.11 hrs, Volume= 1.414 af
Outflow = 13.09 cfs @ 12.15 hrs, Volume= 1.312 af, Atten= 7%, Lag= 2.4 min
Primary = 13.09 cfs @ 12.15 hrs, Volume= 1.312 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.26' @ 12.15 hrs Surf.Area= 6,931 sf Storage= 7,012 cf

Plug-Flow detention time= 87.1 min calculated for 1.311 af (93% of inflow)
Center-of-Mass det. time= 45.4 min (819.8 - 774.5)

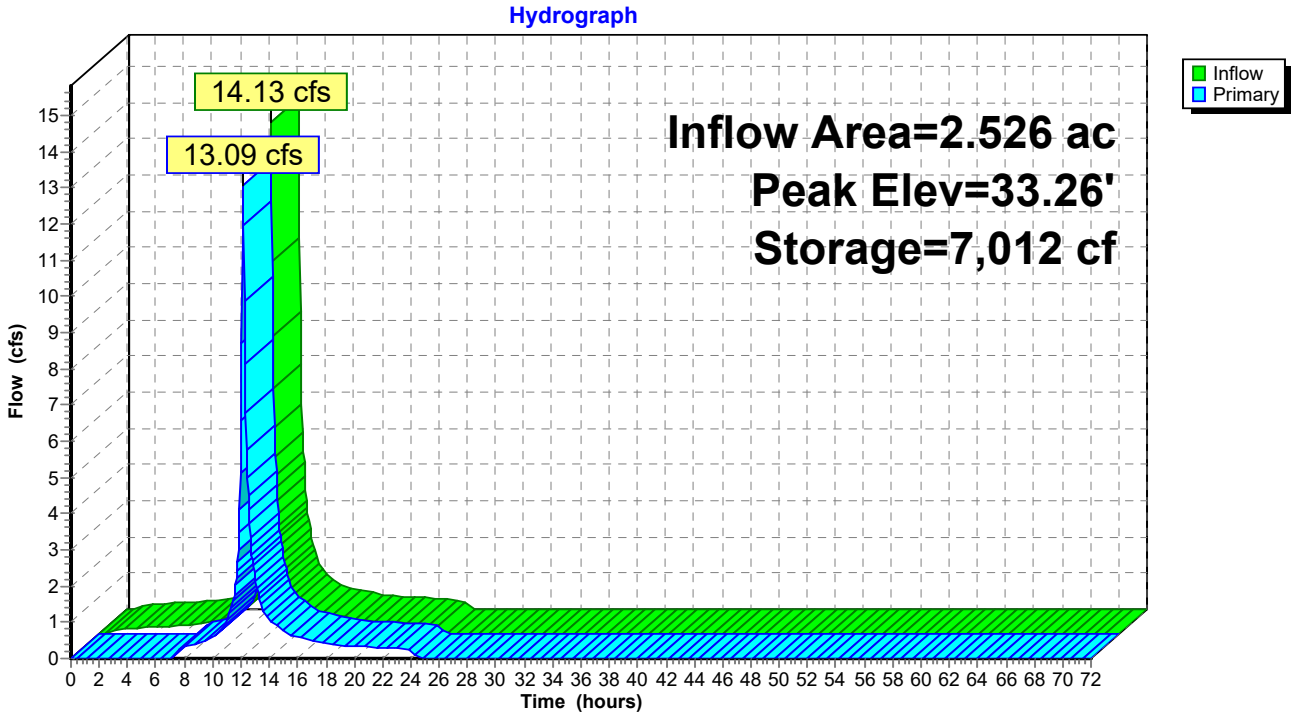
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	17,795 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	4,300	0	0
33.00	6,320	5,310	5,310
34.00	8,700	7,510	12,820
34.50	11,200	4,975	17,795

Device	Routing	Invert	Outlet Devices
#1	Primary	32.86'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.98 cfs @ 12.15 hrs HW=33.25' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 12.98 cfs @ 2.05 fps)

Pond 7P: Basin 4



Summary for Subcatchment 8S: Basin 4 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 201% of capacity of segment #3

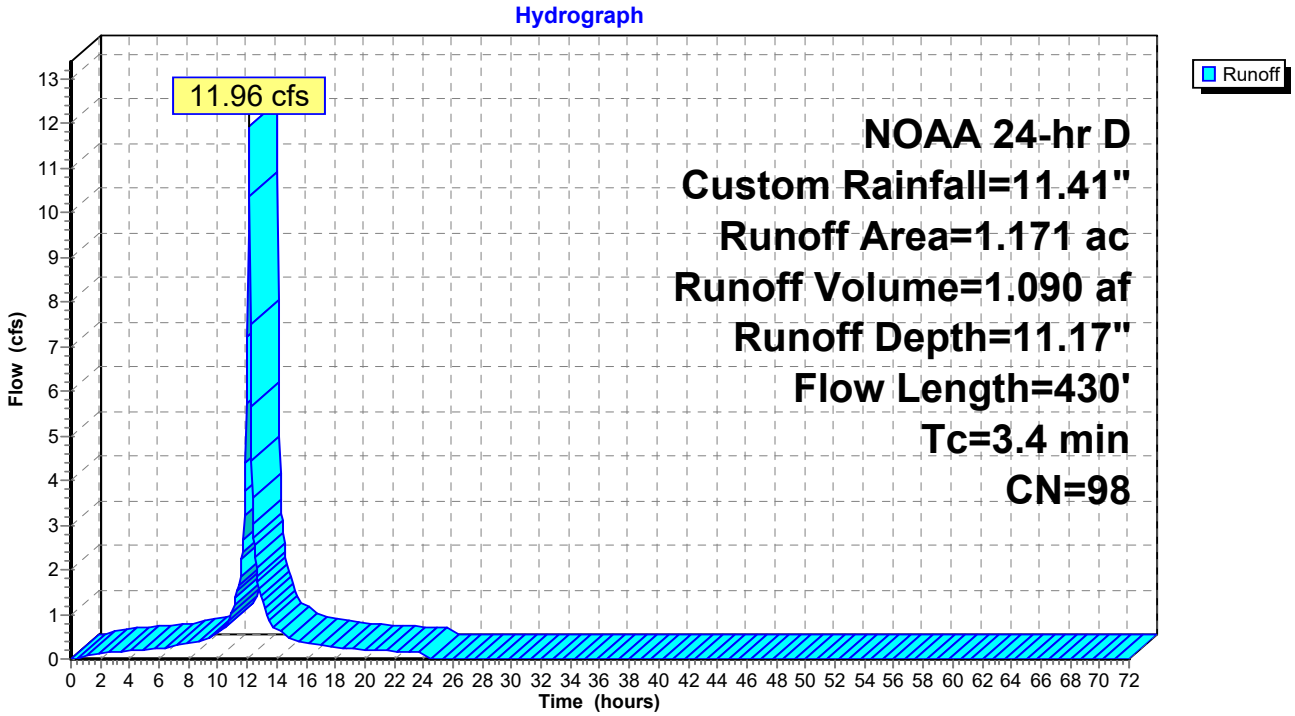
Runoff = 11.96 cfs @ 12.10 hrs, Volume= 1.090 af, Depth=11.17"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.171	98	Impervious
	1.171		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0100	1.17		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.6	200	0.0100	2.03		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.4	130	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.4	430	Total			

Subcatchment 8S: Basin 4 - Impervious



Summary for Subcatchment 9S: Basin 4 - Pervious

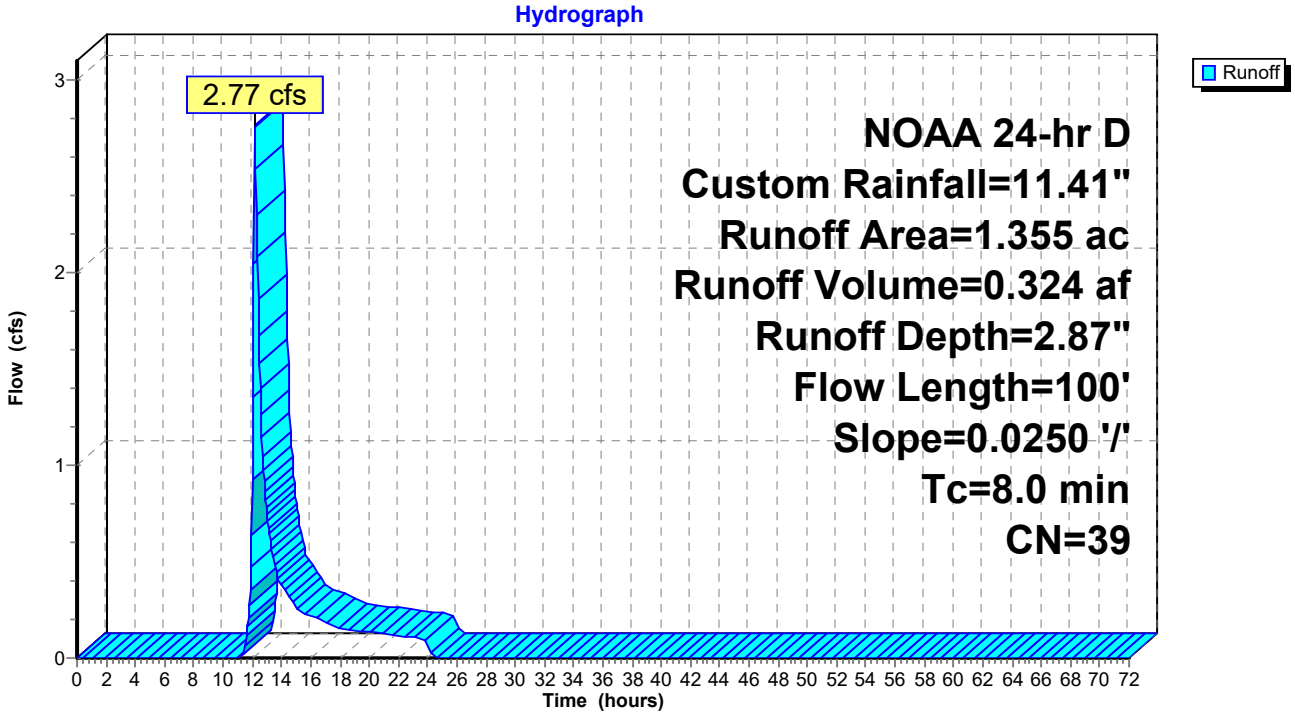
Runoff = 2.77 cfs @ 12.19 hrs, Volume= 0.324 af, Depth= 2.87"
Routed to Pond 7P : Basin 4

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.355	39	>75% Grass cover, Good, HSG A
1.355		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"

Subcatchment 9S: Basin 4 - Pervious



Summary for Pond 10P: Basin 5

Inflow Area = 1.373 ac, 35.40% Impervious, Inflow Depth = 7.00" for Custom event
Inflow = 10.01 cfs @ 12.10 hrs, Volume= 0.801 af
Outflow = 0.54 cfs @ 14.33 hrs, Volume= 0.758 af, Atten= 95%, Lag= 133.6 min
Primary = 0.54 cfs @ 14.33 hrs, Volume= 0.758 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.02' @ 14.33 hrs Surf.Area= 8,323 sf Storage= 20,956 cf

Plug-Flow detention time= 596.0 min calculated for 0.758 af (95% of inflow)
Center-of-Mass det. time= 566.3 min (1,355.4 - 789.1)

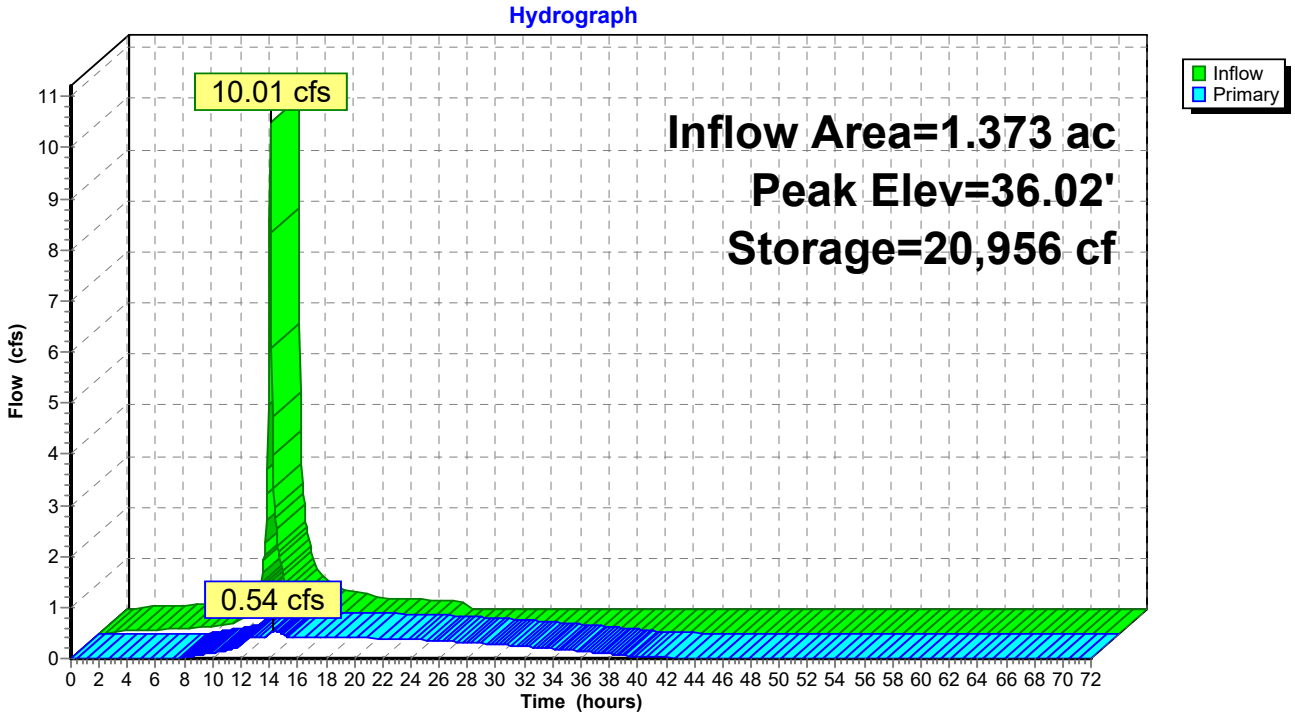
Volume	Invert	Avail.Storage	Storage Description
#1	32.00'	35,120 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
32.00	2,500	0	0
33.00	3,780	3,140	3,140
34.00	5,150	4,465	7,605
35.00	6,490	5,820	13,425
36.00	8,300	7,395	20,820
37.00	9,700	9,000	29,820
37.50	11,500	5,300	35,120

Device	Routing	Invert	Outlet Devices
#1	Primary	32.63'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	36.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.54 cfs @ 14.33 hrs HW=36.02' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.43 cfs @ 8.70 fps)
2=Orifice/Grate (Weir Controls 0.11 cfs @ 0.42 fps)

Pond 10P: Basin 5



Summary for Subcatchment 11S: Basin 5 - Impervious

[49] Hint: Tc<2dt may require smaller dt

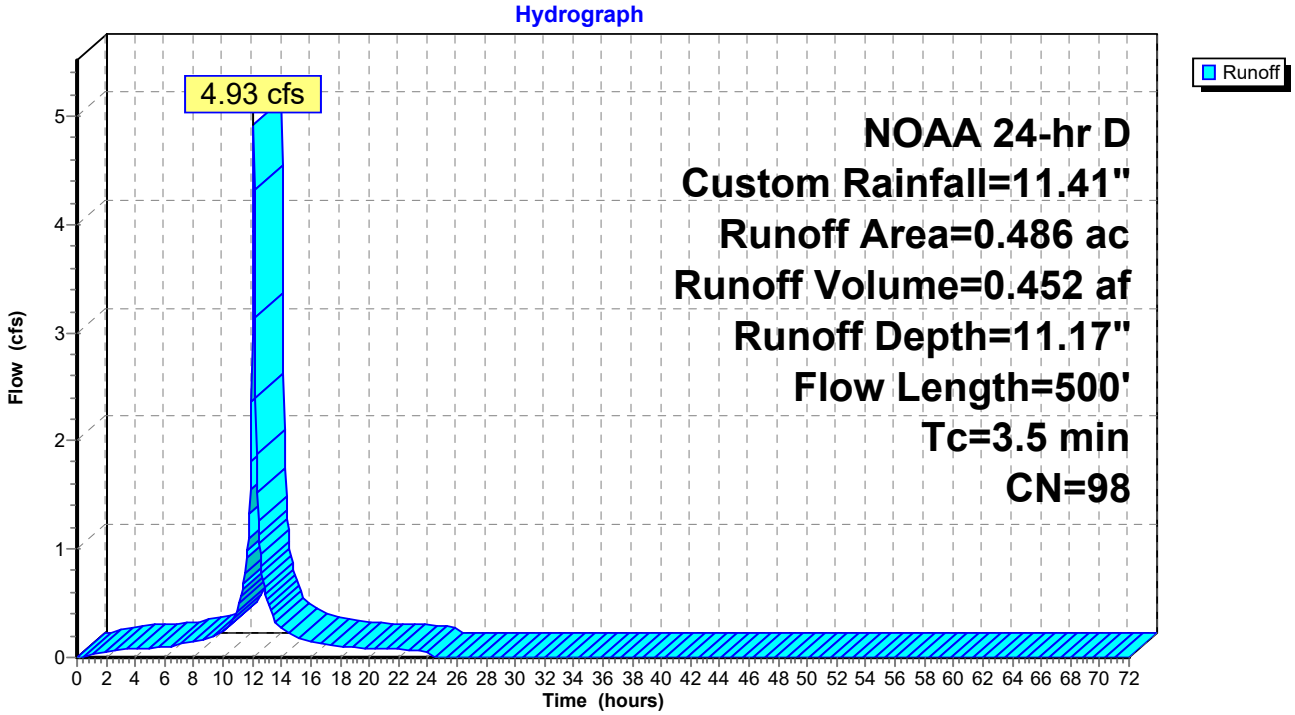
Runoff = 4.93 cfs @ 12.11 hrs, Volume= 0.452 af, Depth=11.17"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.486	98	Impervious
	0.486		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.0	300	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.5	500	Total			

Subcatchment 11S: Basin 5 - Impervious



Summary for Subcatchment 12S: Basin 5 - Pervious

[49] Hint: Tc<2dt may require smaller dt

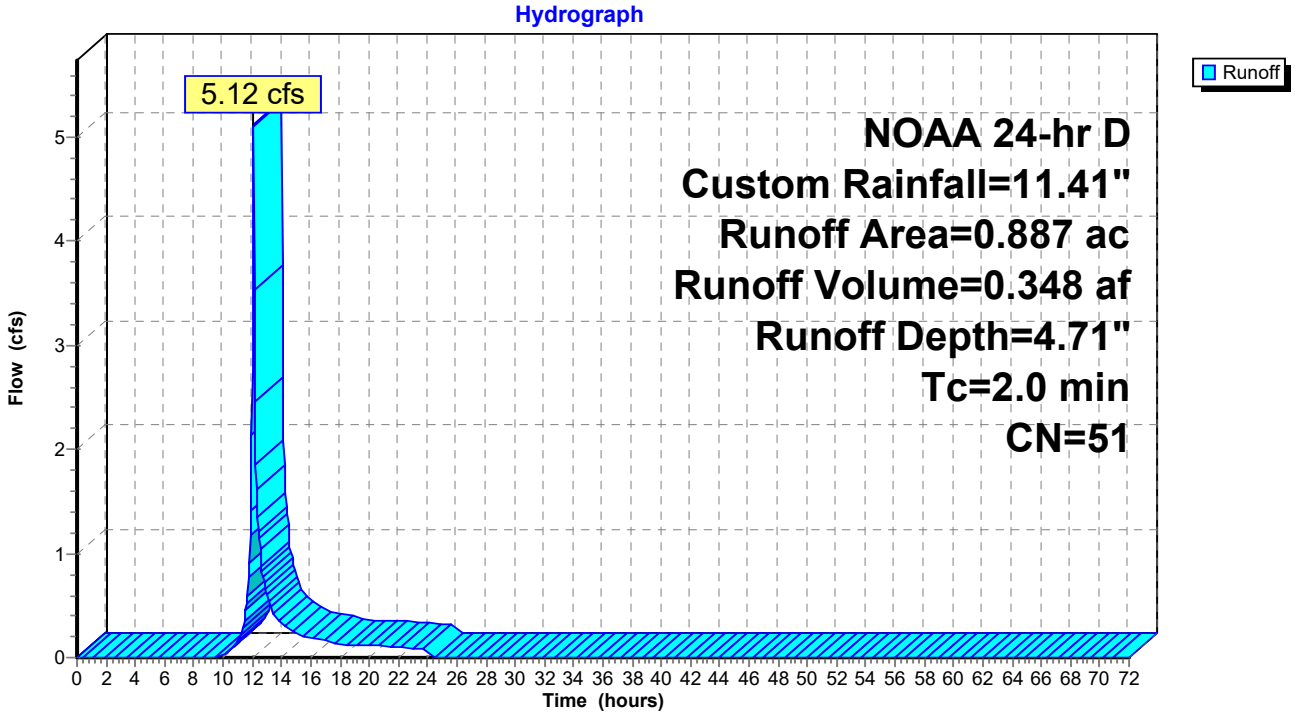
Runoff = 5.12 cfs @ 12.09 hrs, Volume= 0.348 af, Depth= 4.71"
Routed to Pond 10P : Basin 5

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
0.621	39	>75% Grass cover, Good, HSG A
0.266	80	>75% Grass cover, Good, HSG D
0.887	51	Weighted Average
0.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 12S: Basin 5 - Pervious



Summary for Pond 13P: Basin 7

Inflow Area = 3.928 ac, 40.63% Impervious, Inflow Depth = 9.24" for Custom event
Inflow = 27.29 cfs @ 12.17 hrs, Volume= 3.025 af
Outflow = 26.50 cfs @ 12.20 hrs, Volume= 2.909 af, Atten= 3%, Lag= 2.1 min
Primary = 26.50 cfs @ 12.20 hrs, Volume= 2.909 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 33.43' @ 12.20 hrs Surf.Area= 6,536 sf Storage= 8,756 cf

Plug-Flow detention time= 47.1 min calculated for 2.909 af (96% of inflow)
Center-of-Mass det. time= 23.9 min (811.9 - 788.0)

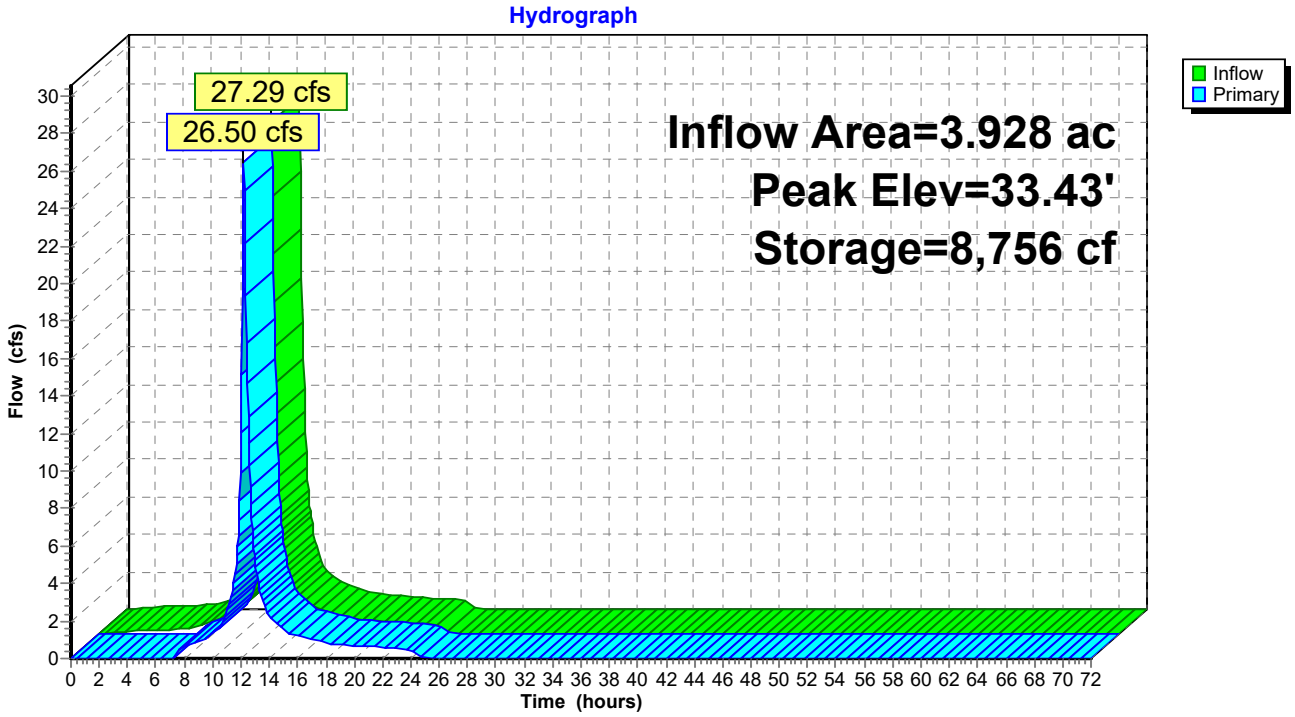
Volume	Invert	Avail.Storage	Storage Description
#1	31.50'	17,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.50	3,000	0	0
32.00	3,500	1,625	1,625
33.00	5,600	4,550	6,175
34.00	7,800	6,700	12,875
34.50	9,400	4,300	17,175

Device	Routing	Invert	Outlet Devices
#1	Primary	32.79'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=26.36 cfs @ 12.20 hrs HW=33.42' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 26.36 cfs @ 2.60 fps)

Pond 13P: Basin 7



Summary for Subcatchment 14S: Basin 7 - Impervious

[47] Hint: Peak is 157% of capacity of segment #3

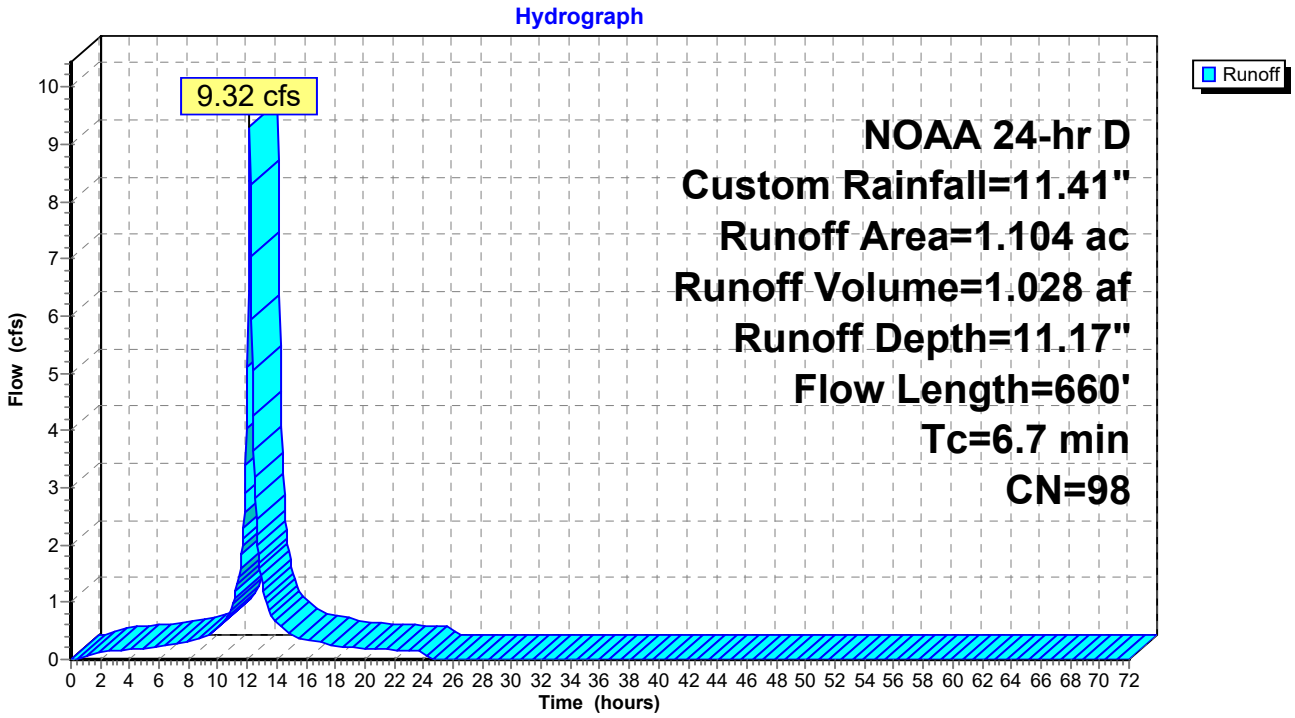
Runoff = 9.32 cfs @ 12.15 hrs, Volume= 1.028 af, Depth=11.17"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.104	98	Impervious
	1.104		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
4.9	500	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	60	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.7	660	Total			

Subcatchment 14S: Basin 7 - Impervious

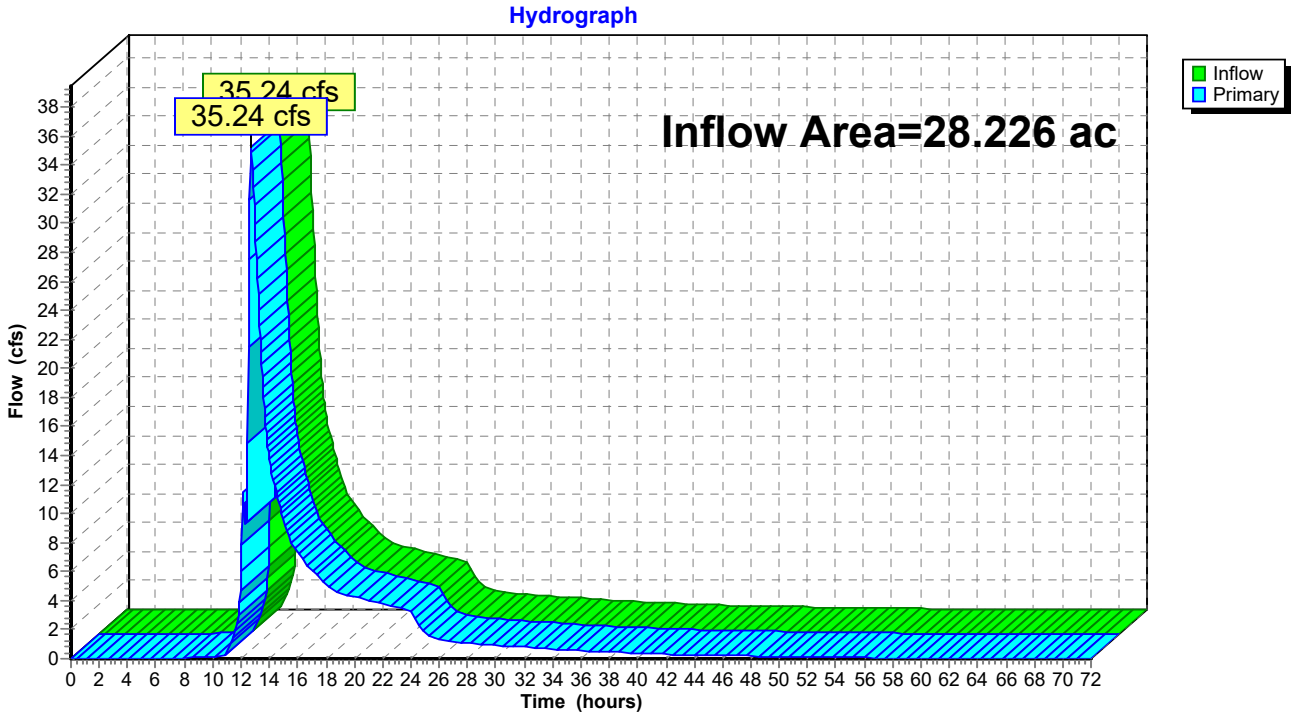


Summary for Link 15L: Willis Creek

Inflow Area = 28.226 ac, 38.93% Impervious, Inflow Depth > 4.15" for Custom event
Inflow = 35.24 cfs @ 12.73 hrs, Volume= 9.772 af
Primary = 35.24 cfs @ 12.73 hrs, Volume= 9.772 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 15L: Willis Creek



Summary for Subcatchment 15S: Basin 7 - Pervious

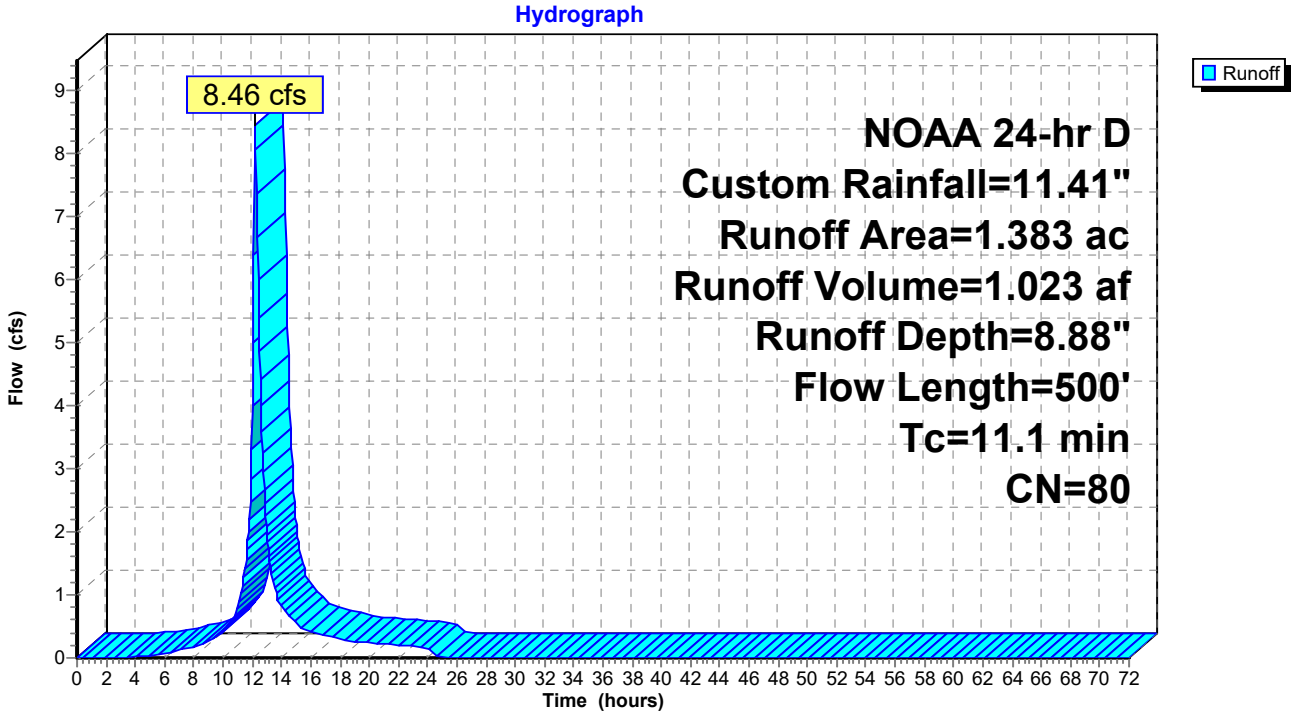
Runoff = 8.46 cfs @ 12.21 hrs, Volume= 1.023 af, Depth= 8.88"
Routed to Pond 13P : Basin 7

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.383	80	>75% Grass cover, Good, HSG D
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	80	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	20	0.0070	0.74		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
3.9	400	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
11.1	500	Total			

Subcatchment 15S: Basin 7 - Pervious



Summary for Pond 16P: Basin 9

Inflow Area = 7.133 ac, 41.50% Impervious, Inflow Depth = 7.31" for Custom event
Inflow = 42.77 cfs @ 12.13 hrs, Volume= 4.347 af
Outflow = 41.75 cfs @ 12.15 hrs, Volume= 4.249 af, Atten= 2%, Lag= 1.4 min
Primary = 41.75 cfs @ 12.15 hrs, Volume= 4.249 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 34.79' @ 12.15 hrs Surf.Area= 6,248 sf Storage= 9,164 cf

Plug-Flow detention time= 47.4 min calculated for 4.247 af (98% of inflow)
Center-of-Mass det. time= 17.6 min (882.7 - 865.0)

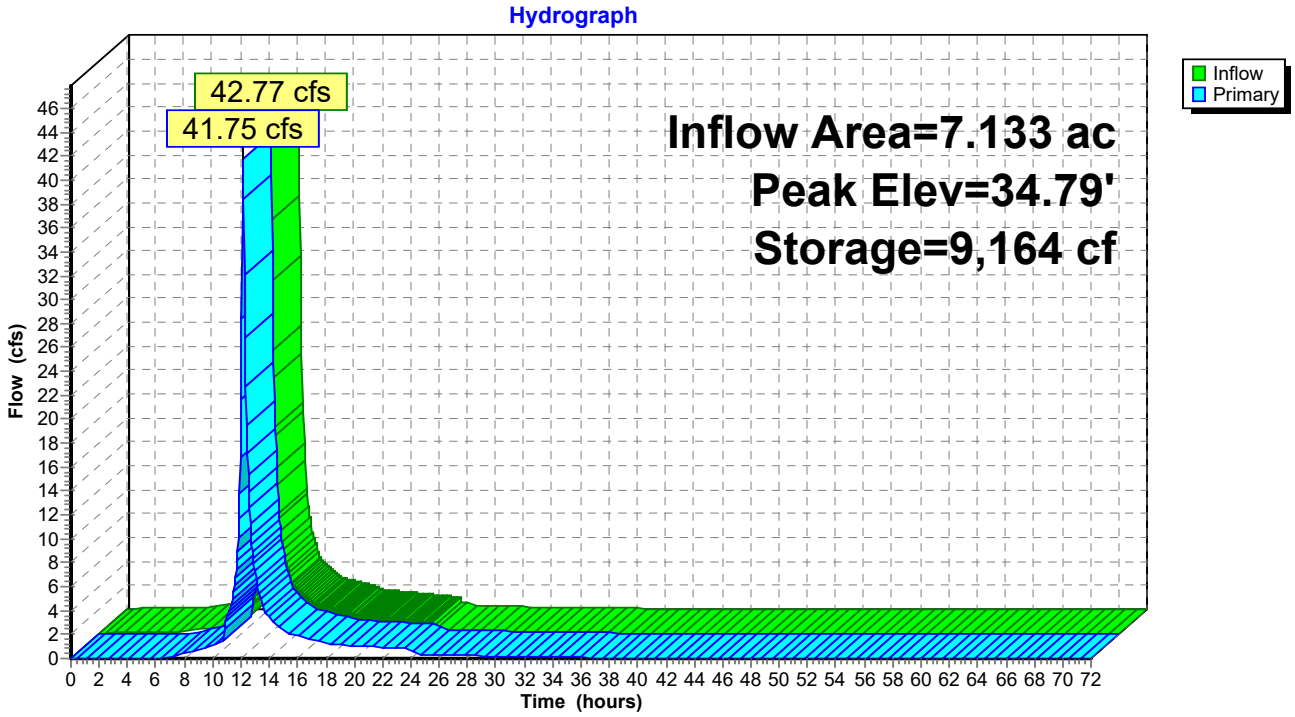
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	22,175 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,900	0	0
34.00	5,300	4,600	4,600
35.00	6,500	5,900	10,500
36.00	8,000	7,250	17,750
36.50	9,700	4,425	22,175

Device	Routing	Invert	Outlet Devices
#1	Primary	33.93'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=41.50 cfs @ 12.15 hrs HW=34.79' (Free Discharge)
1=Orifice/Grate (Weir Controls 41.50 cfs @ 3.03 fps)

Pond 16P: Basin 9



Summary for Subcatchment 17S: Basin 9 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 195% of capacity of segment #3

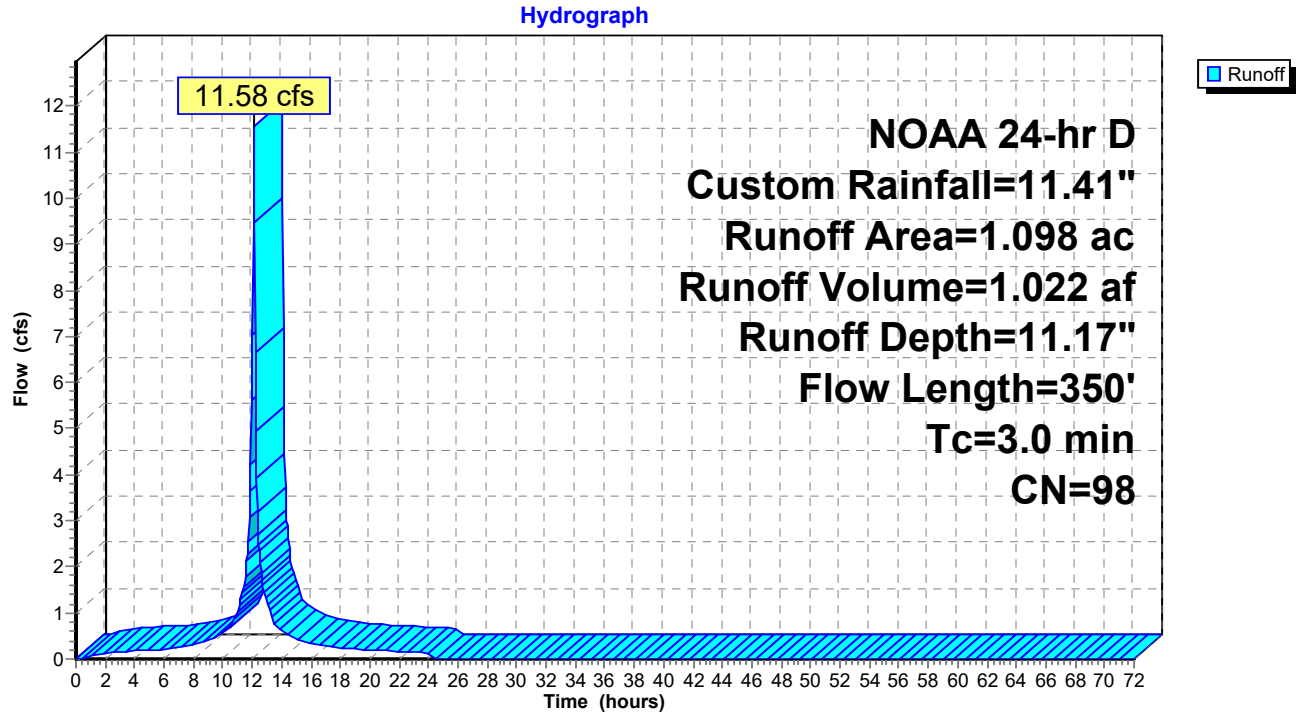
Runoff = 11.58 cfs @ 12.10 hrs, Volume= 1.022 af, Depth=11.17"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.098	98	Impervious
	1.098		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.9	100	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.0	350	Total			

Subcatchment 17S: Basin 9 - Impervious



Summary for Subcatchment 18S: Basin 9 - Pervious

[47] Hint: Peak is 128% of capacity of segment #4

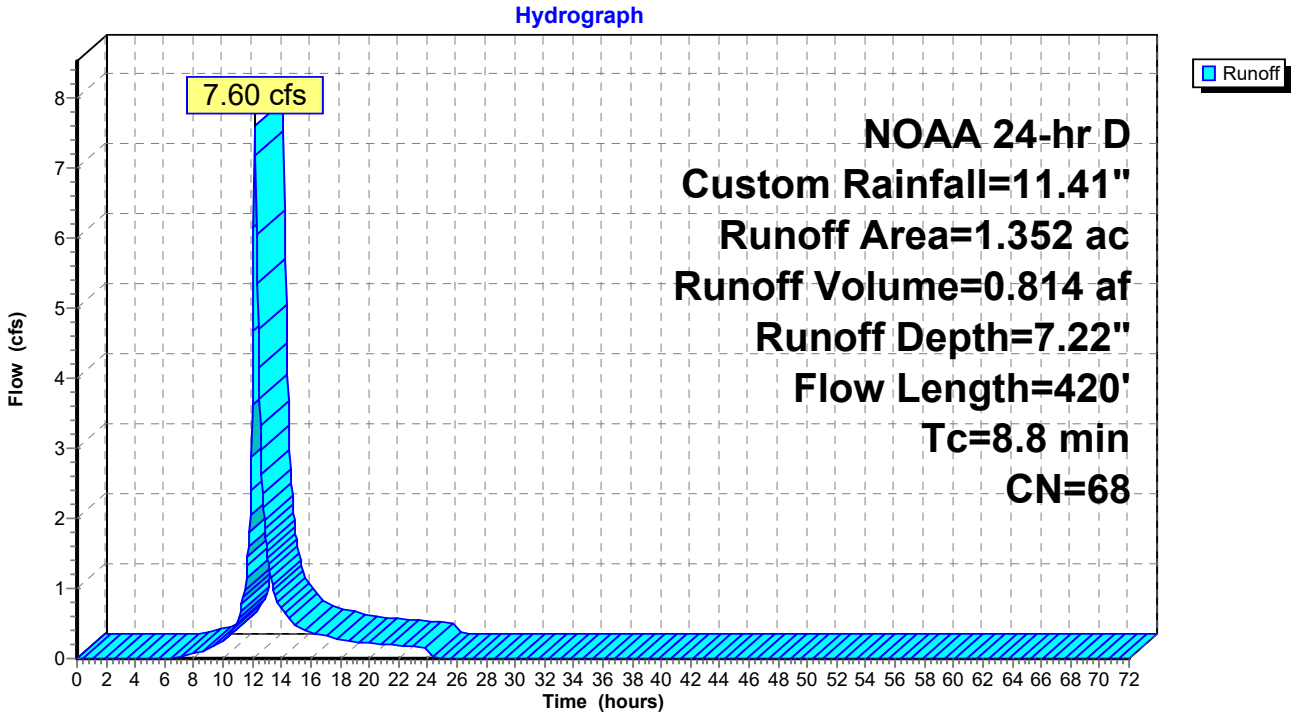
Runoff = 7.60 cfs @ 12.18 hrs, Volume= 0.814 af, Depth= 7.22"
Routed to Pond 16P : Basin 9

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
0.946	80	>75% Grass cover, Good, HSG D
0.406	39	>75% Grass cover, Good, HSG A
1.352	68	Weighted Average
1.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	70	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.6	30	0.0070	0.80		**Sheet Flow, B to C** Smooth surfaces n= 0.011 P2= 4.04"
1.7	170	0.0070	1.70		**Shallow Concentrated Flow, C to D** Paved Kv= 20.3 fps
0.5	150	0.0050	4.84	5.94	**Pipe Channel, D to E** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	420	Total			

Subcatchment 18S: Basin 9 - Pervious



Summary for Pond 19P: Basin 10

[93] Warning: Storage range exceeded by 11,476.13'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=124)
[81] Warning: Exceeded Pond 22P by 11,346.24' @ 12.15 hrs

Inflow Area = 4.683 ac, 39.76% Impervious, Inflow Depth = 6.64" for Custom event
Inflow = 24.85 cfs @ 12.13 hrs, Volume= 2.591 af
Outflow = 25.35 cfs @ 12.14 hrs, Volume= 2.511 af, Atten= 0%, Lag= 0.4 min
Primary = 25.35 cfs @ 12.14 hrs, Volume= 2.511 af
Routed to Pond 16P : Basin 9

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 11,514.63' @ 12.14 hrs Surf.Area= 8,000 sf Storage= 12,700 cf

Plug-Flow detention time= 149.8 min calculated for 2.509 af (97% of inflow)
Center-of-Mass det. time= 132.5 min (928.6 - 796.1)

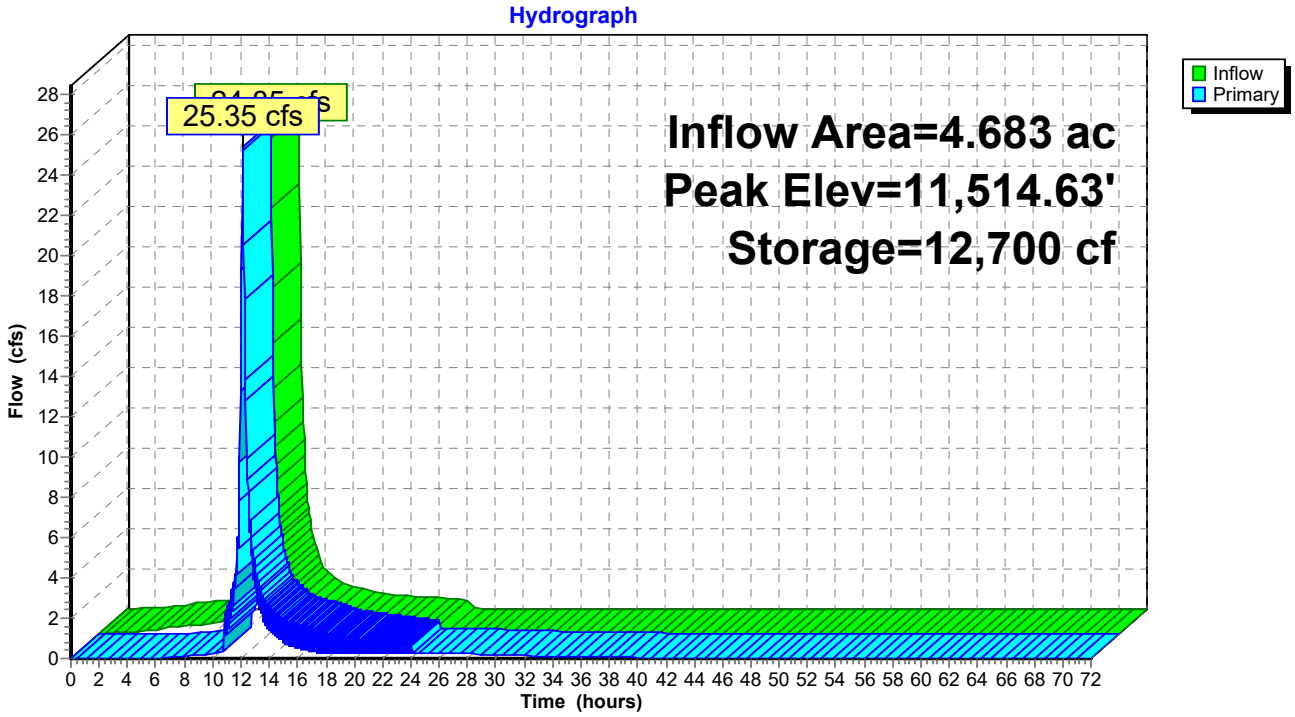
Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	12,700 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	2,700	0	0
37.00	4,400	3,550	3,550
38.00	6,600	5,500	9,050
38.50	8,000	3,650	12,700

Device	Routing	Invert	Outlet Devices
#1	Primary	36.97'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=24.79 cfs @ 12.14 hrs HW=11,037.12' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 24.79 cfs @ 505.00 fps)

Pond 19P: Basin 10



Summary for Subcatchment 20S: Basin 10 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 164% of capacity of segment #3

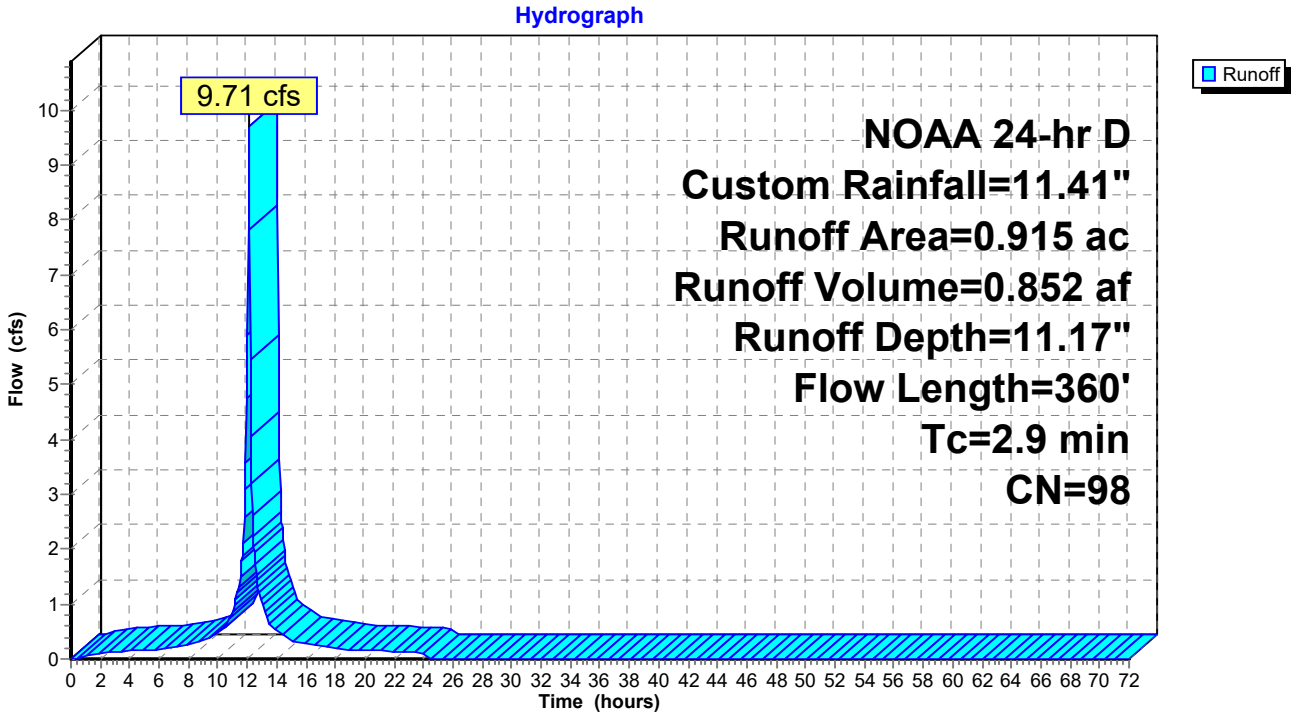
Runoff = 9.71 cfs @ 12.10 hrs, Volume= 0.852 af, Depth=11.17"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.915	98	Impervious
	0.915		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.6	60	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.7	200	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	360	Total			

Subcatchment 20S: Basin 10 - Impervious



Summary for Subcatchment 21S: Basin 10 - Pervious

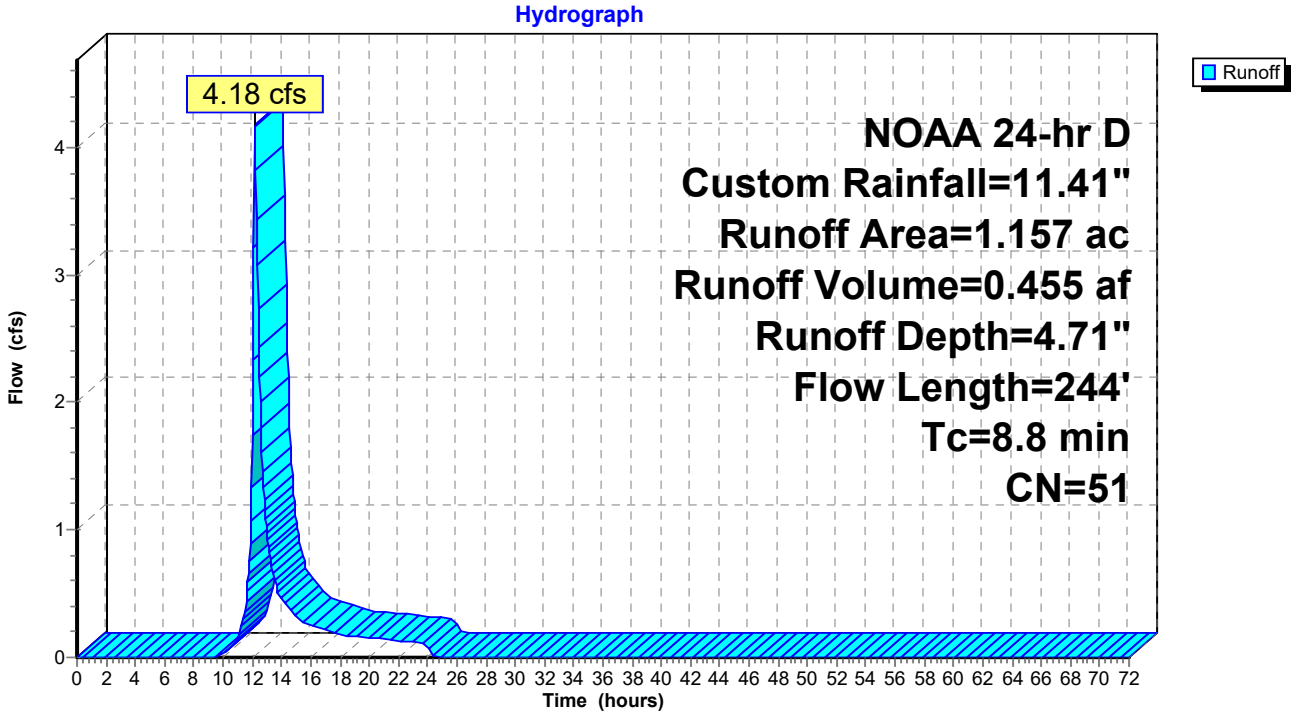
Runoff = 4.18 cfs @ 12.19 hrs, Volume= 0.455 af, Depth= 4.71"
Routed to Pond 19P : Basin 10

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
0.347	80	>75% Grass cover, Good, HSG D
0.810	39	>75% Grass cover, Good, HSG A
1.157	51	Weighted Average
1.157		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.5	150	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
8.8	244	Total			

Subcatchment 21S: Basin 10 - Pervious



Summary for Pond 22P: Basin 11

Inflow Area = 2.611 ac, 36.27% Impervious, Inflow Depth = 6.07" for Custom event
Inflow = 12.97 cfs @ 12.13 hrs, Volume= 1.322 af
Outflow = 12.71 cfs @ 12.15 hrs, Volume= 1.285 af, Atten= 2%, Lag= 1.6 min
Primary = 12.71 cfs @ 12.15 hrs, Volume= 1.285 af
Routed to Pond 19P : Basin 10

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 38.89' @ 12.15 hrs Surf.Area= 4,138 sf Storage= 3,103 cf

Plug-Flow detention time= 39.1 min calculated for 1.285 af (97% of inflow)
Center-of-Mass det. time= 21.7 min (810.6 - 788.9)

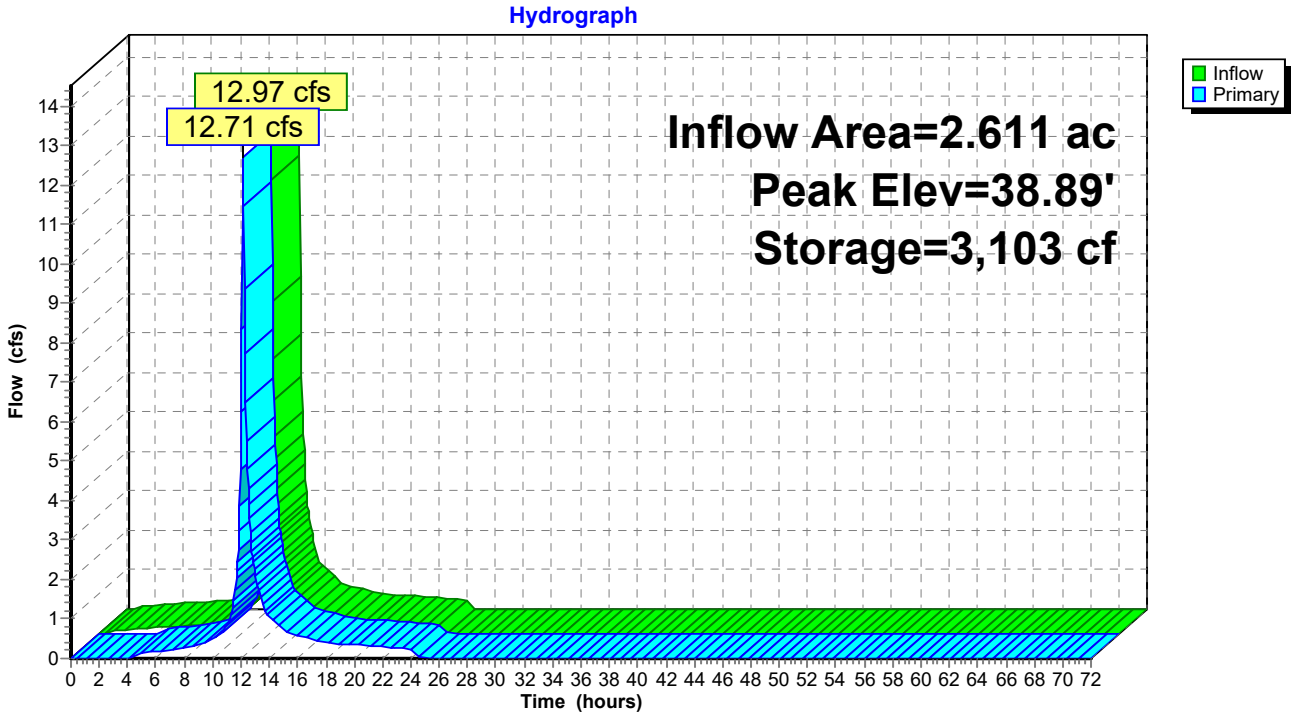
Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	9,170 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	2,840	0	0
39.00	4,300	3,570	3,570
40.00	6,900	5,600	9,170

Device	Routing	Invert	Outlet Devices
#1	Primary	38.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.63 cfs @ 12.15 hrs HW=38.89' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 12.63 cfs @ 2.04 fps)

Pond 22P: Basin 11



Summary for Subcatchment 23S: Basin 11 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 158% of capacity of segment #3

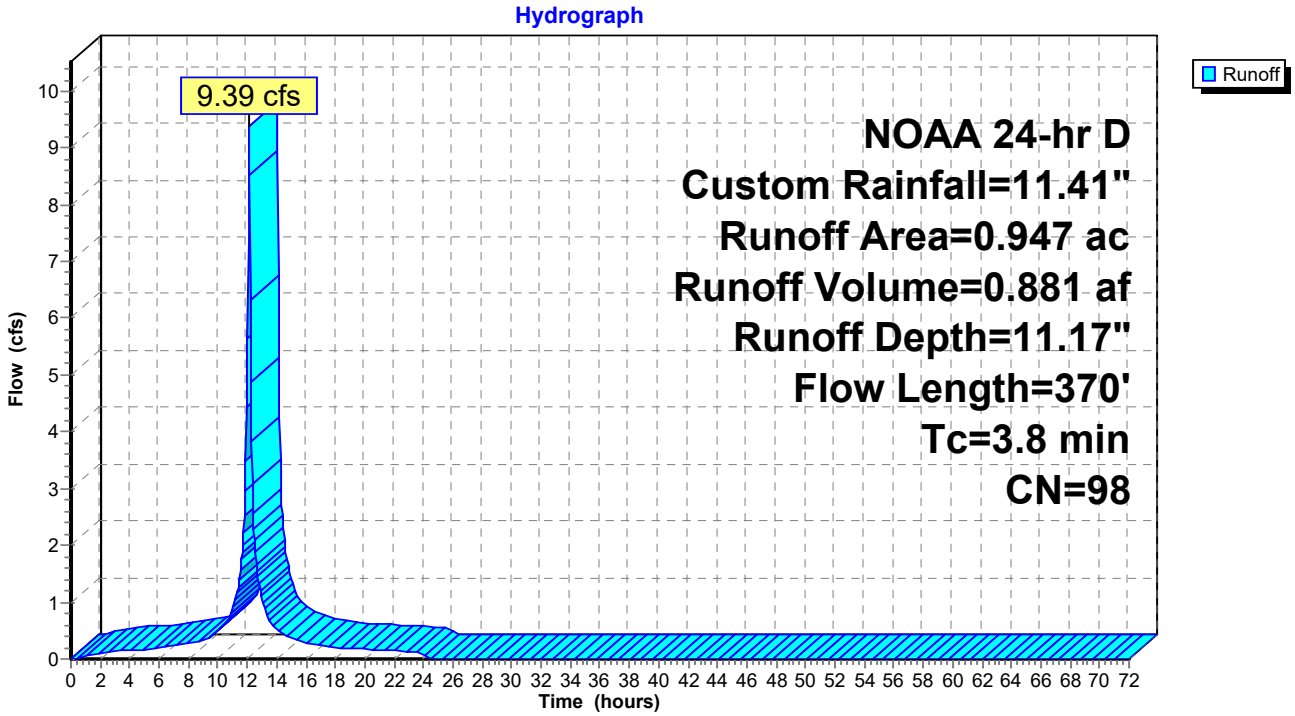
Runoff = 9.39 cfs @ 12.11 hrs, Volume= 0.881 af, Depth=11.17"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.947	98	Impervious
	0.947		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
2.0	200	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.2	70	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
3.8	370	Total			

Subcatchment 23S: Basin 11 - Impervious



Summary for Subcatchment 24S: Basin 11 - Pervious

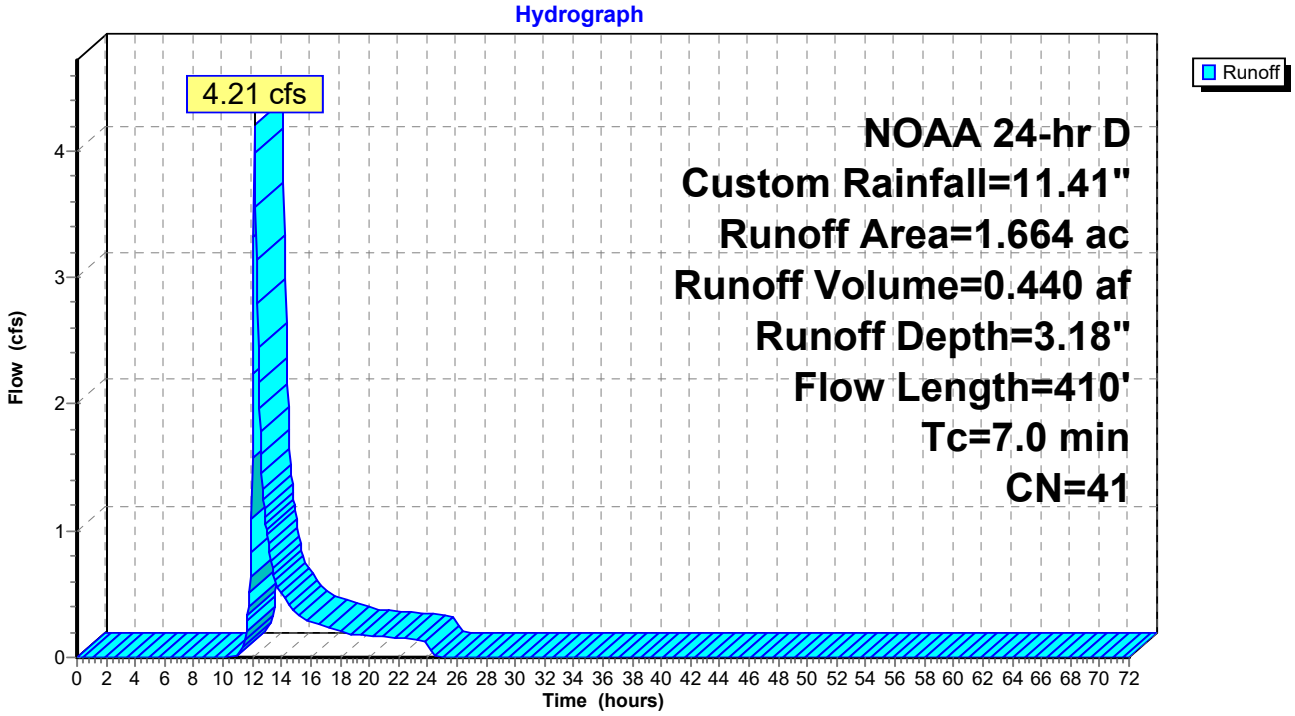
Runoff = 4.21 cfs @ 12.17 hrs, Volume= 0.440 af, Depth= 3.18"
Routed to Pond 22P : Basin 11

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
0.083	80	>75% Grass cover, Good, HSG D
1.581	39	>75% Grass cover, Good, HSG A
1.664	41	Weighted Average
1.664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	60	0.0200	0.17		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.2	350	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.0	410	Total			

Subcatchment 24S: Basin 11 - Pervious



Summary for Pond 25P: Basin 12

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 4.63" for Custom event
Inflow = 7.20 cfs @ 12.12 hrs, Volume= 0.818 af
Outflow = 0.20 cfs @ 22.72 hrs, Volume= 0.051 af, Atten= 97%, Lag= 636.0 min
Primary = 0.20 cfs @ 22.72 hrs, Volume= 0.051 af
Routed to Pond 40P : Wetlands Depression

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.52' @ 22.72 hrs Surf.Area= 17,330 sf Storage= 33,831 cf

Plug-Flow detention time= 1,072.2 min calculated for 0.051 af (6% of inflow)
Center-of-Mass det. time= 575.9 min (1,392.4 - 816.5)

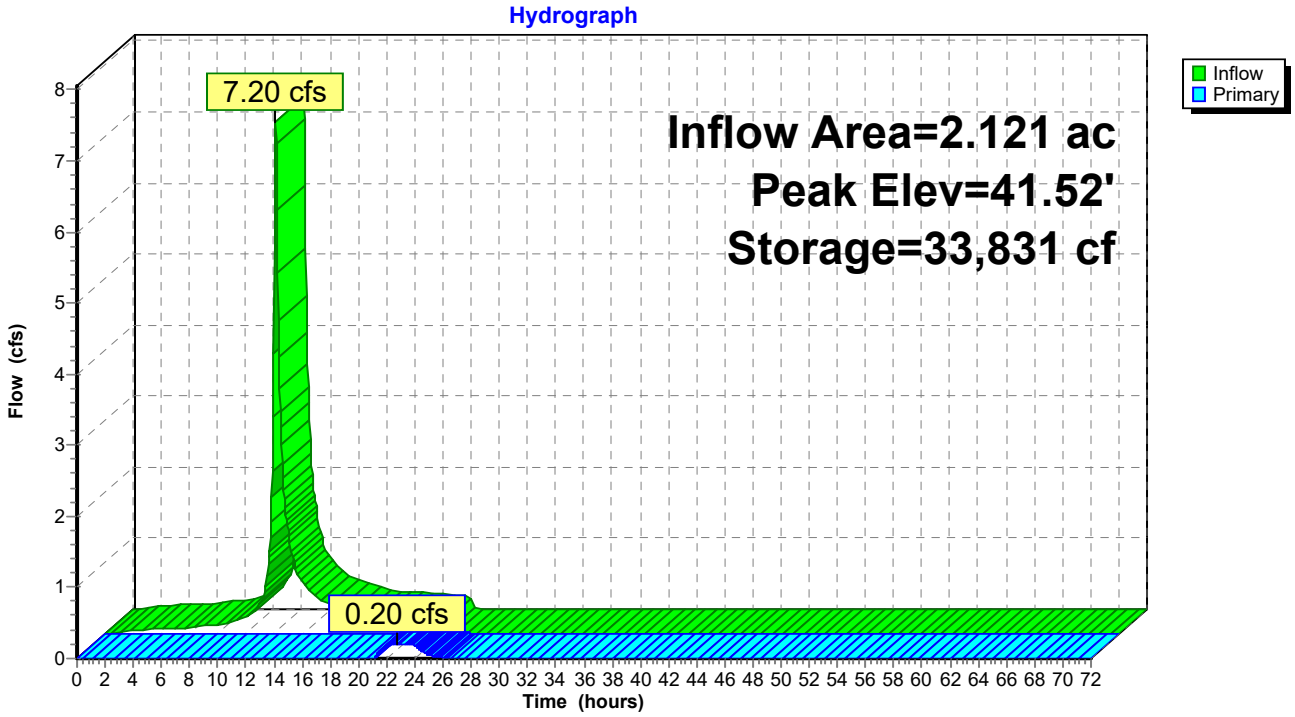
Volume	Invert	Avail.Storage	Storage Description
#1	39.00'	52,425 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.00	9,700	0	0
40.00	12,550	11,125	11,125
41.00	15,600	14,075	25,200
42.00	18,900	17,250	42,450
42.50	21,000	9,975	52,425

Device	Routing	Invert	Outlet Devices
#1	Primary	41.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.19 cfs @ 22.72 hrs HW=41.52' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.19 cfs @ 0.39 fps)

Pond 25P: Basin 12



Summary for Subcatchment 26S: Basin 12 - Impervious

[49] Hint: Tc<2dt may require smaller dt

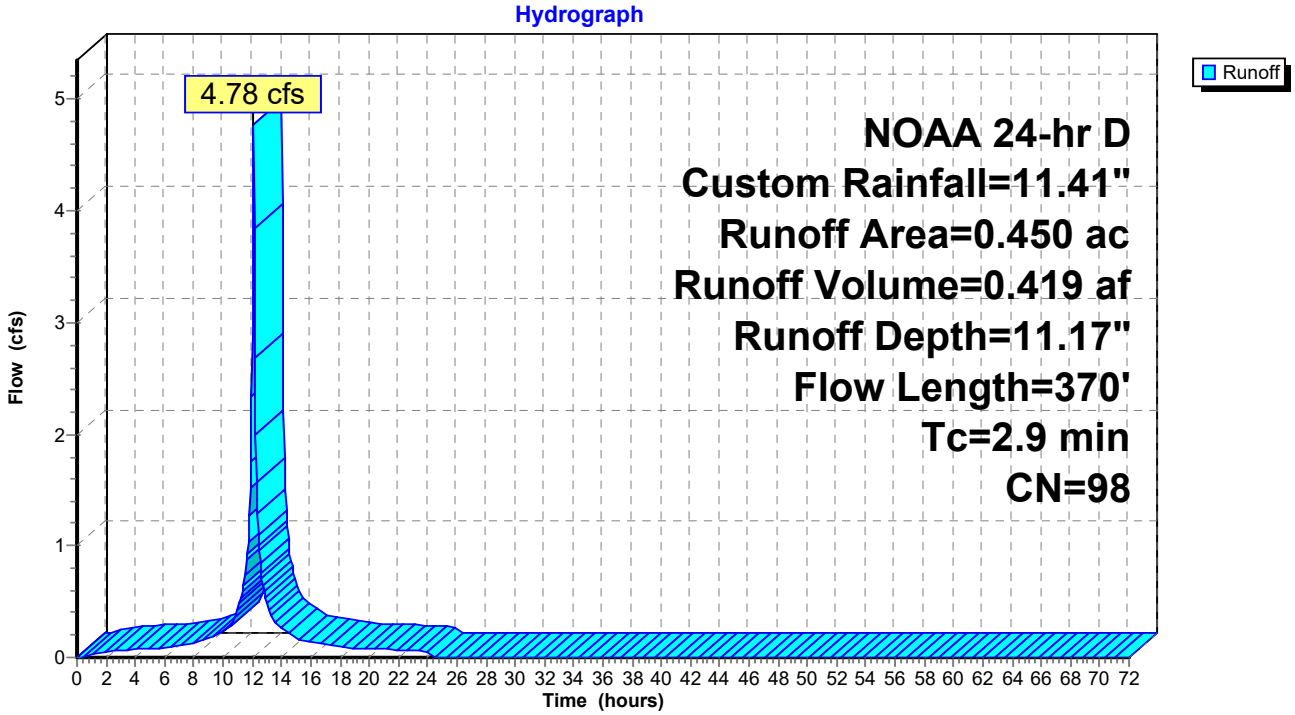
Runoff = 4.78 cfs @ 12.10 hrs, Volume= 0.419 af, Depth=11.17"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.450	98	Impervious
	0.450		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
0.5	50	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
0.8	220	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
2.9	370	Total			

Subcatchment 26S: Basin 12 - Impervious



Summary for Subcatchment 27S: Basin 12 - Pervious

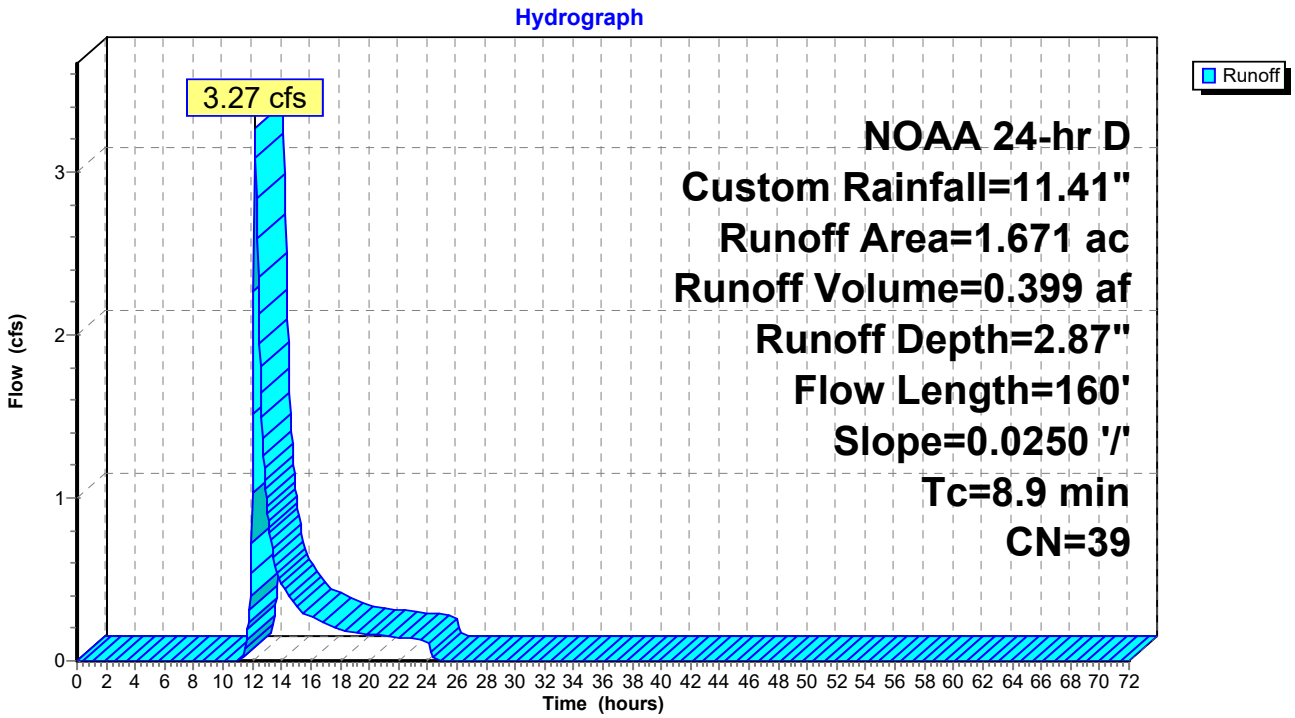
Runoff = 3.27 cfs @ 12.20 hrs, Volume= 0.399 af, Depth= 2.87"
Routed to Pond 25P : Basin 12

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.671	39	>75% Grass cover, Good, HSG A
1.671		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	100	0.0250	0.21		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
0.9	60	0.0250	1.11		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
8.9	160	Total			

Subcatchment 27S: Basin 12 - Pervious



Summary for Pond 29P: Basin 6

Inflow Area = 1.441 ac, 34.14% Impervious, Inflow Depth = 8.48" for Custom event
Inflow = 10.19 cfs @ 12.15 hrs, Volume= 1.018 af
Outflow = 9.94 cfs @ 12.17 hrs, Volume= 0.974 af, Atten= 2%, Lag= 1.2 min
Primary = 9.94 cfs @ 12.17 hrs, Volume= 0.974 af
Routed to Pond 13P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.17' @ 12.17 hrs Surf.Area= 3,206 sf Storage= 2,875 cf

Plug-Flow detention time= 51.5 min calculated for 0.974 af (96% of inflow)
Center-of-Mass det. time= 25.9 min (815.6 - 789.6)

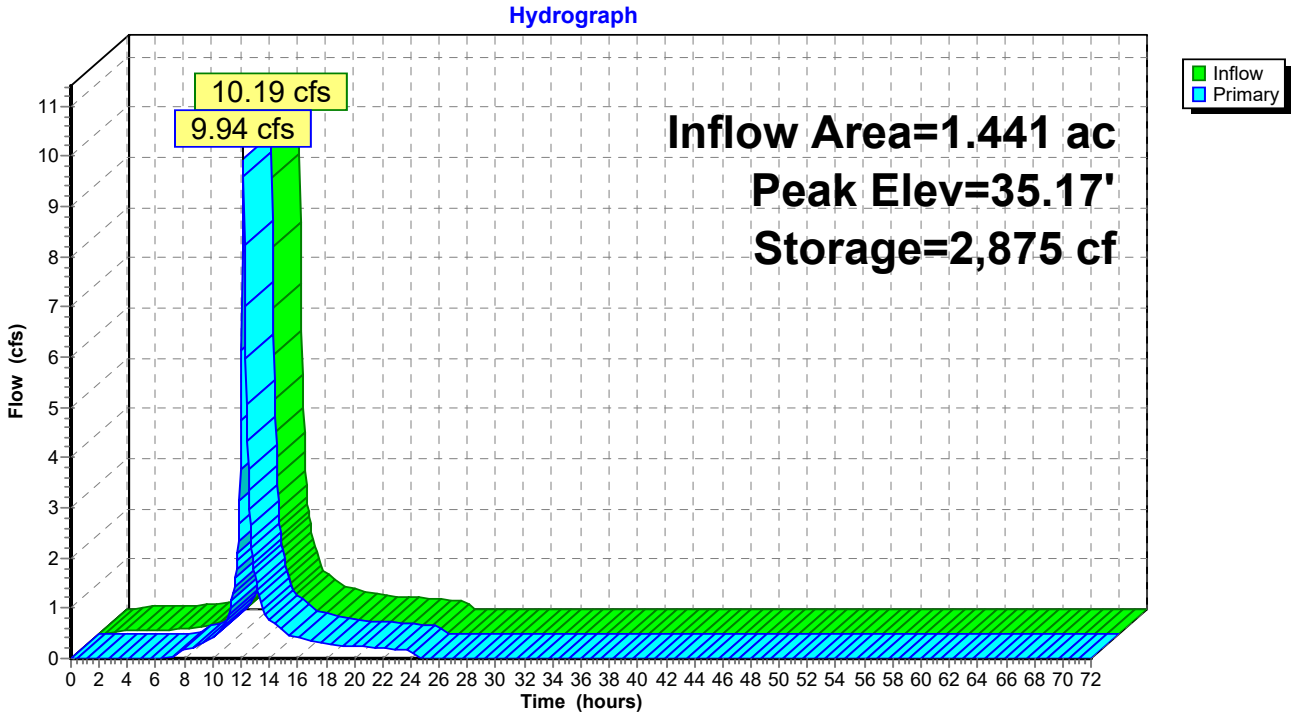
Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	4,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	1,750	0	0
35.00	2,950	2,350	2,350
35.50	3,700	1,663	4,013

Device	Routing	Invert	Outlet Devices
#1	Primary	34.84'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.71 cfs @ 12.17 hrs HW=35.17' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 9.71 cfs @ 1.87 fps)

Pond 29P: Basin 6



Summary for Subcatchment 30S: Basin 6 - Impervious

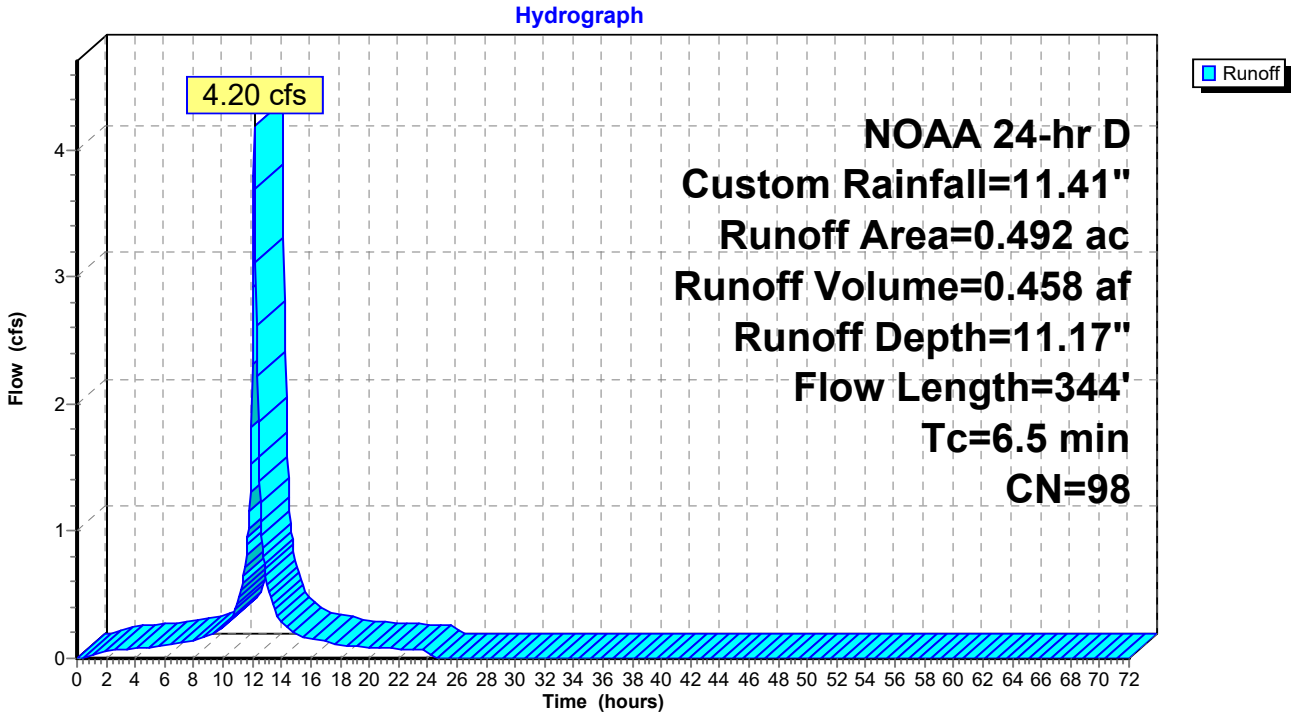
Runoff = 4.20 cfs @ 12.15 hrs, Volume= 0.458 af, Depth=11.17"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.492	98	Impervious
	0.492		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 30S: Basin 6 - Impervious



Summary for Subcatchment 32S: Basin 6 - Pervious

[47] Hint: Peak is 101% of capacity of segment #2

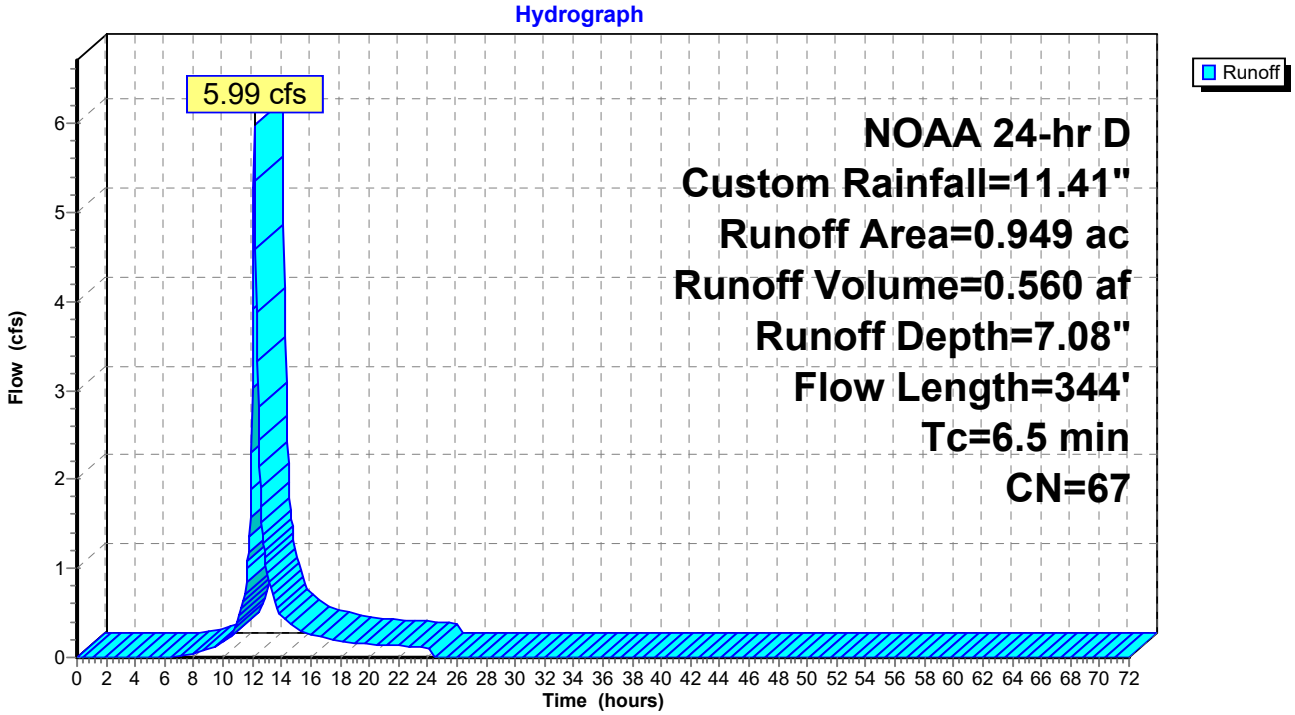
Runoff = 5.99 cfs @ 12.15 hrs, Volume= 0.560 af, Depth= 7.08"
Routed to Pond 29P : Basin 6

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
0.637	80	>75% Grass cover, Good, HSG D
0.312	39	>75% Grass cover, Good, HSG A
0.949	67	Weighted Average
0.949		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	63	0.0250	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	281	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
6.5	344	Total			

Subcatchment 32S: Basin 6 - Pervious



Summary for Pond 33P: Basin 8

Inflow Area = 3.061 ac, 36.82% Impervious, Inflow Depth = 9.72" for Custom event
Inflow = 20.89 cfs @ 12.15 hrs, Volume= 2.479 af
Outflow = 20.16 cfs @ 12.19 hrs, Volume= 2.353 af, Atten= 4%, Lag= 2.2 min
Primary = 20.16 cfs @ 12.19 hrs, Volume= 2.353 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 36.20' @ 12.19 hrs Surf.Area= 6,599 sf Storage= 8,752 cf

Plug-Flow detention time= 61.3 min calculated for 2.353 af (95% of inflow)
Center-of-Mass det. time= 30.8 min (809.5 - 778.7)

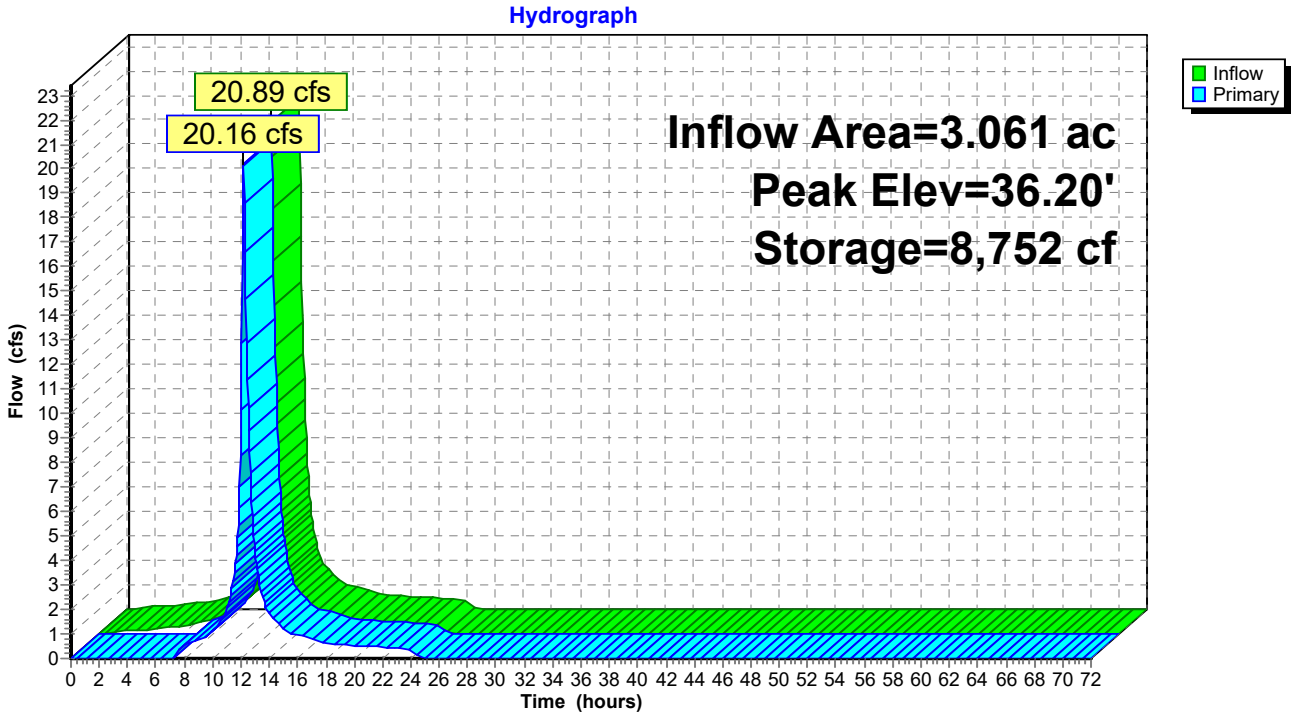
Volume	Invert	Avail.Storage	Storage Description
#1	34.50'	10,825 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.50	4,000	0	0
35.00	4,500	2,125	2,125
36.00	6,200	5,350	7,475
36.50	7,200	3,350	10,825

Device	Routing	Invert	Outlet Devices
#1	Primary	35.67'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=19.98 cfs @ 12.19 hrs HW=36.20' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 19.98 cfs @ 2.37 fps)

Pond 33P: Basin 8



Summary for Subcatchment 34S: Basin 8 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 182% of capacity of segment #3

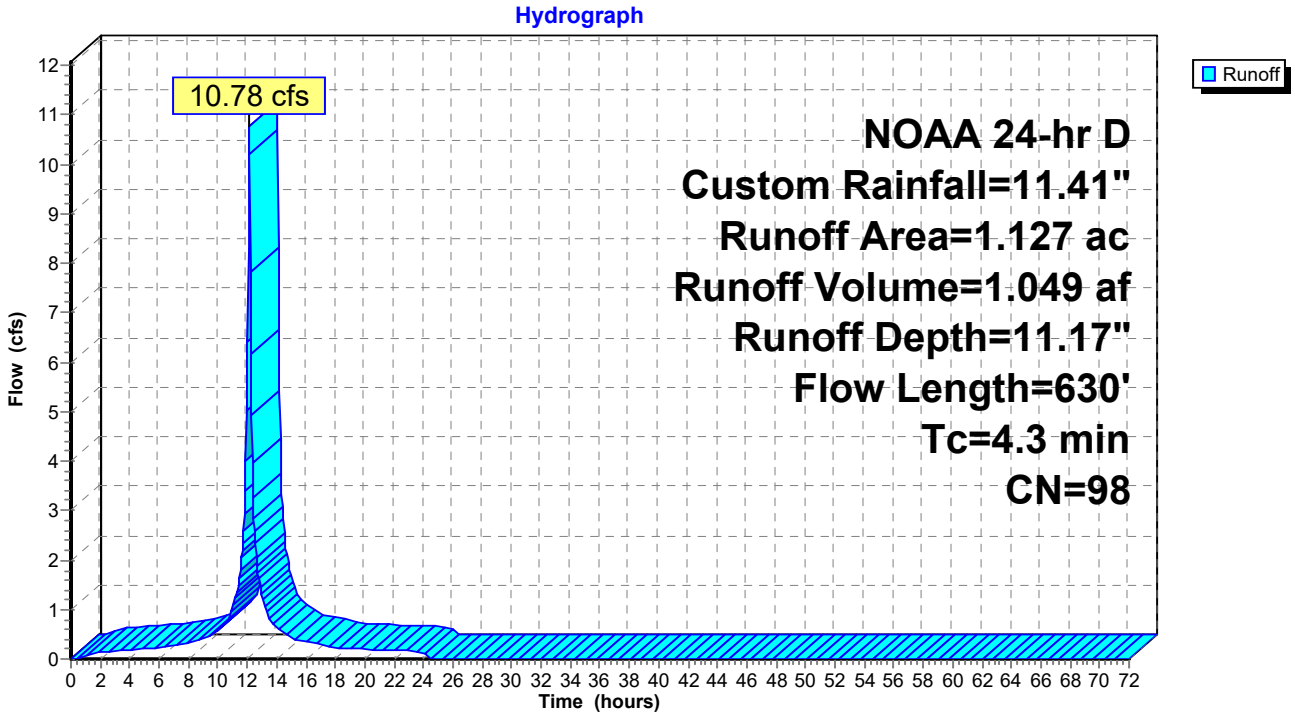
Runoff = 10.78 cfs @ 12.12 hrs, Volume= 1.049 af, Depth=11.17"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	1.127	98	Impervious
	1.127		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0070	1.02		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.3	130	0.0070	1.70		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.3	630	Total			

Subcatchment 34S: Basin 8 - Impervious



Summary for Subcatchment 35S: Basin 8 - Pervious

[47] Hint: Peak is 196% of capacity of segment #3

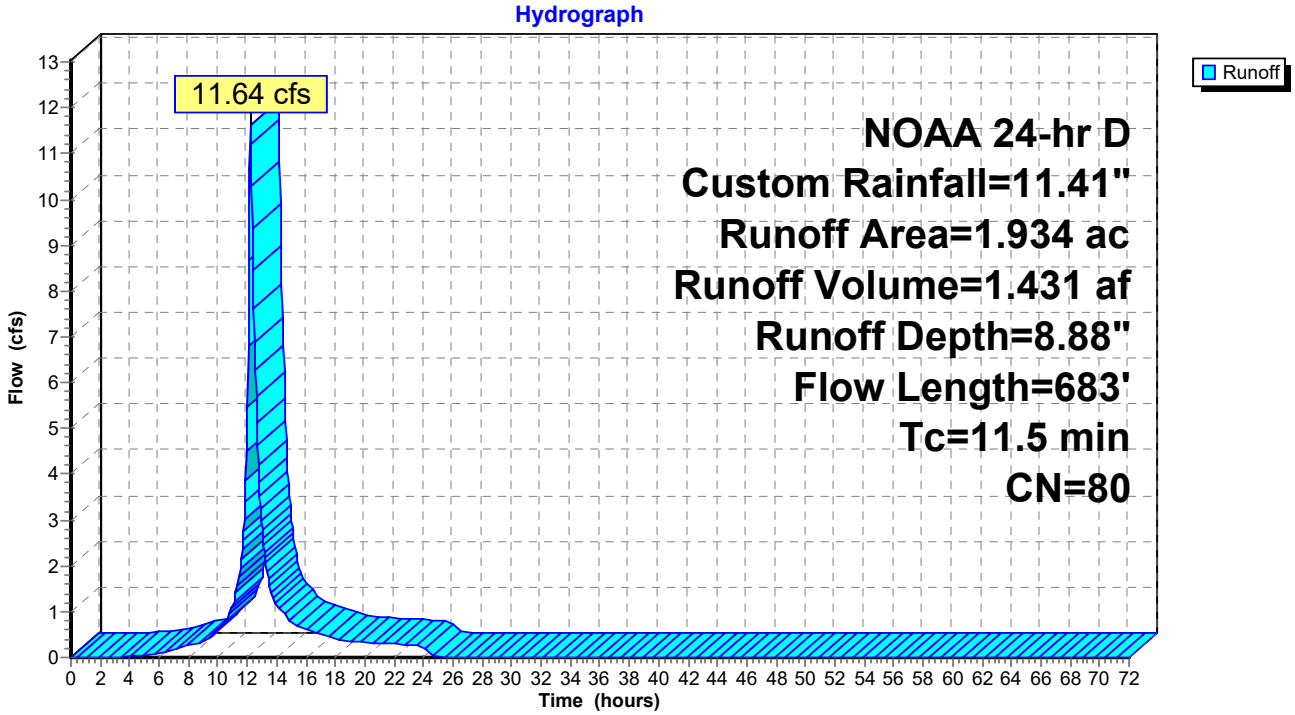
Runoff = 11.64 cfs @ 12.21 hrs, Volume= 1.431 af, Depth= 8.88"
Routed to Pond 33P : Basin 8

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.934	80	>75% Grass cover, Good, HSG D
1.934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	94	0.0200	0.19		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.5	89	0.0200	0.99		**Shallow Concentrated Flow, B to C** Short Grass Pasture Kv= 7.0 fps
1.7	500	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
11.5	683	Total			

Subcatchment 35S: Basin 8 - Pervious



Summary for Pond 40P: Wetlands Depression

[81] Warning: Exceeded Pond 25P by 0.18' @ 71.80 hrs

Inflow Area = 2.121 ac, 21.22% Impervious, Inflow Depth = 0.29" for Custom event
Inflow = 0.20 cfs @ 22.72 hrs, Volume= 0.051 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 15L : Willis Creek

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 41.68' @ 71.80 hrs Surf.Area= 7,465 sf Storage= 2,222 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

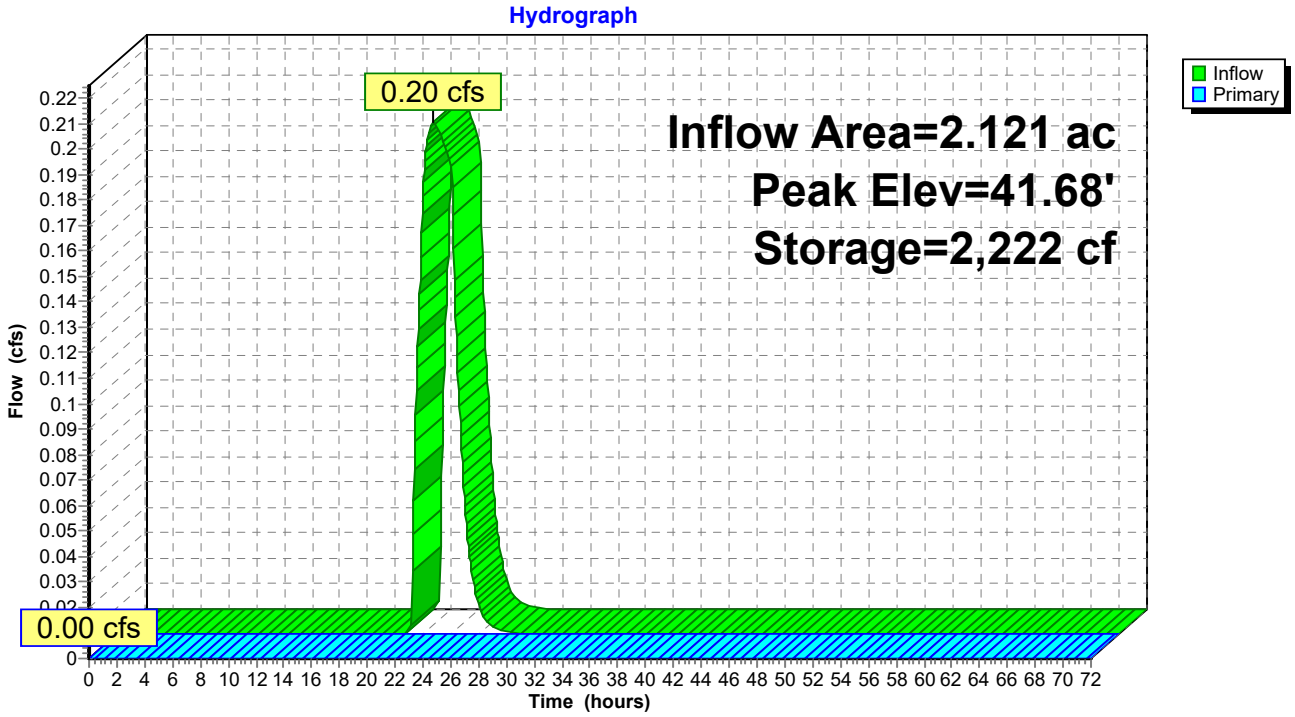
Volume	Invert	Avail.Storage	Storage Description
#1	41.00'	16,741 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
41.00	405	0	0
41.50	4,300	1,176	1,176
42.00	13,200	4,375	5,551
42.50	31,560	11,190	16,741

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**50.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 40P: Wetlands Depression



Summary for Pond 41P: Basin 13

Inflow Area = 2.042 ac, 32.27% Impervious, Inflow Depth = 5.55" for Custom event
Inflow = 8.91 cfs @ 12.14 hrs, Volume= 0.944 af
Outflow = 5.65 cfs @ 12.30 hrs, Volume= 0.884 af, Atten= 37%, Lag= 9.3 min
Primary = 5.65 cfs @ 12.30 hrs, Volume= 0.884 af
Routed to Pond 4P : Basin 3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 35.22' @ 12.30 hrs Surf.Area= 9,269 sf Storage= 15,065 cf

Plug-Flow detention time= 390.5 min calculated for 0.884 af (94% of inflow)
Center-of-Mass det. time= 355.5 min (1,150.5 - 795.0)

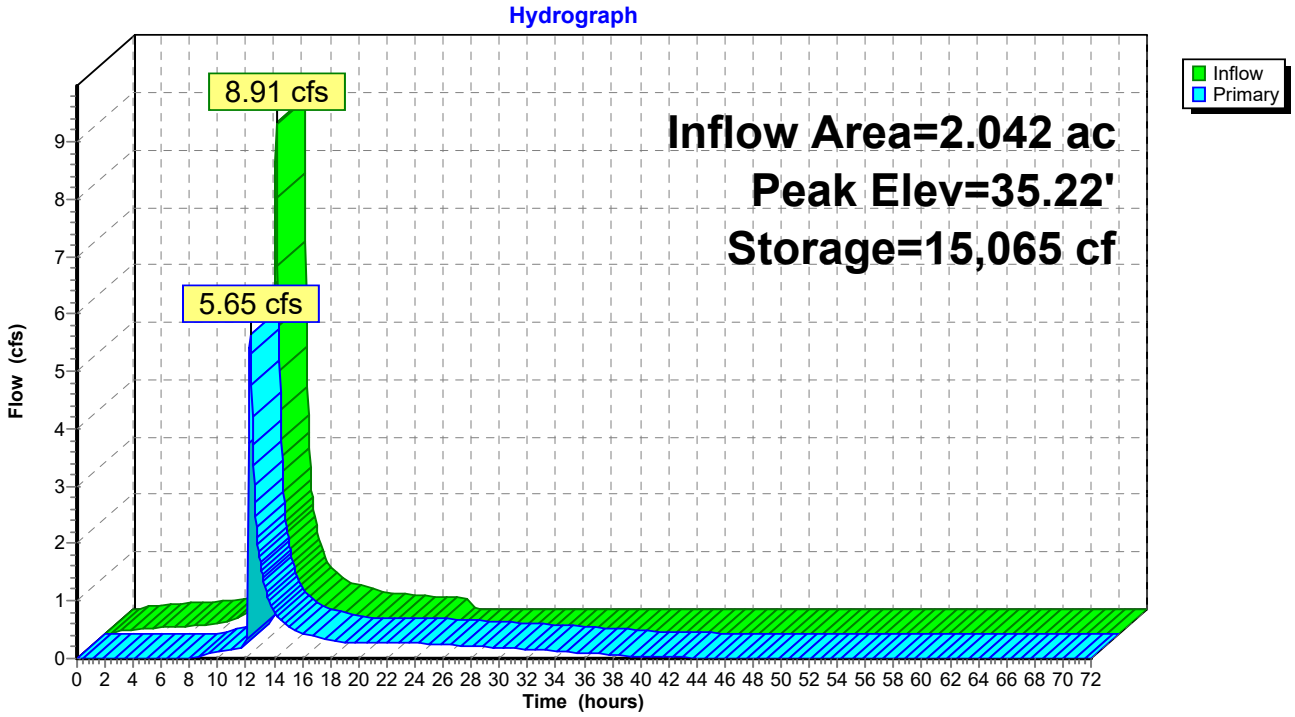
Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	23,100 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	4,500	0	0
34.00	6,500	5,500	5,500
35.00	8,700	7,600	13,100
36.00	11,300	10,000	23,100

Device	Routing	Invert	Outlet Devices
#1	Primary	33.50'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	35.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.63 cfs @ 12.30 hrs HW=35.22' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.30 cfs @ 6.08 fps)
2=Orifice/Grate (Weir Controls 5.33 cfs @ 1.53 fps)

Pond 41P: Basin 13



Summary for Subcatchment 42S: Basin 13 - Impervious

[49] Hint: Tc<2dt may require smaller dt
[47] Hint: Peak is 103% of capacity of segment #3

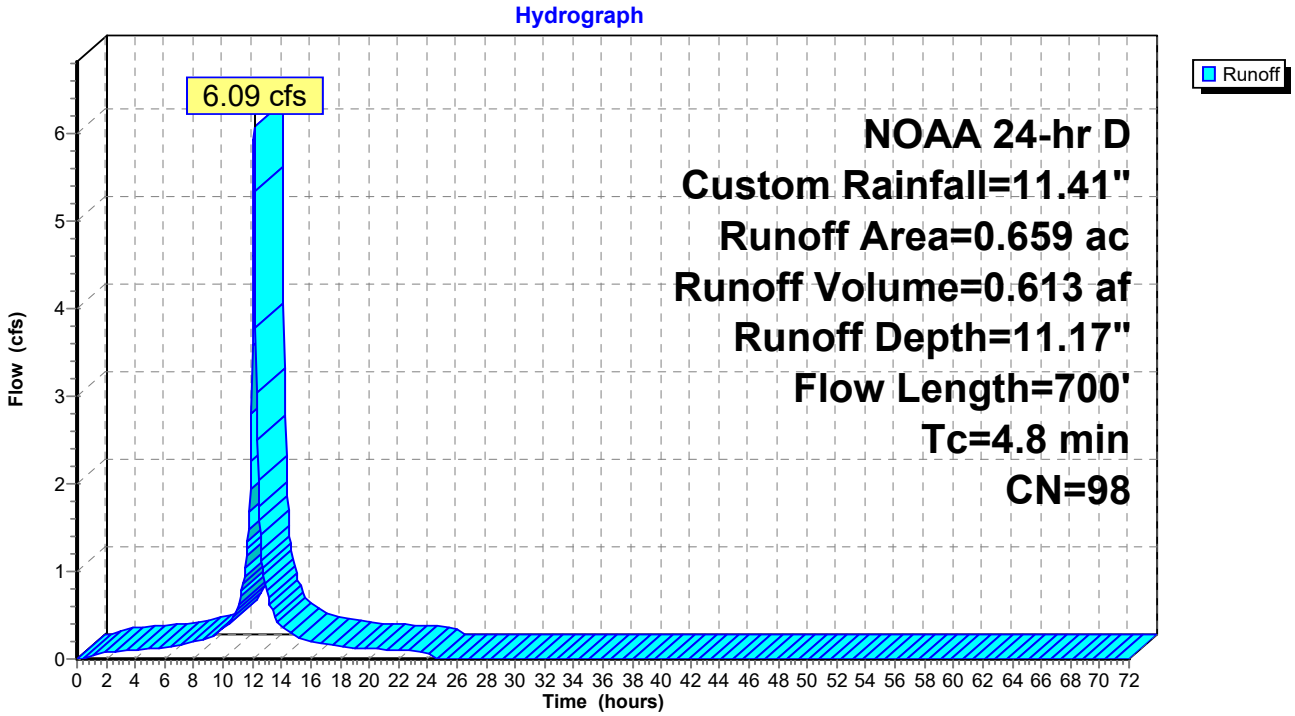
Runoff = 6.09 cfs @ 12.13 hrs, Volume= 0.613 af, Depth=11.17"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.659	98	Impervious
	0.659		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0080	1.07		**Sheet Flow, A to B** Smooth surfaces n= 0.011 P2= 4.04"
1.8	200	0.0080	1.82		**Shallow Concentrated Flow, B to C** Paved Kv= 20.3 fps
1.4	400	0.0050	4.84	5.94	**Pipe Channel, C to D** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
4.8	700	Total			

Subcatchment 42S: Basin 13 - Impervious



Summary for Subcatchment 43S: Basin 13 - Pervious

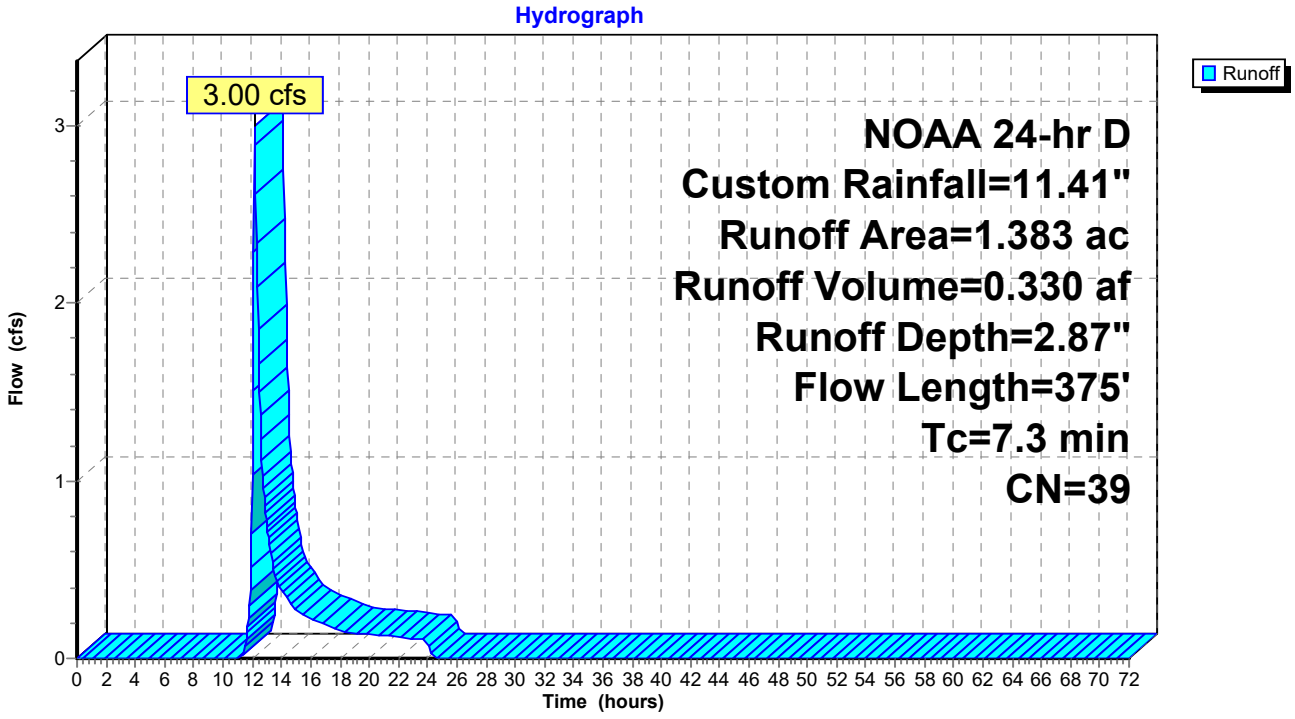
Runoff = 3.00 cfs @ 12.17 hrs, Volume= 0.330 af, Depth= 2.87"
Routed to Pond 41P : Basin 13

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Area (ac)	CN	Description
1.383	39	>75% Grass cover, Good, HSG A
1.383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	75	0.0250	0.20		**Sheet Flow, A to B** Grass: Short n= 0.150 P2= 4.04"
1.0	300	0.0050	4.84	5.94	**Pipe Channel, B to C** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
7.3	375	Total			

Subcatchment 43S: Basin 13 - Pervious



Summary for Subcatchment 44S: Basin 3 - Impervious

[49] Hint: Tc<2dt may require smaller dt

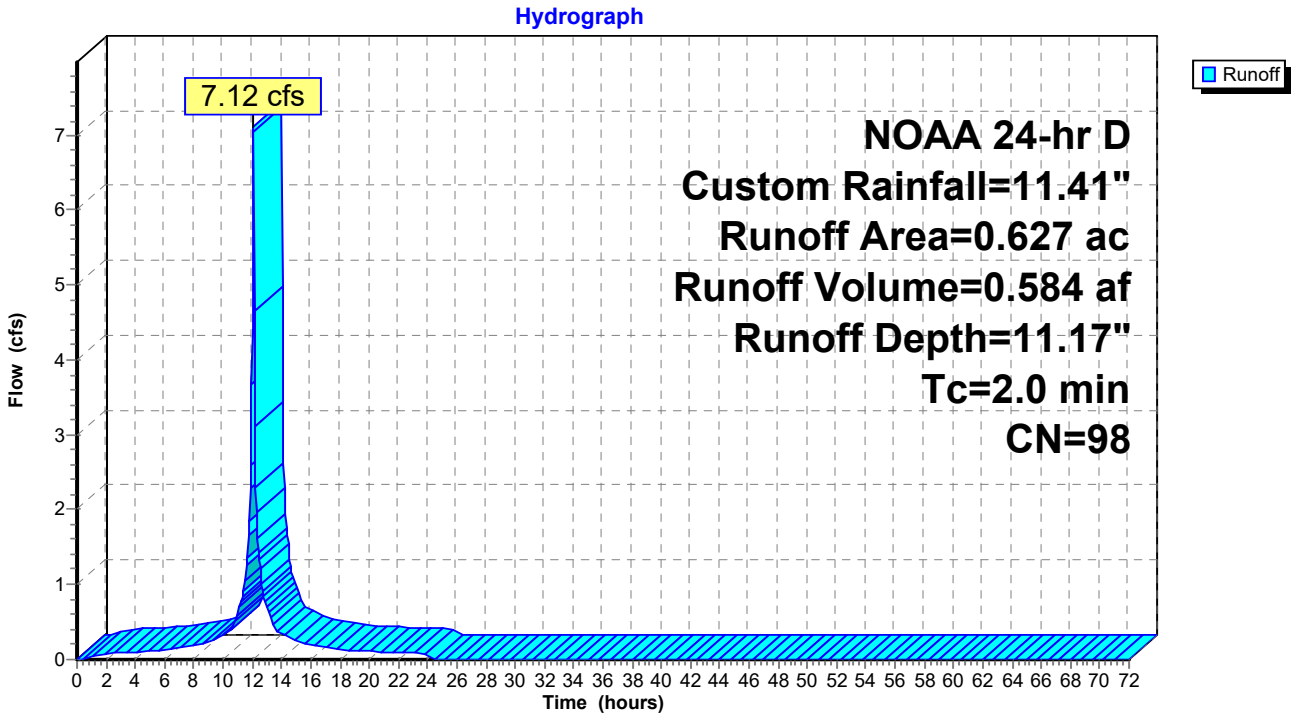
Runoff = 7.12 cfs @ 12.09 hrs, Volume= 0.584 af, Depth=11.17"
Routed to Pond 4P : Basin 3

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

	Area (ac)	CN	Description
*	0.627	98	Impervious
	0.627		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 44S: Basin 3 - Impervious



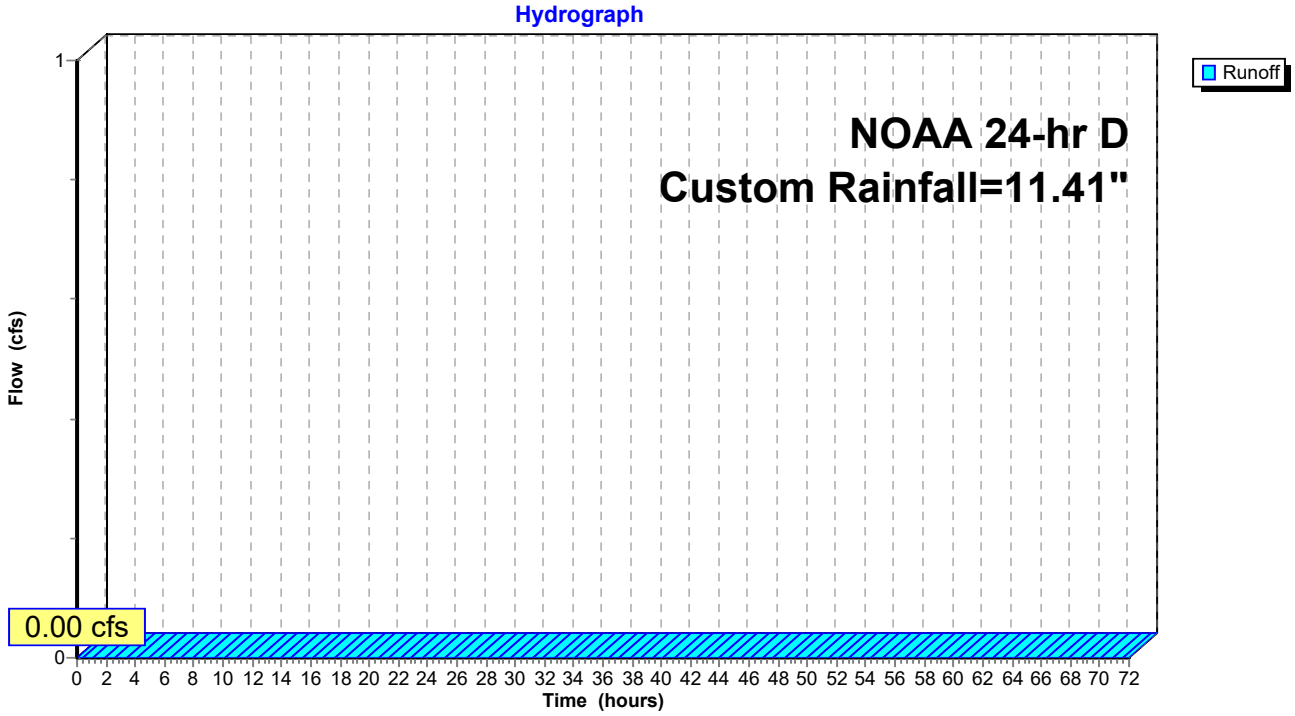
Summary for Subcatchment 45S: Undetained - Impervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Subcatchment 45S: Undetained - Impervious



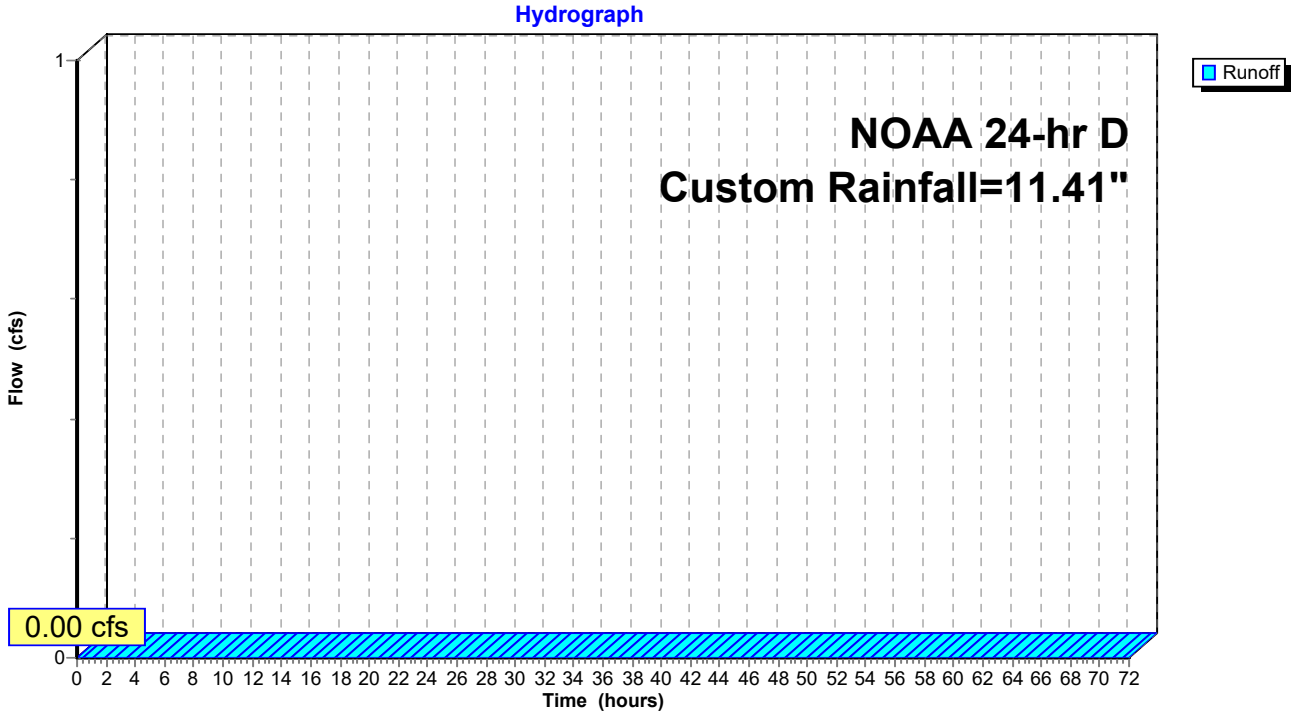
Summary for Subcatchment 46S: Undetained - Pervious

[40] Hint: Not Described (Area=0)

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 15L : Willis Creek

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

Subcatchment 46S: Undetained - Pervious



Summary for Subcatchment 66: Basin 3 - Pervious

[49] Hint: Tc<2dt may require smaller dt

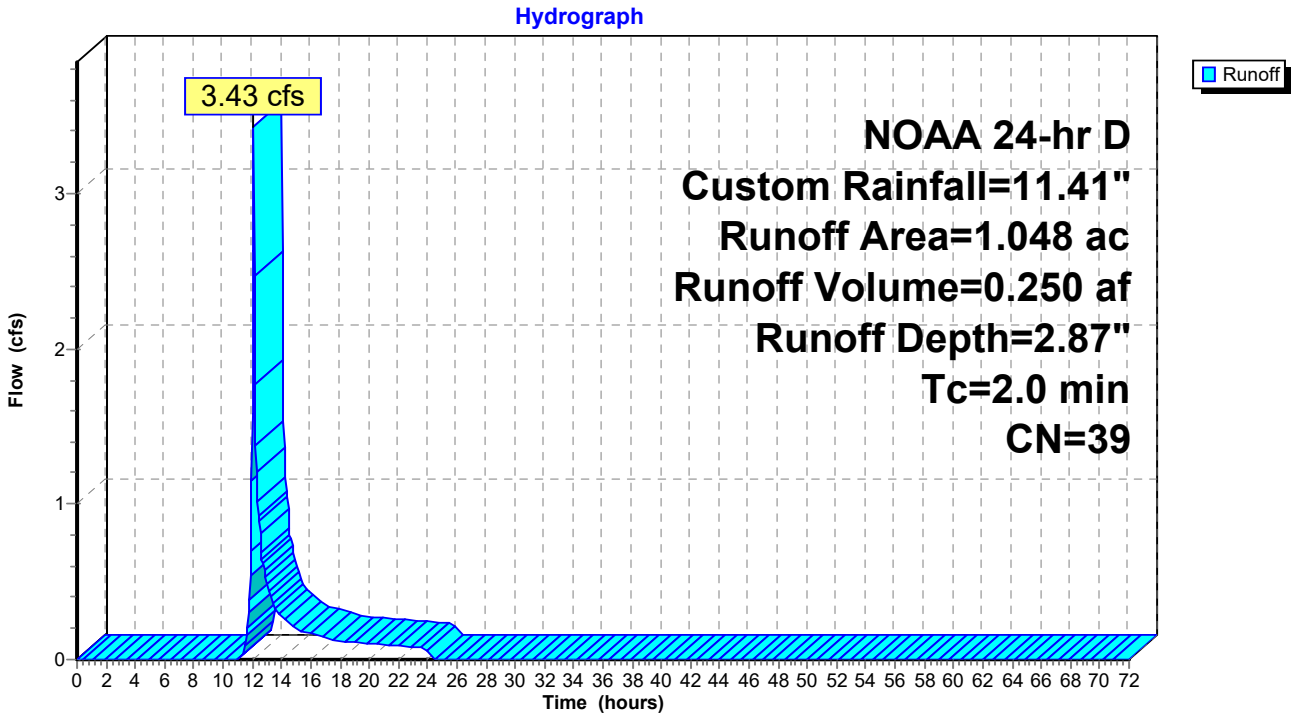
Runoff = 3.43 cfs @ 12.10 hrs, Volume= 0.250 af, Depth= 2.87"
Routed to Pond 4P : Basin 3

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D Custom Rainfall=11.41"

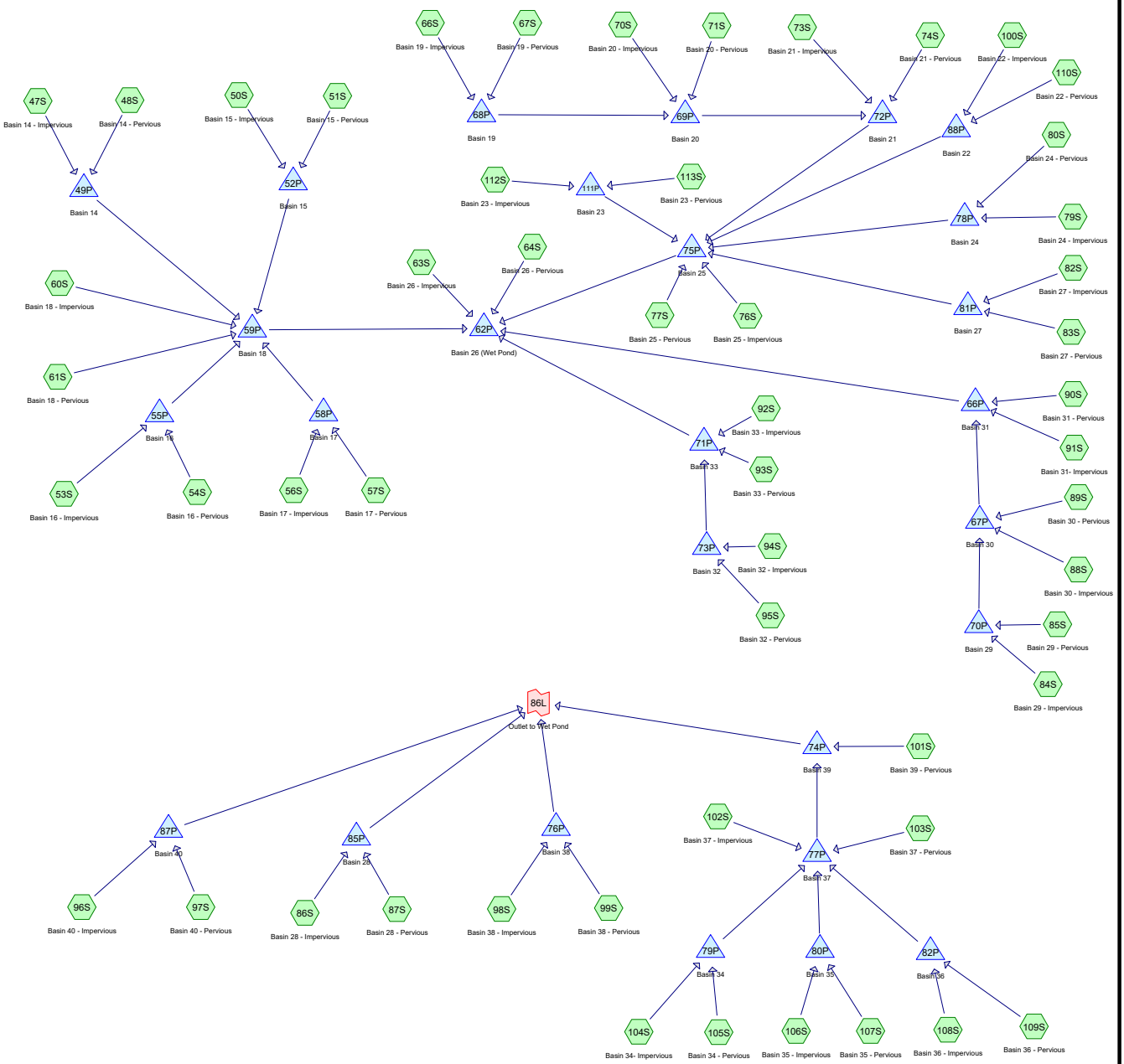
Area (ac)	CN	Description
1.048	39	>75% Grass cover, Good, HSG A
1.048		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment 66: Basin 3 - Pervious



Appendix F – Water Quality Calculations

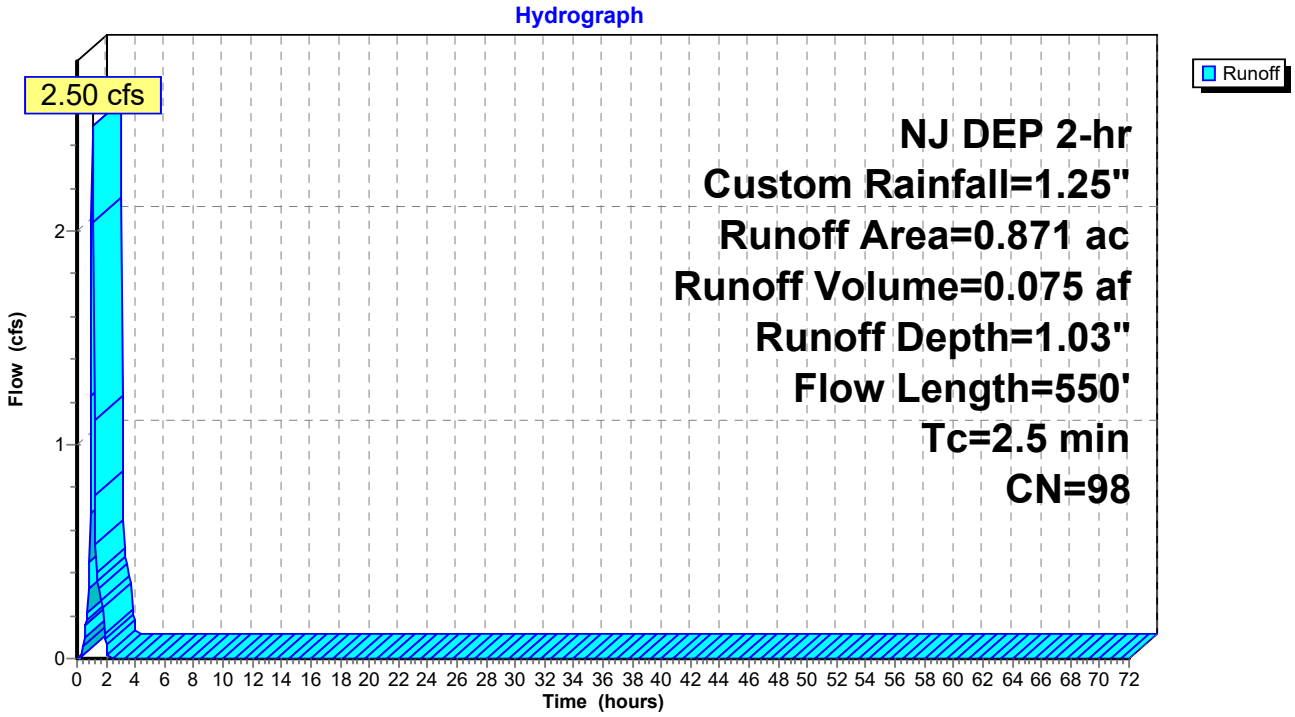


Routing Diagram for WATER QUALITY

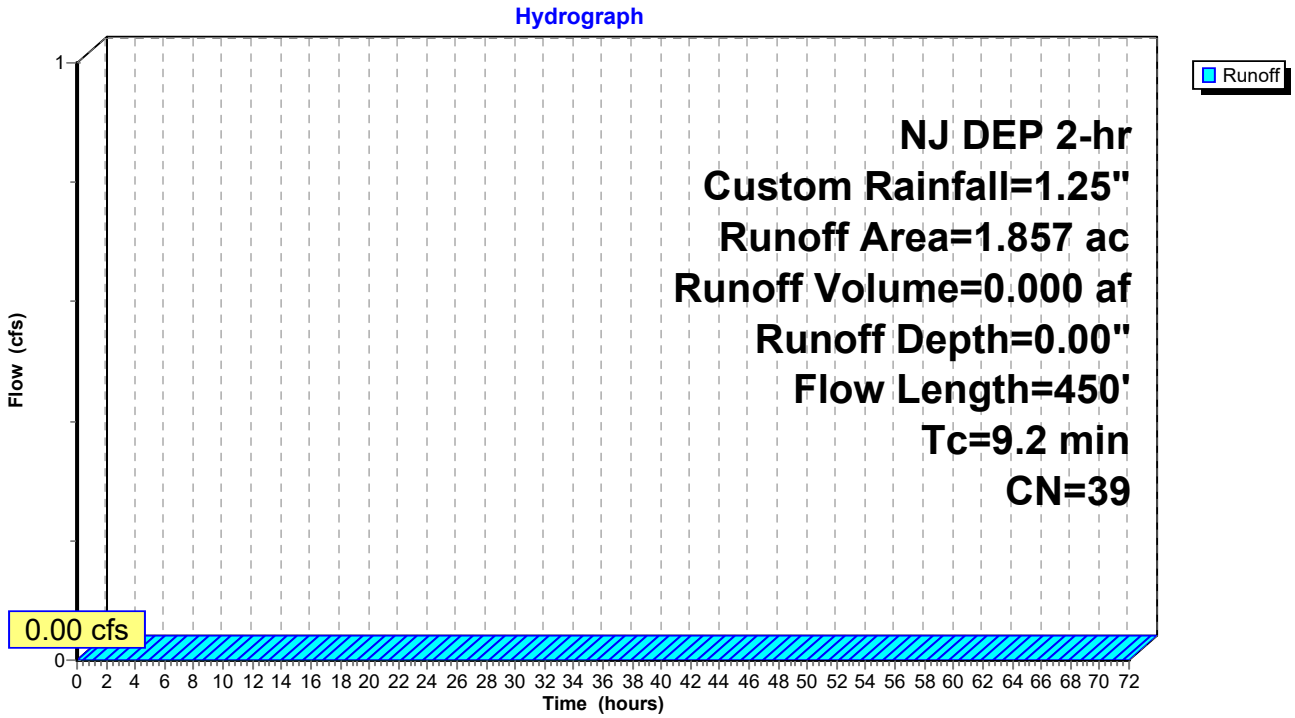
Prepared by ARH Associates, Printed 4/29/2025

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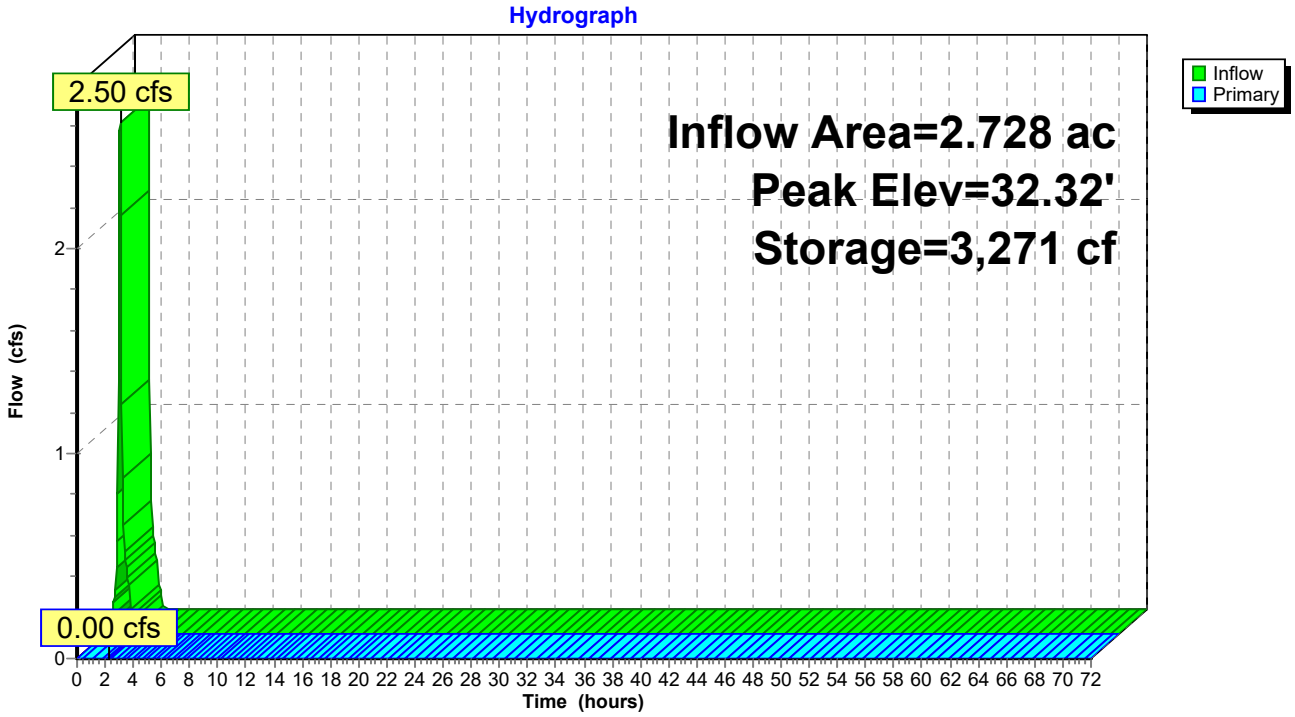
Subcatchment 47S: Basin 14 - Impervious



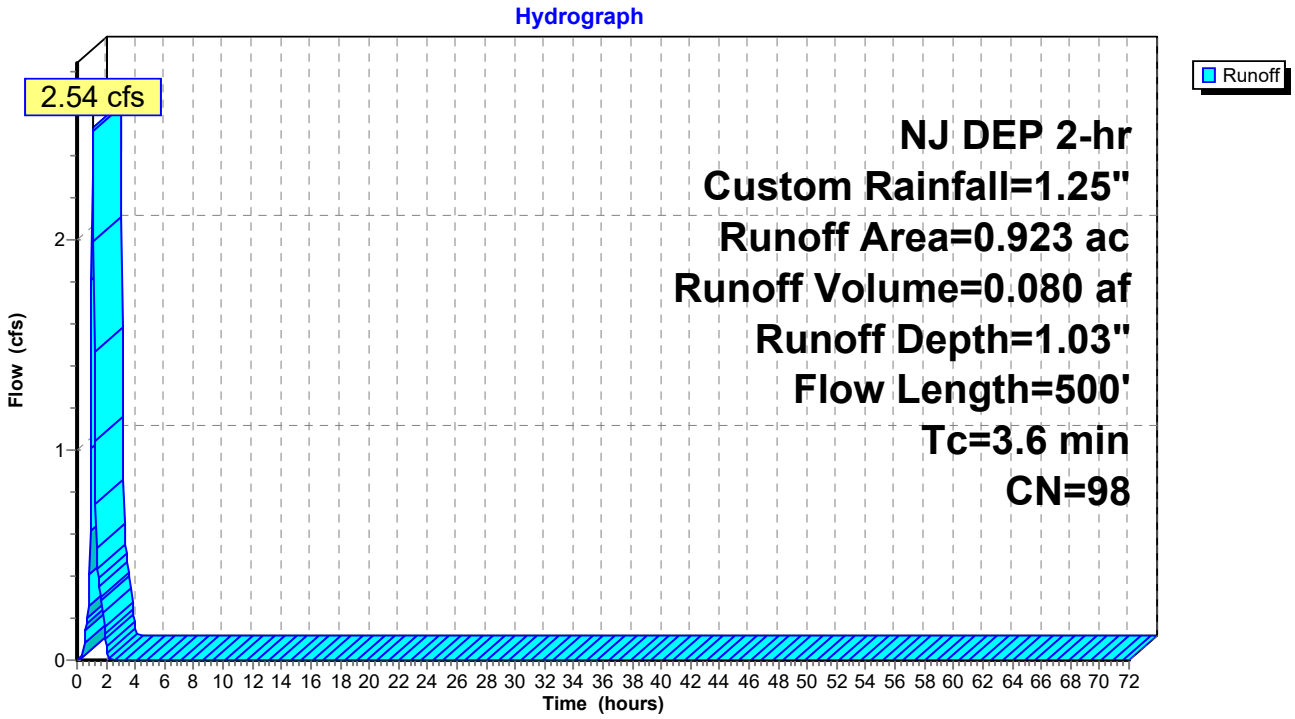
Subcatchment 48S: Basin 14 - Pervious



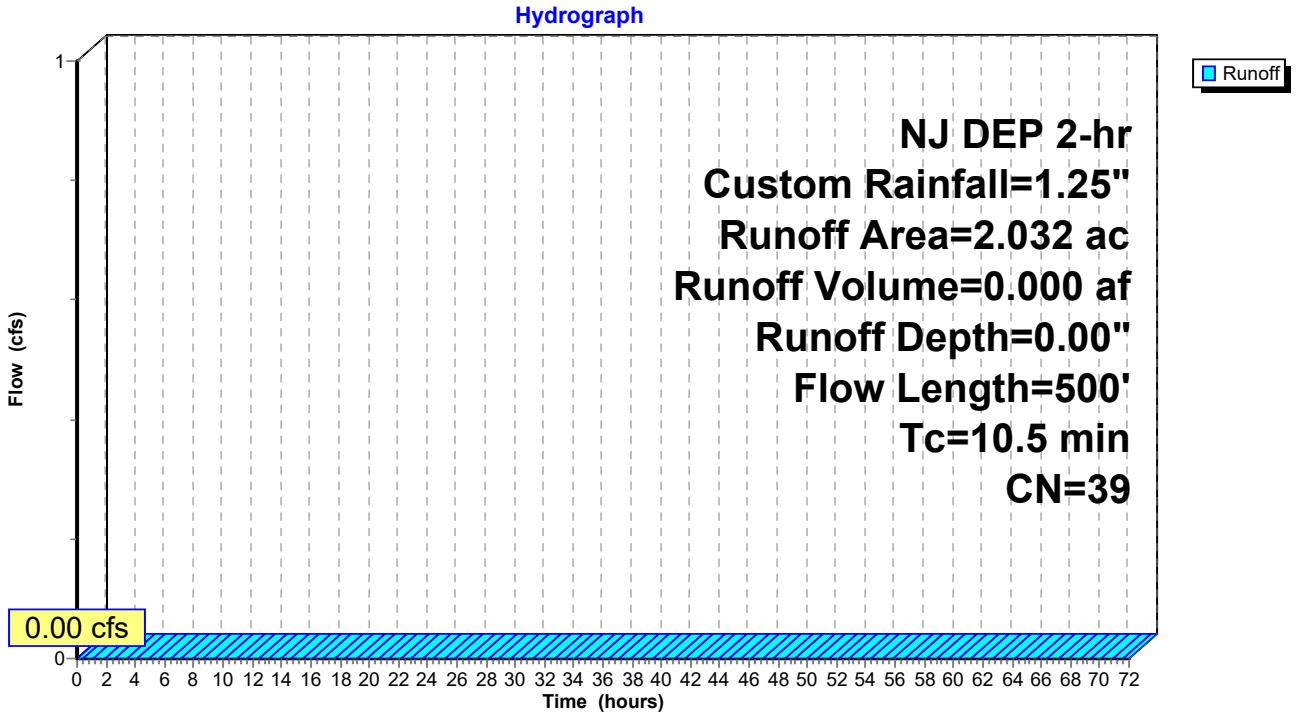
Pond 49P: Basin 14



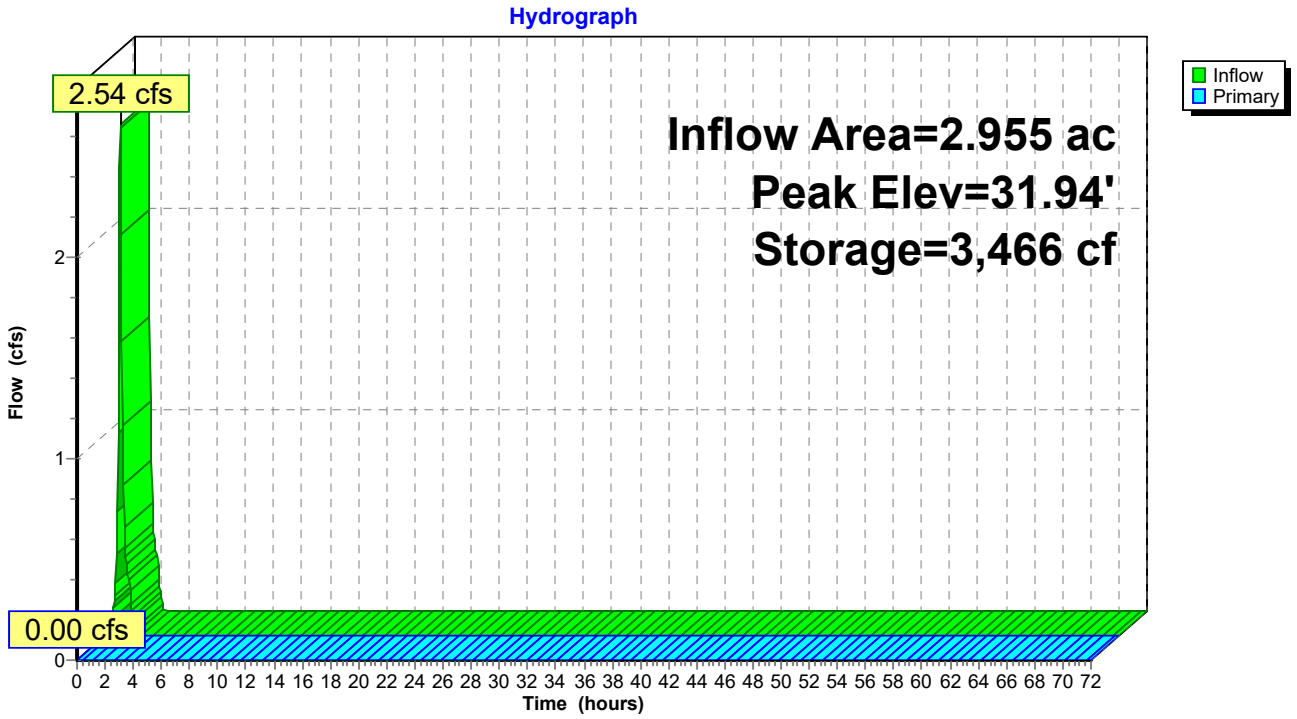
Subcatchment 50S: Basin 15 - Impervious



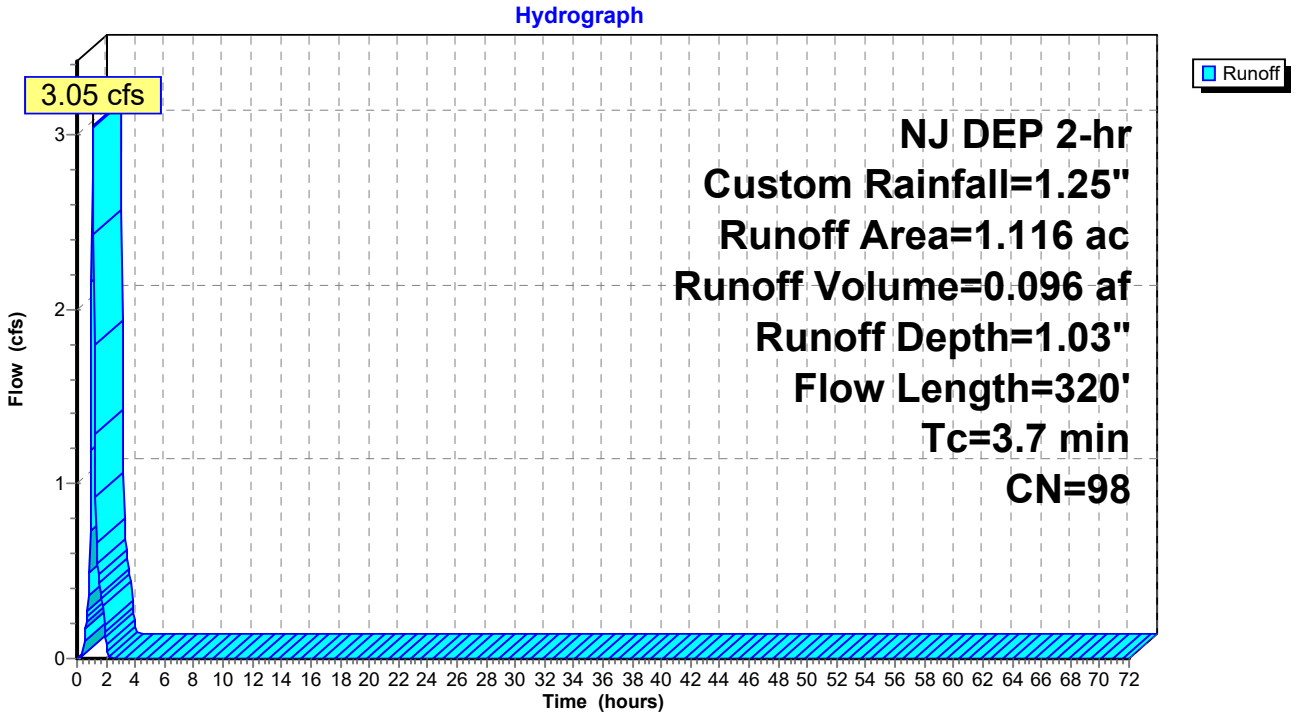
Subcatchment 51S: Basin 15 - Pervious



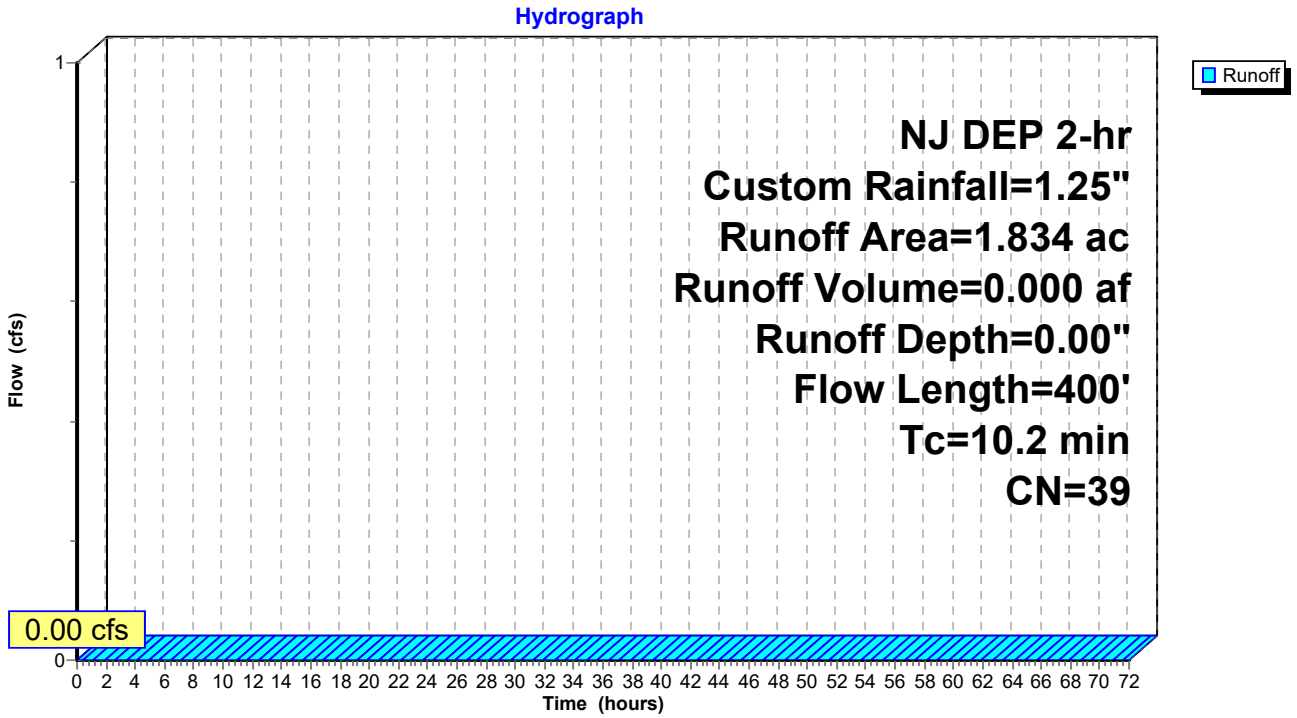
Pond 52P: Basin 15



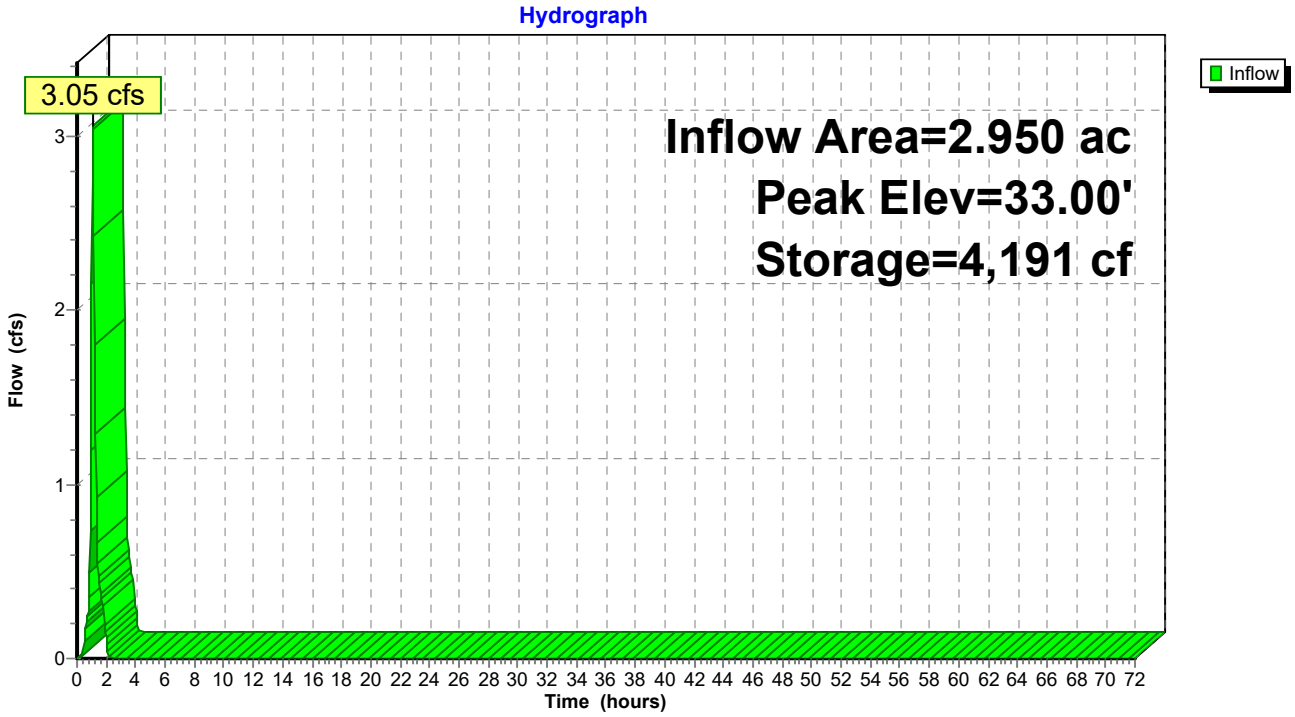
Subcatchment 53S: Basin 16 - Impervious



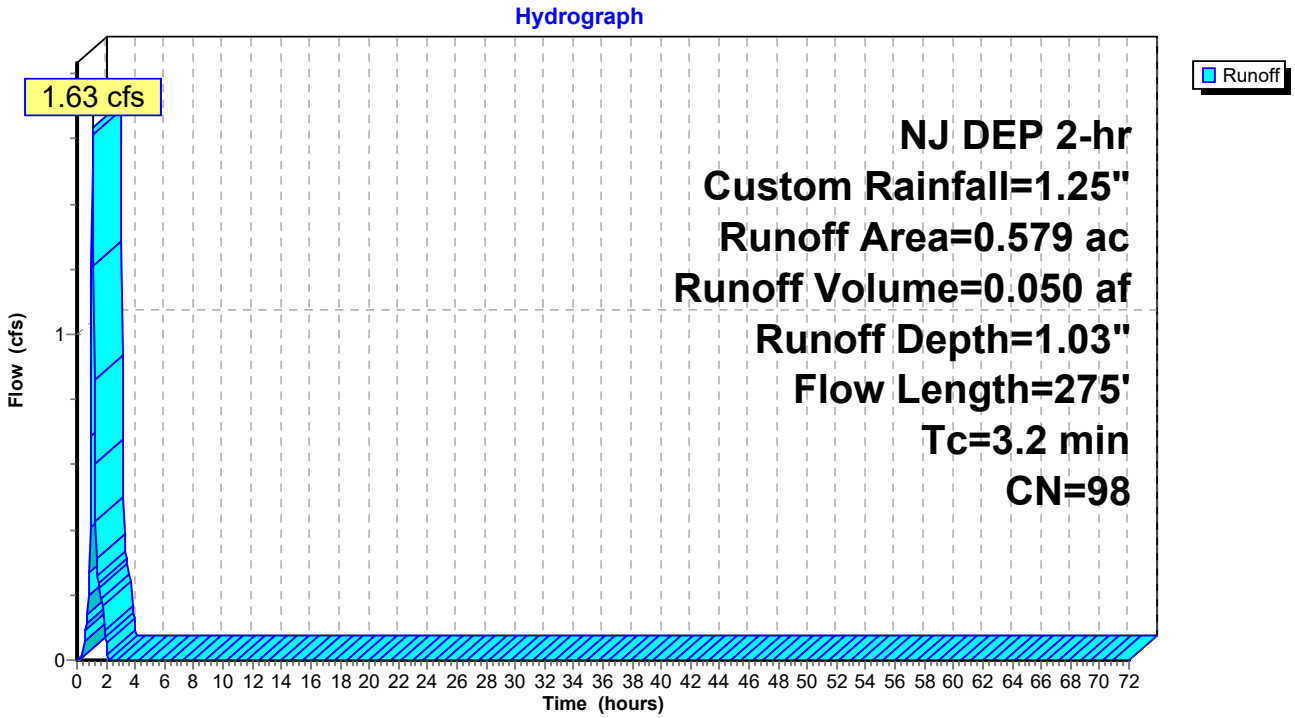
Subcatchment 54S: Basin 16 - Pervious



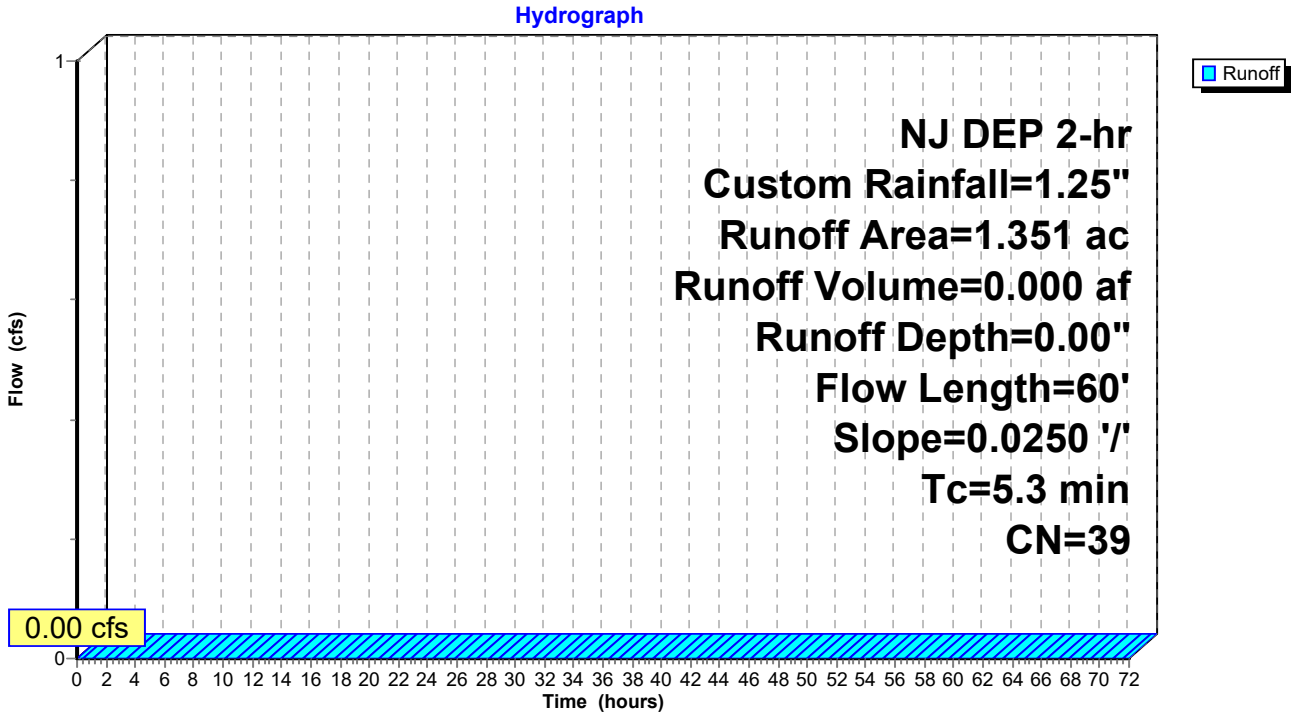
Pond 55P: Basin 16



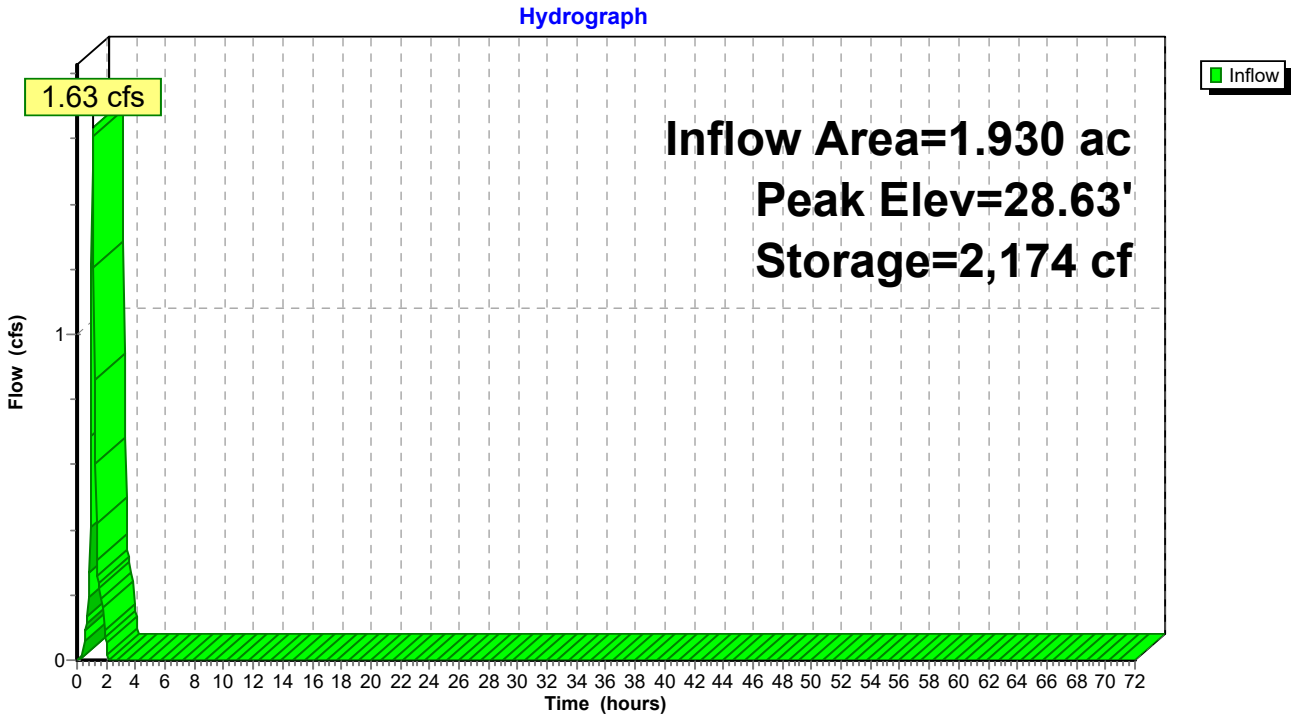
Subcatchment 56S: Basin 17 - Impervious



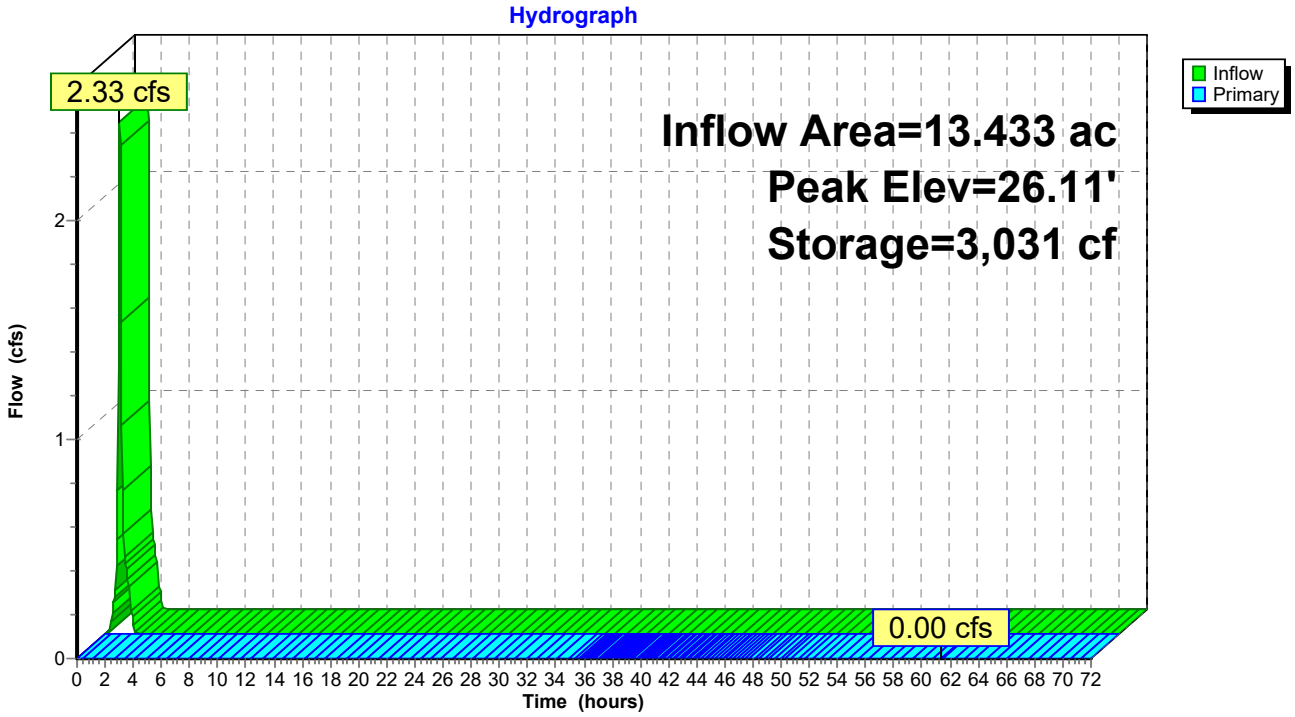
Subcatchment 57S: Basin 17 - Pervious



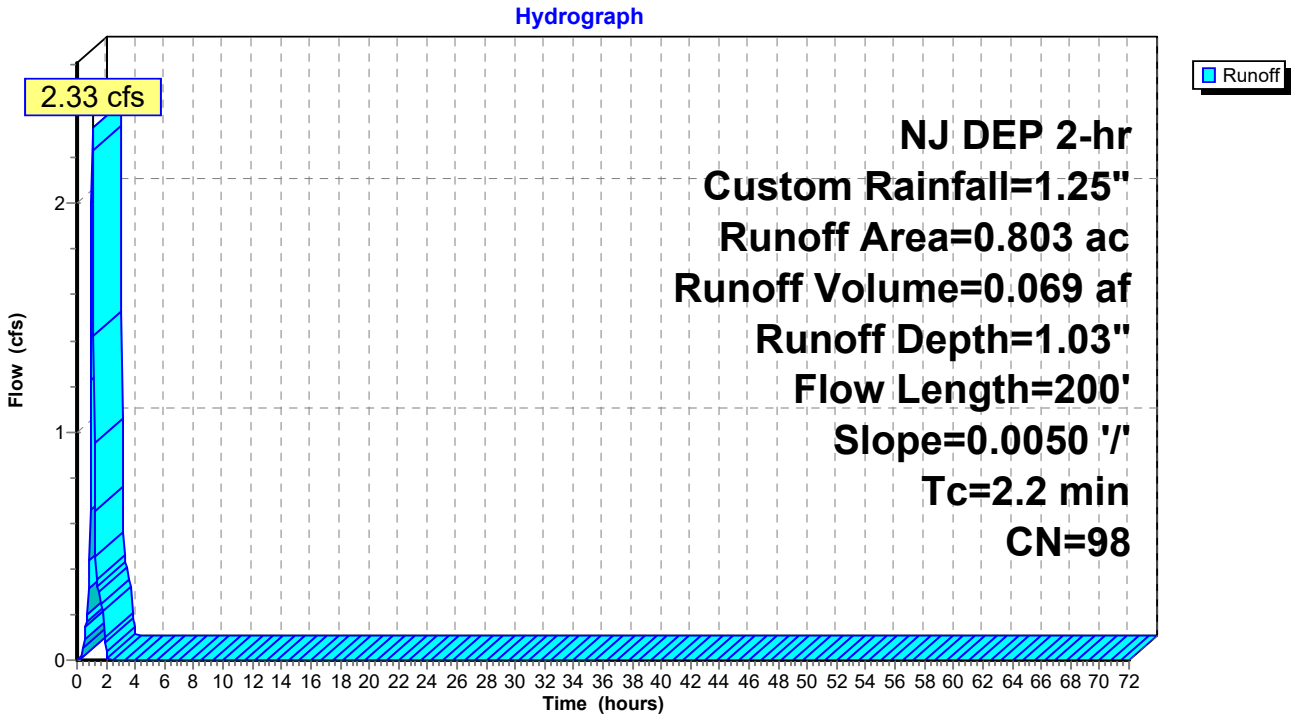
Pond 58P: Basin 17



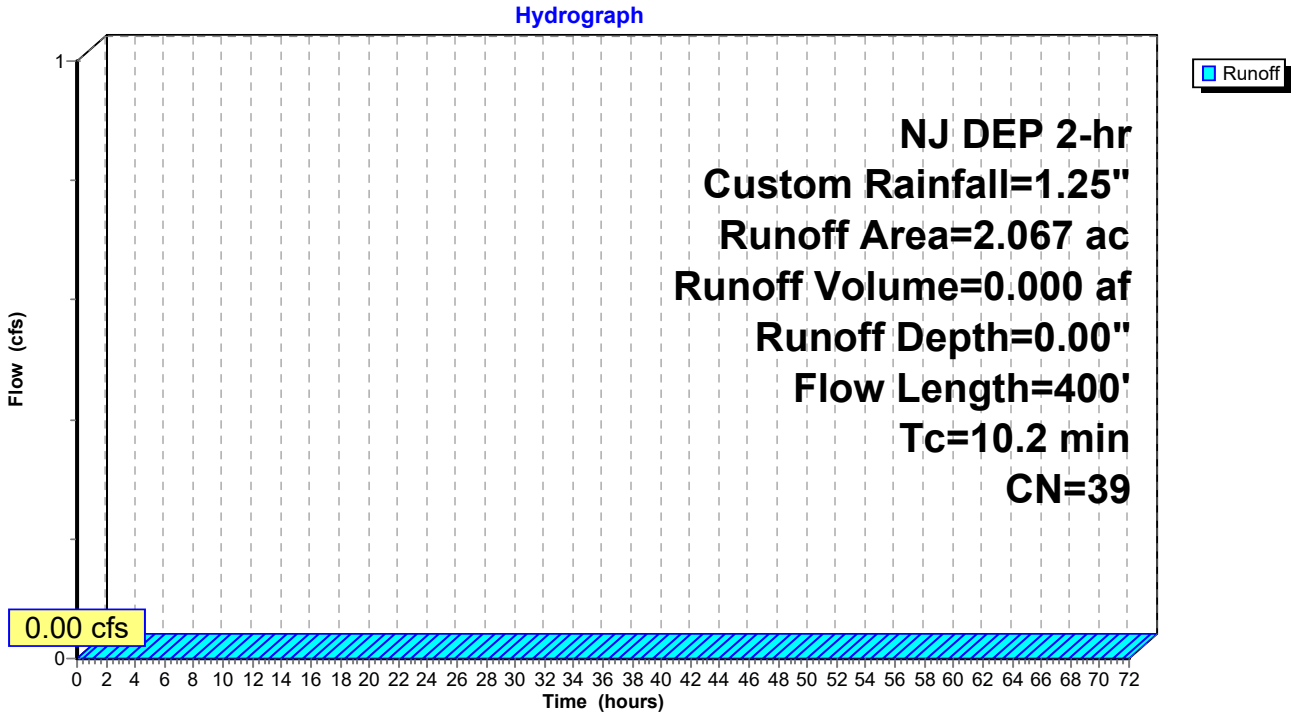
Pond 59P: Basin 18



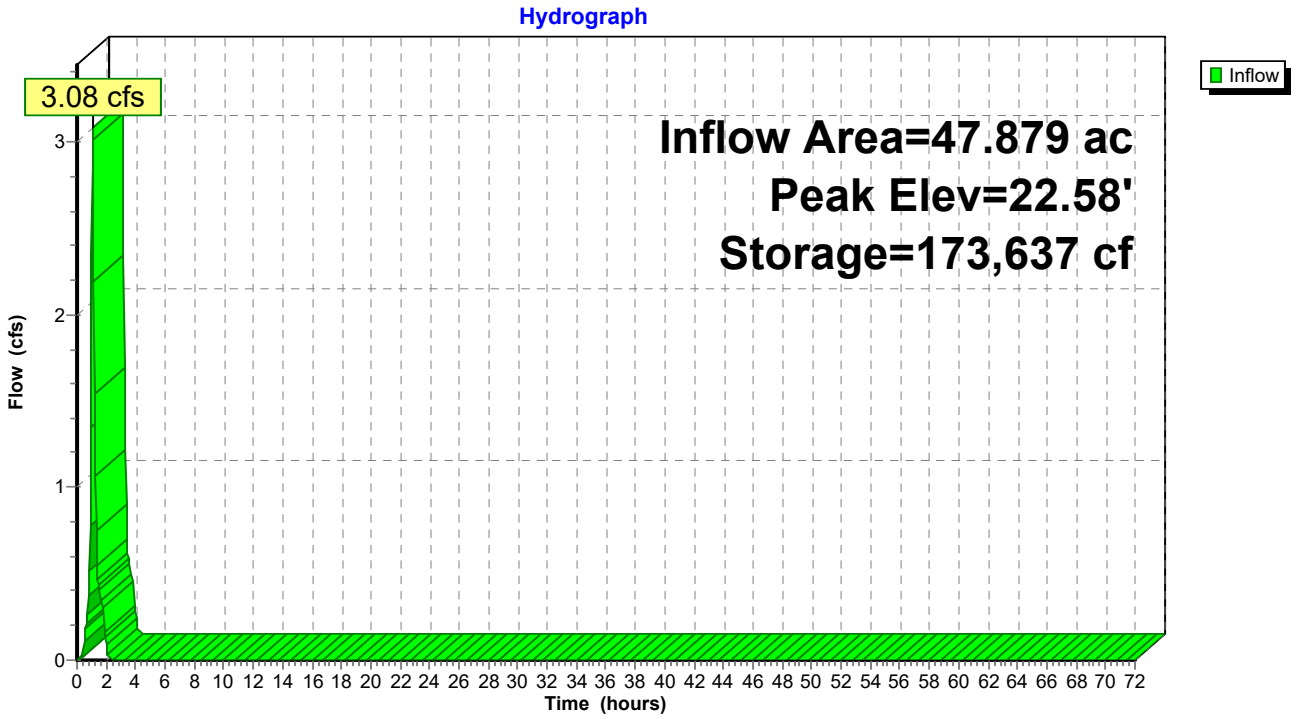
Subcatchment 60S: Basin 18 - Impervious



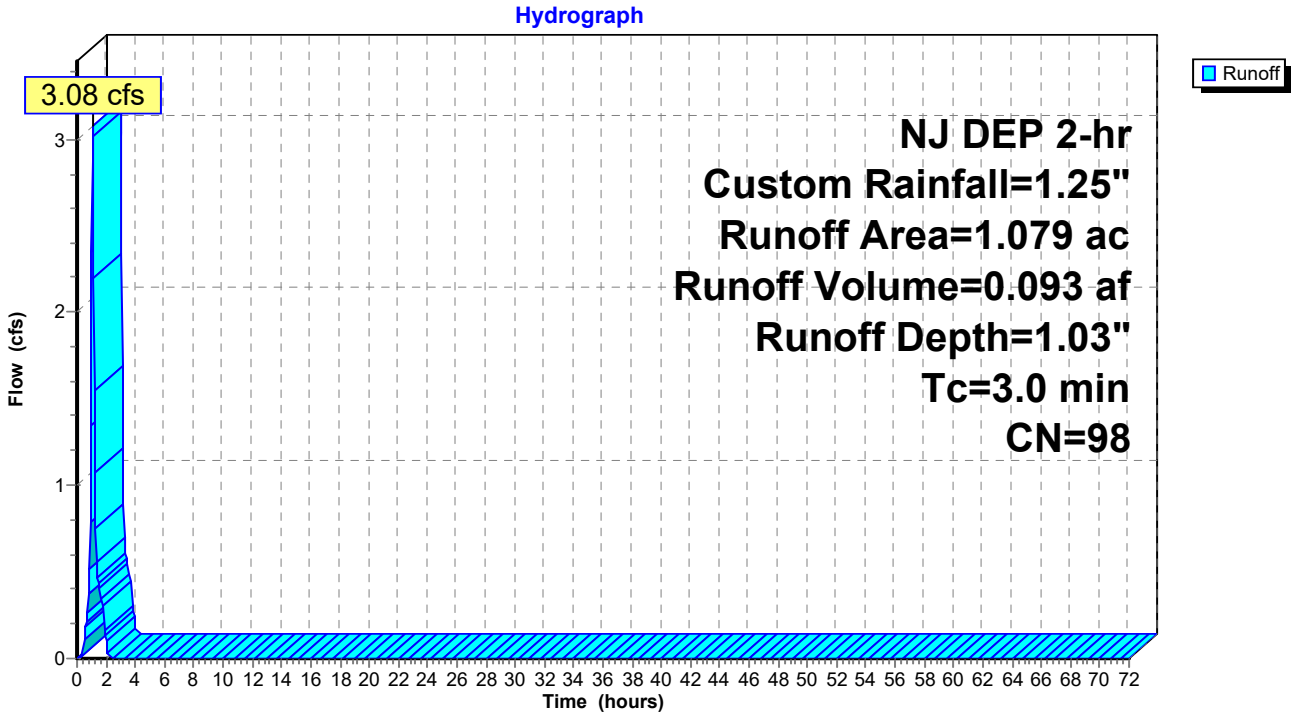
Subcatchment 61S: Basin 18 - Pervious



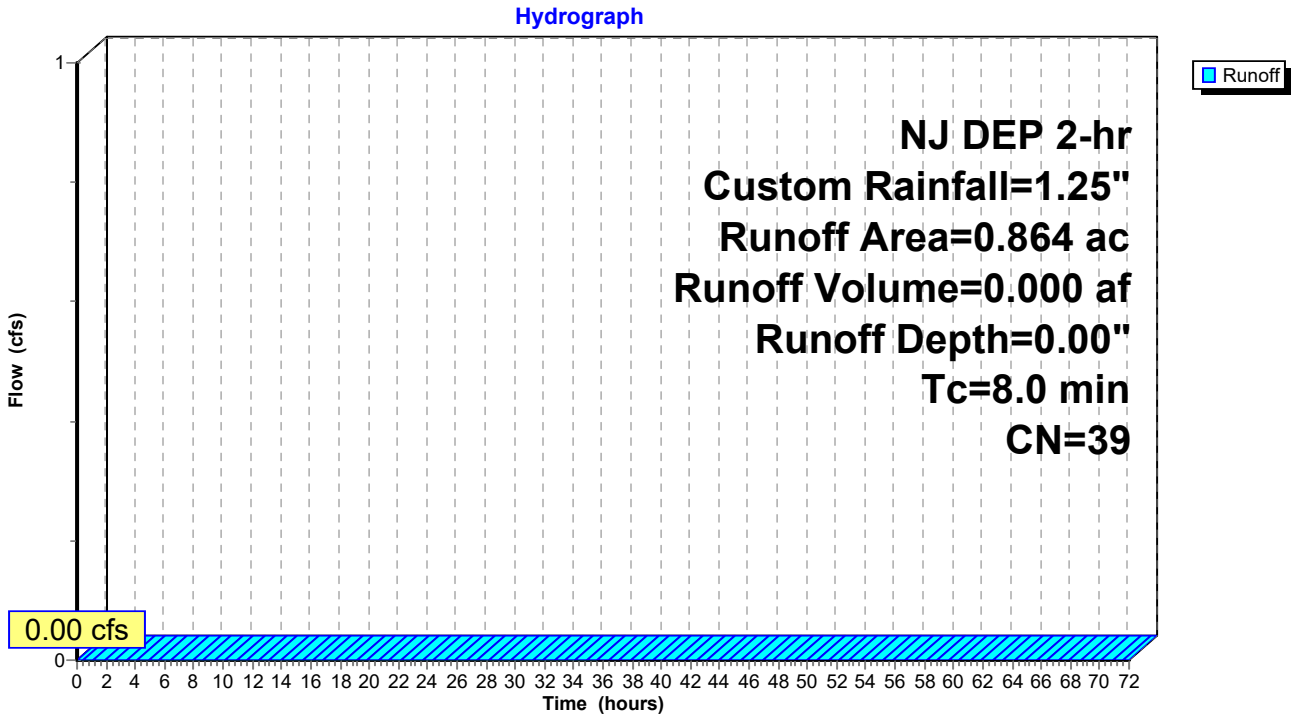
Pond 62P: Basin 26 (Wet Pond)



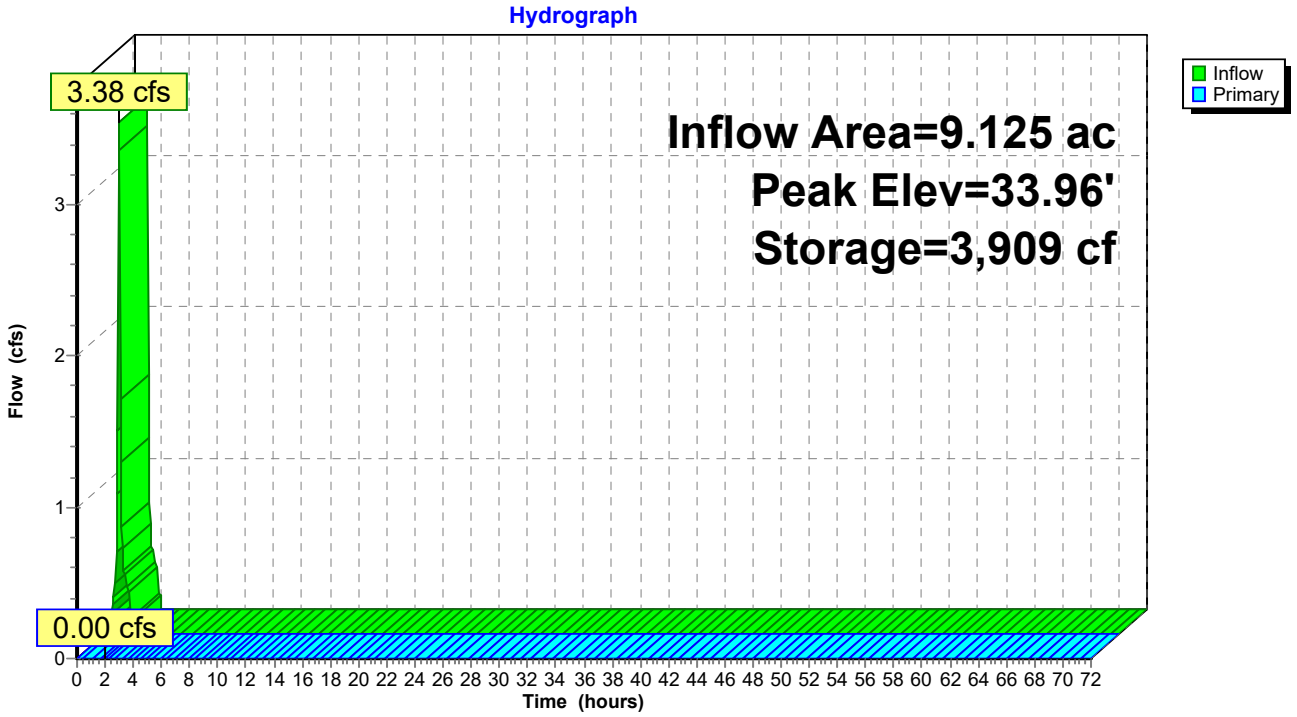
Subcatchment 63S: Basin 26 - Impervious



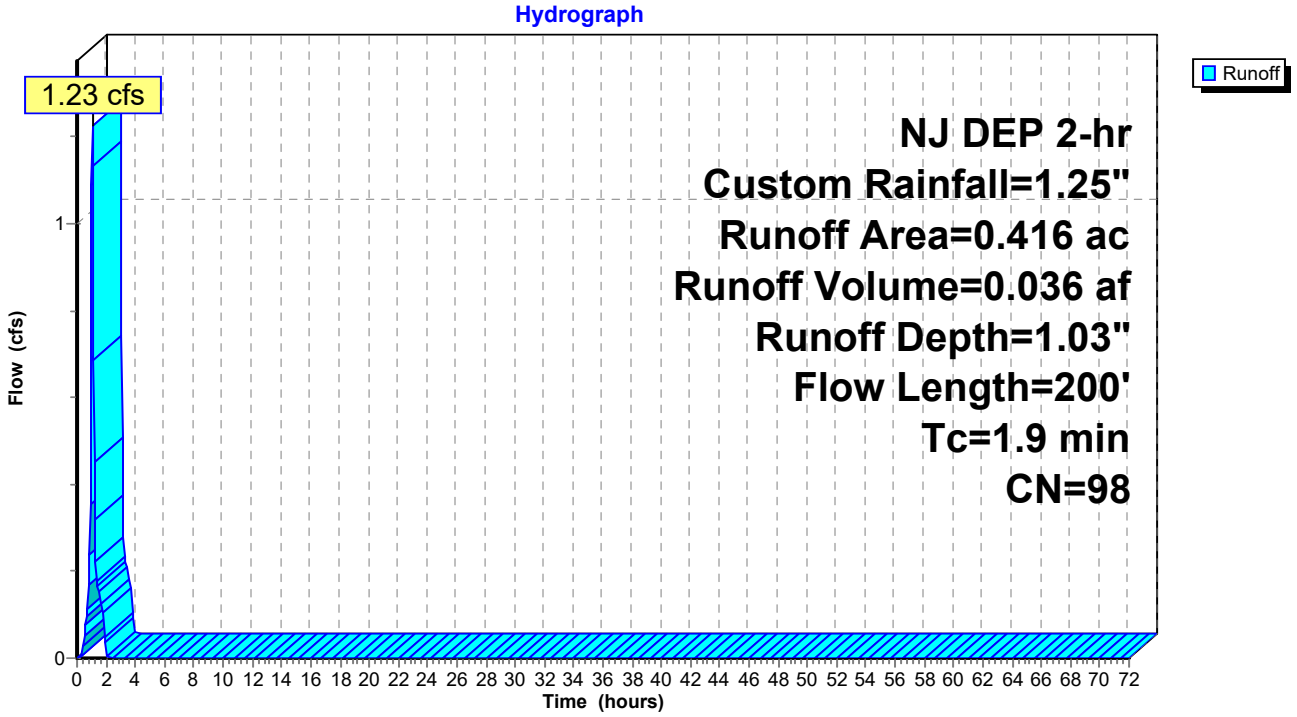
Subcatchment 64S: Basin 26 - Pervious



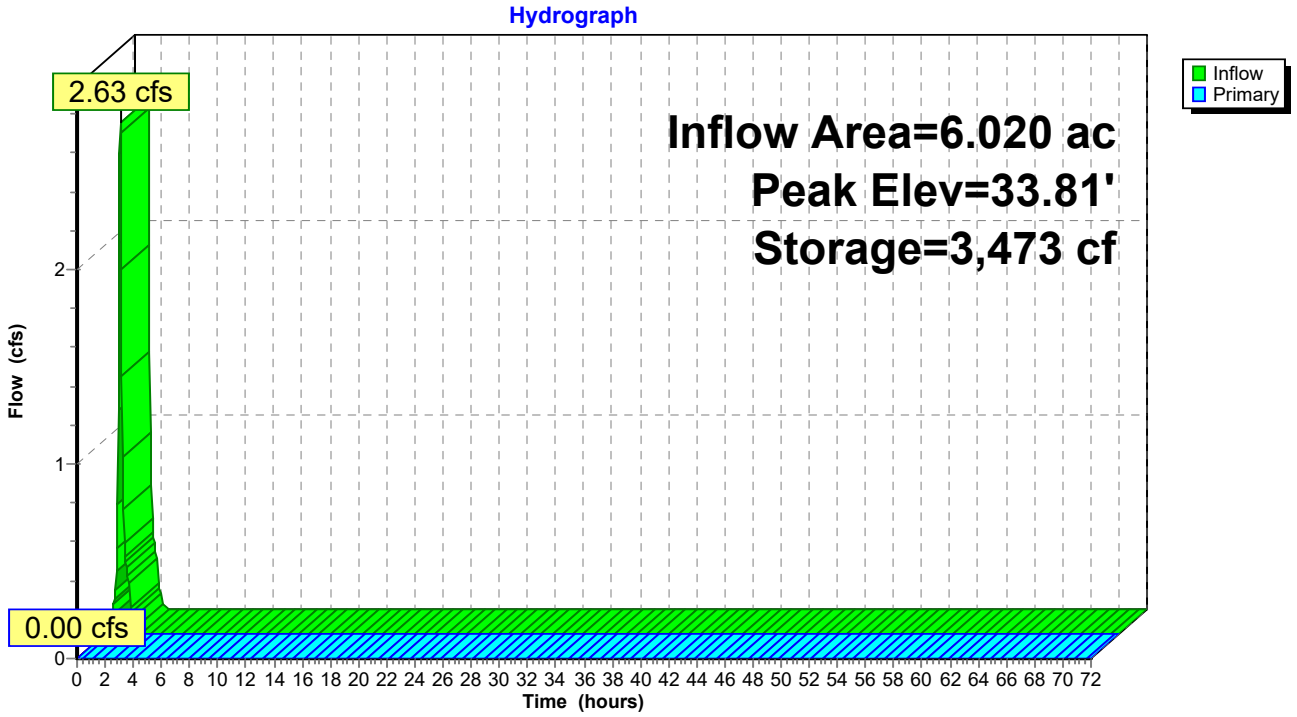
Pond 66P: Basin 31



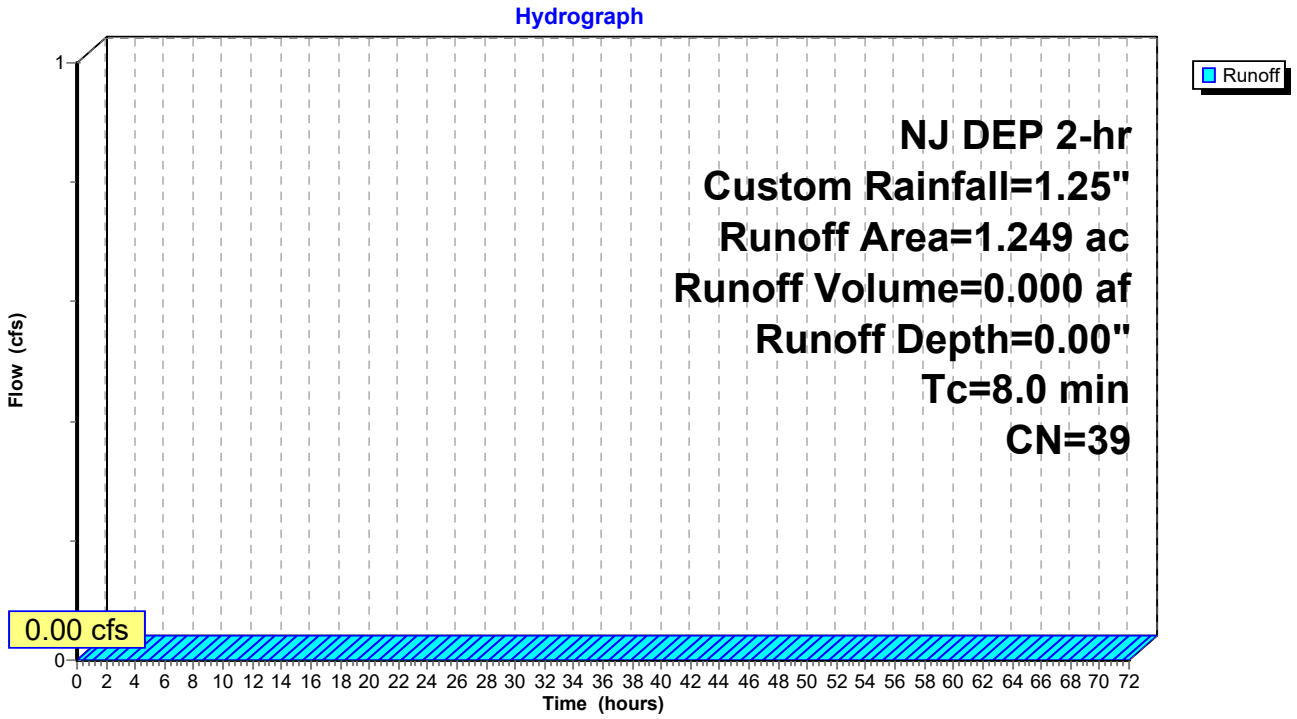
Subcatchment 66S: Basin 19 - Impervious



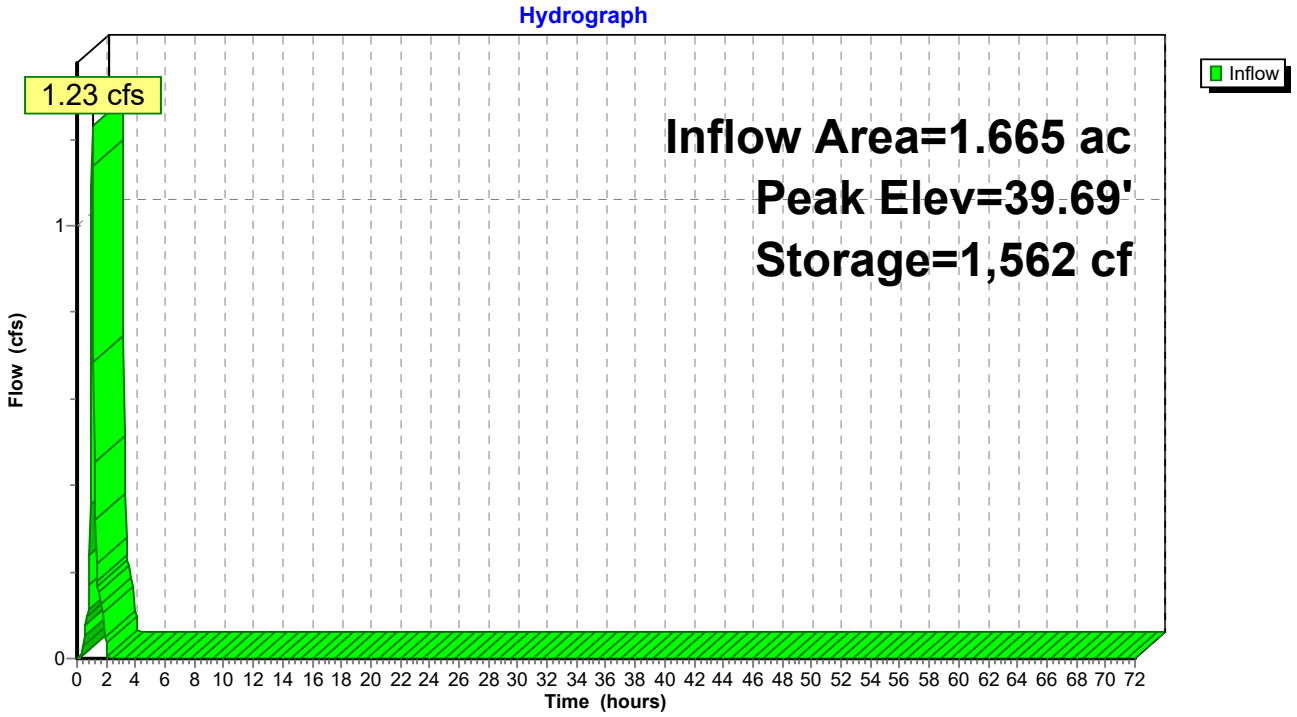
Pond 67P: Basin 30



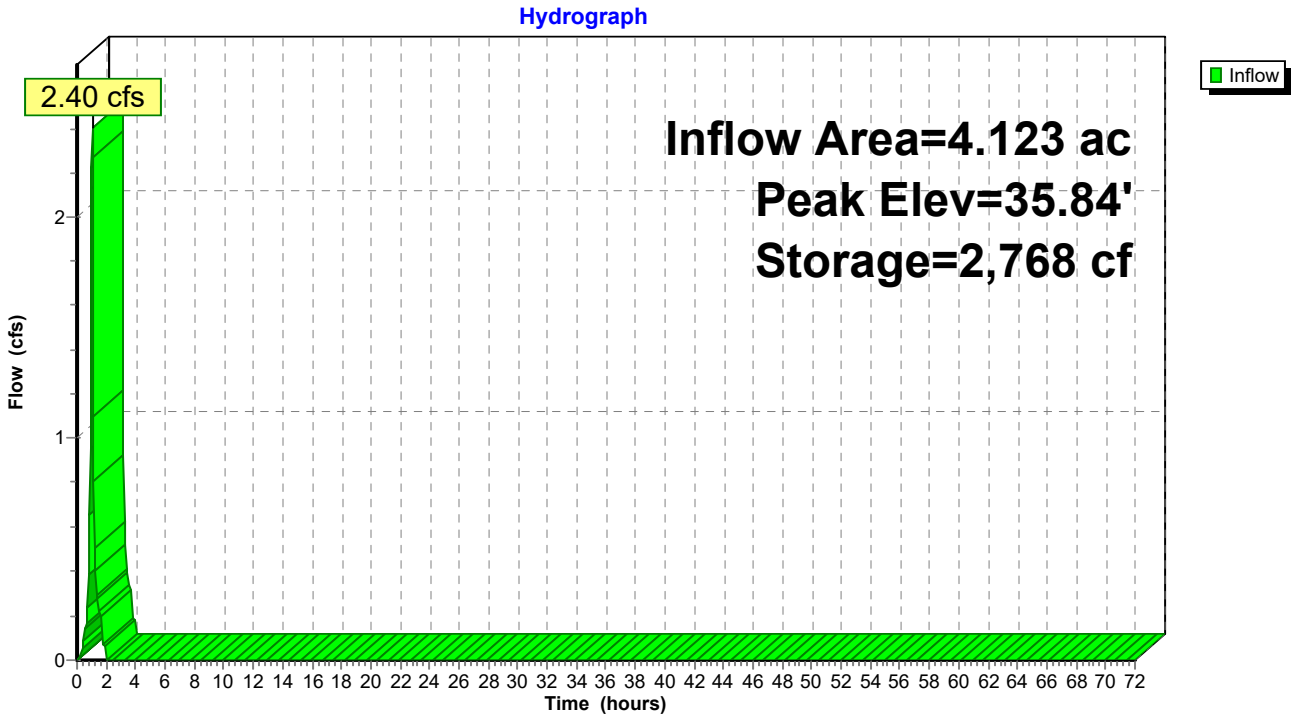
Subcatchment 67S: Basin 19 - Pervious



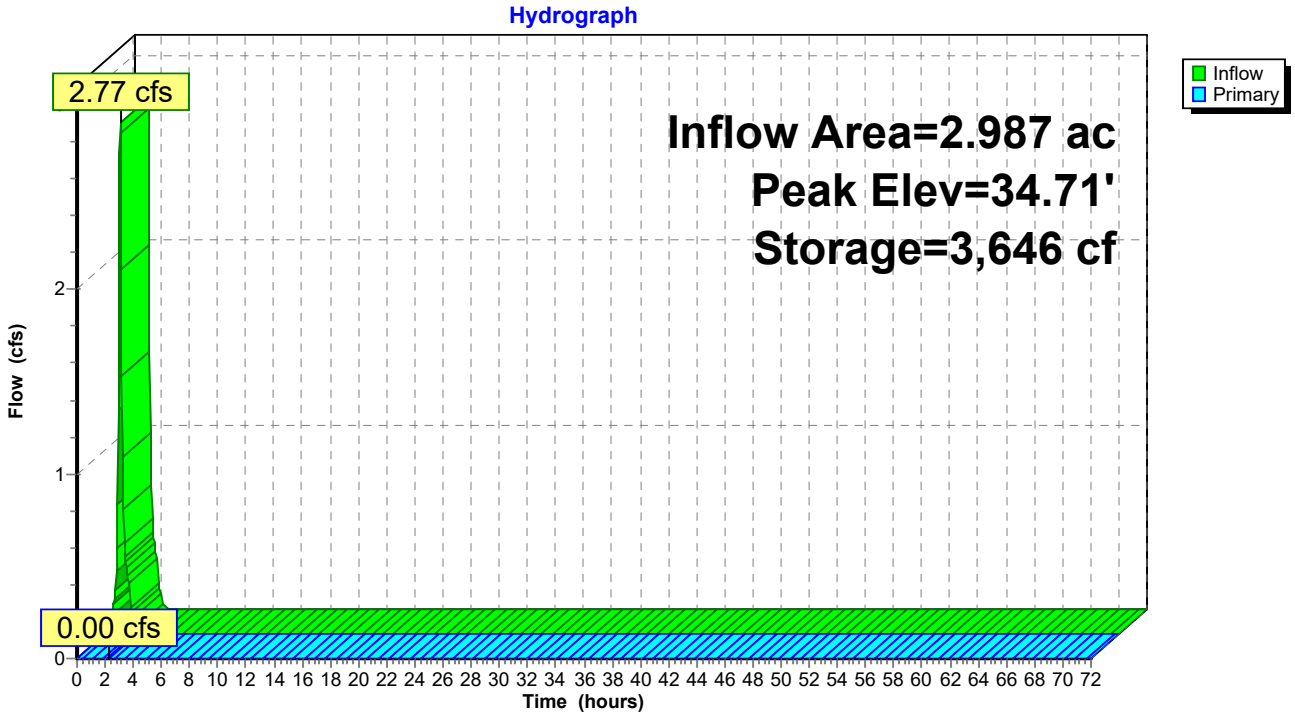
Pond 68P: Basin 19



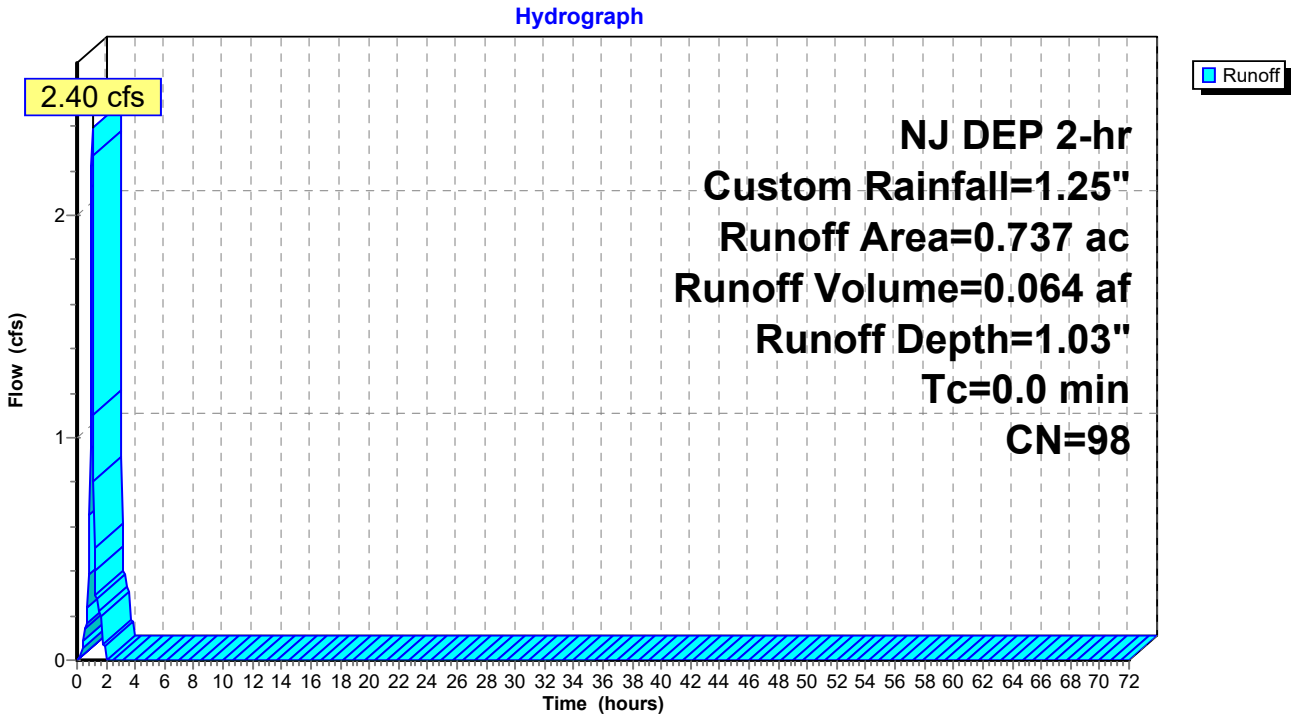
Pond 69P: Basin 20



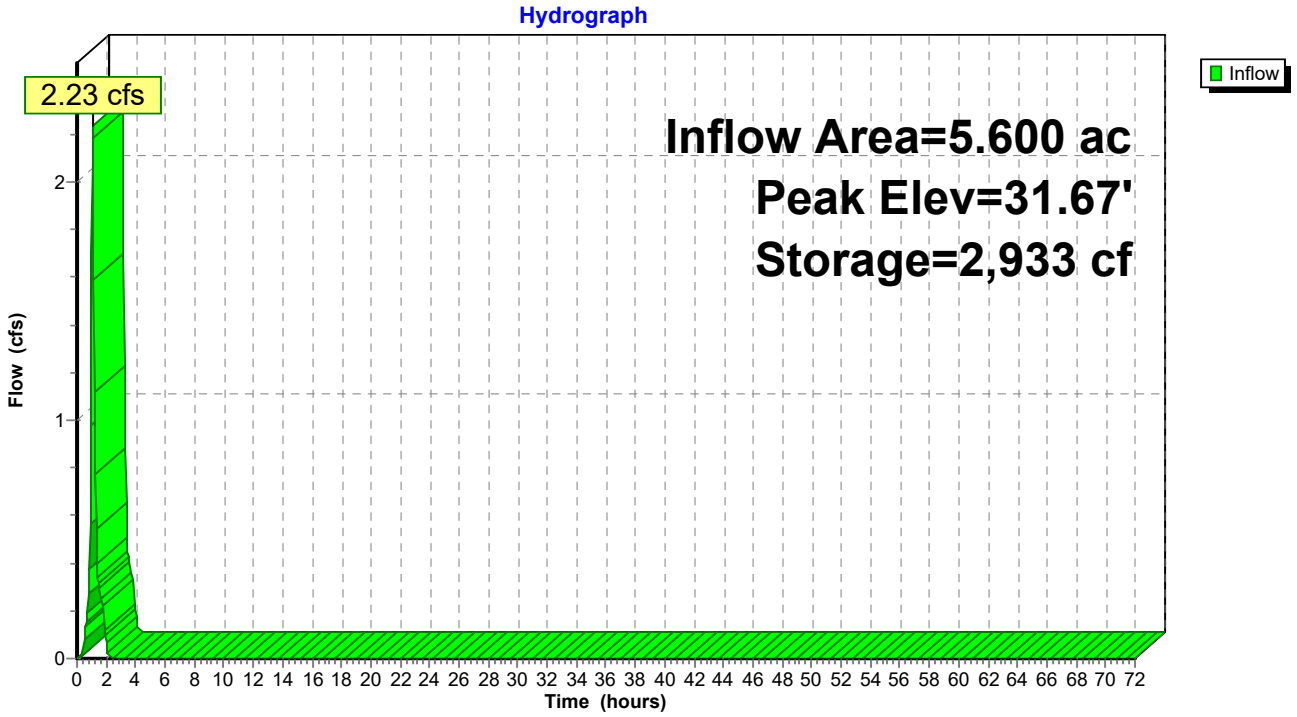
Pond 70P: Basin 29



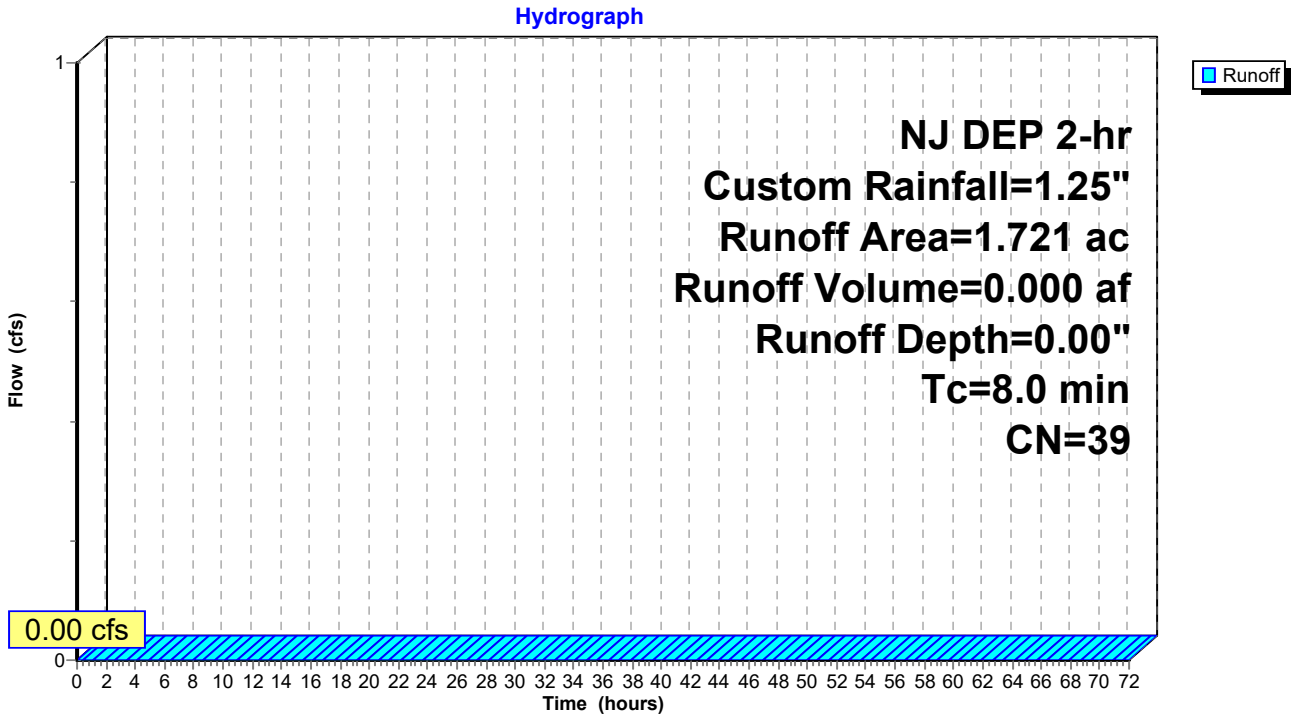
Subcatchment 70S: Basin 20 - Impervious



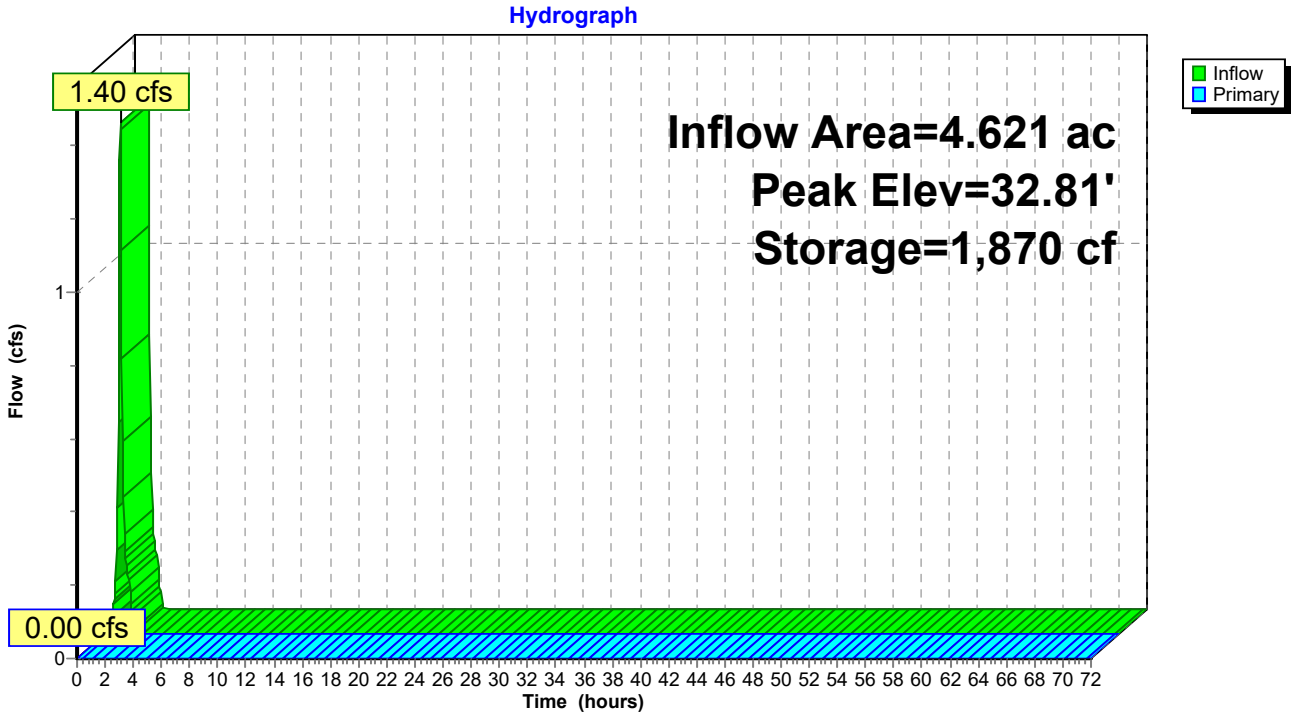
Pond 71P: Basin 33



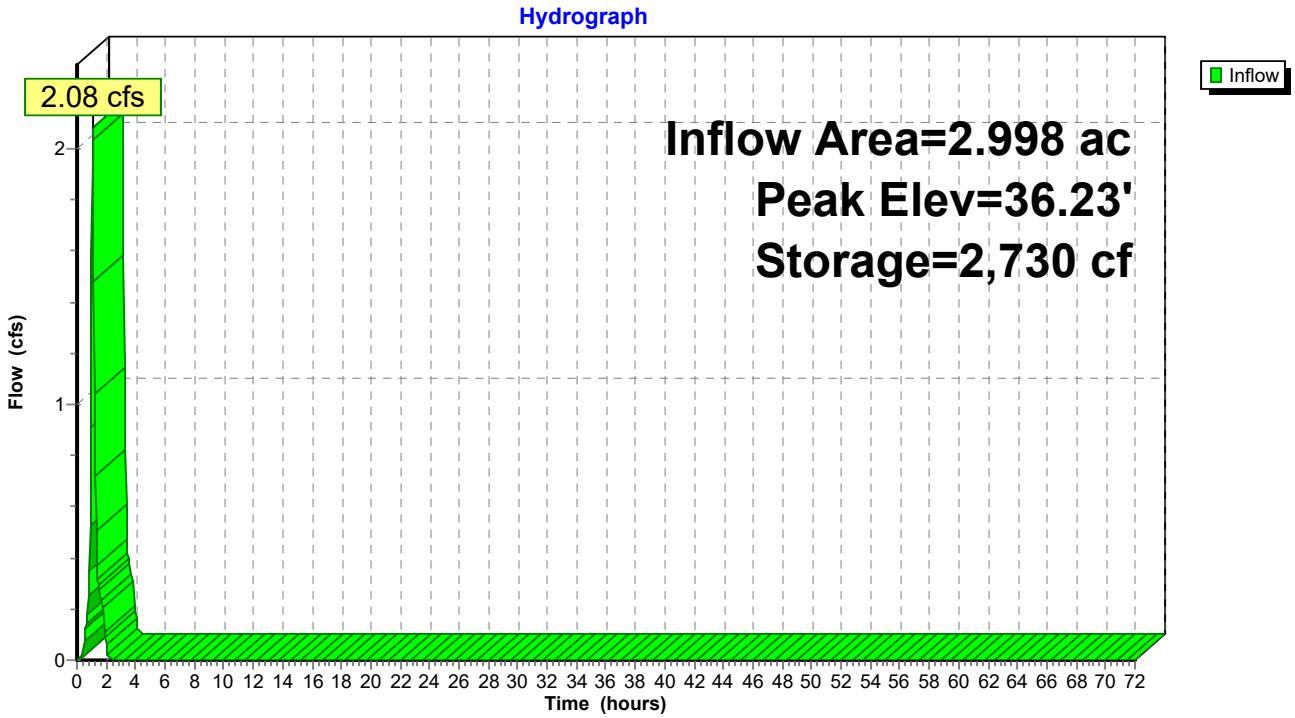
Subcatchment 71S: Basin 20 - Pervious



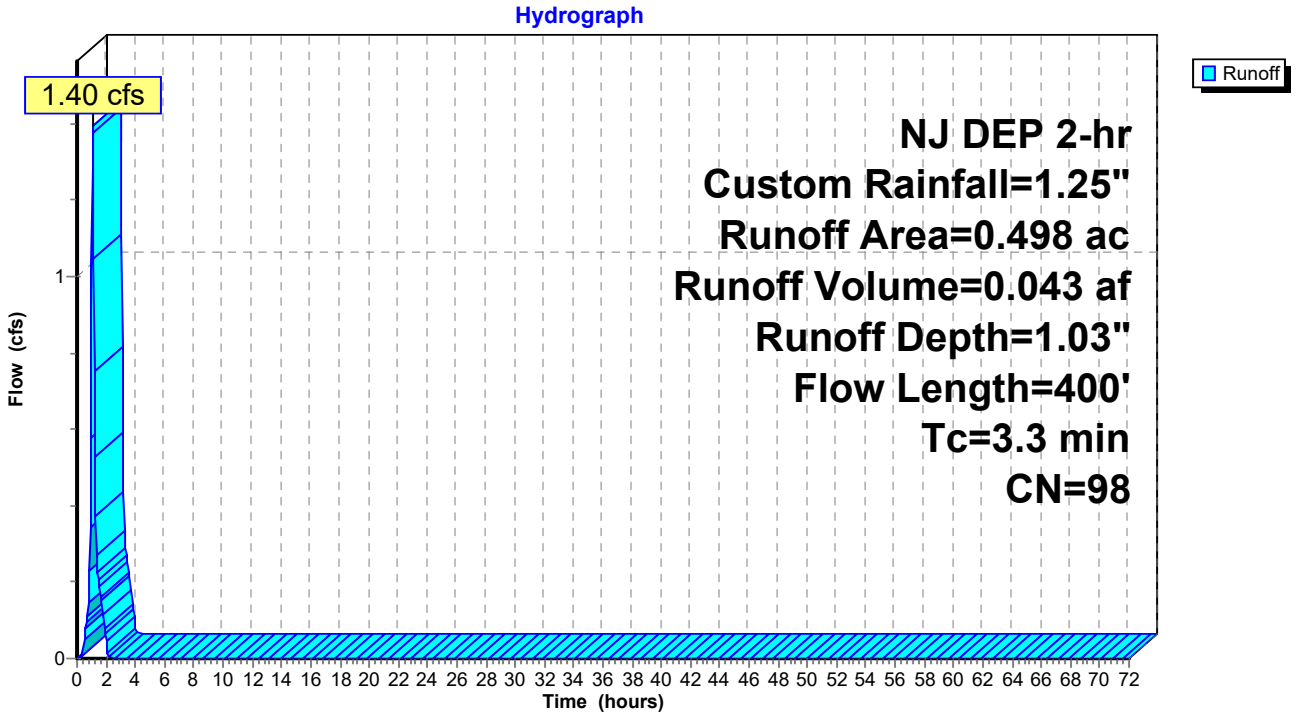
Pond 72P: Basin 21



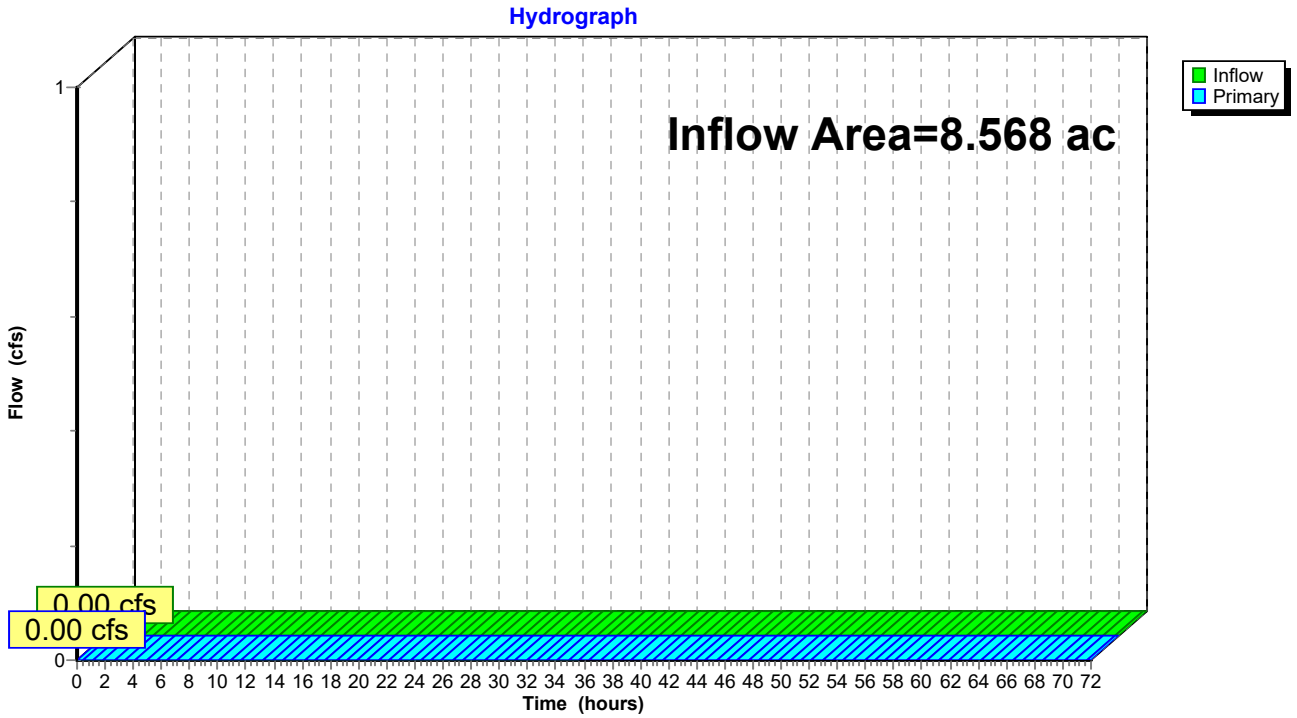
Pond 73P: Basin 32



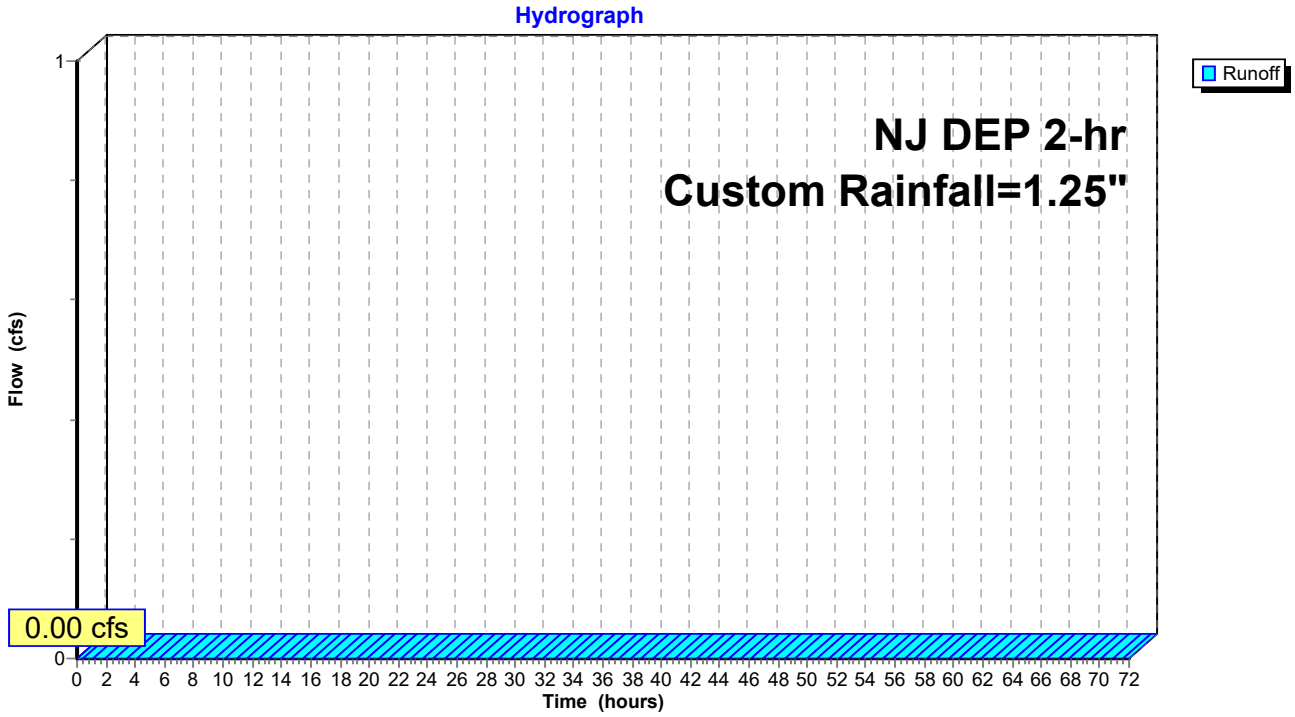
Subcatchment 73S: Basin 21 - Impervious



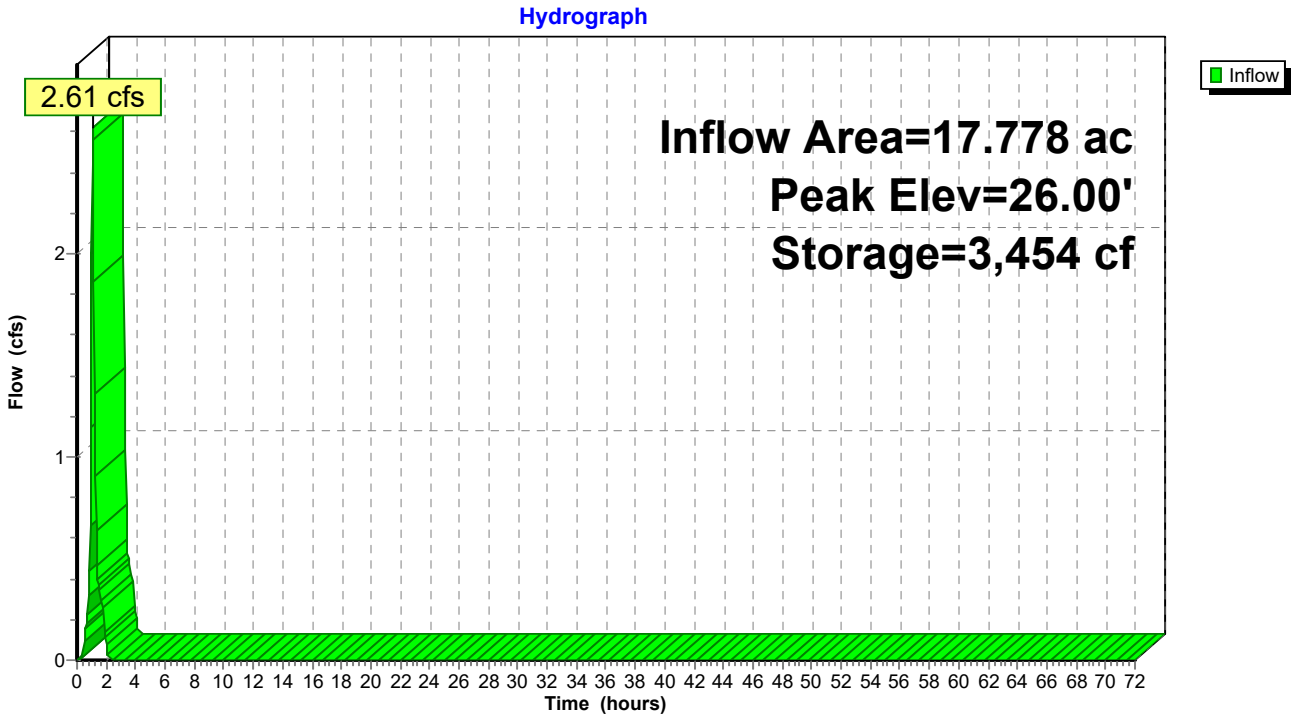
Pond 74P: Basin 39



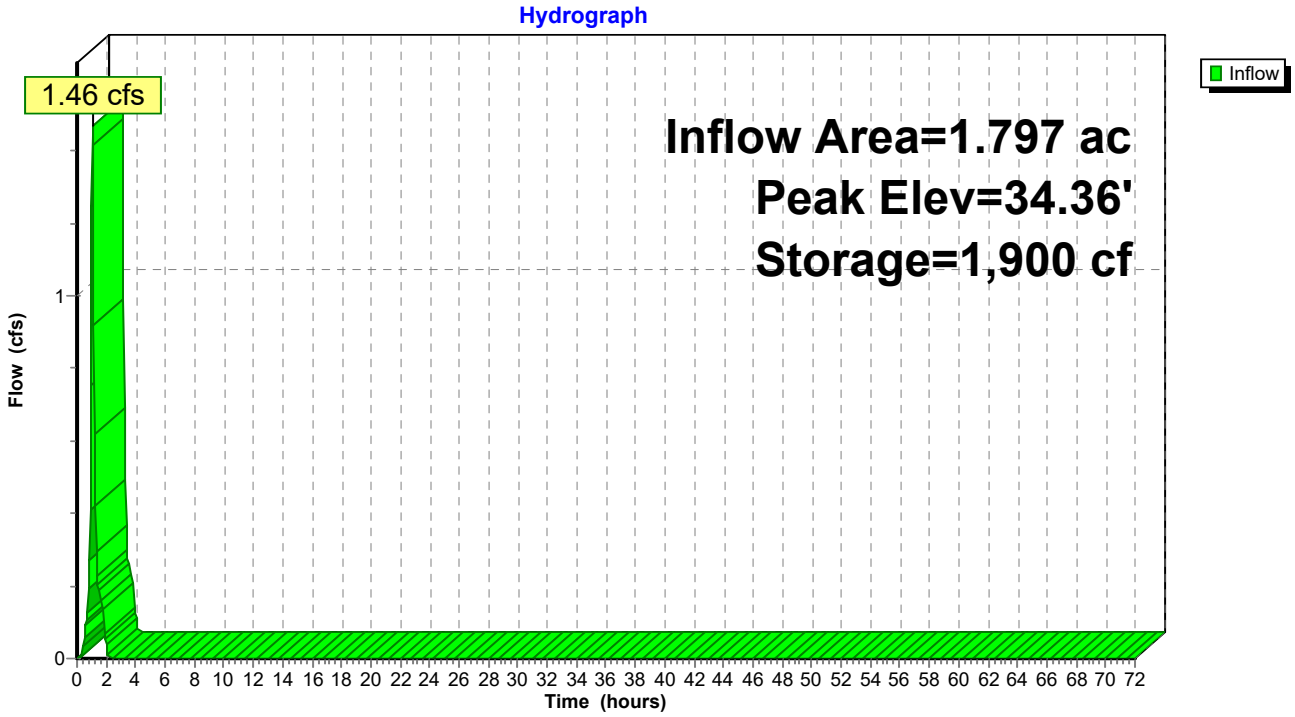
Subcatchment 74S: Basin 21 - Pervious



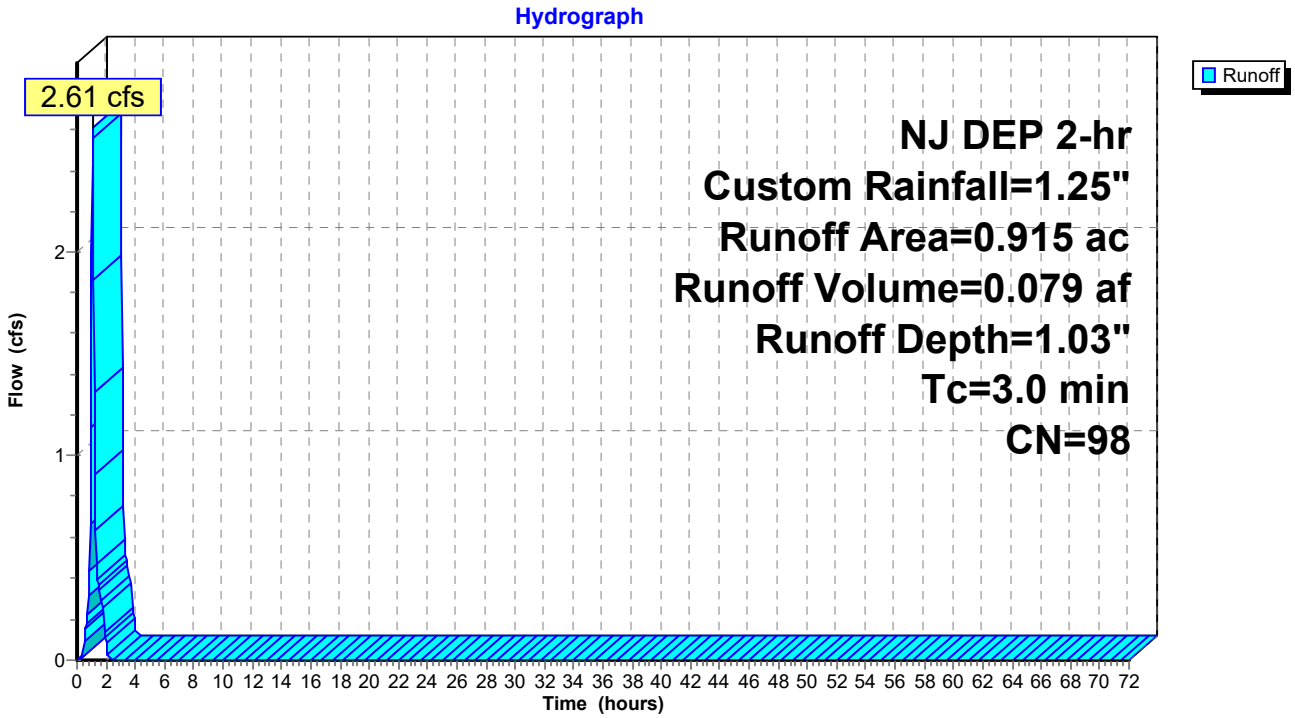
Pond 75P: Basin 25



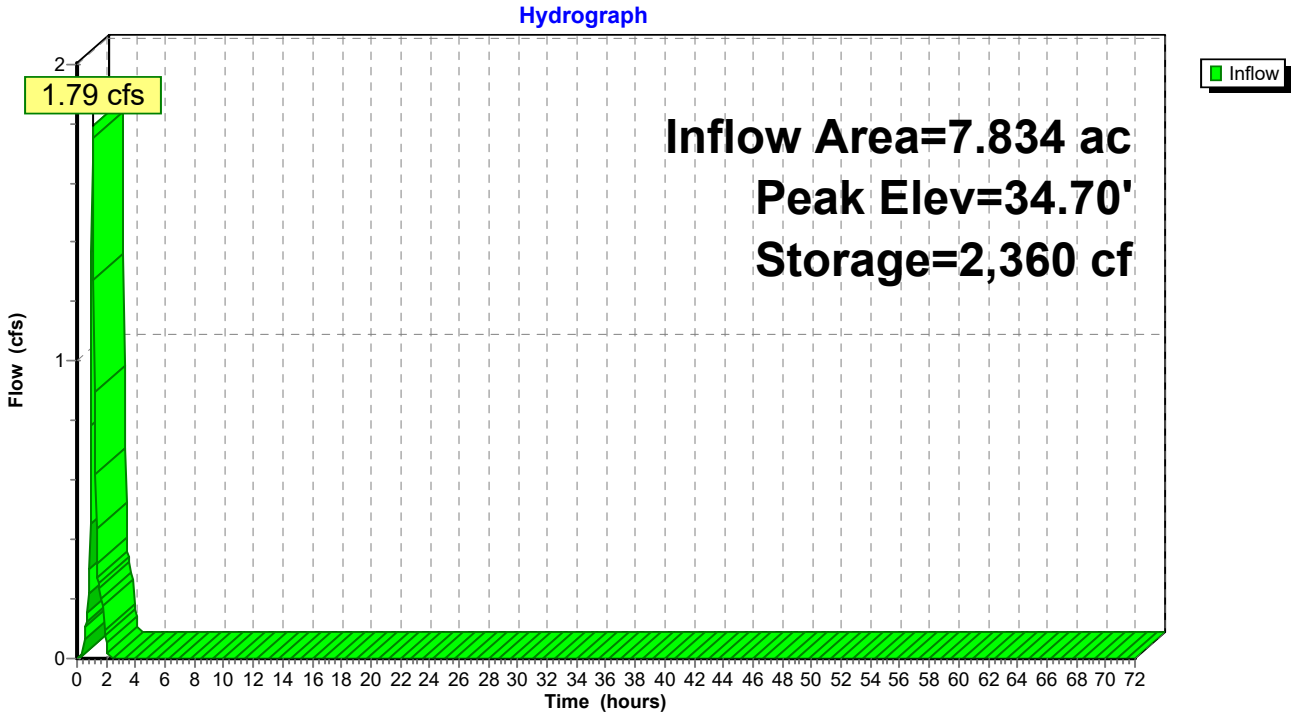
Pond 76P: Basin 38



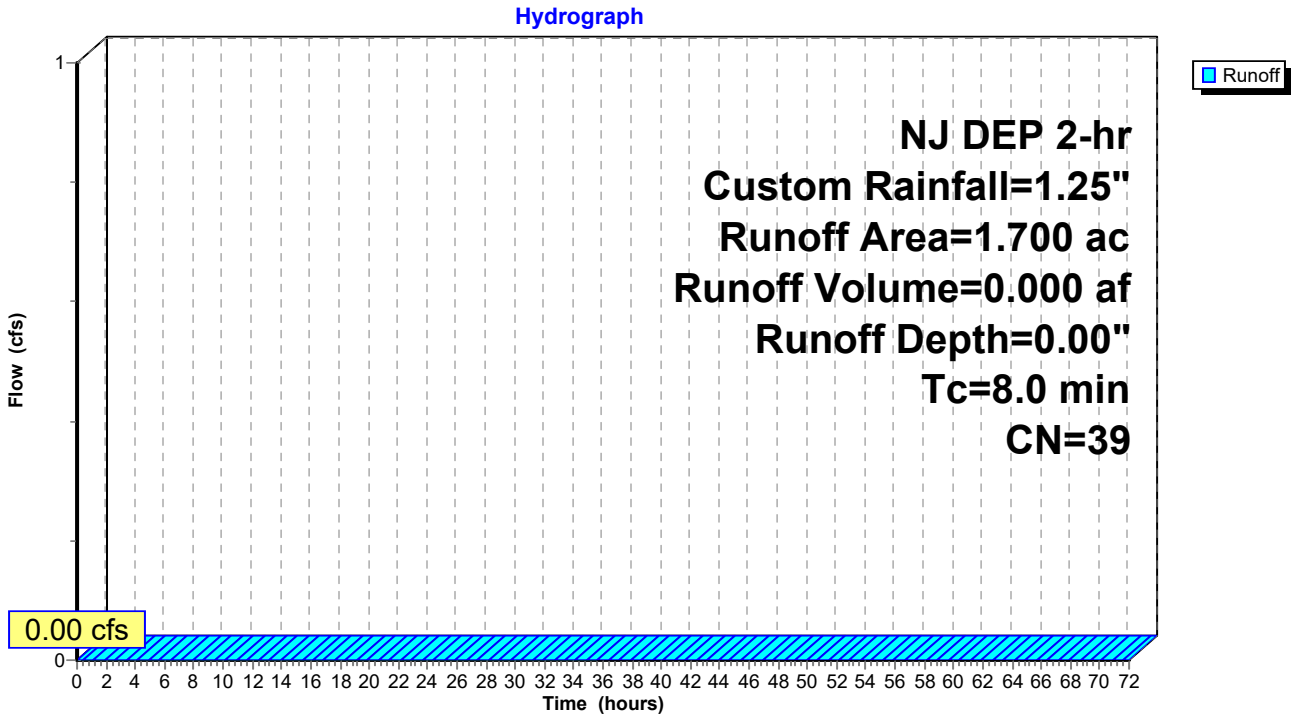
Subcatchment 76S: Basin 25 - Impervious



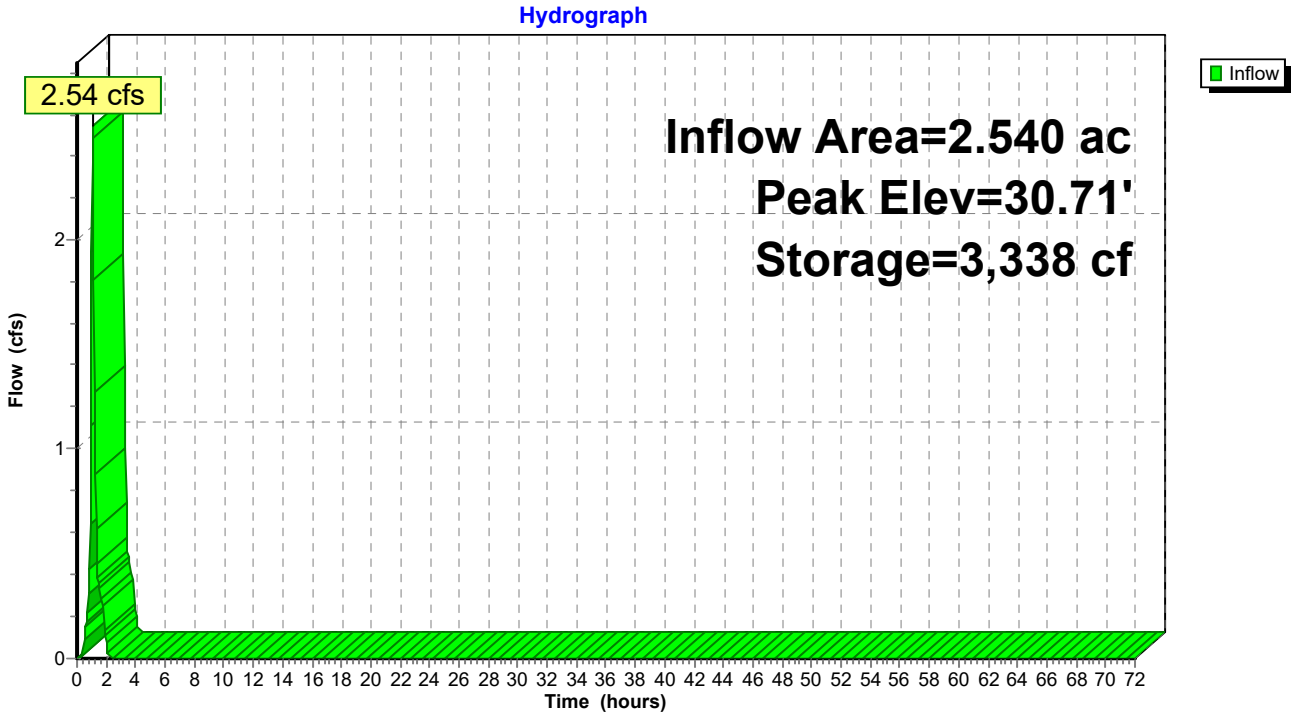
Pond 77P: Basin 37



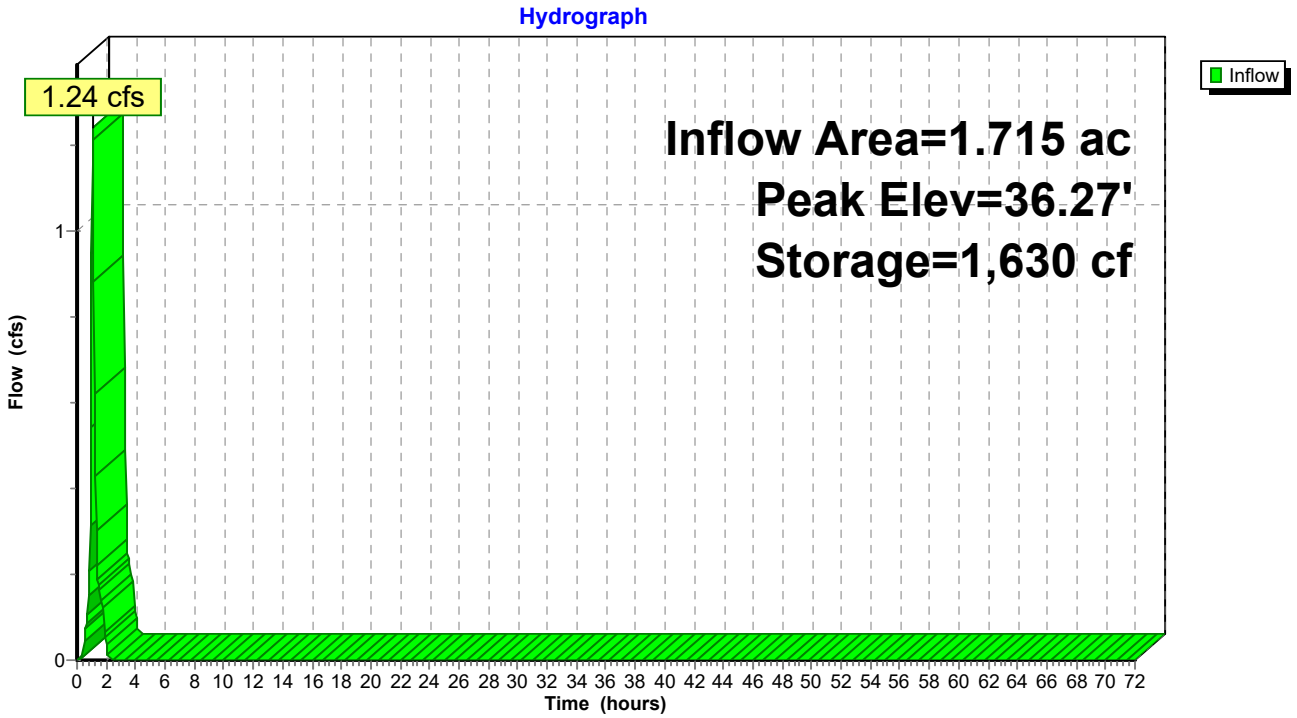
Subcatchment 77S: Basin 25 - Pervious



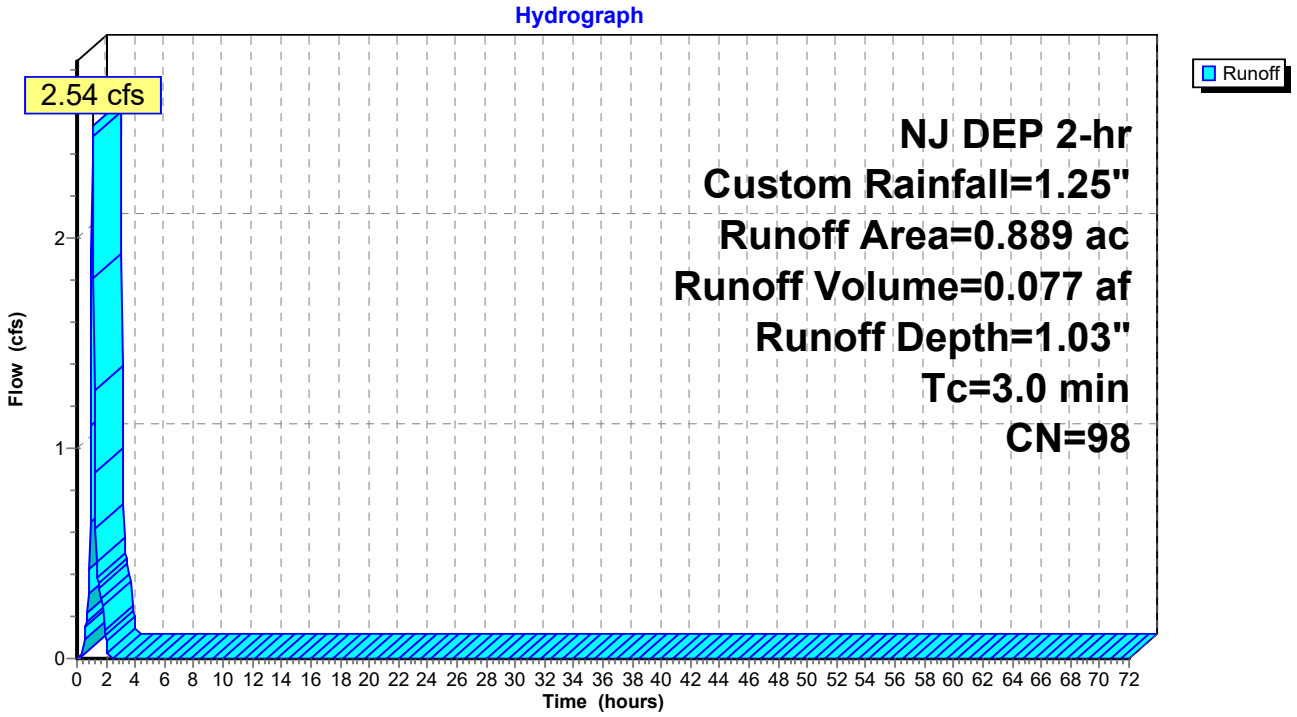
Pond 78P: Basin 24



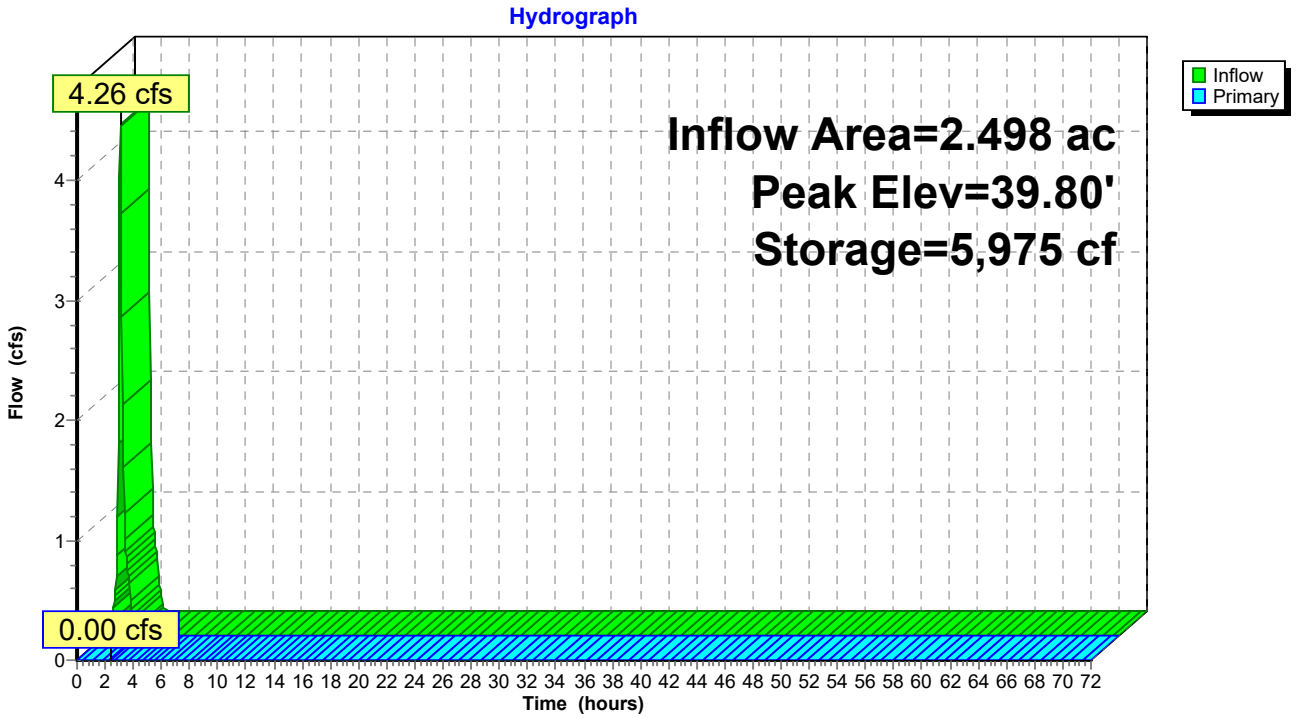
Pond 79P: Basin 34



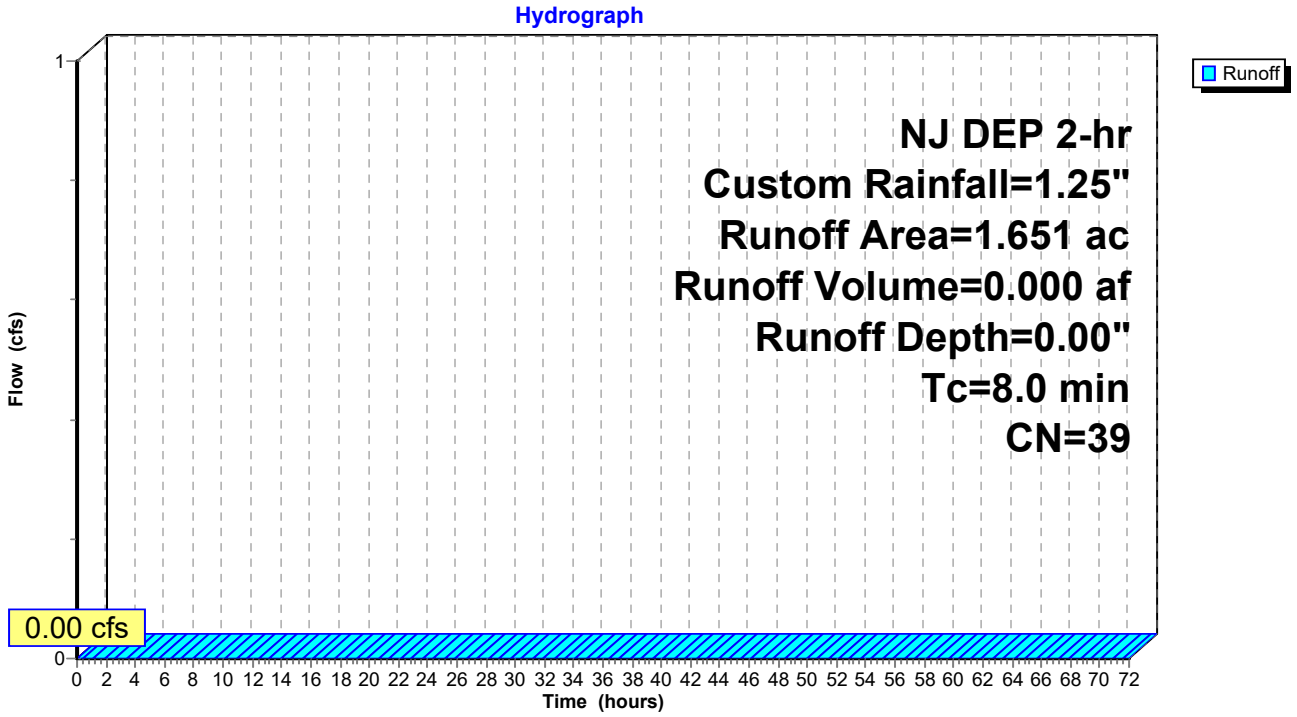
Subcatchment 79S: Basin 24 - Impervious



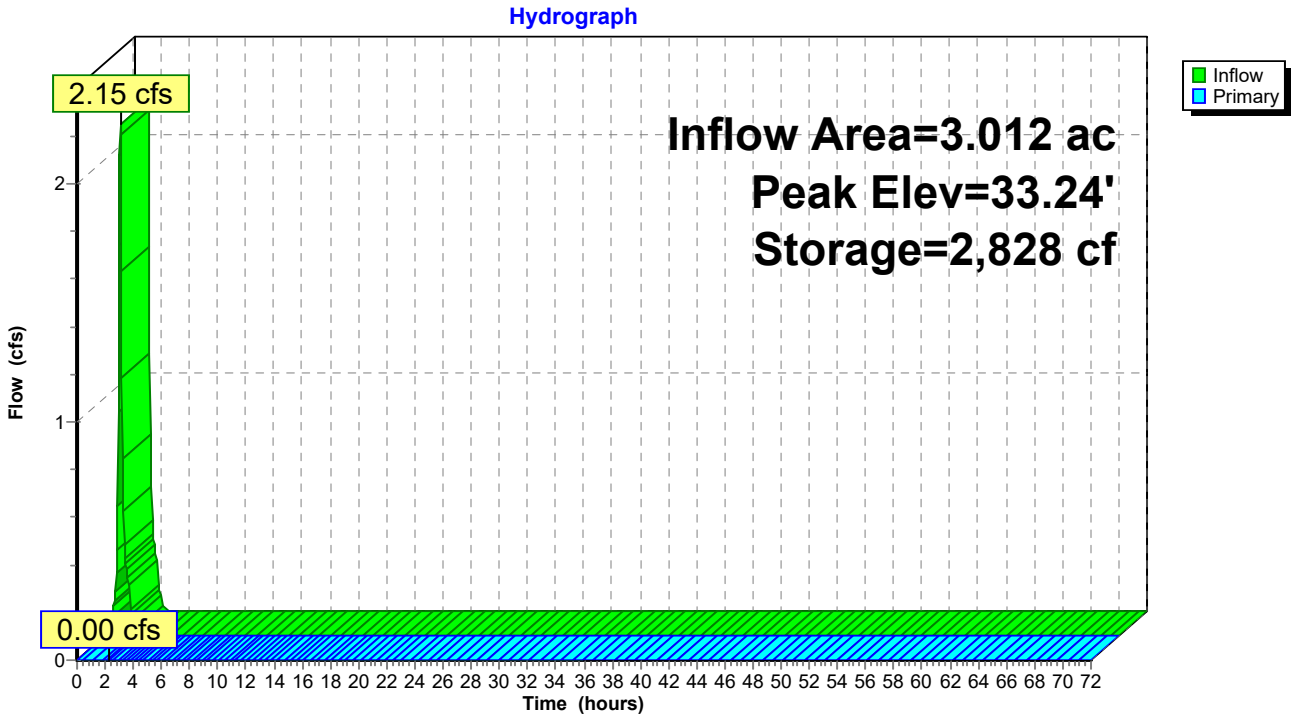
Pond 80P: Basin 35



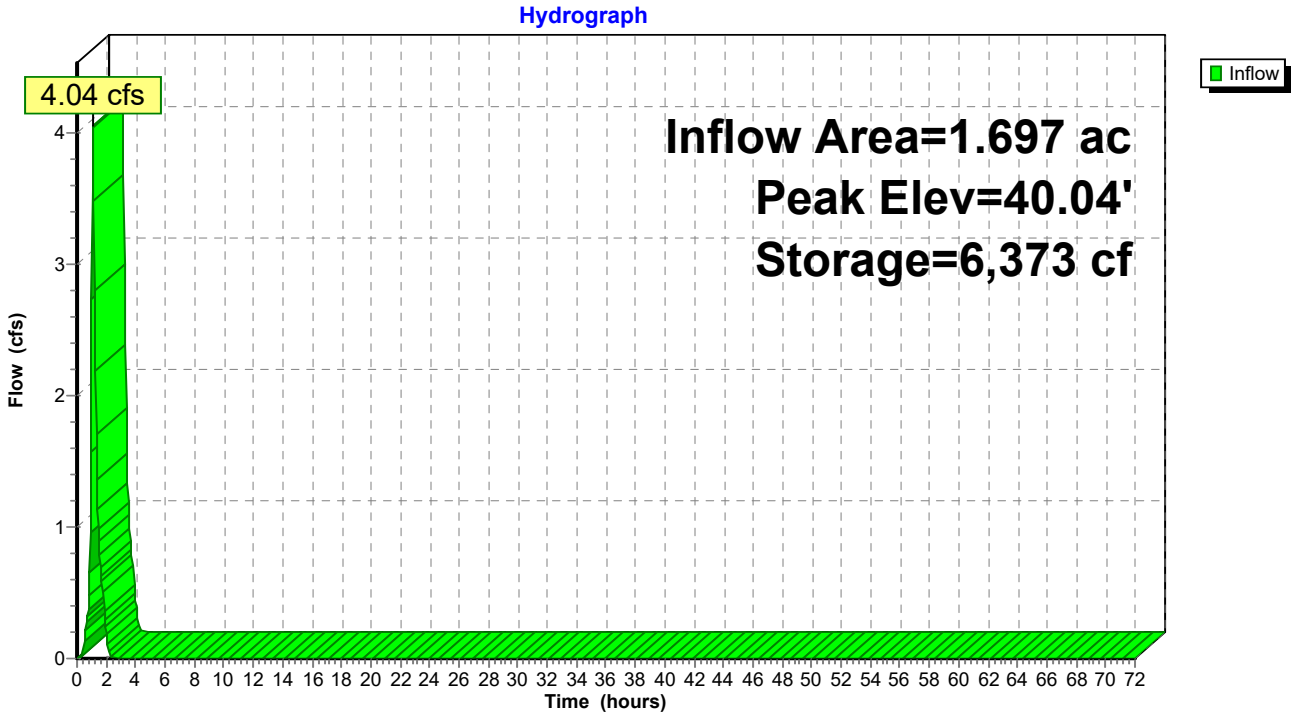
Subcatchment 80S: Basin 24 - Pervious



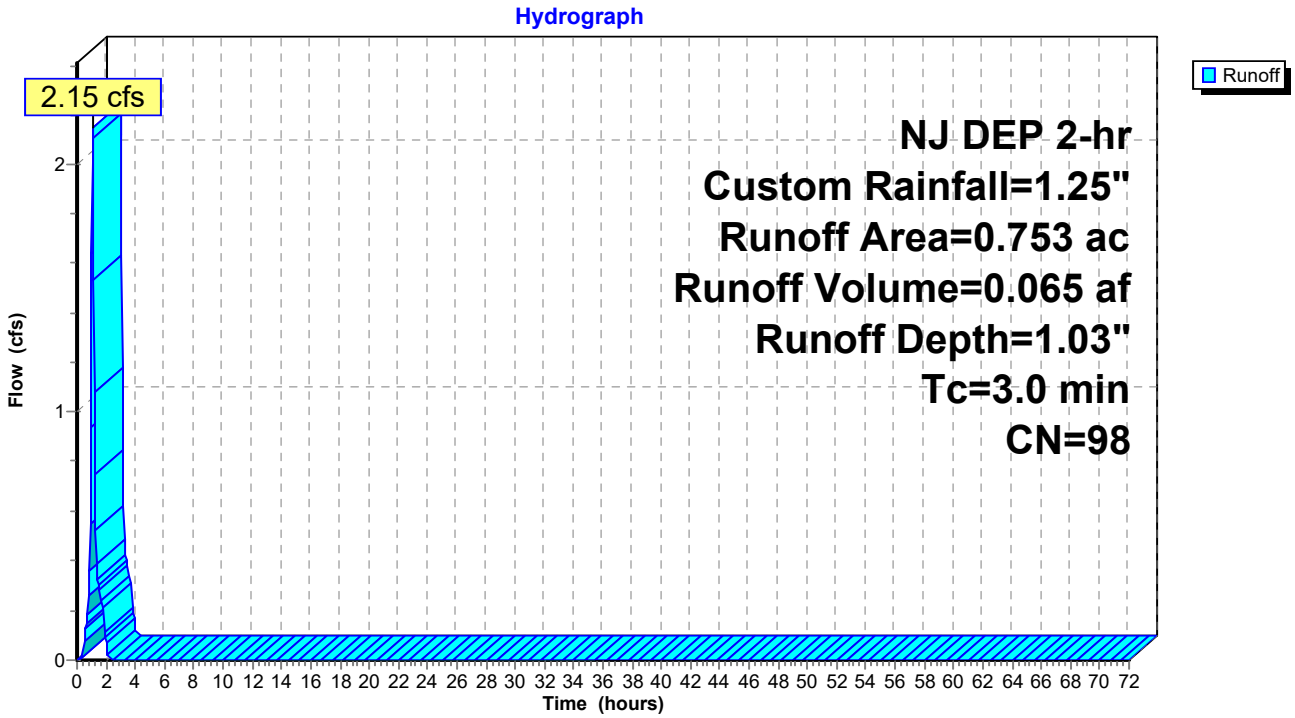
Pond 81P: Basin 27



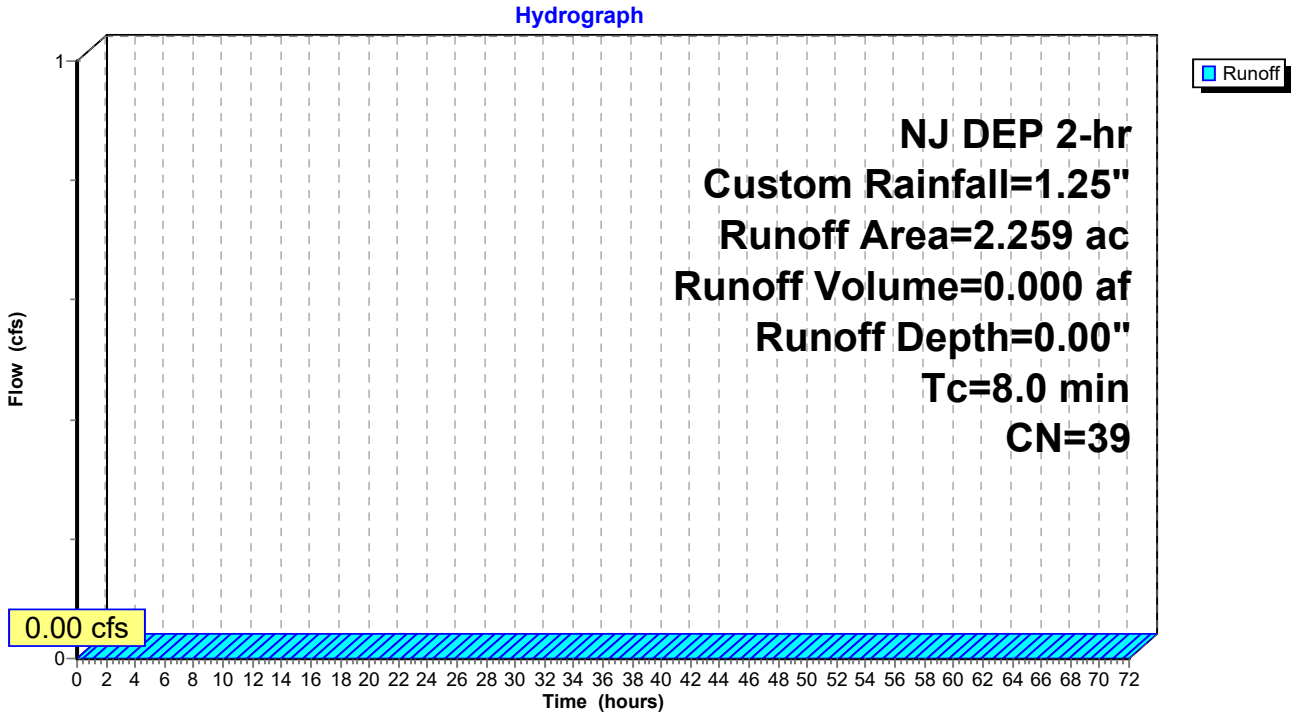
Pond 82P: Basin 36



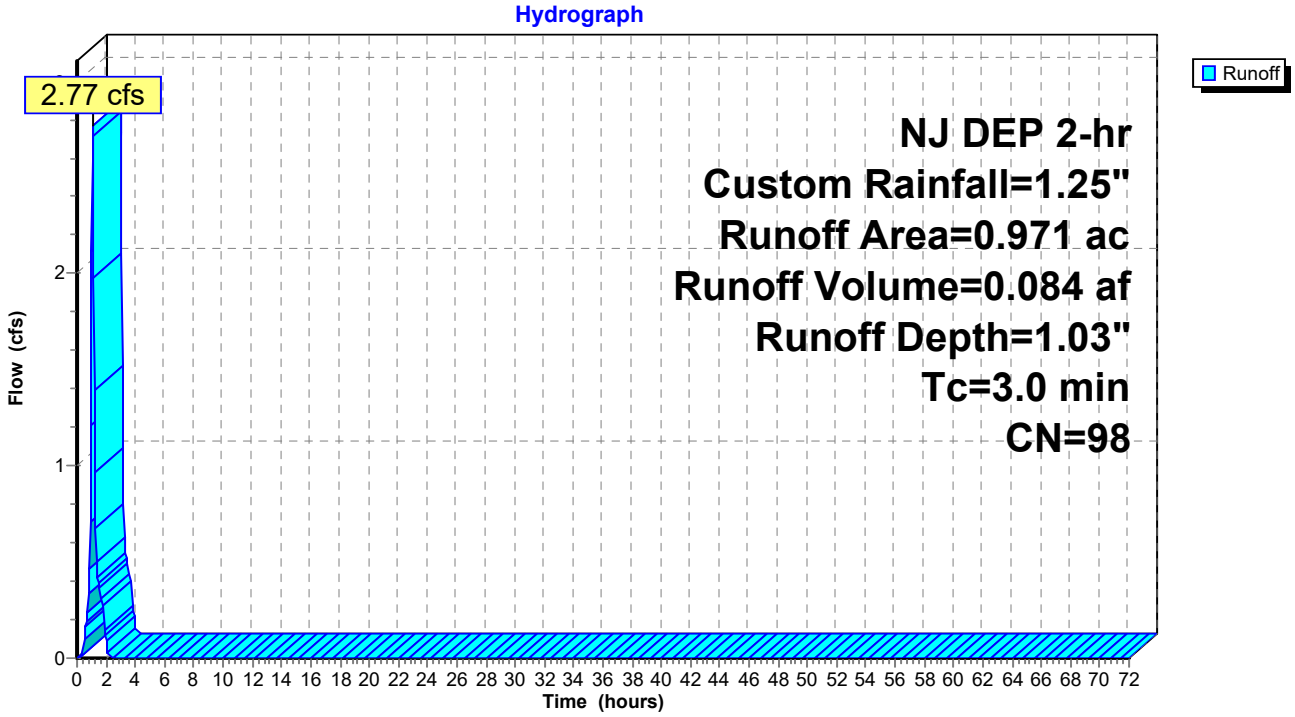
Subcatchment 82S: Basin 27 - Impervious



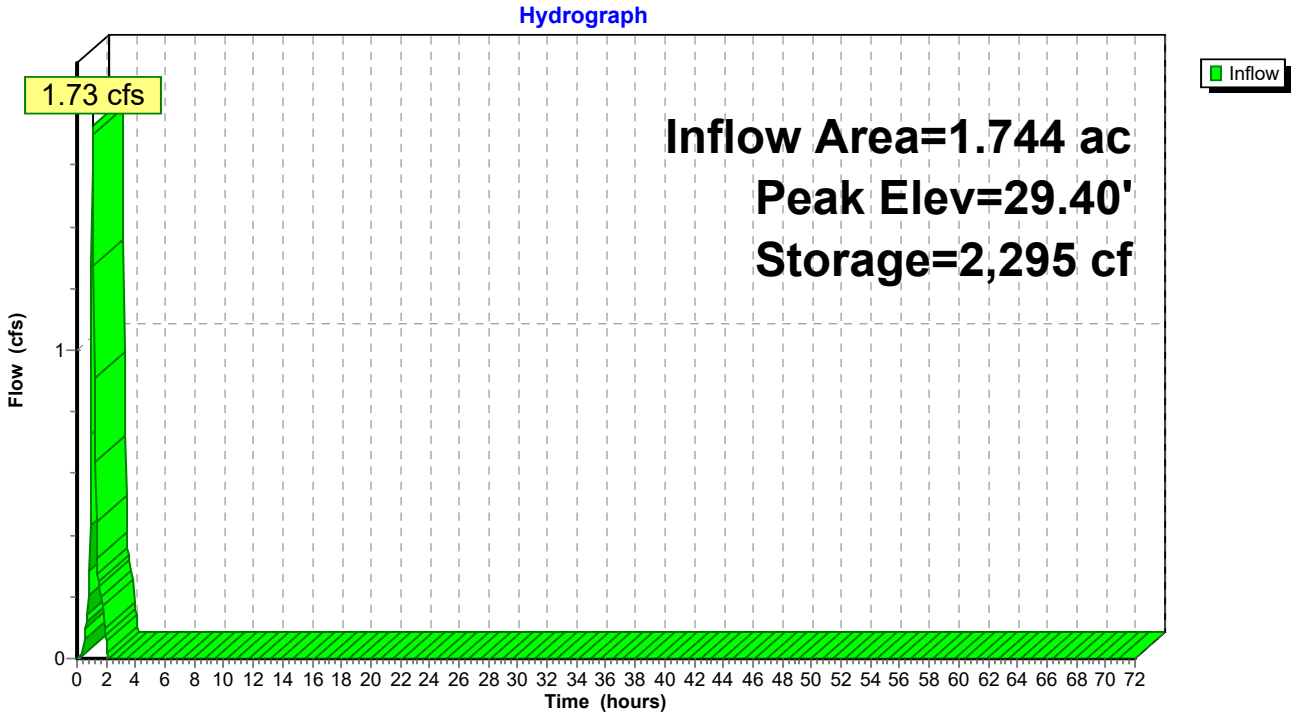
Subcatchment 83S: Basin 27 - Pervious



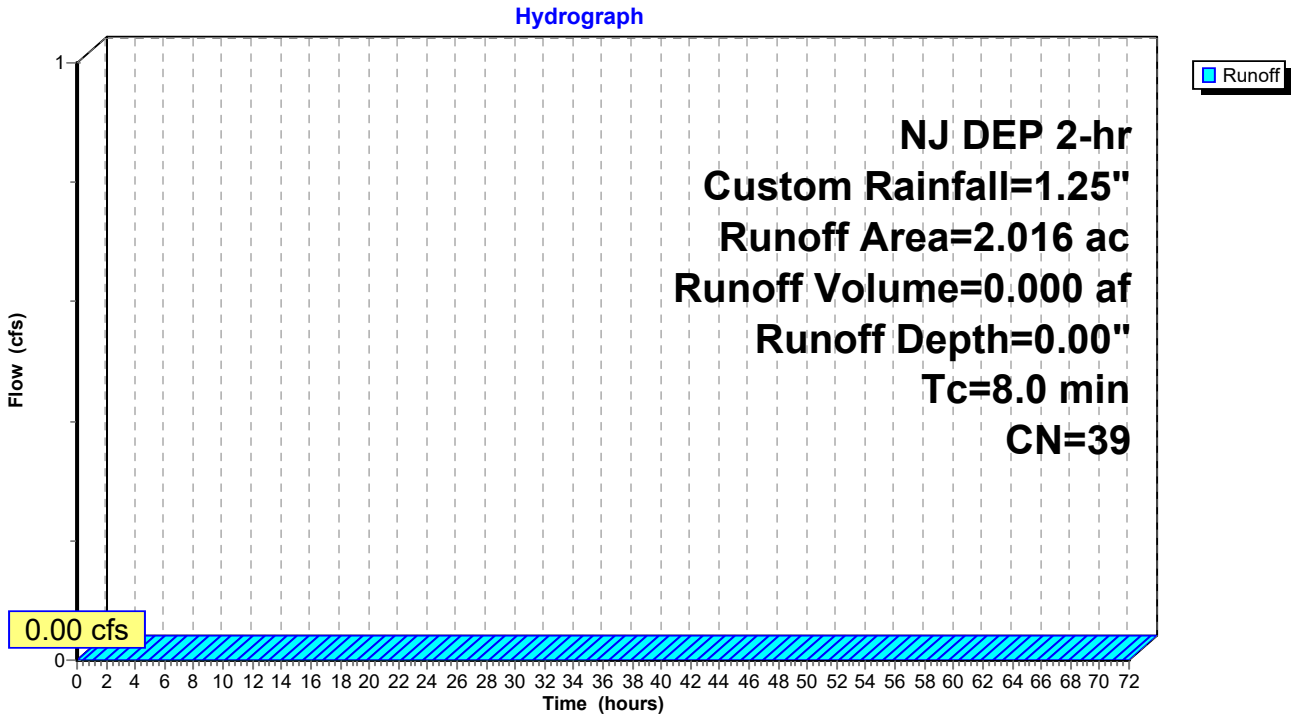
Subcatchment 84S: Basin 29 - Impervious



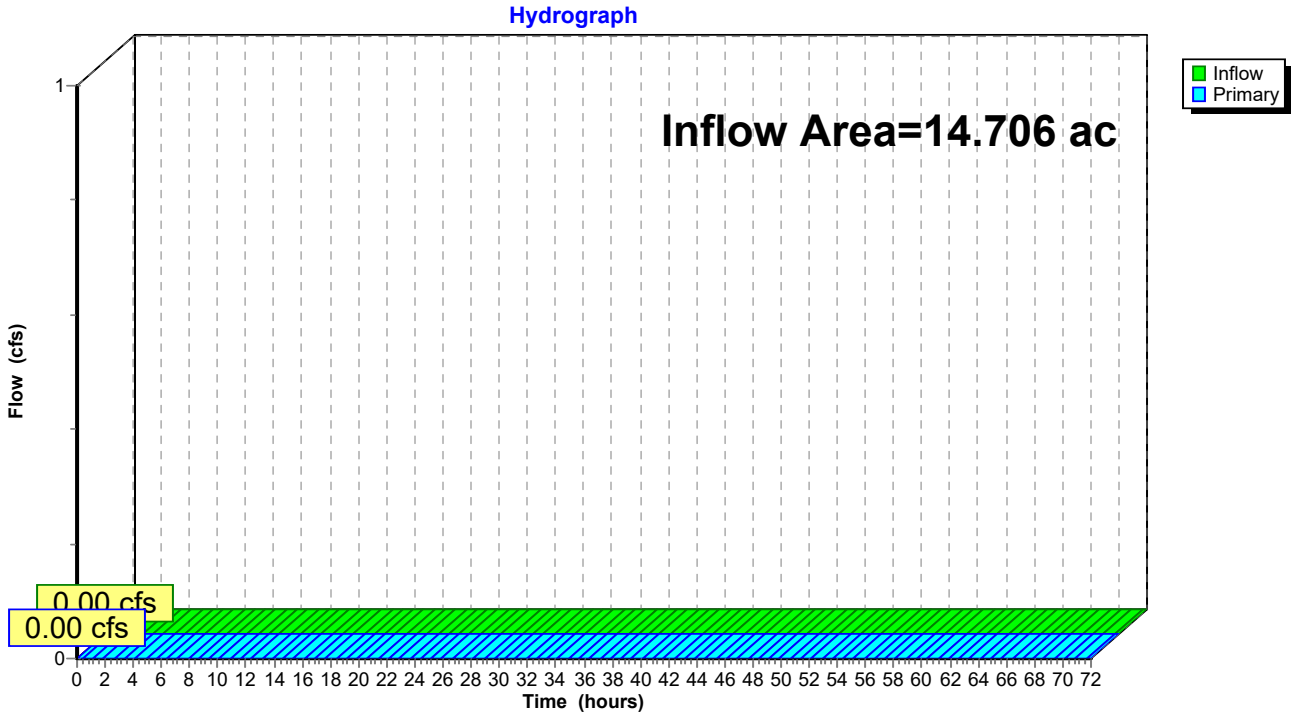
Pond 85P: Basin 28



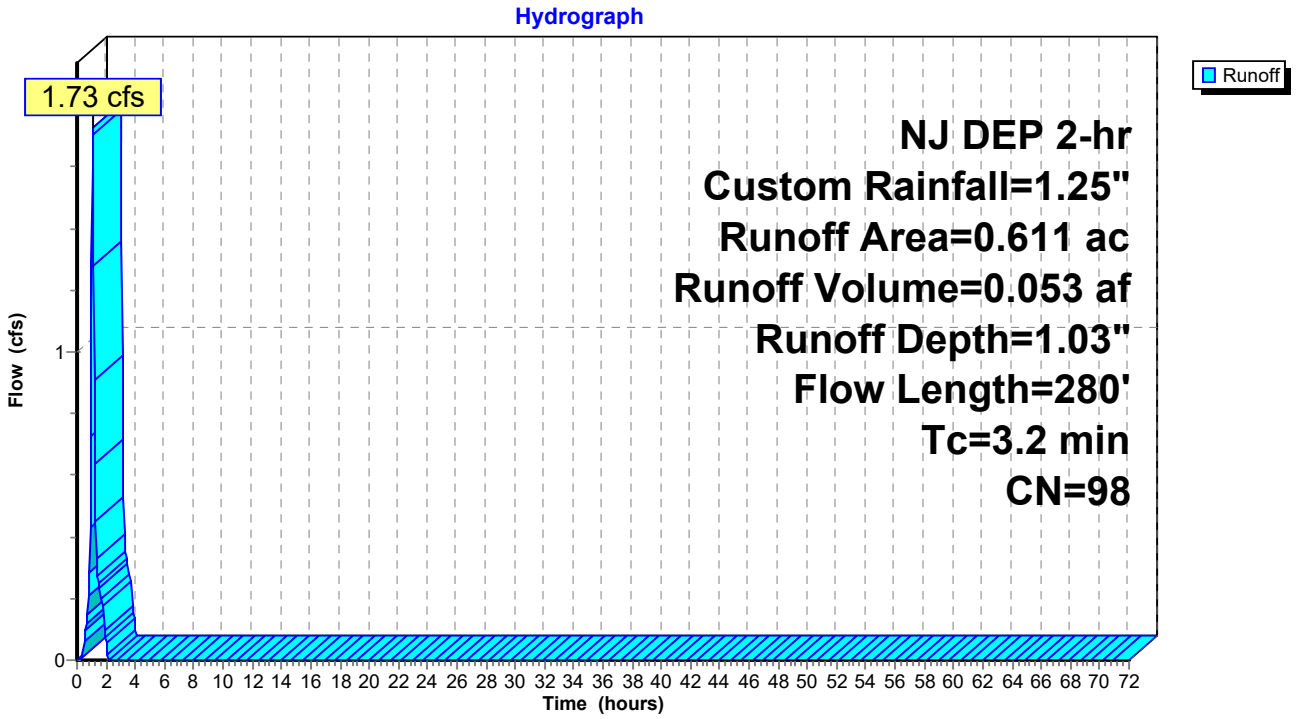
Subcatchment 85S: Basin 29 - Pervious



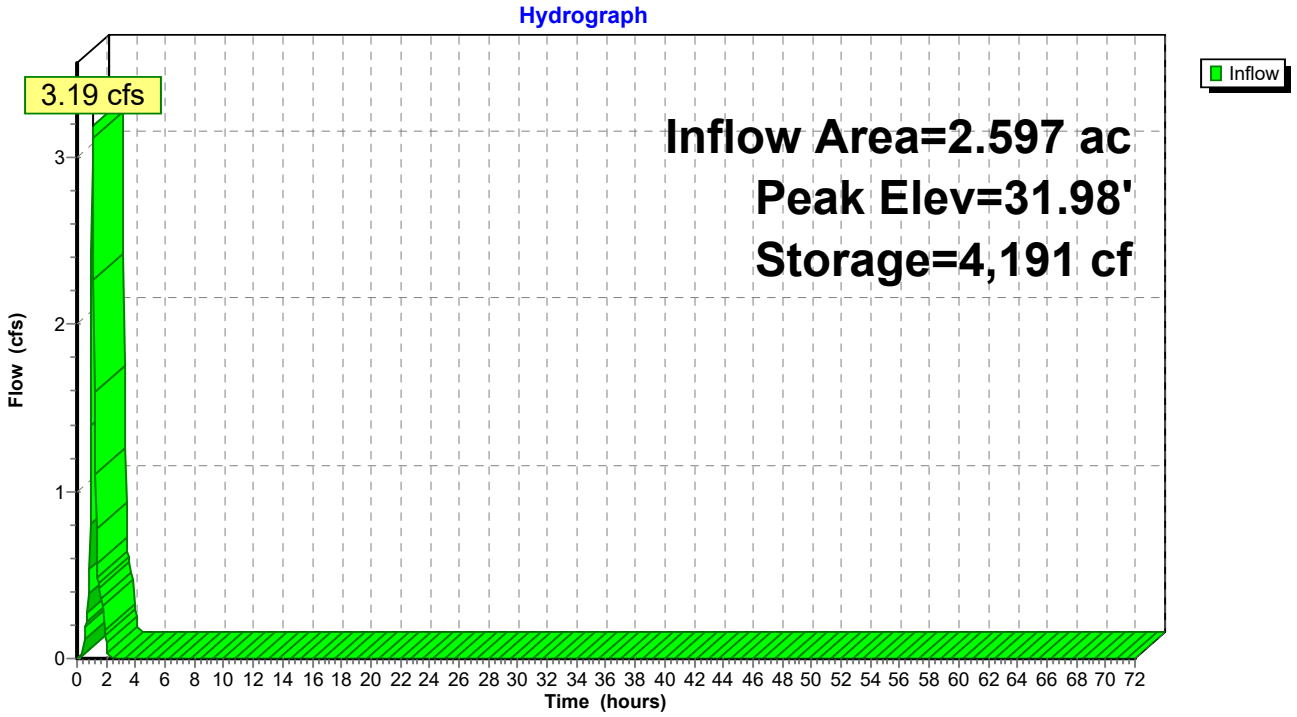
Link 86L: Outlet to Wet Pond



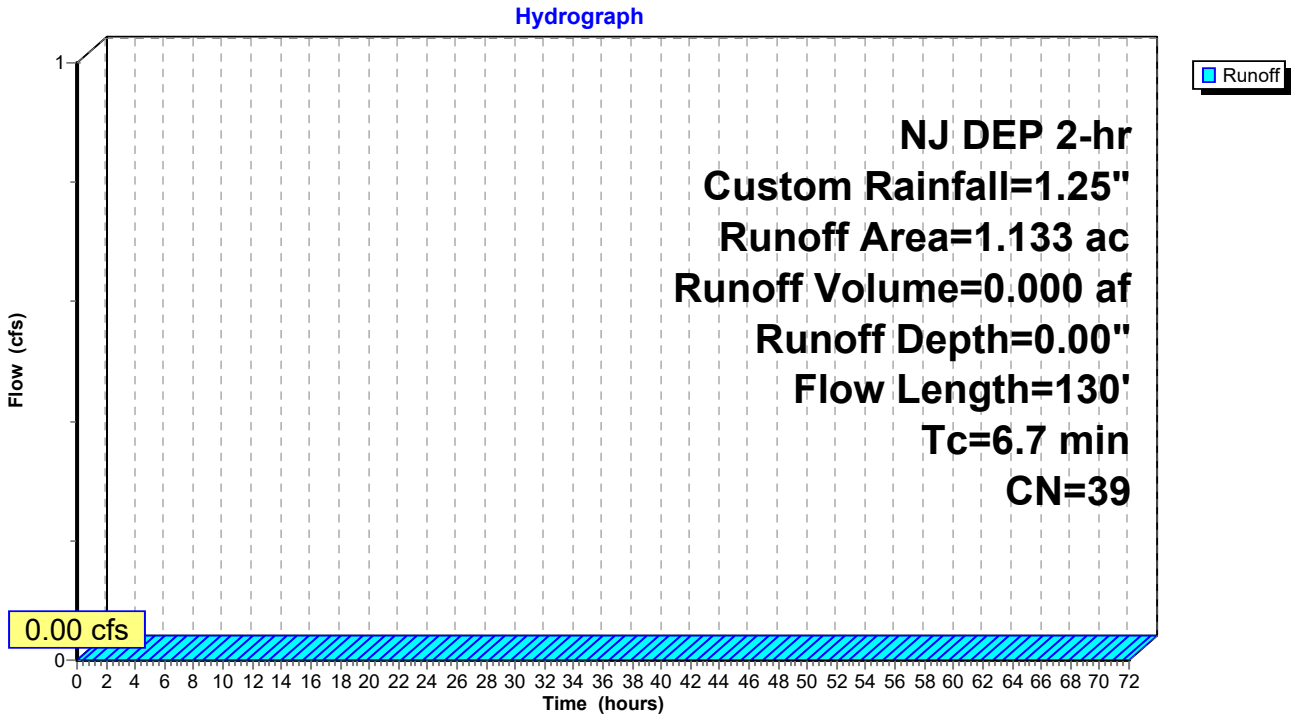
Subcatchment 86S: Basin 28 - Impervious



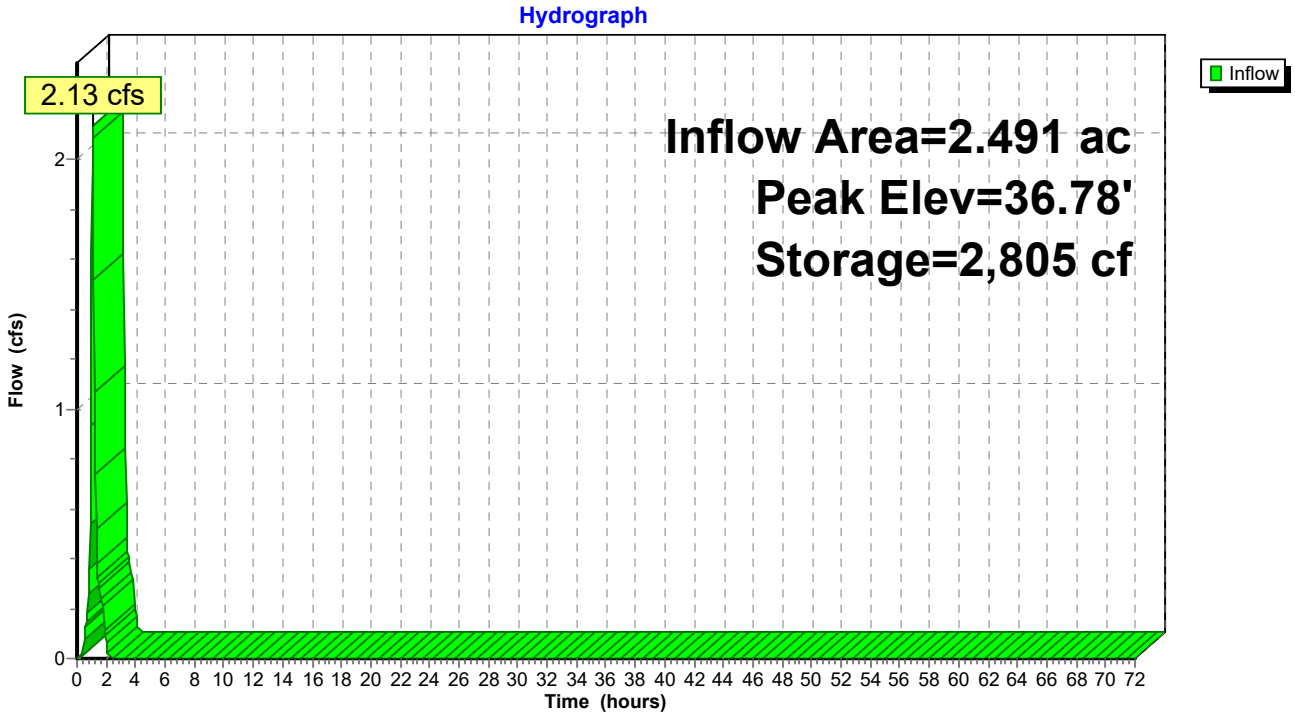
Pond 87P: Basin 40



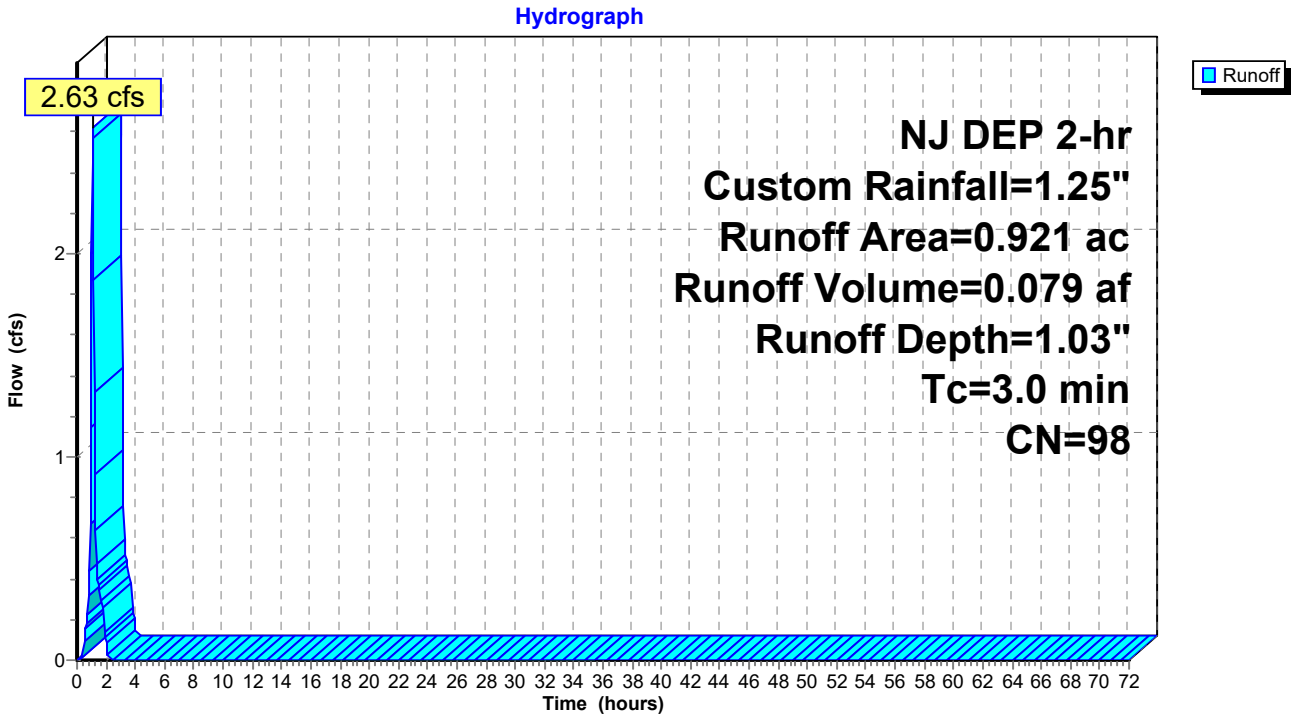
Subcatchment 87S: Basin 28 - Pervious



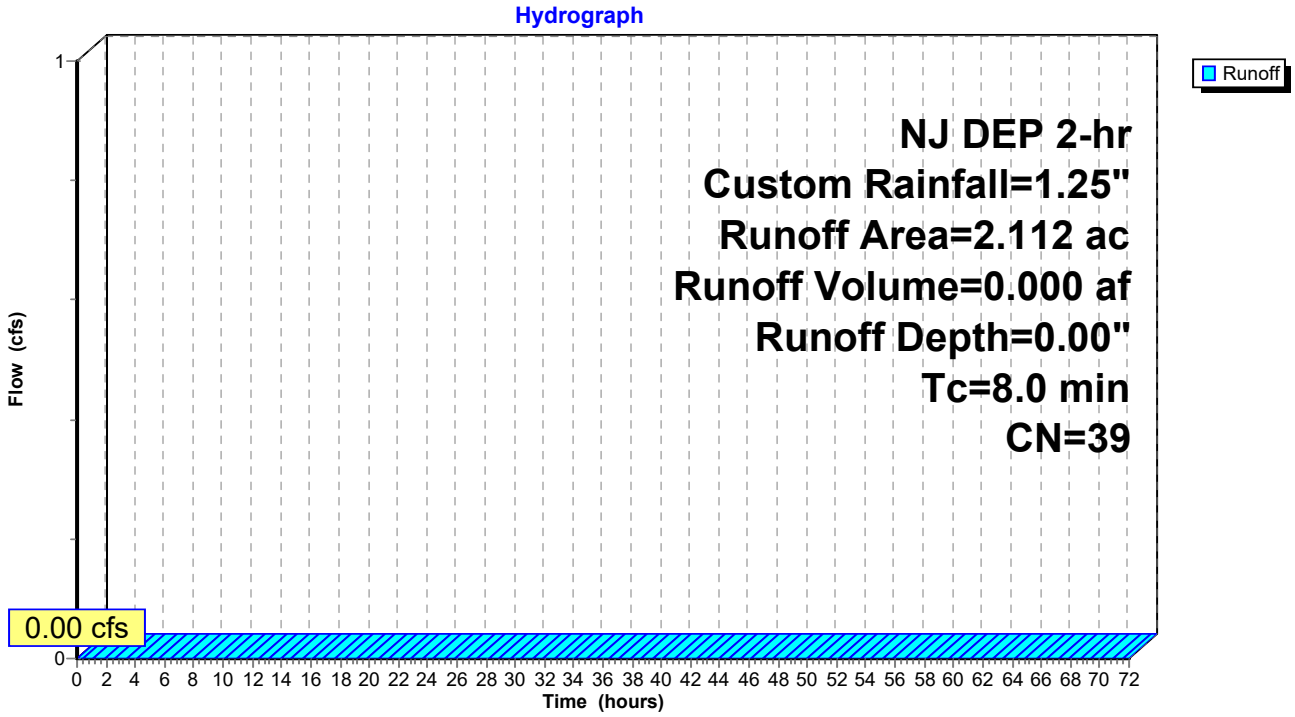
Pond 88P: Basin 22



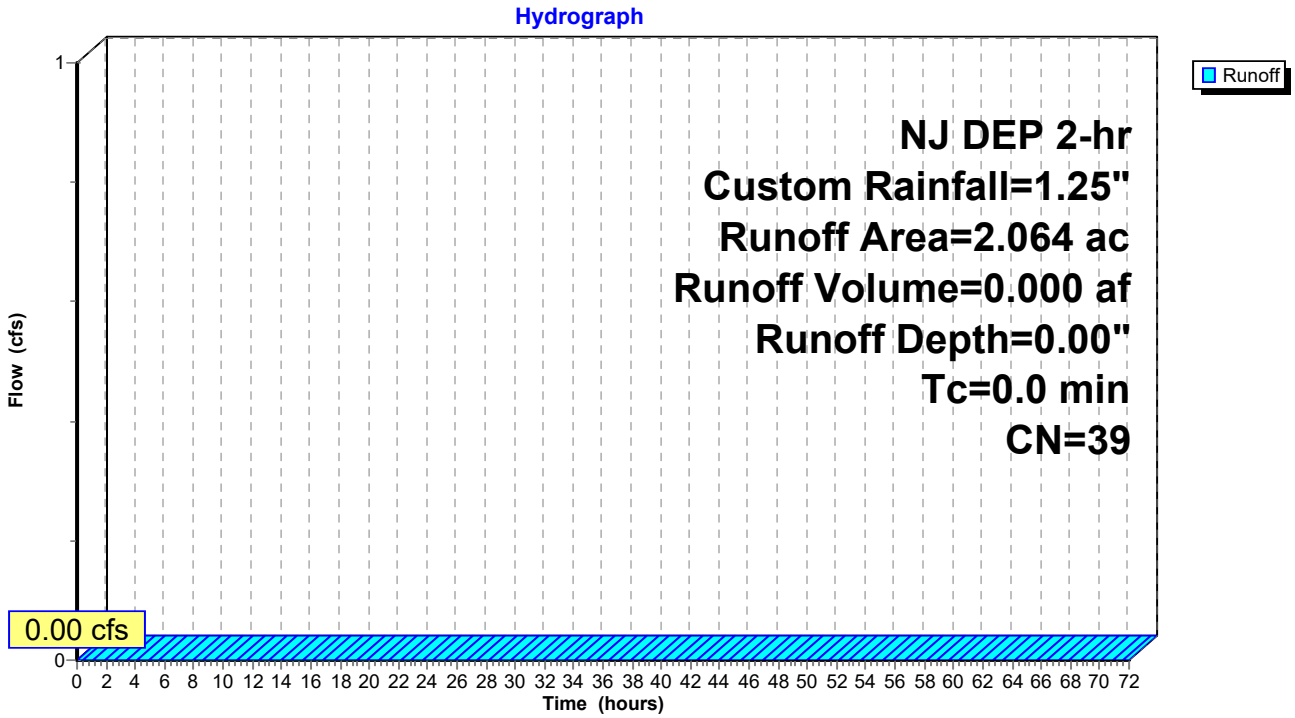
Subcatchment 88S: Basin 30 - Impervious



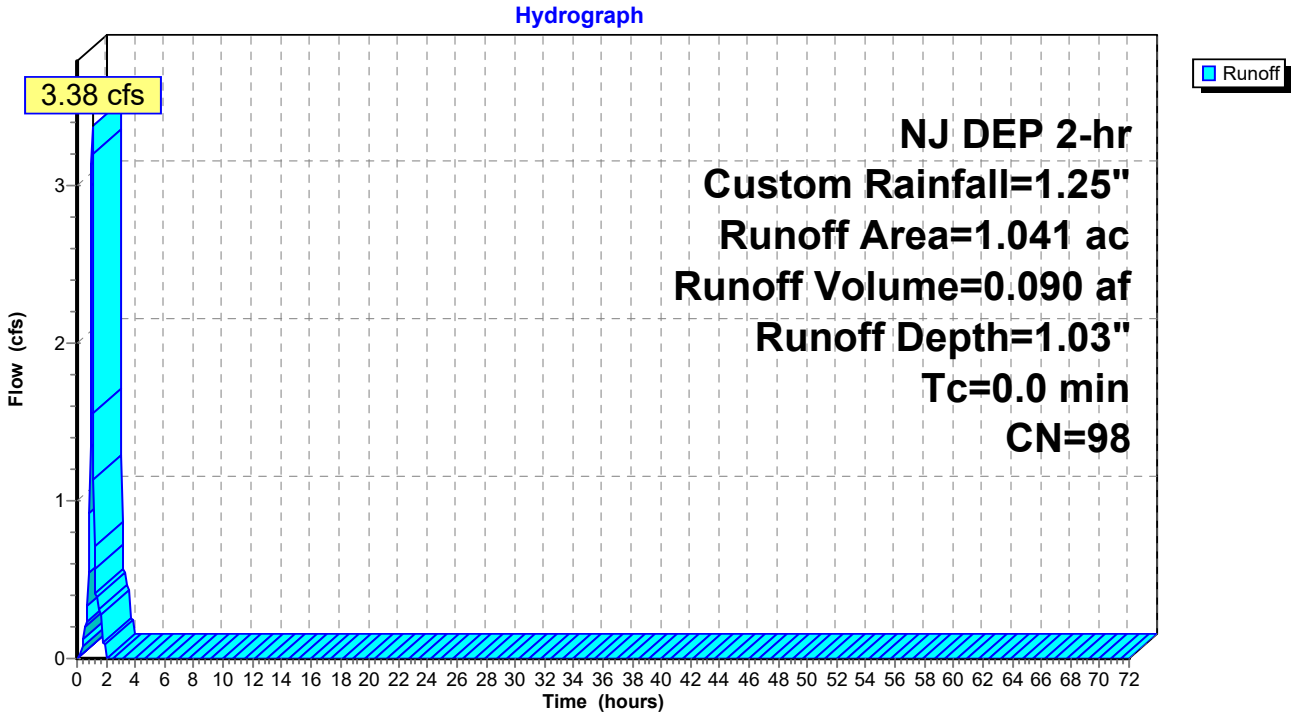
Subcatchment 89S: Basin 30 - Pervious



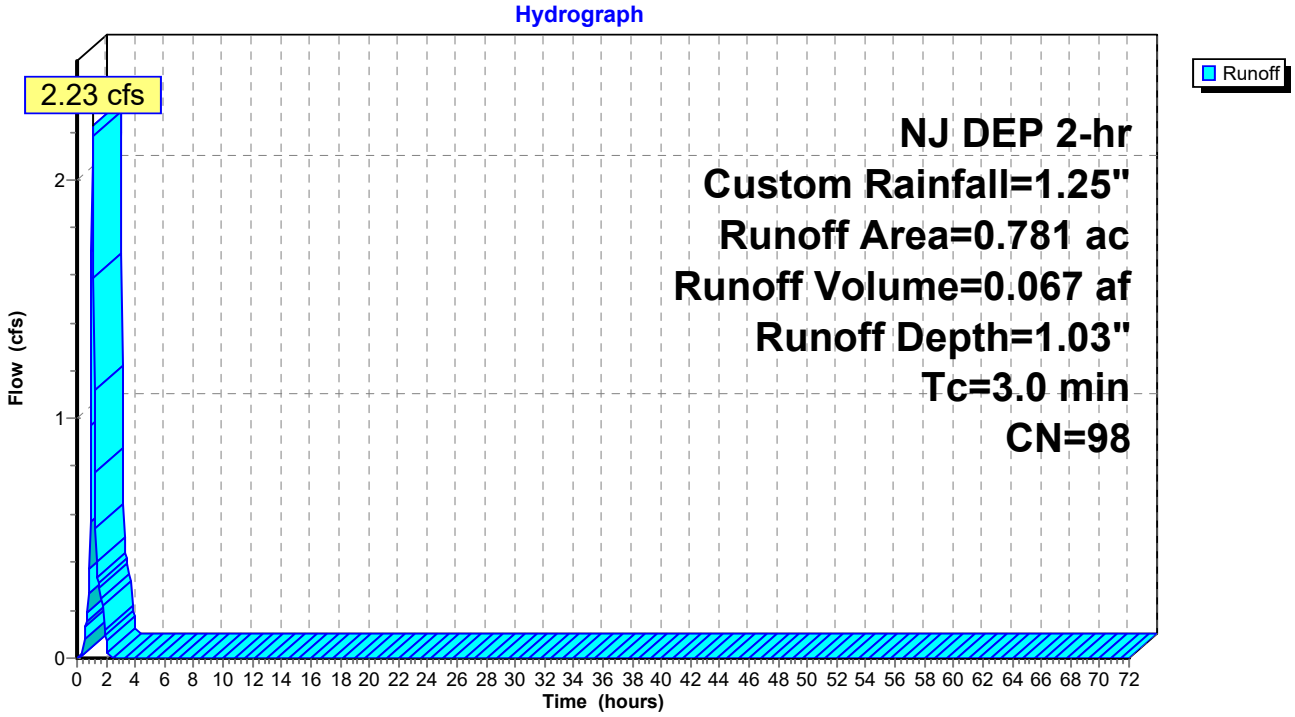
Subcatchment 90S: Basin 31 - Pervious



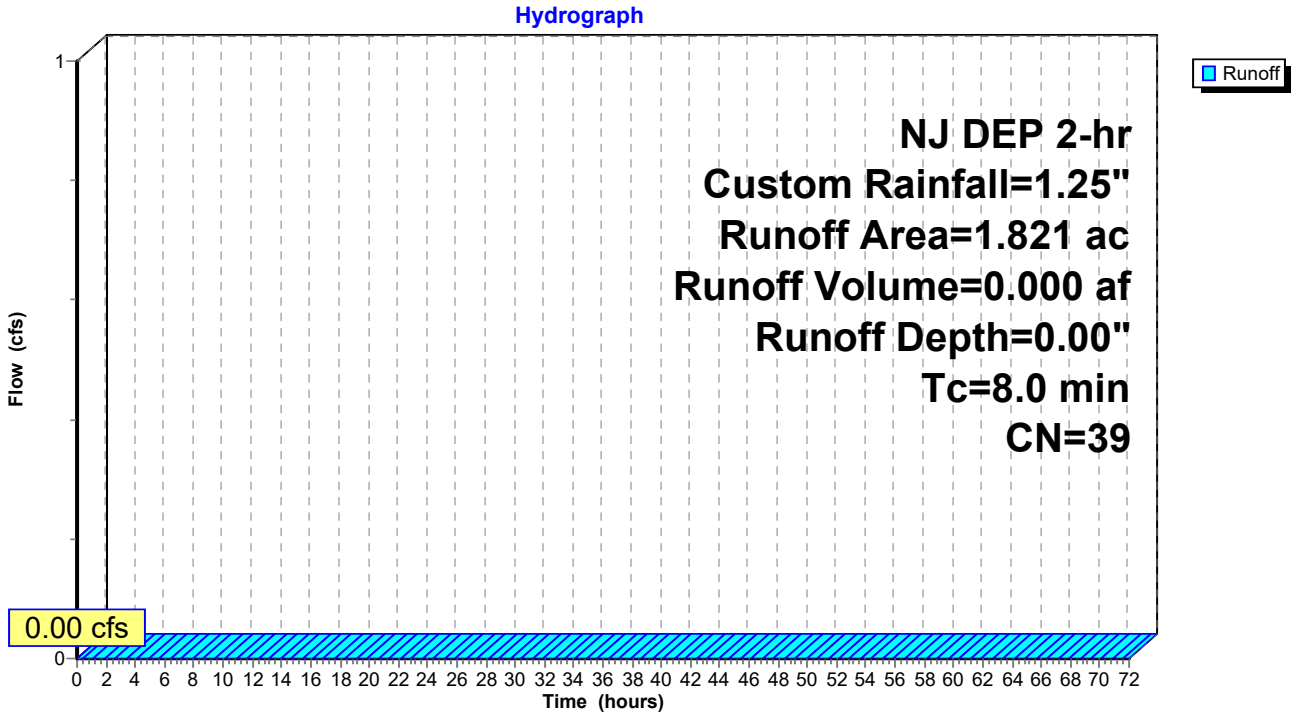
Subcatchment 91S: Basin 31- Impervious



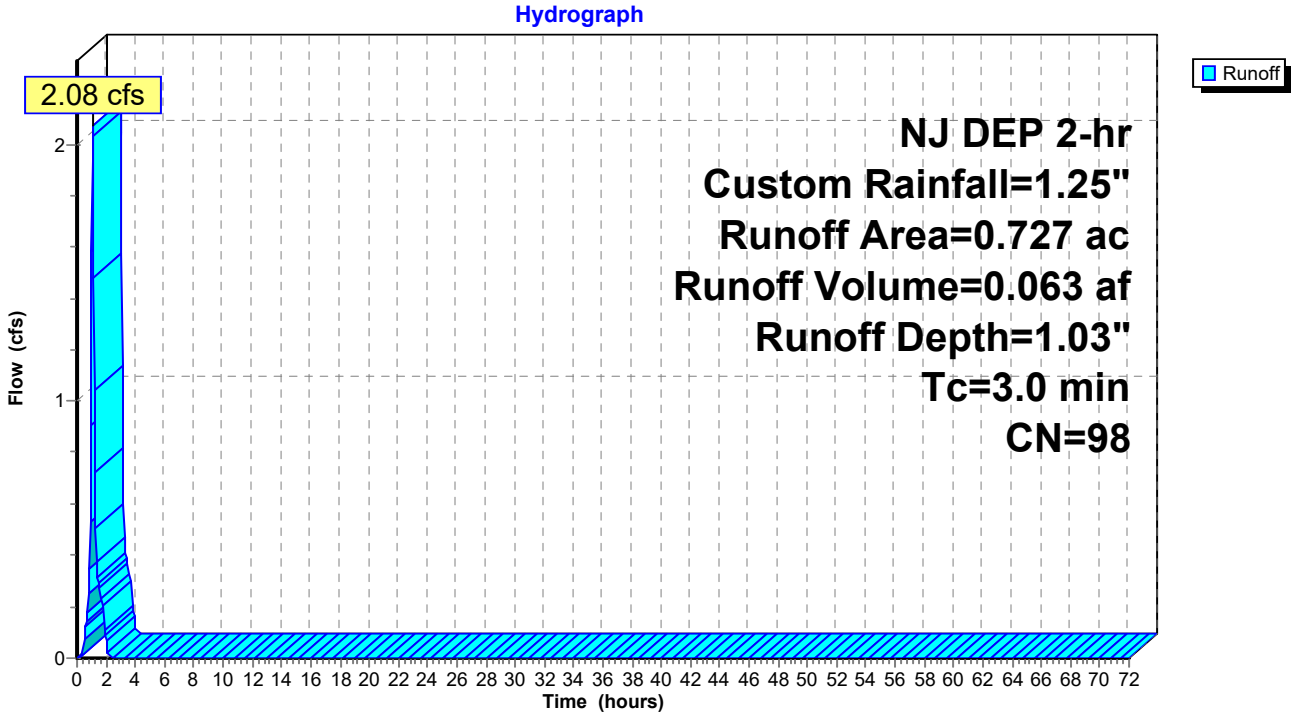
Subcatchment 92S: Basin 33 - Impervious



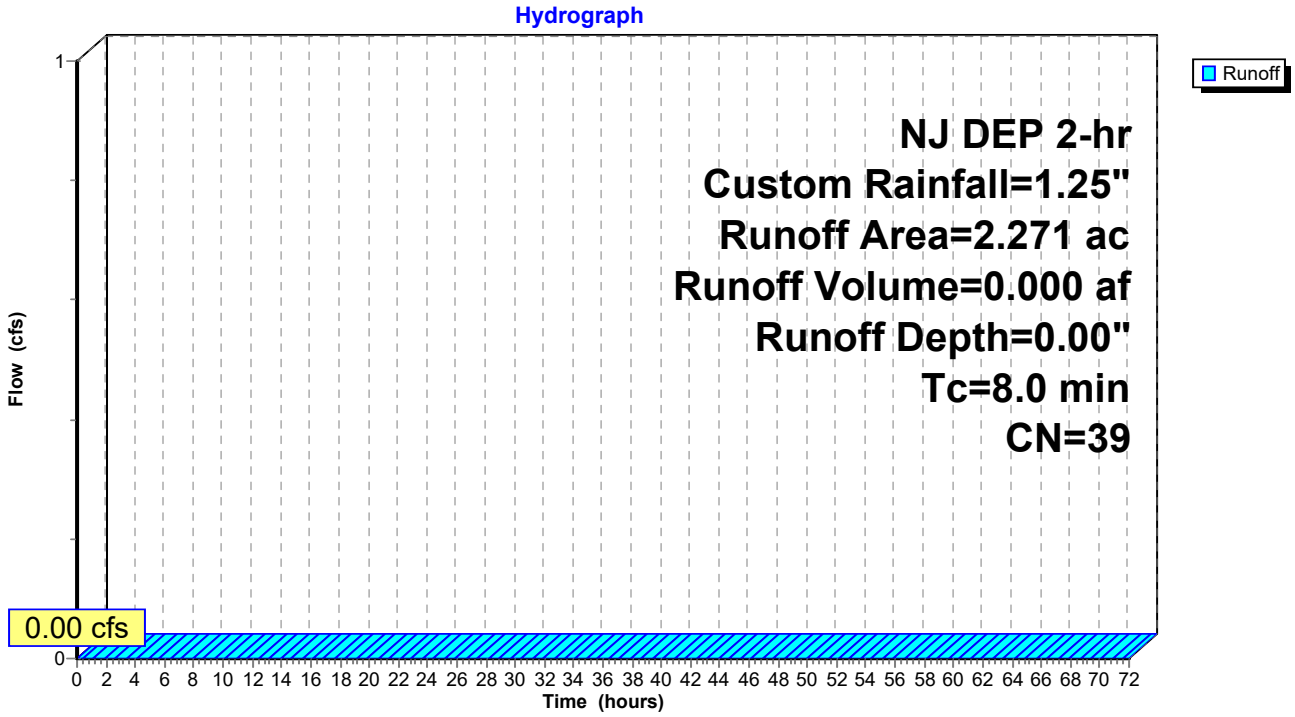
Subcatchment 93S: Basin 33 - Pervious



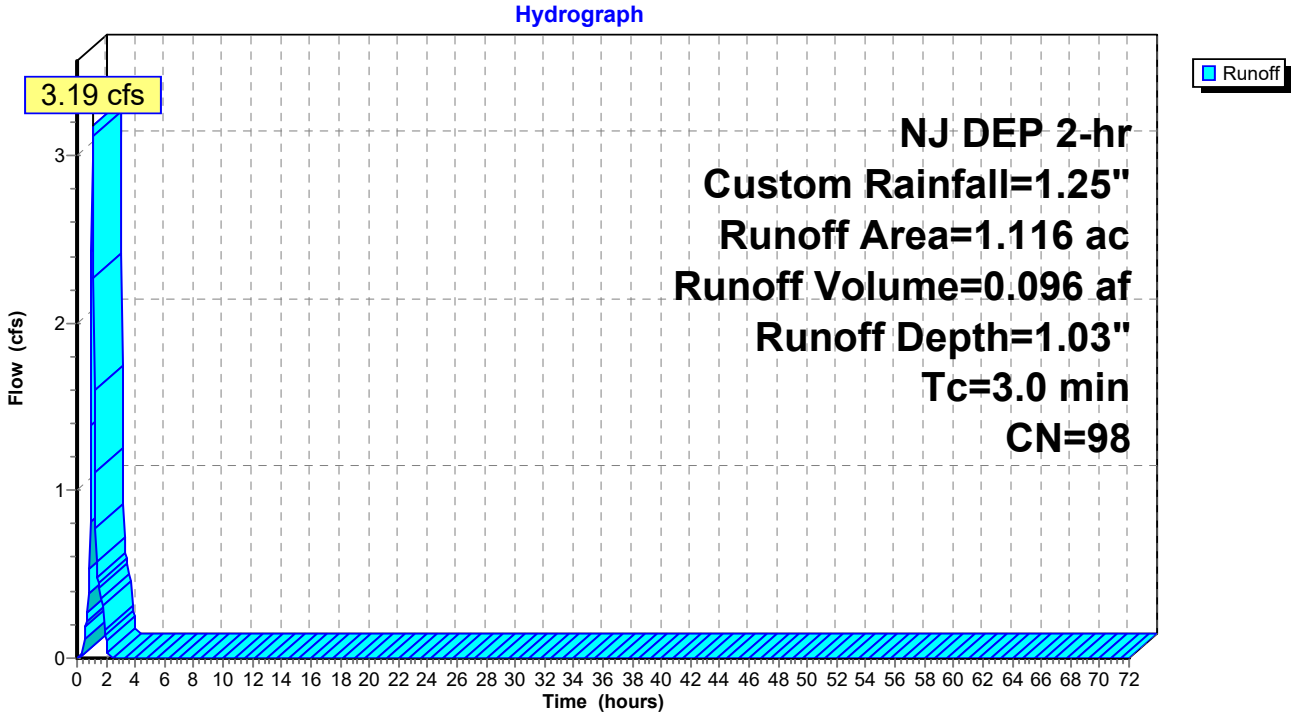
Subcatchment 94S: Basin 32 - Impervious



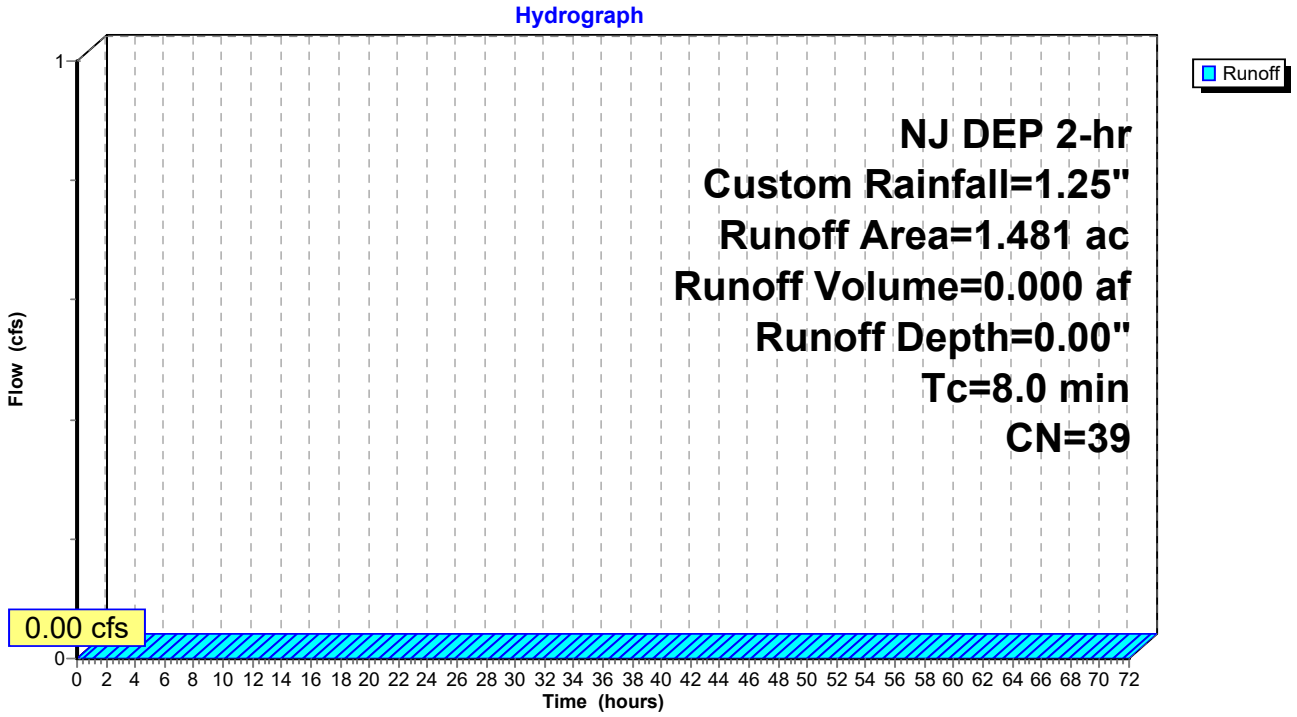
Subcatchment 95S: Basin 32 - Pervious



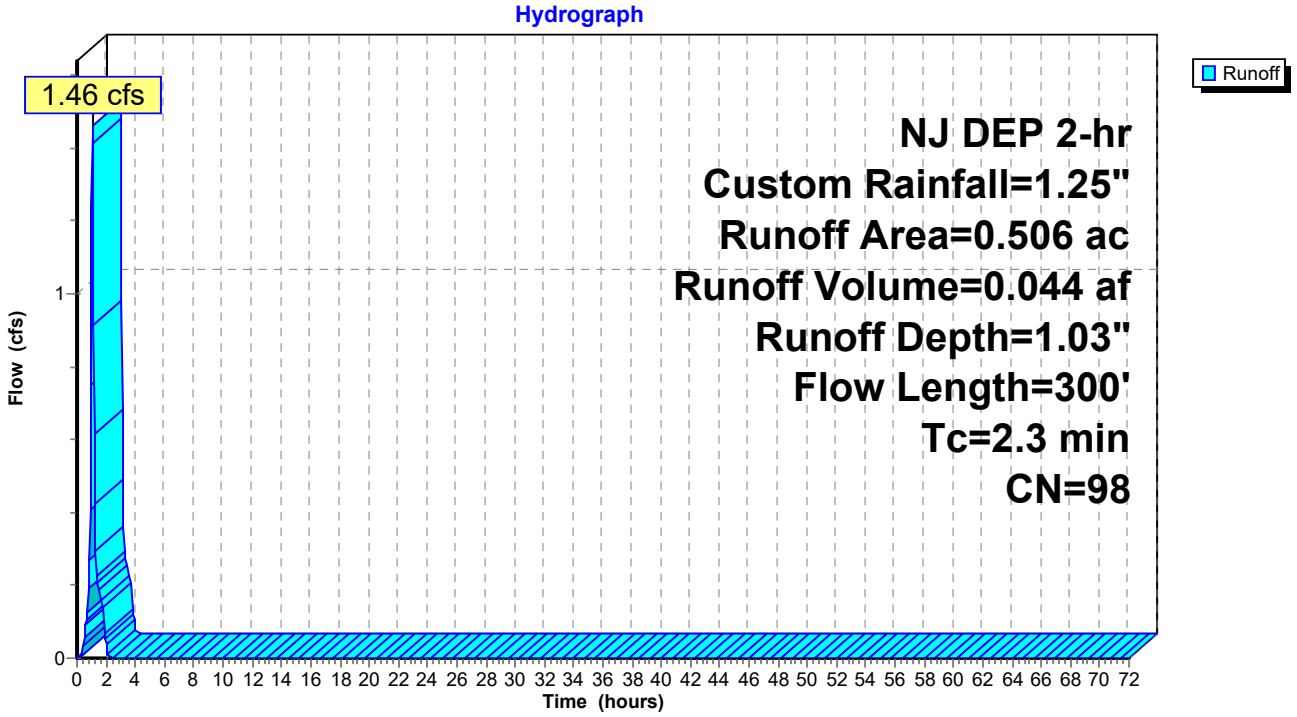
Subcatchment 96S: Basin 40 - Impervious



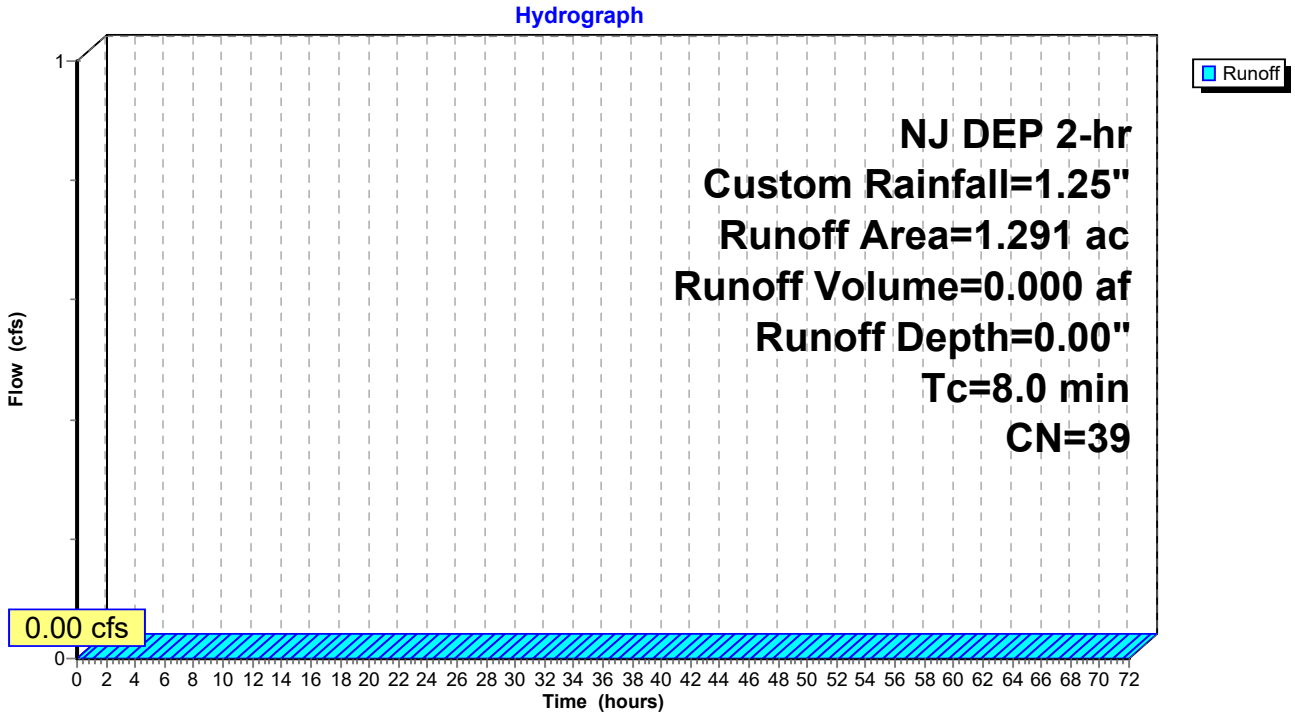
Subcatchment 97S: Basin 40 - Pervious



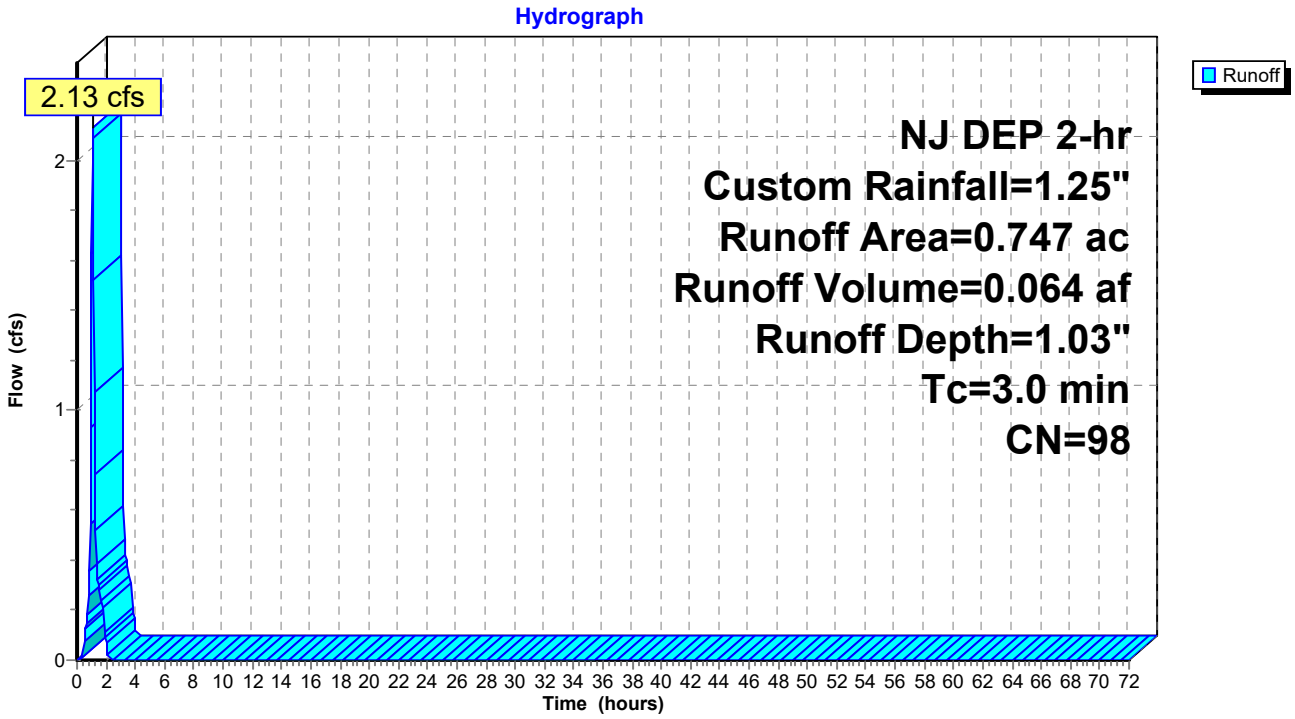
Subcatchment 98S: Basin 38 - Impervious



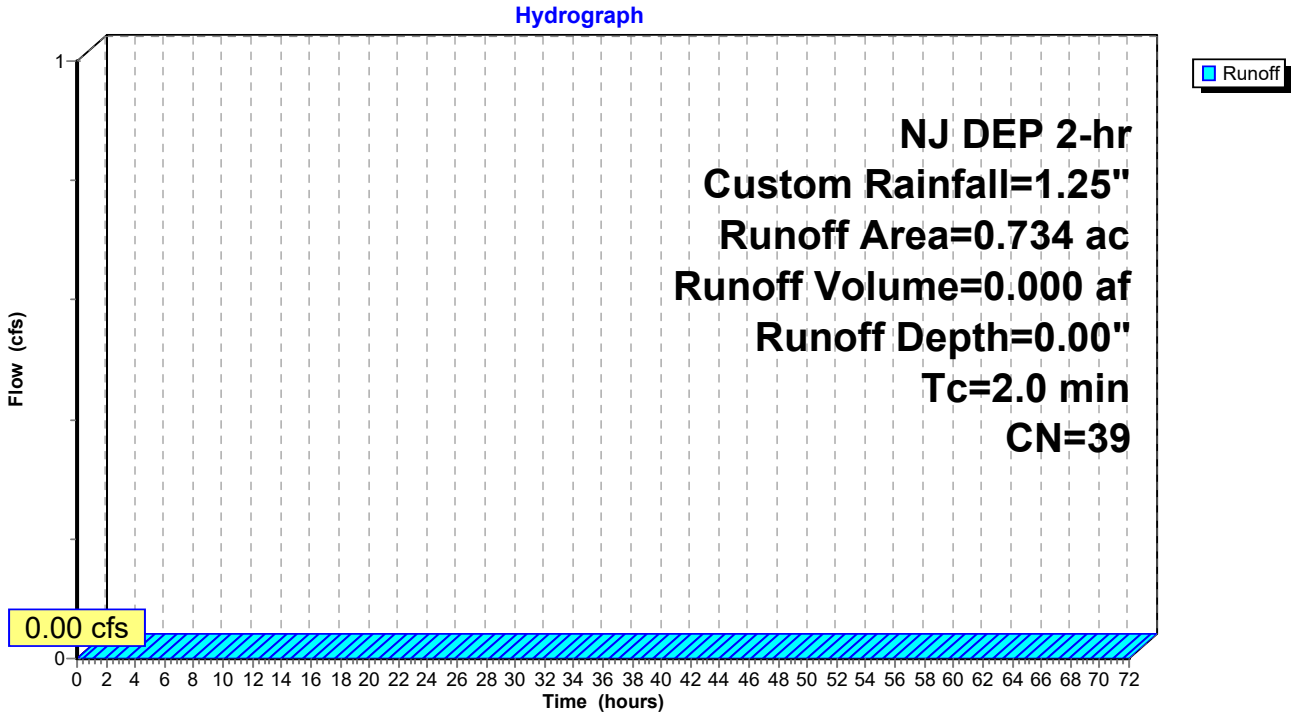
Subcatchment 99S: Basin 38 - Pervious



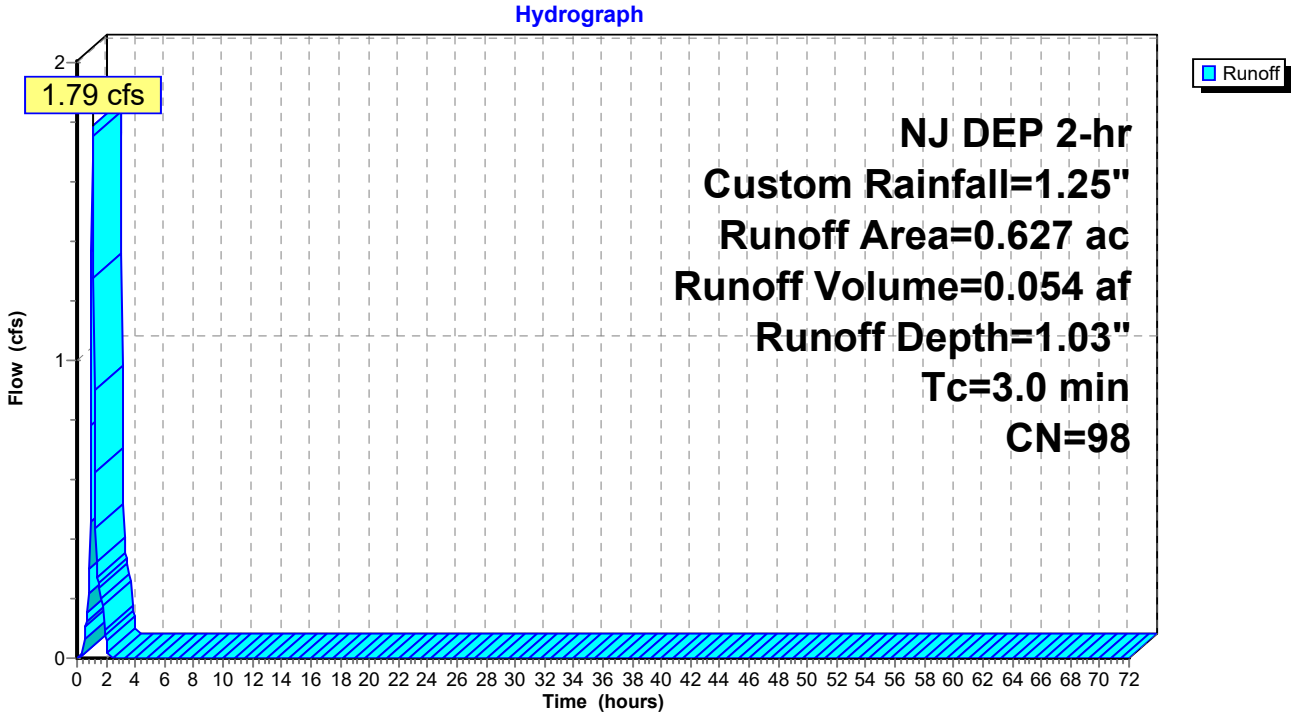
Subcatchment 100S: Basin 22 - Impervious



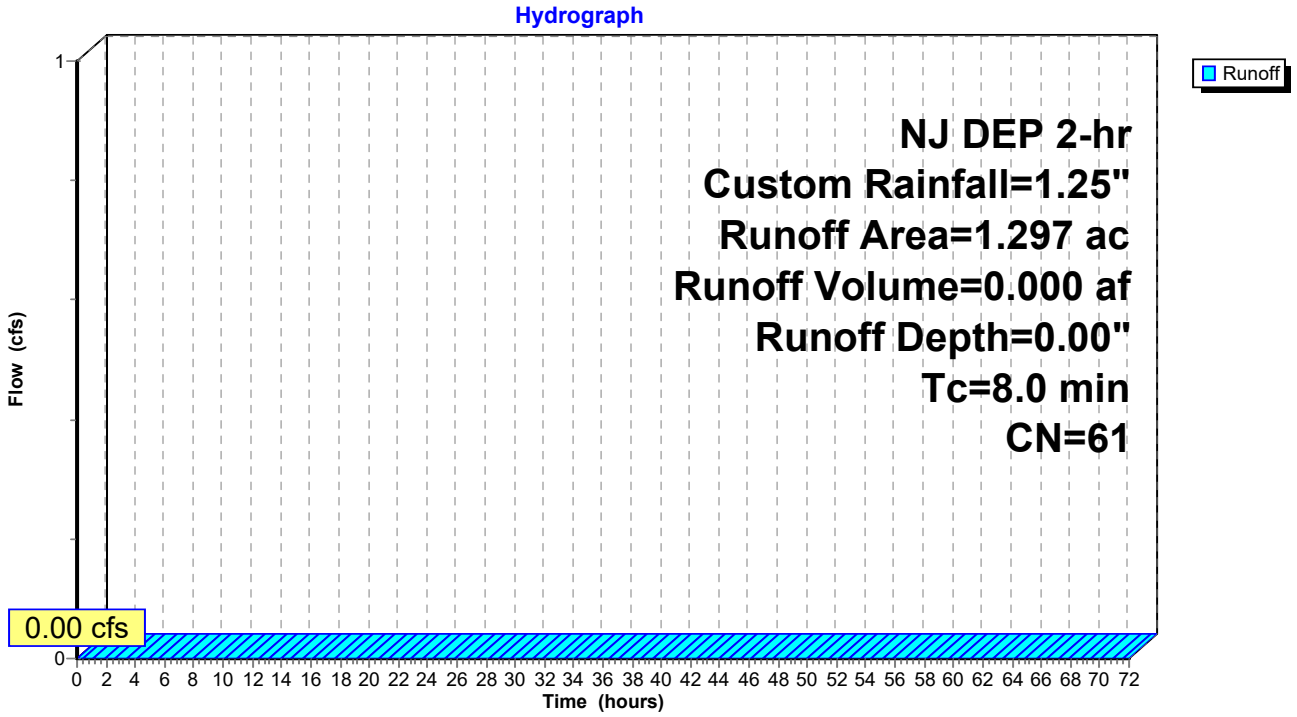
Subcatchment 101S: Basin 39 - Pervious



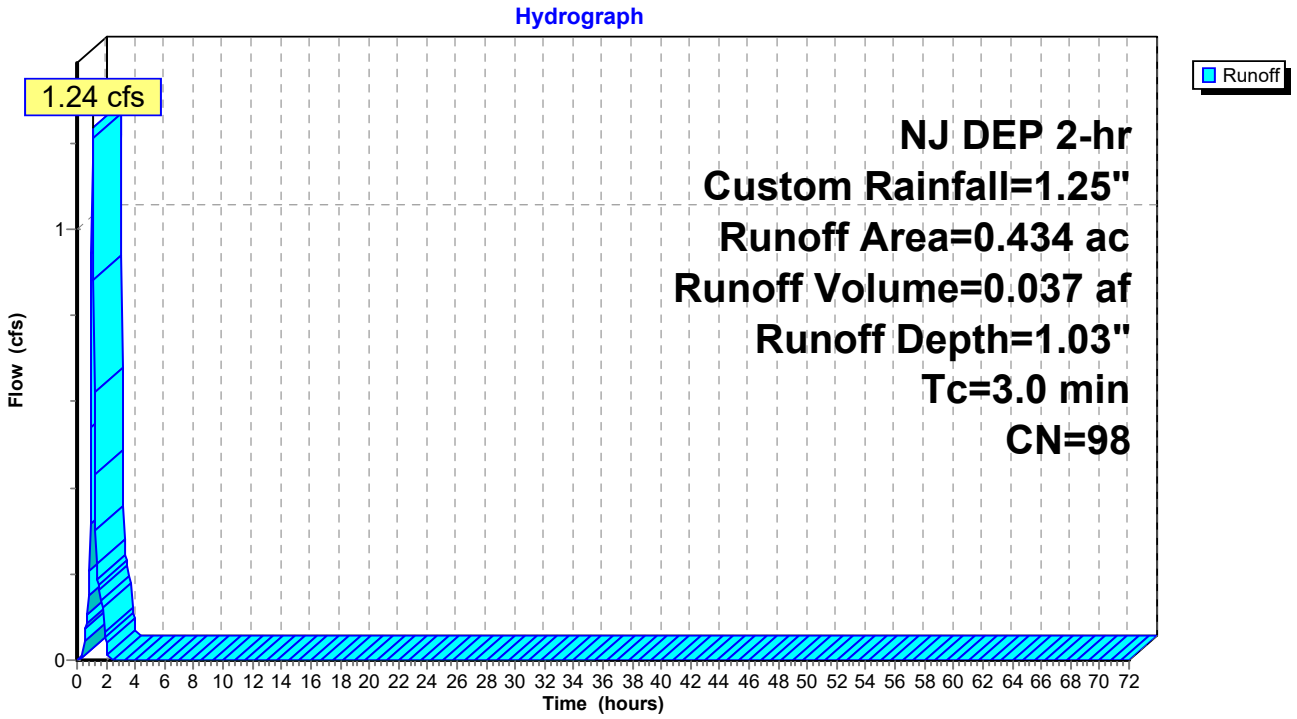
Subcatchment 102S: Basin 37 - Impervious



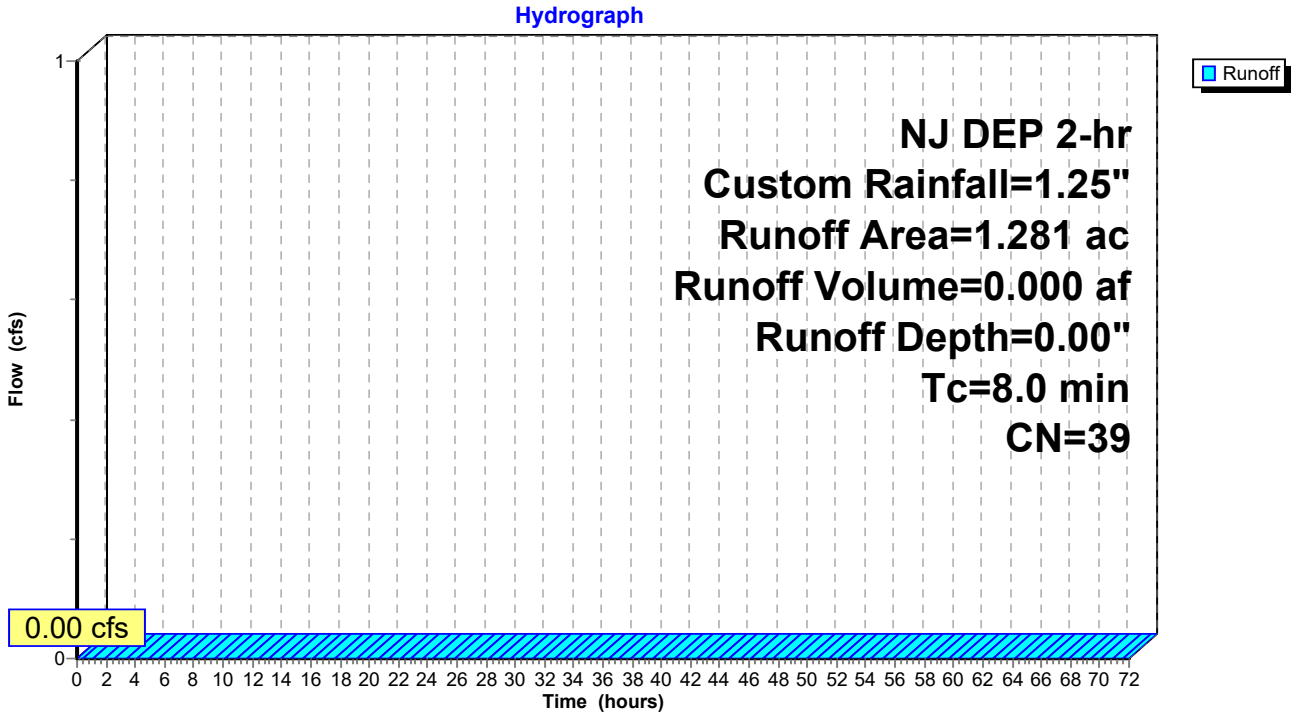
Subcatchment 103S: Basin 37 - Pervious



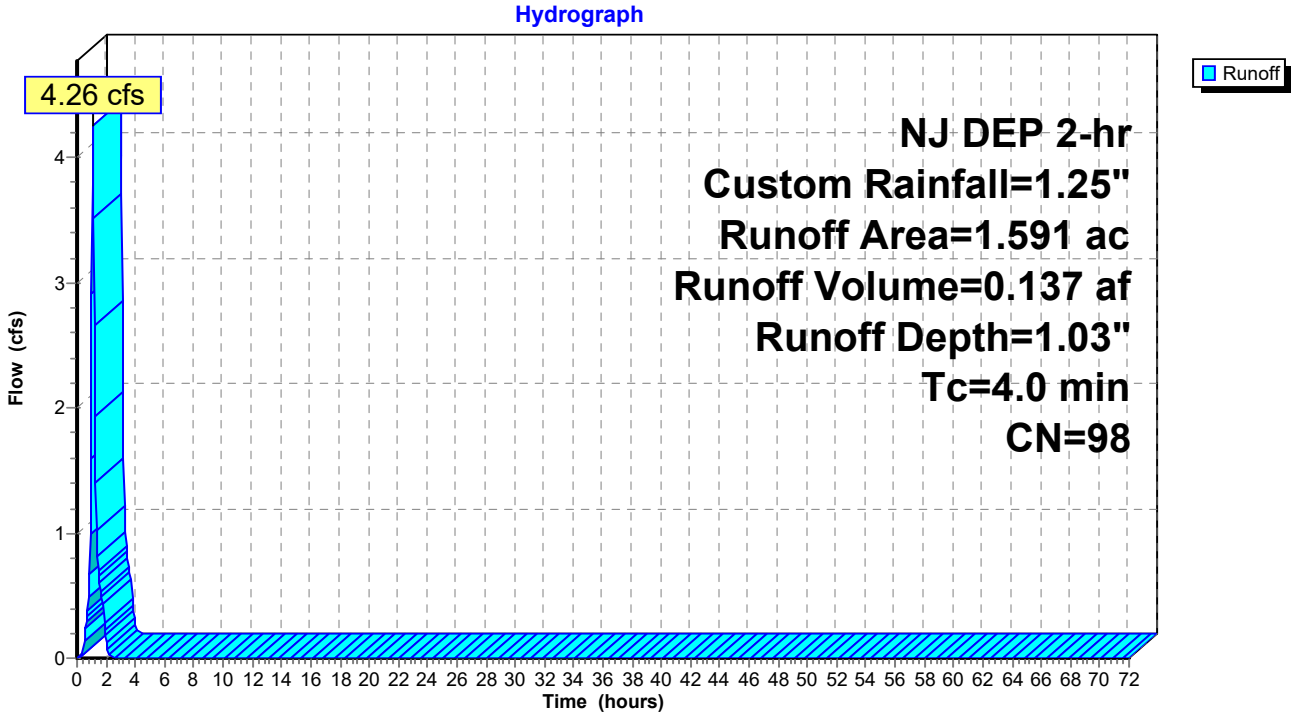
Subcatchment 104S: Basin 34- Impervious



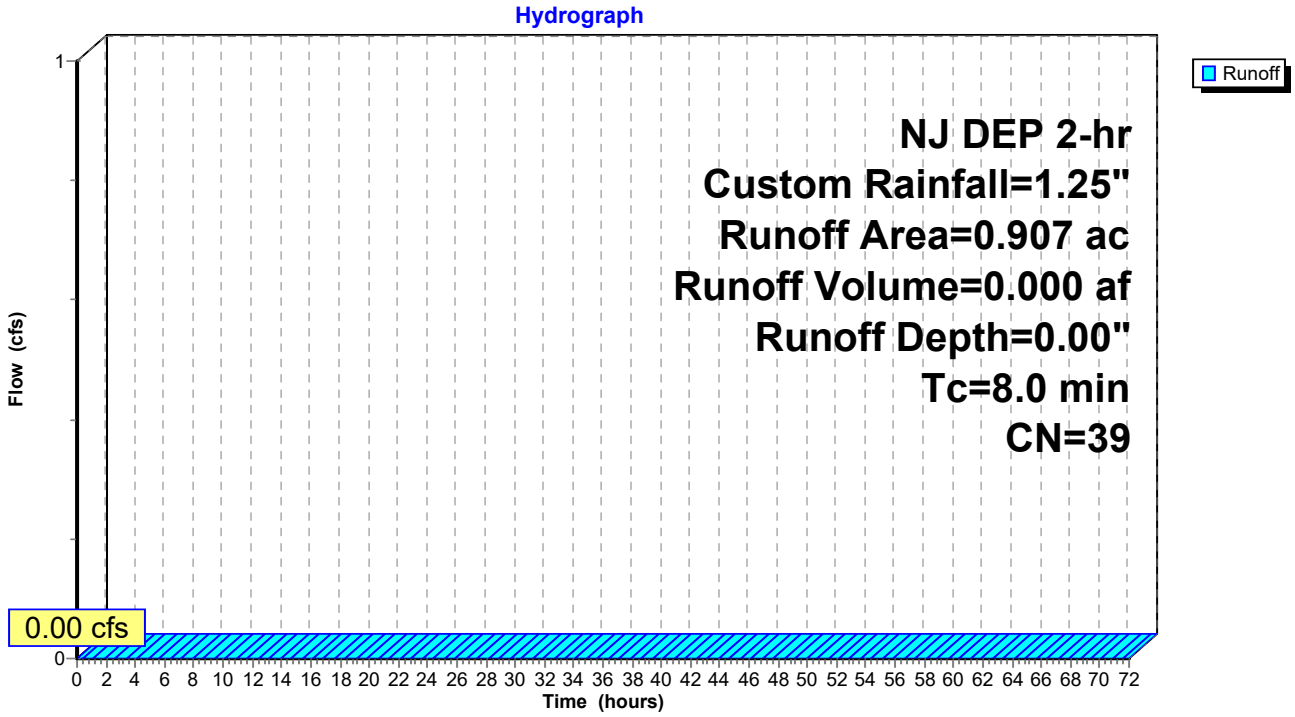
Subcatchment 105S: Basin 34 - Pervious



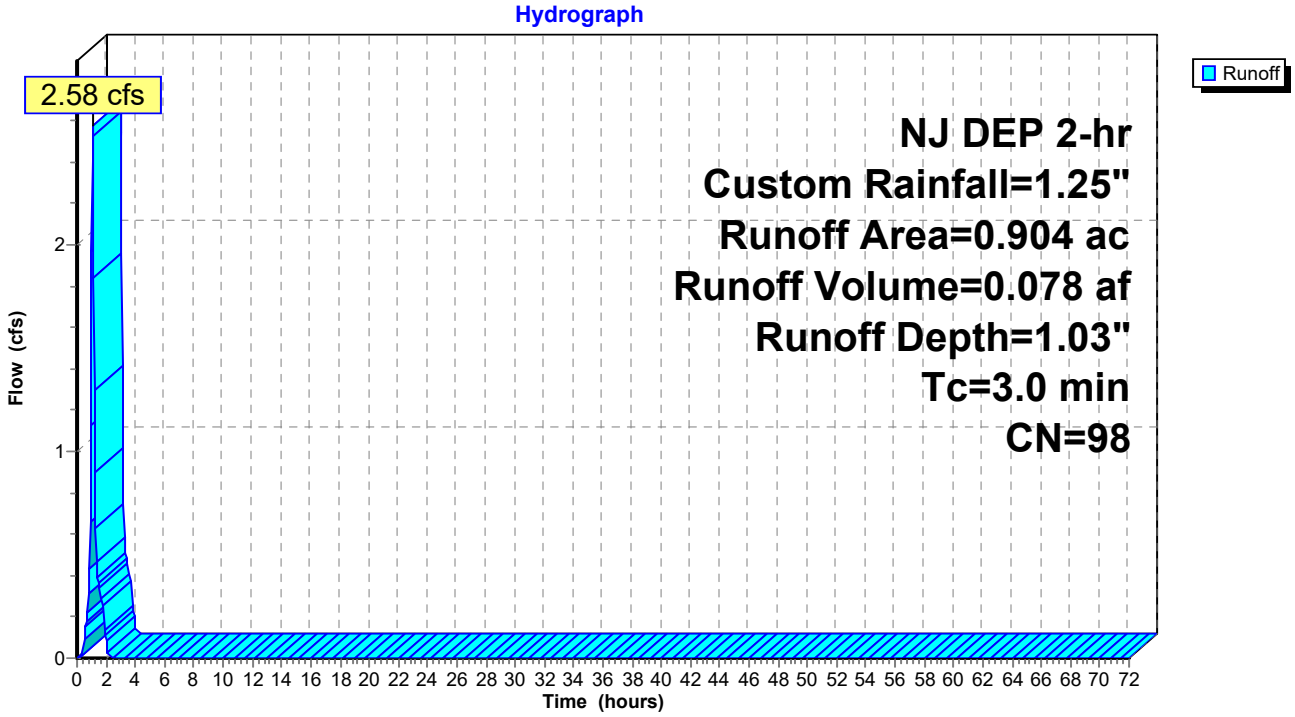
Subcatchment 106S: Basin 35 - Impervious



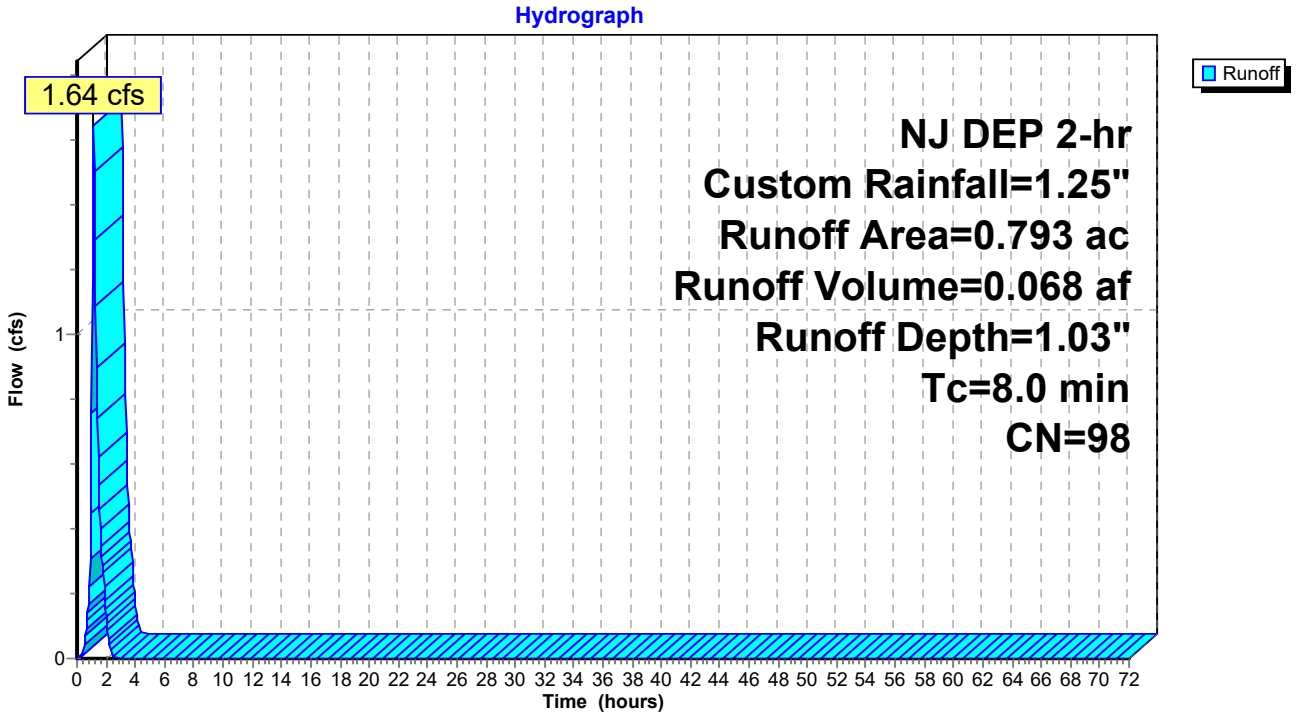
Subcatchment 107S: Basin 35 - Pervious



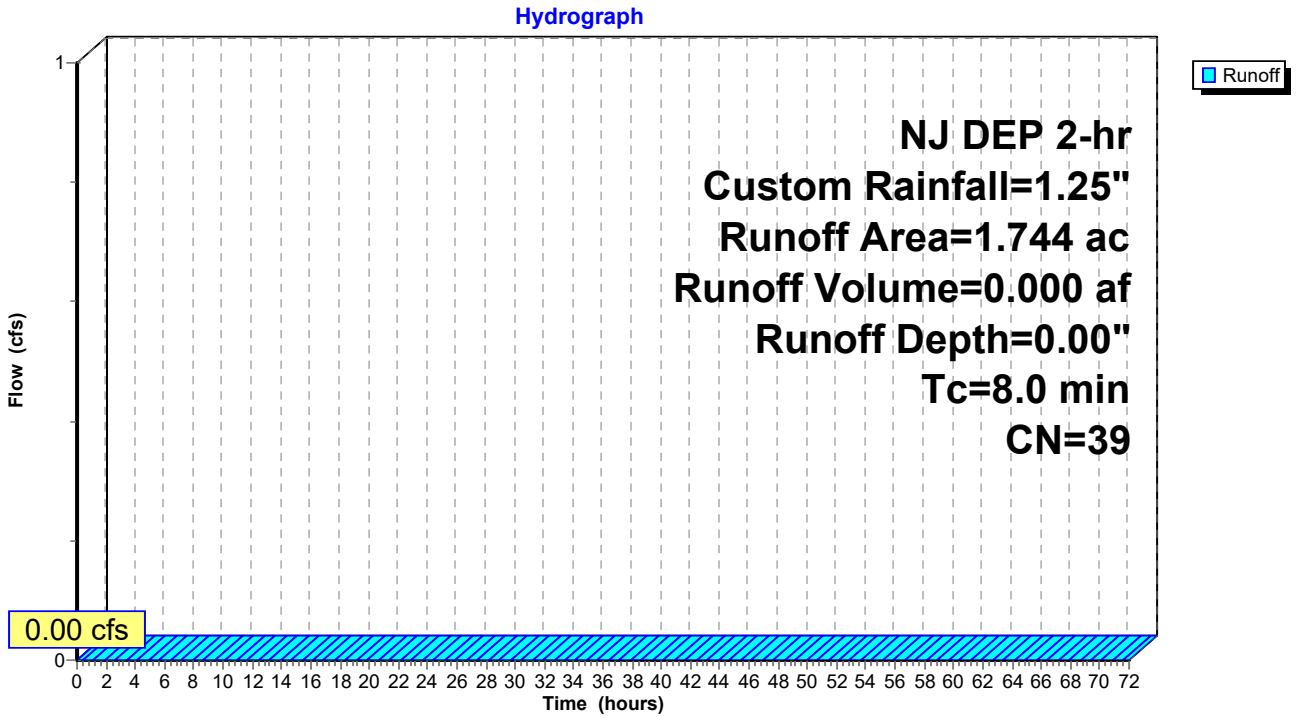
Subcatchment 108S: Basin 36 - Impervious



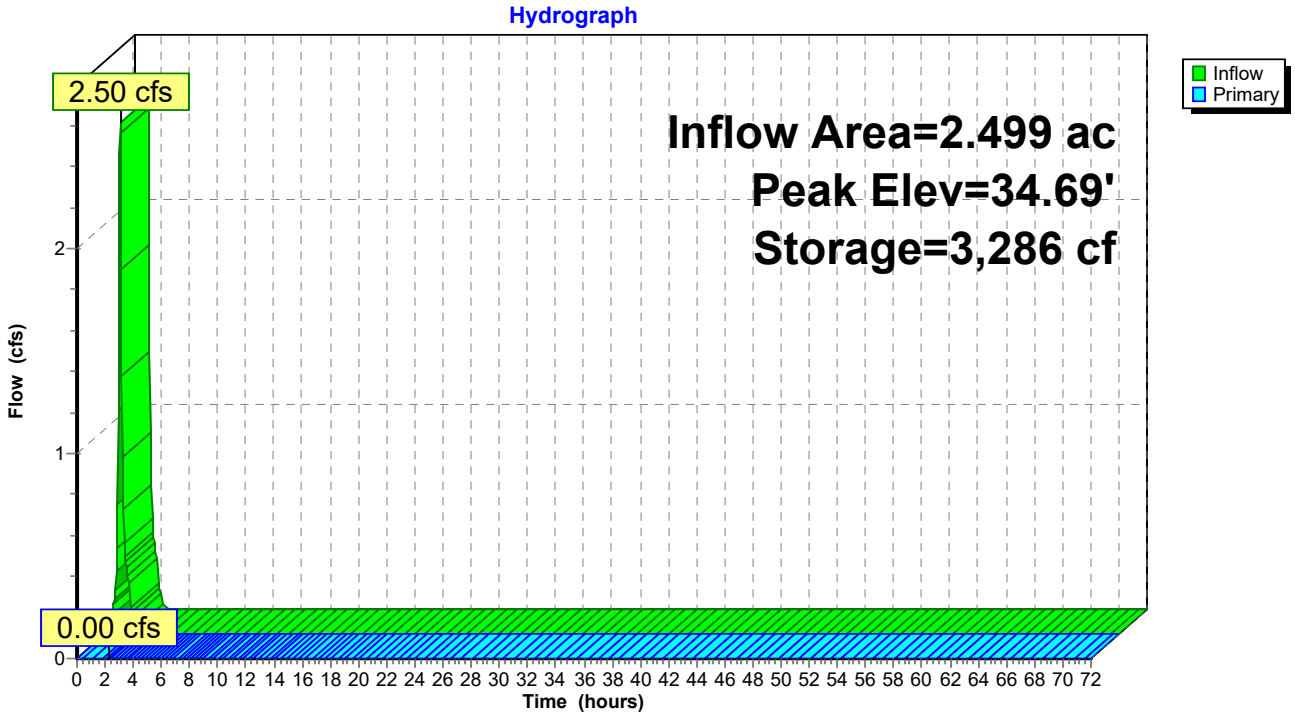
Subcatchment 109S: Basin 36 - Pervious



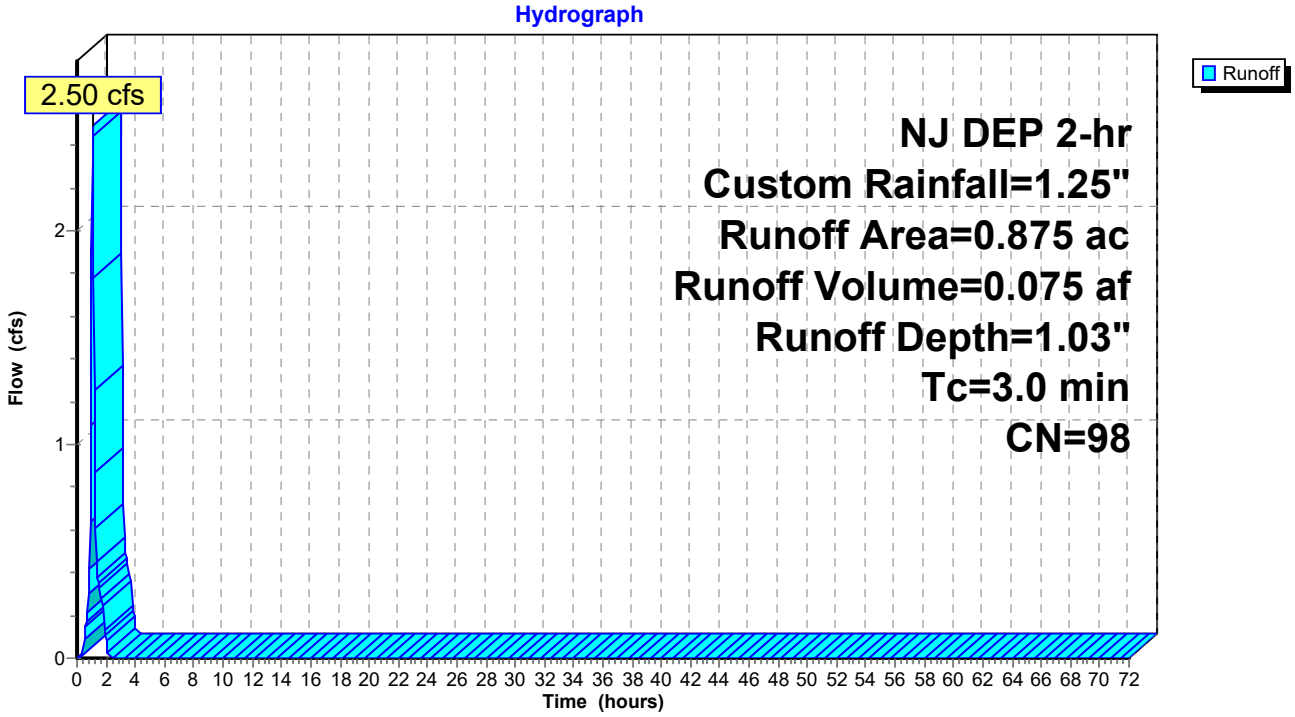
Subcatchment 110S: Basin 22 - Pervious



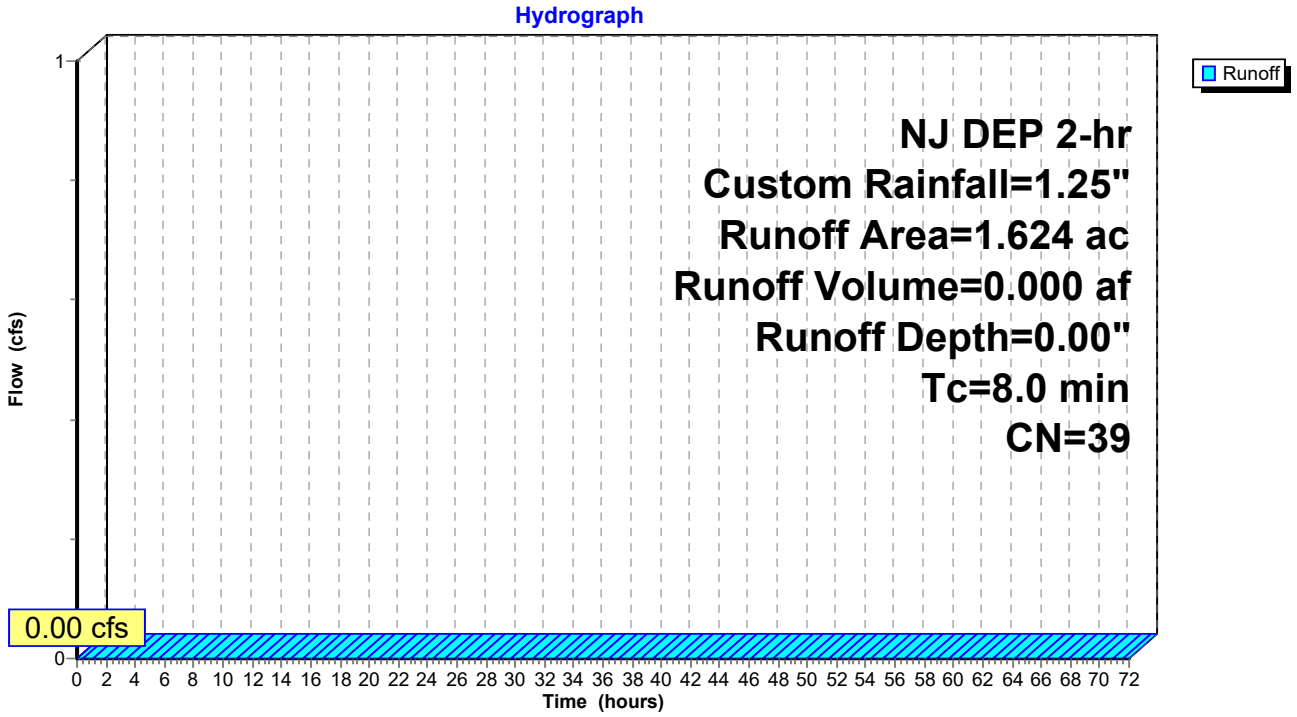
Pond 111P: Basin 23

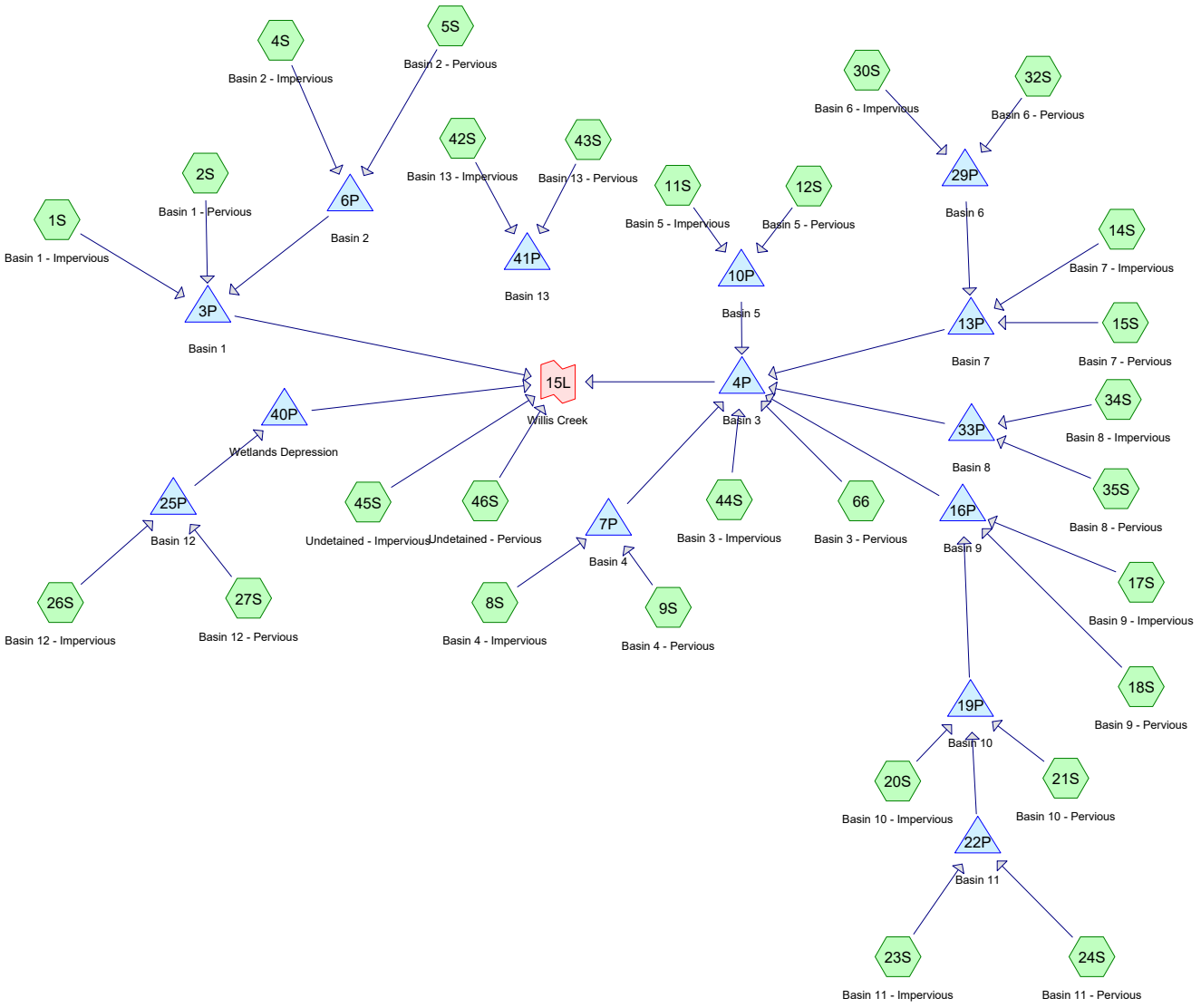


Subcatchment 112S: Basin 23 - Impervious



Subcatchment 113S: Basin 23 - Pervious

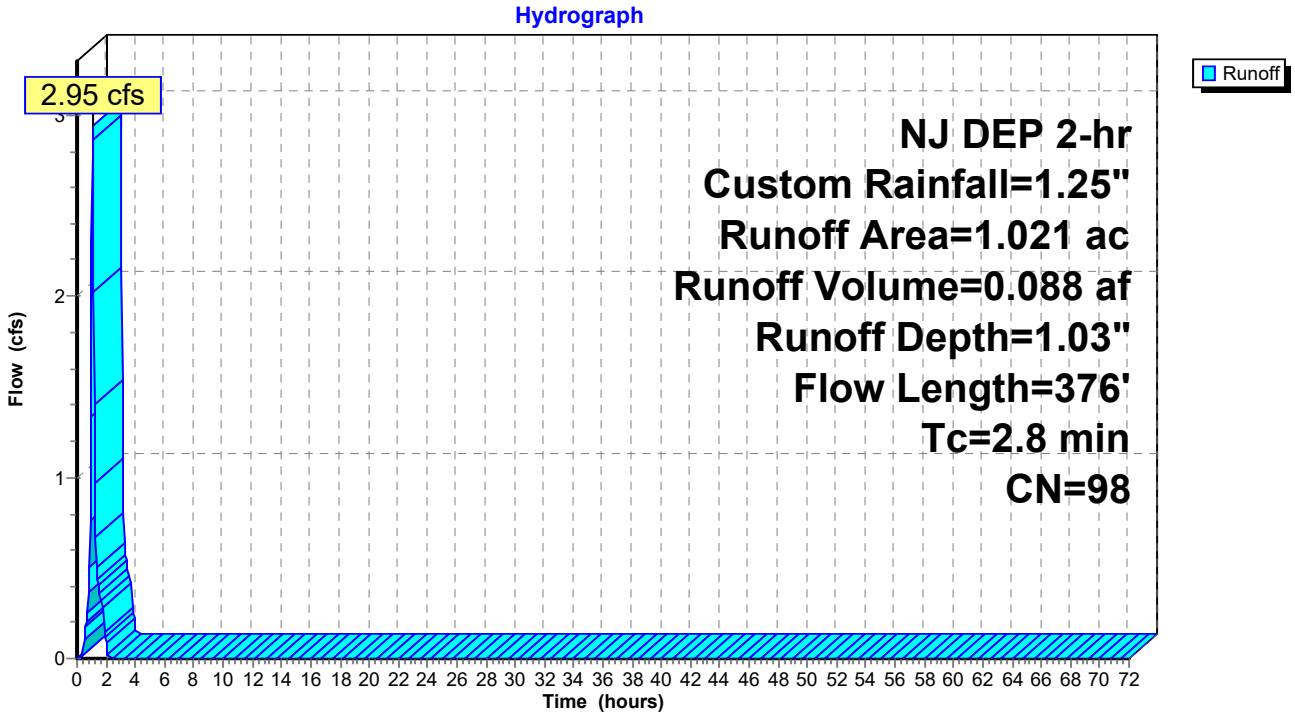




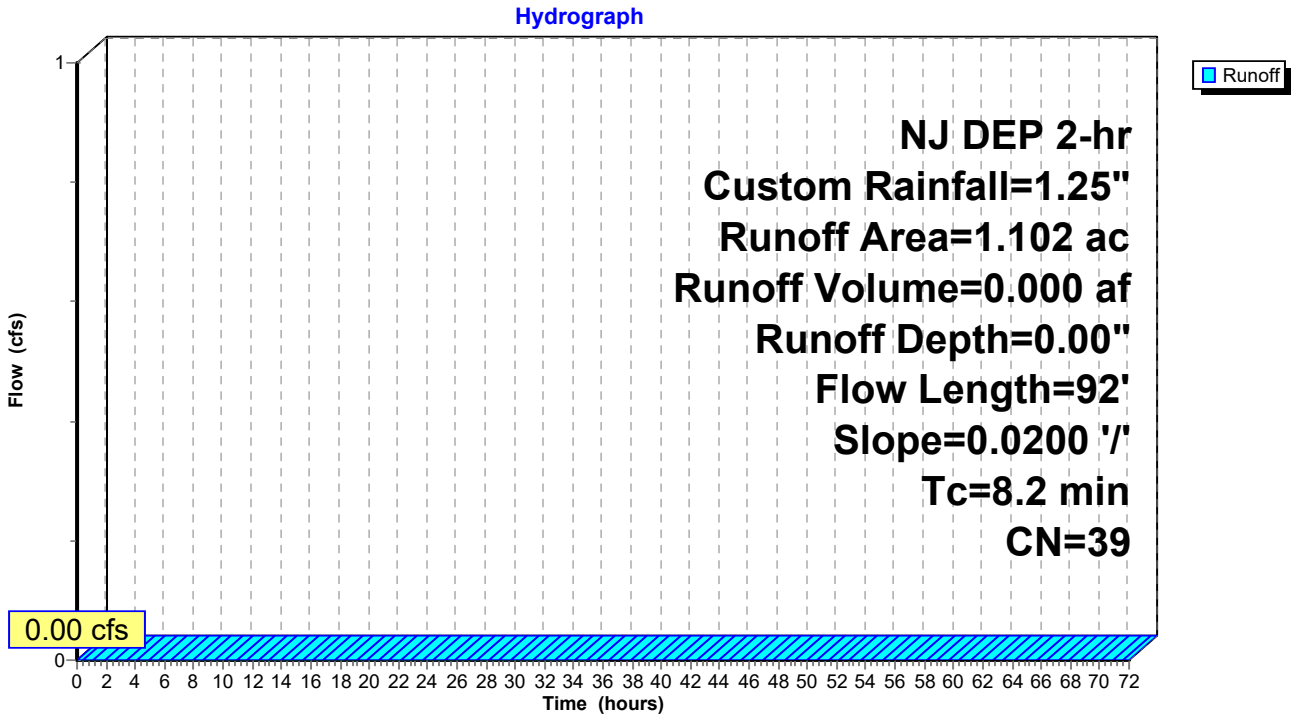
Subcat Reach Pond Link

Routing Diagram for WATER QUALITY - WILLIS CREEK
Prepared by ARH Associates, Printed 4/29/2025
HydroCAD® 10.10-7b s/n 01689 © 2022 HydroCAD Software Solutions LLC

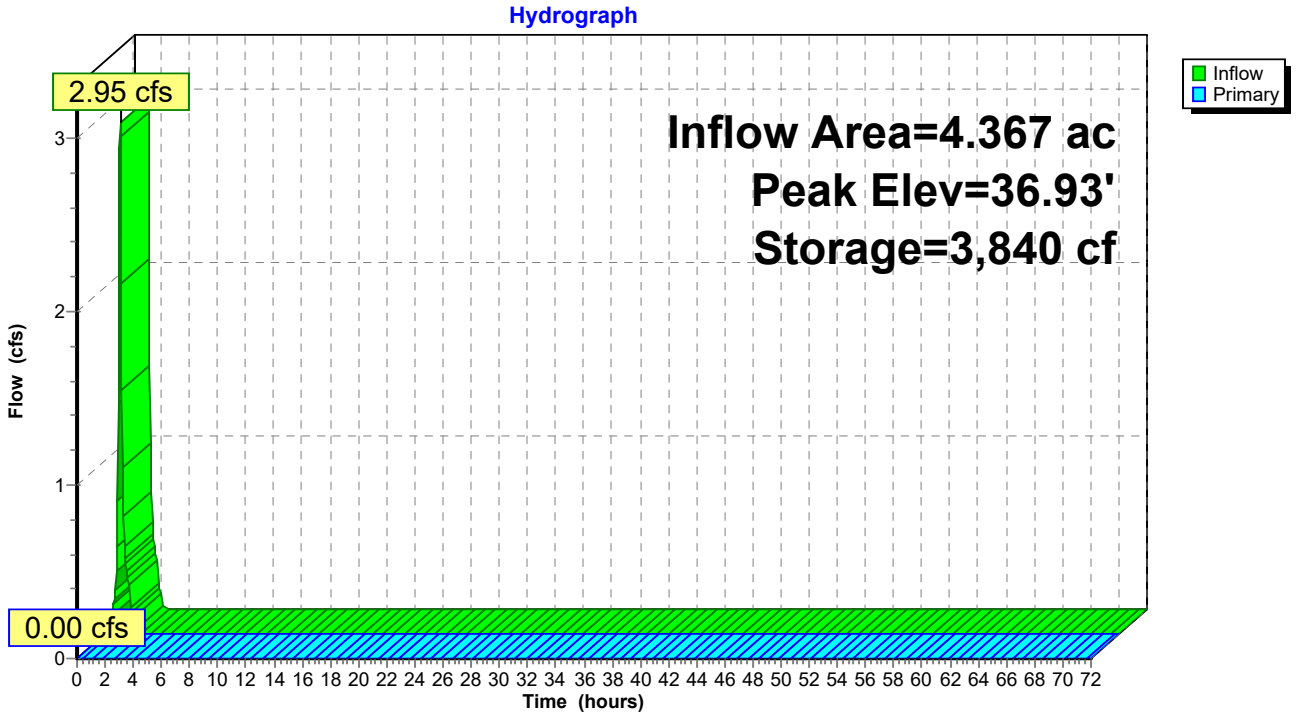
Subcatchment 1S: Basin 1 - Impervious



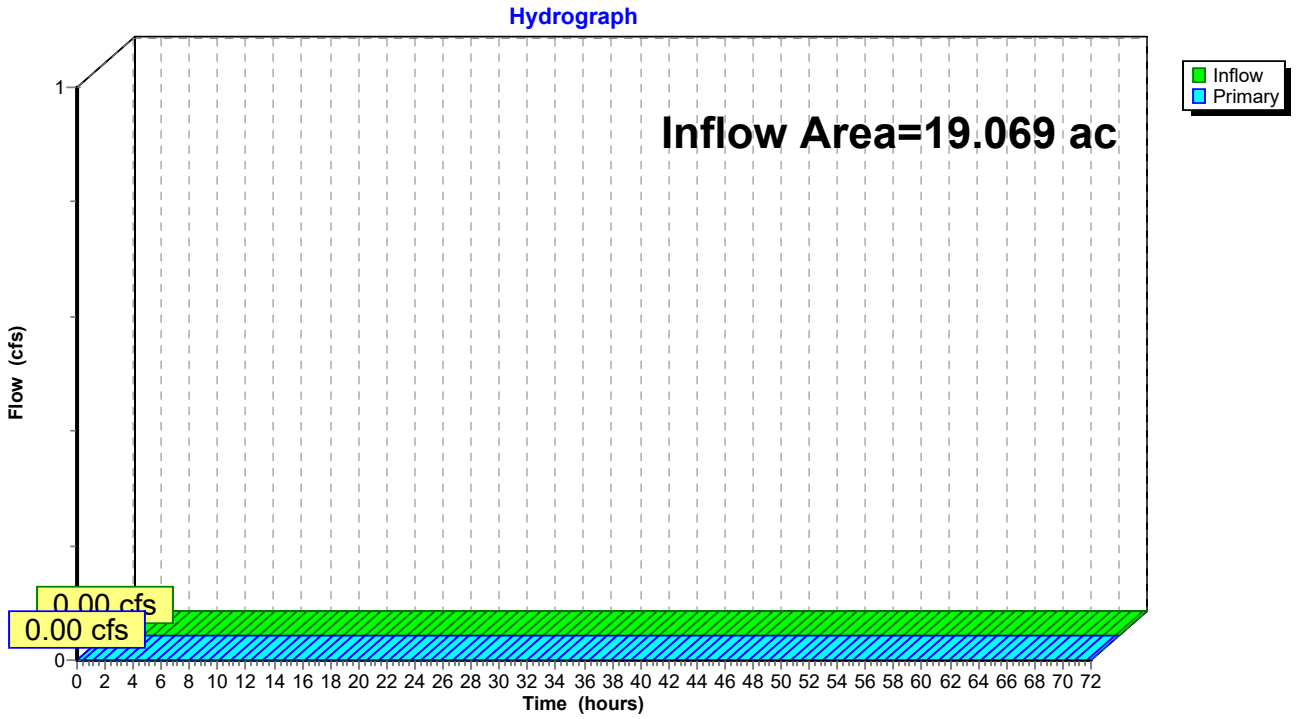
Subcatchment 2S: Basin 1 - Pervious



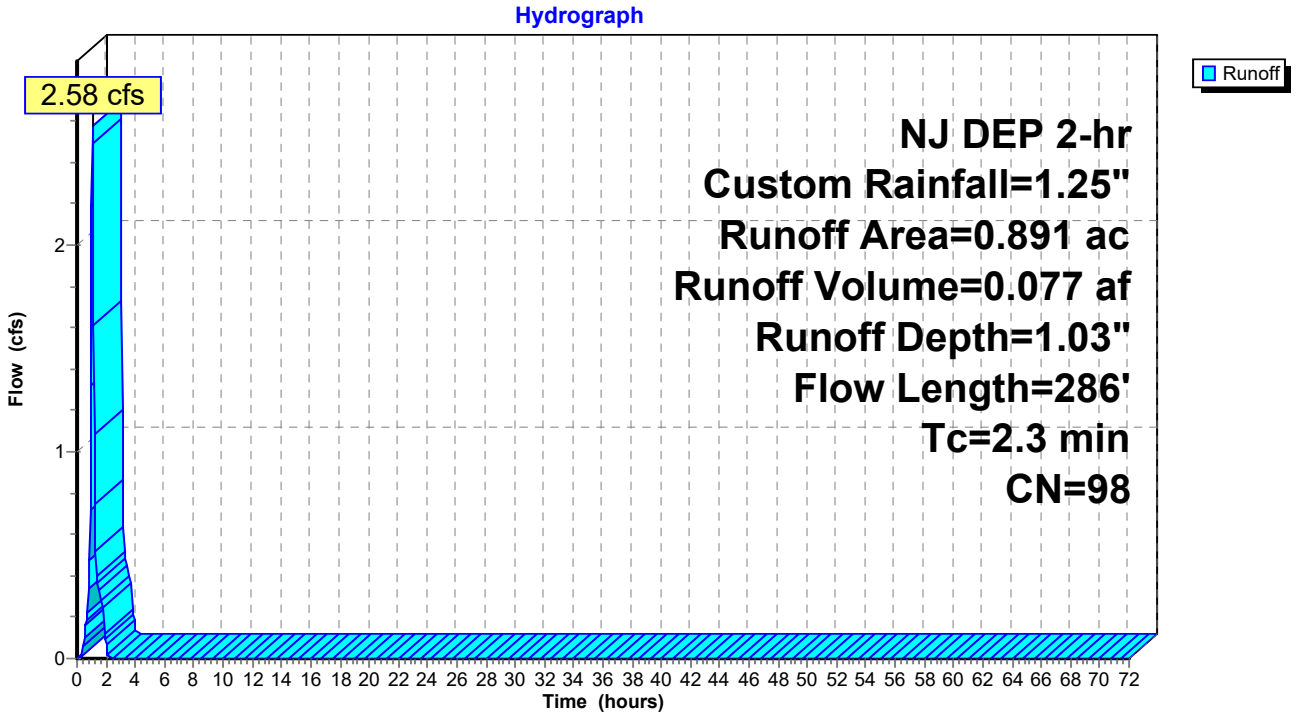
Pond 3P: Basin 1



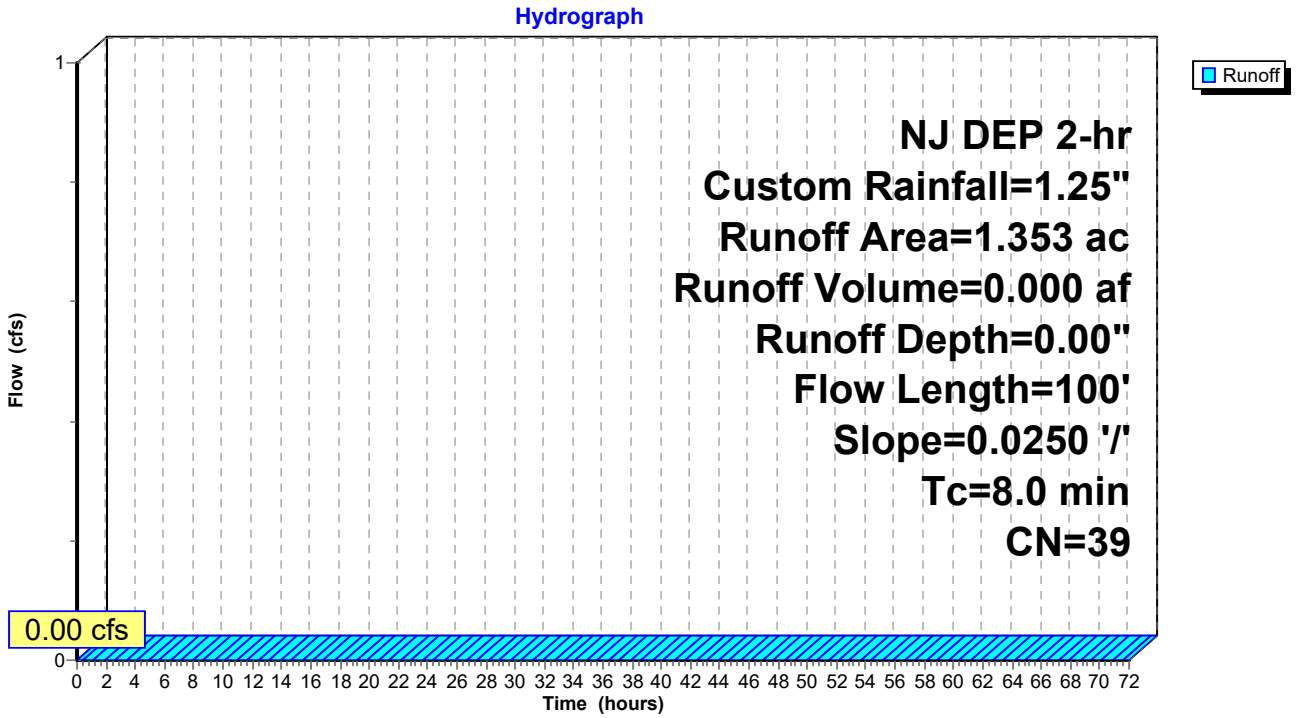
Pond 4P: Basin 3



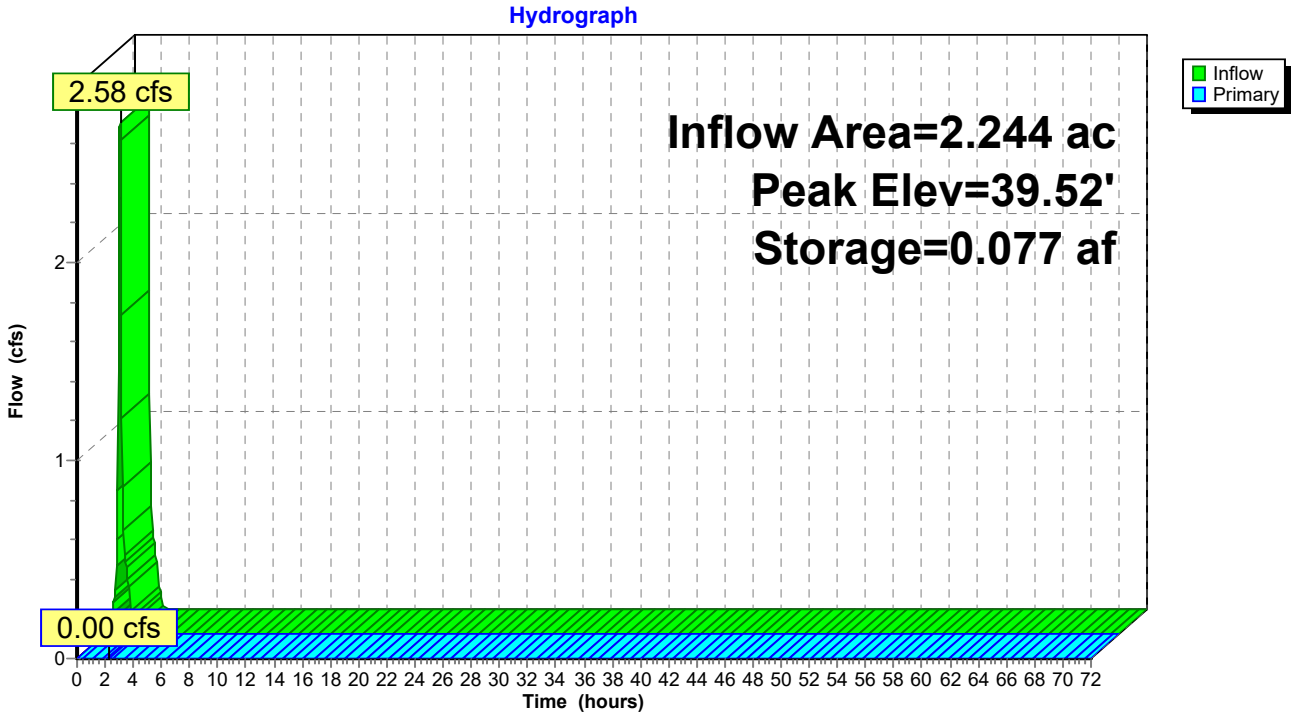
Subcatchment 4S: Basin 2 - Impervious



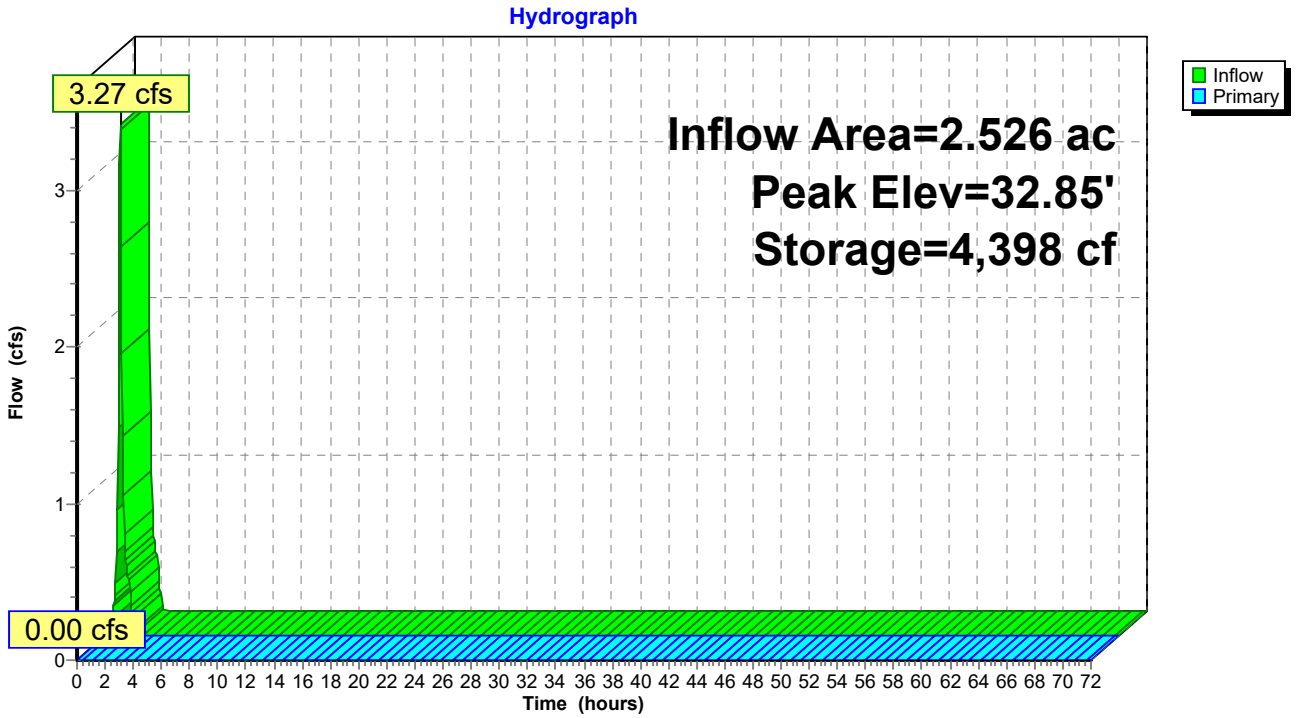
Subcatchment 5S: Basin 2 - Pervious



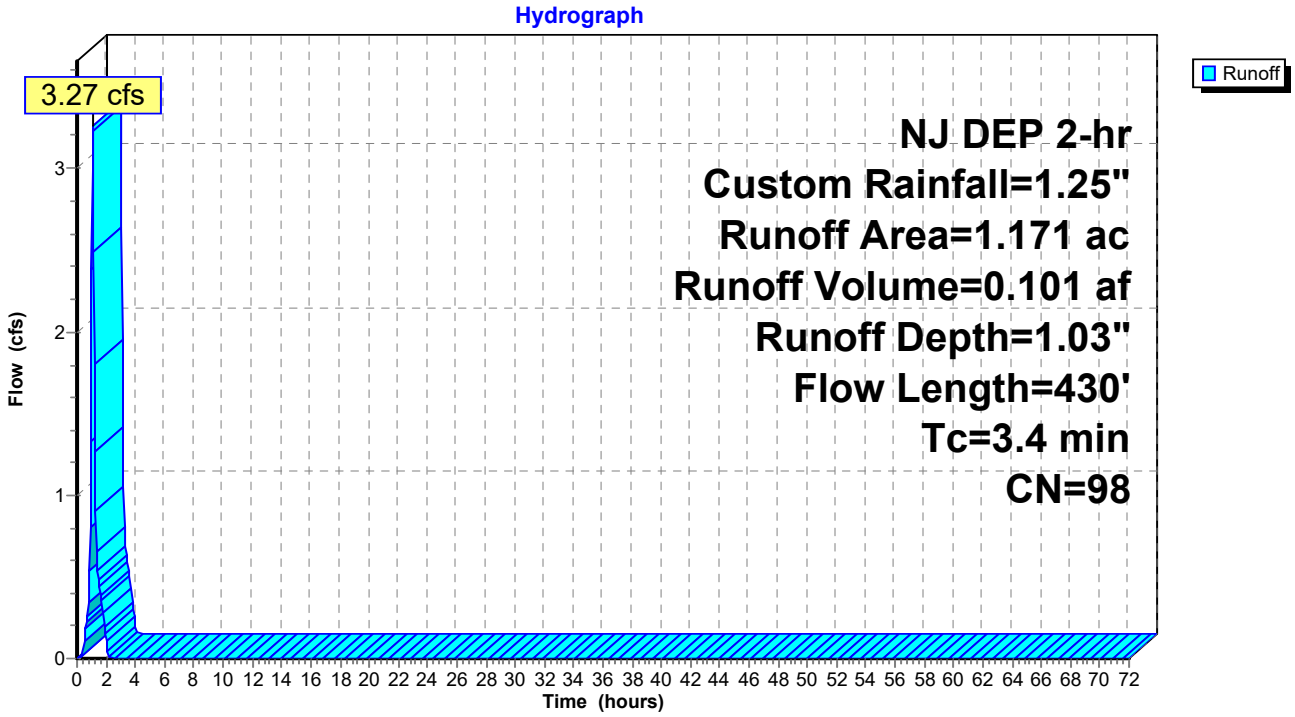
Pond 6P: Basin 2



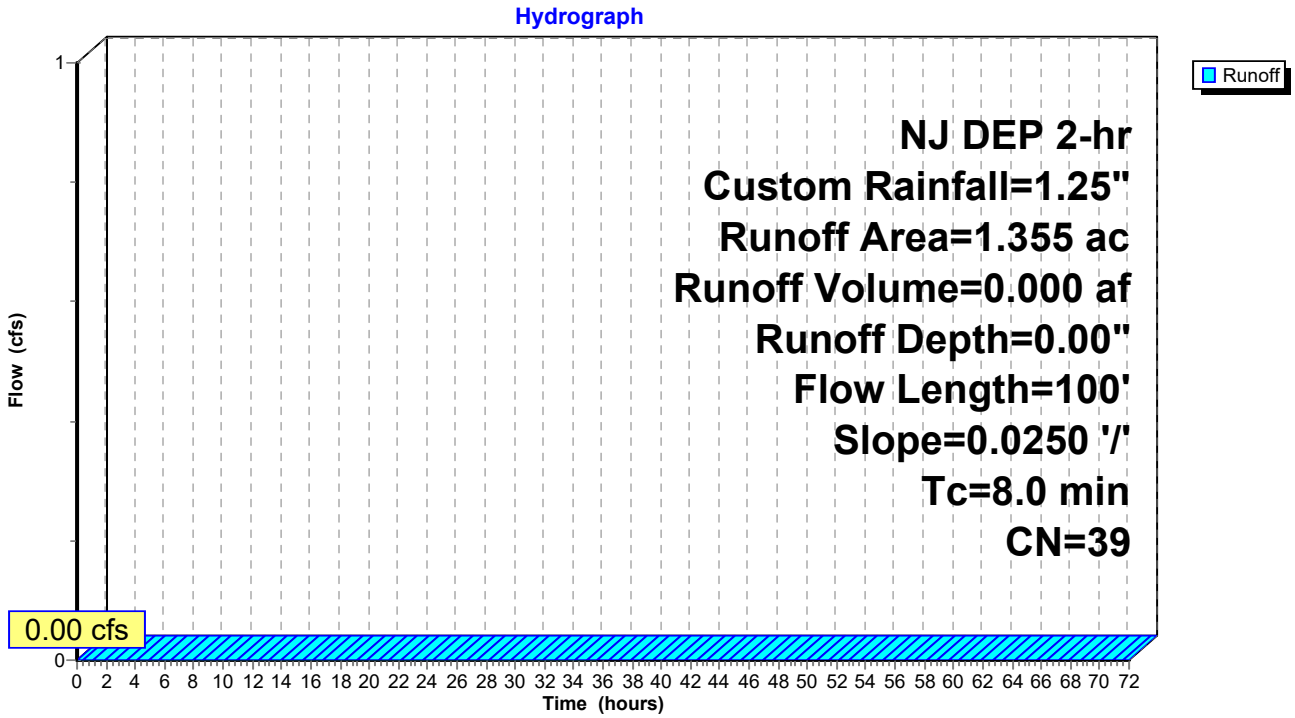
Pond 7P: Basin 4



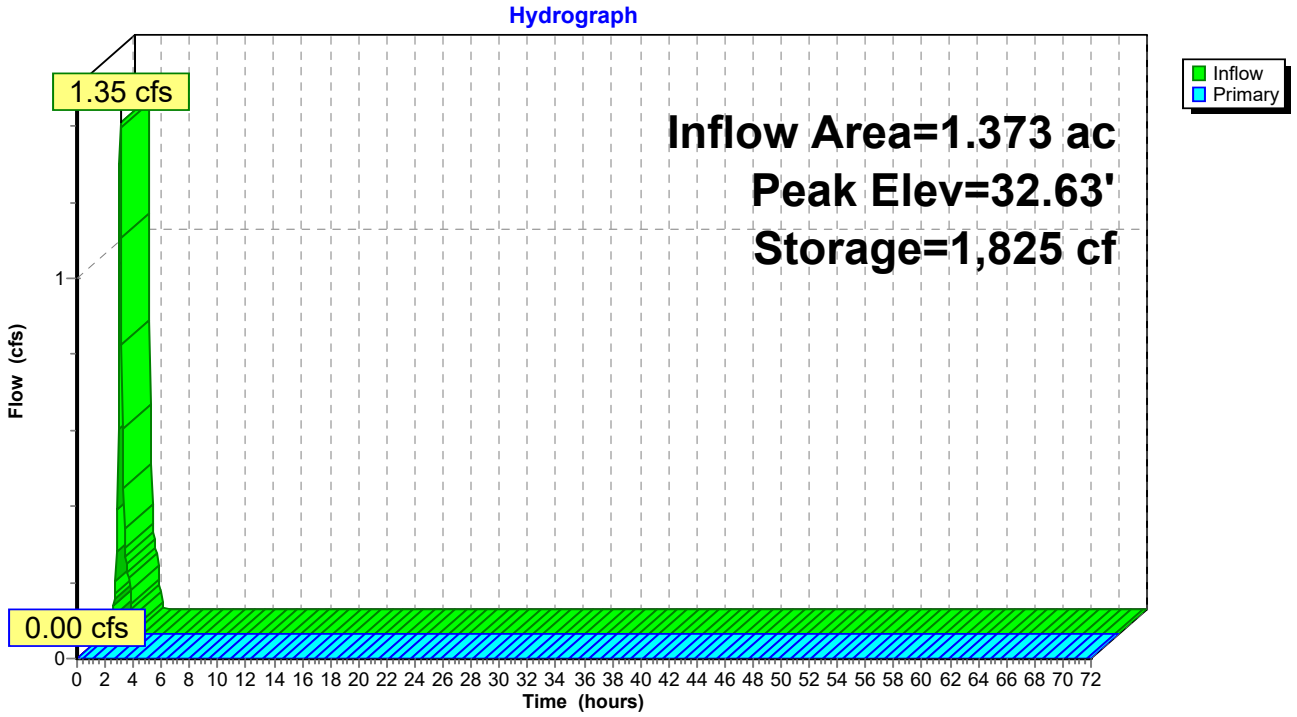
Subcatchment 8S: Basin 4 - Impervious



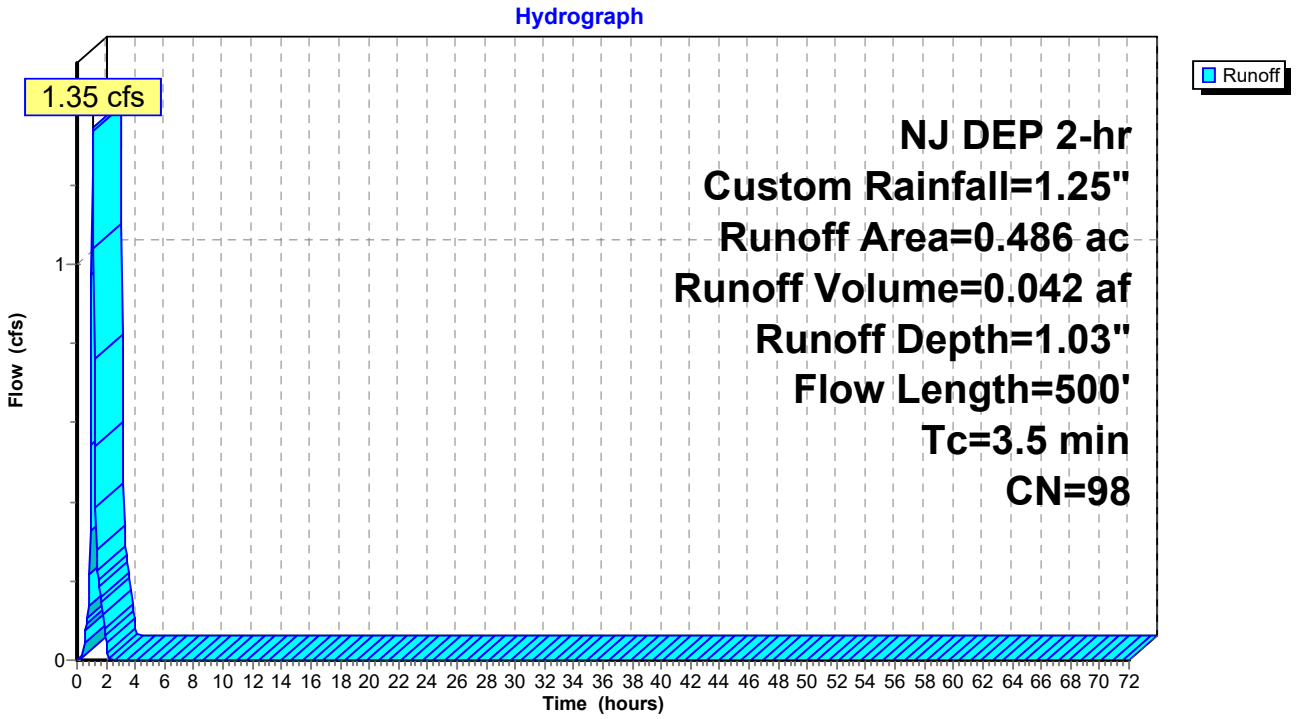
Subcatchment 9S: Basin 4 - Pervious



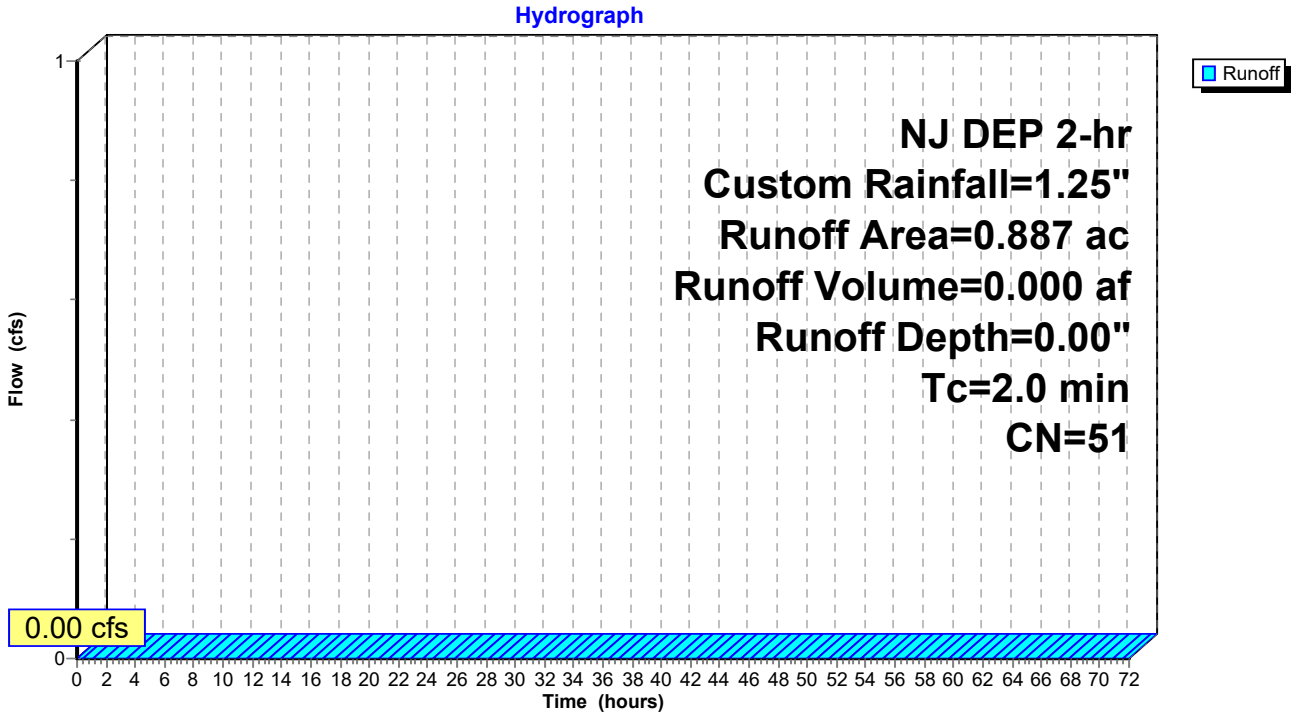
Pond 10P: Basin 5



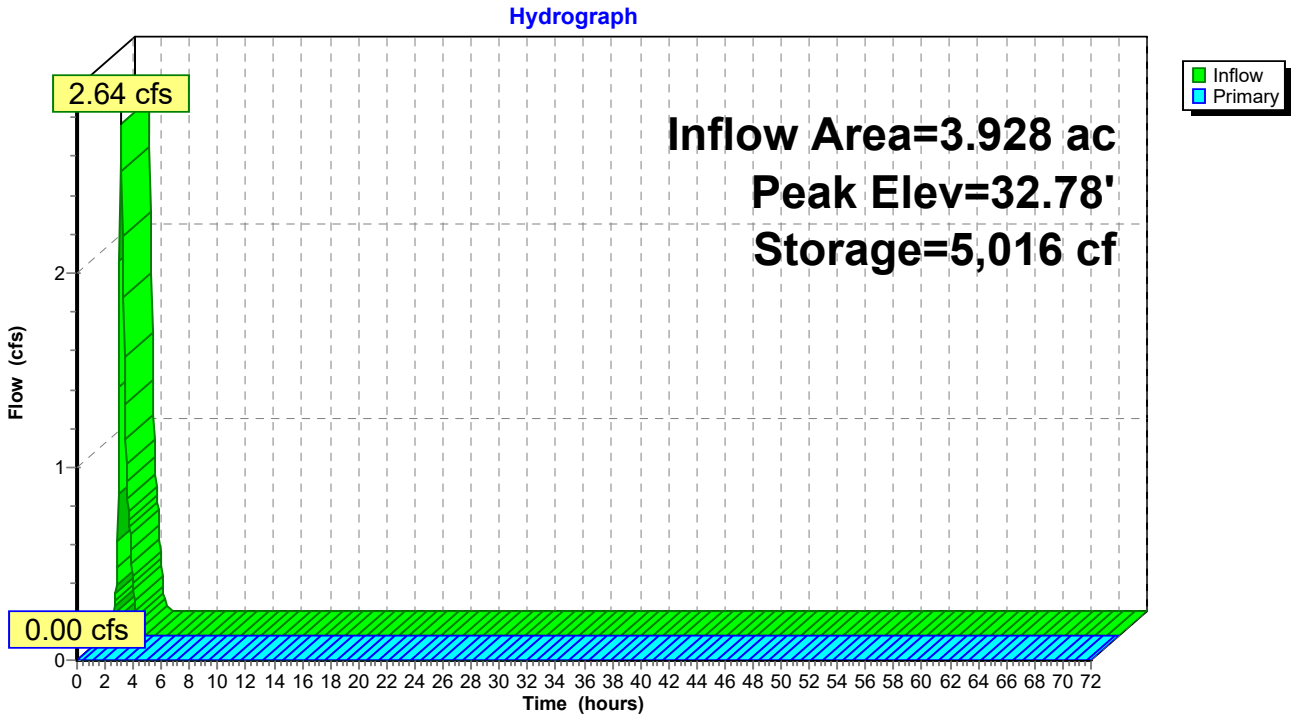
Subcatchment 11S: Basin 5 - Impervious



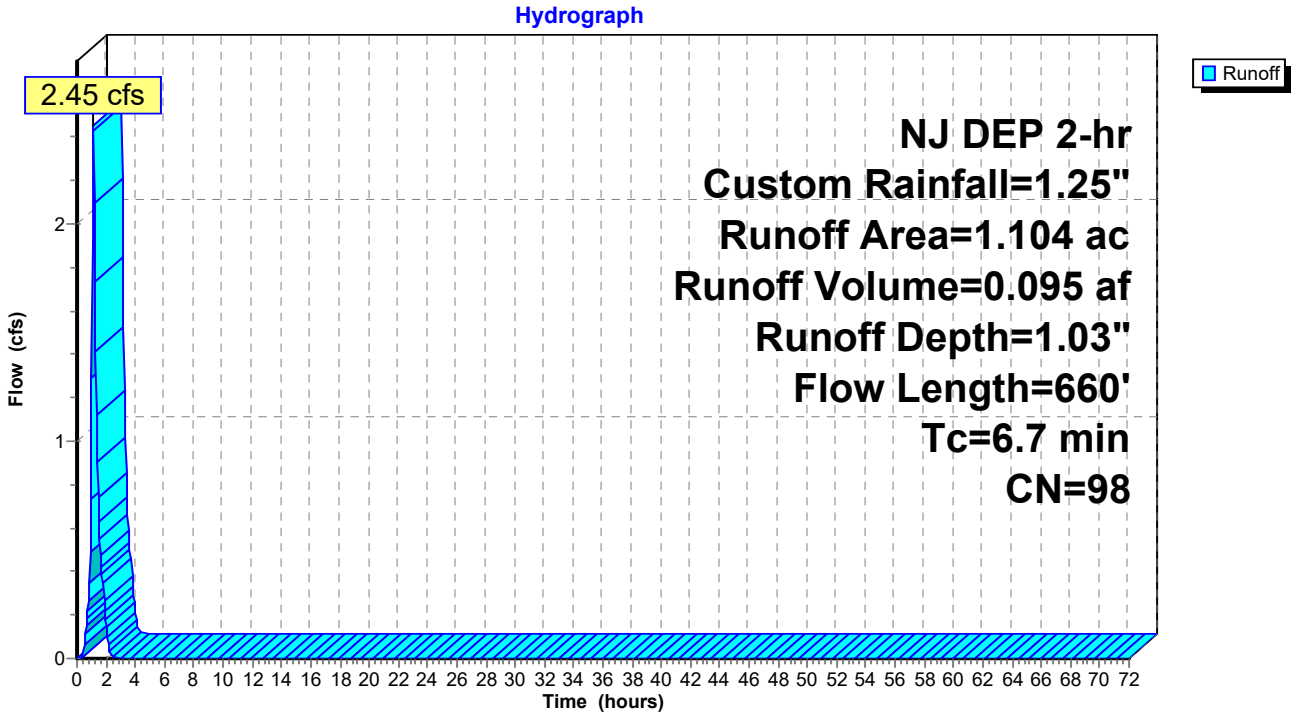
Subcatchment 12S: Basin 5 - Pervious



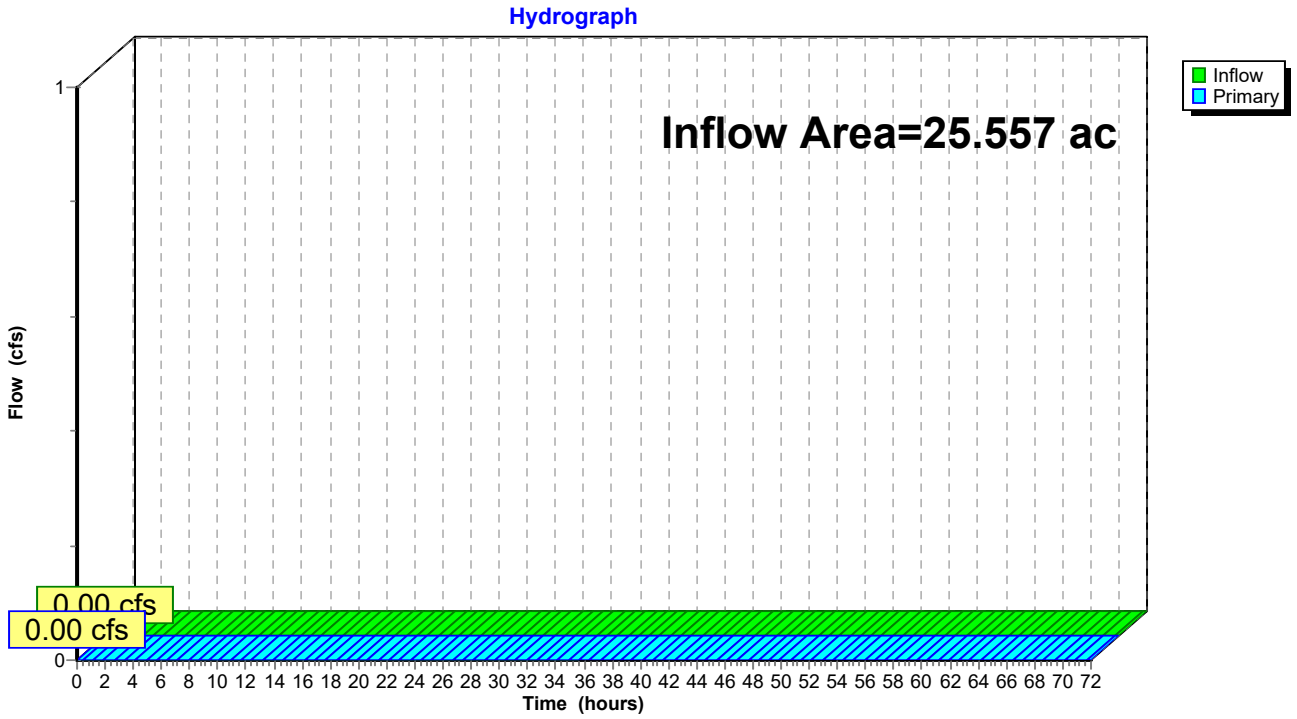
Pond 13P: Basin 7



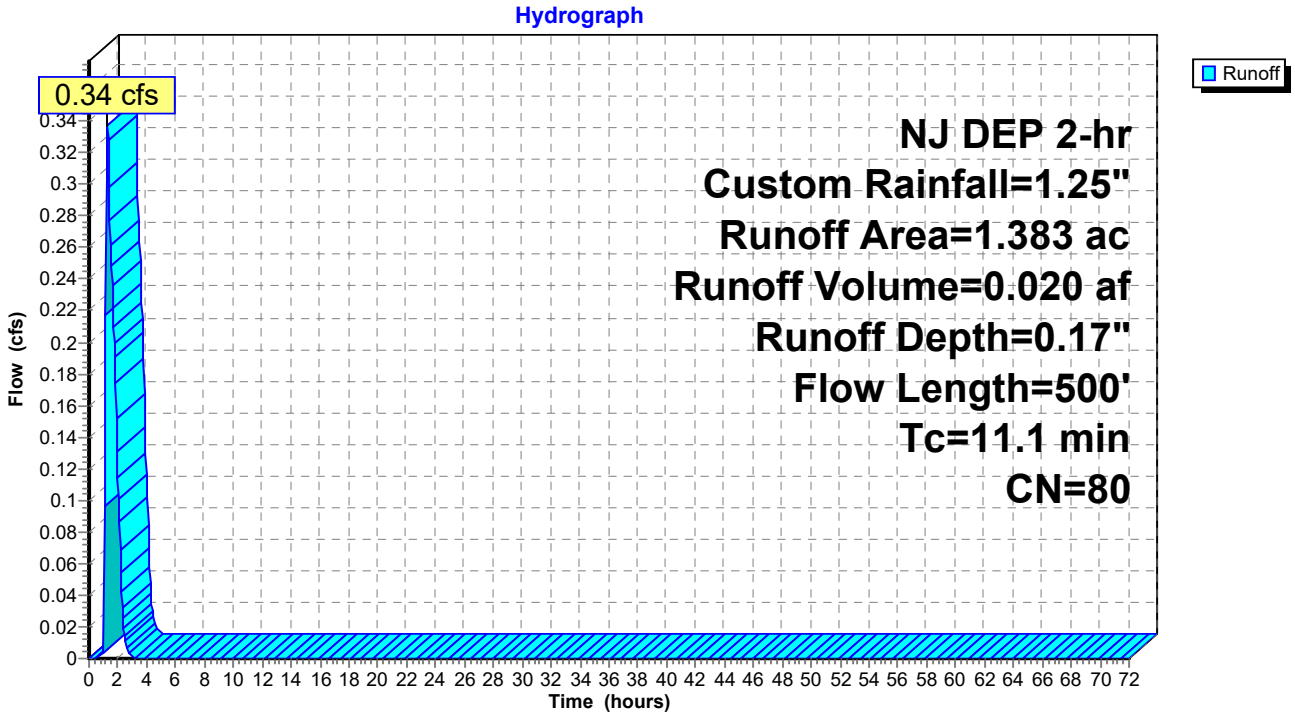
Subcatchment 14S: Basin 7 - Impervious



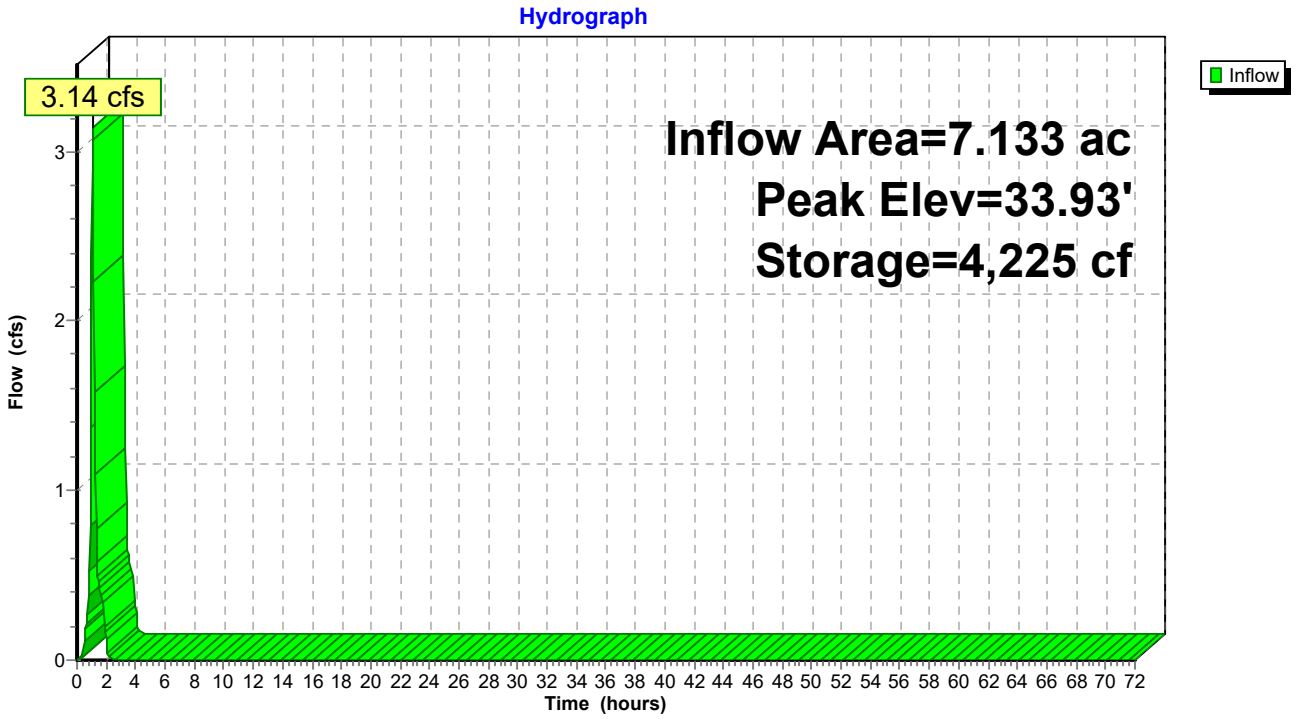
Link 15L: Willis Creek



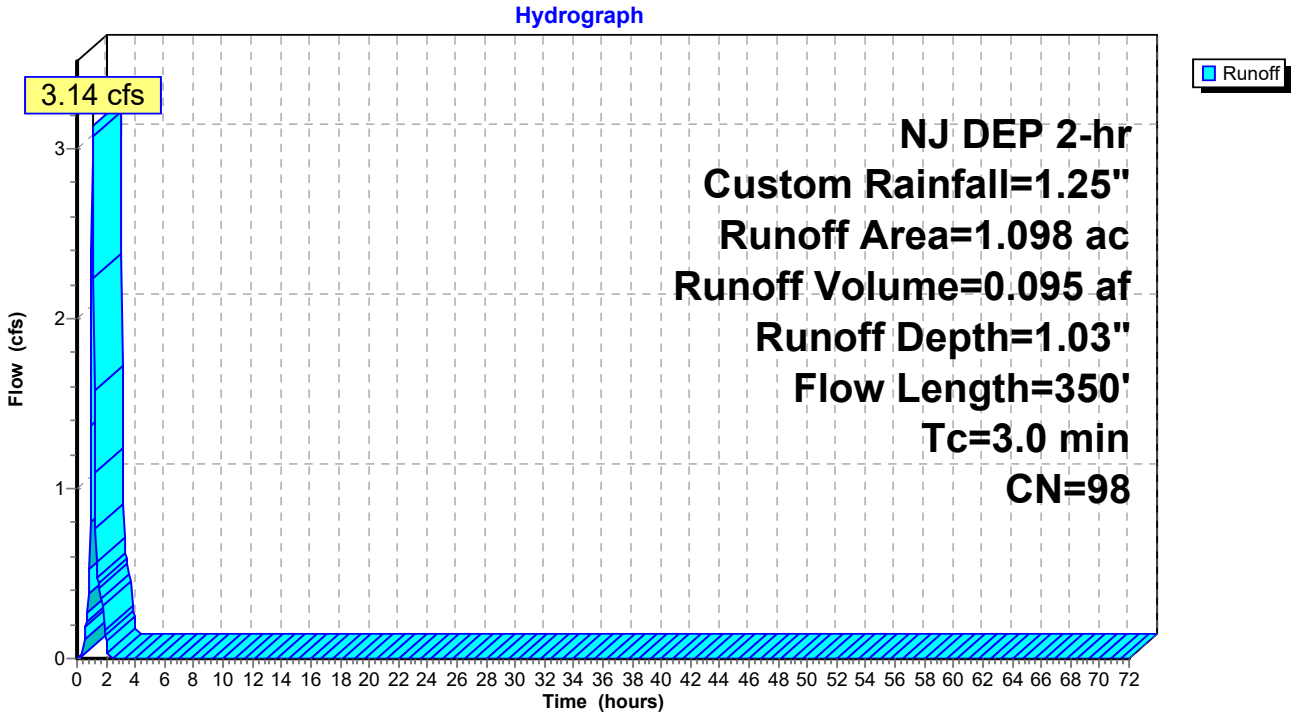
Subcatchment 15S: Basin 7 - Pervious



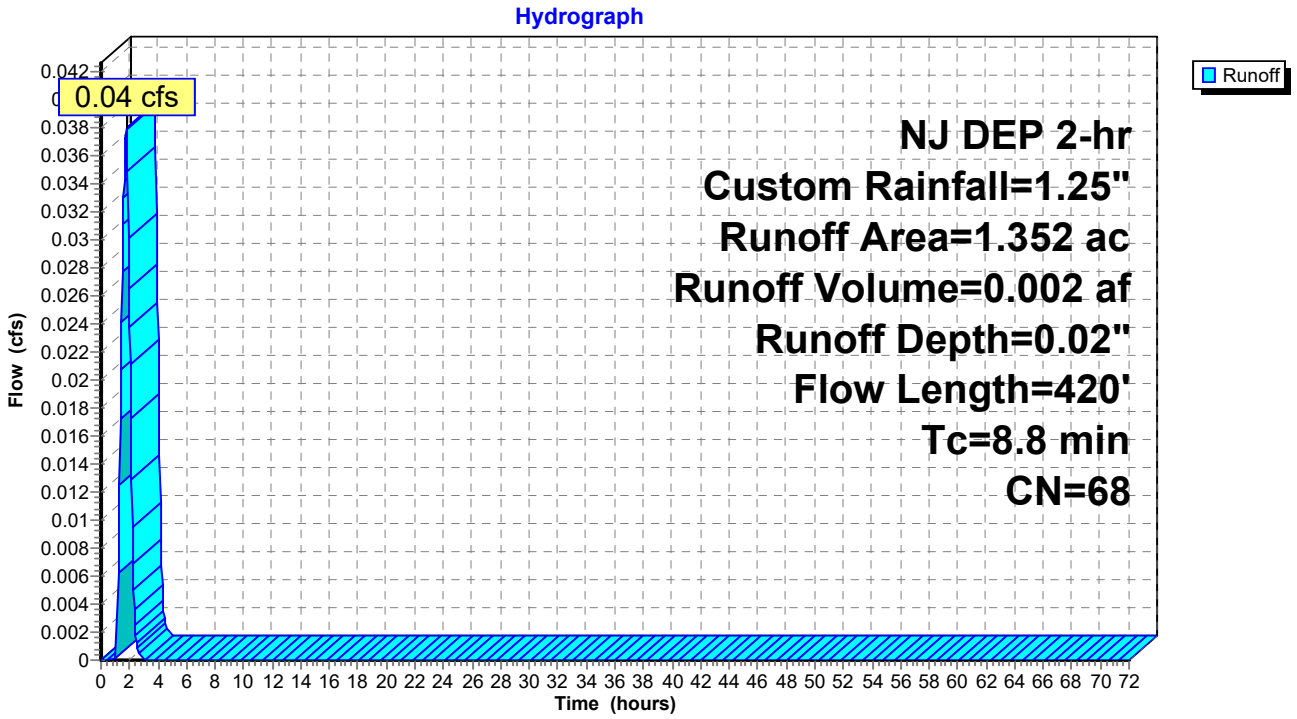
Pond 16P: Basin 9



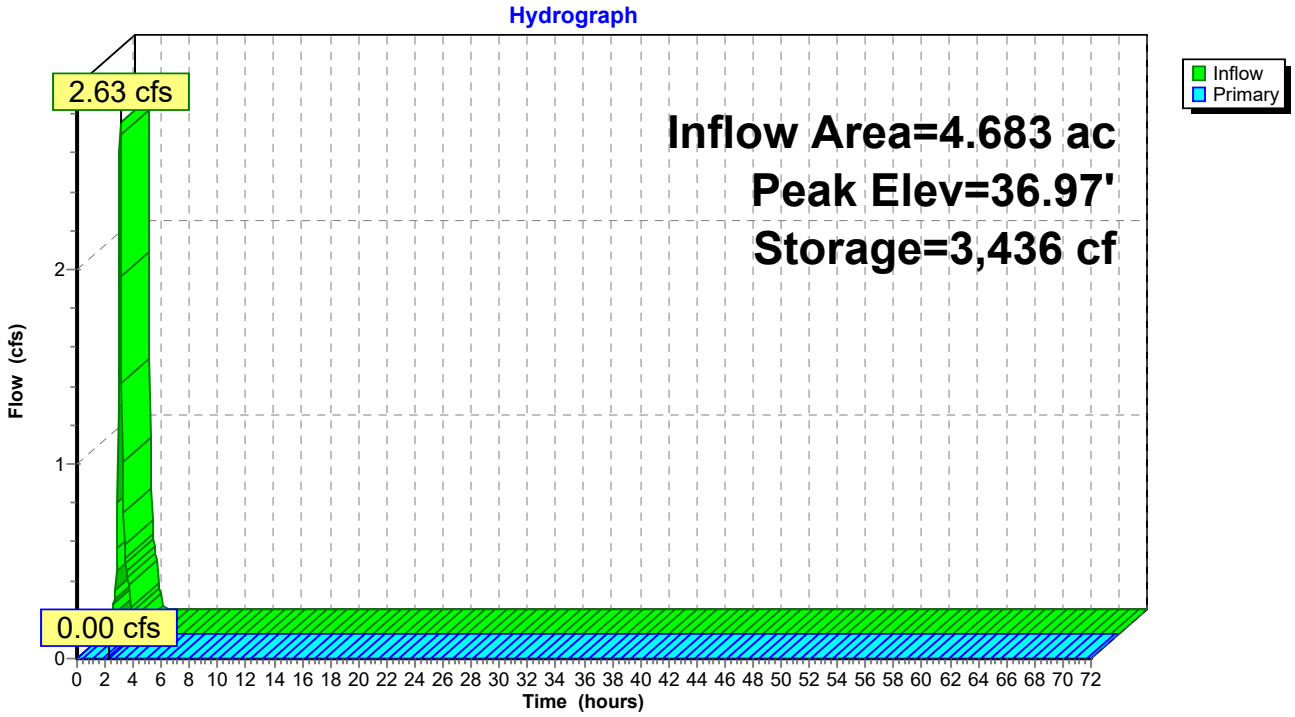
Subcatchment 17S: Basin 9 - Impervious



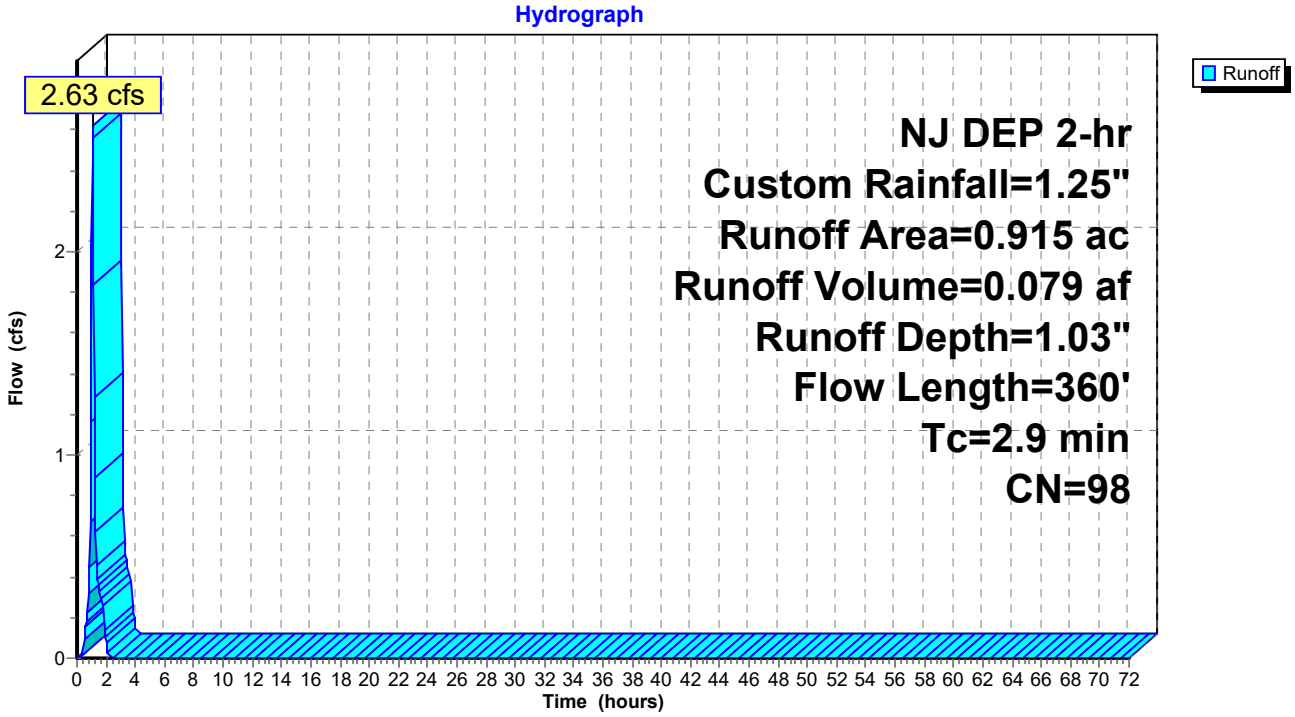
Subcatchment 18S: Basin 9 - Pervious



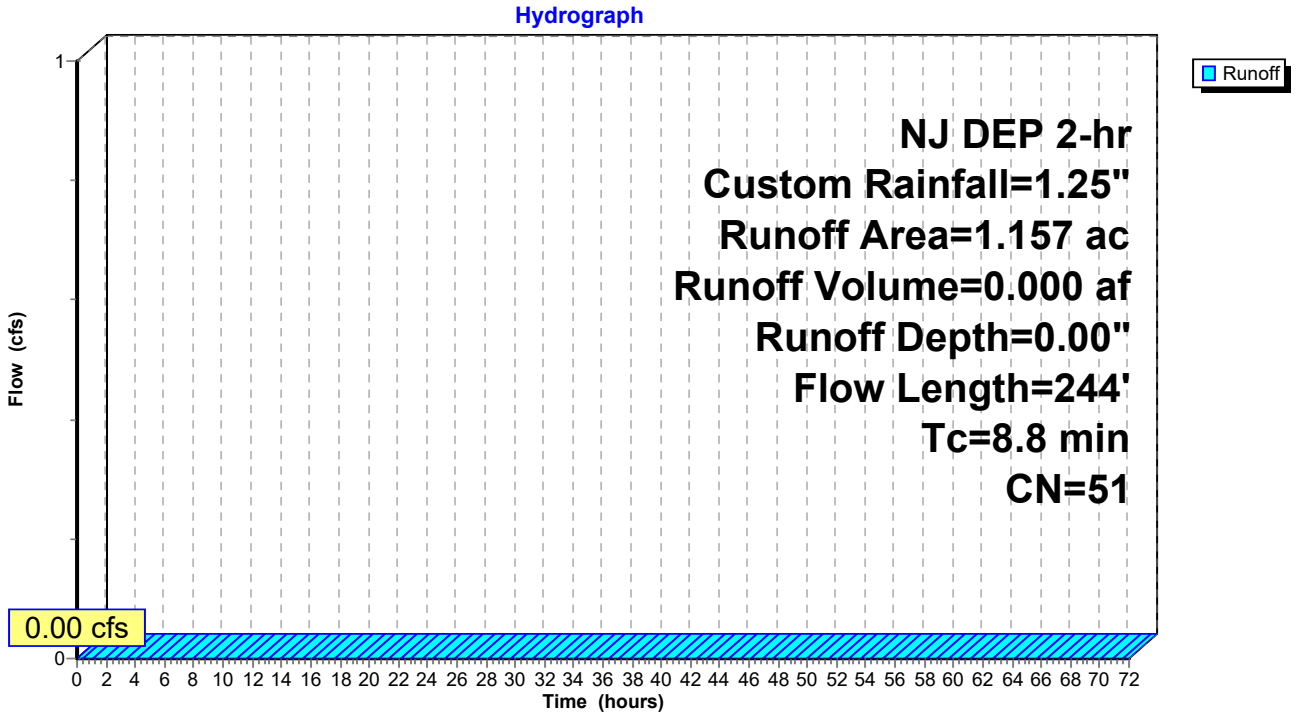
Pond 19P: Basin 10



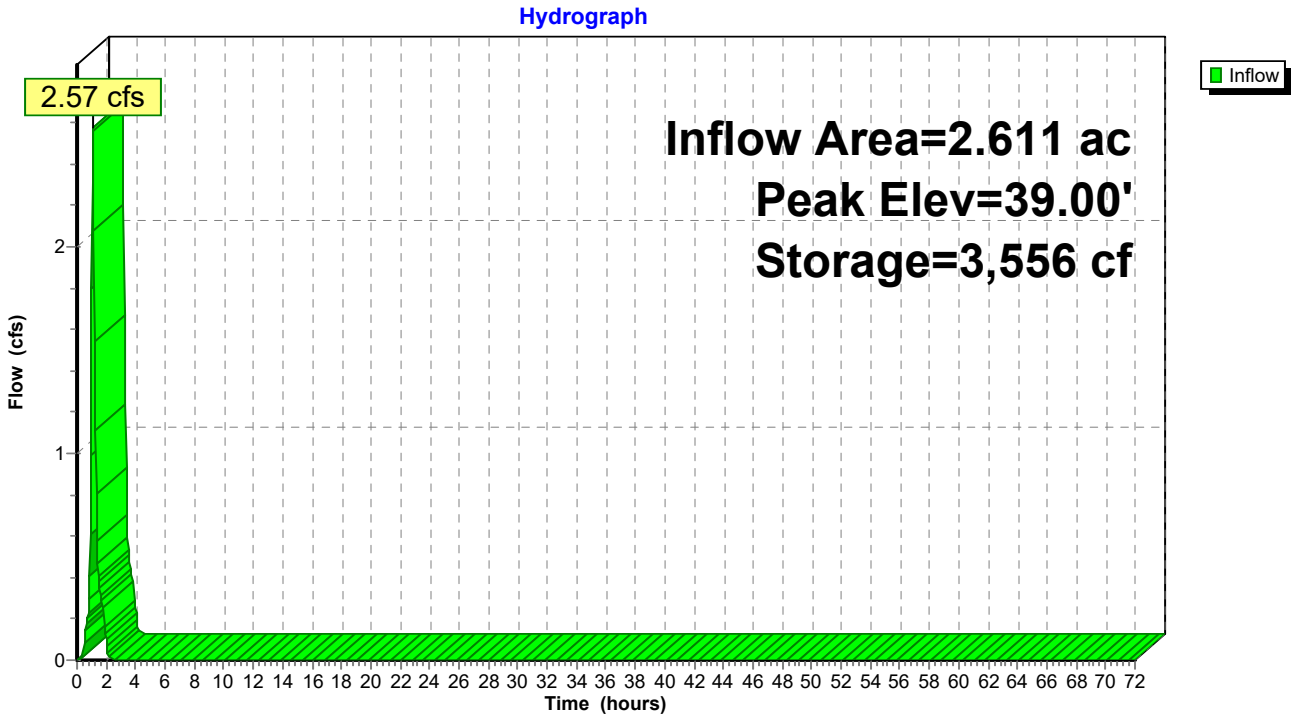
Subcatchment 20S: Basin 10 - Impervious



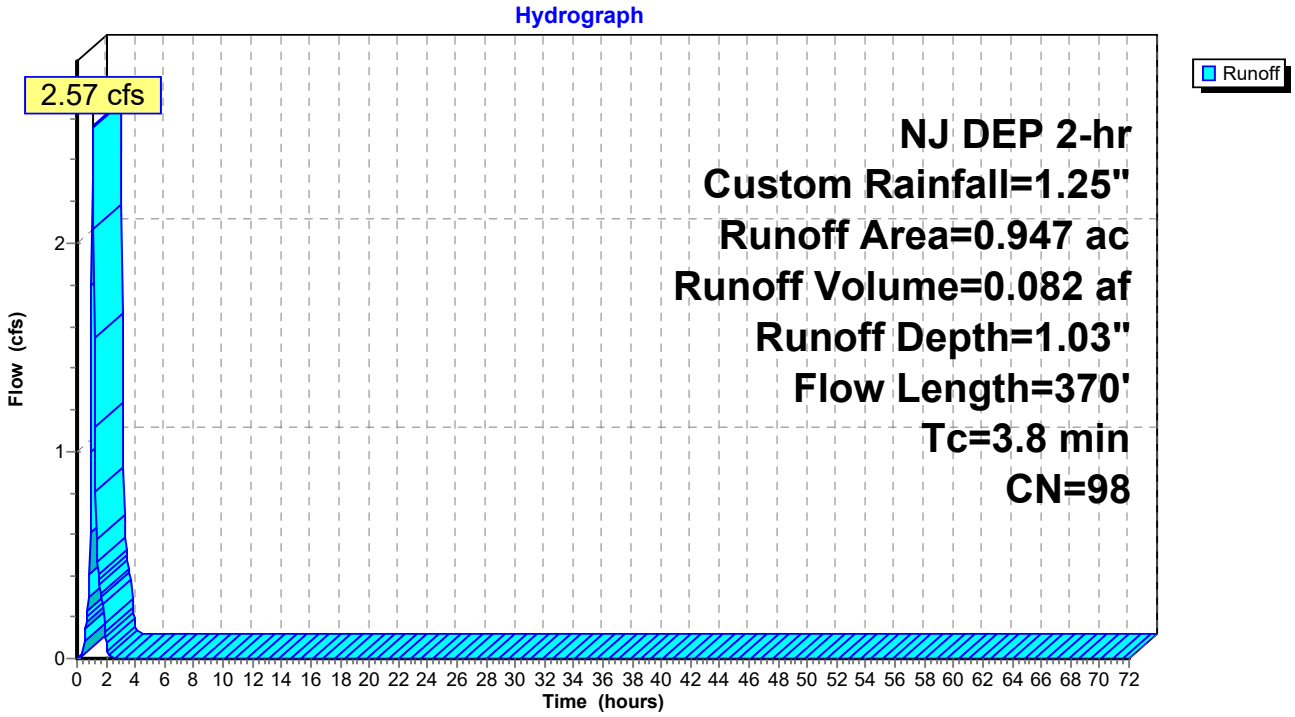
Subcatchment 21S: Basin 10 - Pervious



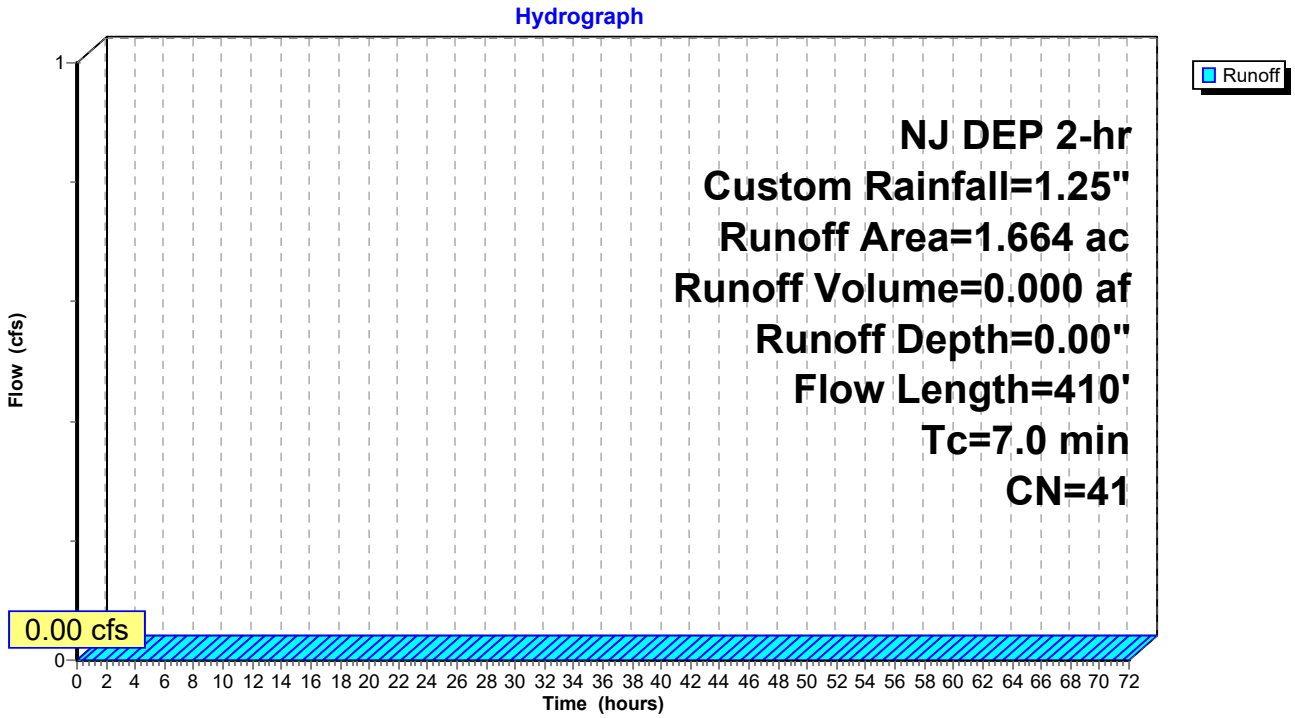
Pond 22P: Basin 11



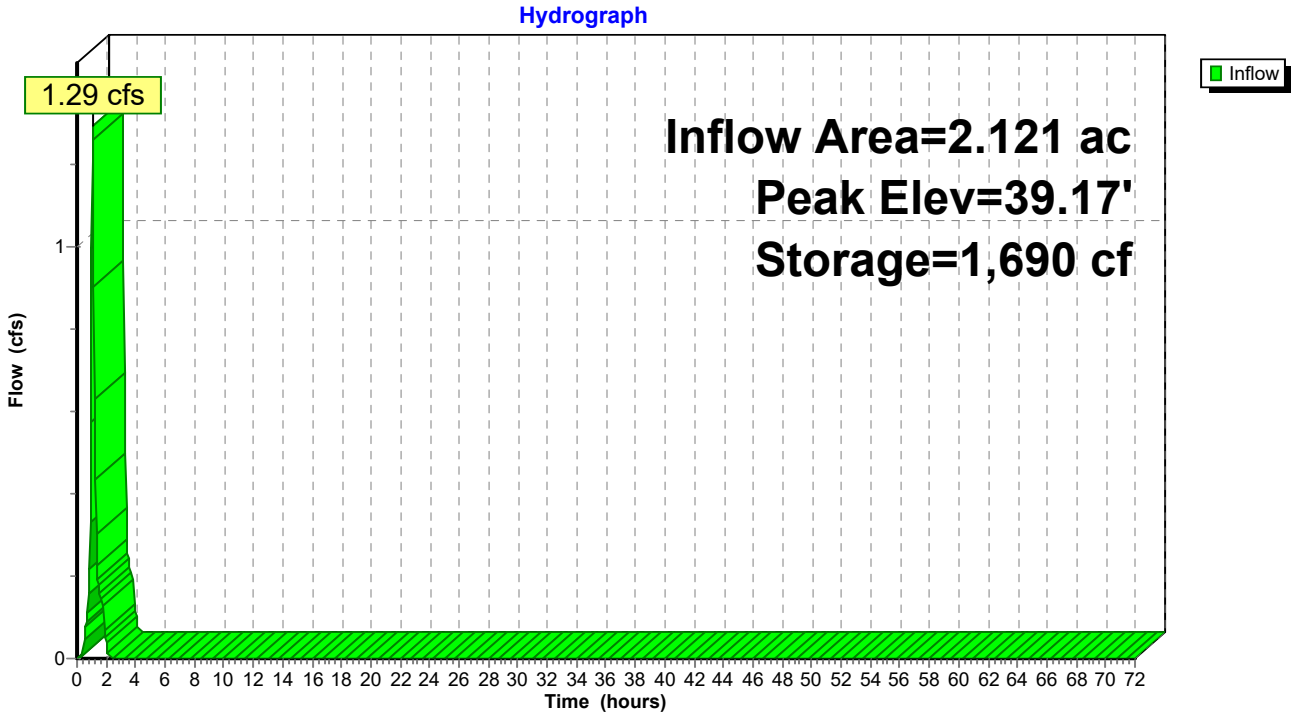
Subcatchment 23S: Basin 11 - Impervious



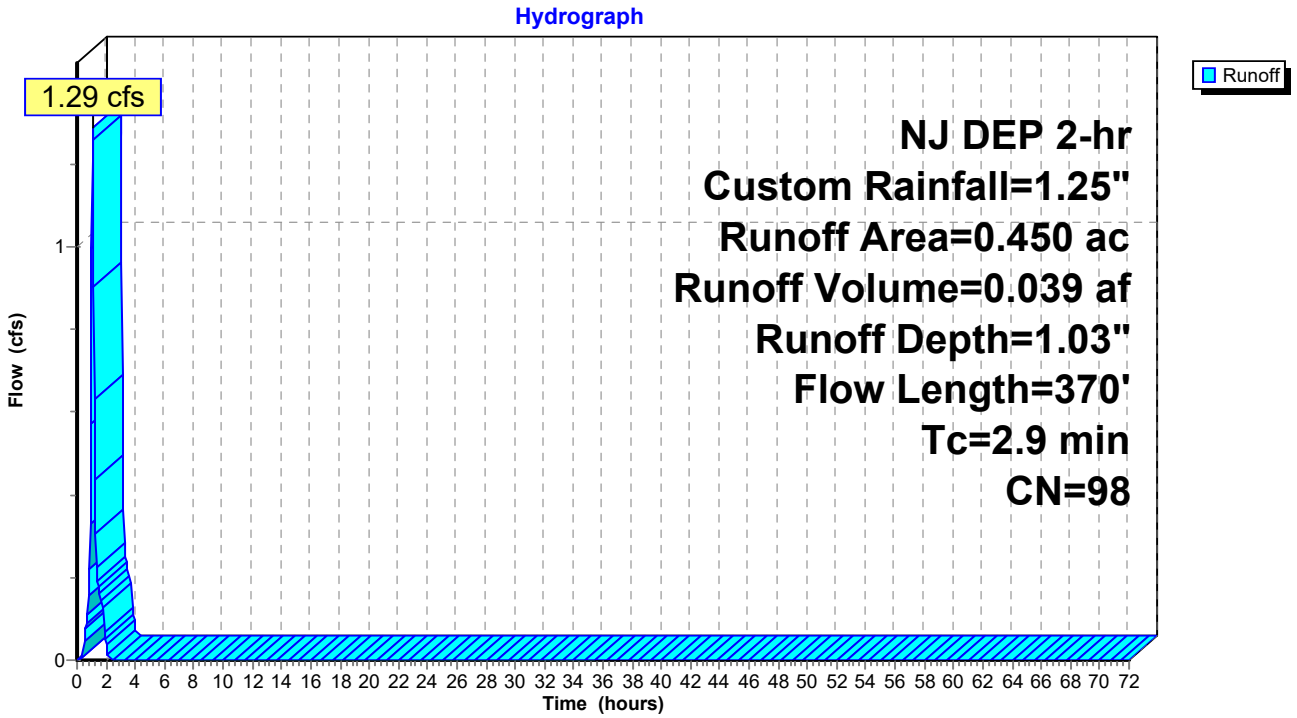
Subcatchment 24S: Basin 11 - Pervious



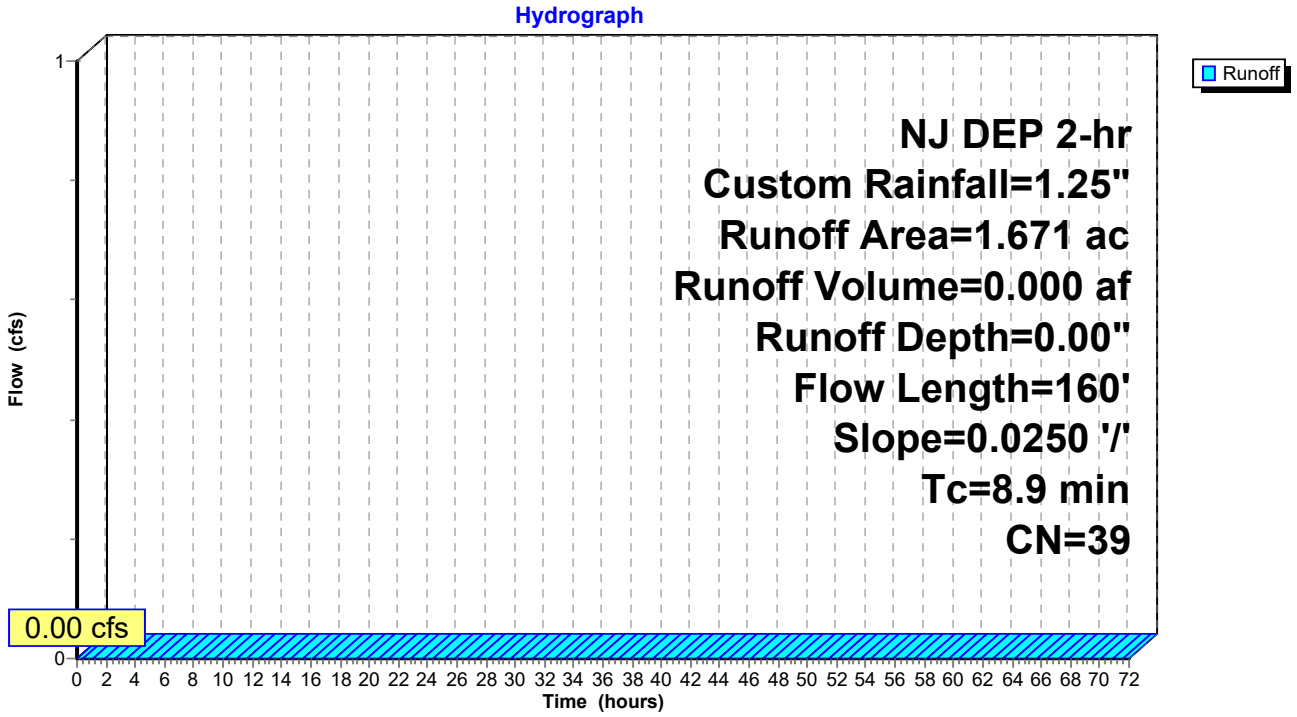
Pond 25P: Basin 12



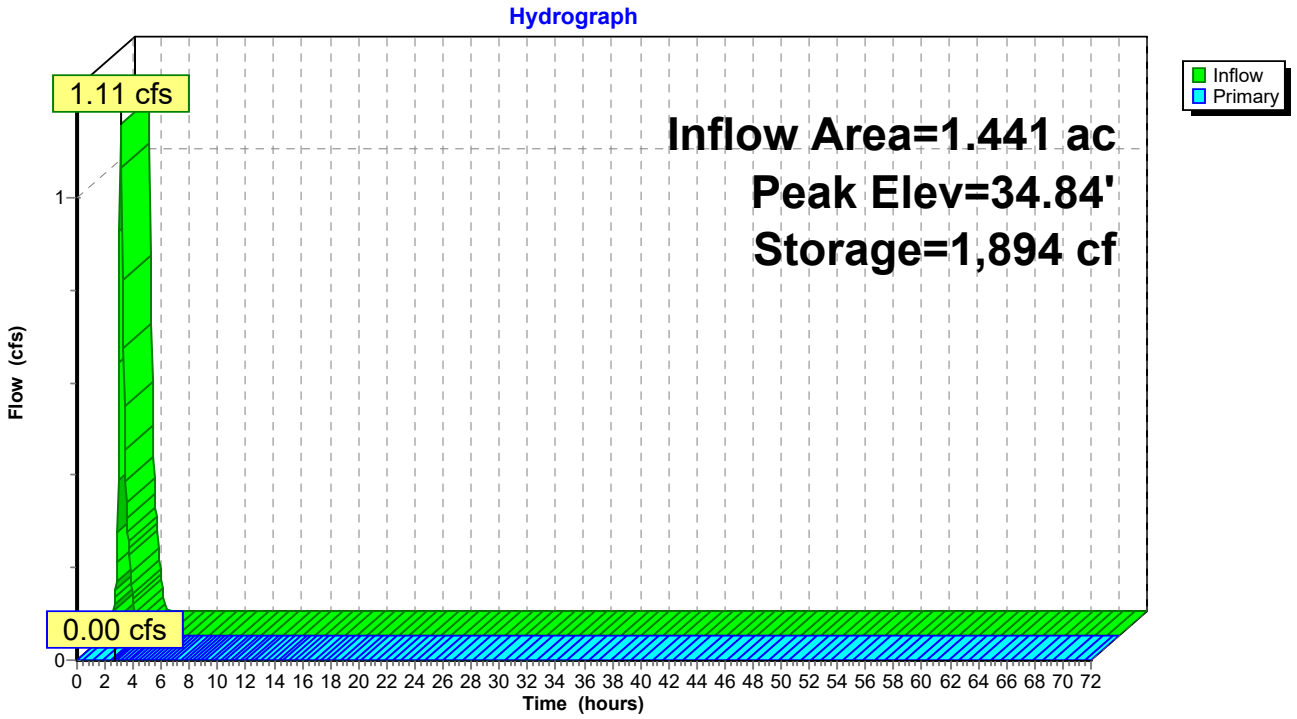
Subcatchment 26S: Basin 12 - Impervious



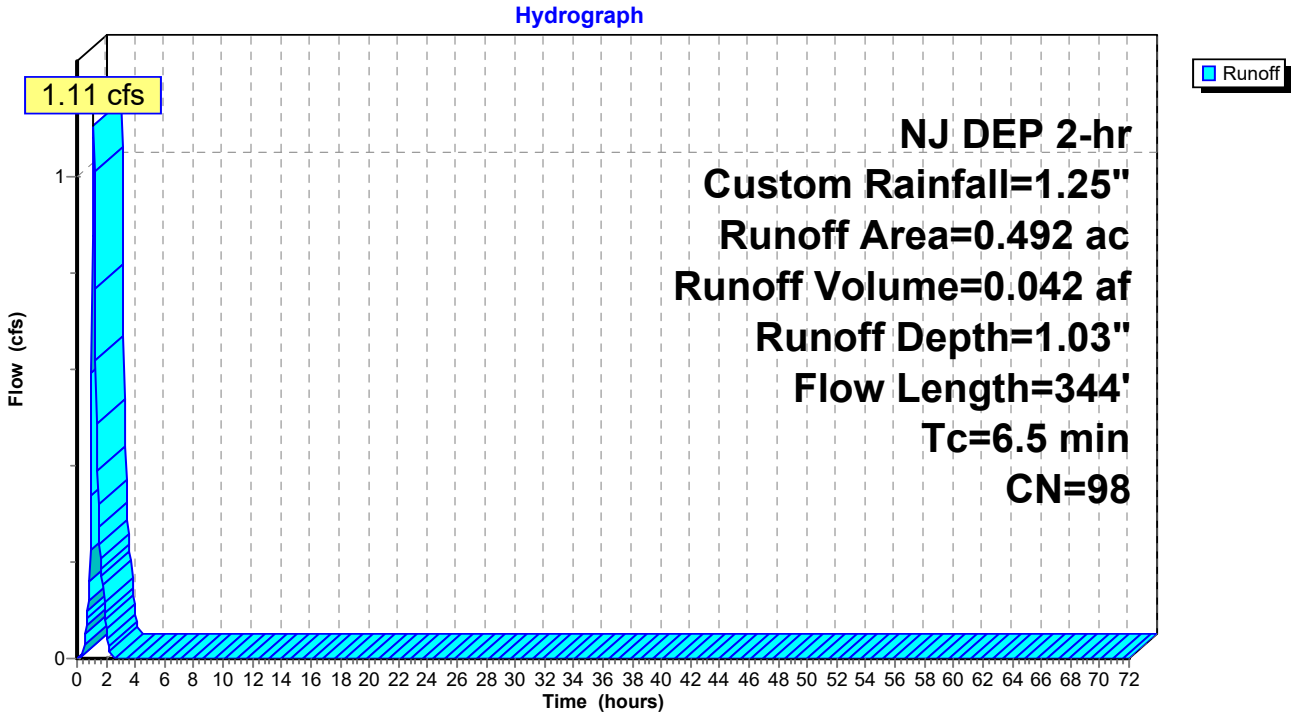
Subcatchment 27S: Basin 12 - Pervious



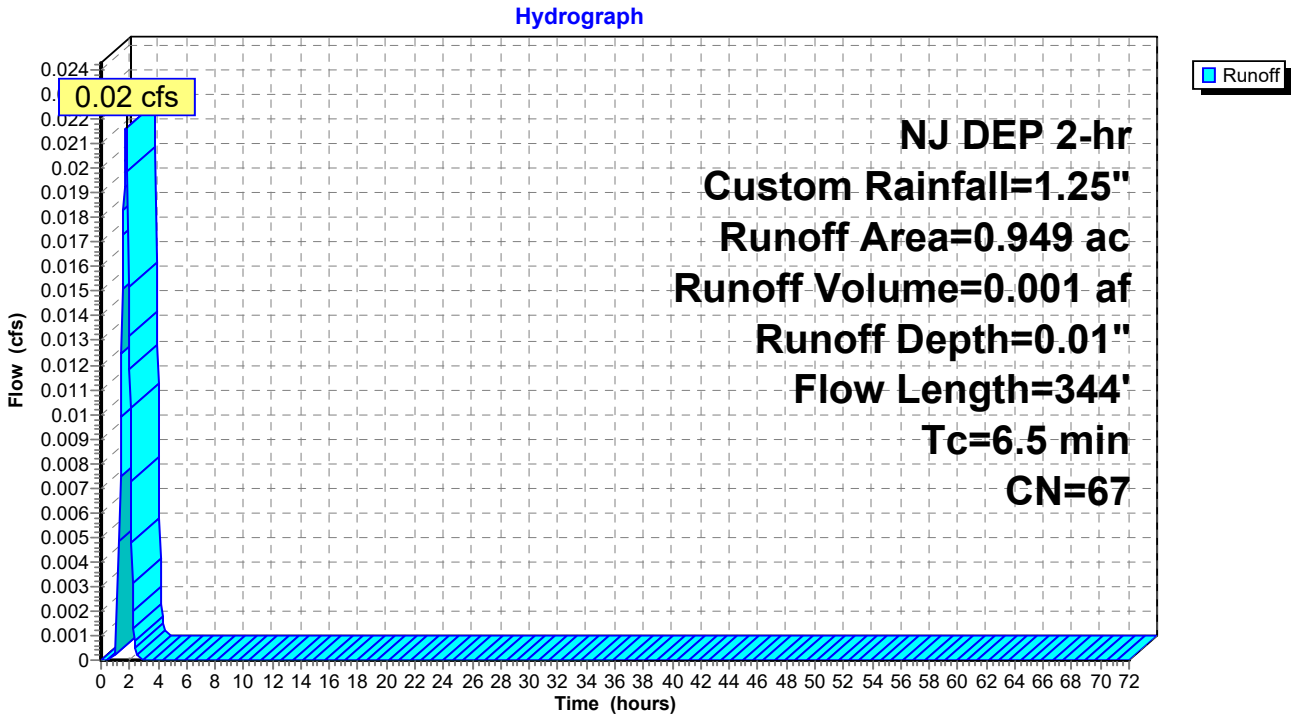
Pond 29P: Basin 6



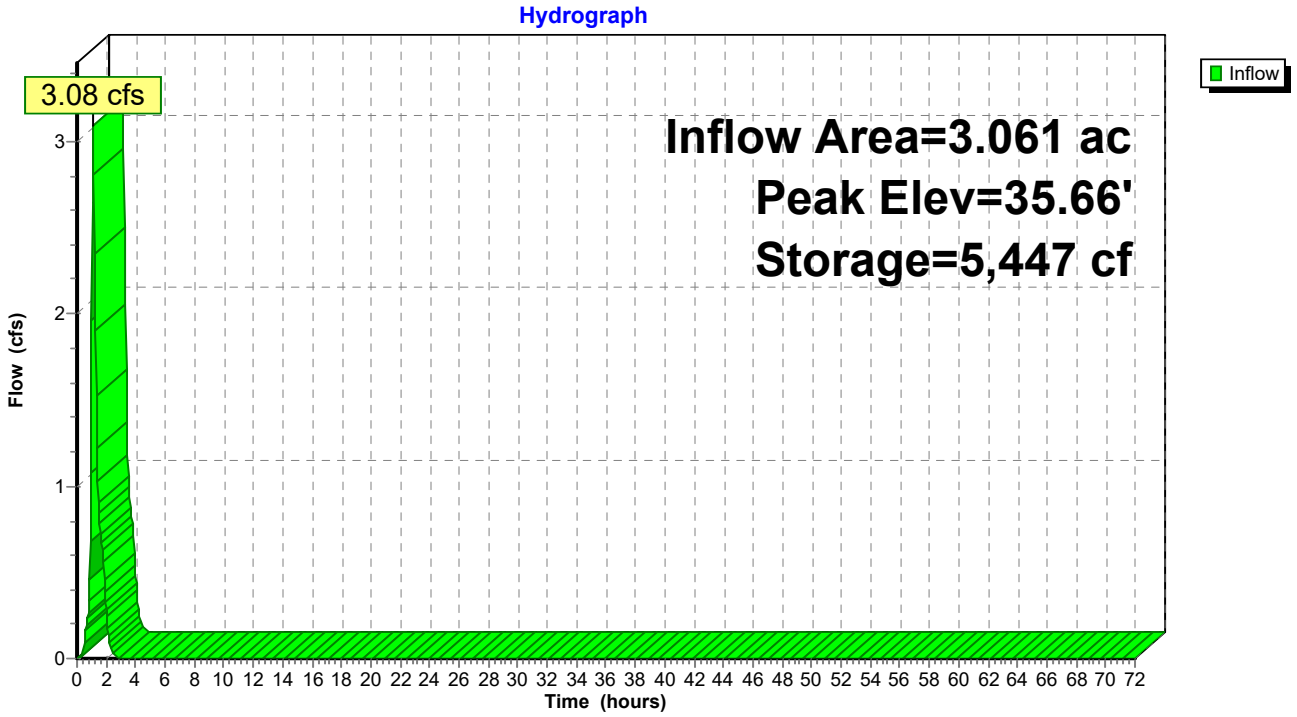
Subcatchment 30S: Basin 6 - Impervious



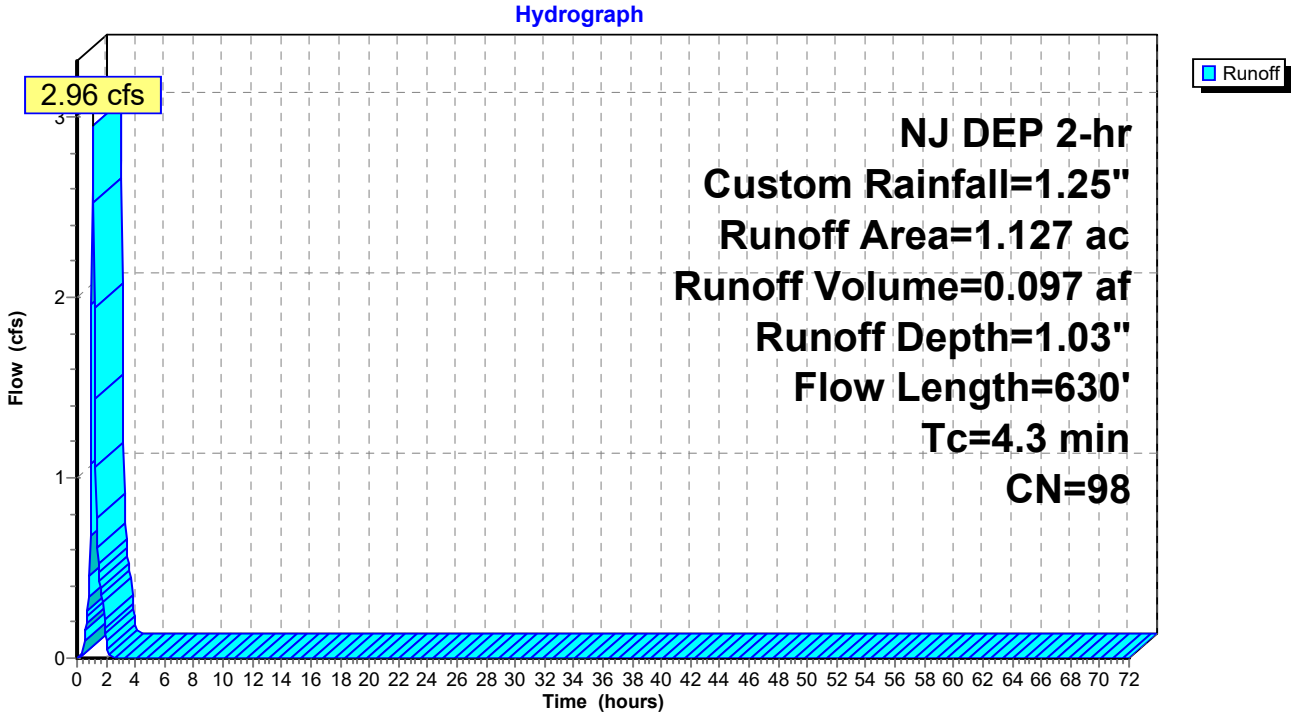
Subcatchment 32S: Basin 6 - Pervious



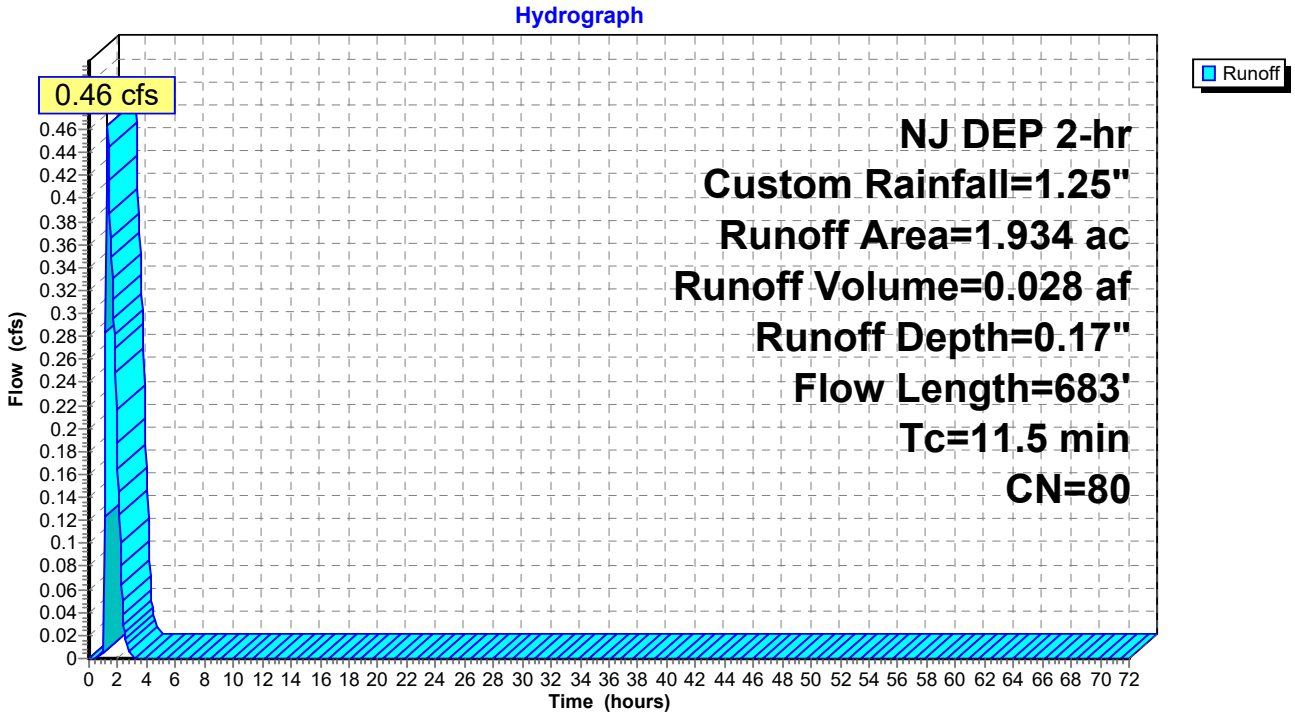
Pond 33P: Basin 8



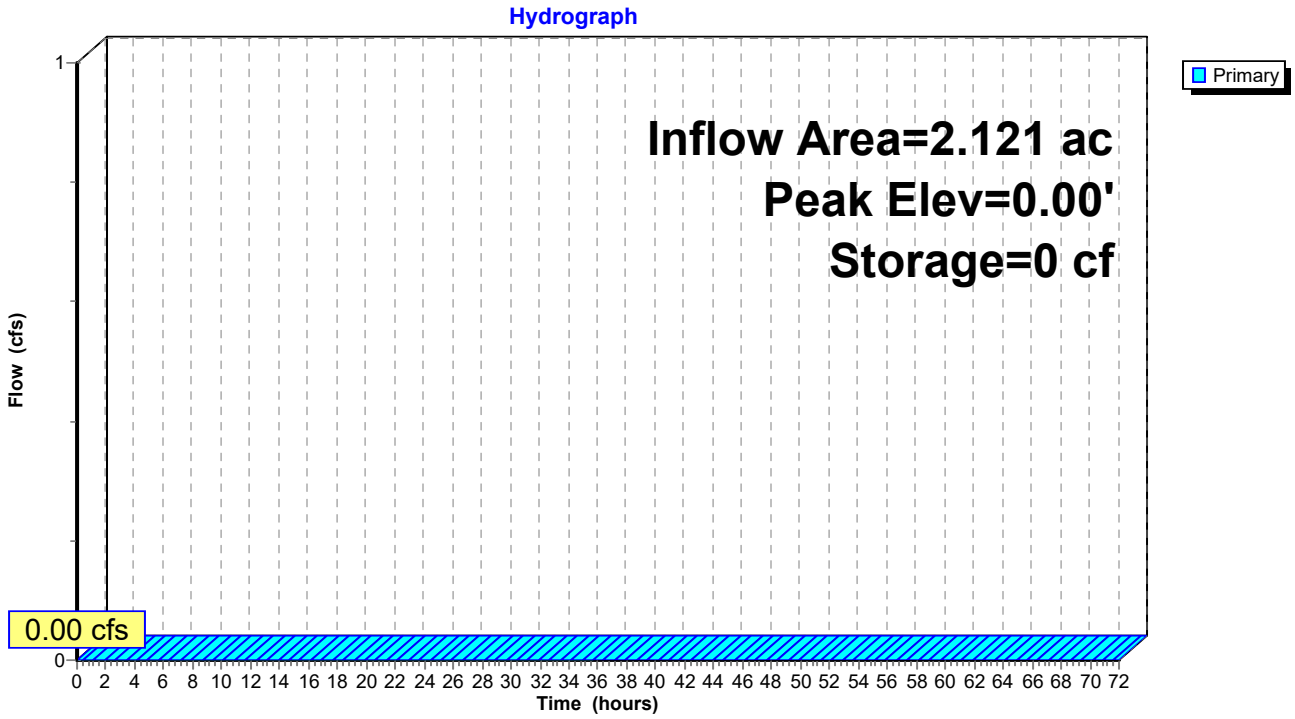
Subcatchment 34S: Basin 8 - Impervious



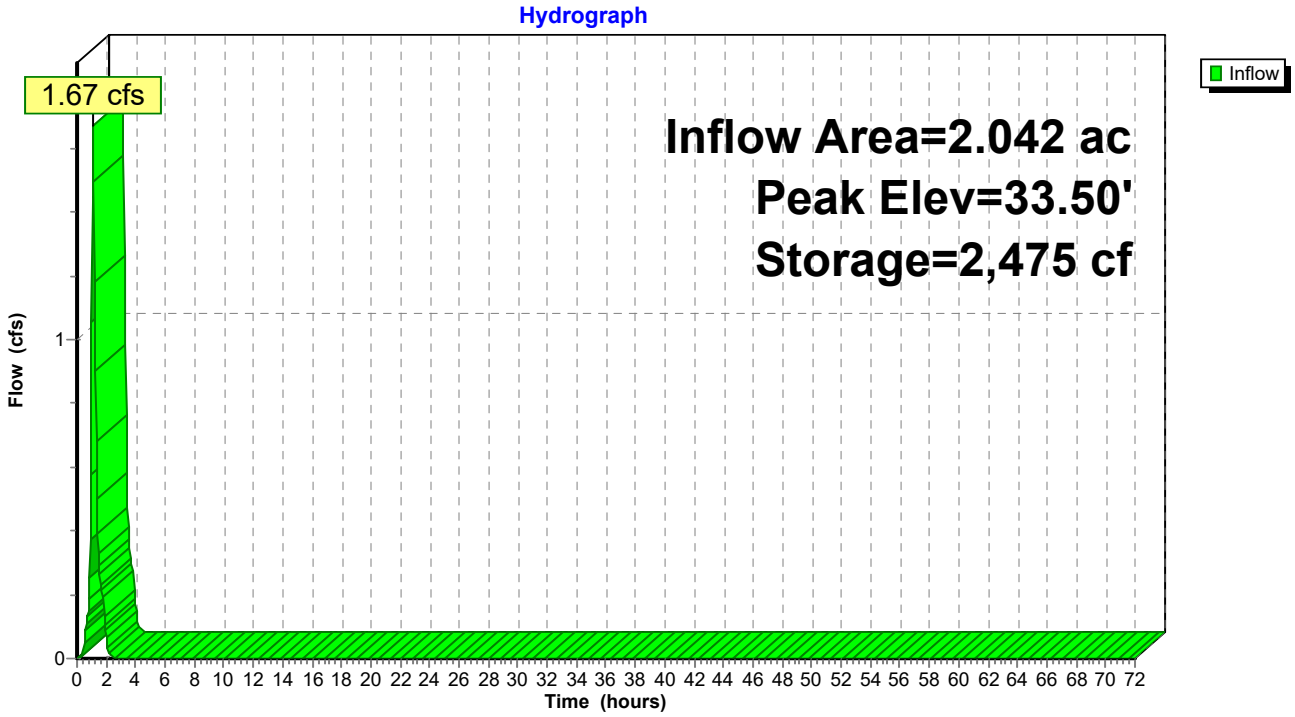
Subcatchment 35S: Basin 8 - Pervious



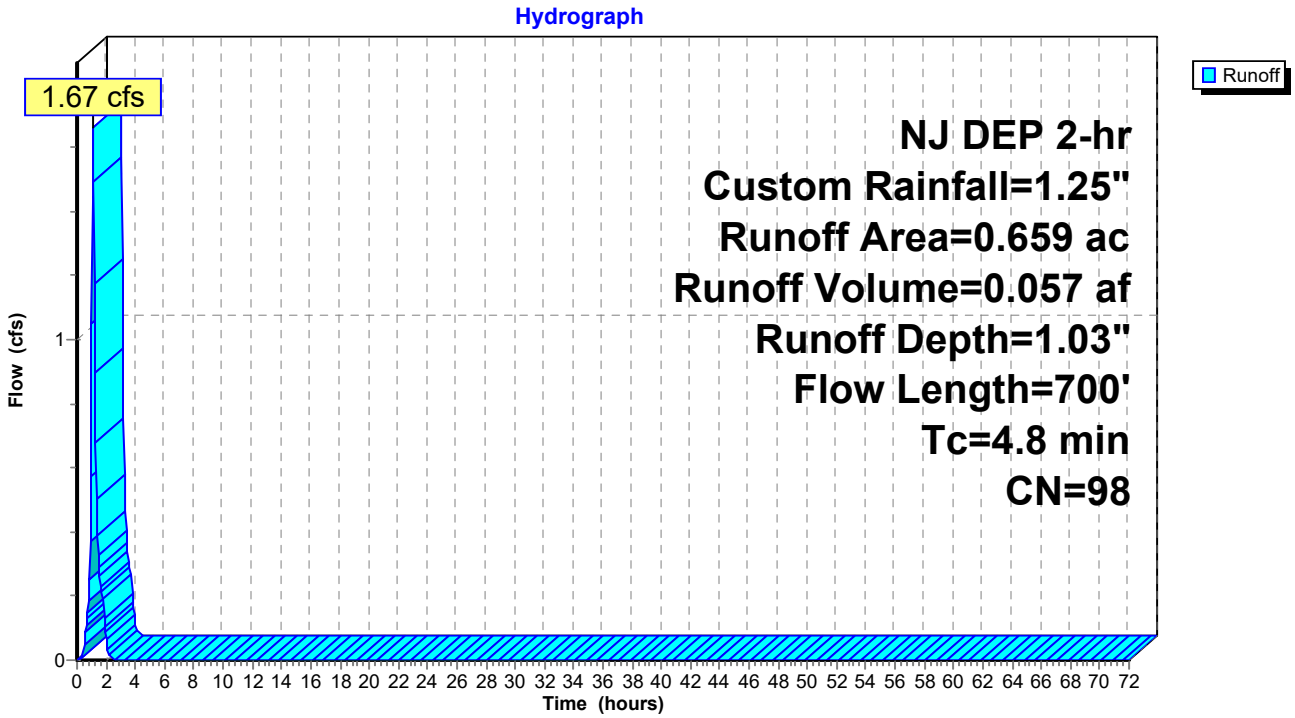
Pond 40P: Wetlands Depression



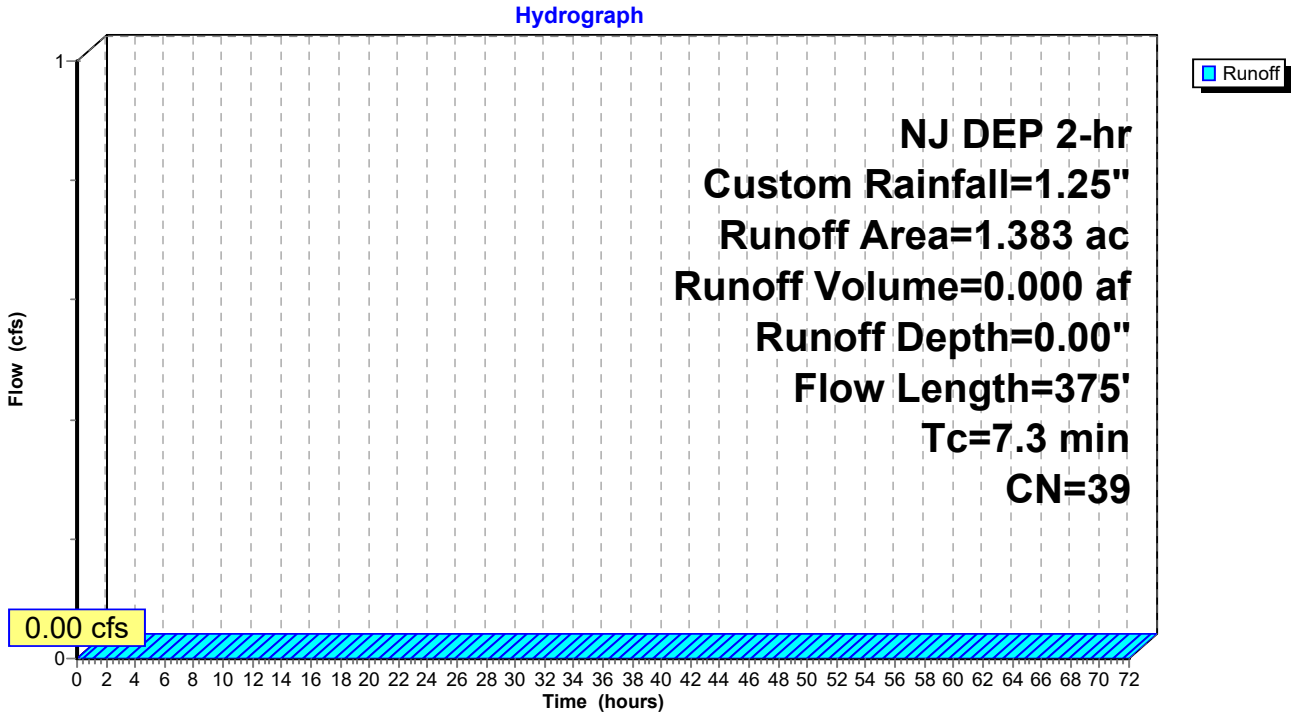
Pond 41P: Basin 13



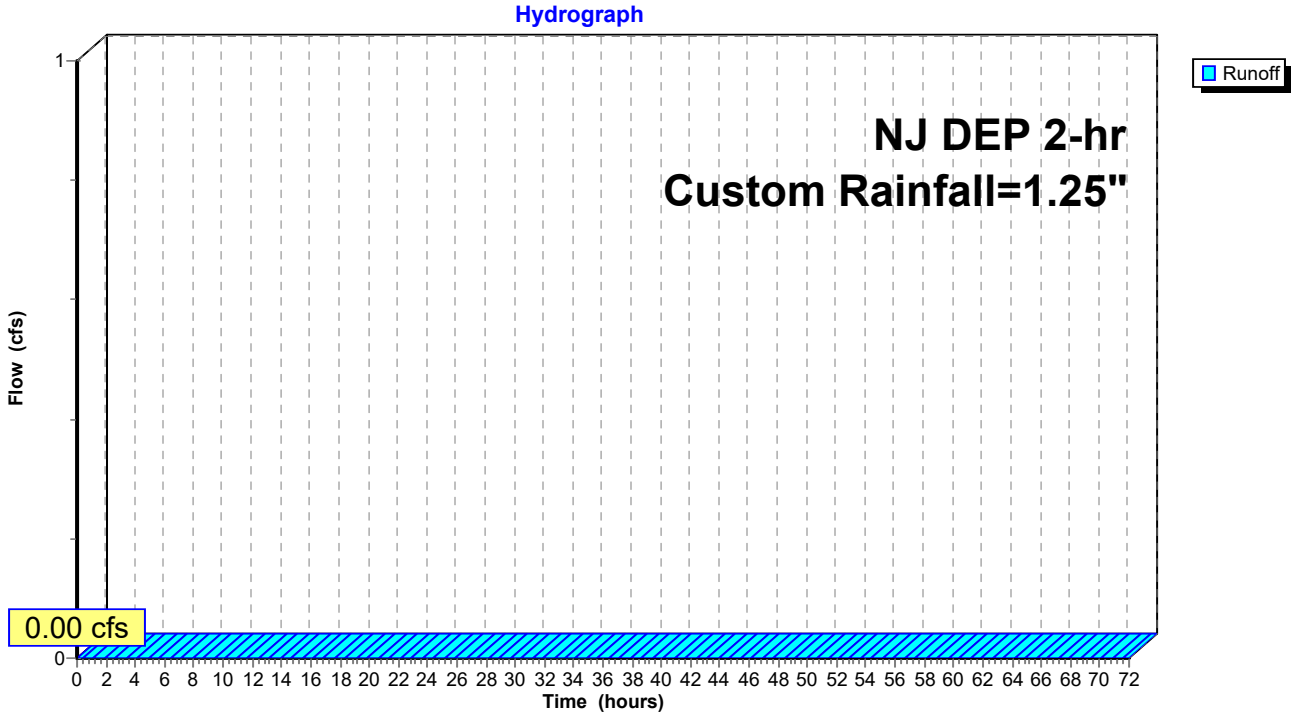
Subcatchment 42S: Basin 13 - Impervious



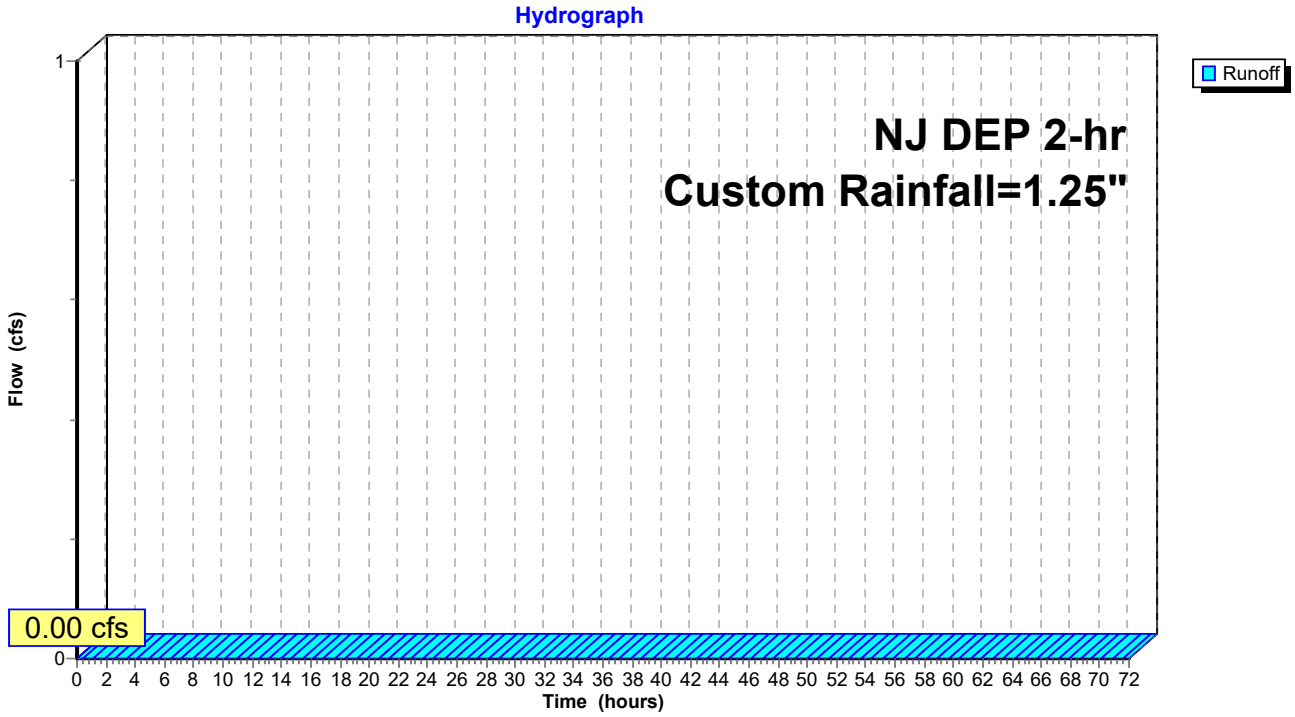
Subcatchment 43S: Basin 13 - Pervious



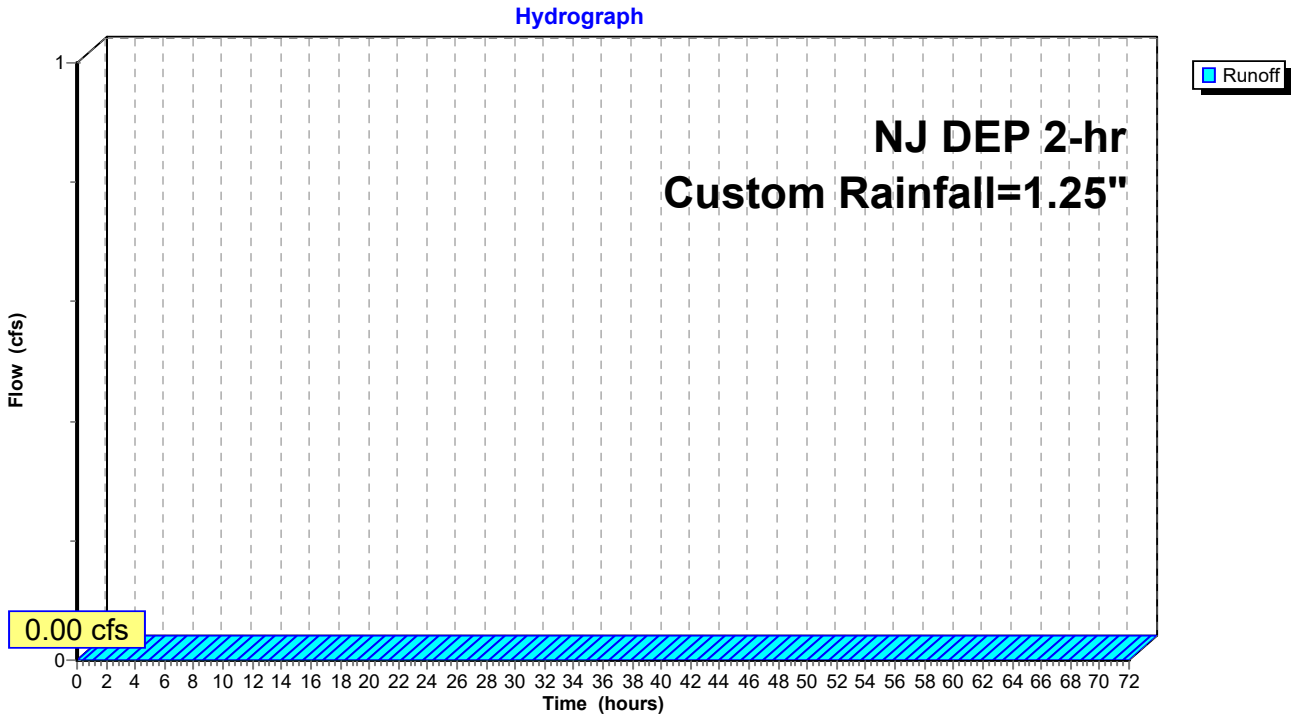
Subcatchment 44S: Basin 3 - Impervious



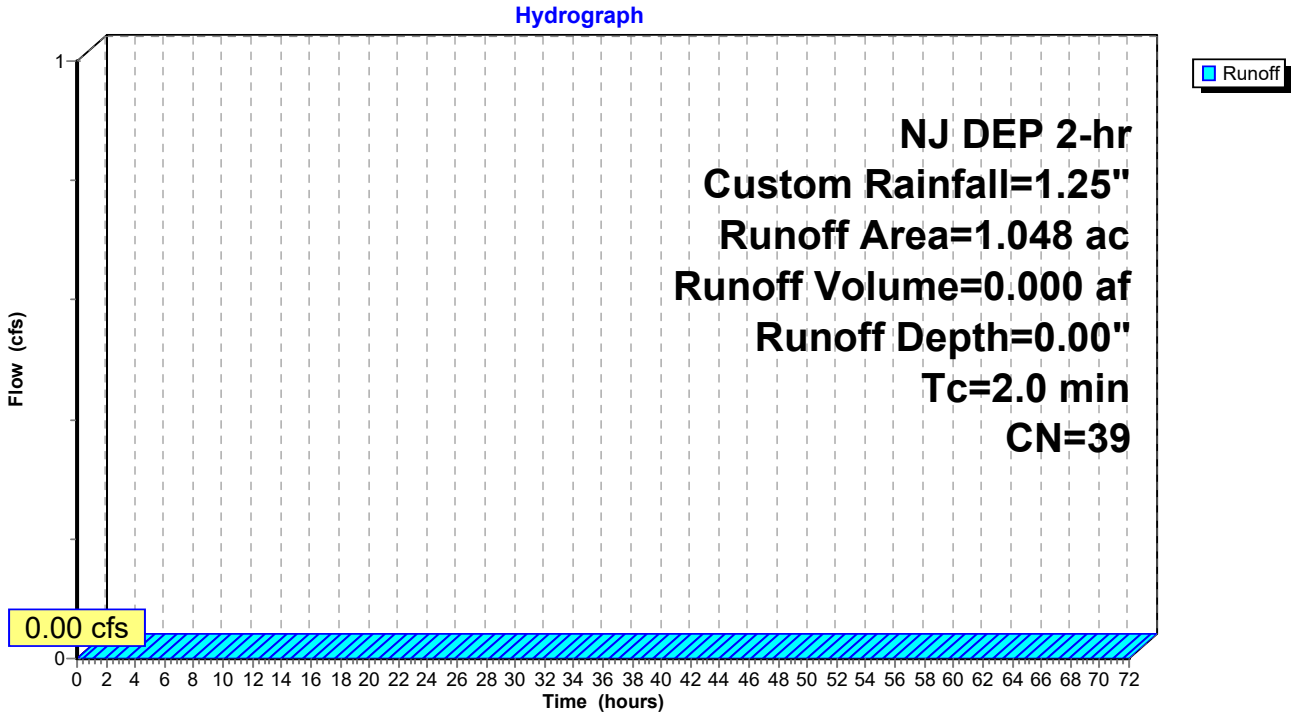
Subcatchment 45S: Undetained - Impervious



Subcatchment 46S: Undetained - Pervious



Subcatchment 66: Basin 3 - Pervious



Appendix G – Groundwater Recharge Calculations

Project Name	Description	Analysis Date	BMP or LID Type
Venue at Summers Corner	Residential Development	04/25/25	Infiltration Basin 25

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	6600.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	24.0	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	36.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	2	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.60	in
ERWC Modified to consider dEXC	EDRWC	0.12	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.09	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.58	in
Inches of Rainfall to capture	Pdesign	0.72	in
Recharge Provided Avg. over Imp. Area		25.8	in
Runoff Captured Avg. over imp. Area		26.0	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.02	unitless
BMP Volume	VBMP	13,200	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK
BMP Location---> OK

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	1,872,749	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	273,234	sq.ft
Root Zone Water Capacity	RWC	2.63	in
RWC Modified to consider dEXC	DRWC	0.53	in
Climatic Factor	C-factor	1.54	no units
Average Annual P	Pavg	47.9	in
Recharge Requirement over Imp. Area	dr	15.7	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		587,856	cu.ft
Avg BMP Recharge Efficiency		99.3%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.3%	%
%Runoff Infiltrated		69.3%	%
%Runoff Recharged		13.1%	%
%Rainfall Recharged		10.3%	%

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
Venue at Summers Corner	Residential Development	04/25/25	Infiltration Basin 3

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	22000.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	66.0	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	78.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	2	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.60	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	2.97	in
Inches of Rainfall to capture	Pdesign	3.21	in
Recharge Provided Avg. over Imp. Area		37.5	in
Runoff Captured Avg. over imp. Area		37.5	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.07	unitless
BMP Volume	VBMP	121,000	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK
BMP Location---> OK

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	1,872,749	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	304,920	sq.ft
Root Zone Water Capacity	RWC	2.63	in
RWC Modified to consider dEXC	DRWC	0.00	in
Climatic Factor	C-factor	1.54	no units
Average Annual P	Pavg	47.9	in
Recharge Requirement over Imp. Area	dr	15.7	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		953,114	cu.ft
Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.3%	%
%Runoff Infiltrated		100.0%	%
%Runoff Recharged		21.3%	%
%Rainfall Recharged		16.6%	%

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
Venue at Summers Corner	Residential Development	04/25/25	Infiltration Basin 18

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	4600.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	24.0	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	36.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	2	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.60	in
ERWC Modified to consider dEXC	EDRWC	0.12	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.09	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.44	in
Inches of Rainfall to capture	Pdesign	0.55	in
Recharge Provided Avg. over Imp. Area		21.8	in
Runoff Captured Avg. over imp. Area		22.0	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.02	unitless
BMP Volume	VBMP	9,200	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK
BMP Location---> OK

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	1,872,749	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	261,360	sq.ft
Root Zone Water Capacity	RWC	2.63	in
RWC Modified to consider dEXC	DRWC	0.53	in
Climatic Factor	C-factor	1.54	no units
Average Annual P	Pavg	47.9	in
Recharge Requirement over Imp. Area	dr	15.7	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		475,255	cu.ft
Avg BMP Recharge Efficiency		99.4%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.3%	%
%Runoff Infiltrated		58.5%	%
%Runoff Recharged		10.6%	%
%Rainfall Recharged		8.3%	%

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.

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
OCEAN CO., OCEAN TWP	47.9	1.54

Project Name:	**Venue at Summers Corner**
Description:	**Residential Development**
Analysis Date:	**04/25/25**

Pre-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	72.96	Woods	Downer	16.0	4,227,771
2	23.74	Open space	Downer	16.1	1,383,455
3	0.392	Impervious areas	Downer	0.0	-
4	0				
5	0				
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	97.1			Total Annual Recharge (in)	Total Annual Recharge (cu-ft)
				15.9	5,611,226

Post-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	32.94	Impervious areas	Downer	0.0	-
2	64.152	Open space	Downer	16.1	3,738,477
3					
4	0				
5	0				
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	97.1			Total Annual Recharge (in)	Total Annual Recharge (cu.ft)
				10.6	3,738,477

Annual Recharge Requirements Calculation ↓

% of Pre-Developed Annual Recharge to Preserve =	100%	Total Impervious Area (sq.ft) 1,434,866
Post-Development Annual Recharge Deficit=	***1,872,749***	(cubic feet)

Recharge Efficiency Parameters Calculations (area averages)

RWC=	#N/A	(in)	DRWC= #N/A	(in)
ERWC =	#N/A	(in)	EDRWC= #N/A	(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.

Stormwater Management Report
Venue at Summers Corner
Little Egg Harbor Township, Ocean County, NJ
April 25, 2025

Appendix H – Drainage Area Maps

PRELIMINARY - DRAFT

1 of 1

date:	APRIL 2025
scale:	As Shown
drawn by:	P.T.
checked:	CM
proj. no.:	5052918

POST-DEVELOPMENT DRAINAGE AREA MAP
FOR
VENUE AT SUMMERS CORNER
PRELIMINARY & FINAL
MAJOR SUBDIVISION AND SITE PLAN

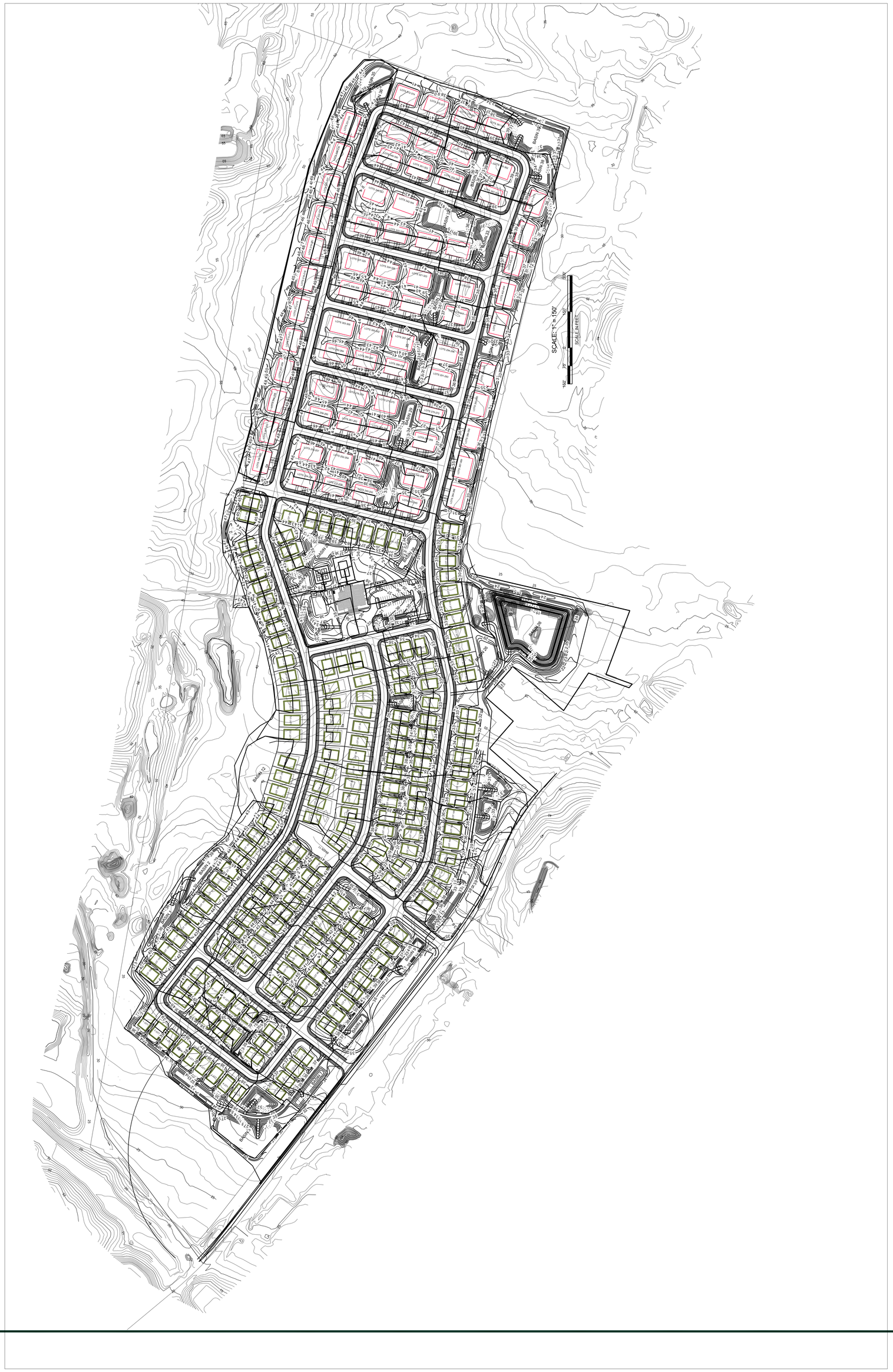
revisions

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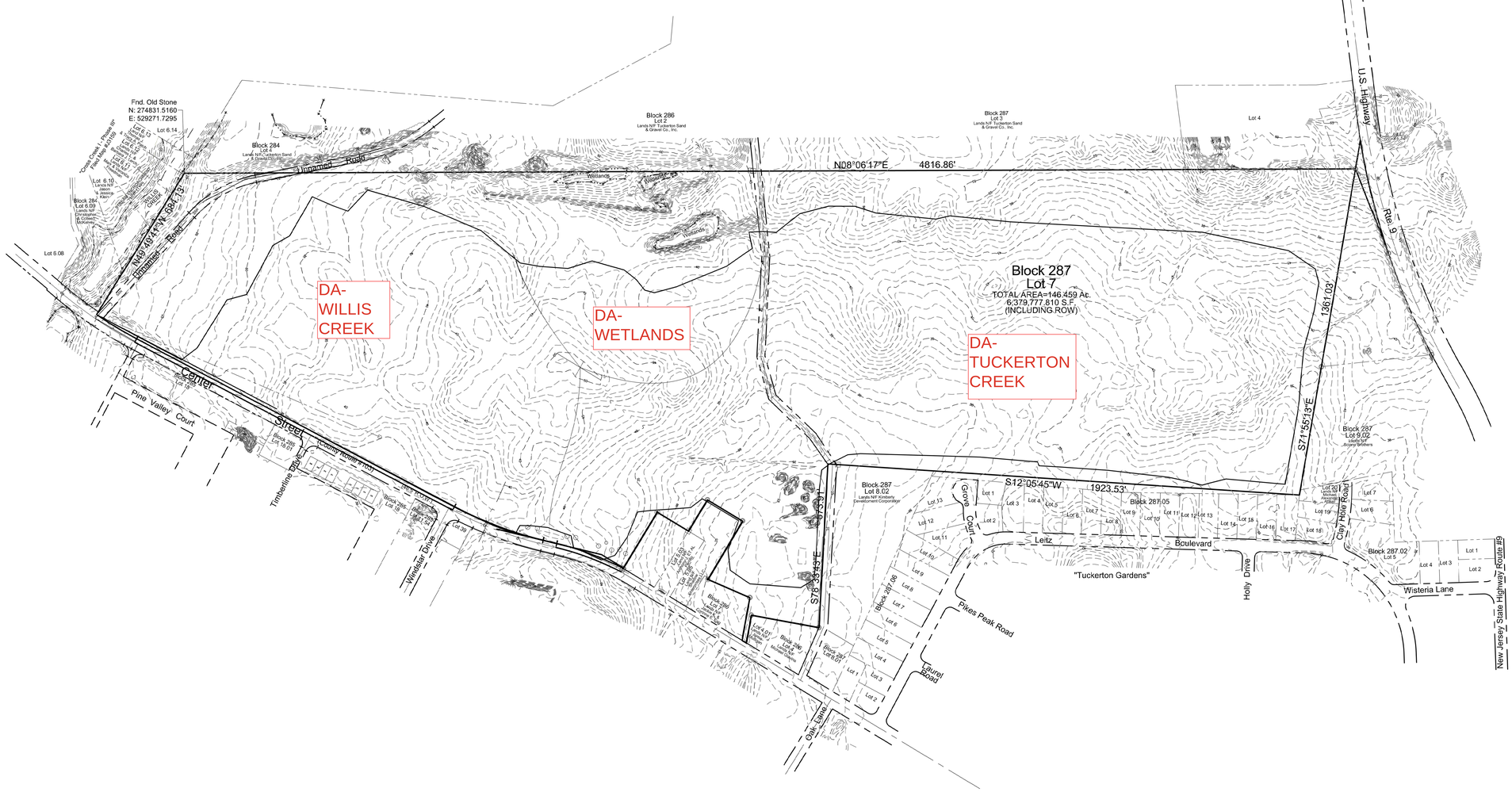
ARH ASSOCIATES
certificate of authorization
NJ no. 24GA27972300, DE no. 2167

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DOCUMENT AND MAY HAVE BEEN ALTERED.



New Jersey State Plane Coordinates (NAD '83)


Fnd. Old Stone
N: 274831.5160
E: 529271.7295
Lot 6.14
Block 284
Lot 4
Lands N/F Tuckerton Sand & Gravel Co., Inc.
Block 286
Lot 2
Lands N/F Tuckerton Sand & Gravel Co., Inc.
Block 287
Lot 3
Lands N/F Tuckerton Sand & Gravel Co., Inc.
Lot 4
U.S. Highway
Rte. 9
Jimmies Road
N08°06'17"E 4816.86'
Wetlands
Wetlands
Wetlands
Lot 6.10
Lands N/F Jason Alaimo
Block 284
Lot 6.03
Lands N/F Joseph & Colleen Bukowski
Lot 6.08
N49°49'41"W 984.13'
Jimmies Road
DA-WILLIS CREEK
DA-WETLANDS
DA-TUCKERTON CREEK
Block 287
Lot 7
TOTAL AREA=146.459 Ac.
6,379,777.810 S.F.
(INCLUDING ROW)
1361.03'
S71°55'13"E
Block 287
Lot 9.02
Lands N/F Joyce Whitters
Center Street
Pine Valley Court
Timberline Drive
Winterset Drive
Block 286
Lot 1
Block 286
Lot 1.01
Block 286
Lot 1.02
Block 286
Lot 1.03
Block 286
Lot 1.04
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Block 286
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Block 286
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Lot 1.18
Block 286
Lot 1.19
Block 286
Lot 1.20
Block 286
Lot 1.21
Block 286
Lot 1.22
Block 286
Lot 1.23
Lot 39
S78°33'45"E 67.43'
Block 287
Lot 8.02
Lands N/F Kimberly Development Corporation
S12°05'45"W 1923.53'
Block 287.05
Grove Court
Leitz Boulevard
Fikes Peak Road
Laurel Road
Holly Drive
Clay Hole Road
"Tuckerton Gardens"
Block 287.02
Lot 5
Wisteria Lane
New Jersey State Highway Route #9
Oak Lane
Lot 20
Lands N/F Ocean County Vocational Technical School
Lot 7
Lot 6
Lot 19
Lot 18
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Lot 14
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