BURNS McDONNELL

Stormwater Management Study

THE NORTHERN PASS

Northern Pass Transmission, LLC

Transition Station #5
Project No. 58466

ISSUED FOR PERMITTING
October 1, 2015

Stormwater Management Study

prepared for

Northern Pass Transmission, LLC

Transition Station #5
Main Street, Bethlehem, NH 03574

Project No. 58466

ISSUED FOR PERMITTING
October 1, 2015

prepared by

Burns & McDonnell Engineering Company, Inc.

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INDEX AND CERTIFICATION

Northern Pass Transmission, LLC
Stormwater Management Study
Transition Station #5 – Project No. 58466
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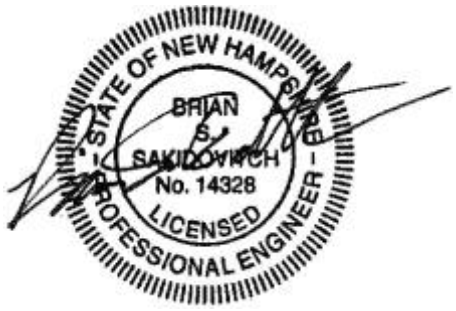
Certification

I hereby certify, as a Professional Engineer in the State of New Hampshire, that the information in this document was assembled under my direct personal charge. This report is not intended or represented to be suitable for reuse by the Northern Pass Transmission, LLC or others without specific verification or adaptation by the Engineer.



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Brian Sakidovitch, P.E. Date

Additional reference information provided by others and not certified by the above sealing Engineer.

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
BMcD	Burns & McDonnell
BMP	Best Management Practice
CFS	Cubic Feet per Second
E&S	Erosion and Sedimentation Control
FPS	Feet per Second
FT	Feet
LF	Linear Feet
LiDAR	Light Detection and Ranging
NAD	North American Datum
NAVD	North American Vertical Datum
NH DES	New Hampshire Department of Environmental Services
ORW	Outstanding Resource Water
ROW	Right-of-way
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
WQF	Water Quality Flow
WQV	Water Quality Volume

1.0 PROJECT OVERVIEW

1.1 Location and Project Summary

Northern Pass Transmission, LLC (NPT) plans to construct Transition Station #5 (Project), a new transition station located on Eversource owned property at 1071 Main Street (US Highway 302) (N44°16'57.0" latitude and –W71°43'31.5" longitude) in the town of Bethlehem, Grafton County, NH (Site). The site is also known as parcel LL#3140, Bethlehem, NH. Refer to Figure 1-1: USGS Site Location Map.

The Site is bounded by an abandoned motel to the east, shrub and wooded land to the north and west, an existing power line right of way to the west and US Highway 302 to the south. The Site is located within the surface watershed of Bakers Brook, a tributary to the Upper Connecticut River.

Pre-development conditions primarily consist of a developed residential lot with a residential structure and a shed located on site. Stormwater runoff in existing conditions generally sheet flows overland from south to north to wetlands located on the northern half of the site.

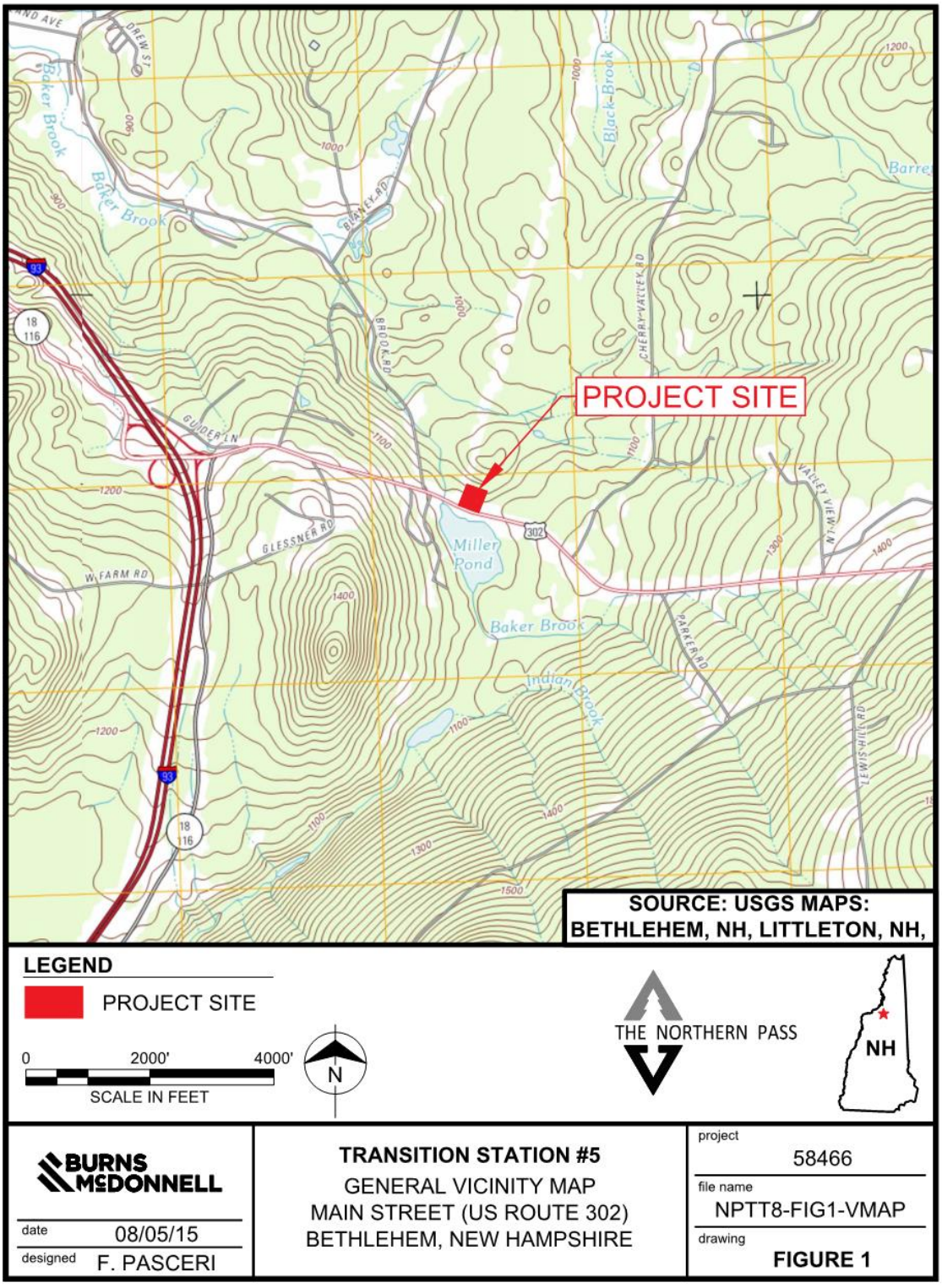
The post-development conditions of the Site include construction of a transition station associated with the Northern Pass Transmission (NPT) project. The NPT project is an approximately 200-mile AC and DC transmission line route extending from the United States/Canadian border in Pittsburg, NH to Deerfield, NH. The station development consists of a gravel pad approximately 86-ft by 135-ft with a perimeter fence and access gates. A gravel access drive and turnaround area is also proposed. The post-development conditions will increase the peak stormwater runoff rate and as a result, stormwater attenuation systems will be implemented. Wherever possible, the pre-development drainage and grading patterns were maintained in the post-development conditions.

A hydrologic model was developed to evaluate the pre- and post-development drainage conditions on the Site for the 2-, 10-, and 50-year design frequency storm events. The results of the analysis indicate that there is an increase in peak discharge rates in post-development conditions from pre-development conditions. The analyses summary, results, and model output are located in further sections.

The Project Site area is 0.925 acres. The Project will result in approximately 0.884-acres of disturbance of which 0.839-acres are on-site and 0.045-acres are off-site in roadways.

The pre-development impervious cover is 0.274 acres and the post-development impervious cover is 0.244 acres, therefore, the decrease in impervious cover is 0.03 acres.

Figure 1-1: USGS Site Location Map



1.2 Existing Conditions Survey Information

An Existing Conditions Plan with topography was prepared for the Project and was used as a base throughout the analysis and design of the Site Development Plans and Stormwater Management Study. In the instance where the watershed areas extended outside the survey topography limits, State published LiDAR was obtained from the New Hampshire GRANIT Statewide GIS Clearinghouse and used to determine the watershed limits.

Horizontal Datum: The survey references the New Hampshire State Plane Coordinate System, NAD 83. The Site Development Plans are drawn in the same state plane coordinate system.

Vertical Datum: North American Vertical Datum of 1988 (NAVD88). The proposed elevations referenced within the Site Development Plans refer to the same vertical datum.

1.3 Geotechnical Investigations

At the time of this study, Geotechnical investigations have not been completed. This information will be updated as soon as it is available.

Based on information available from NRCS and a soils study prepared by Normandeau Environmental Consultants, the site soils can be generally classified disturbed udorthents overlain by fill material.

The soils information can be found in Appendix G.

1.4 Soils

National Resource Conservation Service (NRCS) Web Soil Survey describes the soil at the Project Site as Waumbek loamy sand as well as Monadnock and Hermon soils. The soils on the site were classified as hydrologic soil group B. Four soil types are present on and in the vicinity of the Project Site according to the US Department of Agriculture Soil Conservation Service Soil Survey for Grafton County, New Hampshire. The NRCS Web Soil Survey information is located in Appendix G.

There is also a soil survey report for the site entitled “Northern Pass Transmission Project, Site-Specific Soil Survey Report for the Bethlehem Transition Station (T5A)” by Normandeau Environmental Consultants, dated August 14, 2015, that describes three types of soils that are present at the Project Site.

Peacham and Ossipee soils, and Telos units mapped on-site were derived from glacio-fluvial deposits. Peacham and Ossipee mucky peat is very poorly drained soil and was found north of the Udorthent unit

that makes up the area around the house. Telos was found north of the Peacham map unit in the northwest corner of the parcel.

A majority of the lawn area of the parcel as well as the associated driveway were mapped as a sandy Udorthent in a moderately well to well drained condition. A fill layer measuring up to 19 inches over native soil was observed on the west side of the house. On the east side, it appears that some of the native soil was removed and/or reworked. Depths of fill were shallower on the east side, measuring 16 inches at the maximum depth observed. The soil adjacent and north of the house, also mapped as a Udorthent, smoothed, consisted of excavated soil resulting from the house construction.

Beyond the northern edge of the Udorthent Map Unit, there is a steep topographic drop of approximately 2 to 4 feet. At the base of the drop is a Peacham and Ossipee Soils Map Unit that was observed in the wetland in this location. These soils are both organic in nature, very poorly drained, and rated as hydric. Organic matter up to 18 inches was observed in this map unit. The rise in topography along the northern boundary of the parcel contains Telos soils in a somewhat poorly drained condition.

The hydrologic soil group classifications vary and are listed below in Table 1-1B. The soil survey report is located in Appendix G.

Table 1-1A: Soil Types

Map Legend	Soil Type Per NRCS Web Soil Survey	Hydrologic Soil Group
255B	Monodnock and Hermon soils, 3 to 8 percent slopes, very stoney	B
59B	Waumbek loamy sand, 3 to 8 percent slopes, very stony	B
255E	Monadnock and Hermon soils, 25 to 35 percent slopes, very stony	B

Table 1-2B: Soil Types

Map Legend	Soil Type Per Normandeau Soil Survey Report	Hydrologic Soil Group
123B	Telos silt loam, 3-8 percent slopes	C
299B/dbcde*	Udorthents, smoothed, 3-8 percent slopes	A/B
299C/dbcde*	Udorthents, smoothed, 8-15 percent slopes	C/A/D
731A	Peacham and Ossipee mucky peat, 0-3 percent slopes	D

* d-drainage class: estimated to be moderately well drained (or drier); b-parent material: glacial-fluvial deposits; c- restrictive/impervious layer: mineral restrictive layer present in the soil profile less than 40 inches; d-estimated ksat: not determined; e-hydrologic group: not determined (likely A/B)

The soils series 299B, 299C and 731A have an erosion factor K that is not rated and soil series 123B has a K-Factor of 0.28. The erosion factor K, with values ranging from 0.02 to 0.69, signifies how susceptible a soil is to erosion. The larger the K value the more susceptible the soil is to erosion by water. The K factor for the Project site indicates that the soils have a moderate susceptibility to erosion by water.

1.5 Wetlands, Rivers, Streams and Vernal Pools

A report entitled "Wetlands, Rivers, Streams and Vernal Pools Resource Report and Impact Analysis" by Normandeau Environmental Consultants, dated October 1, 2015 has been prepared for the NPT Project. Environmentally sensitive areas were found within the Project Site. Refer to Appendix I for a copy of this report.

1.6 Floodplain

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map No.33009C0136E for Grafton County, New Hampshire, Effective Date February 20, 2008, the Project Site is located within Zone X, an area determined to be outside the 0.2% annual chance floodplain. The FIRM Map is located in Appendix F.

1.7 Receiving Surface Waters

The Site is within the Upper Connecticut River Watershed, located east of the Baker Brook Tributary.

1.8 Pre-Development Site Conditions

The Pre-Developed site consists of a developed residential lot with a residential structure and accessory shed. There is a lightly wooded area located along the western side of the property, shrub cover near the

center and east side of the property and wetlands present on the north side of the property. The discharge point is located at the northwest corner of the site where the sheet flow begins to collect; however, channelized flow does not begin until beyond the property limits.

1.9 Post-Development Site Conditions

Pre-developed stormwater drainage patterns are mimicked in post-developed conditions and utilize the same aforementioned Site discharge point as pre-development; however, a point discharge will be utilized to drain a proposed basin, which will be outfitted with outlet protection to minimize any erosion or scouring. Pre- and Post-development watershed maps are located in Appendix B. The post-development peak stormwater discharge rates are the same or below pre-development rates.

No new water or septic/sanitary sewer services are required for the Project.

No proposed improvements are located within a FEMA 100-year flood plain as a result, there are no adverse impacts to properties as a result.

* * * * *

2.0 HYDROLOGY AND HYDRAULICS

The stormwater management for the Project has been developed to minimize the downstream effects of development at the Site. The stormwater requirements set forth by the New Hampshire Department of Environmental Services Stormwater Manual Volumes 1, 2, & 3, dated December 2008 and the New Hampshire Department of Transportation Manual on Design for Highways, Revision Date April 1998 were followed to the maximum extent practical for the design of the Site Development Plans and this Report.

The development of the Site results in the need to attenuate stormwater onsite. One above-ground detention basin is proposed and discussed in further detail below. The following is the data used in the stormwater management analysis.

2.1 Methodology and Design Criteria

2.1.1 Rainfall Data

Type II 24-hour rainfall depths for the site location were obtained from the Northeast Regional Climate Center – http://precip.eas.cornell.edu/.

Table 2-1: 24-Hour Type II Rainfall Data

Return Frequency (yr)	24 Hour Depth (in)
2	2.35
10	3.37
50	4.84

2.1.2 Runoff Data

The stormwater runoff calculations were completed using the USDA NRCS/SCS TR-55 runoff curve number method in Bentley's PondPack V8i modeling software. Refer to Appendix B for the inputs and generated outputs. The input values that were used in the PondPack model are shown in the tables below.

Maximum sheet flow length for unpaved areas according to the NH DES Stormwater Manual is 100-ft. Below are the standard SCS runoff curve numbers used in the hydrology modeling and the pre-development and post-development watershed cover data used in the hydrology modeling.

Table 2-2: Standard SCS Runoff Curve Numbers

Land Type	Hydrologic Soil Group	Curve Number
Grass/Wood	B	58
Grass/Wood	C	72
Grass/Wood	D	79
Substation Yard (Gravel)	-	86
Impervious	-	98

Table 2-3: Pre-Developed Model Data

Subarea	Area (ac)	Curve Number	Time of Concentration (Minutes)
1	1.233	78	16.26

Table 2-4: Post-Developed Model Data

Subarea	Area (ac)	Composite Curve Number	Time of Concentration (Minutes)
1	0.680	84	12.06
2	0.553	82	16.08
Total	1.233	-	-

The below table summarizes the Manning's roughness coefficients used in the analysis.

Table 2-5: Manning's Roughness Coefficients

Surface Description	Manning's n
Grass, Dense grasses (sheet)	0.240
Woods, Dense underbrush (sheet)	0.800
Smooth Surface Gravel/Pavement (sheet)	0.100
Woods, Light underbrush (sheet)	0.400
Riprap (D50 = 6") lined channel	0.069
Concrete/RCP	0.013
PVC	0.010
HDPE	0.012
Earth-Straight Channel	0.030
Grass w/ NAG Stabilization	0.045

2.2 Stormwater Modeling Results

For the proposed Project, a new detention basin is proposed to be constructed on the site, located at the north side of the property behind the proposed retaining wall. Runoff from the substation yard and turn around area (Drainage Area: Post 1) will flow southwest to northeast and be collected into a deep sump inlet fitted with a diversion weir located in the northeast corner of the turnaround area. The water quality volume will be conveyed into an underground sand filter and all greater storms will be diverted through drainage line P1 to the detention basin. The detention basin will discharge to a flared end section and riprap outlet protection pad located near the northwest corner of the property. The detention basin includes a concrete outlet control structure to control the runoff rate from the basin and an emergency spillway to manage storm events larger than the 100 year storm event.

The proposed basin was analyzed to mitigate the impacts of stormwater runoff from changes in drainage patterns that would result from the construction of this project. The hydrology model was analyzed assuming no infiltration. The concrete outlet control structure will control the rate of runoff to below the pre-development runoff as shown by the modeling results. The following tables summarize flow conditions for the Project and the reduction of flow achieved by the basin.

There is one analysis point for the site located at Outlet-1 as shown on the Pre-development Watershed Map. The table below summarizes the pre- and post-developed peak discharge runoff rates at the analysis point. Refer to Appendix A for the Pre-Developed and Post-Developed Watershed Maps. Modeling results and output can be found in Appendix B.

Table 2-6: Outlet Flow

Return Frequency (yr)	Pre-Developed Flow (cfs)	Post-Developed Flow (cfs)
2	0.94	0.70
10	2.00	1.32
50	3.73	3.14

2.3 Detention Basin Design

The detention basin, Basin 'DB-1', was designed and analyzed to provide long term stormwater attenuation once the Project has been constructed. The basin has been designed to meet the requirements in the NH DES Stormwater Manual. The detention basin contains storm events up to and including the 50-year design storm with a minimum 1-ft freeboard to the emergency spillway crest elevation. The detention basin has been designed as to not require a State Dam permit. The below tables summarize the detention basin storage volumes and water surface elevations with respect to the design storm events.

Table 2-7: Detention Basin Storage Volume

Elevation (feet-NAVD88)	Surface Area (ac)	Cumulative Storage Volume (Acre-ft)
1,07600	0.019	--
1,077.00	0.025	0.022
1,078.00	0.039	0.054
1,079.00	0.047	0.097
1,080.00	0.057	0.149

Table 2-8: Detention Basin Water Surface Elevation

Return Frequency (yr)	Maximum Water Surface Elevation (ft)
2	1,077.01
10	1,077.61
50	1,078.12

2.4 Sand Filter

An Underground Sand Filter was designed and analyzed to provide long term water quality treatment once the Project has been constructed. To treat the Water Quality event (1 inch rainfall event) an Underground Sand Filter (SF-1) will be constructed in the northeast corner of the gravel access area. The facility will treat impervious surfaces located within post-development drainage area Post-1. The total impervious areas comprised of concrete footings, pads, control building and concrete driveway is 2,159 square feet (0.05 acres). Based on the limited impervious area, the Water Quality Volume (WQV) for this project has been calculated to be 287 cubic feet with a water quality flow (WQF) of 0.065 cubic feet per second.

Stormwater collected from the transition station yard through a deep sump catch basin (CB1) will enter a diversion manhole (MH1) where the Water Quality Flow will be conveyed to the sand filter's pre-

treatment sedimentation chamber through a 2-inch PVC pipe. Greater storms will be allowed to bypass the sand filter through a pipe in the diversion manhole (MH1) set at an invert 6-inches above the 2 inch PVC and be conveyed to the detention basin. The pretreatment sedimentation chamber was sized to contain greater than 25% of the WQV. In the pre-treatment chamber sediment will be given time to settle out before the water continues to the filter chamber through a submerged weir. The filter chamber has been designed to provide a 24-inch thick sand filter layer with 6-inch underdrains located 6 inches below the sand layer and set in a 1- to 2-inch diameter drainage stone layer 12-inches thick. The filter media will be covered with a 3 inch thick gravel debris screen above the sand. The stormwater will enter the filter chamber and flow through the filter media layer. This flow will be collected by the underdrains which will convey the flow to the overflow chamber. The filter chamber was sized to contain 75% of the WQV, with a portion of this volume located within the filter media layer and the rest above but below an overflow weir. The overflow weir has been designed to pass the 10-year storm and is set above the WQV between the filter chamber and the overflow chamber. A maximum ponding depth of 4.5 feet will be maintained in the sedimentation and filter chambers. The Underground Sand Filter was designed to have a maximum drain time of less than 72 hours. The stormwater which enters the overflow chamber will be conveyed into drainage piping to the detention basin DB-1. The tables below summarize the Underground Sand Filter storage and water surface elevations with respect to the Water Quality and 10-year design storm events.

Table 2-9: Underground Sand Filter Storage Volume Within Filter Media

Elevation (feet-NAVD88)	Surface Area (SF)	Cumulative Storage Volume (cf)
1086.65	84.50	-
1087.00	84.50	11.83
1088.00	84.50	45.63
1089.00	84.50	79.43
1089.90	84.50	109.85

Table 2-10: Underground Sand Filter Storage Volume Above Filter Media

Elevation (feet-NAVD88)	Surface Area (SF)	Cumulative Storage Volume (cf)
1089.90	84.50	-
1090.00	84.50	8.45
1091.00	84.50	92.95
1091.15	84.50	105.63

Table 2-11: Underground Sand Filter Storage Volume In Sediment Chamber

Elevation (feet-NAVD88)	Surface Area (SF)	Cumulative Storage Volume (cf)
1086.65	65.00	-
1087.00	65.00	22.75
1088.00	65.00	87.75
1088.65	65.00	130.00
1089.00	52.00	150.43
1090.00	52.00	202.43
1091.00	52.00	254.43
1091.15	52.00	262.23

Table 2-12: Underground Sand Filter Water Surface Elevation

Return Frequency (yr)	Maximum Water Surface Elevation (ft)
WQ Event	1,091.15
10	1,091.75

2.5 Basin Spillway

The detention basin is designed to contain the 100-year storm event without overtopping; the spillway is designed to provide for emergency flow for events higher than the 100-year storm. The spillway was modeled as weir flow using Bentley FlowMaster V8i. The basin spillway will be lined with 12" riprap as specified in the Site Development Plans and the calculation results show the spillway will be stable for storms up to the 100-year flow.

Table 2-13: Basin Spillway Summary & Stability

100 Year Max. Flow (cfs)	100 Year Velocity (ft/s)	Spillway (weir) Width (ft)	Side Slopes (H:V ft)	Downstream Slope (%)	Allowable Shear Stress (psf)	Calculated Shear Stress*
1.76	2.97	5.0	3:1	50	4.8	3.43

*Allowable shear Stress are taken from table 2.3 of FHA HEC 15, Third Edition

Refer to Appendix C for the spillway and shear flow calculations.

2.6 Storm Drainage System

Storm drainage collection system conduit capacity calculations were performed using Bentley FlowMasterV8i. Drainage lines P1, P3 and P5 convey runoff from the station yard and turn around area and outlets into the detention basin. Drainage lines P2 and P4 convey the water quality volume to the underground sand filter which discharges to the detention basin through drainage line P5. The pipe

drainage system is designed to convey the 100-year design storm event. Calculations are provided in Appendix C. Below is a summary of the proposed storm drains and design criteria. Riprap outlet protection is provided at all pipe discharge locations refer to Section 2.7 for further information.

Table 2-14: Storm Drains

Drain	Size	Material	Roughness Coefficient	Length (ft)	Slope (%)	10-Year Design Discharge (cfs)	25-Year Design Discharge (cfs)	100-Year Design Discharge (cfs)
P1	12”	HDPE	0.012	8	2.5	1.62	2.20	3.37
P2	2”	PVC	0.010	5	4.0	0.065	N/A	N/A
P3	12”	HDPE	0.012	17	4.4	1.62	2.20	3.37
P4	8”	PVC	0.010	13	4.6	0.065	N/A	N/A
P5	12”	HDPE	0.012	6	2.5	1.62	2.20	3.37
P6	12”	RCP	0.013	22	5.0	0.51	1.02	1.71
P7	12”	RCP	0.013	6	5.0	0.51	1.02	1.71

*Drain lines P2 and P4 are designed for Water Quality Flow (WQF) = 0.065 cfs

2.7 Outlet Protection

Outlet protection is designed for the 25-year frequency design storm as required by the NH DES Stormwater Manual. Calculations for riprap apron protection are located in Appendix C.

Table 2-15: Outlet Protection

Outlet No.	Length (ft)	Depth (ft)	Width at Culvert (ft)	Width at End of Apron (ft)	Median Stone Size (in)	25-Year Flow (cfs)	25-Year Velocity (fps)
P7	9	1.5	3	12	6	1.02	6.97

* * * * *

3.0 BEST MANAGEMENT PRACTICES

The proposed Stormwater Management System contains Best Management Practices (BMPs) that will, if maintained properly, provide treatment of Site generated stormwater runoff. The proposed BMPs are described below.

3.1 Groundwater Recharge Volume & Water Quality Volume

Runoff from impervious areas of the site will be treated by an underground sand filter. Impervious areas to be treated by the underground sand filter include a paved driveway, structure footings, structures and pads. The Water Quality Volume (WQV) that is required to be treated from these areas is 287 cubic feet. The underground sand filter has a volume of 477 cubic feet which is above the minimum required.

There is a decrease in impervious cover; therefore, groundwater recharge is not required. The worksheets for the underground sand filter and Groundwater Recharge Volume (GRV) are located in Appendix D.

3.2 Temporary Erosion Controls

During construction of the proposed station, the Contractor will be responsible for installation, implementation, and maintenance of temporary erosion and sedimentation control measures, that if implemented and maintained properly, will help to prevent off-site tracking and conveyance of waterborne loss of sediment and debris. The specific measures proposed are located in the Site Development Plans, which are under separate cover.

Temporary erosion and sedimentation controls shall not be removed until construction is complete and site stabilization is achieved.

3.3 Permanent Erosion Controls

Upon completion of construction, the Site shall be stabilized by one or more of the following measures in accordance with the Site Development Plans (under separate cover):

3.3.1 Crushed Rock/Paving

Crushed rock will be installed on the station pad area and turnaround area. The apron at the site entrance will be paved with asphalt.

3.3.2 Seeding

Any disturbed area not proposed as an impervious or gravel surface will be restored to natural meadow vegetation over 4” of topsoil. Planting and mulching of permanent seed will occur as soon as practical

after final grading, placement of topsoil, and soil preparation has been completed. Seeding should occur during the growing season.

3.3.3 Outlet Protection

Pipe outlets implement riprap outlet protection to help prevent scouring and erosion.

3.3.4 Flood Protection Analysis

Flood protection has been implemented for the detention basin as follows:

- Detention Basin will detain the 2-year through 100-year, 24-hour storm event;
- An emergency spillway will be used to convey storm events larger than the 100-year, 24-hour storm event.

3.4 Antidegredation

There is less than 10% effective impervious cover (EIC) and less than 65% undisturbed cover within the property boundary of the Site, therefore the pollutant loading calculations are required to be performed according to the NHDES 1065 Rule. Refer to the Site Cover Plan located in Appendix A and the pollutant load calculations in Appendix J

The site stormwater runoff discharges to an impaired receiving water according to EPA 2008 Waterbody Report for the Baker Brook. As a result, pollutant loading calculations were performed using NH DES standard Simple Method worksheet to demonstrate that there is no increase in Total Suspended Solids (TSS), Total Phosphorus (TP) and Total Nitrogen (TN) resulting from the project. The pollutant loading calculations and other supporting information are located in Appendix J.

The Simple Method generates pollutant loads based on the pre- and post- drainage areas indicated on the Watershed Maps located in Appendix A. The proposed BMPs are designed to remove a percentage of the pollutants. Sub-watershed area Post-1 is considered disconnected impervious area because it drains across a gravel strip to a underground sand filter. The disconnected impervious credit and the treatment BMPs provide water quality and limit post-development pollutant levels to a less than pre-development pollutant level.

The site lies within the NE Regional Mercury Total Maximum Daily Load (TMDL) according to the EPA 2008 Waterbody Report for Baker Brook. The project is not anticipated to produce mercury byproducts; therefore, restrictions from the NE Regional Mercury TMDL are not applicable.

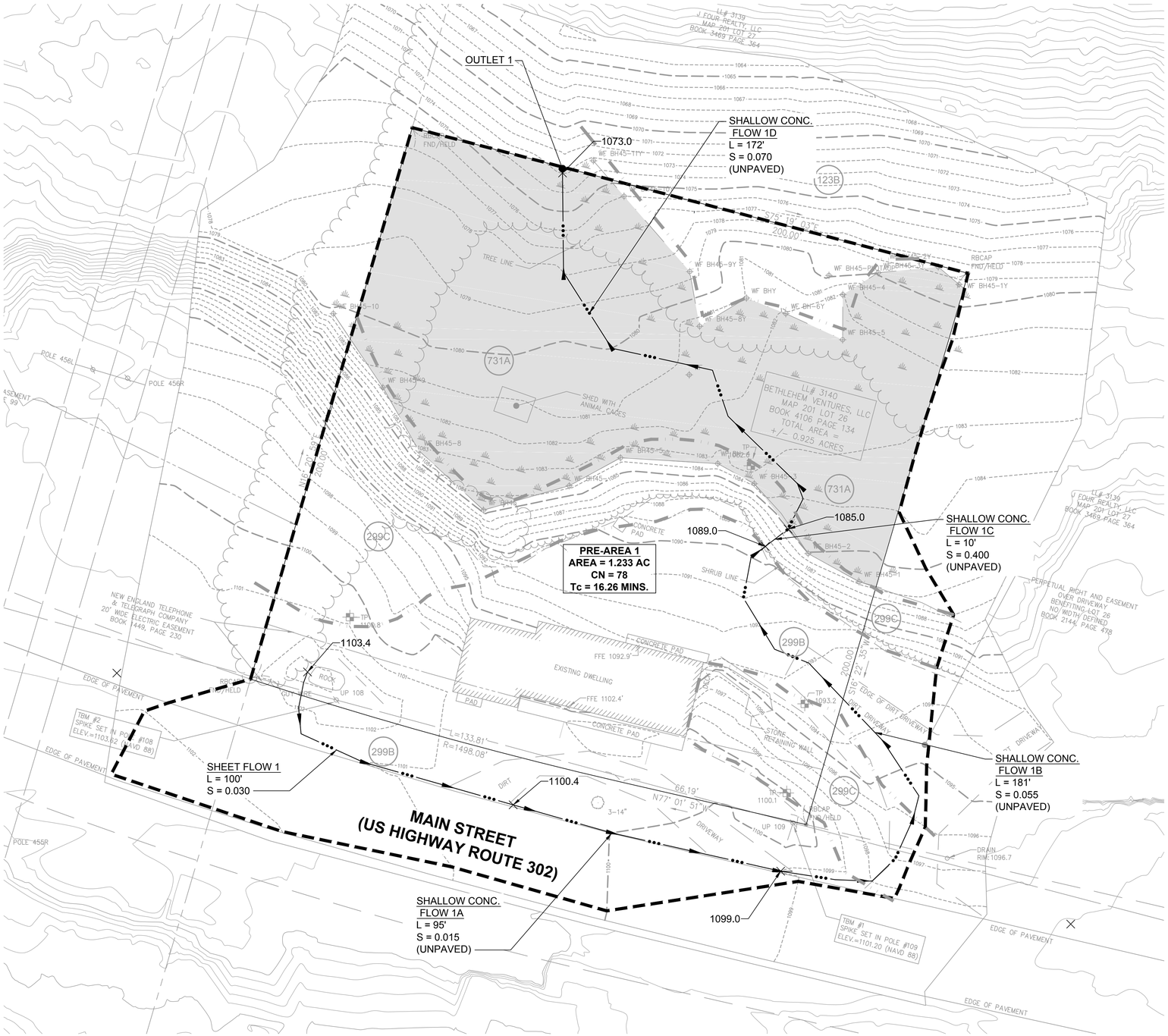
* * * * *

4.0 CONCLUSION

In order to mitigate the impacts of stormwater runoff caused by the addition of the substation, two (2) BMPs were implemented. Those BMPs include the addition of an underground sand filter and detention basin. The underground sand filter will provide filtration for the water quality volume. All greater storm events will bypass the sand filter and be conveyed to the detention basin. The detention basin will reduce the post-developed peak discharge rates below that of the pre-developed flows for the 2-year through the 50-year storm events. The basin utilizes one outlet control structure and emergency spillway. The outlet control structure will control up to and including the 100-year storm event. The storm events larger than the 100-year storm event will discharge through the emergency spillway. The on-site BMPs have been designed in accordance with the New Hampshire Department of Environmental Services Stormwater Manual Volumes 1, 2, & 3.

* * * * *

APPENDIX A – PRE- AND POST-DEVELOPMENT WATERSHED MAPS



LEGEND

- PRE-DEVELOPMENT SUB-AREA BOUNDARY
- NRCS WEB SOIL APPROX. SURVEY SOIL BOUNDARY
- TIME OF CONCENTRATION
- 140B — NRCS SOIL DESIGNATION
- 380.50 — SPOT ELEVATION

NORTH

0 10' 20' 40'
SCALE IN FEET

PROGRESS PRINT
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

NO.	REVISION	DATE	DRWN	CHKD	APPRV.
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

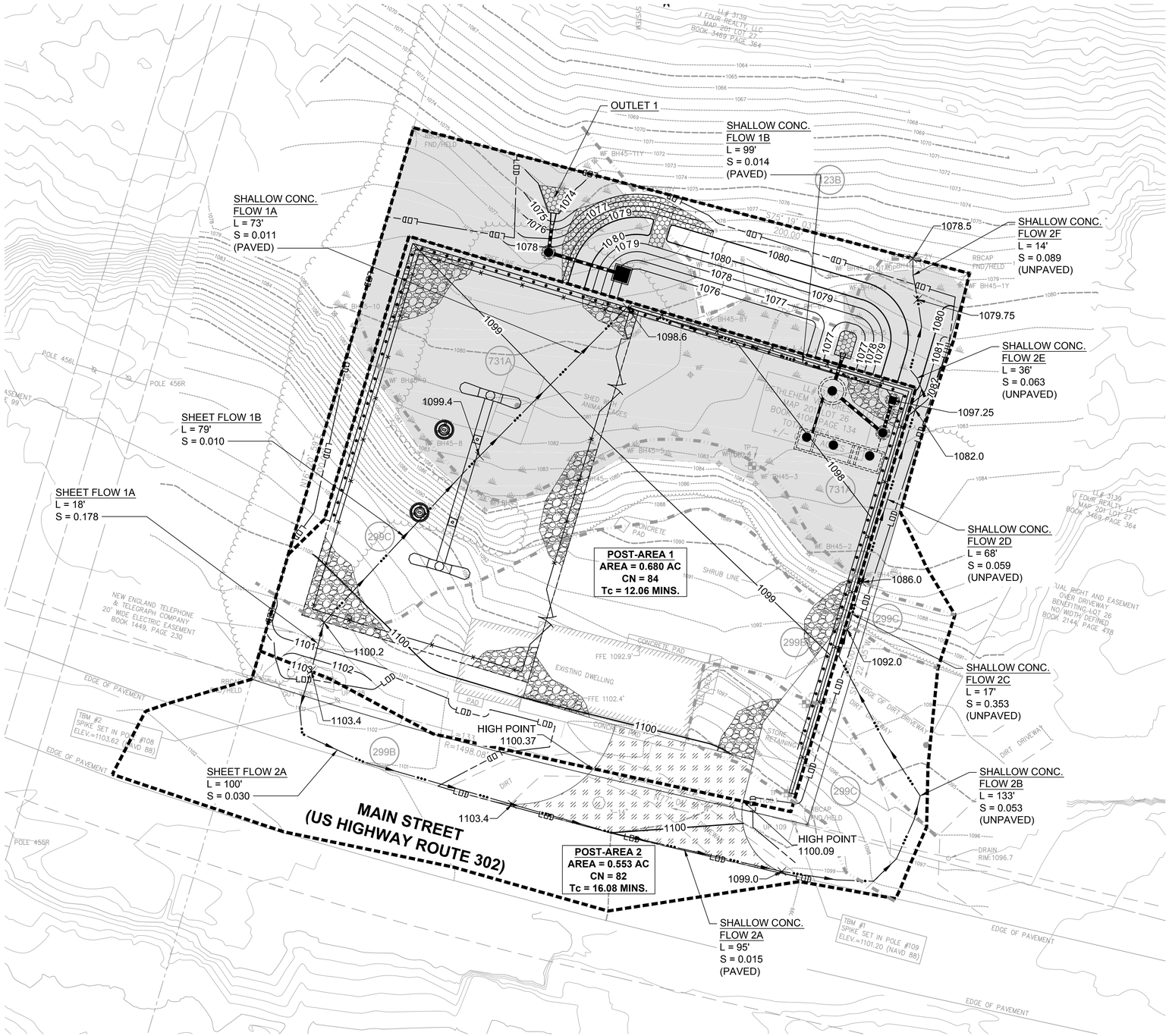
TRANSITION STATION #5
PRE-DEVELOPMENT WATERSHED MAP

DATE: 10/1/2015
SCALE: 1" = 20'

DES: LMP | CHK: RLR
DRW: EP | APR: BSS

TOWN: BETHLEHEM, NH
TRANSMISSION LINE:
MILE NO:
SHEET 1 OF 1
NPTT&WSHED-PRE

REVISION: XXX



LEGEND

- POST-DEVELOPMENT SUB-AREA BOUNDARY
- NRCS WEB SOIL APPROX. SURVEY SOIL BOUNDARY
- TIME OF CONCENTRATION
- 140B — NRCS SOIL DESIGNATION
- 380.50 — SPOT ELEVATION

NORTH

0 10' 20' 40'
SCALE IN FEET

PROGRESS PRINT FOR REVIEW ONLY NOT FOR CONSTRUCTION

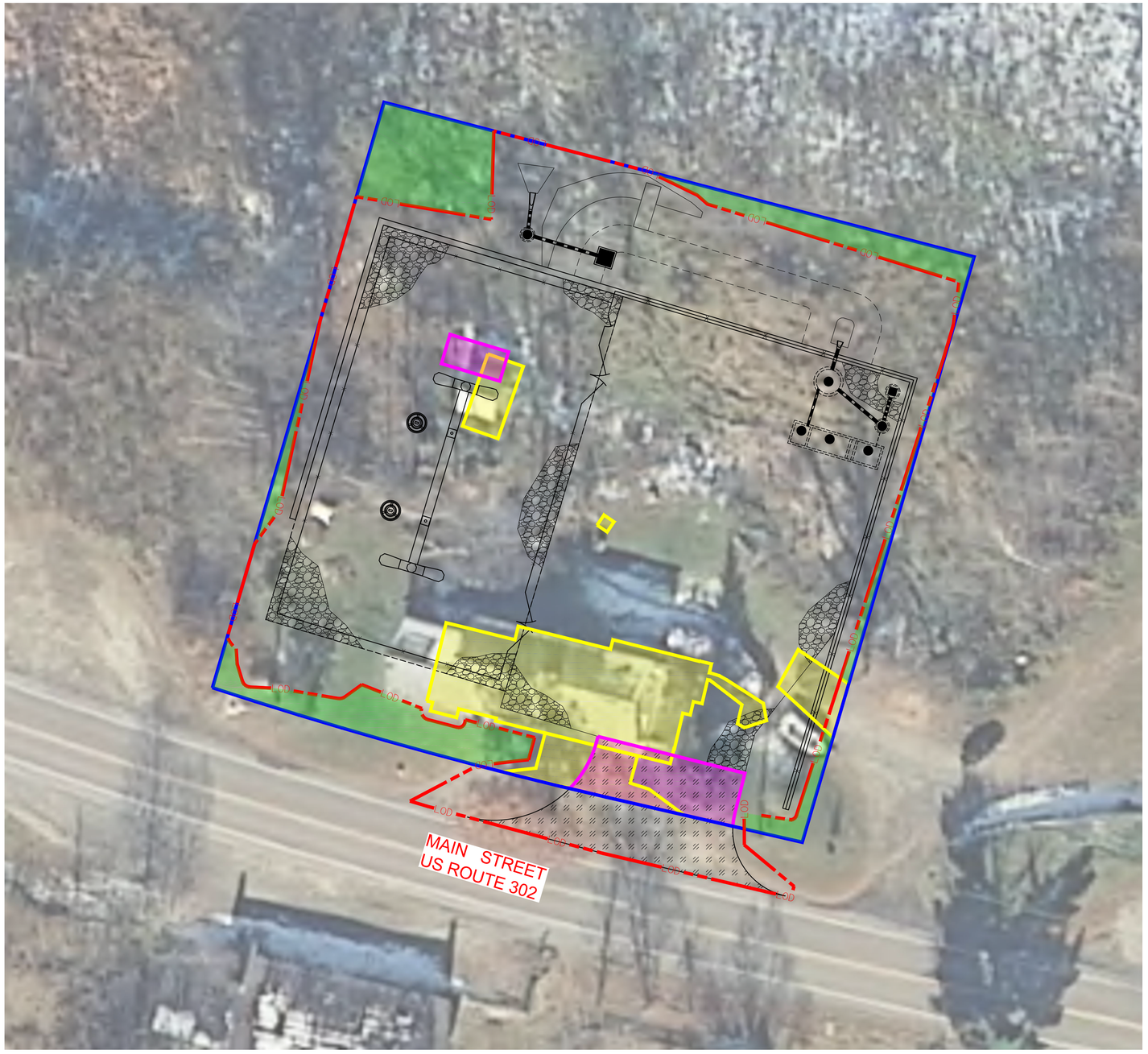
NO.	REVISION	DATE	DRWN	CHKD	APPRV
1	ISSUED FOR PERMITTING	10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

TRANSITION STATION #5
POST-DEVELOPMENT WATERSHED MAP

DATE: 10/1/2015
SCALE: 1" = 20'

DES: LMP | CHK: RLR
DRW: FP | APR: BSS
TOWN: BETHLEHEM, NH
TRANSMISSION LINE:
MILE NO:
SHEET 1 OF 1
NPT78-WSHED-POST
REVISION: XXX



LEGEND

- EI - EXISTING IMPERVIOUS AREA
- UDC - UNDISTURBED COVER
- PI - PROPOSED IMPERVIOUS AREA
- DIA - PROPOSED DISCONNECTED IMPERVIOUS AREA
- EXISTING PARCEL LINE
- LOD — PROPOSED LIMIT OF DISTURBANCE LINE (LOD)

SITE COVER AREA			
ITEM	DESCRIPTION	AREA (SF)	AREA (AC)
PS	PARCEL SIZE	40,305	0.93
EI	EXISTING IMPERVIOUS	4,057	0.09
PI	PROPOSED IMPERVIOUS	1,136	0.03
PDA	PROPOSED DISTURBED AREA (WITHIN PROPERTY LINE)	36,561	0.84
UDC	UNDISTURBED COVER	3,700	0.08
DIA	DISCONNECTED AREA	1,136	0.03

SITE COVER TABULATION			
ITEM	DESCRIPTION	FORMULA	TOTAL
TIC	TOTAL IMPERVIOUS COVER (ACRES)	EI + PI	0.03
EIC	EFFECTIVE IMPERVIOUS COVER (ACRES)	TIC - DIA	0.00
EIC %	EIC PERCENTAGE	EIC / PS	0.4%
UDC %	UDC PERCENTAGE	UDC / PS	9.2%

MAP REFERENCES:
1. 2011 ORTHOIMAGERY OBTAINED IN .SID FORMAT FROM NH STATEWIDE GIS CLEARINGHOUSE WEBSITE AT www.granit.unh.edu. TILES USED: 0965006450 & 09650065500

NOTES:
1. THE TOTAL IMPERVIOUS COVER (TIC) AS A RESULT OF THIS PROJECT ACCOUNTS FOR THE SUM OF THE PROPOSED IMPERVIOUS AREA (PI) AND THE DISCONNECTED IMPERVIOUS AREA (DIA) MINUS THE EXISTING IMPERVIOUS AREA (EI) TO BE DEMOLISHED.

2. NPDES/LIMIT OF DISTURBANCE (LOD) AREA TOTAL = 0.884 ACRES, OF WHICH 0.839 ACRES IS ON-SITE DISTURBANCE AND 0.045 ACRES IS OFF-SITE DISTURBANCE.

NORTH

0 10' 20' 40'
SCALE IN FEET

FOR PERMITTING PURPOSES ONLY NOT FOR CONSTRUCTION

NO.	ISSUED FOR: PERMITTING REVISION	DATE	DRWN	CHKD	APPRV
1		10/1/15	FP	RLR	BSS

THE NORTHERN PASS
Transmission Business

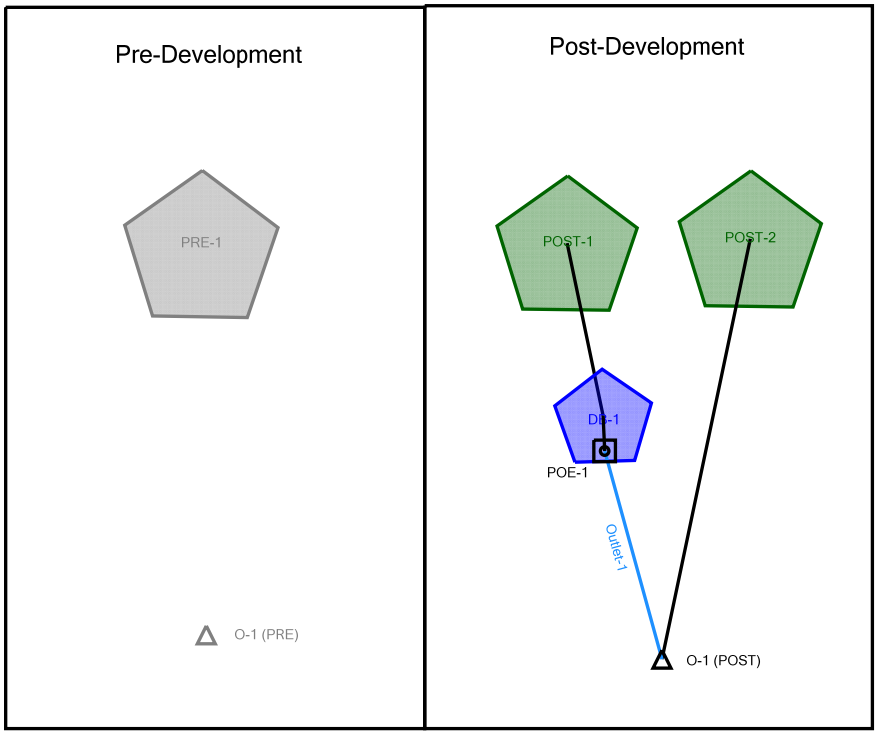
TRANSITION STATION #5
SITE COVER PLAN

DATE: 10/1/2015
SCALE: H 1" = 100'

DES: LMP | CHK: RLR
DRW: FP | APR: BSS
TOWN: BETHLEHEM, NH
TRANSMISSION LINE:
MILE NO:
SHEET 1 OF 1
NPTT8-SCP
REVISION: 11/10/2013

APPENDIX B – HYDROLOGY MODEL (PONDPACK)

Scenario: Post-Development 25 year



Project Summary	
Title	Northern Pass Transition Station #5a Stormwater Model
Engineer	L Guerin
Company	Burns & McDonnell
Date	8/21/2015

Notes

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Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
PRE-1	Pre-Development 2 year	2	0.071	12.083	0.94
PRE-1	Pre-Development 10 year	10	0.143	12.050	2.00
PRE-1	Pre-Development 50 year	50	0.264	12.050	3.73
PRE-1	Pre-Development 100 year	100	0.335	12.050	4.73
POST-1	Post-Development 2 year	2	0.057	12.017	0.88
POST-1	Post-Development 10 year	10	0.103	12.017	1.62
POST-1	Post-Development 25 year	25	0.141	12.017	2.20
POST-1	Post-Development 50 year	50	0.177	12.000	2.74
POST-1	Post-Development 100 year	100	0.219	12.000	3.37
POST-2	Post-Development 2 year	2	0.041	12.067	0.57
POST-2	Post-Development 10 year	10	0.077	12.067	1.09
POST-2	Post-Development 25 year	25	0.107	12.050	1.51
POST-2	Post-Development 50 year	50	0.135	12.050	1.90
POST-2	Post-Development 100 year	100	0.168	12.050	2.36

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)
O-1 (PRE)	Pre-Development 2 year	2	0.071	12.083	0.94
O-1 (PRE)	Pre-Development 10 year	10	0.143	12.050	2.00
O-1 (PRE)	Pre-Development 50 year	50	0.264	12.050	3.73
O-1 (PRE)	Pre-Development 100 year	100	0.335	12.050	4.73
O-1 (POST)	Post-Development 2 year	2	0.096	12.067	0.70
O-1 (POST)	Post-Development 10 year	10	0.178	12.083	1.32
O-1 (POST)	Post-Development 25 year	25	0.245	12.100	2.32
O-1 (POST)	Post-Development 50 year	50	0.308	12.083	3.14
O-1 (POST)	Post-Development 100 year	100	0.383	12.067	3.90

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft^3/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
DB-1 (IN)	Post-Development 2 year	2	0.057	12.017	0.88	(N/A)	(N/A)
DB-1 (OUT)	Post-Development 2 year	2	0.055	12.433	0.16	1,077.01	0.022
DB-1 (IN)	Post-Development 10 year	10	0.103	12.017	1.62	(N/A)	(N/A)
DB-1 (OUT)	Post-Development 10 year	10	0.101	12.250	0.51	1,077.61	0.040
DB-1 (IN)	Post-Development 25 year	25	0.141	12.017	2.20	(N/A)	(N/A)
DB-1 (OUT)	Post-Development 25 year	25	0.138	12.183	1.02	1,077.88	0.049
DB-1 (IN)	Post-Development 50 year	50	0.177	12.000	2.74	(N/A)	(N/A)
DB-1 (OUT)	Post-Development 50 year	50	0.173	12.167	1.38	1,078.12	0.058
DB-1 (IN)	Post-Development 100 year	100	0.219	12.000	3.37	(N/A)	(N/A)
DB-1 (OUT)	Post-Development 100 year	100	0.215	12.167	1.71	1,078.40	0.070

Time-Depth Curve: 10 year	
Label	10 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.3	0.3	0.3
6.000	0.3	0.3	0.3	0.3	0.3
6.500	0.3	0.3	0.3	0.3	0.3
7.000	0.3	0.3	0.3	0.4	0.4
7.500	0.4	0.4	0.4	0.4	0.4
8.000	0.4	0.4	0.4	0.4	0.4
8.500	0.4	0.5	0.5	0.5	0.5
9.000	0.5	0.5	0.5	0.5	0.5
9.500	0.5	0.6	0.6	0.6	0.6
10.000	0.6	0.6	0.6	0.7	0.7
10.500	0.7	0.7	0.7	0.7	0.8
11.000	0.8	0.8	0.8	0.9	0.9
11.500	1.0	1.0	1.2	1.5	1.9
12.000	2.2	2.3	2.4	2.4	2.4
12.500	2.5	2.5	2.5	2.6	2.6
13.000	2.6	2.6	2.6	2.7	2.7
13.500	2.7	2.7	2.7	2.7	2.8
14.000	2.8	2.8	2.8	2.8	2.8
14.500	2.8	2.8	2.8	2.9	2.9
15.000	2.9	2.9	2.9	2.9	2.9
15.500	2.9	2.9	2.9	2.9	3.0
16.000	3.0	3.0	3.0	3.0	3.0
16.500	3.0	3.0	3.0	3.0	3.0
17.000	3.0	3.0	3.1	3.1	3.1
17.500	3.1	3.1	3.1	3.1	3.1
18.000	3.1	3.1	3.1	3.1	3.1
18.500	3.1	3.1	3.1	3.1	3.2
19.000	3.2	3.2	3.2	3.2	3.2
19.500	3.2	3.2	3.2	3.2	3.2
20.000	3.2	3.2	3.2	3.2	3.2
20.500	3.2	3.2	3.2	3.2	3.2
21.000	3.3	3.3	3.3	3.3	3.3
21.500	3.3	3.3	3.3	3.3	3.3
22.000	3.3	3.3	3.3	3.3	3.3

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
22.500	3.3	3.3	3.3	3.3	3.3
23.000	3.3	3.3	3.3	3.3	3.3
23.500	3.4	3.4	3.4	3.4	3.4
24.000	3.4	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 100 year	
Label	100 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.3	0.3
4.000	0.3	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.4	0.4	0.4	0.4	0.4
5.500	0.4	0.4	0.4	0.4	0.4
6.000	0.5	0.5	0.5	0.5	0.5
6.500	0.5	0.5	0.5	0.5	0.5
7.000	0.6	0.6	0.6	0.6	0.6
7.500	0.6	0.6	0.6	0.7	0.7
8.000	0.7	0.7	0.7	0.7	0.7
8.500	0.7	0.8	0.8	0.8	0.8
9.000	0.8	0.8	0.9	0.9	0.9
9.500	0.9	0.9	1.0	1.0	1.0
10.000	1.0	1.0	1.1	1.1	1.1
10.500	1.2	1.2	1.2	1.3	1.3
11.000	1.3	1.4	1.4	1.5	1.5
11.500	1.6	1.7	2.0	2.4	3.2
12.000	3.7	3.9	3.9	4.0	4.1
12.500	4.2	4.2	4.2	4.3	4.3
13.000	4.4	4.4	4.4	4.5	4.5
13.500	4.5	4.5	4.6	4.6	4.6
14.000	4.6	4.7	4.7	4.7	4.7
14.500	4.7	4.8	4.8	4.8	4.8
15.000	4.8	4.8	4.9	4.9	4.9
15.500	4.9	4.9	4.9	4.9	5.0
16.000	5.0	5.0	5.0	5.0	5.0
16.500	5.0	5.0	5.1	5.1	5.1
17.000	5.1	5.1	5.1	5.1	5.1
17.500	5.2	5.2	5.2	5.2	5.2
18.000	5.2	5.2	5.2	5.2	5.2
18.500	5.3	5.3	5.3	5.3	5.3
19.000	5.3	5.3	5.3	5.3	5.3
19.500	5.3	5.3	5.4	5.4	5.4
20.000	5.4	5.4	5.4	5.4	5.4
20.500	5.4	5.4	5.4	5.4	5.4
21.000	5.5	5.5	5.5	5.5	5.5
21.500	5.5	5.5	5.5	5.5	5.5
22.000	5.5	5.5	5.5	5.5	5.5

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
22.500	5.6	5.6	5.6	5.6	5.6
23.000	5.6	5.6	5.6	5.6	5.6
23.500	5.6	5.6	5.6	5.6	5.6
24.000	5.7	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 2 year	
Label	2 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	2 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.0	0.0
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.1	0.1
5.000	0.1	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.2	0.2	0.2	0.2	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.3	0.3	0.3	0.3
8.500	0.3	0.3	0.3	0.3	0.3
9.000	0.3	0.4	0.4	0.4	0.4
9.500	0.4	0.4	0.4	0.4	0.4
10.000	0.4	0.4	0.4	0.5	0.5
10.500	0.5	0.5	0.5	0.5	0.5
11.000	0.6	0.6	0.6	0.6	0.6
11.500	0.7	0.7	0.8	1.0	1.3
12.000	1.6	1.6	1.6	1.7	1.7
12.500	1.7	1.7	1.8	1.8	1.8
13.000	1.8	1.8	1.8	1.9	1.9
13.500	1.9	1.9	1.9	1.9	1.9
14.000	1.9	1.9	1.9	2.0	2.0
14.500	2.0	2.0	2.0	2.0	2.0
15.000	2.0	2.0	2.0	2.0	2.0
15.500	2.0	2.0	2.1	2.1	2.1
16.000	2.1	2.1	2.1	2.1	2.1
16.500	2.1	2.1	2.1	2.1	2.1
17.000	2.1	2.1	2.1	2.1	2.1
17.500	2.1	2.1	2.2	2.2	2.2
18.000	2.2	2.2	2.2	2.2	2.2
18.500	2.2	2.2	2.2	2.2	2.2
19.000	2.2	2.2	2.2	2.2	2.2
19.500	2.2	2.2	2.2	2.2	2.2
20.000	2.2	2.2	2.2	2.2	2.2
20.500	2.3	2.3	2.3	2.3	2.3
21.000	2.3	2.3	2.3	2.3	2.3
21.500	2.3	2.3	2.3	2.3	2.3
22.000	2.3	2.3	2.3	2.3	2.3

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
22.500	2.3	2.3	2.3	2.3	2.3
23.000	2.3	2.3	2.3	2.3	2.3
23.500	2.3	2.3	2.3	2.3	2.3
24.000	2.4	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 25 year	
Label	25 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.3	0.3
6.000	0.3	0.3	0.3	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.4
7.000	0.4	0.4	0.4	0.4	0.4
7.500	0.5	0.5	0.5	0.5	0.5
8.000	0.5	0.5	0.5	0.5	0.5
8.500	0.5	0.6	0.6	0.6	0.6
9.000	0.6	0.6	0.6	0.6	0.7
9.500	0.7	0.7	0.7	0.7	0.7
10.000	0.7	0.8	0.8	0.8	0.8
10.500	0.8	0.9	0.9	0.9	0.9
11.000	1.0	1.0	1.0	1.1	1.1
11.500	1.2	1.3	1.5	1.8	2.4
12.000	2.7	2.8	2.9	3.0	3.0
12.500	3.0	3.1	3.1	3.1	3.2
13.000	3.2	3.2	3.2	3.3	3.3
13.500	3.3	3.3	3.3	3.4	3.4
14.000	3.4	3.4	3.4	3.4	3.5
14.500	3.5	3.5	3.5	3.5	3.5
15.000	3.5	3.5	3.6	3.6	3.6
15.500	3.6	3.6	3.6	3.6	3.6
16.000	3.6	3.7	3.7	3.7	3.7
16.500	3.7	3.7	3.7	3.7	3.7
17.000	3.7	3.7	3.8	3.8	3.8
17.500	3.8	3.8	3.8	3.8	3.8
18.000	3.8	3.8	3.8	3.8	3.8
18.500	3.8	3.9	3.9	3.9	3.9
19.000	3.9	3.9	3.9	3.9	3.9
19.500	3.9	3.9	3.9	3.9	3.9
20.000	3.9	3.9	4.0	4.0	4.0
20.500	4.0	4.0	4.0	4.0	4.0
21.000	4.0	4.0	4.0	4.0	4.0
21.500	4.0	4.0	4.0	4.0	4.0
22.000	4.0	4.0	4.1	4.1	4.1

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
22.500	4.1	4.1	4.1	4.1	4.1
23.000	4.1	4.1	4.1	4.1	4.1
23.500	4.1	4.1	4.1	4.1	4.1
24.000	4.1	(N/A)	(N/A)	(N/A)	(N/A)

Time-Depth Curve: 50 year	
Label	50 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	50 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.4	0.4	0.4	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.5	0.5	0.5
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.5	0.5	0.5	0.6	0.6
8.000	0.6	0.6	0.6	0.6	0.6
8.500	0.6	0.7	0.7	0.7	0.7
9.000	0.7	0.7	0.7	0.8	0.8
9.500	0.8	0.8	0.8	0.8	0.9
10.000	0.9	0.9	0.9	0.9	1.0
10.500	1.0	1.0	1.0	1.1	1.1
11.000	1.1	1.2	1.2	1.3	1.3
11.500	1.4	1.5	1.7	2.1	2.7
12.000	3.2	3.3	3.4	3.5	3.5
12.500	3.6	3.6	3.6	3.7	3.7
13.000	3.7	3.8	3.8	3.8	3.8
13.500	3.9	3.9	3.9	3.9	4.0
14.000	4.0	4.0	4.0	4.0	4.0
14.500	4.1	4.1	4.1	4.1	4.1
15.000	4.1	4.1	4.2	4.2	4.2
15.500	4.2	4.2	4.2	4.2	4.2
16.000	4.3	4.3	4.3	4.3	4.3
16.500	4.3	4.3	4.3	4.3	4.4
17.000	4.4	4.4	4.4	4.4	4.4
17.500	4.4	4.4	4.4	4.4	4.4
18.000	4.5	4.5	4.5	4.5	4.5
18.500	4.5	4.5	4.5	4.5	4.5
19.000	4.5	4.5	4.6	4.6	4.6
19.500	4.6	4.6	4.6	4.6	4.6
20.000	4.6	4.6	4.6	4.6	4.6
20.500	4.6	4.6	4.7	4.7	4.7
21.000	4.7	4.7	4.7	4.7	4.7
21.500	4.7	4.7	4.7	4.7	4.7
22.000	4.7	4.7	4.7	4.7	4.8

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
22.500	4.8	4.8	4.8	4.8	4.8
23.000	4.8	4.8	4.8	4.8	4.8
23.500	4.8	4.8	4.8	4.8	4.8
24.000	4.8	(N/A)	(N/A)	(N/A)	(N/A)

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	18.00 ft
Manning's n	0.240
Slope	0.178 ft/ft
2 Year 24 Hour Depth	2.4 in
Average Velocity	0.17 ft/s
Segment Time of Concentration	0.029 hours

Segment #2: TR-55 Sheet Flow	
Hydraulic Length	79.00 ft
Manning's n	0.100
Slope	0.010 ft/ft
2 Year 24 Hour Depth	2.4 in
Average Velocity	0.15 ft/s
Segment Time of Concentration	0.151 hours

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	73.00 ft
Is Paved?	True
Slope	0.011 ft/ft
Average Velocity	2.13 ft/s
Segment Time of Concentration	0.010 hours

Segment #4: TR-55 Shallow Concentrated Flow	
Hydraulic Length	99.00 ft
Is Paved?	True
Slope	0.014 ft/ft
Average Velocity	2.41 ft/s
Segment Time of Concentration	0.011 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.201 hours

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.030 ft/ft
2 Year 24 Hour Depth	2.4 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.236 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	95.00 ft
Is Paved?	False
Slope	0.015 ft/ft
Average Velocity	1.98 ft/s
Segment Time of Concentration	0.013 hours

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	133.00 ft
Is Paved?	False
Slope	0.053 ft/ft
Average Velocity	3.71 ft/s
Segment Time of Concentration	0.010 hours

Segment #4: TR-55 Shallow Concentrated Flow	
Hydraulic Length	17.00 ft
Is Paved?	False
Slope	0.353 ft/ft
Average Velocity	9.59 ft/s
Segment Time of Concentration	0.000 hours

Segment #5: TR-55 Shallow Concentrated Flow	
Hydraulic Length	68.00 ft
Is Paved?	False
Slope	0.059 ft/ft
Average Velocity	3.92 ft/s
Segment Time of Concentration	0.005 hours

Segment #6: TR-55 Shallow Concentrated Flow	
Hydraulic Length	36.00 ft
Is Paved?	False
Slope	0.063 ft/ft
Average Velocity	4.05 ft/s
Segment Time of Concentration	0.002 hours

Segment #7: TR-55 Shallow Concentrated Flow	
Hydraulic Length	14.00 ft

Segment #7: TR-55 Shallow Concentrated Flow	
Is Paved?	False
Slope	0.089 ft/ft
Average Velocity	4.81 ft/s
Segment Time of Concentration	0.001 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.268 hours

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.030 ft/ft
2 Year 24 Hour Depth	2.4 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.236 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	95.00 ft
Is Paved?	False
Slope	0.015 ft/ft
Average Velocity	1.98 ft/s
Segment Time of Concentration	0.013 hours

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	181.00 ft
Is Paved?	True
Slope	0.055 ft/ft
Average Velocity	4.77 ft/s
Segment Time of Concentration	0.011 hours

Segment #4: TR-55 Shallow Concentrated Flow	
Hydraulic Length	10.00 ft
Is Paved?	False
Slope	0.400 ft/ft
Average Velocity	10.20 ft/s
Segment Time of Concentration	0.000 hours

Segment #5: TR-55 Shallow Concentrated Flow	
Hydraulic Length	172.00 ft
Is Paved?	False
Slope	0.070 ft/ft
Average Velocity	4.27 ft/s
Segment Time of Concentration	0.011 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.271 hours

= = = = SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

= = = = SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious	98.000	0.050	0.0	0.0	98.000
Gravel - HSG B	86.000	0.545	0.0	0.0	86.000
Grass/Wood - HSG B	58.000	0.068	0.0	0.0	58.000
Grass/Wood - HSG D	79.000	0.017	0.0	0.0	79.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.680	(N/A)	(N/A)	83.907

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious	98.000	0.194	0.0	0.0	98.000
Grass/Wood HSG B	58.000	0.091	0.0	0.0	58.000
Grass/Wood HSG C	72.000	0.048	0.0	0.0	72.000
Grass/Wood HSG D	79.000	0.220	0.0	0.0	79.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.553	(N/A)	(N/A)	81.602

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious	98.000	0.274	0.0	0.0	98.000
Grass/Wood/Brush (HSG:A/B)	58.000	0.273	0.0	0.0	58.000
Grass/Wood/Brush (HSG: C/A/D)	79.000	0.238	0.0	0.0	79.000
Grass/Wood/Brush (HSG: C)	72.000	0.048	0.0	0.0	72.000
Grass/Wood/Brush (HSG: D)	79.000	0.400	0.0	0.0	79.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.233	(N/A)	(N/A)	78.300

Storm Event	2 year
Return Event	2 years
Duration	24.000 hours
Depth	2.4 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	12.024 hours
Flow (Peak, Computed)	0.89 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.017 hours
Flow (Peak Interpolated Output)	0.88 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.680 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	0.057 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.057 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.201 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.84 ft³/s
Unit peak time, Tp	0.134 hours
Unit receding limb, Tr	0.536 hours
Total unit time, Tb	0.670 hours

Storm Event	2 year
Return Event	2 years
Duration	24.000 hours
Depth	2.4 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.850	0.00	0.00	0.00	0.00	0.00
9.933	0.00	0.00	0.00	0.00	0.00
10.017	0.00	0.00	0.00	0.00	0.00
10.100	0.00	0.00	0.00	0.00	0.00
10.183	0.00	0.00	0.00	0.00	0.00
10.267	0.00	0.00	0.00	0.00	0.00
10.350	0.00	0.00	0.00	0.01	0.01
10.433	0.01	0.01	0.01	0.01	0.01
10.517	0.01	0.01	0.01	0.01	0.01
10.600	0.01	0.01	0.01	0.01	0.01
10.683	0.01	0.01	0.01	0.01	0.01
10.767	0.01	0.01	0.01	0.01	0.01
10.850	0.01	0.01	0.01	0.01	0.01
10.933	0.01	0.01	0.01	0.01	0.01
11.017	0.01	0.02	0.02	0.02	0.02
11.100	0.02	0.02	0.02	0.02	0.02
11.183	0.02	0.02	0.02	0.02	0.02
11.267	0.02	0.02	0.03	0.03	0.03
11.350	0.03	0.03	0.03	0.03	0.03
11.433	0.03	0.03	0.03	0.04	0.04
11.517	0.04	0.04	0.04	0.05	0.05
11.600	0.06	0.06	0.07	0.08	0.09
11.683	0.11	0.12	0.14	0.16	0.18
11.767	0.20	0.23	0.26	0.30	0.34
11.850	0.38	0.43	0.50	0.56	0.63
11.933	0.70	0.76	0.81	0.84	0.87
12.017	0.88	0.88	0.87	0.83	0.78
12.100	0.72	0.66	0.59	0.53	0.47
12.183	0.41	0.37	0.33	0.30	0.28
12.267	0.26	0.24	0.22	0.21	0.20
12.350	0.19	0.18	0.17	0.17	0.16
12.433	0.15	0.15	0.14	0.14	0.13
12.517	0.13	0.12	0.12	0.12	0.11
12.600	0.11	0.11	0.10	0.10	0.10
12.683	0.10	0.09	0.09	0.09	0.09
12.767	0.09	0.09	0.09	0.09	0.08
12.850	0.08	0.08	0.08	0.08	0.08
12.933	0.08	0.08	0.08	0.08	0.07
13.017	0.07	0.07	0.07	0.07	0.07
13.100	0.07	0.07	0.07	0.07	0.07
13.183	0.07	0.07	0.07	0.06	0.06
13.267	0.06	0.06	0.06	0.06	0.06
13.350	0.06	0.06	0.06	0.06	0.06
13.433	0.06	0.06	0.06	0.06	0.06

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

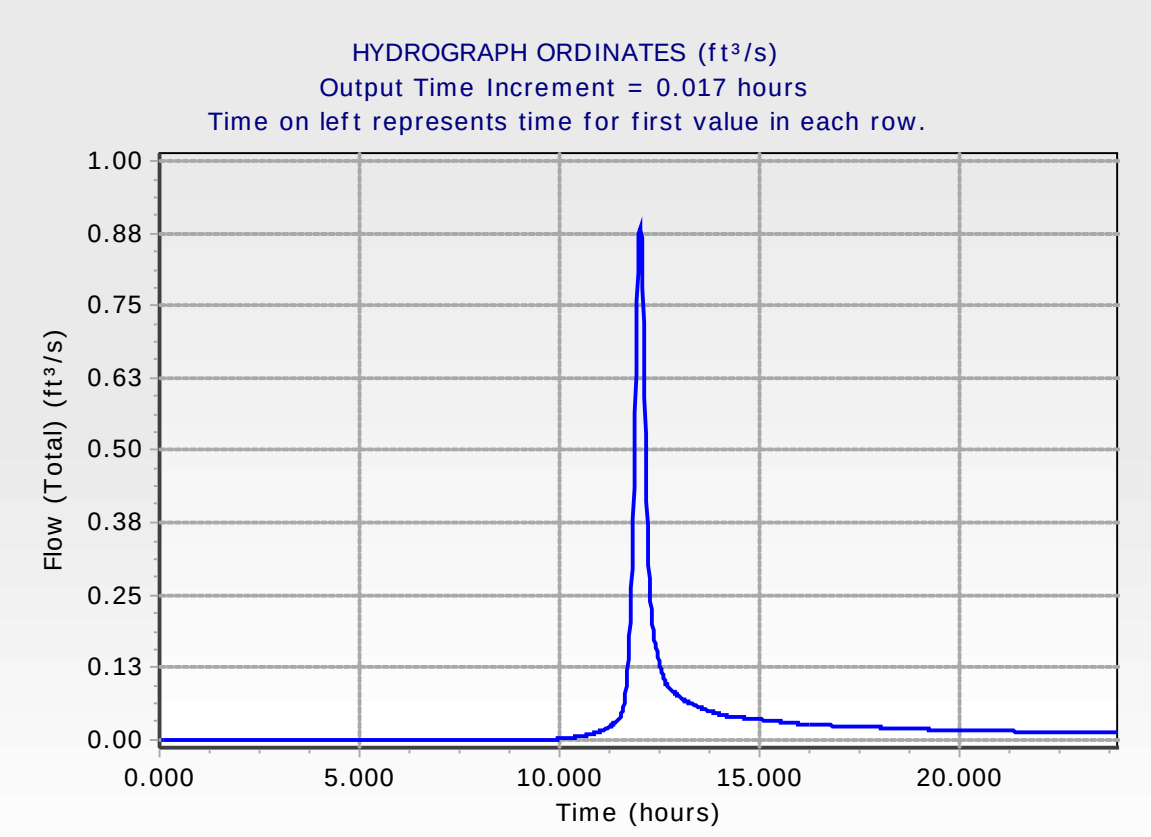
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
13.517	0.06	0.06	0.06	0.05	0.05
13.600	0.05	0.05	0.05	0.05	0.05
13.683	0.05	0.05	0.05	0.05	0.05
13.767	0.05	0.05	0.05	0.05	0.05
13.850	0.05	0.05	0.05	0.05	0.05
13.933	0.05	0.05	0.05	0.05	0.04
14.017	0.04	0.04	0.04	0.04	0.04
14.100	0.04	0.04	0.04	0.04	0.04
14.183	0.04	0.04	0.04	0.04	0.04
14.267	0.04	0.04	0.04	0.04	0.04
14.350	0.04	0.04	0.04	0.04	0.04
14.433	0.04	0.04	0.04	0.04	0.04
14.517	0.04	0.04	0.04	0.04	0.04
14.600	0.04	0.04	0.04	0.04	0.04
14.683	0.04	0.04	0.04	0.04	0.04
14.767	0.04	0.04	0.04	0.04	0.04
14.850	0.04	0.04	0.04	0.04	0.04
14.933	0.04	0.04	0.04	0.04	0.04
15.017	0.04	0.04	0.04	0.03	0.03
15.100	0.03	0.03	0.03	0.03	0.03
15.183	0.03	0.03	0.03	0.03	0.03
15.267	0.03	0.03	0.03	0.03	0.03
15.350	0.03	0.03	0.03	0.03	0.03
15.433	0.03	0.03	0.03	0.03	0.03
15.517	0.03	0.03	0.03	0.03	0.03
15.600	0.03	0.03	0.03	0.03	0.03
15.683	0.03	0.03	0.03	0.03	0.03
15.767	0.03	0.03	0.03	0.03	0.03
15.850	0.03	0.03	0.03	0.03	0.03
15.933	0.03	0.03	0.03	0.03	0.03
16.017	0.03	0.03	0.03	0.03	0.03
16.100	0.03	0.03	0.03	0.03	0.03
16.183	0.03	0.03	0.03	0.03	0.03
16.267	0.03	0.03	0.03	0.03	0.03
16.350	0.03	0.03	0.03	0.03	0.03
16.433	0.03	0.03	0.03	0.03	0.03
16.517	0.03	0.03	0.03	0.03	0.03
16.600	0.03	0.03	0.03	0.03	0.03
16.683	0.03	0.03	0.03	0.03	0.03
16.767	0.03	0.03	0.02	0.02	0.02
16.850	0.02	0.02	0.02	0.02	0.02
16.933	0.02	0.02	0.02	0.02	0.02
17.017	0.02	0.02	0.02	0.02	0.02
17.100	0.02	0.02	0.02	0.02	0.02
17.183	0.02	0.02	0.02	0.02	0.02
17.267	0.02	0.02	0.02	0.02	0.02
17.350	0.02	0.02	0.02	0.02	0.02
17.433	0.02	0.02	0.02	0.02	0.02
17.517	0.02	0.02	0.02	0.02	0.02
17.600	0.02	0.02	0.02	0.02	0.02
17.683	0.02	0.02	0.02	0.02	0.02
17.767	0.02	0.02	0.02	0.02	0.02

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
17.850	0.02	0.02	0.02	0.02	0.02
17.933	0.02	0.02	0.02	0.02	0.02
18.017	0.02	0.02	0.02	0.02	0.02
18.100	0.02	0.02	0.02	0.02	0.02
18.183	0.02	0.02	0.02	0.02	0.02
18.267	0.02	0.02	0.02	0.02	0.02
18.350	0.02	0.02	0.02	0.02	0.02
18.433	0.02	0.02	0.02	0.02	0.02
18.517	0.02	0.02	0.02	0.02	0.02
18.600	0.02	0.02	0.02	0.02	0.02
18.683	0.02	0.02	0.02	0.02	0.02
18.767	0.02	0.02	0.02	0.02	0.02
18.850	0.02	0.02	0.02	0.02	0.02
18.933	0.02	0.02	0.02	0.02	0.02
19.017	0.02	0.02	0.02	0.02	0.02
19.100	0.02	0.02	0.02	0.02	0.02
19.183	0.02	0.02	0.02	0.02	0.02
19.267	0.02	0.02	0.02	0.02	0.02
19.350	0.02	0.02	0.02	0.02	0.02
19.433	0.02	0.02	0.02	0.02	0.02
19.517	0.02	0.02	0.02	0.02	0.02
19.600	0.02	0.02	0.02	0.02	0.02
19.683	0.02	0.02	0.02	0.02	0.02
19.767	0.02	0.02	0.02	0.02	0.02
19.850	0.02	0.02	0.02	0.02	0.02
19.933	0.02	0.02	0.02	0.02	0.02
20.017	0.02	0.02	0.02	0.02	0.02
20.100	0.02	0.02	0.02	0.02	0.02
20.183	0.02	0.02	0.02	0.02	0.02
20.267	0.02	0.02	0.02	0.02	0.02
20.350	0.02	0.02	0.02	0.02	0.02
20.433	0.02	0.02	0.02	0.02	0.02
20.517	0.02	0.02	0.02	0.02	0.02
20.600	0.02	0.02	0.02	0.02	0.02
20.683	0.02	0.02	0.02	0.02	0.02
20.767	0.02	0.02	0.02	0.02	0.02
20.850	0.02	0.02	0.02	0.02	0.02
20.933	0.02	0.02	0.02	0.02	0.02
21.017	0.02	0.02	0.02	0.02	0.02
21.100	0.02	0.02	0.02	0.02	0.02
21.183	0.02	0.02	0.02	0.02	0.02
21.267	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.01
21.433	0.01	0.01	0.01	0.01	0.01
21.517	0.01	0.01	0.01	0.01	0.01
21.600	0.01	0.01	0.01	0.01	0.01
21.683	0.01	0.01	0.01	0.01	0.01
21.767	0.01	0.01	0.01	0.01	0.01
21.850	0.01	0.01	0.01	0.01	0.01
21.933	0.01	0.01	0.01	0.01	0.01
22.017	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
22.183	0.01	0.01	0.01	0.01	0.01
22.267	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.433	0.01	0.01	0.01	0.01	0.01
22.517	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01
22.683	0.01	0.01	0.01	0.01	0.01
22.767	0.01	0.01	0.01	0.01	0.01
22.850	0.01	0.01	0.01	0.01	0.01
22.933	0.01	0.01	0.01	0.01	0.01
23.017	0.01	0.01	0.01	0.01	0.01
23.100	0.01	0.01	0.01	0.01	0.01
23.183	0.01	0.01	0.01	0.01	0.01
23.267	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.433	0.01	0.01	0.01	0.01	0.01
23.517	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.683	0.01	0.01	0.01	0.01	0.01
23.767	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.01	0.01
23.933	0.01	0.01	0.01	0.01	0.01


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
1.00
0.88
0.75
0.63
0.50
0.38
0.25
0.13
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	3.4 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	12.024 hours
Flow (Peak, Computed)	1.62 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.017 hours
Flow (Peak Interpolated Output)	1.62 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.680 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.8 in
Runoff Volume (Pervious)	0.103 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.103 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.201 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.84 ft³/s
Unit peak time, Tp	0.134 hours
Unit receding limb, Tr	0.536 hours
Total unit time, Tb	0.670 hours

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	3.4 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.100	0.00	0.00	0.00	0.00	0.00
8.183	0.00	0.00	0.00	0.00	0.00
8.267	0.00	0.00	0.00	0.00	0.00
8.350	0.00	0.00	0.00	0.00	0.00
8.433	0.00	0.00	0.00	0.00	0.00
8.517	0.00	0.00	0.00	0.00	0.00
8.600	0.00	0.00	0.00	0.00	0.00
8.683	0.00	0.00	0.00	0.00	0.00
8.767	0.00	0.00	0.01	0.01	0.01
8.850	0.01	0.01	0.01	0.01	0.01
8.933	0.01	0.01	0.01	0.01	0.01
9.017	0.01	0.01	0.01	0.01	0.01
9.100	0.01	0.01	0.01	0.01	0.01
9.183	0.01	0.01	0.01	0.01	0.01
9.267	0.01	0.01	0.01	0.01	0.01
9.350	0.01	0.01	0.01	0.01	0.01
9.433	0.01	0.01	0.01	0.01	0.01
9.517	0.01	0.01	0.01	0.01	0.01
9.600	0.01	0.01	0.01	0.01	0.01
9.683	0.01	0.01	0.01	0.01	0.01
9.767	0.01	0.01	0.01	0.01	0.01
9.850	0.01	0.01	0.01	0.01	0.02
9.933	0.02	0.02	0.02	0.02	0.02
10.017	0.02	0.02	0.02	0.02	0.02
10.100	0.02	0.02	0.02	0.02	0.02
10.183	0.02	0.02	0.02	0.02	0.02
10.267	0.02	0.02	0.02	0.02	0.02
10.350	0.02	0.02	0.02	0.02	0.02
10.433	0.03	0.03	0.03	0.03	0.03
10.517	0.03	0.03	0.03	0.03	0.03
10.600	0.03	0.03	0.03	0.03	0.03
10.683	0.03	0.03	0.03	0.03	0.03
10.767	0.04	0.04	0.04	0.04	0.04
10.850	0.04	0.04	0.04	0.04	0.04
10.933	0.04	0.04	0.04	0.05	0.05
11.017	0.05	0.05	0.05	0.05	0.05
11.100	0.05	0.05	0.05	0.05	0.06
11.183	0.06	0.06	0.06	0.06	0.06
11.267	0.07	0.07	0.07	0.07	0.07
11.350	0.07	0.08	0.08	0.08	0.08
11.433	0.08	0.09	0.09	0.09	0.09
11.517	0.10	0.10	0.11	0.11	0.12
11.600	0.14	0.15	0.17	0.19	0.21
11.683	0.24	0.28	0.31	0.35	0.39

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

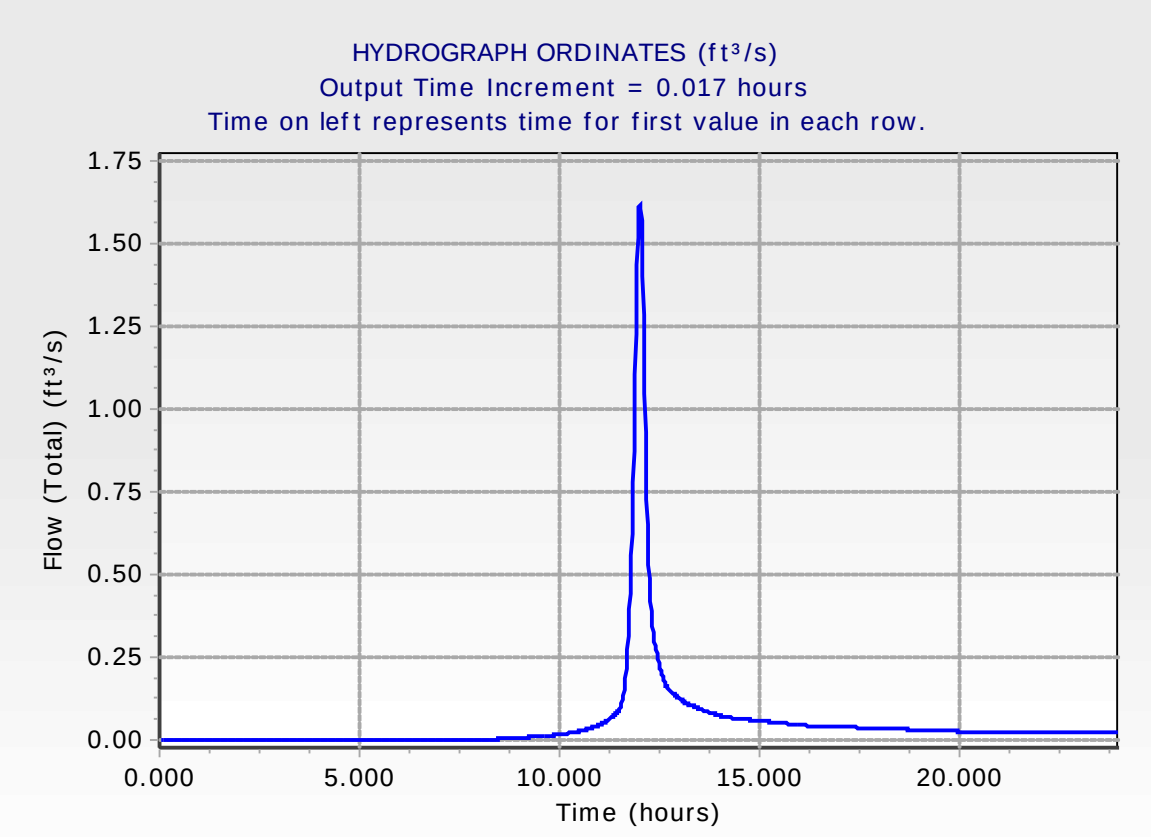
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.767	0.44	0.50	0.56	0.62	0.69
11.850	0.78	0.87	0.99	1.10	1.23
11.933	1.34	1.43	1.52	1.57	1.61
12.017	1.62	1.60	1.57	1.49	1.40
12.100	1.29	1.17	1.05	0.93	0.83
12.183	0.73	0.65	0.58	0.53	0.49
12.267	0.45	0.42	0.39	0.36	0.34
12.350	0.33	0.31	0.30	0.28	0.27
12.433	0.26	0.25	0.24	0.23	0.23
12.517	0.22	0.21	0.20	0.20	0.19
12.600	0.18	0.18	0.17	0.17	0.17
12.683	0.16	0.16	0.16	0.15	0.15
12.767	0.15	0.15	0.15	0.14	0.14
12.850	0.14	0.14	0.14	0.13	0.13
12.933	0.13	0.13	0.13	0.13	0.13
13.017	0.12	0.12	0.12	0.12	0.12
13.100	0.12	0.12	0.11	0.11	0.11
13.183	0.11	0.11	0.11	0.11	0.11
13.267	0.11	0.11	0.10	0.10	0.10
13.350	0.10	0.10	0.10	0.10	0.10
13.433	0.10	0.10	0.10	0.10	0.09
13.517	0.09	0.09	0.09	0.09	0.09
13.600	0.09	0.09	0.09	0.09	0.09
13.683	0.09	0.09	0.08	0.08	0.08
13.767	0.08	0.08	0.08	0.08	0.08
13.850	0.08	0.08	0.08	0.08	0.08
13.933	0.08	0.08	0.08	0.07	0.07
14.017	0.07	0.07	0.07	0.07	0.07
14.100	0.07	0.07	0.07	0.07	0.07
14.183	0.07	0.07	0.07	0.07	0.07
14.267	0.07	0.07	0.07	0.07	0.07
14.350	0.07	0.07	0.07	0.07	0.07
14.433	0.07	0.07	0.06	0.06	0.06
14.517	0.06	0.06	0.06	0.06	0.06
14.600	0.06	0.06	0.06	0.06	0.06
14.683	0.06	0.06	0.06	0.06	0.06
14.767	0.06	0.06	0.06	0.06	0.06
14.850	0.06	0.06	0.06	0.06	0.06
14.933	0.06	0.06	0.06	0.06	0.06
15.017	0.06	0.06	0.06	0.06	0.06
15.100	0.06	0.06	0.06	0.06	0.06
15.183	0.06	0.06	0.06	0.06	0.06
15.267	0.05	0.05	0.05	0.05	0.05
15.350	0.05	0.05	0.05	0.05	0.05
15.433	0.05	0.05	0.05	0.05	0.05
15.517	0.05	0.05	0.05	0.05	0.05
15.600	0.05	0.05	0.05	0.05	0.05
15.683	0.05	0.05	0.05	0.05	0.05
15.767	0.05	0.05	0.05	0.05	0.05
15.850	0.05	0.05	0.05	0.05	0.05
15.933	0.05	0.05	0.05	0.05	0.05
16.017	0.05	0.05	0.05	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.100	0.04	0.04	0.04	0.04	0.04
16.183	0.04	0.04	0.04	0.04	0.04
16.267	0.04	0.04	0.04	0.04	0.04
16.350	0.04	0.04	0.04	0.04	0.04
16.433	0.04	0.04	0.04	0.04	0.04
16.517	0.04	0.04	0.04	0.04	0.04
16.600	0.04	0.04	0.04	0.04	0.04
16.683	0.04	0.04	0.04	0.04	0.04
16.767	0.04	0.04	0.04	0.04	0.04
16.850	0.04	0.04	0.04	0.04	0.04
16.933	0.04	0.04	0.04	0.04	0.04
17.017	0.04	0.04	0.04	0.04	0.04
17.100	0.04	0.04	0.04	0.04	0.04
17.183	0.04	0.04	0.04	0.04	0.04
17.267	0.04	0.04	0.04	0.04	0.04
17.350	0.04	0.04	0.04	0.04	0.04
17.433	0.04	0.04	0.04	0.04	0.04
17.517	0.04	0.04	0.04	0.04	0.04
17.600	0.04	0.04	0.04	0.04	0.04
17.683	0.04	0.04	0.04	0.04	0.04
17.767	0.04	0.04	0.04	0.04	0.04
17.850	0.04	0.04	0.04	0.04	0.04
17.933	0.04	0.04	0.04	0.04	0.04
18.017	0.04	0.04	0.04	0.03	0.03
18.100	0.03	0.03	0.03	0.03	0.03
18.183	0.03	0.03	0.03	0.03	0.03
18.267	0.03	0.03	0.03	0.03	0.03
18.350	0.03	0.03	0.03	0.03	0.03
18.433	0.03	0.03	0.03	0.03	0.03
18.517	0.03	0.03	0.03	0.03	0.03
18.600	0.03	0.03	0.03	0.03	0.03
18.683	0.03	0.03	0.03	0.03	0.03
18.767	0.03	0.03	0.03	0.03	0.03
18.850	0.03	0.03	0.03	0.03	0.03
18.933	0.03	0.03	0.03	0.03	0.03
19.017	0.03	0.03	0.03	0.03	0.03
19.100	0.03	0.03	0.03	0.03	0.03
19.183	0.03	0.03	0.03	0.03	0.03
19.267	0.03	0.03	0.03	0.03	0.03
19.350	0.03	0.03	0.03	0.03	0.03
19.433	0.03	0.03	0.03	0.03	0.03
19.517	0.03	0.03	0.03	0.03	0.03
19.600	0.03	0.03	0.03	0.03	0.03
19.683	0.03	0.03	0.03	0.03	0.03
19.767	0.03	0.03	0.03	0.03	0.03
19.850	0.03	0.03	0.03	0.03	0.03
19.933	0.03	0.03	0.03	0.03	0.03
20.017	0.03	0.03	0.03	0.03	0.03
20.100	0.03	0.03	0.03	0.03	0.03
20.183	0.03	0.03	0.03	0.03	0.03
20.267	0.03	0.03	0.03	0.03	0.03
20.350	0.03	0.03	0.02	0.02	0.02

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
20.433	0.02	0.02	0.02	0.02	0.02
20.517	0.02	0.02	0.02	0.02	0.02
20.600	0.02	0.02	0.02	0.02	0.02
20.683	0.02	0.02	0.02	0.02	0.02
20.767	0.02	0.02	0.02	0.02	0.02
20.850	0.02	0.02	0.02	0.02	0.02
20.933	0.02	0.02	0.02	0.02	0.02
21.017	0.02	0.02	0.02	0.02	0.02
21.100	0.02	0.02	0.02	0.02	0.02
21.183	0.02	0.02	0.02	0.02	0.02
21.267	0.02	0.02	0.02	0.02	0.02
21.350	0.02	0.02	0.02	0.02	0.02
21.433	0.02	0.02	0.02	0.02	0.02
21.517	0.02	0.02	0.02	0.02	0.02
21.600	0.02	0.02	0.02	0.02	0.02
21.683	0.02	0.02	0.02	0.02	0.02
21.767	0.02	0.02	0.02	0.02	0.02
21.850	0.02	0.02	0.02	0.02	0.02
21.933	0.02	0.02	0.02	0.02	0.02
22.017	0.02	0.02	0.02	0.02	0.02
22.100	0.02	0.02	0.02	0.02	0.02
22.183	0.02	0.02	0.02	0.02	0.02
22.267	0.02	0.02	0.02	0.02	0.02
22.350	0.02	0.02	0.02	0.02	0.02
22.433	0.02	0.02	0.02	0.02	0.02
22.517	0.02	0.02	0.02	0.02	0.02
22.600	0.02	0.02	0.02	0.02	0.02
22.683	0.02	0.02	0.02	0.02	0.02
22.767	0.02	0.02	0.02	0.02	0.02
22.850	0.02	0.02	0.02	0.02	0.02
22.933	0.02	0.02	0.02	0.02	0.02
23.017	0.02	0.02	0.02	0.02	0.02
23.100	0.02	0.02	0.02	0.02	0.02
23.183	0.02	0.02	0.02	0.02	0.02
23.267	0.02	0.02	0.02	0.02	0.02
23.350	0.02	0.02	0.02	0.02	0.02
23.433	0.02	0.02	0.02	0.02	0.02
23.517	0.02	0.02	0.02	0.02	0.02
23.600	0.02	0.02	0.02	0.02	0.02
23.683	0.02	0.02	0.02	0.02	0.02
23.767	0.02	0.02	0.02	0.02	0.02
23.850	0.02	0.02	0.02	0.02	0.02
23.933	0.02	0.02	0.02	0.02	0.02


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	4.1 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	12.024 hours
Flow (Peak, Computed)	2.20 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.017 hours
Flow (Peak Interpolated Output)	2.20 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.680 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	0.141 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.141 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.201 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.84 ft³/s
Unit peak time, Tp	0.134 hours
Unit receding limb, Tr	0.536 hours
Total unit time, Tb	0.670 hours

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	4.1 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.017	0.00	0.00	0.00	0.00	0.00
7.100	0.00	0.00	0.00	0.00	0.00
7.183	0.00	0.00	0.00	0.00	0.00
7.267	0.00	0.00	0.00	0.00	0.00
7.350	0.00	0.00	0.00	0.00	0.00
7.433	0.00	0.00	0.00	0.00	0.00
7.517	0.00	0.00	0.00	0.00	0.00
7.600	0.00	0.00	0.00	0.00	0.00
7.683	0.00	0.00	0.00	0.00	0.00
7.767	0.00	0.00	0.00	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
7.933	0.01	0.01	0.01	0.01	0.01
8.017	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.183	0.01	0.01	0.01	0.01	0.01
8.267	0.01	0.01	0.01	0.01	0.01
8.350	0.01	0.01	0.01	0.01	0.01
8.433	0.01	0.01	0.01	0.01	0.01
8.517	0.01	0.01	0.01	0.01	0.01
8.600	0.01	0.01	0.01	0.01	0.01
8.683	0.01	0.01	0.01	0.01	0.01
8.767	0.01	0.01	0.01	0.01	0.01
8.850	0.01	0.01	0.01	0.01	0.02
8.933	0.02	0.02	0.02	0.02	0.02
9.017	0.02	0.02	0.02	0.02	0.02
9.100	0.02	0.02	0.02	0.02	0.02
9.183	0.02	0.02	0.02	0.02	0.02
9.267	0.02	0.02	0.02	0.02	0.02
9.350	0.02	0.02	0.02	0.02	0.02
9.433	0.02	0.02	0.02	0.02	0.02
9.517	0.02	0.02	0.02	0.02	0.02
9.600	0.02	0.02	0.02	0.02	0.02
9.683	0.02	0.02	0.02	0.02	0.02
9.767	0.02	0.03	0.03	0.03	0.03
9.850	0.03	0.03	0.03	0.03	0.03
9.933	0.03	0.03	0.03	0.03	0.03
10.017	0.03	0.03	0.03	0.03	0.03
10.100	0.03	0.03	0.03	0.03	0.03
10.183	0.03	0.04	0.04	0.04	0.04
10.267	0.04	0.04	0.04	0.04	0.04
10.350	0.04	0.04	0.04	0.04	0.04
10.433	0.04	0.04	0.04	0.05	0.05
10.517	0.05	0.05	0.05	0.05	0.05
10.600	0.05	0.05	0.05	0.05	0.05

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.683	0.05	0.06	0.06	0.06	0.06
10.767	0.06	0.06	0.06	0.06	0.06
10.850	0.06	0.07	0.07	0.07	0.07
10.933	0.07	0.07	0.07	0.07	0.07
11.017	0.08	0.08	0.08	0.08	0.08
11.100	0.08	0.08	0.09	0.09	0.09
11.183	0.09	0.09	0.10	0.10	0.10
11.267	0.10	0.10	0.11	0.11	0.11
11.350	0.12	0.12	0.12	0.12	0.13
11.433	0.13	0.13	0.13	0.14	0.14
11.517	0.15	0.15	0.16	0.17	0.19
11.600	0.20	0.23	0.25	0.28	0.32
11.683	0.36	0.41	0.46	0.51	0.58
11.767	0.65	0.72	0.80	0.89	0.99
11.850	1.11	1.23	1.39	1.54	1.70
11.933	1.85	1.98	2.08	2.15	2.20
12.017	2.20	2.17	2.12	2.01	1.88
12.100	1.73	1.57	1.40	1.25	1.11
12.183	0.97	0.87	0.78	0.71	0.65
12.267	0.59	0.55	0.52	0.48	0.46
12.350	0.43	0.41	0.39	0.37	0.36
12.433	0.35	0.33	0.32	0.31	0.30
12.517	0.29	0.28	0.27	0.26	0.25
12.600	0.24	0.23	0.23	0.22	0.22
12.683	0.21	0.21	0.20	0.20	0.20
12.767	0.20	0.19	0.19	0.19	0.19
12.850	0.18	0.18	0.18	0.18	0.17
12.933	0.17	0.17	0.17	0.17	0.16
13.017	0.16	0.16	0.16	0.16	0.15
13.100	0.15	0.15	0.15	0.15	0.15
13.183	0.15	0.14	0.14	0.14	0.14
13.267	0.14	0.14	0.14	0.14	0.13
13.350	0.13	0.13	0.13	0.13	0.13
13.433	0.13	0.13	0.13	0.12	0.12
13.517	0.12	0.12	0.12	0.12	0.12
13.600	0.12	0.12	0.11	0.11	0.11
13.683	0.11	0.11	0.11	0.11	0.11
13.767	0.11	0.11	0.11	0.11	0.10
13.850	0.10	0.10	0.10	0.10	0.10
13.933	0.10	0.10	0.10	0.10	0.10
14.017	0.10	0.10	0.09	0.09	0.09
14.100	0.09	0.09	0.09	0.09	0.09
14.183	0.09	0.09	0.09	0.09	0.09
14.267	0.09	0.09	0.09	0.09	0.09
14.350	0.09	0.09	0.09	0.09	0.09
14.433	0.08	0.08	0.08	0.08	0.08
14.517	0.08	0.08	0.08	0.08	0.08
14.600	0.08	0.08	0.08	0.08	0.08
14.683	0.08	0.08	0.08	0.08	0.08
14.767	0.08	0.08	0.08	0.08	0.08
14.850	0.08	0.08	0.08	0.08	0.08
14.933	0.08	0.08	0.08	0.08	0.08

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

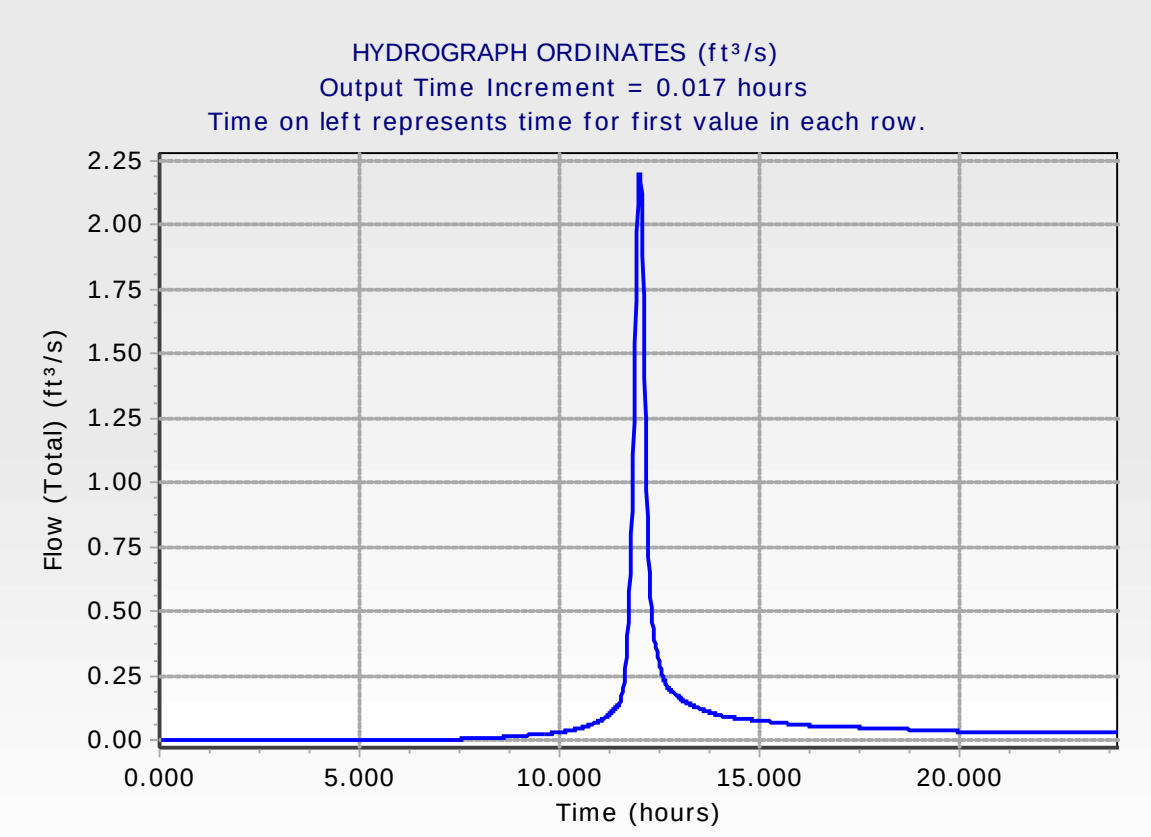
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.017	0.08	0.08	0.07	0.07	0.07
15.100	0.07	0.07	0.07	0.07	0.07
15.183	0.07	0.07	0.07	0.07	0.07
15.267	0.07	0.07	0.07	0.07	0.07
15.350	0.07	0.07	0.07	0.07	0.07
15.433	0.07	0.07	0.07	0.07	0.07
15.517	0.07	0.07	0.07	0.07	0.07
15.600	0.07	0.07	0.07	0.06	0.06
15.683	0.06	0.06	0.06	0.06	0.06
15.767	0.06	0.06	0.06	0.06	0.06
15.850	0.06	0.06	0.06	0.06	0.06
15.933	0.06	0.06	0.06	0.06	0.06
16.017	0.06	0.06	0.06	0.06	0.06
16.100	0.06	0.06	0.06	0.06	0.06
16.183	0.06	0.06	0.06	0.06	0.06
16.267	0.06	0.06	0.06	0.06	0.06
16.350	0.06	0.06	0.06	0.06	0.05
16.433	0.05	0.05	0.05	0.05	0.05
16.517	0.05	0.05	0.05	0.05	0.05
16.600	0.05	0.05	0.05	0.05	0.05
16.683	0.05	0.05	0.05	0.05	0.05
16.767	0.05	0.05	0.05	0.05	0.05
16.850	0.05	0.05	0.05	0.05	0.05
16.933	0.05	0.05	0.05	0.05	0.05
17.017	0.05	0.05	0.05	0.05	0.05
17.100	0.05	0.05	0.05	0.05	0.05
17.183	0.05	0.05	0.05	0.05	0.05
17.267	0.05	0.05	0.05	0.05	0.05
17.350	0.05	0.05	0.05	0.05	0.05
17.433	0.05	0.05	0.05	0.05	0.05
17.517	0.05	0.05	0.05	0.05	0.05
17.600	0.05	0.05	0.05	0.05	0.05
17.683	0.05	0.05	0.05	0.05	0.05
17.767	0.05	0.05	0.05	0.05	0.05
17.850	0.05	0.05	0.05	0.05	0.05
17.933	0.05	0.05	0.05	0.05	0.05
18.017	0.05	0.05	0.05	0.05	0.05
18.100	0.04	0.04	0.04	0.04	0.04
18.183	0.04	0.04	0.04	0.04	0.04
18.267	0.04	0.04	0.04	0.04	0.04
18.350	0.04	0.04	0.04	0.04	0.04
18.433	0.04	0.04	0.04	0.04	0.04
18.517	0.04	0.04	0.04	0.04	0.04
18.600	0.04	0.04	0.04	0.04	0.04
18.683	0.04	0.04	0.04	0.04	0.04
18.767	0.04	0.04	0.04	0.04	0.04
18.850	0.04	0.04	0.04	0.04	0.04
18.933	0.04	0.04	0.04	0.04	0.04
19.017	0.04	0.04	0.04	0.04	0.04
19.100	0.04	0.04	0.04	0.04	0.04
19.183	0.04	0.04	0.04	0.04	0.04
19.267	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.350	0.04	0.04	0.04	0.04	0.04
19.433	0.04	0.04	0.04	0.04	0.04
19.517	0.04	0.04	0.04	0.04	0.04
19.600	0.04	0.04	0.04	0.04	0.04
19.683	0.04	0.04	0.04	0.04	0.03
19.767	0.03	0.03	0.03	0.03	0.03
19.850	0.03	0.03	0.03	0.03	0.03
19.933	0.03	0.03	0.03	0.03	0.03
20.017	0.03	0.03	0.03	0.03	0.03
20.100	0.03	0.03	0.03	0.03	0.03
20.183	0.03	0.03	0.03	0.03	0.03
20.267	0.03	0.03	0.03	0.03	0.03
20.350	0.03	0.03	0.03	0.03	0.03
20.433	0.03	0.03	0.03	0.03	0.03
20.517	0.03	0.03	0.03	0.03	0.03
20.600	0.03	0.03	0.03	0.03	0.03
20.683	0.03	0.03	0.03	0.03	0.03
20.767	0.03	0.03	0.03	0.03	0.03
20.850	0.03	0.03	0.03	0.03	0.03
20.933	0.03	0.03	0.03	0.03	0.03
21.017	0.03	0.03	0.03	0.03	0.03
21.100	0.03	0.03	0.03	0.03	0.03
21.183	0.03	0.03	0.03	0.03	0.03
21.267	0.03	0.03	0.03	0.03	0.03
21.350	0.03	0.03	0.03	0.03	0.03
21.433	0.03	0.03	0.03	0.03	0.03
21.517	0.03	0.03	0.03	0.03	0.03
21.600	0.03	0.03	0.03	0.03	0.03
21.683	0.03	0.03	0.03	0.03	0.03
21.767	0.03	0.03	0.03	0.03	0.03
21.850	0.03	0.03	0.03	0.03	0.03
21.933	0.03	0.03	0.03	0.03	0.03
22.017	0.03	0.03	0.03	0.03	0.03
22.100	0.03	0.03	0.03	0.03	0.03
22.183	0.03	0.03	0.03	0.03	0.03
22.267	0.03	0.03	0.03	0.03	0.03
22.350	0.03	0.03	0.03	0.03	0.03
22.433	0.03	0.03	0.03	0.03	0.03
22.517	0.03	0.03	0.03	0.03	0.03
22.600	0.03	0.03	0.03	0.03	0.03
22.683	0.03	0.03	0.03	0.03	0.03
22.767	0.03	0.03	0.03	0.03	0.03
22.850	0.03	0.03	0.03	0.03	0.03
22.933	0.03	0.03	0.03	0.03	0.03
23.017	0.03	0.03	0.03	0.03	0.03
23.100	0.03	0.03	0.03	0.03	0.03
23.183	0.03	0.03	0.03	0.03	0.03
23.267	0.03	0.03	0.03	0.03	0.03
23.350	0.03	0.03	0.03	0.03	0.03
23.433	0.03	0.03	0.03	0.03	0.03
23.517	0.03	0.03	0.03	0.03	0.03
23.600	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.683	0.03	0.03	0.03	0.03	0.03
23.767	0.03	0.03	0.03	0.03	0.03
23.850	0.03	0.03	0.03	0.03	0.03
23.933	0.03	0.03	0.03	0.03	0.03


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	50 year
Return Event	50 years
Duration	24.000 hours
Depth	4.8 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	11.997 hours
Flow (Peak, Computed)	2.74 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.000 hours
Flow (Peak Interpolated Output)	2.74 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.680 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	0.177 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.177 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.201 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.84 ft³/s
Unit peak time, Tp	0.134 hours
Unit receding limb, Tr	0.536 hours
Total unit time, Tb	0.670 hours

Storm Event	50 year
Return Event	50 years
Duration	24.000 hours
Depth	4.8 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.267	0.00	0.00	0.00	0.00	0.00
6.350	0.00	0.00	0.00	0.00	0.00
6.433	0.00	0.00	0.00	0.00	0.00
6.517	0.00	0.00	0.00	0.00	0.00
6.600	0.00	0.00	0.00	0.00	0.00
6.683	0.00	0.00	0.00	0.00	0.00
6.767	0.00	0.00	0.00	0.00	0.00
6.850	0.00	0.00	0.00	0.00	0.00
6.933	0.00	0.01	0.01	0.01	0.01
7.017	0.01	0.01	0.01	0.01	0.01
7.100	0.01	0.01	0.01	0.01	0.01
7.183	0.01	0.01	0.01	0.01	0.01
7.267	0.01	0.01	0.01	0.01	0.01
7.350	0.01	0.01	0.01	0.01	0.01
7.433	0.01	0.01	0.01	0.01	0.01
7.517	0.01	0.01	0.01	0.01	0.01
7.600	0.01	0.01	0.01	0.01	0.01
7.683	0.01	0.01	0.01	0.01	0.01
7.767	0.01	0.01	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
7.933	0.01	0.01	0.01	0.01	0.01
8.017	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.183	0.01	0.01	0.01	0.01	0.01
8.267	0.01	0.01	0.02	0.02	0.02
8.350	0.02	0.02	0.02	0.02	0.02
8.433	0.02	0.02	0.02	0.02	0.02
8.517	0.02	0.02	0.02	0.02	0.02
8.600	0.02	0.02	0.02	0.02	0.02
8.683	0.02	0.02	0.02	0.02	0.02
8.767	0.02	0.02	0.02	0.02	0.02
8.850	0.02	0.02	0.02	0.02	0.02
8.933	0.02	0.03	0.03	0.03	0.03
9.017	0.03	0.03	0.03	0.03	0.03
9.100	0.03	0.03	0.03	0.03	0.03
9.183	0.03	0.03	0.03	0.03	0.03
9.267	0.03	0.03	0.03	0.03	0.03
9.350	0.03	0.03	0.03	0.03	0.03
9.433	0.03	0.03	0.03	0.03	0.03
9.517	0.03	0.03	0.03	0.03	0.03
9.600	0.03	0.03	0.03	0.03	0.03
9.683	0.04	0.04	0.04	0.04	0.04
9.767	0.04	0.04	0.04	0.04	0.04
9.850	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.933	0.04	0.04	0.04	0.04	0.04
10.017	0.04	0.05	0.05	0.05	0.05
10.100	0.05	0.05	0.05	0.05	0.05
10.183	0.05	0.05	0.05	0.05	0.05
10.267	0.05	0.05	0.06	0.06	0.06
10.350	0.06	0.06	0.06	0.06	0.06
10.433	0.06	0.06	0.06	0.06	0.07
10.517	0.07	0.07	0.07	0.07	0.07
10.600	0.07	0.07	0.07	0.07	0.07
10.683	0.08	0.08	0.08	0.08	0.08
10.767	0.08	0.08	0.08	0.09	0.09
10.850	0.09	0.09	0.09	0.09	0.09
10.933	0.10	0.10	0.10	0.10	0.10
11.017	0.10	0.10	0.11	0.11	0.11
11.100	0.11	0.11	0.12	0.12	0.12
11.183	0.12	0.13	0.13	0.13	0.14
11.267	0.14	0.14	0.15	0.15	0.15
11.350	0.16	0.16	0.16	0.17	0.17
11.433	0.17	0.18	0.18	0.18	0.19
11.517	0.19	0.20	0.21	0.23	0.25
11.600	0.27	0.30	0.33	0.37	0.42
11.683	0.47	0.53	0.60	0.67	0.75
11.767	0.84	0.93	1.04	1.15	1.27
11.850	1.41	1.57	1.76	1.95	2.15
11.933	2.32	2.48	2.60	2.68	2.74
12.017	2.73	2.70	2.63	2.49	2.33
12.100	2.14	1.93	1.73	1.54	1.36
12.183	1.20	1.07	0.96	0.87	0.79
12.267	0.73	0.68	0.63	0.59	0.56
12.350	0.53	0.50	0.48	0.46	0.44
12.433	0.42	0.41	0.39	0.38	0.36
12.517	0.35	0.34	0.32	0.31	0.30
12.600	0.29	0.29	0.28	0.27	0.26
12.683	0.26	0.25	0.25	0.25	0.24
12.767	0.24	0.23	0.23	0.23	0.23
12.850	0.22	0.22	0.22	0.21	0.21
12.933	0.21	0.21	0.20	0.20	0.20
13.017	0.20	0.19	0.19	0.19	0.19
13.100	0.19	0.18	0.18	0.18	0.18
13.183	0.18	0.17	0.17	0.17	0.17
13.267	0.17	0.17	0.17	0.16	0.16
13.350	0.16	0.16	0.16	0.16	0.16
13.433	0.15	0.15	0.15	0.15	0.15
13.517	0.15	0.15	0.15	0.14	0.14
13.600	0.14	0.14	0.14	0.14	0.14
13.683	0.14	0.13	0.13	0.13	0.13
13.767	0.13	0.13	0.13	0.13	0.13
13.850	0.13	0.12	0.12	0.12	0.12
13.933	0.12	0.12	0.12	0.12	0.12
14.017	0.12	0.12	0.11	0.11	0.11
14.100	0.11	0.11	0.11	0.11	0.11
14.183	0.11	0.11	0.11	0.11	0.11

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

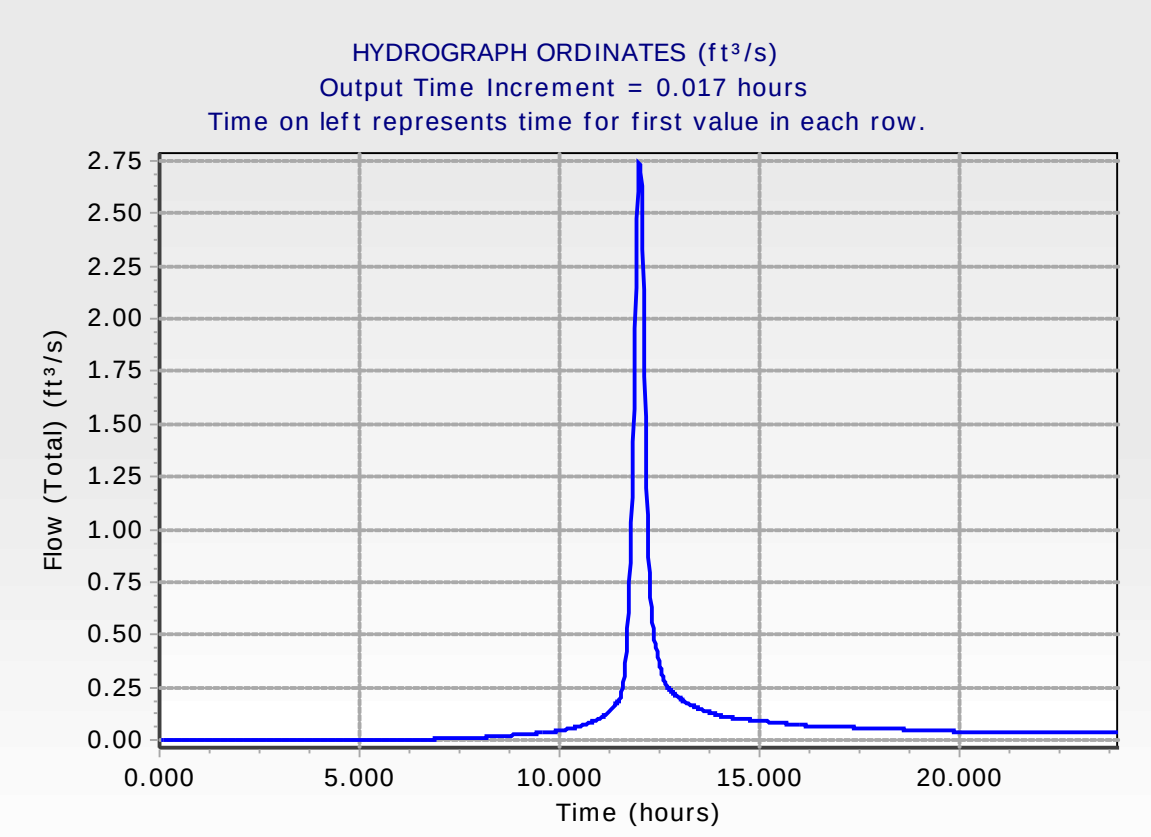
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.267	0.11	0.11	0.11	0.11	0.10
14.350	0.10	0.10	0.10	0.10	0.10
14.433	0.10	0.10	0.10	0.10	0.10
14.517	0.10	0.10	0.10	0.10	0.10
14.600	0.10	0.10	0.10	0.10	0.10
14.683	0.10	0.10	0.10	0.10	0.10
14.767	0.10	0.10	0.10	0.10	0.09
14.850	0.09	0.09	0.09	0.09	0.09
14.933	0.09	0.09	0.09	0.09	0.09
15.017	0.09	0.09	0.09	0.09	0.09
15.100	0.09	0.09	0.09	0.09	0.09
15.183	0.09	0.09	0.09	0.09	0.09
15.267	0.09	0.09	0.09	0.09	0.08
15.350	0.08	0.08	0.08	0.08	0.08
15.433	0.08	0.08	0.08	0.08	0.08
15.517	0.08	0.08	0.08	0.08	0.08
15.600	0.08	0.08	0.08	0.08	0.08
15.683	0.08	0.08	0.08	0.08	0.08
15.767	0.08	0.08	0.08	0.08	0.07
15.850	0.07	0.07	0.07	0.07	0.07
15.933	0.07	0.07	0.07	0.07	0.07
16.017	0.07	0.07	0.07	0.07	0.07
16.100	0.07	0.07	0.07	0.07	0.07
16.183	0.07	0.07	0.07	0.07	0.07
16.267	0.07	0.07	0.07	0.07	0.07
16.350	0.07	0.07	0.07	0.07	0.07
16.433	0.07	0.07	0.07	0.07	0.07
16.517	0.07	0.07	0.07	0.07	0.07
16.600	0.06	0.06	0.06	0.06	0.06
16.683	0.06	0.06	0.06	0.06	0.06
16.767	0.06	0.06	0.06	0.06	0.06
16.850	0.06	0.06	0.06	0.06	0.06
16.933	0.06	0.06	0.06	0.06	0.06
17.017	0.06	0.06	0.06	0.06	0.06
17.100	0.06	0.06	0.06	0.06	0.06
17.183	0.06	0.06	0.06	0.06	0.06
17.267	0.06	0.06	0.06	0.06	0.06
17.350	0.06	0.06	0.06	0.06	0.06
17.433	0.06	0.06	0.06	0.06	0.06
17.517	0.06	0.06	0.06	0.06	0.06
17.600	0.06	0.06	0.06	0.06	0.06
17.683	0.06	0.06	0.06	0.06	0.06
17.767	0.06	0.06	0.06	0.06	0.06
17.850	0.06	0.06	0.06	0.06	0.06
17.933	0.06	0.06	0.06	0.05	0.05
18.017	0.05	0.05	0.05	0.05	0.05
18.100	0.05	0.05	0.05	0.05	0.05
18.183	0.05	0.05	0.05	0.05	0.05
18.267	0.05	0.05	0.05	0.05	0.05
18.350	0.05	0.05	0.05	0.05	0.05
18.433	0.05	0.05	0.05	0.05	0.05
18.517	0.05	0.05	0.05	0.05	0.05

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.600	0.05	0.05	0.05	0.05	0.05
18.683	0.05	0.05	0.05	0.05	0.05
18.767	0.05	0.05	0.05	0.05	0.05
18.850	0.05	0.05	0.05	0.05	0.05
18.933	0.05	0.05	0.05	0.05	0.05
19.017	0.05	0.05	0.05	0.05	0.05
19.100	0.05	0.05	0.05	0.05	0.05
19.183	0.05	0.05	0.05	0.05	0.05
19.267	0.05	0.05	0.05	0.05	0.05
19.350	0.04	0.04	0.04	0.04	0.04
19.433	0.04	0.04	0.04	0.04	0.04
19.517	0.04	0.04	0.04	0.04	0.04
19.600	0.04	0.04	0.04	0.04	0.04
19.683	0.04	0.04	0.04	0.04	0.04
19.767	0.04	0.04	0.04	0.04	0.04
19.850	0.04	0.04	0.04	0.04	0.04
19.933	0.04	0.04	0.04	0.04	0.04
20.017	0.04	0.04	0.04	0.04	0.04
20.100	0.04	0.04	0.04	0.04	0.04
20.183	0.04	0.04	0.04	0.04	0.04
20.267	0.04	0.04	0.04	0.04	0.04
20.350	0.04	0.04	0.04	0.04	0.04
20.433	0.04	0.04	0.04	0.04	0.04
20.517	0.04	0.04	0.04	0.04	0.04
20.600	0.04	0.04	0.04	0.04	0.04
20.683	0.04	0.04	0.04	0.04	0.04
20.767	0.04	0.04	0.04	0.04	0.04
20.850	0.04	0.04	0.04	0.04	0.04
20.933	0.04	0.04	0.04	0.04	0.04
21.017	0.04	0.04	0.04	0.04	0.04
21.100	0.04	0.04	0.04	0.04	0.04
21.183	0.04	0.04	0.04	0.04	0.04
21.267	0.04	0.04	0.04	0.04	0.04
21.350	0.04	0.04	0.04	0.04	0.04
21.433	0.04	0.04	0.04	0.04	0.04
21.517	0.04	0.04	0.04	0.04	0.04
21.600	0.04	0.04	0.04	0.04	0.04
21.683	0.04	0.04	0.04	0.04	0.04
21.767	0.04	0.04	0.04	0.04	0.04
21.850	0.04	0.04	0.04	0.04	0.04
21.933	0.04	0.04	0.04	0.04	0.04
22.017	0.04	0.04	0.04	0.04	0.04
22.100	0.04	0.04	0.04	0.04	0.04
22.183	0.04	0.04	0.04	0.04	0.04
22.267	0.04	0.04	0.04	0.04	0.04
22.350	0.04	0.04	0.04	0.04	0.04
22.433	0.04	0.04	0.04	0.04	0.04
22.517	0.04	0.04	0.04	0.04	0.04
22.600	0.04	0.04	0.04	0.04	0.04
22.683	0.04	0.04	0.04	0.04	0.04
22.767	0.04	0.04	0.04	0.04	0.04
22.850	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
22.933	0.04	0.04	0.03	0.03	0.03
23.017	0.03	0.03	0.03	0.03	0.03
23.100	0.03	0.03	0.03	0.03	0.03
23.183	0.03	0.03	0.03	0.03	0.03
23.267	0.03	0.03	0.03	0.03	0.03
23.350	0.03	0.03	0.03	0.03	0.03
23.433	0.03	0.03	0.03	0.03	0.03
23.517	0.03	0.03	0.03	0.03	0.03
23.600	0.03	0.03	0.03	0.03	0.03
23.683	0.03	0.03	0.03	0.03	0.03
23.767	0.03	0.03	0.03	0.03	0.03
23.850	0.03	0.03	0.03	0.03	0.03
23.933	0.03	0.03	0.03	0.03	0.03


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
2.75
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	11.997 hours
Flow (Peak, Computed)	3.37 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.000 hours
Flow (Peak Interpolated Output)	3.37 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.680 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.9 in
Runoff Volume (Pervious)	0.219 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.219 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.201 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	3.84 ft³/s
Unit peak time, Tp	0.134 hours
Unit receding limb, Tr	0.536 hours
Total unit time, Tb	0.670 hours

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.201 hours
Area (User Defined)	0.680 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
5.583	0.00	0.00	0.00	0.00	0.00
5.667	0.00	0.00	0.00	0.00	0.00
5.750	0.00	0.00	0.00	0.00	0.00
5.833	0.00	0.00	0.00	0.00	0.00
5.917	0.00	0.00	0.00	0.00	0.00
6.000	0.00	0.00	0.00	0.00	0.00
6.083	0.00	0.00	0.00	0.00	0.00
6.167	0.00	0.01	0.01	0.01	0.01
6.250	0.01	0.01	0.01	0.01	0.01
6.333	0.01	0.01	0.01	0.01	0.01
6.417	0.01	0.01	0.01	0.01	0.01
6.500	0.01	0.01	0.01	0.01	0.01
6.583	0.01	0.01	0.01	0.01	0.01
6.667	0.01	0.01	0.01	0.01	0.01
6.750	0.01	0.01	0.01	0.01	0.01
6.833	0.01	0.01	0.01	0.01	0.01
6.917	0.01	0.01	0.01	0.01	0.01
7.000	0.01	0.01	0.01	0.01	0.01
7.083	0.01	0.01	0.01	0.01	0.01
7.167	0.01	0.01	0.01	0.01	0.01
7.250	0.01	0.01	0.01	0.01	0.01
7.333	0.01	0.01	0.01	0.01	0.01
7.417	0.01	0.02	0.02	0.02	0.02
7.500	0.02	0.02	0.02	0.02	0.02
7.583	0.02	0.02	0.02	0.02	0.02
7.667	0.02	0.02	0.02	0.02	0.02
7.750	0.02	0.02	0.02	0.02	0.02
7.833	0.02	0.02	0.02	0.02	0.02
7.917	0.02	0.02	0.02	0.02	0.02
8.000	0.02	0.02	0.02	0.02	0.02
8.083	0.02	0.02	0.02	0.02	0.02
8.167	0.02	0.02	0.02	0.02	0.02
8.250	0.02	0.02	0.02	0.02	0.02
8.333	0.02	0.02	0.03	0.03	0.03
8.417	0.03	0.03	0.03	0.03	0.03
8.500	0.03	0.03	0.03	0.03	0.03
8.583	0.03	0.03	0.03	0.03	0.03
8.667	0.03	0.03	0.03	0.03	0.03
8.750	0.03	0.03	0.03	0.03	0.03
8.833	0.03	0.04	0.04	0.04	0.04
8.917	0.04	0.04	0.04	0.04	0.04
9.000	0.04	0.04	0.04	0.04	0.04
9.083	0.04	0.04	0.04	0.04	0.04
9.167	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.250	0.04	0.04	0.04	0.04	0.04
9.333	0.04	0.05	0.05	0.05	0.05
9.417	0.05	0.05	0.05	0.05	0.05
9.500	0.05	0.05	0.05	0.05	0.05
9.583	0.05	0.05	0.05	0.05	0.05
9.667	0.05	0.05	0.05	0.05	0.05
9.750	0.05	0.05	0.05	0.05	0.05
9.833	0.06	0.06	0.06	0.06	0.06
9.917	0.06	0.06	0.06	0.06	0.06
10.000	0.06	0.06	0.06	0.06	0.06
10.083	0.07	0.07	0.07	0.07	0.07
10.167	0.07	0.07	0.07	0.07	0.07
10.250	0.07	0.07	0.08	0.08	0.08
10.333	0.08	0.08	0.08	0.08	0.08
10.417	0.08	0.08	0.09	0.09	0.09
10.500	0.09	0.09	0.09	0.09	0.09
10.583	0.09	0.10	0.10	0.10	0.10
10.667	0.10	0.10	0.10	0.11	0.11
10.750	0.11	0.11	0.11	0.11	0.12
10.833	0.12	0.12	0.12	0.12	0.12
10.917	0.13	0.13	0.13	0.13	0.13
11.000	0.14	0.14	0.14	0.14	0.14
11.083	0.15	0.15	0.15	0.15	0.16
11.167	0.16	0.16	0.17	0.17	0.17
11.250	0.18	0.18	0.19	0.19	0.20
11.333	0.20	0.20	0.21	0.21	0.22
11.417	0.22	0.23	0.23	0.24	0.24
11.500	0.25	0.25	0.26	0.28	0.30
11.583	0.32	0.35	0.39	0.43	0.48
11.667	0.54	0.61	0.68	0.77	0.86
11.750	0.95	1.06	1.18	1.31	1.45
11.833	1.60	1.78	1.97	2.20	2.43
11.917	2.67	2.88	3.07	3.22	3.31
12.000	3.37	3.36	3.31	3.22	3.05
12.083	2.85	2.61	2.36	2.11	1.88
12.167	1.66	1.46	1.30	1.16	1.06
12.250	0.97	0.89	0.82	0.77	0.72
12.333	0.68	0.64	0.61	0.58	0.55
12.417	0.53	0.51	0.49	0.47	0.45
12.500	0.44	0.42	0.40	0.39	0.38
12.583	0.37	0.35	0.34	0.33	0.33
12.667	0.32	0.31	0.31	0.30	0.30
12.750	0.29	0.29	0.28	0.28	0.27
12.833	0.27	0.27	0.26	0.26	0.26
12.917	0.26	0.25	0.25	0.25	0.24
13.000	0.24	0.24	0.23	0.23	0.23
13.083	0.23	0.22	0.22	0.22	0.22
13.167	0.21	0.21	0.21	0.21	0.21
13.250	0.20	0.20	0.20	0.20	0.20
13.333	0.20	0.19	0.19	0.19	0.19
13.417	0.19	0.19	0.18	0.18	0.18
13.500	0.18	0.18	0.18	0.17	0.17

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

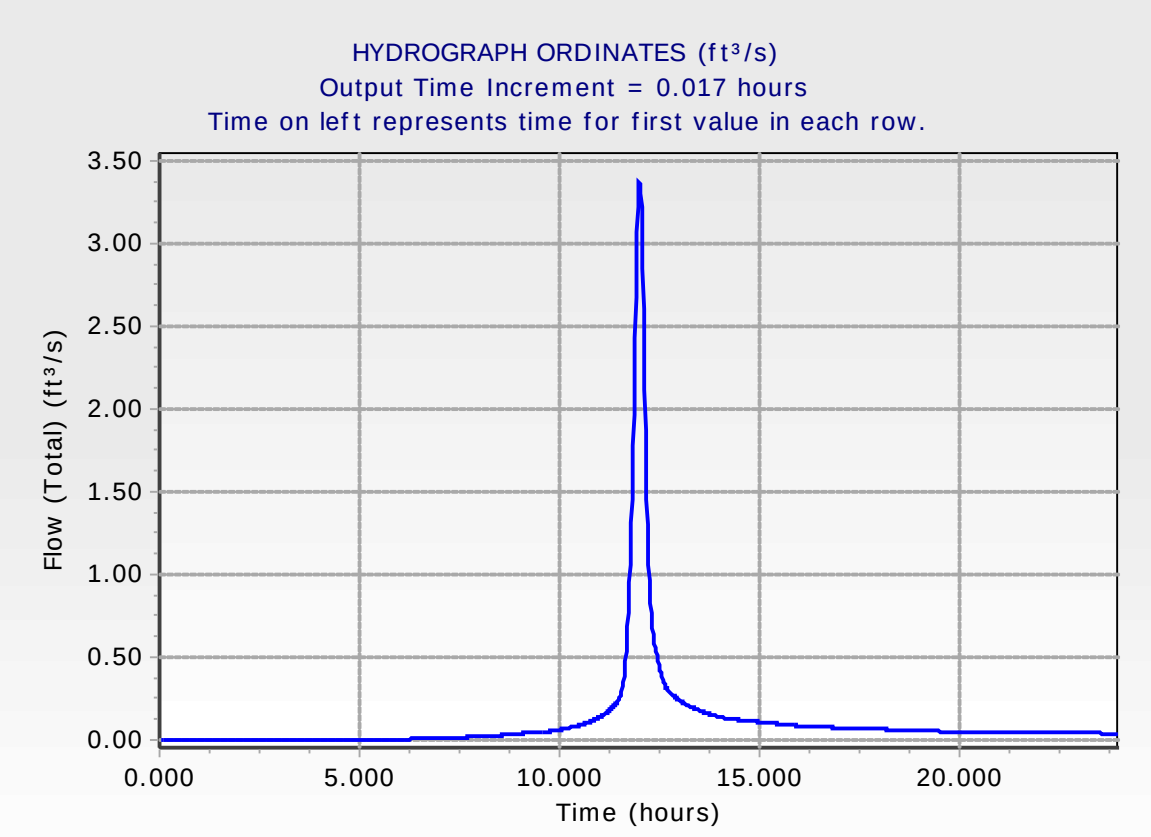
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
13.583	0.17	0.17	0.17	0.17	0.17
13.667	0.16	0.16	0.16	0.16	0.16
13.750	0.16	0.16	0.16	0.15	0.15
13.833	0.15	0.15	0.15	0.15	0.15
13.917	0.15	0.15	0.14	0.14	0.14
14.000	0.14	0.14	0.14	0.14	0.14
14.083	0.14	0.13	0.13	0.13	0.13
14.167	0.13	0.13	0.13	0.13	0.13
14.250	0.13	0.13	0.13	0.13	0.13
14.333	0.13	0.13	0.12	0.12	0.12
14.417	0.12	0.12	0.12	0.12	0.12
14.500	0.12	0.12	0.12	0.12	0.12
14.583	0.12	0.12	0.12	0.12	0.12
14.667	0.12	0.12	0.12	0.12	0.12
14.750	0.12	0.12	0.11	0.11	0.11
14.833	0.11	0.11	0.11	0.11	0.11
14.917	0.11	0.11	0.11	0.11	0.11
15.000	0.11	0.11	0.11	0.11	0.11
15.083	0.11	0.11	0.11	0.11	0.11
15.167	0.11	0.11	0.10	0.10	0.10
15.250	0.10	0.10	0.10	0.10	0.10
15.333	0.10	0.10	0.10	0.10	0.10
15.417	0.10	0.10	0.10	0.10	0.10
15.500	0.10	0.10	0.10	0.10	0.10
15.583	0.10	0.10	0.09	0.09	0.09
15.667	0.09	0.09	0.09	0.09	0.09
15.750	0.09	0.09	0.09	0.09	0.09
15.833	0.09	0.09	0.09	0.09	0.09
15.917	0.09	0.09	0.09	0.09	0.09
16.000	0.09	0.08	0.08	0.08	0.08
16.083	0.08	0.08	0.08	0.08	0.08
16.167	0.08	0.08	0.08	0.08	0.08
16.250	0.08	0.08	0.08	0.08	0.08
16.333	0.08	0.08	0.08	0.08	0.08
16.417	0.08	0.08	0.08	0.08	0.08
16.500	0.08	0.08	0.08	0.08	0.08
16.583	0.08	0.08	0.08	0.08	0.08
16.667	0.08	0.08	0.08	0.08	0.08
16.750	0.08	0.08	0.08	0.08	0.08
16.833	0.08	0.08	0.08	0.08	0.08
16.917	0.07	0.07	0.07	0.07	0.07
17.000	0.07	0.07	0.07	0.07	0.07
17.083	0.07	0.07	0.07	0.07	0.07
17.167	0.07	0.07	0.07	0.07	0.07
17.250	0.07	0.07	0.07	0.07	0.07
17.333	0.07	0.07	0.07	0.07	0.07
17.417	0.07	0.07	0.07	0.07	0.07
17.500	0.07	0.07	0.07	0.07	0.07
17.583	0.07	0.07	0.07	0.07	0.07
17.667	0.07	0.07	0.07	0.07	0.07
17.750	0.07	0.07	0.07	0.07	0.07
17.833	0.07	0.07	0.07	0.07	0.07

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
17.917	0.07	0.07	0.07	0.07	0.07
18.000	0.07	0.07	0.07	0.07	0.06
18.083	0.06	0.06	0.06	0.06	0.06
18.167	0.06	0.06	0.06	0.06	0.06
18.250	0.06	0.06	0.06	0.06	0.06
18.333	0.06	0.06	0.06	0.06	0.06
18.417	0.06	0.06	0.06	0.06	0.06
18.500	0.06	0.06	0.06	0.06	0.06
18.583	0.06	0.06	0.06	0.06	0.06
18.667	0.06	0.06	0.06	0.06	0.06
18.750	0.06	0.06	0.06	0.06	0.06
18.833	0.06	0.06	0.06	0.06	0.06
18.917	0.06	0.06	0.06	0.06	0.06
19.000	0.06	0.06	0.06	0.06	0.06
19.083	0.06	0.06	0.06	0.06	0.06
19.167	0.06	0.06	0.06	0.05	0.05
19.250	0.05	0.05	0.05	0.05	0.05
19.333	0.05	0.05	0.05	0.05	0.05
19.417	0.05	0.05	0.05	0.05	0.05
19.500	0.05	0.05	0.05	0.05	0.05
19.583	0.05	0.05	0.05	0.05	0.05
19.667	0.05	0.05	0.05	0.05	0.05
19.750	0.05	0.05	0.05	0.05	0.05
19.833	0.05	0.05	0.05	0.05	0.05
19.917	0.05	0.05	0.05	0.05	0.05
20.000	0.05	0.05	0.05	0.05	0.05
20.083	0.05	0.05	0.05	0.05	0.05
20.167	0.05	0.05	0.05	0.05	0.05
20.250	0.05	0.05	0.05	0.05	0.05
20.333	0.05	0.05	0.05	0.05	0.05
20.417	0.05	0.05	0.05	0.05	0.05
20.500	0.05	0.05	0.05	0.05	0.05
20.583	0.05	0.05	0.05	0.05	0.05
20.667	0.05	0.05	0.05	0.05	0.05
20.750	0.05	0.05	0.05	0.05	0.05
20.833	0.05	0.05	0.05	0.05	0.05
20.917	0.05	0.05	0.05	0.05	0.05
21.000	0.05	0.05	0.05	0.04	0.04
21.083	0.04	0.04	0.04	0.04	0.04
21.167	0.04	0.04	0.04	0.04	0.04
21.250	0.04	0.04	0.04	0.04	0.04
21.333	0.04	0.04	0.04	0.04	0.04
21.417	0.04	0.04	0.04	0.04	0.04
21.500	0.04	0.04	0.04	0.04	0.04
21.583	0.04	0.04	0.04	0.04	0.04
21.667	0.04	0.04	0.04	0.04	0.04
21.750	0.04	0.04	0.04	0.04	0.04
21.833	0.04	0.04	0.04	0.04	0.04
21.917	0.04	0.04	0.04	0.04	0.04
22.000	0.04	0.04	0.04	0.04	0.04
22.083	0.04	0.04	0.04	0.04	0.04
22.167	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
22.250	0.04	0.04	0.04	0.04	0.04
22.333	0.04	0.04	0.04	0.04	0.04
22.417	0.04	0.04	0.04	0.04	0.04
22.500	0.04	0.04	0.04	0.04	0.04
22.583	0.04	0.04	0.04	0.04	0.04
22.667	0.04	0.04	0.04	0.04	0.04
22.750	0.04	0.04	0.04	0.04	0.04
22.833	0.04	0.04	0.04	0.04	0.04
22.917	0.04	0.04	0.04	0.04	0.04
23.000	0.04	0.04	0.04	0.04	0.04
23.083	0.04	0.04	0.04	0.04	0.04
23.167	0.04	0.04	0.04	0.04	0.04
23.250	0.04	0.04	0.04	0.04	0.04
23.333	0.04	0.04	0.04	0.04	0.04
23.417	0.04	0.04	0.04	0.04	0.04
23.500	0.04	0.04	0.04	0.04	0.04
23.583	0.04	0.04	0.04	0.04	0.04
23.667	0.04	0.04	0.04	0.04	0.04
23.750	0.04	0.04	0.04	0.04	0.04
23.833	0.04	0.04	0.04	0.04	0.04
23.917	0.04	0.04	0.04	0.04	0.04
24.000	0.04	(N/A)	(N/A)	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	2 year
Return Event	2 years
Duration	24.000 hours
Depth	2.4 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.072 hours
Flow (Peak, Computed)	0.57 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.067 hours
Flow (Peak Interpolated Output)	0.57 ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	0.553 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.9 in
Runoff Volume (Pervious)	0.041 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.041 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.268 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.34 ft³/s
Unit peak time, Tp	0.179 hours
Unit receding limb, Tr	0.714 hours
Total unit time, Tb	0.893 hours

Storm Event	2 year
Return Event	2 years
Duration	24.000 hours
Depth	2.4 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.500	0.00	0.00	0.00	0.00	0.00
10.583	0.00	0.00	0.00	0.00	0.00
10.667	0.00	0.00	0.00	0.00	0.00
10.750	0.00	0.00	0.00	0.00	0.00
10.833	0.00	0.00	0.00	0.00	0.00
10.917	0.00	0.00	0.01	0.01	0.01
11.000	0.01	0.01	0.01	0.01	0.01
11.083	0.01	0.01	0.01	0.01	0.01
11.167	0.01	0.01	0.01	0.01	0.01
11.250	0.01	0.01	0.01	0.01	0.01
11.333	0.01	0.01	0.01	0.01	0.01
11.417	0.02	0.02	0.02	0.02	0.02
11.500	0.02	0.02	0.02	0.02	0.02
11.583	0.02	0.03	0.03	0.03	0.04
11.667	0.04	0.05	0.06	0.06	0.07
11.750	0.08	0.10	0.11	0.13	0.15
11.833	0.17	0.19	0.22	0.25	0.29
11.917	0.33	0.37	0.41	0.44	0.48
12.000	0.51	0.53	0.56	0.56	0.57
12.083	0.56	0.55	0.53	0.50	0.47
12.167	0.43	0.40	0.37	0.34	0.31
12.250	0.28	0.26	0.24	0.22	0.21
12.333	0.19	0.18	0.17	0.16	0.16
12.417	0.15	0.14	0.13	0.13	0.12
12.500	0.12	0.11	0.11	0.11	0.10
12.583	0.10	0.09	0.09	0.09	0.09
12.667	0.08	0.08	0.08	0.08	0.07
12.750	0.07	0.07	0.07	0.07	0.07
12.833	0.07	0.07	0.06	0.06	0.06
12.917	0.06	0.06	0.06	0.06	0.06
13.000	0.06	0.06	0.06	0.06	0.06
13.083	0.06	0.05	0.05	0.05	0.05
13.167	0.05	0.05	0.05	0.05	0.05
13.250	0.05	0.05	0.05	0.05	0.05
13.333	0.05	0.05	0.05	0.05	0.05
13.417	0.05	0.05	0.04	0.04	0.04
13.500	0.04	0.04	0.04	0.04	0.04
13.583	0.04	0.04	0.04	0.04	0.04
13.667	0.04	0.04	0.04	0.04	0.04
13.750	0.04	0.04	0.04	0.04	0.04
13.833	0.04	0.04	0.04	0.04	0.04
13.917	0.04	0.04	0.04	0.04	0.03
14.000	0.03	0.03	0.03	0.03	0.03
14.083	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

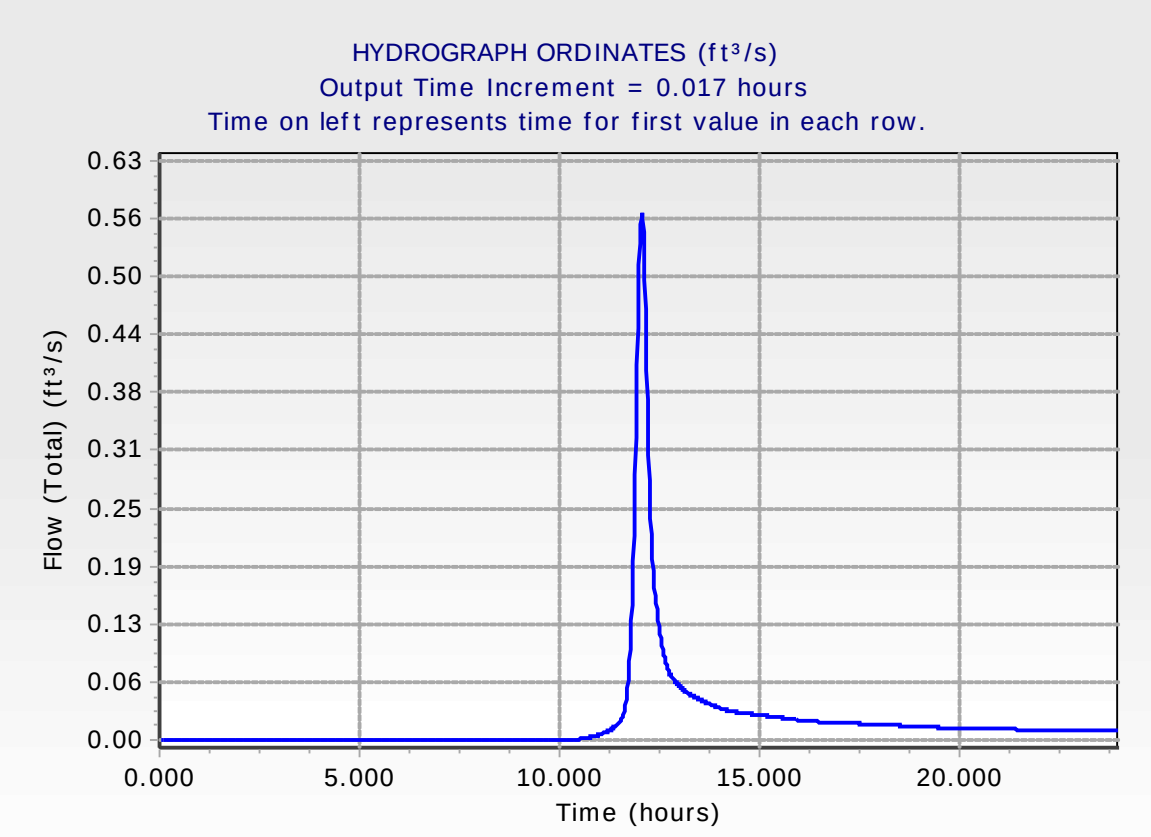
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.167	0.03	0.03	0.03	0.03	0.03
14.250	0.03	0.03	0.03	0.03	0.03
14.333	0.03	0.03	0.03	0.03	0.03
14.417	0.03	0.03	0.03	0.03	0.03
14.500	0.03	0.03	0.03	0.03	0.03
14.583	0.03	0.03	0.03	0.03	0.03
14.667	0.03	0.03	0.03	0.03	0.03
14.750	0.03	0.03	0.03	0.03	0.03
14.833	0.03	0.03	0.03	0.03	0.03
14.917	0.03	0.03	0.03	0.03	0.03
15.000	0.03	0.03	0.03	0.03	0.03
15.083	0.03	0.03	0.03	0.03	0.03
15.167	0.03	0.03	0.03	0.03	0.03
15.250	0.03	0.03	0.03	0.03	0.03
15.333	0.03	0.03	0.03	0.02	0.02
15.417	0.02	0.02	0.02	0.02	0.02
15.500	0.02	0.02	0.02	0.02	0.02
15.583	0.02	0.02	0.02	0.02	0.02
15.667	0.02	0.02	0.02	0.02	0.02
15.750	0.02	0.02	0.02	0.02	0.02
15.833	0.02	0.02	0.02	0.02	0.02
15.917	0.02	0.02	0.02	0.02	0.02
16.000	0.02	0.02	0.02	0.02	0.02
16.083	0.02	0.02	0.02	0.02	0.02
16.167	0.02	0.02	0.02	0.02	0.02
16.250	0.02	0.02	0.02	0.02	0.02
16.333	0.02	0.02	0.02	0.02	0.02
16.417	0.02	0.02	0.02	0.02	0.02
16.500	0.02	0.02	0.02	0.02	0.02
16.583	0.02	0.02	0.02	0.02	0.02
16.667	0.02	0.02	0.02	0.02	0.02
16.750	0.02	0.02	0.02	0.02	0.02
16.833	0.02	0.02	0.02	0.02	0.02
16.917	0.02	0.02	0.02	0.02	0.02
17.000	0.02	0.02	0.02	0.02	0.02
17.083	0.02	0.02	0.02	0.02	0.02
17.167	0.02	0.02	0.02	0.02	0.02
17.250	0.02	0.02	0.02	0.02	0.02
17.333	0.02	0.02	0.02	0.02	0.02
17.417	0.02	0.02	0.02	0.02	0.02
17.500	0.02	0.02	0.02	0.02	0.02
17.583	0.02	0.02	0.02	0.02	0.02
17.667	0.02	0.02	0.02	0.02	0.02
17.750	0.02	0.02	0.02	0.02	0.02
17.833	0.02	0.02	0.02	0.02	0.02
17.917	0.02	0.02	0.02	0.02	0.02
18.000	0.02	0.02	0.02	0.02	0.02
18.083	0.02	0.02	0.02	0.02	0.02
18.167	0.02	0.02	0.02	0.02	0.02
18.250	0.02	0.02	0.02	0.02	0.02
18.333	0.02	0.02	0.02	0.02	0.02
18.417	0.02	0.02	0.02	0.02	0.02

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.500	0.02	0.02	0.02	0.02	0.02
18.583	0.02	0.02	0.02	0.02	0.02
18.667	0.02	0.02	0.02	0.02	0.02
18.750	0.02	0.02	0.01	0.01	0.01
18.833	0.01	0.01	0.01	0.01	0.01
18.917	0.01	0.01	0.01	0.01	0.01
19.000	0.01	0.01	0.01	0.01	0.01
19.083	0.01	0.01	0.01	0.01	0.01
19.167	0.01	0.01	0.01	0.01	0.01
19.250	0.01	0.01	0.01	0.01	0.01
19.333	0.01	0.01	0.01	0.01	0.01
19.417	0.01	0.01	0.01	0.01	0.01
19.500	0.01	0.01	0.01	0.01	0.01
19.583	0.01	0.01	0.01	0.01	0.01
19.667	0.01	0.01	0.01	0.01	0.01
19.750	0.01	0.01	0.01	0.01	0.01
19.833	0.01	0.01	0.01	0.01	0.01
19.917	0.01	0.01	0.01	0.01	0.01
20.000	0.01	0.01	0.01	0.01	0.01
20.083	0.01	0.01	0.01	0.01	0.01
20.167	0.01	0.01	0.01	0.01	0.01
20.250	0.01	0.01	0.01	0.01	0.01
20.333	0.01	0.01	0.01	0.01	0.01
20.417	0.01	0.01	0.01	0.01	0.01
20.500	0.01	0.01	0.01	0.01	0.01
20.583	0.01	0.01	0.01	0.01	0.01
20.667	0.01	0.01	0.01	0.01	0.01
20.750	0.01	0.01	0.01	0.01	0.01
20.833	0.01	0.01	0.01	0.01	0.01
20.917	0.01	0.01	0.01	0.01	0.01
21.000	0.01	0.01	0.01	0.01	0.01
21.083	0.01	0.01	0.01	0.01	0.01
21.167	0.01	0.01	0.01	0.01	0.01
21.250	0.01	0.01	0.01	0.01	0.01
21.333	0.01	0.01	0.01	0.01	0.01
21.417	0.01	0.01	0.01	0.01	0.01
21.500	0.01	0.01	0.01	0.01	0.01
21.583	0.01	0.01	0.01	0.01	0.01
21.667	0.01	0.01	0.01	0.01	0.01
21.750	0.01	0.01	0.01	0.01	0.01
21.833	0.01	0.01	0.01	0.01	0.01
21.917	0.01	0.01	0.01	0.01	0.01
22.000	0.01	0.01	0.01	0.01	0.01
22.083	0.01	0.01	0.01	0.01	0.01
22.167	0.01	0.01	0.01	0.01	0.01
22.250	0.01	0.01	0.01	0.01	0.01
22.333	0.01	0.01	0.01	0.01	0.01
22.417	0.01	0.01	0.01	0.01	0.01
22.500	0.01	0.01	0.01	0.01	0.01
22.583	0.01	0.01	0.01	0.01	0.01
22.667	0.01	0.01	0.01	0.01	0.01
22.750	0.01	0.01	0.01	0.01	0.01

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
22.833	0.01	0.01	0.01	0.01	0.01
22.917	0.01	0.01	0.01	0.01	0.01
23.000	0.01	0.01	0.01	0.01	0.01
23.083	0.01	0.01	0.01	0.01	0.01
23.167	0.01	0.01	0.01	0.01	0.01
23.250	0.01	0.01	0.01	0.01	0.01
23.333	0.01	0.01	0.01	0.01	0.01
23.417	0.01	0.01	0.01	0.01	0.01
23.500	0.01	0.01	0.01	0.01	0.01
23.583	0.01	0.01	0.01	0.01	0.01
23.667	0.01	0.01	0.01	0.01	0.01
23.750	0.01	0.01	0.01	0.01	0.01
23.833	0.01	0.01	0.01	0.01	0.01
23.917	0.01	0.01	0.01	0.01	0.01
24.000	0.01	(N/A)	(N/A)	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
0.63
0.56
0.50
0.44
0.38
0.31
0.25
0.19
0.13
0.06
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	3.4 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.072 hours
Flow (Peak, Computed)	1.09 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.067 hours
Flow (Peak Interpolated Output)	1.09 ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	0.553 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.7 in
Runoff Volume (Pervious)	0.077 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.077 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.268 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.34 ft³/s
Unit peak time, Tp	0.179 hours
Unit receding limb, Tr	0.714 hours
Total unit time, Tb	0.893 hours

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	3.4 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.850	0.00	0.00	0.00	0.00	0.00
8.933	0.00	0.00	0.00	0.00	0.00
9.017	0.00	0.00	0.00	0.00	0.00
9.100	0.00	0.00	0.00	0.00	0.00
9.183	0.00	0.00	0.00	0.00	0.00
9.267	0.00	0.00	0.00	0.00	0.00
9.350	0.00	0.00	0.00	0.00	0.00
9.433	0.00	0.00	0.00	0.00	0.00
9.517	0.00	0.00	0.00	0.00	0.00
9.600	0.01	0.01	0.01	0.01	0.01
9.683	0.01	0.01	0.01	0.01	0.01
9.767	0.01	0.01	0.01	0.01	0.01
9.850	0.01	0.01	0.01	0.01	0.01
9.933	0.01	0.01	0.01	0.01	0.01
10.017	0.01	0.01	0.01	0.01	0.01
10.100	0.01	0.01	0.01	0.01	0.01
10.183	0.01	0.01	0.01	0.01	0.01
10.267	0.01	0.01	0.01	0.01	0.01
10.350	0.01	0.01	0.01	0.01	0.01
10.433	0.01	0.01	0.01	0.01	0.01
10.517	0.02	0.02	0.02	0.02	0.02
10.600	0.02	0.02	0.02	0.02	0.02
10.683	0.02	0.02	0.02	0.02	0.02
10.767	0.02	0.02	0.02	0.02	0.02
10.850	0.02	0.02	0.02	0.02	0.02
10.933	0.03	0.03	0.03	0.03	0.03
11.017	0.03	0.03	0.03	0.03	0.03
11.100	0.03	0.03	0.03	0.03	0.03
11.183	0.03	0.04	0.04	0.04	0.04
11.267	0.04	0.04	0.04	0.04	0.04
11.350	0.05	0.05	0.05	0.05	0.05
11.433	0.05	0.05	0.05	0.06	0.06
11.517	0.06	0.06	0.06	0.07	0.07
11.600	0.08	0.09	0.09	0.10	0.12
11.683	0.13	0.15	0.17	0.19	0.21
11.767	0.24	0.27	0.30	0.34	0.38
11.850	0.43	0.49	0.55	0.61	0.69
11.933	0.76	0.83	0.90	0.96	1.01
12.017	1.05	1.08	1.09	1.09	1.07
12.100	1.04	0.99	0.93	0.87	0.81
12.183	0.74	0.68	0.62	0.57	0.52
12.267	0.48	0.44	0.41	0.38	0.35
12.350	0.33	0.31	0.29	0.28	0.26
12.433	0.25	0.24	0.23	0.22	0.21

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

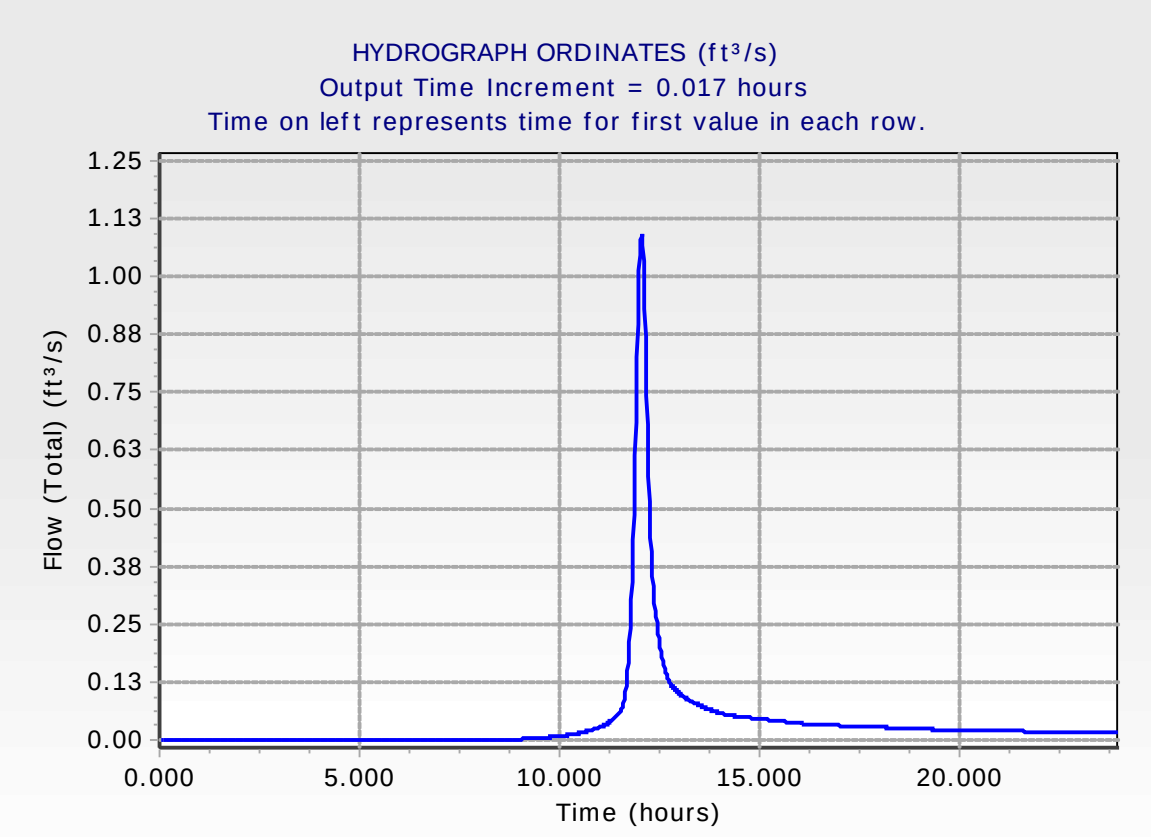
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
12.517	0.20	0.19	0.19	0.18	0.17
12.600	0.17	0.16	0.15	0.15	0.14
12.683	0.14	0.14	0.13	0.13	0.13
12.767	0.12	0.12	0.12	0.12	0.12
12.850	0.11	0.11	0.11	0.11	0.11
12.933	0.11	0.10	0.10	0.10	0.10
13.017	0.10	0.10	0.10	0.10	0.09
13.100	0.09	0.09	0.09	0.09	0.09
13.183	0.09	0.09	0.09	0.09	0.09
13.267	0.08	0.08	0.08	0.08	0.08
13.350	0.08	0.08	0.08	0.08	0.08
13.433	0.08	0.08	0.08	0.08	0.07
13.517	0.07	0.07	0.07	0.07	0.07
13.600	0.07	0.07	0.07	0.07	0.07
13.683	0.07	0.07	0.07	0.07	0.07
13.767	0.07	0.07	0.06	0.06	0.06
13.850	0.06	0.06	0.06	0.06	0.06
13.933	0.06	0.06	0.06	0.06	0.06
14.017	0.06	0.06	0.06	0.06	0.06
14.100	0.06	0.06	0.06	0.06	0.05
14.183	0.05	0.05	0.05	0.05	0.05
14.267	0.05	0.05	0.05	0.05	0.05
14.350	0.05	0.05	0.05	0.05	0.05
14.433	0.05	0.05	0.05	0.05	0.05
14.517	0.05	0.05	0.05	0.05	0.05
14.600	0.05	0.05	0.05	0.05	0.05
14.683	0.05	0.05	0.05	0.05	0.05
14.767	0.05	0.05	0.05	0.05	0.05
14.850	0.05	0.05	0.05	0.05	0.05
14.933	0.05	0.05	0.05	0.05	0.05
15.017	0.05	0.05	0.05	0.05	0.04
15.100	0.04	0.04	0.04	0.04	0.04
15.183	0.04	0.04	0.04	0.04	0.04
15.267	0.04	0.04	0.04	0.04	0.04
15.350	0.04	0.04	0.04	0.04	0.04
15.433	0.04	0.04	0.04	0.04	0.04
15.517	0.04	0.04	0.04	0.04	0.04
15.600	0.04	0.04	0.04	0.04	0.04
15.683	0.04	0.04	0.04	0.04	0.04
15.767	0.04	0.04	0.04	0.04	0.04
15.850	0.04	0.04	0.04	0.04	0.04
15.933	0.04	0.04	0.04	0.04	0.04
16.017	0.04	0.04	0.04	0.04	0.04
16.100	0.04	0.03	0.03	0.03	0.03
16.183	0.03	0.03	0.03	0.03	0.03
16.267	0.03	0.03	0.03	0.03	0.03
16.350	0.03	0.03	0.03	0.03	0.03
16.433	0.03	0.03	0.03	0.03	0.03
16.517	0.03	0.03	0.03	0.03	0.03
16.600	0.03	0.03	0.03	0.03	0.03
16.683	0.03	0.03	0.03	0.03	0.03
16.767	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.850	0.03	0.03	0.03	0.03	0.03
16.933	0.03	0.03	0.03	0.03	0.03
17.017	0.03	0.03	0.03	0.03	0.03
17.100	0.03	0.03	0.03	0.03	0.03
17.183	0.03	0.03	0.03	0.03	0.03
17.267	0.03	0.03	0.03	0.03	0.03
17.350	0.03	0.03	0.03	0.03	0.03
17.433	0.03	0.03	0.03	0.03	0.03
17.517	0.03	0.03	0.03	0.03	0.03
17.600	0.03	0.03	0.03	0.03	0.03
17.683	0.03	0.03	0.03	0.03	0.03
17.767	0.03	0.03	0.03	0.03	0.03
17.850	0.03	0.03	0.03	0.03	0.03
17.933	0.03	0.03	0.03	0.03	0.03
18.017	0.03	0.03	0.03	0.03	0.03
18.100	0.03	0.03	0.03	0.03	0.03
18.183	0.03	0.03	0.03	0.03	0.03
18.267	0.03	0.03	0.03	0.03	0.03
18.350	0.03	0.03	0.03	0.03	0.03
18.433	0.03	0.03	0.03	0.03	0.03
18.517	0.03	0.03	0.03	0.03	0.03
18.600	0.03	0.03	0.03	0.03	0.03
18.683	0.03	0.03	0.03	0.03	0.02
18.767	0.02	0.02	0.02	0.02	0.02
18.850	0.02	0.02	0.02	0.02	0.02
18.933	0.02	0.02	0.02	0.02	0.02
19.017	0.02	0.02	0.02	0.02	0.02
19.100	0.02	0.02	0.02	0.02	0.02
19.183	0.02	0.02	0.02	0.02	0.02
19.267	0.02	0.02	0.02	0.02	0.02
19.350	0.02	0.02	0.02	0.02	0.02
19.433	0.02	0.02	0.02	0.02	0.02
19.517	0.02	0.02	0.02	0.02	0.02
19.600	0.02	0.02	0.02	0.02	0.02
19.683	0.02	0.02	0.02	0.02	0.02
19.767	0.02	0.02	0.02	0.02	0.02
19.850	0.02	0.02	0.02	0.02	0.02
19.933	0.02	0.02	0.02	0.02	0.02
20.017	0.02	0.02	0.02	0.02	0.02
20.100	0.02	0.02	0.02	0.02	0.02
20.183	0.02	0.02	0.02	0.02	0.02
20.267	0.02	0.02	0.02	0.02	0.02
20.350	0.02	0.02	0.02	0.02	0.02
20.433	0.02	0.02	0.02	0.02	0.02
20.517	0.02	0.02	0.02	0.02	0.02
20.600	0.02	0.02	0.02	0.02	0.02
20.683	0.02	0.02	0.02	0.02	0.02
20.767	0.02	0.02	0.02	0.02	0.02
20.850	0.02	0.02	0.02	0.02	0.02
20.933	0.02	0.02	0.02	0.02	0.02
21.017	0.02	0.02	0.02	0.02	0.02
21.100	0.02	0.02	0.02	0.02	0.02

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
21.183	0.02	0.02	0.02	0.02	0.02
21.267	0.02	0.02	0.02	0.02	0.02
21.350	0.02	0.02	0.02	0.02	0.02
21.433	0.02	0.02	0.02	0.02	0.02
21.517	0.02	0.02	0.02	0.02	0.02
21.600	0.02	0.02	0.02	0.02	0.02
21.683	0.02	0.02	0.02	0.02	0.02
21.767	0.02	0.02	0.02	0.02	0.02
21.850	0.02	0.02	0.02	0.02	0.02
21.933	0.02	0.02	0.02	0.02	0.02
22.017	0.02	0.02	0.02	0.02	0.02
22.100	0.02	0.02	0.02	0.02	0.02
22.183	0.02	0.02	0.02	0.02	0.02
22.267	0.02	0.02	0.02	0.02	0.02
22.350	0.02	0.02	0.02	0.02	0.02
22.433	0.02	0.02	0.02	0.02	0.02
22.517	0.02	0.02	0.02	0.02	0.02
22.600	0.02	0.02	0.02	0.02	0.02
22.683	0.02	0.02	0.02	0.02	0.02
22.767	0.02	0.02	0.02	0.02	0.02
22.850	0.02	0.02	0.02	0.02	0.02
22.933	0.02	0.02	0.02	0.02	0.02
23.017	0.02	0.02	0.02	0.02	0.02
23.100	0.02	0.02	0.02	0.02	0.02
23.183	0.02	0.02	0.02	0.02	0.02
23.267	0.02	0.02	0.02	0.02	0.02
23.350	0.02	0.02	0.02	0.02	0.02
23.433	0.02	0.02	0.02	0.02	0.02
23.517	0.02	0.02	0.02	0.02	0.02
23.600	0.02	0.02	0.02	0.02	0.02
23.683	0.02	0.02	0.02	0.02	0.02
23.767	0.02	0.02	0.02	0.02	0.02
23.850	0.02	0.02	0.02	0.02	0.02
23.933	0.02	0.02	0.02	0.02	0.02


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
1.25
1.13
1.00
0.88
0.75
0.63
0.50
0.38
0.25
0.13
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	4.1 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.037 hours
Flow (Peak, Computed)	1.51 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.050 hours
Flow (Peak Interpolated Output)	1.51 ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	0.553 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.3 in
Runoff Volume (Pervious)	0.107 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.107 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.268 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.34 ft³/s
Unit peak time, Tp	0.179 hours
Unit receding limb, Tr	0.714 hours
Total unit time, Tb	0.893 hours

Storm Event	25 year
Return Event	25 years
Duration	24.000 hours
Depth	4.1 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.817	0.00	0.00	0.00	0.00	0.00
7.900	0.00	0.00	0.00	0.00	0.00
7.983	0.00	0.00	0.00	0.00	0.00
8.067	0.00	0.00	0.00	0.00	0.00
8.150	0.00	0.00	0.00	0.00	0.00
8.233	0.00	0.00	0.00	0.00	0.00
8.317	0.00	0.00	0.00	0.00	0.00
8.400	0.00	0.00	0.00	0.00	0.00
8.483	0.00	0.00	0.00	0.00	0.00
8.567	0.00	0.00	0.00	0.01	0.01
8.650	0.01	0.01	0.01	0.01	0.01
8.733	0.01	0.01	0.01	0.01	0.01
8.817	0.01	0.01	0.01	0.01	0.01
8.900	0.01	0.01	0.01	0.01	0.01
8.983	0.01	0.01	0.01	0.01	0.01
9.067	0.01	0.01	0.01	0.01	0.01
9.150	0.01	0.01	0.01	0.01	0.01
9.233	0.01	0.01	0.01	0.01	0.01
9.317	0.01	0.01	0.01	0.01	0.01
9.400	0.01	0.01	0.01	0.01	0.01
9.483	0.01	0.01	0.01	0.01	0.01
9.567	0.01	0.01	0.01	0.01	0.01
9.650	0.01	0.01	0.01	0.01	0.01
9.733	0.01	0.01	0.01	0.01	0.02
9.817	0.02	0.02	0.02	0.02	0.02
9.900	0.02	0.02	0.02	0.02	0.02
9.983	0.02	0.02	0.02	0.02	0.02
10.067	0.02	0.02	0.02	0.02	0.02
10.150	0.02	0.02	0.02	0.02	0.02
10.233	0.02	0.02	0.02	0.02	0.02
10.317	0.02	0.02	0.02	0.03	0.03
10.400	0.03	0.03	0.03	0.03	0.03
10.483	0.03	0.03	0.03	0.03	0.03
10.567	0.03	0.03	0.03	0.03	0.03
10.650	0.03	0.03	0.03	0.03	0.04
10.733	0.04	0.04	0.04	0.04	0.04
10.817	0.04	0.04	0.04	0.04	0.04
10.900	0.04	0.04	0.04	0.05	0.05
10.983	0.05	0.05	0.05	0.05	0.05
11.067	0.05	0.05	0.05	0.05	0.06
11.150	0.06	0.06	0.06	0.06	0.06
11.233	0.06	0.06	0.07	0.07	0.07
11.317	0.07	0.07	0.07	0.08	0.08
11.400	0.08	0.08	0.08	0.09	0.09

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

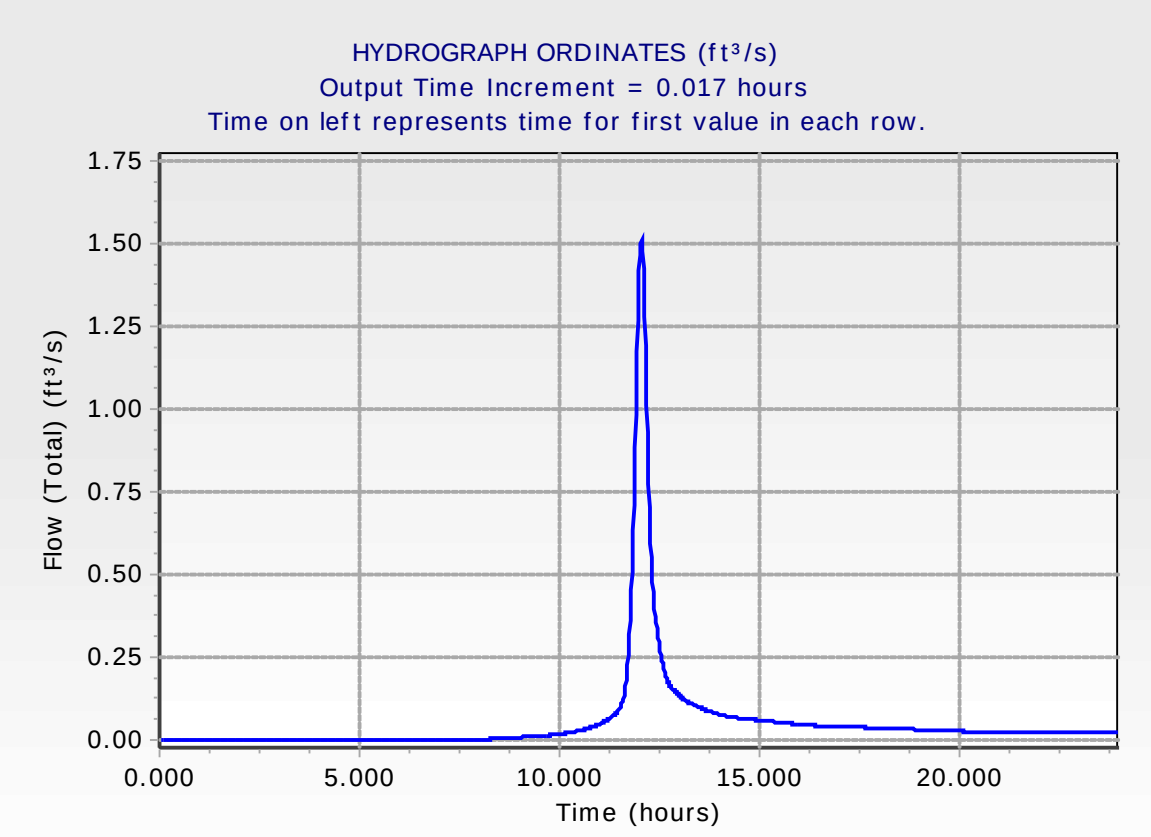
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.483	0.09	0.09	0.10	0.10	0.10
11.567	0.11	0.12	0.12	0.13	0.15
11.650	0.16	0.18	0.20	0.23	0.25
11.733	0.29	0.32	0.36	0.40	0.45
11.817	0.51	0.57	0.63	0.71	0.80
11.900	0.88	0.98	1.08	1.18	1.27
11.983	1.34	1.42	1.46	1.50	1.51
12.067	1.51	1.48	1.43	1.36	1.28
12.150	1.19	1.10	1.01	0.93	0.85
12.233	0.77	0.70	0.65	0.59	0.55
12.317	0.51	0.48	0.45	0.42	0.40
12.400	0.37	0.36	0.34	0.32	0.31
12.483	0.29	0.28	0.27	0.26	0.25
12.567	0.24	0.23	0.22	0.21	0.21
12.650	0.20	0.19	0.19	0.18	0.18
12.733	0.17	0.17	0.16	0.16	0.16
12.817	0.16	0.15	0.15	0.15	0.15
12.900	0.14	0.14	0.14	0.14	0.14
12.983	0.14	0.13	0.13	0.13	0.13
13.067	0.13	0.13	0.12	0.12	0.12
13.150	0.12	0.12	0.12	0.12	0.12
13.233	0.11	0.11	0.11	0.11	0.11
13.317	0.11	0.11	0.11	0.11	0.11
13.400	0.10	0.10	0.10	0.10	0.10
13.483	0.10	0.10	0.10	0.10	0.10
13.567	0.10	0.09	0.09	0.09	0.09
13.650	0.09	0.09	0.09	0.09	0.09
13.733	0.09	0.09	0.09	0.09	0.09
13.817	0.08	0.08	0.08	0.08	0.08
13.900	0.08	0.08	0.08	0.08	0.08
13.983	0.08	0.08	0.08	0.08	0.08
14.067	0.08	0.07	0.07	0.07	0.07
14.150	0.07	0.07	0.07	0.07	0.07
14.233	0.07	0.07	0.07	0.07	0.07
14.317	0.07	0.07	0.07	0.07	0.07
14.400	0.07	0.07	0.07	0.07	0.07
14.483	0.07	0.07	0.07	0.07	0.07
14.567	0.07	0.07	0.07	0.06	0.06
14.650	0.06	0.06	0.06	0.06	0.06
14.733	0.06	0.06	0.06	0.06	0.06
14.817	0.06	0.06	0.06	0.06	0.06
14.900	0.06	0.06	0.06	0.06	0.06
14.983	0.06	0.06	0.06	0.06	0.06
15.067	0.06	0.06	0.06	0.06	0.06
15.150	0.06	0.06	0.06	0.06	0.06
15.233	0.06	0.06	0.06	0.06	0.06
15.317	0.06	0.06	0.06	0.06	0.06
15.400	0.05	0.05	0.05	0.05	0.05
15.483	0.05	0.05	0.05	0.05	0.05
15.567	0.05	0.05	0.05	0.05	0.05
15.650	0.05	0.05	0.05	0.05	0.05
15.733	0.05	0.05	0.05	0.05	0.05

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.817	0.05	0.05	0.05	0.05	0.05
15.900	0.05	0.05	0.05	0.05	0.05
15.983	0.05	0.05	0.05	0.05	0.05
16.067	0.05	0.05	0.05	0.05	0.05
16.150	0.05	0.05	0.04	0.04	0.04
16.233	0.04	0.04	0.04	0.04	0.04
16.317	0.04	0.04	0.04	0.04	0.04
16.400	0.04	0.04	0.04	0.04	0.04
16.483	0.04	0.04	0.04	0.04	0.04
16.567	0.04	0.04	0.04	0.04	0.04
16.650	0.04	0.04	0.04	0.04	0.04
16.733	0.04	0.04	0.04	0.04	0.04
16.817	0.04	0.04	0.04	0.04	0.04
16.900	0.04	0.04	0.04	0.04	0.04
16.983	0.04	0.04	0.04	0.04	0.04
17.067	0.04	0.04	0.04	0.04	0.04
17.150	0.04	0.04	0.04	0.04	0.04
17.233	0.04	0.04	0.04	0.04	0.04
17.317	0.04	0.04	0.04	0.04	0.04
17.400	0.04	0.04	0.04	0.04	0.04
17.483	0.04	0.04	0.04	0.04	0.04
17.567	0.04	0.04	0.04	0.04	0.04
17.650	0.04	0.04	0.04	0.04	0.04
17.733	0.04	0.04	0.04	0.04	0.04
17.817	0.04	0.04	0.04	0.04	0.04
17.900	0.04	0.04	0.04	0.04	0.04
17.983	0.04	0.04	0.04	0.04	0.04
18.067	0.04	0.04	0.04	0.04	0.04
18.150	0.04	0.04	0.04	0.04	0.04
18.233	0.03	0.03	0.03	0.03	0.03
18.317	0.03	0.03	0.03	0.03	0.03
18.400	0.03	0.03	0.03	0.03	0.03
18.483	0.03	0.03	0.03	0.03	0.03
18.567	0.03	0.03	0.03	0.03	0.03
18.650	0.03	0.03	0.03	0.03	0.03
18.733	0.03	0.03	0.03	0.03	0.03
18.817	0.03	0.03	0.03	0.03	0.03
18.900	0.03	0.03	0.03	0.03	0.03
18.983	0.03	0.03	0.03	0.03	0.03
19.067	0.03	0.03	0.03	0.03	0.03
19.150	0.03	0.03	0.03	0.03	0.03
19.233	0.03	0.03	0.03	0.03	0.03
19.317	0.03	0.03	0.03	0.03	0.03
19.400	0.03	0.03	0.03	0.03	0.03
19.483	0.03	0.03	0.03	0.03	0.03
19.567	0.03	0.03	0.03	0.03	0.03
19.650	0.03	0.03	0.03	0.03	0.03
19.733	0.03	0.03	0.03	0.03	0.03
19.817	0.03	0.03	0.03	0.03	0.03
19.900	0.03	0.03	0.03	0.03	0.03
19.983	0.03	0.03	0.03	0.03	0.03
20.067	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
20.150	0.03	0.03	0.03	0.03	0.03
20.233	0.03	0.03	0.03	0.03	0.03
20.317	0.03	0.03	0.03	0.03	0.03
20.400	0.03	0.03	0.03	0.03	0.03
20.483	0.03	0.03	0.03	0.03	0.03
20.567	0.03	0.03	0.03	0.03	0.03
20.650	0.03	0.03	0.03	0.03	0.03
20.733	0.03	0.03	0.03	0.03	0.03
20.817	0.03	0.02	0.02	0.02	0.02
20.900	0.02	0.02	0.02	0.02	0.02
20.983	0.02	0.02	0.02	0.02	0.02
21.067	0.02	0.02	0.02	0.02	0.02
21.150	0.02	0.02	0.02	0.02	0.02
21.233	0.02	0.02	0.02	0.02	0.02
21.317	0.02	0.02	0.02	0.02	0.02
21.400	0.02	0.02	0.02	0.02	0.02
21.483	0.02	0.02	0.02	0.02	0.02
21.567	0.02	0.02	0.02	0.02	0.02
21.650	0.02	0.02	0.02	0.02	0.02
21.733	0.02	0.02	0.02	0.02	0.02
21.817	0.02	0.02	0.02	0.02	0.02
21.900	0.02	0.02	0.02	0.02	0.02
21.983	0.02	0.02	0.02	0.02	0.02
22.067	0.02	0.02	0.02	0.02	0.02
22.150	0.02	0.02	0.02	0.02	0.02
22.233	0.02	0.02	0.02	0.02	0.02
22.317	0.02	0.02	0.02	0.02	0.02
22.400	0.02	0.02	0.02	0.02	0.02
22.483	0.02	0.02	0.02	0.02	0.02
22.567	0.02	0.02	0.02	0.02	0.02
22.650	0.02	0.02	0.02	0.02	0.02
22.733	0.02	0.02	0.02	0.02	0.02
22.817	0.02	0.02	0.02	0.02	0.02
22.900	0.02	0.02	0.02	0.02	0.02
22.983	0.02	0.02	0.02	0.02	0.02
23.067	0.02	0.02	0.02	0.02	0.02
23.150	0.02	0.02	0.02	0.02	0.02
23.233	0.02	0.02	0.02	0.02	0.02
23.317	0.02	0.02	0.02	0.02	0.02
23.400	0.02	0.02	0.02	0.02	0.02
23.483	0.02	0.02	0.02	0.02	0.02
23.567	0.02	0.02	0.02	0.02	0.02
23.650	0.02	0.02	0.02	0.02	0.02
23.733	0.02	0.02	0.02	0.02	0.02
23.817	0.02	0.02	0.02	0.02	0.02
23.900	0.02	0.02	0.02	0.02	0.02
23.983	0.02	0.02	(N/A)	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	50 year
Return Event	50 years
Duration	24.000 hours
Depth	4.8 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.037 hours
Flow (Peak, Computed)	1.91 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.050 hours
Flow (Peak Interpolated Output)	1.90 ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	0.553 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	0.135 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.135 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.268 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.34 ft³/s
Unit peak time, Tp	0.179 hours
Unit receding limb, Tr	0.714 hours
Total unit time, Tb	0.893 hours

Storm Event	50 year
Return Event	50 years
Duration	24.000 hours
Depth	4.8 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.017	0.00	0.00	0.00	0.00	0.00
7.100	0.00	0.00	0.00	0.00	0.00
7.183	0.00	0.00	0.00	0.00	0.00
7.267	0.00	0.00	0.00	0.00	0.00
7.350	0.00	0.00	0.00	0.00	0.00
7.433	0.00	0.00	0.00	0.00	0.00
7.517	0.00	0.00	0.00	0.00	0.00
7.600	0.00	0.00	0.00	0.00	0.00
7.683	0.00	0.00	0.00	0.00	0.00
7.767	0.00	0.00	0.00	0.00	0.00
7.850	0.01	0.01	0.01	0.01	0.01
7.933	0.01	0.01	0.01	0.01	0.01
8.017	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.183	0.01	0.01	0.01	0.01	0.01
8.267	0.01	0.01	0.01	0.01	0.01
8.350	0.01	0.01	0.01	0.01	0.01
8.433	0.01	0.01	0.01	0.01	0.01
8.517	0.01	0.01	0.01	0.01	0.01
8.600	0.01	0.01	0.01	0.01	0.01
8.683	0.01	0.01	0.01	0.01	0.01
8.767	0.01	0.01	0.01	0.01	0.01
8.850	0.01	0.01	0.01	0.01	0.01
8.933	0.01	0.01	0.01	0.01	0.02
9.017	0.02	0.02	0.02	0.02	0.02
9.100	0.02	0.02	0.02	0.02	0.02
9.183	0.02	0.02	0.02	0.02	0.02
9.267	0.02	0.02	0.02	0.02	0.02
9.350	0.02	0.02	0.02	0.02	0.02
9.433	0.02	0.02	0.02	0.02	0.02
9.517	0.02	0.02	0.02	0.02	0.02
9.600	0.02	0.02	0.02	0.02	0.02
9.683	0.02	0.02	0.02	0.02	0.02
9.767	0.02	0.02	0.02	0.02	0.02
9.850	0.03	0.03	0.03	0.03	0.03
9.933	0.03	0.03	0.03	0.03	0.03
10.017	0.03	0.03	0.03	0.03	0.03
10.100	0.03	0.03	0.03	0.03	0.03
10.183	0.03	0.03	0.03	0.03	0.03
10.267	0.03	0.04	0.04	0.04	0.04
10.350	0.04	0.04	0.04	0.04	0.04
10.433	0.04	0.04	0.04	0.04	0.04
10.517	0.04	0.04	0.04	0.05	0.05
10.600	0.05	0.05	0.05	0.05	0.05

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.683	0.05	0.05	0.05	0.05	0.05
10.767	0.05	0.06	0.06	0.06	0.06
10.850	0.06	0.06	0.06	0.06	0.06
10.933	0.06	0.06	0.07	0.07	0.07
11.017	0.07	0.07	0.07	0.07	0.07
11.100	0.08	0.08	0.08	0.08	0.08
11.183	0.08	0.08	0.09	0.09	0.09
11.267	0.09	0.09	0.10	0.10	0.10
11.350	0.10	0.11	0.11	0.11	0.11
11.433	0.12	0.12	0.12	0.12	0.13
11.517	0.13	0.13	0.14	0.15	0.16
11.600	0.17	0.18	0.20	0.22	0.24
11.683	0.27	0.30	0.34	0.38	0.43
11.767	0.48	0.53	0.60	0.66	0.74
11.850	0.83	0.92	1.03	1.14	1.26
11.933	1.39	1.50	1.62	1.71	1.80
12.017	1.85	1.90	1.90	1.90	1.85
12.100	1.79	1.70	1.60	1.49	1.38
12.183	1.26	1.16	1.05	0.96	0.87
12.267	0.80	0.74	0.68	0.63	0.59
12.350	0.55	0.52	0.49	0.46	0.44
12.433	0.42	0.40	0.38	0.36	0.35
12.517	0.33	0.32	0.31	0.29	0.28
12.600	0.27	0.26	0.25	0.24	0.24
12.683	0.23	0.22	0.22	0.21	0.21
12.767	0.20	0.20	0.19	0.19	0.19
12.850	0.18	0.18	0.18	0.18	0.17
12.933	0.17	0.17	0.17	0.17	0.16
13.017	0.16	0.16	0.16	0.16	0.15
13.100	0.15	0.15	0.15	0.15	0.15
13.183	0.14	0.14	0.14	0.14	0.14
13.267	0.14	0.14	0.13	0.13	0.13
13.350	0.13	0.13	0.13	0.13	0.13
13.433	0.13	0.12	0.12	0.12	0.12
13.517	0.12	0.12	0.12	0.12	0.12
13.600	0.11	0.11	0.11	0.11	0.11
13.683	0.11	0.11	0.11	0.11	0.11
13.767	0.11	0.10	0.10	0.10	0.10
13.850	0.10	0.10	0.10	0.10	0.10
13.933	0.10	0.10	0.10	0.10	0.09
14.017	0.09	0.09	0.09	0.09	0.09
14.100	0.09	0.09	0.09	0.09	0.09
14.183	0.09	0.09	0.09	0.09	0.09
14.267	0.09	0.08	0.08	0.08	0.08
14.350	0.08	0.08	0.08	0.08	0.08
14.433	0.08	0.08	0.08	0.08	0.08
14.517	0.08	0.08	0.08	0.08	0.08
14.600	0.08	0.08	0.08	0.08	0.08
14.683	0.08	0.08	0.08	0.08	0.08
14.767	0.08	0.08	0.08	0.08	0.08
14.850	0.08	0.08	0.07	0.07	0.07
14.933	0.07	0.07	0.07	0.07	0.07

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

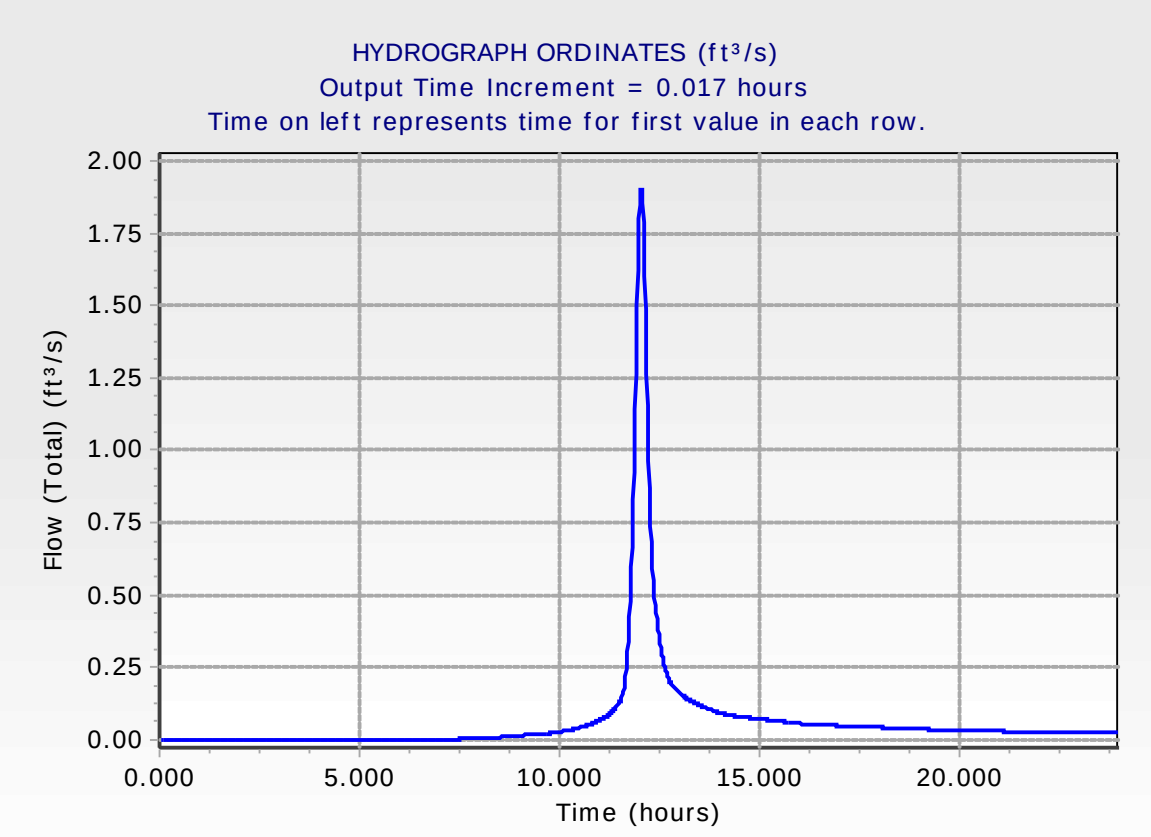
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.017	0.07	0.07	0.07	0.07	0.07
15.100	0.07	0.07	0.07	0.07	0.07
15.183	0.07	0.07	0.07	0.07	0.07
15.267	0.07	0.07	0.07	0.07	0.07
15.350	0.07	0.07	0.07	0.07	0.07
15.433	0.07	0.07	0.07	0.07	0.07
15.517	0.06	0.06	0.06	0.06	0.06
15.600	0.06	0.06	0.06	0.06	0.06
15.683	0.06	0.06	0.06	0.06	0.06
15.767	0.06	0.06	0.06	0.06	0.06
15.850	0.06	0.06	0.06	0.06	0.06
15.933	0.06	0.06	0.06	0.06	0.06
16.017	0.06	0.06	0.06	0.06	0.06
16.100	0.06	0.06	0.06	0.06	0.05
16.183	0.05	0.05	0.05	0.05	0.05
16.267	0.05	0.05	0.05	0.05	0.05
16.350	0.05	0.05	0.05	0.05	0.05
16.433	0.05	0.05	0.05	0.05	0.05
16.517	0.05	0.05	0.05	0.05	0.05
16.600	0.05	0.05	0.05	0.05	0.05
16.683	0.05	0.05	0.05	0.05	0.05
16.767	0.05	0.05	0.05	0.05	0.05
16.850	0.05	0.05	0.05	0.05	0.05
16.933	0.05	0.05	0.05	0.05	0.05
17.017	0.05	0.05	0.05	0.05	0.05
17.100	0.05	0.05	0.05	0.05	0.05
17.183	0.05	0.05	0.05	0.05	0.05
17.267	0.05	0.05	0.05	0.05	0.05
17.350	0.05	0.05	0.05	0.05	0.05
17.433	0.05	0.05	0.05	0.05	0.05
17.517	0.05	0.05	0.05	0.05	0.05
17.600	0.05	0.05	0.05	0.05	0.05
17.683	0.05	0.05	0.05	0.05	0.05
17.767	0.05	0.04	0.04	0.04	0.04
17.850	0.04	0.04	0.04	0.04	0.04
17.933	0.04	0.04	0.04	0.04	0.04
18.017	0.04	0.04	0.04	0.04	0.04
18.100	0.04	0.04	0.04	0.04	0.04
18.183	0.04	0.04	0.04	0.04	0.04
18.267	0.04	0.04	0.04	0.04	0.04
18.350	0.04	0.04	0.04	0.04	0.04
18.433	0.04	0.04	0.04	0.04	0.04
18.517	0.04	0.04	0.04	0.04	0.04
18.600	0.04	0.04	0.04	0.04	0.04
18.683	0.04	0.04	0.04	0.04	0.04
18.767	0.04	0.04	0.04	0.04	0.04
18.850	0.04	0.04	0.04	0.04	0.04
18.933	0.04	0.04	0.04	0.04	0.04
19.017	0.04	0.04	0.04	0.04	0.04
19.100	0.04	0.04	0.04	0.04	0.04
19.183	0.04	0.04	0.04	0.04	0.04
19.267	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.350	0.04	0.04	0.04	0.04	0.04
19.433	0.04	0.04	0.04	0.04	0.04
19.517	0.03	0.03	0.03	0.03	0.03
19.600	0.03	0.03	0.03	0.03	0.03
19.683	0.03	0.03	0.03	0.03	0.03
19.767	0.03	0.03	0.03	0.03	0.03
19.850	0.03	0.03	0.03	0.03	0.03
19.933	0.03	0.03	0.03	0.03	0.03
20.017	0.03	0.03	0.03	0.03	0.03
20.100	0.03	0.03	0.03	0.03	0.03
20.183	0.03	0.03	0.03	0.03	0.03
20.267	0.03	0.03	0.03	0.03	0.03
20.350	0.03	0.03	0.03	0.03	0.03
20.433	0.03	0.03	0.03	0.03	0.03
20.517	0.03	0.03	0.03	0.03	0.03
20.600	0.03	0.03	0.03	0.03	0.03
20.683	0.03	0.03	0.03	0.03	0.03
20.767	0.03	0.03	0.03	0.03	0.03
20.850	0.03	0.03	0.03	0.03	0.03
20.933	0.03	0.03	0.03	0.03	0.03
21.017	0.03	0.03	0.03	0.03	0.03
21.100	0.03	0.03	0.03	0.03	0.03
21.183	0.03	0.03	0.03	0.03	0.03
21.267	0.03	0.03	0.03	0.03	0.03
21.350	0.03	0.03	0.03	0.03	0.03
21.433	0.03	0.03	0.03	0.03	0.03
21.517	0.03	0.03	0.03	0.03	0.03
21.600	0.03	0.03	0.03	0.03	0.03
21.683	0.03	0.03	0.03	0.03	0.03
21.767	0.03	0.03	0.03	0.03	0.03
21.850	0.03	0.03	0.03	0.03	0.03
21.933	0.03	0.03	0.03	0.03	0.03
22.017	0.03	0.03	0.03	0.03	0.03
22.100	0.03	0.03	0.03	0.03	0.03
22.183	0.03	0.03	0.03	0.03	0.03
22.267	0.03	0.03	0.03	0.03	0.03
22.350	0.03	0.03	0.03	0.03	0.03
22.433	0.03	0.03	0.03	0.03	0.03
22.517	0.03	0.03	0.03	0.03	0.03
22.600	0.03	0.03	0.03	0.03	0.03
22.683	0.03	0.03	0.03	0.03	0.03
22.767	0.03	0.03	0.03	0.03	0.03
22.850	0.03	0.03	0.03	0.03	0.03
22.933	0.03	0.03	0.03	0.03	0.03
23.017	0.03	0.03	0.03	0.03	0.03
23.100	0.03	0.03	0.03	0.03	0.03
23.183	0.03	0.03	0.03	0.03	0.03
23.267	0.03	0.03	0.03	0.03	0.03
23.350	0.03	0.03	0.03	0.03	0.03
23.433	0.03	0.03	0.03	0.03	0.03
23.517	0.03	0.03	0.03	0.03	0.03
23.600	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.683	0.03	0.03	0.03	0.03	0.03
23.767	0.03	0.03	0.03	0.03	0.03
23.850	0.03	0.03	0.03	0.03	0.03
23.933	0.03	0.03	0.03	0.03	0.03


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.037 hours
Flow (Peak, Computed)	2.37 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.050 hours
Flow (Peak Interpolated Output)	2.36 ft³/s

Drainage Area	
SCS CN (Composite)	82.000
Area (User Defined)	0.553 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	0.169 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.168 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.268 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	2.34 ft³/s
Unit peak time, Tp	0.179 hours
Unit receding limb, Tr	0.714 hours
Total unit time, Tb	0.893 hours

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.268 hours
Area (User Defined)	0.553 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.267	0.00	0.00	0.00	0.00	0.00
6.350	0.00	0.00	0.00	0.00	0.00
6.433	0.00	0.00	0.00	0.00	0.00
6.517	0.00	0.00	0.00	0.00	0.00
6.600	0.00	0.00	0.00	0.00	0.00
6.683	0.00	0.00	0.00	0.00	0.00
6.767	0.00	0.00	0.00	0.00	0.00
6.850	0.00	0.00	0.00	0.00	0.00
6.933	0.00	0.00	0.00	0.00	0.01
7.017	0.01	0.01	0.01	0.01	0.01
7.100	0.01	0.01	0.01	0.01	0.01
7.183	0.01	0.01	0.01	0.01	0.01
7.267	0.01	0.01	0.01	0.01	0.01
7.350	0.01	0.01	0.01	0.01	0.01
7.433	0.01	0.01	0.01	0.01	0.01
7.517	0.01	0.01	0.01	0.01	0.01
7.600	0.01	0.01	0.01	0.01	0.01
7.683	0.01	0.01	0.01	0.01	0.01
7.767	0.01	0.01	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
7.933	0.01	0.01	0.01	0.01	0.01
8.017	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.183	0.01	0.01	0.01	0.01	0.01
8.267	0.01	0.01	0.01	0.01	0.01
8.350	0.01	0.01	0.02	0.02	0.02
8.433	0.02	0.02	0.02	0.02	0.02
8.517	0.02	0.02	0.02	0.02	0.02
8.600	0.02	0.02	0.02	0.02	0.02
8.683	0.02	0.02	0.02	0.02	0.02
8.767	0.02	0.02	0.02	0.02	0.02
8.850	0.02	0.02	0.02	0.02	0.02
8.933	0.02	0.02	0.02	0.02	0.02
9.017	0.02	0.02	0.03	0.03	0.03
9.100	0.03	0.03	0.03	0.03	0.03
9.183	0.03	0.03	0.03	0.03	0.03
9.267	0.03	0.03	0.03	0.03	0.03
9.350	0.03	0.03	0.03	0.03	0.03
9.433	0.03	0.03	0.03	0.03	0.03
9.517	0.03	0.03	0.03	0.03	0.03
9.600	0.03	0.03	0.03	0.03	0.03
9.683	0.03	0.03	0.03	0.03	0.03
9.767	0.03	0.04	0.04	0.04	0.04
9.850	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.933	0.04	0.04	0.04	0.04	0.04
10.017	0.04	0.04	0.04	0.04	0.04
10.100	0.04	0.04	0.05	0.05	0.05
10.183	0.05	0.05	0.05	0.05	0.05
10.267	0.05	0.05	0.05	0.05	0.05
10.350	0.05	0.05	0.05	0.06	0.06
10.433	0.06	0.06	0.06	0.06	0.06
10.517	0.06	0.06	0.06	0.06	0.06
10.600	0.07	0.07	0.07	0.07	0.07
10.683	0.07	0.07	0.07	0.07	0.07
10.767	0.08	0.08	0.08	0.08	0.08
10.850	0.08	0.08	0.08	0.09	0.09
10.933	0.09	0.09	0.09	0.09	0.09
11.017	0.09	0.10	0.10	0.10	0.10
11.100	0.10	0.10	0.11	0.11	0.11
11.183	0.11	0.11	0.12	0.12	0.12
11.267	0.13	0.13	0.13	0.13	0.14
11.350	0.14	0.14	0.15	0.15	0.15
11.433	0.16	0.16	0.16	0.17	0.17
11.517	0.17	0.18	0.19	0.20	0.21
11.600	0.22	0.24	0.26	0.29	0.32
11.683	0.35	0.40	0.44	0.50	0.56
11.767	0.62	0.69	0.77	0.86	0.95
11.850	1.06	1.18	1.31	1.45	1.60
11.933	1.75	1.89	2.03	2.14	2.25
12.017	2.31	2.36	2.36	2.35	2.29
12.100	2.21	2.10	1.97	1.84	1.70
12.183	1.56	1.43	1.30	1.18	1.07
12.267	0.99	0.90	0.84	0.78	0.73
12.350	0.68	0.64	0.60	0.57	0.54
12.433	0.51	0.49	0.46	0.44	0.42
12.517	0.40	0.39	0.37	0.36	0.34
12.600	0.33	0.32	0.31	0.30	0.29
12.683	0.28	0.27	0.26	0.26	0.25
12.767	0.25	0.24	0.24	0.23	0.23
12.850	0.22	0.22	0.22	0.21	0.21
12.933	0.21	0.21	0.20	0.20	0.20
13.017	0.20	0.19	0.19	0.19	0.19
13.100	0.18	0.18	0.18	0.18	0.18
13.183	0.17	0.17	0.17	0.17	0.17
13.267	0.17	0.16	0.16	0.16	0.16
13.350	0.16	0.16	0.16	0.15	0.15
13.433	0.15	0.15	0.15	0.15	0.15
13.517	0.14	0.14	0.14	0.14	0.14
13.600	0.14	0.14	0.14	0.14	0.13
13.683	0.13	0.13	0.13	0.13	0.13
13.767	0.13	0.13	0.13	0.12	0.12
13.850	0.12	0.12	0.12	0.12	0.12
13.933	0.12	0.12	0.12	0.12	0.11
14.017	0.11	0.11	0.11	0.11	0.11
14.100	0.11	0.11	0.11	0.11	0.11
14.183	0.11	0.11	0.10	0.10	0.10

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

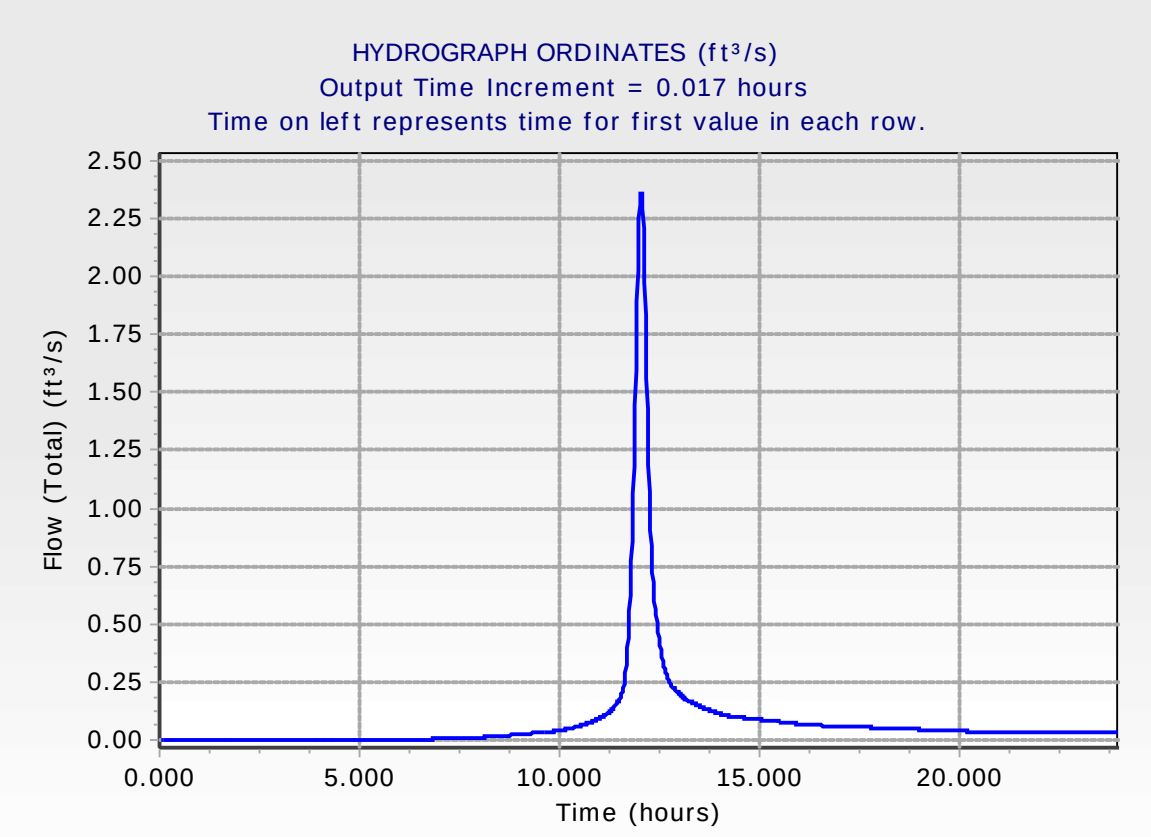
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.267	0.10	0.10	0.10	0.10	0.10
14.350	0.10	0.10	0.10	0.10	0.10
14.433	0.10	0.10	0.10	0.10	0.10
14.517	0.10	0.10	0.10	0.10	0.10
14.600	0.10	0.10	0.09	0.09	0.09
14.683	0.09	0.09	0.09	0.09	0.09
14.767	0.09	0.09	0.09	0.09	0.09
14.850	0.09	0.09	0.09	0.09	0.09
14.933	0.09	0.09	0.09	0.09	0.09
15.017	0.09	0.09	0.09	0.09	0.09
15.100	0.09	0.09	0.09	0.09	0.08
15.183	0.08	0.08	0.08	0.08	0.08
15.267	0.08	0.08	0.08	0.08	0.08
15.350	0.08	0.08	0.08	0.08	0.08
15.433	0.08	0.08	0.08	0.08	0.08
15.517	0.08	0.08	0.08	0.08	0.08
15.600	0.08	0.08	0.08	0.08	0.08
15.683	0.07	0.07	0.07	0.07	0.07
15.767	0.07	0.07	0.07	0.07	0.07
15.850	0.07	0.07	0.07	0.07	0.07
15.933	0.07	0.07	0.07	0.07	0.07
16.017	0.07	0.07	0.07	0.07	0.07
16.100	0.07	0.07	0.07	0.07	0.07
16.183	0.07	0.07	0.07	0.07	0.06
16.267	0.06	0.06	0.06	0.06	0.06
16.350	0.06	0.06	0.06	0.06	0.06
16.433	0.06	0.06	0.06	0.06	0.06
16.517	0.06	0.06	0.06	0.06	0.06
16.600	0.06	0.06	0.06	0.06	0.06
16.683	0.06	0.06	0.06	0.06	0.06
16.767	0.06	0.06	0.06	0.06	0.06
16.850	0.06	0.06	0.06	0.06	0.06
16.933	0.06	0.06	0.06	0.06	0.06
17.017	0.06	0.06	0.06	0.06	0.06
17.100	0.06	0.06	0.06	0.06	0.06
17.183	0.06	0.06	0.06	0.06	0.06
17.267	0.06	0.06	0.06	0.06	0.06
17.350	0.06	0.06	0.06	0.06	0.06
17.433	0.06	0.06	0.06	0.06	0.06
17.517	0.06	0.06	0.06	0.06	0.06
17.600	0.06	0.06	0.06	0.05	0.05
17.683	0.05	0.05	0.05	0.05	0.05
17.767	0.05	0.05	0.05	0.05	0.05
17.850	0.05	0.05	0.05	0.05	0.05
17.933	0.05	0.05	0.05	0.05	0.05
18.017	0.05	0.05	0.05	0.05	0.05
18.100	0.05	0.05	0.05	0.05	0.05
18.183	0.05	0.05	0.05	0.05	0.05
18.267	0.05	0.05	0.05	0.05	0.05
18.350	0.05	0.05	0.05	0.05	0.05
18.433	0.05	0.05	0.05	0.05	0.05
18.517	0.05	0.05	0.05	0.05	0.05

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.600	0.05	0.05	0.05	0.05	0.05
18.683	0.05	0.05	0.05	0.05	0.05
18.767	0.05	0.05	0.05	0.05	0.05
18.850	0.05	0.05	0.05	0.05	0.05
18.933	0.05	0.05	0.05	0.05	0.05
19.017	0.05	0.05	0.05	0.05	0.05
19.100	0.04	0.04	0.04	0.04	0.04
19.183	0.04	0.04	0.04	0.04	0.04
19.267	0.04	0.04	0.04	0.04	0.04
19.350	0.04	0.04	0.04	0.04	0.04
19.433	0.04	0.04	0.04	0.04	0.04
19.517	0.04	0.04	0.04	0.04	0.04
19.600	0.04	0.04	0.04	0.04	0.04
19.683	0.04	0.04	0.04	0.04	0.04
19.767	0.04	0.04	0.04	0.04	0.04
19.850	0.04	0.04	0.04	0.04	0.04
19.933	0.04	0.04	0.04	0.04	0.04
20.017	0.04	0.04	0.04	0.04	0.04
20.100	0.04	0.04	0.04	0.04	0.04
20.183	0.04	0.04	0.04	0.04	0.04
20.267	0.04	0.04	0.04	0.04	0.04
20.350	0.04	0.04	0.04	0.04	0.04
20.433	0.04	0.04	0.04	0.04	0.04
20.517	0.04	0.04	0.04	0.04	0.04
20.600	0.04	0.04	0.04	0.04	0.04
20.683	0.04	0.04	0.04	0.04	0.04
20.767	0.04	0.04	0.04	0.04	0.04
20.850	0.04	0.04	0.04	0.04	0.04
20.933	0.04	0.04	0.04	0.04	0.04
21.017	0.04	0.04	0.04	0.04	0.04
21.100	0.04	0.04	0.04	0.04	0.04
21.183	0.04	0.04	0.04	0.04	0.04
21.267	0.04	0.04	0.04	0.04	0.04
21.350	0.04	0.04	0.04	0.04	0.04
21.433	0.04	0.04	0.04	0.04	0.04
21.517	0.04	0.04	0.04	0.04	0.04
21.600	0.04	0.04	0.04	0.04	0.04
21.683	0.04	0.04	0.04	0.04	0.03
21.767	0.03	0.03	0.03	0.03	0.03
21.850	0.03	0.03	0.03	0.03	0.03
21.933	0.03	0.03	0.03	0.03	0.03
22.017	0.03	0.03	0.03	0.03	0.03
22.100	0.03	0.03	0.03	0.03	0.03
22.183	0.03	0.03	0.03	0.03	0.03
22.267	0.03	0.03	0.03	0.03	0.03
22.350	0.03	0.03	0.03	0.03	0.03
22.433	0.03	0.03	0.03	0.03	0.03
22.517	0.03	0.03	0.03	0.03	0.03
22.600	0.03	0.03	0.03	0.03	0.03
22.683	0.03	0.03	0.03	0.03	0.03
22.767	0.03	0.03	0.03	0.03	0.03
22.850	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
22.933	0.03	0.03	0.03	0.03	0.03
23.017	0.03	0.03	0.03	0.03	0.03
23.100	0.03	0.03	0.03	0.03	0.03
23.183	0.03	0.03	0.03	0.03	0.03
23.267	0.03	0.03	0.03	0.03	0.03
23.350	0.03	0.03	0.03	0.03	0.03
23.433	0.03	0.03	0.03	0.03	0.03
23.517	0.03	0.03	0.03	0.03	0.03
23.600	0.03	0.03	0.03	0.03	0.03
23.683	0.03	0.03	0.03	0.03	0.03
23.767	0.03	0.03	0.03	0.03	0.03
23.850	0.03	0.03	0.03	0.03	0.03
23.933	0.03	0.03	0.03	0.03	0.03


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	2 year
Return Event	2 years
Duration	24.000 hours
Depth	2.4 in
Time of Concentration (Composite)	0.271 hours
Area (User Defined)	1.233 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.084 hours
Flow (Peak, Computed)	0.94 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.083 hours
Flow (Peak Interpolated Output)	0.94 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	1.233 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.7 in
Runoff Volume (Pervious)	0.071 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.071 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.271 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	5.15 ft³/s
Unit peak time, Tp	0.181 hours
Unit receding limb, Tr	0.724 hours
Total unit time, Tb	0.905 hours

Storm Event	2 year
Return Event	2 years
Duration	24.000 hours
Depth	2.4 in
Time of Concentration (Composite)	0.271 hours
Area (User Defined)	1.233 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.250	0.00	0.00	0.00	0.00	0.00
11.333	0.00	0.00	0.00	0.00	0.01
11.417	0.01	0.01	0.01	0.01	0.01
11.500	0.01	0.01	0.01	0.01	0.02
11.583	0.02	0.02	0.02	0.03	0.03
11.667	0.04	0.05	0.06	0.07	0.08
11.750	0.09	0.11	0.13	0.15	0.18
11.833	0.21	0.26	0.30	0.35	0.41
11.917	0.48	0.55	0.62	0.69	0.75
12.000	0.81	0.86	0.90	0.93	0.94
12.083	0.94	0.92	0.89	0.85	0.80
12.167	0.75	0.70	0.64	0.59	0.55
12.250	0.50	0.46	0.43	0.40	0.37
12.333	0.35	0.33	0.31	0.30	0.28
12.417	0.27	0.26	0.25	0.24	0.23
12.500	0.22	0.21	0.20	0.19	0.19
12.583	0.18	0.17	0.17	0.16	0.16
12.667	0.15	0.15	0.15	0.14	0.14
12.750	0.14	0.13	0.13	0.13	0.13
12.833	0.12	0.12	0.12	0.12	0.12
12.917	0.12	0.11	0.11	0.11	0.11
13.000	0.11	0.11	0.11	0.10	0.10
13.083	0.10	0.10	0.10	0.10	0.10
13.167	0.10	0.10	0.10	0.09	0.09
13.250	0.09	0.09	0.09	0.09	0.09
13.333	0.09	0.09	0.09	0.09	0.09
13.417	0.09	0.08	0.08	0.08	0.08
13.500	0.08	0.08	0.08	0.08	0.08
13.583	0.08	0.08	0.08	0.08	0.08
13.667	0.08	0.08	0.07	0.07	0.07
13.750	0.07	0.07	0.07	0.07	0.07
13.833	0.07	0.07	0.07	0.07	0.07
13.917	0.07	0.07	0.07	0.07	0.07
14.000	0.07	0.06	0.06	0.06	0.06
14.083	0.06	0.06	0.06	0.06	0.06
14.167	0.06	0.06	0.06	0.06	0.06
14.250	0.06	0.06	0.06	0.06	0.06
14.333	0.06	0.06	0.06	0.06	0.06
14.417	0.06	0.06	0.06	0.06	0.06
14.500	0.06	0.06	0.06	0.06	0.06
14.583	0.06	0.06	0.06	0.06	0.05
14.667	0.05	0.05	0.05	0.05	0.05
14.750	0.05	0.05	0.05	0.05	0.05
14.833	0.05	0.05	0.05	0.05	0.05

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

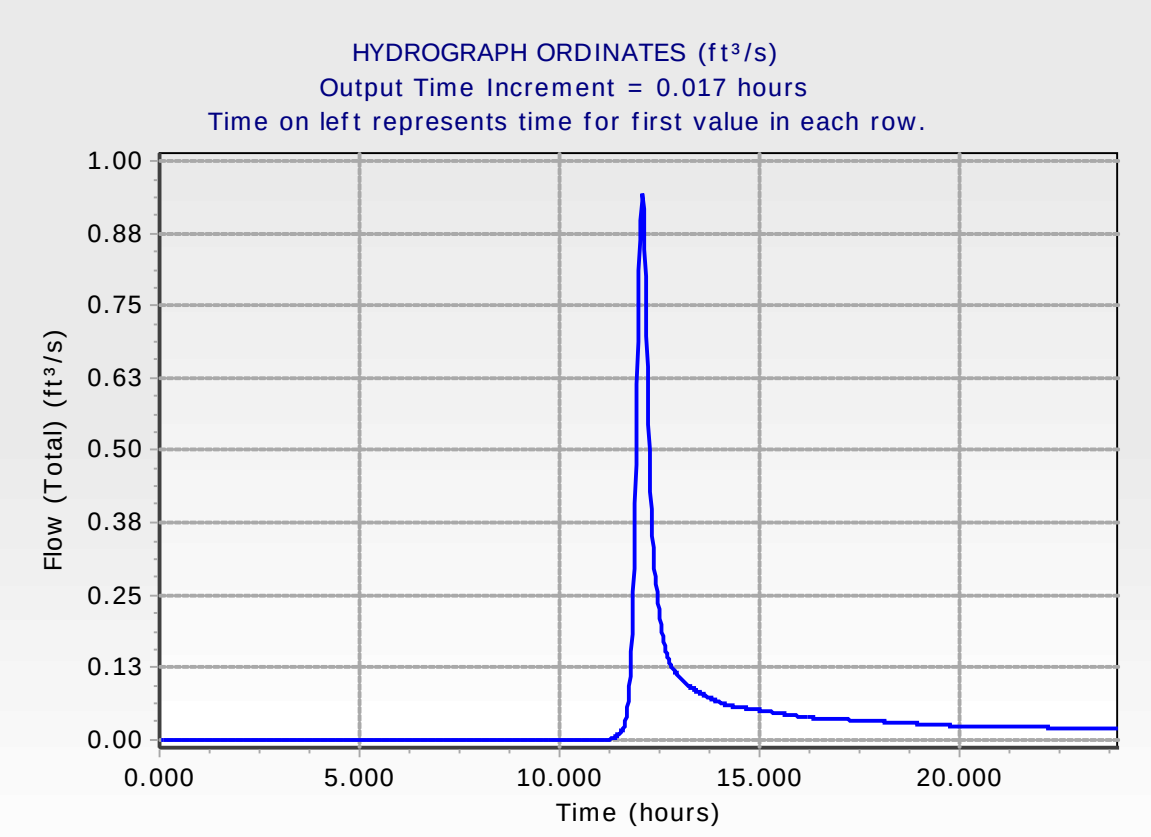
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.917	0.05	0.05	0.05	0.05	0.05
15.000	0.05	0.05	0.05	0.05	0.05
15.083	0.05	0.05	0.05	0.05	0.05
15.167	0.05	0.05	0.05	0.05	0.05
15.250	0.05	0.05	0.05	0.05	0.05
15.333	0.05	0.05	0.05	0.05	0.05
15.417	0.05	0.05	0.05	0.05	0.05
15.500	0.05	0.05	0.05	0.05	0.05
15.583	0.05	0.05	0.05	0.04	0.04
15.667	0.04	0.04	0.04	0.04	0.04
15.750	0.04	0.04	0.04	0.04	0.04
15.833	0.04	0.04	0.04	0.04	0.04
15.917	0.04	0.04	0.04	0.04	0.04
16.000	0.04	0.04	0.04	0.04	0.04
16.083	0.04	0.04	0.04	0.04	0.04
16.167	0.04	0.04	0.04	0.04	0.04
16.250	0.04	0.04	0.04	0.04	0.04
16.333	0.04	0.04	0.04	0.04	0.04
16.417	0.04	0.04	0.04	0.04	0.04
16.500	0.04	0.04	0.04	0.04	0.04
16.583	0.04	0.04	0.04	0.04	0.04
16.667	0.04	0.04	0.04	0.04	0.04
16.750	0.04	0.04	0.04	0.04	0.04
16.833	0.04	0.04	0.04	0.04	0.04
16.917	0.04	0.04	0.04	0.04	0.04
17.000	0.04	0.04	0.04	0.04	0.04
17.083	0.04	0.04	0.04	0.04	0.04
17.167	0.04	0.04	0.04	0.04	0.03
17.250	0.03	0.03	0.03	0.03	0.03
17.333	0.03	0.03	0.03	0.03	0.03
17.417	0.03	0.03	0.03	0.03	0.03
17.500	0.03	0.03	0.03	0.03	0.03
17.583	0.03	0.03	0.03	0.03	0.03
17.667	0.03	0.03	0.03	0.03	0.03
17.750	0.03	0.03	0.03	0.03	0.03
17.833	0.03	0.03	0.03	0.03	0.03
17.917	0.03	0.03	0.03	0.03	0.03
18.000	0.03	0.03	0.03	0.03	0.03
18.083	0.03	0.03	0.03	0.03	0.03
18.167	0.03	0.03	0.03	0.03	0.03
18.250	0.03	0.03	0.03	0.03	0.03
18.333	0.03	0.03	0.03	0.03	0.03
18.417	0.03	0.03	0.03	0.03	0.03
18.500	0.03	0.03	0.03	0.03	0.03
18.583	0.03	0.03	0.03	0.03	0.03
18.667	0.03	0.03	0.03	0.03	0.03
18.750	0.03	0.03	0.03	0.03	0.03
18.833	0.03	0.03	0.03	0.03	0.03
18.917	0.03	0.03	0.03	0.03	0.03
19.000	0.03	0.03	0.03	0.03	0.03
19.083	0.03	0.03	0.03	0.03	0.03
19.167	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.250	0.03	0.03	0.03	0.03	0.03
19.333	0.03	0.03	0.03	0.03	0.03
19.417	0.03	0.03	0.03	0.03	0.03
19.500	0.03	0.03	0.03	0.03	0.03
19.583	0.03	0.03	0.03	0.03	0.03
19.667	0.03	0.03	0.03	0.03	0.03
19.750	0.02	0.02	0.02	0.02	0.02
19.833	0.02	0.02	0.02	0.02	0.02
19.917	0.02	0.02	0.02	0.02	0.02
20.000	0.02	0.02	0.02	0.02	0.02
20.083	0.02	0.02	0.02	0.02	0.02
20.167	0.02	0.02	0.02	0.02	0.02
20.250	0.02	0.02	0.02	0.02	0.02
20.333	0.02	0.02	0.02	0.02	0.02
20.417	0.02	0.02	0.02	0.02	0.02
20.500	0.02	0.02	0.02	0.02	0.02
20.583	0.02	0.02	0.02	0.02	0.02
20.667	0.02	0.02	0.02	0.02	0.02
20.750	0.02	0.02	0.02	0.02	0.02
20.833	0.02	0.02	0.02	0.02	0.02
20.917	0.02	0.02	0.02	0.02	0.02
21.000	0.02	0.02	0.02	0.02	0.02
21.083	0.02	0.02	0.02	0.02	0.02
21.167	0.02	0.02	0.02	0.02	0.02
21.250	0.02	0.02	0.02	0.02	0.02
21.333	0.02	0.02	0.02	0.02	0.02
21.417	0.02	0.02	0.02	0.02	0.02
21.500	0.02	0.02	0.02	0.02	0.02
21.583	0.02	0.02	0.02	0.02	0.02
21.667	0.02	0.02	0.02	0.02	0.02
21.750	0.02	0.02	0.02	0.02	0.02
21.833	0.02	0.02	0.02	0.02	0.02
21.917	0.02	0.02	0.02	0.02	0.02
22.000	0.02	0.02	0.02	0.02	0.02
22.083	0.02	0.02	0.02	0.02	0.02
22.167	0.02	0.02	0.02	0.02	0.02
22.250	0.02	0.02	0.02	0.02	0.02
22.333	0.02	0.02	0.02	0.02	0.02
22.417	0.02	0.02	0.02	0.02	0.02
22.500	0.02	0.02	0.02	0.02	0.02
22.583	0.02	0.02	0.02	0.02	0.02
22.667	0.02	0.02	0.02	0.02	0.02
22.750	0.02	0.02	0.02	0.02	0.02
22.833	0.02	0.02	0.02	0.02	0.02
22.917	0.02	0.02	0.02	0.02	0.02
23.000	0.02	0.02	0.02	0.02	0.02
23.083	0.02	0.02	0.02	0.02	0.02
23.167	0.02	0.02	0.02	0.02	0.02
23.250	0.02	0.02	0.02	0.02	0.02
23.333	0.02	0.02	0.02	0.02	0.02
23.417	0.02	0.02	0.02	0.02	0.02
23.500	0.02	0.02	0.02	0.02	0.02

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.583	0.02	0.02	0.02	0.02	0.02
23.667	0.02	0.02	0.02	0.02	0.02
23.750	0.02	0.02	0.02	0.02	0.02
23.833	0.02	0.02	0.02	0.02	0.02
23.917	0.02	0.02	0.02	0.02	0.02
24.000	0.02	(N/A)	(N/A)	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
1.00
0.88
0.75
0.63
0.50
0.38
0.25
0.13
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	3.4 in
Time of Concentration (Composite)	0.271 hours
Area (User Defined)	1.233 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.048 hours
Flow (Peak, Computed)	2.00 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.050 hours
Flow (Peak Interpolated Output)	2.00 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	1.233 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.4 in
Runoff Volume (Pervious)	0.144 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.143 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.271 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	5.15 ft³/s
Unit peak time, Tp	0.181 hours
Unit receding limb, Tr	0.724 hours
Total unit time, Tb	0.905 hours

Storm Event	10 year
Return Event	10 years
Duration	24.000 hours
Depth	3.4 in
Time of Concentration (Composite)	0.271 hours
Area (User Defined)	1.233 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.900	0.00	0.00	0.00	0.00	0.00
9.983	0.00	0.00	0.00	0.00	0.00
10.067	0.00	0.00	0.00	0.00	0.00
10.150	0.00	0.00	0.00	0.01	0.01
10.233	0.01	0.01	0.01	0.01	0.01
10.317	0.01	0.01	0.01	0.01	0.01
10.400	0.01	0.01	0.01	0.01	0.01
10.483	0.01	0.01	0.01	0.01	0.01
10.567	0.01	0.01	0.01	0.02	0.02
10.650	0.02	0.02	0.02	0.02	0.02
10.733	0.02	0.02	0.02	0.02	0.02
10.817	0.02	0.02	0.02	0.02	0.03
10.900	0.03	0.03	0.03	0.03	0.03
10.983	0.03	0.03	0.03	0.03	0.03
11.067	0.03	0.04	0.04	0.04	0.04
11.150	0.04	0.04	0.04	0.04	0.05
11.233	0.05	0.05	0.05	0.05	0.05
11.317	0.06	0.06	0.06	0.06	0.06
11.400	0.07	0.07	0.07	0.07	0.07
11.483	0.08	0.08	0.08	0.09	0.09
11.567	0.10	0.10	0.11	0.12	0.14
11.650	0.15	0.17	0.19	0.22	0.25
11.733	0.29	0.33	0.37	0.43	0.48
11.817	0.55	0.62	0.71	0.80	0.92
11.900	1.04	1.17	1.31	1.45	1.58
11.983	1.70	1.81	1.89	1.95	2.00
12.067	1.99	1.98	1.92	1.85	1.75
12.150	1.64	1.53	1.41	1.30	1.19
12.233	1.09	1.00	0.92	0.85	0.79
12.317	0.74	0.69	0.65	0.61	0.58
12.400	0.55	0.52	0.49	0.47	0.45
12.483	0.43	0.41	0.40	0.38	0.37
12.567	0.35	0.34	0.33	0.32	0.31
12.650	0.30	0.29	0.28	0.27	0.26
12.733	0.26	0.25	0.25	0.24	0.24
12.817	0.23	0.23	0.22	0.22	0.22
12.900	0.22	0.21	0.21	0.21	0.20
12.983	0.20	0.20	0.20	0.19	0.19
13.067	0.19	0.19	0.19	0.18	0.18
13.150	0.18	0.18	0.18	0.17	0.17
13.233	0.17	0.17	0.17	0.17	0.16
13.317	0.16	0.16	0.16	0.16	0.16
13.400	0.16	0.16	0.15	0.15	0.15
13.483	0.15	0.15	0.15	0.15	0.15

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

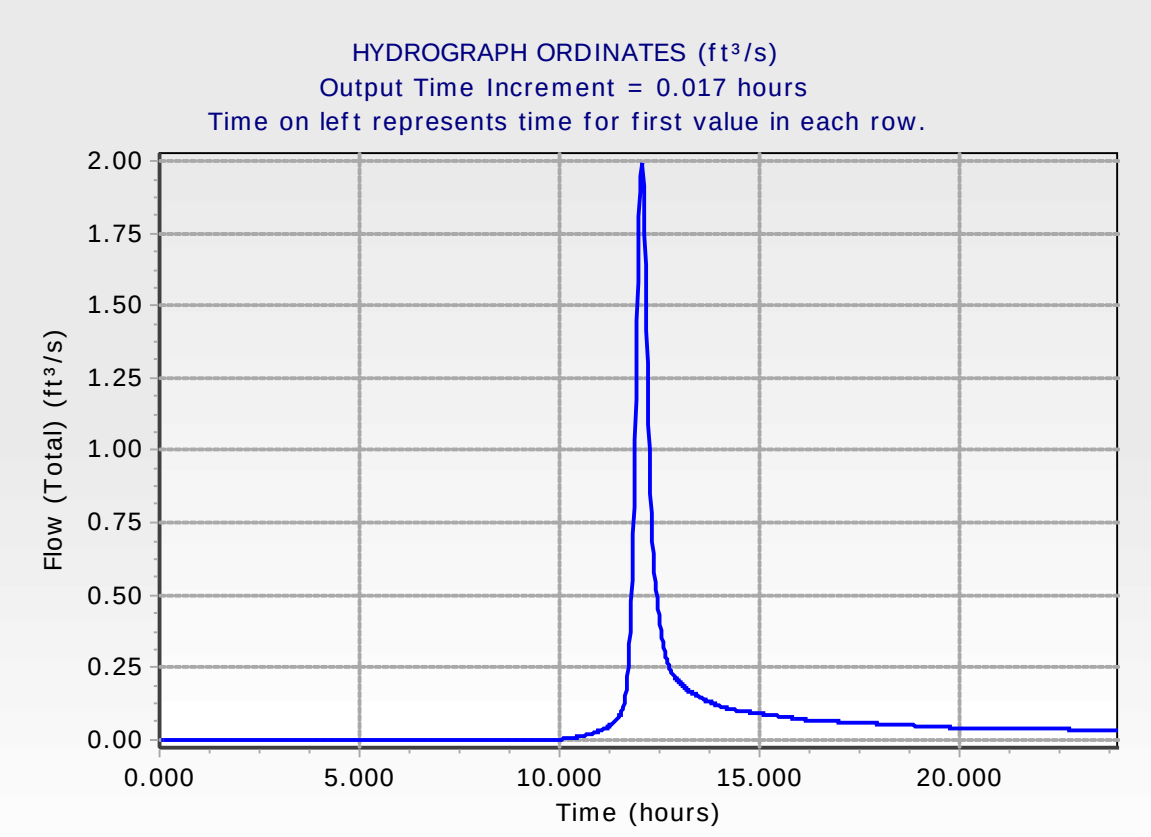
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
13.567	0.14	0.14	0.14	0.14	0.14
13.650	0.14	0.14	0.14	0.14	0.13
13.733	0.13	0.13	0.13	0.13	0.13
13.817	0.13	0.13	0.13	0.13	0.12
13.900	0.12	0.12	0.12	0.12	0.12
13.983	0.12	0.12	0.12	0.12	0.12
14.067	0.11	0.11	0.11	0.11	0.11
14.150	0.11	0.11	0.11	0.11	0.11
14.233	0.11	0.11	0.11	0.11	0.11
14.317	0.10	0.10	0.10	0.10	0.10
14.400	0.10	0.10	0.10	0.10	0.10
14.483	0.10	0.10	0.10	0.10	0.10
14.567	0.10	0.10	0.10	0.10	0.10
14.650	0.10	0.10	0.10	0.10	0.10
14.733	0.10	0.10	0.10	0.10	0.10
14.817	0.10	0.09	0.09	0.09	0.09
14.900	0.09	0.09	0.09	0.09	0.09
14.983	0.09	0.09	0.09	0.09	0.09
15.067	0.09	0.09	0.09	0.09	0.09
15.150	0.09	0.09	0.09	0.09	0.09
15.233	0.09	0.09	0.09	0.09	0.09
15.317	0.09	0.09	0.09	0.08	0.08
15.400	0.08	0.08	0.08	0.08	0.08
15.483	0.08	0.08	0.08	0.08	0.08
15.567	0.08	0.08	0.08	0.08	0.08
15.650	0.08	0.08	0.08	0.08	0.08
15.733	0.08	0.08	0.08	0.08	0.08
15.817	0.08	0.08	0.08	0.08	0.07
15.900	0.07	0.07	0.07	0.07	0.07
15.983	0.07	0.07	0.07	0.07	0.07
16.067	0.07	0.07	0.07	0.07	0.07
16.150	0.07	0.07	0.07	0.07	0.07
16.233	0.07	0.07	0.07	0.07	0.07
16.317	0.07	0.07	0.07	0.07	0.07
16.400	0.07	0.07	0.07	0.07	0.07
16.483	0.07	0.07	0.07	0.07	0.07
16.567	0.07	0.07	0.07	0.07	0.07
16.650	0.07	0.07	0.07	0.07	0.06
16.733	0.06	0.06	0.06	0.06	0.06
16.817	0.06	0.06	0.06	0.06	0.06
16.900	0.06	0.06	0.06	0.06	0.06
16.983	0.06	0.06	0.06	0.06	0.06
17.067	0.06	0.06	0.06	0.06	0.06
17.150	0.06	0.06	0.06	0.06	0.06
17.233	0.06	0.06	0.06	0.06	0.06
17.317	0.06	0.06	0.06	0.06	0.06
17.400	0.06	0.06	0.06	0.06	0.06
17.483	0.06	0.06	0.06	0.06	0.06
17.567	0.06	0.06	0.06	0.06	0.06
17.650	0.06	0.06	0.06	0.06	0.06
17.733	0.06	0.06	0.06	0.06	0.06
17.817	0.06	0.06	0.06	0.06	0.06

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
17.900	0.06	0.06	0.06	0.06	0.06
17.983	0.06	0.06	0.06	0.06	0.06
18.067	0.06	0.06	0.06	0.06	0.06
18.150	0.05	0.05	0.05	0.05	0.05
18.233	0.05	0.05	0.05	0.05	0.05
18.317	0.05	0.05	0.05	0.05	0.05
18.400	0.05	0.05	0.05	0.05	0.05
18.483	0.05	0.05	0.05	0.05	0.05
18.567	0.05	0.05	0.05	0.05	0.05
18.650	0.05	0.05	0.05	0.05	0.05
18.733	0.05	0.05	0.05	0.05	0.05
18.817	0.05	0.05	0.05	0.05	0.05
18.900	0.05	0.05	0.05	0.05	0.05
18.983	0.05	0.05	0.05	0.05	0.05
19.067	0.05	0.05	0.05	0.05	0.05
19.150	0.05	0.05	0.05	0.05	0.05
19.233	0.05	0.05	0.05	0.05	0.05
19.317	0.05	0.05	0.05	0.05	0.05
19.400	0.05	0.05	0.05	0.05	0.05
19.483	0.05	0.05	0.05	0.05	0.04
19.567	0.04	0.04	0.04	0.04	0.04
19.650	0.04	0.04	0.04	0.04	0.04
19.733	0.04	0.04	0.04	0.04	0.04
19.817	0.04	0.04	0.04	0.04	0.04
19.900	0.04	0.04	0.04	0.04	0.04
19.983	0.04	0.04	0.04	0.04	0.04
20.067	0.04	0.04	0.04	0.04	0.04
20.150	0.04	0.04	0.04	0.04	0.04
20.233	0.04	0.04	0.04	0.04	0.04
20.317	0.04	0.04	0.04	0.04	0.04
20.400	0.04	0.04	0.04	0.04	0.04
20.483	0.04	0.04	0.04	0.04	0.04
20.567	0.04	0.04	0.04	0.04	0.04
20.650	0.04	0.04	0.04	0.04	0.04
20.733	0.04	0.04	0.04	0.04	0.04
20.817	0.04	0.04	0.04	0.04	0.04
20.900	0.04	0.04	0.04	0.04	0.04
20.983	0.04	0.04	0.04	0.04	0.04
21.067	0.04	0.04	0.04	0.04	0.04
21.150	0.04	0.04	0.04	0.04	0.04
21.233	0.04	0.04	0.04	0.04	0.04
21.317	0.04	0.04	0.04	0.04	0.04
21.400	0.04	0.04	0.04	0.04	0.04
21.483	0.04	0.04	0.04	0.04	0.04
21.567	0.04	0.04	0.04	0.04	0.04
21.650	0.04	0.04	0.04	0.04	0.04
21.733	0.04	0.04	0.04	0.04	0.04
21.817	0.04	0.04	0.04	0.04	0.04
21.900	0.04	0.04	0.04	0.04	0.04
21.983	0.04	0.04	0.04	0.04	0.04
22.067	0.04	0.04	0.04	0.04	0.04
22.150	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
22.233	0.04	0.04	0.04	0.04	0.04
22.317	0.04	0.04	0.04	0.04	0.04
22.400	0.04	0.04	0.04	0.04	0.04
22.483	0.04	0.04	0.04	0.04	0.04
22.567	0.04	0.04	0.04	0.04	0.04
22.650	0.04	0.04	0.04	0.04	0.04
22.733	0.04	0.04	0.04	0.04	0.04
22.817	0.04	0.04	0.04	0.04	0.04
22.900	0.04	0.04	0.04	0.04	0.04
22.983	0.04	0.04	0.04	0.04	0.04
23.067	0.04	0.04	0.04	0.04	0.04
23.150	0.04	0.04	0.04	0.04	0.04
23.233	0.04	0.04	0.04	0.04	0.04
23.317	0.04	0.04	0.04	0.04	0.04
23.400	0.04	0.04	0.04	0.04	0.04
23.483	0.04	0.04	0.04	0.04	0.04
23.567	0.04	0.04	0.04	0.04	0.04
23.650	0.04	0.04	0.04	0.04	0.04
23.733	0.04	0.04	0.04	0.04	0.04
23.817	0.04	0.04	0.04	0.03	0.03
23.900	0.03	0.03	0.03	0.03	0.03
23.983	0.03	0.03	(N/A)	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	50 year
Return Event	50 years
Duration	24.000 hours
Depth	4.8 in
Time of Concentration (Composite)	0.271 hours
Area (User Defined)	1.233 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.048 hours
Flow (Peak, Computed)	3.73 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.050 hours
Flow (Peak Interpolated Output)	3.73 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	1.233 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.6 in
Runoff Volume (Pervious)	0.265 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.264 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.271 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	5.15 ft³/s
Unit peak time, Tp	0.181 hours
Unit receding limb, Tr	0.724 hours
Total unit time, Tb	0.905 hours

Storm Event	50 year
Return Event	50 years
Duration	24.000 hours
Depth	4.8 in
Time of Concentration (Composite)	0.271 hours
Area (User Defined)	1.233 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.133	0.00	0.00	0.00	0.00	0.00
8.217	0.00	0.00	0.00	0.00	0.00
8.300	0.00	0.00	0.00	0.00	0.00
8.383	0.00	0.00	0.00	0.00	0.00
8.467	0.00	0.00	0.01	0.01	0.01
8.550	0.01	0.01	0.01	0.01	0.01
8.633	0.01	0.01	0.01	0.01	0.01
8.717	0.01	0.01	0.01	0.01	0.01
8.800	0.01	0.01	0.01	0.01	0.01
8.883	0.01	0.01	0.01	0.01	0.01
8.967	0.01	0.01	0.01	0.01	0.01
9.050	0.01	0.02	0.02	0.02	0.02
9.133	0.02	0.02	0.02	0.02	0.02
9.217	0.02	0.02	0.02	0.02	0.02
9.300	0.02	0.02	0.02	0.02	0.02
9.383	0.02	0.02	0.02	0.02	0.02
9.467	0.02	0.02	0.02	0.02	0.02
9.550	0.02	0.02	0.03	0.03	0.03
9.633	0.03	0.03	0.03	0.03	0.03
9.717	0.03	0.03	0.03	0.03	0.03
9.800	0.03	0.03	0.03	0.03	0.03
9.883	0.03	0.03	0.03	0.03	0.04
9.967	0.04	0.04	0.04	0.04	0.04
10.050	0.04	0.04	0.04	0.04	0.04
10.133	0.04	0.04	0.04	0.04	0.05
10.217	0.05	0.05	0.05	0.05	0.05
10.300	0.05	0.05	0.05	0.05	0.05
10.383	0.06	0.06	0.06	0.06	0.06
10.467	0.06	0.06	0.06	0.06	0.06
10.550	0.07	0.07	0.07	0.07	0.07
10.633	0.07	0.07	0.07	0.08	0.08
10.717	0.08	0.08	0.08	0.08	0.08
10.800	0.09	0.09	0.09	0.09	0.09
10.883	0.09	0.10	0.10	0.10	0.10
10.967	0.10	0.11	0.11	0.11	0.11
11.050	0.11	0.12	0.12	0.12	0.12
11.133	0.13	0.13	0.13	0.13	0.14
11.217	0.14	0.14	0.15	0.15	0.16
11.300	0.16	0.16	0.17	0.17	0.18
11.383	0.18	0.19	0.19	0.19	0.20
11.467	0.20	0.21	0.21	0.22	0.23
11.550	0.24	0.25	0.27	0.29	0.31
11.633	0.34	0.38	0.42	0.47	0.53
11.717	0.60	0.67	0.76	0.85	0.95

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

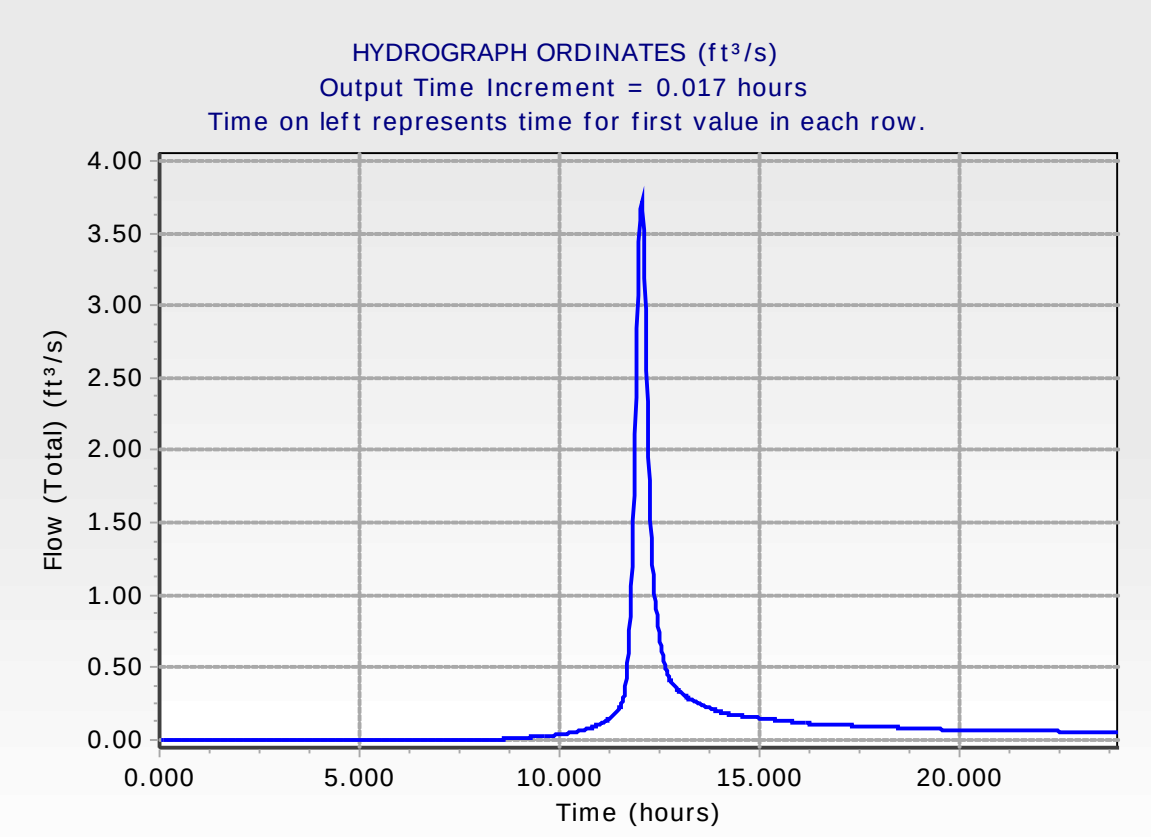
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.800	1.07	1.20	1.34	1.51	1.68
11.883	1.90	2.12	2.36	2.61	2.84
11.967	3.08	3.28	3.45	3.59	3.66
12.050	3.73	3.69	3.66	3.52	3.38
12.133	3.19	2.98	2.77	2.55	2.34
12.217	2.15	1.96	1.80	1.64	1.52
12.300	1.40	1.30	1.22	1.14	1.07
12.383	1.01	0.96	0.91	0.86	0.82
12.467	0.78	0.75	0.72	0.68	0.66
12.550	0.63	0.61	0.58	0.56	0.54
12.633	0.52	0.51	0.49	0.48	0.46
12.717	0.45	0.44	0.43	0.42	0.41
12.800	0.40	0.39	0.39	0.38	0.38
12.883	0.37	0.37	0.36	0.36	0.35
12.967	0.35	0.34	0.34	0.33	0.33
13.050	0.33	0.32	0.32	0.31	0.31
13.133	0.31	0.30	0.30	0.30	0.29
13.217	0.29	0.29	0.29	0.28	0.28
13.300	0.28	0.28	0.27	0.27	0.27
13.383	0.27	0.26	0.26	0.26	0.26
13.467	0.25	0.25	0.25	0.25	0.25
13.550	0.24	0.24	0.24	0.24	0.24
13.633	0.23	0.23	0.23	0.23	0.23
13.717	0.22	0.22	0.22	0.22	0.22
13.800	0.22	0.21	0.21	0.21	0.21
13.883	0.21	0.21	0.20	0.20	0.20
13.967	0.20	0.20	0.20	0.20	0.19
14.050	0.19	0.19	0.19	0.19	0.19
14.133	0.19	0.18	0.18	0.18	0.18
14.217	0.18	0.18	0.18	0.18	0.18
14.300	0.18	0.17	0.17	0.17	0.17
14.383	0.17	0.17	0.17	0.17	0.17
14.467	0.17	0.17	0.17	0.17	0.17
14.550	0.17	0.17	0.17	0.17	0.16
14.633	0.16	0.16	0.16	0.16	0.16
14.717	0.16	0.16	0.16	0.16	0.16
14.800	0.16	0.16	0.16	0.16	0.16
14.883	0.16	0.16	0.15	0.15	0.15
14.967	0.15	0.15	0.15	0.15	0.15
15.050	0.15	0.15	0.15	0.15	0.15
15.133	0.15	0.15	0.15	0.15	0.15
15.217	0.15	0.14	0.14	0.14	0.14
15.300	0.14	0.14	0.14	0.14	0.14
15.383	0.14	0.14	0.14	0.14	0.14
15.467	0.14	0.14	0.14	0.14	0.13
15.550	0.13	0.13	0.13	0.13	0.13
15.633	0.13	0.13	0.13	0.13	0.13
15.717	0.13	0.13	0.13	0.13	0.13
15.800	0.13	0.13	0.13	0.12	0.12
15.883	0.12	0.12	0.12	0.12	0.12
15.967	0.12	0.12	0.12	0.12	0.12
16.050	0.12	0.12	0.12	0.12	0.12

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
16.133	0.12	0.12	0.11	0.11	0.11
16.217	0.11	0.11	0.11	0.11	0.11
16.300	0.11	0.11	0.11	0.11	0.11
16.383	0.11	0.11	0.11	0.11	0.11
16.467	0.11	0.11	0.11	0.11	0.11
16.550	0.11	0.11	0.11	0.11	0.11
16.633	0.11	0.11	0.11	0.11	0.11
16.717	0.11	0.11	0.11	0.11	0.11
16.800	0.11	0.11	0.11	0.11	0.11
16.883	0.10	0.10	0.10	0.10	0.10
16.967	0.10	0.10	0.10	0.10	0.10
17.050	0.10	0.10	0.10	0.10	0.10
17.133	0.10	0.10	0.10	0.10	0.10
17.217	0.10	0.10	0.10	0.10	0.10
17.300	0.10	0.10	0.10	0.10	0.10
17.383	0.10	0.10	0.10	0.10	0.10
17.467	0.10	0.10	0.10	0.10	0.10
17.550	0.10	0.10	0.10	0.10	0.10
17.633	0.10	0.10	0.10	0.10	0.10
17.717	0.10	0.09	0.09	0.09	0.09
17.800	0.09	0.09	0.09	0.09	0.09
17.883	0.09	0.09	0.09	0.09	0.09
17.967	0.09	0.09	0.09	0.09	0.09
18.050	0.09	0.09	0.09	0.09	0.09
18.133	0.09	0.09	0.09	0.09	0.09
18.217	0.09	0.09	0.09	0.09	0.09
18.300	0.09	0.09	0.09	0.09	0.09
18.383	0.09	0.09	0.09	0.09	0.09
18.467	0.09	0.09	0.09	0.09	0.09
18.550	0.09	0.09	0.08	0.08	0.08
18.633	0.08	0.08	0.08	0.08	0.08
18.717	0.08	0.08	0.08	0.08	0.08
18.800	0.08	0.08	0.08	0.08	0.08
18.883	0.08	0.08	0.08	0.08	0.08
18.967	0.08	0.08	0.08	0.08	0.08
19.050	0.08	0.08	0.08	0.08	0.08
19.133	0.08	0.08	0.08	0.08	0.08
19.217	0.08	0.08	0.08	0.08	0.08
19.300	0.08	0.08	0.08	0.08	0.08
19.383	0.08	0.07	0.07	0.07	0.07
19.467	0.07	0.07	0.07	0.07	0.07
19.550	0.07	0.07	0.07	0.07	0.07
19.633	0.07	0.07	0.07	0.07	0.07
19.717	0.07	0.07	0.07	0.07	0.07
19.800	0.07	0.07	0.07	0.07	0.07
19.883	0.07	0.07	0.07	0.07	0.07
19.967	0.07	0.07	0.07	0.07	0.07
20.050	0.07	0.07	0.07	0.07	0.07
20.133	0.07	0.07	0.07	0.07	0.07
20.217	0.07	0.07	0.07	0.07	0.07
20.300	0.07	0.06	0.06	0.06	0.06
20.383	0.06	0.06	0.06	0.06	0.06

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
20.467	0.06	0.06	0.06	0.06	0.06
20.550	0.06	0.06	0.06	0.06	0.06
20.633	0.06	0.06	0.06	0.06	0.06
20.717	0.06	0.06	0.06	0.06	0.06
20.800	0.06	0.06	0.06	0.06	0.06
20.883	0.06	0.06	0.06	0.06	0.06
20.967	0.06	0.06	0.06	0.06	0.06
21.050	0.06	0.06	0.06	0.06	0.06
21.133	0.06	0.06	0.06	0.06	0.06
21.217	0.06	0.06	0.06	0.06	0.06
21.300	0.06	0.06	0.06	0.06	0.06
21.383	0.06	0.06	0.06	0.06	0.06
21.467	0.06	0.06	0.06	0.06	0.06
21.550	0.06	0.06	0.06	0.06	0.06
21.633	0.06	0.06	0.06	0.06	0.06
21.717	0.06	0.06	0.06	0.06	0.06
21.800	0.06	0.06	0.06	0.06	0.06
21.883	0.06	0.06	0.06	0.06	0.06
21.967	0.06	0.06	0.06	0.06	0.06
22.050	0.06	0.06	0.06	0.06	0.06
22.133	0.06	0.06	0.06	0.06	0.06
22.217	0.06	0.06	0.06	0.06	0.06
22.300	0.06	0.06	0.06	0.06	0.06
22.383	0.06	0.06	0.06	0.06	0.06
22.467	0.06	0.06	0.06	0.06	0.06
22.550	0.06	0.06	0.06	0.06	0.06
22.633	0.06	0.06	0.06	0.06	0.06
22.717	0.06	0.06	0.06	0.06	0.06
22.800	0.06	0.06	0.06	0.06	0.06
22.883	0.06	0.06	0.06	0.06	0.06
22.967	0.06	0.06	0.06	0.06	0.06
23.050	0.06	0.06	0.06	0.06	0.06
23.133	0.06	0.06	0.06	0.06	0.06
23.217	0.06	0.06	0.06	0.06	0.06
23.300	0.06	0.06	0.06	0.06	0.06
23.383	0.06	0.06	0.06	0.06	0.06
23.467	0.06	0.06	0.06	0.06	0.06
23.550	0.06	0.06	0.06	0.06	0.06
23.633	0.06	0.06	0.06	0.06	0.06
23.717	0.06	0.06	0.06	0.06	0.06
23.800	0.06	0.06	0.06	0.06	0.06
23.883	0.06	0.06	0.06	0.06	0.06
23.967	0.06	0.06	0.06	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.271 hours
Area (User Defined)	1.233 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.048 hours
Flow (Peak, Computed)	4.73 ft³/s
Output Increment	0.017 hours
Time to Flow (Peak Interpolated Output)	12.050 hours
Flow (Peak Interpolated Output)	4.73 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	1.233 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.3 in
Runoff Volume (Pervious)	0.336 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.335 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.271 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	5.15 ft³/s
Unit peak time, Tp	0.181 hours
Unit receding limb, Tr	0.724 hours
Total unit time, Tb	0.905 hours

Storm Event	100 year
Return Event	100 years
Duration	24.000 hours
Depth	5.7 in
Time of Concentration (Composite)	0.271 hours
Area (User Defined)	1.233 acres

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.317	0.00	0.00	0.00	0.00	0.00
7.400	0.00	0.00	0.00	0.00	0.00
7.483	0.00	0.00	0.00	0.00	0.00
7.567	0.00	0.00	0.00	0.00	0.00
7.650	0.00	0.00	0.01	0.01	0.01
7.733	0.01	0.01	0.01	0.01	0.01
7.817	0.01	0.01	0.01	0.01	0.01
7.900	0.01	0.01	0.01	0.01	0.01
7.983	0.01	0.01	0.01	0.01	0.01
8.067	0.01	0.01	0.01	0.01	0.01
8.150	0.01	0.01	0.01	0.01	0.01
8.233	0.01	0.01	0.01	0.01	0.01
8.317	0.01	0.01	0.01	0.01	0.02
8.400	0.02	0.02	0.02	0.02	0.02
8.483	0.02	0.02	0.02	0.02	0.02
8.567	0.02	0.02	0.02	0.02	0.02
8.650	0.02	0.02	0.02	0.02	0.02
8.733	0.02	0.02	0.02	0.02	0.02
8.817	0.03	0.03	0.03	0.03	0.03
8.900	0.03	0.03	0.03	0.03	0.03
8.983	0.03	0.03	0.03	0.03	0.03
9.067	0.03	0.03	0.03	0.03	0.03
9.150	0.03	0.04	0.04	0.04	0.04
9.233	0.04	0.04	0.04	0.04	0.04
9.317	0.04	0.04	0.04	0.04	0.04
9.400	0.04	0.04	0.04	0.04	0.04
9.483	0.04	0.04	0.04	0.04	0.04
9.567	0.04	0.05	0.05	0.05	0.05
9.650	0.05	0.05	0.05	0.05	0.05
9.733	0.05	0.05	0.05	0.05	0.05
9.817	0.05	0.05	0.05	0.06	0.06
9.900	0.06	0.06	0.06	0.06	0.06
9.983	0.06	0.06	0.06	0.06	0.06
10.067	0.07	0.07	0.07	0.07	0.07
10.150	0.07	0.07	0.07	0.07	0.07
10.233	0.08	0.08	0.08	0.08	0.08
10.317	0.08	0.08	0.08	0.09	0.09
10.400	0.09	0.09	0.09	0.09	0.09
10.483	0.09	0.10	0.10	0.10	0.10
10.567	0.10	0.10	0.11	0.11	0.11
10.650	0.11	0.11	0.11	0.12	0.12
10.733	0.12	0.12	0.12	0.13	0.13
10.817	0.13	0.13	0.13	0.14	0.14
10.900	0.14	0.14	0.15	0.15	0.15

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.983	0.15	0.16	0.16	0.16	0.17
11.067	0.17	0.17	0.17	0.18	0.18
11.150	0.18	0.19	0.19	0.20	0.20
11.233	0.21	0.21	0.22	0.22	0.23
11.317	0.23	0.24	0.24	0.25	0.25
11.400	0.26	0.27	0.27	0.28	0.29
11.483	0.29	0.30	0.31	0.32	0.33
11.567	0.35	0.37	0.40	0.43	0.47
11.650	0.52	0.58	0.64	0.72	0.81
11.733	0.91	1.02	1.14	1.28	1.42
11.817	1.60	1.77	1.99	2.21	2.48
11.900	2.76	3.06	3.37	3.67	3.95
11.983	4.20	4.40	4.57	4.66	4.73
12.067	4.67	4.62	4.44	4.26	4.01
12.150	3.75	3.48	3.20	2.94	2.69
12.233	2.45	2.25	2.05	1.90	1.74
12.317	1.63	1.52	1.42	1.33	1.26
12.400	1.19	1.12	1.07	1.02	0.97
12.483	0.92	0.89	0.85	0.81	0.78
12.567	0.75	0.72	0.69	0.67	0.65
12.650	0.62	0.60	0.59	0.57	0.55
12.733	0.54	0.53	0.51	0.50	0.49
12.817	0.49	0.48	0.47	0.46	0.46
12.900	0.45	0.44	0.44	0.43	0.43
12.983	0.42	0.42	0.41	0.41	0.40
13.067	0.40	0.39	0.39	0.38	0.38
13.150	0.37	0.37	0.36	0.36	0.36
13.233	0.35	0.35	0.35	0.34	0.34
13.317	0.34	0.33	0.33	0.33	0.33
13.400	0.32	0.32	0.32	0.32	0.31
13.483	0.31	0.31	0.30	0.30	0.30
13.567	0.30	0.29	0.29	0.29	0.29
13.650	0.28	0.28	0.28	0.28	0.27
13.733	0.27	0.27	0.27	0.27	0.26
13.817	0.26	0.26	0.26	0.26	0.25
13.900	0.25	0.25	0.25	0.25	0.24
13.983	0.24	0.24	0.24	0.24	0.24
14.067	0.23	0.23	0.23	0.23	0.23
14.150	0.23	0.22	0.22	0.22	0.22
14.233	0.22	0.22	0.22	0.22	0.21
14.317	0.21	0.21	0.21	0.21	0.21
14.400	0.21	0.21	0.21	0.21	0.21
14.483	0.21	0.21	0.20	0.20	0.20
14.567	0.20	0.20	0.20	0.20	0.20
14.650	0.20	0.20	0.20	0.20	0.20
14.733	0.20	0.20	0.19	0.19	0.19
14.817	0.19	0.19	0.19	0.19	0.19
14.900	0.19	0.19	0.19	0.19	0.19
14.983	0.19	0.19	0.19	0.18	0.18
15.067	0.18	0.18	0.18	0.18	0.18
15.150	0.18	0.18	0.18	0.18	0.18
15.233	0.18	0.18	0.18	0.17	0.17

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

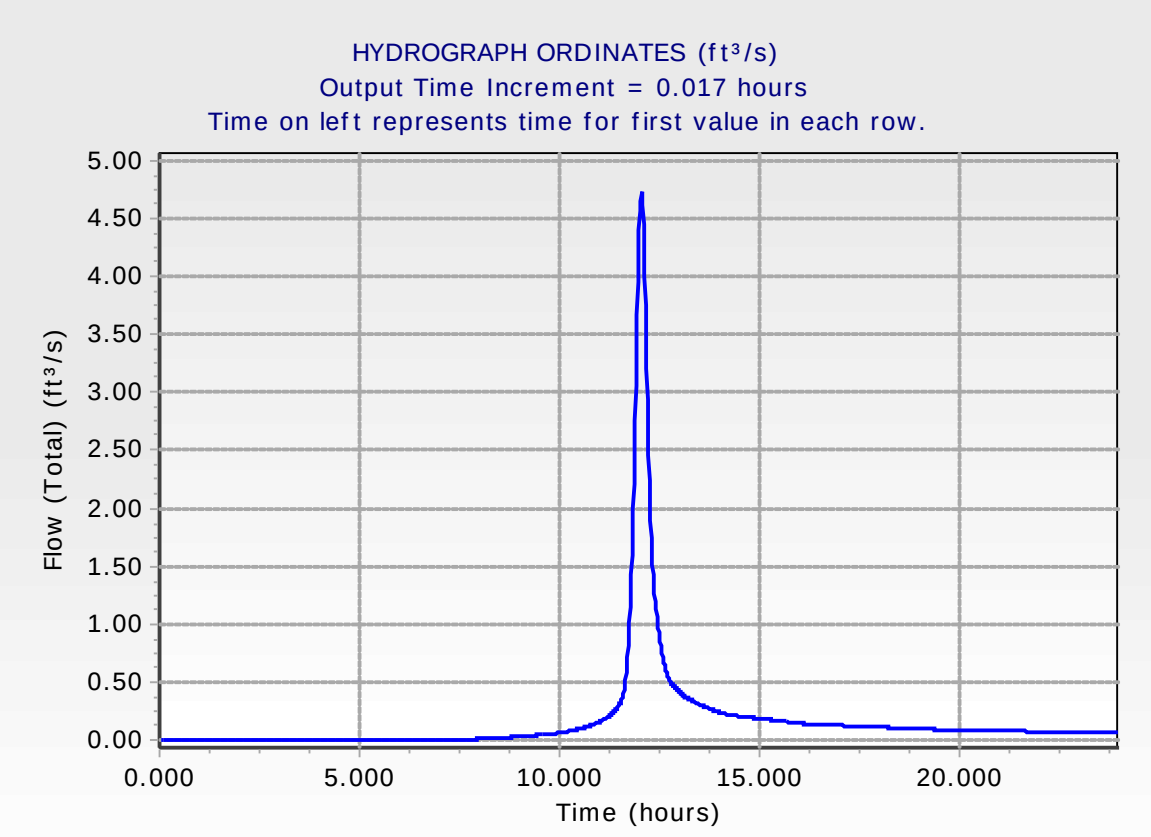
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.317	0.17	0.17	0.17	0.17	0.17
15.400	0.17	0.17	0.17	0.17	0.17
15.483	0.17	0.17	0.17	0.16	0.16
15.567	0.16	0.16	0.16	0.16	0.16
15.650	0.16	0.16	0.16	0.16	0.16
15.733	0.16	0.16	0.16	0.15	0.15
15.817	0.15	0.15	0.15	0.15	0.15
15.900	0.15	0.15	0.15	0.15	0.15
15.983	0.15	0.15	0.15	0.14	0.14
16.067	0.14	0.14	0.14	0.14	0.14
16.150	0.14	0.14	0.14	0.14	0.14
16.233	0.14	0.14	0.14	0.14	0.14
16.317	0.14	0.14	0.14	0.14	0.13
16.400	0.13	0.13	0.13	0.13	0.13
16.483	0.13	0.13	0.13	0.13	0.13
16.567	0.13	0.13	0.13	0.13	0.13
16.650	0.13	0.13	0.13	0.13	0.13
16.733	0.13	0.13	0.13	0.13	0.13
16.817	0.13	0.13	0.13	0.13	0.13
16.900	0.13	0.13	0.13	0.13	0.13
16.983	0.13	0.13	0.13	0.13	0.13
17.067	0.12	0.12	0.12	0.12	0.12
17.150	0.12	0.12	0.12	0.12	0.12
17.233	0.12	0.12	0.12	0.12	0.12
17.317	0.12	0.12	0.12	0.12	0.12
17.400	0.12	0.12	0.12	0.12	0.12
17.483	0.12	0.12	0.12	0.12	0.12
17.567	0.12	0.12	0.12	0.12	0.12
17.650	0.12	0.12	0.12	0.12	0.12
17.733	0.12	0.12	0.11	0.11	0.11
17.817	0.11	0.11	0.11	0.11	0.11
17.900	0.11	0.11	0.11	0.11	0.11
17.983	0.11	0.11	0.11	0.11	0.11
18.067	0.11	0.11	0.11	0.11	0.11
18.150	0.11	0.11	0.11	0.11	0.11
18.233	0.11	0.11	0.11	0.11	0.11
18.317	0.11	0.11	0.11	0.11	0.11
18.400	0.11	0.11	0.11	0.10	0.10
18.483	0.10	0.10	0.10	0.10	0.10
18.567	0.10	0.10	0.10	0.10	0.10
18.650	0.10	0.10	0.10	0.10	0.10
18.733	0.10	0.10	0.10	0.10	0.10
18.817	0.10	0.10	0.10	0.10	0.10
18.900	0.10	0.10	0.10	0.10	0.10
18.983	0.10	0.10	0.10	0.10	0.10
19.067	0.10	0.10	0.10	0.10	0.09
19.150	0.09	0.09	0.09	0.09	0.09
19.233	0.09	0.09	0.09	0.09	0.09
19.317	0.09	0.09	0.09	0.09	0.09
19.400	0.09	0.09	0.09	0.09	0.09
19.483	0.09	0.09	0.09	0.09	0.09
19.567	0.09	0.09	0.09	0.09	0.09

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.650	0.09	0.09	0.09	0.09	0.09
19.733	0.09	0.09	0.09	0.09	0.09
19.817	0.08	0.08	0.08	0.08	0.08
19.900	0.08	0.08	0.08	0.08	0.08
19.983	0.08	0.08	0.08	0.08	0.08
20.067	0.08	0.08	0.08	0.08	0.08
20.150	0.08	0.08	0.08	0.08	0.08
20.233	0.08	0.08	0.08	0.08	0.08
20.317	0.08	0.08	0.08	0.08	0.08
20.400	0.08	0.08	0.08	0.08	0.08
20.483	0.08	0.08	0.08	0.08	0.08
20.567	0.08	0.08	0.08	0.08	0.08
20.650	0.08	0.08	0.08	0.08	0.08
20.733	0.08	0.08	0.08	0.08	0.08
20.817	0.08	0.08	0.08	0.08	0.08
20.900	0.08	0.08	0.08	0.08	0.08
20.983	0.08	0.08	0.08	0.08	0.08
21.067	0.08	0.08	0.08	0.08	0.08
21.150	0.08	0.08	0.08	0.08	0.08
21.233	0.08	0.08	0.08	0.08	0.08
21.317	0.08	0.08	0.08	0.08	0.08
21.400	0.08	0.08	0.08	0.08	0.08
21.483	0.08	0.08	0.08	0.08	0.08
21.567	0.08	0.08	0.07	0.07	0.07
21.650	0.07	0.07	0.07	0.07	0.07
21.733	0.07	0.07	0.07	0.07	0.07
21.817	0.07	0.07	0.07	0.07	0.07
21.900	0.07	0.07	0.07	0.07	0.07
21.983	0.07	0.07	0.07	0.07	0.07
22.067	0.07	0.07	0.07	0.07	0.07
22.150	0.07	0.07	0.07	0.07	0.07
22.233	0.07	0.07	0.07	0.07	0.07
22.317	0.07	0.07	0.07	0.07	0.07
22.400	0.07	0.07	0.07	0.07	0.07
22.483	0.07	0.07	0.07	0.07	0.07
22.567	0.07	0.07	0.07	0.07	0.07
22.650	0.07	0.07	0.07	0.07	0.07
22.733	0.07	0.07	0.07	0.07	0.07
22.817	0.07	0.07	0.07	0.07	0.07
22.900	0.07	0.07	0.07	0.07	0.07
22.983	0.07	0.07	0.07	0.07	0.07
23.067	0.07	0.07	0.07	0.07	0.07
23.150	0.07	0.07	0.07	0.07	0.07
23.233	0.07	0.07	0.07	0.07	0.07
23.317	0.07	0.07	0.07	0.07	0.07
23.400	0.07	0.07	0.07	0.07	0.07
23.483	0.07	0.07	0.07	0.07	0.07
23.567	0.07	0.07	0.07	0.07	0.07
23.650	0.07	0.07	0.07	0.07	0.07
23.733	0.07	0.07	0.07	0.07	0.07
23.817	0.07	0.07	0.07	0.07	0.07
23.900	0.07	0.07	0.07	0.07	0.07

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.983	0.07	0.07	(N/A)	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Total) (ft³/s)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Summary for Hydrograph Addition at 'O-1 (POST)'

Upstream Link	Upstream Node
Outlet-1	DB-1
<Catchment to Outflow Node>	POST-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-1	0.055	12.433	0.16
Flow (From)	POST-2	0.041	12.067	0.57
Flow (In)	O-1 (POST)	0.096	12.067	0.70

Summary for Hydrograph Addition at 'O-1 (POST)'

Upstream Link	Upstream Node
Outlet-1	DB-1
<Catchment to Outflow Node>	POST-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-1	0.101	12.250	0.51
Flow (From)	POST-2	0.077	12.067	1.09
Flow (In)	O-1 (POST)	0.178	12.083	1.32

Summary for Hydrograph Addition at 'O-1 (POST)'

Upstream Link	Upstream Node
Outlet-1	DB-1
<Catchment to Outflow Node>	POST-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-1	0.138	12.183	1.02
Flow (From)	POST-2	0.107	12.050	1.51
Flow (In)	O-1 (POST)	0.245	12.100	2.32

Summary for Hydrograph Addition at 'O-1 (POST)'

Upstream Link	Upstream Node
Outlet-1	DB-1
<Catchment to Outflow Node>	POST-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-1	0.173	12.167	1.38
Flow (From)	POST-2	0.135	12.050	1.90
Flow (In)	O-1 (POST)	0.308	12.083	3.14

Summary for Hydrograph Addition at 'O-1 (POST)'

Upstream Link	Upstream Node
Outlet-1	DB-1
<Catchment to Outflow Node>	POST-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Outlet-1	0.215	12.167	1.71
Flow (From)	POST-2	0.168	12.050	2.36
Flow (In)	O-1 (POST)	0.383	12.067	3.90

Summary for Hydrograph Addition at 'O-1 (PRE)'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PRE-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PRE-1	0.071	12.083	0.94
Flow (In)	O-1 (PRE)	0.071	12.083	0.94

Summary for Hydrograph Addition at 'O-1 (PRE)'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PRE-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PRE-1	0.143	12.050	2.00
Flow (In)	O-1 (PRE)	0.143	12.050	2.00

Summary for Hydrograph Addition at 'O-1 (PRE)'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PRE-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PRE-1	0.264	12.050	3.73
Flow (In)	O-1 (PRE)	0.264	12.050	3.73

Summary for Hydrograph Addition at 'O-1 (PRE)'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PRE-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	PRE-1	0.335	12.050	4.73
Flow (In)	O-1 (PRE)	0.335	12.050	4.73

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
1,076.00	0.0	0.019	0.000	0.000	0.000
1,077.00	0.0	0.025	0.066	0.022	0.022
1,078.00	0.0	0.039	0.095	0.032	0.054
1,079.00	0.0	0.047	0.129	0.043	0.097
1,080.00	0.0	0.057	0.156	0.052	0.149

Requested Pond Water Surface Elevations	
Minimum (Headwater)	1,076.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	1,080.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 2	Forward	TW	1,077.30	1,080.00
Inlet Box	Riser - 1	Forward	TW	1,078.50	1,080.00
Orifice-Circular	Orifice - 1	Forward	TW	1,076.00	1,080.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Riser - 1 Structure Type: Inlet Box	
Number of Openings	1
Elevation	1,078.50 ft
Orifice Area	16.0 ft²
Orifice Coefficient	0.600
Weir Length	4.00 ft
Weir Coefficient	2.80 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	1,076.00 ft
Orifice Diameter	2.5 in
Orifice Coefficient	0.600

Structure ID: Orifice - 2 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	1,077.30 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	1,076.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.017 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.88 ft³/s	Time to Peak (Flow, In)	12.017 hours
Flow (Peak Outlet)	0.16 ft³/s	Time to Peak (Flow, Outlet)	12.433 hours

Elevation (Water Surface, Peak)	1,077.01 ft
Volume (Peak)	0.022 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	0.057 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.055 ac-ft
Volume (Retained)	0.001 ac-ft
Volume (Unrouted)	0.000 ac-ft
Error (Mass Balance)	0.2 %

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	1,076.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.017 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.62 ft³/s	Time to Peak (Flow, In)	12.017 hours
Flow (Peak Outlet)	0.51 ft³/s	Time to Peak (Flow, Outlet)	12.250 hours

Elevation (Water Surface, Peak)	1,077.61 ft
Volume (Peak)	0.040 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	0.103 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.101 ac-ft
Volume (Retained)	0.002 ac-ft
Volume (Unrouted)	0.000 ac-ft
Error (Mass Balance)	0.2 %

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	1,076.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.017 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.20 ft³/s	Time to Peak (Flow, In)	12.017 hours
Flow (Peak Outlet)	1.02 ft³/s	Time to Peak (Flow, Outlet)	12.183 hours

Elevation (Water Surface, Peak)	1,077.88 ft
Volume (Peak)	0.049 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	0.141 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.138 ac-ft
Volume (Retained)	0.003 ac-ft
Volume (Unrouted)	0.000 ac-ft
Error (Mass Balance)	0.1 %

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	1,076.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.017 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.74 ft³/s	Time to Peak (Flow, In)	12.000 hours
Flow (Peak Outlet)	1.38 ft³/s	Time to Peak (Flow, Outlet)	12.167 hours

Elevation (Water Surface, Peak)	1,078.12 ft
Volume (Peak)	0.058 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	0.177 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.173 ac-ft
Volume (Retained)	0.003 ac-ft
Volume (Unrouted)	0.000 ac-ft
Error (Mass Balance)	0.1 %

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	1,076.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.017 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	3.37 ft³/s	Time to Peak (Flow, In)	12.000 hours
Flow (Peak Outlet)	1.71 ft³/s	Time to Peak (Flow, Outlet)	12.167 hours

Elevation (Water Surface, Peak)	1,078.40 ft
Volume (Peak)	0.070 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	0.219 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	0.215 ac-ft
Volume (Retained)	0.004 ac-ft
Volume (Unrouted)	0.000 ac-ft
Error (Mass Balance)	0.1 %

Peak Discharge	0.16 ft³/s
Time to Peak	12.433 hours
Hydrograph Volume	0.055 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.350	0.00	0.00	0.00	0.00	0.00
10.433	0.00	0.00	0.00	0.00	0.00
10.517	0.00	0.00	0.00	0.00	0.00
10.600	0.00	0.00	0.00	0.00	0.00
10.683	0.00	0.00	0.00	0.00	0.00
10.767	0.00	0.00	0.00	0.00	0.00
10.850	0.00	0.00	0.00	0.00	0.00
10.933	0.00	0.00	0.00	0.00	0.00
11.017	0.00	0.00	0.00	0.01	0.01
11.100	0.01	0.01	0.01	0.01	0.01
11.183	0.01	0.01	0.01	0.01	0.01
11.267	0.01	0.01	0.01	0.01	0.01
11.350	0.01	0.01	0.01	0.01	0.01
11.433	0.01	0.01	0.01	0.01	0.01
11.517	0.01	0.01	0.01	0.01	0.01
11.600	0.01	0.01	0.02	0.02	0.02
11.683	0.02	0.02	0.02	0.02	0.02
11.767	0.03	0.03	0.03	0.04	0.04
11.850	0.04	0.05	0.06	0.06	0.07
11.933	0.08	0.09	0.10	0.10	0.11
12.017	0.11	0.12	0.12	0.13	0.13
12.100	0.14	0.14	0.14	0.14	0.15
12.183	0.15	0.15	0.15	0.15	0.15
12.267	0.15	0.15	0.15	0.15	0.16
12.350	0.16	0.16	0.16	0.16	0.16
12.433	0.16	0.16	0.16	0.16	0.16
12.517	0.16	0.16	0.16	0.15	0.15
12.600	0.15	0.15	0.15	0.15	0.15
12.683	0.15	0.15	0.15	0.15	0.15
12.767	0.15	0.15	0.15	0.15	0.15
12.850	0.15	0.15	0.15	0.15	0.15
12.933	0.15	0.15	0.15	0.15	0.15
13.017	0.14	0.14	0.14	0.14	0.14
13.100	0.14	0.14	0.14	0.14	0.14
13.183	0.14	0.14	0.14	0.14	0.14
13.267	0.14	0.14	0.14	0.14	0.14
13.350	0.14	0.14	0.13	0.13	0.13
13.433	0.13	0.13	0.13	0.13	0.13
13.517	0.13	0.13	0.13	0.13	0.13
13.600	0.13	0.13	0.13	0.13	0.13
13.683	0.13	0.13	0.13	0.13	0.12
13.767	0.12	0.12	0.12	0.12	0.12
13.850	0.12	0.12	0.12	0.12	0.12
13.933	0.12	0.12	0.12	0.12	0.12
14.017	0.12	0.12	0.12	0.12	0.12
14.100	0.12	0.11	0.11	0.11	0.11
14.183	0.11	0.11	0.11	0.11	0.11
14.267	0.11	0.11	0.11	0.11	0.11

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

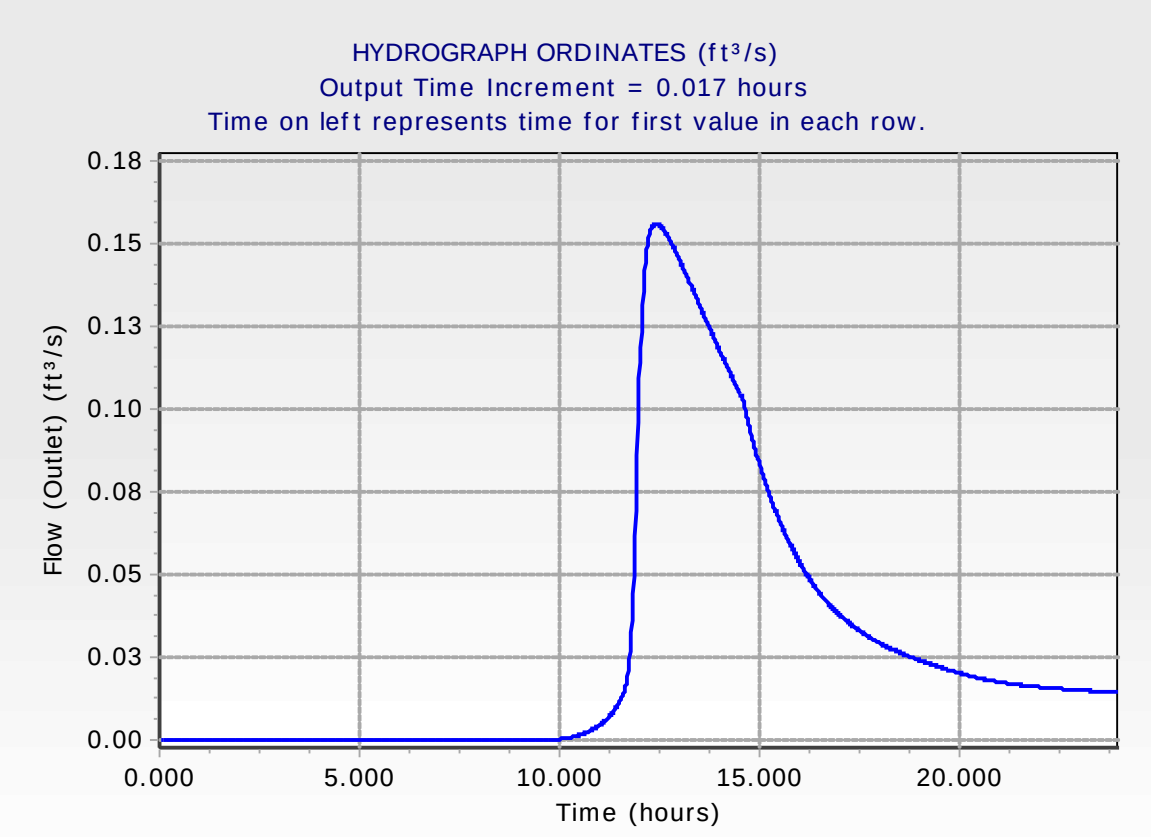
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.350	0.11	0.11	0.11	0.11	0.11
14.433	0.11	0.11	0.11	0.11	0.11
14.517	0.10	0.10	0.10	0.10	0.10
14.600	0.10	0.10	0.10	0.10	0.10
14.683	0.10	0.10	0.10	0.10	0.09
14.767	0.09	0.09	0.09	0.09	0.09
14.850	0.09	0.09	0.09	0.09	0.09
14.933	0.09	0.09	0.08	0.08	0.08
15.017	0.08	0.08	0.08	0.08	0.08
15.100	0.08	0.08	0.08	0.08	0.08
15.183	0.08	0.08	0.08	0.07	0.07
15.267	0.07	0.07	0.07	0.07	0.07
15.350	0.07	0.07	0.07	0.07	0.07
15.433	0.07	0.07	0.07	0.07	0.07
15.517	0.07	0.07	0.07	0.06	0.06
15.600	0.06	0.06	0.06	0.06	0.06
15.683	0.06	0.06	0.06	0.06	0.06
15.767	0.06	0.06	0.06	0.06	0.06
15.850	0.06	0.06	0.06	0.06	0.06
15.933	0.06	0.05	0.05	0.05	0.05
16.017	0.05	0.05	0.05	0.05	0.05
16.100	0.05	0.05	0.05	0.05	0.05
16.183	0.05	0.05	0.05	0.05	0.05
16.267	0.05	0.05	0.05	0.05	0.05
16.350	0.05	0.05	0.05	0.05	0.05
16.433	0.05	0.05	0.05	0.04	0.04
16.517	0.04	0.04	0.04	0.04	0.04
16.600	0.04	0.04	0.04	0.04	0.04
16.683	0.04	0.04	0.04	0.04	0.04
16.767	0.04	0.04	0.04	0.04	0.04
16.850	0.04	0.04	0.04	0.04	0.04
16.933	0.04	0.04	0.04	0.04	0.04
17.017	0.04	0.04	0.04	0.04	0.04
17.100	0.04	0.04	0.04	0.04	0.04
17.183	0.04	0.04	0.04	0.04	0.04
17.267	0.04	0.03	0.03	0.03	0.03
17.350	0.03	0.03	0.03	0.03	0.03
17.433	0.03	0.03	0.03	0.03	0.03
17.517	0.03	0.03	0.03	0.03	0.03
17.600	0.03	0.03	0.03	0.03	0.03
17.683	0.03	0.03	0.03	0.03	0.03
17.767	0.03	0.03	0.03	0.03	0.03
17.850	0.03	0.03	0.03	0.03	0.03
17.933	0.03	0.03	0.03	0.03	0.03
18.017	0.03	0.03	0.03	0.03	0.03
18.100	0.03	0.03	0.03	0.03	0.03
18.183	0.03	0.03	0.03	0.03	0.03
18.267	0.03	0.03	0.03	0.03	0.03
18.350	0.03	0.03	0.03	0.03	0.03
18.433	0.03	0.03	0.03	0.03	0.03
18.517	0.03	0.03	0.03	0.03	0.03
18.600	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.683	0.03	0.03	0.03	0.03	0.03
18.767	0.03	0.03	0.03	0.02	0.02
18.850	0.02	0.02	0.02	0.02	0.02
18.933	0.02	0.02	0.02	0.02	0.02
19.017	0.02	0.02	0.02	0.02	0.02
19.100	0.02	0.02	0.02	0.02	0.02
19.183	0.02	0.02	0.02	0.02	0.02
19.267	0.02	0.02	0.02	0.02	0.02
19.350	0.02	0.02	0.02	0.02	0.02
19.433	0.02	0.02	0.02	0.02	0.02
19.517	0.02	0.02	0.02	0.02	0.02
19.600	0.02	0.02	0.02	0.02	0.02
19.683	0.02	0.02	0.02	0.02	0.02
19.767	0.02	0.02	0.02	0.02	0.02
19.850	0.02	0.02	0.02	0.02	0.02
19.933	0.02	0.02	0.02	0.02	0.02
20.017	0.02	0.02	0.02	0.02	0.02
20.100	0.02	0.02	0.02	0.02	0.02
20.183	0.02	0.02	0.02	0.02	0.02
20.267	0.02	0.02	0.02	0.02	0.02
20.350	0.02	0.02	0.02	0.02	0.02
20.433	0.02	0.02	0.02	0.02	0.02
20.517	0.02	0.02	0.02	0.02	0.02
20.600	0.02	0.02	0.02	0.02	0.02
20.683	0.02	0.02	0.02	0.02	0.02
20.767	0.02	0.02	0.02	0.02	0.02
20.850	0.02	0.02	0.02	0.02	0.02
20.933	0.02	0.02	0.02	0.02	0.02
21.017	0.02	0.02	0.02	0.02	0.02
21.100	0.02	0.02	0.02	0.02	0.02
21.183	0.02	0.02	0.02	0.02	0.02
21.267	0.02	0.02	0.02	0.02	0.02
21.350	0.02	0.02	0.02	0.02	0.02
21.433	0.02	0.02	0.02	0.02	0.02
21.517	0.02	0.02	0.02	0.02	0.02
21.600	0.02	0.02	0.02	0.02	0.02
21.683	0.02	0.02	0.02	0.02	0.02
21.767	0.02	0.02	0.02	0.02	0.02
21.850	0.02	0.02	0.02	0.02	0.02
21.933	0.02	0.02	0.02	0.02	0.02
22.017	0.02	0.02	0.02	0.02	0.02
22.100	0.02	0.02	0.02	0.02	0.02
22.183	0.02	0.02	0.02	0.02	0.02
22.267	0.02	0.02	0.02	0.02	0.02
22.350	0.02	0.02	0.02	0.02	0.02
22.433	0.02	0.02	0.02	0.02	0.02
22.517	0.02	0.02	0.02	0.02	0.02
22.600	0.02	0.02	0.02	0.02	0.02
22.683	0.02	0.02	0.02	0.02	0.02
22.767	0.02	0.02	0.02	0.02	0.02
22.850	0.02	0.02	0.02	0.02	0.02
22.933	0.02	0.02	0.02	0.02	0.02

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.017	0.02	0.02	0.02	0.01	0.01
23.100	0.01	0.01	0.01	0.01	0.01
23.183	0.01	0.01	0.01	0.01	0.01
23.267	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.433	0.01	0.01	0.01	0.01	0.01
23.517	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.683	0.01	0.01	0.01	0.01	0.01
23.767	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.01	0.01
23.933	0.01	0.01	0.01	0.01	0.01


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Outlet) (ft³/s)
0.18
0.15
0.13
0.10
0.08
0.05
0.03
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Peak Discharge	0.51 ft³/s
Time to Peak	12.250 hours
Hydrograph Volume	0.101 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
8.667	0.00	0.00	0.00	0.00	0.00
8.750	0.00	0.00	0.00	0.00	0.00
8.833	0.00	0.00	0.00	0.00	0.00
8.917	0.00	0.00	0.00	0.00	0.00
9.000	0.00	0.00	0.00	0.00	0.00
9.083	0.00	0.00	0.00	0.00	0.00
9.167	0.00	0.00	0.00	0.00	0.00
9.250	0.00	0.00	0.00	0.00	0.00
9.333	0.00	0.00	0.00	0.00	0.00
9.417	0.00	0.00	0.00	0.00	0.00
9.500	0.00	0.00	0.00	0.00	0.00
9.583	0.00	0.00	0.00	0.01	0.01
9.667	0.01	0.01	0.01	0.01	0.01
9.750	0.01	0.01	0.01	0.01	0.01
9.833	0.01	0.01	0.01	0.01	0.01
9.917	0.01	0.01	0.01	0.01	0.01
10.000	0.01	0.01	0.01	0.01	0.01
10.083	0.01	0.01	0.01	0.01	0.01
10.167	0.01	0.01	0.01	0.01	0.01
10.250	0.01	0.01	0.01	0.01	0.01
10.333	0.01	0.01	0.01	0.01	0.01
10.417	0.01	0.01	0.01	0.01	0.01
10.500	0.01	0.01	0.01	0.01	0.01
10.583	0.01	0.01	0.01	0.01	0.01
10.667	0.01	0.01	0.01	0.02	0.02
10.750	0.02	0.02	0.02	0.02	0.02
10.833	0.02	0.02	0.02	0.02	0.02
10.917	0.02	0.02	0.02	0.02	0.02
11.000	0.02	0.02	0.02	0.02	0.02
11.083	0.02	0.02	0.02	0.02	0.02
11.167	0.02	0.02	0.03	0.03	0.03
11.250	0.03	0.03	0.03	0.03	0.03
11.333	0.03	0.03	0.03	0.03	0.03
11.417	0.03	0.03	0.03	0.03	0.04
11.500	0.04	0.04	0.04	0.04	0.04
11.583	0.04	0.04	0.04	0.05	0.05
11.667	0.05	0.05	0.05	0.06	0.06
11.750	0.07	0.07	0.08	0.08	0.09
11.833	0.10	0.10	0.11	0.11	0.12
11.917	0.13	0.13	0.14	0.15	0.16
12.000	0.16	0.17	0.17	0.18	0.22
12.083	0.25	0.28	0.33	0.38	0.42
12.167	0.46	0.48	0.49	0.50	0.51
12.250	0.51	0.50	0.50	0.49	0.48
12.333	0.47	0.46	0.45	0.44	0.43
12.417	0.42	0.41	0.40	0.39	0.38
12.500	0.37	0.36	0.35	0.34	0.33
12.583	0.32	0.31	0.30	0.30	0.29

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

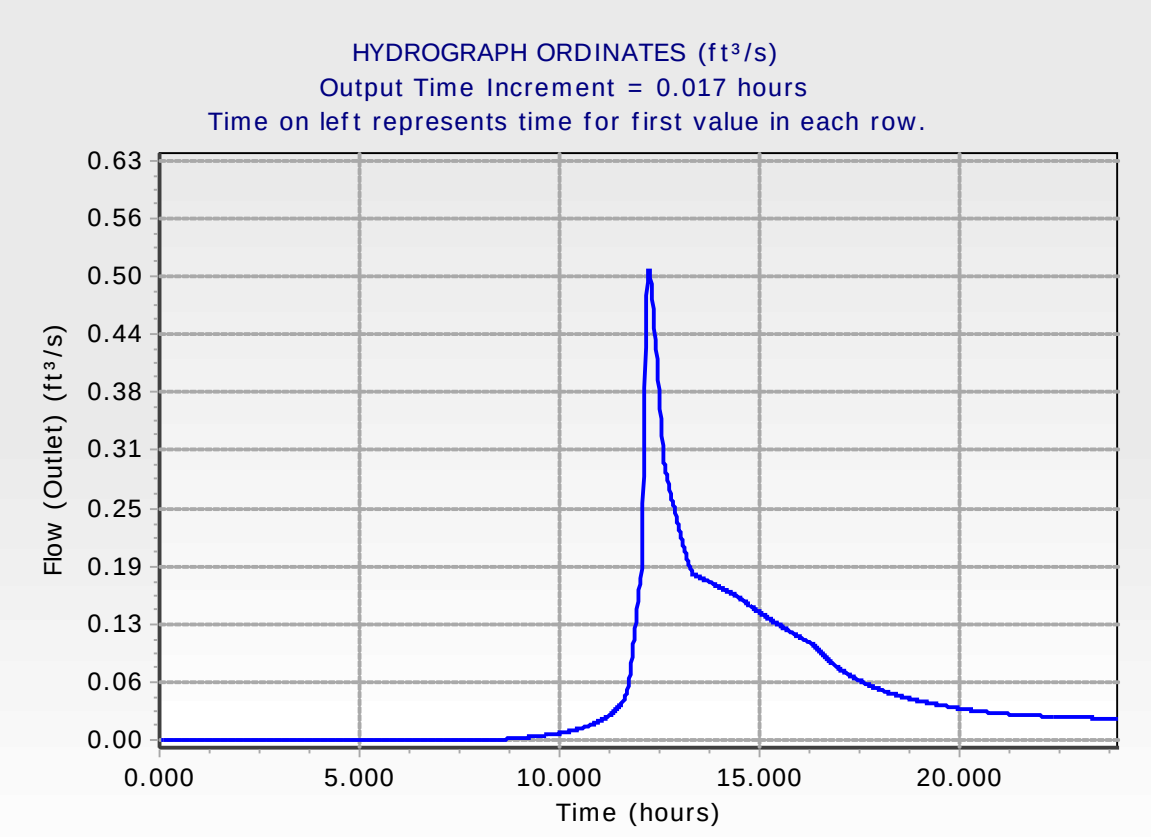
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
12.667	0.29	0.29	0.28	0.28	0.28
12.750	0.27	0.27	0.27	0.26	0.26
12.833	0.26	0.25	0.25	0.25	0.24
12.917	0.24	0.24	0.24	0.23	0.23
13.000	0.23	0.22	0.22	0.22	0.22
13.083	0.21	0.21	0.21	0.21	0.20
13.167	0.20	0.20	0.20	0.19	0.19
13.250	0.19	0.19	0.18	0.18	0.18
13.333	0.18	0.18	0.18	0.18	0.18
13.417	0.18	0.18	0.18	0.18	0.18
13.500	0.18	0.18	0.18	0.17	0.17
13.583	0.17	0.17	0.17	0.17	0.17
13.667	0.17	0.17	0.17	0.17	0.17
13.750	0.17	0.17	0.17	0.17	0.17
13.833	0.17	0.17	0.17	0.17	0.17
13.917	0.17	0.17	0.17	0.17	0.17
14.000	0.17	0.16	0.16	0.16	0.16
14.083	0.16	0.16	0.16	0.16	0.16
14.167	0.16	0.16	0.16	0.16	0.16
14.250	0.16	0.16	0.16	0.16	0.16
14.333	0.16	0.16	0.16	0.16	0.16
14.417	0.16	0.16	0.15	0.15	0.15
14.500	0.15	0.15	0.15	0.15	0.15
14.583	0.15	0.15	0.15	0.15	0.15
14.667	0.15	0.15	0.15	0.15	0.15
14.750	0.15	0.14	0.14	0.14	0.14
14.833	0.14	0.14	0.14	0.14	0.14
14.917	0.14	0.14	0.14	0.14	0.14
15.000	0.14	0.14	0.14	0.14	0.14
15.083	0.14	0.14	0.13	0.13	0.13
15.167	0.13	0.13	0.13	0.13	0.13
15.250	0.13	0.13	0.13	0.13	0.13
15.333	0.13	0.13	0.13	0.13	0.13
15.417	0.13	0.13	0.13	0.12	0.12
15.500	0.12	0.12	0.12	0.12	0.12
15.583	0.12	0.12	0.12	0.12	0.12
15.667	0.12	0.12	0.12	0.12	0.12
15.750	0.12	0.12	0.12	0.12	0.12
15.833	0.12	0.12	0.11	0.11	0.11
15.917	0.11	0.11	0.11	0.11	0.11
16.000	0.11	0.11	0.11	0.11	0.11
16.083	0.11	0.11	0.11	0.11	0.11
16.167	0.11	0.11	0.11	0.11	0.11
16.250	0.11	0.11	0.10	0.10	0.10
16.333	0.10	0.10	0.10	0.10	0.10
16.417	0.10	0.10	0.10	0.10	0.10
16.500	0.10	0.10	0.09	0.09	0.09
16.583	0.09	0.09	0.09	0.09	0.09
16.667	0.09	0.09	0.09	0.09	0.09
16.750	0.09	0.09	0.08	0.08	0.08
16.833	0.08	0.08	0.08	0.08	0.08
16.917	0.08	0.08	0.08	0.08	0.08

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
17.000	0.08	0.08	0.08	0.08	0.08
17.083	0.07	0.07	0.07	0.07	0.07
17.167	0.07	0.07	0.07	0.07	0.07
17.250	0.07	0.07	0.07	0.07	0.07
17.333	0.07	0.07	0.07	0.07	0.07
17.417	0.07	0.07	0.07	0.06	0.06
17.500	0.06	0.06	0.06	0.06	0.06
17.583	0.06	0.06	0.06	0.06	0.06
17.667	0.06	0.06	0.06	0.06	0.06
17.750	0.06	0.06	0.06	0.06	0.06
17.833	0.06	0.06	0.06	0.06	0.06
17.917	0.06	0.06	0.06	0.06	0.05
18.000	0.05	0.05	0.05	0.05	0.05
18.083	0.05	0.05	0.05	0.05	0.05
18.167	0.05	0.05	0.05	0.05	0.05
18.250	0.05	0.05	0.05	0.05	0.05
18.333	0.05	0.05	0.05	0.05	0.05
18.417	0.05	0.05	0.05	0.05	0.05
18.500	0.05	0.05	0.05	0.05	0.05
18.583	0.05	0.05	0.05	0.05	0.05
18.667	0.05	0.05	0.05	0.05	0.04
18.750	0.04	0.04	0.04	0.04	0.04
18.833	0.04	0.04	0.04	0.04	0.04
18.917	0.04	0.04	0.04	0.04	0.04
19.000	0.04	0.04	0.04	0.04	0.04
19.083	0.04	0.04	0.04	0.04	0.04
19.167	0.04	0.04	0.04	0.04	0.04
19.250	0.04	0.04	0.04	0.04	0.04
19.333	0.04	0.04	0.04	0.04	0.04
19.417	0.04	0.04	0.04	0.04	0.04
19.500	0.04	0.04	0.04	0.04	0.04
19.583	0.04	0.04	0.04	0.04	0.04
19.667	0.04	0.04	0.04	0.04	0.04
19.750	0.04	0.04	0.04	0.04	0.04
19.833	0.04	0.04	0.04	0.03	0.03
19.917	0.03	0.03	0.03	0.03	0.03
20.000	0.03	0.03	0.03	0.03	0.03
20.083	0.03	0.03	0.03	0.03	0.03
20.167	0.03	0.03	0.03	0.03	0.03
20.250	0.03	0.03	0.03	0.03	0.03
20.333	0.03	0.03	0.03	0.03	0.03
20.417	0.03	0.03	0.03	0.03	0.03
20.500	0.03	0.03	0.03	0.03	0.03
20.583	0.03	0.03	0.03	0.03	0.03
20.667	0.03	0.03	0.03	0.03	0.03
20.750	0.03	0.03	0.03	0.03	0.03
20.833	0.03	0.03	0.03	0.03	0.03
20.917	0.03	0.03	0.03	0.03	0.03
21.000	0.03	0.03	0.03	0.03	0.03
21.083	0.03	0.03	0.03	0.03	0.03
21.167	0.03	0.03	0.03	0.03	0.03
21.250	0.03	0.03	0.03	0.03	0.03

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
21.333	0.03	0.03	0.03	0.03	0.03
21.417	0.03	0.03	0.03	0.03	0.03
21.500	0.03	0.03	0.03	0.03	0.03
21.583	0.03	0.03	0.03	0.03	0.03
21.667	0.03	0.03	0.03	0.03	0.03
21.750	0.03	0.03	0.03	0.03	0.03
21.833	0.03	0.03	0.03	0.03	0.03
21.917	0.03	0.03	0.03	0.03	0.03
22.000	0.03	0.03	0.03	0.03	0.03
22.083	0.03	0.03	0.03	0.03	0.03
22.167	0.03	0.03	0.03	0.03	0.03
22.250	0.03	0.03	0.03	0.03	0.03
22.333	0.03	0.03	0.03	0.03	0.03
22.417	0.03	0.03	0.03	0.03	0.03
22.500	0.03	0.03	0.03	0.03	0.03
22.583	0.02	0.02	0.02	0.02	0.02
22.667	0.02	0.02	0.02	0.02	0.02
22.750	0.02	0.02	0.02	0.02	0.02
22.833	0.02	0.02	0.02	0.02	0.02
22.917	0.02	0.02	0.02	0.02	0.02
23.000	0.02	0.02	0.02	0.02	0.02
23.083	0.02	0.02	0.02	0.02	0.02
23.167	0.02	0.02	0.02	0.02	0.02
23.250	0.02	0.02	0.02	0.02	0.02
23.333	0.02	0.02	0.02	0.02	0.02
23.417	0.02	0.02	0.02	0.02	0.02
23.500	0.02	0.02	0.02	0.02	0.02
23.583	0.02	0.02	0.02	0.02	0.02
23.667	0.02	0.02	0.02	0.02	0.02
23.750	0.02	0.02	0.02	0.02	0.02
23.833	0.02	0.02	0.02	0.02	0.02
23.917	0.02	0.02	0.02	0.02	0.02
24.000	0.02	(N/A)	(N/A)	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Outlet) (ft³/s)
0.63
0.56
0.50
0.44
0.38
0.31
0.25
0.19
0.13
0.06
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Peak Discharge	1.02 ft³/s
Time to Peak	12.183 hours
Hydrograph Volume	0.138 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
7.600	0.00	0.00	0.00	0.00	0.00
7.683	0.00	0.00	0.00	0.00	0.00
7.767	0.00	0.00	0.00	0.00	0.00
7.850	0.00	0.00	0.00	0.00	0.00
7.933	0.00	0.00	0.00	0.00	0.00
8.017	0.00	0.00	0.00	0.00	0.00
8.100	0.00	0.00	0.00	0.00	0.00
8.183	0.00	0.00	0.00	0.00	0.00
8.267	0.00	0.00	0.00	0.00	0.00
8.350	0.00	0.00	0.00	0.00	0.00
8.433	0.00	0.00	0.00	0.00	0.00
8.517	0.00	0.00	0.00	0.00	0.00
8.600	0.00	0.00	0.00	0.00	0.01
8.683	0.01	0.01	0.01	0.01	0.01
8.767	0.01	0.01	0.01	0.01	0.01
8.850	0.01	0.01	0.01	0.01	0.01
8.933	0.01	0.01	0.01	0.01	0.01
9.017	0.01	0.01	0.01	0.01	0.01
9.100	0.01	0.01	0.01	0.01	0.01
9.183	0.01	0.01	0.01	0.01	0.01
9.267	0.01	0.01	0.01	0.01	0.01
9.350	0.01	0.01	0.01	0.01	0.01
9.433	0.01	0.01	0.01	0.01	0.01
9.517	0.01	0.01	0.01	0.01	0.01
9.600	0.01	0.01	0.01	0.01	0.01
9.683	0.01	0.01	0.01	0.01	0.01
9.767	0.01	0.01	0.01	0.01	0.01
9.850	0.01	0.01	0.01	0.01	0.02
9.933	0.02	0.02	0.02	0.02	0.02
10.017	0.02	0.02	0.02	0.02	0.02
10.100	0.02	0.02	0.02	0.02	0.02
10.183	0.02	0.02	0.02	0.02	0.02
10.267	0.02	0.02	0.02	0.02	0.02
10.350	0.02	0.02	0.02	0.02	0.02
10.433	0.02	0.02	0.02	0.02	0.02
10.517	0.02	0.02	0.02	0.02	0.03
10.600	0.03	0.03	0.03	0.03	0.03
10.683	0.03	0.03	0.03	0.03	0.03
10.767	0.03	0.03	0.03	0.03	0.03
10.850	0.03	0.03	0.03	0.03	0.03
10.933	0.03	0.03	0.03	0.04	0.04
11.017	0.04	0.04	0.04	0.04	0.04
11.100	0.04	0.04	0.04	0.04	0.04
11.183	0.04	0.04	0.04	0.04	0.05
11.267	0.05	0.05	0.05	0.05	0.05
11.350	0.05	0.05	0.05	0.05	0.05
11.433	0.06	0.06	0.06	0.06	0.06
11.517	0.06	0.06	0.06	0.06	0.07

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

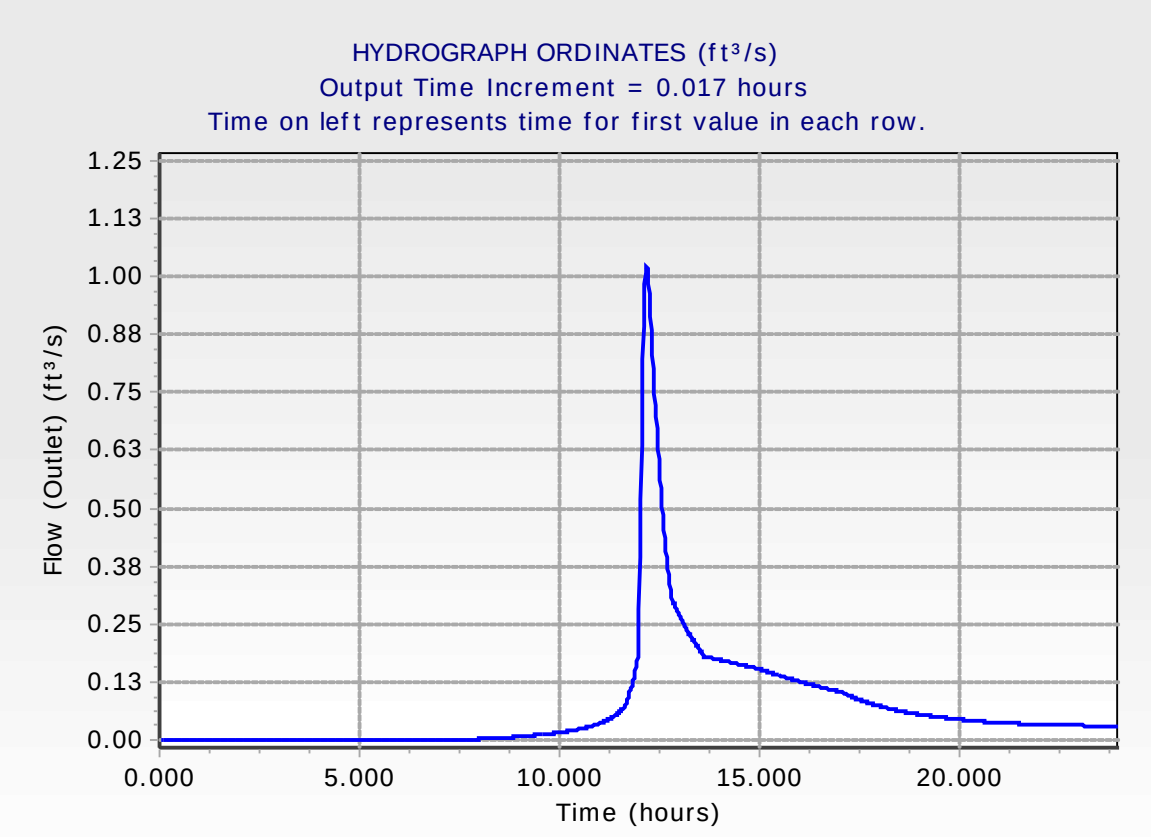
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
11.600	0.07	0.07	0.07	0.07	0.08
11.683	0.08	0.09	0.09	0.10	0.10
11.767	0.11	0.11	0.11	0.12	0.12
11.850	0.13	0.13	0.14	0.15	0.16
11.933	0.16	0.17	0.18	0.23	0.28
12.017	0.39	0.52	0.64	0.74	0.82
12.100	0.89	0.95	0.99	1.01	1.02
12.183	1.02	1.02	1.00	0.98	0.96
12.267	0.94	0.91	0.89	0.86	0.83
12.350	0.80	0.78	0.75	0.72	0.70
12.433	0.67	0.65	0.63	0.60	0.58
12.517	0.56	0.54	0.52	0.50	0.49
12.600	0.47	0.45	0.44	0.42	0.41
12.683	0.39	0.38	0.37	0.36	0.35
12.767	0.33	0.32	0.32	0.31	0.30
12.850	0.30	0.29	0.29	0.29	0.28
12.933	0.28	0.28	0.27	0.27	0.27
13.017	0.27	0.26	0.26	0.26	0.26
13.100	0.25	0.25	0.25	0.24	0.24
13.183	0.24	0.24	0.23	0.23	0.23
13.267	0.23	0.22	0.22	0.22	0.22
13.350	0.21	0.21	0.21	0.21	0.21
13.433	0.20	0.20	0.20	0.20	0.20
13.517	0.19	0.19	0.19	0.19	0.19
13.600	0.18	0.18	0.18	0.18	0.18
13.683	0.18	0.18	0.18	0.18	0.18
13.767	0.18	0.18	0.18	0.18	0.18
13.850	0.18	0.18	0.18	0.18	0.17
13.933	0.17	0.17	0.17	0.17	0.17
14.017	0.17	0.17	0.17	0.17	0.17
14.100	0.17	0.17	0.17	0.17	0.17
14.183	0.17	0.17	0.17	0.17	0.17
14.267	0.17	0.17	0.17	0.17	0.17
14.350	0.17	0.17	0.17	0.17	0.17
14.433	0.16	0.16	0.16	0.16	0.16
14.517	0.16	0.16	0.16	0.16	0.16
14.600	0.16	0.16	0.16	0.16	0.16
14.683	0.16	0.16	0.16	0.16	0.16
14.767	0.16	0.16	0.16	0.16	0.16
14.850	0.16	0.16	0.16	0.16	0.16
14.933	0.15	0.15	0.15	0.15	0.15
15.017	0.15	0.15	0.15	0.15	0.15
15.100	0.15	0.15	0.15	0.15	0.15
15.183	0.15	0.15	0.15	0.15	0.15
15.267	0.15	0.15	0.14	0.14	0.14
15.350	0.14	0.14	0.14	0.14	0.14
15.433	0.14	0.14	0.14	0.14	0.14
15.517	0.14	0.14	0.14	0.14	0.14
15.600	0.14	0.14	0.14	0.14	0.13
15.683	0.13	0.13	0.13	0.13	0.13
15.767	0.13	0.13	0.13	0.13	0.13
15.850	0.13	0.13	0.13	0.13	0.13

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.933	0.13	0.13	0.13	0.13	0.13
16.017	0.13	0.13	0.13	0.12	0.12
16.100	0.12	0.12	0.12	0.12	0.12
16.183	0.12	0.12	0.12	0.12	0.12
16.267	0.12	0.12	0.12	0.12	0.12
16.350	0.12	0.12	0.12	0.12	0.12
16.433	0.12	0.12	0.12	0.12	0.11
16.517	0.11	0.11	0.11	0.11	0.11
16.600	0.11	0.11	0.11	0.11	0.11
16.683	0.11	0.11	0.11	0.11	0.11
16.767	0.11	0.11	0.11	0.11	0.11
16.850	0.11	0.11	0.11	0.11	0.11
16.933	0.11	0.11	0.10	0.10	0.10
17.017	0.10	0.10	0.10	0.10	0.10
17.100	0.10	0.10	0.10	0.10	0.10
17.183	0.10	0.10	0.10	0.10	0.10
17.267	0.09	0.09	0.09	0.09	0.09
17.350	0.09	0.09	0.09	0.09	0.09
17.433	0.09	0.09	0.09	0.09	0.09
17.517	0.09	0.09	0.09	0.08	0.08
17.600	0.08	0.08	0.08	0.08	0.08
17.683	0.08	0.08	0.08	0.08	0.08
17.767	0.08	0.08	0.08	0.08	0.08
17.850	0.08	0.08	0.08	0.08	0.08
17.933	0.07	0.07	0.07	0.07	0.07
18.017	0.07	0.07	0.07	0.07	0.07
18.100	0.07	0.07	0.07	0.07	0.07
18.183	0.07	0.07	0.07	0.07	0.07
18.267	0.07	0.07	0.07	0.07	0.07
18.350	0.07	0.07	0.07	0.06	0.06
18.433	0.06	0.06	0.06	0.06	0.06
18.517	0.06	0.06	0.06	0.06	0.06
18.600	0.06	0.06	0.06	0.06	0.06
18.683	0.06	0.06	0.06	0.06	0.06
18.767	0.06	0.06	0.06	0.06	0.06
18.850	0.06	0.06	0.06	0.06	0.06
18.933	0.06	0.06	0.06	0.06	0.06
19.017	0.06	0.06	0.05	0.05	0.05
19.100	0.05	0.05	0.05	0.05	0.05
19.183	0.05	0.05	0.05	0.05	0.05
19.267	0.05	0.05	0.05	0.05	0.05
19.350	0.05	0.05	0.05	0.05	0.05
19.433	0.05	0.05	0.05	0.05	0.05
19.517	0.05	0.05	0.05	0.05	0.05
19.600	0.05	0.05	0.05	0.05	0.05
19.683	0.05	0.05	0.05	0.05	0.05
19.767	0.05	0.05	0.05	0.05	0.05
19.850	0.05	0.05	0.05	0.05	0.05
19.933	0.05	0.04	0.04	0.04	0.04
20.017	0.04	0.04	0.04	0.04	0.04
20.100	0.04	0.04	0.04	0.04	0.04
20.183	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
20.267	0.04	0.04	0.04	0.04	0.04
20.350	0.04	0.04	0.04	0.04	0.04
20.433	0.04	0.04	0.04	0.04	0.04
20.517	0.04	0.04	0.04	0.04	0.04
20.600	0.04	0.04	0.04	0.04	0.04
20.683	0.04	0.04	0.04	0.04	0.04
20.767	0.04	0.04	0.04	0.04	0.04
20.850	0.04	0.04	0.04	0.04	0.04
20.933	0.04	0.04	0.04	0.04	0.04
21.017	0.04	0.04	0.04	0.04	0.04
21.100	0.04	0.04	0.04	0.04	0.04
21.183	0.04	0.04	0.04	0.04	0.04
21.267	0.04	0.04	0.04	0.04	0.04
21.350	0.04	0.04	0.04	0.04	0.04
21.433	0.04	0.04	0.04	0.04	0.04
21.517	0.04	0.04	0.04	0.04	0.03
21.600	0.03	0.03	0.03	0.03	0.03
21.683	0.03	0.03	0.03	0.03	0.03
21.767	0.03	0.03	0.03	0.03	0.03
21.850	0.03	0.03	0.03	0.03	0.03
21.933	0.03	0.03	0.03	0.03	0.03
22.017	0.03	0.03	0.03	0.03	0.03
22.100	0.03	0.03	0.03	0.03	0.03
22.183	0.03	0.03	0.03	0.03	0.03
22.267	0.03	0.03	0.03	0.03	0.03
22.350	0.03	0.03	0.03	0.03	0.03
22.433	0.03	0.03	0.03	0.03	0.03
22.517	0.03	0.03	0.03	0.03	0.03
22.600	0.03	0.03	0.03	0.03	0.03
22.683	0.03	0.03	0.03	0.03	0.03
22.767	0.03	0.03	0.03	0.03	0.03
22.850	0.03	0.03	0.03	0.03	0.03
22.933	0.03	0.03	0.03	0.03	0.03
23.017	0.03	0.03	0.03	0.03	0.03
23.100	0.03	0.03	0.03	0.03	0.03
23.183	0.03	0.03	0.03	0.03	0.03
23.267	0.03	0.03	0.03	0.03	0.03
23.350	0.03	0.03	0.03	0.03	0.03
23.433	0.03	0.03	0.03	0.03	0.03
23.517	0.03	0.03	0.03	0.03	0.03
23.600	0.03	0.03	0.03	0.03	0.03
23.683	0.03	0.03	0.03	0.03	0.03
23.767	0.03	0.03	0.03	0.03	0.03
23.850	0.03	0.03	0.03	0.03	0.03
23.933	0.03	0.03	0.03	0.03	0.03


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Outlet) (ft³/s)
1.25
1.13
1.00
0.88
0.75
0.63
0.50
0.38
0.25
0.13
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Peak Discharge	1.38 ft³/s
Time to Peak	12.167 hours
Hydrograph Volume	0.173 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.817	0.00	0.00	0.00	0.00	0.00
6.900	0.00	0.00	0.00	0.00	0.00
6.983	0.00	0.00	0.00	0.00	0.00
7.067	0.00	0.00	0.00	0.00	0.00
7.150	0.00	0.00	0.00	0.00	0.00
7.233	0.00	0.00	0.00	0.00	0.00
7.317	0.00	0.00	0.00	0.00	0.00
7.400	0.00	0.00	0.00	0.00	0.00
7.483	0.00	0.00	0.00	0.00	0.00
7.567	0.00	0.00	0.00	0.00	0.00
7.650	0.00	0.00	0.00	0.00	0.00
7.733	0.00	0.00	0.00	0.00	0.00
7.817	0.00	0.00	0.01	0.01	0.01
7.900	0.01	0.01	0.01	0.01	0.01
7.983	0.01	0.01	0.01	0.01	0.01
8.067	0.01	0.01	0.01	0.01	0.01
8.150	0.01	0.01	0.01	0.01	0.01
8.233	0.01	0.01	0.01	0.01	0.01
8.317	0.01	0.01	0.01	0.01	0.01
8.400	0.01	0.01	0.01	0.01	0.01
8.483	0.01	0.01	0.01	0.01	0.01
8.567	0.01	0.01	0.01	0.01	0.01
8.650	0.01	0.01	0.01	0.01	0.01
8.733	0.01	0.01	0.01	0.01	0.01
8.817	0.01	0.01	0.01	0.01	0.01
8.900	0.01	0.01	0.01	0.01	0.01
8.983	0.01	0.01	0.01	0.01	0.01
9.067	0.01	0.01	0.01	0.01	0.01
9.150	0.02	0.02	0.02	0.02	0.02
9.233	0.02	0.02	0.02	0.02	0.02
9.317	0.02	0.02	0.02	0.02	0.02
9.400	0.02	0.02	0.02	0.02	0.02
9.483	0.02	0.02	0.02	0.02	0.02
9.567	0.02	0.02	0.02	0.02	0.02
9.650	0.02	0.02	0.02	0.02	0.02
9.733	0.02	0.02	0.02	0.02	0.02
9.817	0.02	0.02	0.02	0.02	0.02
9.900	0.02	0.02	0.02	0.02	0.02
9.983	0.03	0.03	0.03	0.03	0.03
10.067	0.03	0.03	0.03	0.03	0.03
10.150	0.03	0.03	0.03	0.03	0.03
10.233	0.03	0.03	0.03	0.03	0.03
10.317	0.03	0.03	0.03	0.03	0.03
10.400	0.03	0.03	0.03	0.03	0.03
10.483	0.03	0.04	0.04	0.04	0.04
10.567	0.04	0.04	0.04	0.04	0.04
10.650	0.04	0.04	0.04	0.04	0.04
10.733	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.817	0.04	0.05	0.05	0.05	0.05
10.900	0.05	0.05	0.05	0.05	0.05
10.983	0.05	0.05	0.05	0.05	0.05
11.067	0.05	0.06	0.06	0.06	0.06
11.150	0.06	0.06	0.06	0.06	0.06
11.233	0.06	0.06	0.06	0.07	0.07
11.317	0.07	0.07	0.07	0.07	0.07
11.400	0.07	0.08	0.08	0.08	0.08
11.483	0.08	0.08	0.08	0.09	0.09
11.567	0.09	0.09	0.09	0.10	0.10
11.650	0.10	0.10	0.11	0.11	0.11
11.733	0.12	0.12	0.12	0.13	0.13
11.817	0.14	0.15	0.15	0.16	0.17
11.900	0.17	0.18	0.24	0.30	0.45
11.983	0.61	0.75	0.90	1.02	1.14
12.067	1.24	1.29	1.32	1.35	1.37
12.150	1.38	1.38	1.38	1.37	1.35
12.233	1.34	1.32	1.30	1.27	1.25
12.317	1.21	1.17	1.12	1.08	1.04
12.400	1.00	0.96	0.92	0.88	0.85
12.483	0.82	0.79	0.75	0.73	0.70
12.567	0.67	0.64	0.62	0.60	0.57
12.650	0.55	0.53	0.51	0.49	0.48
12.733	0.46	0.45	0.43	0.42	0.40
12.817	0.39	0.38	0.37	0.36	0.35
12.900	0.34	0.33	0.32	0.31	0.31
12.983	0.30	0.30	0.29	0.29	0.29
13.067	0.29	0.28	0.28	0.28	0.28
13.150	0.27	0.27	0.27	0.27	0.26
13.233	0.26	0.26	0.26	0.25	0.25
13.317	0.25	0.25	0.24	0.24	0.24
13.400	0.24	0.24	0.23	0.23	0.23
13.483	0.23	0.22	0.22	0.22	0.22
13.567	0.22	0.21	0.21	0.21	0.21
13.650	0.21	0.20	0.20	0.20	0.20
13.733	0.20	0.20	0.19	0.19	0.19
13.817	0.19	0.19	0.19	0.18	0.18
13.900	0.18	0.18	0.18	0.18	0.18
13.983	0.18	0.18	0.18	0.18	0.18
14.067	0.18	0.18	0.18	0.18	0.18
14.150	0.18	0.18	0.18	0.17	0.17
14.233	0.17	0.17	0.17	0.17	0.17
14.317	0.17	0.17	0.17	0.17	0.17
14.400	0.17	0.17	0.17	0.17	0.17
14.483	0.17	0.17	0.17	0.17	0.17
14.567	0.17	0.17	0.17	0.17	0.17
14.650	0.17	0.17	0.17	0.17	0.17
14.733	0.17	0.17	0.17	0.17	0.16
14.817	0.16	0.16	0.16	0.16	0.16
14.900	0.16	0.16	0.16	0.16	0.16
14.983	0.16	0.16	0.16	0.16	0.16
15.067	0.16	0.16	0.16	0.16	0.16

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

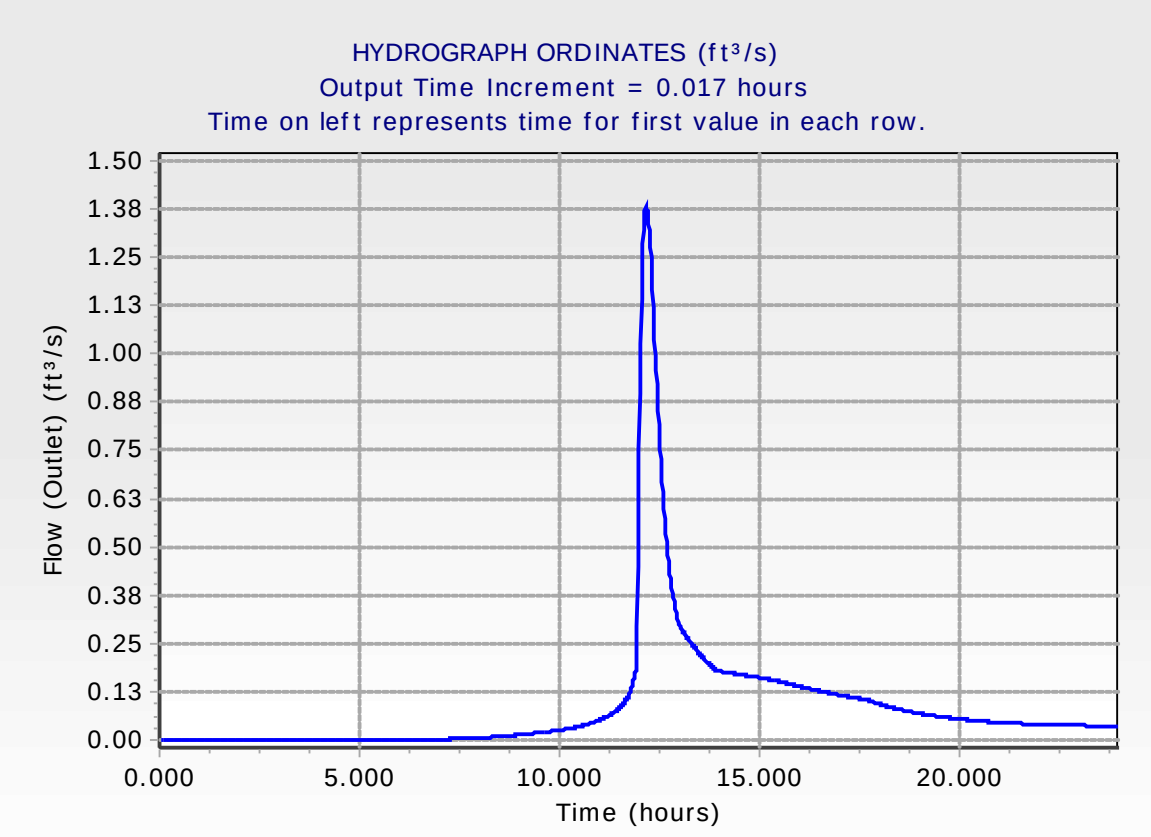
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.150	0.16	0.16	0.16	0.16	0.16
15.233	0.16	0.16	0.16	0.16	0.16
15.317	0.16	0.16	0.16	0.15	0.15
15.400	0.15	0.15	0.15	0.15	0.15
15.483	0.15	0.15	0.15	0.15	0.15
15.567	0.15	0.15	0.15	0.15	0.15
15.650	0.15	0.15	0.15	0.15	0.15
15.733	0.15	0.15	0.14	0.14	0.14
15.817	0.14	0.14	0.14	0.14	0.14
15.900	0.14	0.14	0.14	0.14	0.14
15.983	0.14	0.14	0.14	0.14	0.14
16.067	0.14	0.14	0.14	0.14	0.14
16.150	0.14	0.13	0.13	0.13	0.13
16.233	0.13	0.13	0.13	0.13	0.13
16.317	0.13	0.13	0.13	0.13	0.13
16.400	0.13	0.13	0.13	0.13	0.13
16.483	0.13	0.13	0.13	0.13	0.13
16.567	0.13	0.13	0.12	0.12	0.12
16.650	0.12	0.12	0.12	0.12	0.12
16.733	0.12	0.12	0.12	0.12	0.12
16.817	0.12	0.12	0.12	0.12	0.12
16.900	0.12	0.12	0.12	0.12	0.12
16.983	0.12	0.12	0.12	0.12	0.12
17.067	0.11	0.11	0.11	0.11	0.11
17.150	0.11	0.11	0.11	0.11	0.11
17.233	0.11	0.11	0.11	0.11	0.11
17.317	0.11	0.11	0.11	0.11	0.11
17.400	0.11	0.11	0.11	0.11	0.11
17.483	0.11	0.11	0.11	0.11	0.11
17.567	0.11	0.11	0.11	0.10	0.10
17.650	0.10	0.10	0.10	0.10	0.10
17.733	0.10	0.10	0.10	0.10	0.10
17.817	0.10	0.10	0.10	0.10	0.10
17.900	0.10	0.10	0.10	0.09	0.09
17.983	0.09	0.09	0.09	0.09	0.09
18.067	0.09	0.09	0.09	0.09	0.09
18.150	0.09	0.09	0.09	0.09	0.09
18.233	0.09	0.09	0.09	0.08	0.08
18.317	0.08	0.08	0.08	0.08	0.08
18.400	0.08	0.08	0.08	0.08	0.08
18.483	0.08	0.08	0.08	0.08	0.08
18.567	0.08	0.08	0.08	0.08	0.08
18.650	0.08	0.08	0.08	0.07	0.07
18.733	0.07	0.07	0.07	0.07	0.07
18.817	0.07	0.07	0.07	0.07	0.07
18.900	0.07	0.07	0.07	0.07	0.07
18.983	0.07	0.07	0.07	0.07	0.07
19.067	0.07	0.07	0.07	0.07	0.07
19.150	0.07	0.07	0.07	0.07	0.07
19.233	0.07	0.06	0.06	0.06	0.06
19.317	0.06	0.06	0.06	0.06	0.06
19.400	0.06	0.06	0.06	0.06	0.06

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.483	0.06	0.06	0.06	0.06	0.06
19.567	0.06	0.06	0.06	0.06	0.06
19.650	0.06	0.06	0.06	0.06	0.06
19.733	0.06	0.06	0.06	0.06	0.06
19.817	0.06	0.06	0.06	0.06	0.06
19.900	0.06	0.06	0.06	0.06	0.05
19.983	0.05	0.05	0.05	0.05	0.05
20.067	0.05	0.05	0.05	0.05	0.05
20.150	0.05	0.05	0.05	0.05	0.05
20.233	0.05	0.05	0.05	0.05	0.05
20.317	0.05	0.05	0.05	0.05	0.05
20.400	0.05	0.05	0.05	0.05	0.05
20.483	0.05	0.05	0.05	0.05	0.05
20.567	0.05	0.05	0.05	0.05	0.05
20.650	0.05	0.05	0.05	0.05	0.05
20.733	0.05	0.05	0.05	0.05	0.05
20.817	0.05	0.05	0.05	0.05	0.05
20.900	0.05	0.05	0.05	0.05	0.05
20.983	0.05	0.05	0.05	0.05	0.05
21.067	0.05	0.04	0.04	0.04	0.04
21.150	0.04	0.04	0.04	0.04	0.04
21.233	0.04	0.04	0.04	0.04	0.04
21.317	0.04	0.04	0.04	0.04	0.04
21.400	0.04	0.04	0.04	0.04	0.04
21.483	0.04	0.04	0.04	0.04	0.04
21.567	0.04	0.04	0.04	0.04	0.04
21.650	0.04	0.04	0.04	0.04	0.04
21.733	0.04	0.04	0.04	0.04	0.04
21.817	0.04	0.04	0.04	0.04	0.04
21.900	0.04	0.04	0.04	0.04	0.04
21.983	0.04	0.04	0.04	0.04	0.04
22.067	0.04	0.04	0.04	0.04	0.04
22.150	0.04	0.04	0.04	0.04	0.04
22.233	0.04	0.04	0.04	0.04	0.04
22.317	0.04	0.04	0.04	0.04	0.04
22.400	0.04	0.04	0.04	0.04	0.04
22.483	0.04	0.04	0.04	0.04	0.04
22.567	0.04	0.04	0.04	0.04	0.04
22.650	0.04	0.04	0.04	0.04	0.04
22.733	0.04	0.04	0.04	0.04	0.04
22.817	0.04	0.04	0.04	0.04	0.04
22.900	0.04	0.04	0.04	0.04	0.04
22.983	0.04	0.04	0.04	0.04	0.04
23.067	0.04	0.04	0.04	0.04	0.04
23.150	0.04	0.04	0.04	0.04	0.04
23.233	0.04	0.04	0.04	0.04	0.04
23.317	0.04	0.04	0.04	0.04	0.04
23.400	0.04	0.04	0.04	0.04	0.04
23.483	0.04	0.04	0.04	0.04	0.04
23.567	0.04	0.04	0.04	0.04	0.04
23.650	0.04	0.04	0.04	0.04	0.04
23.733	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.817	0.04	0.04	0.04	0.04	0.04
23.900	0.04	0.04	0.04	0.04	0.04
23.983	0.04	0.04	(N/A)	(N/A)	(N/A)


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Outlet) (ft³/s)
1.50
1.38
1.25
1.13
1.00
0.88
0.75
0.63
0.50
0.38
0.25
0.13
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Peak Discharge	1.71 ft³/s
Time to Peak	12.167 hours
Hydrograph Volume	0.215 ac-ft

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
6.100	0.00	0.00	0.00	0.00	0.00
6.183	0.00	0.00	0.00	0.00	0.00
6.267	0.00	0.00	0.00	0.00	0.00
6.350	0.00	0.00	0.00	0.00	0.00
6.433	0.00	0.00	0.00	0.00	0.00
6.517	0.00	0.00	0.00	0.00	0.00
6.600	0.00	0.00	0.00	0.00	0.00
6.683	0.00	0.00	0.00	0.00	0.00
6.767	0.00	0.00	0.00	0.00	0.00
6.850	0.00	0.00	0.00	0.00	0.00
6.933	0.00	0.00	0.00	0.00	0.00
7.017	0.00	0.01	0.01	0.01	0.01
7.100	0.01	0.01	0.01	0.01	0.01
7.183	0.01	0.01	0.01	0.01	0.01
7.267	0.01	0.01	0.01	0.01	0.01
7.350	0.01	0.01	0.01	0.01	0.01
7.433	0.01	0.01	0.01	0.01	0.01
7.517	0.01	0.01	0.01	0.01	0.01
7.600	0.01	0.01	0.01	0.01	0.01
7.683	0.01	0.01	0.01	0.01	0.01
7.767	0.01	0.01	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
7.933	0.01	0.01	0.01	0.01	0.01
8.017	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.183	0.01	0.01	0.01	0.01	0.01
8.267	0.01	0.01	0.01	0.01	0.01
8.350	0.01	0.01	0.01	0.01	0.01
8.433	0.01	0.02	0.02	0.02	0.02
8.517	0.02	0.02	0.02	0.02	0.02
8.600	0.02	0.02	0.02	0.02	0.02
8.683	0.02	0.02	0.02	0.02	0.02
8.767	0.02	0.02	0.02	0.02	0.02
8.850	0.02	0.02	0.02	0.02	0.02
8.933	0.02	0.02	0.02	0.02	0.02
9.017	0.02	0.02	0.02	0.02	0.02
9.100	0.02	0.02	0.02	0.02	0.02
9.183	0.02	0.02	0.02	0.03	0.03
9.267	0.03	0.03	0.03	0.03	0.03
9.350	0.03	0.03	0.03	0.03	0.03
9.433	0.03	0.03	0.03	0.03	0.03
9.517	0.03	0.03	0.03	0.03	0.03
9.600	0.03	0.03	0.03	0.03	0.03
9.683	0.03	0.03	0.03	0.03	0.03
9.767	0.03	0.03	0.03	0.03	0.03
9.850	0.03	0.03	0.04	0.04	0.04
9.933	0.04	0.04	0.04	0.04	0.04
10.017	0.04	0.04	0.04	0.04	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
10.100	0.04	0.04	0.04	0.04	0.04
10.183	0.04	0.04	0.04	0.04	0.04
10.267	0.04	0.04	0.04	0.04	0.05
10.350	0.05	0.05	0.05	0.05	0.05
10.433	0.05	0.05	0.05	0.05	0.05
10.517	0.05	0.05	0.05	0.05	0.05
10.600	0.05	0.05	0.05	0.06	0.06
10.683	0.06	0.06	0.06	0.06	0.06
10.767	0.06	0.06	0.06	0.06	0.06
10.850	0.06	0.06	0.07	0.07	0.07
10.933	0.07	0.07	0.07	0.07	0.07
11.017	0.07	0.07	0.07	0.08	0.08
11.100	0.08	0.08	0.08	0.08	0.08
11.183	0.08	0.08	0.08	0.09	0.09
11.267	0.09	0.09	0.09	0.09	0.09
11.350	0.10	0.10	0.10	0.10	0.10
11.433	0.10	0.10	0.10	0.11	0.11
11.517	0.11	0.11	0.11	0.11	0.11
11.600	0.11	0.11	0.12	0.12	0.12
11.683	0.12	0.13	0.13	0.13	0.14
11.767	0.14	0.15	0.16	0.16	0.17
11.850	0.17	0.19	0.24	0.29	0.44
11.933	0.61	0.78	0.95	1.11	1.26
12.017	1.34	1.41	1.48	1.55	1.60
12.100	1.64	1.67	1.69	1.71	1.71
12.183	1.70	1.69	1.67	1.65	1.63
12.267	1.60	1.57	1.54	1.51	1.48
12.350	1.45	1.42	1.39	1.36	1.33
12.433	1.29	1.26	1.23	1.17	1.12
12.517	1.07	1.03	0.98	0.94	0.90
12.600	0.86	0.82	0.79	0.76	0.73
12.683	0.70	0.67	0.64	0.62	0.60
12.767	0.57	0.55	0.53	0.52	0.50
12.850	0.48	0.47	0.45	0.44	0.43
12.933	0.41	0.40	0.39	0.38	0.37
13.017	0.36	0.35	0.34	0.34	0.33
13.100	0.32	0.31	0.31	0.30	0.30
13.183	0.30	0.29	0.29	0.29	0.29
13.267	0.28	0.28	0.28	0.28	0.28
13.350	0.27	0.27	0.27	0.27	0.26
13.433	0.26	0.26	0.26	0.26	0.25
13.517	0.25	0.25	0.25	0.25	0.24
13.600	0.24	0.24	0.24	0.24	0.23
13.683	0.23	0.23	0.23	0.23	0.22
13.767	0.22	0.22	0.22	0.22	0.22
13.850	0.21	0.21	0.21	0.21	0.21
13.933	0.21	0.20	0.20	0.20	0.20
14.017	0.20	0.20	0.19	0.19	0.19
14.100	0.19	0.19	0.19	0.19	0.18
14.183	0.18	0.18	0.18	0.18	0.18
14.267	0.18	0.18	0.18	0.18	0.18
14.350	0.18	0.18	0.18	0.18	0.18

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

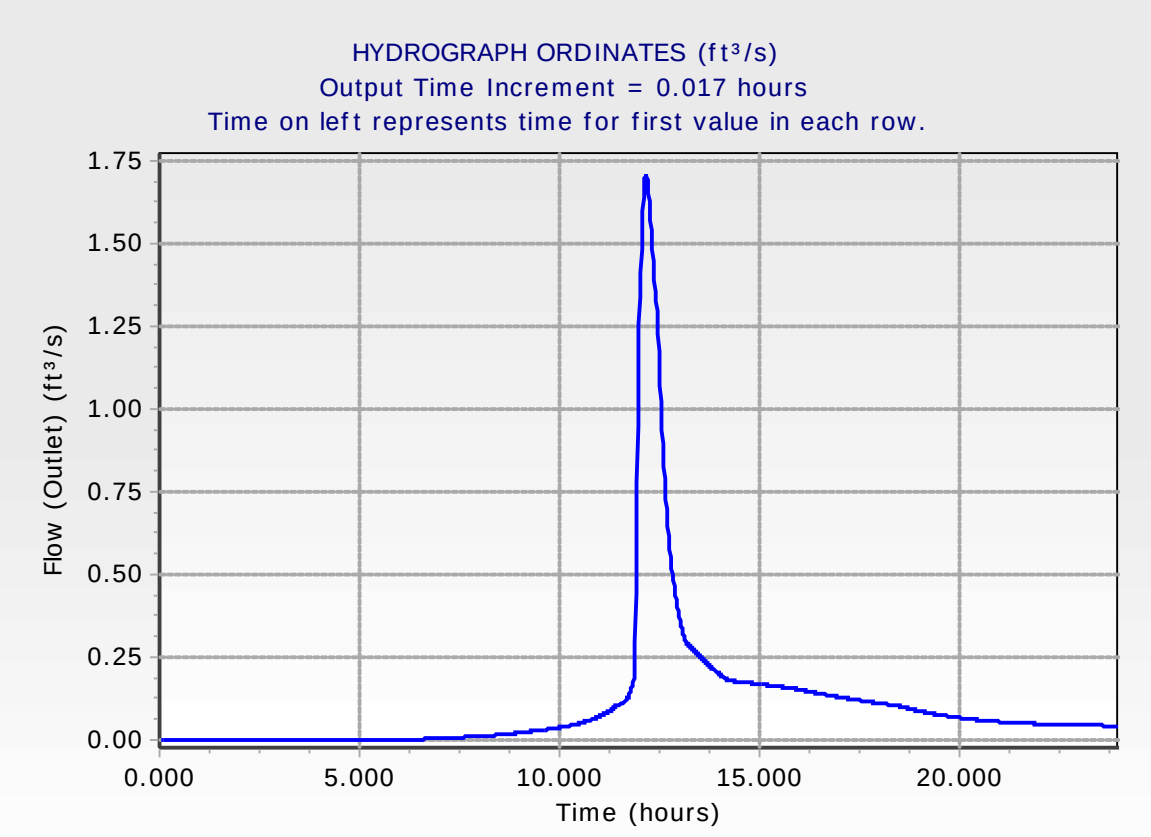
Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
14.433	0.18	0.18	0.18	0.18	0.18
14.517	0.18	0.18	0.18	0.17	0.17
14.600	0.17	0.17	0.17	0.17	0.17
14.683	0.17	0.17	0.17	0.17	0.17
14.767	0.17	0.17	0.17	0.17	0.17
14.850	0.17	0.17	0.17	0.17	0.17
14.933	0.17	0.17	0.17	0.17	0.17
15.017	0.17	0.17	0.17	0.17	0.17
15.100	0.17	0.17	0.17	0.17	0.17
15.183	0.17	0.17	0.17	0.17	0.17
15.267	0.16	0.16	0.16	0.16	0.16
15.350	0.16	0.16	0.16	0.16	0.16
15.433	0.16	0.16	0.16	0.16	0.16
15.517	0.16	0.16	0.16	0.16	0.16
15.600	0.16	0.16	0.16	0.16	0.16
15.683	0.16	0.16	0.16	0.16	0.16
15.767	0.16	0.16	0.16	0.16	0.16
15.850	0.16	0.16	0.15	0.15	0.15
15.933	0.15	0.15	0.15	0.15	0.15
16.017	0.15	0.15	0.15	0.15	0.15
16.100	0.15	0.15	0.15	0.15	0.15
16.183	0.15	0.15	0.15	0.15	0.15
16.267	0.15	0.15	0.14	0.14	0.14
16.350	0.14	0.14	0.14	0.14	0.14
16.433	0.14	0.14	0.14	0.14	0.14
16.517	0.14	0.14	0.14	0.14	0.14
16.600	0.14	0.14	0.14	0.14	0.14
16.683	0.14	0.14	0.14	0.13	0.13
16.767	0.13	0.13	0.13	0.13	0.13
16.850	0.13	0.13	0.13	0.13	0.13
16.933	0.13	0.13	0.13	0.13	0.13
17.017	0.13	0.13	0.13	0.13	0.13
17.100	0.13	0.13	0.13	0.13	0.13
17.183	0.13	0.13	0.13	0.12	0.12
17.267	0.12	0.12	0.12	0.12	0.12
17.350	0.12	0.12	0.12	0.12	0.12
17.433	0.12	0.12	0.12	0.12	0.12
17.517	0.12	0.12	0.12	0.12	0.12
17.600	0.12	0.12	0.12	0.12	0.12
17.683	0.12	0.12	0.12	0.12	0.12
17.767	0.12	0.11	0.11	0.11	0.11
17.850	0.11	0.11	0.11	0.11	0.11
17.933	0.11	0.11	0.11	0.11	0.11
18.017	0.11	0.11	0.11	0.11	0.11
18.100	0.11	0.11	0.11	0.11	0.11
18.183	0.11	0.11	0.11	0.11	0.11
18.267	0.11	0.11	0.11	0.11	0.11
18.350	0.11	0.11	0.10	0.10	0.10
18.433	0.10	0.10	0.10	0.10	0.10
18.517	0.10	0.10	0.10	0.10	0.10
18.600	0.10	0.10	0.10	0.10	0.10
18.683	0.10	0.10	0.10	0.10	0.09

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
18.767	0.09	0.09	0.09	0.09	0.09
18.850	0.09	0.09	0.09	0.09	0.09
18.933	0.09	0.09	0.09	0.09	0.09
19.017	0.09	0.09	0.09	0.09	0.09
19.100	0.09	0.08	0.08	0.08	0.08
19.183	0.08	0.08	0.08	0.08	0.08
19.267	0.08	0.08	0.08	0.08	0.08
19.350	0.08	0.08	0.08	0.08	0.08
19.433	0.08	0.08	0.08	0.08	0.08
19.517	0.08	0.08	0.08	0.08	0.07
19.600	0.07	0.07	0.07	0.07	0.07
19.683	0.07	0.07	0.07	0.07	0.07
19.767	0.07	0.07	0.07	0.07	0.07
19.850	0.07	0.07	0.07	0.07	0.07
19.933	0.07	0.07	0.07	0.07	0.07
20.017	0.07	0.07	0.07	0.07	0.07
20.100	0.07	0.07	0.07	0.07	0.06
20.183	0.06	0.06	0.06	0.06	0.06
20.267	0.06	0.06	0.06	0.06	0.06
20.350	0.06	0.06	0.06	0.06	0.06
20.433	0.06	0.06	0.06	0.06	0.06
20.517	0.06	0.06	0.06	0.06	0.06
20.600	0.06	0.06	0.06	0.06	0.06
20.683	0.06	0.06	0.06	0.06	0.06
20.767	0.06	0.06	0.06	0.06	0.06
20.850	0.06	0.06	0.06	0.06	0.06
20.933	0.06	0.06	0.06	0.06	0.06
21.017	0.06	0.05	0.05	0.05	0.05
21.100	0.05	0.05	0.05	0.05	0.05
21.183	0.05	0.05	0.05	0.05	0.05
21.267	0.05	0.05	0.05	0.05	0.05
21.350	0.05	0.05	0.05	0.05	0.05
21.433	0.05	0.05	0.05	0.05	0.05
21.517	0.05	0.05	0.05	0.05	0.05
21.600	0.05	0.05	0.05	0.05	0.05
21.683	0.05	0.05	0.05	0.05	0.05
21.767	0.05	0.05	0.05	0.05	0.05
21.850	0.05	0.05	0.05	0.05	0.05
21.933	0.05	0.05	0.05	0.05	0.05
22.017	0.05	0.05	0.05	0.05	0.05
22.100	0.05	0.05	0.05	0.05	0.05
22.183	0.05	0.05	0.05	0.05	0.05
22.267	0.05	0.05	0.05	0.05	0.05
22.350	0.05	0.05	0.05	0.05	0.05
22.433	0.05	0.05	0.05	0.05	0.05
22.517	0.05	0.05	0.05	0.05	0.05
22.600	0.05	0.05	0.05	0.05	0.05
22.683	0.05	0.05	0.05	0.05	0.05
22.767	0.05	0.05	0.05	0.05	0.05
22.850	0.05	0.05	0.05	0.05	0.05
22.933	0.05	0.05	0.05	0.05	0.05
23.017	0.05	0.05	0.05	0.05	0.04

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
23.100	0.04	0.04	0.04	0.04	0.04
23.183	0.04	0.04	0.04	0.04	0.04
23.267	0.04	0.04	0.04	0.04	0.04
23.350	0.04	0.04	0.04	0.04	0.04
23.433	0.04	0.04	0.04	0.04	0.04
23.517	0.04	0.04	0.04	0.04	0.04
23.600	0.04	0.04	0.04	0.04	0.04
23.683	0.04	0.04	0.04	0.04	0.04
23.767	0.04	0.04	0.04	0.04	0.04
23.850	0.04	0.04	0.04	0.04	0.04
23.933	0.04	0.04	0.04	0.04	0.04


HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.017 hours
Time on left represents time for first value in each row.
Flow (Outlet) (ft³/s)
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.000
5.000
10.000
15.000
20.000
Time (hours)

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	71.726 degrees West
Latitude	44.282 degrees North
Elevation	0 feet
Date/Time	Wed, 15 Jul 2015 10:38:20 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.39	0.49	0.64	0.80	0.99	**1yr**	0.69	0.95	1.13	1.38	1.67	2.01	2.30	**1yr**	1.78	2.21	2.58	3.22	3.72	**1yr**
2yr	0.30	0.46	0.57	0.76	0.95	1.18	**2yr**	0.82	1.09	1.35	1.63	1.96	2.35	2.68	**2yr**	2.08	2.58	3.02	3.70	4.26	**2yr**
5yr	0.35	0.55	0.69	0.92	1.18	1.47	**5yr**	1.02	1.35	1.68	2.04	2.43	2.88	3.31	**5yr**	2.55	3.18	3.68	4.47	5.10	**5yr**
10yr	0.40	0.62	0.79	1.07	1.39	1.75	**10yr**	1.20	1.59	2.00	2.42	2.87	3.37	3.88	**10yr**	2.98	3.73	4.27	5.15	5.85	**10yr**
25yr	0.47	0.74	0.95	1.30	1.73	2.19	**25yr**	1.50	1.96	2.50	3.01	3.56	4.14	4.80	**25yr**	3.66	4.61	5.21	6.23	7.02	**25yr**
50yr	0.53	0.85	1.09	1.52	2.05	2.60	**50yr**	1.77	2.31	2.97	3.57	4.19	4.84	5.64	**50yr**	4.28	5.42	6.07	7.19	8.05	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.09	**100yr**	2.09	2.71	3.54	4.23	4.93	5.65	6.62	**100yr**	5.00	6.37	7.06	8.30	9.24	**100yr**
200yr	0.69	1.12	1.45	2.08	2.87	3.66	**200yr**	2.47	3.19	4.20	5.00	5.80	6.61	7.79	**200yr**	5.85	7.49	8.22	9.59	10.61	**200yr**
500yr	0.82	1.35	1.76	2.55	3.59	4.60	**500yr**	3.09	3.97	5.26	6.24	7.20	8.14	9.67	**500yr**	7.21	9.30	10.07	11.62	12.75	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.22	0.34	0.41	0.55	0.68	0.81	**1yr**	0.59	0.79	0.94	1.20	1.48	1.84	2.17	**1yr**	1.63	2.09	2.32	2.68	3.08	**1yr**
2yr	0.29	0.44	0.54	0.74	0.91	1.08	**2yr**	0.79	1.05	1.24	1.57	1.96	2.30	2.62	**2yr**	2.04	2.52	2.95	3.63	4.19	**2yr**
5yr	0.32	0.50	0.62	0.85	1.08	1.27	**5yr**	0.93	1.24	1.43	1.82	2.34	2.72	3.11	**5yr**	2.41	2.99	3.50	4.26	4.88	**5yr**
10yr	0.35	0.54	0.67	0.94	1.21	1.42	**10yr**	1.05	1.39	1.58	2.02	2.50	3.06	3.54	**10yr**	2.71	3.41	3.96	4.82	5.46	**10yr**
25yr	0.40	0.60	0.75	1.07	1.41	1.64	**25yr**	1.22	1.60	1.79	2.32	2.85	3.59	4.20	**25yr**	3.18	4.04	4.70	5.66	6.33	**25yr**
50yr	0.42	0.64	0.80	1.15	1.55	1.82	**50yr**	1.34	1.78	1.95	2.55	3.14	4.03	4.77	**50yr**	3.56	4.59	5.33	6.38	7.11	**50yr**
100yr	0.46	0.69	0.87	1.25	1.72	2.01	**100yr**	1.48	1.96	2.13	2.80	3.46	4.53	5.41	**100yr**	4.01	5.20	6.07	7.23	7.97	**100yr**
200yr	0.50	0.75	0.95	1.37	1.91	2.21	**200yr**	1.65	2.16	2.32	3.09	3.79	5.09	6.27	**200yr**	4.51	6.03	6.91	8.18	8.94	**200yr**
500yr	0.55	0.83	1.06	1.54	2.19	2.53	**500yr**	1.89	2.47	2.58	3.49	4.28	5.95	7.48	**500yr**	5.27	7.20	8.22	9.66	10.43	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.23	1.61	1.94	2.14	2.46	**1yr**	1.90	2.36	2.73	3.41	3.95	**1yr**
2yr	0.32	0.49	0.61	0.82	1.01	1.19	**2yr**	0.87	1.16	1.35	1.73	2.14	2.42	2.74	**2yr**	2.14	2.64	3.09	3.78	4.35	**2yr**
5yr	0.39	0.60	0.74	1.02	1.29	1.50	**5yr**	1.12	1.47	1.68	2.15	2.62	3.04	3.49	**5yr**	2.69	3.36	3.87	4.68	5.32	**5yr**
10yr	0.46	0.70	0.87	1.22	1.57	1.83	**10yr**	1.36	1.79	1.99	2.57	3.21	3.63	4.21	**10yr**	3.22	4.05	4.60	5.51	6.19	**10yr**
25yr	0.58	0.88	1.10	1.57	2.06	2.39	**25yr**	1.78	2.33	2.53	3.29	4.11	4.64	5.41	**25yr**	4.10	5.20	5.79	6.85	7.59	**25yr**
50yr	0.69	1.06	1.32	1.89	2.55	2.91	**50yr**	2.20	2.85	3.05	3.96	4.97	5.56	6.53	**50yr**	4.92	6.28	6.88	8.05	8.85	**50yr**
100yr	0.84	1.26	1.58	2.29	3.14	3.57	**100yr**	2.71	3.49	3.66	4.77	6.03	6.70	7.91	**100yr**	5.93	7.61	8.19	9.49	10.33	**100yr**
200yr	1.00	1.51	1.91	2.77	3.86	4.37	**200yr**	3.33	4.27	4.43	5.78	7.32	8.07	9.45	**200yr**	7.14	9.09	9.74	11.18	12.06	**200yr**
500yr	1.29	1.92	2.47	3.59	5.11	5.71	**500yr**	4.41	5.58	5.70	7.45	9.50	10.34	12.10	**500yr**	9.15	11.64	12.27	13.89	14.82	**500yr**

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APPENDIX C – HYDRAULIC AND STABILITY CALCULATIONS

Worksheet for Drainage Line P1_10YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.02500	ft/ft
Diameter	1.00	ft
Discharge	1.62	ft^3/s

Results

Normal Depth	0.35	ft
Flow Area	0.25	ft^2
Wetted Perimeter	1.27	ft
Hydraulic Radius	0.19	ft
Top Width	0.96	ft
Critical Depth	0.54	ft
Percent Full	35.2	%
Critical Slope	0.00543	ft/ft
Velocity	6.57	ft/s
Velocity Head	0.67	ft
Specific Energy	1.02	ft
Froude Number	2.28	
Maximum Discharge	6.56	ft^3/s
Discharge Full	6.10	ft^3/s
Slope Full	0.00176	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	35.18	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.35	ft
Critical Depth	0.54	ft
Channel Slope	0.02500	ft/ft
Critical Slope	0.00543	ft/ft

Worksheet for Drainage Line P1_25YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.02500	ft/ft
Diameter	1.00	ft
Discharge	2.20	ft^3/s

Results

Normal Depth	0.41	ft
Flow Area	0.31	ft^2
Wetted Perimeter	1.40	ft
Hydraulic Radius	0.22	ft
Top Width	0.99	ft
Critical Depth	0.63	ft
Percent Full	41.5	%
Critical Slope	0.00610	ft/ft
Velocity	7.14	ft/s
Velocity Head	0.79	ft
Specific Energy	1.21	ft
Froude Number	2.25	
Maximum Discharge	6.56	ft^3/s
Discharge Full	6.10	ft^3/s
Slope Full	0.00325	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	41.49	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.41	ft
Critical Depth	0.63	ft
Channel Slope	0.02500	ft/ft
Critical Slope	0.00610	ft/ft

Worksheet for Drainage Line P1_100YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.02500	ft/ft
Diameter	1.00	ft
Discharge	3.37	ft^3/s

Results

Normal Depth	0.53	ft
Flow Area	0.42	ft^2
Wetted Perimeter	1.63	ft
Hydraulic Radius	0.26	ft
Top Width	1.00	ft
Critical Depth	0.79	ft
Percent Full	53.1	%
Critical Slope	0.00828	ft/ft
Velocity	7.96	ft/s
Velocity Head	0.99	ft
Specific Energy	1.52	ft
Froude Number	2.16	
Maximum Discharge	6.56	ft^3/s
Discharge Full	6.10	ft^3/s
Slope Full	0.00762	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	53.05	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.53	ft
Critical Depth	0.79	ft
Channel Slope	0.02500	ft/ft
Critical Slope	0.00828	ft/ft

Worksheet for Drainage Line P2_WQF

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.04000	ft/ft
Diameter	0.17	ft
Discharge	0.07	ft³/s

Results

Normal Depth	0.12	ft
Flow Area	0.02	ft²
Wetted Perimeter	0.33	ft
Hydraulic Radius	0.05	ft
Top Width	0.15	ft
Critical Depth	0.16	ft
Percent Full	69.5	%
Critical Slope	0.02382	ft/ft
Velocity	4.00	ft/s
Velocity Head	0.25	ft
Specific Energy	0.36	ft
Froude Number	2.17	
Maximum Discharge	0.08	ft³/s
Discharge Full	0.08	ft³/s
Slope Full	0.02754	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	69.54	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.12	ft
Critical Depth	0.16	ft
Channel Slope	0.04000	ft/ft
Critical Slope	0.02382	ft/ft

Worksheet for Drainage Line P3_10YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.04400	ft/ft
Diameter	1.00	ft
Discharge	1.62	ft^3/s

Results

Normal Depth	0.30	ft
Flow Area	0.20	ft^2
Wetted Perimeter	1.17	ft
Hydraulic Radius	0.17	ft
Top Width	0.92	ft
Critical Depth	0.54	ft
Percent Full	30.3	%
Critical Slope	0.00543	ft/ft
Velocity	8.05	ft/s
Velocity Head	1.01	ft
Specific Energy	1.31	ft
Froude Number	3.03	
Maximum Discharge	8.71	ft^3/s
Discharge Full	8.10	ft^3/s
Slope Full	0.00176	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	30.34	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.30	ft
Critical Depth	0.54	ft
Channel Slope	0.04400	ft/ft
Critical Slope	0.00543	ft/ft

Worksheet for Drainage Line P3_25YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.04400	ft/ft
Diameter	1.00	ft
Discharge	2.20	ft^3/s

Results

Normal Depth	0.36	ft
Flow Area	0.25	ft^2
Wetted Perimeter	1.28	ft
Hydraulic Radius	0.20	ft
Top Width	0.96	ft
Critical Depth	0.63	ft
Percent Full	35.6	%
Critical Slope	0.00609	ft/ft
Velocity	8.77	ft/s
Velocity Head	1.20	ft
Specific Energy	1.55	ft
Froude Number	3.02	
Maximum Discharge	8.71	ft^3/s
Discharge Full	8.10	ft^3/s
Slope Full	0.00325	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	35.62	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.36	ft
Critical Depth	0.63	ft
Channel Slope	0.04400	ft/ft
Critical Slope	0.00609	ft/ft

Worksheet for Drainage Line P3_100YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.04400	ft/ft
Diameter	1.00	ft
Discharge	3.37	ft^3/s

Results

Normal Depth	0.45	ft
Flow Area	0.34	ft^2
Wetted Perimeter	1.47	ft
Hydraulic Radius	0.23	ft
Top Width	1.00	ft
Critical Depth	0.79	ft
Percent Full	45.0	%
Critical Slope	0.00829	ft/ft
Velocity	9.83	ft/s
Velocity Head	1.50	ft
Specific Energy	1.95	ft
Froude Number	2.95	
Maximum Discharge	8.71	ft^3/s
Discharge Full	8.10	ft^3/s
Slope Full	0.00762	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	45.01	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.45	ft
Critical Depth	0.79	ft
Channel Slope	0.04400	ft/ft
Critical Slope	0.00829	ft/ft

Worksheet for Drainage Line P4_WQF

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.04600	ft/ft
Diameter	0.67	ft
Discharge	0.07	ft^3/s

Results

Normal Depth	0.06	ft
Flow Area	0.02	ft^2
Wetted Perimeter	0.42	ft
Hydraulic Radius	0.04	ft
Top Width	0.39	ft
Critical Depth	0.12	ft
Percent Full	9.7	%
Critical Slope	0.00399	ft/ft
Velocity	3.77	ft/s
Velocity Head	0.22	ft
Specific Energy	0.28	ft
Froude Number	3.17	
Maximum Discharge	3.63	ft^3/s
Discharge Full	3.37	ft^3/s
Slope Full	0.00002	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	9.65	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.06	ft
Critical Depth	0.12	ft
Channel Slope	0.04600	ft/ft
Critical Slope	0.00399	ft/ft

Worksheet for Drainage Line P5_10YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.02500	ft/ft
Diameter	1.00	ft
Discharge	1.62	ft^3/s

Results

Normal Depth	0.35	ft
Flow Area	0.25	ft^2
Wetted Perimeter	1.27	ft
Hydraulic Radius	0.19	ft
Top Width	0.96	ft
Critical Depth	0.54	ft
Percent Full	35.2	%
Critical Slope	0.00543	ft/ft
Velocity	6.57	ft/s
Velocity Head	0.67	ft
Specific Energy	1.02	ft
Froude Number	2.28	
Maximum Discharge	6.56	ft^3/s
Discharge Full	6.10	ft^3/s
Slope Full	0.00176	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	35.18	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.35	ft
Critical Depth	0.54	ft
Channel Slope	0.02500	ft/ft
Critical Slope	0.00543	ft/ft

Worksheet for Drainage Line P5_25YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.02500	ft/ft
Diameter	1.00	ft
Discharge	2.20	ft^3/s

Results

Normal Depth	0.41	ft
Flow Area	0.31	ft^2
Wetted Perimeter	1.40	ft
Hydraulic Radius	0.22	ft
Top Width	0.99	ft
Critical Depth	0.63	ft
Percent Full	41.5	%
Critical Slope	0.00610	ft/ft
Velocity	7.14	ft/s
Velocity Head	0.79	ft
Specific Energy	1.21	ft
Froude Number	2.25	
Maximum Discharge	6.56	ft^3/s
Discharge Full	6.10	ft^3/s
Slope Full	0.00325	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	41.49	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.41	ft
Critical Depth	0.63	ft
Channel Slope	0.02500	ft/ft
Critical Slope	0.00610	ft/ft

Worksheet for Drainage Line P5_100YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.02500	ft/ft
Diameter	1.00	ft
Discharge	3.37	ft^3/s

Results

Normal Depth	0.53	ft
Flow Area	0.42	ft^2
Wetted Perimeter	1.63	ft
Hydraulic Radius	0.26	ft
Top Width	1.00	ft
Critical Depth	0.79	ft
Percent Full	53.1	%
Critical Slope	0.00828	ft/ft
Velocity	7.96	ft/s
Velocity Head	0.99	ft
Specific Energy	1.52	ft
Froude Number	2.16	
Maximum Discharge	6.56	ft^3/s
Discharge Full	6.10	ft^3/s
Slope Full	0.00762	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	53.05	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.53	ft
Critical Depth	0.79	ft
Channel Slope	0.02500	ft/ft
Critical Slope	0.00828	ft/ft

Worksheet for Drainage Line P6_10YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.05000	ft/ft
Diameter	1.00	ft
Discharge	0.51	ft^3/s

Results

Normal Depth	0.17	ft
Flow Area	0.09	ft^2
Wetted Perimeter	0.85	ft
Hydraulic Radius	0.10	ft
Top Width	0.75	ft
Critical Depth	0.30	ft
Percent Full	17.1	%
Critical Slope	0.00561	ft/ft
Velocity	5.69	ft/s
Velocity Head	0.50	ft
Specific Energy	0.67	ft
Froude Number	2.91	
Maximum Discharge	8.57	ft^3/s
Discharge Full	7.97	ft^3/s
Slope Full	0.00020	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	17.14	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.17	ft
Critical Depth	0.30	ft
Channel Slope	0.05000	ft/ft
Critical Slope	0.00561	ft/ft

Worksheet for Drainage Line P6_25YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.05000	ft/ft
Diameter	1.00	ft
Discharge	1.02	ft^3/s

Results

Normal Depth	0.24	ft
Flow Area	0.15	ft^2
Wetted Perimeter	1.03	ft
Hydraulic Radius	0.14	ft
Top Width	0.86	ft
Critical Depth	0.42	ft
Percent Full	24.2	%
Critical Slope	0.00581	ft/ft
Velocity	6.97	ft/s
Velocity Head	0.75	ft
Specific Energy	1.00	ft
Froude Number	2.97	
Maximum Discharge	8.57	ft^3/s
Discharge Full	7.97	ft^3/s
Slope Full	0.00082	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	24.17	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.24	ft
Critical Depth	0.42	ft
Channel Slope	0.05000	ft/ft
Critical Slope	0.00581	ft/ft

Worksheet for Drainage Line P6_100YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.05000	ft/ft
Diameter	1.00	ft
Discharge	1.71	ft^3/s

Results

Normal Depth	0.31	ft
Flow Area	0.21	ft^2
Wetted Perimeter	1.19	ft
Hydraulic Radius	0.18	ft
Top Width	0.93	ft
Critical Depth	0.56	ft
Percent Full	31.5	%
Critical Slope	0.00649	ft/ft
Velocity	8.08	ft/s
Velocity Head	1.01	ft
Specific Energy	1.33	ft
Froude Number	2.98	
Maximum Discharge	8.57	ft^3/s
Discharge Full	7.97	ft^3/s
Slope Full	0.00230	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	31.46	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.31	ft
Critical Depth	0.56	ft
Channel Slope	0.05000	ft/ft
Critical Slope	0.00649	ft/ft

Worksheet for Drainage Line P7_10YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.05000	ft/ft
Diameter	1.00	ft
Discharge	0.51	ft^3/s

Results

Normal Depth	0.17	ft
Flow Area	0.09	ft^2
Wetted Perimeter	0.85	ft
Hydraulic Radius	0.10	ft
Top Width	0.75	ft
Critical Depth	0.30	ft
Percent Full	17.1	%
Critical Slope	0.00561	ft/ft
Velocity	5.69	ft/s
Velocity Head	0.50	ft
Specific Energy	0.67	ft
Froude Number	2.91	
Maximum Discharge	8.57	ft^3/s
Discharge Full	7.97	ft^3/s
Slope Full	0.00020	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	17.14	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.17	ft
Critical Depth	0.30	ft
Channel Slope	0.05000	ft/ft
Critical Slope	0.00561	ft/ft

Worksheet for Drainage Line P7_25YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.05000	ft/ft
Diameter	1.00	ft
Discharge	1.02	ft^3/s

Results

Normal Depth	0.24	ft
Flow Area	0.15	ft^2
Wetted Perimeter	1.03	ft
Hydraulic Radius	0.14	ft
Top Width	0.86	ft
Critical Depth	0.42	ft
Percent Full	24.2	%
Critical Slope	0.00581	ft/ft
Velocity	6.97	ft/s
Velocity Head	0.75	ft
Specific Energy	1.00	ft
Froude Number	2.97	
Maximum Discharge	8.57	ft^3/s
Discharge Full	7.97	ft^3/s
Slope Full	0.00082	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	24.17	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.24	ft
Critical Depth	0.42	ft
Channel Slope	0.05000	ft/ft
Critical Slope	0.00581	ft/ft

Worksheet for Drainage Line P7_100YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.05000	ft/ft
Diameter	1.00	ft
Discharge	1.71	ft^3/s

Results

Normal Depth	0.31	ft
Flow Area	0.21	ft^2
Wetted Perimeter	1.19	ft
Hydraulic Radius	0.18	ft
Top Width	0.93	ft
Critical Depth	0.56	ft
Percent Full	31.5	%
Critical Slope	0.00649	ft/ft
Velocity	8.08	ft/s
Velocity Head	1.01	ft
Specific Energy	1.33	ft
Froude Number	2.98	
Maximum Discharge	8.57	ft^3/s
Discharge Full	7.97	ft^3/s
Slope Full	0.00230	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	31.46	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.31	ft
Critical Depth	0.56	ft
Channel Slope	0.05000	ft/ft
Critical Slope	0.00649	ft/ft

Worksheet for Emergency Spillway Weir-100YR

Project Description

Solve For	Headwater Elevation

Input Data

Discharge		1.76	ft^3/s
Crest Elevation		1079.00	ft
Tailwater Elevation		0.00	ft
Crest Surface Type	Gravel		
Crest Breadth		6.00	ft
Crest Length		5.00	ft

Results

Headwater Elevation	1079.26	ft
Headwater Height Above Crest	0.26	ft
Tailwater Height Above Crest	-1079.00	ft
Weir Coefficient	2.61	US
Submergence Factor	1.00	
Adjusted Weir Coefficient	2.61	US
Flow Area	1.31	ft^2
Velocity	1.34	ft/s
Wetted Perimeter	5.53	ft
Top Width	5.00	ft

Worksheet for Emergency Spillway Channel-100YR

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.078	
Channel Slope	0.50000	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	5.00	ft
Discharge	1.76	ft^3/s

Results

Normal Depth	0.11	ft
Flow Area	0.59	ft^2
Wetted Perimeter	5.70	ft
Hydraulic Radius	0.10	ft
Top Width	5.67	ft
Critical Depth	0.15	ft
Critical Slope	0.17256	ft/ft
Velocity	2.97	ft/s
Velocity Head	0.14	ft
Specific Energy	0.25	ft
Froude Number	1.62	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.11	ft
Critical Depth	0.15	ft
Channel Slope	0.50000	ft/ft
Critical Slope	0.17256	ft/ft

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Client *Eversource* Page *1* of

Project *Northern Pass* Date 08/19/15 Made By *L. Guerin*

Bethlehem - TS#5a Checked By

Basin Spillway Shear Stress Preliminary Final **x**

Shear Stress Calculation for Basin Spillway

Basin	* 100 Year Flow (cfs)	100-YR Flow depth (ft)	Channel Slope (ft/ft)	Channel Lining	Allowable Shear Stress (lb/ft)	Calculated** Shear Stress (lb/ft)
DB-1	1.76	0.11	0.5	12" RipRap	4.8	3.43

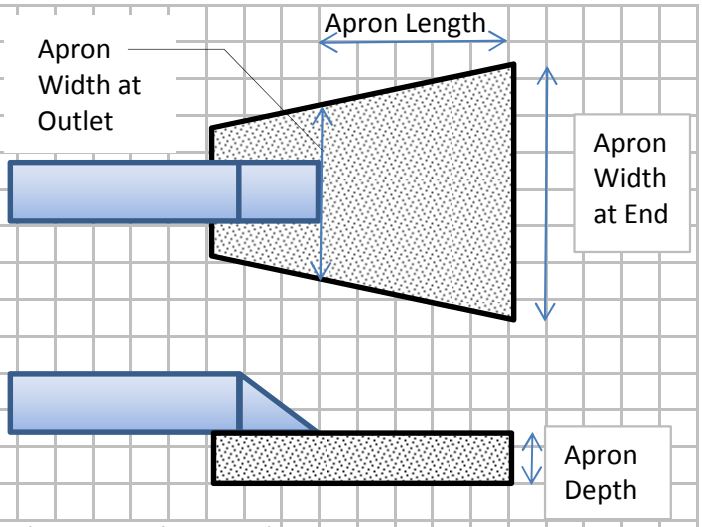
* Values taken from Flowmaster Results - 100 year storm event used for detention basins

** Shear stress = 62.4 lb/cf x (flow depth) x (channel slope)

*** Allowable shear Stress are taken from table 2.3 of FHA HEC 15, Third Edition

Source:

New Hampshire Stormwater Manual, Volume 2
Post-Construction Best Management Practices
Selection & Design, Dec 2008, Section 4.6.6



Apron Width at Outlet:	Width =	3 x Pipe Dia. (or width of channel)	
Apron Length:	Length=	(1.8 x Q) / (Dia. ^1.5) + 7 x Dia.	if Tw depth is < 1/2 dia.
	Length=	(3.0 x Q) / (Dia. ^1.5) + 7 x Dia.	if Tw depth is >= 1/2 dia.
Apron Width at End:	Width = 3 x Dia + Apron Length		if Tw depth is < 1/2 dia.
	Width = 3 x Dia + 0.4 x Apron Length		if Tw depth is >= 1/2 dia.
	or apron width = channel width if a well defined channel exists		
Rock Riprap:	Median Diameter =	(0.2 x Q ^4/3) / Tw x Dia	
	Depth = 18" or 1.5 x largest stone dia.		

Design Element	FES-2
Design Storm (YR)	25-YR
Defined Channel (yes/no)	No
Channel Width (ft)	N/A
Pipe Dia (in)	12
Tail Water (ft)	0.22
	TW<0.5D
Flow (Q), cfs	1.02
Apron Width (outlet) ft	3
Apron Length, ft	8.84
Apron Width (end) ft	11.84
Apron Width, (channel), ft	N/A
Median Stone dia. (D50), inches	6
Apron Depth, inches	18

APPENDIX D – NH DES WORKSHEETS

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.06)

Type/Node Name: **Underground Sand Filter SF-1**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable

Yes		Have you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.06(b)?	
0.68	ac	A = Area draining to the practice[1]	
0.05	ac	A_I = Impervious area draining to the practice	
0.07	decimal	I = percent impervious area draining to the practice, in decimal form	
0.12	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.08	ac-in	WQV= 1" x Rv x A	
287	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
72	cf	25% x WQV (check calc for sediment forebay volume)	
215	cf	75% x WQV (check calc for surface sand filter volume)	
Deep Sump Catch Basir		Method of Pretreatment? (not required for clean or roof runoff)	
262	cf	V_{SED} = sediment forebay volume, if used for pretreatment	← ≥ 25%WQV
85	sf	A_{SA} = surface area of the practice	
1.75	iph	I_{DESIGN} = design infiltration rate[2]	
Yes	Yes/No	If I_{DESIGN} is < 0.50 iph, has an underdrain been provided?	
23.3	hours	T_{DRAIN} = drain time = V / (A_{SA} * I_{DESIGN})	← ≤ 72-hrs
1,087.65	feet	E_{FC} = elevation of the bottom of the filter course material	
1,086.65	feet	E_{UD} = invert elevation of the underdrain (UD), if applicable	
1,086.65	feet	E_{BTM} = elevation of the bottom of the practice (i.e., bottom of the stone reservoir).	
1,082.80	feet	E_{SHWT} = elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
1,080.80	feet	E_{ROCK} = elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = depth to UD from the bottom of the filter course[3]	← ≥ 1'
6.85	feet	$D_{FC\ to\ ROCK}$ = depth to bedrock from the bottom of the filter course[3]	← ≥ 1'
4.85	feet	$D_{FC\ to\ SHWT}$ = depth to SHWT from the bottom of the filter course[3]	← ≥ 1'
3.85	feet	$D_{BTM\ to\ SHWT}$ = depth to SHWT from the bottom of the practice[3]	← ≥ 2'
1,091.75	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
1,093.65	ft	Elevation of the top of the practice	
YES		10 peak elevation ≤ Elevation of the top of the practice	← yes

If a surface sand filter is proposed:

YES	ac	Drainage Area check.	← < 10 ac
	cf	V = volume of storage[4, 5] (attach a stage-storage table)	← ≥ 75%WQV
	inches	D_{FC} = filter course thickness	← 18"
Sheet		Note what sheet in the plan set contains the filter course specification	
	Yes/No	Access grate provided?	← yes
		The filter shall not be covered in grass. What is covering the filter?	

If an underground sand filter is proposed:

YES	ac	Drainage Area check.	← < 10 ac
477	cf	V = volume of storage[4, 5] (attach a stage-storage table)	← ≥ 75%WQV
24.0	inches	D_{FC} = filter course thickness	← 24"
Sheet		Note what sheet in the plan set contains the filter course specification	
Yes	Yes/No	Access grate provided?	← yes

If a bioretention area is proposed:

YES	ac	Drainage Area no larger than 5 ac?	← **yes**
	cf	V = volume of storage[4, 5] (attach a stage-storage table)	← **≥ WQV**
	inches	D_{FC} = filter course thickness	← **18"**
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	← **≥2:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	

If porous pavement is proposed:

		Type of pavement proposed (concrete? Asphalt? Pavers? Etc)	
	acres	A_{SA} = surface area of the pervious pavement	
-	:1	ratio of the contributing area to the pervious surface area	← **5:1**
3.0	inches	D_{FC} = filter course thickness	← **12"**
Sheet		Note what sheet in the plan set contains the filter course spec.	← **304.1 sand**

1. If the practice is a tree box filter, the drainage area shall be < 0.1 acre

2. Rate of the limiting layer (either the filter course or the underlying soil). See Vol. 2 of the NH Stormwater Manual, Ch. 2-4, for guidance on determining the infiltration rate.

3. If not within a GPA or WSIPA: SHWT/Bedrock must be at least 1 foot below the filter course material (or an underdrain must drain the SHWT to at least one foot below the filter course material). If within a GPA or WSIPA: SHWT must be at least two feet below the bottom of the practice OR the filter course material must be at least twice as thick as required and the SHWT must be at least one foot below the filter course material.

4. Volume without depending on infiltration. The storage above the filter media shall not include the volume above the outlet structure, if any.

5. The volume includes the storage above the filter but below the invert of the outlet structure (if any), the filter media voids, and the pretreatment area.

Designer's Notes:

1. Assumed the limiting layer is the sand layer which has a permeability rate (K) of 3.5 ft/day (1.75 in/hr).

2. A waterproof coating will be applied to the exterior walls of the concrete chamber.

Groundwater Recharge Volume (GRV) Calculation

-	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
(0.05)	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
0.02	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.40	inches	Rd = weighted groundwater recharge depth	
-0.012	ac-in	GRV = AI * Rd	
(44)	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12")	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

Groundwater Recharge is not required

General Calculations - WQV and WQF
(optional worksheet)

This worksheet may be useful when designing a BMP that does not fit into one of the specific worksheets already provided. For example, if proposing a new technology, which is not a stormwater wetland, infiltration practice, etc., then this worksheet may be useful.

Water Quality Volume (WQV)

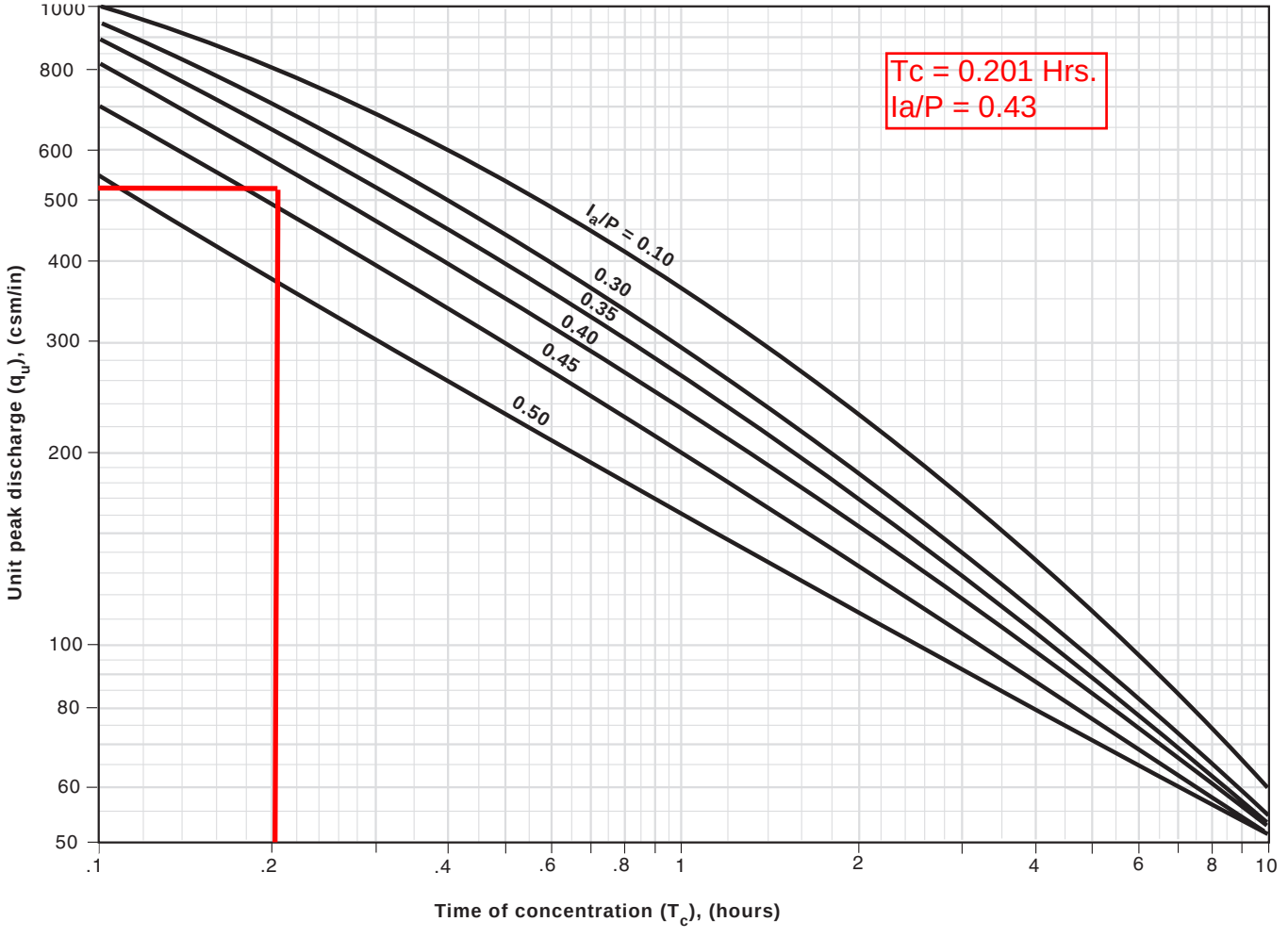
0.68	ac	A = Area draining to the practice
0.05	ac	A_I = Impervious area draining to the practice
0.07	decimal	I = percent impervious area draining to the practice, in decimal form
0.12	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)
0.08	ac-in	WQV= 1" x Rv x A
287	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")

Water Quality Flow (WQF)

1	inches	P = amount of rainfall. For WQF in NH, P = 1".
0.12	inches	Q = water quality depth. Q = WQV/A
82	unitless	CN = unit peak discharge curve number. $CN = 1000/(10+5P+10Q-10*[Q^2 + 1.25*Q*P]^{0.5})$
2.2	inches	S = potential maximum retention. S = (1000/CN) - 10
0.436	inches	Ia = initial abstraction. Ia = 0.2S
12.1	minutes	T_c = Time of Concentration
525.0	cfs/mi^2/in	qu is the unit peak discharge. Obtain this value from TR-55 exhibits 4-II and 4-III
0.065	cfs	WQF = q_u x WQV. Conversion: to convert "cfs/mi^2/in * ac-in" to "cfs" multiply by 1mi^2/640ac

Designer's Notes:

Exhibit 4-II Unit peal discharge (q_u) for NRCS (SCS) type II rainfall distribution

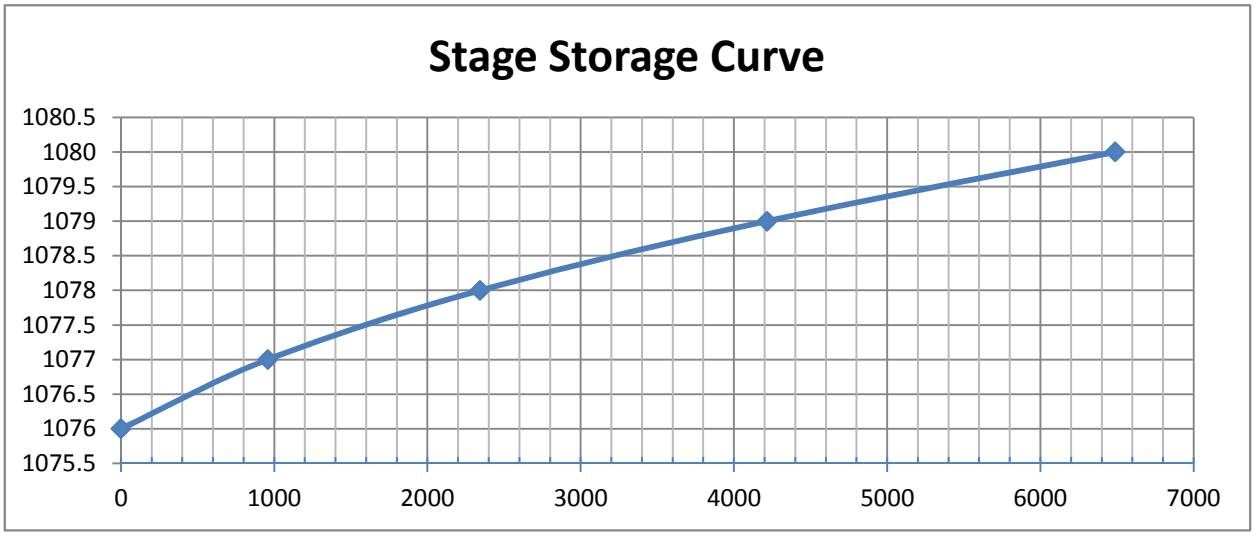


Client	*Eversource*			Page	of
Project	*Northern Pass*	Date	07/27/15	Made By	*L. Guerin*
	Bethlehem/TS#5a			Checked By	
	Detention Basin DB-1 - Stage-Storage Table			Preliminary	Final

Stage/Storage Table

ELEV (FT.)	AREA (S.F.)	AREA (Ac)	DIFFERENCE IN ELEVATION (FT.)	STORAGE VOLUME (Conic Method)		
				INCREMENTAL	TOTAL (CF)	Total Ac-Ft
1076	820	0.019		0	0	0
1077	1104	0.025	1	958.49	958.49	0.022
1078	1684	0.039	1	1383.83	2342.32	0.054
1079	2069	0.047	1	1873.20	4215.52	0.097
1080	2482	0.057	1	2272.37	6487.89	0.149

Stage Storage Curve



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Client *Eversource* Page ____ of ____

Project *Northern Pass* Date 08/28/15 Made By *L. Guerin*

Bethlehem - Transition Station 5a Checked By ____

Sand Filter - Stage-Storage Tables Preliminary ____ Final **x**

Stage/Storage Table

Volume Within Filter Bed

ELEV (FT.)	AREA (S.F.)	AREA (Ac)	DIFFERENCE IN ELEVATION (FT.)	STORAGE VOLUME (Conic Method)			
				INCREMENTAL	x 0.40 *	TOTAL (CF)	Total Ac-Ft
1086.65	84.5	0.002		0	0	0	0
1087	84.5	0.002	0.35	29.57	11.83	11.83	0.000
1088	84.5	0.002	1	84.50	33.80	45.63	0.001
1089	84.5	0.002	1	84.50	33.80	79.43	0.002
1089.9	84.5	0.002	0.9	76.05	30.42	109.85	0.003

* 0.4 = Void factor of filter material

Volume Above filter bed

ELEV (FT.)	AREA (S.F.)	AREA (Ac)	DIFFERENCE IN ELEVATION (FT.)	STORAGE VOLUME (Conic Method)		
				INCREMENTAL	TOTAL (CF)	Total Ac-Ft
1089.9	84.5	0.002	0	0	0	0
1090	84.5	0.002	0.1	8.45	8.45	0.000
1091	84.5	0.002	1	84.50	92.95	0.002
1091.15	84.5	0.002	0.15	12.68	105.63	0.002

WQV = 287 CF

Volume provided in filter chamber = 109.85 CF + 105.63 CF = 215.48 CF > 75% WQV (215.25 CF)

Volume provided in Sediment Chamber

ELEV (FT.)	AREA (S.F.)	AREA (Ac)	DIFFERENCE IN ELEVATION (FT.)	STORAGE VOLUME (Conic Method)		
				INCREMENTAL	TOTAL (CF)	Total Ac-Ft
1086.65	65	0.001		0	0	0
1087	65	0.001	0.35	22.75	22.75	0.001
1088	65	0.001	1	65.00	87.75	0.002
1088.65	65	0.001	0.65	42.25	130.00	0.003
1089	52	0.001	0.35	20.43	150.43	0.003
1090	52	0.001	1	52.00	202.43	0.005
1091	52	0.001	1	52.00	254.43	0.006
1091.15	52	0.001	0.15	7.80	262.23	0.006

Volume in Sediment Chamber is 262.23 > 25% of WQV (71.75 CF)

Total Volume Provided in Sand filter = 215.48 CF + 262.23 CF = 477.71 CF SAY 477.00 CF

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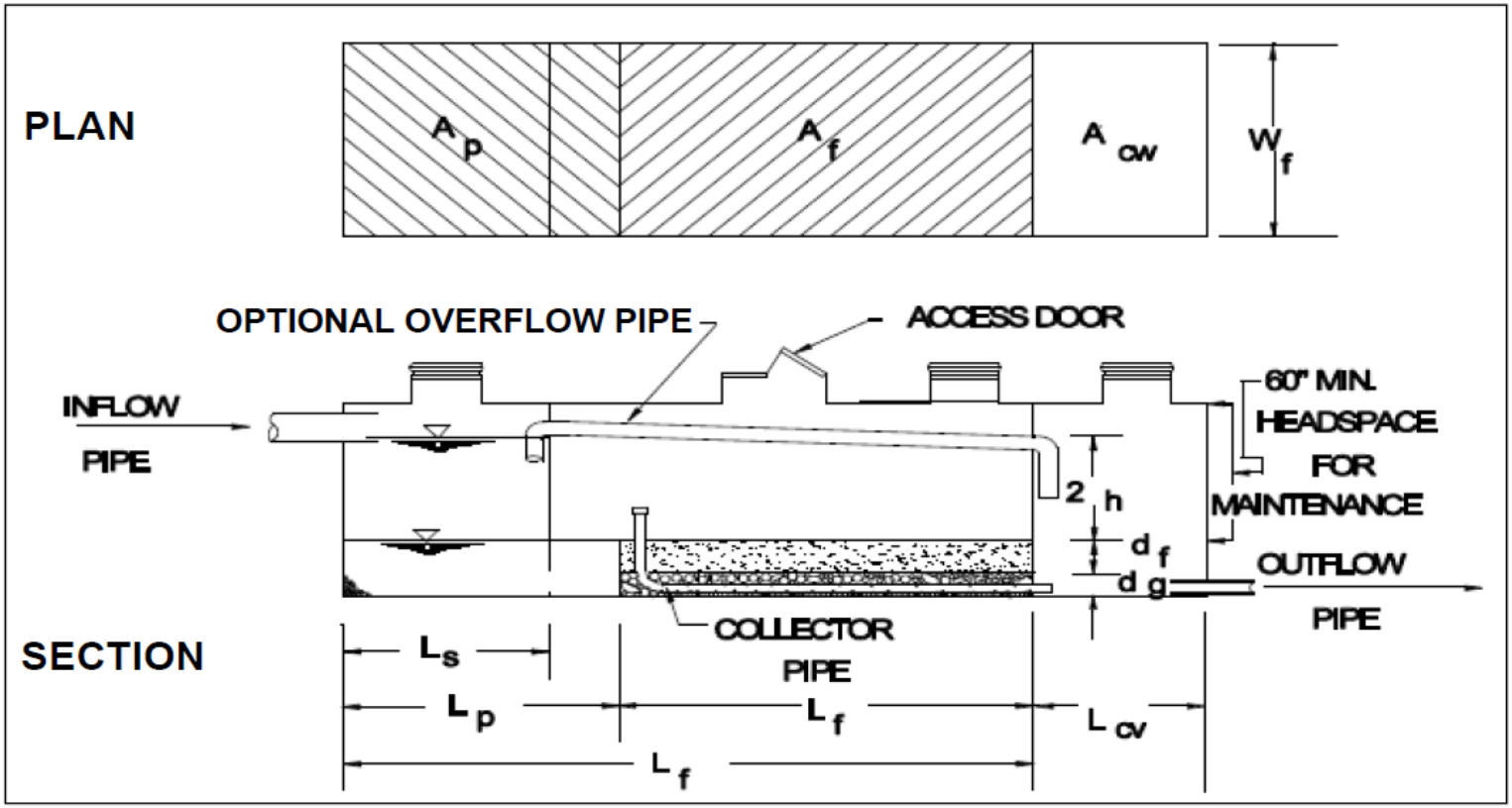
Transition Station #5a
Underground Sand Filter Caculations

August 18, 2015
By: L. Guerin
Checked:_____

Underground Sand Filter Design: TS-4					
Filter Parameters		Preliminary Dimensions	Design Dimensions	Units	Notes
Water Quality Flow	WQF	0.065	0.07	cfs	Design flow is based on 2" PVC inflow capacity
Water Quality Volume	WQV	287	287	cf	
Total Area	A	0.68	0.68	ac	Total area draining to practice
Impervious Area	A_i	0.05	0.05	ac	Total impervious area draining to practice
Sand Bed Depth (including top layer of gravel)	d_f	27	27	inches	Sand Bed is 24 inches. Top layer is 3 inches
Depth pea gravel + underdrain	dg	12	12	inches	Underdrain is 6" topped with 6" of gravel.
Total Filter Bed Depth	d_m	39	39	inches	$d_f + d_g$
Average ponding depth on the filter	h	0.63	0.63	ft	h = (4.5 - d_m)/2 . Assume a maximum depth of 4.5 ft (54") from the bottom of the structure to the overflow elevation.
Maximum possible ponding depth	2h	1.25	1.25	ft	distance between discharge from overflow to top of the filter
Permeability coefficient for sand bed	k	3.5	3.5	(ft/day)	
Time for flow to pass through filter bed	t	24.2	23.3	hours	
Sand and gravel media porosity	n	40%	40%		
Surface area on the sand filter media	A_f	63.64	84.50	ft^2	(WQV*d_f)/[k*(h+d_f)*t]
Width of filter bed	W_f	5.64	6.50	ft	sqrt(A_f/2)
Length of filter bed	L_f	11.28	13.00	ft	2*W_f
Filter Volume					
Max available storage volume on the surface of the filter	V_{Tf}	79.6	105.6	cf	A_f *2h
Storage volume in the void space of gravel and sand media	V_v	82.74	109.85	cf	n x A_f x d_m
Volume of inflow that passes through the filter media while the total WQV is accumulating in the BMP	V_Q	9.50	12.61	cf	[k*A_f(d_f+h)]/d_f
TOTAL FILTER VOLUME*	V_{total}	171.79	228.08	cf	V_{Tf} + V_V + V_Q (Required 75% WQV = 215.25)
Volume of water that must be stored awaiting filtration in the sedimentation chamber	V_{st}	115.21	71.75	cf	WQV - V_{Tf} - V_V - V_Q (Required 25% WQV = 71.75)
Sedimentation Chamber					
Permanent Pool Length	L_p	17.00	9.00	ft	V_{st} / (2h x W_f) - rounded up to the nearest foot
Sedimentation Chamber Length	L_s	9.00	8.00	ft	(0.2 x WQV)/(2h x W_f) - rounded up to the nearest foot

*Minimum total volume required for the filter is equal to 75% of WQV (215.25 cf). Design dimensions adjust the surface area, length and width of the filter bed (while maininting the filter media depth calculations), to provide a total filter volume greater than or equal to the minimum total volume required.



TS4 Underground Sand Filter Dimensions Summary				
Filter Bed Length, L_f (ft)	Filter Bed Width, W_f (ft)	Total Filter Bed Depth, d_m (ft)	Sedimentation Chamber Length, L_S (ft)	Permanent Pool Length, L_P (ft)*
13.00	6.50	3.25	8.00	10.00

According to the VDOT BMP Design Manual, if the computed length of the permanent pool is less than the length of the sedimentation chamber plus 2 feet, the permanty pool lenth should be increased to dimentions of L_s plus 2 feet.

Calculate Weir Height and Orifice Size for By-Pass Structure

Known Data:

Water Quality Peak Flow

WQF = 0.065 cfs

Reference:

NH DES

BMP Worksheet

WQF = Water Quality Flow to be diverted trough a diversion structure

Size the Low flow orifice to pass the Water Quality Peak Flow

Orifice Flow: $Q = CA(2gh)^{1/2}$

where:

C= 0.6

A= orifice area ft

g= acceleration due to gravity = 32.2 ft/sec^2

h= head ft

Let H = 0.5 ft (The height of the bypass/overflow orifice)

solve for the area of the orifice (A)

A= Q/ C (2gh)^1/2

A= 0.065cfs/ (0.6 x (2x 32.2 ft/sec^2 x0.5ft) ^ 1/2

A= 0.019 SF

Solve for the Diameter of the Orifice

D= (4xA/3.14)^1/2

D= (4 x 0.019sf /3.14)^1/2

D= 0.16 ft

D= **1.87** inch ---> Say 2 Inches

Let D = 2.0 inches

Calculate Capacity of 2 inch Orifice

A= πD^2 / 4

A= (3.14 x (2in /12 in/ft)^ 2)/ 4

A= 0.022 SF

Q = CA(2gh)^1/2

Q= (0.6) x (2 SF) x 2 x 32.2 ft/sec^2 x 0.5ft) ^ 1/2

Q= 0.07 CFS

APPENDIX E – OPERATIONS AND MAINTENANCE PLAN

Northern Pass Transmission Project
Transition Station #5

Stormwater System Operations and Maintenance Plan

General Overview
Eversource has established an operations and maintenance (O&M) plan for the station post-construction stormwater management system in accordance with the New Hampshire Department of Environmental Services Stormwater Manual (2008) and will be implemented upon completion of construction as outlined below. Any required post construction stormwater management permits will be obtained and implemented by Eversource.

The station is located on Eversource owned property on Main Street (US Highway 302), Bethlehem, NH 03574

Purpose & Goals
The purpose of this O&M Plan is to provide guidance for the implementation and documentation process of the station site stormwater management system to help conform with the corresponding regulatory agency approvals and permits. The guidance provided herein is the minimum required. The primary goal is to inform all the property managers about how the system operates and what maintenance items are necessary to protect the downstream storm drain system and waters. The secondary goal is to provide a practical, efficient means of maintenance planning and record keeping to verify permit compliance.

Responsible Parties
Eversource will be responsible for implementing the O&M Plan.

Eversource
13 Legends Drive
Hooksett, NH 03106

Maintenance Logs and Checklists
Eversource will keep a record of all maintenance procedures performed, date of inspection/ cleanings, etc. Copies of inspection reports and maintenance records shall be kept on site.

Forms
The following forms will be developed for annual maintenance. Copies of the forms will be kept on-site as part of the Post-Construction Stormwater Management Plan.

- Annual Checklist
- Quarterly Checklist
- Monthly Checklist

Training

Responsible operations and maintenance workers and contractors will be trained with a basic description of the purpose and function of the onsite stormwater management system as well as safety protocol and procedures, with annual up-dates, to provide that the workers tasked with maintaining the station site do so in accordance with the approved permit conditions. All workers that have maintenance duties will be adequately informed of their responsibilities. All sub-contractors (Vactor, landscaping, snowplowing, etc.) will be informed of special requirements and responsibilities.

Stormwater Management System

The onsite stormwater management system has several components that are shown on the Site Development Plans and they perform various functions in conveying and treating stormwater runoff. Refer to the Site Development Plans for locations and details for each of the stormwater system components. Regular operations and maintenance is critical to the long term success of the stormwater management system components. The stormwater system components are:

Storm Drainage System:

Onsite storm drainage system including conveyance pipes and flared end sections convey stormwater. The following is recommended for regular maintenance twice annually unless otherwise noted:

- Remove any accumulated sediment or debris at the outfalls.
- Inspect and repair any damage and deterioration to the conveyance pipes, catch basins, and riprap outlet protection.

Outfalls:

Storm drainage outfalls are the point stormwater discharges from pipe outlets and consist of a flared end section and riprap outlet protection. The following is recommended for regular maintenance twice annually unless otherwise noted:

- Remove any accumulated sediment or debris at the outfalls.
- Inspect and repair any damage and deterioration to riprap outlet protection.

Detention Basin:

The detention basin attenuates stormwater, and consists of numerous components including an outlet control structure, trash rack, outlet pipe, emergency spillway, anti-seep collar, etc. The following is recommended for regular maintenance twice annually unless otherwise noted:

- Remove any trash and debris.
- Periodic mowing of embankments.
- Removal of woody vegetation from embankments.
- Removal of debris from outlet structures. Removal of accumulated sediment.
- Inspection and repair of embankments, outlet structures, and appurtenances.

- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species
- Inspection of pretreatment measures at least twice annually and removal of accumulated sediment as warranted by inspection, but no less than once annually.

Underground Sand Filter:
The underground sand filter provides water quality and consists of numerous components including a flow splitter, sedimentation chamber, filter chamber, filter media, underdrains etc. The following is recommended for regular maintenance twice annually unless otherwise noted:

- Remove any trash or debris from any pretreatment devices, flow splitter and sedimentation chamber and filter chamber.
- Sand filter media and or devices should be cleaned or repaired when drawdown times within the chamber exceed 72 hours. Repair may include replacement of the filter material with new materials conforming to the original specifications.
- Sediment should be removed from the sedimentation chamber when it accumulates to a depth of six inches. Material may be removed by a vacuum pump and disposed of at an approved permitted site.
- Oil on the surface should be removed separately and disposed of properly in accordance with local, state and federal regulations.
- Structural components shall be checked for deterioration and evidence of spalling or cracking of concrete.
- Outlets shall be checked for evidence of clogging, downstream erosion and piping failure.

Station Yard Stone:
The station yard stone within the station yard can become compacted and eroded over time. The following is recommended for regular maintenance twice annually unless otherwise noted:

- Inspect for and repair any erosion in the yard, on access roads, and at the perimeter of the gravel areas.
- As the gravel areas become compacted, scrape off top layer to subgrade elevation and install new gravel surfacing layer at design elevation and pitch.

Spill Control
Eversource will have a spill control program. That program will be updated annually and incorporated into the employee-training program.

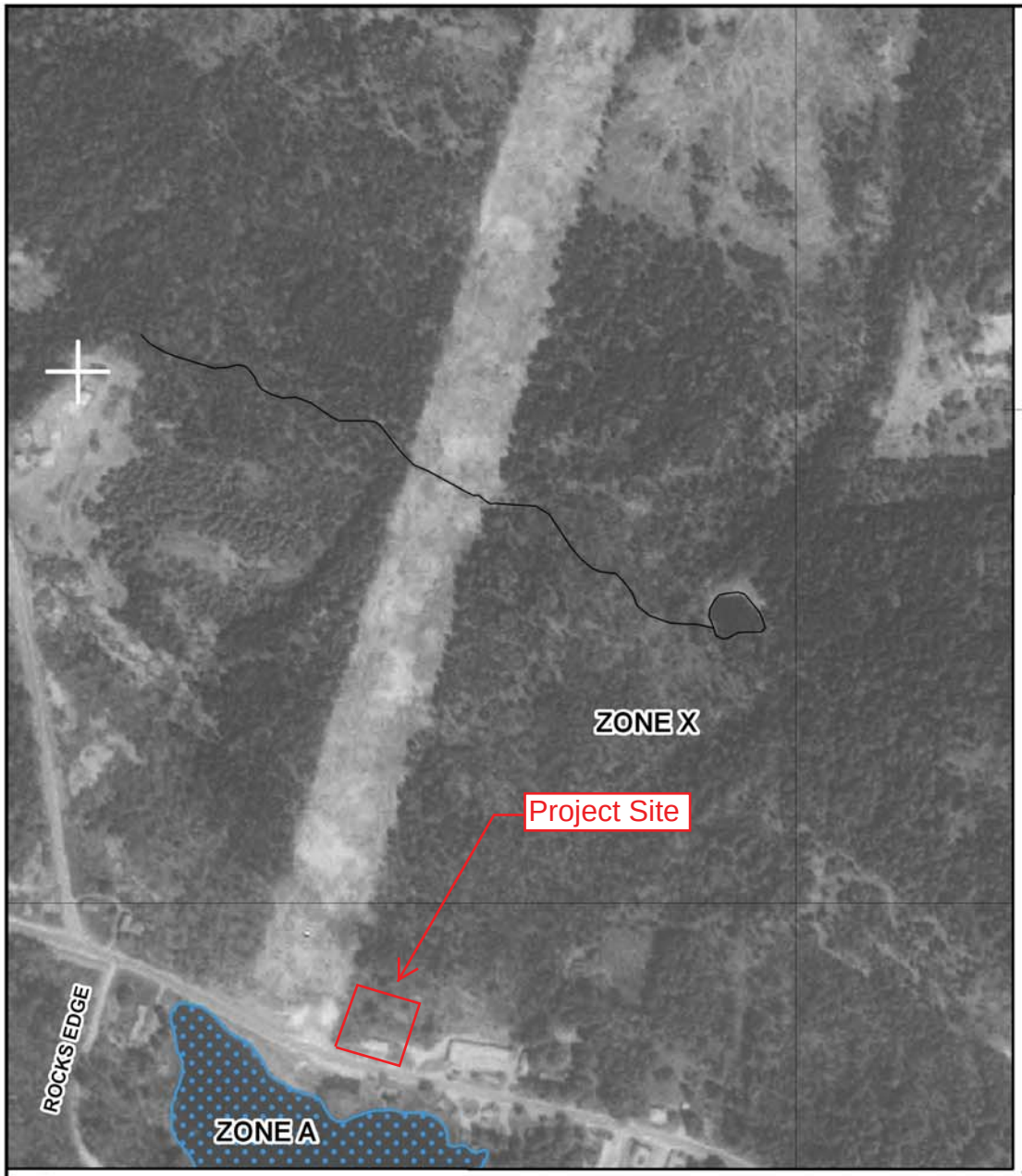
Disposal:
For all removed sediment, debris, trash, etc. from the stormwater management system during operations and maintenance shall be disposed of properly and legally by a New Hampshire Licensed hauler. Road sand may be reused for winter sanding, but may not be stored on-site.

Pesticides:
Northern Pass anticipates that vegetation management activities will be performed by Eversource. Work will be performed in accordance with Eversource's vegetation management program, which

currently employs only mechanical means for controlling vegetation within the Eversource rights of way. Eversource does not currently plan to use herbicides as part of its vegetation management program, and as indicated in the Northern Pass application for a Presidential Permit (at page 52), all vegetation management and maintenance will be carried out in accordance with the New Hampshire Division of Forest and Lands Best Management Practice for utility maintenance. Herbicides will not be used before or during construction of the Northern Pass.

* * * * *

APPENDIX F – FEMA FLOOD INSURANCE RATE MAP



MAP SCALE 1" = 500'

250 0 500 1000

FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0136E

FIRM

FLOOD INSURANCE RATE MAP

GRAFTON COUNTY, NEW HAMPSHIRE
(ALL JURISDICTIONS)

PANEL 136 OF 1185

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BETHLEHEM, TOWN OF	330045	0136	E
LITTLETON, TOWN OF	330064	0136	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
33009C0136E

EFFECTIVE DATE
FEBRUARY 20, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX G – SOIL SURVEY REPORTS (BY OTHERS)

NORMANDEAU ASSOCIATES
Environmental Consultants

Northern Pass Transmission Project

Site-Specific Soil Survey Report for the Bethlehem Transition Station (TS5)

Prepared For:
Northern Pass Transmission, LLC and Public Service of New Hampshire d/b/a Eversource Energy

Octoober 2015

Prepared By:
Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110

www.normandeau.com

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1.0 Introduction

Normandeau Associates, Inc. (Normandeau) has reviewed and mapped the soils at an area under consideration for a proposed Transition Station (TS5) (LL 3140) located in Bethlehem, NH (Figure 1) associated with the Northern Pass Transmission (NPT) project. This report is summarizes the soil survey completed at this site located at 1071 Main St. in Bethlehem, NH.

This site was previously surveyed for wetlands by a Normandeau wetland scientist this year. Information obtained during the soil surveys indicates that wetland boundaries were consistent with hydric soil boundaries.

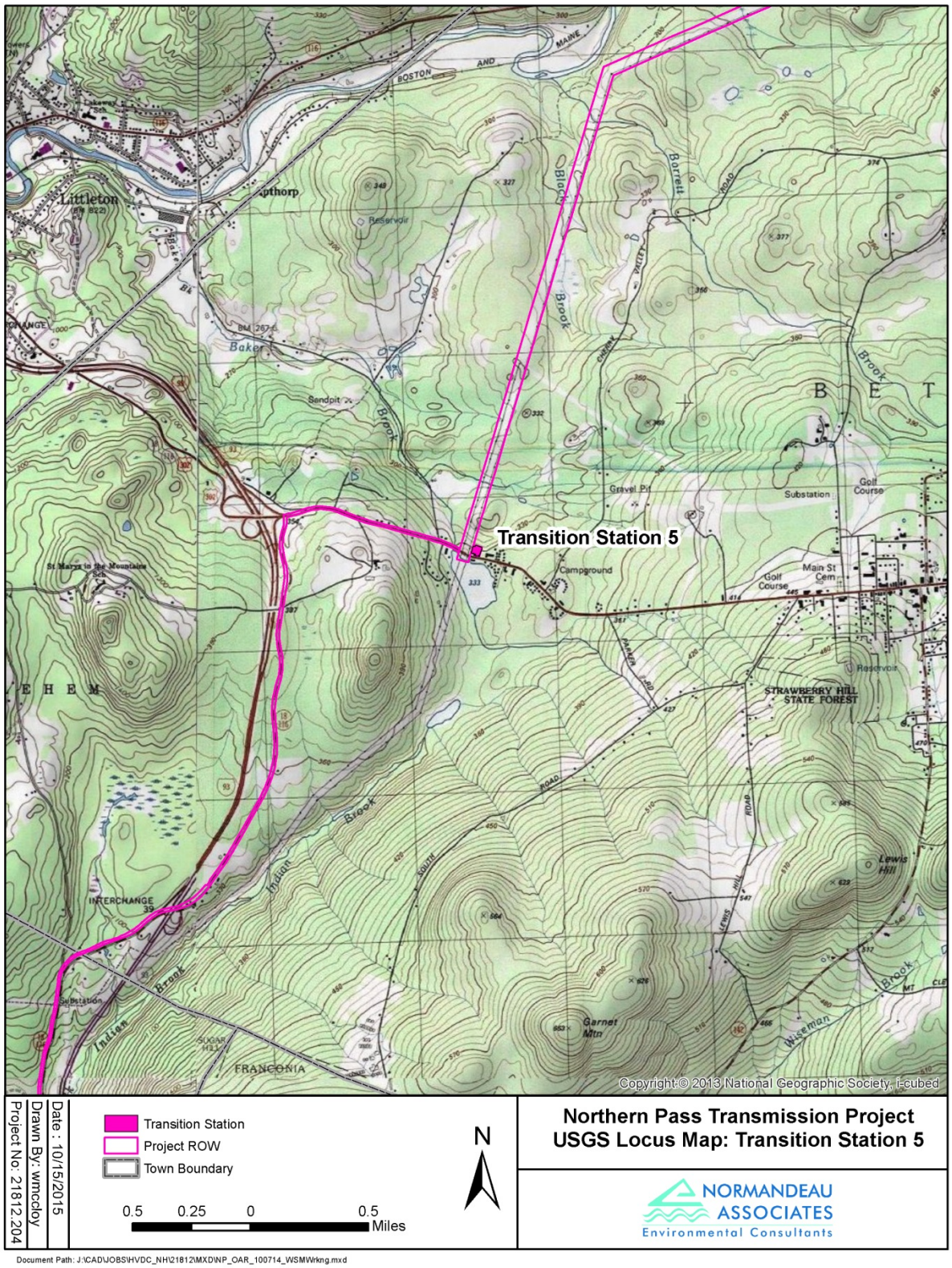

Figure 1. Site Location Transition Station 5

2.0 Purpose

The purpose of the soil survey is to provide a soil map of each site showing limitations to development, including hydric soil boundaries where observed, for inclusion in an Alteration of Terrain Permit application that is anticipated to be filed for the project. This survey is appropriate for use in planning site design for stormwater runoff and erosion control. Information is also provided regarding limitations to the potential for site development including roads, shallow excavations, and stormwater detention. It is important to note that soils considered appropriate (non-limiting) for one use may be considered limiting for another use. Soil map units described in this report have been influenced by the intended use of the soil map; consequently, the information provided may not be adequate for uses other than for those for which the soil map was originally developed.

This soil narrative and accompanying soil survey map have been completed in accordance with the *Site Specific Standards for New Hampshire and Vermont* (SSSNNE 2011). No other warranty, expressed or implied, is made. This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, intended for the assessment of site limitations to development of the site. It was produced by professional soil scientists, and is not the product of the USDA Natural Resources Conservation Service (NRCS). There are maps for each site that accompany this report.

Data provided on soil series are based on interpretation of published information by the NRCS. Due to the complexity of the glaciated landscape in New Hampshire, variations in subsurface conditions may exist that were not evident during the project review. Should significant variations in subsurface conditions become evident during site development, re-evaluation of site conditions may be warranted based on the present findings of this report.

3.0 Methodology

3.1 Field Procedures

Certified Soil Scientists conducted the field reviews at the various sites. Ian Broadwater, a Maine-Certified Soil Scientist, with reciprocity to practice in New Hampshire, completed the fieldwork. Field observations were made using borings advanced by hand with a Dutch auger and test pits dug with an excavator. Soil observations were made to 60 inches, where feasible.

The general field procedures used to make this soil map follow those of the National Cooperative Soil Survey (Schoeneberger et al. 1998). The soils mapped are either established soil series used in the State of New Hampshire by the NRCS (USDA NRCS 2011) or are classified according to the NRCS classification system described in the *Disturbed Soil Mapping Unit Supplement for New Hampshire, DES AoT Site Specific Soil Maps* (SSSNNE 2011). Map unit descriptions are provided in Appendix A.

Soil test pit logs were completed for each test pit excavation and are provided in Appendix B. Test pits were located with a Trimble® GPS, which is capable of submeter accuracy. Soil map unit boundaries are approximate, as their placement is based on a combination of field observations and surveyed site topography.

3.2 Soil Map Units

The soil map units used for this survey are either consociations or complexes. Consociations are dominated by a single soil series and similar soils. Complexes consist of two or more dissimilar components that cannot be mapped separately and the named components are sufficiently different in either morphology or behavior that the unit cannot be considered a consociation. Map unit symbols in this survey are from the State Numerical Legend along with the soil series name. Slope phases are designated as a letter in the map unit symbol - A, B, C, D, and E - refers to slope class (Table 3-1).

Table 3-1. Slope Class

Slope Symbol	Standard Range
A	0-3%
B	3-8%
C	8-15%
D	15-25%
E	25-50%

The soil interpretations provided are based on information in the soil series descriptions and technical information provided by the NRCS web soil survey (Soil Survey Staff 2014a). All limitations and constraints invoked by the NRCS for such interpretations also apply to this soil survey.

The map units observed are described in Appendix A. These descriptions are within the NRCS range for each official Soil Series Description; however, they provide more detail as they are based on site-specific observations. Each map unit description includes information on soil taxonomic classification, general description, morphology, physical characteristics, inclusions, use, and management. The taxonomic classification follows Keys to Soil Taxonomy (Soil Survey Staff 2014a). Information on soil morphology and physical characteristics were obtained from the NRCS (Soil Survey Staff 2014b). It should be noted that Ossipee and Peacham soils are mapped together as one unit in New Hampshire as one map unit because management and limitations of these soils are similar.

Disturbed soil map units were classified according to the New Hampshire State-Wide Numerical Soils Legend (USDA NRCS 2011). Additional information on each map unit is provided according to criteria outlined in the disturbed soil supplement created by SSSNNE (2011), which utilizes the definition of disturbed land, including excavated and filled land, as defined by RSA 485 485-A:6, VIII; RSA 485-A: 17; and NHDES Env-Wq 1500. The map symbol for disturbed soil consists of two parts separated by a forward slash (/). The first part consists of the NRCS Disturbed Map Unit symbol (NRCS 2011) and a capital letter designating slope. The second part consists of symbols of the Disturbed Soil Supplement (SSSNNE 2011) and is composed of 5 lower case letters, which describe drainage class, parent material, restrictive/impervious layers, estimated Ksat, and estimated hydrologic soil group.

Consociation map units, in accordance with the standards, will have a minimum of 75% of the named soil or similar soils within that unit. The named soil will be the most common of all

similar soils. The total number of dissimilar soils in any one mapping unit for either consociations or complexes should not exceed 25% of the map unit of which no more than 15% is limiting. Similar soils are alike in most properties and share similar limitations such as depth to water table or content of organic matter. Dissimilar soils do not share limits of some important diagnostic properties of the named soil and may have different use or management requirements for a particular land use. It is important to note that some dissimilar soils are more limiting in their use than the named soil. For instance, an inclusion of somewhat poorly drained soils can occur within a well-drained soil map unit. A summary of potential inclusions of similar and dissimilar soils is provided for each map unit.

The hydrologic group identifies soils having the same runoff potential under similar storm conditions. Soil properties that influence runoff are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. Infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. Ksat values are based on soil characteristics in the field, particularly structure, consistence, porosity and texture (SSSNNE 2009). The Ksat values provided are from the typical pedon from the county that best reflected the soil and/or had the most acres of that soil. The data represents the range within the B and C horizons (SSSNNE 2009).

3.3 Hydric Soils

Hydric soils refer to those soil series the NRCS considers to be either poorly or very poorly drained. The NRCS (Soil Survey Staff, 2014b) defines hydric soil as "a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part". The hydric soil boundary corresponds with the wetland boundary in the areas observed for this project. The hydric soil boundary was located with a Trimble® GPS unit and post processed for submeter accuracy. Impacts to wetlands come under the jurisdiction of the U.S. Army Corps of Engineers and New Hampshire Department of Environmental Services.

4.0 Summary of Findings

The following summarizes the results of the soil surveys at the seven sites. Soil map unit descriptions are provided in Appendix A; representative soil logs in Appendix B; NRCS soil series descriptions in Appendix C, and soil maps in Appendix D.

4.1 Bethlehem LL 3140

Overview

The proposed Bethlehem transition site is located off Route 302 aka Main St. in Bethlehem, NH. A majority of the site is a developed residential lot with a house and detached garage with woods along the perimeter. West of the site is an existing electrical transmission right-of-way (ROW).

The site slopes from the high points along Route 302 to the north. Slopes range from moderately steep (15% to 25%) to nearly level in front and behind the house. No bedrock was noted in any of the explorations within 48 inches from the soil surface. Wetlands were noted in the northern half of the parcel beginning at the base of a topographic slope.

Soil Mapping Results

Normandeau conducted a field review of the Bethlehem site on May 12, 2015 and May 21, 2015. The final survey area was 0.92 acres. Two soil type map units were identified within the site and are shown on the pre-construction soil map in Appendix D. A post-construction soil map is also provided as interpreted from the permit level design.

Both the natural soils mapped on site have glacial-fluvial parent material. Table 4-1 summarizes the map units and their physical characteristics that were identified within the project site. Slope phases are not provided in Table 4-1 but are included in the site-specific soil maps in Appendix D.

A total of 4 test pits were distributed across the site and located with a Trimble® GPS. The wetland boundary had been previously flagged and located in the field by Normandeau Associates, Inc.

Table 4-1. Bethlehem Transition Site - Summary of Soil Physical Characteristics

Map Unit	Hydrologic Group	Seasonal Water Table (SWT) Depth[1] (Inches)	Depth to Bedrock (Inches)	Drainage Class[2]	Ksat (in/hr)[5]	Limitations
549-Peacham, very stony mucky peat	D	0	>60	VP	0.6-2.0	Hydric soil[4]
123B-Telos, very stony	C	<15	>60	SP	0.6-2.0	Seasonal high water <15" inches below ground surface[4]
299-Udorthents, smoothed	A/B (Variable)	16-40+	>60	SE, W, MW	NM/NR	Seasonal high water 17" and 42" inches below ground surface in MW drained condition[4]

1. Seasonal water table ranges are provided from the NRCS. On-site conditions are expected to fall within these ranges based on test pit observations.
2. Drainage Classes:
   P- poorly drained; SP- somewhat poorly drained; MW- moderately well drained
   W- well drained; SE- somewhat excessively drained.
3. NM-not measured; NR-not reported.
4. See the summary at the end of this section for additional information.
5. As reported for the B horizon.

Peacham and Ossipee soils, and Telos units mapped on-site were derived from glacio-fluvial deposits. Peacham and Ossipee mucky peat is very poorly drained soil and was found north of the Udorthent unit that makes up the area around the house. Telos was found north of the Peacham map unit in the northwest corner of the parcel.

A majority of the lawn area of the parcel as well as the associated driveway were mapped as a sandy Udorthent in a moderately well to well drained condition. A fill layer measuring up to 19 inches over native soil was observed on the west side of the house. On the east side, it appears that some of the native soil was removed and/or reworked. Depths of fill were shallower on the east side, measuring 16 inches at the maximum depth observed. The soil adjacent and north of the house, also mapped as a Udorthent, smoothed, consisted of excavated soil resulting from the house construction.

The Udorthent map unit characteristics on the parcel are summarized in Table 4-1A.

Table 4-1A. Bethlehem Transition Site – Characteristics Summary of Disturbed Soil Map Units (Estimated Physical Characteristics[1])

Characteristic	299B/dbcde and 299C/dbcde
Drainage Class	d- estimated to be moderately well drained (or drier).
Parent Material	b-glacial-fluvial deposits
Restrictive/Impervious layer	c- mineral restrictive layer present in the soil profile less than 40 inches
Estimated ksat	d- not determined
Hydrologic Group	e- not determined (Likely A/B)

1. Society of Soil Scientists of Northern New England. 2011.

Beyond the northern edge of the Udorthen Map Unit, there is a steep topographic drop of approximately 2 to 4 feet. At the base of the drop is a Peacham and Ossipee Soils Map Unit that was observed in the wetland in this location. These soils are both organic in nature, very poorly drained, and rated as hydric. Organic matter up to 18 inches was observed in this map unit. The rise in topography along the northern boundary of the parcel contains Telos soils in a somewhat poorly drained condition.

Summary

Limitations to development within the site consist of moderately steep slope leading to a wetland to the north of the house. Course fragments within the C horizon can make the upland soils (the Udorthent) difficult to excavate without a properly sized machine. Hydric soils, consistent with wetlands, mapped as Peacham mucky peat, are also present on the north half of the parcel and present constraints to development. Filling these soils likely requires a permit from the New Hampshire Department of Environmental Services and the U.S. Army Corps of Engineers. Fill soils may need to be removed for proper foundation construction.

5.0 References

Schoeneberger, P.J., Wysocki, D.A., Benham, E.C., and Broderson, W.D. 1998. Field book for describing and sampling soils. Natural Resources Conservation Service, USDA, National Soil Survey Center, Lincoln, NE.

Society of Soil Scientists of Northern New England. 2009. Ksat Values for New Hampshire Soils. SSSNNE Special Publication No. 5. September, 2009. Durham, NH.

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USDA Natural Resources Conservation Service. 2011. New Hampshire State-Wide Numerical Soils Legend. Issue #10. Durham, NH.

Appendix A

Map Unit Descriptions

731A-Peacham and Ossipee soils, very stony

These very deep, very poorly drained soils are on level to nearly level glaciated uplands. The Peacham soils typically are in depressions and along drainageways. The Ossipee soils typically are in ponded depressions. The areas of the unit are irregular in shape and range from 5 to 75 acres in size. Slopes range from 0 to 2 percent. Stones on the Peacham soils are generally 5 to 30 feet apart and cover from less than 1 percent to 3 percent of the surface. Some areas of the unit are dominantly Peacham soils, some areas are dominantly Ossipee soils, and some are both soils. The Peacham and Ossipee soils were mapped together because they have no major differences in use and management. The total acreage of the unit is about 40 percent Peacham soils, 40 percent Ossipee soils, and 20 percent other soils.

The typical sequence, depth, and composition of the layers of the Peacham soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown muck

Subsoil:
7 to 15 inches, dark grayish brown gravelly fine sandy loam
15 to 30 inches, dark grayish brown gravelly sandy loam

Substratum:
30 to 65 inches, dark grayish brown, firm sandy loam

The typical sequence, depth, and composition of the layers of the Ossipee soil are as follows—

Surface layer:
0 to 6 inches, black slightly decomposed herbaceous and woody materials

Subsurface layer:
6 to 25 inches, dark reddish brown partially decomposed herbaceous and woody materials
25 to 41 inches, black partially decomposed herbaceous and woody materials

Substratum:
41 to 46 inches, dark grayish brown silt loam
46 to 65 inches, greenish gray silt loam

Telos-see Appendix C for official NRCS description

Disturbed Soil Map Units[1]

299- Udorthents, smoothed
699-Urban Land

299- Udorthents, smoothed: land that has been cut and filled to create large level or nearly level areas such as building lots and roads. Soil material making up this area are generally from the surrounding area.

699-Urban Land

This map unit consists of developed areas that host buildings and/or infrastructure. Areas surrounding buildings or infrastructure are generally paved or have a finished driving surface (e.g., gravel) to support access. Subsoil below the driving surface are variable and may contain inches to several feet of fill depending on the elevation of the constructed site and predevelopment conditions. Also included in the map unit are constructed stormwater facilities including settlement basins.

1 USDA Natural Resources Conservation Service. 2011. New Hampshire State-Wide Numerical Soils Legend. Issue #10. Durham, NH.

Appendix B

Soil Test Pit Logs

Soil Observation Logs Abbreviations			
Abbreviation	**Soil Texture**	**Consistence**	**Miscellaneous**
S	Sandy		
FS	Fine Sand		
FSL	Fine Sandy Loam		
VFSL	Very Fine Sandy Loam		
CS	Coarse Sand		
GRY	Gravelly		
L	Loam		
SL	Sandy Loam		
FR		Friable	
EOE			Extent of Excavation

Town, City, Plantation	Street, Road, Subdivision	Owner or Applicant Name
Bethlehem	1071 Main St (RT 302)	Eversource

SOIL PROFILE DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole # 1 ☑ Test Pit ☐ Boring

0 " Depth of organic horizon above mineral soil

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Mottling
0–6	F.S.L.	Friable	10YR 3/2	none (fill)
6–18	S.L. (Fill) w/ 5% c.f. as boulders	friable	10YR 4/3	woody debris in profile (fill) no redox
18–24	f.S.L.	friable	10YR 4/4	5% f-m roots
24–30	f.S.L.	friable	7.5YR 5/8	none (5% f roots)
30–42	f.S.L.	friable	2.5Y 5/6	none
42–48	f.S.L.	dense	2.5Y 5/2	5% c.f.s as f-m gravel
		BOE @ 60" bgs		

Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	
	Well	B	42 "	☐ Groundwater ☑ Restrictive Layer ☐ Bedrock

Soil Series Name: Udarthent 299 — Hydrologic Group: B

Observation Hole # 2 ☑ Test Pit ☐ Boring

17 " Depth of organic horizon above mineral soil

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Mottling
0–6	Mucky peat	30% fibers after rubbing massive	10YR 4/2	none saturated
6–18	Mucky peat	massive 10% after rubbing	10YR 2/2	none saturated
18–24	Mucky s.c. 20% c.f. as boulders	massive dense	10YR 4/2	saturated
24–30				
30–42	medium sand 5% c.f.s. as gravel, cobbles, boulders	dense massive	10YR 5/1	saturated
42–48		BOE @ 60" bgs		

Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	
		2	0 "	☑ Groundwater ☐ Restrictive Layer ☐ Bedrock

Soil Series Name: Peacham — Hydrologic Group: D

Observation Hole # 3 ☑ Test Pit ☐ Boring

0 " Depth of organic horizon above mineral soil

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Mottling
0–6	f.S.L.	friable	10YR 4/2	none (fill)
6–18	S.L. 5% c.f.s as f-m gravel	friable	7.5YR 4/6	none
18–24	f.S.L.	friable	10YR 4/4	none
24–30	S.L.	partially cemented		few
30–42	S.L. 10% c.f.s. as boulders (rounded)	massive dense	2.5Y 4/2	few
42–48		BOE @ 60" bgs		

Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	
			26 "	☐ Groundwater ☒ Restrictive Layer ☐ Bedrock

Soil Series Name: Udarthent — Hydrologic Group: B

Observation Hole # 4 ☑ Test Pit ☐ Boring

0 " Depth of organic horizon above mineral soil

Depth below mineral soil surface (inches)

Depth	Texture	Consistency	Color	Mottling	
0–6	f.S.L.	friable	10YR 4/2	none	fill
6–18	S.L. 5% c.f.s. as f-c gravel	friable	2.5Y 4/2	none	fill
18–48	S.L.	massive; dense	2.5Y 5/2	few	
		BOE @ 56" bgs			

Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	
		12	16 "	☐ Groundwater ☑ Restrictive Layer ☐ Bedrock

Soil Series Name: Udarthent — Hydrologic Group: B

[signature] — Soil Scientist/Site Evaluator Signature

CSS/LSE#

7/31/15 — Date

Appendix C

NRCS Soil Series Descriptions

LOCATION TELOS ME

Established Series
Rev. KJL-LRF-MJK
07/2014

TELOS SERIES

The Telos series consists of somewhat poorly drained soils on till plains, hills, and ridges. They are shallow to dense lodgement till and very deep to bedrock. These soils formed in till. Saturated hydraulic conductivity is moderately high or high in the solum and low to moderately high in the substratum. Slope ranges from 0 to 25 percent. Mean annual temperature is about 4.4 degrees C, and mean annual precipitation is about 97 centimeters at the type location.

TAXONOMIC CLASS: Loamy, isotic, frigid, shallow Aquic Haplorthods

TYPICAL PEDON: Telos silt loam, on a 3 percent slope in a very stony forested area, at an elevation of about 500 meters. (Colors are for moist soil.)

Oi -- 0 to 5 centimeters; dark brown (7.5YR 3/4) slightly decomposed plant material; weak medium granular structure; very friable; common very fine and fine roots throughout; extremely acid; abrupt wavy boundary.

Oe -- 5 to 8 centimeters; black (10YR 2/1) moderately decomposed plant material; weak medium granular structure; very friable; few very fine roots throughout; extremely acid; abrupt wavy boundary. (Combined thickness of the O horizons is 5 to 18 centimeters.)

E -- 8 to 13 centimeters; light brownish gray (10YR 6/2) silt loam; weak medium subangular blocky structure; friable, common fine roots throughout; 5 percent gravel; extremely acid; abrupt wavy boundary. (0 to 15 centimeters thick.)

Bs -- 13 to 33 centimeters; brown (7.5YR 5/4) loam; weak medium subangular blocky structure; friable; common very fine to medium roots throughout; 5 percent gravels and 5 percent channers; very strongly acid; clear wavy boundary. (10 to 30 centimeters thick.)

BC -- 33 to 48 centimeters; light olive brown (2.5Y 5/4) loam; weak fine subangular blocky structure; friable; few very fine and fine roots throughout; 1 percent fine faint light yellowish brown (2.5Y 6/3), moist, areas of iron depletion throughout and 10 percent fine prominent strong brown (7.5YR 5/6), moist, masses of oxidized iron throughout; 5 percent gravels; strongly acid; clear wavy boundary. (0 to 18 centimeters thick.)

Cd -- 48 to 152 centimeters; olive (5Y 5/3) loam; structureless massive; firm; 1 percent fine prominent brownish yellow (10YR 6/8), moist, masses of oxidized iron throughout and 10 percent fine distinct light brownish gray (10YR 6/2), moist, areas of iron depletion throughout; 5 percent gravels and 5 percent channers; strongly acid.

TYPE LOCATION: Somerset County, Maine; Township 5, Range 15; 6.0 miles east of Ragmuff Road

on the Bean Pot Road; USGS Bean Pot Pond, ME topographic quadrangle; Latitude 46 degrees, 5 minutes, 37.2 seconds N. and Longitude 69 degrees, 39 minutes, 30.9 seconds W., NAD 1927.

RANGE IN CHARACTERISTICS: Thickness of the solum ranges from 33 to 50 centimeters. Thickness of the mineral soil over the dense till ranges from 25 to 50 centimeters. Depth to bedrock is more than 152 centimeters. Texture of the fine-earth fraction in the solum is silt loam, loam, very fine sandy loam, and fine sandy loam. The weighted average of clay in the particle-size control section is 10 to 18 percent. Texture in the Cd layer is silt loam and loam in the fine-earth fraction. Rock fragment content ranges from 5 to 35 percent in the E or A horizons where present, and from 5 to 25 percent in the underlying material. Rock fragments are mainly channers and pebbles, but in the A and E horizons of some pedons they are mainly cobbles. Stones and boulders cover from 0 to 25 percent of the surface. Reaction ranges from extremely acid to moderately acid in the solum, and from strongly acid to slightly acid in the substratum.

The O horizon has a hue of 2.5YR to 10YR, value of 2 to 3, and chroma of 1 or 4.

Some areas have an Ap horizon with hue of 10YR and value and chroma of 3 or 4.

The E horizon has hue of 5YR to 10YR, value of 5 to 7, and chroma of 1 or 2. Consistence is very friable or friable.

The Bhs horizon has hue of 2.5YR or 5YR, with value and chroma of 2.5 or 3. The Bh horizon, where present, has hue of 7.5YR to 10YR, value of 2 to 3, and chroma of 2 or 3.

The Bs horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 4 to 8. Consistence is very friable or friable.

The BC horizon has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 3 or 4. Consistence is friable or firm.

Some pedons ahave an E' horizon with hue of 2.5Y or 5Y, value of 5 or 6, and chroma of 2. Consistence is friable or firm.

The Cd layer has hue of 2.5Y or 5Y, value of 3 to 5, and chroma of 1 to 4. It is massive or it has strong very coarse prisms which may part to weak to strong, thin to very thick plates, or moderate or strong, fine to coarse angular blocks. Arrangement of soil particles into structural aggregates is considered to be inherited from the parent material. Consistence is firm or very firm.

COMPETING SERIES: Colonel is the only other series in the same family. Colonel soils have less than 10 percent clay content in the particle-size control section.

Chesuncook, Daigle, Dixfield, Dixmont, Howland, Peru, Skerry, and Sunapee series are in related families. Chesuncook soils are moderately deep to dense till, moderately well drained, and do not have redox depletions within 16 inches from the mineral soil surface. Daigle soils from 18 to 27 percent clay content in the particle-size control section. Dixfield, Dixmont, Howland, Peru, Skerry, and Sunapee soils have less than 10 percent clay in the particle-size control section.

GEOGRAPHIC SETTING: Telos soils are on upland till plains, hills, and ridges. Slope ranges from 0 to 25 percent. The soils formed in dense glacial till derived mainly from slate and other dark colored sedimentary and metamorphic rocks. The climate is humid and cool temperate. The mean annual

temperature ranges from 2 to 7 degrees C and mean annual precipitation ranges from 86 to 117 centimeters. The frost-free season ranges from 80 to 130 days. Elevation ranges from 100 to 840 meters above mean sea level.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Burnham, Chesuncook, Elliottsville, Monarda, Monson, Ragmuff, and Thorndike soils. The Burnham and Monarda soils occur in lower positions on the landscape and are wetter. Chesuncook soils are better drained and are in higher positions on the landscape. Elliottsville, Monson, Ragmuff, and Thorndike soils are shallower to bedrock and occur in higher positions on the landscape.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Somewhat poorly drained. Saturated hydraulic conductivity is moderately high or high in the mineral solum and low to moderately high in the substratum.

USE AND VEGETATION: Mostly forest. Common tree species include red spruce, white spruce, balsam fir, yellow birch, paper birch, and red maple.

DISTRIBUTION AND EXTENT: Maine. MLRA 143, 144B, and 146. The series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Amherst, Massachusetts.

SERIES ESTABLISHED: Soil survey of Franklin County Area and Part of Somerset County, Maine, 1992.

REMARKS: Series classification was revised 11/05 from Coarse-loamy, isotic, frigid, shallow Aquic Haplorthods to Loamy, isotic, frigid, shallow Aquic Haplorthods to reflect shallow characteristic. Competing series section revised 5/06 to reflect classification.

Diagnostic horizons and features recognized in this pedon include:

a. Albic horizon - the zone from 8 to 13 centimeters (E horizon).
b. Spodic horizon - the zone from 13 to 33 centimeters (Bhs and Bs1 horizons).
c. Cambic horizon - the zone from 33 to 48 centimeters (BC horizon).
c. Densic materials - firm, dense lodgement till at a depth of 48 centimeters.
d. Aquic conditions - redoximorphic features at 25 centimeters below the mineral soil surface.

Additional Data: This pedon is characterized by the National Soil Survey Laboratory in Lincoln Nebraska, reference pedon 09N0166. Climate data are from US official station #171472 Clayton Lake, Maine. Source of data used in establishing taxonomic class and range in characteristics is Maine Agricultural and Forest Experiment Station, Technical Bulletin 155, 1994; NRCS Characterization Data; and composite data from the Field Appraisal of Resource Management Systems compiled by Dr. Paul R. Hepler, of the Department of Plant and Soil Sciences, University of Maine, Orono, Maine.

National Cooperative Soil Survey
U.S.A.

LOCATION PEACHAM VT+MA ME NH

Established Series
Rev. SHG-RFL-DHZ
05/2015

PEACHAM SERIES

The Peacham series consists of very deep, very poorly drained soils that formed in organic material over loamy lodgment till in glaciated uplands and lowlands. They are shallow to a dense substratum and very deep to bedrock. Estimated saturated hydraulic conductivity is moderately high or high in the solum and moderately low or low in the dense substratum. Slope ranges from 0 to 8 percent. Mean annual precipitation is about 1180 mm, and mean annual temperature is about 6 degrees C.

TAXONOMIC CLASS: Loamy, mixed, superactive, nonacid, frigid, shallow Histic Humaquepts

TYPICAL PEDON: Peacham mucky peat, on a 3 percent slope in a very stony pasture. (Colors are for moist soil.)

Oe--0 to 3 cm; black (N 2.5/) mucky peat; massive; very friable; many fine roots; neutral (pH 7.3); abrupt wavy boundary.

Oa--5 to 25 cm; black (N 2.5/) muck; massive; very friable; many fine roots; neutral (pH 6.7); abrupt smooth boundary. (O horizon is 20 to 40 cm thick.)

Bg--25 to 38 cm; dark greenish gray (5GY 4/1) fine sandy loam; weak fine and medium subangular blocky structure; friable; many fine roots; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation; 7 percent rock fragments; neutral (pH 6.8); abrupt wavy boundary. (11 to 50 cm thick)

Cdg1--38 to 79 cm; dark grayish brown (2.5Y 4/2) fine sandy loam; massive; firm; many coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation and many medium faint gray (5Y 5/1) iron depletions; 10 percent rock fragments; slightly acid (pH 6.4); clear wavy boundary.

Cdg2--79 to 165 cm; dark olive gray (5Y 3/2) sandy loam; massive; firm; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation and many medium faint gray (5Y 5/1) iron depletions; 10 percent rock fragments; neutral (pH 6.8).

TYPE LOCATION: Caledonia County, Vermont; Town of Burke; located about 1.8 km south of the Sutton River, and 430 meters east of the Sutton town line; USGS Burke Mountain, VT topographic quadrangle; latitude 44 degrees, 37 minutes, and 29 seconds N. and longitude 71 degrees 59 minutes, and 02 seconds W., NAD 1983.

RANGE IN CHARACTERISTICS: The thickness of the mineral solum ranges from 11 to 50 cm. Depth to bedrock is greater than 165 cm. Texture is sandy loam, fine sandy loam, very fine sandy loam, loam, or silt loam in the fine-earth fraction. The weighted average of clay in the particle-size control section is 1 to 10 percent. Rock fragments are mostly gravel and cobbles and range from 5 to 30 percent

in the mineral horizons. Reaction ranges from very strongly acid to neutral throughout the soil.

The O horizon is neutral or has hue of 5YR to 10YR, value of 2 to 3, and chroma of 0 to 2. It is mucky peat or muck.

Some pedons have an Oi horizon that consists of peat.

Some pedons have an A horizon that has hue of 10YR to 5Y, value of 2 to 4, and chroma of 1 or 2. Mucky mineral texture modifiers are common.

The Bg horizon, and Eg horizon where present, is neutral or has hue of 10YR to 5GY, value of 4 to 6, and chroma of 0 to 2.

The Cdg horizon is neutral or has hue of 2.5Y to 5B, value of 3 to 6, and chroma of 0 to 2. It is massive or has plates of geogenic origin. Consistence is firm or very firm.

Some pedons have thin sandy lenses in the Bg and Cdg horizons.

Some pedons have a thin, friable Cg horizon above the Cdg horizon.

COMPETING SERIES: The Burnham series is in the same family. Burnham soils have more than 10 percent clay in the particle-size control section.

GEOGRAPHIC SETTING: Peacham soils are on nearly level to gently sloping areas in glaciated uplands and lowlands. They are typically in open and closed depressions on footslopes and toeslopes. The soils formed in organic material 20 to 40 cm thick and the underlying loamy lodgment till. The till is Wisconsin-aged and derived mainly from granite, gneiss, schist, and phyllite. Slope ranges from 0 to 8 percent. The mean annual precipitation is 790 to 1640 mm, and the mean annual temperature is 2 to 7 degrees C. The frost-free period ranges from 70 to 135 days. Elevation ranges from about 100 to 800 meters above sea level.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Brayton, Buckland, Cabot, Colonel, Marlow, Peru, Pillsbury, Tunbridge, Vershire, and Wonsqueak soils. Peacham soils are in a drainage sequence with the well drained Marlow soils, moderately well drained Buckland and Peru soils, somewhat poorly drained Colonel soils, and poorly drained Brayton, Cabot, and Pillsbury soils. Tunbridge and Vershire soils are on higher positions in the landscape and are well drained and moderately deep to bedrock. Wonsqueak soils formed in thicker deposits of organic material over mineral soil material.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Very poorly drained. Estimated saturated hydraulic conductivity is moderately high or high in the solum and moderately low or low in the dense substratum.

USE AND VEGETATION: Most areas are forested. The common trees are balsam fir, red spruce, black spruce, red maple, yellow birch, tamarack, black ash, eastern white pine, and northern white cedar. A few areas cleared of stones are used mainly for hay and pasture.

DISTRIBUTION AND EXTENT: Vermont, Maine, Massachusetts, and New Hampshire; MLRAs 143 and 144B. These soils are extensive with about 160,000 acres of the series mapped.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Amherst, Massachusetts.

SERIES ESTABLISHED: Franklin County, Vermont, 1948.

REMARKS: Diagnostic horizons and features recognized in this pedon are:
Histic epipedon - the zone from 0 to 25 cm (Oe and Oa horizons).
Cambic horizon - the zone from 25 to 38 cm (Bg horizon).
Aquic conditions- masses of iron accumulation in the matrix and an iron depleted matrix from 25 to 38 cm (Bg horizon).
Densic materials - the zone from 38 to 165 cm (Cdg1 and Cdg2 horizons).

ADDITIONAL DATA: Characterization data for Peacham and similar soils is available through the National Cooperative Soil Survey Soil Characterization Database:
http://ncsslabdatamart.sc.egov.usda.gov/

National Cooperative Soil Survey
U.S.A.

LOCATION OSSIPEE NH+ME NY VT

Established Series
Rev. SALP-HRM
01/2000

OSSIPEE SERIES

The Ossipee series consists of very deep, very poorly drained soils formed in organic accumulations. They are underlain by loamy sediments on outwash plains, lake plains, and glacial till uplands. Slopes range from 0 to 2 percent. Mean annual precipitation is about 42 inches, and mean annual temperature is about 43 degrees F.

TAXONOMIC CLASS: Loamy, mixed, dysic, frigid Terric Haplohemists

TYPICAL PEDON: Ossipee mucky peat, on a nearly level undisturbed bog. (Colors are for moist soil unless otherwise stated.)

Oe1--0 to 12 inches; dark reddish brown (5YR 2/2), broken face and rubbed, hemic material; about 60 percent fibers, 35 percent rubbed; moderate medium and coarse granular structure; nonsticky; 2 percent coarse fragments; extremely acid; clear smooth boundary.
(4 to 16 inches thick)

Oe2--12 to 18 inches; dark reddish brown (5YR 2/2), broken face and rubbed, hemic material; about 60 percent fibers, 30 percent rubbed; moderate very coarse granular structure; nonsticky; 2 percent coarse fragments; extremely acid; clear smooth boundary. (4 to 20 inches thick)

Oe3--18 to 25 inches; dark brown (7.5YR 3/2), broken face and rubbed, hemic material; about 50 percent fibers, 25 percent rubbed; massive; nonsticky; 8 percent coarse fragments; extremely acid; abrupt smooth boundary. (0 to 20 inches thick)

Cg1--25 to 36 inches; gray (5Y 6/1) silt loam; massive; firm; strongly acid; clear smooth boundary. (0 to 15 inches thick)

Cg2--36 to 65 inches; gray (5Y 6/1) very fine sandy loam; massive; firm; moderately acid.

TYPE LOCATION: Carroll County, New Hampshire; Town of Conway, about 700 feet east of the Brewster Morrill access road to Conway Lake and about 1.25 miles south of Rt. 113. USGS Ossipee Lake, NH-ME; 15 feet Quadrangle; 43 degrees 58 feet 44 inches N and 71 degrees 4 feet 21 inches W.

RANGE IN CHARACTERISTICS: Thickness of the organic soil layers ranges from 16 to 50 inches. The organic materials are comprised of herbaceous and woody materials. Slightly decomposed woody fragments comprise 2 to 15 percent by volume of the organic materials. Thin layers of live sphagnum moss up to 4 inches in thickness commonly occur on the surface. The organic soil layers are neutral or have hue of 5YR through 10YR, value of 1 through 4, and chroma of 0 through 2. The value and/or chroma may increase 1 or 2 units when exposed to air. Reaction is extremely acid.

The surface tier, exclusive of loose surface litter or moss, is comprised of hemic or fibric material with an unrubbed fiber content that ranges from 35 to 95 percent of the organic volume; rubbed fiber content

ranges from 15 to 90 percent. It has weak to moderate, medium to coarse granular structure.

The subsurface tier is dominated by hemic material. The unrubbed fiber content ranges from 35 to 80 percent; the rubbed fiber content ranges from 10 to 40 percent. It is dominantly massive, but ranges to include granular structure.

The organic bottom tier, where present, has the same range as the subsurface tier.

The C horizon is neutral or has hue of 10YR through 5GY, value of 4 through 6, and chroma of 0 through 4. It is sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, clay loam, or silty clay loam. Reaction ranges from very strongly acid through slightly acid.

COMPETING SERIES: These are the Merwin series in the same family and the Cathro, Chocorua, and Greenwood series in related families. The Merwin soils have a thin buried soil in the upper part of the mineral substratum. Cathro soils are dominantly of sapric material and are less acid. Chocorua soils have a coarser textured mineral substratum. Greenwood soils have organic materials thicker than 51 inches.

GEOGRAPHIC SETTING: Ossipee soils occur in depressional areas within outwash and lake plains and on glacial till uplands. The average size of these soil areas ranges from about 5 to 75 acres. Slopes are less than 2 percent. The climate is humid and cool temperate. The mean annual temperature ranges from 40 to 45 degrees F., and the mean annual precipitation ranges from 35 to 50 inches.

GEOGRAPHICALLY ASSOCIATED SOILS: The competing Chocorua and Greenwood soils occupy similar landscapes. The Adams, Au Gres, Boothbay, Naumburg, Pillsbury, and Raynham mineral soils commonly occur near the edges of bogs above the Ossipee soils.

DRAINAGE AND PERMEABILITY: Very poorly drained; surface runoff is ponded. Permeability is moderate to moderately rapid in the organic portion and moderately slow to moderate in the mineral substratum.

USE AND VEGETATION: These soils are primarily in native vegetation consisting of shrubs, reeds, sedges, and commonly with a tree canopy. The trees include tamarack, black spruce, balsam fir, yellow birch, and black ash.

DISTRIBUTION AND EXTENT: Maine, New Hampshire, and New York. The series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Amherst, Massachusetts

SERIES ESTABLISHED: Carroll County, New Hampshire, 1974.

REMARKS: 1. The Ossipee soils were formerly included with areas designated as Muck and Peat.
2. Diagnostic horizons and features recognized in this pedon are:

a. Organic materials feature - the zone from 0 to 25 inches (Oe horizon).
b. Terric feature - the zone from 25 to 65 inches (2Cg horizon).
c. Dysic feature - the pH is less than 4.5 in .01 molar calcium chloride in all parts of the organic materials in the control section (Oe1, Oe2, and Oe3 horizons).

National Cooperative Soil Survey
U.S.A.

Appendix D

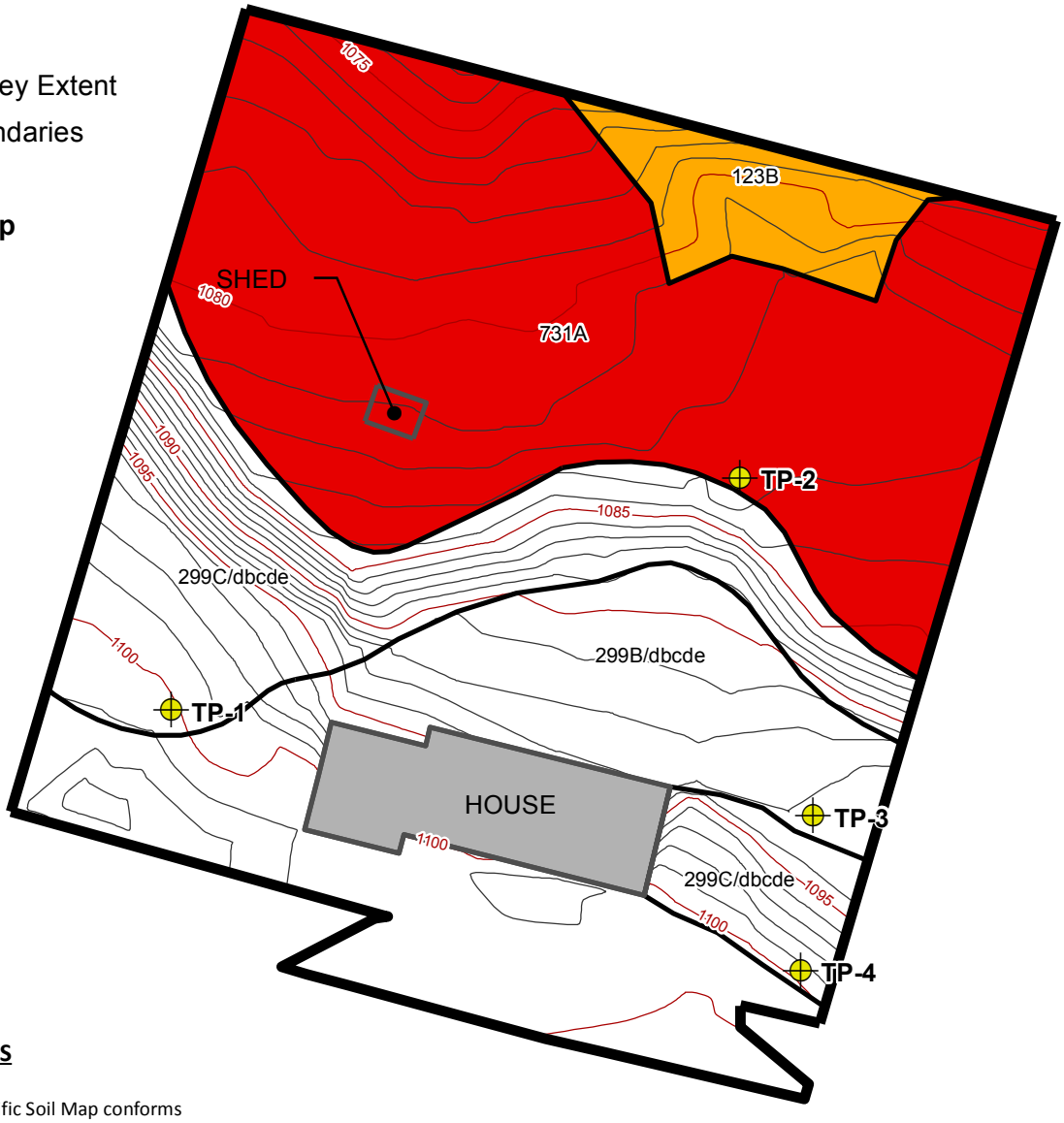
Soil Survey Map

Site Features

- Test Pits
- Soil Survey Extent
- Soil Boundaries
- Building

Soil Hyd. Group

- A
- B
- C
- D



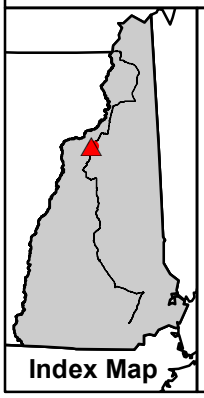
NOTES

1. This detailed Site-Specific Soil Map conforms to the standards of SSSNNE Publication No. 3, as amended, "Site-Specific Soil Mapping Standards for NH and VT".

2. This map has been prepared to comply with soil mapping requirements of RSA 485 A: 17 and NHDES Env-Wq 1500, Alteration of Terrain.

3. See accompanying narrative report for methodology, map symbol legend, and interpretations.

Map Symbol	Name	Slope (%)	Hydrologic Group
123B	Telos silt loam	3-8	C
299B/dbcde	Udorthents, smoothed	3-8	A/B
299C/dbcde	Udorthents, smoothed	8-15	C/A/D
731A	Peacham and Ossipee mucky peat	0-3	D



Data Provided By: Cornerstone Energy Inc. & GRANIT

N

1 inch = 45 feet

Meters
0 5 10 20

Feet
0 25 50 100

TS5 SOIL SURVEY
Pre-Construction

Bethlehem, NH

STATE OF MAINE
IAN BROADWATER
NO. 305
CERTIFIED
SOIL SCIENTIST

EVERSOURCE ENERGY

NORMANDEAU ASSOCIATES
Environmental Consultants

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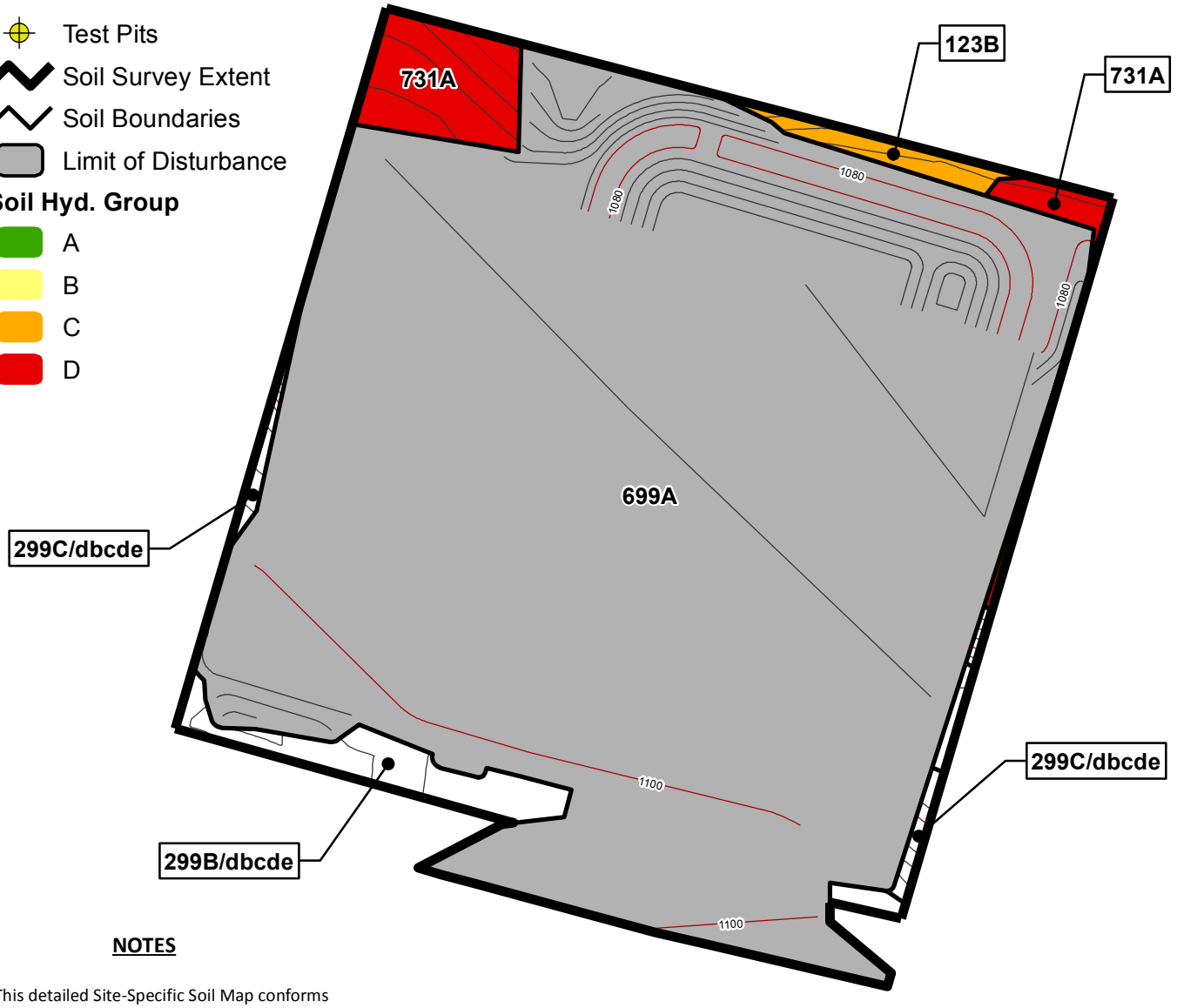
Site Features

- Test Pits
- Soil Survey Extent
- Soil Boundaries
- Limit of Disturbance

Soil Hyd. Group

- A
- B
- C
- D



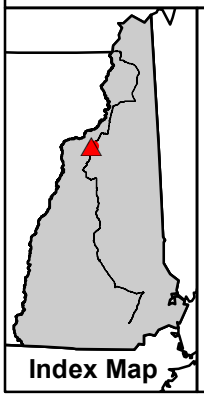
NOTES

1. This detailed Site-Specific Soil Map conforms to the standards of SSSNNE Publication No. 3, as amended, "Site-Specific Soil Mapping Standards for NH and VT".

2. This map has been prepared to comply with soil mapping requirements of RSA 485 A: 17 and NHDES Env-Wq 1500, Alteration of Terrain.

3. See accompanying narrative report for methodology, map symbol legend, and interpretations.

Map Symbol	Name	Slope (%)	Hydrologic Group
123B	Telos silt loam	3-8	C
299B/dbcde	Udorthents, smoothed	3-8	A/B
299C/dbcde	Udorthents, smoothed	8-15	C/A/D
731A	Peacham and Ossipee mucky peat	0-3	D
699A	Urban Land	0-25	NA



Data Provided By: Cornerstone Energy Inc. & GRANIT

N

1 inch = 45 feet

0 5 10 20 Meters

0 25 50 100 Feet

TS5 SOIL SURVEY
Post-Construction

Bethlehem, NH

STATE OF MAINE
IAN BROADWATER
NO. 305
CERTIFIED
SOIL SCIENTIST

EVERSOURCE ENERGY

NORMANDEAU ASSOCIATES
Environmental Consultants

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Hydrologic Soil Group—Grafton County, New Hampshire

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Grafton County, New Hampshire
Survey Area Data: Version 17, Sep 12, 2014

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

Date(s) aerial images were photographed: Aug 19, 2010—Jul 16, 2011

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Grafton County, New Hampshire (NH009)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
59B	Waumbek loamy sand, 3 to 8 percent slopes, very stony	B	0.4	19.7%
255B	Monadnock and Hermon soils, 3 to 8 percent, very stony	B	0.5	24.1%
255E	Monadnock and Hermon soils, 25 to 35 percent slopes, very stony	B	1.1	50.6%
731	Peacham and ossipee soils, very stony	A/D	0.1	5.6%
Totals for Area of Interest			**2.1**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX H – GEOTECHNICAL REPORT (BY OTHERS)

A GEOTECHNICAL REPORT WILL BE PROVIDED AT A FUTURE DATE ONCE GEOTECHNICAL INVESTIGATIONS HAVE BEEN PERFORMED FOR THIS SITE.

APPENDIX I – WETLAND DELINEATION REPORT (BY OTHERS)

WETLANDS REPORT INFORMATION INCLUDED UNDER SEPARATE COVER

APPENDIX J – POLLUTANT LOADING CALCULATIONS

Condition	Point of Analysis (PoA) Number	Sub-Area Number	Area Description	Land Use	BMP	Is the Impervious Area Disconnected in accordance with Chapter 6, Volume 1 of the NH Stormwater Manual or is the BMP an Infiltration BMP designed in accordance with Alteration of Terrain regulations (Env-Wq 1500)?	Pervious Undisturbed (i.e, forest, meadow, etc.)	Pervious Disturbed (i.e. lawn or other area that will be fertilized regularly)	Pervious Pavement that filters and infiltrates all stormwater (no underdrains)	Pervious Disturbed Other	Description of Pervious Disturbed Other	Pervious Total	Pervious Pavement that filters but does not infiltrate all stormwater (has underdrains)	Impervious Roof	Impervious Road	Impervious Parking and Drives	Impervious Sidewalks	Impervious Surface Water	Impervious Other	Description of Impervious Other	Impervious Total (prior to Disconnection or Infiltration BMP Credit)	Total Area	Composite % Impervious (without disconnection or Infiltration credit)	Composite % Impervious (with disconnection or Infiltration credit)
							Acres	Acres	Acres	Acres		Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres		Acres	Acres		
Pre-Development	Pre-1	Pre-1	Pre-Dev Watershed Map Area 1	Residential (general)		NO	0.29	0.67	0.00	0.00		0.96	0.00	0.06	0.13	0.07	0.00	0.00	0.02	shed, walk, wall, pad	0.27	1.23	22.22%	22.22%
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Pre-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		

Condition	Point of Analysis (PoA) Number	Sub-Area Number	Area Description	Land Use	BMP	Is the Impervious Area Disconnected in accordance with Chapter 6, Volume 1 of the NH Stormwater Manual or is the BMP an Infiltration BMP designed in accordance with Alteration of Terrain regulations (Env-Wq 1500)?	Pervious Undisturbed (i.e, forest, meadow, etc.)	Pervious Disturbed (i.e. lawn or other area that will be fertilized annually)	Pervious Pavement that filters and infiltrates all stormwater (no underdrains)	Pervious Disturbed Other	Description of Pervious Disturbed Other	Pervious Total	Pervious Pavement that filters but does not infiltrate all stormwater (has underdrains)	Impervious Roof	Impervious Road	Impervious Parking and Drives	Impervious Sidewalks	Impervious Surface Water	Impervious Other	Description of Impervious Other	Impervious Total (Prior to Disconnection or Infiltration BMP Credit)	Total Area	Composite % Impervious (without disconnection or Infiltration credit)	Composite % Impervious (with disconnection or Infiltration credit)
							Acres	Acres	Acres	Acres		Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres		Acres	Acres		
Post-Development	Post-1	Post-1	Post-Dev Watershed Map Area 1	Residential (general)	Underground Sand Filter	YES	0.00	0.00	0.55	0.08	grass, not fertilized	0.64	0.00	0.03	0.02	0.00	0.00	0.00	0.00	Equipment, Driveway & Retaining Wall	0.04	0.68	6.33%	0.00%
Post-Development	Post-2	Post-2	Post-Dev Watershed Map Area 2	Residential (general)		NO	0.05	0.00	0.00	0.30	grass, not fertilized	0.35	0.00	0.00	0.19	0.00	0.00	0.00	0.00		0.19	0.55	35.16%	35.16%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	100.00%	100.00%
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Post-Development						NO	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		

Date (MM/DD/YYYY):	**8/14/2015**
Project Name:	**Bethlehem Substation**
Town/City:	**Bethlehem, Grafton County**
Impacted Surface Waters:	**Bakers Brook/Upper Connecticut River**
Applicant:	**Northern Pass Transmission, LLC.**
DES File #:	

Average Annual Precipitation P	**45.90**	**inches**
Fraction of Annual Runoff events that produce runoff	**0.90**	**(usually 0.9)**

ONLY INPUT VALUES IN BLUE SHADED CELLS

Credit for Using Low Nutrient Fertilizer: If there are managed turf areas under post development conditions that are to be fertilized annually, reductions in post development nutrient (TP and TN) loadings can be realized by by providing enforceable documents (i.e., deed restrictions) requiring land owners to use low nutrient fertilizer. To get low nutrient fertilizer pollutant reductions input the proposed reduced fertilizer application rates for post development development for TP and TN in the table below. Low nutrient fertilizers must have application rates less than the standard fertilizer application rate shown in the table. Then input the percent of each land use in each post development sub-area that is managed turf that is fertilzed annually.

Fertilizer Reduction Calculator		
	TP	**TN**
STANDARD FERTILIZER APPLICATION RATE (lbs/acre/year)	15.0	150.0
PROPOSED REDUCED FERTILIZER APPLICATION RATES FOR POST-DEVELOPMENT (lbs/acre/year)	**0.0**	**44.0**
INITIAL PERCENT REDUCTION	100.0%	70.7%
PERCENT OF CITIZENS THAT WILL COMPLY WITH REDUCED APPLICATION RATES	50%	50%
PERCENT OF APPLIED FERTILIZER THAT IS LOST TO RUNOFF OR PERCOLATION	10%	10%
FINAL PERCENT FERTILIZER REDUCTION WITH COMPLIANCE AND RUNOFF RATES APPLIED (%FR)	**5.0%**	**3.5%**
MINIMUM ASSUMED EMC = EMC_{MIN} (mg/L)	0.11	1.74

Used to reduce EMCs for Post TP and Post TN for each land use in each Sub Area depending on percent of area that is managed turf that is fertilized annually

PRE-DEVELOPMENT CONDITIONS

	Area	**Impervious Area**
Total Area (All Sub-Areas) (acres)	**1.23**	**0.27**

Insert information for 1st sub-area below

Sub_Area_ID	**Pre-1**
Point of Analysis (PoA) Number	**Pre-1**
Total Area for Sub-Area (acres)	**1.23**

Land Use	**Area** (acres)	**Ia** (% Impervious)
From HWG		
Residential Roof	0.00	0.00%
Commercial Roof	0.00	0.00%
Commercial/Res Parking	0.00	0.00%
Residential Street	0.00	0.00%
Urban Highway	0.00	0.00%
Lawns	0.00	0.00%
Driveway	0.00	0.00%
Residential (general)	1.23	22.22%
Commercial (general)	0.00	0.00%
Industrial (general)	0.00	0.00%
From CDM		
Agriculture and Pasture	0.00	0.00%
Commercial	0.00	0.00%
Forest/Rural Open	0.00	0.00%
Highway	0.00	0.00%
Industrial	0.00	0.00%
Medium Density Residential	0.00	0.00%
Urban Open	0.00	0.00%
Water/Wetland	0.00	0.00%

Insert information for 2nd sub-area below

Sub_Area_ID	
Point of Analysis (PoA) Number	
Total Area for Sub-Area (acres)	**0.00**

Land Use	**Area** (acres)	**Ia** (% Impervious)

POST-DEVELOPMENT CONDITIONS

	Area	**Impervious Area**	**Area Fertilized Annually**
Total Area (All Sub-Areas) (acres)	**1.23**	**0.19**	**0.00**

Sub_Area_ID	**Post-1**				
Point of Analysis (PoA) Number	**Post-1**				
Total Area in Sub-Area (acres)	**0.68**	**0.00**	**0.00**		

Land Use	**Total Area for each Land Use** (acres)	**Ia** (% Impervious)	**Percent of Area that is managed turf (i.e., fertilized annually)** %	**Post-TP EMC** mg/L	**Post-TN EMC** mg/L
From HWG					
Residential Roof	0.00	0.00%	0.0%	0.11	1.50
Commercial Roof	0.00	0.00%	0.0%	0.14	2.10
Commercial/Res Parking	0.00	0.00%	0.0%	0.15	1.90
Residential Street	0.00	0.00%	0.0%	0.55	1.40
Urban Highway	0.00	0.00%	0.0%	0.32	3.00
Lawns	0.00	0.00%	0.0%	2.10	9.10
Driveway	0.00	0.00%	0.0%	0.56	2.10
Residential (general)	0.68	0.00%	0.0%	0.40	2.20
Commercial (general)	0.00	0.00%	0.0%	0.20	2.00
Industrial (general)	0.00	0.00%	0.0%	0.40	2.50
From CDM					
Agriculture and Pasture	0.00	0.00%	0.0%	0.37	5.98
Commercial	0.00	0.00%	0.0%	0.33	2.97
Forest/Rural Open	0.00	0.00%	0.0%	0.11	1.74
Highway	0.00	0.00%	0.0%	0.43	2.65
Industrial	0.00	0.00%	0.0%	0.32	3.97
Medium Density Residential	0.00	0.00%	0.0%	0.52	5.15
Urban Open	0.00	0.00%	0.0%	0.11	1.74
Water/Wetland	0.00	0.00%	0.0%	0.08	1.38

Sub_Area_ID	**Post-2**				
Point of Analysis (PoA) Number	**Post-2**				
Total Area in Sub-Area (acres)	**0.55**	**0.19**	**0.00**		

Land Use	**Area** (acres)	**Ia** (% Impervious)	**Percent of Area that is managed turf (i.e., fertilized annually)** %	**Post-TP EMC** mg/L	**Post-TN EMC** mg/L

From HWG							
	Residential Roof	0.00	0.00%			0.11	1.50
	Commercial Roof	0.00	0.00%			0.14	2.10
	Commercial/Res Parking	0.00	0.00%			0.15	1.90
	Residential Street	0.00	0.00%			0.55	1.40
	Urban Highway	0.00	0.00%			0.32	3.00
	Lawns	0.00	0.00%			2.10	9.10
	Driveway	0.00	0.00%			0.56	2.10
	Residential (general)	0.00	0.00%			0.40	2.20
	Commercial (general)	0.00	0.00%			0.20	2.00
	Industrial (general)	0.00	0.00%			0.40	2.50
From CDM							
	Agriculture and Pasture	0.00	0.00%			0.37	5.98
	Commercial	0.00	0.00%			0.33	2.97
	Forest/Rural Open	0.00	100.00%			0.11	1.74
	Highway	0.00	0.00%			0.43	2.65
	Industrial	0.00	0.00%			0.32	3.97
	Medium Density Residential	0.00	0.00%			0.52	5.15
	Urban Open	0.00	0.00%			0.11	1.74
	Water/Wetland	0.00	0.00%			0.08	1.38

Insert information for 3rd sub-area below

Sub_Area_ID							
Point of Analysis (PoA) Number	**Post--**						
Total Area for Sub-Area (acres)	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	
	Land Use	**Area** (acres)	**Ia** (% Impervious)			**Post-TP EMC** mg/L	**Post-TN EMC** mg/L
From HWG							
	Residential Roof	0.00	0.00%			0.11	1.50
	Commercial Roof	0.00	0.00%			0.14	2.10
	Commercial/Res Parking	0.00	0.00%			0.15	1.90
	Residential Street	0.00	0.00%			0.55	1.40
	Urban Highway	0.00	0.00%			0.32	3.00
	Lawns	0.00	0.00%			2.10	9.10
	Driveway	0.00	0.00%			0.56	2.10
	Residential (general)	0.00	0.00%			0.40	2.20
	Commercial (general)	0.00	0.00%			0.20	2.00
	Industrial (general)	0.00	0.00%			0.40	2.50
From CDM							
	Agriculture and Pasture	0.00	0.00%			0.37	5.98
	Commercial	0.00	0.00%			0.33	2.97
	Forest/Rural Open	0.00	100.00%			0.11	1.74
	Highway	0.00	0.00%			0.43	2.65
	Industrial	0.00	0.00%			0.32	3.97
	Medium Density Residential	0.00	0.00%			0.52	5.15
	Urban Open	0.00	0.00%			0.11	1.74
	Water/Wetland	0.00	0.00%			0.08	1.38

Insert information for 4th sub-area below

Sub_Area_ID							
Point of Analysis (PoA) Number							
Total Area for Sub-Area (acres)	**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	
	Land Use	**Area** (acres)	**Ia** (% Impervious)			**Post-TP EMC** mg/L	**Post-TN EMC** mg/L
From HWG							
	Residential Roof	0.00	0.00%			0.11	1.50
	Commercial Roof	0.00	0.00%			0.14	2.10
	Commercial/Res Parking	0.00	0.00%			0.15	1.90
	Residential Street	0.00	0.00%			0.55	1.40
	Urban Highway	0.00	0.00%			0.32	3.00
	Lawns	0.00	0.00%			2.10	9.10
	Driveway	0.00	0.00%			0.56	2.10
	Residential (general)	0.00	0.00%			0.40	2.20
	Commercial (general)	0.00	0.00%			0.20	2.00
	Industrial (general)	0.00	0.00%			0.40	2.50
From CDM							
	Agriculture and Pasture	0.00	0.00%			0.37	5.98

Date (MM/DD/YYYY):	**8/14/2015**
Project Name:	**Bethlehem Substation**
Town/City:	**Bethlehem, Grafton County**
Impacted Surface Waters:	**Bakers Brook/Upper Connecticut River**
Applicant:	**Northern Pass Transmission, LLC.**
DES File #:	

ONLY CHANGE VALUES SHADED IN BLUE

PRE DEVELOPMENT Sub-Area	INPUT BMP DESCRIPTIONS		INPUT OVERALL REMOVAL EFFICIENCIES (%) FOR POLLUTANTS OF CONCERN TSS	TP	TN
Pre-1			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%

POST DEVELOPMENT Sub-Area	INPUT BMP DESCRIPTIONS		INPUT OVERALL REMOVAL EFFICIENCIES (%) FOR POLLUTANTS OF CONCERN TSS	TP	TN
Post-1	Underground Sand Filter with Underdrain and Sediment Forebay & Deep Sump Catch Basin		85%	45%	10%
Post-2			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%
0.00			0%	0%	0%

OVERALL SUMMARY

Date (MM/DD/YYYY):	**8/14/2015**
Project Name:	**Bethlehem Substation**
Town/City:	**Bethlehem, Grafton County**
Impacted Surface Waters:	**Bakers Brook/Upper Connecticut River**
Applicant:	**Northern Pass Transmission, LLC.**
DES File #:	

TOTAL PRE -DEVELOPMENT (PRE-DEV) AREA (ACRES) =	**1.23**
TOTAL PRE-DEV EFFECTIVE IMPERVIOUS AREA (ACRES) =	**0.27**
TOTAL PRE-DEV PERCENT EFFECTIVE IMPERVIOUS (%) =	**22.2%**
TOTAL POST DEVELOPMENT (POST-DEV) AREA (ACRES) =	**1.23**
TOTAL POST-DEV EFFECTIVE IMPERVIOUS AREA (ACRES) =	**0.19**
TOTAL POST-DEV PERCENT EFFECTIVE IMPERVIOUS (%) =	**15.7%**
TOTAL POST-DEV AREA THAT IS FERTILIZED ANNUALLY (ACRES) =	**0.00**
TOTAL POST-DEV PERCENT OF AREA THAT IS FERTILIZED ANNUALLY (%) =	**0.0%**

	TSS (LBS/YR)	**TP (LBS/YR)**	**TN (LBS/YR)**
PRE DEVELOPMENT LOADS (NO BMPS)	**287.8**	**1.2**	**6.3**
PRE DEVELOPMENT LOADS (WITH BMPS)	**287.8**	**1.2**	**6.3**
PRE DEVELOPMENT LOAD REDUCTION DUE TO BMPS	**0.0**	**0.0**	**0.0**
PROPOSED PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	**NA**	**5.0%**	**3.5%**
POST DEVELOPMENT LOADS (NO BMPS)	**218.5**	**0.9**	**4.8**
POST DEVELOPMENT LOADS (WITH BMPS)	**191.6**	**0.8**	**4.7**
POST DEVELOPMENT LOAD REDUCTION DUE TO BMPS	**26.9**	**0.1**	**0.1**
POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE)	**-96.2**	**-0.3**	**-1.6**
% DIFFERENCE FROM PRE DEVELOMENT LOADS (SHOULD BE 0 OR NEGATIVE)	**-33.4%**	**-29.0%**	**-25.2%**
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAD	**-31.7%**	**-31.7%**	**-31.7%**

Date (MM/DD/YYYY): 8/14/2015
Project Name: Bethlehem Substation
Town/City: Bethlehem, Grafton County
Impacted Surface Waters: Bakers Brook/Upper Connecticut River
Applicant: Northern Pass Transmission, LLC.
DES File #:

TOTAL POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE) (lbs/yr)	-96.2
% DIFFERENCE FROM PRE DEVELOMENT LOADS (SHOULD BE 0 OR NEGATIVE	-33.4%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAD	-31.7%
CURRENTLY PROPOSED REMOVAL EFFICIENCY	12.3%
REMAINING REMOVAL EFFICIENCY NECESSARY TO MEET PRE-DEVELOPMENT LOAI	-44.0%

PRE-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
PRE	Pre-1	Pre-1	1.23	0.27	NA	TSS	NA		287.8	287.8	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00	Post--	0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TSS	NA		0.0	0.0	0.0	0.0%
		TOTAL	1.23	0.27				TOTAL	287.8	287.8	0.0	0.0%

Date (MM/DD/YYYY): 8/14/2015
Project Name: Bethlehem Substation
Town/City: Bethlehem, Grafton County
Impacted Surface Waters: Bakers Brook/Upper Connecticut River
Applicant: Northern Pass Transmission, LLC.
DES File #:

TOTAL POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE) (lbs/yr)	-96.2
% DIFFERENCE FROM PRE DEVELOMENT LOADS (SHOULD BE 0 OR NEGATIVE	-33.4%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAD	-31.7%
CURRENTLY PROPOSED REMOVAL EFFICIENCY	12.3%
REMAINING REMOVAL EFFICIENCY NECESSARY TO MEET PRE-DEVELOPMENT LOAI	-44.0%

POST-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
POST	Post-1	Post-1	0.68	0.00	0.00	TSS	NA	Underground Sand Filter with Underdrain and Sediment Forebay & Deep Sump Catch Basin	31.7	4.8	26.9	85.0%
POST	Post-2	Post-2	0.55	0.19	0.00	TSS	NA		186.8	186.8	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TSS	NA		0.0	0.0	0.0	0.0%
		TOTAL	1.23	0.19	0.00			TOTAL	218.5	191.6	26.9	12.3%

Date (MM/DD/YYYY): 8/14/2015
Project Name: Bethlehem Substation
Town/City: Bethlehem, Grafton County
Impacted Surface Waters: Bakers Brook/Upper Connecticut River
Applicant: Northern Pass Transmission, LLC.
DES File #:

TOTAL POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE) (lbs/yr)	-0.3
% DIFFERENCE FROM PRE DEVELOMENT LOADS (SHOULD BE 0 OR NEGATIVE	-29.0%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAD	-31.7%
CURRENTLY PROPOSED REMOVAL EFFICIENCY	6.5%
REMAINING REMOVAL EFFICIENCY NECESSARY TO MEET PRE-DEVELOPMENT LOAI	-38.2%

PRE-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
PRE	Pre-1	Pre-1	1.23	0.27	NA	TP	NA		1.2	1.2	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00	Post--	0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TP	NA		0.0	0.0	0.0	0.0%
		TOTAL	1.23	0.27				TOTAL	1.2	1.2	0.0	0.0%

Date (MM/DD/YYYY): 8/14/2015
Project Name: Bethlehem Substation
Town/City: Bethlehem, Grafton County
Impacted Surface Waters: Bakers Brook/Upper Connecticut River
Applicant: Northern Pass Transmission, LLC.
DES File #:

POST-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
POST	Post-1	Post-1	0.68	0.00	0.00	TP	5.0%	Underground Sand Filter with Underdrain and Sediment Forebay & Deep Sump Catch Basin	0.1	0.1	0.1	45.0%
POST	Post-2	Post-2	0.55	0.19	0.00	TP	5.0%		0.7	0.7	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TP	5.0%		0.0	0.0	0.0	0.0%
		TOTAL	1.23	0.19	0.00			TOTAL	0.9	0.8	0.1	6.5%

Date (MM/DD/YYYY): 8/14/2015
Project Name: Bethlehem Substation
Town/City: Bethlehem, Grafton County
Impacted Surface Waters: Bakers Brook/Upper Connecticut River
Applicant: Northern Pass Transmission, LLC.
DES File #:

TOTAL POST DEVELOPMENT - PRE DEVELOPMENT (SHOULD BE 0 OR NEGATIVE) (lbs/yr)	-1.6
% DIFFERENCE FROM PRE DEVELOMENT LOADS (SHOULD BE 0 OR NEGATIVE	-25.2%
TOTAL REMOVAL EFFICIENCY NEEDED TO MEET PRE-DEVELOPMENT LOAD	-31.7%
CURRENTLY PROPOSED REMOVAL EFFICIENCY	1.5%
REMAINING REMOVAL EFFICIENCY NECESSARY TO MEET PRE-DEVELOPMENT LOAI	-33.2%

PRE-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
PRE	Pre-1	Pre-1	1.23	0.27	NA	TN	NA		6.3	6.3	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00	Post--	0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
PRE	0.00		0.00	0.00	NA	TN	NA		0.0	0.0	0.0	0.0%
		TOTAL	1.23	0.27				TOTAL	6.3	6.3	0.0	0.0%

Date (MM/DD/YYYY): 8/14/2015
Project Name: Bethlehem Substation
Town/City: Bethlehem, Grafton County
Impacted Surface Waters: Bakers Brook/Upper Connecticut River
Applicant: Northern Pass Transmission, LLC.
DES File #:

POST-DEVELOPMENT

PRE OR POST - DEV	SUB-AREA	POINT OF ANALYSIS NUMBER	AREA (acres)	Effective Impervious Area (acres)	Area Fertilized Annually (acres)	POLLUTANT	PERCENT REDUCTION IN FERTILIZER APPLICATION RATE	BMPS	LOAD (NO BMPS) (lbs/yr)	LOAD (WITH BMPS) (lbs/yr)	LOAD REDUCTION DUE TO BMPS (lbs/yr)	PERCENT REMOVAL
POST	Post-1	Post-1	0.68	0.00	0.00	TN	3.5%	Underground Sand Filter with Underdrain and Sediment Forebay & Deep Sump Catch Basin	0.7	0.6	0.1	10.0%
POST	Post-2	Post-2	0.55	0.19	0.00	TN	3.5%		4.1	4.1	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
POST	0.00		0.00	0.00	0.00	TN	3.5%		0.0	0.0	0.0	0.0%
		TOTAL	1.23	0.19	0.00			TOTAL	4.8	4.7	0.1	1.5%

http://ofmpub.epa.gov/waters10/attains_waterbody.control?p_list_id=NHRIV801030403-09&p_report_type=T&p_cycle=2008

Last updated on 9/1/2015

Watershed Assessment, Tracking & Environmental Results

Return to home page

On This Page

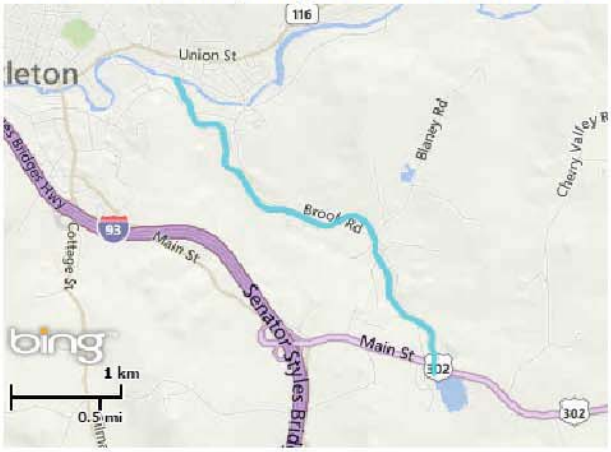
- Causes of Impairment
- TMDLs That Apply to This Waterbody
- Previous Causes of Impairment Now Attaining All Uses

State: New Hampshire
Waterbody ID: NHRIV801030403-09
Location: 010801030403, Baker Brook, Unknown Fishery
State Waterbody Type: River
EPA Waterbody Type: Rivers and Streams
Water Size: 2.63
Units: miles
Watershed Name: Waits

Waterbody History Report

Data are also available for these years: 2010 2006 2004 2002

2008 Waterbody Report for Baker Brook



Click on the waterbody for an interactive map

Click on the waterbody for an interactive r

Features

- About This Database (Integrated Report)
- Assessing Water Quality (Questions and Answers)
- Integrated Reporting Guidance
- Previous National Water Quality Reports
- EnviroMapper for Water
- AskWATERS
- EPA WATERS Homepage
- Exchange Network
- Assessment Database
- Statewide Statistical Surveys
- *How's My Waterway* Local Search tool
- Pollution Categories Summary Document
- Nitrogen and Phosphorus Pollution Data Access Tool (NPDAT)

Causes of Impairment for Reporting Year 2008

Description of this table

Cause of Impairment	Cause of Impairment Group	State TMDL Development Status
Fish Bioassessments	Cause Unknown - Impaired Biota	TMDL needed
Mercury	Mercury	TMDL completed

TMDLs That Apply to this waterbody

Description of this table

TMDL Document Name	TMDL Date	TMDL Pollutant Description	TMDL Pollutant Source Type	Cause(s) of Impairment Addressed
Ne Regional Mercury Tmdl	Dec-20-2007	Mercury	Nonpoint Source	Mercury

Previous Causes of Impairments Now Attaining All Uses

No causes of impairment are recorded as attaining all uses for this waterbody.

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