

POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) NARRATIVE

FOR

KEYSTONE TRADE CENTER – AREA 3 DEVELOPMENT

Falls Township
Bucks County, Pennsylvania
G&A File No. 2020-07083-55

January 17, 2025
Last revised March 7, 2025
Last revised June 20, 2025

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The Erosion and Sediment Control (E&S) Plans and Calculations, and the Post Construction Stormwater Management (PCSM) Plans and Calculations have been provided, planned, designed, and implemented to be consistent with one another. Please refer to the Erosion and Sedimentation Control Plans and Calculations for the project, dated January 17, 2025, last revised June 20, 2025.



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

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EXECUTIVE SUMMARY

Keystone Trade Center - Area 3 Development is a redevelopment project in Falls Township, Bucks County, Pennsylvania located in the MPM – Materials Processing and Manufacturing Zoning District within the Keystone Industrial Port Complex (KIPC). The project is located on tax map parcel TMP 13-051-001 which has a gross project area of 858.88 acres. The limit of disturbance for *Area 3 Development* of the project shall be 232.95 acres. The proposed project for *Area 3 Development* involves the construction of one (1) 32,552 SF building (Ancillary Building 1), one (1) 33,576 SF building (Ancillary Building 2), one (1) 1,499 SF building (Ancillary Building 3), three (3) 217,454 SF warehouse buildings (Buildings C-E) and seven (7) 112,254 SF warehouse buildings (Buildings A, B, & F-J).

The Keystone Industrial Port Complex is located on the west bank of the Delaware River and encompasses about 2,800 acres. Industrial operations began in 1952 involving integrated steel making and finishing. Prior to 1952, the area was used for agricultural purposes. Industrial activities expanded through the early 1970's. Most steel making activities were shut down by 1991. Today the complex supports several independent industrial operations.

A soil management Plan entitled “Material Management Plan for Keystone Trade Center”, prepared by *Langan Engineering & Environmental Services, Inc.*, for *NP Falls Township Industrial, LLC*, dated 2/24/21, revised 11/22/22, was developed as a facility-wide approach for identifying, assessing, handling, properly staging and managing materials toward compliance with relevant and applicable federal, state and local requirements and recommended best practices for materials that are likely to be encountered during planned demolition and construction. This material management plan is incorporated into the Erosion & Sediment Control Plan, Post-Construction Stormwater Management Plan, and the Construction Documents for this project.

The management plan also contains the results of the environmental due diligence performed on the site including locations of testing, regulated substances encountered and their corresponding concentrations. Within the designated project boundary, soil exceedances of direct contact MSCs were discovered for two substances: vanadium and iron. No soil-to-groundwater MSCs were exceeded for a non-residential, non-use aquifer. The management plan includes a Site-specific Human Health Risk Assessment which concludes that there are no unacceptable cancer risks present. Mitigation of non-cancer risks from exposure to concentrations of constituents of potential concern during construction activities include the requirement of OSHA Level D personal protective equipment, dust control measures, implementing good hygiene practices, and the preparation of Site-specific Health and Safety Plans that comply with OSHA and other relevant and applicable rules, regulations and requirements for construction worker protection and safe work practices, for any contractor involved with material handling at the project site. In addition, and in accordance with the management plan, an environmental professional shall be required on-site during any earthwork activities within 100' of sample locations which demonstrated a risk assessment exceedance for thallium (as shown on the Plan), to ensure implementation of the soil handling procedures described in the management plan. These measures have been included in the PCSM Plan.

I. PROJECT DESCRIPTION

Introduction

Keystone Trade Center - Area 3 Development is a redevelopment project in Falls Township, Bucks County, Pennsylvania located in the MPM – Materials Processing and Manufacturing Zoning District within the Keystone Industrial Port Complex (KIPC). The project is located on tax map parcel TMP 13-051-001 which has a gross project area of 858.88 acres. The limit of disturbance for *Area 3 Development* of the project shall be 232.95 acres. The proposed project for *Area 3 Development* involves the construction of one (1) 32,552 SF building (Ancillary Building 1), one (1) 33,576 SF building (Ancillary Building 2), one (1) 1,499 SF building (Ancillary Building 3), three (3) 217,454 SF warehouse buildings (Buildings C-E) and seven (7) 112,254 SF warehouse buildings (Buildings A, B, & F-J).

S. Port Road shall be extended from Ben Fairless Drive to the existing S. Port Road on the west of the site. The site will have driveway access points on Ben Fairless Drive, Sorrells Boulevard, and S. Port Road. The project area will be bound by Sorrells Boulevard to the east, Ben Fairless Drive to the north, Sinter Road to the south, and S. Port Road to the west. See *Figure 1 - Location Map* and *Figure 2 – U.S.G.S. Quad Map (Trenton East, NJ/PA)*.

Existing land use for the subject parcel over the past 50 years is industrial. Present land use for the last 5 years is industrial. The proposed land use of this redevelopment project will be industrial.

The Keystone Industrial Port Complex is located on the west bank of the Delaware River and encompasses approximately 2,800 acres. Industrial operations began in 1952 involving integrated steel making and finishing. Prior to 1952, the area was used for agricultural purposes. Industrial activities expanded through the early 1970's. Today the complex supports several independent industrial operations.

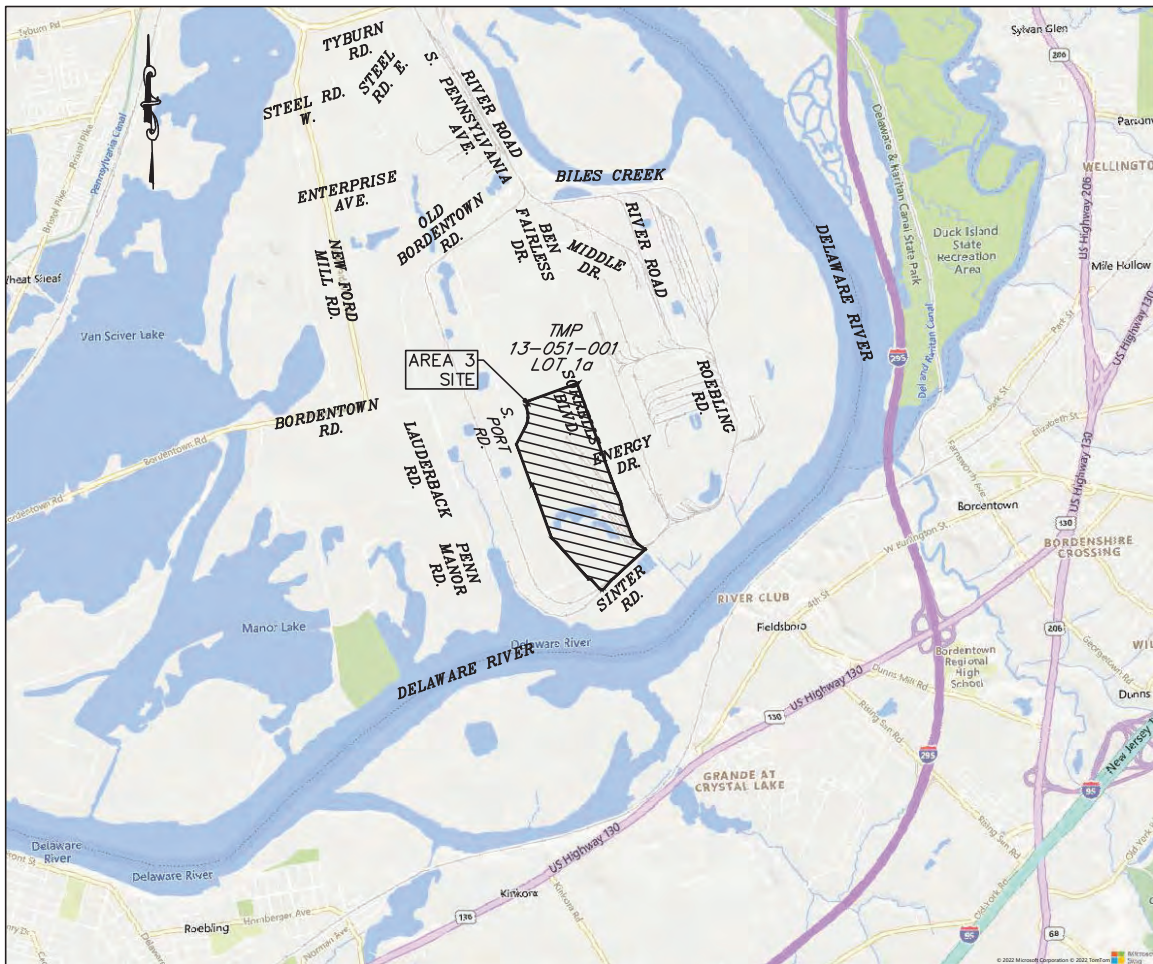
NPDES Permitting Information

Keystone Trade Center - Area 3 is being permitted in two stages: Area 3 Demo/Fill Part A.1 (NPDES Permit No. PAD090088) and Area 3 Development Part A.2. (NPDES Permit No. PAD090088 A-1):

- Part A.1 has a limit of disturbance/project site boundary of 201.53 acres and involves the demolition of existing site features and underground utilities, and importation of regulated fill soil material within this disturbance area. Due to the decrease of impervious area for this stage, PCSM BMPs and analysis area deferred to Part A.2. Disturbance of the existing Borrow Pit/RCRA SWMU area #3 (BP-3) is excluded from Part A.1 of the permit. **All demolition activities, fill importation, stabilization of the site, and removal of E&S BMPs shall occur in Part A.1 prior to commencement of activities in Part A.2.**
- Part A.2 is a Major Amendment to the NPDES permit of Part A.1 and has a project site boundary of 244.54 acres. Site improvements are illustrated in the section below. Disturbance/Filling of the existing Borrow Pit/RCRA SWMU area #3 (BP-3) is included in Part A.2 of the permit. An increase of 43.01 acres of disturbance is proposed for Part A.2 as compared to Part A.1. PCSM BMPs and analysis are included for this stage, as illustrated on the PCSM Plans and in this report.

- The Minor Amendment to Area 3 Development Part A.2 involves a limit of disturbance (+1.55 ac) and project site boundary (+2.16 ac) increase encompassing the construction of a railroad track and coal unloader facilities on the west side of S. Port Road. The proposed stormwater management approach remains the same, with additional disturbance being captured and conveyed to Wet Pond #15G, which drains to DP 001.
- Part A.3 is a Major Amendment to the NPDES permit of Part A.1 and has a project site boundary of 247.08 acres. Site improvements are illustrated in the section below. Disturbance/Filling of the existing Borrow Pit/RCRA SWMU area #3 (BP-3) is included in Part A.2 of the permit. An increase of 0.38 acres of disturbance is proposed for Part A.3 as compared to Part A.2. PCSM BMPs and analysis are included for this stage, as illustrated on the PCSM Plans and in this report.

FIGURE NO. 1



LOCATION MAP

NORTHPOINT AREA 3

FALLS TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

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JOB NO.:

2020-0708333

DATE:

12-09-2022

SCALE:

1"=5,000'

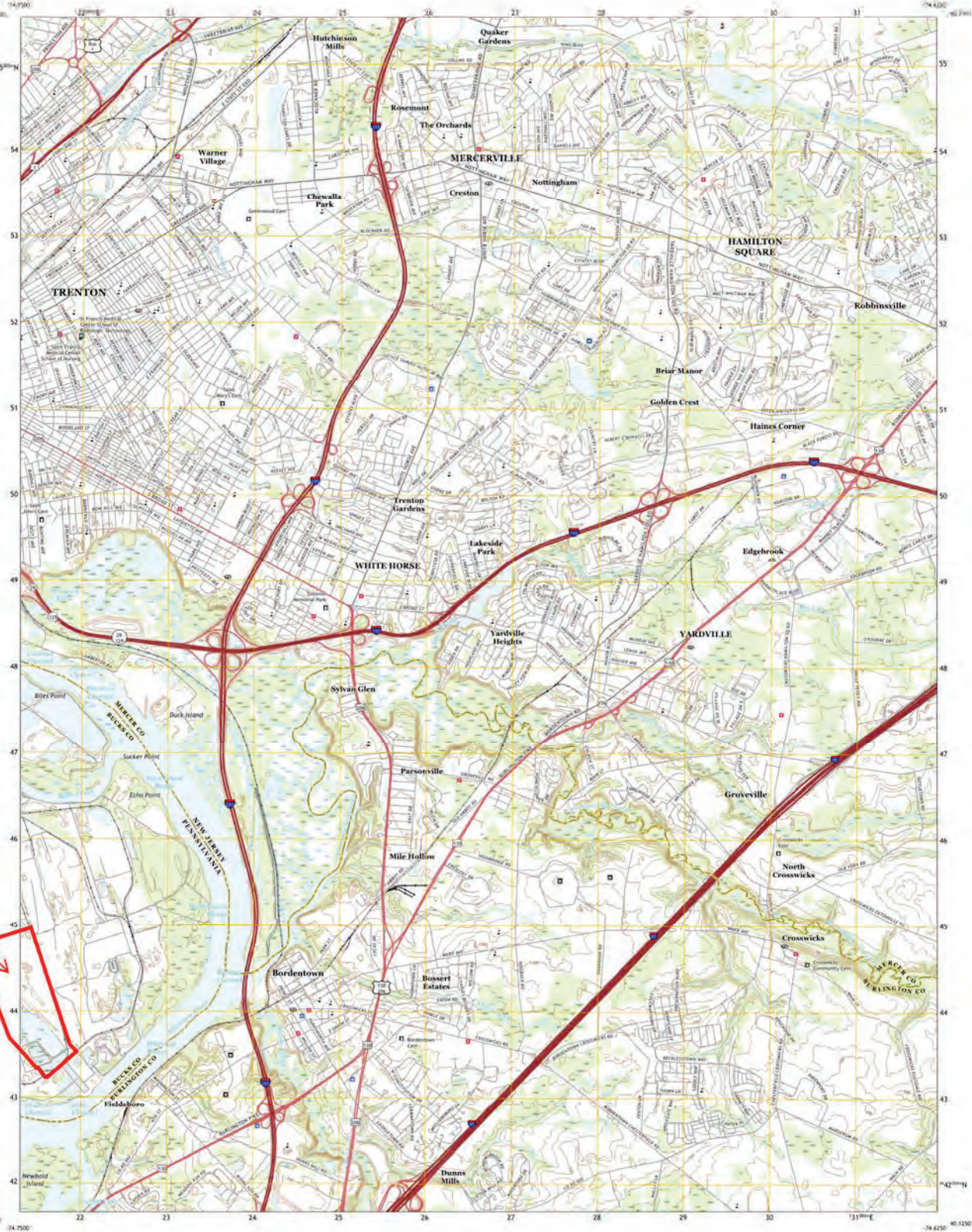


U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



TRENTON EAST QUADRANGLE
NEW JERSEY - PENNSYLVANIA
7.5-MINUTE SERIES

AREA 3
DEVELOPMENT



Produced by the United States Geological Survey
Map of the Trenton East Quadrangle, New Jersey - Pennsylvania, 7.5-minute series, 1:24,000 scale, 1981 edition.
This map is a reproduction of the original map, which was published by the United States Geological Survey in 1981.
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TRENTON EAST, NJ, PA
2019



TRENTON WEST, N.J. PA
2019

Custom Soil Resource Report Soil Map



Existing Topographical Features and Land Cover

The boundary and existing features depicted on the plans have been prepared based on: (1) plan entitled “Galvanized Minor Subdivision Plan” by R.L. Showalter & Associates, Inc. dated 08/17/2020, last revised 09/18/2020, and (2) plan entitled “ALTA/NSPS Land Title Survey Parcel Plan – Keystone Industrial Port Complex,” prepared for NorthPoint Development, LLC, dated 10/09/2020. The development area is flat for most of the site, with slopes ranging from nearly flat (0.0%) to 2.0%. There are areas of steep slopes associated with existing material stockpiles, stormwater swales, and borrow pits on-site.

The existing site contains two (2) points of interest. Drainage Point #1 (DP 001) consists of area on-site that generally drains from north-to-south toward an existing conveyance system (Canal No. 2). Canal No. 2 directly discharges into the Delaware River at the far southern portion of the KIPC site. Drainage Point #2 (DP 002) is located at the southwestern edge of the disturbance and contains impervious and existing lawn areas. The overall studied drainage area for *Area 3 Development* consists of buildings, asphalt access driveways and parking lots, concrete walkways, railway lines, and staging/operating areas for the current businesses located on the site. Large pervious meadow areas are located throughout the site, with woodland area contained to the southern corner of the development surrounding the existing borrow pits.

Soils

Soils information for the project area was obtained from the USDA NRCS Soil Survey of Bucks County, Pennsylvania, and is presented in *Figure 3*. The majority of the soil area within the development area is classified as Urban Land (UfuB), with the remaining areas consisting of Udorthents, Gravelly (Ua) and Water (W). No soil limitations are listed for these soil types. The geologic formation for the project area is Qt – Trenton Gravel (Gravelly Sand).

Improvements

The *Area 3 Development* proposed site improvements include: one (1) 32,552 SF building, one (1) 33,576 SF building, one (1) 1,499 SF building, three (3) 217,454 SF warehouse buildings and seven (7) 112,254 SF warehouse buildings for data centers. S. Port Road shall be extended from Ben Fairless Drive to the existing S. Port Road on the west of the site. The site will have driveway access points on Ben Fairless Drive, Sorrells Boulevard, and S. Port Road. One (1) proposed driveway will be installed for access to the site along Ben Fairless Drive, one (1) along Sorrells Boulevard, and one (1) along the re-aligned S. Port Road. Other improvements include: proposed asphalt parking areas, warehouse loading docks areas, concrete walkways, underground utilities, landscaping, lighting, and stormwater management facilities.

The Major Amendment to Area 3 Development Part A.3 involves a limit of disturbance (+0.38 ac) and project site boundary (+0.38 ac) increase encompassing the extension of the proposed natural gas line to the east of the project site.

Stormwater Management

The post construction stormwater runoff from the proposed redevelopment site will be collected and ultimately conveyed to two (2) discharge points on-site. Discharge Point #1 (DP 001) is Canal No. 2 which drains to the Delaware River. Discharge Point #2 (DP 002) is located at the southwest portion of the disturbed area, which also ultimately drains to the Delaware River. The proposed post construction stormwater management system consists of

three (3) Managed Release Concept (MRC) Bio-retention (MRC) Basins, two (2) Dry Extended Detention Basins, and seven (7) Wet Pond/Retention Basins, which together will provide water quality benefits and reduce post construction stormwater peak rates and volumes for the site.

The site is located in the Delaware River (South) Watershed. As such, proposed stormwater management is subject to the Delaware River (South) Watershed Stormwater Management Plan, and Act 167 Plan adopted on May 19, 2011. The Stormwater Management Ordinance of Falls Township is consistent with the Act 167 Plan. The Delaware River has a designated receiving water classification of Warm Water Fishes/Migratory Fishes (WWF, MF) per Chapter 93 of the PA Code.

Per the PA Integrated Water Quality Monitoring and Assessment Report, the Delaware River has the following TMDL status:

- Category 5: Use Assessed: Fish Consumption, Source: Unknown, Cause: Organics; Polychlorinated Biphenyls (PCBs)

The stormwater management facilities have been designed in accordance with the PADEP Best Management Practices (BMP) Manual, PADEP Erosion and Sediment Control Best Management Practice Manual, and USDA TR-55 Manual to treat the required volume of runoff from the proposed improvements. The facilities have also been designed in accordance with the Delaware River (South) Watershed Stormwater Management Plan.

The existing site is generally flat, largely containing slopes of 0.0 – 2.0%. There are areas of steep slopes associated with existing material stockpiles, stormwater swales, and borrow pits. Pre-development time of concentrations are provided for the eight (8) pre-development drainage areas. One (1) on-site pre-development drainage area drains to Canal No. 2, while six (6) on-site and one (1) off-site pre-development drainage areas remain on-site and were therefore excluded from the pre-to-post peak rate analysis. Calculations also provide for 20% of all existing impervious area for on-site drainage areas to be modeled as meadow in good condition. The site is designed to direct as much impervious surface to the proposed stormwater management BMPs as possible. Time of concentration values are provided for all drainage areas, with the minimum value of five (5) minutes for all proposed drainage areas.

The stormwater management design is based on the SCS Method for runoff rate and hydrograph generation, automated by the use of the *Hydraflow Hydrographs™* computer program. Hydrograph reservoir routing in the program is based on the storage-indication method, a.k.a Modified Puls Routing. Exhibits and tables summarizing all the results have been included in this narrative.

Best Management Practices (BMPs)

BMP 6.4.5: Bio-retention Basin and Bio-retention Basin – Managed Release Concept (MRC) – Bio-retention BMP facilities and Bio-retention BMP facilities utilizing the PADEP managed release concept are proposed for the project for volume control, peak rate control, and water quality purposes. This structural BMP is applicable and utilized for the PCSM design of this project.

BMP 6.6.2: Wet Pond / Retention Basin – Wet Pond / Retention Basin BMP facilities are proposed for the project for volume control, peak rate control, and water quality purposes. This structural BMP is applicable and utilized for the PCSM design of this project.

BMP 6.6.3: Dry Extended Detention Basin – Surface and Subsurface Dry Extended Detention Basin BMP facilities are proposed for the project for volume control, peak rate control, and water quality purposes. This structural BMP is applicable and utilized for the PCSM design of this project.

BMP 6.6.4: Water Quality Filters & Hydrodynamic Devices – These devices are utilized on-site at specified proposed inlet locations. These devices effectively filter debris, particle pollutants, suspended solids, oil and grease, and other pollutant loads for the site, preventing these materials from proceeding downstream of the site. This structural BMP is applicable and utilized for PCSM design for this project.

BMP 6.7.2: Landscape Restoration – Proposed trees will be planted throughout the site. These features effectively reduce stormwater volume and provide water quality benefits in the post-development condition. This structural BMP is applicable and utilized in the PCSM design for this project.

BMP 6.7.3: Soil Amendment & Restoration – Proposed soil amendment areas are proposed for the project. These features effectively reduce stormwater volume in the post-development condition. This structural BMP is applicable and utilized in the PCSM design for this project.

Peak Rate Control

The project site is located within Stormwater Runoff Rate District C and is subject to the following peak rate control criteria:

<u>Post-Development</u>		<u>Pre-Development</u>
2-Year	Reduced to	1-Year
5-Year	Reduced to	2-Year
100-Year	Reduced to	50% of the 100-Year

The project is designed to comply with the requirements to reduce the post-development 5-year storm beyond the pre-development on-site 2-year storm, as well as reducing the Post 2-year storm beyond the On-site Pre 1-year storm. See table below for summary of peak runoff rates for Discharge Point #1 and #2 (DP 001 and DP 002):

Summary of Peak Runoff Rate Control (DP 001)

	DP 001 - Peak Flow (cfs) - SCS Method						
Design Storm	1-Year	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
Pre-Development	52.10	76.62	116.09	152.76	190.23	218.64	256.76
Maximum Allowable Post-Development	---	52.10	76.62	---	---	---	128.38
Post-Development	18.35	25.74	40.84	54.44	66.86	77.60	94.37*

* $94.46 \text{ cfs} / 256.76 \text{ cfs} = 36.79\%$

(Post-Dev 100-year reduced to 36.79% of Pre-Dev 100-year peak rate)

Summary of Peak Runoff Rate Control (DP 002)**

	DP 002 - Peak Flow (cfs) - SCS Method						
Design Storm	1-Year	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
Pre-Development	37.26	49.52	67.04	82.56	98.00	109.52	124.83
Maximum Allowable Post-Development	---	37.26	49.52	---	---	---	62.41
Post-Development	26.10	36.78**	53.47**	68.68	84.19	95.87	111.45**

** Disturbance in DP 002 only involves the demolition of existing impervious buildings and structures associated with the powerhouse. Lawn areas are proposed for the post development condition in all disturbed areas. Therefore, peak rate controls were only met for corresponding storm events (100-year post < 100-year pre, 50-year post < 50-year pre, etc.)

Refer to the pre- and post-development hydrographs for full routing of each design storm.

Groundwater Recharge

Required groundwater recharge volume (**Re**):

$$P = I \text{ (Infiltration)} = (200 / CN) - 2$$

Where:

P = I = infiltration requirement (inches)

CN = SCS (NRCS) curve number of the existing conditions contributing to the recharge facility

$$Re = I * \text{impervious area (SF)} / 12 \text{ Cubic Feet (CF)}$$

Discharge Point #1 (DP 001):

Pre-CN = 74.5

Impervious Area = 6,297,034 SF

$P = (200 / 74.5) - 2 = 0.685$ inches

$Re = 0.685 * 6,119,744 / 12 = 359,227$ CF

Groundwater recharge requirements have been achieved through managed release of stormwater through Bio-retention (MRC) Basins #12A/#12B and #14. Given the absence of the use of traditional infiltration for the site, Bio-retention (MRC) Basins #12A/#12B and #14 are designed according to the Managed Release Concept Design Guidelines with no deviations per PA DEP standards. The impounded stormwater in the basin below the first orifice will be filtered through an engineered soil media and collected by an underdrain designed to release this volume at a rate comparable to the lateral unsaturated flow movement to the receiving water from undeveloped areas. Since the MRC Basins are designed according to the Managed Release Concept Design Guidelines with no deviations, it may be used to satisfy 25 PA Code Section 102.8(g)(2) requirements for the management of all events up to and including the 2-year/24-hour storm volume. This volume is considered to be permanently removed by the PA DEP. The 2-year/24-hour storm volume to the MRC Basins #12A/12B is 173,278 CF and the 2-year/24-hour storm volume to the MRC Basin #14 is 261,249 CF per the routing software. Therefore, the total groundwater recharge volume provided for the site equals 173,278 CF + 261,249 CF = **434,527 CF**. The calculations for this volume are contained in the *Managed Release Concept* section of this narrative.

Water Quality Requirement

Bio-retention (MRC) Basins #13B, #13C, and #13D are designed to retain a volume beyond the required groundwater recharge and release it slowly over time. This required water quality volume (WQv) is the storage capacity needed to capture and treat a portion of stormwater runoff from the developed areas of the site produced from 90% of the average annual rainfall.

$$WQv = [(P)(Rv)(A)]/12$$

Where:

WQv = Water quality volume (acre-feet)

P = Rainfall amount equal to 90% of events producing this rainfall (inches)

A = Area of the project contributing to the water quality BMP (acres)

Rv = **0.05 + 0.009(I)** where I is the percent of the area that is impervious surface (impervious area/A x 100)

Discharge Point #1 (DP 001):

$$Rv = 0.05 + 0.009 \times (65.55) = 0.640$$

$$P = 2.04 \text{ inches (PennDOT Region 5)}$$

$$A = 220.53 \text{ acres}$$

$$WQv = (2.04) (0.640) (220.53) / 12 = 23.992 \text{ acre-feet} = 1,045,110 \text{ CF}$$

For Water Quality calculations, the Groundwater Recharge volume credits as detailed above can be utilized, thus for MRC Basins #12A/12B and MRC Basin #14 , a total volume of **434,527 CF** is provided. Additionally, for Wet Ponds #12C/12D, #13A/13B/13C, and #15C/15D, the first orifice is set at elevation 10.00, therefore volume in the 2-year storm will not outflow below this elevation. Thus, the volume credit for Wet Ponds #12C/12D is **92,694 CF**, the volume credit for Wet Ponds #13A/13B/13C is **164,003 CF**, and the volume credit for Wet Ponds #15C/15D is **881,059 CF**. The total volume credit for all Wet Ponds is 92,694 CF + 164,003 CF + 881,059 CF = **1,137,756 CF**. These volumes do not outlet and thus are considered permanently removed water quality volume. Worksheets displaying these volumes are provided in *Section III* of this report.

Therefore, the total provided water quality volume for DP 001 is:

$$434,527 \text{ CF} + 1,137,756 \text{ CF} = \mathbf{1,572,283 \text{ CF}}$$

Maintenance and Operation Procedures

It is the sole responsibility of the owner to complete all maintenance items and tasks described in this "Operation & Maintenance Manual":

1.0 Short- and Long-term Maintenance & Operation Requirements:

Until the permittee or co-permittee has received a written approval of a notice of termination, the permittee or co-permittee will remain responsible during the short term for compliance with the permit terms and conditions including long-term operation and maintenance of all PCSM BMPs on the project site and is responsible for violations occurring on the project site. The department or conservation district will conduct a final inspection and approve or deny the notice of termination within 30 days.

The permittee or co-permittee shall be responsible for long-term operation and maintenance of PCSM BMPs unless a different person is identified in the notice of termination and has agreed to long-term operation and maintenance of PCSM BMPs.

For any property containing a PCSM BMP, the permittee or co-permittee shall record an instrument with the recorder of deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM BMP, provide for necessary access related to long-term operation and maintenance for PCSM BMPs and provide notice that the responsibility for long-term operation and maintenance of the PCSM BMP is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees, and provide proof of filing with the Notice of Termination under 102.7(b)(5) (relating to permit termination).

The person responsible for performing long-term operation and maintenance may enter into an agreement with another person, including a conservation district, nonprofit organization, municipality, authority, private corporation, or other person, to transfer the responsibility for PCSM BMPs or to perform long-term operation and maintenance of the PCSM BMPs located on the property.

A permittee or co-permittee that fails to transfer long-term operation and maintenance of the PCSM BMP or otherwise fails to comply with this requirement shall remain jointly and severally responsible with the landowner for long-term operation and maintenance of the PCSM BMPs located on the property.

BMPs should be inspected at least one (1) time per year and after runoff events.

The PCSM BMPs must be inspected and maintained as noted under operation and maintenance notes. This includes repairs and replacement if required to ensure they function/operate properly.

A written report documenting each inspection and all BMP repairs and maintenance activities must be completed and made available for DEP or BCCD staff for review.

2.0 Dry Extended Detention Basins and Bio-retention (MRC) Basins

A. Embankment - the embankment for this facility is an earthen berm; therefore, the following maintenance items are required to ensure its structural integrity:

1. 100% vegetative coverage by herbaceous species must be maintained throughout all areas of the berm and all other areas of direct drainage to the berm. Any areas that become void of vegetation must be immediately corrected by replanting or other adequate measures necessary to prevent erosion that may jeopardize the structural integrity of the facility.
2. Vegetation on the embankments of the facility should be mowed at a minimum of two to three times per year. No trees are to be planted or maintained within the facility. Minimum height of vegetation when mown shall be four (4") inches.
3. Any erosion, slumping or other soil disturbances within the facility that are noted during routine maintenance shall be immediately repaired. Additional materials, as specified by a registered professional engineer, shall be added where necessary to return eroded areas to grade. All repaired areas shall be either rock-lined or immediately re-vegetated with recommended herbaceous species.

B. Facility Structure - the basin shall be vegetated and mulched by a qualified landscaper in accordance with the design plans.

1. All trash and debris shall be removed from the rain garden following all measurable runoff events or when such materials are observed.
2. The gravel trench shall be inspected during routine maintenance for physical damages, change of physical conditions, and signs of erosion. Minor damage shall be repaired immediately.
3. Vegetation shall be inspected at the beginning of each growing season and replaced as needed.

C. Rip Rap Aprons

1. Examine aprons for shifting or excessive settlement.
2. Ensure that aprons are not overgrown with brush or trees.
3. Look for gullies or areas of bare earth downstream from aprons. Repair these areas and stabilize immediately.
4. Ensure that the area downstream is clear of obstructions.
5. Aprons that become laden with silt or excessive vegetation shall be removed and reinstalled after the apron area has been cleaned and regraded.

D. Maintenance Schedule

1. Regular Maintenance - regular maintenance shall be conducted on an “as needed” basis including, but not limited to, mowing of vegetation, trash and debris removal, rodent removal, and repairs of physical damage. Trash, leaf, and debris removal shall occur immediately following all measurable rain events or when such materials are observed. During the fall season, any yard drains or inlets connected to the facility shall be checked and cleared a minimum of one (1) time per month for leaf litter and other debris which may clog pipes.
2. Routine Maintenance - two (2) routine maintenance events shall be conducted annually by the owner/operator. The first event will occur in March or April after the snow pack has completely melted, and the second will occur in October or November after all leaves have fallen from the trees but prior to the onset of winter weather conditions. All maintenance events shall be conducted by the owner/operator. Any problems noted during the maintenance events shall be immediately corrected.
3. Special Maintenance - A special inspection shall be made following extreme runoff events. An extreme runoff event shall be any rainfall event with an average return period of 10 years or greater. In addition to the regular maintenance noted above, any failed vegetation shall be replaced and any erosion along the basin side slopes shall be repaired.
4. Inspection Tasks - two (2) annual inspections will be conducted by the owner/operator for the life of the facilities. These inspections will be for all items as listed for the routine maintenance events. All basin inspections will adhere to the specific criteria noted above. Any problems noted during inspection shall be immediately corrected including any and all routine maintenance items. A consulting engineer will be contacted if there are any structural problems beyond the scope of routine maintenance.

3.0 Wet Pond / Retention Basin

1. All catch basins and inlets should be inspected and cleaned at least 2 times per year.
2. The overlaying vegetation (if applicable) of the detention basin features should be maintained in good condition, and any bare spots re-vegetated as soon as possible.
3. Vehicular or construction equipment access on the detention basin area should be prohibited, and care should be taken to avoid excess compaction by mowers (if applicable). If access is needed, use of permeable, turf reinforcement should be considered.
4. If bmp problems or functionality failures are observed, take immediate corrective action as necessary.
5. Failure of the basins could entail standing water observed 72 hours after the storm event or water overtopping the outlet structure. should this occur, a pump shall be used per manufacturer's specifications to drain standing water.
6. Piping and outlet structure shall be inspected for clogging. Any clogging or miscellaneous trash or debris shall be removed. Underground pipes shall be flushed and pumped to remove any potential clogging or sediment.

4.0 Soil Amendment Restoration

- A. Inspection of soil amendment restoration areas shall be biannual. Regular maintenance shall be conducted as needed. Any erosion, slumping or other soil disturbances that are noted during inspection shall be immediately repaired. Additional materials, as specified by a registered professional engineer, shall be added where necessary to return eroded areas to grade.

5.0 Water Quality Filters

- A. Maintenance intervals may vary depending on site conditions. Inspect quarterly during the first year of operation, biannually thereafter.
- B. Inspect and maintain water quality filters from the surface, without entry into the inlet. Perform maintenance when half full of sediment and debris. Replace filter media in accordance with manufacturer's guidelines and in accordance with federal, state and local regulations.
- C. System replacement will be warranted where the following conditions exist:
 1. The system does not operate according to the design criteria.
 2. The system components become damaged beyond standard maintenance repairs.

II. MANAGED RELEASE CONCEPT

Managed Release Concept Design Guidelines

The pre-development site characterization and assessment of soil and geology of the project site presents several impediments for successful infiltration including high groundwater and the proximity of the Delaware River. Therefore, Bio-retention Basins utilizing the PADEP's Managed Release Concept (MRC) were selected as the primary BMPs for water quality treatment and slow release of lower order runoff events at a rate similar to the lateral unsaturated flow movement to the receiving waters from undeveloped areas. The PADEP's MRC design standards are included below and were utilized to the maximum practicable extent. Deviations from these design standards are noted where applicable.

1. **Runoff Capture** – The runoff from the 1.2-in/2-hr storm from the contributing watershed that the MRC is intended to treat should be captured and managed by the MRC BMP, filtered through vegetated media or treated and filtered to the extent practicable through the on-site undisturbed soils or other acceptable treatment systems, and released as indicated in MRC Standard 2. The MRC may be designed for offsetting when contributing non-regulated earth disturbance is present in the contributing drainage area, but the total volume managed may not exceed the volume of runoff generated in the 2-yr/24-hr storm. Uncompacted pervious surfaces outside the disturbed area should be bypassed to the maximum extent practical.

Bio-Retention (MRC) Basins #12A and 12B:

Bio-retention (MRC) Basins #12A and 12B will capture and filter the volume generated by the 1.2-in/2-hr storm. This volume, as calculated by the routing software, was found to be 41,898 CF for Basins #12A and 12B. Storage for this volume is attained at elevation 12.12.

In addition to the 1.2-in/2-hr runoff volume, the basins were designed to retain the increase in volume between the pre- and post-construction 2-yr/24-hr storm (Delta 2 volume) for Bypass Area #1, which yields a volume of -6,314 CF. With the 1.2-in/2-hr runoff of 41,898 CF plus the Delta 2 volume of -6,314 CF yields a total of 35,584 CF of required managed release volume.

The first orifice designed to handle larger storm events is at elevation 13.00. Total available volume at this elevation is 64,785 CF and the basins will filter this volume through the vegetated soil media.

Therefore, this design standard has been met.

Bio-Retention (MRC) Basin #14:

Bio-retention (MRC) Basins #14 will capture and filter the volume generated by the 1.2-in/2-hr storm. This volume, as calculated by the routing software, was found to be 55,059 CF for Basin #14. Storage for this volume is attained at elevation 11.89.

In addition to the 1.2-in/2-hr runoff volume, the basins were designed to retain the increase in volume between the pre- and post-construction 2-yr/24-hr storm (Delta 2 volume) for Bypass Areas #2 and #3, which yields a volume of 2,271 CF. With the 1.2-in/2-hr runoff of 55,059 CF plus the Delta 2 volume of 2,271 CF yields a total of 57,330 CF of required managed release volume.

The first orifice designed to handle larger storm events is at elevation 13.00. Total available volume at this elevation is 99,102 CF, and the basin will filter this volume through the vegetated soil media.

Therefore, this design standard has been met.

2. **Release Rate for the 1.2-in/2-hr Storm** – The stormwater release rate from the MRC BMP for the 1.2-in/2-hr storm should not exceed 0.01 cubic feet per second (cfs) from the equivalent impervious area. To obtain the equivalent impervious area being managed by an MRC BMP, determine the total volume of runoff generated during the 1.2-in/2-hr event from all pervious and impervious areas contributing to the MRC and divide by 0.0833 feet. This release rate is rounded to the nearest hundredth of a cfs (e.g., 1.576 ac. Is 0.01576 cfs, rounded to 0.02 cfs). Routing is necessary to demonstrate compliance with the standard for release rate.

Bio-Retention (MRC) Basins #12A and 12B:

Routing of the 1.2-in/2-hr storm using the computer software generates a volume of 41,898 CF. This volume yields Equivalent Impervious Areas of:

Volume of 1.2-in/2-hr storm inflow (CF) / (0.0833 ft * 43,560 sf/ac)

Basins #12A and #12B: $41,898 / (0.0833 * 43,560) = 11.55$ ac.

MRC BMP Release Rate = Equivalent Impervious Area (ac) * 0.01 cfs

Basins #12A and #12B = $11.55 * 0.01 = 0.115$ cfs

The orifice diameter on the underdrain within the outlet structure is 2.00 in. Routing of the basins within the software yields a maximum release rate of 0.026 cfs for the 1.2-in/2-hr storm.

Therefore, this design standard has been met.

Bio-Retention (MRC) Basin #14:

Routing of the 1.2-in/2-hr storm using the computer software generates a volume of 55,059 CF. This volume yields Equivalent Impervious Areas of:

$$\text{Volume of 1.2-in/2-hr storm inflow (CF)} / (0.0833 \text{ ft} * 43,560 \text{ sf/ac})$$
$$\text{Basin \#14: } 55,059 / (0.0833 * 43,560) = 15.17 \text{ ac.}$$

$$\text{MRC BMP Release Rate} = \text{Equivalent Impervious Area (ac)} * 0.01 \text{ cfs}$$
$$\text{Basin \#14} = 15.17 * 0.01 = 0.151 \text{ cfs}$$

The orifice diameter on the underdrain within the outlet structure is 2.00 in. Routing of the basins within the software yields a maximum release rate of 0.000 cfs for the 1.2-in/2-hr storm.

Therefore, this design standard has been met.

3. **Internal Water Storage (IWS)** – A volume for IWS should be provided that is at least one foot deep below the lowest structural outlet (i.e. the outlet for the underdrain) in the MRC BMP to encourage ET, infiltration and denitrification. To encourage ET, the overall soil media depth of a facility including the IWS can be no deeper than four (4) feet, and up to 50% of the IWS void volume can be included (only for vegetated MRC BMPs) as available storage during hydrologic routings to demonstrate compliance with the standards for the release rate (No. 2 above) and peak flow attenuation (No. 4 below). For soil media, a void space of 30% can be used to describe the soil volume storage and recovery. If an alternate void space is used for soil media, specific data demonstrating the void space should be submitted. For non-vegetated MRC designs, the IWS must be above the underdrain, but below the outlet, to promote a change of the stormwater stored during rain events.

Use of Liners – The MRC BMP should not have an impervious liner installed unless environmental or geological conditions necessitate use of a liner, or if an existing structure would be damaged as a result of not lining the facility.

Bio-Retention (MRC) Basins #12A, 12B, and #14:

The Bio-retention (MRC) Basins #12A, 12B, and #14 bottoms will be vegetated with native grasses, sedges, and rushes to promote evapotranspiration. The basins utilize 2 feet of soil media below the bottom of the basin to the invert of the underdrain. Another 1 foot of soil media is provided below the underdrain for IWS for a total of 3 feet of soil media depth. A void space of 15% was used for storage calculation to represent 50% storage routing within the IWS and storage media from underdrain invert to basin bottom. In the modeling software, the bottom of IWS for Basins #12A, #12B, and #14 is set at elevation 10.50 to accurately model 1.0' depth of IWS at 15% voids (1.0' IWS depth @ 15% voids = 0.5' IWS depth @ 30% voids).

This design standard has been met.

4. **Peak Flow Attenuation for the 2-yr/24-hour Event** – The peak flow from the post-construction 2-yr/24-hr storm should be managed back to the pre-construction 1-yr/24-hr storm peak flow, unless an approved and current Act 167 Plan or another requirement (such as limited capacity of a downstream channel) is more restrictive. In general, this rate is determined at the project point of interest. In the event the MRC drainage area is part of a larger overall site with non-MRC BMPs, only the MRC drainage peak flows must be managed back to the 1-yr/24-hr level and overflows can be combined with flows from the non-MRC BMPs.

In situations where the pre-construction drainage area to the MRC BMP varies significantly compared to the post-construction drainage area, the post-construction drainage area boundary to the MRC BMP (using existing land uses) can be used to calculate the target pre-construction 1-yr/24-hr rate, as long as all areas in question are in close proximity to the MRC BMP and drain to the same surface water. In cases where the BMP is managing additional volume to offset adjacent areas that could not be captured in the MRC BMP, the targeted pre-construction 1-yr/24-hr release rate should be calculated based on the combined flow rates from the BMP drainage area and the adjacent area.

Flows Greater Than 2-yr/24-hr Storm – The recommended design for MRC BMPs is to bypass storm events larger than the 2-yr/24-hr storm to a rate control BMP; however, DEP understands that site and cost limitations may not allow for this bypass. When it is demonstrated by the licensed professional engineer that larger storm events cannot reasonably be bypassed, the MRC BMP surface component should be designed to manage the post-construction 10-, 50- and 100-yr/24-hr storm event peak flows to their corresponding pre-construction rates and the MRC BMP should have an increased (i.e., more frequent) inspection and maintenance schedule that includes inspection and repair after extreme events (10-, 50- and 100-yr/24-hr storm events).

The pre-construction 1-yr/24-hr peak runoff rate on-site for DP 001 is 52.10 cfs. After management, the post-construction 2-yr/24-hr peak runoff rate at Discharge Point #1 (DP 001) will be 25.74 cfs. Due to site limitations and the size of the facility required to manage the anticipated runoff, the MRC BMP will be used to mitigate the peak runoff from the 10-, 50- and 100-yr/24-hr storm events. Special attention is given in the Stormwater Operations and Maintenance procedures for inspection and repair after large rain events.

This design standard is met.

5. **Stormwater BMP Manual** – Follow the design considerations for BMPs as presented in the *Pennsylvania Stormwater Best Management Practices Manual* as revised. MRC may be incorporated into the design of any BMP by a licensed professional engineer.

Bio-retention Basin (BMP 6.4.5 in the Stormwater BMP Manual) was selected for general flexibility and ability to filter and treat pollutants through the use of native plantings and soil media. Bio-retention treats stormwater by pooling water on the surface and allowing it to settle and filter through the plant/soil/microbe complex media. This process adapts well for use in MRC BMPs.

Design standard is met.

6. **MRC BMP Selection** – Standard MRC BMPs include the following system types:
 - a. **Vegetated MRC** – Vegetation must be provided for 75% of the surface of the MRC BMP. Native vegetation should be selected by the licensed professional engineer in consultation with a professional that is knowledgeable in native plant ecology. Vegetation should be selected based on the plants' ability to grow within the anticipated conditions considering the depth and duration of stormwater stored in the MRC BMP.
 - b. **Non-vegetated MRC: Porous Pavement** – Porous pavements with a storage bed require a vacuum street sweeping maintenance regime adequate for the drainage area characteristics; the vacuum street sweeping equipment must provide adequate suction capacity to remove particles on the pavement's surface to provide a sufficient water quality demonstration and to maintain flow pathways.
 - c. **Non-vegetated MRC: Underground Storage Chambers** – The use of the MRC BMP with non-vegetated, non-porous pavement stormwater practices must have pre-treatment, post-treatment, or a combination of both pre- and post-treatment measures incorporated into the design, to provide sufficient water quality. Underground storage chambers must be accessible for maintenance, and for this reason underground storage is not recommended to be rock beds. Pre- and post-treatment can be achieved through a treatment train concept that includes other BMPs listed in the Stormwater BMP Manual (as revised) so that the combination of BMPs provide 85% removal of TSS and associated Phosphorus. The MRC is considered a primary BMP for nitrate removal through the use of the IWS. Preferred pre- and post-treatment BMPs include: level spreader with vegetated filter strip, vegetated swale, other vegetated systems, and manufactured treatment devices. An applicant must demonstrate that the treatment train will meet water requirements by using Worksheets 11-13 or by providing an alternative water quality demonstration that is acceptable to DEP.

Vegetated Bio-retention Basins have been selected for the incorporation of the MRC BMP. Both basin bottom and basin side slopes shall be vegetated. Vegetation will include native grasses, sedges, and rushes in both plug beds and as seed mix. Vegetation species and mixtures, plant spacing and planting details, and the specification for the soil media have been selected by a Registered Landscape Architect specifically for use at this site and in these conditions. It is anticipated that these species will do well under normal conditions and will survive the depth and duration of larger storm events.

This design standard is met.

7. **Pre-Development Site Characterization and Assessment of Soil and Geology** – Adequate and appropriate soils and geologic testing and evaluation must be performed to demonstrate the infiltration capacity of the entire project site to the satisfaction of DEP. At a minimum, one infiltration test for every 40,000 square feet of disturbed acreage should be performed with a minimum of four tests, equally distributed across a site. The infiltration tests must be done in the most accommodating soil horizon for infiltration as demonstrated by a deep hole test within 100 feet of the infiltration test. All other sections of Appendix C Protocol 1, Site Evaluation and Soil Infiltration Testing and Appendix C Protocol 2, Infiltration Systems Guidelines per the Stormwater BMP Manual (as revised) should be followed to clearly demonstrate the infiltration capability of on-site undisturbed soils at applicable elevations and for a variety of locations. Soil probes and infiltration test locations should be identified on the PCSM Plan drawing(s). The use of soil borings as a substitute for test pits can be used as a planning tool but will not generally be accepted for final design of infiltration MRC BMPs.

Due to the existing site being utilized for industrial purposes, and the site's proximity to the Delaware River, infiltration for stormwater management is not utilized. Therefore, MRC design was implemented for Bio-retention (MRC) Basins #12A, #12B, and #14 on-site due to the lack of infiltration capability.

This design standard is met.

8. **Separation Distance** – At least one foot of separation distance should be maintained between groundwater or the seasonally high-water table and the bottom footprint of the MRC BMP's soil media; however, a two-foot separation is preferred. There is no minimum separation required between bedrock or hardpan and the MRC BMP's soil media.

The proposed Bio-Retention BMPs are not designed for infiltration. Groundwater or the seasonally high-water table was not encountered for this project area.

This design standard is met.

9. **Ponding Depth and Drawdown Time** – The maximum ponding time (i.e., the time after the end of storm event for stored surface water to lower to soil surface) should not exceed 72 hours for any storm event. In general, a maximum ponding depth (i.e., storage depth above BMP surface) of one to two feet at the peak of the 2-yr/24-hr storm event should not be exceeded for the design of surface BMPs. In accordance with MRC Design Standard 4, the MRC might incorporate a multi-stage detention facility with the upper portions of the facility providing flow attenuation for storm events greater than the 2-yr/24-hr storm, to meet 25 Pa. Code §102.8(g)(3). An engineered overflow structure or reinforced spillway/berm should be installed to provide safe conveyance for storm events greater than the 2-yr/24-hr storm. Ponding depths for storms larger than the 2-yr/24-hr storm should not exceed four feet, and drawdown to the MRC BMP surface should not exceed 72 hours for all design storms. For underground storage chambers and porous pavement MRC systems, drawdown to the IWS storage level should not exceed 7 days.

Basins #12A and #12B

	<u>Drawdown Time</u>	<u>Ponding Elevation</u>	<u>Ponding Depth</u>
2-yr / 24-hr Storm	38.65 hrs	13.84	0.84 ft
10-yr / 24-hr Storm	53.42 hrs	14.65	1.65 ft
50-yr / 24-hr Storm	55.47 hrs	15.01	2.01 ft
100-yr / 24-hr Storm	56.18 hrs	15.24	2.24 ft

This design standard is met.

Basin #14

	<u>Drawdown Time</u>	<u>Ponding Elevation</u>	<u>Ponding Depth</u>
2-yr / 24-hr Storm	40.43 hrs	13.82	0.82 ft
10-yr / 24-hr Storm	63.56 hrs	14.81	1.81 ft
50-yr / 24-hr Storm	69.25 hrs	15.35	2.35 ft
100-yr / 24-hr Storm	70.54 hrs	15.58	2.58 ft

This design standard is met.

10. **Soil Media** – The selection of soil media should be done by considering anticipated pollutants to be treated and the vegetation that will be used. On-site soils should be evaluated for desired characteristics and infiltration capabilities as listed below. The depth of the soil media above the invert elevation of the underdrain pipe should be a minimum of 2 feet to provide pollutant removal. If on-site undisturbed soils are unsuitable for the purpose of providing IWS, an additional one to two feet of suitable soil media should be provided below the underdrain.

Soil Media Discharge – The designer will need to exercise caution when selecting a soil media, as there is a delicate balance between infiltration rate and residence time. As noted in Appendix C, Protocol 2 of the Stormwater BMP Manual (as revised), the design soil infiltration rate should be between 0.1 inch per hour and 10 inches per hour for native soils. To maximize water quality treatment, the residence time within the soil media used in MRC BMPs should be selected to be close to the parameters established for infiltration into native soils. The designer will need to select a soil media that provide the proper infiltration rate and ponding time to achieve water quality for the anticipated life cycle of the BMP.

Bio-retention, vegetation, and the soil media were specifically selected for their ability to reduce the expected pollutants on the project site. 2 feet of soil media will be provided above the invert elevation of the underdrain for the Bio-retention (MRC) Basins proposed on-site. It is anticipated that on-site soils will be suitable for use within the soil media in providing IWS.

Residence time within the soil media will be maximized given the 1.2in./2-hr storm elevation does not exceed the overflow orifice in the outlet structures of the MRC basins.

This design standard has been met.

11. **Underdrain Design** – The licensed professional engineer can refer to PennDOT Publication 408 Section 610 for specifications of underdrains. However, underdrains should have a minimum flow rate of 10 gallons (1.34 cubic feet) per minute per linear foot of pipe not considering the flow control orifice or upturned elbow. For non-vegetated MRC BMPs, the underdrain should be located at the bottom of the IWS to promote movement of water from previous storms. There may need to be multiple underdrains, or longer underdrains, to provide adequate design capacity for drainage. Section 6.4.7 (Constructed Filter) of the Stormwater Management BMP Manual (as revised) has recommended design standards for lateral spacing of multiple underdrains.

IWS Outflow with Capped/Orifice Underdrain – It is highly recommended that an upturned elbow or an elevated weir be designed at the outlet of the underdrain. The upturned elbow or elevated weir will create a zone within the soil media, referred to as the IWS. Research has shown that IWS can reduce runoff volume and improve water quality treatment. The upturned elbow or elevated weir can also help if site conditions present daylighting issues for the underdrain's discharge elevation. Underdrains should be capped within an outlet structure when used to allow access for maintenance. The cap should be drilled to provide an appropriately sized orifice. Note that all cleanouts and angles within the underdrain should not exceed 45 degrees. For lined, non-vegetated MRCs the underdrain leading to the upturned elbow should be located at the bottom of the IWS.

Underdrain Aggregate Envelope – A 6-inch stone envelope of AASHTO #57 should be placed around the underdrain. A geotextile (or pea gravel diaphragm) is needed around the aggregate envelope. Note that the stone should be placed throughout the bottom of the BMP, but just in the envelope of the underdrain.

Cleanout for the Underdrain – The underdrain(s) should be equipped with a cleanout for maintenance. The design of any cleanout should ensure that surface water does not enter the underdrain system through the top of the cleanout. Consideration must be given for cleaning and inspecting underdrains and access to the upturned elbow or elevated weir.

Orifices – An appropriately sized orifice is necessary on the outlet of the underdrain to control flow to the required release rate. The orifice should be clean, smooth and sanded so that no burrs or irregularities are present. The orifice should be on a plate or cap of sufficient thickness, and the edges of the orifice should be ground so that flow through the orifice is smooth. Orifices should be vertical. The orifice plate and other connections should be water-tight and accessible for maintenance. Control valves cannot be substituted for an orifice.

A 12-inch perforated underdrain has been provided throughout the entire length of Bio-Retention (MRC) Basins #12A, #12B, and #14 with an invert elevation 2 feet below the bottom of the basins (invert 11.00). 12-inch solid wall underdrain equalizer pipes are also provided that connect the MRC Basins #12A and #12B at invert elevation 11.00. The underdrain extends into the outlet structure for access and maintenance. The underdrain will be capped watertight for both Basins #12A/#12B and Basin #14 with a 2.00-inch smooth orifice drilled into the cap to provide the design release rate. Cleanouts are provided within the basin bottoms and the outlet structure will act as a cleanout if necessary. A geotextile wrapped, AASHTO #57 envelope is provided around the underdrains.

Therefore, this design standard is met.

12. **Discharge Flow Path** – The MRC BMP should be directed to a suitably vegetated flow path, which can safely convey the releases without erosion or loss of stability. The discharge should be dispersed through the use of a level spreader. A licensed professional engineer can provide analysis, with calculations, which identifies that a level spreader is not necessary, or that discharge to a channel will not cause increased erosion.

Bio-retention Basins #12A, #12B, and #14 have been designed to act as MRC BMPs and provide the required stormwater management for the larger design storms for the Discharge Point on-site. The outlet structure discharges through appropriately sized RCP pipes, flow which eventually conveys to the project Discharge Point, the Delaware River. Runoff rates from the post-construction 2-yr/24-hr storm are managed back to the pre-construction 1-yr/24-hr storm, the post-construction 5-yr/24-hr storm to the pre-construction 2-yr/24-hr storm, and the post construction 100-yr/24-hr storm to the pre-construction 100-yr/24-hr storm. In meeting these requirements, streambank erosion criteria are met.

Therefore, this design standard is met.

13. **Antidegradation Requirements** – Where the stormwater from the project site discharges to a special protection surface water, an MRC BMP can be used to satisfy the Antidegradation Best Available Combination of Technologies (ABACT) regulatory requirements from Chapters 93 and 102 (assuming that non-discharge alternatives do not exist).

The project site is not located within an HQ or EV watershed and the receiving waters are not impaired for siltation, suspended soils, turbidity, water/flow variability, flow modification/alterations or nutrients; therefore, this design standard does not apply.

Pond Report

Pond No. 1 - MRC Basins 12A-B

Pond Data

Capex=0.00, Batede line=10.00, Area=86,265 sqft, Slope=0.00, Volume=0.00, Bottom elevation=18.50, Inlet elevation=13.00, Outlet elevation=13.00, S=30.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	10.50	86,265	0	0
0.25	10.75	86,265	6,470	6,470
0.50	11.00	86,265	6,470	12,940
0.75	11.25	86,265	6,470	19,410
1.00	11.50	86,265	6,470	25,880
1.25	11.75	86,265	6,470	32,349
1.50	12.00	86,265	6,470	38,819
1.75	12.25	86,265	6,470	45,289
2.00	12.50	86,265	6,470	51,759
2.25	12.75	86,265	6,470	58,229
2.50	13.00	86,265	6,470	64,699
2.50	13.00	86,265	86	64,785
3.00	13.50	90,221	44,025	108,810
3.50	14.00	94,207	46,099	154,909
4.50	15.00	105,259	99,572	254,481
5.50	16.00	110,422	107,712	362,193
6.50	17.00	118,697	114,409	476,601
7.50	18.00	127,083	122,731	599,332

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	6.00	2.00	Inactive
Span (in)	= 36.00	6.00	2.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 12.00	13.00	11.00	0.00
Length (ft)	= 85.00	0.00	0.00	0.00
Slope (%)	= 2.31	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	5.00	0.00	0.00
Crest El. (ft)	= 17.00	14.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	Yes	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	10.50	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.25	6,470	10.75	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.50	12,940	11.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.75	19,410	11.25	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.00	25,880	11.50	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.25	32,349	11.75	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.50	38,819	12.00	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.75	45,289	12.25	0.05 ic	0.00	0.04 ic	---	0.00	0.00	---	---	---	---	0.044
2.00	51,759	12.50	0.07 ic	0.00	0.07 ic	---	0.00	0.00	---	---	---	---	0.067
2.25	58,229	12.75	0.08 ic	0.00	0.08 ic	---	0.00	0.00	---	---	---	---	0.085
2.50	64,699	13.00	0.10 ic	0.00	0.10 ic	---	0.00	0.00	---	---	---	---	0.099
2.50	64,785	13.00	0.10 ic	0.00 ic	0.10 ic	---	0.00	0.00	---	---	---	---	0.099
3.00	108,810	13.50	0.61 ic	0.47 ic	0.12 ic	---	0.00	0.00	---	---	---	---	0.589
3.50	154,909	14.00	0.96 ic	0.82 ic	0.14 ic	---	0.00	0.00	---	---	---	---	0.954
4.50	254,481	15.00	7.43 ic	1.25 ic	0.15 ic	---	0.00	5.87	---	---	---	---	7.267
5.50	362,193	16.00	31.86 ic	1.20 ic	0.13 ic	---	0.00	30.53	---	---	---	---	31.86
6.50	476,601	17.00	53.37 ic	0.96 ic	0.11 ic	---	0.00	52.30 s	---	---	---	---	53.37
7.50	599,332	18.00	70.24 ic	0.46 ic	0.05 ic	---	25.00 s	44.72 s	---	---	---	---	70.24

Pond Report

Pond No. 5 - Basin #14 (MRC)

Pond Data

Capexoid - Bottom line at 10.00 ft, Area 32.0 sq ft, Side slopes 1:0.0, Bottom calculation: Beginning Depth 2.50 ft, Width = 30.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	10.50	131,960	0	0
0.25	10.75	131,960	9,897	9,897
0.50	11.00	131,960	9,897	19,794
0.75	11.25	131,960	9,897	29,691
1.00	11.50	131,960	9,897	39,588
1.25	11.75	131,960	9,897	49,485
1.50	12.00	131,960	9,897	59,382
1.75	12.25	131,960	9,897	69,279
2.00	12.50	131,960	9,897	79,176
2.25	12.75	131,960	9,897	89,073
2.50	13.00	131,960	9,897	98,970
2.50	13.00	131,961	132	99,102
3.00	13.50	137,426	67,201	166,303
3.50	14.00	142,907	70,072	236,374
4.50	15.00	153,914	148,362	384,736
5.50	16.00	164,977	159,398	544,134
6.50	17.00	176,097	170,490	714,623
7.50	18.00	187,273	181,638	896,262

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	8.00	2.00	0.00
Span (in)	= 36.00	8.00	2.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 12.00	13.00	11.00	0.00
Length (ft)	= 91.00	0.00	0.00	0.00
Slope (%)	= 2.19	0.00	0.00	n/a
N-Value	= .011	.011	.011	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	5.00	Inactive	0.00
Crest El. (ft)	= 17.00	15.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	Rect	---
Multi-Stage	= Yes	Yes	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	10.50	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.25	9,897	10.75	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.50	19,794	11.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.75	29,691	11.25	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.00	39,588	11.50	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.25	49,485	11.75	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.50	59,382	12.00	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.75	69,279	12.25	0.05 ic	0.00	0.04 ic	---	0.00	0.00	---	---	---	---	0.044
2.00	79,176	12.50	0.07 ic	0.00	0.07 ic	---	0.00	0.00	---	---	---	---	0.067
2.25	89,073	12.75	0.08 ic	0.00	0.08 ic	---	0.00	0.00	---	---	---	---	0.085
2.50	98,970	13.00	0.10 ic	0.00	0.10 ic	---	0.00	0.00	---	---	---	---	0.099
2.50	99,102	13.00	0.10 ic	0.00 ic	0.10 ic	---	0.00	0.00	---	---	---	---	0.099
3.00	166,303	13.50	0.81 ic	0.68 ic	0.11 ic	---	0.00	0.00	---	---	---	---	0.795
3.50	236,374	14.00	1.53 ic	1.37 ic	0.13 ic	---	0.00	0.00	---	---	---	---	1.503
4.50	384,736	15.00	2.33 ic	2.17 ic	0.16 ic	---	0.00	0.00	---	---	---	---	2.334
5.50	544,134	16.00	19.33 ic	2.53 ic	0.16 ic	---	0.00	16.65	---	---	---	---	19.33
6.50	714,623	17.00	47.39 ic	2.10 ic	0.13 ic	---	0.00	45.16 s	---	---	---	---	47.39
7.50	896,262	18.00	69.73 ic	0.92 ic	0.06 ic	---	27.41 s	41.33 s	---	---	---	---	69.72

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	-----	52.10	76.62	0.000	116.09	152.76	190.23	218.64	256.76	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	-----	21.76	39.66	0.000	71.22	102.31	135.37	161.19	196.70	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	-----	12.36	22.81	0.000	41.26	59.46	78.88	94.12	115.02	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	-----	6.342	13.24	0.000	26.73	40.77	56.05	68.17	84.97	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	-----	32.73	43.91	0.000	61.12	76.50	91.87	103.36	118.63	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	-----	10.61	15.17	0.000	22.35	28.92	35.64	40.72	47.51	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	-----	56.17	73.90	0.000	100.62	124.32	147.92	165.54	188.95	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	-----	3.477	4.750	0.000	6.714	8.494	10.28	11.62	13.40	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	-----	62.99	80.01	0.000	105.35	127.71	149.93	166.52	188.57	Post-Dev DA #1 (DP 001)
11	Reservoir	10	0.610	0.853	0.000	1.128	2.281	4.832	7.536	12.15	Rte MRC Basins #12A-B
13	SCS Runoff	-----	71.05	90.25	0.000	118.83	144.04	169.10	187.82	212.69	Post-Dev DA #2 (DP 001)
14	Reservoir	13	0.889	1.954	0.000	3.379	4.349	5.165	5.705	6.335	Rte Wet Ponds #12C-D
16	SCS Runoff	-----	143.70	181.35	0.000	237.37	286.79	335.93	372.65	421.46	Post-Dev DA #3 (DP 001)
17	Reservoir	16	1.926	3.144	0.000	4.780	8.787	14.31	18.83	23.21	Rte Wet Ponds #13A-C
19	SCS Runoff	-----	95.42	123.71	0.000	166.06	203.50	240.72	268.51	305.40	Post-Dev DA #4 (DP 001)
20	Reservoir	19	0.835	1.294	0.000	1.820	2.199	3.707	5.997	10.10	Rte MRC Basin #14
22	SCS Runoff	-----	146.28	190.32	0.000	256.35	314.75	372.83	416.18	473.76	Post-Dev DA #5A (DP 001)
23	Reservoir	22	46.52	68.49	0.000	98.61	126.54	152.92	166.70	184.58	Rte Basin #15A-B
25	SCS Runoff	-----	124.60	174.08	0.000	251.03	321.24	392.39	445.89	517.23	Post-Dev DA #5B (DP 001)
26	Combine	23, 25	158.20	224.90	0.000	329.15	421.63	515.48	586.63	674.27	Total to Wet Ponds #15C-D
27	Reservoir	26	0.000	0.000	0.000	0.663	3.067	5.126	6.382	7.831	Rte Wet Ponds #15C-D
29	SCS Runoff	-----	13.92	19.60	0.000	28.46	36.54	44.78	50.97	59.24	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	-----	0.194	0.266	0.000	0.376	0.476	0.577	0.652	0.752	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	-----	4.071	5.393	0.000	7.399	9.182	10.96	12.29	14.05	Post-Dev-Bypass #3 (DP 001)
33	Combine	29, 30, 31,	18.19	25.24	0.000	36.20	46.20	56.31	63.91	74.04	Total Bypass (DP 001)
35	Combine	11, 14, 17, 20, 27, 33,	18.35	25.74	0.000	40.73	54.31	66.77	77.64	94.46	Total Post-Dev (DP 001)
37	SCS Runoff	-----	37.86	49.52	0.000	67.04	82.56	98.00	109.52	124.83	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	-----	26.10	36.78	0.000	53.47	68.68	84.19	95.87	111.45	Post-Dev-Bypass #5 (DP 002)

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #1 (DP 001)
11	Reservoir	0.000	1	n/a	0	10	10.50	0.000	Rte MRC Basins #12A-B
13	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #2 (DP 001)
14	Reservoir	0.000	1	n/a	0	13	8.00	0.000	Rte Wet Ponds #12C-D
16	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #3 (DP 001)
17	Reservoir	0.000	1	n/a	0	16	8.00	0.000	Rte Wet Ponds #13A-C
19	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #4 (DP 001)
20	Reservoir	0.000	1	n/a	0	19	10.50	0.000	Rte MRC Basin #14
22	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #5A (DP 001)
23	Reservoir	0.000	1	n/a	0	22	13.00	0.000	Rte Basin #15A-B
25	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #5B (DP 001)
26	Combine	0.000	1	n/a	0	23, 25	-----	-----	Total to Wet Ponds #15C-D
27	Reservoir	0.000	1	n/a	0	26	8.00	0.000	Rte Wet Ponds #15C-D
29	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev-Bypass #3 (DP 001)
33	Combine	0.000	1	n/a	0	29, 30, 31,	-----	-----	Total Bypass (DP 001)
35	Combine	0.000	1	n/a	0	11, 14, 17, 20, 27, 33,	-----	-----	Total Post-Dev (DP 001)
37	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev-Bypass #5 (DP 002)
KTC_Greenfield.gpw					Return Period: 3 Year			Thursday, 02 / 13 / 2025 32	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

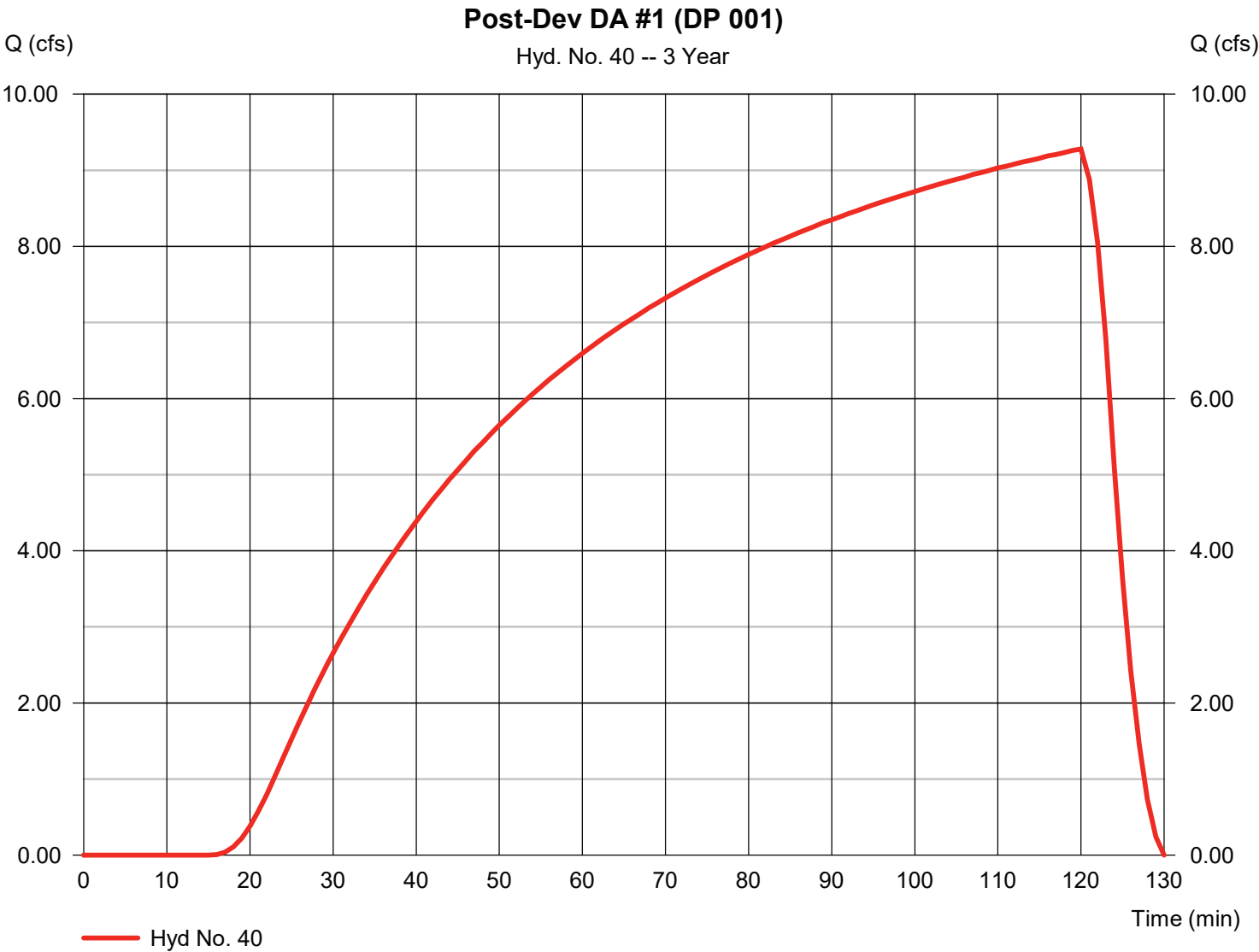
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
40	SCS Runoff	9.281	1	120	41,898	-----	-----	-----	Post-Dev DA #1 (DP 001)
41	Reservoir	0.026	1	130	2,376	40	12.12	41,885	Rte MRC Basins #12A-B
43	SCS Runoff	13.68	1	120	55,059	-----	-----	-----	Post-Dev DA #4 (DP 001)
44	Reservoir	0.000	1	n/a	0	43	11.89	55,059	Rte MRC Basin #14
46	Combine	0.000	1	n/a	0	10, 13, 16, 19, 22, 25, 33, 46	-----	-----	Total Post (No BMPs)
47	Combine	0.000	1	n/a	0		-----	-----	Total Post (No BMPs with Bypass)
KTC_Greenfield.gpw					Return Period: 3 Year			Thursday, 02 / 13 / 2025 33	

Hydrograph Report

Hyd. No. 40

Post-Dev DA #1 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	9.281 cfs
Storm frequency	=	3 yrs	Time to peak	=	120 min
Time interval	=	1 min	Hyd. volume	=	41,898 cuft
Drainage area	=	18.140 ac	Curve number	=	93.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	1.20 in	Distribution	=	Custom
Storm duration	=	Q:\LANDDEV\2020\2007083_USS Fairless_Hills_Master_Plan\2007083-05 - Ph			



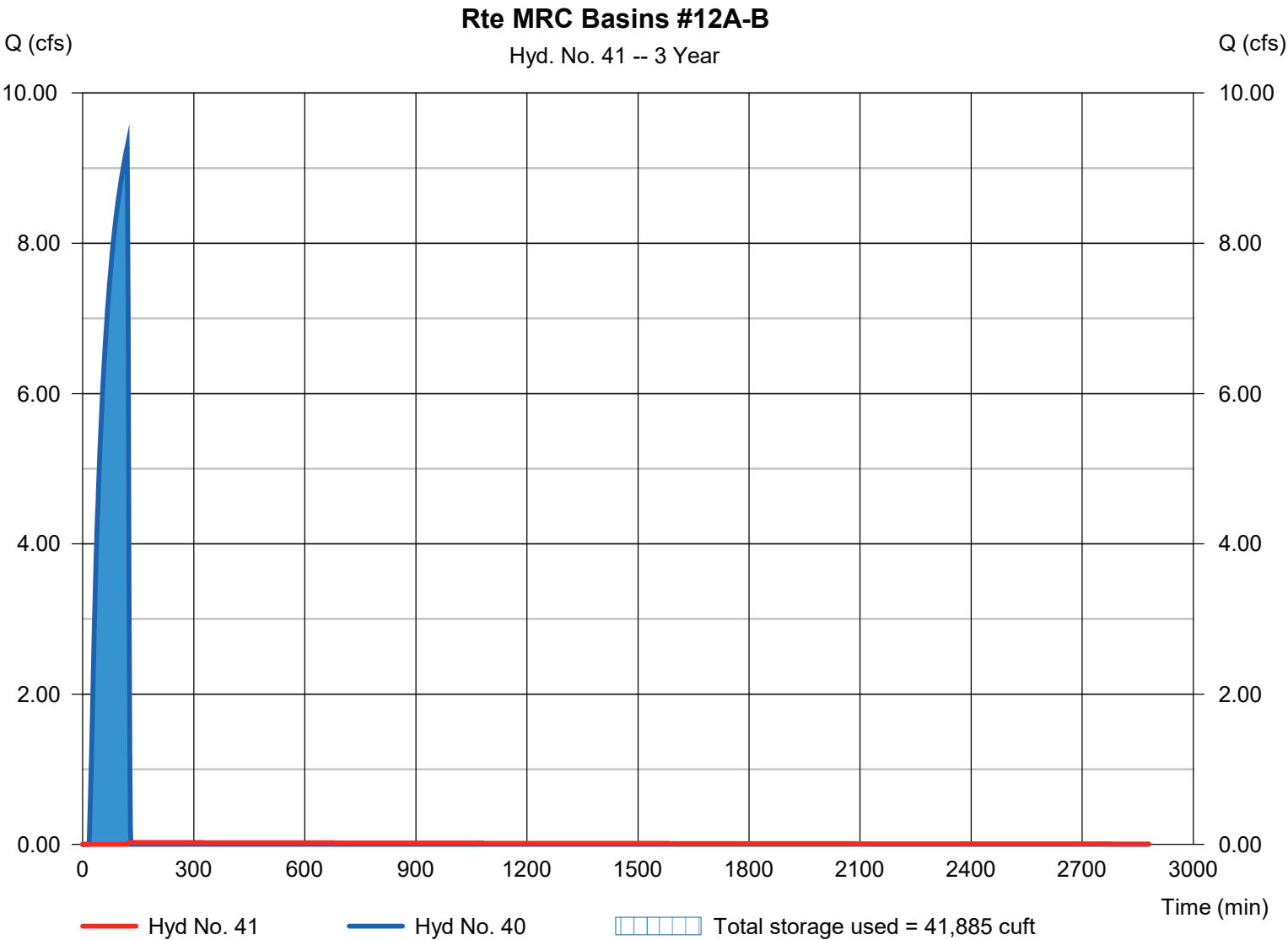
Hydrograph Report

Hyd. No. 41

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.026 cfs
Storm frequency	= 3 yrs	Time to peak	= 130 min
Time interval	= 1 min	Hyd. volume	= 2,376 cuft
Inflow hyd. No.	= 40 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 12.12 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 41,885 cuft

Storage Indication method used.

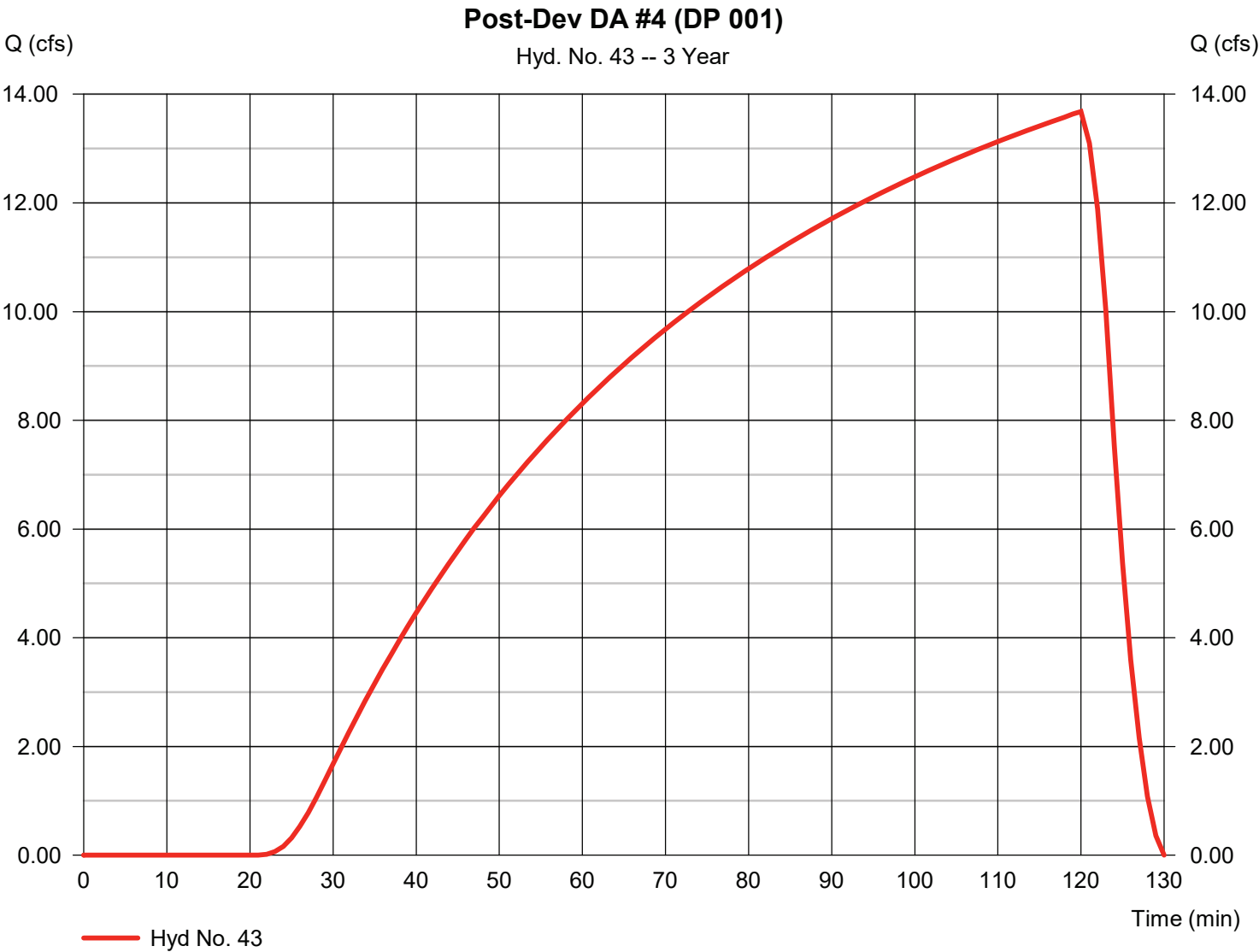


Hydrograph Report

Hyd. No. 43

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 13.68 cfs
Storm frequency	= 3 yrs	Time to peak	= 120 min
Time interval	= 1 min	Hyd. volume	= 55,059 cuft
Drainage area	= 30.020 ac	Curve number	= 90.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 1.20 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



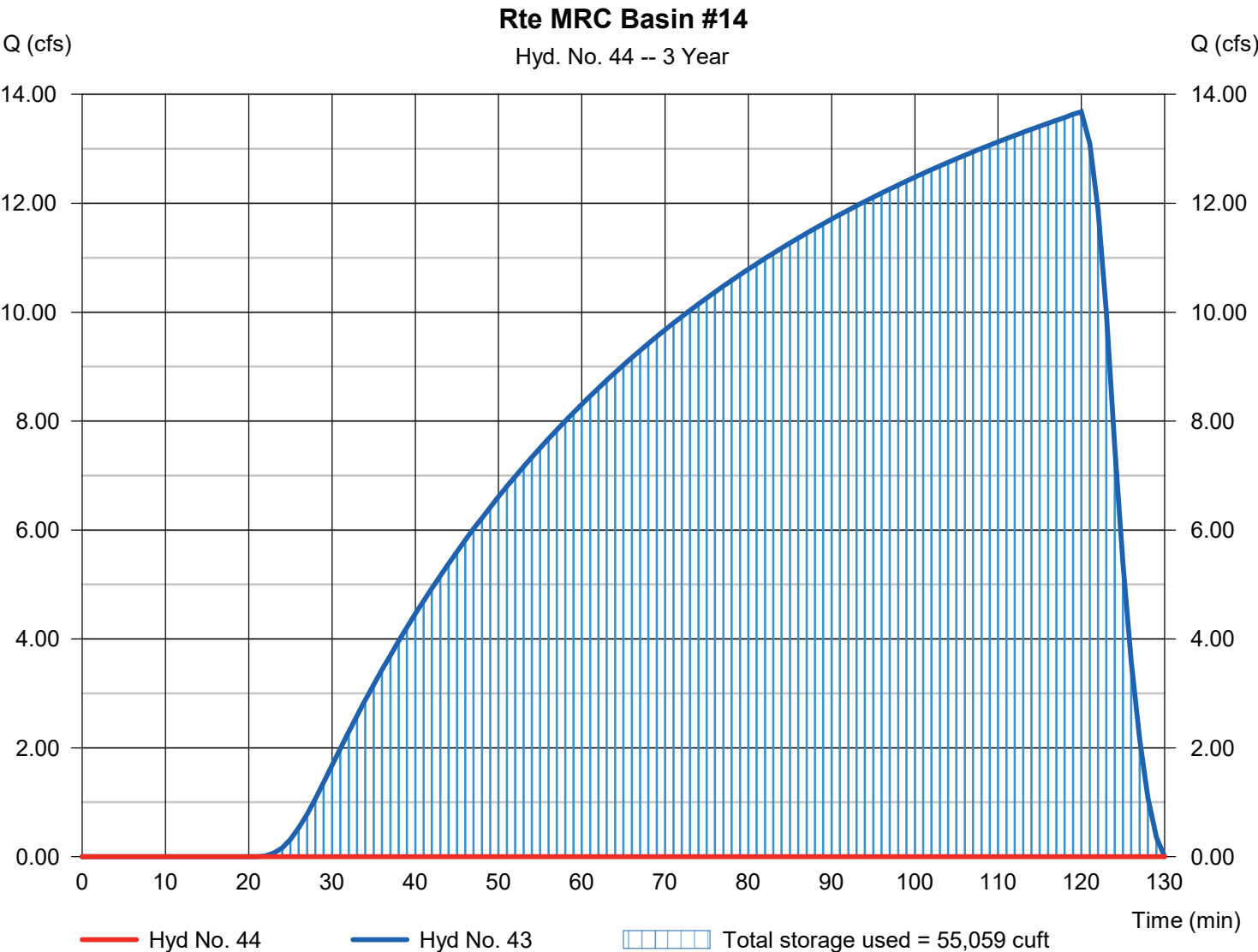
Hydrograph Report

Hyd. No. 44

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 3 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 43 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 11.89 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 55,059 cuft

Storage Indication method used.



Change in Runoff Volume for 2-YR Storm Event

PROJECT: Keystone Trade Center - Area 3 Development
Drainage Area: Bypass Area #1 - DP 001
2-Year Rainfall: 3.3 inches NOAA Atlas 14, Table 2

Total Site Area: 6.58 Acres
Protected Site Area: 0.00 Acres
Managed Area: 6.58 Acres

Existing Conditions:

Cover Type/Condition		Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands	good	A	0	0.00	30	23.33	4.67	0.085	0
		B	0	0.00	55	8.18	1.64	0.281	0
		D	0	0.00	77	2.99	0.60	1.284	0
Meadow	good	A	0	0.00	30	23.33	4.67	0.085	0
		B	0	0.00	58	7.24	1.45	0.377	0
		D	141,570	3.25	78	2.82	0.56	1.347	15,893
Impervious		-	115,870	2.66	98	0.20	0.04	3.067	29,616
Impervious (20% as Meadow)		A	0	0.00	30	23.33	4.67	0.085	0
Impervious (20% as Meadow)		D	0	0.67	78	2.82	0.56	1.347	0
Wetlands/Waters		-	0	0.00	98	0.20	0.04	3.067	0
TOTAL:			257,440	6.58					45,508

Developed Conditions:

Cover Type/Condition		Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands	good	A	0	0.00	30	23.33	4.67	0.085	0
		B	0	0.00	55	8.18	1.64	0.281	0
		D	0	0.00	77	2.99	0.60	1.284	0
Meadow	good	A	0	0.00	30	23.33	4.67	0.085	0
		B	0	0.00	58	7.24	1.45	0.377	0
		D	0	0.00	78	2.82	0.56	1.347	0
Lawn	good	A	0	0.00	61	6.39	1.28	0.486	0
		B	0	0.00	74	3.51	0.70	1.104	0
		D	257,440	5.91	80	2.50	0.50	1.479	31,735
Impervious		-	29,185	0.67	98	0.20	0.04	3.067	7,460
Wetlands/Waters		-	0	0.00	98	0.20	0.04	3.067	0
TOTAL:			286,625	6.58					39,194

2-Year Volume Increase (cu.ft.): **-6,314**

2-Year Volume Increase (cu.ft.) = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

Runoff Volume (cu.ft) = Q x Area x 1/12 where Area = Land use area in square feet

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI. The use of a weighted CN value for volume calculations is not acceptable.

Change in Runoff Volume for 2-YR Storm Event

PROJECT: Keystone Trade Center - Area 3 Development
Drainage Area: Bypass Area #2+#3 - DP 001
2-Year Rainfall: 3.3 inches NOAA Atlas 14, Table 2

Total Site Area: 1.50 Acres
Protected Site Area: 0.00 Acres
Managed Area: 1.50 Acres

Existing Conditions:

Cover Type/Condition		Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands	good	A	0	0.00	30	23.33	4.67	0.085	0
		B	0	0.00	55	8.18	1.64	0.281	0
		D	0	0.00	77	2.99	0.60	1.284	0
Meadow	good	A	0	0.00	30	23.33	4.67	0.085	0
		B	0	0.00	58	7.24	1.45	0.377	0
		D	49,223	1.13	78	2.82	0.56	1.347	5,526
Impervious		-	16,117	0.37	98	0.20	0.04	3.067	4,119
Impervious (20% as Meadow)		A	0	0.00	30	23.33	4.67	0.085	0
Impervious (20% as Meadow)		D	0		78	2.82	0.56	1.347	0
Wetlands/Waters		-	0	0.00	98	0.20	0.04	3.067	0
TOTAL:			65,340	1.50					9,645

Developed Conditions:

Cover Type/Condition		Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands	good	A	0	0.00	30	23.33	4.67	0.085	0
		B	0	0.00	55	8.18	1.64	0.281	0
		D	0	0.00	77	2.99	0.60	1.284	0
Meadow	good	A	0	0.00	30	23.33	4.67	0.085	0
		B	0	0.00	58	7.24	1.45	0.377	0
		D	0	0.00	78	2.82	0.56	1.347	0
Lawn	good	A	0	0.00	61	6.39	1.28	0.486	0
		B	0	0.00	74	3.51	0.70	1.104	0
		D	36,155	0.83	80	2.50	0.50	1.479	4,457
Impervious		-	29,185	0.67	98	0.20	0.04	3.067	7,460
Wetlands/Waters		-	0	0.00	98	0.20	0.04	3.067	0
TOTAL:			65,340	1.50					11,916

2-Year Volume Increase (cu.ft.): 2,271

2-Year Volume Increase (cu.ft.) = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

Runoff Volume (cu.ft) = Q x Area x 1/12 where Area = Land use area in square feet

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI. The use of a weighted CN value for volume calculations is not acceptable.

Project

Keystone Trade Center - Area 3 Development
 Falls Township, Bucks County, PA

Project No. 2020-07083-55

2/14/2025

Basin Drawdown Time Computation - Basins #12A + #12B

Stage	Basin Storage (cu ft)	Incr. Storage (cu ft)	Discharge (cfs)	Avg. Discharge (cfs)	Incr. Time (hrs)
13.84	139,823		0.853		
		75,038		0.440	47.43
13.00	64,785		0.026		Basin Bottom
Total					47.43

2-Yr/24-Hr Storm Ponding Time:

Time to reach Elev: 13.84 15.22 Hrs (From Hydrograph)

- Storm Duration -24.00 Hrs

Time to reach basin bottom: 47.43 Hrs

Drawdown Time: 38.65 Hrs

Project

Keystone Trade Center - Area 3 Development
 Falls Township, Bucks County, PA

Project No. 2020-07083-55
 2/14/2025

Basin Drawdown Time Computation - Basins #12A + #12B

Stage	Basin Storage (cu ft)	Incr. Storage (cu ft)	Discharge (cfs)	Avg. Discharge (cfs)	Incr. Time (hrs)
14.65	219,723		2.281		
		79,900		1.567	14.16
13.84	139,823		0.853		
		75,038		0.440	47.43
13.00	64,785		0.026		
					Basin Bottom
				Total	61.59

10-Yr/24-Hr Storm Ponding Time:

Time to reach Elev:	14.65	15.83 Hrs	(From Hydrograph)
- Storm Duration		-24.00 Hrs	
Time to reach basin bottom:		61.59 Hrs	
Drawdown Time:		53.42 Hrs	

Project

Keystone Trade Center - Area 3 Development
 Falls Township, Bucks County, PA

Project No. 2020-07083-55
 2/14/2025

Basin Drawdown Time Computation - Basins #12A + #12B

Stage	Basin Storage (cu ft)	Incr. Storage (cu ft)	Discharge (cfs)	Avg. Discharge (cfs)	Incr. Time (hrs)
15.01	256,022		7.536		
		36,299		4.909	2.05
14.65	219,723		2.281		
		79,900		1.567	14.16
13.84	139,823		0.853		
		75,038		0.440	47.43
13.00	64,785		0.026		
Total					63.64

Basin Bottom**50-Yr/24-Hr Storm Ponding Time:**

Time to reach Elev: 15.01 15.83 Hrs (From Hydrograph)
 - Storm Duration -24.00 Hrs
 Time to reach basin bottom: 63.64 Hrs

Drawdown Time: 55.47 Hrs

Project

Keystone Trade Center - Area 3 Development
 Falls Township, Bucks County, PA

Project No. 2020-07083-55

2/14/2025

Basin Drawdown Time Computation - Basins #12A + #12B

Stage	Basin Storage (cu ft)	Incr. Storage (cu ft)	Discharge (cfs)	Avg. Discharge (cfs)	Incr. Time (hrs)
15.24	280,902		12.150		
		24,880		9.843	0.70
15.01	256,022		7.536		
		36,299		4.909	2.05
14.65	219,723		2.281		
		79,900		1.567	14.16
13.84	139,823		0.853		
		75,038		0.440	47.43
13.00	64,785		0.026		
Total					64.35
					Basin Bottom

50-Yr/24-Hr Storm Ponding Time:

Time to reach Elev:	15.24	15.83 Hrs	(From Hydrograph)
- Storm Duration		-24.00 Hrs	
Time to reach basin bottom:		64.35 Hrs	
Drawdown Time:		56.18 Hrs	

Project

Keystone Trade Center - Area 3 Development
 Falls Township, Bucks County, PA

Project No. 2020-07083-55
 2/14/2025

Basin Drawdown Time Computation - Basin #14

Stage	Basin Storage (cu ft)	Incr. Storage (cu ft)	Discharge (cfs)	Avg. Discharge (cfs)	Incr. Time (hrs)
13.82	210,813		1.294		
		111,711		0.697	44.55
13.00	99,102		0.099		Basin Bottom
Total					44.55

2-Yr/24-Hr Storm Ponding Time:

Time to reach Elev:	13.82	19.88 Hrs	(From Hydrograph)
- Storm Duration		-24.00 Hrs	
Time to reach basin bottom:		44.55 Hrs	
Drawdown Time:		40.43 Hrs	

Project

Keystone Trade Center - Area 3 Development
 Falls Township, Bucks County, PA

Project No. 2020-07083-55
 2/14/2025

Basin Drawdown Time Computation - Basin #14

Stage	Basin Storage (cu ft)	Incr. Storage (cu ft)	Discharge (cfs)	Avg. Discharge (cfs)	Incr. Time (hrs)
14.81	356,204		2.199		
		145,391		1.747	23.12
13.82	210,813		1.294		
		111,711		0.697	44.55
13.00	99,102		0.099		
Total					67.68

10-Yr/24-Hr Storm Ponding Time:

Time to reach Elev:	14.81	19.88 Hrs	(From Hydrograph)
- Storm Duration		-24.00 Hrs	
Time to reach basin bottom:		67.68 Hrs	
Drawdown Time:		63.56 Hrs	

Project

Keystone Trade Center - Area 3 Development
 Falls Township, Bucks County, PA

Project No. 2020-07083-55

2/14/2025

Basin Drawdown Time Computation - Basin #14

Stage	Basin Storage (cu ft)	Incr. Storage (cu ft)	Discharge (cfs)	Avg. Discharge (cfs)	Incr. Time (hrs)
15.35	440,241		5.997		
		84,037		4.098	5.70
14.81	356,204		2.199		
		145,391		1.747	23.12
13.82	210,813		1.294		
		111,711		0.697	44.55
13.00	99,102		0.099		
Total					73.37

Basin Bottom

50-Yr/24-Hr Storm Ponding Time:

Time to reach Elev: 15.35 19.88 Hrs (From Hydrograph)

- Storm Duration -24.00 Hrs

Time to reach basin bottom: 73.37 Hrs

Drawdown Time: 69.25 Hrs

Project

Keystone Trade Center - Area 3 Development
 Falls Township, Bucks County, PA

Project No. 2020-07083-55

2/14/2025

Basin Drawdown Time Computation - Basin #14

Stage	Basin Storage (cu ft)	Incr. Storage (cu ft)	Discharge (cfs)	Avg. Discharge (cfs)	Incr. Time (hrs)
15.58	477,586		10.100		
		37,345		8.049	1.29
15.35	440,241		5.997		
		84,037		4.098	5.70
14.81	356,204		2.199		
		145,391		1.747	23.12
13.82	210,813		1.294		
		111,711		0.697	44.55
13.00	99,102		0.099		
Total					74.66

Basin Bottom

50-Yr/24-Hr Storm Ponding Time:

Time to reach Elev:	15.58	19.88 Hrs	(From Hydrograph)
- Storm Duration		-24.00 Hrs	
Time to reach basin bottom:		74.66 Hrs	
Drawdown Time:		70.54 Hrs	

III. STORMWATER MANAGEMENT DESIGN CALCULATIONS

Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Wednesday, 12 / 21 / 2022

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	51.6066	12.5000	0.8820	-----
2	67.7244	13.5000	0.8977	-----
3	0.0000	0.0000	0.0000	-----
5	64.8823	12.8000	0.8348	-----
10	66.3444	12.6000	0.8081	-----
25	58.0444	11.1000	0.7423	-----
50	54.6664	10.4000	0.7036	-----
100	48.3757	9.1000	0.6533	-----

File name: NorthPoint_Phase_2 NOAA IDF Curve.IDF

$$\text{Intensity} = B / (T_c + D)^E$$

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	4.13	3.31	2.77	2.39	2.11	1.89	1.71	1.57	1.45	1.35	1.26	1.18
2	4.93	3.98	3.35	2.90	2.56	2.29	2.08	1.90	1.76	1.63	1.52	1.43
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	5.87	4.77	4.04	3.52	3.13	2.82	2.57	2.37	2.19	2.05	1.92	1.81
10	6.54	5.34	4.54	3.97	3.54	3.20	2.93	2.70	2.51	2.34	2.20	2.08
25	7.38	6.04	5.15	4.53	4.05	3.68	3.38	3.13	2.92	2.74	2.59	2.45
50	7.98	6.55	5.61	4.95	4.44	4.05	3.73	3.47	3.24	3.05	2.89	2.74
100	8.59	7.04	6.05	5.35	4.82	4.41	4.08	3.80	3.57	3.37	3.19	3.04

T_c = time in minutes. Values may exceed 60.

n\2007083-15 - Building 4 Land Development\ENGINEERING DATA\SWM\Hydraflow\Rainfall Data\Falls Township.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.70	3.30	0.00	4.20	5.00	5.80	6.40	7.20
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.00

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: **JPR**
 Date: **10/20/2022**
 Chk'd: **-**
 Revised: **8/20/2024**

Watershed: **Pre-Development - Drainage Area Total - On-site**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	1,737,608	39.89	2193.95
D	Woods (Good Condition)	77	145,490	3.34	257.18
B	Meadow	58	1,517,195	34.83	2020.14
D	Meadow	78	3,935,646	90.35	7047.30
-	Impervious (80% as Impervious)	98	1,817,759	41.73	4089.54
D	Impervious (20% as Meadow)	78	452,588	10.39	810.42
	<i>[Modeled as Meadow (D Soil)]</i>				

Totals = **9,606,287** **220.53** **16418.53**

CN = 74.5

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: MF
 Date: 12/17/2024
 Chk'd: -
 Revised:

Watershed: **Pre-Development - Drainage Area #1 (DP 001)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	6,098	0.14	7.70
D	Woods (Good Condition)	77	11,326	0.26	20.02
B	Meadow	58	29,185	0.67	38.86
D	Meadow	78	2,039,915	46.83	3652.74
-	Impervious (80% as Impervious)	98	332,798	7.64	748.72
D	Impervious (20% as Meadow)	78	83,200	1.91	148.98
	<i>[Modeled as Meadow (D Soil)]</i>				

Totals = 2,502,522 57.45 4617.02

CN = 80.4

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: MF
 Date: 12/17/2024
 Chk'd: -
 Revised:

Watershed: **Pre-Development - Drainage Area #2 (Remains On-Site)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	700,009	16.07	883.85
D	Woods (Good Condition)	77	35,719	0.82	63.14
B	Meadow	58	612,889	14.07	816.06
D	Meadow	78	545,807	12.53	977.34
-	Impervious (80% as Impervious)	98	374,616	8.60	842.80
D	Impervious (20% as Meadow)	78	93,654	2.15	167.70
	<i>[Modeled as Meadow (D Soil)]</i>				

Totals =

2,362,694	54.24	3750.89
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CN = 69.2

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: MF
 Date: 12/17/2024
 Chk'd: -
 Revised:

Watershed: **Pre-Development - Drainage Area #3 (Remains On-Site)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	373,309	8.57	471.35
D	Woods (Good Condition)	77	1,307	0.03	2.31
B	Meadow	58	370,696	8.51	493.58
D	Meadow	78	216,493	4.97	387.66
-	Impervious (80% as Impervious)	98	220,849	5.07	496.86
D	Impervious (20% as Meadow)	78	55,321	1.27	99.06
	<i>[Modeled as Meadow (D Soil)]</i>				

Totals = 1,237,975 28.42 1950.82

CN = 68.6

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: **MF**
 Date: **12/17/2024**
 Chk'd: **-**
 Revised:

Watershed: **Pre-Development - Drainage Area #4 (Remains On-Site)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	658,192	15.11	831.05
D	Woods (Good Condition)	77	94,525	2.17	167.09
B	Meadow	58	504,425	11.58	671.64
D	Meadow	78	409,900	9.41	733.98
-	Impervious (80% as Impervious)	98	106,286	2.44	239.12
D	Impervious (20% as Meadow)	78	24,829	0.57	44.46
	<i>[Modeled as Meadow (D Soil)]</i>				

Totals = **1,798,157** **41.28** **2687.34**

CN = 65.1

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: **MF**
 Date: **12/17/2024**
 Chk'd: **-**
 Revised: _____

Watershed: **Pre-Development - Drainage Area #5 (Remains On-Site)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	2,614	0.06	4.62
B	Meadow	58	0	0.00	0.00
D	Meadow	78	243,065	5.58	435.24
-	Impervious (80% as Impervious)	98	229,997	5.28	517.44
D	Impervious (20% as Meadow)	78	57,499	1.32	102.96
	<i>[Modeled as Meadow (D Soil)]</i>				

Totals = 533,174 12.24 1060.26

CN = 86.6

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: MF
 Date: 12/17/2024
 Chk'd: -
 Revised:

Watershed: **Pre-Development - Drainage Area #6 (Remains On-Site)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	200,376	4.60	358.80
-	Impervious (80% as Impervious)	98	28,314	0.65	63.70
D	Impervious (20% as Meadow)	78	6,970	0.16	12.48
	<i>[Modeled as Meadow (D Soil)]</i>				

Totals =

235,660	5.41	434.98
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CN = 80.4

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: **MF**
 Date: **12/17/2024**
 Chk'd: **-**
 Revised: _____

Watershed: **Pre-Development - Drainage Area #7 (Remains On-Site)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	280,091	6.43	501.54
-	Impervious (80% as Impervious)	98	524,898	12.05	1180.90
D	Impervious (20% as Meadow)	78	131,116	3.01	234.78
	<i>[Modeled as Meadow (D Soil)]</i>				

Totals = 936,104 21.49 1917.22

CN = 89.2

Project: Keystone Trade Center - Area 3 Development
Location: Falls Township
Bucks County, PA

By: MF
Date: 12/17/2024
Chk'd: -
Revised:

Watershed: Post-Development - Drainage Area #1

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	0	0.00	0.00
D	Lawn	80	216,058	4.96	396.80
-	Proposed Impervious	98	574,121	13.18	1291.64
-	Existing Impervious	98	0	0.00	0.00

Totals =

790,178	18.14	1688.44
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CN = 93.1

Project: Keystone Trade Center - Area 3 Development
Location: Falls Township
Bucks County, PA

By: MF
Date: 12/17/2024
Chk'd: -
Revised:

Watershed: Post-Development - Drainage Area #2

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	0	0.00	0.00
D	Lawn	80	242,629	5.57	445.60
-	Proposed Impervious	98	648,608	14.89	1459.22
-	Existing Impervious	98	0	0.00	0.00

Totals =

891,238	20.46	1904.82
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CN = 93.1

Project: Keystone Trade Center - Area 3 Development
Location: Falls Township
Bucks County, PA

By: MF
Date: 12/17/2024
Chk'd: -
Revised:

Watershed: Post-Development - Drainage Area #3

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	0	0.00	0.00
D	Lawn	80	403,366	9.26	740.80
-	Proposed Impervious	98	1,352,102	31.04	3041.92
-	Existing Impervious	98	0	0.00	0.00

Totals =

1,755,468	40.30	3782.72
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CN = 93.9

Project: Keystone Trade Center - Area 3 Development
Location: Falls Township
Bucks County, PA

By: MF
Date: 12/17/2024
Chk'd: -
Revised:

Watershed: Post-Development - Drainage Area #4

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	18,731	0.43	26.23
D	Lawn	80	490,921	11.27	901.60
-	Proposed Impervious	98	798,019	18.32	1795.36
-	Existing Impervious	98	0	0.00	0.00

Totals =

1,307,671	30.02	2723.19
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CN = 90.7

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: MF
 Date: 12/17/2024
 Chk'd: -
 Revised:

Watershed: **Post-Development - Drainage Area #5A**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	329,749	7.57	461.77
D	Lawn	80	192,535	4.42	353.60
-	Proposed Impervious	98	1,514,581	34.77	3407.46
-	Existing Impervious	98	0	0.00	0.00

Totals = 2,036,866 46.76 4222.83

CN = 90.3

Project: Keystone Trade Center - Area 3 Development
Location: Falls Township
Bucks County, PA

By: MF
Date: 12/17/2024
Chk'd: -
Revised:

Watershed: Post-Development - Drainage Area #5B

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	948,737	21.78	1328.58
D	Lawn	80	172,933	3.97	317.60
-	Proposed Impervious	98	1,351,231	31.02	3039.96
-	Existing Impervious	98	0	0.00	0.00

Totals =

2,472,901	56.77	4686.14
-----------	-------	---------

CN = 82.5

Project: Keystone Trade Center - Area 3 Development

Location: Falls Township
Bucks County, PA

By: MF

Date: 12/17/2024

Chk'd: -

Revised:

Watershed: Post-Development - Bypass #1 (DP 001)

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	0	0.00	0.00
D	Lawn	80	257,440	5.91	472.80
-	Proposed Impervious	98	29,185	0.67	65.66
-	Existing Impervious	98	0	0.00	0.00

Totals =

286,625

6.58

538.46

CN = 81.8

Project: **Keystone Trade Center - Area 3 Development**
Location: **Falls Township**
Bucks County, PA

By: **MF**
Date: **12/17/2024**
Chk'd: **-**
Revised:

Watershed: **Post-Development - Bypass #2 (DP 001)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	0	0.00	0.00
D	Lawn	80	2,614	0.06	4.80
-	Proposed Impervious	98	871	0.02	1.96
-	Existing Impervious	98	0	0.00	0.00

Totals =

3,485
0.08
6.76

CN = 84.5

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: **MF**
 Date: **12/17/2024**
 Chk'd: **-**
 Revised: _____

Watershed: **Post-Development - Bypass #3 (DP 001)**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	0	0.00	0.00
D	Lawn	80	33,541	0.77	61.60
-	Proposed Impervious	98	28,314	0.65	63.70
-	Existing Impervious	98	0	0.00	0.00

Totals = **61,855 1.42 125.30**

CN = 88.2

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: MF
 Date: _____
 Chk'd: -
 Revised: _____

Watershed: **Post-Development - Total to DP 001**

CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	1,297,217	29.78	1816.58
D	Lawn	80	2,012,036	46.19	3695.20
-	Proposed Impervious	98	6,297,034	144.56	14166.88
-	Existing Impervious	98	0	0	0.00

Totals = 9,606,287 220.53 19678.66

CN = 89.2

Project: **Keystone Trade Center - Area 3 Development**
 Location: **Falls Township**
Bucks County, PA

By: **MF**
 Date: **12/17/2024**
 Chk'd: **-**
 Revised: _____

Watershed: **Post-Development - Bypass #4 (DP 002)**

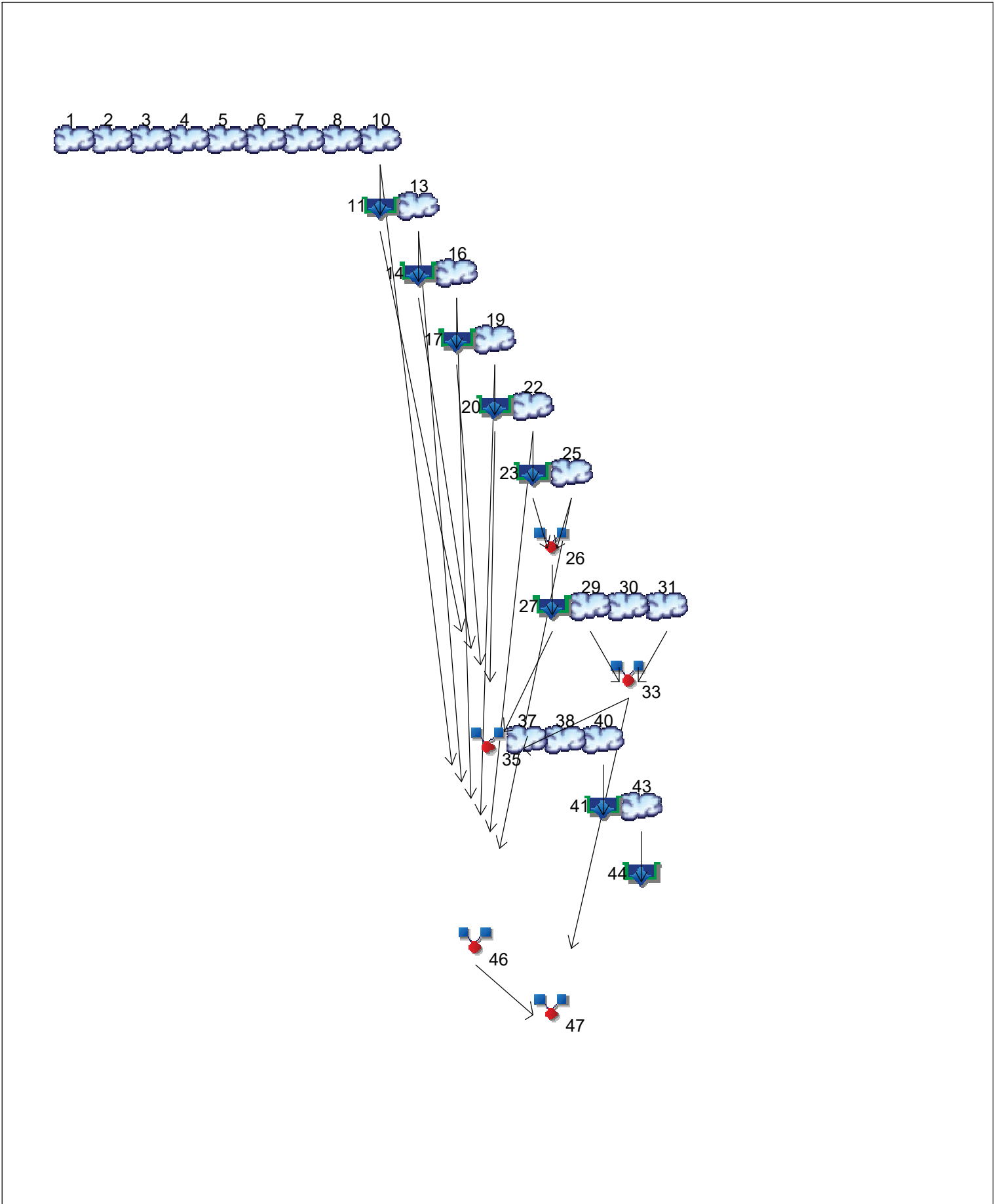
CURVE NUMBERS FOR SCS METHOD

Hydrologic Soil Group	Cover Description	CN	Area		CN X A
			(sf)	(acres)	
B	Woods (Good Condition)	55	0	0.00	0.00
D	Woods (Good Condition)	77	0	0.00	0.00
B	Meadow	58	0	0.00	0.00
D	Meadow	78	0	0.00	0.00
B	Lawn	61	0	0.00	0.00
D	Lawn	80	487,872	11.20	896.00
-	Proposed Impervious	98	0	0.00	0.00
-	Existing Impervious	98	52,272	1.20	117.60

Totals = **540,144 12.40 1013.60**

CN = 81.7

Watershed Model Schematic



Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	-----	52.10	76.62	0.000	116.09	152.76	190.23	218.64	256.76	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	-----	21.76	39.66	0.000	71.22	102.31	135.37	161.19	196.70	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	-----	12.36	22.81	0.000	41.26	59.46	78.88	94.12	115.02	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	-----	6.342	13.24	0.000	26.73	40.77	56.05	68.17	84.97	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	-----	32.73	43.91	0.000	61.12	76.50	91.87	103.36	118.63	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	-----	10.61	15.17	0.000	22.35	28.92	35.64	40.72	47.51	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	-----	56.17	73.90	0.000	100.62	124.32	147.92	165.54	188.95	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	-----	3.477	4.750	0.000	6.714	8.494	10.28	11.62	13.40	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	-----	63.06	80.10	0.000	105.47	127.85	150.09	166.71	188.78	Post-Dev DA #1 (DP 001)
11	Reservoir	10	0.611	0.854	0.000	1.129	2.293	4.853	7.567	12.20	Rte MRC Basins #12A-B
13	SCS Runoff	-----	71.57	90.91	0.000	119.70	145.10	170.34	189.20	214.25	Post-Dev DA #2 (DP 001)
14	Reservoir	13	0.911	1.995	0.000	3.412	4.385	5.199	5.740	6.367	Rte Wet Ponds #12C-D
16	SCS Runoff	-----	142.67	180.19	0.000	236.03	285.28	334.26	370.85	419.49	Post-Dev DA #3 (DP 001)
17	Reservoir	16	1.920	3.151	0.000	4.726	8.655	14.13	18.73	23.14	Rte Wet Ponds #13A-C
19	SCS Runoff	-----	98.87	128.30	0.000	172.37	211.33	250.07	278.99	317.39	Post-Dev DA #4 (DP 001)
20	Reservoir	19	0.896	1.354	0.000	1.882	2.265	4.350	6.873	11.51	Rte MRC Basin #14
22	SCS Runoff	-----	146.19	190.20	0.000	256.18	314.55	372.59	415.92	473.46	Post-Dev DA #5A (DP 001)
23	Reservoir	22	46.48	68.44	0.000	98.54	126.44	153.79	170.94	188.84	Rte Basin #15A-B
25	SCS Runoff	-----	120.09	168.30	0.000	243.43	311.96	381.56	433.92	503.75	Post-Dev DA #5B (DP 001)
26	Combine	23, 25	153.65	219.08	0.000	321.49	412.39	504.70	574.72	664.49	Total to Wet Ponds #15C-D
27	Reservoir	26	0.000	0.000	0.000	0.549	2.882	4.990	6.230	7.704	Rte Wet Ponds #15C-D
29	SCS Runoff	-----	13.92	19.60	0.000	28.46	36.54	44.78	50.97	59.24	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	-----	0.194	0.266	0.000	0.376	0.476	0.577	0.652	0.752	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	-----	4.071	5.393	0.000	7.399	9.182	10.96	12.29	14.05	Post-Dev-Bypass #3 (DP 001)
33	Combine	29, 30, 31,	18.19	25.24	0.000	36.20	46.20	56.31	63.91	74.04	Total Bypass (DP 001)
35	Combine	11, 14, 17, 20, 27, 33,	18.35	25.74	0.000	40.84	54.44	66.86	77.60	94.37	Total Post-Dev (DP 001)
37	SCS Runoff	-----	37.86	49.52	0.000	67.04	82.56	98.00	109.52	124.83	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	-----	26.10	36.78	0.000	53.47	68.68	84.19	95.87	111.45	Post-Dev-Bypass #5 (DP 002)

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
40	SCS Runoff	-----	0.000	0.000	9.291	0.000	0.000	0.000	0.000	0.000	Post-Dev DA #1 (DP 001)
41	Reservoir	40	0.000	0.000	0.026	0.000	0.000	0.000	0.000	0.000	Rte MRC Basins #12A-B
43	SCS Runoff	-----	0.000	0.000	14.16	0.000	0.000	0.000	0.000	0.000	Post-Dev DA #4 (DP 001)
44	Reservoir	43	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Rte MRC Basin #14
46	Combine	10, 13, 16, 19, 22, 25, 33, 46	640.94	836.82	0.000	1132.74	1396.07	1658.91	1855.58	2117.12	Total Post (No BMPs)
47	Combine		658.94	861.92	0.000	1168.91	1442.27	1715.22	1919.49	2191.17	Total Post (No BMPs with Bypass)

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	52.10	1	730	200,875	-----	-----	-----	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	21.76	1	731	103,813	-----	-----	-----	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	12.36	1	728	52,137	-----	-----	-----	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	6.342	1	749	56,812	-----	-----	-----	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	32.73	1	718	66,493	-----	-----	-----	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	10.61	1	718	21,317	-----	-----	-----	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	56.17	1	719	128,455	-----	-----	-----	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	3.477	1	718	7,014	-----	-----	-----	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	63.06	1	717	134,428	-----	-----	-----	Post-Dev DA #1 (DP 001)
11	Reservoir	0.611	1	1245	54,754	10	13.52	110,933	Rte MRC Basins #12A-B
13	SCS Runoff	71.57	1	717	152,564	-----	-----	-----	Post-Dev DA #2 (DP 001)
14	Reservoir	0.911	1	1116	51,925	13	10.53	124,140	Rte Wet Ponds #12C-D
16	SCS Runoff	142.67	1	717	306,855	-----	-----	-----	Post-Dev DA #3 (DP 001)
17	Reservoir	1.920	1	1087	120,434	16	10.79	244,206	Rte Wet Ponds #13A-C
19	SCS Runoff	98.87	1	717	205,747	-----	-----	-----	Post-Dev DA #4 (DP 001)
20	Reservoir	0.896	1	1421	76,509	19	13.55	173,189	Rte MRC Basin #14
22	SCS Runoff	146.19	1	717	303,531	-----	-----	-----	Post-Dev DA #5A (DP 001)
23	Reservoir	46.48	1	725	302,541	22	14.60	122,414	Rte Basin #15A-B
25	SCS Runoff	120.09	1	718	241,182	-----	-----	-----	Post-Dev DA #5B (DP 001)
26	Combine	153.65	1	718	543,722	23, 25	-----	-----	Total to Wet Ponds #15C-D
27	Reservoir	0.000	1	n/a	0	26	9.27	543,722	Rte Wet Ponds #15C-D
29	SCS Runoff	13.92	1	718	27,959	-----	-----	-----	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	0.194	1	718	391	-----	-----	-----	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	4.071	1	718	8,342	-----	-----	-----	Post-Dev-Bypass #3 (DP 001)
33	Combine	18.19	1	718	36,692	29, 30, 31,	-----	-----	Total Bypass (DP 001)
35	Combine	18.35	1	718	340,315	11, 14, 17, 20, 27, 33,	-----	-----	Total Post-Dev (DP 001)
37	SCS Runoff	37.86	1	717	78,283	-----	-----	-----	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	26.10	1	718	52,409	-----	-----	-----	Post-Dev-Bypass #5 (DP 002)
KTC_Greenfield.gpw					Return Period: 1 Year			Thursday, 06 / 19 / 2025 72	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
40	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #1 (DP 001)
41	Reservoir	0.000	1	n/a	0	40	10.50	0.000	Rte MRC Basins #12A-B
43	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #4 (DP 001)
44	Reservoir	0.000	1	n/a	0	43	10.50	0.000	Rte MRC Basin #14
46	Combine	640.94	1	717	1,344,308	10, 13, 16, 19, 22, 25, 33, 46	-----	-----	Total Post (No BMPs)
47	Combine	658.94	1	717	1,380,998		-----	-----	Total Post (No BMPs with Bypass)
KTC_Greenfield.gpw					Return Period: 1 Year			Thursday, 06 / 19 / 2025	
								73	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	76.62	1	730	289,340	-----	-----	-----	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	39.66	1	731	167,961	-----	-----	-----	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	22.81	1	727	85,070	-----	-----	-----	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	13.24	1	747	97,998	-----	-----	-----	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	43.91	1	718	90,302	-----	-----	-----	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	15.17	1	718	30,511	-----	-----	-----	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	73.90	1	719	170,879	-----	-----	-----	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	4.750	1	718	9,675	-----	-----	-----	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	80.10	1	717	173,469	-----	-----	-----	Post-Dev DA #1 (DP 001)
11	Reservoir	0.854	1	1174	84,568	10	13.84	139,971	Rte MRC Basins #12A-B
13	SCS Runoff	90.91	1	717	196,872	-----	-----	-----	Post-Dev DA #2 (DP 001)
14	Reservoir	1.995	1	908	95,656	13	10.85	143,120	Rte Wet Ponds #12C-D
16	SCS Runoff	180.19	1	717	393,825	-----	-----	-----	Post-Dev DA #3 (DP 001)
17	Reservoir	3.151	1	958	204,277	16	11.26	294,045	Rte Wet Ponds #13A-C
19	SCS Runoff	128.30	1	717	270,713	-----	-----	-----	Post-Dev DA #4 (DP 001)
20	Reservoir	1.354	1	1191	128,212	19	13.87	217,758	Rte MRC Basin #14
22	SCS Runoff	190.20	1	717	400,309	-----	-----	-----	Post-Dev DA #5A (DP 001)
23	Reservoir	68.44	1	724	399,276	22	14.96	155,437	Rte Basin #15A-B
25	SCS Runoff	168.30	1	718	339,756	-----	-----	-----	Post-Dev DA #5B (DP 001)
26	Combine	219.08	1	718	739,034	23, 25	-----	-----	Total to Wet Ponds #15C-D
27	Reservoir	0.000	1	n/a	0	26	9.69	739,033	Rte Wet Ponds #15C-D
29	SCS Runoff	19.60	1	718	39,523	-----	-----	-----	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	0.266	1	718	540	-----	-----	-----	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	5.393	1	717	11,185	-----	-----	-----	Post-Dev-Bypass #3 (DP 001)
33	Combine	25.24	1	718	51,249	29, 30, 31,	-----	-----	Total Bypass (DP 001)
35	Combine	25.74	1	718	563,960	11, 14, 17, 20, 27, 33,	-----	-----	Total Post-Dev (DP 001)
37	SCS Runoff	49.52	1	717	103,728	-----	-----	-----	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	36.78	1	718	74,151	-----	-----	-----	Post-Dev-Bypass #5 (DP 002)
KTC_Greenfield.gpw					Return Period: 2 Year			Thursday, 06 / 19 / 2025 74	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
40	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #1 (DP 001)
41	Reservoir	0.000	1	n/a	0	40	10.50	0.000	Rte MRC Basins #12A-B
43	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #4 (DP 001)
44	Reservoir	0.000	1	n/a	0	43	10.50	0.000	Rte MRC Basin #14
46	Combine	836.82	1	717	1,774,945	10, 13, 16, 19, 22, 25, 33, 46	-----	-----	Total Post (No BMPs)
47	Combine	861.92	1	717	1,826,192		-----	-----	Total Post (No BMPs with Bypass)
KTC_Greenfield.gpw					Return Period: 2 Year			Thursday, 06 / 19 / 202575	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	116.09	1	729	433,049	-----	-----	-----	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	71.22	1	730	280,102	-----	-----	-----	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	41.26	1	727	142,927	-----	-----	-----	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	26.73	1	746	172,695	-----	-----	-----	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	61.12	1	717	127,538	-----	-----	-----	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	22.35	1	718	45,383	-----	-----	-----	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	100.62	1	719	236,422	-----	-----	-----	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	6.714	1	717	13,876	-----	-----	-----	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	105.47	1	717	232,850	-----	-----	-----	Post-Dev DA #1 (DP 001)
11	Reservoir	1.129	1	1165	122,500	10	14.33	187,894	Rte MRC Basins #12A-B
13	SCS Runoff	119.70	1	717	264,265	-----	-----	-----	Post-Dev DA #2 (DP 001)
14	Reservoir	3.412	1	838	162,269	13	11.49	183,312	Rte Wet Ponds #12C-D
16	SCS Runoff	236.03	1	717	525,797	-----	-----	-----	Post-Dev DA #3 (DP 001)
17	Reservoir	4.726	1	925	329,569	16	12.10	386,677	Rte Wet Ponds #13A-C
19	SCS Runoff	172.37	1	717	370,477	-----	-----	-----	Post-Dev DA #4 (DP 001)
20	Reservoir	1.882	1	1169	198,094	19	14.40	295,919	Rte MRC Basin #14
22	SCS Runoff	256.18	1	717	549,114	-----	-----	-----	Post-Dev DA #5A (DP 001)
23	Reservoir	98.54	1	724	548,041	22	15.40	202,700	Rte Basin #15A-B
25	SCS Runoff	243.43	1	718	497,570	-----	-----	-----	Post-Dev DA #5B (DP 001)
26	Combine	321.49	1	718	1,045,611	23, 25	-----	-----	Total to Wet Ponds #15C-D
27	Reservoir	0.549	1	1631	46,705	26	10.30	1,024,648	Rte Wet Ponds #15C-D
29	SCS Runoff	28.46	1	718	58,079	-----	-----	-----	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	0.376	1	717	776	-----	-----	-----	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	7.399	1	717	15,597	-----	-----	-----	Post-Dev-Bypass #3 (DP 001)
33	Combine	36.20	1	718	74,453	29, 30, 31,	-----	-----	Total Bypass (DP 001)
35	Combine	40.84	1	718	933,590	11, 14, 17, 20, 27, 33,	-----	-----	Total Post-Dev (DP 001)
37	SCS Runoff	67.04	1	717	142,954	-----	-----	-----	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	53.47	1	718	109,058	-----	-----	-----	Post-Dev-Bypass #5 (DP 002)
KTC_Greenfield.gpw					Return Period: 5 Year			Thursday, 06 / 19 / 2025 76	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
40	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #1 (DP 001)
41	Reservoir	0.000	1	n/a	0	40	10.50	0.000	Rte MRC Basins #12A-B
43	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #4 (DP 001)
44	Reservoir	0.000	1	n/a	0	43	10.50	0.000	Rte MRC Basin #14
46	Combine	1132.74	1	717	2,440,072	10, 13, 16, 19, 22, 25, 33, 46	-----	-----	Total Post (No BMPs)
47	Combine	1168.91	1	717	2,514,527		-----	-----	Total Post (No BMPs with Bypass)
KTC_Greenfield.gpw					Return Period: 5 Year			Thursday, 06 / 19 / 202577	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	152.76	1	729	568,257	-----	-----	-----	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	102.31	1	730	391,511	-----	-----	-----	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	59.46	1	727	200,616	-----	-----	-----	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	40.77	1	745	248,878	-----	-----	-----	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	76.50	1	717	161,607	-----	-----	-----	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	28.92	1	718	59,332	-----	-----	-----	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	124.32	1	719	295,863	-----	-----	-----	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	8.494	1	717	17,747	-----	-----	-----	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	127.85	1	717	286,121	-----	-----	-----	Post-Dev DA #1 (DP 001)
11	Reservoir	2.293	1	949	162,857	10	14.65	219,842	Rte MRC Basins #12A-B
13	SCS Runoff	145.10	1	717	324,722	-----	-----	-----	Post-Dev DA #2 (DP 001)
14	Reservoir	4.385	1	830	221,803	13	12.12	224,470	Rte Wet Ponds #12C-D
16	SCS Runoff	285.28	1	717	643,998	-----	-----	-----	Post-Dev DA #3 (DP 001)
17	Reservoir	8.655	1	828	444,612	16	12.66	452,516	Rte Wet Ponds #13A-C
19	SCS Runoff	211.33	1	717	460,570	-----	-----	-----	Post-Dev DA #4 (DP 001)
20	Reservoir	2.265	1	1170	249,077	19	14.90	369,874	Rte MRC Basin #14
22	SCS Runoff	314.55	1	717	683,612	-----	-----	-----	Post-Dev DA #5A (DP 001)
23	Reservoir	126.44	1	724	682,509	22	15.77	242,863	Rte Basin #15A-B
25	SCS Runoff	311.96	1	717	644,449	-----	-----	-----	Post-Dev DA #5B (DP 001)
26	Combine	412.39	1	718	1,326,958	23, 25	-----	-----	Total to Wet Ponds #15C-D
27	Reservoir	2.882	1	1448	229,839	26	10.75	1,238,181	Rte Wet Ponds #15C-D
29	SCS Runoff	36.54	1	717	75,379	-----	-----	-----	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	0.476	1	717	994	-----	-----	-----	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	9.182	1	717	19,612	-----	-----	-----	Post-Dev-Bypass #3 (DP 001)
33	Combine	46.20	1	717	95,985	29, 30, 31,	-----	-----	Total Bypass (DP 001)
35	Combine	54.44	1	718	1,404,174	11, 14, 17, 20, 27, 33,	-----	-----	Total Post-Dev (DP 001)
37	SCS Runoff	82.56	1	717	178,473	-----	-----	-----	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	68.68	1	717	141,615	-----	-----	-----	Post-Dev-Bypass #5 (DP 002)
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
40	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #1 (DP 001)
41	Reservoir	0.000	1	n/a	0	40	10.50	0.000	Rte MRC Basins #12A-B
43	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #4 (DP 001)
44	Reservoir	0.000	1	n/a	0	43	10.50	0.000	Rte MRC Basin #14
46	Combine	1396.07	1	717	3,043,470	10, 13, 16, 19, 22, 25, 33, 46	-----	-----	Total Post (No BMPs)
47	Combine	1442.27	1	717	3,139,456		-----	-----	Total Post (No BMPs with Bypass)
KTC_Greenfield.gpw					Return Period: 10 Year			Thursday, 06 / 19 / 2025	
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	190.23	1	729	708,253	-----	-----	-----	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	135.37	1	730	511,011	-----	-----	-----	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	78.88	1	726	262,641	-----	-----	-----	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	56.05	1	744	331,991	-----	-----	-----	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	91.87	1	717	196,263	-----	-----	-----	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	35.64	1	717	73,746	-----	-----	-----	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	147.92	1	719	356,005	-----	-----	-----	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	10.28	1	717	21,702	-----	-----	-----	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	150.09	1	717	339,670	-----	-----	-----	Post-Dev DA #1 (DP 001)
11	Reservoir	4.853	1	820	214,658	10	14.85	239,852	Rte MRC Basins #12A-B
13	SCS Runoff	170.34	1	717	385,496	-----	-----	-----	Post-Dev DA #2 (DP 001)
14	Reservoir	5.199	1	828	281,555	13	12.74	267,151	Rte Wet Ponds #12C-D
16	SCS Runoff	334.26	1	717	762,706	-----	-----	-----	Post-Dev DA #3 (DP 001)
17	Reservoir	14.13	1	788	561,674	16	13.19	515,049	Rte Wet Ponds #13A-C
19	SCS Runoff	250.07	1	717	551,491	-----	-----	-----	Post-Dev DA #4 (DP 001)
20	Reservoir	4.350	1	957	320,821	19	15.23	421,488	Rte MRC Basin #14
22	SCS Runoff	372.59	1	717	819,418	-----	-----	-----	Post-Dev DA #5A (DP 001)
23	Reservoir	153.79	1	723	818,292	22	16.10	281,884	Rte Basin #15A-B
25	SCS Runoff	381.56	1	717	795,479	-----	-----	-----	Post-Dev DA #5B (DP 001)
26	Combine	504.70	1	718	1,613,771	23, 25	-----	-----	Total to Wet Ponds #15C-D
27	Reservoir	4.990	1	1444	450,631	26	11.15	1,428,141	Rte Wet Ponds #15C-D
29	SCS Runoff	44.78	1	717	93,186	-----	-----	-----	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	0.577	1	717	1,216	-----	-----	-----	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	10.96	1	717	23,682	-----	-----	-----	Post-Dev-Bypass #3 (DP 001)
33	Combine	56.31	1	717	118,084	29, 30, 31,	-----	-----	Total Bypass (DP 001)
35	Combine	66.86	1	718	1,947,421	11, 14, 17, 20, 27, 33,	-----	-----	Total Post-Dev (DP 001)
37	SCS Runoff	98.00	1	717	214,376	-----	-----	-----	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	84.19	1	717	175,136	-----	-----	-----	Post-Dev-Bypass #5 (DP 002)
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
40	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #1 (DP 001)
41	Reservoir	0.000	1	n/a	0	40	10.50	0.000	Rte MRC Basins #12A-B
43	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #4 (DP 001)
44	Reservoir	0.000	1	n/a	0	43	10.50	0.000	Rte MRC Basin #14
46	Combine	1658.91	1	717	3,654,260	10, 13, 16, 19, 22, 25, 33, 46	-----	-----	Total Post (No BMPs)
47	Combine	1715.22	1	717	3,772,344		-----	-----	Total Post (No BMPs with Bypass)
KTC_Greenfield.gpw					Return Period: 25 Year			Thursday, 06 / 19 / 2025	
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	218.64	1	729	815,571	-----	-----	-----	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	161.19	1	729	604,773	-----	-----	-----	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	94.12	1	726	311,381	-----	-----	-----	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	68.17	1	744	397,937	-----	-----	-----	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	103.36	1	717	222,531	-----	-----	-----	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	40.72	1	717	84,782	-----	-----	-----	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	165.54	1	719	401,435	-----	-----	-----	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	11.62	1	717	24,709	-----	-----	-----	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	166.71	1	717	379,957	-----	-----	-----	Post-Dev DA #1 (DP 001)
11	Reservoir	7.567	1	781	254,072	10	15.01	256,198	Rte MRC Basins #12A-B
13	SCS Runoff	189.20	1	717	431,218	-----	-----	-----	Post-Dev DA #2 (DP 001)
14	Reservoir	5.740	1	828	326,461	13	13.19	299,710	Rte Wet Ponds #12C-D
16	SCS Runoff	370.85	1	717	851,965	-----	-----	-----	Post-Dev DA #3 (DP 001)
17	Reservoir	18.73	1	773	650,010	16	13.58	563,801	Rte Wet Ponds #13A-C
19	SCS Runoff	278.99	1	717	620,061	-----	-----	-----	Post-Dev DA #4 (DP 001)
20	Reservoir	6.873	1	870	386,281	19	15.40	449,247	Rte MRC Basin #14
22	SCS Runoff	415.92	1	717	921,871	-----	-----	-----	Post-Dev DA #5A (DP 001)
23	Reservoir	170.94	1	723	920,732	22	16.33	311,269	Rte Basin #15A-B
25	SCS Runoff	433.92	1	717	910,738	-----	-----	-----	Post-Dev DA #5B (DP 001)
26	Combine	574.72	1	718	1,831,468	23, 25	-----	-----	Total to Wet Ponds #15C-D
27	Reservoir	6.230	1	1443	607,733	26	11.47	1,583,396	Rte Wet Ponds #15C-D
29	SCS Runoff	50.97	1	717	106,785	-----	-----	-----	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	0.652	1	717	1,386	-----	-----	-----	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	12.29	1	717	26,760	-----	-----	-----	Post-Dev-Bypass #3 (DP 001)
33	Combine	63.91	1	717	134,931	29, 30, 31,	-----	-----	Total Bypass (DP 001)
35	Combine	77.60	1	718	2,359,493	11, 14, 17, 20, 27, 33,	-----	-----	Total Post-Dev (DP 001)
37	SCS Runoff	109.52	1	717	241,481	-----	-----	-----	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	95.87	1	717	200,741	-----	-----	-----	Post-Dev-Bypass #5 (DP 002)
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description	
40	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #1 (DP 001)	
41	Reservoir	0.000	1	n/a	0	40	10.50	0.000	Rte MRC Basins #12A-B	
43	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #4 (DP 001)	
44	Reservoir	0.000	1	n/a	0	43	10.50	0.000	Rte MRC Basin #14	
46	Combine	1855.58	1	717	4,115,810	10, 13, 16, 19, 22, 25, 33, 46	-----	-----	Total Post (No BMPs)	
47	Combine	1919.49	1	717	4,250,741		-----	-----	Total Post (No BMPs with Bypass)	
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	256.76	1	729	961,022	-----	-----	-----	Pre-Dev DA #1 (DP 001)
2	SCS Runoff	196.70	1	729	734,177	-----	-----	-----	Pre-Dev DA #2 (Remains On-Site)
3	SCS Runoff	115.02	1	726	378,733	-----	-----	-----	Pre-Dev DA #3 (Remains On-Site)
4	SCS Runoff	84.97	1	744	489,759	-----	-----	-----	Pre-Dev DA #4 (Remains On-Site)
5	SCS Runoff	118.63	1	717	257,825	-----	-----	-----	Pre-Dev DA #5 (Remains On-Site)
6	SCS Runoff	47.51	1	717	99,723	-----	-----	-----	Pre-Dev DA #6 (Remains On-Site)
7	SCS Runoff	188.95	1	719	462,322	-----	-----	-----	Pre-Dev DA #7 (Remains On-Site)
8	SCS Runoff	13.40	1	717	28,757	-----	-----	-----	Pre-Dev Off-site DA #4 (DP 001)
10	SCS Runoff	188.78	1	717	433,794	-----	-----	-----	Post-Dev DA #1 (DP 001)
11	Reservoir	12.20	1	754	307,021	10	15.25	281,129	Rte MRC Basins #12A-B
13	SCS Runoff	214.25	1	717	492,318	-----	-----	-----	Post-Dev DA #2 (DP 001)
14	Reservoir	6.367	1	830	386,341	13	13.78	343,708	Rte Wet Ponds #12C-D
16	SCS Runoff	419.49	1	717	971,193	-----	-----	-----	Post-Dev DA #3 (DP 001)
17	Reservoir	23.14	1	765	768,131	16	14.15	635,661	Rte Wet Ponds #13A-C
19	SCS Runoff	317.39	1	717	711,853	-----	-----	-----	Post-Dev DA #4 (DP 001)
20	Reservoir	11.51	1	807	475,336	19	15.65	488,748	Rte MRC Basin #14
22	SCS Runoff	473.46	1	717	1,059,055	-----	-----	-----	Post-Dev DA #5A (DP 001)
23	Reservoir	188.84	1	724	1,057,900	22	16.64	351,623	Rte Basin #15A-B
25	SCS Runoff	503.75	1	717	1,066,413	-----	-----	-----	Post-Dev DA #5B (DP 001)
26	Combine	664.49	1	718	2,124,311	23, 25	-----	-----	Total to Wet Ponds #15C-D
27	Reservoir	7.704	1	1442	798,661	26	11.92	1,802,870	Rte Wet Ponds #15C-D
29	SCS Runoff	59.24	1	717	125,163	-----	-----	-----	Post-Dev-Bypass #1 (DP 001)
30	SCS Runoff	0.752	1	717	1,613	-----	-----	-----	Post-Dev-Bypass #2 (DP 001)
31	SCS Runoff	14.05	1	717	30,889	-----	-----	-----	Post-Dev-Bypass #3 (DP 001)
33	Combine	74.04	1	717	157,665	29, 30, 31,	-----	-----	Total Bypass (DP 001)
35	Combine	94.37	1	718	2,893,156	11, 14, 17, 20, 27, 33,	-----	-----	Total Post-Dev (DP 001)
37	SCS Runoff	124.83	1	717	277,792	-----	-----	-----	Pre-Dev DA #8 (DP 002)
38	SCS Runoff	111.45	1	717	235,346	-----	-----	-----	Post-Dev-Bypass #5 (DP 002)
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
40	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #1 (DP 001)
41	Reservoir	0.000	1	n/a	0	40	10.50	0.000	Rte MRC Basins #12A-B
43	SCS Runoff	0.000	1	n/a	0	-----	-----	-----	Post-Dev DA #4 (DP 001)
44	Reservoir	0.000	1	n/a	0	43	10.50	0.000	Rte MRC Basin #14
46	Combine	2117.12	1	717	4,734,629	10, 13, 16, 19, 22, 25, 33, 46	-----	-----	Total Post (No BMPs)
47	Combine	2191.17	1	717	4,892,288		-----	-----	Total Post (No BMPs with Bypass)
KTC_Greenfield.gpw					Return Period: 100 Year			Thursday, 06 / 19 / 2025	
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Pond Report

Pond No. 1 - MRC Basins 12A-B

Pond Data

Capexoid - Based on line V cent 1000 area 86,265 sqft. Slope 0.00. Bottom elevation 10.50. Beginning elevation 13.00. Slope = 30.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	10.50	86,265	0	0
0.25	10.75	86,265	6,470	6,470
0.50	11.00	86,265	6,470	12,940
0.75	11.25	86,265	6,470	19,410
1.00	11.50	86,265	6,470	25,880
1.25	11.75	86,265	6,470	32,349
1.50	12.00	86,265	6,470	38,819
1.75	12.25	86,265	6,470	45,289
2.00	12.50	86,265	6,470	51,759
2.25	12.75	86,265	6,470	58,229
2.50	13.00	86,265	6,470	64,699
2.50	13.00	86,265	86	64,785
3.00	13.50	90,221	44,025	108,810
3.50	14.00	94,207	46,099	154,909
4.50	15.00	105,259	99,572	254,481
5.50	16.00	110,422	107,712	362,193
6.50	17.00	118,697	114,409	476,601
7.50	18.00	127,083	122,731	599,332

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	6.00	2.00	Inactive
Span (in)	= 36.00	6.00	2.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 12.00	13.00	11.00	0.00
Length (ft)	= 84.00	0.00	0.00	0.00
Slope (%)	= 2.31	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	5.00	0.00	0.00
Crest El. (ft)	= 17.00	14.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	Yes	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	10.50	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.25	6,470	10.75	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.50	12,940	11.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.75	19,410	11.25	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.00	25,880	11.50	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.25	32,349	11.75	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.50	38,819	12.00	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.75	45,289	12.25	0.05 ic	0.00	0.04 ic	---	0.00	0.00	---	---	---	---	0.044
2.00	51,759	12.50	0.07 ic	0.00	0.07 ic	---	0.00	0.00	---	---	---	---	0.067
2.25	58,229	12.75	0.08 ic	0.00	0.08 ic	---	0.00	0.00	---	---	---	---	0.085
2.50	64,699	13.00	0.10 ic	0.00	0.10 ic	---	0.00	0.00	---	---	---	---	0.099
2.50	64,785	13.00	0.10 ic	0.00 ic	0.10 ic	---	0.00	0.00	---	---	---	---	0.099
3.00	108,810	13.50	0.61 ic	0.47 ic	0.12 ic	---	0.00	0.00	---	---	---	---	0.589
3.50	154,909	14.00	0.96 ic	0.82 ic	0.14 ic	---	0.00	0.00	---	---	---	---	0.954
4.50	254,481	15.00	7.43 ic	1.25 ic	0.15 ic	---	0.00	5.87	---	---	---	---	7.267
5.50	362,193	16.00	31.86 ic	1.20 ic	0.13 ic	---	0.00	30.53	---	---	---	---	31.86
6.50	476,601	17.00	53.37 ic	0.96 ic	0.11 ic	---	0.00	52.30 s	---	---	---	---	53.37
7.50	599,332	18.00	70.24 ic	0.46 ic	0.05 ic	---	25.00 s	44.72 s	---	---	---	---	70.24

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Pond No. 2 - Wet Pond #12C-D

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 8.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	8.00	26,205	0	0
1.00	9.00	51,956	38,349	38,349
2.00	10.00	56,779	54,344	92,694
3.00	11.00	61,723	59,228	151,922
4.00	12.00	66,789	64,233	216,154
5.00	13.00	71,977	69,360	285,514
6.00	14.00	77,274	74,602	360,117
7.00	15.00	82,683	79,955	440,072
8.00	16.00	88,203	85,420	525,492
9.00	17.00	93,834	90,995	616,486
10.00	18.00	99,589	96,688	713,174

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	12.00	0.00	0.00
Span (in)	= 36.00	12.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 10.00	10.00	0.00	0.00
Length (ft)	= 134.00	0.00	0.00	0.00
Slope (%)	= 1.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	0.00	0.00	0.00
Crest El. (ft)	= 17.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	8.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
1.00	38,349	9.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
2.00	92,694	10.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
3.00	151,922	11.00	2.47 ic	2.47 ic	---	---	0.00	---	---	---	---	---	2.473
4.00	216,154	12.00	4.31 ic	4.22 ic	---	---	0.00	---	---	---	---	---	4.216
5.00	285,514	13.00	5.52 ic	5.52 ic	---	---	0.00	---	---	---	---	---	5.517
6.00	360,117	14.00	6.59 ic	6.59 ic	---	---	0.00	---	---	---	---	---	6.594
7.00	440,072	15.00	7.73 ic	7.53 ic	---	---	0.00	---	---	---	---	---	7.528
8.00	525,492	16.00	8.38 ic	8.38 ic	---	---	0.00	---	---	---	---	---	8.381
9.00	616,486	17.00	9.35 ic	9.15 ic	---	---	0.00	---	---	---	---	---	9.146
10.00	713,174	18.00	46.56 ic	8.13 ic	---	---	38.43	---	---	---	---	---	46.56

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Pond No. 3 - Wet Pond #13A-C

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 8.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	8.00	50,618	0	0
1.00	9.00	90,555	69,618	69,618
2.00	10.00	98,285	94,384	164,003
3.00	11.00	105,464	101,843	265,846
4.00	12.00	112,858	109,129	374,975
5.00	13.00	120,466	116,630	491,605
6.00	14.00	128,292	124,346	615,951
7.00	15.00	136,332	132,278	748,229
8.00	16.00	144,588	140,426	888,655
9.00	17.00	153,058	148,788	1,037,443
10.00	18.00	161,743	157,365	1,194,808

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 60.00	12.00	18.00	0.00
Span (in)	= 60.00	12.00	24.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 10.00	10.00	12.00	0.00
Length (ft)	= 307.00	0.00	0.00	0.00
Slope (%)	= 0.93	0.00	0.00	n/a
N-Value	= .011	.011	.011	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	Inactive	0.00	0.00
Crest El. (ft)	= 17.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	8.00	0.00	0.00	0.00	---	0.00	---	---	---	---	---	0.000
1.00	69,618	9.00	0.00	0.00	0.00	---	0.00	---	---	---	---	---	0.000
2.00	164,003	10.00	0.00	0.00	0.00	---	0.00	---	---	---	---	---	0.000
3.00	265,846	11.00	2.66 ic	2.66 ic	0.00	---	0.00	---	---	---	---	---	2.657
4.00	374,975	12.00	4.39 ic	4.39 ic	0.00	---	0.00	---	---	---	---	---	4.387
5.00	491,605	13.00	11.99 ic	5.18 ic	6.81 ic	---	0.00	---	---	---	---	---	11.99
6.00	615,951	14.00	22.51 ic	5.93 ic	16.15 ic	---	0.00	---	---	---	---	---	22.08
7.00	748,229	15.00	28.84 ic	6.80 ic	21.67 ic	---	0.00	---	---	---	---	---	28.47
8.00	888,655	16.00	33.67 ic	7.63 ic	26.04 ic	---	0.00	---	---	---	---	---	33.67
9.00	1,037,443	17.00	38.55 ic	8.40 ic	29.78 ic	---	0.00	---	---	---	---	---	38.17
10.00	1,194,808	18.00	78.68 ic	8.35 ic	31.90 ic	---	38.43	---	---	---	---	---	78.68

Pond Report

Pond No. 5 - Basin #14 (MRC)

Pond Data

Capexoid = 0.000, Base of Line = 10.00, Area = 32.0, Side Slopes = 0.00, Bottom Slope = 0.00, Bottom Elevation = 10.50, Depth = 2.50, Width = 30.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	10.50	131,960	0	0
0.25	10.75	131,960	9,897	9,897
0.50	11.00	131,960	9,897	19,794
0.75	11.25	131,960	9,897	29,691
1.00	11.50	131,960	9,897	39,588
1.25	11.75	131,960	9,897	49,485
1.50	12.00	131,960	9,897	59,382
1.75	12.25	131,960	9,897	69,279
2.00	12.50	131,960	9,897	79,176
2.25	12.75	131,960	9,897	89,073
2.50	13.00	131,960	9,897	98,970
2.50	13.00	131,961	132	99,102
3.00	13.50	137,426	67,201	166,303
3.50	14.00	142,907	70,072	236,374
4.50	15.00	153,914	148,362	384,736
5.50	16.00	164,977	159,398	544,134
6.50	17.00	176,097	170,490	714,623
7.50	18.00	187,273	181,638	896,262

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	8.00	2.00	0.00
Span (in)	= 36.00	8.00	2.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 12.00	13.00	11.00	0.00
Length (ft)	= 91.00	0.00	0.00	0.00
Slope (%)	= 2.19	0.00	0.00	n/a
N-Value	= .011	.011	.011	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	5.00	Inactive	0.00
Crest El. (ft)	= 17.00	15.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	Rect	---
Multi-Stage	= Yes	Yes	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	10.50	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.25	9,897	10.75	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.50	19,794	11.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
0.75	29,691	11.25	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.00	39,588	11.50	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.25	49,485	11.75	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.50	59,382	12.00	0.00	0.00	0.00 ic	---	0.00	0.00	---	---	---	---	0.000
1.75	69,279	12.25	0.05 ic	0.00	0.04 ic	---	0.00	0.00	---	---	---	---	0.044
2.00	79,176	12.50	0.07 ic	0.00	0.07 ic	---	0.00	0.00	---	---	---	---	0.067
2.25	89,073	12.75	0.08 ic	0.00	0.08 ic	---	0.00	0.00	---	---	---	---	0.085
2.50	98,970	13.00	0.10 ic	0.00	0.10 ic	---	0.00	0.00	---	---	---	---	0.099
2.50	99,102	13.00	0.10 ic	0.00 ic	0.10 ic	---	0.00	0.00	---	---	---	---	0.099
3.00	166,303	13.50	0.81 ic	0.68 ic	0.11 ic	---	0.00	0.00	---	---	---	---	0.795
3.50	236,374	14.00	1.53 ic	1.37 ic	0.13 ic	---	0.00	0.00	---	---	---	---	1.503
4.50	384,736	15.00	2.33 ic	2.17 ic	0.16 ic	---	0.00	0.00	---	---	---	---	2.334
5.50	544,134	16.00	19.33 ic	2.53 ic	0.16 ic	---	0.00	16.65	---	---	---	---	19.33
6.50	714,623	17.00	47.39 ic	2.10 ic	0.13 ic	---	0.00	45.16 s	---	---	---	---	47.39
7.50	896,262	18.00	69.73 ic	0.92 ic	0.06 ic	---	27.41 s	41.33 s	---	---	---	---	69.72

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Pond No. 7 - Basin #15A-B

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 13.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	13.00	59,439	0	0
1.00	14.00	79,456	69,199	69,199
2.00	15.00	99,691	89,373	158,572
3.00	16.00	120,205	109,777	268,350
4.00	17.00	140,881	130,393	398,743
5.00	18.00	161,657	151,135	549,878
5.50	18.50	172,070	83,410	633,288

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 60.00	Inactive	0.00	0.00
Span (in)	= 60.00	0.00	0.00	0.00
No. Barrels	= 2	1	0	0
Invert El. (ft)	= 13.00	0.00	0.00	0.00
Length (ft)	= 66.00	0.00	0.00	0.00
Slope (%)	= 1.51	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	13.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	69,199	14.00	19.09 ic	---	---	---	---	---	---	---	---	---	19.09
2.00	158,572	15.00	70.66 ic	---	---	---	---	---	---	---	---	---	70.66
3.00	268,350	16.00	145.26 ic	---	---	---	---	---	---	---	---	---	145.26
4.00	398,743	17.00	207.89 oc	---	---	---	---	---	---	---	---	---	207.89
5.00	549,878	18.00	238.44 oc	---	---	---	---	---	---	---	---	---	238.44
5.50	633,288	18.50	292.19 oc	---	---	---	---	---	---	---	---	---	292.19

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Pond No. 9 - Wet Pond #15C-D

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 8.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	8.00	379,820	0	0
1.00	9.00	457,452	417,993	417,993
2.00	10.00	468,795	463,066	881,059
3.00	11.00	480,264	474,470	1,355,529
4.00	12.00	491,856	486,000	1,841,529
5.00	13.00	503,573	497,653	2,339,182
6.00	14.00	515,415	509,432	2,848,614
7.00	15.00	527,380	521,334	3,369,948
8.00	16.00	539,471	533,361	3,903,309
9.00	17.00	551,686	545,512	4,448,821
10.00	18.00	564,051	557,802	5,006,623

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 60.00	12.00	Inactive	0.00
Span (in)	= 60.00	12.00	0.00	0.00
No. Barrels	= 1	2	1	0
Invert El. (ft)	= 10.00	10.00	0.00	0.00
Length (ft)	= 113.00	0.00	0.00	0.00
Slope (%)	= 1.77	0.00	0.00	n/a
N-Value	= .011	.011	.011	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	Inactive	0.00	0.00
Crest El. (ft)	= 17.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	8.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
1.00	417,993	9.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
2.00	881,059	10.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
3.00	1,355,529	11.00	4.41 ic	4.41 ic	---	---	0.00	---	---	---	---	---	4.408
4.00	1,841,529	12.00	8.25 ic	7.91 ic	---	---	0.00	---	---	---	---	---	7.908
5.00	2,339,182	13.00	10.59 ic	10.59 ic	---	---	0.00	---	---	---	---	---	10.59
6.00	2,848,614	14.00	13.19 ic	12.74 ic	---	---	0.00	---	---	---	---	---	12.74
7.00	3,369,948	15.00	14.68 ic	14.68 ic	---	---	0.00	---	---	---	---	---	14.68
8.00	3,903,309	16.00	16.37 ic	16.37 ic	---	---	0.00	---	---	---	---	---	16.37
9.00	4,448,821	17.00	17.94 ic	17.94 ic	---	---	0.00	---	---	---	---	---	17.94
10.00	5,006,623	18.00	56.89 ic	17.61 ic	---	---	38.43	---	---	---	---	---	56.04

Hydrograph Report

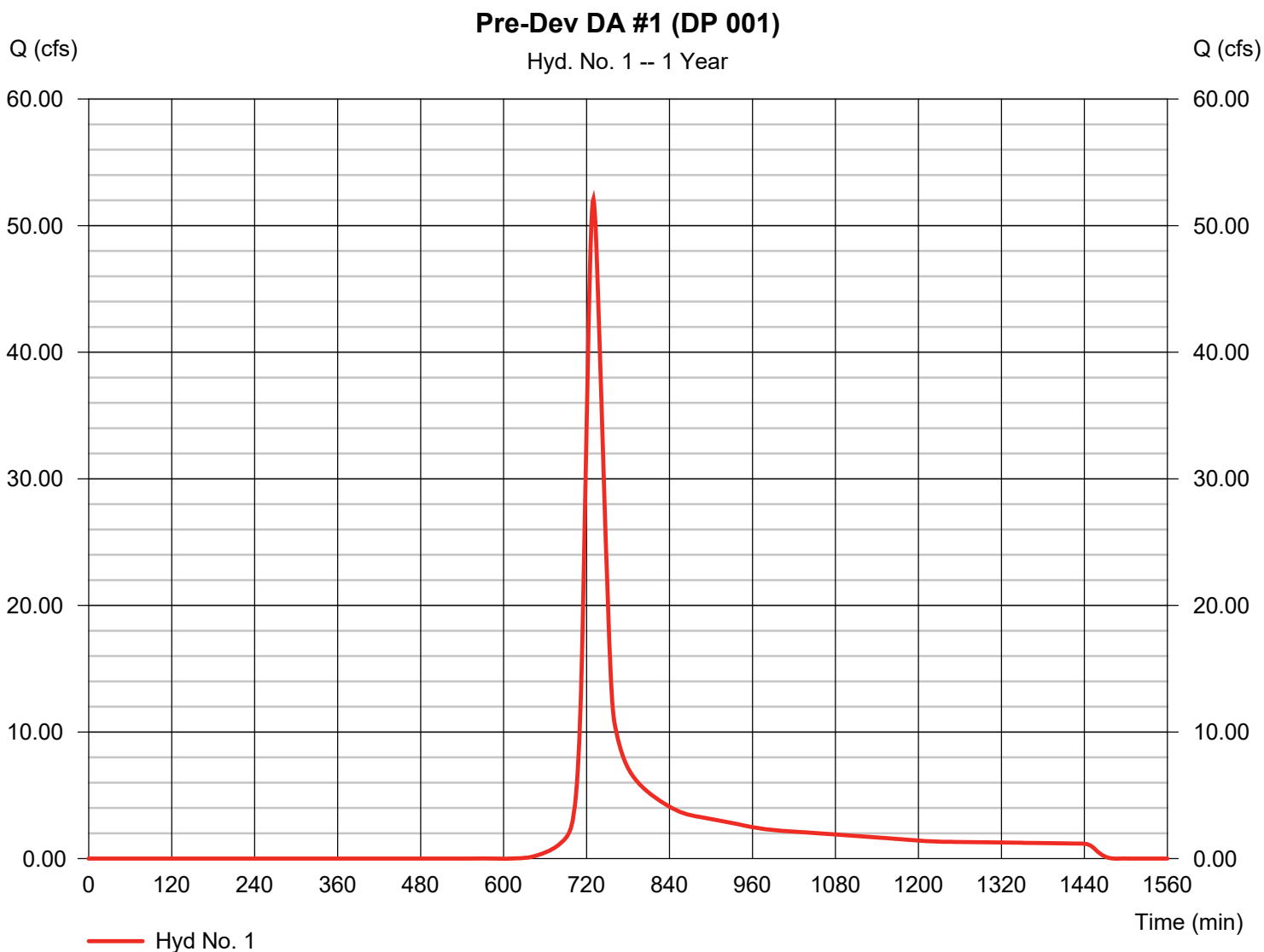
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 1

Pre-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 52.10 cfs
Storm frequency	= 1 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 200,875 cuft
Drainage area	= 54.210 ac	Curve number	= 79.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.80 min
Total precip.	= 2.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

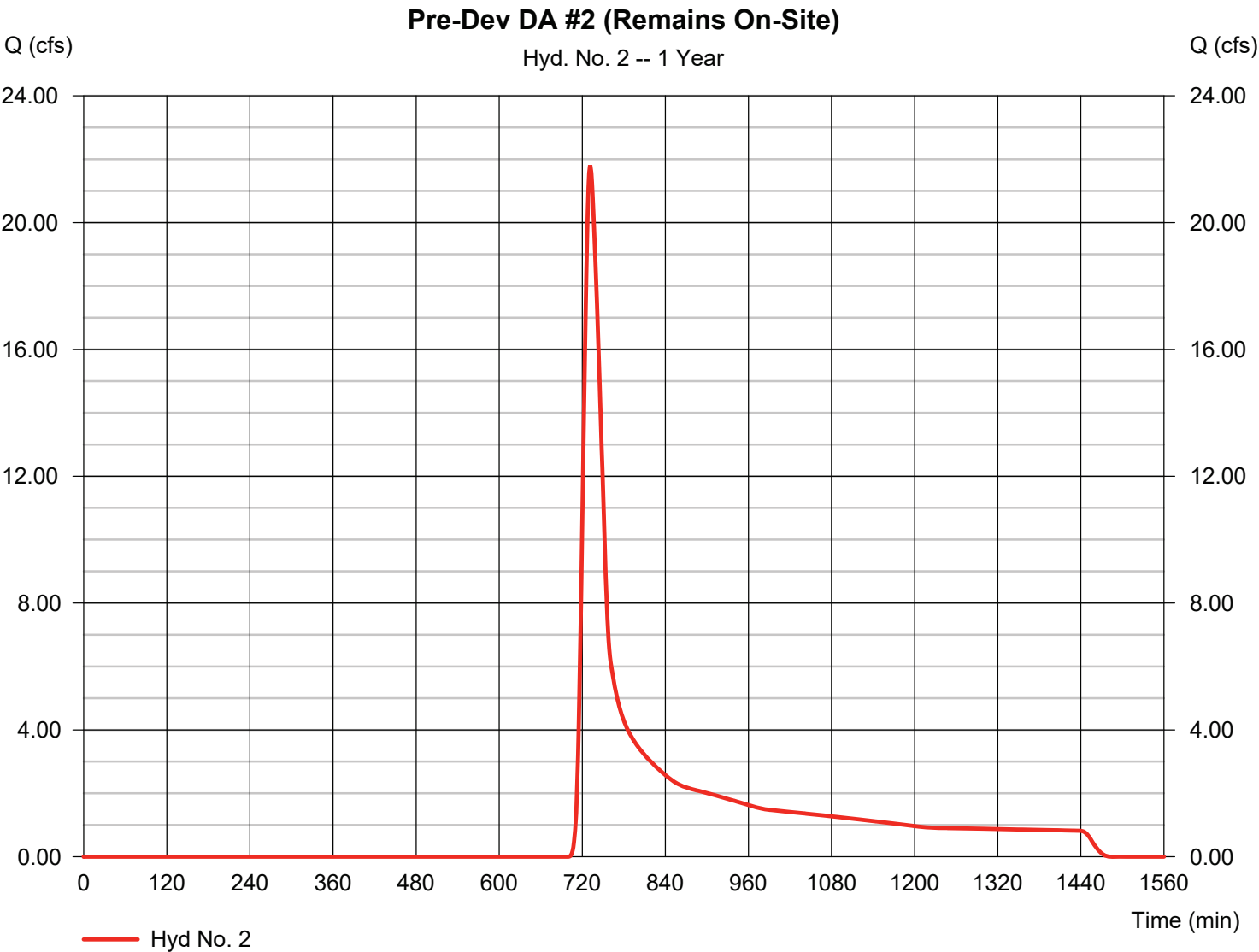


Hydrograph Report

Hyd. No. 2

Pre-Dev DA #2 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	21.76 cfs
Storm frequency	=	1 yrs	Time to peak	=	731 min
Time interval	=	1 min	Hyd. volume	=	103,813 cuft
Drainage area	=	54.240 ac	Curve number	=	69.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	26.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

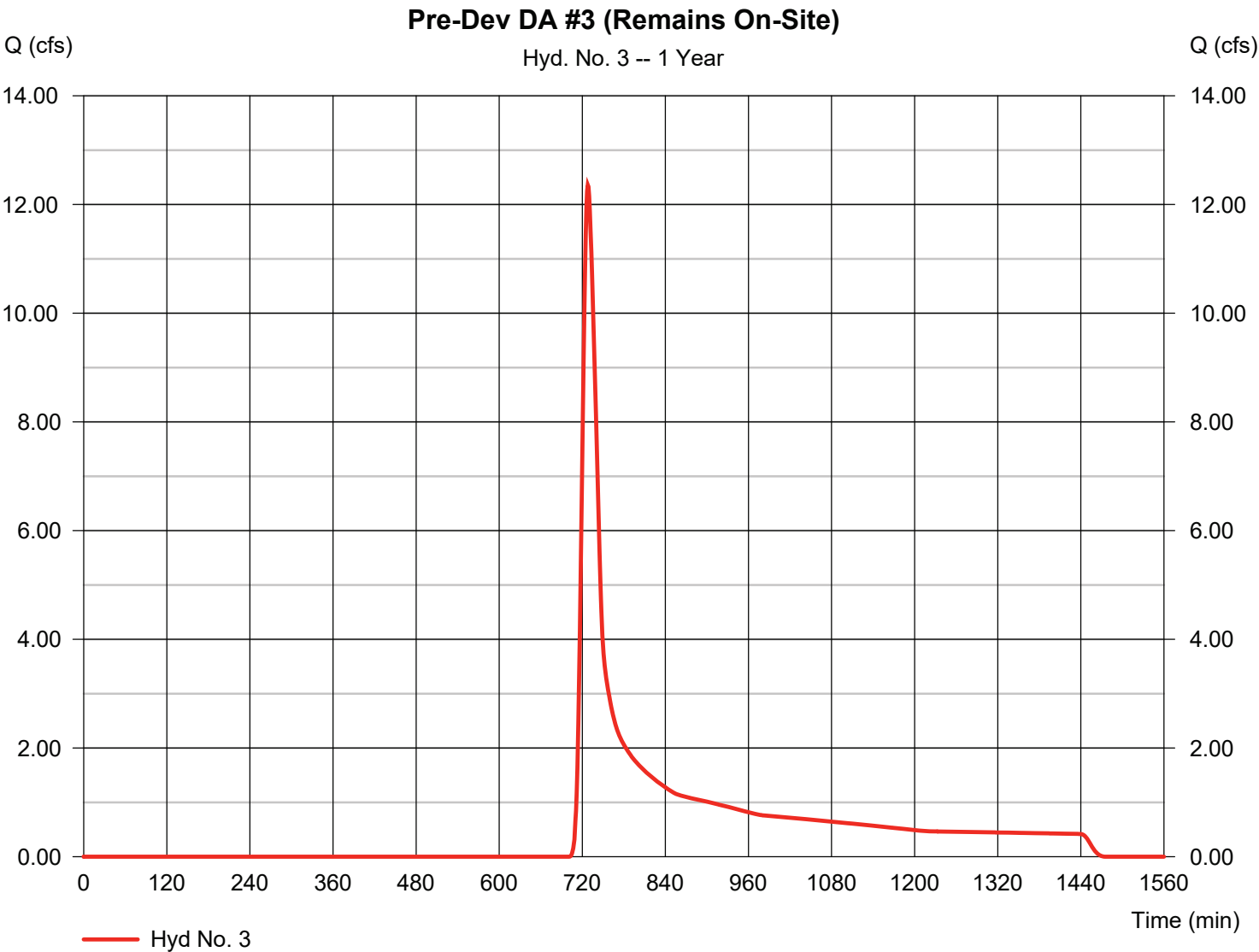


Hydrograph Report

Hyd. No. 3

Pre-Dev DA #3 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.36 cfs
Storm frequency	=	1 yrs	Time to peak	=	728 min
Time interval	=	1 min	Hyd. volume	=	52,137 cuft
Drainage area	=	28.420 ac	Curve number	=	68.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	20.50 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

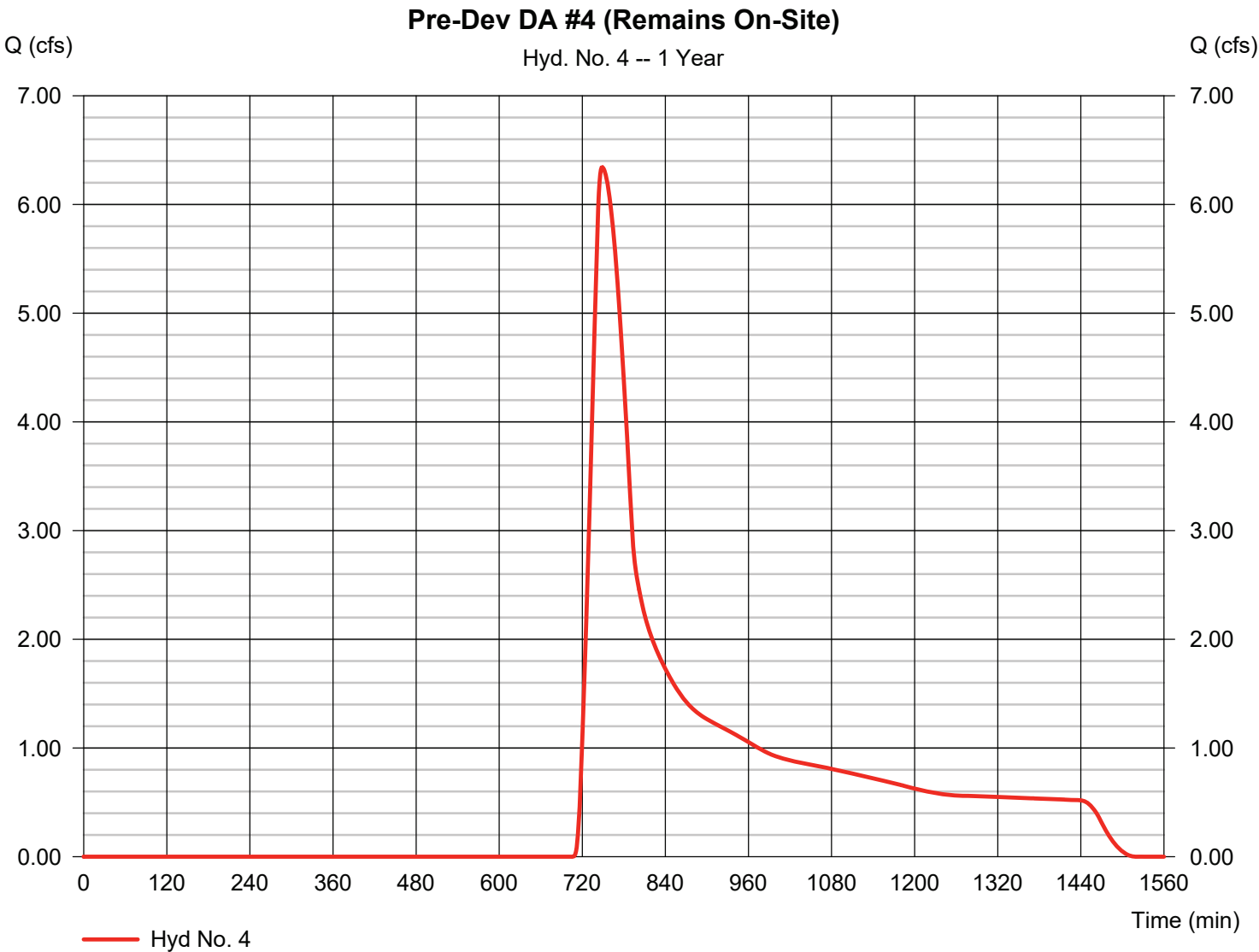


Hydrograph Report

Hyd. No. 4

Pre-Dev DA #4 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.342 cfs
Storm frequency	=	1 yrs	Time to peak	=	749 min
Time interval	=	1 min	Hyd. volume	=	56,812 cuft
Drainage area	=	41.280 ac	Curve number	=	65.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	49.50 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

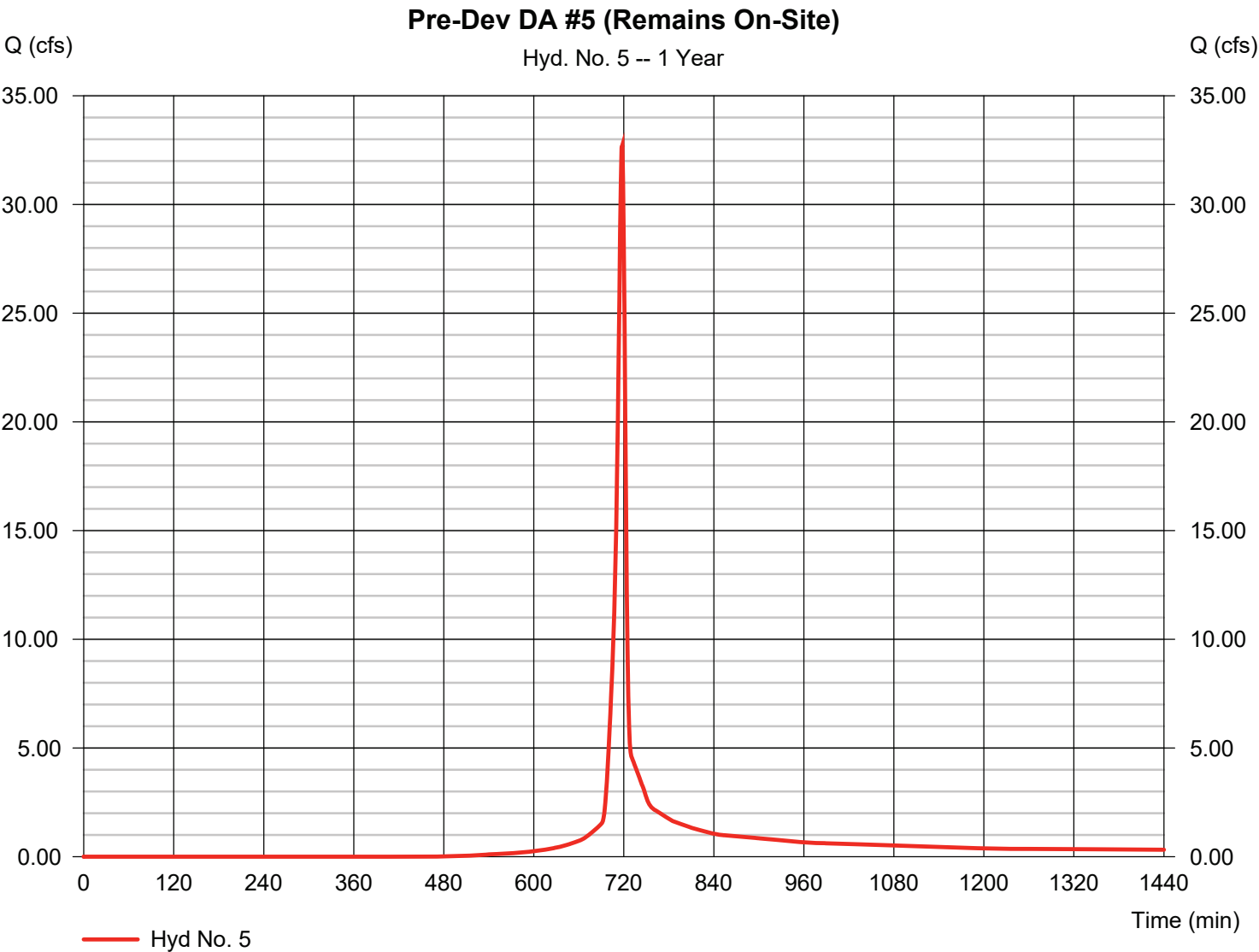


Hydrograph Report

Hyd. No. 5

Pre-Dev DA #5 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	32.73 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	66,493 cuft
Drainage area	=	12.240 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	6.20 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

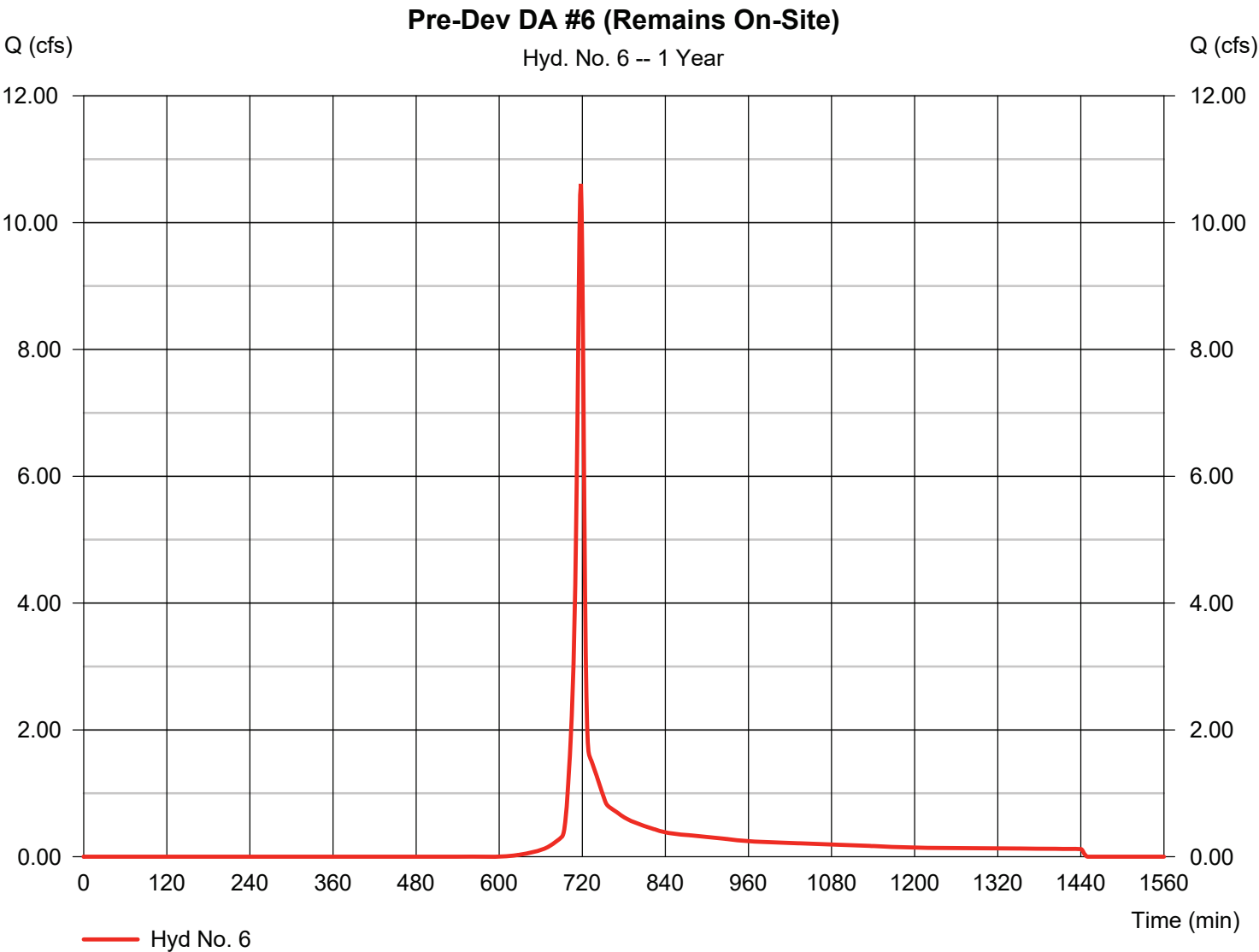


Hydrograph Report

Hyd. No. 6

Pre-Dev DA #6 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.61 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	21,317 cuft
Drainage area	=	5.410 ac	Curve number	=	80.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	5.97 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

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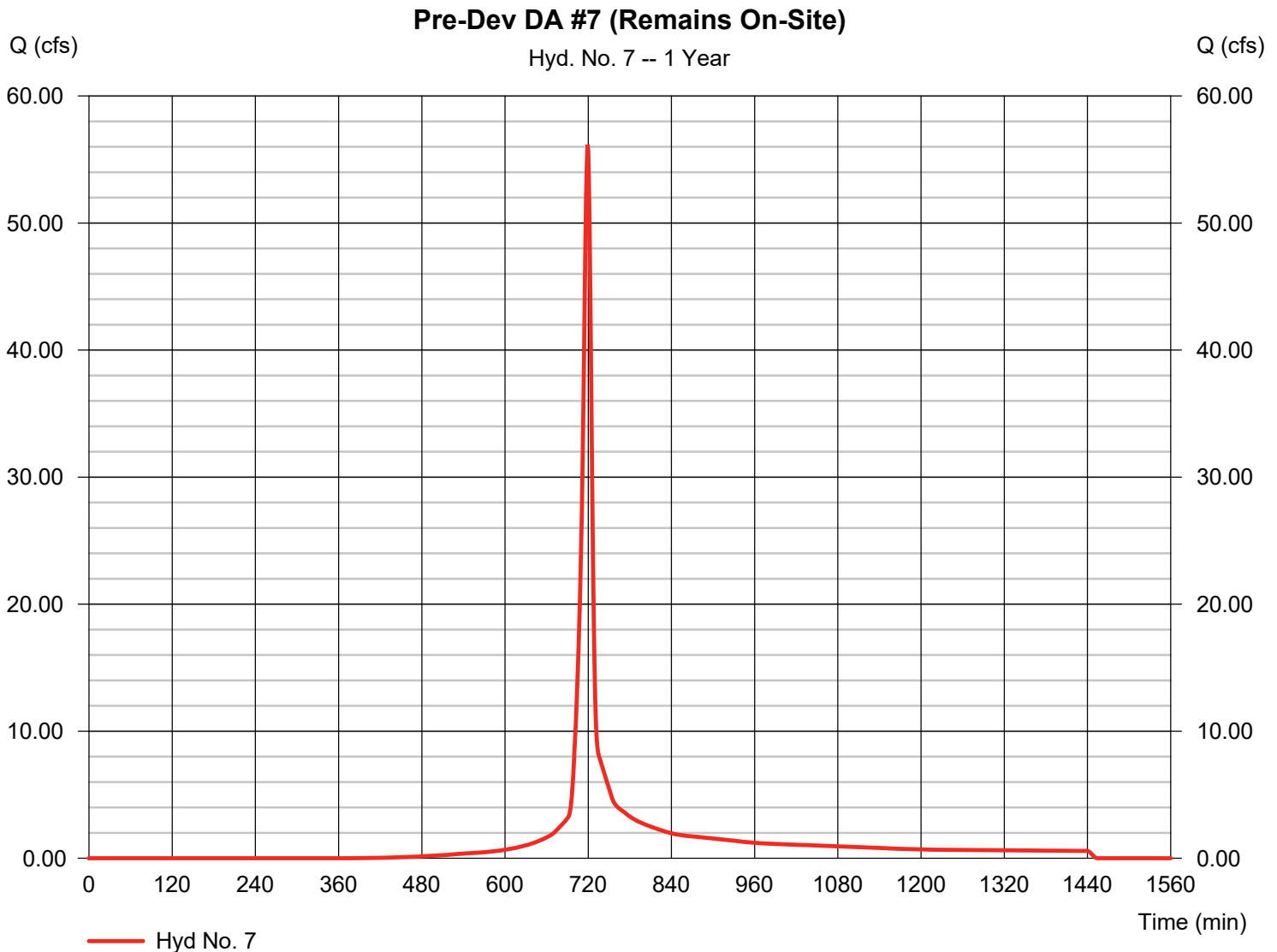
Thursday, 06 / 19 / 2025

Hyd. No. 7

Pre-Dev DA #7 (Remains On-Site)

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 1 min
 Drainage area = 21.490 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 2.70 in
 Storm duration = 24 hrs

Peak discharge = 56.17 cfs
 Time to peak = 719 min
 Hyd. volume = 128,455 cuft
 Curve number = 89.2
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 8.50 min
 Distribution = Type II
 Shape factor = 484

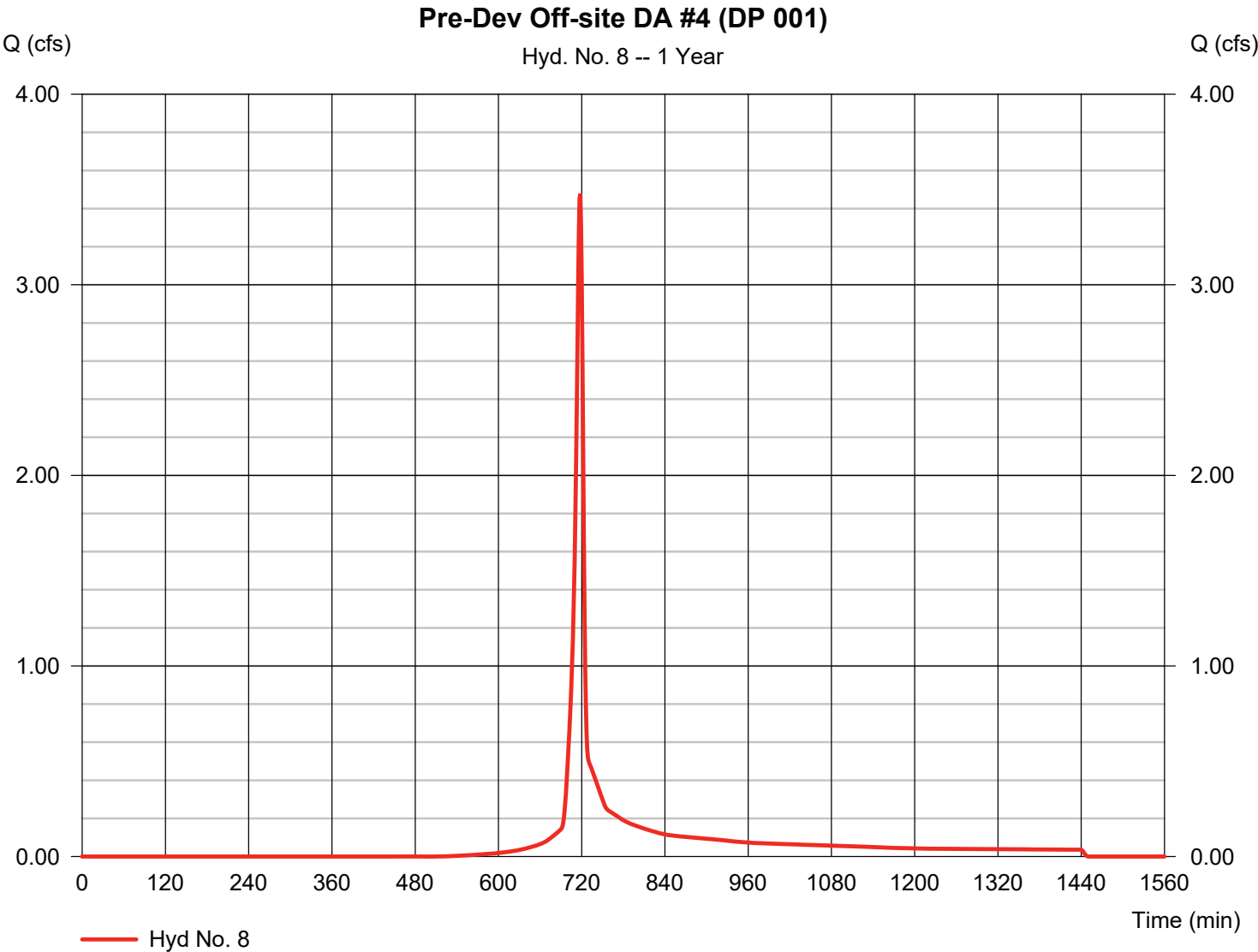


Hydrograph Report

Hyd. No. 8

Pre-Dev Off-site DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.477 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	7,014 cuft
Drainage area	=	1.420 ac	Curve number	=	84.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

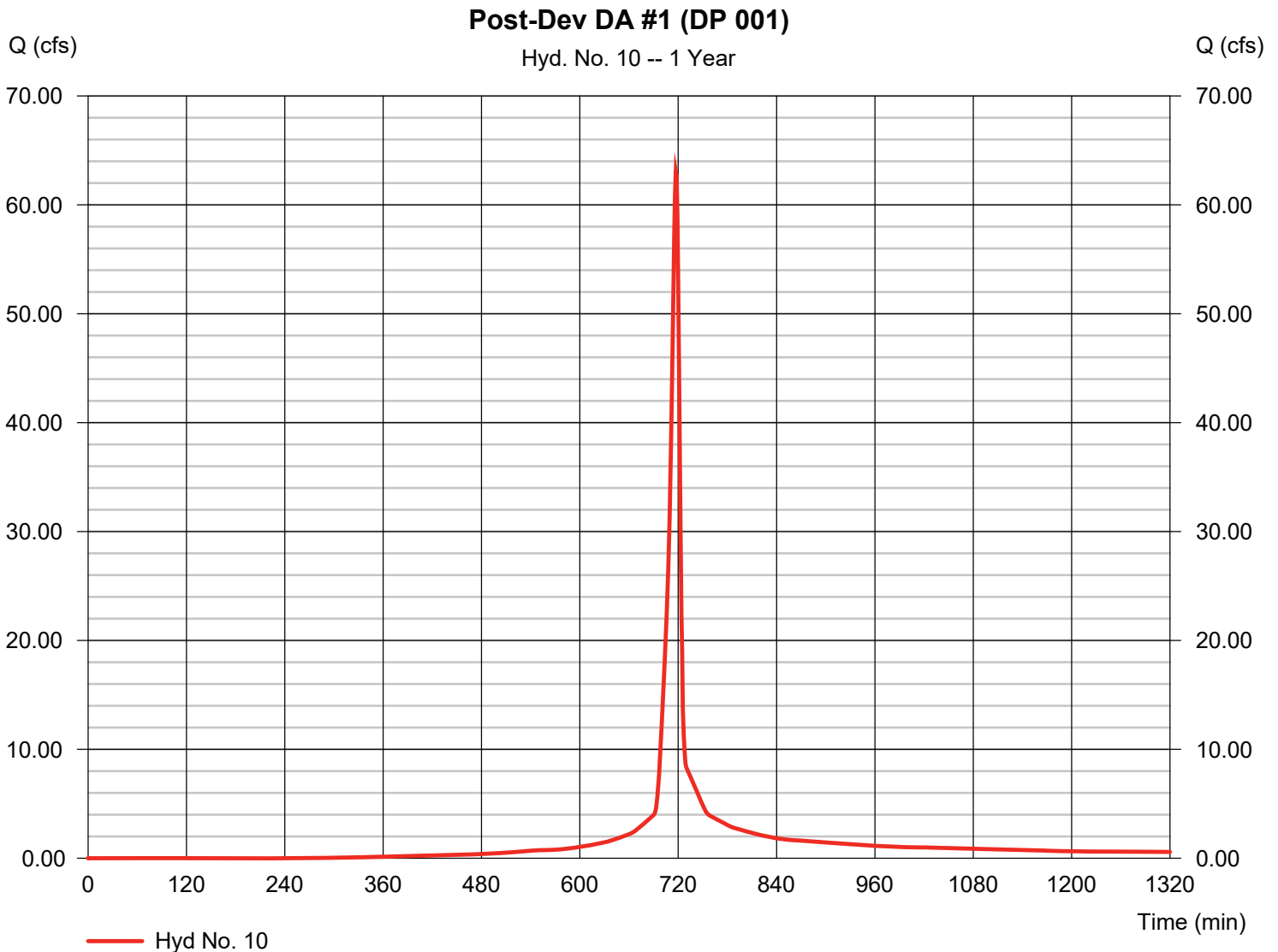
Thursday, 06 / 19 / 2025

Hyd. No. 10

Post-Dev DA #1 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 1 min
 Drainage area = 18.160 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.70 in
 Storm duration = 24 hrs

Peak discharge = 63.06 cfs
 Time to peak = 717 min
 Hyd. volume = 134,428 cuft
 Curve number = 93.1
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

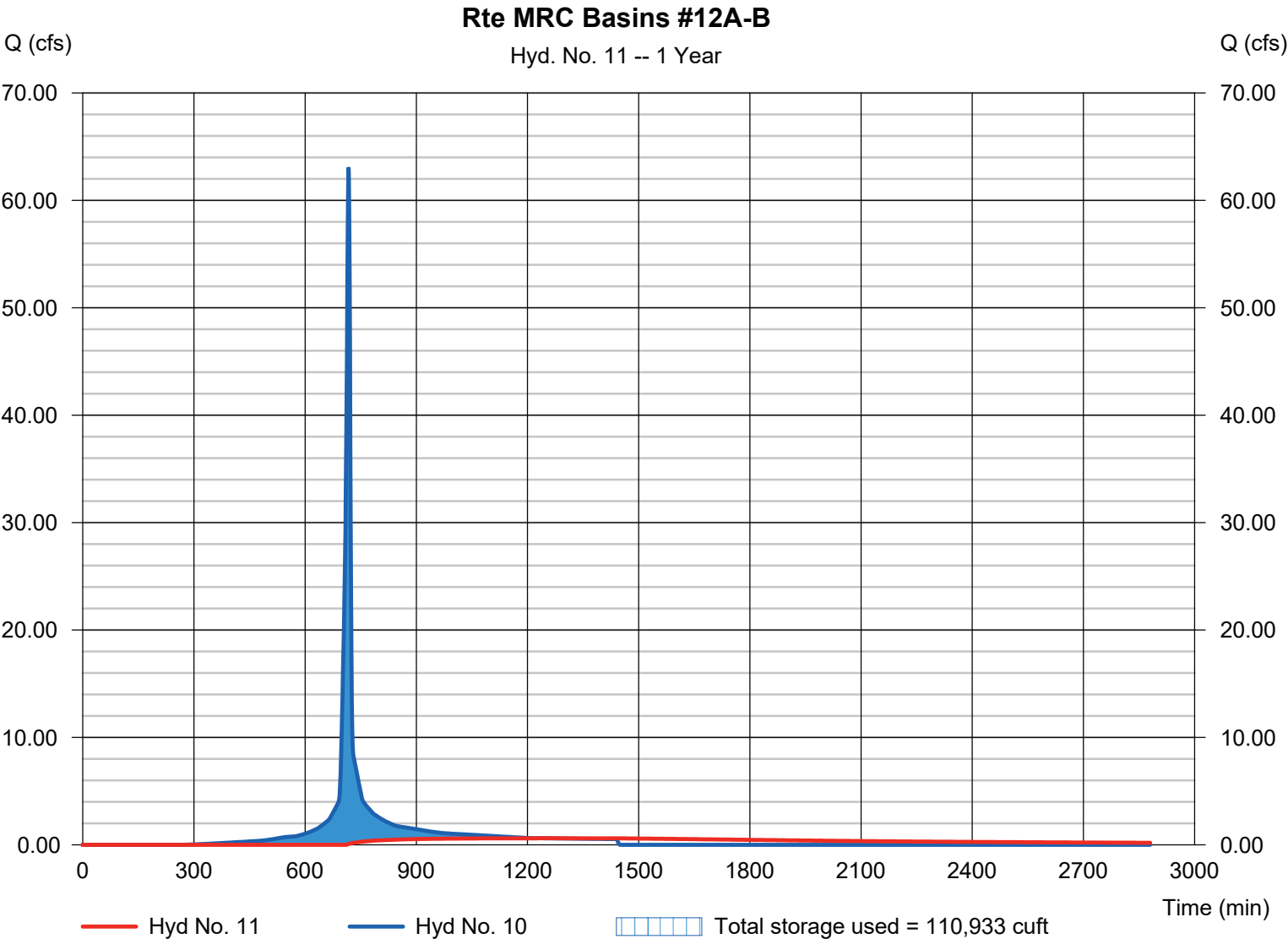
Thursday, 06 / 19 / 2025

Hyd. No. 11

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.611 cfs
Storm frequency	= 1 yrs	Time to peak	= 1245 min
Time interval	= 1 min	Hyd. volume	= 54,754 cuft
Inflow hyd. No.	= 10 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 13.52 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 110,933 cuft

Storage Indication method used.

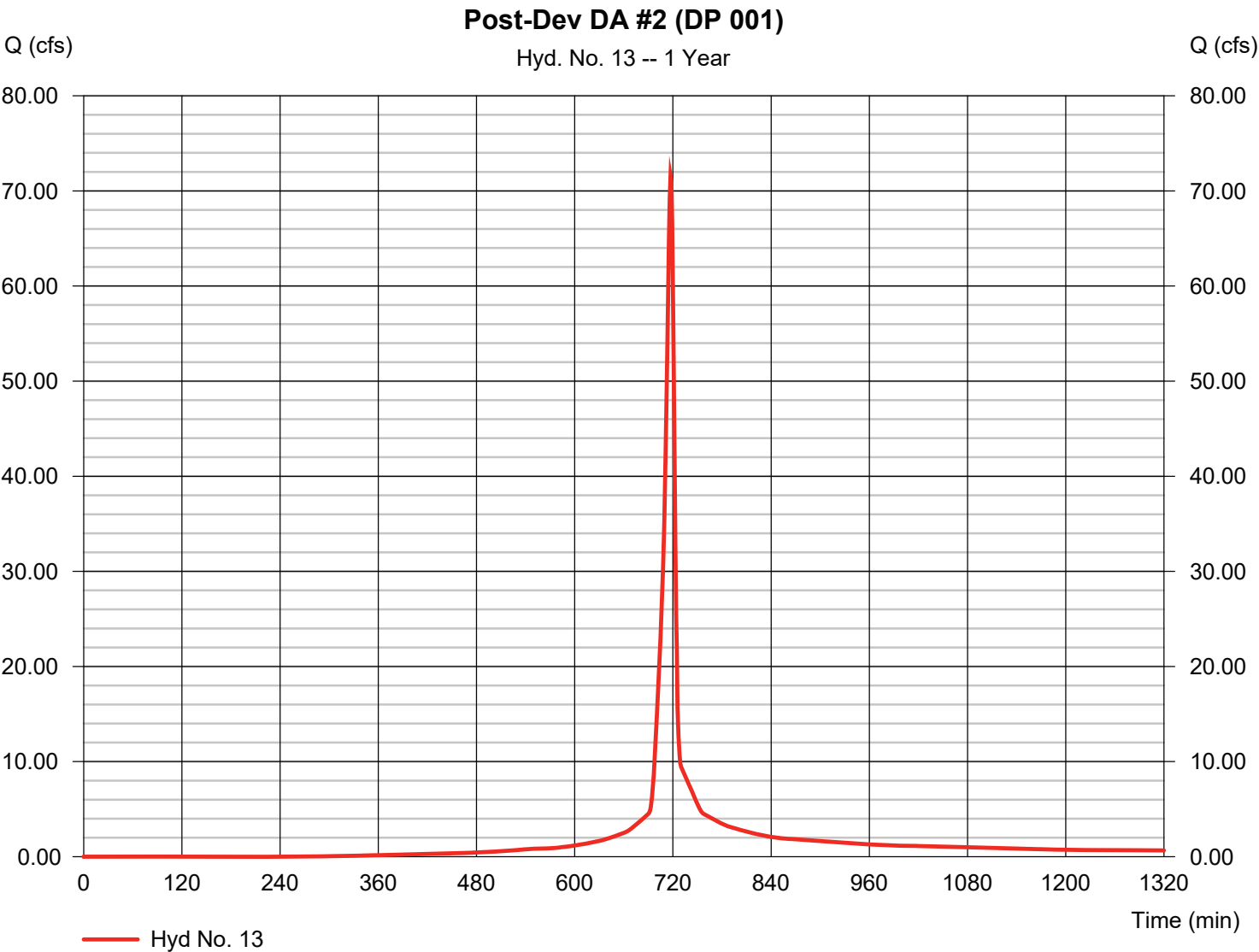


Hydrograph Report

Hyd. No. 13

Post-Dev DA #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	71.57 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	152,564 cuft
Drainage area	=	20.610 ac	Curve number	=	93.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

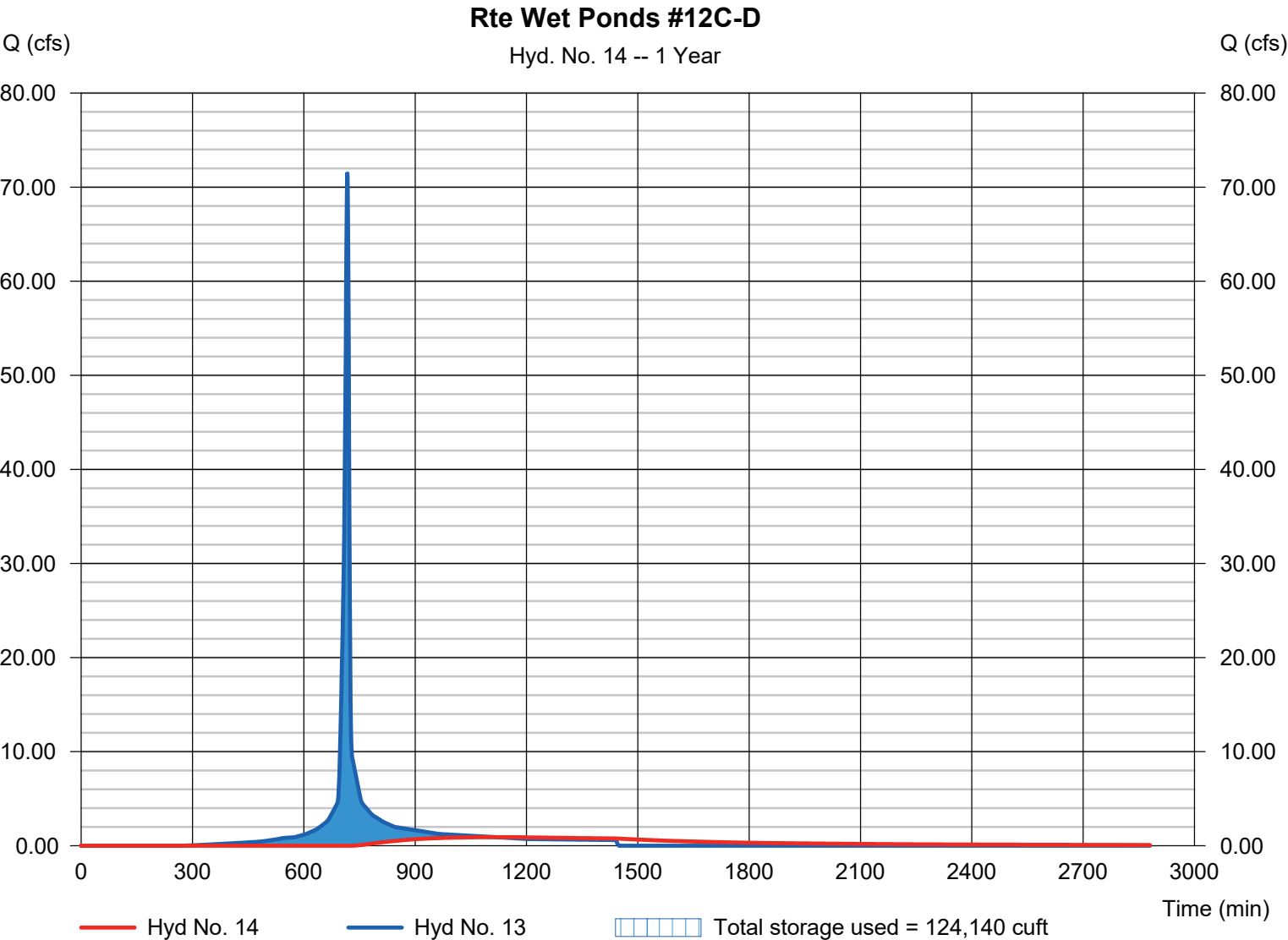
Thursday, 06 / 19 / 2025

Hyd. No. 14

Rte Wet Ponds #12C-D

Hydrograph type	= Reservoir	Peak discharge	= 0.911 cfs
Storm frequency	= 1 yrs	Time to peak	= 1116 min
Time interval	= 1 min	Hyd. volume	= 51,925 cuft
Inflow hyd. No.	= 13 - Post-Dev DA #2 (DP 001)	Max. Elevation	= 10.53 ft
Reservoir name	= Wet Pond #12C-D	Max. Storage	= 124,140 cuft

Storage Indication method used.



Hydrograph Report

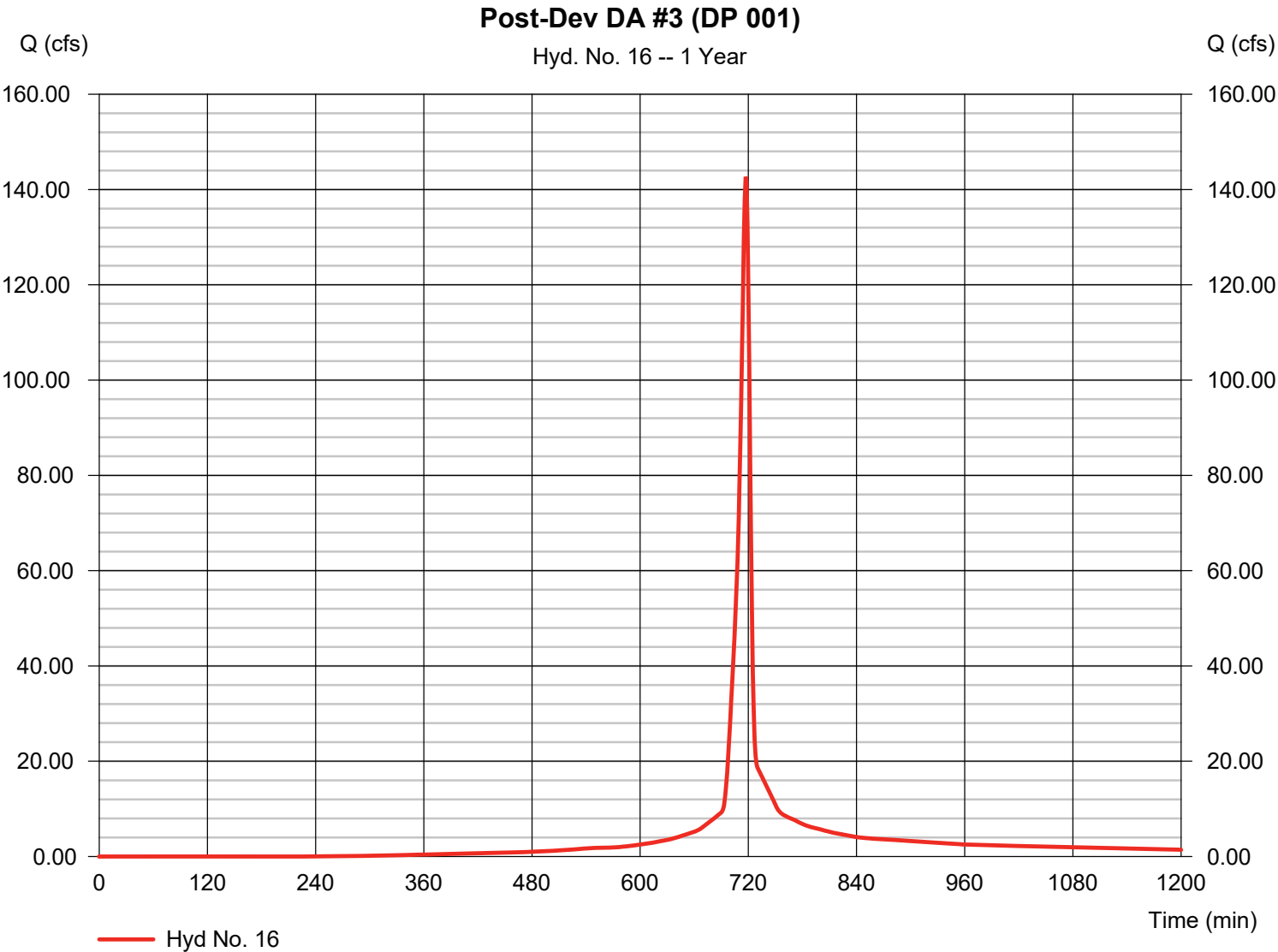
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Hyd. No. 16

Post-Dev DA #3 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	142.67 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	306,855 cuft
Drainage area	=	40.140 ac	Curve number	=	93.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



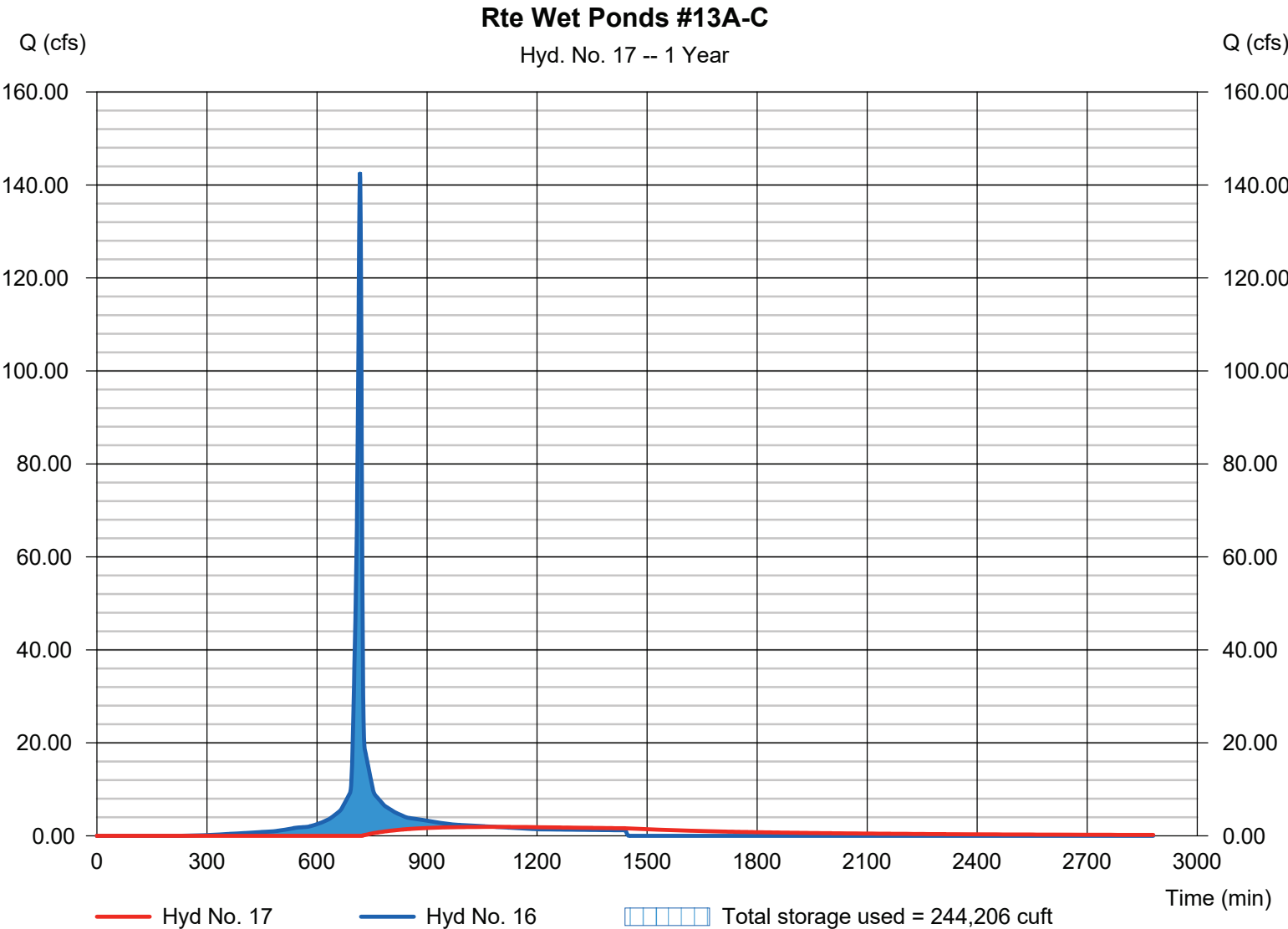
Hydrograph Report

Hyd. No. 17

Rte Wet Ponds #13A-C

Hydrograph type	= Reservoir	Peak discharge	= 1.920 cfs
Storm frequency	= 1 yrs	Time to peak	= 1087 min
Time interval	= 1 min	Hyd. volume	= 120,434 cuft
Inflow hyd. No.	= 16 - Post-Dev DA #3 (DP 001)	Max. Elevation	= 10.79 ft
Reservoir name	= Wet Pond #13A-C	Max. Storage	= 244,206 cuft

Storage Indication method used.

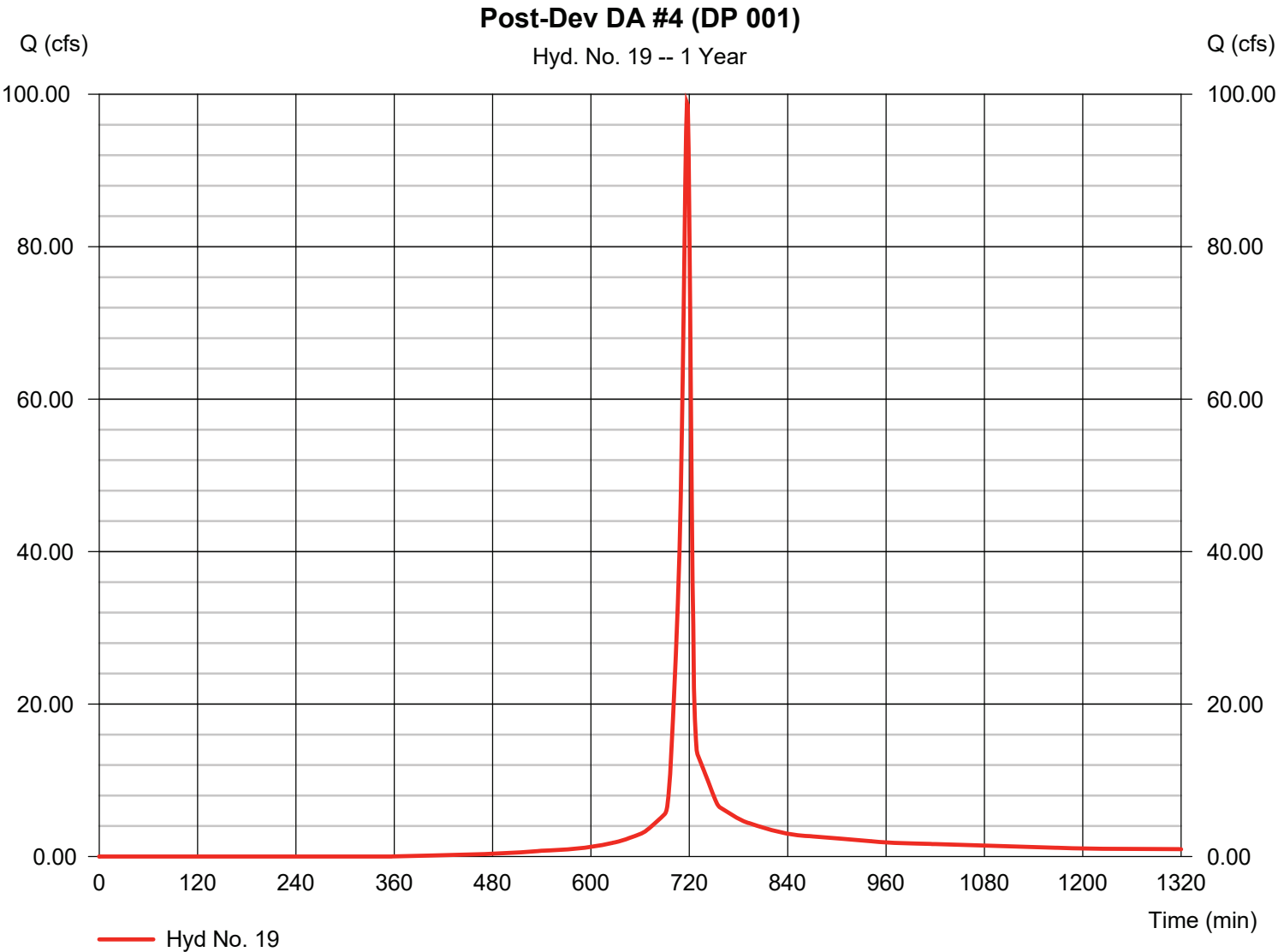


Hydrograph Report

Hyd. No. 19

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 98.87 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 205,747 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

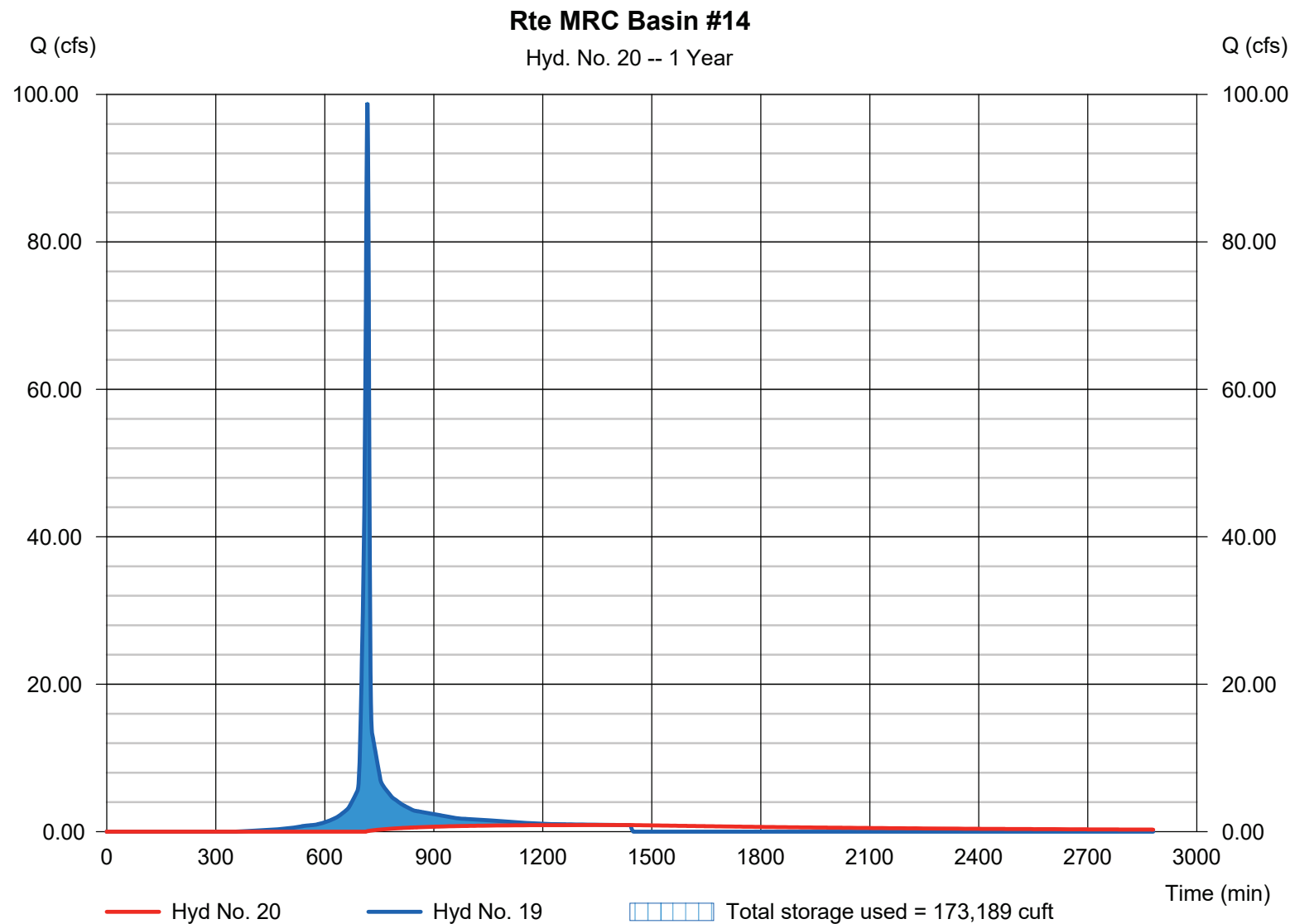
Thursday, 06 / 19 / 2025

Hyd. No. 20

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.896 cfs
Storm frequency	= 1 yrs	Time to peak	= 1421 min
Time interval	= 1 min	Hyd. volume	= 76,509 cuft
Inflow hyd. No.	= 19 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 13.55 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 173,189 cuft

Storage Indication method used.



Hydrograph Report

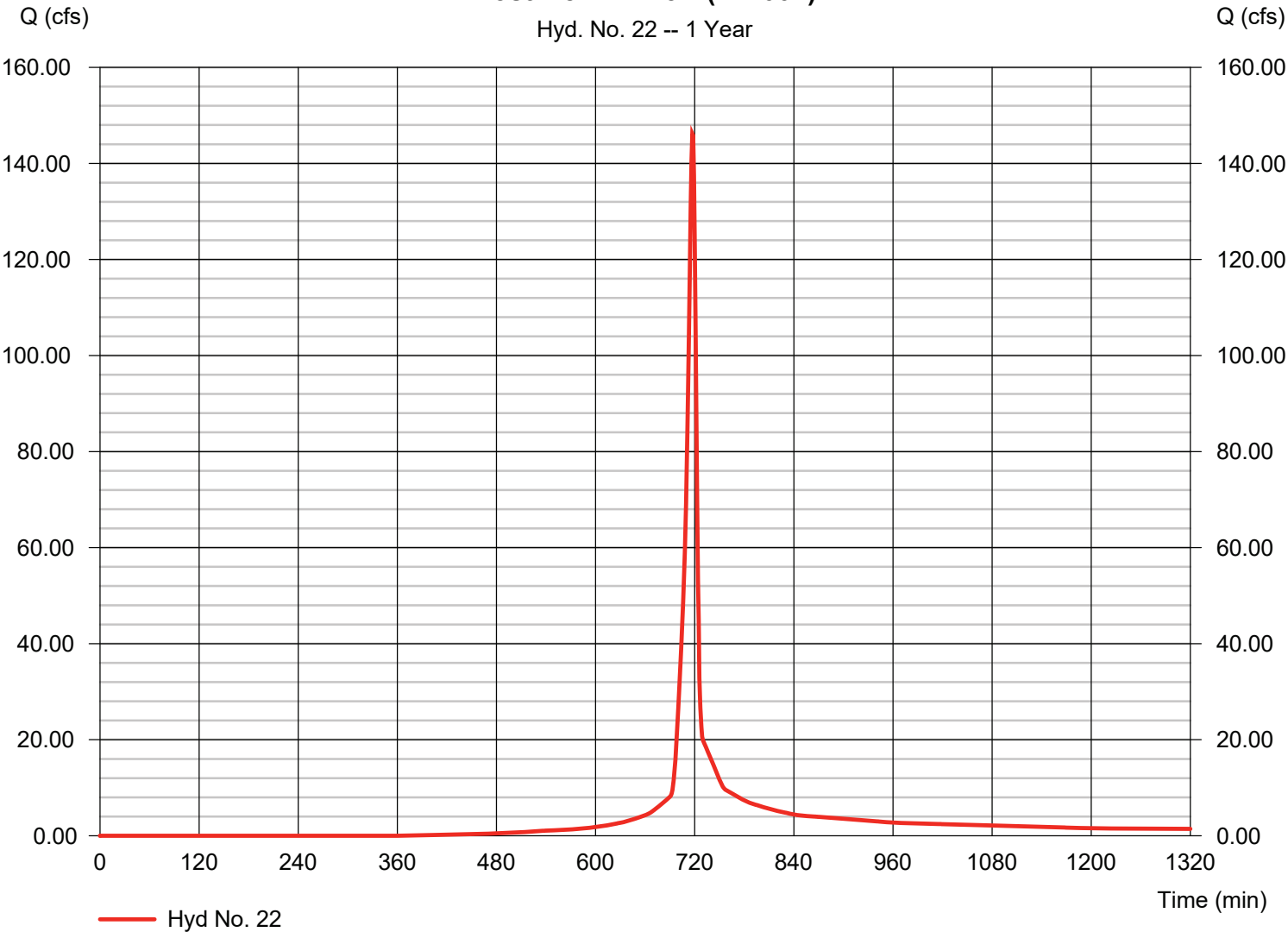
Hyd. No. 22

Post-Dev DA #5A (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	146.19 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	303,531 cuft
Drainage area	=	46.730 ac	Curve number	=	90.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

Post-Dev DA #5A (DP 001)

Hyd. No. 22 -- 1 Year



Hydrograph Report

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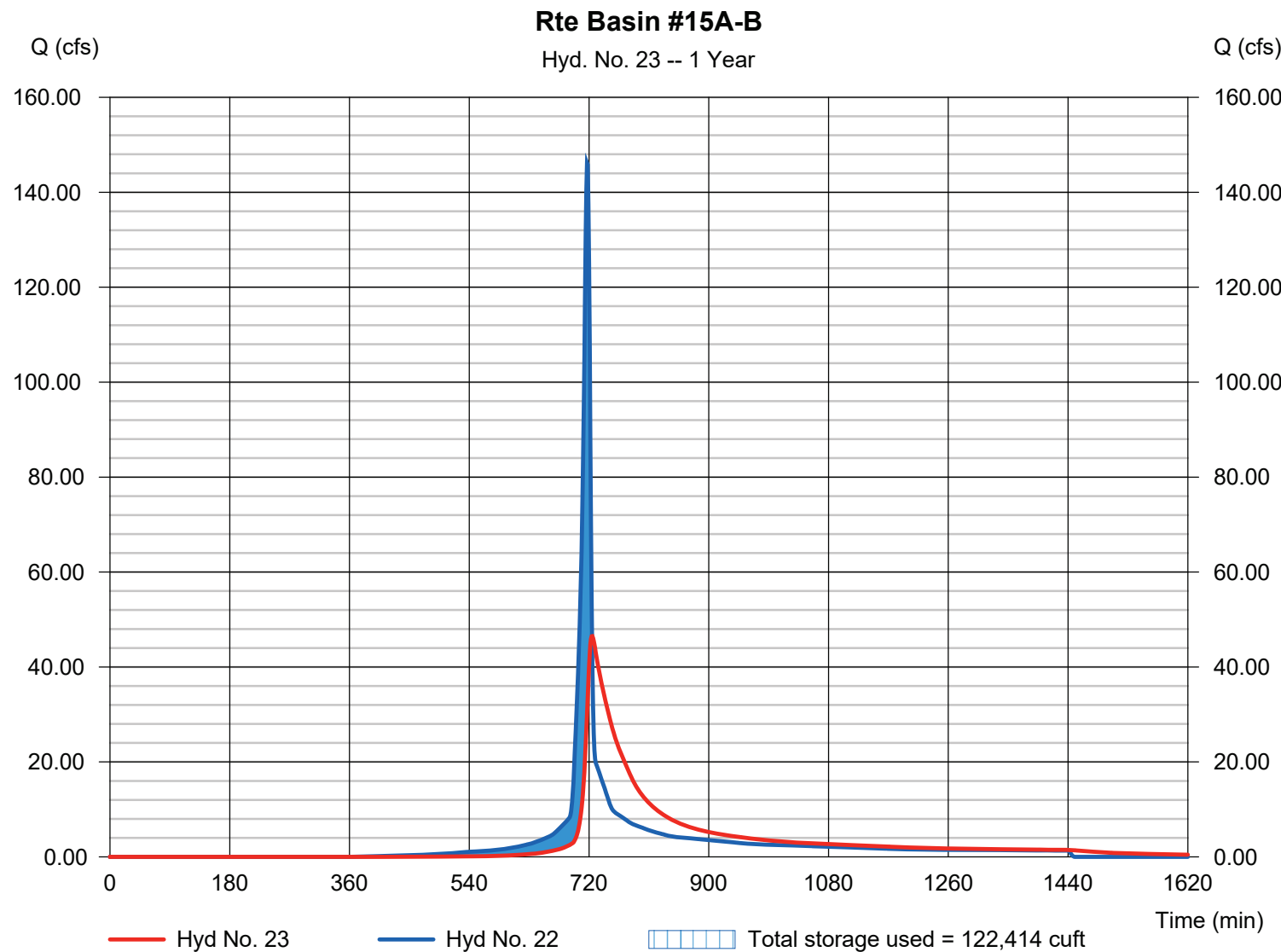
Thursday, 06 / 19 / 2025

Hyd. No. 23

Rte Basin #15A-B

Hydrograph type	= Reservoir	Peak discharge	= 46.48 cfs
Storm frequency	= 1 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 302,541 cuft
Inflow hyd. No.	= 22 - Post-Dev DA #5A (DP 001)	Max. Elevation	= 14.60 ft
Reservoir name	= Basin #15A-B	Max. Storage	= 122,414 cuft

Storage Indication method used.



Hydrograph Report

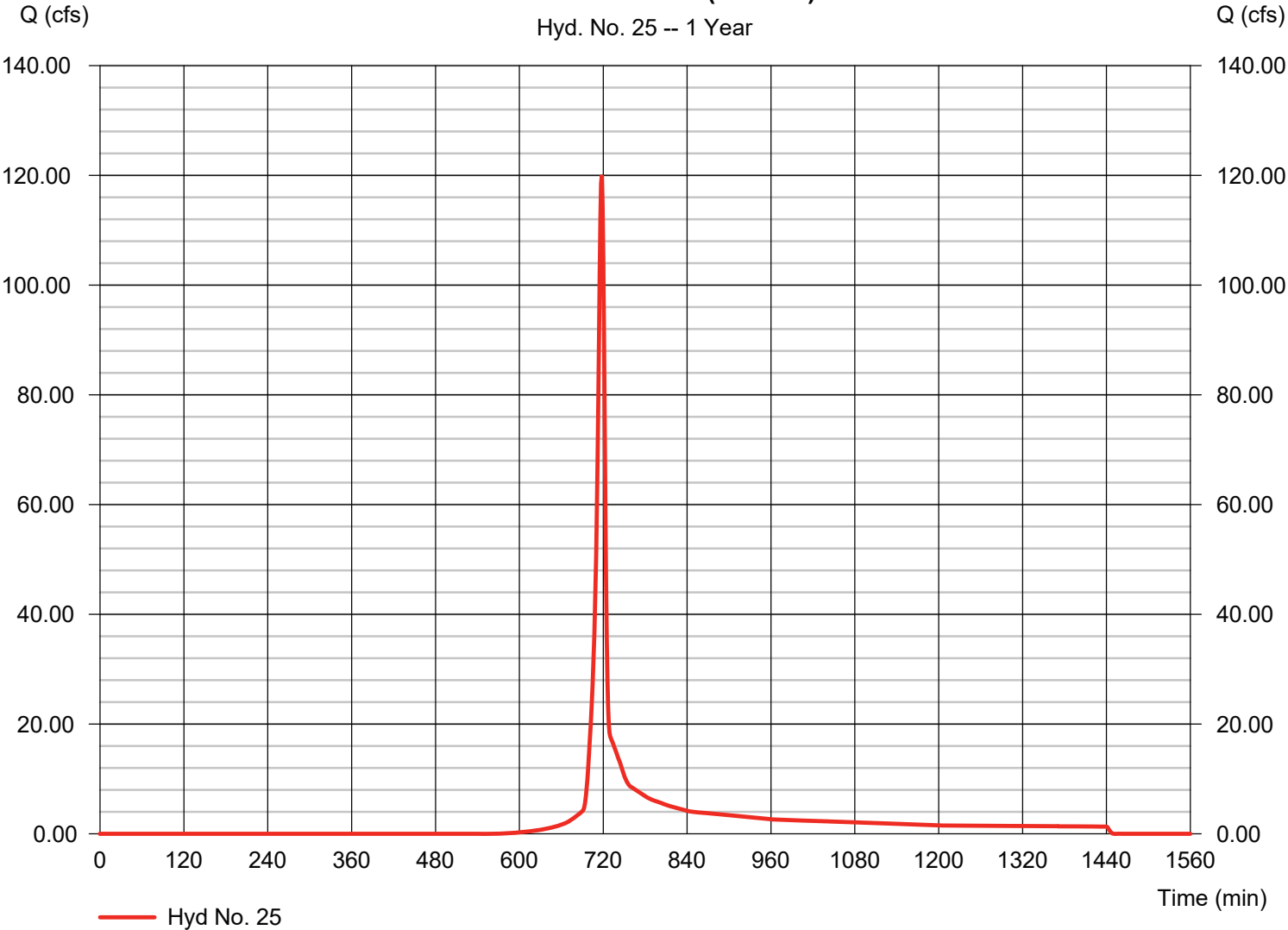
Hyd. No. 25

Post-Dev DA #5B (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 120.09 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 241,182 cuft
Drainage area	= 55.570 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Post-Dev DA #5B (DP 001)

Hyd. No. 25 -- 1 Year



Hydrograph Report

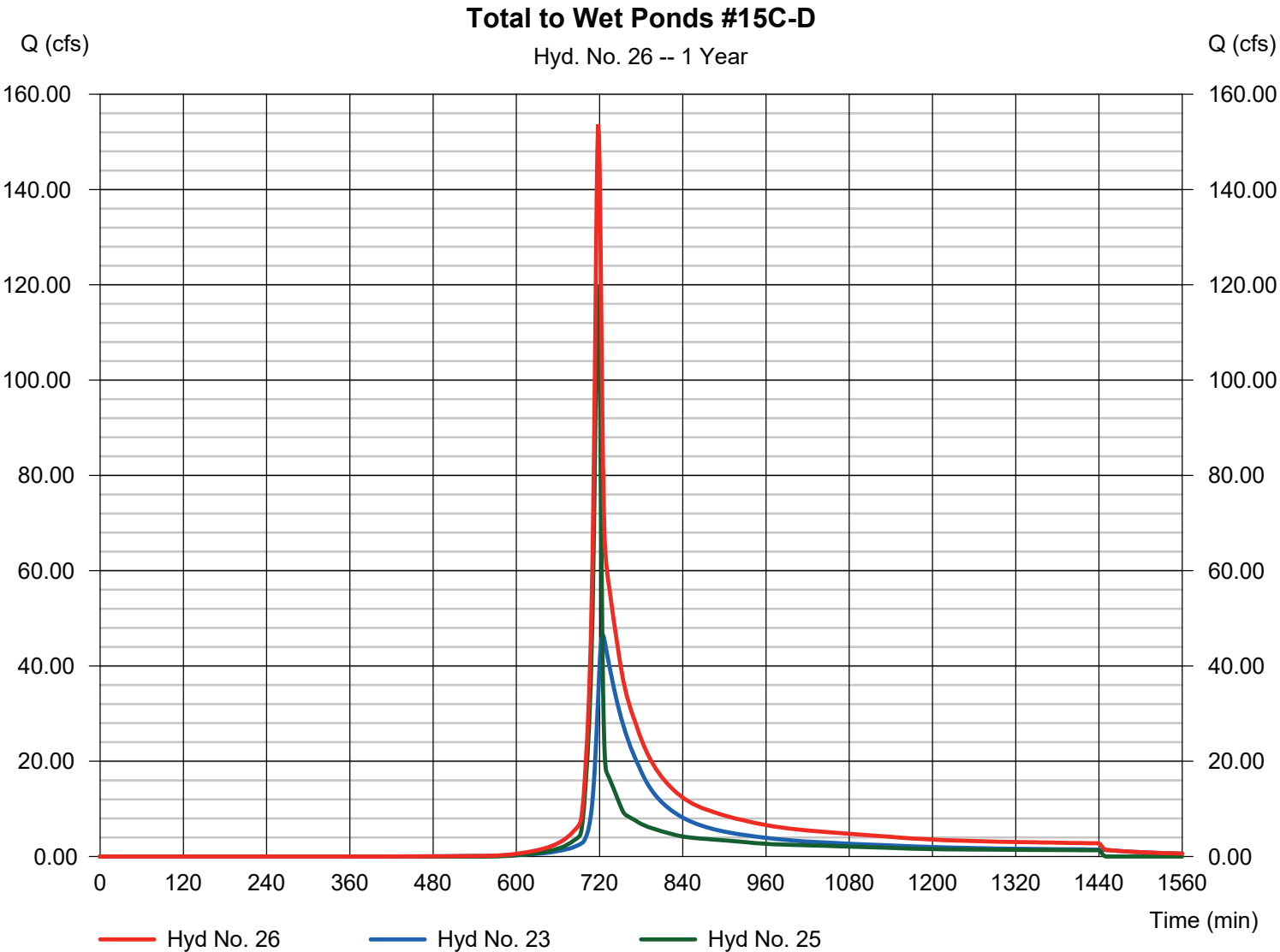
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Thursday, 06 / 19 / 2025

Hyd. No. 26

Total to Wet Ponds #15C-D

Hydrograph type	= Combine	Peak discharge	= 153.65 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 543,722 cuft
Inflow hyds.	= 23, 25	Contrib. drain. area	= 55.570 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

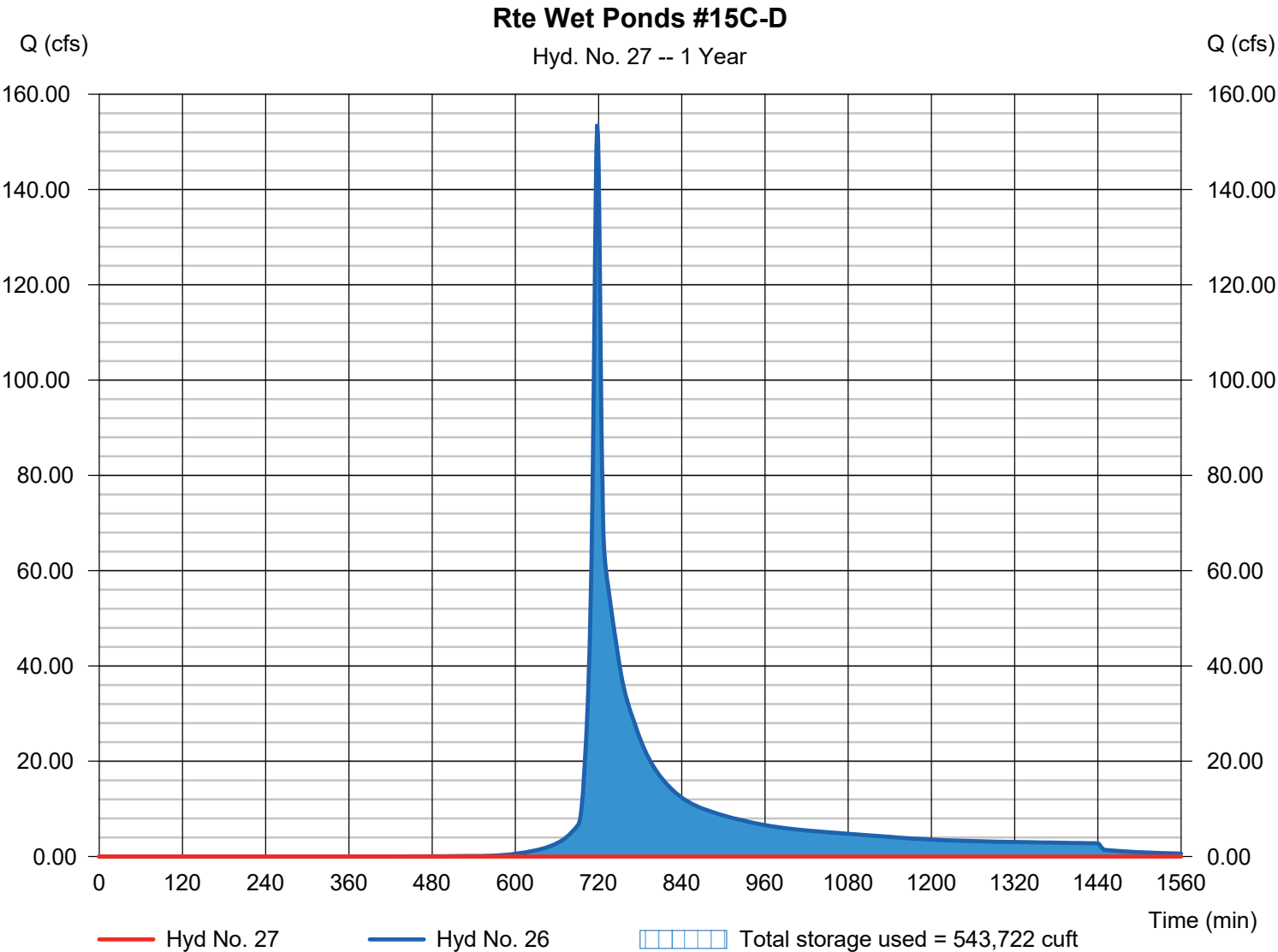
Thursday, 06 / 19 / 2025

Hyd. No. 27

Rte Wet Ponds #15C-D

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 26 - Total to Wet Ponds #15C-D	Max. Elevation	= 9.27 ft
Reservoir name	= Wet Pond #15C-D	Max. Storage	= 543,722 cuft

Storage Indication method used.



Hydrograph Report

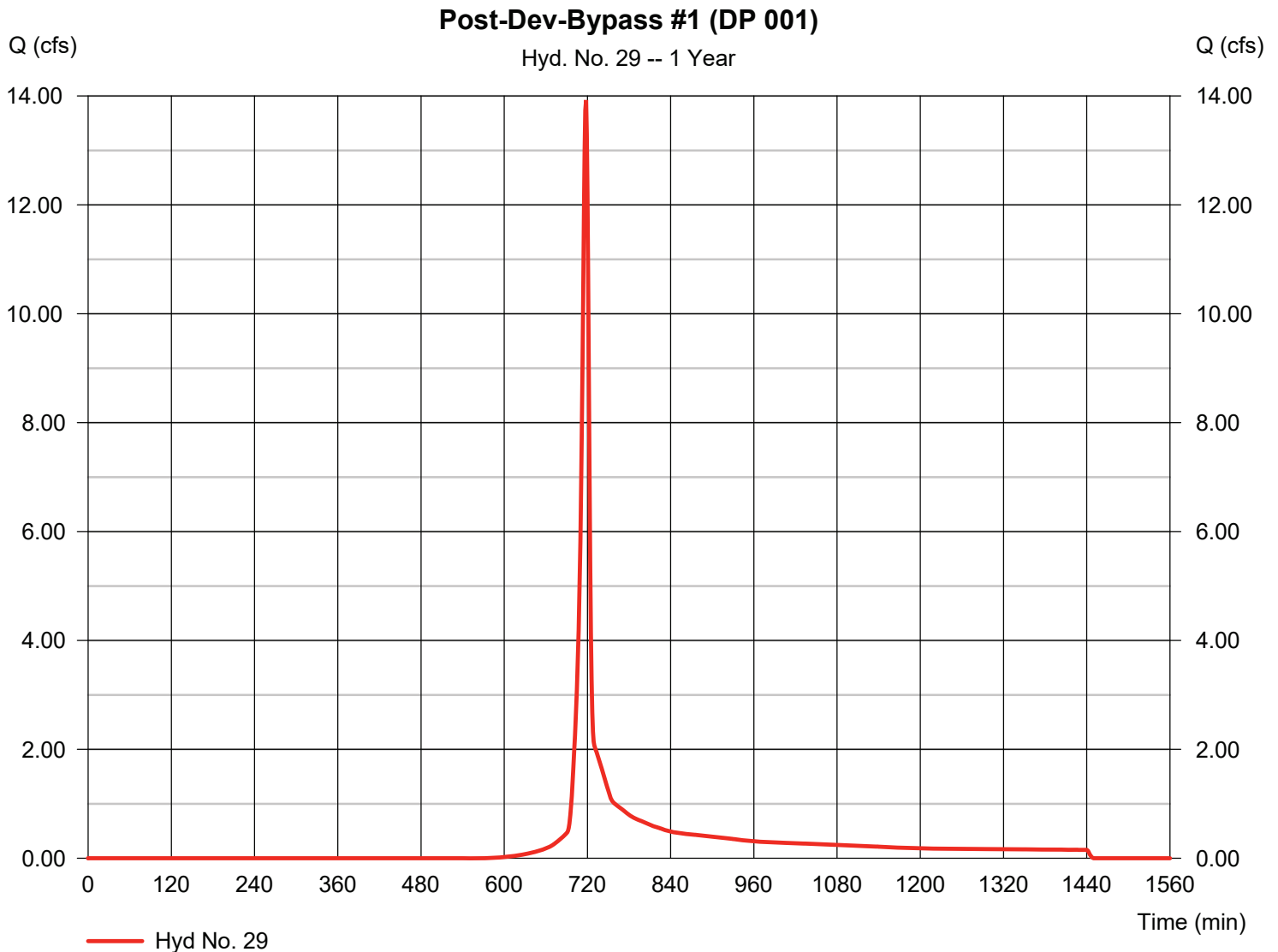
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Thursday, 06 / 19 / 2025

Hyd. No. 29

Post-Dev-Bypass #1 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	13.92 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	27,959 cuft
Drainage area	=	6.580 ac	Curve number	=	81.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

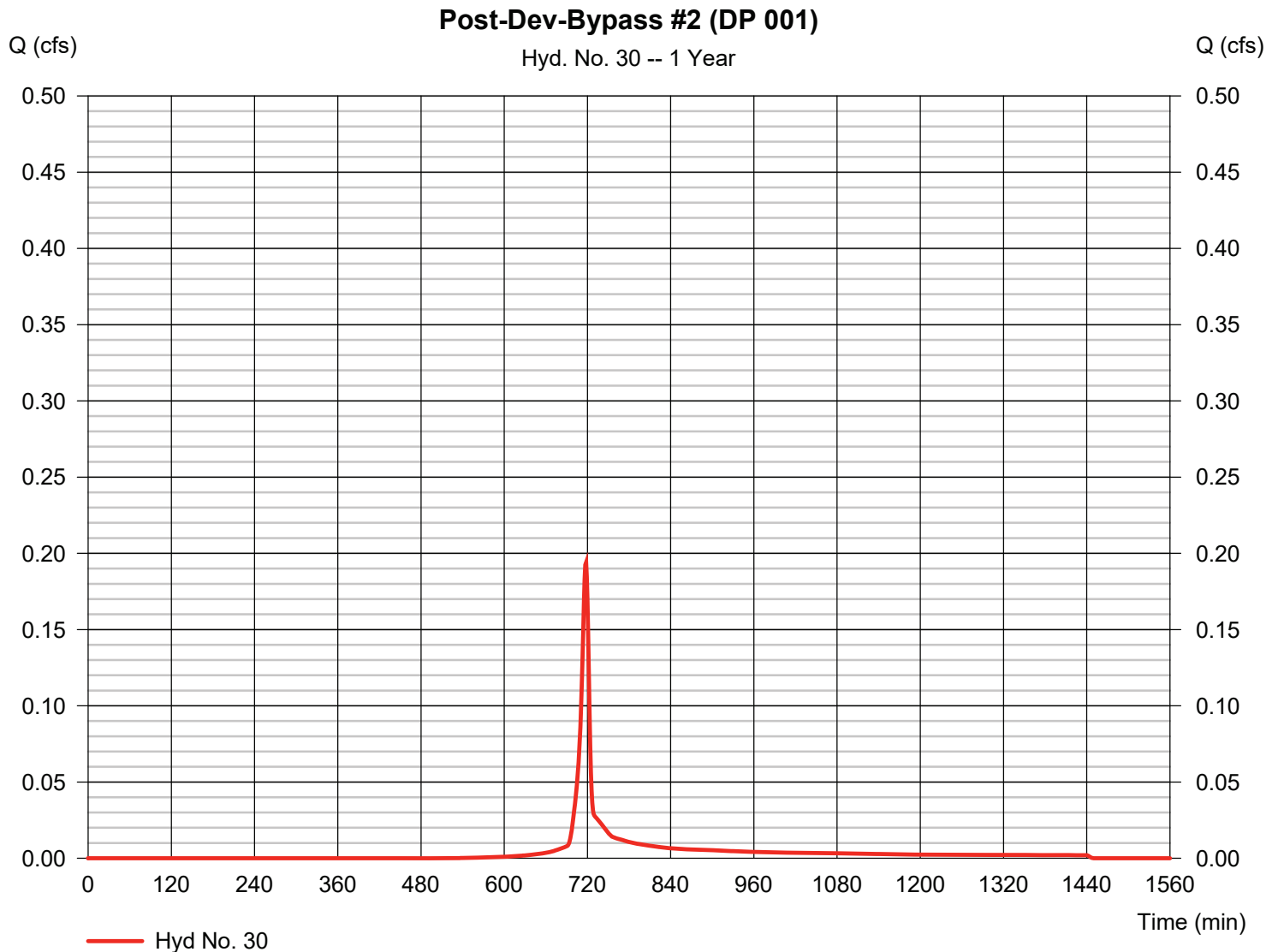
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Thursday, 06 / 19 / 2025

Hyd. No. 30

Post-Dev-Bypass #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.194 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	391 cuft
Drainage area	=	0.080 ac	Curve number	=	84.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

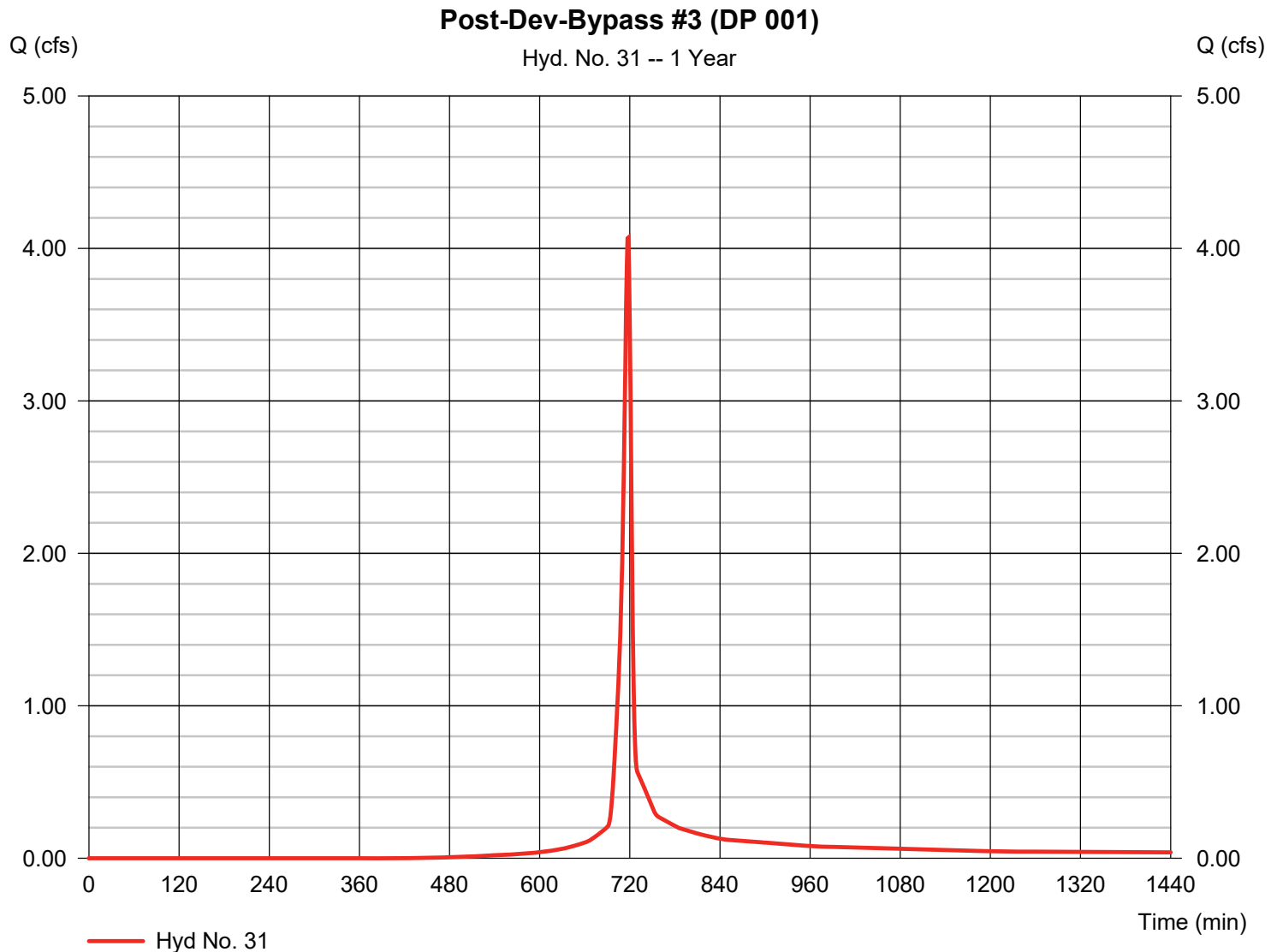
Thursday, 06 / 19 / 2025

Hyd. No. 31

Post-Dev-Bypass #3 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 1 min
 Drainage area = 1.420 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.70 in
 Storm duration = 24 hrs

Peak discharge = 4.071 cfs
 Time to peak = 718 min
 Hyd. volume = 8,342 cuft
 Curve number = 88.2
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

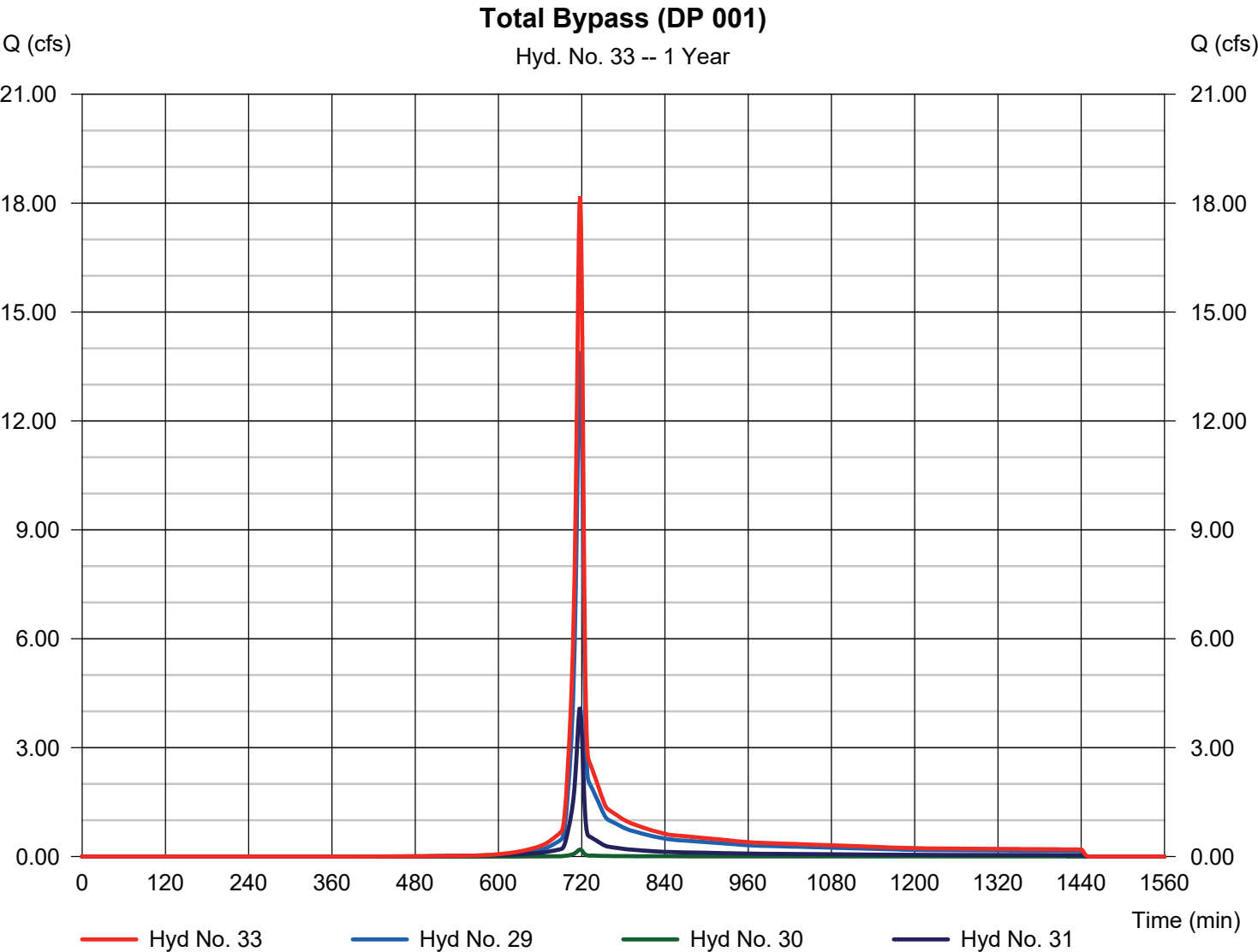
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Thursday, 06 / 19 / 2025

Hyd. No. 33

Total Bypass (DP 001)

Hydrograph type	= Combine	Peak discharge	= 18.19 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 36,692 cuft
Inflow hyds.	= 29, 30, 31	Contrib. drain. area	= 8.080 ac

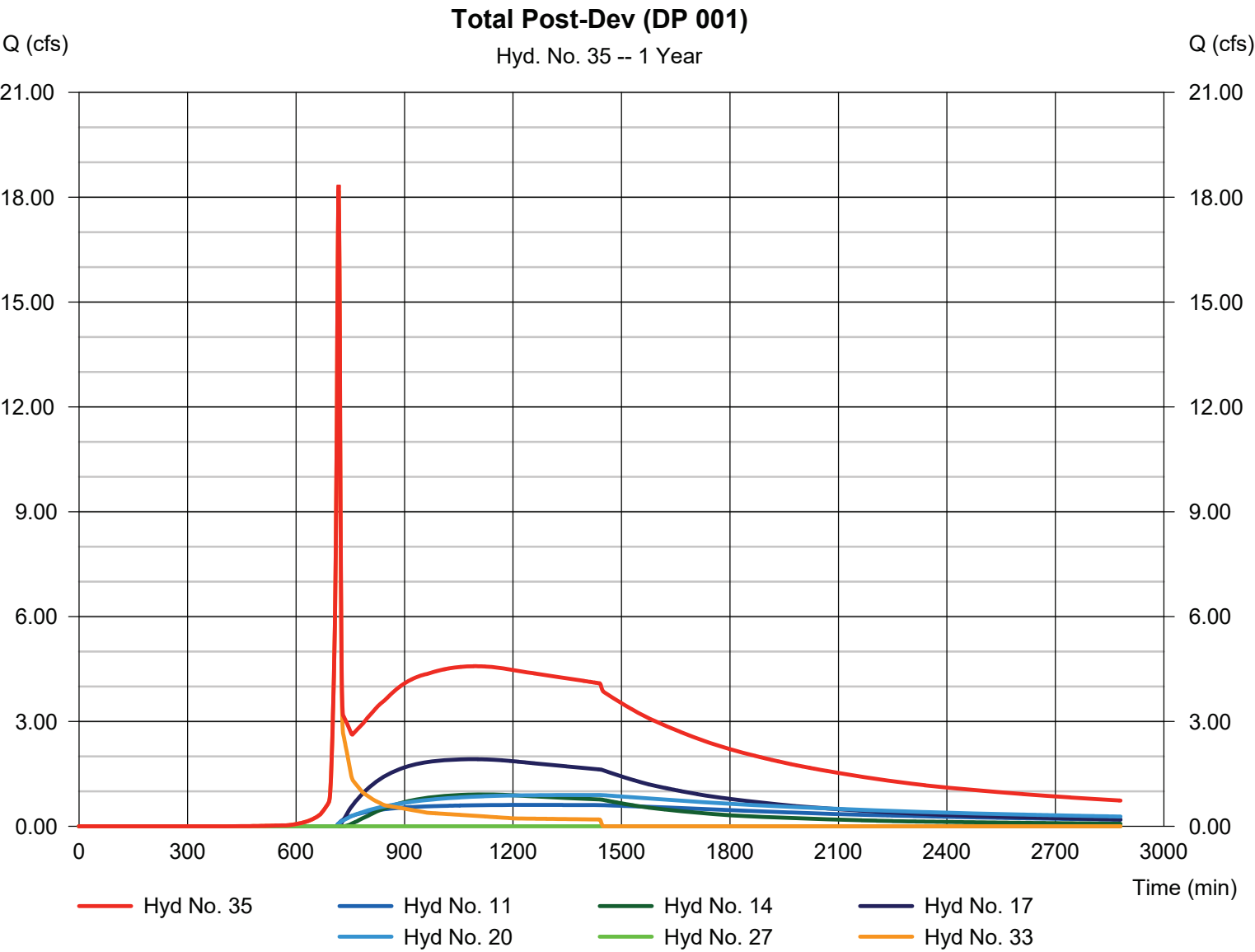


Hydrograph Report

Hyd. No. 35

Total Post-Dev (DP 001)

Hydrograph type	= Combine	Peak discharge	= 18.35 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 340,315 cuft
Inflow hyds.	= 11, 14, 17, 20, 27, 33	Contrib. drain. area	= 0.000 ac



Hydrograph Report

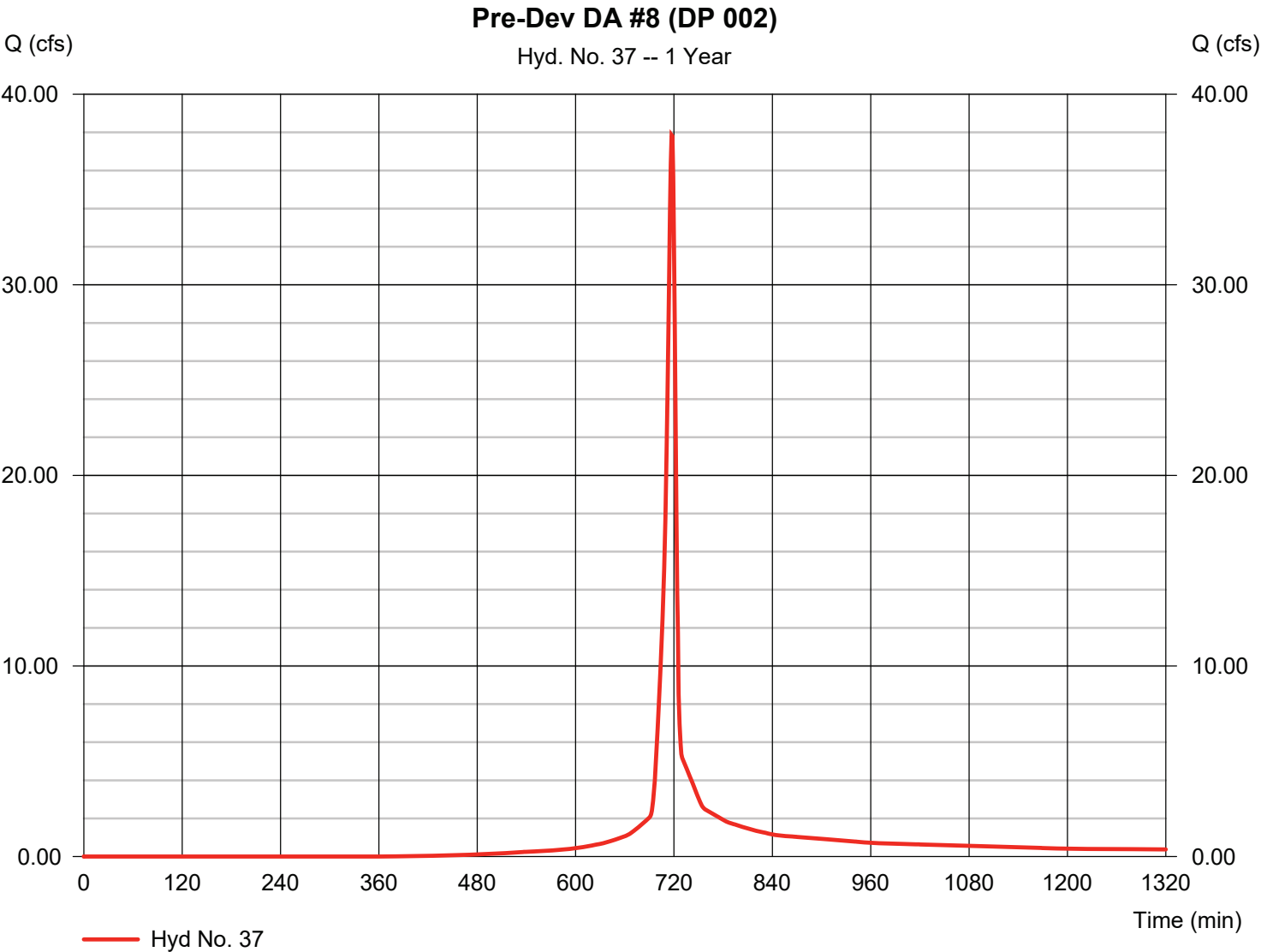
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Thursday, 06 / 19 / 2025

Hyd. No. 37

Pre-Dev DA #8 (DP 002)

Hydrograph type	=	SCS Runoff	Peak discharge	=	37.86 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	78,283 cuft
Drainage area	=	12.400 ac	Curve number	=	89.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

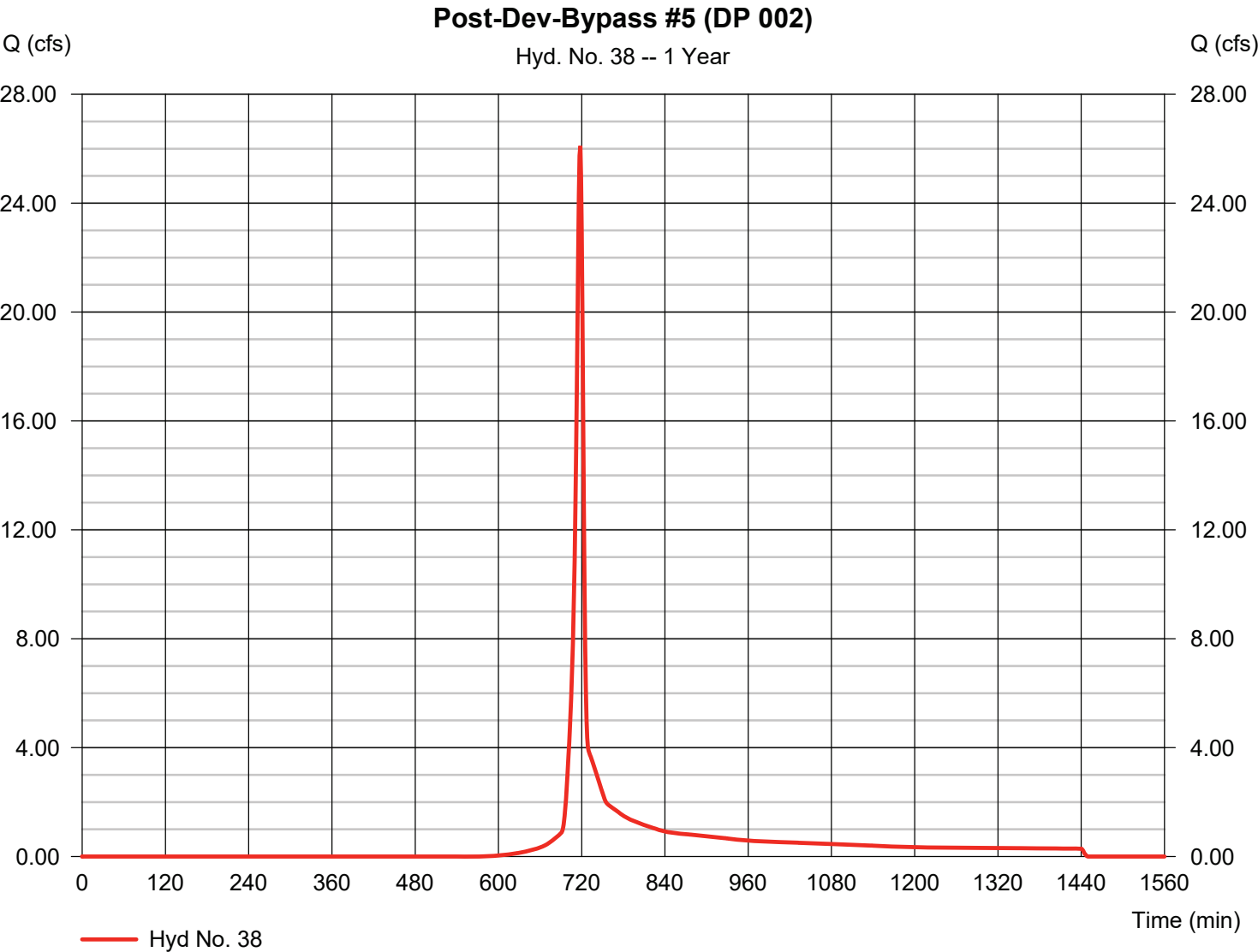


Hydrograph Report

Hyd. No. 38

Post-Dev-Bypass #5 (DP 002)

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.10 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	52,409 cuft
Drainage area	=	12.400 ac	Curve number	=	81.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

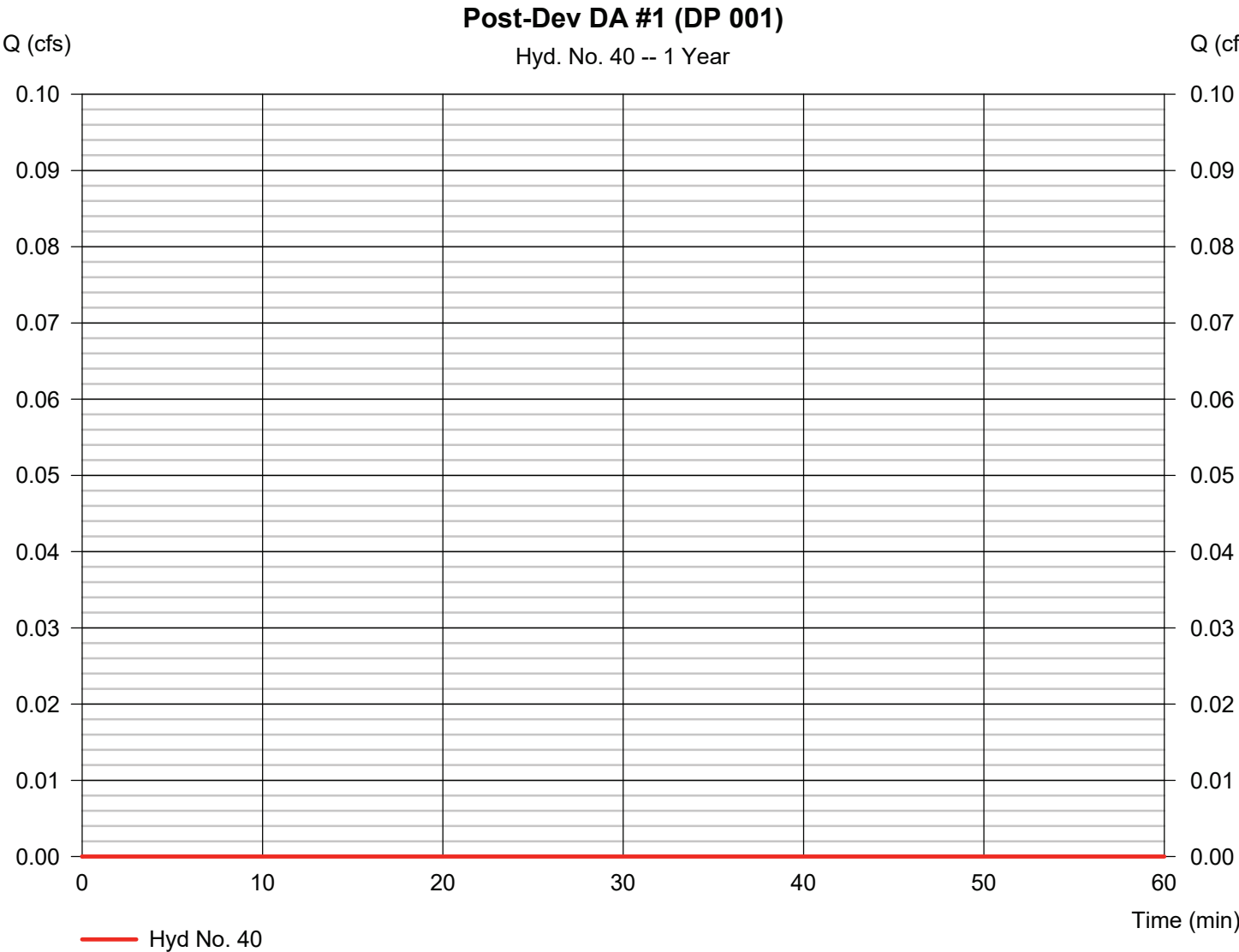


Hydrograph Report

Hyd. No. 40

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



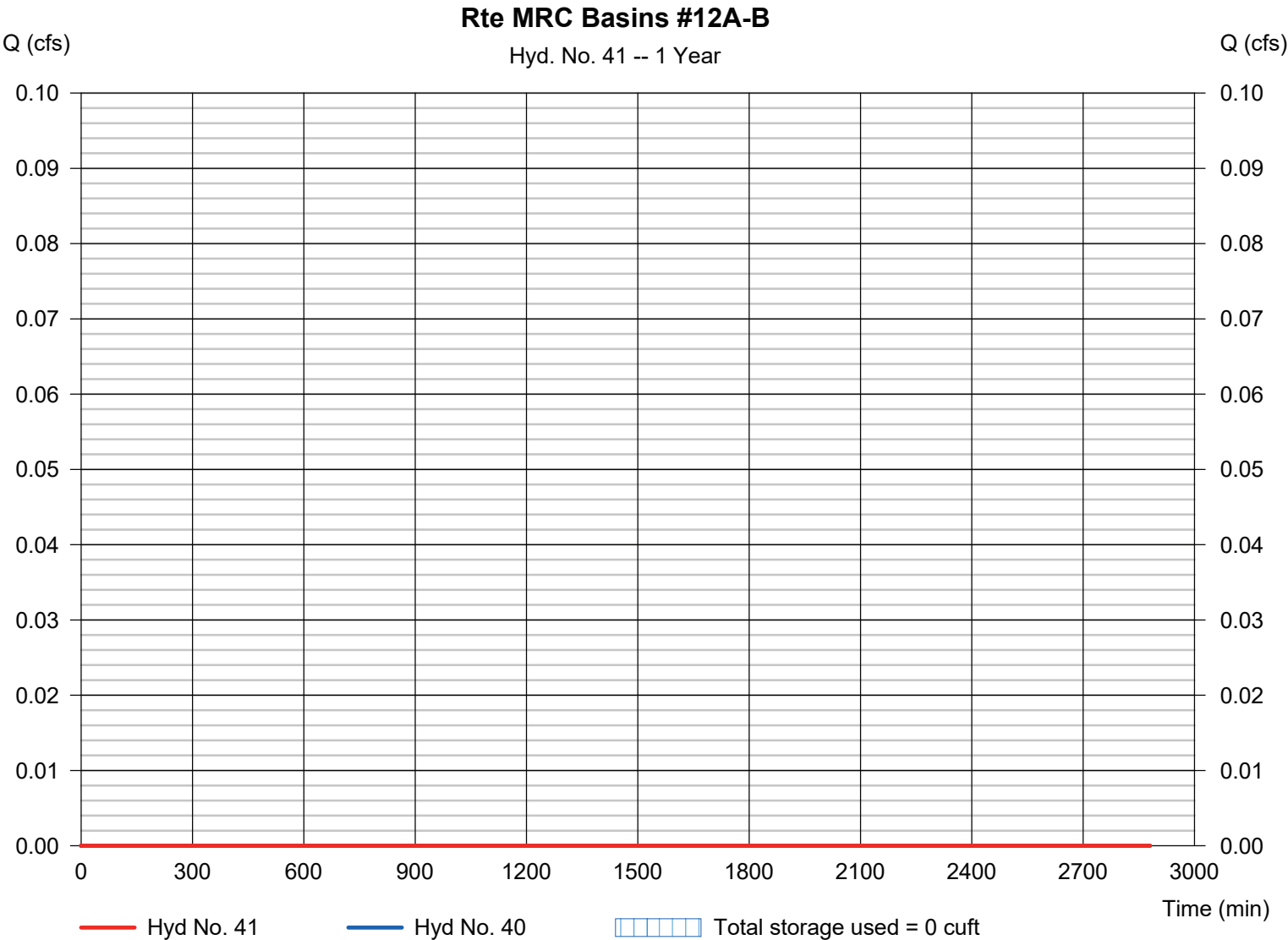
Hydrograph Report

Hyd. No. 41

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 40 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 0 cuft

Storage Indication method used.

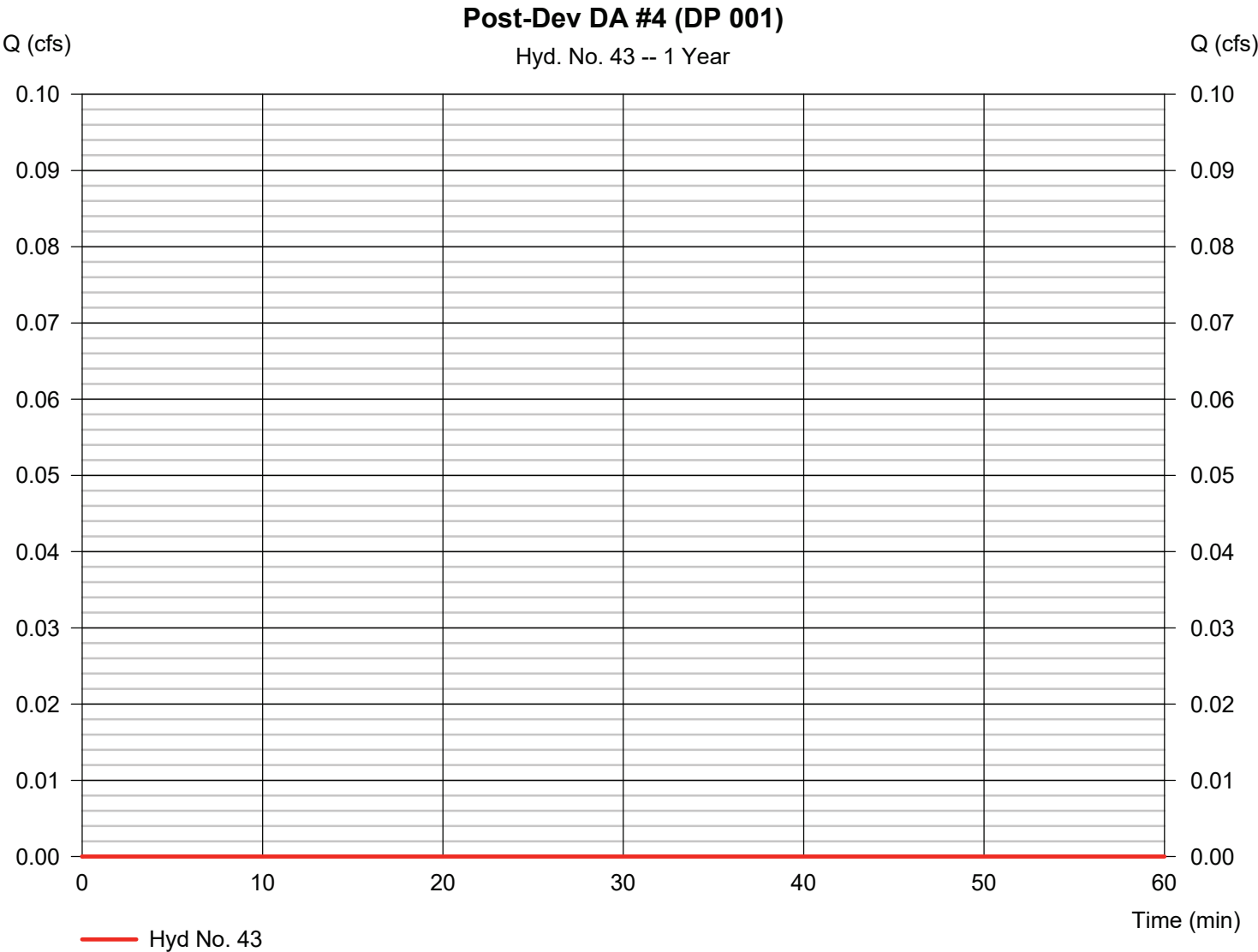


Hydrograph Report

Hyd. No. 43

Post-Dev DA #4 (DP 001)

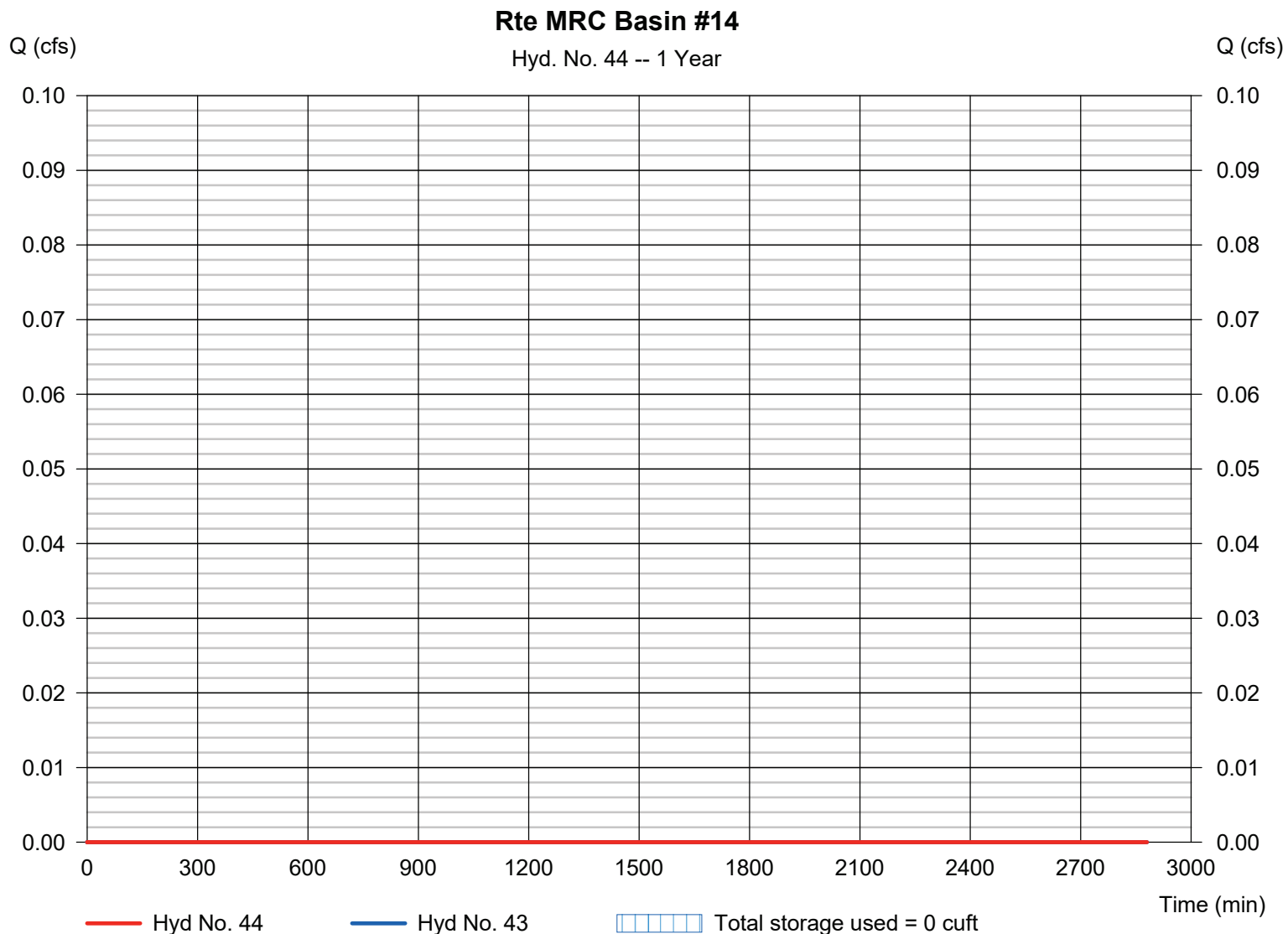
Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 43 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

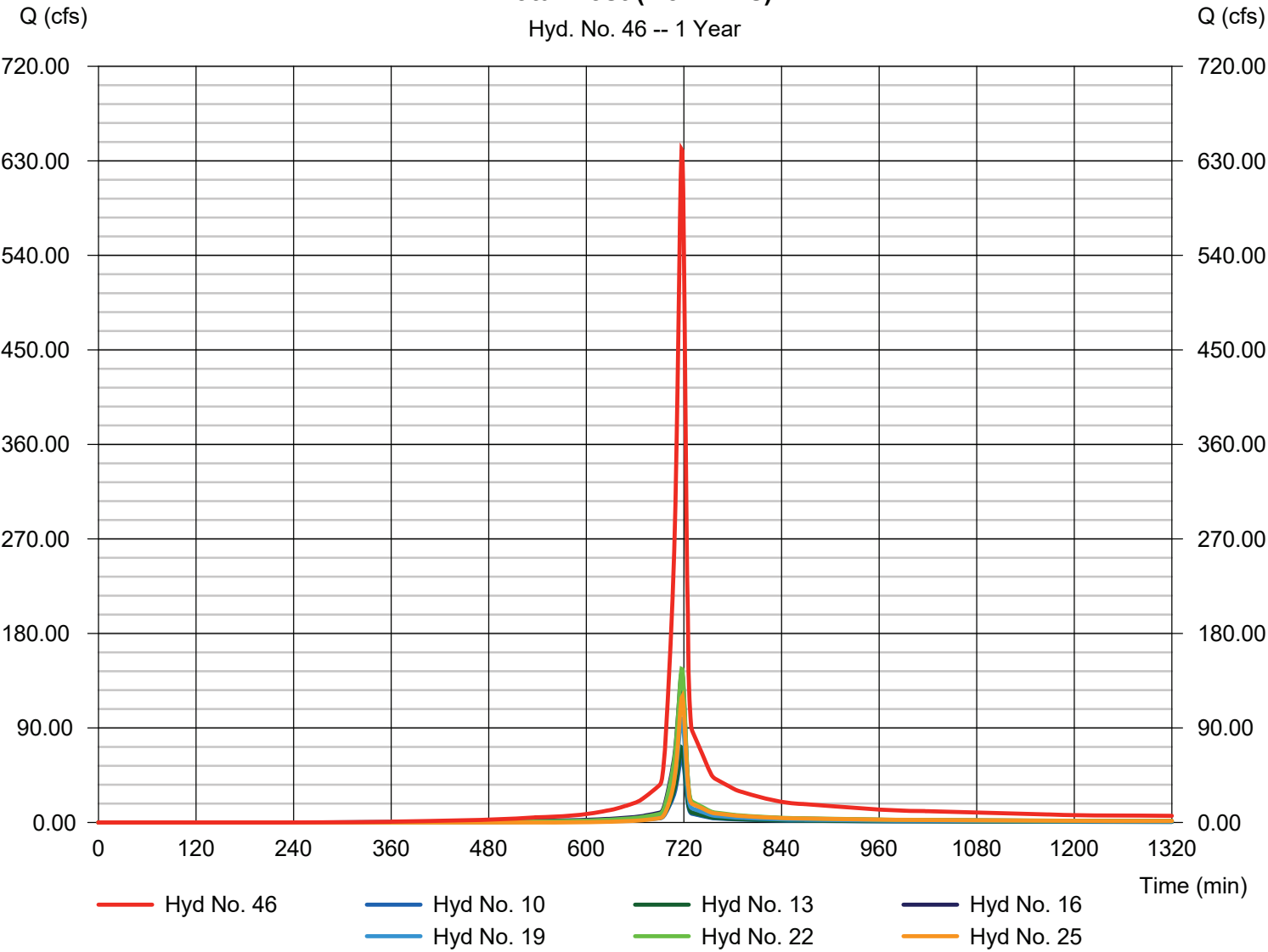
Hyd. No. 46

Total Post (No BMPs)

Hydrograph type	= Combine	Peak discharge	= 640.94 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 1,344,308 cuft
Inflow hyds.	= 10, 13, 16, 19, 22, 25	Contrib. drain. area	= 212.440 ac

Total Post (No BMPs)

Hyd. No. 46 -- 1 Year

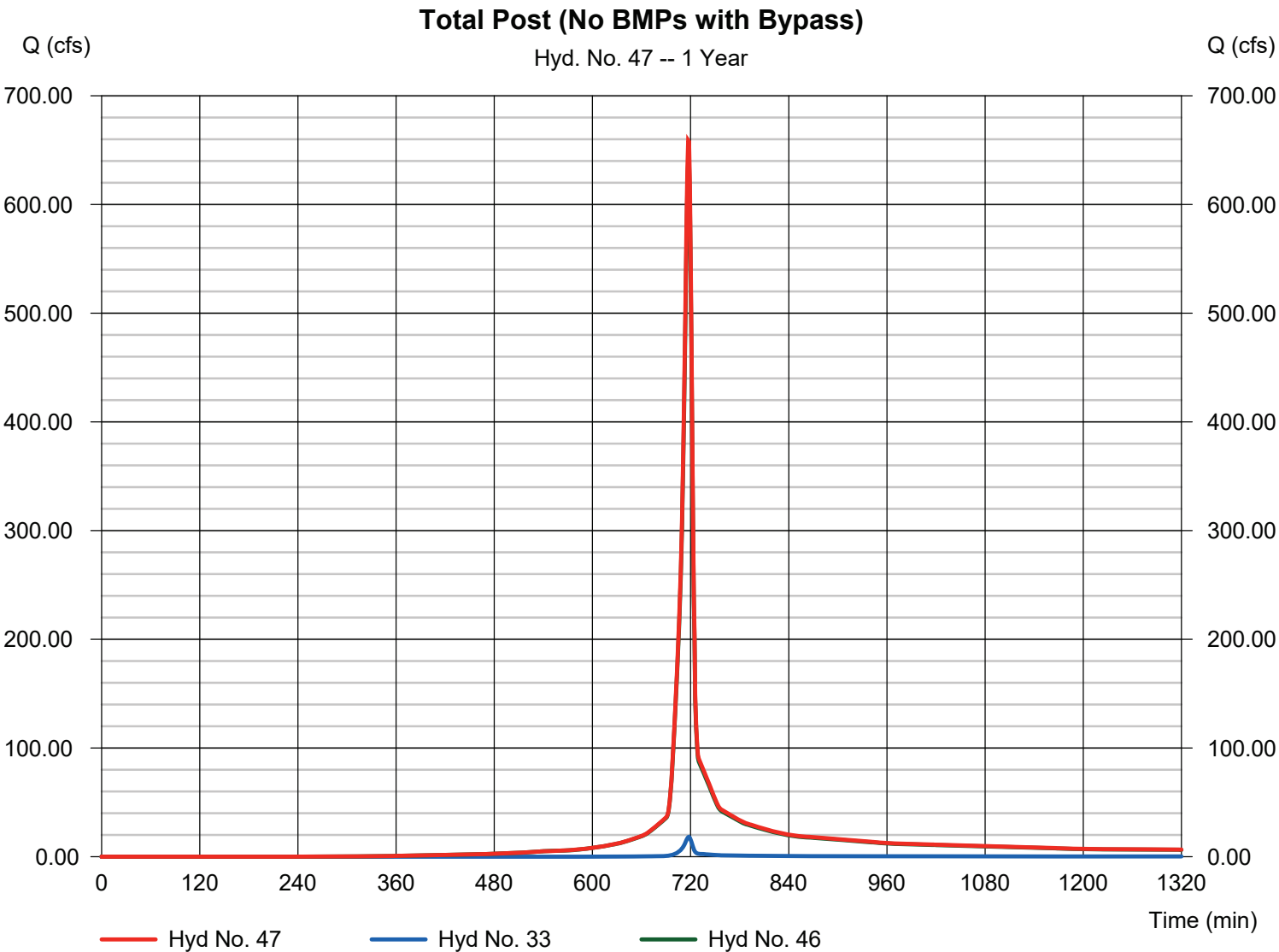


Hydrograph Report

Hyd. No. 47

Total Post (No BMPs with Bypass)

Hydrograph type	= Combine	Peak discharge	= 658.94 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 1,380,998 cuft
Inflow hyds.	= 33, 46	Contrib. drain. area	= 0.000 ac

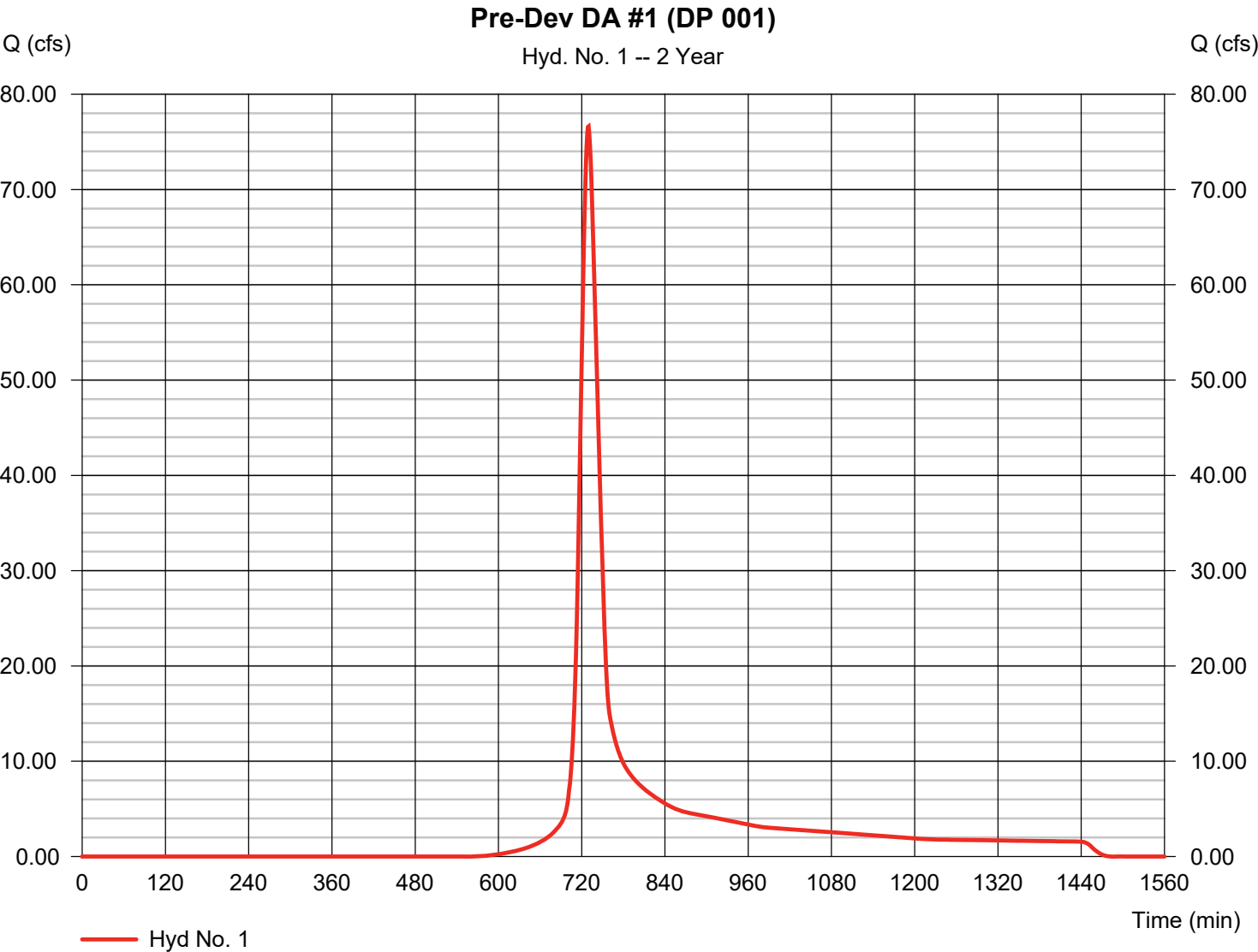


Hydrograph Report

Hyd. No. 1

Pre-Dev DA #1 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	76.62 cfs
Storm frequency	=	2 yrs	Time to peak	=	730 min
Time interval	=	1 min	Hyd. volume	=	289,340 cuft
Drainage area	=	54.210 ac	Curve number	=	79.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	25.80 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

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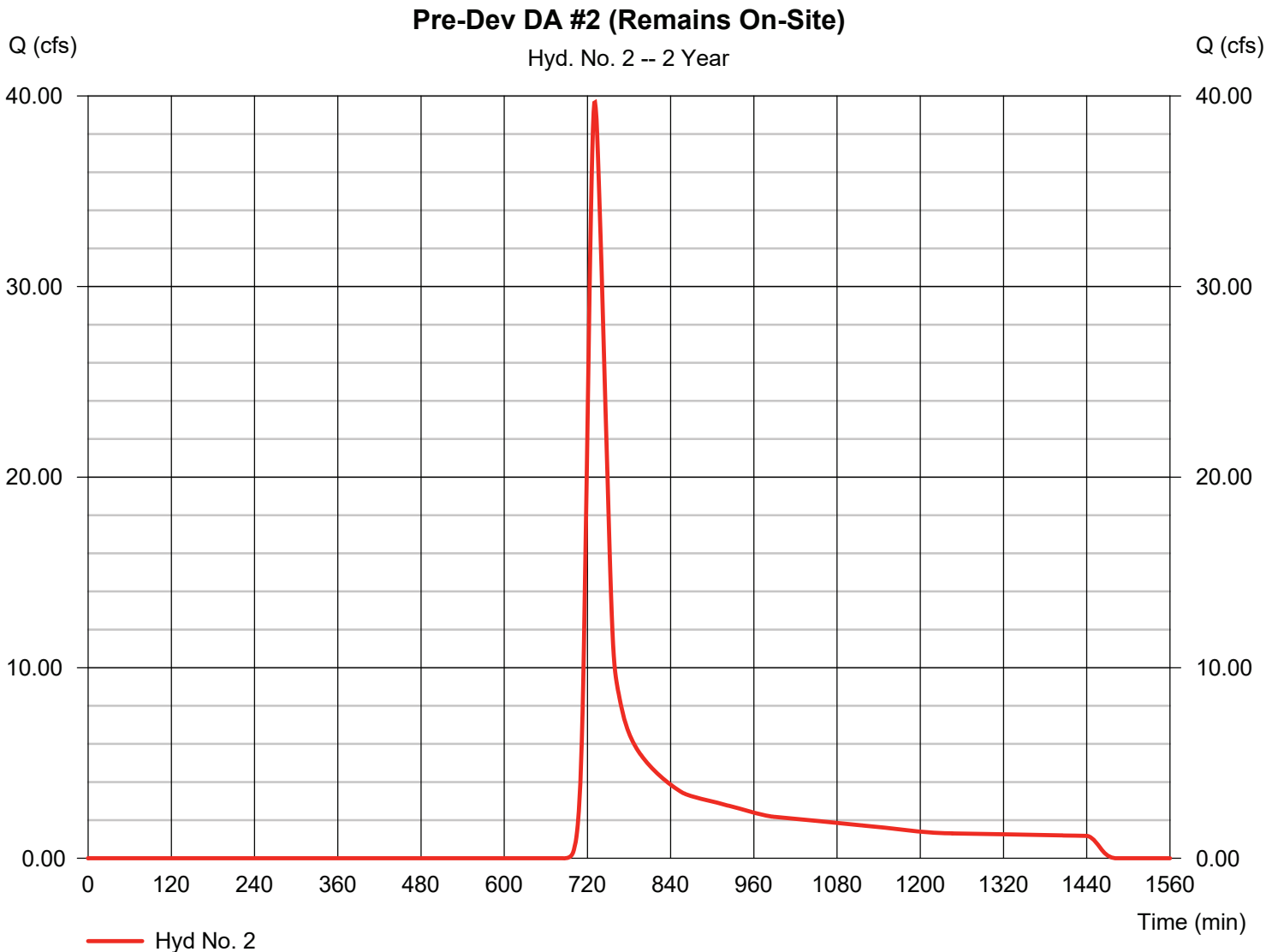
Thursday, 06 / 19 / 2025

Hyd. No. 2

Pre-Dev DA #2 (Remains On-Site)

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 54.240 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 3.30 in
 Storm duration = 24 hrs

Peak discharge = 39.66 cfs
 Time to peak = 731 min
 Hyd. volume = 167,961 cuft
 Curve number = 69.2
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 26.00 min
 Distribution = Type II
 Shape factor = 484

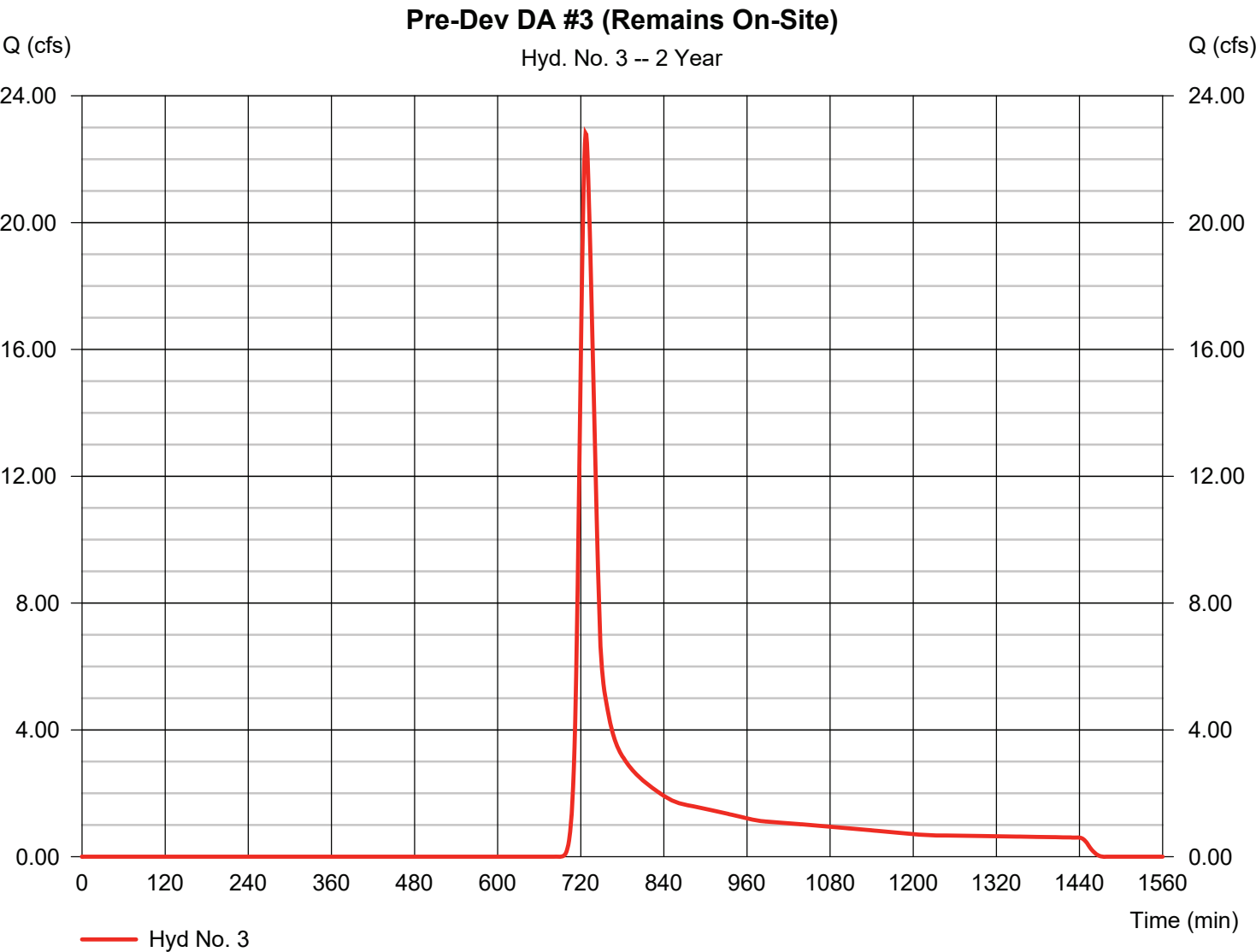


Hydrograph Report

Hyd. No. 3

Pre-Dev DA #3 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	22.81 cfs
Storm frequency	=	2 yrs	Time to peak	=	727 min
Time interval	=	1 min	Hyd. volume	=	85,070 cuft
Drainage area	=	28.420 ac	Curve number	=	68.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	20.50 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

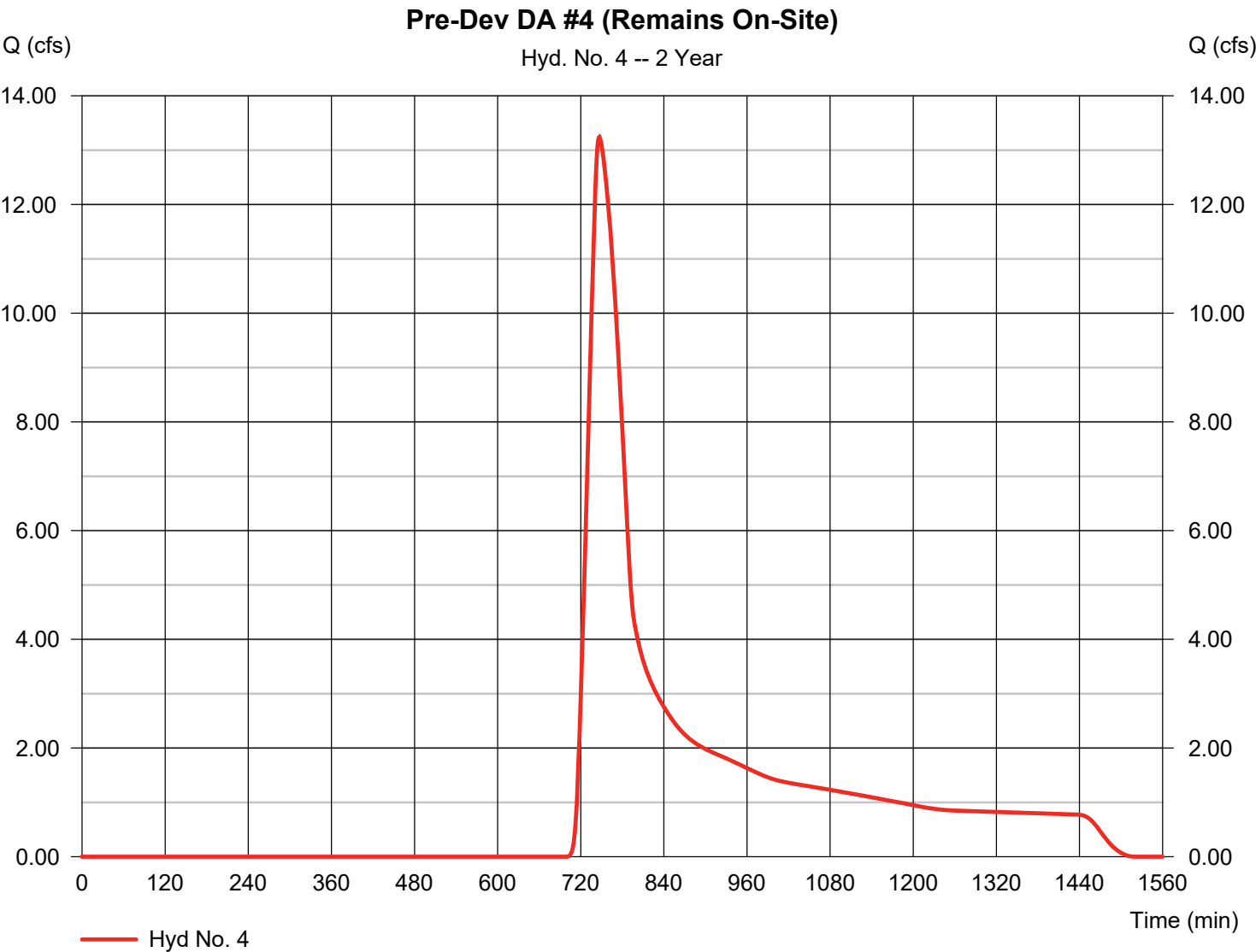


Hydrograph Report

Hyd. No. 4

Pre-Dev DA #4 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	13.24 cfs
Storm frequency	=	2 yrs	Time to peak	=	747 min
Time interval	=	1 min	Hyd. volume	=	97,998 cuft
Drainage area	=	41.280 ac	Curve number	=	65.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	49.50 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

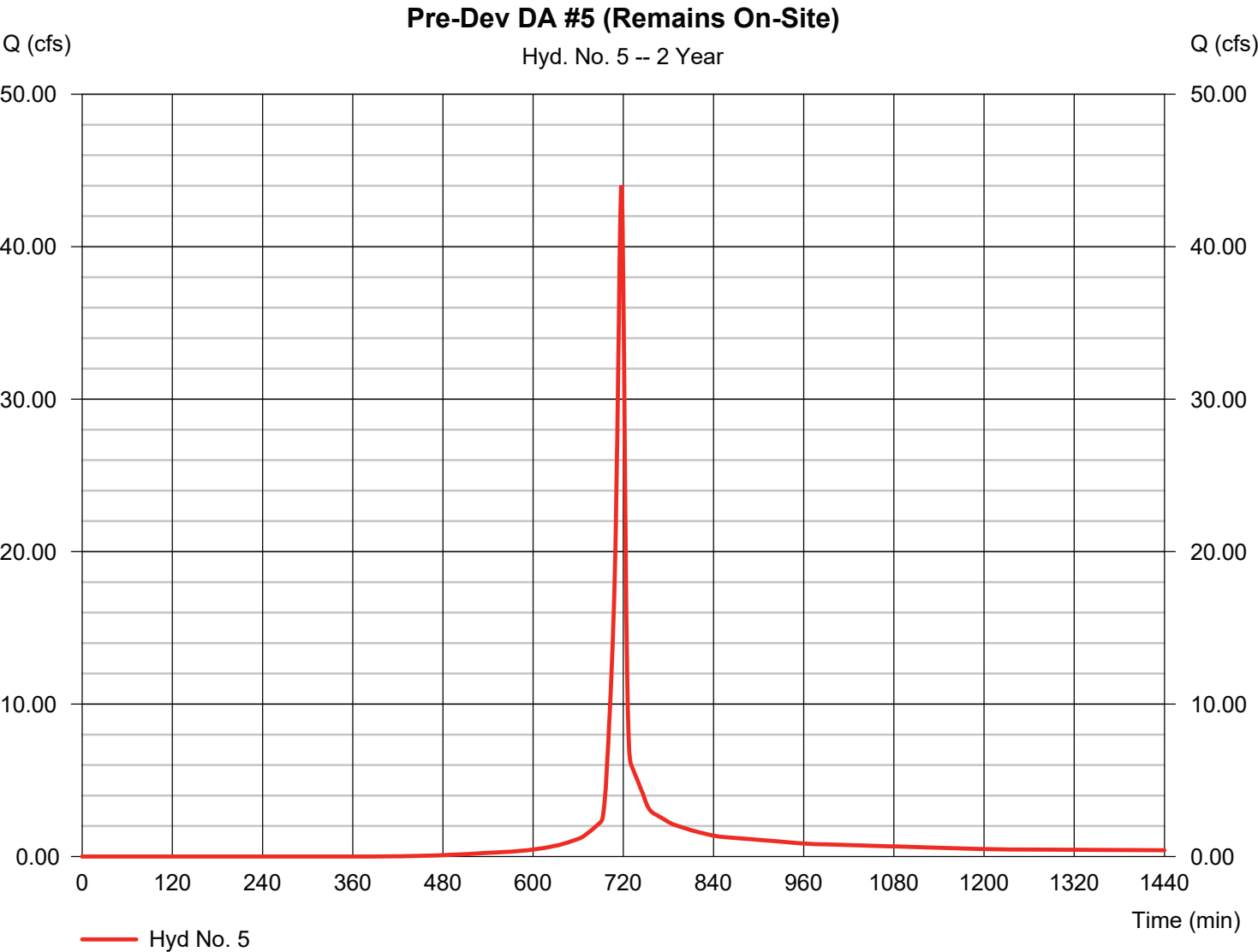


Hydrograph Report

Hyd. No. 5

Pre-Dev DA #5 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	43.91 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	90,302 cuft
Drainage area	=	12.240 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	6.20 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

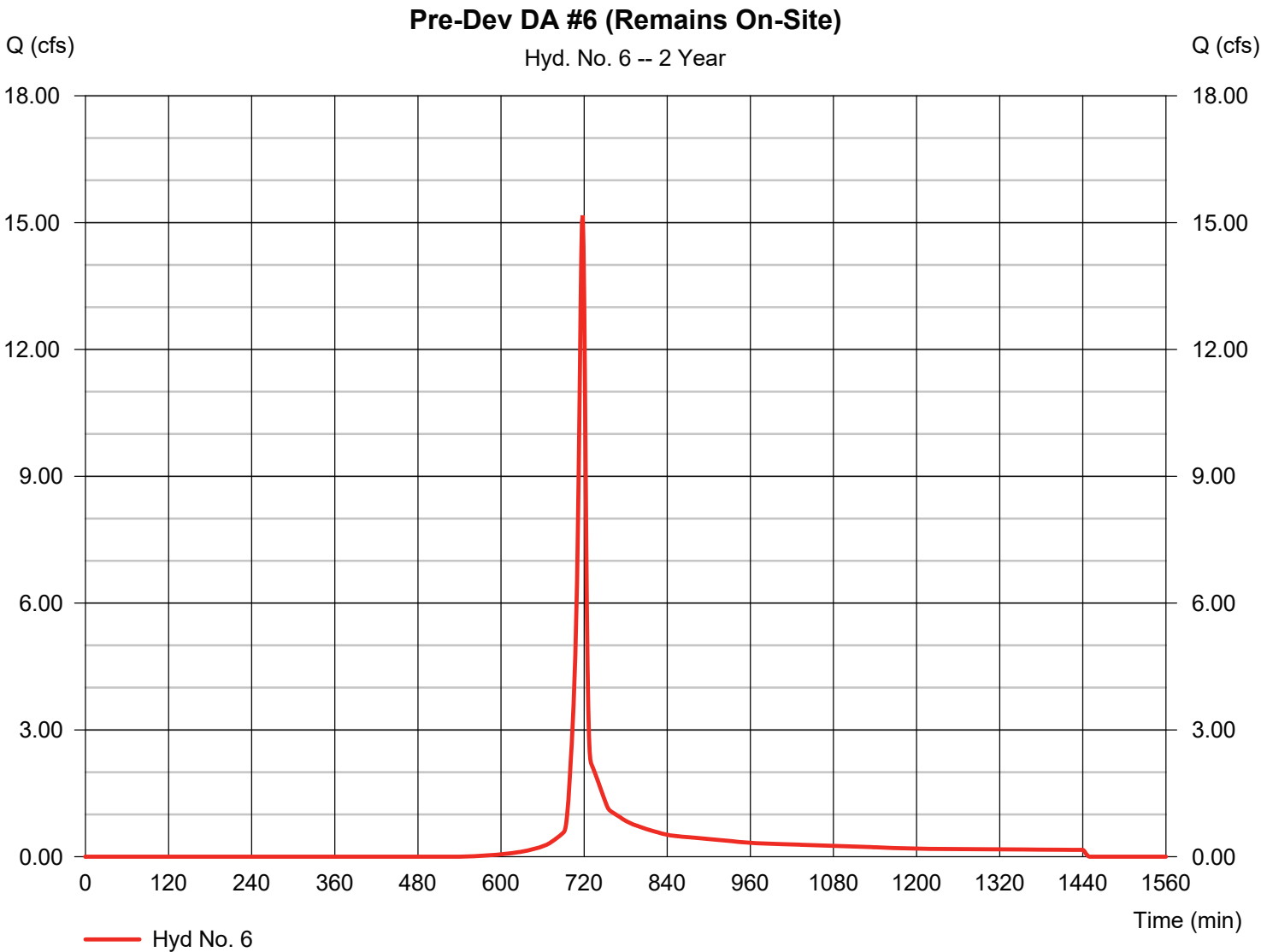
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Thursday, 06 / 19 / 2025

Hyd. No. 6

Pre-Dev DA #6 (Remains On-Site)

Hydrograph type	= SCS Runoff	Peak discharge	= 15.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 30,511 cuft
Drainage area	= 5.410 ac	Curve number	= 80.4
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.97 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

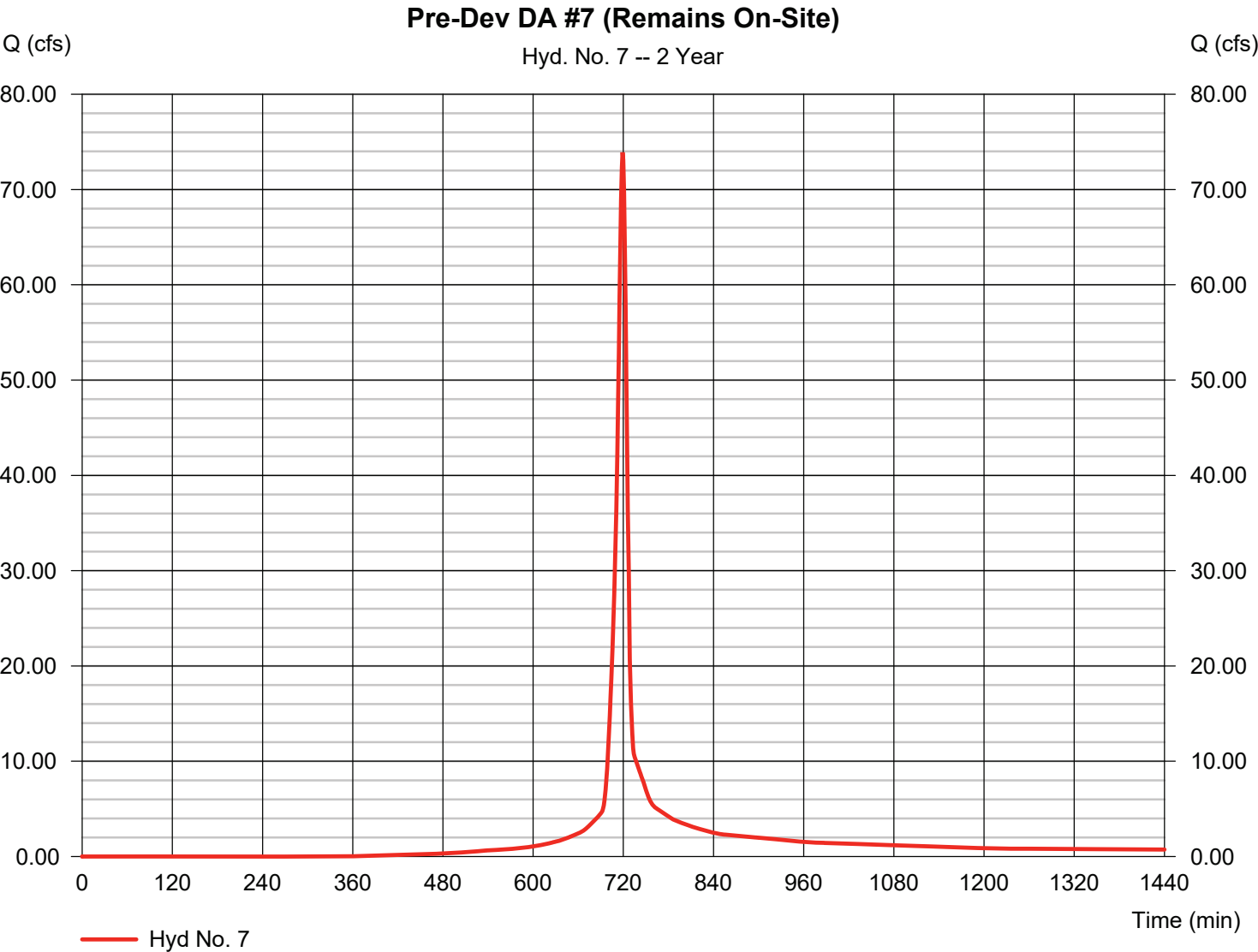
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Thursday, 06 / 19 / 2025

Hyd. No. 7

Pre-Dev DA #7 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	73.90 cfs
Storm frequency	=	2 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	170,879 cuft
Drainage area	=	21.490 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.50 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

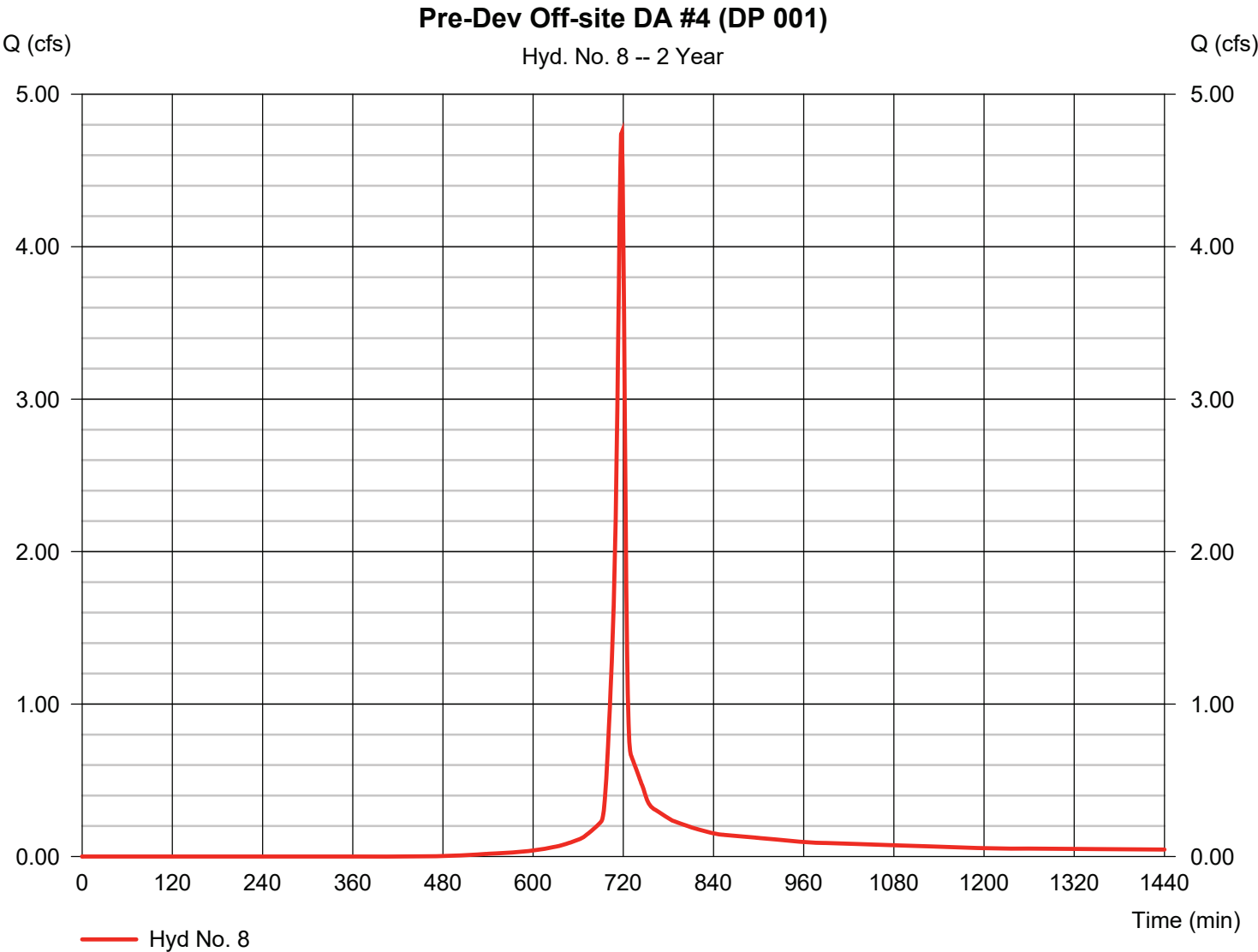
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Hyd. No. 8

Pre-Dev Off-site DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.750 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	9,675 cuft
Drainage area	=	1.420 ac	Curve number	=	84.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

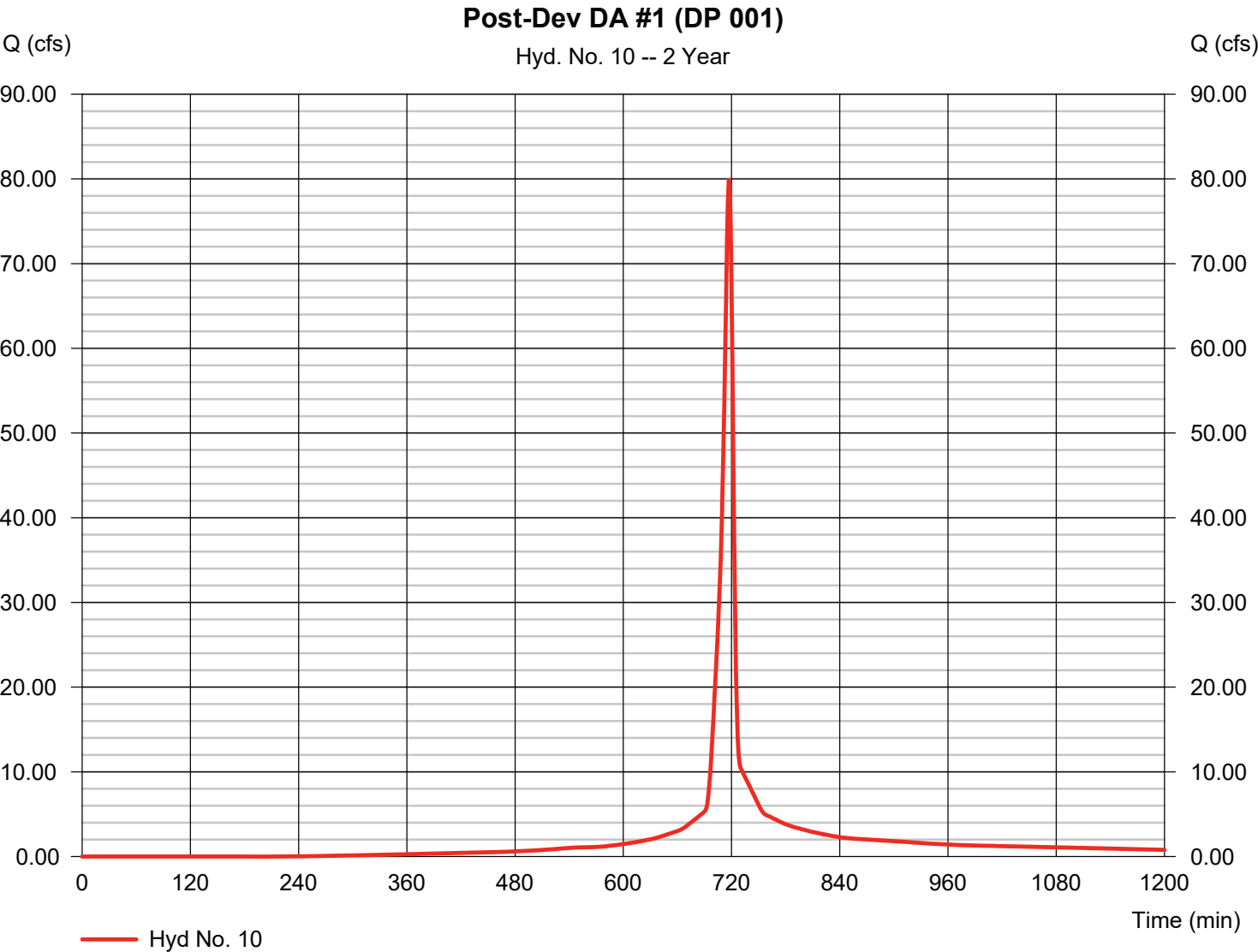
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 10

Post-Dev DA #1 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	80.10 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	173,469 cuft
Drainage area	=	18.160 ac	Curve number	=	93.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



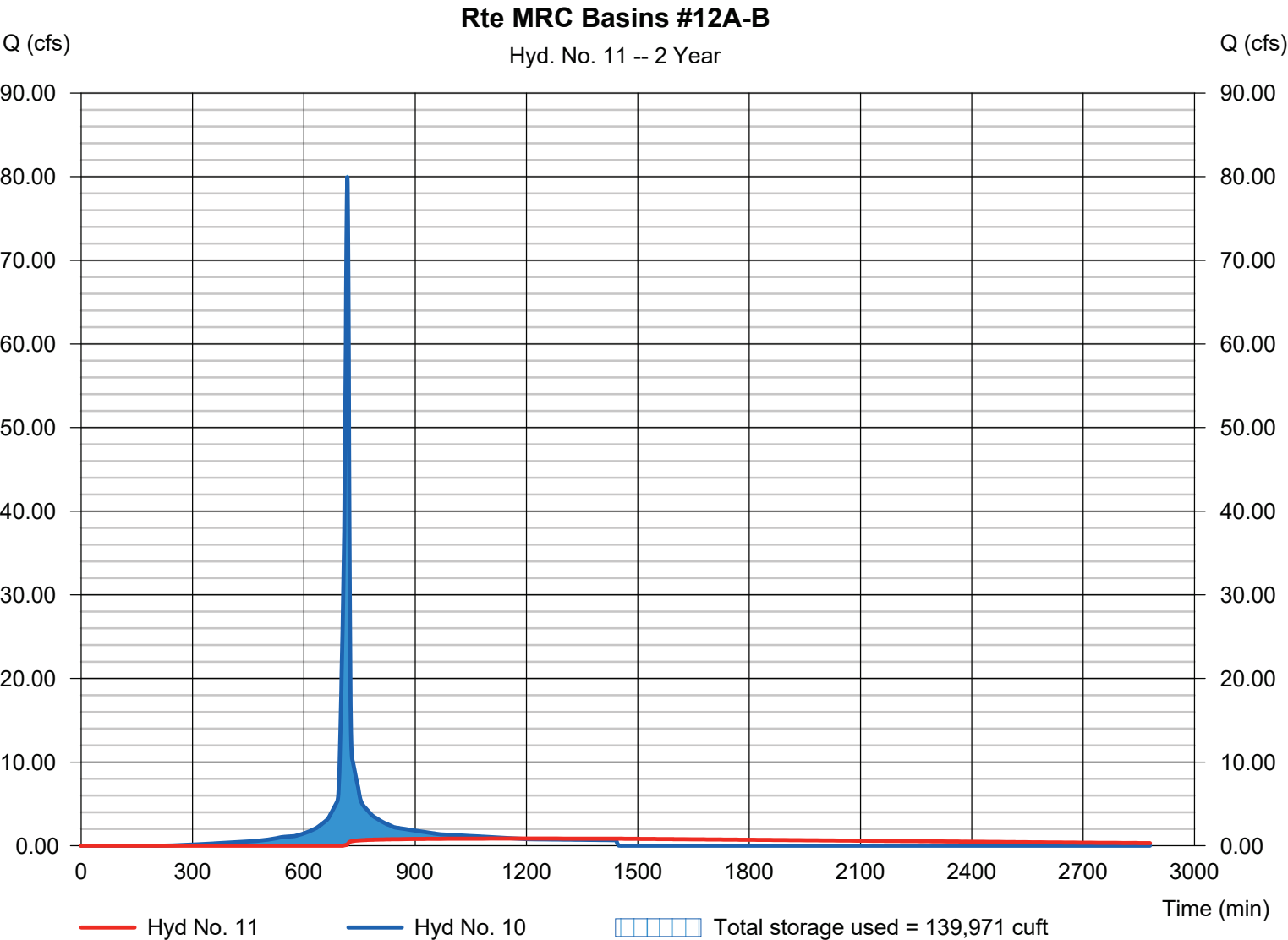
Hydrograph Report

Hyd. No. 11

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.854 cfs
Storm frequency	= 2 yrs	Time to peak	= 1174 min
Time interval	= 1 min	Hyd. volume	= 84,568 cuft
Inflow hyd. No.	= 10 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 13.84 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 139,971 cuft

Storage Indication method used.



Hydrograph Report

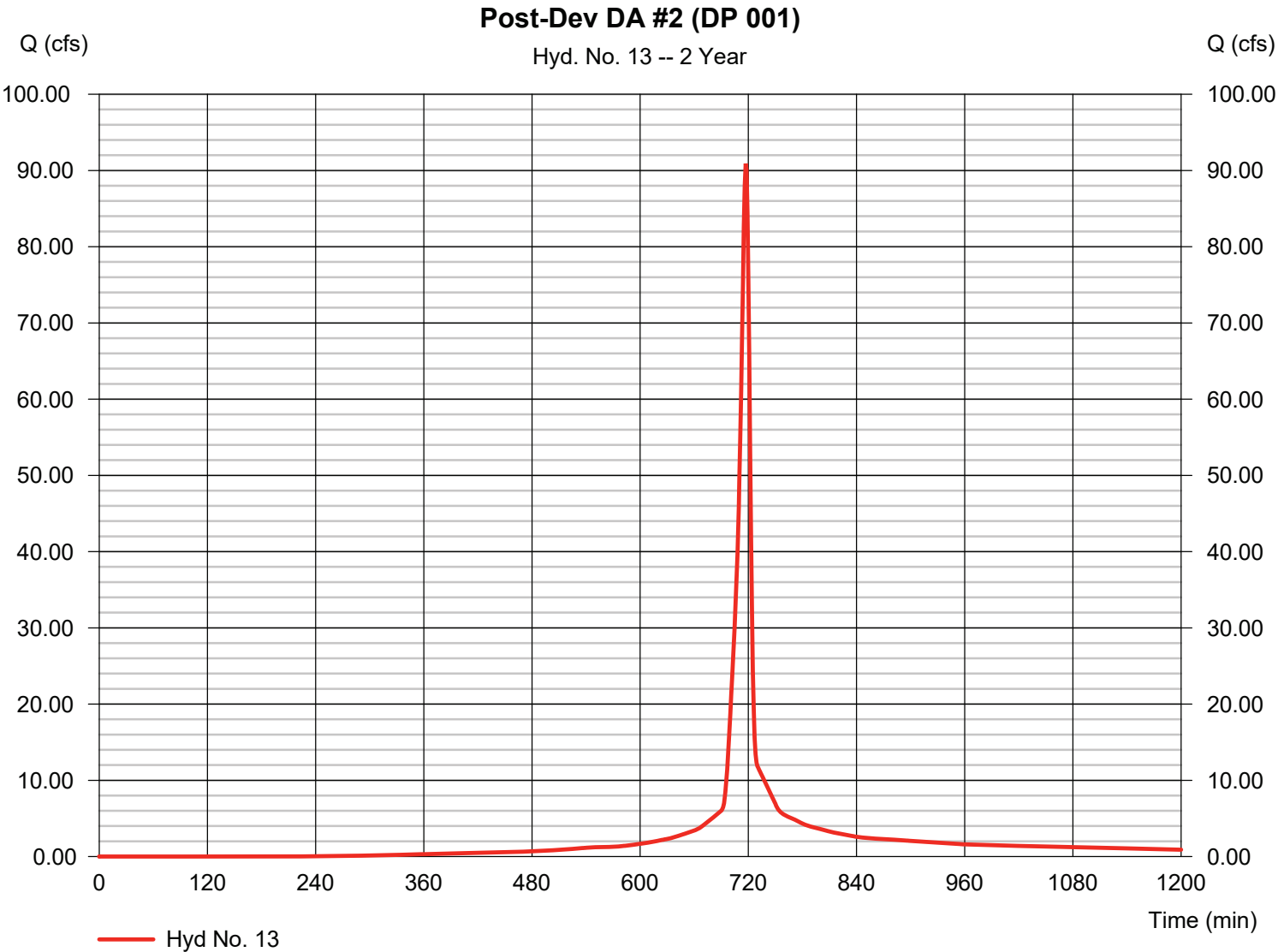
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Thursday, 06 / 19 / 2025

Hyd. No. 13

Post-Dev DA #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	90.91 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	196,872 cuft
Drainage area	=	20.610 ac	Curve number	=	93.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

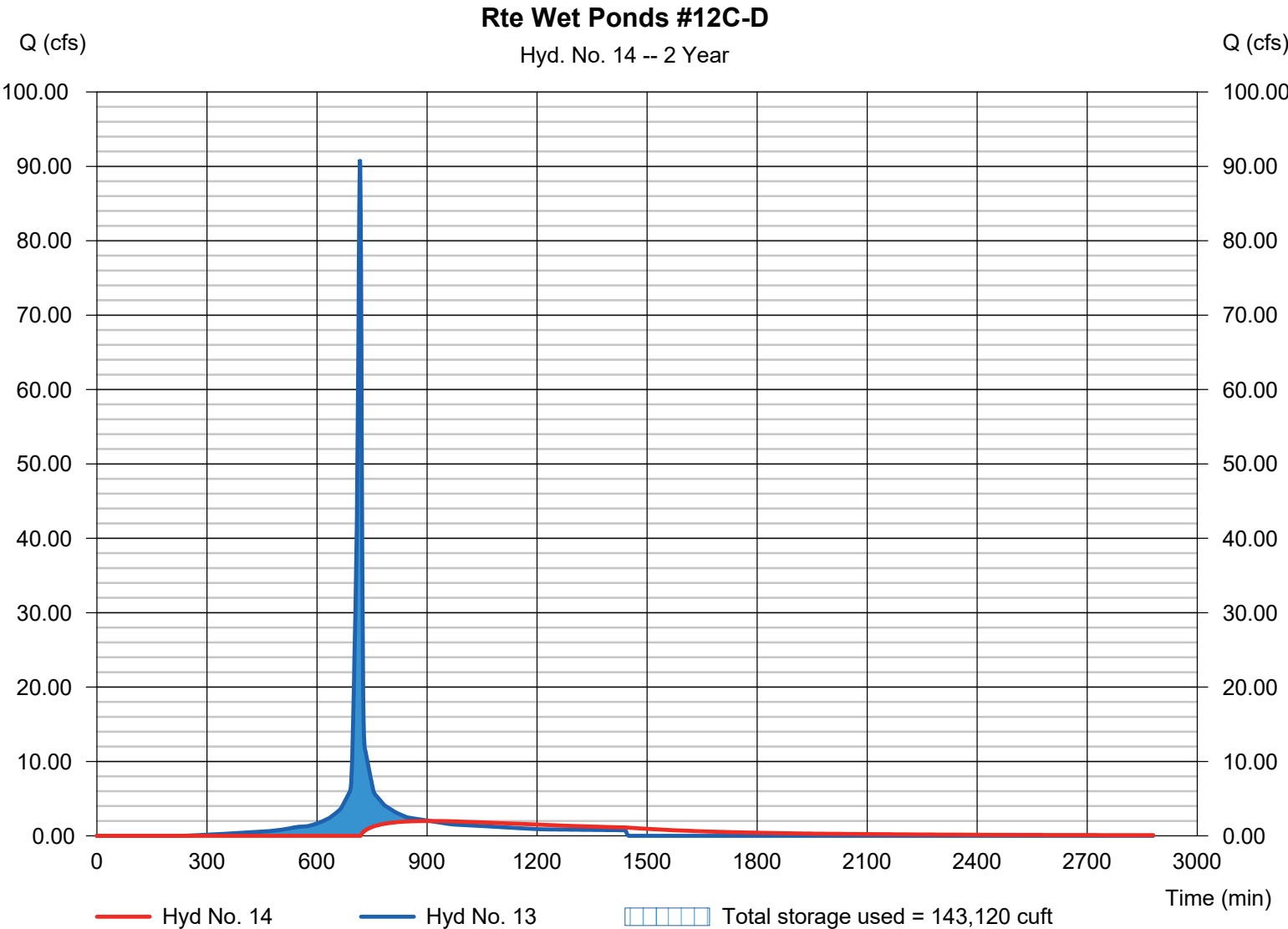
Thursday, 06 / 19 / 2025

Hyd. No. 14

Rte Wet Ponds #12C-D

Hydrograph type	= Reservoir	Peak discharge	= 1.995 cfs
Storm frequency	= 2 yrs	Time to peak	= 908 min
Time interval	= 1 min	Hyd. volume	= 95,656 cuft
Inflow hyd. No.	= 13 - Post-Dev DA #2 (DP 001)	Max. Elevation	= 10.85 ft
Reservoir name	= Wet Pond #12C-D	Max. Storage	= 143,120 cuft

Storage Indication method used.



Hydrograph Report

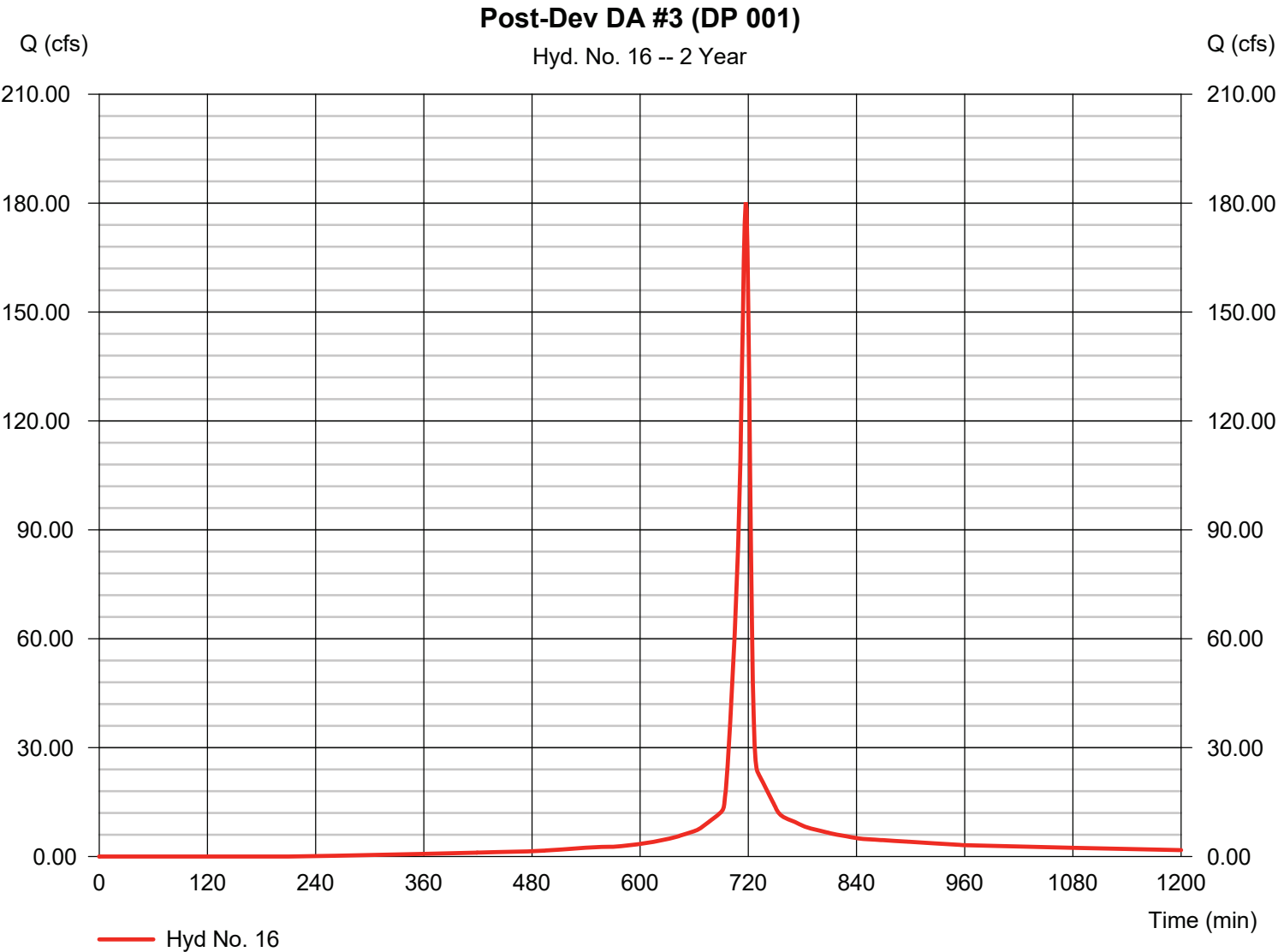
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 16

Post-Dev DA #3 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 180.19 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 393,825 cuft
Drainage area	= 40.140 ac	Curve number	= 93.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 17

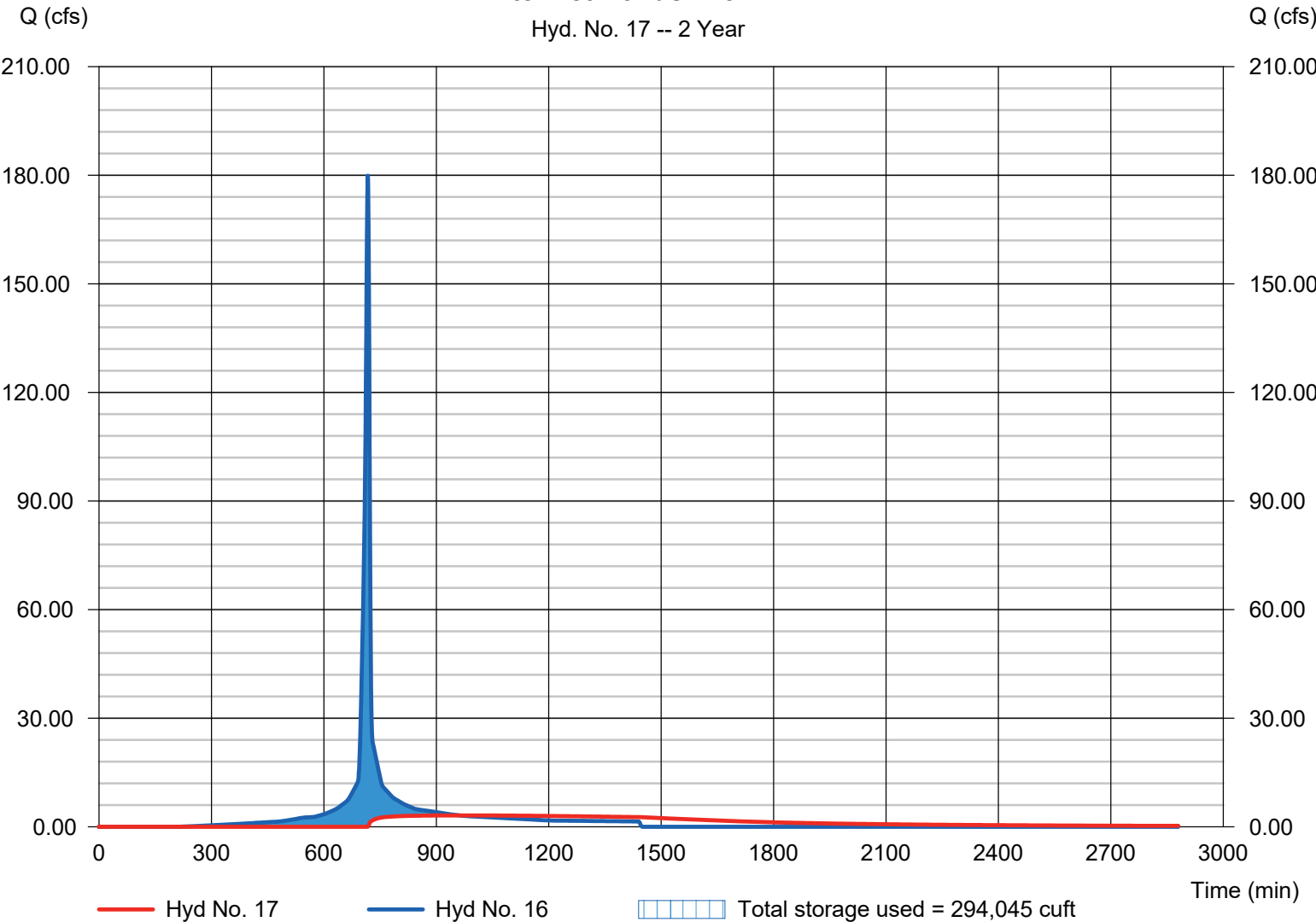
Rte Wet Ponds #13A-C

Hydrograph type	= Reservoir	Peak discharge	= 3.151 cfs
Storm frequency	= 2 yrs	Time to peak	= 958 min
Time interval	= 1 min	Hyd. volume	= 204,277 cuft
Inflow hyd. No.	= 16 - Post-Dev DA #3 (DP 001)	Max. Elevation	= 11.26 ft
Reservoir name	= Wet Pond #13A-C	Max. Storage	= 294,045 cuft

Storage Indication method used.

Rte Wet Ponds #13A-C

Hyd. No. 17 -- 2 Year

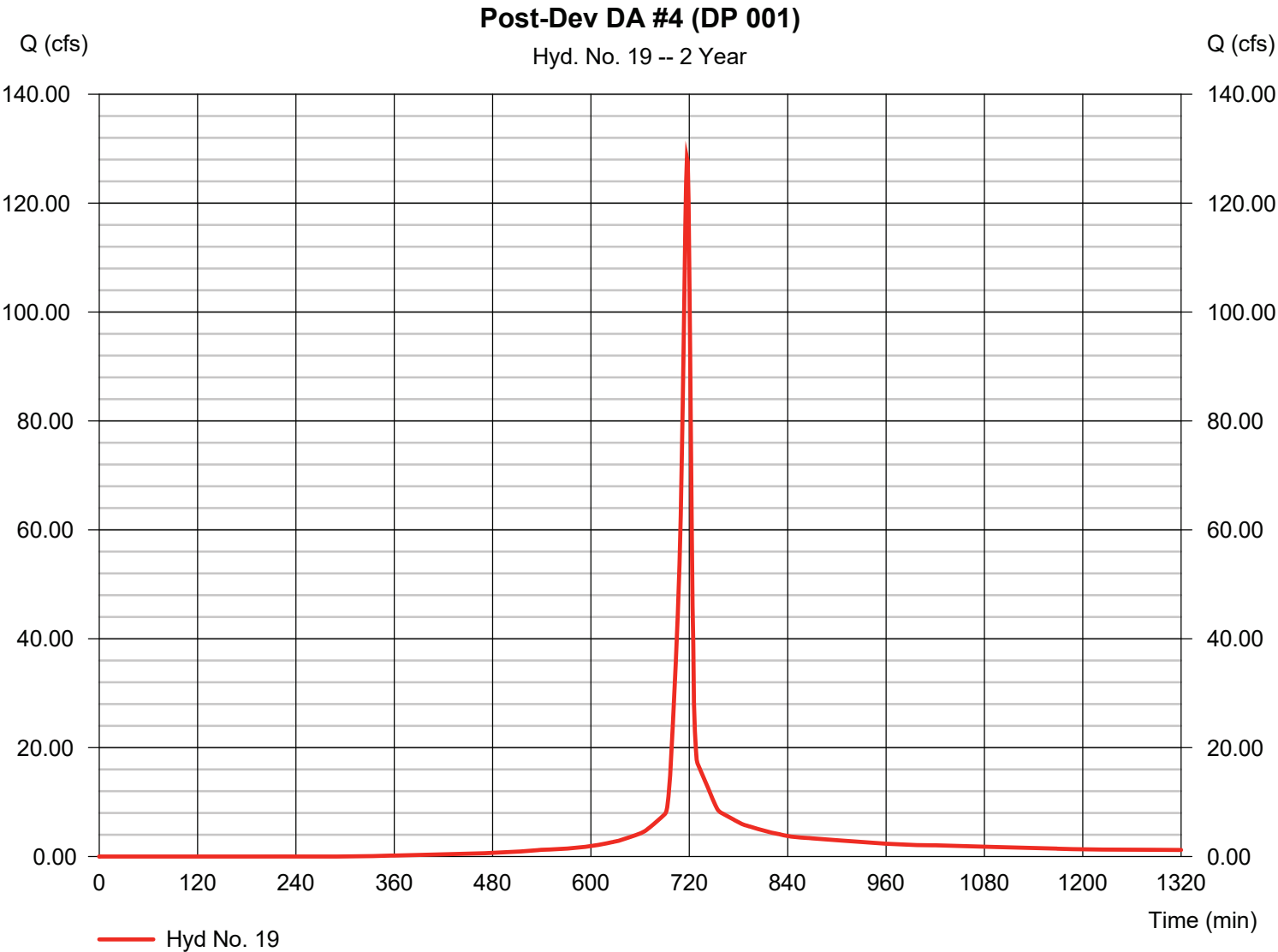


Hydrograph Report

Hyd. No. 19

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 128.30 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 270,713 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

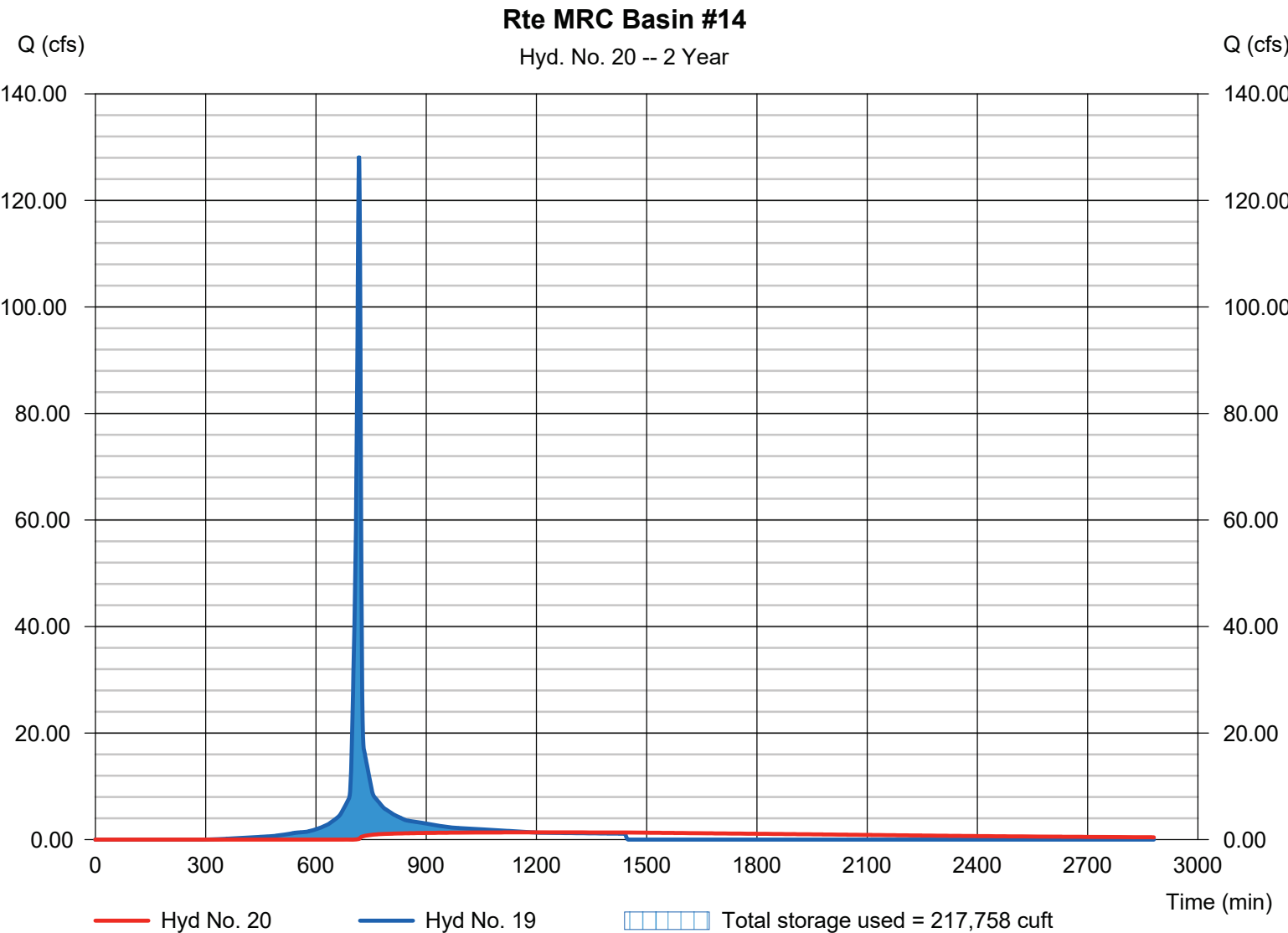
Thursday, 06 / 19 / 2025

Hyd. No. 20

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 1.354 cfs
Storm frequency	= 2 yrs	Time to peak	= 1191 min
Time interval	= 1 min	Hyd. volume	= 128,212 cuft
Inflow hyd. No.	= 19 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 13.87 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 217,758 cuft

Storage Indication method used.



Hydrograph Report

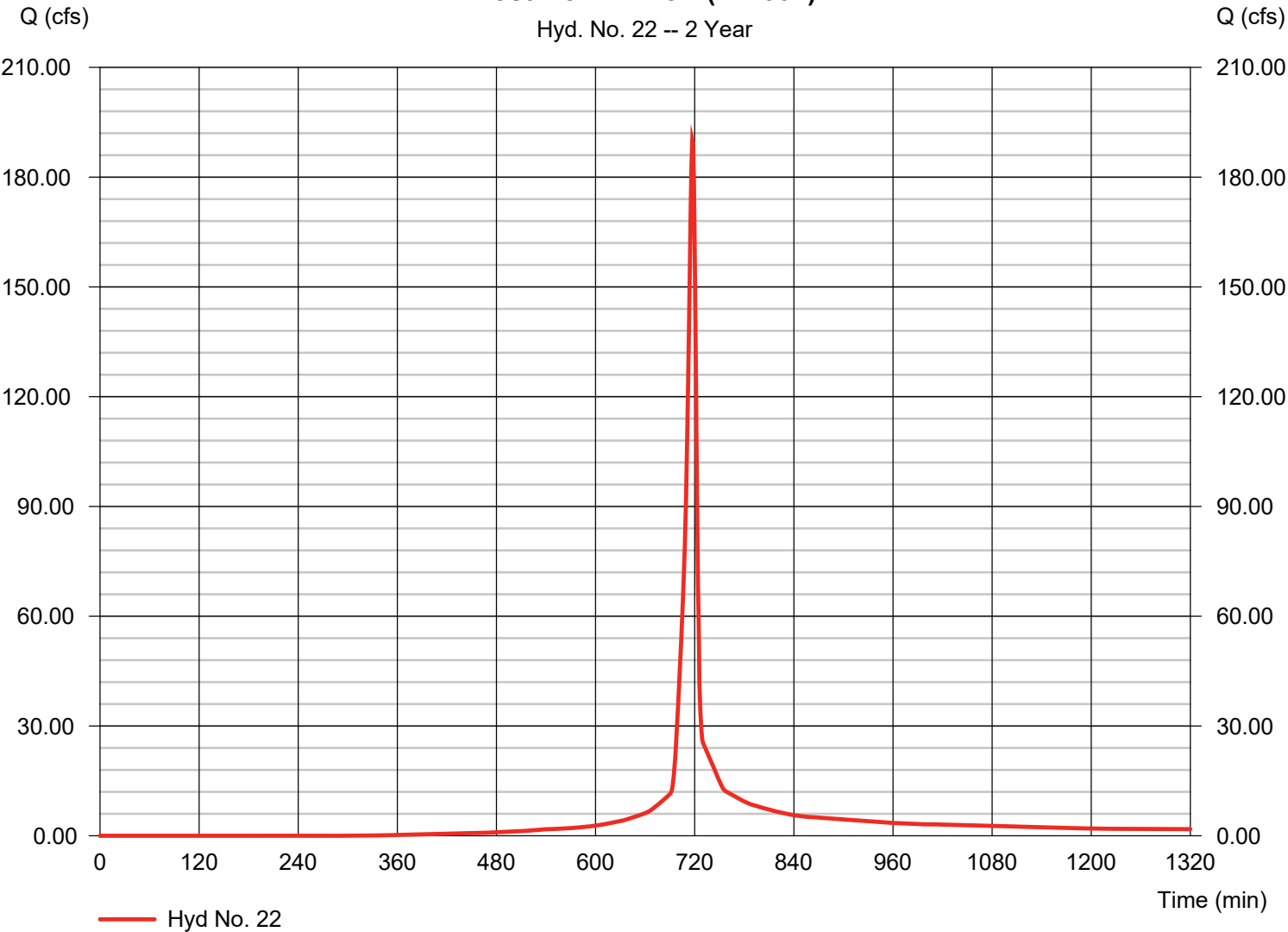
Hyd. No. 22

Post-Dev DA #5A (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 190.20 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 400,309 cuft
Drainage area	= 46.730 ac	Curve number	= 90.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Post-Dev DA #5A (DP 001)

Hyd. No. 22 -- 2 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

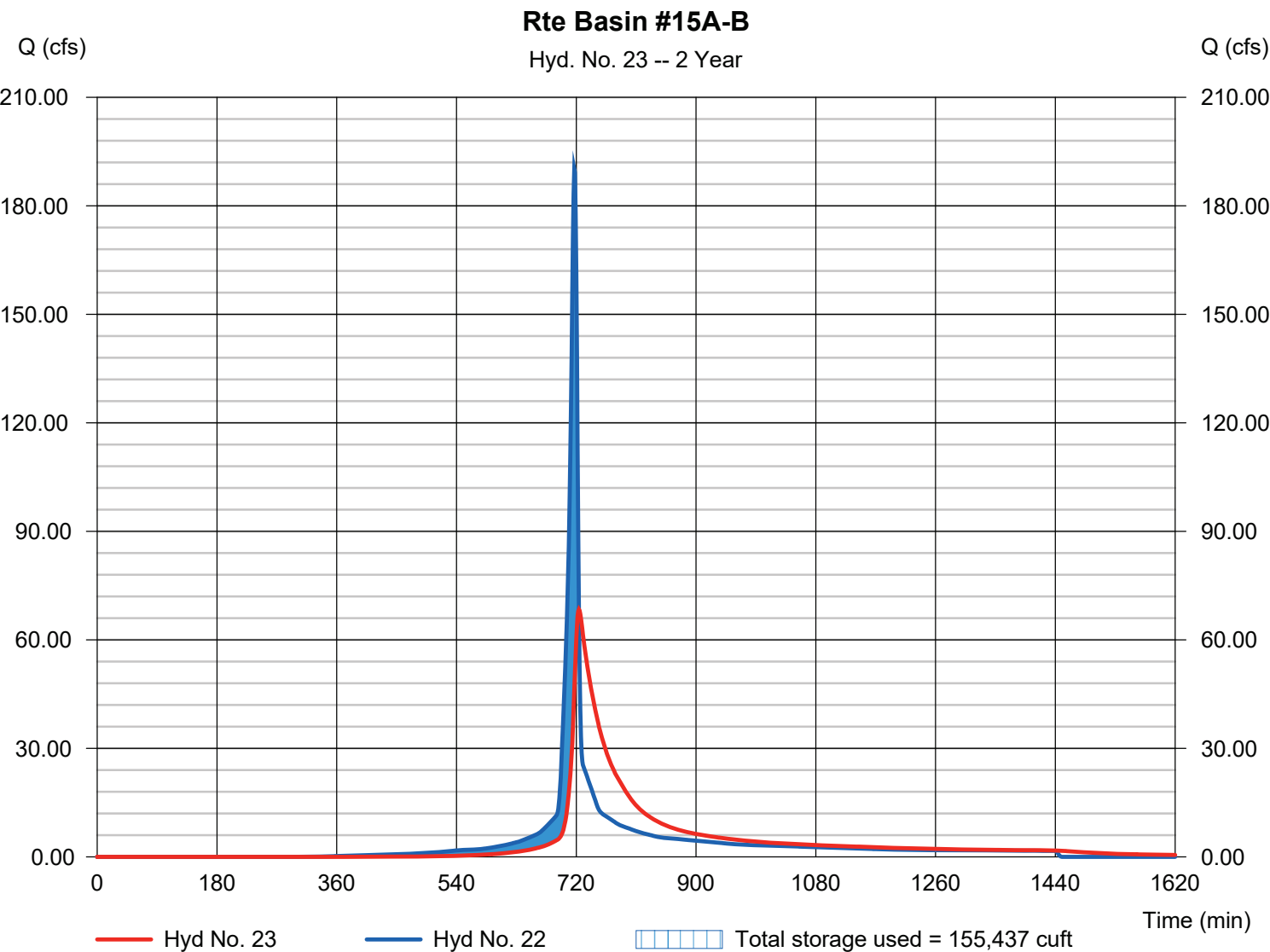
Thursday, 06 / 19 / 2025

Hyd. No. 23

Rte Basin #15A-B

Hydrograph type	= Reservoir	Peak discharge	= 68.44 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 399,276 cuft
Inflow hyd. No.	= 22 - Post-Dev DA #5A (DP 001)	Max. Elevation	= 14.96 ft
Reservoir name	= Basin #15A-B	Max. Storage	= 155,437 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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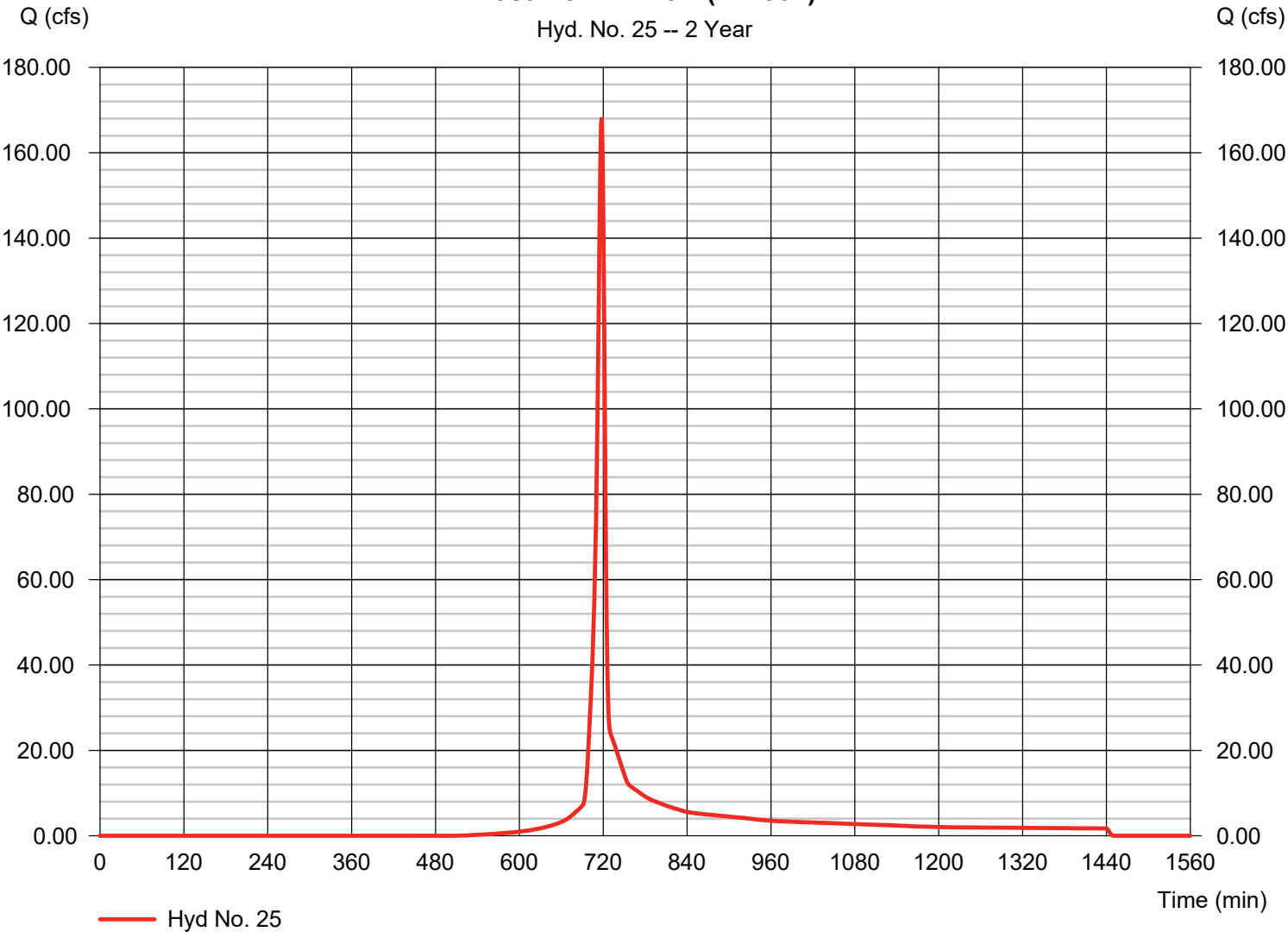
Hyd. No. 25

Post-Dev DA #5B (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	168.30 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	339,756 cuft
Drainage area	=	55.570 ac	Curve number	=	82.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

Post-Dev DA #5B (DP 001)

Hyd. No. 25 -- 2 Year



Hydrograph Report

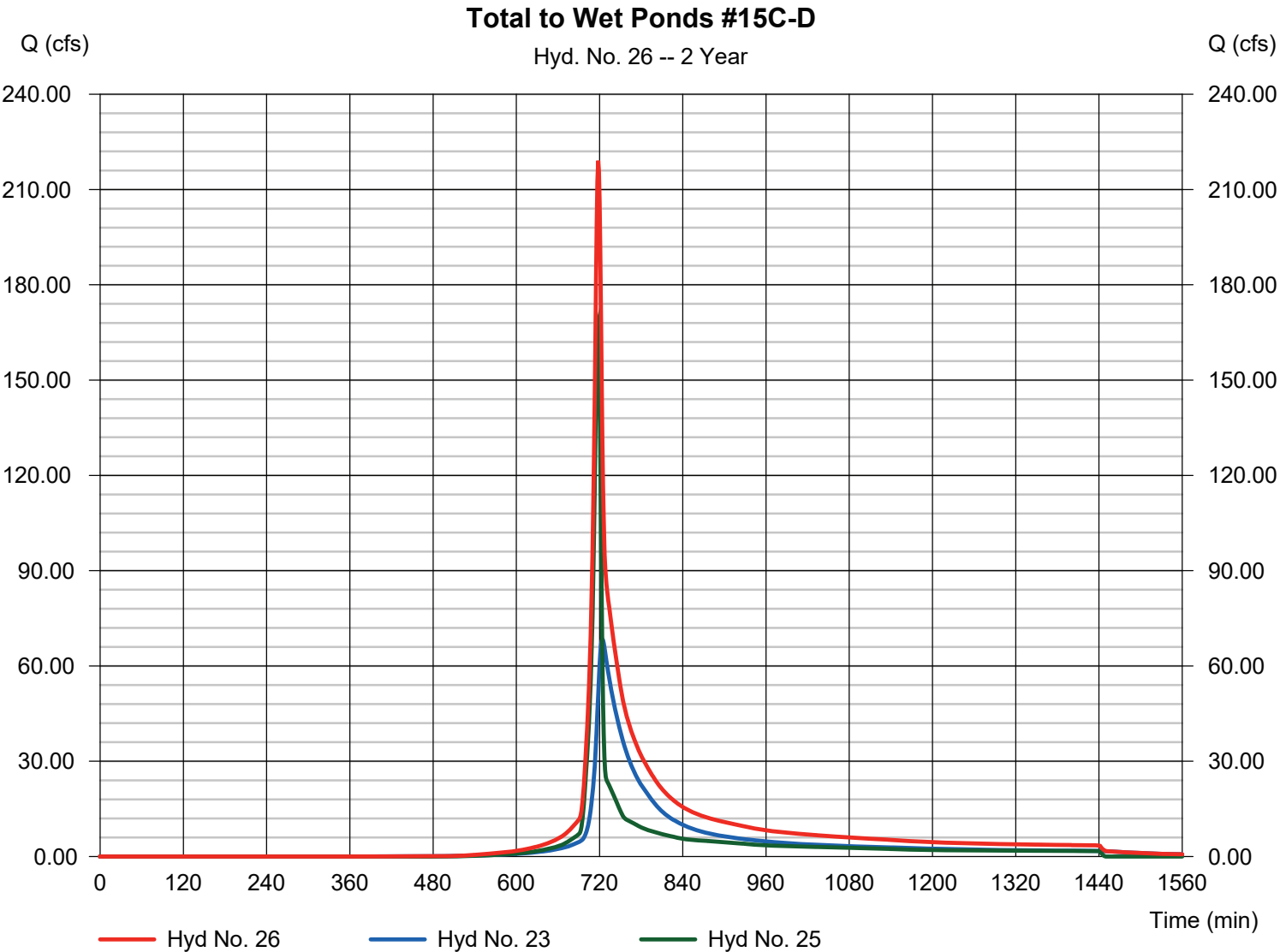
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Thursday, 06 / 19 / 2025

Hyd. No. 26

Total to Wet Ponds #15C-D

Hydrograph type	= Combine	Peak discharge	= 219.08 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 739,034 cuft
Inflow hyds.	= 23, 25	Contrib. drain. area	= 55.570 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 27

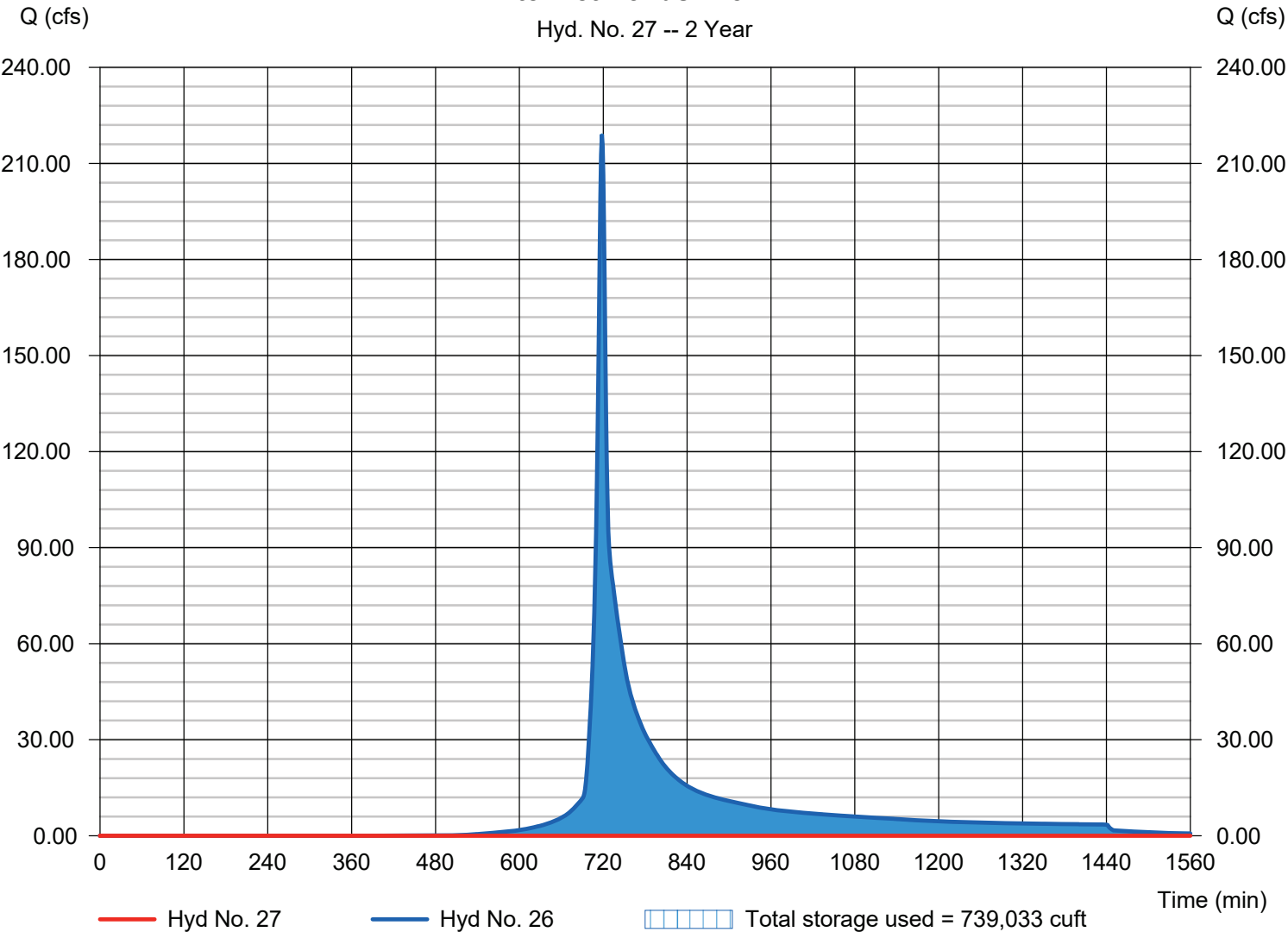
Rte Wet Ponds #15C-D

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 26 - Total to Wet Ponds #15C-D	Max. Elevation	= 9.69 ft
Reservoir name	= Wet Pond #15C-D	Max. Storage	= 739,033 cuft

Storage Indication method used.

Rte Wet Ponds #15C-D

Hyd. No. 27 -- 2 Year



Hydrograph Report

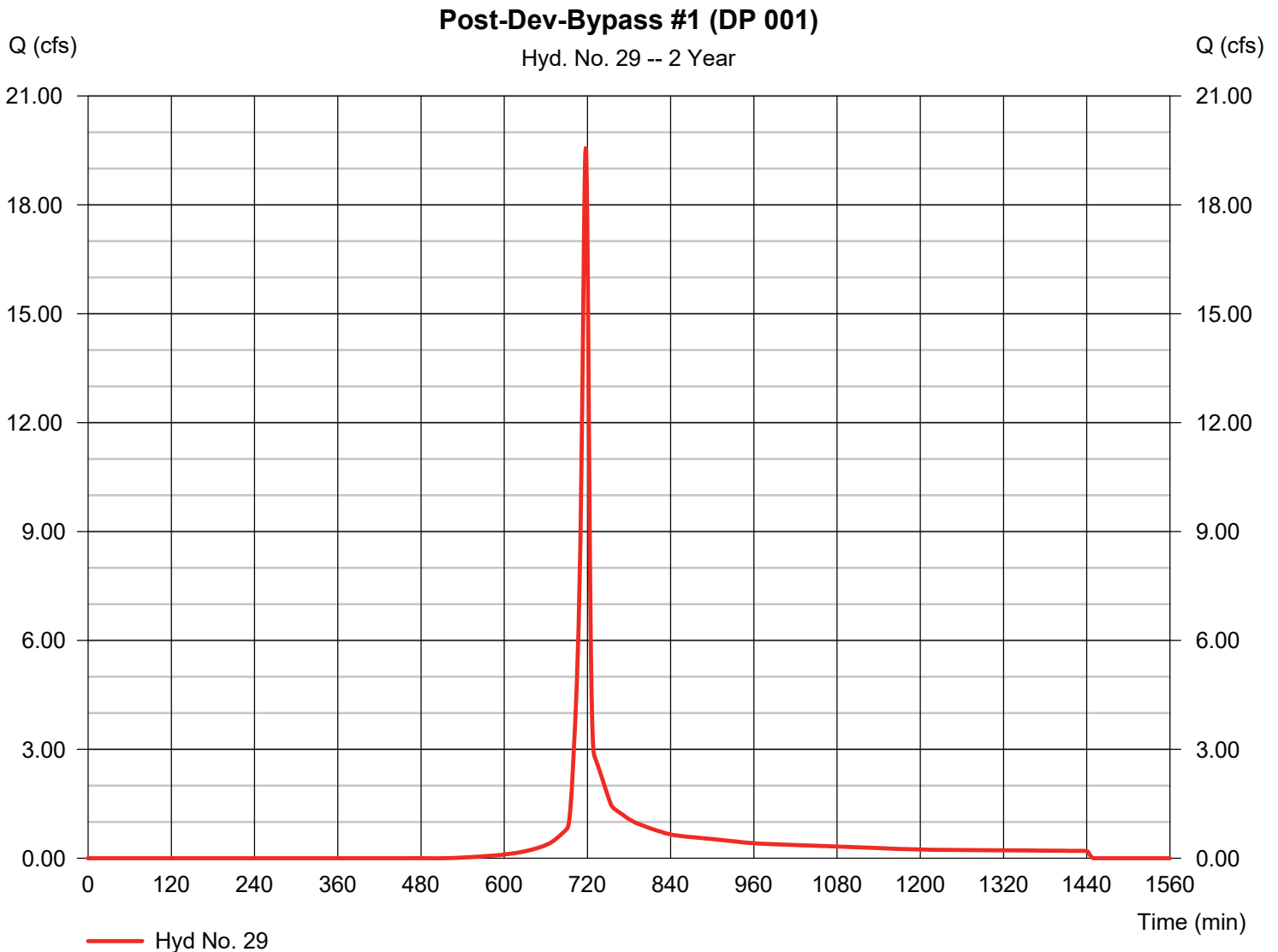
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Hyd. No. 29

Post-Dev-Bypass #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 19.60 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 39,523 cuft
Drainage area	= 6.580 ac	Curve number	= 81.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

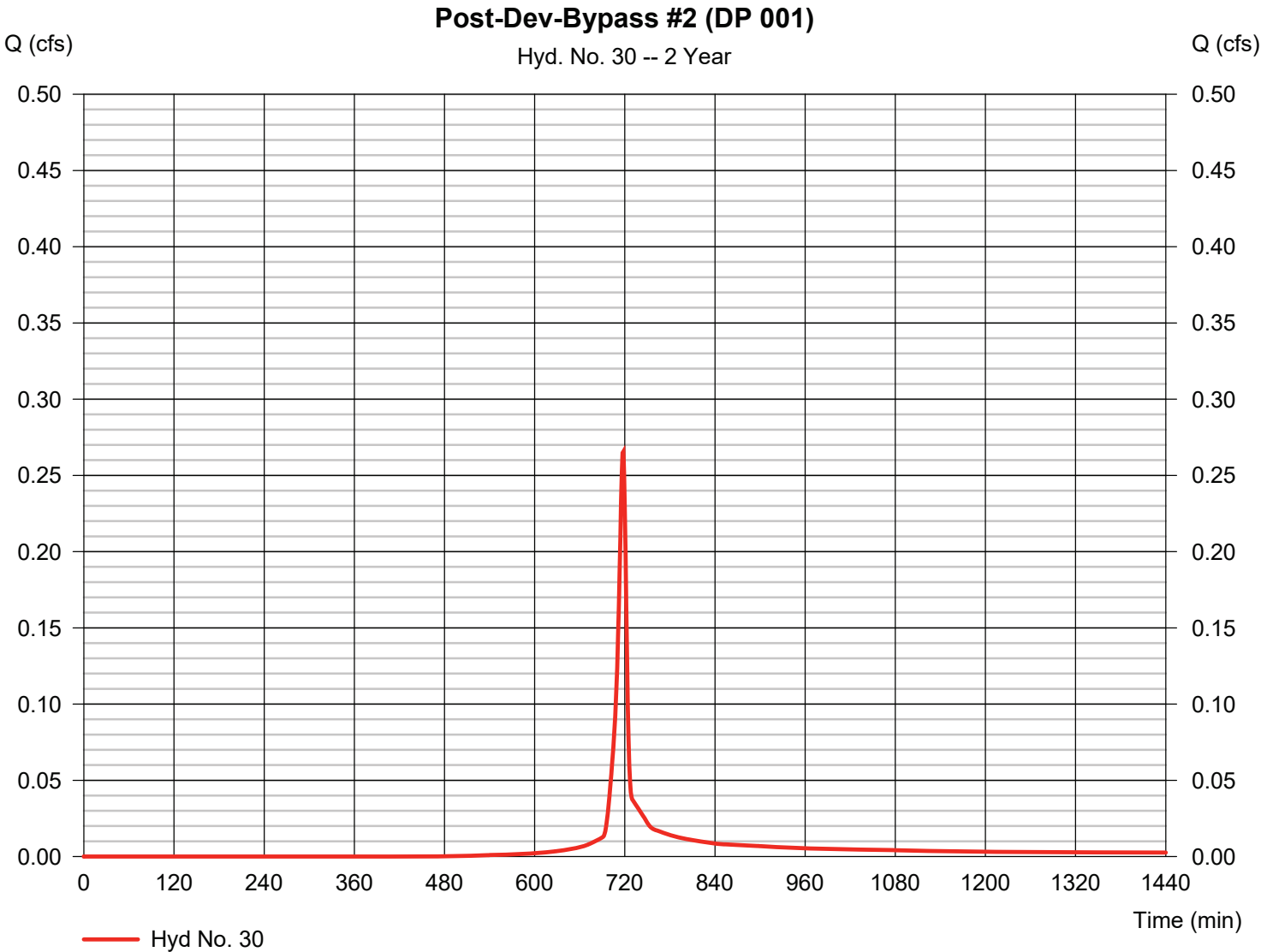
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Thursday, 06 / 19 / 2025

Hyd. No. 30

Post-Dev-Bypass #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.266 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	540 cuft
Drainage area	=	0.080 ac	Curve number	=	84.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

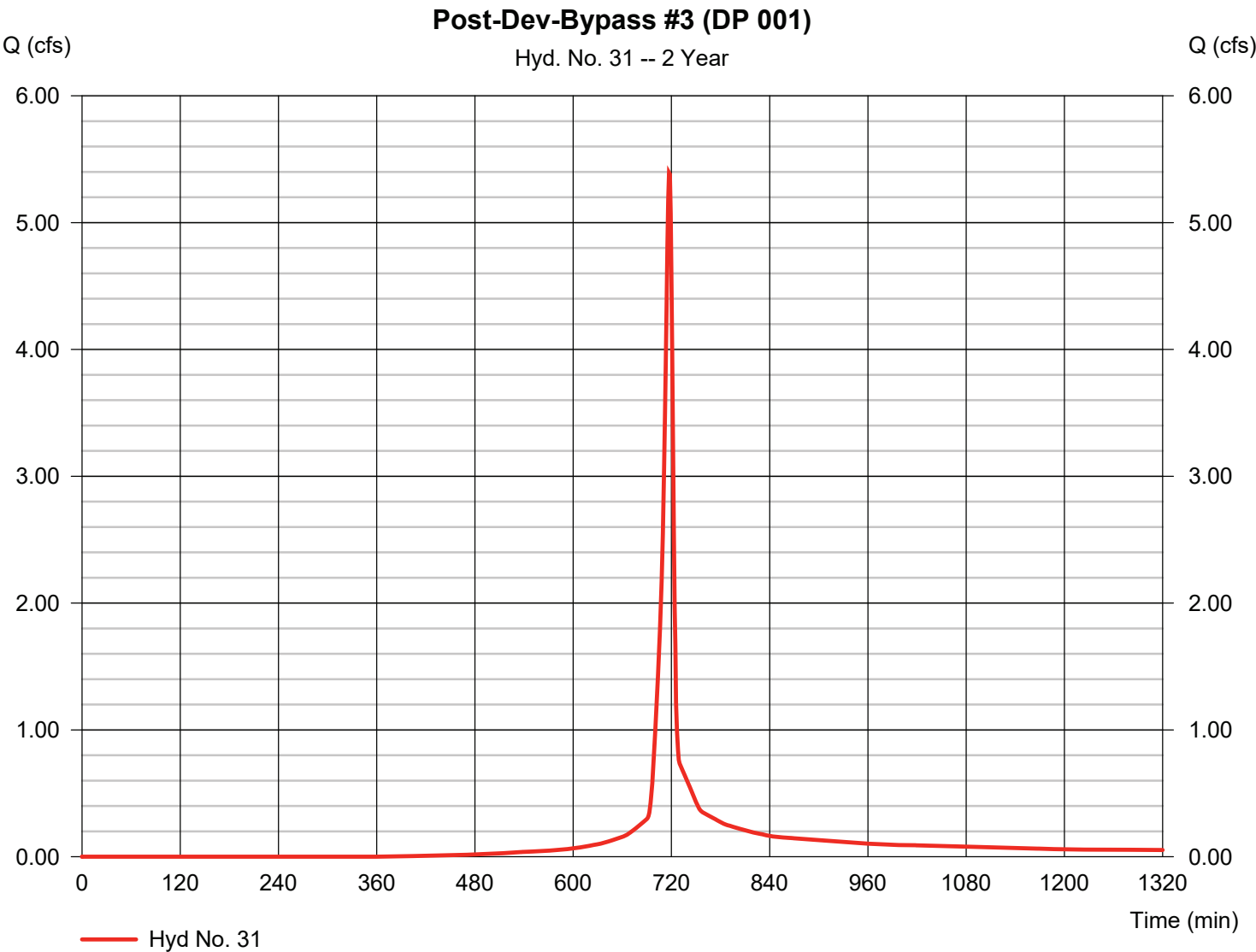


Hydrograph Report

Hyd. No. 31

Post-Dev-Bypass #3 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.393 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	11,185 cuft
Drainage area	=	1.420 ac	Curve number	=	88.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

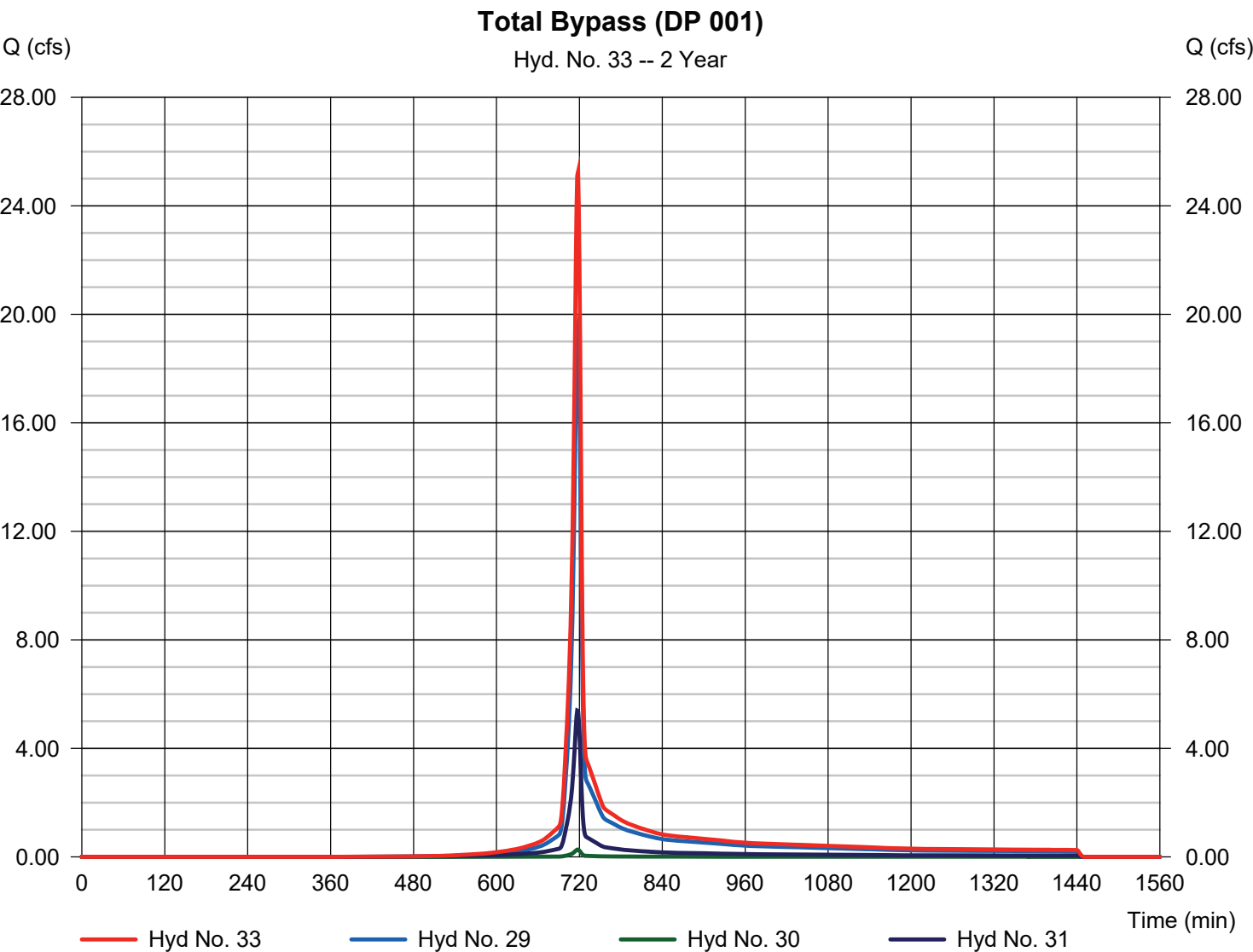
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 33

Total Bypass (DP 001)

Hydrograph type	= Combine	Peak discharge	= 25.24 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 51,249 cuft
Inflow hyds.	= 29, 30, 31	Contrib. drain. area	= 8.080 ac



Hydrograph Report

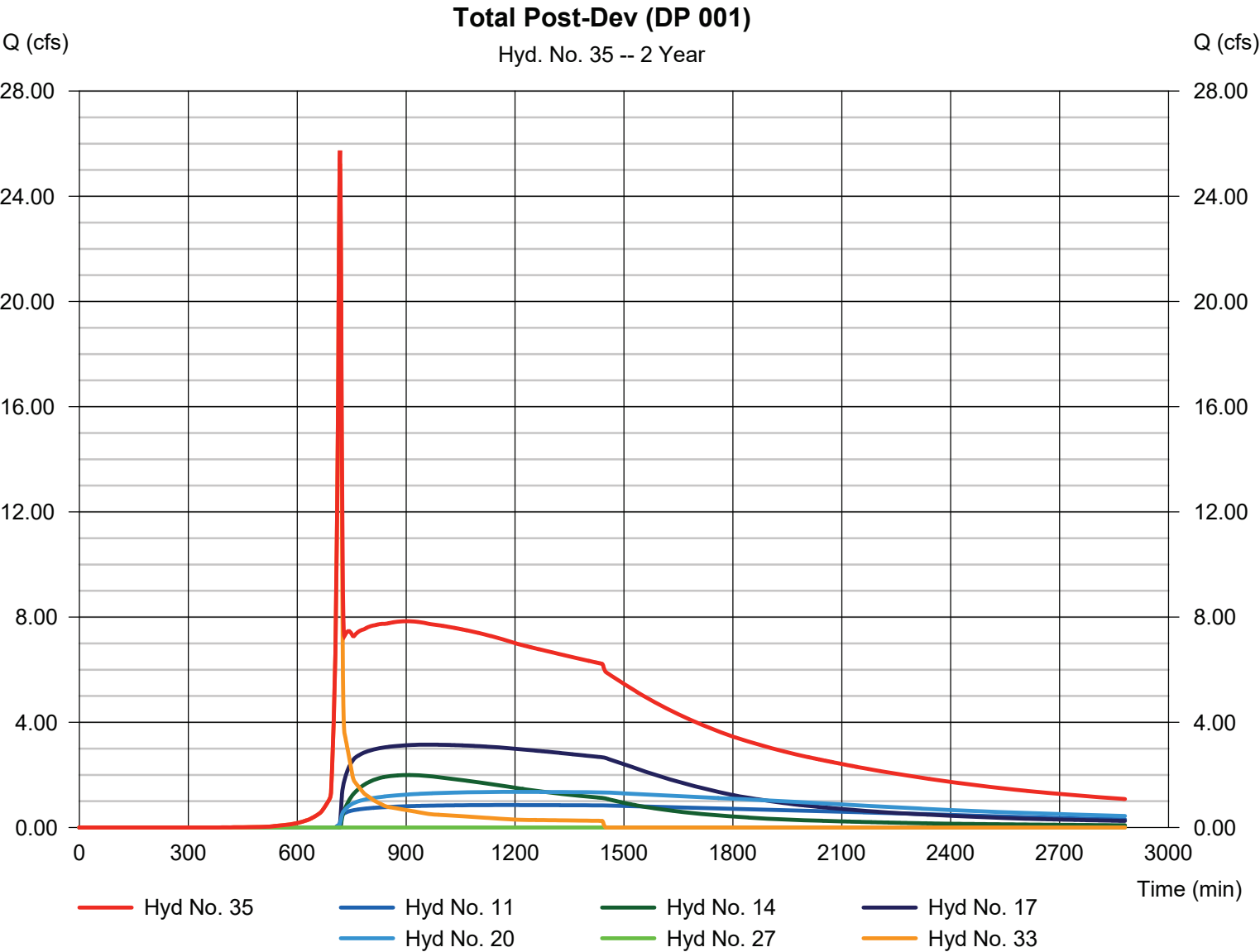
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 35

Total Post-Dev (DP 001)

Hydrograph type	= Combine	Peak discharge	= 25.74 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 563,960 cuft
Inflow hyds.	= 11, 14, 17, 20, 27, 33	Contrib. drain. area	= 0.000 ac

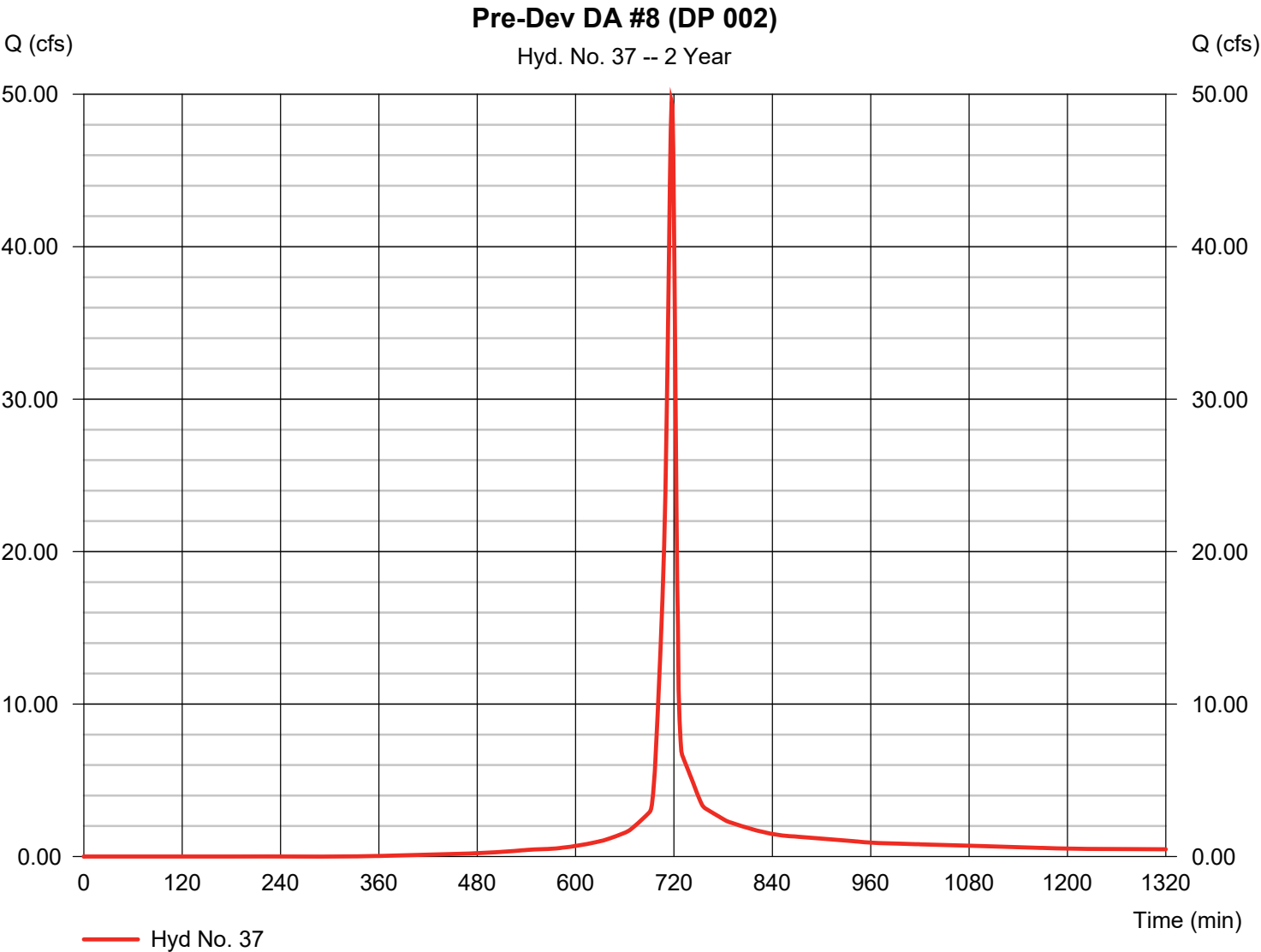


Hydrograph Report

Hyd. No. 37

Pre-Dev DA #8 (DP 002)

Hydrograph type	=	SCS Runoff	Peak discharge	=	49.52 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	103,728 cuft
Drainage area	=	12.400 ac	Curve number	=	89.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

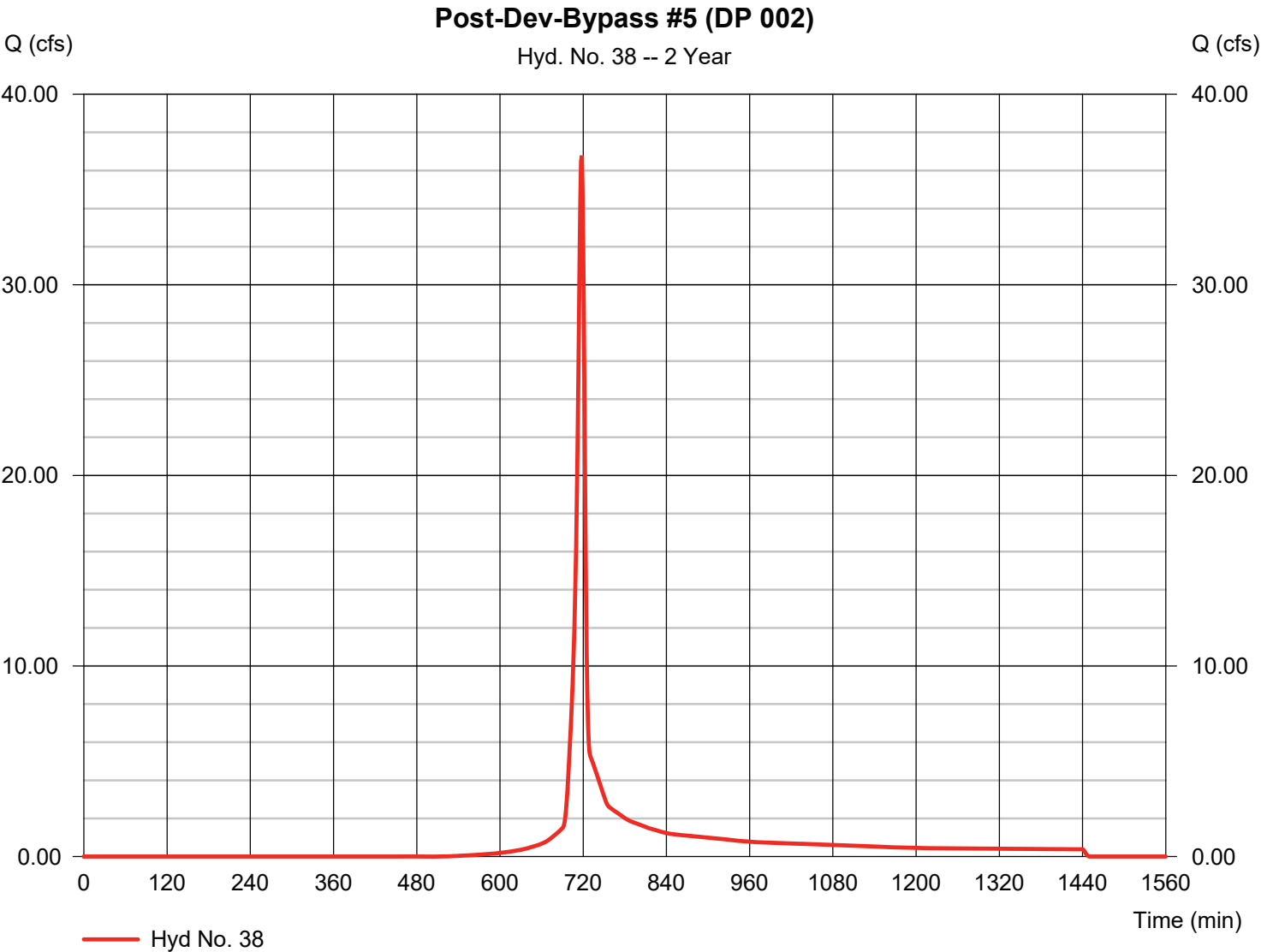


Hydrograph Report

Hyd. No. 38

Post-Dev-Bypass #5 (DP 002)

Hydrograph type	=	SCS Runoff	Peak discharge	=	36.78 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	74,151 cuft
Drainage area	=	12.400 ac	Curve number	=	81.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

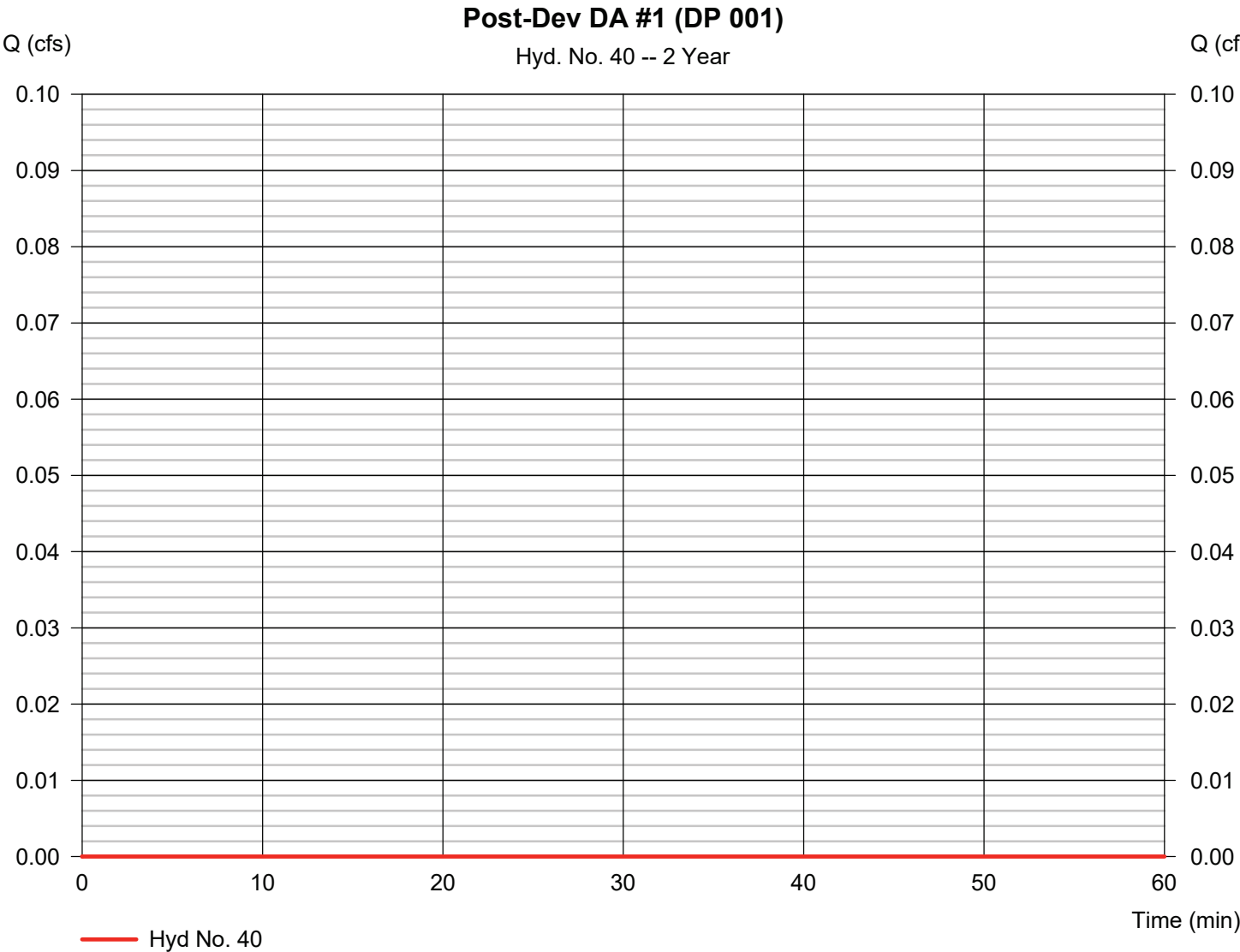


Hydrograph Report

Hyd. No. 40

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_MasterPlan\2007083-05 - Ph		



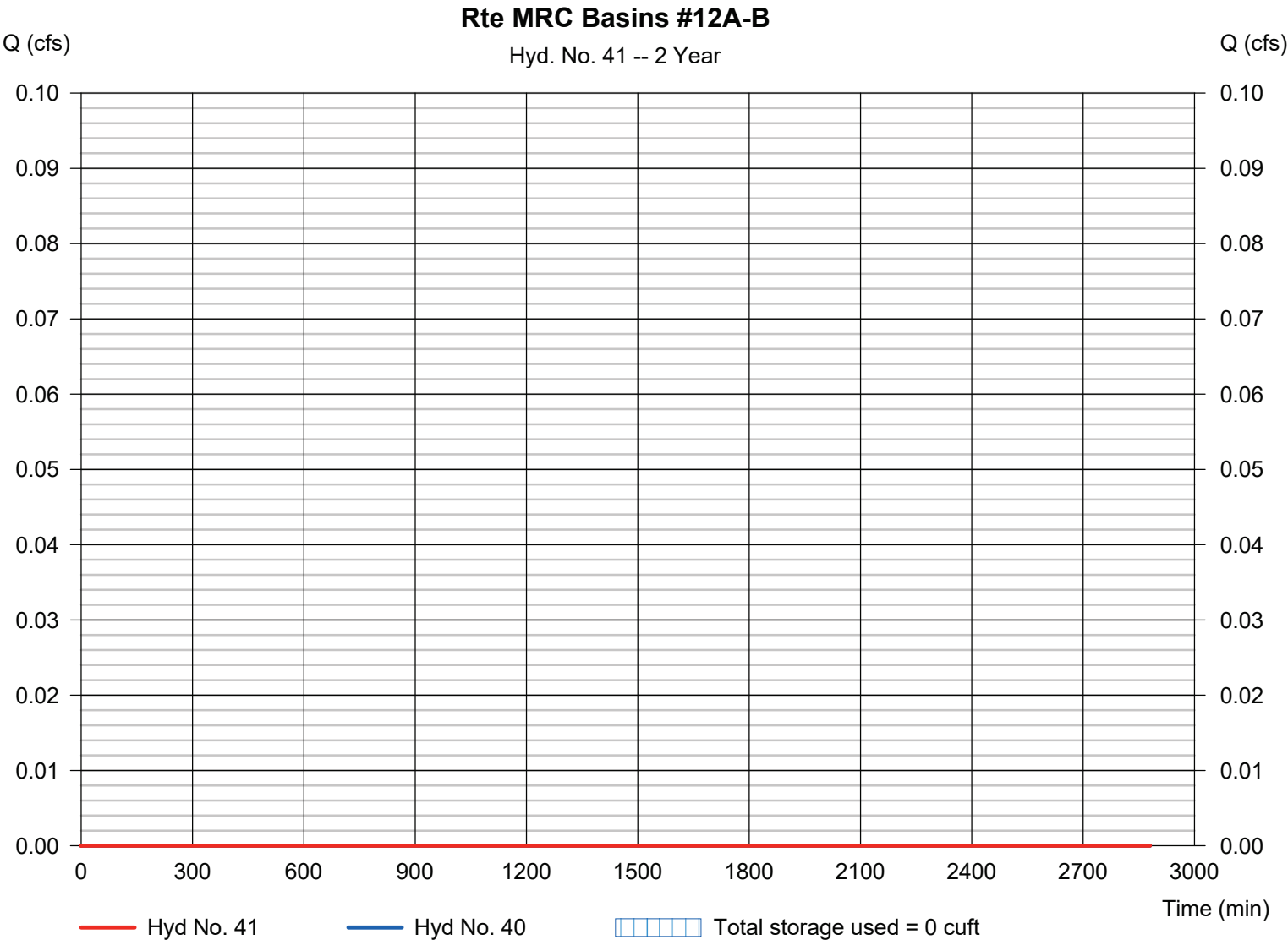
Hydrograph Report

Hyd. No. 41

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 40 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 0 cuft

Storage Indication method used.

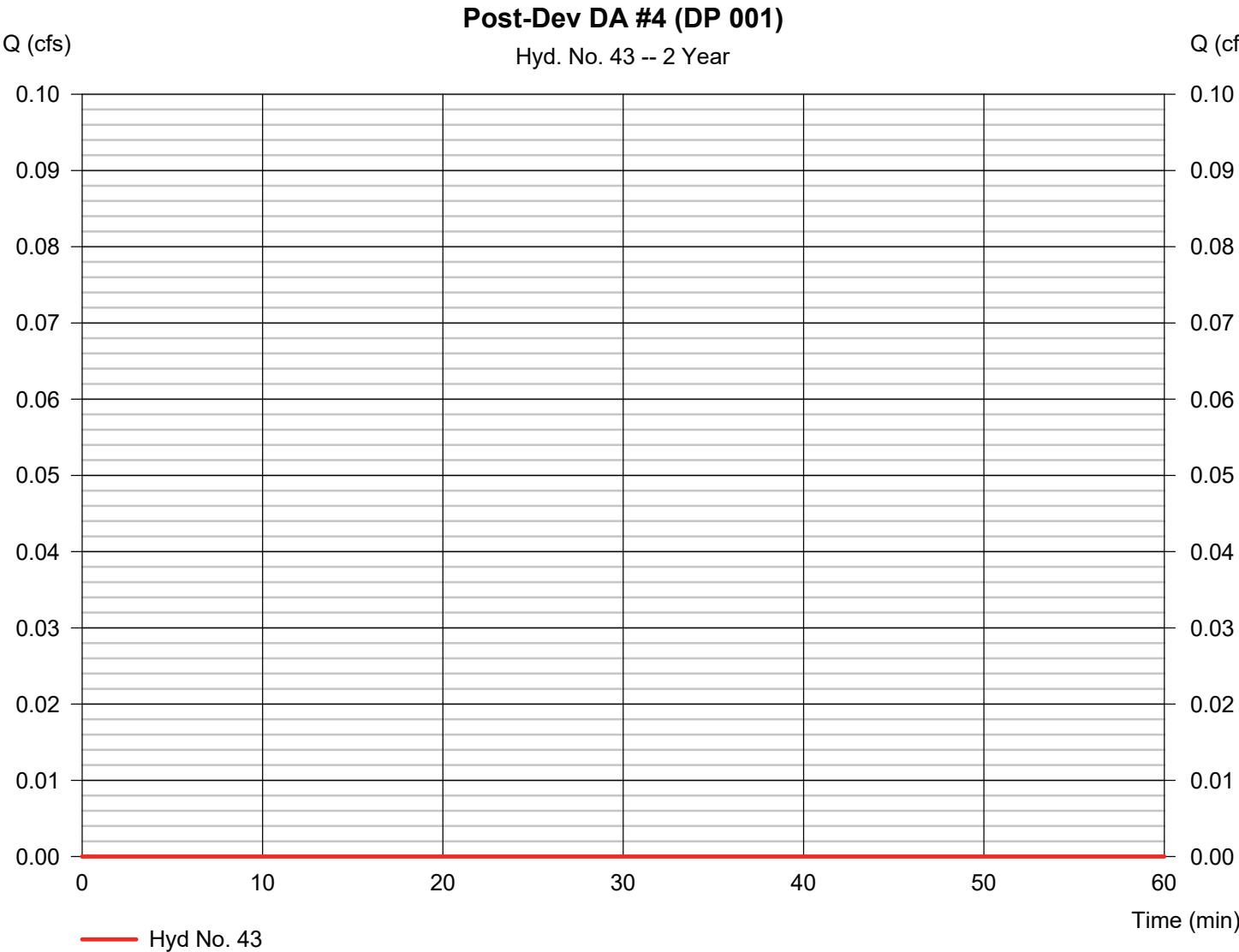


Hydrograph Report

Hyd. No. 43

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



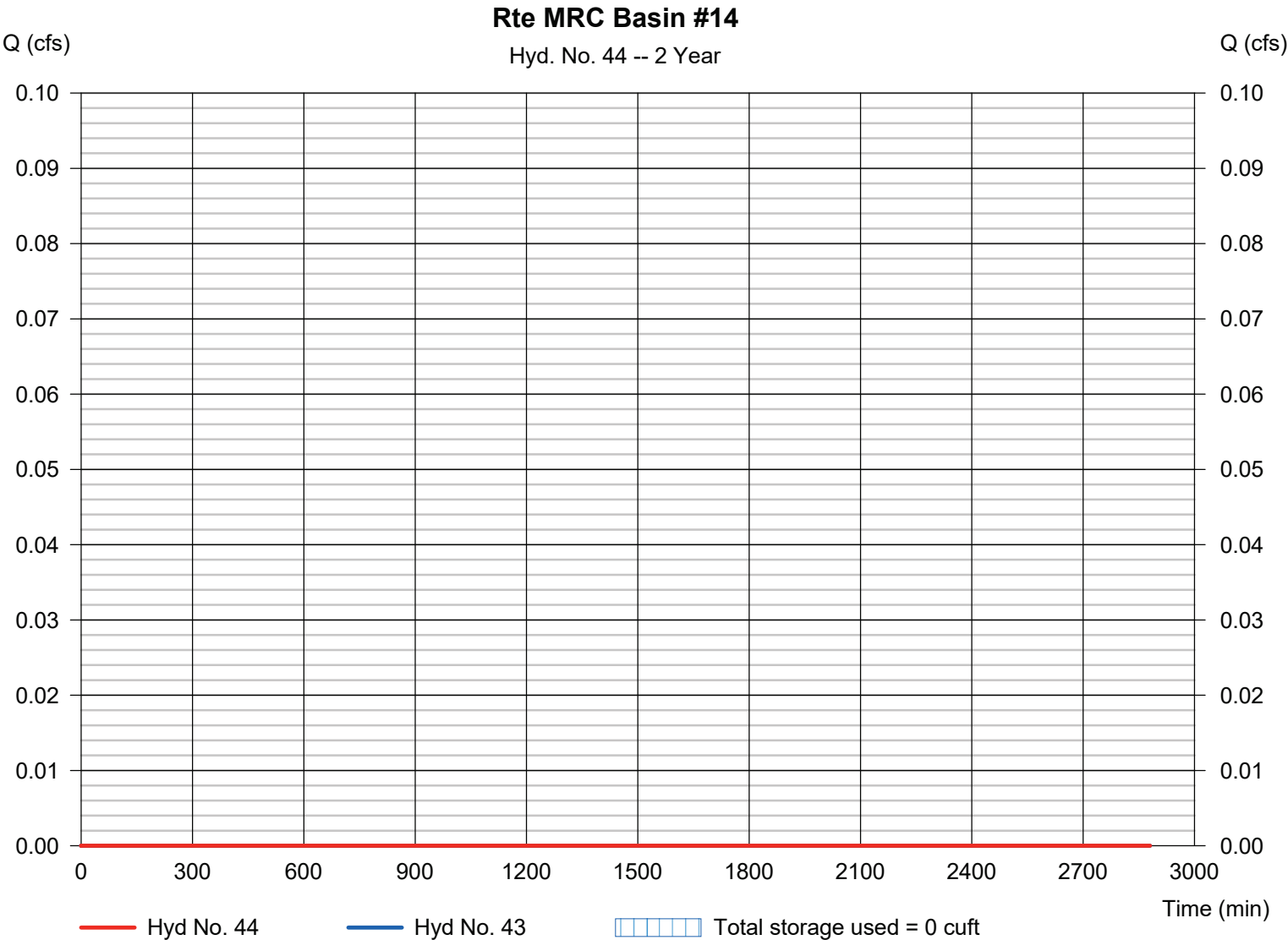
Hydrograph Report

Hyd. No. 44

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 43 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

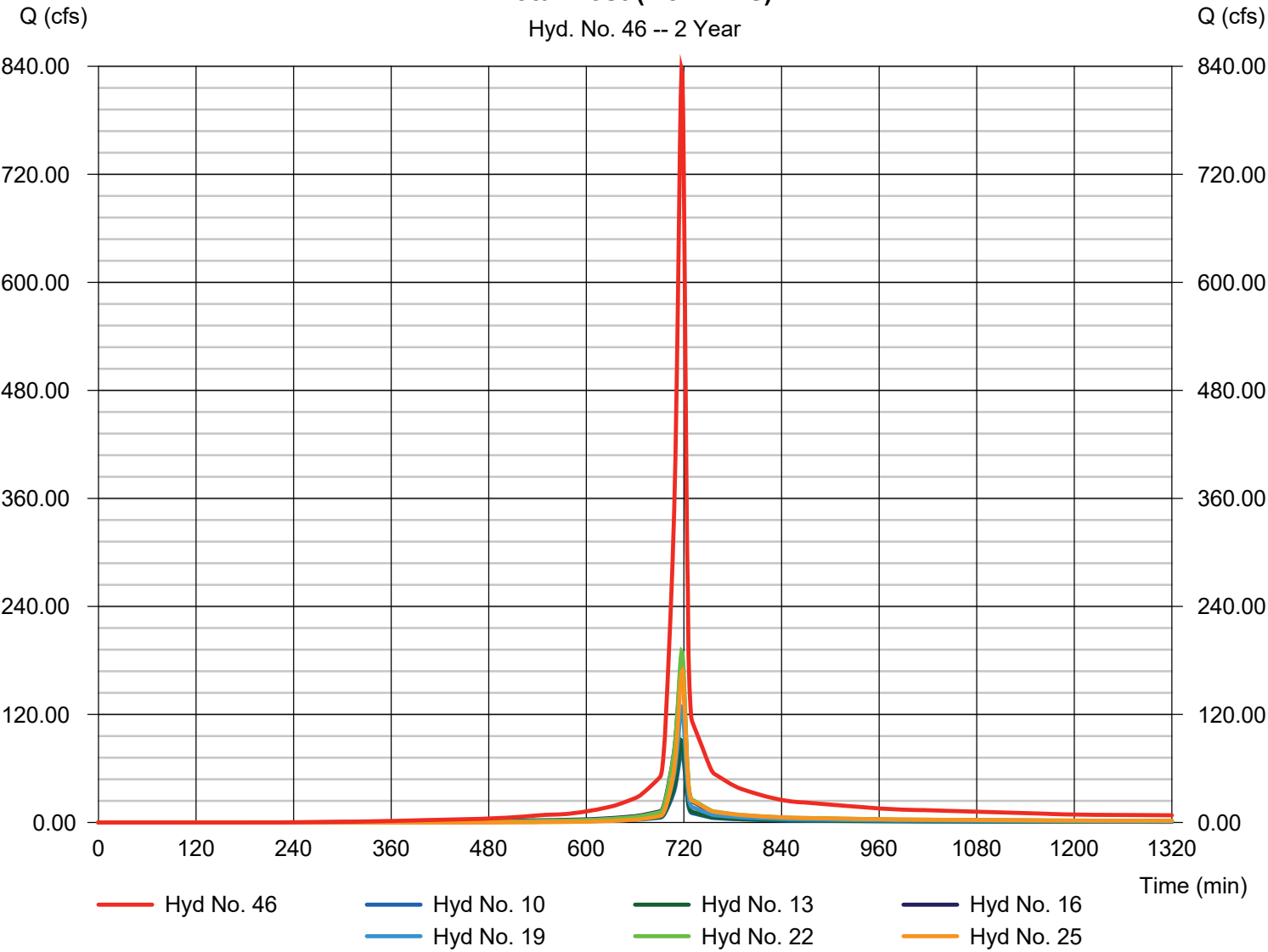
Hyd. No. 46

Total Post (No BMPs)

Hydrograph type	= Combine	Peak discharge	= 836.82 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 1,774,945 cuft
Inflow hyds.	= 10, 13, 16, 19, 22, 25	Contrib. drain. area	= 212.440 ac

Total Post (No BMPs)

Hyd. No. 46 -- 2 Year

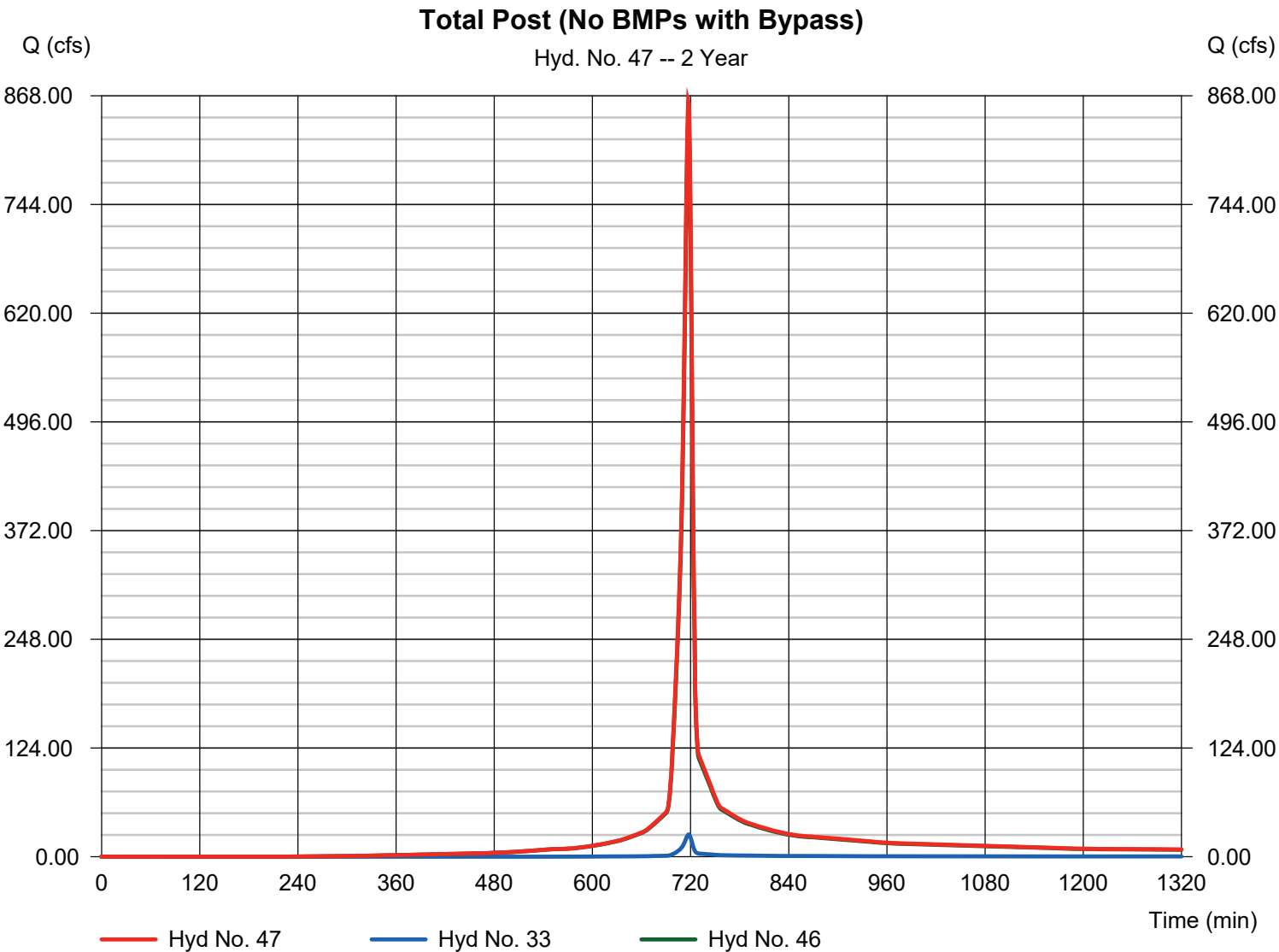


Hydrograph Report

Hyd. No. 47

Total Post (No BMPs with Bypass)

Hydrograph type	= Combine	Peak discharge	= 861.92 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 1,826,192 cuft
Inflow hyds.	= 33, 46	Contrib. drain. area	= 0.000 ac



Hydrograph Report

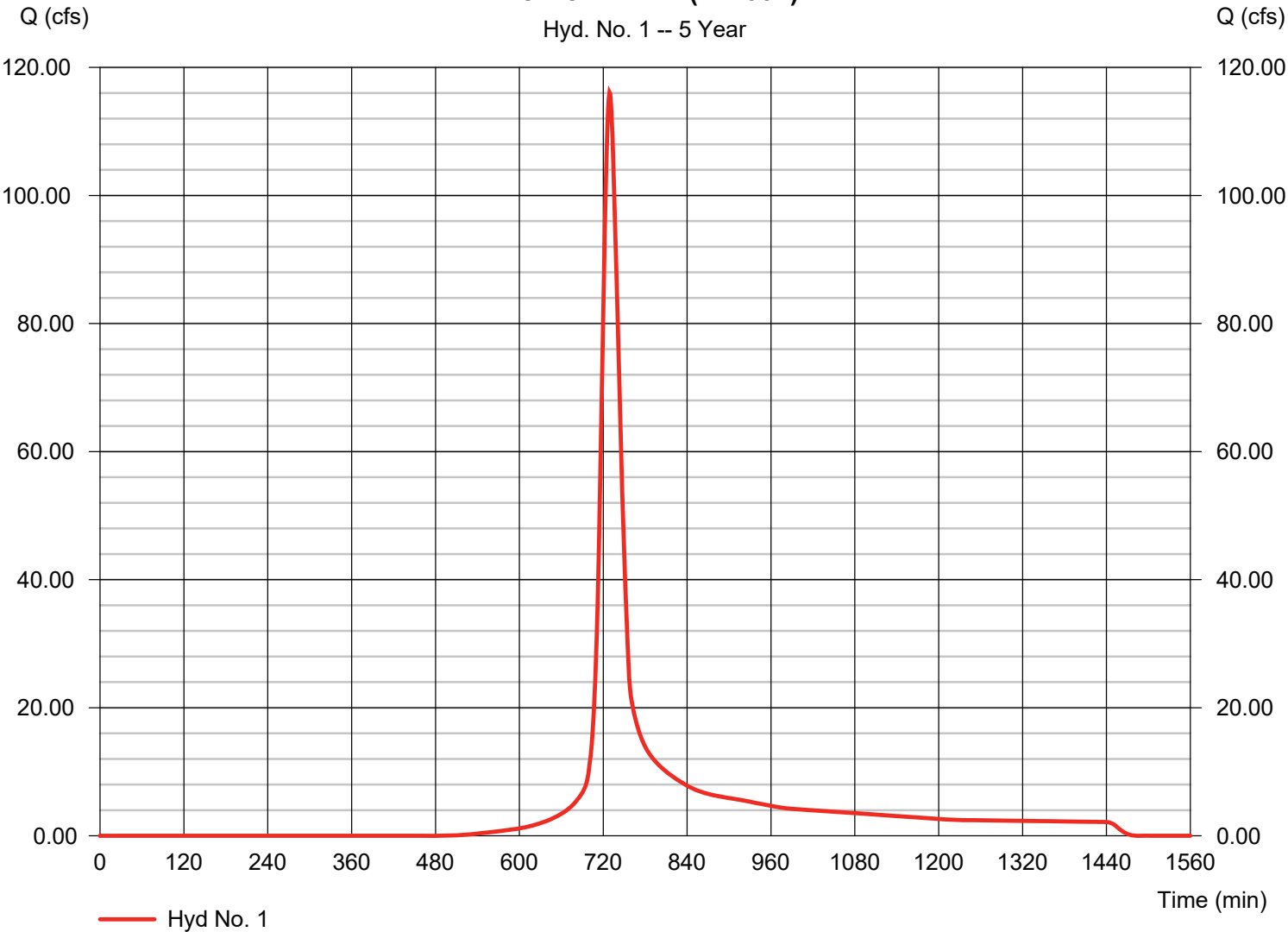
Hyd. No. 1

Pre-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 116.09 cfs
Storm frequency	= 5 yrs	Time to peak	= 729 min
Time interval	= 1 min	Hyd. volume	= 433,049 cuft
Drainage area	= 54.210 ac	Curve number	= 79.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.80 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Pre-Dev DA #1 (DP 001)

Hyd. No. 1 -- 5 Year



Hydrograph Report

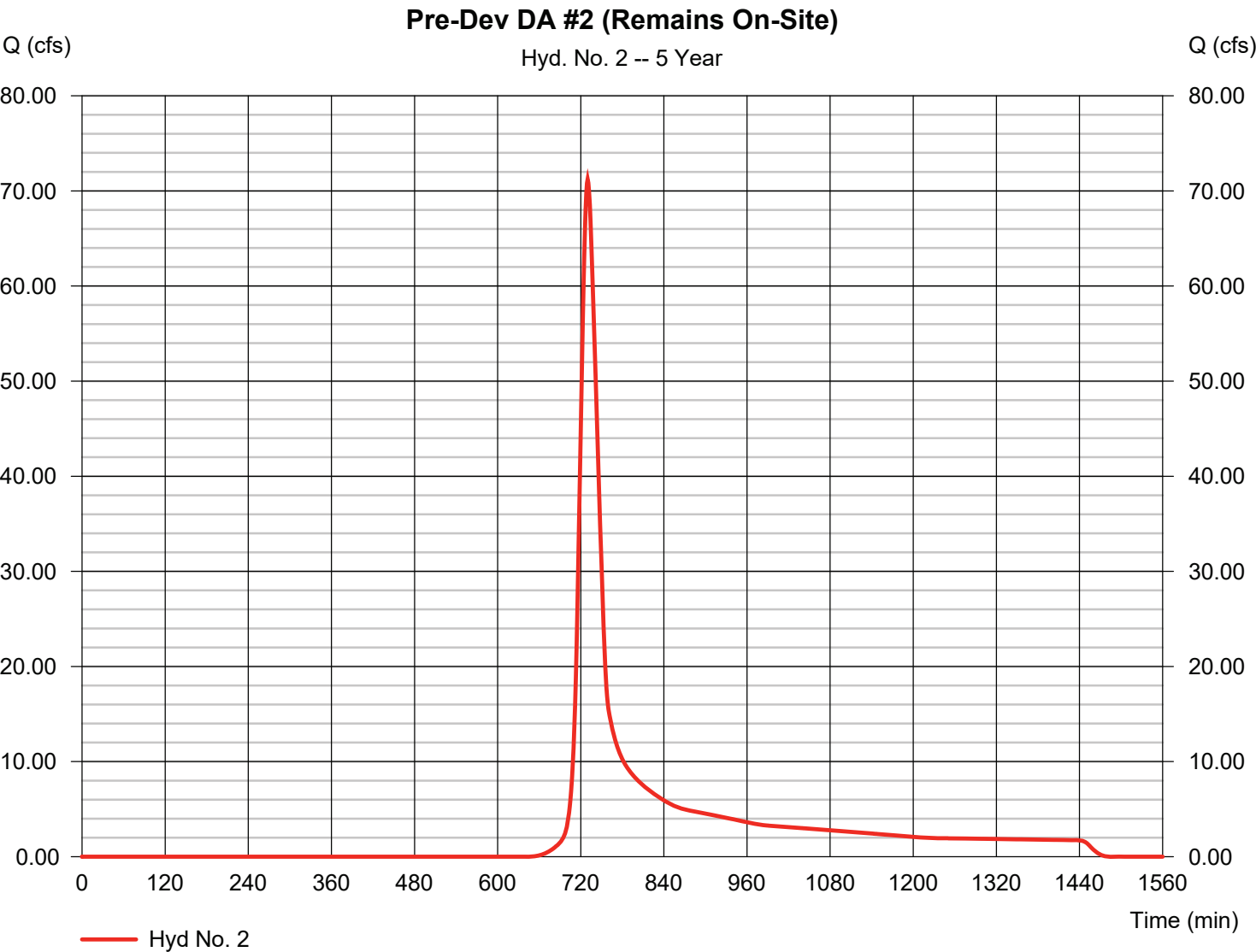
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 2

Pre-Dev DA #2 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	71.22 cfs
Storm frequency	=	5 yrs	Time to peak	=	730 min
Time interval	=	1 min	Hyd. volume	=	280,102 cuft
Drainage area	=	54.240 ac	Curve number	=	69.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	26.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

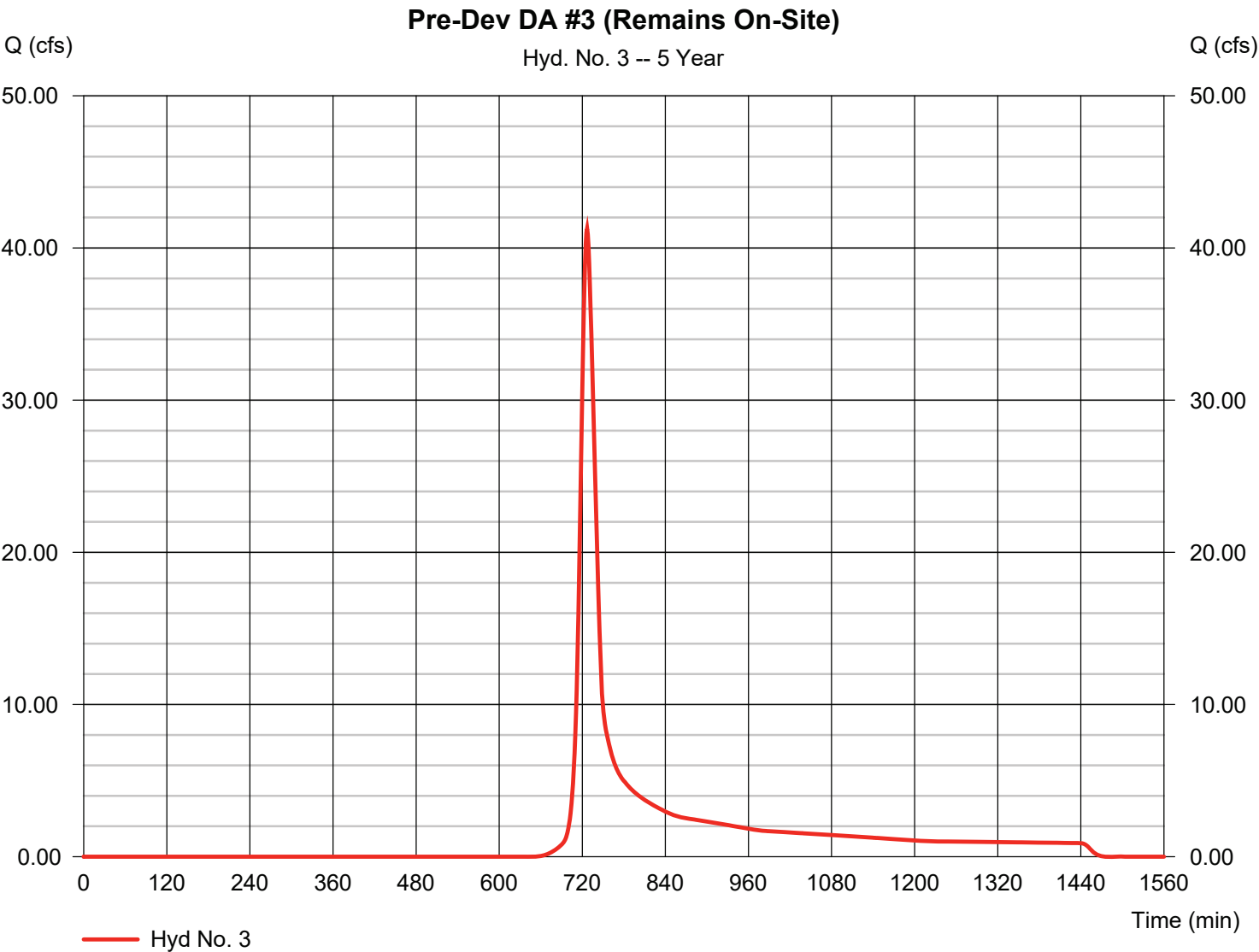


Hydrograph Report

Hyd. No. 3

Pre-Dev DA #3 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	41.26 cfs
Storm frequency	=	5 yrs	Time to peak	=	727 min
Time interval	=	1 min	Hyd. volume	=	142,927 cuft
Drainage area	=	28.420 ac	Curve number	=	68.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	20.50 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

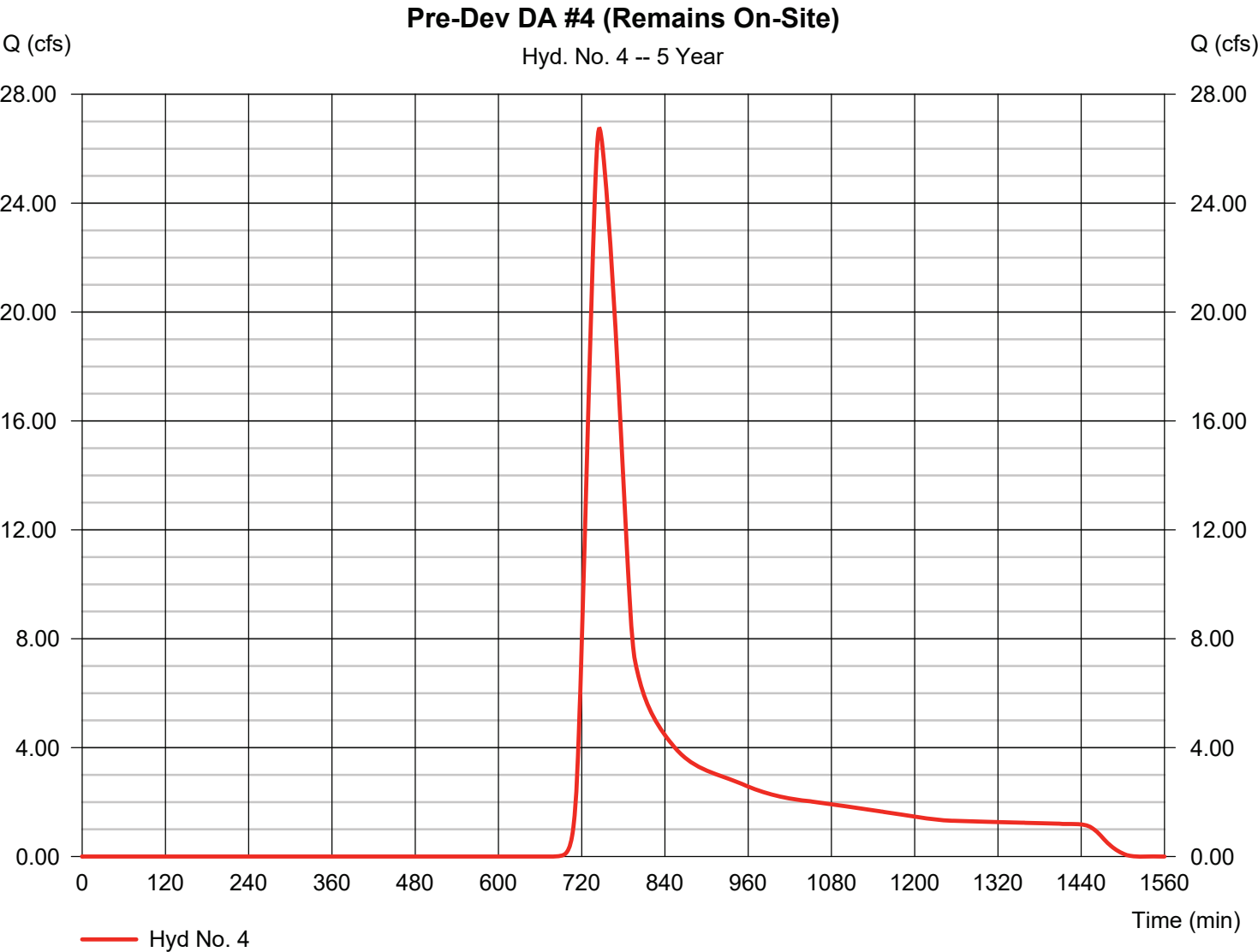
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 4

Pre-Dev DA #4 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.73 cfs
Storm frequency	=	5 yrs	Time to peak	=	746 min
Time interval	=	1 min	Hyd. volume	=	172,695 cuft
Drainage area	=	41.280 ac	Curve number	=	65.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	49.50 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

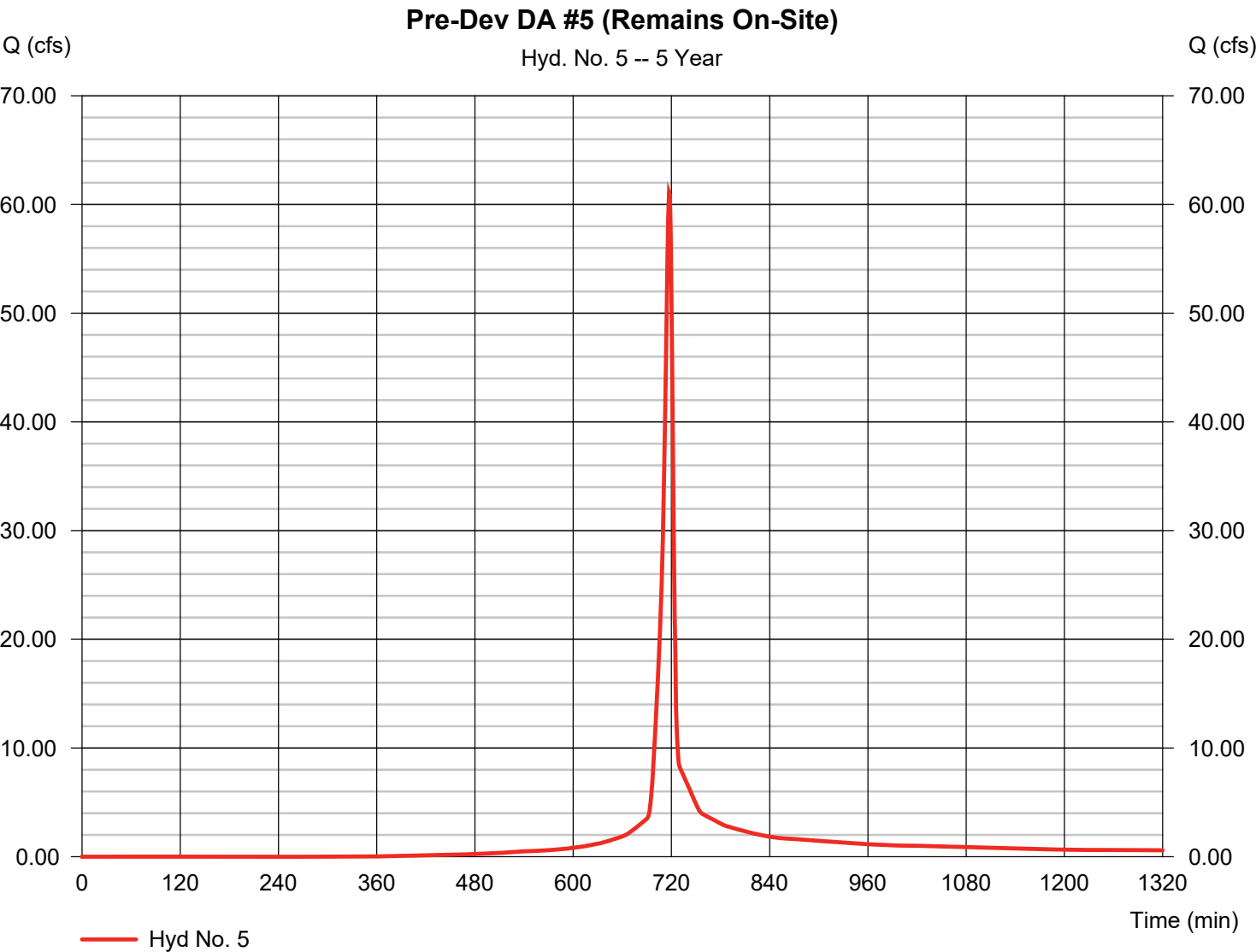
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 5

Pre-Dev DA #5 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	61.12 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	127,538 cuft
Drainage area	=	12.240 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	6.20 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

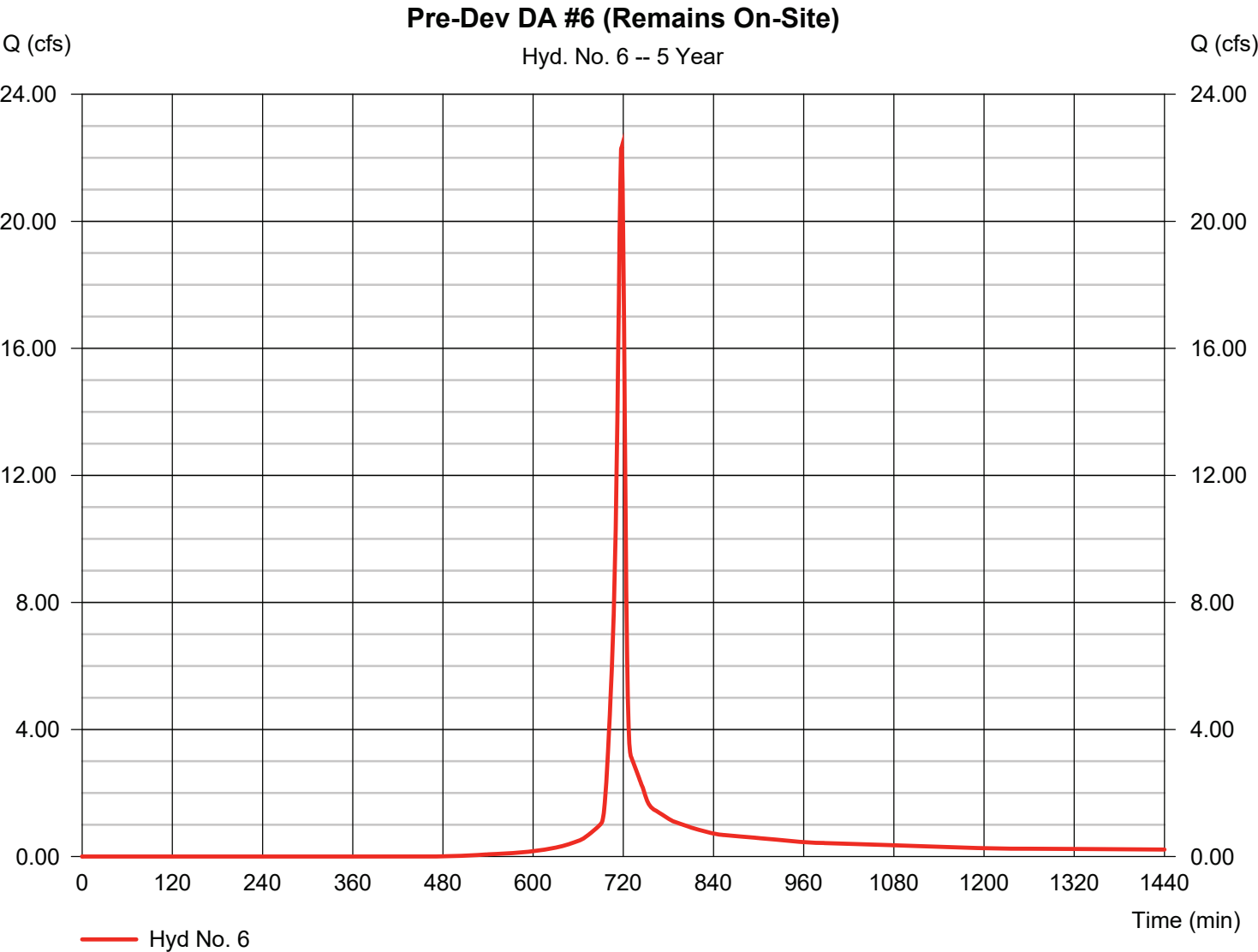
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 6

Pre-Dev DA #6 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	22.35 cfs
Storm frequency	=	5 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	45,383 cuft
Drainage area	=	5.410 ac	Curve number	=	80.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	5.97 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

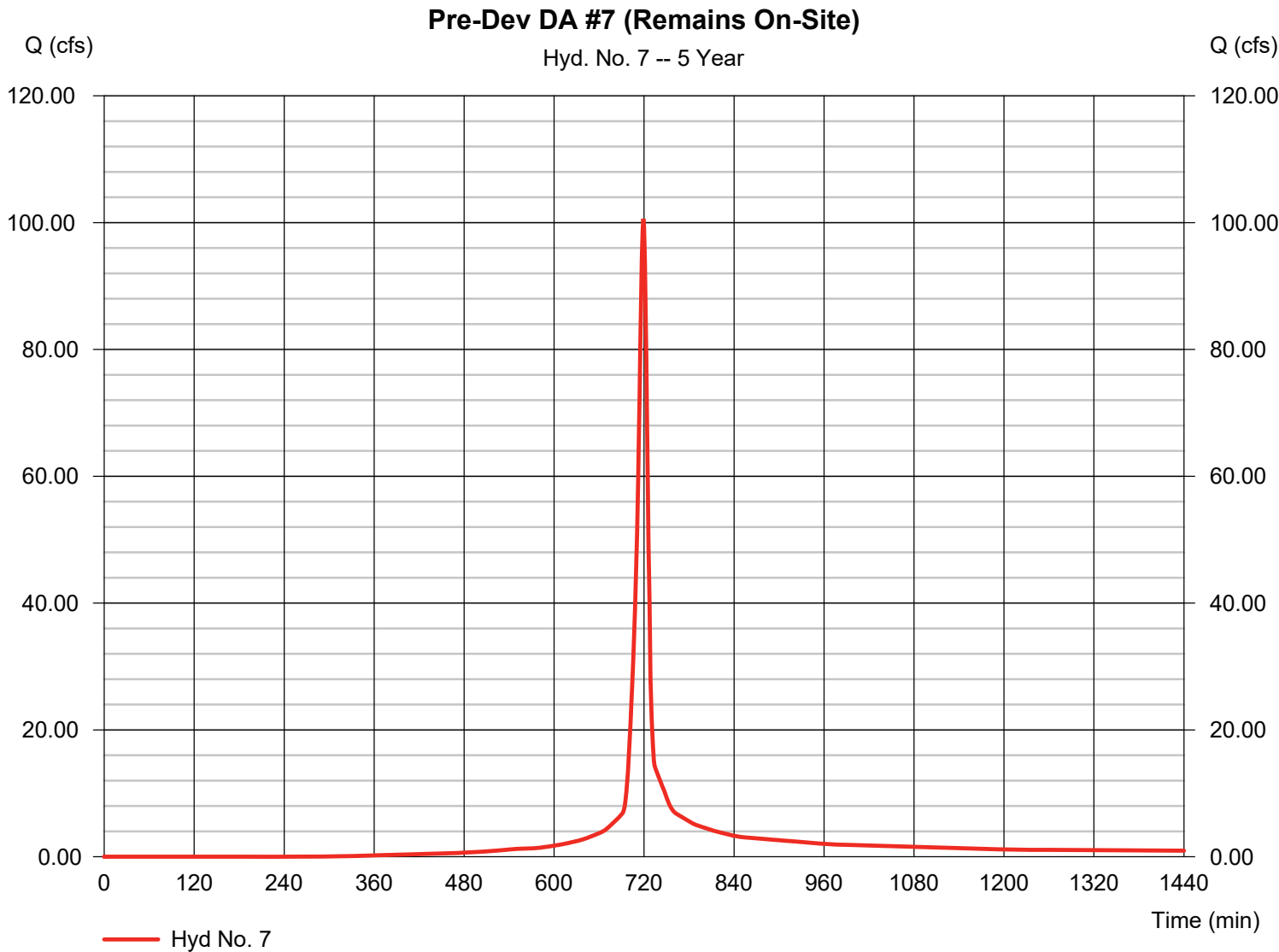
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 7

Pre-Dev DA #7 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	100.62 cfs
Storm frequency	=	5 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	236,422 cuft
Drainage area	=	21.490 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.50 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

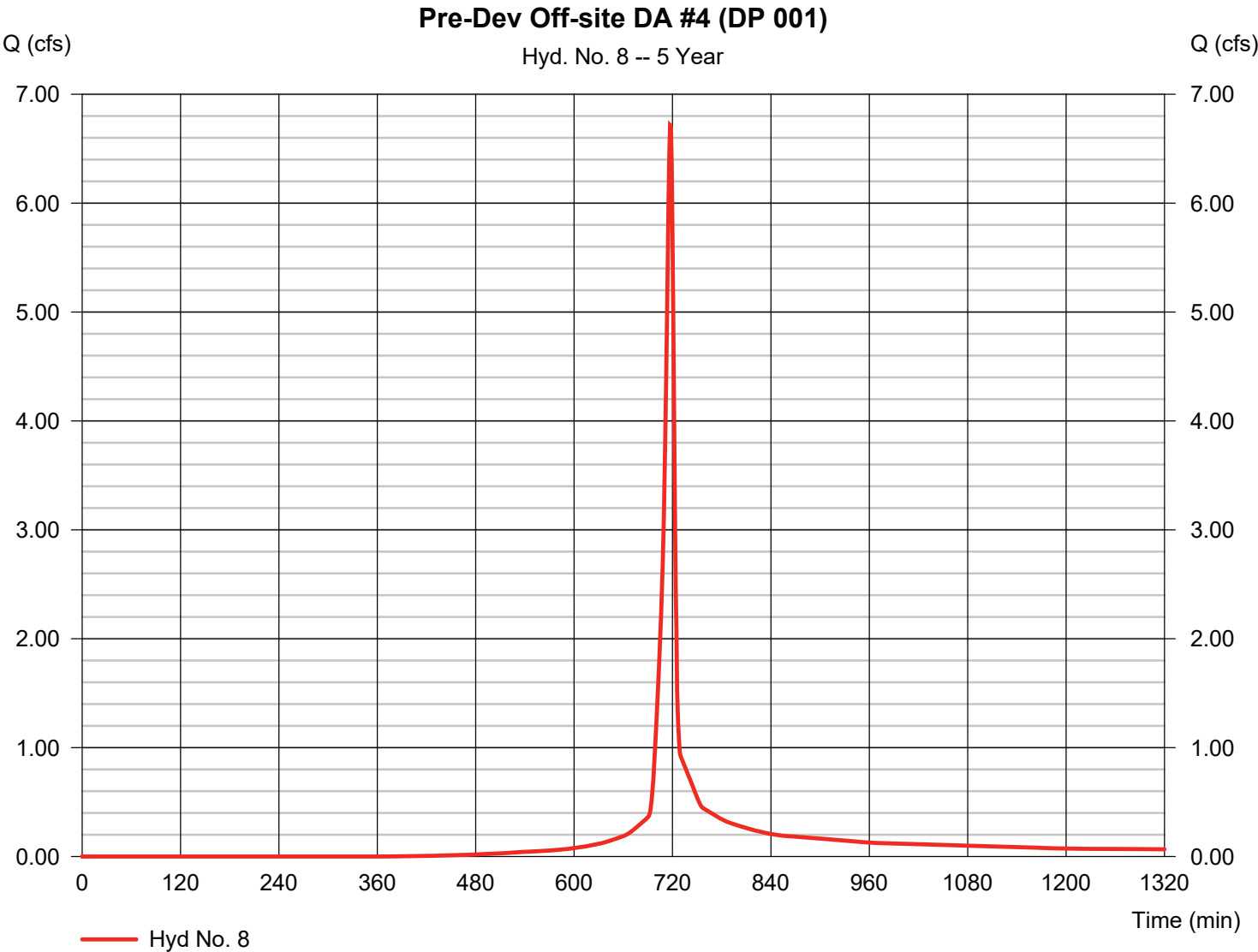


Hydrograph Report

Hyd. No. 8

Pre-Dev Off-site DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.714 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	13,876 cuft
Drainage area	=	1.420 ac	Curve number	=	84.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

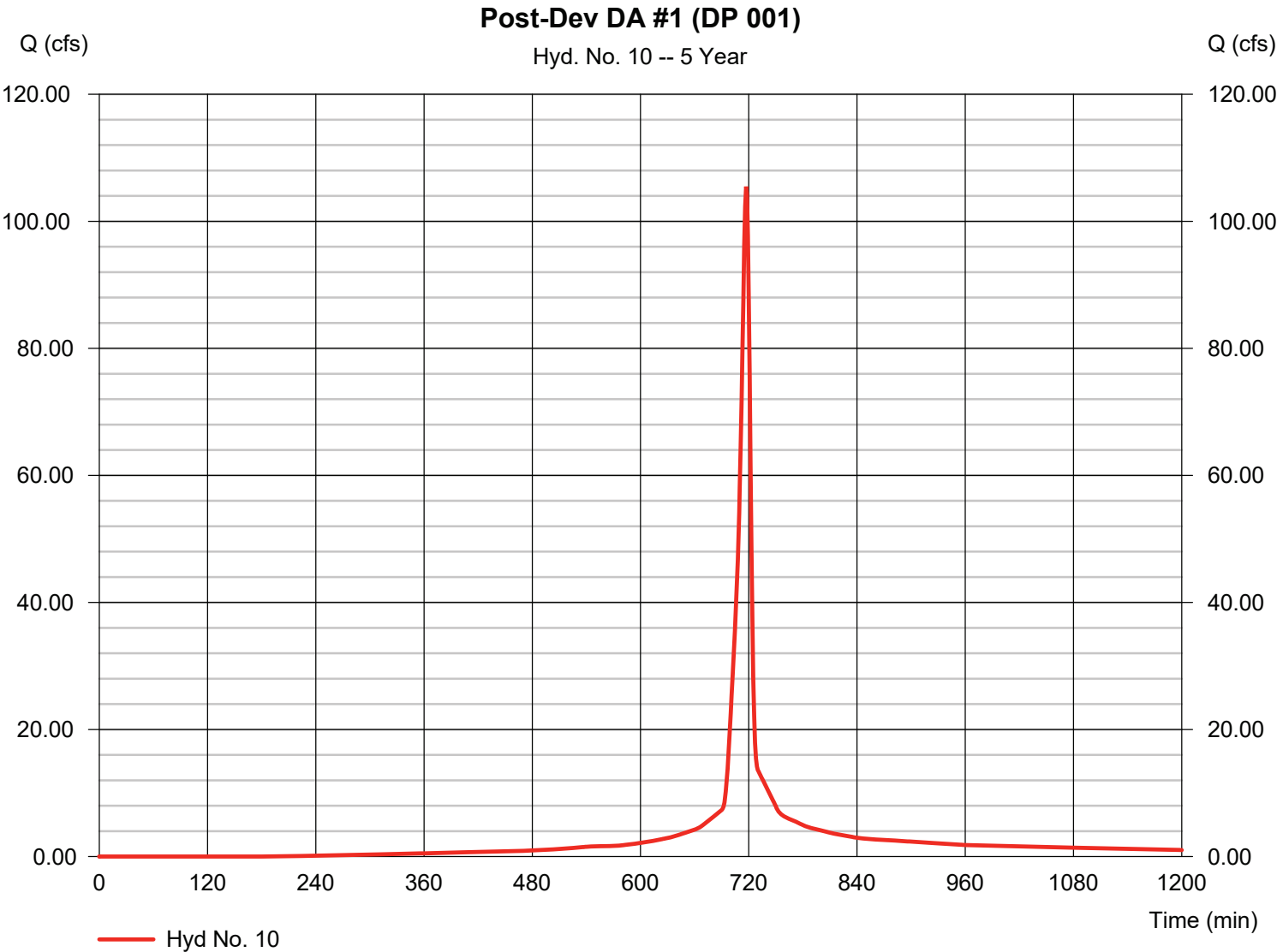
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Thursday, 06 / 19 / 2025

Hyd. No. 10

Post-Dev DA #1 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	105.47 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	232,850 cuft
Drainage area	=	18.160 ac	Curve number	=	93.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 11

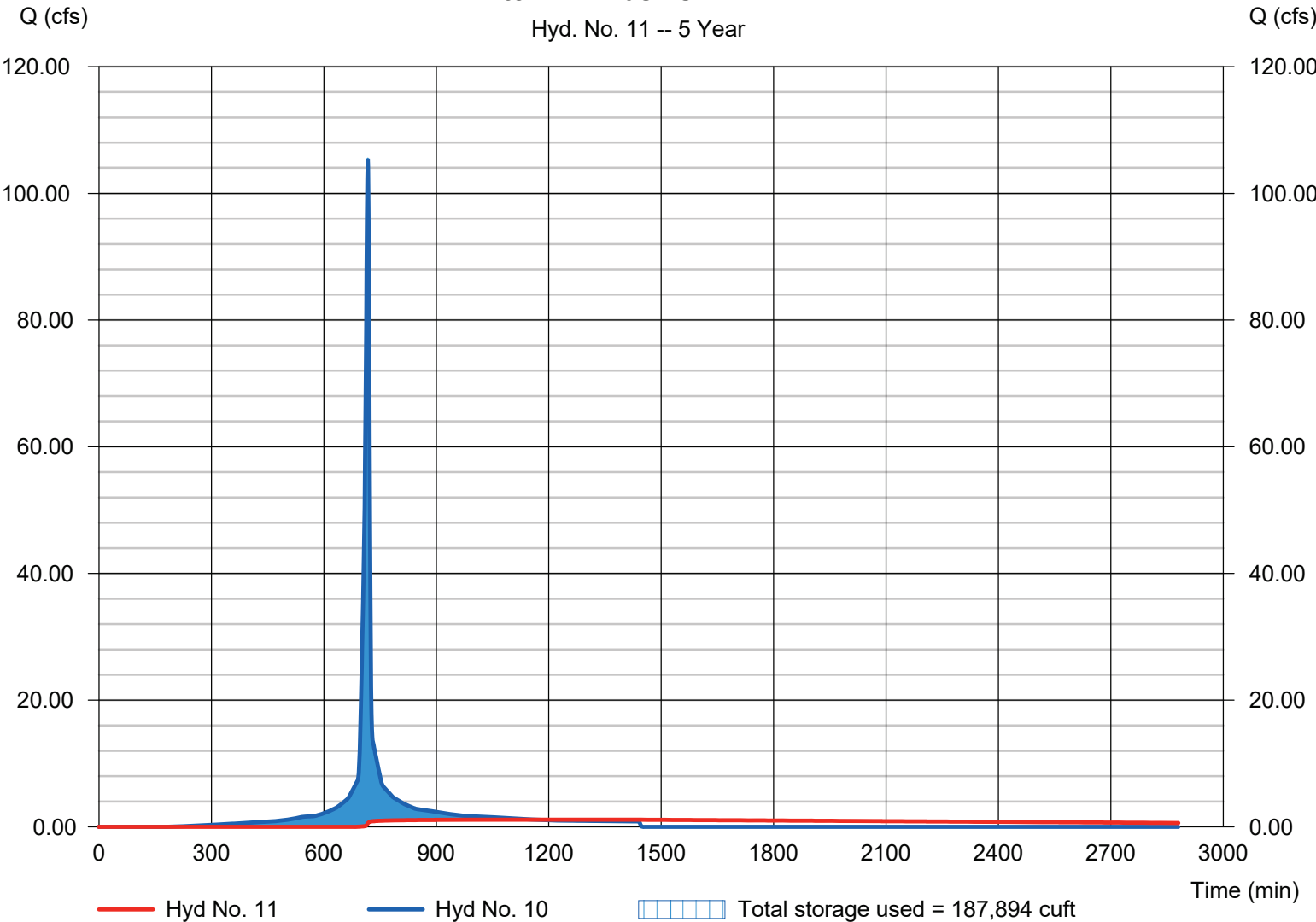
Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 1.129 cfs
Storm frequency	= 5 yrs	Time to peak	= 1165 min
Time interval	= 1 min	Hyd. volume	= 122,500 cuft
Inflow hyd. No.	= 10 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 14.33 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 187,894 cuft

Storage Indication method used.

Rte MRC Basins #12A-B

Hyd. No. 11 -- 5 Year

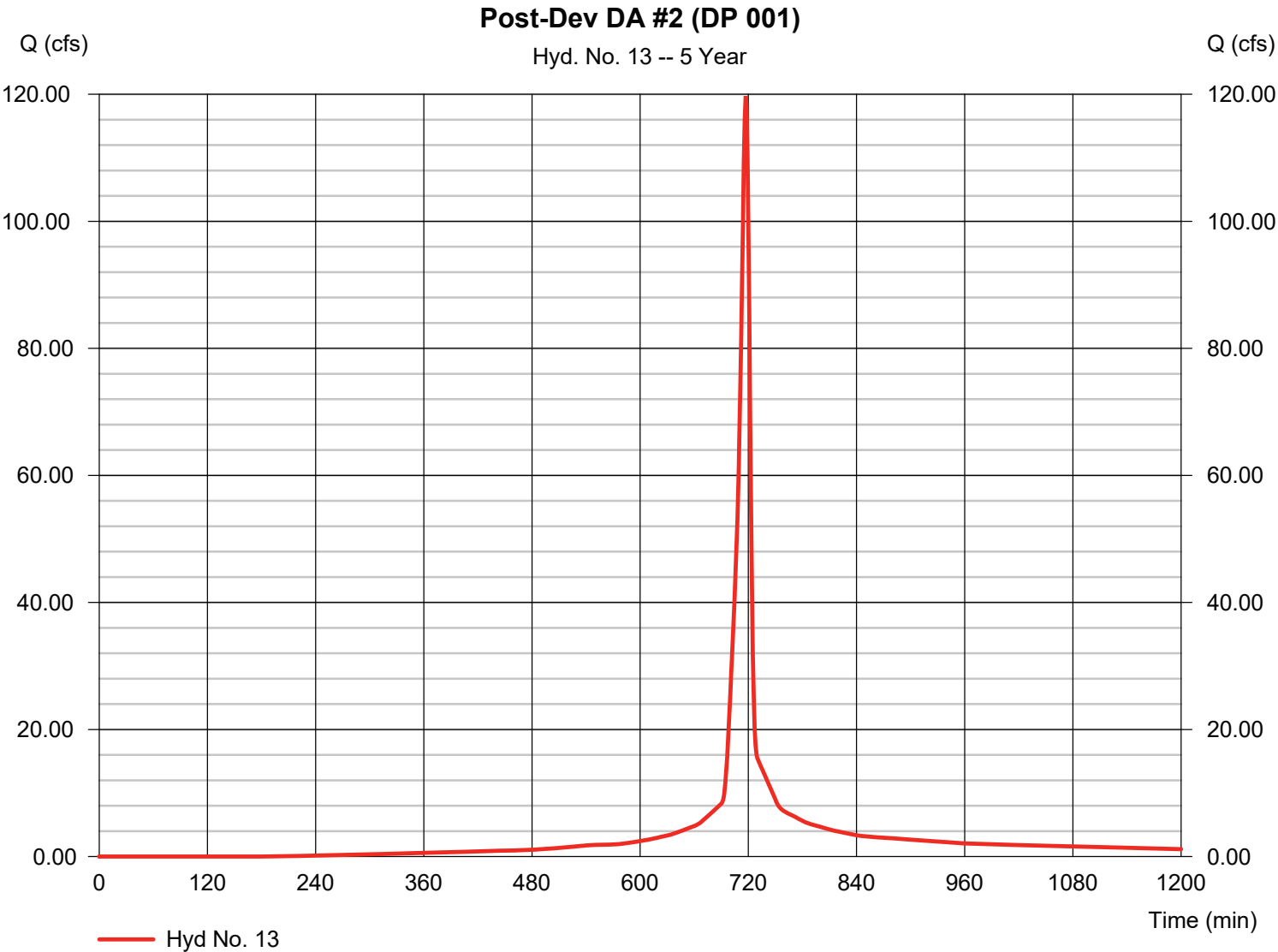


Hydrograph Report

Hyd. No. 13

Post-Dev DA #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	119.70 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	264,265 cuft
Drainage area	=	20.610 ac	Curve number	=	93.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

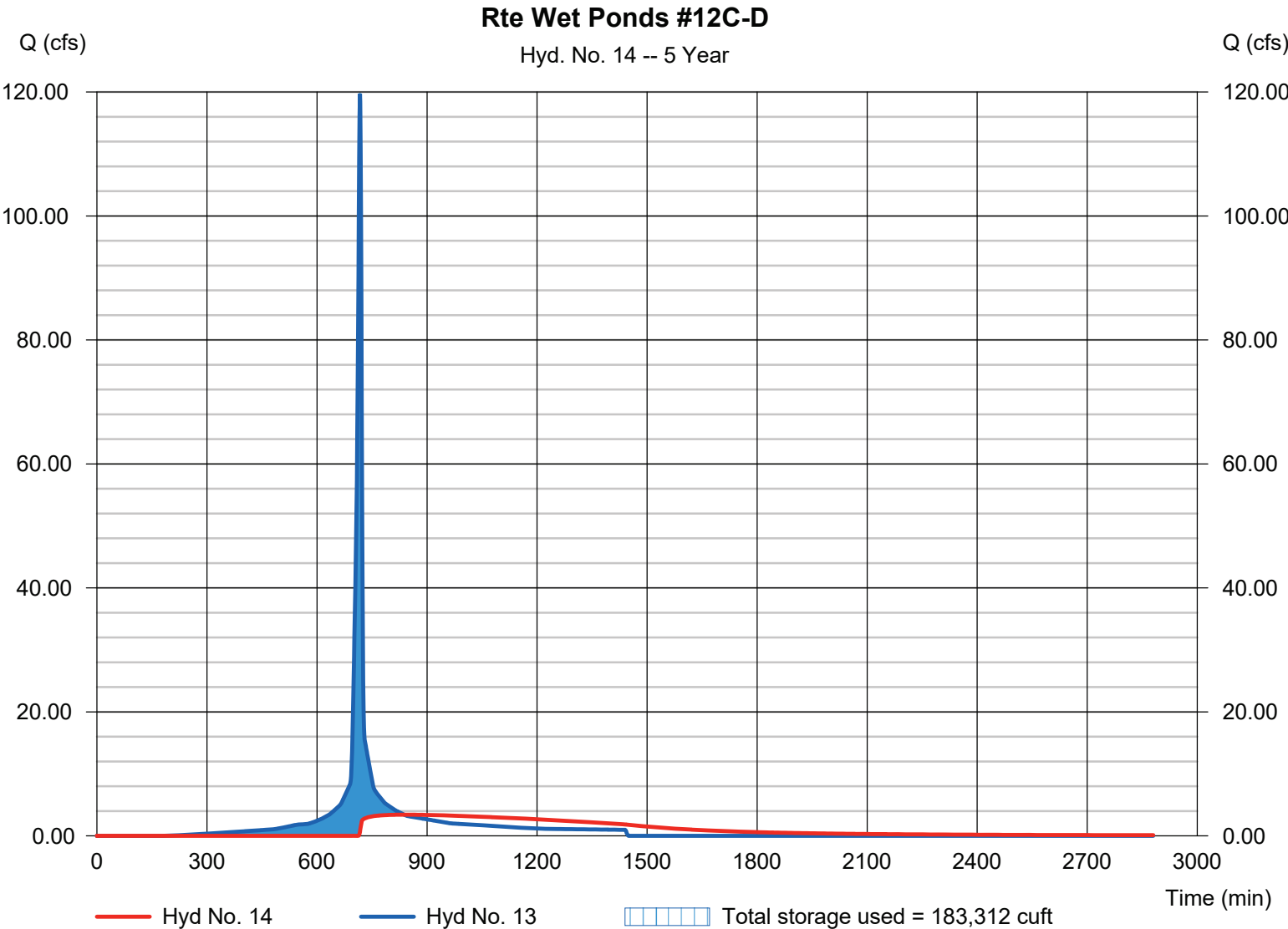
Thursday, 06 / 19 / 2025

Hyd. No. 14

Rte Wet Ponds #12C-D

Hydrograph type	= Reservoir	Peak discharge	= 3.412 cfs
Storm frequency	= 5 yrs	Time to peak	= 838 min
Time interval	= 1 min	Hyd. volume	= 162,269 cuft
Inflow hyd. No.	= 13 - Post-Dev DA #2 (DP 001)	Max. Elevation	= 11.49 ft
Reservoir name	= Wet Pond #12C-D	Max. Storage	= 183,312 cuft

Storage Indication method used.

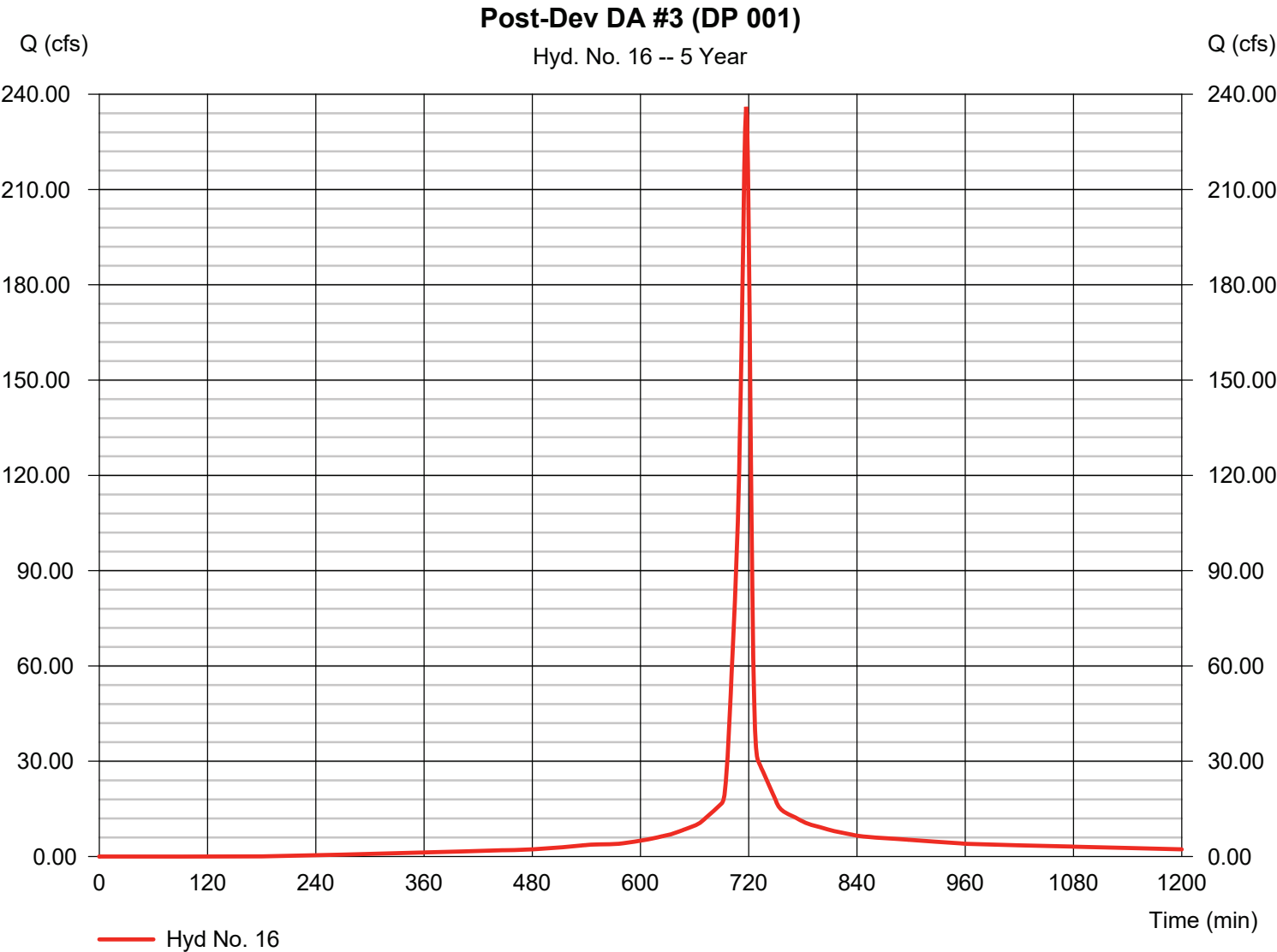


Hydrograph Report

Hyd. No. 16

Post-Dev DA #3 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	236.03 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	525,797 cuft
Drainage area	=	40.140 ac	Curve number	=	93.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hyd. No. 17

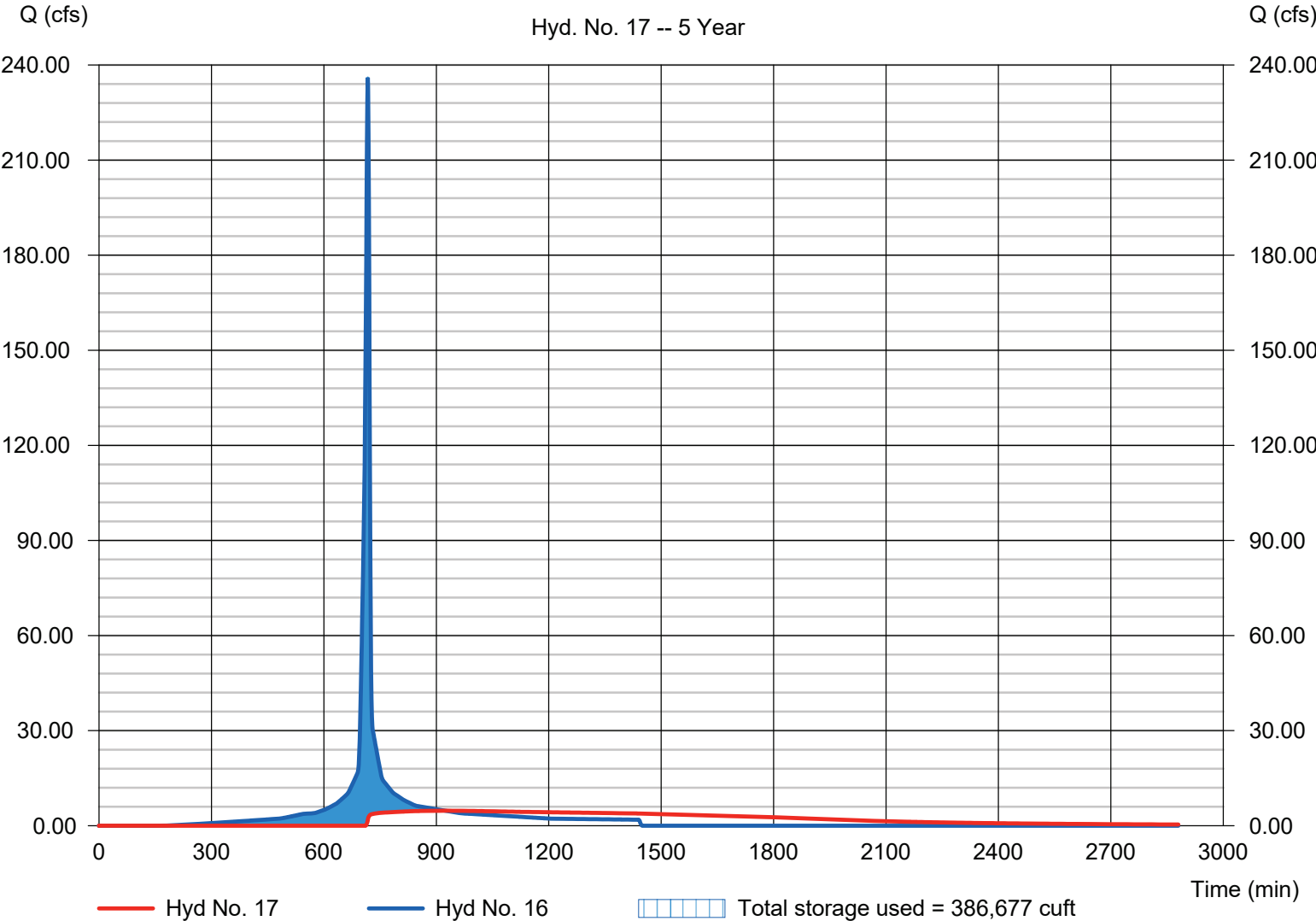
Rte Wet Ponds #13A-C

Hydrograph type	= Reservoir	Peak discharge	= 4.726 cfs
Storm frequency	= 5 yrs	Time to peak	= 925 min
Time interval	= 1 min	Hyd. volume	= 329,569 cuft
Inflow hyd. No.	= 16 - Post-Dev DA #3 (DP 001)	Max. Elevation	= 12.10 ft
Reservoir name	= Wet Pond #13A-C	Max. Storage	= 386,677 cuft

Storage Indication method used.

Rte Wet Ponds #13A-C

Hyd. No. 17 -- 5 Year

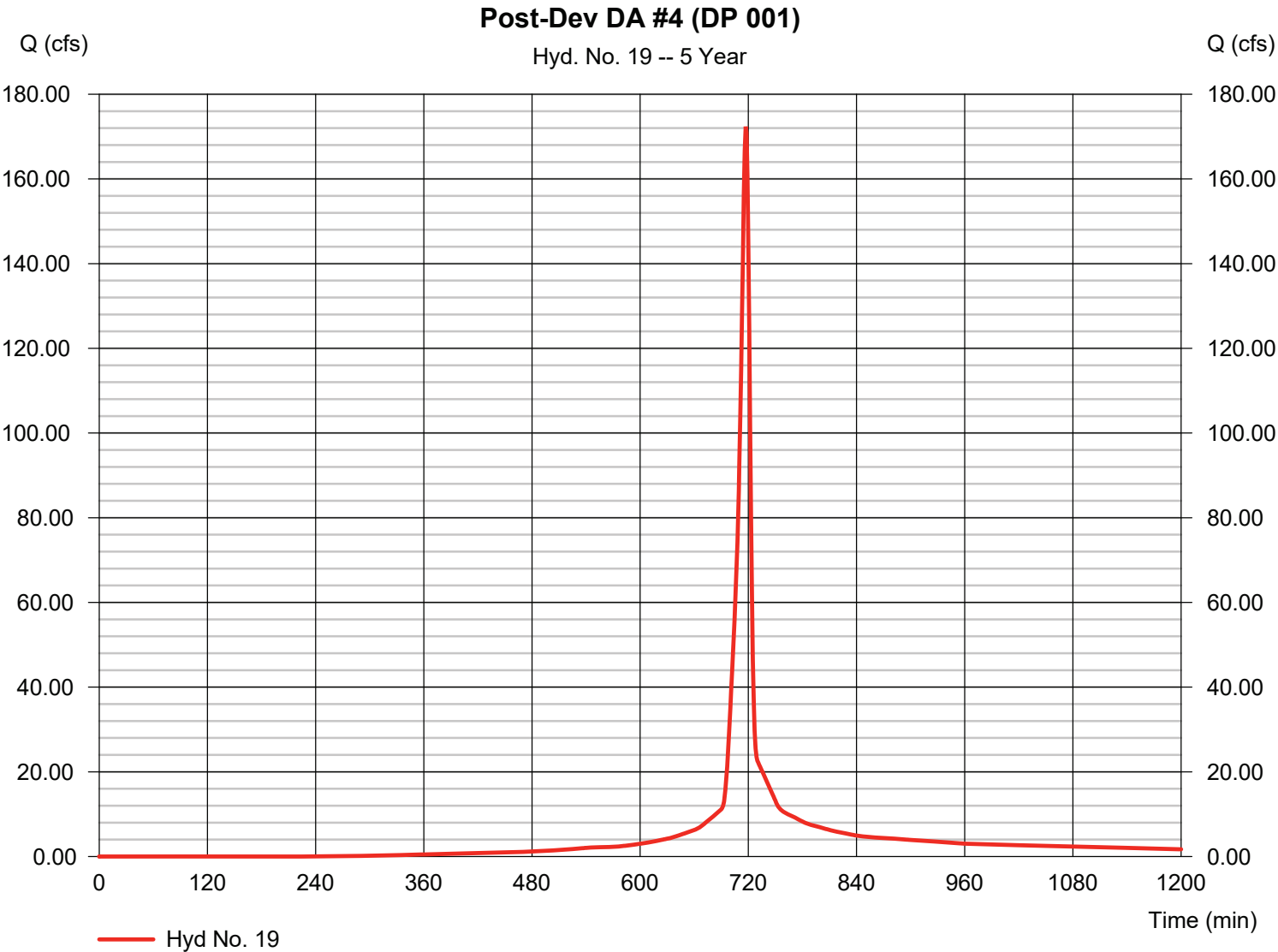


Hydrograph Report

Hyd. No. 19

Post-Dev DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	172.37 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	370,477 cuft
Drainage area	=	31.230 ac	Curve number	=	90.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



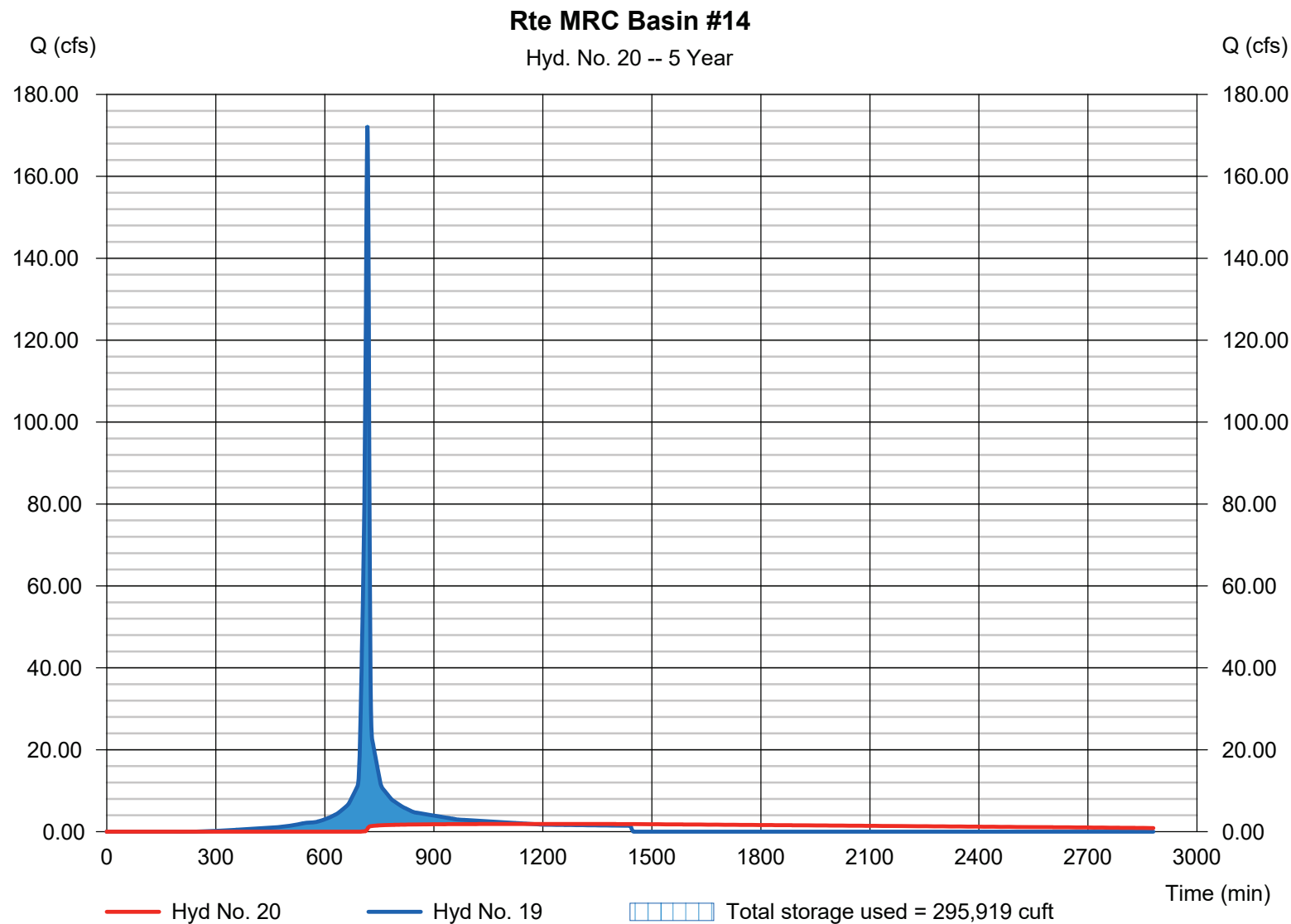
Hydrograph Report

Hyd. No. 20

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 1.882 cfs
Storm frequency	= 5 yrs	Time to peak	= 1169 min
Time interval	= 1 min	Hyd. volume	= 198,094 cuft
Inflow hyd. No.	= 19 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 14.40 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 295,919 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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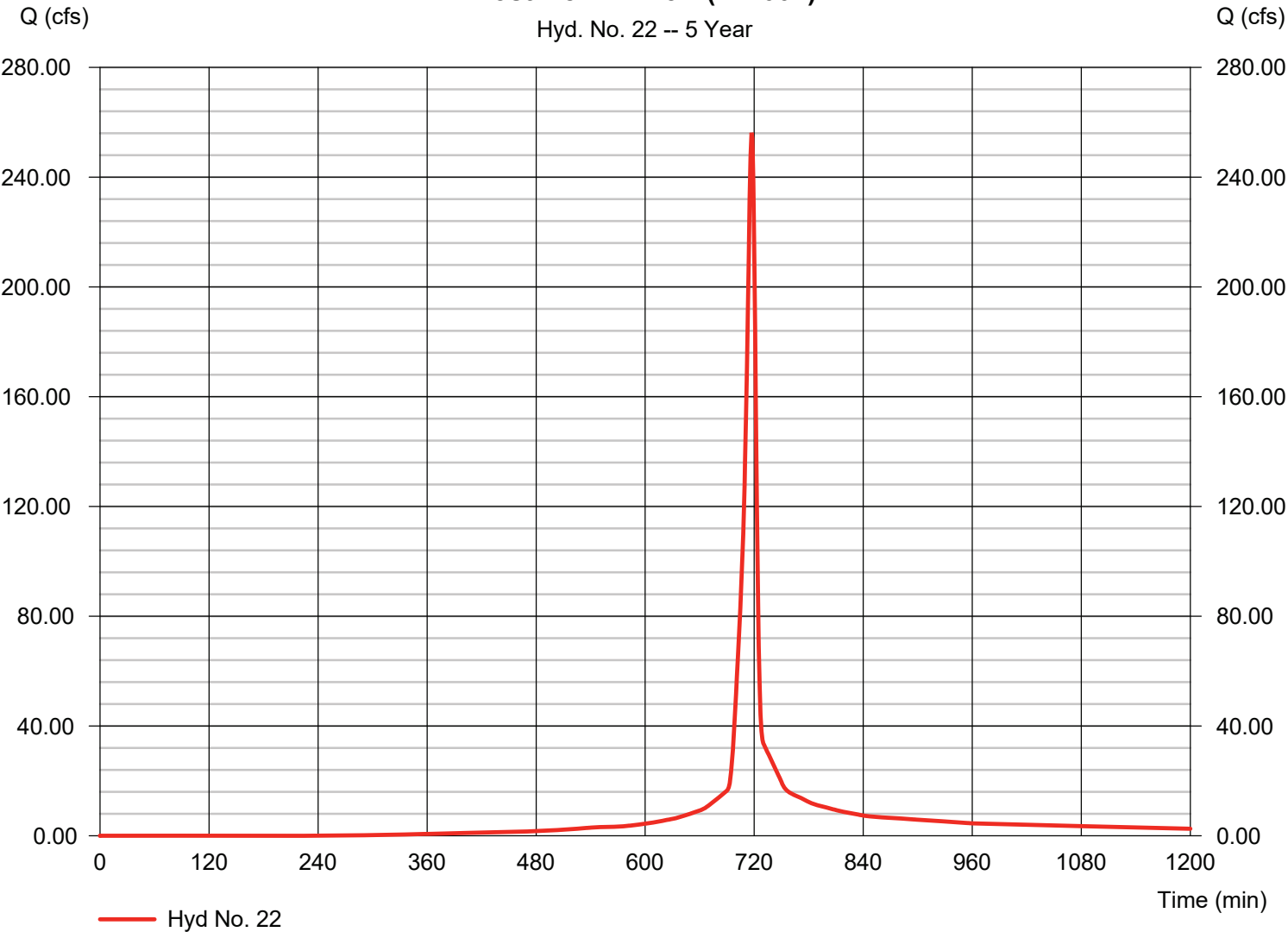
Hyd. No. 22

Post-Dev DA #5A (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	256.18 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	549,114 cuft
Drainage area	=	46.730 ac	Curve number	=	90.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

Post-Dev DA #5A (DP 001)

Hyd. No. 22 -- 5 Year



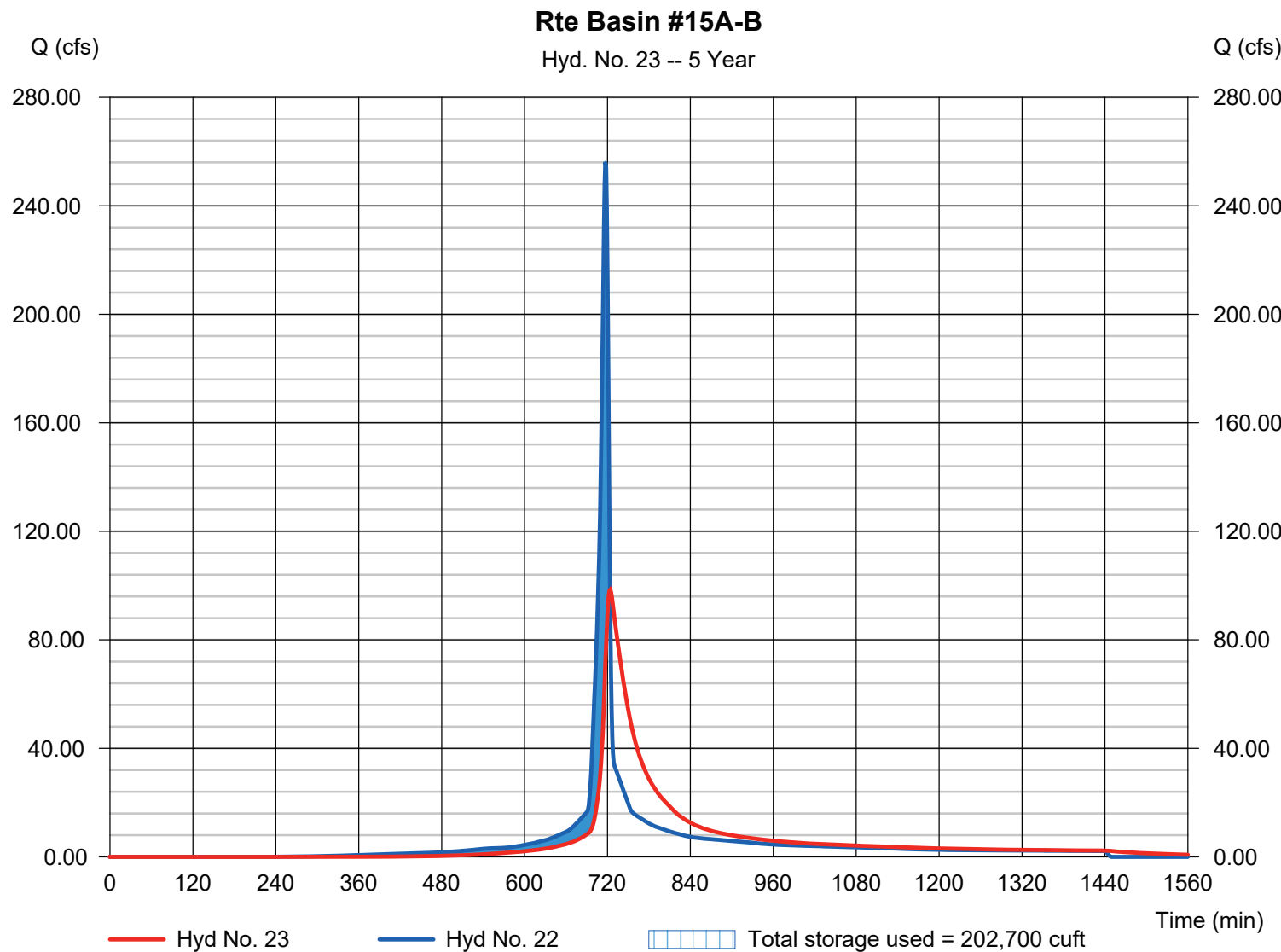
Hydrograph Report

Hyd. No. 23

Rte Basin #15A-B

Hydrograph type	= Reservoir	Peak discharge	= 98.54 cfs
Storm frequency	= 5 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 548,041 cuft
Inflow hyd. No.	= 22 - Post-Dev DA #5A (DP 001)	Max. Elevation	= 15.40 ft
Reservoir name	= Basin #15A-B	Max. Storage	= 202,700 cuft

Storage Indication method used.



Hydrograph Report

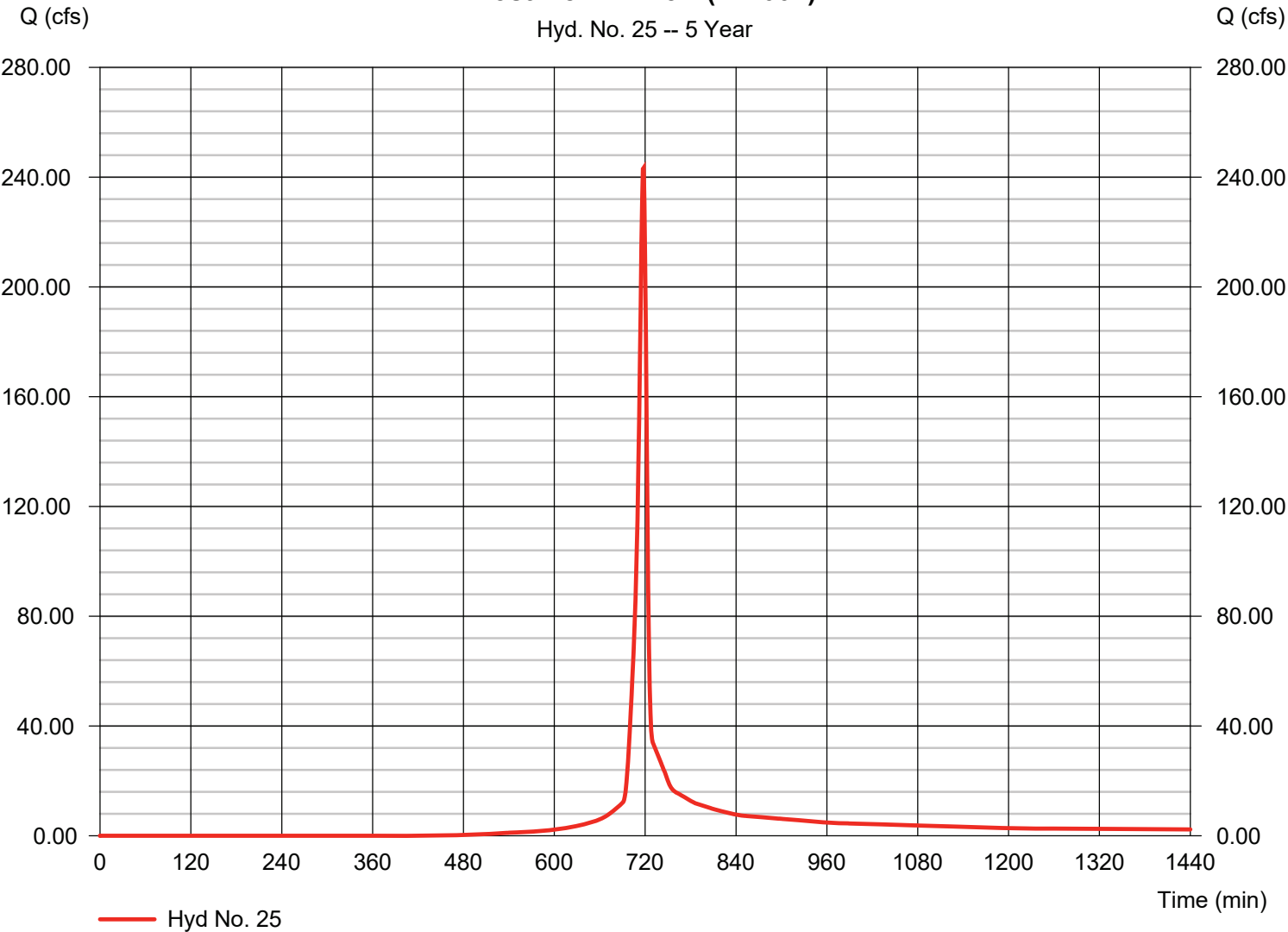
Hyd. No. 25

Post-Dev DA #5B (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 243.43 cfs
Storm frequency	= 5 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 497,570 cuft
Drainage area	= 55.570 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Post-Dev DA #5B (DP 001)

Hyd. No. 25 -- 5 Year

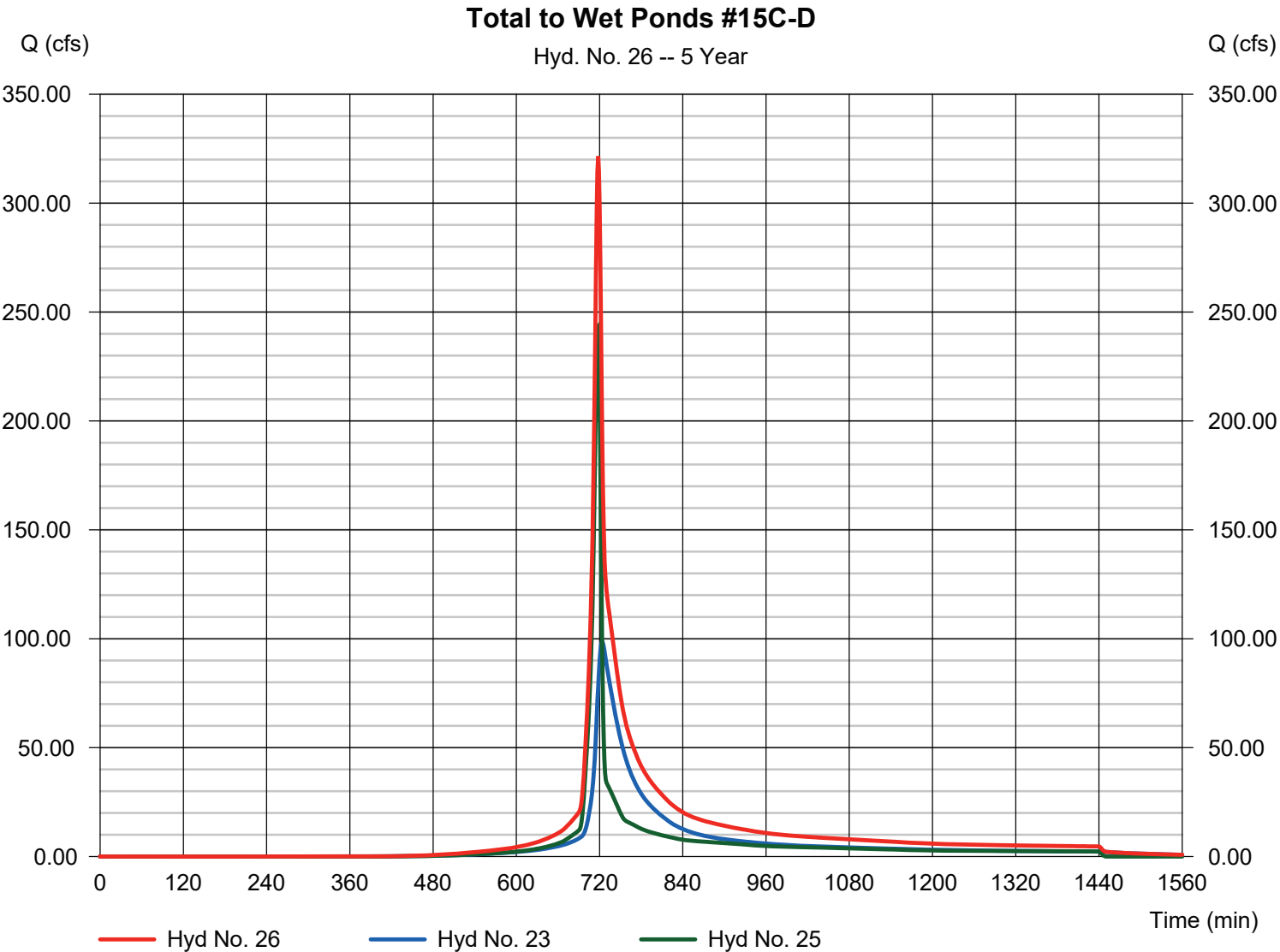


Hydrograph Report

Hyd. No. 26

Total to Wet Ponds #15C-D

Hydrograph type	= Combine	Peak discharge	= 321.49 cfs
Storm frequency	= 5 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 1,045,611 cuft
Inflow hyds.	= 23, 25	Contrib. drain. area	= 55.570 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

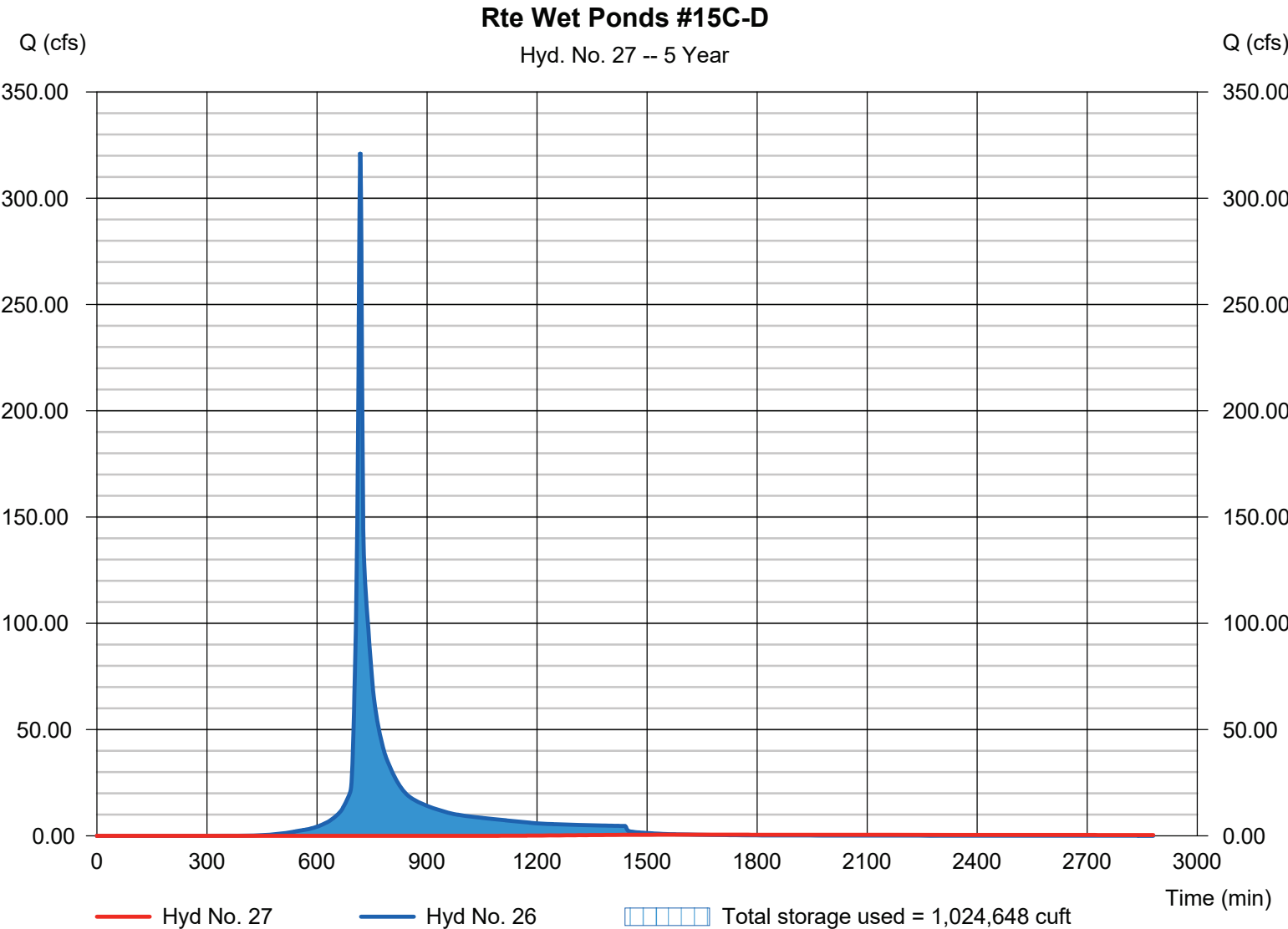
Thursday, 06 / 19 / 2025

Hyd. No. 27

Rte Wet Ponds #15C-D

Hydrograph type	= Reservoir	Peak discharge	= 0.549 cfs
Storm frequency	= 5 yrs	Time to peak	= 1631 min
Time interval	= 1 min	Hyd. volume	= 46,705 cuft
Inflow hyd. No.	= 26 - Total to Wet Ponds #15C-D	Max. Elevation	= 10.30 ft
Reservoir name	= Wet Pond #15C-D	Max. Storage	= 1,024,648 cuft

Storage Indication method used.

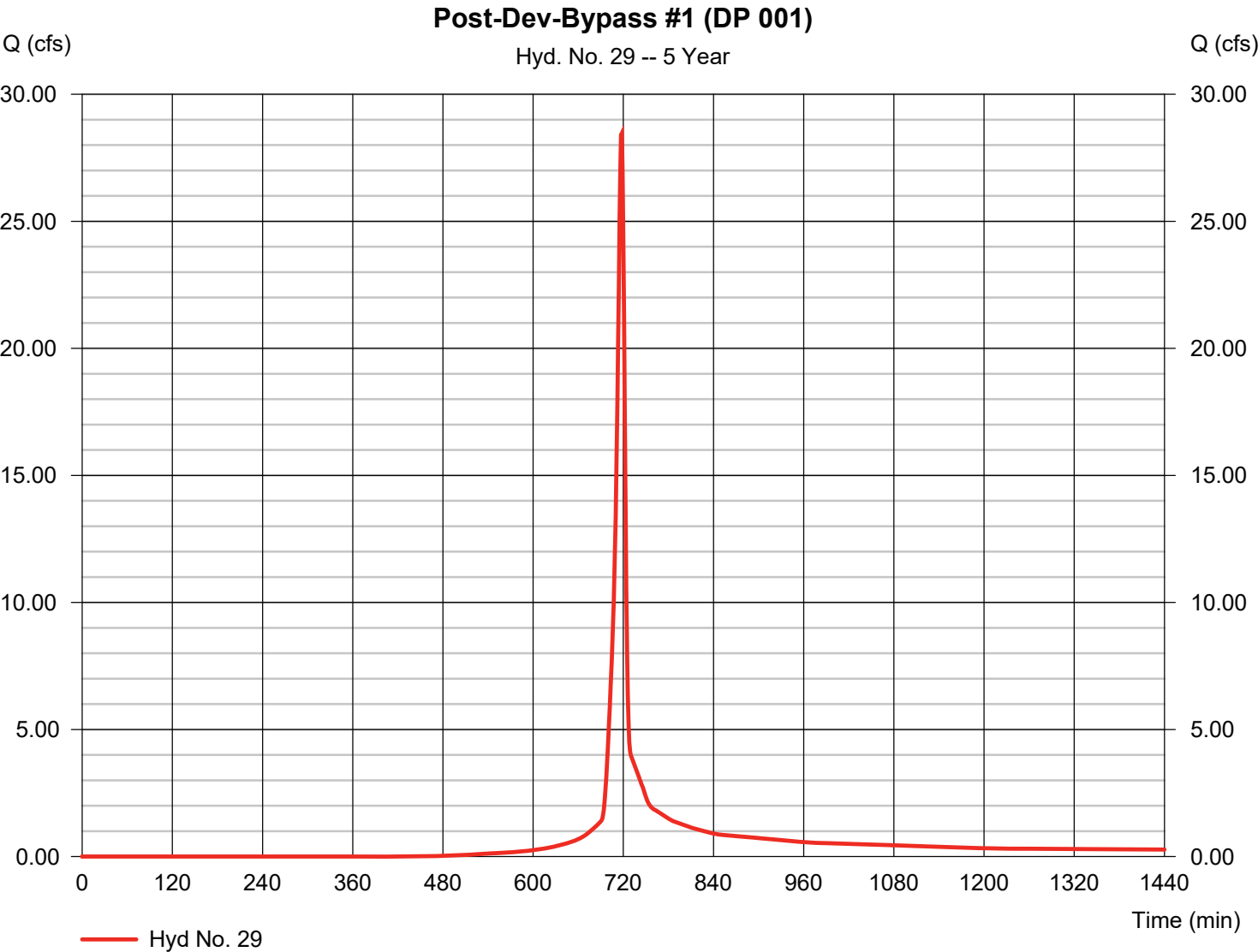


Hydrograph Report

Hyd. No. 29

Post-Dev-Bypass #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 28.46 cfs
Storm frequency	= 5 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 58,079 cuft
Drainage area	= 6.580 ac	Curve number	= 81.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

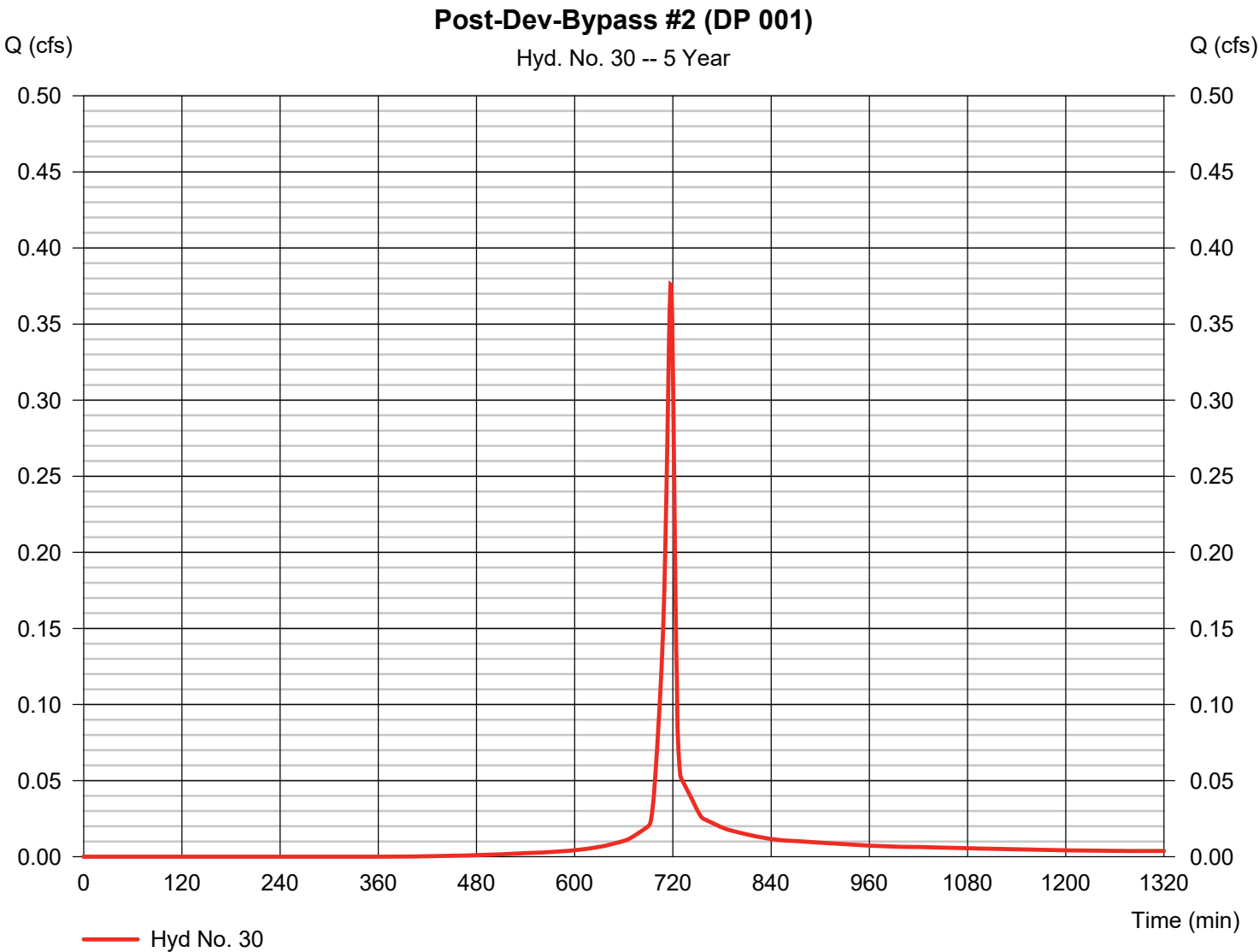


Hydrograph Report

Hyd. No. 30

Post-Dev-Bypass #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.376 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	776 cuft
Drainage area	=	0.080 ac	Curve number	=	84.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

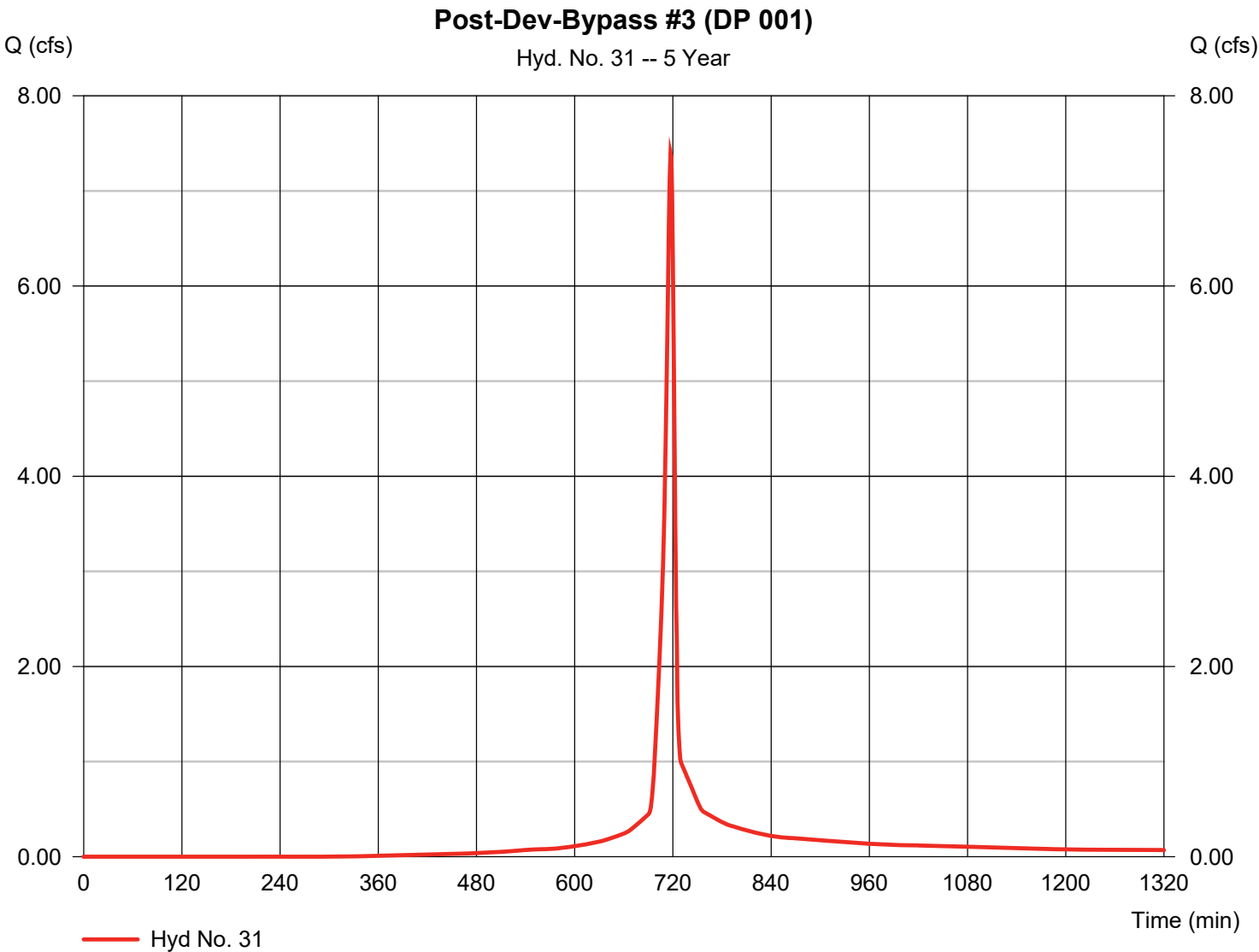


Hydrograph Report

Hyd. No. 31

Post-Dev-Bypass #3 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	7.399 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	15,597 cuft
Drainage area	=	1.420 ac	Curve number	=	88.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

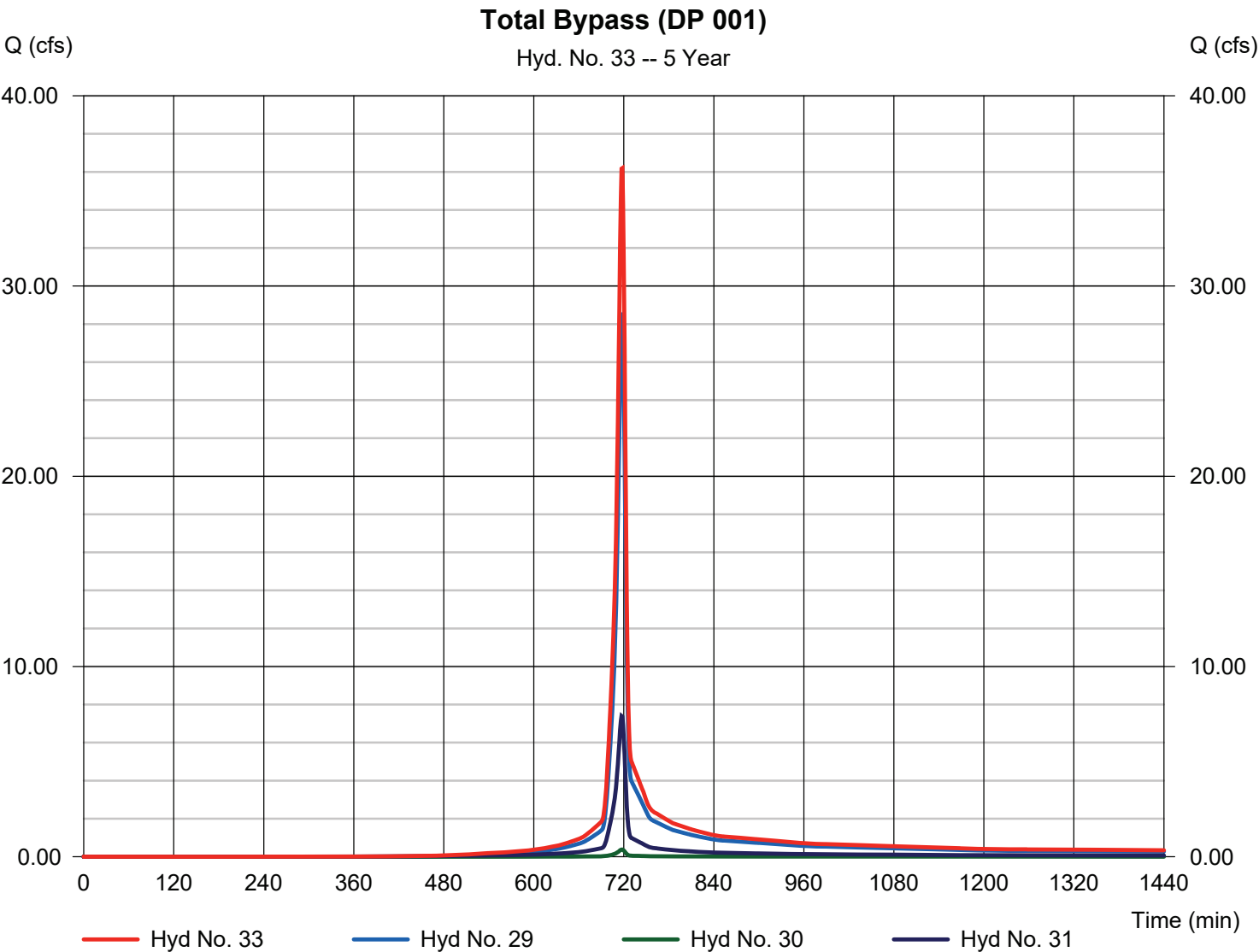


Hydrograph Report

Hyd. No. 33

Total Bypass (DP 001)

Hydrograph type	= Combine	Peak discharge	= 36.20 cfs
Storm frequency	= 5 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 74,453 cuft
Inflow hyds.	= 29, 30, 31	Contrib. drain. area	= 8.080 ac

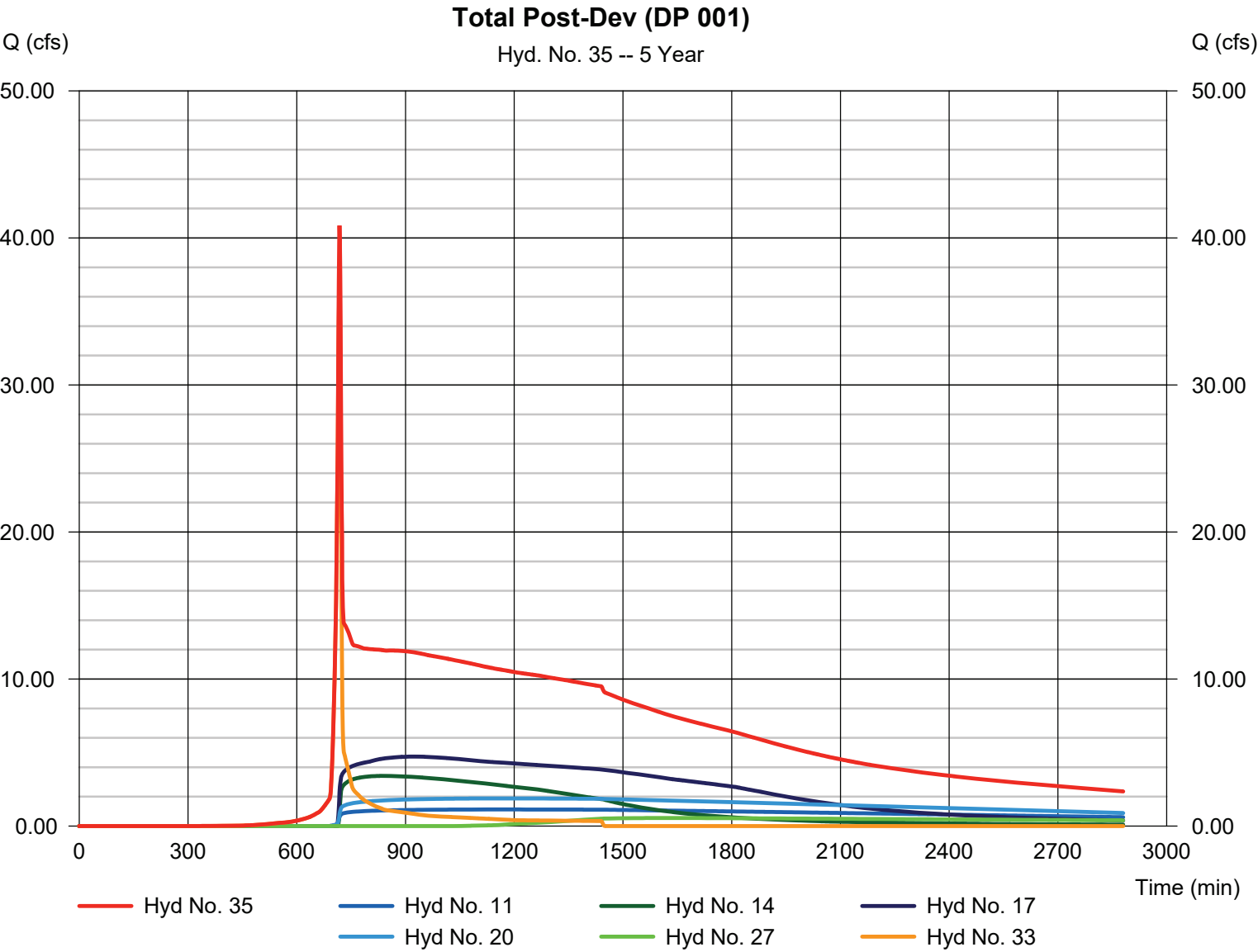


Hydrograph Report

Hyd. No. 35

Total Post-Dev (DP 001)

Hydrograph type	= Combine	Peak discharge	= 40.84 cfs
Storm frequency	= 5 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 933,590 cuft
Inflow hyds.	= 11, 14, 17, 20, 27, 33	Contrib. drain. area	= 0.000 ac

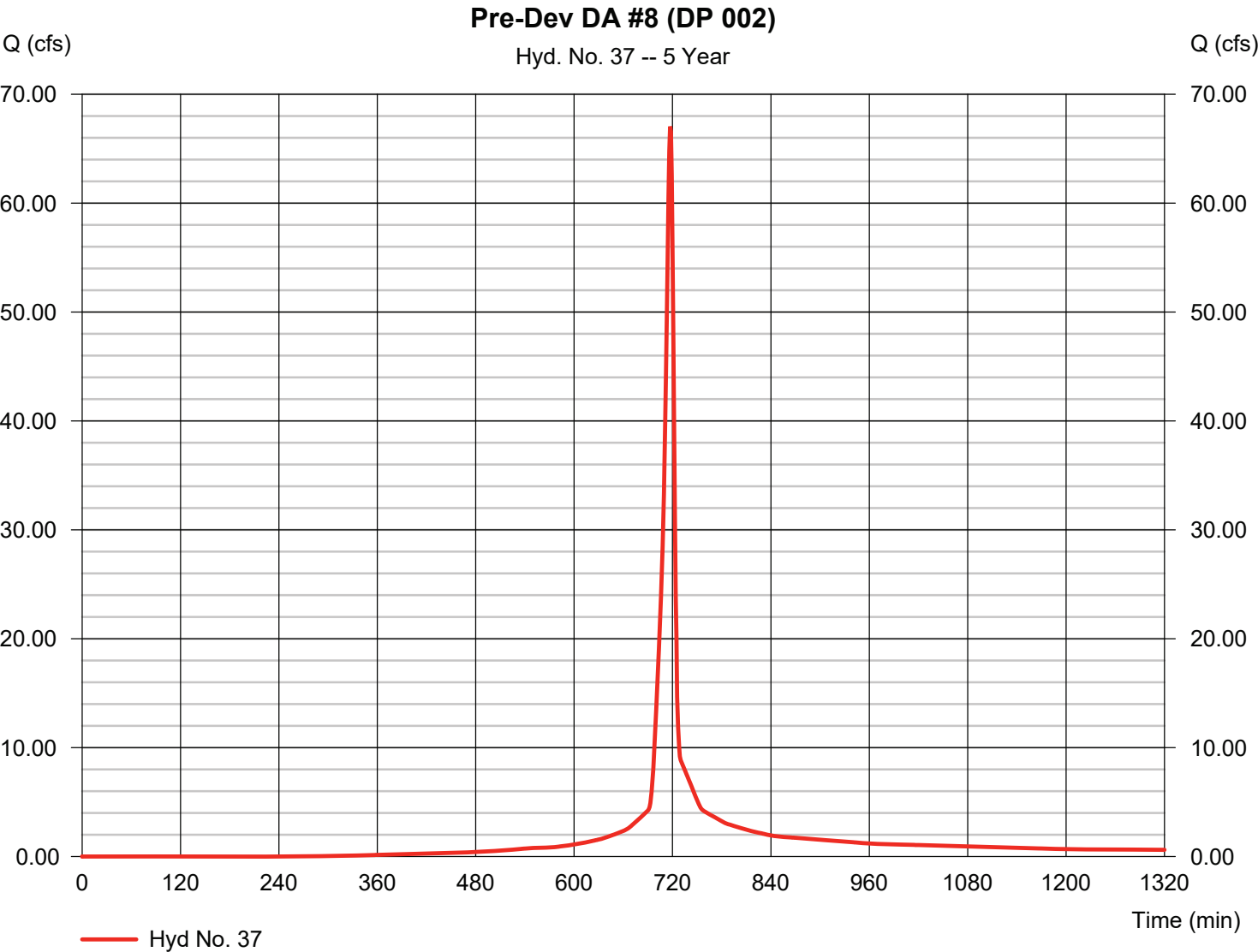


Hydrograph Report

Hyd. No. 37

Pre-Dev DA #8 (DP 002)

Hydrograph type	= SCS Runoff	Peak discharge	= 67.04 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 142,954 cuft
Drainage area	= 12.400 ac	Curve number	= 89.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

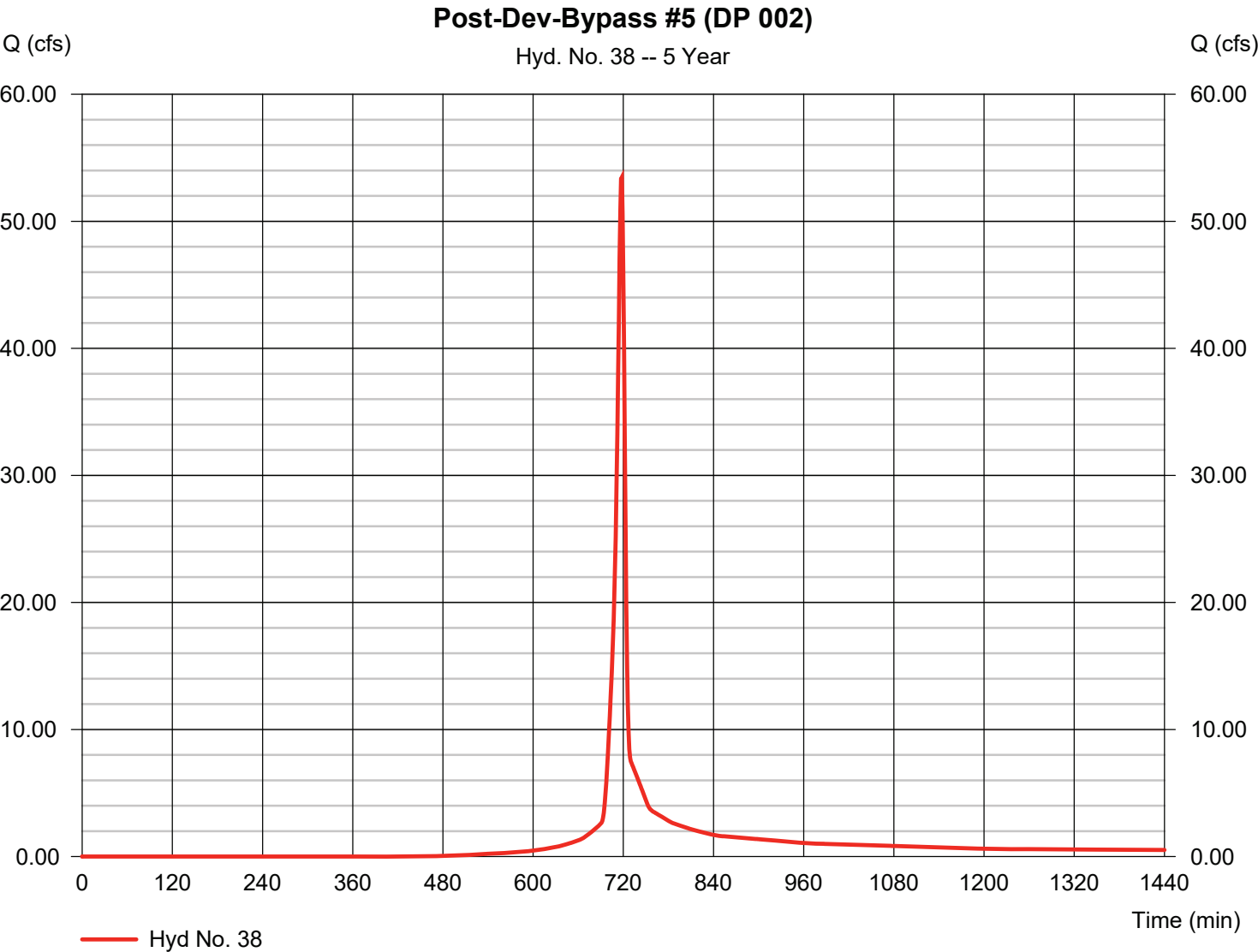
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Hyd. No. 38

Post-Dev-Bypass #5 (DP 002)

Hydrograph type	=	SCS Runoff	Peak discharge	=	53.47 cfs
Storm frequency	=	5 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	109,058 cuft
Drainage area	=	12.400 ac	Curve number	=	81.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

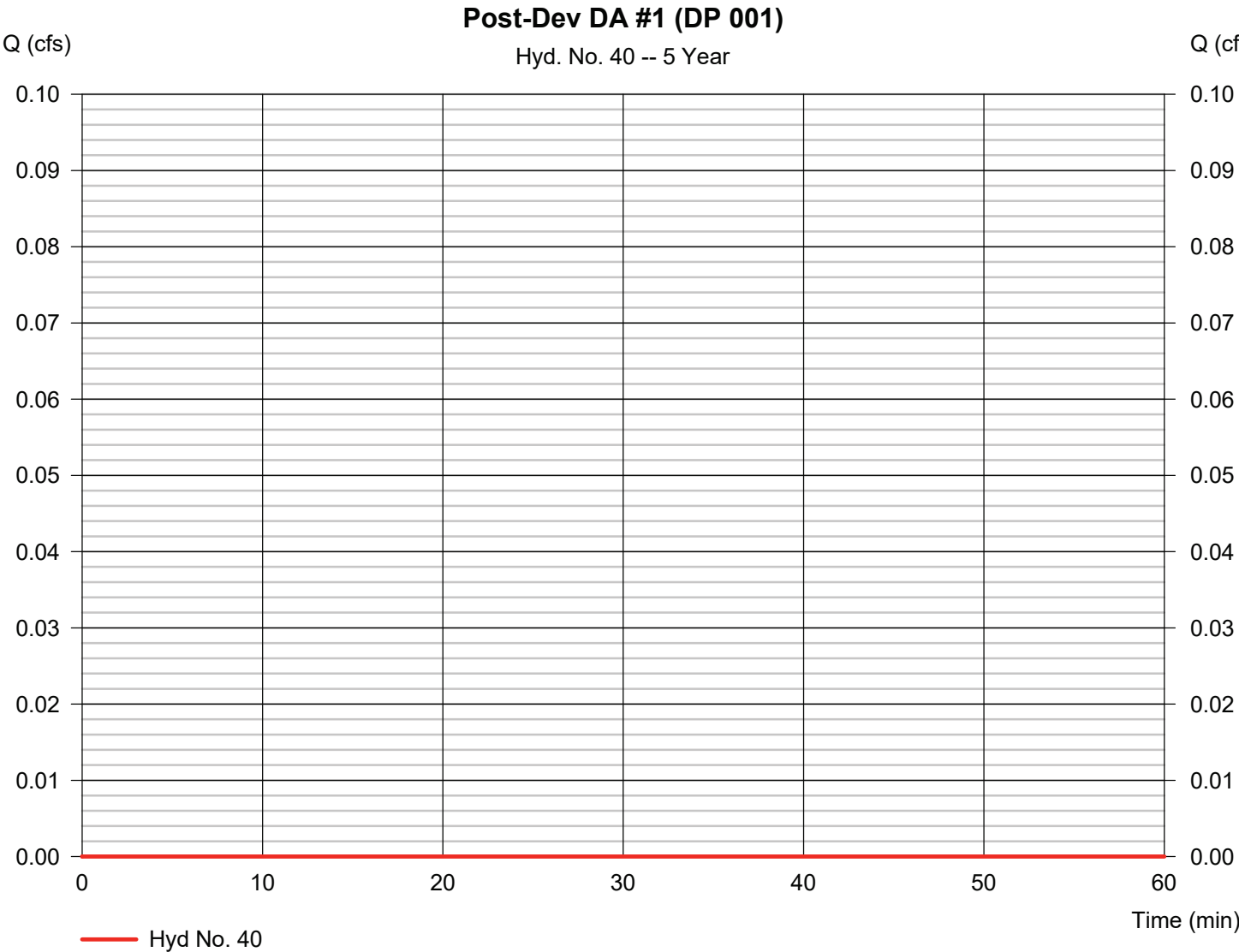


Hydrograph Report

Hyd. No. 40

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



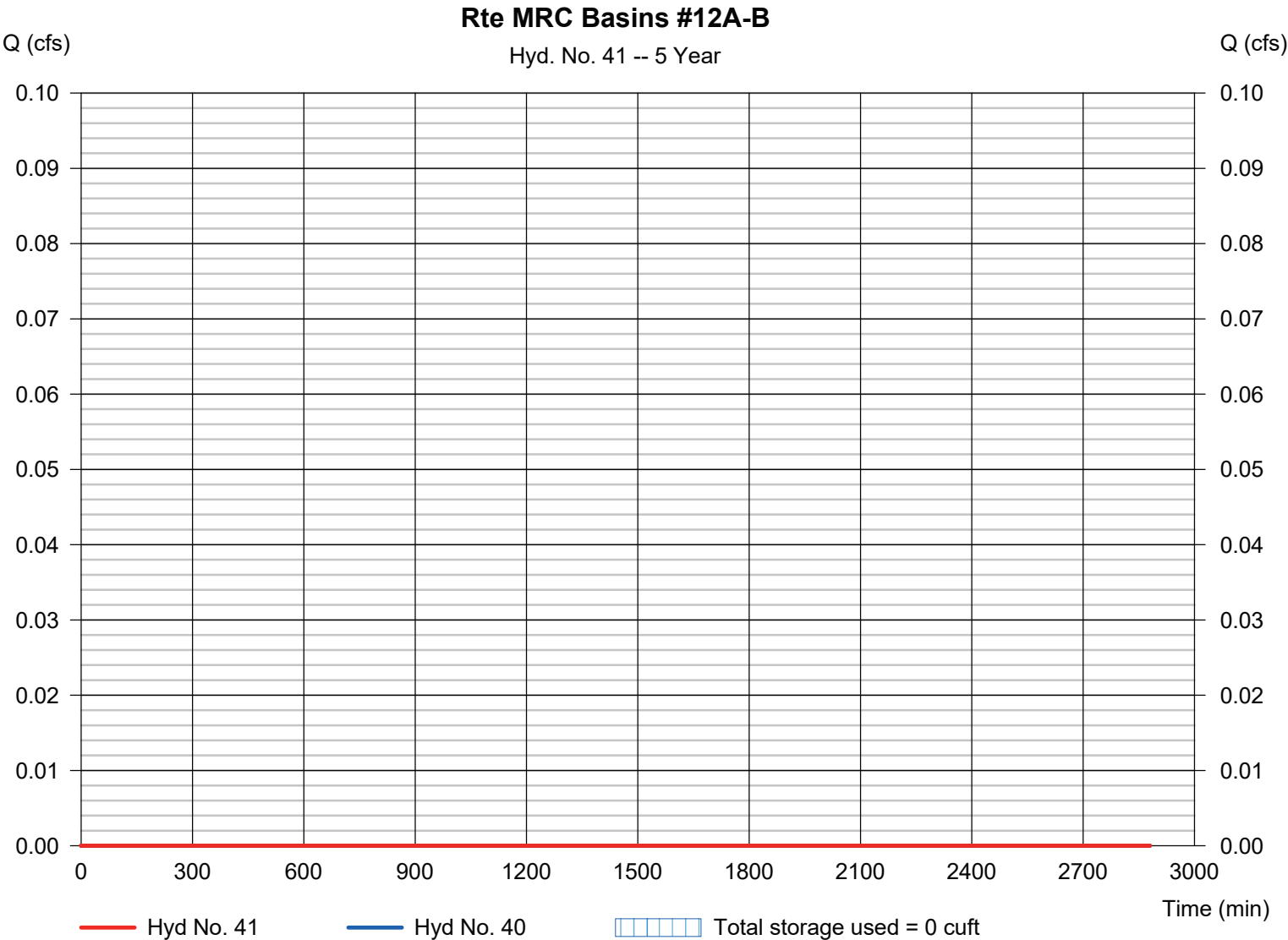
Hydrograph Report

Hyd. No. 41

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 40 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 0 cuft

Storage Indication method used.

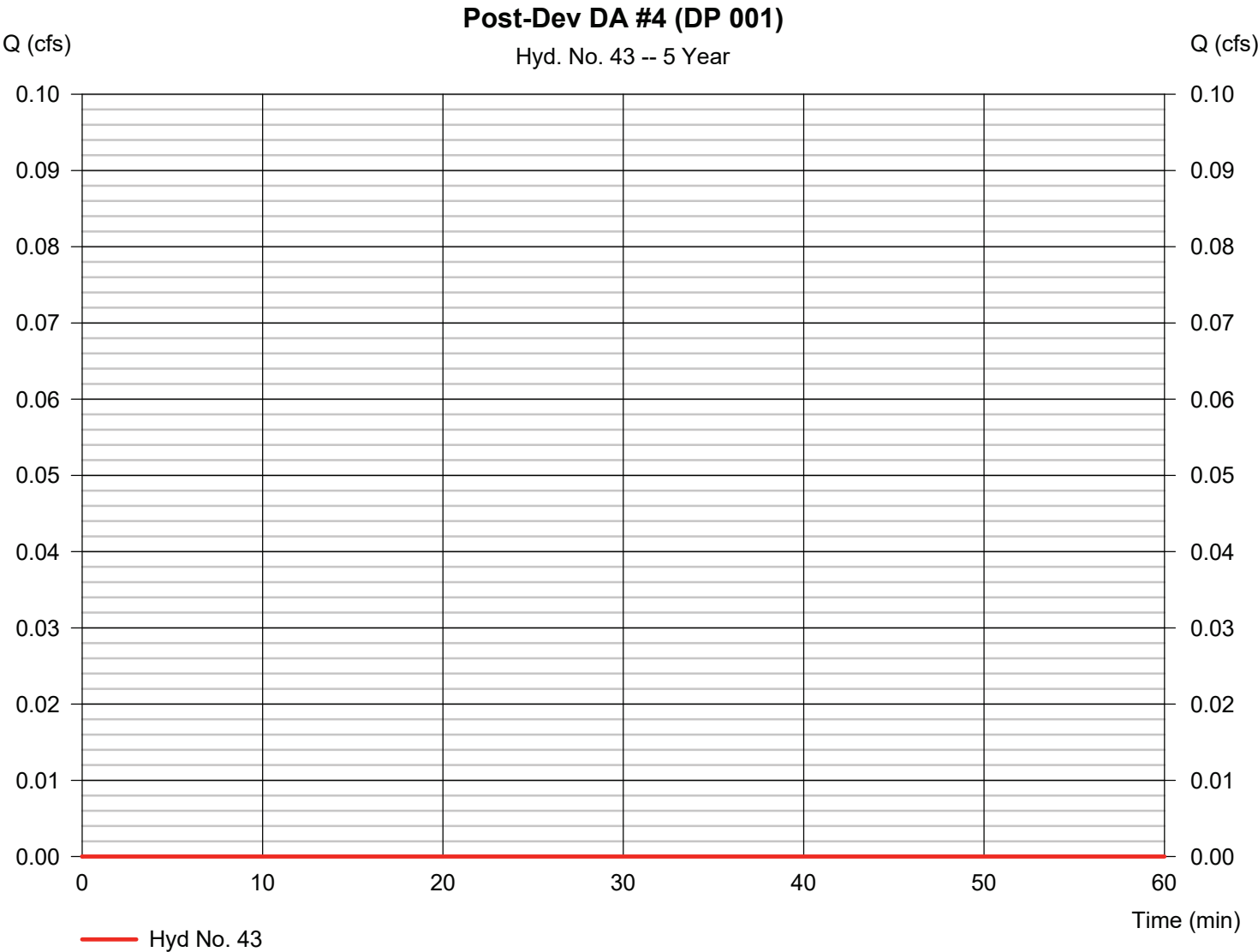


Hydrograph Report

Hyd. No. 43

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



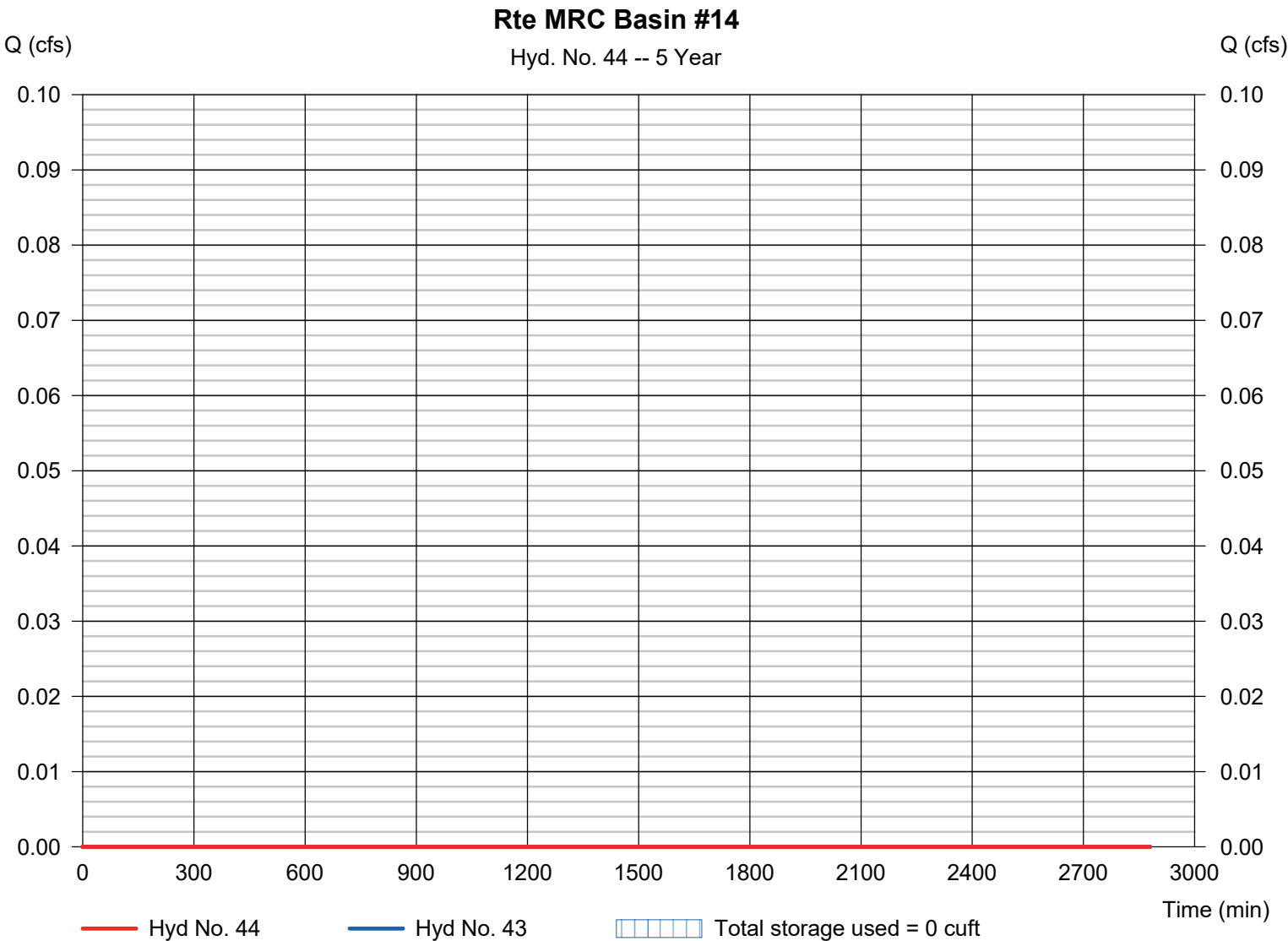
Hydrograph Report

Hyd. No. 44

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 43 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

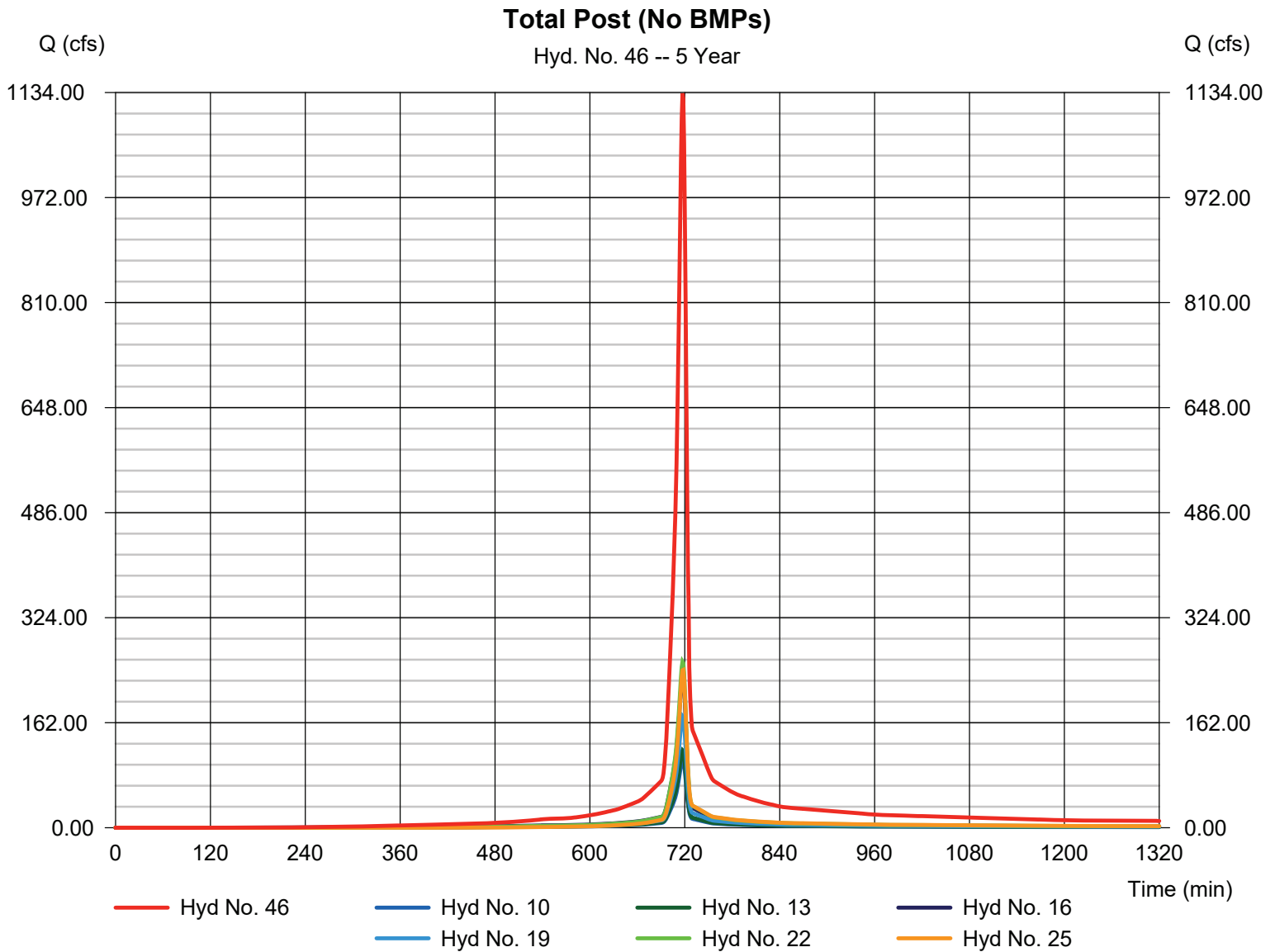
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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Hyd. No. 46

Total Post (No BMPs)

Hydrograph type	= Combine	Peak discharge	= 1132.74 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 2,440,072 cuft
Inflow hyds.	= 10, 13, 16, 19, 22, 25	Contrib. drain. area	= 212.440 ac

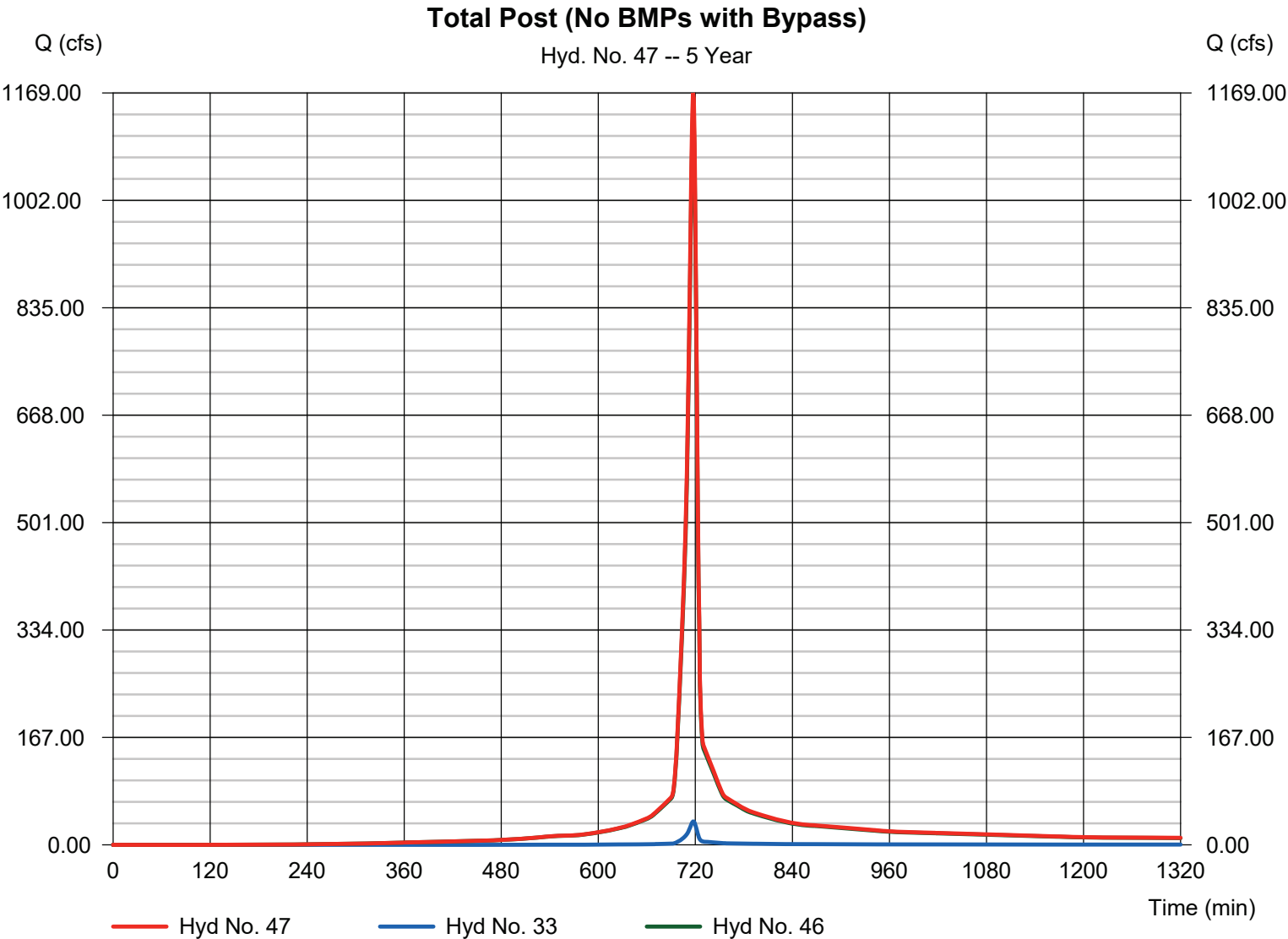


Hydrograph Report

Hyd. No. 47

Total Post (No BMPs with Bypass)

Hydrograph type	= Combine	Peak discharge	= 1168.91 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 2,514,527 cuft
Inflow hyds.	= 33, 46	Contrib. drain. area	= 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 1

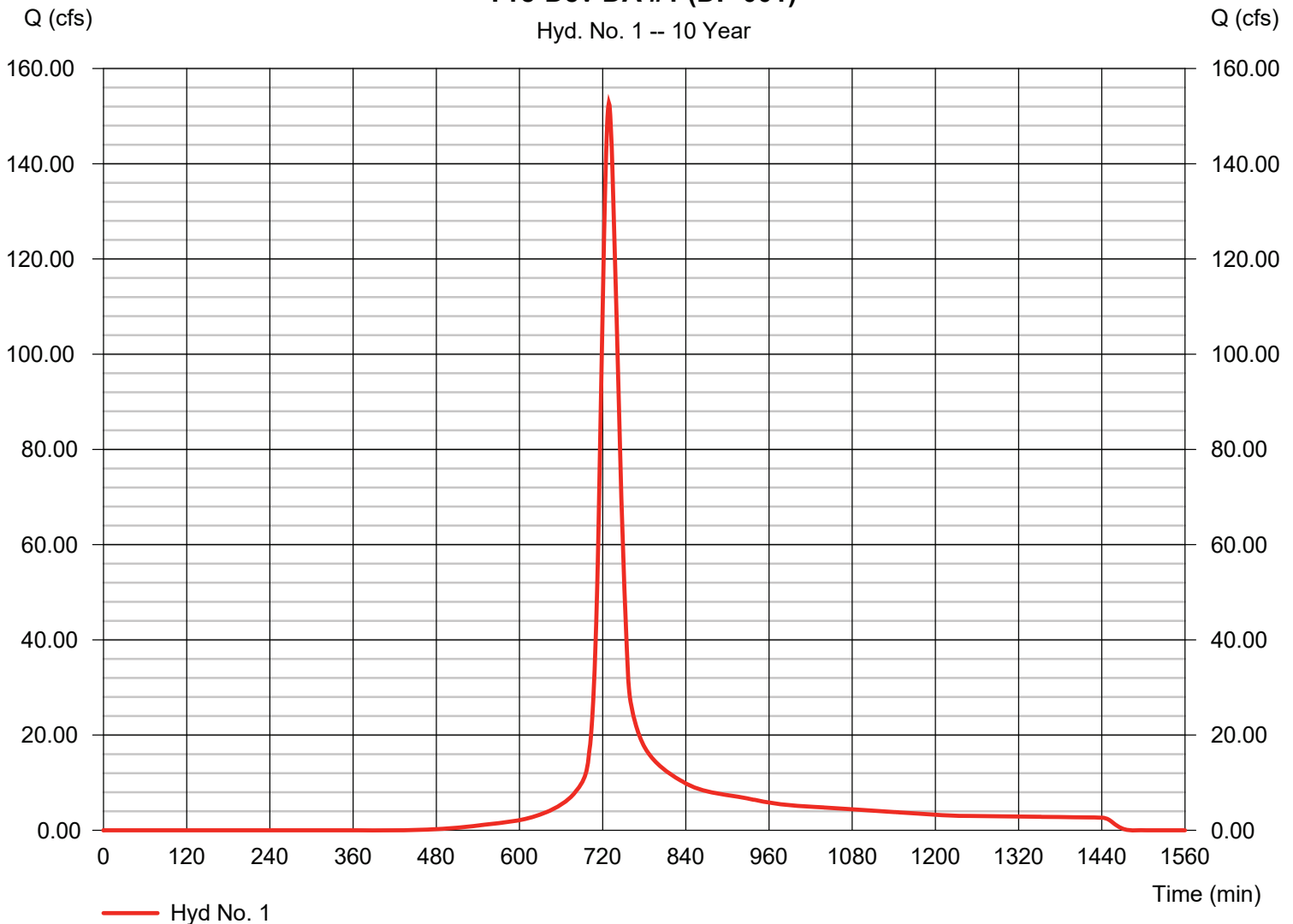
Pre-Dev DA #1 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 54.210 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 5.00 in
 Storm duration = 24 hrs

Peak discharge = 152.76 cfs
 Time to peak = 729 min
 Hyd. volume = 568,257 cuft
 Curve number = 79.7
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 25.80 min
 Distribution = Type II
 Shape factor = 484

Pre-Dev DA #1 (DP 001)

Hyd. No. 1 -- 10 Year



Hydrograph Report

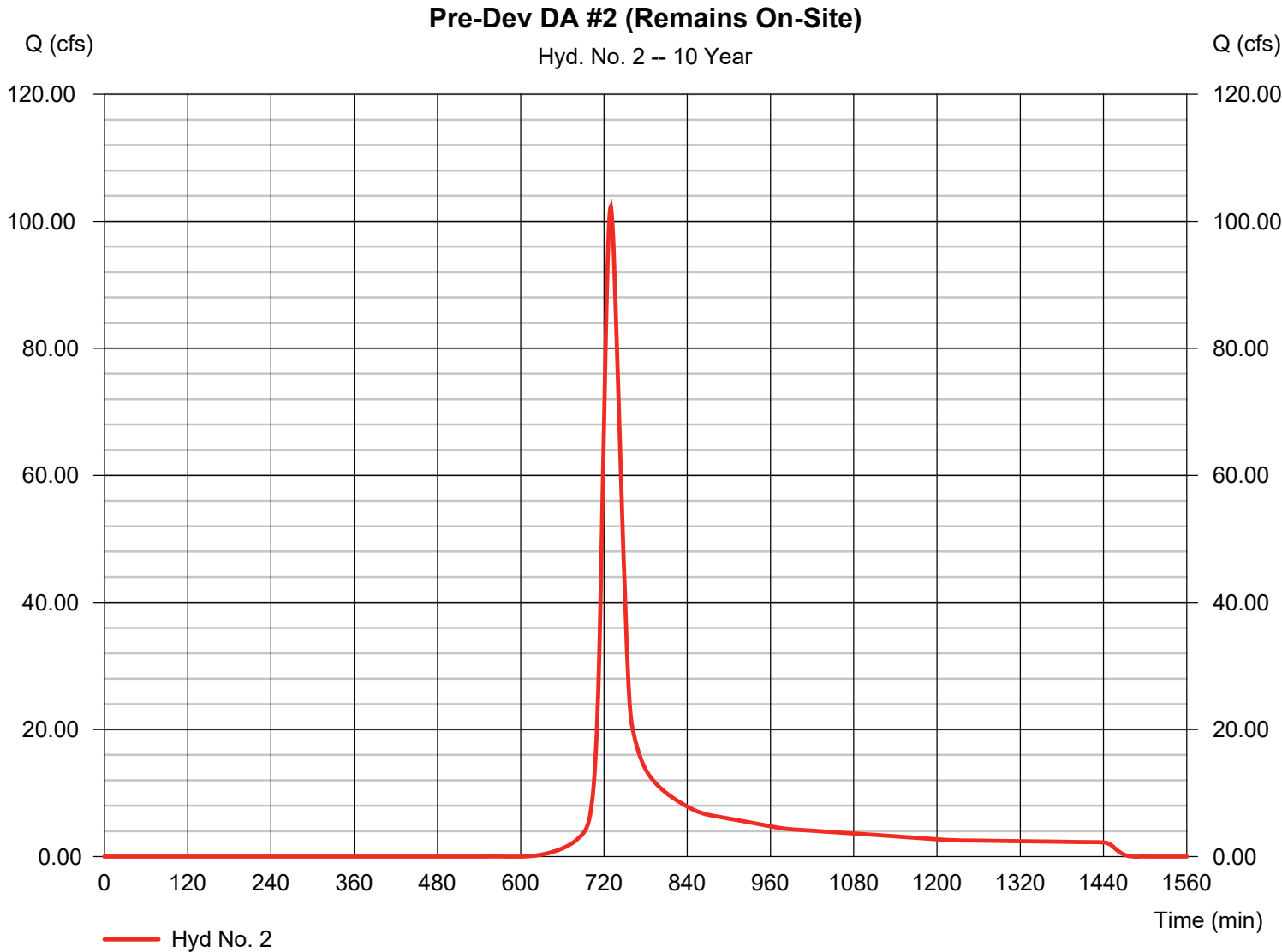
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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Hyd. No. 2

Pre-Dev DA #2 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	102.31 cfs
Storm frequency	=	10 yrs	Time to peak	=	730 min
Time interval	=	1 min	Hyd. volume	=	391,511 cuft
Drainage area	=	54.240 ac	Curve number	=	69.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	26.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

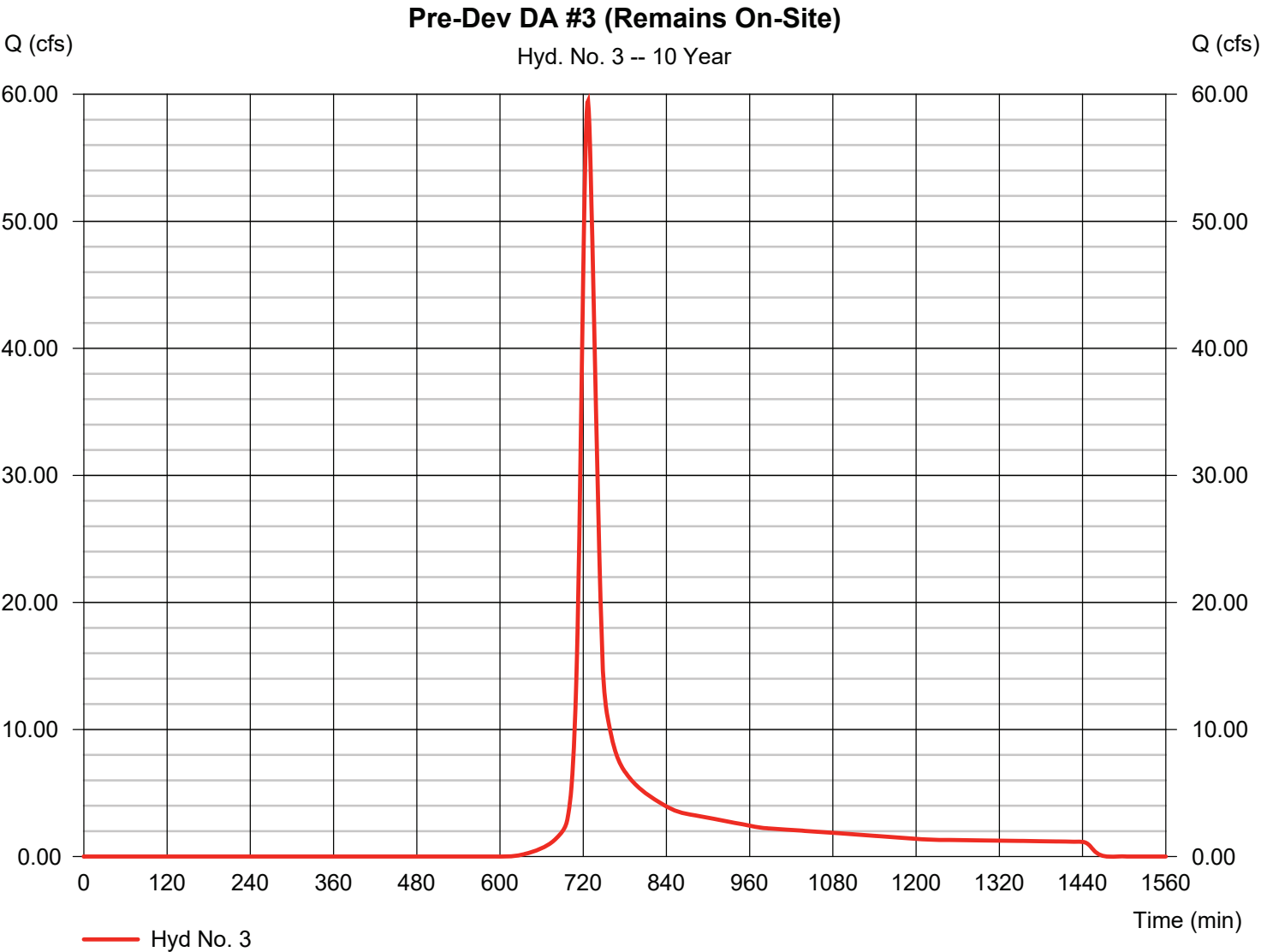
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 3

Pre-Dev DA #3 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	59.46 cfs
Storm frequency	=	10 yrs	Time to peak	=	727 min
Time interval	=	1 min	Hyd. volume	=	200,616 cuft
Drainage area	=	28.420 ac	Curve number	=	68.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	20.50 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

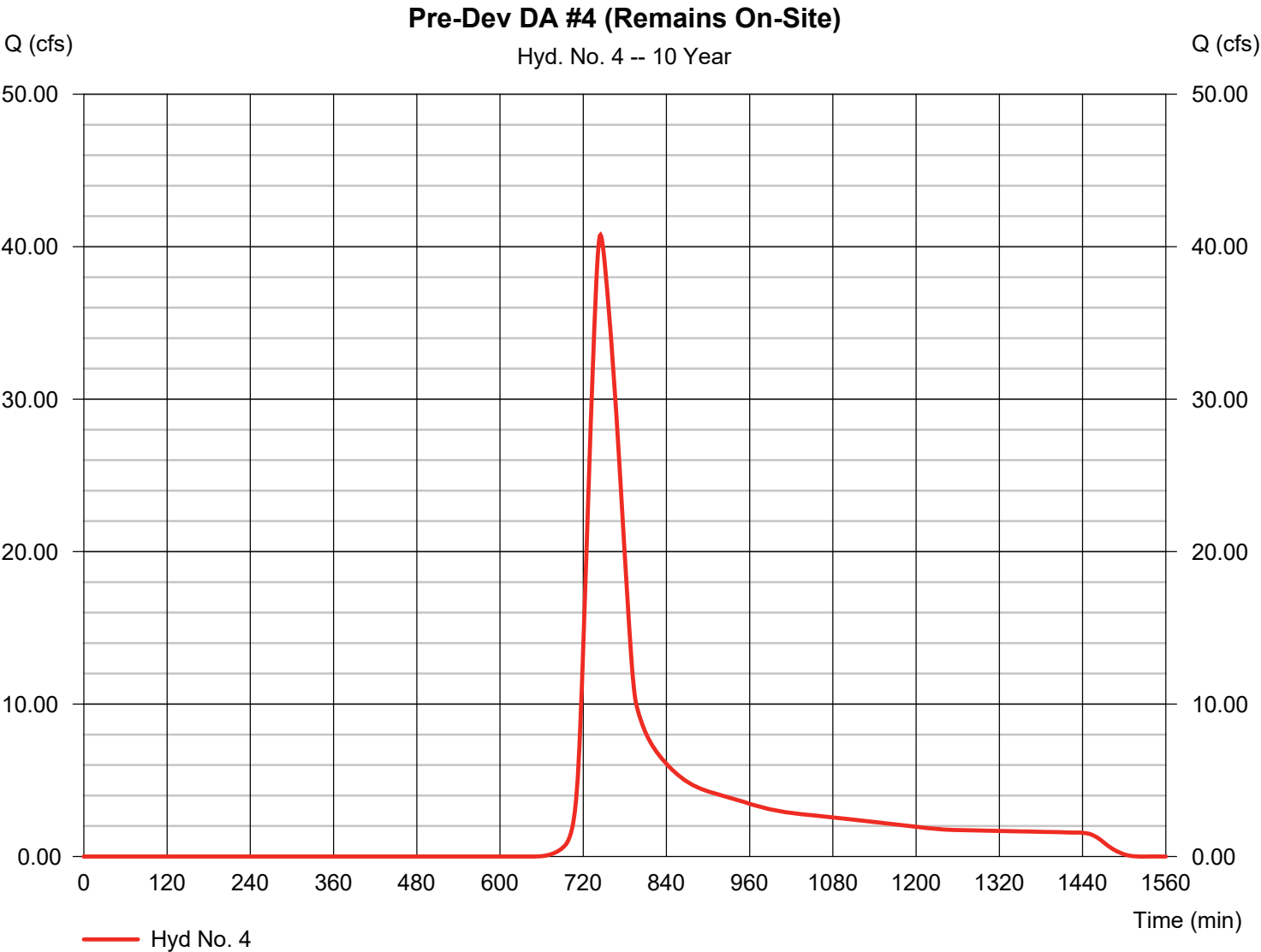
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 4

Pre-Dev DA #4 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	40.77 cfs
Storm frequency	=	10 yrs	Time to peak	=	745 min
Time interval	=	1 min	Hyd. volume	=	248,878 cuft
Drainage area	=	41.280 ac	Curve number	=	65.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	49.50 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

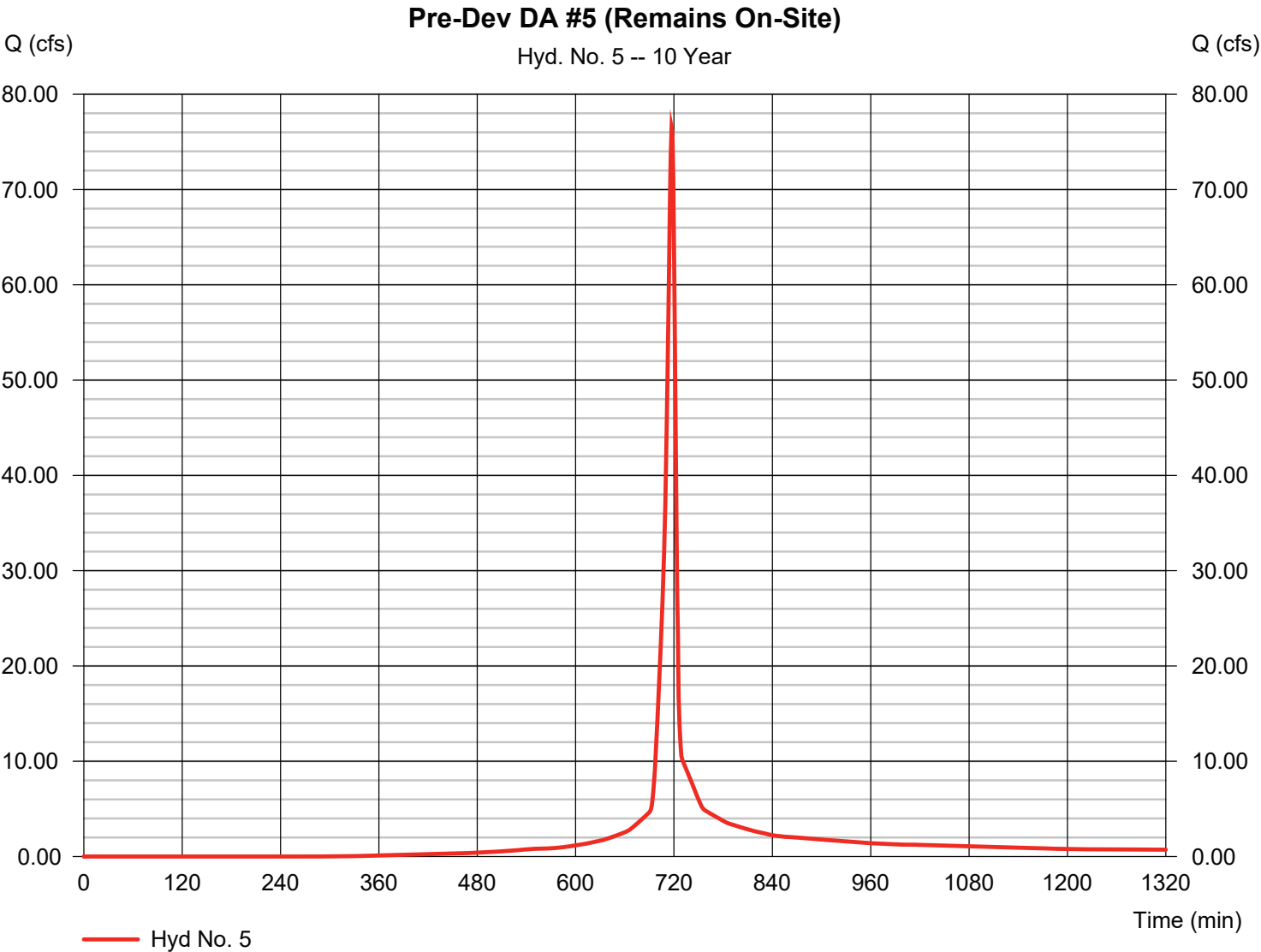
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 5

Pre-Dev DA #5 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	76.50 cfs
Storm frequency	=	10 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	161,607 cuft
Drainage area	=	12.240 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	6.20 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

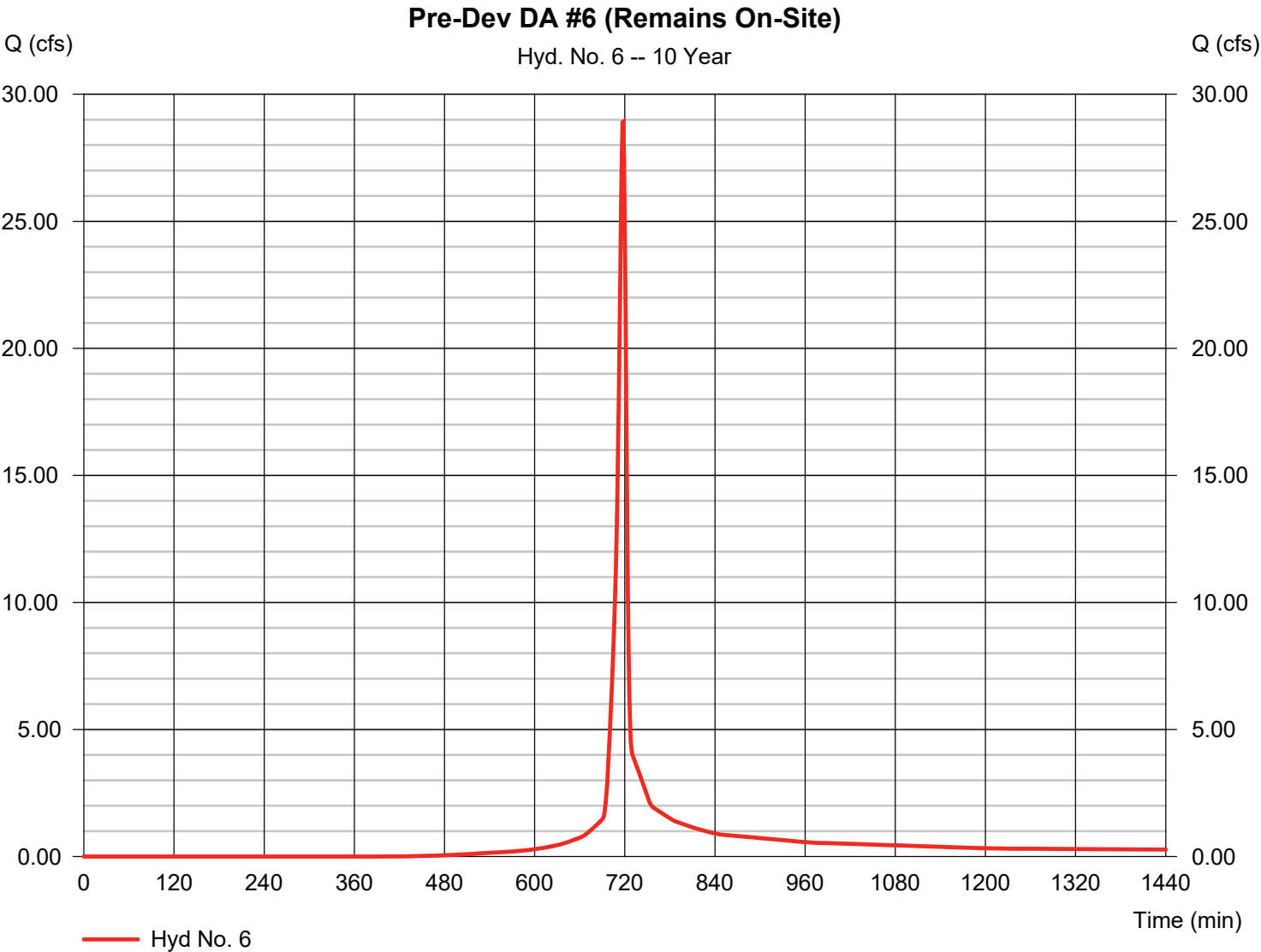
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 6

Pre-Dev DA #6 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	28.92 cfs
Storm frequency	=	10 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	59,332 cuft
Drainage area	=	5.410 ac	Curve number	=	80.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	5.97 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

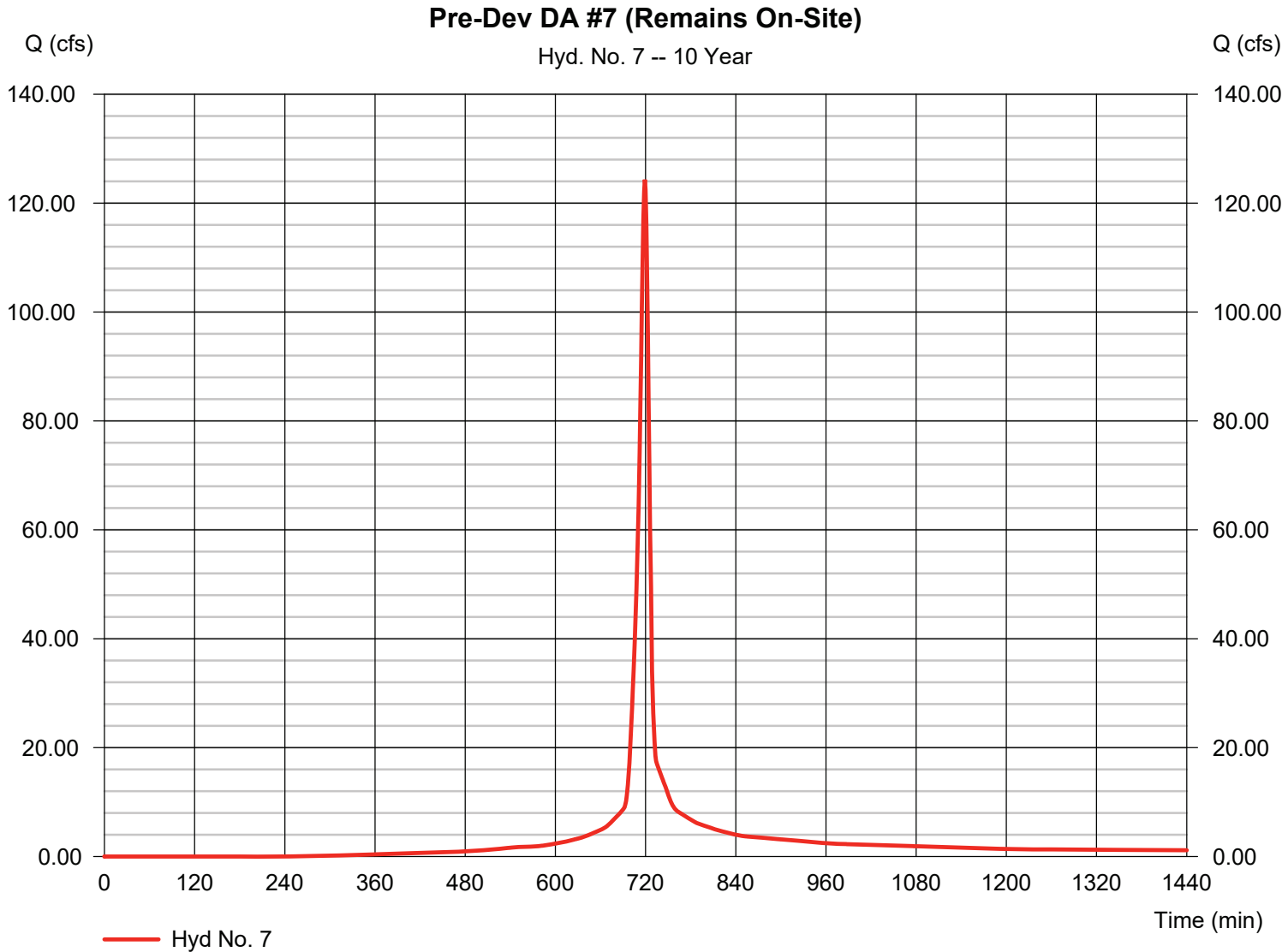
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 7

Pre-Dev DA #7 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	124.32 cfs
Storm frequency	=	10 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	295,863 cuft
Drainage area	=	21.490 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.50 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

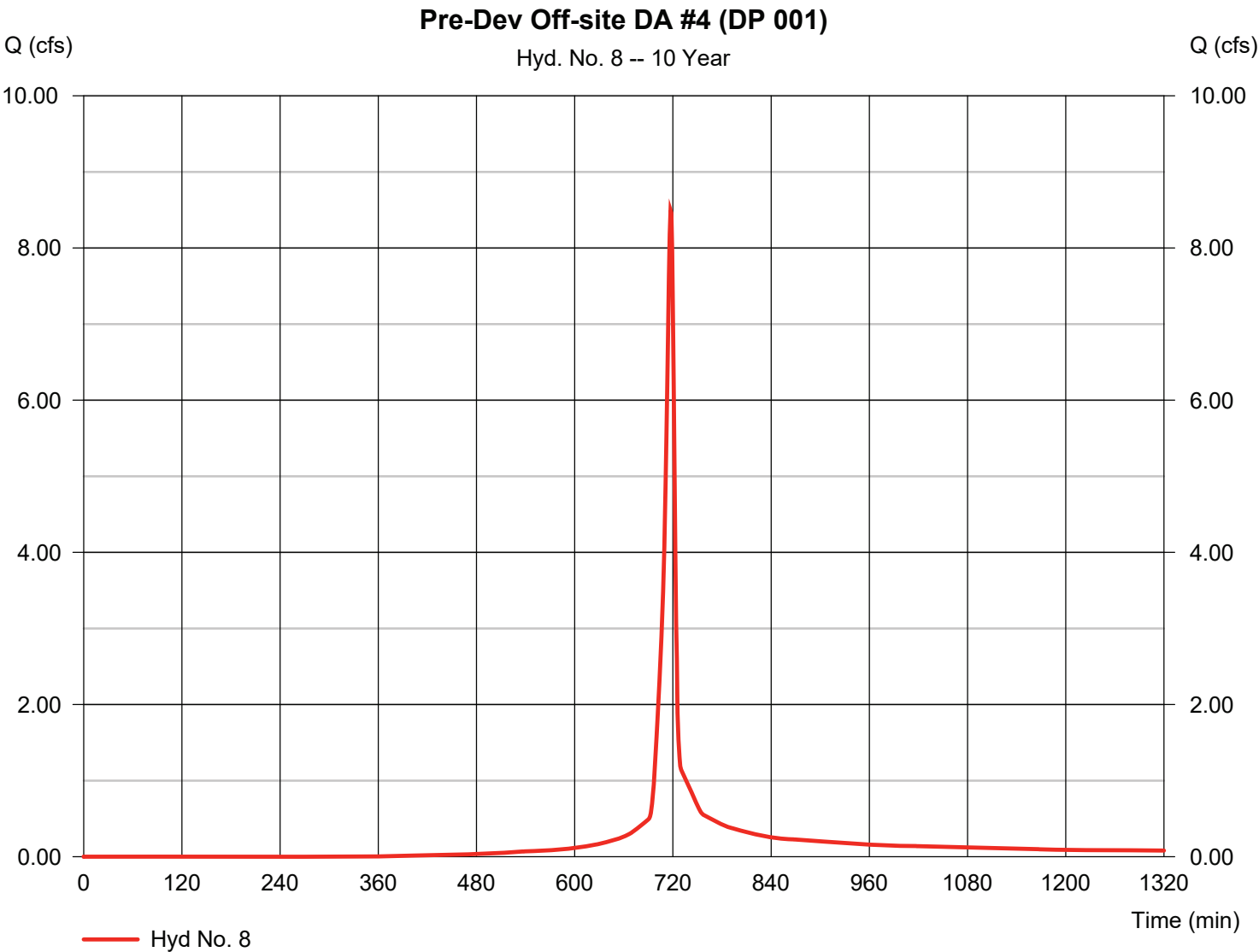


Hydrograph Report

Hyd. No. 8

Pre-Dev Off-site DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.494 cfs
Storm frequency	=	10 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	17,747 cuft
Drainage area	=	1.420 ac	Curve number	=	84.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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Hyd. No. 10

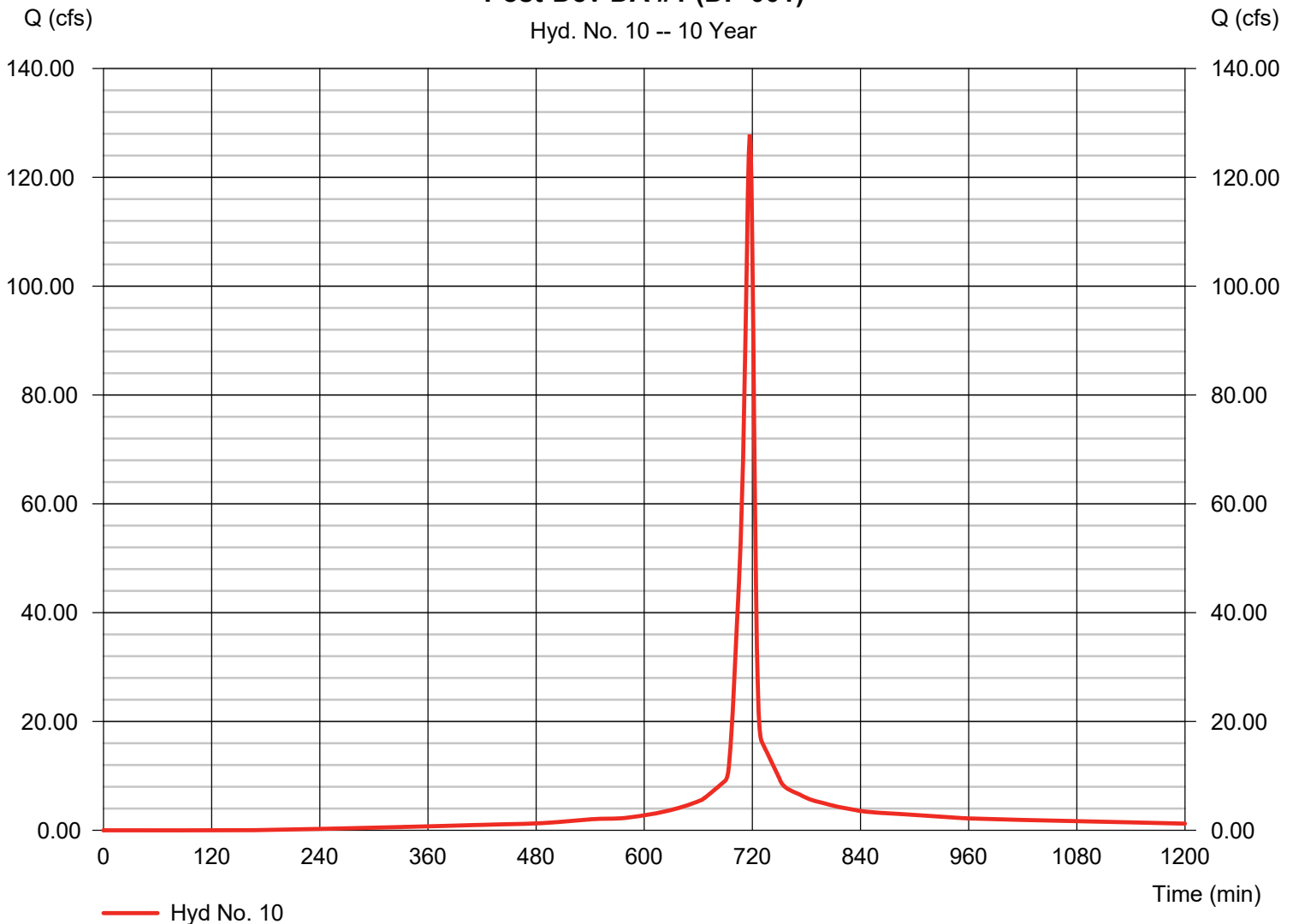
Post-Dev DA #1 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 18.160 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.00 in
 Storm duration = 24 hrs

Peak discharge = 127.85 cfs
 Time to peak = 717 min
 Hyd. volume = 286,121 cuft
 Curve number = 93.1
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484

Post-Dev DA #1 (DP 001)

Hyd. No. 10 -- 10 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 11

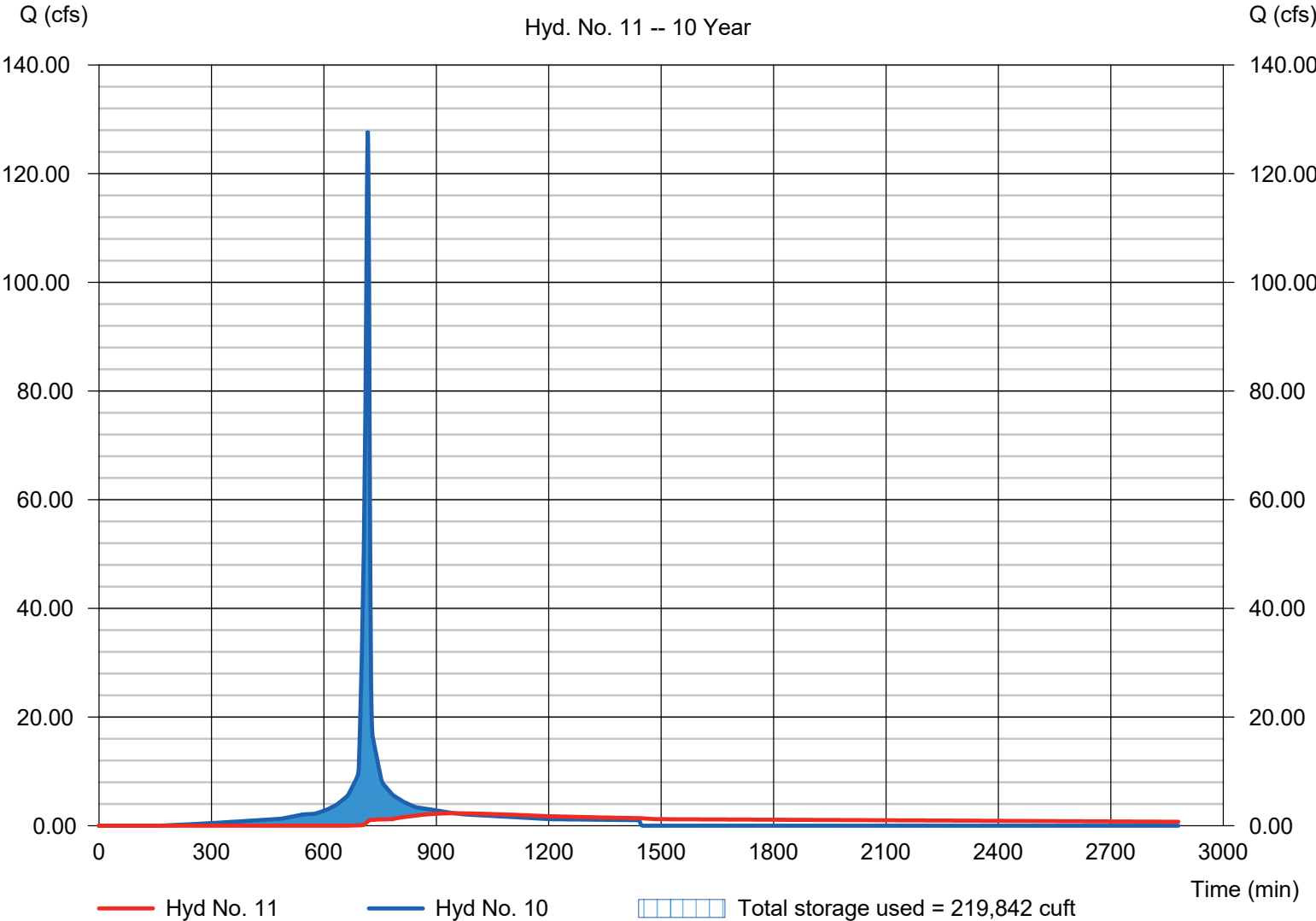
Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 2.293 cfs
Storm frequency	= 10 yrs	Time to peak	= 949 min
Time interval	= 1 min	Hyd. volume	= 162,857 cuft
Inflow hyd. No.	= 10 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 14.65 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 219,842 cuft

Storage Indication method used.

Rte MRC Basins #12A-B

Hyd. No. 11 -- 10 Year



Hydrograph Report

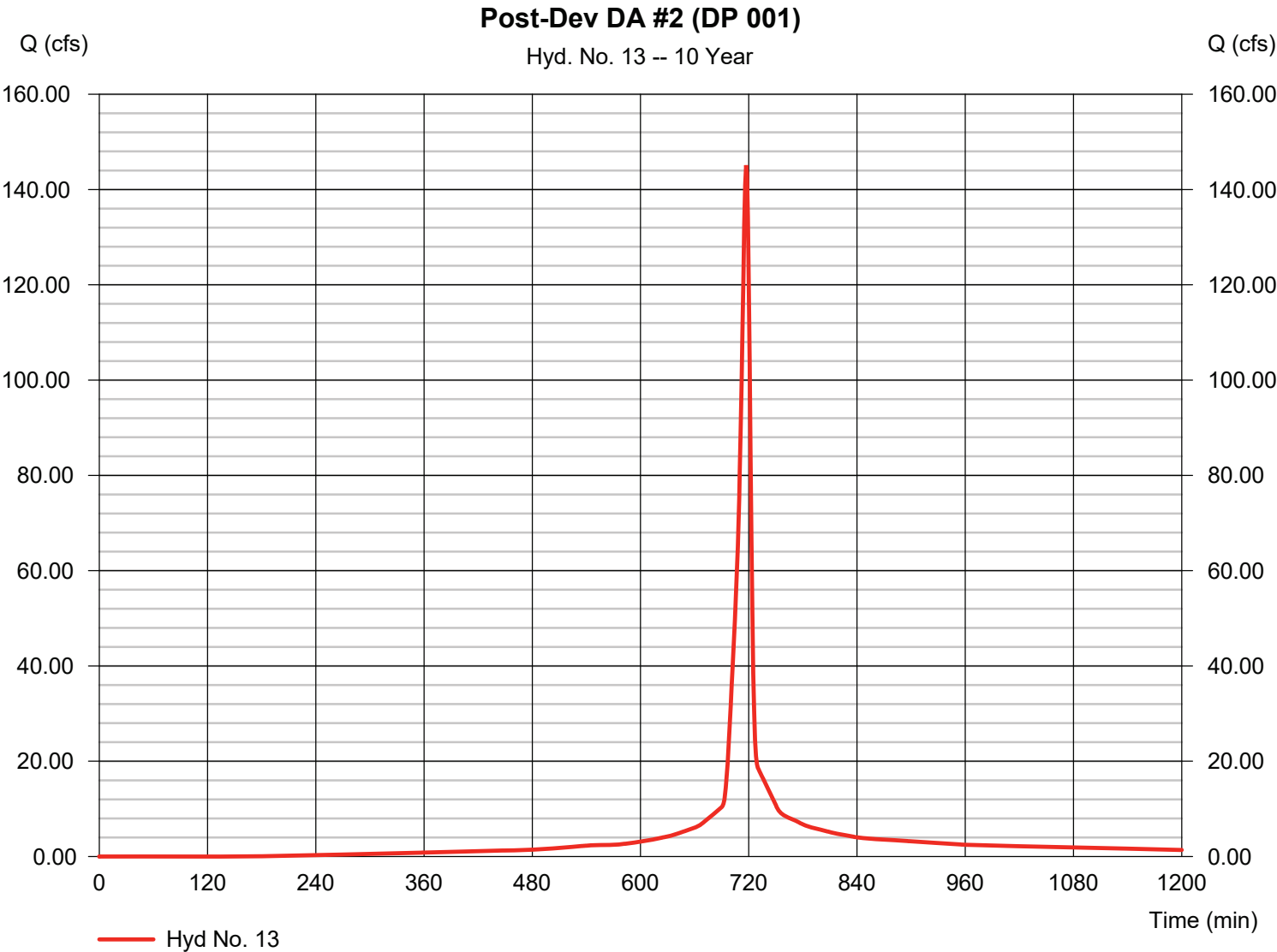
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 13

Post-Dev DA #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	145.10 cfs
Storm frequency	=	10 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	324,722 cuft
Drainage area	=	20.610 ac	Curve number	=	93.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

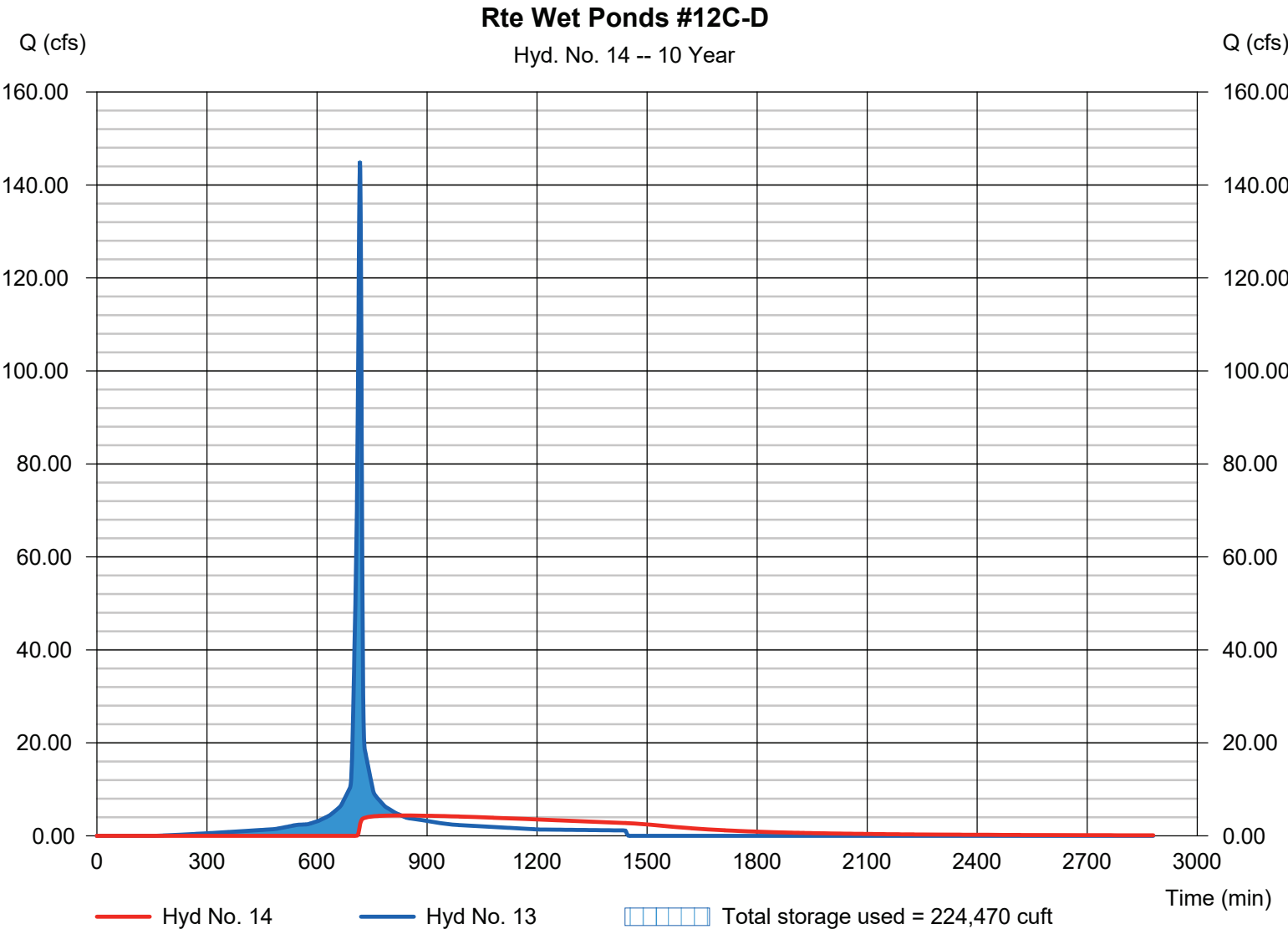
Thursday, 06 / 19 / 2025

Hyd. No. 14

Rte Wet Ponds #12C-D

Hydrograph type	= Reservoir	Peak discharge	= 4.385 cfs
Storm frequency	= 10 yrs	Time to peak	= 830 min
Time interval	= 1 min	Hyd. volume	= 221,803 cuft
Inflow hyd. No.	= 13 - Post-Dev DA #2 (DP 001)	Max. Elevation	= 12.12 ft
Reservoir name	= Wet Pond #12C-D	Max. Storage	= 224,470 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

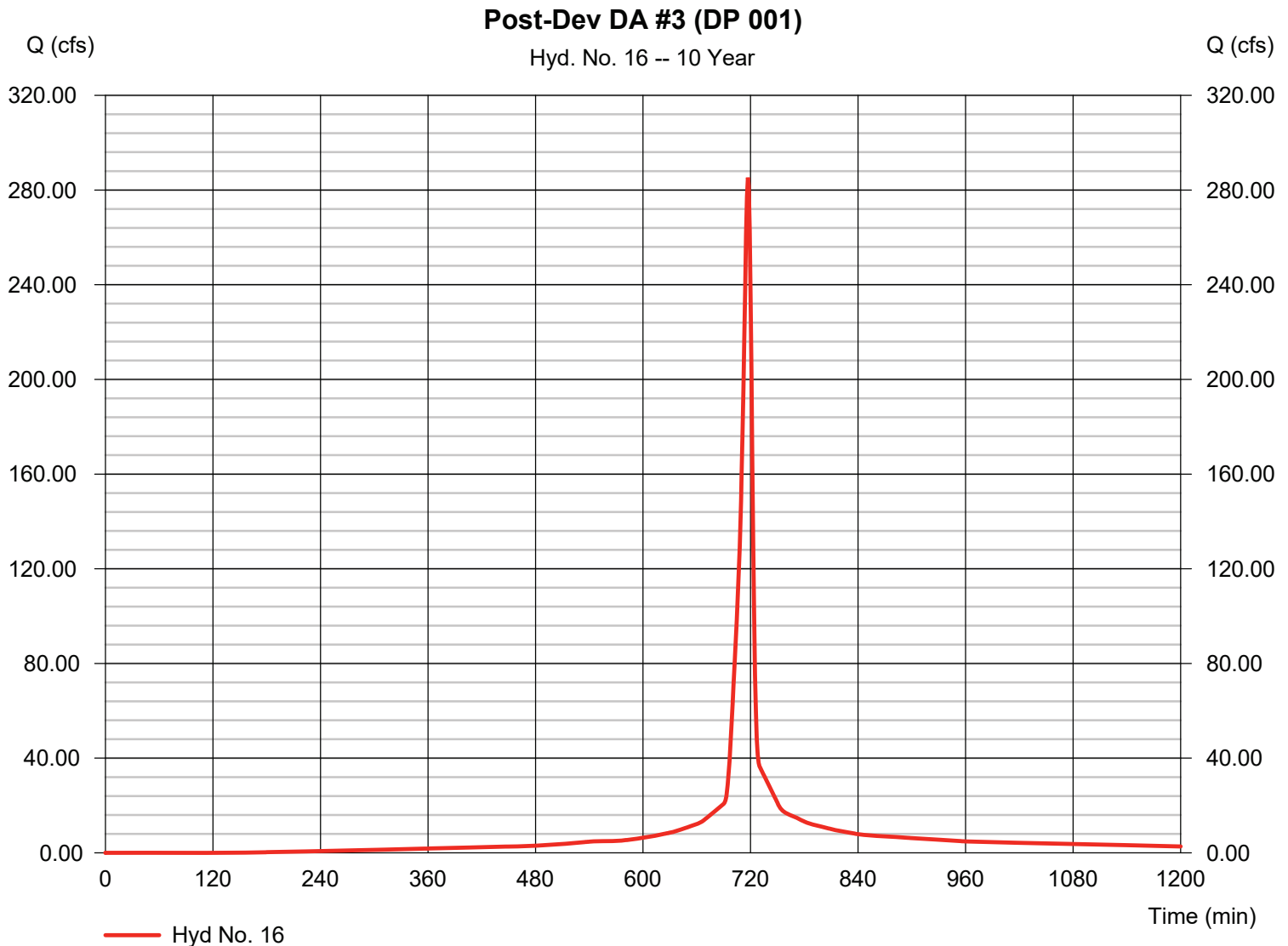
Thursday, 06 / 19 / 2025

Hyd. No. 16

Post-Dev DA #3 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 40.140 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.00 in
 Storm duration = 24 hrs

Peak discharge = 285.28 cfs
 Time to peak = 717 min
 Hyd. volume = 643,998 cuft
 Curve number = 93.8
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

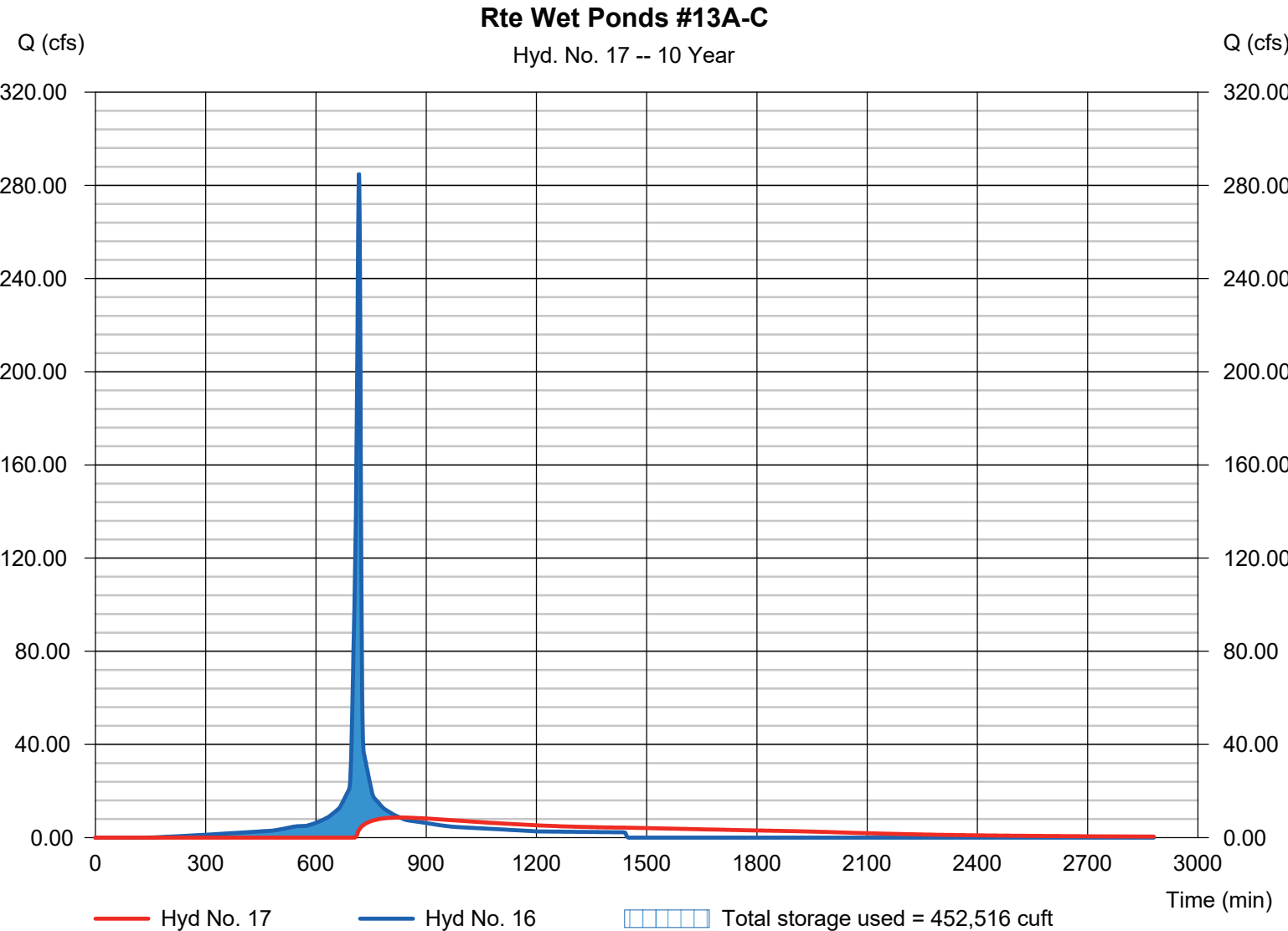
Thursday, 06 / 19 / 2025

Hyd. No. 17

Rte Wet Ponds #13A-C

Hydrograph type	= Reservoir	Peak discharge	= 8.655 cfs
Storm frequency	= 10 yrs	Time to peak	= 828 min
Time interval	= 1 min	Hyd. volume	= 444,612 cuft
Inflow hyd. No.	= 16 - Post-Dev DA #3 (DP 001)	Max. Elevation	= 12.66 ft
Reservoir name	= Wet Pond #13A-C	Max. Storage	= 452,516 cuft

Storage Indication method used.



Hydrograph Report

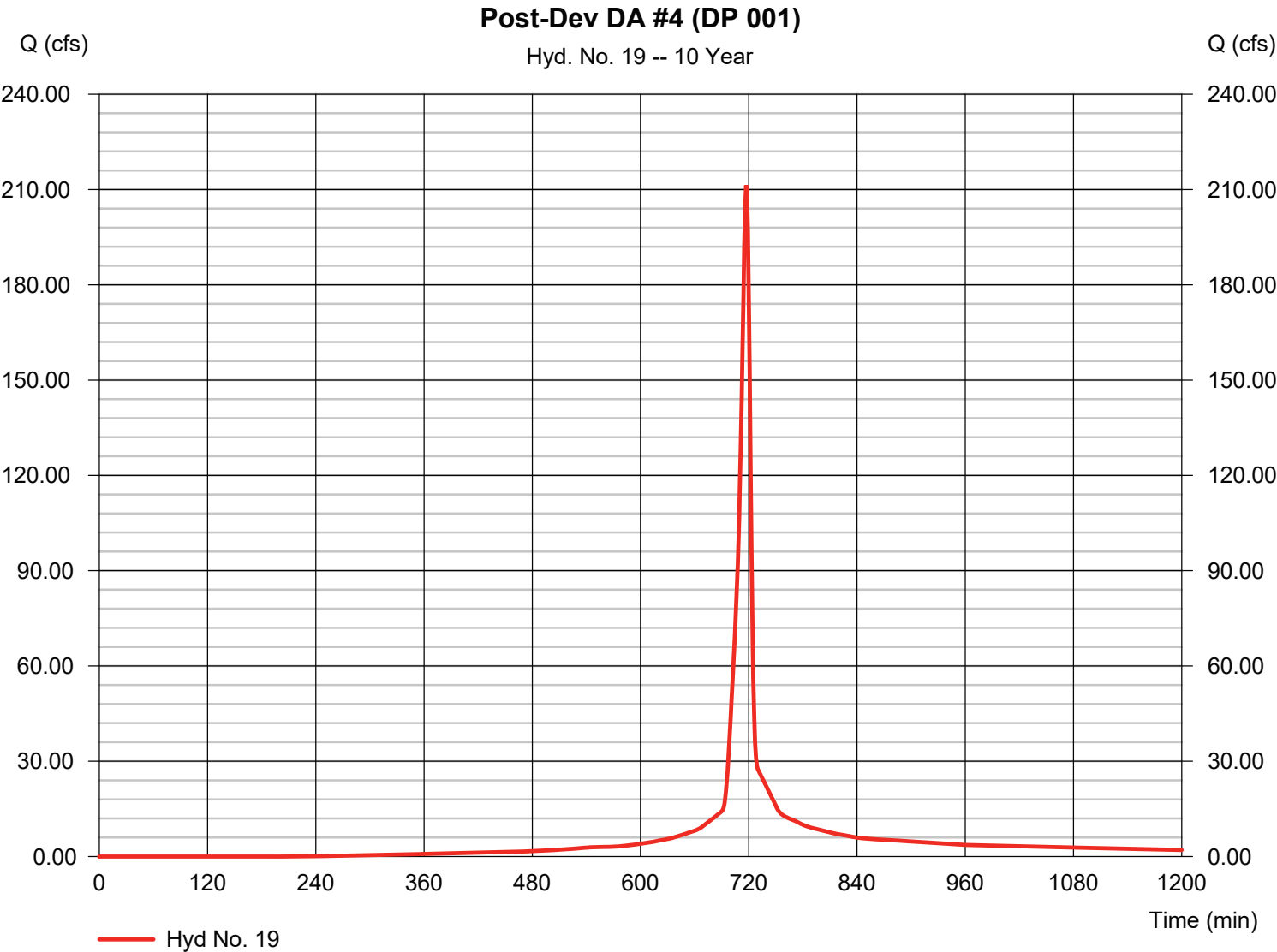
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 19

Post-Dev DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	211.33 cfs
Storm frequency	=	10 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	460,570 cuft
Drainage area	=	31.230 ac	Curve number	=	90.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

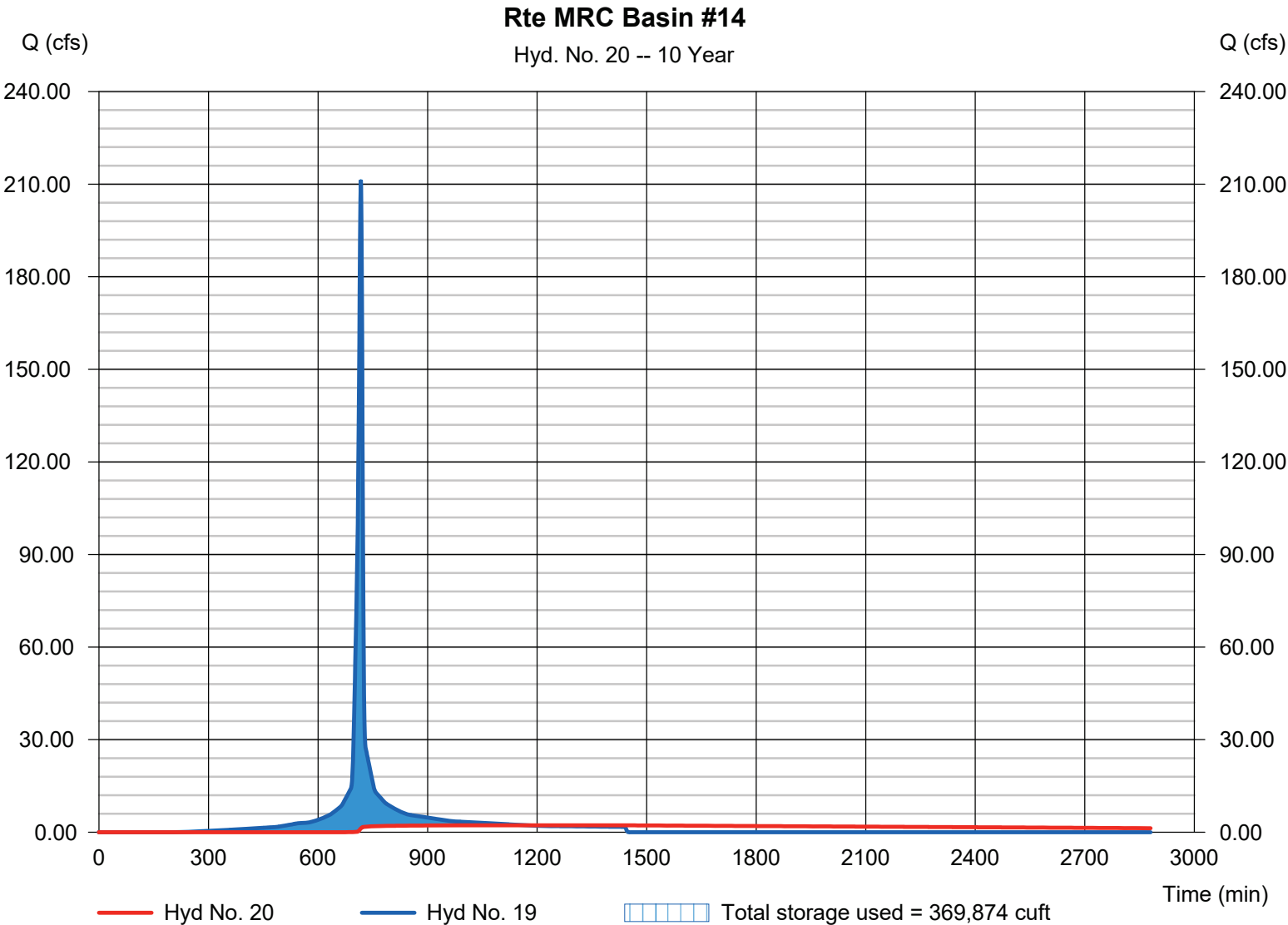
Thursday, 06 / 19 / 2025

Hyd. No. 20

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 2.265 cfs
Storm frequency	= 10 yrs	Time to peak	= 1170 min
Time interval	= 1 min	Hyd. volume	= 249,077 cuft
Inflow hyd. No.	= 19 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 14.90 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 369,874 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

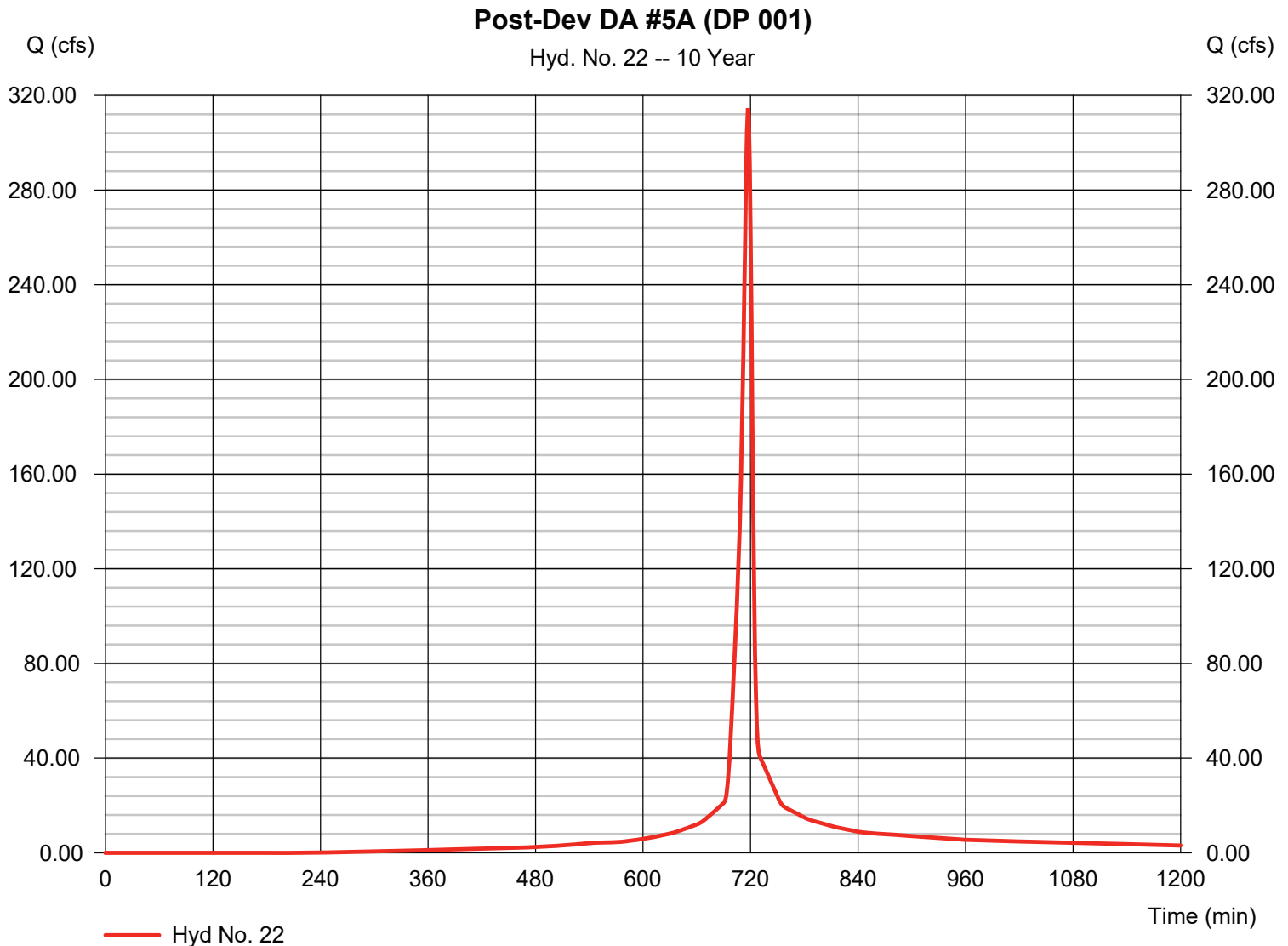
Thursday, 06 / 19 / 2025

Hyd. No. 22

Post-Dev DA #5A (DP 001)

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Time interval = 1 min
Drainage area = 46.730 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 5.00 in
Storm duration = 24 hrs

Peak discharge = 314.55 cfs
Time to peak = 717 min
Hyd. volume = 683,612 cuft
Curve number = 90.3
Hydraulic length = 0 ft
Time of conc. (Tc) = 5.00 min
Distribution = Type II
Shape factor = 484



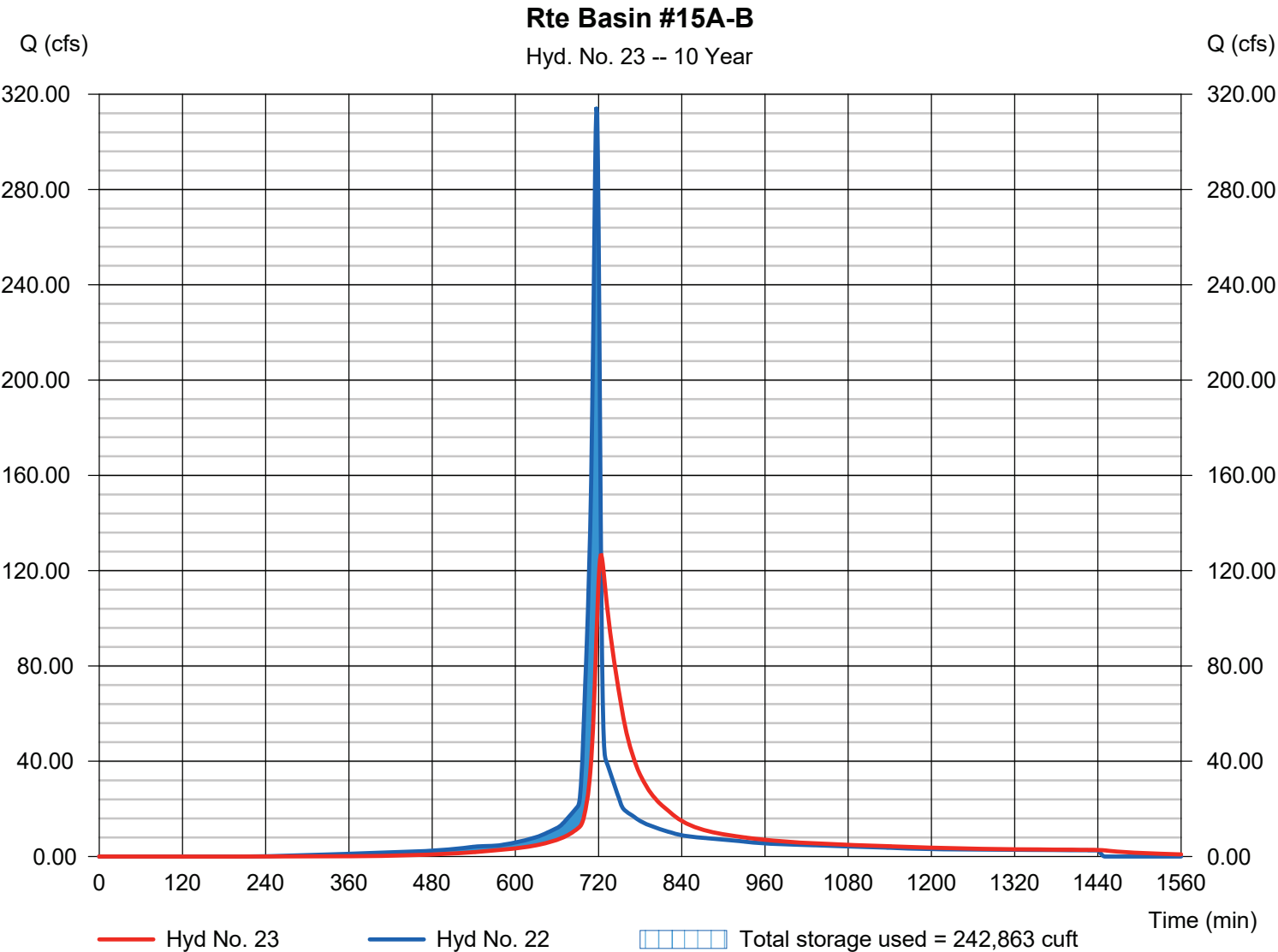
Hydrograph Report

Hyd. No. 23

Rte Basin #15A-B

Hydrograph type	= Reservoir	Peak discharge	= 126.44 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 682,509 cuft
Inflow hyd. No.	= 22 - Post-Dev DA #5A (DP 001)	Max. Elevation	= 15.77 ft
Reservoir name	= Basin #15A-B	Max. Storage	= 242,863 cuft

Storage Indication method used.



Hydrograph Report

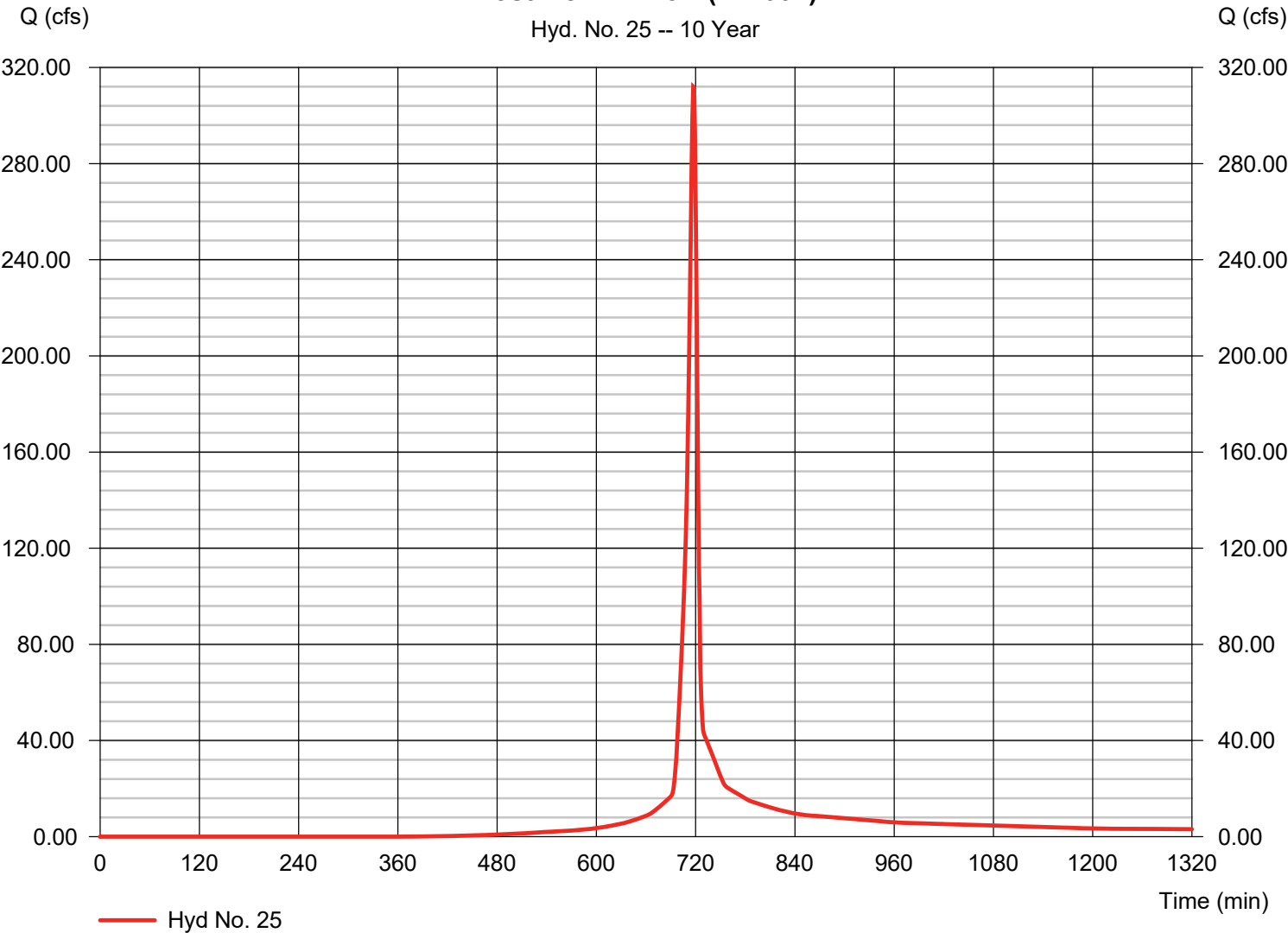
Hyd. No. 25

Post-Dev DA #5B (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 311.96 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 644,449 cuft
Drainage area	= 55.570 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Post-Dev DA #5B (DP 001)

Hyd. No. 25 -- 10 Year



Hydrograph Report

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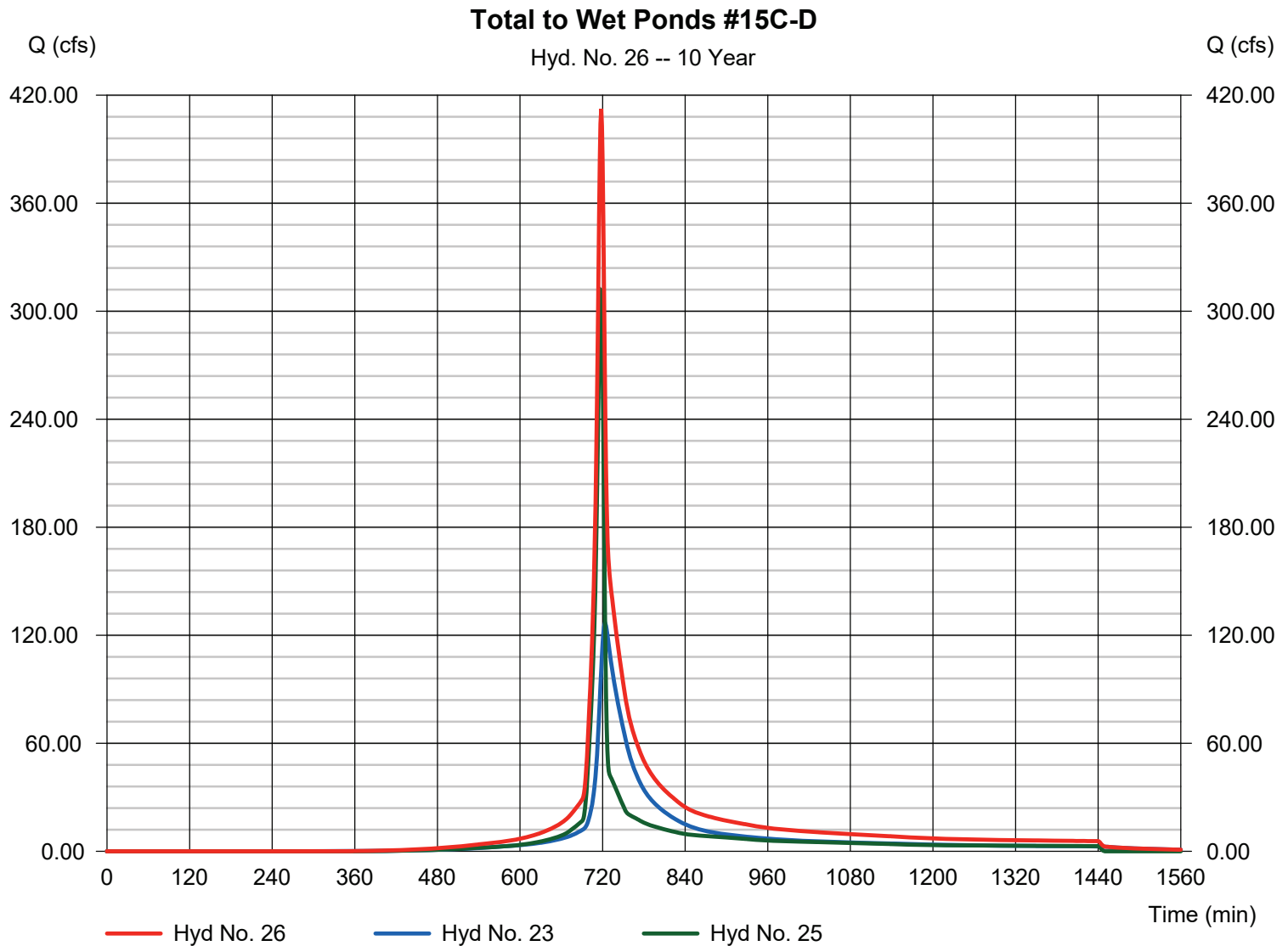
Thursday, 06 / 19 / 2025

Hyd. No. 26

Total to Wet Ponds #15C-D

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 1 min
Inflow hyds. = 23, 25

Peak discharge = 412.39 cfs
Time to peak = 718 min
Hyd. volume = 1,326,958 cuft
Contrib. drain. area = 55.570 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

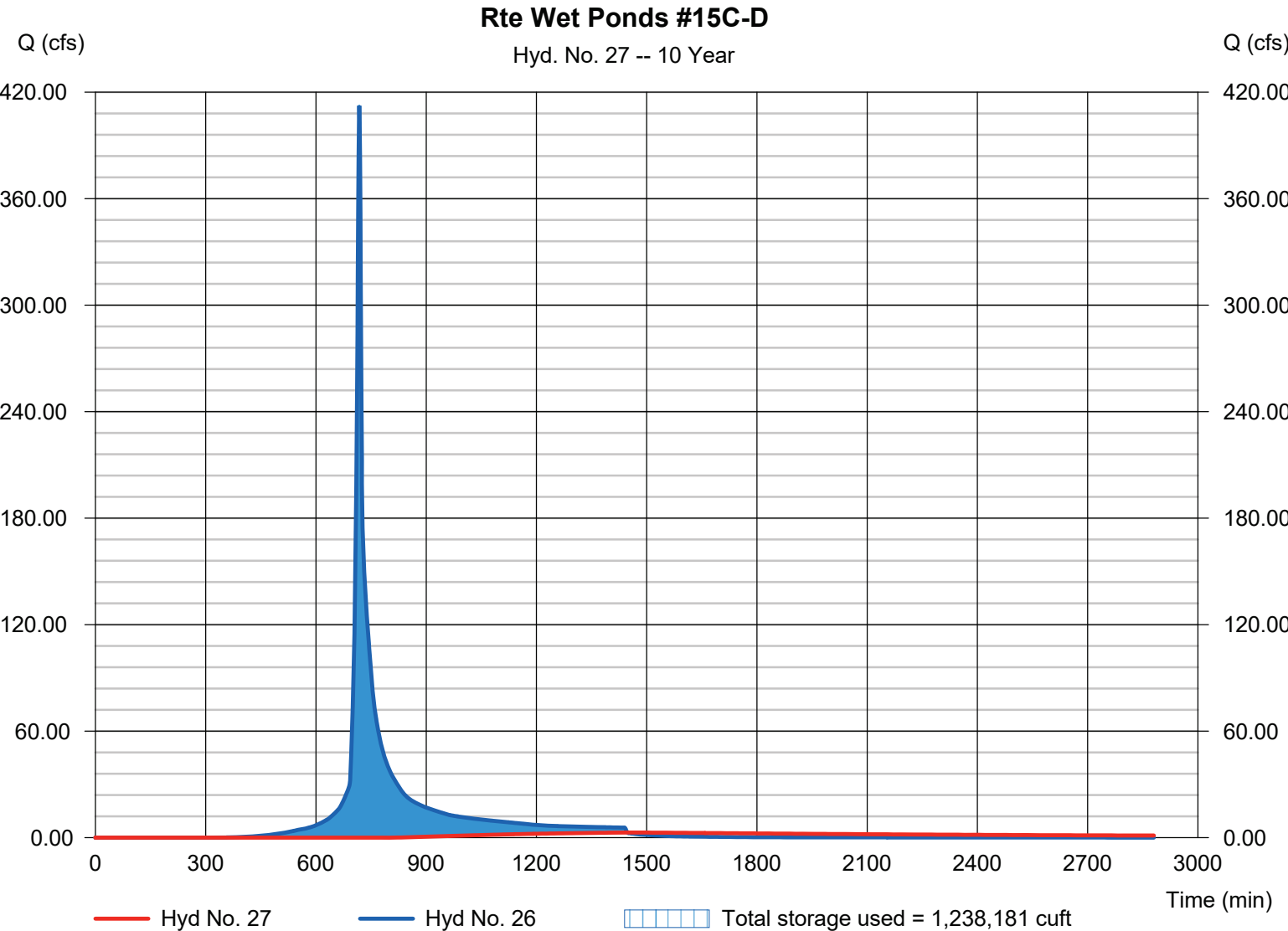
Thursday, 06 / 19 / 2025

Hyd. No. 27

Rte Wet Ponds #15C-D

Hydrograph type	= Reservoir	Peak discharge	= 2.882 cfs
Storm frequency	= 10 yrs	Time to peak	= 1448 min
Time interval	= 1 min	Hyd. volume	= 229,839 cuft
Inflow hyd. No.	= 26 - Total to Wet Ponds #15C-D	Max. Elevation	= 10.75 ft
Reservoir name	= Wet Pond #15C-D	Max. Storage	= 1,238,181 cuft

Storage Indication method used.



Hydrograph Report

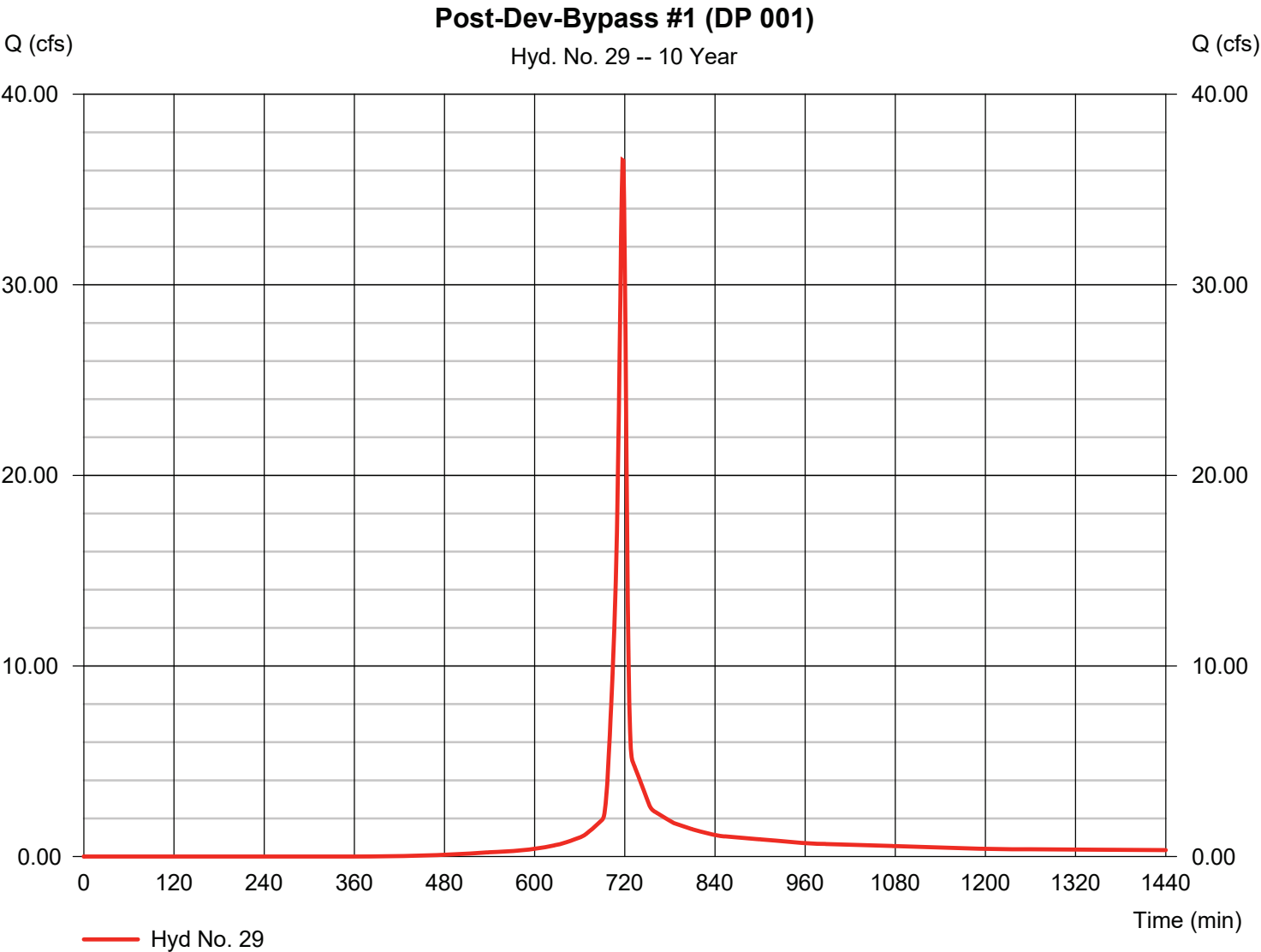
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Thursday, 06 / 19 / 2025

Hyd. No. 29

Post-Dev-Bypass #1 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	36.54 cfs
Storm frequency	=	10 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	75,379 cuft
Drainage area	=	6.580 ac	Curve number	=	81.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

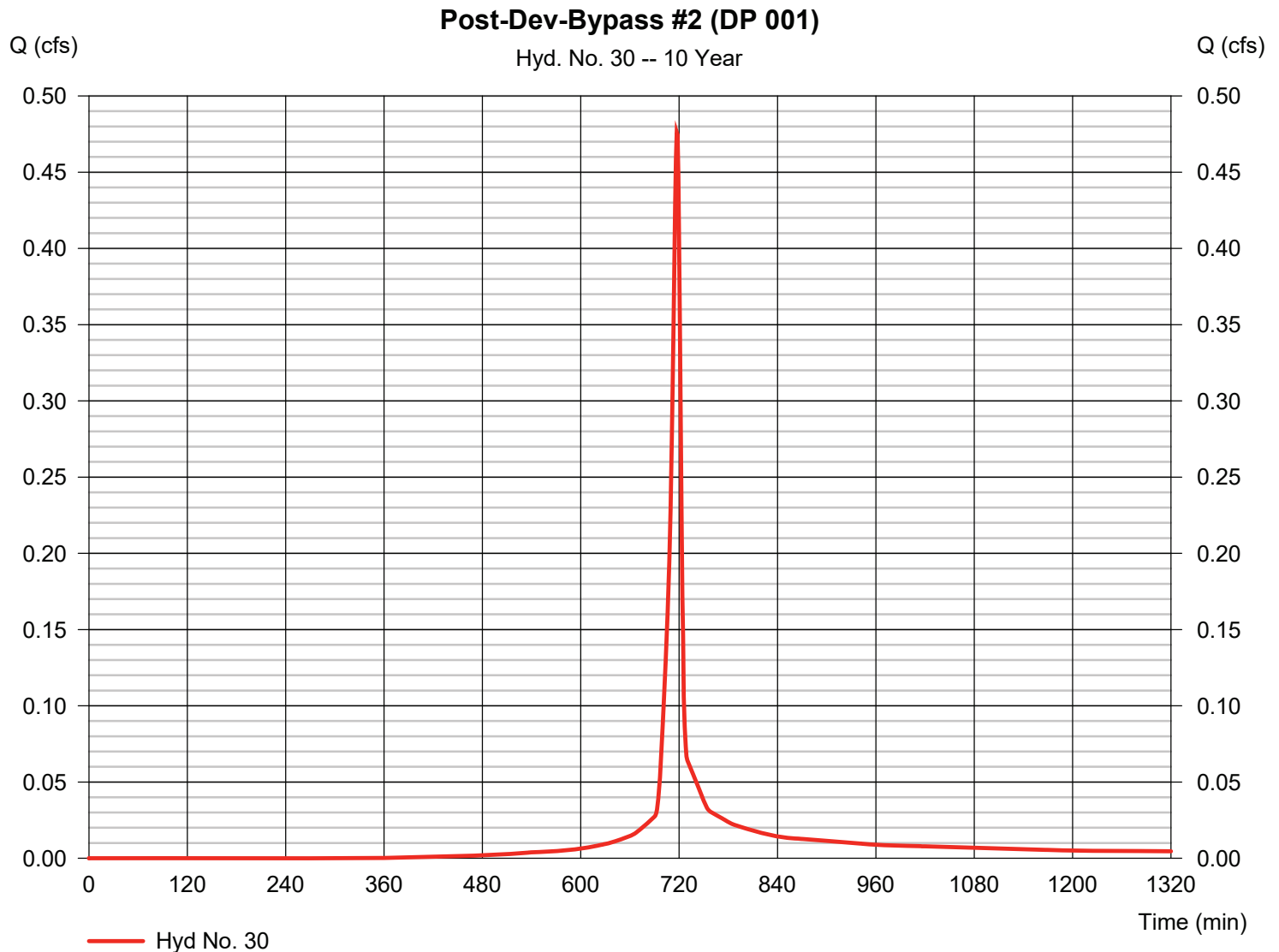
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Thursday, 06 / 19 / 2025

Hyd. No. 30

Post-Dev-Bypass #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.476 cfs
Storm frequency	=	10 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	994 cuft
Drainage area	=	0.080 ac	Curve number	=	84.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

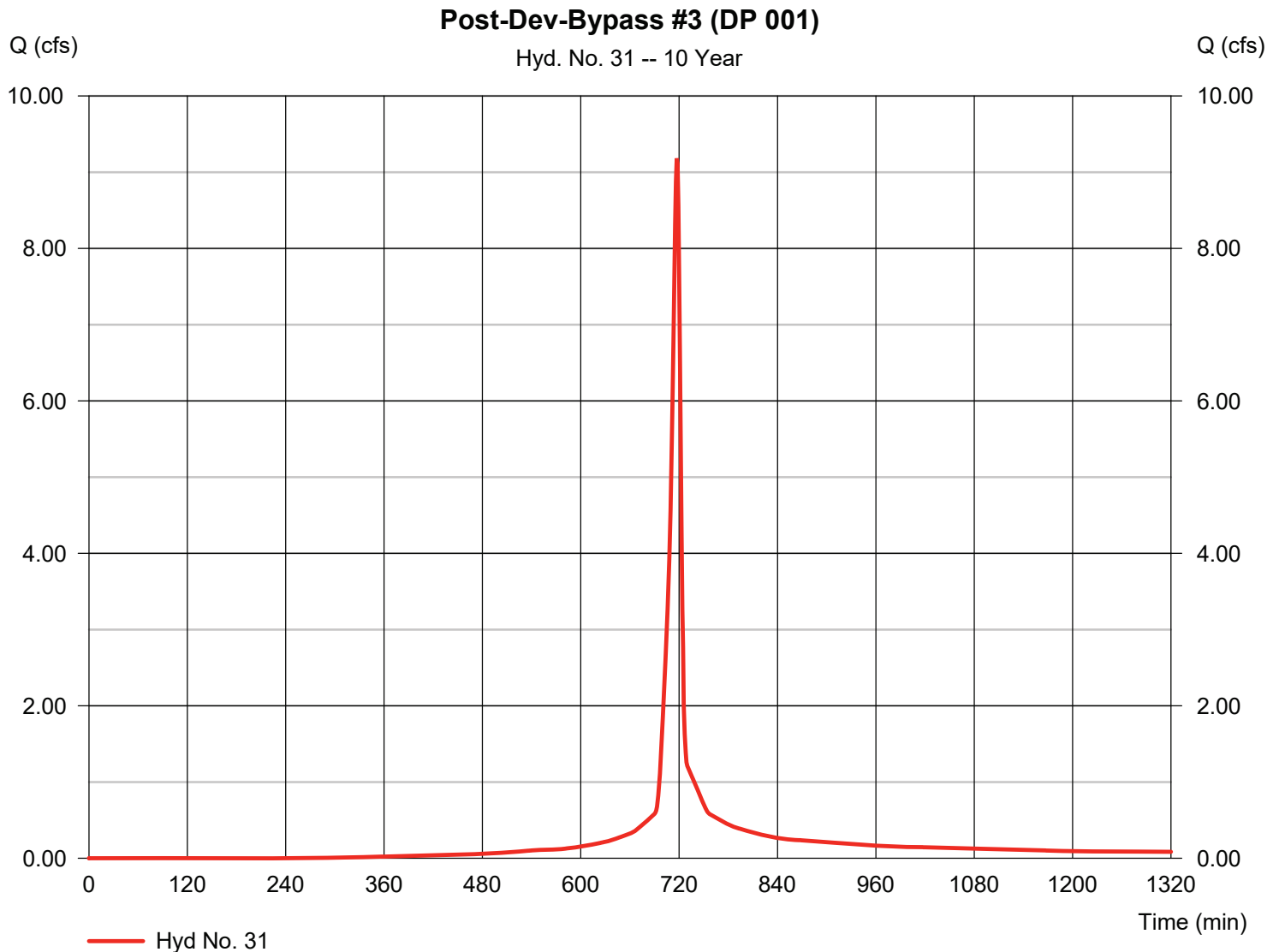
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 31

Post-Dev-Bypass #3 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 9.182 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 19,612 cuft
Drainage area	= 1.420 ac	Curve number	= 88.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

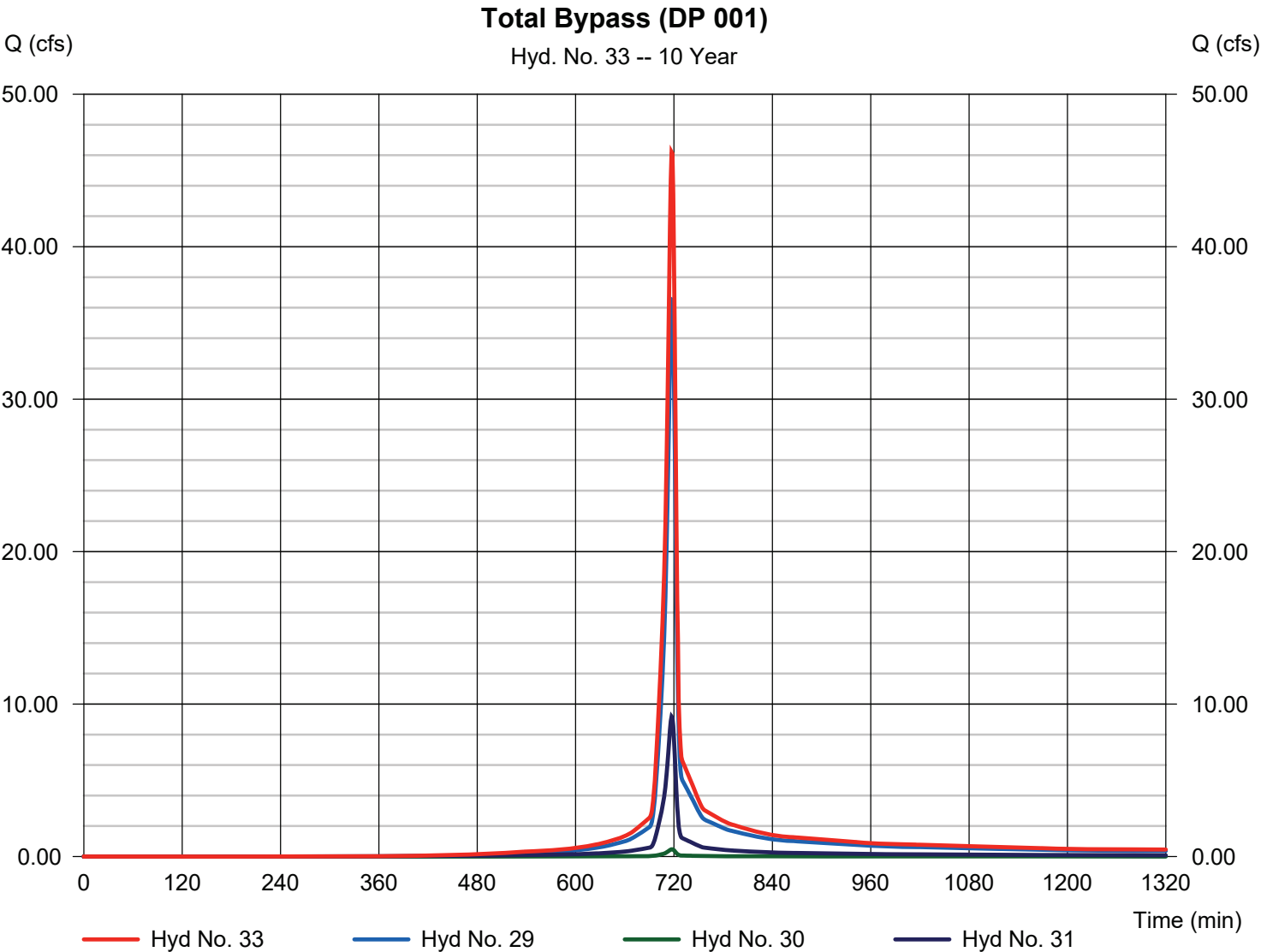
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 33

Total Bypass (DP 001)

Hydrograph type	= Combine	Peak discharge	= 46.20 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 95,985 cuft
Inflow hyds.	= 29, 30, 31	Contrib. drain. area	= 8.080 ac



Hydrograph Report

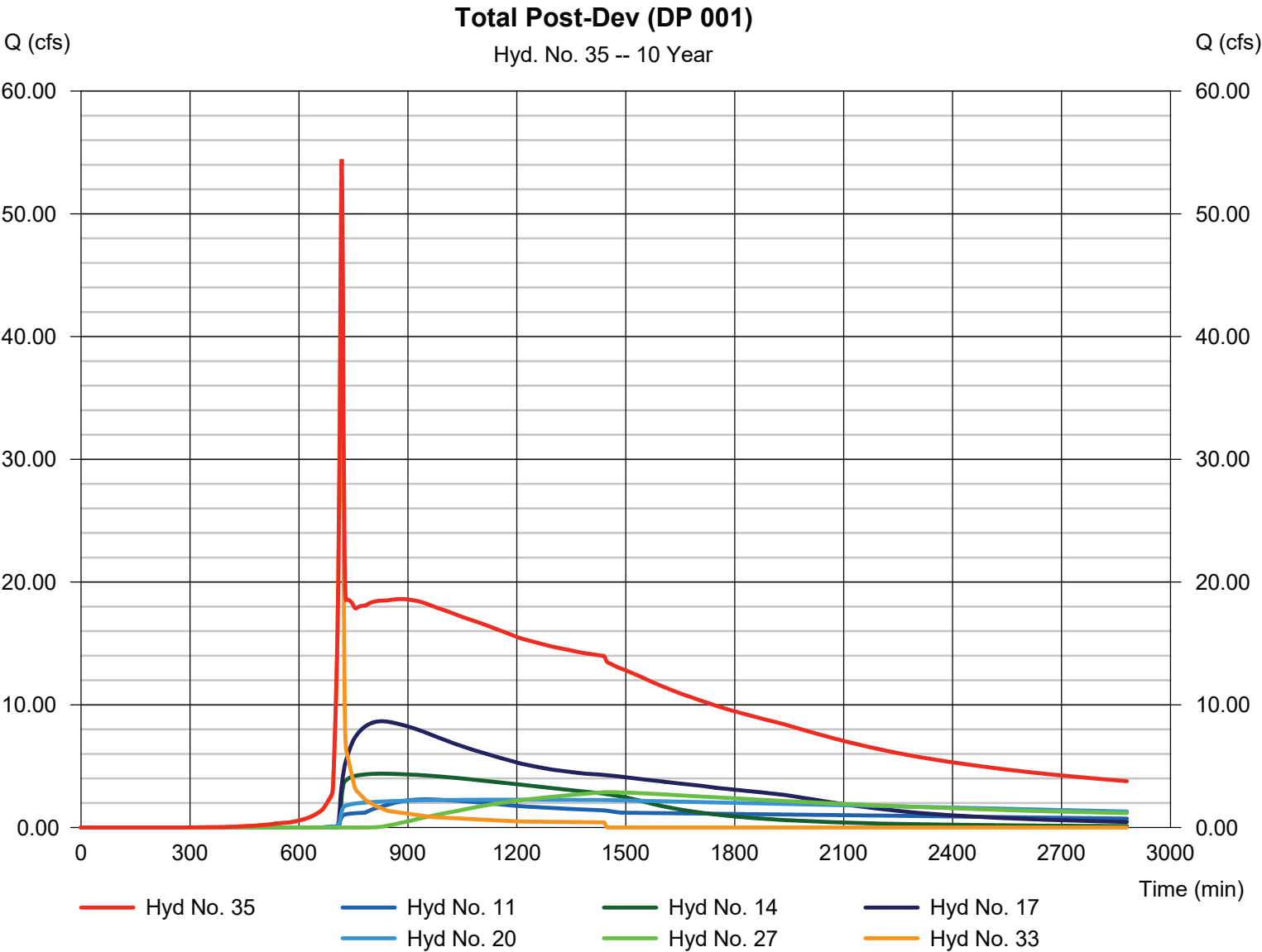
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 35

Total Post-Dev (DP 001)

Hydrograph type	= Combine	Peak discharge	= 54.44 cfs
Storm frequency	= 10 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 1,404,174 cuft
Inflow hyds.	= 11, 14, 17, 20, 27, 33	Contrib. drain. area	= 0.000 ac



Hydrograph Report

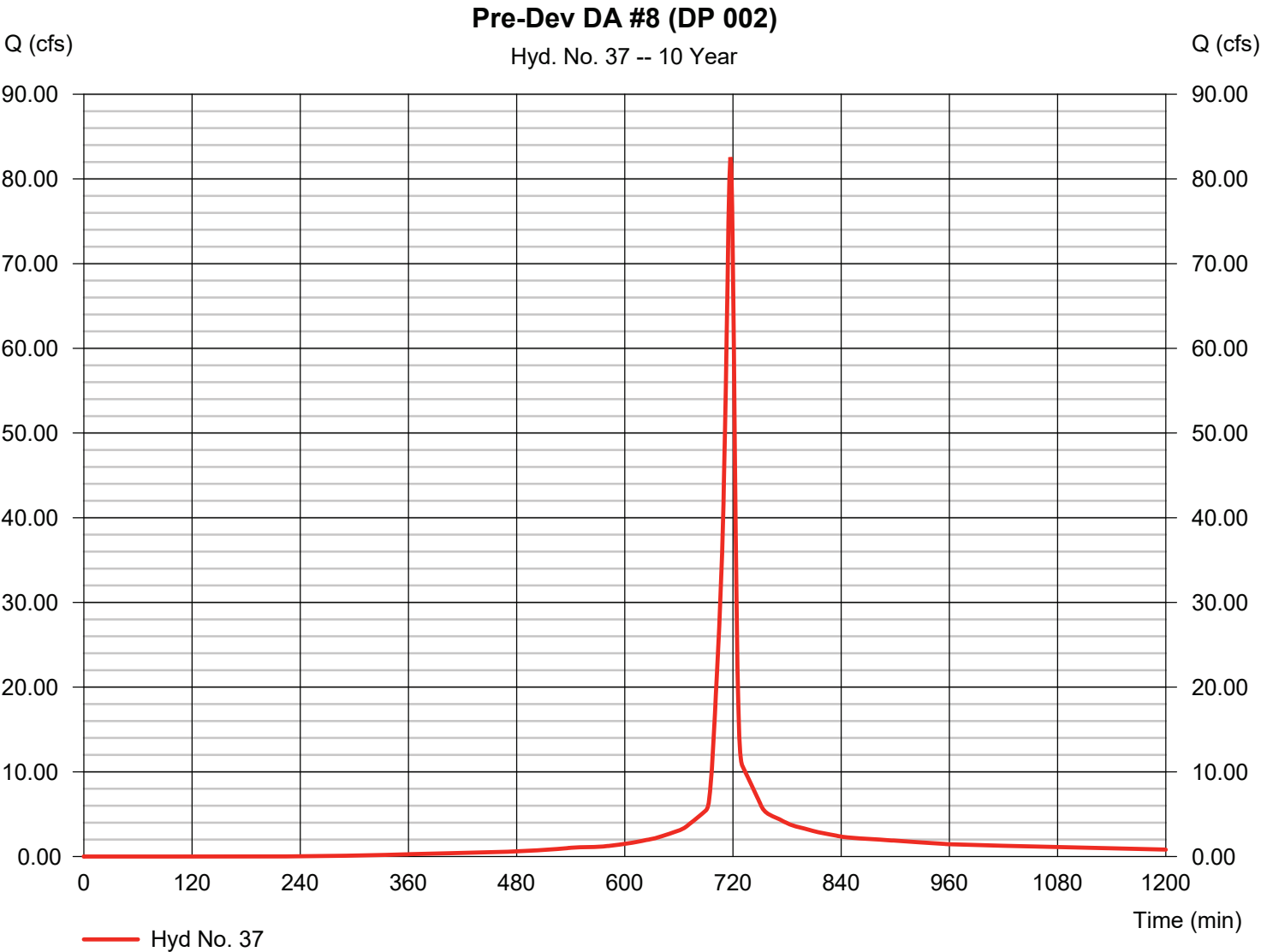
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 37

Pre-Dev DA #8 (DP 002)

Hydrograph type	=	SCS Runoff	Peak discharge	=	82.56 cfs
Storm frequency	=	10 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	178,473 cuft
Drainage area	=	12.400 ac	Curve number	=	89.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

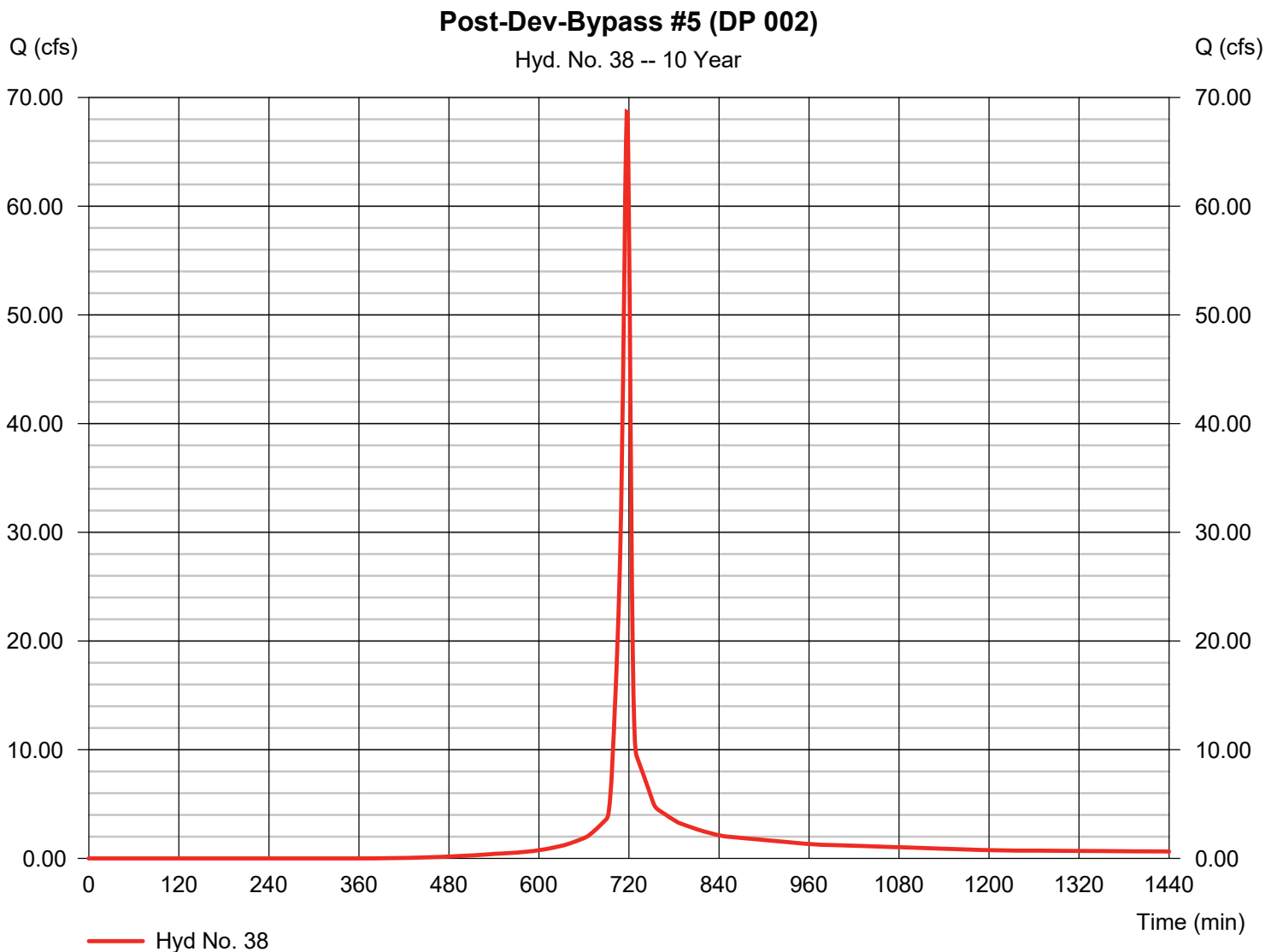
Thursday, 06 / 19 / 2025

Hyd. No. 38

Post-Dev-Bypass #5 (DP 002)

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Time interval = 1 min
Drainage area = 12.400 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 5.00 in
Storm duration = 24 hrs

Peak discharge = 68.68 cfs
Time to peak = 717 min
Hyd. volume = 141,615 cuft
Curve number = 81.7
Hydraulic length = 0 ft
Time of conc. (Tc) = 5.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

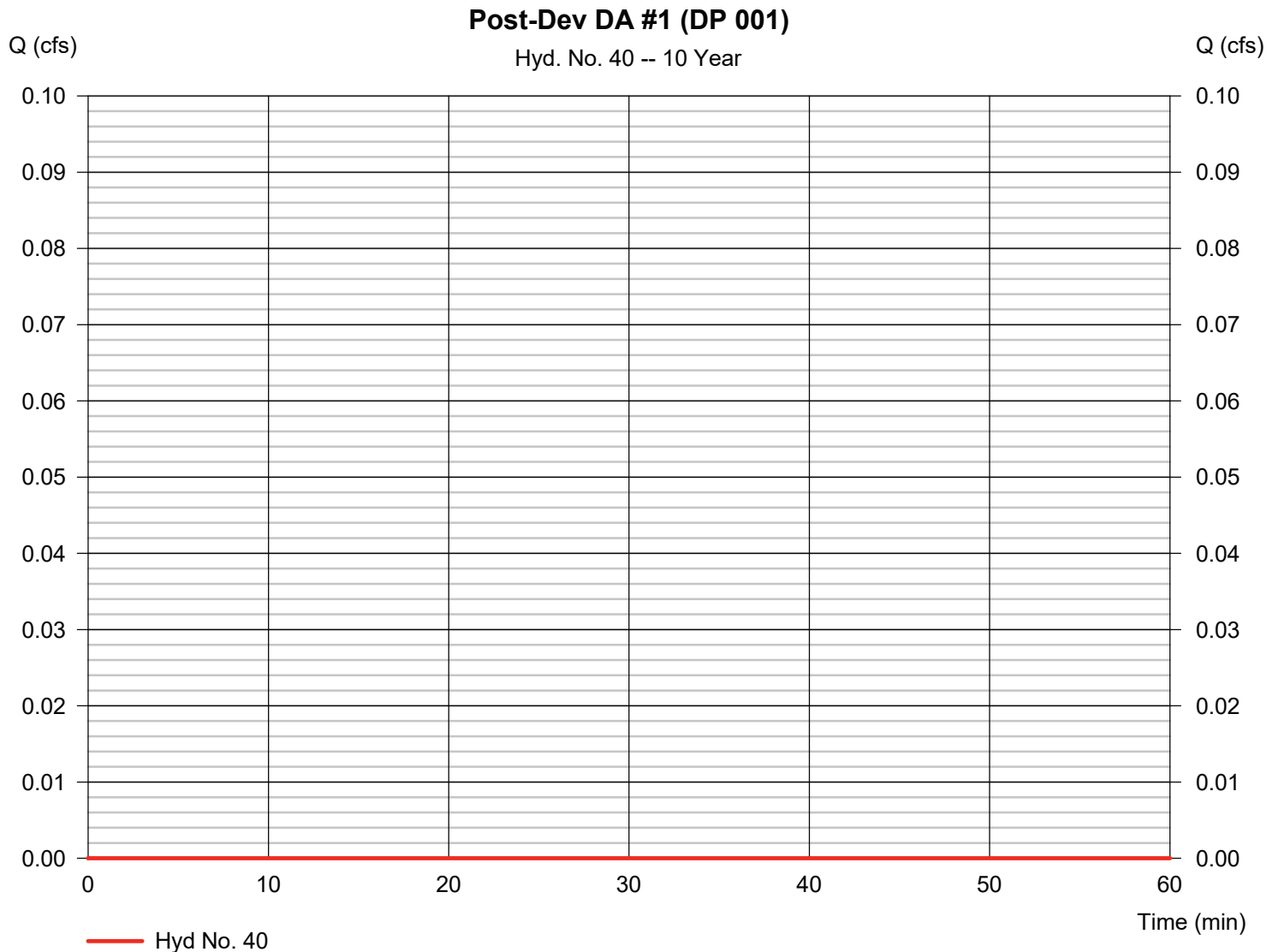
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Thursday, 06 / 19 / 2025

Hyd. No. 40

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



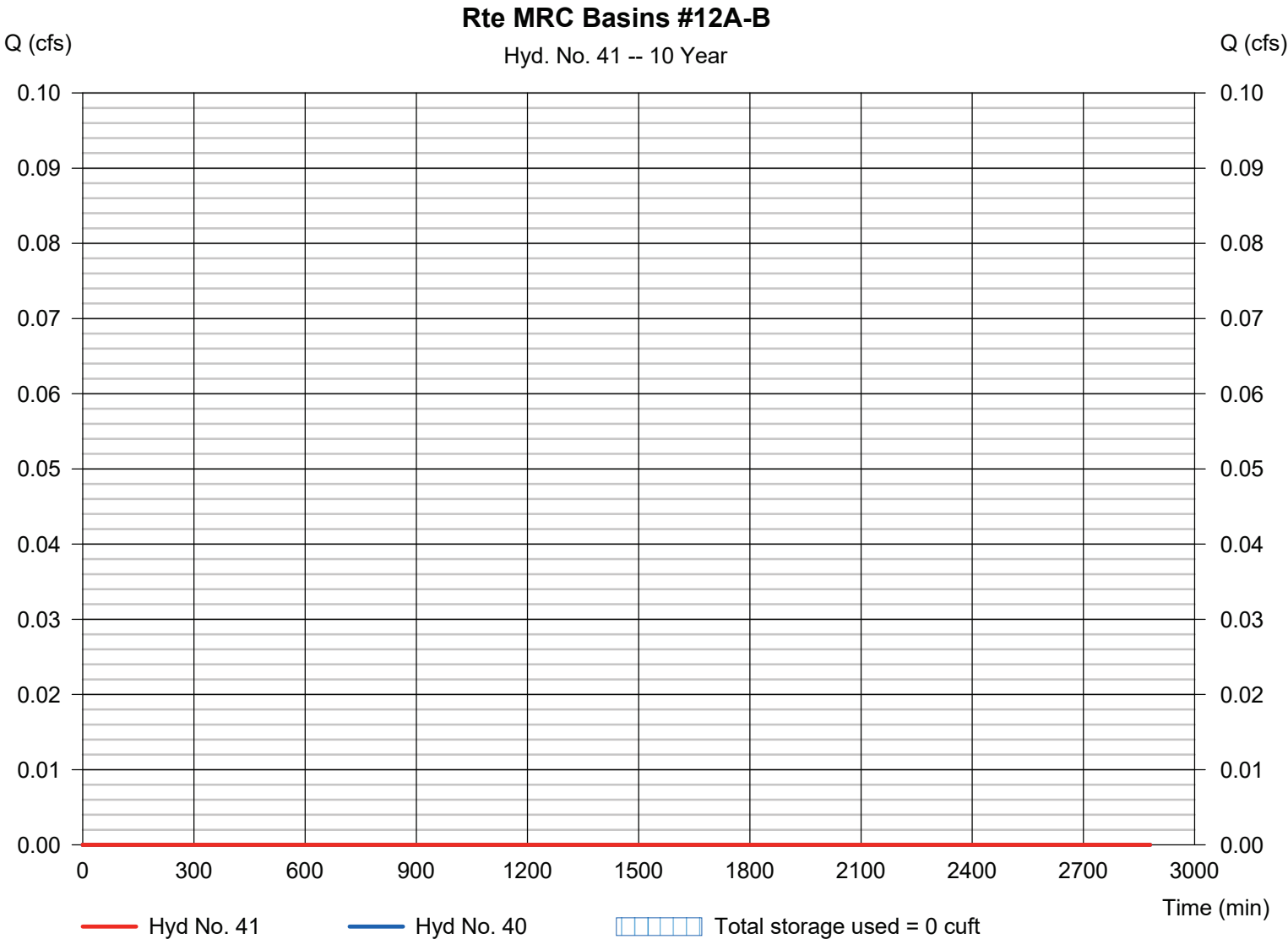
Hydrograph Report

Hyd. No. 41

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 40 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

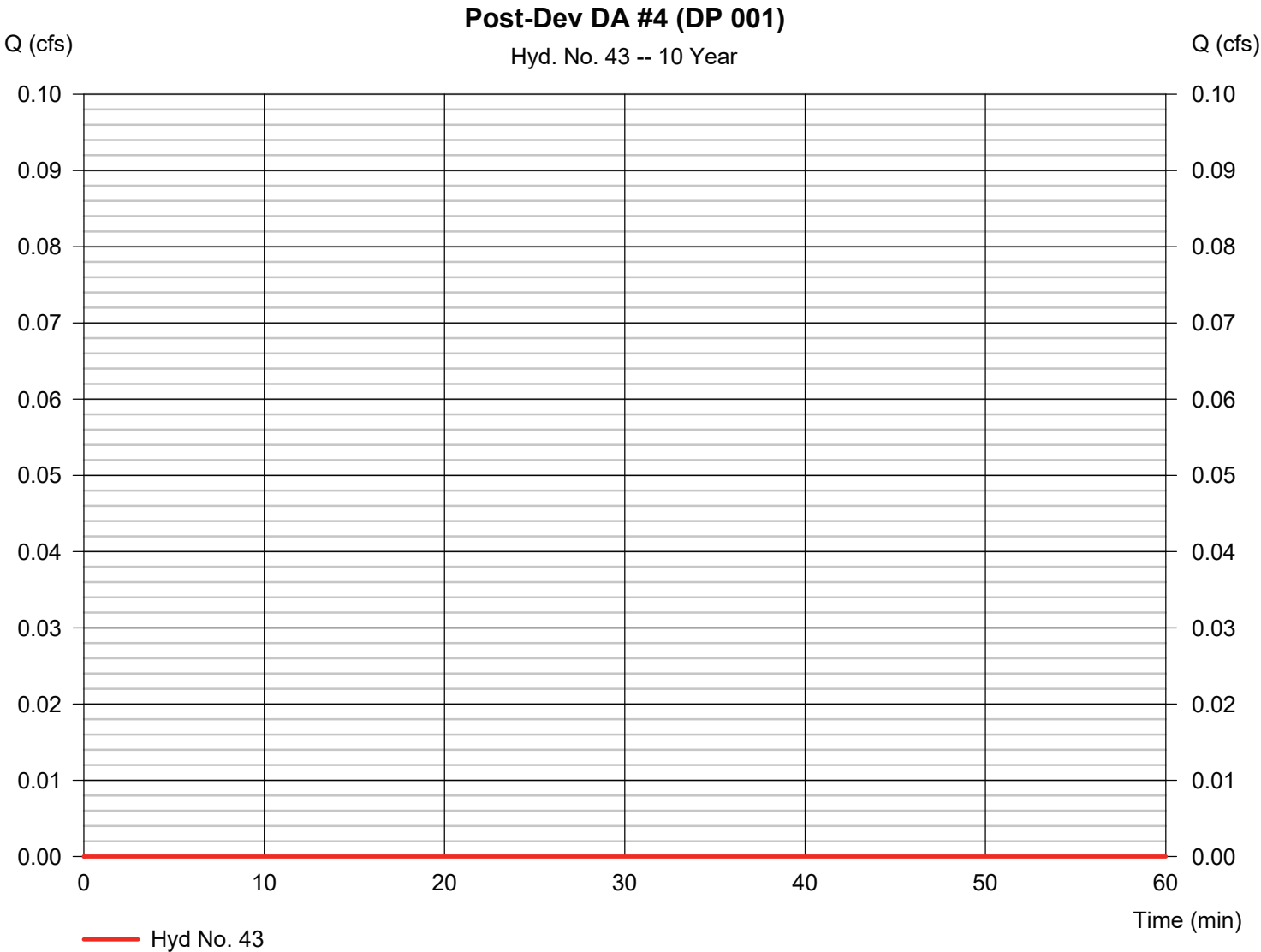
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 43

Post-Dev DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.000 cfs
Storm frequency	=	10 yrs	Time to peak	=	n/a
Time interval	=	1 min	Hyd. volume	=	0 cuft
Drainage area	=	31.230 ac	Curve number	=	90.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	0.00 in	Distribution	=	Custom
Storm duration	=	Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph...			



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

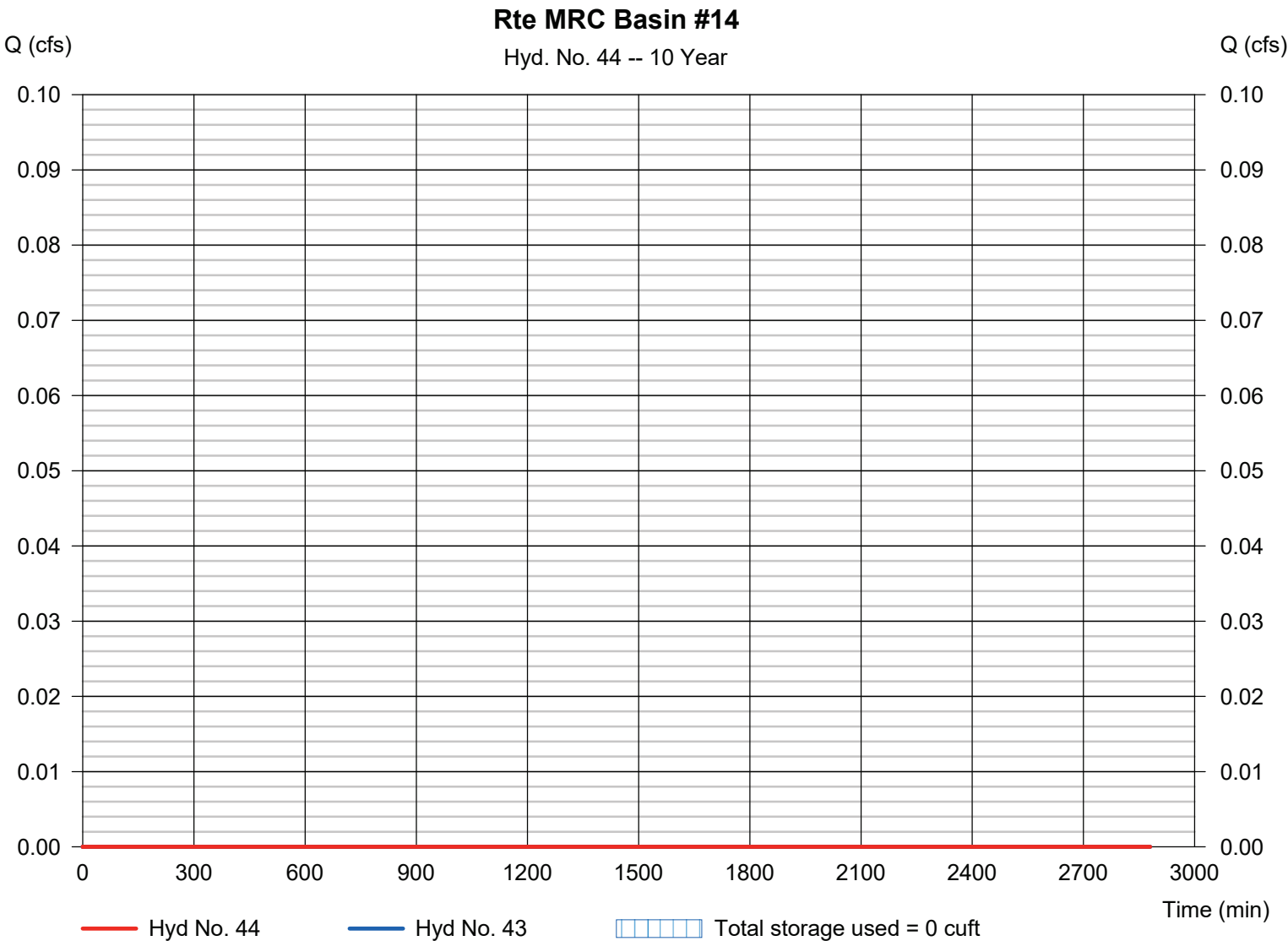
Thursday, 06 / 19 / 2025

Hyd. No. 44

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 43 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

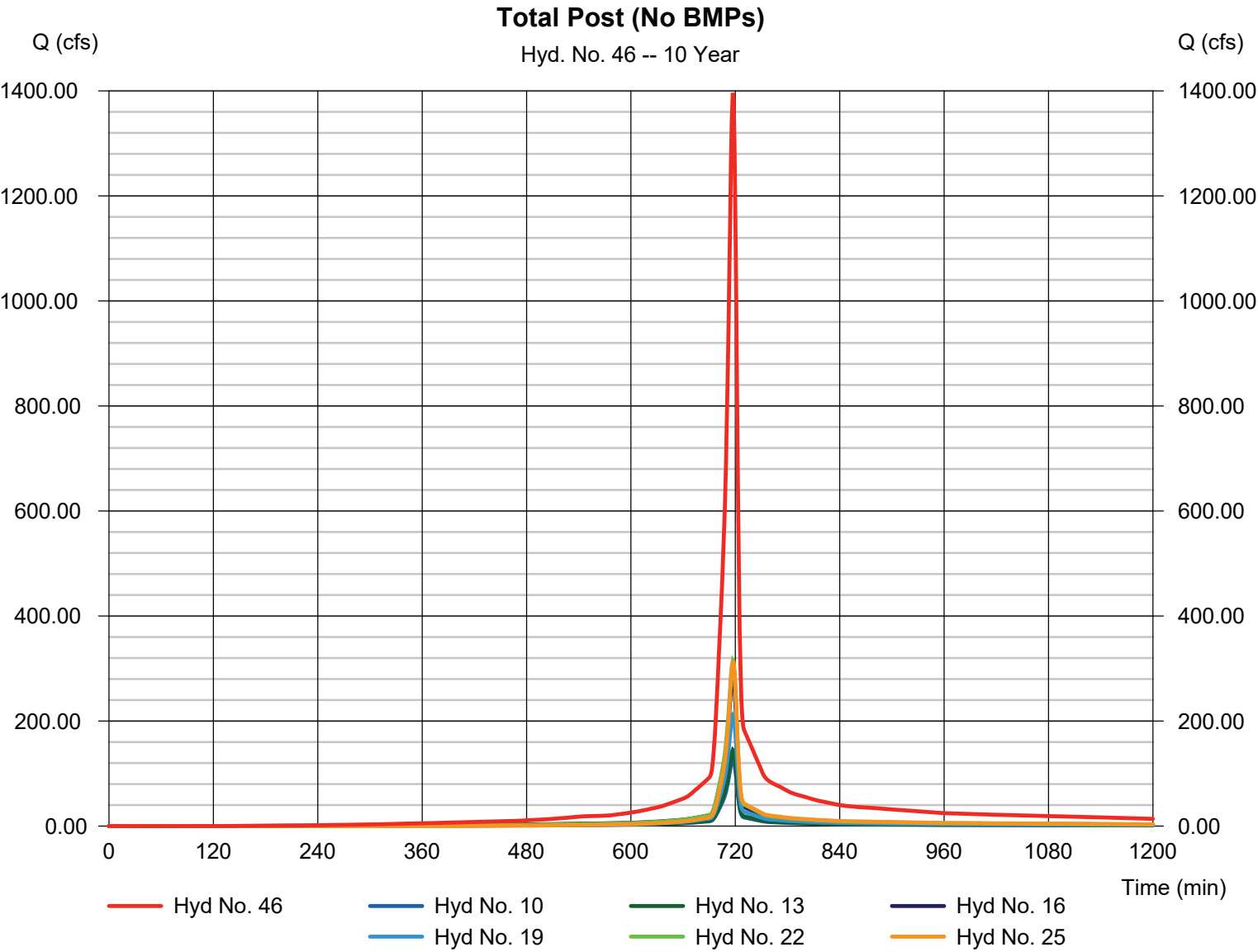
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 46

Total Post (No BMPs)

Hydrograph type	= Combine	Peak discharge	= 1396.07 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 3,043,470 cuft
Inflow hyds.	= 10, 13, 16, 19, 22, 25	Contrib. drain. area	= 212.440 ac



Hydrograph Report

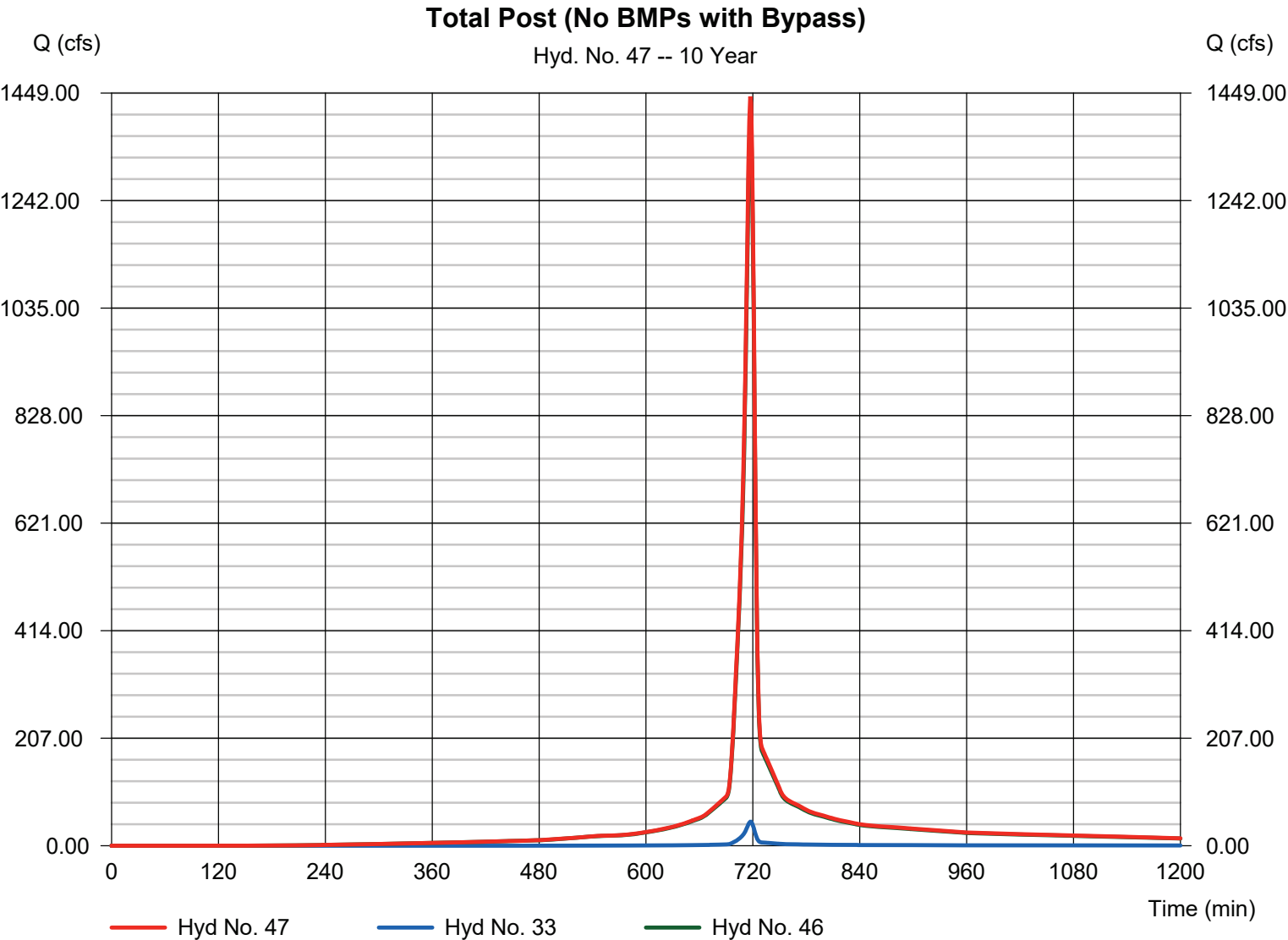
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 47

Total Post (No BMPs with Bypass)

Hydrograph type	= Combine	Peak discharge	= 1442.27 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 3,139,456 cuft
Inflow hyds.	= 33, 46	Contrib. drain. area	= 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

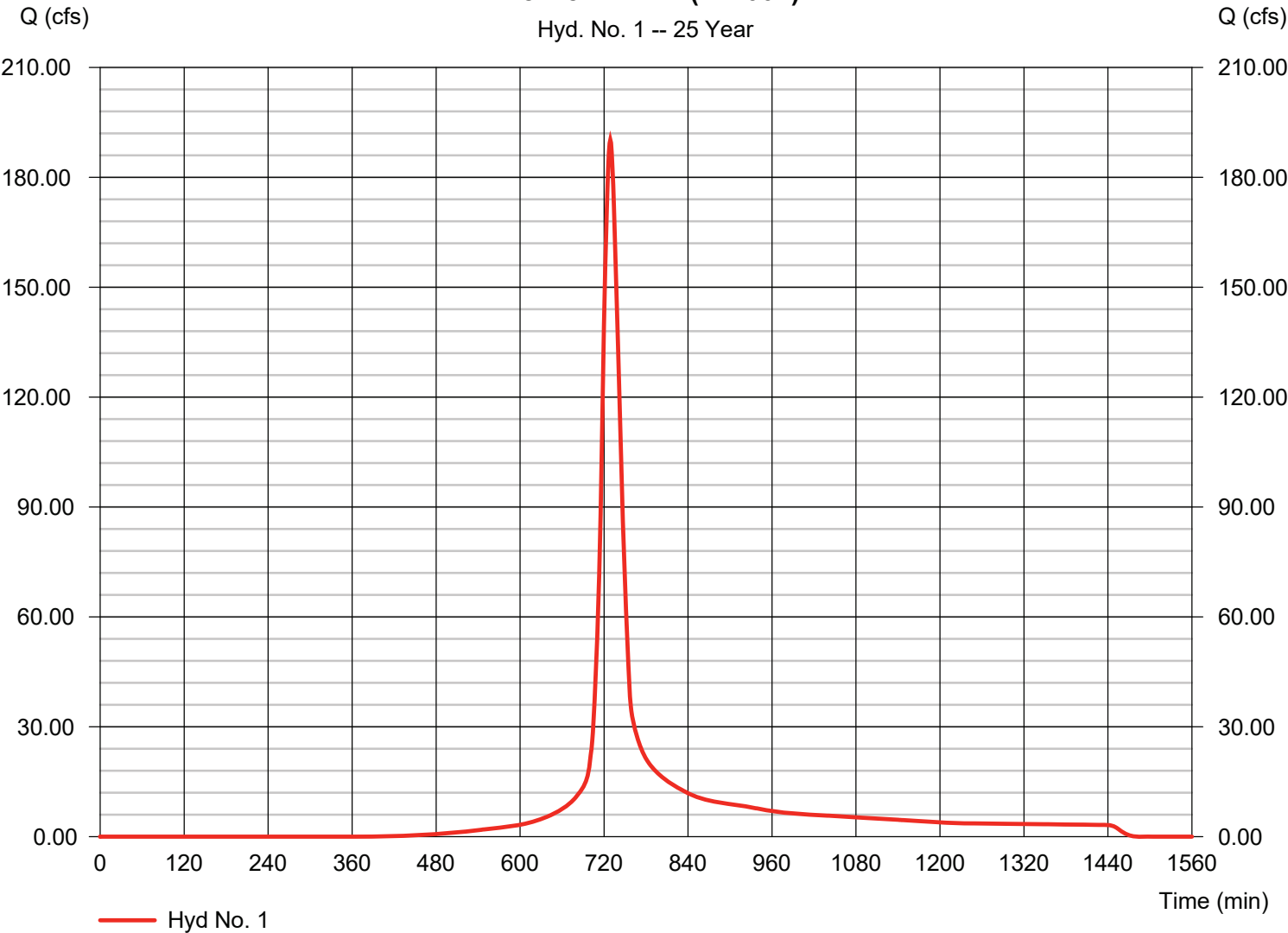
Hyd. No. 1

Pre-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 190.23 cfs
Storm frequency	= 25 yrs	Time to peak	= 729 min
Time interval	= 1 min	Hyd. volume	= 708,253 cuft
Drainage area	= 54.210 ac	Curve number	= 79.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.80 min
Total precip.	= 5.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Pre-Dev DA #1 (DP 001)

Hyd. No. 1 -- 25 Year



Hydrograph Report

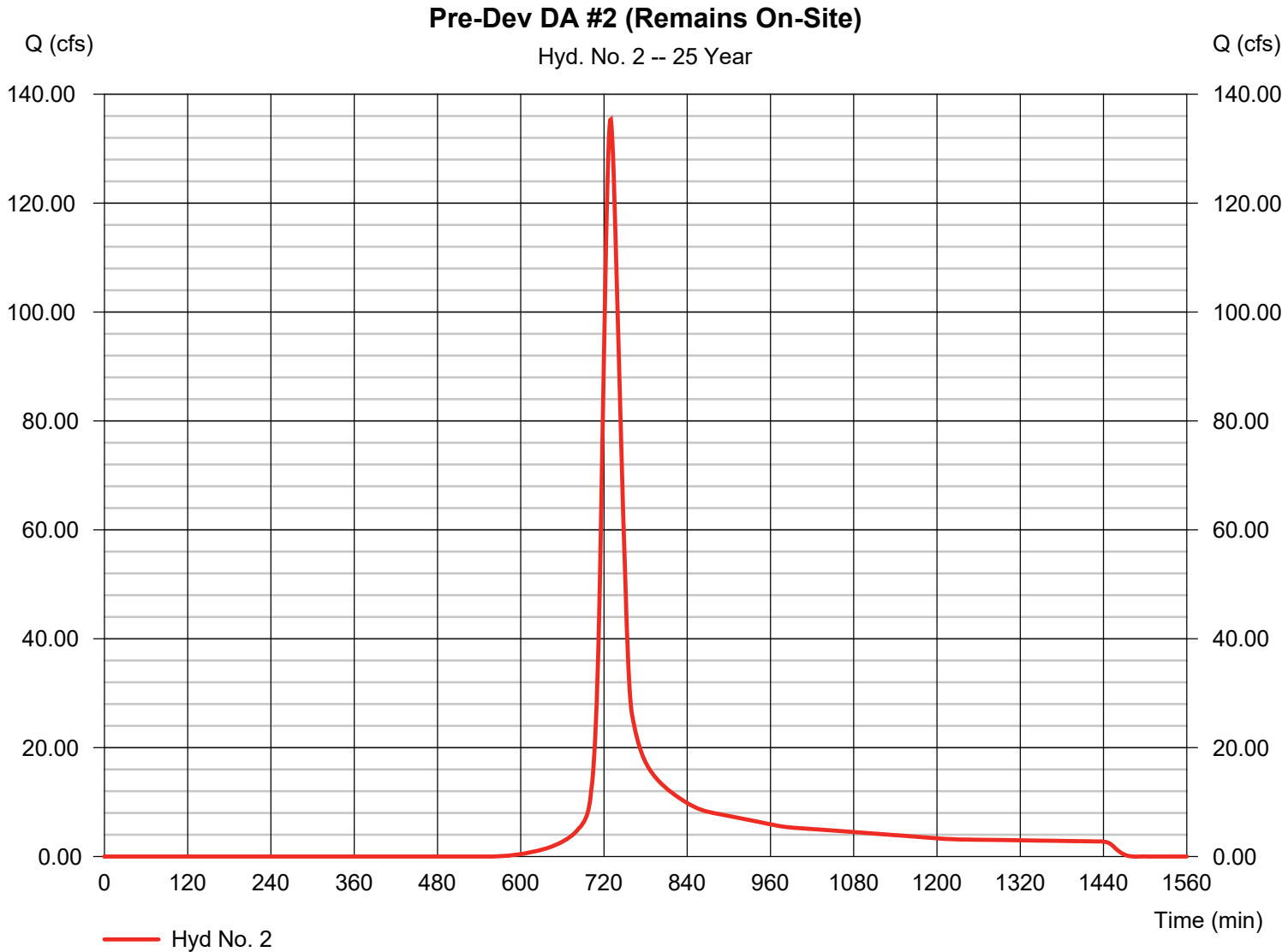
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 2

Pre-Dev DA #2 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	135.37 cfs
Storm frequency	=	25 yrs	Time to peak	=	730 min
Time interval	=	1 min	Hyd. volume	=	511,011 cuft
Drainage area	=	54.240 ac	Curve number	=	69.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	26.00 min
Total precip.	=	5.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

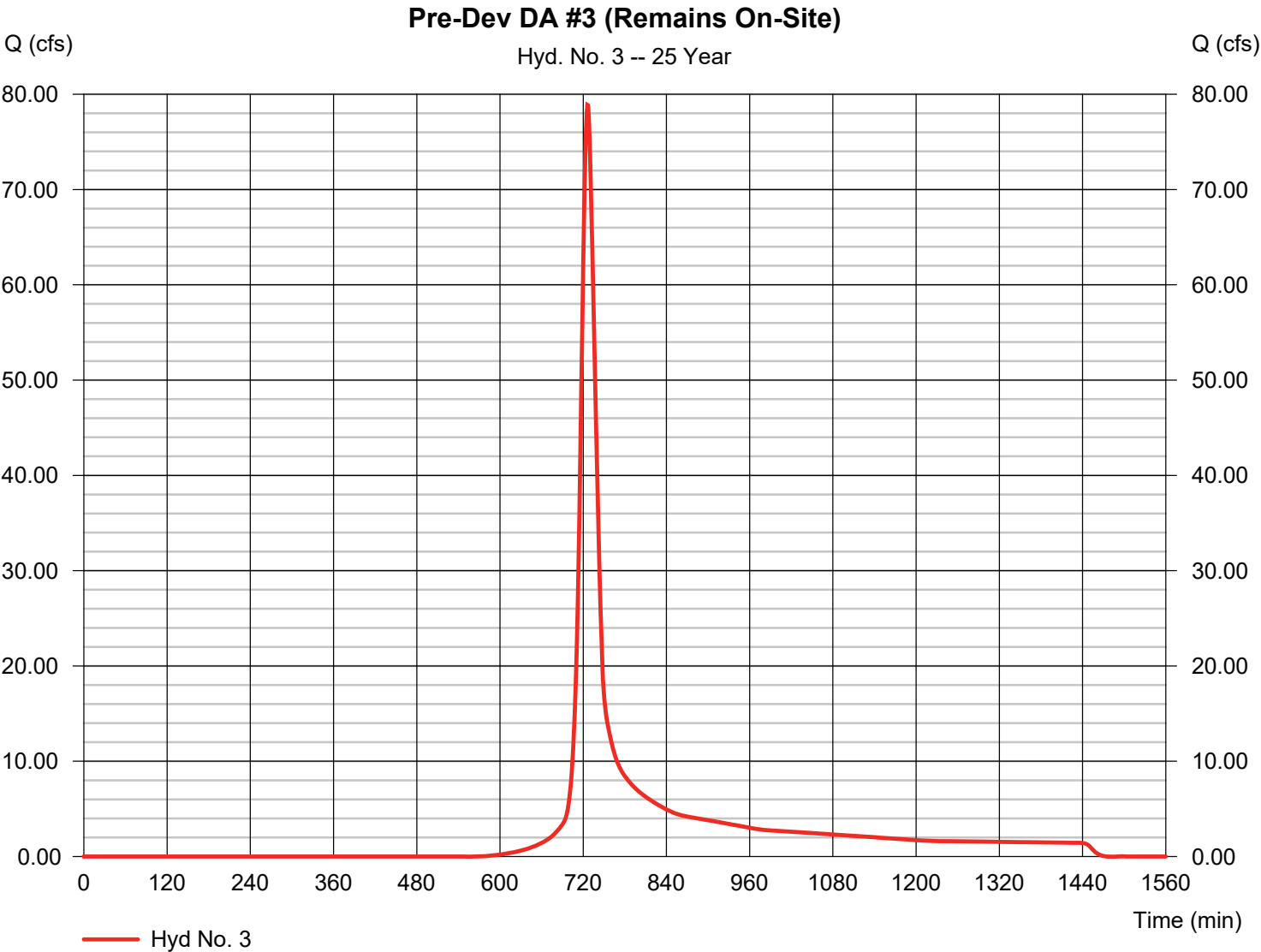
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 3

Pre-Dev DA #3 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	78.88 cfs
Storm frequency	=	25 yrs	Time to peak	=	726 min
Time interval	=	1 min	Hyd. volume	=	262,641 cuft
Drainage area	=	28.420 ac	Curve number	=	68.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	20.50 min
Total precip.	=	5.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

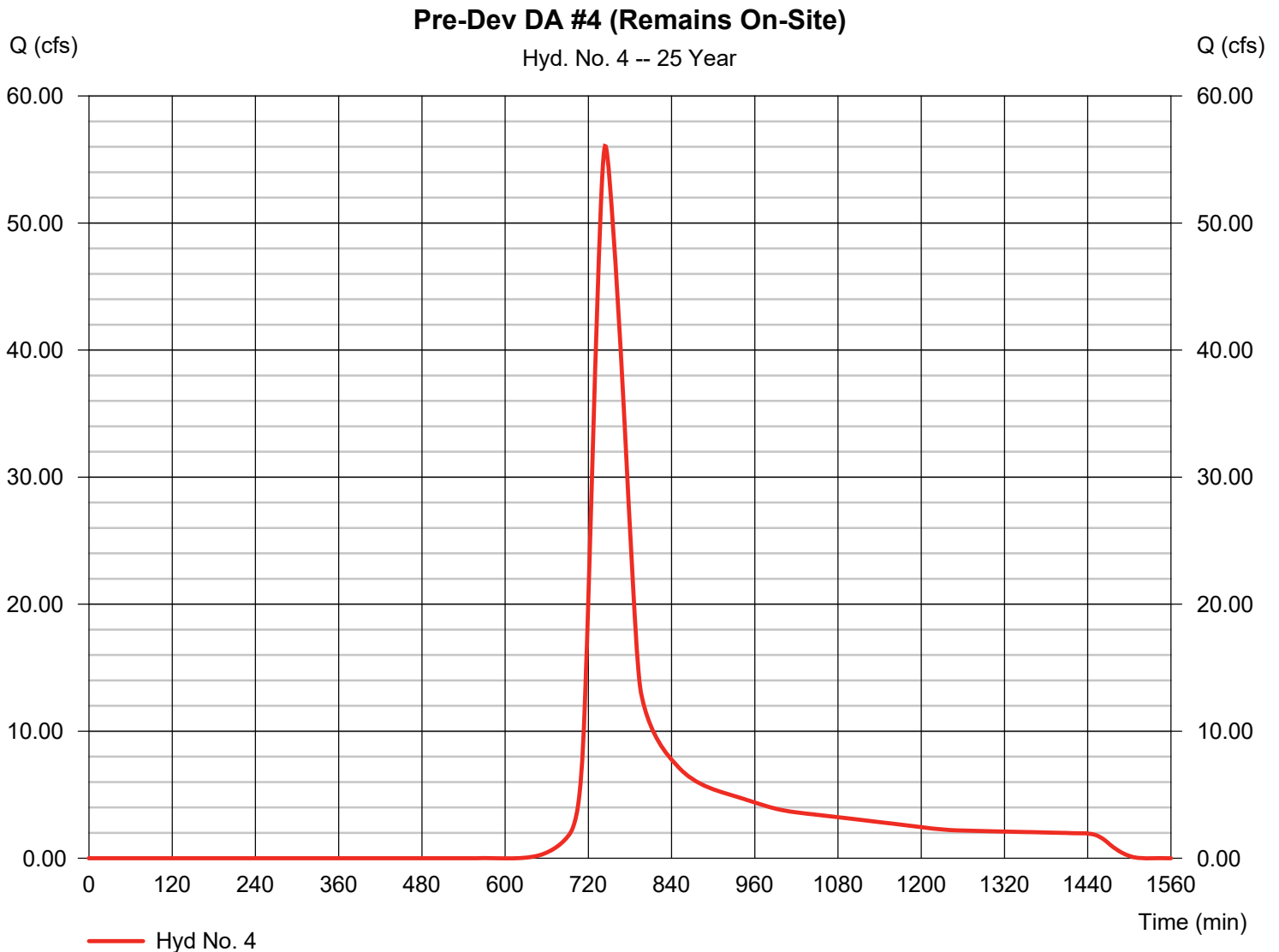
Thursday, 06 / 19 / 2025

Hyd. No. 4

Pre-Dev DA #4 (Remains On-Site)

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 1 min
 Drainage area = 41.280 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 5.80 in
 Storm duration = 24 hrs

Peak discharge = 56.05 cfs
 Time to peak = 744 min
 Hyd. volume = 331,991 cuft
 Curve number = 65.1
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 49.50 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 5

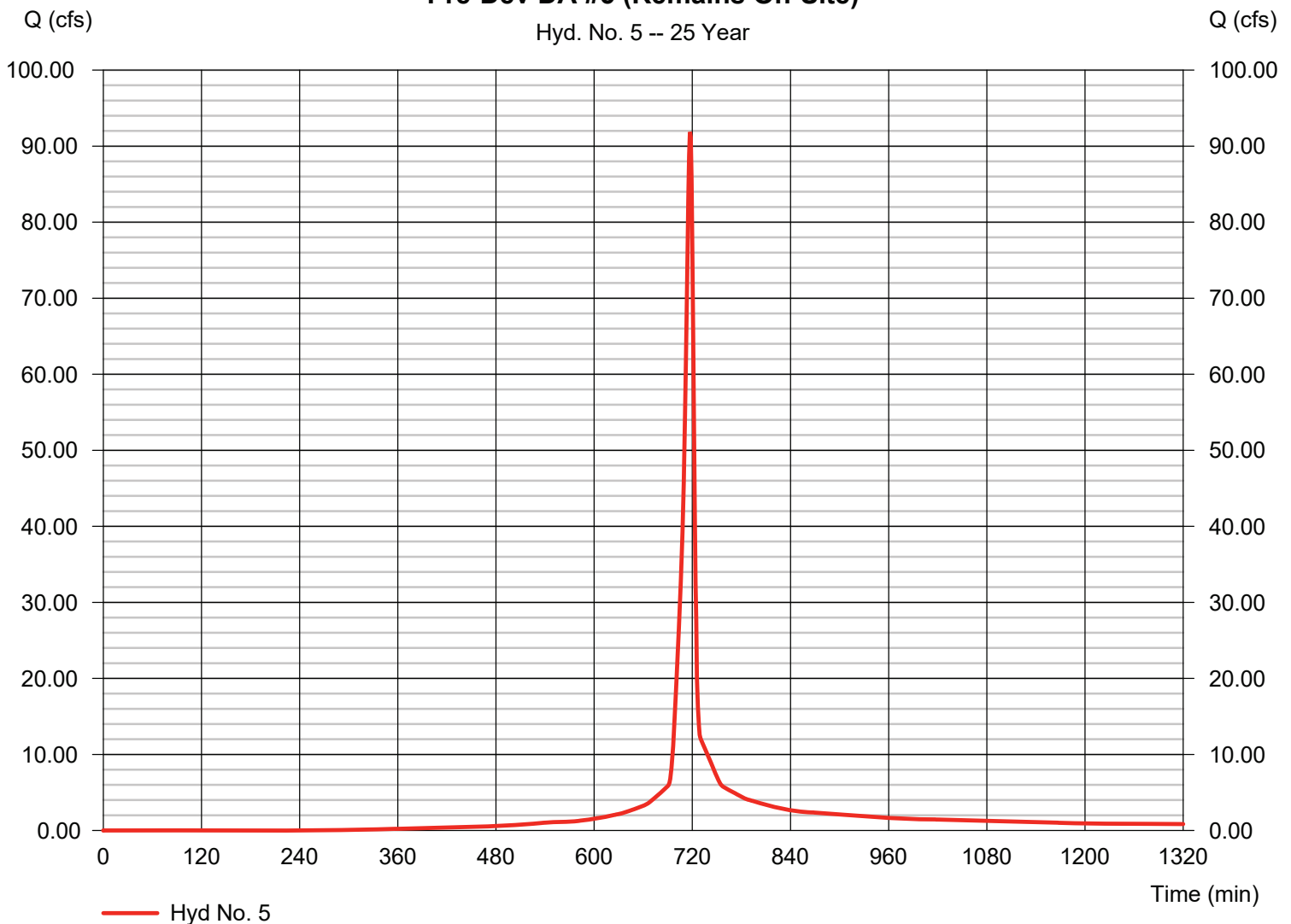
Pre-Dev DA #5 (Remains On-Site)

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 1 min
 Drainage area = 12.240 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 5.80 in
 Storm duration = 24 hrs

Peak discharge = 91.87 cfs
 Time to peak = 717 min
 Hyd. volume = 196,263 cuft
 Curve number = 86.6
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.20 min
 Distribution = Type II
 Shape factor = 484

Pre-Dev DA #5 (Remains On-Site)

Hyd. No. 5 -- 25 Year



Hydrograph Report

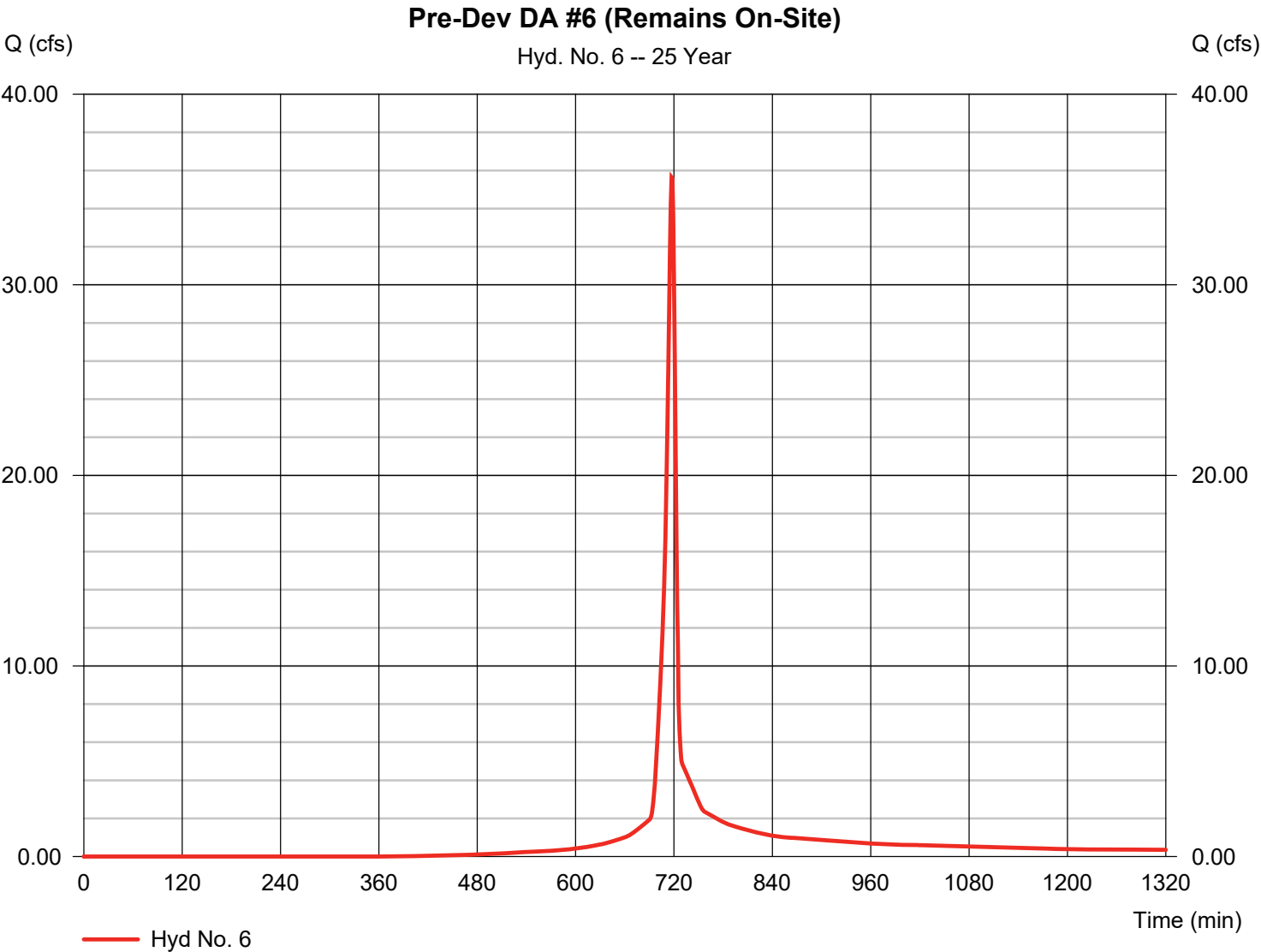
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 6

Pre-Dev DA #6 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	35.64 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	73,746 cuft
Drainage area	=	5.410 ac	Curve number	=	80.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	5.97 min
Total precip.	=	5.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 7

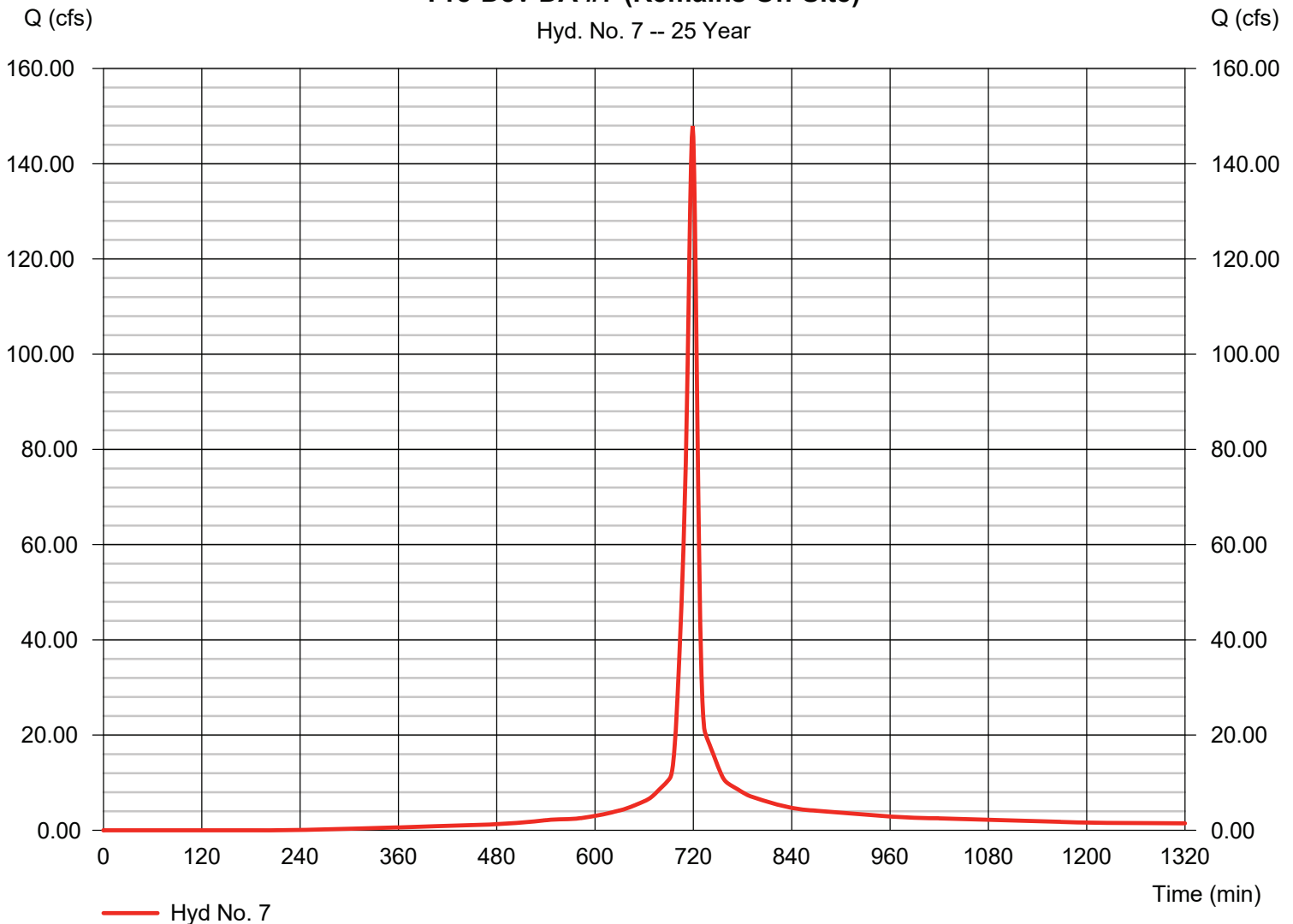
Pre-Dev DA #7 (Remains On-Site)

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 1 min
 Drainage area = 21.490 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 5.80 in
 Storm duration = 24 hrs

Peak discharge = 147.92 cfs
 Time to peak = 719 min
 Hyd. volume = 356,005 cuft
 Curve number = 89.2
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 8.50 min
 Distribution = Type II
 Shape factor = 484

Pre-Dev DA #7 (Remains On-Site)

Hyd. No. 7 -- 25 Year



Hydrograph Report

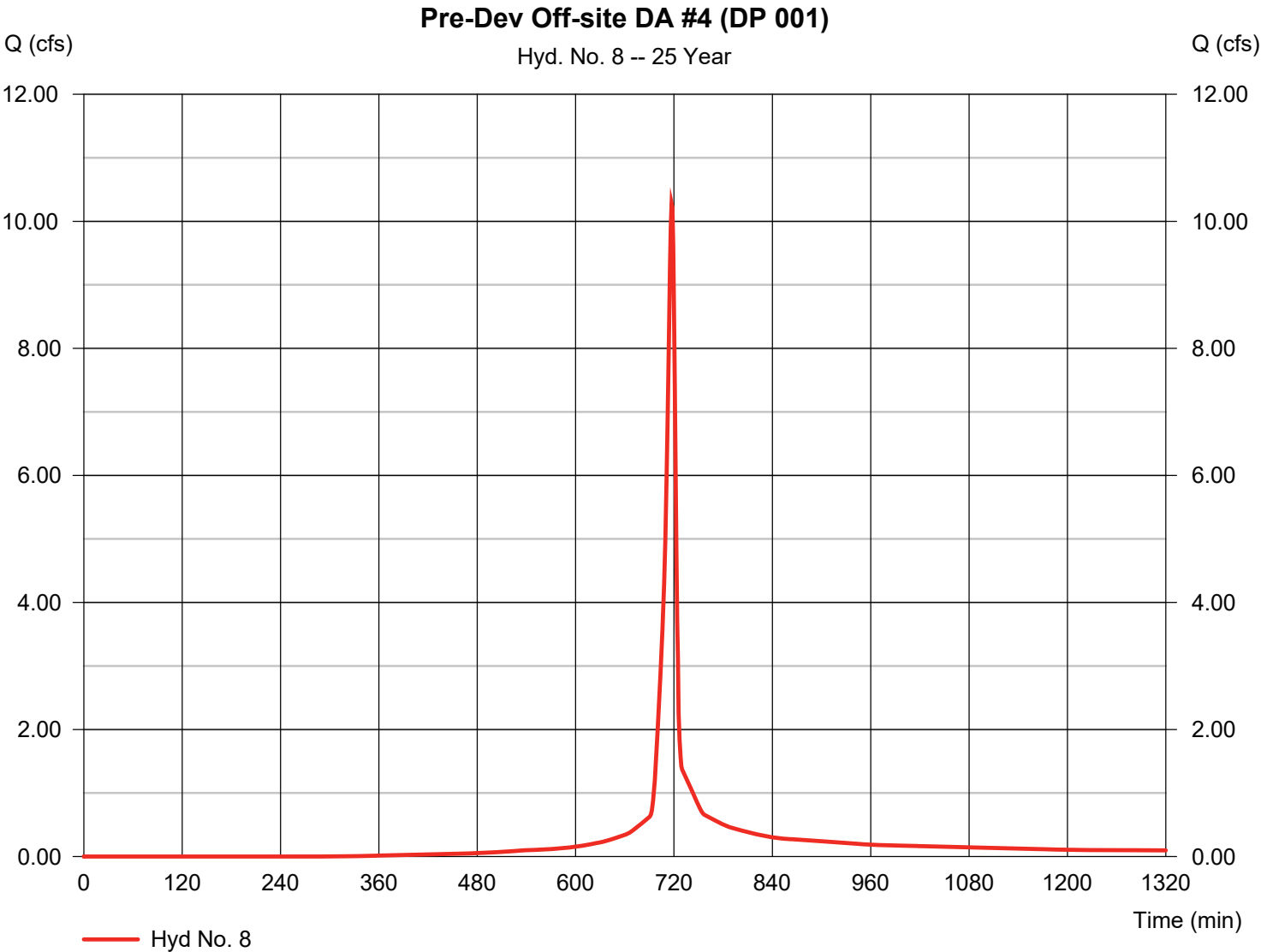
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 8

Pre-Dev Off-site DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.28 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	21,702 cuft
Drainage area	=	1.420 ac	Curve number	=	84.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

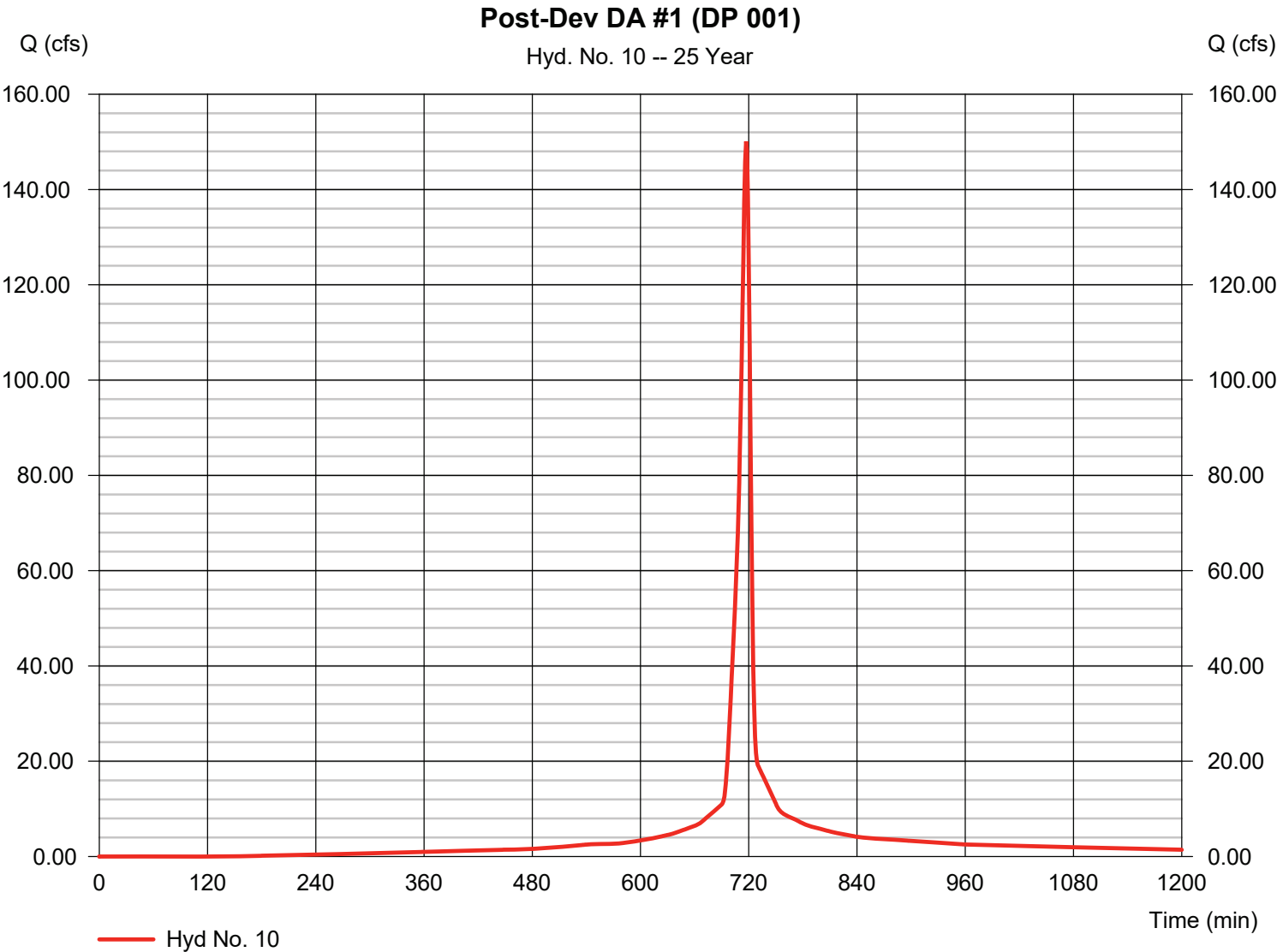
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 10

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 150.09 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 339,670 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 11

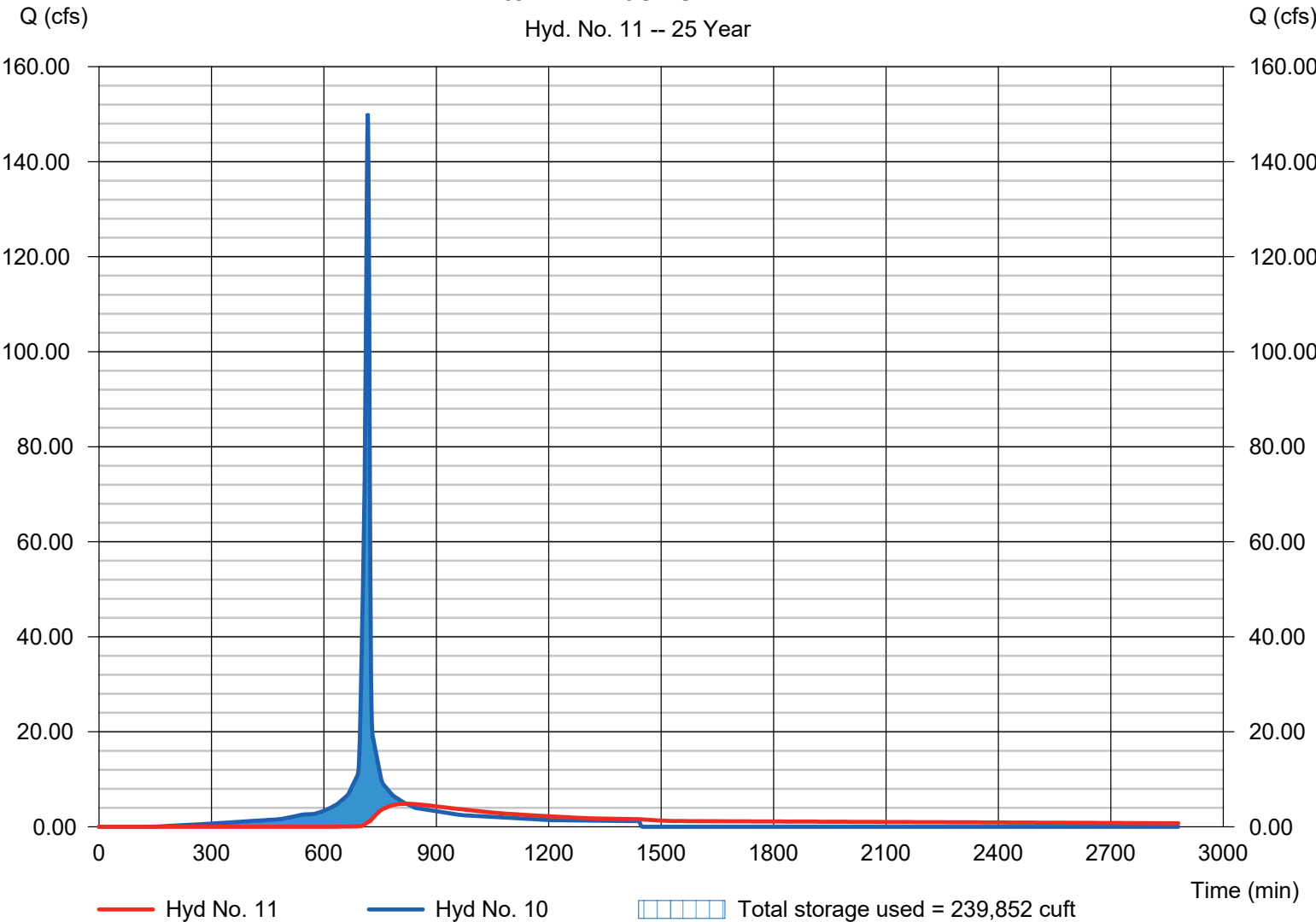
Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 4.853 cfs
Storm frequency	= 25 yrs	Time to peak	= 820 min
Time interval	= 1 min	Hyd. volume	= 214,658 cuft
Inflow hyd. No.	= 10 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 14.85 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 239,852 cuft

Storage Indication method used.

Rte MRC Basins #12A-B

Hyd. No. 11 -- 25 Year



Hydrograph Report

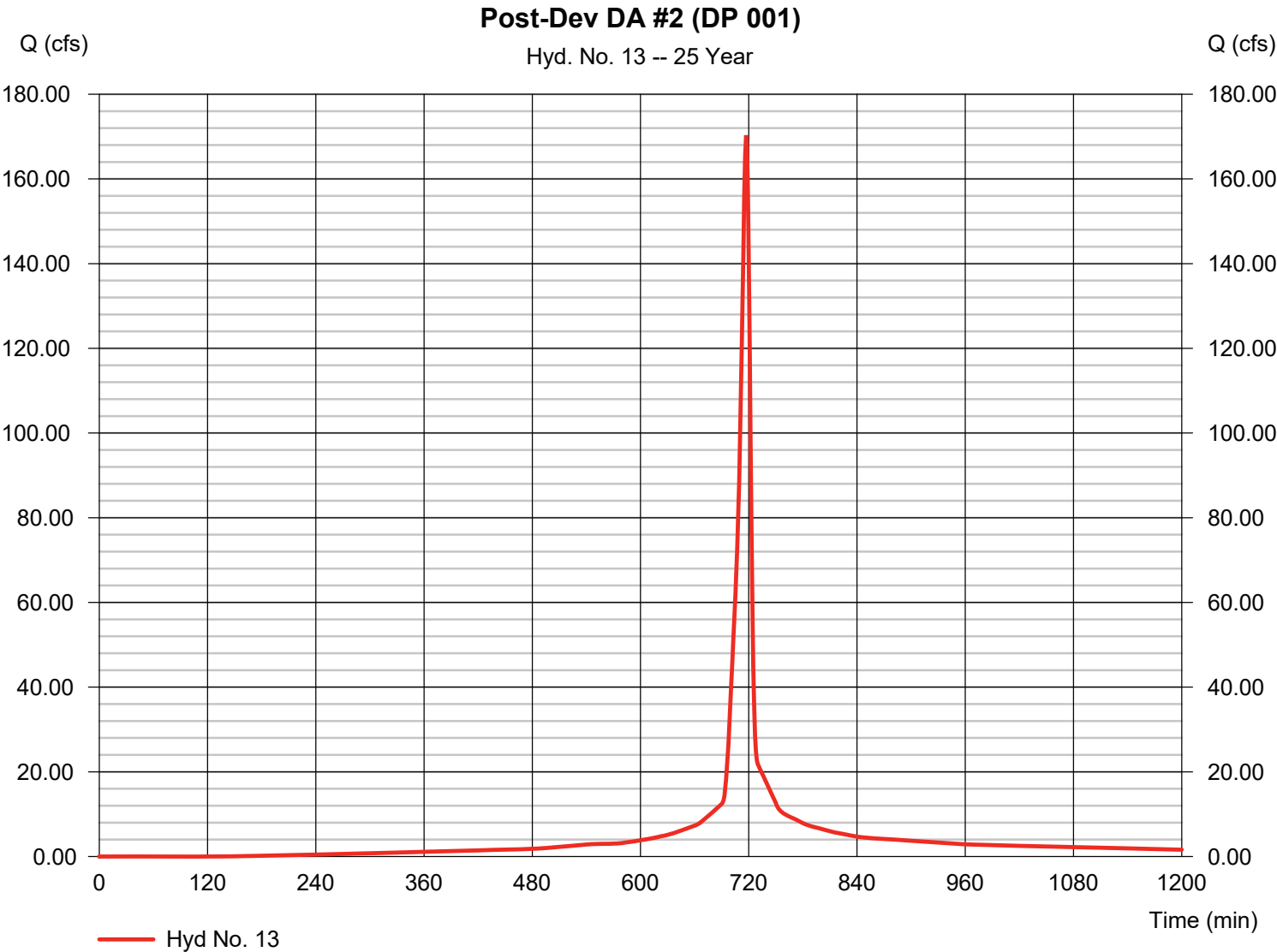
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 13

Post-Dev DA #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	170.34 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	385,496 cuft
Drainage area	=	20.610 ac	Curve number	=	93.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

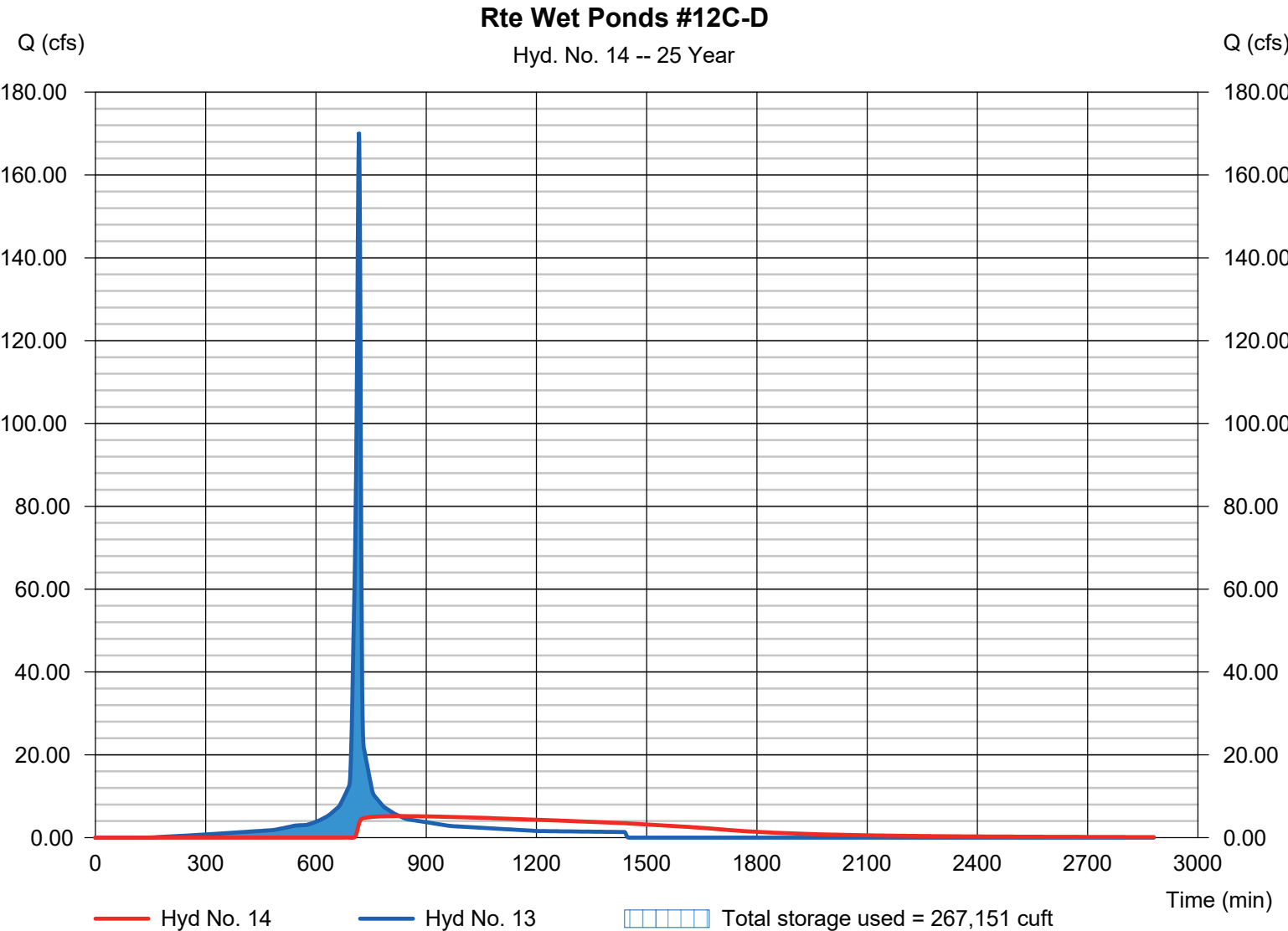
Thursday, 06 / 19 / 2025

Hyd. No. 14

Rte Wet Ponds #12C-D

Hydrograph type	= Reservoir	Peak discharge	= 5.199 cfs
Storm frequency	= 25 yrs	Time to peak	= 828 min
Time interval	= 1 min	Hyd. volume	= 281,555 cuft
Inflow hyd. No.	= 13 - Post-Dev DA #2 (DP 001)	Max. Elevation	= 12.74 ft
Reservoir name	= Wet Pond #12C-D	Max. Storage	= 267,151 cuft

Storage Indication method used.



Hydrograph Report

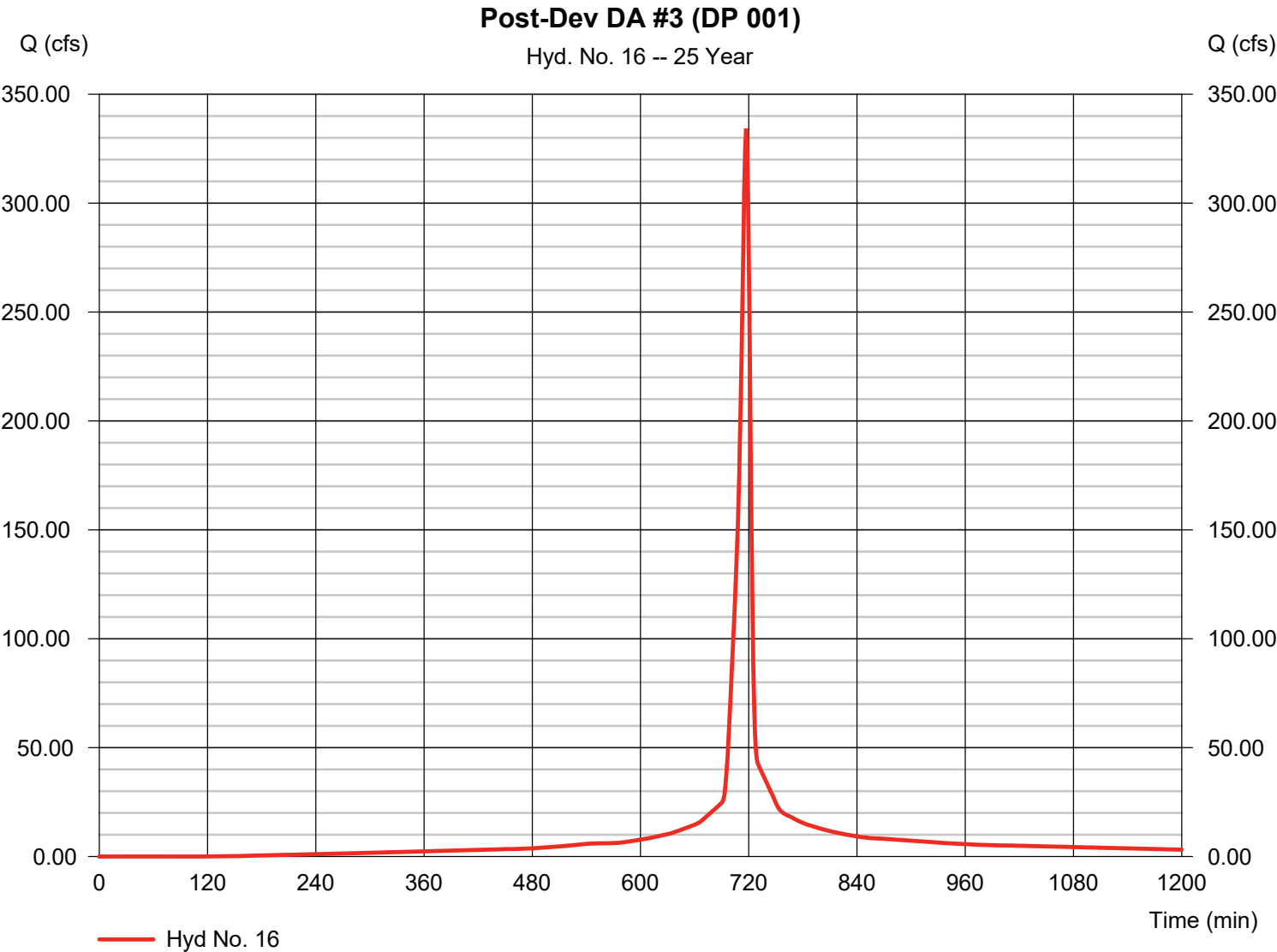
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 16

Post-Dev DA #3 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 334.26 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 762,706 cuft
Drainage area	= 40.140 ac	Curve number	= 93.8
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

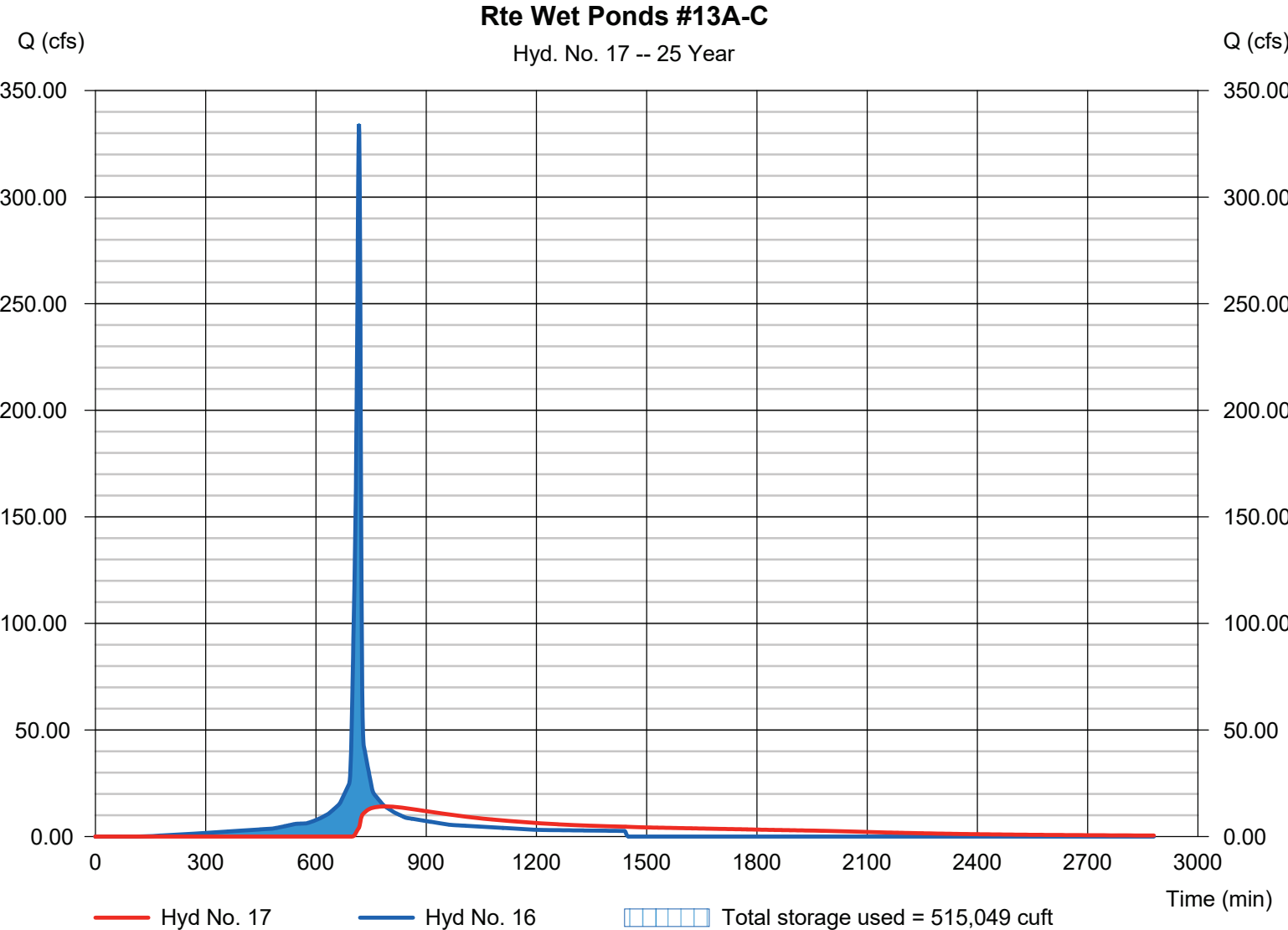
Thursday, 06 / 19 / 2025

Hyd. No. 17

Rte Wet Ponds #13A-C

Hydrograph type	= Reservoir	Peak discharge	= 14.13 cfs
Storm frequency	= 25 yrs	Time to peak	= 788 min
Time interval	= 1 min	Hyd. volume	= 561,674 cuft
Inflow hyd. No.	= 16 - Post-Dev DA #3 (DP 001)	Max. Elevation	= 13.19 ft
Reservoir name	= Wet Pond #13A-C	Max. Storage	= 515,049 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

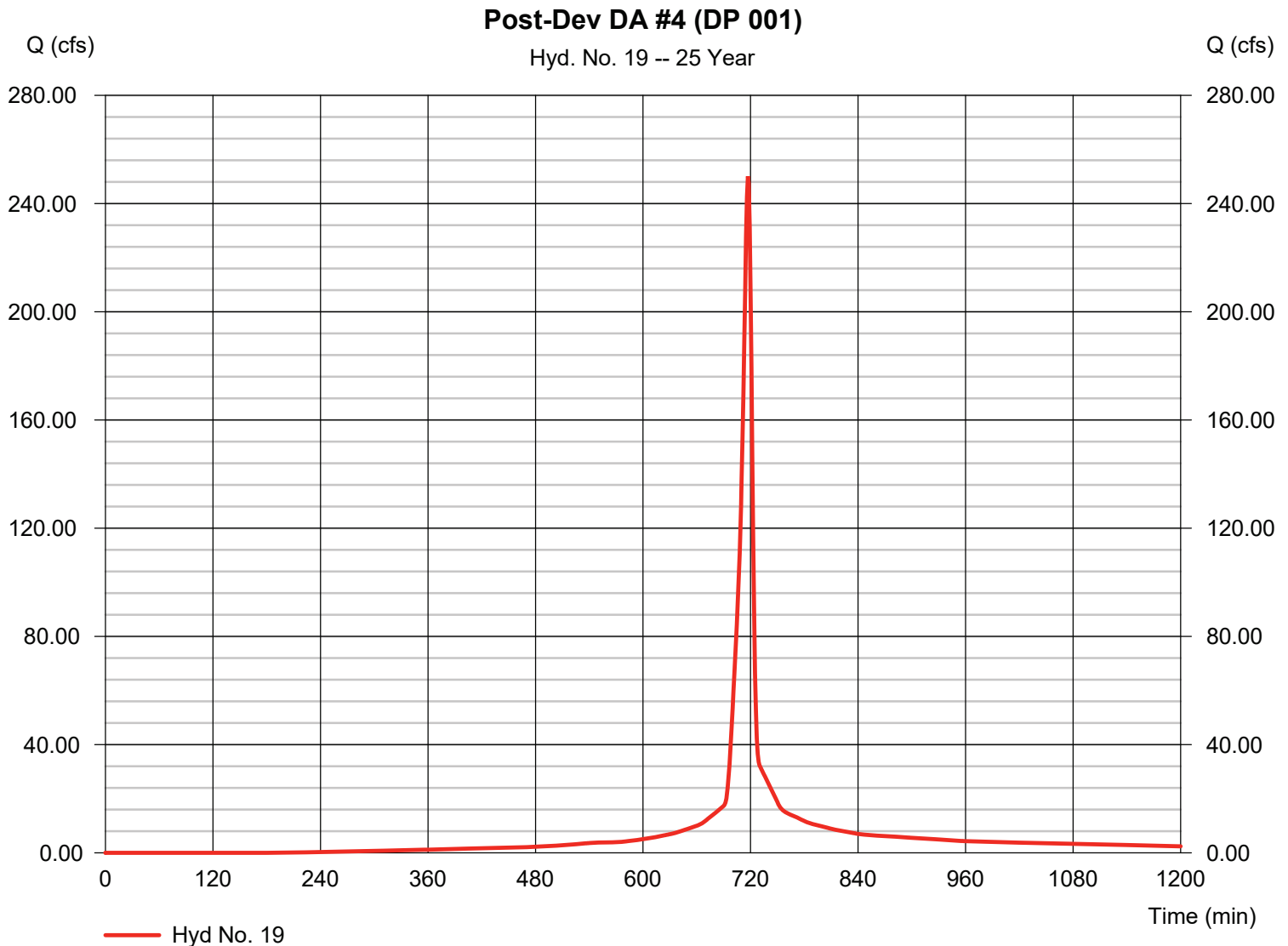
Thursday, 06 / 19 / 2025

Hyd. No. 19

Post-Dev DA #4 (DP 001)

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Time interval = 1 min
Drainage area = 31.230 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 5.80 in
Storm duration = 24 hrs

Peak discharge = 250.07 cfs
Time to peak = 717 min
Hyd. volume = 551,491 cuft
Curve number = 90.6
Hydraulic length = 0 ft
Time of conc. (Tc) = 5.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

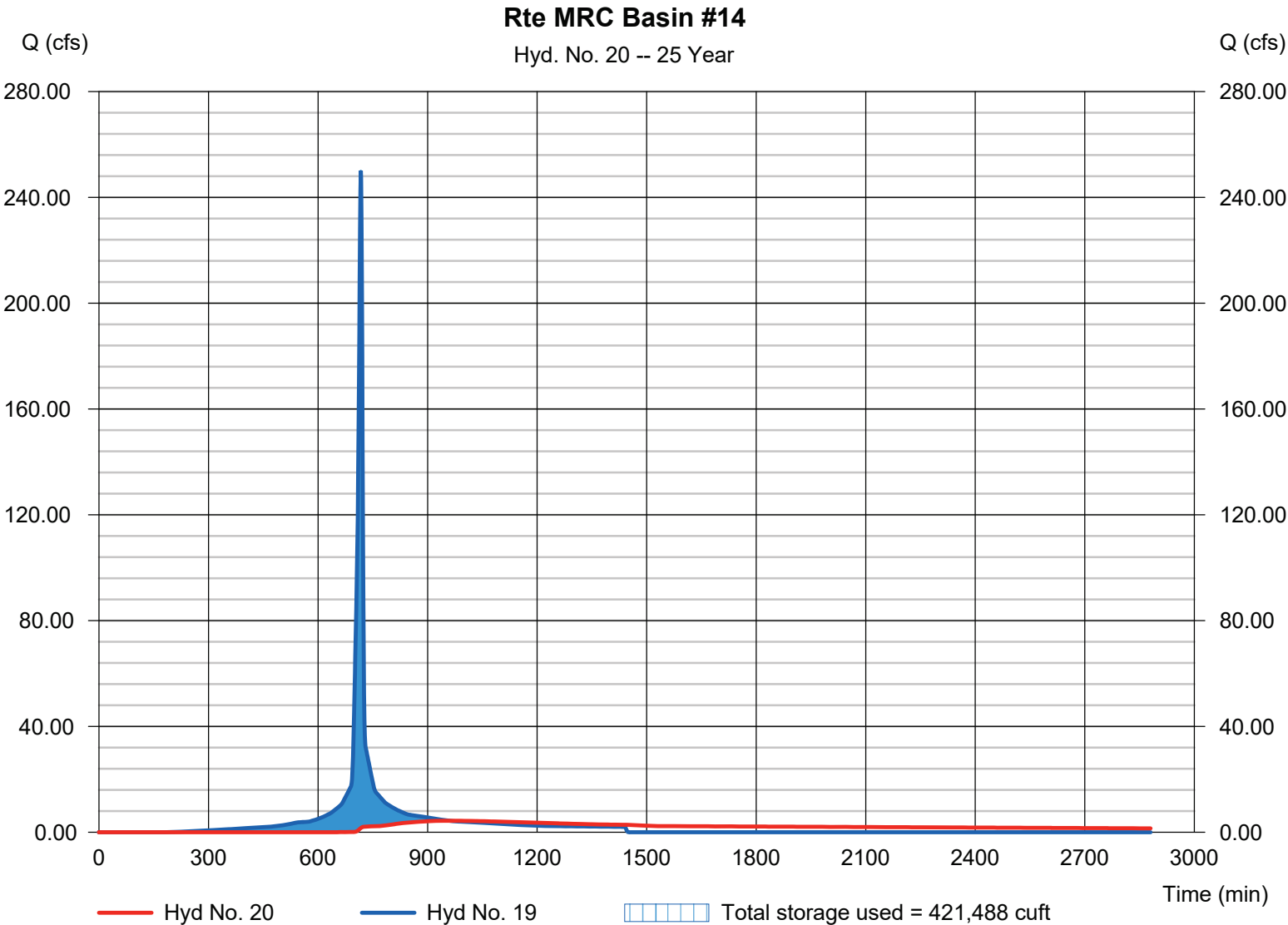
Thursday, 06 / 19 / 2025

Hyd. No. 20

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 4.350 cfs
Storm frequency	= 25 yrs	Time to peak	= 957 min
Time interval	= 1 min	Hyd. volume	= 320,821 cuft
Inflow hyd. No.	= 19 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 15.23 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 421,488 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

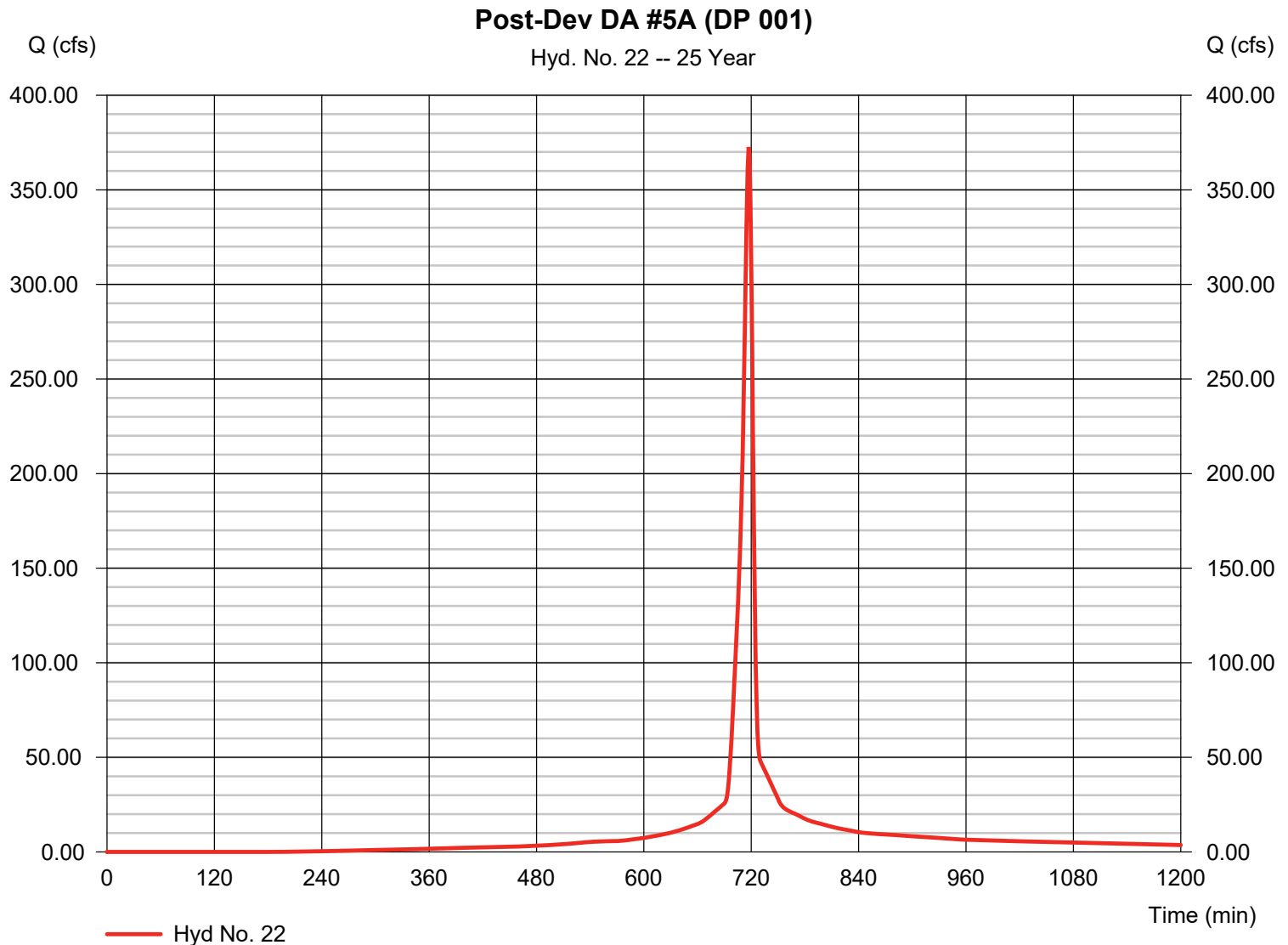
Thursday, 06 / 19 / 2025

Hyd. No. 22

Post-Dev DA #5A (DP 001)

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Time interval = 1 min
Drainage area = 46.730 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 5.80 in
Storm duration = 24 hrs

Peak discharge = 372.59 cfs
Time to peak = 717 min
Hyd. volume = 819,418 cuft
Curve number = 90.3
Hydraulic length = 0 ft
Time of conc. (Tc) = 5.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

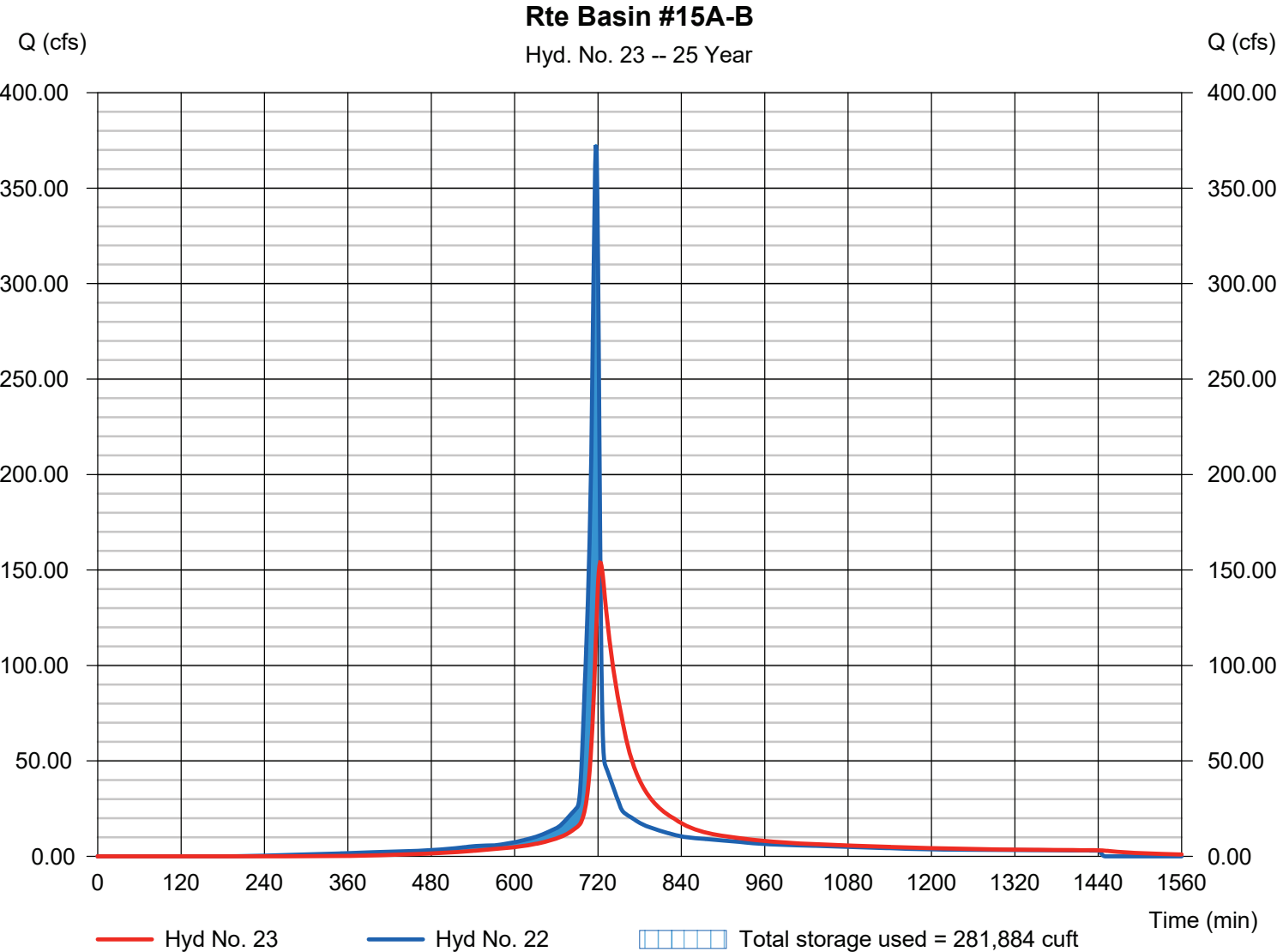
Thursday, 06 / 19 / 2025

Hyd. No. 23

Rte Basin #15A-B

Hydrograph type	= Reservoir	Peak discharge	= 153.79 cfs
Storm frequency	= 25 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 818,292 cuft
Inflow hyd. No.	= 22 - Post-Dev DA #5A (DP 001)	Max. Elevation	= 16.10 ft
Reservoir name	= Basin #15A-B	Max. Storage	= 281,884 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

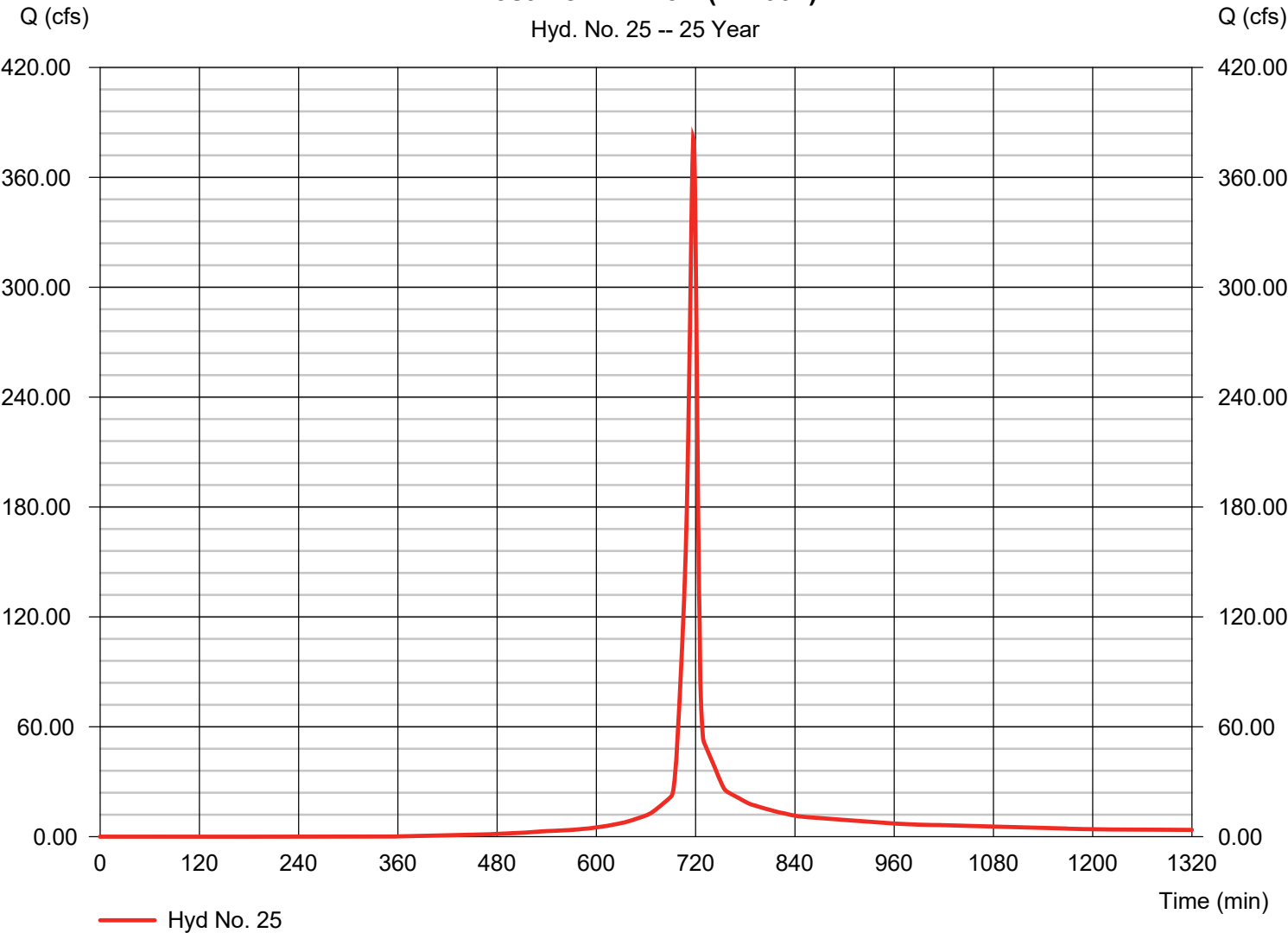
Hyd. No. 25

Post-Dev DA #5B (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	381.56 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	795,479 cuft
Drainage area	=	55.570 ac	Curve number	=	82.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

Post-Dev DA #5B (DP 001)

Hyd. No. 25 -- 25 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

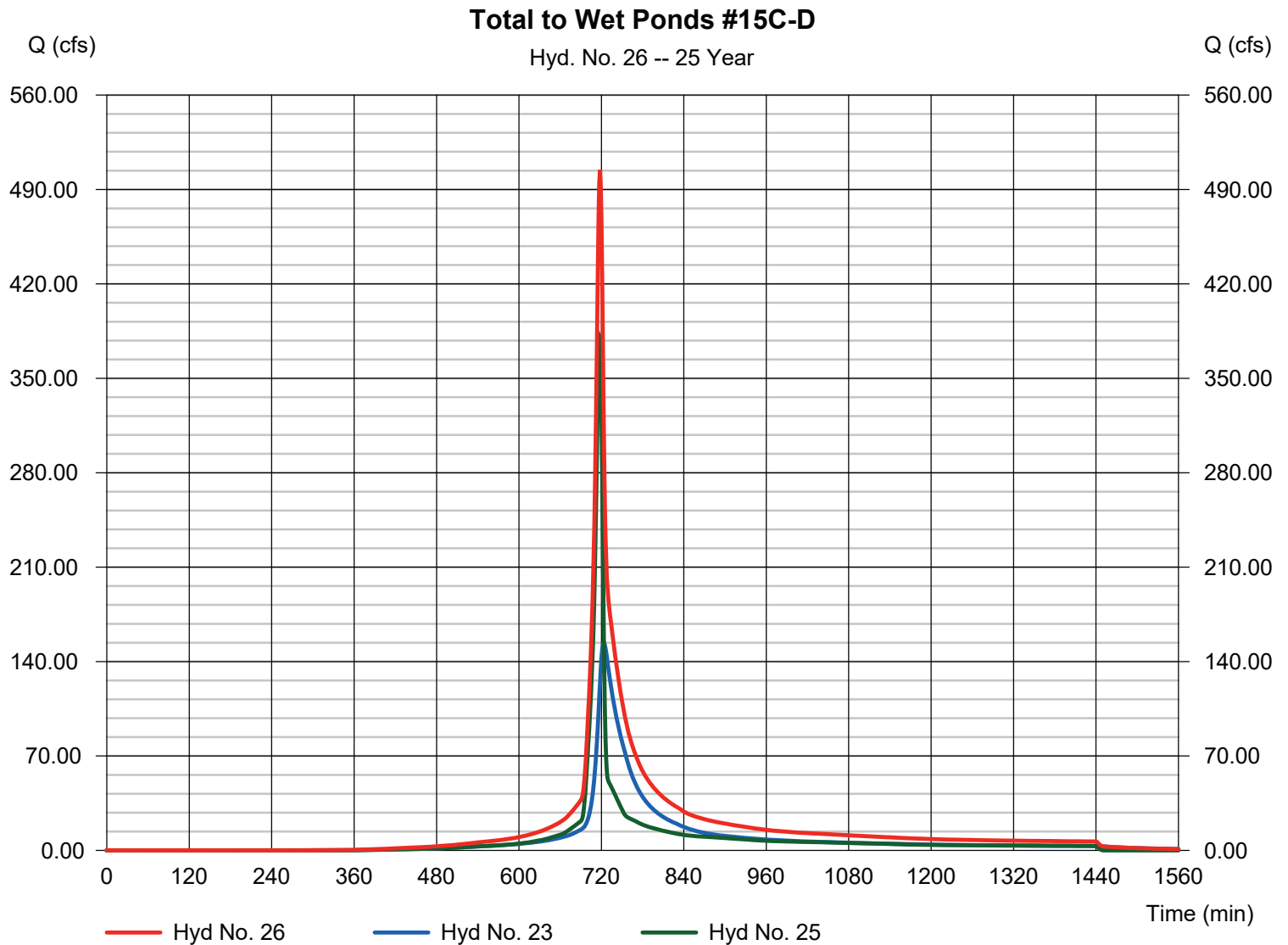
Thursday, 06 / 19 / 2025

Hyd. No. 26

Total to Wet Ponds #15C-D

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 1 min
Inflow hyds. = 23, 25

Peak discharge = 504.70 cfs
Time to peak = 718 min
Hyd. volume = 1,613,771 cuft
Contrib. drain. area = 55.570 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

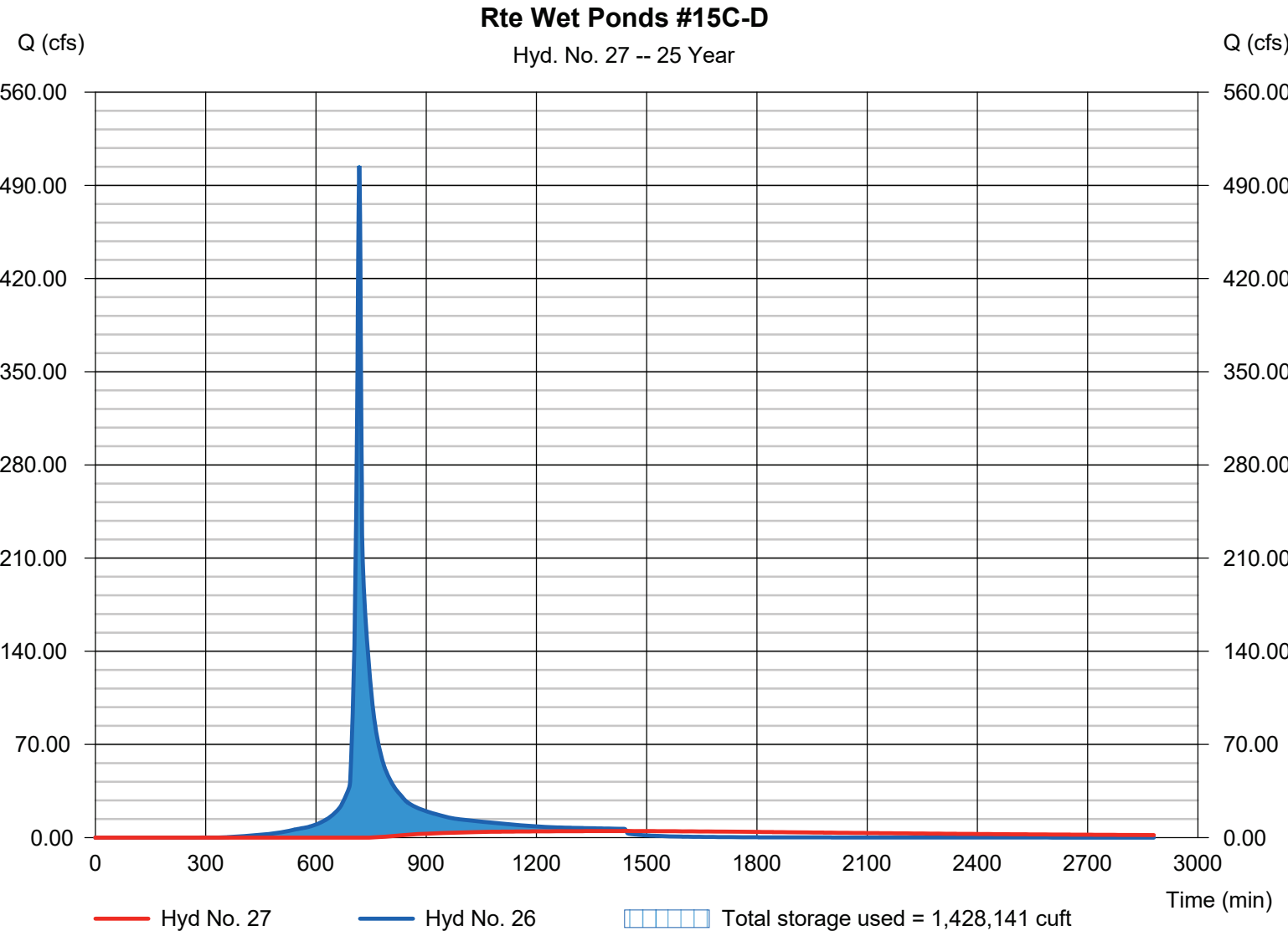
Thursday, 06 / 19 / 2025

Hyd. No. 27

Rte Wet Ponds #15C-D

Hydrograph type	= Reservoir	Peak discharge	= 4.990 cfs
Storm frequency	= 25 yrs	Time to peak	= 1444 min
Time interval	= 1 min	Hyd. volume	= 450,631 cuft
Inflow hyd. No.	= 26 - Total to Wet Ponds #15C-D	Max. Elevation	= 11.15 ft
Reservoir name	= Wet Pond #15C-D	Max. Storage	= 1,428,141 cuft

Storage Indication method used.



Hydrograph Report

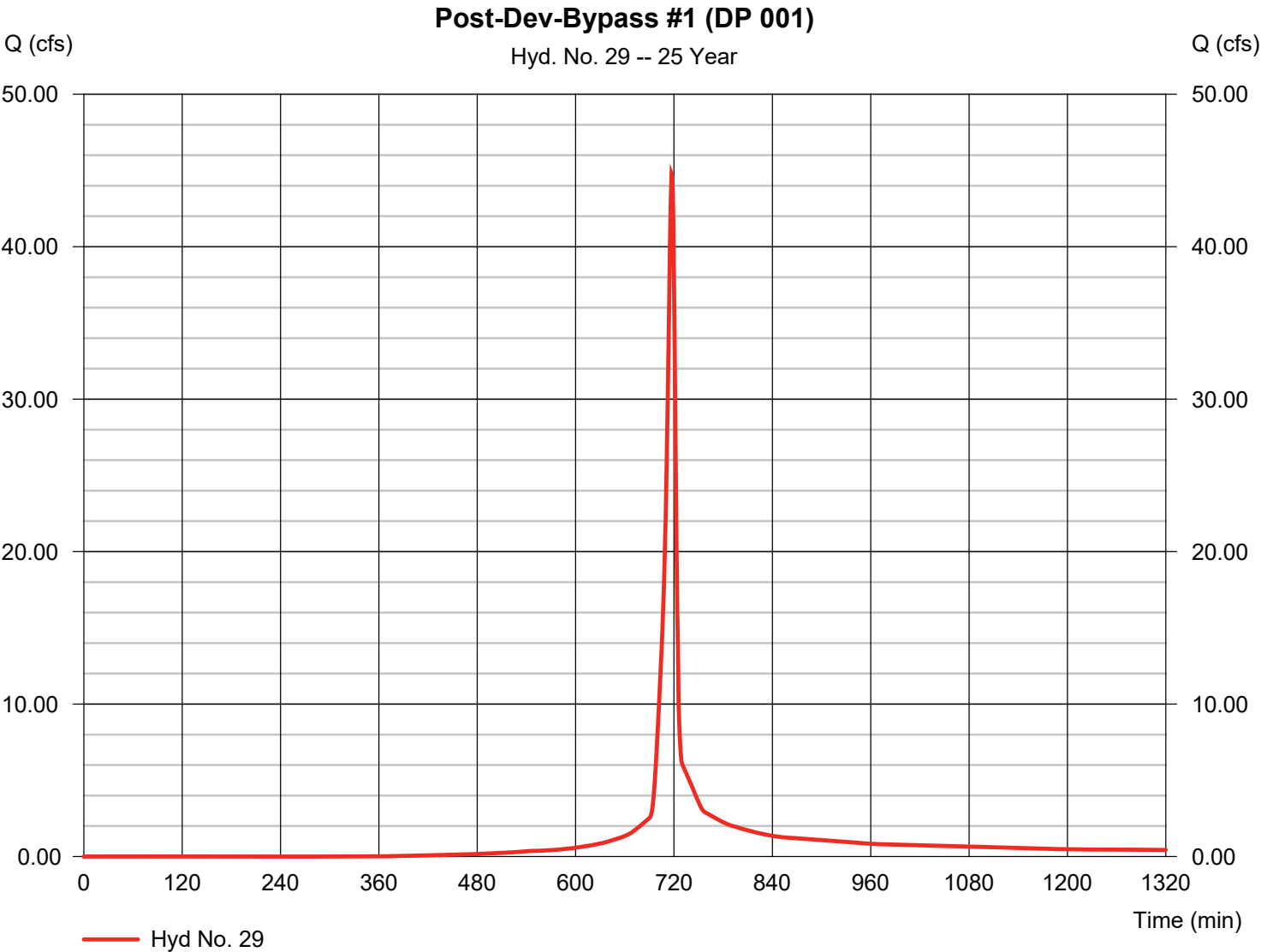
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 29

Post-Dev-Bypass #1 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	44.78 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	93,186 cuft
Drainage area	=	6.580 ac	Curve number	=	81.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

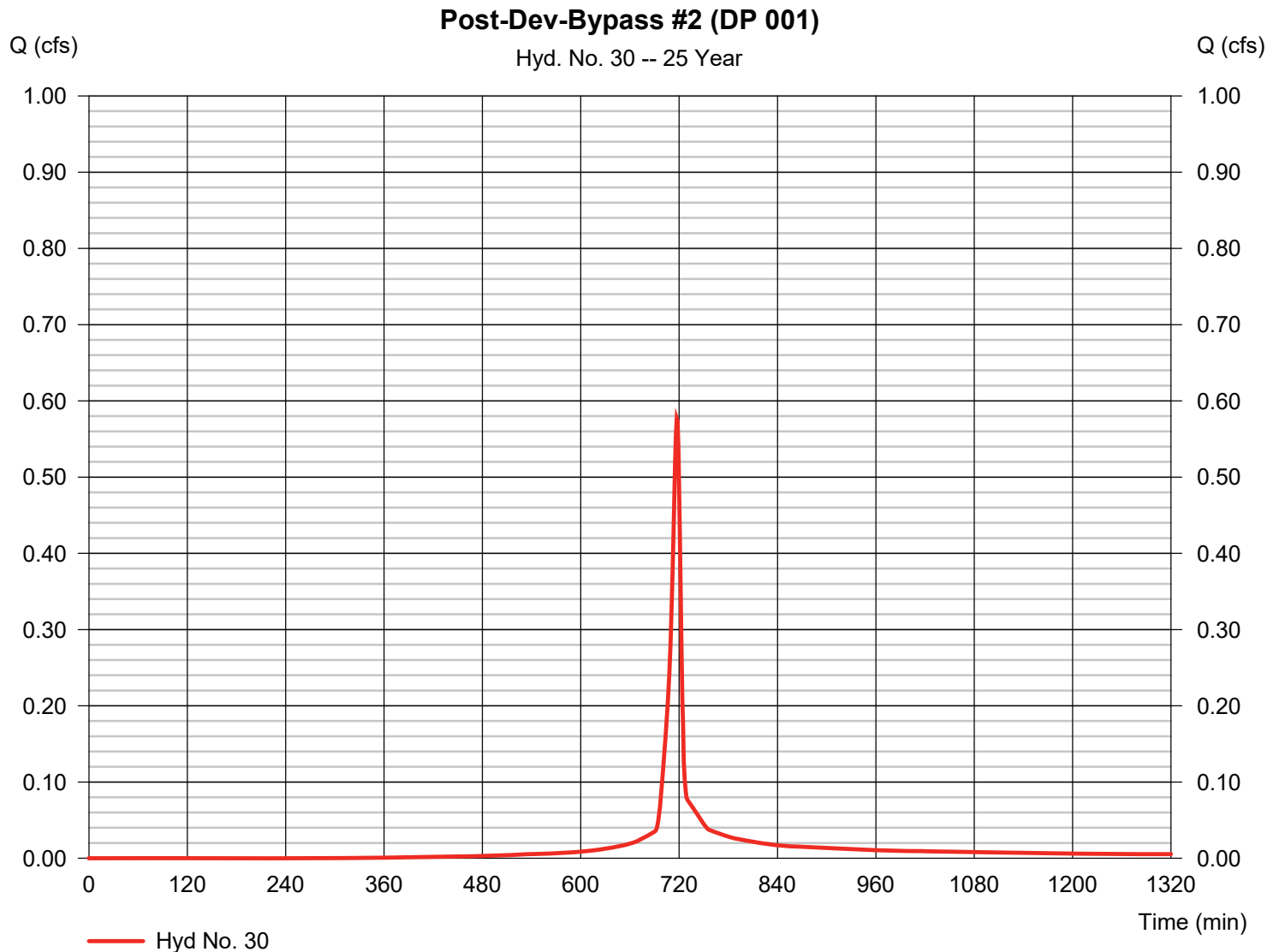
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 30

Post-Dev-Bypass #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.577 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	1,216 cuft
Drainage area	=	0.080 ac	Curve number	=	84.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

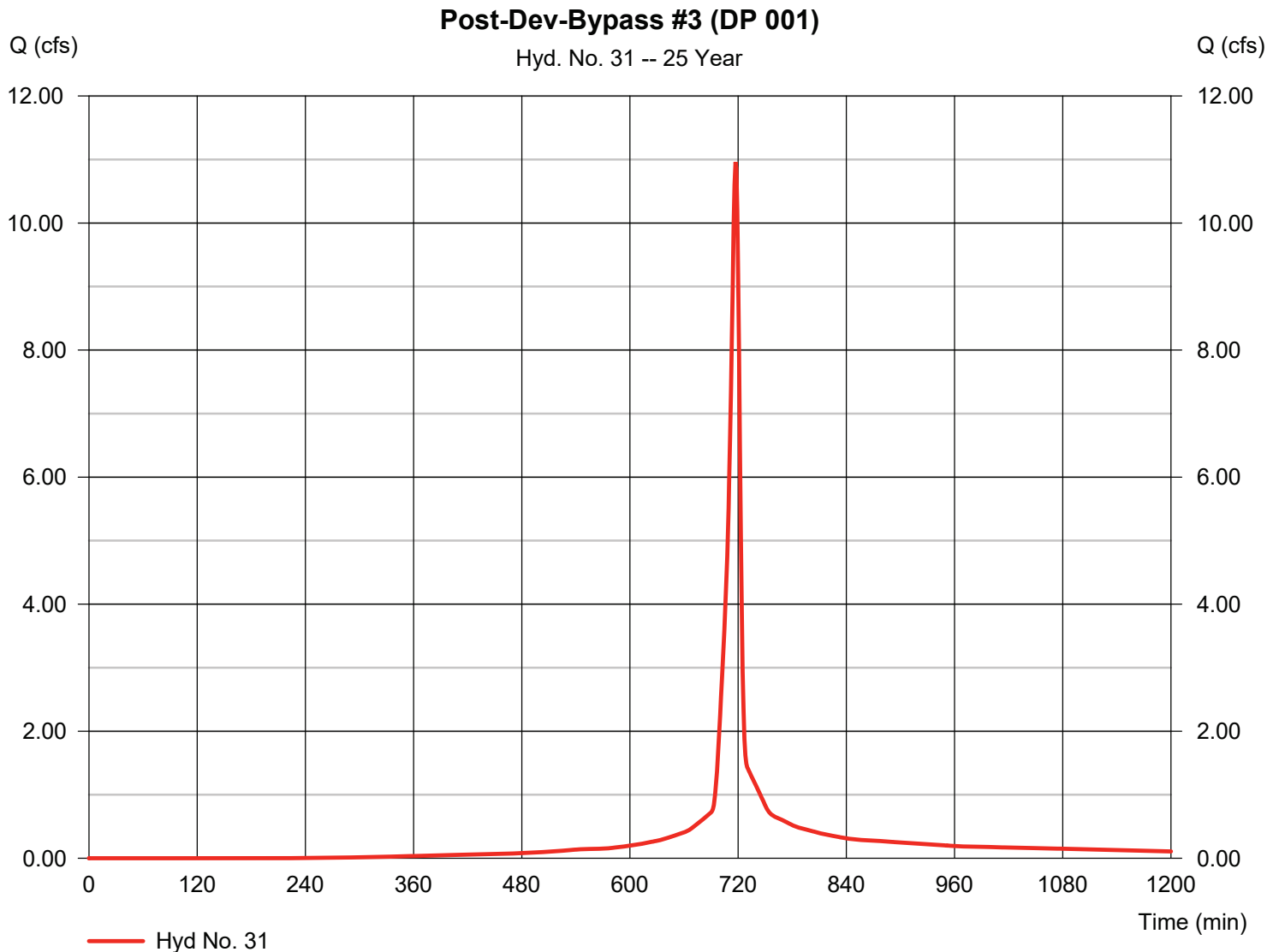
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 31

Post-Dev-Bypass #3 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 10.96 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 23,682 cuft
Drainage area	= 1.420 ac	Curve number	= 88.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

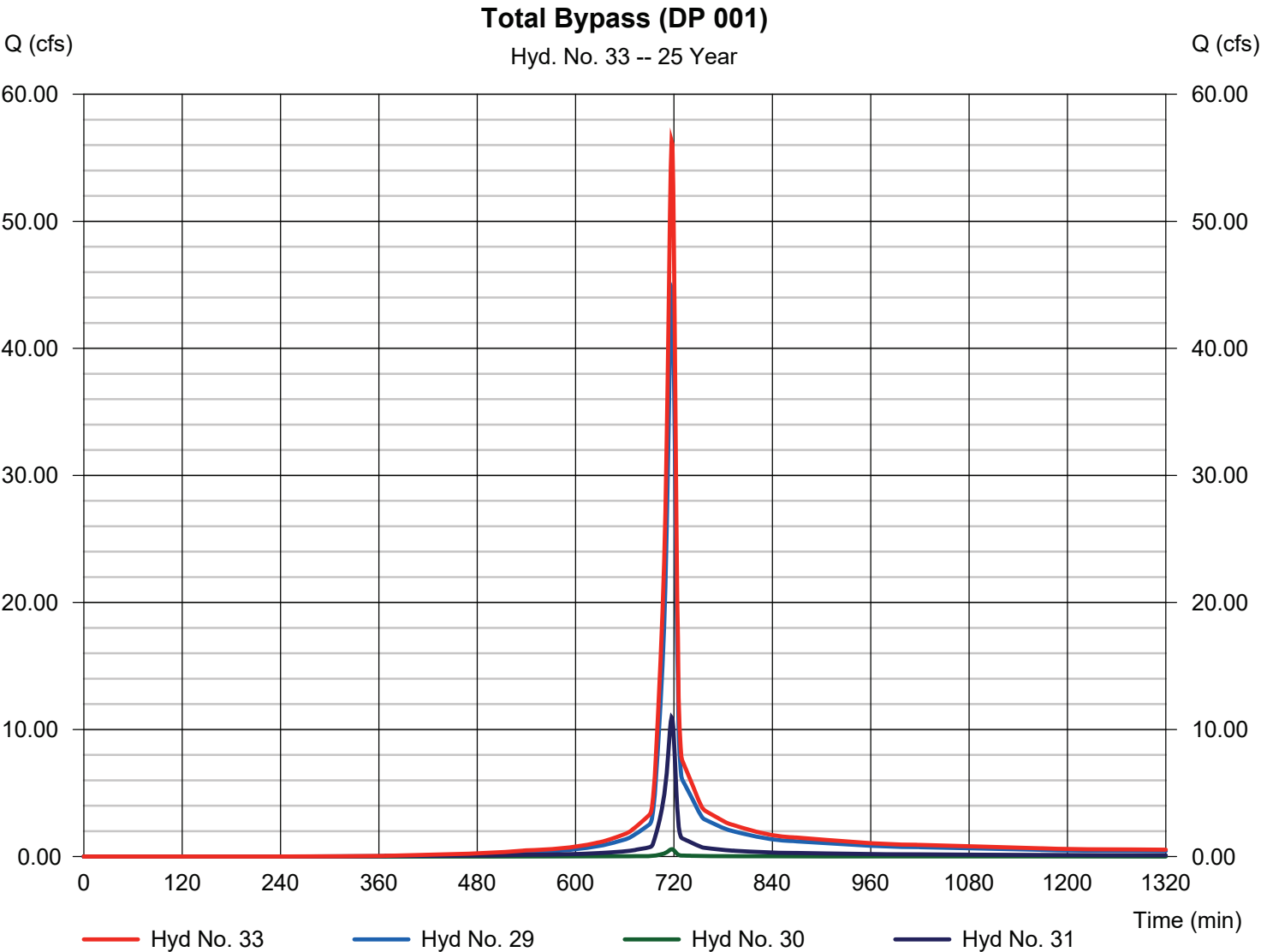


Hydrograph Report

Hyd. No. 33

Total Bypass (DP 001)

Hydrograph type	= Combine	Peak discharge	= 56.31 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 118,084 cuft
Inflow hyds.	= 29, 30, 31	Contrib. drain. area	= 8.080 ac



Hydrograph Report

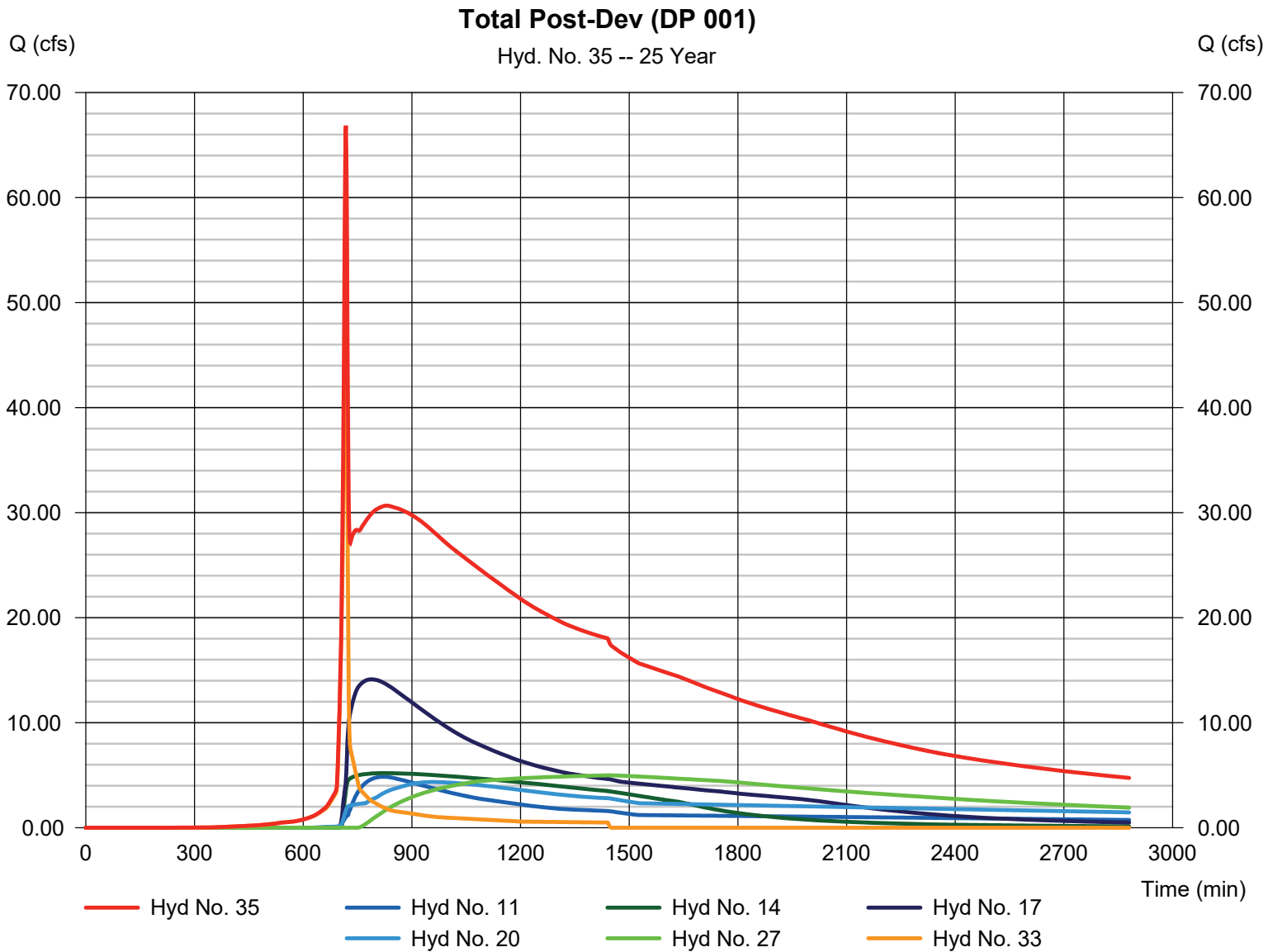
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Thursday, 06 / 19 / 2025

Hyd. No. 35

Total Post-Dev (DP 001)

Hydrograph type	= Combine	Peak discharge	= 66.86 cfs
Storm frequency	= 25 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 1,947,421 cuft
Inflow hyds.	= 11, 14, 17, 20, 27, 33	Contrib. drain. area	= 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

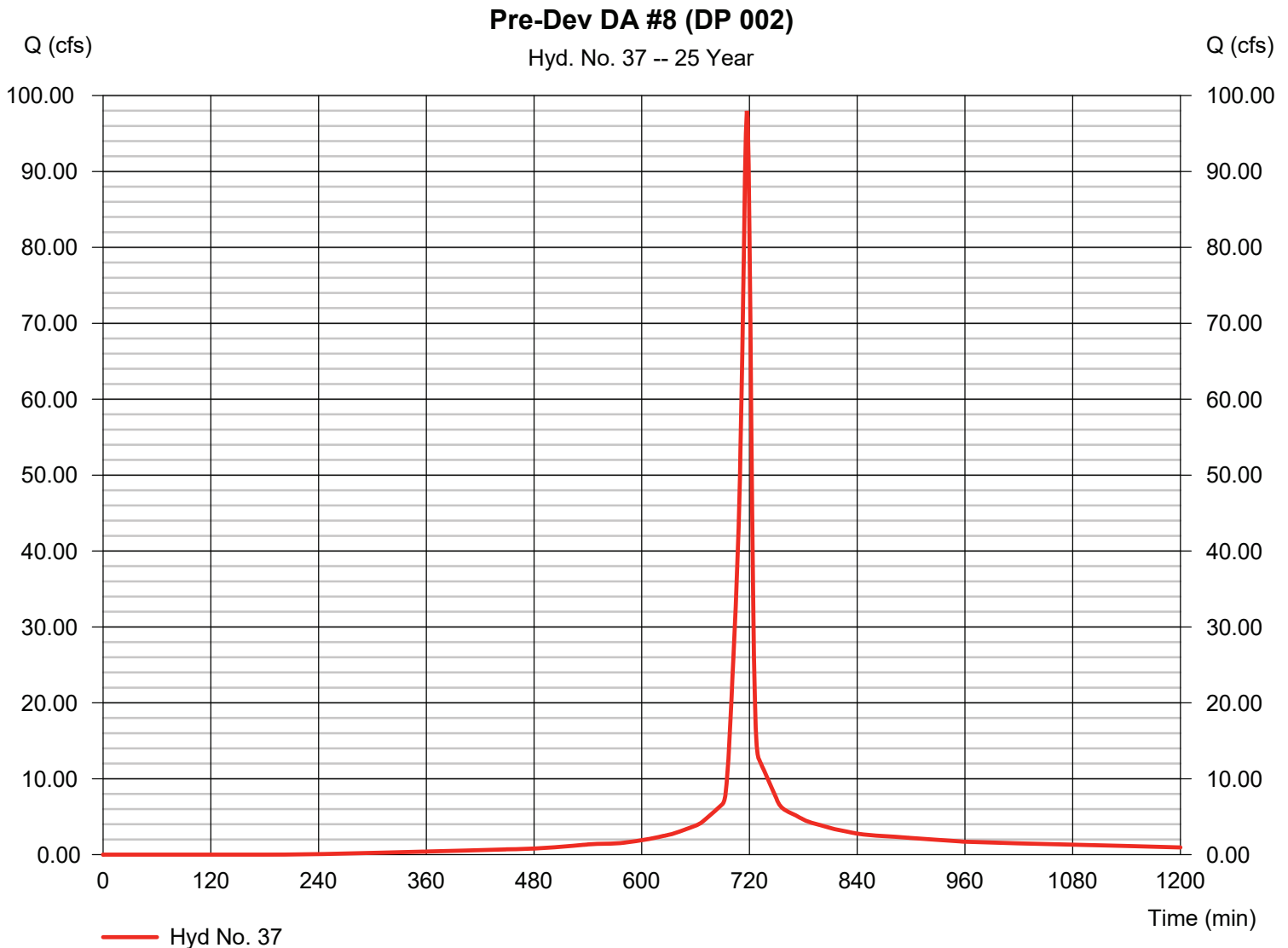
Thursday, 06 / 19 / 2025

Hyd. No. 37

Pre-Dev DA #8 (DP 002)

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 1 min
 Drainage area = 12.400 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.80 in
 Storm duration = 24 hrs

Peak discharge = 98.00 cfs
 Time to peak = 717 min
 Hyd. volume = 214,376 cuft
 Curve number = 89.7
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

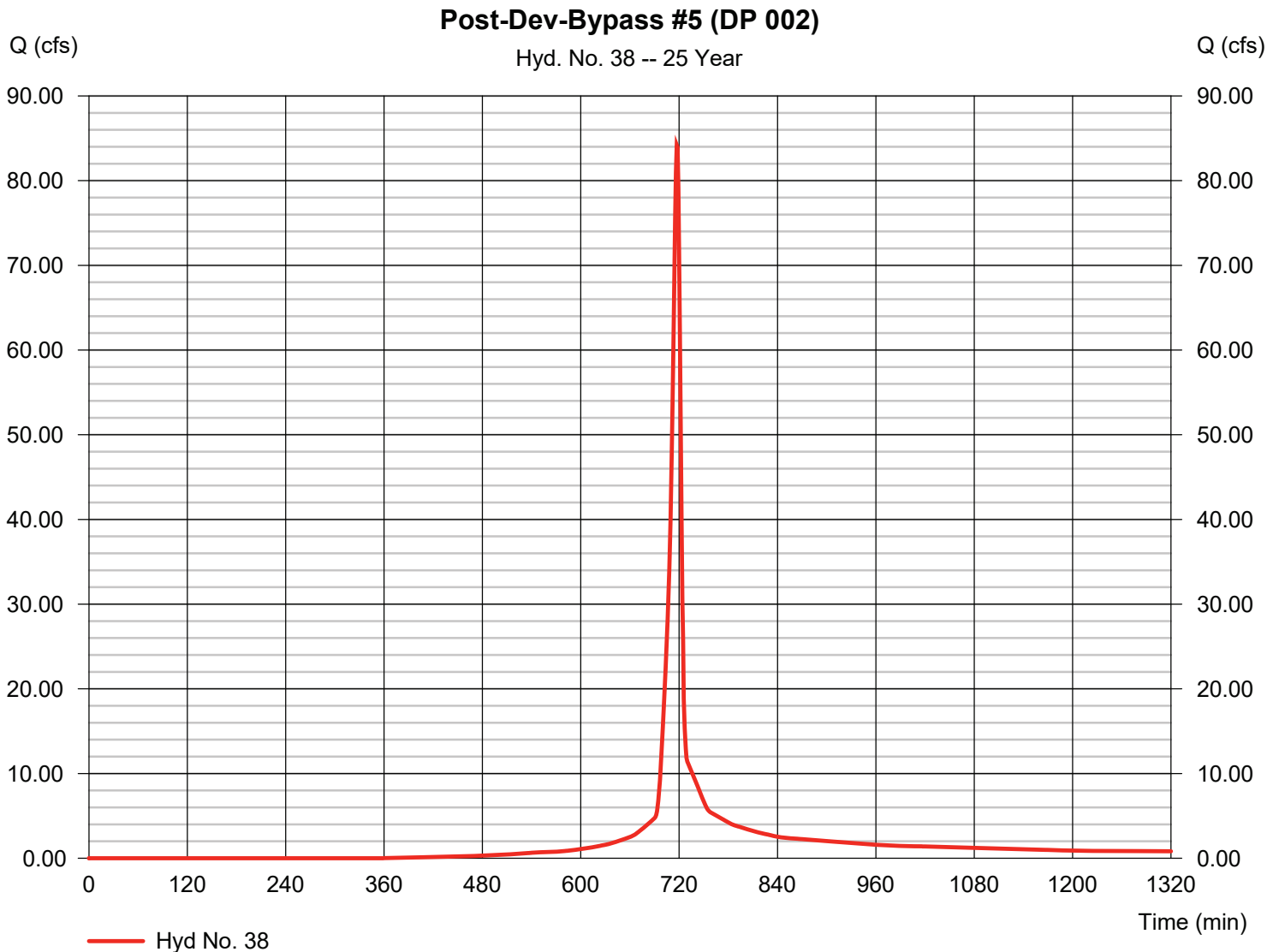
Thursday, 06 / 19 / 2025

Hyd. No. 38

Post-Dev-Bypass #5 (DP 002)

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 1 min
 Drainage area = 12.400 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.80 in
 Storm duration = 24 hrs

Peak discharge = 84.19 cfs
 Time to peak = 717 min
 Hyd. volume = 175,136 cuft
 Curve number = 81.7
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

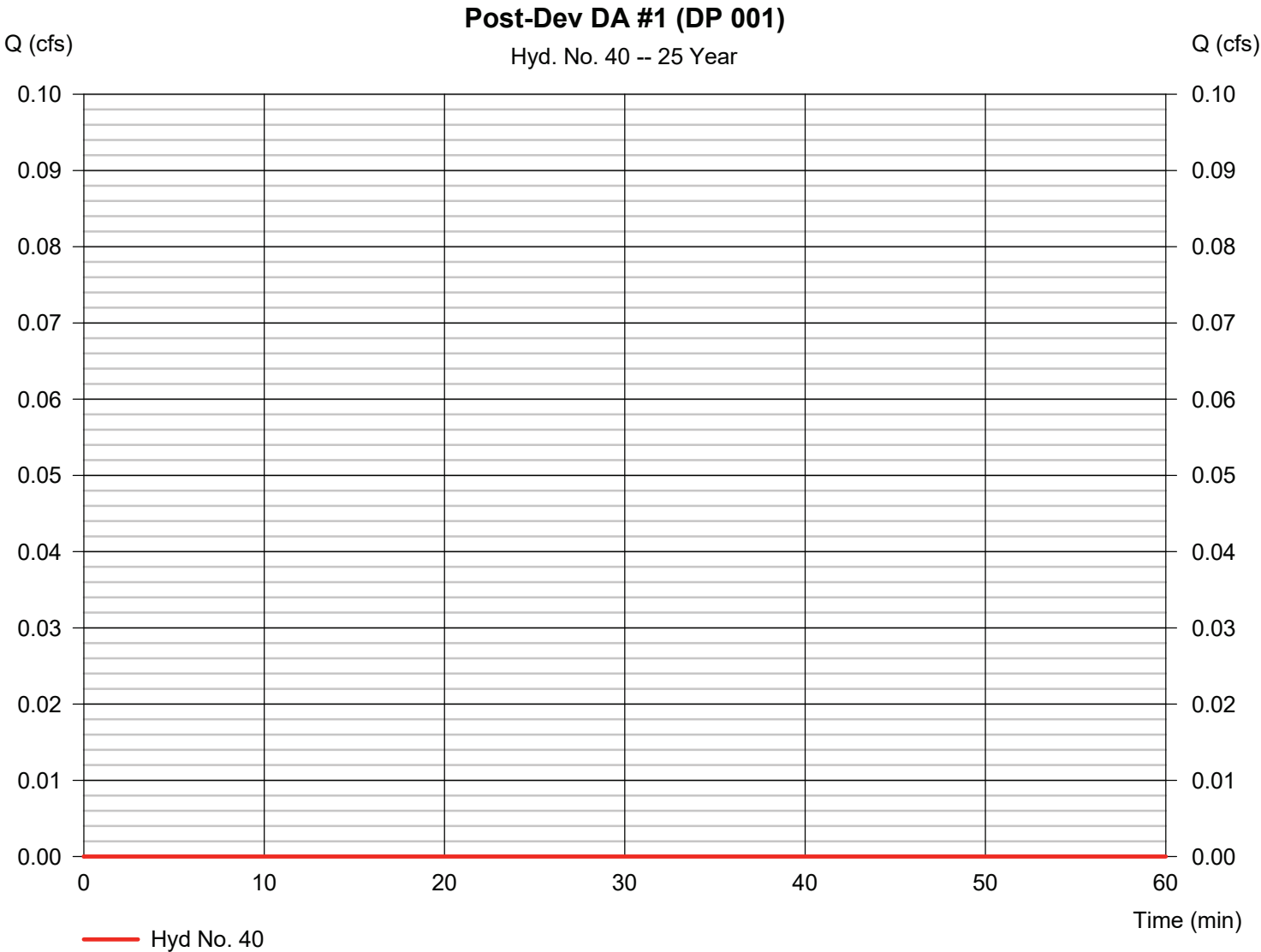
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 40

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

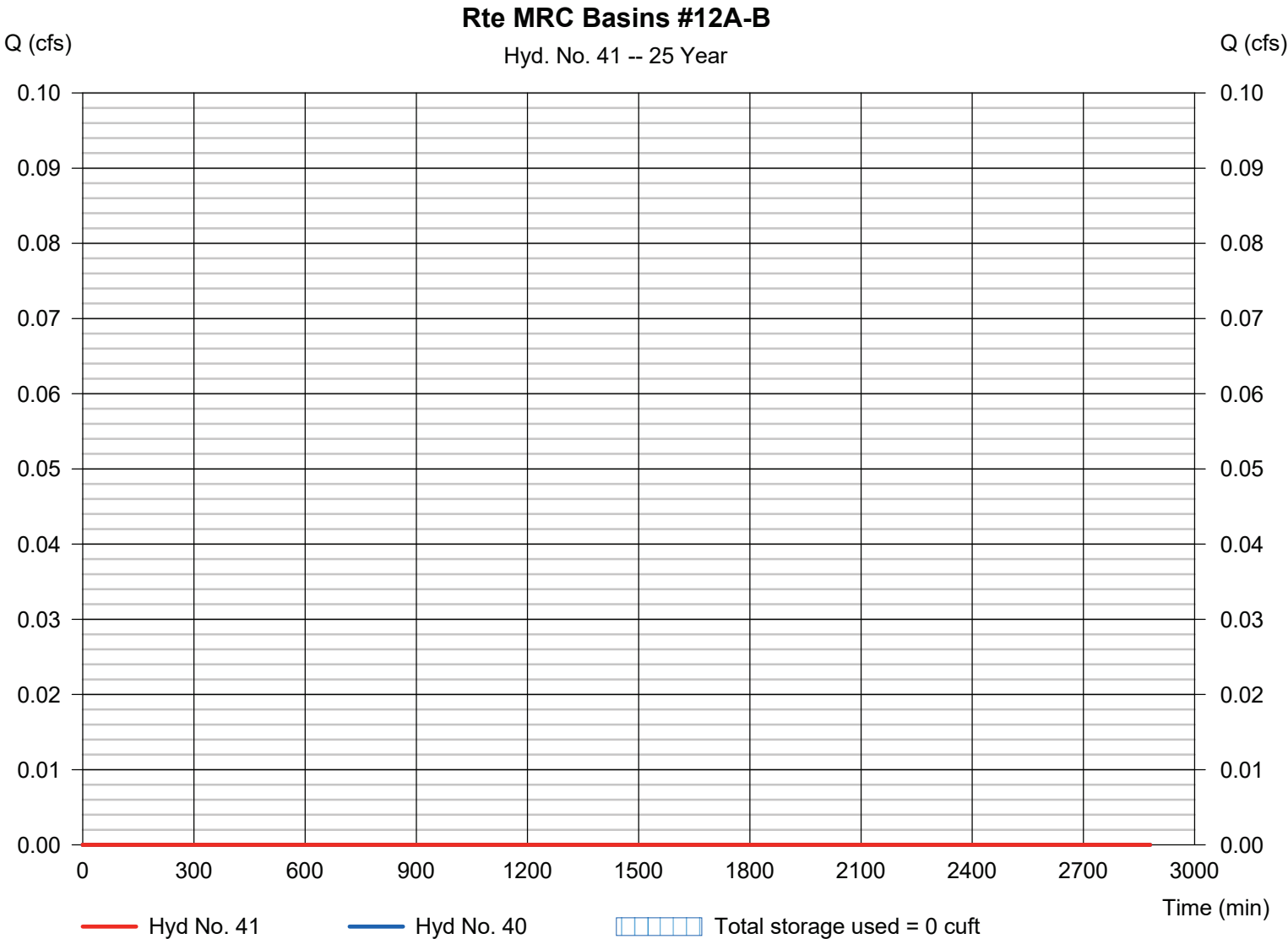
Thursday, 06 / 19 / 2025

Hyd. No. 41

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 40 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

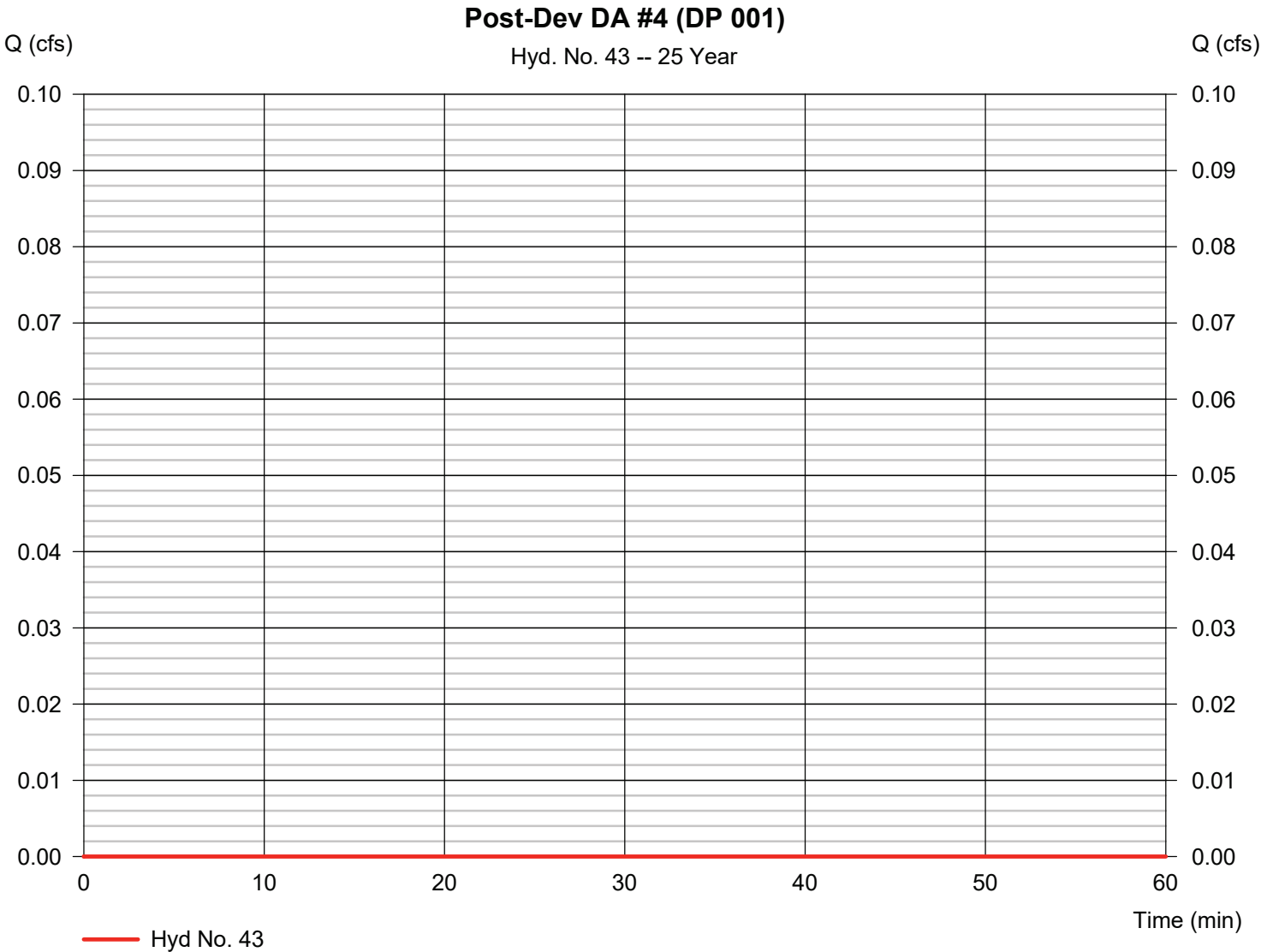
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 43

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



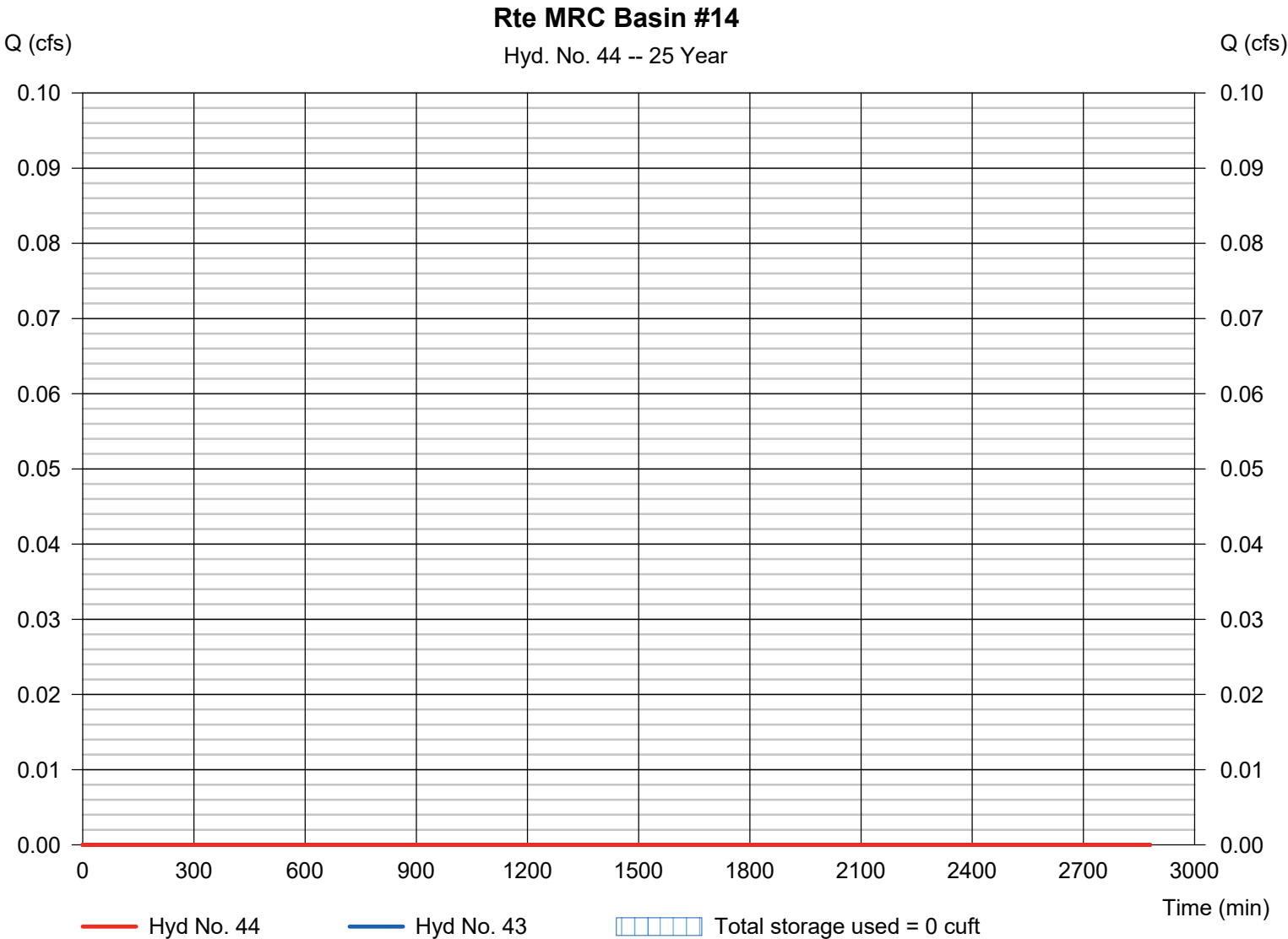
Hydrograph Report

Hyd. No. 44

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 43 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

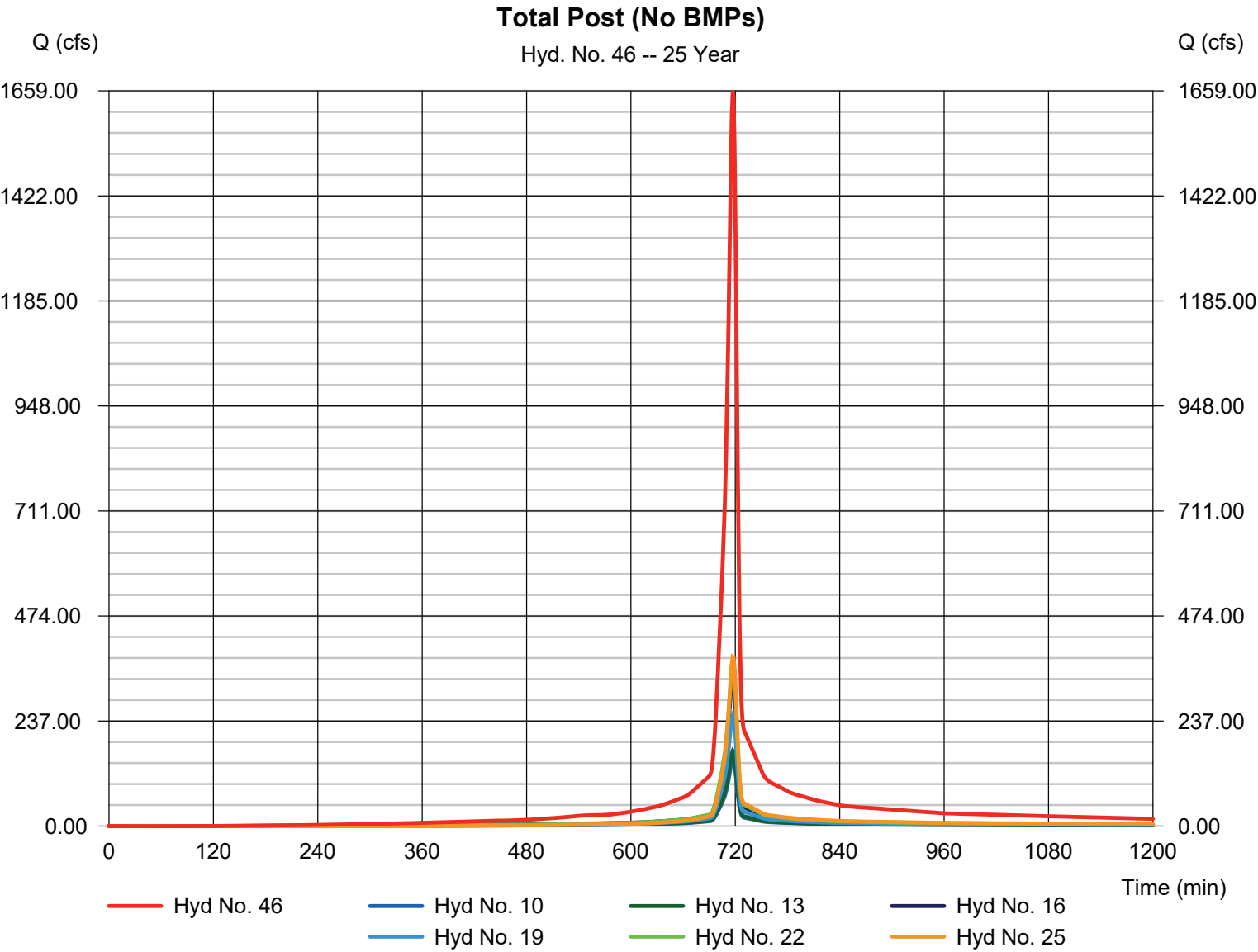
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Thursday, 06 / 19 / 2025

Hyd. No. 46

Total Post (No BMPs)

Hydrograph type	= Combine	Peak discharge	= 1658.91 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 3,654,260 cuft
Inflow hyds.	= 10, 13, 16, 19, 22, 25	Contrib. drain. area	= 212.440 ac



Hydrograph Report

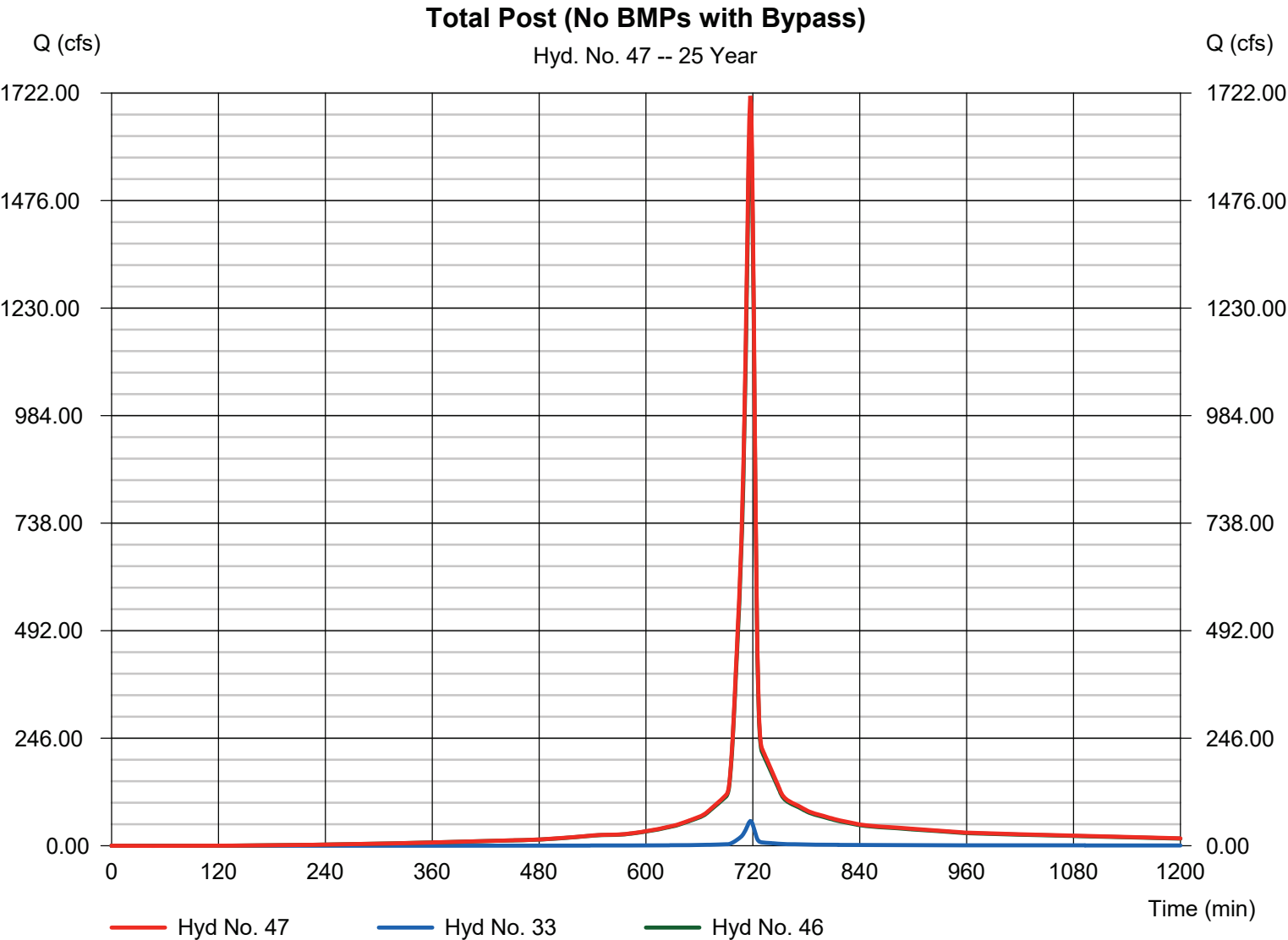
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 47

Total Post (No BMPs with Bypass)

Hydrograph type	= Combine	Peak discharge	= 1715.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 3,772,344 cuft
Inflow hyds.	= 33, 46	Contrib. drain. area	= 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

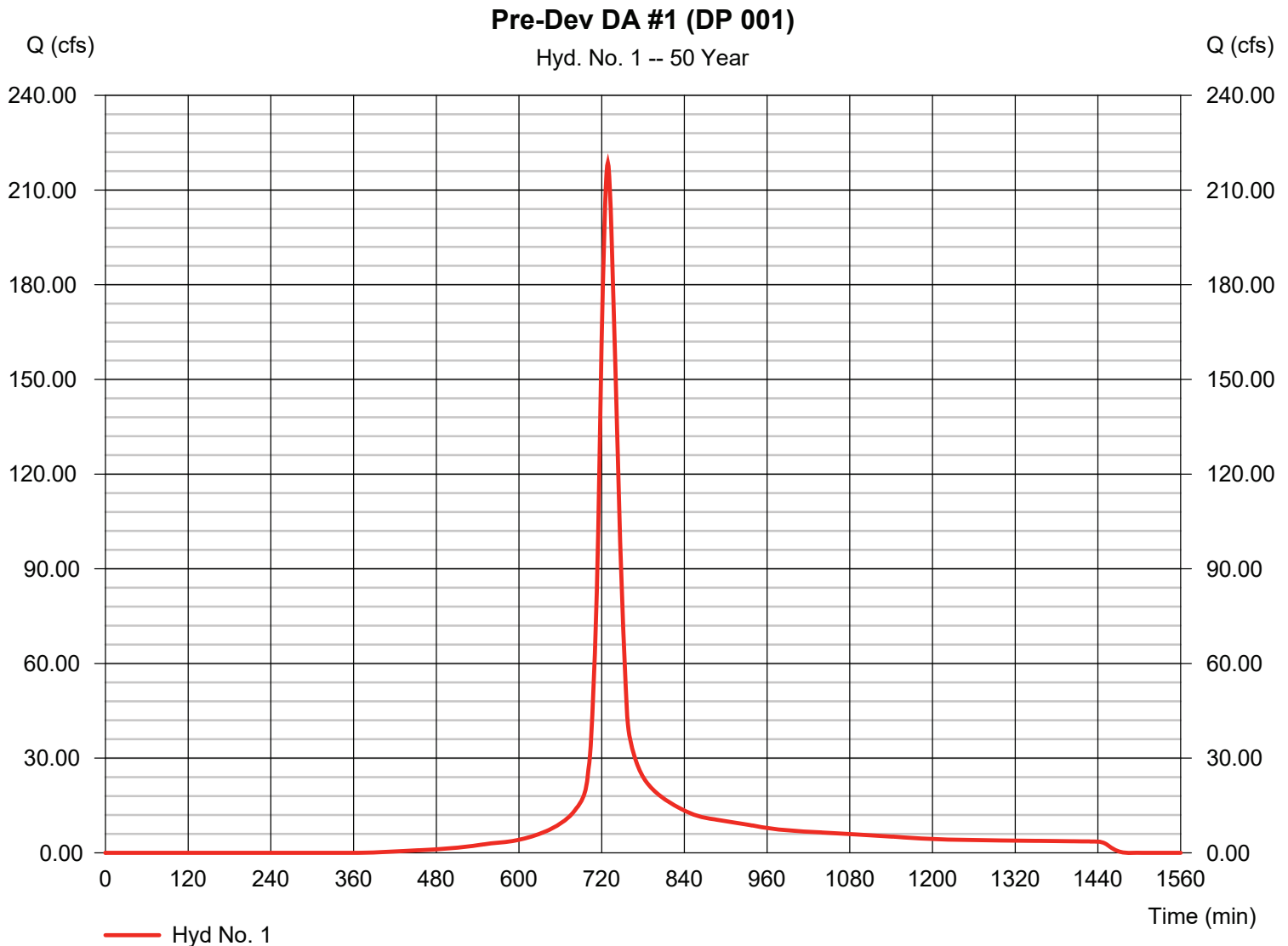
Thursday, 06 / 19 / 2025

Hyd. No. 1

Pre-Dev DA #1 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 1 min
 Drainage area = 54.210 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 6.40 in
 Storm duration = 24 hrs

Peak discharge = 218.64 cfs
 Time to peak = 729 min
 Hyd. volume = 815,571 cuft
 Curve number = 79.7
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 25.80 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

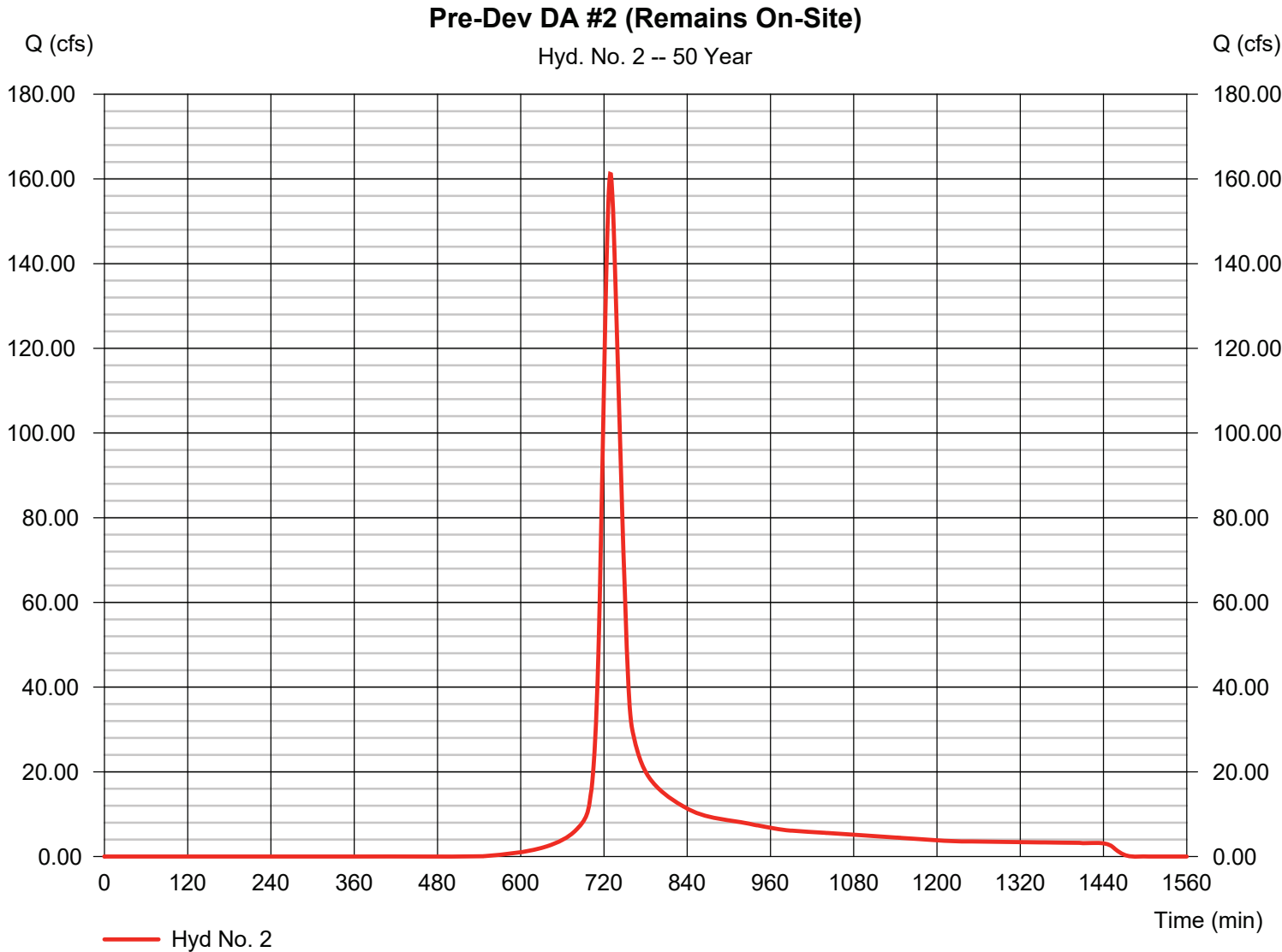
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 2

Pre-Dev DA #2 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	161.19 cfs
Storm frequency	=	50 yrs	Time to peak	=	729 min
Time interval	=	1 min	Hyd. volume	=	604,773 cuft
Drainage area	=	54.240 ac	Curve number	=	69.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	26.00 min
Total precip.	=	6.40 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

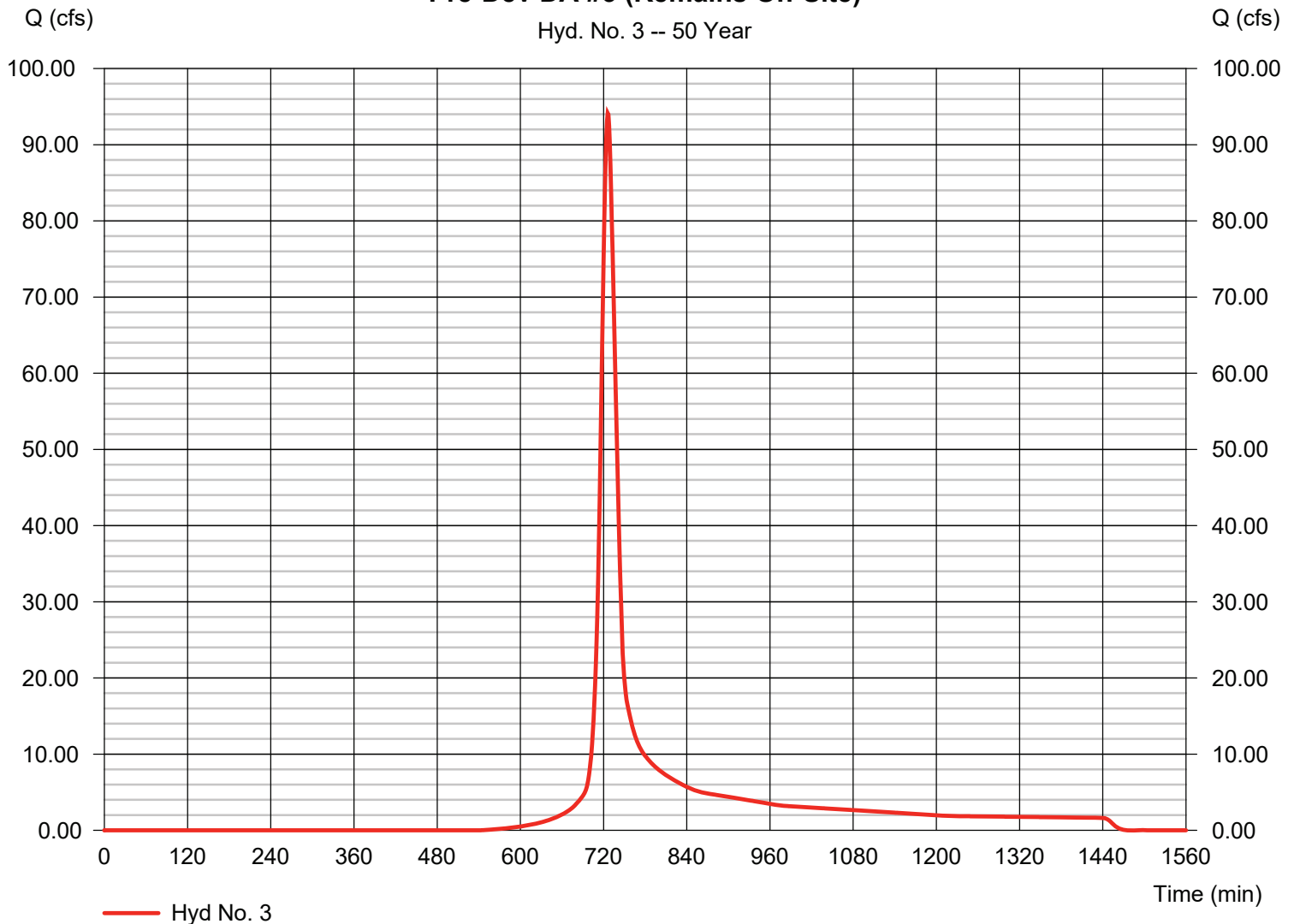
Hyd. No. 3

Pre-Dev DA #3 (Remains On-Site)

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 1 min
 Drainage area = 28.420 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 6.40 in
 Storm duration = 24 hrs

Peak discharge = 94.12 cfs
 Time to peak = 726 min
 Hyd. volume = 311,381 cuft
 Curve number = 68.6
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 20.50 min
 Distribution = Type II
 Shape factor = 484

Pre-Dev DA #3 (Remains On-Site)



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

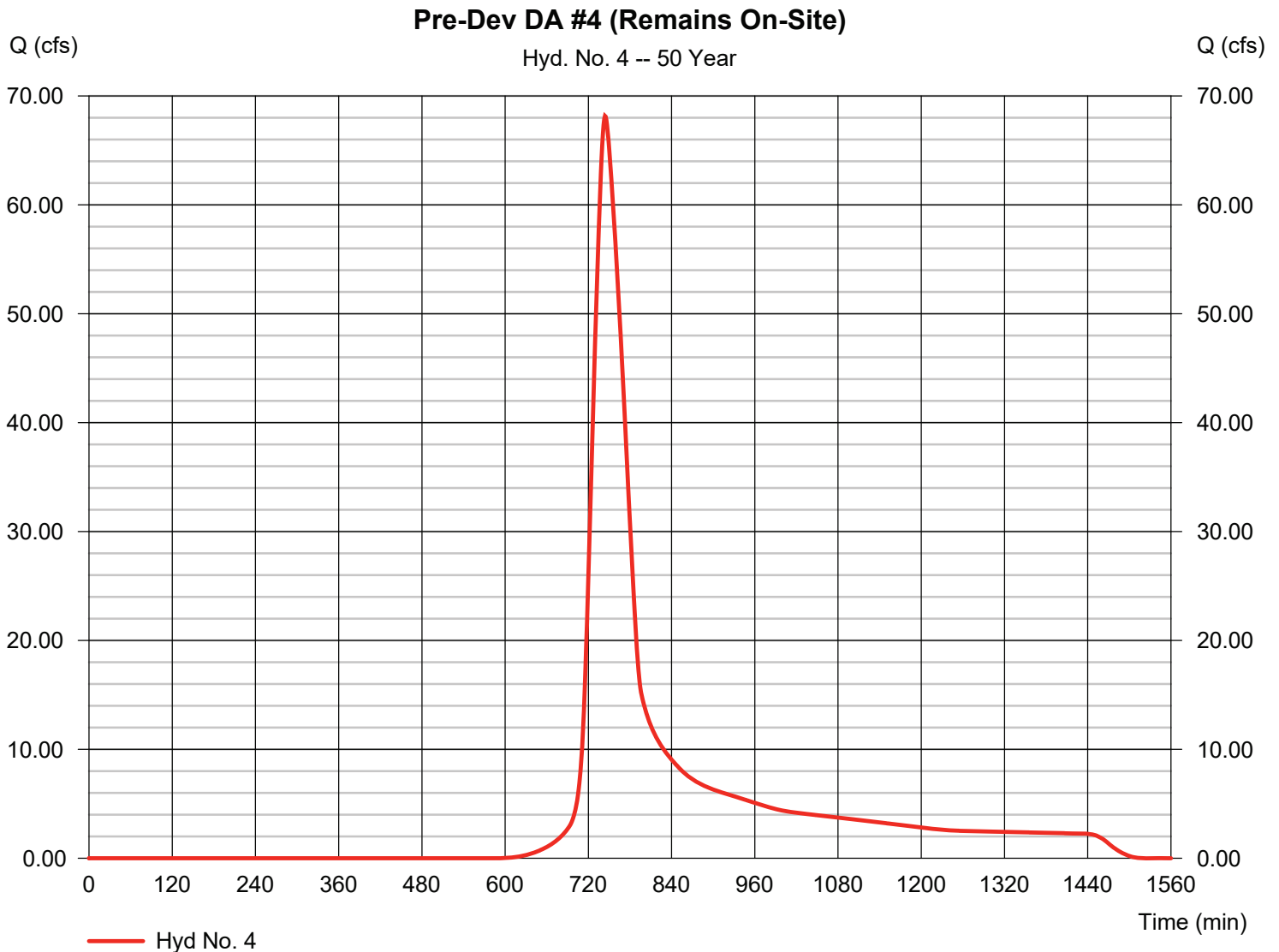
Thursday, 06 / 19 / 2025

Hyd. No. 4

Pre-Dev DA #4 (Remains On-Site)

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 1 min
 Drainage area = 41.280 ac
 Basin Slope = 0.0 %
 Tc method = TR55
 Total precip. = 6.40 in
 Storm duration = 24 hrs

Peak discharge = 68.17 cfs
 Time to peak = 744 min
 Hyd. volume = 397,937 cuft
 Curve number = 65.1
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 49.50 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

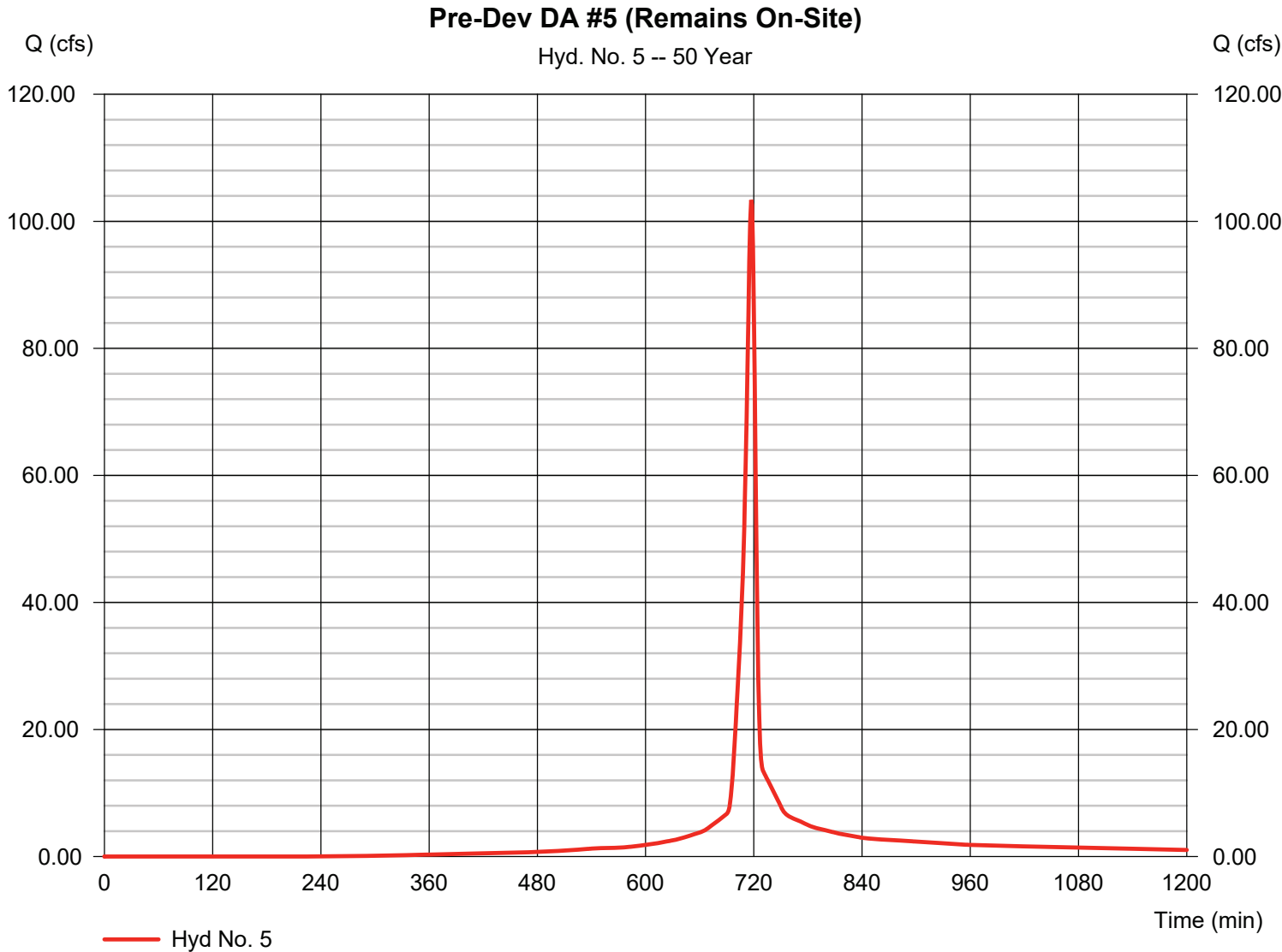
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 5

Pre-Dev DA #5 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	103.36 cfs
Storm frequency	=	50 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	222,531 cuft
Drainage area	=	12.240 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	6.20 min
Total precip.	=	6.40 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

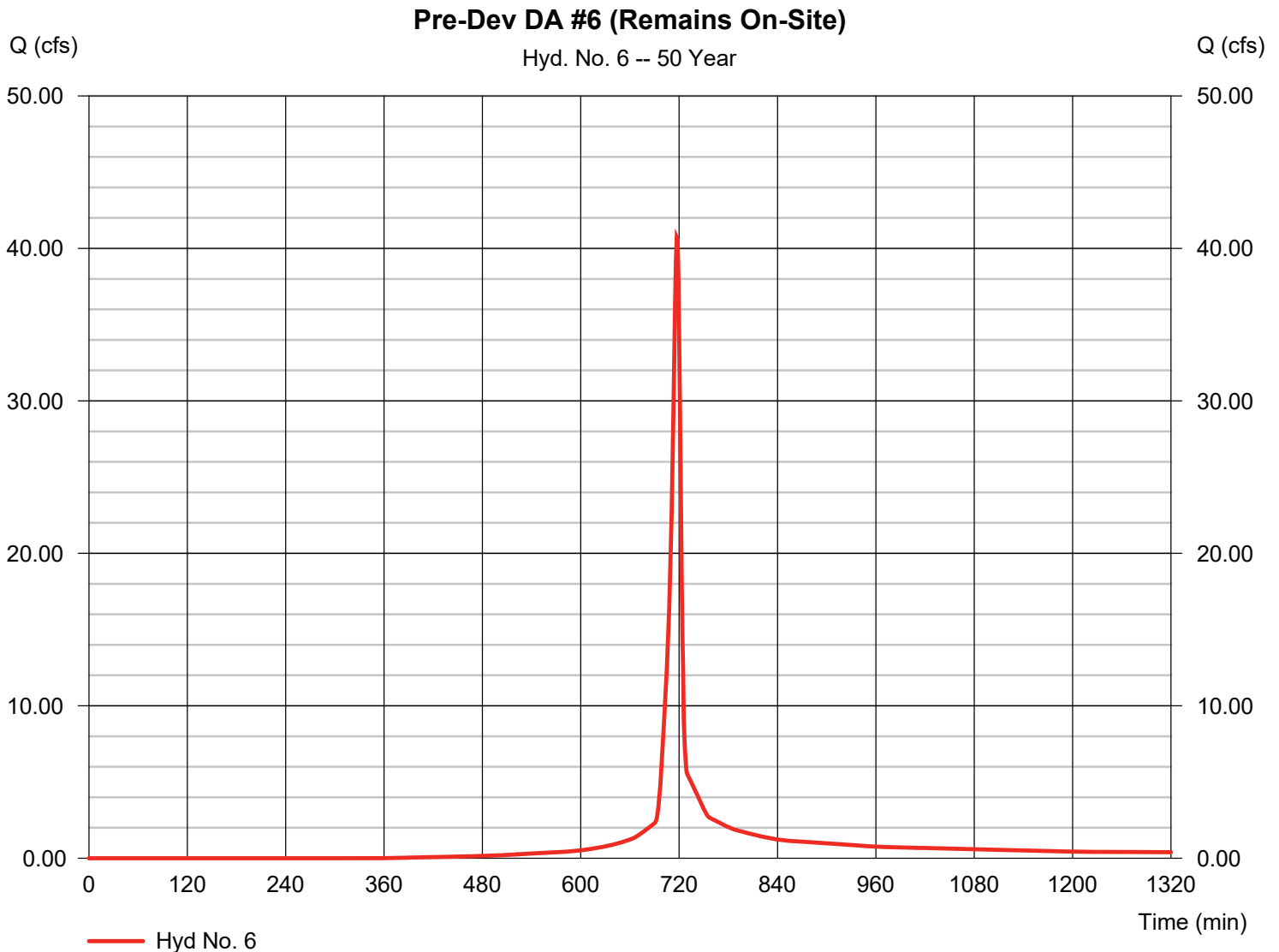
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 6

Pre-Dev DA #6 (Remains On-Site)

Hydrograph type	= SCS Runoff	Peak discharge	= 40.72 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 84,782 cuft
Drainage area	= 5.410 ac	Curve number	= 80.4
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.97 min
Total precip.	= 6.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

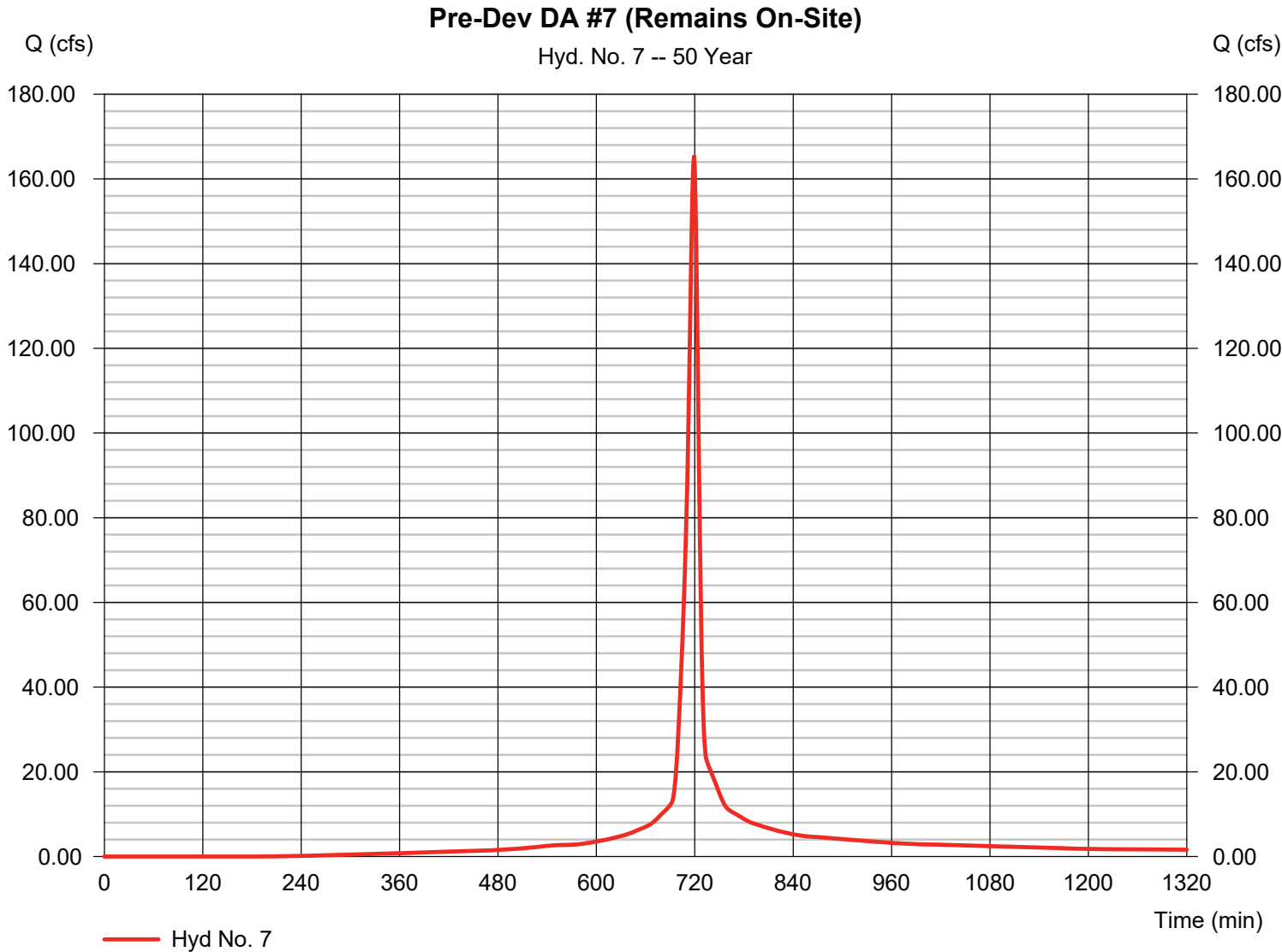


Hydrograph Report

Hyd. No. 7

Pre-Dev DA #7 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	165.54 cfs
Storm frequency	=	50 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	401,435 cuft
Drainage area	=	21.490 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.50 min
Total precip.	=	6.40 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

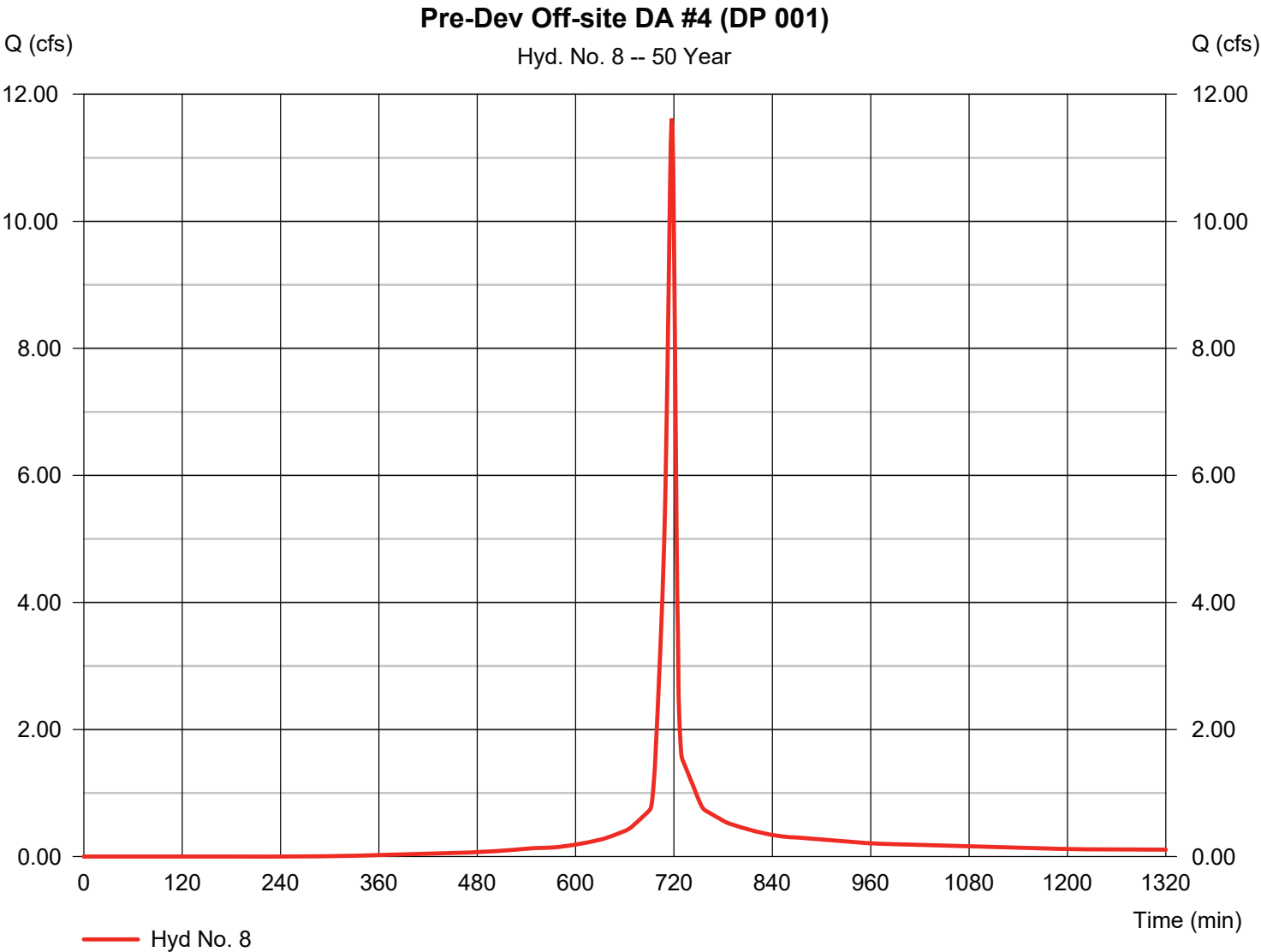
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 8

Pre-Dev Off-site DA #4 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	11.62 cfs
Storm frequency	=	50 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	24,709 cuft
Drainage area	=	1.420 ac	Curve number	=	84.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.40 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

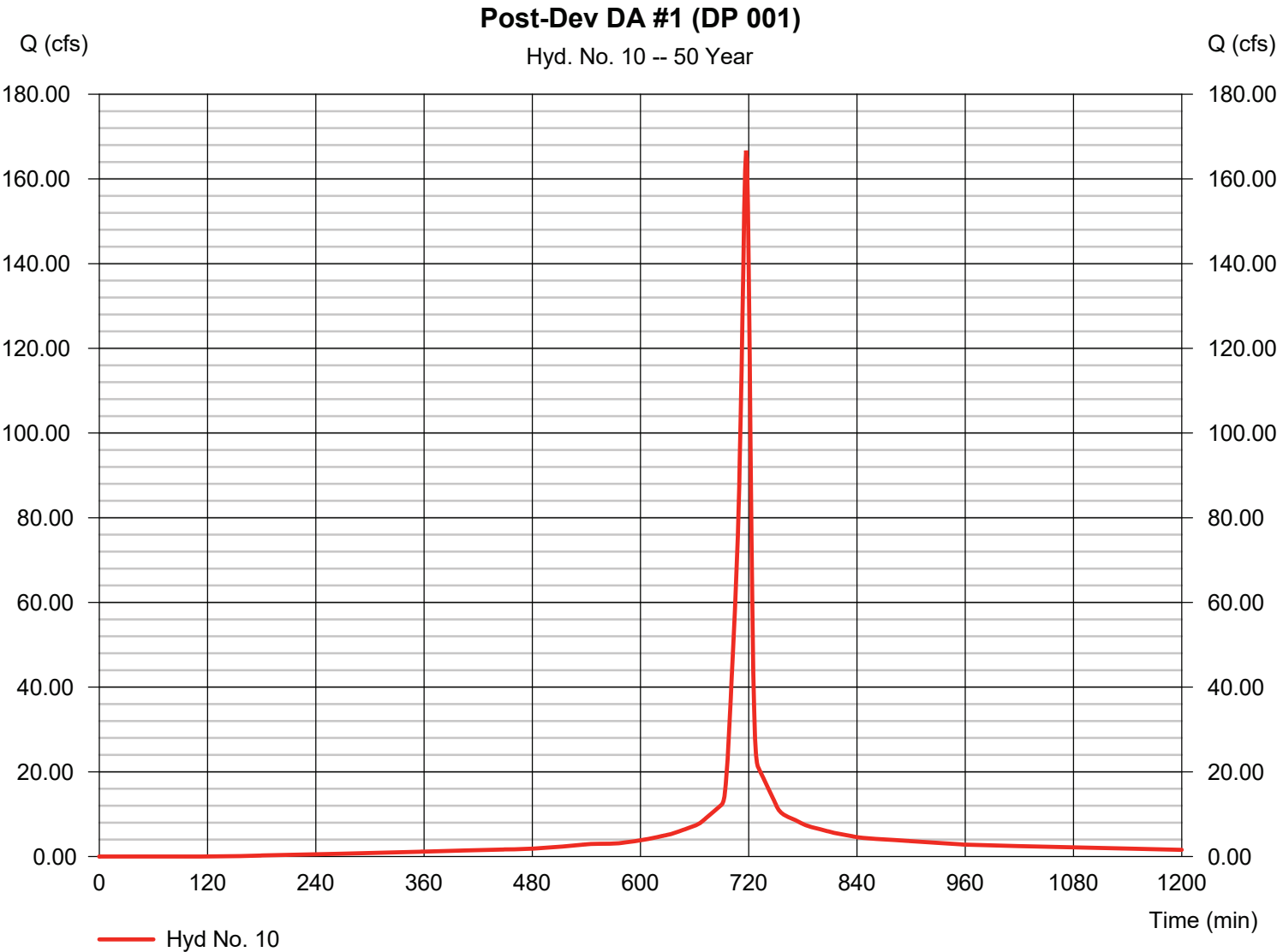
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 10

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 166.71 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 379,957 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hyd. No. 11

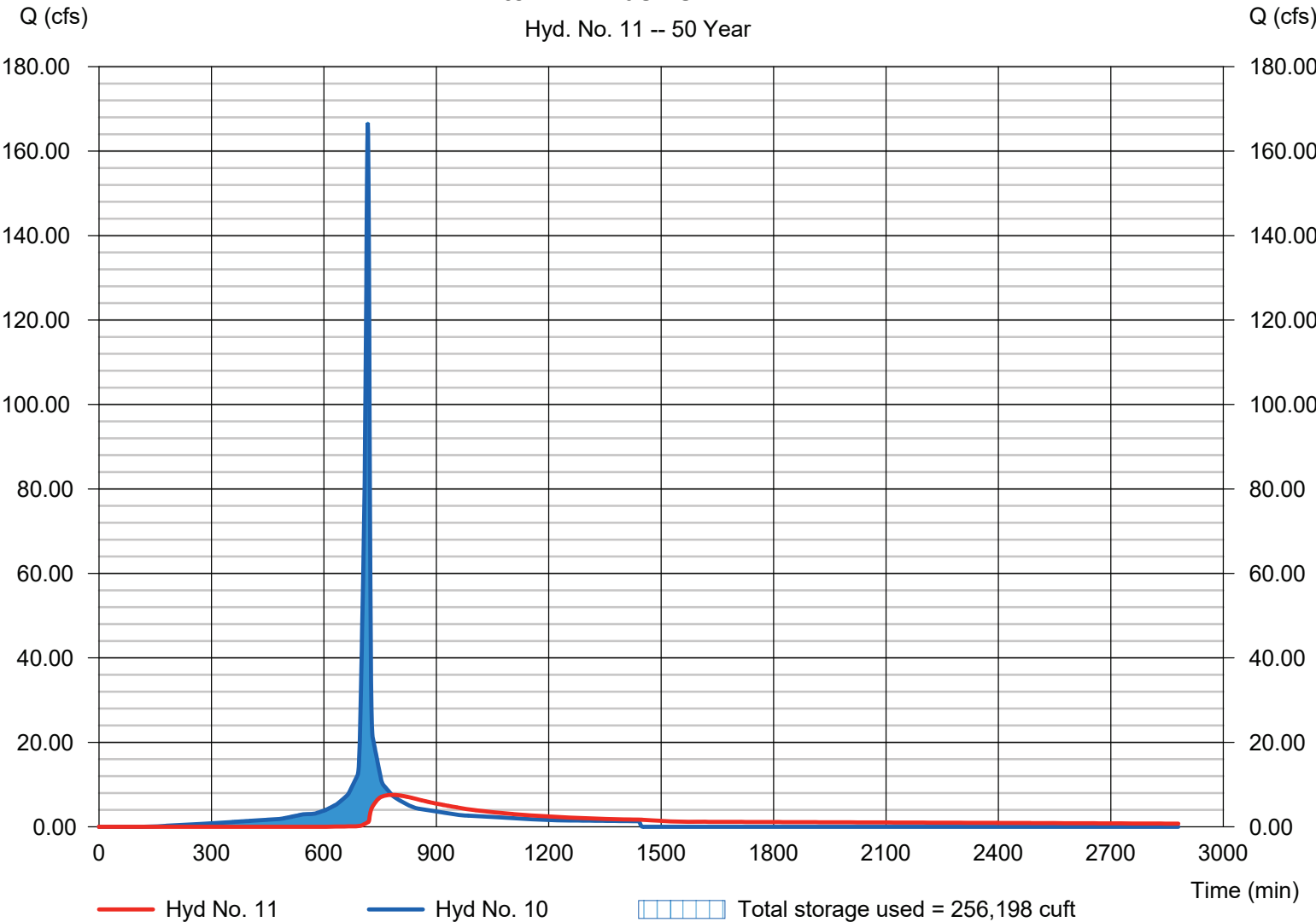
Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 7.567 cfs
Storm frequency	= 50 yrs	Time to peak	= 781 min
Time interval	= 1 min	Hyd. volume	= 254,072 cuft
Inflow hyd. No.	= 10 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 15.01 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 256,198 cuft

Storage Indication method used.

Rte MRC Basins #12A-B

Hyd. No. 11 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

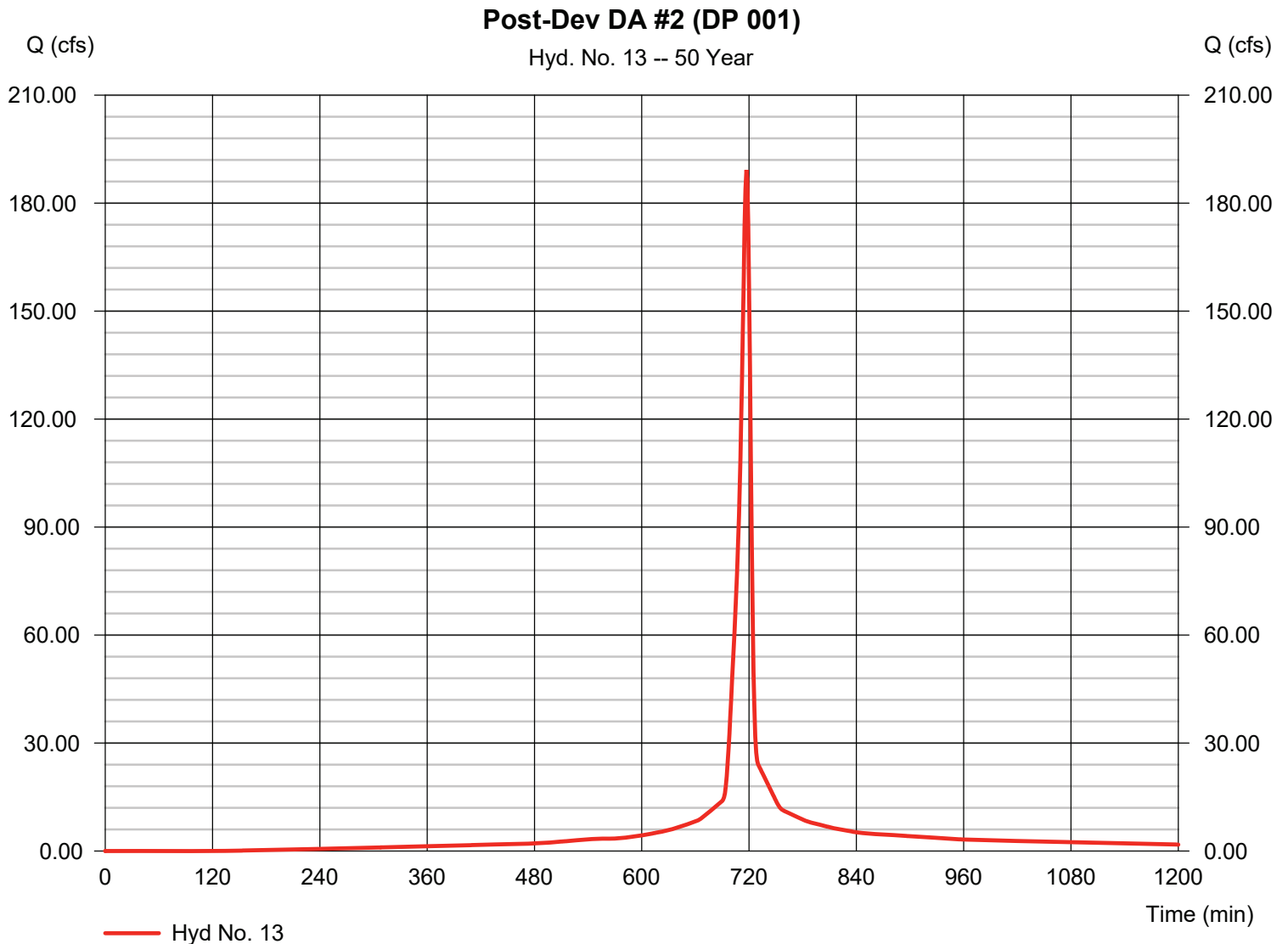
Thursday, 06 / 19 / 2025

Hyd. No. 13

Post-Dev DA #2 (DP 001)

Hydrograph type = SCS Runoff
Storm frequency = 50 yrs
Time interval = 1 min
Drainage area = 20.610 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 6.40 in
Storm duration = 24 hrs

Peak discharge = 189.20 cfs
Time to peak = 717 min
Hyd. volume = 431,218 cuft
Curve number = 93.1
Hydraulic length = 0 ft
Time of conc. (Tc) = 5.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

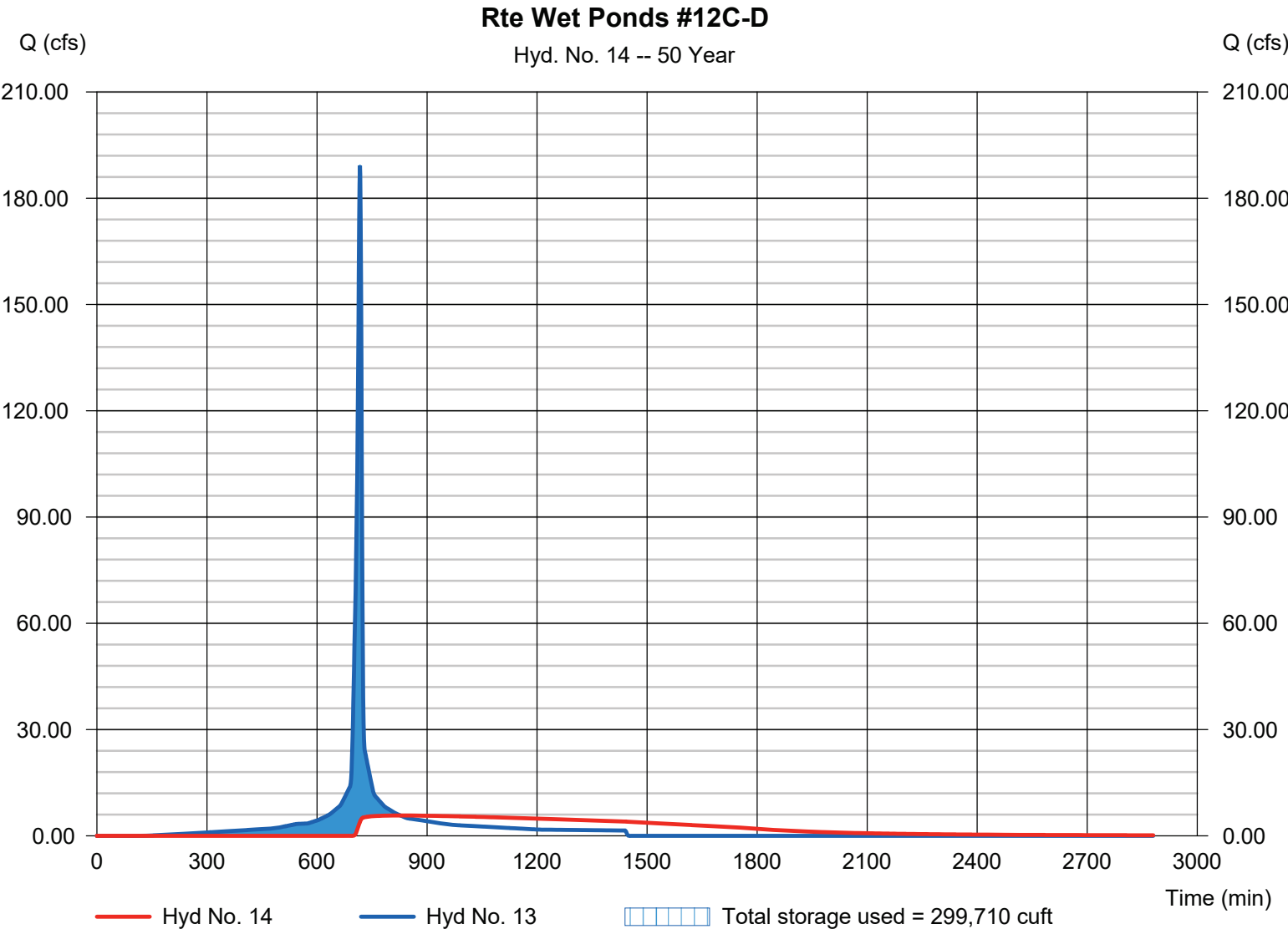
Thursday, 06 / 19 / 2025

Hyd. No. 14

Rte Wet Ponds #12C-D

Hydrograph type	= Reservoir	Peak discharge	= 5.740 cfs
Storm frequency	= 50 yrs	Time to peak	= 828 min
Time interval	= 1 min	Hyd. volume	= 326,461 cuft
Inflow hyd. No.	= 13 - Post-Dev DA #2 (DP 001)	Max. Elevation	= 13.19 ft
Reservoir name	= Wet Pond #12C-D	Max. Storage	= 299,710 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

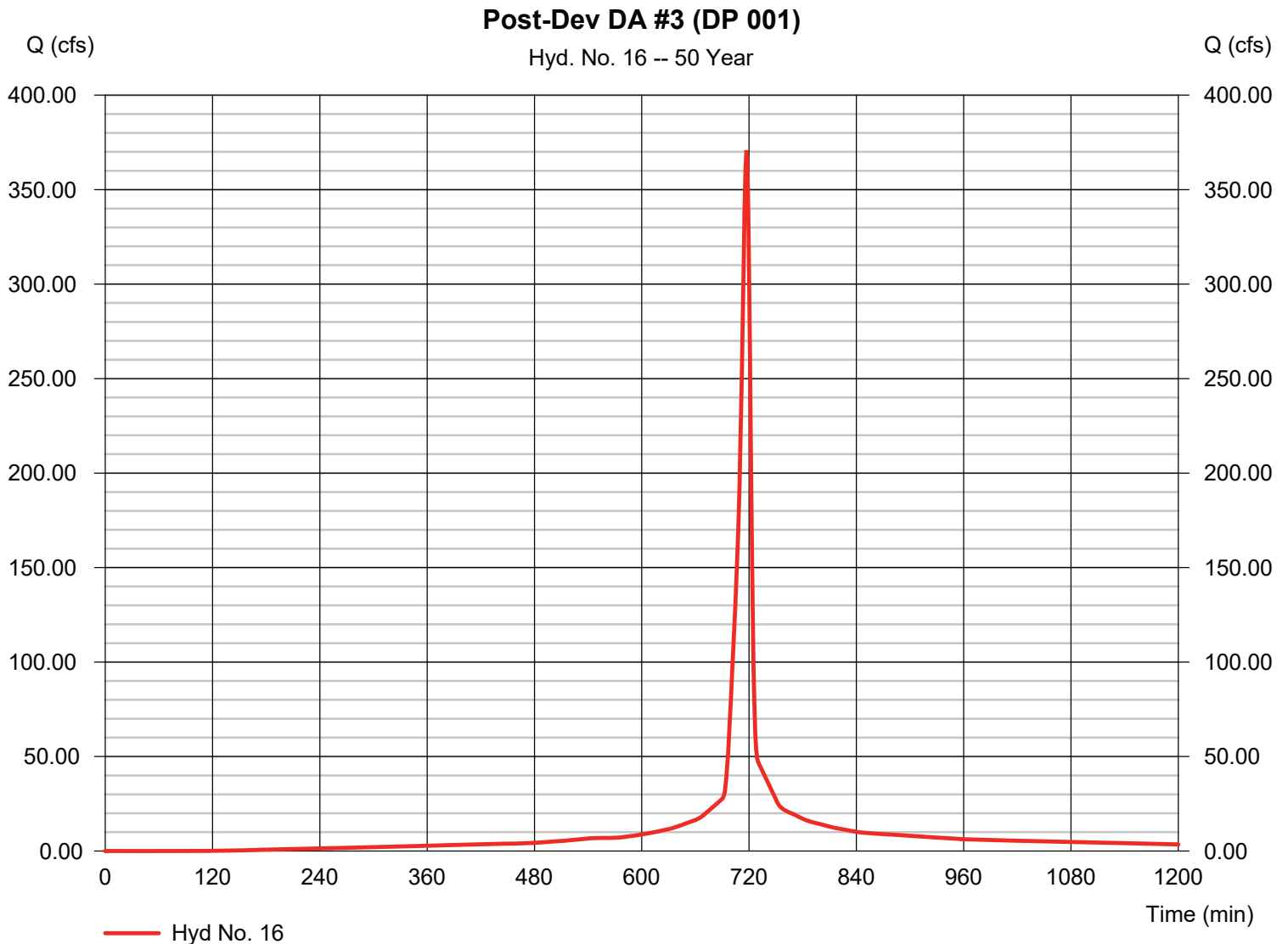
Thursday, 06 / 19 / 2025

Hyd. No. 16

Post-Dev DA #3 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 1 min
 Drainage area = 40.140 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.40 in
 Storm duration = 24 hrs

Peak discharge = 370.85 cfs
 Time to peak = 717 min
 Hyd. volume = 851,965 cuft
 Curve number = 93.8
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

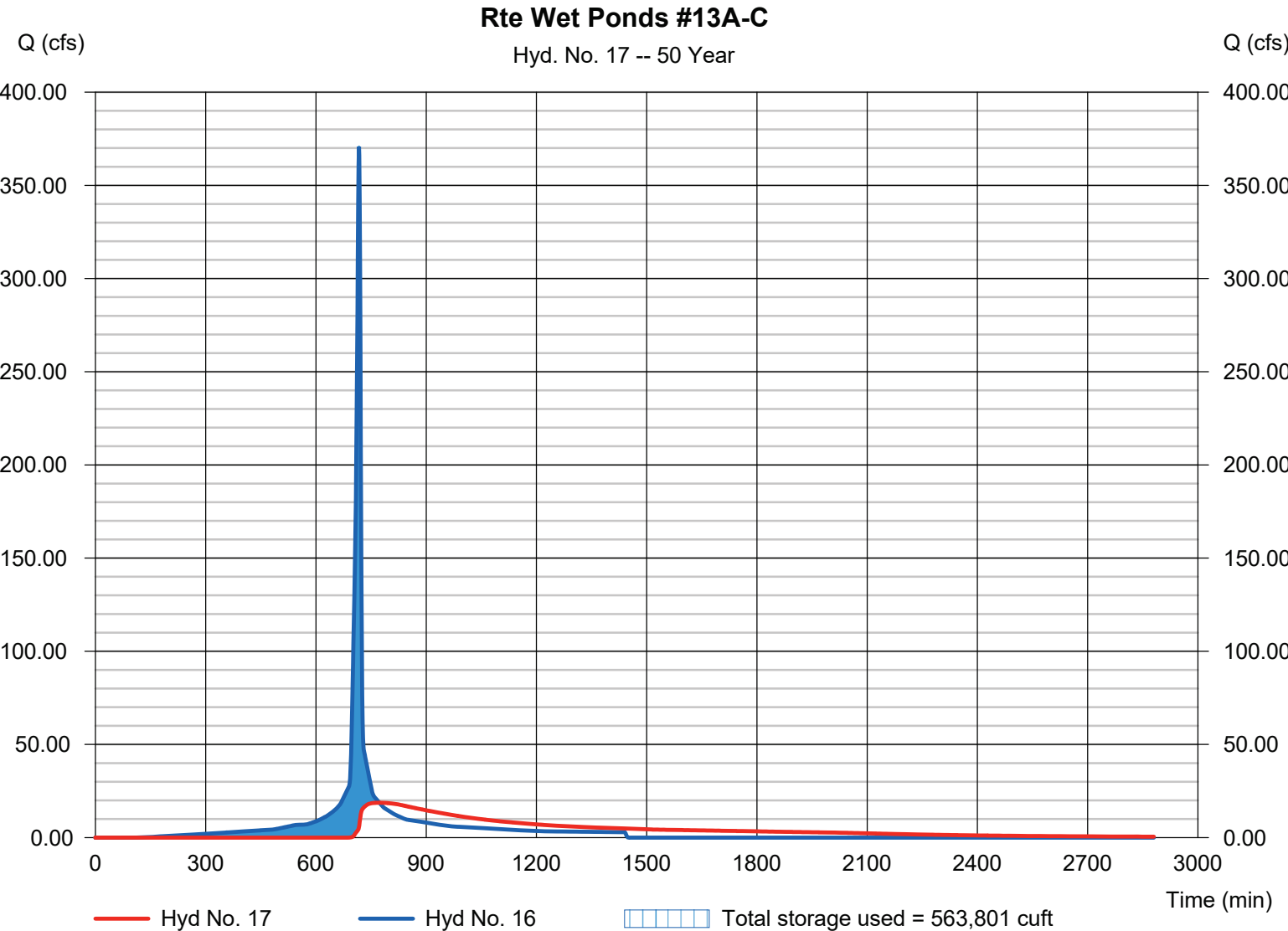
Thursday, 06 / 19 / 2025

Hyd. No. 17

Rte Wet Ponds #13A-C

Hydrograph type	= Reservoir	Peak discharge	= 18.73 cfs
Storm frequency	= 50 yrs	Time to peak	= 773 min
Time interval	= 1 min	Hyd. volume	= 650,010 cuft
Inflow hyd. No.	= 16 - Post-Dev DA #3 (DP 001)	Max. Elevation	= 13.58 ft
Reservoir name	= Wet Pond #13A-C	Max. Storage	= 563,801 cuft

Storage Indication method used.



Hydrograph Report

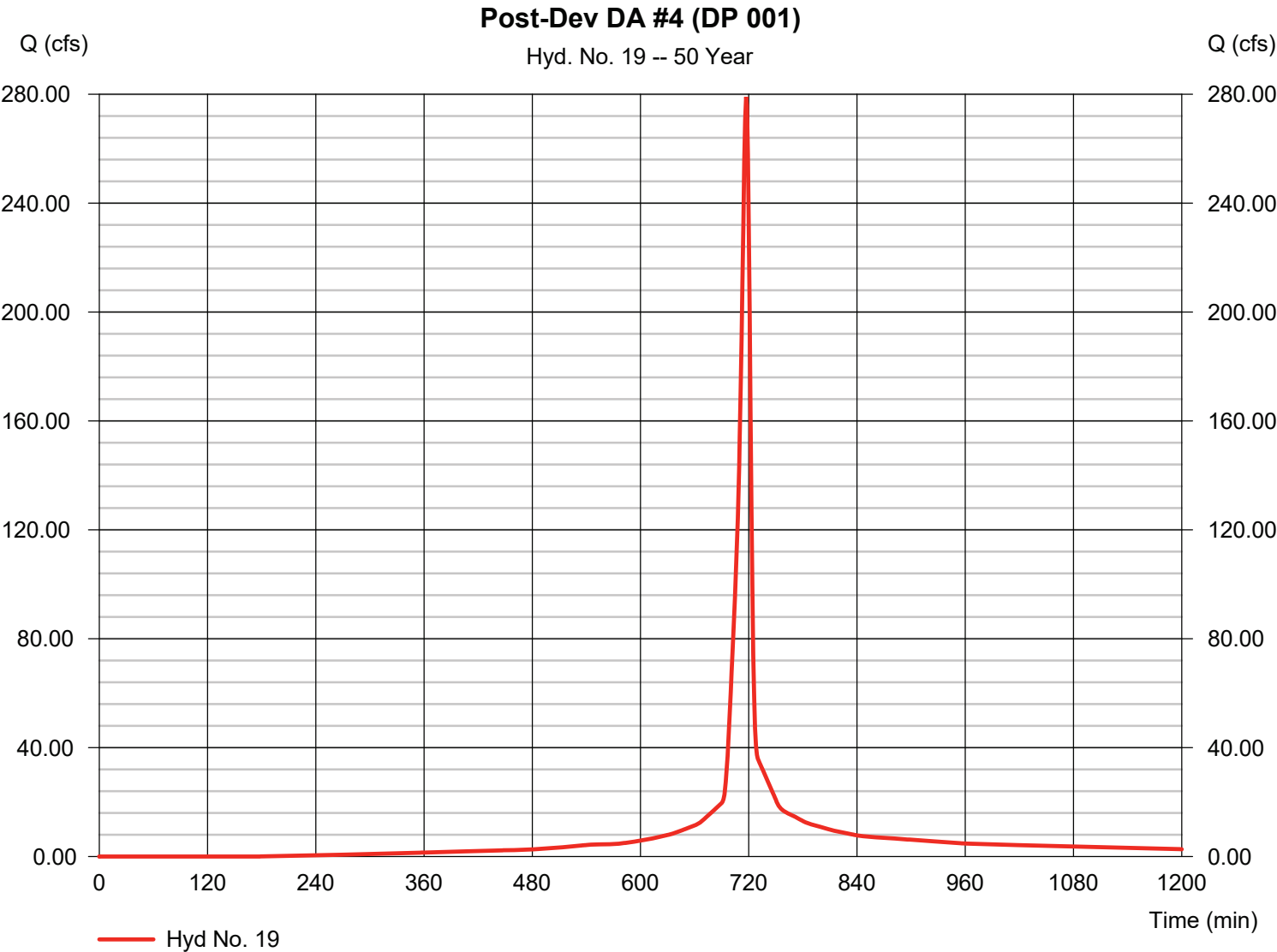
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 19

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 278.99 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 620,061 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

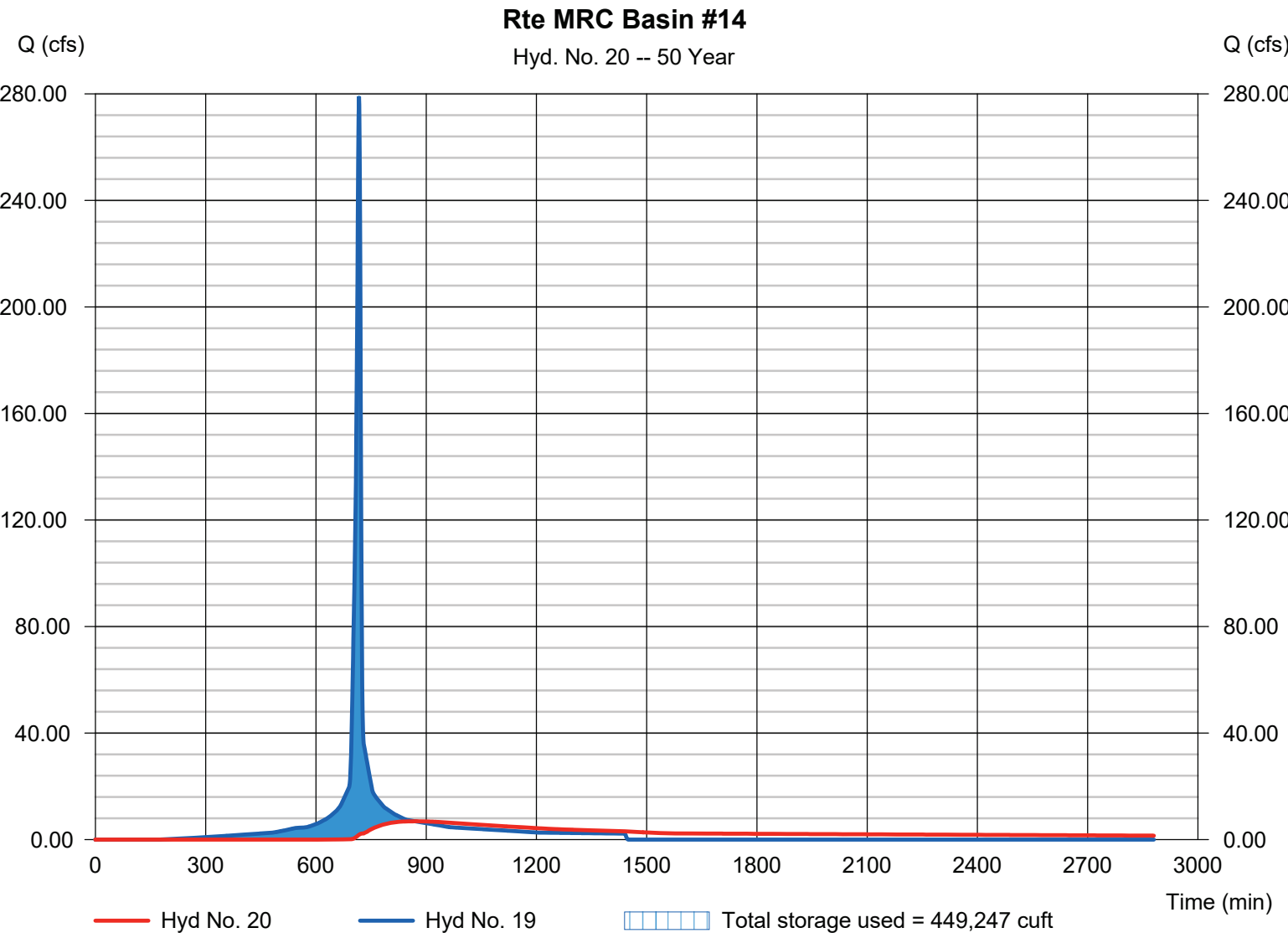
Thursday, 06 / 19 / 2025

Hyd. No. 20

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 6.873 cfs
Storm frequency	= 50 yrs	Time to peak	= 870 min
Time interval	= 1 min	Hyd. volume	= 386,281 cuft
Inflow hyd. No.	= 19 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 15.40 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 449,247 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

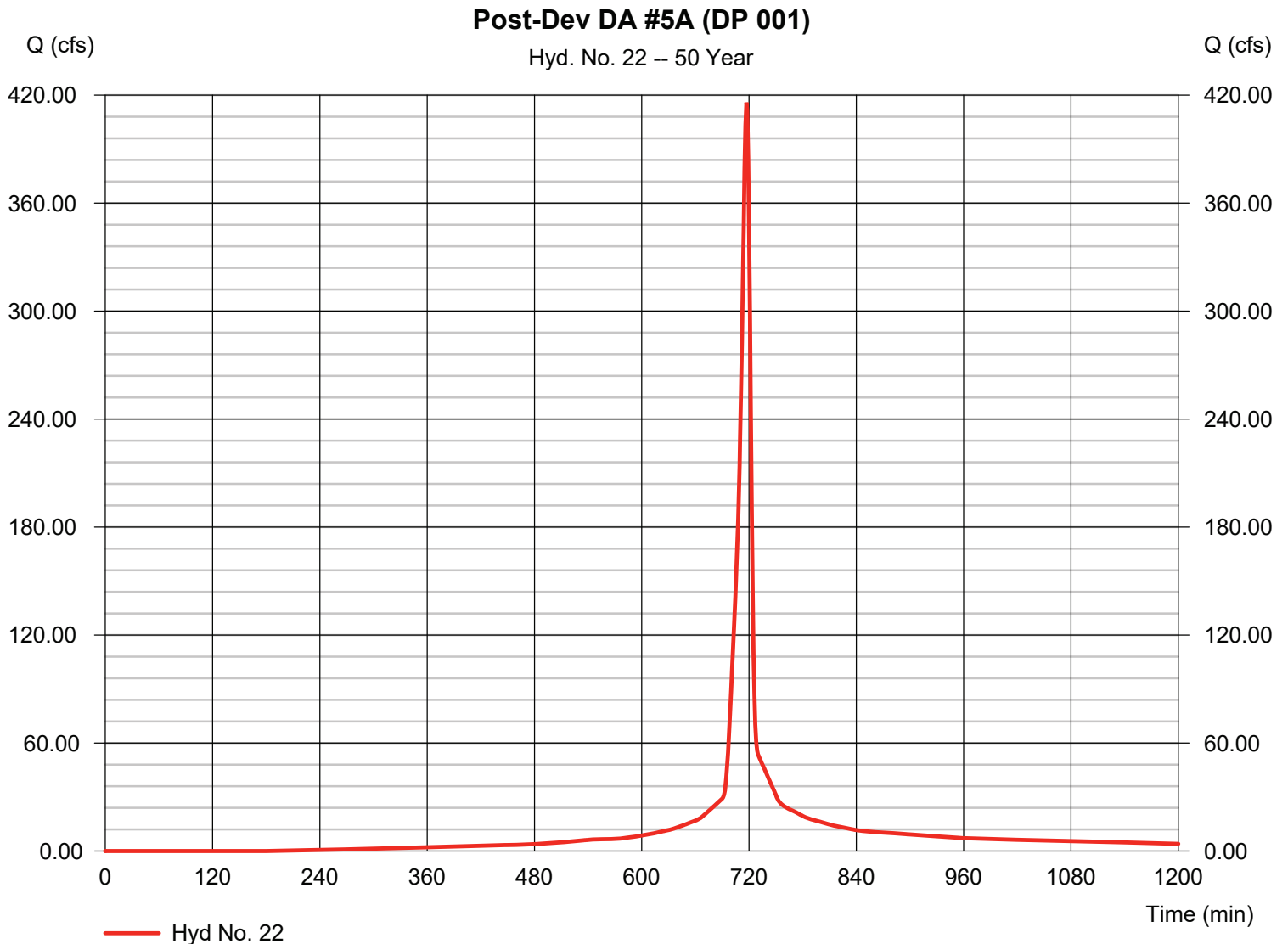
Thursday, 06 / 19 / 2025

Hyd. No. 22

Post-Dev DA #5A (DP 001)

Hydrograph type = SCS Runoff
Storm frequency = 50 yrs
Time interval = 1 min
Drainage area = 46.730 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 6.40 in
Storm duration = 24 hrs

Peak discharge = 415.92 cfs
Time to peak = 717 min
Hyd. volume = 921,871 cuft
Curve number = 90.3
Hydraulic length = 0 ft
Time of conc. (Tc) = 5.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

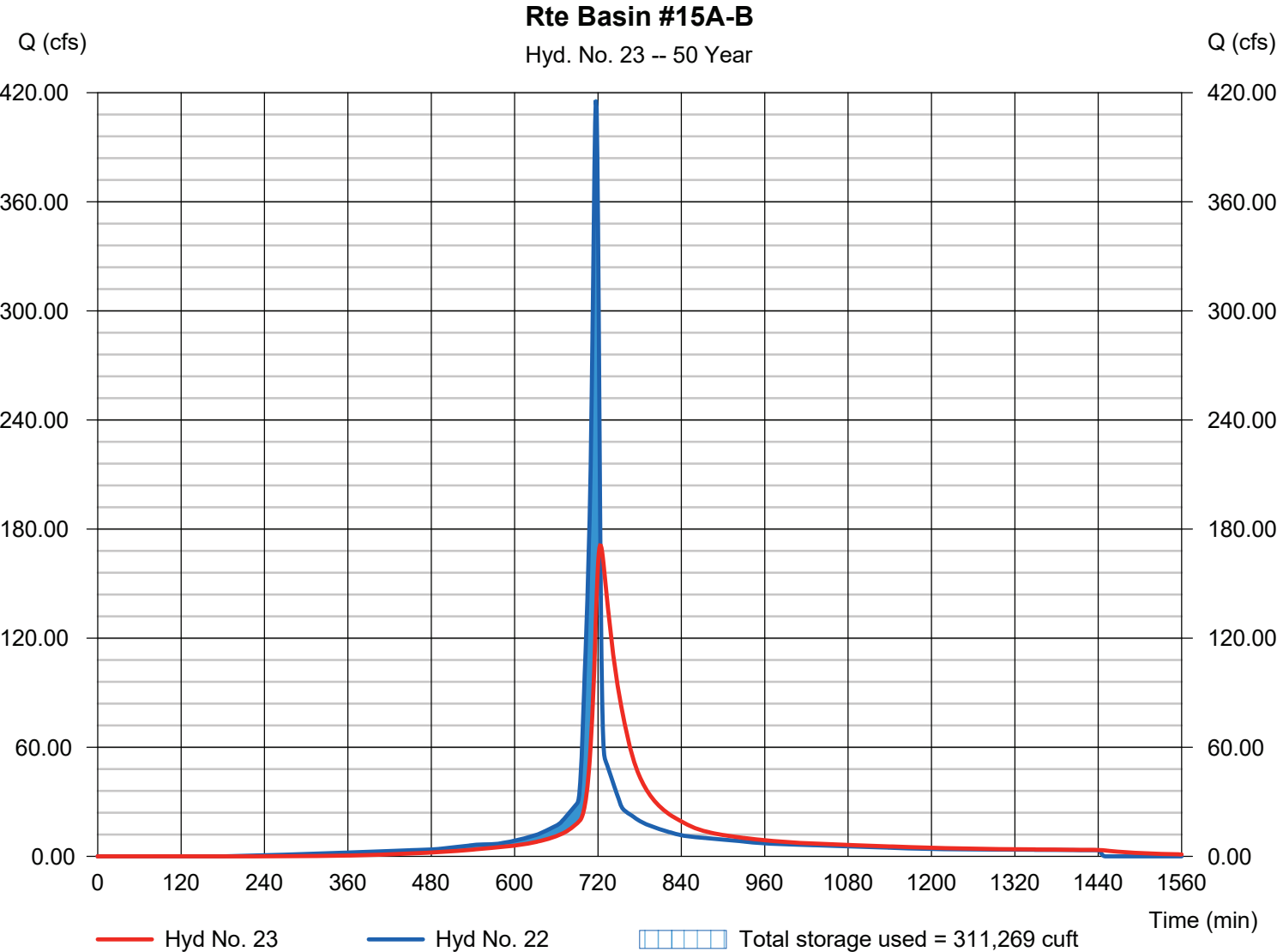
Thursday, 06 / 19 / 2025

Hyd. No. 23

Rte Basin #15A-B

Hydrograph type	= Reservoir	Peak discharge	= 170.94 cfs
Storm frequency	= 50 yrs	Time to peak	= 723 min
Time interval	= 1 min	Hyd. volume	= 920,732 cuft
Inflow hyd. No.	= 22 - Post-Dev DA #5A (DP 001)	Max. Elevation	= 16.33 ft
Reservoir name	= Basin #15A-B	Max. Storage	= 311,269 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

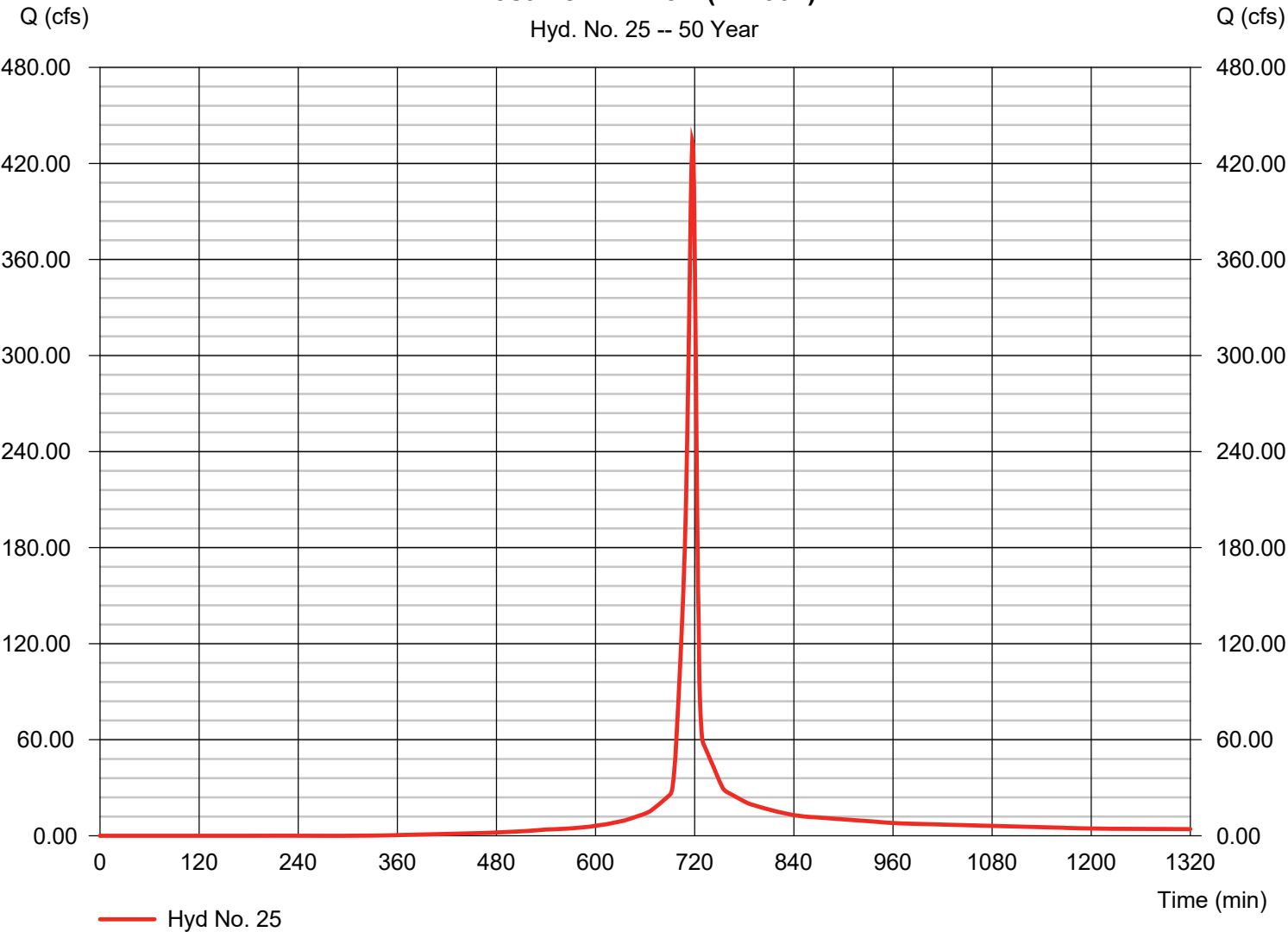
Hyd. No. 25

Post-Dev DA #5B (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	433.92 cfs
Storm frequency	=	50 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	910,738 cuft
Drainage area	=	55.570 ac	Curve number	=	82.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.40 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

Post-Dev DA #5B (DP 001)

Hyd. No. 25 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

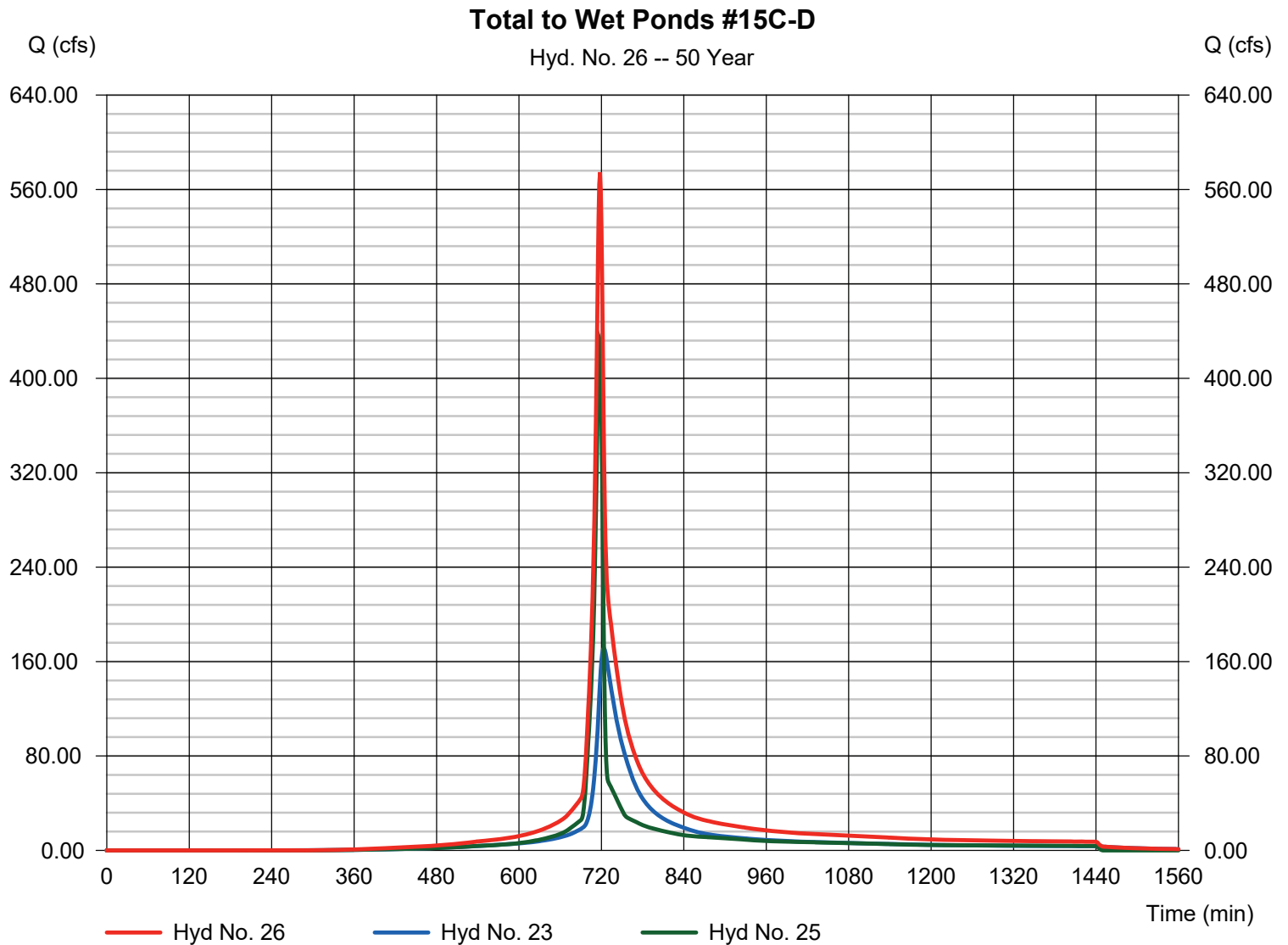
Thursday, 06 / 19 / 2025

Hyd. No. 26

Total to Wet Ponds #15C-D

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 1 min
Inflow hyds. = 23, 25

Peak discharge = 574.72 cfs
Time to peak = 718 min
Hyd. volume = 1,831,468 cuft
Contrib. drain. area = 55.570 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

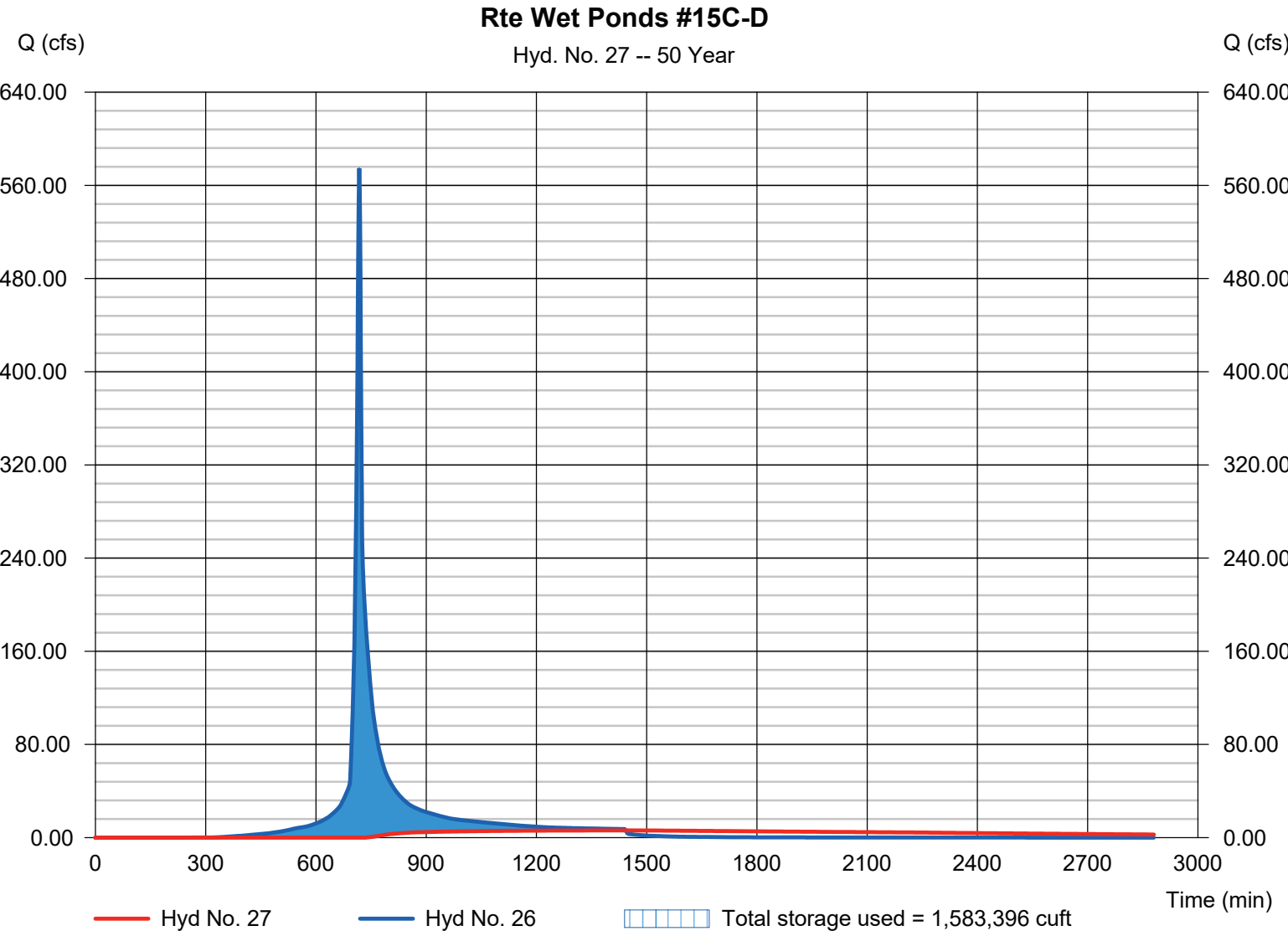
Thursday, 06 / 19 / 2025

Hyd. No. 27

Rte Wet Ponds #15C-D

Hydrograph type	= Reservoir	Peak discharge	= 6.230 cfs
Storm frequency	= 50 yrs	Time to peak	= 1443 min
Time interval	= 1 min	Hyd. volume	= 607,733 cuft
Inflow hyd. No.	= 26 - Total to Wet Ponds #15C-D	Max. Elevation	= 11.47 ft
Reservoir name	= Wet Pond #15C-D	Max. Storage	= 1,583,396 cuft

Storage Indication method used.



Hydrograph Report

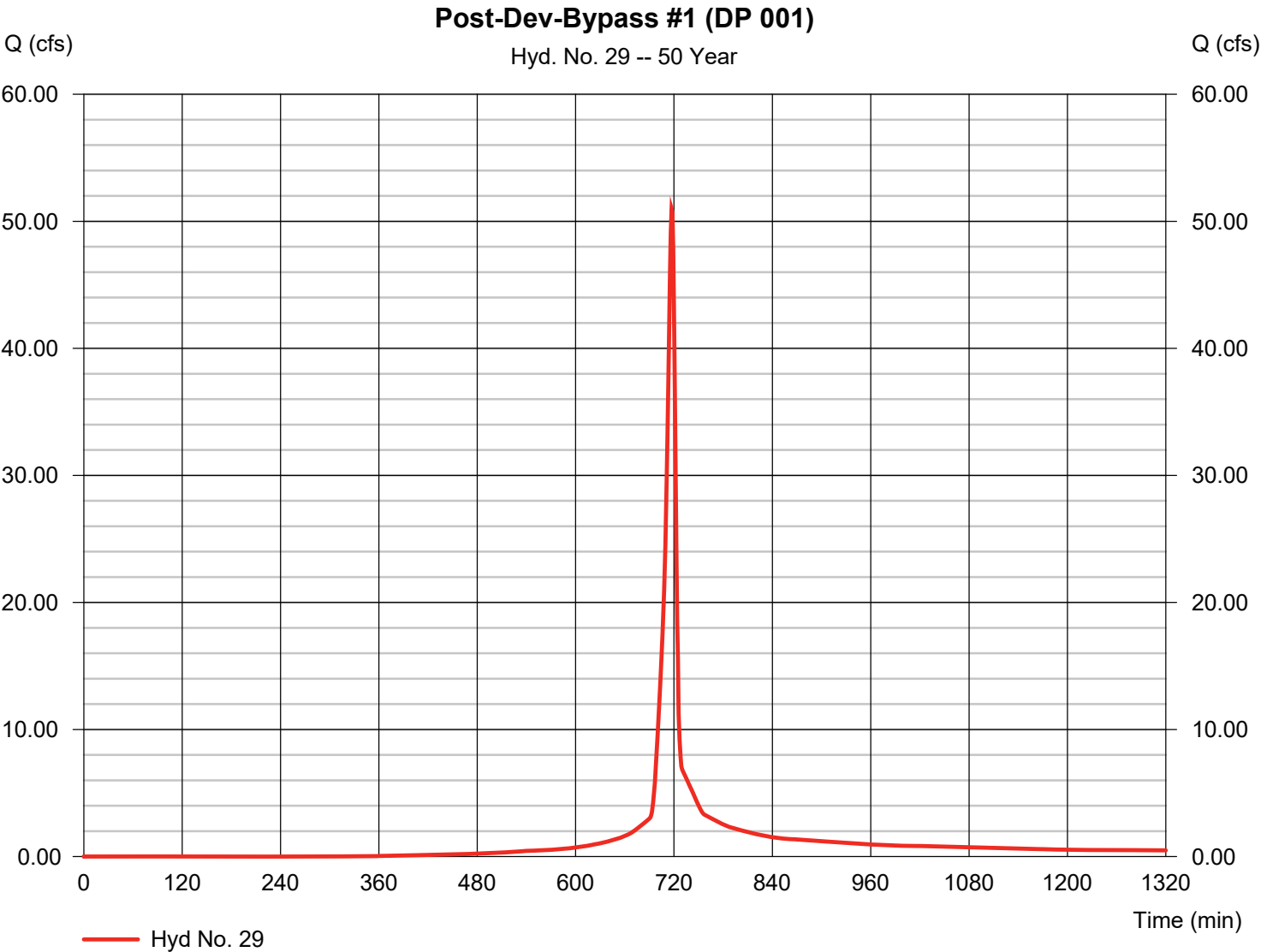
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Thursday, 06 / 19 / 2025

Hyd. No. 29

Post-Dev-Bypass #1 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	50.97 cfs
Storm frequency	=	50 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	106,785 cuft
Drainage area	=	6.580 ac	Curve number	=	81.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.40 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

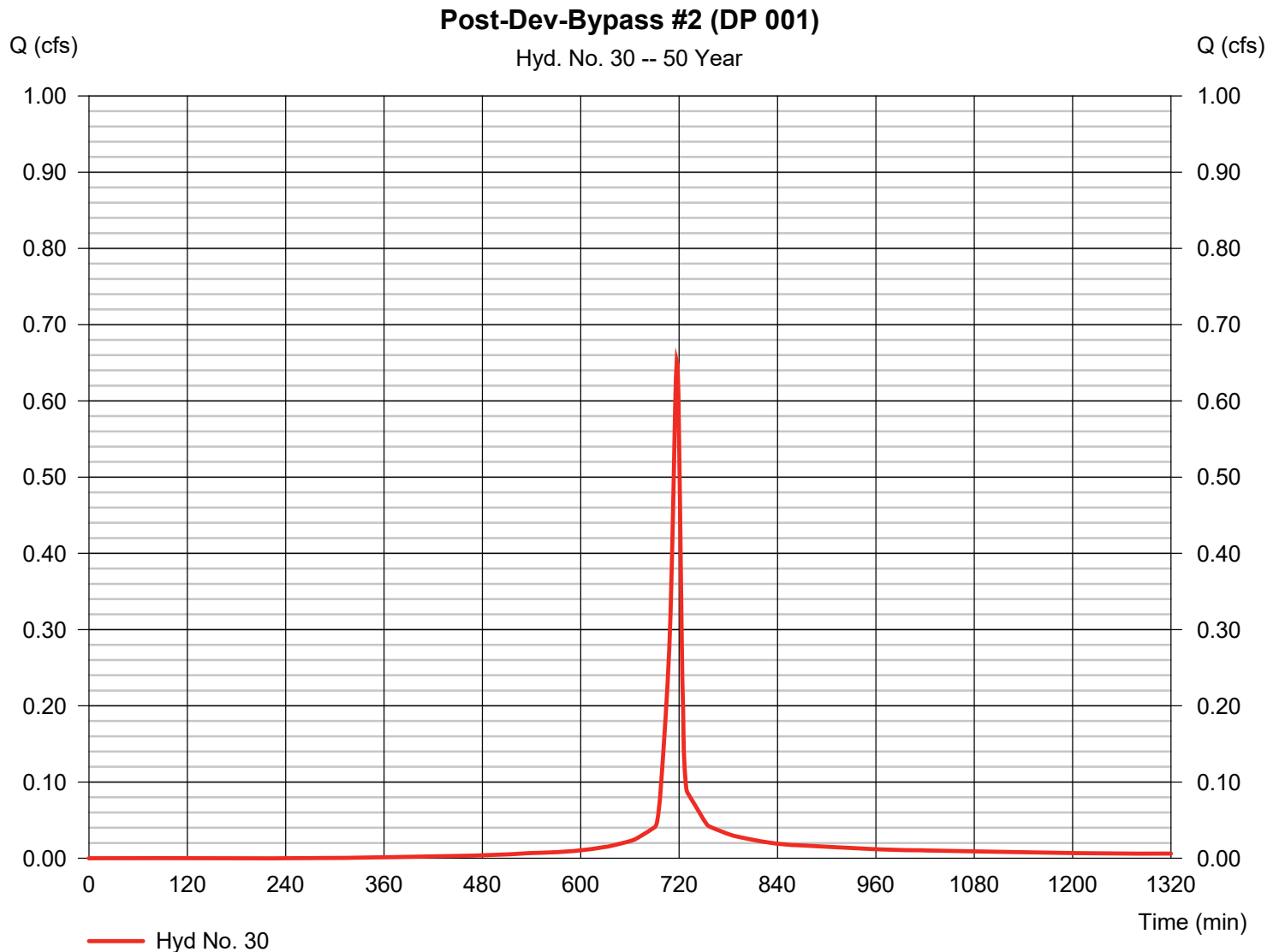
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Thursday, 06 / 19 / 2025

Hyd. No. 30

Post-Dev-Bypass #2 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.652 cfs
Storm frequency	=	50 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	1,386 cuft
Drainage area	=	0.080 ac	Curve number	=	84.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.40 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

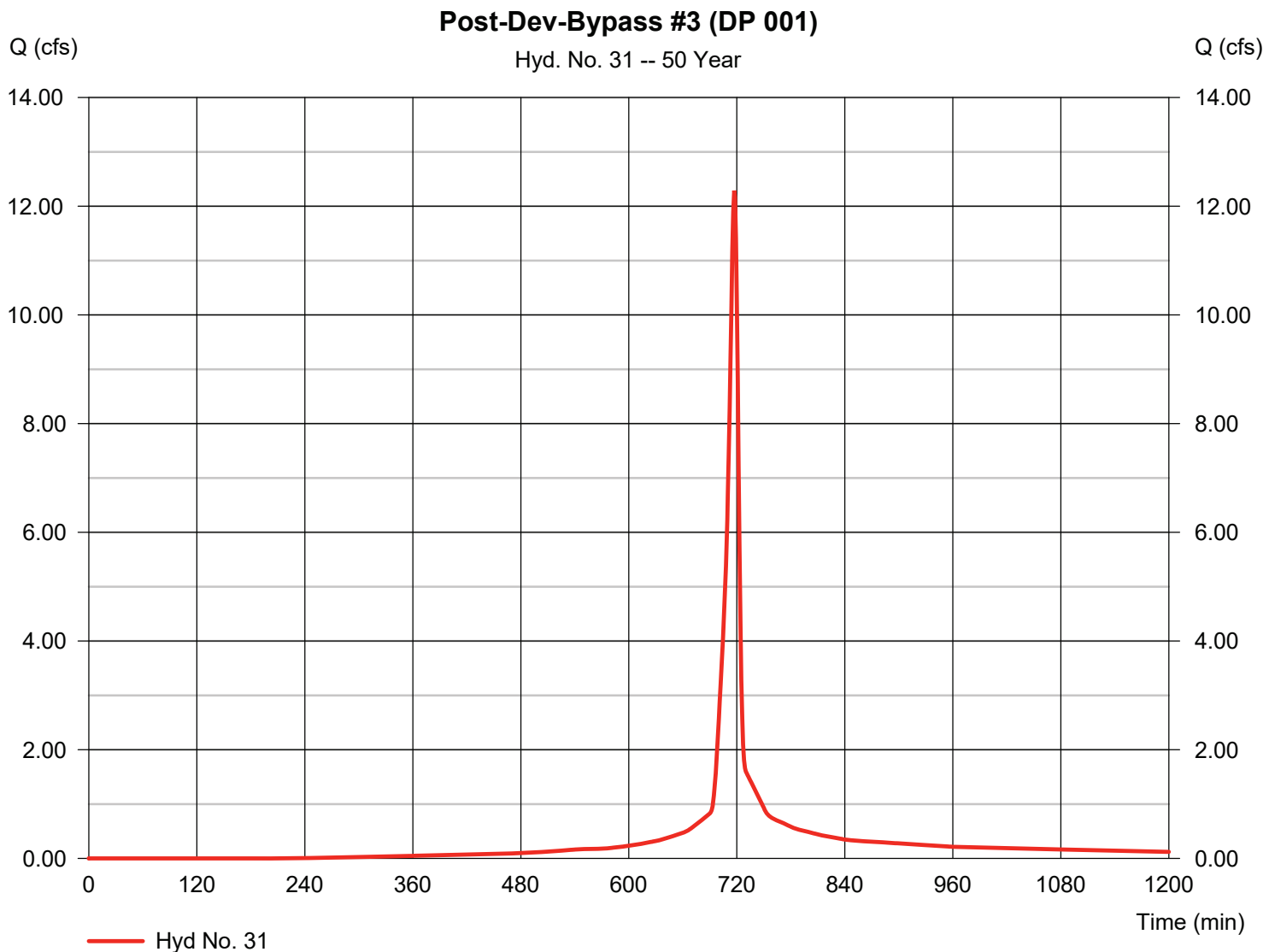
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 31

Post-Dev-Bypass #3 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 12.29 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 26,760 cuft
Drainage area	= 1.420 ac	Curve number	= 88.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

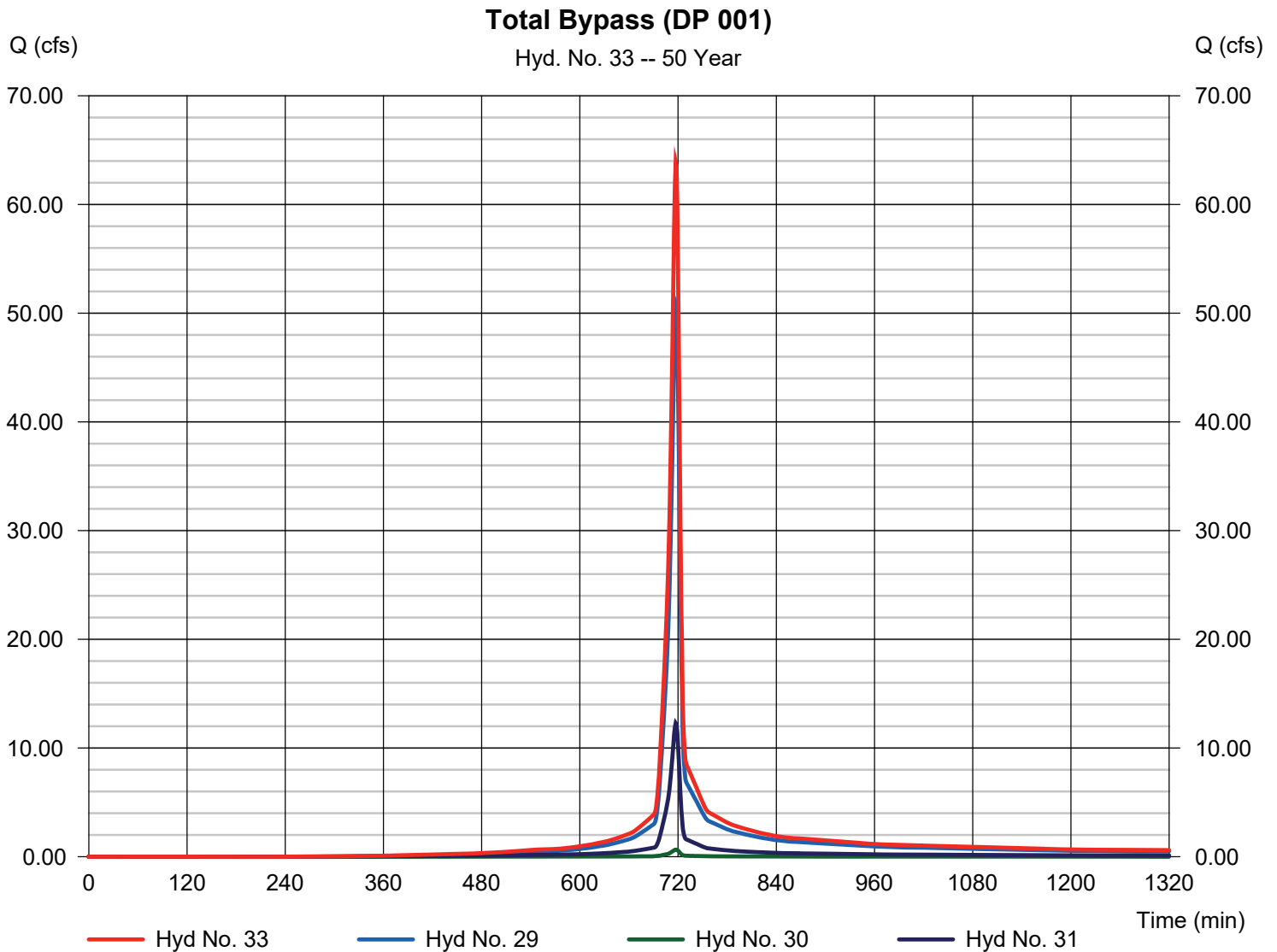
Thursday, 06 / 19 / 2025

Hyd. No. 33

Total Bypass (DP 001)

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 1 min
Inflow hyds. = 29, 30, 31

Peak discharge = 63.91 cfs
Time to peak = 717 min
Hyd. volume = 134,931 cuft
Contrib. drain. area = 8.080 ac



Hydrograph Report

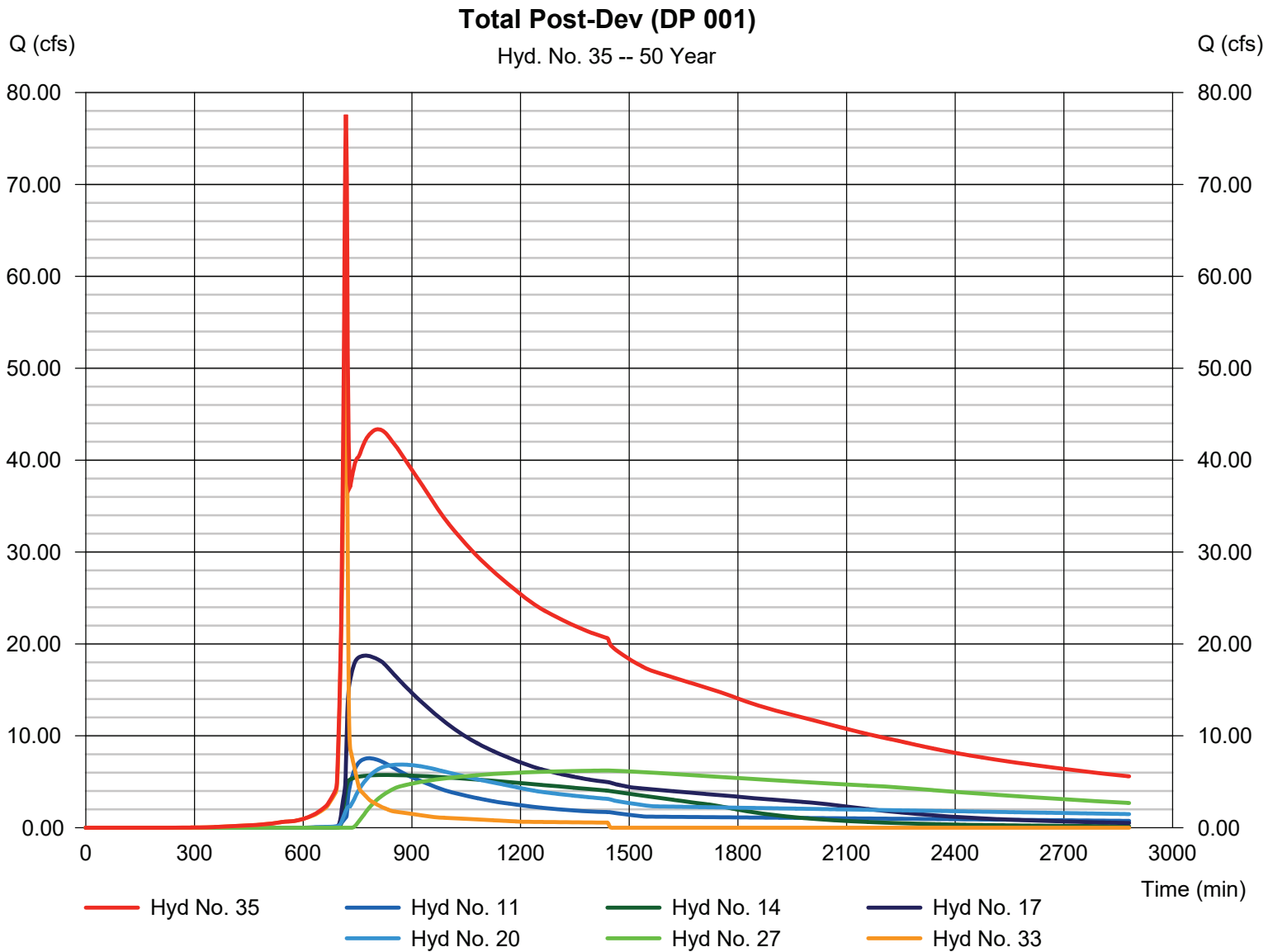
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Thursday, 06 / 19 / 2025

Hyd. No. 35

Total Post-Dev (DP 001)

Hydrograph type	= Combine	Peak discharge	= 77.60 cfs
Storm frequency	= 50 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 2,359,493 cuft
Inflow hyds.	= 11, 14, 17, 20, 27, 33	Contrib. drain. area	= 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

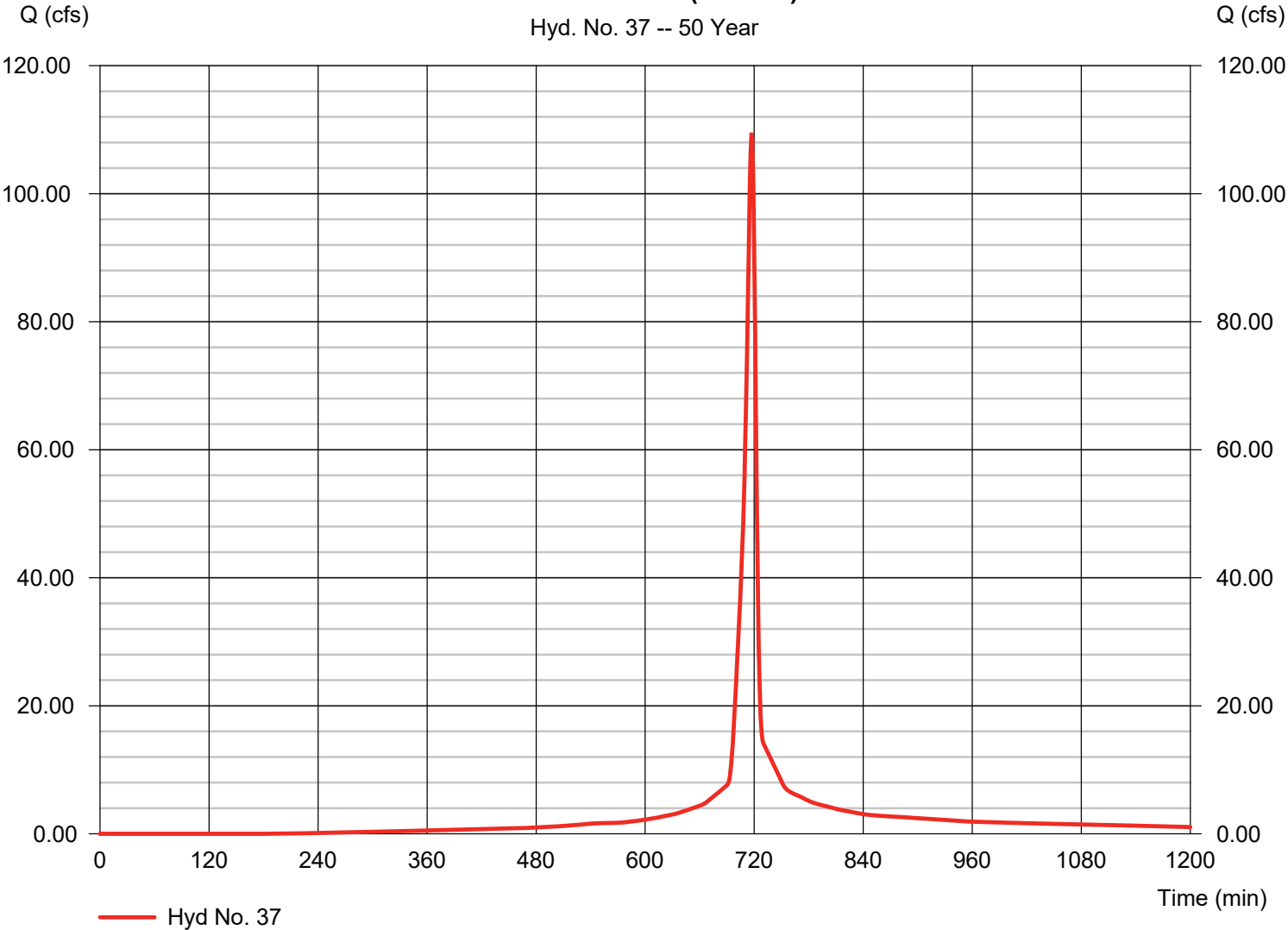
Hyd. No. 37

Pre-Dev DA #8 (DP 002)

Hydrograph type	= SCS Runoff	Peak discharge	= 109.52 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 241,481 cuft
Drainage area	= 12.400 ac	Curve number	= 89.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Pre-Dev DA #8 (DP 002)

Hyd. No. 37 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 38

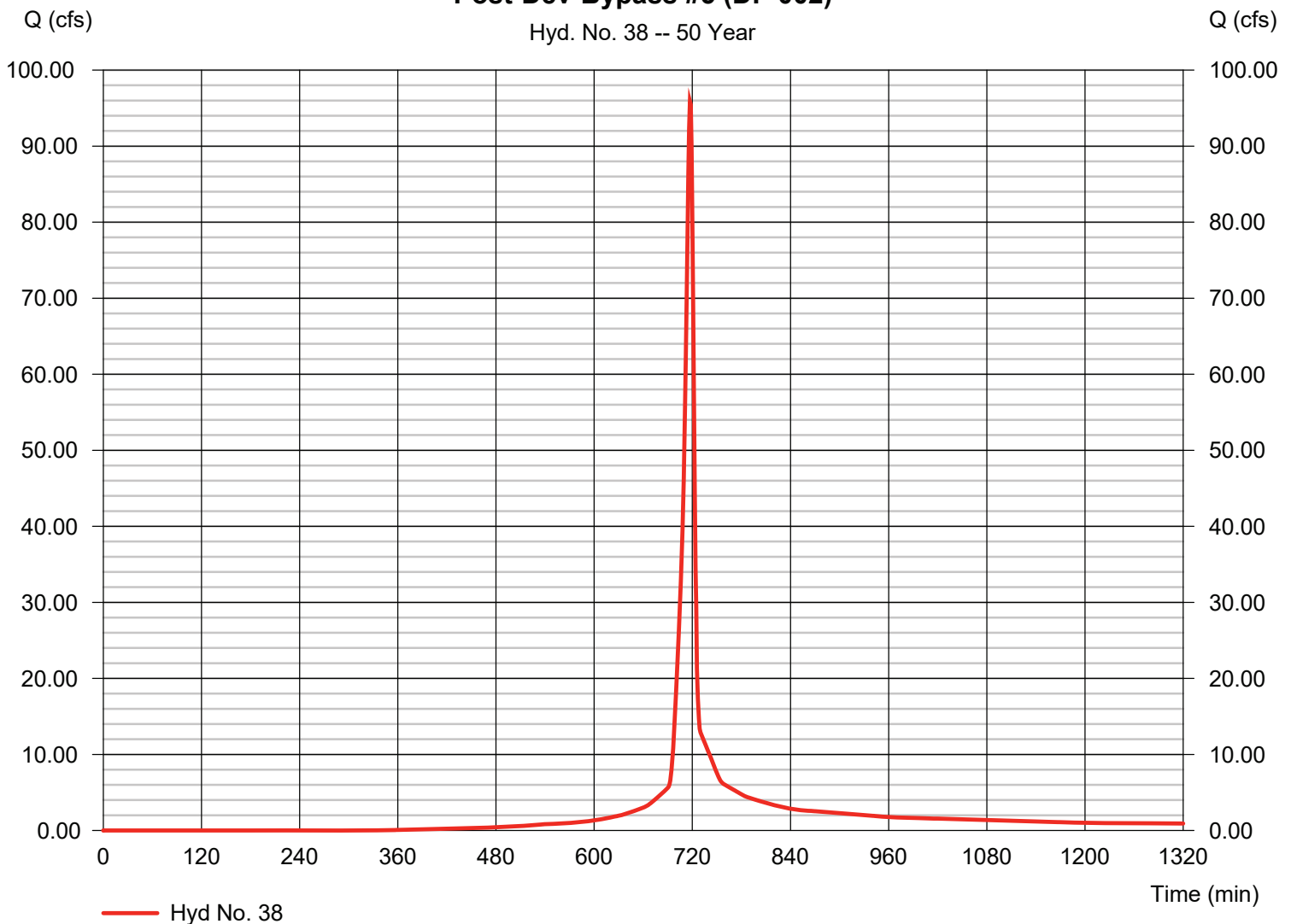
Post-Dev-Bypass #5 (DP 002)

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 1 min
 Drainage area = 12.400 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.40 in
 Storm duration = 24 hrs

Peak discharge = 95.87 cfs
 Time to peak = 717 min
 Hyd. volume = 200,741 cuft
 Curve number = 81.7
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484

Post-Dev-Bypass #5 (DP 002)

Hyd. No. 38 -- 50 Year

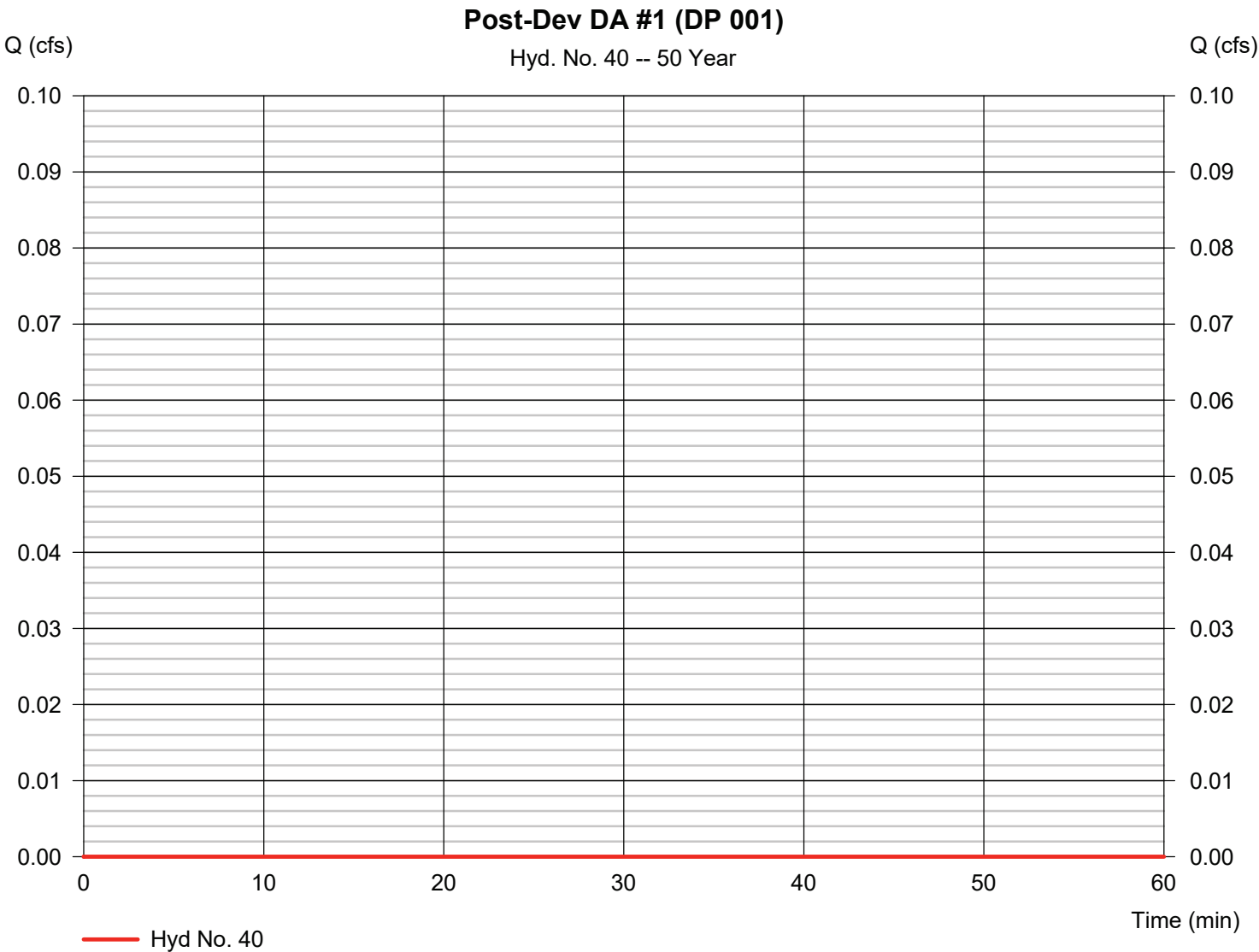


Hydrograph Report

Hyd. No. 40

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 50 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



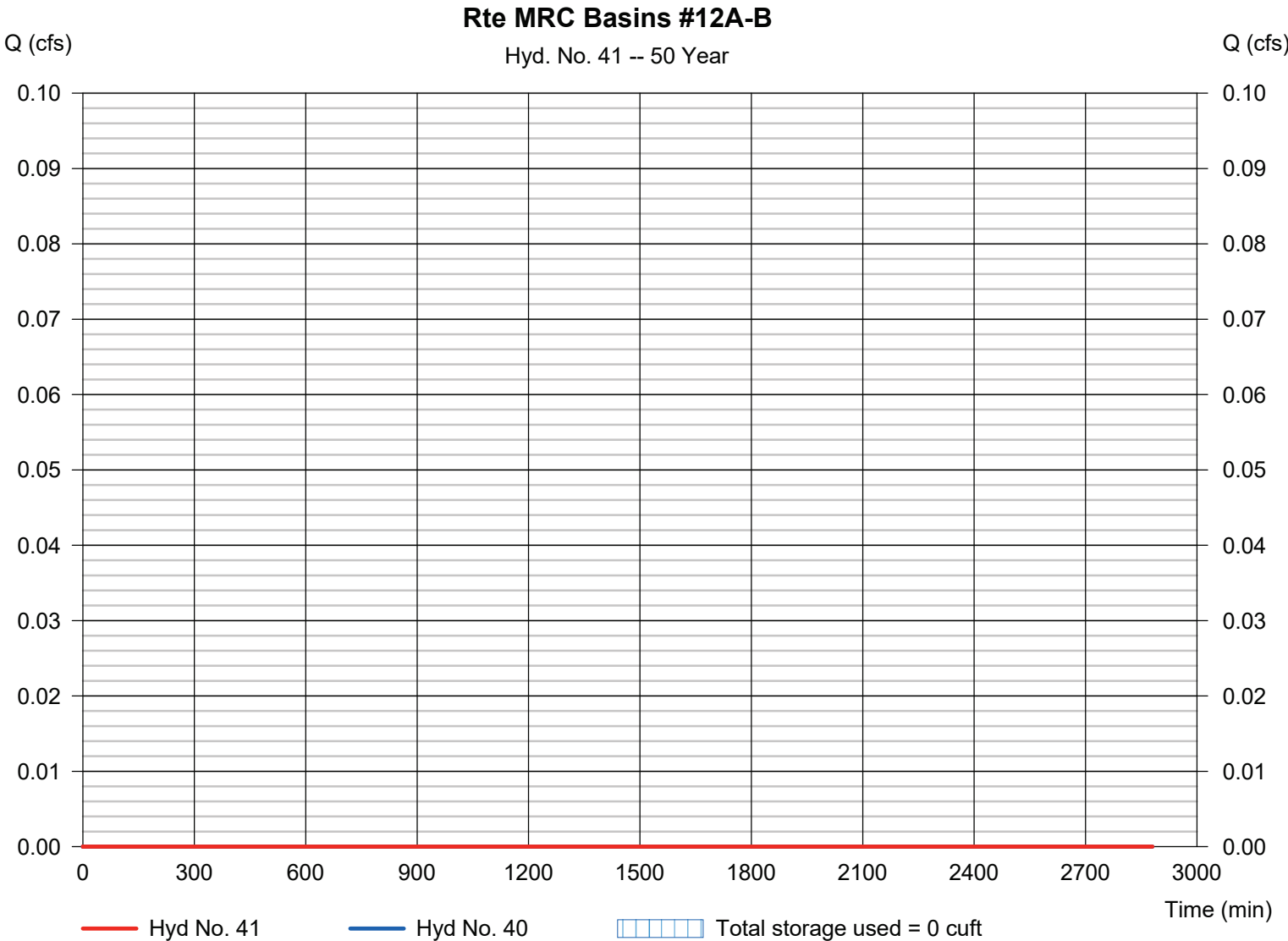
Hydrograph Report

Hyd. No. 41

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 50 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 40 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 0 cuft

Storage Indication method used.

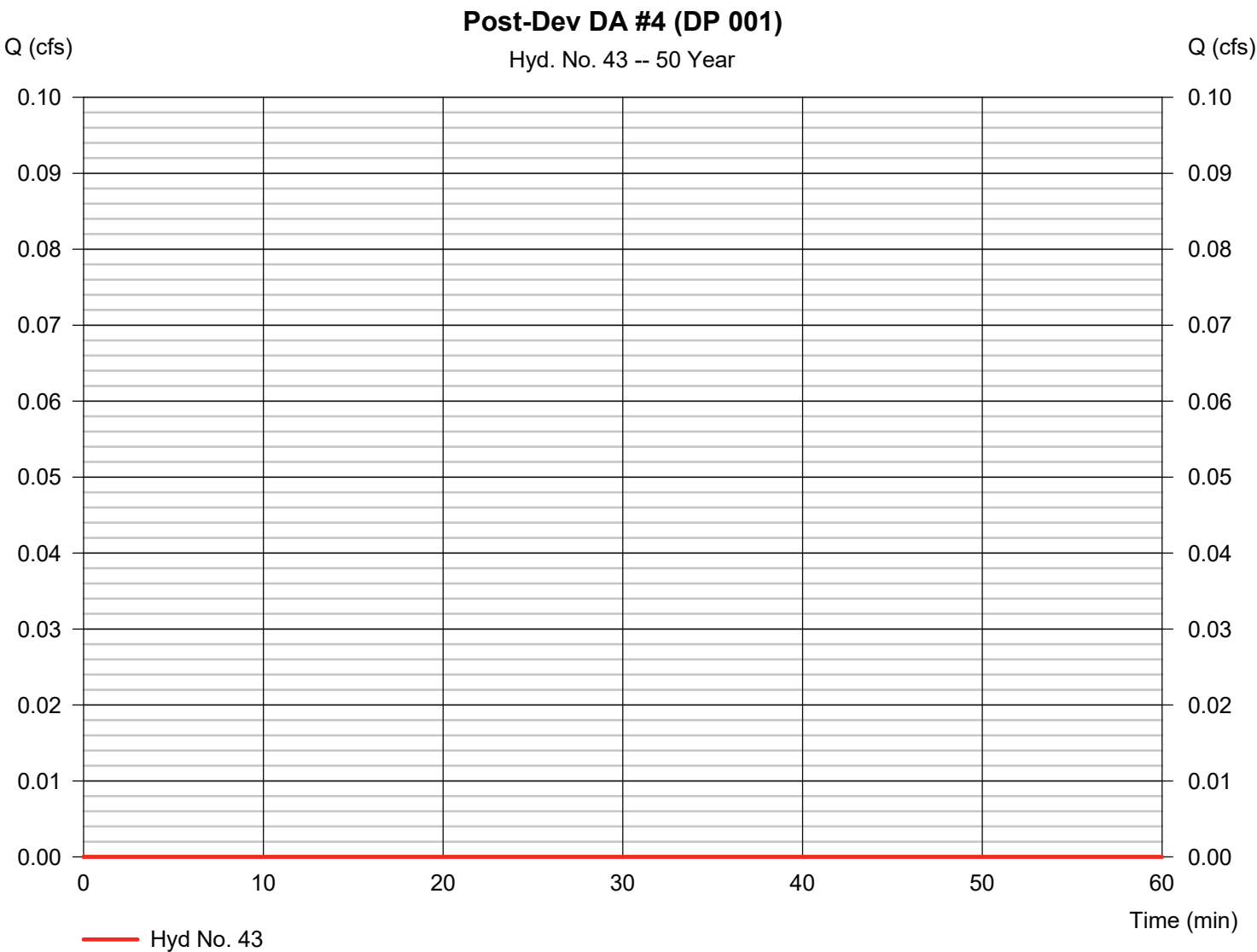


Hydrograph Report

Hyd. No. 43

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 50 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_MasterPlan\2007083-05 - Ph		



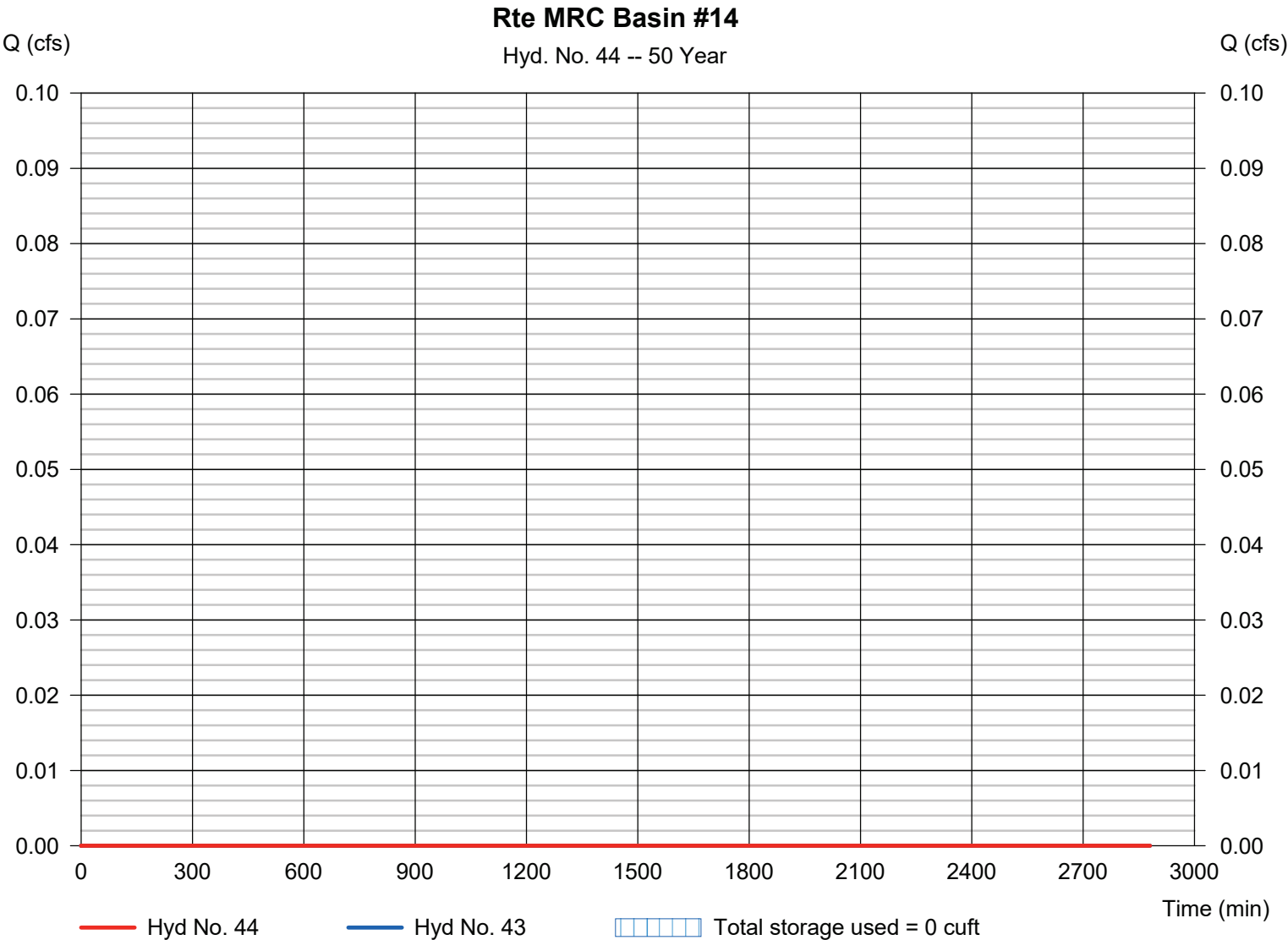
Hydrograph Report

Hyd. No. 44

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 50 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 43 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

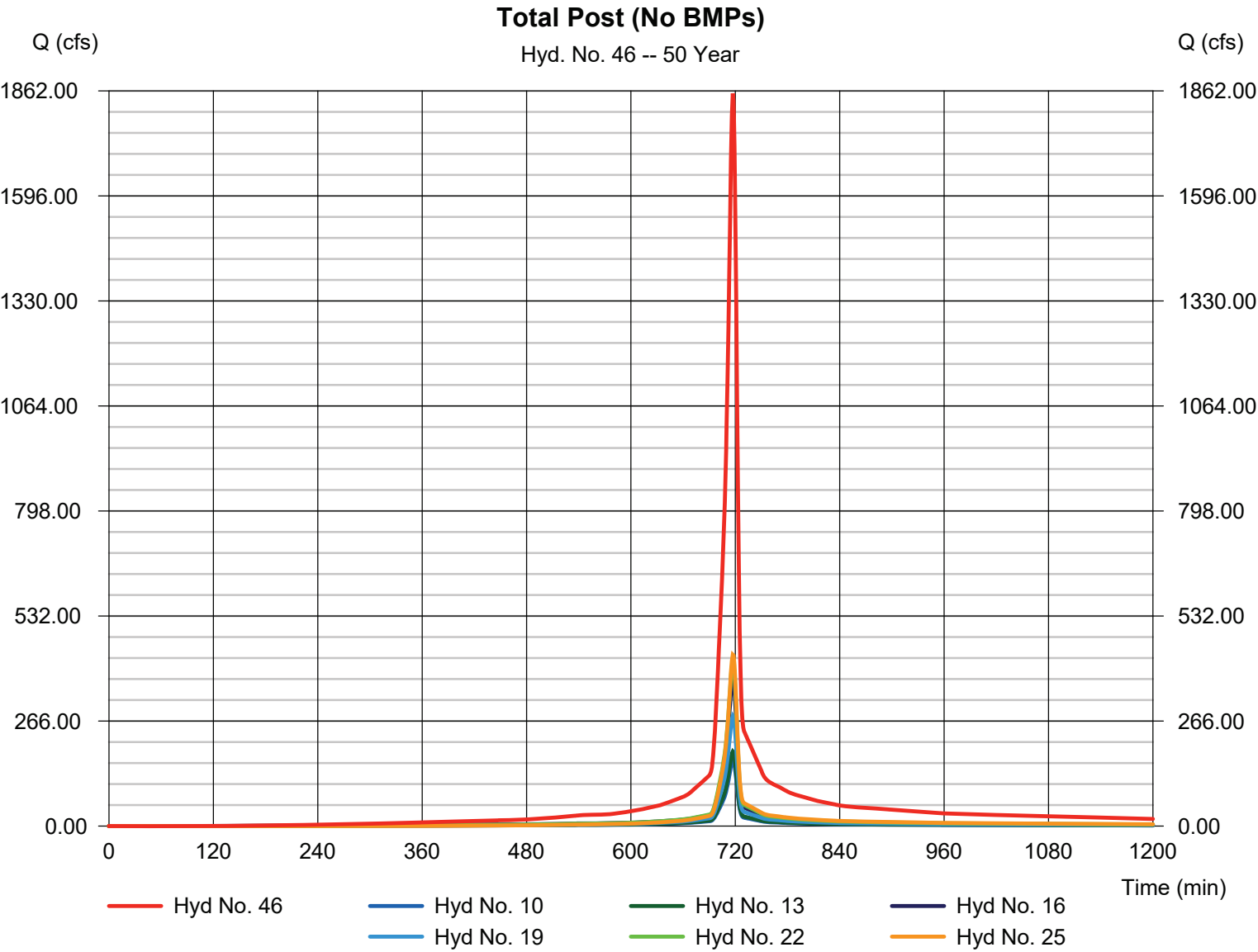
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 46

Total Post (No BMPs)

Hydrograph type	= Combine	Peak discharge	= 1855.58 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 4,115,810 cuft
Inflow hyds.	= 10, 13, 16, 19, 22, 25	Contrib. drain. area	= 212.440 ac

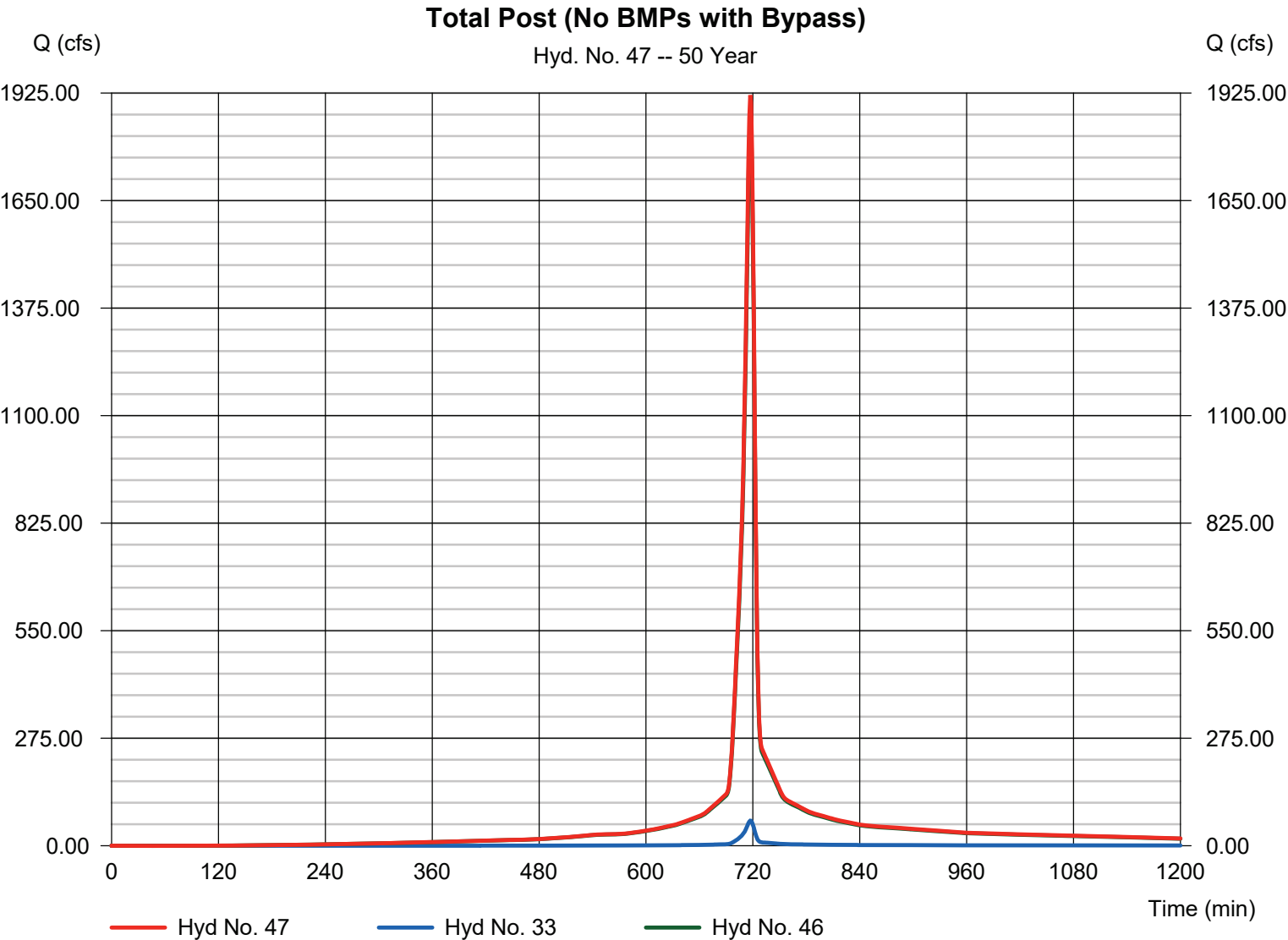


Hydrograph Report

Hyd. No. 47

Total Post (No BMPs with Bypass)

Hydrograph type	= Combine	Peak discharge	= 1919.49 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 4,250,741 cuft
Inflow hyds.	= 33, 46	Contrib. drain. area	= 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

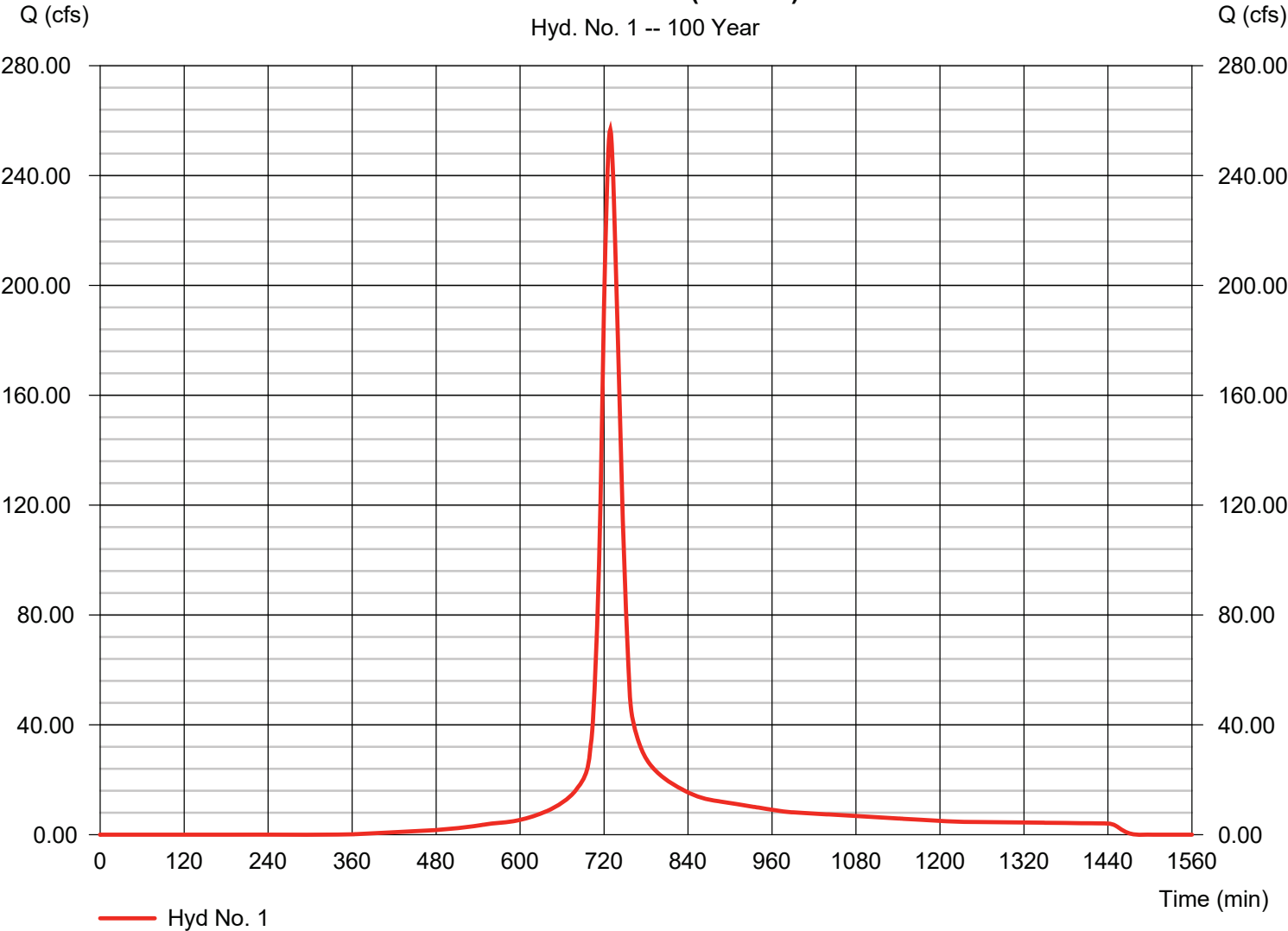
Hyd. No. 1

Pre-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 256.76 cfs
Storm frequency	= 100 yrs	Time to peak	= 729 min
Time interval	= 1 min	Hyd. volume	= 961,022 cuft
Drainage area	= 54.210 ac	Curve number	= 79.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.80 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Pre-Dev DA #1 (DP 001)

Hyd. No. 1 -- 100 Year



Hydrograph Report

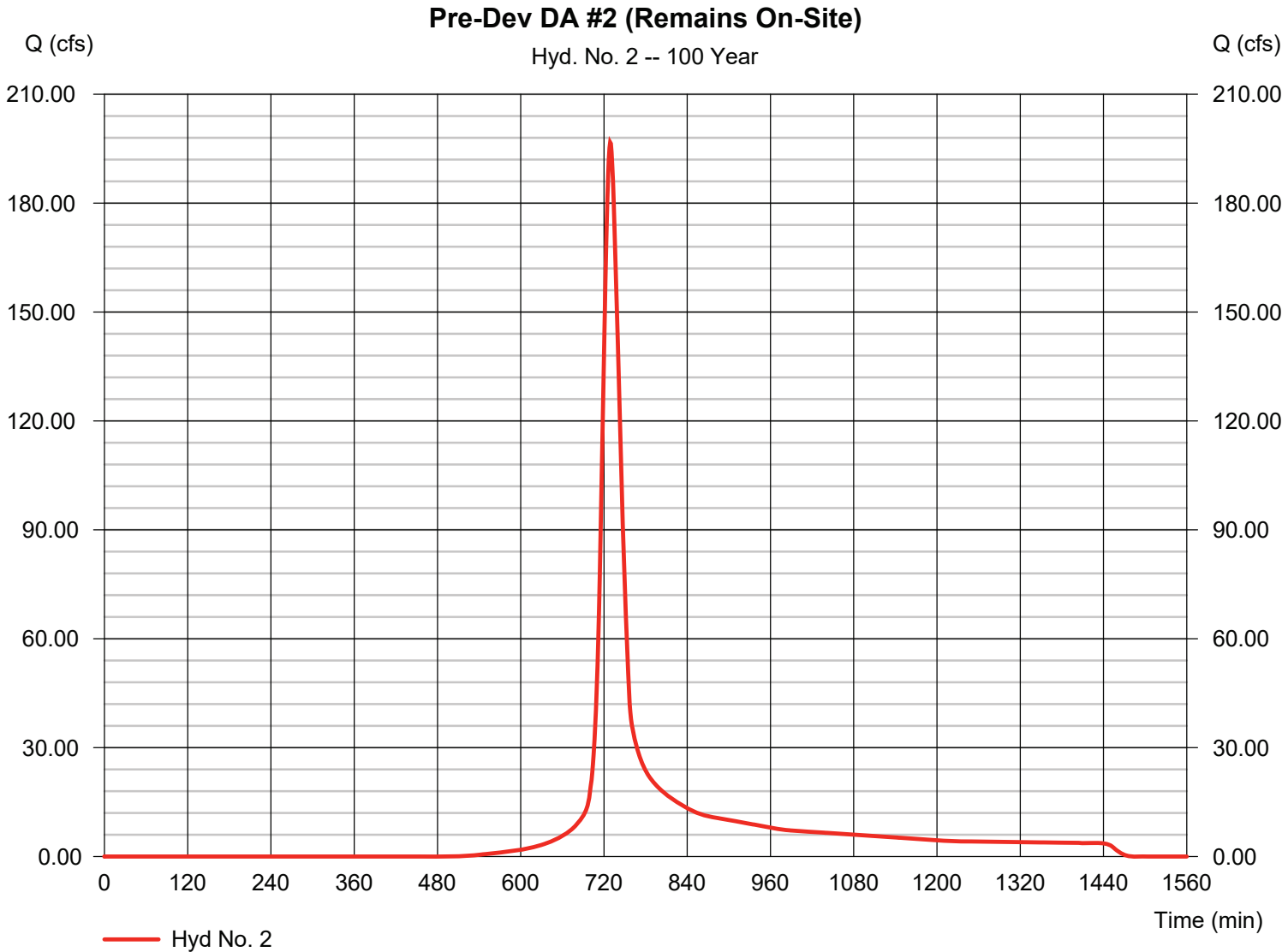
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 2

Pre-Dev DA #2 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	196.70 cfs
Storm frequency	=	100 yrs	Time to peak	=	729 min
Time interval	=	1 min	Hyd. volume	=	734,177 cuft
Drainage area	=	54.240 ac	Curve number	=	69.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	26.00 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

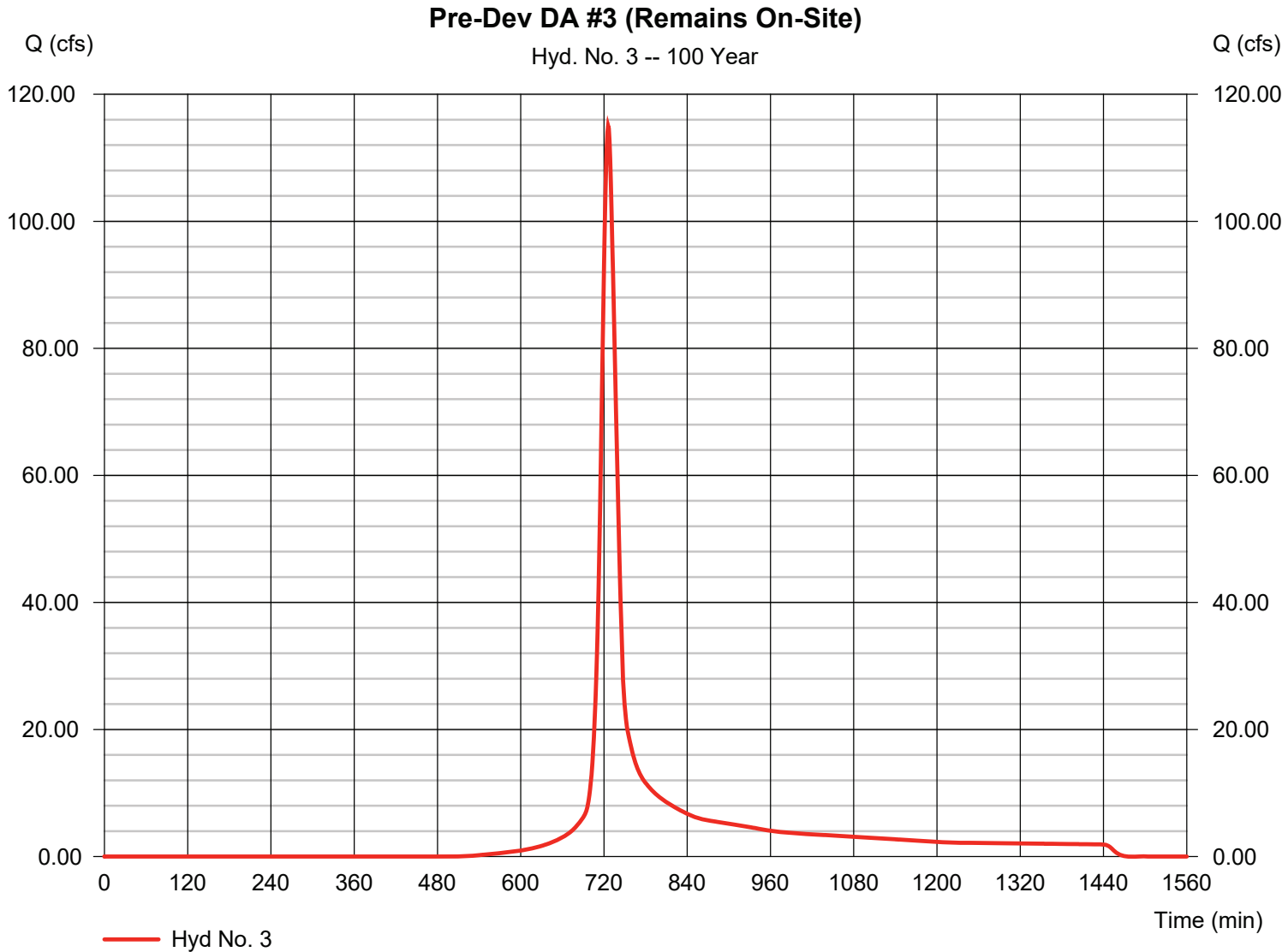
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 3

Pre-Dev DA #3 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	115.02 cfs
Storm frequency	=	100 yrs	Time to peak	=	726 min
Time interval	=	1 min	Hyd. volume	=	378,733 cuft
Drainage area	=	28.420 ac	Curve number	=	68.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	20.50 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

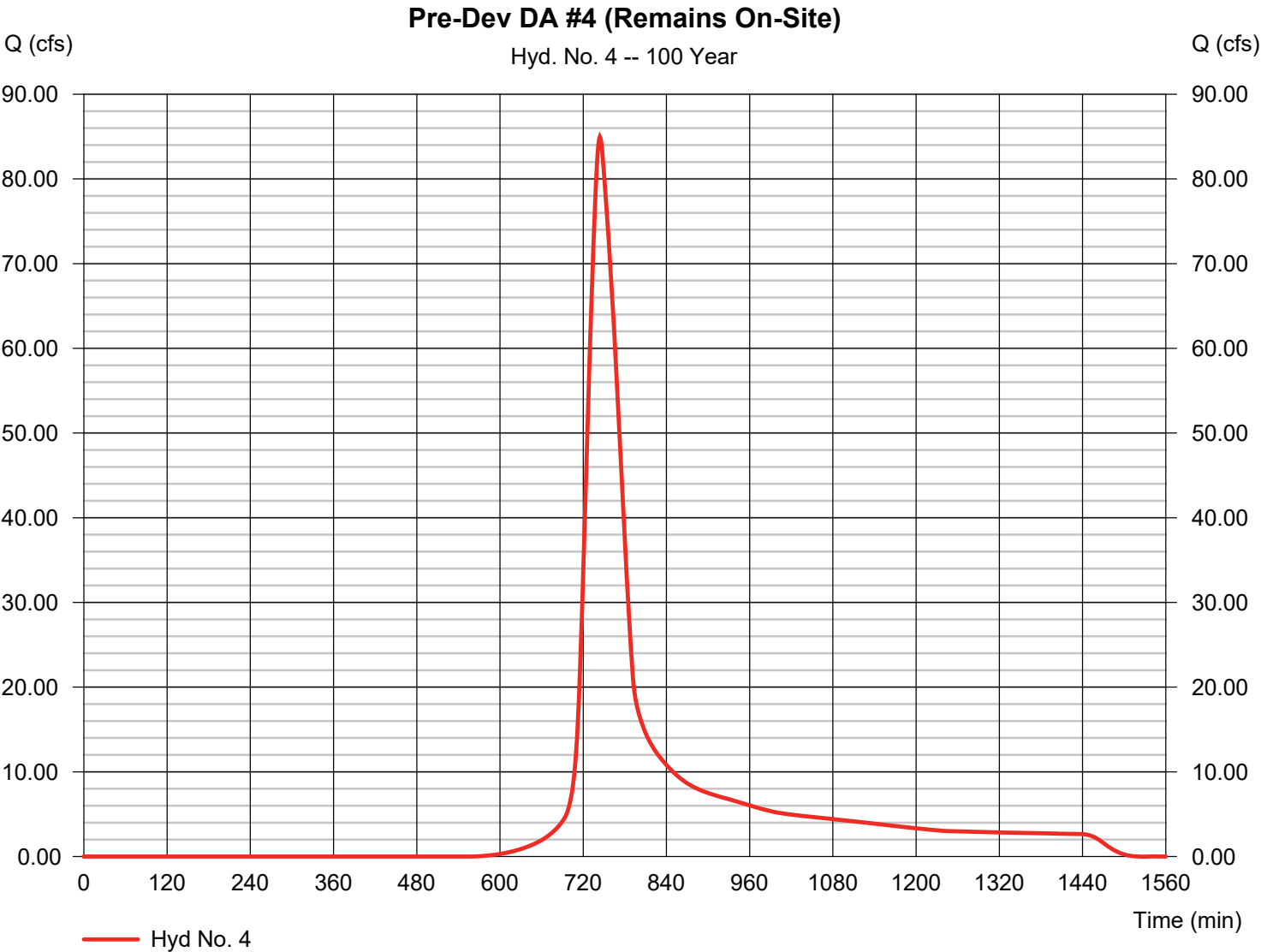
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 4

Pre-Dev DA #4 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	84.97 cfs
Storm frequency	=	100 yrs	Time to peak	=	744 min
Time interval	=	1 min	Hyd. volume	=	489,759 cuft
Drainage area	=	41.280 ac	Curve number	=	65.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	49.50 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

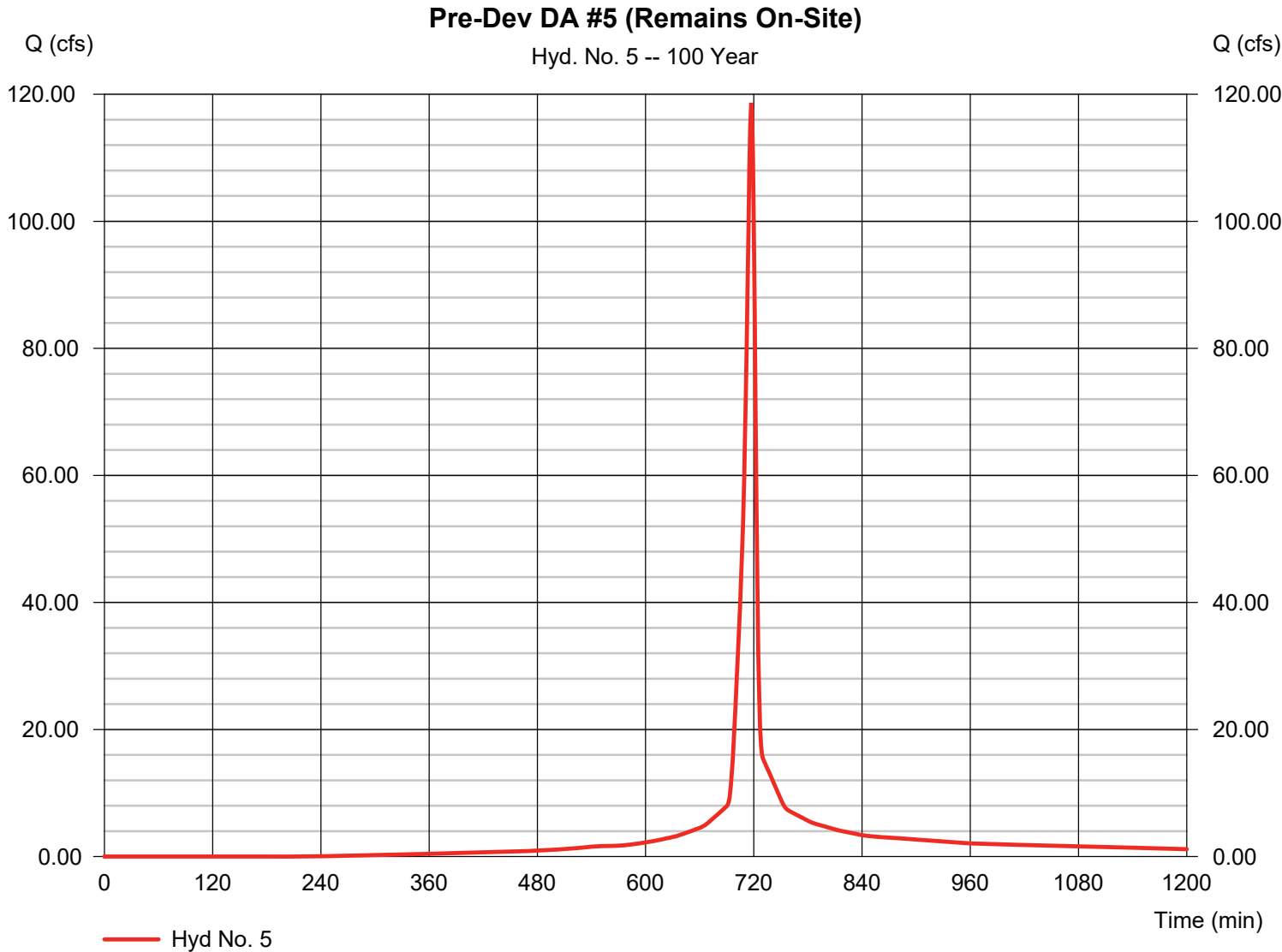
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 5

Pre-Dev DA #5 (Remains On-Site)

Hydrograph type	= SCS Runoff	Peak discharge	= 118.63 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 257,825 cuft
Drainage area	= 12.240 ac	Curve number	= 86.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.20 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

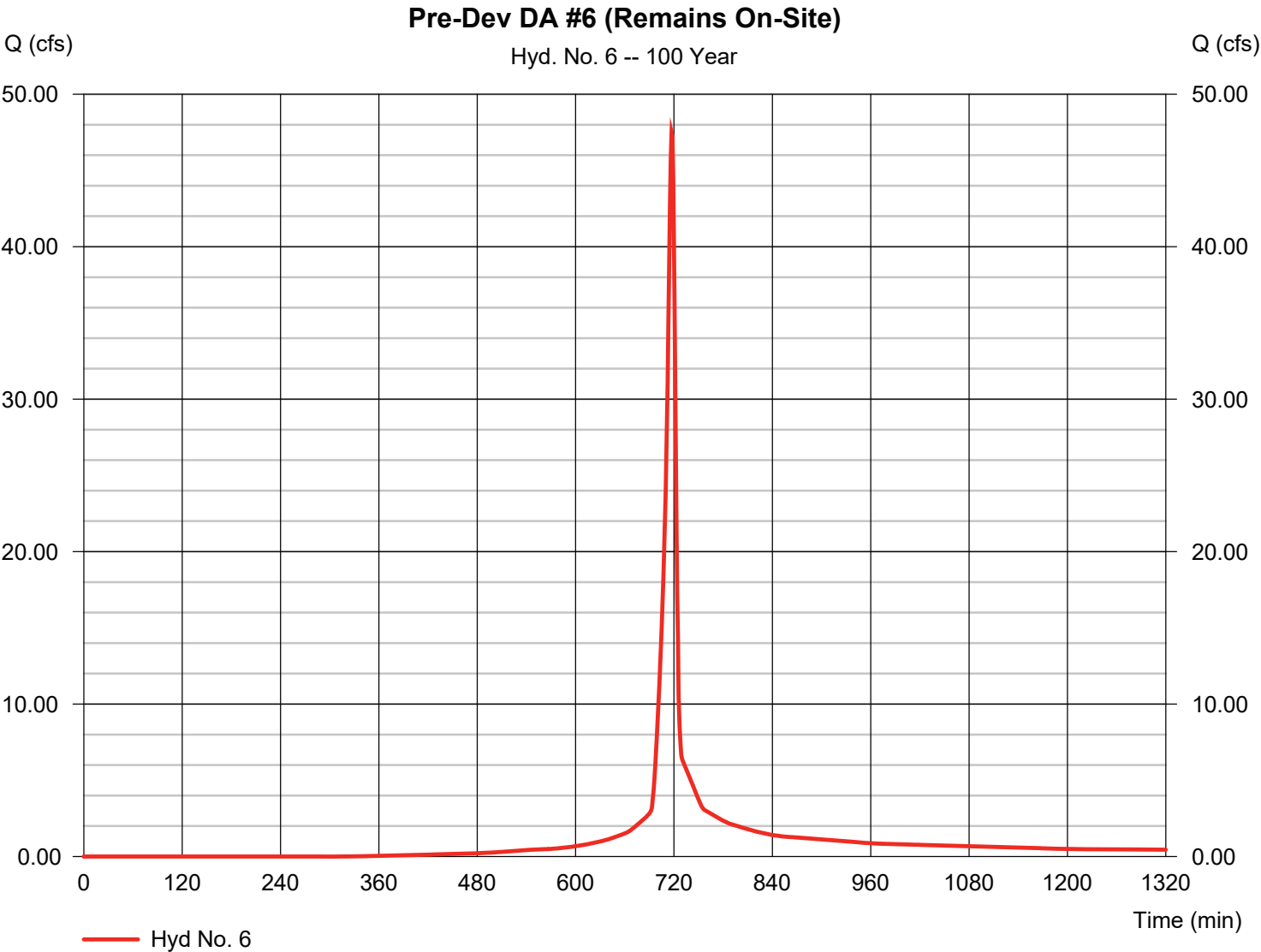
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 6

Pre-Dev DA #6 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.51 cfs
Storm frequency	=	100 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	99,723 cuft
Drainage area	=	5.410 ac	Curve number	=	80.4
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	5.97 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

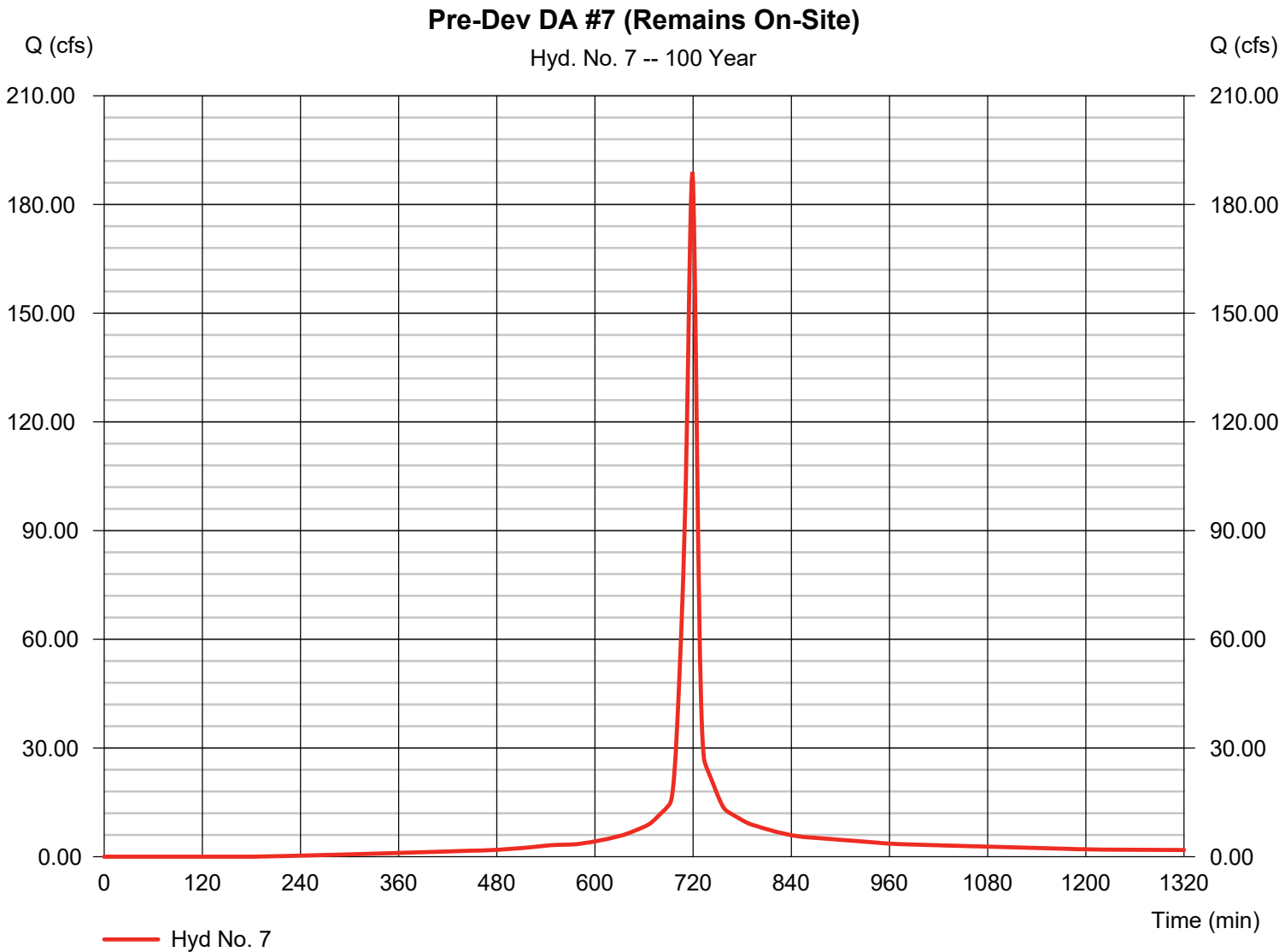


Hydrograph Report

Hyd. No. 7

Pre-Dev DA #7 (Remains On-Site)

Hydrograph type	=	SCS Runoff	Peak discharge	=	188.95 cfs
Storm frequency	=	100 yrs	Time to peak	=	719 min
Time interval	=	1 min	Hyd. volume	=	462,322 cuft
Drainage area	=	21.490 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.50 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

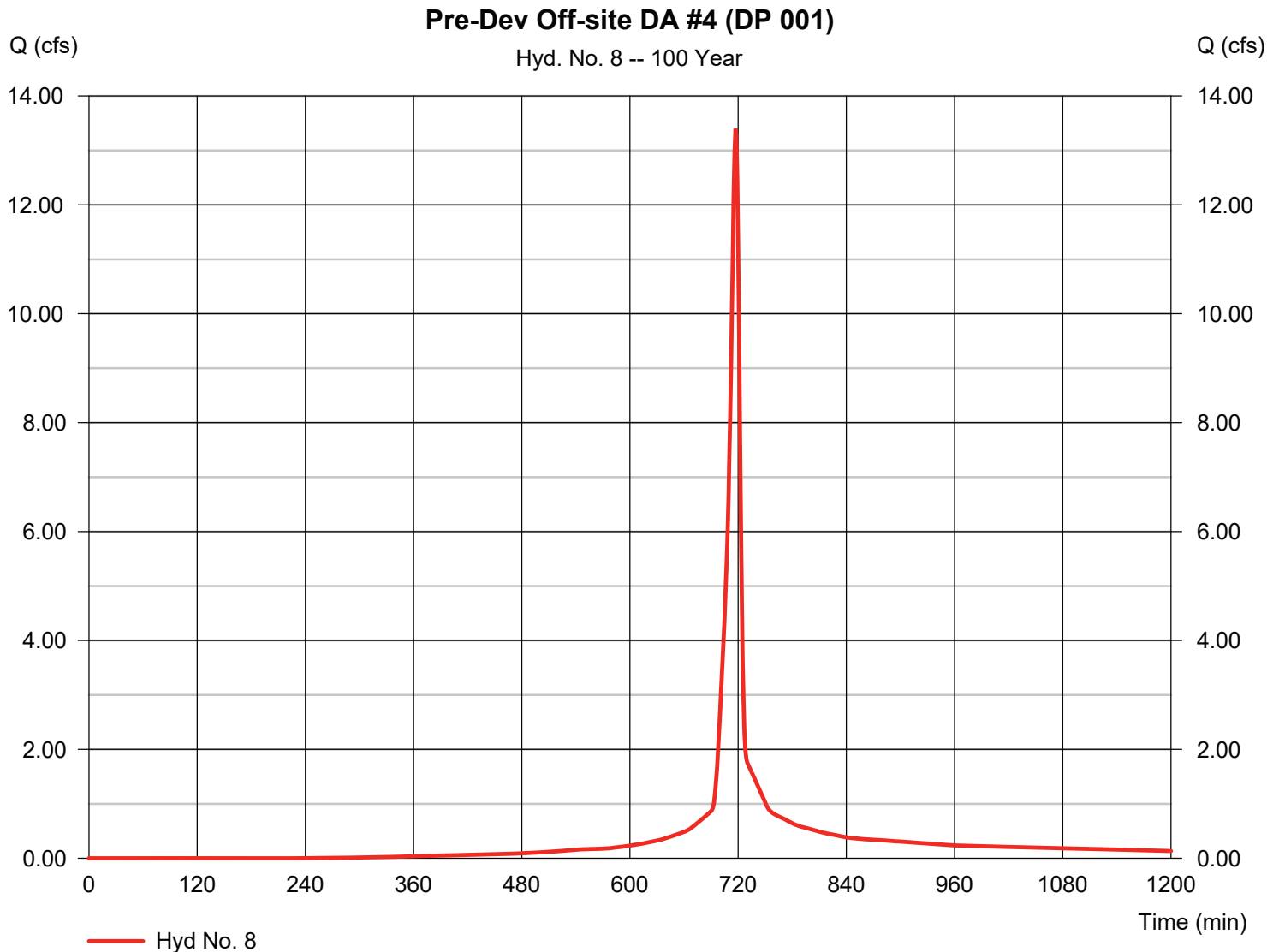
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 8

Pre-Dev Off-site DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 13.40 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 28,757 cuft
Drainage area	= 1.420 ac	Curve number	= 84.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

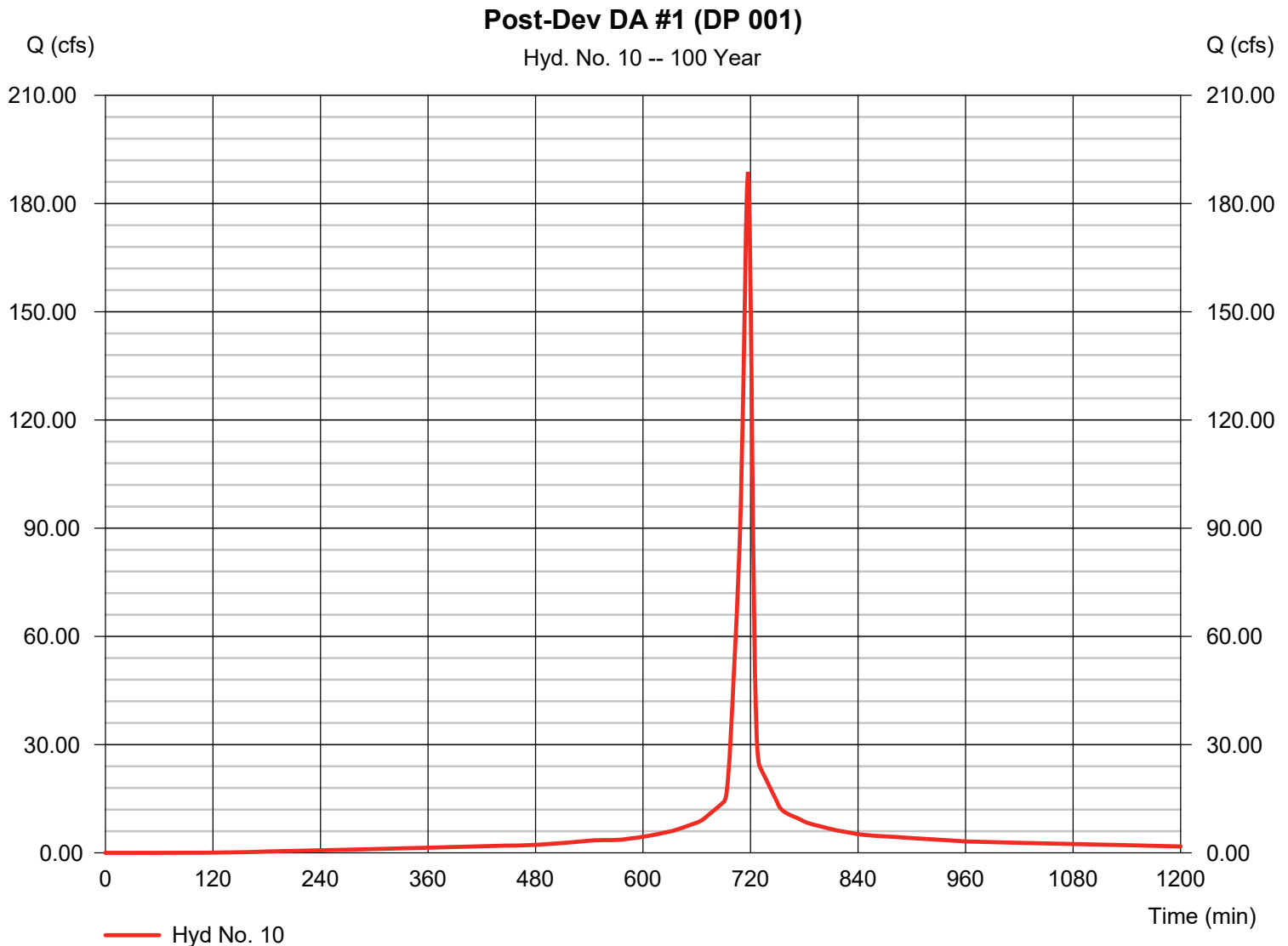
Thursday, 06 / 19 / 2025

Hyd. No. 10

Post-Dev DA #1 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 18.160 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.20 in
 Storm duration = 24 hrs

Peak discharge = 188.78 cfs
 Time to peak = 717 min
 Hyd. volume = 433,794 cuft
 Curve number = 93.1
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 11

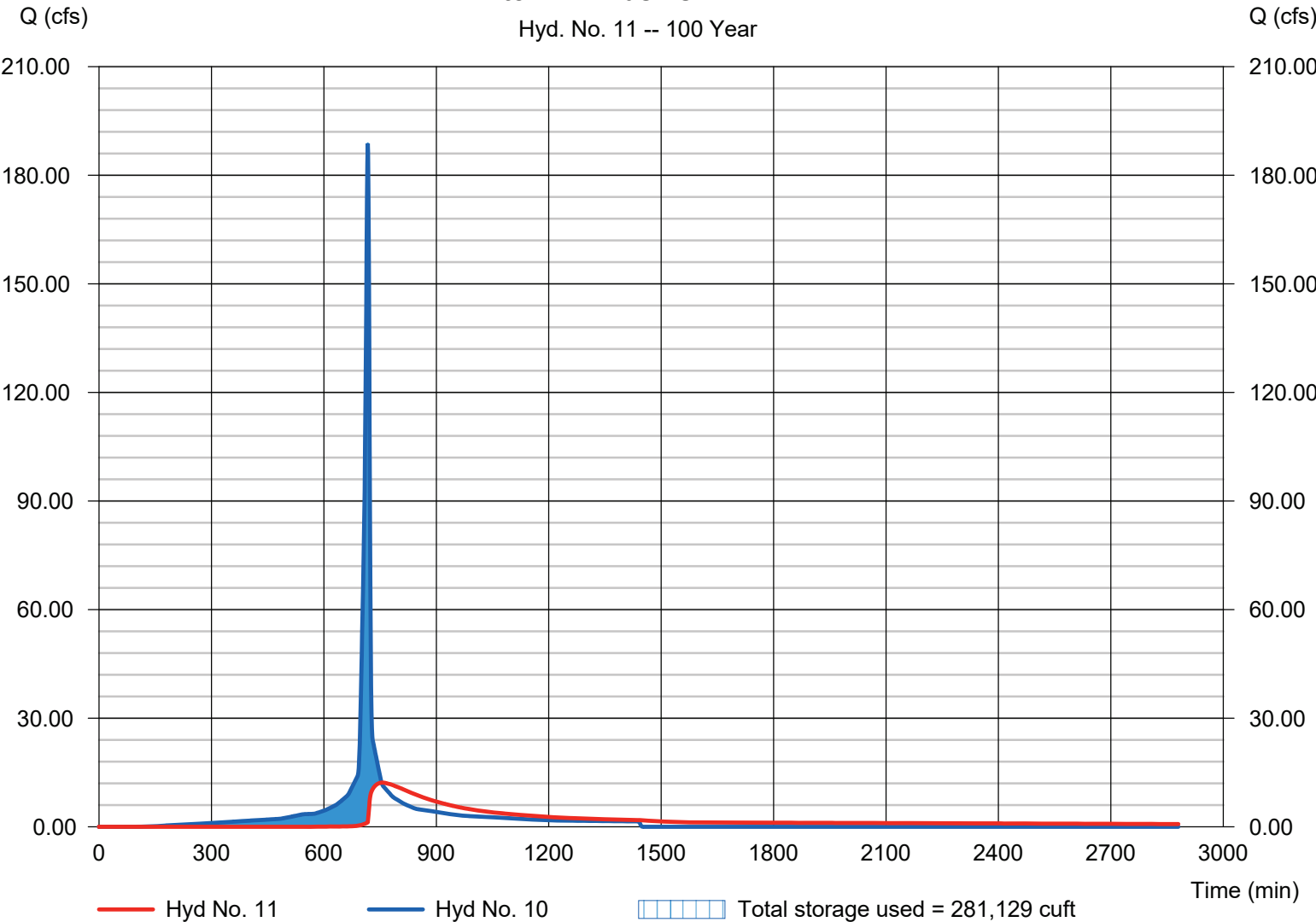
Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 12.20 cfs
Storm frequency	= 100 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 307,021 cuft
Inflow hyd. No.	= 10 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 15.25 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 281,129 cuft

Storage Indication method used.

Rte MRC Basins #12A-B

Hyd. No. 11 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

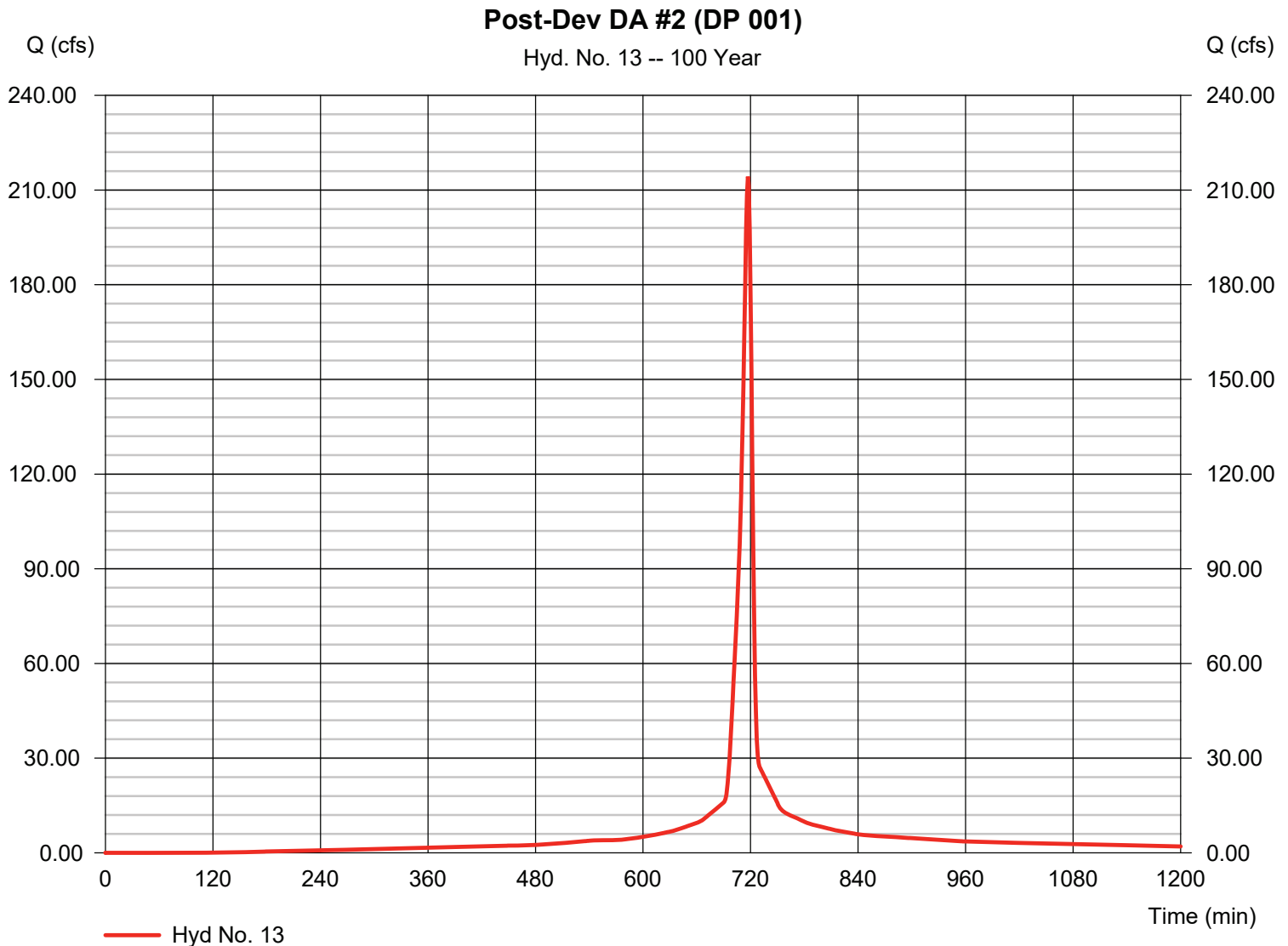
Thursday, 06 / 19 / 2025

Hyd. No. 13

Post-Dev DA #2 (DP 001)

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 20.610 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 7.20 in
Storm duration = 24 hrs

Peak discharge = 214.25 cfs
Time to peak = 717 min
Hyd. volume = 492,318 cuft
Curve number = 93.1
Hydraulic length = 0 ft
Time of conc. (Tc) = 5.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

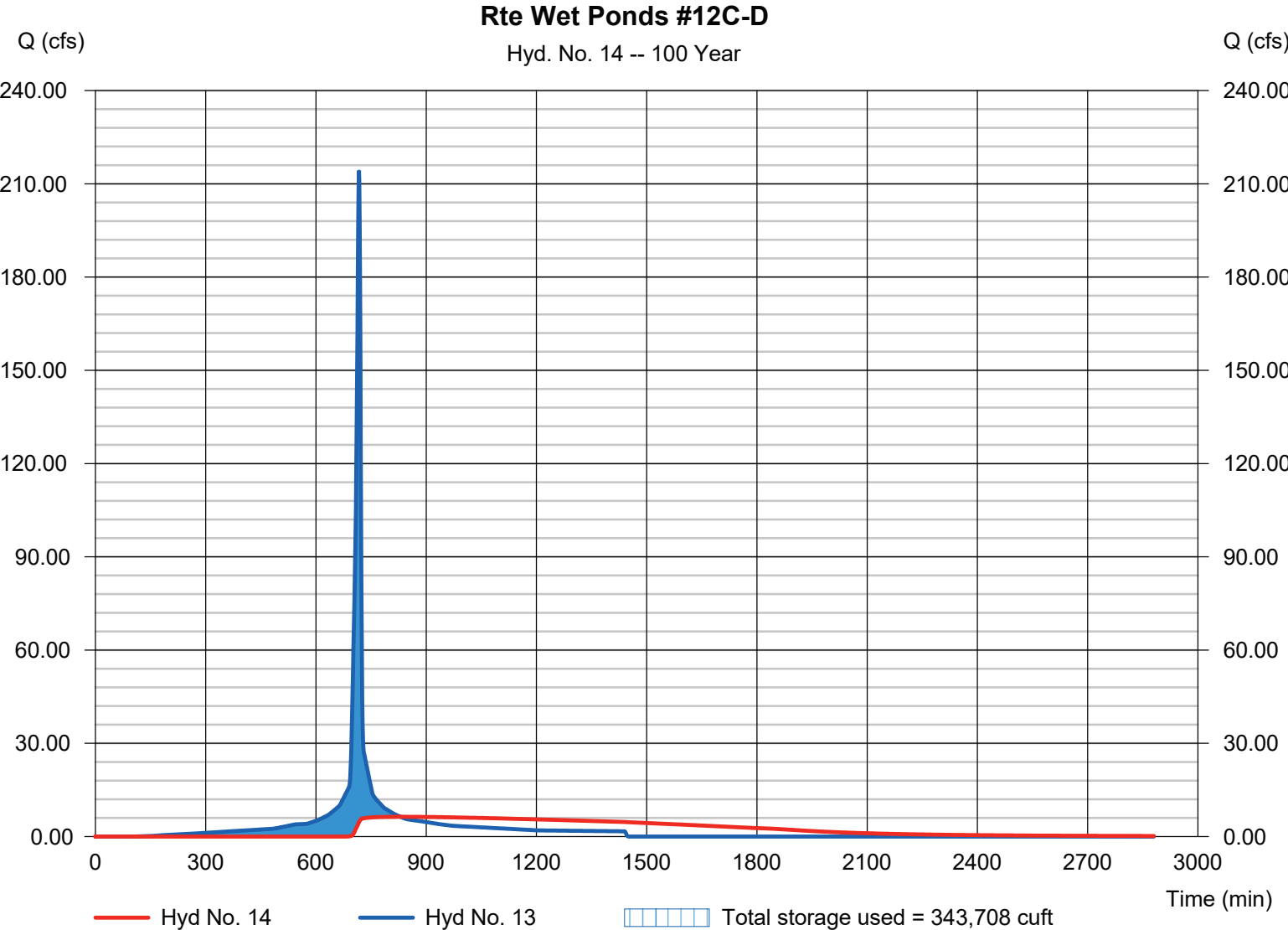
Thursday, 06 / 19 / 2025

Hyd. No. 14

Rte Wet Ponds #12C-D

Hydrograph type	= Reservoir	Peak discharge	= 6.367 cfs
Storm frequency	= 100 yrs	Time to peak	= 830 min
Time interval	= 1 min	Hyd. volume	= 386,341 cuft
Inflow hyd. No.	= 13 - Post-Dev DA #2 (DP 001)	Max. Elevation	= 13.78 ft
Reservoir name	= Wet Pond #12C-D	Max. Storage	= 343,708 cuft

Storage Indication method used.



Hydrograph Report

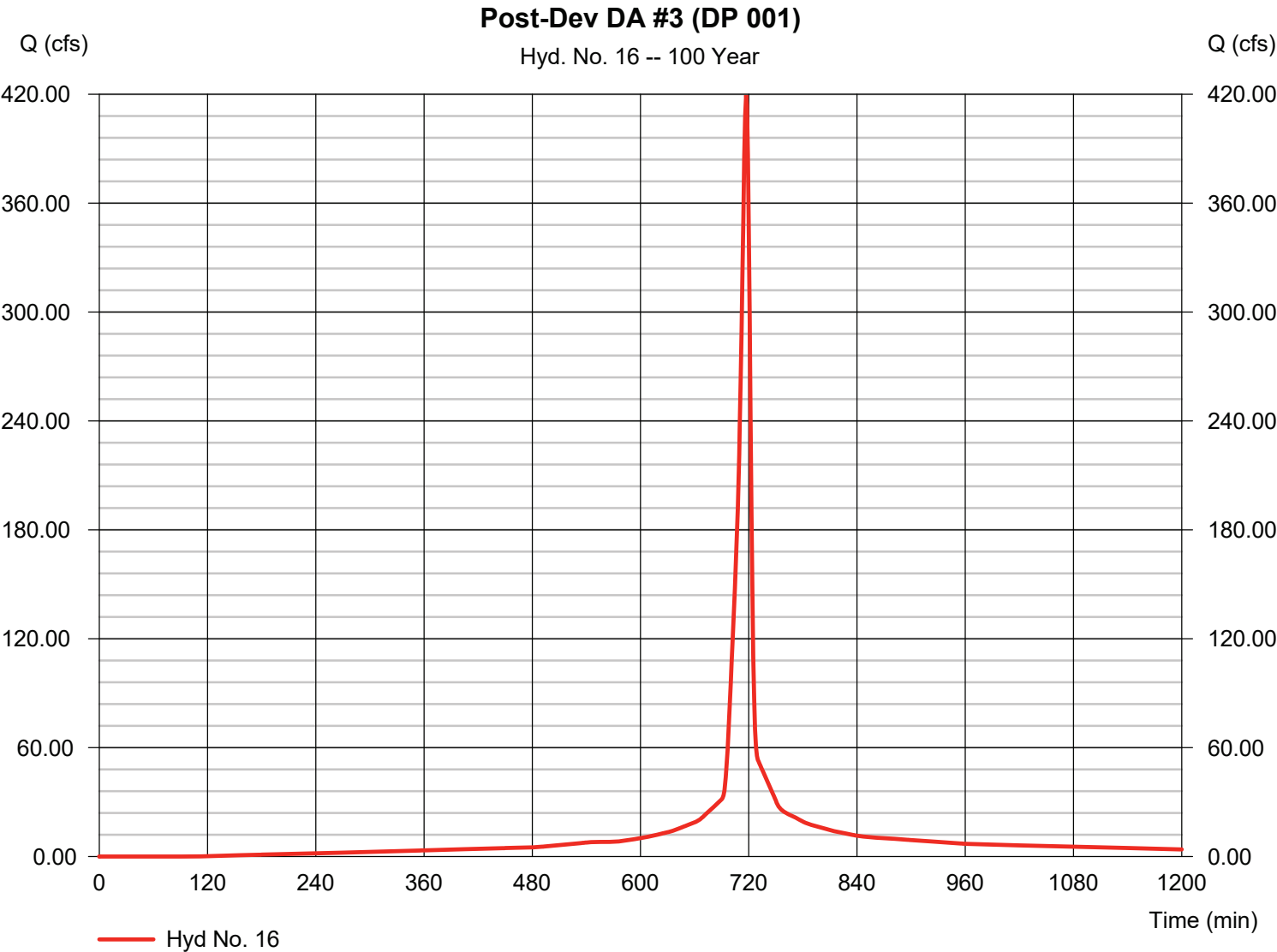
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 16

Post-Dev DA #3 (DP 001)

Hydrograph type	=	SCS Runoff	Peak discharge	=	419.49 cfs
Storm frequency	=	100 yrs	Time to peak	=	717 min
Time interval	=	1 min	Hyd. volume	=	971,193 cuft
Drainage area	=	40.140 ac	Curve number	=	93.8
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

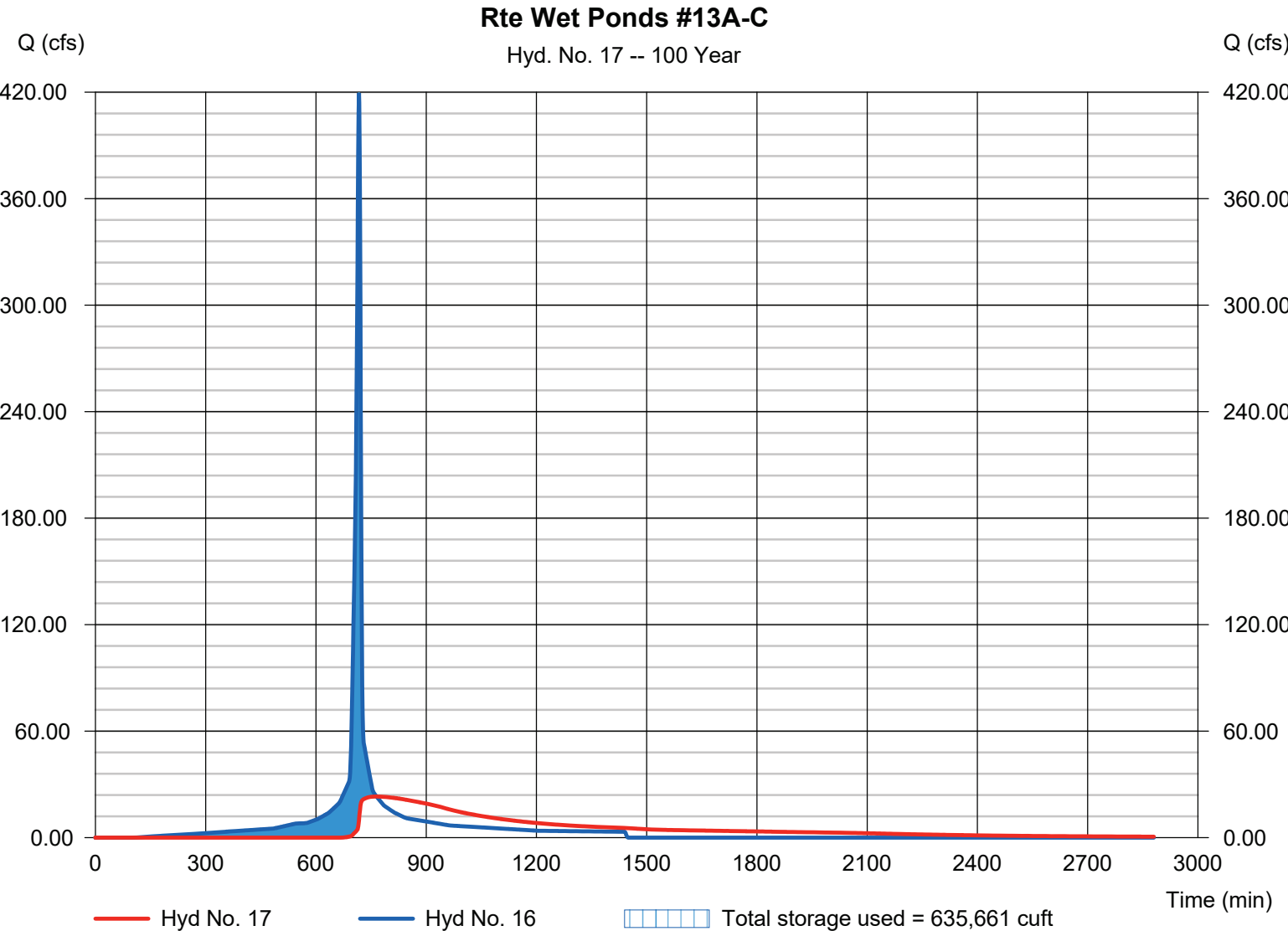
Thursday, 06 / 19 / 2025

Hyd. No. 17

Rte Wet Ponds #13A-C

Hydrograph type	= Reservoir	Peak discharge	= 23.14 cfs
Storm frequency	= 100 yrs	Time to peak	= 765 min
Time interval	= 1 min	Hyd. volume	= 768,131 cuft
Inflow hyd. No.	= 16 - Post-Dev DA #3 (DP 001)	Max. Elevation	= 14.15 ft
Reservoir name	= Wet Pond #13A-C	Max. Storage	= 635,661 cuft

Storage Indication method used.



Hydrograph Report

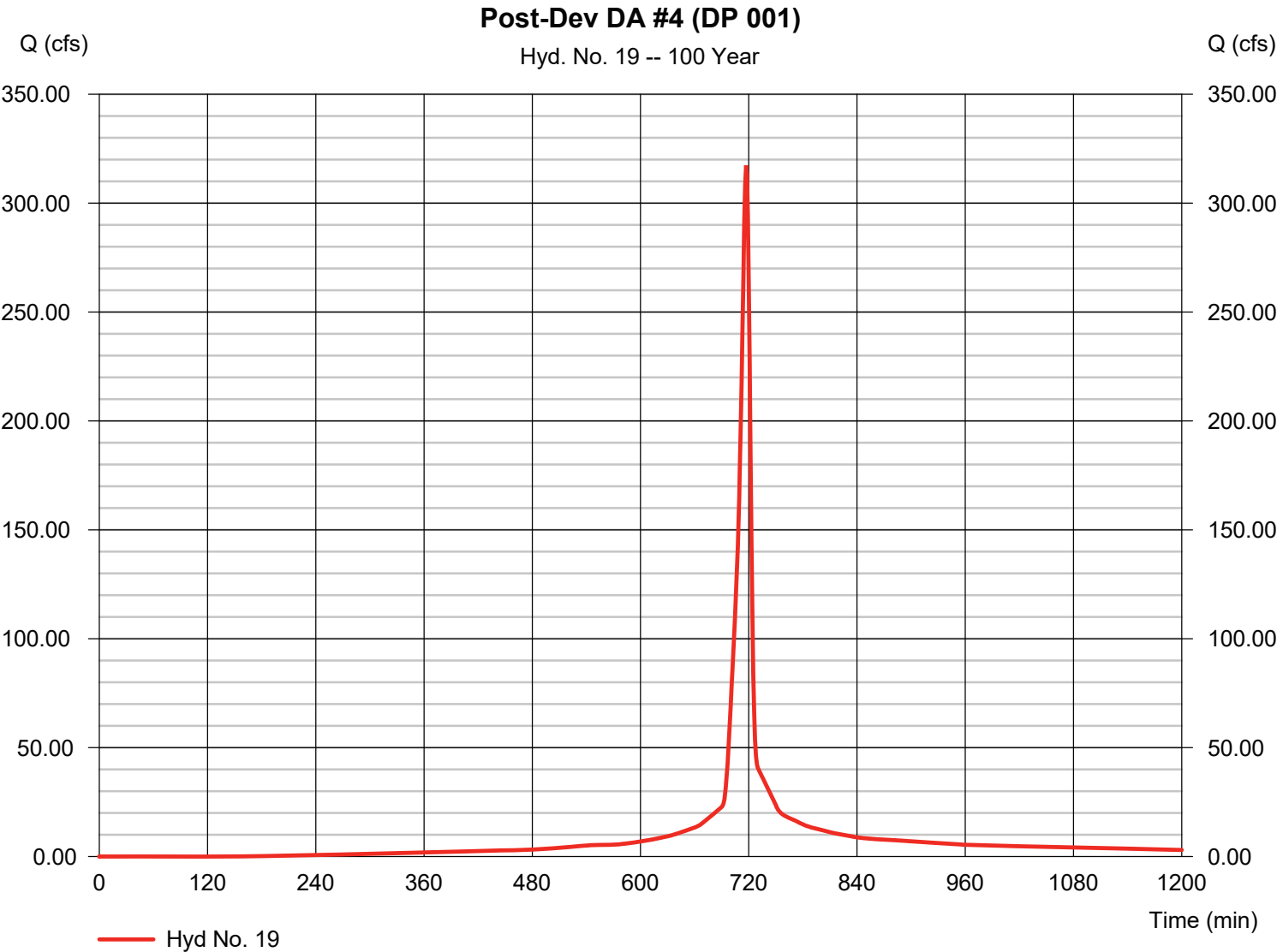
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 19

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 317.39 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 711,853 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

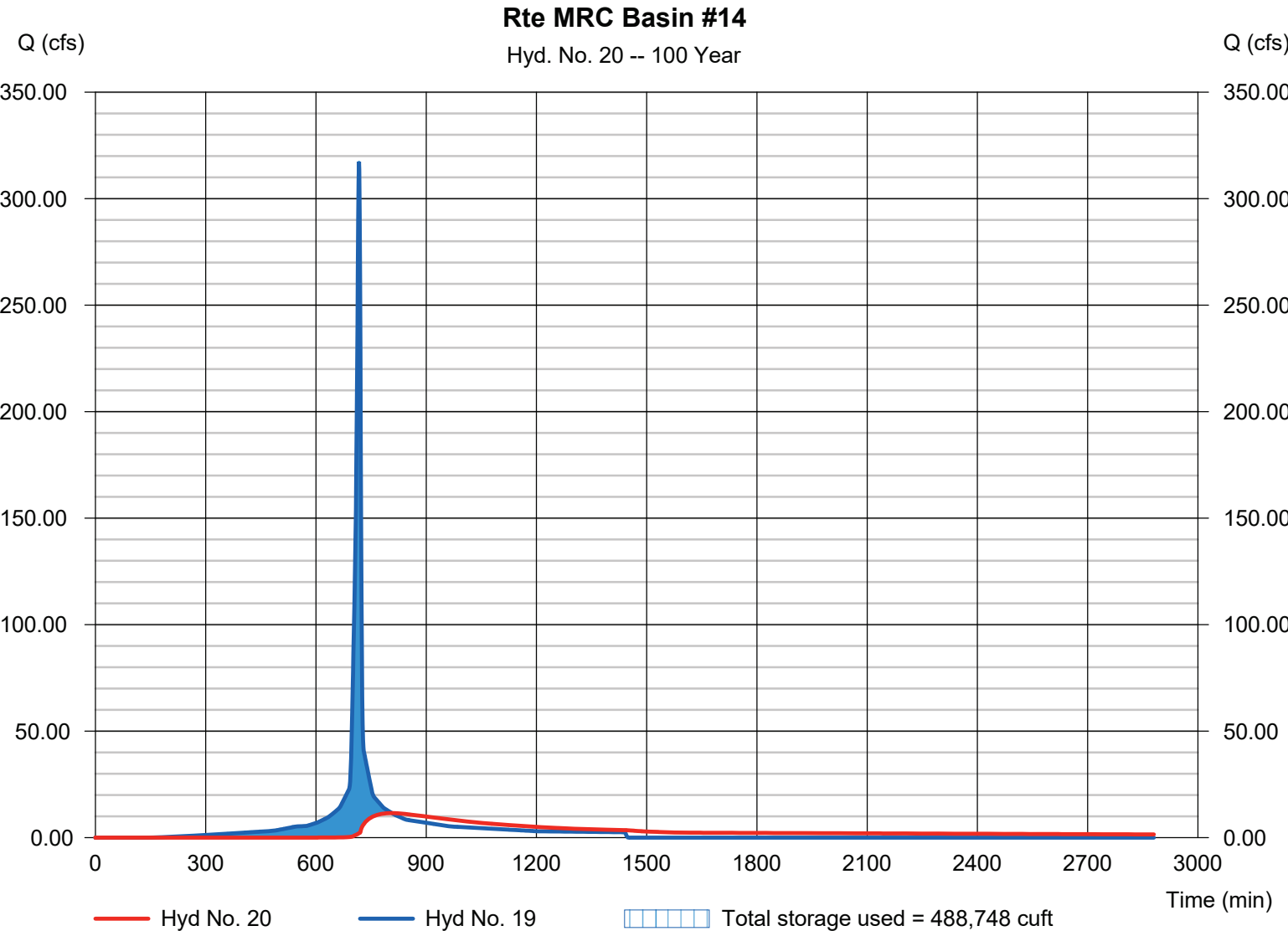
Thursday, 06 / 19 / 2025

Hyd. No. 20

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 11.51 cfs
Storm frequency	= 100 yrs	Time to peak	= 807 min
Time interval	= 1 min	Hyd. volume	= 475,336 cuft
Inflow hyd. No.	= 19 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 15.65 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 488,748 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

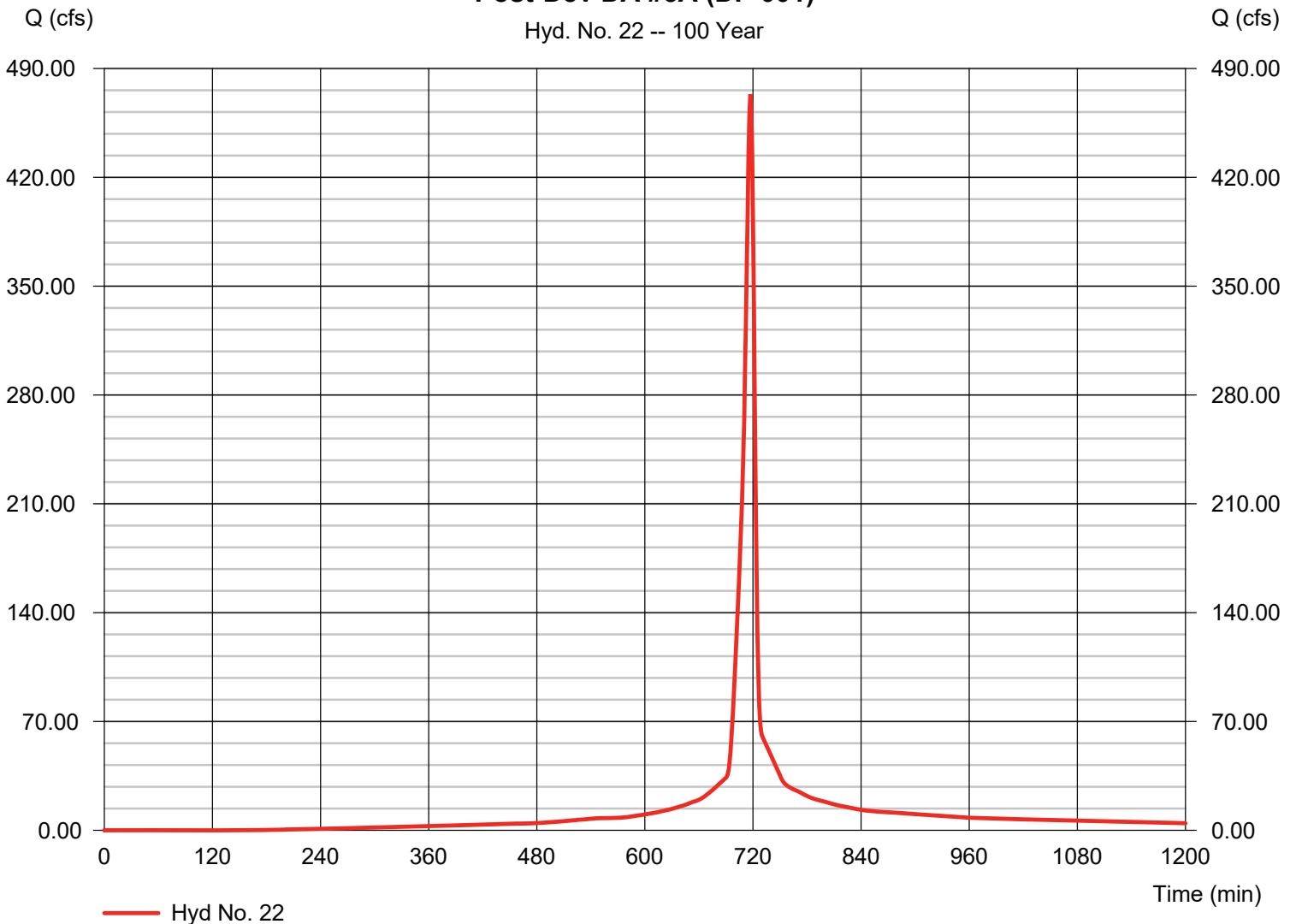
Hyd. No. 22

Post-Dev DA #5A (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 473.46 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 1,059,055 cuft
Drainage area	= 46.730 ac	Curve number	= 90.3
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

Post-Dev DA #5A (DP 001)

Hyd. No. 22 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

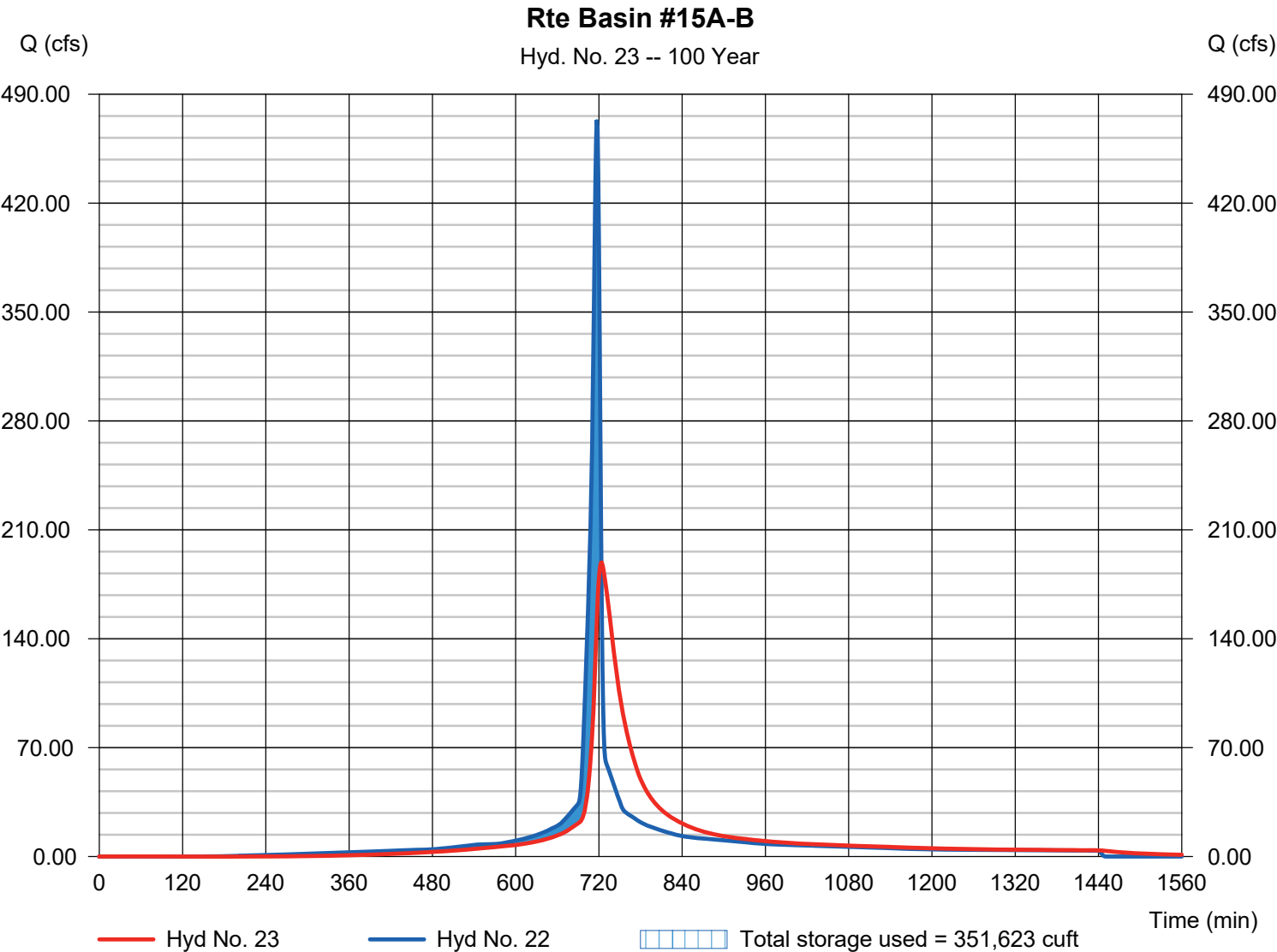
Thursday, 06 / 19 / 2025

Hyd. No. 23

Rte Basin #15A-B

Hydrograph type	= Reservoir	Peak discharge	= 188.84 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 1,057,900 cuft
Inflow hyd. No.	= 22 - Post-Dev DA #5A (DP 001)	Max. Elevation	= 16.64 ft
Reservoir name	= Basin #15A-B	Max. Storage	= 351,623 cuft

Storage Indication method used.



Hydrograph Report

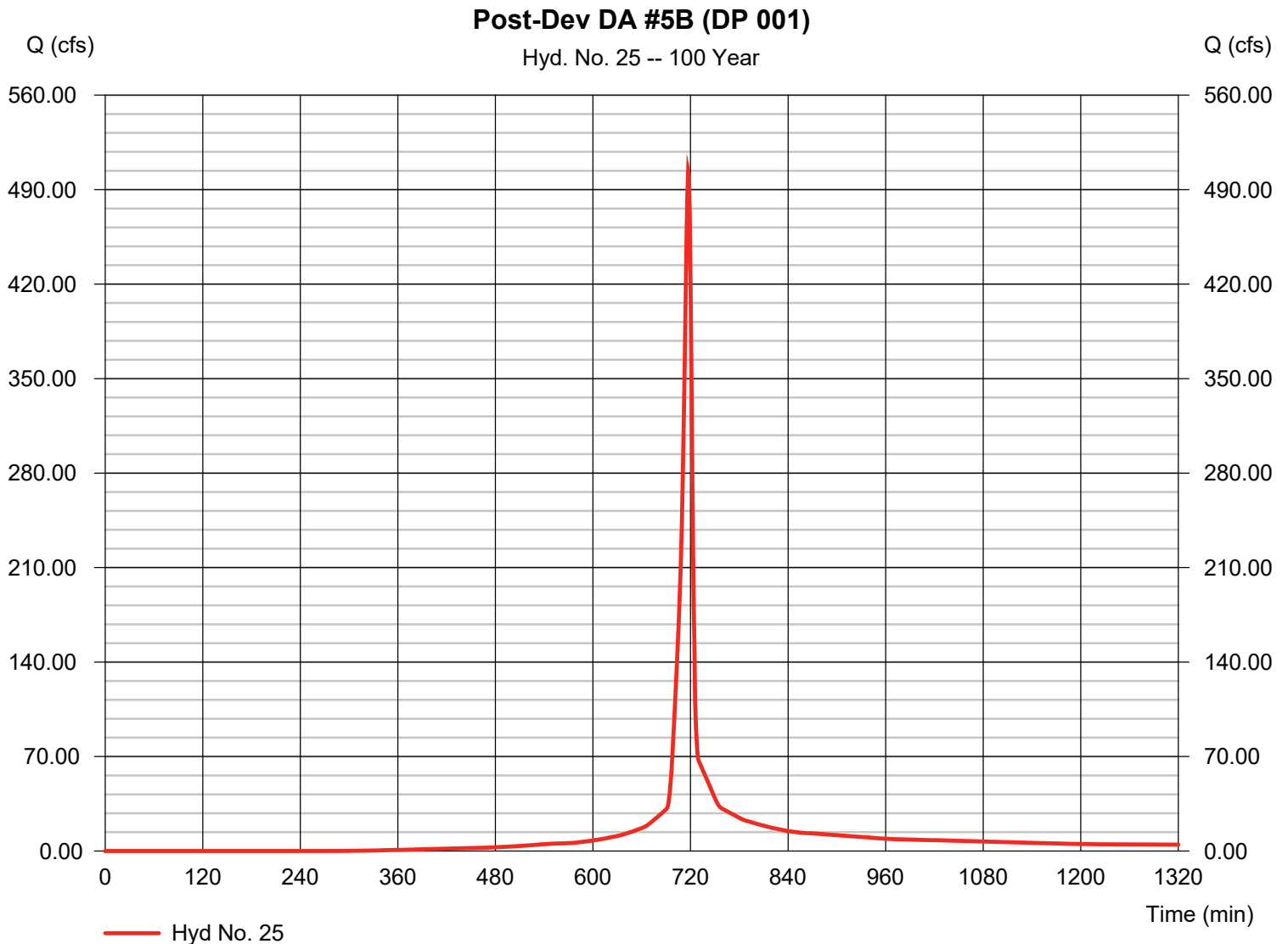
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 25

Post-Dev DA #5B (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 503.75 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 1,066,413 cuft
Drainage area	= 55.570 ac	Curve number	= 82.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

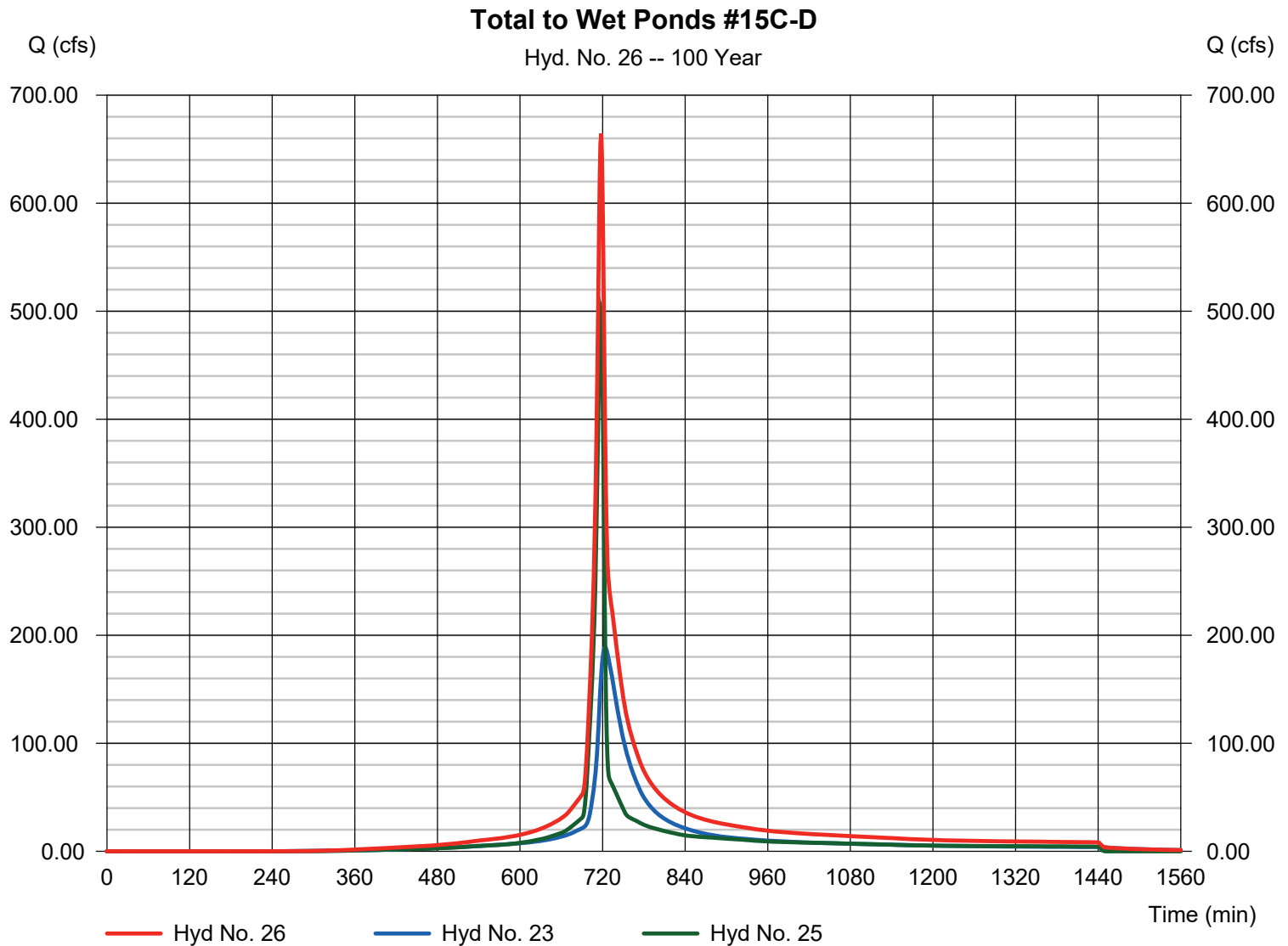
Thursday, 06 / 19 / 2025

Hyd. No. 26

Total to Wet Ponds #15C-D

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 23, 25

Peak discharge = 664.49 cfs
Time to peak = 718 min
Hyd. volume = 2,124,311 cuft
Contrib. drain. area = 55.570 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

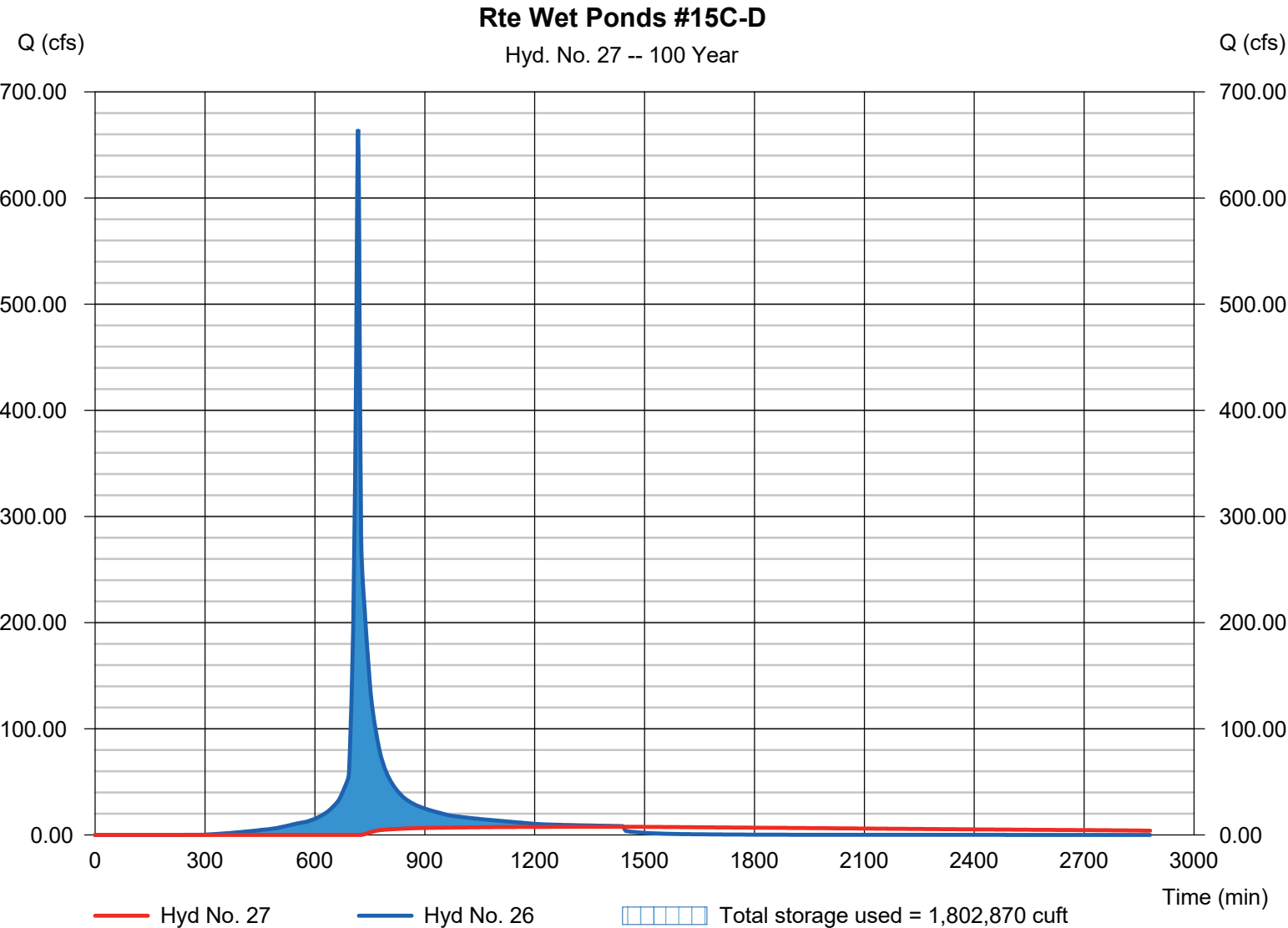
Thursday, 06 / 19 / 2025

Hyd. No. 27

Rte Wet Ponds #15C-D

Hydrograph type	= Reservoir	Peak discharge	= 7.704 cfs
Storm frequency	= 100 yrs	Time to peak	= 1442 min
Time interval	= 1 min	Hyd. volume	= 798,661 cuft
Inflow hyd. No.	= 26 - Total to Wet Ponds #15C-D	Max. Elevation	= 11.92 ft
Reservoir name	= Wet Pond #15C-D	Max. Storage	= 1,802,870 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

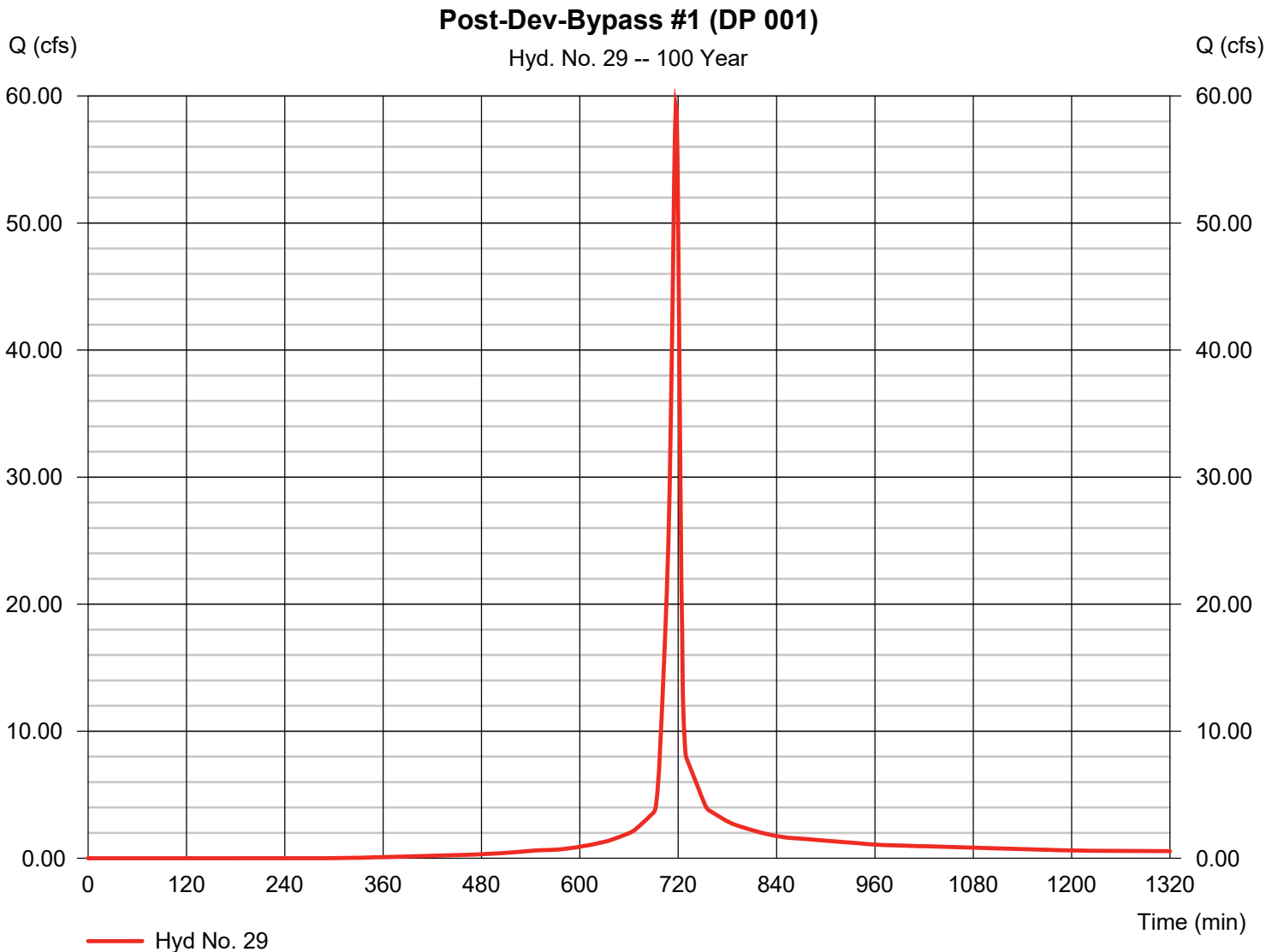
Thursday, 06 / 19 / 2025

Hyd. No. 29

Post-Dev-Bypass #1 (DP 001)

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 6.580 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.20 in
 Storm duration = 24 hrs

Peak discharge = 59.24 cfs
 Time to peak = 717 min
 Hyd. volume = 125,163 cuft
 Curve number = 81.8
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 5.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

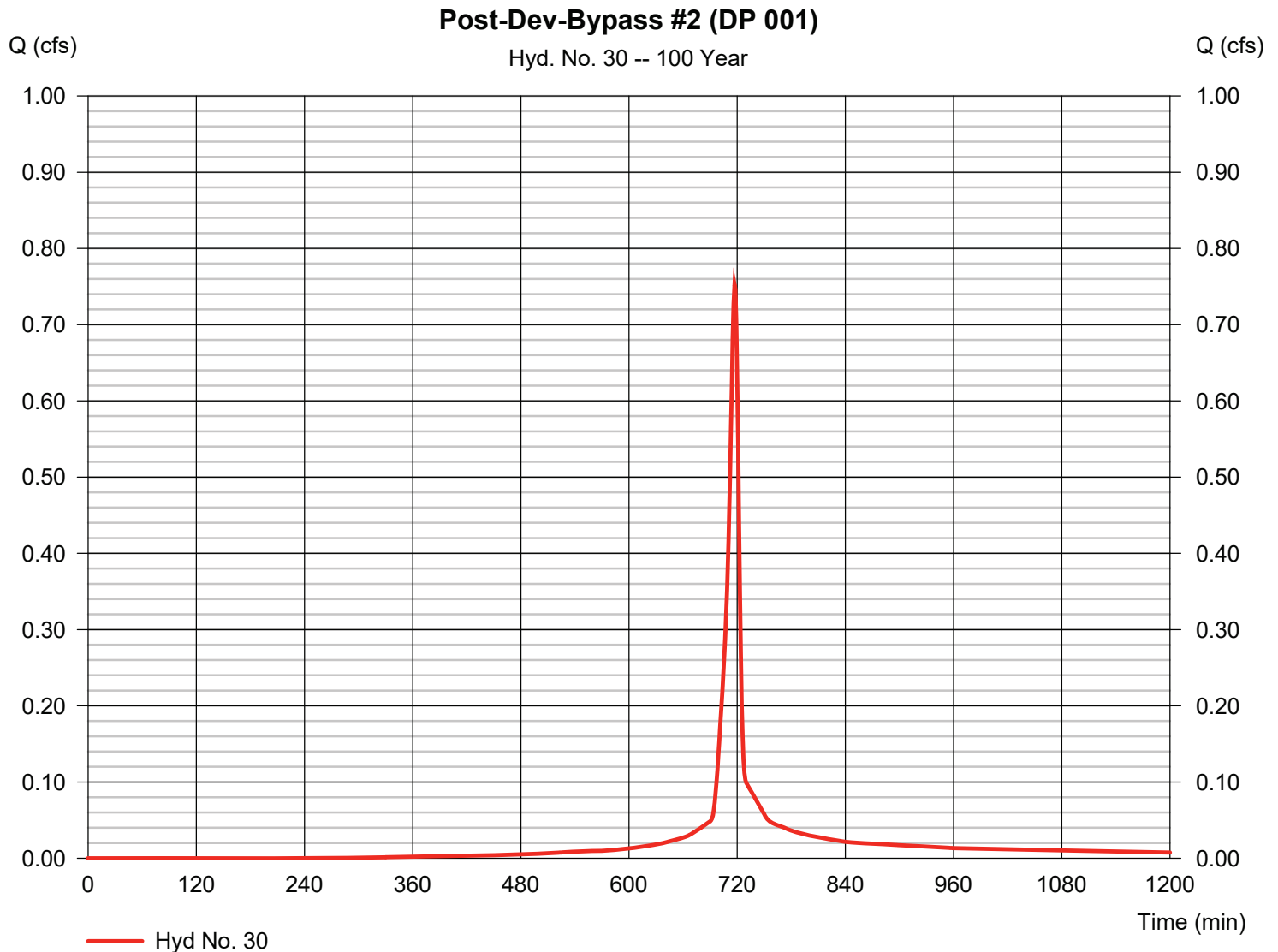
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 30

Post-Dev-Bypass #2 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.752 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 1,613 cuft
Drainage area	= 0.080 ac	Curve number	= 84.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

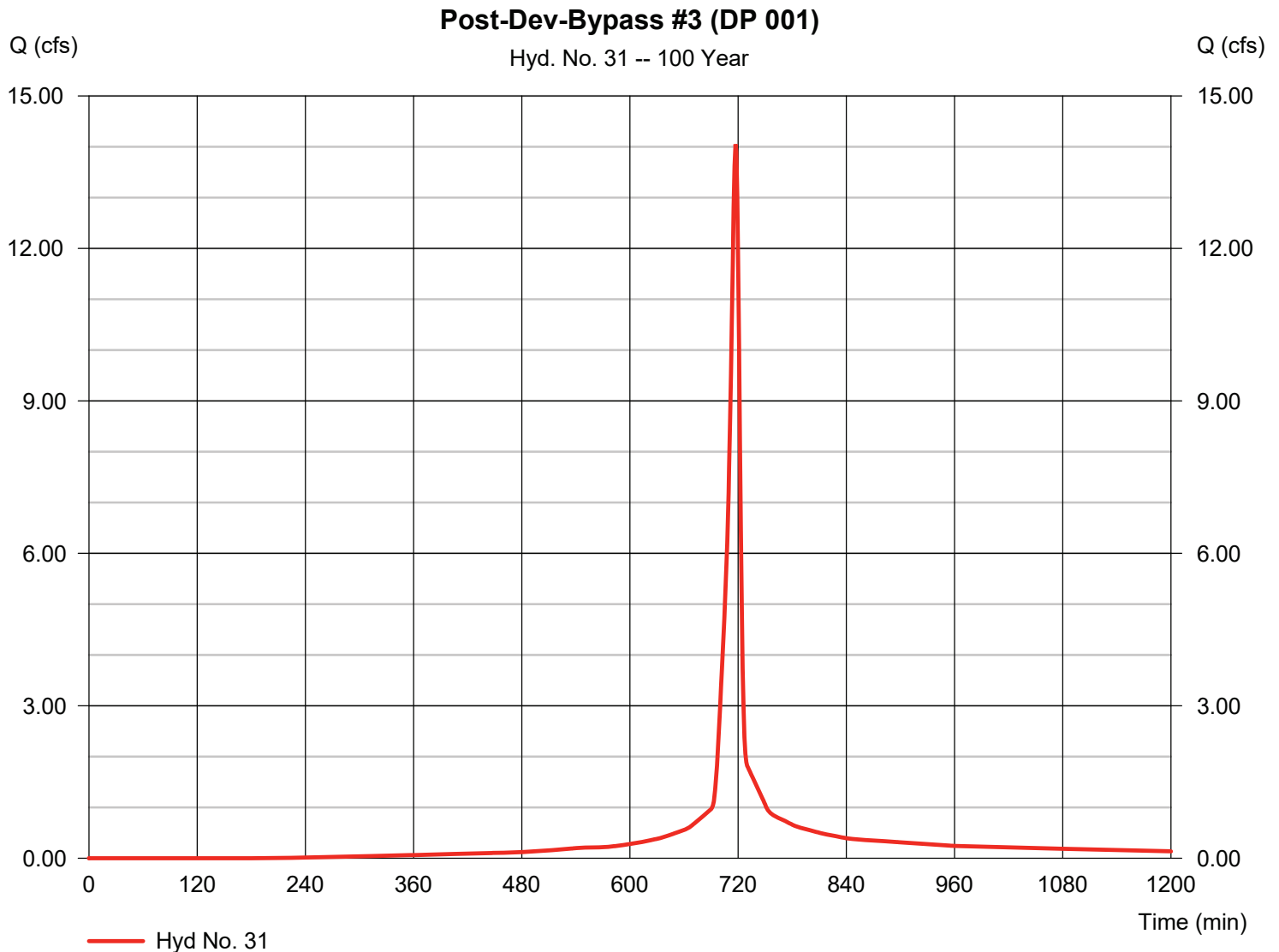
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 31

Post-Dev-Bypass #3 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 14.05 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 30,889 cuft
Drainage area	= 1.420 ac	Curve number	= 88.2
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

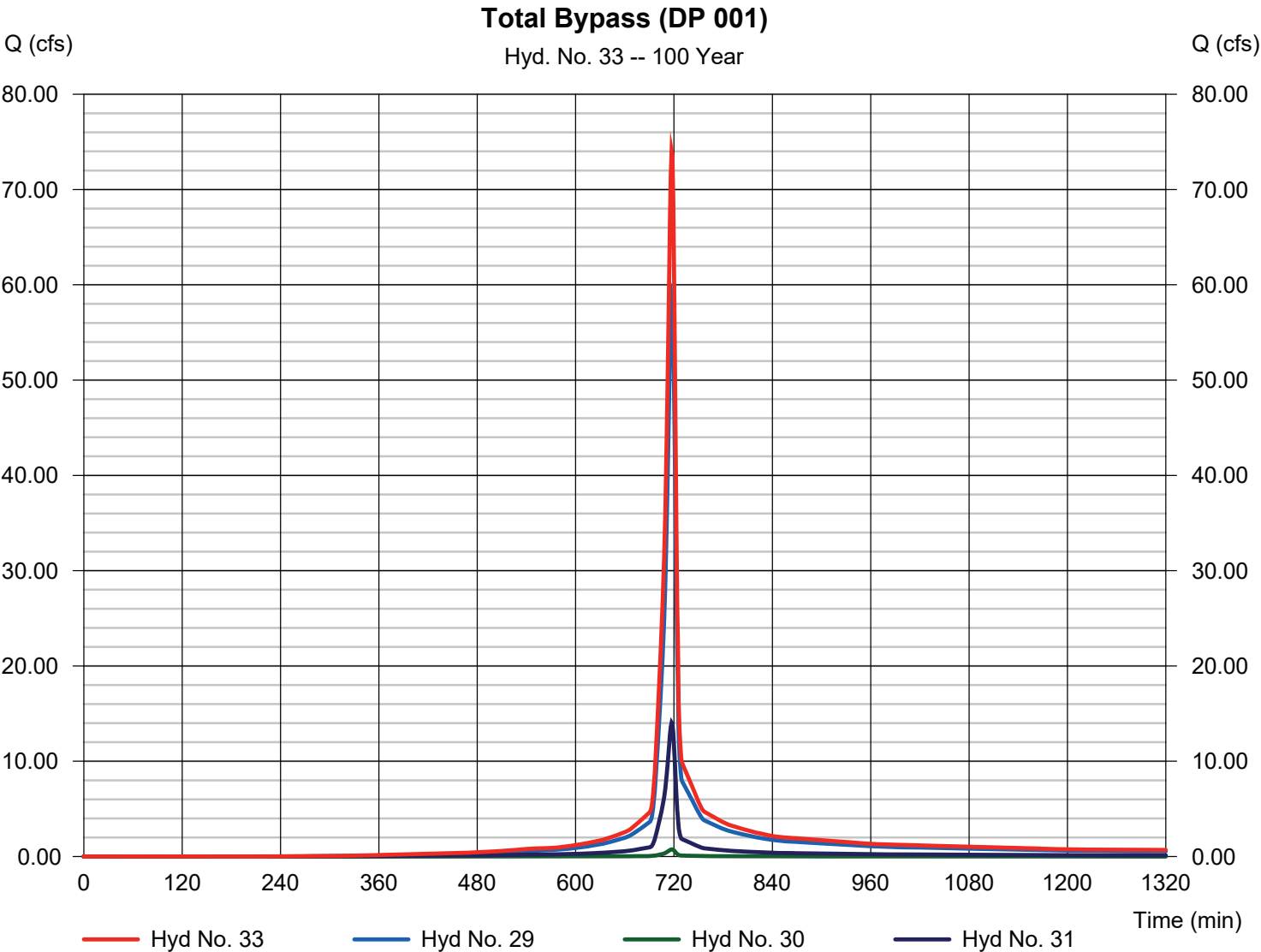
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 33

Total Bypass (DP 001)

Hydrograph type	= Combine	Peak discharge	= 74.04 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 157,665 cuft
Inflow hyds.	= 29, 30, 31	Contrib. drain. area	= 8.080 ac



Hydrograph Report

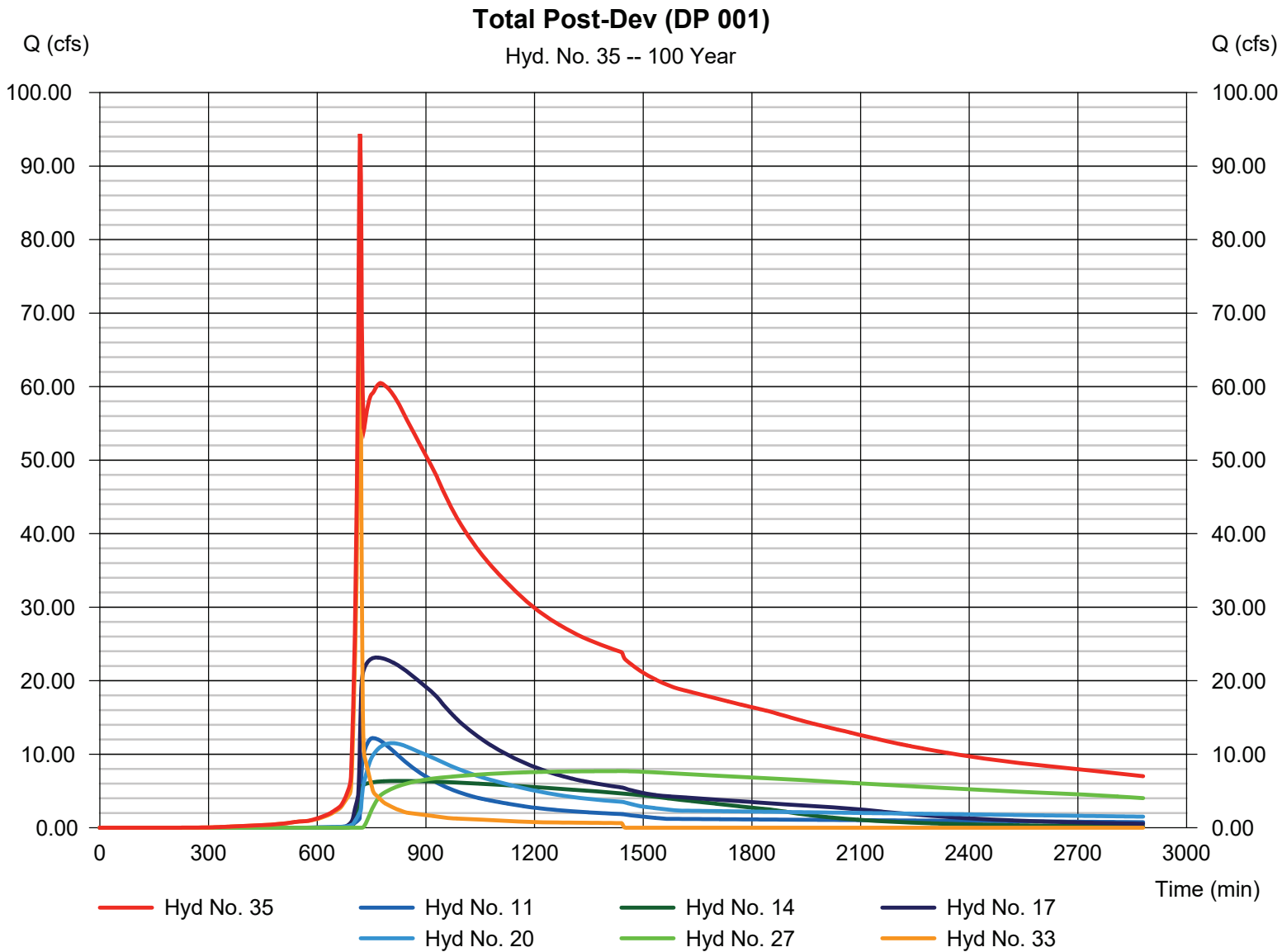
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 35

Total Post-Dev (DP 001)

Hydrograph type	= Combine	Peak discharge	= 94.37 cfs
Storm frequency	= 100 yrs	Time to peak	= 718 min
Time interval	= 1 min	Hyd. volume	= 2,893,156 cuft
Inflow hyds.	= 11, 14, 17, 20, 27, 33	Contrib. drain. area	= 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 37

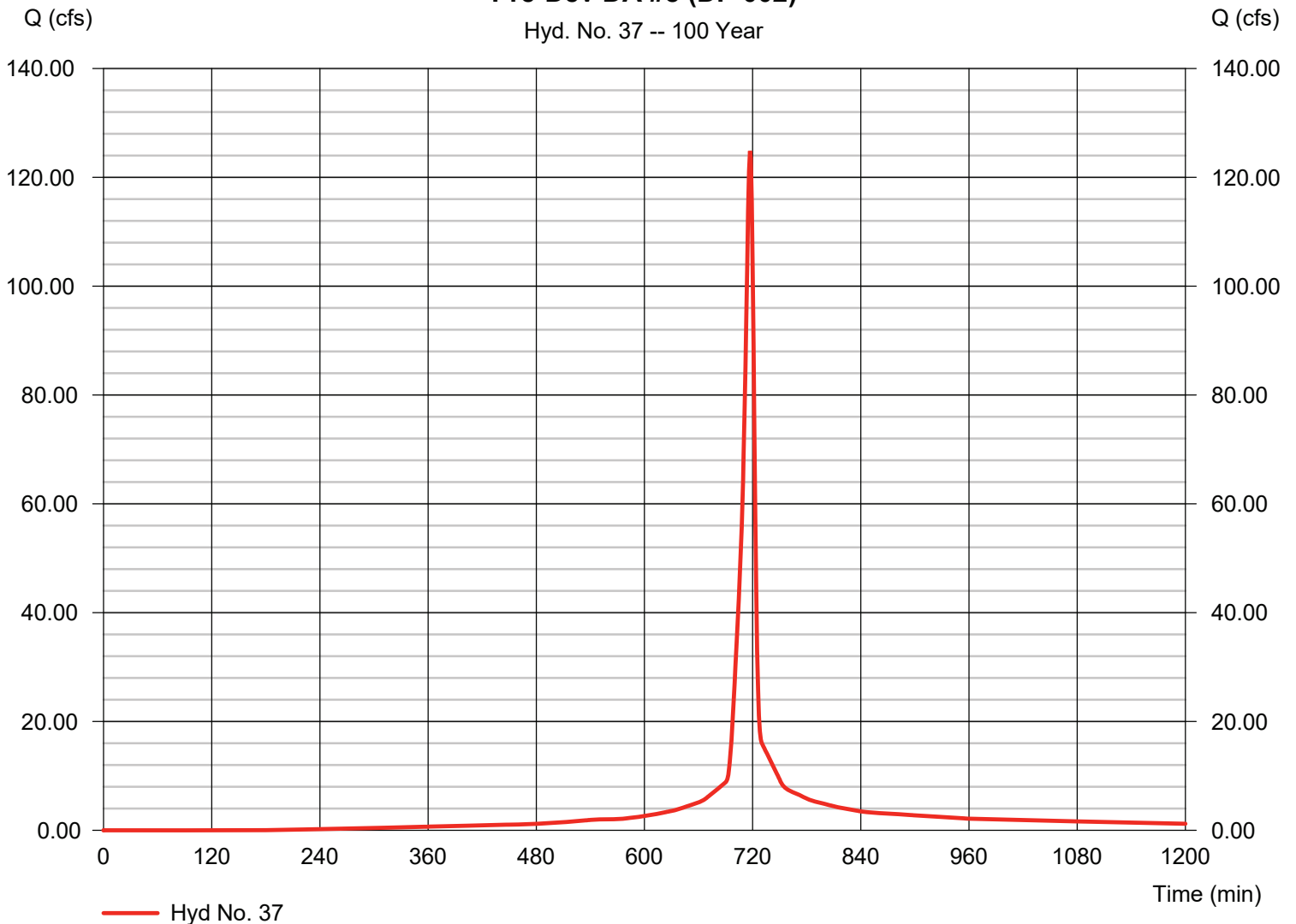
Pre-Dev DA #8 (DP 002)

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 12.400 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 7.20 in
Storm duration = 24 hrs

Peak discharge = 124.83 cfs
Time to peak = 717 min
Hyd. volume = 277,792 cuft
Curve number = 89.7
Hydraulic length = 0 ft
Time of conc. (Tc) = 5.00 min
Distribution = Type II
Shape factor = 484

Pre-Dev DA #8 (DP 002)

Hyd. No. 37 -- 100 Year



Hydrograph Report

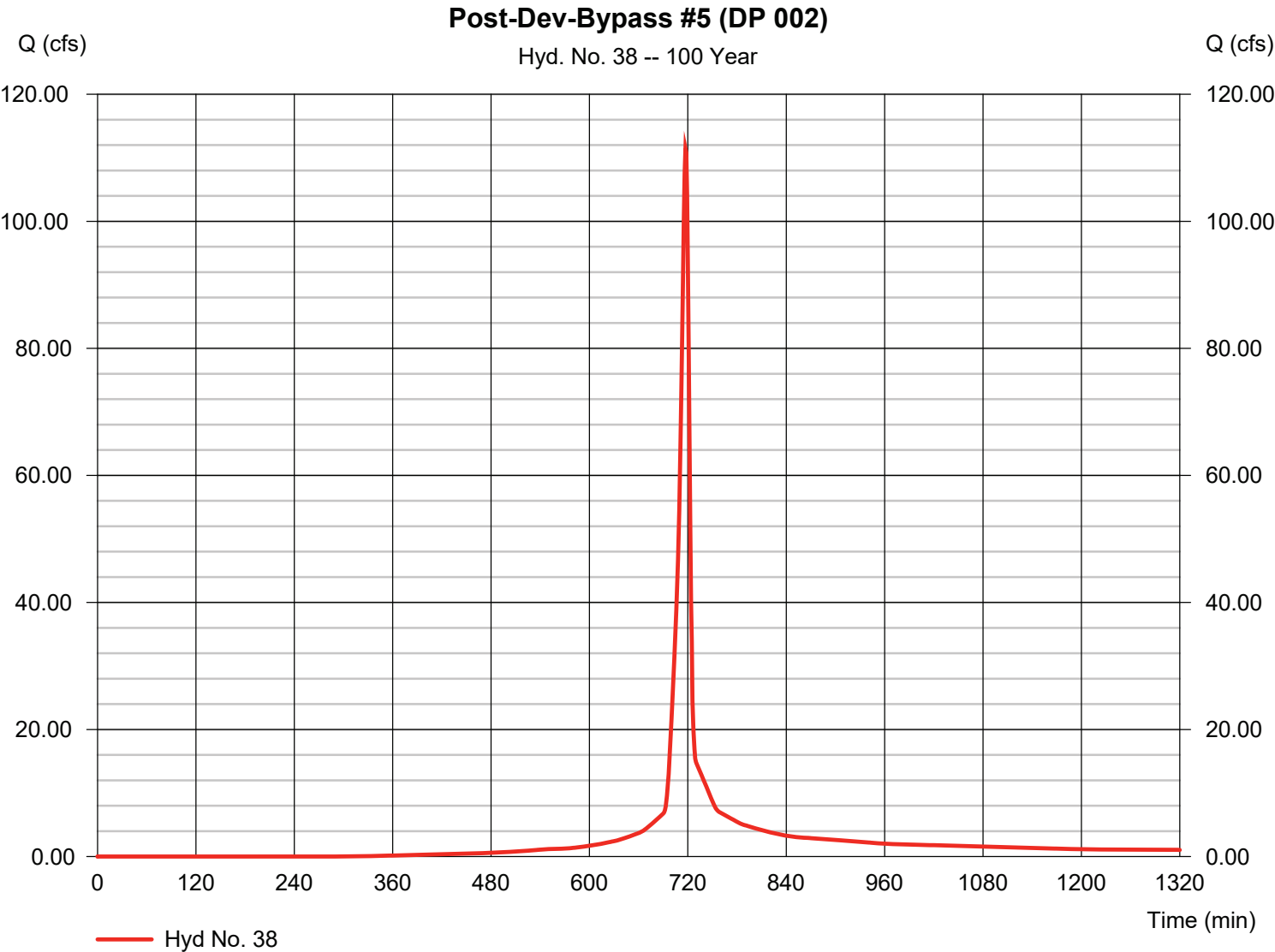
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 38

Post-Dev-Bypass #5 (DP 002)

Hydrograph type	= SCS Runoff	Peak discharge	= 111.45 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 235,346 cuft
Drainage area	= 12.400 ac	Curve number	= 81.7
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

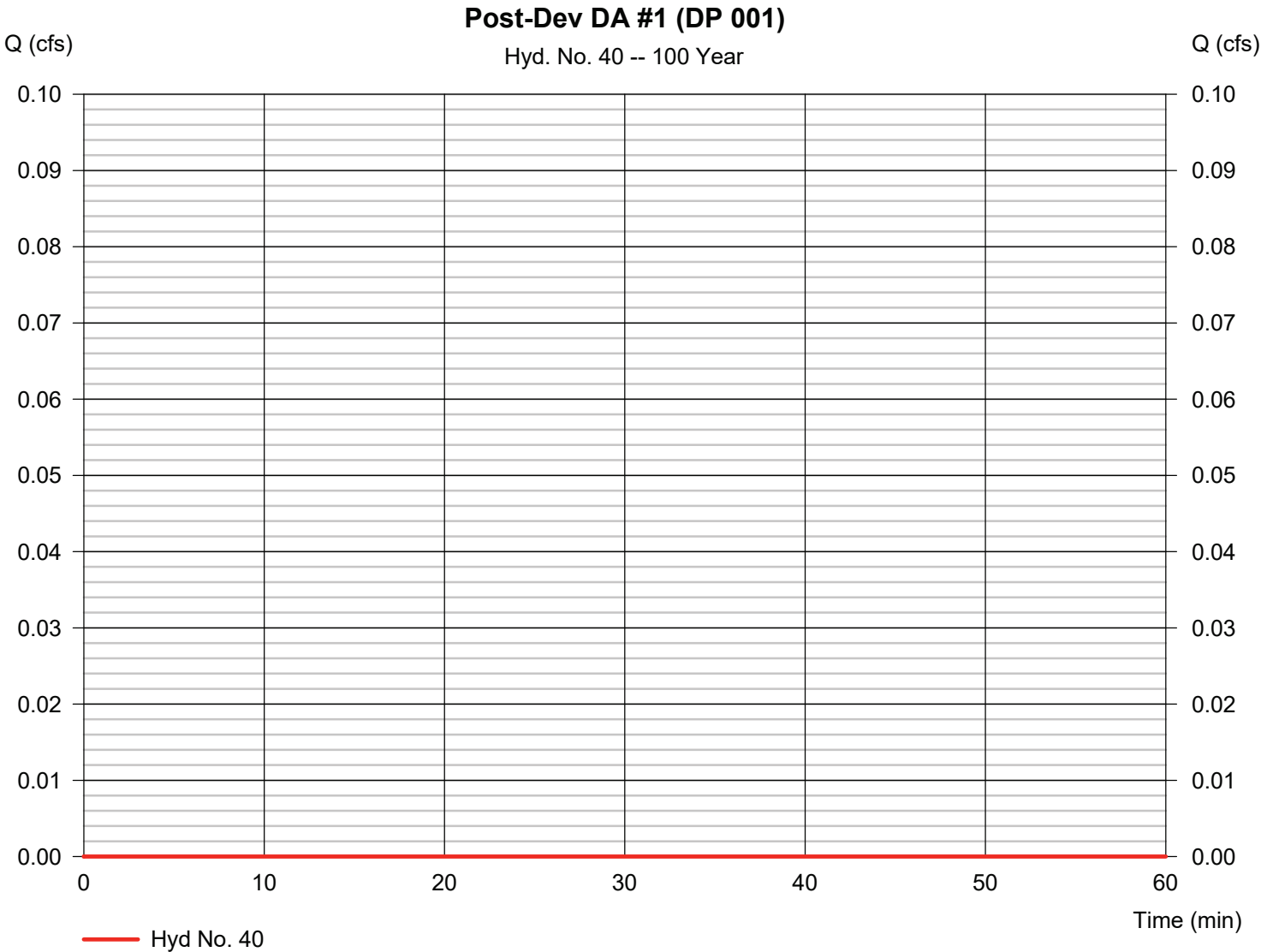
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 40

Post-Dev DA #1 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 18.160 ac	Curve number	= 93.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_Master_Plan\2007083-05 - Ph		



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

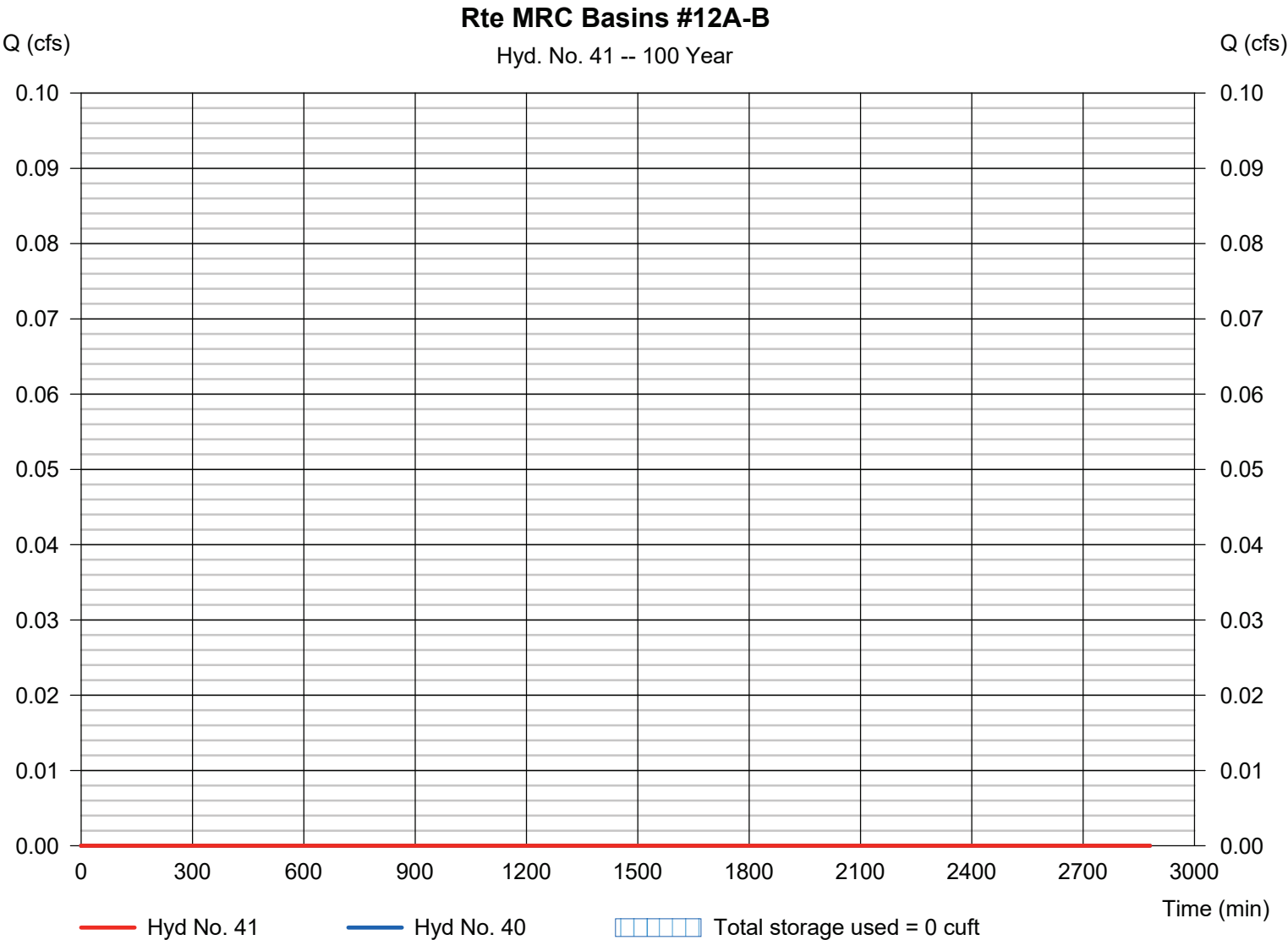
Thursday, 06 / 19 / 2025

Hyd. No. 41

Rte MRC Basins #12A-B

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 40 - Post-Dev DA #1 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= MRC Basins 12A-B	Max. Storage	= 0 cuft

Storage Indication method used.

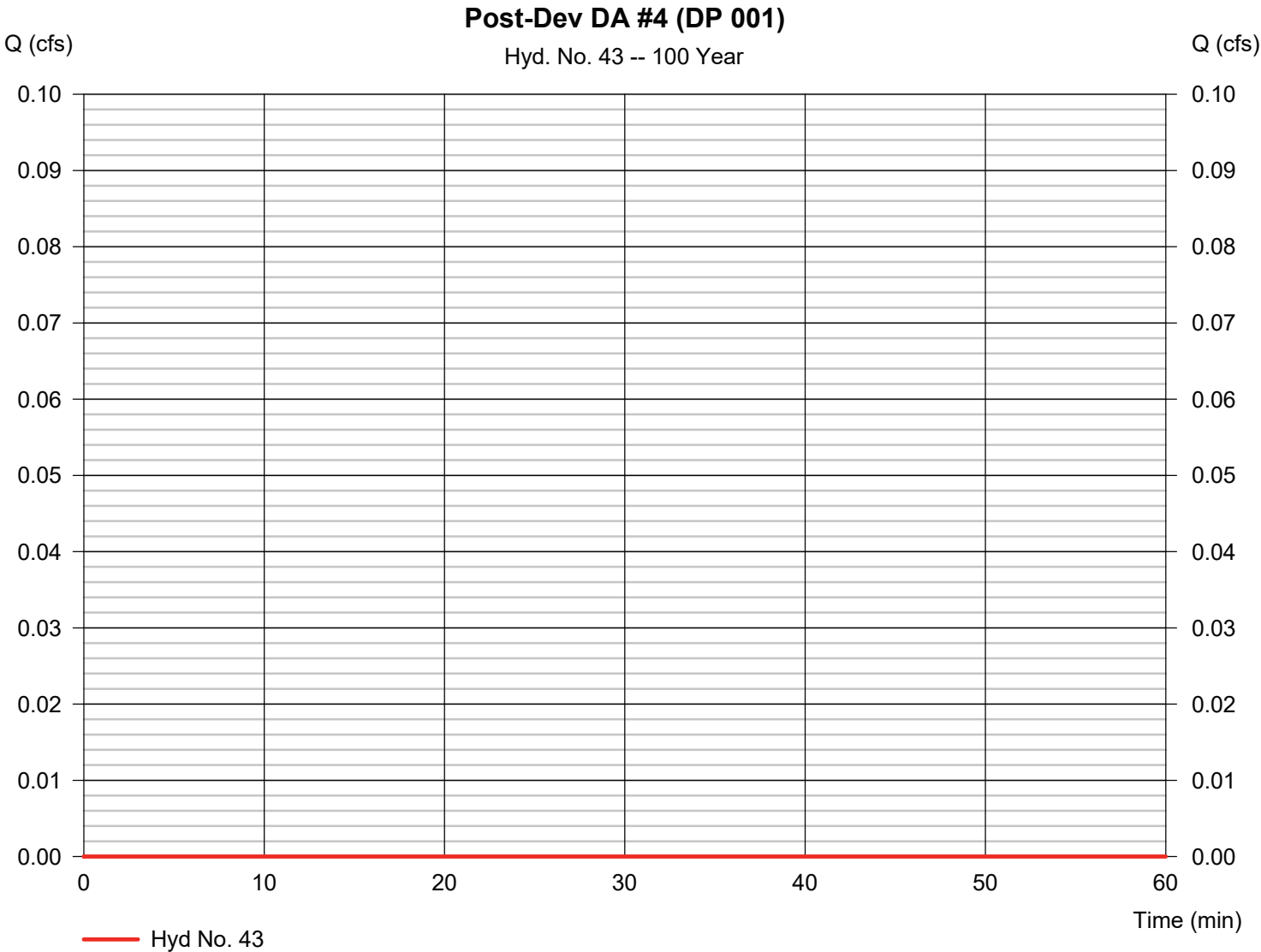


Hydrograph Report

Hyd. No. 43

Post-Dev DA #4 (DP 001)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Drainage area	= 31.230 ac	Curve number	= 90.6
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 0.00 in	Distribution	= Custom
Storm duration	= Q:\LANDDEV\2020\2007083_USS-Fairfax_Hills_MasterPlan\2007083-05 - Ph		



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

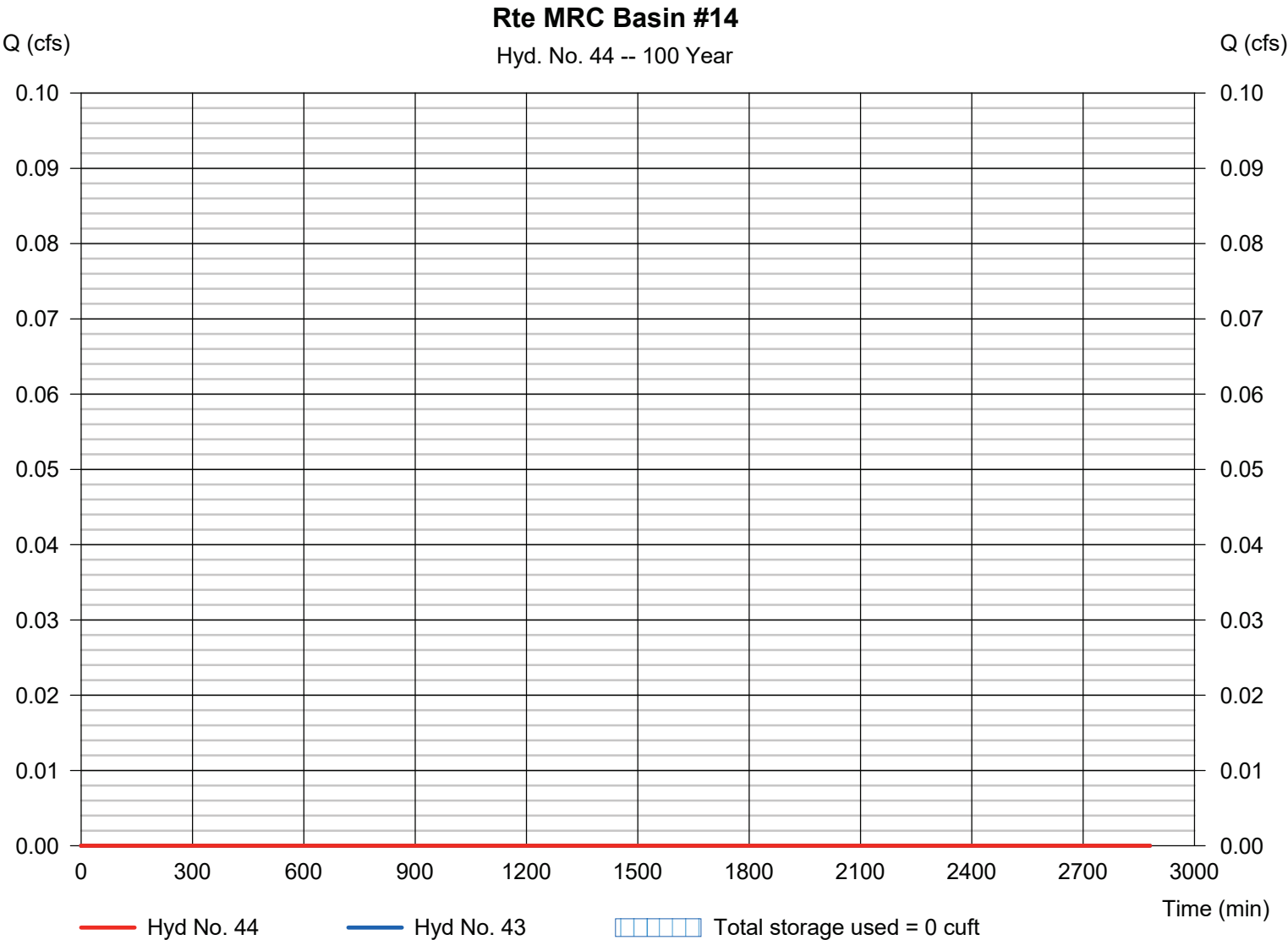
Thursday, 06 / 19 / 2025

Hyd. No. 44

Rte MRC Basin #14

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 43 - Post-Dev DA #4 (DP 001)	Max. Elevation	= 10.50 ft
Reservoir name	= Basin #14 (MRC)	Max. Storage	= 0 cuft

Storage Indication method used.



Hydrograph Report

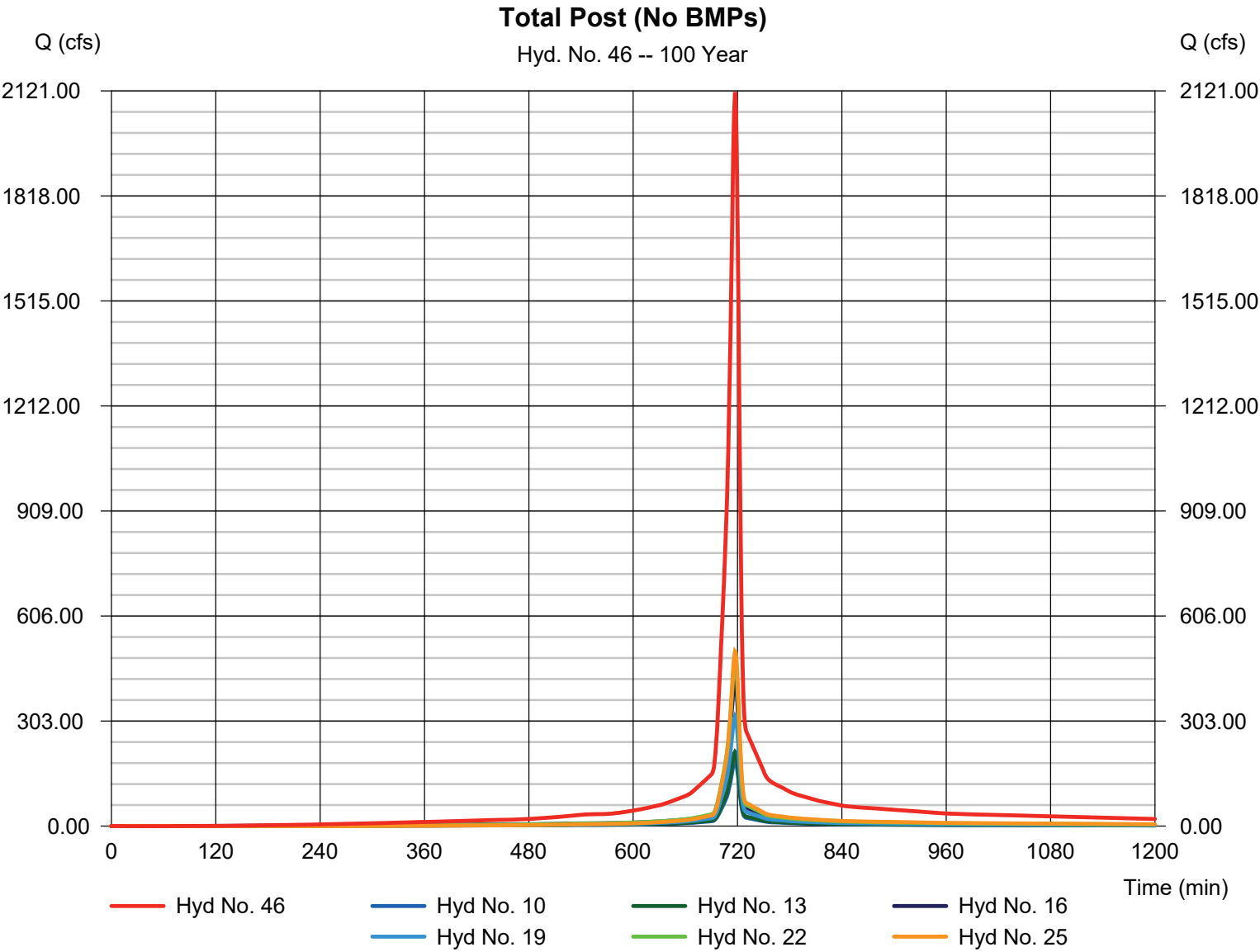
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 46

Total Post (No BMPs)

Hydrograph type	= Combine	Peak discharge	= 2117.12 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 4,734,629 cuft
Inflow hyds.	= 10, 13, 16, 19, 22, 25	Contrib. drain. area	= 212.440 ac



Hydrograph Report

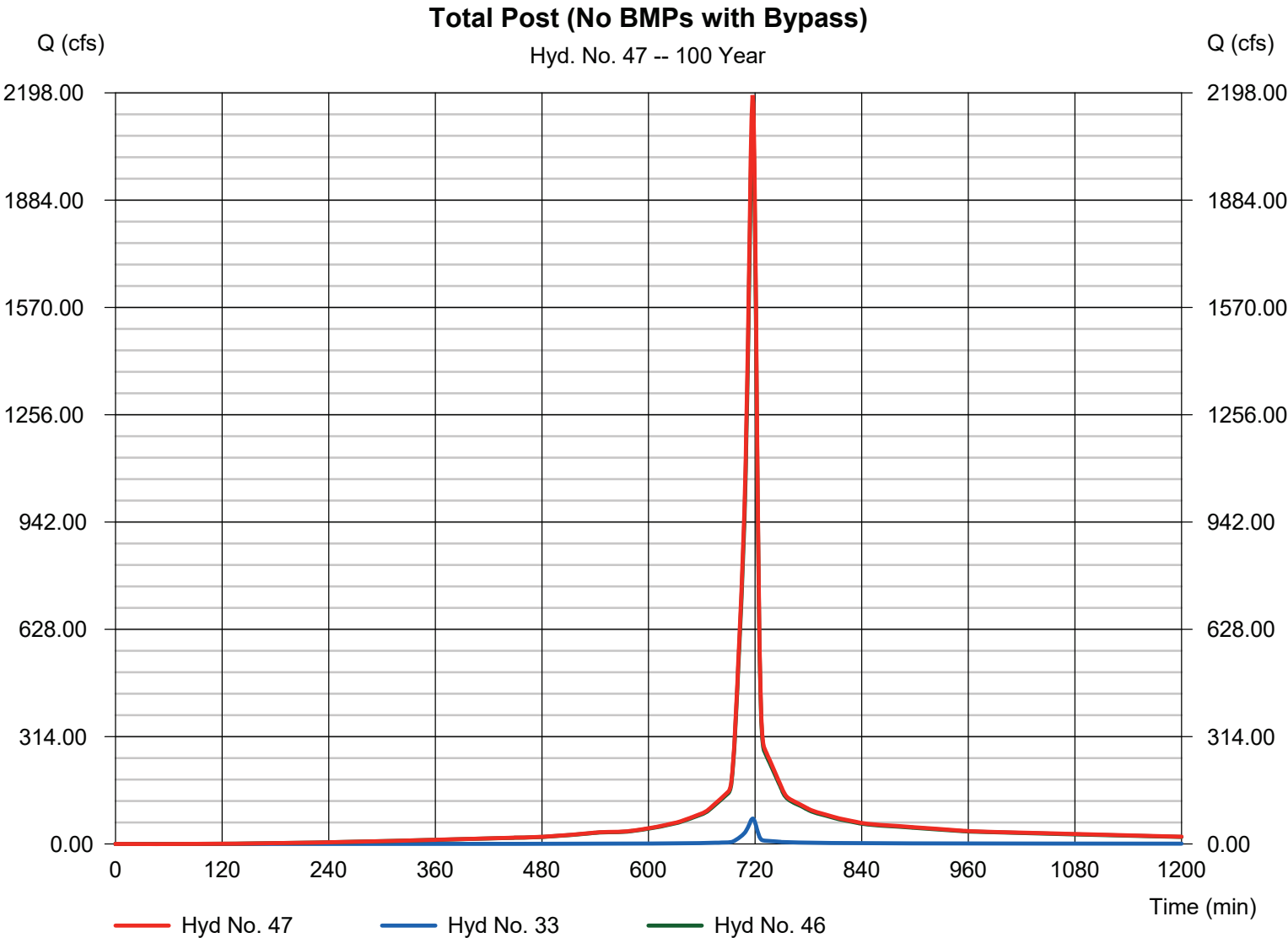
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Thursday, 06 / 19 / 2025

Hyd. No. 47

Total Post (No BMPs with Bypass)

Hydrograph type	= Combine	Peak discharge	= 2191.17 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 1 min	Hyd. volume	= 4,892,288 cuft
Inflow hyds.	= 33, 46	Contrib. drain. area	= 0.000 ac



STANDARD WORKSHEET
Rip-Rap Apron Outlet Protection

PROJECT NAME:	NorthPoint Phase 3 - East			
LOCATION:	Falls Township		Bucks County	
PREPARED BY:	TAS		DATE:	6/17/2025
CHECKED BY:			DATE:	

METHODOLOGY:

Utilize *PA D.E.P. Erosion and Sediment Control Manual* to construct a Rock Apron at culvert, endwall, headwall or channel outfalls. First, tailwater condition must be determined (minimum or maximum). Second, with a known discharge, determine D50 rock size and length of apron "La". Third, determine the width and thickness of the apron. Lastly, ensure the permissible velocity of the rock size chosen is not exceeded by the velocity of the discharge entering the apron.

Equations Utilized:

Minimum Tailwater Condition: $W2 = 3do + La$

Maximum Tailwater Condition: $W2 = 3do + 0.4La$

Blanket Thickness: $T = 1.5 \cdot D_{max}$

Discharge (Q) and Velocity (V) - obtained from the 100 Year Storm

do = pipe diameter

Width 1 = initial width of apron at end of structure

Width 2 = terminal width of apron, W2

STRUCTURE DATA							RIP-RAP DATA			APRON DATA		
EW #	PIPE DIA.	Tailwtr Cond.	Mngs "n"	Pipe Slope	Q	V	D50	ROCK	Rock T	La	W at pipe	W at tailwtr
(in)	MIN/MAX			(%)	(cfs)	(fps)	(in.)	SIZE	(in.)	(ft)	(ft)	(ft)
Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10	Column11	Column12	Column13
1200	24	MIN	0.09	3.35	12.23	4.89	6	R-4	18	12	6	18
1201	48	MIN	0.09	2.27	73.28	9.29	12	R-6	36	26	12	38
1202	15	MIN	0.09	7.64	2.55	3.06	6	R-4	18	8	3.75	11.75
1205	36	MIN	0.09	2.31	12.20	1.78	9	R-5	27	20	9	29
1230	42	MIN	0.09	0.53	48.50	5.04	12	R-6	36	22	10.5	32.5
1231	24	MIN	0.09	7.91	10.26	7.28	6	R-4	18	12	6	18
1234	48	MIN	0.09	2.08	6.37	4.05	12	R-6	36	26	12	38
1238	36	MIN	0.09	4.18	30.73	5.66	9	R-5	27	20	9	29
1302	60	MIN	0.09	1.13	23.14	1.18	12	R-6	36	32	15	47
1303	18	MIN	0.09	1.78	6.78	5.02	6	R-4	18	10	4.5	14.5
1304	24	MIN	0.09	1.93	8.35	7.34	6	R-4	18	12	6	18
1307	15	MIN	0.09	11.48	1.20	6.32	6	R-4	18	8	3.75	11.75
1310	30	MIN	0.09	0.53	8.76	1.79	6	R-4	18	16	7.5	23.5
1311	60	MIN	0.09	0.83	6.30	4.80	12	R-6	36	32	15	47
1312	42	MIN	0.09	0.50	58.24	7.19	12	R-6	36	22	10.5	32.5
1362	24	MIN	0.09	3.67	23.10	7.72	6	R-4	18	12	6	18
1400	60	MIN	0.09	0.35	54.83	6.15	12	R-6	36	32	15	47
1401	15	MIN	0.09	7.14	8.25	6.91	6	R-4	18	8	3.75	11.75
1416	30	MIN	0.09	1.95	21.22	5.44	6	R-4	18	16	7.5	23.5
1500	48	MIN	0.09	0.43	64.73	6.65	12	R-6	36	26	12	38
1501	30	MIN	0.09	1.97	18.99	9.08	9	R-5	27	16	7.5	23.5
1502	60	MIN	0.09	0.50	78.08	6.35	12	R-6	36	32	15	47
1503	48	MIN	0.09	0.36	48.36	5.66	12	R-6	36	26	12	38
1504	36	MIN	0.09	0.79	39.74	5.62	9	R-5	27	20	9	29
1539	60	MIN	0.09	1.77	7.70	2.28	12	R-6	36	32	15	47
1541	60	MIN	0.09	5.24	7.70	2.28	12	R-6	36	32	15	47
1581	60	MIN	0.09	0.35	64.22	5.82	12	R-6	36	32	15	47
1596	15	MIN	0.09	4.73	0.68	1.64	6	R-4	18	8	3.75	11.75
1598	15	MIN	0.09	5.61	3.26	2.66	6	R-4	18	8	3.75	11.75
1527B	36	MIN	0.09	2.22	11.51	3.73	12	R-6	36	20	9	29
1537A	60	MIN	0.09	1.00	148.50	14.13	12	R-6	36	32	15	47
1537B	60	MIN	0.09	1.00	118.96	6.05	12	R-6	36	32	15	47

Notes: Rock size selected has been increased from the suggested size based upon the (1) higher velocity parameter energy. Dissipator shall be hand placed and dimensions adjusted to conform to the existing roadside conveyance. Stone larger than R-4 shall have stone filter blanket installed prior to the rip-rap in lieu of non-woven geotextile. Filter stone shall meet the following requirements:

Rip-rap Filter Blanket Requirements					
Gradation	depth	stone #	max.	d50	min.
R-5	6"	AASHTO #3	2"	1 1/2"	3/8"
R-6	8"	AASHTO #1	3 1/2"	2 1/2"	1/2"
R-7	10"	AASHTO #1	3 1/2"	2 1/2"	1/2"
R-8	12"	AASHTO #1	3 1/2"	2 1/2"	1/2"

	R-3	R-4	R-5	R-6	R-7	R-8
Vmax	6.5	9	11.5	13	14.5	17
D50	3	6	9	12	15	18

Roof Leader Drainage Area Calculations							
Project		NorthPoint - Phase 3 (North)				By:	
Location:		Falls Township, Bucks County, PA				Date:	
						Chk'd:	
						Revised:	
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
1A	5385.00	0.12	0	0.00	0.99	5,385	0.12
2A	4917.00	0.11	0	0.00	0.99	4,917	0.11
3A	5469.00	0.13	0	0.00	0.99	5,469	0.13
4A	7368.00	0.17	0	0.00	0.99	7,368	0.17
5A	7009.00	0.16	0	0.00	0.99	7,009	0.16
6A	5687.00	0.13	0	0.00	0.99	5,687	0.13
7A	6335.00	0.15	0	0.00	0.99	6,335	0.15
8A	9120.00	0.21	0	0.00	0.99	9,120	0.21
1C	6130.00	0.14	0	0.00	0.99	6,130	0.14
2C	6255.00	0.14	0	0.00	0.99	6,255	0.14
3C	3436.00	0.08	0	0.00	0.99	3,436	0.08
4C	3478.00	0.08	0	0.00	0.99	3,478	0.08
5C	6991.00	0.16	0	0.00	0.99	6,991	0.16
6C	3222.00	0.07	0	0.00	0.99	3,222	0.07
7C	8342.00	0.19	0	0.00	0.99	8,342	0.19
8C	8138.00	0.19	0	0.00	0.99	8,138	0.19
9C	9398.00	0.22	0	0.00	0.99	9,398	0.22
19C	24512.00	0.56	0	0.00	0.99	24,512	0.56
20C	5802.00	0.13	0	0.00	0.99	5,802	0.13
21C	4959.00	0.11	0	0.00	0.99	4,959	0.11
22C	5137.00	0.12	0	0.00	0.99	5,137	0.12
23C	6054.00	0.14	0	0.00	0.99	6,054	0.14
24C	11002.00	0.25	0	0.00	0.99	11,002	0.25
25C	11231.00	0.26	0	0.00	0.99	11,231	0.26
26C	7677.00	0.18	0	0.00	0.99	7,677	0.18
27C	5751.00	0.13	0	0.00	0.99	5,751	0.13
28C	4345.00	0.10	0	0.00	0.99	4,345	0.10
29C	4345.00	0.10	0	0.00	0.99	4,345	0.10
30C	3538.00	0.08	0	0.00	0.99	3,538	0.08
31C	6169.00	0.14	0	0.00	0.99	6,169	0.14
32C	6169.00	0.14	0	0.00	0.99	6,169	0.14
1D	7377.00	0.17	0	0.00	0.99	7,377	0.17
2D	4479.00	0.10	0	0.00	0.99	4,479	0.10
3D	3617.00	0.08	0	0.00	0.99	3,617	0.08
4D	6449.00	0.15	0	0.00	0.99	6,449	0.15

Roof Leader Drainage Area Calculations							
Project		NorthPoint - Phase 3 (North)				By:	
Location:		Falls Township, Bucks County, PA				Date:	
						Chk'd:	
						Revised:	
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
5D	5472.00	0.13	0	0.00	0.99	5,472	0.13
6D	4645.00	0.11	0	0.00	0.99	4,645	0.11
7D	7712.00	0.18	0	0.00	0.99	7,712	0.18
8D	11687.00	0.27	0	0.00	0.99	11687	0.27
9D	9300.00	0.21	0	0.00	0.99	9,300	0.21
10D	5743.00	0.13	0	0.00	0.99	5,743	0.13
11D	8133.00	0.19	0	0.00	0.99	8,133	0.19
12D	4134.00	0.09	0	0.00	0.99	4,134	0.09
13D	5150.00	0.12	0	0.00	0.99	5,150	0.12
14D	24941.00	0.57	0	0.00	0.99	24,941	0.57
15D	11410.00	0.26	0	0.00	0.99	11,410	0.26
16D	4395.00	0.10	0	0.00	0.99	4,395	0.10
17D	3709.00	0.10	0	0.00	0.99	3,709	0.10
18D	5513.00	0.09	0	0.00	0.99	5,513	0.09
19D	4706.00	0.13	0	0.00	0.99	4,706	0.13
20D	5451.00	0.11	0	0.00	0.99	5,451	0.11
21D	5451.00	0.13	0	0.00	0.99	5,451	0.13
22D	5369.00	0.13	0	0.00	0.99	5,369	0.13
23D	1652.00	0.12	0	0.00	0.99	1,652	0.12
24D	2818.00	0.04	0	0.00	0.99	2,818	0.04
25D	4937.00	0.06	0	0.00	0.99	4,937	0.06
1E	5912.00	0.14	0	0.00	0.99	5,912	0.14
2E	5830.00	0.13	0	0.00	0.99	5,830	0.13
3E	4196.00	0.13	0	0.00	0.99	4,196	0.13
4E	3014.00	0.10	0	0.00	0.99	3,014	0.10
5E	6628.00	0.07	0	0.00	0.99	6,628	0.07
6E	5330.00	0.12	0	0.00	0.99	5,330	0.12
7E	7281.00	0.17	0	0.00	0.99	7,281	0.17
8E	7619.00	0.17	0	0.00	0.99	7,619	0.17
9E	10714.00	0.25	0	0.00	0.99	10,714	0.25
17E	24938.00	0.57	0	0.00	0.99	24,938	0.57
18E	5060.00	0.12	0	0.00	0.99	5,060	0.12
19E	4380.00	0.10	0	0.00	0.99	4,380	0.10
20E	4761.00	0.11	0	0.00	0.99	4,761	0.11
21E	6461.00	0.15	0	0.00	0.99	6,461	0.15
22E	6279.00	0.14	0	0.00	0.99	6,279	0.14

Roof Leader Drainage Area Calculations							
Project		NorthPoint - Phase 3 (North)				By:	
Location:		Falls Township, Bucks County, PA				Date:	
						Chk'd:	
						Revised:	
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
1M	3954.00	0.09	0	0.00	0.99	3,954	0.09
2M-A	1641.00	0.04	0	0.00	0.99	1,641	0.04
2M-B	1227.00	0.03	0	0.00	0.99	1,227	0.03
3M-A	1227.00	0.03	0	0.00	0.99	1,227	0.03
3M-B	1299.00	0.03	0	0.00	0.99	1,299	0.03
4M	464.00	0.01	0	0.00	0.99	464	0.01
5M-A	369.00	0.01	0	0.00	0.99	369	0.01
5M-B	319.00	0.01	0	0.00	0.99	319	0.01
6M-A	318.00	0.01	0	0.00	0.99	318	0.01
6M-B	336.00	0.01	0	0.00	0.99	336	0.01
7M-A	355.00	0.01	0	0.00	0.99	355	0.01
7M-B	143.00	0.00	0	0.00	0.99	143	0.00
8M	175.00	0.00	0	0.00	0.99	175	0.00
9M	561.00	0.01	0	0.00	0.99	561	0.01
10M	3607.00	0.08	0	0.00	0.99	3,607	0.08
11M	2329.00	0.05	0	0.00	0.99	2,329	0.05
12M	3225.00	0.07	0	0.00	0.99	3,225	0.07
13M	2024.00	0.05	0	0.00	0.99	2,024	0.05
14M	722.00	0.02	0	0.00	0.99	722	0.02
15M	3883.00	0.09	0	0.00	0.99	3,883	0.09
16M	4369.00	0.10	0	0.00	0.99	4,369	0.10
1L	6414.00	0.15	0	0.00	0.99	6,414	0.15
2L	2238.00	0.05	0	0.00	0.99	2,238	0.05
3L	324.00	0.01	0	0.00	0.99	324	0.01
4L	2731.00	0.06	0	0.00	0.99	2,731	0.06
5L	1639.00	0.04	0	0.00	0.99	1,639	0.04
6L	958.00	0.02	0	0.00	0.99	958	0.02
7L	423.00	0.01	0	0.00	0.99	423	0.01
8L	231.00	0.01	0	0.00	0.99	231	0.01
9L	3408.00	0.08	0	0.00	0.99	3,408	0.08
10L	4263.00	0.10	0	0.00	0.99	4,263	0.10
11L	304.00	0.01	0	0.00	0.99	304	0.01
12L	2866.71	0.07	0	0.00	0.99	2,867	0.07

Roof Leader Drainage Area Calculations							
Project	NorthPoint - Phase 3 (North)					By:	
Location:	Falls Township, Bucks County, PA					Date:	5/30/2025
						Chk'd:	
						Revised:	
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
13L	3858.30	0.09	0	0.00	0.99	3,858	0.09
14L	3845.00	0.09	0	0.00	0.99	3,845	0.09
1K	710.00	0.02	0	0.00	0.99	710	0.02
2K	710.00	0.02	0	0.00	0.99	710	0.02

Inlet Drainage Area Calculations North

Project	NorthPoint - Phase 3 (North)	By:
Location:	Falls Township, Bucks County, PA	Date: 5/30/2025
		Chk'd:
		Revised:

C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
INL NO.							
1239	8,494	0.20	2,615	0.06	0.91	11,109	0.26
1241	8,051	0.18	0	0.00	0.99	8,051	0.18
1242	6,968	0.16	919	0.02	0.95	7,887	0.18
1243	6,596	0.15	975	0.02	0.95	7,571	0.17
1244	11,999	0.28	1,682	0.04	0.95	13,681	0.31
1247	26,397	0.61	-27	0.00	0.99	26,370	0.61
1247B	3,723	0.09	1,961	0.05	0.87	5,684	0.13
1247C	39,278	0.90	4,257	0.10	0.96	43,535	1.00
1247D	5,915	0.14	0	0.00	0.99	5,915	0.14
1249	41,818	0.96	0	0.00	0.99	41,818	0.96
1250	8,573	0.20	0	0.00	0.99	8,573	0.20
1251	40,642	0.93	0	0.00	0.99	40,642	0.93
1254	7,490	0.17	0	0.00	0.99	7,490	0.17
1254A	8,332	0.19	793	0.02	0.96	9,125	0.21
1255	7,835	0.18	379	0.01	0.97	8,214	0.19
1255A	8,623	0.20	939	0.02	0.96	9,562	0.22
1256B	5,813	0.13	2,254	0.05	0.90	8,067	0.19
1256C	5,258	0.12	1,657	0.04	0.91	6,915	0.16
1256D	4,356	0.10	3,494	0.08	0.84	7,850	0.18
1256	5,535	0.13	505	0.01	0.96	6,040	0.14
1256A	4,196	0.10	516	0.01	0.95	4,712	0.11
1257	5,522	0.13	492	0.01	0.96	6,014	0.14
1258	3,594	0.08	745	0.02	0.93	4,339	0.10
1259	5,368	0.12	927	0.02	0.94	6,295	0.14
1259A	7,363	0.17	2,034	0.05	0.92	9,397	0.22
1259B	5,882	0.14	846	0.02	0.95	6,728	0.15
1259C	6,900	0.16	380	0.01	0.97	7,280	0.17
1260	4,819	0.11	620	0.01	0.95	5,439	0.12
1261	24,734	0.57	10,423	0.24	0.89	35,157	0.81
1261A	5,523	0.13	2,214	0.05	0.89	7,737	0.18
1262	5,195	0.12	3,291	0.08	0.86	8,486	0.19
1262A	7,543	0.17	298	0.01	0.98	7,841	0.18
1262B	6,547	0.15	423	0.01	0.97	6,970	0.16
1262C	9,840	0.23	4,007	0.09	0.89	13,847	0.32
1315	17,957	0.41	21,588	0.50	0.80	39,545	0.91

Inlet Drainage Area Calculations North							
Project	NorthPoint - Phase 3 (North)					By:	
Location:	Falls Township, Bucks County, PA					Date:	5/30/2025
						Chk'd:	
						Revised:	
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
INL NO.	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
1316	19,397	0.45	0	0.00	0.99	19,397	0.45
1317	11724	0.27	7,257	0.17	0.86	18,981	0.44
1318	5,541	0.13	1,124	0.03	0.93	6,665	0.15
1331	13,939	0.32	-3,144	-0.07	1.09	10,795	0.25
1332	20,368	0.47	6,000	0.14	0.91	26,368	0.61
1332A	46,637	1.07	0	0.00	0.99	46,637	1.07
1332B	35,716	0.82	0	0.00	0.99	35,716	0.82
1332C	35,953	0.83	0	0.00	0.99	35,953	0.83
1332D	35,953	0.83	0	0.00	0.99	35,953	0.83
1332E	34,941	0.80	0	0.00	0.99	34,941	0.80
1332F	23,522	0.54	0	0.00	0.99	23,522	0.54
1332G	34,194	0.78	0	0.00	0.99	34,194	0.78
1332H	36,310	0.83	0	0.00	0.99	36,310	0.83
1332I	36,310	0.83	0	0.00	0.99	36,310	0.83
1332J	36,124	0.83	0	0.00	0.99	36,124	0.83
1332K	41,995	0.96	0	0.00	0.99	41,995	0.96
1332L	13,931	0.32	0	0.00	0.99	13,931	0.32
1333	13,503	0.31	1,221	0.03	0.96	14,724	0.34
1334A	8,405	0.19	0	0.00	0.99	8,405	0.19
1334B	13,094	0.30	0	0.00	0.99	13,094	0.30
1334C	12,852	0.30	0	0.00	0.99	12,852	0.30
1334D	13,893	0.32	0	0.00	0.99	13,893	0.32
1334E	13,184	0.30	0	0.00	0.99	13,184	0.30
1334F	13,184	0.30	0	0.00	0.99	13,184	0.30
1335	8,871	0.20	5,629	0.13	0.86	14,500	0.33
1335A	12,536	0.29	6,499	0.15	0.87	19,035	0.44
1335B	12,145	0.28	6,957	0.16	0.87	19,102	0.44
1335C	13,407	0.31	6,975	0.16	0.87	20,382	0.47
1335D	8,548	0.20	26,744	0.61	0.73	35,292	0.81
1338A	20,867	0.48	0	0.00	0.99	20,867	0.48
1338B	24,167	0.55	0	0.00	0.99	24,167	0.55
1338C	24,713	0.57	0	0.00	0.99	24,713	0.57
1338D	24,625	0.57	0	0.00	0.99	24,625	0.57
1338E	24,167	0.55	0	0.00	0.99	24,167	0.55
1338F	20,720	0.48	0	0.00	0.99	20,720	0.48
1,339	925	0.02	0	0.00	0.99	925	0.02
1,340	18,775	0.43	0	0.00	0.99	18,775	0.43
1,341	23,785	0.55	0	0.00	0.99	23,785	0.55

Inlet Drainage Area Calculations North

Project	NorthPoint - Phase 3 (North)	By:
Location:	Falls Township, Bucks County, PA	Date: 5/30/2025
		Chk'd:
		Revised:

C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
INL NO.							
1341A	8,276	0.19	0	0.00	0.99	8,276	0.19
1341C	9,583	0.22	0	0.00	0.99	9,583	0.22
1,342	32,103	0.74	1,003	0.02	0.98	33,106	0.76
1,343	38,621	0.89	3,300	0.08	0.96	41,921	0.96
1,344	15,503	0.36	1,676	0.04	0.96	17,179	0.39
1,345	12,976	0.30	0	0.00	0.99	12,976	0.30
1,346	23,044	0.53	3,553	0.08	0.94	26,597	0.61
Bldg. L TD East	3,880	0.09	0	0.00	0.99	3,880	0.09
Bldg. L TD West	1,722	0.04	0	0.00	0.99	1,722	0.04
Bldg. D TD	4,356	0.10	0	0.00	0.99	4,356	0.10
Bldg. E TD	4,356	0.10	0	0.00	0.99	4,356	0.10
Bldg. A TD	4,356	0.10	0	0.00	0.99	4,356	0.10

Roof Leader Drainage Area Calculations

Project NorthPoint - Phase 3 (East)

By:

Location: Falls Township, Bucks County, PA

Date: 5/30/2025

Chk'd:

Revised:

C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
RL 9A	8,300	0.19	0	0.00	0.99	8,300	0.19
RL 10A	5,420	0.12	0	0.00	0.99	5,420	0.12
RL 11A	5,483	0.13	0	0.00	0.99	5,483	0.13
RL 12A	7,765	0.18	0	0.00	0.99	7,765	0.18
RL 13A	7,739	0.18	0	0.00	0.99	7,739	0.18
RL 14A	6,421	0.15	0	0.00	0.99	6,421	0.15
RL 15A	6,437	0.15	0	0.00	0.99	6,437	0.15
RL 16A	9,578	0.22	0	0.00	0.99	9,578	0.22
RL 1B	6,052	0.14	0	0.00	0.99	6,052	0.14
RL 2B	5,312	0.12	0	0.00	0.99	5,312	0.12
RL 3B	5,478	0.13	0	0.00	0.99	5,478	0.13
RL 4B	7,951	0.18	0	0.00	0.99	7,951	0.18
RL 5B	7,747	0.18	0	0.00	0.99	7,747	0.18
RL 6B	6,527	0.15	0	0.00	0.99	6,527	0.15
RL 7B	6,460	0.15	0	0.00	0.99	6,460	0.15
RL 8B	9,649	0.22	0	0.00	0.99	9,649	0.22
RL 9B	8,352	0.19	0	0.00	0.99	8,352	0.19
RL 10B	5,379	0.12	0	0.00	0.99	5,379	0.12
RL 11B	5,492	0.13	0	0.00	0.99	5,492	0.13
RL 12B	7,754	0.18	0	0.00	0.99	7,754	0.18
RL 13B	7,734	0.18	0	0.00	0.99	7,734	0.18
RL 14B	6,372	0.15	0	0.00	0.99	6,372	0.15
RL 15B	6,406	0.15	0	0.00	0.99	6,406	0.15
RL 16B	9,589	0.22	0	0.00	0.99	9,589	0.22
RL 10C	9,228	0.21	0	0.00	0.99	9,228	0.21
RL 11C	2,804	0.06	0	0.00	0.99	2,804	0.06
RL 12C	4,192	0.10	0	0.00	0.99	4,192	0.10
RL 13C	5,394	0.12	0	0.00	0.99	5,394	0.12
RL 14C	5,018	0.12	0	0.00	0.99	5,018	0.12
RL 15C	5,031	0.12	0	0.00	0.99	5,031	0.12
RL 16C	5,573	0.13	0	0.00	0.99	5,573	0.13
RL 17C	3,587	0.08	0	0.00	0.99	3,587	0.08
RL 18C	3,571	0.08	0	0.00	0.99	3,571	0.08
RL 19C	12,352	0.28	0	0.00	0.99	12,352	0.28

Inlet Drainage Area Calculations East							
Project	NorthPoint - Phase 3 (East)				By:		
Location:	Falls Township, Bucks County, PA				Date:	5/30/2025	
					Chk'd:		
					Revised:		
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
INL 1209C	8,281	0.19	0	0.00	0.99	8,281	0.19
INL 1209B	16,244	0.37	0	0.00	0.99	16,244	0.37
INL 1209A	12,089	0.28	0	0.00	0.99	12,089	0.28
INL 1209D	11,155	0.26	0	0.00	0.99	11,155	0.26
INL 1209E	12,379	0.28	0	0.00	0.99	12,379	0.28
INL 1209F	12,319	0.28	0	0.00	0.99	12,319	0.28
INL 1209G	11,396	0.26	0	0.00	0.99	11,396	0.26
INL 1210	15,926	0.37	0	0.00	0.99	15,926	0.37
INL 1211	14,460	0.33	0	0.00	0.99	14,460	0.33
INL 1212	8,450	0.19	0	0.00	0.99	8,450	0.19
INL 1214	27,184	0.62	0	0.00	0.99	27,184	0.62
INL 1215	32,253	0.74	0	0.00	0.99	32,253	0.74
INL 1216	35,746	0.82	0	0.00	0.99	35,746	0.82
INL 1217	36,641	0.84	0	0.00	0.99	36,641	0.84
INL 1218	36,500	0.84	0	0.00	0.99	36,500	0.84
INL 1219	36,500	0.84	0	0.00	0.99	36,500	0.84
INL 1220	36,500	0.84	0	0.00	0.99	36,500	0.84
INL 1227	8,809	0.20	432	0.01	0.97	9,241	0.21
INL 1407	17,852	0.41	34,637	0.80	0.77	52,489	1.20
INL 1406	21,537	0.49	22,198	0.51	0.82	43,735	1.00
INL 1404	16,061	0.37	7,809	0.18	0.88	23,870	0.55
INL 1403	19,518	0.45	11,828	0.27	0.86	31,346	0.72
INL 1402	17,204	0.39	9,368	0.22	0.87	26,572	0.61
INL 1401	4,964	0.11	1,324	0.03	0.92	6,288	0.14
INL 1410	36,311	0.83	346	0.01	0.99	36,657	0.84
INL 1409	36,125	0.83	375	0.01	0.99	36,500	0.84
INL 1408	42,434	0.97	0	0.00	0.99	42,434	0.97
INL 1415	32,761	0.75	14,202	0.33	0.89	46,963	1.08
INL 1416	32,762	0.75	14,202	0.33	0.89	46,964	1.08
INL 1417	4,047	0.09	14,465	0.33	0.72	18,512	0.42
INL 1418	2,553	0.06	0	0.00	0.99	2,553	0.06
INL 1419	7,414	0.17	1,547	0.04	0.93	8,961	0.21
INL 1420	12,325	0.28	5,678	0.13	0.88	18,003	0.41
INL 1421	3,350	0.08	6,436	0.15	0.77	9,786	0.22
INL 1422	1,777	0.04	872	0.02	0.88	2,649	0.06
INL 1423	10,017	0.23	0	0.00	0.99	10,017	0.23
INL 1424	11,604	0.27	27,063	0.62	0.75	38,667	0.89

Inlet Drainage Area Calculations East

Project	NorthPoint - Phase 3 (East)	By:	
Location:	Falls Township, Bucks County, PA	Date:	5/30/2025
		Chk'd:	
		Revised:	

C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
INL 1425	18,596	0.43	52	0.00	0.99	18,648	0.43
INL 1426	2,642	0.06	0	0.00	0.99	2,642	0.06
INL 1427	3,669	0.08	3,715	0.09	0.82	7,384	0.17
INL 1428	4,019	0.09	4,283	0.10	0.81	8,302	0.19
INL 1429	2,873	0.07	2,074	0.05	0.85	4,947	0.11
Bldg B. TD	3,920	0.09	0	0.00	0.99	3,920	0.09
Bldg C. TD	3,920	0.09	0	0.00	0.99	3,920	0.09

Roof Leader Drainage Area Calculations

Project NorthPoint - Phase 3 (Southeast)

By:

Location: Falls Township, Bucks County, PA

Date: 5/30/2025

Chk'd:

Revised:

C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
9H	6,052	0.14	0	0.00	0.99	6,052	0.14
10H	5,312	0.12	0	0.00	0.99	5,312	0.12
11H	5,478	0.13	0	0.00	0.99	5,478	0.13
12H	7,951	0.18	0	0.00	0.99	7,951	0.18
13H	7,746	0.18	0	0.00	0.99	7,746	0.18
14H	6,527	0.15	0	0.00	0.99	6,527	0.15
15H	6,459	0.15	0	0.00	0.99	6,459	0.15
16H	9,649	0.22	0	0.00	0.99	9,649	0.22
1I	9,649	0.22	0	0.00	0.99	9,649	0.22
2I	6,459	0.15	0	0.00	0.99	6,459	0.15
3I	6,527	0.15	0	0.00	0.99	6,527	0.15
4I	7,746	0.18	0	0.00	0.99	7,746	0.18
5I	7,951	0.18	0	0.00	0.99	7,951	0.18
6I	5,478	0.13	0	0.00	0.99	5,478	0.13
7I	5,312	0.12	0	0.00	0.99	5,312	0.12
8I	6,052	0.14	0	0.00	0.99	6,052	0.14
9I	9,589	0.22	0	0.00	0.99	9,589	0.22
10I	6,406	0.15	0	0.00	0.99	6,406	0.15
11I	6,371	0.15	0	0.00	0.99	6,371	0.15
12I	7,733	0.18	0	0.00	0.99	7,733	0.18
13I	7,754	0.18	0	0.00	0.99	7,754	0.18
14I	5,491	0.13	0	0.00	0.99	5,491	0.13
15I	5,379	0.12	0	0.00	0.99	5,379	0.12
16I	8,351	0.19	0	0.00	0.99	8,351	0.19
1J	8,351	0.19	0	0.00	0.99	8,351	0.19
2J	5,379	0.12	0	0.00	0.99	5,379	0.12
3J	5,491	0.13	0	0.00	0.99	5,491	0.13
4J	7,754	0.18	0	0.00	0.99	7,754	0.18
5J	7,733	0.18	0	0.00	0.99	7,733	0.18
6J	6,371	0.15	0	0.00	0.99	6,371	0.15
7J	6,406	0.15	0	0.00	0.99	6,406	0.15
8J	9,589	0.22	0	0.00	0.99	9,589	0.22
9J	6,052	0.14	0	0.00	0.99	6,052	0.14
10J	5,312	0.12	0	0.00	0.99	5,312	0.12
11J	5,478	0.13	0	0.00	0.99	5,478	0.13
12J	7,951	0.18	0	0.00	0.99	7,951	0.18
13J	7,746	0.18	0	0.00	0.99	7,746	0.18
14J	6,527	0.15	0	0.00	0.99	6,527	0.15
15J	6,459	0.15	0	0.00	0.99	6,459	0.15
16J	9,649	0.22	0	0.00	0.99	9,649	0.22

Inlet Drainage Area Calculations Southeast							
Project	NorthPoint - Phase 3 (Southeast)				By:		
Location:	Falls Township, Bucks County, PA				Date: 5/30/2025		
					Chk'd:		
					Revised:		
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
INL 1501	11,773	0.27	11,227	0.26	0.82	23,000	0.53
INL 1502	14,530	0.33	12,713	0.29	0.83	27,243	0.63
INL 1503	12,124	0.28	10,749	0.25	0.83	22,873	0.53
INL 1503A	4,653	0.11	0	0.00	0.99	4,653	0.11
INL 1503D	39,420	0.90	0	0.00	0.99	39,420	0.90
INL 1503E	34,731	0.80	0	0.00	0.99	34,731	0.80
INL 1503F	34,735	0.80	0	0.00	0.99	34,735	0.80
INL 1503G	12,336	0.28	0	0.00	0.99	12,336	0.28
INL 1503H	17,618	0.40	0	0.00	0.99	17,618	0.40
INL 1504	4,526	0.10	53,080	1.22	0.68	57,606	1.32
INL 1505	12,634	0.29	50,463	1.16	0.72	63,097	1.45
INL 1506	13,049	0.30	9,414	0.22	0.85	22,463	0.52
INL 1506A	0	0.00	9,887	0.23	0.65	9,887	0.23
INL 1506B	19,751	0.45	0	0.00	0.99	19,751	0.45
INL 1507	0	0.00	11,671	0.27	0.65	11,671	0.27
INL 1508	12,106	0.28	20,469	0.47	0.78	32,575	0.75
INL 1508D	28,968	0.67	0	0.00	0.99	28,968	0.67
INL 1508E	35,105	0.81	0	0.00	0.99	35,105	0.81
INL 1509	7,183	0.16	23,453	0.54	0.73	30,636	0.70
INL 1510	8,238	0.19	30,779	0.71	0.72	39,017	0.90
INL 1511	7,084	0.16	31,537	0.72	0.71	38,621	0.89
INL 1512	5,616	0.13	19,956	0.46	0.72	25,572	0.59
INL 1514	14,370	0.33	0	0.00	0.99	14,370	0.33
INL 1515	12,951	0.30	0	0.00	0.99	12,951	0.30
INL 1516	14,887	0.34	0	0.00	0.99	14,887	0.34
INL 1517	11,896	0.27	0	0.00	0.99	11,896	0.27
INL 1521	7,492	0.17	0	0.00	0.99	7,492	0.17
INL 1522	31,805	0.73	12,211	0.28	0.90	44,016	1.01
INL 1523	12,330	0.28	9,712	0.22	0.84	22,042	0.51
INL 1524	39,867	0.92	8,723	0.20	0.93	48,590	1.12
INL 1526A	16,448	0.38	0	0.00	0.99	16,448	0.38
INL 1526B	25,872	0.59	0	0.00	0.99	25,872	0.59
INL 1526C	24,914	0.57	0	0.00	0.99	24,914	0.57
INL 1531A	42,275	0.97	0	0.00	0.99	42,275	0.97
INL 1531B	34,712	0.80	0	0.00	0.99	34,712	0.80
INL 1531C	34,735	0.80	0	0.00	0.99	34,735	0.80
TD BLDG H	5,301	0.12	0	0.00	0.99	5,301	0.12
TD BLDG I	2,995	0.07	0	0.00	0.99	2,995	0.07

Inlet Drainage Area Calculations Southeast							
Project		NorthPoint - Phase 3 (Southeast)				By:	
Location:		Falls Township, Bucks County, PA				Date:	5/30/2025
						Chk'd:	
						Revised:	
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
TD BLDG J	2,995	0.07	0	0.00	0.99	2,995	0.07

Roof Leader Drainage Area Calculations							
Project NorthPoint - Phase 3 (Southwest)					By:		
Location: Falls Township, Bucks County, PA					Date: 5/30/2025		
					Chk'd:		
					Revised:		
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
24D	9,524	0.22	0	0.00	0.99	9,524	0.22
25D	6,905	0.16	0	0.00	0.99	6,905	0.16
26D	7,564	0.17	0	0.00	0.99	7,564	0.17
27D	7,688	0.18	0	0.00	0.99	7,688	0.18
28D	4,459	0.10	0	0.00	0.99	4,459	0.10
29D	3,833	0.09	0	0.00	0.99	3,833	0.09
30D	5,002	0.11	0	0.00	0.99	5,002	0.11
31D	6,107	0.14	0	0.00	0.99	6,107	0.14
32D	4,776	0.11	0	0.00	0.99	4,776	0.11
8E	4,594	0.11	0	0.00	0.99	4,594	0.11
9E	2,571	0.06	0	0.00	0.99	2,571	0.06
10E	4,789	0.11	0	0.00	0.99	4,789	0.11
11E	4,766	0.11	0	0.00	0.99	4,766	0.11
12E	5,021	0.12	0	0.00	0.99	5,021	0.12
13E	4,579	0.11	0	0.00	0.99	4,579	0.11
14E	4,579	0.11	0	0.00	0.99	4,579	0.11
15E	4,958	0.11	0	0.00	0.99	4,958	0.11
16E	5,627	0.13	0	0.00	0.99	5,627	0.13
17E	10,251	0.24	0	0.00	0.99	10,251	0.24
23E	11,381	0.26	0	0.00	0.99	11,381	0.26
24E	7,796	0.18	0	0.00	0.99	7,796	0.18
25E	5,034	0.12	0	0.00	0.99	5,034	0.12
26E	5,558	0.13	0	0.00	0.99	5,558	0.13
27E	3,672	0.08	0	0.00	0.99	3,672	0.08
28E	3,587	0.08	0	0.00	0.99	3,587	0.08
29E	5,477	0.13	0	0.00	0.99	5,477	0.13
30E	6,822	0.16	0	0.00	0.99	6,822	0.16
1F	9,088	0.21	0	0.00	0.99	9,088	0.21
2F	4,848	0.11	0	0.00	0.99	4,848	0.11
3F	5,478	0.13	0	0.00	0.99	5,478	0.13
4F	7,734	0.18	0	0.00	0.99	7,734	0.18
5F	7,812	0.18	0	0.00	0.99	7,812	0.18
6F	6,413	0.15	0	0.00	0.99	6,413	0.15
7F	6,413	0.15	0	0.00	0.99	6,413	0.15
8F	9,593	0.22	0	0.00	0.99	9,593	0.22
9F	6,031	0.14	0	0.00	0.99	6,031	0.14
10F	5,291	0.12	0	0.00	0.99	5,291	0.12
11F	5,477	0.13	0	0.00	0.99	5,477	0.13

Roof Leader Drainage Area Calculations							
Project NorthPoint - Phase 3 (Southwest)				By:			
Location: Falls Township, Bucks County, PA				Date: 5/30/2025			
				Chk'd:			
				Revised:			
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
12F	7,951	0.18	0	0.00	0.99	7,951	0.18
13F	7,747	0.18	0	0.00	0.99	7,747	0.18
14F	6,481	0.15	0	0.00	0.99	6,481	0.15

Roof Leader Drainage Area Calculations

Project NorthPoint - Phase 3 (Southwest)

By:

Location: Falls Township, Bucks County, PA

Date: 5/30/2025

Chk'd:

Revised:

C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
15F	6,613	0.15	0	0.00	0.99	6,613	0.15
16F	9,691	0.22	0	0.00	0.99	9,691	0.22
1G	9,650	0.22	0	0.00	0.99	9,650	0.22
2G	6,459	0.15	0	0.00	0.99	6,459	0.15
3G	6,526	0.15	0	0.00	0.99	6,526	0.15
4G	7,746	0.18	0	0.00	0.99	7,746	0.18
5G	7,950	0.18	0	0.00	0.99	7,950	0.18
6G	5,478	0.13	0	0.00	0.99	5,478	0.13
7G	5,291	0.12	0	0.00	0.99	5,291	0.12
8G	6,071	0.14	0	0.00	0.99	6,071	0.14
9G	9,552	0.22	0	0.00	0.99	9,552	0.22
10G	6,396	0.15	0	0.00	0.99	6,396	0.15
11G	6,397	0.15	0	0.00	0.99	6,397	0.15
12G	7,754	0.18	0	0.00	0.99	7,754	0.18
13G	7,771	0.18	0	0.00	0.99	7,771	0.18
14G	5,478	0.13	0	0.00	0.99	5,478	0.13
15G	4,872	0.11	0	0.00	0.99	4,872	0.11
16G	8,855	0.20	0	0.00	0.99	8,855	0.20
1H	8,855	0.20	0	0.00	0.99	8,855	0.20
2H	4,848	0.11	0	0.00	0.99	4,848	0.11
3H	5,478	0.13	0	0.00	0.99	5,478	0.13
4H	7,754	0.18	0	0.00	0.99	7,754	0.18
5H	7,754	0.18	0	0.00	0.99	7,754	0.18
6H	6,397	0.15	0	0.00	0.99	6,397	0.15
7H	6,396	0.15	0	0.00	0.99	6,396	0.15
8H	9,593	0.22	0	0.00	0.99	9,593	0.22

Roof Leader Drainage Area Calculations							
Project	NorthPoint - Phase 3 (Southwest)				By:		
Location:	Falls Township, Bucks County, PA				Date:	5/30/2025	
					Chk'd:		
					Revised:		
C =	Impervious 0.99		Lawn 0.65		Wt'd C	Total Area	
	(sf)	(ac)	(sf)	(ac)		(sf)	(ac)
INL 1540	13,033	0.30	0	0.00	0.99	13,033	0.30
INL 1540A	7,310	0.17	0	0.00	0.99	7,310	0.17
INL 1540B	8,330	0.19	0	0.00	0.99	8,330	0.19
INL 1544	27,086	0.62	0	0.00	0.99	27,086	0.62
INL 1545	33,508	0.77	0	0.00	0.99	33,508	0.77
INL 1546	34,596	0.79	0	0.00	0.99	34,596	0.79
INL 1547	34,735	0.80	0	0.00	0.99	34,735	0.80
INL 1548	34,735	0.80	0	0.00	0.99	34,735	0.80
INL 1550	9,351	0.21	0	0.00	0.99	9,351	0.21
INL 1551	19,348	0.44	0	0.00	0.99	19,348	0.44
INL 1552	25,792	0.59	0	0.00	0.99	25,792	0.59
INL 1553	24,822	0.57	0	0.00	0.99	24,822	0.57
INL 1554	25,036	0.57	0	0.00	0.99	25,036	0.57
INL 1558	16,539	0.38	0	0.00	0.99	16,539	0.38
INL 1558A	7,312	0.17	0	0.00	0.99	7,312	0.17
INL 1559	17,838	0.41	0	0.00	0.99	17,838	0.41
INL 1560	24,772	0.57	0	0.00	0.99	24,772	0.57
INL 1562	27,345	0.63	0	0.00	0.99	27,345	0.63
INL 1563	27,325	0.63	0	0.00	0.99	27,325	0.63
INL 1565	31,166	0.72	0	0.00	0.99	31,166	0.72
INL 1566	30,874	0.71	0	0.00	0.99	30,874	0.71
INL 1568	10,567	0.24	0	0.00	0.99	10,567	0.24
INL 1569	13,498	0.31	0	0.00	0.99	13,498	0.31
INL 1569A	16,334	0.37	0	0.00	0.99	16,334	0.37
INL 1596A	0	0.00	3,440	0.08	0.65	3,440	0.08
INL 1598A	0	0.00	9,768	0.22	0.65	9,768	0.22
INL 1598B	0	0.00	9,794	0.22	0.79	8,053	0.18

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
1	End	62.402	0.33	9.44	0.86	0.28	8.93	5.0	12.4	6.5	58.24	83.80	7.19	42	0.50	10.67	10.98	14.15	13.37	14.60	20.62	1335-1312
2	1	56.067	0.00	6.91	0.00	0.00	6.84	0.0	12.2	6.6	44.82	55.70	8.34	36	0.50	11.28	11.56	13.37	13.74	20.62	22.91	1336-1335
3	2	261.309	0.00	5.70	0.00	0.00	5.64	0.0	11.4	6.7	37.93	55.59	7.23	36	0.50	11.56	12.86	13.74	14.86	22.91	22.05	1338-1336
4	3	82.168	0.00	5.70	0.00	0.00	5.64	0.0	11.2	6.8	38.24	55.68	7.61	36	0.50	12.86	13.27	14.86	15.28	22.05	22.50	1338A-1338
5	4	23.594	0.00	2.50	0.00	0.00	2.48	0.0	10.1	7.0	17.35	119.3	5.10	30	6.06	13.27	14.70	15.28	16.11	22.50	23.60	1337A-1338A
6	5	65.770	0.00	2.33	0.00	0.00	2.31	0.0	9.8	7.1	16.36	34.33	5.85	30	0.50	14.70	15.03	16.11	16.40	23.60	22.96	1337B-1337A
7	6	66.002	0.00	2.23	0.00	0.00	2.21	0.0	9.5	7.2	15.84	34.27	5.84	30	0.50	15.03	15.36	16.40	16.70	22.96	23.68	1337C-1337B
8	7	18.642	0.00	2.15	0.00	0.00	2.13	0.0	9.4	7.2	15.33	35.50	5.77	30	0.54	15.36	15.46	16.70	16.78	23.68	23.69	1337D-1337C
9	8	67.334	0.00	2.00	0.00	0.00	1.98	0.0	9.1	7.3	14.39	18.99	6.42	24	0.50	15.46	15.80	16.78	17.17	23.69	23.16	1337E-1337D
10	9	65.999	0.00	1.87	0.00	0.00	1.85	0.0	8.8	7.3	13.58	18.90	6.04	24	0.50	15.80	16.13	17.17	17.46	23.16	22.73	1337F-1337E
11	10	55.010	0.00	1.76	0.00	0.00	1.74	0.0	8.6	7.4	12.88	19.07	5.92	24	0.51	16.13	16.41	17.46	17.70	22.73	23.28	1337G-1337F
12	11	131.990	0.00	1.58	0.00	0.00	1.56	0.0	8.0	7.6	11.82	18.90	5.67	24	0.50	16.41	17.07	17.70	18.30	23.28	22.81	1337H-1337G
13	12	186.372	0.00	1.31	0.00	0.00	1.30	0.0	7.1	7.8	10.17	18.78	5.25	24	0.49	17.07	17.99	18.30	19.13	22.81	23.12	1337I-1337H
14	13	11.698	0.00	0.21	0.00	0.00	0.21	0.0	5.2	8.5	1.77	2.67	6.74	8	3.50	20.00	20.41	20.40	21.02	23.12	23.44	1337J-1337I
15	14	36.718	0.00	0.21	0.00	0.00	0.21	0.0	5.1	8.6	1.78	2.47	5.33	8	3.00	20.41	21.51	21.02	22.12	23.44	24.04	1337K-1337J
16	15	23.998	0.00	0.21	0.00	0.00	0.21	0.0	5.0	8.6	1.78	2.47	5.34	8	3.00	21.51	22.23	22.12	22.84	24.04	24.06	1337L-1337K
17	16	2.747	0.21	0.21	0.99	0.2	0.21	5.0	5.0	8.6	1.79	2.98	5.34	8	4.37	22.23	22.35	22.84	22.96	24.06	24.10	RL 9D
18	1	234.433	0.44	2.20	0.87	0.38	1.81	5.0	8.4	7.5	13.48	18.88	6.33	24	0.50	15.05	16.22	16.30	17.54	20.62	21.52	1335A-1335
19	18	65.278	0.44	1.76	0.87	0.38	1.42	5.0	8.1	7.5	10.74	20.12	5.24	24	0.57	16.22	16.59	17.54	17.76	21.52	21.52	1335B-1335A
20	19	49.141	0.00	1.32	0.00	0.00	1.04	0.0	7.8	7.6	7.94	19.07	4.59	24	0.51	16.59	16.84	17.76	17.84	21.52	22.11	1335E-1335B
21	20	100.004	0.00	0.04	0.00	0.00	0.04	0.0	6.1	8.2	0.32	1.92	3.31	8	1.81	19.88	21.69	20.07	21.95	22.11	24.21	1335F-1335E
22	21	23.271	0.00	0.02	0.00	0.00	0.02	0.0	5.3	8.5	0.17	1.02	2.12	8	0.52	21.89	22.01	22.07	22.20	24.21	24.42	1335G-1335F

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Project File: Greenfield Storm North_1.stm

Number of lines: 242

Run Date: 5/11/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	To Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
				Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	22		7.400	0.02	0.02	0.99	0.02	0.02	5.0	5.0	8.6	0.17	2.16	2.89	8	2.30	22.21	22.38	22.34	22.57	24.42	24.60	RL 1K
24	2		132.515	0.00	1.21	0.00	0.00	1.20	0.0	9.1	7.3	8.71	20.77	5.76	24	0.60	15.52	16.32	16.42	17.37	22.91	23.38	1336A-1336
25	24		94.433	0.00	0.95	0.00	0.00	0.94	0.0	8.4	7.5	7.01	19.06	5.17	24	0.51	16.52	17.00	17.37	17.94	23.38	23.39	1336C-1336A
26	25		74.136	0.00	0.75	0.00	0.00	0.74	0.0	7.8	7.6	5.67	19.39	4.94	24	0.53	17.20	17.59	17.94	18.43	23.39	23.42	1336D-1336C
27	26		47.679	0.00	0.66	0.00	0.00	0.65	0.0	7.5	7.7	5.05	8.80	4.97	18	0.50	17.79	18.03	18.60	18.89	23.42	23.40	1336E-1336D
28	27		57.419	0.00	0.53	0.00	0.00	0.52	0.0	7.1	7.8	4.12	8.82	4.68	18	0.51	18.23	18.52	18.95	19.30	23.40	23.43	1336F-1336E
29	28		80.090	0.00	0.42	0.00	0.00	0.42	0.0	6.6	8.0	3.33	5.39	4.53	15	0.50	18.77	19.17	19.48	19.90	23.43	23.42	1336G-1336F
30	29		44.828	0.00	0.29	0.00	0.00	0.29	0.0	6.2	8.1	2.33	7.30	3.13	15	0.91	18.96	19.37	19.90	19.98	23.42	23.44	1336H-1336G
31	30		28.457	0.00	0.13	0.00	0.00	0.13	0.0	5.1	8.5	1.10	3.61	6.51	8	6.40	20.00	21.82	20.25	22.32	23.44	23.88	CO1336H - DB
32	31		10.731	0.00	0.13	0.00	0.00	0.13	0.0	5.0	8.6	1.10	2.46	3.95	8	2.98	21.82	22.14	22.32	22.64	23.88	23.99	1336I - 1336H
33	32		7.089	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.46	3.95	8	2.96	22.14	22.35	22.64	22.85	23.99	24.10	RL 22D
34	26		34.855	0.00	0.09	0.00	0.00	0.09	0.0	5.1	8.6	0.76	3.42	5.62	8	5.74	20.00	22.00	20.21	22.41	23.42	23.98	CO1336D - DB
35	34		10.300	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	2.63	3.37	8	3.40	22.00	22.35	22.41	22.76	23.98	24.10	RL 18D
36	25		35.661	0.00	0.10	0.00	0.00	0.10	0.0	5.1	8.6	0.85	3.38	5.78	8	5.61	20.00	22.00	20.23	22.44	23.39	23.97	CO1336B - DB
37	36		10.545	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	2.60	3.52	8	3.32	22.00	22.35	22.44	22.79	23.97	24.10	RL 16D
38	25		33.472	0.00	0.10	0.00	0.00	0.10	0.0	5.1	8.6	0.85	3.49	5.87	8	5.98	20.00	22.00	20.22	22.44	23.39	23.94	1336C-MH
39	38		10.201	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	2.64	3.52	8	3.43	22.00	22.35	22.44	22.79	23.94	24.10	RL 17D
40	27		29.676	0.00	0.13	0.00	0.00	0.13	0.0	5.1	8.6	1.10	3.71	6.59	8	6.74	20.00	22.00	20.25	22.50	23.40	23.88	1336E-DB
41	40		17.258	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.03	3.95	8	2.03	22.00	22.35	22.50	22.85	23.88	24.10	RL 19D
42	21		7.445	0.02	0.02	0.99	0.02	0.02	5.0	5.0	8.6	0.17	3.27	3.51	8	5.24	21.99	22.38	22.09	22.57	24.21	24.60	RL 2K
43	30		42.796	0.00	0.16	0.00	0.00	0.16	0.0	5.6	8.4	1.32	5.47	2.76	15	0.51	19.37	19.59	19.98	20.04	23.44	23.37	1336I-1336H
44	43		12.854	0.00	0.16	0.00	0.00	0.16	0.0	5.5	8.4	1.33	4.38	7.68	8	9.41	20.12	21.33	20.37	21.87	23.37	23.63	1336J - 1336I

Run Date: 5/11/2025

Number of lines: 242

Project File: Greenfield Storm North_1.stm

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
45	44	22.404	0.00	0.04	0.00	0.00	0.04	0.0	5.1	8.5	0.34	2.45	1.83	8	2.95	21.33	21.99	21.87	22.26	23.63	23.77	1336K - 1336J
46	45	8.512	0.04	0.04	0.99	0.04	0.04	5.0	5.0	8.6	0.34	2.49	2.57	8	3.05	21.99	22.25	22.26	22.52	23.77	24.10	RL 24D
47	28	33.088	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	3.46	6.03	8	5.89	20.00	21.95	20.24	22.41	23.43	23.96	CO1336F - DB
48	47	13.024	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.50	3.66	8	3.07	21.95	22.35	22.41	22.81	23.96	24.10	RL 20D
49	29	31.087	0.00	0.13	0.00	0.00	0.13	0.0	5.1	8.6	1.10	3.54	6.44	8	6.14	20.00	21.91	20.26	22.41	23.42	23.92	1336G-DB
50	49	14.501	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.49	3.95	8	3.03	21.91	22.35	22.41	22.85	23.92	24.10	RL 21D
51	24	15.564	0.00	0.26	0.00	0.00	0.26	0.0	5.1	8.6	2.20	4.43	9.54	8	9.64	20.00	21.50	20.33	22.14	23.38	23.64	CO1336A - DB
52	51	31.088	0.26	0.26	0.99	0.26	0.26	5.0	5.0	8.6	2.21	2.36	6.43	8	2.73	21.50	22.35	22.14	22.99	23.64	24.10	RL 15D
53	44	8.529	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	4.00	3.58	8	7.86	21.33	22.00	21.87	22.48	23.63	24.10	RL 23D
54	13	59.964	0.00	1.10	0.00	0.00	1.09	0.0	6.7	8.0	8.67	18.91	4.94	24	0.50	17.99	18.29	19.13	19.34	23.12	22.71	1337M-1337I
55	54	65.998	0.00	0.97	0.00	0.00	0.96	0.0	6.3	8.1	7.79	18.90	4.84	24	0.50	18.29	18.62	19.34	19.61	22.71	23.37	1337N-1337M
56	55	66.047	0.00	0.78	0.00	0.00	0.77	0.0	5.7	8.3	6.41	18.89	4.41	24	0.50	18.62	18.95	19.61	19.85	23.37	23.37	1337O-1337N
57	56	54.954	0.00	0.69	0.00	0.00	0.68	0.0	5.5	8.4	5.74	8.70	5.12	18	0.49	18.95	19.22	19.85	20.14	23.37	22.82	1337P-1337O
58	57	65.998	0.00	0.57	0.00	0.00	0.56	0.0	5.1	8.6	4.83	8.78	4.47	18	0.50	19.22	19.55	20.14	20.39	22.82	23.07	1337Q-1337P
59	58	31.769	0.57	0.57	0.99	0.56	0.56	5.0	5.0	8.6	4.85	6.78	11.21	10	6.86	20.00	22.18	20.52	23.00	23.07	24.10	RL 14D
60	11	31.762	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	3.88	7.61	8	7.40	20.00	22.35	20.29	22.93	23.28	24.10	RL 7D
61	55	31.747	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	3.88	7.78	8	7.40	20.00	22.35	20.30	22.94	23.37	24.10	RL 11D
62	12	31.768	0.27	0.27	0.99	0.27	0.27	5.0	5.0	8.6	2.30	3.88	9.12	8	7.40	20.00	22.35	20.37	22.99	22.81	24.10	RL 8D
63	10	31.770	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	3.88	6.40	8	7.40	20.00	22.35	20.22	22.81	22.73	24.10	RL 6D
64	8	31.747	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	3.88	7.11	8	7.40	20.00	22.35	20.26	22.88	23.69	24.10	RL 4D
65	57	32.522	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	3.84	6.55	8	7.23	20.00	22.35	20.23	22.83	22.82	24.10	RL 13D
66	5	31.821	0.17	0.17	0.99	0.17	0.17	5.0	5.0	8.6	1.45	3.88	7.44	8	7.39	20.00	22.35	20.28	22.91	23.60	24.10	RL 1D

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Project File: Greenfield Storm North_1.stm Number of lines: 242 Run Date: 5/11/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
67	6	31,783	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	3.88	6.21	8	7.39	20.00	22.35	20.21	22.79	22.96	24.10	RL 2D
68	7	31,756	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	3.88	5.79	8	7.40	20.00	22.35	20.19	22.74	23.68	24.10	RL 3D
69	9	31,764	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	3.88	6.76	8	7.40	20.00	22.35	20.24	22.85	23.16	24.10	RL 5D
70	54	31,769	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	3.88	6.76	8	7.40	20.00	22.35	20.24	22.85	22.71	24.10	RL 10D
71	56	32,517	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	3.84	5.97	8	7.23	20.00	22.35	20.20	22.76	23.37	24.10	RL 12D
72	4	51,554	0.48	3.20	0.99	0.48	3.17	5.0	10.9	6.8	21.67	55.97	5.23	36	0.50	13.27	13.53	15.28	15.03	22.50	22.12	1338B-1338A
73	72	212,713	0.55	2.72	0.99	0.54	2.69	5.0	10.0	7.1	18.99	34.21	6.25	30	0.50	13.53	14.59	15.03	16.07	22.12	21.84	1338C-1338B
74	73	215,010	0.57	2.17	0.99	0.56	2.15	5.0	8.9	7.3	15.75	34.19	5.55	30	0.50	14.59	15.66	16.07	17.00	21.84	21.84	1338D-1338C
75	74	217,510	0.57	1.60	0.99	0.56	1.58	5.0	7.9	7.6	12.02	18.92	5.62	24	0.50	15.66	16.75	17.00	17.99	21.84	21.84	1338E-1338D
76	75	215,010	0.55	1.03	0.99	0.54	1.02	5.0	6.6	8.0	8.17	18.86	5.01	24	0.50	16.95	18.02	17.99	19.04	21.84	21.84	1338F-1338E
77	76	217,510	0.48	0.48	0.99	0.48	0.48	5.0	5.0	8.6	4.08	8.79	3.82	18	0.50	18.02	19.11	19.04	19.88	21.84	22.11	1338G-1338F
78	20	80,982	0.47	1.28	0.87	0.47	1.00	5.0	5.6	8.4	8.37	19.48	5.55	24	0.53	17.04	17.47	17.96	18.50	22.11	21.63	1335C-1335E
79	78	99,621	0.81	0.81	0.73	0.59	0.59	5.0	5.0	8.6	5.08	8.79	4.98	18	0.50	17.97	18.47	18.79	19.34	21.63	21.47	1335D-1335C
80	End	75,381	0.17	5.71	0.99	0.17	5.34	5.0	16.9	5.8	30.73	161.1	5.66	36	4.18	10.00	13.15	13.78	14.95	13.62	21.09	1254-1238
81	80	113,117	0.14	3.86	0.96	0.13	3.59	5.0	16.3	5.8	20.98	55.95	6.64	36	0.50	13.65	14.22	14.95	15.69	21.09	21.38	1257-1254
82	81	62,581	0.10	3.72	0.93	0.09	3.45	5.0	16.1	5.9	20.31	34.11	6.61	30	0.50	14.22	14.53	15.69	16.06	21.38	21.54	1268-1257
83	82	60,862	0.14	3.62	0.94	0.13	3.36	5.0	15.9	5.9	19.86	34.03	6.36	30	0.49	14.53	14.83	16.06	16.34	21.54	21.00	1259-1258
84	83	55,023	0.00	2.91	0.00	0.00	2.70	0.0	15.6	5.9	16.06	34.58	5.55	30	0.51	14.83	15.11	16.34	16.46	21.00	21.22	1259-1-1259
85	84	22,477	0.12	2.70	0.95	0.17	2.49	5.0	15.5	6.0	14.86	33.91	5.63	30	0.49	15.11	15.22	16.46	16.52	21.22	21.00	1260-1259.1
86	85	59,197	0.00	2.58	0.00	0.00	2.38	0.0	15.4	6.0	14.25	19.65	6.43	24	0.54	15.22	15.54	16.52	16.90	21.00	22.05	1260A-1260
87	86	63,053	0.68	2.32	0.87	0.59	2.12	5.0	15.2	6.0	12.77	18.74	5.81	24	0.49	15.54	15.85	16.90	17.13	22.05	20.32	1261-1260A
88	87	79,409	0.28	1.46	0.90	0.25	1.37	5.0	14.8	6.1	8.33	18.97	4.52	24	0.50	15.85	16.25	17.13	17.28	20.32	21.73	1262-1261

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Project File: Greenfield Storm North_1.stm

Number of lines: 242

Run Date: 5/11/2025

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Storm Sewer Tabulation

Station	Line	To Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
				Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
89	88		36.334	0.00	1.18	0.00	0.00	1.12	0.0	14.6	6.1	6.82	8.74	5.34	18	0.50	16.25	16.43	17.28	17.44	21.73	22.50	1262D-1262
90	89		96.506	0.18	1.00	0.89	0.16	0.94	5.0	14.2	6.2	5.80	8.75	4.81	18	0.50	16.43	16.91	17.44	17.84	22.50	22.71	1262A-1262D
91	90		42.239	0.00	0.34	0.00	0.00	0.34	0.0	14.0	6.2	2.09	2.97	4.09	12	0.50	20.01	20.22	20.63	20.84	22.71	23.75	1262E - 1262A
92	91		66.611	0.00	0.19	0.00	0.00	0.19	0.0	13.5	6.3	1.19	3.01	2.50	12	0.51	20.22	20.56	21.10	21.02	23.75	23.76	1262G - 1262E
93	92		27.254	0.00	0.14	0.00	0.00	0.14	0.0	13.1	6.4	0.88	3.12	2.79	12	0.55	20.56	20.71	21.02	21.10	23.76	24.06	1262H - 1262G
94	93		22.090	0.00	0.14	0.00	0.00	0.14	0.0	12.9	6.4	0.89	2.97	3.09	12	0.50	20.71	20.82	21.10	21.21	24.06	23.88	1262I - 1262H
95	94		70.624	0.00	0.13	0.00	0.00	0.13	0.0	12.0	6.6	0.85	2.96	2.99	12	0.50	20.82	21.17	21.21	21.56	23.88	23.86	1262J - 1262I
96	95		21.479	0.00	0.07	0.00	0.00	0.07	0.0	11.5	6.7	0.46	3.01	2.11	12	0.51	21.17	21.28	21.56	21.56	23.86	23.89	1262K - 1262J
97	96		70.271	0.00	0.03	0.00	0.00	0.03	0.0	7.9	7.6	0.23	2.97	1.67	12	0.50	21.28	21.63	21.56	21.82	23.89	23.97	1262L - 1262K
98	97		19.939	0.02	0.02	0.99	0.02	0.02	5.0	5.0	8.6	0.17	2.52	3.10	8	3.11	22.19	22.81	22.31	23.00	23.97	24.60	RL 6L
99	91		38.148	0.00	0.15	0.00	0.00	0.15	0.0	5.1	8.5	1.27	1.01	3.64	8	0.50	21.53	21.72	22.20	22.50	23.75	24.32	1262F - 1262E
100	99		21.778	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.47	3.96	8	2.98	22.15	22.80	22.81	23.33	24.32	24.60	RL 1L
101	97		21.311	0.00	0.01	0.00	0.00	0.01	0.0	6.4	8.1	0.08	1.03	1.32	8	0.52	21.63	21.74	21.82	21.87	23.97	23.95	1262M - 1262L
102	101		20.897	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	2.50	2.52	8	3.06	22.14	22.78	22.22	22.91	23.95	24.60	RL 7L
103	96		19.988	0.04	0.04	0.99	0.04	0.04	5.0	5.0	8.6	0.34	3.38	4.38	8	5.60	21.68	22.80	21.82	23.07	23.89	24.60	RL 5L
104	95		19.757	0.06	0.06	0.99	0.06	0.06	5.0	5.0	8.6	0.51	3.44	4.99	8	5.82	21.65	22.80	21.82	23.13	23.86	24.60	RL 4L
105	94		19.616	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	4.01	3.18	8	7.90	21.25	22.80	21.32	22.93	23.88	24.60	RL 3L
106	92		21.735	0.05	0.05	0.99	0.05	0.05	5.0	5.0	8.6	0.43	3.92	5.04	8	7.55	21.16	22.80	21.31	23.10	23.76	24.60	RL 2L
107	89		80.785	0.00	0.18	0.00	0.00	0.18	0.0	5.6	8.4	1.49	8.73	3.47	18	0.50	17.11	17.51	17.53	17.97	22.50	21.00	1262O - 1262D
108	107		27.072	0.00	0.09	0.00	0.00	0.09	0.0	5.2	8.5	0.76	3.03	3.07	12	0.52	18.36	18.50	18.70	18.86	21.00	24.10	1262P-1262O
109	108		19.806	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	3.53	5.72	8	6.11	21.09	22.30	21.30	22.71	24.10	24.60	RL 14L
110	80		113.822	0.19	1.47	0.97	0.18	1.38	0.0	16.3	5.8	8.06	18.92	5.42	24	0.50	14.90	15.47	15.81	16.48	21.09	21.09	1255-1254

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Project File: Greenfield Storm North_1.stm

Number of lines: 242

Run Date: 5/11/2025

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Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
111	110	116.071	0.14	0.86	0.96	0.13	0.79	5.0	15.8	5.9	4.66	8.77	4.85	18	0.50	15.97	16.55	16.75	17.38	21.09	21.38	1255-1255
112	111	65.774	0.11	0.72	0.95	0.10	0.65	5.0	15.5	6.0	3.89	5.41	4.75	15	0.50	16.80	17.13	17.58	17.93	21.38	21.54	1256A-1256
113	112	76.864	0.19	0.61	0.90	0.17	0.55	5.0	15.2	6.0	3.29	5.37	4.51	15	0.49	17.33	17.71	18.04	18.44	21.54	21.24	1256B-1256A
114	113	45.936	0.00	0.08	0.00	0.00	0.08	0.0	13.8	6.3	0.50	13.93	3.34	15	3.33	18.25	19.78	18.44	20.05	21.24	22.75	1256E-1256B
115	114	30.000	0.00	0.05	0.00	0.00	0.05	0.0	12.8	6.4	0.32	2.98	2.06	12	0.50	19.78	19.93	20.05	20.16	22.75	22.75	1256G-1256E
116	115	30.000	0.00	0.03	0.00	0.00	0.03	0.0	11.3	6.8	0.20	2.98	1.74	12	0.50	19.93	20.08	20.16	20.26	22.75	22.75	1256H-1256G
117	116	34.199	0.00	0.01	0.00	0.00	0.01	0.0	6.0	8.2	0.08	2.97	1.21	12	0.50	20.08	20.25	20.26	20.37	22.75	22.78	1256I-1256H
118	117	14.347	0.01	0.01	0.99	0.0	0.01	5.0	5.0	8.6	0.09	1.81	2.19	8	1.60	21.00	21.23	21.10	21.36	22.78	23.00	RL 8M
119	114	34.214	0.00	0.01	0.00	0.00	0.01	0.0	6.0	8.2	0.08	2.97	1.62	12	0.50	20.08	20.25	20.19	20.37	22.75	22.81	1256F-1256E
120	119	13.882	0.01	0.01	0.99	0.0	0.01	5.0	5.0	8.6	0.09	1.84	2.20	8	1.66	21.00	21.23	21.10	21.36	22.81	23.00	RL 5M
121	86	72.684	0.00	0.26	0.00	0.00	0.26	0.0	10.2	7.0	1.80	2.96	3.92	12	0.50	18.56	18.92	19.12	19.49	22.05	22.71	1260B-1260A
122	121	81.901	0.00	0.21	0.00	0.00	0.21	0.0	9.6	7.1	1.49	2.98	3.42	12	0.50	18.92	19.33	19.49	19.85	22.71	22.71	1260C-1260B
123	122	18.192	0.00	0.14	0.00	0.00	0.14	0.0	9.4	7.2	1.00	2.96	2.82	12	0.49	19.33	19.42	19.85	19.84	22.71	22.70	1260D-1260C
124	123	65.875	0.00	0.09	0.00	0.00	0.09	0.0	8.2	7.5	0.67	2.98	2.49	12	0.50	19.42	19.75	19.84	20.09	22.70	22.77	1260E-1260D
125	124	27.000	0.00	0.01	0.00	0.00	0.01	0.0	6.4	8.1	0.08	1.03	1.72	8	0.52	20.90	21.04	21.03	21.17	22.77	22.66	1260F-1260E
126	125	19.970	0.01	0.01	0.99	0.0	0.01	5.0	5.0	8.6	0.09	1.78	1.22	8	1.55	20.92	21.23	21.17	21.36	22.66	23.00	RL 9M
127	110	63.268	0.22	0.42	0.96	0.2	0.41	5.0	8.6	7.4	3.03	5.43	4.42	15	0.51	17.92	18.24	18.59	18.94	21.09	21.24	1255A-1255
128	127	31.567	0.00	0.20	0.00	0.00	0.20	0.0	8.2	7.5	1.49	13.58	2.76	15	3.17	18.24	19.24	18.94	19.72	21.24	22.24	1255_1-1255A
129	128	36.000	0.00	0.13	0.00	0.00	0.13	0.0	6.0	8.2	1.05	2.98	3.36	12	0.50	19.70	19.88	20.11	20.31	22.24	22.25	1255C-1255B
130	129	43.500	0.00	0.09	0.00	0.00	0.09	0.0	5.1	8.5	0.76	1.02	3.19	8	0.51	19.88	20.10	20.31	20.53	22.25	22.83	1255D-1255C
131	130	14.582	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	2.77	5.07	8	3.77	20.68	21.23	20.92	21.64	22.83	23.00	RL 1M
132	124	19.965	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	1.46	3.67	8	1.05	20.58	20.79	20.90	21.18	22.77	23.00	RL 10M

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Project File: Greenfield Storm North_1.stm

Number of lines: 242

Run Date: 5/11/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
133	121	19.934	0.05	0.05	0.99	0.05	0.05	5.0	5.0	8.6	0.43	2.62	4.13	8	3.36	20.56	21.23	20.74	21.53	22.71	23.00	RL 13M
134	122	19.950	0.07	0.07	0.99	0.07	0.07	5.0	5.0	8.6	0.60	1.53	3.59	8	1.15	20.56	20.79	20.85	21.15	22.71	23.00	RL 12M
135	123	19.953	0.05	0.05	0.99	0.05	0.05	5.0	5.0	8.6	0.43	1.57	3.28	8	1.20	20.55	20.79	20.79	21.09	22.70	23.00	RL 11M
136	114	16.140	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	2.95	2.73	8	4.28	20.54	21.23	20.62	21.36	22.75	23.00	RL5M-A
137	114	16.163	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	2.95	2.73	8	4.27	20.54	21.23	20.62	21.36	22.75	23.00	RL 5M-B
138	115	16.198	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	2.95	2.73	8	4.26	20.54	21.23	20.62	21.36	22.75	23.00	RL6M-A
139	115	16.197	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	2.95	2.73	8	4.26	20.54	21.23	20.62	21.36	22.75	23.00	RL 6M-B
140	116	16.255	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	2.94	2.72	8	4.24	20.54	21.23	20.62	21.36	22.75	23.00	RL 7M-B
141	129	15.332	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	3.26	2.87	8	5.22	20.43	21.23	20.50	21.36	22.25	23.00	RL 2M-A
142	129	15.349	0.03	0.03	0.99	0.03	0.03	5.0	5.0	8.6	0.26	3.26	3.95	8	5.21	20.43	21.23	20.56	21.46	22.25	23.00	RL 2M-B
143	84	28.631	0.00	0.21	0.00	0.00	0.21	0.0	7.4	7.7	1.61	2.26	5.99	8	2.51	19.01	19.73	19.43	20.32	21.22	22.15	1259A-1259B
144	143	51.000	0.00	0.02	0.00	0.00	0.02	0.0	5.6	8.3	0.17	1.04	1.29	8	0.53	19.73	20.00	20.32	20.19	22.15	22.23	1259D-1259B
145	144	18.994	0.02	0.02	0.99	0.02	0.02	5.0	5.0	8.6	0.17	3.02	3.38	8	4.48	20.38	21.23	20.49	21.42	22.23	23.00	RL 14M
146	143	19.092	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	3.03	5.30	8	4.50	20.37	21.23	20.60	21.64	22.15	23.00	RL 15M
147	143	33.000	0.00	0.10	0.00	0.00	0.10	0.0	5.1	8.5	0.84	0.99	2.79	8	0.48	19.74	19.90	20.32	20.41	22.15	22.15	1259 C-1259B
148	147	19.156	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	3.02	5.47	8	4.49	20.37	21.23	20.61	21.67	22.15	23.00	RL 16M
149	116	16.277	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	3.50	2.97	8	6.02	20.25	21.23	20.32	21.36	22.75	23.00	RL 7M-A
150	128	31.500	0.00	0.01	0.00	0.00	0.01	0.0	6.0	8.2	0.08	1.02	1.73	8	0.51	19.68	19.84	19.81	19.97	22.24	22.30	1255E-1255B
151	150	14.797	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	2.23	2.39	8	2.43	20.04	20.40	20.13	20.53	22.30	23.00	RL 4M
152	128	15.416	0.03	0.03	0.99	0.03	0.03	5.0	5.0	8.6	0.26	4.78	2.42	8	11.22	19.50	21.23	19.72	21.46	22.24	23.00	RL-3M-B
153	128	15.399	0.03	0.03	0.99	0.03	0.03	5.0	5.0	8.6	0.26	4.78	2.42	8	11.23	19.50	21.23	19.72	21.46	22.24	23.00	RL 3M-A
154	113	72.784	0.16	0.34	0.91	0.15	0.30	5.0	6.2	8.2	2.42	5.44	4.14	15	0.51	17.91	18.28	18.49	18.90	21.24	21.29	1256C-1256B

Project File: Greenfield Storm North_1.stm

Number of lines: 242

Run Date: 5/11/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
155	154	74.206	0.18	0.18	0.84	0.15	0.15	5.0	5.0	8.6	1.30	5.39	3.42	15	0.50	18.48	18.85	18.90	19.30	21.29	21.60	1256D-1256C
156	80	64.261	0.21	0.21	0.96	0.20	0.20	5.0	5.0	8.6	1.73	5.39	3.74	15	0.50	17.88	18.20	18.37	18.72	21.09	21.24	1254A-1254
157	107	16.333	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	5.67	3.01	15	0.55	17.76	17.85	18.07	18.19	21.00	20.67	TD 2- MH1262O
158	90	79.000	0.16	0.48	0.98	0.16	0.44	5.0	5.4	8.4	3.72	5.36	4.24	15	0.49	16.92	17.31	17.84	18.09	22.71	22.71	1262B-1262A
159	158	49.319	0.32	0.32	0.89	0.28	0.28	5.0	5.0	8.6	2.45	5.43	3.51	15	0.51	17.31	17.56	18.09	18.19	22.71	20.56	1262C-1262B
160	87	143.868	0.18	0.18	0.89	0.16	0.16	5.0	5.0	8.6	1.38	7.79	4.05	15	1.04	17.30	18.80	17.66	19.26	20.32	21.83	1261A-1261
161	83	73.382	0.22	0.57	0.92	0.20	0.53	5.0	7.0	7.9	4.17	5.42	4.86	15	0.50	15.63	16.00	16.45	16.83	21.00	20.38	1259A-1259
162	161	73.050	0.15	0.35	0.95	0.14	0.33	5.0	6.4	8.1	2.63	5.43	4.24	15	0.51	16.30	16.67	16.91	17.32	20.38	20.39	1259B-1259A
163	162	111.501	0.20	0.20	0.92	0.18	0.18	5.0	5.0	8.6	1.58	5.41	3.64	15	0.50	16.87	17.43	17.33	17.93	20.39	20.43	1259C-1259B
164	End	74.277	0.18	8.72	0.99	0.18	8.53	5.0	17.4	5.7	48.50	86.16	5.04	42	0.53	9.00	9.39	13.78	13.90	13.13	21.62	1241-1230
165	164	82.157	0.18	8.54	0.95	0.17	8.35	5.0	17.1	5.7	47.80	83.99	4.97	42	0.50	9.39	9.80	14.44	14.57	21.62	21.48	1242-1241
166	165	36.977	0.17	8.36	0.95	0.16	8.18	5.0	17.0	5.7	46.97	87.44	4.88	42	0.54	9.80	10.00	14.76	14.82	21.48	21.09	1243-1242
167	166	37.773	0.31	8.19	0.95	0.29	8.01	5.0	16.9	5.8	46.19	90.74	4.80	42	0.58	10.00	10.22	15.01	15.06	21.09	21.07	1244-1243
168	167	137.051	0.00	7.88	0.00	0.00	7.72	0.0	16.4	5.8	45.04	87.37	4.68	42	0.54	10.22	10.96	15.24	15.44	21.07	21.01	1245-1244
169	168	48.443	0.00	7.88	0.00	0.00	7.72	0.0	16.2	5.9	45.23	83.69	4.70	42	0.50	10.96	11.20	15.95	16.02	21.01	21.80	1248-1245
170	169	80.253	0.00	4.98	0.00	0.00	4.88	0.0	15.9	5.9	28.85	55.65	4.08	36	0.50	11.20	11.60	16.53	16.64	21.80	23.77	1247A-1248
171	170	158.306	0.14	3.85	0.99	0.14	3.81	5.0	15.1	6.0	22.99	56.38	3.25	36	0.51	11.60	12.41	17.09	17.22	23.77	21.64	1247D-1247A
172	171	47.474	0.00	3.71	0.00	0.00	3.67	0.0	14.9	6.1	22.30	57.20	3.15	36	0.53	12.41	12.66	17.31	17.34	21.64	22.99	1252-1247D
173	172	74.924	0.00	1.27	0.00	0.00	1.26	0.0	7.7	7.7	9.62	19.04	5.73	24	0.51	17.15	17.53	18.16	18.64	22.99	23.46	1252A-1252
174	173	61.171	0.00	1.13	0.00	0.00	1.12	0.0	7.3	7.8	8.69	19.03	5.03	24	0.51	17.53	17.84	18.64	18.89	23.46	23.42	1252B-1252A
175	174	75.587	0.00	0.99	0.00	0.00	0.98	0.0	7.1	7.9	7.70	8.80	5.61	18	0.50	17.84	18.22	18.93	19.31	23.42	23.44	1252C-1252B
176	175	7.198	0.00	0.91	0.00	0.00	0.90	0.0	7.0	7.9	7.09	9.25	4.01	18	0.56	18.22	18.26	20.04	20.07	23.44	23.43	1252D-1252C

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Project File: Greenfield Storm North_1.stm

Number of lines: 242

Run Date: 5/11/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
177	176	73.570	0.00	0.83	0.00	0.00	0.82	0.0	6.7	8.0	6.55	8.80	3.71	18	0.50	18.26	18.63	20.44	20.64	23.43	23.45	1252E-1252D
178	177	55.227	0.00	0.67	0.00	0.00	0.66	0.0	6.5	8.0	5.33	5.34	4.35	15	0.49	18.88	19.15	20.96	21.23	23.45	23.42	1252F-1252E
179	178	29.938	0.00	0.07	0.00	0.00	0.07	0.0	5.1	8.5	0.59	2.65	2.38	8	3.44	20.97	22.00	21.79	22.36	23.42	23.93	1252F-DB
180	179	12.611	0.07	0.07	0.99	0.07	0.07	5.0	5.0	8.6	0.60	2.38	3.08	8	2.78	22.00	22.35	22.36	22.71	23.93	24.10	RL 6C
181	174	34.427	0.00	0.14	0.00	0.00	0.14	0.0	5.0	8.6	1.19	2.46	5.54	8	2.96	20.98	22.00	21.31	22.52	23.42	23.99	1252B-DB
182	181	9.770	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.70	4.10	8	3.58	22.00	22.35	22.52	22.87	23.99	24.10	RL 2C
183	172	236.083	0.00	2.44	0.00	0.00	2.42	0.0	13.7	6.3	15.17	34.27	3.09	30	0.50	12.66	13.84	17.57	17.81	22.99	22.60	1253-1252
184	183	80.697	0.00	2.44	0.00	0.00	2.42	0.0	13.2	6.4	15.36	34.97	3.13	30	0.52	13.84	14.26	18.03	18.11	22.60	23.34	1253A-1253
185	184	216.792	0.00	2.44	0.00	0.00	2.42	0.0	12.2	6.6	15.85	34.37	3.23	30	0.50	14.39	15.48	18.13	18.36	23.34	23.16	1253B-1253A
186	185	66.048	0.00	1.88	0.00	0.00	1.86	0.0	11.9	6.6	12.32	18.89	3.92	24	0.50	15.48	15.81	18.61	18.75	23.16	22.73	1253C-1253B
187	186	54.952	0.00	1.75	0.00	0.00	1.73	0.0	11.7	6.7	11.55	18.74	3.68	24	0.49	15.81	16.08	19.11	19.21	22.73	23.28	1253D-1253C
188	187	66.000	0.00	1.64	0.00	0.00	1.62	0.0	11.4	6.7	10.92	18.90	3.48	24	0.50	16.08	16.41	19.52	19.63	23.28	23.46	1253E-1253D
189	188	66.000	0.00	1.52	0.00	0.00	1.50	0.0	11.1	6.8	10.23	18.90	3.26	24	0.50	16.41	16.74	19.92	20.01	23.46	22.80	1253F-1253E
190	189	66.217	0.00	1.38	0.00	0.00	1.37	0.0	10.7	6.9	9.39	18.87	2.99	24	0.50	16.74	17.07	20.26	20.34	22.80	23.08	1253G-1253F
191	190	10.952	0.00	0.25	0.00	0.00	0.25	0.0	5.2	8.5	2.11	2.55	6.50	8	3.20	20.00	20.35	20.55	20.98	23.08	23.40	1253H-1253G
192	191	34.803	0.00	0.25	0.00	0.00	0.25	0.0	5.1	8.6	2.12	2.47	6.19	8	2.99	20.35	21.39	20.98	22.02	23.40	24.02	1263I-1253H
193	192	20.239	0.00	0.25	0.00	0.00	0.25	0.0	5.0	8.6	2.12	2.48	6.20	8	3.01	21.39	22.00	22.02	22.63	24.02	24.03	1253J - 1253I
194	193	3.831	0.25	0.25	0.99	0.25	0.25	5.0	5.0	8.6	2.13	4.31	6.20	8	9.14	22.00	22.35	22.63	22.98	24.03	24.10	RL24C
195	173	28.297	0.00	0.14	0.00	0.00	0.14	0.0	5.1	8.6	1.19	2.75	5.84	8	3.71	20.95	22.00	21.26	22.52	23.46	23.91	1252A - DB
196	195	13.486	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.30	4.10	8	2.60	22.00	22.35	22.52	22.87	23.91	24.10	RL 1C
197	175	32.051	0.00	0.08	0.00	0.00	0.08	0.0	5.1	8.6	0.68	2.55	4.69	8	3.18	20.98	22.00	21.21	22.39	23.44	23.96	1252C - DB
198	197	10.757	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	2.57	3.23	8	3.25	22.00	22.35	22.39	22.74	23.96	24.10	RL 3C

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Project File: Greenfield Storm North_1.stm

Number of lines: 242

Run Date: 5/11/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
199	176	32.577	0.00	0.08	0.00	0.00	0.08	0.0	5.1	8.6	0.68	2.53	4.67	8	3.13	20.98	22.00	21.22	22.39	23.43	23.97	CO1252D - DB
200	199	10.332	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	2.63	3.23	8	3.39	22.00	22.35	22.39	22.74	23.97	24.10	RL 4C
201	178	50.901	0.00	0.60	0.00	0.00	0.59	0.0	6.3	8.1	4.82	5.35	3.93	15	0.49	19.15	19.40	21.79	21.99	23.42	23.46	1252G-1252F
202	201	32.406	0.00	0.19	0.00	0.00	0.19	0.0	5.0	8.6	1.61	2.53	4.62	8	3.15	20.98	22.00	22.41	22.82	23.46	23.96	CO1252H - DB
203	202	11.308	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	2.51	4.63	8	3.10	22.00	22.35	23.15	23.29	23.96	24.10	RL 7C
204	177	32.895	0.00	0.16	0.00	0.00	0.16	0.0	5.0	8.6	1.36	2.51	5.88	8	3.10	20.98	22.00	21.33	22.55	23.45	23.97	CO1252E - DB
205	204	9.048	0.16	0.16	0.99	0.16	0.16	5.0	5.0	8.6	1.36	2.81	4.42	8	3.87	22.00	22.35	22.55	22.90	23.97	24.10	RL 5C
206	201	131.079	0.00	0.41	0.00	0.00	0.41	0.0	5.5	8.4	3.41	5.42	2.78	15	0.50	19.60	20.26	22.41	22.67	23.46	23.44	1252H-1252G
207	206	32.926	0.00	0.19	0.00	0.00	0.19	0.0	5.0	8.6	1.61	2.49	4.62	8	3.04	21.00	22.00	22.90	23.32	23.44	23.98	CO1252I - DB
208	207	9.344	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	2.76	4.63	8	3.75	22.00	22.35	23.63	23.75	23.98	24.10	RL 8C
209	190	180.116	0.00	1.13	0.00	0.00	1.12	0.0	9.6	7.1	7.98	18.89	2.54	24	0.50	17.07	17.97	20.55	20.71	23.08	22.71	1253K-1253G
210	209	131.990	0.00	0.87	0.00	0.00	0.86	0.0	8.6	7.4	6.38	18.90	2.03	24	0.50	17.97	18.63	20.86	20.94	22.71	23.37	1253L-1253K
211	210	55.010	0.00	0.69	0.00	0.00	0.68	0.0	8.1	7.6	5.16	19.07	1.64	24	0.51	18.63	18.91	21.03	21.05	23.37	22.82	1253M-1253L
212	211	66.000	0.00	0.56	0.00	0.00	0.55	0.0	7.6	7.7	4.26	8.78	2.42	18	0.50	19.41	19.74	21.12	21.19	22.82	23.06	1253N-1253M
213	212	67.333	0.00	0.46	0.00	0.00	0.46	0.0	7.1	7.8	3.57	8.69	2.11	18	0.49	19.74	20.07	21.33	21.37	23.06	23.70	1253O-1253N
214	213	20.724	0.00	0.36	0.00	0.00	0.36	0.0	6.9	7.9	2.81	5.66	3.27	15	0.53	20.32	20.43	21.48	21.10	23.70	23.68	1253P-1253O
215	214	25.624	0.00	0.28	0.00	0.00	0.28	0.0	6.7	8.0	2.21	5.44	3.57	15	0.51	20.43	20.56	21.10	21.15	23.68	23.66	1253Q-1253P
216	215	18.649	0.00	0.28	0.00	0.00	0.28	0.0	6.6	8.0	2.22	5.30	3.87	15	0.48	20.56	20.65	21.15	21.24	23.66	23.94	1253R-1253Q
217	216	40.299	0.00	0.28	0.00	0.00	0.28	0.0	6.2	8.1	2.26	5.38	3.90	15	0.50	20.65	20.85	21.24	21.45	23.94	23.94	1253S-1253R
218	217	13.229	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.48	5.57	8	3.02	21.95	22.35	22.28	22.87	23.94	24.10	RL 31C
219	206	38.440	0.00	0.22	0.00	0.00	0.22	0.0	5.1	8.6	1.86	5.77	1.52	15	0.57	20.46	20.68	22.90	22.92	23.44	23.43	1252I-1252H
220	219	13.318	0.00	0.22	0.00	0.00	0.22	0.0	5.0	8.6	1.87	2.65	5.35	8	3.45	21.32	21.78	22.98	23.21	23.43	23.68	1252J-1252I

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Project File: Greenfield Storm North_1.stm

Number of lines: 242

Run Date: 5/11/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
221	220	8.893	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.24	5.36	8	2.47	21.78	22.00	23.53	23.68	23.68	24.10	RL 9C
222	213	31.826	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	2.47	4.96	8	2.98	21.40	22.35	21.67	22.79	23.70	24.10	RL 29C
223	214	31.831	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	2.47	4.63	8	2.98	21.40	22.35	21.64	22.74	23.68	24.10	RL 30C
224	217	65.978	0.00	0.14	0.00	0.00	0.14	0.0	5.1	8.6	1.19	5.40	2.61	15	0.50	20.85	21.18	21.45	21.61	23.94	23.93	1253T-1253S
225	224	13.324	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	4.04	5.52	8	8.03	21.28	22.35	21.61	22.87	23.93	24.10	RL 32C
226	185	31.336	0.56	0.56	0.99	0.55	0.55	5.0	5.0	8.6	4.76	6.83	11.15	10	6.96	20.00	22.18	20.51	23.00	23.16	24.10	RL 19C
227	211	31.837	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	3.88	3.56	8	7.38	20.00	22.35	21.12	22.85	22.82	24.10	RL 27C
228	189	31.826	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	3.88	6.77	8	7.38	20.00	22.35	20.26	22.87	22.80	24.10	RL 23C
229	212	31.826	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	3.88	2.97	8	7.38	20.00	22.35	21.33	22.79	23.06	24.10	RL 28C
230	188	31.836	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	3.88	6.58	8	7.38	20.00	22.35	20.23	22.83	23.46	24.10	RL 22C
231	186	31.837	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	3.88	6.76	8	7.38	20.00	22.35	20.24	22.85	22.73	24.10	RL 20C
232	187	31.336	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	3.91	6.42	8	7.50	20.00	22.35	20.22	22.81	23.28	24.10	RL 21C
233	210	31.837	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	3.88	4.58	8	7.38	20.00	22.35	21.03	22.93	23.37	24.10	RL 26C
234	209	31.837	0.26	0.26	0.99	0.26	0.26	5.0	5.0	8.6	2.21	3.88	6.38	8	7.38	20.00	22.35	20.86	22.99	22.71	24.10	RL 25C
235	170	77.591	0.13	1.13	0.87	0.11	1.07	5.0	5.5	8.4	9.02	18.71	5.58	24	0.49	16.47	16.85	17.45	17.92	23.77	21.77	1247B-1247A
236	235	73.520	1.00	1.00	0.96	0.96	0.96	5.0	5.0	8.6	8.24	18.96	5.47	24	0.50	17.05	17.42	17.97	18.44	21.77	20.92	1247C-1247B
237	169	47.770	0.71	0.71	0.94	0.67	0.67	5.0	5.0	8.6	5.73	8.80	5.16	18	0.50	17.21	17.45	18.09	18.37	21.80	20.45	1247-1248
238	169	77.979	0.00	2.19	0.00	0.00	2.17	0.0	8.2	7.5	16.27	34.28	4.70	30	0.50	14.23	14.62	16.53	15.98	21.80	21.87	1248A-1248
239	238	121.790	0.96	2.09	0.99	0.95	2.07	5.0	6.0	8.2	16.98	34.30	6.13	30	0.50	14.62	15.23	15.98	16.62	21.87	19.60	1249-1248A
240	239	54.375	0.20	1.13	0.99	0.20	1.12	5.0	5.7	8.3	9.30	18.84	5.65	24	0.50	15.73	16.00	16.72	17.09	19.60	20.25	1250-1249
241	240	106.753	0.93	0.93	0.99	0.92	0.92	5.0	5.0	8.6	7.91	18.83	5.38	24	0.50	16.20	16.73	17.10	17.73	20.25	20.23	1251-1250
242	238	134.259	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	5.39	3.05	15	0.50	16.18	16.85	16.52	17.21	21.87	19.65	TD A - MH 1248A
Project File: Greenfield Storm North_1.stm																					Run Date: 5/11/2025	
Number of lines: 242																						

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope (%)	Dn	Up	Dn	Up	Dn	Up	(ft)
1	End	34.138	0.49	1.33	0.99	0.49	1.26	5.0	11.8	6.6	8.35	37.17	7.34	24	1.93	15.00	15.66	15.64	16.69	17.60	19.95	1316-1304
2	1	59.138	0.00	0.09	0.00	0.00	0.09	0.0	6.5	8.1	0.72	1.02	3.16	8	0.51	16.87	17.17	17.28	17.58	19.95	19.96	1316I - 1316
3	2	171.041	0.00	0.09	0.00	0.00	0.09	0.0	5.1	8.5	0.76	2.27	3.06	8	2.53	17.17	21.50	17.66	21.91	19.96	23.88	1316J - 1316I
4	3	19.679	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	2.79	5.09	8	3.81	22.15	22.90	22.39	23.31	23.88	24.60	RL 13L
5	1	38.997	0.00	0.75	0.00	0.00	0.69	0.0	11.6	6.7	4.57	8.66	4.80	18	0.49	16.16	16.35	16.93	17.17	19.95	21.08	1316A-1316
6	5	96.544	0.00	0.31	0.00	0.00	0.31	0.0	10.5	6.9	2.12	8.75	3.35	18	0.50	16.55	17.03	17.17	17.58	21.08	22.00	1316B - 1316A
7	6	32.560	0.00	0.27	0.00	0.00	0.27	0.0	9.9	7.1	1.89	3.76	4.38	12	0.80	19.50	19.76	20.00	20.35	22.00	22.69	1316C - 1316B
8	7	16.492	0.00	0.20	0.00	0.00	0.20	0.0	9.7	7.1	1.41	2.93	3.63	12	0.49	19.96	20.04	20.45	20.54	22.69	24.60	1316E - 1316C
9	8	51.434	0.00	0.19	0.00	0.00	0.19	0.0	9.3	7.2	1.36	2.99	3.62	12	0.51	21.04	21.30	21.51	21.79	24.60	23.80	1316F - 1316E
10	9	27.250	0.00	0.09	0.00	0.00	0.09	0.0	8.8	7.3	0.65	3.02	2.26	12	0.51	21.30	21.44	21.78	21.78	23.80	23.81	1316G - 1316F
11	10	36.934	0.00	0.01	0.00	0.00	0.01	0.0	6.3	8.1	0.08	1.00	1.08	8	0.49	21.44	21.62	21.78	21.75	23.81	24.12	1316H - 1316G
12	11	18.831	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	2.28	2.42	8	2.55	21.82	22.30	21.91	22.43	24.12	24.60	RL 8L
13	10	19.526	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	2.87	4.09	8	4.05	21.50	22.29	21.78	22.68	23.81	24.60	RL 9L
14	9	19.579	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	2.87	4.64	8	4.03	21.50	22.29	21.79	22.73	23.80	24.60	RL 10L
15	7	40.137	0.00	0.07	0.00	0.00	0.07	0.0	5.1	8.5	0.59	1.92	3.96	8	1.82	20.46	21.19	20.71	21.55	22.69	23.48	1316D - 1316C
16	15	12.382	0.07	0.07	0.99	0.07	0.07	5.0	5.0	8.6	0.60	1.15	3.08	8	0.65	21.19	21.27	21.55	21.63	23.48	24.60	RL 12L
17	8	19.236	0.01	0.01	0.99	0.01	0.01	5.0	5.0	8.6	0.09	3.82	3.10	8	7.17	21.00	22.38	21.07	22.51	24.60	24.60	RL 11L
18	6	91.482	0.04	0.04	0.99	0.04	0.04	5.0	5.0	8.6	0.34	5.41	2.35	15	0.50	17.45	17.91	17.66	18.14	22.00	20.66	TD 2 - MH1316B
19	5	109.842	0.44	0.44	0.86	0.38	0.38	5.0	5.0	8.6	3.25	8.78	4.36	18	0.50	17.15	17.70	17.78	18.39	21.08	20.70	1317-1316A
20	End	60.386	0.32	15.25	0.99	0.32	15.05	5.0	13.8	6.3	94.20	280.1	4.80	60	0.83	8.00	8.50	14.15	14.21	13.55	20.43	1331-1311
21	20	125.007	0.00	1.28	0.00	0.00	1.27	0.0	8.0	7.6	9.61	18.82	5.70	24	0.50	15.28	15.90	16.29	17.01	20.43	22.99	1331A-1331
22	21	33.032	0.00	0.14	0.00	0.00	0.14	0.0	5.1	8.6	1.19	2.47	5.55	8	3.00	20.54	21.53	20.87	22.05	22.99	23.46	1331A-DB

Project File: Greenfield Storm North_2.stm

Run Date: 6/17/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope (%)	Dn	Up	Dn	Up	Dn	Up	(ft)
23	22	10.664	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.47	4.10	8	3.00	21.53	21.85	22.05	22.37	23.46	23.60	RL 1E
24	21	61.168	0.00	1.14	0.00	0.00	1.13	0.0	7.6	7.7	8.68	19.03	5.56	24	0.51	16.10	16.41	17.05	17.46	22.99	22.91	1331B-1331A
25	24	74.892	0.00	1.01	0.00	0.00	1.00	0.0	7.1	7.8	7.84	18.79	5.37	24	0.49	16.61	16.98	17.51	17.98	22.91	22.94	1331C-1331B
26	25	7.198	0.00	0.88	0.00	0.00	0.87	0.0	7.1	7.9	6.84	9.25	5.56	18	0.56	17.48	17.52	18.44	18.53	22.94	22.93	1331D-1331C
27	26	73.570	0.00	0.78	0.00	0.00	0.77	0.0	6.7	8.0	6.15	8.80	5.01	18	0.50	17.52	17.89	18.53	18.85	22.93	22.96	1331E-1331D
28	27	55.227	0.00	0.71	0.00	0.00	0.70	0.0	6.4	8.1	5.67	8.84	5.15	18	0.51	18.14	18.42	19.01	19.34	22.96	22.92	1331F-1331E
29	28	50.902	0.00	0.59	0.00	0.00	0.58	0.0	6.2	8.1	4.75	5.35	4.93	15	0.49	18.62	18.87	19.54	19.79	22.92	22.96	1331G-1331F
30	29	131.079	0.00	0.42	0.00	0.00	0.42	0.0	5.4	8.4	3.50	5.42	3.37	15	0.50	19.07	19.73	20.35	20.59	22.96	22.94	1331H-1331G
31	30	34.530	0.00	0.17	0.00	0.00	0.17	0.0	5.0	8.6	1.44	3.24	4.36	8	5.15	19.75	21.53	21.06	22.09	22.94	23.48	CO1331H - DB
32	31	10.512	0.17	0.17	0.99	0.17	0.17	5.0	5.0	8.6	1.45	2.49	4.59	8	3.04	21.53	21.85	22.09	22.41	23.48	23.60	RL 8E
33	27	33.652	0.00	0.07	0.00	0.00	0.07	0.0	5.1	8.5	0.59	3.51	5.27	8	6.03	19.50	21.53	19.69	21.89	22.96	23.46	CO1331E
34	33	10.334	0.07	0.07	0.99	0.07	0.07	5.0	5.0	8.6	0.60	2.51	3.07	8	3.10	21.53	21.85	21.89	22.21	23.46	23.60	RL 5E
35	25	32.762	0.00	0.13	0.00	0.00	0.13	0.0	5.1	8.6	1.10	2.47	5.41	8	2.99	20.55	21.53	20.86	22.03	22.94	23.45	1331C-DB
36	35	10.753	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.46	3.95	8	2.98	21.53	21.85	22.03	22.35	23.45	23.60	RL 3E
37	26	33.292	0.00	0.10	0.00	0.00	0.10	0.0	5.1	8.6	0.85	2.47	4.96	8	3.00	20.53	21.53	20.80	21.97	22.93	23.46	1331D-DB
38	37	10.759	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	2.46	3.52	8	2.97	21.53	21.85	21.97	22.29	23.46	23.60	RL 4E
39	24	35.125	0.00	0.13	0.00	0.00	0.13	0.0	5.1	8.6	1.10	2.47	5.41	8	2.99	20.48	21.53	20.79	22.03	22.91	23.49	CO1331B - DB
40	39	10.776	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.46	3.95	8	2.97	21.53	21.85	22.03	22.35	23.49	23.60	RL 2E
41	20	128.798	0.31	3.21	0.99	0.31	3.18	5.0	13.1	6.4	20.31	56.85	2.87	36	0.52	10.00	10.67	14.74	14.83	20.43	20.43	1333-1331
42	41	136.026	0.00	2.90	0.00	0.00	2.87	0.0	12.2	6.5	18.80	55.73	2.66	36	0.50	10.87	11.55	14.89	14.97	20.43	21.09	1334-1333
43	42	93.000	0.19	2.90	0.99	0.19	2.87	5.0	11.9	6.6	19.02	34.46	3.88	30	0.51	12.05	12.52	15.08	15.22	21.09	21.54	1334A-1334
44	43	51.304	0.00	1.19	0.00	0.00	1.18	0.0	8.5	7.4	8.75	22.66	5.56	18	3.33	14.18	15.89	15.59	17.03	21.54	23.45	1334G-1334A

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Project File: Greenfield Storm North_2.stm

Run Date: 6/17/2025

Number of lines: 121

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope (%)	Dn	Up	Dn	Up	Dn	Up	(ft)
45	44	230.240	0.00	1.19	0.00	0.00	1.18	0.0	7.2	7.8	9.20	18.89	5.13	24	0.50	15.89	17.04	17.03	18.12	23.45	23.29	1334H-1334G
46	45	64.673	0.00	0.62	0.00	0.00	0.61	0.0	6.8	7.9	4.87	8.73	4.15	18	0.49	17.04	17.36	18.12	18.21	23.29	23.30	1334I-1334H
47	46	55.000	0.00	0.50	0.00	0.00	0.50	0.0	6.5	8.0	3.97	5.35	4.62	15	0.49	17.36	17.63	18.21	18.44	23.30	23.11	1334J-1334I
48	47	66.011	0.00	0.40	0.00	0.00	0.40	0.0	6.1	8.2	3.23	5.40	4.13	15	0.50	17.63	17.96	18.44	18.68	23.11	23.21	1334K-1334J
49	48	65.990	0.00	0.29	0.00	0.00	0.29	0.0	5.6	8.4	2.40	5.40	3.61	15	0.50	17.96	18.29	18.68	18.91	23.21	23.39	1334L-1334K
50	49	61.032	0.00	0.14	0.00	0.00	0.14	0.0	5.3	8.5	1.18	2.02	5.04	8	2.00	18.87	20.09	19.24	20.60	23.39	23.05	1334M-1334L
51	50	28.263	0.00	0.14	0.00	0.00	0.14	0.0	5.1	8.5	1.18	2.48	4.10	8	3.01	20.09	20.94	20.60	21.46	23.05	23.45	1334N-1334M
52	51	20.833	0.00	0.14	0.00	0.00	0.14	0.0	5.0	8.6	1.19	2.34	4.10	8	2.69	20.94	21.50	21.46	22.02	23.45	23.50	1334O-1334N
53	52	3.529	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	4.49	4.10	8	9.92	21.50	21.85	22.02	22.37	23.50	23.60	RL 22E
54	29	33.242	0.00	0.17	0.00	0.00	0.17	0.0	5.0	8.6	1.44	3.50	4.36	8	6.02	19.50	21.50	20.35	22.06	22.96	23.46	1331G-DB
55	54	11.703	0.17	0.17	0.99	0.17	0.17	5.0	5.0	8.6	1.45	2.47	4.59	8	2.99	21.50	21.85	22.06	22.41	23.46	23.60	RL 7E
56	28	30.734	0.00	0.12	0.00	0.00	0.12	0.0	5.1	8.6	1.02	3.58	6.31	8	6.28	19.50	21.43	19.74	21.91	22.92	23.42	CO1331F - DB
57	56	13.836	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.49	3.81	8	3.04	21.43	21.85	21.91	22.33	23.42	23.60	RL 6E
58	30	38.690	0.00	0.25	0.00	0.00	0.25	0.0	5.1	8.6	2.12	5.49	2.81	15	0.52	19.93	20.13	21.06	20.71	22.94	22.93	1331I-1331H
59	58	16.189	0.00	0.25	0.00	0.00	0.25	0.0	5.0	8.6	2.12	2.53	7.16	8	3.15	20.71	21.22	21.18	21.85	22.93	23.20	1331I-DB
60	59	7.610	0.25	0.25	0.99	0.25	0.25	5.0	5.0	8.6	2.13	2.48	6.20	8	3.02	21.22	21.45	21.85	22.08	23.20	23.60	RL 9E
61	46	11.683	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	4.03	6.71	8	7.96	20.92	21.85	21.15	22.33	23.30	23.60	RL 18E
62	49	11.913	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	5.62	8.64	8	15.53	20.00	21.85	20.22	22.38	23.39	23.60	RL 21E
63	48	11.838	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	5.64	7.81	8	15.63	20.00	21.85	20.18	22.31	23.21	23.60	RL 20E
64	47	11.743	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	5.67	7.59	8	15.75	20.00	21.85	20.17	22.29	23.11	23.60	RL 19E
65	45	11.598	0.57	0.57	0.99	0.56	0.56	5.0	5.0	8.6	4.85	5.70	16.11	8	15.95	20.00	21.85	20.47	22.52	23.29	23.60	RL 17E
66	43	173.940	0.30	1.52	0.99	0.30	1.50	5.0	11.0	6.8	10.24	20.37	3.26	24	0.58	12.52	13.53	15.59	15.84	21.54	21.36	1334B-1334A

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Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
67	66	195.492	0.30	1.22	0.99	0.30	1.21	5.0	9.9	7.1	8.54	18.93	2.96	24	0.50	13.53	14.51	15.93	16.09	21.36	21.34	1334C-1334B
68	67	196.000	0.32	0.92	0.99	0.32	0.91	5.0	8.5	7.4	6.78	18.90	3.78	24	0.50	14.71	15.69	16.17	16.61	21.34	21.37	1334D-1334C
69	68	196.000	0.30	0.60	0.99	0.30	0.59	5.0	7.3	7.8	4.63	8.78	4.84	18	0.50	16.19	17.17	16.96	18.00	21.37	21.35	1334E-1334D
70	69	196.000	0.30	0.30	0.99	0.30	0.30	5.0	5.0	8.6	2.55	8.78	3.74	18	0.50	17.37	18.35	18.00	18.95	21.35	21.35	1334F-1334E
71	20	122.957	0.60	10.44	0.91	0.55	10.29	5.0	12.8	6.4	66.16	293.8	3.37	60	0.91	8.50	9.62	14.74	14.80	20.43	19.89	1332-1331
72	71	186.137	1.07	9.84	0.99	1.06	9.74	5.0	11.9	6.6	64.45	216.4	3.35	60	0.49	9.62	10.54	15.07	15.13	19.89	20.23	1332A-1332
73	72	108.749	0.82	8.77	0.99	0.81	8.68	5.0	11.5	6.7	58.14	119.6	4.63	48	0.50	10.54	11.08	15.22	15.35	20.23	20.23	1332B-1332A
74	73	108.755	0.83	7.95	0.99	0.82	7.87	5.0	11.1	6.8	53.41	119.6	4.25	48	0.50	11.08	11.62	15.51	15.62	20.23	20.23	1332C-1332B
75	74	108.801	0.83	7.12	0.99	0.82	7.05	5.0	10.7	6.9	48.55	120.7	3.95	48	0.51	11.62	12.17	15.76	15.82	20.23	20.23	1332D-1332C
76	75	106.210	0.80	6.29	0.99	0.79	6.23	5.0	10.3	7.0	43.43	84.78	4.54	42	0.51	12.17	12.71	15.95	16.07	20.23	20.23	1332E-1332D
77	76	72.348	0.00	5.49	0.00	0.00	5.44	0.0	10.0	7.0	38.28	86.17	4.07	42	0.53	12.71	13.09	16.24	16.29	20.23	20.55	1332M-1332E
78	77	27.384	0.74	5.39	0.99	0.73	5.34	5.0	9.9	7.1	37.73	85.02	3.92	42	0.51	13.09	13.23	16.69	16.71	20.55	20.24	1332F-1332M
79	78	14.980	0.00	4.65	0.00	0.00	4.60	0.0	9.8	7.1	32.63	81.28	3.39	42	0.47	13.23	13.30	16.83	16.85	20.24	20.41	1332O-1332F
80	79	88.775	0.78	4.55	0.99	0.77	4.50	5.0	9.5	7.2	32.27	55.49	4.57	36	0.50	13.30	13.74	17.11	17.26	20.41	20.23	1332G-1332O
81	80	108.755	0.83	3.77	0.99	0.82	3.73	5.0	9.1	7.3	27.16	56.05	3.84	36	0.51	13.74	14.29	17.42	17.55	20.23	20.23	1332H-1332G
82	81	109.039	0.83	2.94	0.99	0.82	2.91	5.0	8.5	7.4	21.61	59.43	3.09	36	0.57	14.29	14.91	17.67	17.74	20.23	20.24	1332I-1332H
83	82	108.472	0.83	2.11	0.99	0.82	2.09	5.0	7.8	7.6	15.96	56.13	3.93	36	0.51	14.91	15.46	17.81	16.73	20.24	20.23	1332J-1332I
84	83	108.755	0.96	1.28	0.99	0.95	1.27	5.0	6.9	7.9	10.01	34.15	5.56	30	0.50	15.96	16.50	16.89	17.56	20.23	20.60	1132K-1332J
85	84	99.896	0.32	0.32	0.99	0.32	0.32	5.0	5.0	8.6	2.72	18.91	2.88	24	0.50	16.70	17.20	17.56	17.77	20.60	20.80	1332L-1332K
86	79	141.671	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	5.40	2.64	15	0.50	16.70	17.41	17.11	17.77	20.41	20.16	TD D-1332O
87	77	142.658	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	5.38	2.38	15	0.50	16.19	16.90	16.69	17.26	20.55	19.64	TD E - 1332M
88	End	36.544	0.26	1.44	0.91	0.24	1.40	5.0	9.0	7.3	10.26	75.17	7.28	24	7.91	13.00	15.89	13.78	17.04	15.60	22.29	1239-1231

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Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope (%)	Dn	Up	Dn	Up	Dn	Up	(ft)
89	88	33.088	0.00	1.18	0.00	0.00	1.17	0.0	8.8	7.4	8.59	19.16	4.90	24	0.51	15.89	16.06	17.04	17.10	22.29	22.88	1240-1239
90	89	56.150	0.00	1.18	0.00	0.00	1.17	0.0	8.4	7.4	8.70	18.88	5.54	24	0.50	16.26	16.54	17.21	17.59	22.88	22.73	1240A-1240
91	90	61.509	0.00	1.06	0.00	0.00	1.05	0.0	8.0	7.6	7.93	18.98	4.89	24	0.50	16.54	16.85	17.59	17.85	22.73	22.64	1240B-1240A
92	91	65.712	0.00	0.95	0.00	0.00	0.94	0.0	7.8	7.6	7.18	8.66	5.47	18	0.49	16.85	17.17	17.89	18.21	22.64	22.43	1240C-1240B
93	92	66.289	0.00	0.82	0.00	0.00	0.81	0.0	7.5	7.7	6.27	8.89	3.55	18	0.51	17.17	17.51	18.91	19.08	22.43	22.57	1240D-1240C
94	93	119.747	0.00	0.65	0.00	0.00	0.64	0.0	6.8	7.9	5.11	8.71	2.90	18	0.49	17.51	18.10	19.38	19.57	22.57	22.45	1241-1240D
95	94	65.670	0.00	0.49	0.00	0.00	0.49	0.0	6.5	8.1	3.91	5.41	3.18	15	0.50	18.35	18.68	19.76	19.93	22.45	22.54	1241A-1241
96	95	88.276	0.00	0.36	0.00	0.00	0.36	0.0	5.8	8.3	2.95	5.39	2.68	15	0.50	18.88	19.32	20.17	20.26	22.54	22.62	1241B-1241A
97	96	66.125	0.00	0.21	0.00	0.00	0.21	0.0	5.1	8.6	1.78	5.39	2.69	15	0.50	19.52	19.85	20.47	20.38	22.62	22.40	1242-1241B
98	97	26.449	0.21	0.21	0.99	0.21	0.21	5.0	5.0	8.6	1.79	3.56	7.78	8	6.24	20.20	21.85	20.53	22.46	22.40	23.60	RL 8A
99	93	28.125	0.17	0.17	0.99	0.17	0.17	5.0	5.0	8.6	1.45	3.56	7.13	8	6.22	20.10	21.85	20.40	22.41	22.57	23.60	RL 4A
100	92	28.058	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	3.56	6.48	8	6.24	20.10	21.85	20.35	22.35	22.43	23.60	RL 3A
101	94	28.226	0.16	0.16	0.99	0.16	0.16	5.0	5.0	8.6	1.36	3.55	6.96	8	6.20	20.10	21.85	20.39	22.40	22.45	23.60	RL 5A
102	96	28.318	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	3.55	5.36	8	6.18	20.10	21.85	20.47	22.38	22.62	23.60	RL 7A
103	95	28.257	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	3.55	6.46	8	6.19	20.10	21.85	20.36	22.35	22.54	23.60	RL 6A
104	91	28.005	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	3.57	6.13	8	6.25	20.10	21.85	20.33	22.31	22.64	23.60	RL 2A
105	90	26.948	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	3.64	6.37	8	6.49	20.10	21.85	20.34	22.33	22.73	23.60	RL 1A
106	End	31.569	0.86	2.85	0.99	0.85	2.78	0.0	5.8	8.3	23.10	51.24	7.72	24	3.67	12.00	13.16	14.15	14.87	14.60	17.82	1343-1362
107	106	89.938	0.32	1.23	0.99	0.32	1.19	5.0	5.3	8.5	10.06	18.91	5.79	24	0.50	14.15	14.60	15.19	15.73	17.82	18.31	1344-1343
108	107	57.476	0.30	0.91	0.99	0.30	0.87	5.0	5.1	8.6	7.46	18.23	6.06	18	2.16	14.81	16.05	15.73	17.11	18.31	19.75	1345-1344
109	108	13.100	0.61	0.61	0.94	0.57	0.57	5.0	5.0	8.6	4.92	12.29	5.35	15	2.60	16.25	16.59	17.11	17.49	19.75	20.09	1346 -1345
110	106	110.429	0.76	0.76	0.98	0.74	0.74	5.0	5.0	8.6	6.40	8.92	4.70	18	0.52	13.65	14.22	14.87	15.20	17.82	17.22	1342-1343
363		Project File: Greenfield Storm North_2.stm																			Run Date: 6/17/2025	
		Number of lines: 121																				
		NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box																				
		Storm Sewers v2025.00																				

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
111	End	41.675	0.02	1.41	0.99	0.02	1.40	5.0	13.7	6.3	8.76	38.28	1.79	30	0.62	8.00	8.26	14.15	14.16	14.07	18.04	1339-1310
112	111	188.731	0.55	0.96	0.99	0.54	0.95	5.0	12.3	6.5	6.22	18.86	1.98	24	0.50	8.76	9.70	14.27	14.38	18.04	16.28	1341-1339
113	112	171.847	0.19	0.41	0.99	0.19	0.41	5.0	9.4	7.2	2.91	18.91	0.93	24	0.50	9.70	10.56	14.41	14.43	16.28	18.10	1341A-1341
114	113	196.234	0.00	0.22	0.00	0.00	0.22	0.0	7.2	7.8	1.70	5.39	3.72	15	0.50	14.32	15.30	14.80	15.82	18.10	20.39	1341B-1341A
115	114	200.532	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	5.39	3.82	15	0.50	15.50	16.50	16.01	17.04	20.39	19.54	1341C-1341B
116	111	192.935	0.43	0.43	0.99	0.43	0.43	5.0	5.0	8.6	3.66	18.86	4.31	24	0.50	13.68	14.64	14.28	15.31	18.04	18.14	1340-1339
117	End	26.130	0.15	0.15	0.93	0.14	0.14	5.0	5.0	8.6	1.20	25.86	6.32	15	11.48	14.00	17.00	14.20	17.43	16.07	20.06	1318-1307
118	End	140.127	1.00	1.00	0.79	0.79	0.79	5.0	5.0	8.6	6.78	16.58	5.02	18	1.78	13.00	15.50	14.15	16.51	15.07	18.50	1315-1303
119	End	177.381	0.00	0.00	0.00	0.00	0.00	0.0	6.9	0.0	23.14	326.9	1.18	60	1.13	6.00	8.00	14.15	14.16	11.55	20.22	1314-1302
120	119	133.661	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	23.14	376.5	1.25	60	1.50	8.00	10.00	14.18	14.18	20.22	17.00	OS13C-1314
121	End	96.226	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	6.37	244.7	4.06	48	2.08	8.00	10.00	8.73	10.73	13.04	17.00	OS12D - 1234
Project File: Greenfield Storm North_2.stm														Number of lines: 121						Run Date: 6/17/2025		
NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope (%)	Dn	Up	Dn	Up	Dn	Up	(ft)
1	End	74.923	0.14	8.74	0.92	0.13	7.96	5.0	10.6	6.9	54.83	181.3	6.15	60	0.35	13.00	13.26	15.65	15.34	18.55	20.05	1401 - 1400
2	1	279.698	0.62	8.60	0.91	0.56	7.83	5.0	9.6	7.1	55.94	100.5	7.95	48	0.35	13.26	14.24	15.39	16.49	20.05	20.48	1402 - 1401
3	2	112.099	0.99	7.98	0.90	0.89	7.26	5.0	9.1	7.3	52.75	107.6	7.39	48	0.40	14.24	14.69	16.49	16.87	20.48	20.38	1403 - 1402
4	3	87.864	0.71	4.31	0.83	0.59	3.72	5.0	8.9	7.3	27.27	32.29	6.65	30	0.44	14.69	15.08	16.87	16.86	20.38	20.67	1404 - 1403
5	4	33.588	0.00	3.60	0.00	0.00	3.13	0.0	8.7	7.4	23.05	34.48	6.48	30	0.51	15.08	15.25	16.86	16.88	20.67	21.66	1405 - 1404
6	5	197.937	0.00	1.40	0.00	0.00	1.39	0.0	7.8	7.6	10.59	18.90	5.88	24	0.50	17.12	18.11	18.19	19.27	21.66	23.37	1411 - 1405
7	6	95.460	0.00	1.12	0.00	0.00	1.11	0.0	7.2	7.8	8.67	19.73	4.88	24	0.54	18.11	18.63	19.27	19.68	23.37	23.37	1411B-1411
8	7	77.531	0.00	0.96	0.00	0.00	0.95	0.0	6.9	7.9	7.52	9.02	5.66	18	0.53	18.63	19.04	19.68	20.10	23.37	23.40	1411C-1411B
9	8	45.427	0.00	0.83	0.00	0.00	0.82	0.0	6.7	8.0	6.56	9.21	5.10	18	0.55	19.04	19.29	20.10	20.28	23.40	23.37	1411D - 1411C
10	9	62.174	0.00	0.71	0.00	0.00	0.70	0.0	6.4	8.1	5.68	9.04	4.80	18	0.53	19.29	19.62	20.28	20.54	23.37	23.40	1411E-1411D
11	10	82.583	0.00	0.59	0.00	0.00	0.58	0.0	5.9	8.3	4.83	8.96	4.48	18	0.52	19.62	20.05	20.54	20.89	23.40	23.40	1411F-1411E
12	11	47.319	0.00	0.37	0.00	0.00	0.37	0.0	5.5	8.4	3.07	5.66	3.89	15	0.55	20.05	20.31	20.89	21.01	23.40	23.43	1411G-1411F
13	12	27.924	0.00	0.10	0.00	0.00	0.10	0.0	5.1	8.5	0.85	2.46	4.95	8	2.97	21.05	21.88	21.32	22.32	23.43	23.86	1411G-DB 1411G
14	13	10.662	0.00	0.10	0.00	0.00	0.10	0.0	5.0	8.6	0.85	2.55	3.51	8	3.19	21.88	22.22	22.32	22.66	23.86	23.98	1411H-CO 1411G
15	14	7.141	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	2.45	3.51	8	2.94	22.22	22.43	22.66	22.87	23.98	24.10	RL 12C
16	12	44.882	0.00	0.27	0.00	0.00	0.27	0.0	5.1	8.5	2.28	5.34	3.55	15	0.49	20.31	20.53	21.01	21.13	23.43	23.43	1411H-1411G
17	16	12.076	0.00	0.27	0.00	0.00	0.27	0.0	5.1	8.5	2.28	2.36	7.16	8	2.73	21.13	21.46	21.66	22.10	23.43	23.65	1411I-1411H
18	17	22.603	0.00	0.21	0.00	0.00	0.21	0.0	5.0	8.6	1.78	2.48	5.25	8	3.01	21.46	22.14	22.10	22.75	23.65	23.74	1411J - 1411I
19	18	9.015	0.21	0.21	0.99	0.21	0.21	5.0	5.0	8.6	1.79	2.56	5.35	8	3.22	22.14	22.43	22.75	23.04	23.74	24.10	RL 10C
20	7	35.180	0.00	0.08	0.00	0.00	0.08	0.0	5.1	8.6	0.68	2.43	4.59	8	2.90	21.07	22.09	21.31	22.48	23.37	23.95	1411A-1411B
21	20	10.583	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	2.56	3.23	8	3.21	22.09	22.43	22.48	22.82	23.95	24.10	RL 18C
22	7	33.556	0.00	0.08	0.00	0.00	0.08	0.0	5.1	8.6	0.68	2.49	4.64	8	3.04	21.07	22.09	21.31	22.48	23.37	23.94	1411B-DB 1411B

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Project File: Greenfield Storm East.stm

Run Date: 6/19/2025

Number of lines: 140

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	22	9.614	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	2.68	3.22	8	3.54	22.09	22.43	22.48	22.82	23.94	24.10	RL 17C
24	8	34.253	0.00	0.13	0.00	0.00	0.13	0.0	5.1	8.6	1.10	2.45	5.39	8	2.95	21.05	22.06	21.36	22.56	23.40	23.96	1411C-DB 1411C
25	24	11.142	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.60	3.95	8	3.32	22.06	22.43	22.56	22.93	23.96	24.10	RL 16C
26	10	32.632	0.00	0.12	0.00	0.00	0.12	0.0	5.1	8.6	1.02	2.32	5.11	8	2.64	21.20	22.06	21.51	22.54	23.40	23.94	1411E-DB 1411E
27	26	12.395	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.47	3.80	8	2.99	22.06	22.43	22.54	22.91	23.94	24.10	RL 14C
28	11	30.571	0.00	0.22	0.00	0.00	0.22	0.0	5.0	8.6	1.87	2.49	6.68	8	3.04	21.05	21.98	21.48	22.60	23.40	23.90	1411F-DB 1411F
29	28	14.583	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.51	5.55	8	3.09	21.98	22.43	22.60	23.05	23.90	24.10	RL 13C
30	9	18.046	0.00	0.12	0.00	0.00	0.12	0.0	5.2	8.5	1.01	2.49	5.28	8	3.05	21.05	21.60	21.35	22.08	23.37	23.67	1411D-DB 1411D
31	30	28.435	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.44	3.81	8	2.92	21.60	22.43	22.08	22.91	23.67	24.10	RL 15C
32	17	8.436	0.06	0.06	0.99	0.06	0.06	5.0	5.0	8.6	0.51	4.84	2.20	8	11.50	21.46	22.43	22.10	22.76	23.65	24.10	RL 11C
33	6	16.789	0.00	0.28	0.00	0.00	0.28	0.0	5.1	8.6	2.37	3.94	9.33	8	7.62	20.00	21.28	20.37	21.92	23.37	23.65	1411-DB 1411
34	33	28.650	0.28	0.28	0.99	0.28	0.28	5.0	5.0	8.6	2.38	2.86	6.89	8	4.01	21.28	22.43	21.92	23.08	23.65	24.10	RL 19C
35	3	180.764	1.00	2.68	0.99	0.99	2.65	5.0	5.8	8.3	21.95	28.84	6.21	30	0.35	15.07	15.71	16.87	17.31	20.38	20.23	1408 - 1403
36	35	104.755	0.84	1.68	0.99	0.83	1.66	5.0	5.4	8.4	14.00	18.83	5.36	24	0.50	15.71	16.23	17.65	17.58	20.23	20.23	1409 - 1408
37	36	104.255	0.84	0.84	0.99	0.83	0.83	5.0	5.0	8.6	7.14	8.76	5.51	18	0.50	16.73	17.25	17.76	18.28	20.23	20.32	1410 - 1409
38	5	184.480	1.00	2.20	0.82	0.82	1.74	5.0	5.5	8.4	14.61	18.88	5.83	24	0.50	15.25	16.17	16.88	17.55	21.66	19.85	1406 - 1405
39	38	146.000	1.20	1.20	0.77	0.92	0.92	5.0	5.0	8.6	7.93	8.78	5.14	18	0.50	16.17	16.90	17.55	18.02	19.85	19.90	1407 - 1406
40	End	19.348	0.00	10.82	0.00	0.00	10.71	0.0	10.9	6.8	73.28	256.0	9.29	48	2.27	13.00	13.44	15.25	16.03	17.57	23.07	1209 - 1201
41	40	97.207	0.37	8.73	0.99	0.37	8.64	5.0	9.9	7.1	61.02	120.5	7.52	48	0.50	13.44	13.93	16.03	16.28	23.07	21.25	1210 - 1209
42	41	77.554	0.33	8.36	0.99	0.33	8.28	5.0	9.6	7.1	58.99	120.4	7.76	48	0.50	13.93	14.32	16.28	16.63	21.25	21.25	1211 - 1210
43	42	80.009	0.19	8.03	0.99	0.19	7.95	5.0	9.4	7.2	57.11	84.07	8.37	42	0.50	14.32	14.72	16.63	17.08	21.25	21.25	1212 - 1211
44	43	136.036	0.00	1.32	0.00	0.00	1.31	0.0	8.4	7.4	9.73	18.90	5.53	24	0.50	16.01	16.69	17.08	17.80	21.25	22.91	1221 - 1212

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Project File: Greenfield Storm East.stm

Run Date: 6/19/2025

Number of lines: 140

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
45	44	66.209	0.00	1.10	0.00	0.00	1.09	0.0	8.0	7.6	8.23	19.43	5.52	24	0.53	17.18	17.53	18.09	18.55	22.91	22.91	1221A-1221
46	45	88.288	0.00	0.95	0.00	0.00	0.94	0.0	7.7	7.7	7.21	8.76	5.53	18	0.50	17.53	17.97	18.57	19.01	22.91	22.91	1221B-1221A
47	46	75.533	0.00	0.80	0.00	0.00	0.79	0.0	7.3	7.8	6.16	10.88	4.94	18	0.77	17.97	18.55	19.01	19.51	22.91	22.91	1222 - 1221B
48	47	34.861	0.00	0.18	0.00	0.00	0.18	0.0	5.1	8.6	1.53	2.67	6.33	8	3.50	20.40	21.62	20.76	22.20	22.91	23.43	1222A-DB 1222
49	48	14.932	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	1.77	4.77	8	1.54	21.62	21.85	22.20	22.43	23.43	23.60	RL 13A
50	47	110.949	0.00	0.62	0.00	0.00	0.61	0.0	6.7	8.0	4.90	8.90	4.43	18	0.51	18.55	19.12	19.51	19.97	22.91	22.91	1222A-1222
51	50	66.362	0.00	0.44	0.00	0.00	0.44	0.0	6.3	8.1	3.53	5.54	4.25	15	0.53	19.12	19.47	19.97	20.23	22.91	22.91	1222B-1222A
52	51	76.270	0.00	0.31	0.00	0.00	0.31	0.0	5.7	8.3	2.55	5.46	3.66	15	0.51	19.47	19.86	20.23	20.50	22.91	22.91	1222C-1222B
53	52	37.378	0.00	0.12	0.00	0.00	0.12	0.0	5.1	8.6	1.02	2.55	5.34	8	3.18	20.40	21.59	20.69	22.07	22.91	23.47	1222A-1222C
54	53	13.634	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	1.97	3.81	8	1.91	21.59	21.85	22.07	22.33	23.47	23.60	RL 10A
55	43	122.763	0.00	6.52	0.00	0.00	6.45	0.0	9.1	7.3	46.87	55.56	8.08	36	0.50	14.72	15.33	17.08	17.56	21.25	20.46	1213 - 1212
56	55	18.884	0.62	4.00	0.99	0.61	3.96	5.0	9.1	7.3	28.81	35.27	6.86	30	0.53	15.33	15.43	17.56	17.26	20.46	20.23	1214 - 1213
57	56	72.401	0.00	3.38	0.00	0.00	3.35	0.0	8.8	7.3	24.55	34.18	6.67	30	0.50	15.43	15.79	17.26	17.48	20.23	20.54	1214A-1214
58	57	26.854	0.74	3.29	0.99	0.73	3.26	5.0	8.8	7.4	23.97	35.00	6.85	30	0.52	15.79	15.93	17.48	17.60	20.54	20.23	1215 - 1214A
59	58	118.385	0.00	0.89	0.00	0.00	0.88	0.0	7.9	7.6	6.71	18.87	3.47	24	0.50	15.70	16.29	17.60	17.21	20.23	19.87	1224-1215
60	59	26.116	0.00	0.80	0.00	0.00	0.79	0.0	7.7	7.6	6.06	8.76	5.24	18	0.50	16.29	16.42	17.21	17.37	19.87	23.16	1224A - 1224
61	60	12.909	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	2.48	6.26	8	3.02	21.46	21.85	21.85	22.44	23.16	23.60	RL 9B
62	52	50.574	0.00	0.19	0.00	0.00	0.19	0.0	5.1	8.6	1.61	5.37	3.66	15	0.49	20.15	20.40	20.62	20.90	22.91	23.14	1223 - 1222C
63	62	14.170	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	2.68	6.49	8	3.53	21.35	21.85	21.72	22.44	23.14	23.60	RL 9A
64	60	47.632	0.00	0.61	0.00	0.00	0.60	0.0	7.5	7.7	4.66	5.52	5.04	15	0.52	17.90	18.15	18.78	19.03	23.16	22.91	1224B-1224A
65	64	37.863	0.00	0.12	0.00	0.00	0.12	0.0	5.1	8.6	1.02	2.19	4.97	8	2.35	20.46	21.35	20.78	21.83	22.91	23.48	1224C-1224B
66	65	14.137	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.68	3.81	8	3.54	21.35	21.85	21.83	22.33	23.48	23.60	RL 10B
Project File: Greenfield Storm East.stm																					Run Date: 6/19/2025	
Number of lines: 140																						
NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
67	64	77.746	0.00	0.49	0.00	0.00	0.49	0.0	7.1	7.8	3.80	5.68	4.19	15	0.55	18.65	19.08	19.62	22.91	22.91	1224D-1224B	
68	67	66.010	0.00	0.36	0.00	0.00	0.36	0.0	6.7	8.0	2.84	5.40	3.84	15	0.50	19.08	19.41	19.87	22.91	22.91	1224E - 1224D	
69	68	109.564	0.00	0.18	0.00	0.00	0.18	0.0	5.2	8.5	1.52	5.41	3.47	15	0.50	19.61	20.16	20.09	22.91	22.91	1224F-1224E	
70	69	23.528	0.00	0.18	0.00	0.00	0.18	0.0	5.1	8.5	1.52	2.63	6.28	8	3.40	20.47	21.27	20.83	22.91	23.26	1224G-1224F	
71	70	25.242	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.16	4.77	8	2.30	21.27	21.85	21.85	23.26	23.60	RL 13B	
72	68	46.103	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.47	6.11	8	2.99	20.47	21.85	20.85	22.91	23.60	RL 12B	
73	67	46.112	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.47	5.41	8	2.99	20.47	21.85	20.78	22.91	23.60	RL 11B	
74	51	46.159	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.53	5.48	8	3.14	20.40	21.85	20.71	22.91	23.60	RL 11A	
75	50	46.182	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.53	6.18	8	3.14	20.40	21.85	20.77	22.91	23.60	RL 12A	
76	45	46.252	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.53	5.76	8	3.14	20.40	21.85	20.74	22.91	23.60	RL 15A	
77	44	46.351	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.52	6.73	8	3.13	20.40	21.85	20.83	22.91	23.60	RL 16A	
78	46	46.227	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.53	5.76	8	3.14	20.40	21.85	20.74	22.91	23.60	RL 14A	
79	40	68.886	0.32	1.20	0.99	0.32	1.19	5.0	9.6	7.1	8.49	18.78	3.98	24	0.49	14.19	14.53	16.03	23.07	21.32	1209D - 1209	
80	79	197.506	0.30	0.88	0.99	0.30	0.87	5.0	8.7	7.4	6.42	8.79	5.34	18	0.50	15.03	16.02	15.98	21.32	21.34	1209E - 1209D	
81	80	196.516	0.30	0.58	0.99	0.30	0.57	5.0	7.5	7.7	4.43	8.81	4.68	18	0.50	16.22	17.21	17.00	21.34	21.38	1209F - 1209E	
82	81	200.906	0.28	0.28	0.99	0.28	0.28	5.0	5.0	8.6	2.38	8.76	3.65	18	0.50	17.41	18.41	18.02	21.38	21.41	1209G - 1209F	
83	40	131.690	0.30	0.89	0.99	0.30	0.88	5.0	9.9	7.1	6.23	18.92	4.22	24	0.50	14.99	15.65	16.03	23.07	21.32	1209A - 1209	
84	83	200.147	0.40	0.59	0.99	0.40	0.58	5.0	8.6	7.4	4.32	8.82	4.75	18	0.50	16.15	17.16	16.89	21.32	21.34	1209B - 1209A	
85	84	198.992	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	8.66	2.90	18	0.49	17.36	18.33	17.96	21.34	21.33	1209C - 1209B	
86	59	11.222	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	5.58	2.51	15	0.53	16.80	16.86	17.21	19.87	23.60	TD B - 1224	
87	55	81.871	0.84	2.52	0.99	0.83	2.49	5.0	5.8	8.3	20.62	33.88	5.36	30	0.49	15.10	15.50	17.56	20.46	20.23	1218 - 1213	
88	87	104.755	0.84	1.68	0.99	0.83	1.66	5.0	5.4	8.4	13.99	18.83	6.09	24	0.50	15.64	16.16	17.04	20.23	20.23	1219 - 1218	
Project File: Greenfield Storm East.stm												Number of lines: 140		Run Date: 6/19/2025								
NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
88	88	108.755	0.84	0.84	0.99	0.83	0.83	5.0	5.0	8.6	7.14	8.75	5.51	18	0.50	16.66	17.20	17.69	18.23	20.23	20.27	1220 - 1219
89	57	140.995	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	5.38	1.85	15	0.50	16.65	17.35	17.48	17.69	20.54	24.10	TD C - 1214A
90	58	104.755	0.82	1.66	0.99	0.81	1.64	5.0	5.4	8.4	13.83	18.83	5.57	24	0.50	15.93	16.45	17.60	17.79	20.23	20.23	1216 - 1215
91	91	108.755	0.84	0.84	0.99	0.83	0.83	5.0	5.0	8.6	7.14	8.83	4.88	18	0.51	16.44	16.99	17.79	18.02	20.23	20.23	1217 - 1216
92	End	49.725	0.42	3.86	0.72	0.30	3.43	5.0	14.9	6.1	20.81	60.70	4.92	30	1.57	13.00	13.78	15.65	15.55	16.10	20.37	1417-1416
93	93	52.120	0.00	2.28	0.00	0.00	2.06	0.0	8.6	7.4	15.20	34.23	3.17	30	0.50	13.78	14.04	16.28	16.31	20.37	20.70	1417A-1417
94	94	102.150	0.06	2.28	0.99	0.06	2.06	5.0	8.1	7.5	15.51	34.25	4.52	30	0.50	14.04	14.55	16.48	15.88	20.70	21.06	1418-1417A
95	95	104.951	0.21	2.22	0.93	0.20	2.00	5.0	7.5	7.7	15.39	34.12	5.82	30	0.50	14.55	15.07	15.88	16.39	21.06	21.06	1419-1418
96	96	102.005	0.41	2.01	0.88	0.36	1.80	5.0	7.2	7.8	14.09	19.08	6.32	24	0.51	15.07	15.59	16.39	16.94	21.06	21.08	1420-1419
97	97	100.000	0.22	1.60	0.77	0.17	1.44	5.0	6.7	8.0	11.47	19.09	5.41	24	0.51	15.59	16.10	16.94	17.31	21.08	21.08	1421-1420
98	98	57.226	0.06	1.38	0.88	0.05	1.27	5.0	6.4	8.1	10.25	19.03	5.32	24	0.51	16.10	16.39	17.31	17.54	21.08	21.14	1422-1421
99	99	76.883	0.00	0.20	0.00	0.00	0.20	0.0	5.8	8.3	1.64	5.39	4.89	12	1.64	18.64	19.90	19.02	20.44	21.14	23.10	1420A-1422
100	100	100.599	0.00	0.10	0.00	0.00	0.10	0.0	5.1	8.5	0.85	1.07	3.41	8	0.57	20.22	20.79	20.67	21.24	23.10	23.10	1420B-1420A
101	101	17.324	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	1.08	2.44	8	0.58	20.79	20.89	21.51	21.56	23.10	23.10	RL 1N
102	100	20.071	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	1.01	3.24	8	0.50	20.79	20.89	21.26	21.36	23.10	23.10	RL 2N
103	93	100.915	0.43	1.16	0.99	0.43	1.07	5.0	13.8	6.2	6.68	39.20	3.91	30	0.65	15.21	15.87	16.28	16.73	20.37	20.69	1425-1417
104	104	54.860	0.00	0.73	0.00	0.00	0.64	0.0	12.9	6.4	4.13	39.26	3.35	30	0.66	15.87	16.23	16.73	16.90	20.69	21.03	1425A-1425
105	105	104.930	0.06	0.73	0.99	0.06	0.64	5.0	11.2	6.8	4.35	39.30	4.05	30	0.66	16.23	16.92	16.90	17.61	21.03	21.40	1426-1425A
106	106	102.924	0.17	0.67	0.82	0.14	0.58	5.0	10.1	7.0	4.10	18.82	4.20	24	0.50	16.92	17.43	17.61	18.14	21.40	21.43	1427-1426
107	107	100.000	0.19	0.50	0.81	0.15	0.45	5.0	8.7	7.4	3.29	18.90	3.57	24	0.50	17.43	17.93	18.14	18.56	21.43	21.43	1428-1427
108	108	36.823	0.00	0.20	0.00	0.00	0.20	0.0	5.9	8.2	1.63	3.57	5.24	10	1.90	18.80	19.50	19.20	20.07	21.43	22.42	1428A-1428
109	109	86.000	0.00	0.10	0.00	0.00	0.10	0.0	5.3	8.5	0.84	1.01	3.24	8	0.50	19.95	20.38	20.41	20.84	22.42	22.58	1428B-1428A

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Project File: Greenfield Storm East.stm

Number of lines: 140

Run Date: 6/19/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope	Dn	Up	Dn	Up	Dn	Up	(ft)
			(ac)	(ac)				(min)	(min)					(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
111	110	47.654	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	1.01	3.25	8	0.50	20.65	20.89	21.12	21.36	22.58	23.10	RL 3N
112	109	47.591	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	1.01	3.25	8	0.50	20.24	20.48	20.71	20.95	22.42	23.10	RL 4N
113	108	100.000	0.11	0.11	0.85	0.09	0.09	5.0	5.0	8.6	0.80	8.78	1.94	18	0.50	17.93	18.43	18.56	18.76	21.43	21.43	1429-1428
114	99	28.960	0.00	1.12	0.00	0.00	1.02	0.0	5.7	8.3	8.48	19.24	4.86	24	0.52	16.39	16.54	17.54	17.58	21.14	21.37	1422B-1422
115	114	74.550	0.00	1.12	0.00	0.00	1.02	0.0	5.3	8.5	8.65	18.83	5.23	24	0.50	16.54	16.91	17.58	17.96	21.37	21.59	1422A-1422B
116	115	44.980	0.89	0.89	0.89	0.79	0.79	5.0	5.0	8.6	6.80	8.87	5.27	18	0.51	16.91	17.14	17.96	18.15	21.59	21.59	1424-1422A
117	115	18.000	0.23	0.23	0.99	0.23	0.23	5.0	5.0	8.6	1.96	8.48	2.59	18	0.56	17.00	17.10	17.96	17.63	21.59	21.59	1423-1422A
118	End	65.413	0.00	1.79	0.00	0.00	1.77	0.0	10.6	6.9	12.23	48.91	4.89	24	3.35	13.00	15.19	15.25	16.45	15.60	22.53	1201 - 1200
119	118	26.704	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.86	7.14	8	4.01	20.78	21.85	21.17	22.47	22.53	23.60	RL 8B
120	118	115.278	0.00	0.52	0.00	0.00	0.51	0.0	9.7	7.1	3.66	8.80	4.52	18	0.50	16.79	17.37	17.46	18.10	22.53	21.92	1205 - 1201
121	120	237.892	0.00	0.52	0.00	0.00	0.51	0.0	8.0	7.6	3.90	8.78	4.47	18	0.50	17.37	18.56	18.10	19.31	21.92	22.23	1206 - 1205
122	121	116.399	0.00	0.52	0.00	0.00	0.51	0.0	7.2	7.8	4.02	8.76	4.47	18	0.50	18.56	19.14	19.31	19.91	22.23	22.91	1206A-1206
123	122	45.823	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.47	6.66	8	2.99	20.48	21.85	20.91	22.47	22.91	23.60	RL 16B
124	122	66.345	0.00	0.30	0.00	0.00	0.30	0.0	6.6	8.0	2.37	5.46	4.12	15	0.51	19.37	19.71	19.95	20.33	22.91	22.91	1206B-1206A
125	124	45.926	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.47	5.70	8	3.00	20.47	21.85	20.81	22.38	22.91	23.60	RL 15B
126	124	88.064	0.00	0.15	0.00	0.00	0.15	0.0	5.2	8.5	1.26	5.46	2.67	15	0.51	19.71	20.16	20.33	20.60	22.91	22.91	1207 - 1206B
127	126	45.969	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.47	5.70	8	3.00	20.47	21.85	20.81	22.38	22.91	23.60	RL 14B
128	118	65.995	0.00	1.05	0.00	0.00	1.04	0.0	8.7	7.4	7.66	18.90	5.34	24	0.50	16.13	16.46	17.02	17.44	22.53	22.60	1201A-1201
129	128	88.339	0.00	0.90	0.00	0.00	0.89	0.0	8.4	7.5	6.66	8.76	5.39	18	0.50	16.97	17.41	17.95	18.41	22.60	22.69	1202 - 1201A
130	129	65.661	0.00	0.75	0.00	0.00	0.74	0.0	8.0	7.6	5.62	8.80	4.74	18	0.50	17.41	17.74	18.41	18.65	22.69	22.48	1202A-1202
131	130	120.992	0.00	0.57	0.00	0.00	0.56	0.0	7.2	7.8	4.40	8.81	4.23	18	0.50	17.74	18.35	18.65	19.15	22.48	22.69	1202B-1202A
132	131	66.016	0.00	0.39	0.00	0.00	0.39	0.0	6.8	7.9	3.06	5.40	4.42	15	0.50	18.59	18.92	19.26	19.62	22.69	22.49	1203 - 1202B

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Project File: Greenfield Storm East.stm

Number of lines: 140

Run Date: 6/19/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station Line	Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID		
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
133	132	66.002	0.00	0.26	0.00	0.26	0.0	6.2	8.1	2.10	5.40	3.95	15	0.50	19.12	19.45	19.66	20.03	22.49	22.61	1203A-1203		
134	133	61.709	0.00	0.14	0.00	0.14	0.0	5.1	8.5	1.18	5.41	3.35	15	0.50	19.65	19.96	20.05	20.39	22.61	22.71	1204 - 1203A		
135	134	26.499	0.14	0.14	0.99	0.14	5.0	5.0	8.6	1.19	3.50	6.58	8	6.00	20.26	21.85	20.53	22.37	22.71	23.60	RL 1B		
136	133	26.521	0.12	0.12	0.99	0.12	5.0	5.0	8.6	1.02	3.49	6.24	8	6.00	20.26	21.85	20.51	22.33	22.61	23.60	RL 2B		
137	132	26.547	0.13	0.13	0.99	0.13	5.0	5.0	8.6	1.11	3.49	6.41	8	5.99	20.26	21.85	20.52	22.35	22.49	23.60	RL 3B		
138	131	26.572	0.18	0.18	0.99	0.18	5.0	5.0	8.6	1.53	3.49	7.22	8	5.98	20.26	21.85	20.57	22.43	22.69	23.60	RL 4B		
139	130	26.619	0.18	0.18	0.99	0.18	5.0	5.0	8.6	1.53	3.50	7.23	8	6.01	20.25	21.85	20.56	22.43	22.48	23.60	RL 5B		
140	129	26.645	0.15	0.15	0.99	0.15	5.0	5.0	8.6	1.28	3.50	6.75	8	6.00	20.25	21.85	20.53	22.38	22.69	23.60	RL 6B		

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	38.040	0.00	9.48	0.00	0.00	9.39	0.0	10.9	6.8	64.22	180.0	5.82	60	0.34	13.00	13.13	16.65	15.39	18.55	20.07	1557-1581
2	1	24.500	0.38	8.10	0.99	0.38	8.02	5.0	10.8	6.9	55.00	75.96	8.26	42	0.41	13.13	13.23	15.39	15.55	20.07	20.56	1558-1557
3	2	112.449	0.17	6.32	0.99	0.17	6.26	5.0	10.4	7.0	43.53	83.91	6.92	42	0.50	13.23	13.79	15.55	15.84	20.56	20.69	1558A-1558
4	3	78.184	0.41	6.15	0.99	0.41	6.09	5.0	10.1	7.0	42.68	55.67	8.12	36	0.50	13.79	14.18	15.84	16.31	20.69	20.71	1559-1558A
5	4	108.202	0.57	5.74	0.99	0.56	5.68	5.0	9.8	7.1	40.27	55.68	7.64	36	0.50	14.18	14.72	16.31	16.78	20.71	20.71	1560-1559
6	5	58.513	0.00	5.17	0.00	0.00	5.12	0.0	9.6	7.1	36.51	55.49	7.24	36	0.50	14.72	15.01	16.78	16.97	20.71	21.22	1561-1560
7	6	57.860	0.63	3.96	0.99	0.62	3.92	5.0	9.4	7.2	28.21	55.80	6.25	36	0.50	15.01	15.30	16.97	17.02	21.22	20.64	1562-1561
8	7	124.542	0.63	3.33	0.99	0.62	3.30	5.0	9.0	7.3	24.08	33.36	6.81	30	0.47	15.30	15.89	17.02	17.56	20.64	20.64	1563-1562
9	8	62.271	0.00	2.70	0.00	0.00	2.67	0.0	8.7	7.4	19.71	33.08	6.02	30	0.47	15.89	16.18	17.56	17.89	20.64	21.26	1564-1563
10	9	119.328	0.00	1.28	0.00	0.00	1.27	0.0	8.0	7.6	9.57	25.19	4.58	24	0.89	16.18	17.24	17.69	18.34	21.26	23.53	1564A-1564
11	10	61.202	0.00	1.17	0.00	0.00	1.16	0.0	7.7	7.7	8.87	19.02	5.11	24	0.51	17.24	17.55	18.34	18.61	23.53	23.41	1564B-1564A
12	11	78.201	0.00	1.03	0.00	0.00	1.02	0.0	7.4	7.7	7.90	9.31	5.83	18	0.56	18.05	18.49	19.11	19.58	23.41	23.41	1564C-1564B
13	12	7.541	0.00	0.92	0.00	0.00	0.91	0.0	7.4	7.8	7.07	9.04	5.31	18	0.53	18.49	18.53	19.58	19.56	23.41	23.40	1564D-1564C
14	13	76.076	0.00	0.83	0.00	0.00	0.82	0.0	7.0	7.9	6.46	11.20	5.14	18	0.81	18.53	19.15	19.56	20.13	23.40	23.42	1564E-1564D
15	14	57.913	0.00	0.73	0.00	0.00	0.72	0.0	6.7	8.0	5.75	9.08	4.86	18	0.54	19.15	19.46	20.13	20.38	23.42	23.39	1564F-1564E
16	15	53.188	0.00	0.55	0.00	0.00	0.54	0.0	6.4	8.1	4.40	9.16	4.20	18	0.55	19.46	19.75	20.38	20.55	23.39	23.41	1564G-1564F
17	16	133.605	0.00	0.38	0.00	0.00	0.38	0.0	5.5	8.4	3.15	5.48	4.07	15	0.52	19.75	20.44	20.55	21.15	23.41	23.36	1564H-1564G
18	17	40.771	0.00	0.22	0.00	0.00	0.22	0.0	5.1	8.6	1.86	5.48	3.11	15	0.52	20.44	20.65	21.15	21.19	23.36	23.40	1564I-1564H
19	18	16.864	0.00	0.22	0.00	0.00	0.22	0.0	5.0	8.6	1.87	2.48	6.68	8	3.02	21.69	22.20	22.12	22.82	23.40	23.71	1564I-DB
20	19	6.952	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.48	5.62	8	3.02	22.22	22.43	22.82	23.05	23.71	24.10	RL 24D
21	11	36.303	0.00	0.14	0.00	0.00	0.14	0.0	5.0	8.6	1.19	2.47	5.55	8	3.00	21.04	22.13	21.37	22.65	23.41	24.01	1564B-MH
22	21	9.826	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.49	4.10	8	3.05	22.13	22.43	22.65	22.95	24.01	24.10	RL 31D

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Project File: Greenfield Storm Southwest.stm

Number of lines: 199

Run Date: 6/11/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	17	35.539	0.00	0.16	0.00	0.00	0.16	0.0	5.0	8.6	1.36	2.48	5.84	8	3.01	21.04	22.11	21.39	22.66	23.36	23.98	1564H-DB
24	23	9.598	0.16	0.16	0.99	0.16	0.16	5.0	5.0	8.6	1.36	2.61	4.42	8	3.33	22.11	22.43	22.66	22.98	23.98	24.10	RL 25D
25	16	34.308	0.00	0.17	0.00	0.00	0.17	0.0	5.0	8.6	1.44	2.47	5.97	8	3.00	21.04	22.07	21.41	22.63	23.41	23.97	1564G-DB
26	25	11.476	0.17	0.17	0.99	0.17	0.17	5.0	5.0	8.6	1.45	2.46	4.67	8	2.96	22.09	22.43	22.63	22.99	23.97	24.10	RL 26D
27	13	34.877	0.00	0.09	0.00	0.00	0.09	0.0	5.1	8.6	0.76	2.46	4.79	8	2.98	21.04	22.08	21.29	22.49	23.40	23.99	1564D-DB
28	27	10.068	0.09	0.09	0.99	0.09	0.09	5.0	5.0	8.6	0.77	2.66	3.37	8	3.48	22.08	22.43	22.49	22.84	23.99	24.10	RL 29D
29	14	34.559	0.00	0.10	0.00	0.00	0.10	0.0	5.1	8.6	0.85	2.48	4.96	8	3.01	21.04	22.08	21.31	22.52	23.42	23.98	1564E-DB
30	29	9.428	0.10	0.10	0.99	0.10	0.10	5.0	5.0	8.6	0.85	2.75	3.51	8	3.71	22.08	22.43	22.52	22.87	23.98	24.10	RL 28D
31	10	34.284	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	2.47	5.12	8	3.00	21.04	22.07	21.32	22.53	23.53	23.98	1564A-MH
32	31	10.212	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.68	3.66	8	3.53	22.07	22.43	22.53	22.89	23.98	24.10	RL 32D
33	12	34.142	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	2.48	5.12	8	3.02	21.04	22.07	21.32	22.53	23.41	23.98	1564C-DB
34	33	10.846	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.60	3.66	8	3.32	22.07	22.43	22.53	22.89	23.98	24.10	RL 30D
35	15	31.630	0.00	0.18	0.00	0.00	0.18	0.0	5.0	8.6	1.53	2.47	6.11	8	3.00	21.04	21.99	21.42	22.57	23.39	23.94	1564F-DB
36	35	12.958	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.63	4.77	8	3.40	21.99	22.43	22.57	23.01	23.94	24.10	RL 27D
37	6	195.230	0.00	1.21	0.00	0.00	1.20	0.0	8.1	7.5	9.03	18.94	5.61	24	0.50	16.26	17.24	17.23	18.31	21.22	22.91	1561A-1561
38	37	76.325	0.00	0.97	0.00	0.00	0.96	0.0	7.8	7.6	7.32	8.98	5.61	18	0.52	17.73	18.13	18.76	19.18	22.91	22.89	1561C-1561A
39	38	77.531	0.00	0.73	0.00	0.00	0.72	0.0	7.4	7.7	5.60	8.80	4.61	18	0.50	18.13	18.52	19.18	19.43	22.89	22.92	1561D-1561C
40	39	45.427	0.00	0.62	0.00	0.00	0.61	0.0	7.2	7.8	4.80	8.83	4.49	18	0.51	18.52	18.75	19.43	19.59	22.92	22.89	1561E-1561D
41	40	62.174	0.00	0.51	0.00	0.00	0.50	0.0	6.8	7.9	4.00	5.39	4.79	15	0.50	19.00	19.31	19.80	20.12	22.89	22.92	1561F-1561E
42	41	82.583	0.00	0.39	0.00	0.00	0.39	0.0	6.3	8.1	3.13	5.38	4.03	15	0.50	19.31	19.72	20.12	20.43	22.92	22.92	1561G-1561F
43	42	47.319	0.00	0.28	0.00	0.00	0.28	0.0	5.9	8.2	2.29	5.44	3.53	15	0.51	19.72	19.96	20.43	20.56	22.92	22.93	1561H-1561G
44	43	28.068	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.5	0.93	2.41	5.05	8	2.85	20.58	21.38	20.87	21.84	22.93	23.37	1561H-DB

Project File: Greenfield Storm Southwest.stm

Run Date: 6/11/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
45	44	10.662	0.00	0.11	0.00	0.00	0.11	0.0	5.0	8.6	0.93	2.55	3.66	8	3.19	21.38	21.72	21.84	22.18	23.37	23.48	1561I-1561H(0)
46	45	7.127	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.45	3.66	8	2.95	21.72	21.93	22.18	22.39	23.48	23.60	RL 10E
47	43	44.961	0.00	0.17	0.00	0.00	0.17	0.0	5.3	8.5	1.43	5.46	2.90	15	0.51	19.96	20.19	20.56	20.66	22.93	22.94	1561I-1561H
48	47	13.701	0.00	0.17	0.00	0.00	0.17	0.0	5.2	8.5	1.43	2.22	5.65	8	2.41	20.77	21.10	21.16	21.66	22.94	23.17	1561J-1561I
49	48	22.723	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	2.26	3.36	8	2.51	21.12	21.69	21.66	22.15	23.17	23.34	1561K-1561J
50	49	9.049	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.32	3.66	8	2.65	21.69	21.93	22.15	22.39	23.34	23.60	RL 8E
51	38	33.505	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	2.54	5.18	8	3.16	20.58	21.64	20.86	22.10	22.89	23.44	1561C-DB
52	51	9.614	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.48	3.66	8	3.02	21.64	21.93	22.10	22.39	23.44	23.60	RL 15E
53	39	34.268	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	2.52	5.16	8	3.12	20.57	21.64	20.85	22.10	22.92	23.47	1561D-DB
54	53	9.634	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.48	3.66	8	3.01	21.64	21.93	22.10	22.39	23.47	23.60	RL 14E
55	38	35.130	0.00	0.13	0.00	0.00	0.13	0.0	5.1	8.6	1.10	2.49	5.43	8	3.05	20.54	21.61	20.85	22.11	22.89	23.46	1561B-1561C
56	55	10.583	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.48	3.95	8	3.02	21.61	21.93	22.11	22.43	23.46	23.60	RL 16E
57	37	32.574	0.00	0.24	0.00	0.00	0.24	0.0	5.0	8.6	2.04	2.54	7.03	8	3.16	20.57	21.60	21.02	22.23	22.91	23.44	1561A-DB
58	57	11.161	0.24	0.24	0.99	0.24	0.24	5.0	5.0	8.6	2.04	2.45	5.98	8	2.96	21.60	21.93	22.23	22.56	23.44	23.60	RL 17E
59	41	32.670	0.00	0.12	0.00	0.00	0.12	0.0	5.1	8.6	1.02	2.46	5.25	8	2.97	20.57	21.54	20.87	22.02	22.92	23.44	1561F-DB
60	59	12.913	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.48	3.80	8	3.02	21.54	21.93	22.02	22.41	23.44	23.60	RL 12E
61	42	30.621	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	2.36	5.01	8	2.74	20.65	21.49	20.94	21.95	22.92	23.41	1561G-DB
62	61	14.539	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.48	3.66	8	3.03	21.49	21.93	21.95	22.39	23.41	23.60	RL 11E
63	1	263.266	0.24	1.38	0.99	0.24	1.37	5.0	8.3	7.5	10.24	18.86	5.82	24	0.50	16.00	17.31	17.05	18.45	20.07	21.34	1568-1557
64	63	49.499	0.00	1.14	0.00	0.00	1.13	0.0	8.0	7.6	8.55	18.61	4.89	24	0.48	17.31	17.55	18.45	18.59	21.34	23.47	1568A-1568
65	64	33.083	0.00	0.98	0.00	0.00	0.97	0.0	7.7	7.6	7.42	18.00	4.71	24	0.45	17.55	17.70	18.59	18.67	23.47	23.47	1568C-1568A
66	65	65.762	0.00	0.85	0.00	0.00	0.84	0.0	7.4	7.7	6.51	8.66	5.33	18	0.49	18.20	18.52	19.17	19.51	23.47	23.41	1568D-1568C

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Project File: Greenfield Storm Southwest.stm

Number of lines: 199

Run Date: 6/11/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
67	66	20.667	0.00	0.77	0.00	0.00	0.76	0.0	7.3	7.8	5.92	8.63	4.95	18	0.48	18.52	18.62	19.51	19.56	23.41	23.33	1568E-1568D
68	67	65.933	0.00	0.69	0.00	0.00	0.68	0.0	7.0	7.9	5.38	8.79	4.76	18	0.50	18.62	18.95	19.56	19.84	23.33	23.06	1568F-1568E
69	68	65.501	0.00	0.56	0.00	0.00	0.55	0.0	6.6	8.0	4.44	8.67	4.31	18	0.49	18.95	19.27	19.84	20.08	23.06	23.23	1568G-1568F
70	69	55.243	0.00	0.44	0.00	0.00	0.44	0.0	6.3	8.1	3.54	5.34	4.59	15	0.49	19.52	19.79	20.26	20.55	23.23	23.39	1568H-1568G
71	70	12.409	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.72	6.39	8	3.63	21.48	21.93	21.84	22.51	23.39	23.60	RL 24E
72	69	12.480	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.71	5.51	8	3.61	21.48	21.93	21.76	22.41	23.23	23.60	RL 25E
73	66	12.678	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	2.72	4.85	8	3.63	21.47	21.93	21.70	22.32	23.41	23.60	RL 28E
74	67	12.651	0.08	0.08	0.99	0.08	0.08	5.0	5.0	8.6	0.68	2.72	4.85	8	3.64	21.47	21.93	21.70	22.32	23.33	23.60	RL 27E
75	65	12.763	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.71	5.66	8	3.60	21.47	21.93	21.77	22.43	23.47	23.60	RL 29E
76	68	11.304	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	3.12	6.06	8	4.78	21.39	21.93	21.66	22.43	23.06	23.60	RL 26E
77	70	131.756	0.00	0.26	0.00	0.00	0.26	0.0	5.0	8.6	2.21	5.36	3.34	15	0.49	19.79	20.44	20.55	21.03	23.39	23.19	1568I-1568H
78	77	12.229	0.26	0.26	0.99	0.26	0.26	5.0	5.0	8.6	2.21	3.16	8.11	8	4.91	21.33	21.93	21.74	22.57	23.19	23.60	RL 23E
79	2	139.585	0.00	1.40	0.00	0.00	1.39	0.0	9.4	7.2	9.97	18.66	3.26	24	0.49	13.23	13.91	15.55	15.71	20.56	22.84	1557A-1558
80	79	66.002	0.00	1.18	0.00	0.00	1.17	0.0	9.0	7.3	8.52	18.61	2.79	24	0.48	13.91	14.23	15.97	16.03	22.84	22.87	1557B-1557A
81	80	88.144	0.00	1.03	0.00	0.00	1.02	0.0	8.4	7.5	7.60	18.67	3.70	24	0.49	14.23	14.66	16.22	15.64	22.87	22.85	1557C-1557B
82	81	73.243	0.00	0.88	0.00	0.00	0.87	0.0	8.1	7.5	6.57	8.82	5.34	18	0.51	14.66	15.03	15.64	16.02	22.85	22.89	1557D-1557C
83	82	109.879	0.00	0.70	0.00	0.00	0.69	0.0	7.5	7.7	5.34	8.78	4.60	18	0.50	15.03	15.58	16.02	16.47	22.89	22.89	1557E-1557D
84	83	64.748	0.00	0.52	0.00	0.00	0.51	0.0	7.1	7.8	4.04	8.72	4.07	18	0.49	15.58	15.90	16.47	16.67	22.89	22.85	1557F-1557E
85	84	78.018	0.00	0.39	0.00	0.00	0.39	0.0	6.6	8.0	3.09	5.33	4.11	15	0.49	15.90	16.28	16.67	16.99	22.85	22.90	1557G-1557F
86	85	36.221	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.5	0.93	2.35	4.99	8	2.71	20.28	21.26	20.57	21.72	22.90	23.30	1557G-DB
87	86	15.288	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.50	3.66	8	3.07	21.26	21.73	21.72	22.19	23.30	23.40	RL 2F
88	64	37.014	0.00	0.16	0.00	0.00	0.16	0.0	5.1	8.6	1.36	2.25	5.58	8	2.49	20.34	21.26	20.71	21.81	23.47	23.43	1568B-1568A

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Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope (%)	Dn	Up	Dn	Up	Dn	Up	(ft)
89	88	12.763	0.16	0.16	0.99	0.16	0.16	5.0	5.0	8.6	1.36	3.27	4.42	8	5.25	21.26	21.93	21.81	22.48	23.43	23.60	RL 30E
90	85	47.816	0.00	0.28	0.00	0.00	0.28	0.0	6.2	8.2	2.26	5.41	3.52	15	0.50	16.28	16.52	16.99	17.12	22.90	23.11	1557H-1557G
91	90	13.689	0.21	0.21	0.99	0.21	0.21	5.0	5.0	8.6	1.79	2.70	6.81	8	3.58	21.24	21.73	21.64	22.34	23.11	23.40	RL 1F
92	48	9.049	0.06	0.06	0.99	0.06	0.06	5.0	5.0	8.6	0.51	4.32	2.27	8	9.17	21.10	21.93	21.66	22.26	23.17	23.60	RL 9E
93	40	18.075	0.00	0.11	0.00	0.00	0.11	0.0	5.2	8.5	0.93	2.40	5.04	8	2.82	20.57	21.08	20.86	21.54	22.89	23.18	1561E-DB
94	93	28.441	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.47	3.66	8	2.99	21.08	21.93	21.54	22.39	23.18	23.60	RL 13E
95	82	22.887	0.00	0.18	0.00	0.00	0.18	0.0	5.1	8.5	1.52	2.46	6.09	8	2.97	20.28	20.96	20.66	21.54	22.89	23.15	1557D-DB
96	95	24.767	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.52	4.77	8	3.11	20.96	21.73	21.54	22.31	23.15	23.40	RL 5F
97	80	45.700	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.54	5.77	8	3.17	20.28	21.73	20.61	22.26	22.87	23.40	RL 7F
98	84	45.699	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.54	5.49	8	3.17	20.28	21.73	20.61	22.23	22.85	23.40	RL 3F
99	81	45.689	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.54	5.77	8	3.17	20.28	21.73	20.61	22.26	22.85	23.40	RL 6F
100	83	45.699	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.54	6.19	8	3.17	20.28	21.73	20.65	22.31	22.89	23.40	RL 4F
101	79	45.690	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.54	6.76	8	3.17	20.28	21.73	20.71	22.35	22.84	23.40	RL 8F
102	9	66.509	0.71	1.42	0.99	0.70	1.41	5.0	6.2	8.2	11.47	18.54	5.13	24	0.48	16.18	16.50	17.69	17.71	21.26	20.64	1565-1564
103	102	132.971	0.71	0.71	0.99	0.70	0.70	5.0	5.0	8.6	6.04	18.54	3.82	24	0.48	16.50	17.14	17.71	18.01	20.64	20.64	1566-1565
104	90	24.227	0.00	0.07	0.00	0.00	0.07	0.0	5.3	8.5	0.59	5.37	1.81	15	0.50	16.52	16.64	17.12	16.94	23.11	19.72	1557I-1557H
105	104	9.769	0.07	0.07	0.99	0.07	0.07	5.0	5.0	8.6	0.60	5.46	2.63	15	0.51	16.64	16.69	16.94	16.99	19.72	19.72	TD F-15571
106	End	80.035	0.30	7.08	0.99	0.30	7.01	5.0	10.6	6.9	48.36	102.2	5.66	48	0.36	13.00	13.29	16.65	15.37	17.57	19.23	1540-1503
107	106	51.751	0.00	6.42	0.00	0.00	6.36	0.0	10.5	6.9	44.04	51.39	8.13	36	0.43	13.29	13.51	15.43	15.67	19.23	19.44	1541-1540
108	107	52.391	0.00	1.39	0.00	0.00	1.38	0.0	10.2	7.0	9.62	18.83	4.68	24	0.50	14.23	14.49	15.67	15.60	19.44	20.77	1543-1541
109	108	75.277	0.00	1.39	0.00	0.00	1.38	0.0	9.8	7.1	9.75	18.99	5.44	24	0.50	14.49	14.87	15.60	15.99	20.77	20.58	1543A-1543
110	109	61.947	0.00	1.39	0.00	0.00	1.38	0.0	9.5	7.2	9.86	18.91	5.45	24	0.50	14.87	15.18	15.99	16.30	20.58	19.26	1543B-1543A
376		Project File: Greenfield Storm Southwest.stm																			Run Date: 6/11/2025	
		Number of lines: 199																				
		NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box																				
		Storm Sewers v2025.00																				

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope	Dn	Up	Dn	Up	Dn	Up	(ft)
			(ac)	(ac)				(min)	(min)					(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
111	110	24.494	0.00	1.32	0.00	0.00	1.31	0.0	9.4	7.2	9.41	20.92	5.26	24	0.61	15.18	15.33	16.30	16.43	19.26	22.58	1543C-1543B
112	111	50.659	0.00	1.12	0.00	0.00	1.11	0.0	9.1	7.3	8.07	20.22	5.57	24	0.57	16.08	16.37	16.96	17.38	22.58	22.32	1543D-1543C
113	112	36.789	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	2.45	5.09	8	2.94	19.88	20.96	20.17	21.42	22.32	22.87	1543D-DB
114	113	13.793	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.34	3.66	8	2.68	20.96	21.33	21.42	21.79	22.87	23.00	RL 15G
115	111	13.682	0.20	0.20	0.99	0.20	0.20	5.0	5.0	8.6	1.70	2.70	6.66	8	3.58	20.84	21.33	21.22	21.93	22.58	23.00	RL 16G
116	112	76.122	0.00	1.01	0.00	0.00	1.00	0.0	8.5	7.4	7.42	19.38	4.80	24	0.53	16.37	16.77	17.38	17.74	22.32	22.31	1543E-1543D
117	116	65.303	0.00	0.88	0.00	0.00	0.87	0.0	8.0	7.6	6.59	19.00	4.56	24	0.51	16.77	17.10	17.74	18.01	22.31	22.31	1543F-1543E
118	117	109.780	0.00	0.70	0.00	0.00	0.69	0.0	7.0	7.9	5.46	18.92	4.20	24	0.50	17.10	17.65	18.01	18.47	22.31	22.31	1543G-1543F
119	118	23.083	0.00	0.18	0.00	0.00	0.18	0.0	5.1	8.5	1.52	2.49	6.12	8	3.03	19.88	20.58	20.26	21.16	22.31	22.66	1543G-DB
120	119	25.353	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.45	4.77	8	2.96	20.58	21.33	21.16	21.91	22.66	23.00	RL 12G
121	107	119.794	0.00	1.32	0.00	0.00	1.31	0.0	8.9	7.3	9.56	19.07	5.72	24	0.51	15.28	15.89	16.28	16.99	19.44	21.45	1542-1541
122	121	85.768	0.00	1.32	0.00	0.00	1.31	0.0	8.5	7.4	9.73	19.15	5.44	24	0.51	15.89	16.33	16.99	17.44	21.45	21.71	1542A-1542
123	122	64.547	0.00	1.10	0.00	0.00	1.09	0.0	8.0	7.6	8.23	19.40	4.84	24	0.53	16.33	16.67	17.44	17.69	21.71	21.72	1542B-1542A
124	123	86.885	0.00	0.95	0.00	0.00	0.94	0.0	7.7	7.7	7.20	8.93	5.57	18	0.52	16.67	17.12	17.69	18.16	21.72	21.73	1542C-1542B
125	124	77.024	0.00	0.80	0.00	0.00	0.79	0.0	7.3	7.8	6.15	8.94	4.94	18	0.52	17.12	17.52	18.16	18.48	21.73	21.74	1542D-1542C
126	125	108.870	0.00	0.62	0.00	0.00	0.61	0.0	6.7	8.0	4.89	8.90	4.42	18	0.51	17.52	18.08	18.48	18.93	21.74	21.76	1542E-1542D
127	126	65.963	0.00	0.44	0.00	0.00	0.44	0.0	6.3	8.1	3.53	5.56	4.25	15	0.53	18.08	18.43	18.93	19.19	21.76	21.77	1542F-1542E
128	127	62.090	0.00	0.31	0.00	0.00	0.31	0.0	5.8	8.3	2.54	5.56	3.65	15	0.53	18.43	18.76	19.19	19.40	21.77	21.76	1542G-1542F
129	128	33.270	0.00	0.11	0.00	0.00	0.11	0.0	5.1	8.6	0.93	2.46	5.11	8	2.98	19.26	20.25	19.54	20.71	21.76	22.21	1542G-DB
130	129	13.744	0.11	0.11	0.99	0.11	0.11	5.0	5.0	8.6	0.94	2.67	3.66	8	3.49	20.25	20.73	20.71	21.19	22.21	22.40	RL 2H
131	128	64.751	0.00	0.20	0.00	0.00	0.20	0.0	5.0	8.6	1.70	5.45	3.12	15	0.51	18.76	19.09	19.40	19.61	21.76	22.09	1542H-1542G
132	131	14.434	0.20	0.20	0.99	0.20	0.20	5.0	5.0	8.6	1.70	2.68	6.64	8	3.53	20.22	20.73	20.61	21.33	22.09	22.40	RL 1H

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Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope (%)	Dn	Up	Dn	Up	Dn	Up	(ft)
133	118	77.075	0.00	0.52	0.00	0.00	0.51	0.0	6.5	8.1	4.14	8.60	4.64	18	0.48	18.15	18.52	18.88	19.30	22.31	22.31	1543H-1543G
134	133	88.146	0.00	0.37	0.00	0.00	0.37	0.0	5.9	8.3	3.02	5.51	4.44	15	0.52	18.77	19.23	19.43	19.93	22.31	22.31	1543I-1543H
135	134	65.979	0.00	0.22	0.00	0.00	0.22	0.0	5.1	8.5	1.86	5.40	3.14	15	0.50	19.23	19.56	19.93	20.10	22.31	22.31	1543J-1543I
136	135	45.740	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.30	6.45	8	2.60	20.14	21.33	20.60	21.95	22.31	23.00	RL 9G
137	117	45.750	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.54	6.19	8	3.17	19.88	21.33	20.25	21.91	22.31	23.00	RL 13G
138	116	45.720	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.54	5.49	8	3.17	19.88	21.33	20.19	21.83	22.31	23.00	RL 14G
139	134	45.750	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.54	5.77	8	3.17	19.88	21.33	20.21	21.86	22.31	23.00	RL 10G
140	133	45.750	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.54	5.77	8	3.17	19.88	21.33	20.21	21.86	22.31	23.00	RL 11G
141	125	19.165	0.00	0.18	0.00	0.00	0.18	0.0	5.1	8.5	1.52	2.42	6.04	8	2.87	19.26	19.81	19.64	20.39	21.74	22.01	1542D-DB
142	141	29.316	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.53	4.77	8	3.14	19.81	20.73	20.39	21.31	22.01	22.40	RL 5H
143	122	46.229	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.55	6.76	8	3.18	19.26	20.73	19.68	21.35	21.71	22.40	RL 8H
144	127	46.385	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.54	5.49	8	3.17	19.26	20.73	19.57	21.23	21.77	22.40	RL 3H
145	123	46.265	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.54	5.77	8	3.18	19.26	20.73	19.59	21.26	21.72	22.40	RL 7H
146	126	46.370	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.54	6.19	8	3.17	19.26	20.73	19.63	21.31	21.76	22.40	RL 4H
147	124	46.288	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.54	5.77	8	3.18	19.26	20.73	19.59	21.26	21.73	22.40	RL 6H
148	107	40.278	0.55	3.71	0.99	0.54	3.67	5.0	7.0	7.9	28.90	48.10	6.05	36	0.37	13.51	13.66	15.67	15.40	19.44	18.99	1544-1541
149	148	97.810	0.77	3.16	0.99	0.76	3.13	5.0	6.6	8.0	25.08	47.82	6.19	36	0.37	13.66	14.02	15.40	15.63	18.99	18.99	1545-1544
150	149	98.310	0.79	2.39	0.99	0.78	2.37	5.0	6.1	8.2	19.31	34.22	6.05	30	0.50	14.02	14.51	15.63	16.00	18.99	18.99	1546-1545
151	150	98.310	0.80	1.60	0.99	0.79	1.58	5.0	5.8	8.3	13.14	18.87	5.67	24	0.50	14.52	15.01	16.00	16.31	18.99	18.99	1547-1546
152	151	98.310	0.80	0.80	0.99	0.79	0.79	5.0	5.0	8.6	6.80	18.87	3.95	24	0.50	15.00	15.49	16.31	16.41	18.99	18.99	1548-1547
153	110	10.137	0.07	0.07	0.99	0.07	0.07	5.0	5.0	8.6	0.60	5.87	2.85	15	0.59	16.21	16.27	16.48	16.57	19.26	23.00	TD G-1543B
154	106	160.751	0.17	0.36	0.99	0.17	0.36	5.0	7.1	7.8	2.79	5.42	2.52	15	0.50	13.80	14.61	15.37	15.57	19.23	20.12	1540A-1540

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Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope	Dn	Up	Dn	Up	(ft)	(ft)	
155	154	168.268	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	5.39	2.50	15	0.50	14.61	15.45	15.63	15.95	20.12	20.18	1540B-1540A
156	End	78.279	0.21	5.68	0.99	0.21	5.62	5.0	9.9	7.1	39.74	70.15	5.62	36	0.79	13.00	13.62	16.65	16.85	16.62	20.46	1550-1504
157	156	98.067	0.44	4.78	0.99	0.44	4.73	5.0	9.6	7.1	33.82	55.72	4.79	36	0.50	13.62	14.11	17.59	17.77	20.46	20.67	1551-1550
158	157	38.005	0.00	1.27	0.00	0.00	1.26	0.0	9.4	7.2	9.05	17.88	2.88	24	0.45	16.31	16.48	18.57	18.61	20.67	22.34	1556-1551
159	158	38.787	0.00	1.27	0.00	0.00	1.26	0.0	9.1	7.3	9.12	18.21	2.90	24	0.46	16.48	16.66	18.81	18.85	22.34	22.54	1556A-1556
160	159	65.992	0.00	1.05	0.00	0.00	1.04	0.0	8.7	7.4	7.66	18.32	2.44	24	0.47	16.66	16.97	19.05	19.10	22.54	22.93	1556B-1556A
161	160	88.339	0.00	0.90	0.00	0.00	0.89	0.0	8.3	7.5	6.66	8.66	3.77	18	0.49	17.47	17.90	19.24	19.49	22.93	22.70	1556C-1556B
162	161	65.822	0.00	0.75	0.00	0.00	0.74	0.0	8.0	7.6	5.62	8.65	3.18	18	0.49	17.90	18.22	19.83	19.96	22.70	22.78	1556D-1556C
163	162	120.845	0.00	0.57	0.00	0.00	0.56	0.0	7.2	7.8	4.40	8.74	2.49	18	0.50	18.22	18.82	20.20	20.32	22.78	22.82	1556E-1556D
164	163	24.713	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.60	6.26	8	3.32	20.91	21.73	21.28	22.31	22.82	23.40	RL 12F
165	163	65.985	0.00	0.39	0.00	0.00	0.39	0.0	6.8	7.9	3.06	5.31	2.51	15	0.48	19.07	19.39	20.50	20.60	22.82	22.76	1556F-1556E
166	165	65.995	0.00	0.26	0.00	0.00	0.26	0.0	6.2	8.1	2.10	5.56	1.81	15	0.53	19.39	19.74	20.75	20.78	22.76	22.93	1556G-1556F
167	166	24.543	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.61	5.41	8	3.34	20.91	21.73	21.20	22.21	22.93	23.40	RL 10F
168	166	61.509	0.00	0.14	0.00	0.00	0.14	0.0	5.1	8.5	1.18	5.33	2.09	15	0.49	19.74	20.04	20.89	20.47	22.93	22.79	1556H-1556G
169	168	24.491	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.61	5.70	8	3.35	20.91	21.73	21.23	22.25	22.79	23.40	RL 9F
170	160	24.500	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.61	5.85	8	3.35	20.91	21.73	21.24	22.26	22.93	23.40	RL 15F
171	159	24.500	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.61	6.84	8	3.35	20.91	21.73	21.33	22.35	22.54	23.40	RL 16F
172	165	24.633	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.60	5.55	8	3.33	20.91	21.73	21.21	22.23	22.76	23.40	RL 11F
173	162	24.740	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.60	6.26	8	3.31	20.91	21.73	21.28	22.31	22.78	23.40	RL 13F
174	161	24.728	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.60	5.83	8	3.32	20.91	21.73	21.24	22.26	22.70	23.40	RL 14F
175	157	37.708	0.00	1.34	0.00	0.00	1.33	0.0	8.8	7.4	9.75	15.08	3.10	24	0.32	16.31	16.43	18.57	18.62	20.67	22.27	1555-1551
176	175	57.730	0.00	1.34	0.00	0.00	1.33	0.0	8.5	7.4	9.86	18.95	3.14	24	0.50	16.43	16.72	18.84	18.92	22.27	22.70	1555A-1555
Project File: Greenfield Storm Southwest.stm												Number of lines: 199								Run Date: 6/11/2025		
NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr	Total	(C)	Incr	Total	Inlet	Syst	(in/hr)	(cfs)	(cfs)	(ft/s)	Size	Slope (%)	Dn	Up	Dn	Up	Dn	Up	(ft)
177	176	61.499	0.00	1.20	0.00	0.00	1.19	0.0	8.1	7.5	8.95	18.98	2.85	24	0.50	16.72	17.03	19.15	19.22	22.70	22.68	1555B-1555A
178	177	66.000	0.00	1.08	0.00	0.00	1.07	0.0	7.7	7.7	8.19	18.90	2.61	24	0.50	17.03	17.36	19.41	19.47	22.68	22.55	1555C-1555B
179	178	65.979	0.00	0.95	0.00	0.00	0.94	0.0	7.4	7.7	7.27	8.78	4.12	18	0.50	17.36	17.69	19.63	19.86	22.55	22.65	1555D-1555C
180	179	121.035	0.00	0.77	0.00	0.00	0.76	0.0	6.9	7.9	6.03	8.81	3.42	18	0.50	18.19	18.80	20.25	20.54	22.65	22.59	1555E-1555D
181	180	65.642	0.00	0.59	0.00	0.00	0.58	0.0	6.5	8.0	4.70	8.80	2.66	18	0.50	18.80	19.13	20.81	20.90	22.59	22.62	1555F-1555E
182	181	88.343	0.00	0.44	0.00	0.00	0.44	0.0	5.8	8.3	3.61	8.76	2.05	18	0.50	19.13	19.57	21.07	21.14	22.62	22.68	1555G-1555F
183	182	63.497	0.00	0.22	0.00	0.00	0.22	0.0	5.1	8.6	1.87	5.42	1.56	15	0.50	19.82	20.14	21.24	21.27	22.68	22.58	1555H-1555G
184	183	18.993	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.64	5.47	8	3.42	20.68	21.33	21.33	21.95	22.58	23.00	RL 1G
185	182	19.055	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.64	5.76	8	3.41	20.68	21.33	21.24	21.95	22.68	23.00	RL 2G
186	181	19.138	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.63	5.15	8	3.40	20.68	21.33	21.07	21.86	22.62	23.00	RL 3G
187	179	19.324	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.64	6.30	8	3.42	20.67	21.33	21.03	21.91	22.65	23.00	RL 5G
188	177	19.437	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.63	5.43	8	3.40	20.67	21.33	20.96	21.81	22.68	23.00	RL 7G
189	180	19.200	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.65	6.31	8	3.44	20.67	21.33	21.03	21.91	22.59	23.00	RL 4G
190	178	19.386	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.63	5.58	8	3.40	20.67	21.33	20.97	21.83	22.55	23.00	RL 6G
191	176	19.495	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.65	5.74	8	3.44	20.66	21.33	20.97	21.85	22.70	23.00	RL 8G
192	157	204.621	0.59	1.73	0.99	0.58	1.71	5.0	7.4	7.8	13.28	19.06	4.23	24	0.51	14.11	15.15	18.57	19.07	20.67	20.67	1552-1551
193	192	200.621	0.57	1.14	0.99	0.56	1.13	5.0	6.2	8.1	9.17	18.87	2.92	24	0.50	15.15	16.15	19.21	19.45	20.67	20.67	1553-1552
194	193	204.621	0.57	0.57	0.99	0.56	0.56	5.0	5.0	8.6	4.85	8.76	2.74	18	0.50	16.65	17.67	19.51	19.83	20.67	21.51	1554-1553
195	156	119.756	0.38	0.69	0.99	0.38	0.68	5.0	6.7	8.0	5.45	8.93	3.08	18	0.52	14.86	15.48	17.59	17.82	20.46	20.24	1569A-1550
196	195	151.768	0.31	0.31	0.99	0.31	0.31	5.0	5.0	8.6	2.64	8.78	1.49	18	0.50	15.48	16.24	17.99	17.96	20.24	19.24	1569-1569A
197	End	37.456	0.22	0.44	0.99	0.22	0.44	5.0	8.3	7.5	3.26	18.07	2.66	15	5.61	13.00	15.10	16.65	16.72	14.81	19.54	1598A-1598
198	197	300.000	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	5.38	2.52	15	0.50	15.30	16.79	16.88	17.35	19.54	19.54	1598B-1598A

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Project File: Greenfield Storm Southwest.stm

Number of lines: 199

Run Date: 6/11/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

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Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	152.272	0.00	12.16	0.00	0.00	11.80	5.0	11.9	6.6	78.08	217.5	6.35	60	0.50	8.00	8.76	11.92	11.26	13.55	20.21	1519-1502
2	1	99.382	0.00	12.16	0.00	0.00	11.80	5.0	11.5	6.7	79.14	218.3	8.03	60	0.50	8.76	9.26	11.26	11.78	20.21	19.44	1520-1519
3	2	8.404	0.17	6.89	0.99	0.17	6.59	5.0	11.5	6.7	44.19	54.38	7.85	36	0.48	9.48	9.52	11.78	11.68	19.44	19.11	1521-1520
4	3	163.309	1.01	6.72	0.90	0.91	6.42	5.0	11.0	6.8	43.69	57.20	8.03	36	0.53	9.52	10.38	11.68	12.53	19.11	17.34	1522-1521
5	4	135.344	0.51	5.71	0.84	0.43	5.51	5.0	10.6	6.9	38.03	55.87	7.29	36	0.50	10.38	11.06	12.53	13.06	17.34	17.67	1523-1522
6	5	41.700	0.00	5.20	0.00	0.00	5.08	5.0	10.5	6.9	35.24	102.8	7.18	36	1.70	11.06	11.77	13.06	13.70	17.67	18.56	1523A-1523
7	6	171.933	1.12	5.20	0.93	1.04	5.08	5.0	9.9	7.1	35.92	56.39	7.44	36	0.51	11.77	12.65	13.70	14.60	18.56	17.82	1524-1523A
8	7	159.057	0.00	4.08	0.00	0.00	4.04	5.0	9.4	7.2	29.00	44.98	7.29	30	0.86	12.65	14.02	14.60	15.85	17.82	19.79	1525-1524
9	8	31.752	0.00	2.81	0.00	0.00	2.78	5.0	9.3	7.2	20.06	34.41	6.10	30	0.50	14.19	14.35	15.85	15.87	19.79	20.40	1526-1525
10	9	39.012	0.00	1.27	0.00	0.00	1.26	5.0	9.1	7.3	9.14	19.14	5.65	24	0.51	15.62	15.82	16.59	16.90	20.40	21.81	1527-1526
11	10	64.206	0.00	1.05	0.00	0.00	1.04	5.0	8.7	7.4	7.67	18.87	4.71	24	0.50	15.82	16.14	16.90	17.12	21.81	21.56	1527A-1527
12	11	86.638	0.00	0.90	0.00	0.00	0.89	5.0	8.3	7.5	6.66	12.79	5.38	18	1.06	16.14	17.06	17.12	18.06	21.56	22.01	1527B-1527A
13	12	66.156	0.00	0.75	0.00	0.00	0.74	5.0	8.0	7.6	5.62	8.77	4.75	18	0.50	17.06	17.39	18.06	18.30	22.01	21.97	1527C-1527B
14	13	20.240	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.20	5.79	8	2.37	20.25	20.73	20.66	21.31	21.97	22.40	RL 13H
15	12	20.240	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.20	5.39	8	2.37	20.25	20.73	20.61	21.26	22.01	22.40	RL 14H
16	13	121.019	0.00	0.57	0.00	0.00	0.56	5.0	7.2	7.8	4.41	8.81	4.24	18	0.50	17.39	18.00	18.30	18.80	21.97	22.00	1527D-1527C
17	16	65.991	0.00	0.39	0.00	0.00	0.39	5.0	6.8	7.9	3.07	5.64	3.99	15	0.55	18.00	18.36	18.80	19.06	22.00	21.96	1527E-1527D
18	17	20.240	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.20	5.13	8	2.37	20.25	20.73	20.58	21.23	21.96	22.40	RL 11H
19	16	20.250	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.20	5.78	8	2.37	20.25	20.73	20.66	21.31	22.00	22.40	RL 12H
20	17	65.706	0.00	0.26	0.00	0.00	0.26	5.0	6.2	8.2	2.10	5.41	3.37	15	0.50	18.36	18.69	19.06	19.27	21.96	21.91	1527F-1527E
21	20	20.250	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.44	5.23	8	2.91	20.14	20.73	20.44	21.21	21.91	22.40	RL 10H
22	20	61.784	0.00	0.14	0.00	0.00	0.14	5.0	5.1	8.5	1.18	5.74	3.43	15	0.57	18.89	19.24	19.28	19.67	21.91	21.99	1527G-1527F

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Project File: Greenfield Storm Southeast.stm Number of lines: 145 Run Date: 6/20/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
23	22	20.240	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.64	5.73	8	3.41	20.04	20.73	20.35	21.25	21.99	22.40	RL 9H
24	10	20.250	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.63	6.87	8	3.41	20.04	20.73	20.45	21.35	21.81	22.40	RL 16H
25	8	120.599	0.00	1.27	0.00	0.00	1.26	5.0	8.7	7.4	9.28	18.85	4.74	24	0.50	14.52	15.12	15.85	16.21	19.79	21.43	1525A-1525
26	25	7.521	0.00	1.27	0.00	0.00	1.26	5.0	8.6	7.4	9.30	19.49	5.32	24	0.53	15.12	15.16	16.21	16.25	21.43	21.67	1525B-1525A
27	26	39.468	0.00	1.27	0.00	0.00	1.26	5.0	8.4	7.5	9.37	19.03	5.35	24	0.51	15.16	15.36	16.25	16.45	21.67	21.77	1525C-1525B
28	27	61.510	0.00	1.13	0.00	0.00	1.12	5.0	8.0	7.6	8.46	18.67	4.98	24	0.49	15.36	15.66	16.45	16.70	21.77	21.73	1525D-1525C
29	28	65.796	0.00	1.01	0.00	0.00	1.00	5.0	7.6	7.7	7.69	18.64	4.84	24	0.49	15.66	15.98	16.70	16.97	21.73	21.65	1525E-1525D
30	29	66.194	0.00	0.88	0.00	0.00	0.87	5.0	7.3	7.8	6.78	8.89	5.46	18	0.51	16.48	16.82	17.46	17.83	21.65	21.74	1525F-1525E
31	30	120.859	0.00	0.70	0.00	0.00	0.69	5.0	6.7	8.0	5.53	8.74	4.67	18	0.50	16.82	17.42	17.83	18.33	21.74	21.65	1525G-1525F
32	31	14.922	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.28	5.88	8	2.55	19.95	20.33	20.35	20.91	21.65	22.00	RL 4I
33	29	14.922	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.28	5.21	8	2.55	19.95	20.33	20.28	20.83	21.65	22.00	RL 6I
34	31	65.808	0.00	0.52	0.00	0.00	0.51	5.0	6.4	8.1	4.16	6.59	4.61	15	0.74	17.42	17.91	18.33	18.74	21.65	21.73	1525H-1525G
35	34	88.333	0.00	0.37	0.00	0.00	0.37	5.0	5.8	8.3	3.04	5.32	3.91	15	0.49	17.91	18.34	18.74	19.04	21.73	21.73	1525I-1525H
36	35	66.000	0.00	0.22	0.00	0.00	0.22	5.0	5.0	8.6	1.87	5.31	3.80	15	0.48	18.54	18.86	19.05	19.40	21.73	21.61	1525J-1525I
37	36	14.932	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.28	6.42	8	2.54	19.95	20.33	20.41	20.95	21.61	22.00	RL 1I
38	28	14.932	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.28	5.07	8	2.54	19.95	20.33	20.26	20.81	21.73	22.00	RL 7I
39	30	14.932	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.28	5.88	8	2.54	19.95	20.33	20.35	20.91	21.74	22.00	RL 5I
40	27	15.682	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	2.25	5.32	8	2.49	19.94	20.33	20.28	20.85	21.77	22.00	RL 8I
41	2	130.878	0.00	5.27	0.00	0.00	5.22	5.0	9.8	7.1	37.05	55.55	7.95	36	0.50	11.20	11.85	12.99	13.83	19.44	18.14	1530-1520
42	41	116.942	0.00	3.95	0.00	0.00	3.91	5.0	9.4	7.2	28.10	34.13	7.58	30	0.50	12.35	12.93	14.08	14.74	18.14	18.93	1531-1530
43	42	25.666	0.00	1.38	0.00	0.00	1.37	5.0	9.3	7.2	9.86	19.74	4.99	24	0.55	13.43	13.57	14.74	14.69	18.93	18.65	1531D-1531
44	43	122.585	0.00	1.38	0.00	0.00	1.37	5.0	8.7	7.4	10.09	25.32	5.52	24	0.90	13.57	14.67	14.69	15.81	18.65	18.27	1531E-1531D

Project File: Greenfield Storm Southeast.stm

Number of lines: 145

Run Date: 6/20/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
45	44	26.700	0.00	1.32	0.00	0.00	1.31	5.0	8.5	7.4	9.70	18.65	5.34	24	0.49	14.67	14.80	15.81	15.91	18.27	21.54	1531F-1531E
46	45	75.671	0.00	1.13	0.00	0.00	1.12	5.0	8.1	7.6	8.45	31.03	4.93	24	1.35	14.80	15.82	15.91	16.86	21.54	21.31	1531G-1531F
47	46	50.794	0.00	1.01	0.00	0.00	1.00	5.0	7.7	7.7	7.66	18.75	4.82	24	0.49	15.82	16.07	16.86	17.05	21.31	21.31	1531H-1531G
48	47	66.366	0.00	0.88	0.00	0.00	0.87	5.0	7.4	7.7	6.75	8.62	5.38	18	0.48	16.57	16.89	17.57	17.89	21.31	21.31	1531I-1531H
49	48	110.756	0.00	0.70	0.00	0.00	0.69	5.0	6.8	7.9	5.49	9.36	4.66	18	0.57	16.89	17.52	17.89	18.42	21.31	21.31	1531J-1531I
50	49	35.147	0.00	0.18	0.00	0.00	0.18	5.0	5.1	8.6	1.53	2.43	6.06	8	2.90	18.86	19.88	19.24	20.46	21.31	21.84	1531J-DB
51	50	15.015	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.47	4.77	8	3.00	19.88	20.33	20.46	20.91	21.84	22.00	RL 12I
52	11	20.250	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.99	6.24	8	4.40	19.84	20.73	20.14	21.26	21.56	22.40	RL 15H
53	34	14.922	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.69	5.93	8	3.55	19.80	20.33	20.12	20.86	21.73	22.00	RL 3I
54	35	14.922	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.69	5.93	8	3.55	19.80	20.33	20.12	20.86	21.73	22.00	RL 2I
55	46	32.767	0.00	0.12	0.00	0.00	0.12	5.0	5.1	8.5	1.01	2.35	5.14	8	2.72	18.88	19.77	19.19	20.25	21.31	21.80	1531G-DB
56	55	20.049	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.39	3.81	8	2.79	19.77	20.33	20.25	20.81	21.80	22.00	RL 15I
57	41	159.639	0.00	1.32	0.00	0.00	1.31	5.0	8.3	7.5	9.77	18.92	5.74	24	0.50	13.87	14.67	14.89	15.79	18.14	20.72	1530A-1530
58	57	65.583	0.00	1.10	0.00	0.00	1.09	5.0	7.9	7.6	8.27	18.96	5.47	24	0.50	14.87	15.20	15.79	16.22	20.72	20.71	1530B-1530A
59	58	92.172	0.00	0.95	0.00	0.00	0.94	5.0	7.5	7.7	7.25	8.77	5.54	18	0.50	15.70	16.16	16.74	17.20	20.71	20.71	1530C-1530B
60	59	36.866	0.00	0.15	0.00	0.00	0.15	5.0	5.0	8.6	1.27	2.50	5.72	8	3.07	18.54	19.67	18.88	20.20	20.71	21.26	1530C-DB
61	60	10.108	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	1.42	4.13	8	0.99	19.63	19.73	20.20	20.26	21.26	21.40	RL 6J
62	59	73.015	0.00	0.80	0.00	0.00	0.79	5.0	7.2	7.8	6.19	8.95	4.95	18	0.52	16.16	16.54	17.20	17.50	20.71	20.71	1530D-1530C
63	62	23.141	0.00	0.18	0.00	0.00	0.18	5.0	5.1	8.5	1.52	2.41	6.03	8	2.85	18.73	19.39	19.11	19.97	20.71	21.05	1530D-DB
64	63	25.222	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	1.66	4.77	8	1.35	19.39	19.73	19.97	20.31	21.05	21.40	RL 5J
65	49	76.098	0.00	0.52	0.00	0.00	0.51	5.0	6.5	8.1	4.14	5.32	4.41	15	0.49	17.44	17.81	18.42	18.64	21.31	21.31	1531K-1531J
66	65	45.740	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.10	5.28	8	2.16	19.34	20.33	19.72	20.86	21.31	22.00	RL 11I

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Project File: Greenfield Storm Southeast.stm Number of lines: 145 Run Date: 6/20/2025

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
67	65	87.766	0.00	0.37	0.00	0.00	0.37	5.0	5.9	8.3	3.02	5.34	2.51	15	0.49	17.81	18.24	19.27	19.39	21.31	21.31	1531L-1531K
68	67	46.447	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.10	5.29	8	2.17	19.32	20.33	19.69	20.86	21.31	22.00	RL 10I
69	62	110.146	0.00	0.62	0.00	0.00	0.61	5.0	6.8	8.0	4.88	5.39	4.94	15	0.50	16.54	17.09	17.50	18.01	20.71	20.71	1530E-1530D
70	69	64.825	0.00	0.44	0.00	0.00	0.44	5.0	6.4	8.1	3.52	5.45	2.87	15	0.51	17.09	17.42	18.60	18.74	20.71	20.71	1530F-1530E
71	70	48.895	0.00	0.31	0.00	0.00	0.31	5.0	6.0	8.2	2.52	5.35	2.05	15	0.49	17.42	17.66	18.93	18.99	20.71	20.71	1530G-1530F
72	71	74.678	0.00	0.19	0.00	0.00	0.19	5.0	5.0	8.6	1.61	5.37	1.37	15	0.50	17.66	18.03	19.09	19.11	20.71	21.02	1530H-1530G
73	72	13.867	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	2.51	6.30	8	3.10	19.30	19.73	19.69	20.32	21.02	21.40	RL 1J
74	67	66.342	0.00	0.22	0.00	0.00	0.22	5.0	5.1	8.5	1.86	5.30	1.63	15	0.48	18.24	18.56	19.54	19.57	21.31	21.31	1531M-1531L
75	74	45.686	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.30	6.07	8	2.60	19.14	20.33	19.64	20.95	21.31	22.00	RL 9I
76	48	45.740	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.30	5.91	8	2.60	19.14	20.33	19.54	20.91	21.31	22.00	RL 13I
77	45	13.747	0.19	0.19	0.99	0.19	0.19	5.0	5.0	8.6	1.62	4.20	8.10	8	8.66	19.14	20.33	19.43	20.92	21.54	22.00	RL 16I
78	47	45.752	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.30	5.24	8	2.60	19.14	20.33	19.47	20.83	21.31	22.00	RL 14I
79	71	32.318	0.00	0.12	0.00	0.00	0.12	5.0	5.1	8.5	1.01	2.25	3.35	8	2.48	18.27	19.07	19.09	19.55	20.71	21.19	1530G-DB
80	79	20.209	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	2.58	3.81	8	3.27	19.07	19.73	19.55	20.21	21.19	21.40	RL 2J
81	69	46.101	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	2.29	5.90	8	2.58	18.54	19.73	18.94	20.31	20.71	21.40	RL 4J
82	70	46.034	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	2.29	4.55	8	2.59	18.54	19.73	18.93	20.23	20.71	21.40	RL 3J
83	57	45.584	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	2.31	6.45	8	2.61	18.54	19.73	19.00	20.35	20.72	21.40	RL 8J
84	58	45.898	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	2.30	5.50	8	2.59	18.54	19.73	18.89	20.26	20.71	21.40	RL 7J
85	9	63.475	0.38	1.54	0.99	0.38	1.52	5.0	7.3	7.8	11.85	18.98	5.22	24	0.50	14.35	14.67	15.87	15.90	20.40	19.67	1526A-1526
86	85	200.121	0.59	1.16	0.99	0.58	1.15	5.0	6.2	8.1	9.34	18.90	4.96	24	0.50	14.67	15.67	15.90	16.76	19.67	19.67	1526B-1526A
87	86	200.121	0.57	0.57	0.99	0.56	0.56	5.0	5.0	8.6	4.85	8.77	4.12	18	0.50	15.67	16.67	16.76	17.52	19.67	19.67	1526C-1526B
88	44	8.839	0.06	0.06	0.99	0.06	0.06	5.0	5.0	8.6	0.51	5.74	1.71	15	0.57	15.22	15.27	15.81	15.55	18.27	18.02	TD I - 1531E
Project File: Greenfield Storm Southeast.stm																					Run Date: 6/20/2025	
Number of lines: 145																						
NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box																						

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
89	42	111.961	0.97	2.57	0.99	0.96	2.54	5.0	5.8	8.3	21.06	34.89	6.05	30	0.52	12.93	13.51	14.74	15.07	18.93	17.99	1531A-1531
90	89	98.309	0.80	1.60	0.99	0.79	1.58	5.0	5.4	8.4	13.34	18.87	5.59	24	0.50	13.51	14.00	15.07	15.31	17.99	17.99	1531B-1531A
91	90	98.310	0.80	0.80	0.99	0.79	0.79	5.0	5.0	8.6	6.80	8.76	5.43	18	0.50	14.50	14.99	15.49	16.00	17.99	17.99	1531C-1531B
92	End	79.344	0.00	2.51	0.00	0.00	2.48	5.0	7.8	7.6	18.99	67.96	9.08	30	1.97	12.33	13.89	13.23	15.37	16.29	18.98	1513-1501
93	92	55.292	0.00	1.27	0.00	0.00	1.26	5.0	7.4	7.7	9.73	18.68	5.71	24	0.49	15.34	15.61	16.36	16.72	18.98	21.17	1518-1513
94	93	62.626	0.00	0.39	0.00	0.00	0.39	5.0	6.8	8.0	3.07	5.46	4.44	15	0.51	17.06	17.38	17.73	18.08	21.17	21.17	1518E-1518
95	94	12.708	0.13	0.13	0.99	0.13	0.13	5.0	5.0	8.6	1.11	3.42	6.34	8	5.74	19.00	19.73	19.26	20.23	21.17	21.40	RL 11J
96	94	65.393	0.00	0.26	0.00	0.00	0.26	5.0	6.1	8.2	2.10	5.42	3.96	15	0.50	17.58	17.91	18.12	18.49	21.17	21.17	1518F-1518E
97	96	62.231	0.00	0.14	0.00	0.00	0.14	5.0	5.1	8.6	1.19	5.39	3.35	15	0.50	18.11	18.42	18.51	18.85	21.17	21.17	1518G-1518F
98	97	12.698	0.14	0.14	0.99	0.14	0.14	5.0	5.0	8.6	1.19	3.42	6.51	8	5.75	19.00	19.73	19.27	20.25	21.17	21.40	RL 9J
99	93	121.166	0.00	0.70	0.00	0.00	0.69	5.0	6.8	7.9	5.50	8.66	5.07	18	0.49	16.11	16.70	16.98	17.60	21.17	21.18	1518A-1518
100	99	65.500	0.00	0.52	0.00	0.00	0.51	5.0	6.3	8.1	4.16	8.67	4.67	18	0.49	16.90	17.22	17.63	18.00	21.18	21.17	1518B-1518A
101	100	12.708	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	3.42	6.67	8	5.74	19.00	19.73	19.28	20.26	21.17	21.40	RL 14J
102	100	88.393	0.00	0.37	0.00	0.00	0.37	5.0	5.8	8.3	3.04	5.32	4.39	15	0.49	17.47	17.90	18.15	18.60	21.17	21.18	1518C-1518B
103	102	65.940	0.00	0.22	0.00	0.00	0.22	5.0	5.0	8.6	1.87	5.32	3.80	15	0.49	18.10	18.42	18.61	18.96	21.18	21.17	1518D-1518C
104	103	12.708	0.22	0.22	0.99	0.22	0.22	5.0	5.0	8.6	1.87	3.42	7.78	8	5.74	19.00	19.73	19.35	20.35	21.17	21.40	RL 16J
105	93	12.708	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	3.42	7.15	8	5.74	19.00	19.73	19.31	20.31	21.17	21.40	RL 12J
106	102	12.708	0.15	0.15	0.99	0.15	0.15	5.0	5.0	8.6	1.28	3.42	6.67	8	5.74	19.00	19.73	19.28	20.26	21.18	21.40	RL 15J
107	96	12.711	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	3.42	6.18	8	5.74	19.00	19.73	19.25	20.21	21.17	21.40	RL 10J
108	99	12.708	0.18	0.18	0.99	0.18	0.18	5.0	5.0	8.6	1.53	3.42	7.15	8	5.74	19.00	19.73	19.31	20.31	21.18	21.40	RL 13J
109	92	170.439	0.34	0.61	0.99	0.34	0.60	5.0	6.7	8.0	4.81	8.76	3.72	18	0.50	13.91	14.76	15.37	15.60	18.98	18.74	1516-1513
110	109	195.503	0.27	0.27	0.99	0.27	0.27	5.0	5.0	8.6	2.30	5.40	3.26	15	0.50	14.76	15.74	15.60	16.34	18.74	18.74	1517-1516

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Project File: Greenfield Storm Southeast.stm

Number of lines: 145

Run Date: 6/20/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff	Area x C		Tc		Rain (l)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
111	92	25.745	0.33	0.63	0.99	0.33	0.62	5.0	6.6	8.0	5.00	5.21	4.84	15	0.47	14.44	14.56	15.42	15.54	18.98	18.75	1514-1513
112	111	196.053	0.30	0.30	0.99	0.30	0.30	5.0	5.0	8.6	2.55	5.40	3.28	15	0.50	14.76	15.74	15.72	16.38	18.75	18.74	1515-1514
113	End	159.305	0.53	13.28	0.82	0.43	11.35	5.0	12.6	6.5	73.64	110.9	7.21	48	0.43	8.00	8.68	11.92	11.27	13.55	18.80	1501-1500
114	113	136.224	0.63	12.75	0.83	0.52	10.92	5.0	12.1	6.6	71.73	102.9	8.38	48	0.37	8.68	9.18	11.27	11.74	18.80	18.78	1502-1501
115	114	138.531	0.53	12.12	0.83	0.44	10.40	5.0	11.7	6.7	69.22	99.93	8.24	48	0.35	9.18	9.66	11.74	12.17	18.78	18.78	1503-1502
116	115	83.034	0.00	11.59	0.00	0.00	9.96	5.0	11.4	6.7	66.86	100.3	8.13	48	0.35	9.66	9.95	12.17	12.42	18.78	19.79	1503.1-1503
117	116	150.674	1.32	8.23	0.65	0.86	6.63	5.0	10.7	6.9	45.56	100.7	6.38	48	0.35	9.95	10.48	12.42	12.50	19.79	17.77	1504-1503.1
118	117	197.117	0.00	6.91	0.00	0.00	5.77	5.0	9.9	7.1	40.74	70.85	7.16	42	0.36	10.48	11.18	12.50	13.16	17.77	17.76	1505-1504
119	118	176.691	0.00	6.91	0.00	0.00	5.77	5.0	9.3	7.2	41.73	82.95	7.36	42	0.49	11.18	12.04	13.16	14.05	17.76	19.36	1506-1505
120	119	97.436	0.37	6.91	0.91	0.34	5.77	5.0	9.0	7.3	42.14	55.90	8.15	36	0.50	12.04	12.53	14.05	14.64	19.36	19.21	1506A-1506
121	120	148.892	0.66	6.09	0.85	0.56	4.99	5.0	8.5	7.4	37.06	55.57	7.23	36	0.50	12.53	13.27	14.64	15.25	19.21	18.63	1507-1506A
122	121	145.450	0.75	5.43	0.78	0.59	4.43	5.0	8.2	7.5	33.32	34.34	7.97	30	0.50	13.27	14.00	15.26	15.99	18.63	18.63	1508-1507
123	122	71.900	0.70	3.08	0.73	0.51	2.26	5.0	6.9	7.9	17.84	24.42	5.68	24	0.83	14.50	15.10	17.34	17.66	18.63	19.25	1509-1508
124	123	144.941	0.90	2.38	0.75	0.68	1.75	5.0	6.4	8.1	14.11	19.10	4.49	24	0.51	15.10	15.84	17.91	18.31	19.25	20.49	1510-1509
125	124	147.251	0.89	1.48	0.73	0.65	1.07	5.0	5.6	8.4	8.99	19.08	2.86	24	0.51	15.84	16.59	18.47	18.59	20.49	20.09	1511-1510
126	125	69.516	0.59	0.59	0.72	0.42	0.42	5.0	5.0	8.6	3.65	8.93	2.06	18	0.52	16.59	16.95	18.65	18.71	20.09	19.95	1512-1511
127	120	67.512	0.45	0.45	0.99	0.45	0.45	5.0	5.0	8.6	3.83	5.42	4.73	15	0.50	16.12	16.46	16.90	17.25	19.21	19.46	1506B-1506A
128	122	57.608	0.00	1.60	0.00	0.00	1.58	5.0	7.9	7.6	12.02	18.97	3.83	24	0.50	14.00	14.29	17.34	17.45	18.63	19.99	1508C-1508
129	128	67.897	0.67	1.60	0.99	0.66	1.58	5.0	7.7	7.7	12.15	18.92	3.87	24	0.50	14.29	14.63	17.57	17.71	19.99	18.99	1508D-1508C
130	129	98.310	0.81	0.81	0.99	0.80	0.80	5.0	5.0	8.6	6.89	8.76	3.90	18	0.50	15.50	15.99	18.05	18.36	18.99	18.99	1508E-1508D
131	116	56.280	0.11	3.36	0.99	0.11	3.33	5.0	10.2	7.0	23.23	34.19	7.15	30	0.50	12.46	12.74	13.97	14.38	19.79	18.51	1503A-1503.1
132	131	62.540	0.00	3.25	0.00	0.00	3.22	5.0	10.0	7.0	22.62	34.12	6.68	30	0.50	12.74	13.05	14.38	14.67	18.51	18.88	1503B-1503A

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Project File: Greenfield Storm Southeast.stm

Number of lines: 145

Run Date: 6/20/2025

NOTES:Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station	Line	Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
			Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)			
133	132	40.631	0.28	3.18	0.99	0.28	3.15	5.0	7.3	7.8	24.52	34.01	7.13	30	0.49	13.05	13.25	14.67	14.94	18.88	18.46	1503C-1503B
134	133	67.306	0.00	0.40	0.00	0.00	0.40	5.0	6.6	8.0	3.16	8.95	1.83	18	0.52	13.25	13.60	14.94	14.97	18.46	19.44	1503G-1503C
135	134	274.003	0.40	0.40	0.99	0.40	0.40	5.0	5.0	8.6	3.40	5.42	4.57	15	0.50	15.30	16.68	16.02	17.42	19.44	19.68	1503H-1503G
136	129	132.685	0.12	0.12	0.99	0.12	0.12	5.0	5.0	8.6	1.02	5.42	0.83	15	0.50	14.99	15.66	18.05	18.08	18.99	18.41	TD H - 1508D
137	133	47.761	0.90	2.50	0.99	0.89	2.48	5.0	5.8	8.3	20.47	34.36	6.15	30	0.50	13.25	13.49	14.94	15.03	18.46	17.99	1503D-1503C
138	137	102.311	0.80	1.60	0.99	0.79	1.58	5.0	5.4	8.4	13.34	18.87	5.63	24	0.50	13.49	14.00	15.03	15.31	17.99	17.99	1503E-1503D
139	138	98.310	0.80	0.80	0.99	0.79	0.79	5.0	5.0	8.6	6.80	8.76	5.43	18	0.50	14.50	14.99	15.49	16.00	17.99	17.99	1503F-1503E
140	132	146.784	0.07	0.07	0.99	0.07	0.07	5.0	5.0	8.6	0.60	5.42	1.70	15	0.50	13.92	14.66	14.67	14.96	18.88	17.41	TD J - 1503D
141	End	65.459	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	148.5	380.5	8.98	60	1.53	12.00	13.00	16.64	16.49	0.00	0.00	1537B-1537A (1)
142	End	66.038	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	148.5	378.8	8.98	60	1.51	12.00	13.00	16.64	16.49	17.23	18.55	1537B-1537A
143	End	90.047	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	11.51	117.5	3.73	36	2.22	10.00	12.00	11.92	13.07	13.96	17.01	OS 14-1527B
144	End	114.558	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	7.70	704.5	2.28	60	5.24	8.00	14.00	11.92	14.76	13.37	19.31	1540-1541
145	End	115.900	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	7.70	404.4	2.28	60	1.73	8.00	10.00	11.92	10.76	14.17	17.00	OS 15D-1539

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Project File: Greenfield Storm Southeast.stm

Run Date: 6/20/2025

Number of lines: 145

NOTES: Intensity = 48.38 / (Inlet time + 9.10) ^ 0.65; Return period = Yrs. 100 ; c = cir e = ellip b = box

Worksheet 4. Change in Runoff Volume for 2-YR Storm Event

PROJECT: Keystone Trade Center - Area 3 Development
Drainage Area: Water Quality Filter Inlets to Wet Ponds #12C + #12D
2-Year Rainfall: 3.3 inches NOAA Atlas 14

Total Site Area: - Acres
Protected Site Area: - Acres
Managed Area: 16.77 Acres

Existing Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	la (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands good	B	0	0.00	55	8.18	1.64	0.281	0
	C	0	0.00	70	4.29	0.86	0.887	0
	D	0	0.00	77	2.99	0.60	1.284	0
Meadow good	B	0	0.00	58	7.24	1.45	0.377	0
	C	0	0.00	71	4.08	0.82	0.939	0
	D	0	0.00	78	2.82	0.56	1.347	0
Impervious	-	0	0.00	98	0.20	0.04	3.067	0
Impervious (20% as Meadow)	C	0	0.00	71	4.08	0.82	0.939	0
Impervious (20% as Meadow)	D	0	0.00	78	2.82	0.56	1.347	0
TOTAL:		0	0.00					0

Developed Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	la (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands good	B	0	0.00	55	8.18	1.64	0.281	0
	C	0	0.00	70	4.29	0.86	0.887	0
	D	0	0.00	77	2.99	0.60	1.284	0
Meadow good	B	0	0.00	58	7.24	1.45	0.377	0
	C	0	0.00	71	4.08	0.82	0.939	0
	D	0	0.00	78	2.82	0.56	1.347	0
Lawn good	B	0	0.00	61	6.39	1.28	0.486	0
	C	0	0.00	74	3.51	0.70	1.104	0
	D	156,380	3.59	80	2.50	0.50	1.479	19,277
Impervious	-	574,121	13.18	98	0.20	0.04	3.067	146,742
TOTAL:		730,501	16.77					166,019

2-Year Volume Increase (cu.ft.): **166,019**

(Install WQ Filters on All Proposed Inlets Draining to Wet Ponds #12C + #12D)

NOTE: Only 92,694 CF utilized for volume credits, see PCSM Spreadsheet

2-Year Volume Increase (cu.ft.) = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

Q Runoff (in) = $(P - 0.2S)^2 / (P + 0.8S)$ where P = 2-year rainfall, inches and S = $(1000/CN) - 10$

Runoff Volume (cu.ft) = Q x Area x 1/12 where Area = Land use area in square feet

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI. The use of a weighted CN value for volume

Worksheet 4. Change in Runoff Volume for 2-YR Storm Event

PROJECT: Keystone Trade Center - Area 3 Development
Drainage Area: Water Quality Filter Inlets to Wet Ponds #13A + #13B + #13C
2-Year Rainfall: 3.3 inches NOAA Atlas 14

Total Site Area: - Acres
Protected Site Area: - Acres
Managed Area: 25.87 Acres

Existing Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	la (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands good	B	0	0.00	55	8.18	1.64	0.281	0
	C	0	0.00	70	4.29	0.86	0.887	0
	D	0	0.00	77	2.99	0.60	1.284	0
Meadow good	B	0	0.00	58	7.24	1.45	0.377	0
	C	0	0.00	71	4.08	0.82	0.939	0
	D	0	0.00	78	2.82	0.56	1.347	0
Impervious	-	0	0.00	98	0.20	0.04	3.067	0
Impervious (20% as Meadow)	C	0	0.00	71	4.08	0.82	0.939	0
Impervious (20% as Meadow)	D	0	0.00	78	2.82	0.56	1.347	0
TOTAL:		0	0.00					0

Developed Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	la (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands good	B	0	0.00	55	8.18	1.64	0.281	0
	C	0	0.00	70	4.29	0.86	0.887	0
	D	0	0.00	77	2.99	0.60	1.284	0
Meadow good	B	0	0.00	58	7.24	1.45	0.377	0
	C	0	0.00	71	4.08	0.82	0.939	0
	D	0	0.00	78	2.82	0.56	1.347	0
Lawn good	B	0	0.00	61	6.39	1.28	0.486	0
	C	0	0.00	74	3.51	0.70	1.104	0
	D	148,540	3.41	80	2.50	0.50	1.479	18,311
Impervious	-	978,358	22.46	98	0.20	0.04	3.067	250,062
TOTAL:		1,126,897	25.87					268,373

2-Year Volume Increase (cu.ft.): 268,373

(Install WQ Filters on All Proposed Inlets Draining to Wet Ponds #13A + #13B + #13C)

NOTE: Only 164,003 CF utilized for volume credits, see PCSM Spreadsheet

2-Year Volume Increase (cu.ft.) = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

Q Runoff (in) = $(P - 0.2S)^2 / (P + 0.8S)$ where P = 2-year rainfall, inches and S = $(1000/CN) - 10$

Runoff Volume (cu.ft) = Q x Area x 1/12 where Area = Land use area in square feet

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI. The use of a weighted CN value for volume

Worksheet 4. Change in Runoff Volume for 2-YR Storm Event

PROJECT: Keystone Trade Center - Area 3 Development
Drainage Area: Water Quality Filter Inlets to Wet Ponds #15C + #15D
2-Year Rainfall: 3.3 inches NOAA Atlas 14

Total Site Area: - Acres
Protected Site Area: - Acres
Managed Area: 23.39 Acres

Existing Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	la (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands good	B	0	0.00	55	8.18	1.64	0.281	0
	C	0	0.00	70	4.29	0.86	0.887	0
	D	0	0.00	77	2.99	0.60	1.284	0
Meadow good	B	0	0.00	58	7.24	1.45	0.377	0
	C	0	0.00	71	4.08	0.82	0.939	0
	D	0	0.00	78	2.82	0.56	1.347	0
Impervious	-	0	0.00	98	0.20	0.04	3.067	0
Impervious (20% as Meadow)	C	0	0.00	71	4.08	0.82	0.939	0
Impervious (20% as Meadow)	D	0	0.00	78	2.82	0.56	1.347	0
TOTAL:		0	0.00					0

Developed Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	la (0.2*S)	Q Runoff (in)	Runoff Volume (cu.ft.)
Woodlands good	B	0	0.00	55	8.18	1.64	0.281	0
	C	0	0.00	70	4.29	0.86	0.887	0
	D	0	0.00	77	2.99	0.60	1.284	0
Meadow good	B	0	0.00	58	7.24	1.45	0.377	0
	C	0	0.00	71	4.08	0.82	0.939	0
	D	0	0.00	78	2.82	0.56	1.347	0
Lawn good	B	0	0.00	61	6.39	1.28	0.486	0
	C	0	0.00	74	3.51	0.70	1.104	0
	D	270,508	6.21	80	2.50	0.50	1.479	33,346
Impervious	-	748,361	17.18	98	0.20	0.04	3.067	191,277
TOTAL:		1,018,868	23.39					224,622

2-Year Volume Increase (cu.ft.): 224,622

(Install WQ Filters on All Proposed Inlets Draining to Wet Ponds #15C + #15D)

2-Year Volume Increase (cu.ft.) = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

Q Runoff (in) = $(P - 0.2S)^2 / (P + 0.8S)$ where P = 2-year rainfall, inches and S = $(1000/CN) - 10$

Runoff Volume (cu.ft) = Q x Area x 1/12 where Area = Land use area in square feet

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI. The use of a weighted CN value for volume

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	188.57	1	717	433,316	-----	-----	-----	Post-Dev DA #1 (DP 001)
2	Reservoir	0.000	1	n/a	0	1	16.62	433,316	Rte 12A-B Em. Spillway
4	SCS Runoff	212.69	1	717	488,735	-----	-----	-----	Post-Dev DA #2 (DP 001)
5	Reservoir	0.000	1	n/a	0	4	15.57	488,734	Rte 12C-D Em. Spillway
7	SCS Runoff	421.46	1	717	976,839	-----	-----	-----	Post-Dev DA #3 (DP 001)
8	Reservoir	0.000	1	n/a	0	7	16.59	976,840	Rte 13A-B Em. Spillway
10	SCS Runoff	305.40	1	717	685,580	-----	-----	-----	Post-Dev DA #4 (DP 001)
11	Reservoir	0.000	1	n/a	0	10	16.83	685,579	Rte 14 Em. Spillway
13	SCS Runoff	473.76	1	717	1,059,735	-----	-----	-----	Post-Dev DA #5A (DP 001)
14	Reservoir	184.58	1	724	1,058,581	13	16.65	353,589	Rte Basin #15A-B
16	SCS Runoff	517.23	1	717	1,096,638	-----	-----	-----	Post-Dev DA #5B (DP001)
17	Combine	674.27	1	718	2,155,213	14, 16	-----	-----	Total to Wet Ponds #15C-D
18	Reservoir	0.000	1	n/a	0	17	12.63	2,155,217	Rte Wet Ponds #15C-D
KTC_Greenfield_e.spillway.gpw					Return Period: 100 Year			Monday, 02 / 17 / 2025 392	

Pond Report

Pond No. 1 - MRC Basins 12A-B E.Spill

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	15.24	n/a	0	0
0.76	16.00	n/a	362,193	362,193
1.76	17.00	n/a	114,408	476,601
2.76	18.00	n/a	122,731	599,332

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	Inactive	Inactive	Inactive
Span (in)	= 36.00	0.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 12.00	0.00	0.00	0.00
Length (ft)	= 85.00	0.00	0.00	0.00
Slope (%)	= 2.31	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	0.00	0.00	0.00
Crest El. (ft)	= 17.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	15.24	0.00	---	---	---	0.00	---	---	---	---	---	0.000
0.76	362,193	16.00	44.89 ic	---	---	---	0.00	---	---	---	---	---	0.000
1.76	476,601	17.00	44.89 ic	---	---	---	0.00	---	---	---	---	---	0.000
2.76	599,332	18.00	44.89 ic	---	---	---	38.43	---	---	---	---	---	38.43

Pond Report

Pond No. 2 - Wet Pond #12C-D E.Spillway

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	13.75	n/a	0	0
0.25	14.00	n/a	360,117	360,117
1.25	15.00	n/a	79,955	440,072
2.25	16.00	n/a	85,420	525,492
3.25	17.00	n/a	90,994	616,486
4.25	18.00	n/a	96,688	713,174

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	Inactive	Inactive	0.00
Span (in)	= 36.00	0.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 10.00	0.00	0.00	0.00
Length (ft)	= 134.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	0.00	0.00	0.00
Crest El. (ft)	= 17.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	13.75	0.00	---	---	---	0.00	---	---	---	---	---	0.000
0.25	360,117	14.00	51.05 ic	---	---	---	0.00	---	---	---	---	---	0.000
1.25	440,072	15.00	51.05 ic	---	---	---	0.00	---	---	---	---	---	0.000
2.25	525,492	16.00	51.05 ic	---	---	---	0.00	---	---	---	---	---	0.000
3.25	616,486	17.00	51.05 ic	---	---	---	0.00	---	---	---	---	---	0.000
4.25	713,174	18.00	51.05 ic	---	---	---	38.43	---	---	---	---	---	38.43

Pond Report

Pond No. 3 - Wet Pond #13A-C E. Spillway

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	14.18	n/a	0	0
0.82	15.00	n/a	748,229	748,229
1.82	16.00	n/a	140,426	888,655
2.82	17.00	n/a	148,788	1,037,443
3.82	18.00	n/a	157,365	1,194,808

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 48.00	Inactive	Inactive	0.00
Span (in)	= 48.00	0.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 10.00	0.00	0.00	0.00
Length (ft)	= 324.00	0.00	0.00	0.00
Slope (%)	= 1.23	0.00	0.00	n/a
N-Value	= .011	.011	.011	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	Inactive	0.00	0.00
Crest El. (ft)	= 17.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	14.18	0.00	---	---	---	0.00	---	---	---	---	---	0.000
0.82	748,229	15.00	89.33 ic	---	---	---	0.00	---	---	---	---	---	0.000
1.82	888,655	16.00	89.33 ic	---	---	---	0.00	---	---	---	---	---	0.000
2.82	1,037,443	17.00	89.33 ic	---	---	---	0.00	---	---	---	---	---	0.000
3.82	1,194,808	18.00	89.33 ic	---	---	---	38.43	---	---	---	---	---	38.43

Pond Report

Pond No. 5 - Basin #14 (MRC) E. Spillway

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	15.95	n/a	0	0
0.05	16.00	n/a	544,134	544,134
1.05	17.00	n/a	170,489	714,623
2.05	18.00	n/a	181,639	896,262

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	Inactive	Inactive	0.00
Span (in)	= 36.00	0.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 12.00	0.00	0.00	0.00
Length (ft)	= 91.00	0.00	0.00	0.00
Slope (%)	= 2.19	0.00	0.00	n/a
N-Value	= .011	.011	.011	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	Inactive	Inactive	0.00
Crest El. (ft)	= 17.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	Rect	---
Multi-Stage	= Yes	Yes	Yes	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	15.95	0.00	---	---	---	0.00	---	---	---	---	---	0.000
0.05	544,134	16.00	53.27 ic	---	---	---	0.00	---	---	---	---	---	0.000
1.05	714,623	17.00	53.27 ic	---	---	---	0.00	---	---	---	---	---	0.000
2.05	896,262	18.00	53.27 ic	---	---	---	38.43	---	---	---	---	---	38.43

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Monday, 02 / 17 / 2025

Pond No. 9 - Wet Pond #15C-D E. Spillway

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	11.97	n/a	0	0
0.03	12.00	n/a	1,841,529	1,841,529
1.03	13.00	n/a	497,656	2,339,185
2.03	14.00	n/a	509,429	2,848,614
3.03	15.00	n/a	521,334	3,369,948
4.03	16.00	n/a	533,361	3,903,309
5.03	17.00	n/a	545,512	4,448,821
6.03	18.00	n/a	557,802	5,006,623

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 60.00	Inactive	Inactive	0.00
Span (in)	= 60.00	0.00	0.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 10.00	10.00	0.00	0.00
Length (ft)	= 116.00	0.00	0.00	0.00
Slope (%)	= 1.73	0.00	0.00	n/a
N-Value	= .011	.011	.011	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.54	Inactive	0.00	0.00
Crest El. (ft)	= 17.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	11.97	0.00	---	---	---	0.00	---	---	---	---	---	0.000
0.03	1,841,529	12.00	34.89 ic	---	---	---	0.00	---	---	---	---	---	0.000
1.03	2,339,185	13.00	34.89 ic	---	---	---	0.00	---	---	---	---	---	0.000
2.03	2,848,614	14.00	34.89 ic	---	---	---	0.00	---	---	---	---	---	0.000
3.03	3,369,948	15.00	34.89 ic	---	---	---	0.00	---	---	---	---	---	0.000
4.03	3,903,309	16.00	34.89 ic	---	---	---	0.00	---	---	---	---	---	0.000
5.03	4,448,821	17.00	34.89 ic	---	---	---	0.00	---	---	---	---	---	0.000
6.03	5,006,623	18.00	38.55 ic	---	---	---	38.43	---	---	---	---	---	38.43

Off-Site Discharge Analysis for Discharge Point #1 (DP 001) & Discharge Point #2 (DP 002)

Discharge Point #1 (DP 001):

Discharge Point #1 (DP 001) in the Post Construction Stormwater Analysis is located at the southeast side of the project site. The flow from DP 001 travels through the stormwater ditch south of the subject parcel into the Delaware River. The proposed flows will not cause erosion to the downstream soil. All post-development flow to the adjacent property is overland flow. All post-development flow rates are reduced to below the corresponding pre-development storm event peak rates. The flow from this discharge point is considered off-site discharge of stormwater to an area that is not surface water.

The flow path from DP 001 outlets to the existing wetlands south of the subject parcel. Flow is ultimately conveyed to Delaware River approximately 1360 ft southeast of the project site. The flow path winds through the existing stormwater ditch that confluences with the Delaware River. The flow path is shown on the Off-Site Discharge Analysis Map in the PCSM Report.

For purposes of stormwater management analysis, pre- and post-development peak rates were analyzed to determine the effects of the off-site discharge for DP 001. The details in the above report illustrate the peak rate reductions for DP 001. For all storm events, the post development stormwater rates were reduced below the corresponding pre-development rates. Since the flows are being reduced, all downstream areas will be stable in the post-development condition.

The *DP 001 - Peak Rate Control Table* below illustrates that peak rates for all design storms are reduced beyond the requirements of Stormwater Runoff Rate District C of the Delaware River South Watershed. These analyses for peak rate reveal that for the stormwater discharge to DP 001, and the off-site flow path beyond DP 001 to the Delaware River, accelerated erosion or sedimentation will not occur due to these reduced peak rates. This analysis is consistent with the Erosion and Sediment Pollution Control Manual (363-2134-008) and the Pennsylvania Stormwater Best Management Practices Manual (363-0300-002).

Peak Rate Control

The project site is located within Stormwater Runoff Rate District C and is subject to the following peak rate control criteria:

<u>Post-Development</u>		<u>Pre-Development</u>
2-Year	Reduced to	1-Year
5-Year	Reduced to	2-Year
100-Year	Reduced to	50% of the 100-Year

The project is designed to comply with the requirements to reduce the post-development 5-year storm beyond the pre-development on-site 2-year storm, as well as reducing the Post 2-year storm beyond the On-site Pre 1-year storm. See table below for summary of peak runoff rates for Discharge Point #1 and #2 (DP 001 and DP 002):

Summary of Peak Runoff Rate Control (DP 001)

	DP 001 - Peak Flow (cfs) - SCS Method						
Design Storm	1-Year	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
Pre-Development	52.10	76.62	116.09	152.76	190.23	218.64	256.76
Maximum Allowable Post-Development	---	52.10	76.62	---	---	---	128.38
Post-Development	18.35	25.74	40.73	54.31	66.77	77.64	94.46*

* $94.46 \text{ cfs} / 256.76 \text{ cfs} = 36.79\%$

(Post-Dev 100-year reduced to 36.79% of Pre-Dev 100-year peak rate)

Discharge Point #2 (DP 002):

Discharge Point #2 (DP 002) in the Post Construction Stormwater Analysis is located at the southwest corner of the project site. Flow from DP 002 is collected and conveyed into stormwater piping southwest of the subject parcel. All post-development flow to the adjacent property is overland flow. All post-development flow rates are reduced to below the corresponding pre-development storm event peak rates. The flow from this discharge point is considered off-site discharge to an area that is not surface water.

The flow path from DP 002 outlets to the existing stormwater pipe on the properties west of the subject parcel. Flow is ultimately conveyed to Delaware River approximately 1220 ft southwest of the project site. The flow path winds through the underground that confluence with the Delaware River. The flow path is shown on the Off-Site Discharge Analysis Map in the PCSM Report. The stormwater flows over soil types that do not have erodibility factors that are of concern.

The *DP 002 - Peak Rate Control Table* below illustrates that peak rates for all design storms are reduced beyond the requirements of Stormwater Runoff Rate District A of the Delaware River South Watershed. This analysis is consistent with the Erosion and Sediment Pollution Control Manual (363-2134-008) and the Pennsylvania Stormwater Best Management Practices Manual (363-0300-002).

The project site is located within Stormwater Runoff Rate District C and is subject to the following peak rate control criteria:

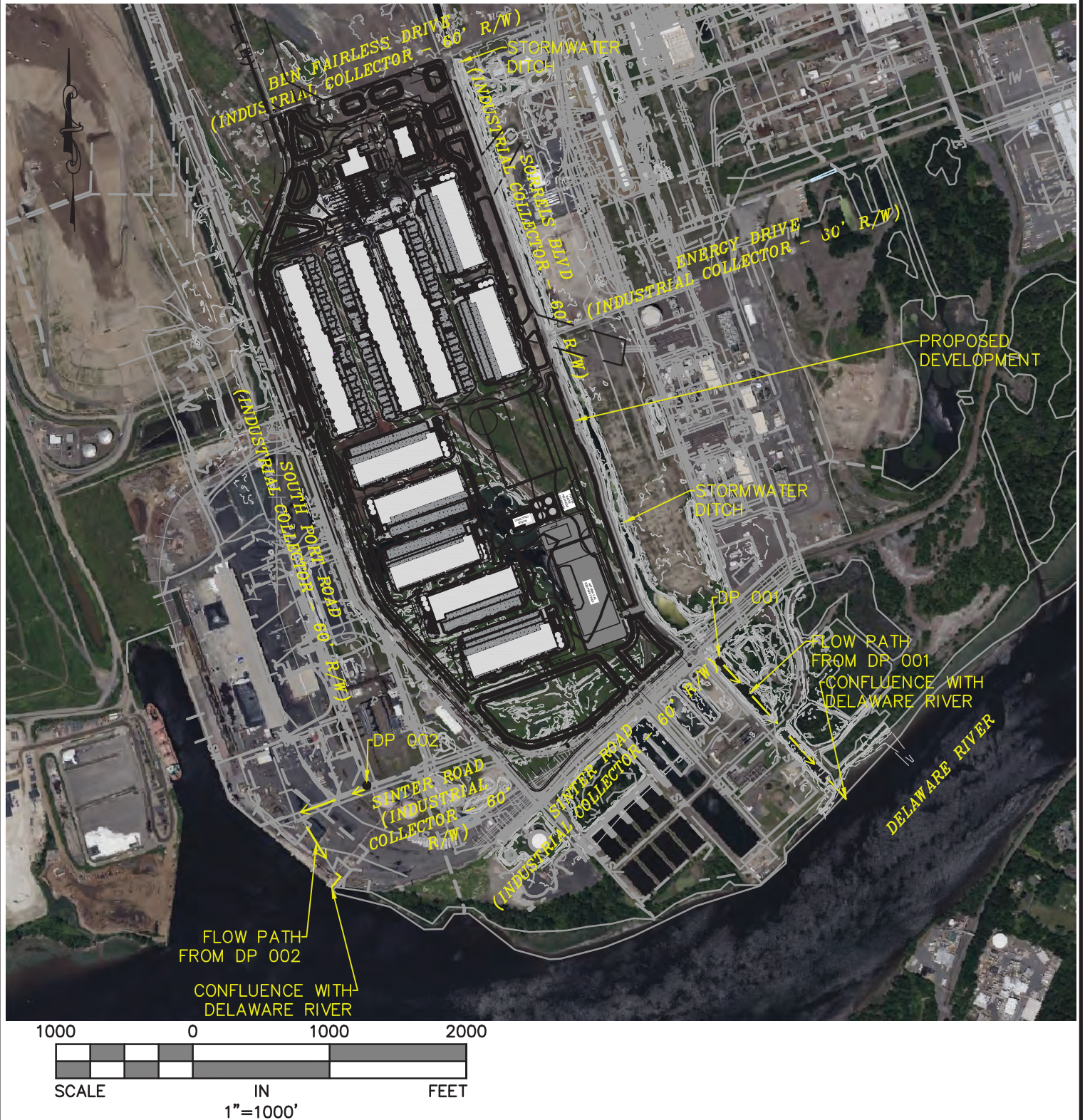
Summary of Peak Runoff Rate Control (DP 002)**

	DP 002 - Peak Flow (cfs) - SCS Method						
Design Storm	1-Year	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
Pre-Development	37.26	49.52	67.04	82.56	98.00	109.52	124.83
Maximum Allowable Post-Development	---	37.26	49.52	---	---	---	62.41
Post-Development	26.10	36.78**	53.47**	68.68	84.19	95.87	111.45**

** Disturbance in DP 002 only involves the demolition of existing impervious buildings and structures associated with the powerhouse. Lawn areas are proposed for the post development condition in all disturbed areas. Therefore, peak rate controls were only met for corresponding storm events (100-year post < 100-year pre, 50-year post < 50-year pre, etc.)

Refer to the pre- and post-development hydrographs for full routing of each design storm.

FIGURE NO. 1



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DRAWN BY:
MF

JOB NO.:
2007083-55

DATE:
1/17/2025

SCALE:
1"=1000'

OFF-SITE DISCHARGE ANALYSIS MAP
**KEYSTONE TRADE
CENTER - AREA 3
DEVELOPMENT**

FALLS TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Bucks County, Pennsylvania, Burlington County, New Jersey, and Mercer County, New Jersey



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Erosion Factors.....	5
K Factor, Rock Free.....	5
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Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

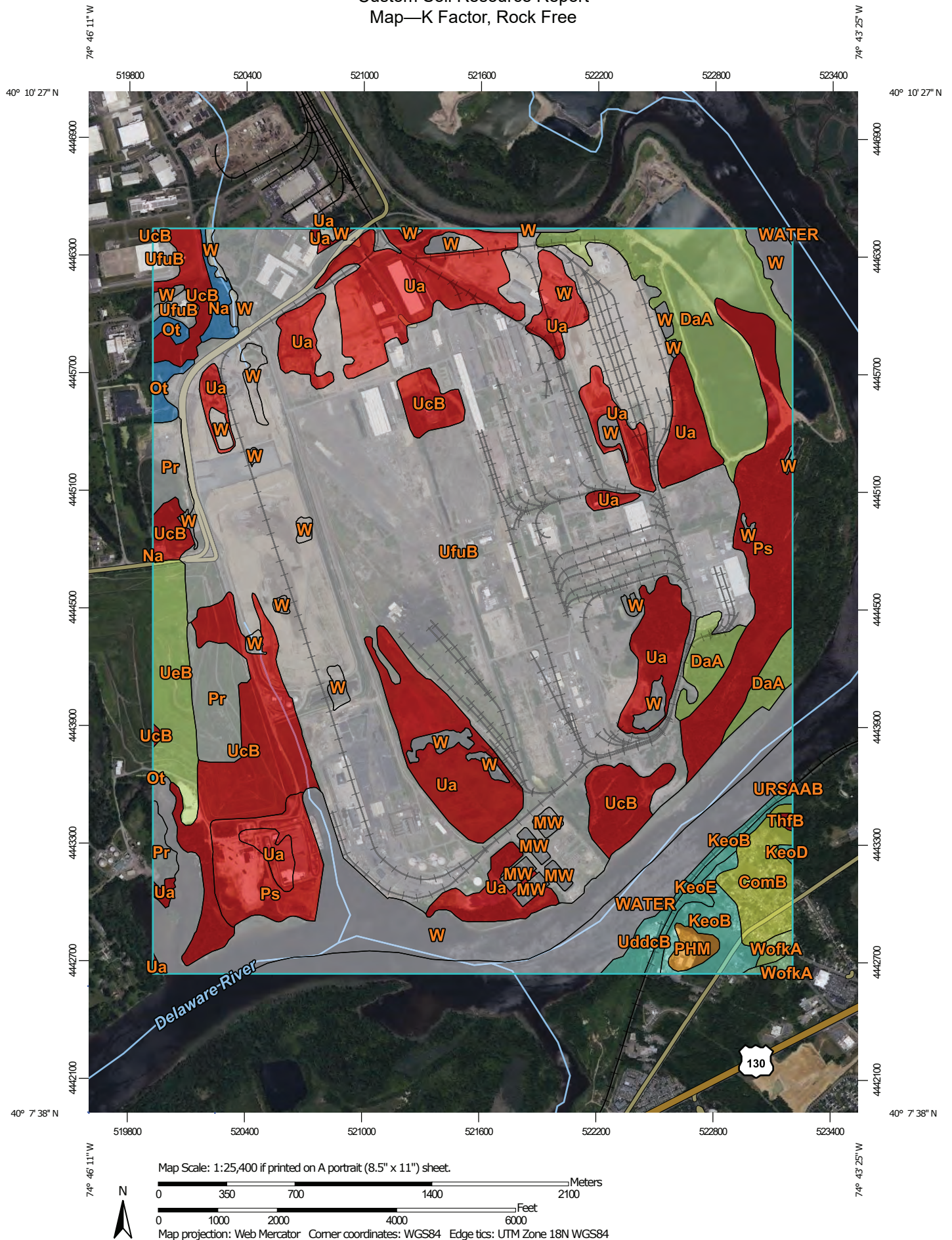
K Factor, Rock Free

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kf (rock free)" indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Factor K does not apply to organic horizons and is not reported for those layers.

Custom Soil Resource Report Map—K Factor, Rock Free



MAP LEGEND**Area of Interest (AOI)**
 Area of Interest (AOI)
Soils**Soil Rating Polygons**

	.02
	.05
	.10
	.15
	.17
	.20
	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Soil Rating Lines

	.02
	.05
	.10
	.15
	.17
	.20

	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Soil Rating Points

	.02
	.05
	.10
	.15
	.17
	.20
	.24
	.28
	.32
	.37
	.43
	.49
	.55
	.64
	Not rated or not available

Water Features

	Streams and Canals
	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads
	Background
	Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were surveyed at a scale of 1:24,000.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <https://websoilsurvey.sc.egov.usda.gov/>
Coordinate System: Web Mercator (EPSG:3857)

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

This product is generated from the USDA National Soil Survey Data as of the version date(s) listed below.

Soil Survey Area: Bucks County, Pennsylvania
Survey Area Data: Version 19, Sep 6, 2021

Soil Survey Area: Burlington County, New Jersey
Survey Area Data: Version 19, Oct 11, 2021

Soil Survey Area: Mercer County, New Jersey
Survey Area Data: Version 18, Aug 30, 2021

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been surveyed at different scales, with a different land use in mind, and at different levels of detail. This may result in differences in soil properties, and interpretations that do not always align across soil survey area boundaries.

Soil map units are labeled (as space allows) at a scale of 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 22, 2022

MAP LEGEND

MAP INFORMATION

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

Table—K Factor, Rock Free

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DaA	Delaware fine sandy loam, 0 to 3 percent slopes	.24	183.9	6.0%
MW	Miscellaneous water		16.5	0.5%
Na	Nanticoke-Hatboro silt loams	.43	10.0	0.3%
Ot	Othello silt loams, 0 to 2 percent slopes, northern coastal plain	.43	12.7	0.4%
Pr	Pits, quarry		65.2	2.1%
Ps	Psammments, dredged river material	.02	176.2	5.7%
Ua	Udorthents, gravelly	.02	361.6	11.7%
UcB	Udorthents, sandy	.02	203.4	6.6%
UeB	Udorthents, sanitary landfill	.24	57.7	1.9%
UfuB	Urban land, 0 to 8 percent slopes		1,454.4	47.1%
W	Water		310.6	10.0%
Subtotals for Soil Survey Area			2,852.2	92.3%
Totals for Area of Interest			3,090.6	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ComB	Collington fine sandy loam, 2 to 5 percent slopes	.20	42.6	1.4%
FankA	Fallsington fine sandy loam, clayey substratum, 0 to 2 percent slopes	.28	3.4	0.1%
KeoB	Keyport loam, 2 to 5 percent slopes	.32	36.9	1.2%
KeoD	Keyport loam, 10 to 15 percent slopes	.32	1.2	0.0%
KeoE	Keyport loam, 15 to 25 percent slopes	.32	12.9	0.4%
PHM	Pits, clay	.10	9.8	0.3%
ThfB	Tinton sand, 0 to 5 percent slopes	.02	1.5	0.0%
UddcB	Udorthents, dredged coarse materials, 0 to 8 percent slopes	.32	12.8	0.4%
URSAAB	Urban land, sandy, 0 to 8 percent slopes	.02	0.7	0.0%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
WATER	Water		111.0	3.6%
WofkA	Woodstown fine sandy loam, clayey substratum, 0 to 2 percent slopes	.24	5.1	0.2%
Subtotals for Soil Survey Area			237.7	7.7%
Totals for Area of Interest			3,090.6	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
WATER	Water		0.7	0.0%
Subtotals for Soil Survey Area			0.7	0.0%
Totals for Area of Interest			3,090.6	100.0%

Rating Options—K Factor, Rock Free

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

For an attribute of a soil horizon, a depth qualification must be specified. In most cases it is probably most appropriate to specify a fixed depth range, either in centimeters or inches. The Bottom Depth must be greater than the Top Depth, and the Top Depth can be greater than zero. The choice of "inches" or "centimeters" only applies to the depth of soil to be evaluated. It has no influence on the units of measure the data are presented in.

When "Surface Layer" is specified as the depth qualifier, only the surface layer or horizon is considered when deriving a value for a component, but keep in mind that the thickness of the surface layer varies from component to component.

When "All Layers" is specified as the depth qualifier, all layers recorded for a component are considered when deriving the value for that component.

Whenever more than one layer or horizon is considered when deriving a value for a component, and the attribute being aggregated is a numeric attribute, a weighted average value is returned, where the weighting factor is the layer or horizon thickness.

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APPENDIX A – DRAINAGE AREA PLANS: AREA 3 DEVELOPMENT

APPENDIX B – CANAL NO. 2 ANALYSIS: AREA 3 DEVELOPMENT

Canal 2 Analysis

For the proposed Keystone Trade Center Area 3 buildings 7, 8, 9, and 10 development, five (5) proposed bio-retention managed release (MRC) basins, five (5) wet ponds/retention basins, five (5) dry extended detention basins, and five (5) subsurface detention basins are designed with outlet structures that control the outflow of stormwater from the basins for the 1-year through 100-year storm events. Proposed reinforced concrete pipes (RCP) are utilized to convey this outflow to the existing canal located along the eastern edge of the Area 3 project area. This existing canal is known as Canal No. 2 for the drainage scheme for the existing Keystone Trade Center (KTC) site.

The existing canal #2 of the project this area is draining to is owned and maintained by NorthPoint Industrial Falls Township, LLC. Area 3 has four (4) connections to existing canal #2 from basin outlet structures. The canal operates under passive hydraulic conditions (gravity). The canal is in good condition, and no issues should arise when connecting to this conveyance system.

Attached with this report is a drainage and storm sewer capacity analysis for Canal No. 2, illustrating that drainage from the post-development sites for Area 3- buildings 7, 8, 9, and 10 can safely convey stormwater through this system and to the canal. Applying a conservative modeling approach, the starting hydraulic grade line/tailwater condition utilized for analysis was 13.0 feet, which is the regulated base flood elevation of the Delaware River where the canal outfalls to the river, per FEMA flood mapping.

The following pages illustrate the capacity of Canal No. 2 for the flow from the proposed Area 3 sites (Buildings 7, 8, 9, and 10) and all existing drainage to Canal No. 2 from the KTC site. Appendix A also displays drainage area maps corresponding to these calculations. As demonstrated with the following calculations, the existing canal has sufficient capacity to receive and convey the 100-year flow in the post-development condition.

Canal No. 2 - Drainage Analysis					
Project	Keystone Trade Center-Area 3			By:	DPB
Location:	Falls Township, Bucks County, PA			Date:	8/1/2023
				Chk'd:	
				Revised:	
				Impervious C =	0.99
				Gravel/Compacted areas C =	0.60
EXISTING CONDITIONS-DRAINAGE TO CANAL NO. 2					
Sub-Drainage Area	Total Drainage Area (Ac.)	Existing Impervious (Ac.)	80% Existing Impervious (Ac.)	Remaining Grav/Comp Area (Ac.)	Composite C
PRE-CANAL 2-1 (WEST)	9.60	3.04	0.00	6.56	0.72
PRE-CANAL 2-2 (WEST)	5.26	2.80	0.00	2.46	0.81
PRE-CANAL 2-7 (WEST)	8.18	2.77	0.00	5.41	0.73
PRE-CANAL 2-1 (EAST)	1.02	0.00	0.00	1.02	0.60
PRE-CANAL 2-2 (EAST)	1.98	0.04	0.00	1.94	0.61
PRE-CANAL 2-3 (EAST)	55.95	44.28	0.00	11.67	0.91
PRE-CANAL 2-4 (EAST)	59.81	29.36	0.00	30.45	0.79
OFF-FULLER (NORTH)	1.24	0.69	0.00	0.55	0.82
OFF-FULLER (MIDDLE)	3.59	2.77	0.00	0.82	0.90
OFF-FULLER (SOUTH)	1.88	1.27	0.00	0.61	0.86
OFF-HIOSSEN	8.51	7.83	0.00	0.68	0.96
OFF-PETRUCCI	18.00	1.97	0.00	16.03	0.64
OFF-EASTERN DA	6.38	2.98	0.00	3.40	0.78
OFF-FLECK	7.47	3.13	0.00	4.34	0.76
Total Area	188.87	102.93	0.00	85.94	

TOTAL AREA - CANAL NO.1	188.87	AC.
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Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
37	Reach	587.62	1	16	1,068,988	36	-----	-----	To 0+85
38	Combine	587.62	1	16	1,091,182	1, 7, 37	-----	-----	Total to 0+85

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 6122.84 Profile: 100 Year

E.G. Elev (ft)	19.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.57	Reach Len. (ft)	302.00	300.00	298.00
Crit W.S. (ft)		Flow Area (sq ft)	25.24	636.10	85.02
E.G. Slope (ft/ft)	0.000020	Area (sq ft)	25.24	636.10	85.02
Q Total (cfs)	259.87	Flow (cfs)	3.23	242.82	13.82
Top Width (ft)	201.14	Top Width (ft)	40.28	73.58	87.28
Vel Total (ft/s)	0.35	Avg. Vel. (ft/s)	0.13	0.38	0.16
Max Chl Dpth (ft)	13.57	Hydr. Depth (ft)	0.63	8.64	0.97
Conv. Total (cfs)	58197.1	Conv. (cfs)	723.6	54379.0	3094.4
Length Wtd. (ft)	300.73	Wetted Per. (ft)	41.13	78.71	87.67
Min Ch El (ft)	6.00	Shear (lb/sq ft)	0.00	0.01	0.00
Alpha	1.14	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	37.90	123.44	11.64
C & E Loss (ft)	0.00	Cum SA (acres)	10.44	13.61	8.77

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 5823.42 Profile: 100 Year

E.G. Elev (ft)	19.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.57	Reach Len. (ft)	301.00	300.00	299.00
Crit W.S. (ft)		Flow Area (sq ft)	1617.27	613.15	179.80
E.G. Slope (ft/ft)	0.000001	Area (sq ft)	1617.27	613.15	179.80
Q Total (cfs)	259.87	Flow (cfs)	207.57	45.05	7.25
Top Width (ft)	303.03	Top Width (ft)	147.02	56.84	99.17
Vel Total (ft/s)	0.11	Avg. Vel. (ft/s)	0.13	0.07	0.04
Max Chl Dpth (ft)	13.57	Hydr. Depth (ft)	11.00	10.79	1.81
Conv. Total (cfs)	350865.5	Conv. (cfs)	280254.8	60823.3	9787.4
Length Wtd. (ft)	300.58	Wetted Per. (ft)	160.52	60.70	101.36
Min Ch El (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.22	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	32.21	119.14	10.73
C & E Loss (ft)	0.00	Cum SA (acres)	9.79	13.17	8.13

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 5523.12 Profile: 100 Year

E.G. Elev (ft)	19.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.57	Reach Len. (ft)	300.00	300.00	300.00
Crit W.S. (ft)		Flow Area (sq ft)	588.66	643.25	180.97
E.G. Slope (ft/ft)	0.000004	Area (sq ft)	588.66	643.25	180.97
Q Total (cfs)	259.87	Flow (cfs)	121.08	120.81	17.98
Top Width (ft)	281.54	Top Width (ft)	115.43	60.39	105.72
Vel Total (ft/s)	0.18	Avg. Vel. (ft/s)	0.21	0.19	0.10
Max Chl Dpth (ft)	13.57	Hydr. Depth (ft)	5.10	10.65	1.71
Conv. Total (cfs)	137054.8	Conv. (cfs)	63857.3	63717.4	9480.0
Length Wtd. (ft)	300.00	Wetted Per. (ft)	117.96	63.81	108.07
Min Ch El (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.09	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	24.58	114.82	9.49
C & E Loss (ft)	0.00	Cum SA (acres)	8.88	12.76	7.43

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 5223.34 Profile: 100 Year

E.G. Elev (ft)	19.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.57	Reach Len. (ft)	303.00	301.00	300.00
Crit W.S. (ft)		Flow Area (sq ft)	640.61	543.11	161.20
E.G. Slope (ft/ft)	0.000004	Area (sq ft)	640.61	543.11	161.20
Q Total (cfs)	259.87	Flow (cfs)	141.19	102.24	16.44
Top Width (ft)	269.85	Top Width (ft)	119.10	52.75	98.00
Vel Total (ft/s)	0.19	Avg. Vel. (ft/s)	0.22	0.19	0.10
Max Chl Dpth (ft)	13.57	Hydr. Depth (ft)	5.38	10.30	1.64
Conv. Total (cfs)	130247.1	Conv. (cfs)	70764.8	51240.3	8242.0
Length Wtd. (ft)	301.80	Wetted Per. (ft)	124.93	57.96	99.83
Min Ch EI (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.10	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	20.35	110.73	8.31
C & E Loss (ft)	0.00	Cum SA (acres)	8.07	12.37	6.73

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 4922.72 Profile: 100 Year

E.G. Elev (ft)	19.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.57	Reach Len. (ft)	300.00	300.00	300.00
Crit W.S. (ft)		Flow Area (sq ft)	298.06	563.04	146.62
E.G. Slope (ft/ft)	0.000009	Area (sq ft)	298.06	563.04	146.62
Q Total (cfs)	259.87	Flow (cfs)	86.42	151.20	22.25
Top Width (ft)	220.71	Top Width (ft)	66.72	60.39	93.60
Vel Total (ft/s)	0.26	Avg. Vel. (ft/s)	0.29	0.27	0.15
Max Chl Dpth (ft)	13.57	Hydr. Depth (ft)	4.47	9.32	1.57
Conv. Total (cfs)	84856.5	Conv. (cfs)	28219.6	49371.7	7265.2
Length Wtd. (ft)	300.00	Wetted Per. (ft)	73.25	67.06	95.17
Min Ch EI (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.08	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	17.09	106.91	7.25
C & E Loss (ft)	0.00	Cum SA (acres)	7.43	11.98	6.07

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 4623.05 Profile: 100 Year

E.G. Elev (ft)	19.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.56	Reach Len. (ft)	299.00	300.00	301.00
Crit W.S. (ft)		Flow Area (sq ft)	407.29	630.54	142.46
E.G. Slope (ft/ft)	0.000008	Area (sq ft)	407.29	630.54	142.46
Q Total (cfs)	259.87	Flow (cfs)	89.61	150.88	19.38
Top Width (ft)	285.76	Top Width (ft)	125.52	69.16	91.08
Vel Total (ft/s)	0.22	Avg. Vel. (ft/s)	0.22	0.24	0.14
Max Chl Dpth (ft)	13.56	Hydr. Depth (ft)	3.24	9.12	1.56
Conv. Total (cfs)	94541.9	Conv. (cfs)	32600.0	54891.5	7050.4
Length Wtd. (ft)	299.74	Wetted Per. (ft)	128.78	75.92	92.64
Min Ch EI (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.06	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	14.66	102.80	6.26
C & E Loss (ft)	0.00	Cum SA (acres)	6.76	11.54	5.43

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 4322.55 Profile: 100 Year

E.G. Elev (ft)	19.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.56	Reach Len. (ft)	200.00	200.00	200.00
Crit W.S. (ft)		Flow Area (sq ft)	256.54	740.18	2.21
E.G. Slope (ft/ft)	0.000010	Area (sq ft)	256.54	740.18	2.21
Q Total (cfs)	259.87	Flow (cfs)	65.38	194.42	0.07
Top Width (ft)	187.44	Top Width (ft)	78.61	91.91	16.91
Vel Total (ft/s)	0.26	Avg. Vel. (ft/s)	0.25	0.26	0.03
Max Chl Dpth (ft)	13.56	Hydr. Depth (ft)	3.26	8.05	0.13
Conv. Total (cfs)	80565.5	Conv. (cfs)	20268.9	60275.7	20.9
Length Wtd. (ft)	200.00	Wetted Per. (ft)	82.71	98.51	17.18
Min Ch El (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.00	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	12.38	98.08	5.76
C & E Loss (ft)	0.00	Cum SA (acres)	6.06	10.98	5.06

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 4122.9 Profile: 100 Year

E.G. Elev (ft)	19.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.56	Reach Len. (ft)	199.00	201.00	202.00
Crit W.S. (ft)	7.82	Flow Area (sq ft)	439.27	633.92	65.36
E.G. Slope (ft/ft)	0.000008	Area (sq ft)	439.27	633.92	65.36
Q Total (cfs)	254.54	Flow (cfs)	102.54	146.32	5.68
Top Width (ft)	285.37	Top Width (ft)	124.76	76.54	84.07
Vel Total (ft/s)	0.22	Avg. Vel. (ft/s)	0.23	0.23	0.09
Max Chl Dpth (ft)	13.56	Hydr. Depth (ft)	3.52	8.28	0.78
Conv. Total (cfs)	91901.0	Conv. (cfs)	37022.9	52829.1	2049.0
Length Wtd. (ft)	201.00	Wetted Per. (ft)	128.53	81.49	84.30
Min Ch El (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.06	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	10.78	94.92	5.60
C & E Loss (ft)		Cum SA (acres)	5.60	10.59	4.83

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 3922.64 Profile: 100 Year

E.G. Elev (ft)	19.56	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.56	Reach Len. (ft)	300.00	300.00	300.00
Crit W.S. (ft)		Flow Area (sq ft)	192.73	693.33	96.04
E.G. Slope (ft/ft)	0.000010	Area (sq ft)	192.73	693.33	96.04
Q Total (cfs)	254.54	Flow (cfs)	43.00	199.20	12.34
Top Width (ft)	223.04	Top Width (ft)	69.44	71.48	82.12
Vel Total (ft/s)	0.26	Avg. Vel. (ft/s)	0.22	0.29	0.13
Max Chl Dpth (ft)	13.56	Hydr. Depth (ft)	2.78	9.70	1.17
Conv. Total (cfs)	81152.0	Conv. (cfs)	13707.9	63508.5	3935.6
Length Wtd. (ft)	300.00	Wetted Per. (ft)	72.75	77.35	82.90
Min Ch El (ft)	6.00	Shear (lb/sq ft)	0.00	0.01	0.00
Alpha	1.10	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	10.78	93.12	5.60
C & E Loss (ft)	0.00	Cum SA (acres)	5.15	10.25	4.44

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 3622.17 Profile: 100 Year

E.G. Elev (ft)	19.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.55	Reach Len. (ft)	302.00	301.00	298.00
Crit W.S. (ft)		Flow Area (sq ft)	369.55	904.74	129.69
E.G. Slope (ft/ft)	0.000005	Area (sq ft)	369.55	904.74	129.69
Q Total (cfs)	254.54	Flow (cfs)	63.22	177.53	13.79
Top Width (ft)	294.90	Top Width (ft)	116.49	94.94	83.47
Vel Total (ft/s)	0.18	Avg. Vel. (ft/s)	0.17	0.20	0.11
Max Chl Dpth (ft)	13.55	Hydr. Depth (ft)	3.17	9.53	1.55
Conv. Total (cfs)	117863.3	Conv. (cfs)	29275.0	82204.2	6384.0
Length Wtd. (ft)	300.97	Wetted Per. (ft)	120.77	102.17	85.02
Min Ch EI (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.06	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	8.85	87.62	4.83
C & E Loss (ft)	0.00	Cum SA (acres)	4.51	9.68	3.87

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 3322.23 Profile: 100 Year

E.G. Elev (ft)	19.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.55	Reach Len. (ft)	298.00	299.00	300.00
Crit W.S. (ft)		Flow Area (sq ft)	93.23	978.37	131.23
E.G. Slope (ft/ft)	0.000006	Area (sq ft)	93.23	978.37	131.23
Q Total (cfs)	254.54	Flow (cfs)	11.45	227.15	15.94
Top Width (ft)	241.61	Top Width (ft)	58.65	98.40	84.56
Vel Total (ft/s)	0.21	Avg. Vel. (ft/s)	0.12	0.23	0.12
Max Chl Dpth (ft)	13.55	Hydr. Depth (ft)	1.59	9.94	1.55
Conv. Total (cfs)	103071.5	Conv. (cfs)	4635.1	91980.7	6455.7
Length Wtd. (ft)	298.99	Wetted Per. (ft)	60.22	104.97	86.11
Min Ch EI (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.11	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	7.24	81.11	3.93
C & E Loss (ft)	0.00	Cum SA (acres)	3.91	9.01	3.30

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 3022.7 Profile: 100 Year

E.G. Elev (ft)	19.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.55	Reach Len. (ft)	307.00	302.00	295.00
Crit W.S. (ft)		Flow Area (sq ft)	95.44	778.91	48.40
E.G. Slope (ft/ft)	0.000011	Area (sq ft)	95.44	778.91	48.40
Q Total (cfs)	254.54	Flow (cfs)	15.18	234.35	5.01
Top Width (ft)	212.00	Top Width (ft)	64.36	83.87	63.77
Vel Total (ft/s)	0.28	Avg. Vel. (ft/s)	0.16	0.30	0.10
Max Chl Dpth (ft)	13.55	Hydr. Depth (ft)	1.48	9.29	0.76
Conv. Total (cfs)	76012.7	Conv. (cfs)	4533.9	69983.0	1495.7
Length Wtd. (ft)	302.05	Wetted Per. (ft)	66.76	89.45	63.79
Min Ch EI (ft)	6.00	Shear (lb/sq ft)	0.00	0.01	0.00
Alpha	1.12	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	6.60	75.08	3.31
C & E Loss (ft)	0.00	Cum SA (acres)	3.48	8.39	2.79

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 2720.33 Profile: 100 Year

E.G. Elev (ft)	19.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.55	Reach Len. (ft)	293.00	300.00	303.00
Crit W.S. (ft)		Flow Area (sq ft)	117.87	928.51	100.08
E.G. Slope (ft/ft)	0.000007	Area (sq ft)	117.87	928.51	100.08
Q Total (cfs)	254.54	Flow (cfs)	14.69	226.98	12.87
Top Width (ft)	241.27	Top Width (ft)	80.56	96.00	64.71
Vel Total (ft/s)	0.22	Avg. Vel. (ft/s)	0.12	0.24	0.13
Max Chl Dpth (ft)	13.55	Hydr. Depth (ft)	1.46	9.67	1.55
Conv. Total (cfs)	96775.5	Conv. (cfs)	5584.2	86297.1	4894.3
Length Wtd. (ft)	299.76	Wetted Per. (ft)	82.68	101.35	66.26
Min Ch EI (ft)	6.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.12	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	5.84	69.16	2.81
C & E Loss (ft)	0.00	Cum SA (acres)	2.97	7.76	2.35

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 2419.37 Profile: 100 Year

E.G. Elev (ft)	19.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.54	Reach Len. (ft)	295.00	300.00	305.00
Crit W.S. (ft)		Flow Area (sq ft)	129.60	902.42	134.43
E.G. Slope (ft/ft)	0.000006	Area (sq ft)	129.60	902.42	134.43
Q Total (cfs)	254.54	Flow (cfs)	15.44	222.44	16.66
Top Width (ft)	261.30	Top Width (ft)	89.24	85.03	87.03
Vel Total (ft/s)	0.22	Avg. Vel. (ft/s)	0.12	0.25	0.12
Max Chl Dpth (ft)	14.54	Hydr. Depth (ft)	1.45	10.61	1.54
Conv. Total (cfs)	100760.5	Conv. (cfs)	6112.9	88052.8	6594.8
Length Wtd. (ft)	300.03	Wetted Per. (ft)	91.37	91.57	88.57
Min Ch EI (ft)	5.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.15	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	5.01	62.85	2.00
C & E Loss (ft)	0.00	Cum SA (acres)	2.40	7.14	1.83

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 2117.71 Profile: 100 Year

E.G. Elev (ft)	19.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.54	Reach Len. (ft)	277.00	308.00	343.00
Crit W.S. (ft)		Flow Area (sq ft)	110.61	999.14	116.05
E.G. Slope (ft/ft)	0.000006	Area (sq ft)	110.61	999.14	116.05
Q Total (cfs)	254.54	Flow (cfs)	11.85	229.21	13.47
Top Width (ft)	254.35	Top Width (ft)	82.51	96.62	75.22
Vel Total (ft/s)	0.21	Avg. Vel. (ft/s)	0.11	0.23	0.12
Max Chl Dpth (ft)	14.54	Hydr. Depth (ft)	1.34	10.34	1.54
Conv. Total (cfs)	107275.5	Conv. (cfs)	4995.7	96600.8	5679.0
Length Wtd. (ft)	307.98	Wetted Per. (ft)	84.35	102.79	76.76
Min Ch EI (ft)	5.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.13	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	4.20	56.31	1.12
C & E Loss (ft)	0.00	Cum SA (acres)	1.82	6.51	1.26

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 1807.45 Profile: 100 Year

E.G. Elev (ft)	19.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.54	Reach Len. (ft)	166.00	155.00	130.00
Crit W.S. (ft)		Flow Area (sq ft)	130.03	2521.46	50.95
E.G. Slope (ft/ft)	0.000001	Area (sq ft)	130.03	2521.46	50.95
Q Total (cfs)	254.54	Flow (cfs)	5.67	247.11	1.75
Top Width (ft)	339.89	Top Width (ft)	84.50	207.90	47.49
Vel Total (ft/s)	0.09	Avg. Vel. (ft/s)	0.04	0.10	0.03
Max Chl Dpth (ft)	15.54	Hydr. Depth (ft)	1.54	12.13	1.07
Conv. Total (cfs)	285514.6	Conv. (cfs)	6362.3	277185.9	1966.4
Length Wtd. (ft)	154.89	Wetted Per. (ft)	86.01	213.95	48.10
Min Ch EI (ft)	4.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.06	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	3.43	43.86	0.46
C & E Loss (ft)	0.00	Cum SA (acres)	1.29	5.44	0.77

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 1654.95 Profile: 100 Year

E.G. Elev (ft)	19.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	19.54	Reach Len. (ft)	395.00	398.00	398.00
Crit W.S. (ft)	4.41	Flow Area (sq ft)	57.05	2742.82	72.00
E.G. Slope (ft/ft)	0.000004	Area (sq ft)	57.05	2742.82	72.00
Q Total (cfs)	603.75	Flow (cfs)	5.11	591.85	6.79
Top Width (ft)	313.72	Top Width (ft)	41.34	225.37	47.01
Vel Total (ft/s)	0.21	Avg. Vel. (ft/s)	0.09	0.22	0.09
Max Chl Dpth (ft)	17.54	Hydr. Depth (ft)	1.38	12.17	1.53
Conv. Total (cfs)	309356.5	Conv. (cfs)	2620.5	303257.1	3479.0
Length Wtd. (ft)	398.00	Wetted Per. (ft)	41.49	230.74	48.53
Min Ch EI (ft)	2.00	Shear (lb/sq ft)	0.00	0.00	0.00
Alpha	1.04	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	3.08	34.49	0.28
C & E Loss (ft)		Cum SA (acres)	1.05	4.67	0.63

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 1253.38 Profile: 100 Year

E.G. Elev (ft)	18.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	18.74	Reach Len. (ft)	296.00	296.00	296.00
Crit W.S. (ft)		Flow Area (sq ft)	46.61	1310.96	33.77
E.G. Slope (ft/ft)	0.000017	Area (sq ft)	46.61	1310.96	33.77
Q Total (cfs)	603.75	Flow (cfs)	12.66	586.53	4.55
Top Width (ft)	164.52	Top Width (ft)	16.98	107.93	39.61
Vel Total (ft/s)	0.43	Avg. Vel. (ft/s)	0.27	0.45	0.13
Max Chl Dpth (ft)	14.74	Hydr. Depth (ft)	2.74	12.15	0.85
Conv. Total (cfs)	146432.1	Conv. (cfs)	3071.6	142256.7	1103.9
Length Wtd. (ft)	296.00	Wetted Per. (ft)	19.72	113.43	40.91
Min Ch EI (ft)	4.00	Shear (lb/sq ft)	0.00	0.01	0.00
Alpha	1.04	Stream Power (lb/ft s)	0.00	0.01	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	3.08	30.14	0.28
C & E Loss (ft)	0.00	Cum SA (acres)	0.79	3.14	0.24

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 953.68 Profile: 100 Year

E.G. Elev (ft)	18.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	18.74	Reach Len. (ft)	222.00	216.00	218.00
Crit W.S. (ft)		Flow Area (sq ft)	37.39	1854.31	19.31
E.G. Slope (ft/ft)	0.000009	Area (sq ft)	37.39	1854.31	19.31
Q Total (cfs)	603.75	Flow (cfs)	7.12	593.36	3.28
Top Width (ft)	181.92	Top Width (ft)	15.67	157.43	8.81
Vel Total (ft/s)	0.32	Avg. Vel. (ft/s)	0.19	0.32	0.17
Max Chl Dpth (ft)	15.74	Hydr. Depth (ft)	2.39	11.78	2.19
Conv. Total (cfs)	204330.6	Conv. (cfs)	2408.0	200813.2	1109.4
Length Wtd. (ft)	216.15	Wetted Per. (ft)	16.38	160.92	10.04
Min Ch El (ft)	3.00	Shear (lb/sq ft)	0.00	0.01	0.00
Alpha	1.01	Stream Power (lb/ft s)	0.00	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	2.79	19.39	0.10
C & E Loss (ft)	0.00	Cum SA (acres)	0.68	2.24	0.07

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 737.13 Profile: 100 Year

E.G. Elev (ft)	18.74	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.00	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	18.74	Reach Len. (ft)	148.00	150.00	154.00
Crit W.S. (ft)	4.64	Flow Area (sq ft)	81.51	992.27	10.97
E.G. Slope (ft/ft)	0.000041	Area (sq ft)	81.51	992.27	10.97
Q Total (cfs)	591.85	Flow (cfs)	20.67	568.15	3.04
Top Width (ft)	191.62	Top Width (ft)	74.42	108.85	8.35
Vel Total (ft/s)	0.55	Avg. Vel. (ft/s)	0.25	0.57	0.28
Max Chl Dpth (ft)	17.74	Hydr. Depth (ft)	1.10	9.12	1.31
Conv. Total (cfs)	92074.9	Conv. (cfs)	3215.0	88387.1	472.8
Length Wtd. (ft)	150.00	Wetted Per. (ft)	74.49	115.43	8.79
Min Ch El (ft)	1.00	Shear (lb/sq ft)	0.00	0.02	0.00
Alpha	1.07	Stream Power (lb/ft s)	0.00	0.01	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)	2.49	12.33	0.02
C & E Loss (ft)		Cum SA (acres)	0.45	1.58	0.03

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 585.52 Profile: 100 Year

E.G. Elev (ft)	13.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.		0.070	
W.S. Elev (ft)	13.02	Reach Len. (ft)	306.00	300.00	298.00
Crit W.S. (ft)		Flow Area (sq ft)		1027.48	
E.G. Slope (ft/ft)	0.000037	Area (sq ft)		1027.48	
Q Total (cfs)	591.85	Flow (cfs)		591.85	
Top Width (ft)	103.15	Top Width (ft)		103.15	
Vel Total (ft/s)	0.58	Avg. Vel. (ft/s)		0.58	
Max Chl Dpth (ft)	13.02	Hydr. Depth (ft)		9.96	
Conv. Total (cfs)	97066.8	Conv. (cfs)		97066.8	
Length Wtd. (ft)	300.00	Wetted Per. (ft)		109.44	
Min Ch El (ft)	0.00	Shear (lb/sq ft)		0.02	
Alpha	1.00	Stream Power (lb/ft s)		0.01	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	2.49	11.33	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.32	1.22	0.02

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 285.01 Profile: 100 Year

E.G. Elev (ft)	13.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.040	0.070	
W.S. Elev (ft)	13.01	Reach Len. (ft)	198.00	204.00	204.00
Crit W.S. (ft)		Flow Area (sq ft)	0.01	1030.37	
E.G. Slope (ft/ft)	0.000038	Area (sq ft)	0.01	1030.37	
Q Total (cfs)	591.85	Flow (cfs)	0.00	591.85	
Top Width (ft)	105.80	Top Width (ft)	0.37	105.42	
Vel Total (ft/s)	0.57	Avg. Vel. (ft/s)	0.01	0.57	
Max Chl Dpth (ft)	13.01	Hydr. Depth (ft)	0.02	9.77	
Conv. Total (cfs)	95933.6	Conv. (cfs)	0.0	95933.6	
Length Wtd. (ft)	201.31	Wetted Per. (ft)	0.41	112.17	
Min Ch El (ft)	0.00	Shear (lb/sq ft)	0.00	0.02	
Alpha	1.00	Stream Power (lb/ft s)	0.00	0.01	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	2.49	4.24	0.02
C & E Loss (ft)	0.00	Cum SA (acres)	0.32	0.50	0.02

Plan: Plan 02 Canal 2 Canal 2 Centerli RS: 85.14 Profile: 100 Year

E.G. Elev (ft)	13.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.040	0.070	0.040
W.S. Elev (ft)	13.00	Reach Len. (ft)			
Crit W.S. (ft)	4.32	Flow Area (sq ft)	1094.81	780.80	9.67
E.G. Slope (ft/ft)	0.000021	Area (sq ft)	1094.81	780.80	9.67
Q Total (cfs)	983.49	Flow (cfs)	706.44	275.01	2.04
Top Width (ft)	253.36	Top Width (ft)	139.56	107.33	6.47
Vel Total (ft/s)	0.52	Avg. Vel. (ft/s)	0.65	0.35	0.21
Max Chl Dpth (ft)	13.00	Hydr. Depth (ft)	7.84	7.27	1.49
Conv. Total (cfs)	212174.6	Conv. (cfs)	152404.7	59329.8	440.0
Length Wtd. (ft)		Wetted Per. (ft)	150.92	115.29	7.14
Min Ch El (ft)	0.00	Shear (lb/sq ft)	0.01	0.01	0.00
Alpha	1.23	Stream Power (lb/ft s)	0.01	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

