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Drainage Calculations

&

Stormwater Management Report

FOR

STALLION RIDGE SUBDIVISION

Dependable Construction LLC

#524 Bell Street

Glastonbury, Connecticut

July 23, 2020
Revised September 29, 2020
Revised October 7, 2020

TABLE OF CONTENTS

1 Project Overview _____ 1

2 Existing Site Conditions_____ 2

3 Stormwater Management Design_____ 3

4 Hydrology Analysis_____4

5 Water Quality Management_____7

APPENDIX

A. FEMA Flood Insurance Map, USDA Web Soil Survey National Cooperative Soil Survey, Soil Map-State of Connecticut and "Natural Drainage Basins, Major, Regional, Sub-regional and Local Cromwell, Connecticut, map created by CT DEEP dated January 2010"

B. Storm Drainage Subarea Data and Computations

C. Water Quality Computations

D. Hydrology Input Computations

E. Stormwater Studio ™ Computer Model for On-Site Drainage system

F. Hydrology Studio ™ Computer Model Report-Pre-Development

G. Hydrology Studio ™ Computer Model Report-Post-Development

H. Drainage Area Maps

-Overall Drainage Subarea Map – Pre & Post Drainage Area

-Onsite Drainage Subarea Map

1. PROJECT OVERVIEW

The descriptions and computations included within this Engineering Report and Appendix are provided in support of the development of a parcel located at #524 Bell Street Glastonbury, CT. The current permit applications are for the approvals of a subdivision application from the Town of Glastonbury Planning and Zoning Commission and the approval of a wetlands permit from the Town of Glastonbury IWWA.

The overall project will consist of the development of a new 29 lot residential subdivision off the easterly side of Bell Street. Nine of the lots would be located along Bell Street and the remaining twenty lots are proposed to be located on a new cul-de-sac named Stallion Drive. The total site consists of about 37.50 acres of Residential zoned land, with about 1,550' of frontage along Bell Street. This property located at #524 Bell Street presently contains a large building used for a barn with farm fields and pasture. The eastern half of the property has a mixture of brush, wooded and wetland areas. The overall property is bordered by residential properties to the south, land owned by the town of Glastonbury to the east, a residential property used for farmland to the north, and more residential properties to the west across Bell Street. There is one double tiered detention pond located on the eastern side of the proposed site. This pond will collect runoff from a majority of the overall property excluding lots one thru five. The basin has an emergency overflow and outlet culvert which flows to the wetlands on the southern border of the property. Lots one thru five are proposed to utilize concrete level spreaders to collect runoff from the driveway and roof area and discharge it in a controlled manor to the wetlands at the northeastern border of the property. The roof leaders on each lot are proposed to connect into the stormwater system in Stallion Drive and eventually discharge to the proposed detention basin with the exception of lots one thru five as stated previously.

The proposed lots are proposed to use public water and sewer coming from Bell Street. To make this possible, a sanitary force main is being proposed in Bell Street running south towards the intersection of Bell Street and Somerset Road. Electric and gas service will also come from existing services in Bell Street and be located underground.

The storm water management system for this site has been designed utilizing Best Management Practices (BMPs) to provide water quality measures, while attenuating peak flows to prevent increases in the predevelopment runoff rates to the adjacent wetland area and Salmon Brook Tributary. The overall storm water management system will use one proposed detention/water quality basin, along with several other water quality measures before discharging storm water to the receiving wetlands and Salmon Brook Tributary. The goal of the storm water management design is to provide removal of total suspended solids while attenuating the post development peak runoff rates. For more detailed information regarding storm water quantity, refer to Section 3 and Section 4 of this report. Refer to Section 5 for storm water quality management provided in the proposed design. Design computations and other relevant information are provided in the Appendix of this report.

2. EXISTING SITE CONDITIONS

The total site consists of about 37.50 acres of Residential zoned land, with about 1,550' of frontage along the eastern side of Bell Street. This property located at #524 Bell Street presently contains a large building used for a barn with farm fields and pasture. The eastern half of the property has a mixture of brush, wooded and wetland areas. The overall property is bordered by residential properties to the south, land owned by the town of Glastonbury to the east, a residential property used for farmland to the north, and more residential properties to the west across Bell Street. Utilities for the existing building are services located in Bell Street.

Currently the northern quarter of the property drains to the northern wetlands and the southern majority of the property drains to the southern wetlands. Topography on the property slopes from Bell Street down to the East and splits off to flow either in the southeast or northeast direction. There is presently no drainage system on the property as runoff just flows to the wetlands on the property and to the bordering wetlands.

The entire site lies in Flood Zone X (Areas of 0.2% annual chance flood). A portion of this map has been included in the Appendix A of this report.

3. STORMWATER MANAGEMENT DESIGN

The proposed storm water management system has been designed utilizing BMPs design principles to safely convey storm water runoff from the site while providing storm water quality measures. Storm water management for the proposed project was achieved by collecting storm water and conveying it to the detention/water quality basin, which has been designed to attenuate the proposed peak flow rates in order to prevent increases in the existing peak flow rates from the project site. In addition, the collection system will incorporate several storm water quality measures designed to provide storm water treatment before discharging from the proposed project site. More information regarding water quantity (hydrology) can be found in Section 4. Storm water quality management is discussed further in Section 5.

The computer program entitled "Stormwater Studio, ver. 2.0" by Hydrology Studio, was used for designing the proposed storm drainage. Storm drainage computations performed include pipe capacity calculations, hydraulic grade line calculations, and gutter flow (inlet capacity) computations. The overall watershed was divided into sub-basins to determine the drainage area and land coverage to each individual catch basin inlet. These values were used to determine the storm water runoff to each inlet using the Rational Method. The rainfall intensities utilized in the storm drainage computations were obtained from the web-based NOAA's National Weather Service Hydrometeorological Design Studies Center Precipitation Intensity Data Server (PFDS) NOAA Atlas 14, Vol 10, Ver. 2 for 524 Bell Street.

The proposed storm drainage systems were designed according to the town's standards and specifications to provide adequate pipe capacity to convey the 25-year storm event. In addition, the storm drainage design analysis includes a complete hydraulic grade line computation, which ensures adequate capacity for the 25-year storm event. Because the majority of the catch basins in this drainage system are in a sag condition, a gutter flow analysis was not performed. In addition, the outlet pipe from the proposed outlet control structure of the detention basin was sized with adequate capacity to convey the 100-year storm event. All storm drainage computations described in this section are provided in the Appendix of this report.

The use of a storm water discharge/infiltration system or level spreader was utilized at the discharge point from the storm water management basin as well. The purpose of the level spreader system is to encourage infiltration of storm water while allowing the overflow discharge to be released through a level spreader promoting quiescent sheet flow rather than a concentrated point discharge. The level spreader is located in an area that will allow any overflow to pass through the existing vegetation before entering the existing wetlands and surface water bodies. The level spreader has been designed with adequate overflow discharge capacity to meet the 100-year peak flow rate from the proposed detention basin. The sizing computations have been included in the Appendix of this report.

4. HYDROLOGY ANALYSIS

The storm water management system has been designed in part to attenuate the proposed peak rates of runoff from the project site. In order to analyze the pre-development and post development peak flow rates from this site, the drainage area to a point at the southerly wetlands along property line of 524 Bell Street and the northerly wetlands where the runoff from this site presently discharges were analyzed for this report. Another design point was also analyzed at the connection of Salmon Brook Tributary south of the property near Cardinal Drive. The subareas have a total area of approximately 62.33 acres as shown on a watershed map for both pre and post condition included in Appendix H of this report.

The principal method of predicting the surface water runoff rates utilized in this analysis is a computer program entitled "Hydrology Studio V. 2.0.039". The "Hydrology Studio" computer modeling program utilizes the same methods for computing runoff rates that were originally developed by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS, formerly known as the Soil Conservation Service or SCS), also utilized in the TR-20 computer modeling program and others. The "Hydrology Studio" computer program forecasts the rate of surface water runoff and river flow rates based upon several factors. The input data includes information on land use, hydrologic soil type, and vegetation conditions, contributing watershed area, time of concentration, rainfall data, storage volumes, and the hydraulic capacity of structures. The computer model predicts the amount of runoff as a function of time, including the attenuation effect due to flow restriction at roadway culverts, ponds, large wetlands, and floodplains. Runoff rates during specific rainstorms may vary due to different assumptions concerning soil moisture, water levels in ponds, snowmelt, and rainfall patterns. The input data for rainfalls with statistical recurrence frequencies of 1, 2, 10, 25, 50, and 100 years were obtained from the NOAA's National Weather Service Hydrometeorological Design Studies Center Precipitation Frequency Data Server (PFDS) NOAA Atlas 14, Vol 10, Ver. 2 for 524 Bell Street Glastonbury, CT. Analysis of a Type III rainfall pattern with 24-hour duration was used.

The land use for the site under pre and post conditions was determined from field survey, the proposed site development plans for the on-site drainage areas and Town of Glastonbury topography mapping for the drainage subareas that contribute from the south of this site. Land use types used in the analysis included paved areas, lawn areas, wooded areas and brush areas. Soil types in the watershed were determined from the available GIS (Geographic Information System) database of the NRCS soil survey for Hartford County, Connecticut. The study area was determined to contain hydrologic soil type C as classified by the NRCS and as shown on attached mapping in Appendix A of this report.

The pre-conditions were modeled with the Hydrographs computer program to determine the flow rates for the various storm events at the analysis points. A revised model was developed incorporating the post site conditions, and flows obtained with the revised model were then compared to the results of the existing conditions model. The detention basin was incorporated into the proposed model, which illustrated the attenuation capabilities of this basin.

The NRCS Reservoir routing subroutine utilized within the Hydro Studio computer program was used to design the detention basin storage and outlet control requirements. All Hydrographs input computations and model results

are included in the Appendix *F* (for pre-development conditions) and Appendix *G* (for post development conditions) of this report.

The analysis points, as shown on the existing and proposed conditions watershed maps, were used to determine the peak flow rates. These analysis points were chosen based on the fact that they both receive some storm water runoff from a portion of the project site for pre and post conditions. Therefore, the pre and post hydrology analysis of these areas provided a comparison of the peak flow rates that ultimately provided guidance when designing the storm water management system.

Stormwater management for the project was achieved by routing the storm water runoff from the developed subareas of the site through the proposed basins behind lots 25-29 as well as the large detention basin on the eastern side of the property. The stormwater discharge rates were attenuated by using an outlet control structure for the outlet of the Stormwater Basin. The outlet of the new basin will consist of a precast concrete structure with an emergency overflow grate at the top and rectangular weirs on the sides which will connect to a culvert pipe to discharge. The basin will also have an emergency riprap overflow for cases of unusually high runoff. The new basins have been designed to provide approximately one foot of freeboard during the 100-year storm event. The following is the Stormwater Pond routing results and the peak flows to the design point:

<u>Stormwater Pond Routing Information (Proposed Stormwater Basin)</u>

Storm Frequency	1	2	5	10	25	50	100
Peak Inflow (c.f.s.)	*9.242*	*13.75*	*21.60*	*28.45*	*37.93*	*45.36*	*52.81*
Peak Outflow (c.f.s.)	0.478	1.243	2.856	5.064	11.97	13.21	14.26
Max. Water Surface El.(Lower)	261.43	261.83	262.43	262.80	263.25	264.02	264.85
Top of Berm El.(Lower) = 266.50							
Spillway Elev.(Lower) = 265.00							
Max. Water Surface El.(Upper)	273.45	274.03	274.82	275.33	275.93	276.29	276.61
Top of Berm El.(Upper) = 278.00							
Spillway Elev.(Upper) = 276.00							
Max. Storage Vol. (ft^3.)(Lower)	14,545	18,519	25,846	30,625	36,454	46,546	59,705
Max. Storage Vol. (ft^3.)(Upper)	17,516	24,822	37,564	45,838	55,435	61,484	65,870

Peak Flow at Design Point "A" (Flow to Northerly Wetlands)

	Peak Flow Rates (cfs)*						
Storm Frequency (years)	1	2	5	10	25	50	100
Existing Conditions	*10.87*	*17.02*	*28.13*	*37.97*	*51.78*	*62.71*	*73.71*
Proposed Sum to Existing area	6.364	11.10	19.97	28.14	39.88	49.34	58.96

*cfs = cubic feet per second

Peak Flow at Design Point "B" (Flow to Southerly Wetlands)

	Peak Flow Rates (cfs)*						
Storm Frequency (years)	1	2	5	10	25	50	100
Existing Conditions	*11.57*	*19.56*	*34.50*	*48.09*	*67.59*	*83.23*	*99.12*
Proposed Sum to Existing area	8.539	15.06	27.43	38.78	55.41	73.04	90.06

*cfs = cubic feet per second

Peak Flow at Design Point "C" (Flow to Salmon Brook Tributary)

	Peak Flow Rates (cfs)*						
Storm Frequency (years)	1	2	5	10	25	50	100
Existing Conditions	*23.40*	*39.83*	*70.58*	*98.48*	*138.7*	*171.0*	*203.8*
Proposed Sum to Existing area	21.68	37.34	66.71	93.41	132.0	167.3	202.4

*cfs = cubic feet per second

For more detailed information of these routings, see Appendix F "Hydroflow Hydrograph ™ Computer Model Report-Pre-Development" and Appendix G "Hydroflow Hydrograph ™ Computer Model Report-Post-Development" in this report.

The summary of results above shows that no increases in peak rates of runoff are anticipated from this site post development for a 1, 2, 5, 10, 25, 50 & 100-year storm event. There will actually be a reduction in peak flows to all design points. Design Point A is proposed to have a 41% reduction for a 1-year storm and a 20% reduction for a 100-year storm, Design Point B is proposed to have 26% reduction for a 1-year storm and a 8% reduction for a 100-year storm and Design Point C is proposed to have a 7% reduction for a 1-year storm and a 0.5% reduction for a 100-year storm.

5. WATER QUALITY MANAGEMENT

Several water quality measures or BMPs are incorporated into the storm water management design to maintain water quality. All of the best management control measures described in this section will help maintain the water quality of the storm water runoff from the proposed development.

Storm water runoff from the proposed site will be collected and conveyed via a subsurface pipe and catch basin drainage system. All of the new catch basins are proposed to have a four-foot sump. These four-foot stumps utilized in the storm drainage design will increase the system's ability to remove suspended solids before discharging to the stormwater quality basin.

The storm water management design also incorporates the use of a sediment forebays at the inlet to the proposed detention/stormwater quality basin. The sediment forebays will improve water quality by trapping floatables as well as filtering coarse sediment and other pollutants. The forebays will be constructed using a riprap filter berm and a riprap splash pad. Riprap splash pads dissipate the potential erosive velocity of storm water entering the basin as well as trap sediment, while the riprap filter berm will contain the sediment within a small area in the basin allowing easy maintenance.

The detention/stormwater quality basin has been designed in accordance with the Connecticut Department of Environmental Protection's (CT DEEP) Storm Water Quality Manual and will enhance water quality by additional storage volume or retention volume within the basin creating a water quality feature. Although the majority of the volume provided in the detention basin is for flow attenuation purposes, the bottom portion of the detention basin has been shaped to provide retention volume. Providing this water quality measure serves several purposes including storm water renovation, first flush retention, and infiltration. A more detailed explanation of each of these measures follows

The basin will be planted with select vegetation based on the soil moisture conditions expected for each basin. Common plantings include native wetland grass mixes for the side slopes and wetlands vegetation for the bottom. The detention basin will provide approximately 2 feet of additional depth below the lowest outlet providing the additional storage volume and moisture to support the proposed vegetation. The vegetation will provide pollutant removal by filtering storm water runoff and will utilize excess nutrients that may be present in the storm water.

The Stormwater Quality Manual (Chapter 7) also recommends methods for sizing storm water treatment measures with the Water Quality Volume (WQV) and computations. The WQV addresses the initial storm water runoff also commonly referred to as the “first flush” runoff. The WQV provides adequate volume to store the initial one inch of runoff, which tends to contain the highest concentrations of potential pollutants. Supporting calculations for the volume provided as well as WQV computations have been included in the Appendix of this report.

The storm water discharge/infiltration system or level spreader designed to release storm water from lots one thru five will also help improve water quality. This device consists of a single row of several four-foot by four-foot concrete galleries normally used in the design of septic leaching systems. The number of galleries used is determined by the amount of storm water they will receive from the roof leader outlet pipe. The design calls for the top row of weep holes to be set at grade as an overflow outlet, which is designed to gradually release storm water over a protective apron in a quiescent manner as sheet flow rather than a concentrated point discharge that results from typical storm pie outlets or flared end sections. The storage volume within the galleries will provide an additional opportunity for infiltration to occur into the surrounding soils prior to reaching the overflow outlet level.

Long Tern Stormwater Maintenance Measures

The following maintenance program is proposed to ensure the continued effectiveness of the structural water controls previously described.

- Inspect stormwater quality basin once annually, in the spring, for accumulated sediment. Necessary sediment removal will be performed immediately upon identification.
- Inspect sediment forebays monthly for erosion of side slopes and accumulated sediment. Necessary sediment removal, earth repair and/or reseeding shall be performed immediately upon identification. Clean forebays approximately two times a year of as needed.
- Inspect and clean stormwater quality basins twice a year during the first year, annually thereafter for cracking or erosion of side slopes, embankments, accumulated sediment, vegetative conditions, etc. Necessary sediment removal, earth repair, and/or reseeding will be performed immediately upon identification. If sediment build-up is found, core aeration or cultivating may be required to ensure adequate filtration. Inspect inlets, vegetation, and outlet structures. Verify that devises drains completely in less than four days after storm event.
- Clean all catch basins twice annually to remove accumulated sand, sediment and floatables products or as needed based on use.

Erosion and Sediment Control Measures

A detailed Sediment and Erosion (S&E) Control Plan has been developed to mitigate the short-term impacts of the development during construction. The S&E Control Plan includes a detailed proposed construction sequence in addition to descriptive specifications concerning land grading, top soiling, temporary vegetative cover, permanent vegetative cover, and vegetative cover selection and mulching, and erosion checks. Details have been provided for all erosion control measures with corresponding labels on the S&E control site plan. In addition, the S&E controls provided are in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control manual.

Appendices

Appendix A

FEMA FLOOD INSURANCE RATE MAP,

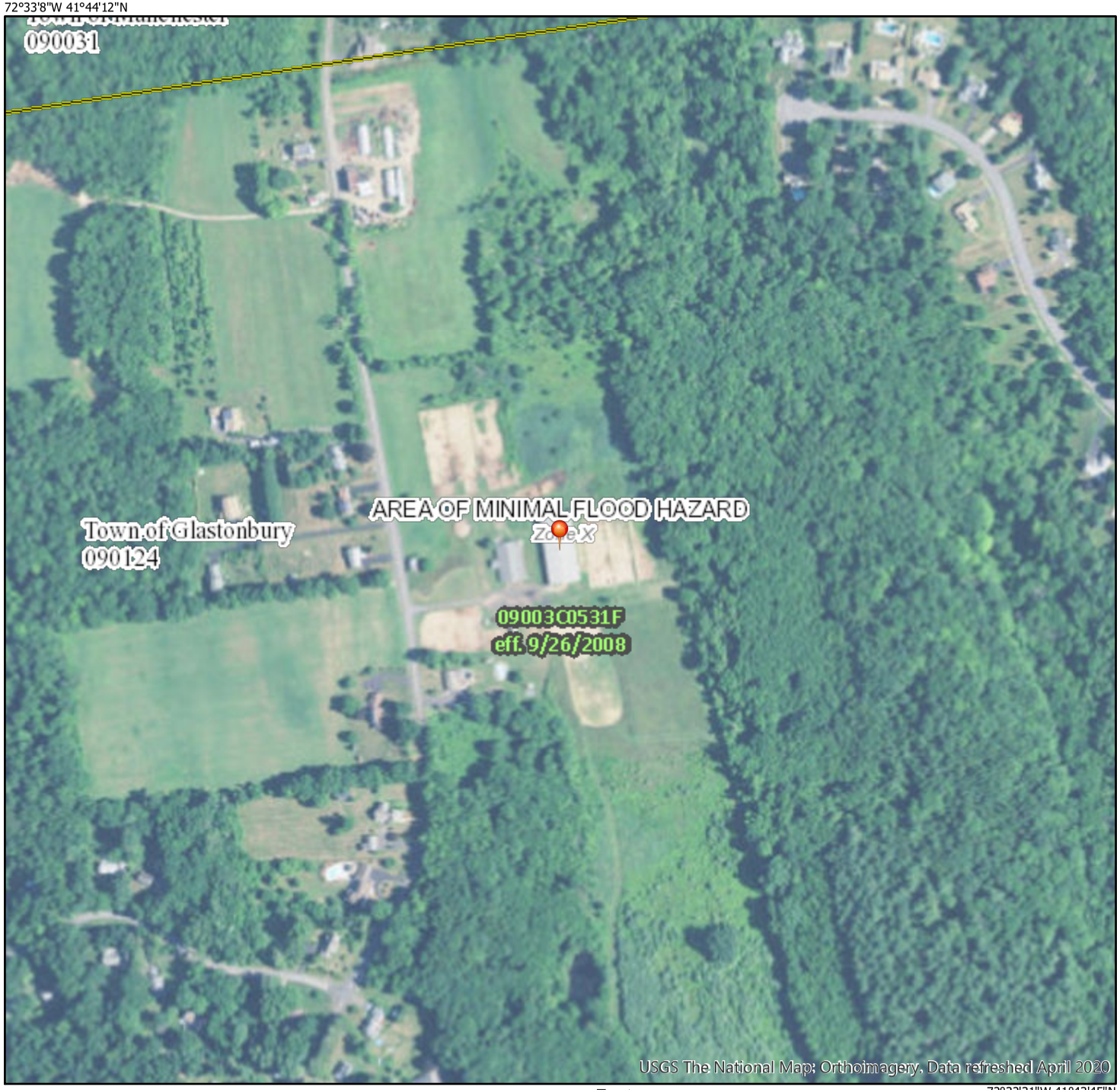
AND

NRCS SOILS MAPPING

National Flood Hazard Layer FIRMette

FEMA

72°33'8"W 41°44'12"N



72°32'31"W 41°43'45"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/23/2020 at 7:18 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Soil Map—State of Connecticut

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 1:12,000.

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: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Jul 15, 2019—Aug 29, 2019

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Wilbraham silt loam, 0 to 3 percent slopes	1.5	1.8%
6	Wilbraham and Menlo soils, 0 to 8 percent slopes, extremely stony	11.2	14.2%
15	Scarboro muck, 0 to 3 percent slopes	5.7	7.3%
20A	Ellington silt loam, 0 to 5 percent slopes	2.7	3.4%
37C	Manchester gravelly sandy loam, 3 to 15 percent slopes	12.2	15.4%
37E	Manchester gravelly sandy loam, 15 to 45 percent slopes	2.9	3.7%
40A	Ludlow silt loam, 0 to 3 percent slopes	6.0	7.6%
40B	Ludlow silt loam, 3 to 8 percent slopes	0.0	0.0%
41B	Ludlow silt loam, 2 to 8 percent slopes, very stony	6.3	8.0%
87B	Wethersfield loam, 3 to 8 percent slopes	23.7	30.0%
87C	Wethersfield loam, 8 to 15 percent slopes	2.2	2.7%
87D	Wethersfield loam, 15 to 25 percent slopes	1.9	2.4%
88B	Wethersfield loam, 3 to 8 percent slopes, very stony	0.8	1.0%
88C	Wethersfield loam, 8 to 15 percent slopes, very stony	1.9	2.4%
Totals for Area of Interest		**79.1**	**100.0%**

Appendix B

STORM DRAINAGE SUBAREA DATA and COMPUTATIONS

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JOB #3134- Bell Street, Glastonbury
SHEET NO. 1 OF 2
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Pre Development Conditions - Drainage Area Data

Pre-SA-1

Total Area = 14.4000 AC.

Pave = 0.973 AC.
Woods = 4.451 AC.
Bare Soil = 2.191 AC.
Lawn = 6.785 AC.

$$CN = \frac{(0.973 \times 98) + (4.451 \times 70) + (2.191 \times 91) + (6.785 \times 74)}{14.4000}$$

CN = 77

T.O.C. = 100' Sheet Flow, Lawn @ 5.0% =
227' Shallow Channel, Lawn @ 5.0% =
533' Shallow Channel, Woods @ 8.0% =

Pre-SA-2

Total Area = 24.6000 AC.

Pave = 0.713 AC.
Bare Soil = 0.891 AC.
Woods = 12.719 AC.
Lawn = 10.273 AC.

$$CN = \frac{(0.713 \times 98) + (0.891 \times 91) + (12.719 \times 70) + (10.273 \times 74)}{24.6000}$$

CN = 73

T.O.C. = 100' Sheet Flow, Lawn @ 2.0% =
137' Shallow Channel, Lawn @ 3.0% =
1252' Shallow Channel, Wooded @ 3.0% =

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JOB #3134 - Bell Street, Glastonbury
SHEET NO. 2 OF 2
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Pre Development Conditions - Drainage Area Data

Pre-SA-3

Total Area = 23.3300 AC.

Wooded = 17.3160 AC.
1/2 Acre Residential = 6.0140 AC.

$$CN = \frac{\overset{1212.12}{(17.3160 \times 70)} + \overset{481.12}{(6.0140 \times 80)}}{23.3300}$$

CN = 73

T.O.C. = 100' Sheet Flow, Wooded @ 12.5% =
950' Shallow Channel, Wooded @ 12.5% =

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JOB #3134 - Bell Street, Glastonbury
SHEET NO. 1 OF 16
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Post Development Conditions - Drainage Area Data

Pro-SA-1

Total Area = 1.3716 AC.

Paved = 0.2547 AC.
Lawn = 1.1169 AC.

$$CN = \frac{\overset{24.9606}{(0.2547 \times 98)} + \overset{82.6506}{(1.1169 \times 74)}}{1.3716}$$

CN = 78

T.O.C. = 100' Sheet Flow, Lawn @ 9.1% =
120' Shallow Channel, Lawn @ 9.1% =
160' Shallow Channel, Pave @ 2.0% =

Pro-SA-2

Total Area = 0.0361 AC.

All Pave

CN = 98

T.O.C. = 39' Sheet Flow, Pave @ 4.3% =
22' Shallow Channel, Pave @ 4.3% =

Pro-SA-3

Total Area = 0.0295 AC.

All Pave

CN = 98

T.O.C. = 38' Sheet Flow, Pave @ 4.3% =
24' Shallow Channel, Pave @ 4.3% =

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Post Development Conditions Cont.

Pro-SA-4

Total Area = 0.3817 AC.

Pave = 0.0893 AC.
Lawn = 0.2924 AC.

$$CN = \frac{\overset{8.7514}{(0.0893 \times 98)} + \overset{21.6376}{(0.2924 \times 74)}}{0.3817}$$

CN = 80

T.O.C. = 100' Sheet Flow, Lawn @ 6.3% =
80' Shallow Channel, Lawn @ 6.3% =
128' Shallow Channel, Pave @ 2.4% =

Pro-SA-5

Total Area = 0.2411 AC.

Pave = 0.0880 AC.
Lawn = 0.1531 AC.

$$CN = \frac{\overset{8.624}{(0.0880 \times 98)} + \overset{11.3294}{(0.1531 \times 74)}}{0.2411}$$

CN = 83

T.O.C. = 100' Sheet Flow, Lawn @ 7.0% =
161' Shallow Channel, Lawn @ 2.0% =
19' Shallow Channel, Pave @ 2.6% =

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JOB #3134 - Bell Street, Glastonbury
SHEET NO. 3 OF 16
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Post Development Conditions Cont.

Pro-SA-6

Total Area = 0.0183 AC.

All Pave

CN = 98

T.O.C. ≤ 5 min.

Pro-SA-7

Total Area = 0.6244 AC.

Pave = 0.1020 AC.
Lawn = 0.5224 AC.

$$CN = \frac{\overset{38.6576}{(0.5224 \times 74)} + \overset{9.996}{(0.1020 \times 98)}}{0.6244}$$

CN = 78

T.O.C. = 100' Sheet Flow, Lawn @ 6.1% =
119' Shallow Channel, Lawn @ 6.1% =
181' Shallow Channel, Pave @ 2.6% =

Pro-SA-8

Total Area = 0.0215 AC.

All Pave

CN = 98

T.O.C. ≤ 5 min.

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Post Development Conditions Cont.

Pro-SA-9

Total Area = 0.0772 AC.

All Pave

CN = 98

T.O.C. ≤ 5 min.

Pro-SA-10

Total Area = 0.7929 AC.

Pave = 0.1787 AC.
Lawn = 0.6142 AC.

$$CN = \frac{\overset{17.5126}{(0.1787 \times 98)} + \overset{45.4508}{(0.6142 \times 74)}}{0.7929}$$

CN = 79

T.O.C. = 100' Sheet Flow, Lawn @ 4.0% =
99' Shallow Channel, Lawn @ 5.9% =
172' Shallow Channel, Pave @ 1.0% =

Pro-SA-11

Total Area = 0.1776 AC.

Pave = 0.0528 AC.
Lawn = 0.1248 AC.

$$CN = \frac{\overset{5.1744}{(0.0528 \times 98)} + \overset{9.2352}{(0.1248 \times 74)}}{0.1776}$$

CN = 81

T.O.C. = 100' Sheet Flow, Pave @ 1.2% =
138' Shallow Channel, Pave @ 1.2% =

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Post Development Conditions Cont.

Pro-SA-12

Total Area = 0.2459 AC.

Pave = 0.0529 AC.
Lawn = 0.1930 AC.

$$CN = \frac{\overset{5.1842}{(0.0529 \times 98)} + \overset{14.2820}{(0.1930 \times 74)}}{0.2459}$$

CN = 79

T.O.C. = 75' Sheet Flow, Lawn @ 2.7% =

Pro-SA-13

Total Area = 0.0737 AC.

All Pave

CN = 98

T.O.C. ≤ 5 min.

Pro-SA-14

Total Area = 0.2178 AC.

Pave = 0.0701 AC.
Lawn = 0.1477 AC.

$$CN = \frac{\overset{6.8698}{(0.0701 \times 98)} + \overset{10.9298}{(0.1477 \times 74)}}{0.2178}$$

CN = 82

T.O.C. = 35' Sheet Flow, Pave @ 2.0% =
73' Shallow Channel, Lawn @ 4.0% =

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JOB #3134 - Bell Street, Glastonbury
SHEET NO. 6 OF 16
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Post Development Conditions Cont.

Pro-SA-15

Total Area = 0.3088 AC.

Pave = 0.1309 AC.
Lawn = 0.1779 AC.

$$CN = \frac{\overset{12.8282}{(0.1309 \times 98)} + \overset{13.1646}{(0.1779 \times 74)}}{0.3088}$$

CN = 84

T.O.C. = 90' Sheet Flow, Lawn @ 3.3% =
71' Shallow Channel, Pave @ 1.0% =

Pro-SA-16

Total Area = 0.1514 AC.

Pave = 0.0725 AC.
Lawn = 0.0789 AC.

$$CN = \frac{\overset{7.105}{(0.0725 \times 98)} + \overset{5.8386}{(0.0789 \times 74)}}{0.1514}$$

CN = 85

T.O.C. = 100' Sheet Flow, Pave @ 1.0% =
145' Shallow Channel, Pave @ 1.0% =

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Post Development Conditions Cont.

Pro-SA-17

Total Area = 0.5378 AC.

Pave = 0.1871 AC.
Lawn = 0.3507 AC.

$$CN = \frac{\overset{18.3358}{(0.1871 \times 98)} + \overset{25.9518}{(0.3507 \times 74)}}{0.5378}$$

CN = 82

T.O.C. = 100' Sheet Flow, Lawn @ 1.0% =
52' Shallow Channel, Lawn @ 12.5% =

Pro-SA-18

Total Area = 0.0975 AC.

All Pave

CN = 98

T.O.C. ≤ 5 Min.

Pro-SA-19

Total Area = 0.3123 AC

Pave = 0.0397 AC.
Lawn = 0.2726 AC.

$$CN = \frac{\overset{3.8906}{(0.0397 \times 98)} + \overset{20.1724}{(0.2726 \times 74)}}{0.3123}$$

CN = 77

T.O.C. = 99' Sheet Flow, Lawn @ 5.1% =

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Post Development Conditions Cont.

Pro-SA-20

Total Area = 0.1865 AC.

Pave = 0.0513 AC.
Lawn = 0.1352 AC.

$$CN = \frac{\overset{5.0274}{(0.0513 \times 98)} + \overset{10.0048}{(0.1352 \times 74)}}{0.1865}$$

CN = 81

T.O.C. = 100' Sheet Flow, Lawn @ 7.0% =

Pro-SA-21

Total Area = 0.2711 AC.

Pave = 0.0884 AC.
Lawn = 0.1827 AC.

$$CN = \frac{\overset{8.6632}{(0.0884 \times 98)} + \overset{13.5198}{(0.1827 \times 74)}}{0.2711}$$

CN = 82

T.O.C. = 69' Sheet Flow, Lawn @ 23.9% =

Pro-SA-22

Total Area = 0.3087 AC.

Pave = 0.1074 AC.
Lawn = 0.2013 AC.

$$CN = \frac{\overset{10.5252}{(0.1074 \times 98)} + \overset{14.8962}{(0.2013 \times 74)}}{0.3087}$$

CN = 82

T.O.C. = 100' Sheet Flow, Lawn @ 8.7% =
53' Shallow Channel, Lawn @ 17.9% =

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JOB #3134 - Bell Street, Glastonbury
SHEET NO. 9 OF 16
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Post Development Conditions Cont.

Pro-SA-23

Total Area = 0.4021 AC.

Pave = 0.0959 AC.
Lawn = 0.3062 AC.

$$CN = \frac{\overset{9.3982}{(0.0959 \times 98)} + \overset{22.6588}{(0.3062 \times 74)}}{0.4021}$$

CN = 80

T.O.C. = 100' Sheet Flow, Lawn @ 8.0% =
53' Shallow Channel, Lawn @ 21.8% =

Pro-SA-24

Total Area = 0.3031 AC.

Pave = 0.0955 AC.
Lawn = 0.2076 AC.

$$CN = \frac{\overset{9.359}{(0.0955 \times 98)} + \overset{15.3624}{(0.2076 \times 74)}}{0.3031}$$

CN = 82

T.O.C. = 100' Sheet Flow, Lawn @ 8.0% =
50' Shallow Channel, Lawn @ 18.0% =

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Post Development Conditions Cont.

Pro-SA-25

Total Area = 6.8473 AC.

Lawn = 0.6618 AC.
Wooded = 6.1855 AC.

$$CN = \frac{\overset{48.97}{(0.6618 \times 74)} + \overset{433.97}{(6.1855 \times 70)}}{6.8473}$$

CN = 70

T.O.C. = 100' Sheet Flow, Woods @ 5.0% =
300' Shallow Channel, Woods @ 23.5% =

Pro-SA-26

Total Area = 8.9582 AC.

Pave = 0.1570 AC.
Lawn = 3.8871 AC.
Wooded = 4.9141 AC

$$CN = \frac{\overset{15.386}{(0.1570 \times 98)} + \overset{287.6454}{(3.8871 \times 74)} + \overset{343.987}{(4.9141 \times 70)}}{8.9582}$$

CN = 72

T.O.C. = 100' Sheet Flow, Lawn @ 5.0% =
300' Shallow Channel, Lawn @ 5.0% =
45' Shallow Channel, Wooded @ 5.5% =

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JOB #3134 - Bell Street, Glastonbury
SHEET NO. 11 OF 16
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE N/A

Post Development Conditions Cont.

Pro-SA-27

Total Area = 1.1638 AC.

Pave = 0.0522 AC.
Lawn = 1.1116 AC.

$$CN = \frac{\overset{5.1156}{(0.0522 \times 98)} + \overset{82.2584}{(1.1116 \times 74)}}{1.1638}$$

CN = 75

T.O.C. = 100' Sheet Flow, Lawn @ 2.3% =
609' Shallow Channel, Lawn @ 1.9% =

Pro-SA-28

Total Area = 2.5651 AC.

Pave = 0.3744 AC.
Lawn = 2.1907 AC.

$$CN = \frac{\overset{36.6912}{(0.3744 \times 98)} + \overset{162.1118}{(2.1907 \times 74)}}{2.5651}$$

CN = 78

T.O.C. = 100' Sheet Flow, Lawn @ 7.0% =
587' Shallow Channel, Lawn @ 2.0% =

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JOB #3134- Bell Street, Glastonbury
SHEET NO. 12 OF 16
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Post Development Conditions Cont.

Pro-SA-29

Total Area = 10.2966 AC.

Wooded = 9.1771 AC.
Lawn = 1.1195 AC.

$$CN = \frac{\overset{642.397}{(9.1771 \times 70)} + \overset{82.843}{(1.1195 \times 74)}}{10.2966}$$

CN = 70

T.O.C. = 100' Sheet Flow, Lawn @ 5.5% =
854' Shallow Channel, Lawn @ 8.0% =

Pro-SA-30

Total Area = 2.9511 AC.

Pave = 0.1138 AC.
Lawn = 2.8373 AC.

$$CN = \frac{\overset{11.1524}{(0.1138 \times 98)} + \overset{209.9602}{(2.8373 \times 74)}}{2.9511}$$

CN = 75

T.O.C. = 100' Sheet Flow, Lawn @ 9.0% =
100' Shallow Chanel, Lawn @ 5.0% =

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Post Development Conditions Cont.

Pro-SA-31

Total Area = 2.5711 AC.

Pave = 0.2492 AC.
Lawn = 2.3219 AC.

$$CN = \frac{\overset{24.4216}{(0.2492 \times 98)} + \overset{171.8206}{(2.3219 \times 74)}}{2.5711}$$

CN = 76

T.O.C. = 100' Sheet Flow, Lawn @ 3.6% =
111' Shallow Channel, Lawn @ 8.3% =

Pro-SA-32

Total Area = 0.0562 AC.

All Pave

CN = 98

T.O.C. ≤ 5 Min.

Pro-SA-33

Total Area = 0.0562 AC.

All Pave

CN = 98

T.O.C. ≤ 5 Min.

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JOB #3134 - Bell Street, Glastonbury
SHEET NO 14 OF 16
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Post Development Conditions Cont.

Pro-SA-34

Total Area = 0.0562 AC. All Pave

CN = 98

T.O.C. ≤ 5 Min.

Pro-SA-35

Total Area = 0.0562 AC. All Pave

CN = 98

T.O.C. ≤ 5 Min.

Pro-SA-36

Total Area = 0.0562 AC. All Pave

CN = 98

T.O.C. ≤ 5 Min.

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Post Development Conditions Cont.

Pro-SA-37

Total Area = 0.0562 AC. All Pave

CN = 98

T.O.C. ≤ 5 min.

Pro-SA-38

Total Area = 0.0562 AC. All Pave

CN = 98

T.O.C. ≤ 5 min.

Pro-SA-39

Total Area = 0.0562 AC. All Pave

CN = 98

T.O.C. ≤ 5 min.

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JOB #3134 - Bell Street, Glastonbury
SHEET NO 16 OF 16
CALCULATED BY JMP DATE 6/16/20
CHECKED BY JPC DATE 6/16/20
SCALE NA

Post Development Conditions - Drainage Area Data

PrO-SA-40

Total Area = 22.4610 AC.

Wooded = 16.4467 AC.
½ Acre Residential = 6.0143 AC.

$$CN = \frac{\overset{1151.27}{(16.4467 \times 70)} + \overset{493.17}{(6.0143 \times 80)}}{22.4610}$$

CN = 73

T.O.C. = 100' Sheet Flow, Woods @ 12.5% =
950' Shallow Channel, Woods @ 12.5% =

Appendix C

WATER QUALITY COMPUTATIONS

	A	B	C	D	E	F	G	H	I
1	**Proposed Stallion Ridge Subdivision- 524 Bell Street, Glastonbury CT- % Impervoius Coverage and Storm Water Quality Volume**								
2	SUBAREA	TOTAL AREA	PAVED AREA	% PAVED COV.	WOODED AREA	% WOODED COV.	LAWN AREA	% LANDSCAPE COV.	
3	FLOW TO SWQB	10.3050	2.8300	27.46	0.0000	0.00	7.4750	72.54	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13	**SUM OF SA TO S.W.Q.B.**	10.3050	2.8300	27.46	0.0000	0.00	7.4750	72.54	
14									
15									
16	**WATER QUALITY VOLUME (WQV)**								
17	WQV= 1" x R x A/12								
18									
19	WQV= water quailty volume (ac-ft)								
20	R= volumetric runoff coefficent = 0.05 + 0.009 (I)								
21	I= percent impervious cover								
22	A= site area in acres								
23									
24	WQV=	0.2552	acre-feet						
25									
26	**WATER QUALITY VOLUME (WQV) PROVIDED**								
27	WQV (UPPER)=	0.2022	acre-feet	from elev. 272 to 272.50					
28	WQV(LOWER)=	0.1208	acre-feet	from elev. 260 to 261.00					
29	WQV(TOTAL)=	0.3230	acre-feet	from elev. 260 to 261.00 and 272 to 272.50					

	A	B	C	D	E	F	G	H	I
1	**Proposed Stallion Ridge Subdivision- 524 Bell Street, Glastonbury CT- % Impervoius Coverage and Storm Water Quality Volume**								
2	SUBAREA	TOTAL AREA	PAVED AREA	% PAVED COV.	WOODED AREA	% WOODED COV.	LAWN AREA	% LANDSCAPE COV.	
3	FLOW TO LOT 25 BIOBASIN	0.3040	0.0960	31.58	0.0000	0.00	0.2080	68.42	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13	**SUM OF SA TO S.W.Q.B.**	0.3040	0.0960	31.58	0.0000	0.00	0.2080	68.42	
14									
15									
16	**WATER QUALITY VOLUME (WQV)**								
17	WQV= 1" x R x A/12								
18									
19	WQV= water quailty volume (ac-ft)								
20	R= volumetric runoff coefficent = 0.05 + 0.009 (I)								
21	I= percent impervious cover								
22	A= site area in acres								
23									
24	WQV=	0.0085	acre-feet						
25									
26	**WATER QUALITY VOLUME (WQV) PROVIDED**								
27	WQV=	0.0523	acre-feet	from elev. 307 to 309					

	A	B	C	D	E	F	G	H	I
1	**Proposed Stallion Ridge Subdivision- 524 Bell Street, Glastonbury CT- % Impervoius Coverage and Storm Water Quality Volume**								
2	SUBAREA	TOTAL AREA	PAVED AREA	% PAVED COV.	WOODED AREA	% WOODED COV.	LAWN AREA	% LANDSCAPE COV.	
3	FLOW TO LOT 26 BIOBASIN	0.4020	0.0960	23.88	0.0000	0.00	0.3060	76.12	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13	**SUM OF SA TO S.W.Q.B.**	0.4020	0.0960	23.88	0.0000	0.00	0.3060	76.12	
14									
15									
16	**WATER QUALITY VOLUME (WQV)**								
17	WQV= 1" x R x A/12								
18									
19	WQV= water quailty volume (ac-ft)								
20	R= volumetric runoff coefficent = 0.05 + 0.009 (I)								
21	I= percent impervious cover								
22	A= site area in acres								
23									
24	WQV=	0.0089	acre-feet						
25									
26	**WATER QUALITY VOLUME (WQV) PROVIDED**								
27	WQV=	0.0705	acre-feet	from elev. 300 to 302					

	A	B	C	D	E	F	G	H	I
1	**Proposed Stallion Ridge Subdivision- 524 Bell Street, Glastonbury CT- % Impervoius Coverage and Storm Water Quality Volume**								
2	SUBAREA	TOTAL AREA	PAVED AREA	% PAVED COV.	WOODED AREA	% WOODED COV.	LAWN AREA	% LANDSCAPE COV.	
3	FLOW TO LOT 27 BIOBASIN	0.3080	0.1070	34.74	0.0000	0.00	0.2010	65.26	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13	**SUM OF SA TO S.W.Q.B.**	0.3080	0.1070	34.74	0.0000	0.00	0.2010	65.26	
14									
15									
16	**WATER QUALITY VOLUME (WQV)**								
17	WQV= 1" x R x A/12								
18									
19	WQV= water quailty volume (ac-ft)								
20	R= volumetric runoff coefficent = 0.05 + 0.009 (I)								
21	I= percent impervious cover								
22	A= site area in acres								
23									
24	WQV=	0.0093	acre-feet						
25									
26	**WATER QUALITY VOLUME (WQV) PROVIDED**								
27	WQV=	0.0523	acre-feet	from elev. 300 to 302					

	A	B	C	D	E	F	G	H	I
1	**Proposed Stallion Ridge Subdivision- 524 Bell Street, Glastonbury CT- % Impervoius Coverage and Storm Water Quality Volume**								
2	SUBAREA	TOTAL AREA	PAVED AREA	% PAVED COV.	WOODED AREA	% WOODED COV.	LAWN AREA	% LANDSCAPE COV.	
3	FLOW TO LOT 28 BIOBASIN	0.2710	0.0880	32.47	0.0000	0.00	0.1830	67.53	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13	**SUM OF SA TO S.W.Q.B.**	0.2710	0.0880	32.47	0.0000	0.00	0.1830	67.53	
14									
15									
16	**WATER QUALITY VOLUME (WQV)**								
17	WQV= 1" x R x A/12								
18									
19	WQV= water quailty volume (ac-ft)								
20	R= volumetric runoff coefficent = 0.05 + 0.009 (I)								
21	I= percent impervious cover								
22	A= site area in acres								
23									
24	WQV=	0.0077	acre-feet						
25									
26	**WATER QUALITY VOLUME (WQV) PROVIDED**								
27	WQV=	0.0523	acre-feet	from elev. 302 to 304					

	A	B	C	D	E	F	G	H	I
1	**Proposed Stallion Ridge Subdivision- 524 Bell Street, Glastonbury CT- % Impervoius Coverage and Storm Water Quality Volume**								
2	SUBAREA	TOTAL AREA	PAVED AREA	% PAVED COV.	WOODED AREA	% WOODED COV.	LAWN AREA	% LANDSCAPE COV.	
3	FLOW TO LOT 29 BIOBASIN	0.1860	0.0510	27.42	0.0000	0.00	0.1350	72.58	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13	**SUM OF SA TO S.W.Q.B.**	0.1860	0.0510	27.42	0.0000	0.00	0.1350	72.58	
14									
15									
16	**WATER QUALITY VOLUME (WQV)**								
17	WQV= 1" x R x A/12								
18									
19	WQV= water quailty volume (ac-ft)								
20	R= volumetric runoff coefficent = 0.05 + 0.009 (I)								
21	I= percent impervious cover								
22	A= site area in acres								
23									
24	WQV=	0.0046	acre-feet						
25									
26	**WATER QUALITY VOLUME (WQV) PROVIDED**								
27	WQV=	0.0531	acre-feet	from elev. 312 to 314					

Appendix D

HYDROLOGY INPUT COMPUTATION

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **1**

Check one: ☑ Present ☐ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Wooded	70			4.451	311.6
C	Pavement	98			0.973	95.4
C	Bare Soil	91			2.191	199.4
C	Lawn	74			6.785	502.1
				Total=	14.400	1108.4

CN (weighted)= total product/total area= 76.97 Use CN= 77

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **2**

Check one: ☑ Present ☐ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Wooded	70			12.719	890.3
C	Pavement	98			0.713	69.9
C	Bare Soil	91			0.891	81.1
C	Lawn	74			10.273	760.2
				Total=	24.596	1801.5

CN (weighted)= total product/total area= 73.24 Use CN= 73

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **3**

Check one: ☑ Present ☐ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Wooded	70			16.4467	1151.3
C	1/2 Acre Residential	80			6.014	481.1
				Total=	22.461	1632.4

CN (weighted)= total product/total area= 72.68 Use CN= 73

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **1**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.2547	25.0
C	Lawn	74			1.117	82.7
				Total=	1.372	107.6

CN (weighted)= total product/total area= 78.46 Use CN= 78

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **2**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.036	3.5
				Total=	0.036	3.5

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **3**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.030	2.9
				Total=	0.030	2.9

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **4**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.089	8.8
C	Lawn	74			0.292	21.6
				Total=	0.382	30.4

CN (weighted)= total product/total area= 79.61 Use CN= 80

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **5**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.088	8.6
C	Lawn	74			0.153	11.3
				Total=	0.241	20.0

CN (weighted)= total product/total area= 82.76 Use CN= 83

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **6**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.018	1.8
				Total=	0.018	1.8

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **7**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.102	10.0
C	Lawn	74			0.522	38.7
				Total=	0.624	48.7

CN (weighted)= total product/total area= 77.92 Use CN= 78

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **8**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.022	2.1
				Total=	0.022	2.1

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **9**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.077	7.6
				Total=	0.077	7.6

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **10**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.179	17.5
C	Lawn	74			0.614	45.5
				Total=	0.793	63.0

CN (weighted)= total product/total area= 79.41 Use CN= 79

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **11**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.053	5.2
C	Lawn	74			0.125	9.2
				Total=	0.178	14.4

CN (weighted)= total product/total area= 81.14 Use CN= 81

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **12**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.053	5.2
C	Lawn	74			0.193	14.3
				Total=	0.246	19.5

CN (weighted)= total product/total area= 79.16 Use CN= 79

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **13**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.074	7.2
				Total=	0.074	7.2

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **14**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.070	6.9
C	Lawn	74			0.148	10.9
				Total=	0.218	17.8

CN (weighted)= total product/total area= 81.72 Use CN= 82

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **15**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.131	12.8
C	Lawn	74			0.178	13.2
				Total=	0.309	26.0

CN (weighted)= total product/total area= 84.17 Use CN= 84

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **16**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.073	7.1
C	Lawn	74			0.079	5.8
				Total=	0.151	12.9

CN (weighted)= total product/total area= 85.49 Use CN= 85

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **17**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.187	18.3
C	Lawn	74			0.351	26.0
				Total=	0.538	44.3

CN (weighted)= total product/total area= 82.35 Use CN= 82

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **18**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.098	9.6
				Total=	0.098	9.6

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **19**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.040	3.9
C	Lawn	74			0.273	20.2
				Total=	0.312	24.1

CN (weighted)= total product/total area= 77.05 Use CN= 77

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **20**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.051	5.0
C	Lawn	74			0.135	10.0
				Total=	0.187	15.0

CN (weighted)= total product/total area= 80.60 Use CN= 81

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **21**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.088	8.7
C	Lawn	74			0.183	13.5
				Total=	0.271	22.2

CN (weighted)= total product/total area= 81.83 Use CN= 82

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **22**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.107	10.5
C	Lawn	74			0.201	14.9
				Total=	0.309	25.4

CN (weighted)= total product/total area= 82.35 Use CN= 82

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **23**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.096	9.4
C	Lawn	74			0.306	22.7
				Total=	0.402	32.1

CN (weighted)= total product/total area= 79.72 Use CN= 80

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **24**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.096	9.4
C	Lawn	74			0.208	15.4
				Total=	0.303	24.7

CN (weighted)= total product/total area= 81.56 Use CN= 82

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **25**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Wooded	70			6.186	433.0
C	Lawn	74			0.662	49.0
				Total=	6.847	482.0

CN (weighted)= total product/total area= 70.39 Use CN= 70

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **26**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.157	15.4
C	Wooded	70			4.914	344.0
C	Lawn	74			3.887	287.6
				Total=	8.801	631.6

CN (weighted)= total product/total area= 71.77 Use CN= 72

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **27**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.0522	5.1
C	Lawn	74			1.112	82.3
				Total=	1.112	82.3

CN (weighted)= total product/total area= 74.00 Use CN= 74

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **28**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.3744	36.7
C	Lawn	74			2.191	162.1
				Total=	2.565	198.8

CN (weighted)= total product/total area= 77.50 Use CN= 78

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **29**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Wooded	70			9.1771	642.4
C	Lawn	74			1.120	82.8
				Total=	10.297	725.2

CN (weighted)= total product/total area= 70.43 Use CN= 70

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **30**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.1138	11.2
C	Lawn	74			2.837	210.0
				Total=	2.951	221.1

CN (weighted)= total product/total area= 74.93 Use CN= 75

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **31**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.2492	24.4
C	Lawn	74			2.322	171.8
				Total=	2.571	196.2

CN (weighted)= total product/total area= 76.33 Use CN= 76

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **32**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.0562	5.5
				Total=	0.056	5.5

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **33**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.0562	5.5
				Total=	0.056	5.5

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **34**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.0562	5.5
				Total=	0.056	5.5

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **35**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.0562	5.5
				Total=	0.056	5.5

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **36**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.0562	5.5
				Total=	0.056	5.5

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **37**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.0562	5.5
				Total=	0.056	5.5

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **38**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Pavement	98			0.0562	5.5
				Total=	0.056	5.5

CN (weighted)= total product/total area= 98.00 Use CN= 98

TR-55 Worksheets 2: Runoff Curve Number and Runoff

Project:	Stallion Ridge Subdivision	Design By:	J.M.P.	Date:	6/16/2020
Location:	#524 Belll Street, Glastonbury	Checked:	J.P.C.	Date:	6/16/2020

Subarea: **40**

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

		CN				
Soil Name and Hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic conditions; percent impervious; unconnected/connected impervious area ratio)	Table 2-2	Fig. 2-3	Fig. 2-4	Area ☑ acres ☐ mi2 ☐ %	Product of CN x Area
C	Wooded	70			16.4467	1151.3
C	1/2 Acre Residential	80			6.014	481.1
				Total=	22.461	1632.4

CN (weighted)= total product/total area= 72.68 Use CN= 73

Appendix E

Stormwater Studio, ver. 2.0™

Computer Model Report for On-Site Drainage System

Plan View

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Project File: 3134-STM.sws

CT DOT Report

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No.	Inlet Time (min)	Pipe Travel (min)	Tc System (min)	Drain Area (ac)	Runoff Coeff (C)	Incr CxA	Total C x A	Incr Q (cfs)	Flow Rate (cfs)	Line Size (in)	Line Length (ft)	Line Slope (ft/ft)	Vel Ave (ft/s)	Capac. Full (cfs)	Vel Hd Dn (ft)	n-value Pipe	Line ID	
1	0.0	0.05	9.6	0.000	0.00	0.00	3.43	0.00	22.97	30	22.00	0.01	4.68	41.01	0.34	0.013		
2	5.0	0.39	9.3	0.112	0.90	0.10	3.43	0.92	23.46	30	190.00	0.0102	4.78	41.33	0.36	0.013		
3	5.0	0.42	8.8	0.538	0.51	0.27	3.32	2.49	23.30	30	233.00	0.014	5.85	48.59	0.35	0.013		
4	5.0	0.25	5.0	0.154	0.90	0.14	0.14	1.26	1.26	15	61.00	0.01	1.03	6.46	0.02	0.013		
5	5.0	0.19	8.6	0.309	0.55	0.17	2.91	1.54	20.63	24	104.00	0.014	8.22	26.80	1.21	0.013		
6	5.0	0.04	5.0	0.152	0.59	0.09	0.09	0.82	0.82	15	16.00	0.0613	0.66	15.98	0.01	0.013		
7	5.0	0.15	8.5	0.218	0.49	0.11	2.65	0.97	18.96	24	89.00	0.0181	6.66	30.42	0.57	0.013		
8	5.0	0.21	8.3	0.246	0.43	0.11	2.54	0.96	18.42	24	97.00	0.01	6.56	22.62	0.55	0.013		
9	5.0	0.08	5.0	0.074	0.90	0.07	0.07	0.61	0.61	15	16.00	0.01	0.49	6.46	0.00	0.013		
10	5.0	0.21	8.1	0.178	0.48	0.09	2.37	0.78	17.38	24	95.00	0.01	6.30	22.62	0.49	0.013		
11	5.0	0.67	7.4	0.133	0.90	0.12	2.29	1.09	17.47	24	195.00	0.0027	5.56	11.68	0.48	0.013		
12	5.0	0.04	7.4	0.849	0.47	0.40	0.98	3.63	7.52	24	16.00	0.01	2.40	22.62	0.09	0.013		
13	0.0	0.55	6.8	0.000	0.00	0.00	0.58	0.00	4.63	15	192.16	0.0103	3.78	6.54	0.22	0.013		
14	6.8	0.01	6.8	1.389	0.42	0.58	0.58	4.64	4.64	15	5.00	0.02	5.34	9.13	0.48	0.013		
15	0.0	0.23	6.6	0.000	0.00	0.00	1.18	0.00	9.53	15	145.00	0.0332	7.87	11.76	0.94	0.013		
16	5.0	0.18	6.4	0.078	0.90	0.07	1.18	0.64	9.65	15	122.00	0.0376	9.39	12.53	1.79	0.013		
17	5.0	0.11	6.3	0.074	0.90	0.07	1.11	0.61	9.15	15	72.00	0.0357	7.58	12.20	0.87	0.013		
18	5.0	0.05	5.0	0.680	0.44	0.30	0.30	2.72	2.72	15	16.00	0.01	2.22	6.46	0.08	0.013		
19	5.0	0.09	6.2	0.127	0.86	0.11	0.75	0.99	6.19	15	47.00	0.0272	5.47	10.66	0.40	0.013		
20	5.0	0.19	6.0	0.380	0.49	0.19	0.64	1.69	5.36	15	99.00	0.0283	6.86	10.86	1.05	0.013		
21	5.0	0.23	5.8	0.437	0.50	0.22	0.45	1.99	3.86	15	98.00	0.0204	3.97	9.22	0.16	0.013		
22	5.0	0.06	5.0	0.297	0.59	0.18	0.18	1.59	1.59	15	16.00	0.01	1.64	6.46	0.03	0.013		
23	0.0	0.31	5.5	0.000	0.00	0.00	0.06	0.00	0.52	15	96.00	0.0402	1.45	12.95	0.00	0.013		
24	5.0	0.40	5.1	0.036	0.90	0.03	0.06	0.29	0.54	15	150.00	0.0695	4.28	17.02	0.58	0.013		

Notes: IDF File = NOAAATLAS14 IDF CURVE 923 BOSTON POST RD OLD SAYBROOK CT.idf, Return Period = 25-yrs.

Project File: 3134-STM.sws

CT DOT Report

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No.	Inlet Time (min)	Pipe Travel (min)	Tc System (min)	Drain Area (ac)	Runoff Coeff (C)	Incr CxA	Total C x A	Incr Q (cfs)	Flow Rate (cfs)	Line Size (in)	Line Length (ft)	Line Slope (ft/ft)	Vel Ave (ft/s)	Capac. Full (cfs)	Vel Hd Dn (ft)	n-value Pipe	Line ID	
25	5.0	0.11	5.0	0.030	0.90	0.03	0.03	0.25	0.25	15	16.00	0.01	2.14	6.46	0.08	0.013		
26	0.0	0.21	0.1	0.000	0.00	0.00	0.00	0.00	0.00	15	38.00	0.0332	0.00	11.76	0.00	0.013		
27	0.0	0.13	0.0	0.000	0.00	0.00	0.00	0.00	0.00	15	23.00	0.0617	0.00	16.04	0.00	0.013		

Notes: IDF File = NOAAATLAS14 IDF CURVE 923 BOSTON POST RD OLD SAYBROOK CT.idf, Return Period = 25-yrs.

Project File: 3134-STM.sws

Energy Grade Line Calculations

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No	Line Size	Q	Downstream							Length	Upstream							Pipe		Junction		
			Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev		Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev	n Value	Enrgy Loss	HGLa Elev	EGLa Elev	Enrgy Loss
	(in)	(cfs)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
1	30	22.97	272.00	2.50	4.91	276.62	4.68	0.34	276.96	22.00	272.22	2.50	4.91	276.69	4.68	0.34	277.03	0.013	0.069	276.93	277.27	0.24
2	30	23.46	272.23	2.50	4.91	277.05	4.78	0.36	277.41	190.00	274.16	2.50	4.91	277.67	4.78	0.36	278.03	0.013	0.622	277.95	278.31	0.28
3	30	23.30	274.16	2.50	4.91	278.10	4.75	0.35	278.45	233.00	277.43	1.61[2]	3.35	279.04	6.96	0.75	279.80	0.013	1.350	279.04	279.80	0.00
4	15	1.26	277.53	1.25	1.23	279.79	1.03	0.02	279.80	61.00	278.14	1.25	1.23	279.81	1.03	0.02	279.83	0.013	0.023	279.82	279.83	0.01
5	24	20.63	277.53	1.39‡	2.34	278.92	8.83	1.21	280.05	104.00	278.99	1.61[2]	2.71	280.60	7.62	0.90	281.50	0.013	1.453	280.60	281.50	0.00
6	15	0.82	279.09	1.25	1.23	281.50	0.66	0.01	281.50	16.00	280.07	1.25	1.23	281.50	0.66	0.01	281.51	0.013	0.003	281.50	281.51	0.00
7	24	18.96	279.09	2.00	3.14	281.16	6.04	0.57	281.73	89.00	280.70	1.54[2]	2.60	282.24	7.29	0.83	283.07	0.013	1.341	282.24	283.07	0.00
8	24	18.42	280.80	1.93	3.11	282.73	5.92	0.55	283.28	97.00	281.77	1.52[2]	2.56	283.29	7.19	0.80	284.09	0.013	0.814	283.29	284.09	0.00
9	15	0.61	281.87	1.25	1.23	284.09	0.49	0.00	284.10	16.00	282.03	1.25	1.23	284.09	0.49	0.00	284.10	0.013	0.001	284.09	284.10	0.00
10	24	17.38	281.87	1.92	3.10	283.79	5.61	0.49	284.28	95.00	282.82	1.48[2]	2.49	284.30	6.99	0.76	285.06	0.013	0.776	284.30	285.06	0.00
11	24	17.47	282.92	2.00[3]	3.14	284.92	5.56	0.48	285.40	195.00	283.44	2.00	3.14	286.08	5.56	0.48	286.56	0.013	1.163	286.19	286.67	0.11
12	24	7.52	283.54	2.00	3.14	286.62	2.40	0.09	286.71	16.00	283.70	2.00	3.14	286.63	2.39	0.09	286.72	0.013	0.018	286.67	286.76	0.03
13	15	4.63	283.80	1.25	1.23	286.62	3.78	0.22	286.84	192.16	285.77	1.25	1.23	287.61	3.78	0.22	287.83	0.013	0.990	287.79	288.02	0.18
14	15	4.64	287.00	0.81‡	0.84	287.81	5.54	0.48	288.27	5.00	287.10	0.86[2]	0.90	287.96	5.14	0.41	288.37	0.013	0.100	288.42ic	288.42	0.05
15	15	9.53	283.54	1.25	1.20	286.11	7.77	0.94	287.05	145.00	288.35	1.17[2]	1.20	289.52	7.97	0.99	290.51	0.013	3.465	289.52	290.51	0.00
16	15	9.65	289.26	0.86‡	0.90	290.12	10.73	1.79	291.45	122.00	293.85	1.18[2]	1.20	295.03	8.06	1.01	296.04	0.013	4.590	295.03	296.04	0.00
17	15	9.15	293.95	1.25	1.19	295.52	7.46	0.87	296.38	72.00	296.52	1.16[2]	1.19	297.68	7.70	0.92	298.60	0.013	2.221	297.68	298.60	0.00
18	15	2.72	296.62	1.25	1.23	298.56	2.22	0.08	298.63	16.00	296.78	1.25	1.23	298.59	2.22	0.08	298.66	0.013	0.028	298.63	298.70	0.04
19	15	6.19	296.62	1.25	1.23	298.37	5.04	0.40	298.76	47.00	297.90	1.00[2]	1.05	298.90	5.90	0.54	299.44	0.013	0.676	298.90	299.44	0.00
20	15	5.36	298.10	0.66‡	0.65	298.76	8.22	1.05	299.55	99.00	300.90	0.93[2]	0.98	301.83	5.49	0.47	302.30	0.013	2.748	301.83	302.30	0.00
21	15	3.86	301.00	1.20	1.21	302.20	3.20	0.16	302.35	98.00	303.00	0.79[2]	0.81	303.79	4.75	0.35	304.14	0.013	1.783	303.79	304.14	0.00
22	15	1.59	303.10	1.01	1.07	304.11	1.49	0.03	304.15	16.00	303.26	0.85	0.89	304.11	1.79	0.05	304.16	0.013	0.012	304.15	304.20	0.04

Notes: Return Period = 25-yrs. [2] Critical depth. [3] Normal depth. ‡ Supercritical. ic Inlet Control

Project File: 3134-STM.sws

Energy Grade Line Calculations

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No	Line Size	Q	Downstream							Length	Upstream							Pipe		Junction		
			Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev		Invert Elev	Depth	Area	HGL Elev	Vel	Vel Head	EGL Elev	n Value	Enrgy Loss	HGLa Elev	EGLa Elev	Enrgy Loss
	(in)	(cfs)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft)	(ft/s)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
23	15	0.52	303.10	1.04	1.09	304.14	0.48	0.00	304.14	96.00	306.96	0.29[2]	0.21	307.25	2.42	0.09	307.34	0.013	3.201	307.25	307.34	0.00
24	15	0.54	307.06	0.16‡	0.09	307.22	6.11	0.58	307.45	150.00	317.48	0.29[2]	0.22	317.77	2.45	0.09	317.87	0.013	10.420	317.77	317.87	0.00
25	15	0.25	317.56	0.18‡	0.11	317.74	2.32	0.08	317.87	16.00	317.72	0.20[2]	0.13	317.92	1.96	0.06	317.98	0.013	0.110	317.92	317.98	0.00
26	15	0.00	317.56	0.00	0.00	317.56	0.00	0.00	317.56	38.00	318.82	0.00	0.00	318.82	0.00	0.00	318.82	0.013	1.260	318.82	318.82	0.00
27	15	0.00	318.82	0.00	0.00	318.82	0.00	0.00	318.82	23.00	320.24	0.00	0.00	320.24	0.00	0.00	320.24	0.013	1.420	320.24	320.24	0.00

Notes: Return Period = 25-yrs. [1] Critical depth. [2] Critical depth. ‡ Supercritical.

Project File: 3134-STM.sws

Inlet Report

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No	Inlet		Q				Curb		Grate			Gutter							Inlet			Byp Line No
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	MH 18B	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	MH 18A	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	CB 17	Combination	2.49	0.00	2.49	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.32	13.00	0.32	13.00	0.0	2
4	CB 18	Combination	1.26	0.00	1.26	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.22	8.00	0.22	8.00	0.0	3
5	CB 15	Combination	1.54	0.00	1.54	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.25	9.50	0.25	9.50	0.0	3
6	CB 16	Combination	0.82	0.00	0.82	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.18	6.00	0.18	6.00	0.0	5
7	CB 14	Combination	0.97	0.00	0.97	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.20	7.00	0.20	7.00	0.0	5
8	CB 12	Combination	0.96	0.00	0.96	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.20	7.00	0.20	7.00	0.0	7
9	CB 13	Combination	0.61	0.00	0.61	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.16	5.00	0.16	5.00	0.0	8
10	CB 11	Combination	0.78	0.00	0.78	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.18	6.00	0.18	6.00	0.0	8
11	CB 9	Combination	1.09	0.00	1.09	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.21	7.50	0.21	7.50	0.0	10
12	CB 10	Combination	3.63	0.00	3.63	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.40	17.00	0.40	17.00	0.0	11
13	MH 10B	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	HW 10A	Hdwall-Proj	4.64	0.00	4.64	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	MH 8A	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	CB 8	Combination	0.64	0.00	0.64	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.16	5.00	0.16	5.00	0.0	15
17	CB 6	Combination	0.61	0.00	0.61	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.16	5.00	0.16	5.00	0.0	16
18	CB 7	Combination	2.72	0.00	2.72	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.34	14.00	0.34	14.00	0.0	17
19	CB 4B	Combination	0.99	0.00	0.99	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.20	7.00	0.20	7.00	0.0	17
20	CB 4A	Combination	1.69	0.00	1.69	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.26	10.00	0.26	10.00	0.0	19
21	CB 4	Combination	1.99	0.00	1.99	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.29	11.50	0.29	11.50	0.0	20
22	CB 5	Combination	1.59	0.00	1.59	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.25	9.50	0.25	9.50	0.0	21

Notes: Return Period = 25-yrs. All curb inlets are Horiz throat.,

Project File: 3134-STM.sws

Inlet Report

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No	Inlet		Q				Curb		Grate			Gutter							Inlet			Byp Line No
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
23		Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	CB 2	Combination	0.29	0.00	0.29	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.12	3.00	0.12	3.00	0.0	23
25	CB 3	Combination	0.25	0.00	0.25	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.11	2.50	0.11	2.50	0.0	24
26		Combination	0.00	0.00	0.00	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	24
27		Combination	0.00	0.00	0.00	0.00	4.0	4.00	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	26

Notes: Return Period = 25-yrs. All curb inlets are Horiz throat.,

Project File: 3134-STM.sws

Storm Sewer Tabulation

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line ID	Length	Drng Area		Rational	C x A		Tc		Intensity	Total Q	Capacity	Velocity	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
Line 1	22.00	0.000	6.491	0.00	0.00	3.43	0.0	9.64	6.71	22.97	41.01	4.68	30	1.00	272.22	272.00	276.69	276.62	280.00	272.00	1
Line 2	190.00	0.112	6.491	0.90	0.10	3.43	5.0	9.25	6.85	23.46	41.33	4.78	30	1.02	274.16	272.23	277.67	277.05	279.00	280.00	2
Line 3	233.00	0.538	6.379	0.51	0.27	3.32	5.0	8.83	7.01	23.30	48.59	5.85	30	1.40	277.43	274.16	279.04	278.10	282.51	279.00	3
Line 4	61.00	0.154	0.154	0.90	0.14	0.14	5.0	5.00	9.09	1.26	6.46	1.03	15	1.00	278.14	277.53	279.81	279.79	282.14	282.51	4
Line 5	104.00	0.309	5.687	0.55	0.17	2.91	5.0	8.64	7.09	20.63	26.80	8.22	24	1.40	278.99	277.53	280.60	278.92	284.07	282.51	5
Line 6	16.00	0.152	0.152	0.59	0.09	0.09	5.0	5.00	9.09	0.82	15.98	0.66	15	6.13	280.07	279.09	281.50	281.50	284.07	284.07	6
Line 7	89.00	0.218	5.226	0.49	0.11	2.65	5.0	8.49	7.15	18.96	30.42	6.66	24	1.81	280.70	279.09	282.24	281.16	285.03	284.07	7
Line 8	97.00	0.246	5.008	0.43	0.11	2.54	5.0	8.28	7.24	18.42	22.62	6.56	24	1.00	281.77	280.80	283.29	282.73	286.03	285.03	8
Line 9	16.00	0.074	0.074	0.90	0.07	0.07	5.0	5.00	9.09	0.61	6.46	0.49	15	1.00	282.03	281.87	284.09	284.09	286.03	286.03	9
Line 10	95.00	0.178	4.688	0.48	0.09	2.37	5.0	8.08	7.33	17.38	22.62	6.30	24	1.00	282.82	281.87	284.30	283.79	287.03	286.03	10
Line 11	195.00	0.133	4.510	0.90	0.12	2.29	5.0	7.41	7.64	17.47	11.68	5.56	24	0.27	283.44	282.92	286.08	284.92	290.03	287.03	11
Line 12	16.00	0.849	2.238	0.47	0.40	0.98	5.0	7.37	7.66	7.52	22.62	2.40	24	1.00	283.70	283.54	286.63	286.62	290.03	290.03	12
Line 13	192.16	0.000	1.389	0.00	0.00	0.58	0.0	6.81	7.94	4.63	6.54	3.78	15	1.03	285.77	283.80	287.61	286.62	290.50	290.03	13
Line 14	5.00	1.389	1.389	0.42	0.58	0.58	6.8	6.80	7.95	4.64	9.13	5.34	15	2.00	287.10	287.00	287.96	287.81	290.00	290.50	14
Line 15	145.00	0.000	2.139	0.00	0.00	1.18	0.0	6.62	8.05	9.53	11.76	7.87	15	3.32	288.35	283.54	289.52	286.11	293.20	290.03	15
Line 16	122.00	0.078	2.139	0.90	0.07	1.18	5.0	6.44	8.15	9.65	12.53	9.39	15	3.76	293.85	289.26	295.03	290.12	297.95	293.20	16
Line 17	72.00	0.074	2.061	0.90	0.07	1.11	5.0	6.33	8.22	9.15	12.20	7.58	15	3.57	296.52	293.95	297.68	295.52	300.78	297.95	17
Line 18	16.00	0.680	0.680	0.44	0.30	0.30	5.0	5.00	9.09	2.72	6.46	2.22	15	1.00	296.78	296.62	298.59	298.56	300.78	300.78	18
Line 19	47.00	0.127	1.307	0.86	0.11	0.75	5.0	6.24	8.27	6.19	10.66	5.47	15	2.72	297.90	296.62	298.90	298.37	302.42	300.78	19
Line 20	99.00	0.380	1.180	0.49	0.19	0.64	5.0	6.05	8.38	5.36	10.86	6.86	15	2.83	300.90	298.10	301.83	298.76	305.00	302.42	20
Line 21	98.00	0.437	0.800	0.50	0.22	0.45	5.0	5.82	8.53	3.86	9.22	3.97	15	2.04	303.00	301.00	303.79	302.20	307.51	305.00	21
Line 22	16.00	0.297	0.297	0.59	0.18	0.18	5.0	5.00	9.09	1.59	6.46	1.64	15	1.00	303.26	303.10	304.11	304.11	307.51	307.51	22

Notes: IDF File = NOAAATLAS14 IDF CURVE 923 BOSTON POST RD OLD SAYBROOK CT.idf, Return Period = 25-yrs.

Project File: 3134-STM.sws

Storm Sewer Tabulation

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line ID	Length	Drng Area		Rational	C x A		Tc		Intensity	Total Q	Capacity	Velocity	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
Line 23	96.00	0.000	0.066	0.00	0.00	0.06	0.0	5.50	8.73	0.52	12.95	1.45	15	4.02	306.96	303.10	307.25	304.14	311.06	307.51	23
Line 24	150.00	0.036	0.066	0.90	0.03	0.06	5.0	5.11	9.01	0.54	17.02	4.28	15	6.95	317.48	307.06	317.77	307.22	321.55	311.06	24
Line 25	16.00	0.030	0.030	0.90	0.03	0.03	5.0	5.00	9.09	0.25	6.46	2.14	15	1.00	317.72	317.56	317.92	317.74	321.11	321.55	25
Line 26	38.00	0.000	0.000	0.00	0.00	0.00	0.0	0.13	9.09	0.00	11.76	0.00	15	3.32	318.82	317.56	318.82	317.56	322.92	321.55	26
Line 27	23.00	0.000	0.000	0.00	0.00	0.00	0.0	0.00	9.09	0.00	16.04	0.00	15	6.17	320.24	318.82	320.24	318.82	322.37	322.92	27

Notes: IDF File = NOAAATLAS14 IDF CURVE 923 BOSTON POST RD OLD SAYBROOK CT.idf, Return Period = 25-yrs.

Project File: 3134-STM.sws

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 3

CB 17

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.025	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	1			
Travel Time (min)	**3.12**	**0.00**	**0.00**	**3.12**
Shallow Concentrated Flow				
Flow Length (ft)	52			
Watercourse Slope (%)	12.5			
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.7			
Travel Time (min)	**0.15**	**0.00**	**0.00**	**0.15**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 5

CB 15

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.025	0.000	0.000	
Flow Length (ft)	90			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	3.3			
Travel Time (min)	**1.78**	**0.00**	**0.00**	**1.78**
Shallow Concentrated Flow				
Flow Length (ft)		71		
Watercourse Slope (%)		1		
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)		2.03		
Travel Time (min)	**0.00**	**0.58**	**0.00**	**0.58**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 6

CB 16

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.013	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	1			
Travel Time (min)	**1.85**	**0.00**	**0.00**	**1.85**
Shallow Concentrated Flow				
Flow Length (ft)	145			
Watercourse Slope (%)	1			
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)	2.03			
Travel Time (min)	**1.19**	**0.00**	**0.00**	**1.19**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 7

CB 14

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.013	0.000	0.000	
Flow Length (ft)	35			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	2			
Travel Time (min)	**0.61**	**0.00**	**0.00**	**0.61**
Shallow Concentrated Flow				
Flow Length (ft)		73		
Watercourse Slope (%)		4		
Surface Description	Paved	Unpaved	Paved	
Average Velocity (ft/s)		3.23		
Travel Time (min)	**0.00**	**0.38**	**0.00**	**0.38**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 8

CB 12

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.025	0.000	0.000	
Flow Length (ft)	75			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	2.7			
Travel Time (min)	**1.67**	**0.00**	**0.00**	**1.67**
Shallow Concentrated Flow				
Flow Length (ft)				
Watercourse Slope (%)				
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 10

CB 11

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.013	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	1.2			
Travel Time (min)	**1.72**	**0.00**	**0.00**	**1.72**
Shallow Concentrated Flow				
Flow Length (ft)	138			
Watercourse Slope (%)	1.2			
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)	2.23			
Travel Time (min)	**1.03**	**0.00**	**0.00**	**1.03**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 12

CB 10

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.025	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	4			
Travel Time (min)	**1.79**	**0.00**	**0.00**	**1.79**
Shallow Concentrated Flow				
Flow Length (ft)	99	172		
Watercourse Slope (%)	5.9	1		
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.92	2.03		
Travel Time (min)	**0.42**	**1.41**	**0.00**	**1.83**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 14

HW 10A

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.025	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	2.3			
Travel Time (min)	**2.24**	**0.00**	**0.00**	**2.24**
Shallow Concentrated Flow				
Flow Length (ft)	609			
Watercourse Slope (%)	1.9			
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	2.22			
Travel Time (min)	**4.56**	**0.00**	**0.00**	**4.56**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**6.8 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 18

CB 7

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.025	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	6.1			
Travel Time (min)	**1.51**	**0.00**	**0.00**	**1.51**
Shallow Concentrated Flow				
Flow Length (ft)	119	181		
Watercourse Slope (%)	6.1	2.6		
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	3.98	3.28		
Travel Time (min)	**0.50**	**0.92**	**0.00**	**1.42**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 21

CB 4

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.025	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	6.3			
Travel Time (min)	**1.50**	**0.00**	**0.00**	**1.50**
Shallow Concentrated Flow				
Flow Length (ft)	80	128		
Watercourse Slope (%)	6.3	2.4		
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.05	3.15		
Travel Time (min)	**0.33**	**0.68**	**0.00**	**1.01**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 22

CB 5

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.025	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	7			
Travel Time (min)	**1.43**	**0.00**	**0.00**	**1.43**
Shallow Concentrated Flow				
Flow Length (ft)	161	19		
Watercourse Slope (%)	2	2.6		
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	2.28	3.28		
Travel Time (min)	**1.18**	**0.10**	**0.00**	**1.27**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 24

CB 2

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.013	0.000	0.000	
Flow Length (ft)	39			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	4.3			
Travel Time (min)	**0.49**	**0.00**	**0.00**	**0.49**
Shallow Concentrated Flow				
Flow Length (ft)	22			
Watercourse Slope (%)	4.3			
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)	4.22			
Travel Time (min)	**0.09**	**0.00**	**0.00**	**0.09**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

TR55 Worksheet

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

Stormwater Studio 2020 v 3.0.0.21

09-29-2020

Line No. 25

CB 3

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.013	0.000	0.000	
Flow Length (ft)	38			
2-yr, 24-hr Precip. (in)	3.120	3.180	3.180	
Land Slope (%)	4.3			
Travel Time (min)	**0.48**	**0.00**	**0.00**	**0.48**
Shallow Concentrated Flow				
Flow Length (ft)	24			
Watercourse Slope (%)	4.3			
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)	4.22			
Travel Time (min)	**0.09**	**0.00**	**0.00**	**0.09**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**5 min**

Composite C Worksheet

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No	Description	Drainage Area (ac)	Runoff Coeff (C)	C x A	Composite (C)	Structure ID
3	PAVE	0.187	0.90	0.168		CB 17
	LAWN	0.351	0.30	0.105		
	Totals	**0.538**		**0.274**	**0.51**	
4	PAVE	0.154	0.90	0.139		CB 18
	Totals	**0.154**		**0.139**	**0.90**	
5	PAVE	0.131	0.90	0.118		CB 15
	LAWN	0.178	0.30	0.053		
	Totals	**0.309**		**0.171**	**0.55**	
6	PAVE	0.073	0.90	0.066		CB 16
	LAWN	0.079	0.30	0.024		
	Totals	**0.152**		**0.089**	**0.59**	
7	PAVE	0.070	0.90	0.063		CB 14
	LAWN	0.148	0.30	0.044		
	Totals	**0.218**		**0.107**	**0.49**	
8	PAVE	0.053	0.90	0.048		CB 12
	LAWN	0.193	0.30	0.058		
	Totals	**0.246**		**0.106**	**0.43**	
9	PAVE	0.074	0.90	0.067		CB 13
	Totals	**0.074**		**0.067**	**0.90**	
10	PAVE	0.053	0.90	0.048		CB 11
	LAWN	0.125	0.30	0.038		
	Totals	**0.178**		**0.085**	**0.48**	

Project File: 3134-STM.sws

Composite C Worksheet

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No	Description	Drainage Area (ac)	Runoff Coeff (C)	C x A	Composite (C)	Structure ID
11	PAVE	0.133	0.90	0.120		CB 9
	Totals	**0.133**		**0.120**	**0.90**	
12	PAVE	0.235	0.90	0.212		CB 10
	LAWN	0.614	0.30	0.184		
	Totals	**0.849**		**0.396**	**0.47**	
14	PAVE	0.277	0.90	0.249		HW 10A
	LAWN	1.112	0.30	0.334		
	Totals	**1.389**		**0.583**	**0.42**	
16	PAVE	0.078	0.90	0.070		CB 8
	Totals	**0.078**		**0.070**	**0.90**	
17	PAVE	0.074	0.90	0.067		CB 6
	Totals	**0.074**		**0.067**	**0.90**	
18	PAVE	0.158	0.90	0.142		CB 7
	LAWN	0.522	0.30	0.157		
	Totals	**0.680**		**0.299**	**0.44**	
19	PAVE	0.119	0.90	0.107		CB 4B
	LAWN	0.008	0.30	0.002		
	Totals	**0.127**		**0.110**	**0.86**	
20	PAVE	0.119	0.90	0.107		CB 4A
	LAWN	0.261	0.30	0.078		
	Totals	**0.380**		**0.185**	**0.49**	

Project File: 3134-STM.sws

Composite C Worksheet

Stormwater Studio 2020 v 3.0.0.21

Project Name: STALLION RIDGE SUBDIVISION STORMWATER

09-29-2020

Line No	Description	Drainage Area (ac)	Runoff Coeff (C)	C x A	Composite (C)	Structure ID
21	PAVE	0.145	0.90	0.131		CB 4
	LAWN	0.292	0.30	0.088		
	Totals	**0.437**		**0.218**	**0.50**	
22	PAVE	0.144	0.90	0.130		CB 5
	LAWN	0.153	0.30	0.046		
	Totals	**0.297**		**0.176**	**0.59**	
24	PAVE	0.036	0.90	0.032		CB 2
	Totals	**0.036**		**0.032**	**0.90**	
25	PAVE	0.030	0.90	0.027		CB 3
	Totals	**0.030**		**0.027**	**0.90**	

Appendix F

Hydrology Studio ™

Computer Model Report – Pre-Development

Table of Contents

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Basin Model Schematic **1**

Hydrograph by Return Period **2**

1 - Year

Hydrograph Summary **3**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Pre FLOW TO N DP 4

Tc by TR55 Worksheet 5

Hydrograph No. 2, NRCS Runoff, Pre FLOW TO S DP 6

Tc by TR55 Worksheet 7

Hydrograph No. 3, NRCS Runoff, Pre SA-3 8

Tc by TR55 Worksheet 9

Hydrograph No. 4, Junction, Pre FLOW TO SALMON BROOK 10

Design Storm Report - NRCS/SCS - Type III 11

2 - Year

Hydrograph Summary **12**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Pre FLOW TO N DP 13

Hydrograph No. 2, NRCS Runoff, Pre FLOW TO S DP 14

Hydrograph No. 3, NRCS Runoff, Pre SA-3 15

Hydrograph No. 4, Junction, Pre FLOW TO SALMON BROOK 16

Design Storm Report - NRCS/SCS - Type III 17

5 - Year

Hydrograph Summary **18**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Pre FLOW TO N DP 19

Hydrograph No. 2, NRCS Runoff, Pre FLOW TO S DP 20

Hydrograph No. 3, NRCS Runoff, Pre SA-3 21

Hydrograph No. 4, Junction, Pre FLOW TO SALMON BROOK 22

Design Storm Report - NRCS/SCS - Type III 23

10 - Year

Hydrograph Summary **24**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Pre FLOW TO N DP 25

Hydrograph No. 2, NRCS Runoff, Pre FLOW TO S DP 26

Hydrograph No. 3, NRCS Runoff, Pre SA-3 27

Hydrograph No. 4, Junction, Pre FLOW TO SALMON BROOK 28

Contents continued...

Design Storm Report - NRCS/SCS - Type III 29

25 - Year

Hydrograph Summary **30**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Pre FLOW TO N DP 31

Hydrograph No. 2, NRCS Runoff, Pre FLOW TO S DP 32

Hydrograph No. 3, NRCS Runoff, Pre SA-3 33

Hydrograph No. 4, Junction, Pre FLOW TO SALMON BROOK 34

Design Storm Report - NRCS/SCS - Type III 35

50 - Year

Hydrograph Summary **36**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Pre FLOW TO N DP 37

Hydrograph No. 2, NRCS Runoff, Pre FLOW TO S DP 38

Hydrograph No. 3, NRCS Runoff, Pre SA-3 39

Hydrograph No. 4, Junction, Pre FLOW TO SALMON BROOK 40

Design Storm Report - NRCS/SCS - Type III 41

100 - Year

Hydrograph Summary **42**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Pre FLOW TO N DP 43

Hydrograph No. 2, NRCS Runoff, Pre FLOW TO S DP 44

Hydrograph No. 3, NRCS Runoff, Pre SA-3 45

Hydrograph No. 4, Junction, Pre FLOW TO SALMON BROOK 46

Design Storm Report - NRCS/SCS - Type III 47

IDF Report **48**

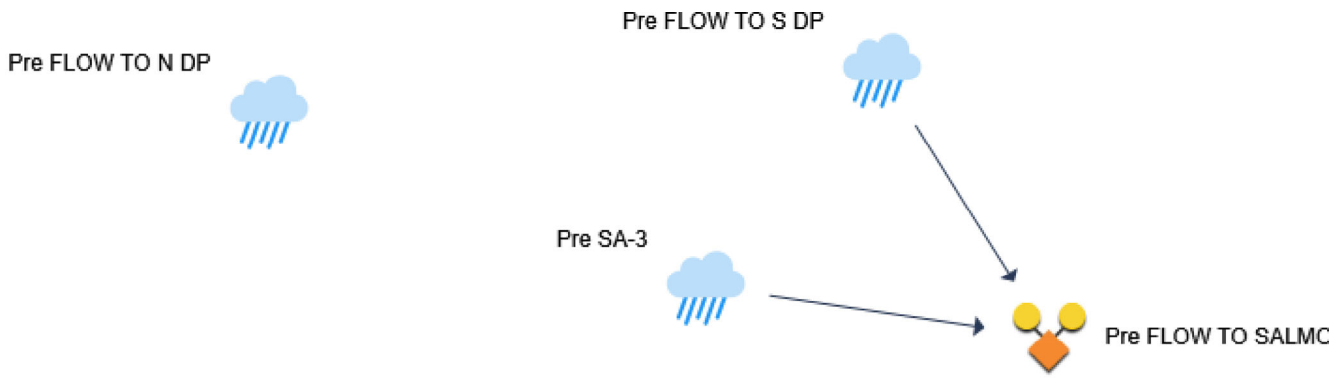
Precipitation Report **49**

Basin Model

Hydrology Studio v 3.0.0.16

Project Name: BELL STREET EXIST. HYDRO.

09-29-2020



Hydrograph by Return Period

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	NRCS Runoff	Pre FLOW TO N DP	10.87	17.02		28.13	37.97	51.78	62.71	73.71
2	NRCS Runoff	Pre FLOW TO S DP	11.57	19.56		34.50	48.09	67.59	83.23	99.12
3	NRCS Runoff	Pre SA-3	13.71	23.27		40.98	57.15	80.26	98.78	117.6
4	Junction	Pre FLOW TO SALMON BROOK	23.40	39.83		70.58	98.48	138.7	171.0	203.8

Hydrograph 1-yr Summary

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre FLOW TO N DP	10.87	12.17	43,351	----		
2	NRCS Runoff	Pre FLOW TO S DP	11.57	12.30	60,032	----		
3	NRCS Runoff	Pre SA-3	13.71	12.15	56,570	----		
4	Junction	Pre FLOW TO SALMON BROOK	23.40	12.20	116,602	2, 3		

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

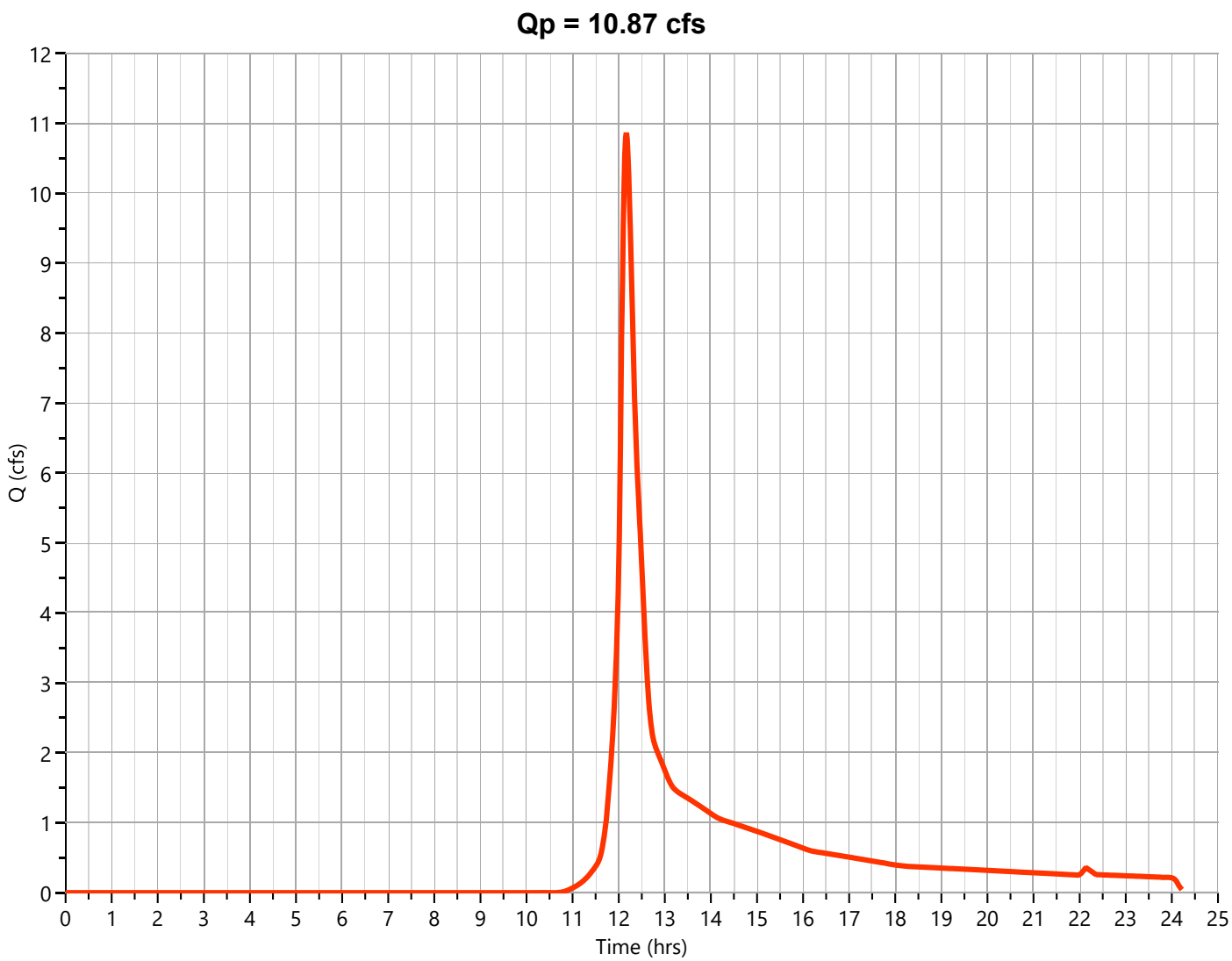
Pre FLOW TO N DP

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 10.87 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 43,351 cuft
Drainage Area	= 14.4 ac	Curve Number	= 77*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.36 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.973	98	PAVE
4.451	70	WOODS
2.191	91	BARE SOIL
6.785	74	LAWN
14.4	**77**	Weighted CN Method Employed



Tc by TR55 Worksheet

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

FLOW TO N DP
NRCS Runoff

Hyd. No. 1

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description	LAWN	WOODS		
Manning's n	0.250	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.110000	2.280000	2.280000	
Land Slope (%)	5			
Travel Time (min)	**10.37**	**0.00**	**0.00**	**10.37**
Shallow Concentrated Flow				
Flow Length (ft)	227	533		
Watercourse Slope (%)	5	8		
Surface Description	Unpaved	Unpaved	Paved	
Average Velocity (ft/s)	3.61	4.56		
Travel Time (min)	**1.05**	**1.95**	**0.00**	**3.00**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimiter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**13.36 min**

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

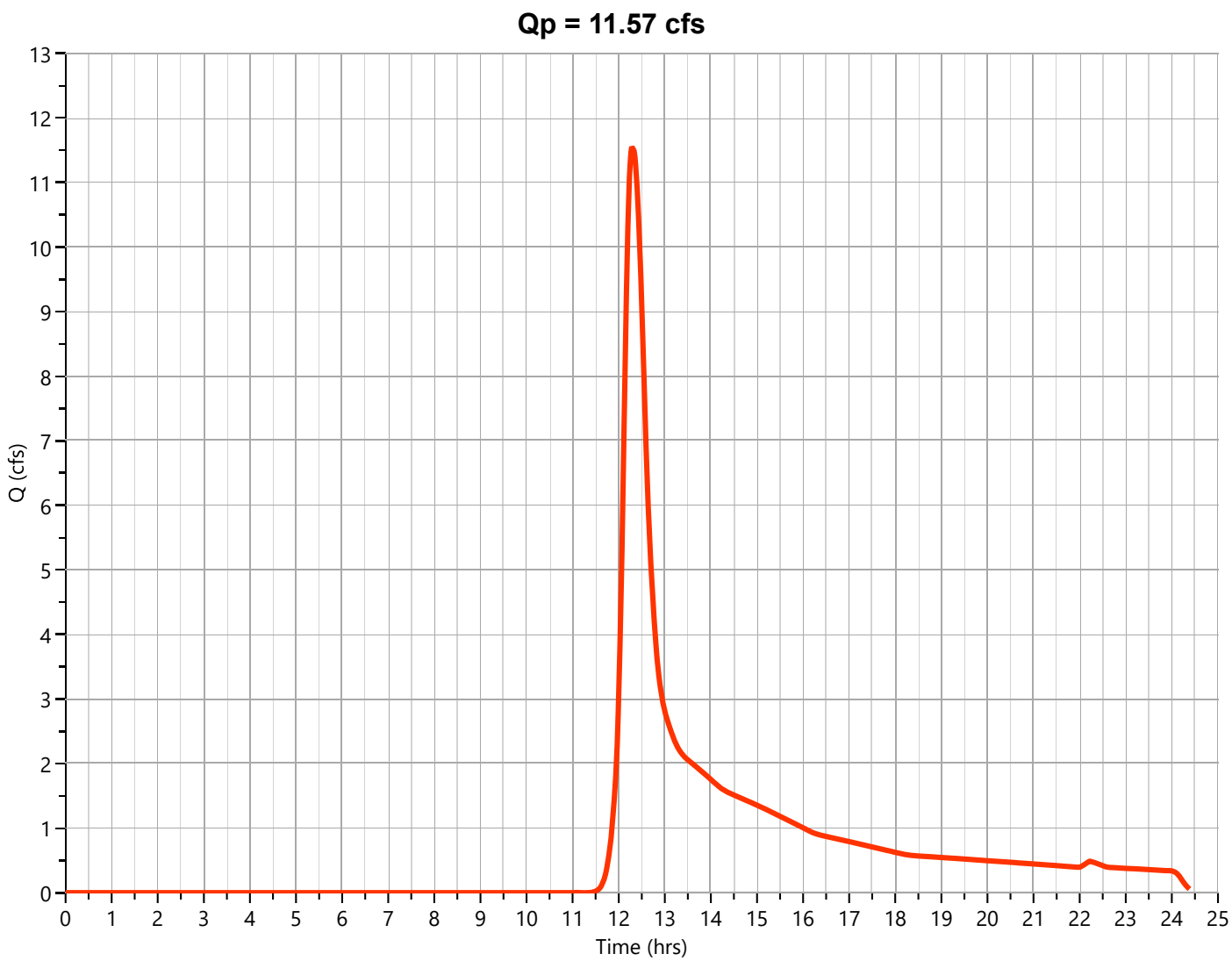
Pre FLOW TO S DP

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 11.57 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.30 hrs
Time Interval	= 1 min	Runoff Volume	= 60,032 cuft
Drainage Area	= 24.96 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.79 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.713	98	PAVE
0.891	91	BARE SOIL
12.719	70	WOODS
10.633	74	LAWN
24.96	**73**	Weighted CN Method Employed



Tc by TR55 Worksheet

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

FLOW TO S DP
NRCS Runoff

Hyd. No. 2

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description	LAWN	WOODED		
Manning's n	0.200	0.440	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.110000	2.280000	2.280000	
Land Slope (%)	2			
Travel Time (min)	**12.51**	**0.00**	**0.00**	**12.51**
Shallow Concentrated Flow				
Flow Length (ft)	137	1252		
Watercourse Slope (%)	3	3		
Surface Description	Unpaved	Unpaved	Paved	
Average Velocity (ft/s)	2.79	2.79		
Travel Time (min)	**0.82**	**7.47**	**0.00**	**8.28**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimiter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**20.79 min**

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

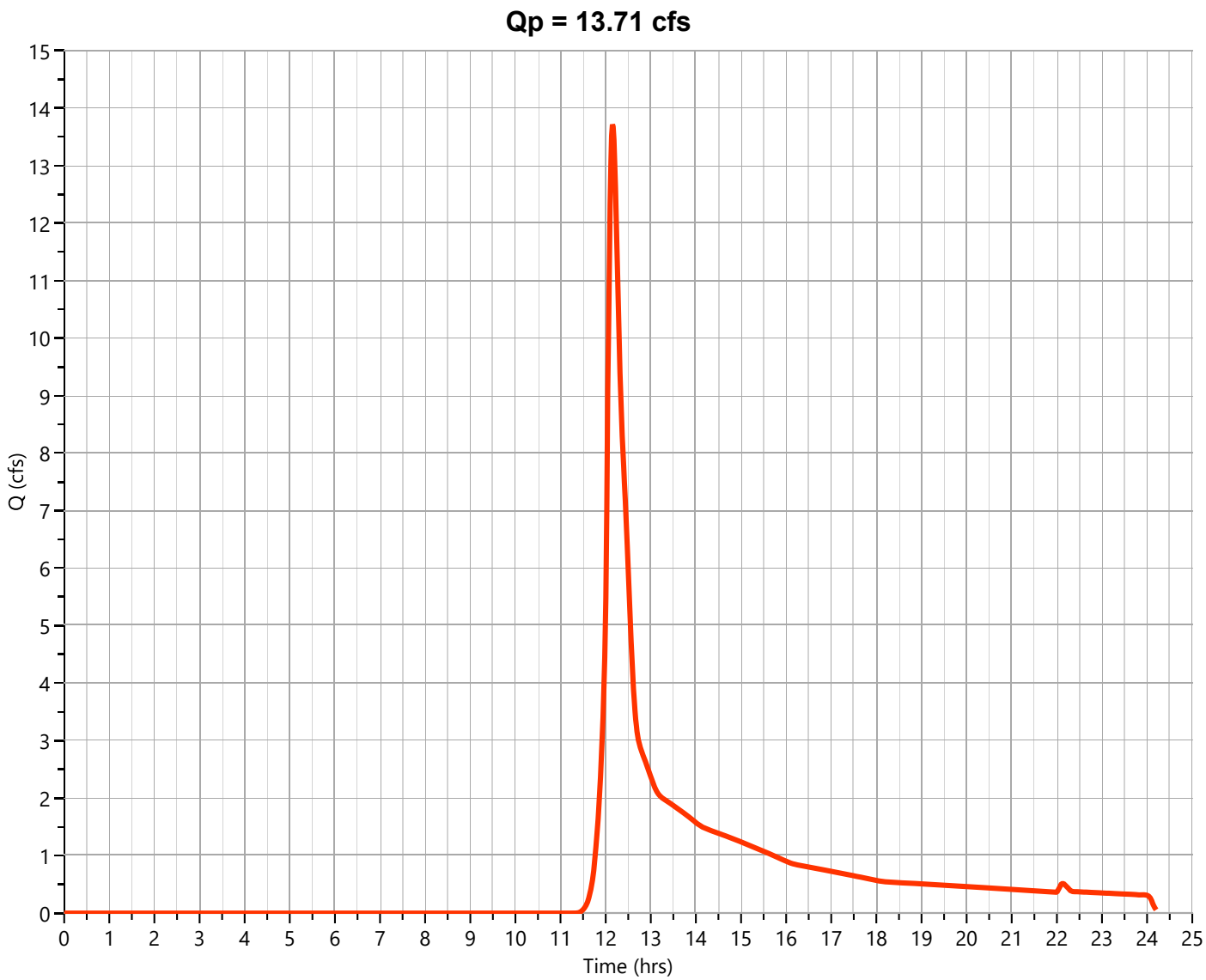
Pre SA-3

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 13.71 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 56,570 cuft
Drainage Area	= 23.33 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
17.316	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
23.33	**73**	Weighted CN Method Employed



Tc by TR55 Worksheet

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

SA-3

Hyd. No. 3

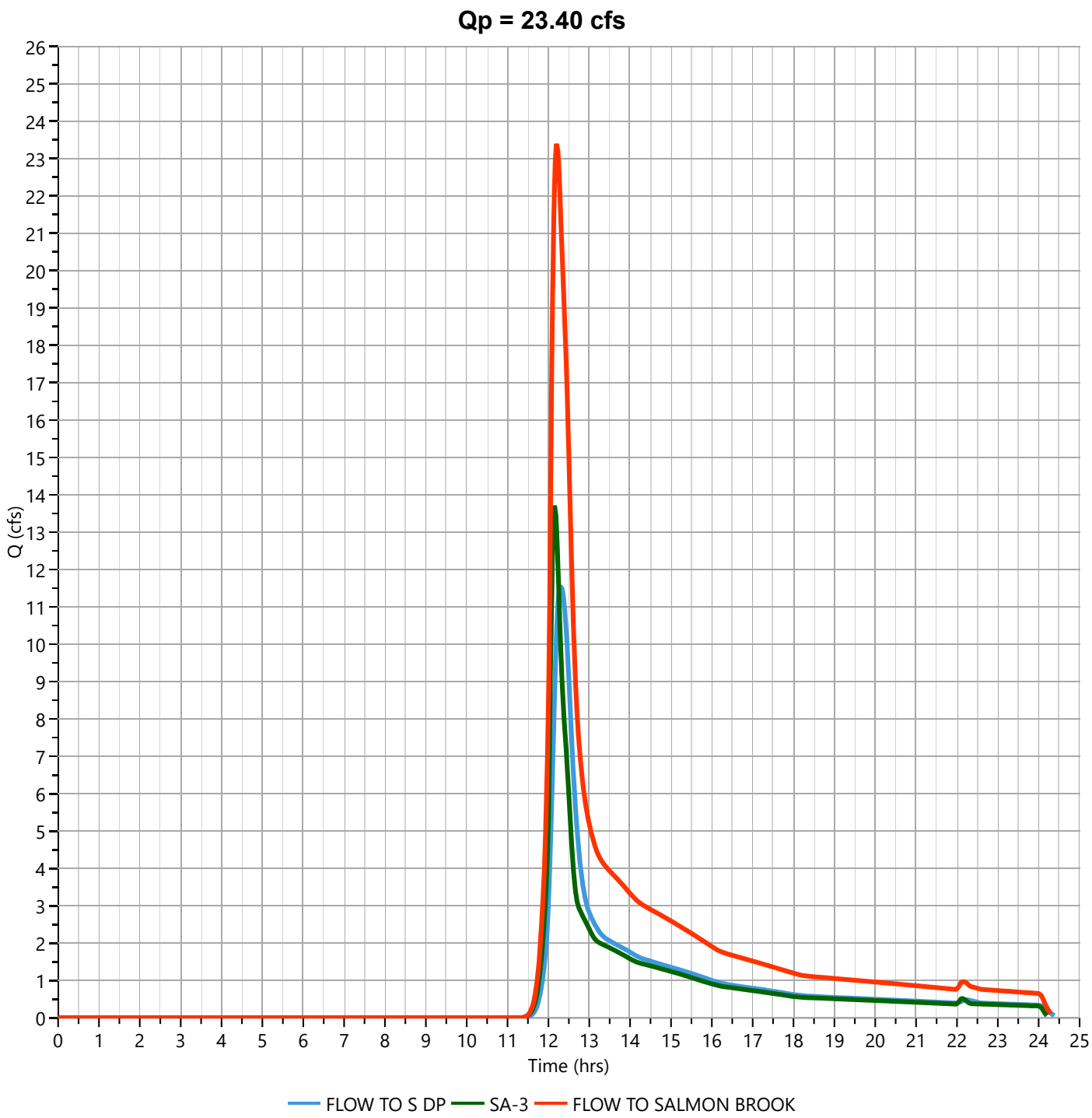
NRCS Runoff

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description	WOODED			
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120000	2.280000	2.280000	
Land Slope (%)	12.5			
Travel Time (min)	**8.30**	**0.00**	**0.00**	**8.30**
Shallow Concentrated Flow				
Flow Length (ft)	950			
Watercourse Slope (%)	12.5			
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.7			
Travel Time (min)	**2.78**	**0.00**	**0.00**	**2.78**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimiter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**11.08 min**

Pre FLOW TO SALMON BROOK

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 23.40 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 116,602 cuft
Inflow Hydrographs	= 2, 3	Total Contrib. Area	= 48.29 ac



Design Storm Report

Custom Storm filename:

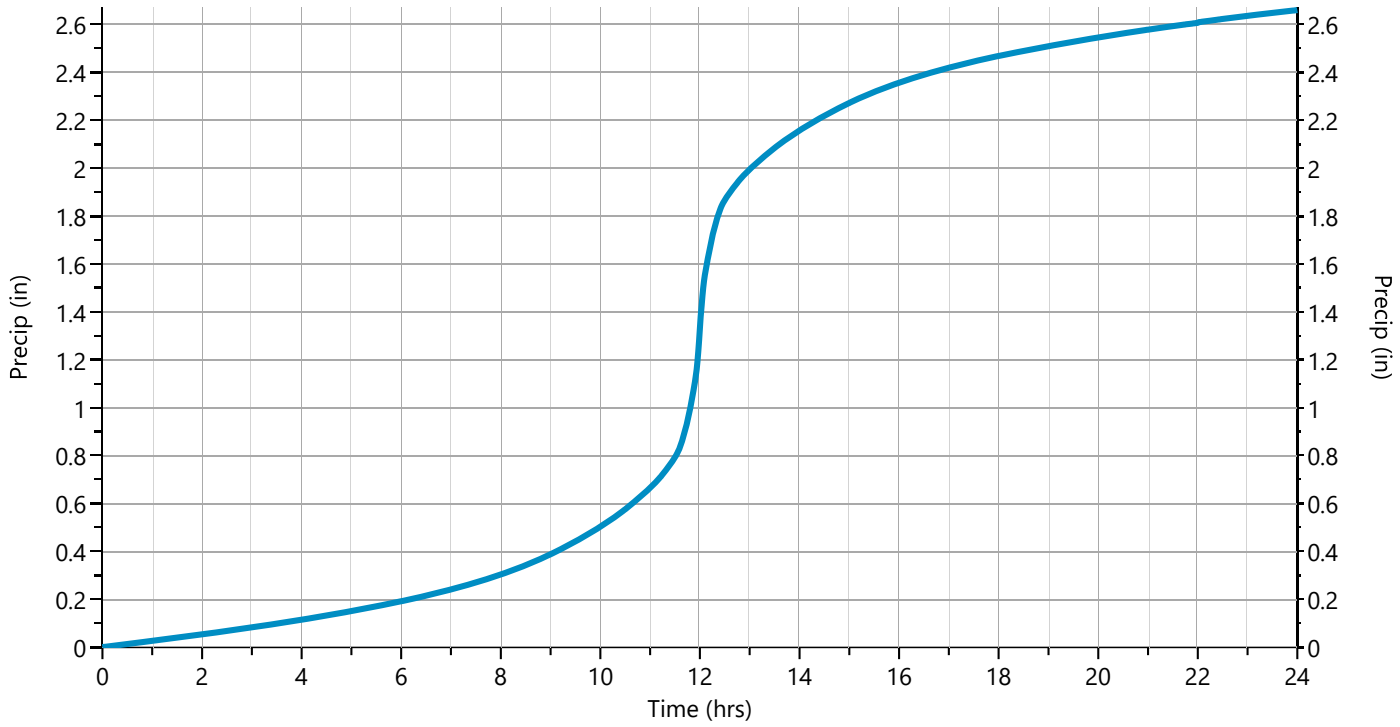
Hydrology Studio v 3.0.0.16

09-29-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	✔ 1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 1-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.005242	11.68	0.012103	11.87	0.019255	12.05	0.039966	12.23	0.016004
11.52	0.005586	11.70	0.012753	11.88	0.019906	12.07	0.034513	12.25	0.015354
11.53	0.006251	11.72	0.013403	11.90	0.020556	12.08	0.029060	12.27	0.014704
11.55	0.006901	11.73	0.014054	11.92	0.023683	12.10	0.023607	12.28	0.014054
11.57	0.007551	11.75	0.014704	11.93	0.029061	12.12	0.020634	12.30	0.013404
11.58	0.008202	11.77	0.015354	11.95	0.034514	12.13	0.019906	12.32	0.012753
11.60	0.008852	11.78	0.016004	11.97	0.039967	12.15	0.019255	12.33	0.012103
11.62	0.009502	11.80	0.016655	11.98	0.045420	12.17	0.018605	12.35	0.011453
11.63	0.010152	11.82	0.017305	**12.00**	**0.050873**	12.18	0.017955	12.37	0.010803
11.65	0.010803	11.83	0.017955	12.02	0.050750	12.20	0.017305	12.38	0.010152
11.67	0.011453	11.85	0.018605	12.03	0.045419	12.22	0.016655	12.40	0.009502



Hydrograph 2-yr Summary

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre FLOW TO N DP	17.02	12.17	65,683	----		
2	NRCS Runoff	Pre FLOW TO S DP	19.56	12.28	95,209	----		
3	NRCS Runoff	Pre SA-3	23.27	12.15	89,718	----		
4	Junction	Pre FLOW TO SALMON BROOK	39.83	12.18	184,927	2, 3		

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

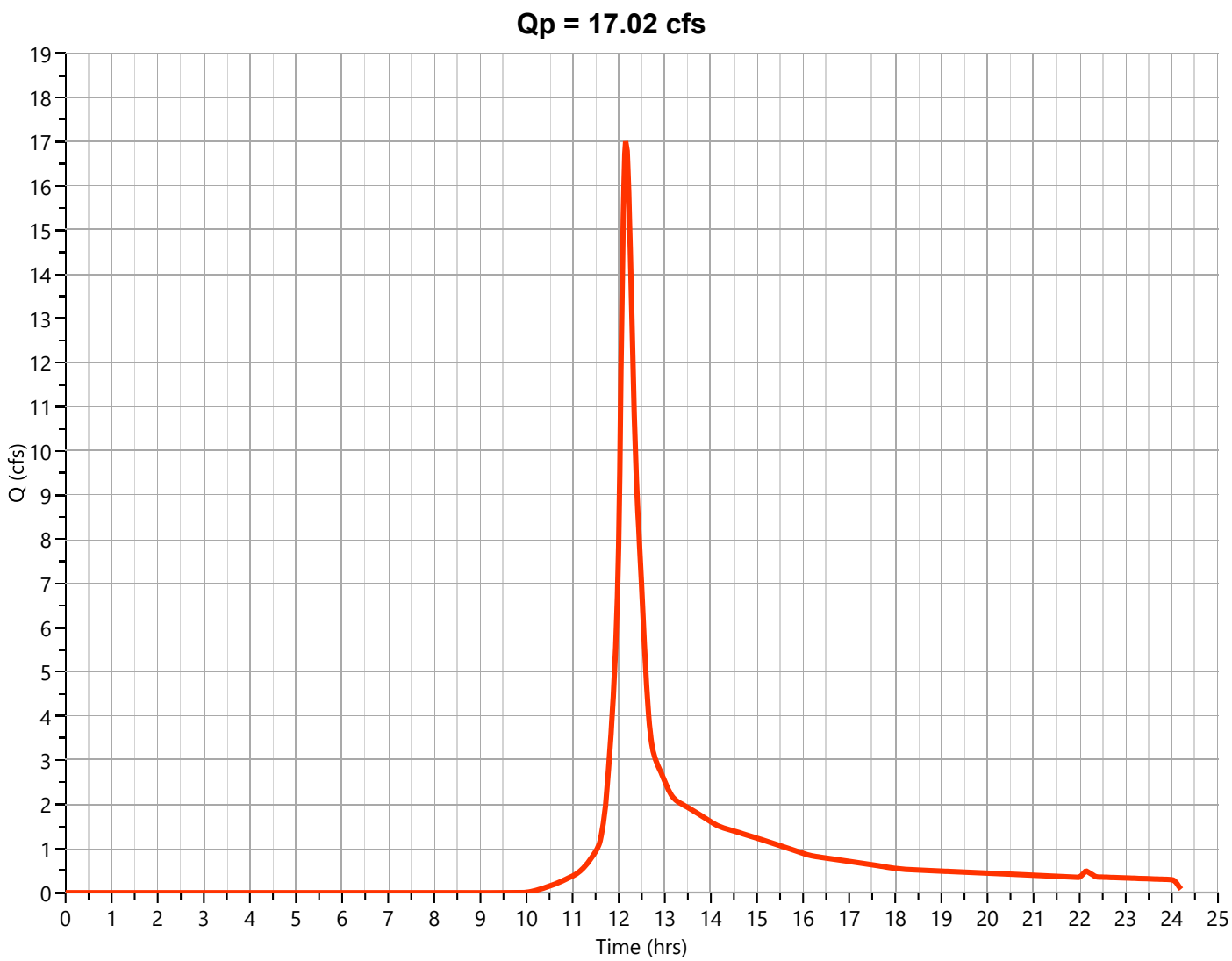
Pre FLOW TO N DP

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 17.02 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 65,683 cuft
Drainage Area	= 14.4 ac	Curve Number	= 77*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.36 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.973	98	PAVE
4.451	70	WOODS
2.191	91	BARE SOIL
6.785	74	LAWN
14.4	**77**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

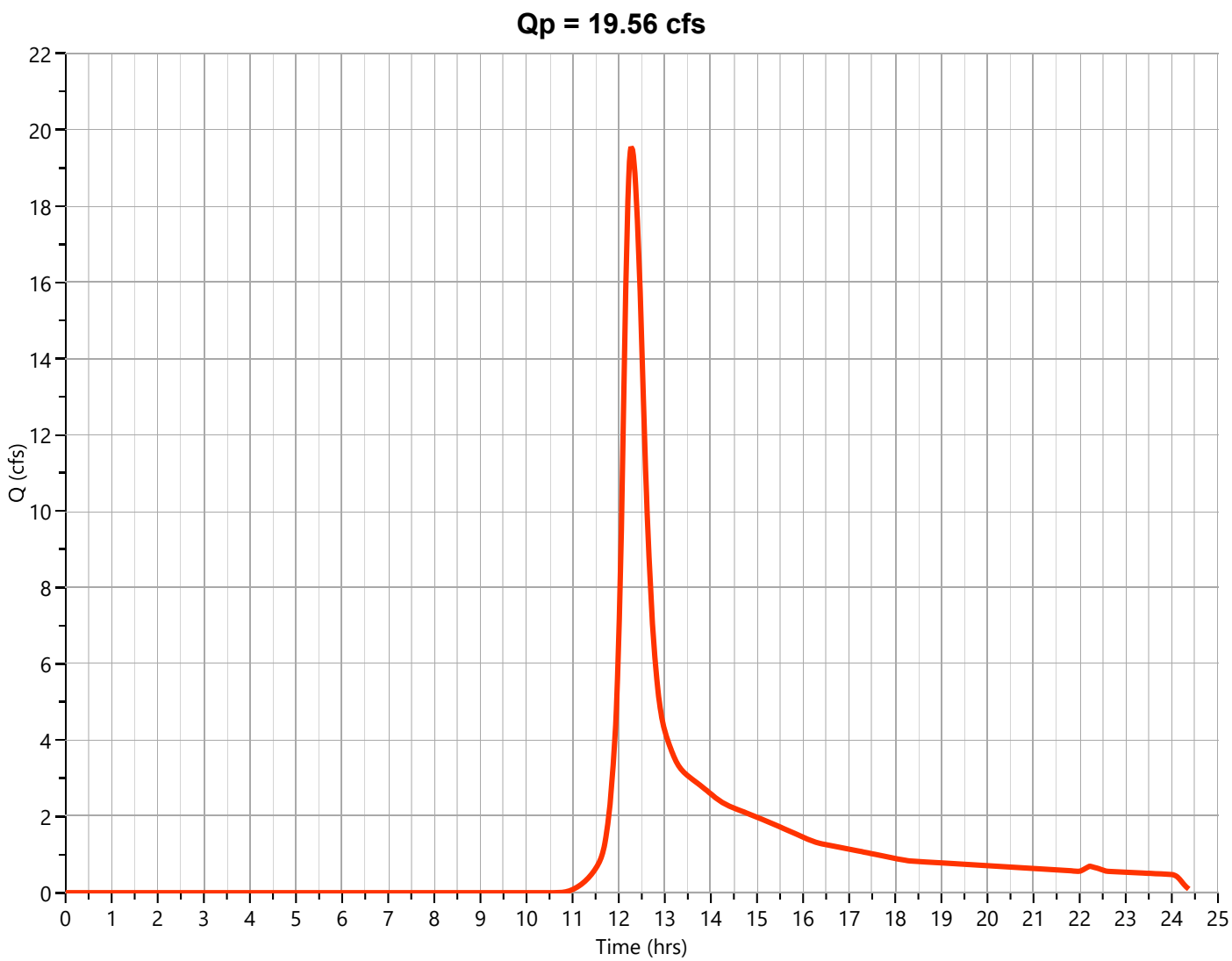
Pre FLOW TO S DP

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 19.56 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.28 hrs
Time Interval	= 1 min	Runoff Volume	= 95,209 cuft
Drainage Area	= 24.96 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.79 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.713	98	PAVE
0.891	91	BARE SOIL
12.719	70	WOODS
10.633	74	LAWN
24.96	**73**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

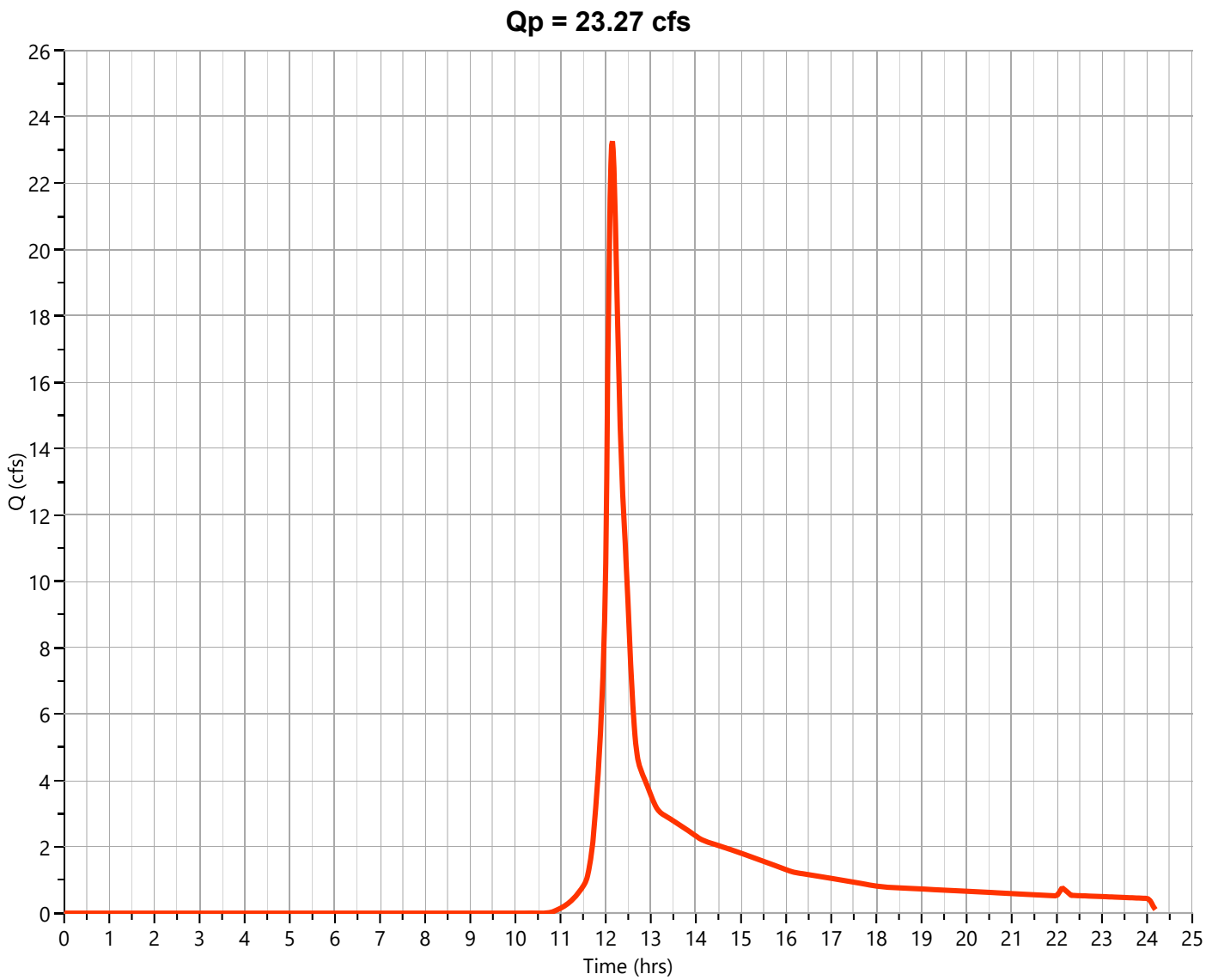
Pre SA-3

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 23.27 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 89,718 cuft
Drainage Area	= 23.33 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

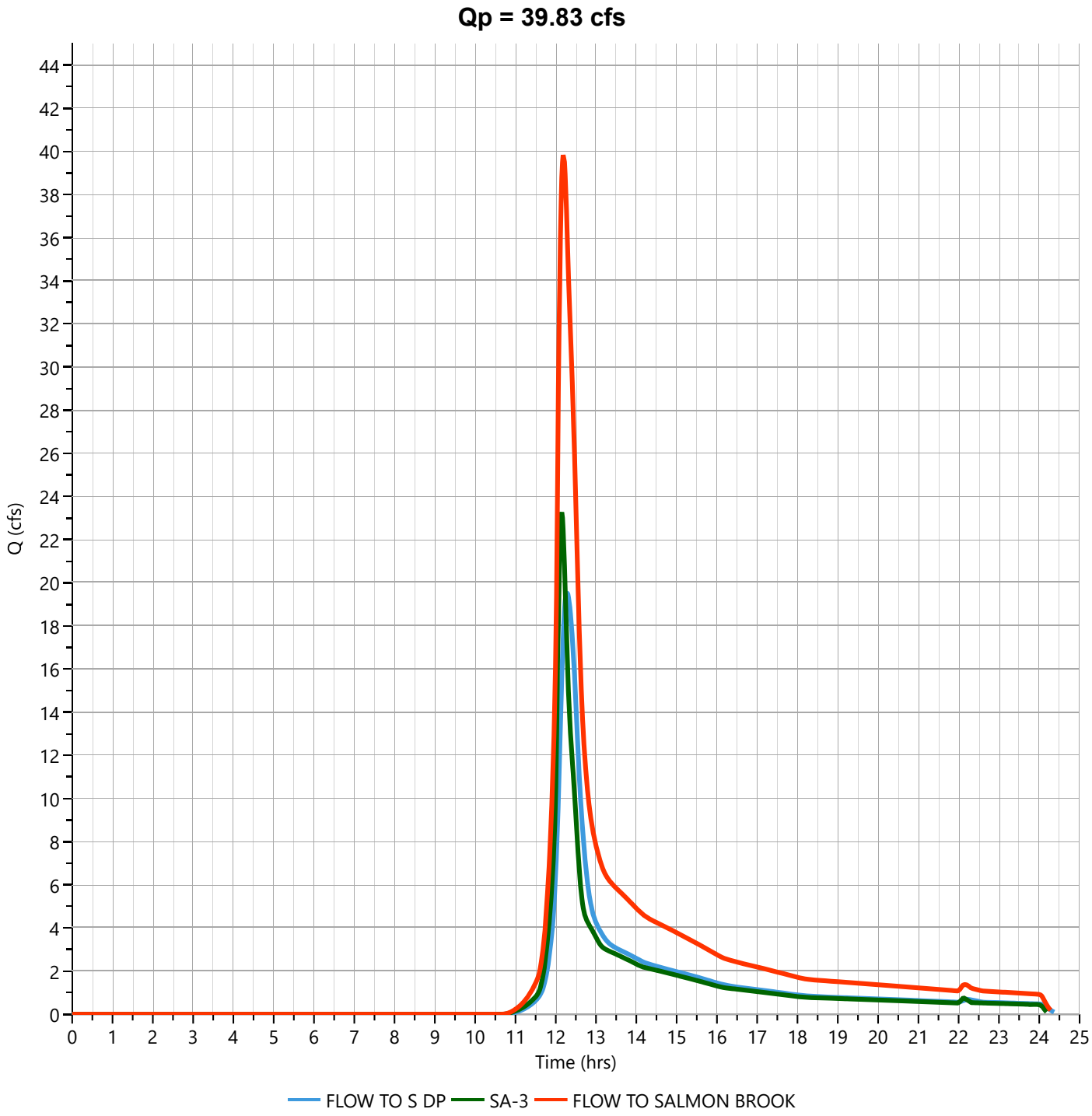
AREA (ac)	CN	DESCRIPTION
17.316	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
23.33	**73**	Weighted CN Method Employed



Pre FLOW TO SALMON BROOK

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 39.83 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Hydrograph Volume	= 184,927 cuft
Inflow Hydrographs	= 2, 3	Total Contrib. Area	= 48.29 ac



Design Storm Report

Custom Storm filename:

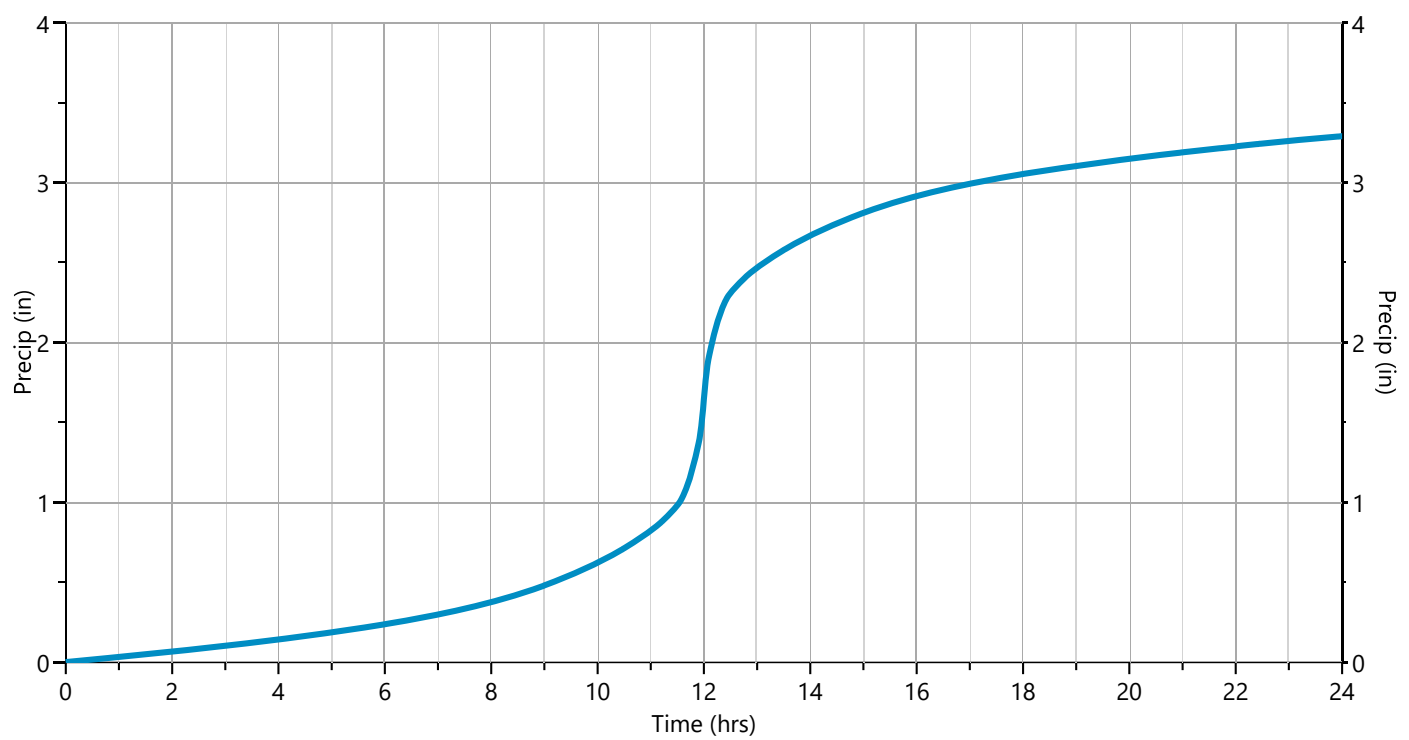
Hydrology Studio v 3.0.0.16

09-29-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	✔ 2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 2-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.006483	11.68	0.014969	11.87	0.023816	12.05	0.049432	12.23	0.019795
11.52	0.006909	11.70	0.015774	11.88	0.024620	12.07	0.042688	12.25	0.018991
11.53	0.007731	11.72	0.016578	11.90	0.025424	12.08	0.035943	12.27	0.018187
11.55	0.008536	11.73	0.017382	11.92	0.029293	12.10	0.029198	12.28	0.017382
11.57	0.009340	11.75	0.018186	11.93	0.035943	12.12	0.025521	12.30	0.016578
11.58	0.010144	11.77	0.018991	11.95	0.042688	12.13	0.024620	12.32	0.015774
11.60	0.010948	11.78	0.019795	11.97	0.049432	12.15	0.023816	12.33	0.014969
11.62	0.011752	11.80	0.020599	11.98	0.056177	12.17	0.023012	12.35	0.014165
11.63	0.012557	11.82	0.021403	**12.00**	**0.062922**	12.18	0.022208	12.37	0.013361
11.65	0.013361	11.83	0.022208	12.02	0.062770	12.20	0.021403	12.38	0.012557
11.67	0.014165	11.85	0.023012	12.03	0.056177	12.22	0.020599	12.40	0.011753



Hydrograph 5-yr Summary

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre FLOW TO N DP	28.13	12.15	106,273	----		
2	NRCS Runoff	Pre FLOW TO S DP	34.50	12.27	161,092	----		
3	NRCS Runoff	Pre SA-3	40.98	12.13	151,801	----		
4	Junction	Pre FLOW TO SALMON BROOK	70.58	12.18	312,893	2, 3		

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

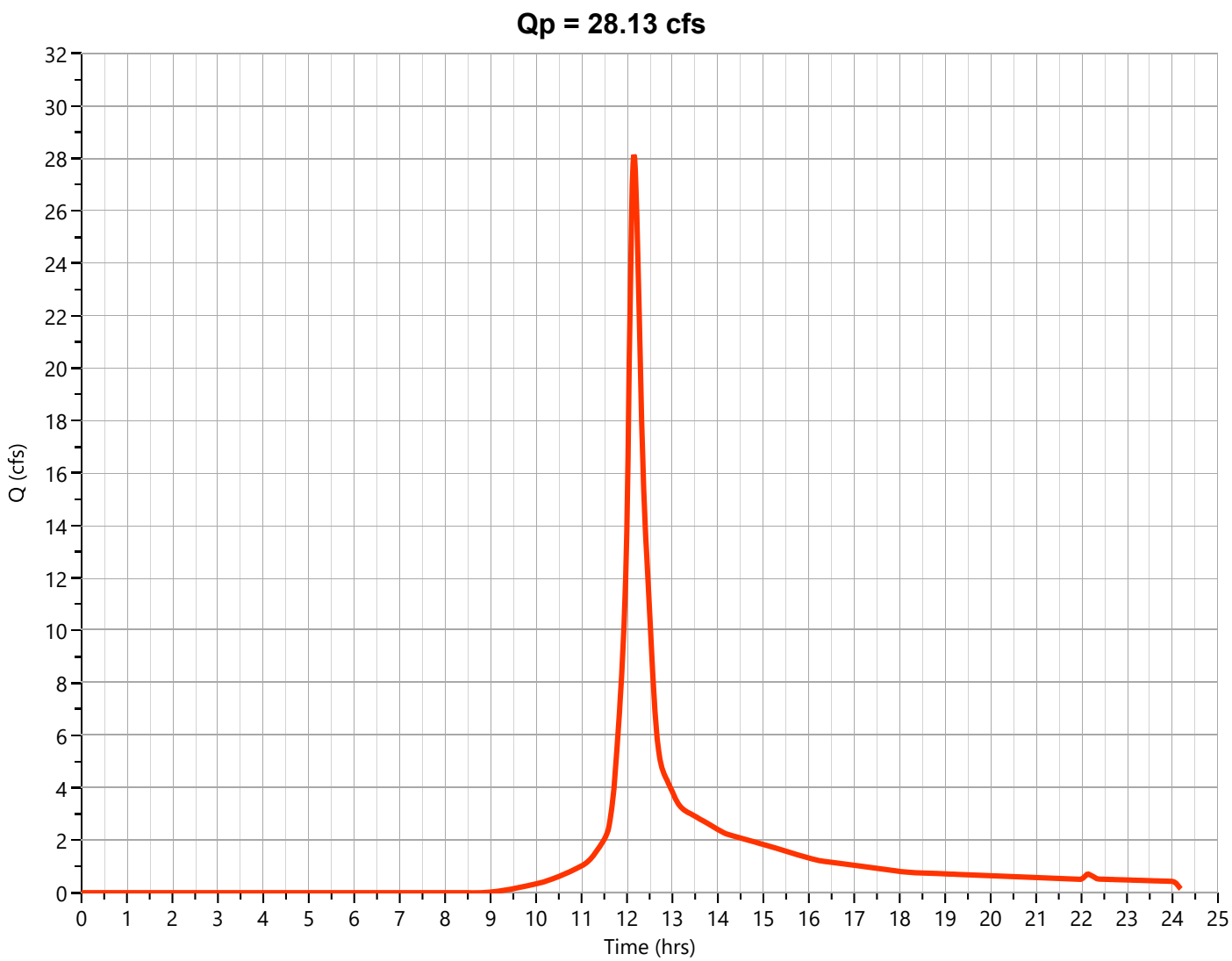
Pre FLOW TO N DP

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 28.13 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 106,273 cuft
Drainage Area	= 14.4 ac	Curve Number	= 77*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.36 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.973	98	PAVE
4.451	70	WOODS
2.191	91	BARE SOIL
6.785	74	LAWN
14.4	**77**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

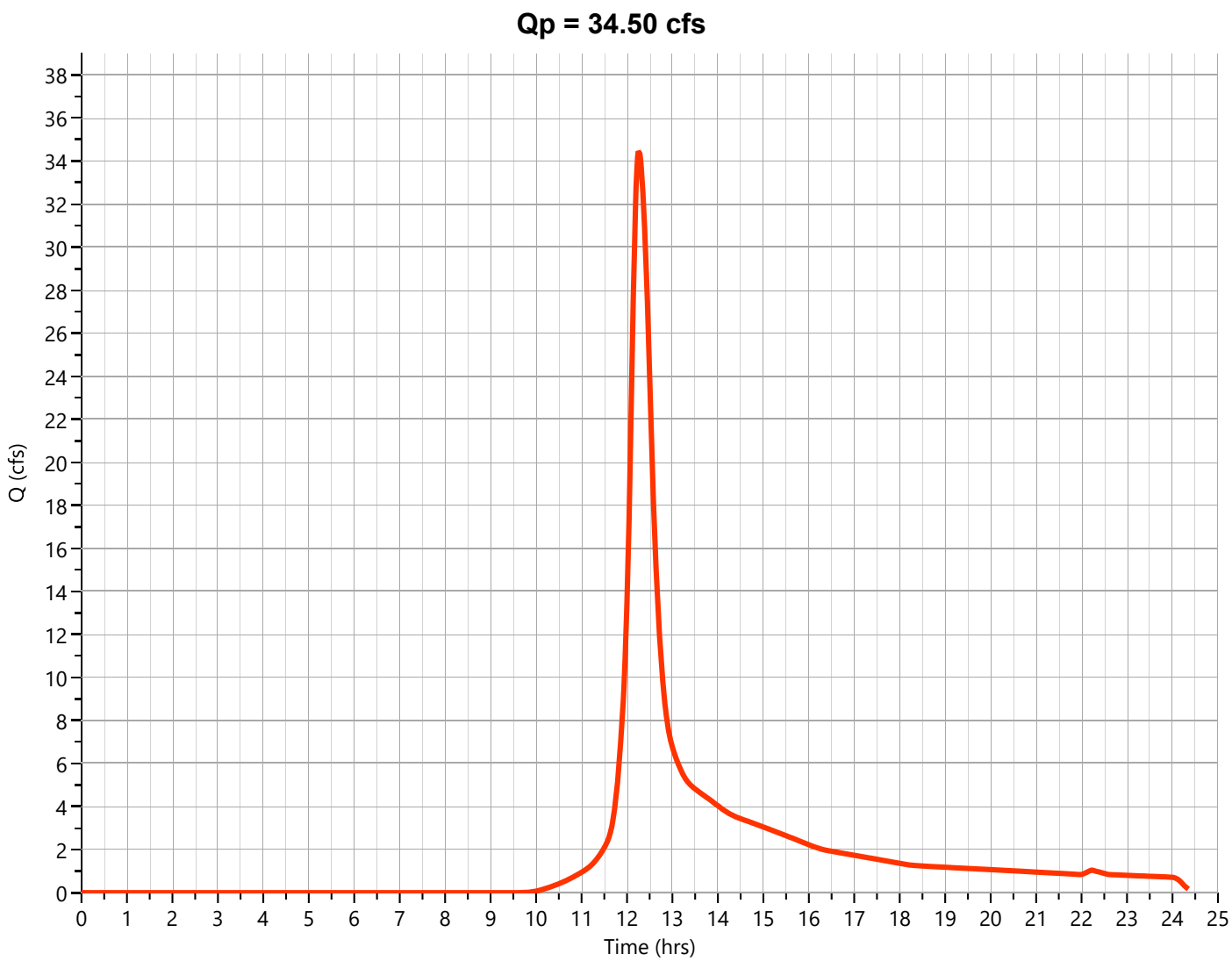
Pre FLOW TO S DP

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 34.50 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 161,092 cuft
Drainage Area	= 24.96 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.79 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.713	98	PAVE
0.891	91	BARE SOIL
12.719	70	WOODS
10.633	74	LAWN
24.96	**73**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

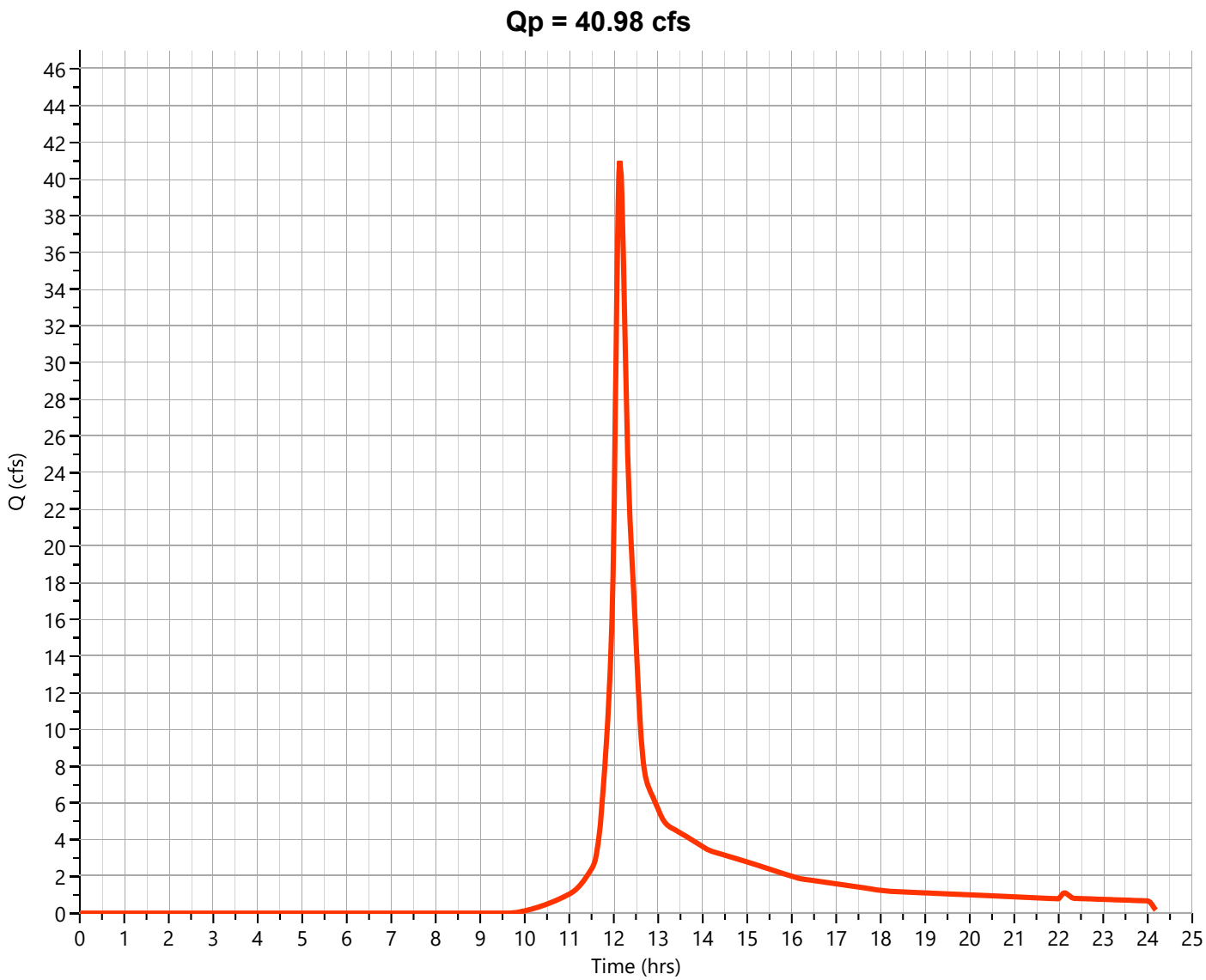
Pre SA-3

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 40.98 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 151,801 cuft
Drainage Area	= 23.33 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

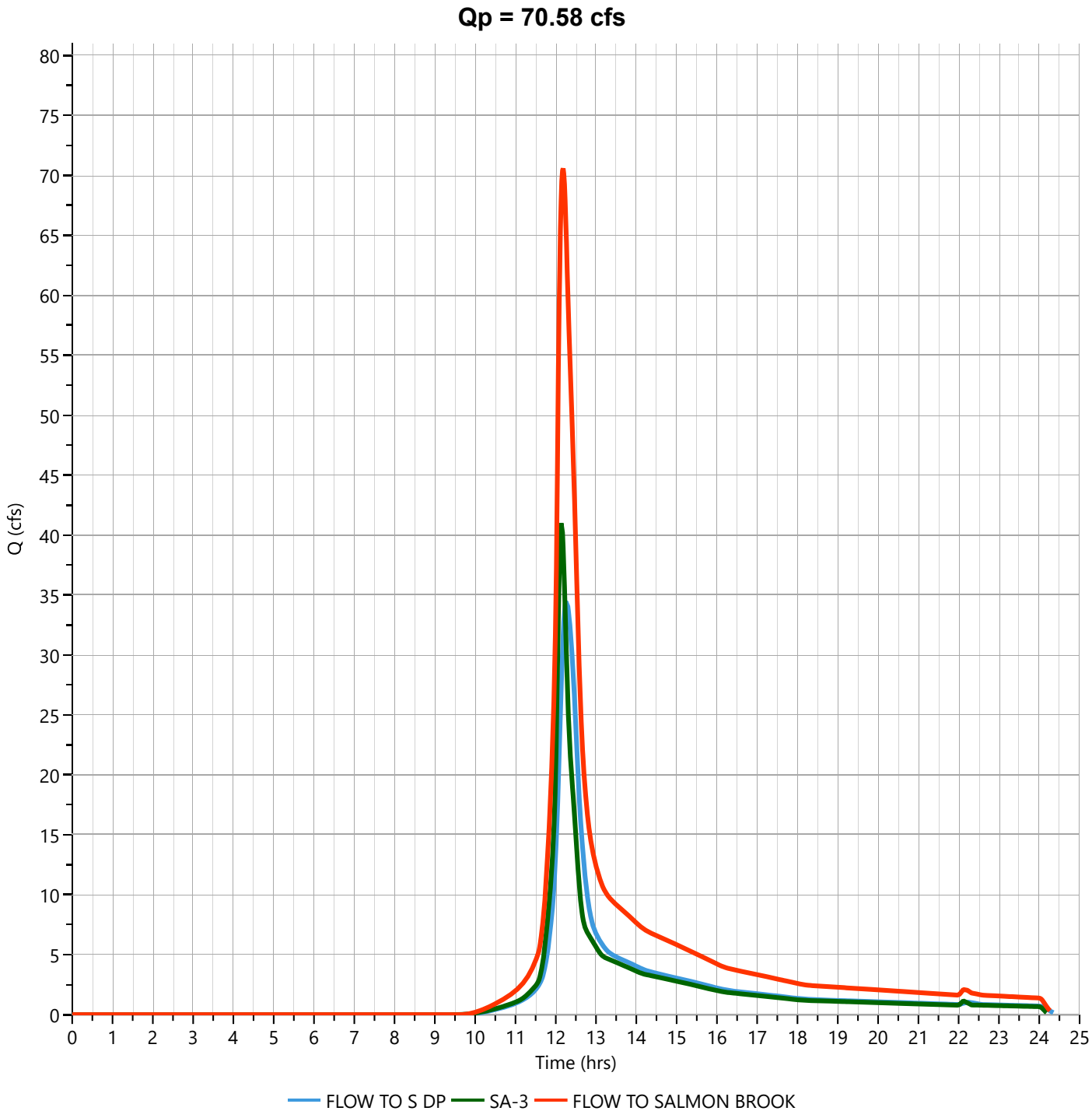
AREA (ac)	CN	DESCRIPTION
17.316	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
23.33	**73**	Weighted CN Method Employed



Pre FLOW TO SALMON BROOK

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 70.58 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Hydrograph Volume	= 312,893 cuft
Inflow Hydrographs	= 2, 3	Total Contrib. Area	= 48.29 ac



Design Storm Report

Custom Storm filename:

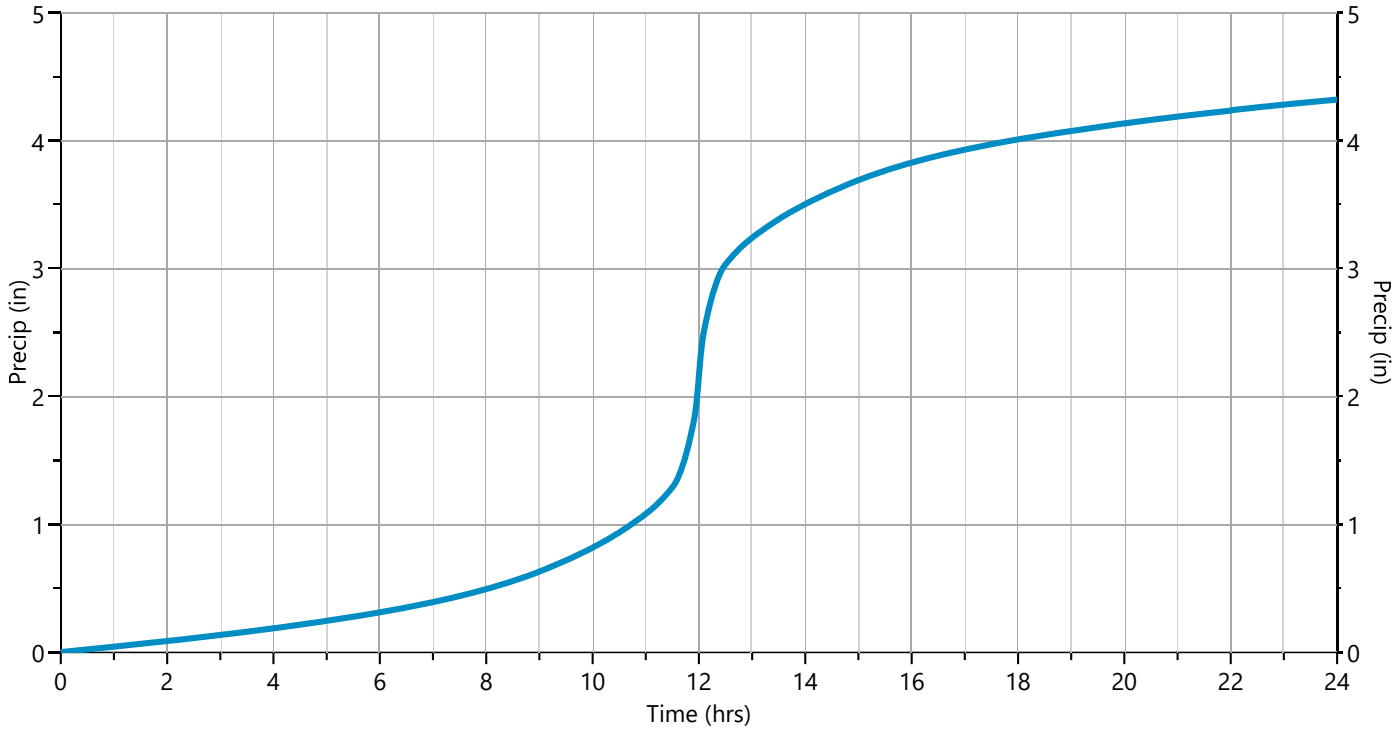
Hydrology Studio v 3.0.0.16

09-29-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	✔ 5-yr	10-yr	25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 5-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.008513	11.68	0.019656	11.87	0.031272	12.05	0.064908	12.23	0.025992
11.52	0.009072	11.70	0.020712	11.88	0.032328	12.07	0.056052	12.25	0.024936
11.53	0.010152	11.72	0.021768	11.90	0.033384	12.08	0.047196	12.27	0.023880
11.55	0.011208	11.73	0.022824	11.92	0.038463	12.10	0.038340	12.28	0.022824
11.57	0.012264	11.75	0.023880	11.93	0.047196	12.12	0.033511	12.30	0.021768
11.58	0.013320	11.77	0.024936	11.95	0.056052	12.13	0.032328	12.32	0.020712
11.60	0.014376	11.78	0.025992	11.97	0.064908	12.15	0.031272	12.33	0.019656
11.62	0.015432	11.80	0.027048	11.98	0.073764	12.17	0.030216	12.35	0.018600
11.63	0.016488	11.82	0.028104	**12.00**	**0.082620**	12.18	0.029160	12.37	0.017544
11.65	0.017544	11.83	0.029160	12.02	0.082422	12.20	0.028104	12.38	0.016488
11.67	0.018600	11.85	0.030216	12.03	0.073764	12.22	0.027048	12.40	0.015432



Hydrograph 10-yr Summary

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre FLOW TO N DP	37.97	12.15	142,751	----		
2	NRCS Runoff	Pre FLOW TO S DP	48.09	12.25	221,596	----		
3	NRCS Runoff	Pre SA-3	57.15	12.13	208,815	----		
4	Junction	Pre FLOW TO SALMON BROOK	98.48	12.17	430,411	2, 3		

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

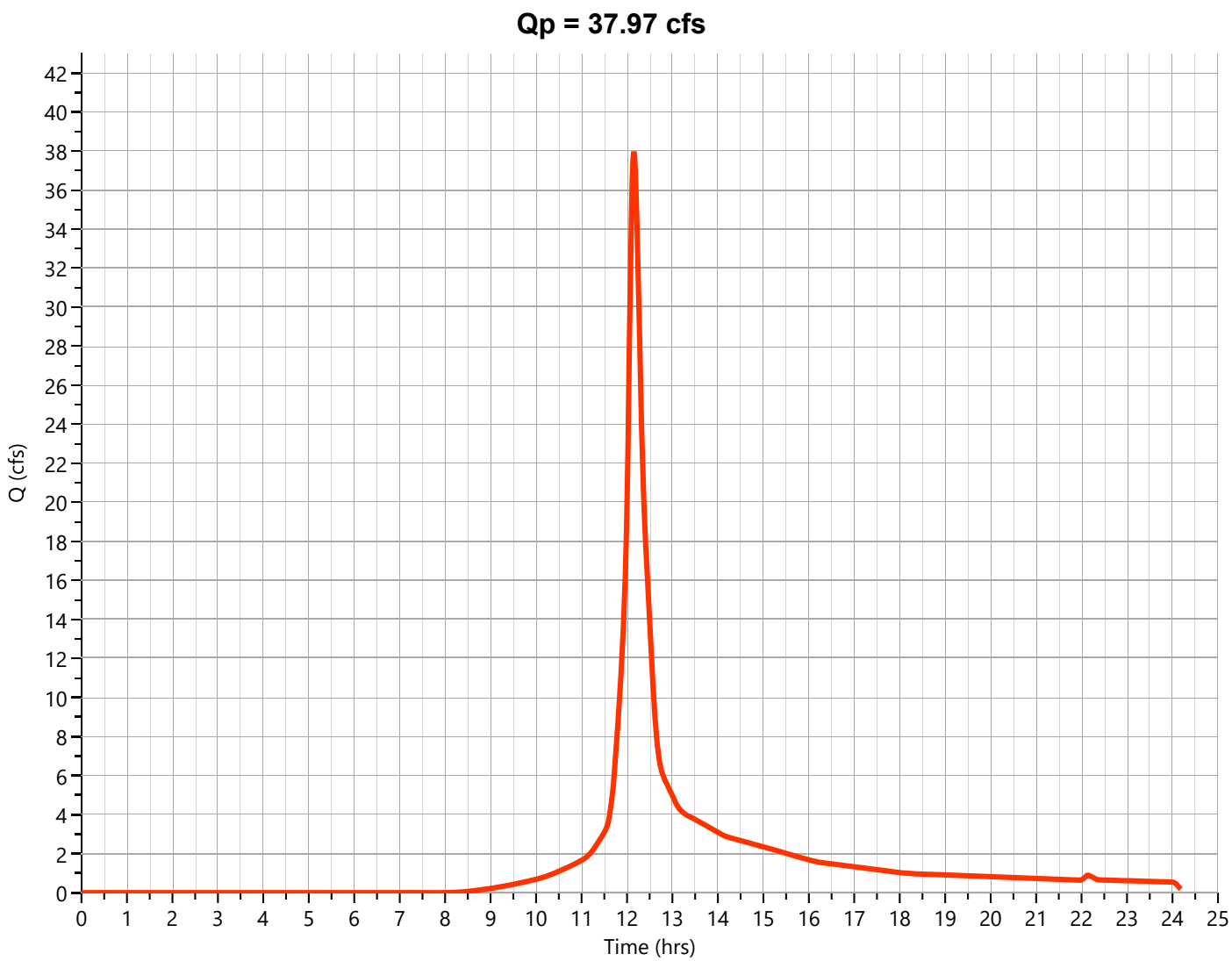
Pre FLOW TO N DP

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 37.97 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 142,751 cuft
Drainage Area	= 14.4 ac	Curve Number	= 77*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.36 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.973	98	PAVE
4.451	70	WOODS
2.191	91	BARE SOIL
6.785	74	LAWN
14.4	**77**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

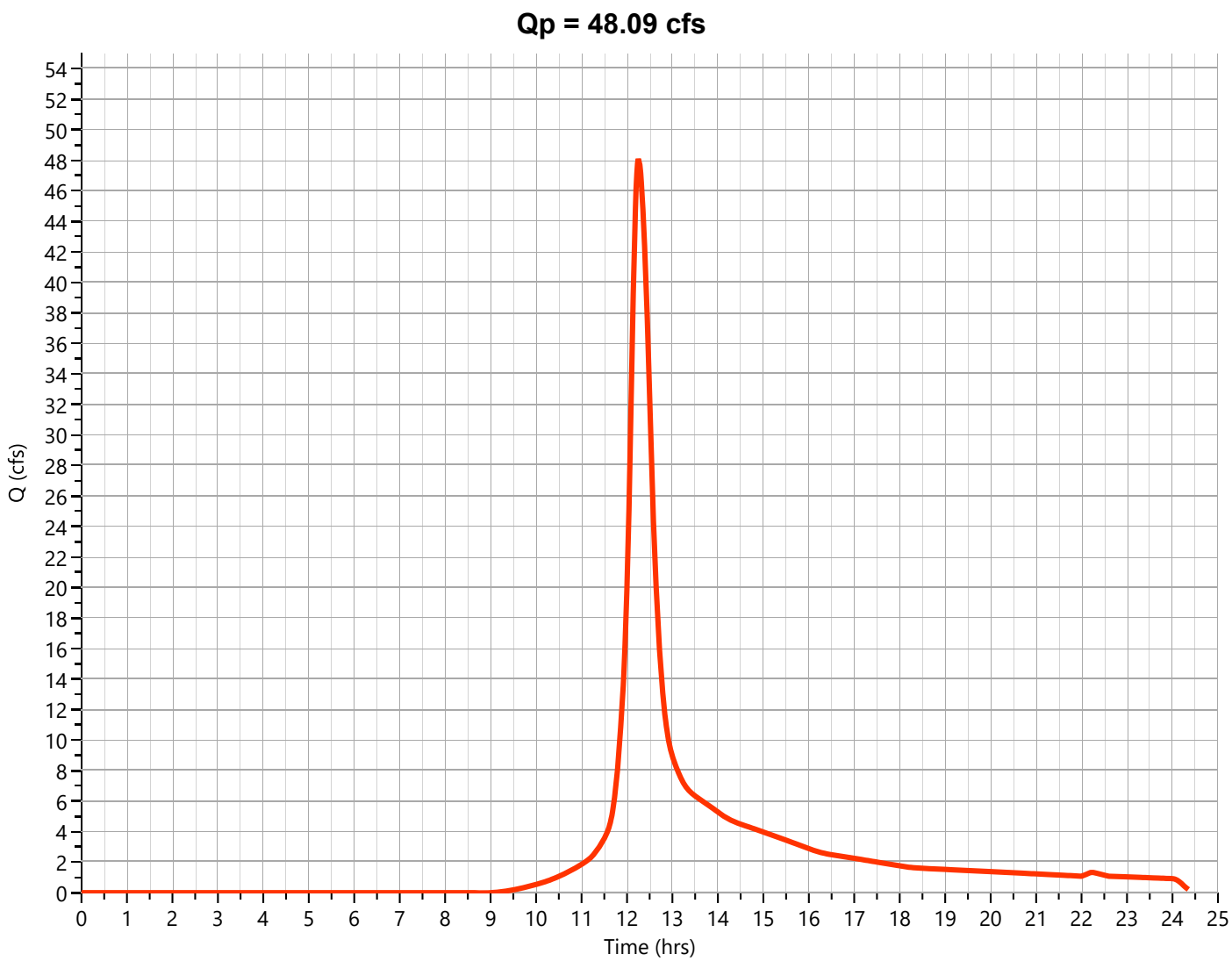
Pre FLOW TO S DP

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 48.09 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 221,596 cuft
Drainage Area	= 24.96 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.79 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.713	98	PAVE
0.891	91	BARE SOIL
12.719	70	WOODS
10.633	74	LAWN
24.96	**73**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

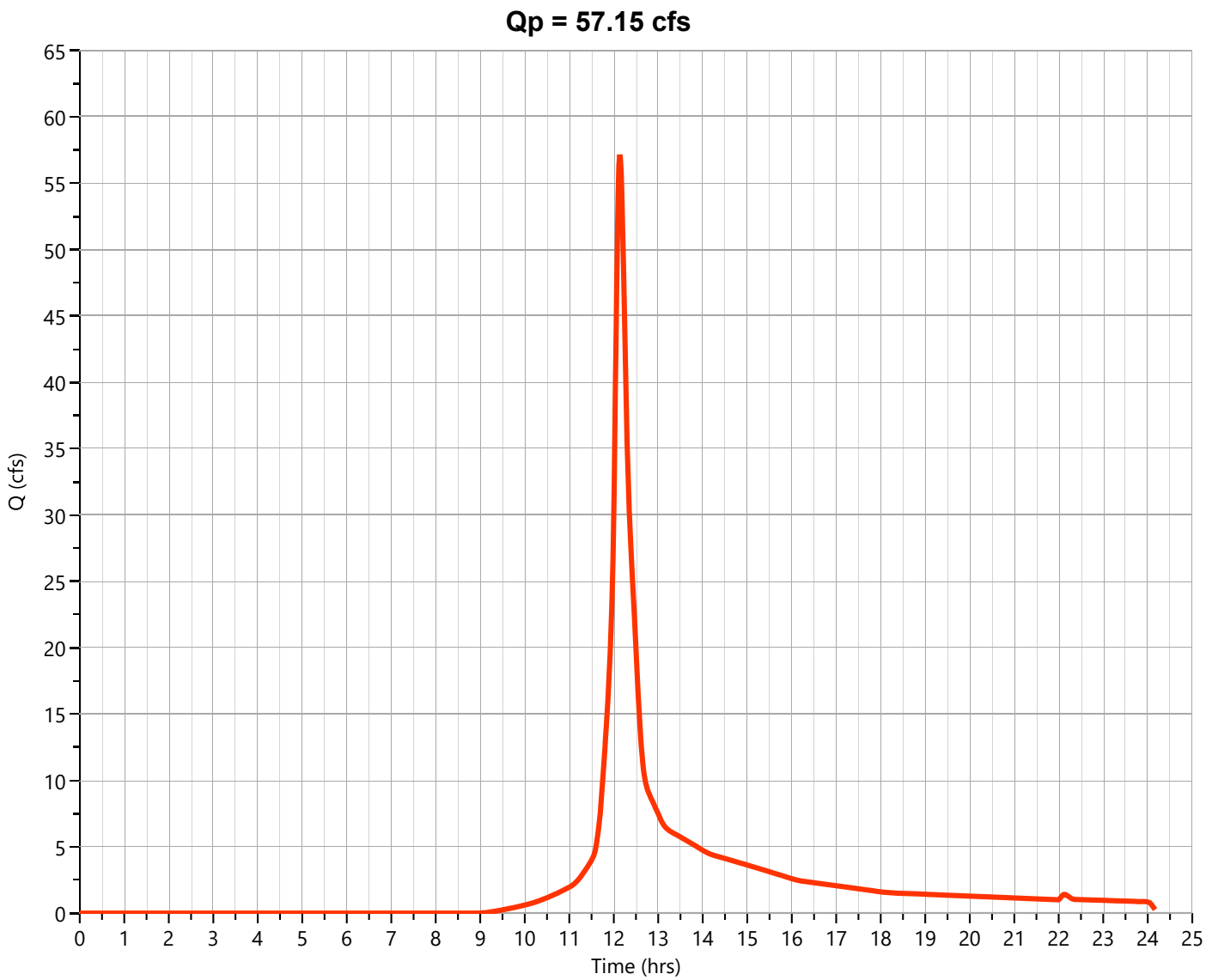
Pre SA-3

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 57.15 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 208,815 cuft
Drainage Area	= 23.33 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

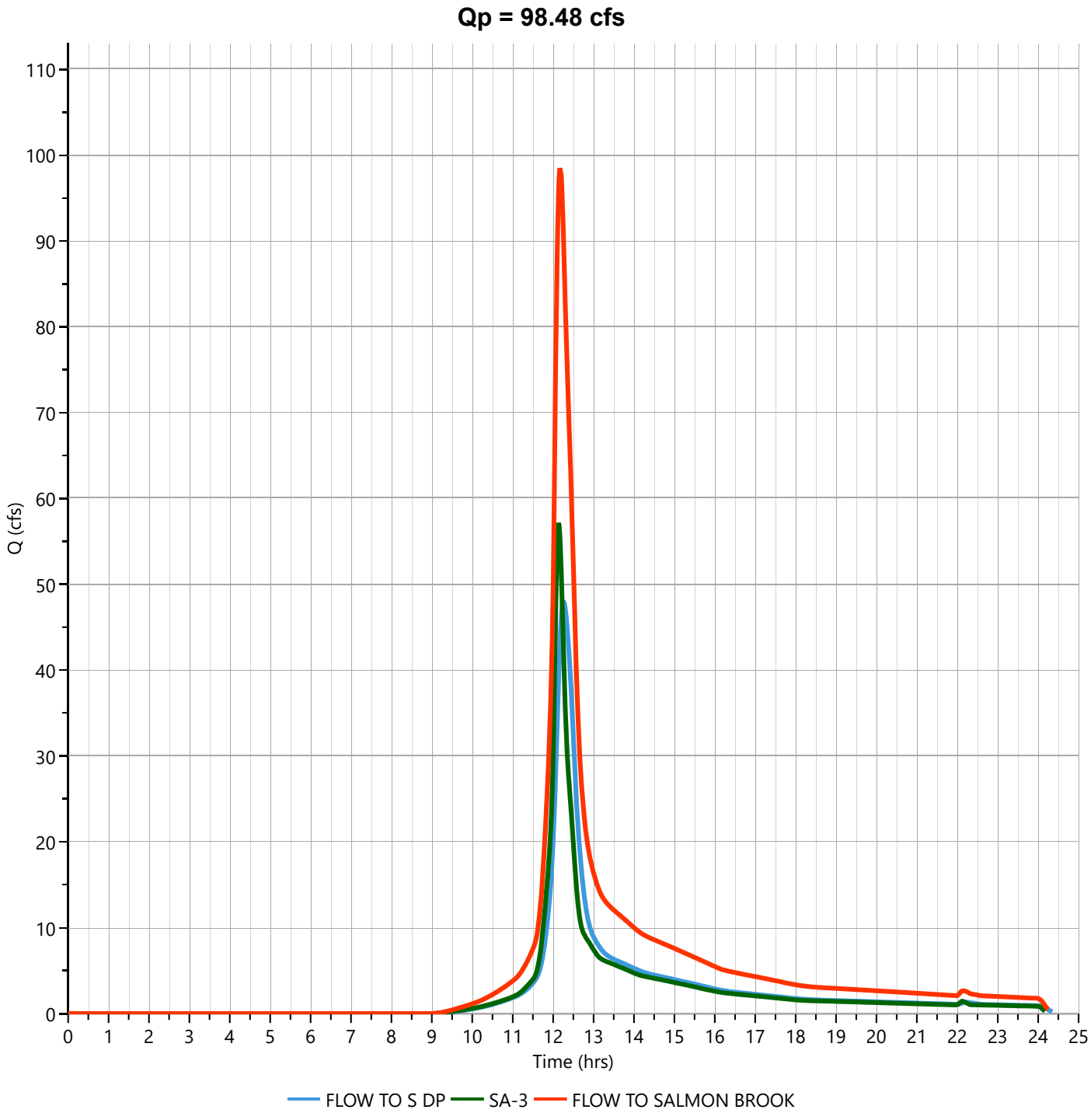
AREA (ac)	CN	DESCRIPTION
17.316	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
23.33	**73**	Weighted CN Method Employed



Pre FLOW TO SALMON BROOK

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 98.48 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 430,411 cuft
Inflow Hydrographs	= 2, 3	Total Contrib. Area	= 48.29 ac



Design Storm Report

Custom Storm filename:

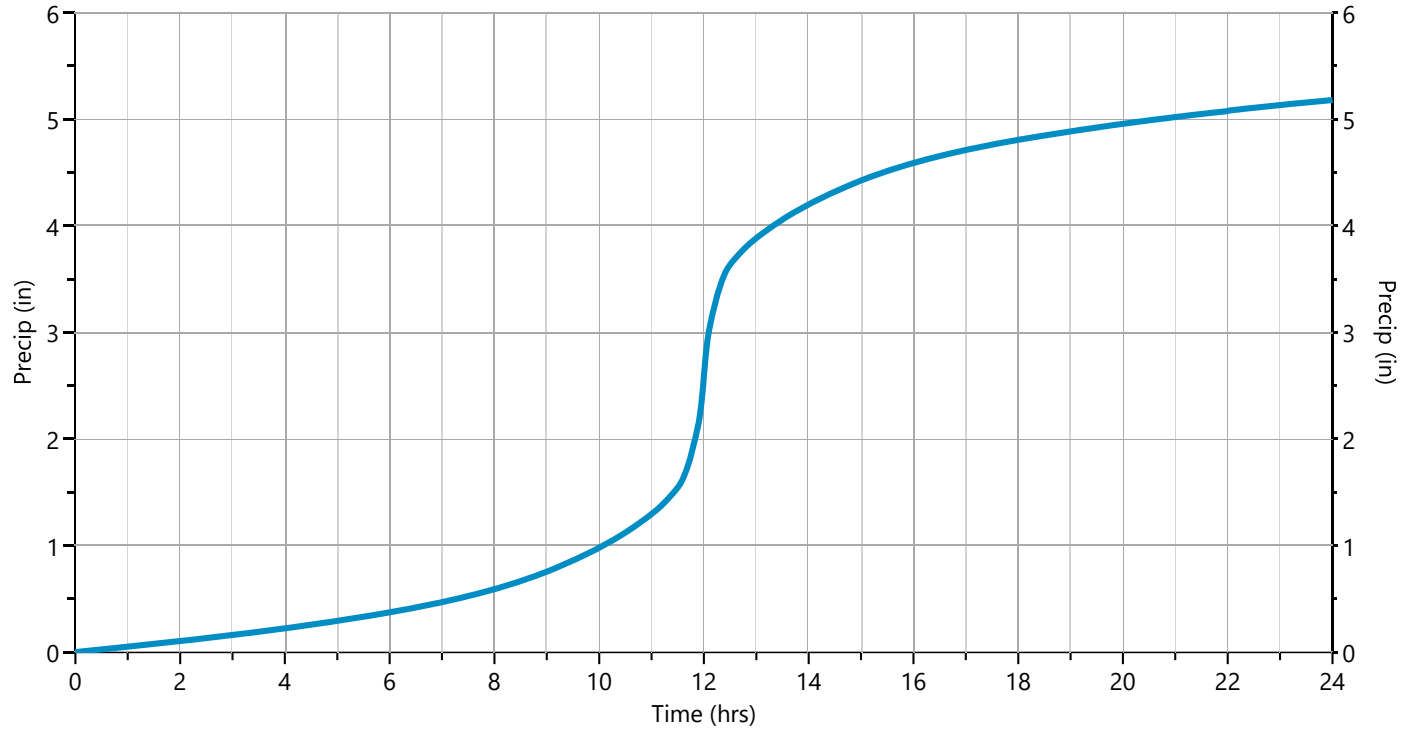
Hydrology Studio v 3.0.0.16

09-29-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	✔ 10-yr	25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 10-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.010207	11.68	0.023569	11.87	0.037498	12.05	0.077829	12.23	0.031166
11.52	0.010877	11.70	0.024835	11.88	0.038764	12.07	0.067210	12.25	0.029900
11.53	0.012173	11.72	0.026101	11.90	0.040030	12.08	0.056591	12.27	0.028634
11.55	0.013439	11.73	0.027368	11.92	0.046120	12.10	0.045972	12.28	0.027368
11.57	0.014705	11.75	0.028634	11.93	0.056592	12.12	0.040182	12.30	0.026101
11.58	0.015972	11.77	0.029900	11.95	0.067211	12.13	0.038764	12.32	0.024835
11.60	0.017238	11.78	0.031166	11.97	0.077830	12.15	0.037498	12.33	0.023569
11.62	0.018504	11.80	0.032432	11.98	0.088449	12.17	0.036231	12.35	0.022303
11.63	0.019770	11.82	0.033699	**12.00**	**0.099068**	12.18	0.034965	12.37	0.021037
11.65	0.021037	11.83	0.034965	12.02	0.098830	12.20	0.033699	12.38	0.019770
11.67	0.022303	11.85	0.036231	12.03	0.088448	12.22	0.032433	12.40	0.018504



Hydrograph 25-yr Summary

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre FLOW TO N DP	51.78	12.15	194,834	----		
2	NRCS Runoff	Pre FLOW TO S DP	67.59	12.25	309,298	----		
3	NRCS Runoff	Pre SA-3	80.26	12.13	291,459	----		
4	Junction	Pre FLOW TO SALMON BROOK	138.7	12.17	600,758	2, 3		

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

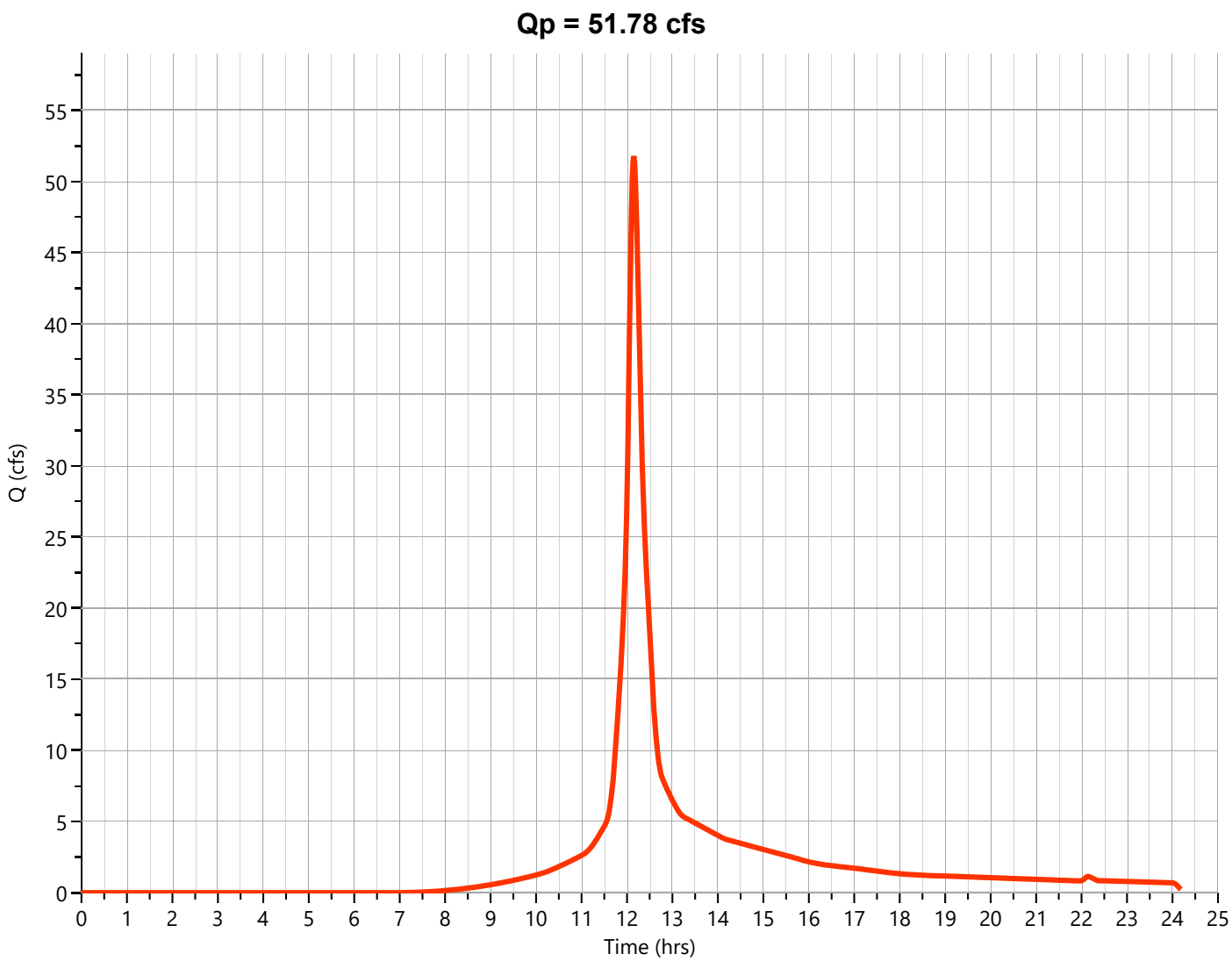
Pre FLOW TO N DP

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 51.78 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 194,834 cuft
Drainage Area	= 14.4 ac	Curve Number	= 77*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.36 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.973	98	PAVE
4.451	70	WOODS
2.191	91	BARE SOIL
6.785	74	LAWN
14.4	**77**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

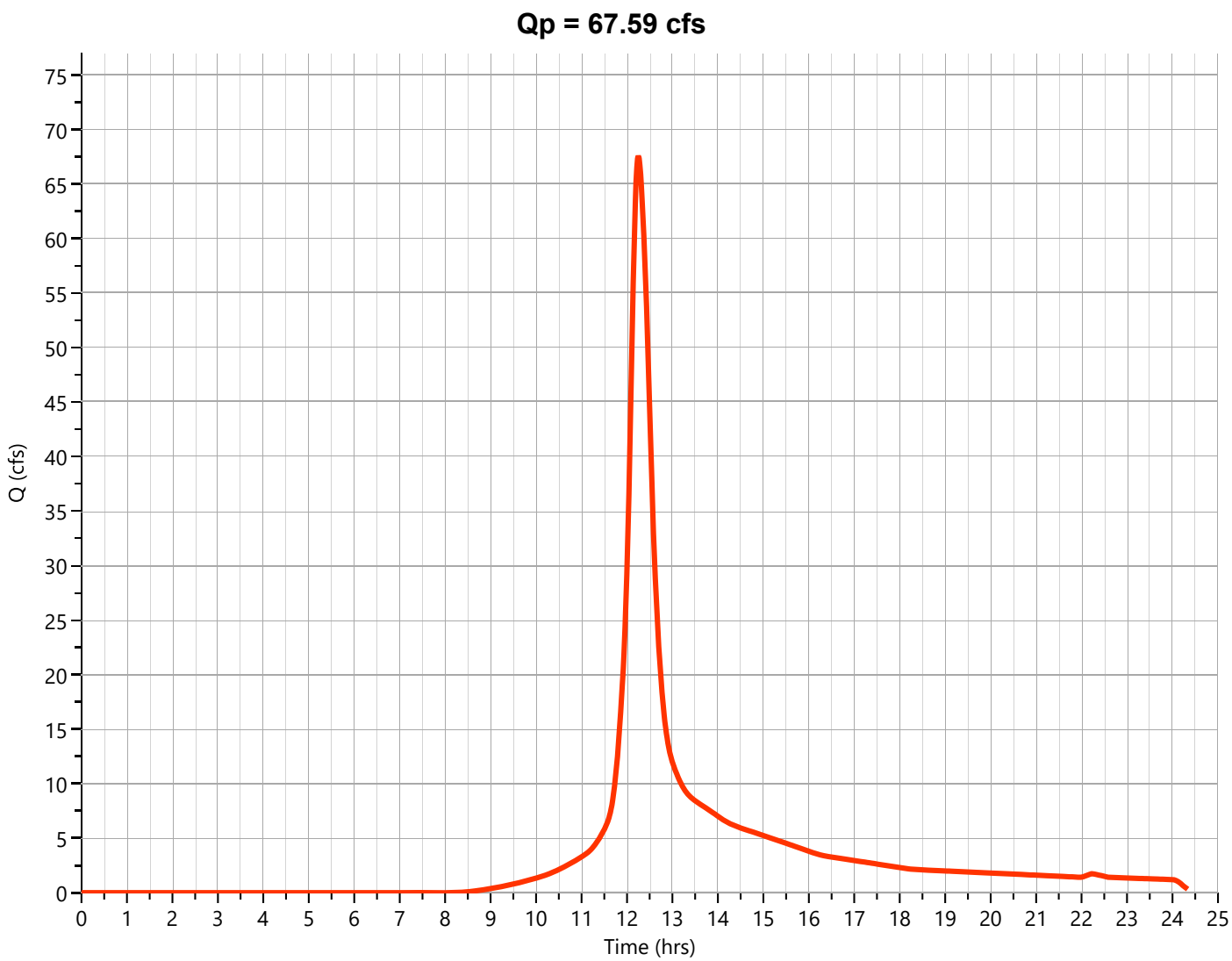
Pre FLOW TO S DP

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 67.59 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 309,298 cuft
Drainage Area	= 24.96 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.79 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.713	98	PAVE
0.891	91	BARE SOIL
12.719	70	WOODS
10.633	74	LAWN
24.96	**73**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

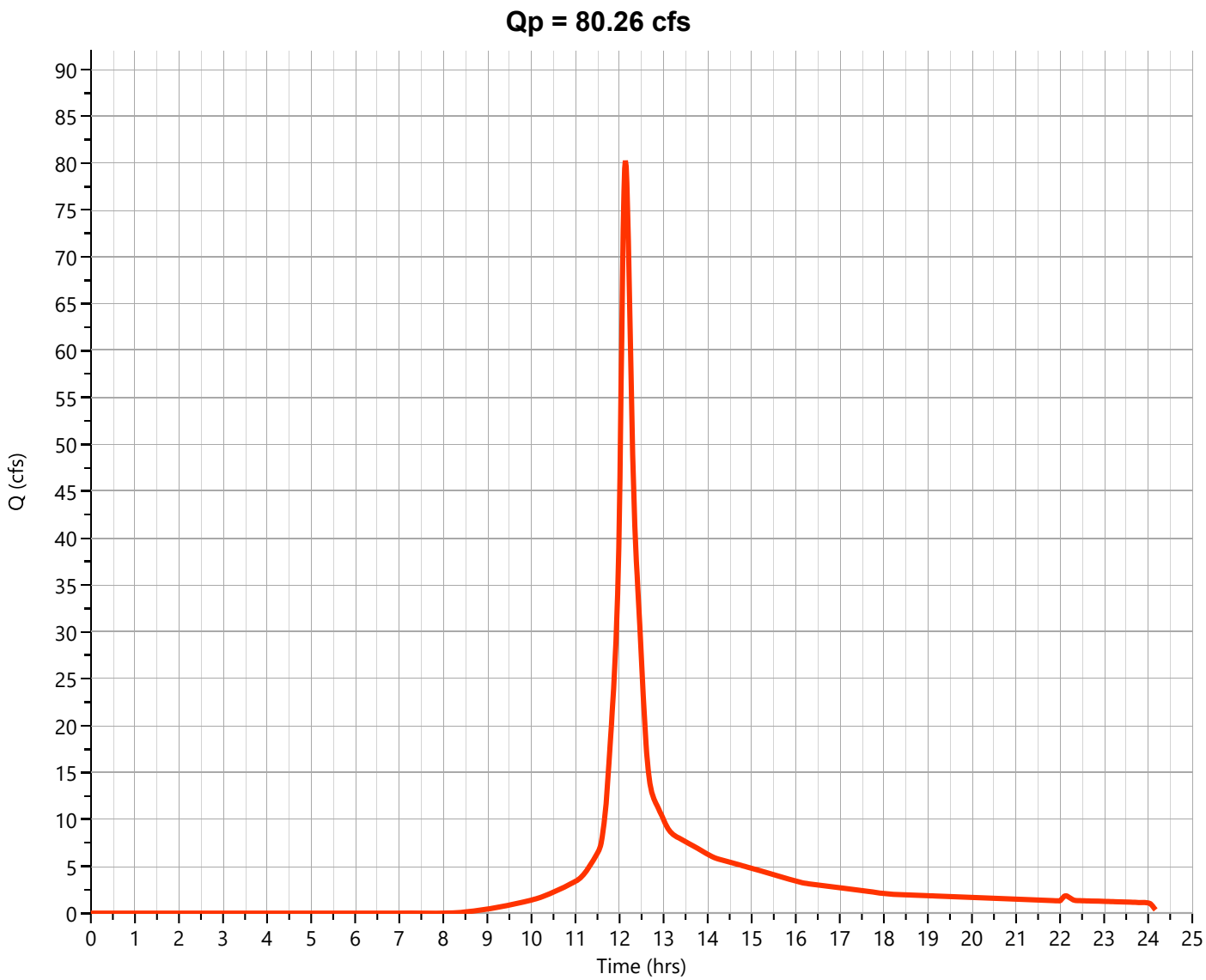
Pre SA-3

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 80.26 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 291,459 cuft
Drainage Area	= 23.33 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

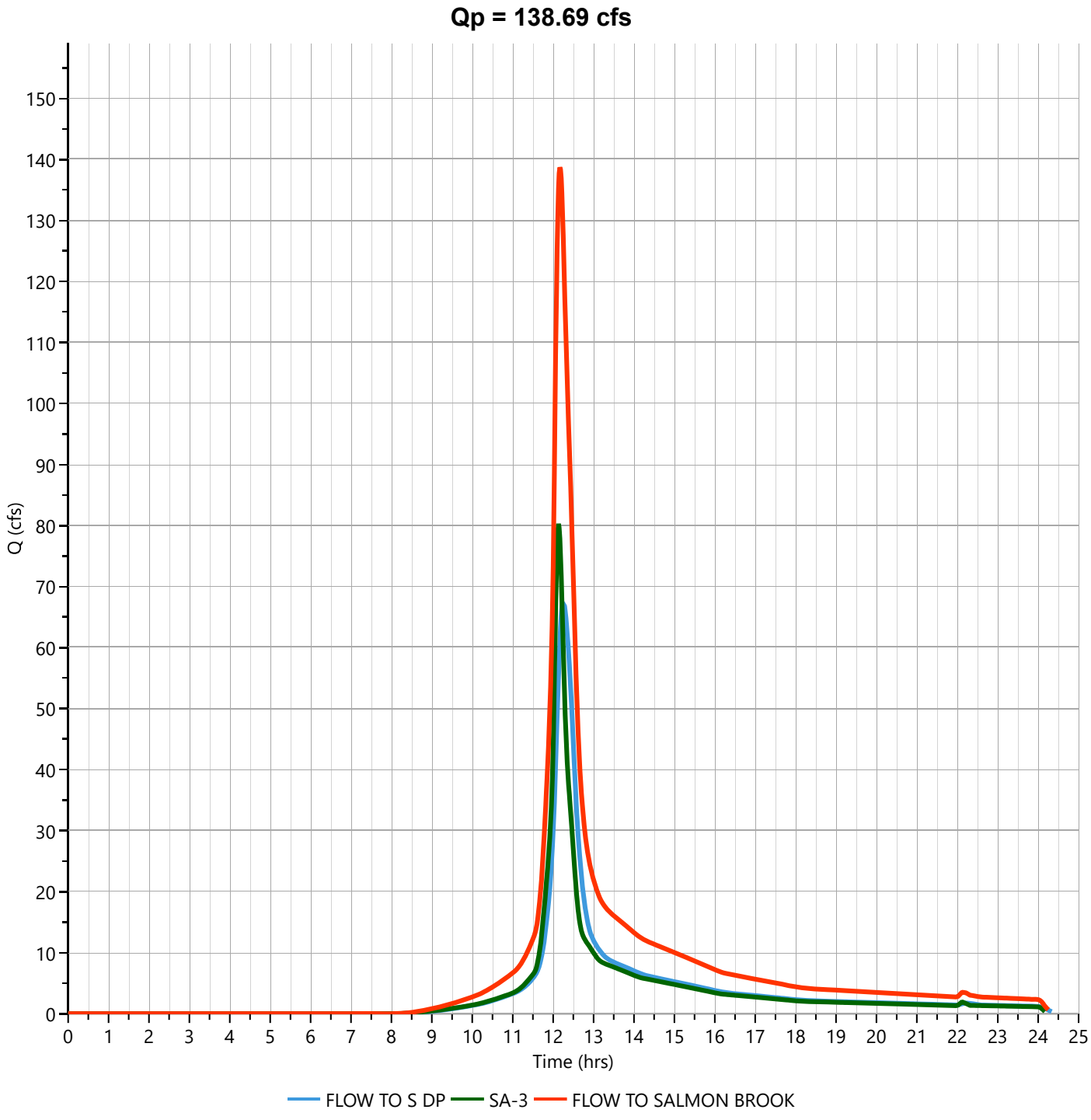
AREA (ac)	CN	DESCRIPTION
17.316	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
23.33	**73**	Weighted CN Method Employed



Pre FLOW TO SALMON BROOK

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 138.7 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 600,758 cuft
Inflow Hydrographs	= 2, 3	Total Contrib. Area	= 48.29 ac



Design Storm Report

Custom Storm filename:

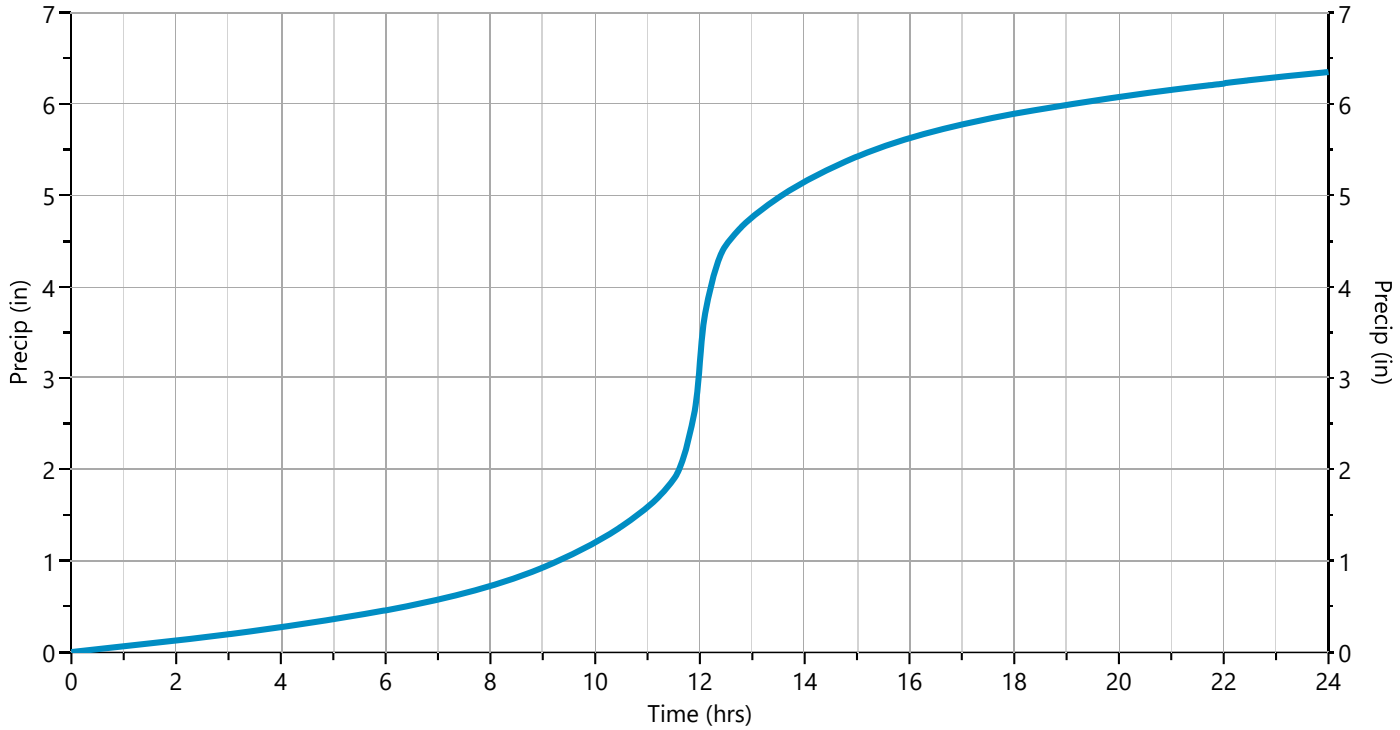
Hydrology Studio v 3.0.0.16

09-29-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	✔ 25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 25-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.012513	11.68	0.028893	11.87	0.045967	12.05	0.095408	12.23	0.038206
11.52	0.013334	11.70	0.030445	11.88	0.047519	12.07	0.082391	12.25	0.036654
11.53	0.014922	11.72	0.031997	11.90	0.049071	12.08	0.069373	12.27	0.035101
11.55	0.016475	11.73	0.033549	11.92	0.056537	12.10	0.056356	12.28	0.033549
11.57	0.018027	11.75	0.035101	11.93	0.069374	12.12	0.049258	12.30	0.031997
11.58	0.019579	11.77	0.036654	11.95	0.082392	12.13	0.047519	12.32	0.030445
11.60	0.021131	11.78	0.038206	11.97	0.095409	12.15	0.045967	12.33	0.028893
11.62	0.022684	11.80	0.039758	11.98	0.108427	12.17	0.044415	12.35	0.027340
11.63	0.024236	11.82	0.041310	**12.00**	**0.121444**	12.18	0.042862	12.37	0.025788
11.65	0.025788	11.83	0.042862	12.02	0.121153	12.20	0.041310	12.38	0.024236
11.67	0.027340	11.85	0.044415	12.03	0.108426	12.22	0.039758	12.40	0.022684



Hydrograph 50-yr Summary

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre FLOW TO N DP	62.71	12.15	236,705	----		
2	NRCS Runoff	Pre FLOW TO S DP	83.23	12.25	380,570	----		
3	NRCS Runoff	Pre SA-3	98.78	12.13	358,621	----		
4	Junction	Pre FLOW TO SALMON BROOK	171.0	12.17	739,191	2, 3		

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

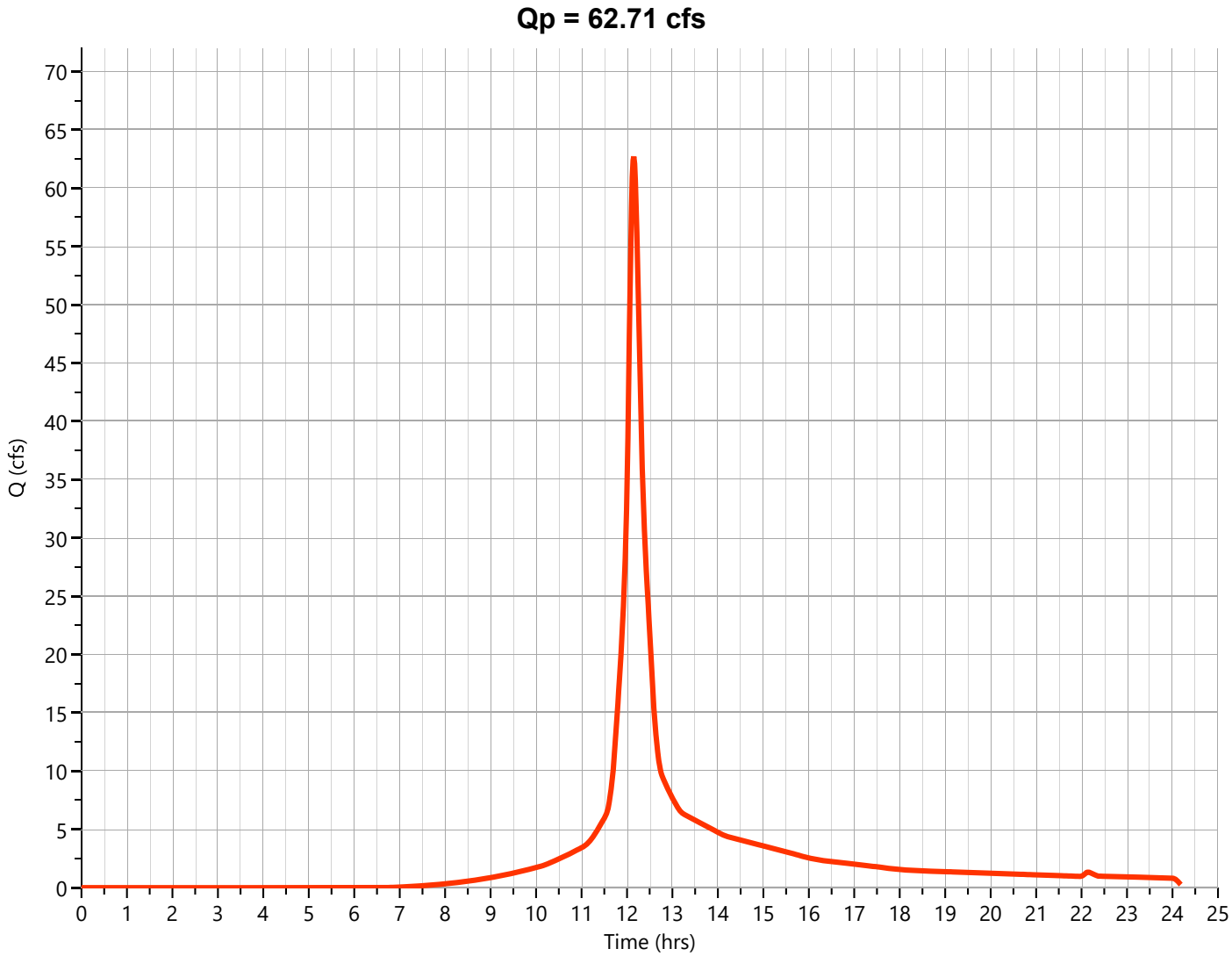
Pre FLOW TO N DP

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 62.71 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 236,705 cuft
Drainage Area	= 14.4 ac	Curve Number	= 77*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.36 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.973	98	PAVE
4.451	70	WOODS
2.191	91	BARE SOIL
6.785	74	LAWN
14.4	**77**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

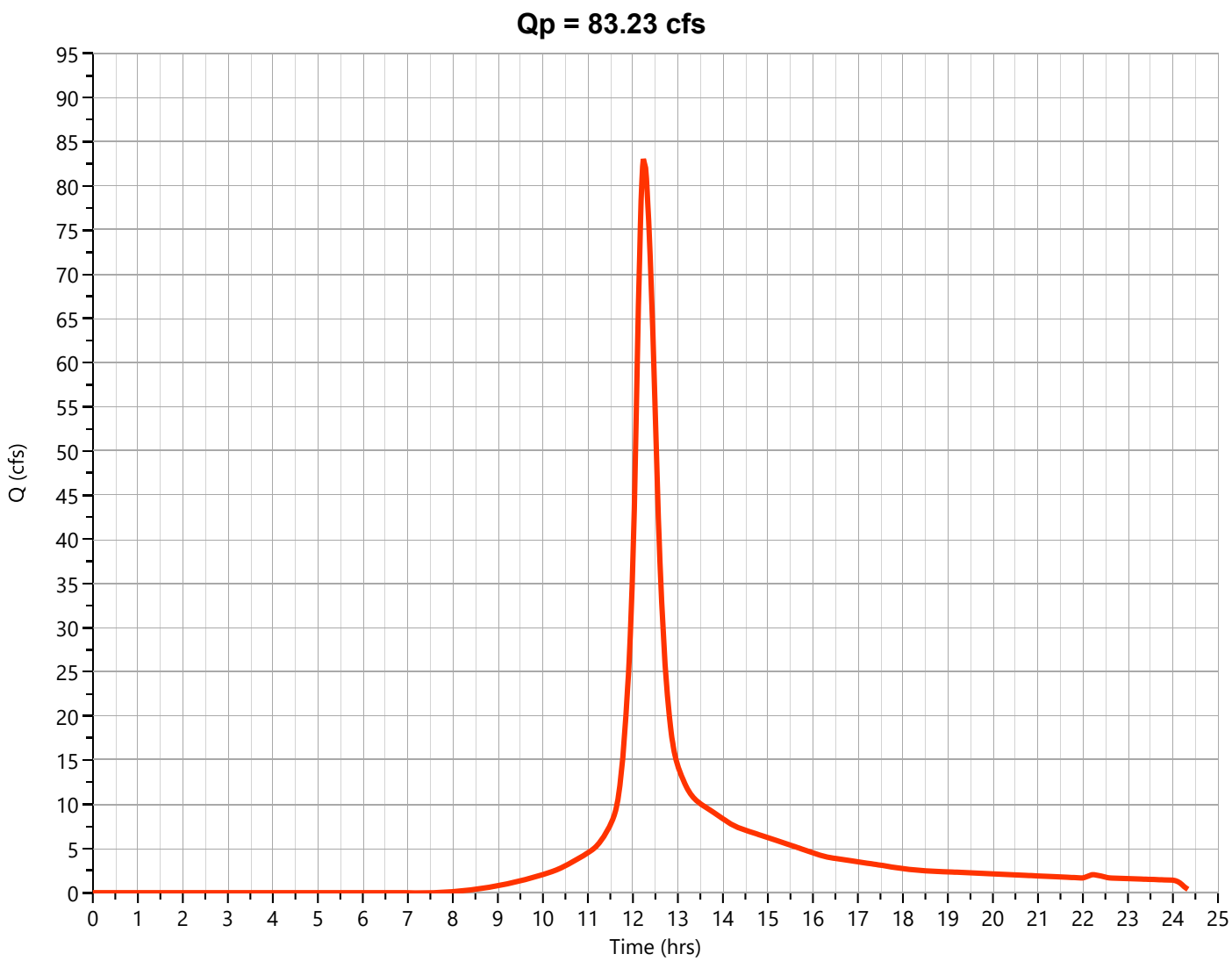
Pre FLOW TO S DP

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 83.23 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 380,570 cuft
Drainage Area	= 24.96 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.79 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.713	98	PAVE
0.891	91	BARE SOIL
12.719	70	WOODS
10.633	74	LAWN
24.96	**73**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

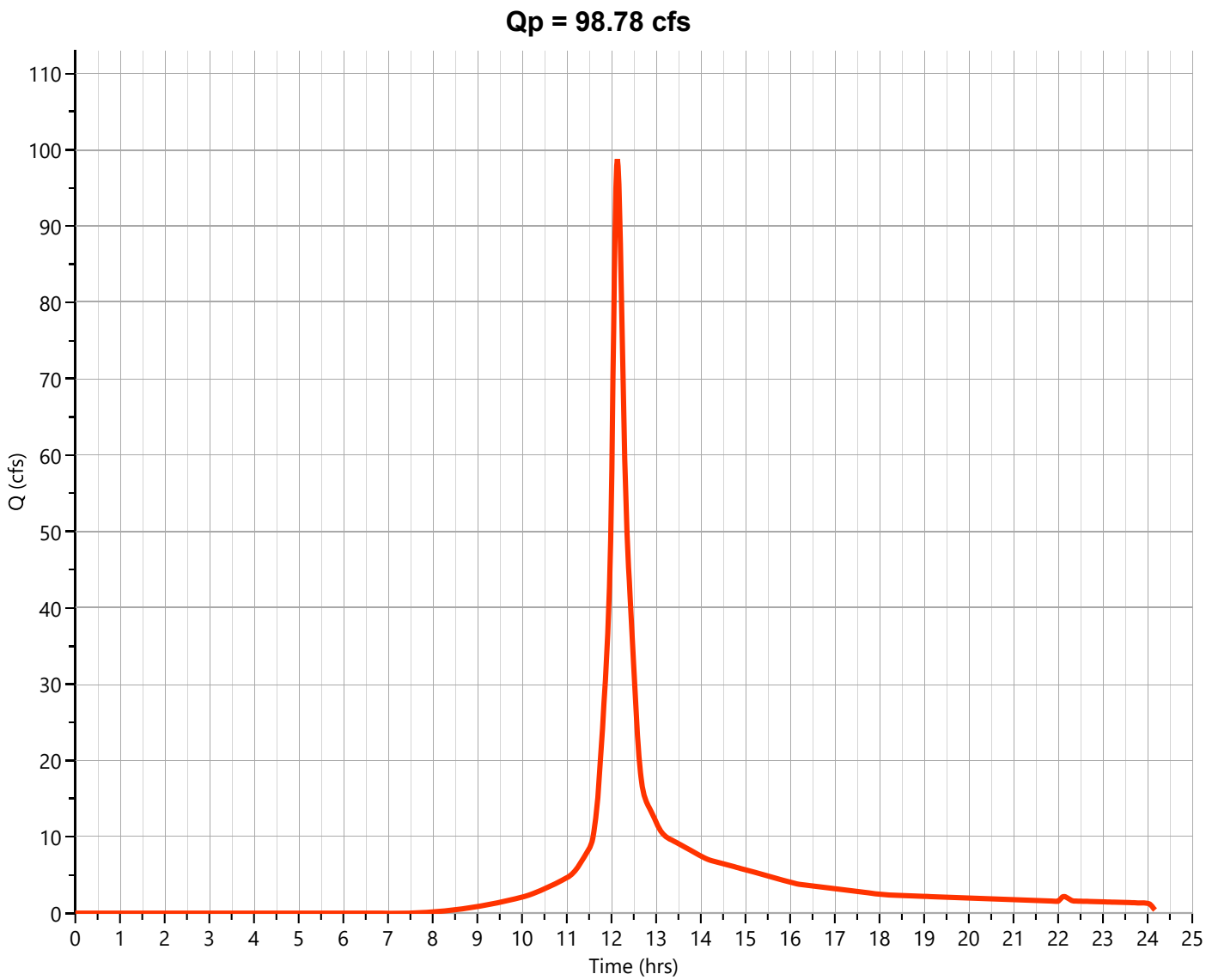
Pre SA-3

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 98.78 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 358,621 cuft
Drainage Area	= 23.33 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

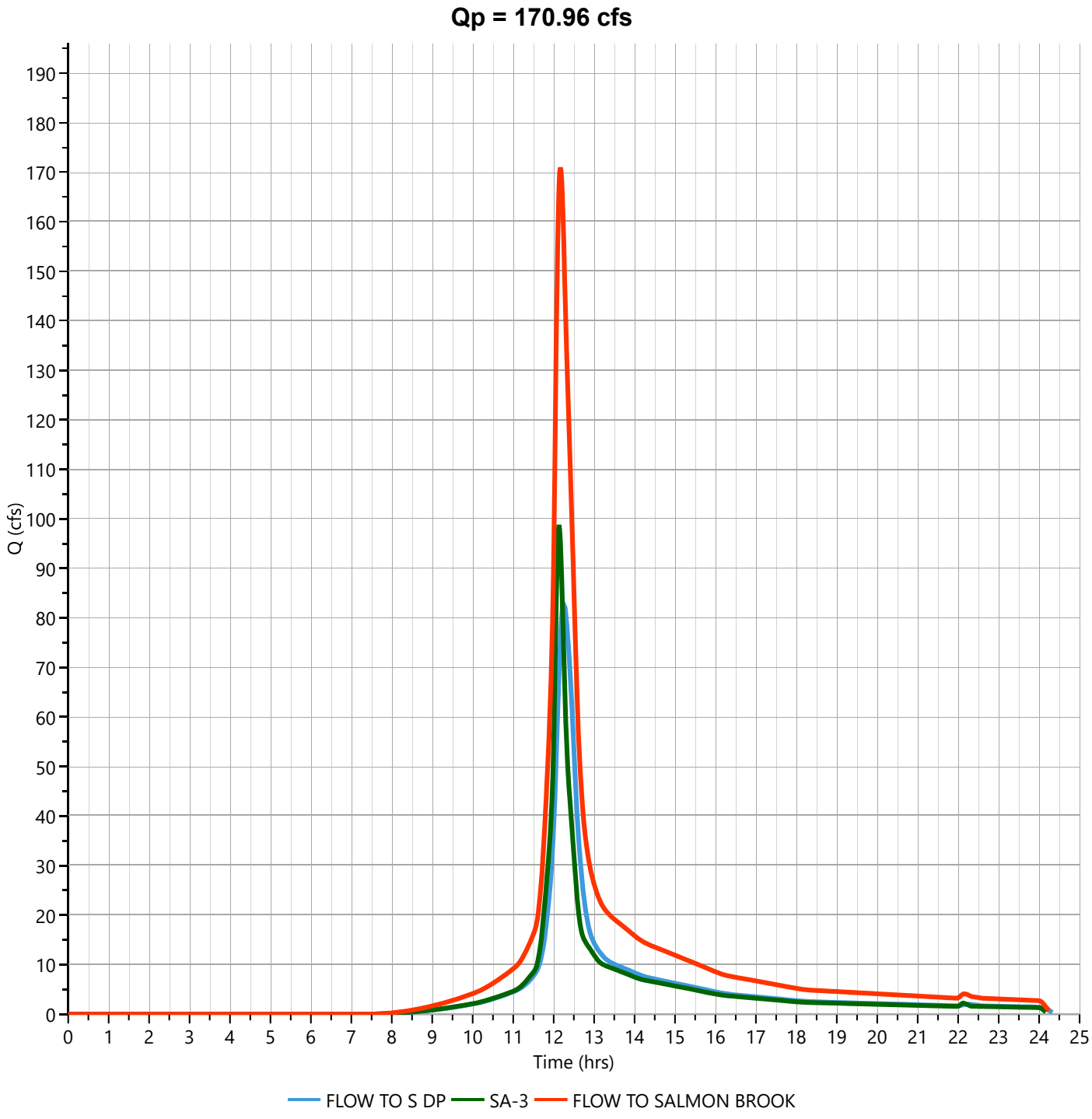
AREA (ac)	CN	DESCRIPTION
17.316	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
23.33	**73**	Weighted CN Method Employed



Pre FLOW TO SALMON BROOK

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 171.0 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 739,191 cuft
Inflow Hydrographs	= 2, 3	Total Contrib. Area	= 48.29 ac



Design Storm Report

Custom Storm filename:

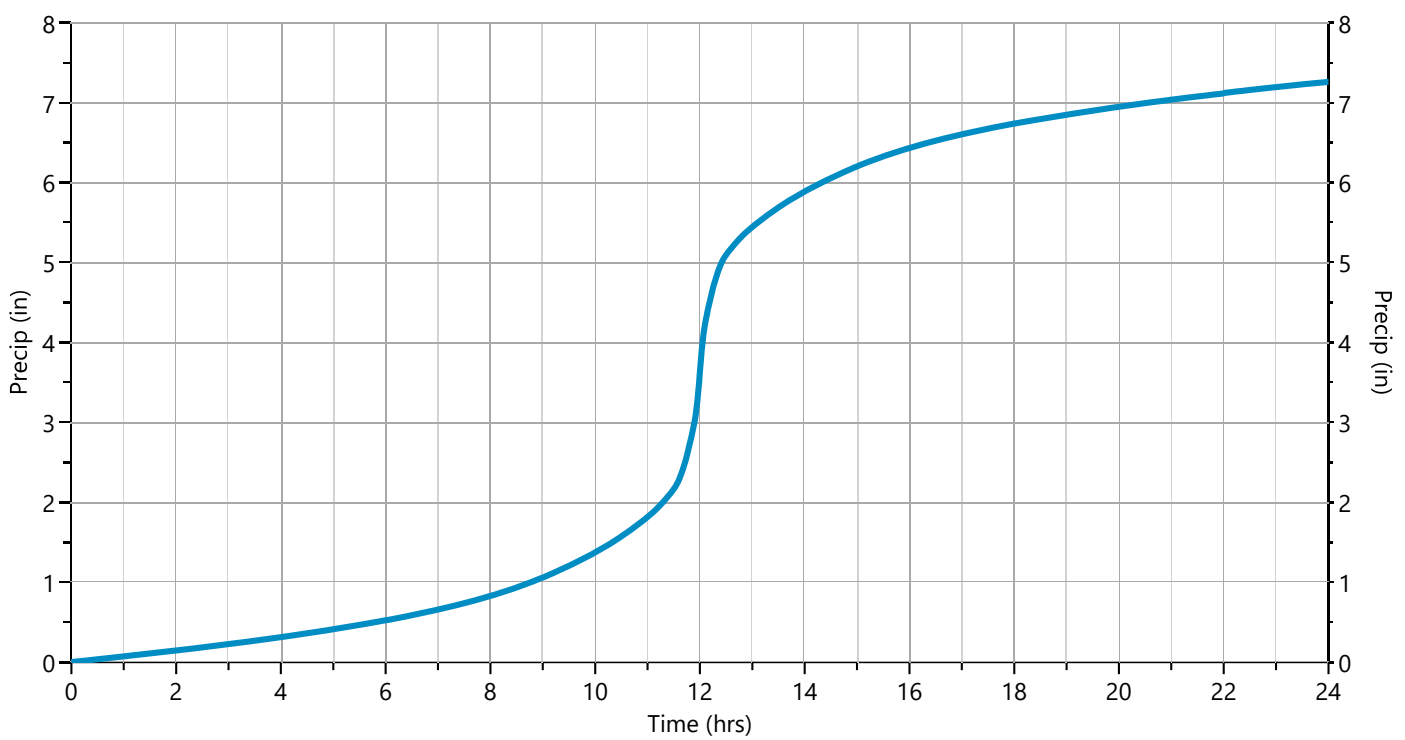
Hydrology Studio v 3.0.0.16

09-29-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	✔ 50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 50-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.014306	11.68	0.033033	11.87	0.052554	12.05	0.109081	12.23	0.043681
11.52	0.015245	11.70	0.034808	11.88	0.054329	12.07	0.094198	12.25	0.041906
11.53	0.017061	11.72	0.036582	11.90	0.056104	12.08	0.079315	12.27	0.040132
11.55	0.018836	11.73	0.038357	11.92	0.064640	12.10	0.064432	12.28	0.038357
11.57	0.020610	11.75	0.040132	11.93	0.079316	12.12	0.056317	12.30	0.036582
11.58	0.022385	11.77	0.041906	11.95	0.094199	12.13	0.054329	12.32	0.034808
11.60	0.024160	11.78	0.043681	11.97	0.109082	12.15	0.052555	12.33	0.033033
11.62	0.025934	11.80	0.045455	11.98	0.123965	12.17	0.050780	12.35	0.031259
11.63	0.027709	11.82	0.047230	**12.00**	**0.138848**	12.18	0.049005	12.37	0.029483
11.65	0.029484	11.83	0.049005	12.02	0.138515	12.20	0.047230	12.38	0.027709
11.67	0.031258	11.85	0.050780	12.03	0.123964	12.22	0.045456	12.40	0.025935



Hydrograph 100-yr Summary

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre FLOW TO N DP	73.71	12.15	279,429	----		
2	NRCS Runoff	Pre FLOW TO S DP	99.12	12.25	453,800	----		
3	NRCS Runoff	Pre SA-3	117.6	12.13	427,628	----		
4	Junction	Pre FLOW TO SALMON BROOK	203.8	12.17	881,427	2, 3		

Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

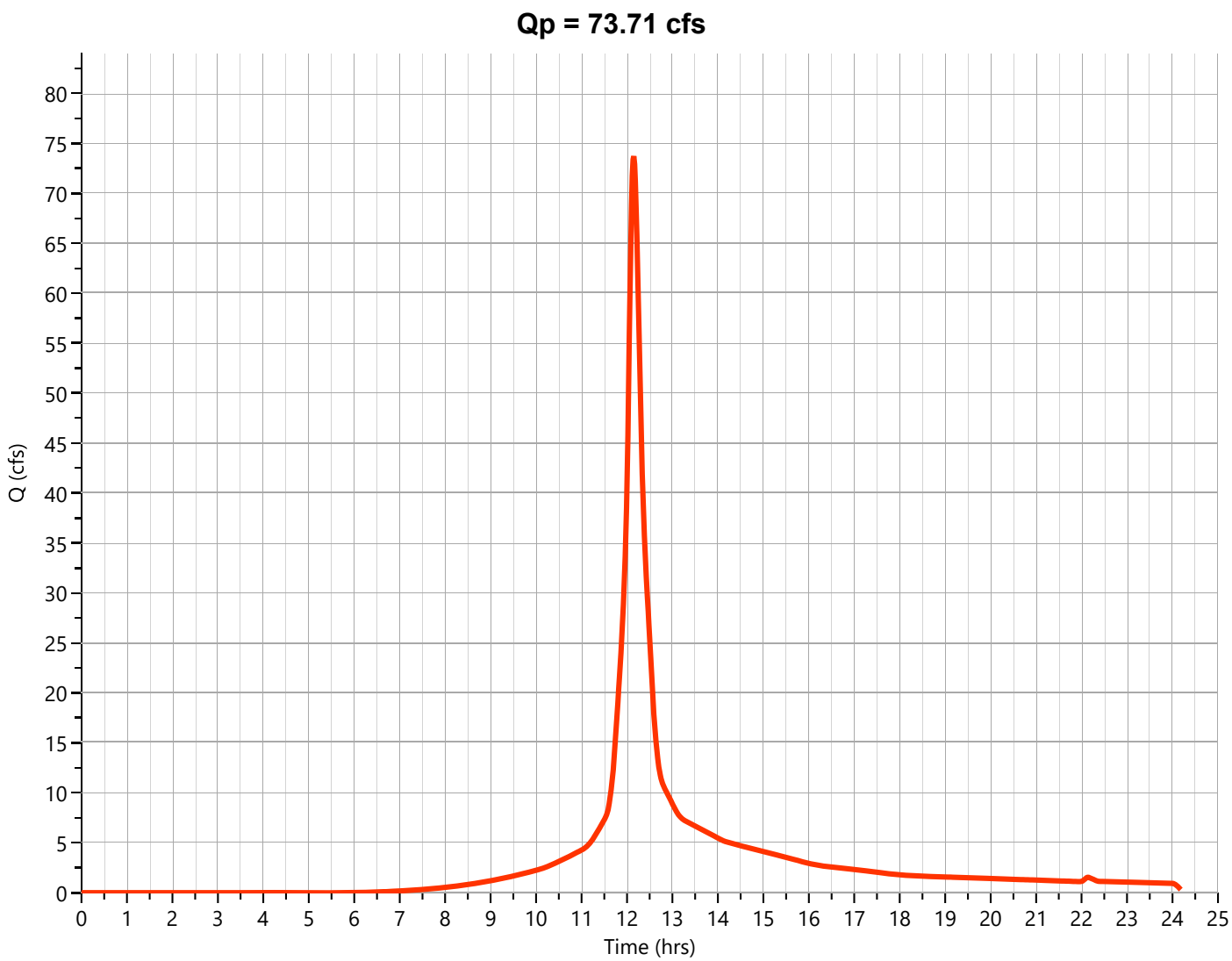
Pre FLOW TO N DP

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 73.71 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 279,429 cuft
Drainage Area	= 14.4 ac	Curve Number	= 77*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.36 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.973	98	PAVE
4.451	70	WOODS
2.191	91	BARE SOIL
6.785	74	LAWN
14.4	**77**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

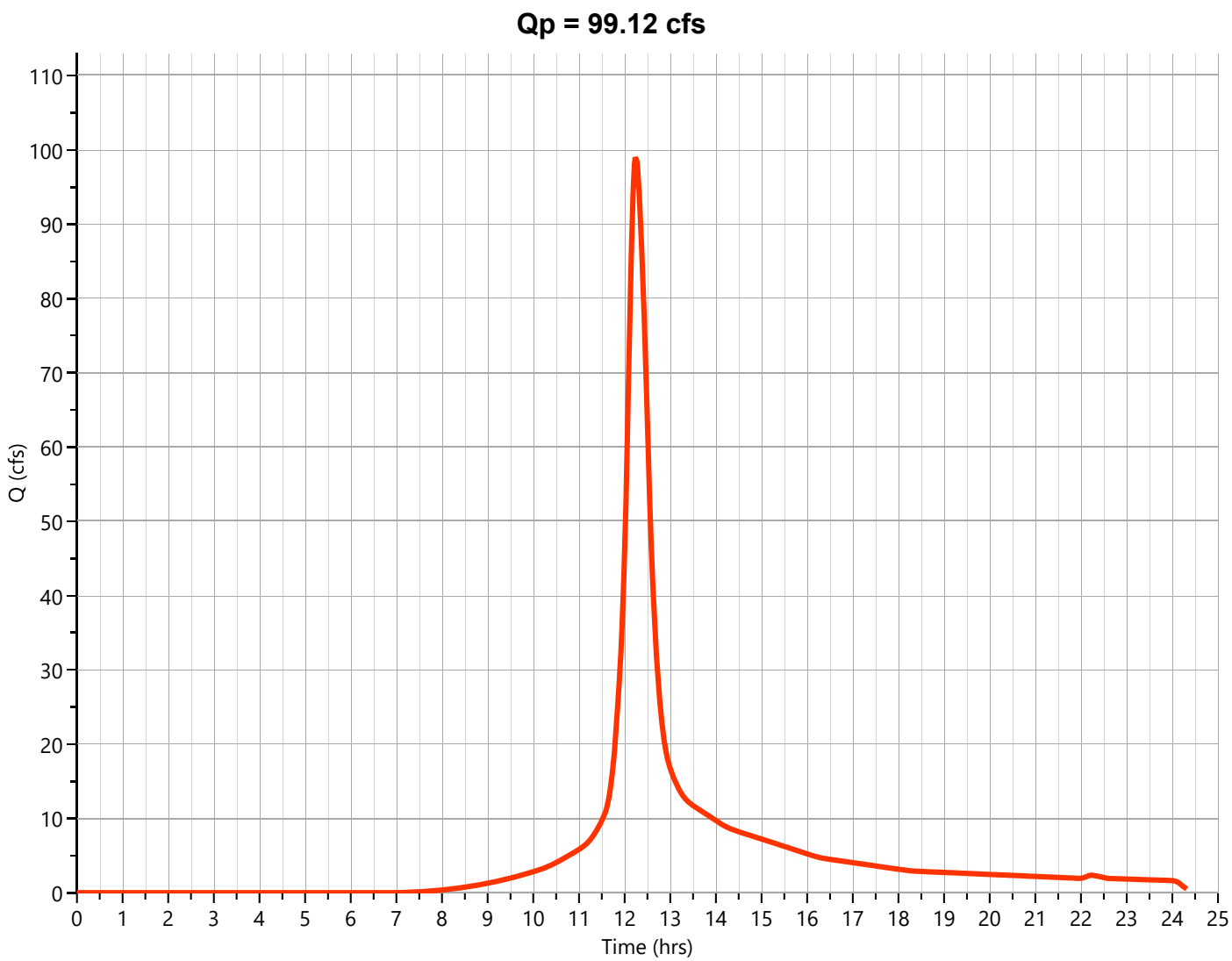
Pre FLOW TO S DP

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 99.12 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 453,800 cuft
Drainage Area	= 24.96 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.79 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.713	98	PAVE
0.891	91	BARE SOIL
12.719	70	WOODS
10.633	74	LAWN
24.96	**73**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET EXIST. HYDRO.

Hydrology Studio v 3.0.0.16

09-29-2020

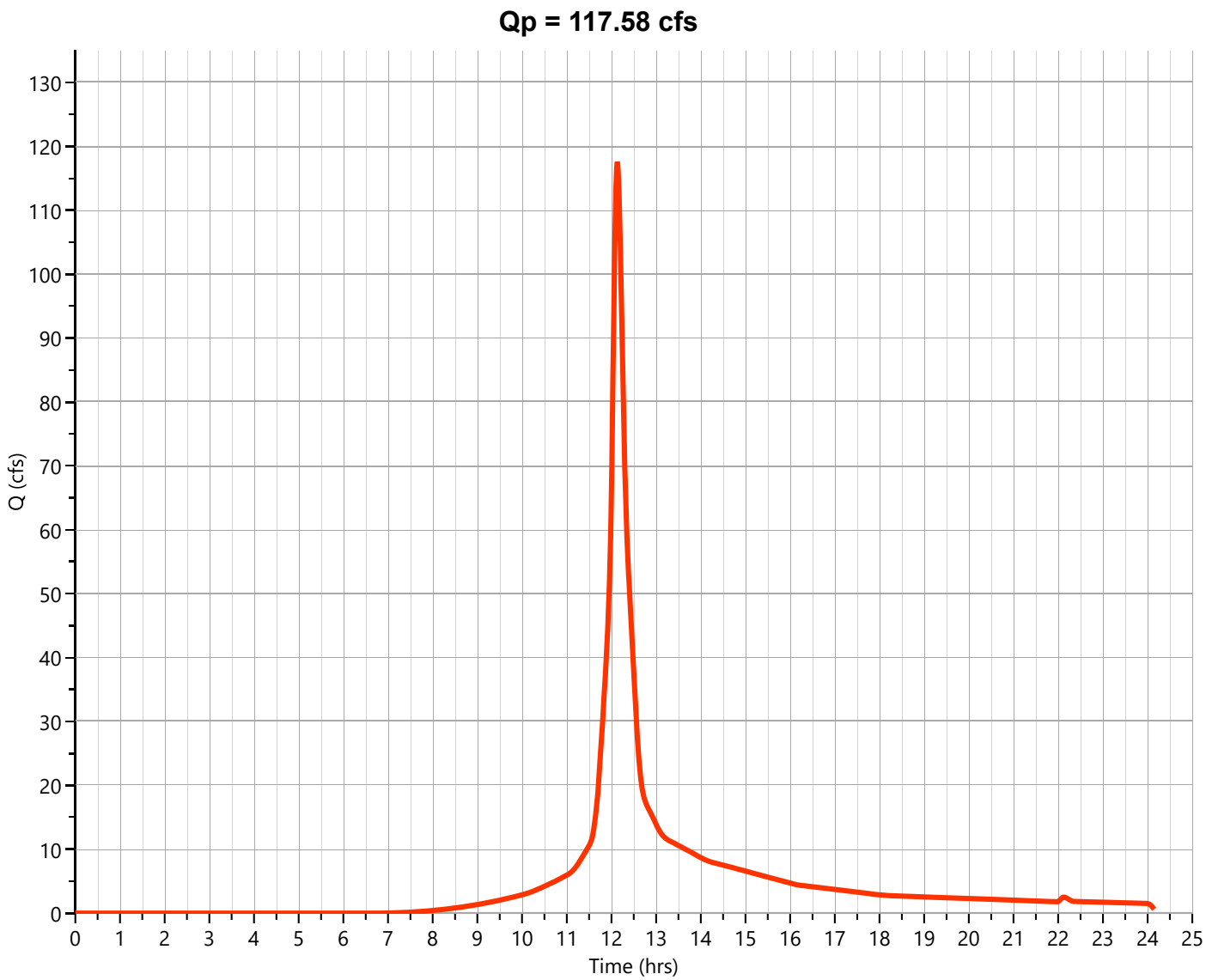
Pre SA-3

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 117.6 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 427,628 cuft
Drainage Area	= 23.33 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

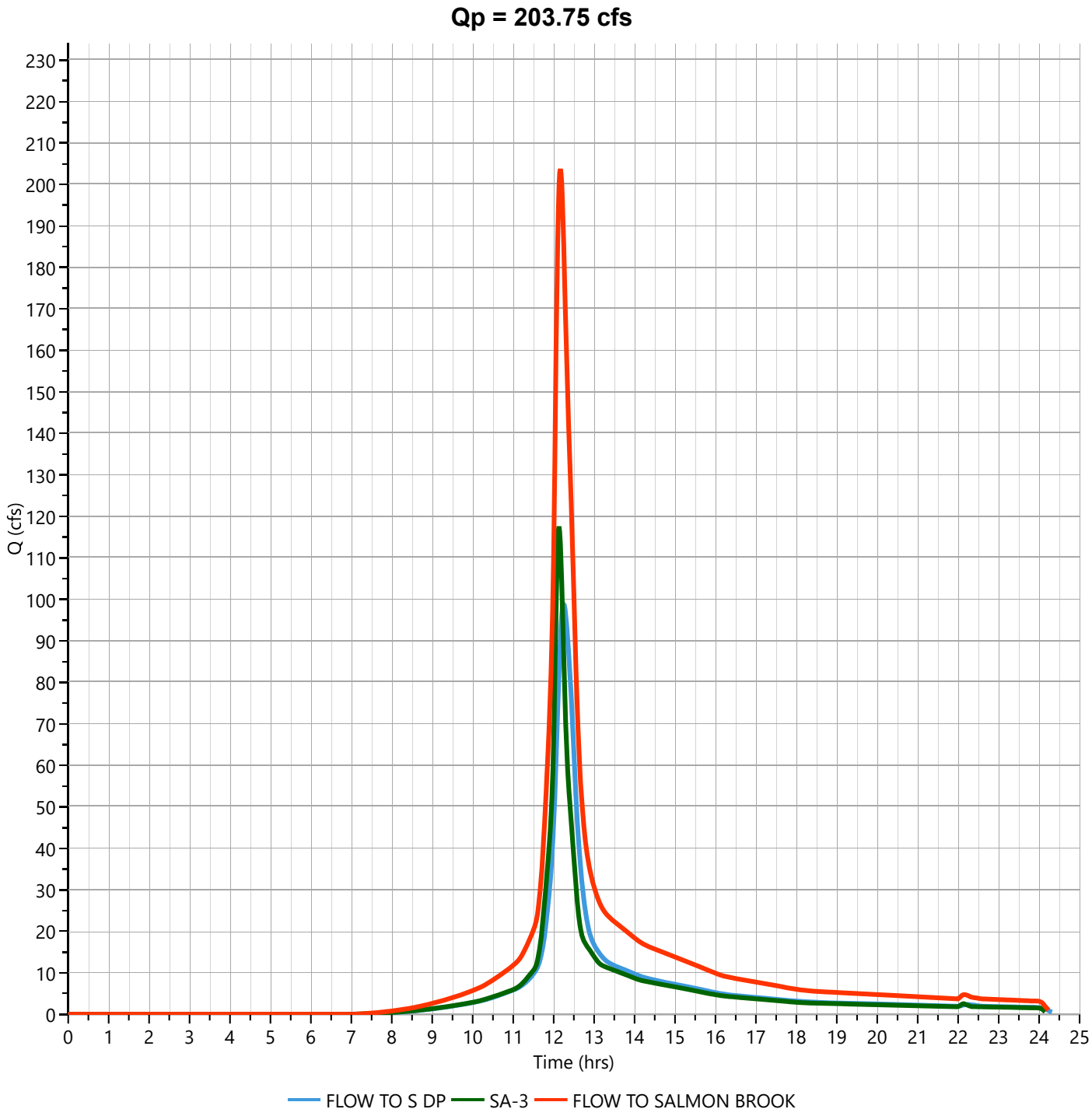
AREA (ac)	CN	DESCRIPTION
17.316	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
23.33	**73**	Weighted CN Method Employed



Pre FLOW TO SALMON BROOK

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 203.8 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 881,427 cuft
Inflow Hydrographs	= 2, 3	Total Contrib. Area	= 48.29 ac



Design Storm Report

Custom Storm filename:

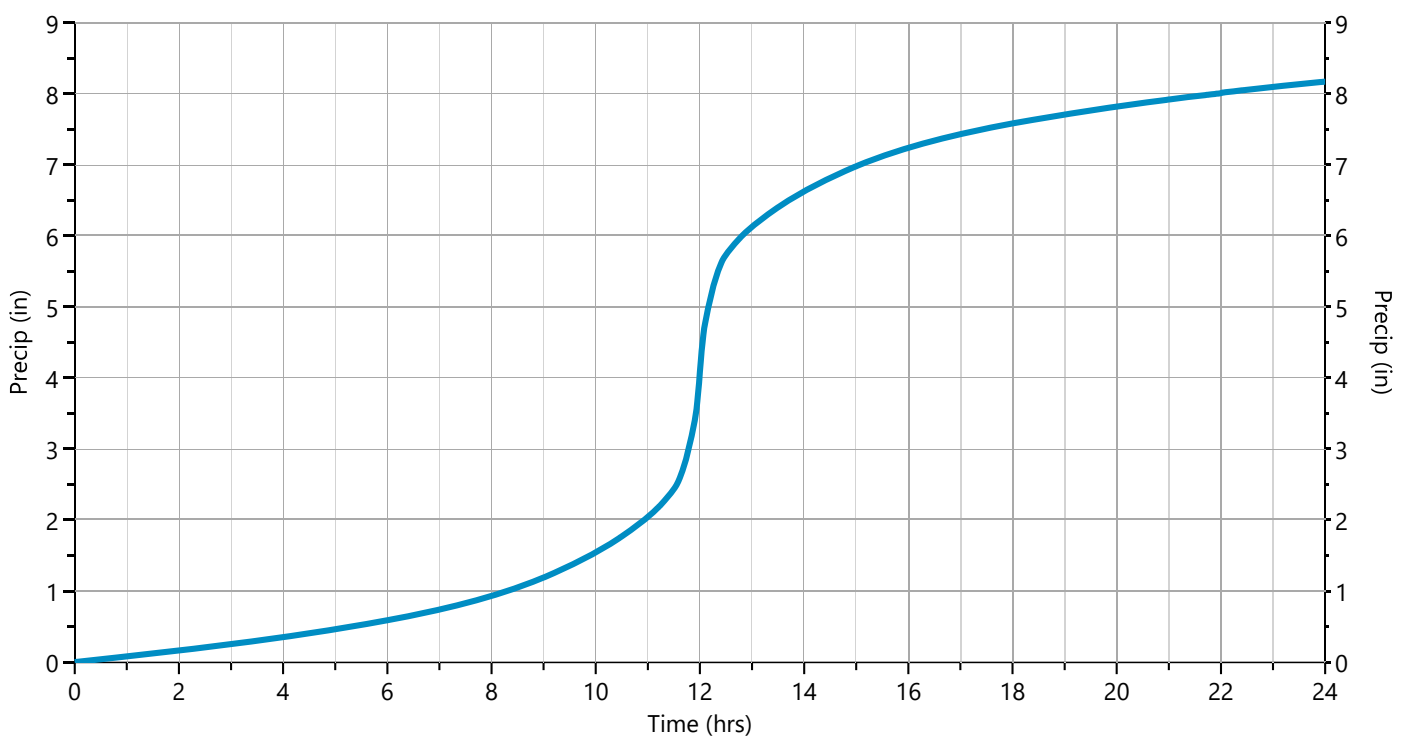
Hydrology Studio v 3.0.0.16

09-29-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	✔ 100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 100-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.016099	11.68	0.037174	11.87	0.059142	12.05	0.122754	12.23	0.049157
11.52	0.017156	11.70	0.039171	11.88	0.061139	12.07	0.106005	12.25	0.047159
11.53	0.019199	11.72	0.041168	11.90	0.063136	12.08	0.089256	12.27	0.045162
11.55	0.021197	11.73	0.043165	11.92	0.072742	12.10	0.072508	12.28	0.043165
11.57	0.023194	11.75	0.045162	11.93	0.089258	12.12	0.063376	12.30	0.041168
11.58	0.025191	11.77	0.047159	11.95	0.106006	12.13	0.061139	12.32	0.039170
11.60	0.027188	11.78	0.049156	11.97	0.122755	12.15	0.059142	12.33	0.037174
11.62	0.029185	11.80	0.051153	11.98	0.139503	12.17	0.057145	12.35	0.035176
11.63	0.031182	11.82	0.053150	**12.00**	**0.156252**	12.18	0.055148	12.37	0.033180
11.65	0.033179	11.83	0.055147	12.02	0.155877	12.20	0.053150	12.38	0.031182
11.67	0.035176	11.85	0.057145	12.03	0.139503	12.22	0.051153	12.40	0.029185



IDF Report

IDF filename: SampleIDF.idf

Hydrology Studio v 3.0.0.16

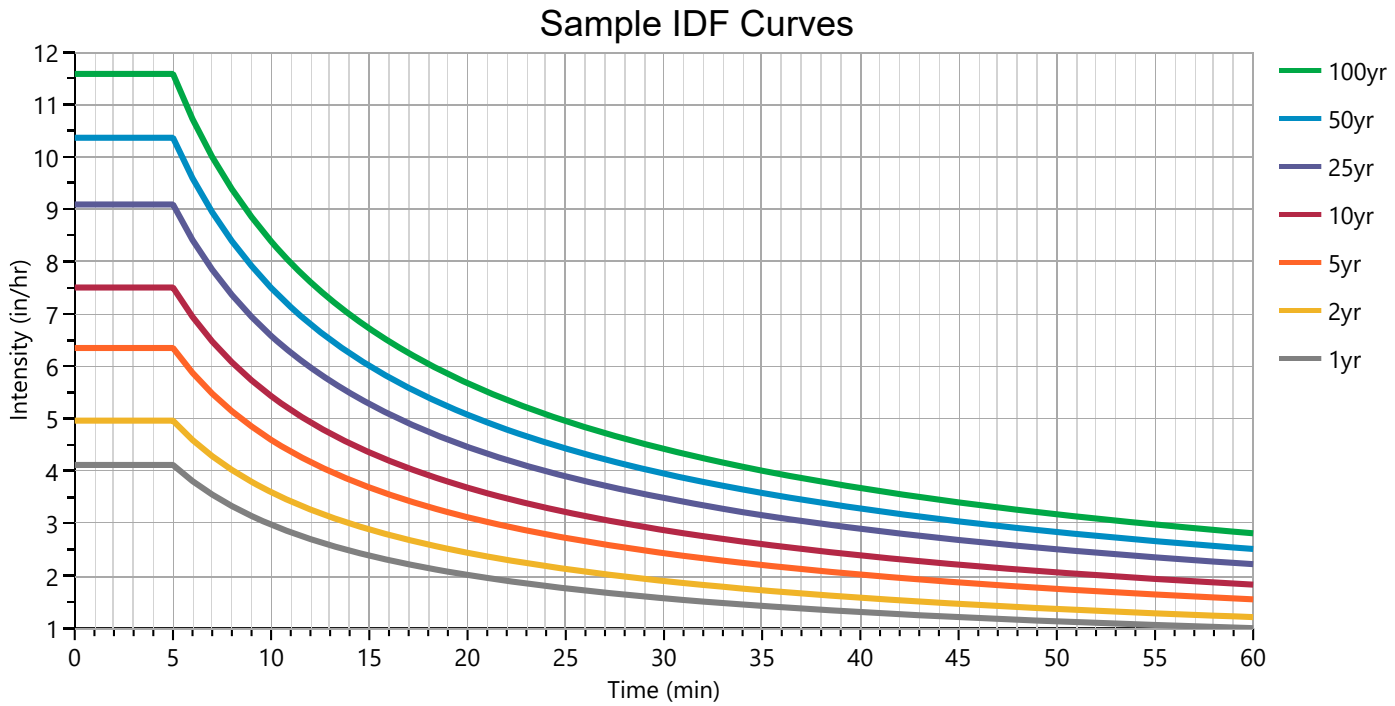
09-29-2020

Equation Coefficients	Intensity = B / (Tc + D)^E (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
B	18.8320	22.9836	0.0000	28.9175	34.2213	41.3873	48.3658	53.9781	
D	3.6000	3.7000	0.0000	3.6000	3.6000	3.6000	3.7000	3.7000	
E	0.7069	0.7087	0.0000	0.7047	0.7052	0.7045	0.7122	0.7114	

Minimum Tc = 5 minutes

Tc (min)	Intensity Values (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
Cf	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
5	4.11	4.96	0	6.35	7.50	9.09	10.36	11.58	
10	2.98	3.60	0	4.60	5.43	6.58	7.50	8.39	
15	2.38	2.88	0	3.69	4.36	5.28	6.01	6.72	
20	2.02	2.44	0	3.12	3.68	4.46	5.08	5.68	
25	1.76	2.13	0	2.72	3.22	3.90	4.43	4.95	
30	1.57	1.90	0	2.43	2.87	3.48	3.95	4.42	
35	1.42	1.72	0	2.20	2.60	3.16	3.58	4.01	
40	1.31	1.58	0	2.02	2.39	2.90	3.28	3.67	
45	1.21	1.46	0	1.87	2.21	2.68	3.04	3.40	
50	1.13	1.37	0	1.75	2.06	2.50	2.83	3.17	
55	1.06	1.28	0	1.64	1.94	2.35	2.66	2.98	
60	1.00	1.21	0	1.55	1.83	2.22	2.51	2.81	

Cf = Correction Factor applied to Rational Method runoff coefficient.



Precipitation Report

Precipitation filename: SamplePrecip.pcp

Hydrology Studio v 3.0.0.16 (Rainfall totals in Inches)

09-29-2020

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✔	✔		✔	✔	✔	✔	✔
SCS Storms	**> SCS Dimensionless Storms**								
SCS 6hr		1.20	1.50	0	1.86	2.18	2.64	3.01	3.41
Type I, 24-hr		0	0	0	0	0	0	0	0
Type IA, 24-hr		0	0	0	0	0	0	0	0
Type II, 24-hr		1.82	2.28	0	2.85	3.31	3.94	4.43	4.94
Type II FL, 24-hr		0	0	0	0	0	0	0	0
Type III, 24-hr	✔	2.66	3.29	0	4.32	5.18	6.35	7.26	8.17
Synthetic Storms	**> IDF-Based Synthetic Storms**								
1-hr		1.00	1.21	0	1.55	1.83	2.22	2.51	2.81
2-hr		1.25	1.51	0	1.94	2.29	2.78	3.13	3.50
3-hr		1.42	1.71	0	2.20	2.60	3.16	3.54	3.97
6-hr		1.75	2.11	0	2.72	3.21	3.90	4.36	4.88
12-hr		2.15	2.59	0	3.35	3.95	4.80	5.34	5.98
24-hr		2.64	3.18	0	4.12	4.86	5.91	6.53	7.32
Huff Distribution	**> 1st Quartile (0 to 6 hrs)**								
1-hr		0.76	0.98	0	1.33	1.61	2.01	2.34	2.69
2-hr		0.89	1.14	0	1.50	1.80	2.24	2.60	2.99
3-hr		0.98	1.24	0	1.59	1.90	2.33	2.68	3.07
6-hr		1.20	1.50	0	1.86	2.18	2.64	3.01	3.41
Huff Distribution	**> 2nd Quartile (>6 to 12 hrs)**								
8-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
Huff Distribution	**> 3rd Quartile (>12 to 24 hrs)**								
18-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0
Custom Storms	**> Custom Storm Distributions**								
My Custom Storm 1		0	0	0	0	0	0	0	0
My Custom Storm 2		0	0	0	0	0	0	0	0
My Custom Storm 3		0	0	0	0	0	0	0	0
My Custom Storm 4		0	0	0	0	0	0	0	0
My Custom Storm 5		0	0	0	0	0	0	0	0
My Custom Storm 6		0	0	0	0	0	0	0	0
My Custom Storm 7		0	0	0	0	0	0	0	0
My Custom Storm 8		0	0	0	0	0	0	0	0
My Custom Storm 9		0	0	0	0	0	0	0	0
My Custom Storm 10		0	0	0	0	0	0	0	0

Precipitation Report Cont'd

Precipitation filename: SamplePrecip.pcp

Rainfall totals in Inches

09-29-2020

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✔	✔		✔	✔	✔	✔	✔
Huff Indiana	**> Indianapolis**								
30-min		0	0	0	0	0	0	0	0
1-hr		0	0	0	0	0	0	0	0
2-hr		0	0	0	0	0	0	0	0
3-hr		0	0	0	0	0	0	0	0
6-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0
Huff Indiana	**> Evansville**								
30-min		0	0	0	0	0	0	0	0
1-hr		0	0	0	0	0	0	0	0
2-hr		0	0	0	0	0	0	0	0
3-hr		0	0	0	0	0	0	0	0
6-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0
Huff Indiana	**> Fort Wayne**								
30-min		0	0	0	0	0	0	0	0
1-hr		0	0	0	0	0	0	0	0
2-hr		0	0	0	0	0	0	0	0
3-hr		0	0	0	0	0	0	0	0
6-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0
Huff Indiana	**> South Bend**								
30-min		0	0	0	0	0	0	0	0
1-hr		0	0	0	0	0	0	0	0
2-hr		0	0	0	0	0	0	0	0
3-hr		0	0	0	0	0	0	0	0
6-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0

Precipitation Report Cont'd

Precipitation filename: SamplePrecip.pcp

Rainfall totals in Inches

09-29-2020

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✔	✔		✔	✔	✔	✔	✔
NRCS Storms	**> NRCS Dimensionless Storms**								
NRCS MSE1, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE2, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE3, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE4, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE5, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE6, 24-hr		0	0	0	0	0	0	0	0
NOAA-A, 24-hr		0	0	0	0	0	0	0	0
NOAA-B, 24-hr		0	0	0	0	0	0	0	0
NOAA-C, 24-hr		0	0	0	0	0	0	0	0
NOAA-D, 24-hr		0	0	0	0	0	0	0	0
NRCC-A, 24-hr		0	0	0	0	0	0	0	0
NRCC-B, 24-hr		0	0	0	0	0	0	0	0
NRCC-C, 24-hr		0	0	0	0	0	0	0	0
NRCC-D, 24-hr		0	0	0	0	0	0	0	0
CA-1, 24-hr		0	0	0	0	0	0	0	0
CA-2, 24-hr		0	0	0	0	0	0	0	0
CA-3, 24-hr		0	0	0	0	0	0	0	0
CA-4, 24-hr		0	0	0	0	0	0	0	0
CA-5, 24-hr		0	0	0	0	0	0	0	0
CA-6, 24-hr		0	0	0	0	0	0	0	0

Appendix G

Hydrology Studio ™

Computer Model Report – Post Development

Table of Contents

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Basin Model Schematic **1**

Hydrograph by Return Period **2**

1 - Year

Hydrograph Summary **3**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Post FLOW TO SWQB 4

Hydrograph No. 2, Pond Route, Post SWQB 5

Detention Pond Reports - SWQB TOP 6

Interconnected Pond Reports - SWQB BOT 10

Hydrograph No. 3, NRCS Runoff, Post FLOW TO N DP 14

Tc by TR55 Worksheet 15

Hydrograph No. 4, NRCS Runoff, Post SA-21 16

Hydrograph No. 5, NRCS Runoff, Post SA-20 17

Hydrograph No. 6, NRCS Runoff, Post SA-23 18

Hydrograph No. 7, NRCS Runoff, Post SA-24 19

Hydrograph No. 8, NRCS Runoff, Post SA-22 20

Hydrograph No. 9, NRCS Runoff, Post SA-25 21

Hydrograph No. 10, NRCS Runoff, Post SA-26 22

Hydrograph No. 11, NRCS Runoff, Post SA-40 23

Tc by TR55 Worksheet 24

Hydrograph No. 12, Pond Route, Post BIO RET 25

Detention Pond Reports - SA-20 26

Hydrograph No. 13, Pond Route, Post BIO RET 30

Detention Pond Reports - SA-21 31

Hydrograph No. 14, Pond Route, Post BIO-RET 35

Detention Pond Reports - SA-23 36

Hydrograph No. 15, Pond Route, Post BIO RET 40

Detention Pond Reports - SA-22 41

Hydrograph No. 16, Pond Route, Post BIO RET 45

Detention Pond Reports - SA-24 46

Hydrograph No. 17, Junction, ... 50

Hydrograph No. 18, Junction, Post FLOW TO SOUTH DP 51

Hydrograph No. 19, Junction, Post FLOW TO SALMON BROOK 52

Design Storm Report - NRCS/SCS - Type III 53

2 - Year

Hydrograph Summary **54**

Contents continued...

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Post FLOW TO SWQB 55
Hydrograph No. 2, Pond Route, Post SWQB 56
Hydrograph No. 3, NRCS Runoff, Post FLOW TO N DP 57
Hydrograph No. 4, NRCS Runoff, Post SA-21 58
Hydrograph No. 5, NRCS Runoff, Post SA-20 59
Hydrograph No. 6, NRCS Runoff, Post SA-23 60
Hydrograph No. 7, NRCS Runoff, Post SA-24 61
Hydrograph No. 8, NRCS Runoff, Post SA-22 62
Hydrograph No. 9, NRCS Runoff, Post SA-25 63
Hydrograph No. 10, NRCS Runoff, Post SA-26 64
Hydrograph No. 11, NRCS Runoff, Post SA-40 65
Hydrograph No. 12, Pond Route, Post BIO RET 66
Hydrograph No. 13, Pond Route, Post BIO RET 67
Hydrograph No. 14, Pond Route, Post BIO-RET 68
Hydrograph No. 15, Pond Route, Post BIO RET 69
Hydrograph No. 16, Pond Route, Post BIO RET 70
Hydrograph No. 17, Junction, ... 71
Hydrograph No. 18, Junction, Post FLOW TO SOUTH DP 72
Hydrograph No. 19, Junction, Post FLOW TO SALMON BROOK 73
Design Storm Report - NRCS/SCS - Type III 74

5 - Year

Hydrograph Summary **75**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Post FLOW TO SWQB 76
Hydrograph No. 2, Pond Route, Post SWQB 77
Hydrograph No. 3, NRCS Runoff, Post FLOW TO N DP 78
Hydrograph No. 4, NRCS Runoff, Post SA-21 79
Hydrograph No. 5, NRCS Runoff, Post SA-20 80
Hydrograph No. 6, NRCS Runoff, Post SA-23 81
Hydrograph No. 7, NRCS Runoff, Post SA-24 82
Hydrograph No. 8, NRCS Runoff, Post SA-22 83
Hydrograph No. 9, NRCS Runoff, Post SA-25 84
Hydrograph No. 10, NRCS Runoff, Post SA-26 85
Hydrograph No. 11, NRCS Runoff, Post SA-40 86
Hydrograph No. 12, Pond Route, Post BIO RET 87

Contents continued...

Hydrograph No. 13, Pond Route, Post BIO RET 88
Hydrograph No. 14, Pond Route, Post BIO-RET 89
Hydrograph No. 15, Pond Route, Post BIO RET 90
Hydrograph No. 16, Pond Route, Post BIO RET 91
Hydrograph No. 17, Junction, ... 92
Hydrograph No. 18, Junction, Post FLOW TO SOUTH DP 93
Hydrograph No. 19, Junction, Post FLOW TO SALMON BROOK 94
Design Storm Report - NRCS/SCS - Type III 95

10 - Year

Hydrograph Summary **96**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Post FLOW TO SWQB 97
Hydrograph No. 2, Pond Route, Post SWQB 98
Hydrograph No. 3, NRCS Runoff, Post FLOW TO N DP 99
Hydrograph No. 4, NRCS Runoff, Post SA-21 100
Hydrograph No. 5, NRCS Runoff, Post SA-20 101
Hydrograph No. 6, NRCS Runoff, Post SA-23 102
Hydrograph No. 7, NRCS Runoff, Post SA-24 103
Hydrograph No. 8, NRCS Runoff, Post SA-22 104
Hydrograph No. 9, NRCS Runoff, Post SA-25 105
Hydrograph No. 10, NRCS Runoff, Post SA-26 106
Hydrograph No. 11, NRCS Runoff, Post SA-40 107
Hydrograph No. 12, Pond Route, Post BIO RET 108
Hydrograph No. 13, Pond Route, Post BIO RET 109
Hydrograph No. 14, Pond Route, Post BIO-RET 110
Hydrograph No. 15, Pond Route, Post BIO RET 111
Hydrograph No. 16, Pond Route, Post BIO RET 112
Hydrograph No. 17, Junction, ... 113
Hydrograph No. 18, Junction, Post FLOW TO SOUTH DP 114
Hydrograph No. 19, Junction, Post FLOW TO SALMON BROOK 115
Design Storm Report - NRCS/SCS - Type III 116

25 - Year

Hydrograph Summary **117**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Post FLOW TO SWQB 118
Hydrograph No. 2, Pond Route, Post SWQB 119

Contents continued...

Hydrograph No. 3, NRCS Runoff, Post FLOW TO N DP 120
Hydrograph No. 4, NRCS Runoff, Post SA-21 121
Hydrograph No. 5, NRCS Runoff, Post SA-20 122
Hydrograph No. 6, NRCS Runoff, Post SA-23 123
Hydrograph No. 7, NRCS Runoff, Post SA-24 124
Hydrograph No. 8, NRCS Runoff, Post SA-22 125
Hydrograph No. 9, NRCS Runoff, Post SA-25 126
Hydrograph No. 10, NRCS Runoff, Post SA-26 127
Hydrograph No. 11, NRCS Runoff, Post SA-40 128
Hydrograph No. 12, Pond Route, Post BIO RET 129
Hydrograph No. 13, Pond Route, Post BIO RET 130
Hydrograph No. 14, Pond Route, Post BIO-RET 131
Hydrograph No. 15, Pond Route, Post BIO RET 132
Hydrograph No. 16, Pond Route, Post BIO RET 133
Hydrograph No. 17, Junction, ... 134
Hydrograph No. 18, Junction, Post FLOW TO SOUTH DP 135
Hydrograph No. 19, Junction, Post FLOW TO SALMON BROOK 136
Design Storm Report - NRCS/SCS - Type III 137

50 - Year

Hydrograph Summary **138**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Post FLOW TO SWQB 139
Hydrograph No. 2, Pond Route, Post SWQB 140
Hydrograph No. 3, NRCS Runoff, Post FLOW TO N DP 141
Hydrograph No. 4, NRCS Runoff, Post SA-21 142
Hydrograph No. 5, NRCS Runoff, Post SA-20 143
Hydrograph No. 6, NRCS Runoff, Post SA-23 144
Hydrograph No. 7, NRCS Runoff, Post SA-24 145
Hydrograph No. 8, NRCS Runoff, Post SA-22 146
Hydrograph No. 9, NRCS Runoff, Post SA-25 147
Hydrograph No. 10, NRCS Runoff, Post SA-26 148
Hydrograph No. 11, NRCS Runoff, Post SA-40 149
Hydrograph No. 12, Pond Route, Post BIO RET 150
Hydrograph No. 13, Pond Route, Post BIO RET 151
Hydrograph No. 14, Pond Route, Post BIO-RET 152
Hydrograph No. 15, Pond Route, Post BIO RET 153

Contents continued...

Hydrograph No. 16, Pond Route, Post BIO RET 154
Hydrograph No. 17, Junction, ... 155
Hydrograph No. 18, Junction, Post FLOW TO SOUTH DP 156
Hydrograph No. 19, Junction, Post FLOW TO SALMON BROOK 157
Design Storm Report - NRCS/SCS - Type III 158

100 - Year

Hydrograph Summary **159**

Hydrograph Reports

Hydrograph No. 1, NRCS Runoff, Post FLOW TO SWQB 160
Hydrograph No. 2, Pond Route, Post SWQB 161
Hydrograph No. 3, NRCS Runoff, Post FLOW TO N DP 162
Hydrograph No. 4, NRCS Runoff, Post SA-21 163
Hydrograph No. 5, NRCS Runoff, Post SA-20 164
Hydrograph No. 6, NRCS Runoff, Post SA-23 165
Hydrograph No. 7, NRCS Runoff, Post SA-24 166
Hydrograph No. 8, NRCS Runoff, Post SA-22 167
Hydrograph No. 9, NRCS Runoff, Post SA-25 168
Hydrograph No. 10, NRCS Runoff, Post SA-26 169
Hydrograph No. 11, NRCS Runoff, Post SA-40 170
Hydrograph No. 12, Pond Route, Post BIO RET 171
Hydrograph No. 13, Pond Route, Post BIO RET 172
Hydrograph No. 14, Pond Route, Post BIO-RET 173
Hydrograph No. 15, Pond Route, Post BIO RET 174
Hydrograph No. 16, Pond Route, Post BIO RET 175
Hydrograph No. 17, Junction, ... 176
Hydrograph No. 18, Junction, Post FLOW TO SOUTH DP 177
Hydrograph No. 19, Junction, Post FLOW TO SALMON BROOK 178
Design Storm Report - NRCS/SCS - Type III 179

IDF Report **180**

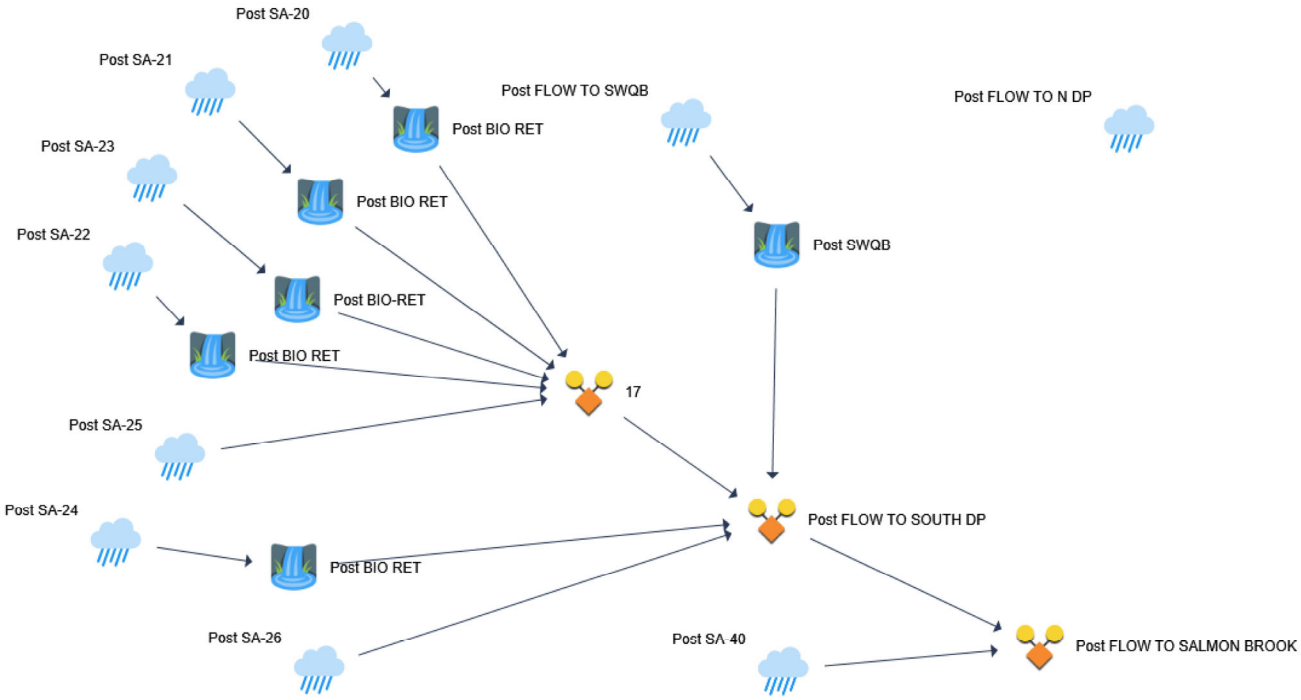
Precipitation Report **181**

Basin Model

Hydrology Studio v 3.0.0.16

Project Name: BELL STREET POST DEVELOPMENT

10-07-2020



Hydrograph by Return Period

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	NRCS Runoff	Post FLOW TO SWQB	9.242	13.75		21.60	28.45	37.93	45.36	52.81
2	Pond Route	Post SWQB	0.478	1.243		2.856	5.064	11.97	13.21	14.26
3	NRCS Runoff	Post FLOW TO N DP	6.364	11.10		19.97	28.14	39.88	49.34	58.96
4	NRCS Runoff	Post SA-21	0.372	0.544		0.840	1.094	1.445	1.718	1.992
5	NRCS Runoff	Post SA-20	0.247	0.365		0.571	0.748	0.994	1.187	1.379
6	NRCS Runoff	Post SA-23	0.489	0.731		1.158	1.530	2.046	2.450	2.855
7	NRCS Runoff	Post SA-24	0.414	0.604		0.933	1.216	1.605	1.909	2.213
8	NRCS Runoff	Post SA-22	0.428	0.624		0.964	1.256	1.659	1.973	2.287
9	NRCS Runoff	Post SA-25	3.514	6.347		11.75	16.74	23.96	29.79	35.74
10	NRCS Runoff	Post SA-26	5.026	8.711		15.68	22.04	31.16	38.50	45.96
11	NRCS Runoff	Post SA-40	13.20	22.40		39.45	55.02	77.27	95.10	113.2
12	Pond Route	Post BIO RET	0.000	0.000		0.000	0.006	0.050	0.114	0.229
13	Pond Route	Post BIO RET	0.000	0.000		0.021	0.075	0.360	0.837	1.642
14	Pond Route	Post BIO-RET	0.000	0.000		0.030	0.129	0.726	1.698	2.677
15	Pond Route	Post BIO RET	0.000	0.000		0.044	0.135	0.666	1.499	2.155
16	Pond Route	Post BIO RET	0.000	0.000		0.038	0.118	0.600	1.357	2.052
17	Junction		3.514	6.347		11.75	16.74	24.14	33.16	41.75
18	Junction	Post FLOW TO SOUTH DP	8.539	15.06		27.43	38.78	55.41	73.04	90.06
19	Junction	Post FLOW TO SALMON BROOK	21.68	37.34		66.71	93.41	132.0	167.3	202.4

Hydrograph 1-yr Summary

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Post FLOW TO SWQB	9.242	12.20	39,181	----		
2	Pond Route(i)	Post SWQB	0.478	17.53	12,829	1	273.45 U 261.43 L	17,516 U 14,545 L
3	NRCS Runoff	Post FLOW TO N DP	6.364	12.18	27,909	----		
4	NRCS Runoff	Post SA-21	0.372	12.07	1,095	----		
5	NRCS Runoff	Post SA-20	0.247	12.07	730	----		
6	NRCS Runoff	Post SA-23	0.489	12.07	1,454	----		
7	NRCS Runoff	Post SA-24	0.414	12.07	1,216	----		
8	NRCS Runoff	Post SA-22	0.428	12.07	1,257	----		
9	NRCS Runoff	Post SA-25	3.514	12.13	14,548	----		
10	NRCS Runoff	Post SA-26	5.026	12.13	19,966	----		
11	NRCS Runoff	Post SA-40	13.20	12.15	54,460	----		
12	Pond Route	Post BIO RET	0.000	42.83	0.000	5	312.53	490
13	Pond Route	Post BIO RET	0.000	11.25	0.000	4	302.89	786
14	Pond Route	Post BIO-RET	0.000	0.00	0.000	6	300.84	1,031
15	Pond Route	Post BIO RET	0.000	11.27	0.000	8	301.03	918
16	Pond Route	Post BIO RET	0.000	11.63	0.000	7	308.00	884
17	Junction		3.514	12.13	14,548	9, 12, 13, 14, 15		
18	Junction	Post FLOW TO SOUTH DP	8.539	12.13	47,344	2, 10, 16, 17		
19	Junction	Post FLOW TO SALMON BROOK	21.68	12.15	101,804	11, 18		

(i) = Interconnected ponds, U = Upper pond, L = Lower pond

Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

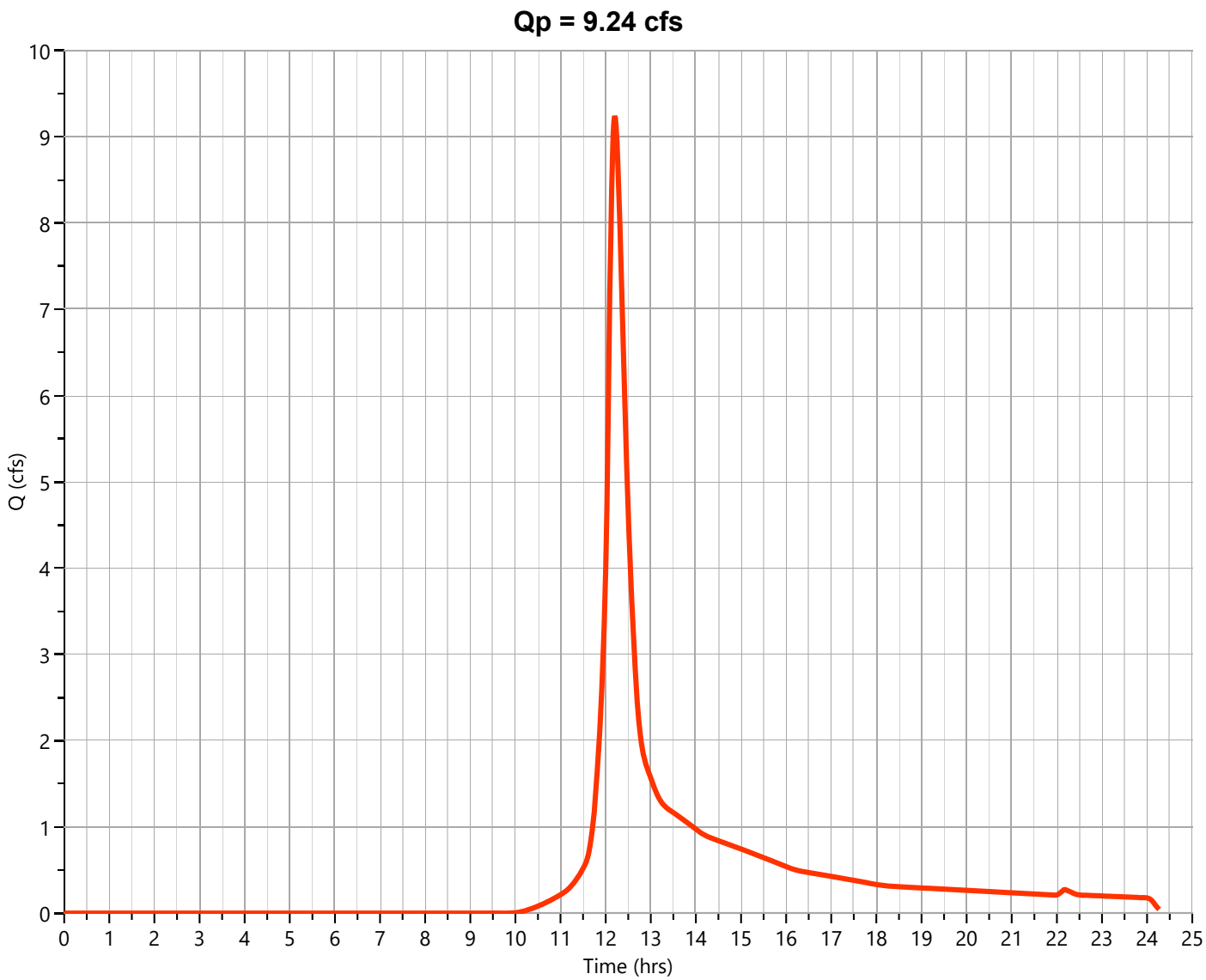
Post FLOW TO SWQB

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 9.242 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Runoff Volume	= 39,181 cuft
Drainage Area	= 10.305 ac	Curve Number	= 80.59*
Tc Method	= User	Time of Conc. (Tc)	= 15.9 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.83	98	PAVE
7.475	74	LAWN
10.305	**81**	Weighted CN Method Employed

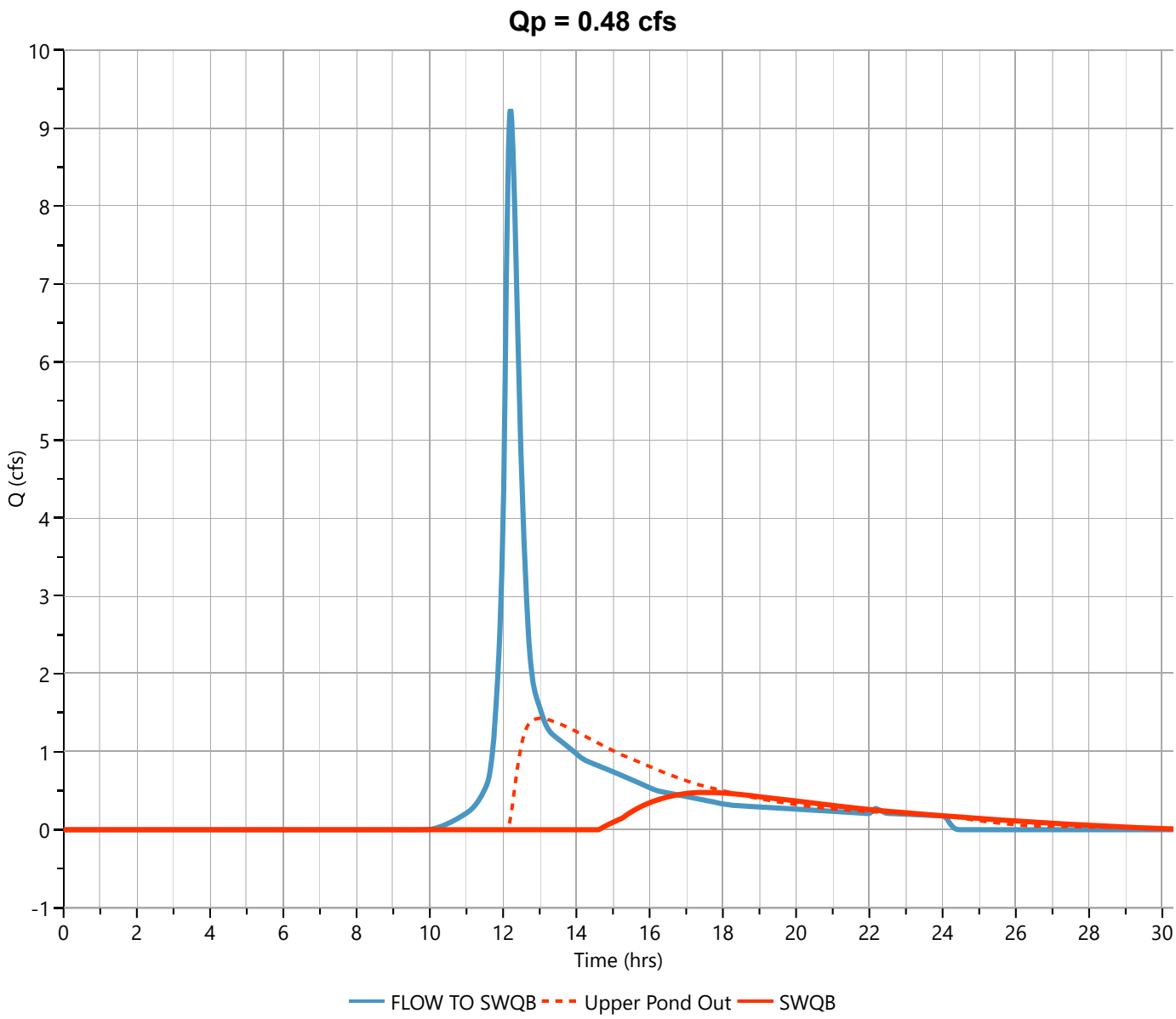


Post SWQB

Hyd. No. 2

Hydrograph Type	= Pond Route(i)*	Peak Flow	= 0.478 cfs
Storm Frequency	= 1-yr	Time to Peak	= 17.53 hrs
Time Interval	= 1 min	Hydrograph Volume	= 12,829 cuft
Upper Pond		**Lower Pond**	
Pond Name	= SWQB TOP	Pond Name	= SWQB BOT
Inflow Hyd	= 1 - FLOW TO SWQB	Addnl Inflow Hyd	= None
Max. Elevation	= 273.45 ft	Max. Elevation	= 261.43 ft
Max. Storage	= 17,516 cuft	Max. Storage	= 14,545 cuft

**Interconnected Pond Routing by Storage Indication Method.*



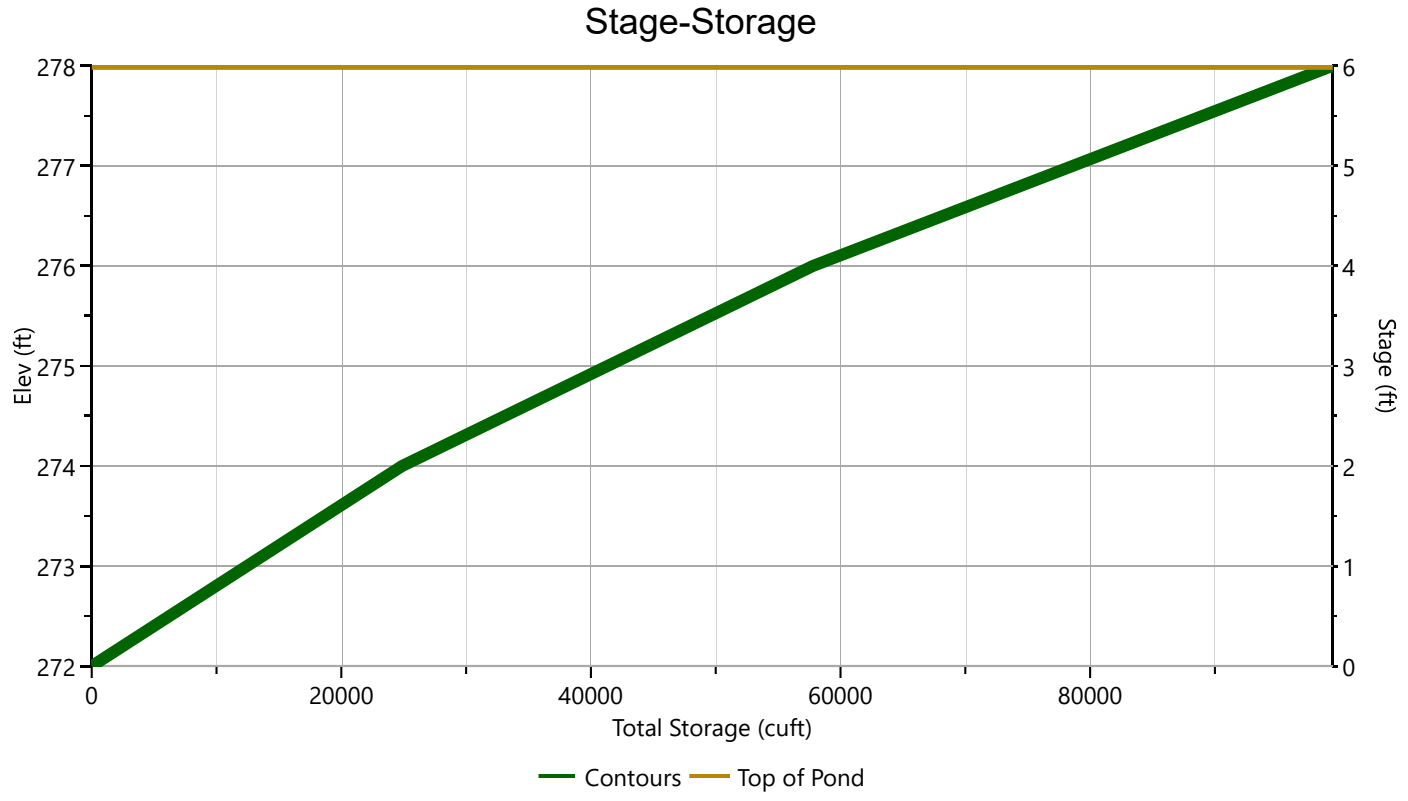
SWQB TOP

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	272.00
Voids (%)	100.00
Volume Calc	None

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	272.00	10,543	0.000	0.000
2.00	274.00	14,336	24,879	24,879
4.00	276.00	18,566	32,901	57,780
6.00	278.00	23,070	41,636	99,416

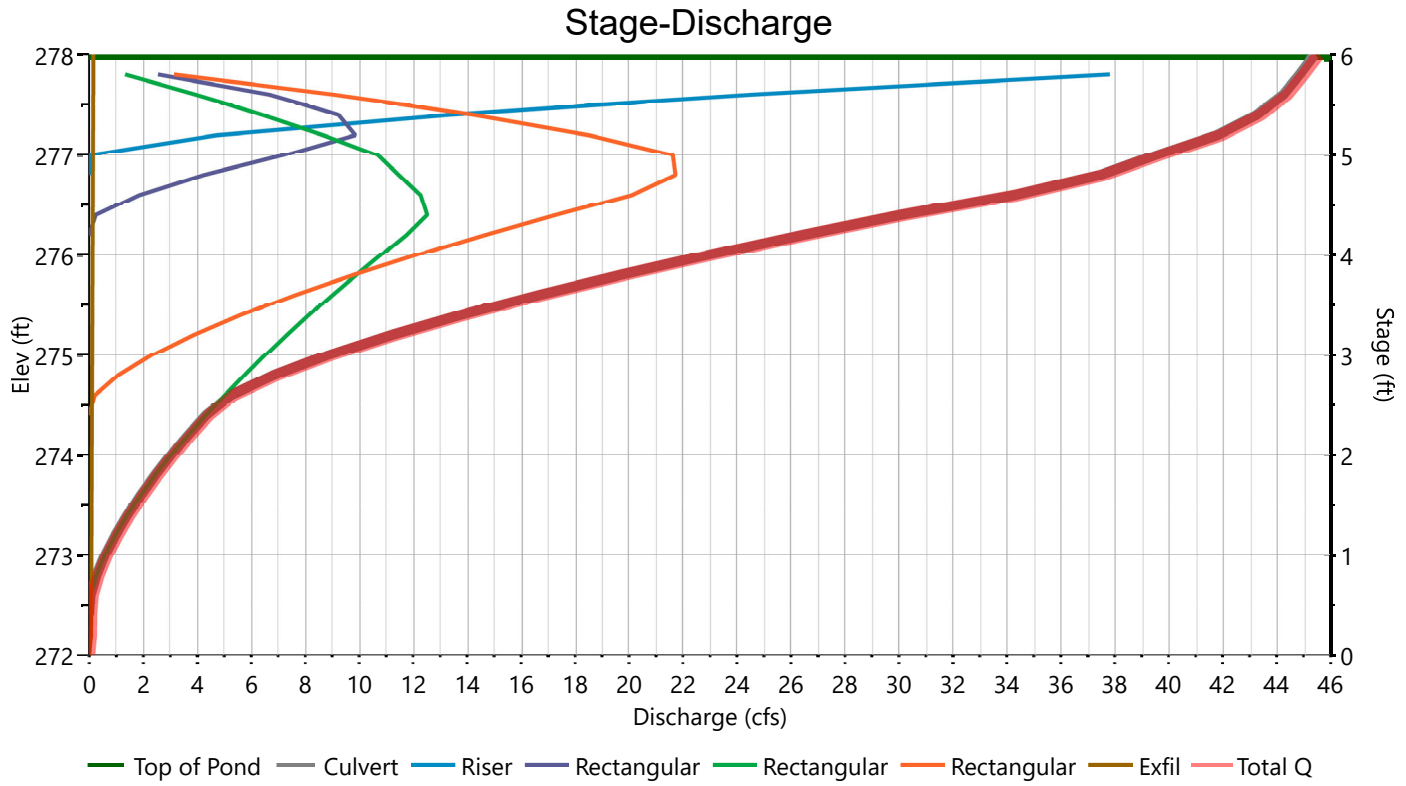


SWQB TOP

Stage-Discharge

Culvert / Orifices	Culvert	Orifices			Orifice Plate	
		1	2	3		
Rise, in	24				Orifice Dia, in	
Span, in	24				No. Orifices	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	268.00				Height, ft	
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co	
Length, ft	74					
Barrel Slope, %	10.8					
N-Value, n	0.013					
Weirs	**Riser***	**Weirs**			**Ancillary**	
		1*	2*	3*		
Shape / Type	Box	Rectangular	Rectangular	Rectangular	Exfiltration, in/hr	0.30**
Crest Elevation, ft	277	276.33	272.5	274.5		
Crest Length, ft	16	4	.5	2		
Angle, deg						
Weir Coefficient, Cw	3.3	3.3	3.3	3.3		

**Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.*



SWQB TOP

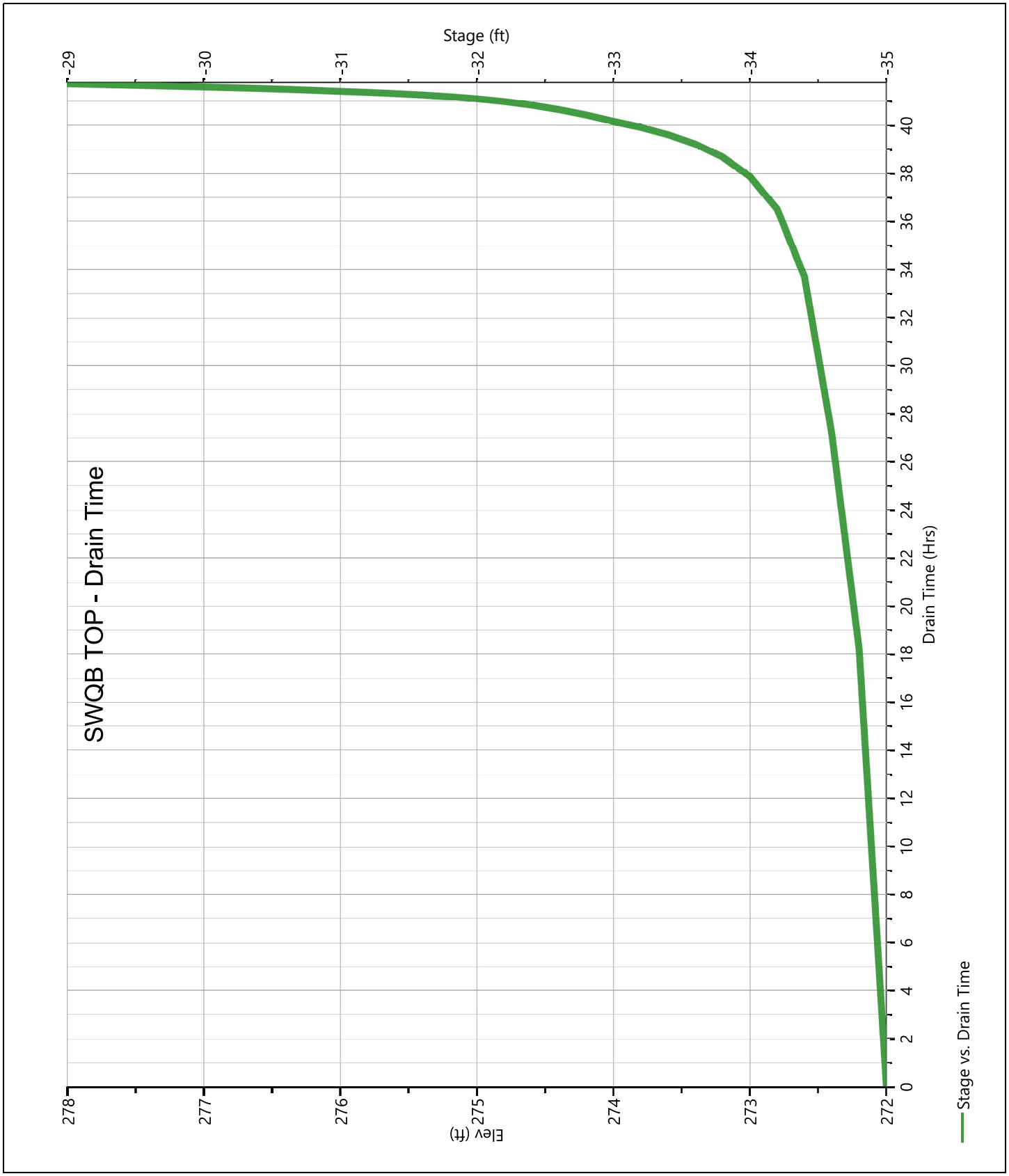
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	272.00	0.000	0.000				0.000	0.000	0.000	0.000		0.000		0.000
2.00	274.00	24,879	3.031 ic				0.000	0.000	3.031	0.000		0.100		3.131
4.00	276.00	57,780	22.93 ic				0.000	0.000	10.80	12.12		0.129		23.06
6.00	278.00	99,416	45.37 ic				0.000	0.000 s	0.000 s	0.000 s		0.160		45.53

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

SWQB TOP

Pond Drawdown



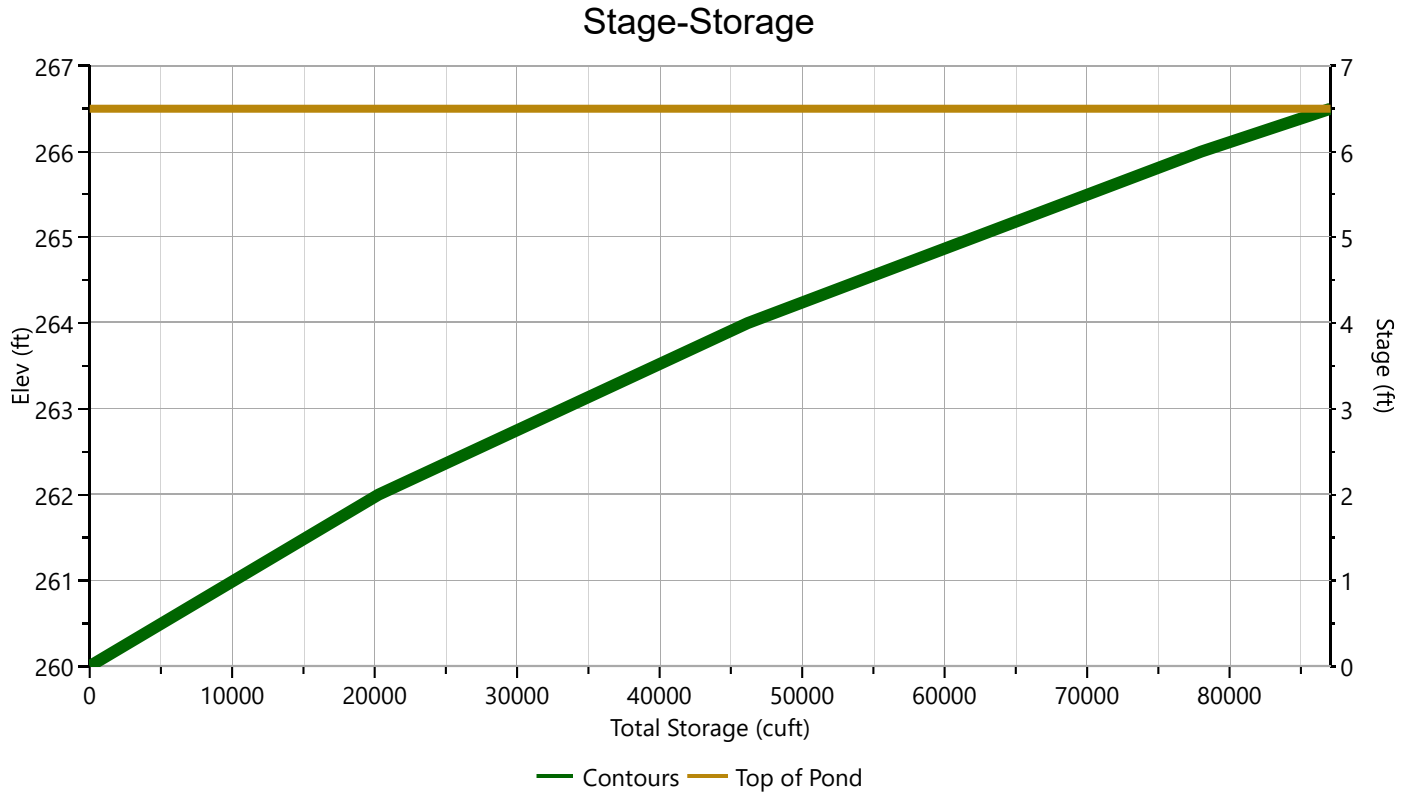
SWQB BOT

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	260.00
Voids (%)	100.00
Volume Calc	Conic

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	260.00	8,788	0.000	0.000
2.00	262.00	11,553	20,276	20,276
4.00	264.00	14,400	25,899	46,175
6.00	266.00	17,482	31,829	78,004
6.50	266.50	18,827	9,074	87,079

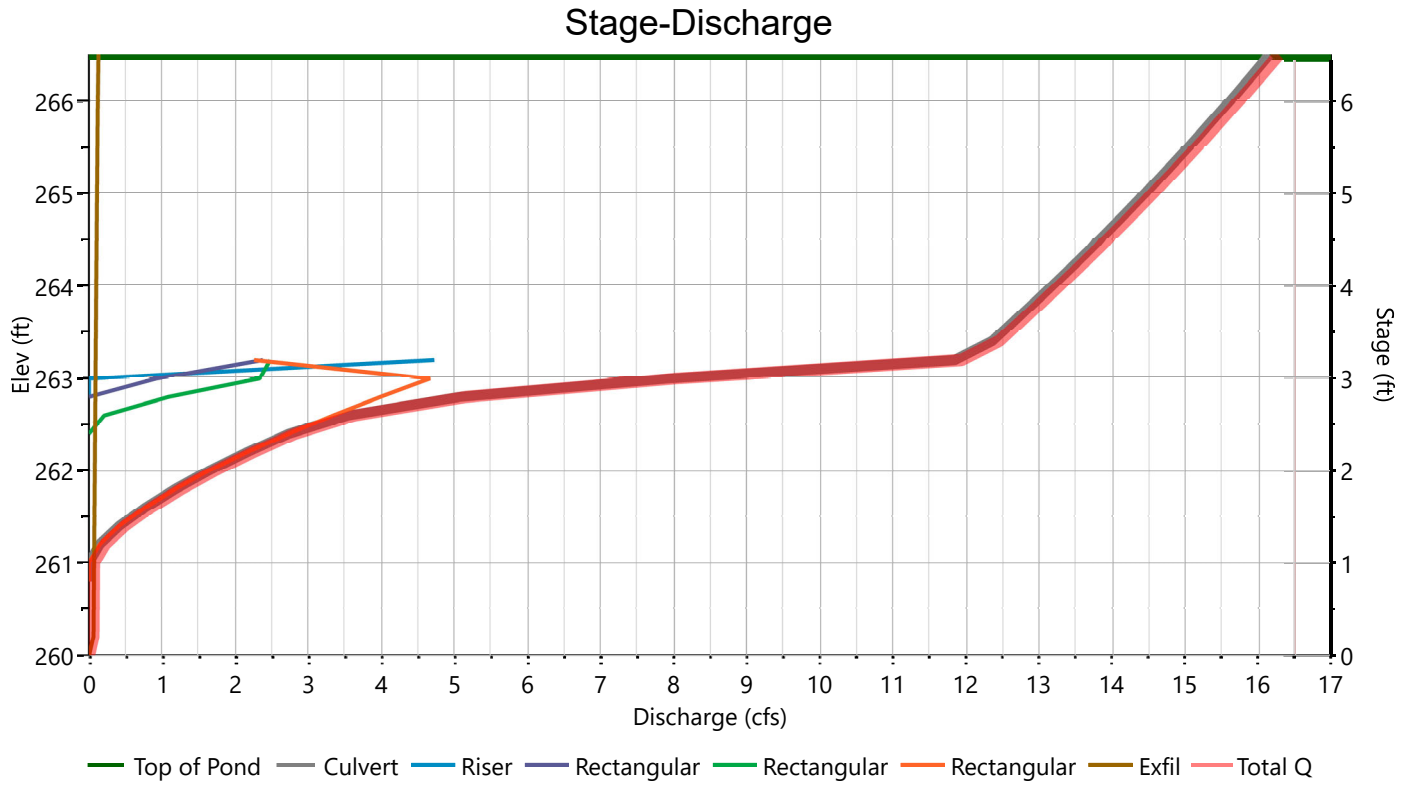


SWQB BOT

Stage-Discharge

Culvert / Orifices	Culvert	Orifices			Orifice Plate	
		1	2	3		
Rise, in	15				Orifice Dia, in	
Span, in	15				No. Orifices	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	258.40				Height, ft	
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co	
Length, ft	22					
Barrel Slope, %	1.8					
N-Value, n	0.013					
Weirs	**Riser***	**Weirs**			**Ancillary**	
		1*	2*	3*		
Shape / Type	Box	Rectangular	Rectangular	Rectangular	Exfiltration, in/hr	0.30**
Crest Elevation, ft	263	262.83	262.5	261		
Crest Length, ft	16	4	2	.5		
Angle, deg						
Weir Coefficient, Cw	3.3	3.3	3.3	3.3		

**Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.*



SWQB BOT

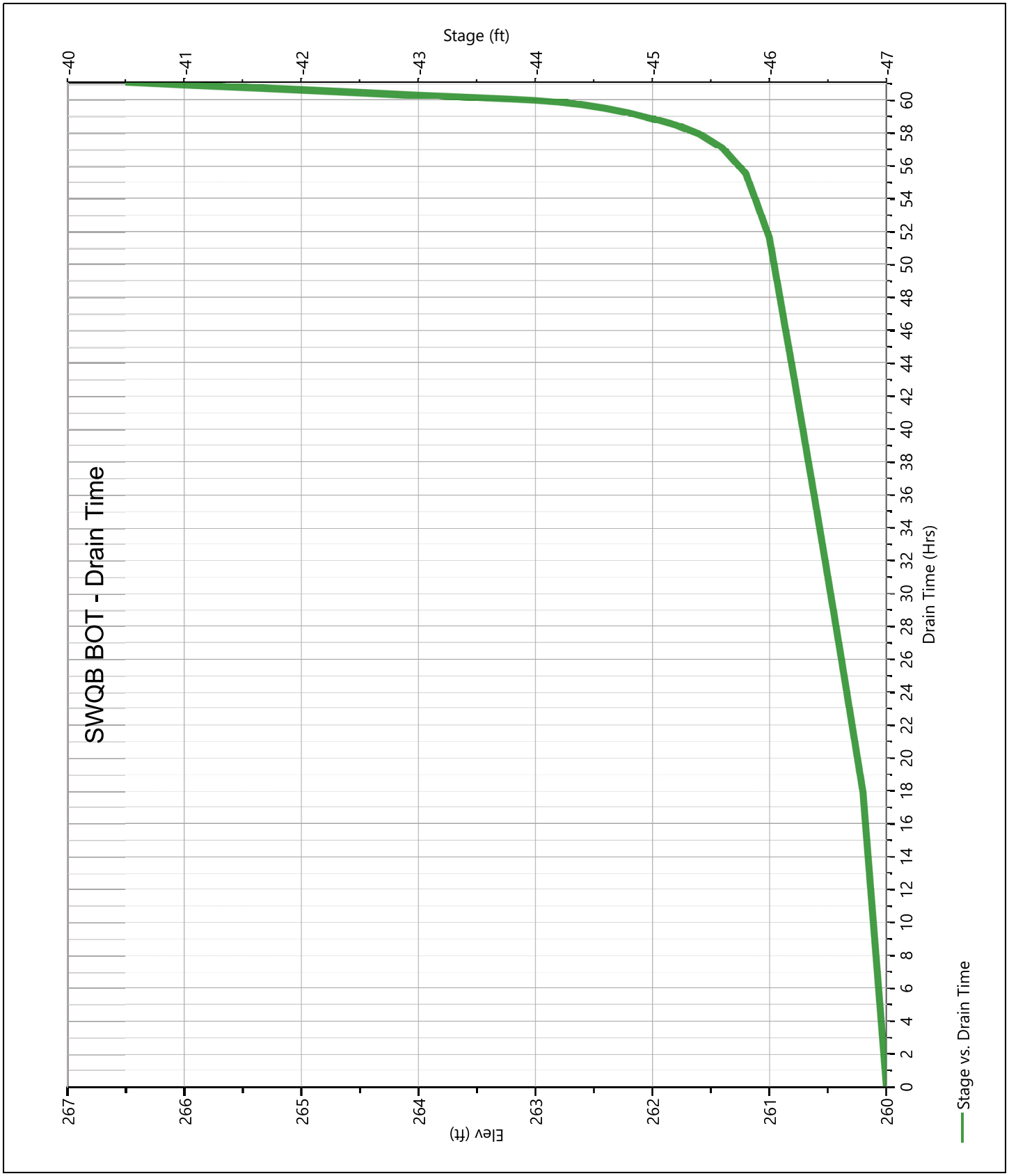
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	260.00	0.000	0.000				0.000	0.000	0.000	0.000		0.000		0.000
2.00	262.00	20,276	1.650 ic				0.000	0.000	0.000	1.650		0.080		1.730
4.00	264.00	46,175	13.18 ic				0.000	0.000	0.000	0.000		0.100		13.28
6.00	266.00	78,004	15.60 ic				0.000	0.000	0.000	0.000		0.121		15.72
6.50	266.50	87,079	16.15 ic				0.000	0.000	0.000	0.000		0.131		16.28

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

SWQB BOT

Pond Drawdown



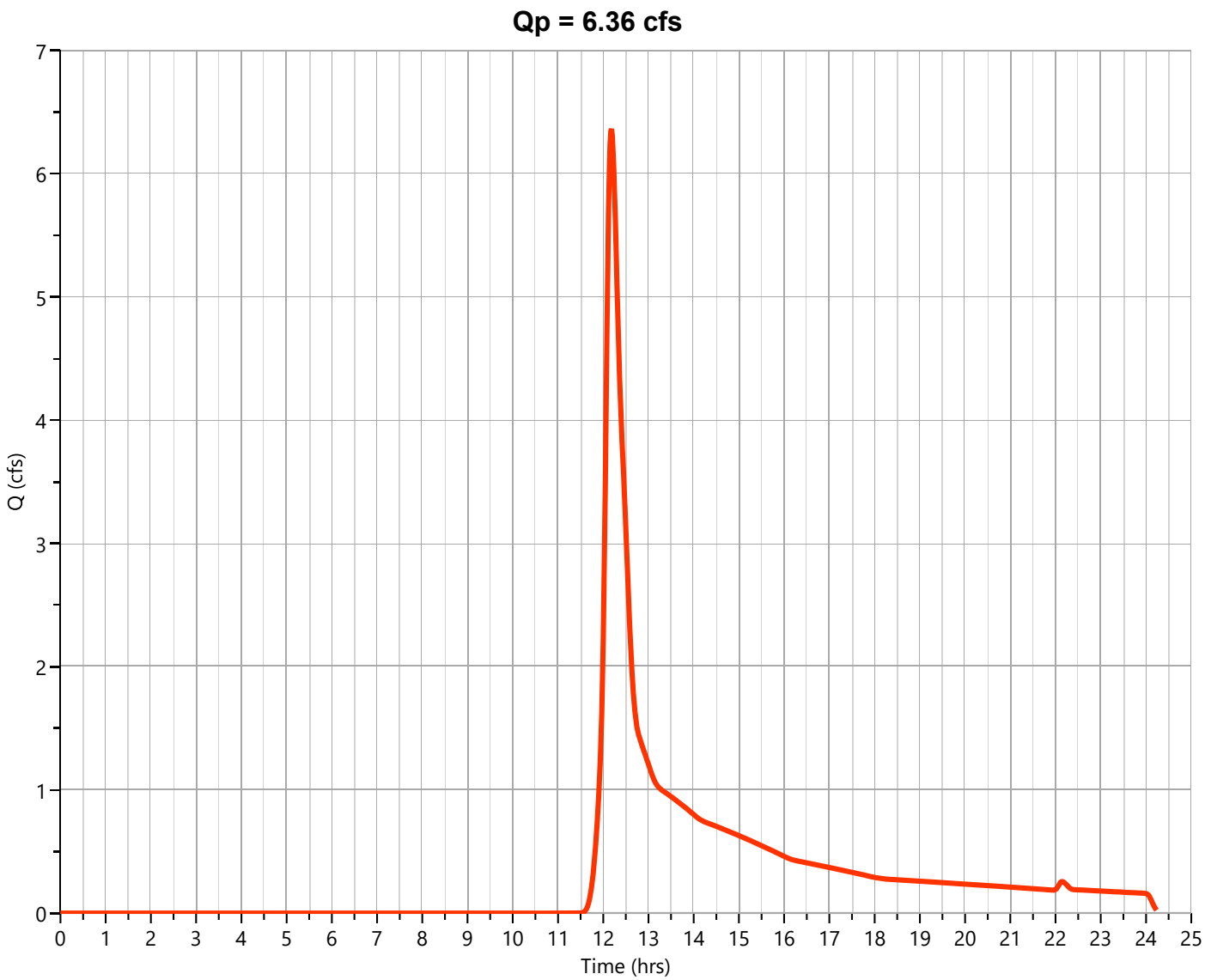
Post FLOW TO N DP

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 6.364 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 27,909 cuft
Drainage Area	= 12.862 ac	Curve Number	= 71.84*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.08 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
9.177	70	WOODED
3.311	74	LAWN
0.374	98	PAVE
12.862	**72**	Weighted CN Method Employed



Tc by TR55 Worksheet

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

FLOW TO N DP
NRCS Runoff

Hyd. No. 3

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description	LAWN			
Manning's n	0.250	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120000	2.280000	2.280000	
Land Slope (%)	5.5			
Travel Time (min)	**9.96**	**0.00**	**0.00**	**9.96**
Shallow Concentrated Flow				
Flow Length (ft)	854			
Watercourse Slope (%)	8			
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.56			
Travel Time (min)	**3.12**	**0.00**	**0.00**	**3.12**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimiter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**13.08 min**

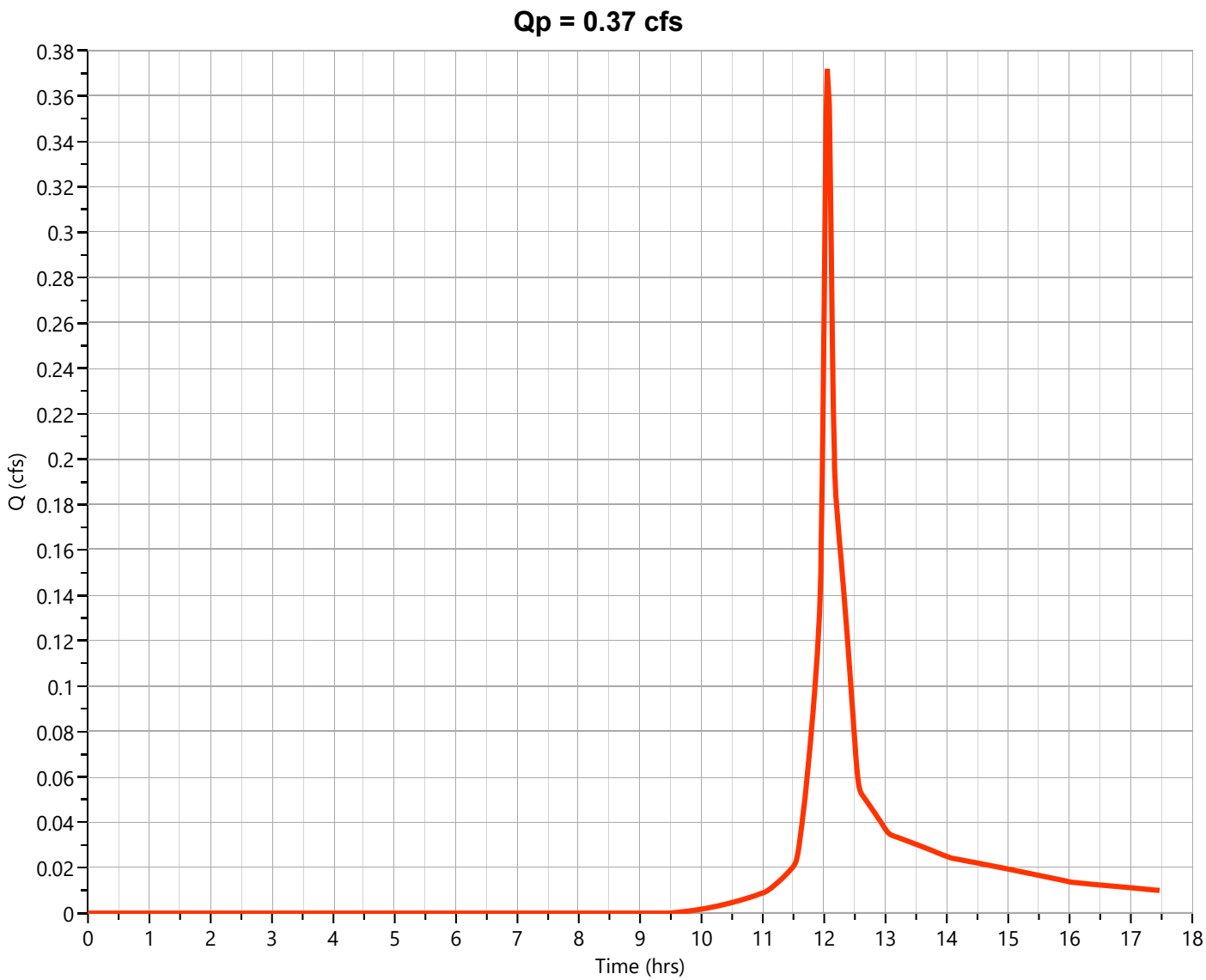
Post SA-21

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.372 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.07 hrs
Time Interval	= 1 min	Runoff Volume	= 1,095 cuft
Drainage Area	= 0.27 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.088	98	PAVE
0.183	74	LAWN
0.27	**82**	Weighted CN Method Employed



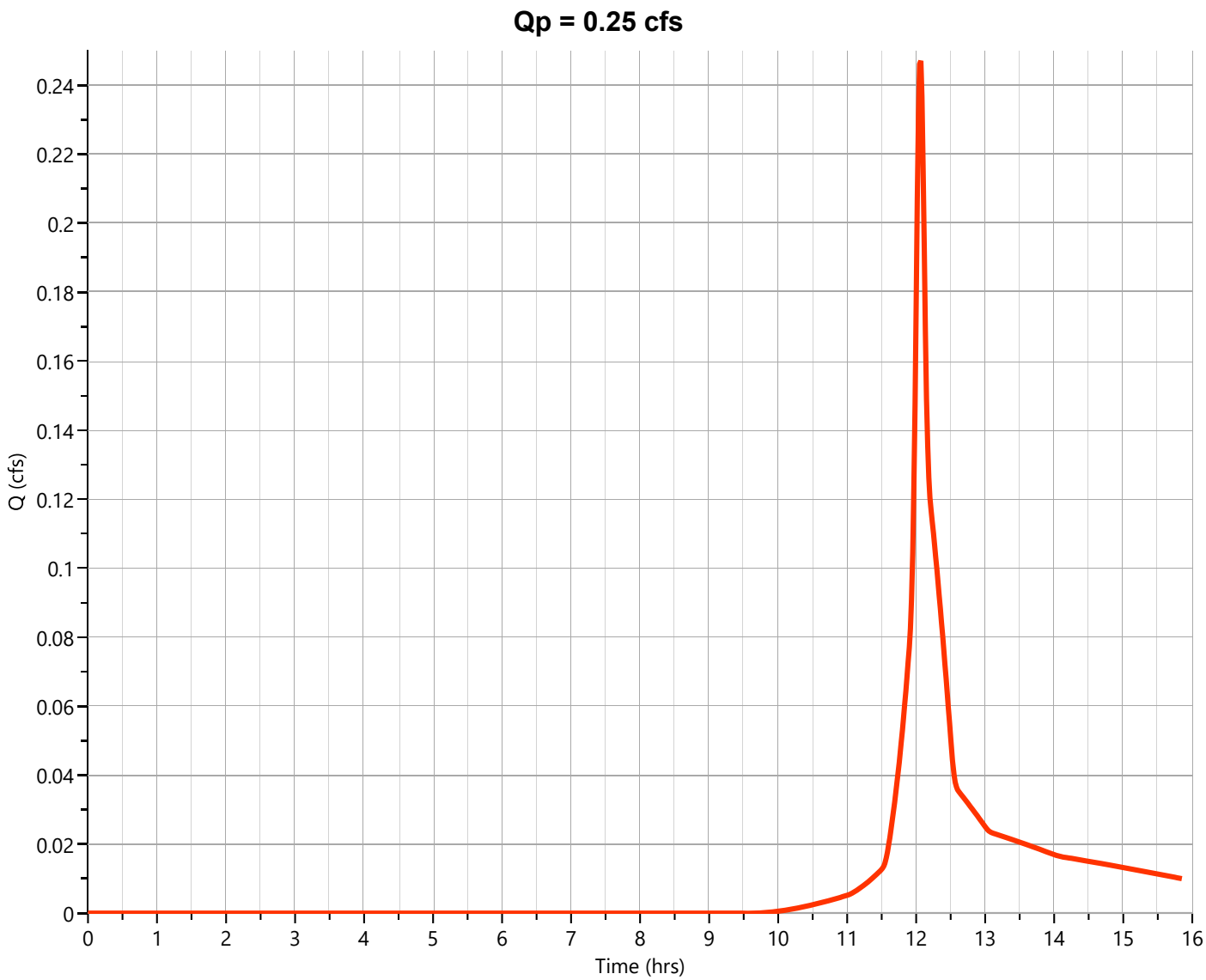
Post SA-20

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.247 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.07 hrs
Time Interval	= 1 min	Runoff Volume	= 730 cuft
Drainage Area	= 0.19 ac	Curve Number	= 81*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.051	98	PAVE
0.135	74	LAWN
0.19	**81**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

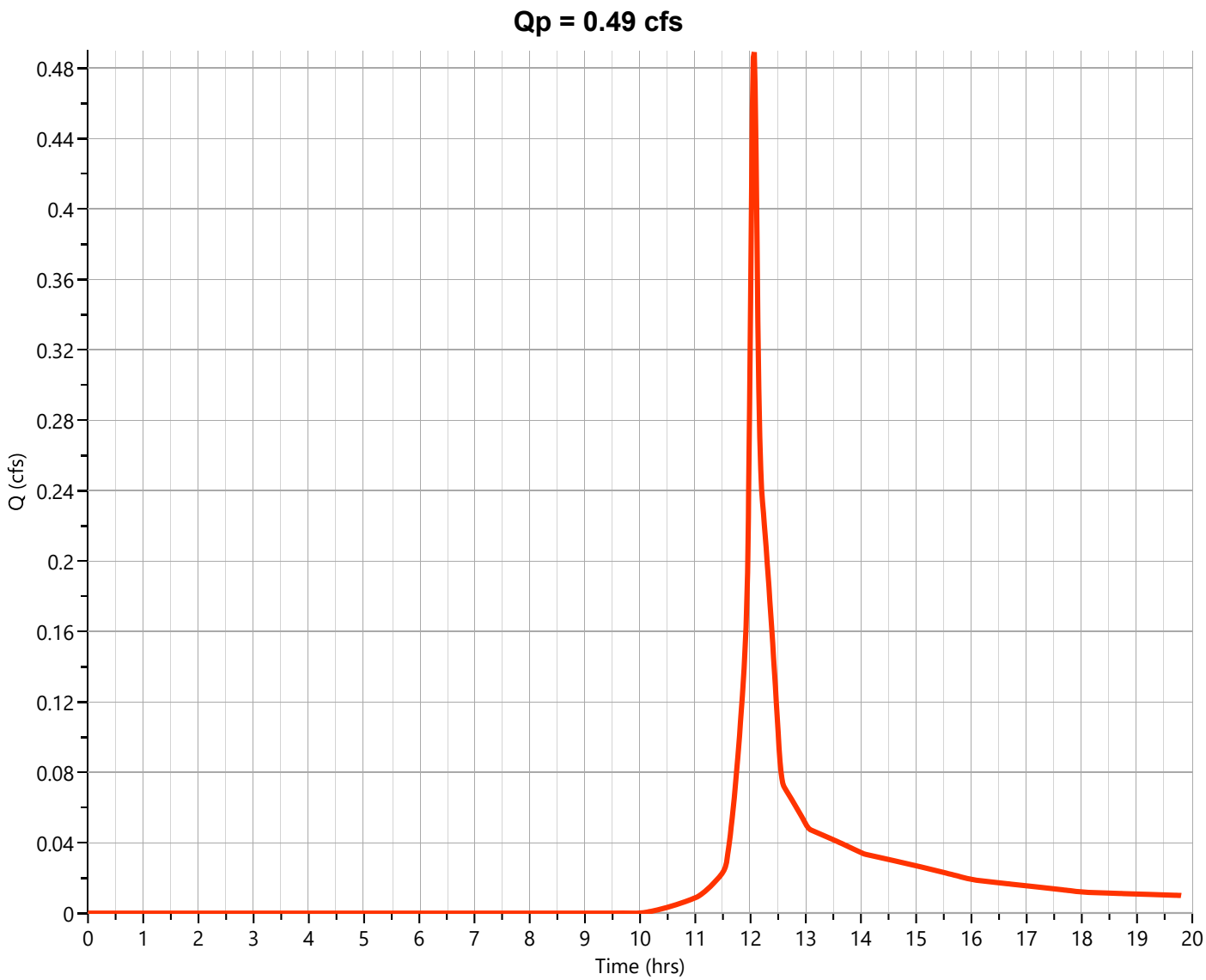
Post SA-23

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.489 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.07 hrs
Time Interval	= 1 min	Runoff Volume	= 1,454 cuft
Drainage Area	= 0.4 ac	Curve Number	= 80*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.306	74	LAWN
0.4	**80**	Weighted CN Method Employed



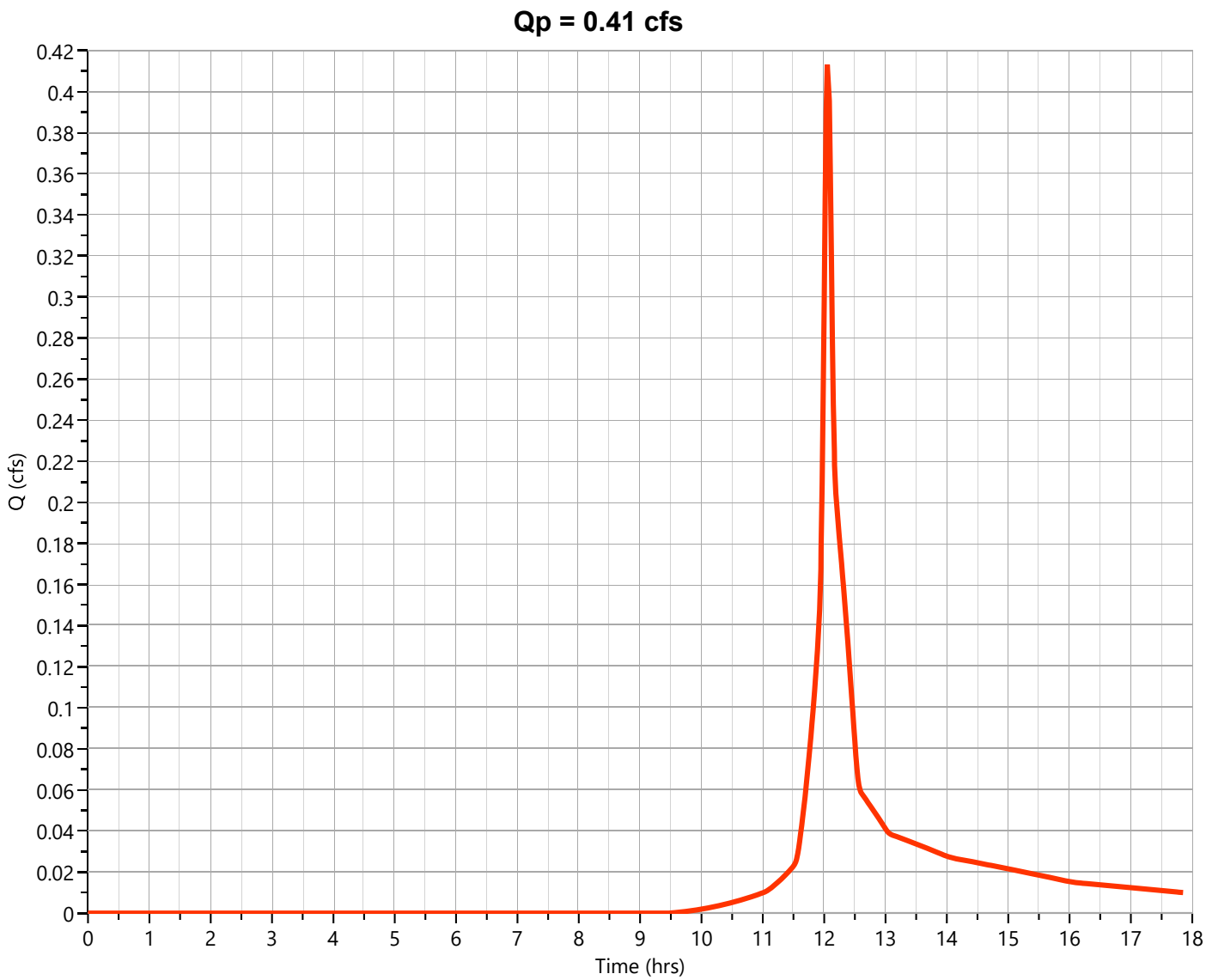
Post SA-24

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.414 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.07 hrs
Time Interval	= 1 min	Runoff Volume	= 1,216 cuft
Drainage Area	= 0.3 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.208	74	LAWN
0.3	**82**	Weighted CN Method Employed



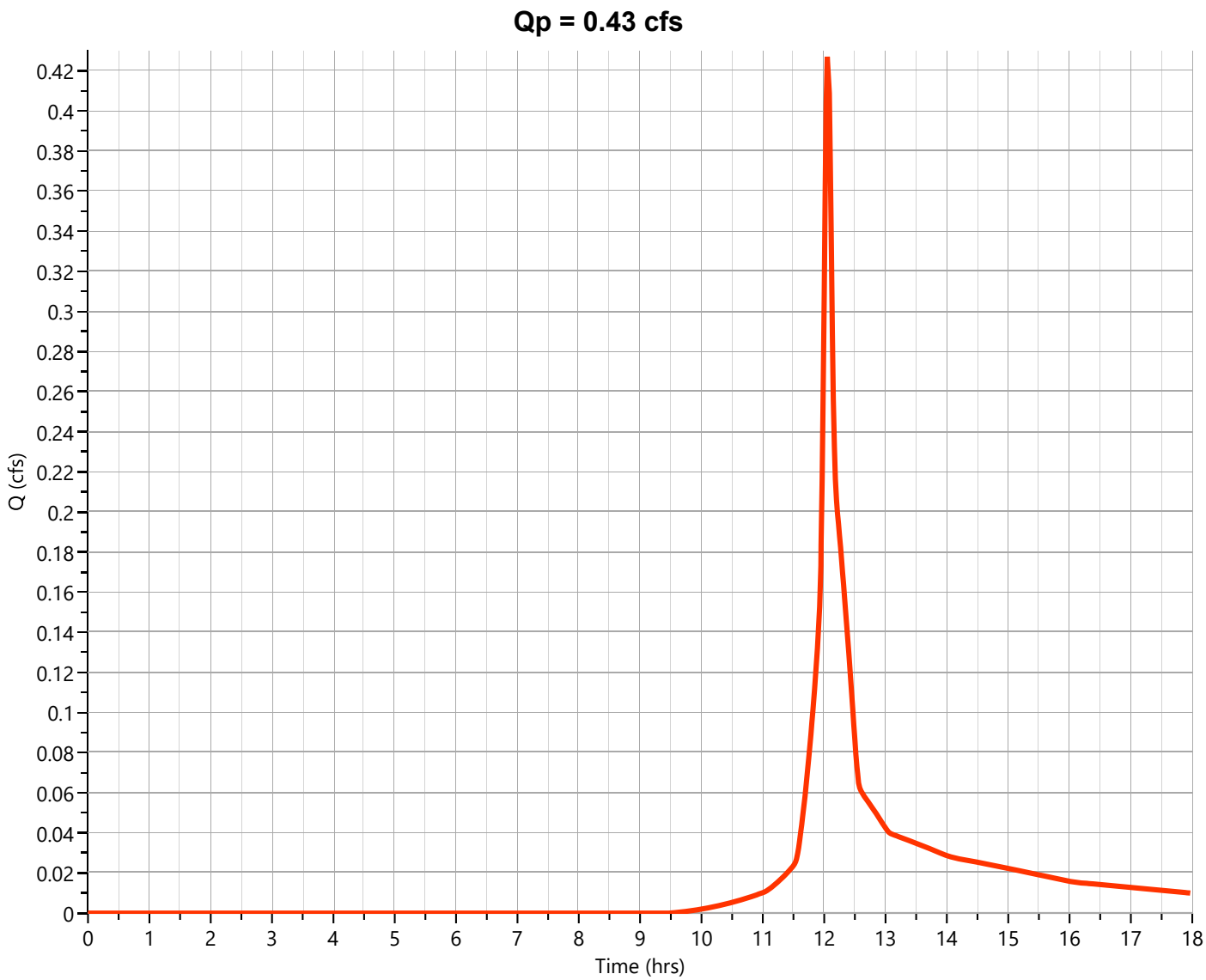
Post SA-22

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.428 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.07 hrs
Time Interval	= 1 min	Runoff Volume	= 1,257 cuft
Drainage Area	= 0.31 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.107	98	PAVE
0.201	74	LAWN
0.31	**82**	Weighted CN Method Employed



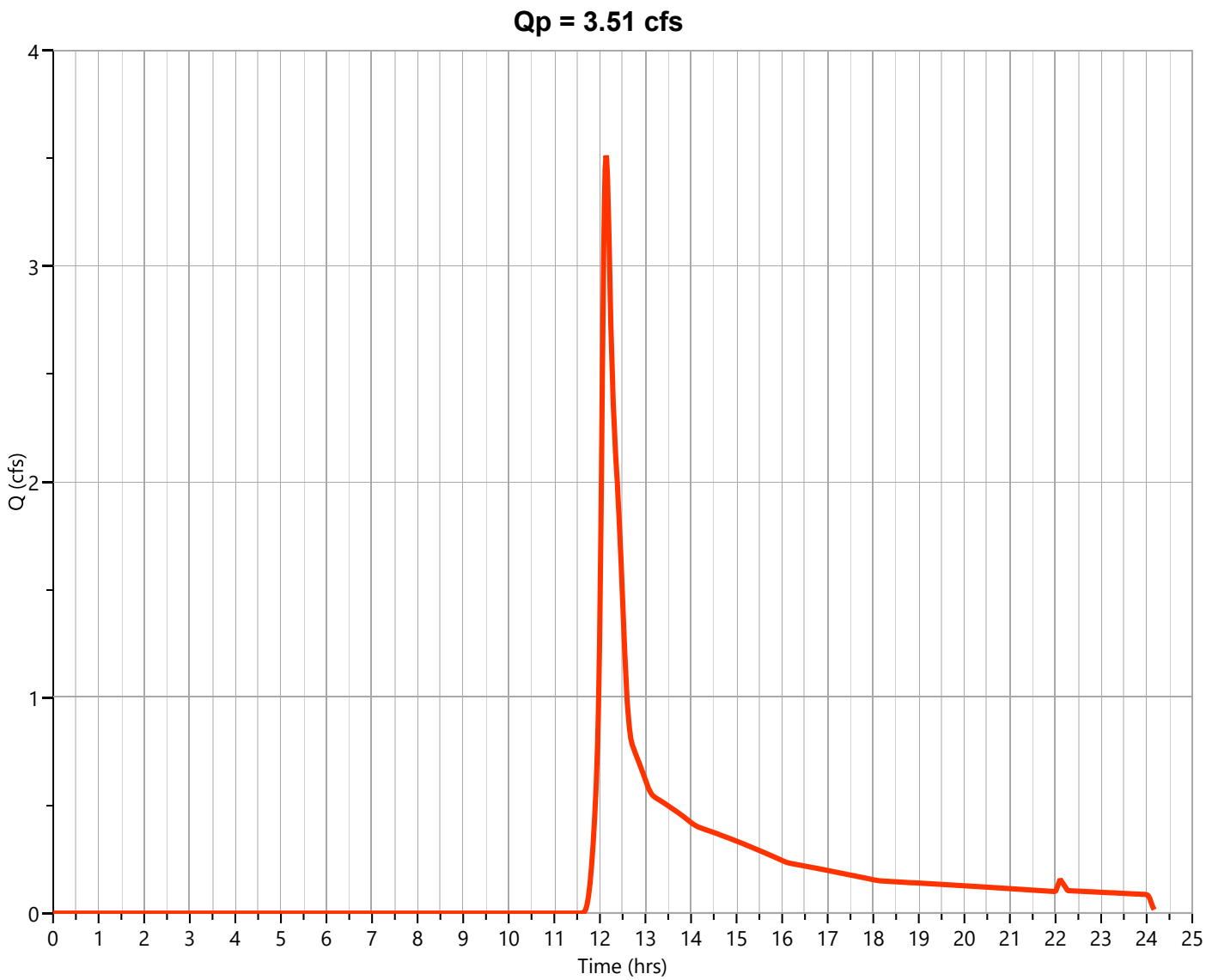
Post SA-25

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.514 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 14,548 cuft
Drainage Area	= 7.208 ac	Curve Number	= 70.57*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
1.022	74	LAWN
6.186	70	WOODED
7.208	**71**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

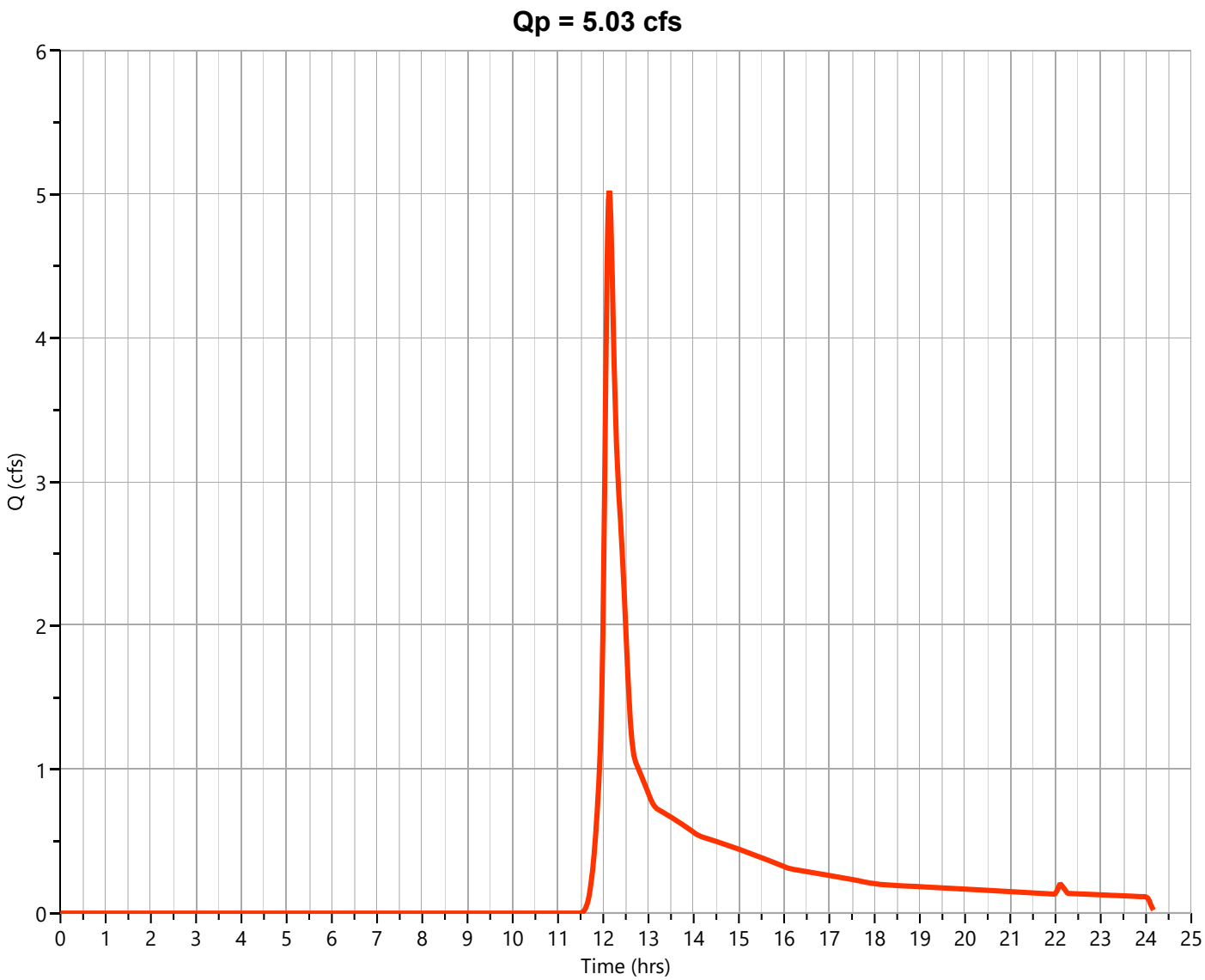
Post SA-26

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 5.026 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 19,966 cuft
Drainage Area	= 8.96 ac	Curve Number	= 72*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.157	98	PAVE
3.887	74	LAWN
4.914	70	WOODED
8.96	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

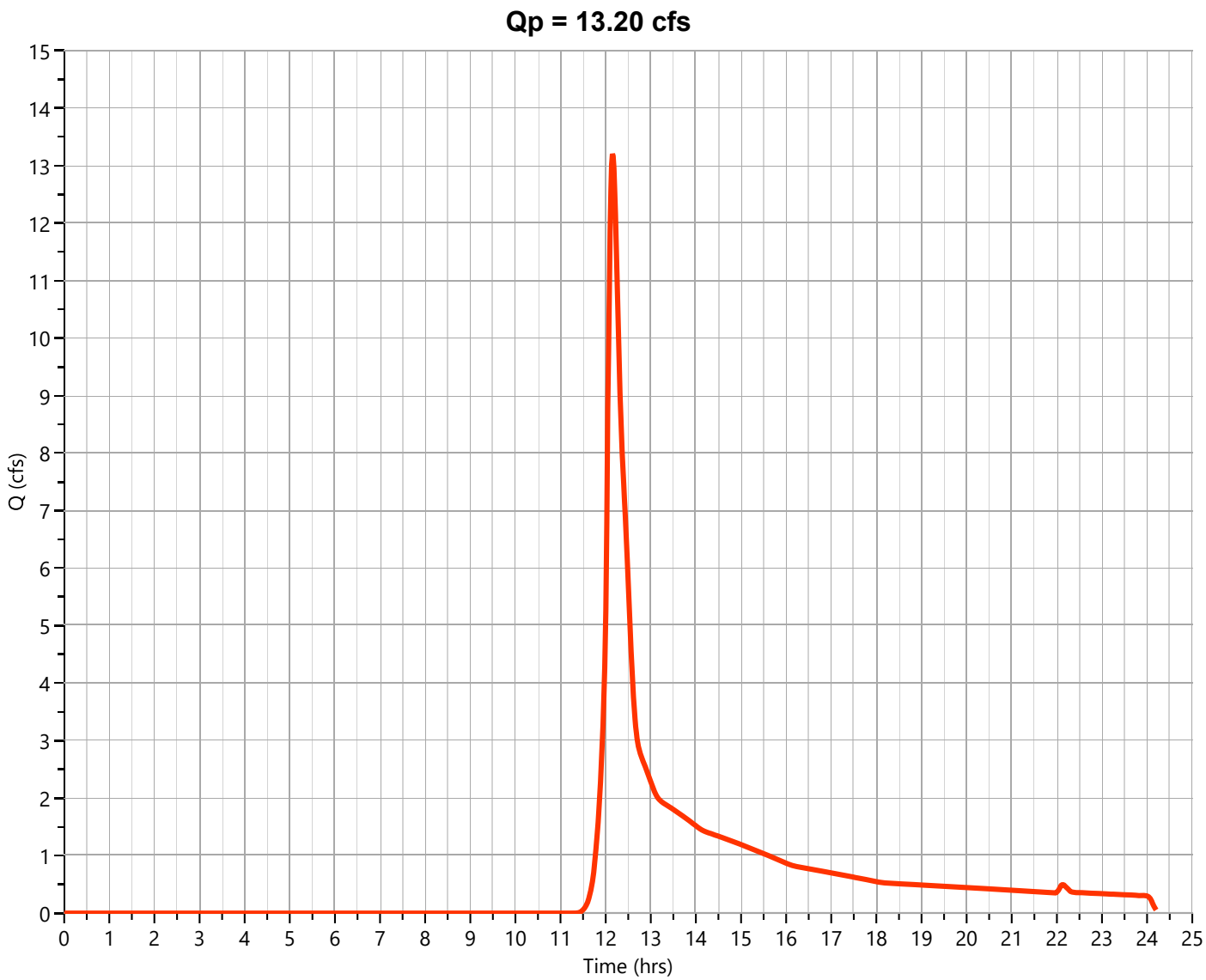
Post SA-40

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 13.20 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 54,460 cuft
Drainage Area	= 22.46 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 2.66 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
16.447	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
22.46	**73**	Weighted CN Method Employed



SA-40

Hyd. No. 11

NRCS Runoff

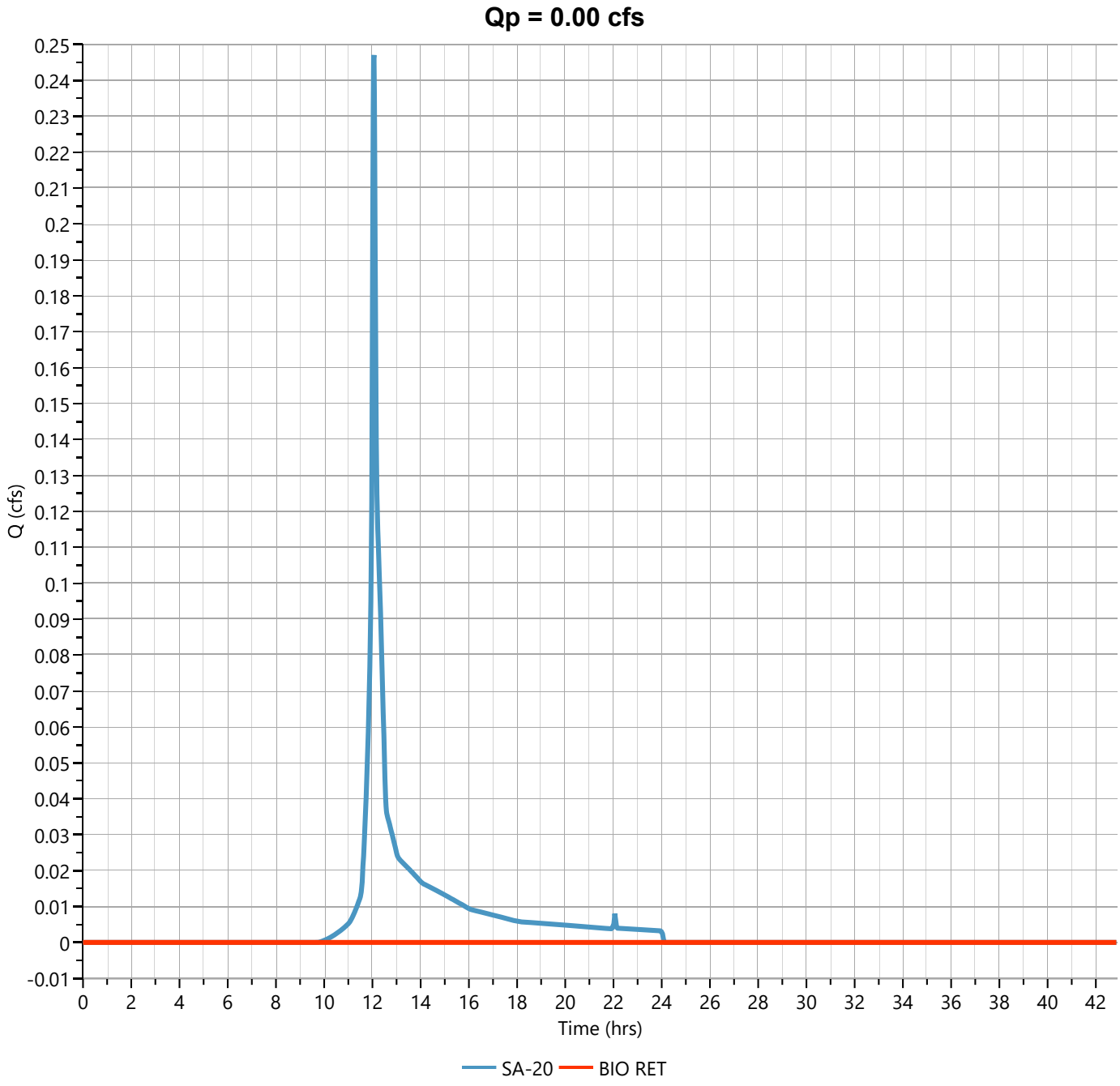
Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description	WOODED			
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.120000	2.280000	2.280000	
Land Slope (%)	12.5			
Travel Time (min)	**8.30**	**0.00**	**0.00**	**8.30**
Shallow Concentrated Flow				
Flow Length (ft)	950			
Watercourse Slope (%)	12.5			
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.7			
Travel Time (min)	**2.78**	**0.00**	**0.00**	**2.78**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimiter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**11.08 min**

Post BIO RET

Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 42.83 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 5 - SA-20	Max. Elevation	= 312.53 ft
Pond Name	= SA-20	Max. Storage	= 490 cuft

Pond Routing by Storage Indication Method



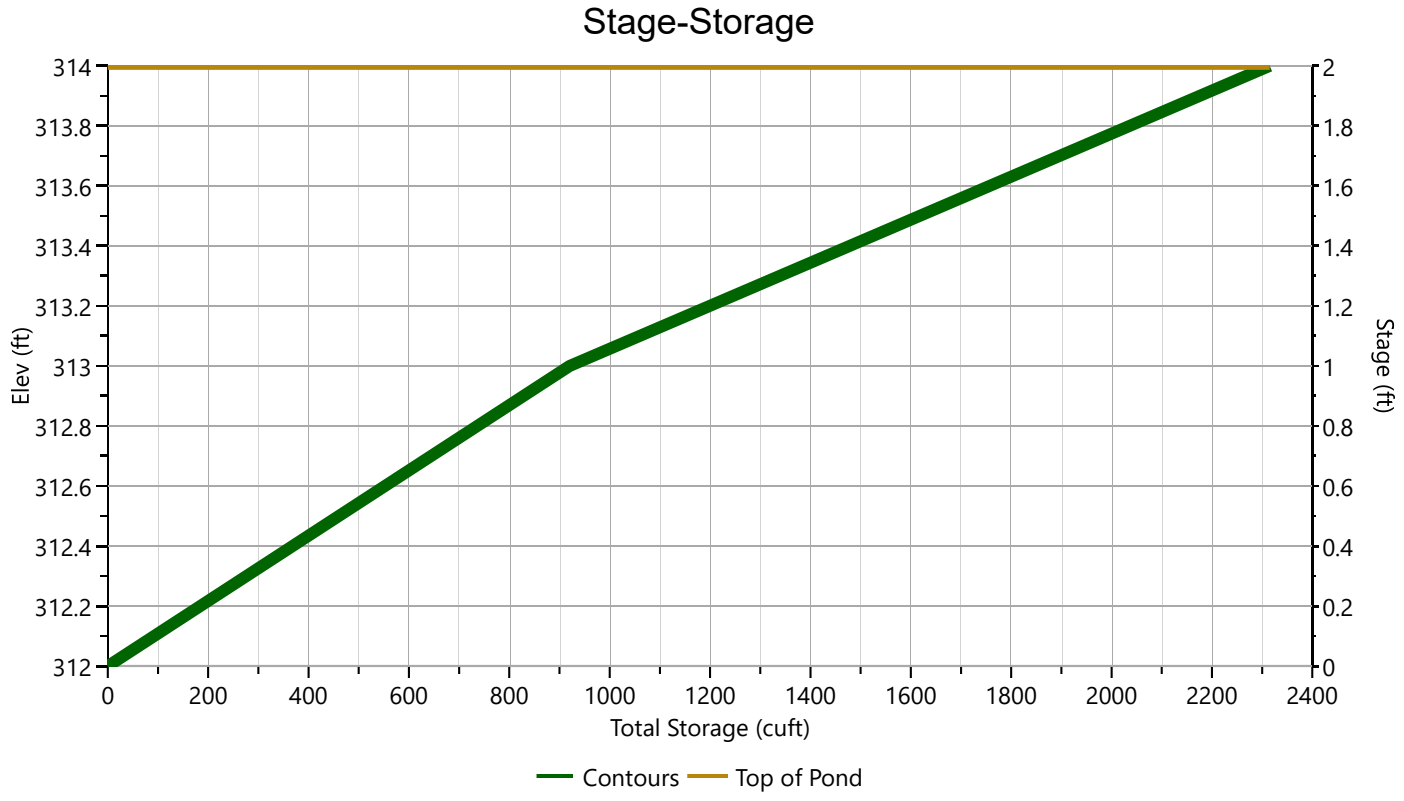
SA-20

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	312.00
Voids (%)	100.00
Volume Calc	Conic

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	312.00	666	0.000	0.000
1.00	313.00	1,200	920	920
2.00	314.00	1,600	1,395	2,315

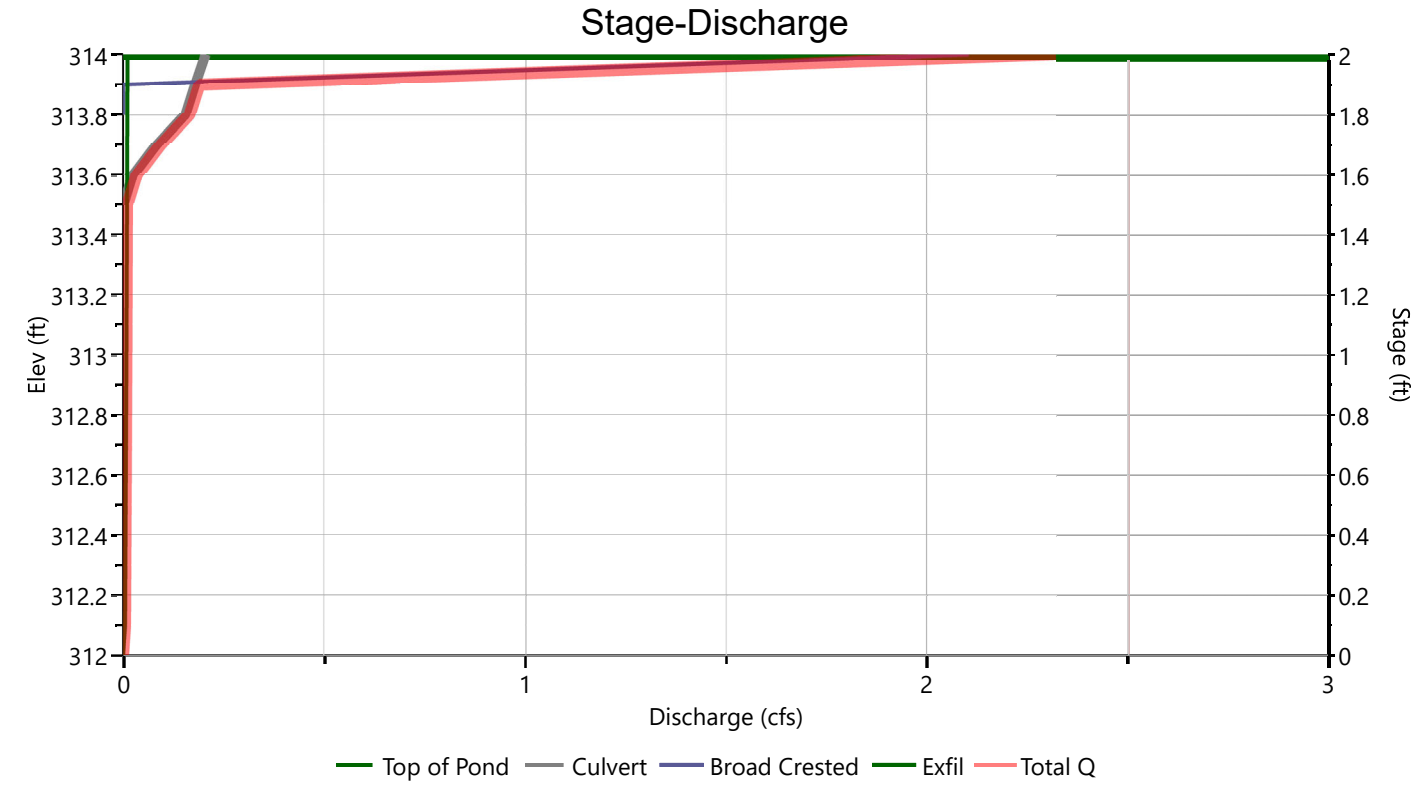


SA-20

Stage-Discharge

Culvert / Orifices	Culvert	Orifices			Perforated Riser	
		1	2	3		
Rise, in	4				Hole Diameter, in	
Span, in	4				No. holes	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	313.50				Height, ft	
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co	
Length, ft	25					
Barrel Slope, %	1					
N-Value, n	0.013					
Weirs	**Riser***	**Weirs**			**Ancillary**	
		1	2	3		
Shape / Type		Broad Crested			Exfiltration, in/hr	0.30**
Crest Elevation, ft		313.9				
Crest Length, ft		20				
Angle, deg		26.6 (2:1)				
Weir Coefficient, Cw		3.3				

**Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.*



SA-20

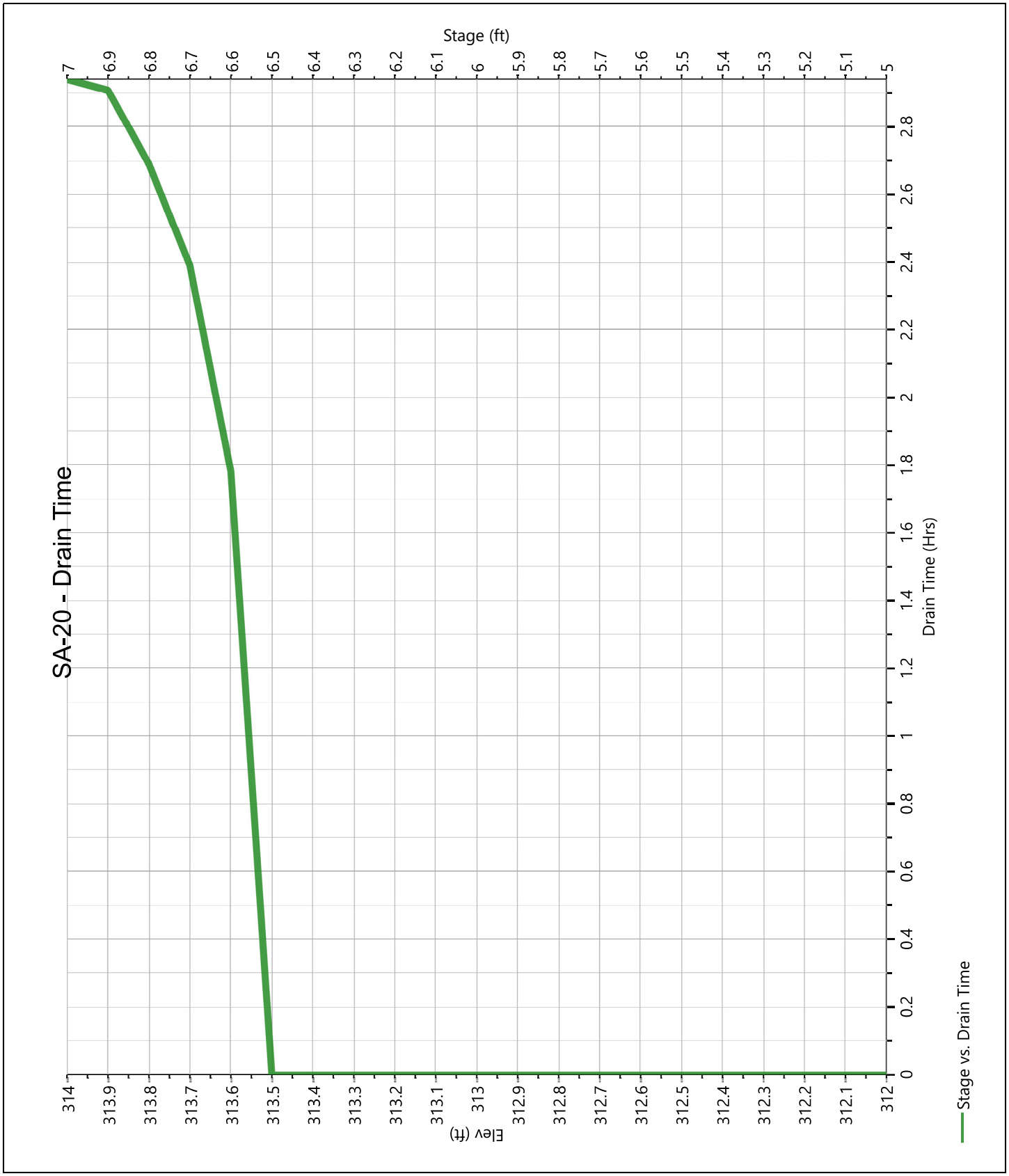
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	312.00	0.000	0.000					0.000				0.000		0.000
1.00	313.00	920	0.000					0.000				0.008		0.008
2.00	314.00	2,315	0.205 oc					2.104				0.011		2.321

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

SA-20

Pond Drawdown

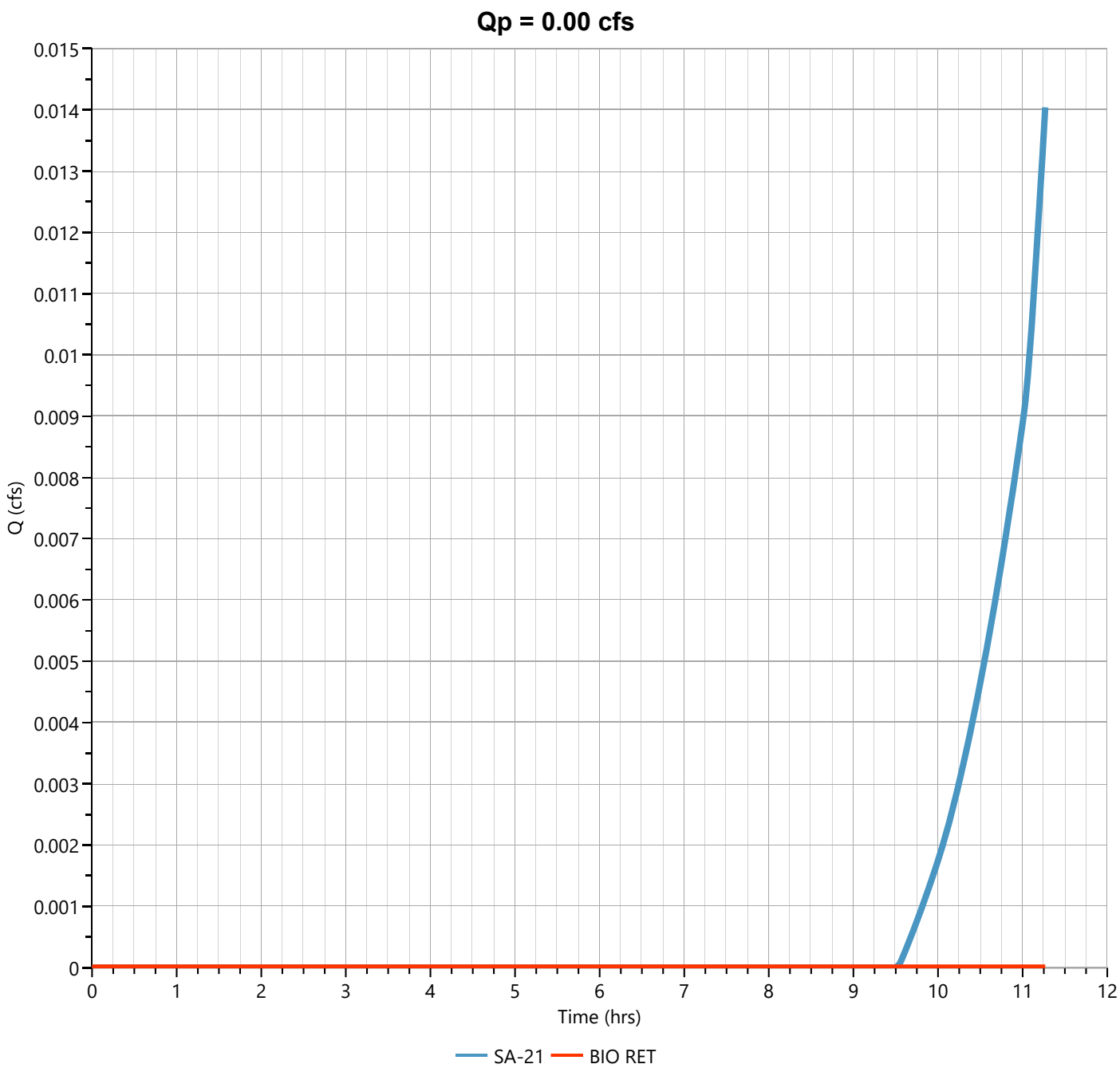


Post BIO RET

Hyd. No. 13

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 11.25 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 4 - SA-21	Max. Elevation	= 302.89 ft
Pond Name	= SA-21	Max. Storage	= 786 cuft

Pond Routing by Storage Indication Method



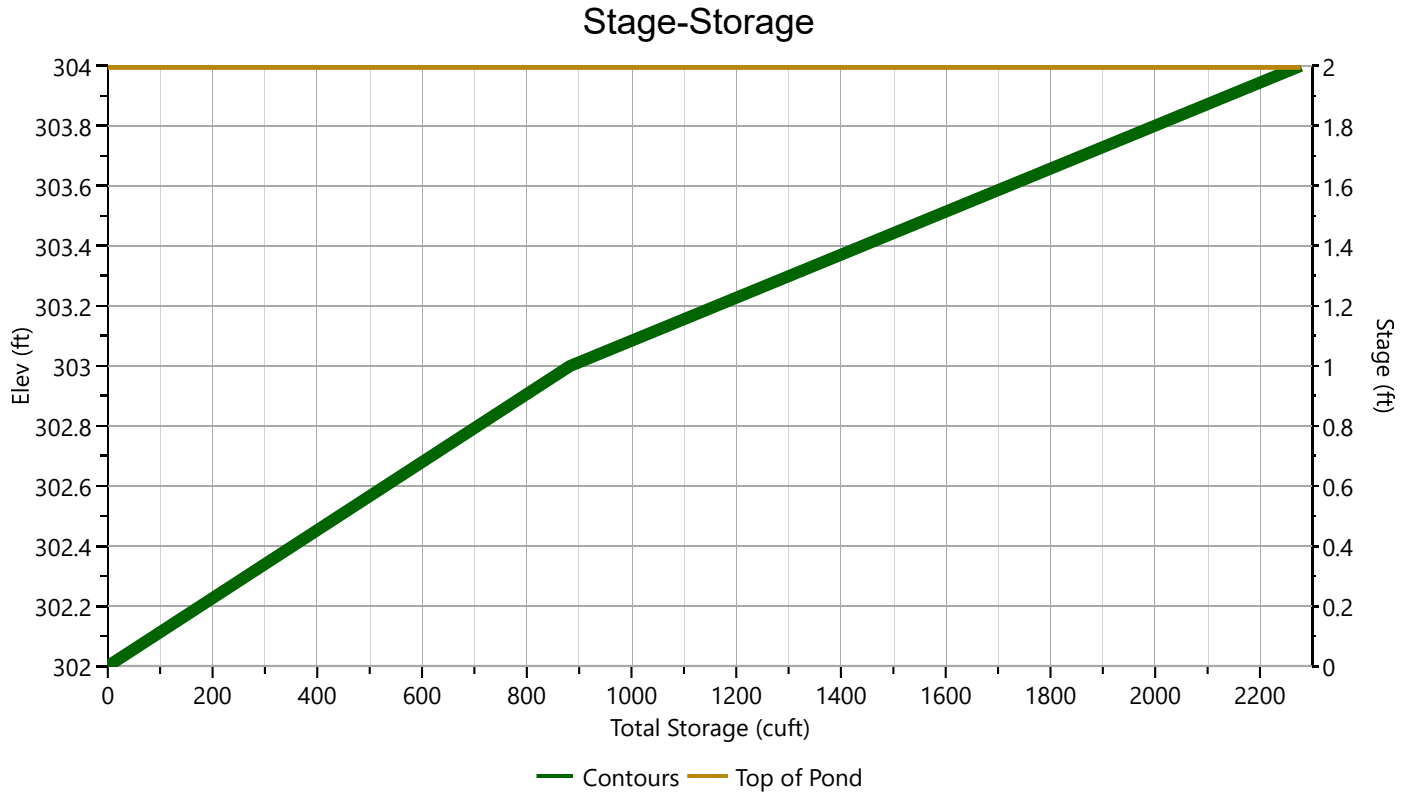
SA-21

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	302.00
Voids (%)	100.00
Volume Calc	Conic

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	302.00	600	0.000	0.000
1.00	303.00	1,200	883	883
2.00	304.00	1,600	1,395	2,278

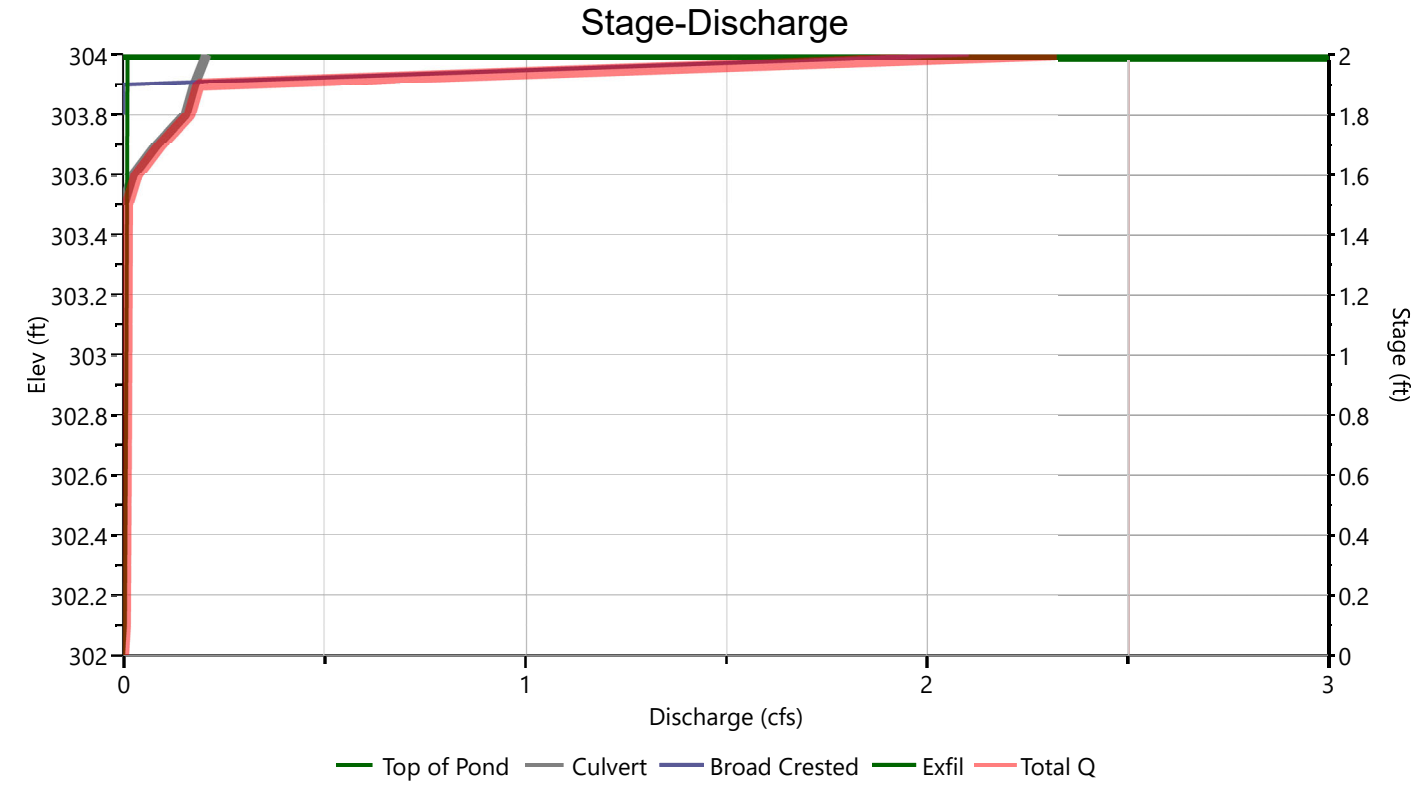


SA-21

Stage-Discharge

Culvert / Orifices	Culvert	Orifices			Perforated Riser	
		1	2	3		
Rise, in	4				Hole Diameter, in	
Span, in	4				No. holes	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	303.50				Height, ft	
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co	
Length, ft	20					
Barrel Slope, %	1					
N-Value, n	0.013					
Weirs	**Riser***	**Weirs**			**Ancillary**	
		1	2	3		
Shape / Type		Broad Crested			Exfiltration, in/hr	0.30**
Crest Elevation, ft		303.9				
Crest Length, ft		20				
Angle, deg		26.6 (2:1)				
Weir Coefficient, Cw		3.3				

*Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.*



SA-21

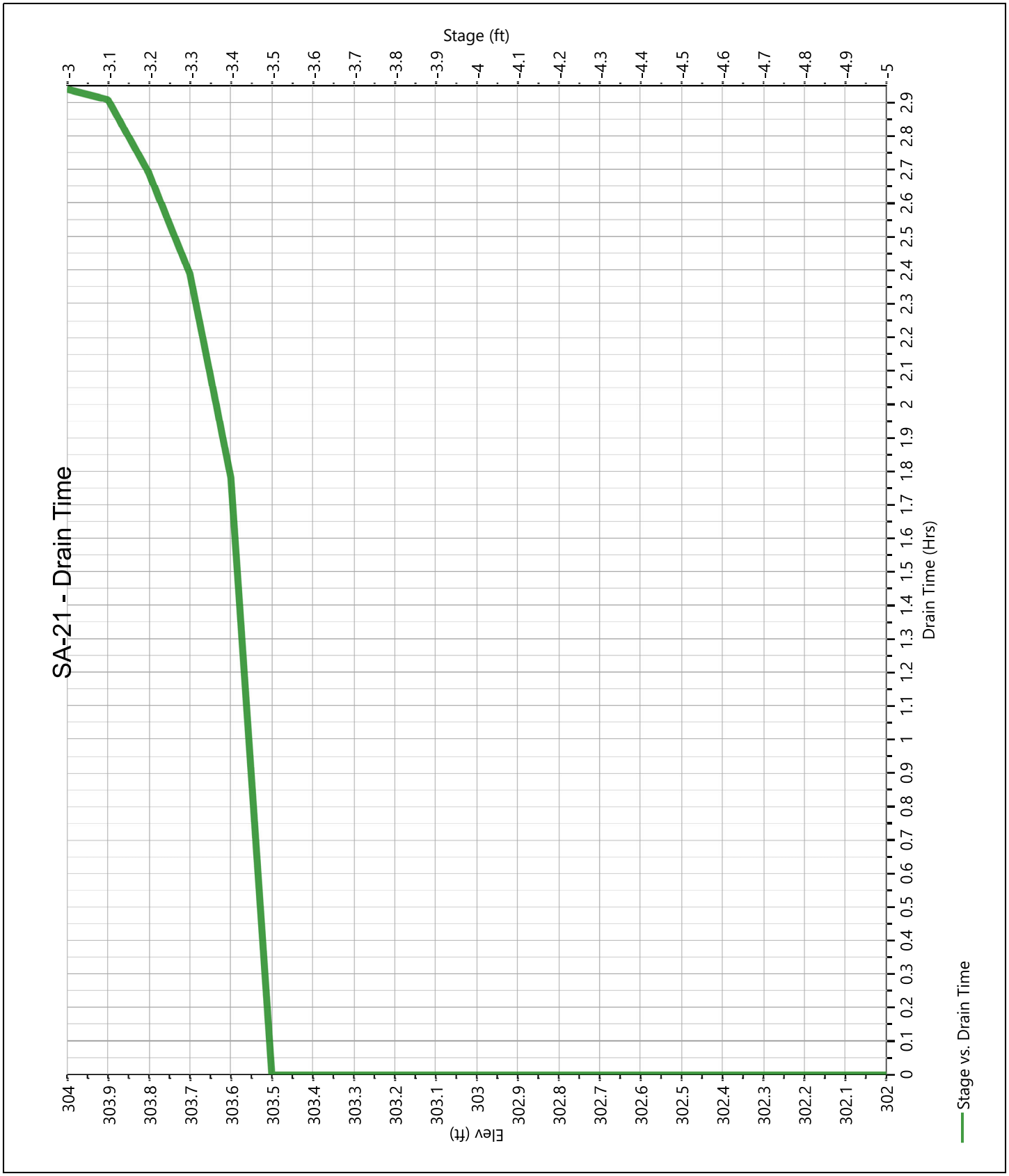
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	302.00	0.000	0.000					0.000				0.000		0.000
1.00	303.00	883	0.000					0.000				0.008		0.008
2.00	304.00	2,278	0.208 oc					2.104				0.011		2.323

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

SA-21

Pond Drawdown



Post BIO-RET

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 0.00 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 6 - SA-23	Max. Elevation	= 300.84 ft
Pond Name	= SA-23	Max. Storage	= 1,031 cuft

Pond Routing by Storage Indication Method

Qp = 0.00 cfs

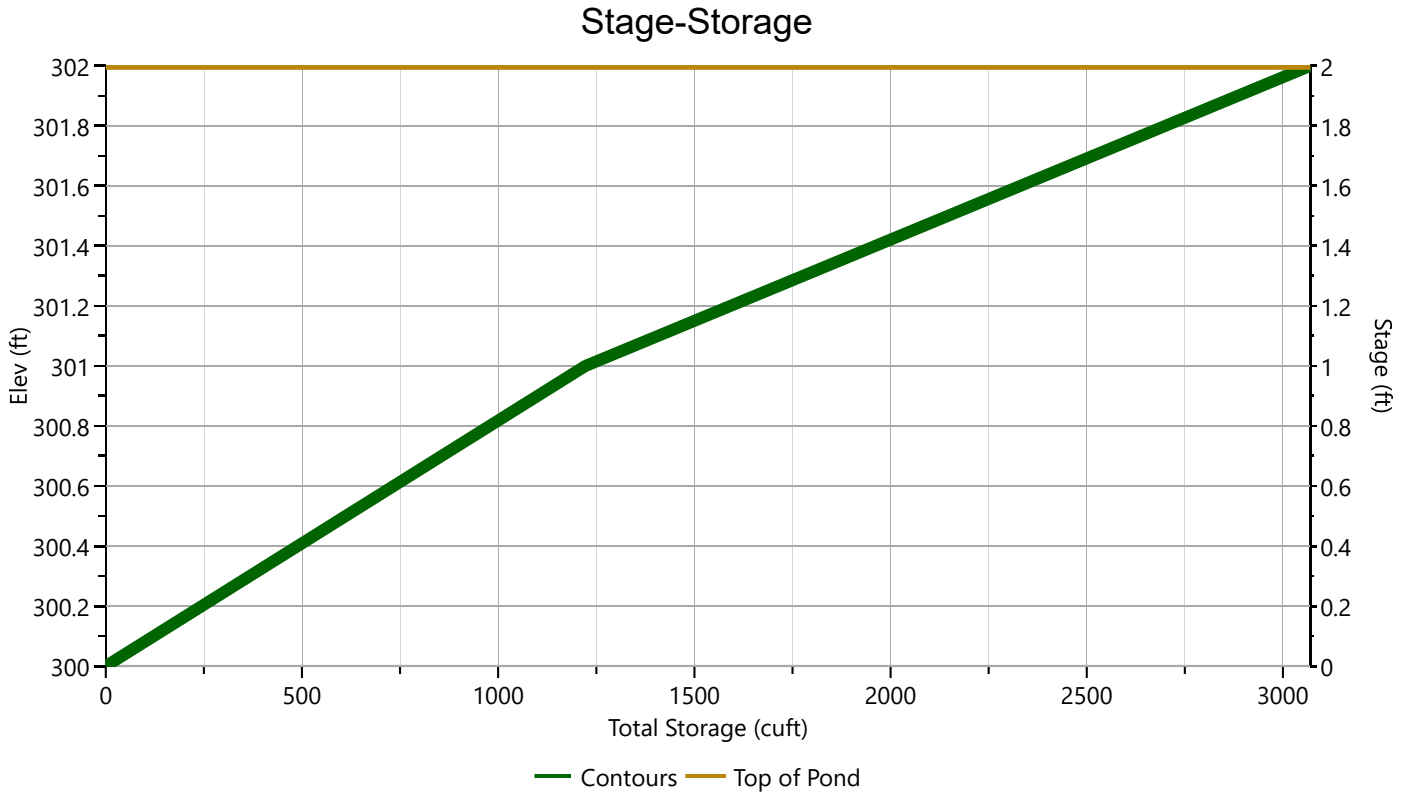
SA-23

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	300.00
Voids (%)	100.00
Volume Calc	Conic

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	300.00	800	0.000	0.000
1.00	301.00	1,700	1,222	1,222
2.00	302.00	2,000	1,848	3,070

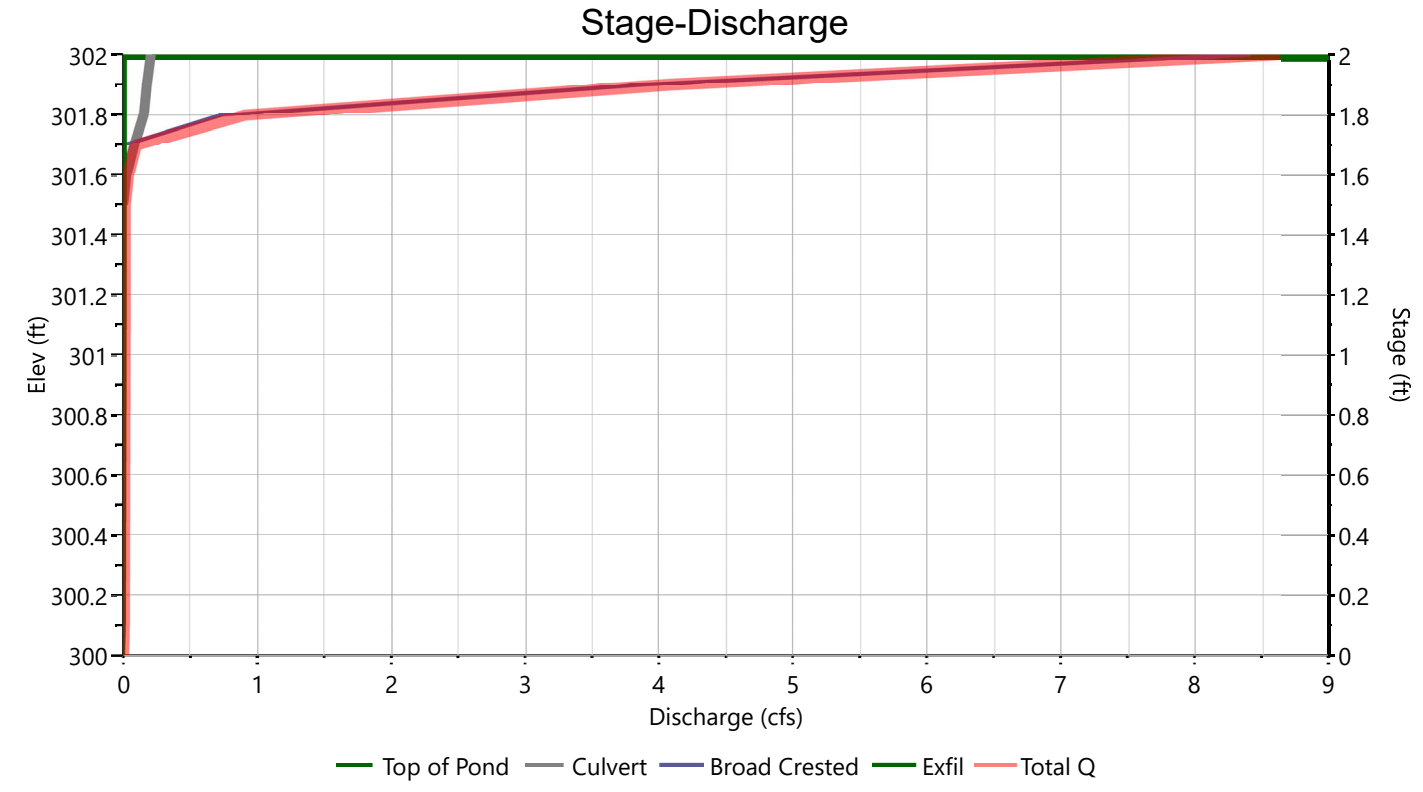


SA-23

Stage-Discharge

Culvert / Orifices	Culvert	Orifices			Perforated Riser	
		1	2	3		
Rise, in	4				Hole Diameter, in	
Span, in	4				No. holes	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	301.50				Height, ft	
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co	
Length, ft	20					
Barrel Slope, %	1					
N-Value, n	0.013					
Weirs	**Riser***	**Weirs**			**Ancillary**	
		1	2	3		
Shape / Type		Broad Crested			Exfiltration, in/hr	0.30**
Crest Elevation, ft		301.75				
Crest Length, ft		20				
Angle, deg		26.6 (2:1)				
Weir Coefficient, Cw		3.3				

**Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.*



SA-23

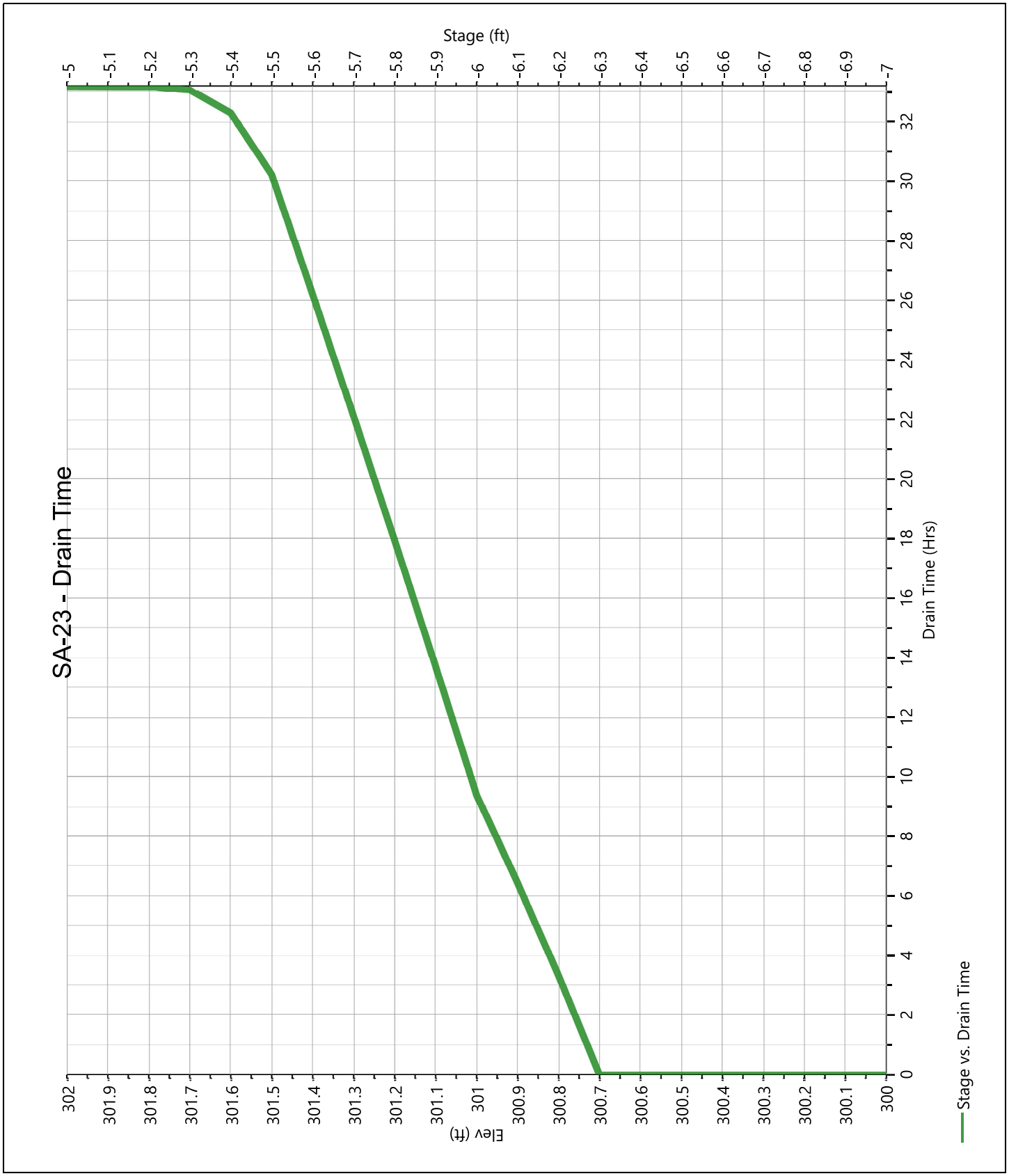
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	300.00	0.000	0.000					0.000				0.000		0.000
1.00	301.00	1,222	0.000					0.000				0.012		0.012
2.00	302.00	3,070	0.208 oc					8.415				0.014		8.637

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

SA-23

Pond Drawdown

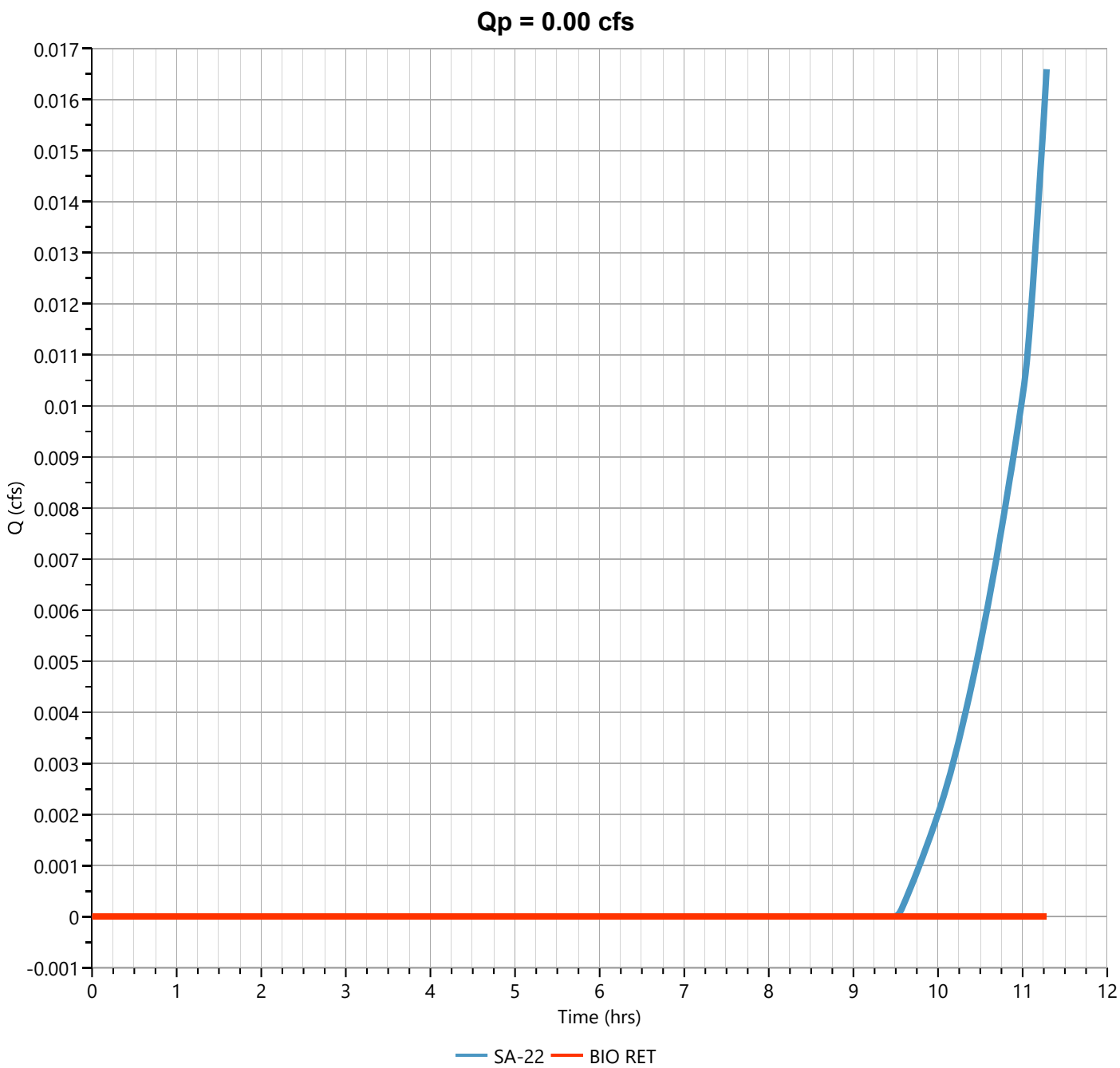


Post BIO RET

Hyd. No. 15

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 11.27 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 8 - SA-22	Max. Elevation	= 301.03 ft
Pond Name	= SA-22	Max. Storage	= 918 cuft

Pond Routing by Storage Indication Method



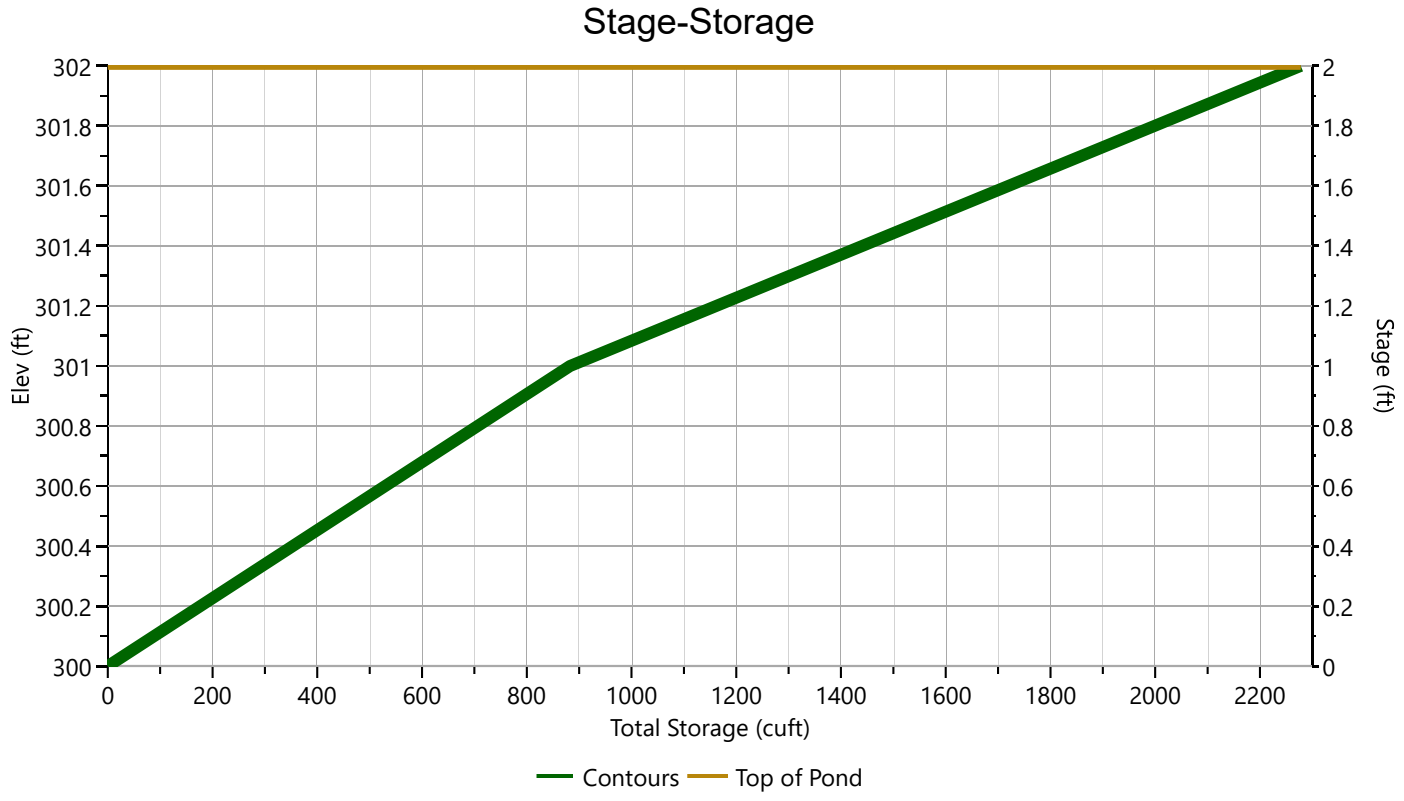
SA-22

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	300.00
Voids (%)	100.00
Volume Calc	Conic

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	300.00	600	0.000	0.000
1.00	301.00	1,200	883	883
2.00	302.00	1,600	1,395	2,278

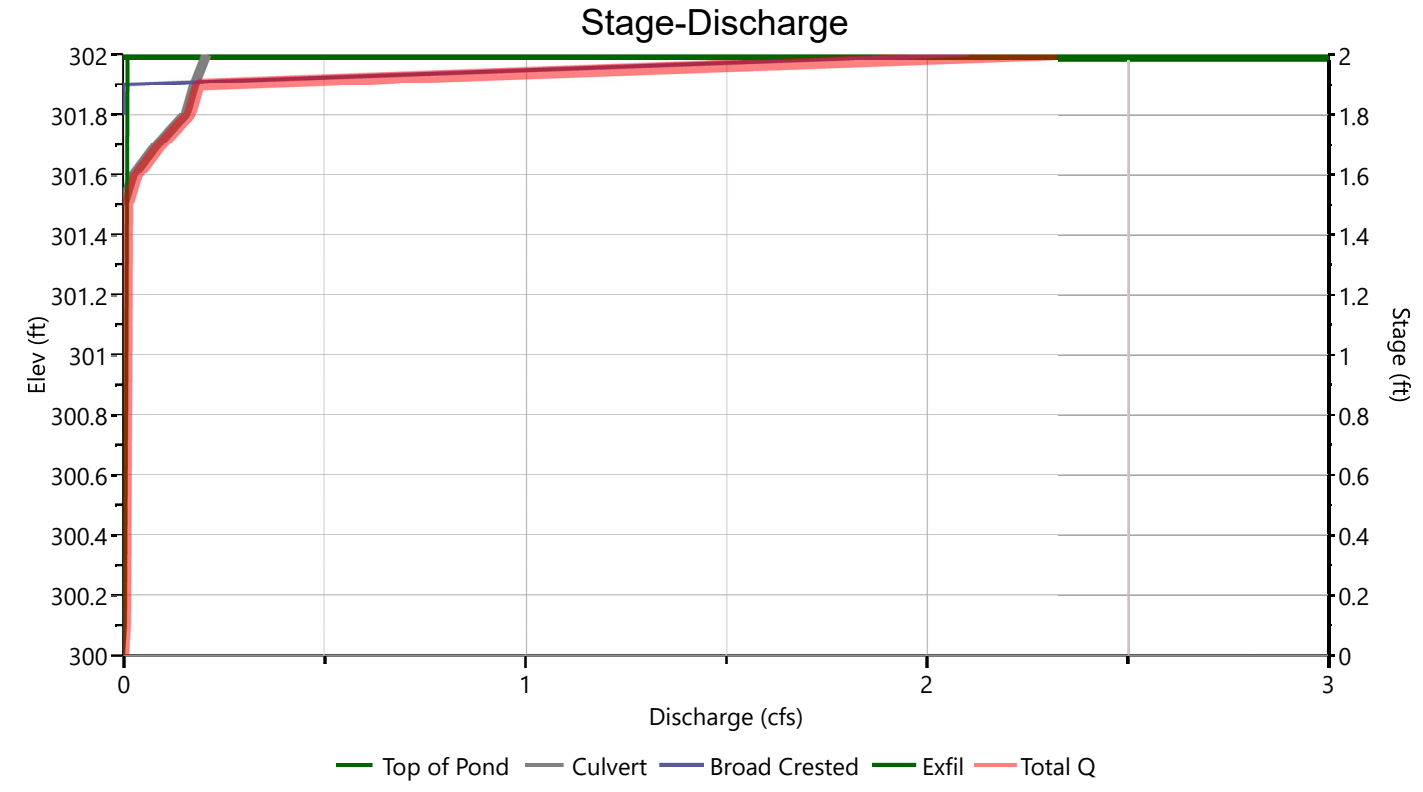


SA-22

Stage-Discharge

Culvert / Orifices	Culvert	Orifices			Perforated Riser	
		1	2	3		
Rise, in	4				Hole Diameter, in	
Span, in	4				No. holes	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	301.50				Height, ft	
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co	
Length, ft	20					
Barrel Slope, %	1					
N-Value, n	0.013					
Weirs	**Riser***	**Weirs**			**Ancillary**	
		1	2	3		
Shape / Type		Broad Crested			Exfiltration, in/hr	0.30**
Crest Elevation, ft		301.9				
Crest Length, ft		20				
Angle, deg		26.6 (2:1)				
Weir Coefficient, Cw		3.3				

**Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.*



SA-22

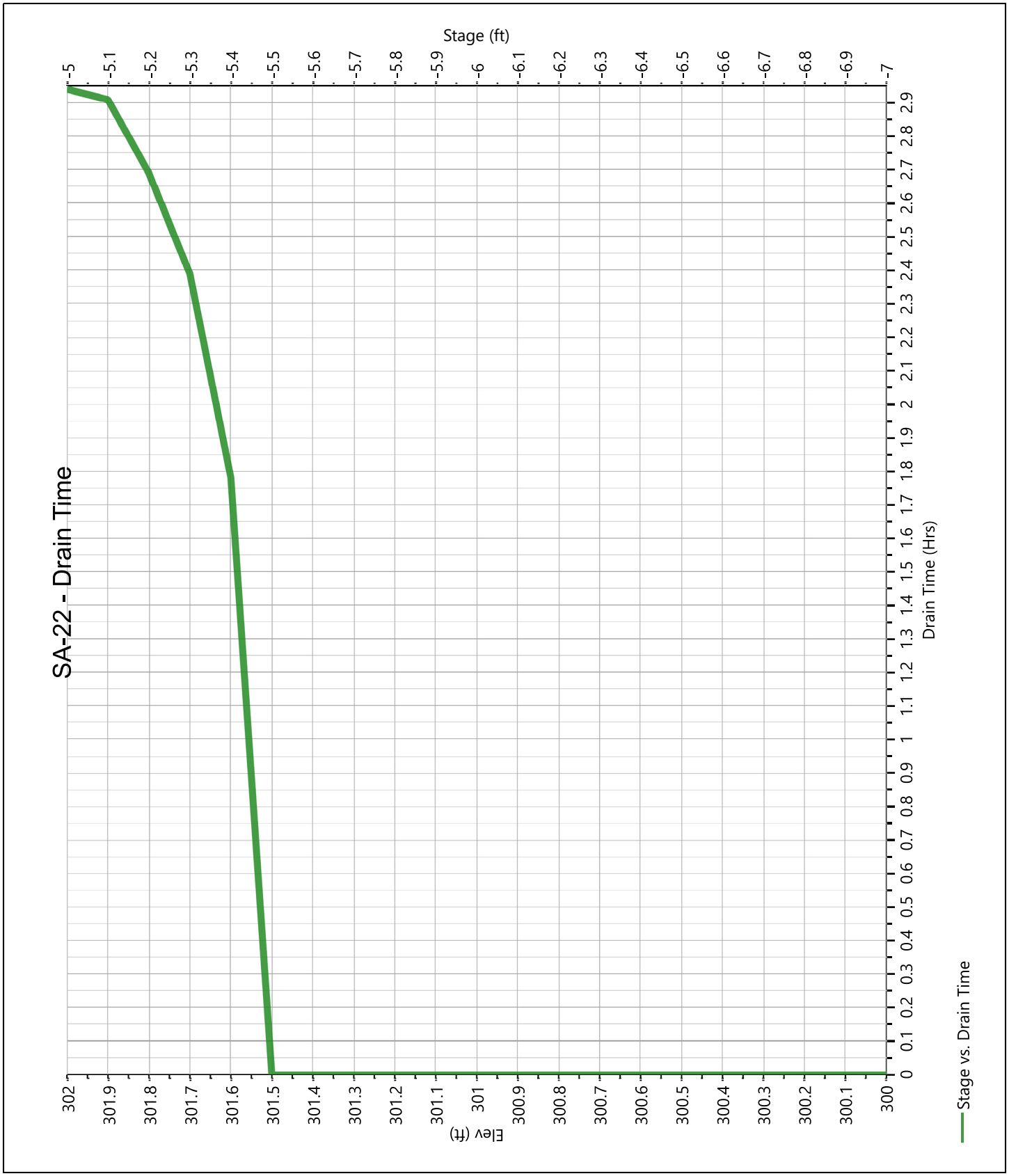
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	300.00	0.000	0.000					0.000				0.000		0.000
1.00	301.00	883	0.000					0.000				0.008		0.008
2.00	302.00	2,278	0.208 oc					2.104				0.011		2.323

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

SA-22

Pond Drawdown

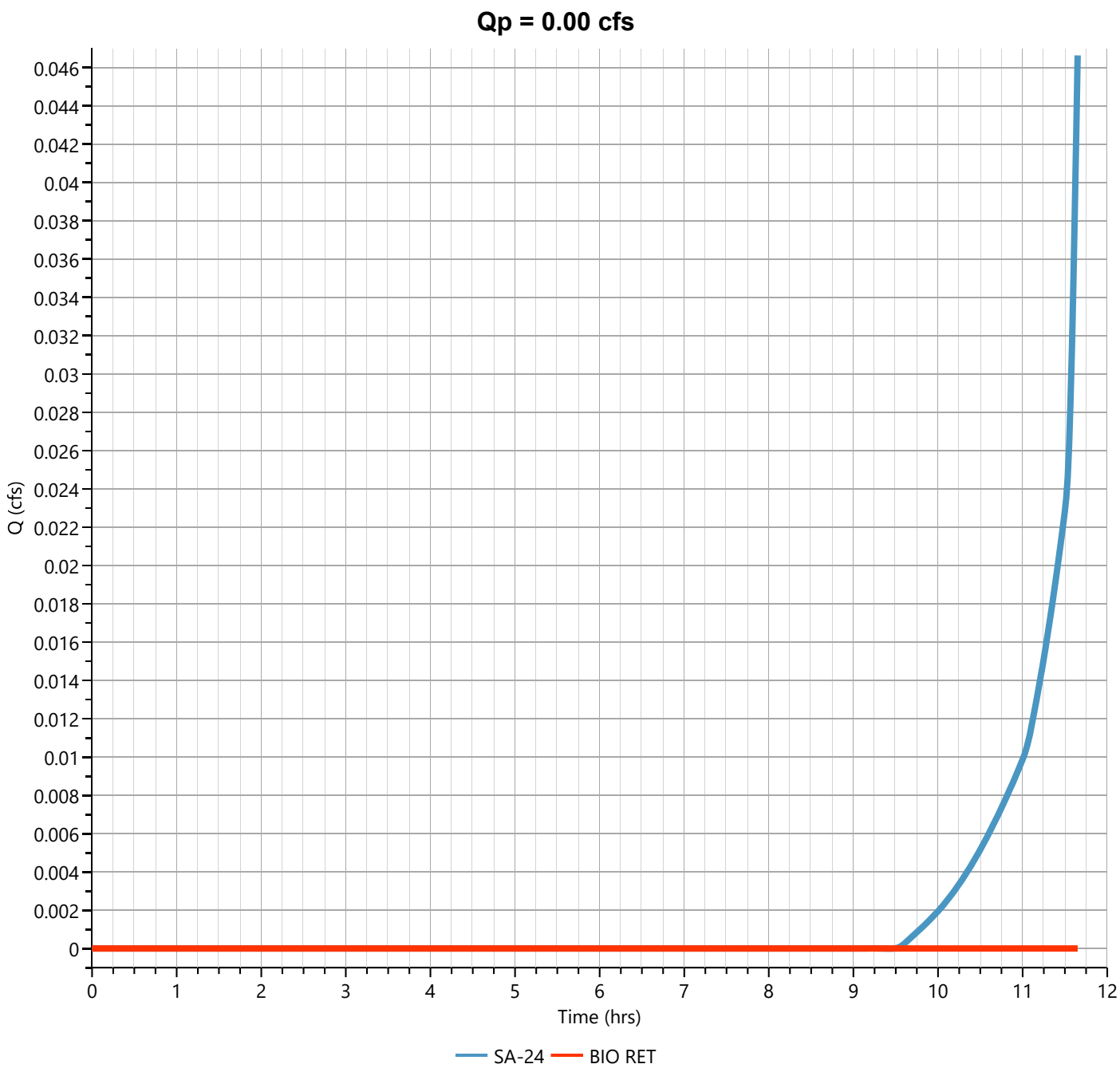


Post BIO RET

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 11.63 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 7 - SA-24	Max. Elevation	= 308.00 ft
Pond Name	= SA-24	Max. Storage	= 884 cuft

Pond Routing by Storage Indication Method



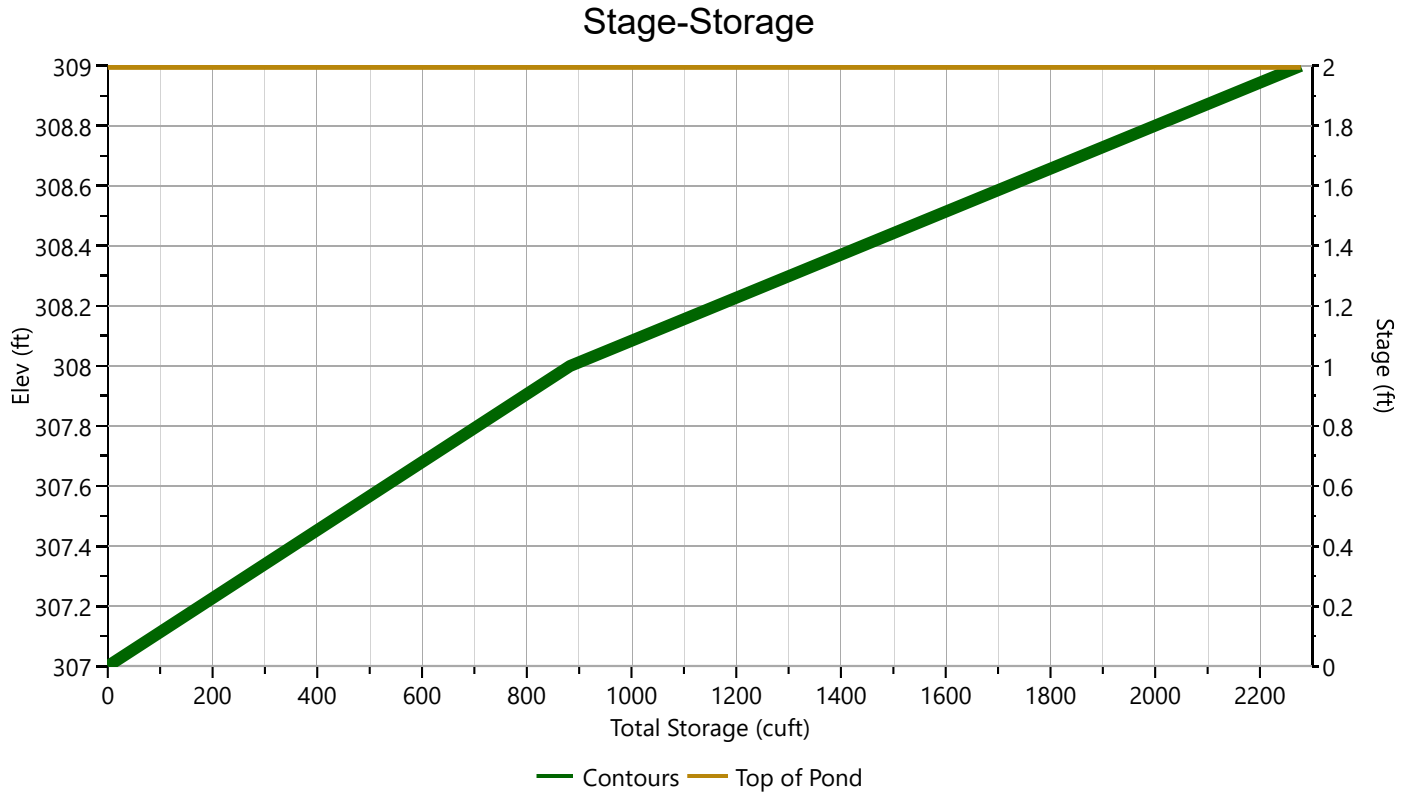
SA-24

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	307.00
Voids (%)	100.00
Volume Calc	Conic

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	307.00	600	0.000	0.000
1.00	308.00	1,200	883	883
2.00	309.00	1,600	1,395	2,278

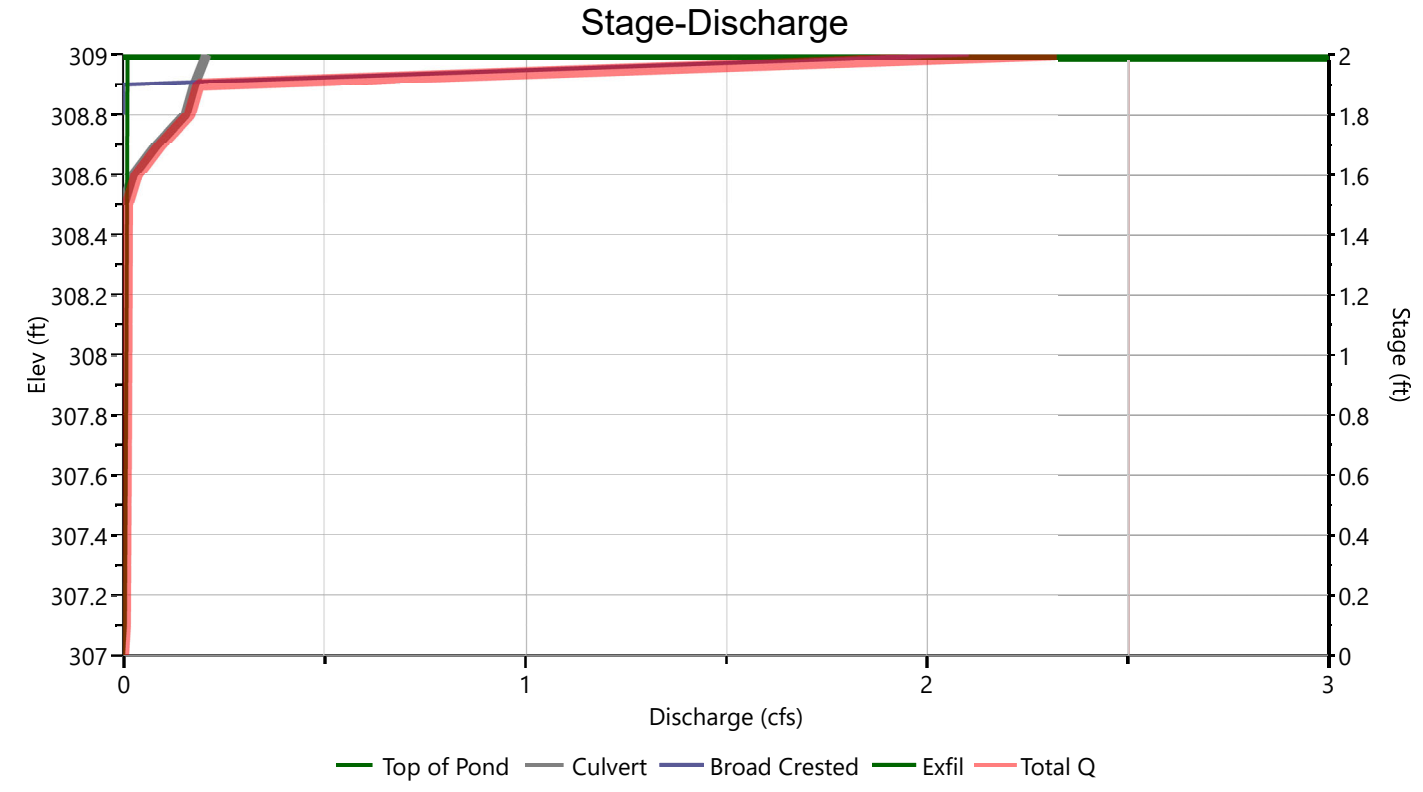


SA-24

Stage-Discharge

Culvert / Orifices	Culvert	Orifices			Perforated Riser	
		1	2	3		
Rise, in	4				Hole Diameter, in	
Span, in	4				No. holes	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	308.50				Height, ft	
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co	
Length, ft	20					
Barrel Slope, %	1					
N-Value, n	0.013					
Weirs	**Riser***	**Weirs**			**Ancillary**	
		1	2	3		
Shape / Type		Broad Crested			Exfiltration, in/hr	0.30**
Crest Elevation, ft		308.9				
Crest Length, ft		20				
Angle, deg		26.6 (2:1)				
Weir Coefficient, Cw		3.3				

**Routes through Culvert. **Exfiltration extracted from outflow hydrograph. Rate applied to contours.*



SA-24

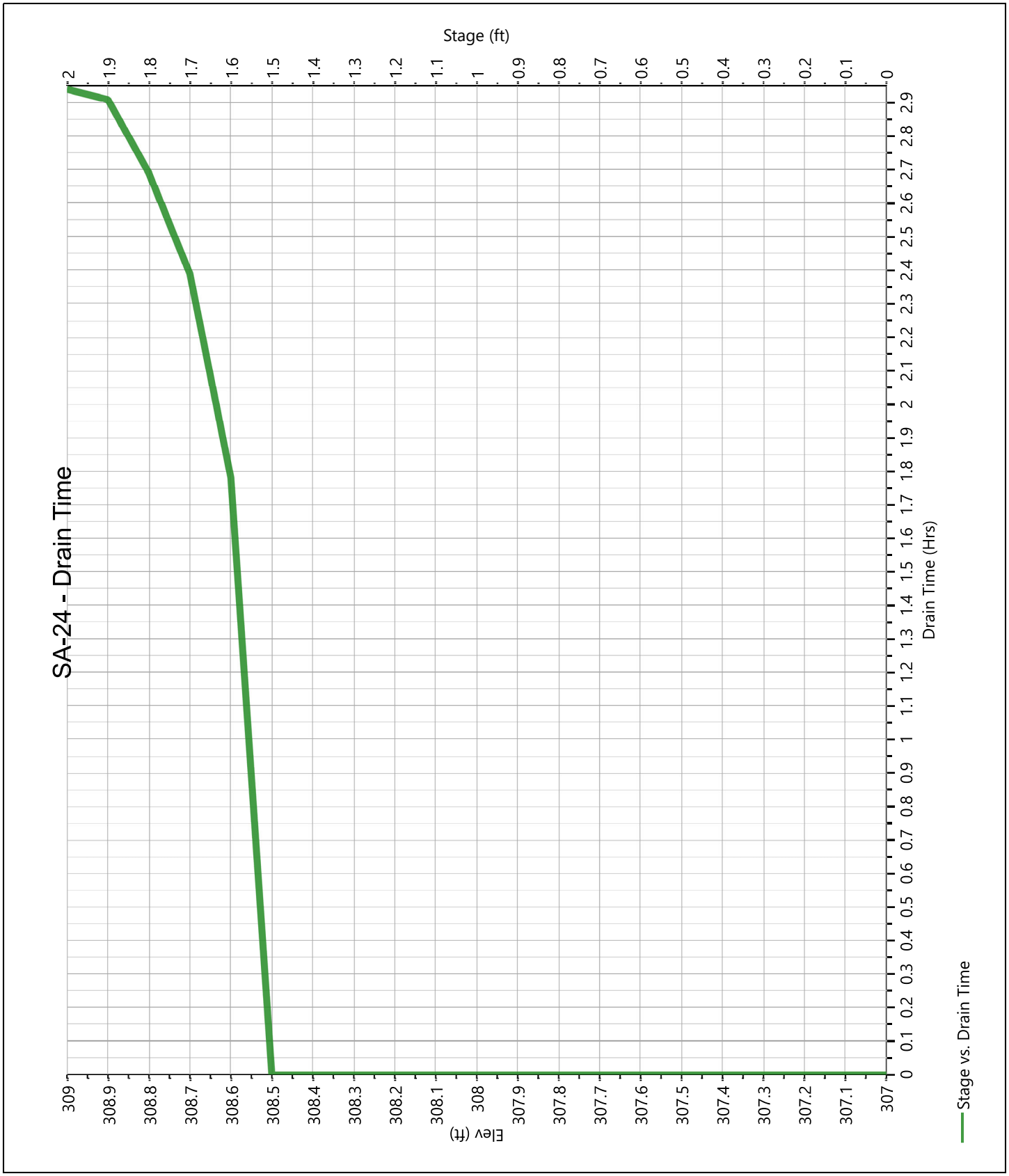
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	307.00	0.000	0.000					0.000				0.000		0.000
1.00	308.00	883	0.000					0.000				0.008		0.008
2.00	309.00	2,278	0.208 oc					2.104				0.011		2.323

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

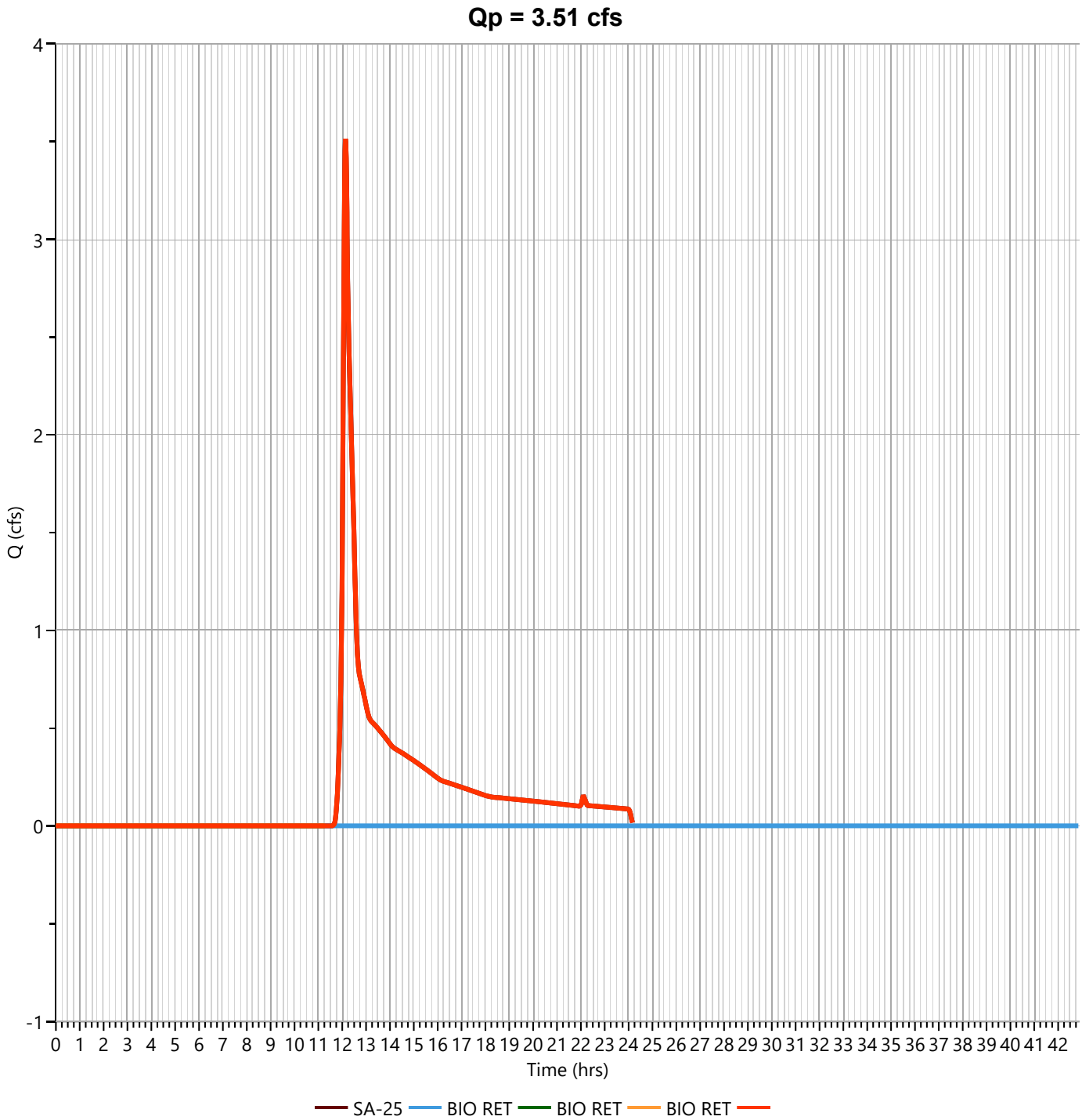
SA-24

Pond Drawdown



Hyd. No. 17

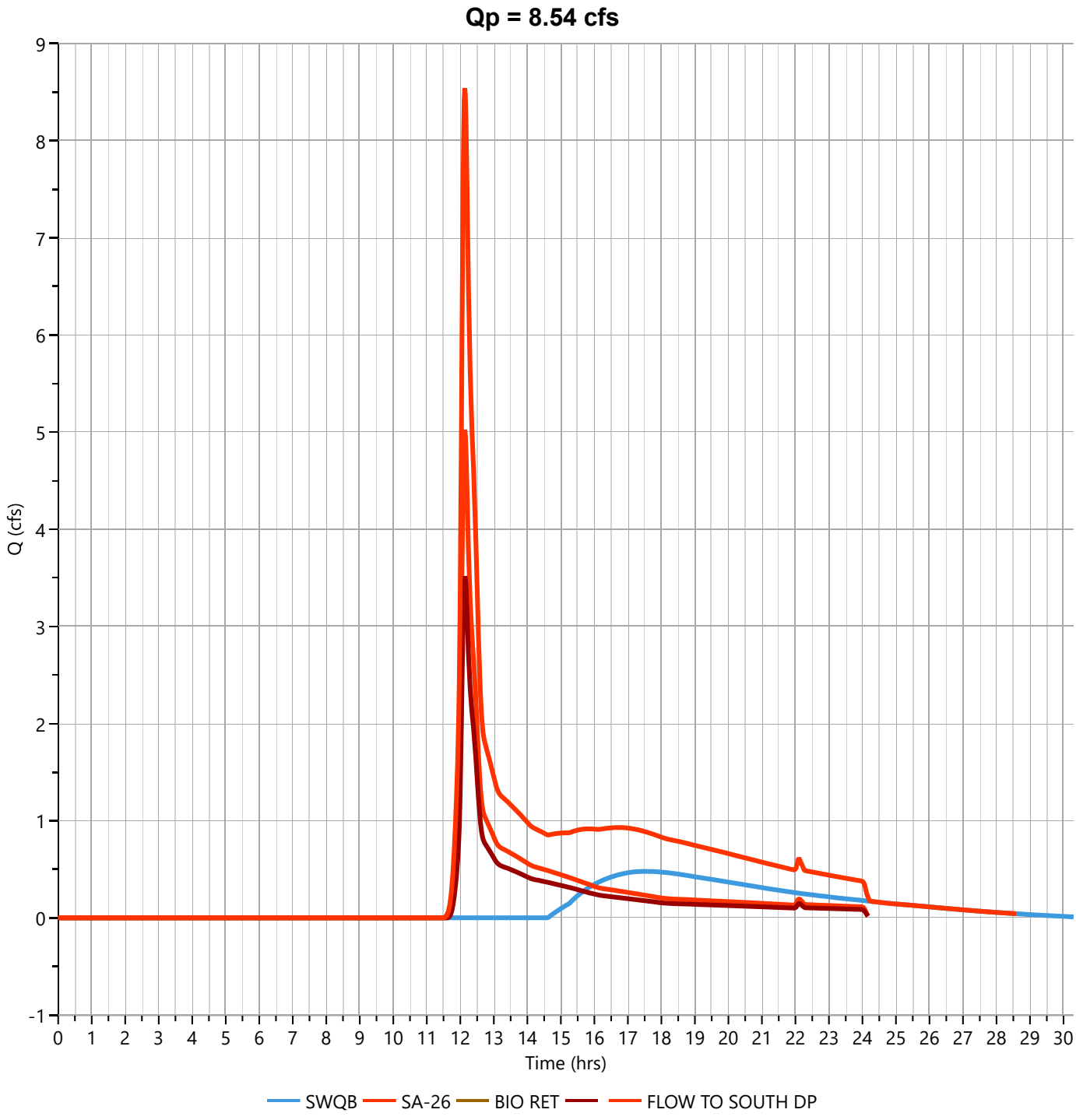
Hydrograph Type	= Junction	Peak Flow	= 3.514 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 14,548 cuft
Inflow Hydrographs	= 9, 12, 13, 14, 15	Total Contrib. Area	= 7.208 ac



Post FLOW TO SOUTH DP

Hyd. No. 18

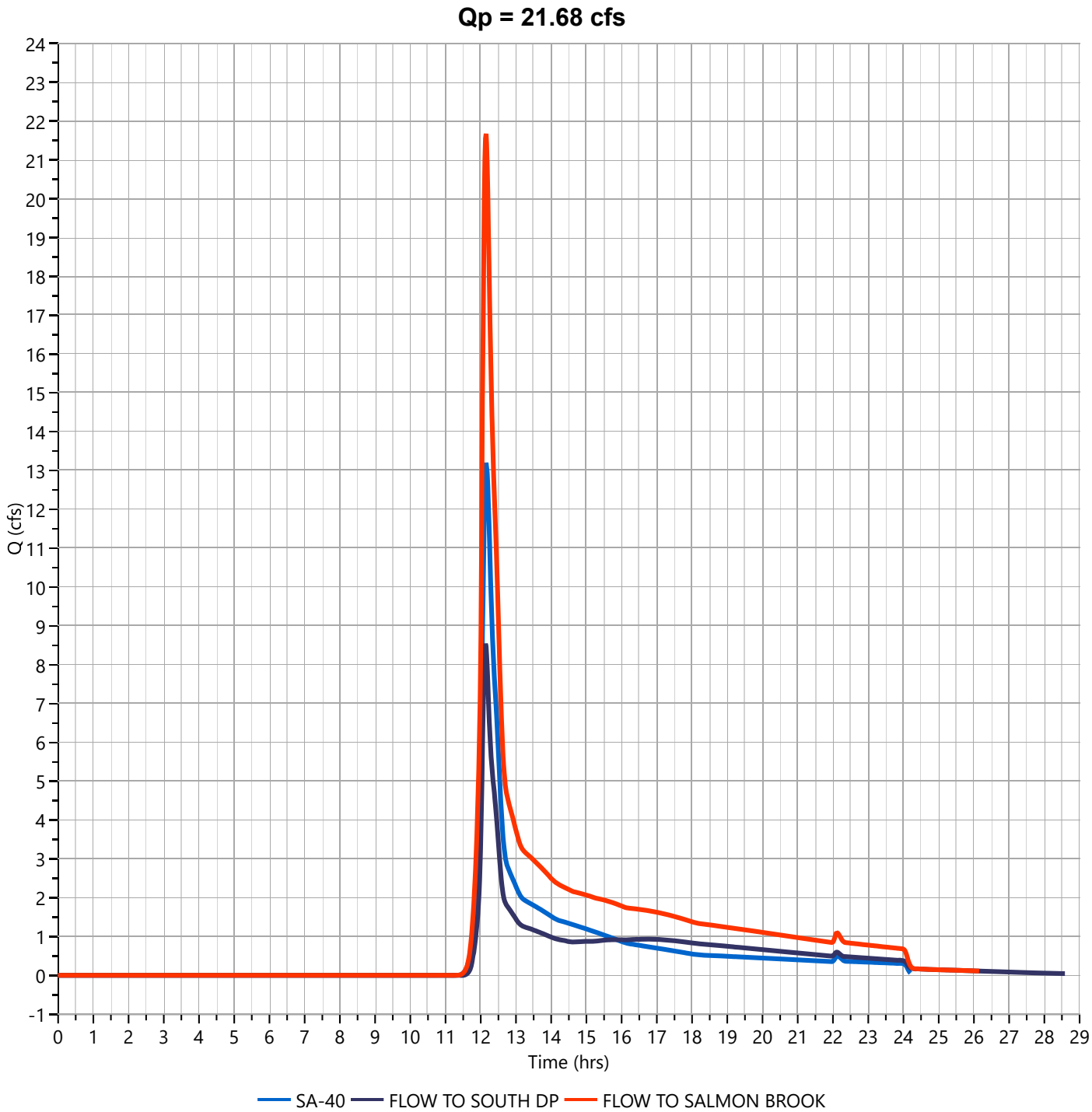
Hydrograph Type	= Junction	Peak Flow	= 8.539 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 47,344 cuft
Inflow Hydrographs	= 2, 10, 16, 17	Total Contrib. Area	= 16.168 ac



Post FLOW TO SALMON BROOK

Hyd. No. 19

Hydrograph Type	= Junction	Peak Flow	= 21.68 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 101,804 cuft
Inflow Hydrographs	= 11, 18	Total Contrib. Area	= 38.628 ac



Design Storm Report

Custom Storm filename:

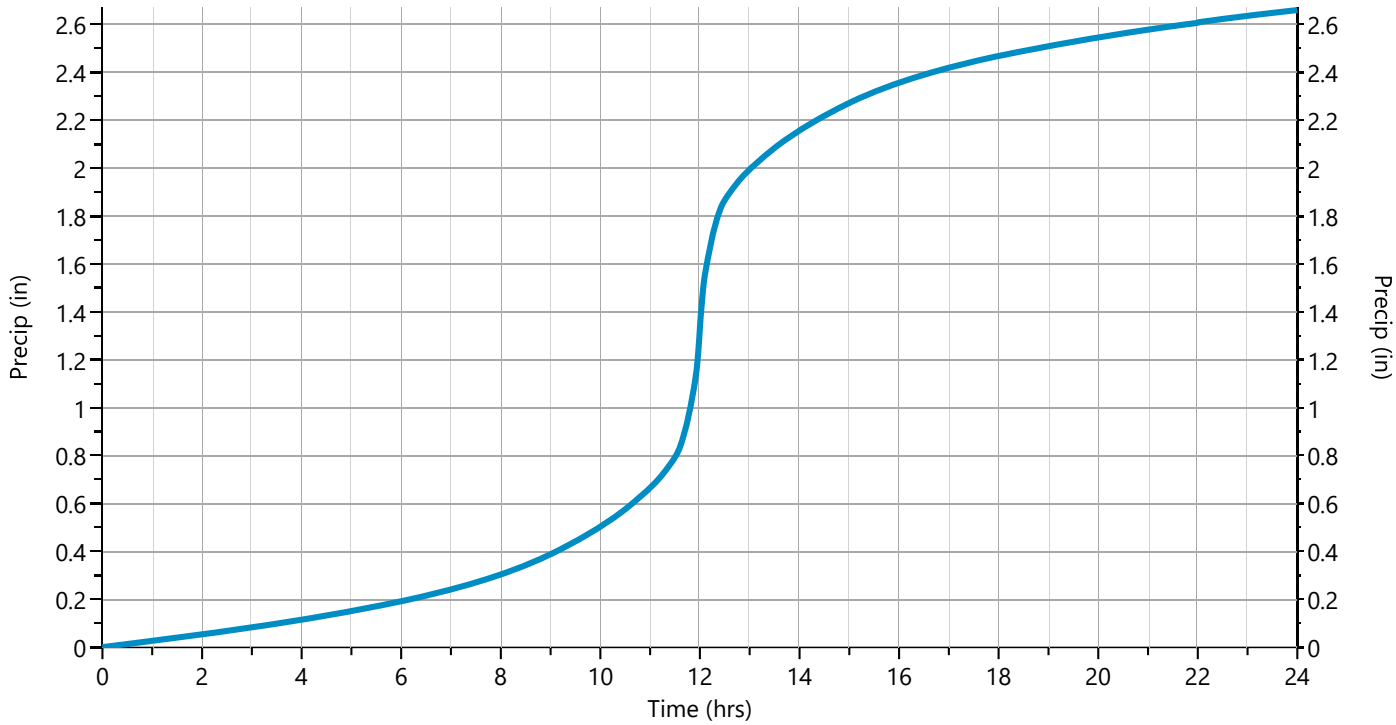
Hydrology Studio v 3.0.0.16

10-07-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	✔ 1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 1-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.005242	11.68	0.012103	11.87	0.019255	12.05	0.039966	12.23	0.016004
11.52	0.005586	11.70	0.012753	11.88	0.019906	12.07	0.034513	12.25	0.015354
11.53	0.006251	11.72	0.013403	11.90	0.020556	12.08	0.029060	12.27	0.014704
11.55	0.006901	11.73	0.014054	11.92	0.023683	12.10	0.023607	12.28	0.014054
11.57	0.007551	11.75	0.014704	11.93	0.029061	12.12	0.020634	12.30	0.013404
11.58	0.008202	11.77	0.015354	11.95	0.034514	12.13	0.019906	12.32	0.012753
11.60	0.008852	11.78	0.016004	11.97	0.039967	12.15	0.019255	12.33	0.012103
11.62	0.009502	11.80	0.016655	11.98	0.045420	12.17	0.018605	12.35	0.011453
11.63	0.010152	11.82	0.017305	**12.00**	**0.050873**	12.18	0.017955	12.37	0.010803
11.65	0.010803	11.83	0.017955	12.02	0.050750	12.20	0.017305	12.38	0.010152
11.67	0.011453	11.85	0.018605	12.03	0.045419	12.22	0.016655	12.40	0.009502



Hydrograph 2-yr Summary

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Post FLOW TO SWQB	13.75	12.20	57,258	----		
2	Pond Route(i)	Post SWQB	1.243	15.58	29,992	1	274.03 U 261.83 L	24,822 U 18,519 L
3	NRCS Runoff	Post FLOW TO N DP	11.10	12.17	44,918	----		
4	NRCS Runoff	Post SA-21	0.544	12.05	1,579	----		
5	NRCS Runoff	Post SA-20	0.365	12.05	1,062	----		
6	NRCS Runoff	Post SA-23	0.731	12.05	2,137	----		
7	NRCS Runoff	Post SA-24	0.604	12.05	1,754	----		
8	NRCS Runoff	Post SA-22	0.624	12.05	1,813	----		
9	NRCS Runoff	Post SA-25	6.347	12.13	23,817	----		
10	NRCS Runoff	Post SA-26	8.711	12.13	32,068	----		
11	NRCS Runoff	Post SA-40	22.40	12.15	86,372	----		
12	Pond Route	Post BIO RET	0.000	11.02	0.000	5	312.83	761
13	Pond Route	Post BIO RET	0.000	11.15	0.000	4	303.23	1,197
14	Pond Route	Post BIO-RET	0.000	0.00	0.000	6	301.21	1,613
15	Pond Route	Post BIO RET	0.000	11.22	0.000	8	301.37	1,404
16	Pond Route	Post BIO RET	0.000	11.08	0.000	7	308.34	1,352
17	Junction		6.347	12.13	23,817	9, 12, 13, 14, 15		
18	Junction	Post FLOW TO SOUTH DP	15.06	12.13	85,878	2, 10, 16, 17		
19	Junction	Post FLOW TO SALMON BROOK	37.34	12.13	172,250	11, 18		

(i) = Interconnected ponds, U = Upper pond, L = Lower pond

Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

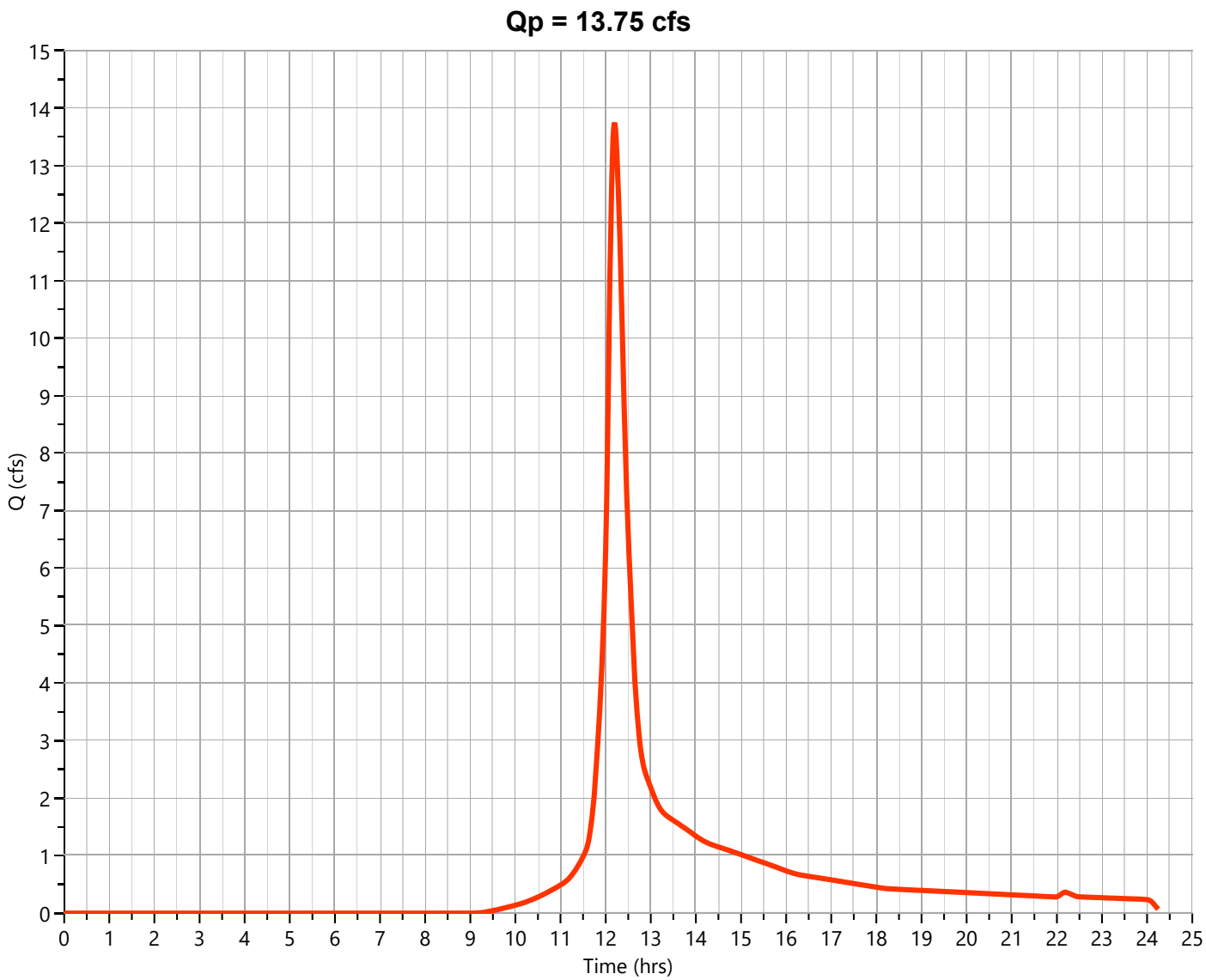
Post FLOW TO SWQB

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 13.75 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Runoff Volume	= 57,258 cuft
Drainage Area	= 10.305 ac	Curve Number	= 80.59*
Tc Method	= User	Time of Conc. (Tc)	= 15.9 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.83	98	PAVE
7.475	74	LAWN
10.305	**81**	Weighted CN Method Employed

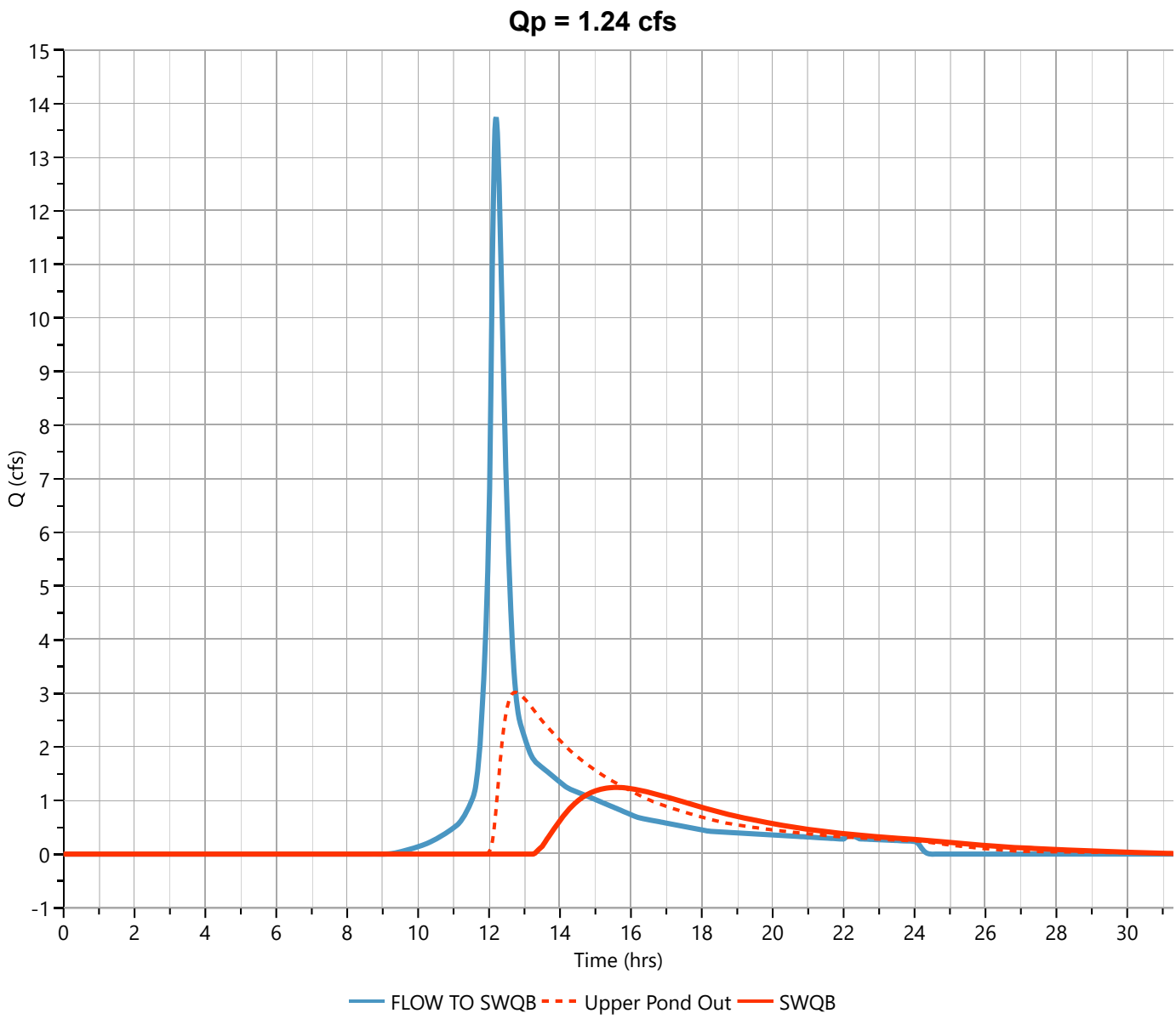


Post SWQB

Hyd. No. 2

Hydrograph Type	= Pond Route(i)*	Peak Flow	= 1.243 cfs
Storm Frequency	= 2-yr	Time to Peak	= 15.58 hrs
Time Interval	= 1 min	Hydrograph Volume	= 29,992 cuft
Upper Pond		**Lower Pond**	
Pond Name	= SWQB TOP	Pond Name	= SWQB BOT
Inflow Hyd	= 1 - FLOW TO SWQB	Addnl Inflow Hyd	= None
Max. Elevation	= 274.03 ft	Max. Elevation	= 261.83 ft
Max. Storage	= 24,822 cuft	Max. Storage	= 18,519 cuft

**Interconnected Pond Routing by Storage Indication Method.*



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

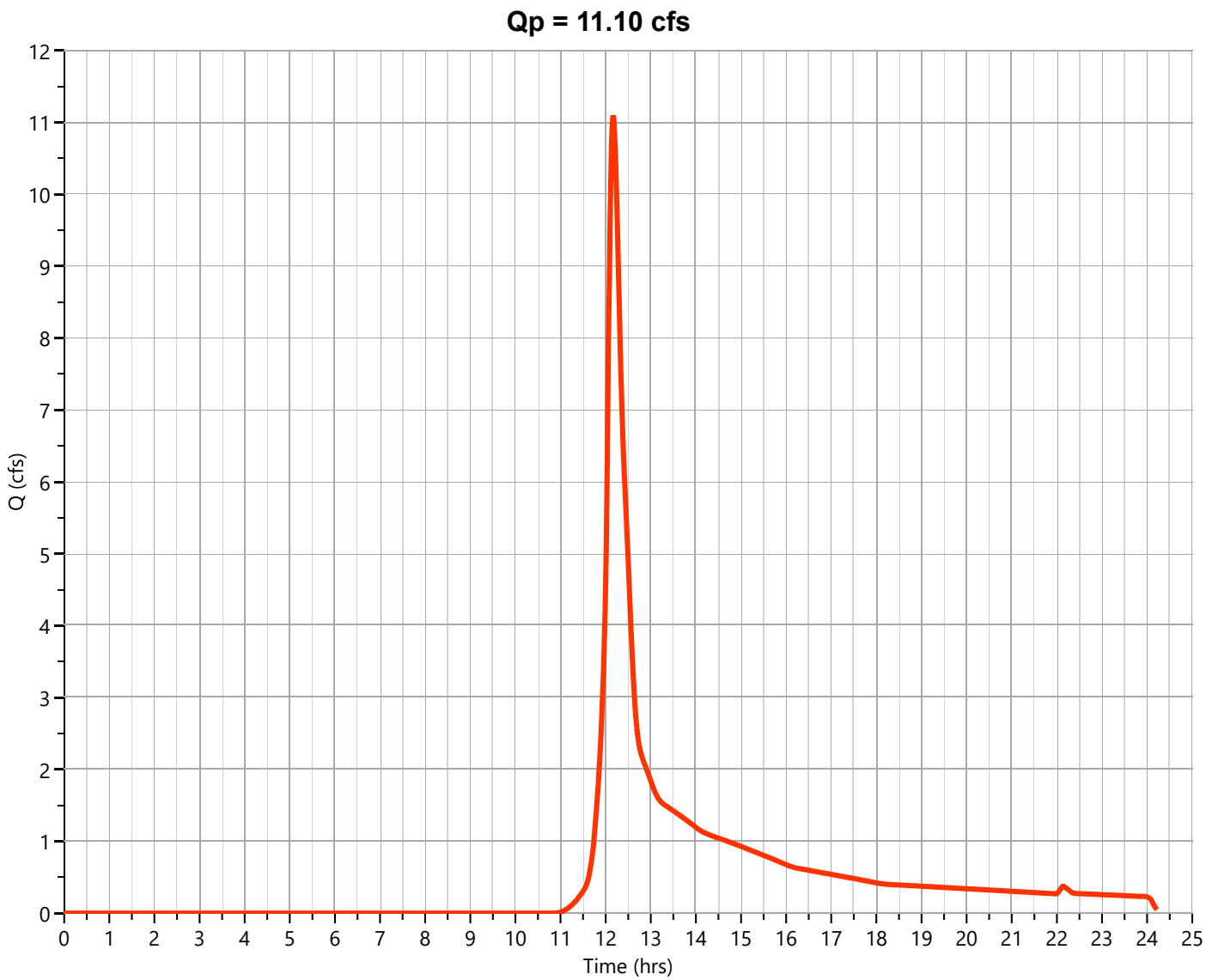
Post FLOW TO N DP

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 11.10 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 44,918 cuft
Drainage Area	= 12.862 ac	Curve Number	= 71.84*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.08 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
9.177	70	WOODED
3.311	74	LAWN
0.374	98	PAVE
12.862	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

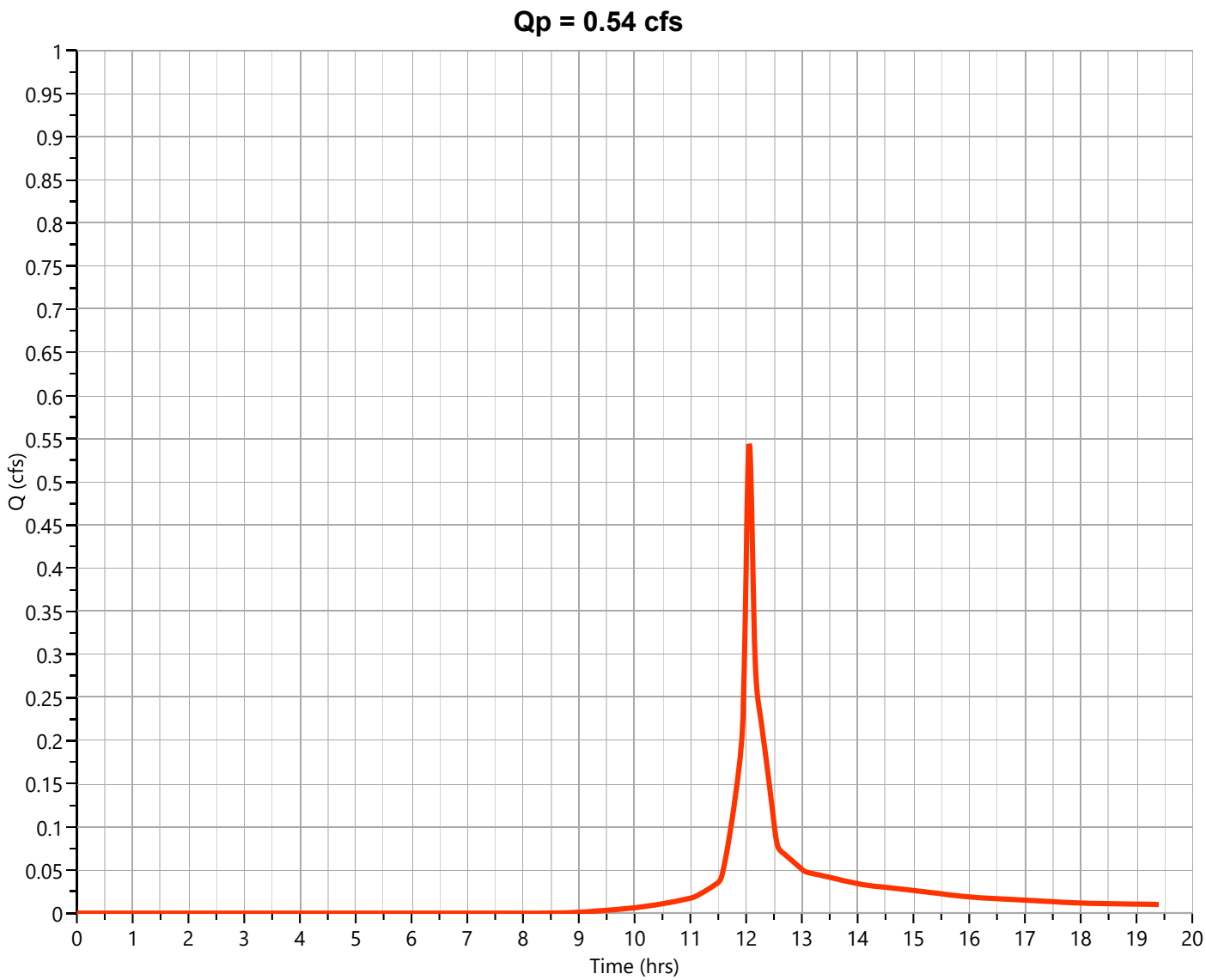
Post SA-21

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.544 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 1,579 cuft
Drainage Area	= 0.27 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.088	98	PAVE
0.183	74	LAWN
0.27	**82**	Weighted CN Method Employed



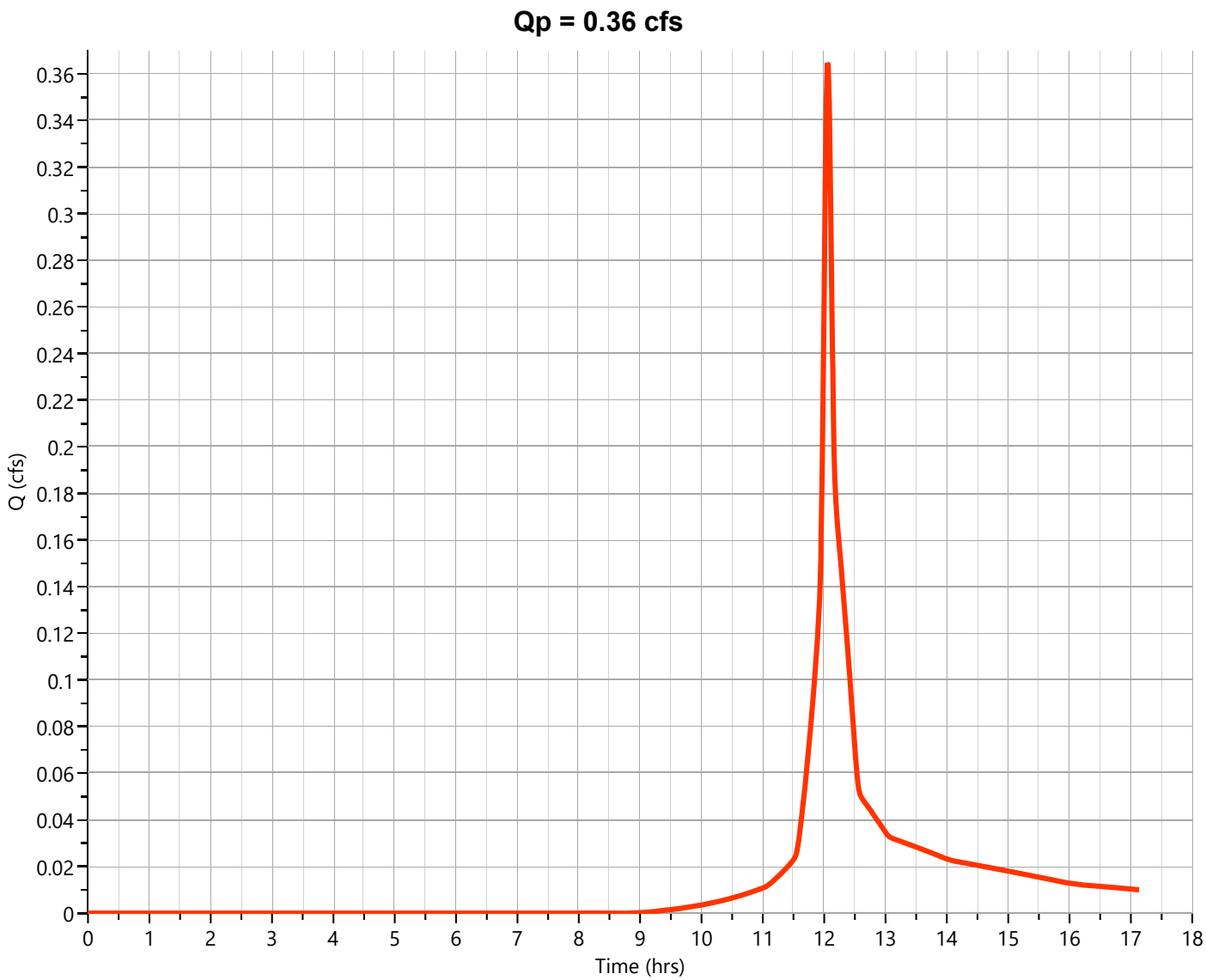
Post SA-20

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.365 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 1,062 cuft
Drainage Area	= 0.19 ac	Curve Number	= 81*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.051	98	PAVE
0.135	74	LAWN
0.19	**81**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

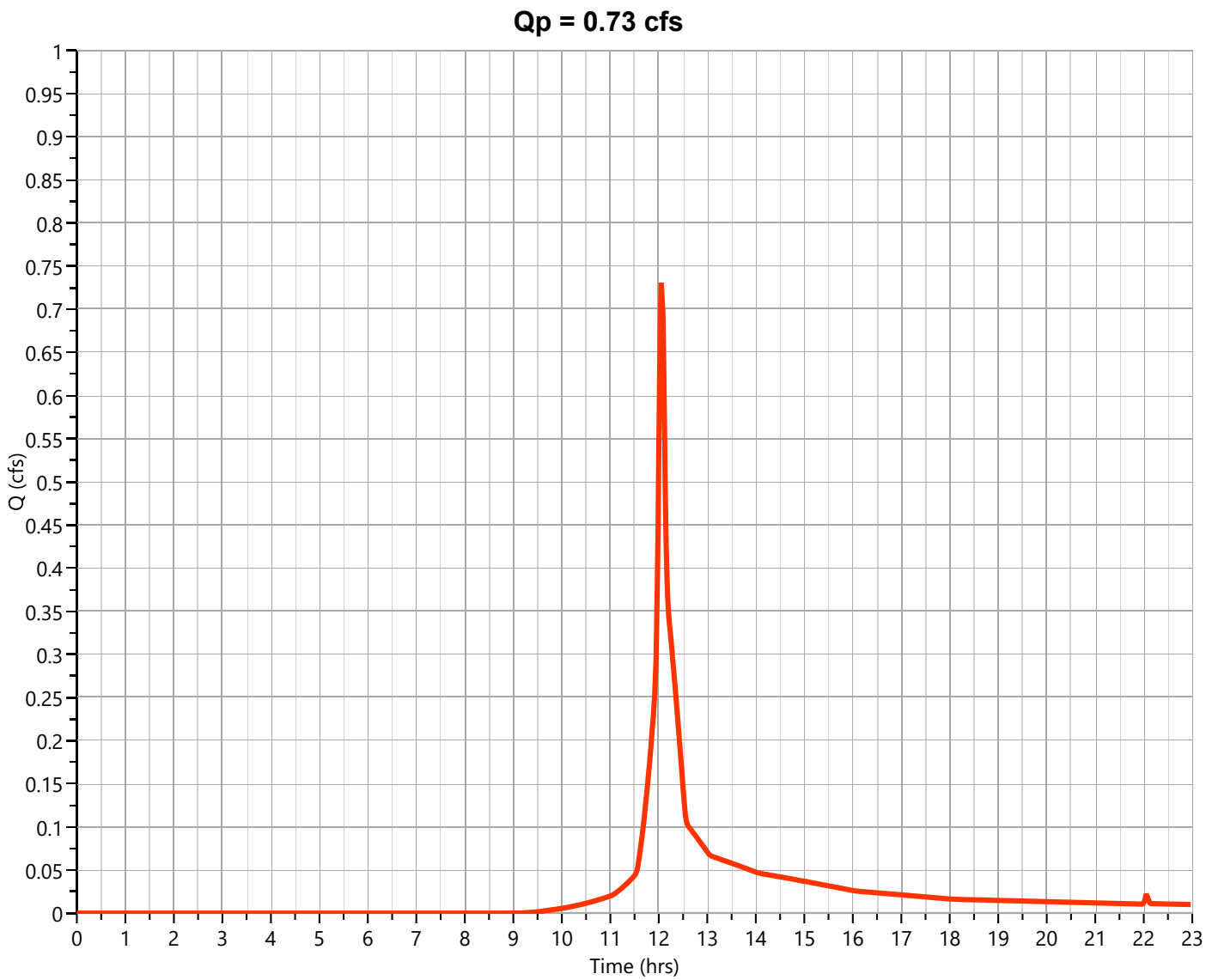
Post SA-23

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.731 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 2,137 cuft
Drainage Area	= 0.4 ac	Curve Number	= 80*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.306	74	LAWN
0.4	**80**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

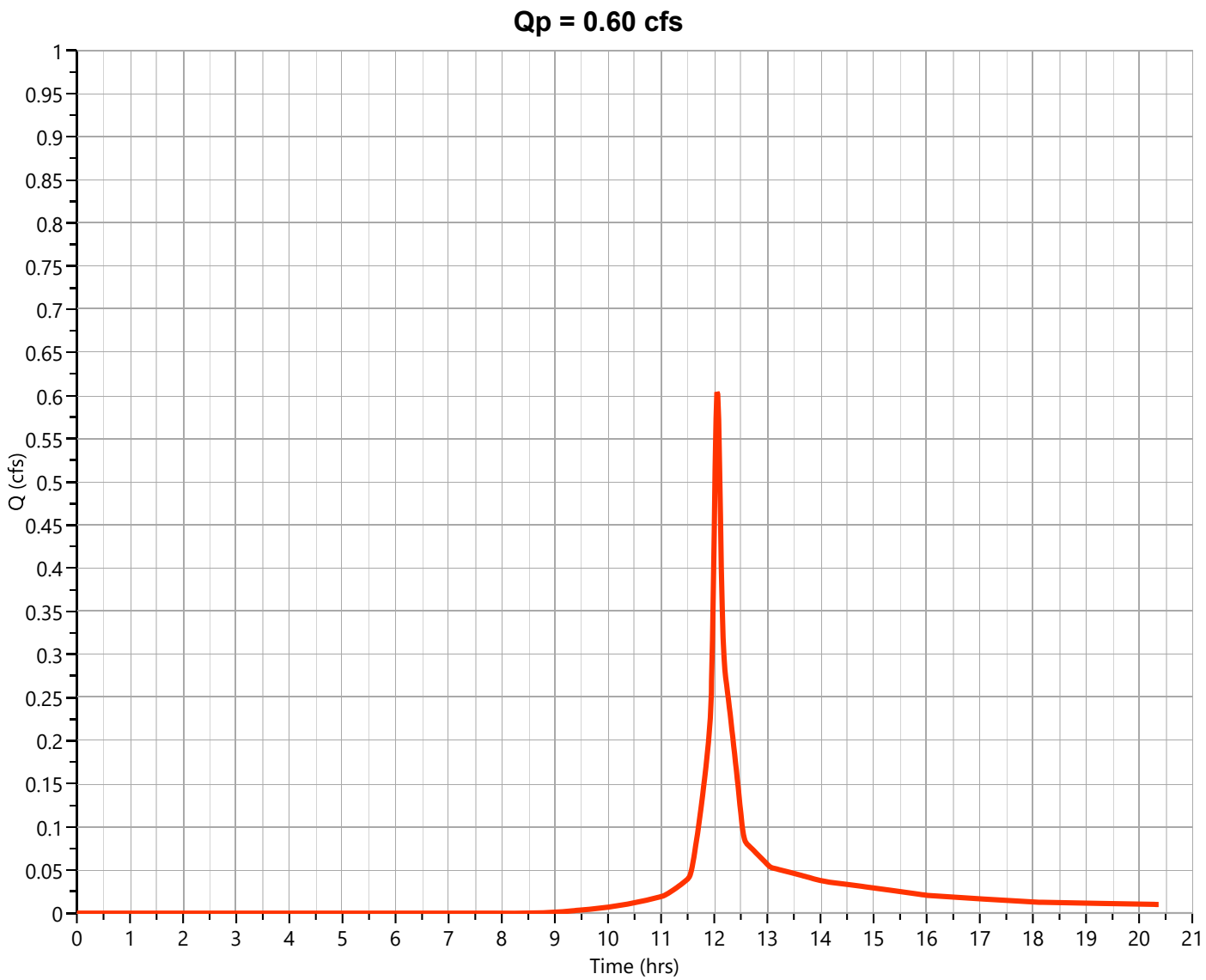
Post SA-24

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.604 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 1,754 cuft
Drainage Area	= 0.3 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.208	74	LAWN
0.3	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

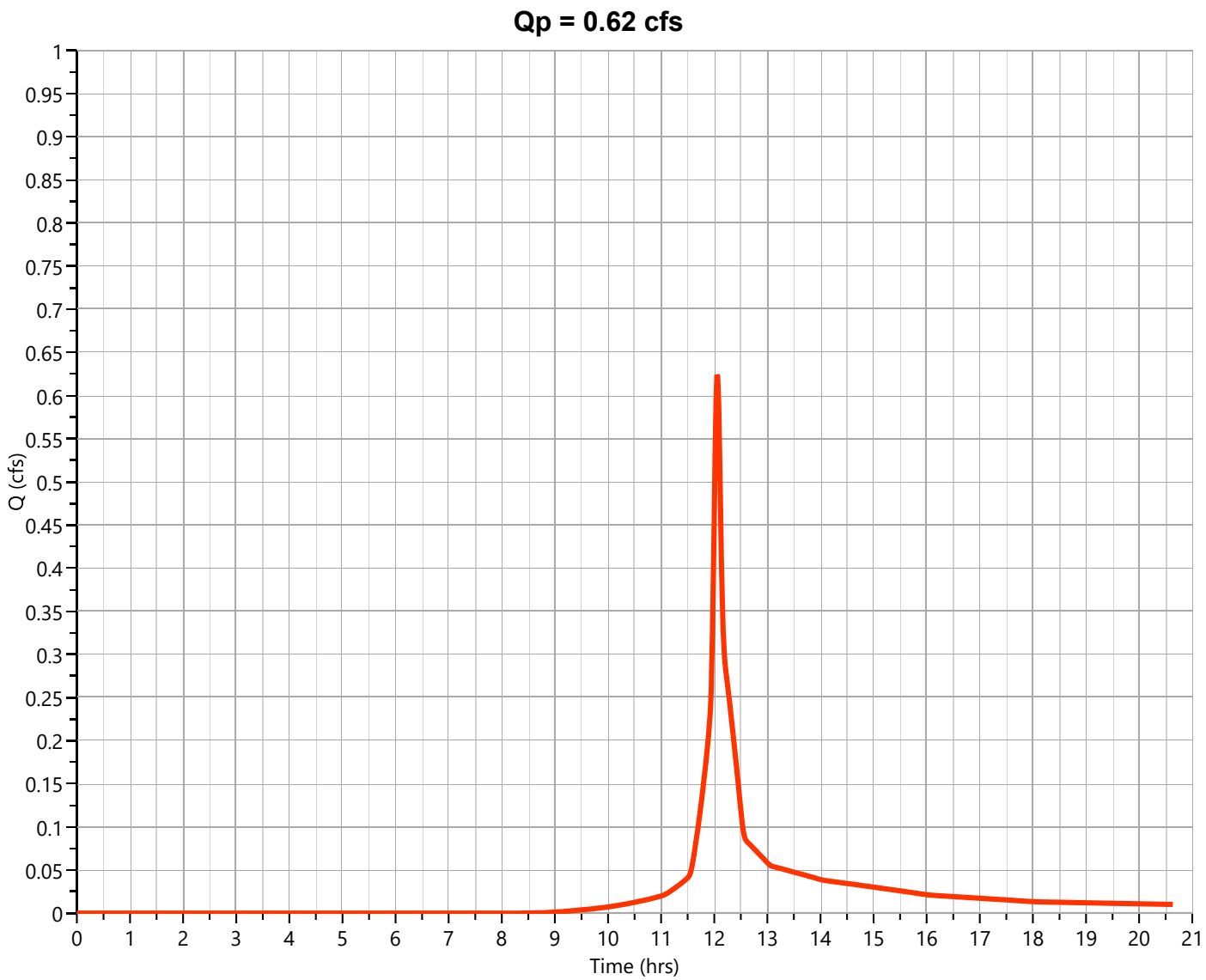
Post SA-22

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.624 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 1,813 cuft
Drainage Area	= 0.31 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.107	98	PAVE
0.201	74	LAWN
0.31	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

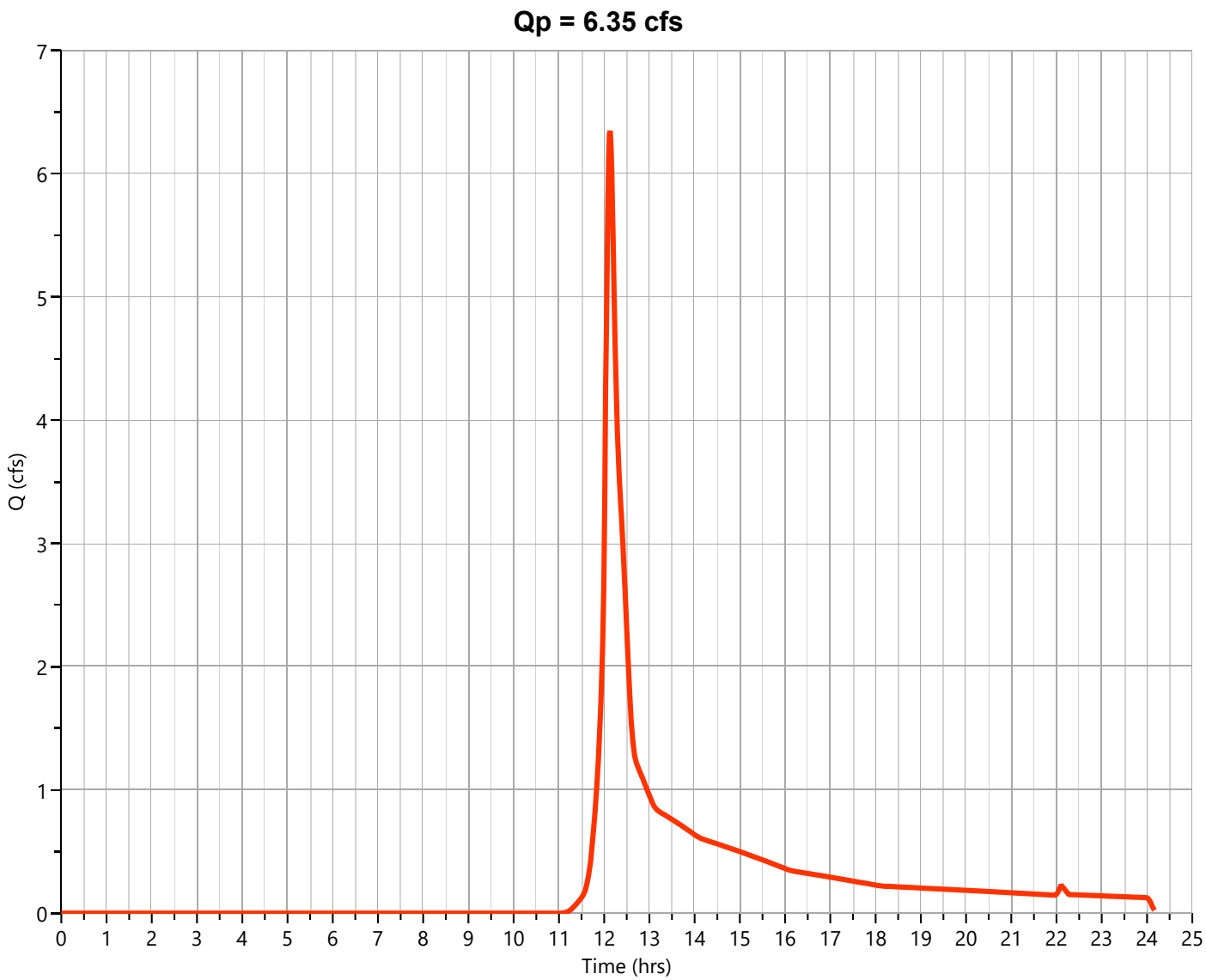
Post SA-25

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 6.347 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 23,817 cuft
Drainage Area	= 7.208 ac	Curve Number	= 70.57*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
1.022	74	LAWN
6.186	70	WOODED
7.208	**71**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

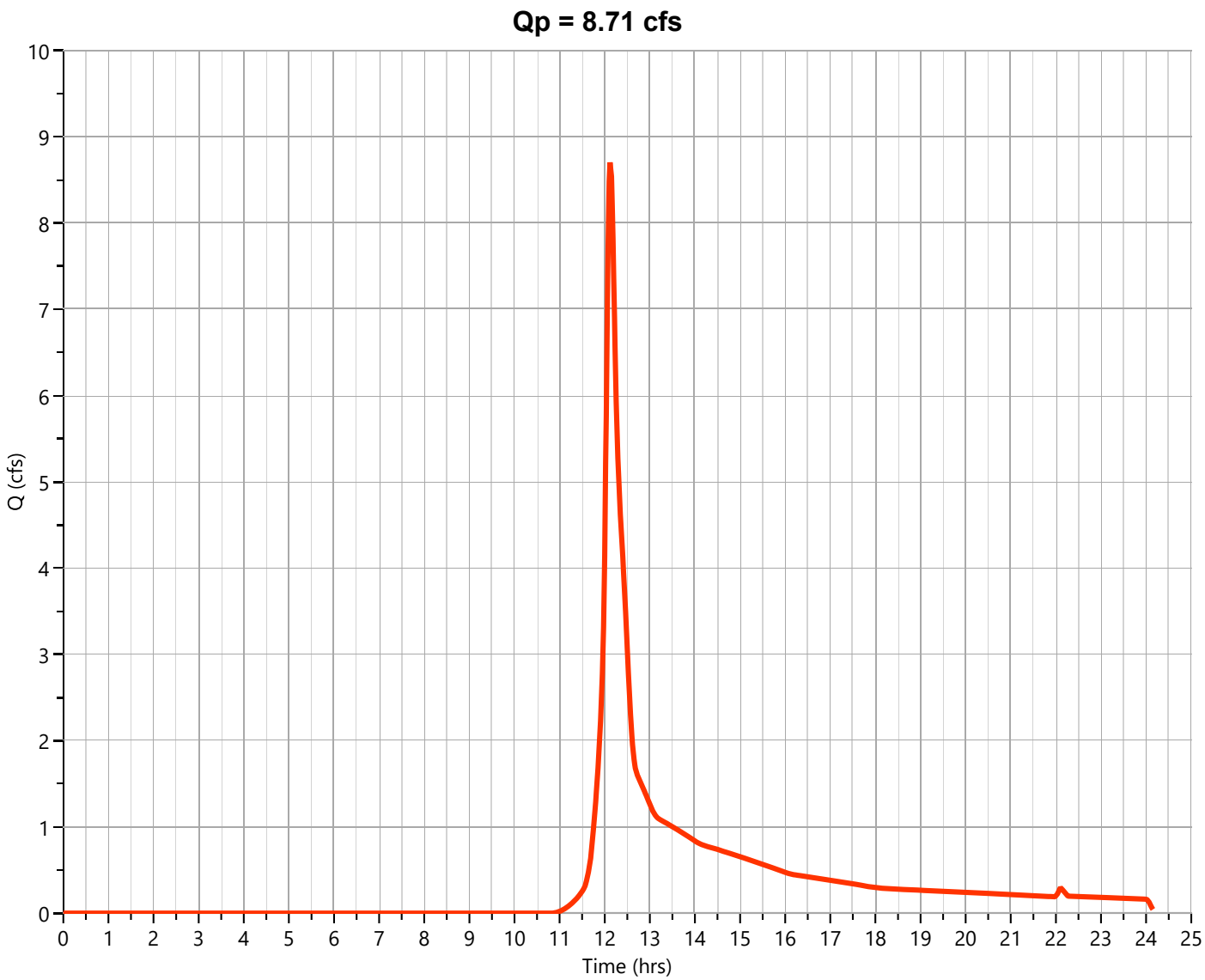
Post SA-26

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 8.711 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 32,068 cuft
Drainage Area	= 8.96 ac	Curve Number	= 72*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.157	98	PAVE
3.887	74	LAWN
4.914	70	WOODED
8.96	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

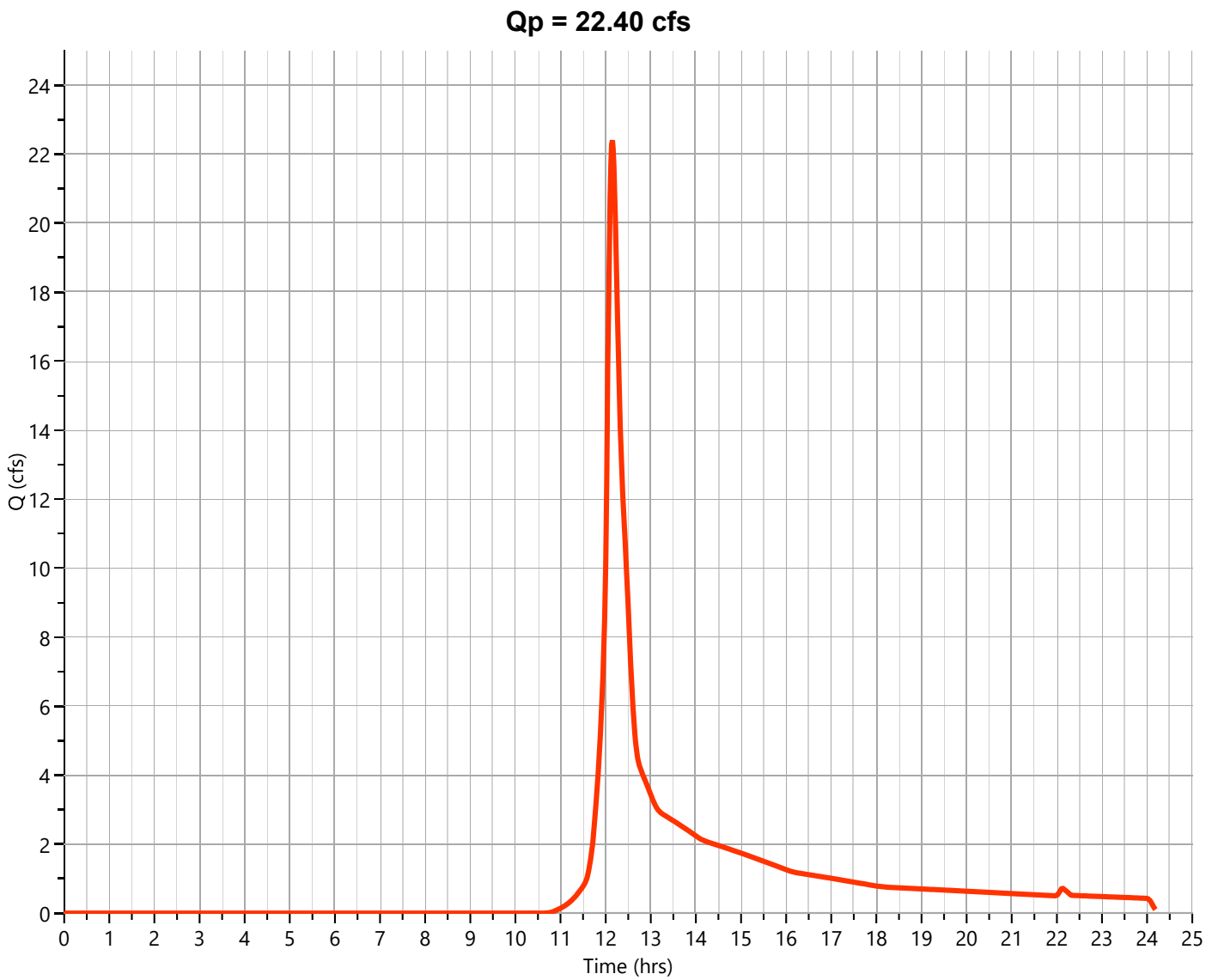
Post SA-40

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 22.40 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 86,372 cuft
Drainage Area	= 22.46 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 3.29 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
16.447	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
22.46	**73**	Weighted CN Method Employed

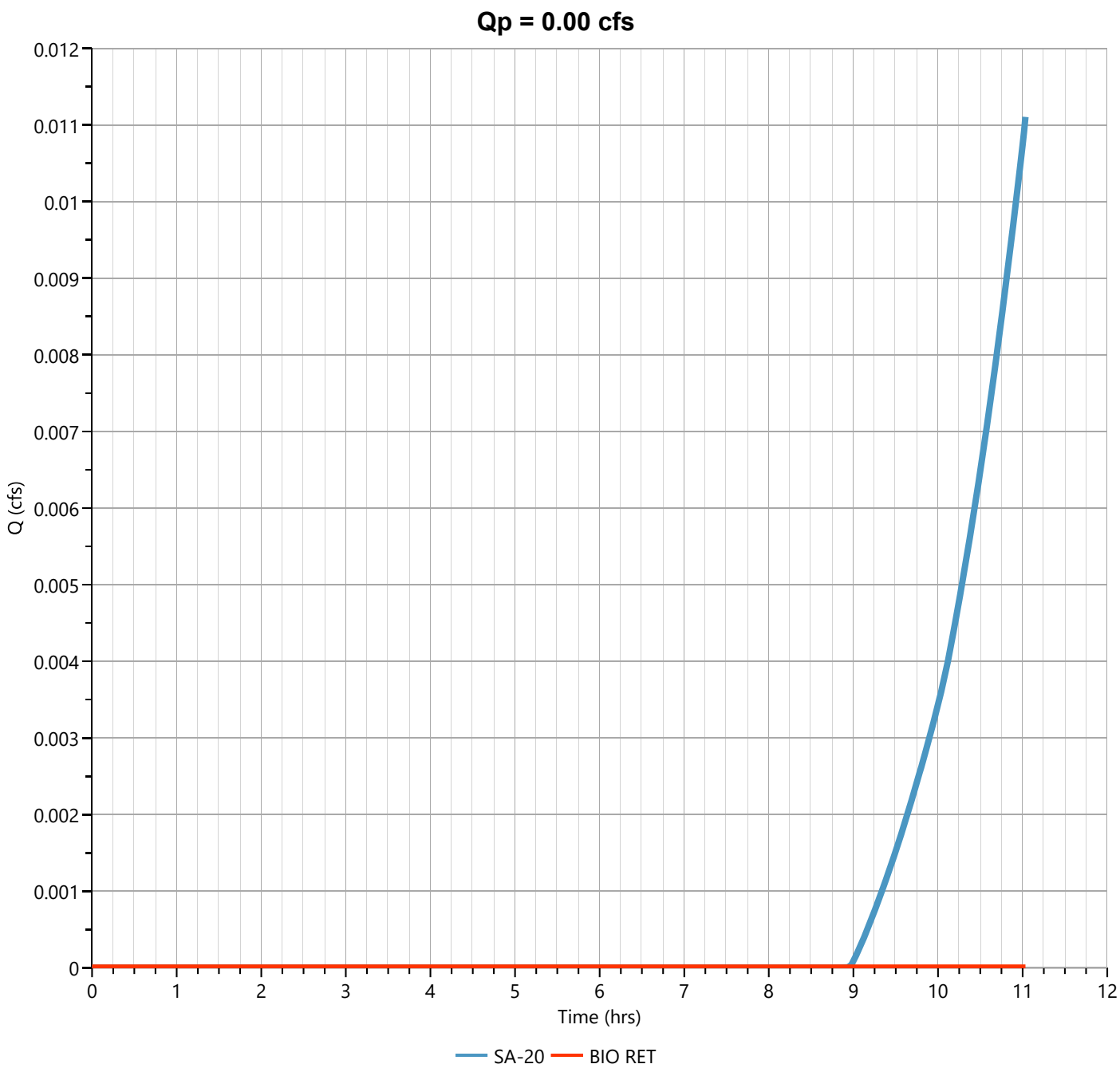


Post BIO RET

Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 11.02 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 5 - SA-20	Max. Elevation	= 312.83 ft
Pond Name	= SA-20	Max. Storage	= 761 cuft

Pond Routing by Storage Indication Method

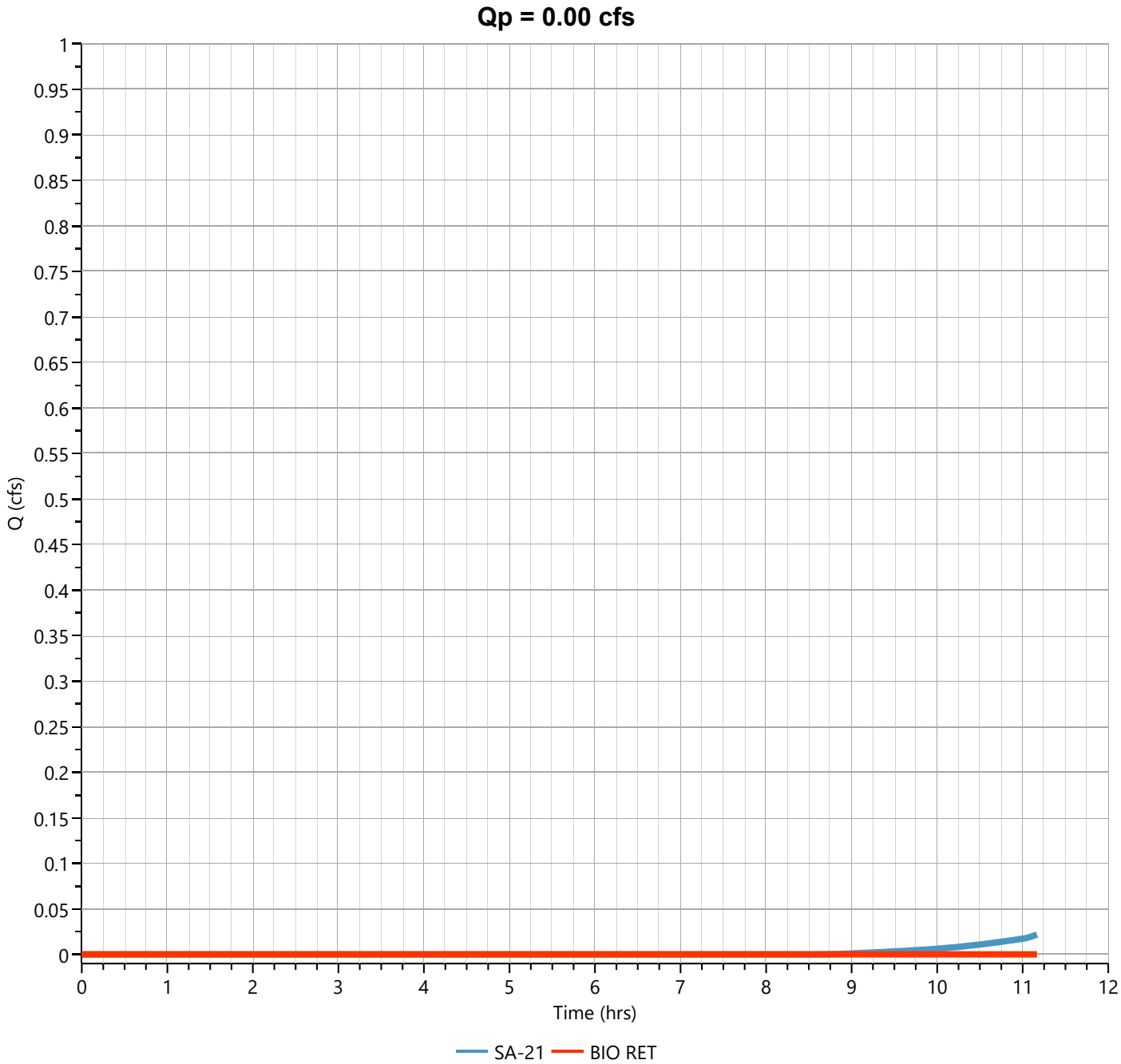


Post BIO RET

Hyd. No. 13

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 11.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 4 - SA-21	Max. Elevation	= 303.23 ft
Pond Name	= SA-21	Max. Storage	= 1,197 cuft

Pond Routing by Storage Indication Method



Post BIO-RET

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.00 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 6 - SA-23	Max. Elevation	= 301.21 ft
Pond Name	= SA-23	Max. Storage	= 1,613 cuft

Pond Routing by Storage Indication Method

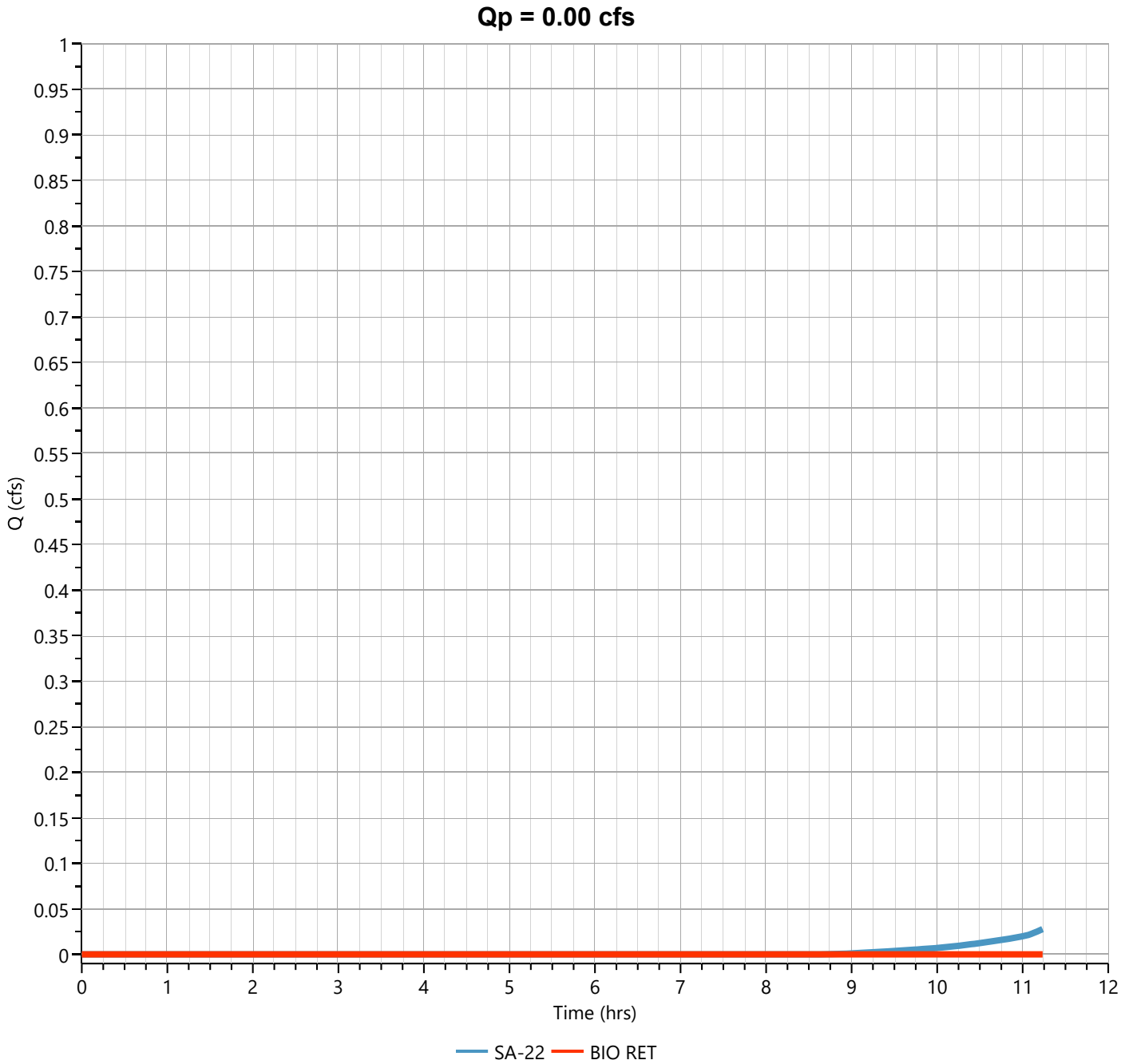
Qp = 0.00 cfs

Post BIO RET

Hyd. No. 15

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 11.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 8 - SA-22	Max. Elevation	= 301.37 ft
Pond Name	= SA-22	Max. Storage	= 1,404 cuft

Pond Routing by Storage Indication Method

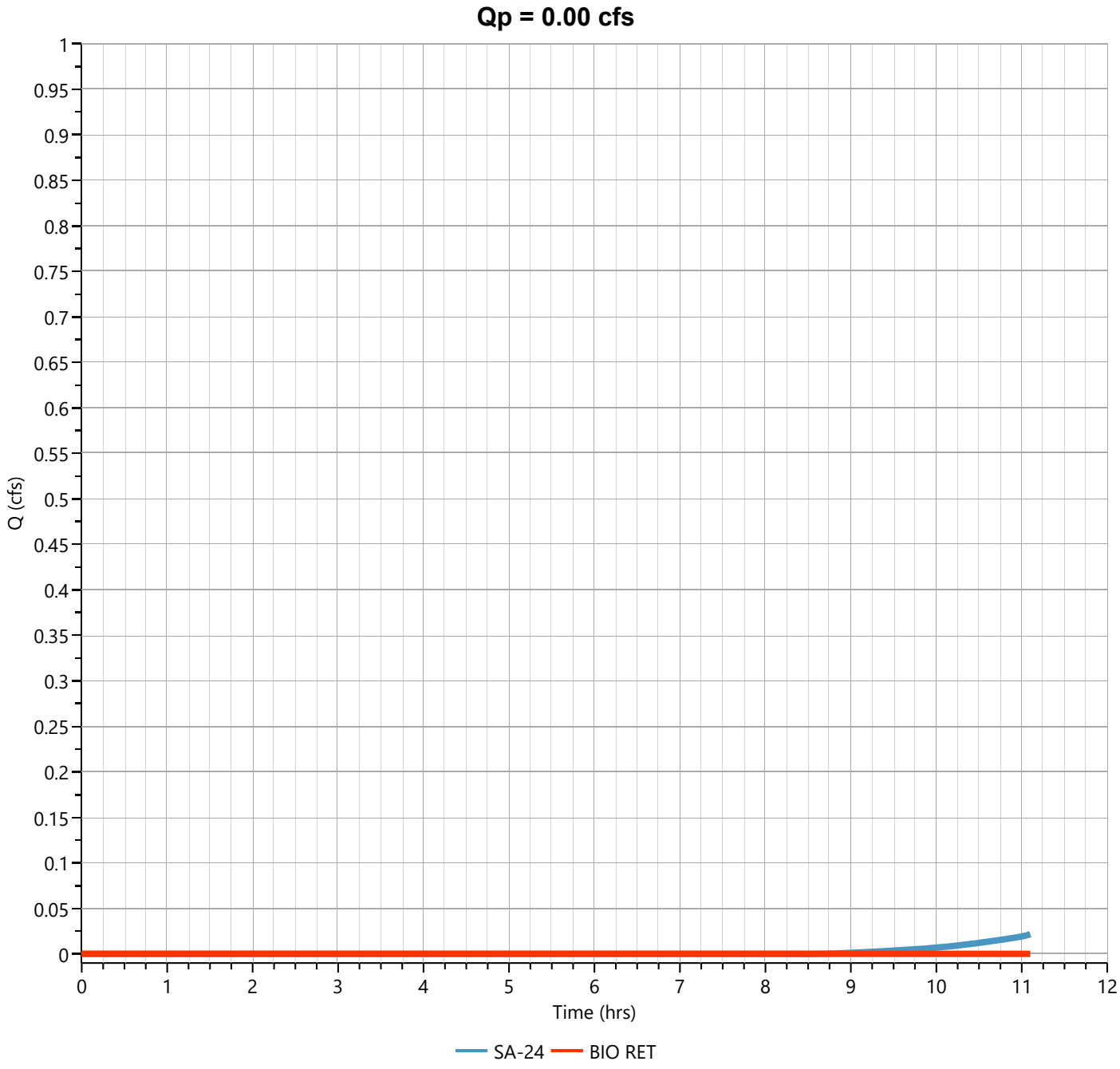


Post BIO RET

Hyd. No. 16

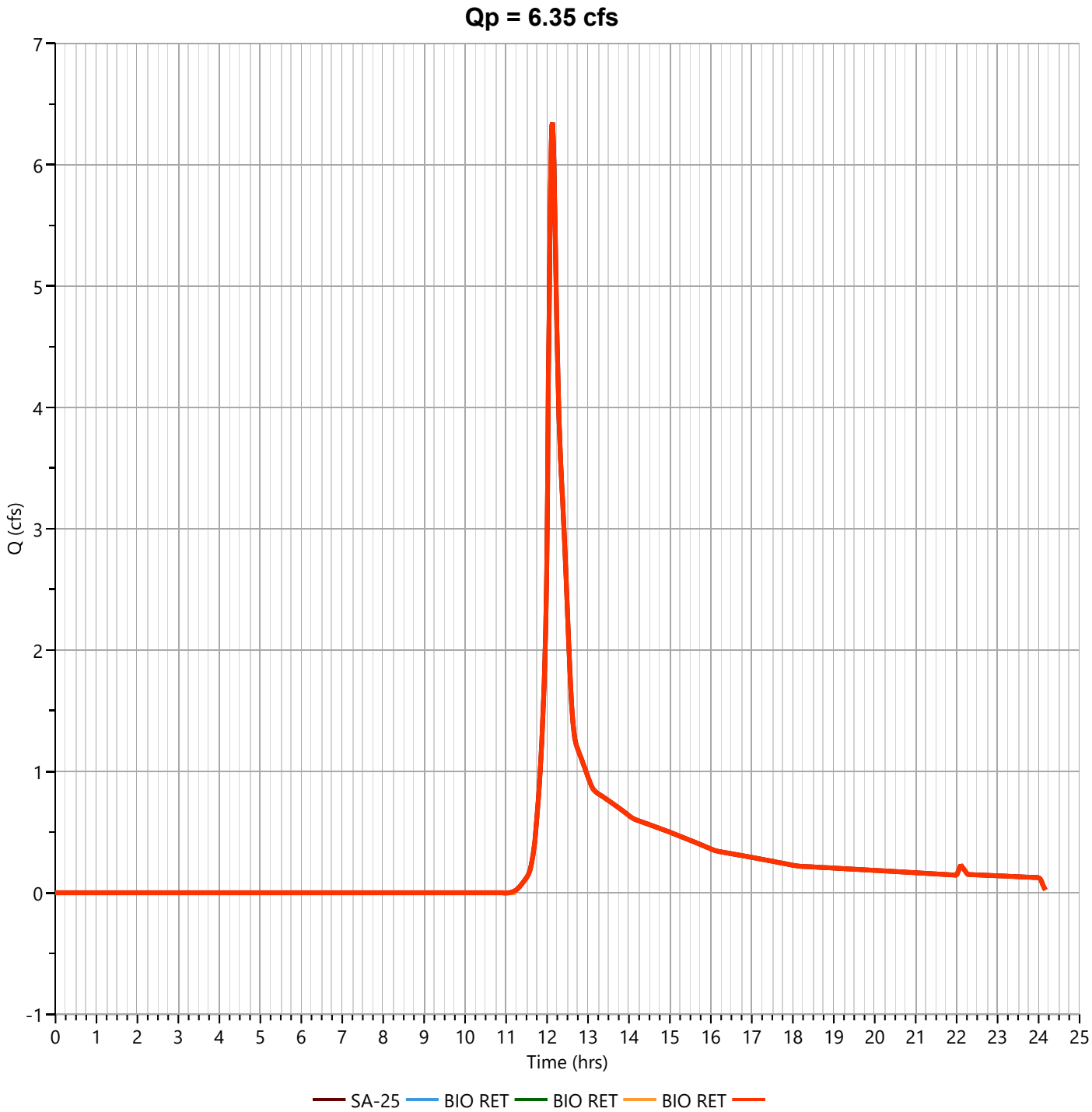
Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 2-yr	Time to Peak	= 11.08 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 7 - SA-24	Max. Elevation	= 308.34 ft
Pond Name	= SA-24	Max. Storage	= 1,352 cuft

Pond Routing by Storage Indication Method



Hyd. No. 17

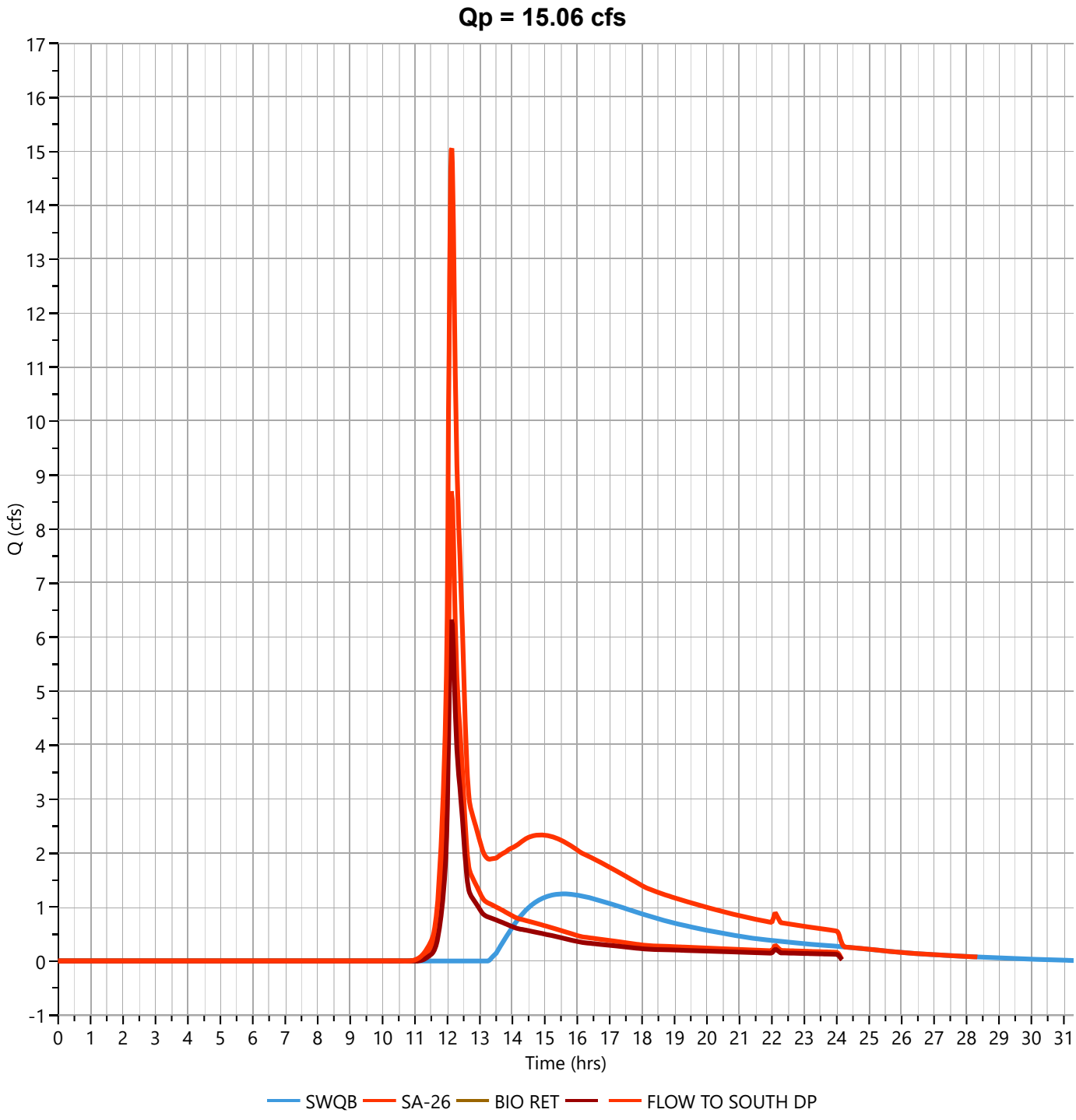
Hydrograph Type	= Junction	Peak Flow	= 6.347 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 23,817 cuft
Inflow Hydrographs	= 9, 12, 13, 14, 15	Total Contrib. Area	= 7.208 ac



Post FLOW TO SOUTH DP

Hyd. No. 18

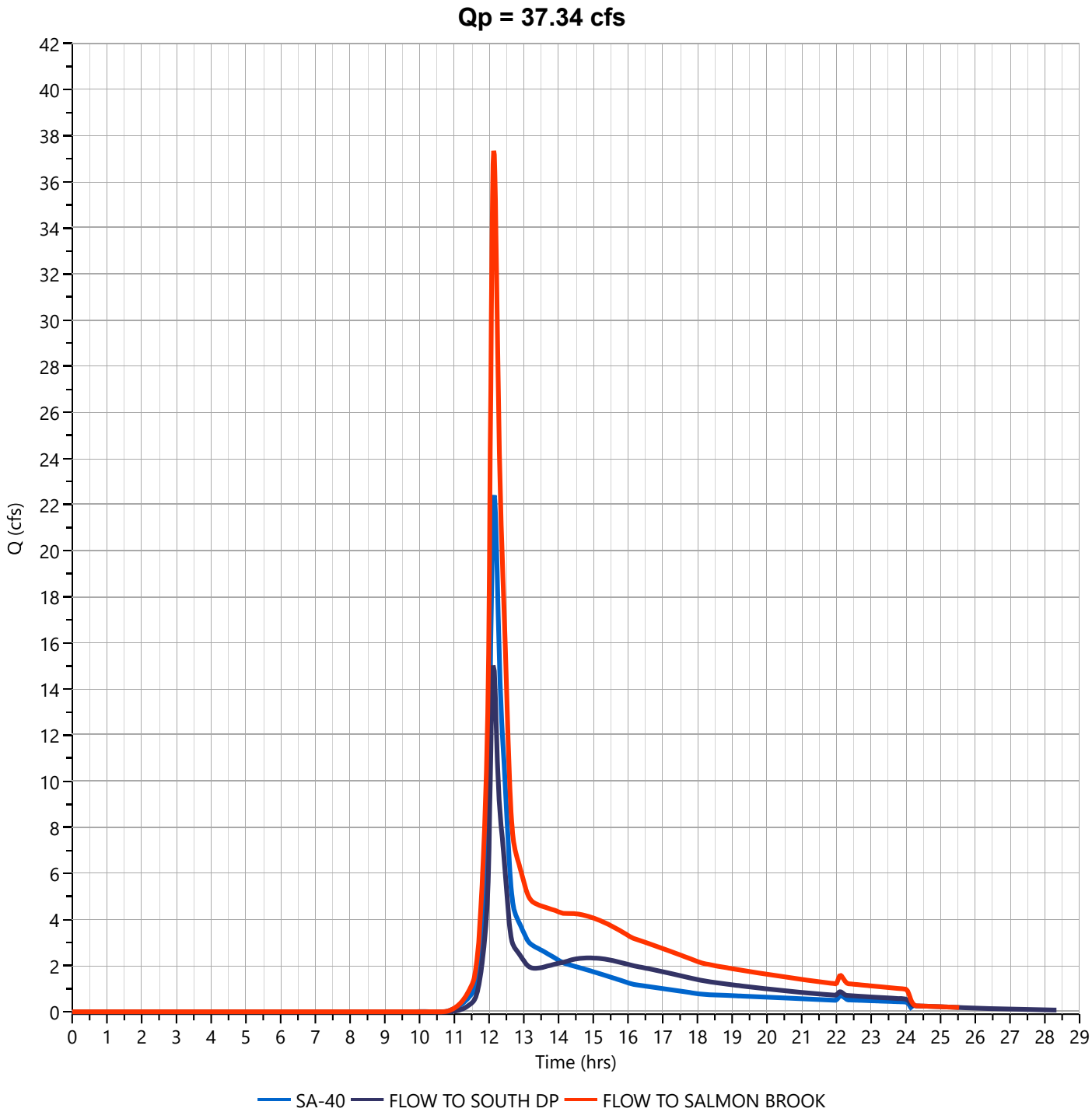
Hydrograph Type	= Junction	Peak Flow	= 15.06 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 85,878 cuft
Inflow Hydrographs	= 2, 10, 16, 17	Total Contrib. Area	= 16.168 ac



Post FLOW TO SALMON BROOK

Hyd. No. 19

Hydrograph Type	= Junction	Peak Flow	= 37.34 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 172,250 cuft
Inflow Hydrographs	= 11, 18	Total Contrib. Area	= 38.628 ac



Design Storm Report

Custom Storm filename:

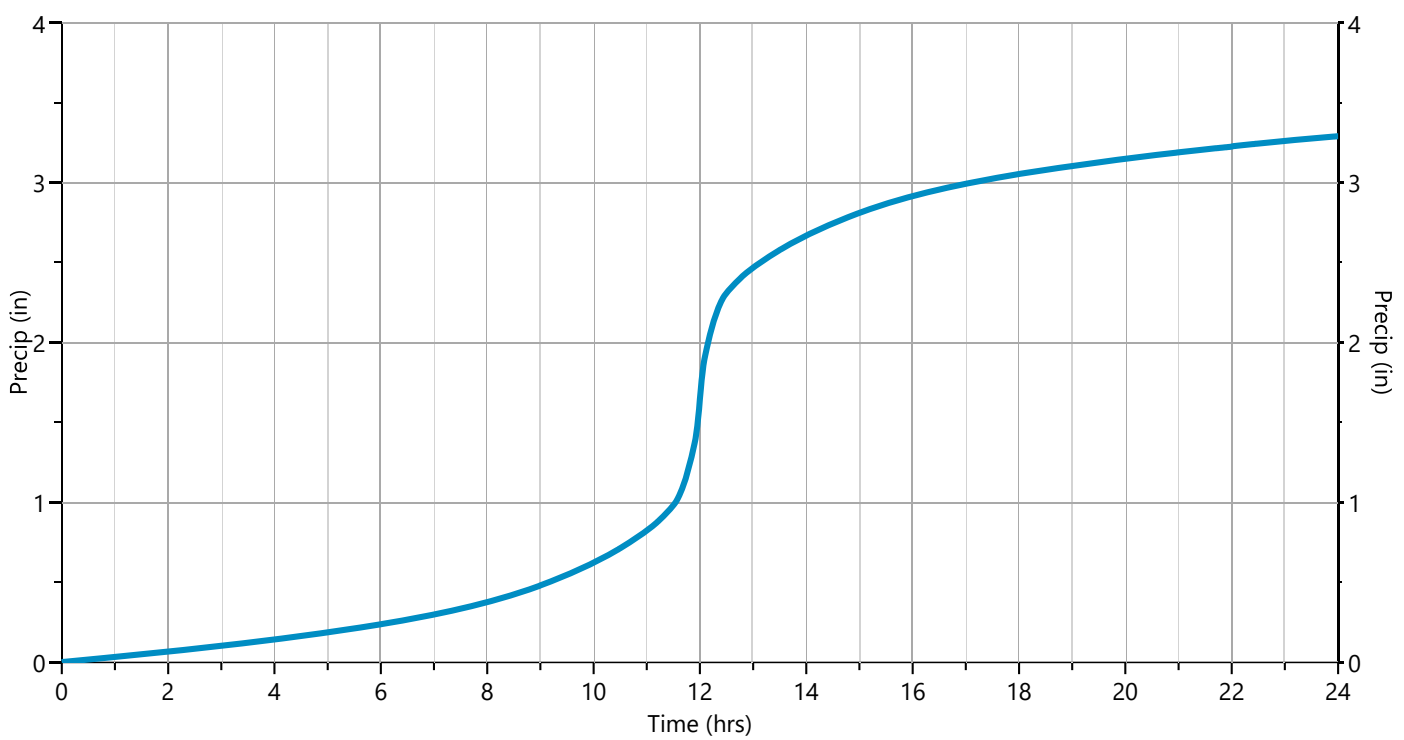
Hydrology Studio v 3.0.0.16

10-07-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	✔ 2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 2-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.006483	11.68	0.014969	11.87	0.023816	12.05	0.049432	12.23	0.019795
11.52	0.006909	11.70	0.015774	11.88	0.024620	12.07	0.042688	12.25	0.018991
11.53	0.007731	11.72	0.016578	11.90	0.025424	12.08	0.035943	12.27	0.018187
11.55	0.008536	11.73	0.017382	11.92	0.029293	12.10	0.029198	12.28	0.017382
11.57	0.009340	11.75	0.018186	11.93	0.035943	12.12	0.025521	12.30	0.016578
11.58	0.010144	11.77	0.018991	11.95	0.042688	12.13	0.024620	12.32	0.015774
11.60	0.010948	11.78	0.019795	11.97	0.049432	12.15	0.023816	12.33	0.014969
11.62	0.011752	11.80	0.020599	11.98	0.056177	12.17	0.023012	12.35	0.014165
11.63	0.012557	11.82	0.021403	**12.00**	**0.062922**	12.18	0.022208	12.37	0.013361
11.65	0.013361	11.83	0.022208	12.02	0.062770	12.20	0.021403	12.38	0.012557
11.67	0.014165	11.85	0.023012	12.03	0.056177	12.22	0.020599	12.40	0.011753



Hydrograph 5-yr Summary

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Post FLOW TO SWQB	21.60	12.18	89,325	----		
2	Pond Route(i)	Post SWQB	2.856	14.57	60,957	1	274.82 U 262.43 L	37,564 U 25,846 L
3	NRCS Runoff	Post FLOW TO N DP	19.97	12.17	77,075	----		
4	NRCS Runoff	Post SA-21	0.840	12.05	2,430	----		
5	NRCS Runoff	Post SA-20	0.571	12.05	1,651	----		
6	NRCS Runoff	Post SA-23	1.158	12.05	3,353	----		
7	NRCS Runoff	Post SA-24	0.933	12.05	2,700	----		
8	NRCS Runoff	Post SA-22	0.964	12.05	2,789	----		
9	NRCS Runoff	Post SA-25	11.75	12.12	41,528	----		
10	NRCS Runoff	Post SA-26	15.68	12.12	54,918	----		
11	NRCS Runoff	Post SA-40	39.45	12.13	146,140	----		
12	Pond Route	Post BIO RET	0.000	10.88	0.000	5	313.24	1,259
13	Pond Route	Post BIO RET	0.021	15.60	383	4	303.59	1,703
14	Pond Route	Post BIO-RET	0.030	15.67	579	6	301.61	2,350
15	Pond Route	Post BIO RET	0.044	14.13	728	8	301.63	1,766
16	Pond Route	Post BIO RET	0.038	14.48	642	7	308.62	1,752
17	Junction		11.75	12.12	43,219	9, 12, 13, 14, 15		
18	Junction	Post FLOW TO SOUTH DP	27.43	12.12	159,735	2, 10, 16, 17		
19	Junction	Post FLOW TO SALMON BROOK	36.71	12.13	305,875	11, 18		

(i) = Interconnected ponds, U = Upper pond, L = Lower pond

Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

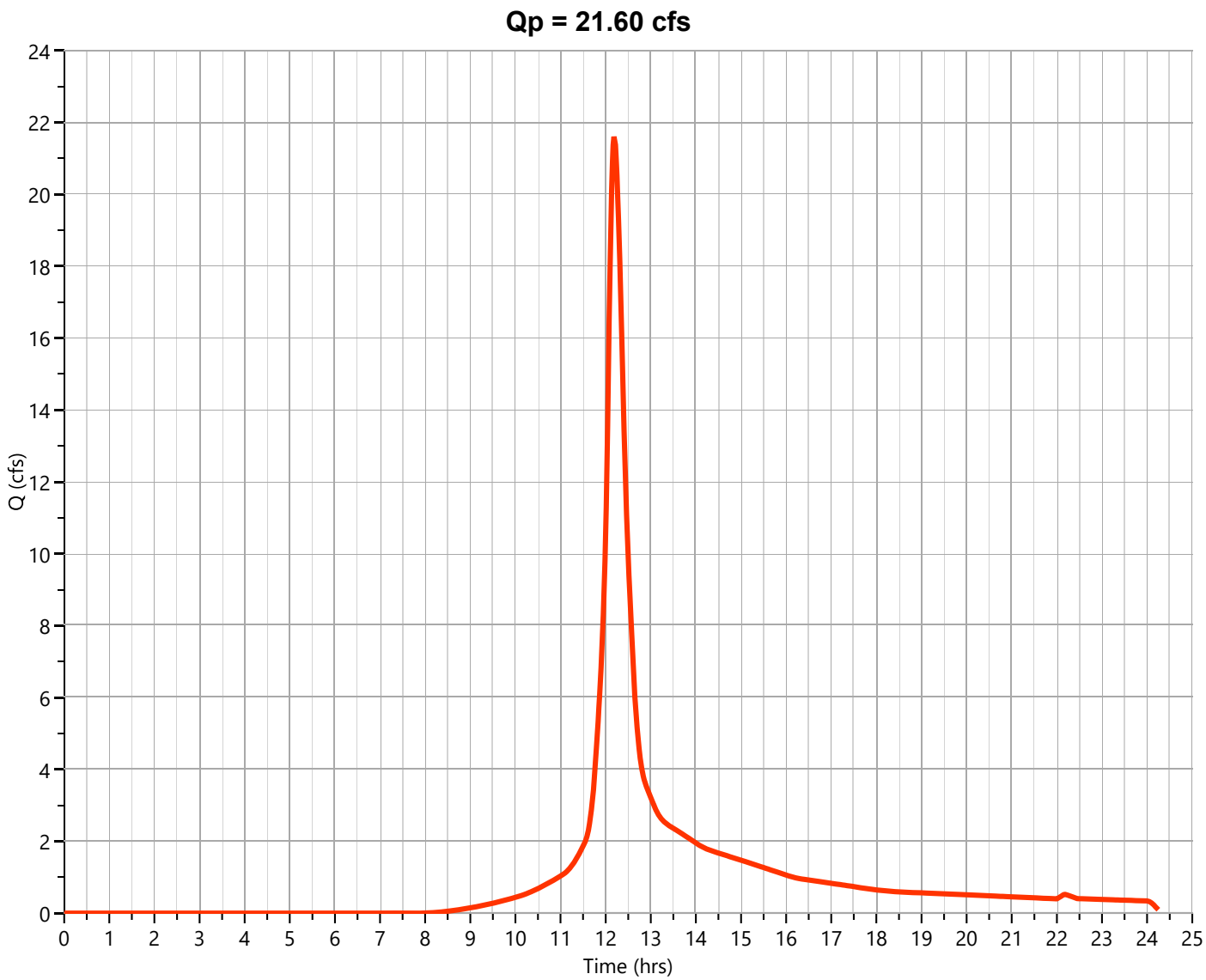
Post FLOW TO SWQB

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 21.60 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 89,325 cuft
Drainage Area	= 10.305 ac	Curve Number	= 80.59*
Tc Method	= User	Time of Conc. (Tc)	= 15.9 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.83	98	PAVE
7.475	74	LAWN
10.305	**81**	Weighted CN Method Employed

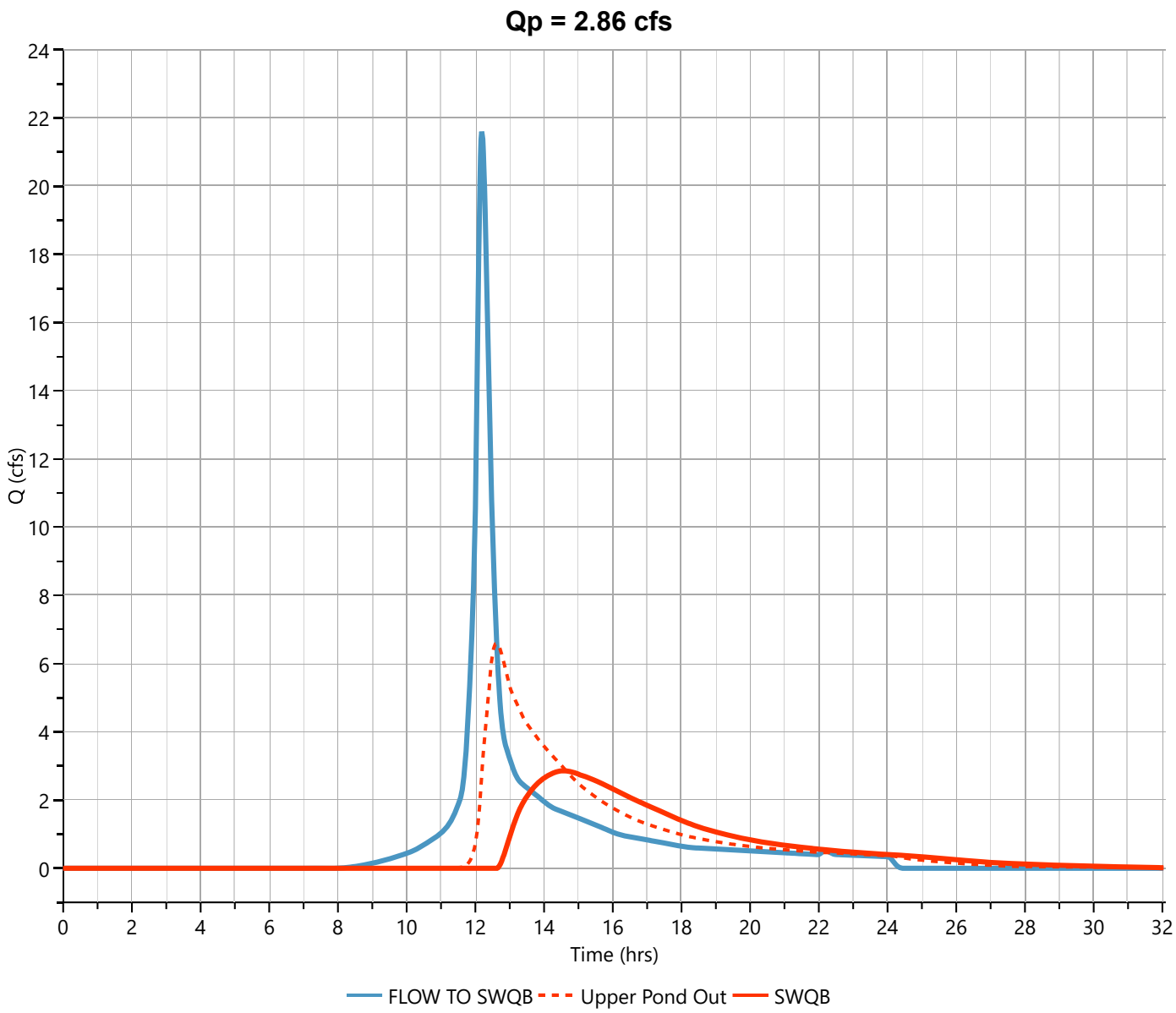


Post SWQB

Hyd. No. 2

Hydrograph Type	= Pond Route(i)*	Peak Flow	= 2.856 cfs
Storm Frequency	= 5-yr	Time to Peak	= 14.57 hrs
Time Interval	= 1 min	Hydrograph Volume	= 60,957 cuft
Upper Pond		**Lower Pond**	
Pond Name	= SWQB TOP	Pond Name	= SWQB BOT
Inflow Hyd	= 1 - FLOW TO SWQB	Addnl Inflow Hyd	= None
Max. Elevation	= 274.82 ft	Max. Elevation	= 262.43 ft
Max. Storage	= 37,564 cuft	Max. Storage	= 25,846 cuft

**Interconnected Pond Routing by Storage Indication Method.*



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

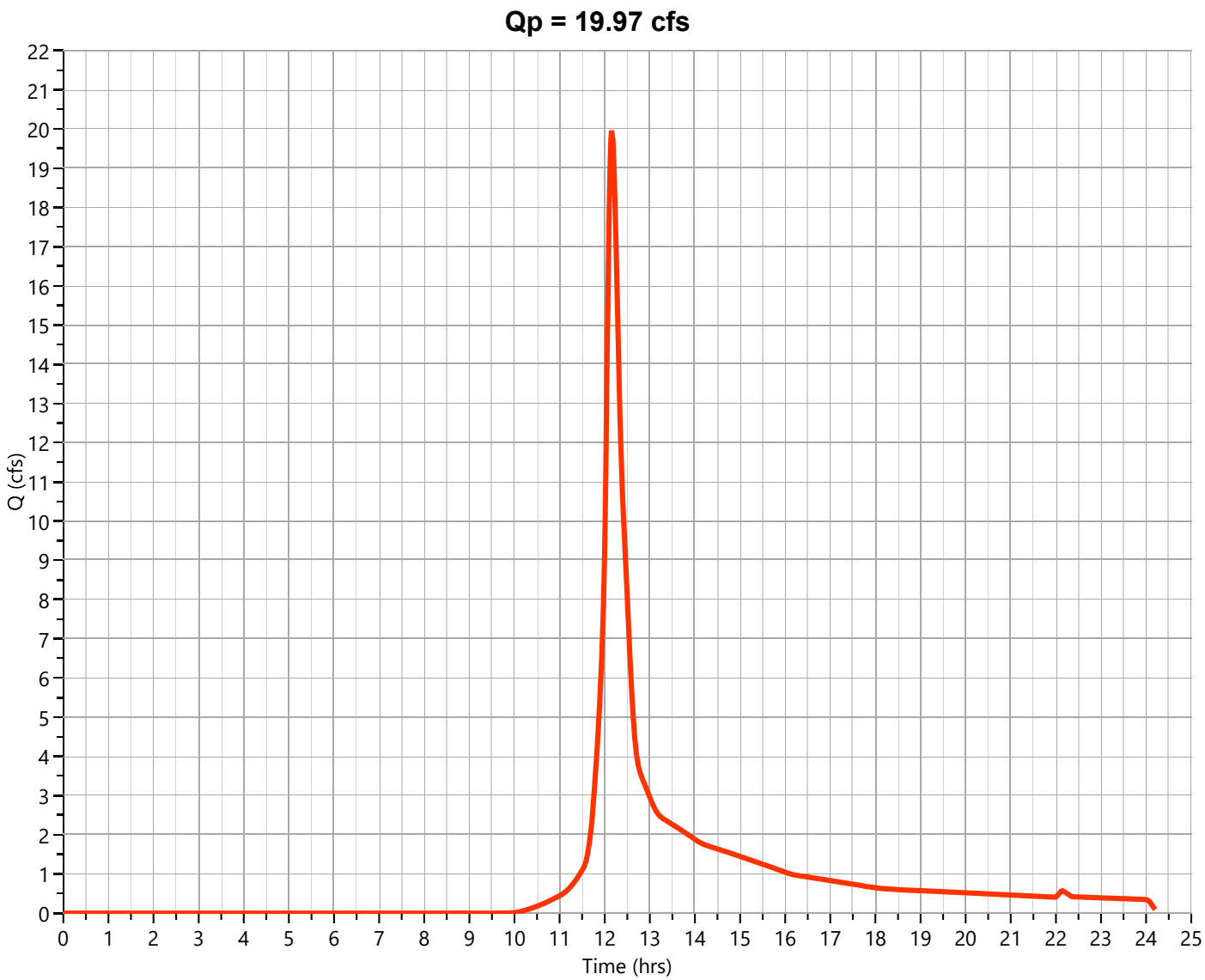
Post FLOW TO N DP

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 19.97 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 77,075 cuft
Drainage Area	= 12.862 ac	Curve Number	= 71.84*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.08 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
9.177	70	WOODED
3.311	74	LAWN
0.374	98	PAVE
12.862	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

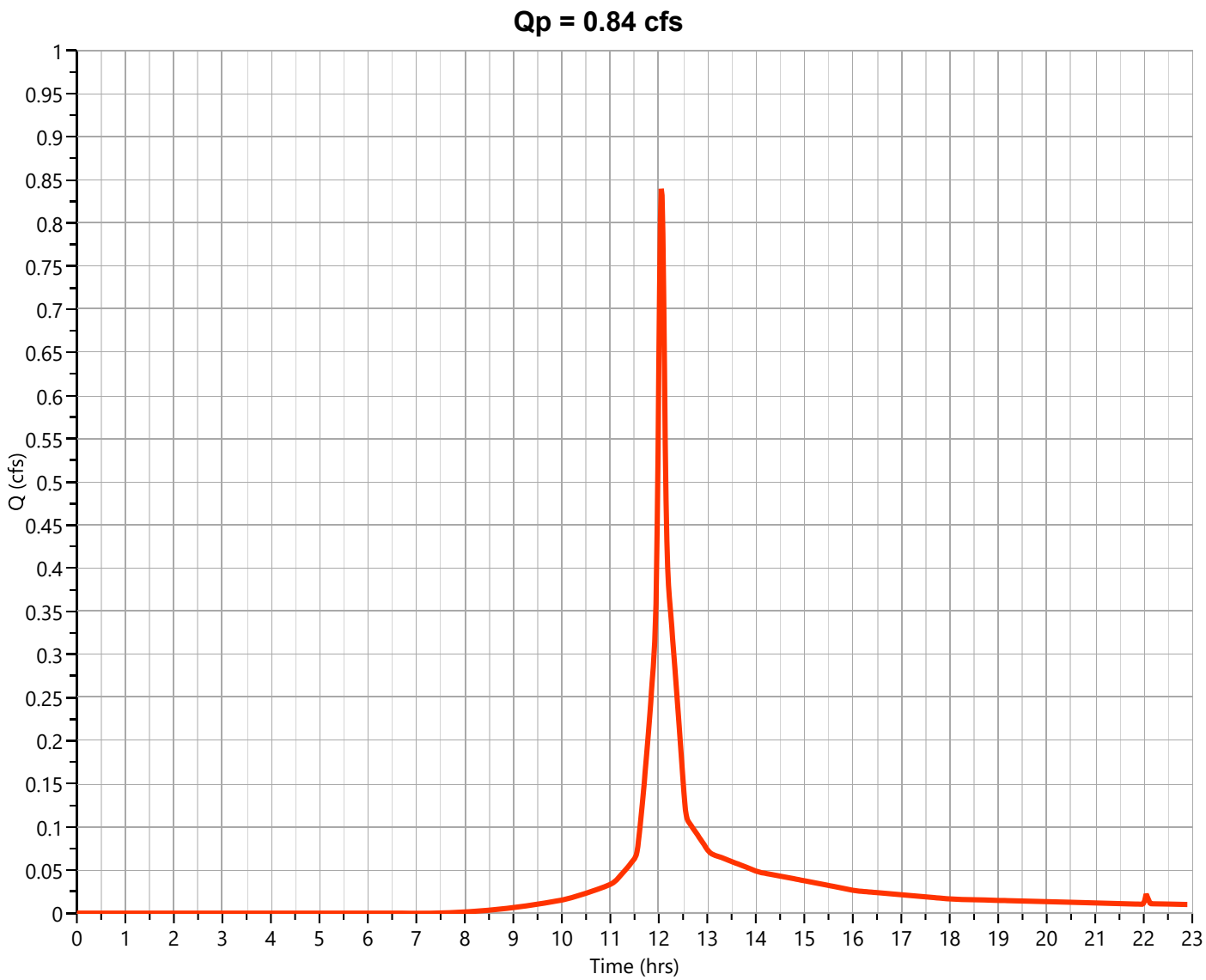
Post SA-21

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.840 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 2,430 cuft
Drainage Area	= 0.27 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.088	98	PAVE
0.183	74	LAWN
0.27	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

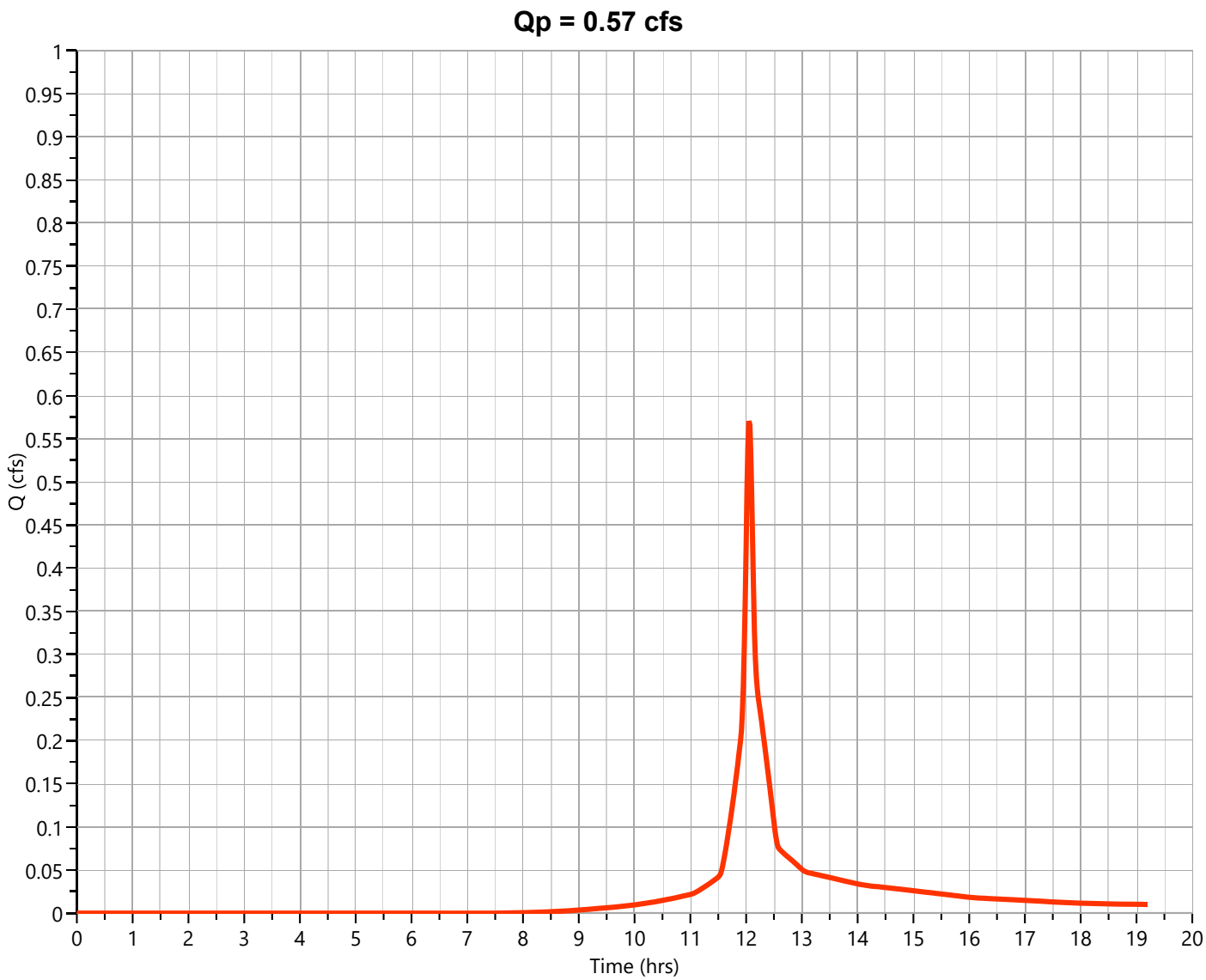
Post SA-20

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.571 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 1,651 cuft
Drainage Area	= 0.19 ac	Curve Number	= 81*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.051	98	PAVE
0.135	74	LAWN
0.19	**81**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

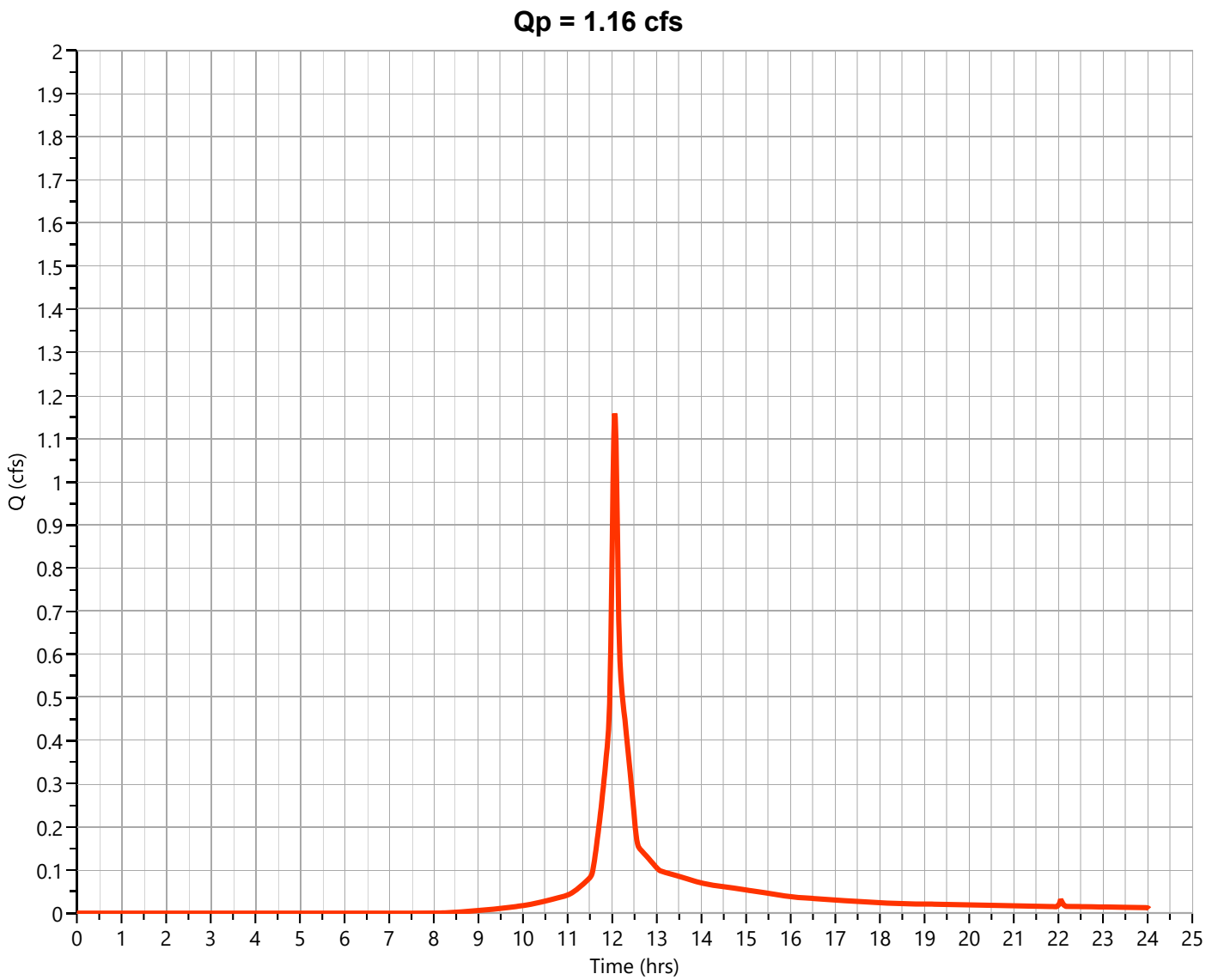
Post SA-23

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.158 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 3,353 cuft
Drainage Area	= 0.4 ac	Curve Number	= 80*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.306	74	LAWN
0.4	**80**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

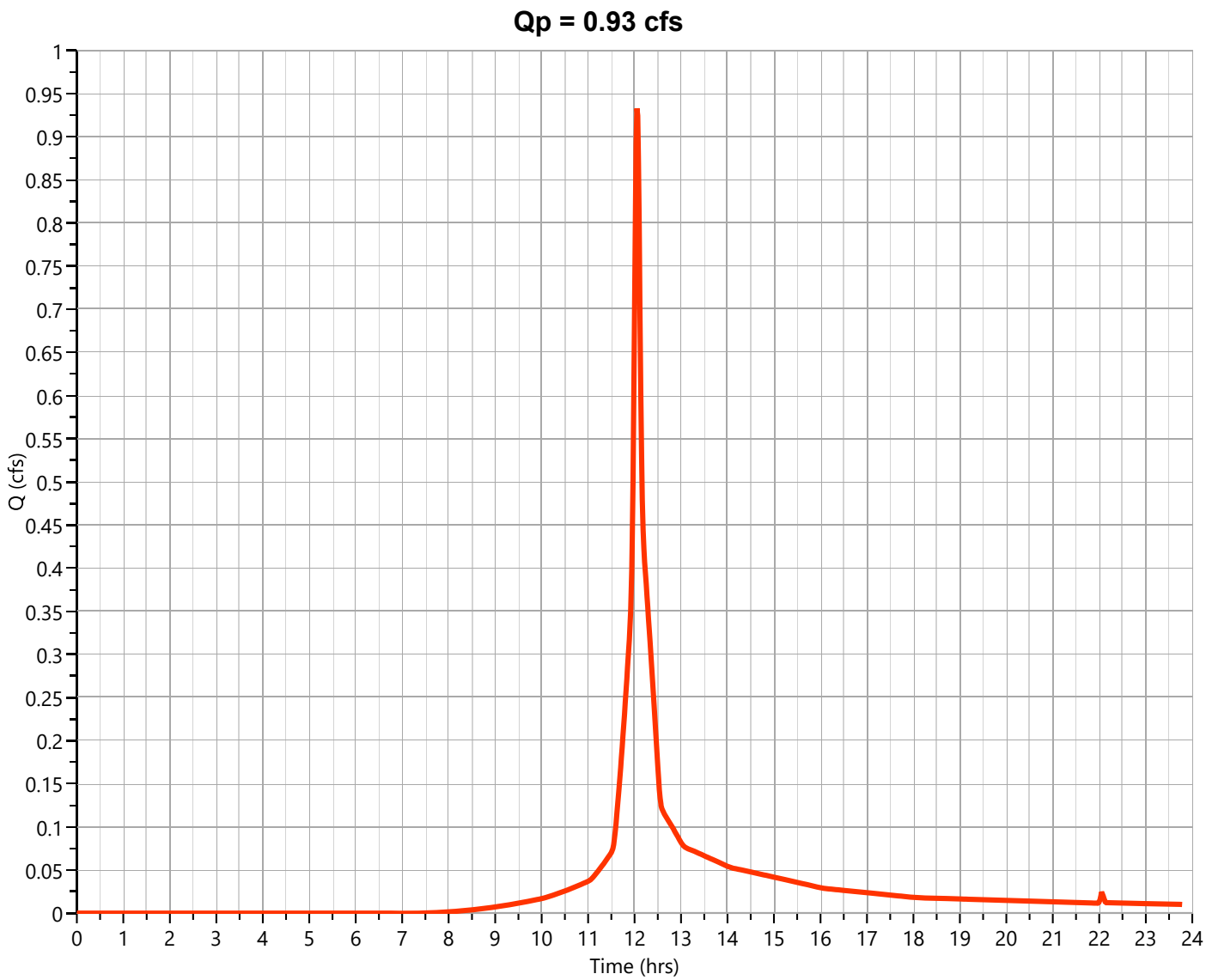
Post SA-24

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.933 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 2,700 cuft
Drainage Area	= 0.3 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.208	74	LAWN
0.3	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

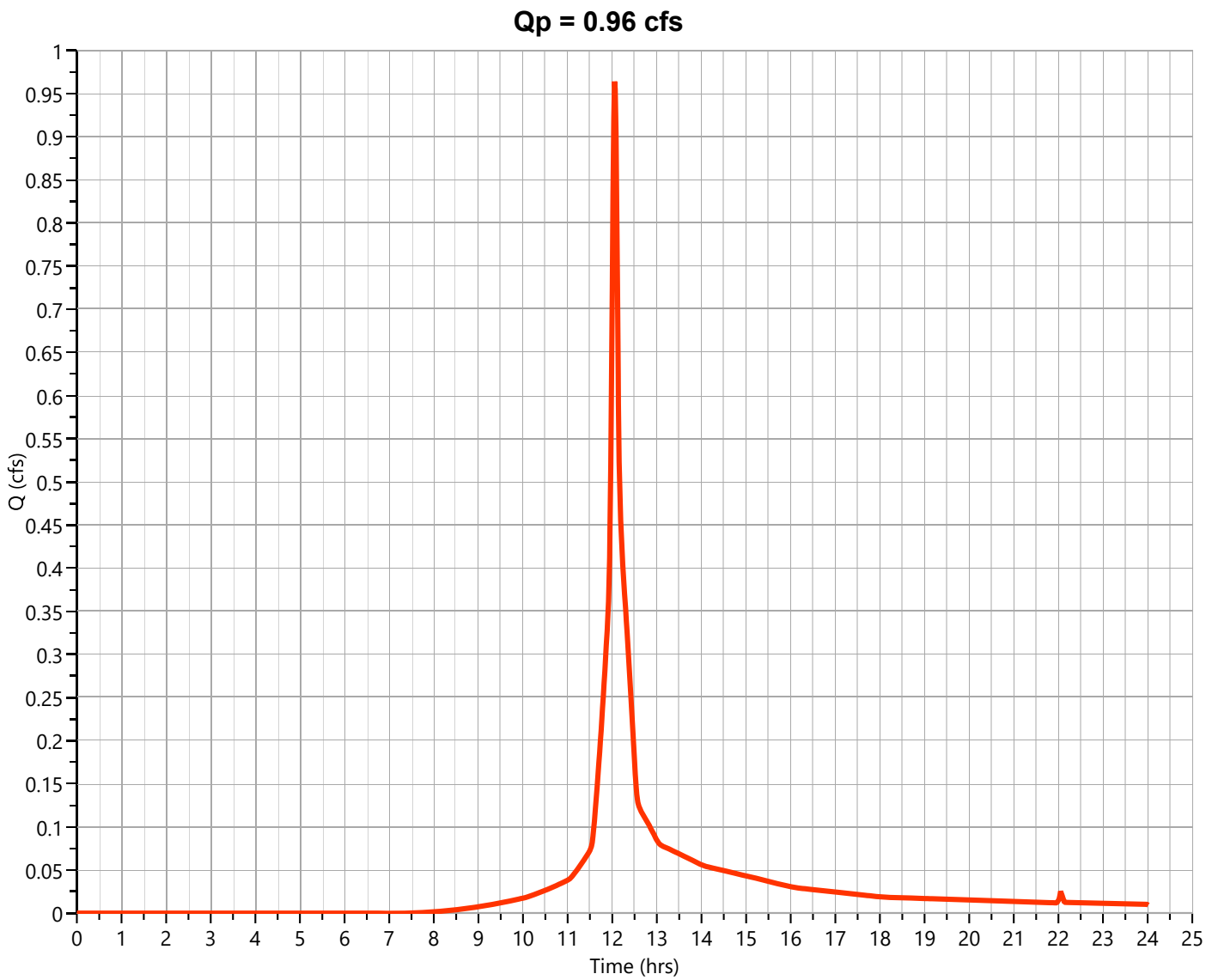
Post SA-22

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.964 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 2,789 cuft
Drainage Area	= 0.31 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.107	98	PAVE
0.201	74	LAWN
0.31	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

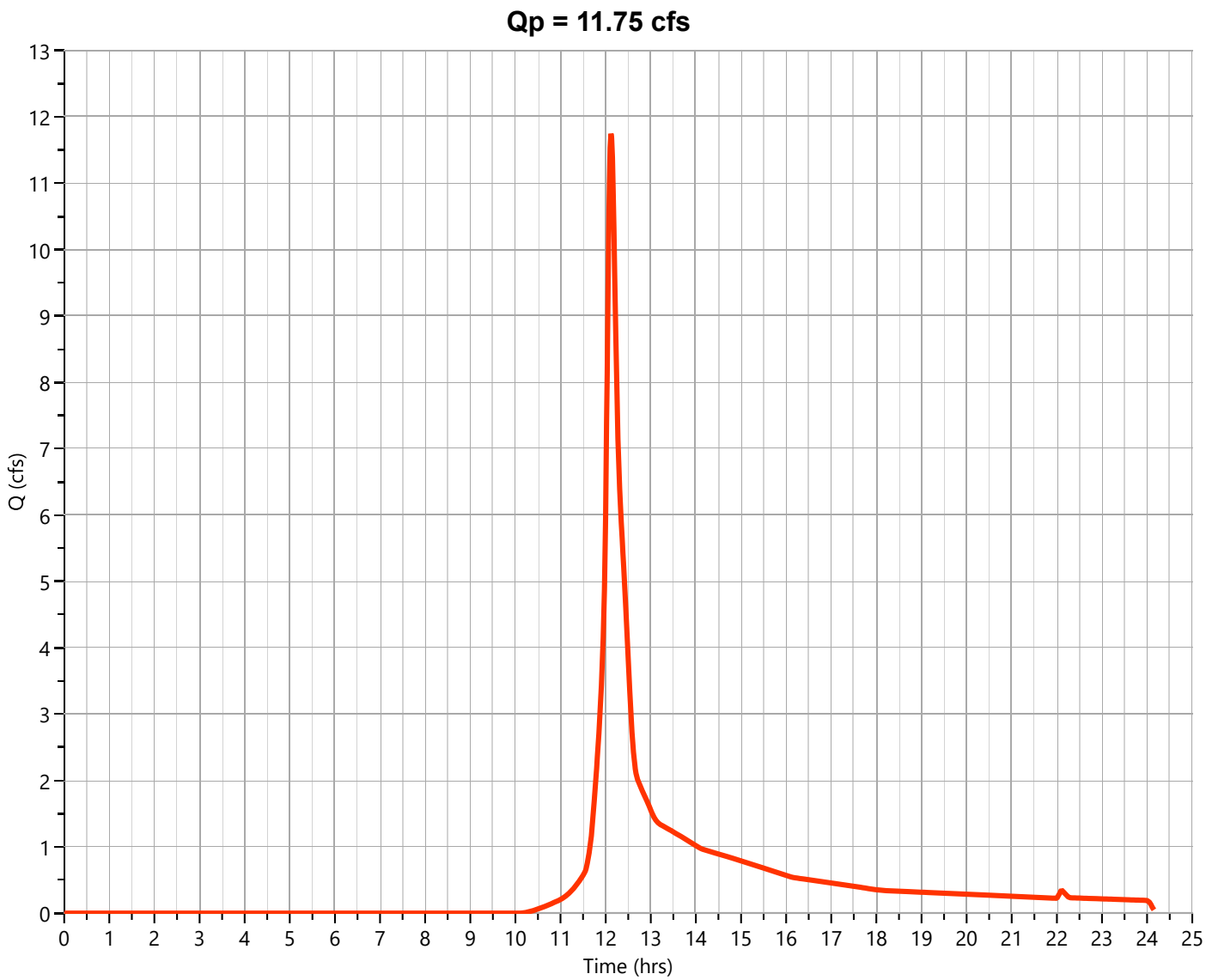
Post SA-25

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 11.75 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 41,528 cuft
Drainage Area	= 7.208 ac	Curve Number	= 70.57*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
1.022	74	LAWN
6.186	70	WOODED
7.208	**71**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

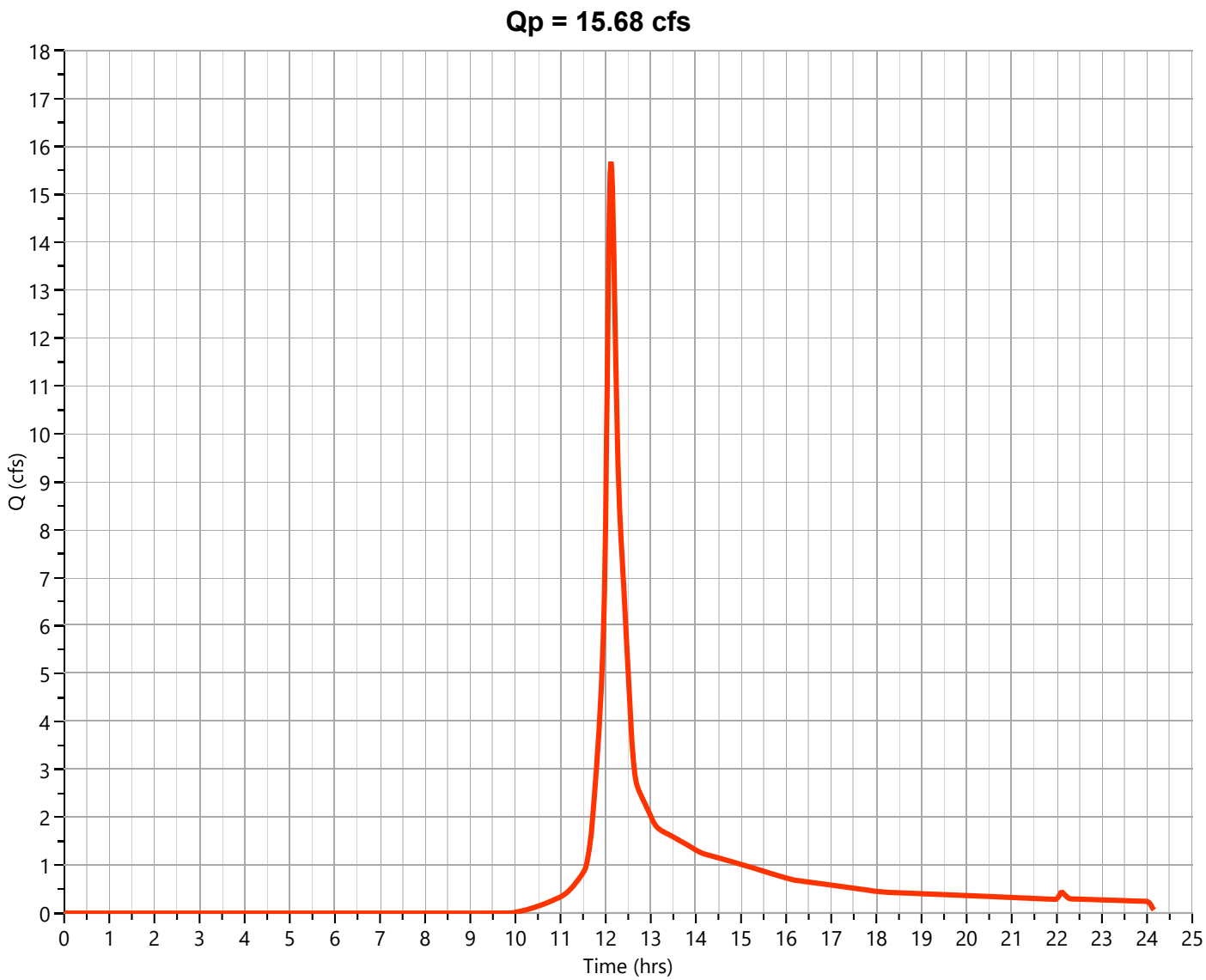
Post SA-26

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 15.68 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 54,918 cuft
Drainage Area	= 8.96 ac	Curve Number	= 72*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.157	98	PAVE
3.887	74	LAWN
4.914	70	WOODED
8.96	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

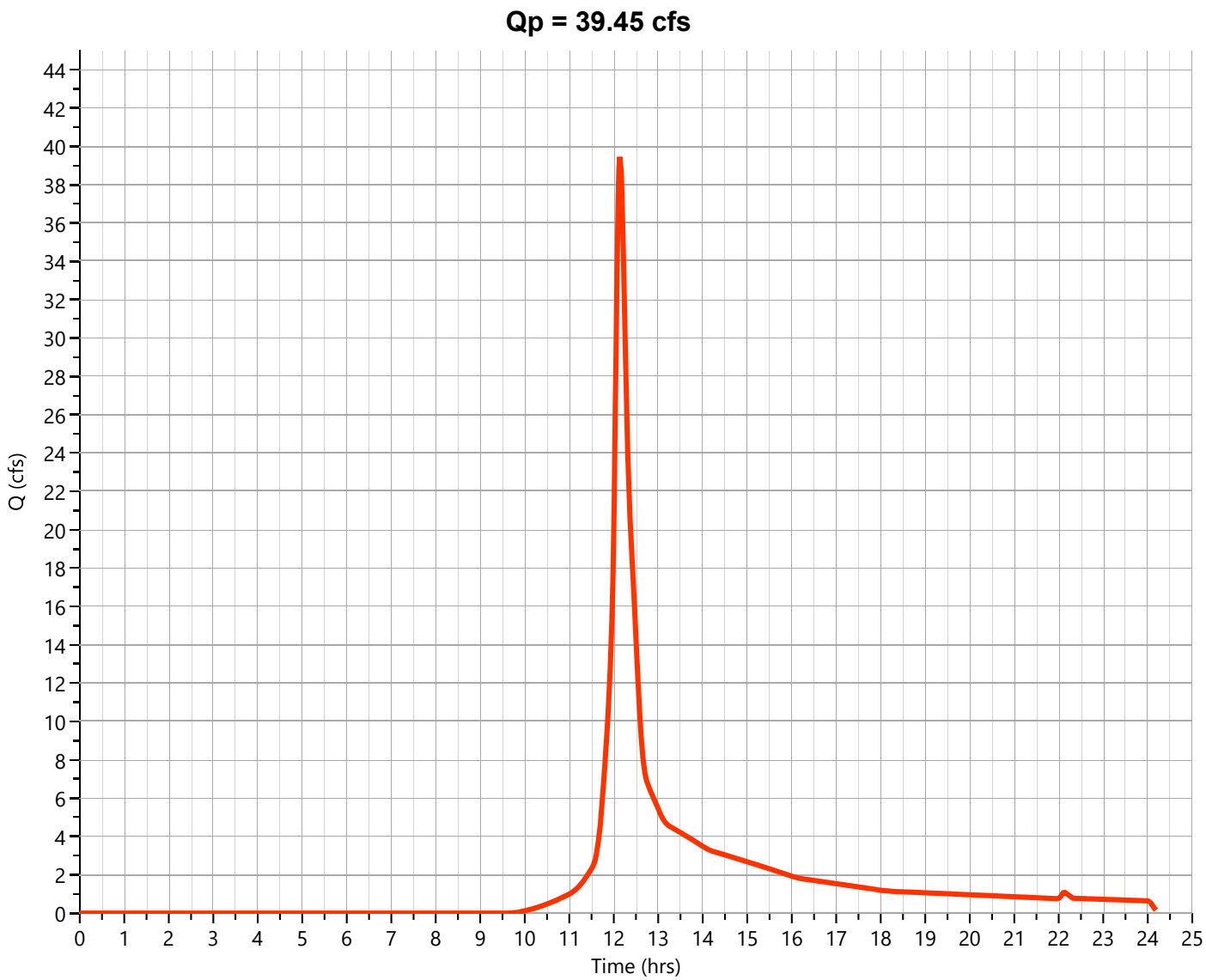
Post SA-40

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 39.45 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 146,140 cuft
Drainage Area	= 22.46 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 4.32 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
16.447	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
22.46	**73**	Weighted CN Method Employed

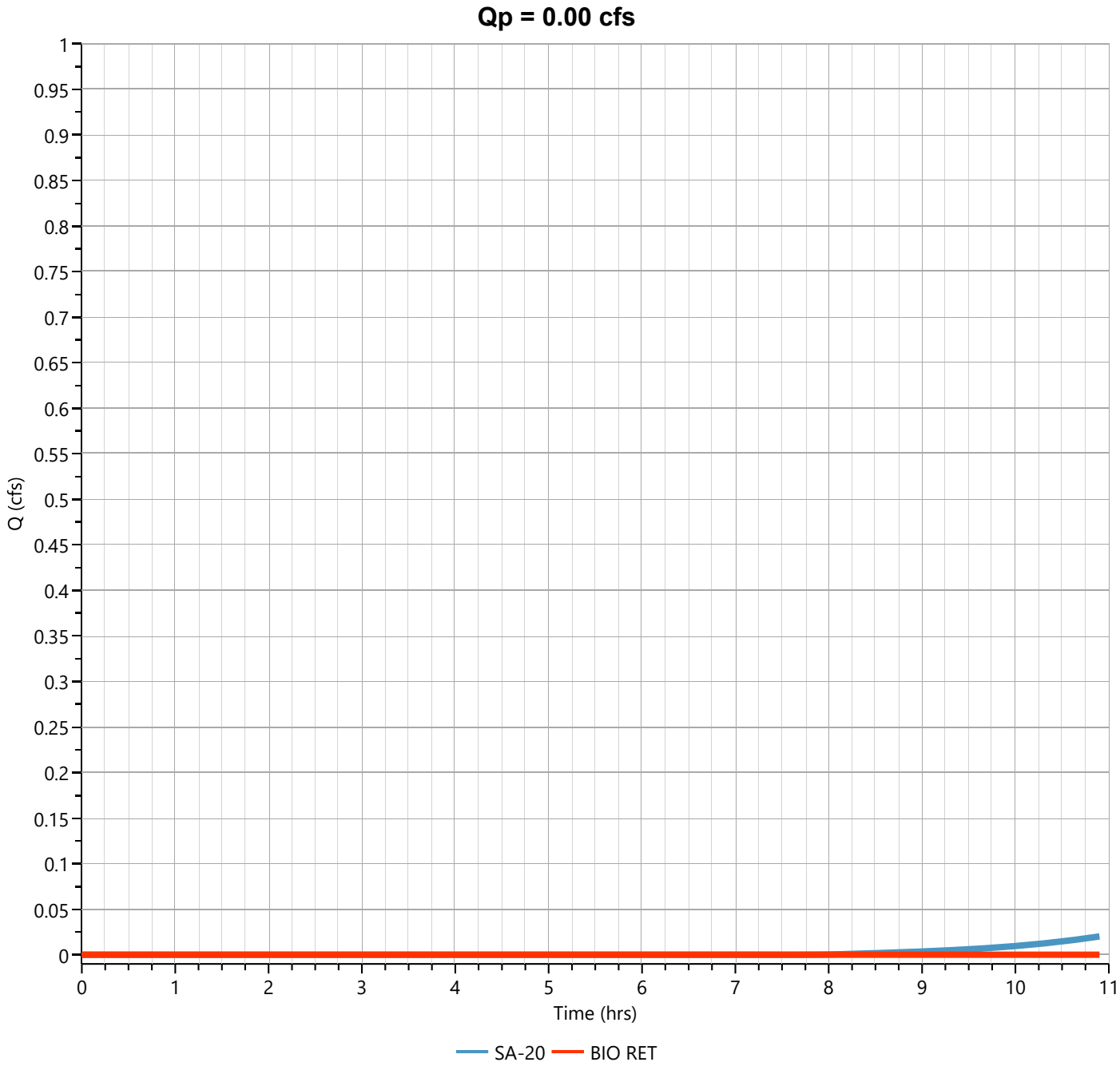


Post BIO RET

Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 5-yr	Time to Peak	= 10.88 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 5 - SA-20	Max. Elevation	= 313.24 ft
Pond Name	= SA-20	Max. Storage	= 1,259 cuft

Pond Routing by Storage Indication Method



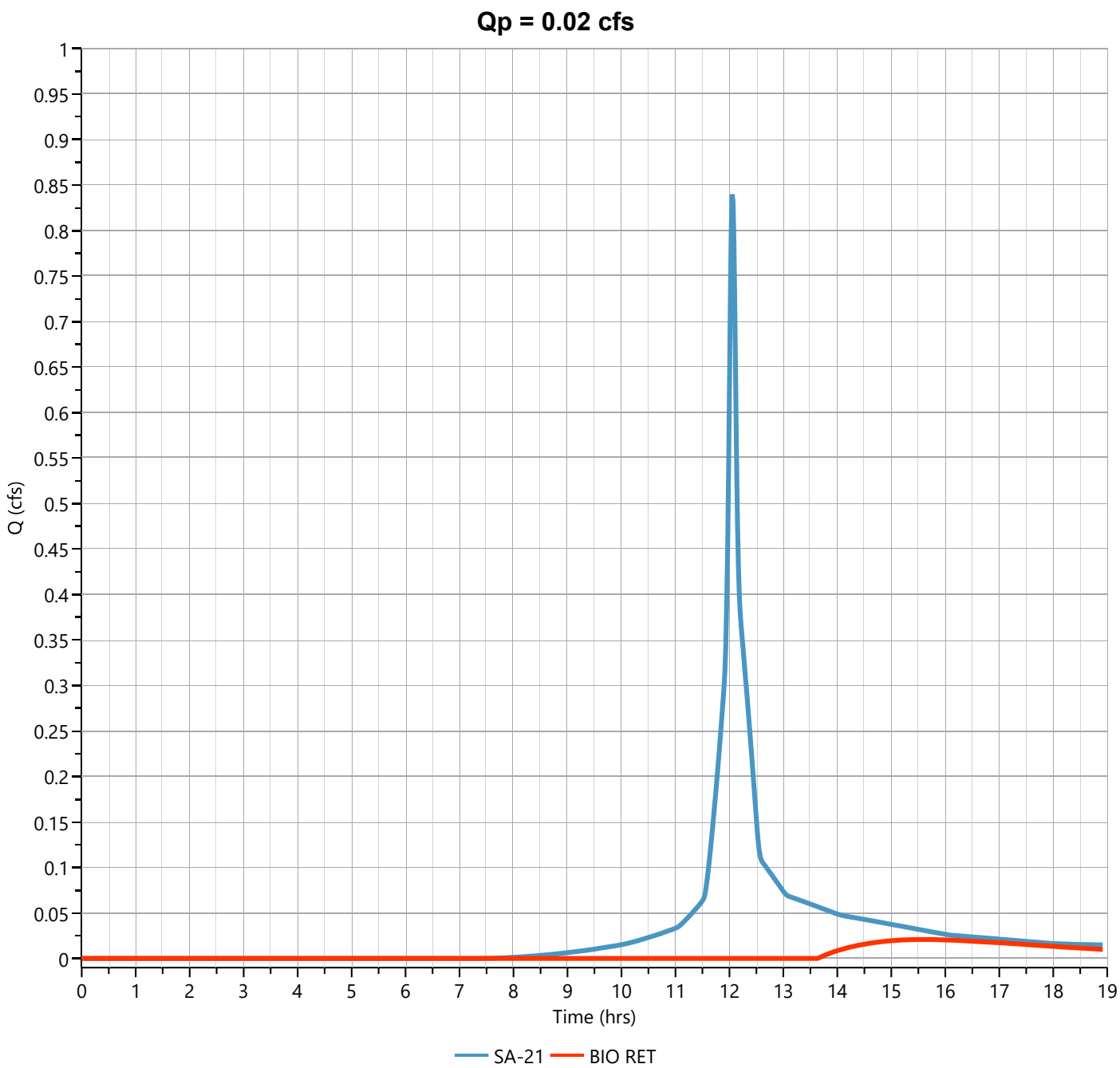
Post BIO RET

Hyd. No. 13

Hydrograph Type	= Pond Route	Peak Flow	= 0.021 cfs
Storm Frequency	= 5-yr	Time to Peak	= 15.60 hrs
Time Interval	= 1 min	Hydrograph Volume	= 383 cuft
Inflow Hydrograph	= 4 - SA-21	Max. Elevation	= 303.59 ft
Pond Name	= SA-21	Max. Storage	= 1,703 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 3.62 hrs



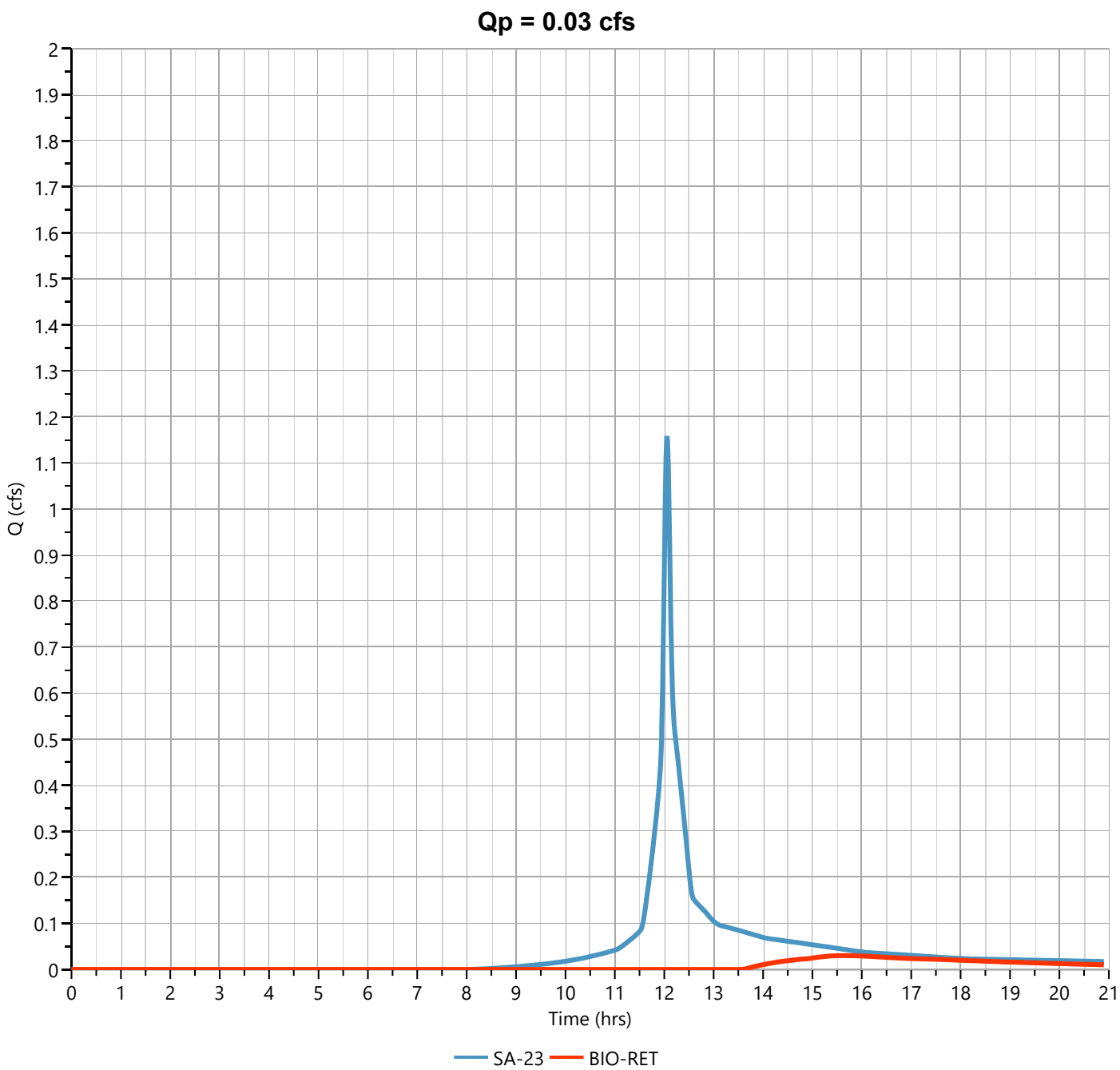
Post BIO-RET

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.030 cfs
Storm Frequency	= 5-yr	Time to Peak	= 15.67 hrs
Time Interval	= 1 min	Hydrograph Volume	= 579 cuft
Inflow Hydrograph	= 6 - SA-23	Max. Elevation	= 301.61 ft
Pond Name	= SA-23	Max. Storage	= 2,350 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 3.95 hrs



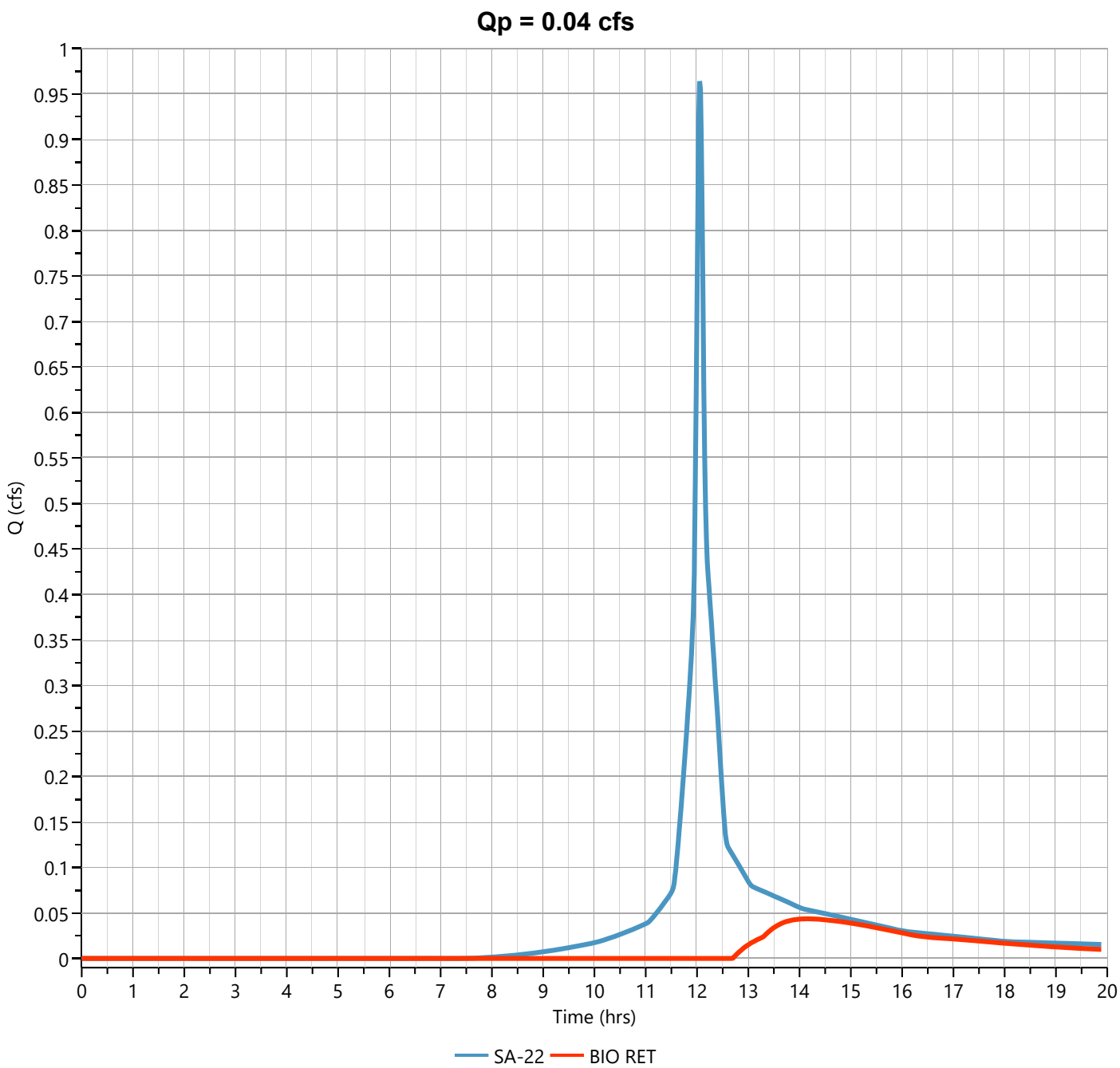
Post BIO RET

Hyd. No. 15

Hydrograph Type	= Pond Route	Peak Flow	= 0.044 cfs
Storm Frequency	= 5-yr	Time to Peak	= 14.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 728 cuft
Inflow Hydrograph	= 8 - SA-22	Max. Elevation	= 301.63 ft
Pond Name	= SA-22	Max. Storage	= 1,766 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 2.74 hrs



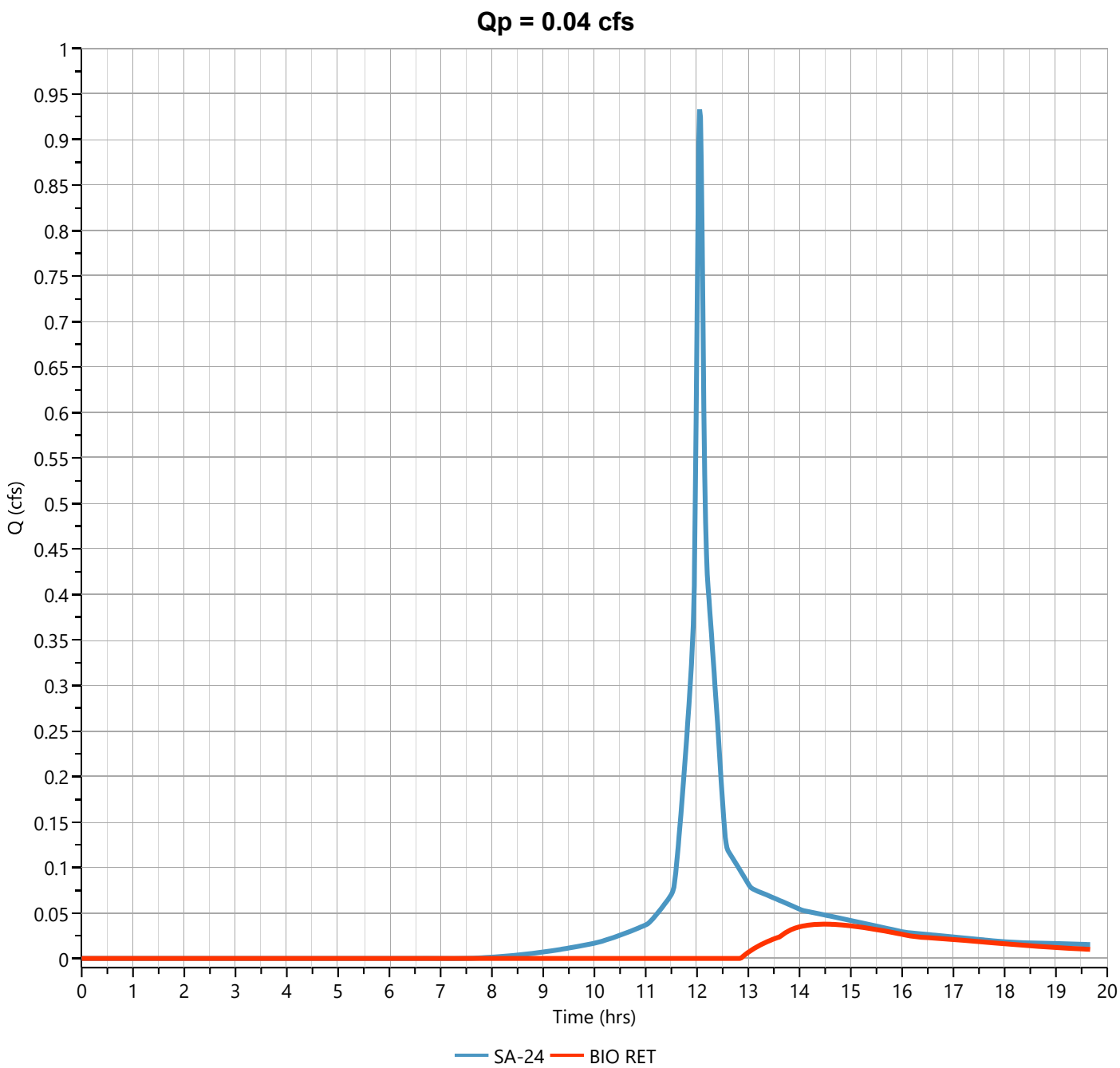
Post BIO RET

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 0.038 cfs
Storm Frequency	= 5-yr	Time to Peak	= 14.48 hrs
Time Interval	= 1 min	Hydrograph Volume	= 642 cuft
Inflow Hydrograph	= 7 - SA-24	Max. Elevation	= 308.62 ft
Pond Name	= SA-24	Max. Storage	= 1,752 cuft

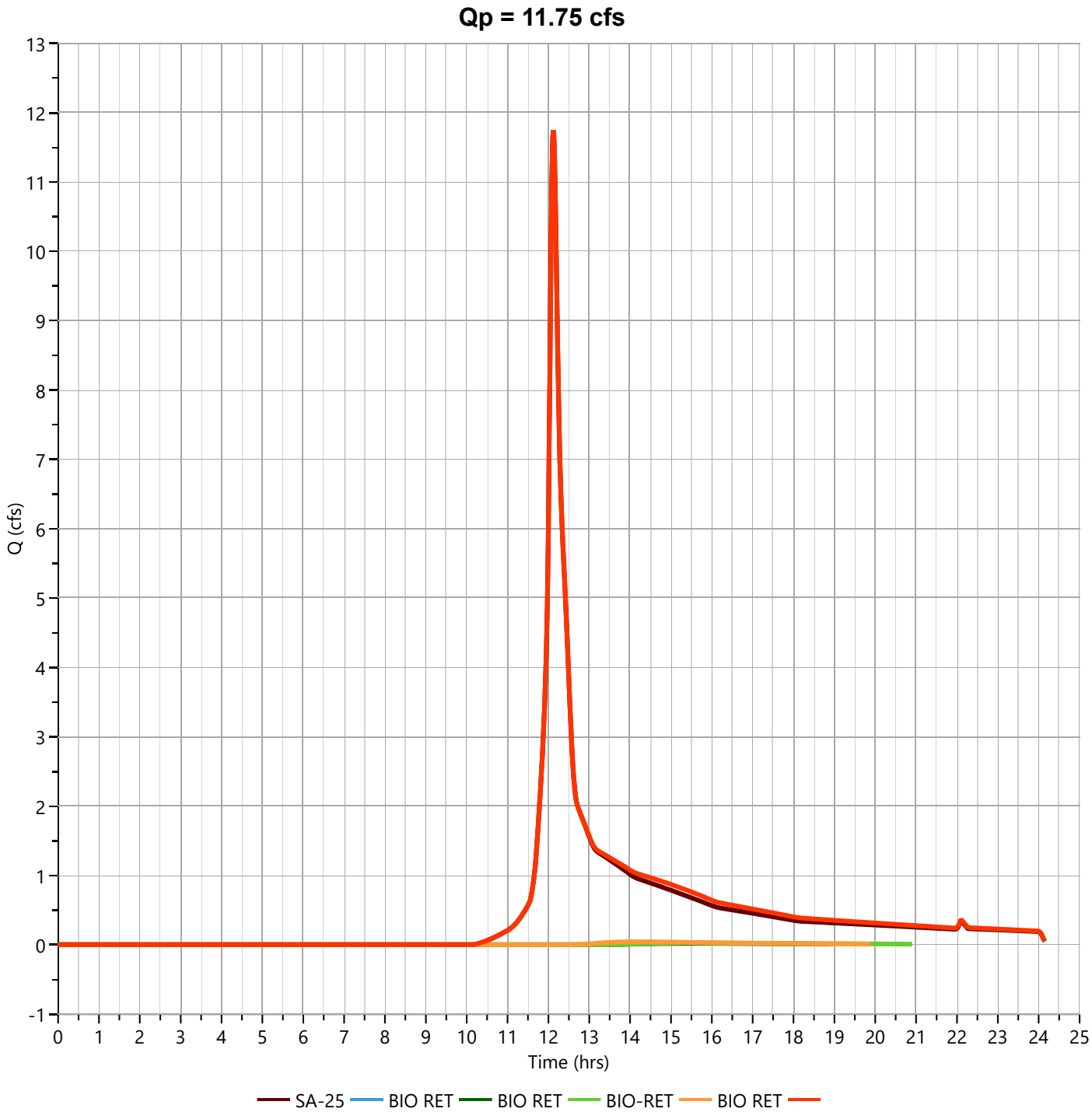
Pond Routing by Storage Indication Method

Center of mass detention time = 2.92 hrs



Hyd. No. 17

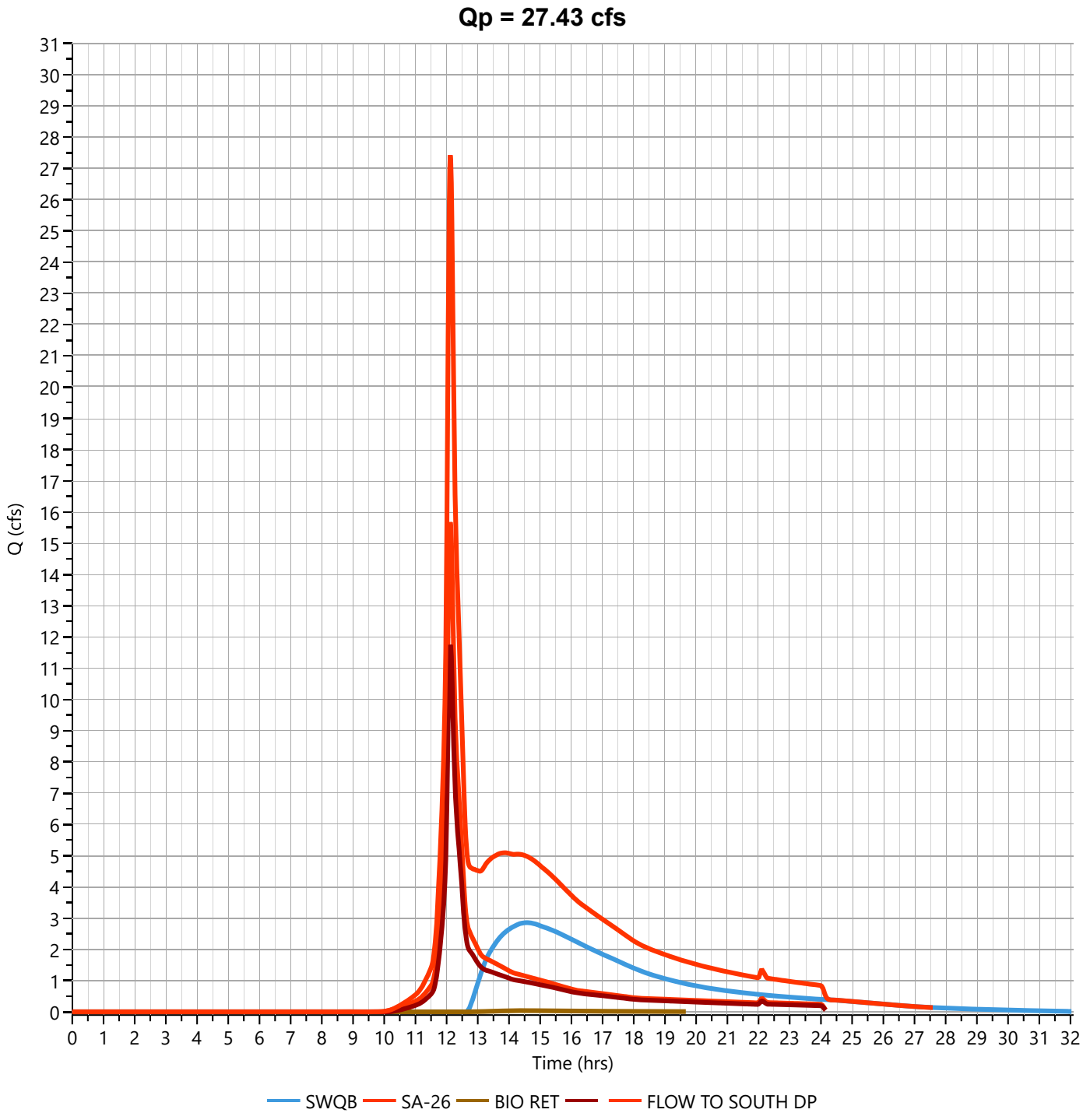
Hydrograph Type	= Junction	Peak Flow	= 11.75 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 43,219 cuft
Inflow Hydrographs	= 9, 12, 13, 14, 15	Total Contrib. Area	= 7.208 ac



Post FLOW TO SOUTH DP

Hyd. No. 18

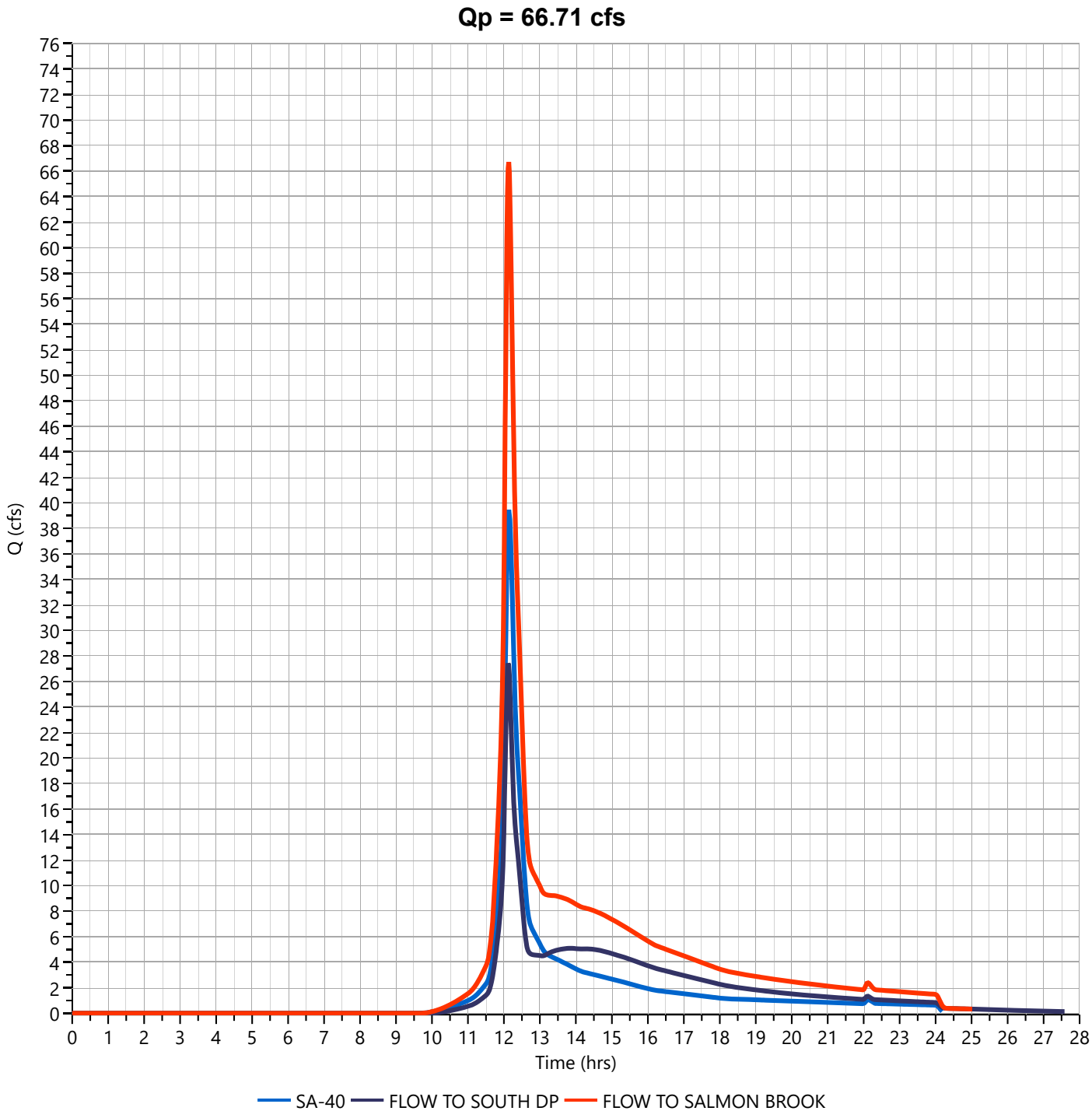
Hydrograph Type	= Junction	Peak Flow	= 27.43 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 159,735 cuft
Inflow Hydrographs	= 2, 10, 16, 17	Total Contrib. Area	= 16.168 ac



Post FLOW TO SALMON BROOK

Hyd. No. 19

Hydrograph Type	= Junction	Peak Flow	= 66.71 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 305,875 cuft
Inflow Hydrographs	= 11, 18	Total Contrib. Area	= 38.628 ac



Design Storm Report

Custom Storm filename:

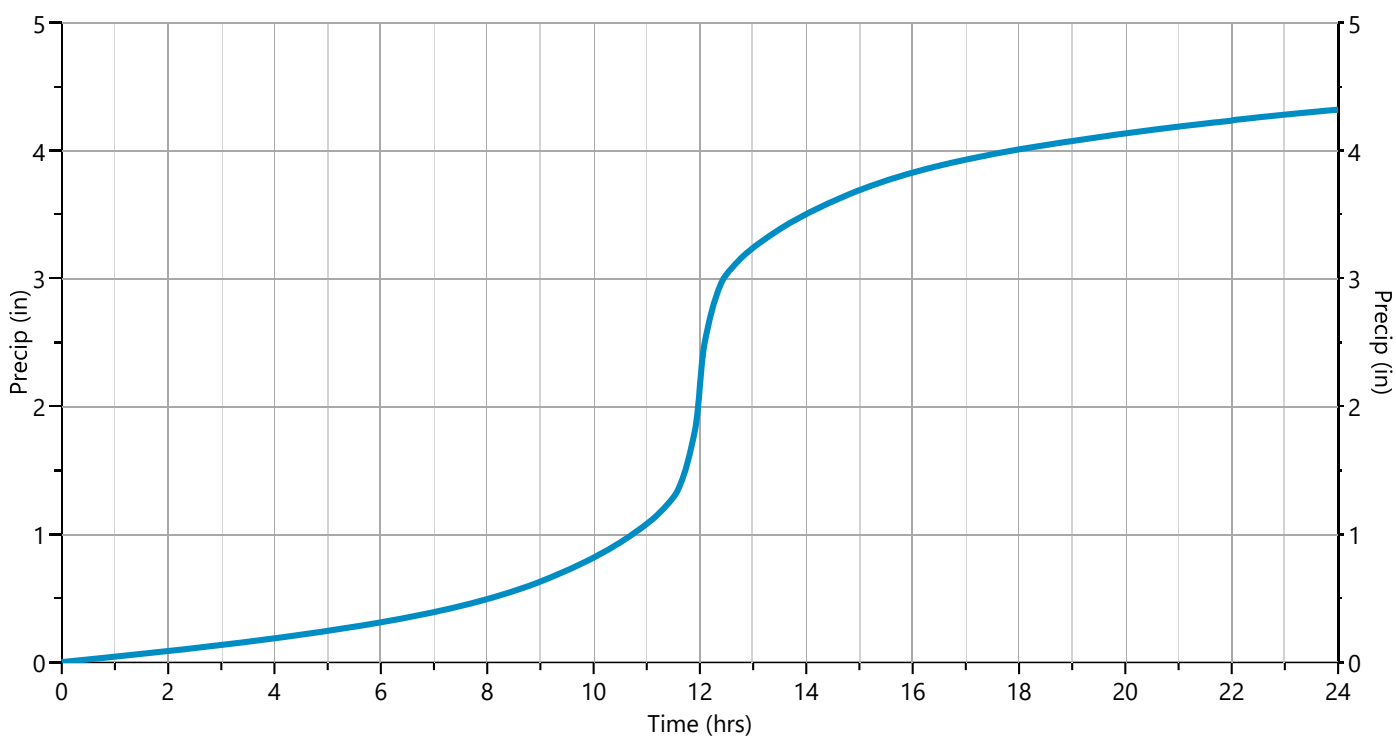
Hydrology Studio v 3.0.0.16

10-07-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	✔ 5-yr	10-yr	25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 5-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.008513	11.68	0.019656	11.87	0.031272	12.05	0.064908	12.23	0.025992
11.52	0.009072	11.70	0.020712	11.88	0.032328	12.07	0.056052	12.25	0.024936
11.53	0.010152	11.72	0.021768	11.90	0.033384	12.08	0.047196	12.27	0.023880
11.55	0.011208	11.73	0.022824	11.92	0.038463	12.10	0.038340	12.28	0.022824
11.57	0.012264	11.75	0.023880	11.93	0.047196	12.12	0.033511	12.30	0.021768
11.58	0.013320	11.77	0.024936	11.95	0.056052	12.13	0.032328	12.32	0.020712
11.60	0.014376	11.78	0.025992	11.97	0.064908	12.15	0.031272	12.33	0.019656
11.62	0.015432	11.80	0.027048	11.98	0.073764	12.17	0.030216	12.35	0.018600
11.63	0.016488	11.82	0.028104	**12.00**	**0.082620**	12.18	0.029160	12.37	0.017544
11.65	0.017544	11.83	0.029160	12.02	0.082422	12.20	0.028104	12.38	0.016488
11.67	0.018600	11.85	0.030216	12.03	0.073764	12.22	0.027048	12.40	0.015432



Hydrograph 10-yr Summary

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Post FLOW TO SWQB	28.45	12.18	117,641	----		
2	Pond Route(i)	Post SWQB	5.064	13.47	88,552	1	275.33 U 262.80 L	45,838 U 30,625 L
3	NRCS Runoff	Post FLOW TO N DP	28.14	12.15	106,805	----		
4	NRCS Runoff	Post SA-21	1.094	12.05	3,176	----		
5	NRCS Runoff	Post SA-20	0.748	12.05	2,169	----		
6	NRCS Runoff	Post SA-23	1.530	12.05	4,429	----		
7	NRCS Runoff	Post SA-24	1.216	12.05	3,529	----		
8	NRCS Runoff	Post SA-22	1.256	12.05	3,647	----		
9	NRCS Runoff	Post SA-25	16.74	12.12	58,028	----		
10	NRCS Runoff	Post SA-26	22.04	12.12	76,023	----		
11	NRCS Runoff	Post SA-40	55.02	12.13	201,028	----		
12	Pond Route	Post BIO RET	0.006	17.53	96.7	5	313.53	1,655
13	Pond Route	Post BIO RET	0.075	13.13	1,096	4	303.69	1,839
14	Pond Route	Post BIO-RET	0.129	12.95	1,609	6	301.71	2,526
15	Pond Route	Post BIO RET	0.135	12.68	1,552	8	301.77	1,961
16	Pond Route	Post BIO RET	0.118	12.78	1,438	7	308.75	1,928
17	Junction		16.74	12.12	62,382	9, 12, 13, 14, 15		
18	Junction	Post FLOW TO SOUTH DP	38.78	12.12	228,395	2, 10, 16, 17		
19	Junction	Post FLOW TO SALMON BROOK	93.41	12.13	429,423	11, 18		

(i) = Interconnected ponds, U = Upper pond, L = Lower pond

Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

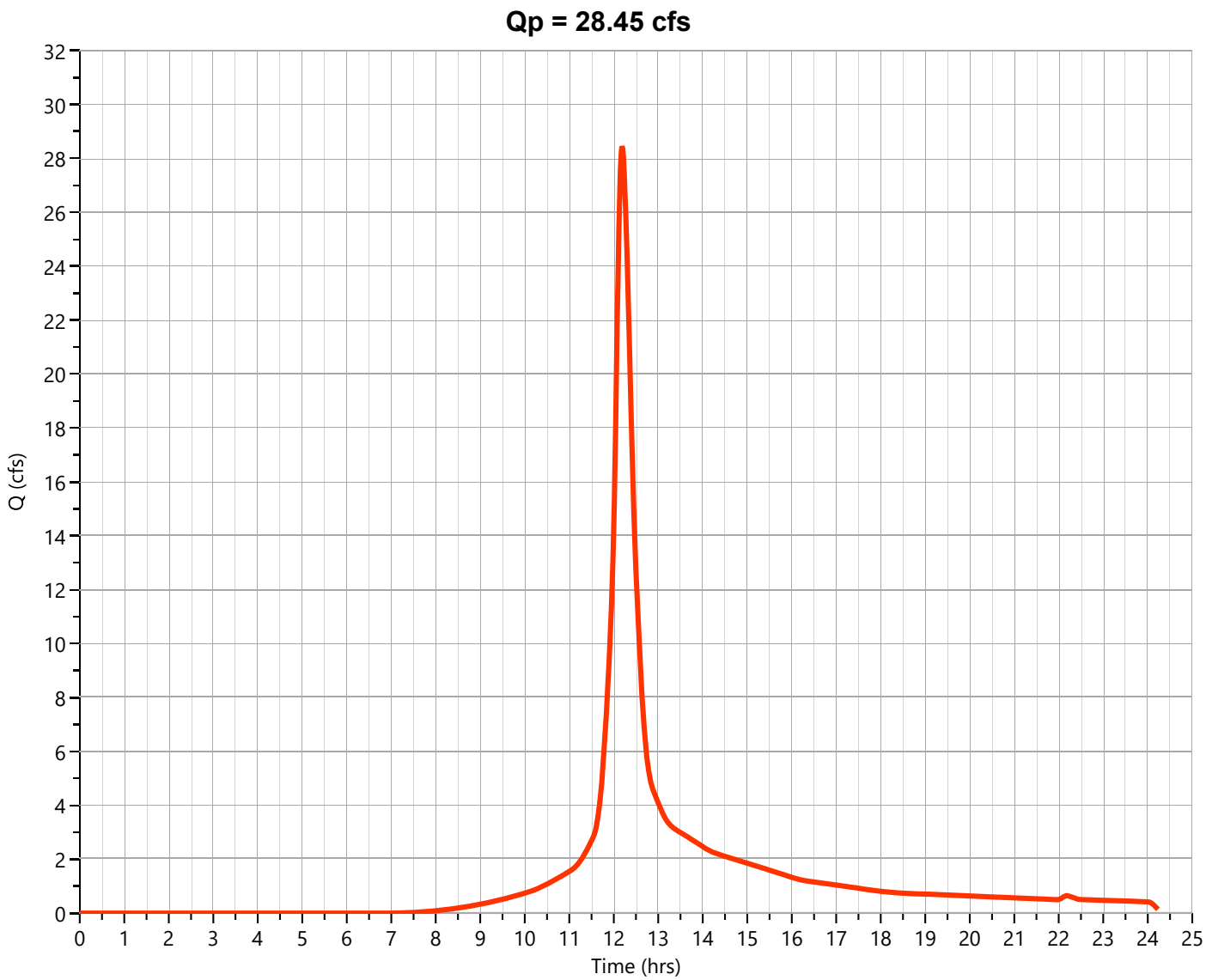
Post FLOW TO SWQB

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 28.45 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 117,641 cuft
Drainage Area	= 10.305 ac	Curve Number	= 80.59*
Tc Method	= User	Time of Conc. (Tc)	= 15.9 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.83	98	PAVE
7.475	74	LAWN
10.305	**81**	Weighted CN Method Employed

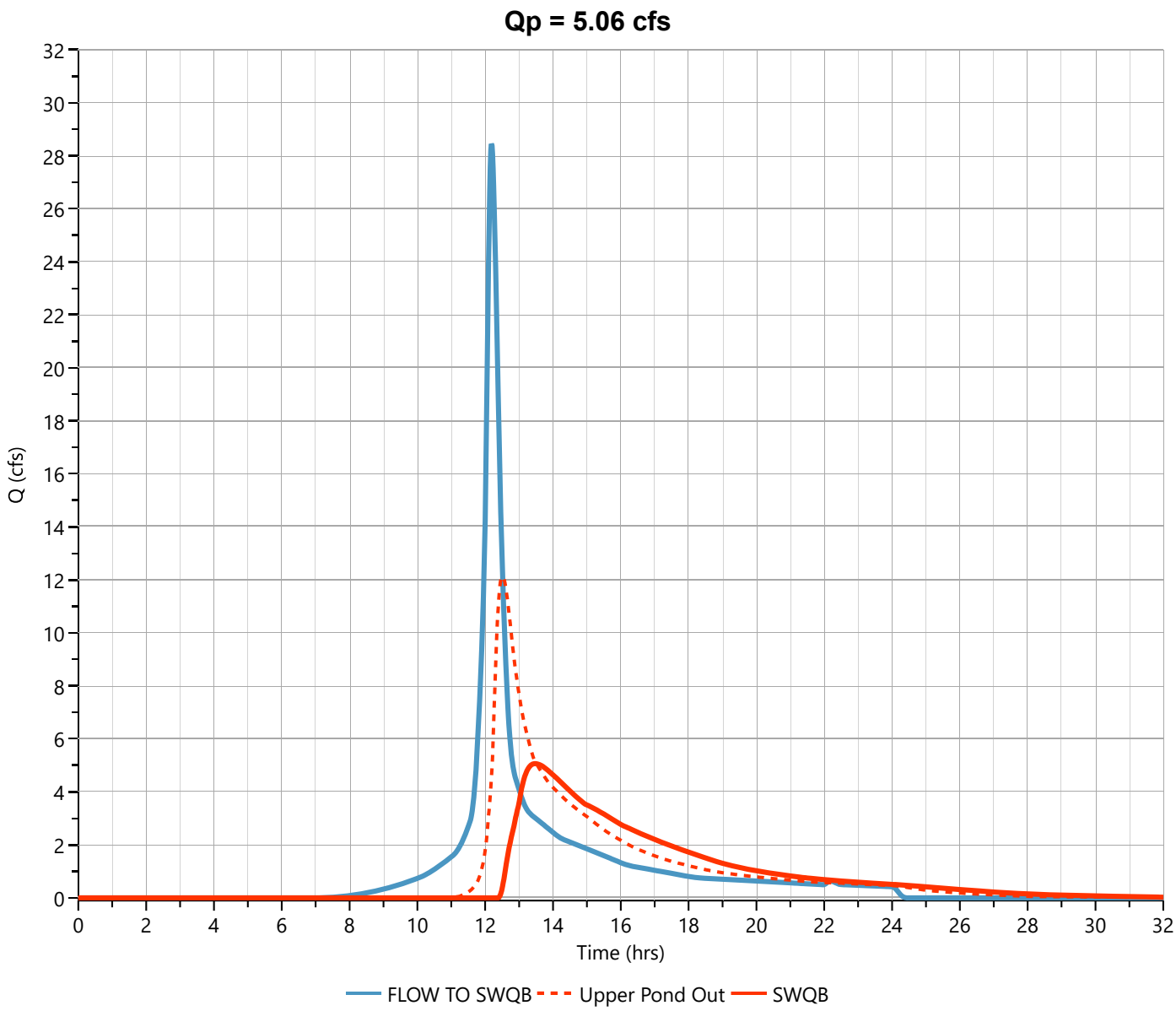


Post SWQB

Hyd. No. 2

Hydrograph Type	= Pond Route(i)*	Peak Flow	= 5.064 cfs
Storm Frequency	= 10-yr	Time to Peak	= 13.47 hrs
Time Interval	= 1 min	Hydrograph Volume	= 88,552 cuft
Upper Pond		**Lower Pond**	
Pond Name	= SWQB TOP	Pond Name	= SWQB BOT
Inflow Hyd	= 1 - FLOW TO SWQB	Addnl Inflow Hyd	= None
Max. Elevation	= 275.33 ft	Max. Elevation	= 262.80 ft
Max. Storage	= 45,838 cuft	Max. Storage	= 30,625 cuft

**Interconnected Pond Routing by Storage Indication Method.*



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

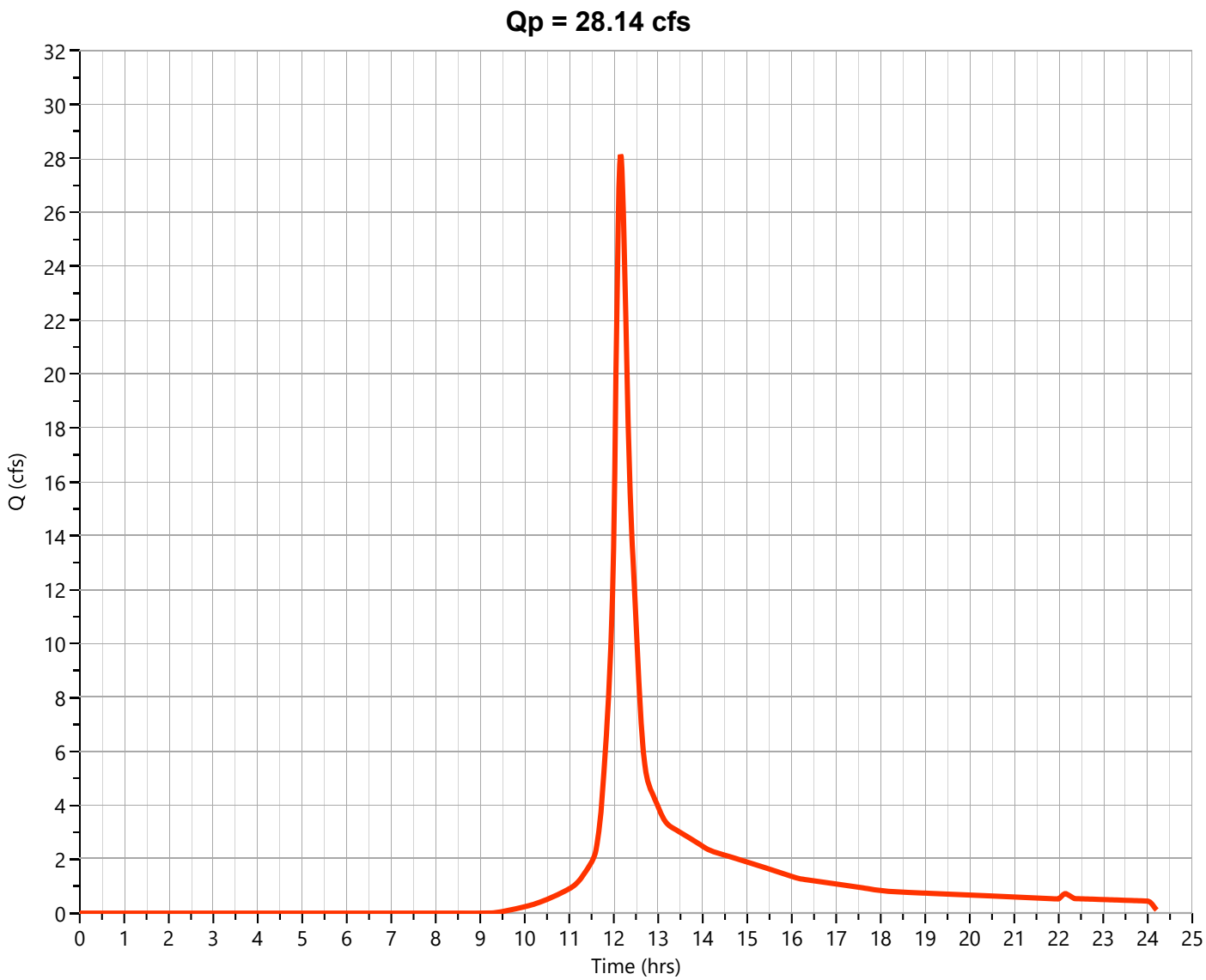
Post FLOW TO N DP

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 28.14 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 106,805 cuft
Drainage Area	= 12.862 ac	Curve Number	= 71.84*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.08 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
9.177	70	WOODED
3.311	74	LAWN
0.374	98	PAVE
12.862	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

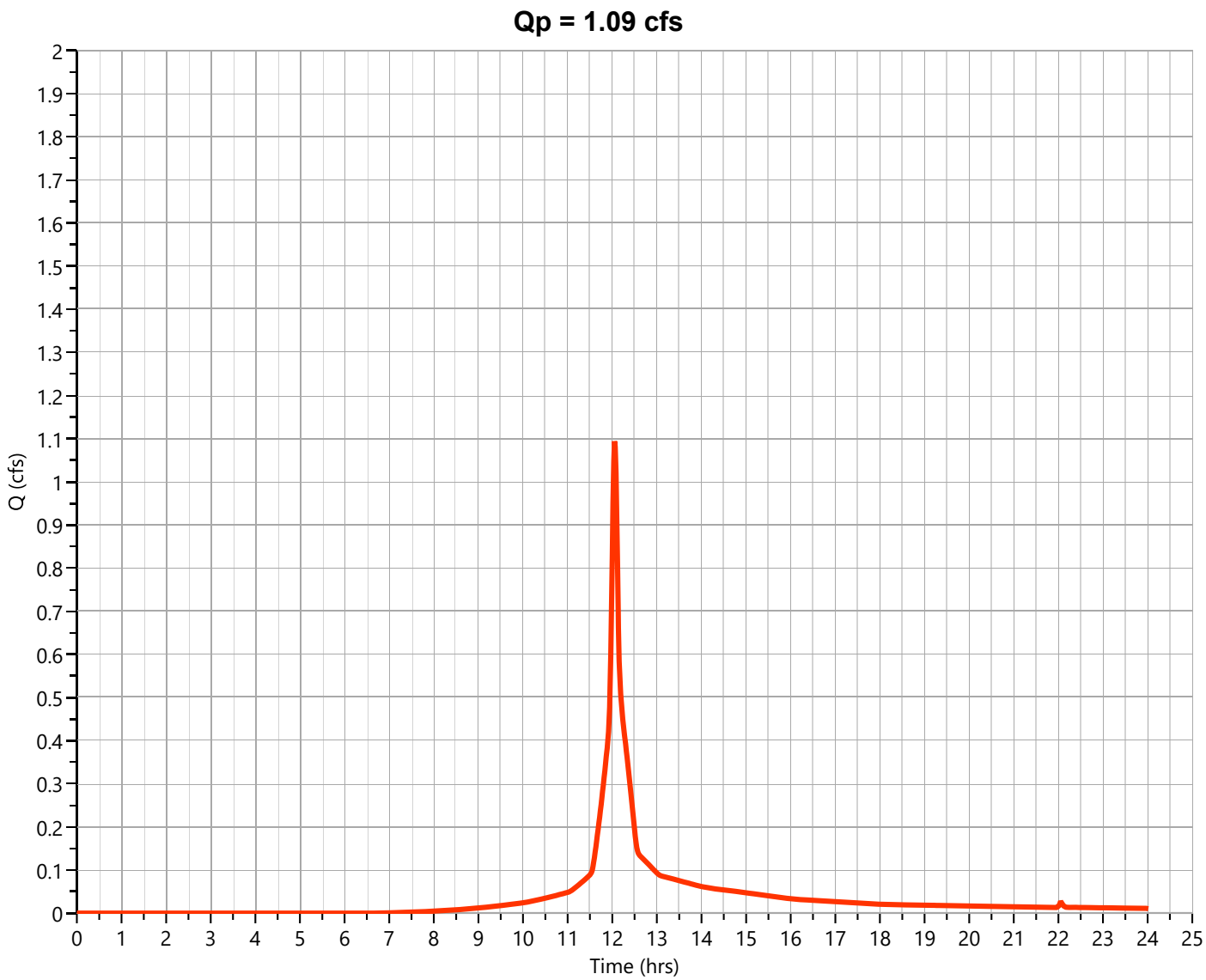
Post SA-21

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.094 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 3,176 cuft
Drainage Area	= 0.27 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.088	98	PAVE
0.183	74	LAWN
0.27	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

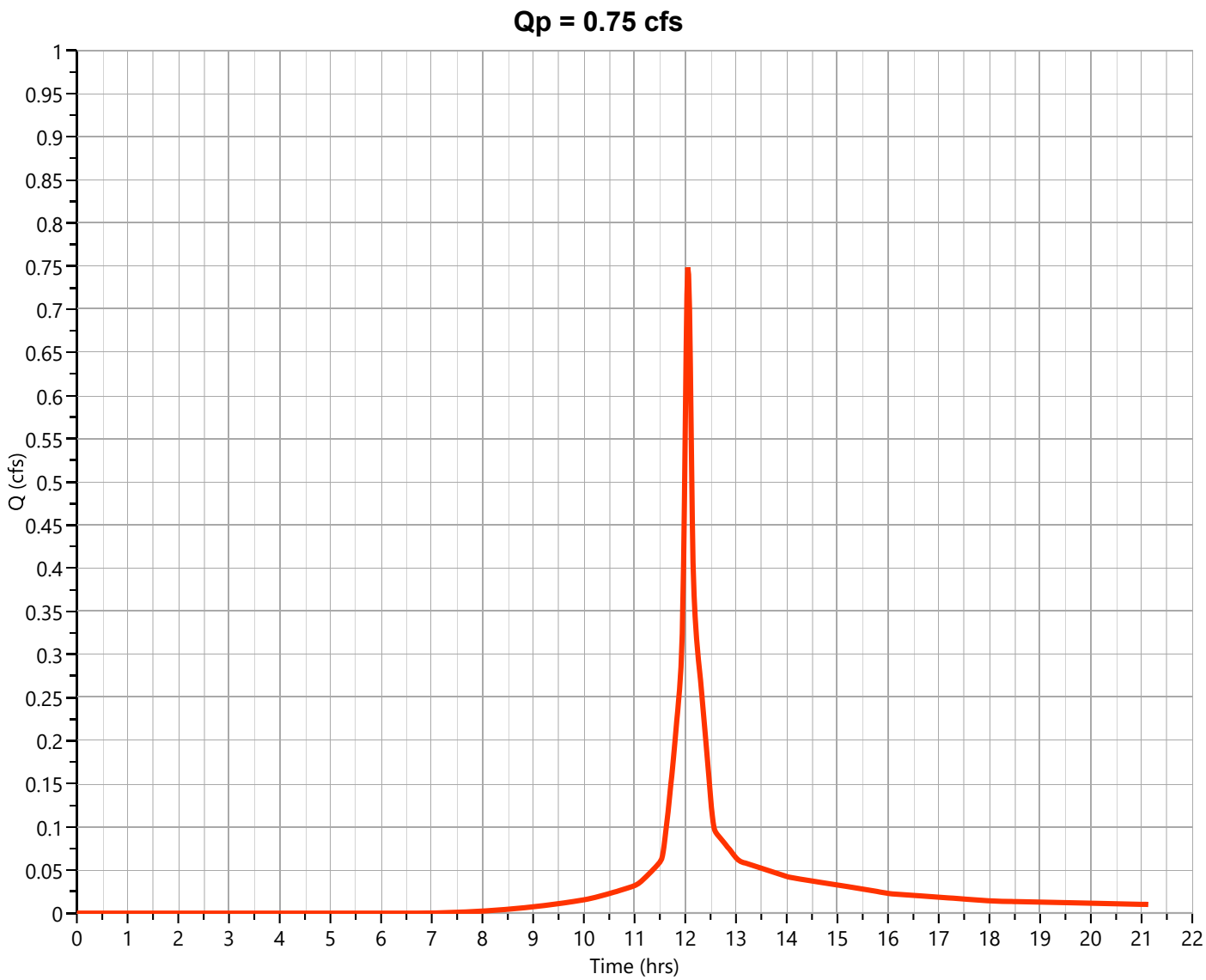
Post SA-20

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.748 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 2,169 cuft
Drainage Area	= 0.19 ac	Curve Number	= 81*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.051	98	PAVE
0.135	74	LAWN
0.19	**81**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

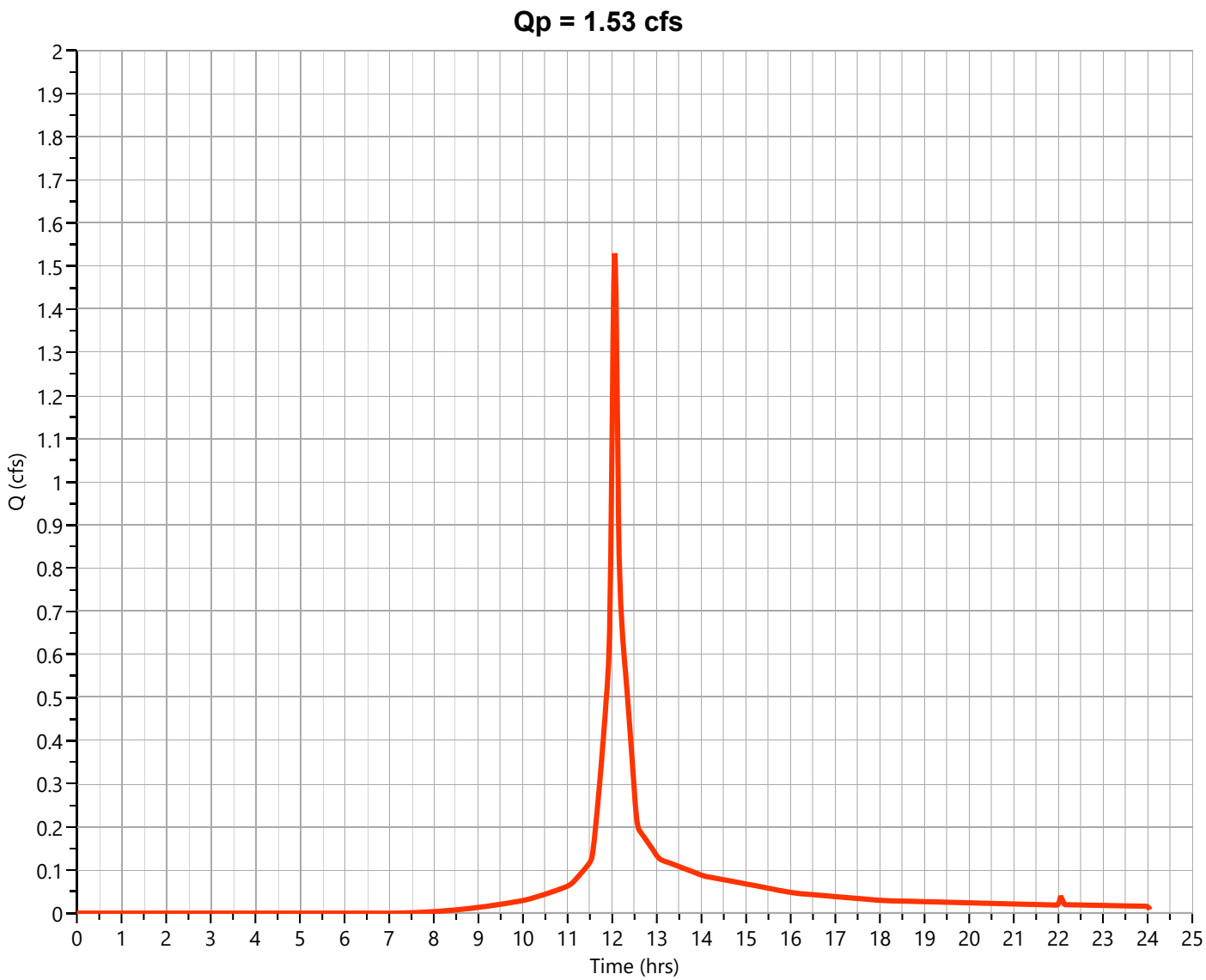
Post SA-23

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.530 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 4,429 cuft
Drainage Area	= 0.4 ac	Curve Number	= 80*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.306	74	LAWN
0.4	**80**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

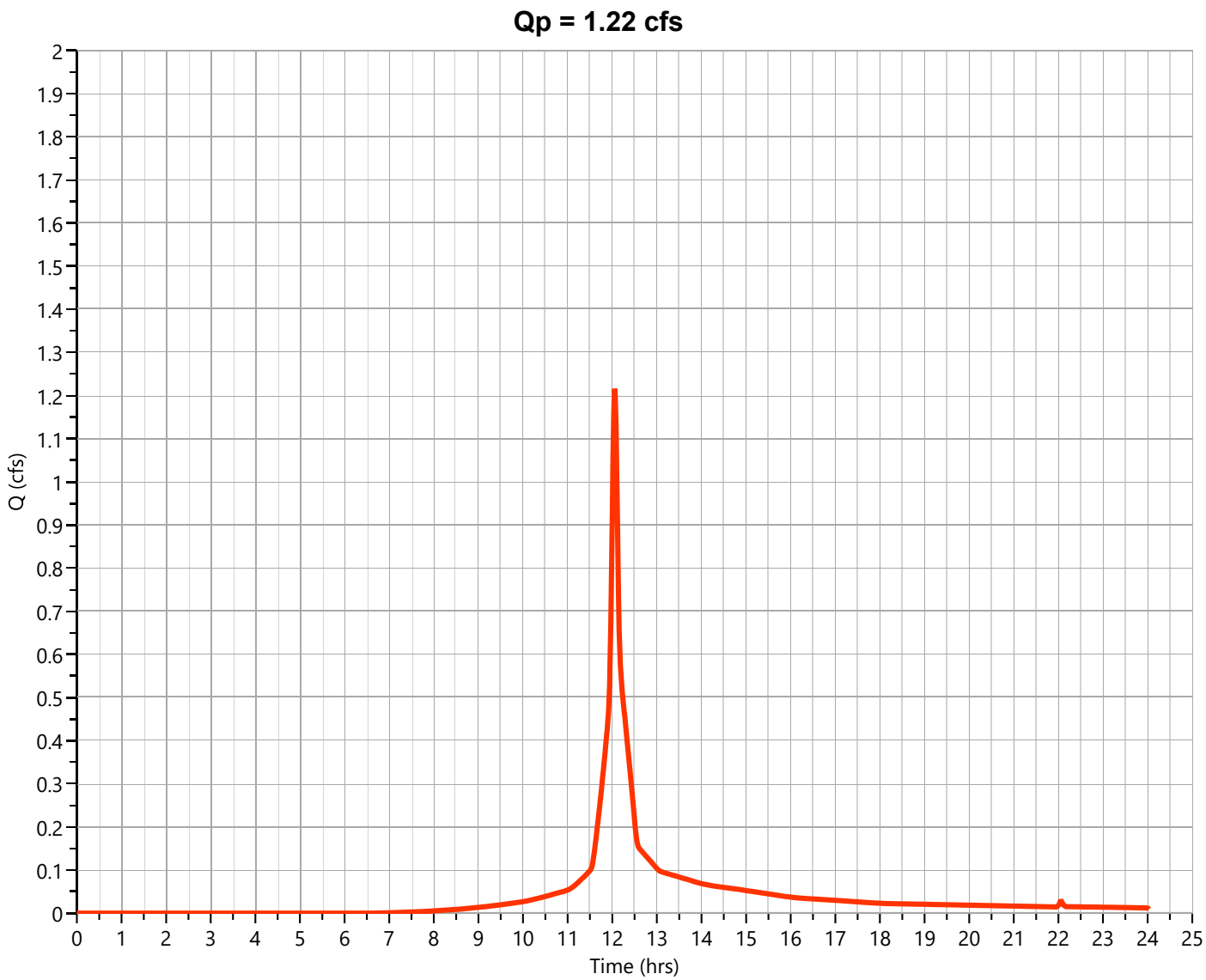
Post SA-24

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.216 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 3,529 cuft
Drainage Area	= 0.3 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.208	74	LAWN
0.3	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

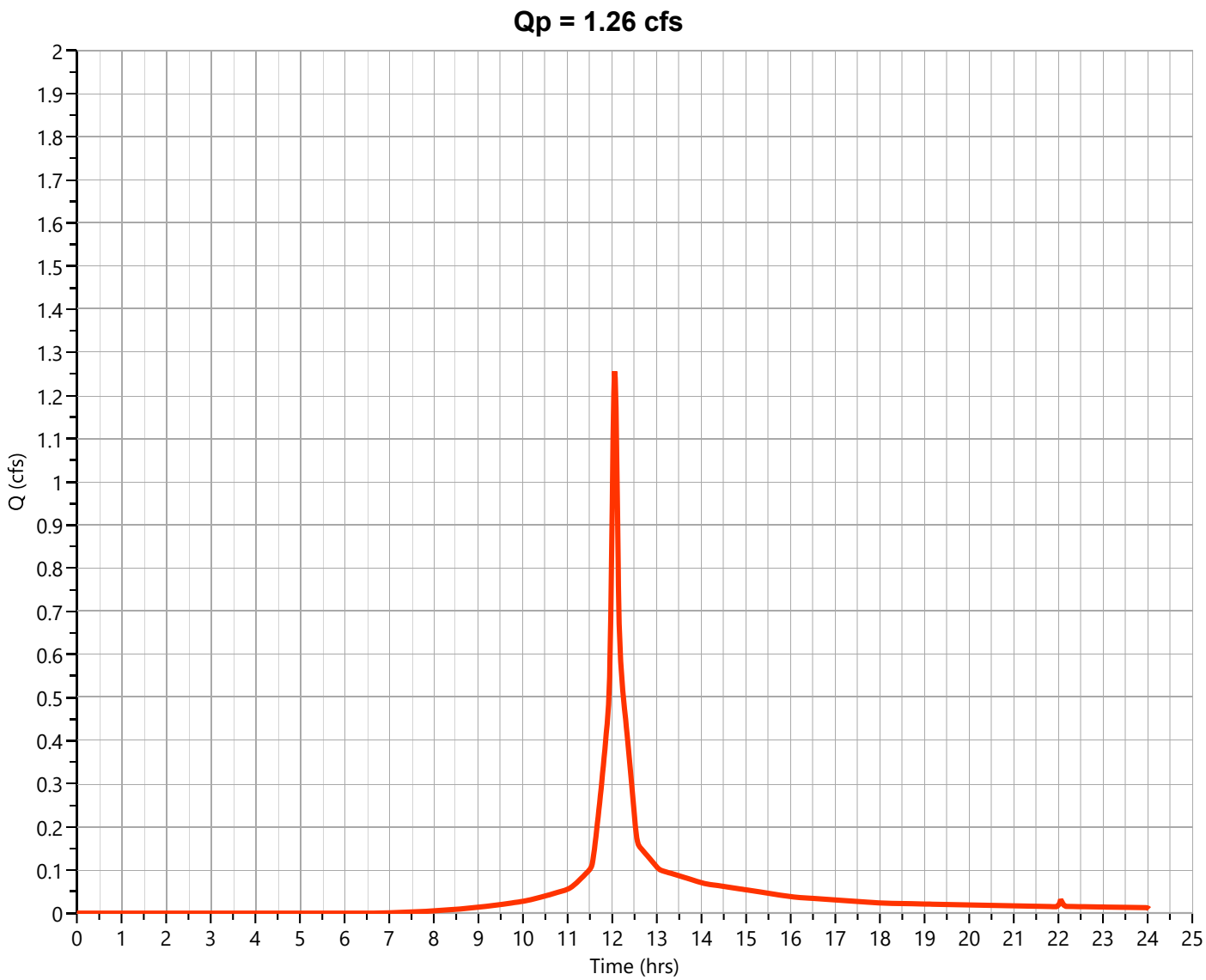
Post SA-22

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.256 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 3,647 cuft
Drainage Area	= 0.31 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.107	98	PAVE
0.201	74	LAWN
0.31	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

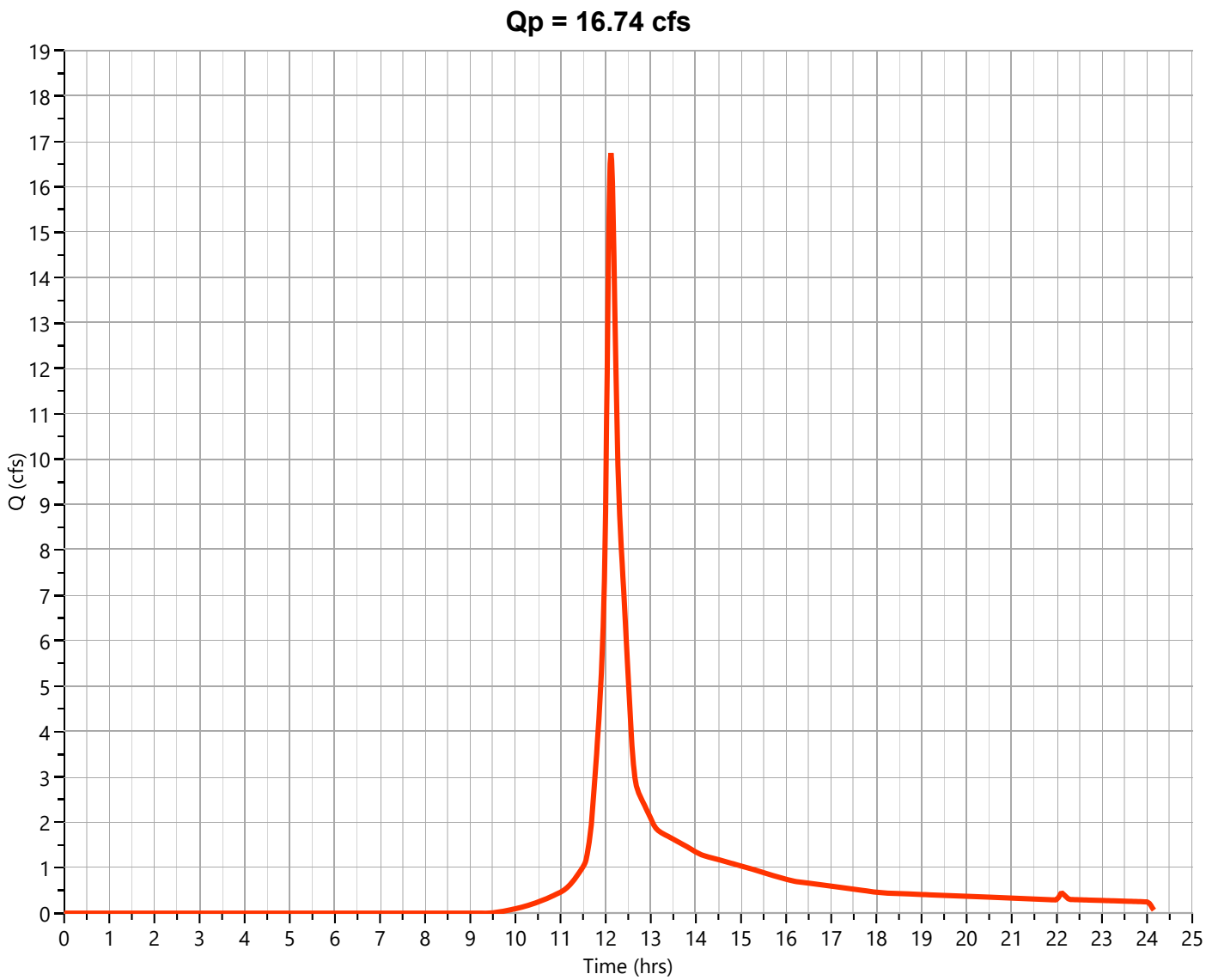
Post SA-25

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 16.74 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 58,028 cuft
Drainage Area	= 7.208 ac	Curve Number	= 70.57*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
1.022	74	LAWN
6.186	70	WOODED
7.208	**71**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Post SA-26

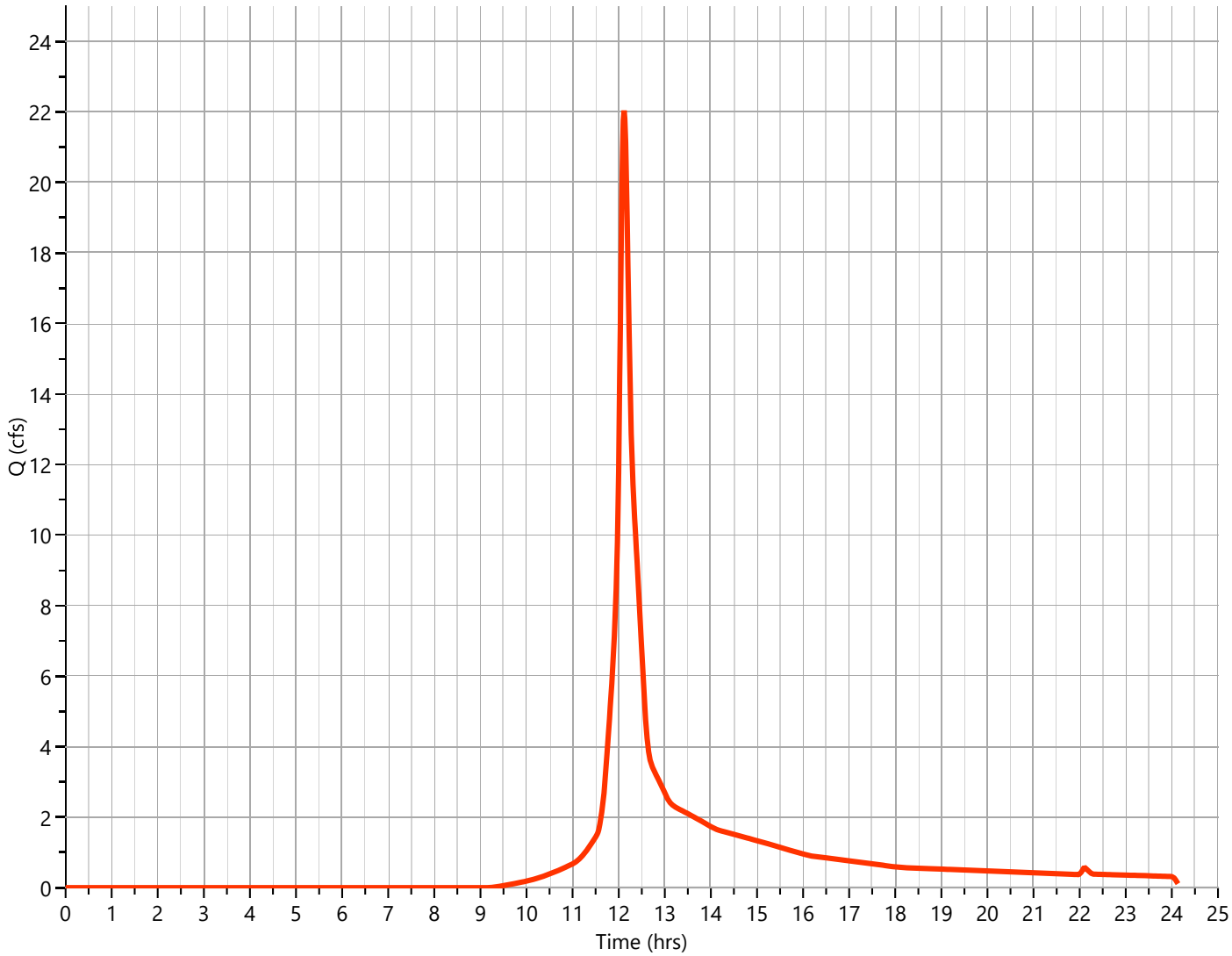
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 22.04 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 76,023 cuft
Drainage Area	= 8.96 ac	Curve Number	= 72*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.157	98	PAVE
3.887	74	LAWN
4.914	70	WOODED
8.96	**72**	Weighted CN Method Employed

Qp = 22.04 cfs



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

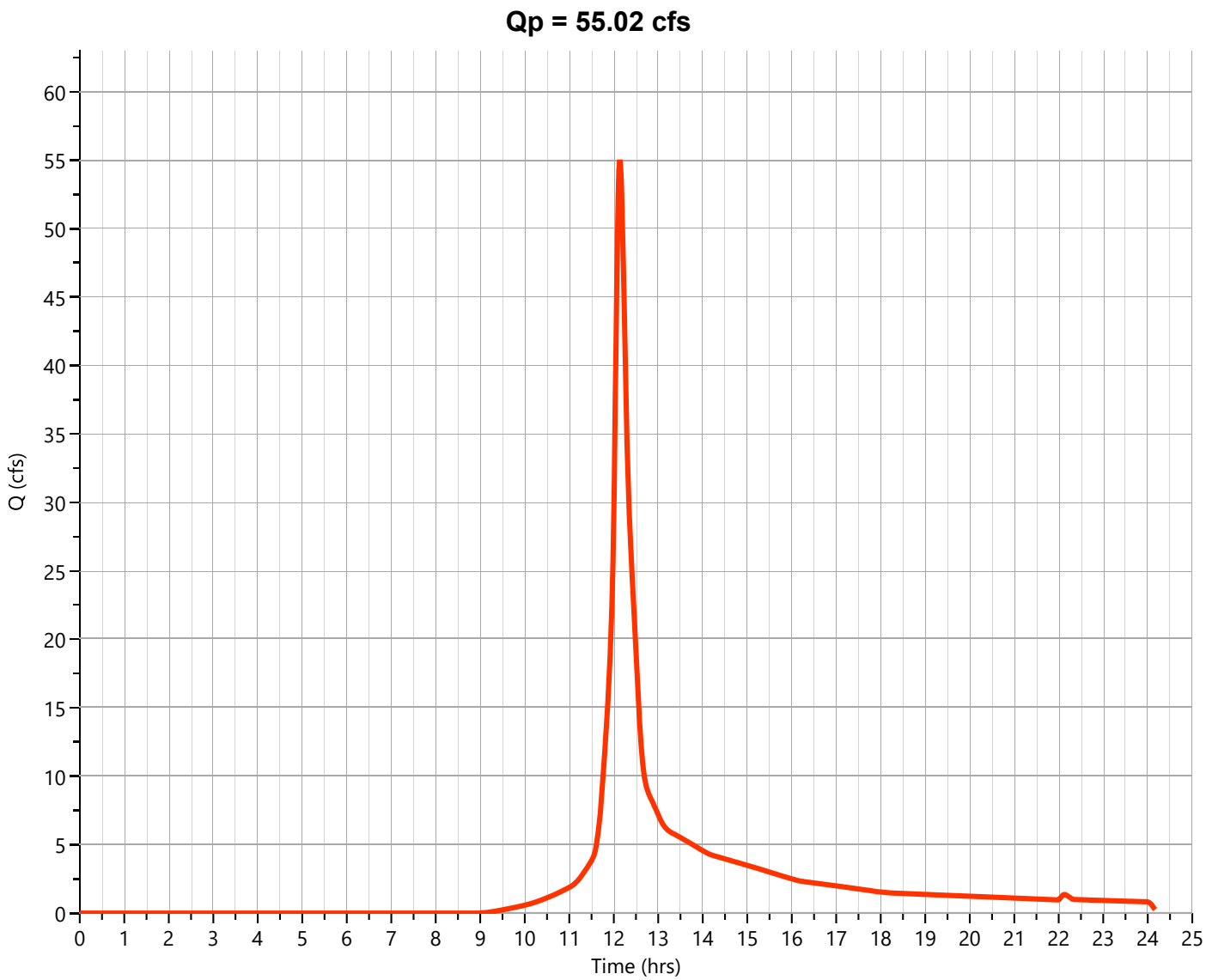
Post SA-40

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 55.02 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 201,028 cuft
Drainage Area	= 22.46 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 5.18 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
16.447	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
22.46	**73**	Weighted CN Method Employed



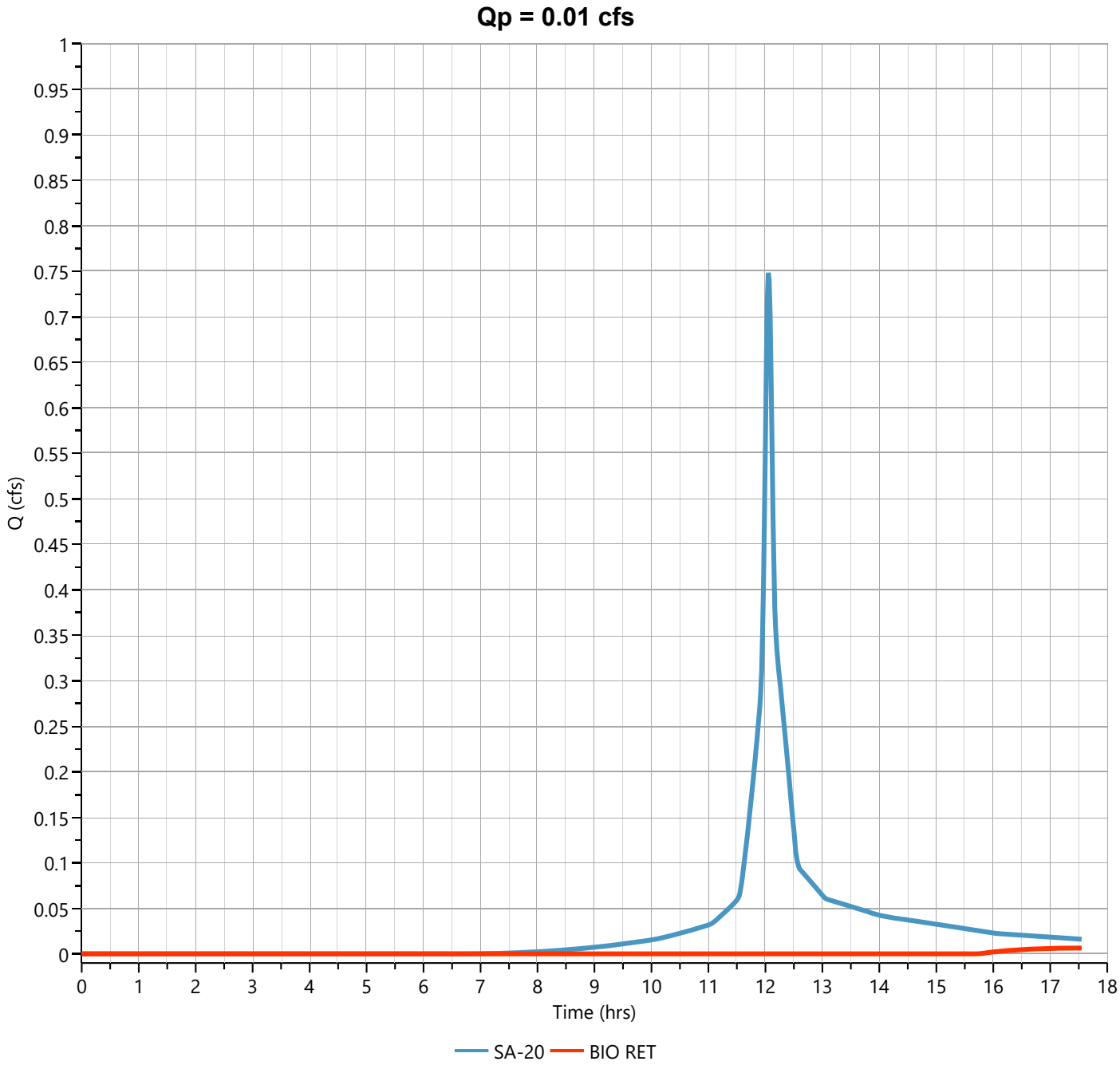
Post BIO RET

Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.006 cfs
Storm Frequency	= 10-yr	Time to Peak	= 17.53 hrs
Time Interval	= 1 min	Hydrograph Volume	= 96.7 cuft
Inflow Hydrograph	= 5 - SA-20	Max. Elevation	= 313.53 ft
Pond Name	= SA-20	Max. Storage	= 1,655 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 5.09 hrs



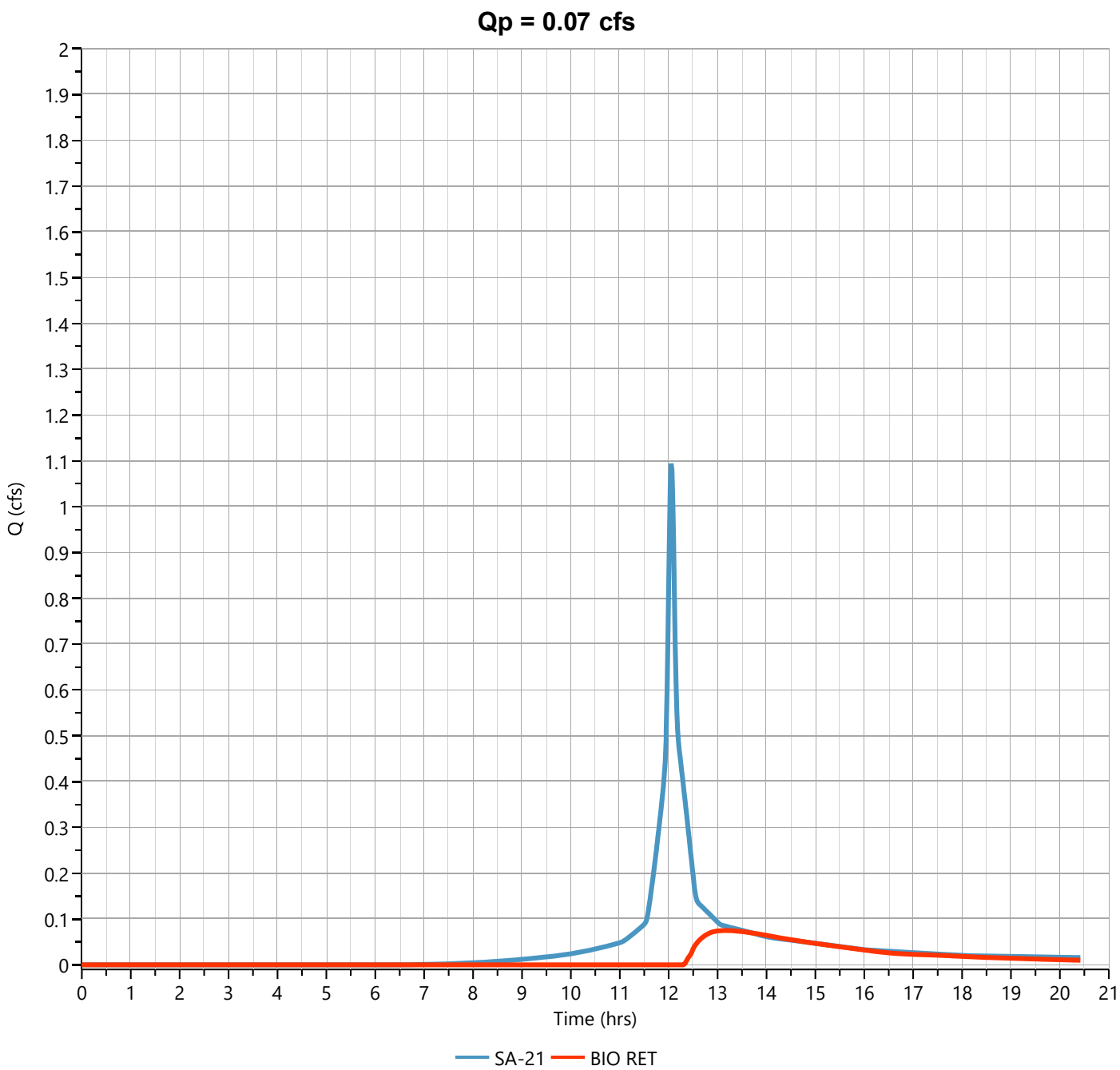
Post BIO RET

Hyd. No. 13

Hydrograph Type	= Pond Route	Peak Flow	= 0.075 cfs
Storm Frequency	= 10-yr	Time to Peak	= 13.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,096 cuft
Inflow Hydrograph	= 4 - SA-21	Max. Elevation	= 303.69 ft
Pond Name	= SA-21	Max. Storage	= 1,839 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 2.14 hrs



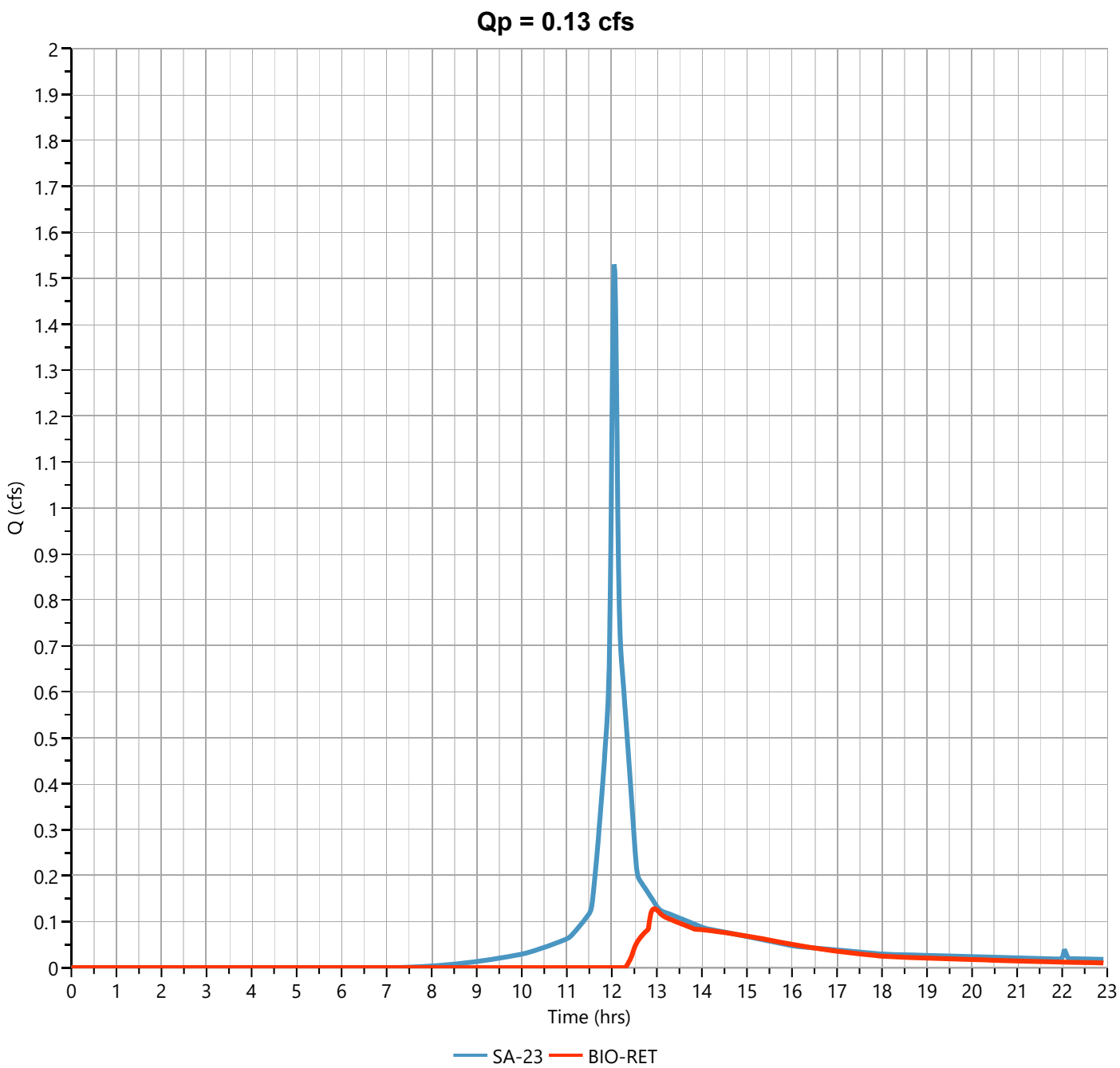
Post BIO-RET

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.129 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.95 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,609 cuft
Inflow Hydrograph	= 6 - SA-23	Max. Elevation	= 301.71 ft
Pond Name	= SA-23	Max. Storage	= 2,526 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 2.26 hrs



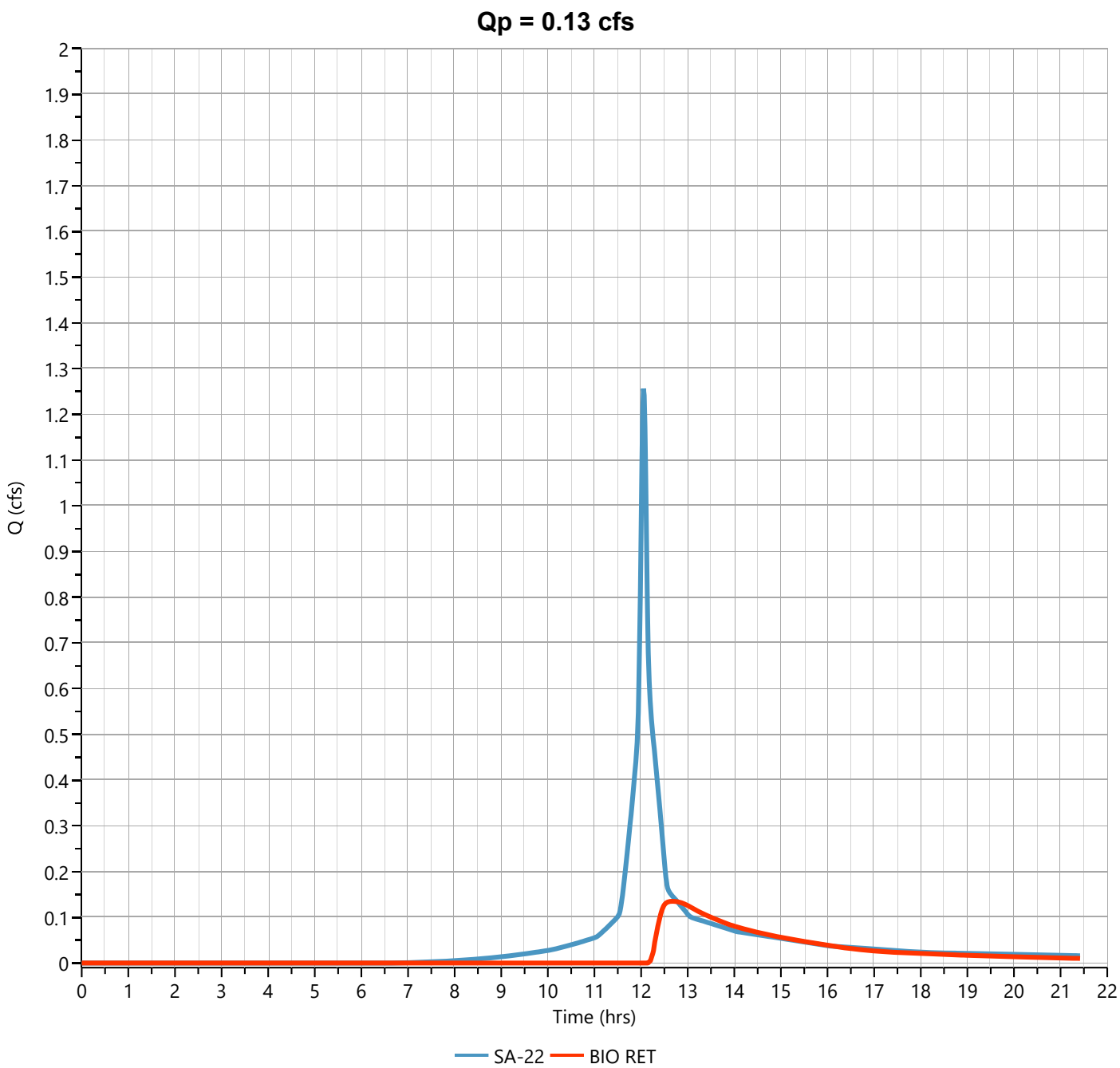
Post BIO RET

Hyd. No. 15

Hydrograph Type	= Pond Route	Peak Flow	= 0.135 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.68 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,552 cuft
Inflow Hydrograph	= 8 - SA-22	Max. Elevation	= 301.77 ft
Pond Name	= SA-22	Max. Storage	= 1,961 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.78 hrs



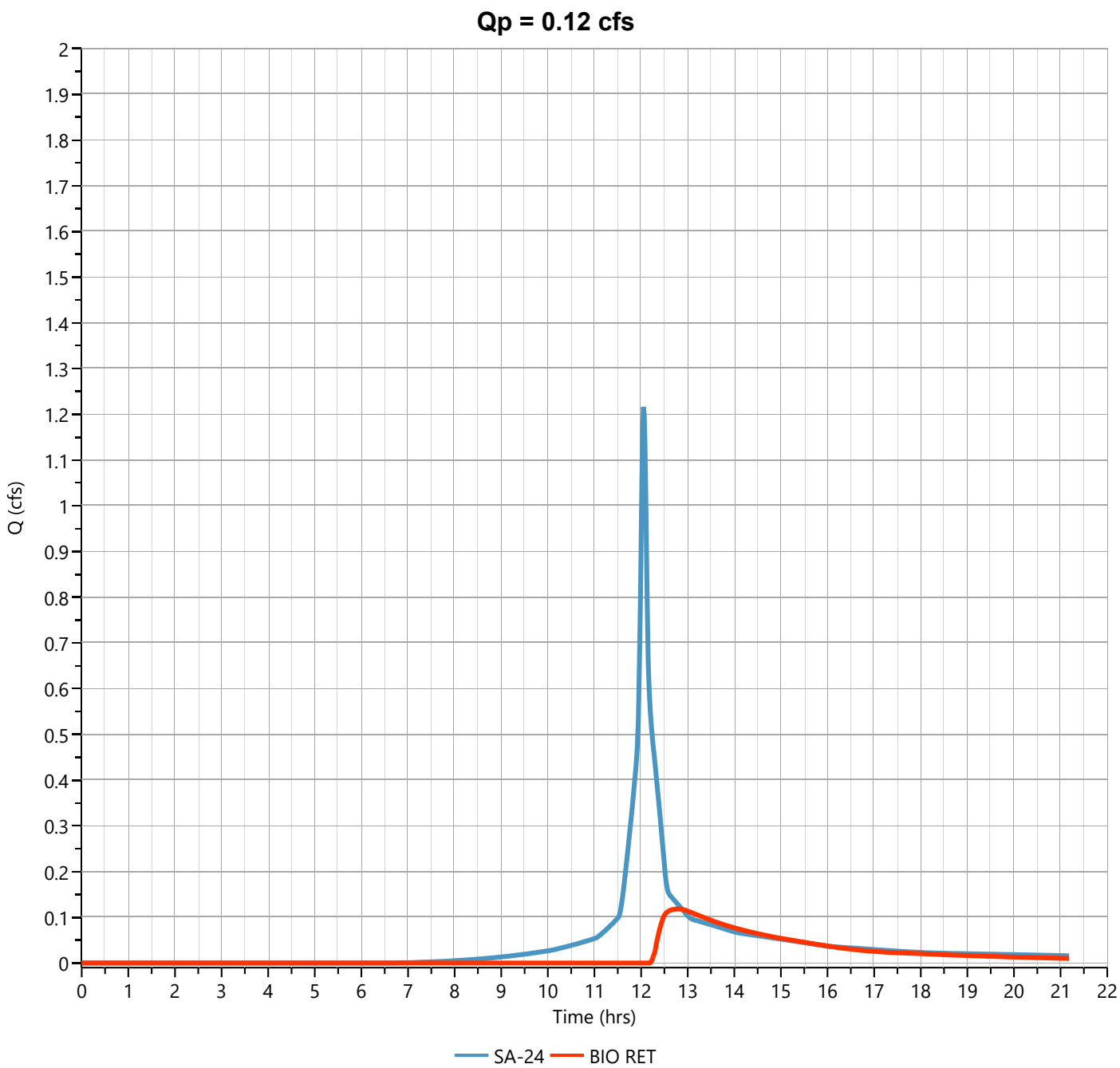
Post BIO RET

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 0.118 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.78 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,438 cuft
Inflow Hydrograph	= 7 - SA-24	Max. Elevation	= 308.75 ft
Pond Name	= SA-24	Max. Storage	= 1,928 cuft

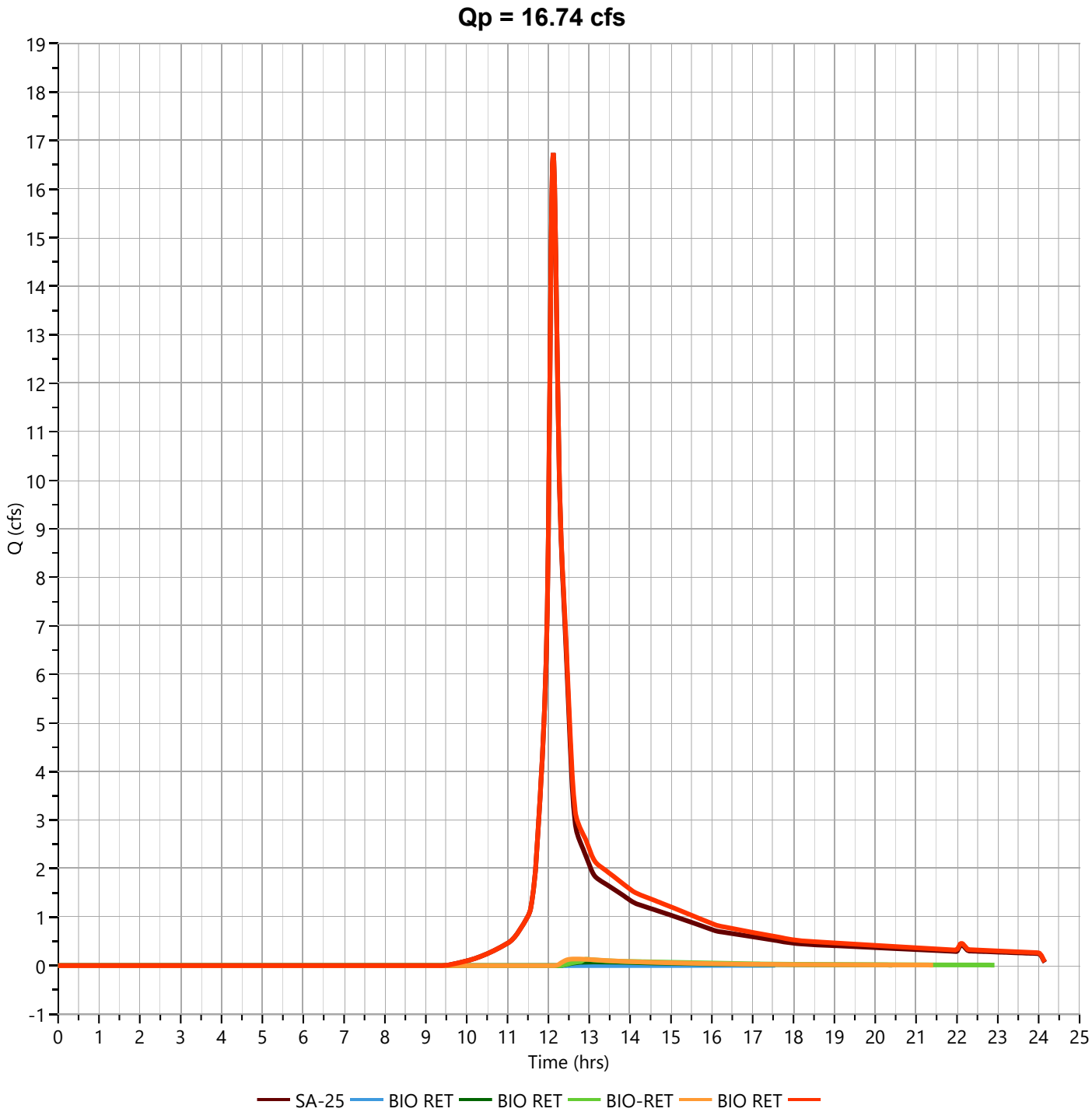
Pond Routing by Storage Indication Method

Center of mass detention time = 1.85 hrs



Hyd. No. 17

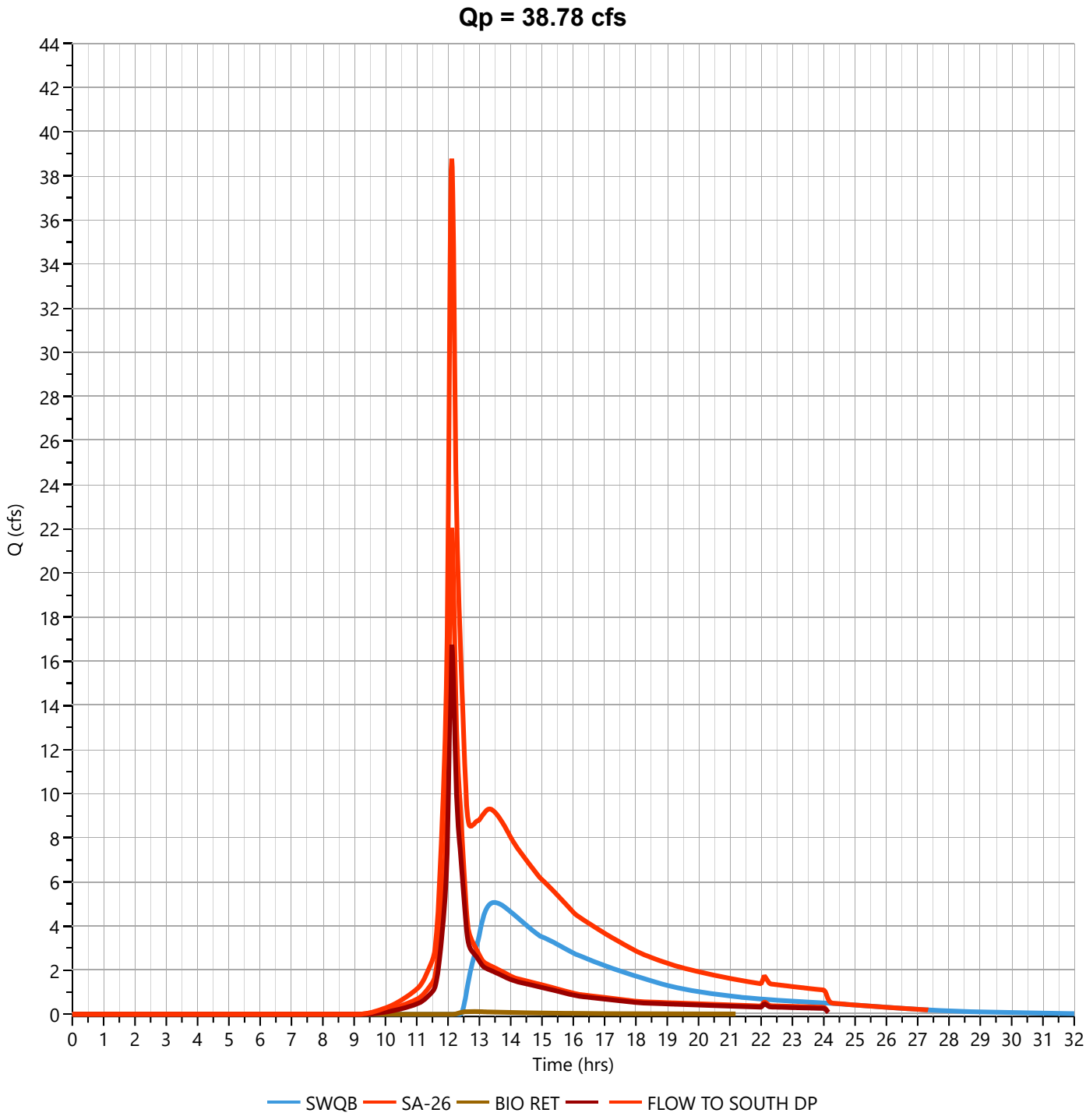
Hydrograph Type	= Junction	Peak Flow	= 16.74 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 62,382 cuft
Inflow Hydrographs	= 9, 12, 13, 14, 15	Total Contrib. Area	= 7.208 ac



Post FLOW TO SOUTH DP

Hyd. No. 18

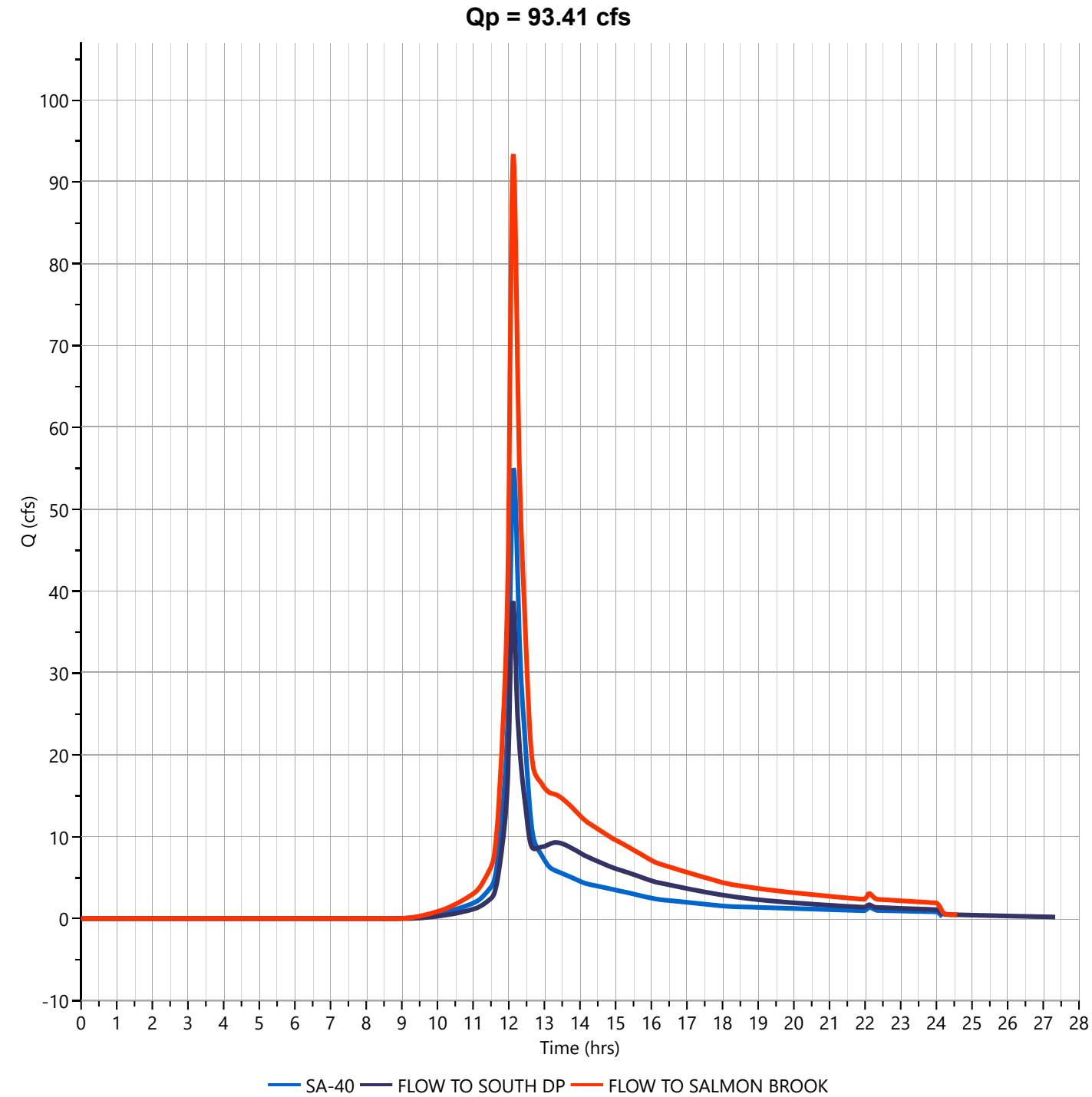
Hydrograph Type	= Junction	Peak Flow	= 38.78 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 228,395 cuft
Inflow Hydrographs	= 2, 10, 16, 17	Total Contrib. Area	= 16.168 ac



Post FLOW TO SALMON BROOK

Hyd. No. 19

Hydrograph Type	= Junction	Peak Flow	= 93.41 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 429,423 cuft
Inflow Hydrographs	= 11, 18	Total Contrib. Area	= 38.628 ac



Design Storm Report

Custom Storm filename:

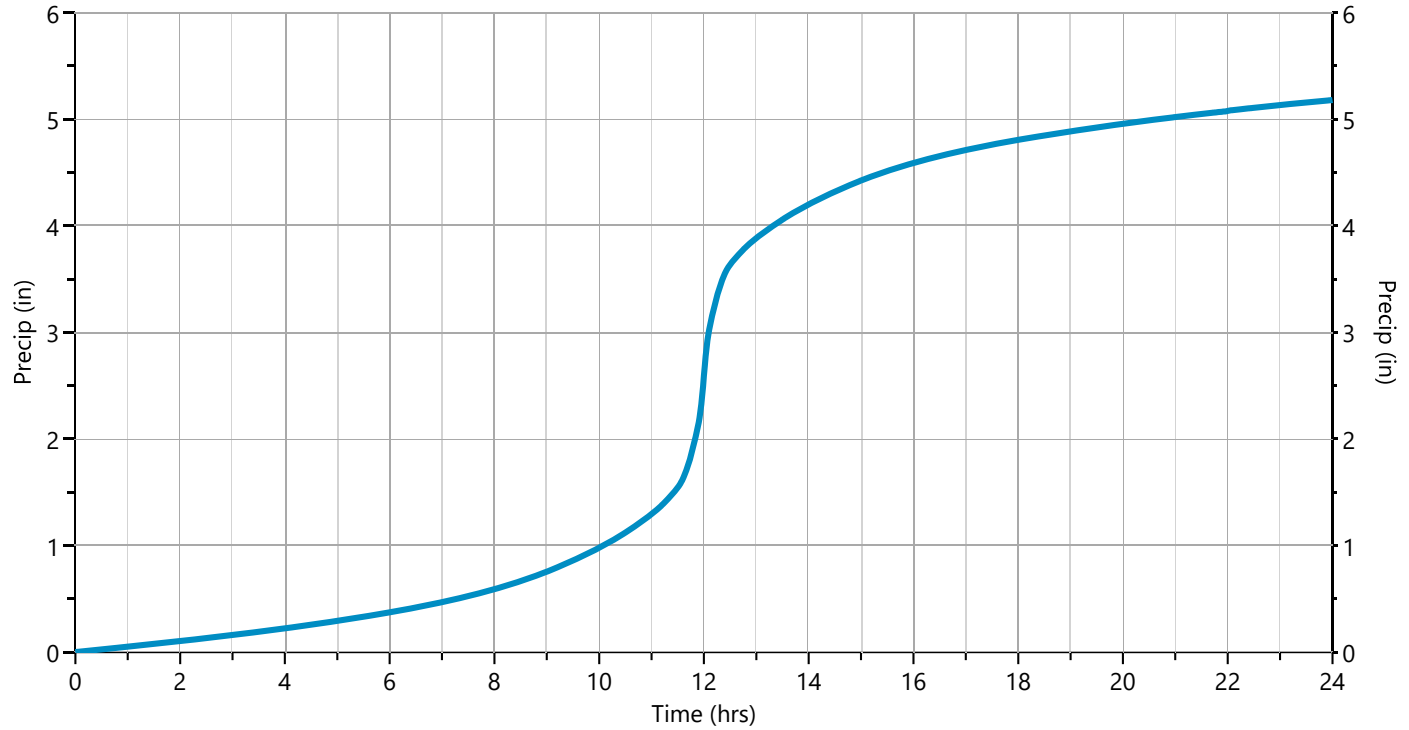
Hydrology Studio v 3.0.0.16

10-07-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	✔ 10-yr	25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 10-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.010207	11.68	0.023569	11.87	0.037498	12.05	0.077829	12.23	0.031166
11.52	0.010877	11.70	0.024835	11.88	0.038764	12.07	0.067210	12.25	0.029900
11.53	0.012173	11.72	0.026101	11.90	0.040030	12.08	0.056591	12.27	0.028634
11.55	0.013439	11.73	0.027368	11.92	0.046120	12.10	0.045972	12.28	0.027368
11.57	0.014705	11.75	0.028634	11.93	0.056592	12.12	0.040182	12.30	0.026101
11.58	0.015972	11.77	0.029900	11.95	0.067211	12.13	0.038764	12.32	0.024835
11.60	0.017238	11.78	0.031166	11.97	0.077830	12.15	0.037498	12.33	0.023569
11.62	0.018504	11.80	0.032432	11.98	0.088449	12.17	0.036231	12.35	0.022303
11.63	0.019770	11.82	0.033699	**12.00**	**0.099068**	12.18	0.034965	12.37	0.021037
11.65	0.021037	11.83	0.034965	12.02	0.098830	12.20	0.033699	12.38	0.019770
11.67	0.022303	11.85	0.036231	12.03	0.088448	12.22	0.032433	12.40	0.018504



Hydrograph 25-yr Summary

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Post FLOW TO SWQB	37.93	12.18	157,584	----		
2	Pond Route(i)	Post SWQB	11.97	12.88	127,663	1	275.93 U 263.25 L	55,435 U 36,454 L
3	NRCS Runoff	Post FLOW TO N DP	39.88	12.15	150,104	----		
4	NRCS Runoff	Post SA-21	1.445	12.05	4,225	----		
5	NRCS Runoff	Post SA-20	0.994	12.05	2,900	----		
6	NRCS Runoff	Post SA-23	2.046	12.05	5,951	----		
7	NRCS Runoff	Post SA-24	1.605	12.05	4,694	----		
8	NRCS Runoff	Post SA-22	1.659	12.05	4,850	----		
9	NRCS Runoff	Post SA-25	23.96	12.12	82,187	----		
10	NRCS Runoff	Post SA-26	31.16	12.12	106,741	----		
11	NRCS Runoff	Post SA-40	77.27	12.13	280,591	----		
12	Pond Route	Post BIO RET	0.050	13.78	784	5	313.64	1,818
13	Pond Route	Post BIO RET	0.360	12.40	2,106	4	303.91	2,150
14	Pond Route	Post BIO-RET	0.726	12.30	3,081	6	301.78	2,662
15	Pond Route	Post BIO RET	0.666	12.23	2,718	8	301.92	2,170
16	Pond Route	Post BIO RET	0.600	12.27	2,565	7	308.92	2,166
17	Junction		24.14	12.12	90,876	9, 12, 13, 14, 15		
18	Junction	Post FLOW TO SOUTH DP	55.41	12.12	327,845	2, 10, 16, 17		
19	Junction	Post FLOW TO SALMON BROOK	132.0	12.13	608,436	11, 18		

(i) = Interconnected ponds, U = Upper pond, L = Lower pond

Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

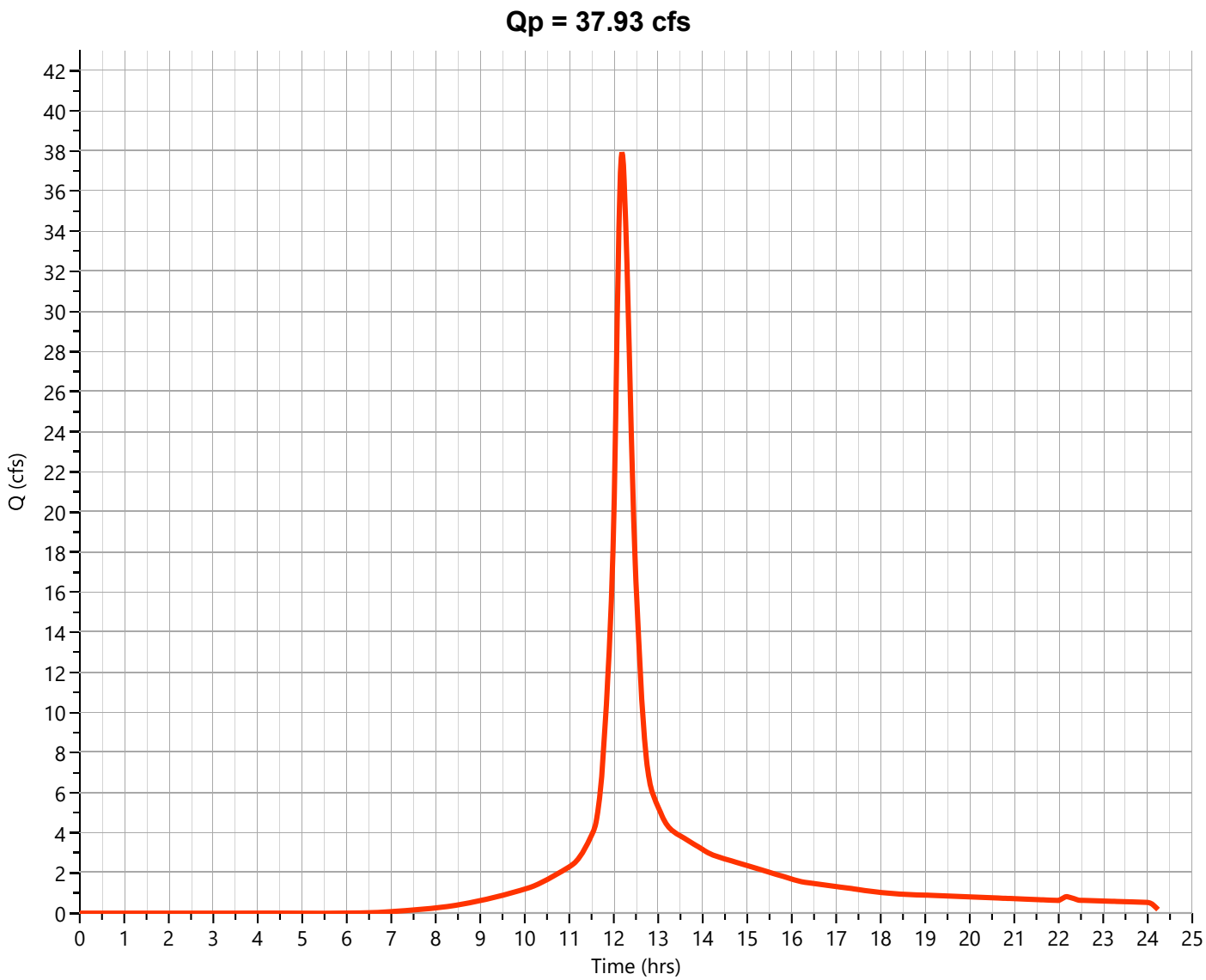
Post FLOW TO SWQB

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 37.93 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 157,584 cuft
Drainage Area	= 10.305 ac	Curve Number	= 80.59*
Tc Method	= User	Time of Conc. (Tc)	= 15.9 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.83	98	PAVE
7.475	74	LAWN
10.305	**81**	Weighted CN Method Employed

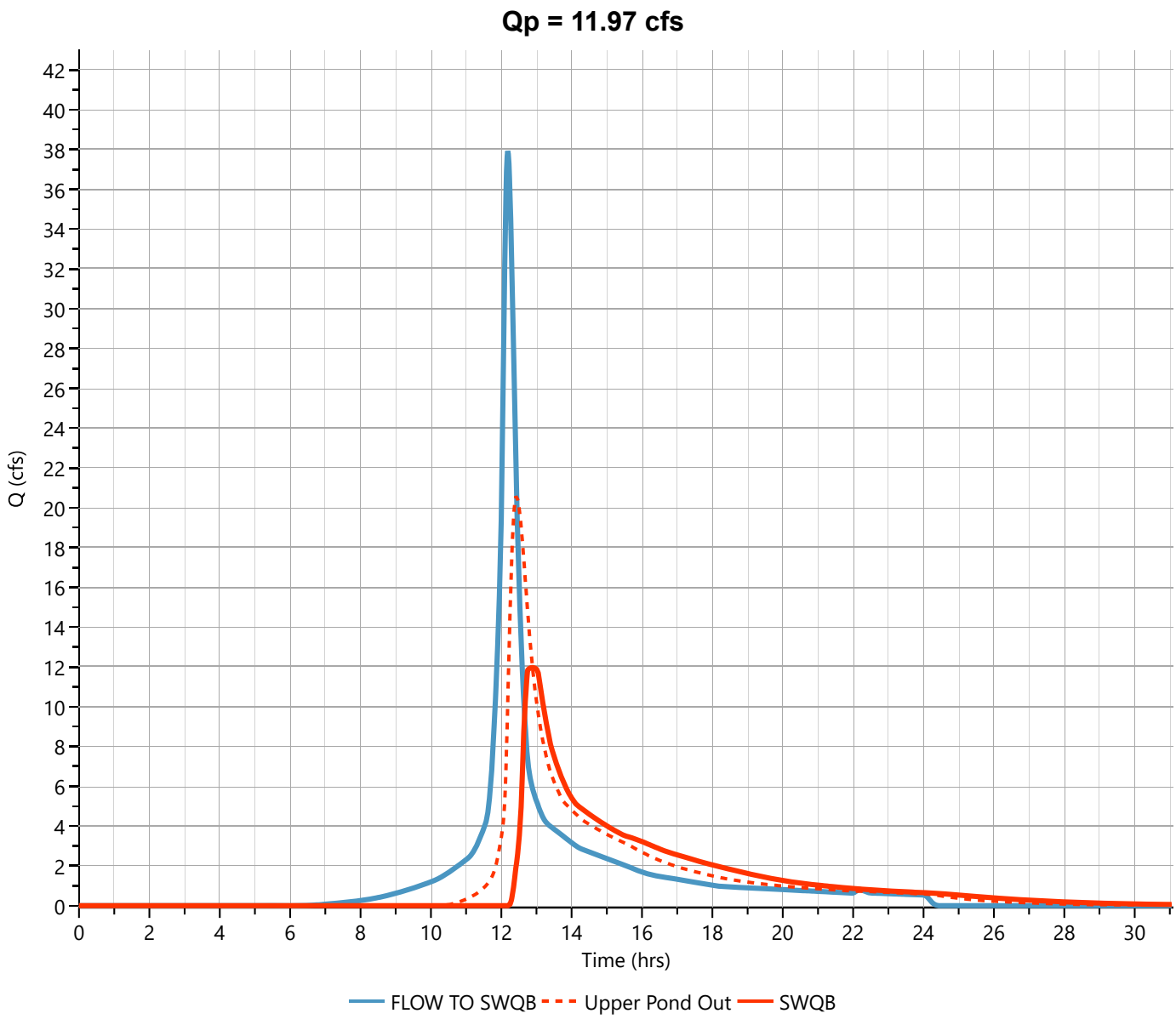


Post SWQB

Hyd. No. 2

Hydrograph Type	= Pond Route(i)*	Peak Flow	= 11.97 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.88 hrs
Time Interval	= 1 min	Hydrograph Volume	= 127,663 cuft
Upper Pond		**Lower Pond**	
Pond Name	= SWQB TOP	Pond Name	= SWQB BOT
Inflow Hyd	= 1 - FLOW TO SWQB	Addnl Inflow Hyd	= None
Max. Elevation	= 275.93 ft	Max. Elevation	= 263.25 ft
Max. Storage	= 55,435 cuft	Max. Storage	= 36,454 cuft

**Interconnected Pond Routing by Storage Indication Method.*



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Post FLOW TO N DP

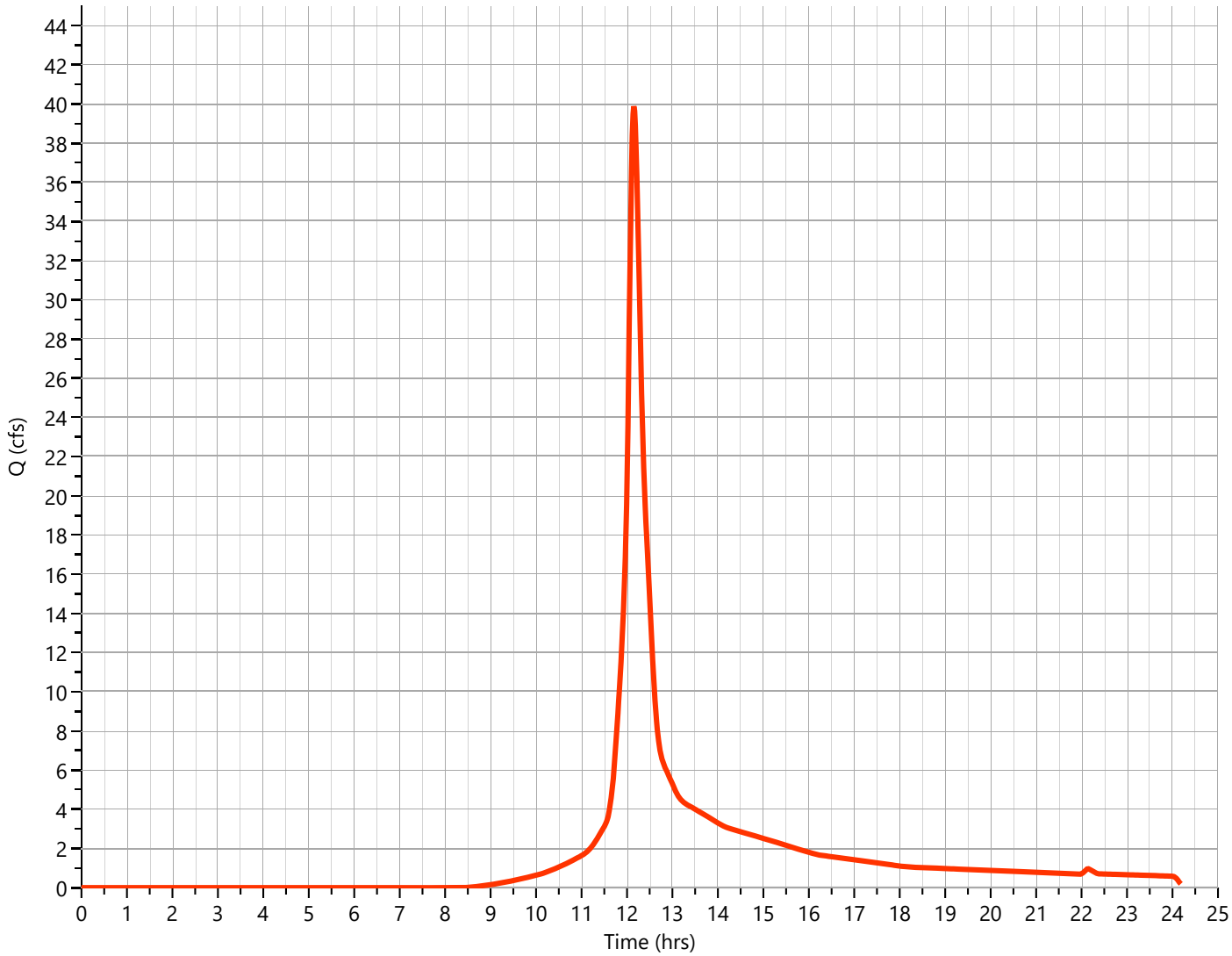
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 39.88 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 150,104 cuft
Drainage Area	= 12.862 ac	Curve Number	= 71.84*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.08 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
9.177	70	WOODED
3.311	74	LAWN
0.374	98	PAVE
12.862	**72**	Weighted CN Method Employed

Qp = 39.88 cfs



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

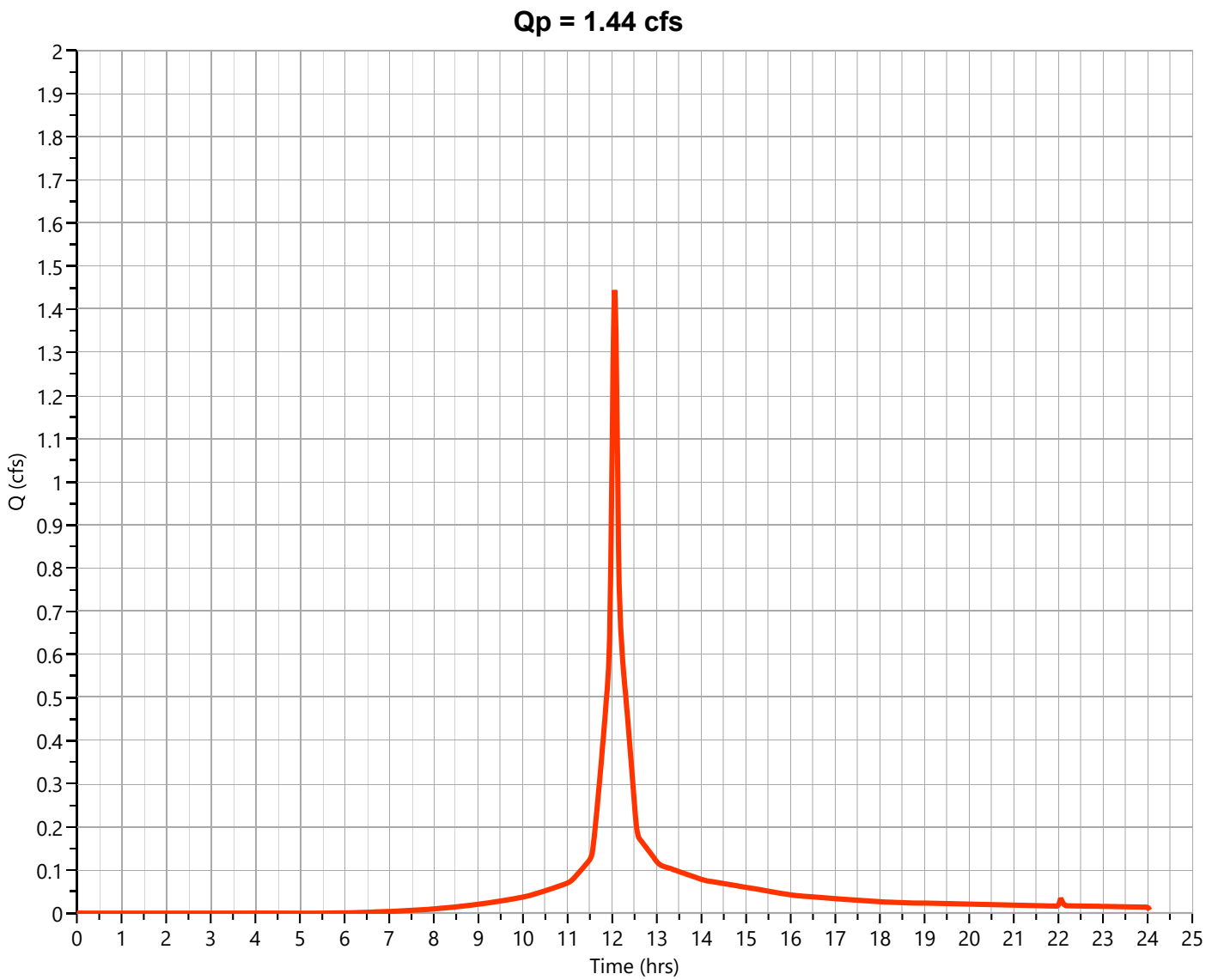
Post SA-21

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.445 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 4,225 cuft
Drainage Area	= 0.27 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.088	98	PAVE
0.183	74	LAWN
0.27	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

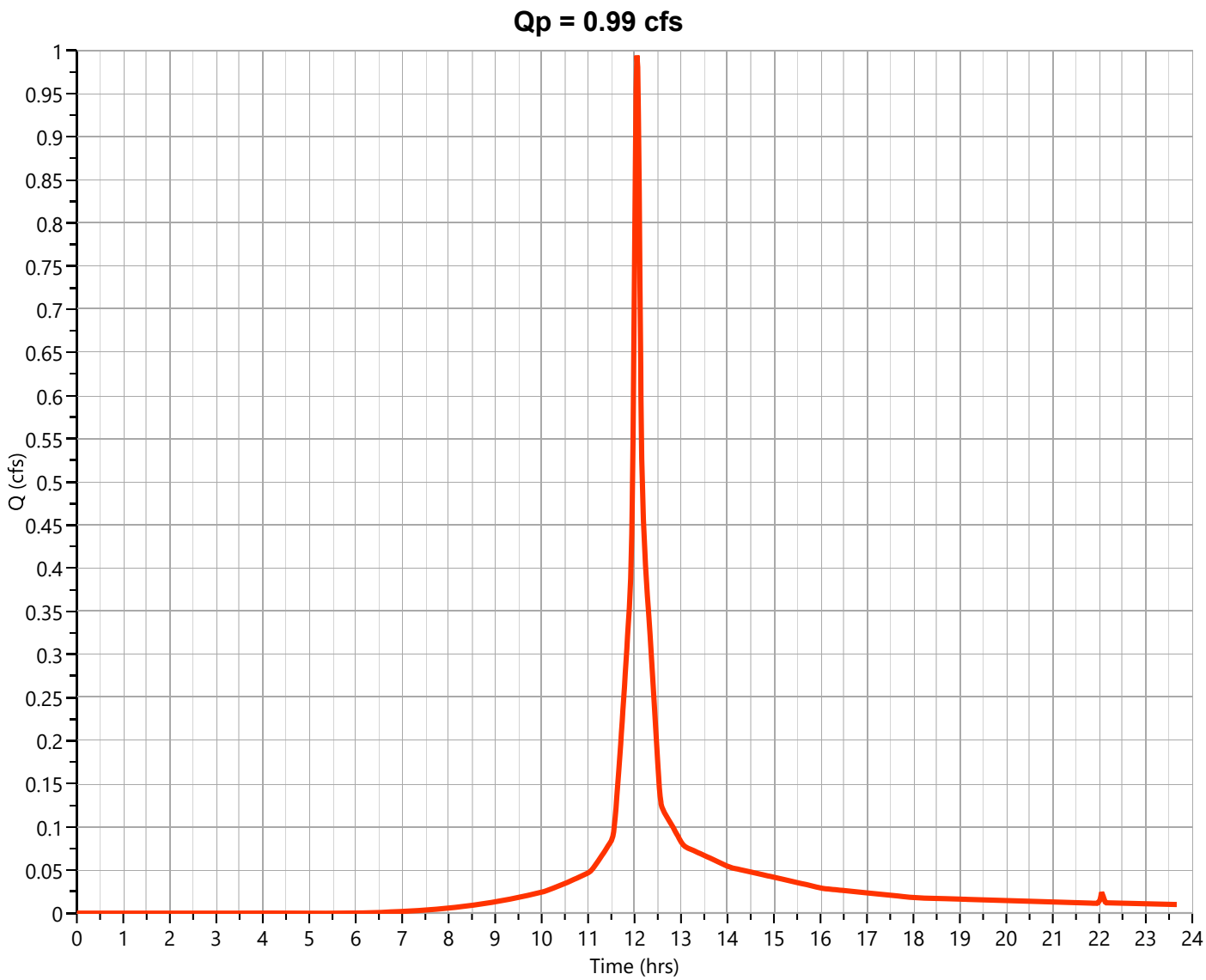
Post SA-20

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.994 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 2,900 cuft
Drainage Area	= 0.19 ac	Curve Number	= 81*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.051	98	PAVE
0.135	74	LAWN
0.19	**81**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

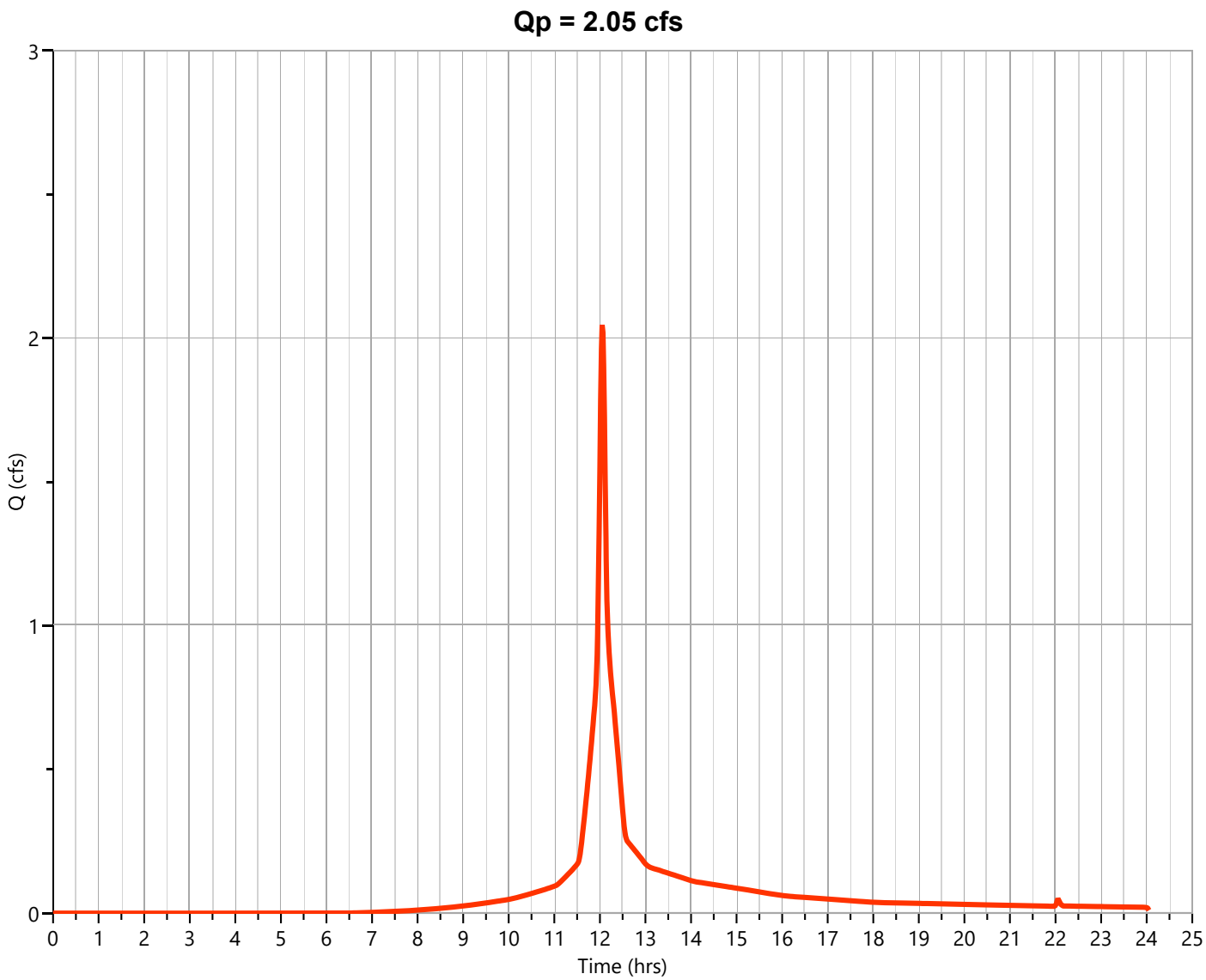
Post SA-23

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.046 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 5,951 cuft
Drainage Area	= 0.4 ac	Curve Number	= 80*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.306	74	LAWN
0.4	**80**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

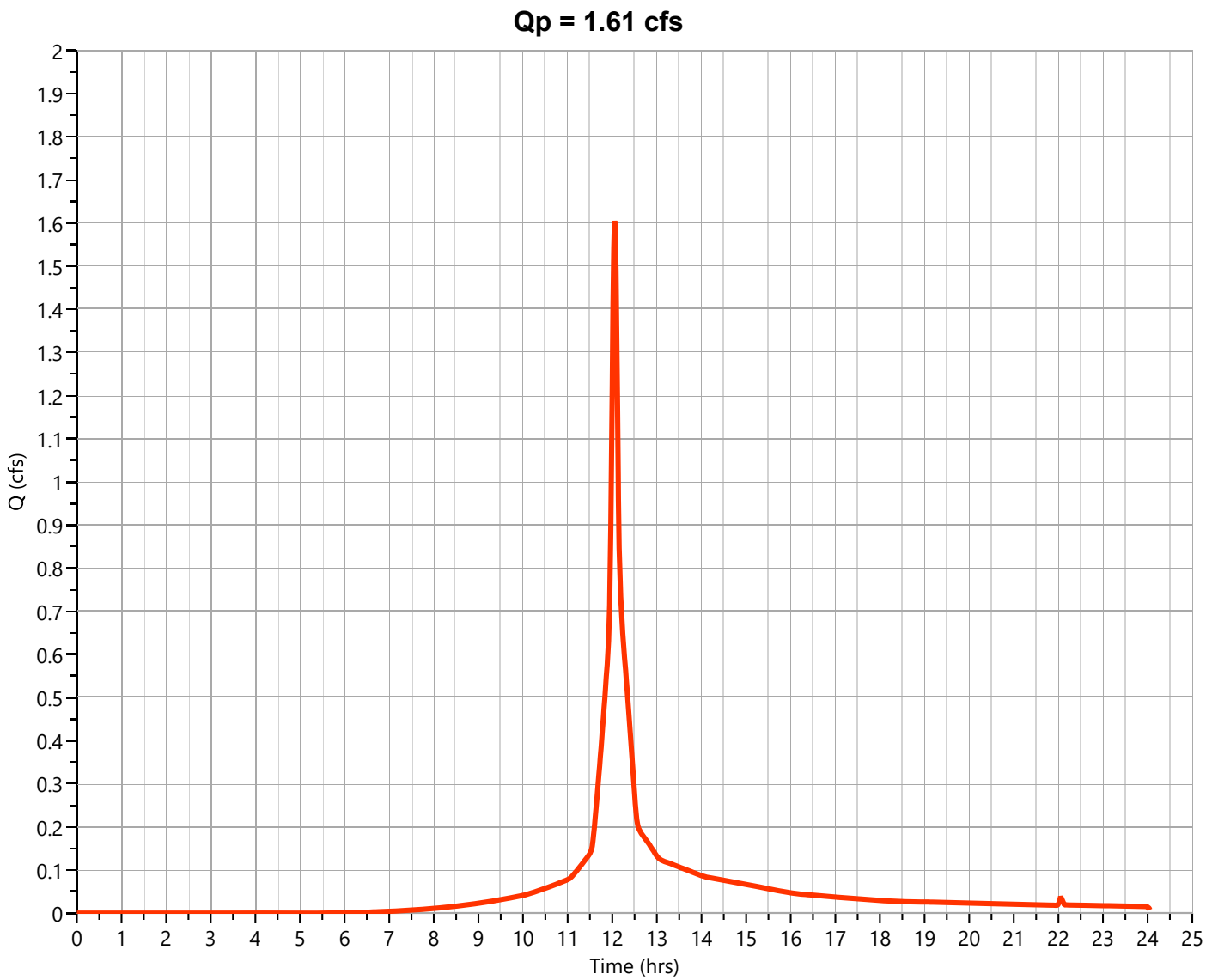
Post SA-24

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.605 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 4,694 cuft
Drainage Area	= 0.3 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.208	74	LAWN
0.3	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

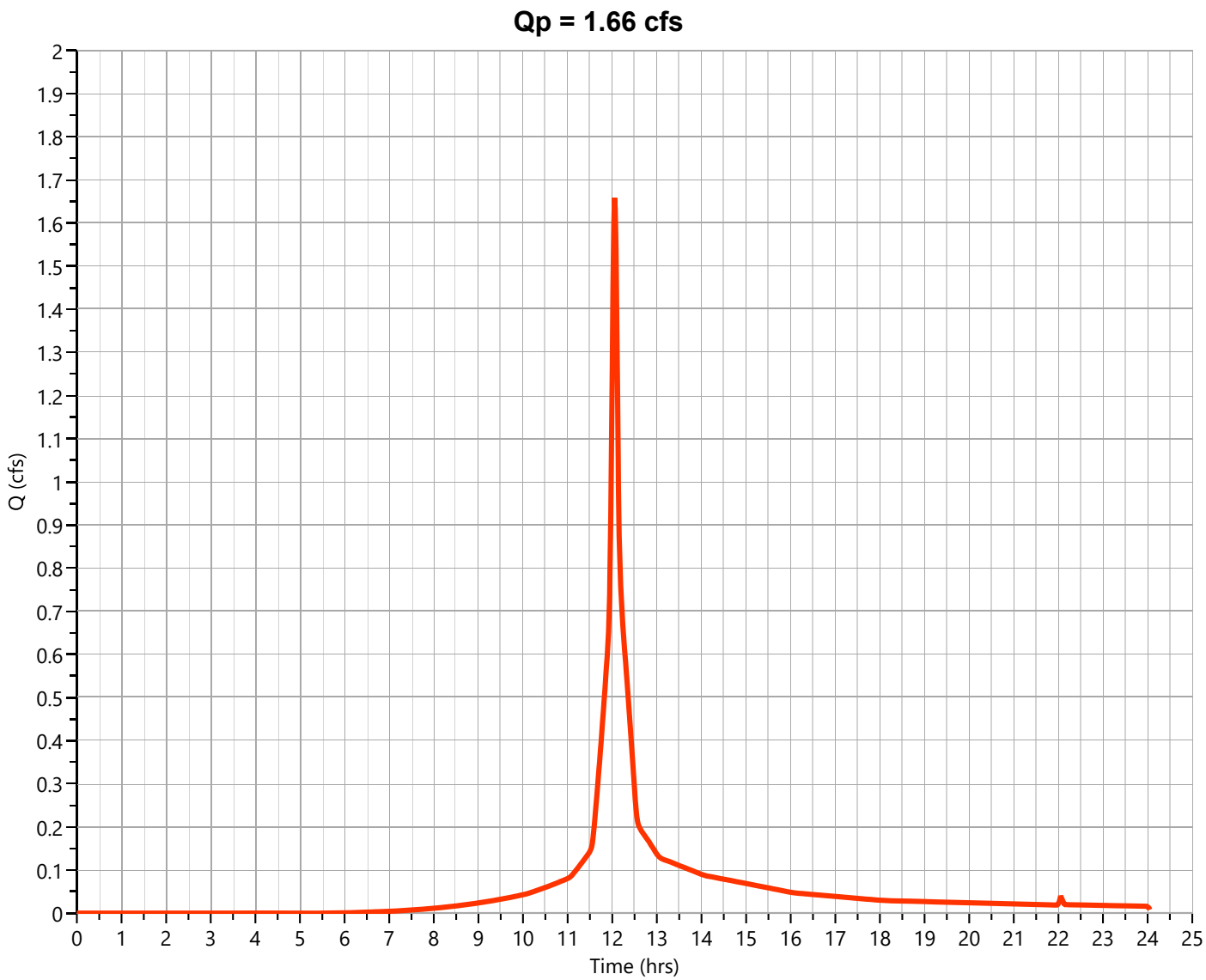
Post SA-22

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.659 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 4,850 cuft
Drainage Area	= 0.31 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.107	98	PAVE
0.201	74	LAWN
0.31	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

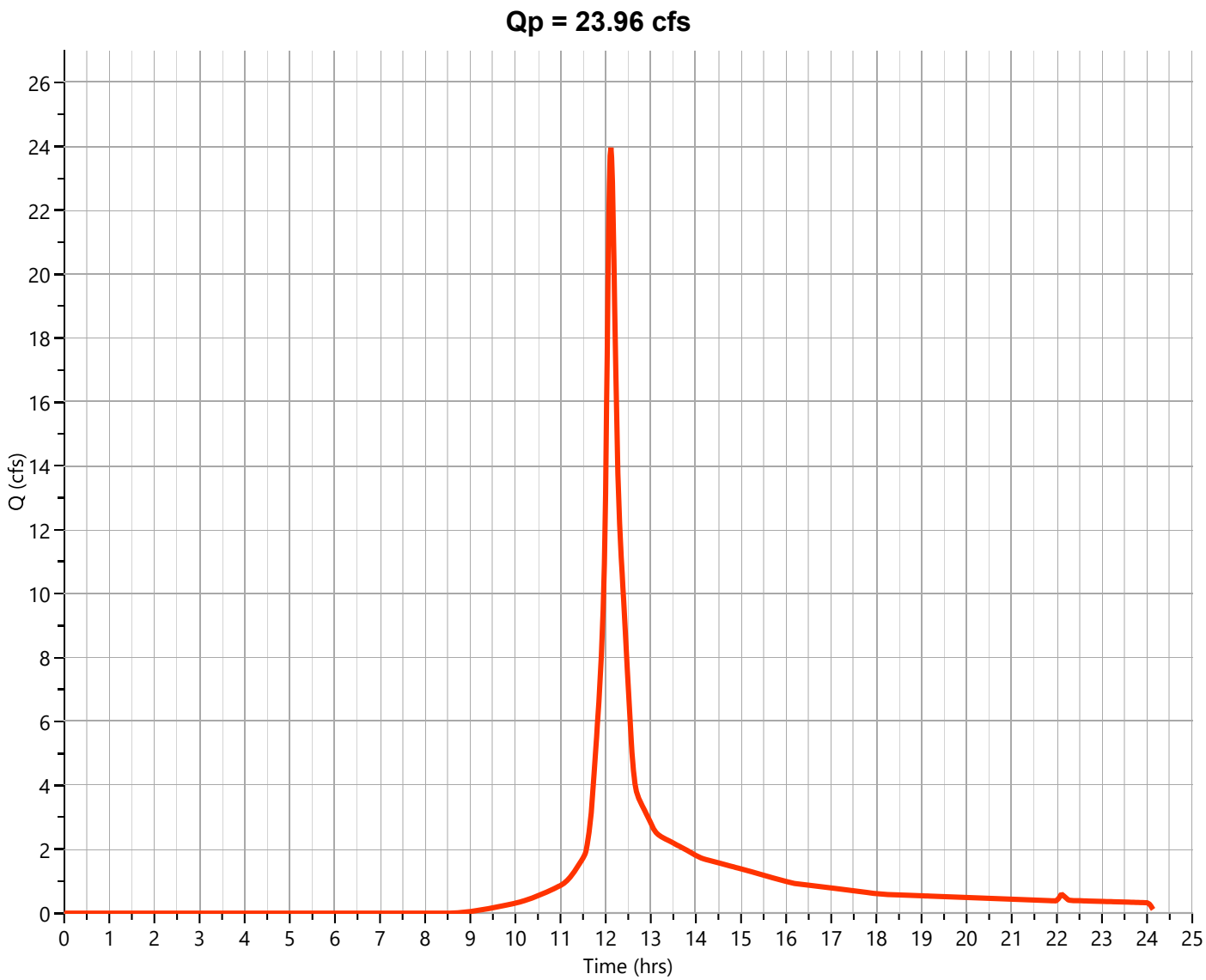
Post SA-25

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 23.96 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 82,187 cuft
Drainage Area	= 7.208 ac	Curve Number	= 70.57*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
1.022	74	LAWN
6.186	70	WOODED
7.208	**71**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Post SA-26

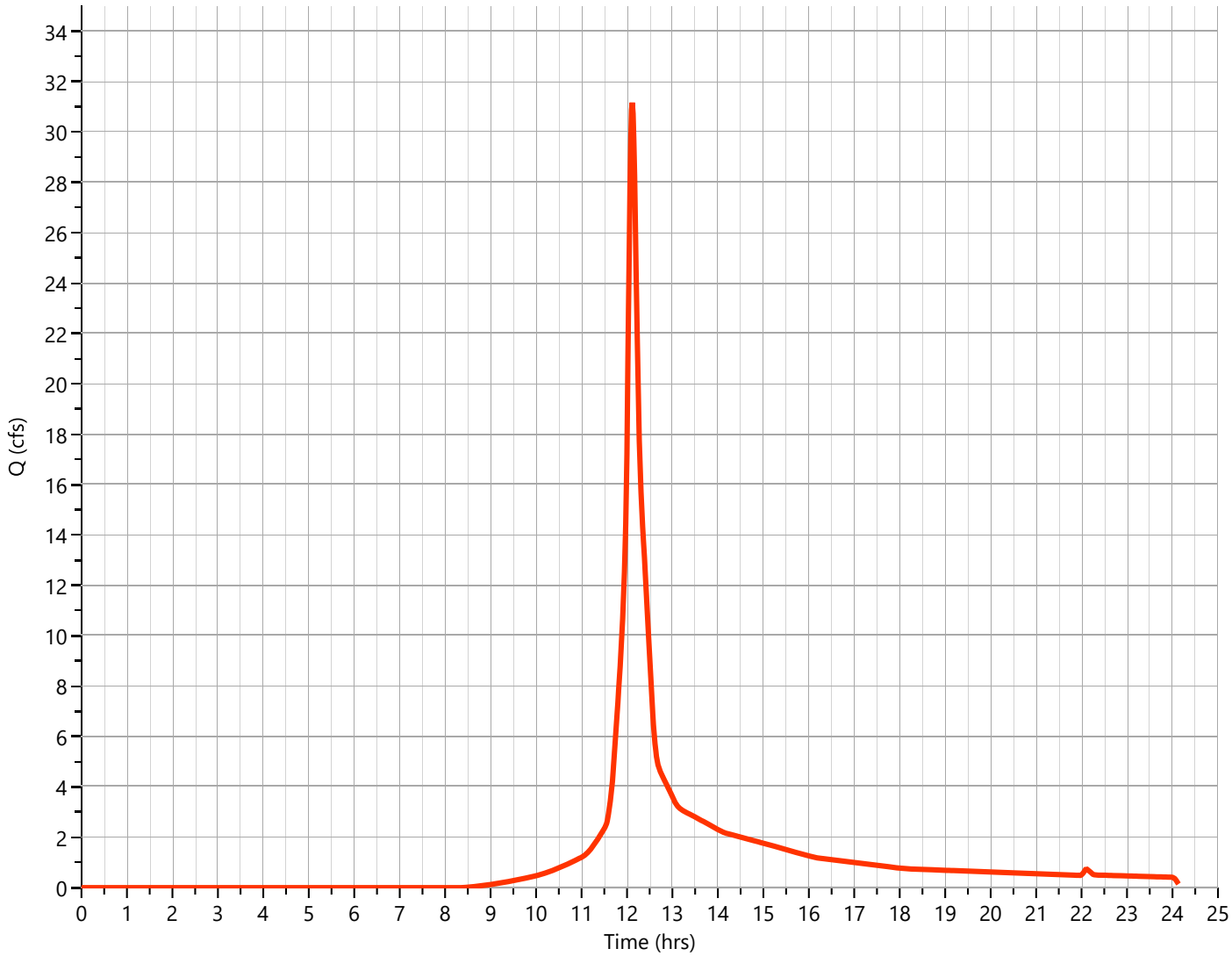
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 31.16 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 106,741 cuft
Drainage Area	= 8.96 ac	Curve Number	= 72*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.157	98	PAVE
3.887	74	LAWN
4.914	70	WOODED
8.96	**72**	Weighted CN Method Employed

Qp = 31.16 cfs



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

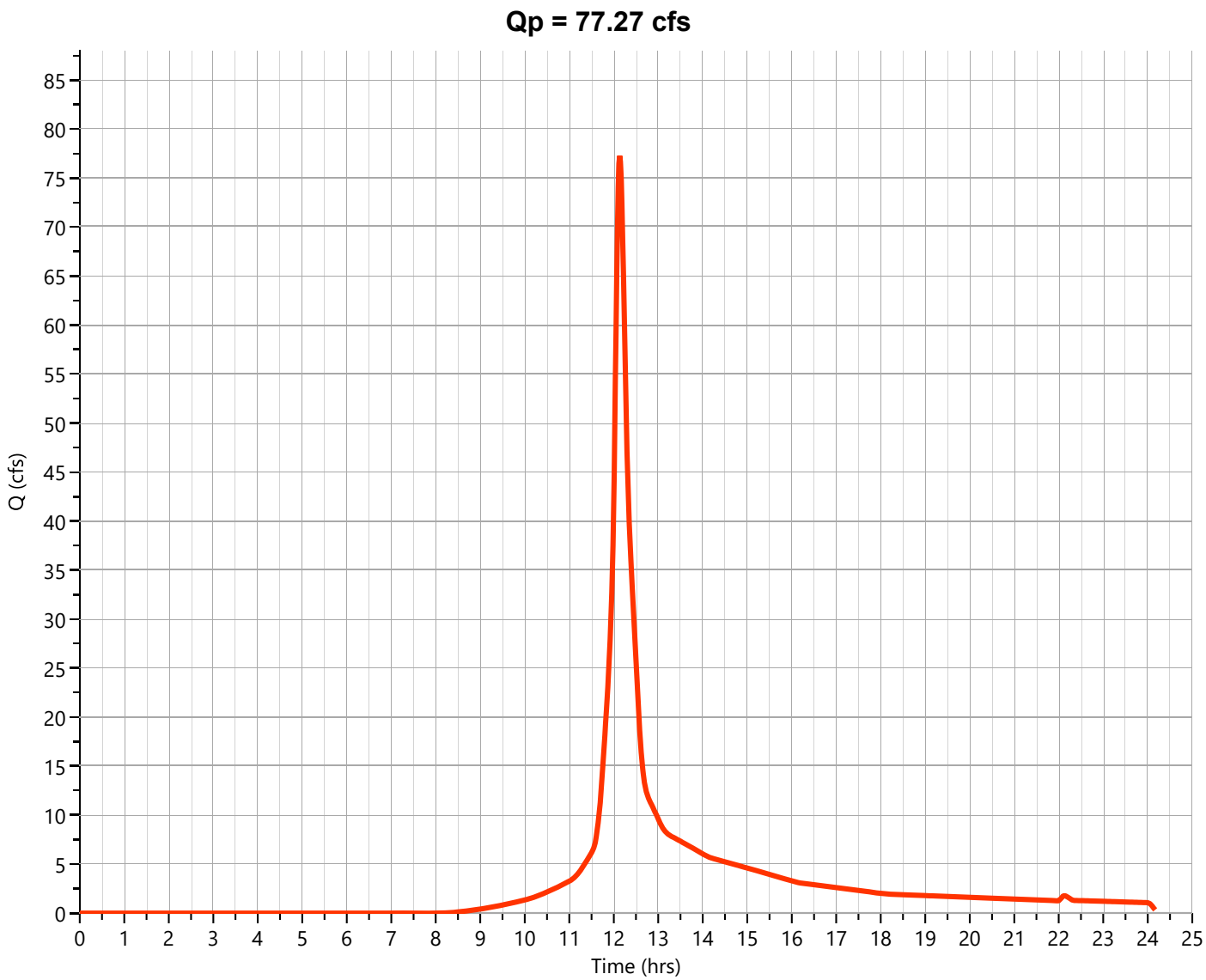
Post SA-40

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 77.27 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 280,591 cuft
Drainage Area	= 22.46 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 6.35 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
16.447	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
22.46	**73**	Weighted CN Method Employed



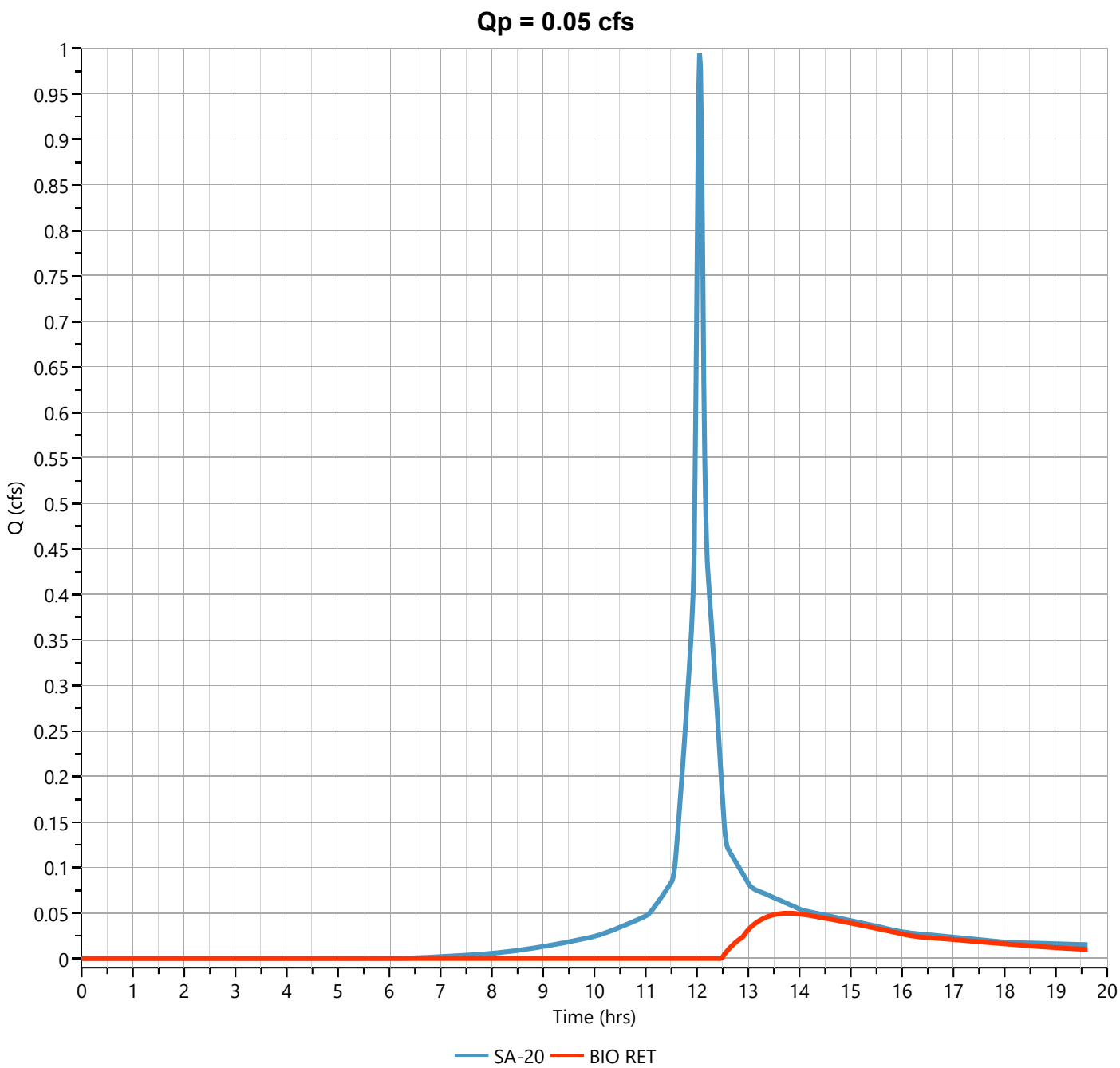
Post BIO RET

Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.050 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.78 hrs
Time Interval	= 1 min	Hydrograph Volume	= 784 cuft
Inflow Hydrograph	= 5 - SA-20	Max. Elevation	= 313.64 ft
Pond Name	= SA-20	Max. Storage	= 1,818 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 2.60 hrs



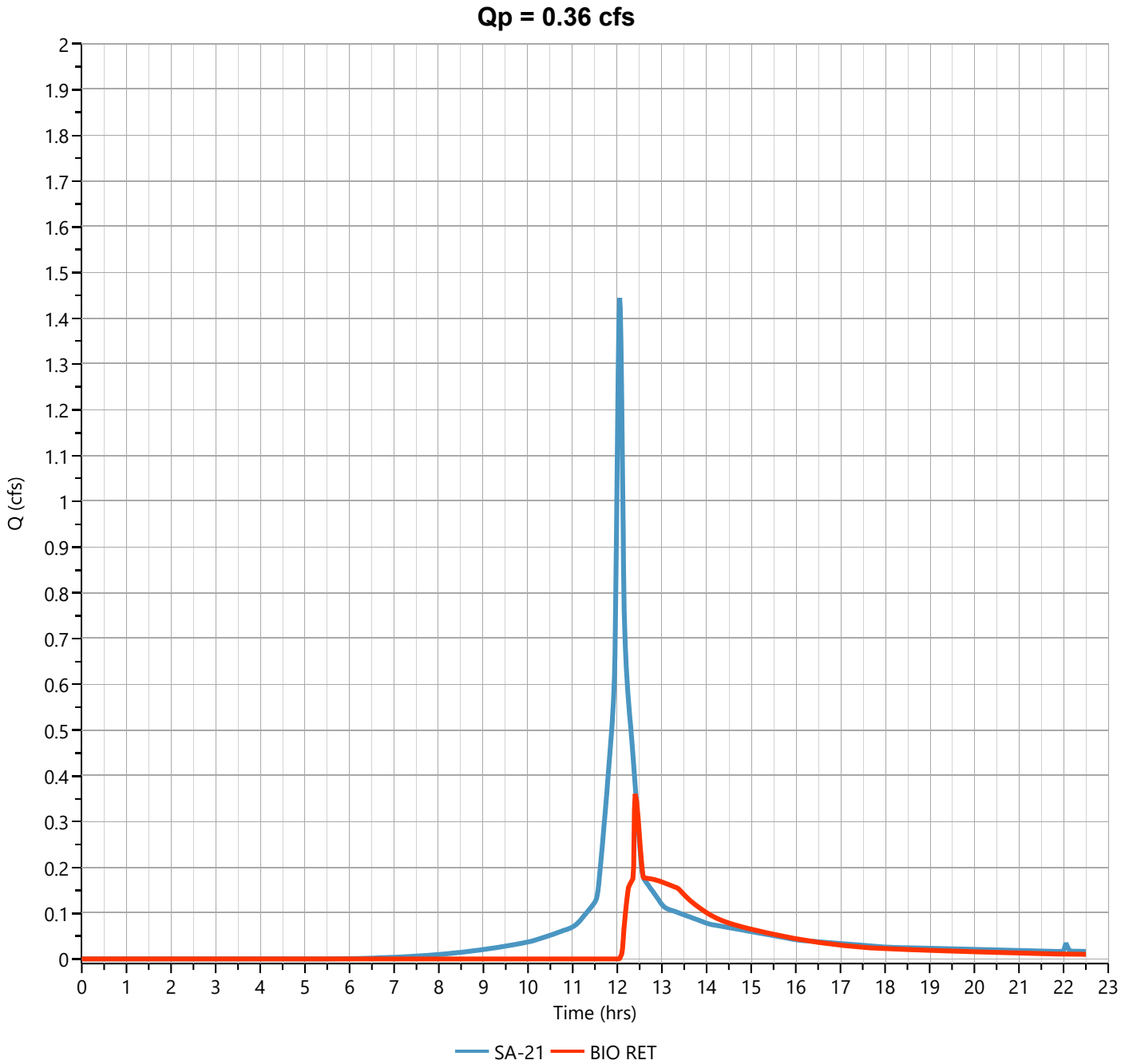
Post BIO RET

Hyd. No. 13

Hydrograph Type	= Pond Route	Peak Flow	= 0.360 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.40 hrs
Time Interval	= 1 min	Hydrograph Volume	= 2,106 cuft
Inflow Hydrograph	= 4 - SA-21	Max. Elevation	= 303.91 ft
Pond Name	= SA-21	Max. Storage	= 2,150 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.56 hrs



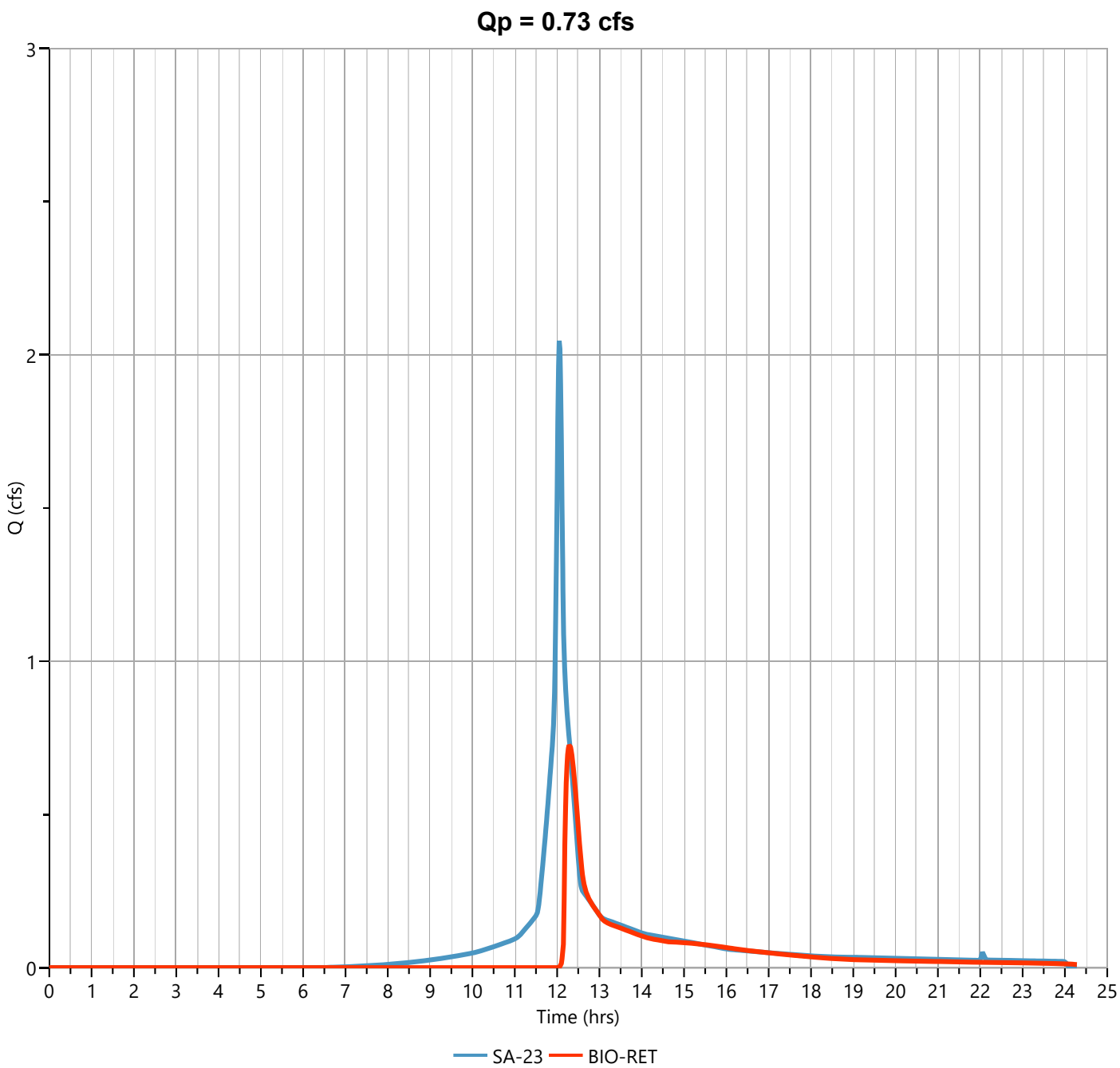
Post BIO-RET

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.726 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.30 hrs
Time Interval	= 1 min	Hydrograph Volume	= 3,081 cuft
Inflow Hydrograph	= 6 - SA-23	Max. Elevation	= 301.78 ft
Pond Name	= SA-23	Max. Storage	= 2,662 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.39 hrs



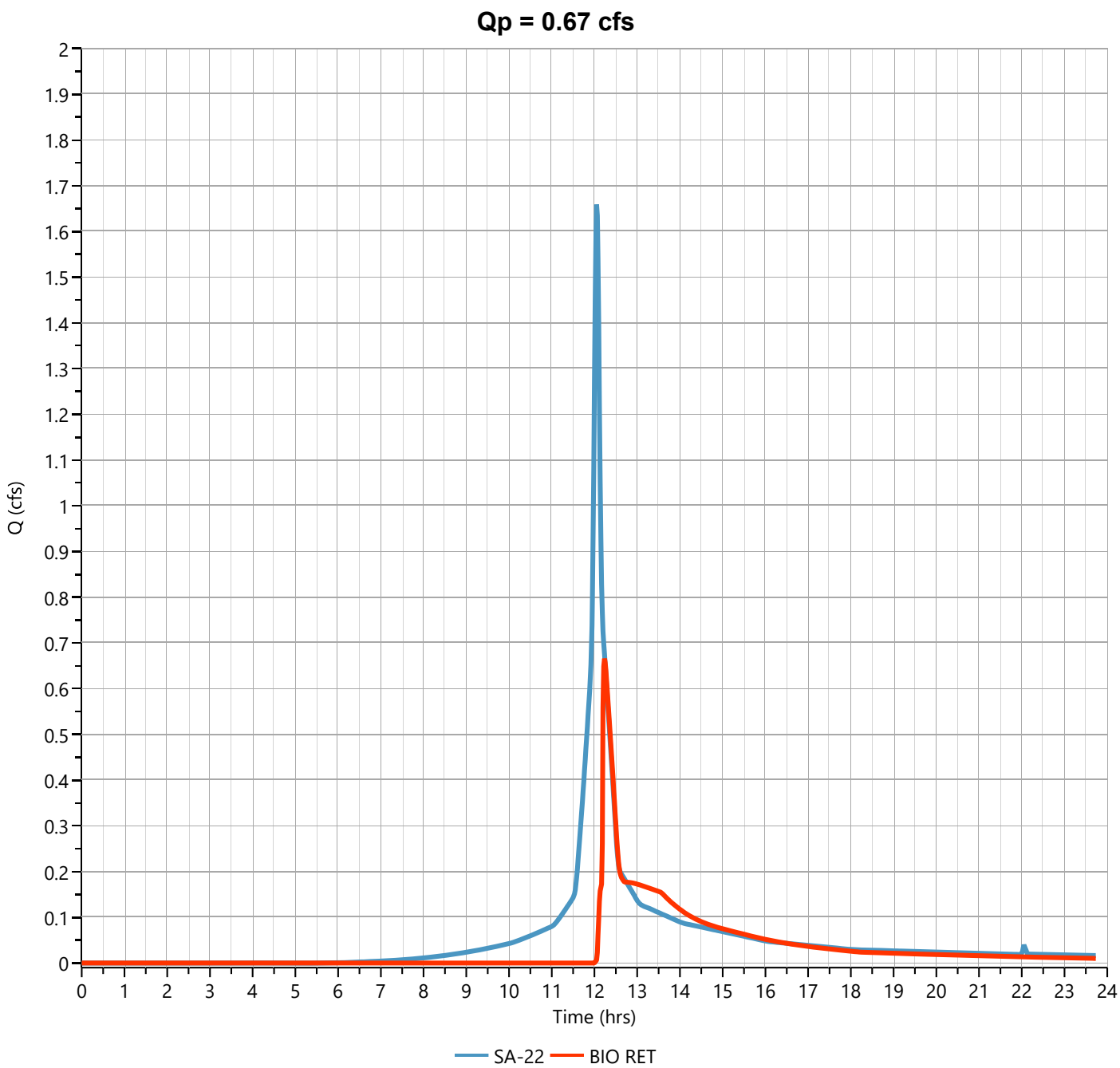
Post BIO RET

Hyd. No. 15

Hydrograph Type	= Pond Route	Peak Flow	= 0.666 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.23 hrs
Time Interval	= 1 min	Hydrograph Volume	= 2,718 cuft
Inflow Hydrograph	= 8 - SA-22	Max. Elevation	= 301.92 ft
Pond Name	= SA-22	Max. Storage	= 2,170 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.33 hrs



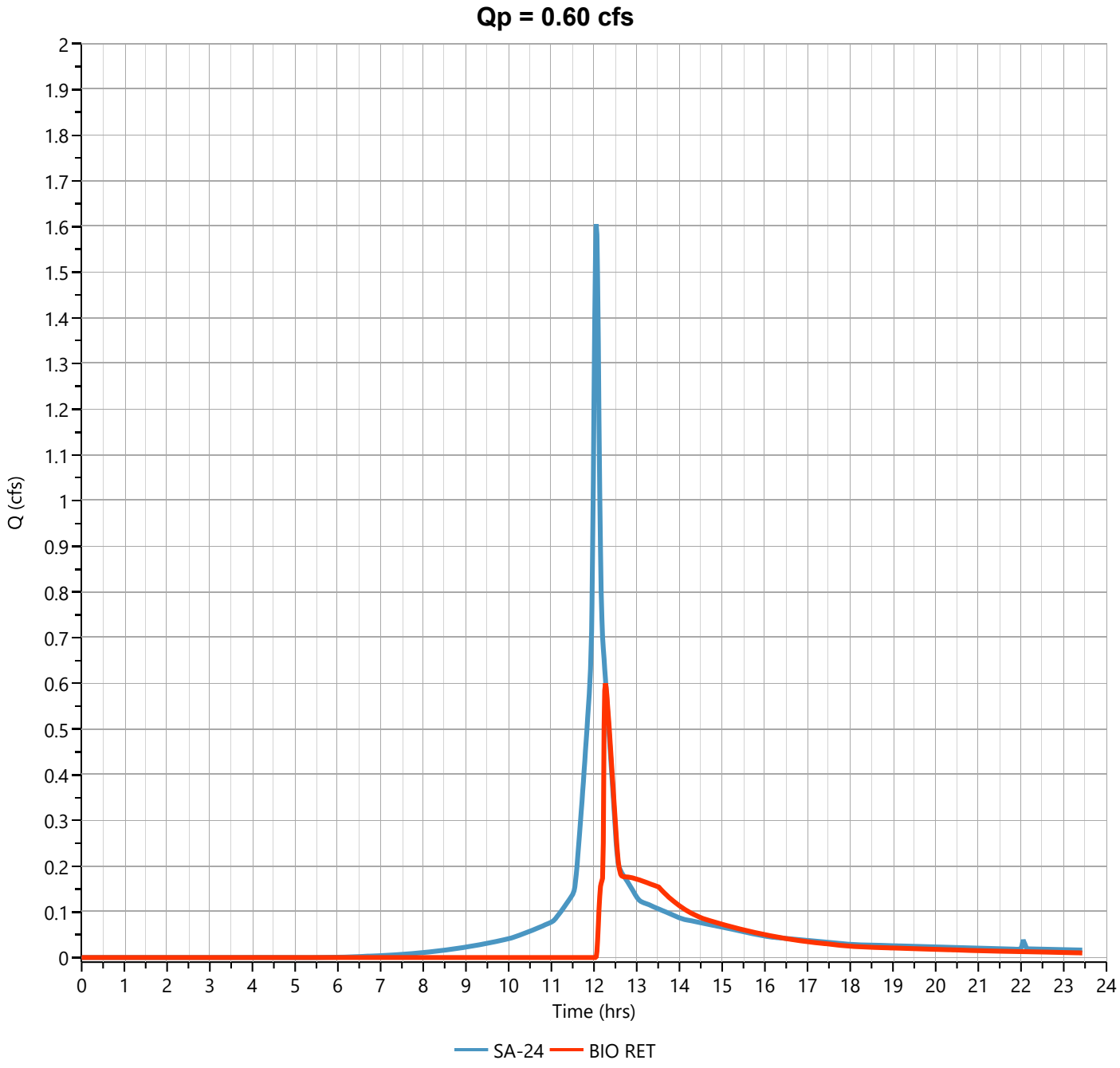
Post BIO RET

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 0.600 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Hydrograph Volume	= 2,565 cuft
Inflow Hydrograph	= 7 - SA-24	Max. Elevation	= 308.92 ft
Pond Name	= SA-24	Max. Storage	= 2,166 cuft

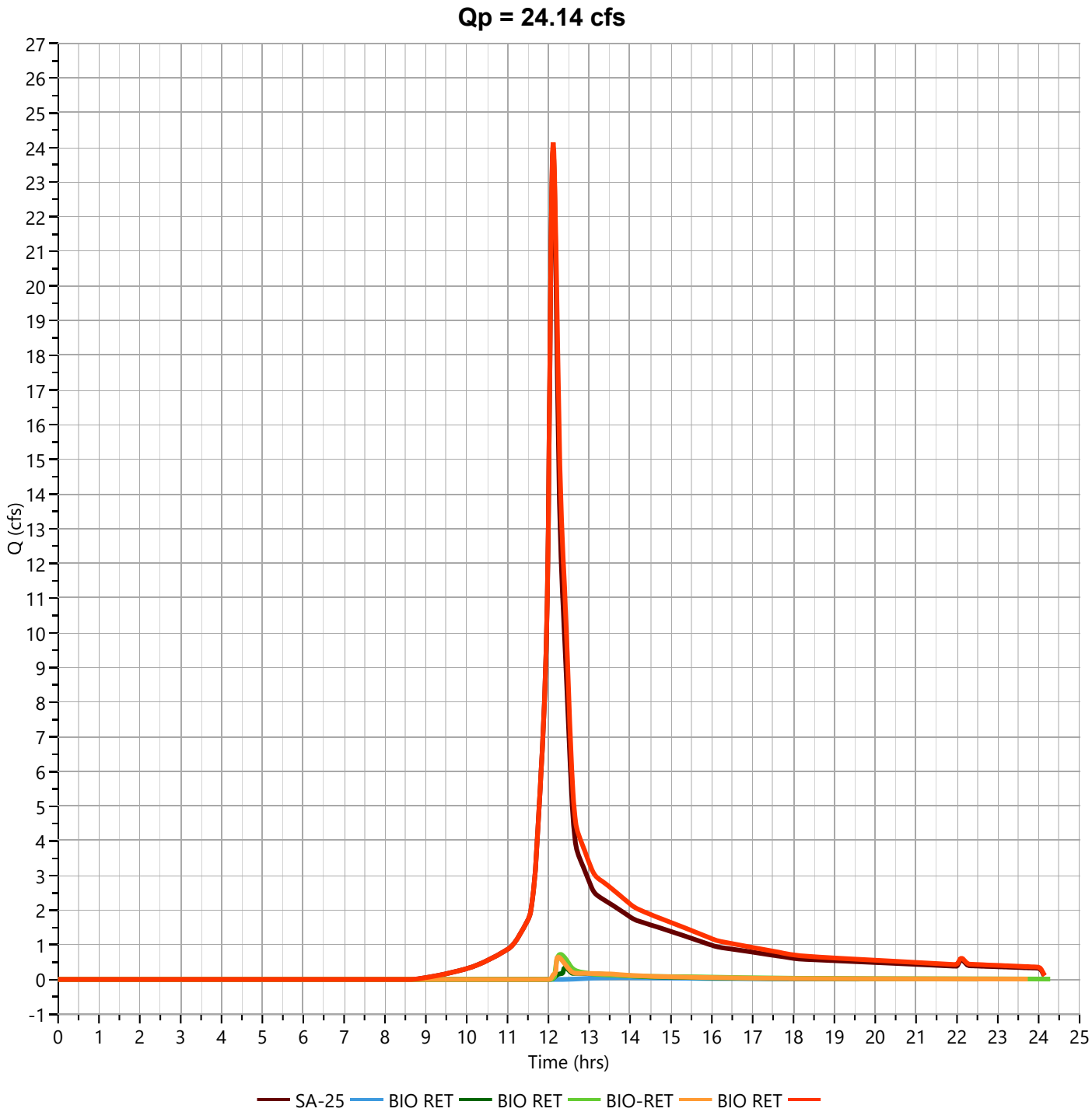
Pond Routing by Storage Indication Method

Center of mass detention time = 1.38 hrs



Hyd. No. 17

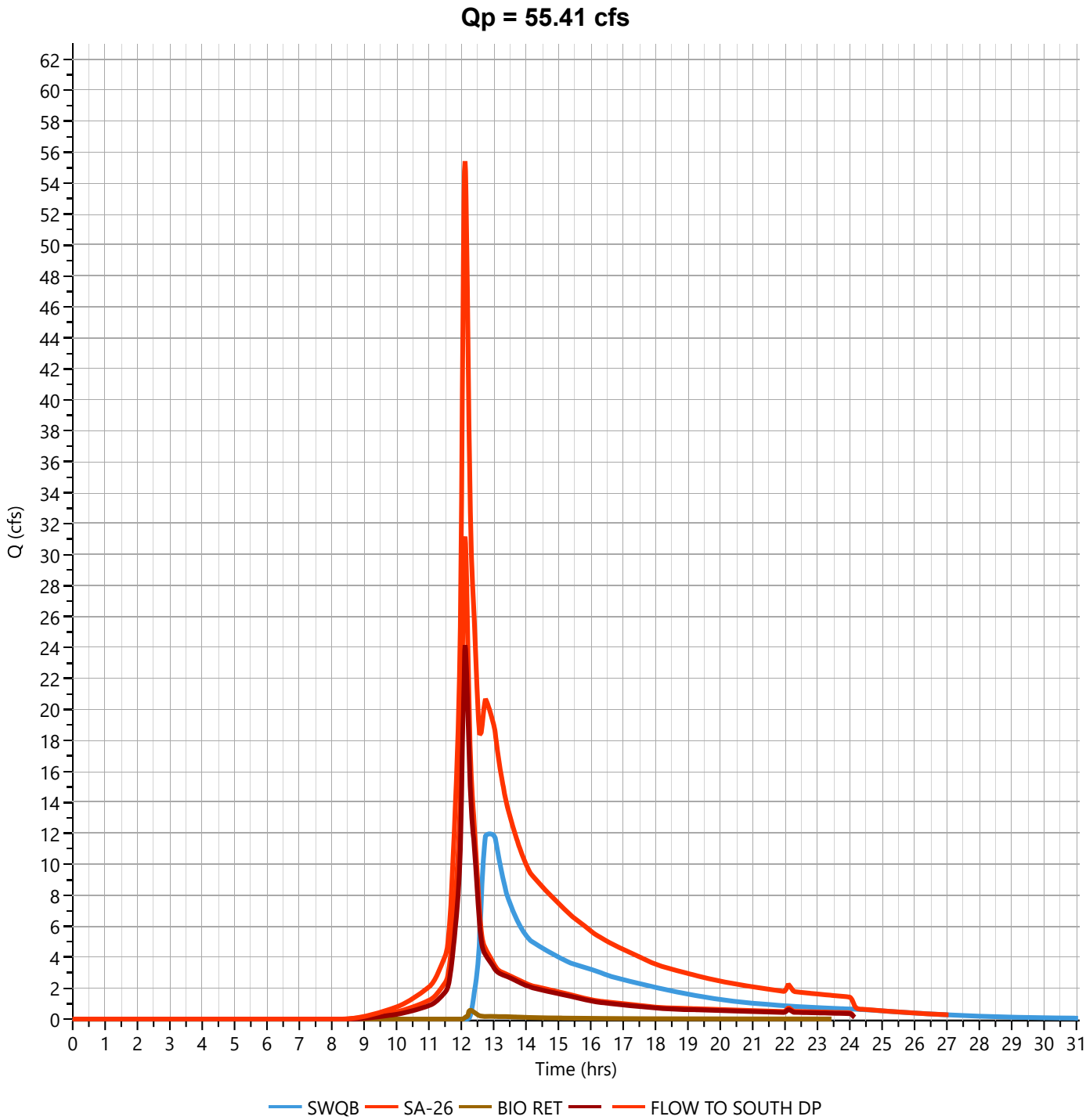
Hydrograph Type	= Junction	Peak Flow	= 24.14 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 90,876 cuft
Inflow Hydrographs	= 9, 12, 13, 14, 15	Total Contrib. Area	= 7.208 ac



Post FLOW TO SOUTH DP

Hyd. No. 18

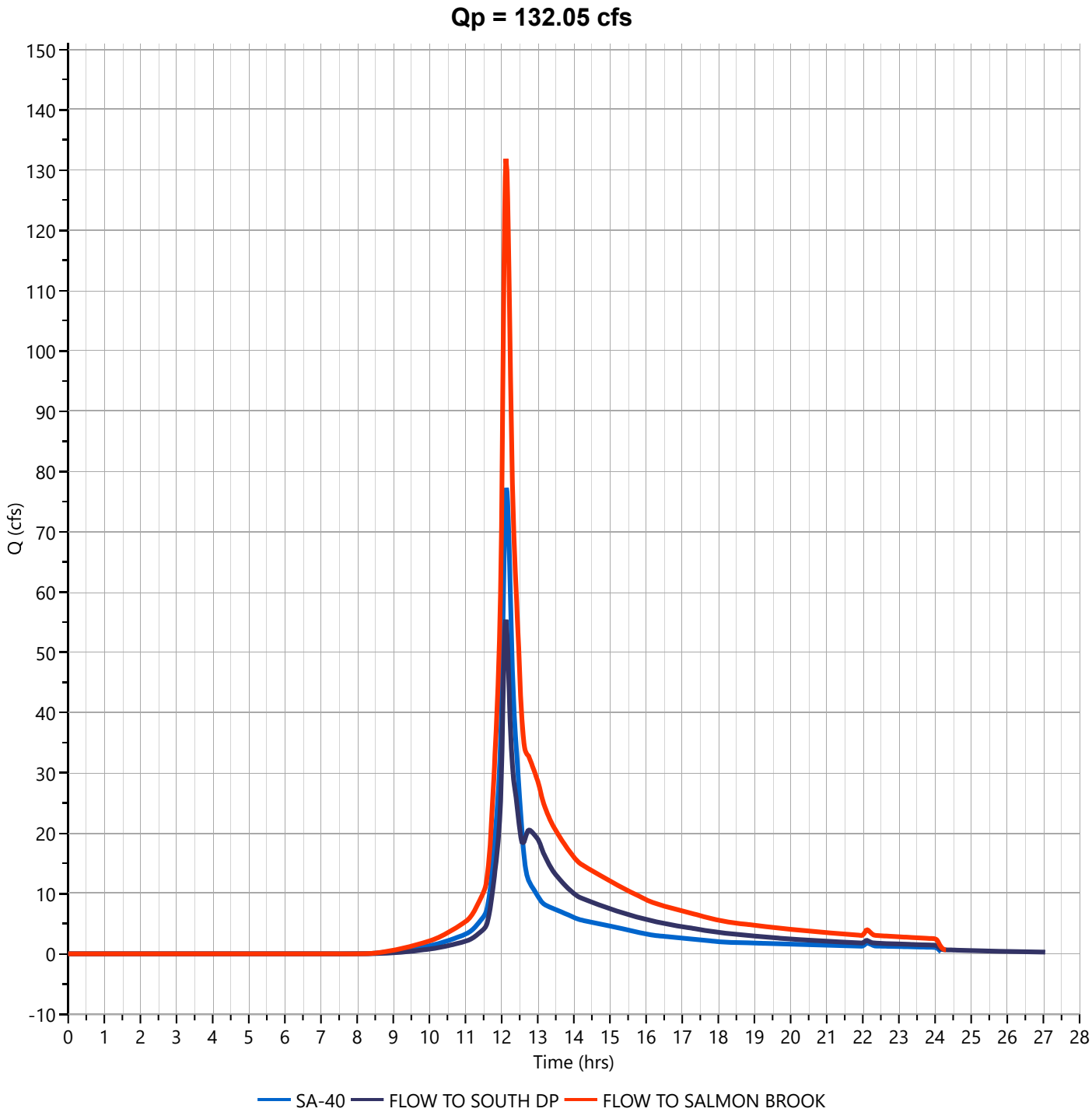
Hydrograph Type	= Junction	Peak Flow	= 55.41 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 327,845 cuft
Inflow Hydrographs	= 2, 10, 16, 17	Total Contrib. Area	= 16.168 ac



Post FLOW TO SALMON BROOK

Hyd. No. 19

Hydrograph Type	= Junction	Peak Flow	= 132.0 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 608,436 cuft
Inflow Hydrographs	= 11, 18	Total Contrib. Area	= 38.628 ac



Design Storm Report

Custom Storm filename:

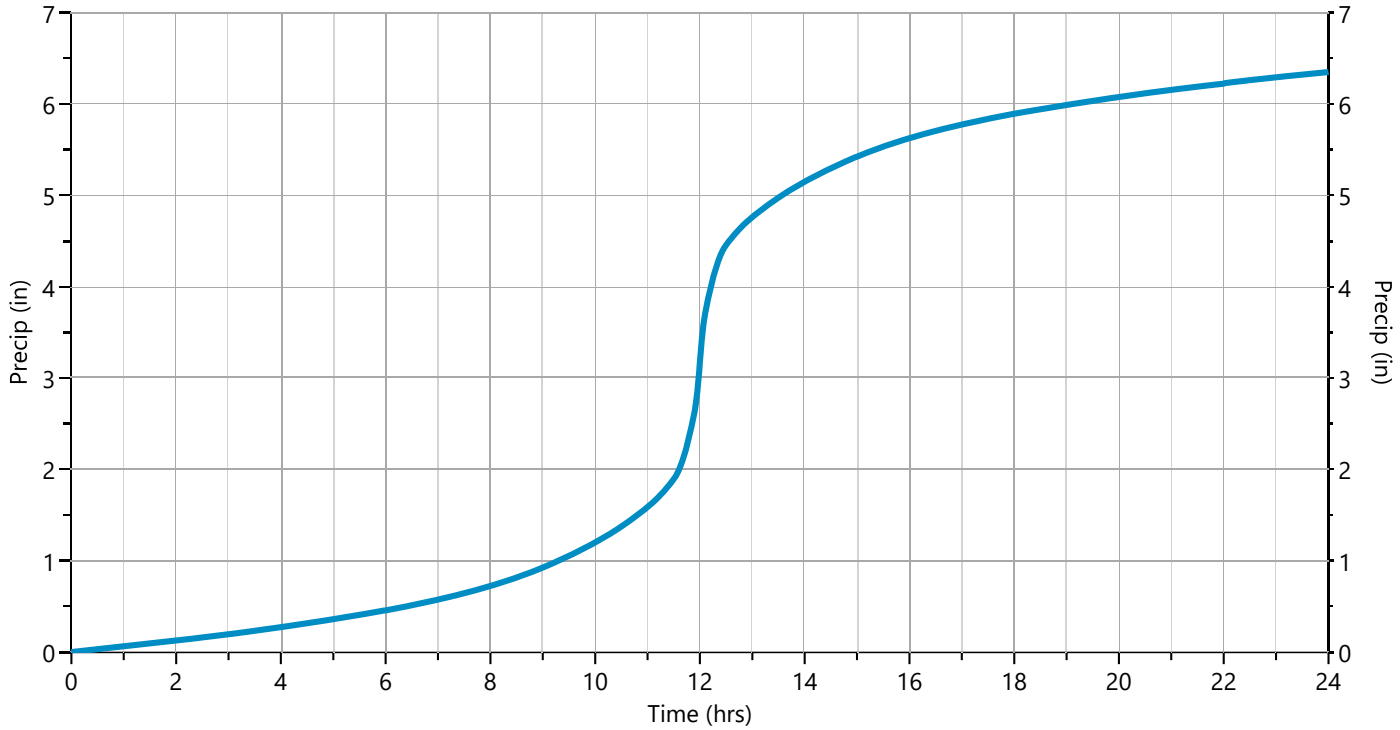
Hydrology Studio v 3.0.0.16

10-07-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	✔ 25-yr	50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 25-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.012513	11.68	0.028893	11.87	0.045967	12.05	0.095408	12.23	0.038206
11.52	0.013334	11.70	0.030445	11.88	0.047519	12.07	0.082391	12.25	0.036654
11.53	0.014922	11.72	0.031997	11.90	0.049071	12.08	0.069373	12.27	0.035101
11.55	0.016475	11.73	0.033549	11.92	0.056537	12.10	0.056356	12.28	0.033549
11.57	0.018027	11.75	0.035101	11.93	0.069374	12.12	0.049258	12.30	0.031997
11.58	0.019579	11.77	0.036654	11.95	0.082392	12.13	0.047519	12.32	0.030445
11.60	0.021131	11.78	0.038206	11.97	0.095409	12.15	0.045967	12.33	0.028893
11.62	0.022684	11.80	0.039758	11.98	0.108427	12.17	0.044415	12.35	0.027340
11.63	0.024236	11.82	0.041310	**12.00**	**0.121444**	12.18	0.042862	12.37	0.025788
11.65	0.025788	11.83	0.042862	12.02	0.121153	12.20	0.041310	12.38	0.024236
11.67	0.027340	11.85	0.044415	12.03	0.108426	12.22	0.039758	12.40	0.022684



Hydrograph 50-yr Summary

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Post FLOW TO SWQB	45.36	12.18	189,421	----		
2	Pond Route(i)	Post SWQB	13.21	12.93	158,911	1	276.29 U 264.02 L	62,276 U 46,546 L
3	NRCS Runoff	Post FLOW TO N DP	49.34	12.15	185,410	----		
4	NRCS Runoff	Post SA-21	1.718	12.05	5,058	----		
5	NRCS Runoff	Post SA-20	1.187	12.05	3,481	----		
6	NRCS Runoff	Post SA-23	2.450	12.05	7,166	----		
7	NRCS Runoff	Post SA-24	1.909	12.05	5,620	----		
8	NRCS Runoff	Post SA-22	1.973	12.05	5,807	----		
9	NRCS Runoff	Post SA-25	29.79	12.12	101,963	----		
10	NRCS Runoff	Post SA-26	38.50	12.12	131,776	----		
11	NRCS Runoff	Post SA-40	95.10	12.13	345,247	----		
12	Pond Route	Post BIO RET	0.114	12.75	1,341	5	313.74	1,958
13	Pond Route	Post BIO RET	0.837	12.17	2,915	4	303.93	2,181
14	Pond Route	Post BIO-RET	1.698	12.12	4,262	6	301.83	2,747
15	Pond Route	Post BIO RET	1.499	12.12	3,649	8	301.96	2,225
16	Pond Route	Post BIO RET	1.357	12.12	3,465	7	308.96	2,215
17	Junction		33.16	12.12	114,129	9, 12, 13, 14, 15		
18	Junction	Post FLOW TO SOUTH DP	73.04	12.12	408,281	2, 10, 16, 17		
19	Junction	Post FLOW TO SALMON BROOK	167.3	12.12	753,529	11, 18		

(i) = Interconnected ponds, U = Upper pond, L = Lower pond

Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

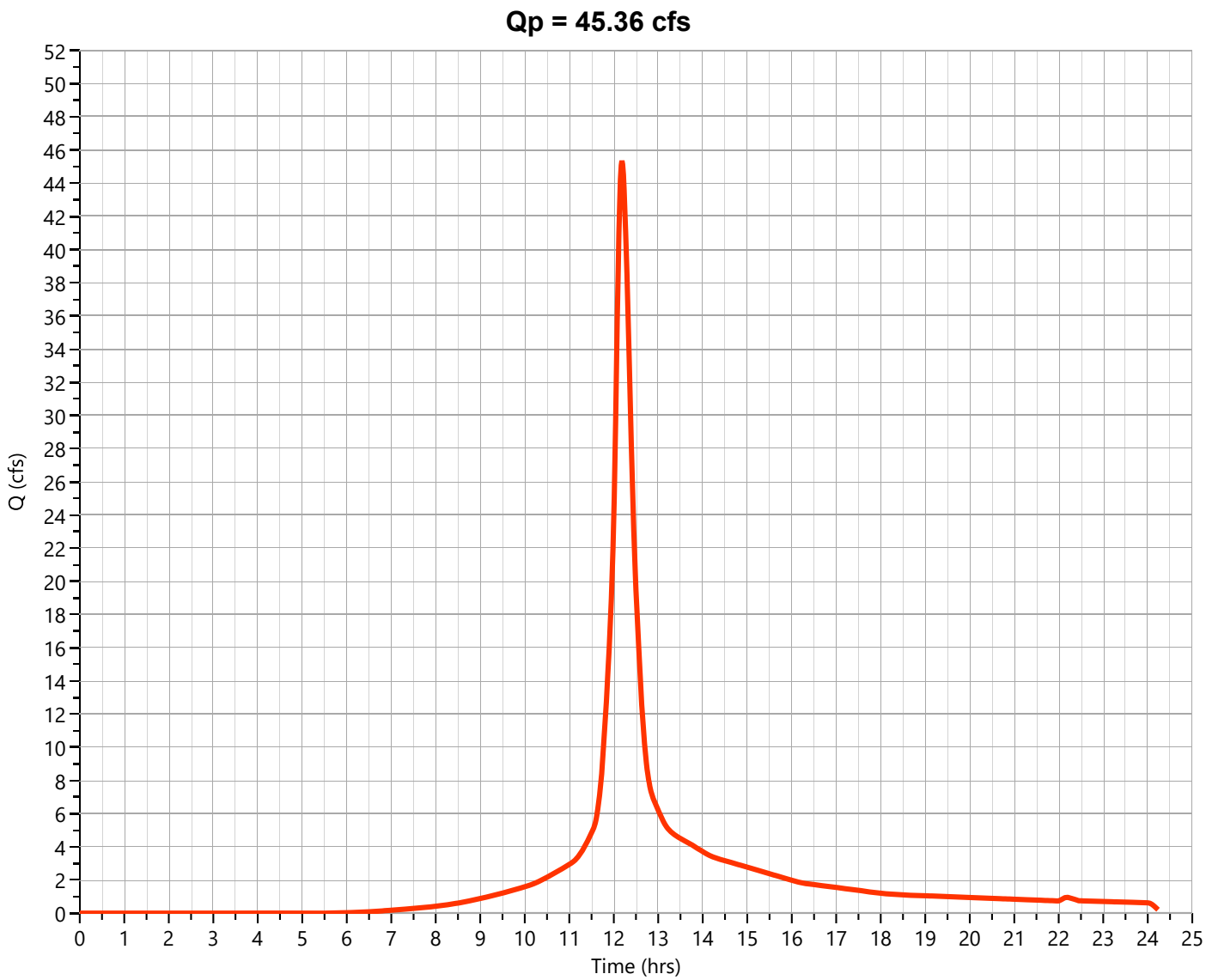
Post FLOW TO SWQB

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 45.36 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 189,421 cuft
Drainage Area	= 10.305 ac	Curve Number	= 80.59*
Tc Method	= User	Time of Conc. (Tc)	= 15.9 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.83	98	PAVE
7.475	74	LAWN
10.305	**81**	Weighted CN Method Employed

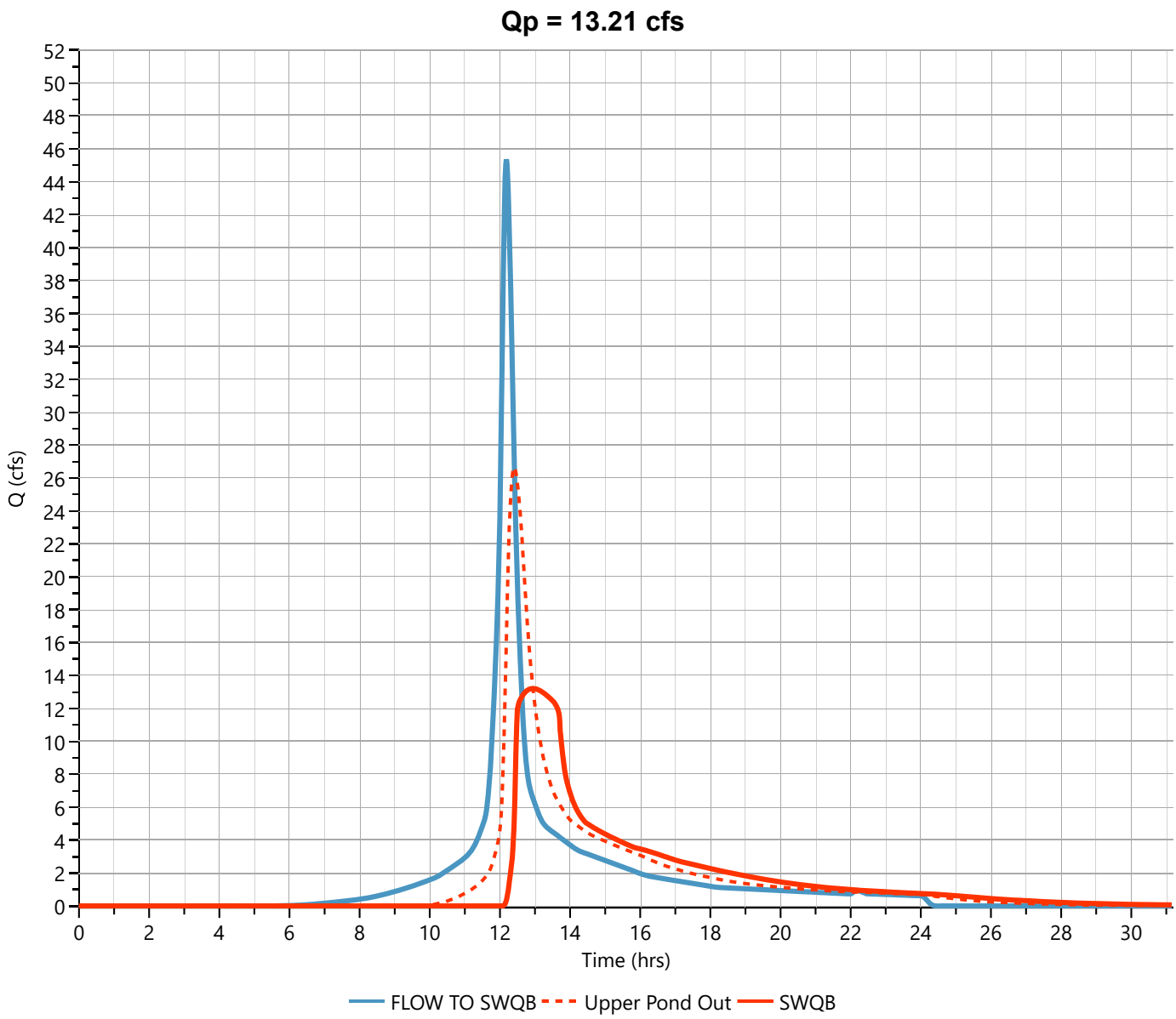


Post SWQB

Hyd. No. 2

Hydrograph Type	= Pond Route(i)*	Peak Flow	= 13.21 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.93 hrs
Time Interval	= 1 min	Hydrograph Volume	= 158,911 cuft
Upper Pond		**Lower Pond**	
Pond Name	= SWQB TOP	Pond Name	= SWQB BOT
Inflow Hyd	= 1 - FLOW TO SWQB	Addnl Inflow Hyd	= None
Max. Elevation	= 276.29 ft	Max. Elevation	= 264.02 ft
Max. Storage	= 62,276 cuft	Max. Storage	= 46,546 cuft

**Interconnected Pond Routing by Storage Indication Method.*



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

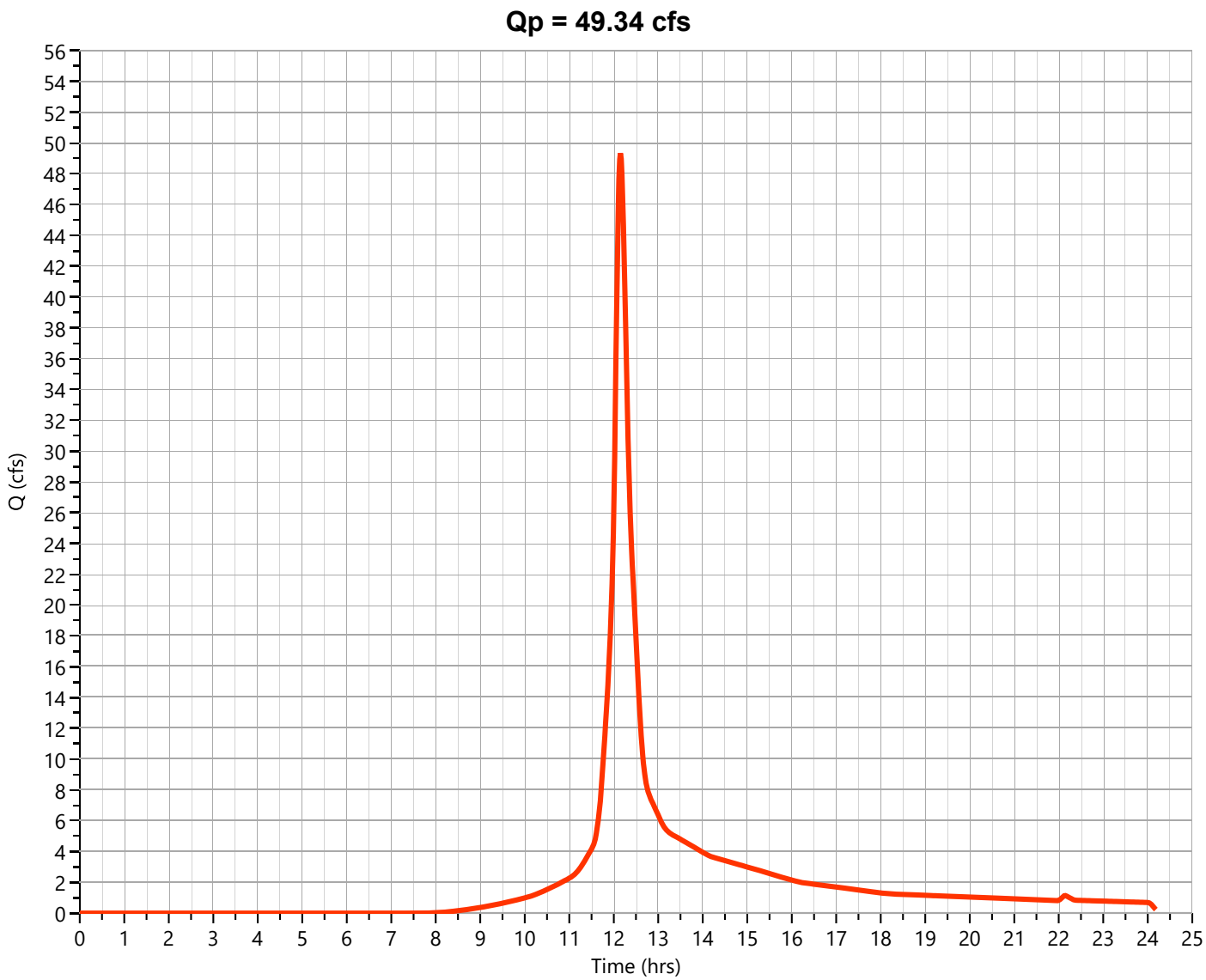
Post FLOW TO N DP

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 49.34 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 185,410 cuft
Drainage Area	= 12.862 ac	Curve Number	= 71.84*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.08 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
9.177	70	WOODED
3.311	74	LAWN
0.374	98	PAVE
12.862	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

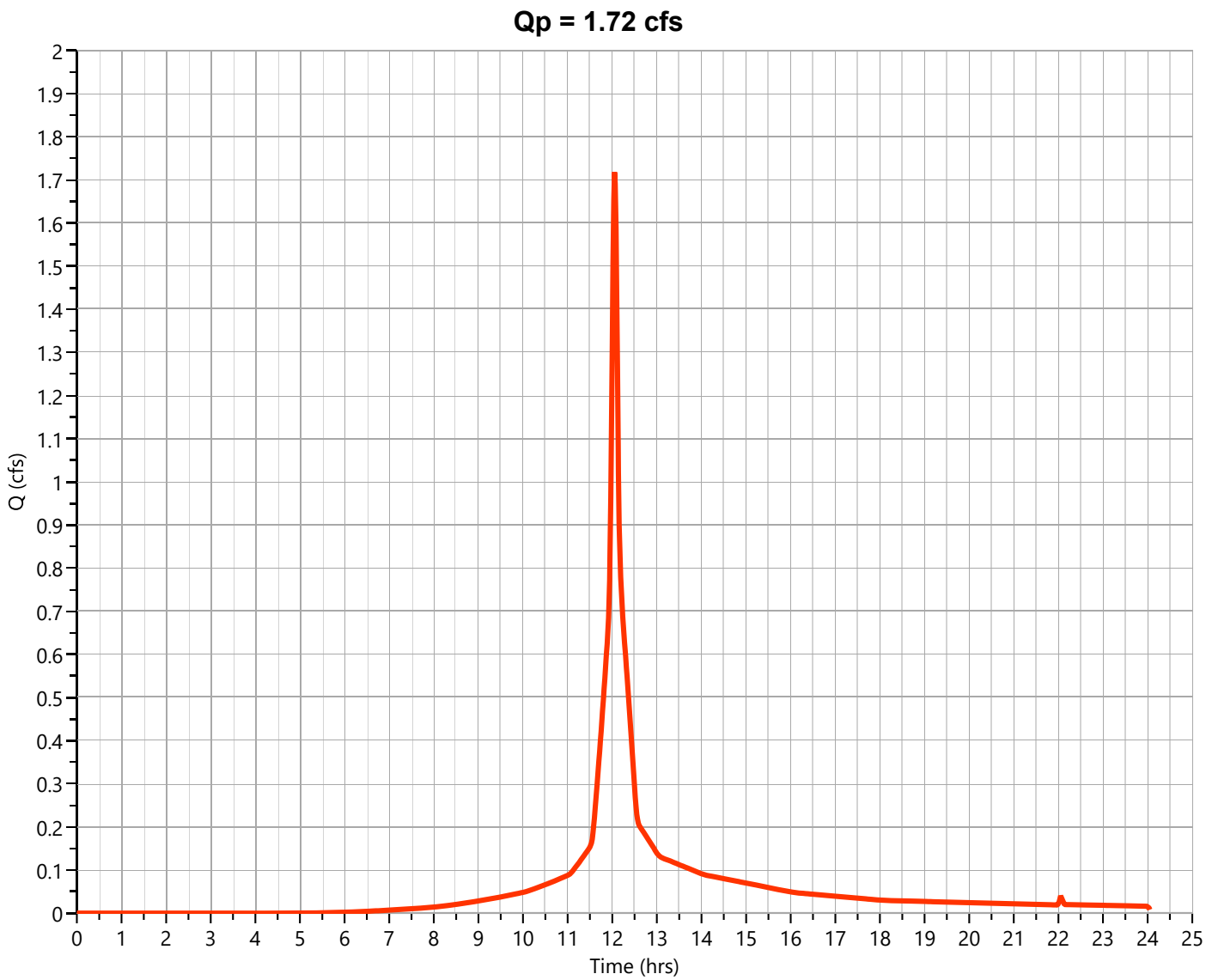
Post SA-21

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.718 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 5,058 cuft
Drainage Area	= 0.27 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.088	98	PAVE
0.183	74	LAWN
0.27	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

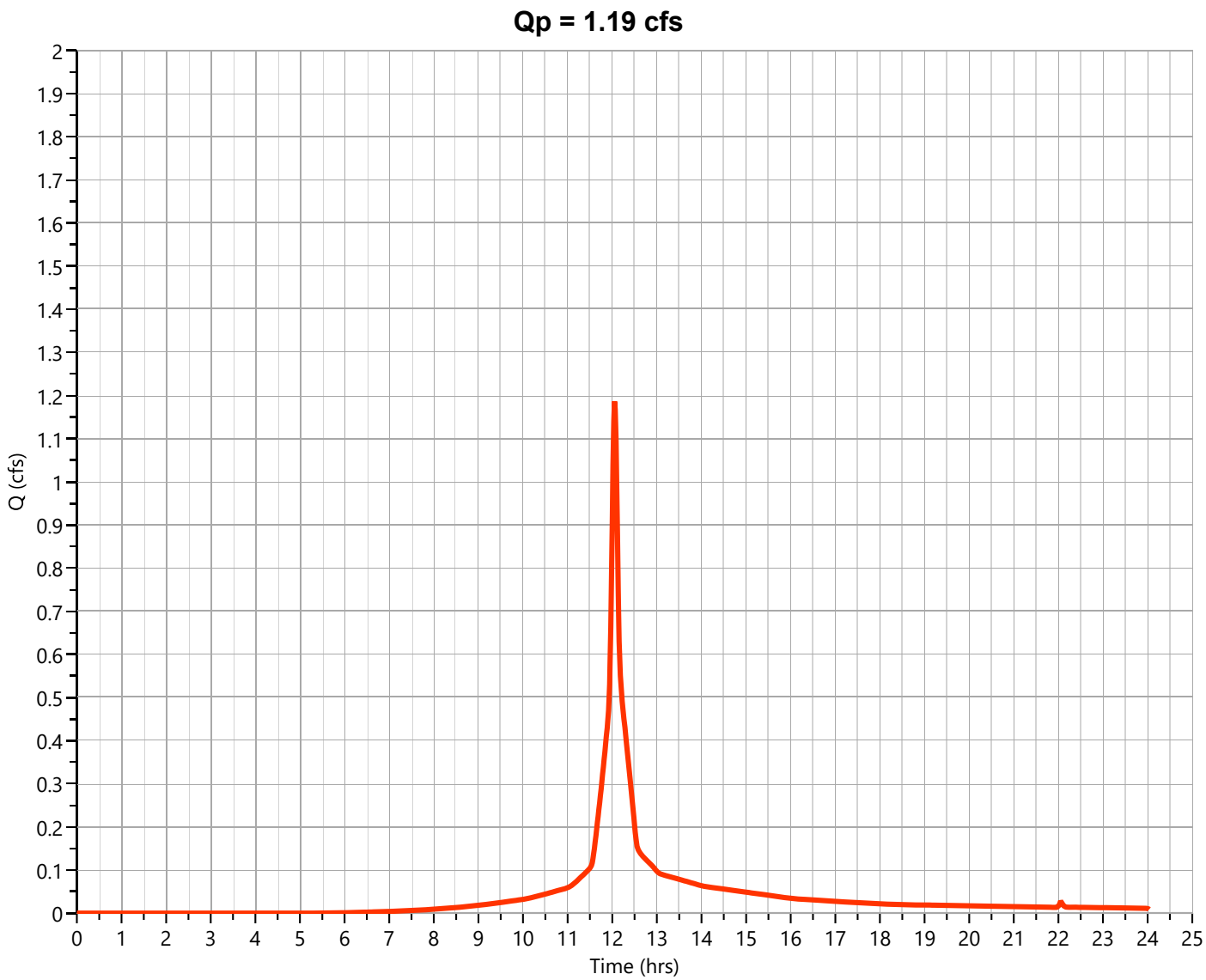
Post SA-20

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.187 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 3,481 cuft
Drainage Area	= 0.19 ac	Curve Number	= 81*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.051	98	PAVE
0.135	74	LAWN
0.19	**81**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

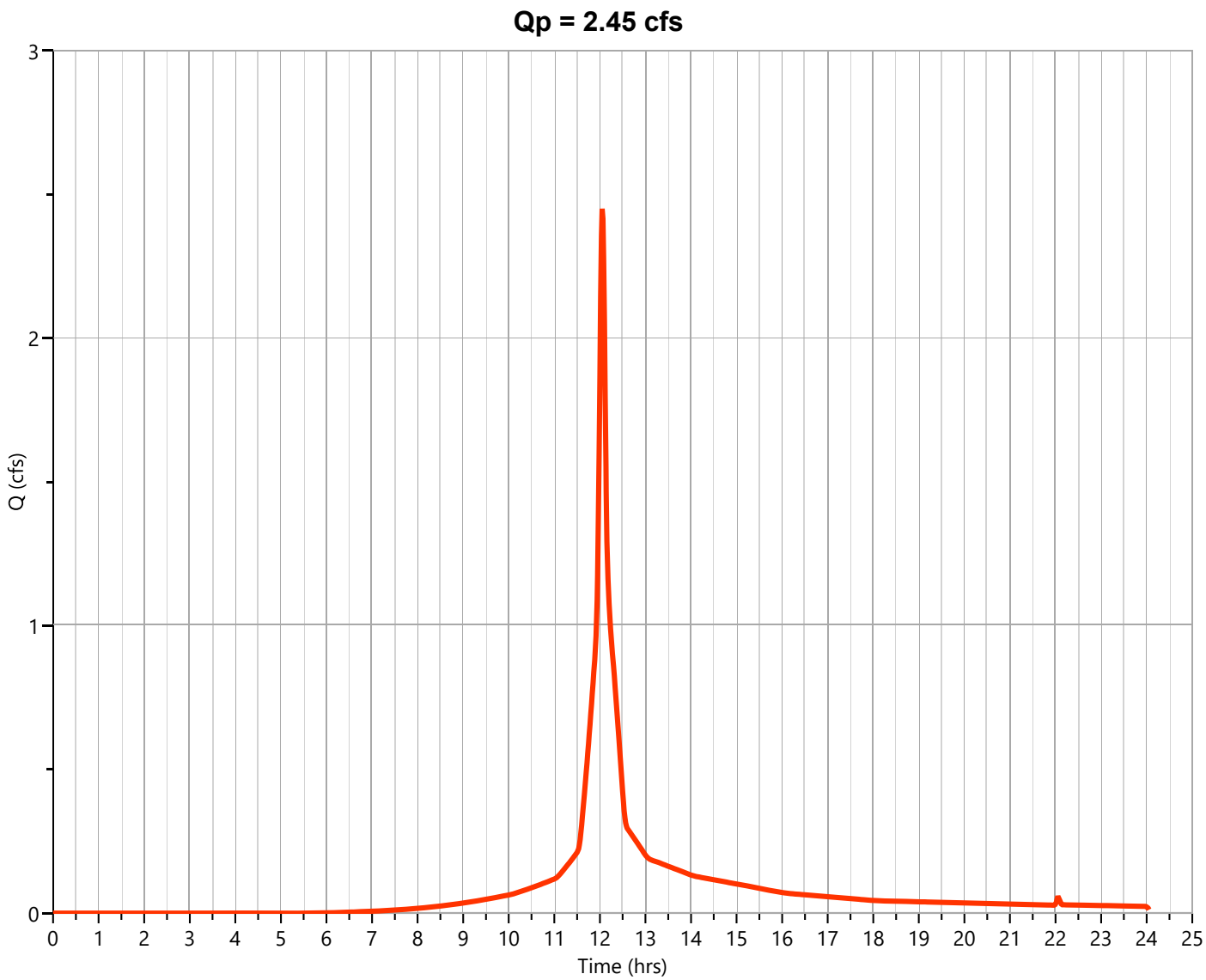
Post SA-23

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.450 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 7,166 cuft
Drainage Area	= 0.4 ac	Curve Number	= 80*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.306	74	LAWN
0.4	**80**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

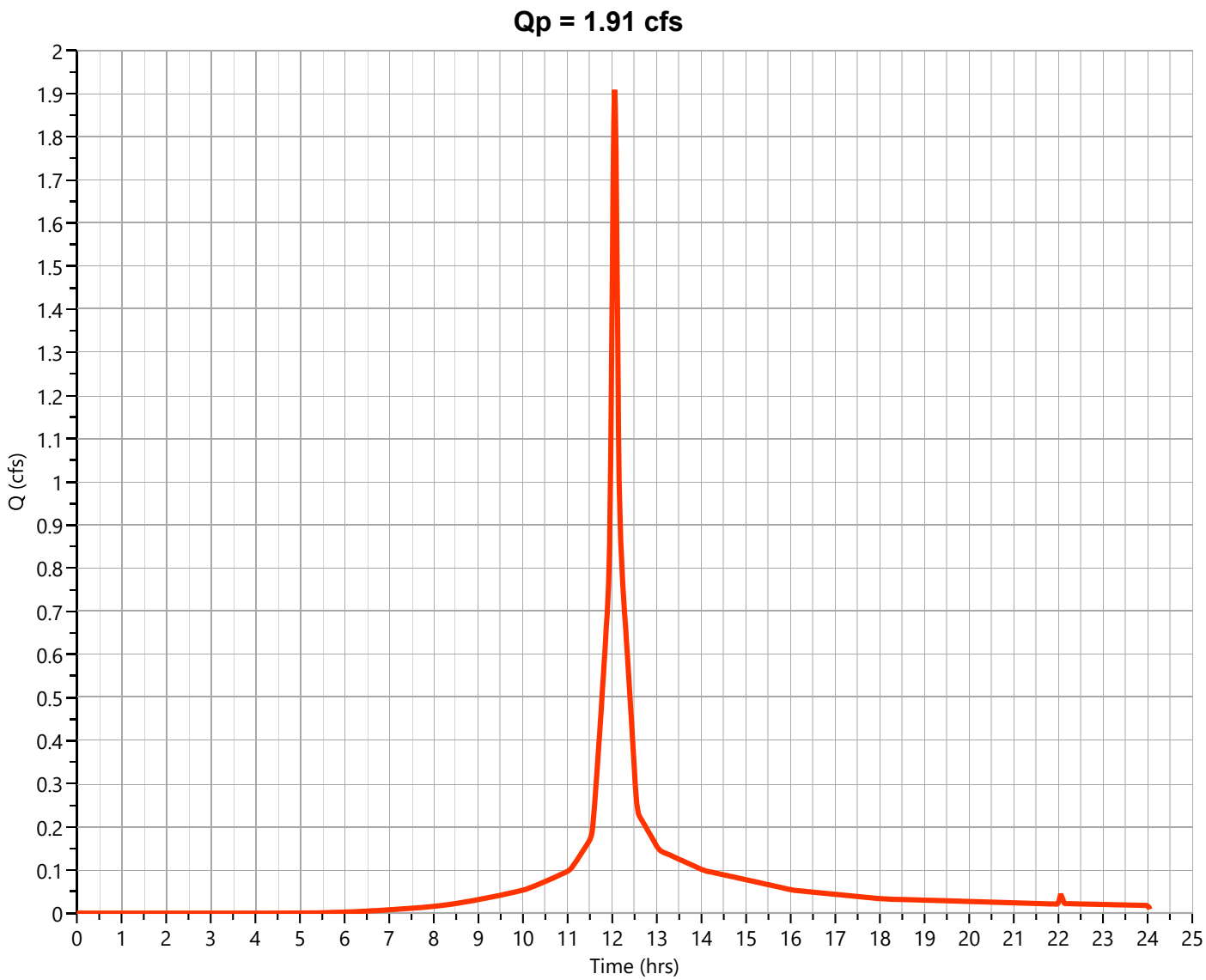
Post SA-24

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.909 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 5,620 cuft
Drainage Area	= 0.3 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.208	74	LAWN
0.3	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

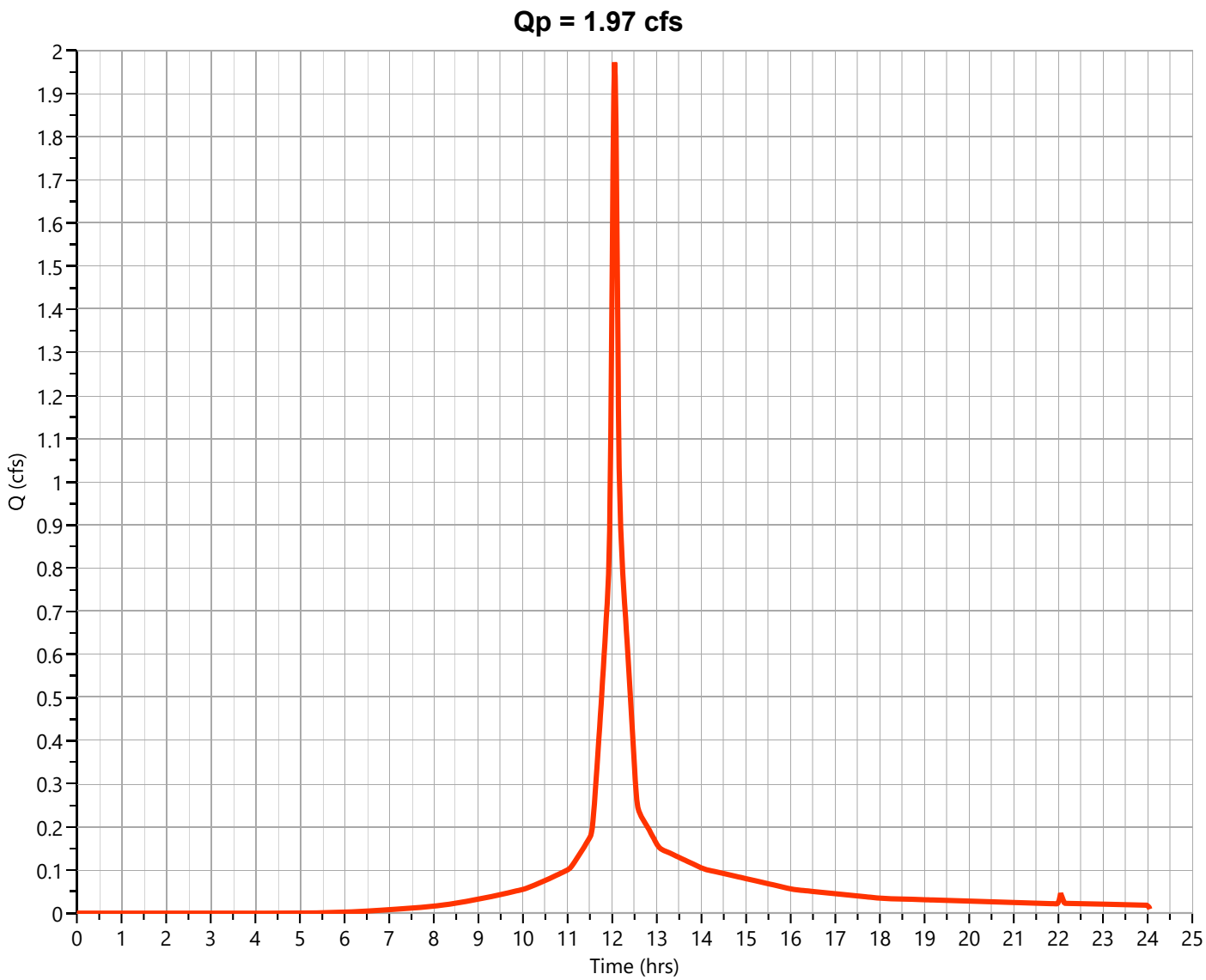
Post SA-22

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.973 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 5,807 cuft
Drainage Area	= 0.31 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.107	98	PAVE
0.201	74	LAWN
0.31	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

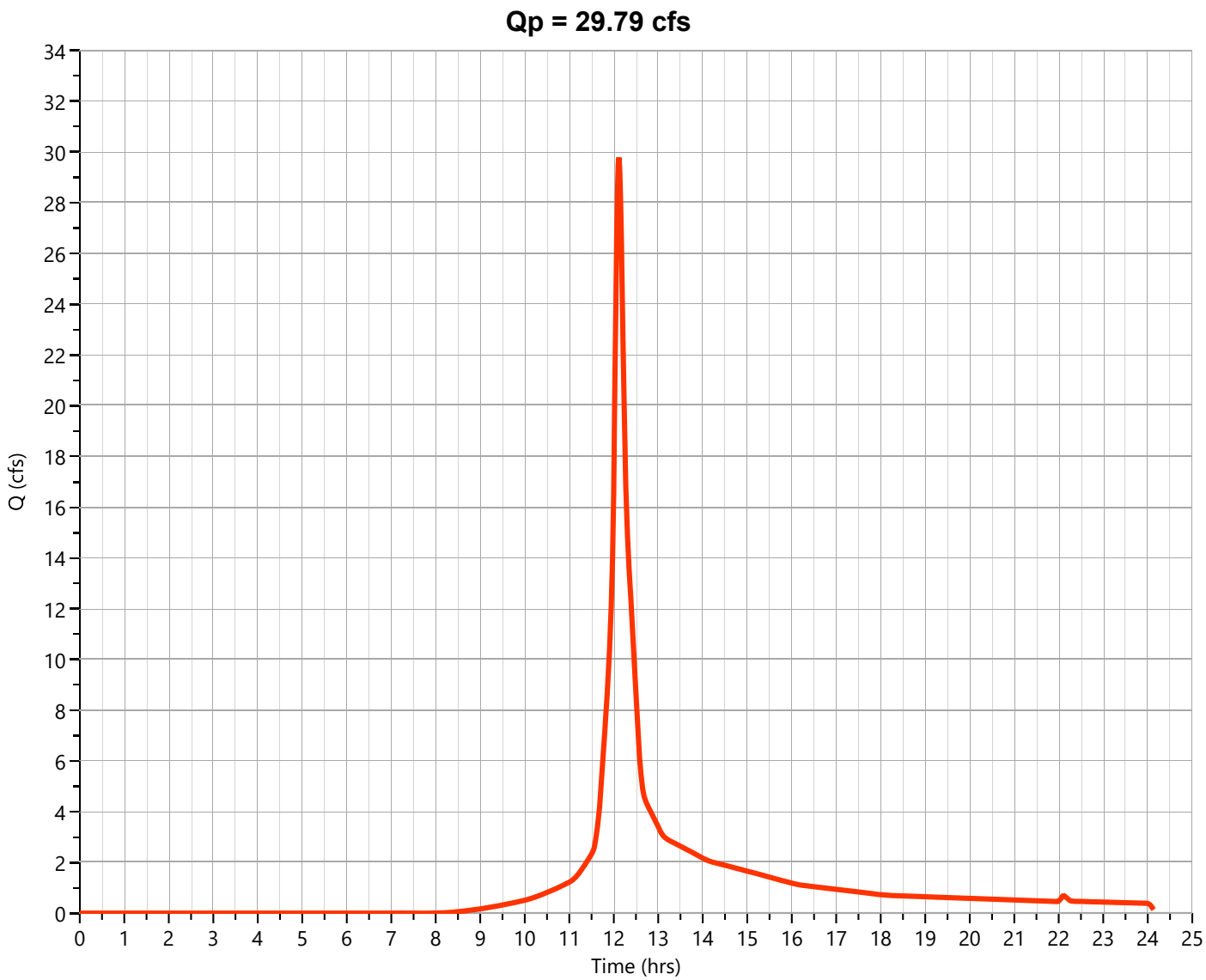
Post SA-25

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 29.79 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 101,963 cuft
Drainage Area	= 7.208 ac	Curve Number	= 70.57*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
1.022	74	LAWN
6.186	70	WOODED
7.208	**71**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

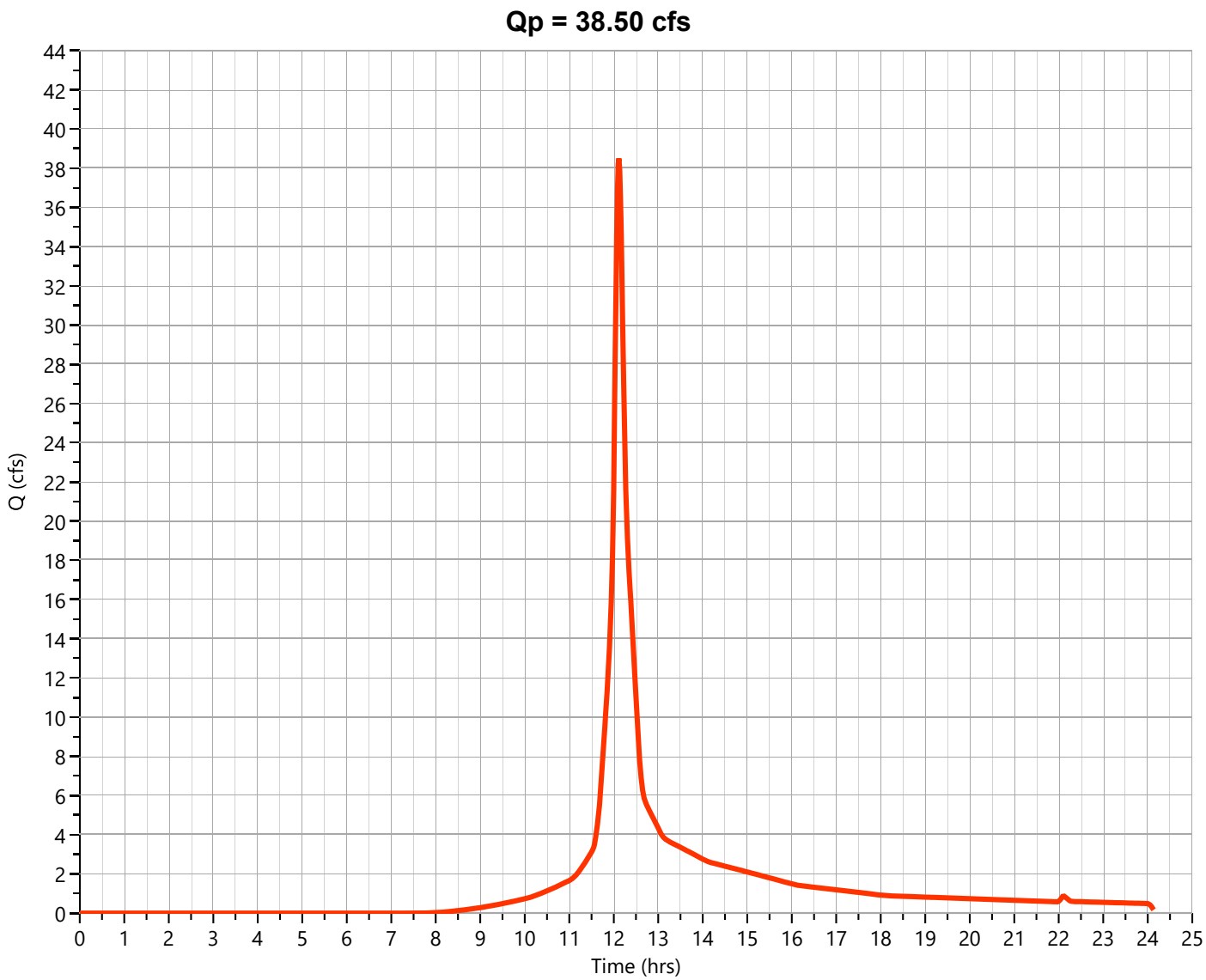
Post SA-26

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 38.50 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 131,776 cuft
Drainage Area	= 8.96 ac	Curve Number	= 72*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.157	98	PAVE
3.887	74	LAWN
4.914	70	WOODED
8.96	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

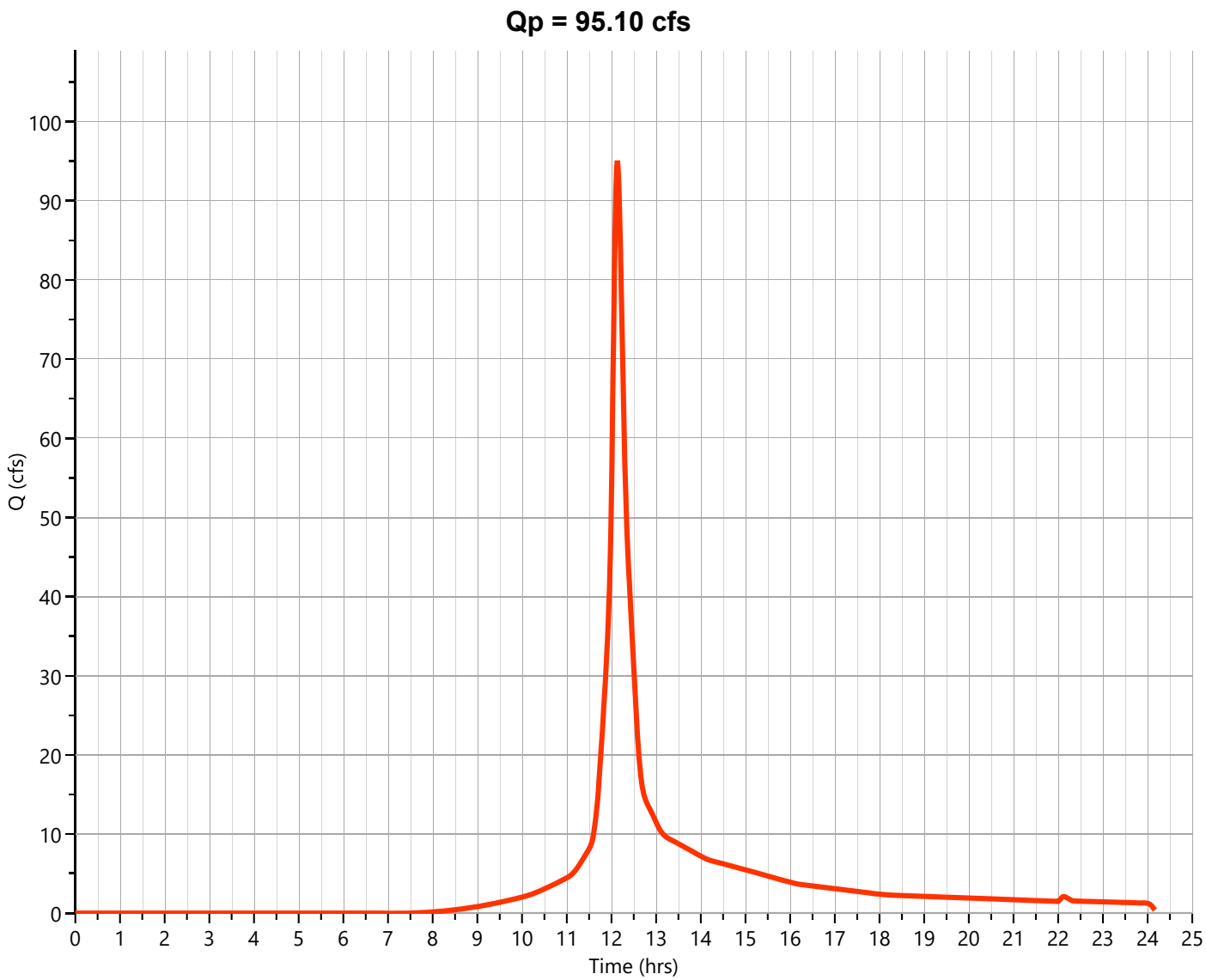
Post SA-40

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 95.10 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 345,247 cuft
Drainage Area	= 22.46 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 7.26 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
16.447	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
22.46	**73**	Weighted CN Method Employed



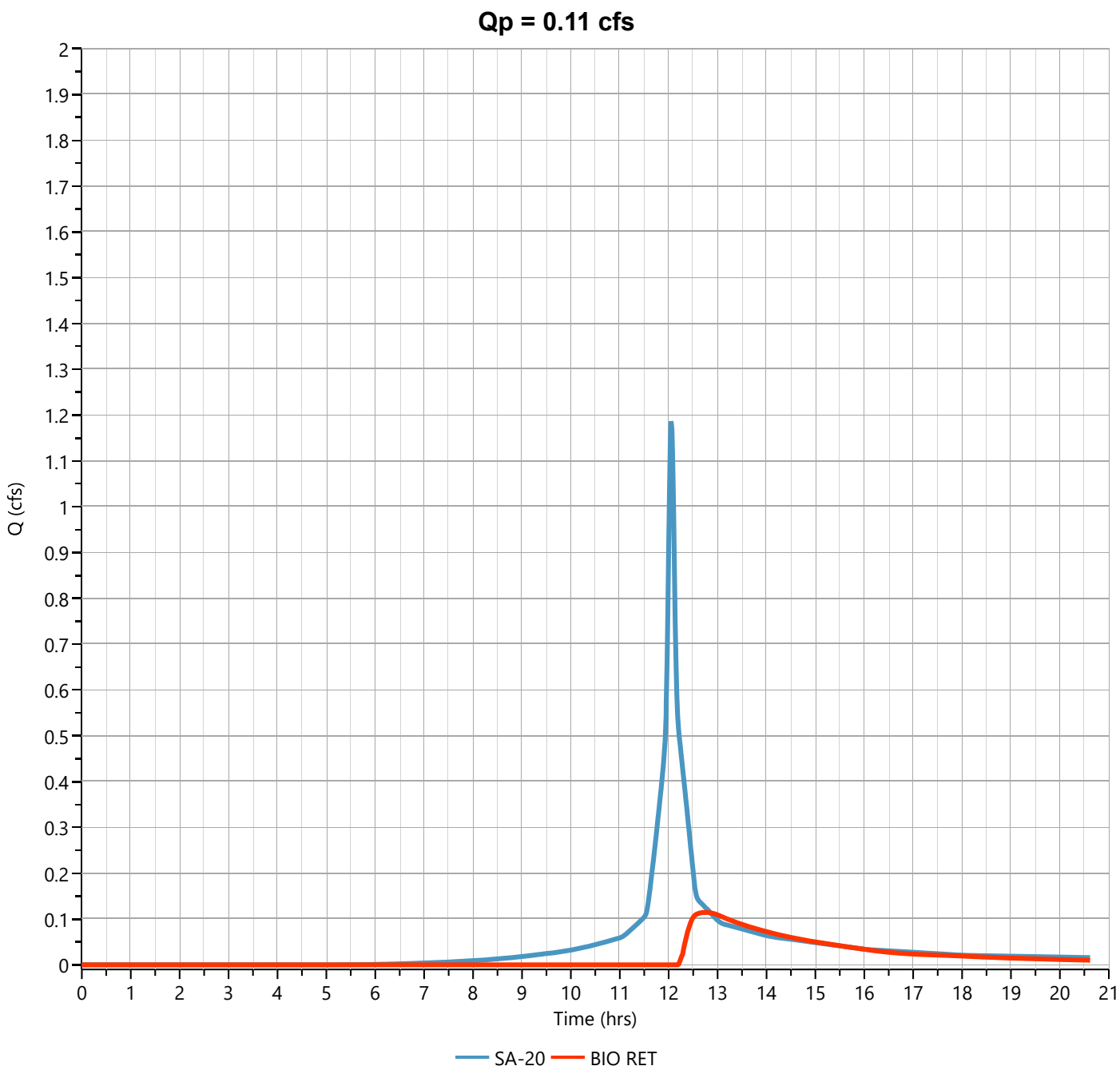
Post BIO RET

Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.114 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.75 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,341 cuft
Inflow Hydrograph	= 5 - SA-20	Max. Elevation	= 313.74 ft
Pond Name	= SA-20	Max. Storage	= 1,958 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.97 hrs



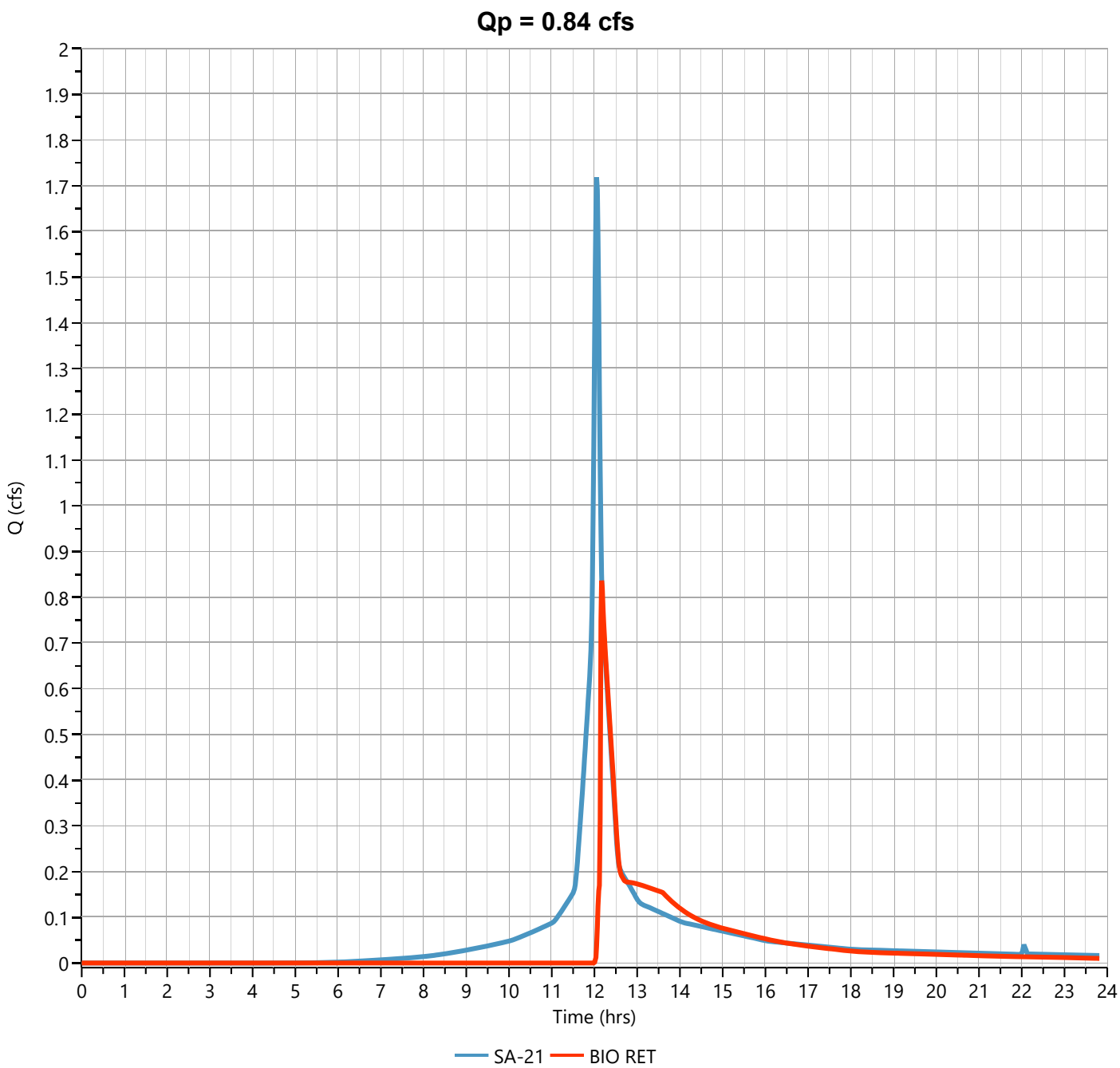
Post BIO RET

Hyd. No. 13

Hydrograph Type	= Pond Route	Peak Flow	= 0.837 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 2,915 cuft
Inflow Hydrograph	= 4 - SA-21	Max. Elevation	= 303.93 ft
Pond Name	= SA-21	Max. Storage	= 2,181 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.30 hrs



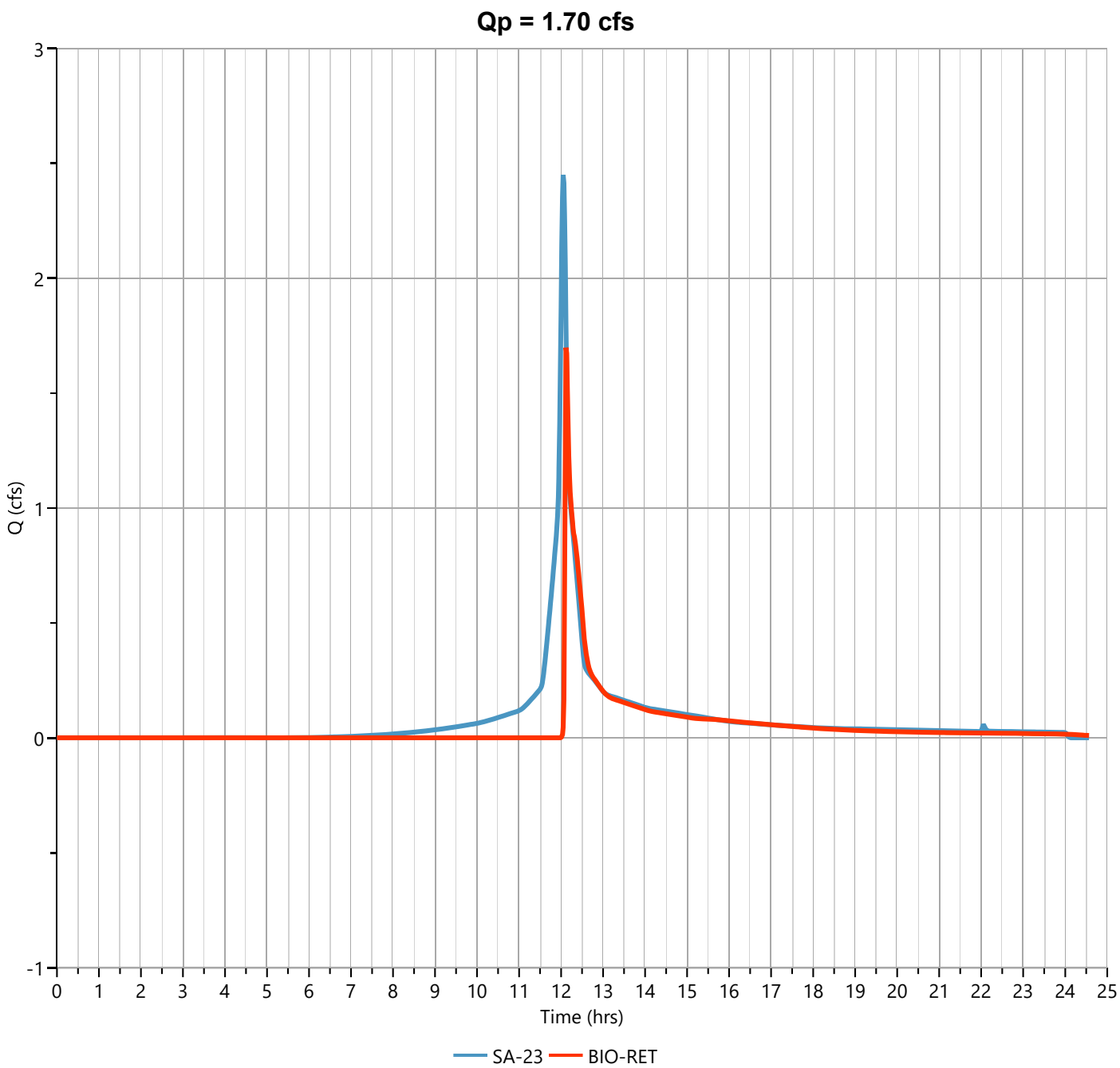
Post BIO-RET

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 1.698 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 4,262 cuft
Inflow Hydrograph	= 6 - SA-23	Max. Elevation	= 301.83 ft
Pond Name	= SA-23	Max. Storage	= 2,747 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.03 hrs



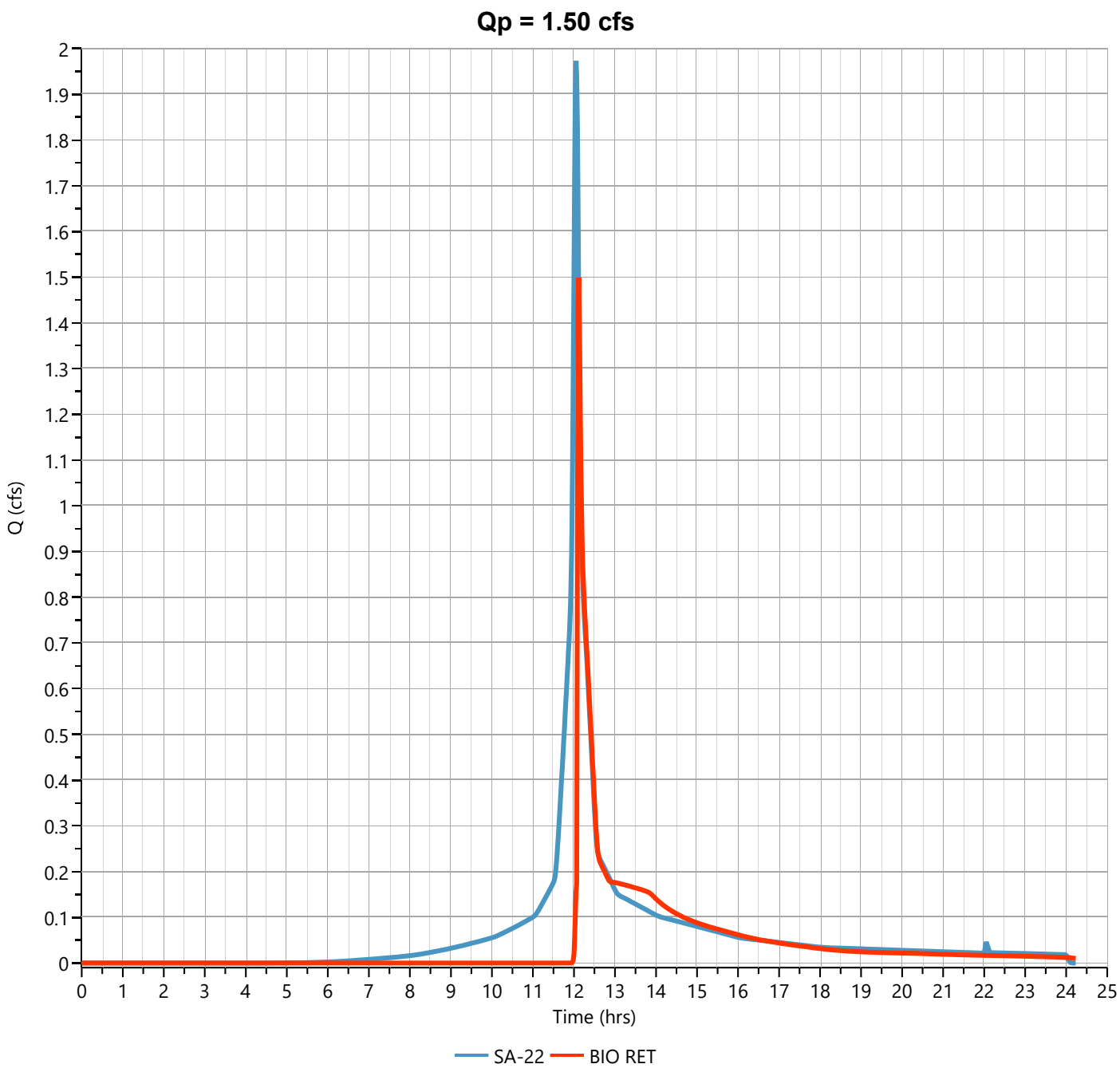
Post BIO RET

Hyd. No. 15

Hydrograph Type	= Pond Route	Peak Flow	= 1.499 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 3,649 cuft
Inflow Hydrograph	= 8 - SA-22	Max. Elevation	= 301.96 ft
Pond Name	= SA-22	Max. Storage	= 2,225 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 59 min



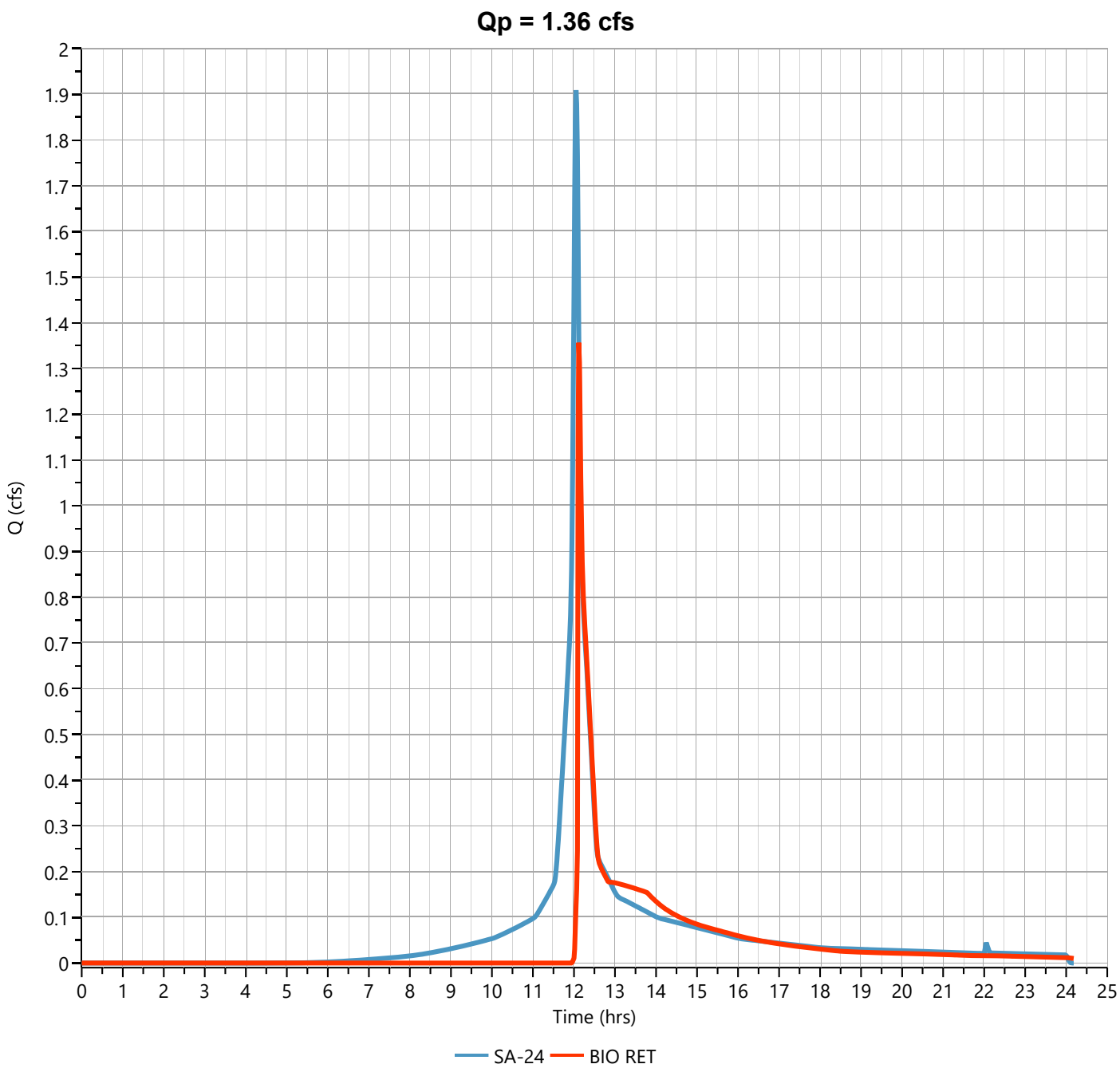
Post BIO RET

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 1.357 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 3,465 cuft
Inflow Hydrograph	= 7 - SA-24	Max. Elevation	= 308.96 ft
Pond Name	= SA-24	Max. Storage	= 2,215 cuft

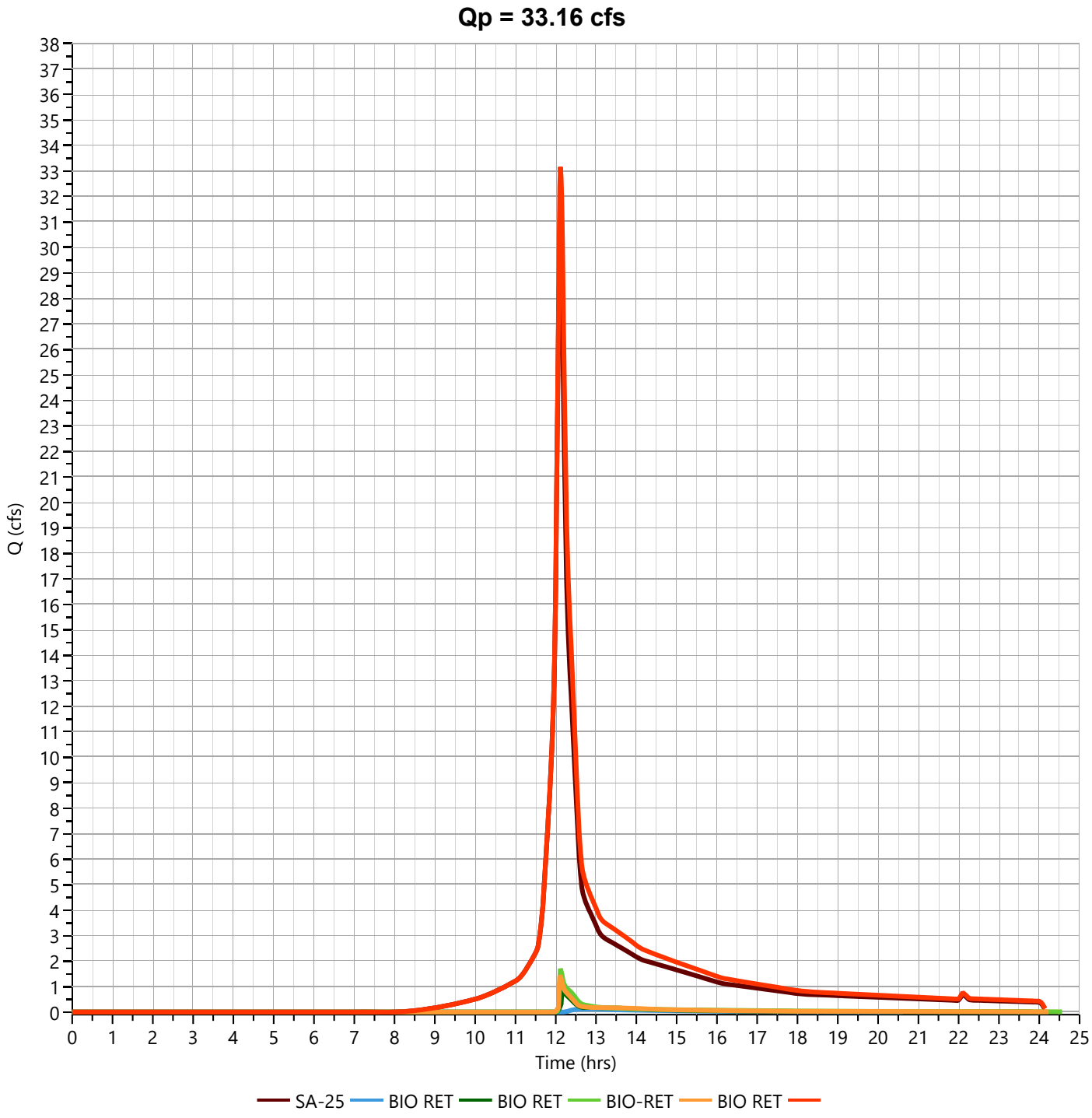
Pond Routing by Storage Indication Method

Center of mass detention time = 1.06 hrs



Hyd. No. 17

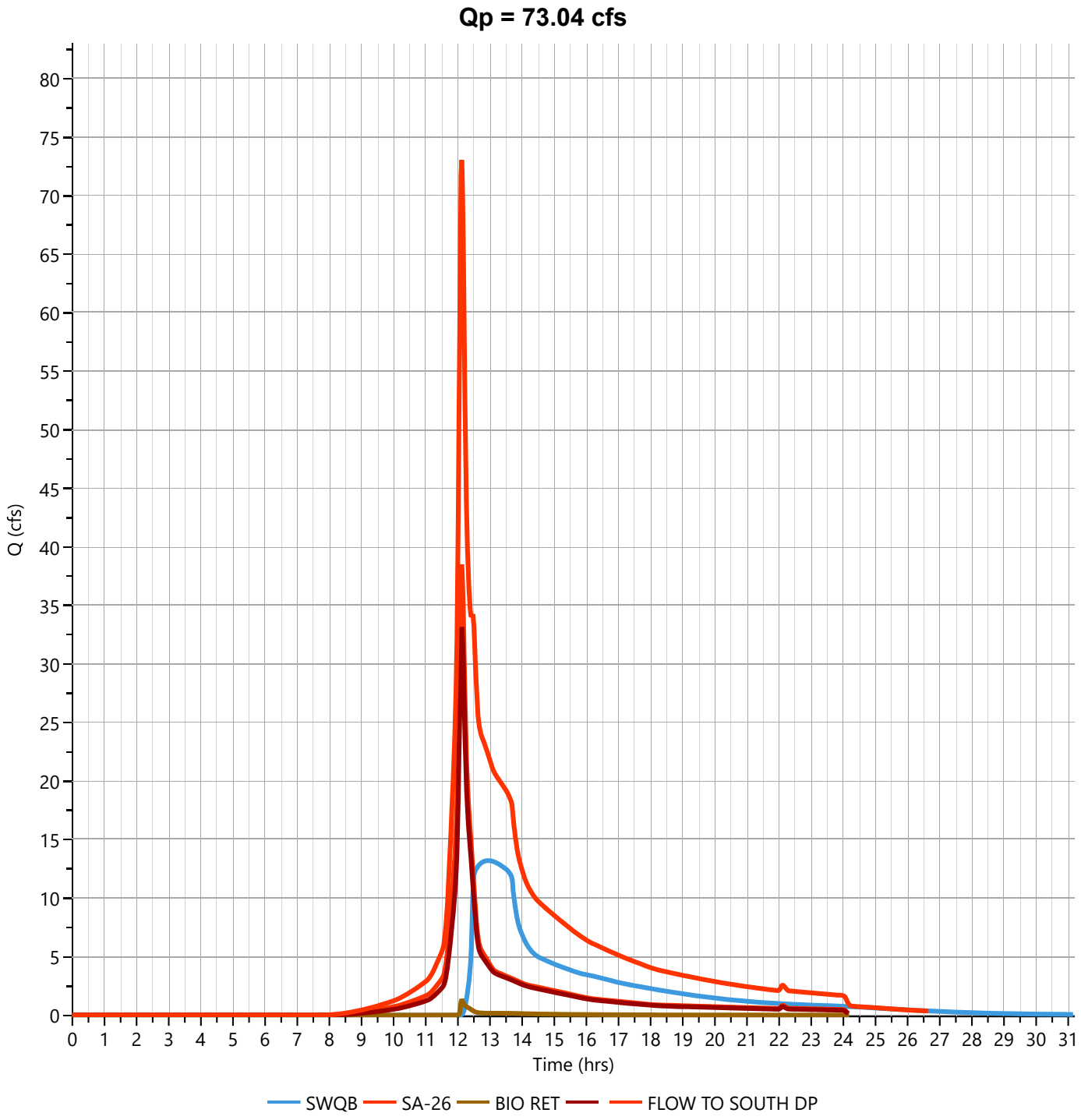
Hydrograph Type	= Junction	Peak Flow	= 33.16 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 114,129 cuft
Inflow Hydrographs	= 9, 12, 13, 14, 15	Total Contrib. Area	= 7.208 ac



Post FLOW TO SOUTH DP

Hyd. No. 18

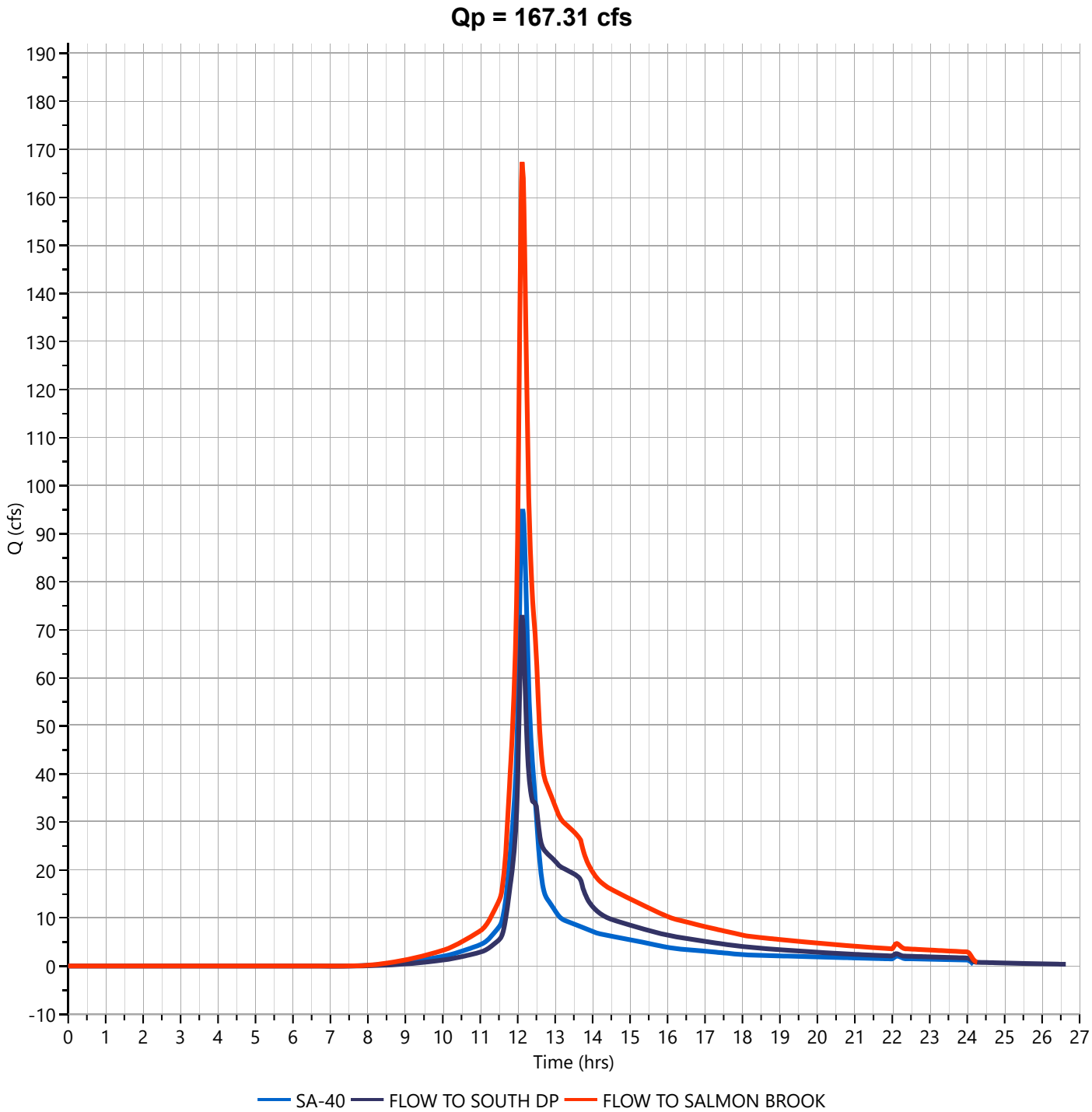
Hydrograph Type	= Junction	Peak Flow	= 73.04 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 408,281 cuft
Inflow Hydrographs	= 2, 10, 16, 17	Total Contrib. Area	= 16.168 ac



Post FLOW TO SALMON BROOK

Hyd. No. 19

Hydrograph Type	= Junction	Peak Flow	= 167.3 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 753,529 cuft
Inflow Hydrographs	= 11, 18	Total Contrib. Area	= 38.628 ac



Design Storm Report

Custom Storm filename:

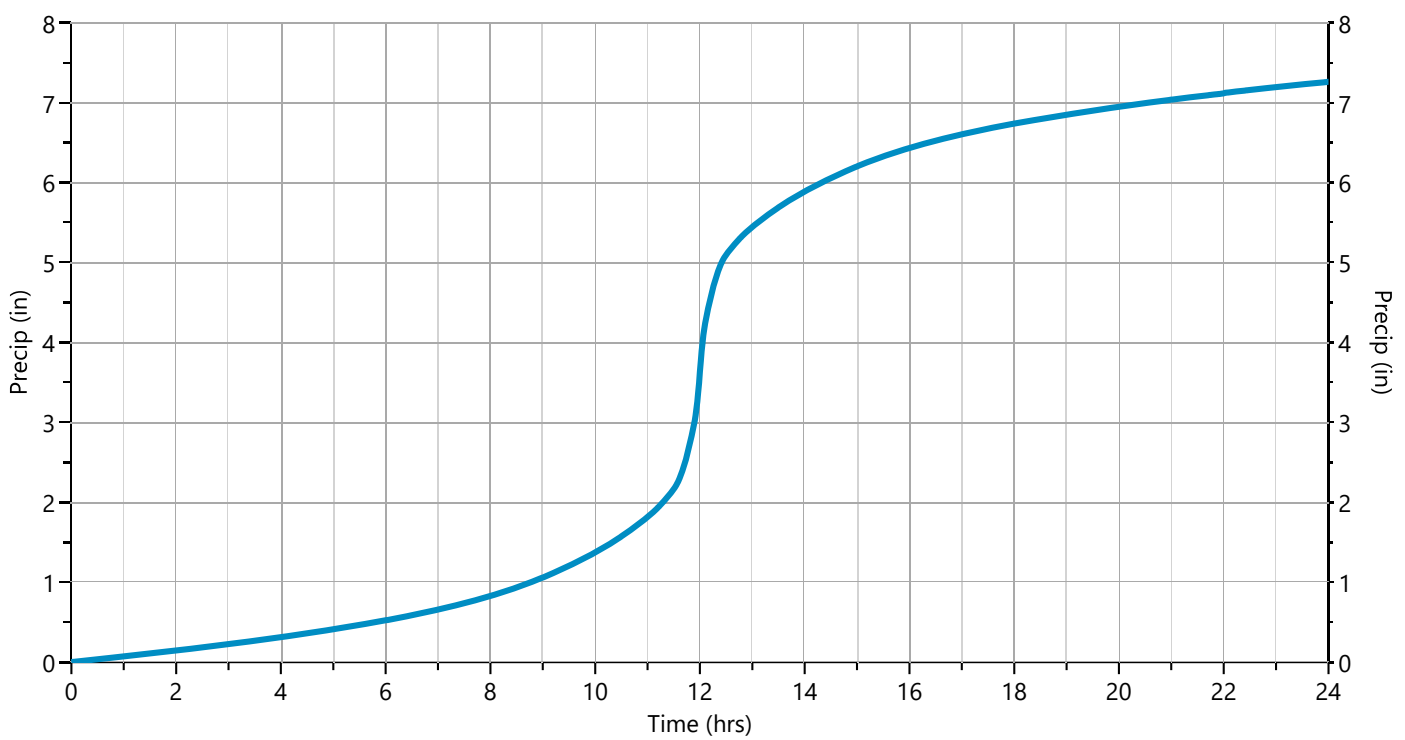
Hydrology Studio v 3.0.0.16

10-07-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	✔ 50-yr	100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 50-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.014306	11.68	0.033033	11.87	0.052554	12.05	0.109081	12.23	0.043681
11.52	0.015245	11.70	0.034808	11.88	0.054329	12.07	0.094198	12.25	0.041906
11.53	0.017061	11.72	0.036582	11.90	0.056104	12.08	0.079315	12.27	0.040132
11.55	0.018836	11.73	0.038357	11.92	0.064640	12.10	0.064432	12.28	0.038357
11.57	0.020610	11.75	0.040132	11.93	0.079316	12.12	0.056317	12.30	0.036582
11.58	0.022385	11.77	0.041906	11.95	0.094199	12.13	0.054329	12.32	0.034808
11.60	0.024160	11.78	0.043681	11.97	0.109082	12.15	0.052555	12.33	0.033033
11.62	0.025934	11.80	0.045455	11.98	0.123965	12.17	0.050780	12.35	0.031259
11.63	0.027709	11.82	0.047230	**12.00**	**0.138848**	12.18	0.049005	12.37	0.029483
11.65	0.029484	11.83	0.049005	12.02	0.138515	12.20	0.047230	12.38	0.027709
11.67	0.031258	11.85	0.050780	12.03	0.123964	12.22	0.045456	12.40	0.025935



Hydrograph 100-yr Summary

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Post FLOW TO SWQB	52.81	12.18	221,732	----		
2	Pond Route(i)	Post SWQB	14.26	12.98	190,655	1	276.61 U 264.85 L	68,840 U 59,705 L
3	NRCS Runoff	Post FLOW TO N DP	58.96	12.15	221,766	----		
4	NRCS Runoff	Post SA-21	1.992	12.05	5,901	----		
5	NRCS Runoff	Post SA-20	1.379	12.05	4,071	----		
6	NRCS Runoff	Post SA-23	2.855	12.05	8,399	----		
7	NRCS Runoff	Post SA-24	2.213	12.05	6,557	----		
8	NRCS Runoff	Post SA-22	2.287	12.05	6,776	----		
9	NRCS Runoff	Post SA-25	35.74	12.12	122,377	----		
10	NRCS Runoff	Post SA-26	45.96	12.12	157,548	----		
11	NRCS Runoff	Post SA-40	113.2	12.13	411,681	----		
12	Pond Route	Post BIO RET	0.229	12.50	1,908	5	313.90	2,179
13	Pond Route	Post BIO RET	1.642	12.10	3,736	4	303.97	2,234
14	Pond Route	Post BIO-RET	2.677	12.08	5,465	6	301.86	2,804
15	Pond Route	Post BIO RET	2.155	12.08	4,595	8	301.99	2,268
16	Pond Route	Post BIO RET	2.052	12.08	4,380	7	308.99	2,261
17	Junction		41.75	12.10	138,081	9, 12, 13, 14, 15		
18	Junction	Post FLOW TO SOUTH DP	90.06	12.12	490,663	2, 10, 16, 17		
19	Junction	Post FLOW TO SALMON BROOK	202.4	12.12	902,345	11, 18		

(i) = Interconnected ponds, U = Upper pond, L = Lower pond

Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

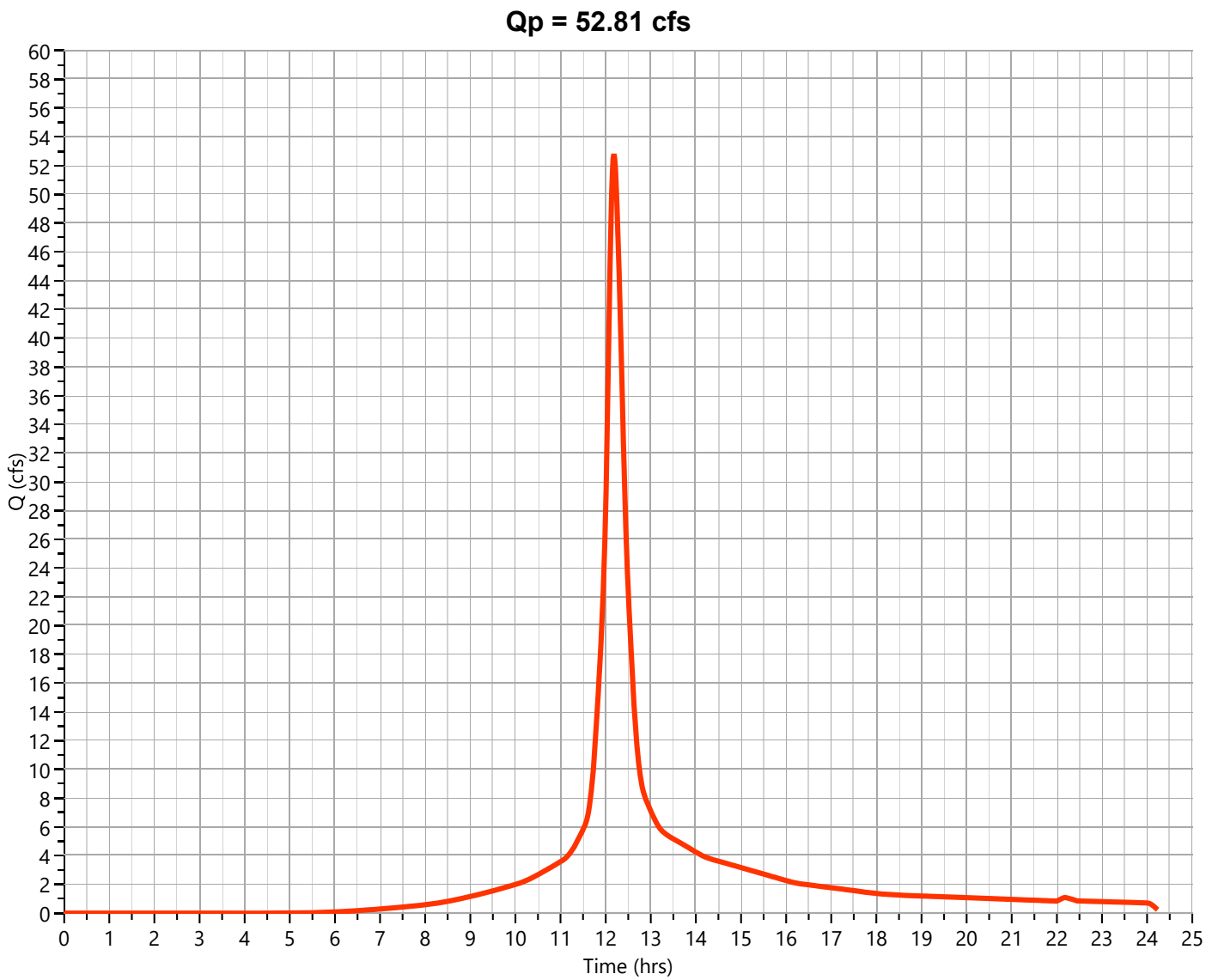
Post FLOW TO SWQB

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 52.81 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 221,732 cuft
Drainage Area	= 10.305 ac	Curve Number	= 80.59*
Tc Method	= User	Time of Conc. (Tc)	= 15.9 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.83	98	PAVE
7.475	74	LAWN
10.305	**81**	Weighted CN Method Employed

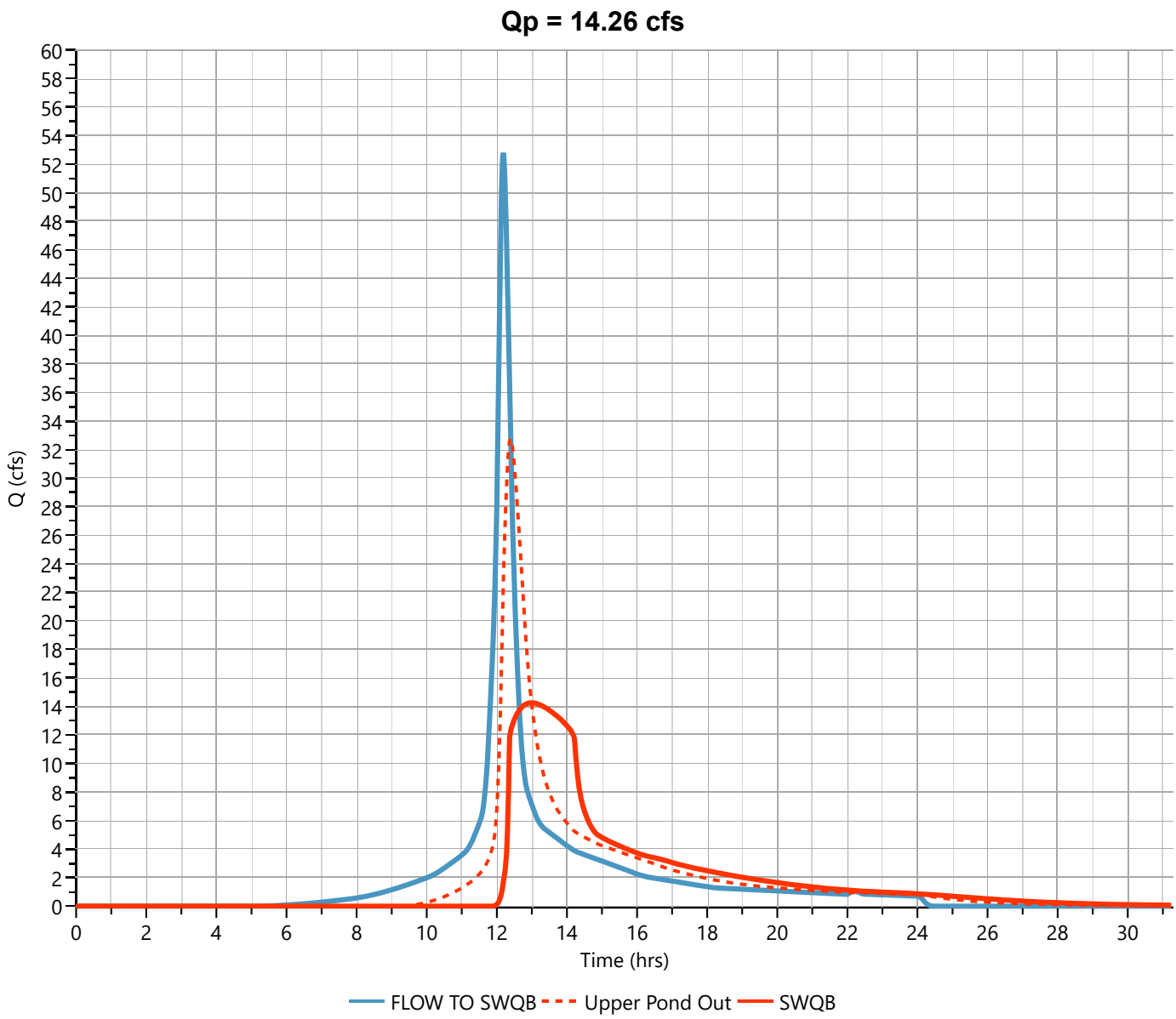


Post SWQB

Hyd. No. 2

Hydrograph Type	= Pond Route(i)*	Peak Flow	= 14.26 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.98 hrs
Time Interval	= 1 min	Hydrograph Volume	= 190,655 cuft
Upper Pond		**Lower Pond**	
Pond Name	= SWQB TOP	Pond Name	= SWQB BOT
Inflow Hyd	= 1 - FLOW TO SWQB	Addnl Inflow Hyd	= None
Max. Elevation	= 276.61 ft	Max. Elevation	= 264.85 ft
Max. Storage	= 68,840 cuft	Max. Storage	= 59,705 cuft

**Interconnected Pond Routing by Storage Indication Method.*



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

Post FLOW TO N DP

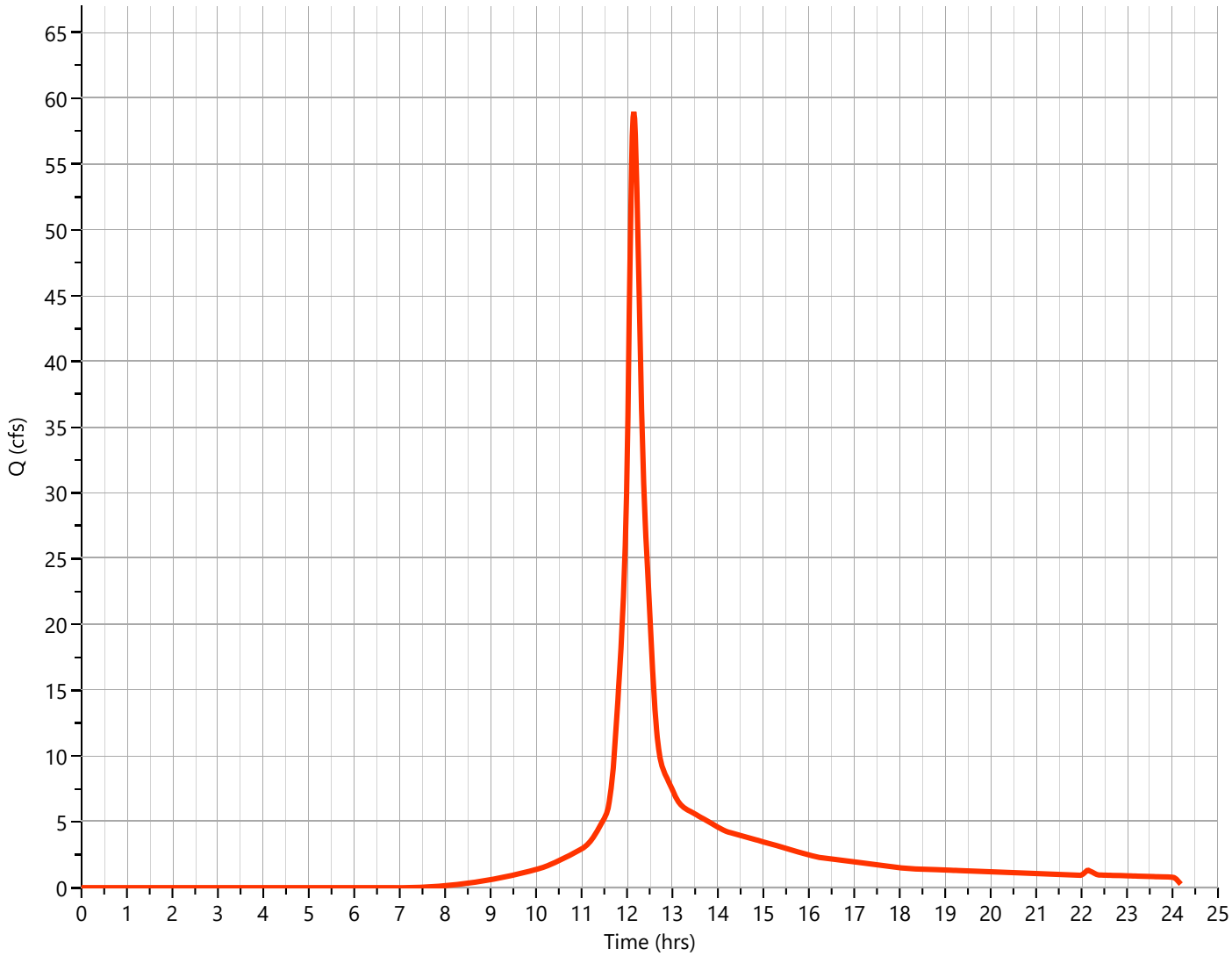
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 58.96 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Runoff Volume	= 221,766 cuft
Drainage Area	= 12.862 ac	Curve Number	= 71.84*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.08 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
9.177	70	WOODED
3.311	74	LAWN
0.374	98	PAVE
12.862	**72**	Weighted CN Method Employed

Qp = 58.96 cfs



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

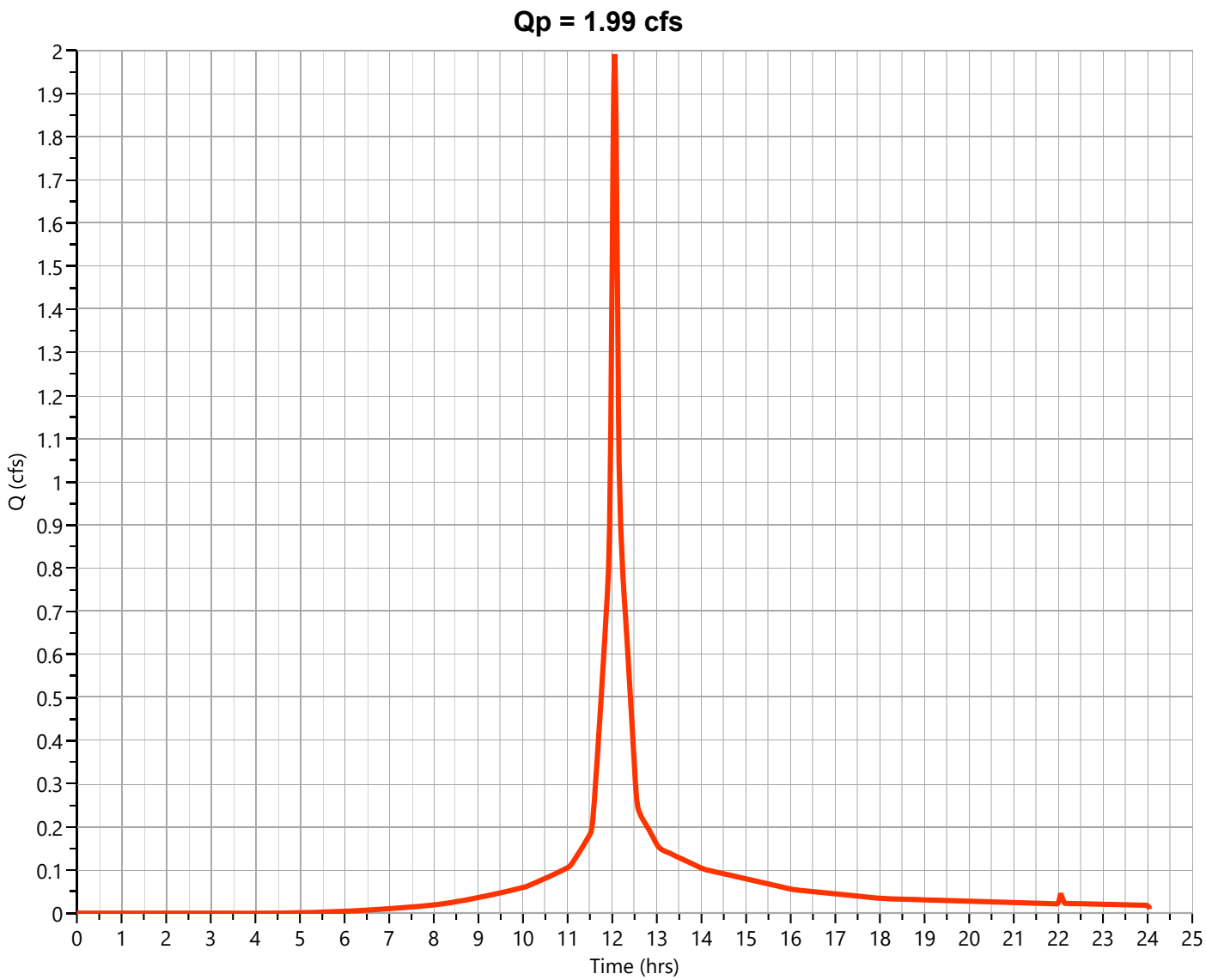
Post SA-21

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.992 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 5,901 cuft
Drainage Area	= 0.27 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.088	98	PAVE
0.183	74	LAWN
0.27	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

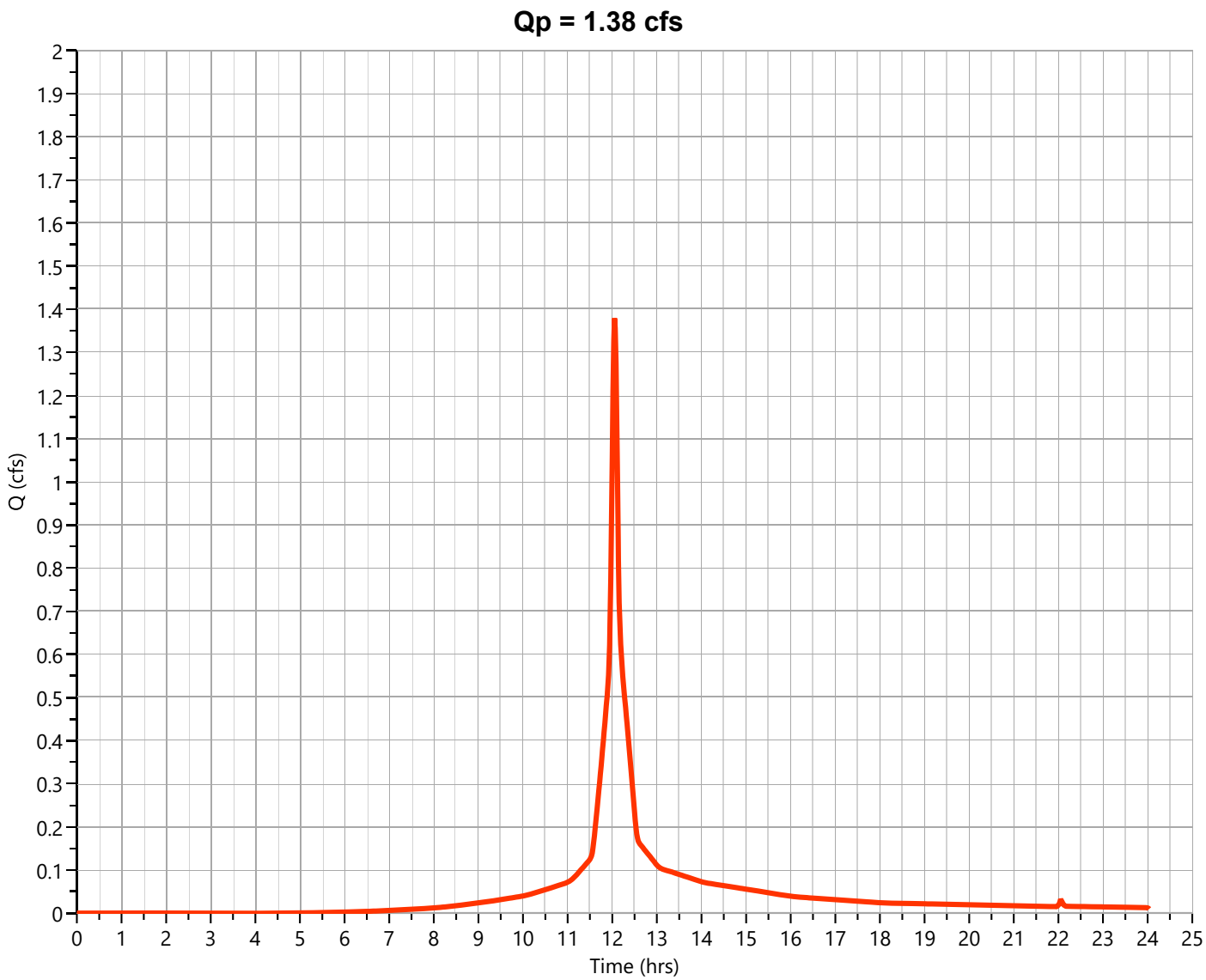
Post SA-20

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.379 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 4,071 cuft
Drainage Area	= 0.19 ac	Curve Number	= 81*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.051	98	PAVE
0.135	74	LAWN
0.19	**81**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

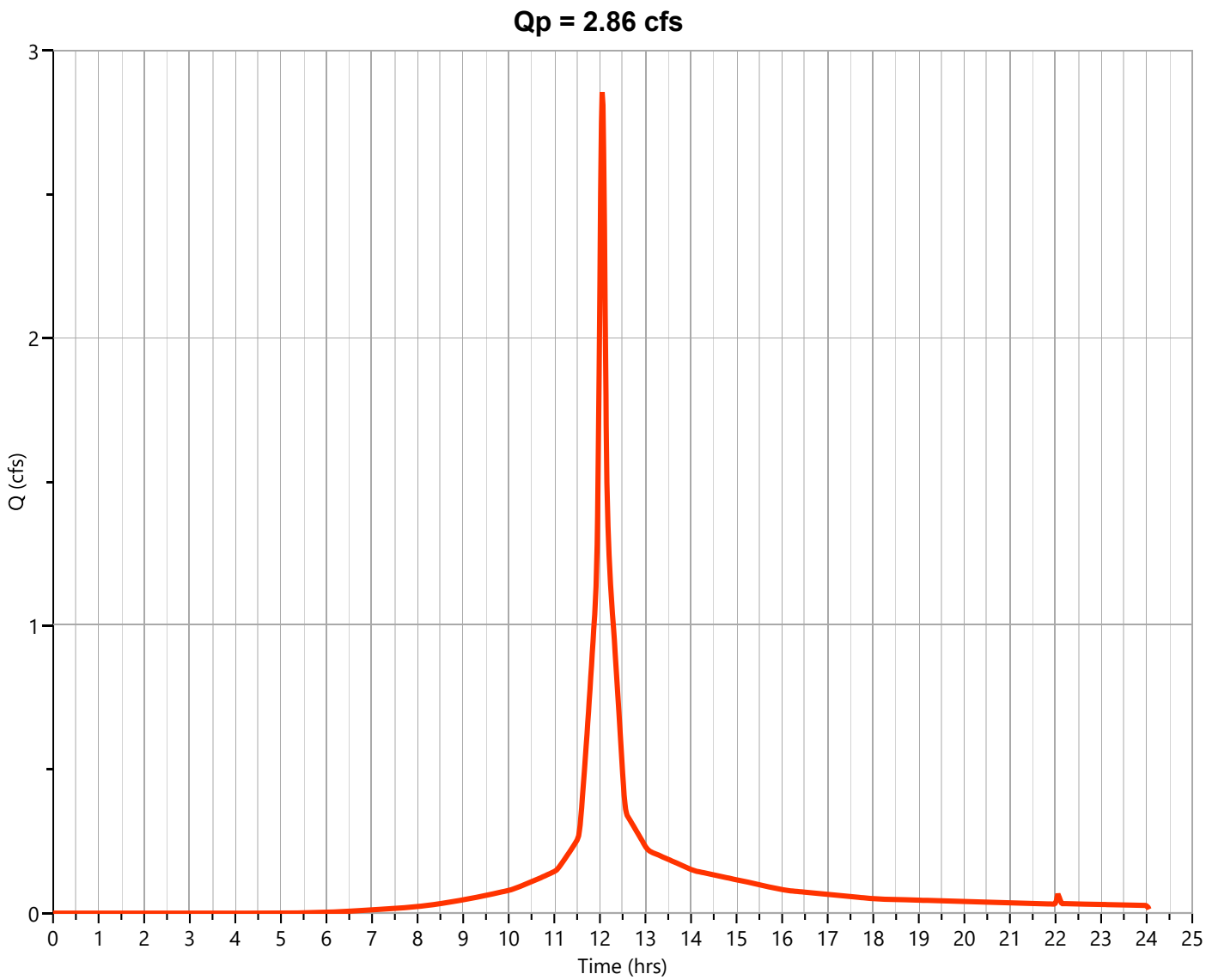
Post SA-23

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.855 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 8,399 cuft
Drainage Area	= 0.4 ac	Curve Number	= 80*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.306	74	LAWN
0.4	**80**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

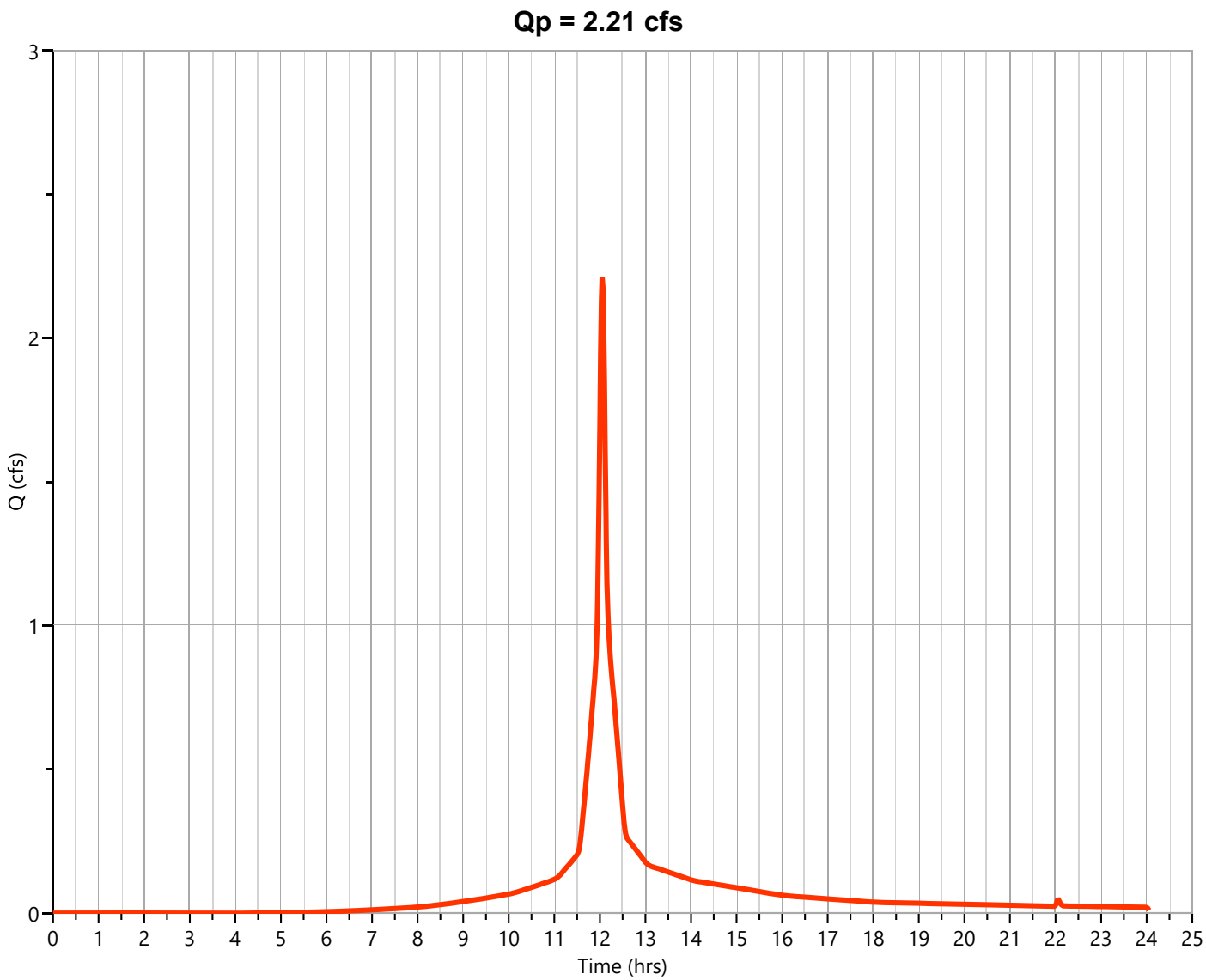
Post SA-24

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.213 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 6,557 cuft
Drainage Area	= 0.3 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.096	98	PAVE
0.208	74	LAWN
0.3	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

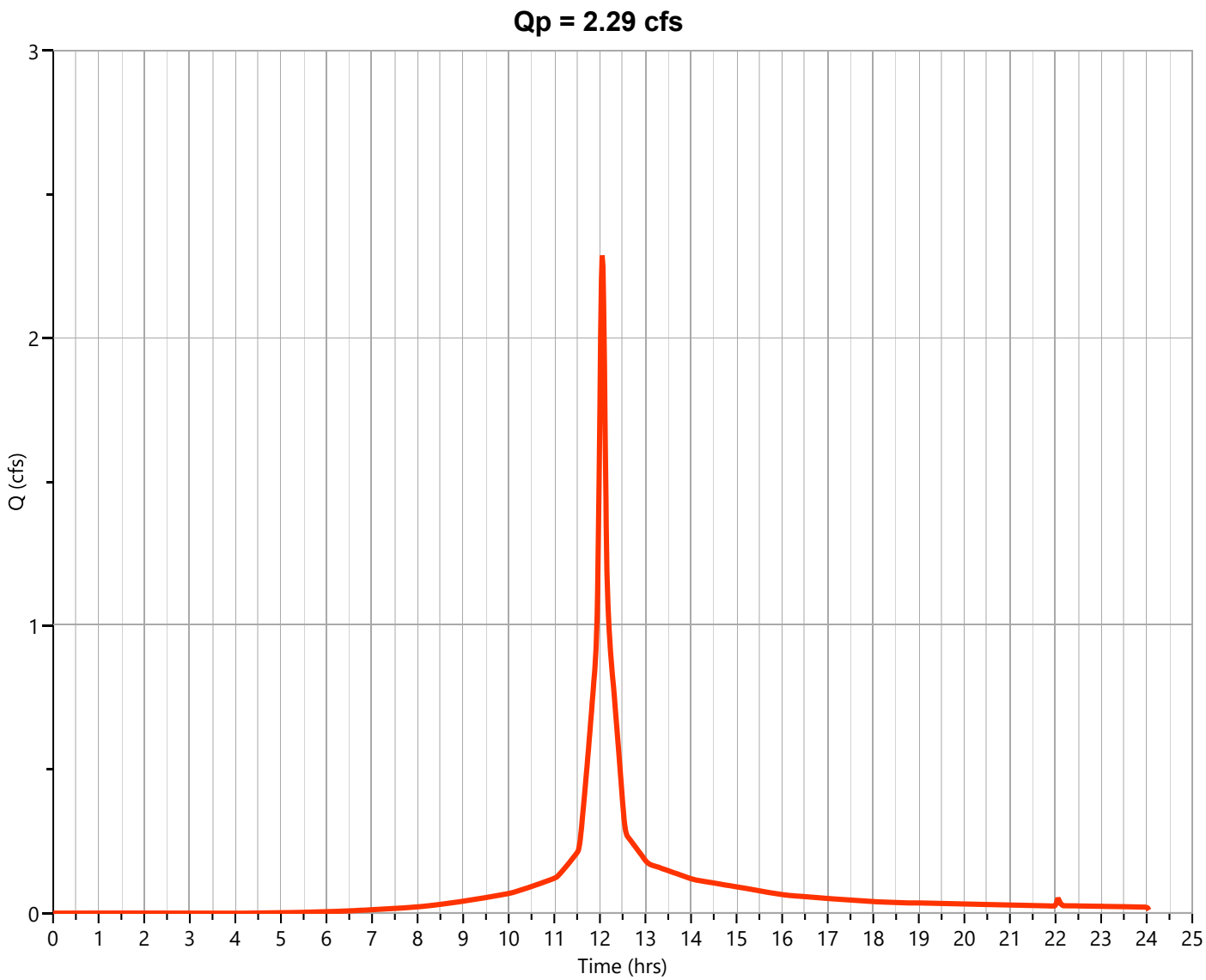
Post SA-22

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.287 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.05 hrs
Time Interval	= 1 min	Runoff Volume	= 6,776 cuft
Drainage Area	= 0.31 ac	Curve Number	= 82*
Tc Method	= User	Time of Conc. (Tc)	= 4.0 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.107	98	PAVE
0.201	74	LAWN
0.31	**82**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

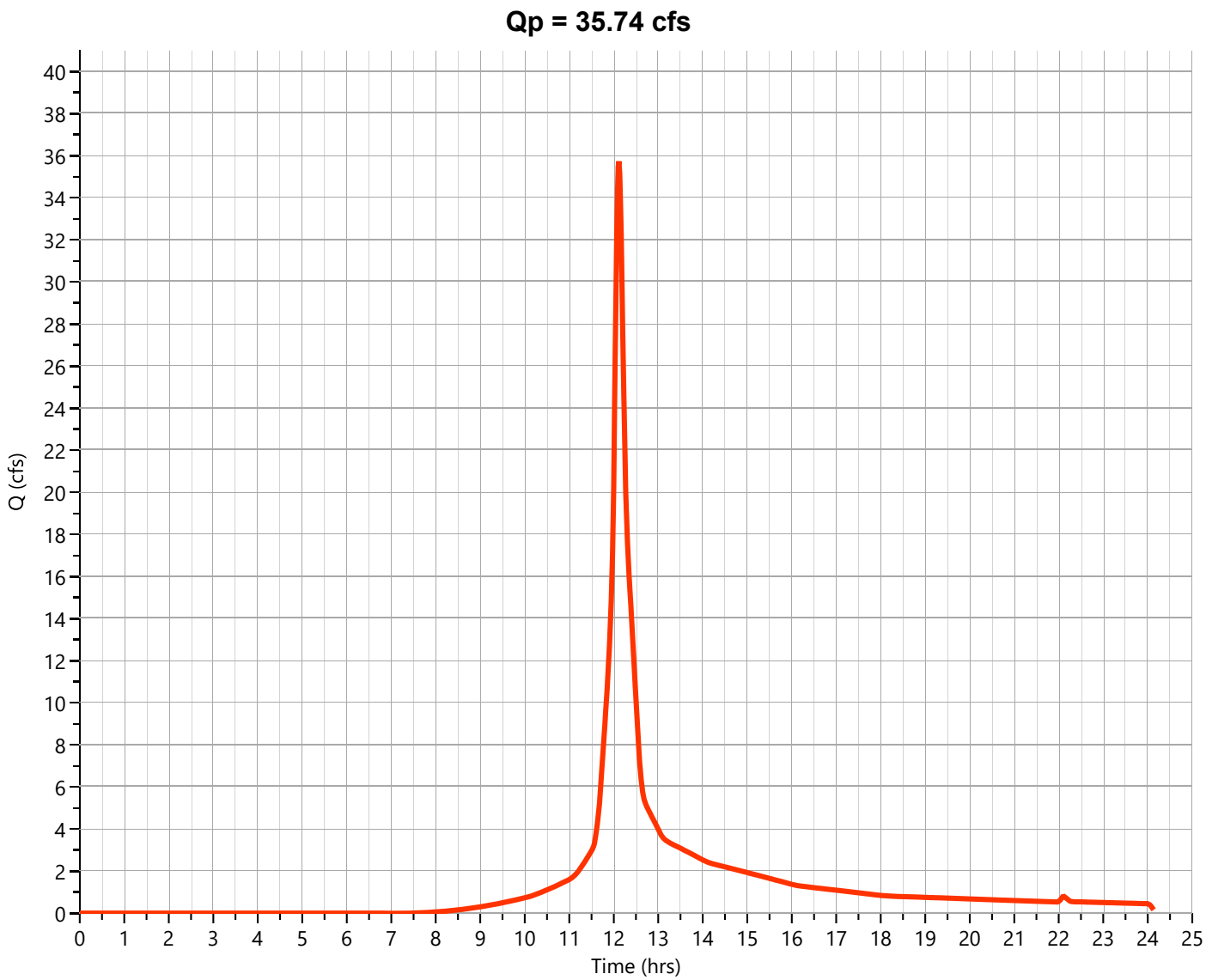
Post SA-25

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 35.74 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 122,377 cuft
Drainage Area	= 7.208 ac	Curve Number	= 70.57*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
1.022	74	LAWN
6.186	70	WOODED
7.208	**71**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

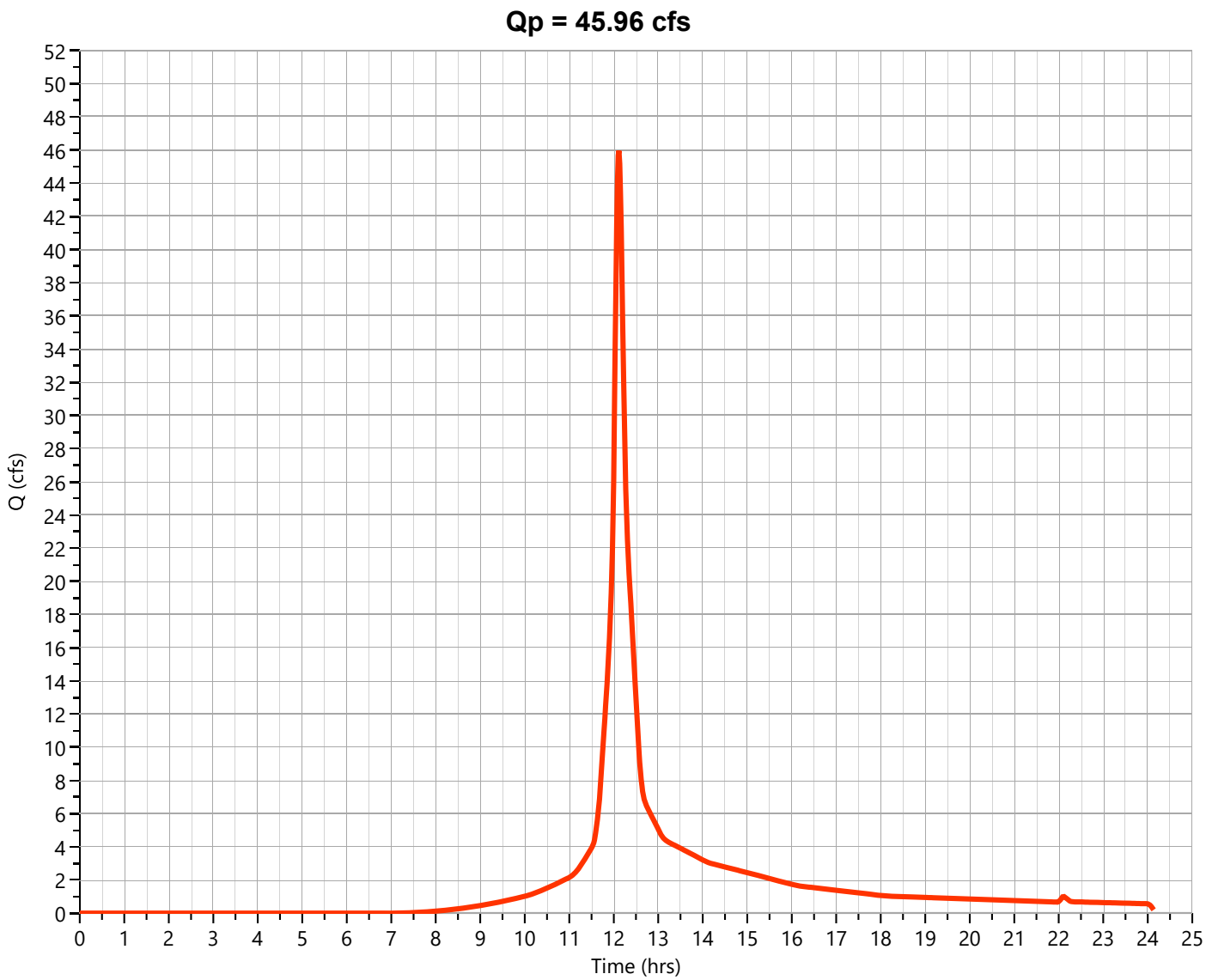
Post SA-26

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 45.96 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 157,548 cuft
Drainage Area	= 8.96 ac	Curve Number	= 72*
Tc Method	= User	Time of Conc. (Tc)	= 10.0 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.157	98	PAVE
3.887	74	LAWN
4.914	70	WOODED
8.96	**72**	Weighted CN Method Employed



Hydrograph Report

Project Name: BELL STREET POST DEVELOPMENT

Hydrology Studio v 3.0.0.16

10-07-2020

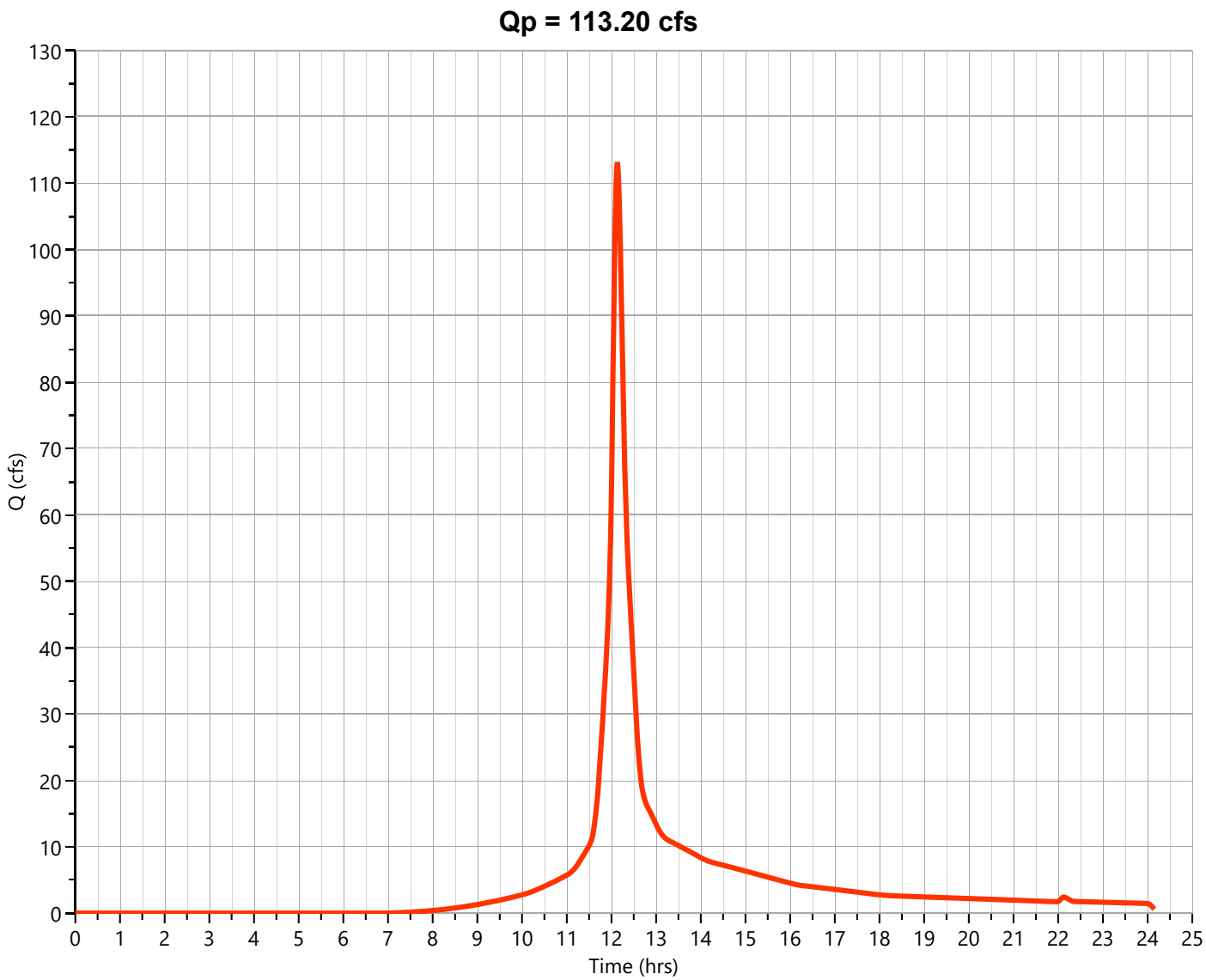
Post SA-40

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 113.2 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 411,681 cuft
Drainage Area	= 22.46 ac	Curve Number	= 73*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 11.08 min
Total Rainfall	= 8.17 in	Design Storm	= Type III
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
16.447	70	WOODED
6.014	80	1/2 ACRE RESIDENTIAL
22.46	**73**	Weighted CN Method Employed



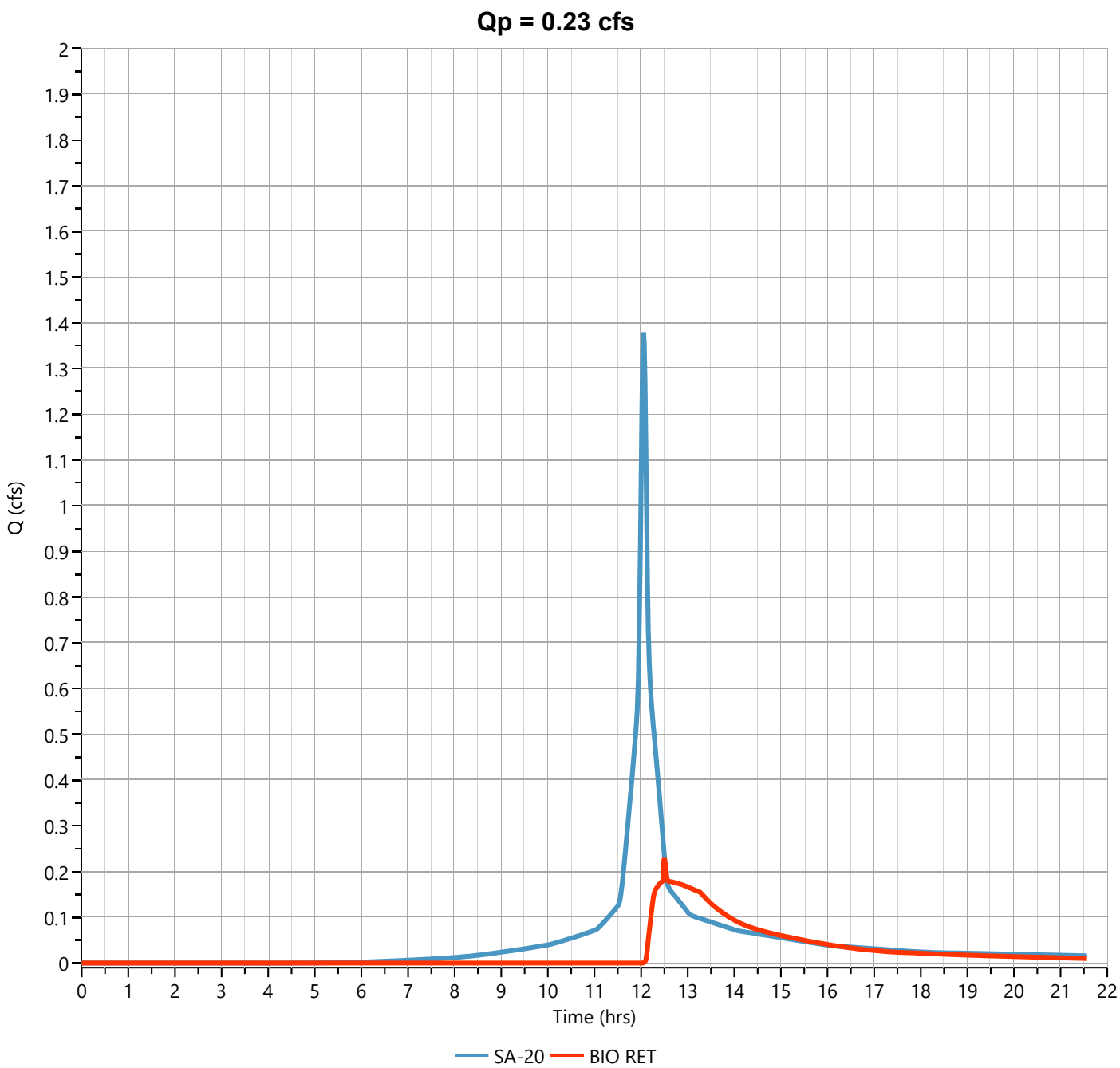
Post BIO RET

Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.229 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.50 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,908 cuft
Inflow Hydrograph	= 5 - SA-20	Max. Elevation	= 313.90 ft
Pond Name	= SA-20	Max. Storage	= 2,179 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 1.72 hrs



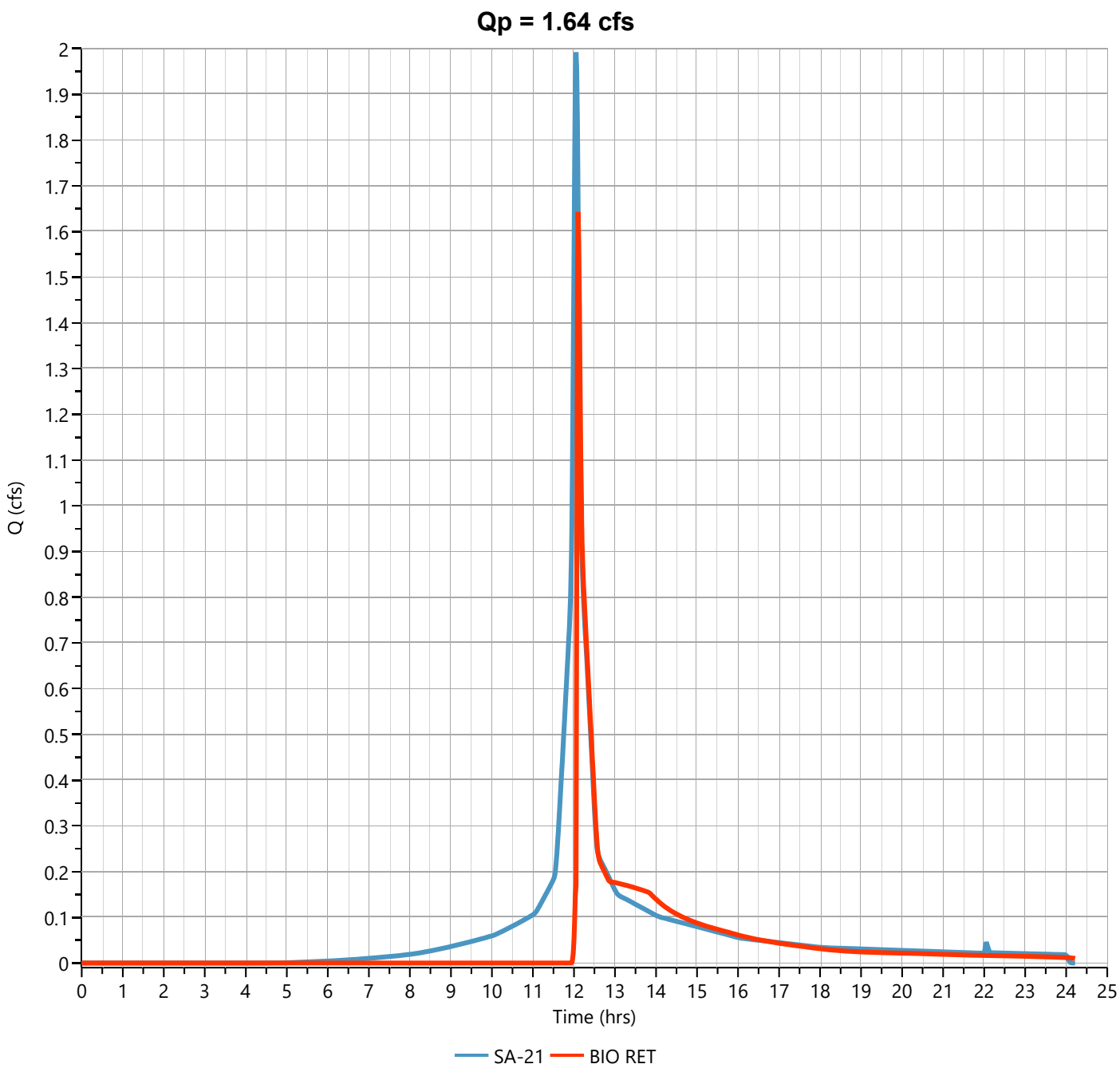
Post BIO RET

Hyd. No. 13

Hydrograph Type	= Pond Route	Peak Flow	= 1.642 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.10 hrs
Time Interval	= 1 min	Hydrograph Volume	= 3,736 cuft
Inflow Hydrograph	= 4 - SA-21	Max. Elevation	= 303.97 ft
Pond Name	= SA-21	Max. Storage	= 2,234 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 53 min



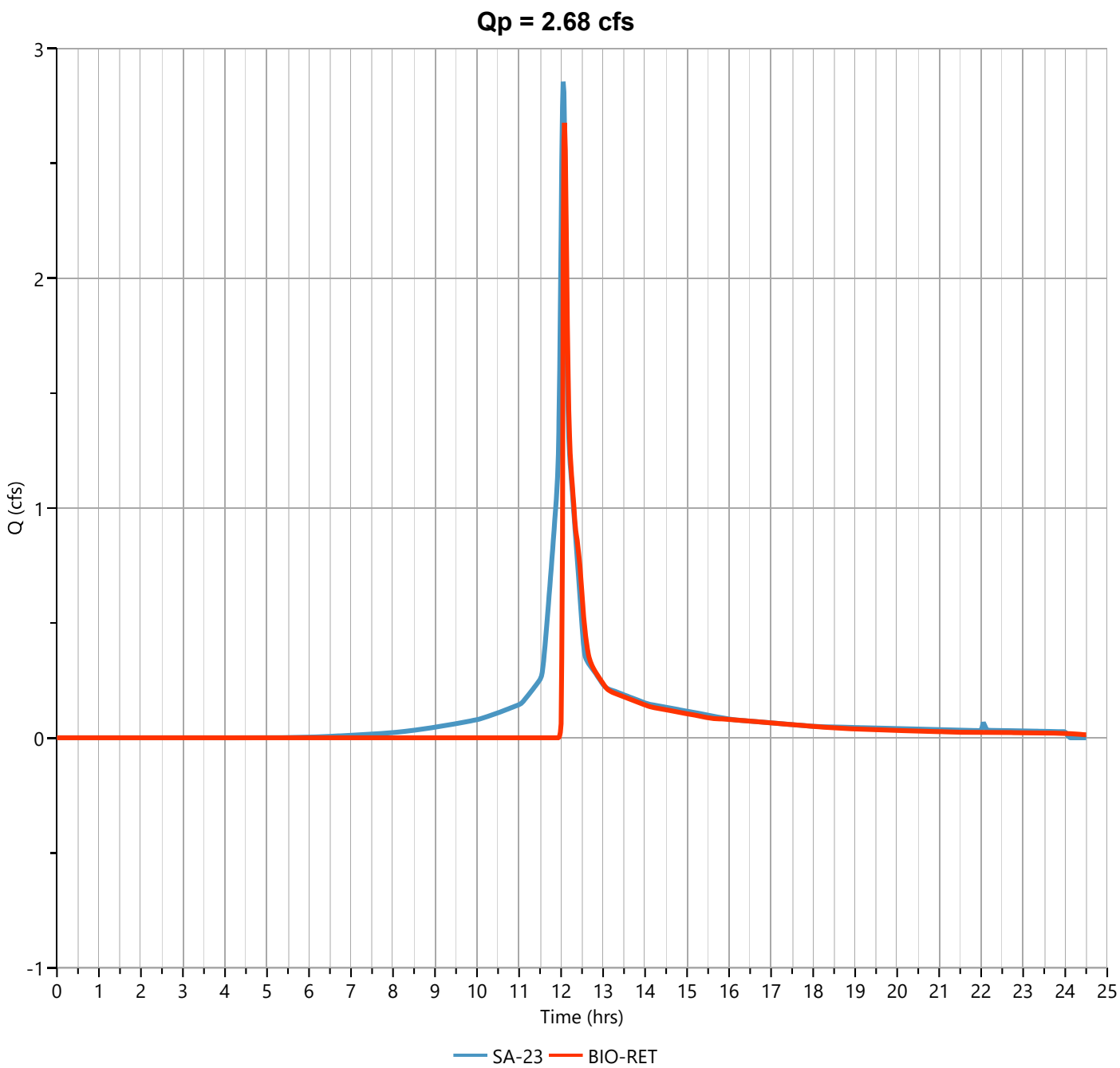
Post BIO-RET

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 2.677 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.08 hrs
Time Interval	= 1 min	Hydrograph Volume	= 5,465 cuft
Inflow Hydrograph	= 6 - SA-23	Max. Elevation	= 301.86 ft
Pond Name	= SA-23	Max. Storage	= 2,804 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 33 min



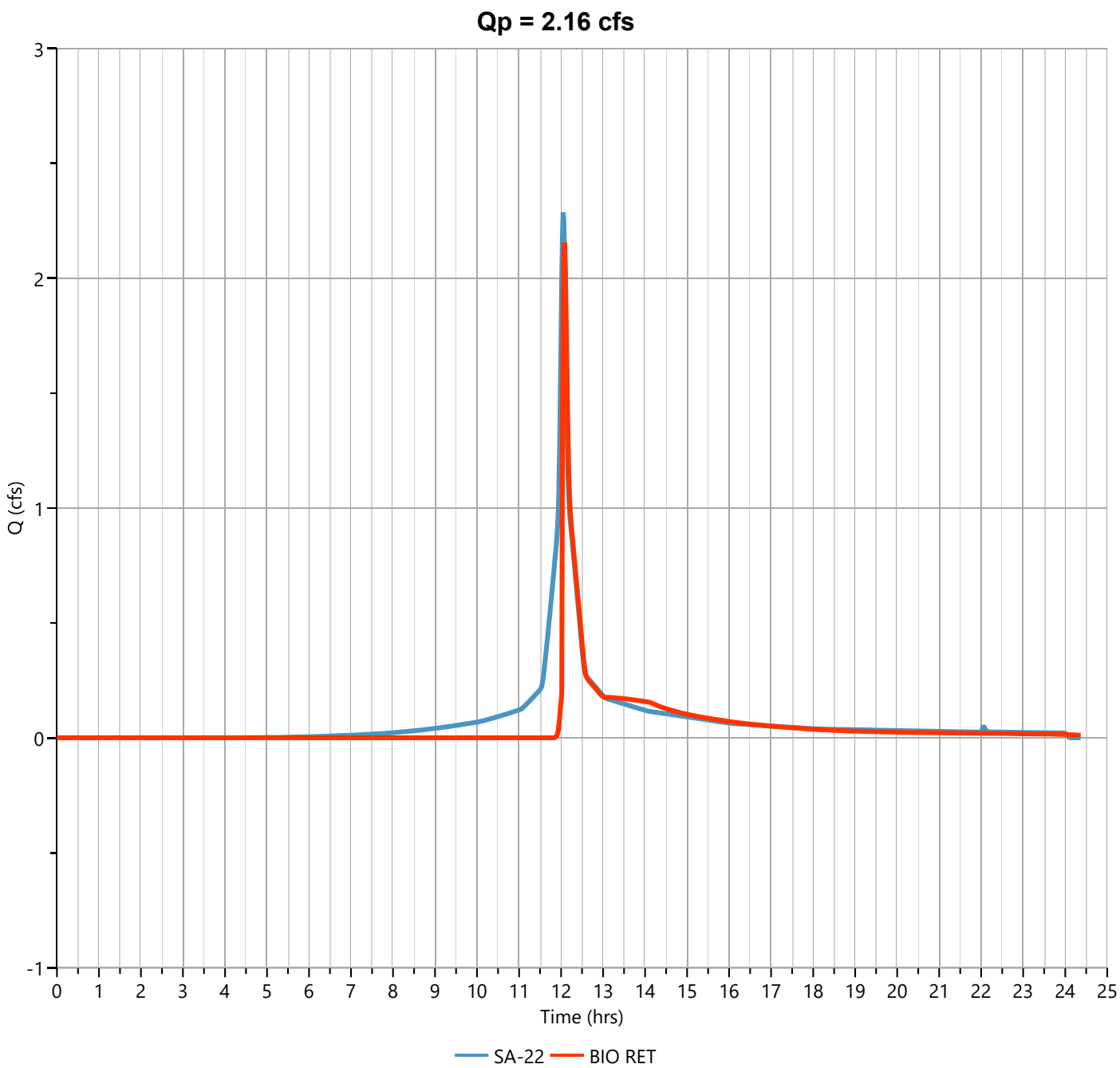
Post BIO RET

Hyd. No. 15

Hydrograph Type	= Pond Route	Peak Flow	= 2.155 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.08 hrs
Time Interval	= 1 min	Hydrograph Volume	= 4,595 cuft
Inflow Hydrograph	= 8 - SA-22	Max. Elevation	= 301.99 ft
Pond Name	= SA-22	Max. Storage	= 2,268 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 40 min



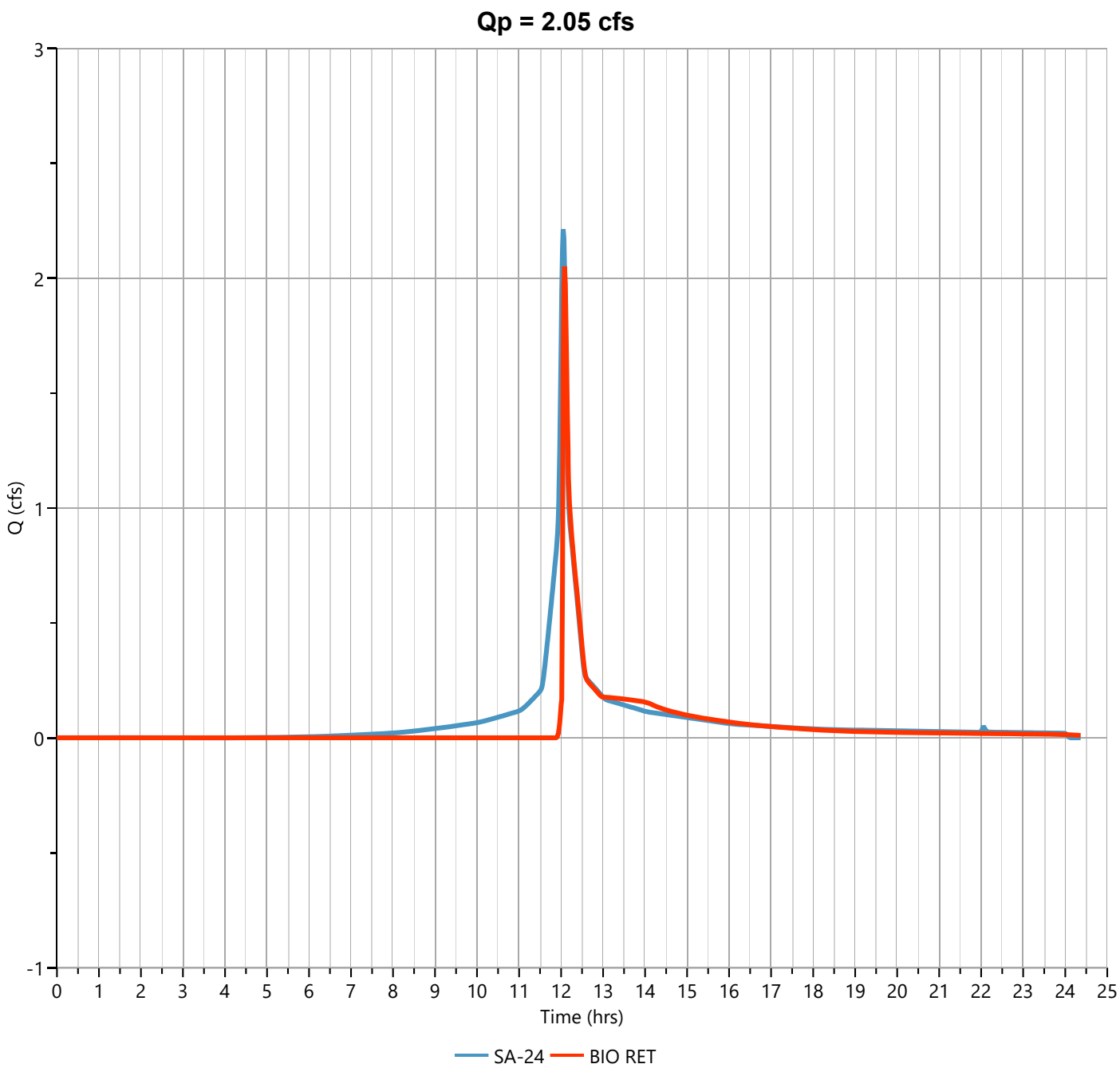
Post BIO RET

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 2.052 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.08 hrs
Time Interval	= 1 min	Hydrograph Volume	= 4,380 cuft
Inflow Hydrograph	= 7 - SA-24	Max. Elevation	= 308.99 ft
Pond Name	= SA-24	Max. Storage	= 2,261 cuft

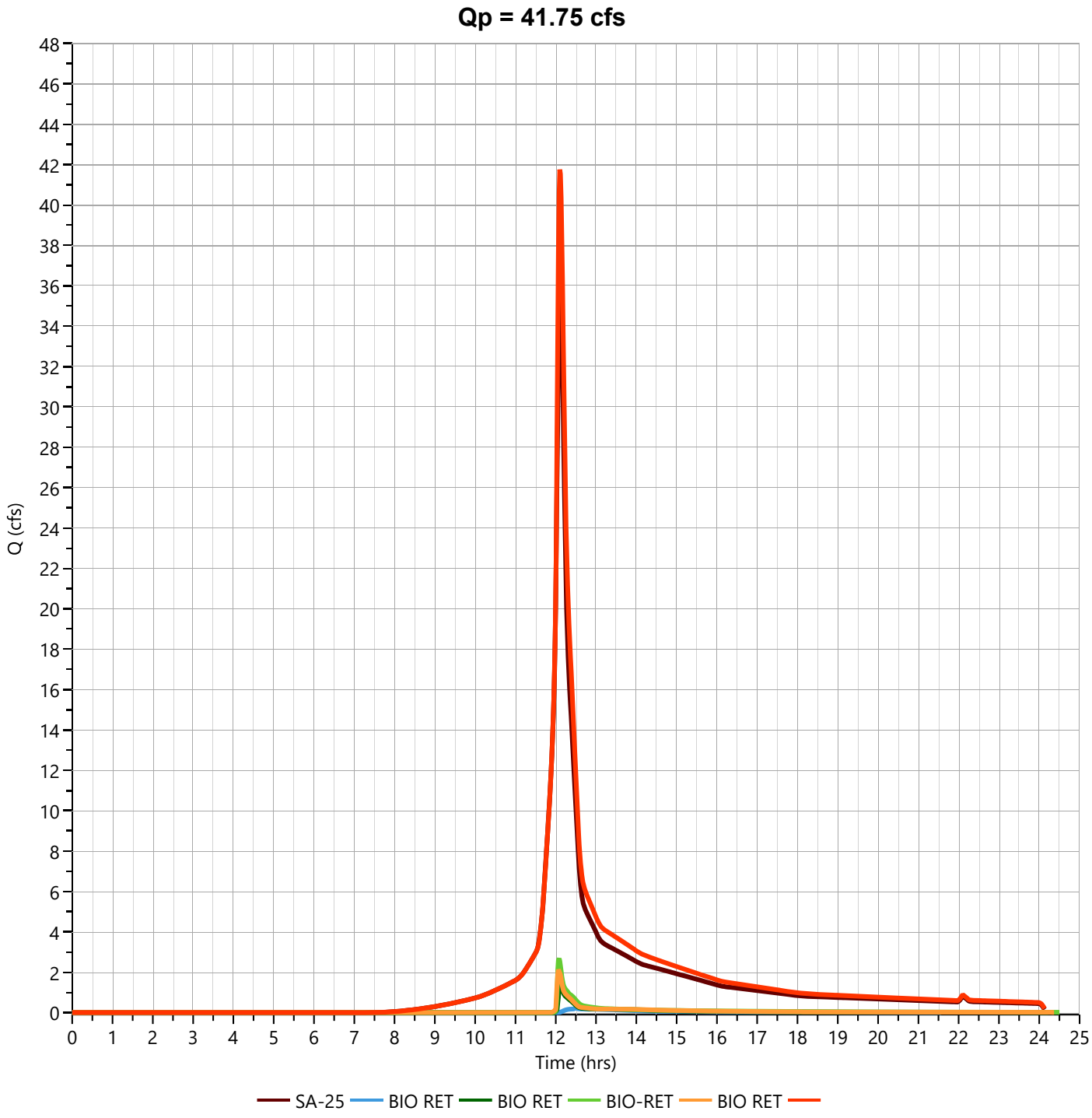
Pond Routing by Storage Indication Method

Center of mass detention time = 42 min



Hyd. No. 17

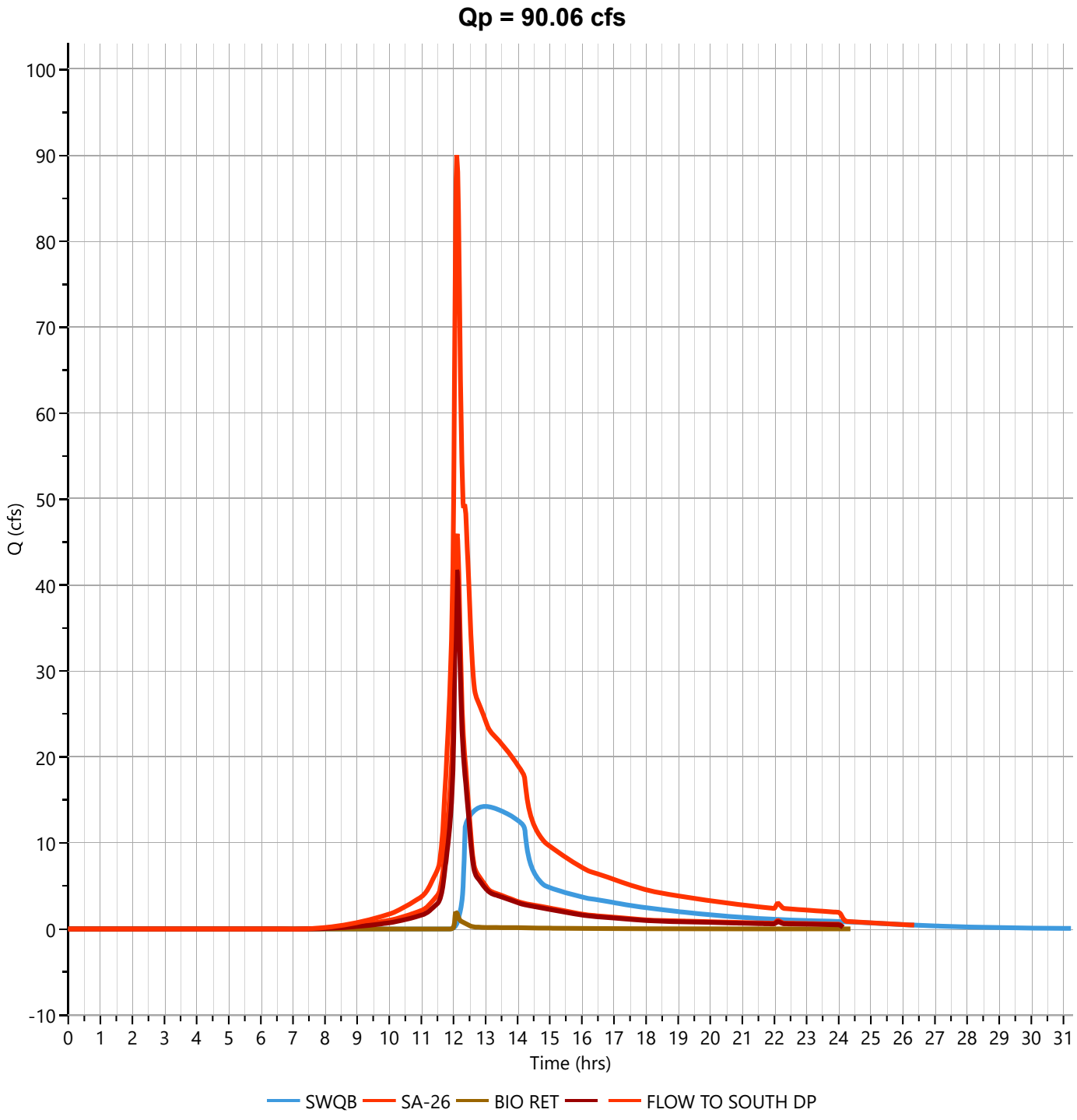
Hydrograph Type	= Junction	Peak Flow	= 41.75 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.10 hrs
Time Interval	= 1 min	Hydrograph Volume	= 138,081 cuft
Inflow Hydrographs	= 9, 12, 13, 14, 15	Total Contrib. Area	= 7.208 ac



Post FLOW TO SOUTH DP

Hyd. No. 18

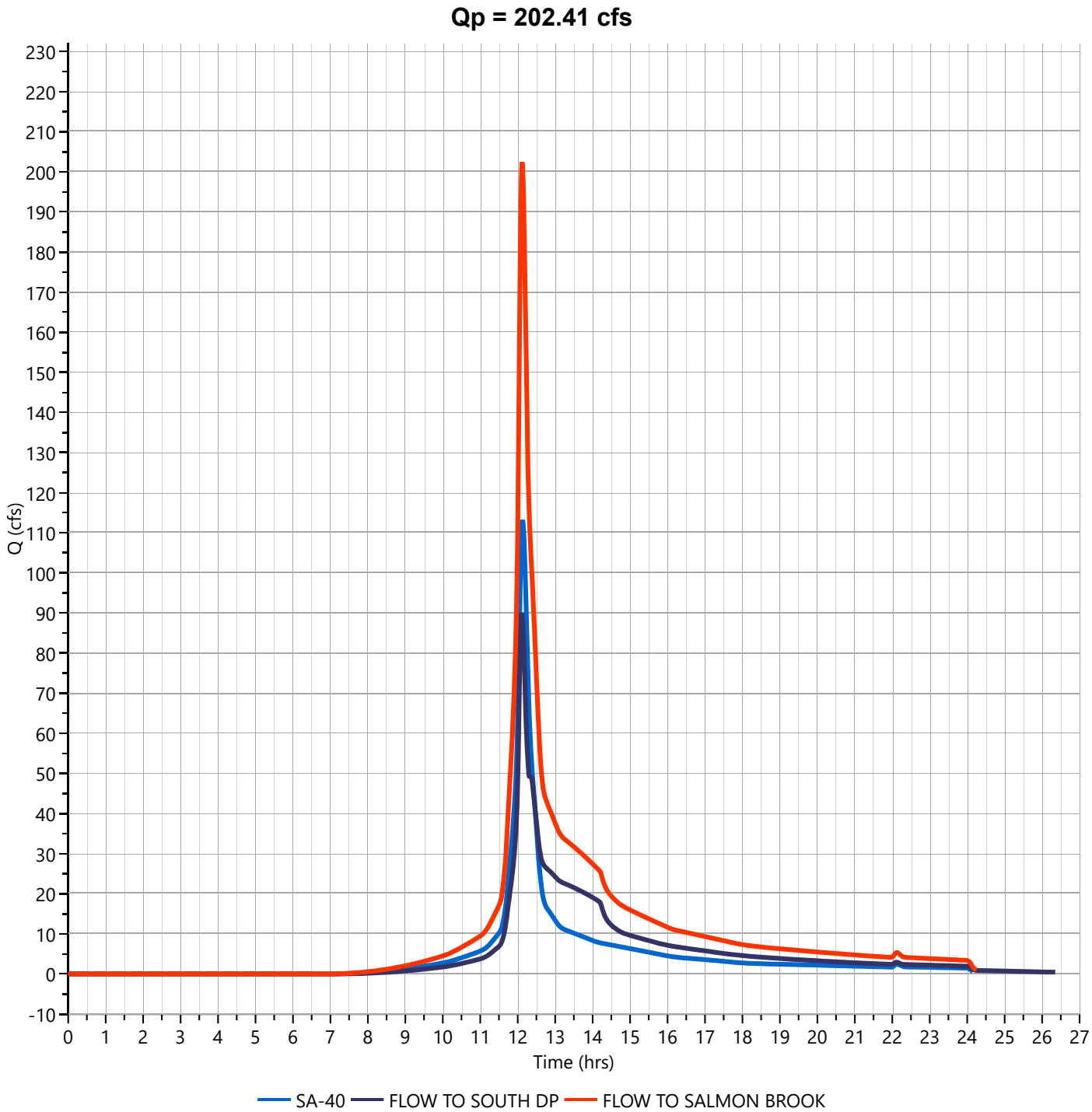
Hydrograph Type	= Junction	Peak Flow	= 90.06 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 490,663 cuft
Inflow Hydrographs	= 2, 10, 16, 17	Total Contrib. Area	= 16.168 ac



Post FLOW TO SALMON BROOK

Hyd. No. 19

Hydrograph Type	= Junction	Peak Flow	= 202.4 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 902,345 cuft
Inflow Hydrographs	= 11, 18	Total Contrib. Area	= 38.628 ac



Design Storm Report

Custom Storm filename:

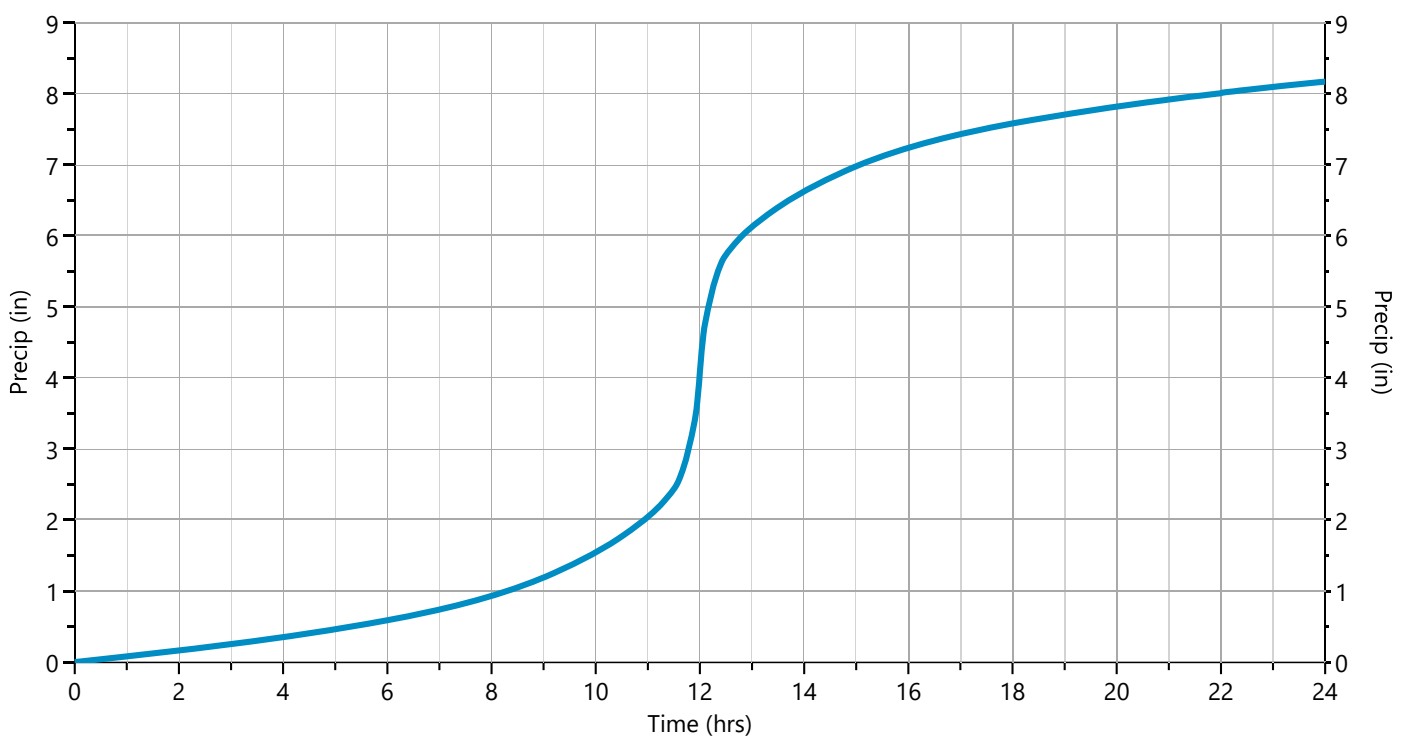
Hydrology Studio v 3.0.0.16

10-07-2020

Storm Distribution: NRCS/SCS - Type III

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	✔ 100-yr	
24 hrs	2.66	3.29	0.00	4.32	5.18	6.35	7.26	8.17	

Incremental Rainfall Distribution, 100-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.50	0.016099	11.68	0.037174	11.87	0.059142	12.05	0.122754	12.23	0.049157
11.52	0.017156	11.70	0.039171	11.88	0.061139	12.07	0.106005	12.25	0.047159
11.53	0.019199	11.72	0.041168	11.90	0.063136	12.08	0.089256	12.27	0.045162
11.55	0.021197	11.73	0.043165	11.92	0.072742	12.10	0.072508	12.28	0.043165
11.57	0.023194	11.75	0.045162	11.93	0.089258	12.12	0.063376	12.30	0.041168
11.58	0.025191	11.77	0.047159	11.95	0.106006	12.13	0.061139	12.32	0.039170
11.60	0.027188	11.78	0.049156	11.97	0.122755	12.15	0.059142	12.33	0.037174
11.62	0.029185	11.80	0.051153	11.98	0.139503	12.17	0.057145	12.35	0.035176
11.63	0.031182	11.82	0.053150	**12.00**	**0.156252**	12.18	0.055148	12.37	0.033180
11.65	0.033179	11.83	0.055147	12.02	0.155877	12.20	0.053150	12.38	0.031182
11.67	0.035176	11.85	0.057145	12.03	0.139503	12.22	0.051153	12.40	0.029185



IDF Report

Hydrology Studio v 3.0.0.16

IDF filename: SampleIDF.idf

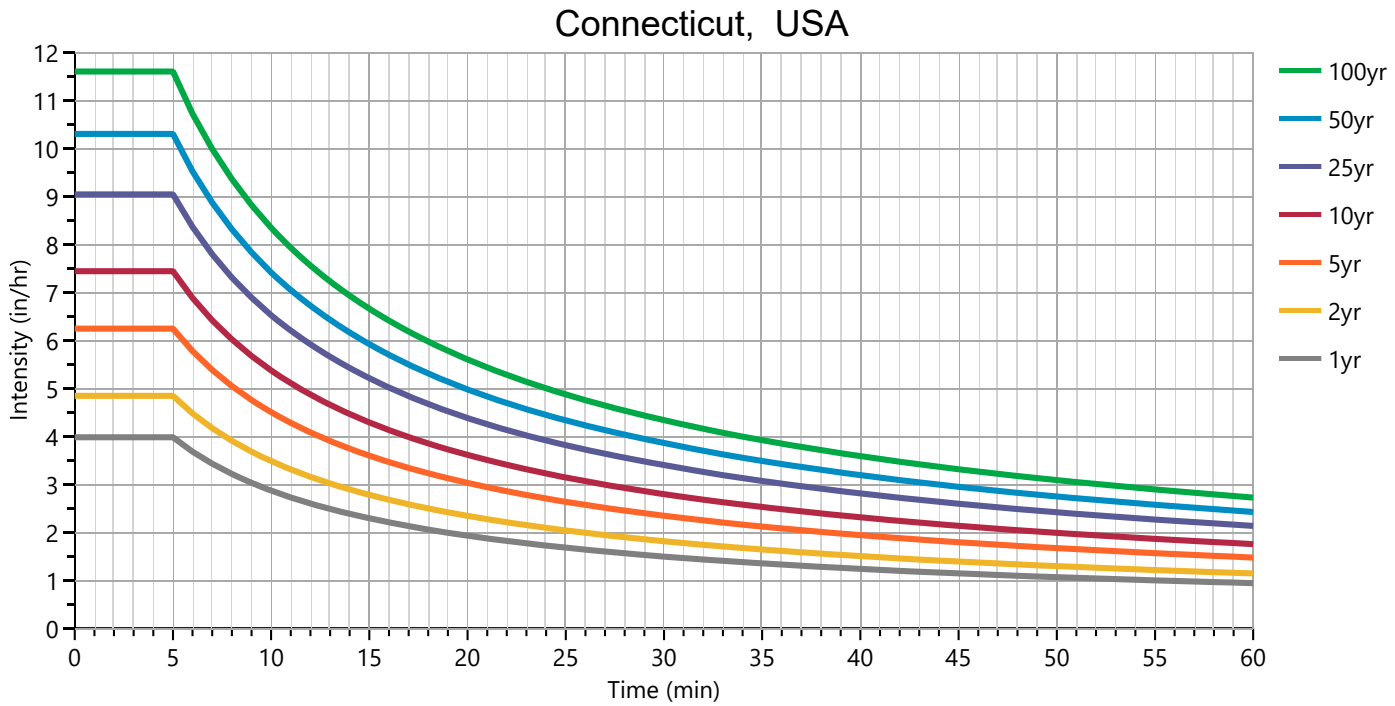
10-07-2020

Equation Coefficients	Intensity = B / (Tc + D)^E (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
B	19.7451	23.2751	0.0000	31.0044	37.5773	44.8715	50.4516	56.9401	
D	3.9000	3.7000	0.0000	3.9000	4.0000	3.9000	3.8000	3.8000	
E	0.7334	0.7261	0.0000	0.7334	0.7374	0.7331	0.7309	0.7318	

Minimum Tc = 5 minutes

Tc (min)	Intensity Values (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
Cf	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
5	3.97	4.84	0	6.24	7.43	9.04	10.29	11.59	
10	2.87	3.48	0	4.50	5.37	6.52	7.41	8.34	
15	2.29	2.78	0	3.59	4.29	5.20	5.91	6.65	
20	1.93	2.34	0	3.02	3.61	4.38	4.98	5.60	
25	1.67	2.03	0	2.63	3.14	3.81	4.33	4.87	
30	1.49	1.81	0	2.34	2.79	3.39	3.85	4.33	
35	1.35	1.64	0	2.12	2.52	3.06	3.48	3.91	
40	1.23	1.50	0	1.94	2.31	2.80	3.19	3.58	
45	1.14	1.39	0	1.79	2.13	2.59	2.94	3.31	
50	1.06	1.29	0	1.67	1.98	2.41	2.74	3.08	
55	0.99	1.21	0	1.56	1.86	2.26	2.57	2.89	
60	0.94	1.14	0	1.47	1.75	2.13	2.42	2.72	

Cf = Correction Factor applied to Rational Method runoff coefficient.



Precipitation Report

Precipitation filename: SamplePrecip.pcp

Hydrology Studio v 3.0.0.16 (Rainfall totals in Inches)

10-07-2020

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✔	✔		✔	✔	✔	✔	✔
SCS Storms	**> SCS Dimensionless Storms**								
SCS 6hr		1.20	1.50	0	1.86	2.18	2.64	3.01	3.41
Type I, 24-hr		0	0	0	0	0	0	0	0
Type IA, 24-hr		0	0	0	0	0	0	0	0
Type II, 24-hr		1.82	2.28	0	2.85	3.31	3.94	4.43	4.94
Type II FL, 24-hr		0	0	0	0	0	0	0	0
Type III, 24-hr	✔	2.66	3.29	0	4.32	5.18	6.35	7.26	8.17
Synthetic Storms	**> IDF-Based Synthetic Storms**								
1-hr		0.94	1.14	0	1.47	1.75	2.13	2.42	2.72
2-hr		1.15	1.41	0	1.81	2.15	2.62	2.98	3.35
3-hr		1.29	1.59	0	2.03	2.41	2.94	3.35	3.76
6-hr		1.57	1.93	0	2.46	2.91	3.57	4.07	4.56
12-hr		1.89	2.34	0	2.97	3.51	4.31	4.92	5.52
24-hr		2.28	2.84	0	3.59	4.22	5.20	5.94	6.66
Huff Distribution	**> 1st Quartile (0 to 6 hrs)**								
1-hr		0.76	0.98	0	1.33	1.61	2.01	2.34	2.69
2-hr		0.89	1.14	0	1.50	1.80	2.24	2.60	2.99
3-hr		0.98	1.24	0	1.59	1.90	2.33	2.68	3.07
6-hr		1.20	1.50	0	1.86	2.18	2.64	3.01	3.41
Huff Distribution	**> 2nd Quartile (>6 to 12 hrs)**								
8-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
Huff Distribution	**> 3rd Quartile (>12 to 24 hrs)**								
18-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0
Custom Storms	**> Custom Storm Distributions**								
My Custom Storm 1		0	0	0	0	0	0	0	0
My Custom Storm 2		0	0	0	0	0	0	0	0
My Custom Storm 3		0	0	0	0	0	0	0	0
My Custom Storm 4		0	0	0	0	0	0	0	0
My Custom Storm 5		0	0	0	0	0	0	0	0
My Custom Storm 6		0	0	0	0	0	0	0	0
My Custom Storm 7		0	0	0	0	0	0	0	0
My Custom Storm 8		0	0	0	0	0	0	0	0
My Custom Storm 9		0	0	0	0	0	0	0	0
My Custom Storm 10		0	0	0	0	0	0	0	0

Precipitation Report Cont'd

Precipitation filename: SamplePrecip.pcp

Rainfall totals in Inches

10-07-2020

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✔	✔		✔	✔	✔	✔	✔
Huff Indiana	**> Indianapolis**								
30-min		0	0	0	0	0	0	0	0
1-hr		0	0	0	0	0	0	0	0
2-hr		0	0	0	0	0	0	0	0
3-hr		0	0	0	0	0	0	0	0
6-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0
Huff Indiana	**> Evansville**								
30-min		0	0	0	0	0	0	0	0
1-hr		0	0	0	0	0	0	0	0
2-hr		0	0	0	0	0	0	0	0
3-hr		0	0	0	0	0	0	0	0
6-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0
Huff Indiana	**> Fort Wayne**								
30-min		0	0	0	0	0	0	0	0
1-hr		0	0	0	0	0	0	0	0
2-hr		0	0	0	0	0	0	0	0
3-hr		0	0	0	0	0	0	0	0
6-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0
Huff Indiana	**> South Bend**								
30-min		0	0	0	0	0	0	0	0
1-hr		0	0	0	0	0	0	0	0
2-hr		0	0	0	0	0	0	0	0
3-hr		0	0	0	0	0	0	0	0
6-hr		0	0	0	0	0	0	0	0
12-hr		0	0	0	0	0	0	0	0
24-hr		0	0	0	0	0	0	0	0

Precipitation Report Cont'd

Precipitation filename: SamplePrecip.pcp

Rainfall totals in Inches

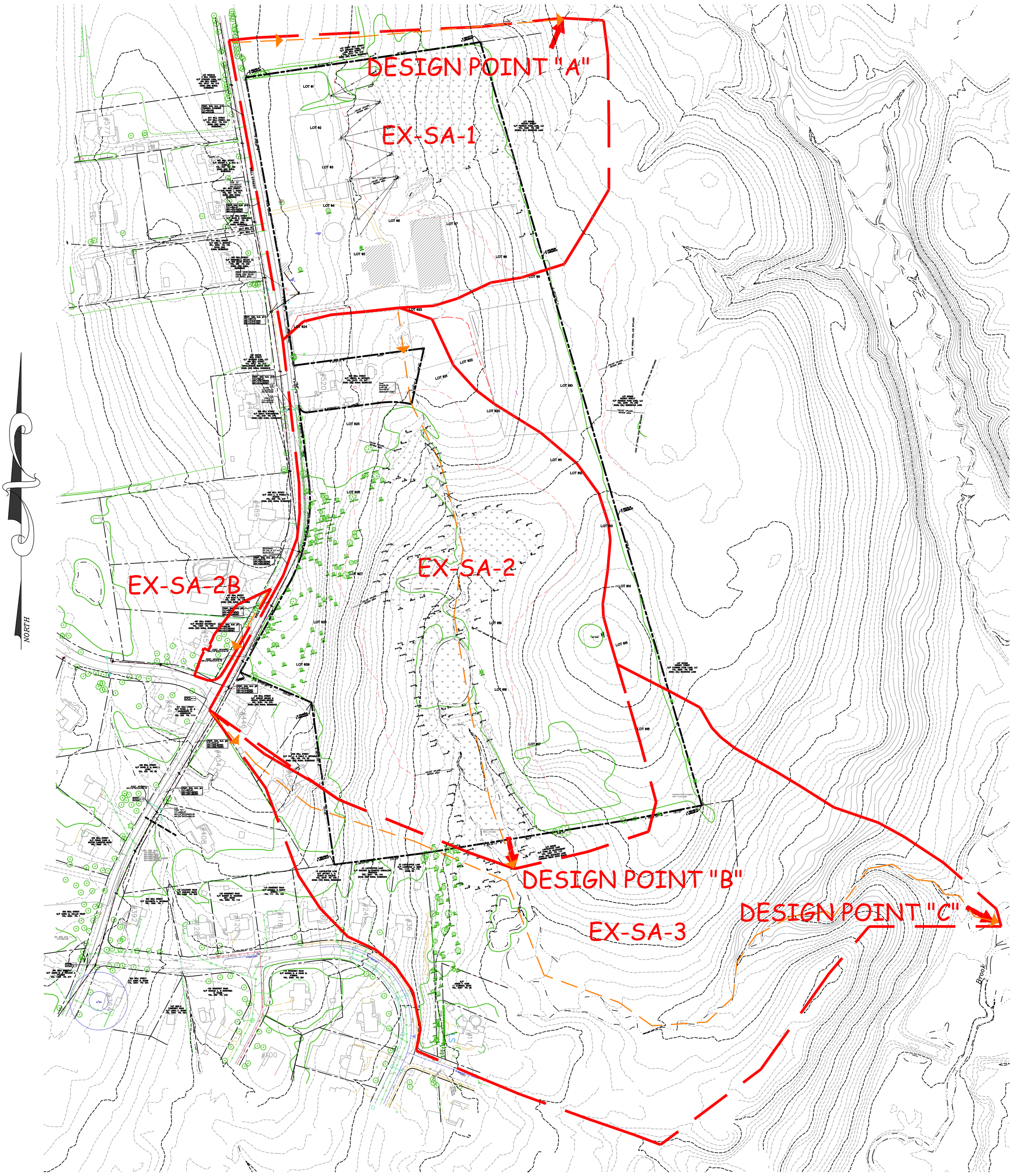
10-07-2020

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✔	✔		✔	✔	✔	✔	✔
NRCS Storms	**> NRCS Dimensionless Storms**								
NRCS MSE1, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE2, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE3, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE4, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE5, 24-hr		0	0	0	0	0	0	0	0
NRCS MSE6, 24-hr		0	0	0	0	0	0	0	0
NOAA-A, 24-hr		0	0	0	0	0	0	0	0
NOAA-B, 24-hr		0	0	0	0	0	0	0	0
NOAA-C, 24-hr		0	0	0	0	0	0	0	0
NOAA-D, 24-hr		0	0	0	0	0	0	0	0
NRCC-A, 24-hr		0	0	0	0	0	0	0	0
NRCC-B, 24-hr		0	0	0	0	0	0	0	0
NRCC-C, 24-hr		0	0	0	0	0	0	0	0
NRCC-D, 24-hr		0	0	0	0	0	0	0	0
CA-1, 24-hr		0	0	0	0	0	0	0	0
CA-2, 24-hr		0	0	0	0	0	0	0	0
CA-3, 24-hr		0	0	0	0	0	0	0	0
CA-4, 24-hr		0	0	0	0	0	0	0	0
CA-5, 24-hr		0	0	0	0	0	0	0	0
CA-6, 24-hr		0	0	0	0	0	0	0	0

Appendix H

Overall Drainage Subarea Map – Pre & Post Drainage Area

Onsite Drainage Subarea Map



GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)
1 inch = 120 ft.

DRAINAGE SUBAREA - LEGEND

LIMITS OF PRE DEVELOPMENT DRAINAGE SUBAREA

TIME OF CONCENTRATION FLOW LINE

I HAVE REVIEWED THE WETLAND BOUNDARY DEPICTED HEREON AND BELIEVE IT TO BE AN ACCURATE REPRESENTATION OF MY WETLAND DELINEATION.

DATE: 12/20/19

JAMES SIPPERLY
REGISTERED SOILS SCIENTIST

TOWN PLAN & ZONING COMMISSION APPROVAL

STALLION RIDGE SUBDIVISION — RR/OPEN SPACE
SUBDIVISION NAME — ZONE

D & D DEPENDABLE CONSTRUCTION
SUBDIVIDER

SUBDIVISION APPROVAL DATE — PLAN & ZONING COMMISSION CHAIRMAN

COMPLETION DATE FOR SUBDIVISION IMPROVEMENTS — COMMUNITY DEVELOPMENT DIRECTOR

FILE NO. — TOWN ENGINEER

NOTE: ALL SHEETS OF THIS PLAN SET ARE LOCATED IN THE OFFICE OF COMMUNITY DEVELOPMENT.

TOWN PLAN & ZONING COMMISSION APPROVAL

STALLION RIDGE SUBDIVISION / D & D DEPENDABLE CONSTRUCTION — RR/OPEN SPACE
PROJECT / APPLICANT — ZONE

524 BELL STREET
PROJECT ADDRESS

6.8 (REAR LOT)
SPECIAL PERMIT SECTION — T.P.&Z. CHAIRMAN

SPECIAL PERMIT APPROVAL DATE — COMMUNITY DEVELOPMENT DIRECTOR

FILE NO.

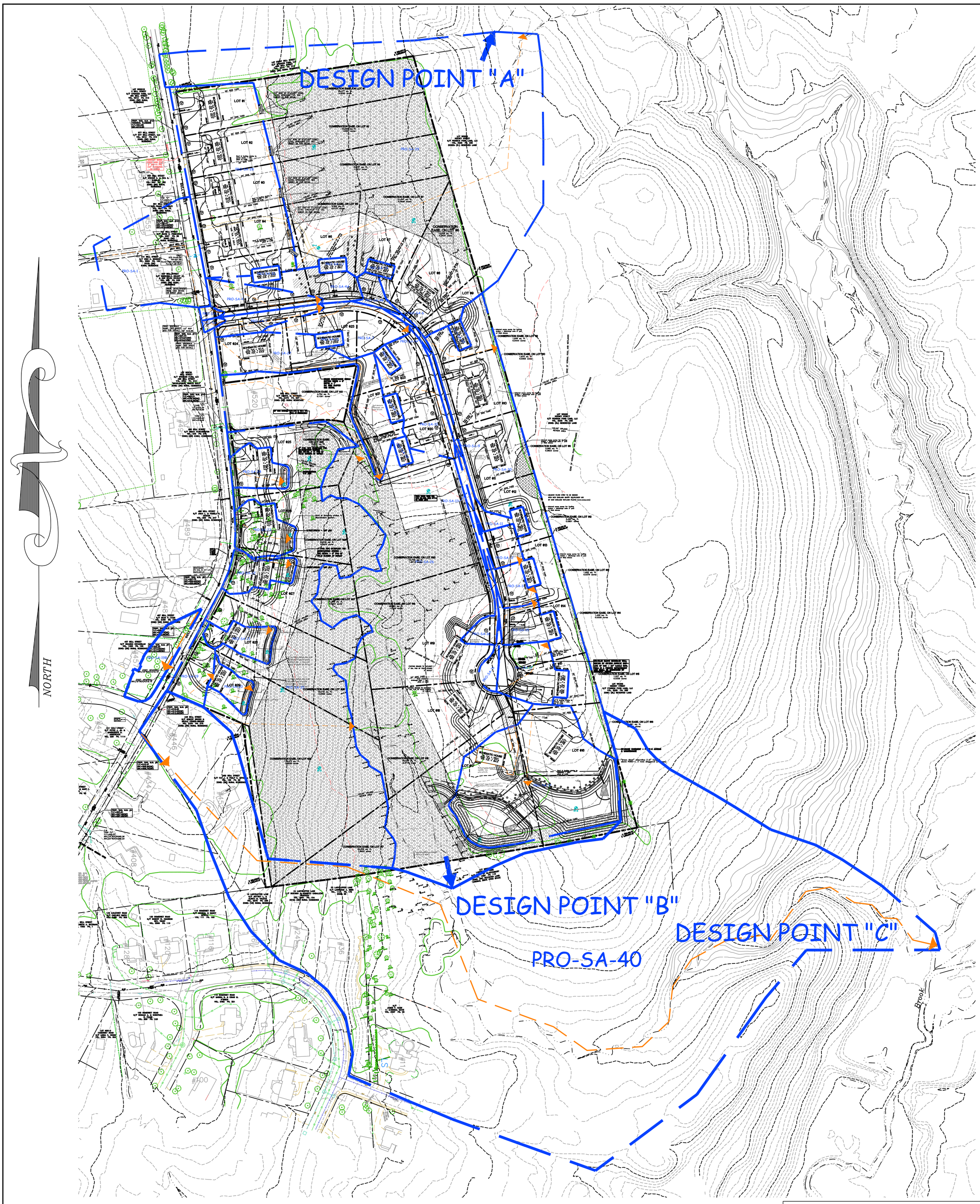
NOTE: ALL SHEETS OF THIS PLAN SET ARE LOCATED IN THE OFFICE OF COMMUNITY DEVELOPMENT.

STATE OF CONNECTICUT
JAMES P. CASSIDY II
NO. 20665
LICENSED PROFESSIONAL ENGINEER

DRAINAGE SUBAREA MAP - EXISTING
PREPARED FOR:
DEPENDABLE CONSTRUCTION
PROPERTY LOCATED AT:
524 BELL STREET
GLASTONBURY, CONNECTICUT

HALLISEY, PEARSON & CASSIDY
CIVIL ENGINEERS & LAND SURVEYORS
35 COLD SPRING ROAD,
SOUTHWAY EXECUTIVE PARK , UNIT #511
ROCKY HILL, CONNECTICUT
PHONE: (860)-529-6812, FAX: (860)-721-7709

SCALE: 1"=120'	CHECKED BY: JPC
DATE: JUN. 23, 2020	DRAWN BY: JMP
JOB No.: 3134	ACAD FILE: 3134-EX-DRA
SHEET: 1	OF: 1
REVISIONS:	



DRAINAGE SUBAREA - LEGEND

LIMITS OF PRE DEVELOPMENT DRAINAGE SUBAREA

TIME OF CONCENTRATION FLOW LINE

I HAVE REVIEWED THE WETLAND BOUNDARY DEPICTED HEREON AND BELIEVE IT TO BE AN ACCURATE REPRESENTATION OF MY WETLAND DELINEATION.

DATE: 12/20/19

JAMES SIPPERLY
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GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)
1 inch = 120 ft.

TOWN PLAN & ZONING COMMISSION APPROVAL

STALLION RIDGE SUBDIVISION — RR/OPEN SPACE
SUBDIVISION NAME — ZONE

D & D DEPENDABLE CONSTRUCTION
SUBDIVIDER

SUBDIVISION APPROVAL DATE — PLAN & ZONING COMMISSION CHAIRMAN

COMPLETION DATE FOR SUBDIVISION IMPROVEMENTS — COMMUNITY DEVELOPMENT DIRECTOR

FILE NO. — TOWN ENGINEER

NOTE: ALL SHEETS OF THIS PLAN SET ARE LOCATED IN THE OFFICE OF COMMUNITY DEVELOPMENT.

UNDERGROUND UTILITY NOTE:

UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROLE TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO THE UNDERSIGNED. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455 OR 811.

INSPECTION NOTE:

THE CONTRACTOR SHALL NOTIFY THE TOWN OF GLASTONBURY ENGINEERING DIVISION 24 HOURS PRIOR TO BEGINNING ANY STORM DRAINAGE, SANITARY SEWER INSTALLATION, ROADWAY PREPARATION, PAVING, SIDEWALK, CURBING, OR ANY EXCAVATION IN THE TOWN RIGHT-OF-WAY SCHEDULE INSPECTIONS. THE DIVISION CAN BE REACHED BETWEEN 8:00 AM - 4:30 PM MONDAY THROUGH FRIDAY AT (860)-652-7735

NOTE:
SOIL DELINEATION INFORMATION PERFORMED BY CYNTHIA RABINOWITZ AT HGCONNSOIL, LLC. SOIL MAPPING IS SHOWN ON EXISTING CONDITIONS MAP

TOWN PLAN & ZONING COMMISSION APPROVAL

STALLION RIDGE SUBDIVISION / D & D DEPENDABLE CONSTRUCTION — RR/OPEN SPACE
PROJECT / APPLICANT — ZONE

524 BELL STREET
PROJECT ADDRESS

6.8 (REAR LOT)
SPECIAL PERMIT SECTION — T.P.&Z. CHAIRMAN

SPECIAL PERMIT APPROVAL DATE — COMMUNITY DEVELOPMENT DIRECTOR

FILE NO.

NOTE: ALL SHEETS OF THIS PLAN SET ARE LOCATED IN THE OFFICE OF COMMUNITY DEVELOPMENT.

STATE OF CONNECTICUT — JAMES P. CASSIDY II — NO. 20665 — LICENSED PROFESSIONAL ENGINEER

SITE DEVELOPMENT PLAN
PREPARED FOR:
DEPENDABLE CONSTRUCTION
PROPERTY LOCATED AT:
524 BELL STREET
GLASTONBURY, CONNECTICUT

HALLISEY, PEARSON & CASSIDY
CIVIL ENGINEERS & LAND SURVEYORS
630 MAIN STREET, UNIT #1A
CROMWELL, CONNECTICUT 06416
PHONE: (860)-529-6812, FAX: (860)-721-7709

SCALE: 1"=120'	CHECKED BY: JPC
DATE: JUN. 23, 2020	DRAWN BY: JMP
JOB No.: 3134	ACAD FILE: 3134-PRO-RA
SHEET: 1	OF: 1
REVISIONS:	