

Gravel Pit Solar

Windsorville Road & Plantation Road
East Windsor, Connecticut

PREPARED FOR



Gravel Pit Solar, LLC
Gravel Pit Solar II, LLC
Gravel Pit Solar III, LLC
Gravel Pit Solar IV, LLC

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1

Introduction

Gravel Pit Solar, LLC, Gravel Pit Solar II, LLC, Gravel Pit Solar III, LLC, and Gravel Pit Solar IV, LLC (collectively Gravel Pit Solar) are proposing the construction, operation and maintenance of the Gravel Pit Solar project (Project) in East Windsor, Connecticut. The Project includes the development of a 120-megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic system. The Project encompasses approximately 485 acres and proposes to clear approximately 83 acres of wooded areas and therefore requires a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from CTDEEP.

This Stormwater Pollution Control Plan has been prepared in accordance with Section 22a-430b of the Connecticut General Statutes and the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (the "General Permit"), effective date December 31, 2020. This SWPCP addresses pre- and post-construction issues associated with stormwater management during construction. All actions required by this plan shall be followed by the permittee per the conditions of the General Permit.



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Project Summary

This Stormwater Pollution Control Plan (SWPCP) has been developed for the proposed construction of the proposed Gravel Pit Solar project, a ± 120 MW-AC photovoltaic solar energy facility (the "Project"). The Project will consist of ground-based solar racks, panels, combiner boxes, power conditioning systems (i.e. inverters), and buried conduit. The Project will also have access roads, perimeter security fences, and paths around the perimeter. The Project will be sited on nine (9) parcel of land in East Windsor, Connecticut, with access provided from Apothecaries Hall Road, Windsorville Road and Plantation Road. The Site is generally bounded by forest with residential developments to the northeast on Windsorville Road and Apothecaries Hall Road. Ketch Brook flows from east to west approximately through the center of the combined parcels. Refer to Figure A for a map of the Site.

Most of the Project development will be on farm fields or gravel pits, but approximately 83 acres of forest will also be cleared. Ketch Brook bisects the parcels and contains a wetland system, and various wetlands exist around the Site in some of the gravel pit and kettle hole areas.

Existing Conditions

The Project Site occupies near level to gently sloping terrace position; however, steep slopes exist today within the active gravel pits and in the riparian buffers off the edges of the farm fields. Most of the Site consists of active farmland and active gravel pits with forest remaining around the site perimeters.

The Project site north of Ketch Brook consists of an active gravel pit, active farm fields, and forested areas. The active gravel pit itself retains (discharges to groundwater) all stormwater runoff up to a 100-year rainfall event on site and runoff from the farm fields and forested areas are contained in natural depressions or drain into gravel pit areas. The Project site south of Ketch Brook is surrounded by kettle holes, valleys, and wetlands that are within or adjacent to the Site. A large portion of the stormwater runoff generated south of Ketch Brook is contained in natural depressions before leaving the Site.

Proposed Conditions

Under proposed conditions, Site grading has been minimized to maintain as much of the existing topography and drainage patterns as practicable to preserve the Site's existing hydrologic characteristics. Stormwater runoff generated from the



Project areas located south of Ketch Brook will continue to flow overland off the site and areas located north of Ketch Brook will continue to discharge stormwater (up to 100-year rainfall event) to groundwater. Stormwater best management practices (BMPs) will be implemented throughout the Site to utilize natural processes of infiltrating rainfall and filtering runoff as close to its source as possible. The SWPCP has been designed to avoid impacts to ecologically sensitive areas and to preserve existing vegetative cover and limit new impervious areas to the maximum extent practicable.

In accordance with State regulations, project designs need to manage or mitigate post-development peak flow rates to meet pre-development rates up to the 100-year rainfall event, treat water quality, and capture sediment generated from construction activities. Gravel Pit Solar's design incorporates a number of conservative measures that will manage and mitigate stormwater runoff, preserve /improve water quality, and prevent erosion and sedimentation from the project site including:

1. Siting Project in open areas to minimize grading, tree clearing, and grubbing
2. Siting Project to avoid steep slopes.
3. Promotion of infiltration in the stormwater management design.
4. Targeted geotechnical and soil testing to properly site and design basins to infiltrate stormwater and contain potential sediment
5. Pre-seed areas that lack vegetation prior to installation of the solar facility
6. Use of deep rooting vegetation in seed mixes that have the ability to break through compacted existing layers of soil.
7. Mechanical soil decompaction following the initial grading activities in agricultural field, where appropriate.

Estimated Site Area and Total Area to be disturbed during Construction

The total anticipated site area to be disturbed during construction is approximately 485 acres and the Project will require a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from the CTDEEP. The Project proposes to clear approximately 83 acres of forested areas along the edges of the Site. Gravel Pit Solar intends to perform tree clearing, grading, stabilization, and vegetation within the growing season of 2021 prior to the to the installation of the solar facility.

Estimated Runoff Coefficients

As most of the Site is an existing gravel pit and active farmland, an existing cover type of "fallow soil" and "row crops" has generally been considered in the hydrologic model, and "grass, fair" is proposed under the solar panels. The hydrologic



modelling of the proposed conditions includes a drop of one-half Hydrologic Soil Group where the solar farm is proposed in accordance with the General Permit requirements. Areas of the active gravel pit do not incorporate a drop in Hydrologic Soil Group for proposed conditions as these areas are being actively disturbed today.

Water Quality Treatment

The Project proposes not to grub removed trees outside the limits of the physical solar development and to maintain a meadow condition for a vegetative buffer between the development area and the proposed treeline, to the maximum extents practicable. The Project proposes to meet or exceed water quality goals of the State regulations by incorporation of proposed stormwater basins, which were designed by use of the extensive geotechnical survey.

NDDB Consultation

Preliminary Assessments were received from CTDEEP Wildlife Division on December 31, 2019, and March 4, 2020. Over the course of 2020, the species listed in these assessments were addressed by VHB environmental staff by field survey or by development of conservation measures. A Final Determination was received from CTDEEP Wildlife Division on February 10, 2021. Documentation received from NDDB is enclosed herewith in Appendix C.

SHPO Consultation

A Phase 1A historic/archaeological study was performed by Heritage Consultants and provided to SHPO for their review and reference. A letter dated June 2, 2020 was provided to Heritage Consultants from SHPO concurring with the findings of the Phase 1A and requesting a Phase 1B survey of the site. Heritage Consultants has to date initiated the Phase 1B survey and is working towards final correspondence from SHPO. Documentation received from SHPO to date is enclosed herewith in Appendix D, and a copy of final consultation will be provided to CTDEEP Stormwater upon receipt.



3

Construction Sequencing

All construction activities are expected to begin in the summer/fall of 2021 and completed by the end of 2022. The general construction notes are as follows:

1. The site contractor shall be fully responsible to control construction such that sedimentation shall not affect roads/highways and their drainage system, neighboring properties, wetlands and regulatory protected areas, whether such sedimentation is caused by water, wind, or direct deposit. Designated access drives must be used to the maximum extents possible.
2. A qualified inspector shall be assigned to be responsible for performing inspections and preparing reports in accordance with Section 5(b)(4)(B) of the Construction General Permit. It is also anticipated that representatives from CTDEEP and/or the State Conservation District will perform periodic inspections.
3. Engineer of record shall perform three (3) monthly plan implementation inspections within the first 90 days of construction activity, as required by Connecticut Department of Energy & Environmental Protection.
4. Throughout the course of the construction project, additional sediment and erosion control measures may be warranted at the discretion of the qualified inspector and/or design engineer. These improvements must be implemented in a timely fashion in accordance with the requirements of the Construction General Permit. Additionally, areas of proposed compacted native soil roads shall be converted to stable gravel roads if/as determined by the qualified inspector or engineer of record.
5. Prior to construction, the applicant shall provide the Town of East Windsor with the name of contact and 24-hour contact information.
6. Contractor shall adhere to 2002 Connecticut Guidelines for Erosion and Sediment Control, as amended.
7. The contractor shall flag the limits of clearing necessary to facilitate the pre-construction meeting.
8. The contractor shall hold pre-construction meeting(s). Attendees shall include, but not be limited to, representatives of the general contractor, site contractor, CTDEEP, the Conservation District, Town of East Windsor, engineer of record, and qualified SWPPP inspector.
9. The contractor shall contact Call-Before-You-Dig (1-800-922-4455) prior to engaging in any excavation activities at the Site.
10. The contractor shall notify the Town of East Windsor agent, Zoning Enforcement Officer, and Engineering Department, 48 hours prior to commencement of any construction activity.



11. No construction of site improvements may begin until the proper erosion control measures serving the area to be disturbed are in place.
12. Anticipated work hours will be between 6:30 AM and 5:00 PM.
13. High flotation tire equipment shall be used to the maximum extents practicable in lieu of track construction equipment in an effort to avoid compaction of the native soils.
14. Entire site shall be allowed to vegetate for as long as possible prior to start of civil construction work.



Pre-Construction Site Protection Sequence (2021)

1. Install stabilized vehicle construction exit at the existing road intersecting with Windsorville Road, Apothecaries Hall Road, and Plantation Road.
2. Survey and mark all woodland clearing limits.
3. Mark trees to be felled within 10 feet of clearing limits and install tree protection for trees to be preserved outside clearing limits.
4. Field survey and mark boundary between clearing limits and grubbing limits.
5. The use of a tub grinder is recommended for the mulching of felled trees.
6. As trees are cleared and grubbed, grind tops and root balls in tub grinder to create material for wood chip mulch/erosion control mix berm.
7. Access roads shall be designated as early as feasible and used primarily for construction traffic.
8. As material is produced, install mulch berm at the limit of disturbance generally in areas of cleared forest. Mulch berm has nominal dimensions of 1.5 to 2 feet high by 4-foot wide.
9. Immediately inside the perimeter mulch berm, install entrenched silt fence following standards of the 2002 Connecticut Guidelines for Erosion and Sediment Control. Mulch berm and perimeter silt fence shall be maintained in perpetuity until completion of construction.
10. Concurrent with Items 2 through 9 above, the contractor shall address ongoing erosion problems using temporary diversions and filling and grading gullies. Track gullies up and down slope and install seed and tackifier. A stapled biodegradable erosion control blanket without monofilament mesh is an acceptable alternative for tackifier.
11. Install stormwater basins in accordance with the approved site-specific SWPCP and CT Guidelines. The engineer of record shall inspect features to confirm required storage capacities are provided and that outlets and/or spillways are constructed correctly. Discharge areas below outfalls must be inspected to confirm flow will be over stable ground and sheet flow is encouraged. If disturbed soils are present, the engineer of record to provide correct measures to address condition.
12. Seed and protect disturbed soils around sediment traps and basins within 72 hours of completion (within 14 days on parcels north of Ketch Brook). Secure seed with a tackifier. An anionic polyacrylamide product may be included with the tackifier to promote soil stability. All other amendments should be prescribed based on the result of soil tests.
13. Install other erosion and sediment controls following the CT Guidelines and manufacturer's directions. During construction, the contractor shall install measures as required by the engineer of record or qualified inspector, to prevent sediment-laden runoff from reaching wetlands or discharging offsite.
14. Establish designated vehicular traffic access roads (gravel, or compacted native soil, per plans) that shall be used as primary accesses. Efforts must be made to minimize vehicular trafficking across non-designated areas to the extents possible.
15. Perform mass earthwork on the site and install perimeter fence to serve as construction barrier. Topsoil shall be stripped and stockpiled from areas proposed for regrading.



16. Pre-seed within the growing season, if possible, areas that lack vegetative cover prior to 2022 construction activities.
17. Topsoil shall be replaced to 3" minimum depth over regraded areas upon completion of mass earthwork activities and areas which were disturbed by mass earthwork operations shall be reseeded within 72 hours of completion (within 14 days on parcels north of Ketch Brook).
18. Areas disturbed by mass earthwork shall be reseeded and stabilized as necessary.

Construction Sequence (2022)

1. Drive piles for solar panel racking.
2. The installation of racking shall follow the pile driving by roughly one week starting from the same point. It is anticipated that approximately 13 acres of piles will be in ahead of racking on average.
3. Reseed and regrade all areas disturbed by construction traffic within the arrays where racks are installed as early as possible. Ruts and rills shall be smoothed and graded as discovered.
4. Install solar panel modules in the racking. Much of this work is anticipated to be performed by hand and light construction equipment which will cause minimal disturbance compared to the use of heavy equipment. Designated access roads shall still be used to the maximum extents possible.
5. Upon completion of construction, re-seed all disturbed areas within 72 hours (within 14 days at parcels east of north of Ketch Brook) and prevent vehicular trafficking over these areas. Install final landscaping.
6. After site is stabilized, and after inspection by design engineer, or other owner's representative, remove temporary erosion and sediment controls. Entire site shall be checked for and cleaned of sediment as needed.



Wildlife Protection

1. Consultation with CTDEEP Wildlife Division (NDDDB) shall take place in the event that any notes listed here cannot be met. Any notes listed herewith may not be inclusive of all requirements found in the NDDDB final determination. The NDDDB and their Final Determination is the authority on handling wildlife at the site.
2. No tree clearing within 300 feet of the Ketch Brook or its associated wetlands shall take place between June 1 and September 1 to avoid bat pupping conflicts.
3. If big sand tiger beetles or scribbled sallow moth are encountered during construction, the contractor shall make the project team aware and NDDDB shall be notified.
4. An HDD contingency plan must be prepared to outline best management practices for HDD activities and planned response measures in the event of a frac-out. The owner shall engage a freshwater mussel specialist to prepare this plan and to monitor the stream during HDD operations.
5. Mowing perimeter areas shall not be performed between April 30 and November 1 to protect turtle foraging and nesting.
6. Perimeter fencing (i.e. Silt fence) shall be installed between November 1 and April 1 if possible. If not possible, details within the NDDDB final determination and/or consultation with NDDDB shall be undertaken to protect turtles.
7. The contractor and/or the qualified herpetologist shall search work areas within 0.2 miles of ketch brook each morning prior to beginning work for state-listed species within the project perimeter fence.
8. No heavy machinery or vehicles shall be parked on the site outside of the perimeter exclusionary fence.
9. All construction personnel shall be trained about the presence of turtles and any turtles located within the site perimeter fence shall carefully be moved outside the fence.
10. Any encounter with a state-listed species shall be reported to NDDDB.
11. If any american kestrel nests are discovered during construction, the nest shall be avoided until young are fledged to the maximum extents feasible.
12. Up to five kestrel nest boxes shall be purchased and placed outside the fenced perimeter of the solar arrays. Guidance found in the NDDDB Final Determination shall be followed for installation and maintenance.
13. If work is proposed on the site between March 1 and August 30, an ornithologist shall be employed to conduct surveys for american kestrel within the work area. If encountered, guidance within the NDDDB Final Determination shall be followed.



Vegetation Establishment for Gravel Pit Areas

1. Prior to regrading, a plan for the areas of gravel pit soil testing shall be created and implemented by a certified professional soil scientist. These samples shall be tested for suitable plant growth media.
2. It is intended to follow the United States Office of Surface Mining Reclamation and Enforcement (OSMRE) to identify suitable plant growth media that will be used on the surface to promote reclamation success.
3. Soil samples shall be checked against the soil reconstruction material for drastically disturbed areas as depicted herewith.
4. The certified professional soil scientist shall be responsible for determining appropriate soil amendments in the event that plant growth media is not adequate. Soil amendments may include, but not be limited to, commercial fertilizer, agricultural lime, mycorrhiza, organic amendments, or other.
5. A certified professional soil scientist shall be retained to investigate the vegetative growth across the site and sample areas and propose additional recommendations in the event of areas struggling to vegetate.

Table 2. Soil reconstruction material for drastically disturbed areas.

Property	Limits			Restrictive Feature
	Good	Fair	Poor	
1. Sodium adsorption ratio	<4	4-13	>13	Excess sodium
2. Salinity (mmhos/cm)	<8	8-16	>16	Excess salt
3. Soil reaction (pH, 0-40")	5.0-8.5	4.0-5.0	<4.0	Too acid
3a. Soil reaction (pH, >40")	---	<4.0	---	Too acid
3b. Soil reaction	---	---	>8.5	Too alkaline
4. Available water capacity (in./in.)	>0.10	0.05-0.10	<0.05	Droughty
5. Erosion factor (k)	<0.35	>0.35	---	Erodes easily
6. Wind erodibility group	---	---	1, 2	Soil blowing
7. Texture	---	SCL, CL, SiCL	C, SiC, SC	Too clayey
7a. Texture	---	LCoS, LS, LFS, LVFS	CoS, S, FS, VFS	Too sandy
8. Weight % 3-10"	<25	25-50	>50%	Too cobbly
8a. Weight % >10"	<5	5-15	>15	Too stony
9. Layer thickness (in.)	>40	20-40	<20	Thin layer
10. Organic matter (%)	>1	0.5-1.0	<0.5	Low fertility
11. Clay activity (CEC/clay)	>0.24	0.16-0.24	<0.16	Low fertility
12. Calcium carbonate eq. (%)	<15	15-40	>40	Excess lime

Source: Source: <http://www.itc.nl/~rossiter/Docs/NRCS/620nsh.pdf>



4

Erosion and Sedimentation Control Measures

The following erosion and sedimentation controls are for use during the earthwork and construction phases of the Project. The following controls are provided as recommendations for the site contractor in compliance with the DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities, and 2002 Connecticut Guidelines for Erosion and Sediment Control as amended.

Silt Fencing

This semi-permeable barrier made of a synthetic porous fabric will provide additional protection. The silt fences will be repaired or replaced as determined by periodic field inspections.

Temporary/Permanent Sediment Trap/Basin

These stormwater settling basins will be installed at the locations shown on the E&S plans and will have the majority of runoff from the on-site construction area diverted to them. The temporary sediment basins must have a safe outlet for excess stormwater. Additional temporary sediment traps may need to be installed during construction depending upon final phasing of improvements.

Temporary/Permanent Diversions

These swales shall be constructed generally as depicted on the site plans and adjusted to work for field conditions. They shall be installed upon completion of the tributary sediment trap/basin and fitted with erosion control blankets and check dams in accordance with the details and standard practices.

Construction Entrance/Exit

Temporary crushed-stone construction entrances/exits will be installed at access points off of town roads.



Street Sweeping

Adjacent streets affected by sediment runoff from vehicle tires shall be swept at a minimum of bi-weekly intervals or on an as-needed basis as required by the qualified inspector.

Flocculent Logs

Flocculent logs shall be placed in the bottom of diversion swales to assist in reducing total suspended solids.

Straw Wattles

Straw wattles are compressed weed-free straw encased in jute, nylon, or other biodegradable materials. The intended location for these are along slopes, along delineated natural depression basins within the work areas, and at the edges of travel ways to intercept runoff.

Stockpile Management

Active stockpiles shall be topped with hay at the end of each work day. Stockpiles intended to be left dormant for more than 14 days must be stabilized with erosion control blankets and/or hydroseed. Stockpiles shall be completely surrounded with silt fence.

Compost Filter Socks

These media-filled mesh socks shall be installed in the areas depicted on the site plans primarily to act as check dams and/or perimeter control depending upon the area. Care should be taken that these socks do not divert flow, but rather allow it time to settle without modifying intended drainage patterns.

Erosion Control Blankets

Straw fiber or jute netting roll blankets designed for use on moderate slope and channel applications. Material type shall be selected to ensure no danger to wildlife.

Hydroseeding

Hydroseed may be used at the intervals outlined in the construction sequence. Hydroseed shall be combined with an application of polyacrylamide (PAM) to assist in the stabilization to soil.



Stone Check Dams

Stone check dams shall be constructed to the dimensions as detailed on the site plans and are intended to be left in place permanently to act as velocity dissipators downstream of the stormwater basins. In areas where they are proposed outside the limits of work, the stone check dams shall be constructed by hand without the use of heavy construction machinery.

Keeping Disturbance to a Minimum

Construction traffic shall utilize the existing timber harvest paths around the site (or designated access routes once they are established) and avoid travel across undisturbed areas to minimize soil compaction. The contractor shall also strive to limit areas of exposed soil in each sub-watershed as much as feasible during construction. Areas that have been regraded to final grade shall be seeded within 72 hours. For areas north of Ketch Brook, areas that have been regraded to final grade shall be seeded within 14 days.

Maintenance

The contractor or subcontractor will be responsible for implementing, at minimum, each control shown on the Site Plan. Refer to the Site Plans in Appendix F.

The qualified inspector will inspect all sediment and erosion control structures periodically and after each rainfall event. Records of the inspections will be prepared and maintained on-site by the contractor.

- Silt shall be removed from behind barriers if greater than 6-inches deep or as needed.
- Damaged or deteriorated items will be repaired within 48 hours of identification, or sooner if a significant rainfall event is predicted.
- Sediment that is collected in sediment traps and basins shall be removed in accordance with the details.
- Erosion control structures shall remain in place until all disturbed earth has been securely stabilized. After removal of structures, disturbed areas shall be regraded and stabilized as necessary.



5

Water Quantity and Quality Controls Long Term Maintenance

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

Low Water Crossings

- Soil stability of rip-rap road crossings shall be checked and repaired, as necessary, once annually or after damaging rainfall events

Stormwater Basins

- Basins shall be checked for and cleaned of sediment once annually or after damaging rainfall events
- Sediment shall be cleaned from the pond any time it affects the overall performance and infiltration capabilities of the system
- Any structural damage or other indication of malfunction will be reported to the site manager and repaired as necessary

Diversion Swales

- Swales shall be checked for and cleaned of sediment once annually or after damaging rainfall events
- Sediment shall be cleaned from a swale any time it affects the overall performance of the system
- Any structural damage or other indication of malfunction will be reported to the site manager and repaired as necessary

Vegetated Perimeter Filter Areas

- Vegetated filter areas shall be checked for and cleaned of sediment once annually or after damaging rainfall events
- Sediment shall be cleaned from the filter areas any time it affects the overall performance and infiltration capabilities of the system



Stone Check Dams

- Stone check dams shall be checked for and cleaned of sediment once annually or after damaging rainfall events, and repaired as necessary
- Sediment shall be cleaned from the stone check dams any time it affects the overall performance and infiltration capabilities of the system



6

Site Inspections

Qualified personnel (provided by the permittee) shall inspect disturbed areas of the construction activity that have not been finally stabilized, erosion and sediment control measures, all structural controls, soil stockpile areas, washout areas and locations where vehicles enter or exit the site. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and impacts to the receiving waters. Locations where vehicles enter or exit the site shall also be inspected for evidence of off-site sediment tracking.

The permittee shall maintain a rain gauge on-site to document rainfall amounts. The qualified inspector shall inspect the site and prepare reports weekly, at a minimum. For storms that end on a weekend, holiday, or other time after normal working hours, an inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours. For areas north of Ketch Brook, which discharge entirely to groundwater for up to a 100-year rainfall event, the qualified inspector shall inspect the site and prepare reports monthly, at a minimum, and within 24 hour for storms that equal or exceed 0.5 inches.

Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least once every month for three months. The engineer of record shall perform three (3) monthly plan implementation inspections within the first 90 days of construction activity.

Any and all violations to the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and/or the approved SWPCP, including, but not limited to sediment discharges and chemical spills, shall be reported to the Water Permitting and Enforcement Division of the Connecticut Department of Energy and Environmental Protection (attention: Neal Williams – neal.williams@ct.gov or 860-424-3356).

Reports

A report shall be prepared and retained as part of the Plan. This report shall summarize: the scope of the inspection; name(s) and qualifications of personnel making the inspection; the date(s) of the inspection; weather conditions including



precipitation information; major observations relating to erosion and sediment controls and the implementation of the Plan; a description of the stormwater discharge(s) from the site; and any water quality monitoring performed during the inspection. The report shall be signed by the permittee or his/her authorized representative in accordance with the "Certification of Documents" section (subsection 5(i)) of this general permit. Copies of the reports must be provided to the contractor, site owner, CTDEEP, and the design engineer.

The report shall include a statement that, in the judgment of the qualified inspector(s) conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the Plan and permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised Plan within three (3) calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised Plan within ten (10) days of the date of inspection, unless another schedule is specified in the Guidelines or is approved by the commissioner. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants from the site.



7

Termination Requirements

Notice of Termination

At the completion of a construction project registered of this general permit, a Notice of Termination must be filed with the Commissioner. A project shall be considered complete after all post-construction measures are installed, cleaned and functioning and the site has been stabilized for at least three months following the cessation of construction activities. A site is considered stabilized when there is no active erosion or sedimentation present and no disturbed areas remain exposed for all phases.



8

Contractors

Each Contractor and Subcontractor who will perform actions on the site that may reasonably be expected to cause or have the potential to cause pollution of the waters of the State shall sign the certification statement below:

Certification Statement

"I certify under penalty of the law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that, as a Contractor or Subcontractor at the site, I am authorized by this General Permit, and must comply with the terms and conditions of this General Permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for the site."

List of Project Contractors

- Contractor Name: _____
 Address: _____
 Telephone Number: _____ Fax Number: _____
 Contractor Specialty to be used on this Project: _____
 Contractor's On-site Representative: _____

Signature _____ Date _____

- Contractor Name: _____
 Address: _____
 Telephone Number: _____ Fax Number: _____
 Contractor Specialty to be used on this Project: _____
 Contractor's On-site Representative: _____

Signature _____ Date _____



3. Contractor Name: _____
Address: _____
Telephone Number: _____ Fax Number: _____
Contractor Specialty to be used on this Project: _____
Contractor's On-site Representative: _____

Signature Date

4. Contractor Name: _____
Address: _____
Telephone Number: _____ Fax Number: _____
Contractor Specialty to be used on this Project: _____
Contractor's On-site Representative: _____

Signature Date

5. Contractor Name: _____
Address: _____
Telephone Number: _____ Fax Number: _____
Contractor Specialty to be used on this Project: _____
Contractor's On-site Representative: _____

Signature Date

6. Contractor Name: _____
Address: _____
Telephone Number: _____ Fax Number: _____
Contractor Specialty to be used on this Project: _____
Contractor's On-site Representative: _____

Signature Date



9

Reporting and Record Keeping Requirements

The permittee shall retain copies of the SWPCP and all reports required by this General Permit, and records of all data used to complete the registration to be authorized by this General Permit, for a period of at least five (5) years from the date that construction at the Site is completed, unless the Commissioner specifies another time period in writing.

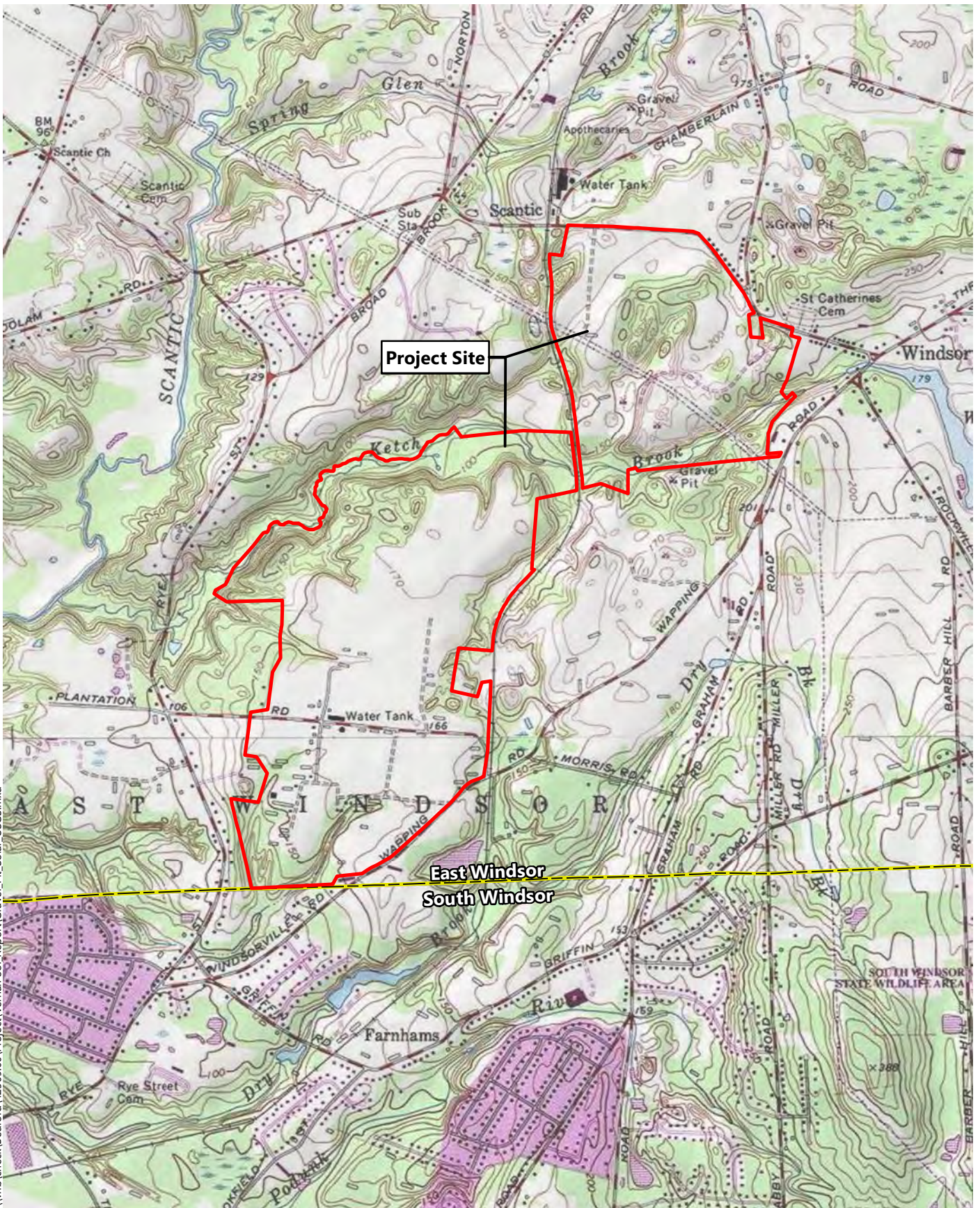
The permittee shall retain an updated copy of the SWPCP required by this General Permit at the construction site from the date construction is initiated at the site until the date construction at the site is complete.

Stormwater Pollution Control Plan Permit Drawing

<u>DRAWING TITLE</u>	<u>NO. OF SHEETS</u>
Cover Sheet	1
Legend and General Notes	1
Key Plan	1
Layout and Materials Plan	26
Grading and Drainage Plan	26
Erosion and Sediment Control Plan	26
Site Details	2
Property Survey	32



Appendix A
USGS Quad Map



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Legend

- Project Site
- Town Boundary

Gravel Pit Solar

East Windsor, Connecticut

USGS Overview Map

Source: VHB, CTDEEP



Appendix B
Sample Inspection Forms

Gravel Pit Solar – East Windsor, CT – Windsorville Road and Planation Road
Best Management Practices – Maintenance/ Evaluation Checklist

Construction Practices

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed <input type="checkbox"/> yes <input type="checkbox"/> no (List Items)	Date of Cleaning/Repair	Performed by
Silt Fencing	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Compost Filter Sock	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Straw Wattles	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Stabilized Construction Exit	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Temporary Sediment Trap/Basin & Diversion Swales	Once per week or after a 0.5" or greater storm event			Inspect for damage to side slopes, blockages, or ruts and rills.			
Vegetated Slope Stabilization	Once per week or after a 0.5" or greater storm event			Inspect for damage to side slopes, blockages, or ruts and rills.			
Energy Dissipators	Once per week or after a 0.5" or greater storm event			Inspect that level spreader lip remains level over time. Inspect for damage to side slopes, blockages, or ruts and rills.			
E-Fence	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Wood Chip Mulch Berm	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			

Stormwater Control Manager _____

Gravel Pit Solar – East Windsor, CT – Windsorville Road and Planation Road

Best Management Practices – Maintenance/ Evaluation Checklist

Long Term Practices

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed <input type="checkbox"/> yes <input type="checkbox"/> no (List Items)	Date of Cleaning/Repair	Performed by
Trash/Litter	Routinely pick up and remove litter from entire property as required.						
Vegetated Areas	Inspect bi-annually. Replant bare areas upon identification.			Inspect for bare spots and to ensure seed is taking hold and germinating. Also inspect for any ruts and rills.			
Energy Dissipators	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect that level spreader lip remains level over time. Inspect for damage to side slopes, blockages, or ruts and rills.			
Diversion Swales	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect for damage to side slopes, blockages, or ruts and rills.			
Valley Berm	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect for damage to side slopes, blockages, or ruts and rills.			
Kettle Hole	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect for damage to side slopes, blockages, or ruts and rills.			
Infiltration Basin	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect for damage to side slopes, blockages, or ruts and rills.			

Stormwater Control Manager _____



Appendix C
Rare, Threatened, and
Endangered Species



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

December 31, 2019

Ms. Susan Moberg
Vanasse Hangen Brustlin
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109
smoberg@VHB.com

Project: Preliminary Assessment for Gravel Pit Solar I, Development of a Solar Photovoltaic Electric Generating Facility on a 451Acre Site (Collection of 5 Properties) Located south of Apothecaries Hall Road in East Windsor, Connecticut
NDDDB Preliminary Assessment No.: 201914275

Dear Susan Moberg,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for the Gravel Pit Solar I, Development of a Solar Photovoltaic Electric Generating Facility on 451Acre Site (Collection of 5 Properties) Located south of Apothecaries Hall Road in East Windsor, Connecticut.

According to our records there are known extant populations of State Listed Species known that occur within or close to the boundaries of this property. I have attached a list of these species to this letter. Please be advised that this is a preliminary review and not a final determination. A more detailed review will be necessary to move forward with any subsequent environmental permit applications submitted to DEEP for the proposed project. **This preliminary assessment letter cannot be used or submitted with your permit applications at DEEP.** This letter is valid for one year.

To prevent impacts to State-listed species, field surveys of the site should be performed by a qualified biologist when these target species are identifiable. A report summarizing the results of such surveys should include:

1. Survey date(s) and duration
2. Site descriptions and photographs
3. List of component vascular plant and animal species within the survey area (including scientific binomials). A complete ecological description of the habitats on site.
4. Data regarding population numbers and/or area occupied by State-listed species
5. Detailed maps of the area surveyed including the survey route and locations of State-listed species present on the site.
6. Statement/résumé indicating the biologist's qualifications. Please be sure when you hire a consulting qualified biologist to help conduct this site survey that they have the proper experience with target taxon and have a CT scientific collectors permit to work with state listed species for this specific project.

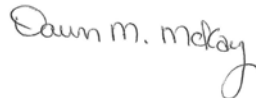
7. Protection strategies and/or mitigation for state listed species included in this letter. The site surveys report should be sent to our CT DEEP-NDDDB Program (deep.nddbrequest@ct.gov) for further review by our program biologists along with an updated request for another NDDDB review. Incomplete reports may not be accepted.

If you do not intend to do site surveys to determine the presence or absence of state-listed species, assume they are present and please provide a protection plan to let us how you will protect the state-listed species from being impacted by this project. You may submit these protection plans with your new request for an NDDDB review.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,

A handwritten signature in cursive script that reads "Dawn M. McKay".

Dawn M. McKay
Environmental Analyst 3

Species List for NDDB Request

Scientific Name	Common Name	State Status
Freshwater Community - Other Classification		
Alluvial swamp		
Poor fen		
Invertebrate Animal		
Lycaena epixanthe	Bog copper	SC
Margaritifera margaritifera	Eastern pearlshell	SC
Sympistis perscripta	Scribbled sallow moth	SC
Cicindela formosa generosa	Big sand tiger beetle	SC
Terrestrial Community - Other Classification		
Dry acidic oak forest on stratified sand and gravel		
Floodplain forest		
Vascular Plant		
Alopecurus aequalis	Short-awned meadow foxtail	T
Asclepias purpurascens	Purple milkweed	SC
Gaylussacia bigeloviana	Dwarf huckleberry	T
Lygodium palmatum	Climbing fern	SC
Vertebrate Animal		
Accipiter striatus	Sharp-shinned hawk	E
Asio flammeus	Short-eared owl	T
Falco sparverius	American kestrel	SC
Glyptemys insculpta	Wood turtle	SC
Lethenteron appendix	American brook lamprey	E
Melanerpes erythrocephalus	Red-headed woodpecker	E
Passerculus sandwichensis	Savannah sparrow	SC

E = Endangered, T = Threatened, SC = Special Concern, * Extirpated

March 4, 2020

Susan Moberg
Vanasse Hangen Brustlin
100 Great Meadow Rd Suite 200
Wethersfield, CT 06109
smoberg@VHB.com

Project: Preliminary Assessment of Gravel Pit Solar IV, 250 acres north and south of Plantation Road in East Windsor, CT
NDDDB Preliminary Assessment No.: 202002957

Dear Ms. Moberg,

I have reviewed Natural Diversity Database maps and files regarding the area delineated on the map provided for a preliminary assessment of the Gravel Pit Solar IV, on 250 acres north and south of Plantation Road in East Windsor, Connecticut.

According to our records there are known populations of State Listed Species that occur in the vicinity of this property. This property is primarily highlighted due to its proximity to riparian habitat and freshwater resources on surrounding properties including the Scantic River, Ketch Brook and the Morris Road Poor Fen. I have attached a list of species known from this area. Project design should consider maintaining or creating vegetated buffers to protect water quality and habitat for surrounding resources. We have not visited this site and were not provided any project plan details. Depending on the habitat available, these or other species may be present. Please be advised that this is a preliminary review and not a final determination. A more detailed review will be necessary to move forward with any environmental permit applications submitted to DEEP for the proposed project. **This preliminary assessment letter cannot be used or submitted with permit applications at DEEP.** This letter is valid for one year.

To better evaluate the property and to plan for management activities that may enhance habitat or prevent impacts to State-listed species, field surveys of the site should be performed by a qualified biologist with the appropriate scientific collecting permits at a time when these target species are identifiable. A report summarizing the results of such surveys should include:

1. Survey date(s) and duration
2. Site descriptions and photographs
3. List of component vascular plant and animal species within the survey area (including scientific binomials)
4. Data regarding population numbers and/or area occupied by State-listed species
5. Detailed maps of the area surveyed including the survey route and locations of State listed species
6. Conservation strategies or protection plans that indicate how impacts may be avoided for all state listed species present on the site
7. Statement/résumé indicating the biologist's qualifications. Please be sure when you hire a consulting qualified biologist to help conduct this site survey that they have the

proper experience with target taxon and have a CT scientific collectors permit to work with state listed species for this specific project.

The site surveys report should be sent to our CT DEEP-NDDDB Program (deep.nddbrequest@ct.gov) for further review by our program biologists along with an updated request for another NDDDB review. Incomplete reports may not be accepted.

If you do not intend to do site surveys to determine the presence or absence of state-listed species, then you should presume species are present and let us know how you will protect the state-listed species from being impacted by this project. You may submit these best management practices or protection plans with your new request for an NDDDB review. After reviewing your new NDDDB request form and the documents describing how you will protect this species from project impacts we will make a final determination and provide you with a letter from our program to use with DEEP-Permits.

Natural Diversity Database information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey, cooperating units of DEEP, landowners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the NDDDB should not be substitutes for onsite surveys necessary for a thorough environmental impact assessment. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact me if you have further questions at (860) 424-3378, or karen.zyko@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,



Karen Zyko
Environmental Analyst

Species List for NDDDB Request

Scientific Name	Common Name	State Status
Vertebrate Animal		
<i>Falco sparverius</i>	American kestrel	SC
<i>Glyptemys insculpta</i>	Wood turtle	SC
Invertebrate Animal		
<i>Lycaena epixanthe</i>	Bronze copper	SC
<i>Margaritifera margaritifera</i>	Eastern pearlshell	SC
Vascular Plant		
<i>Gaylussacia bigeloviana</i>	Dwarf huckleberry	T
Critical Habitat		
Poor fen		

Additional Species Information:

American kestrel: Habitat for this bird consists of open grassy or shrubby areas with short vegetation and natural tree cavities or nest boxes for nesting. This bird is limited by habitat availability in Connecticut and it can benefit from adding and maintaining artificial nest boxes.

Poor fens are natural peatlands (bogs) occupying topographically defined basins; influenced by acidic ground water; on deep, poorly decomposed peats; dominated primarily by ericaceous shrubs.

Poor fens are primarily threatened by inputs of salts, minerals, and nutrients in both stormwater runoff and groundwater.



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

February 10, 2021

Ms. Susan Moberg
Vanasse Hangen Brustlin
100 Great Meadows Road, Suite 200
Wethersfield, CT 06109
smoberg@VHB.com

Project: Proposed 120 MW Utility-Scale Gravel Pit Solar Project on 726 Acres consisting of eight separate parcels of land with Frontage on Apothecaries Hall, Plantation, Wapping and Windsorville Roads in East Windsor, Connecticut
NDDB Final Determination No.: 202002957 (Preliminary Assessment No's. 201914275 and 202002957)

Dear Susan Moberg,

I have re-reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map provided for a proposed 120 MW Utility-Scale Gravel Pit Solar Project on 726 Acres consisting of eight separate parcels of land with Frontage on Apothecaries Hall, Plantation, Wapping and Windsorville Roads in East Windsor, Connecticut. The Project includes the construction of solar photovoltaic arrays across an approximate 485-acre Project Area. As you are aware, according to our records there are extant populations of State Listed Species known to occur within or close to the boundaries of this property. The species include:

Amphibians and Reptiles

Glyptemys insculpta (Wood turtle) – Special Concern

Birds

Eremophila alpestris (Horned lark) - Endangered
Melanerpes erythrocephalus (Red-headed woodpecker) – Endangered
Asio flammeus (Short-eared owl) – Threatened
Falco sparverius (American kestrel) – Special Concern
Toxostoma rufum (Brown thrasher) – Special Concern
Passerculus sandwichensis (Savannah sparrow) – Special Concern

Invertebrates

Cicindela formosa generosa (Big sand tiger beetle) – Special Concern
Lycaena epixanthe (Bronze copper) – Special Concern
Sympistis perscripta (Scribbled sallow moth) – Special Concern
Margaritifera margaritifera (Eastern pearlshell) – Special Concern

Plants

Gaylussacia bigeloviana (Dwarf huckleberry) –Threatened
Alopecurus aequalis (Short-awned meadow foxtail) – Threatened
Asclepias purpurascens (Purple milkweed) – Special Concern
Lygodium palmatum (American climbing Fern) – Special Concern

Thank you for your report submitted July 17, 2020. Information from that report as well as our November 20, 2020 meeting are included in the details outlined below.

Protection for State Listed Bat Species

As discussed in our conference call on November 20th tree clearing is a concern in the Ketch Brook area of the project footprint. We do have records of tree roosting bats in the area and to minimize the possibility of adversely

impacting tree roosting bat species, no tree removal should take place during the bat pupping season (between June 1st and September 1st).

Protection for State Listed Invertebrates

Insect invertebrates: Survey results included in VHB Memorandum dated July 17, 2020 from Jeffery C. Peterson and Chelsea O. Glinka indicate the following:

- Bog copper – No suitable habitat occurs on the project site and no conservation measures are proposed.
- Big sand tiger beetle – No individuals were observed, however, if encountered, project proponents will coordinate with NDDB to prepare conservation measures.
- Scribbled sallow moth – Small, scattered populations of host species Canada toadflax. No conservation measures are proposed, however the project proponent is willing to negotiate incorporation of this species into perimeter seed mixes where appropriate.

NDDB concurs with the conclusions drawn in the report, and the proposed measures offered.

Gravel Pit Solar has agreed to the following conservation measures to protect freshwater mussels from adverse impacts from this solar project:

- Gravel Pit Solar will revise proposed HDD pits to reduce tree clearing and soil disturbance near Ketch Brook. The attached map depicts the previously proposed HDD clearing in yellow and the revised HDD clearing in a red hatch.
- Provide an HDD Contingency Plan to outline Best Management Practices for HDD activities and planned response measures in the event of a frac-out. Gravel Pit Solar will engage a freshwater mussel specialist (e.g. Biodiversity) to prepare a contingency plan and monitor the stream during HDD operations. The contingency plan and any monitoring reports during the directional drilling will be provided to the NDDB Program (deep.nddbrequest@ct.gov) as soon as it is possible to do so.
- Gravel Pit Solar will minimize clearing within a 300-foot buffer to the thread of Ketch Brook (approximately 74 acres within Project Site). The attached map depicts proposed clearing in the 300-foot buffer to Ketch Brook. Gravel Pit Solar will limit clearing within the 300 foot buffer area to approximately 1.1 acres.
- Gravel Pit Solar will minimize clearing within a 300-foot buffer to wetlands associated with Ketch Brook (approximately 67 acres within Project Site). The attached map depicts proposed clearing in the 300-foot buffer to wetlands associated with Ketch Brook. Gravel Pit Solar will limit clearing within the 300-foot buffer area to wetlands associated with Ketch Brook to approximately 2 acres.
- Gravel Pit Solar will prepare and implement a comprehensive sedimentation and erosion control plan for the construction phase of this project.
- A stormwater management plan will be developed and implemented and must comply with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, 2004 Connecticut Stormwater Quality Manual and the DEEP Stormwater Management at Solar Farm Construction Projects, dated September 8, 2017. The overall stormwater management plan will emphasize infiltration and groundwater recharge which will contribute to aquatic base flow within Ketch Brook. There will be no discharge of untreated stormwater to Ketch Brook or associated wetlands. All stormwater runoff will be treated within the Project Area through the use of sediment basins and traps and natural closed depressions, and treated water will be designed to dissipate and infiltrate in vegetated upland areas prior to reaching Ketch Brook and will not be discharged into any wetlands associated with Ketch Brook.

Protection and Mitigation for State Listed Amphibians and Reptiles

VHB Memorandum dated July 17, 2020 from Jeffery C. Peterson and Chelsea O. Glinka includes the following protection measures for wood turtle to be utilized throughout the implementation of the project:

- No work is proposed along Ketch Brook or in its floodplain.
- The Project will create and maintain cleared areas outside of the fenced solar arrays in early successional habitat potentially suitable for turtle foraging and nesting. These areas will not be mowed between April 30 and November 1.
- Maintain gaps under perimeter fencing to allow turtles to pass through the grassed solar arrays to avoid habitat fragmentation.

- The development will seek to curtail illicit ATV operation within the properties it will control with fencing and other barriers (e.g., boulders, bollards, Mafia block, etc.).
- No practices that could increase the temperature of the discharge to Ketch Brook (e.g., discharge from surface detention) will be proposed. Existing drainage patterns will be maintained to the greatest extent practicable.

The following protection measures are specific to construction phase:

- The use of entrenched silt fence (EF) at least 20-inches tall to isolate any work area within 0.2 miles of Ketch Brook from potential wood turtle between April 1 and November 1 each construction season.
- Special pervious exclusionary fencing will be used periodically along silt fence lines to release entrapped stormwater and reduce the likelihood of EF failure
- This EF should be installed between November 1 and April 1 when turtles can be presumed to be within the brook. Tree clearing operations within potential habitat should also be undertaken during this period unless previously isolated by this exclusionary fencing.
- The EF shall be regularly maintained (at least bi-weekly and after rainfall events greater than 0.5 inches in 24/hours) to secure any gaps or openings at ground level that may let animal pass through. Debris collected at pervious sections of fencing shall be removed to ensure function during the next storm.
- Should the previous condition not be met, it is essential that all existing open sands, unvegetated soil areas and other early successional habitats in work areas within 0.2 miles of Ketch Brook be isolated with exclusionary fencing prior to May 15 to prevent female turtles from nesting in the work area. This will include the portion of the gravel access road to the Gravel Pit from Wapping Road.
- Because exclusionary measure can potentially fail, the Contractor must search the work areas within 0.2 miles of Ketch Brook each morning prior to beginning work.*
- All construction personnel working within the turtle habitat must be apprised of the species description and the possible presence of a listed species.
- Any turtles encountered within the work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and eliminate the suspected access point.
- These animals are protected by law and no turtles should be relocated from the site.
- In areas where silt fence is used for exclusion, it shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.
- No heavy machinery or vehicles may be parked in any turtle habitat not previously secured by EF.
- Special precautions must be taken to avoid degradation of wetland habitats including any wet meadows and seasonal pools.
- Encounters with any State-listed species encounters will be reported to the CTDEEP NDDDB.

*Please see note below; a qualified herpetologist must be hired to search the site.

We concur with the proposed protection measures and add the following:

A qualified herpetologist must be hired to be on site during construction activities at this project site. The herpetologist will be responsible for educating workers and doing sweeps before construction equipment is moved each day at the project site and will be able to move and handle any amphibians and reptiles that may be encountered. The herpetologist must maintain a valid CT scientific collector's permit and report all state listed species to the NDDDB Program (deep.nddbrequest@ct.gov) within 30 days of the observation of any state listed species found during the project construction.

Additional Recommended Protection Strategies for Amphibians and Reptiles Specifically During Construction:

- A qualified herpetologist (a biologist familiar with amphibians and reptiles) will remain on site to ensure these protection guidelines remain in effect and prevent amphibians and reptiles from being run over when moving heavy equipment.
- Exclusionary practices will be required to prevent any amphibian or reptile access into construction areas. These measures will need to be installed at the limits of disturbance.
- Exclusionary fencing must be at least 20 in tall and must be secured to and remain in contact with the ground and be regularly maintained (at least bi-weekly and after major weather events) to secure any gaps or openings at ground level that may let animal pass through. Do not use plastic netted silt-fence. Many amphibians and reptiles get tangled in the netting.

- All staging and storage areas, outside of previously paved locations, regardless of the duration of time they will be utilized, must be reviewed to remove individuals and exclude them from re-entry.
- All construction personnel working must be apprised of state listed species description and the possible presence of a listed species, and instructed that the amphibian or reptile found inside work areas or notify the appropriate authorities to relocate individuals.
- Any amphibian or reptile encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and remove access point.
- In areas where silt fence is used for exclusion, it shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.
- Special precautions must be taken to avoid degradation of wetland habitats including any wet meadows and seasonal pools.
- The Contractor and consulting biologist must search the work area each morning prior to any work being done.
- Vehicles and heavy machinery should operate at slower speeds to allow animals the time to move out of harm's way on their own.
- Work conducted during early morning, evening hours or shortly after rain events shall occur with special care not to harm basking or foraging individuals.
- Vehicles shall be parked on paved, graveled surfaces or compacted surfaces used for access roads only.
- Any confirmed sightings of state listed species should be reported and documented with the NDDB (nddbrequestdep@ct.gov) on the appropriate special animal form found at (http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323460&depNav_GID=1641)

Protection for State Listed Plant Species

VHB Memorandum dated July 17, 2020 from Jeffery C. Peterson and Chelsea O. Glinka addressed conservation/protection strategies for the four state listed plant species having the potential to occur within the 726 acre site. The report indicated that none of the potential state listed plants occurred within the project boundaries.

To protect all wetland plants:

- A 100-foot vegetative (no cut) buffer is required between the Project's limits of disturbance and any forested wetlands, fens or vernal pools that occur within the project site.
- The 100-foot vegetative buffer restriction is not required at Forested Wetland 3, where a small number of trees are allowed to be removed within the 100 foot to prevent shading of the solar panels. Specifically, approximately 0.06 acres will be cleared for shading purposes at the edge of a farm field
- No stormwater should be directed to Morris Road Fen which is outside the property boundaries and just east of the project site on the east side of the railroad bed.

Protection for State Listed Bird Species

State Special Concern *Falco sparverius* (American kestrel) are known to occur in this area of East Windsor. VHB Memorandum dated July 17, 2020 from Jeffery C. Peterson and Chelsea O. Glinka proposed the following conservation/protection strategies:

- If an active nest is discovered during construction of the Project, the nest will be avoided until young are fledged.
- The proponent agrees to purchase and install up to five kestrel nest boxes outside the fenced perimeter of the solar arrays along the Project Site. These areas will be maintained in native grasses and forbs mixed with conservation grasses providing foraging habitat for American kestrel. The American Kestrel Partnership provides guidance of the placement and monitoring of nest boxes (Hilleary, undated). A minimum spacing of one-half mile between boxes is recommended. Final locations for nest boxes will follow any guidance provided by the CT DEEP.
- The proponent will monitor the boxes each year or seek to assist the successful Kestrel Nest Box Program of Northwest and North Central Connecticut operated by the Connecticut Audubon Society (CT Audubon Society, 2019).

NDDB concurs with these proposals and provides the following additional detailed measures below.

Protection Strategies for American kestrel:

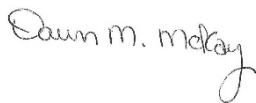
- Avoid doing project work March 1st through August 30th. If work must occur during the active breeding time (March 1st - August 30th) then I recommend that an ornithologist familiar with the habitat requirements of this species conduct surveys (between April and September) to see if they are present. A report summarizing the results of such surveys should include habitat descriptions, avian species list and a statement/resume giving the ornithologist's qualifications. (A DEEP Wildlife Division permit may be required by the ornithologist to conduct survey work, you should ask if your ornithologist has one). The results of this investigation can be forwarded to our NDDB Program at deep.nddbrequest@ct.gov
- If kestrels are nesting in the vicinity of this site then we recommend that work not be conducted near the nest from March through August. A sufficient buffer should be left from the nest to minimize disturbance. This buffer should be determined after the nest is located. Silvicultural practices that maintain high densities of nesting and roosting cavities in trees with a minimum diameter of 30.5 cm will benefit this species.
- The installation of exclusion fencing around active work areas during construction and performing sweeps of enclosed areas to remove any wildlife that may become entrapped also should limit the presence of potential prey items that could attract kestrels to the construction areas.
- Consideration should be given to installing kestrel nest boxes at this site in addition to developing a long-term management plan, by a qualified ornithologist that includes enhancement protocols and suggestions for property enhancement opportunities this bird.

This determination is good for two years. Please re-submit a new NDDB Request for Review if the scope of work changes or if work has not begun on this project by February 10, 2023.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,

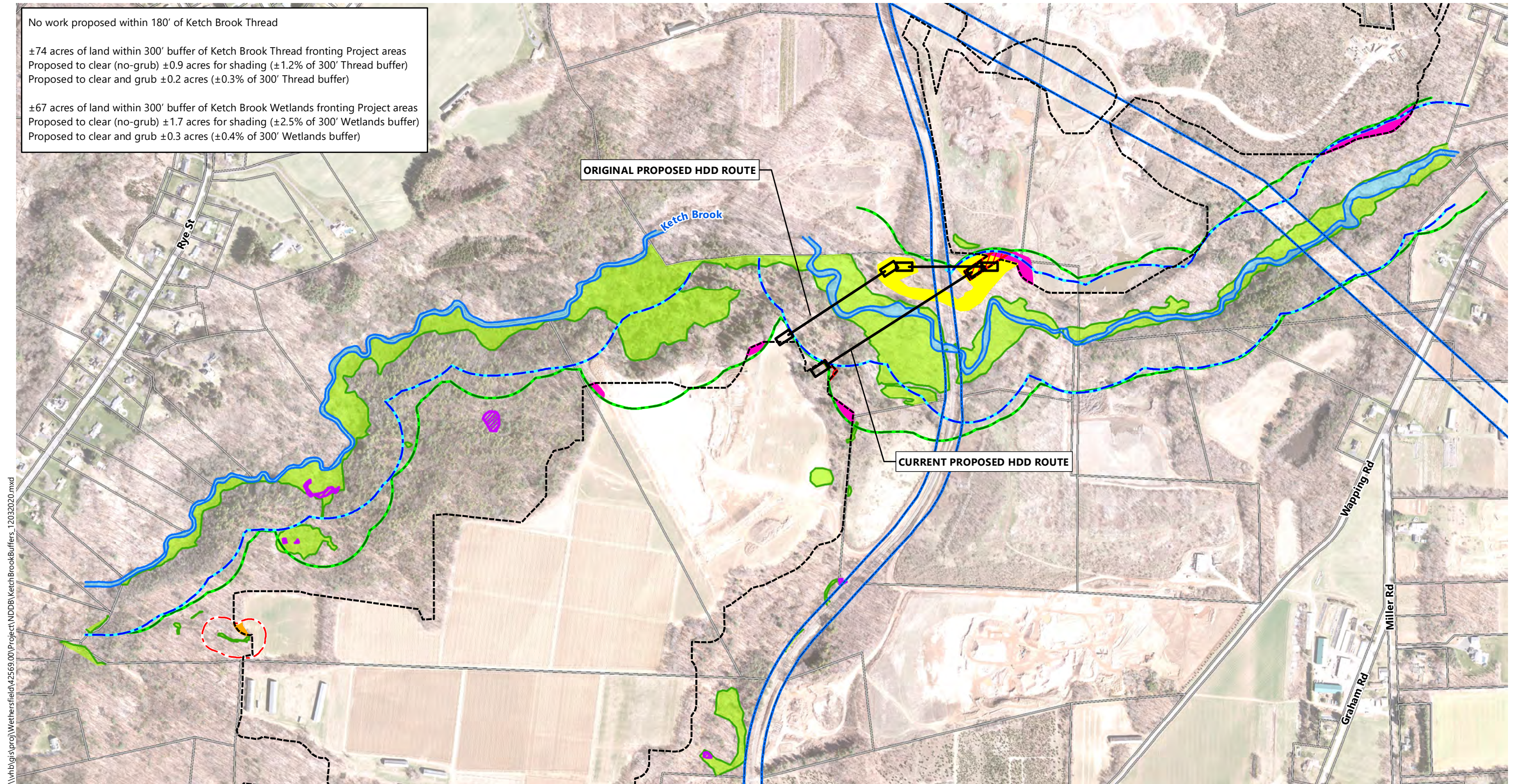


Dawn M. McKay
Environmental Analyst 3

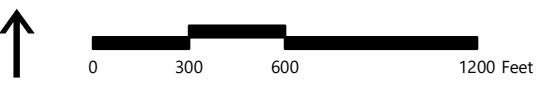
No work proposed within 180' of Ketch Brook Thread

±74 acres of land within 300' buffer of Ketch Brook Thread fronting Project areas
 Proposed to clear (no-grub) ±0.9 acres for shading (±1.2% of 300' Thread buffer)
 Proposed to clear and grub ±0.2 acres (±0.3% of 300' Thread buffer)

±67 acres of land within 300' buffer of Ketch Brook Wetlands fronting Project areas
 Proposed to clear (no-grub) ±1.7 acres for shading (±2.5% of 300' Wetlands buffer)
 Proposed to clear and grub ±0.3 acres (±0.4% of 300' Wetlands buffer)



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- | | | | |
|----------------------------------|---------------------------------|---|--|
| Proposed Limits of Work/Clearing | Top of Bank | 100' Forested Wetland Buffer for Impact Area | Proposed No-Grub Clearing within 100' Forested Wetland Buffer |
| Parcel Boundary | Delineated Wetland Edge | 300' Ketch Brook Thread Buffer | Proposed No-Grub Clearing within 300' Ketch Brook Wetland Buffer |
| Connecticut Inland Wetlands | 300' Ketch Brook Wetland Buffer | Original Proposed Clearing for HDD Route within 300' Ketch Brook Wetland Buffer | Current Proposed Clearing for HDD Route within 300' Ketch Brook Wetland Buffer |
| Open Water | | | |
| Vernal Pool | | | |

Gravel Pit Solar

East Windsor, Connecticut

Ketch Brook Buffers

Source: VHB, CTDEEP, FEMA, AGO



Appendix D
Historic and/or Archaeological
Resources



June 2, 2020

Mr. David R. George
Heritage Consultants
PO Box 310249
Newington, CT 06131

Subject: Phase IA Cultural Resources Assessment Survey
Proposed Gravel Pits Solar
Apothecaries Hall Road et al
East Windsor, Connecticut
ENV-20-0698

Dear Mr. George:

The State Historic Preservation Office (SHPO) has reviewed the archeological survey report prepared by Heritage Consultants, LLC (Heritage), dated May 2020. The proposed activities are under the jurisdiction of the Connecticut Siting Council and are subject to review by this office pursuant to the Connecticut Environmental Policy Act (CEPA). The proposed undertaking includes the construction of a 120-megawatt, alternating current, ground-mounted solar facility, which is to occupy an approximately 485 acre project site within a larger 737 acre area, located within 8 parcels adjacent to Apothecaries Hall Road, Plantation Road, Wapping Road, and Windsorville Road. Surrounding land uses include housing developments, agricultural fields, a utility transmission corridor, railroad line, wooded areas, and a golf course. The submitted report is well-written, comprehensive, and meet the standards set forth in the *Environmental Review Primer for Connecticut's Archaeological Resources*.

The reconnaissance survey consisted of a contextual overview of the area's prehistory, history, and natural setting, literature to identify previously completed cultural resource surveys and recorded sites, review of historic maps, pedestrian survey of the study area, and preparation of a current archaeological assessment report.

The Phase IA assessment survey identified that approximately 238.9 acres of the 485 project area retain a moderate to high potential to contain intact archaeological deposits. These areas are primarily forested tracks and agricultural fields. Additionally, the survey also identified 41 historic period structures within and immediately adjacent to the project site, and include tobacco sheds, English-style barns, residential structures, a water tower, and other ancillary structures. Many of these appear to retain a high degree of historic integrity.

We therefore recommend that a Phase IB professional cultural resources assessment and reconnaissance survey that includes subsurface testing techniques be completed in areas identified

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Department of Economic and
Community Development

State Historic Preservation Office

as having moderate to high archaeological sensitivity and will be impacted by the proposed solar project prior to construction. This office concurs with the proposed method of subsurface testing as proposed in *Chapter VII: Results of the Investigation & Management Recommendations* of the Phase IA. Additionally, SHPO concurs that that additional examination and documentation of exteriors and interiors (where possible) of the historic structures within the study area be undertaken in order to ascertain their potential eligibility for listing on either the State or National Register of Historic Places. All work should be in compliance with our *Environmental Review Primer for Connecticut's Archaeological Resources* and no construction or other project-related ground disturbance or demolition should be initiated until SHPO has had an opportunity to review and comment upon the requested survey.

This office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act. For additional information, please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or marena.wisniewski@ct.gov.

Sincerely,

A handwritten signature in black ink that reads "Mary B. Dunne". The signature is written in a cursive style with a long horizontal line extending to the right.

Mary B. Dunne
State Historic Preservation Officer

State Historic Preservation Office

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Appendix E Stormwater Report

Gravel Pit Solar

Windsorville Road & Plantation Road
East Windsor, Connecticut

PREPARED FOR



Gravel Pit Solar, LLC
Gravel Pit Solar II, LLC
Gravel Pit Solar III, LLC
Gravel Pit Solar IV, LLC

1166 Avenue of the Americas, 9th Floor
New York, NY 10036

PREPARED BY



100 Great Meadow Road
Suite 200
Wethersfield, Connecticut
860.807.4300

July 2020

Revised February 16, 2021



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List of Appendices

Appendix A:

- FEMA Flood Insurance Rate Map
- NOAA Rainfall Depth Estimates
- CTDEEP Groundwater Classification Map
- Aquifer Protection Area Mapping

Appendix B

- NRCS Soil Survey Information
- Field-conducted Soil Test Information

Appendix C

- Erosion and Sedimentation Control Checklist
- Long Term Stormwater Operation and Maintenance Measures

Appendix D

- Sediment & Water Quality Volume Computations
- HydroCAD: Existing Conditions
- HydroCAD: Proposed Conditions



1

Project Summary

Project Description

The Applicant, Gravel Pit Solar, LLC, Gravel Pit Solar II, LLC, Gravel Pit Solar III, LLC, and Gravel Pit Solar IV, LLC (collectively Gravel Pit Solar or the Applicant), is proposing to construct a ±120 MW alternating current ground-mounted solar photovoltaic system, along with all associated utilities, access paths, fencing, and landscaping (the Project), on undeveloped gravel pit and farm fields in East Windsor, Connecticut. When the Project reaches its useful life the improvements constructed as part of the Project will be removed and the land will be restored in accordance with the decommissioning plan.

Site Description

The approximately ±737 acre Project Site is comprised of eight parcels, (Map, Block, Lots: 057-65-001, 057-65-002, 048-65-007, 037-65-005A, 027-49-017C, 025-49-17A, 016-49-007, and 016-50-001) in East Windsor, Connecticut (see Figure 1). The Project Site is bounded by Apothecaries Hall Road to the north and Windsorville Road to the east and south. The development parcels are zoned R-3, A-1, and M-1, and are bisected by Ketch Brook, a railroad right-of-way (ROW) and an Eversource electric transmission line ROW. The Project development (the Project Area) will encompass approximately 485 acres of the Project Site.

The farm field portions of the Project Area within lots 057-65-001, 025-49-017C, 025-49-017A, 016-49-007 and 016-50-001 have been planted mostly in tobacco or silage corn. Portions of the two gravel mining operations in the Project Area within lots 027-49-17C, 057-65-001, 057-65-002, 048-65-007 and 037-65-005A are active. The southern portion of the site includes areas of ice contact stratified drift with features including kame hills, kettle holes, and glacial meltwater valleys. Under existing conditions, runoff from the northern parcels (057-65-001, 057-65-002, 048-65-007 and 037-65-005A) is generally self-contained within the parcel boundaries without discharge to a watercourse. Runoff from the central parcels north of Plantation Road (027-49-017C, 025-49-017A and 016-49-007) generally flows east towards the



railroad tracks or north or west to Ketch Brook. Runoff from the southern parcel south of Plantation Road (016-50-001) generally flows to the south towards one of two large glacial meltwater valleys where runoff infiltrates or flows offsite to wetlands in the Scantic River watershed.

According to available Natural Resource Conservation Service (NRCS) soil mapping¹, the majority of on-Site soils within the Project Area belong to the Hydrologic Soil Group "B", indicating that the soils have a relatively-high infiltration rate when thoroughly wet. Hydrologic soil group investigations have taken place at the Site, and geotechnical investigations in specific areas for stormwater management have been performed. Geotechnical borings and test pits have been performed as well. See Appendix B for NRCS Web Soil Survey output and results of the on-site field testing.

According to available Connecticut Department of Energy and Environmental Protection (CTDEEP) Groundwater Classification maps, the majority of groundwater at the Project Site is GA with a small portion of the northern part of the Project listed as GB (see Appendix A). The presence of GB Groundwater Quality Classification in this area is likely due to the adjacent closed NORCAP landfill which straddles the railroad south of Ketch Brook.

Mapping from the CTDEEP Aquifer Protection Areas Mapping website portrays that a portion of the northern array lies within an Aquifer Protection Area (see Appendix A).

Methodology

The Project was designed to incorporate measures provided in the Connecticut Stormwater Quality Manual (CTDEEP 2004) as well as the Stormwater General Permit effective December 31, 2020, to prevent potential erosion and sedimentation during construction and to properly manage post-development runoff. The conclusion of this analysis is that the proposed improvements will not increase the post-development peak runoff rates in comparison to existing pre-development rates at any of the critical design points analyzed and the Project will provide the required water quality mitigation of stormwater runoff prior to discharge from the Site.

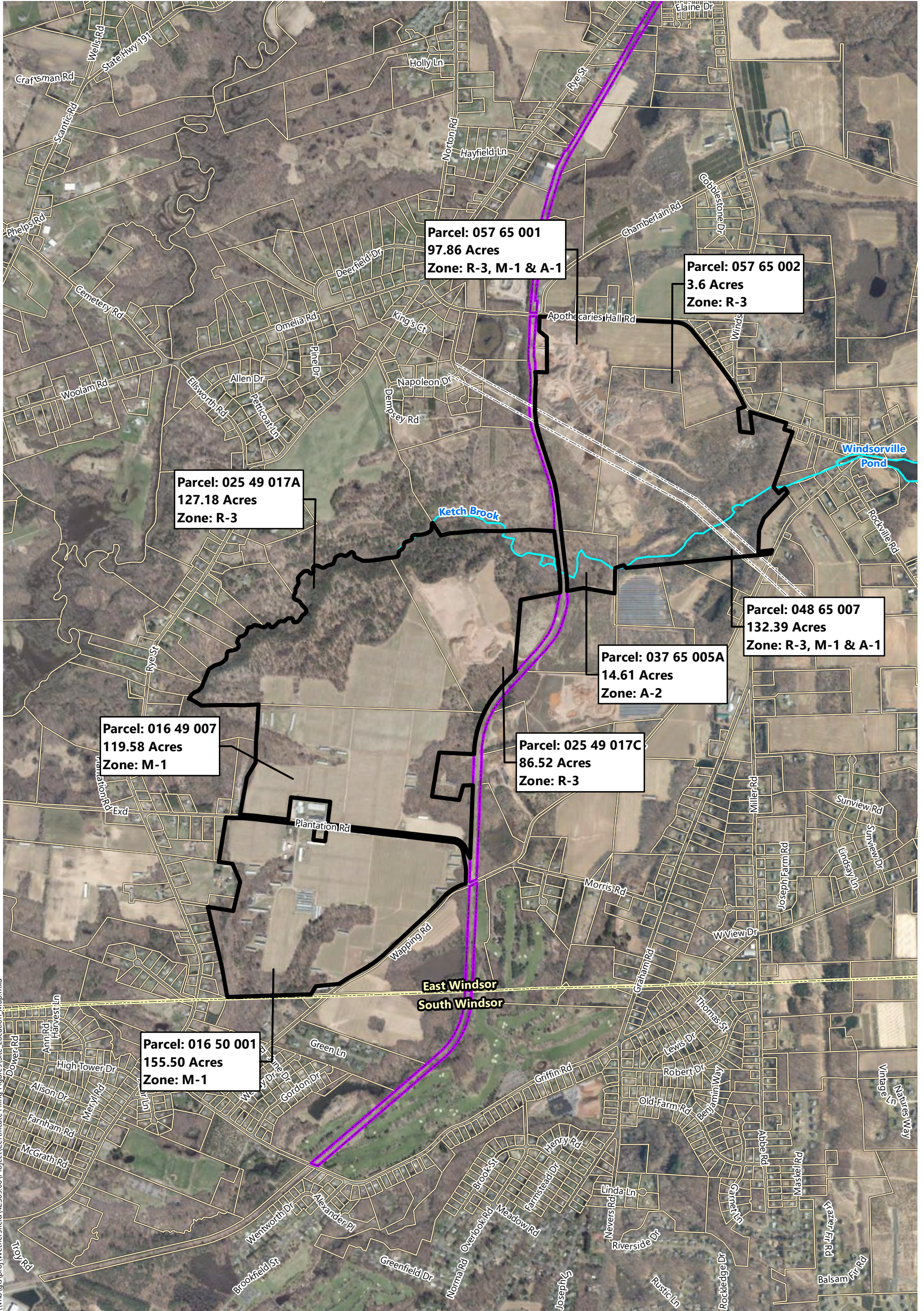
¹ <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>



Figure 1: Site Location Map



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\\vhb\gis\proj\Wethersfield\42569.00\Project\Certificate Filing Figures\Site Location Map.mxd



Gravel Pit Solar

East Windsor, Connecticut

- Property Boundary
- Stream
- Adjacent Parcels
- Town Boundary
- Approximate Railroad Boundary
- Approximate Eversource ROW

Site Location Map

Source: VHB, CTDEEP, ESRI

Parcel: 057 65 001
97.86 Acres
Zone: R-3, M-1 & A-1

Parcel: 057 65 002
3.6 Acres
Zone: R-3

Parcel: 025 49 017A
127.18 Acres
Zone: R-3

Parcel: 048 65 007
132.39 Acres
Zone: R-3, M-1 & A-1

Parcel: 037 65 005A
14.61 Acres
Zone: A-2

Parcel: 016 49 007
119.58 Acres
Zone: M-1

Parcel: 025 49 017C
86.52 Acres
Zone: R-3

Parcel: 016 50 001
155.50 Acres
Zone: M-1

East Windsor
South Windsor

Existing Drainage Conditions

Summary

The Project Area consists primarily of gravel pits and cultivated farm fields. Farm fields are mostly near level with slopes ranging from one to five percent. Gravel mine areas have much more variable slopes as a result of mining and reclamation activities. The Project also includes some forested areas that are flat to gradually sloping.

The Project Site has been broken up into three study areas: the Northern Array along Apothecaries Hall Road and Windsorville Road, the Central Array north of Plantation Road and south and east of Ketch Brook, and the Southern Array south of Plantation Road.

Under existing conditions, stormwater runoff from the Northern Array is generally contained on site by a system of depressions created by gravel extraction. Stormwater runoff from the Central Array generally flows to the east towards the railroad tracks where it is captured by natural depressions, or to the north or west towards Ketch Brook where other natural depressions trap some of the runoff. Stormwater runoff from the Southern Array flows to one of two glacial meltwater valleys which infiltrate runoff and convey the rest off-site to wetlands south of the site in the watershed of the Scantic River.

Hydrologic Information

The Project Area has been divided into three existing conditions hydrologic analysis study areas and 70 drainage sub-watersheds. Sub-watersheds were designated as areas at the Project limits where flow begins to concentrate naturally. Figure 2 illustrates the existing drainage patterns on the Site. All portions of the Project Site and tributary offsite areas have been considered in the hydrologic analysis.

Drainage Area 2A - This ±205-acre area (parcels 057-65-001, 057-65-002, 048-65-007 and 037-65-005A) is located along Windsorville Road near its intersection with



Apothecaries Hall Road, bordered to the south by Ketch Brook but separated by a large berm. The majority of this area is gravel pit with smaller portions consisting of farm fields and forested blocks. This area is self-contained within the gravel pit floor and discharges to constructed process water ponds and the groundwater.

Drainage Area 2B - This ±205-acre area (Parcels 027-49-017C, 025-49-017A and 016-49-007) is located to the north of Plantation Road and is bordered to the east by the railroad ROW and to the north and west by Ketch Brook. Stormwater in this area flows in all directions off the farm fields and gravel pit areas including to kettle holes upgradient of Ketch Brook, through steeply sloping drainage swales and to the railroad ROW.

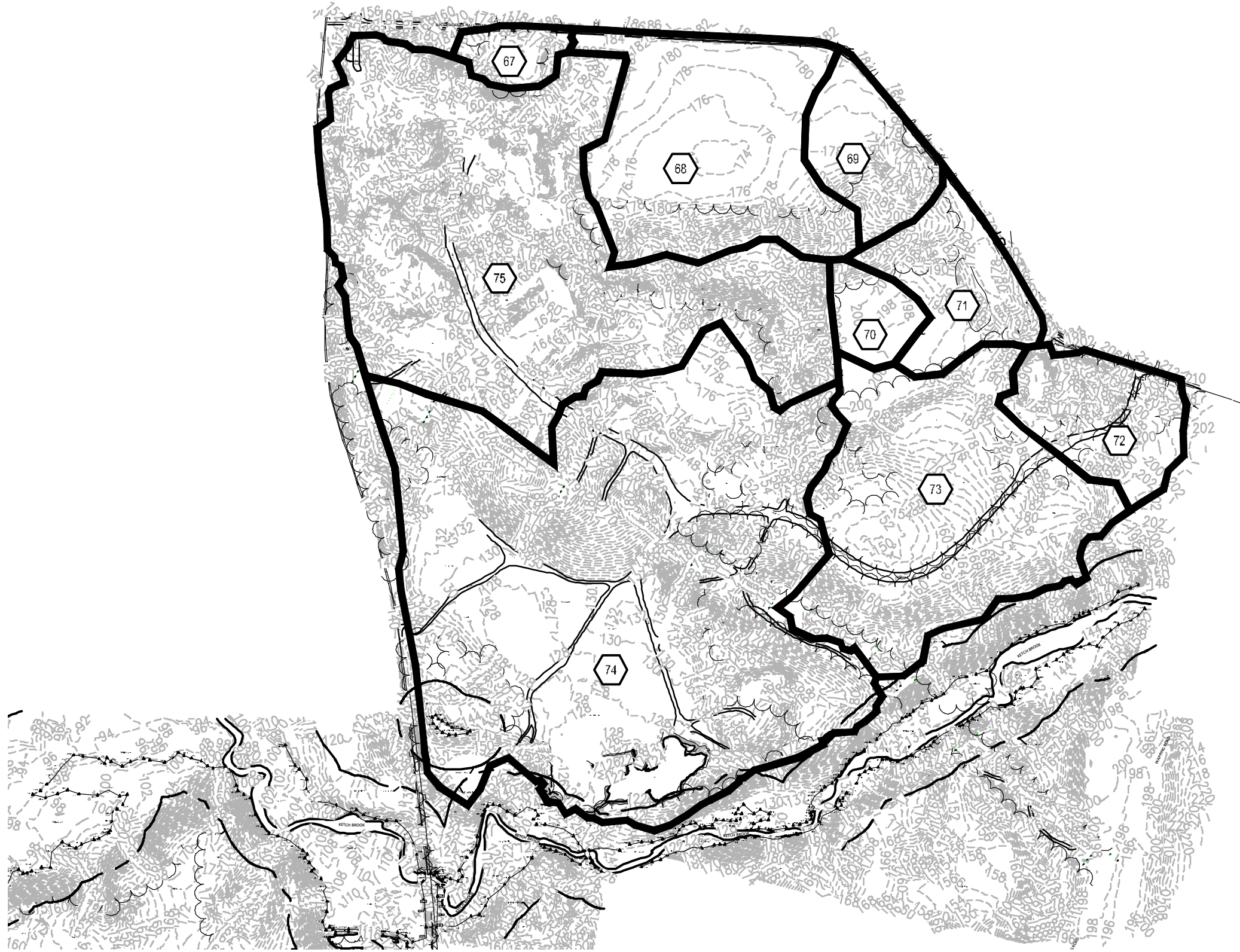
Drainage Area 2C - This ±145-acre area (Parcel 016-50-001) is located to the south of Plantation Road and is bordered to the west and south by residential development and to the east by Windsorville Road. Stormwater in this area generally flows to one of two glacial meltwater valleys which slope towards the Town boundary with South Windsor to enter off-site wetlands in the Scantic River watershed.



Figure 2: Existing Drainage Areas



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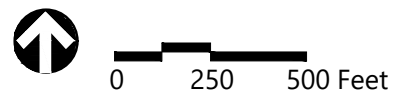


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DRAINAGE AREA
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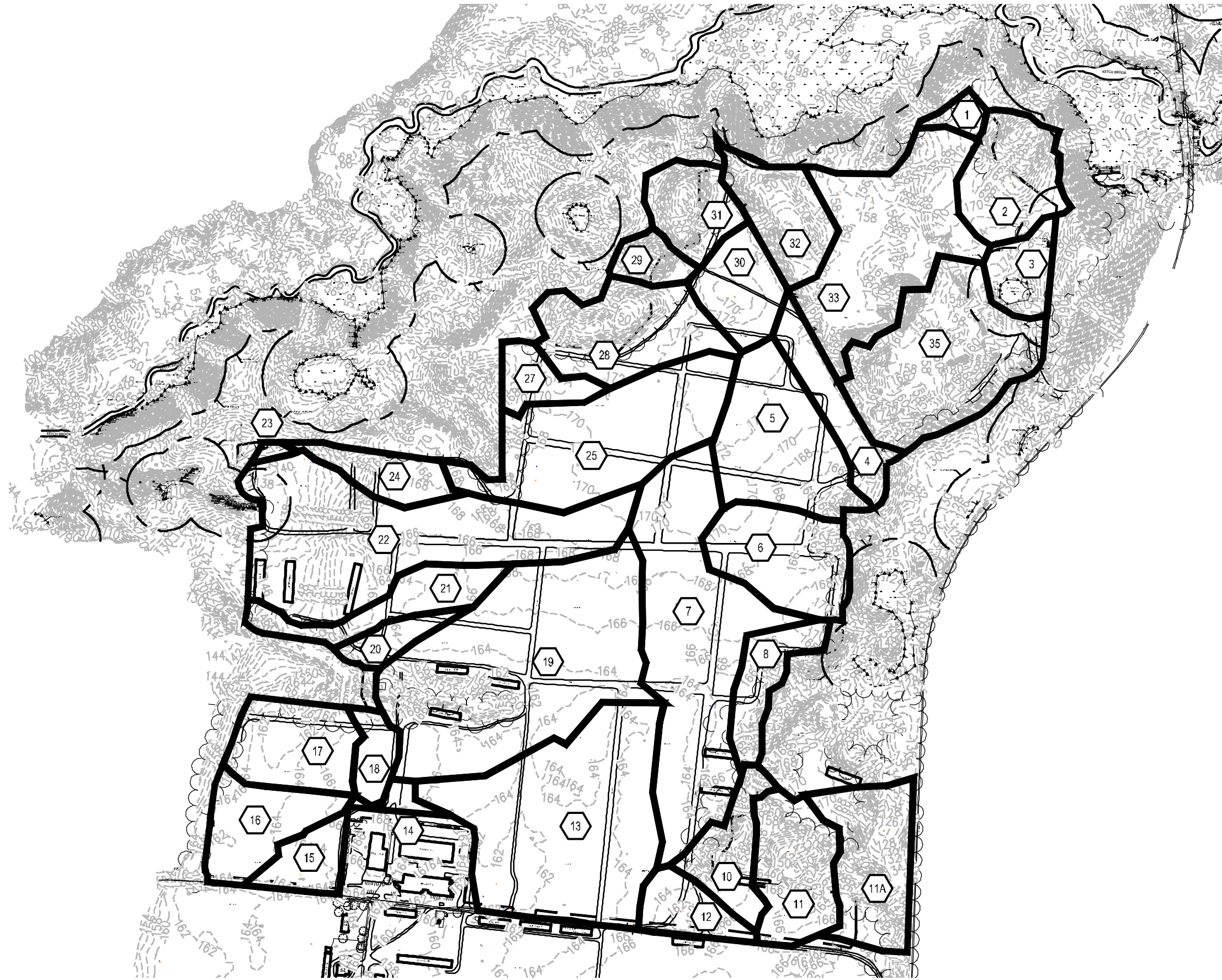


Existing Drainage Areas

Figure 2A

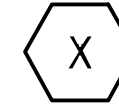
Gravel Pit Solar
Windsorville Road - East Windsor, CT

1/18/2021



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DRAINAGE AREA
DESIGNATION

LINETYPES



DRAINAGE AREA
BOUNDARY



0 250 500 Feet

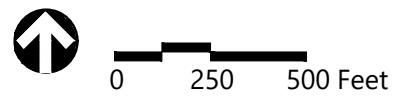
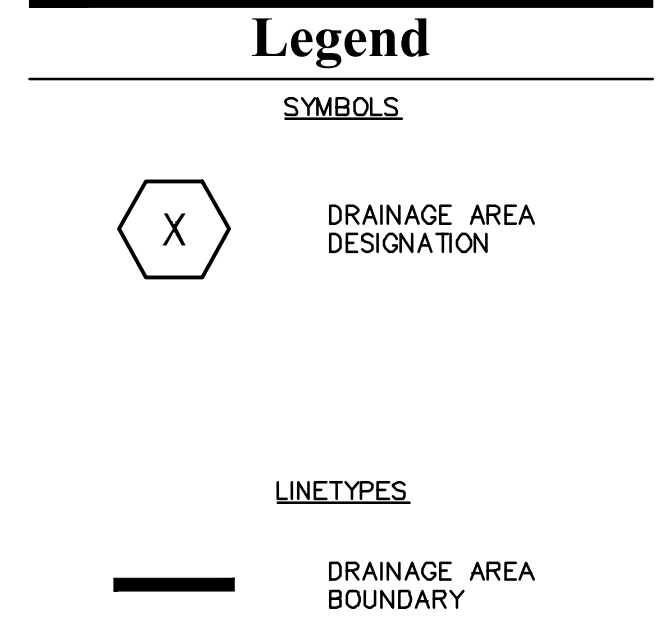
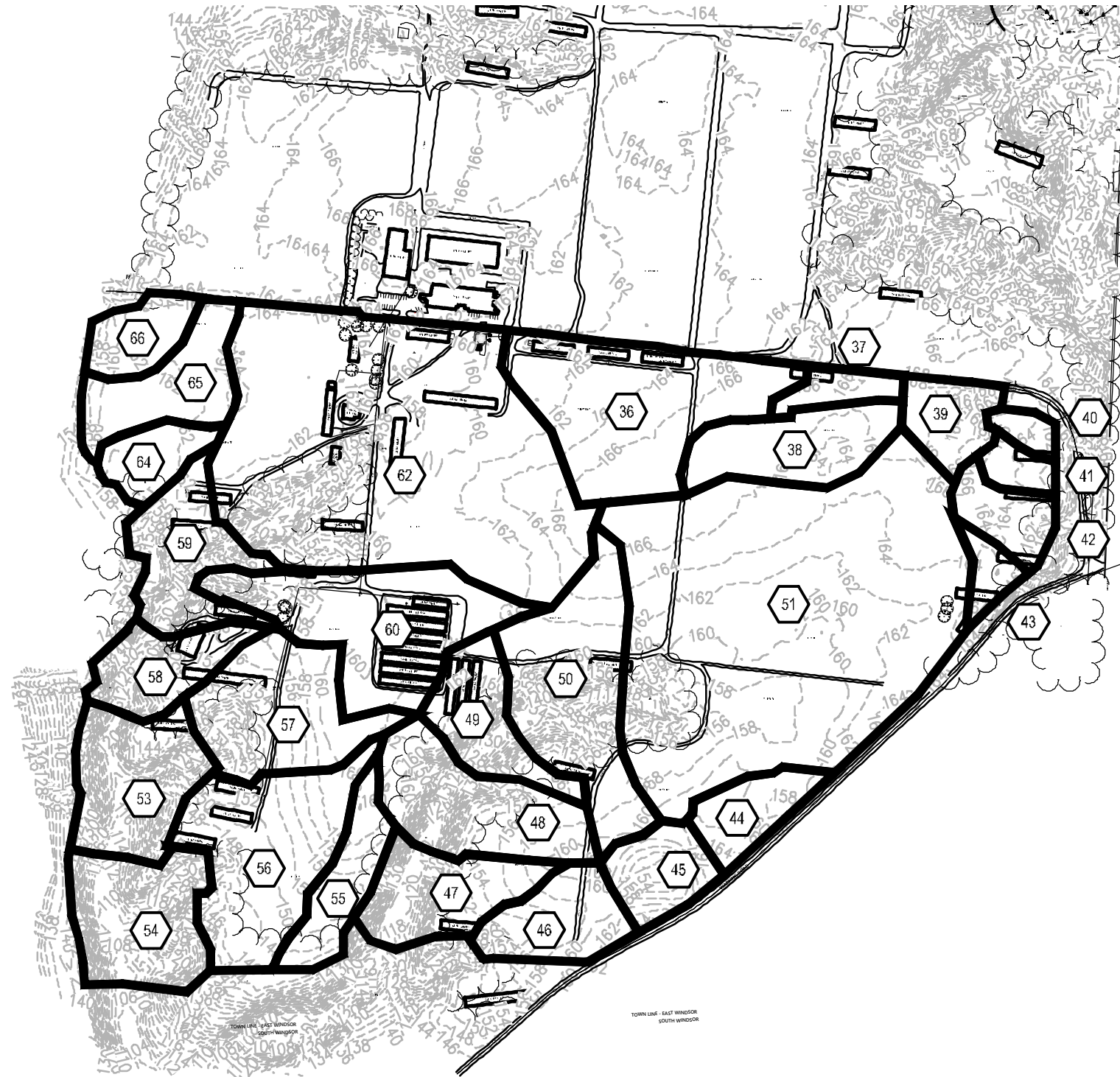


Existing Drainage Areas

Figure 2B

Gravel Pit Solar
North of Plantation Road - East Windsor, CT

1/18/2021



Existing Drainage Areas

Figure 2C

Proposed Drainage Conditions

Summary

The Site has been designed to maintain existing topography and mimic existing drainage patterns to the maximum extent practicable. In the majority of the Project Area, permanent turf-forming grasses will be planted to stabilize the soil, cycle nutrients and sequester any residual contaminants remaining from past farming activities. These grasses will improve soil structure and promote infiltration which will lower runoff rates from the operational facility. Existing forest vegetation has been preserved to the maximum extent practicable. Majority of the tree clearing is proposed to protect Project assets from damage and minimize shading. The Project will cut approximately 83 acres of woodland across the entire Project Area.

The only impervious surfaces proposed to be constructed are access roads and small pads for utility equipment. Once operational, vehicular access to the Project will be limited to infrequent maintenance visits. The use of natural depressions and vegetated buffers as well as the proposed stormwater basins will provide water quality treatment for the Project.

Hydrologic Information

Natural drainage patterns will be maintained throughout the Site so that the proposed hydrologic conditions will closely match existing conditions at each of the modelled discharge points. The proposed conditions analysis utilizes the same three (3) analysis areas and 70 sub-watersheds from existing conditions.

Learning from experience designing and constructing other solar projects in Connecticut, the Project approach to stormwater management has emphasized the use of non-structural controls such as pre-seeding and establishing permanent vegetation cover before construction starts. In this case site preparation is anticipated in the summer and fall of the year preceding the spring start of construction. Similarly, the Project will mitigate increases in peak discharge rates by promoting infiltration into the sandy soils present at various depths below finer textured soil



mantles. The Project will utilize the natural terrain of upland depressions (kettle holes) and upland glacial meltwater valleys to retain and infiltrate stormwater runoff. This infiltration will also provide the water quality treatment required under the CTDEEP regulations and guidance documents. This approach has been developed in consultation with CTDEEP personnel.

Drainage Area 3A - This ±205-acre area is located along Windsorville Road near its intersection with Apothecaries Hall Road, bordered to the south by Ketch Brook but separated by a large berm. It is proposed to modify the grades within the gravel pit areas but generally maintain that all stormwater runoff will discharge to groundwater from the area.

Drainage Area 3B - This ±205-acre area is located to the north of Plantation Road and is bordered to the east by the railroad tracks and to the north and west by Ketch Brook. It is proposed to regrade the gravel pit area but existing grades within the farm fields will generally not be modified. Existing drainage patterns will be maintained.

Drainage Area 3C - This ±145-acre area is located to the south of Plantation Road and is bordered to the west and south by residential development and to the east by Wapping Road. Almost no regrading is proposed within this area and existing drainage patterns from the existing farm fields will be maintained.



Figure 3: Proposed Drainage Areas



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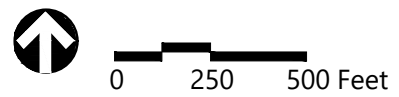
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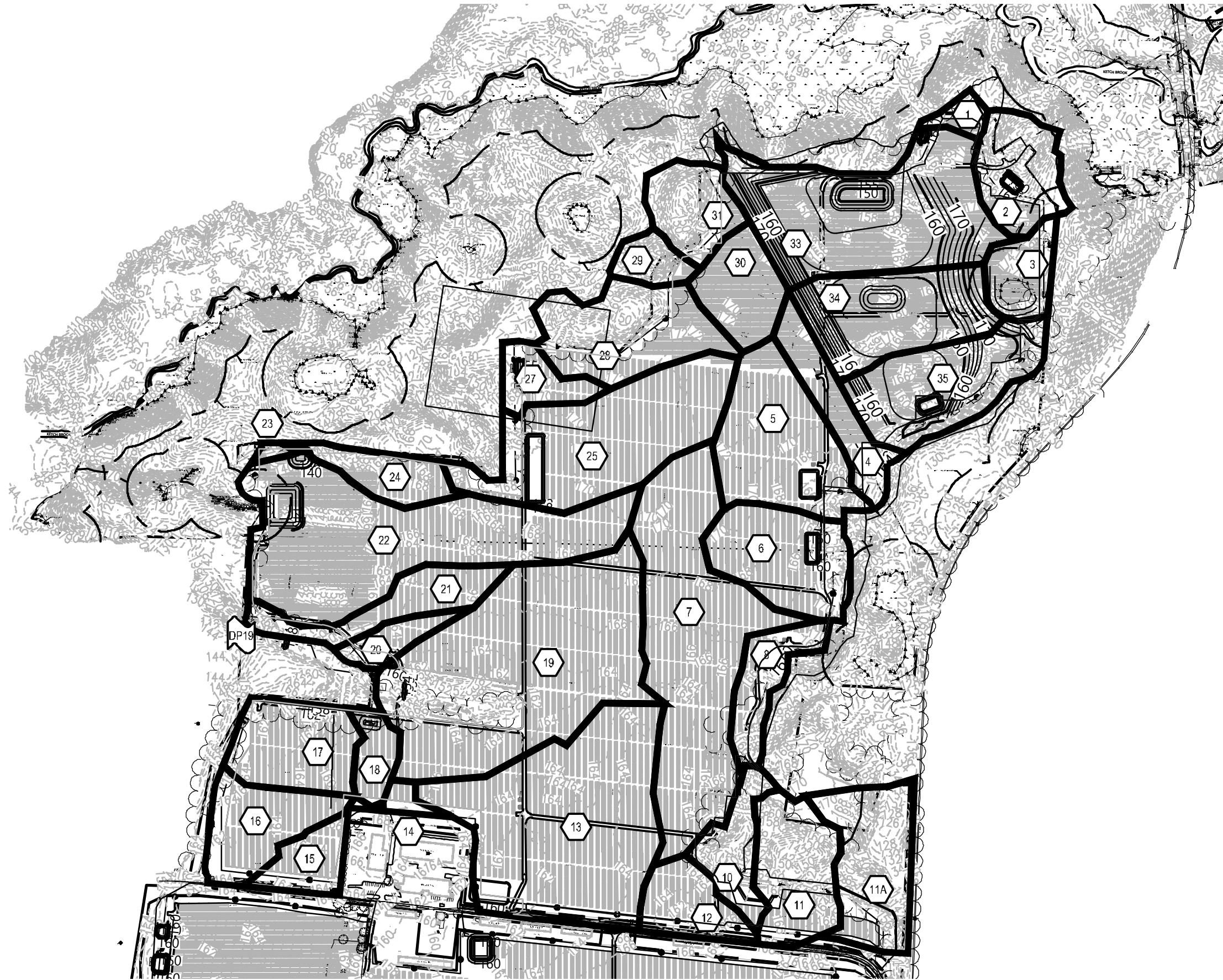


Proposed Drainage Areas

Figure 3A

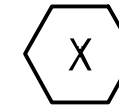
Gravel Pit Solar
Windsorville Road - East Windsor, CT

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DESIGN POINT

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DRAINAGE AREA BOUNDARY



0 250 500 Feet



Proposed Drainage Areas

Figure 3B

Gravel Pit Solar
North of Plantation Road - East Windsor, CT

1/18/2021



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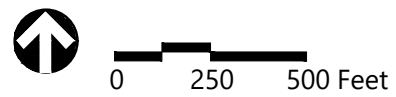


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LINETYPES



DRAINAGE AREA BOUNDARY



Proposed Drainage Areas

Figure 3C



4

Hydrologic Analysis

Hydrologic Analysis

The rainfall-runoff was evaluated for the 2-, 25-, 50-, and 100-year storm recurrence intervals. Rainfall volumes used for this analysis were based on the National Weather Service NOAA Hydrometeorological Design Studies Center, Type III, 24-hour storm event for the Site. Rainfall depths were 3.16, 6.18, 7.02, 7.96 inches respectively. Runoff coefficients for the pre- and post- development conditions provided in the tables below were determined using NRCS Technical Release 55 (TR-55) methodology as provided in the HydroCAD reports found in Appendix D. Under proposed conditions, areas of the proposed solar farm have been designed to incorporate a drop of one-half Hydrologic Soil Group (HSG). Areas of existing active gravel pit mining do not incorporate a drop in HSG as these areas are currently disturbed.

The results of the pre- and post-development hydrologic models indicate that peak runoff rates from the Site will be reduced at all design points for all design storms with the implementation of the proposed permanent stormwater basins. One-half of the lowest field-tested infiltration rate for each stormwater basin has been incorporated into the hydrologic model, to be conservative.

Table 3 presents a summary of the existing and proposed conditions peak discharge rates for each subwatershed and/or design point.

Table 3a (Windsorville) Peak Discharge Rates (cfs*)

<u>Watershed</u>	<u>2-year</u>	<u>25-year</u>	<u>50-year</u>	<u>100-year</u>
Watershed 67				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 68				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00



Watershed 69				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 71				
Existing	0.00	0.00	2.19	10.86
Proposed	0.00	0.00	0.00	1.78
Watershed 72				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 74				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 75				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00

* Expressed in cubic feet per second

Table 3b (North Plantation) Peak Discharge Rates (cfs*)

Watershed	2-year	25-year	50-year	100-year
Watershed 1				
Existing	1.27	3.68	4.37	5.15
Proposed	0.00	0.34	1.17	2.43
Watershed 2				
Existing	0.22	5.61	7.98	10.87
Proposed	0.00	0.00	0.00	0.44
Watershed 3				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 4				
Existing	1.41	8.35	10.66	13.36
Proposed	0.00	5.93	9.29	12.93
Watershed 5				
Existing	6.26	22.00	26.78	32.22
Proposed	0.00	13.28	19.63	26.31
Watershed 6				
Existing	5.00	18.32	22.39	27.03
Proposed	0.00	7.21	12.20	17.89



Watershed 7				
Existing	0.00	0.00	0.90	3.44
Proposed	0.00	0.00	0.09	1.88
Watershed 8				
Existing	2.26	9.30	11.51	14.04
Proposed	0.09	7.33	10.02	12.39
Watershed 10				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 11				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 11A				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 13				
Existing	0.00	21.76	28.75	36.31
Proposed	0.00	4.58	11.99	20.49
Watershed 15				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Design Point 19				
Existing	8.61	51.39	67.48	85.53
Proposed	0.00	3.01	13.94	28.73
Watershed 22				
Existing	7.61	27.68	33.86	40.91
Proposed	0.00	15.95	22.58	29.80
Watershed 23				
Existing	0.37	1.14	1.37	1.62
Proposed	0.19	0.84	1.05	1.29
Watershed 24				
Existing	2.27	8.00	9.74	11.72
Proposed	0.00	1.79	4.13	6.78
Watershed 25				
Existing	7.76	25.42	30.73	36.73
Proposed	0.00	0.18	3.66	9.82
Watershed 27				
Existing	1.05	4.76	5.97	7.35
Proposed	0.00	2.47	4.19	6.15



Watershed 28				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 29				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 30				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 31				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00
Watershed 33				
Existing	29.06	73.68	86.17	100.11
Proposed	0.00	0.00	0.00	3.93
Watershed 35				
Existing	0.00	0.00	0.00	0.00
Proposed	0.00	0.00	0.00	0.00

* Expressed in cubic feet per second

Table 3c (South Plantation) Peak Discharge Rates (cfs*)

Watershed	2-year	25-year	50-year	100-year
Watershed 40				
Existing	0.29	1.60	2.03	2.53
Proposed	0.00	0.00	0.29	1.03
Watershed 41				
Existing	0.37	2.14	2.73	3.42
Proposed	0.00	0.00	0.00	0.08
Watershed 42				
Existing	0.75	4.10	5.21	6.49
Proposed	0.00	0.15	1.00	2.62
Watershed 43				
Existing	0.29	1.82	2.34	2.95
Proposed	0.00	0.00	0.26	1.07
Design Point 47				
Existing	28.54	106.30	132.25	162.86
Proposed	0.00	45.86	68.27	91.98



Design Point 54				
Existing	30.75	115.32	142.50	173.84
Proposed	0.00	50.27	78.57	109.74
Watershed 55				
Existing	2.12	7.20	8.73	10.46
Proposed	0.00	4.16	6.01	7.95
Watershed 65				
Existing	2.73	9.27	11.24	13.48
Proposed	0.00	4.12	6.74	9.58
Watershed 66				
Existing	1.89	6.20	7.49	8.95
Proposed	0.00	2.32	4.02	5.95

* Expressed in cubic feet per second

Floodplain Information / Analysis

The only portion of the Site which includes a 100-year floodplain area is associated with Ketch Brook (included in Appendix A). Impacts to Ketch Brook and its associated floodplain will be avoided by utilizing a horizontal direction drill crossing method and the development limits are kept well beyond the floodplain limits.

Water Quality Volume

Water Quality Volume (WQV) is based upon the first inch of rainfall, or a 1-inch rainfall event, over the acreage of proposed impervious surfaces for the development. Neither the solar panels nor the equipment pads will be subject to vehicular access nor will they contribute any pollutants to stormwater runoff. The crushed stone access paths will be trafficked infrequently and the grassy meadows downstream of the paths will provide residence time of stormwater runoff to remove the small amount of sediment from runoff.

Water quality treatment for all areas of the site which do not discharge completely to groundwater will be treated by stormwater management basins prior to discharge from the site. The proposed solar panels have been considered to be impervious in computing required Water Quality Volumes to be conservative. Computations can be found in Appendix D.



Water Quality Flow

Water Quality Flow (WQF) is a rate of stormwater runoff based upon the first inch of rainfall, or a 1-inch rainfall event. This alternative to WQV storage is generally followed for “flow-through” treatment devices. As the proposed development does not incorporate any “flow-through” water quality treatment devices, WQF is not applicable to this project.



Appendix A:

- FEMA Flood Insurance Rate Map
- NOAA Rainfall Depth Estimates
- CTDEEP Groundwater Classification Map
- Aquifer Protection Area Mapping



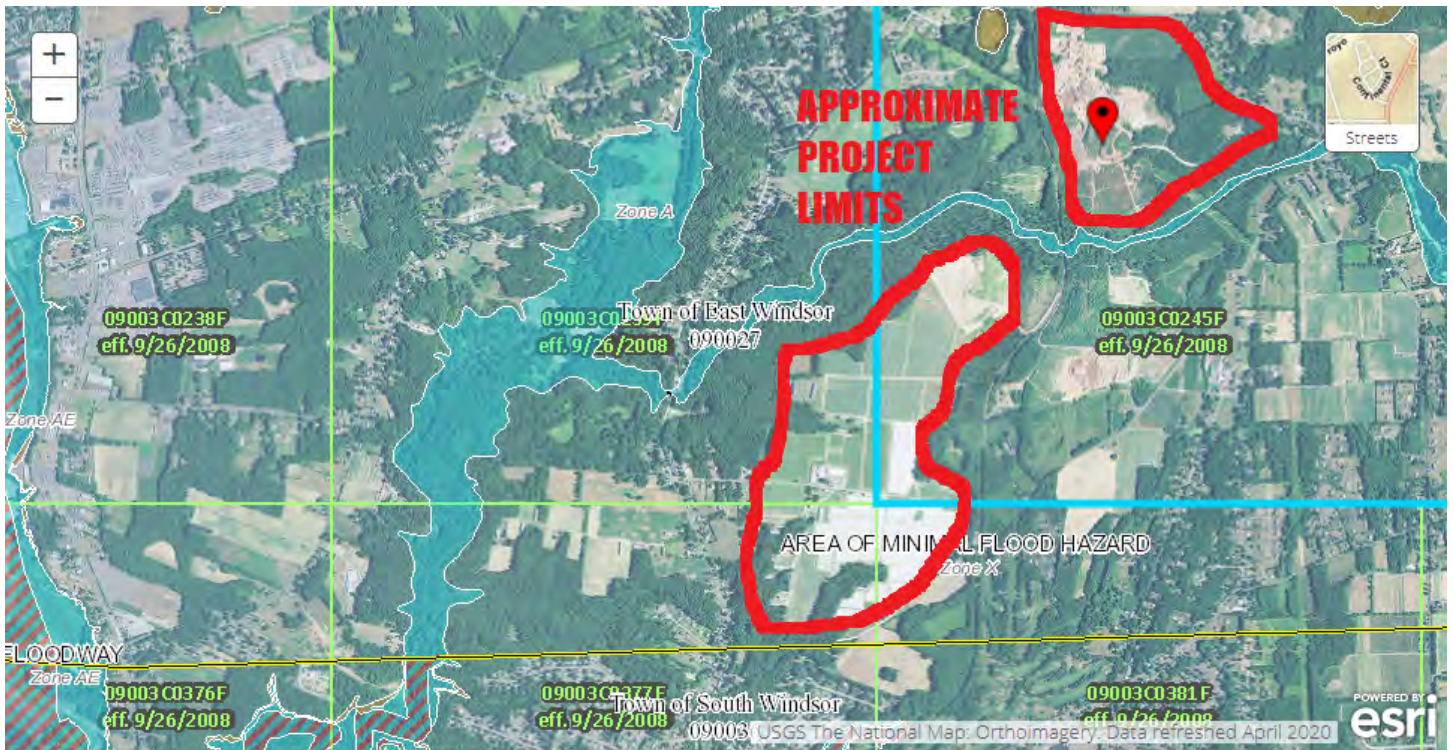
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FEMA Flood Insurance Rate Map



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<p>PIN</p> <ul style="list-style-type: none"> Approximate location based on user input and does not represent an authoritative property location <p>MAP PANELS</p> <ul style="list-style-type: none"> Selected FloodMap Boundary Digital Data Available No Digital Data Available Unmapped <p>OTHER AREAS</p> <ul style="list-style-type: none"> Area of Minimal Flood Hazard Zone X Effective LOMRs Area of Undetermined Flood Hazard Zone D Otherwise Protected Area Coastal Barrier Resource System Area 	<p>SPECIAL FLOOD HAZARD AREAS</p> <ul style="list-style-type: none"> Without Base Flood Elevation (BFE) Zone A, V, A99 With BFE or Depth Regulatory Floodway Zone AE, AO, AH, VE, AR <p>OTHER AREAS OF FLOOD HAZARD</p> <ul style="list-style-type: none"> 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levee. See Notes. Zone X Area with Flood Risk due to Levee Zone D 	<p>OTHER FEATURES</p> <ul style="list-style-type: none"> 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation 17.5 Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Baseline Profile Baseline Hydrographic Feature <p>GENERAL STRUCTURES</p> <ul style="list-style-type: none"> Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall
--	---	---



NOAA Rainfall Depth Estimates



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NOAA Atlas 14, Volume 10, Version 3
Location name: Broad Brook, Connecticut, USA*
Latitude: 41.8887°, Longitude: -72.5547°
Elevation: 118.51 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orjan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerials](#)

PF tabular

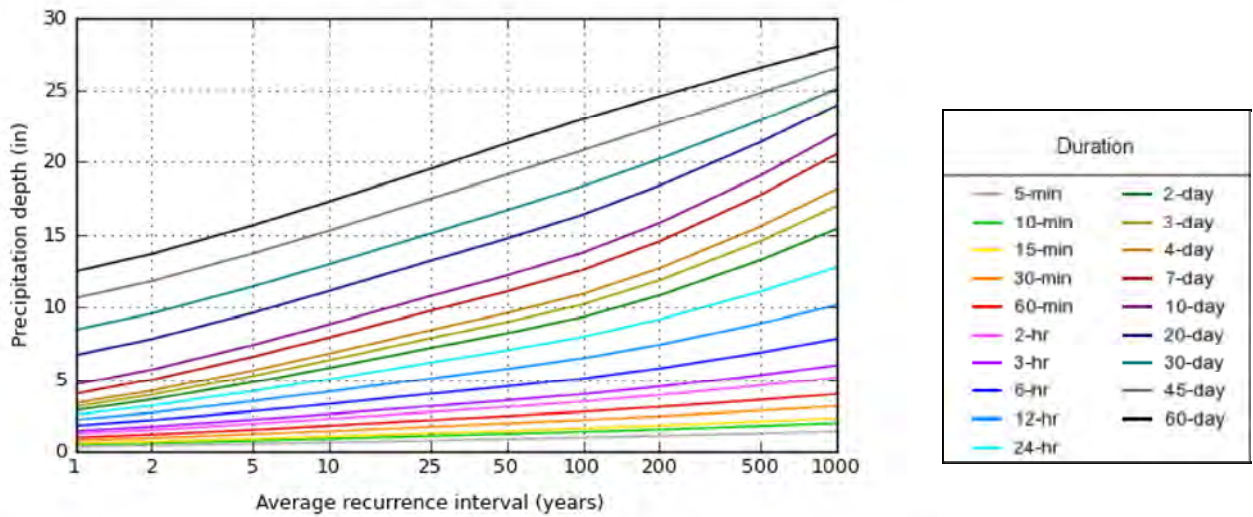
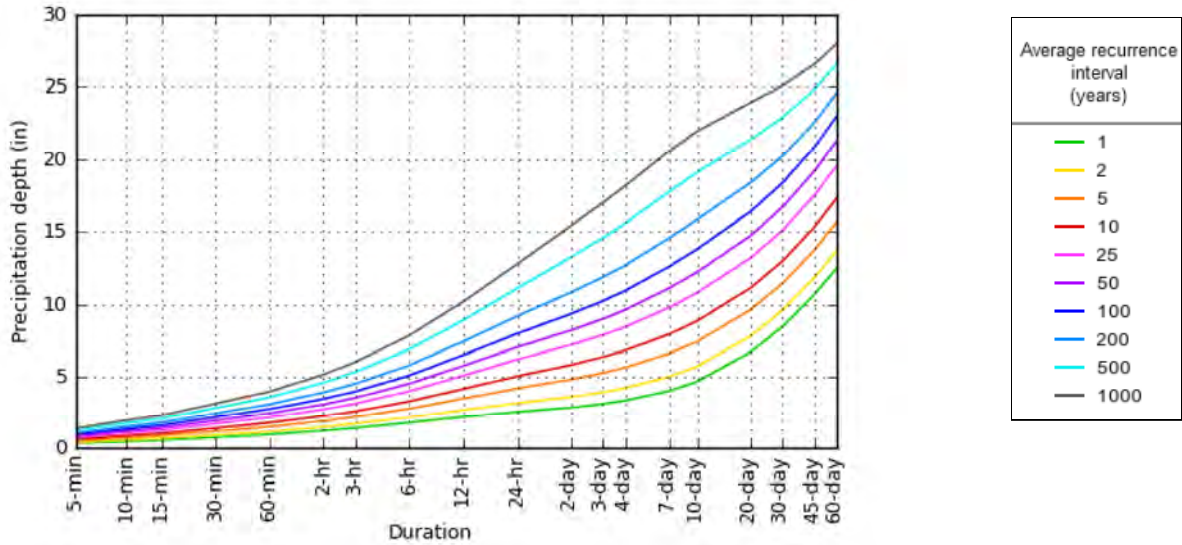
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.338 (0.259-0.441)	0.409 (0.313-0.533)	0.524 (0.400-0.686)	0.620 (0.470-0.816)	0.751 (0.554-1.03)	0.850 (0.615-1.20)	0.954 (0.673-1.39)	1.07 (0.718-1.60)	1.24 (0.801-1.91)	1.38 (0.872-2.17)
10-min	0.479 (0.367-0.624)	0.579 (0.443-0.755)	0.742 (0.566-0.972)	0.878 (0.666-1.16)	1.06 (0.785-1.47)	1.21 (0.872-1.69)	1.35 (0.953-1.97)	1.52 (1.02-2.26)	1.76 (1.14-2.71)	1.95 (1.24-3.07)
15-min	0.563 (0.432-0.734)	0.681 (0.521-0.889)	0.873 (0.666-1.14)	1.03 (0.784-1.36)	1.25 (0.923-1.72)	1.42 (1.03-1.99)	1.59 (1.12-2.32)	1.79 (1.20-2.66)	2.07 (1.34-3.19)	2.30 (1.45-3.62)
30-min	0.758 (0.581-0.989)	0.920 (0.704-1.20)	1.18 (0.904-1.55)	1.40 (1.06-1.85)	1.70 (1.25-2.34)	1.93 (1.40-2.71)	2.17 (1.53-3.16)	2.43 (1.63-3.63)	2.82 (1.82-4.35)	3.13 (1.98-4.93)
60-min	0.953 (0.730-1.24)	1.16 (0.886-1.51)	1.49 (1.14-1.96)	1.77 (1.34-2.33)	2.15 (1.59-2.96)	2.44 (1.77-3.43)	2.74 (1.93-4.00)	3.08 (2.07-4.59)	3.57 (2.31-5.51)	3.96 (2.51-6.24)
2-hr	1.23 (0.946-1.59)	1.48 (1.14-1.92)	1.90 (1.46-2.47)	2.25 (1.71-2.94)	2.72 (2.02-3.73)	3.07 (2.24-4.32)	3.45 (2.46-5.05)	3.90 (2.62-5.79)	4.57 (2.97-7.02)	5.14 (3.26-8.05)
3-hr	1.41 (1.09-1.83)	1.71 (1.32-2.21)	2.18 (1.68-2.83)	2.58 (1.97-3.37)	3.13 (2.33-4.28)	3.53 (2.59-4.95)	3.97 (2.84-5.80)	4.50 (3.03-6.65)	5.31 (3.45-8.12)	6.00 (3.82-9.35)
6-hr	1.78 (1.38-2.28)	2.15 (1.67-2.77)	2.77 (2.14-3.58)	3.28 (2.53-4.26)	3.99 (2.99-5.44)	4.50 (3.32-6.30)	5.07 (3.66-7.40)	5.78 (3.90-8.49)	6.88 (4.48-10.5)	7.83 (5.00-12.1)
12-hr	2.18 (1.70-2.79)	2.67 (2.09-3.42)	3.48 (2.71-4.46)	4.15 (3.21-5.35)	5.07 (3.82-6.88)	5.74 (4.26-7.99)	6.49 (4.71-9.43)	7.42 (5.03-10.8)	8.88 (5.80-13.4)	10.2 (6.50-15.6)
24-hr	2.54 (2.00-3.23)	3.16 (2.48-4.03)	4.18 (3.27-5.33)	5.02 (3.90-6.44)	6.18 (4.69-8.36)	7.02 (5.24-9.75)	7.96 (5.83-11.6)	9.16 (6.23-13.3)	11.1 (7.26-16.6)	12.8 (8.19-19.5)
2-day	2.85 (2.25-3.60)	3.59 (2.83-4.55)	4.81 (3.78-6.10)	5.81 (4.54-7.42)	7.20 (5.50-9.71)	8.20 (6.17-11.4)	9.33 (6.90-13.6)	10.8 (7.38-15.6)	13.2 (8.71-19.8)	15.4 (9.93-23.4)
3-day	3.11 (2.46-3.91)	3.92 (3.10-4.94)	5.25 (4.14-6.64)	6.35 (4.98-8.08)	7.87 (6.03-10.6)	8.97 (6.77-12.4)	10.2 (7.58-14.8)	11.9 (8.10-17.1)	14.6 (9.59-21.7)	17.0 (11.0-25.7)
4-day	3.35 (2.66-4.20)	4.21 (3.34-5.30)	5.63 (4.45-7.11)	6.81 (5.35-8.64)	8.43 (6.47-11.3)	9.60 (7.26-13.2)	10.9 (8.12-15.8)	12.7 (8.68-18.2)	15.6 (10.3-23.1)	18.2 (11.7-27.4)
7-day	4.00 (3.19-5.00)	4.98 (3.97-6.24)	6.59 (5.23-8.28)	7.92 (6.25-10.0)	9.75 (7.51-13.0)	11.1 (8.40-15.2)	12.6 (9.36-18.0)	14.5 (9.99-20.8)	17.7 (11.7-26.2)	20.6 (13.3-30.9)
10-day	4.65 (3.72-5.80)	5.70 (4.55-7.11)	7.40 (5.90-9.27)	8.82 (6.98-11.1)	10.8 (8.30-14.3)	12.2 (9.24-16.6)	13.8 (10.2-19.6)	15.8 (10.9-22.5)	19.1 (12.6-28.0)	21.9 (14.2-32.9)
20-day	6.70 (5.39-8.31)	7.81 (6.28-9.70)	9.62 (7.71-12.0)	11.1 (8.86-13.9)	13.2 (10.2-17.3)	14.7 (11.2-19.7)	16.4 (12.1-22.8)	18.4 (12.7-25.9)	21.4 (14.2-31.2)	24.0 (15.6-35.6)
30-day	8.45 (6.82-10.4)	9.58 (7.72-11.9)	11.4 (9.18-14.2)	13.0 (10.4-16.2)	15.1 (11.7-19.6)	16.7 (12.6-22.1)	18.3 (13.5-25.2)	20.2 (14.1-28.4)	22.9 (15.3-33.3)	25.1 (16.4-37.2)
45-day	10.6 (8.61-13.1)	11.8 (9.55-14.6)	13.7 (11.0-17.0)	15.3 (12.3-19.0)	17.5 (13.5-22.5)	19.1 (14.5-25.1)	20.8 (15.2-28.1)	22.5 (15.7-31.5)	24.8 (16.7-35.9)	26.6 (17.3-39.2)
60-day	12.5 (10.1-15.3)	13.7 (11.1-16.8)	15.7 (12.6-19.3)	17.3 (13.9-21.4)	19.5 (15.1-25.0)	21.3 (16.1-27.7)	23.0 (16.7-30.8)	24.6 (17.2-34.2)	26.6 (17.9-38.3)	28.0 (18.3-41.2)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.8887°, Longitude: -72.5547°



Maps & aerals

Small scale terrain



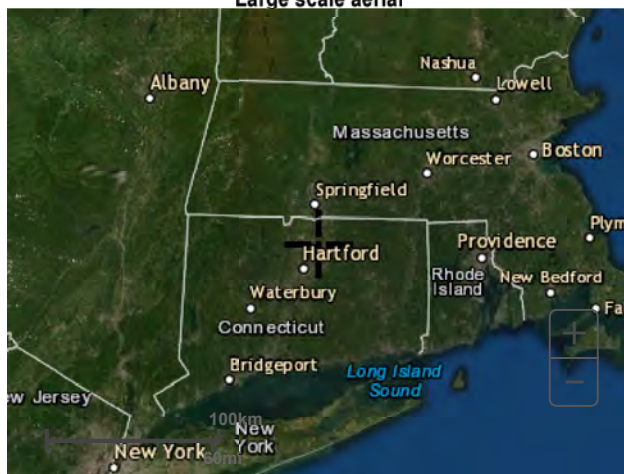
Large scale terrain



Large scale map



Large scale aerial



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[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)



CTDEEP Groundwater Classification Map



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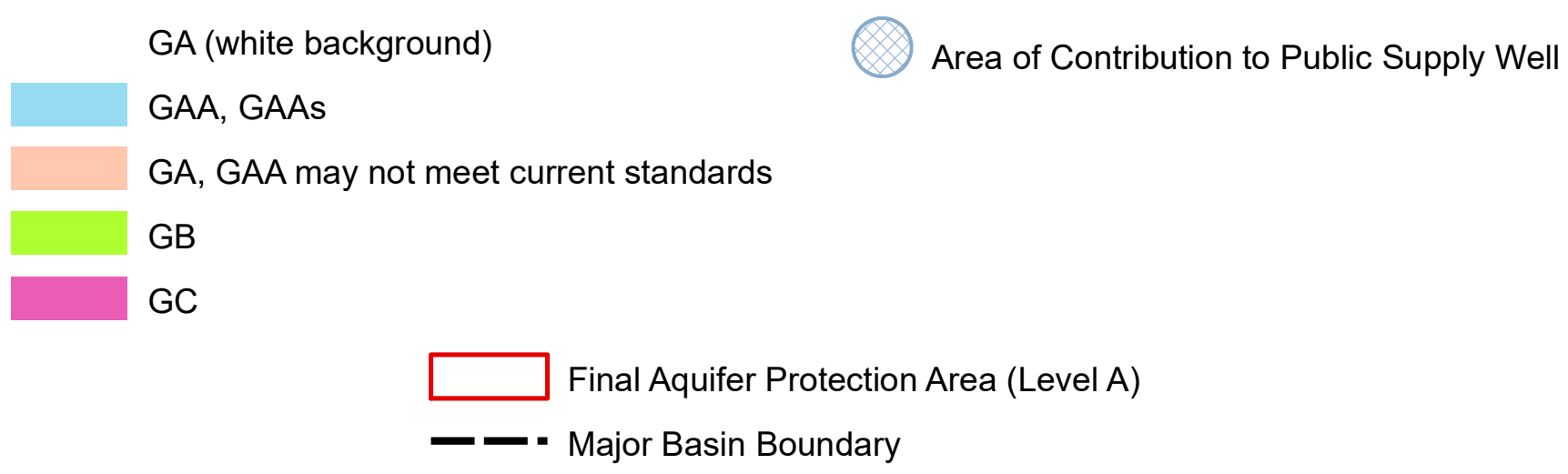
WATER QUALITY CLASSIFICATIONS EAST WINDSOR, CT

SURFACE WATER QUALITY CLASSES



NOTES:
Surface Water Classifications beginning with S refer to Coastal and Marine Surface Water. B* is a subset of Class B where no direct wastewater discharges are allowed other than those consistent with Class AA, A, and SA surface waters.

GROUND WATER QUALITY CLASSES



EXPLANATION

WATER QUALITY CLASSIFICATIONS (WQC) MAPS are one of the elements of the Water Quality Standards (WQS) for the State of Connecticut. The WQS are a part of Connecticut's clean water program and are essential for protecting and improving water quality. The WQS follow the principles of Connecticut's Clean Water Act which is in Chapter 446k of the Connecticut General Statutes. The WQS provide policy guidance in many areas, for example decisions on acceptable discharges to water resources, siting of landfills, remediation or prioritization of municipal sewerage system projects. The first two elements of the WQS are the Standards, which set an overall policy for management of water quality, and the Criteria, which are descriptive and numerical standards that describe the allowable parameters and goals for various water quality classifications. A discussion of these two elements is found in the Water Quality Standards document available on the CT DEEP website. The third element is the Classifications and the Water Quality Classification Maps which show the Classification assigned to each surface and groundwater resource throughout the State. The WQS are adopted using a public participation process. The WQC maps are also adopted using a public participation process but go through hearings separately from the Standards and Criteria hearings. Revision and adoption of the WQC data occurs in accordance with the public participation procedures contained in Section 22a-426 of the Connecticut General Statutes. Ground WQC is subject to Connecticut regulation and changes must be reviewed and adopted. All changes to the Surface WQC require an adoption process which is subject to federal review and approval in addition to CT regulation. The adoption dates for the WQC by major drainage basin are: Housatonic River, Hudson River and Southwest Coastal Basins - March 1999; Connecticut River and South Central Coastal Basins - February 1993; Thames River, Pawcatuck River and Southeast Coastal Basins - December 1986. Surface Water Classifications do not change after the adoption date until the next major revision. Ground Water Classifications may change after the adoption date under specific circumstances. The map may have more than one WQC adoption date because a town may be in more than one major drainage basin.

SURFACE WATERS in Connecticut are divided into freshwater classified as AA, A, B or B* and saline waters classified as SA or SB. Class AA designated uses are existing or proposed drinking water supplies; habitat for fish and other aquatic life and wildlife; recreation; and water supply for industry and agriculture. Class A designated uses are habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture. Class SA designated uses are habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply, and navigation. Class SB designated uses are habitat for fish and aquatic life and wildlife; recreation; navigation and industrial and agricultural water supply. Class B* is applicable to Candlewood Lake, is a subset of Class B and is identical in all ways to the designated uses, criteria and standards for Class B waters except for the restriction on direct discharges. Class SB designated uses are habitat for marine fish and aquatic life and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation.

Surface waters which are not specifically classified shall be considered as Class A or Class AA. Surface waters in GA ground water areas are assumed Class A or Class SA unless otherwise indicated. Surface waters in GAA ground water areas are assumed Class AA unless otherwise indicated.

On the WQC map a surface water quality goal of A is represented by blue colored water bodies. Surface water quality goal of AA is represented by purple colored water bodies. Surface water quality goal of B is represented by gold colored water bodies.

GROUND WATERS in Connecticut are classified as GAA, GA, GB and GC. Class GAA designated uses are existing or potential public supply of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. The Class GAAs is a subclass of GAA for ground water that is tributary to a public water supply reservoir. The area of contribution to a public water supply well is represented by a 500-foot radius around the well and is assumed to be Class GAA unless otherwise classified. Class GA designated uses are existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. All ground waters not specifically classified are considered as Class GA. Class GB designated uses are industrial process water and cooling waters and baseflow for hydraulically-connected water bodies and is presumed not suitable for human consumption without treatment. Class GC designated uses are assimilation of discharges authorized by the Commissioner pursuant to Section 22a-430 of the General Statutes.

On the WQC map GA is represented by white colored land areas. Class GAA and class GAAs are represented by blue colored land areas. The area of contribution to a public water supply well is shown by a blue cross-hatch overprint. A notation of GAA followed by a state abbreviation indicates a watershed that contributes to the public water supply for a state other than Connecticut. Class GA or Class GAA areas that currently may not be meeting the GA or GAA standards are represented on the WQC maps by tan colored land areas. Class GB is represented by green colored land areas. Class GC is represented by magenta colored land areas.

FINAL AQUIFER PROTECTION AREAS (Level A) are included on the WQC maps for informational purposes. These areas are anticipated to be reclassified A during the next major basin updates, subject to public participation. The Aquifer Protection Program helps protect Connecticut's public drinking water resources by delineating aquifer protection areas (also called wellhead protection areas) for public supply wells and establishing land use regulations within these areas. These areas represent the land area contributing ground water to active public water supply wells or well fields that serve more than 1000 people and are in sand and gravel aquifers (stratified drift deposits).

DATA SOURCES

WATER QUALITY CLASSIFICATIONS DATA - Water quality classifications shown on this map are based on information from the following digital spatial datasets that are typically shown together - Ground Water Quality Classifications Poly, Surface Water Quality Classifications Line, and Surface Water Quality Classifications Poly. The map legend above reflects the content of these three data sources. These WQC data were initially compiled on 1:24,000-scale 7.5 minute USGS topographic quadrangle maps and later digitized at 1:24,000 scale. For example, the Surface Water Quality Classifications Line and Surface Water Quality Classifications Poly digital data assigns surface water quality classifications to water bodies such as rivers, streams, reservoirs, lakes, ponds and covers found in 1:24,000-scale hydrography data available from CT DEEP. The hydrography data does not include all the waterbodies in Connecticut. The Ground Water Quality Classifications Poly data assigns ground water quality classifications, at 1:24,000 scale, to the remaining land areas in Connecticut.

the individual water companies owning the well fields and submitted to the CT DEEP for approval. Preliminary mapping provides a general estimate of the area contributing ground water to the well field. Final mapping is based on extensive site-specific, detailed modeling of the ground water flow system. CT DEEP may adjust Final area boundaries to be consistent with 1:24,000 scale topography and base map data where appropriate during the approval process.

MAJOR DRAINAGE BASIN DATA - Major drainage basins shown on this map are from Major Basin Line data developed by CT DEEP and intended to be used at 1:24,000 scale.

BASE MAP DATA - Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas' copyrighted data. Base map information is neither current nor complete.

RELATED INFORMATION
This map is intended to be printed at its original dimensions in order to maintain the 1:24,000 scale (1 inch = 2000 feet).
WATER QUALITY STANDARDS - Go to the CT DEEP website for a summary and the full text of the "Water Quality Standards" and for other information on water quality.
AQUIFER PROTECTION AREAS - Go to the CT DEEP website for more information.

ADOPTED DATES

- Water Quality Standards
February 25, 2011
- Thames River, Pawcatuck River and Southeast Coastal Basins - December 1986
- Connecticut River and South Central Coastal Basins - February 1993
- Housatonic River, Hudson River and Southwest Coastal Basins - March 1999

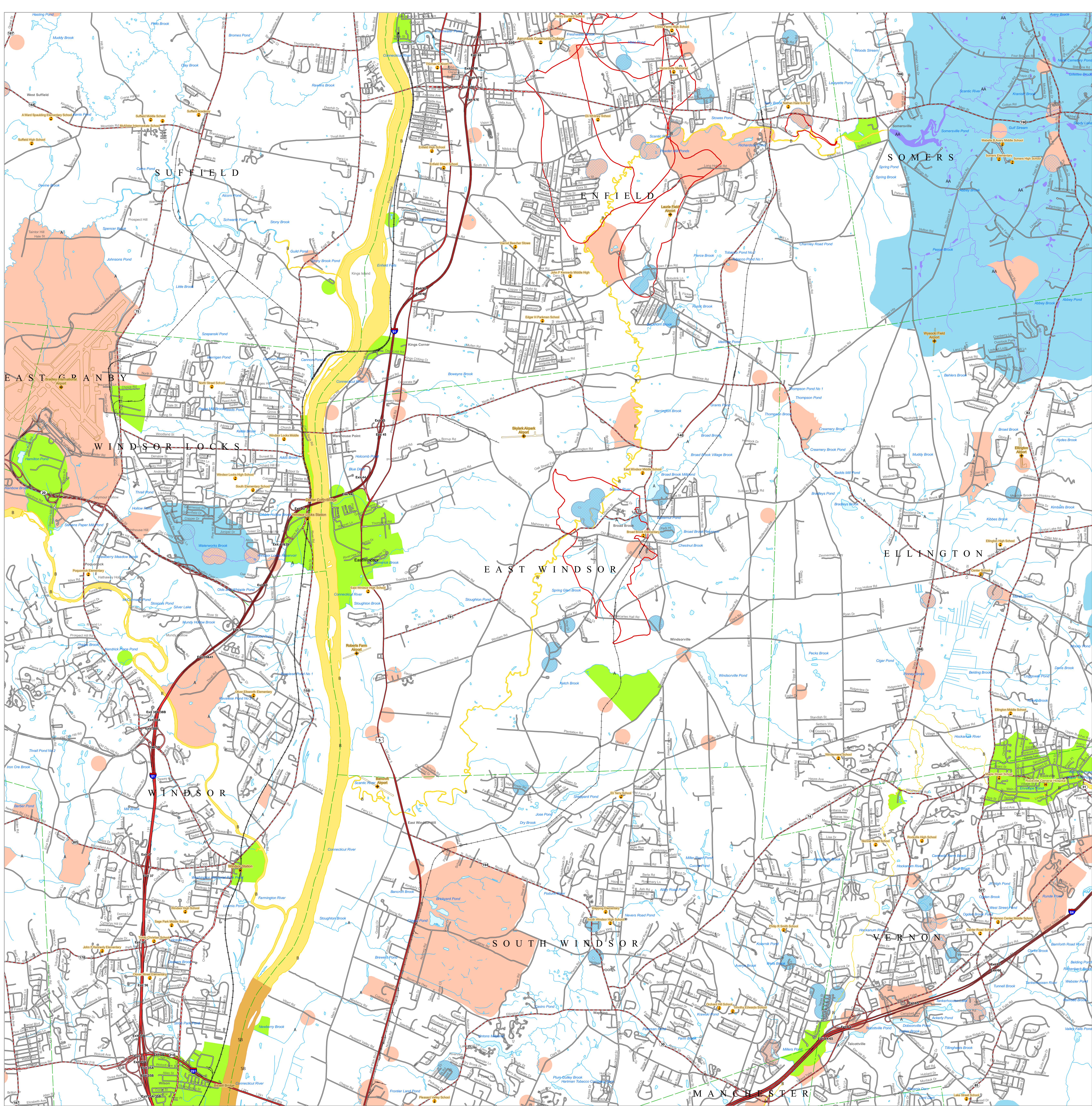
- MAJOR BASINS
- 1 Pawcatuck
- 2 Southeast Coast
- 3 Thames
- 4 Connecticut
- 5 South Central Coast
- 6 Housatonic
- 7 Southwest Coast
- 8 Hudson

State Plane Coordinate System of 1983, Zone 2026
Lambert Conformal Conic Projection
with American Datum of 1983

SCALE 1:24,000 (1 inch = 2000 feet) when map is printed at original size

Map created by CT DEEP
October 2018
Map is not colorfast
Protect from light and moisture

STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127





Aquifer Protection Area Mapping







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AQUIFER PROTECTION AREAS

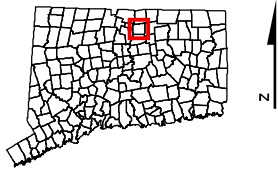
East Windsor, CT

August 26, 2019

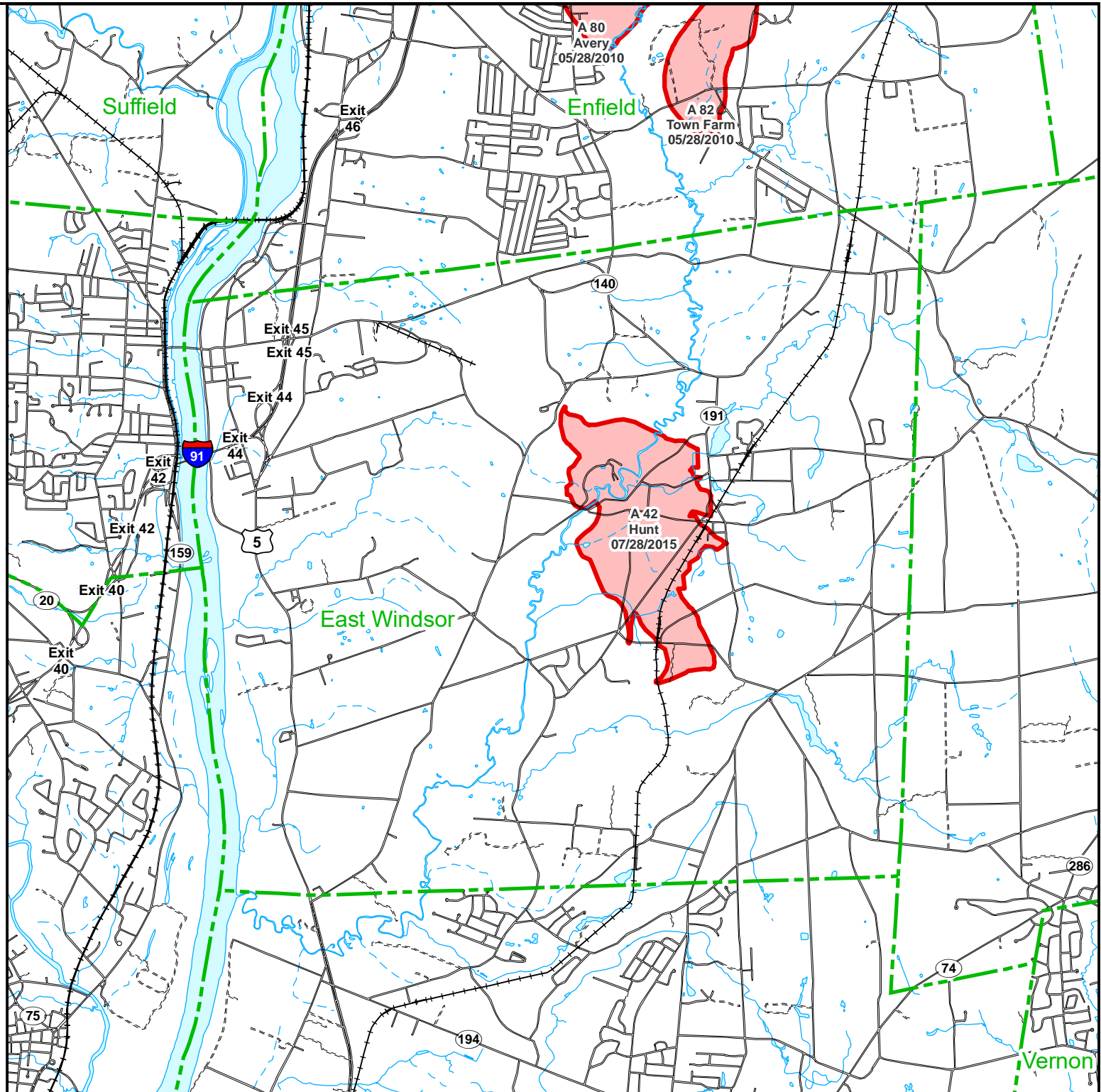
-  Level A APA (Final Adopted)
-  Level A APA (Final)
-  Level B APA (Preliminary)
-  Town Boundary

NOTE: The Aquifer Protection Areas were delineated through Connecticut's Level A and Level B Mapping Processes. Aquifer Protection Areas are delineated for active public water supply wells in stratified drift that serve more than 1000 people, in accordance with Sections 22a-354c and 22a-354z of the Connecticut General Statutes. Level B Mapping delineates a preliminary aquifer protection area, providing an estimate of the land area from which the well draws its water. Level A Mapping delineates the final Aquifer Protection Area, which becomes the regulatory boundary for land use controls designed to protect the well from contamination. As Level A Mapping is completed for each well field and approved by DEEP, it replaces the Level B Mapping. Final Adopted Level A Areas are those where towns have land use regulations for them. Massachusetts and Rhode Island Wellhead Protection Areas may be shown for informational purposes.

QUESTIONS:
 Bureau of Water Protection and Land Reuse
 Planning and Standards Division
 Phone: (860) 424-3020
www.ct.gov/deep/aquiferprotection



STATE OF CONNECTICUT
 DEPARTMENT OF
 ENERGY & ENVIRONMENTAL PROTECTION
 79 Elm Street
 Hartford, CT 06106-5127



Kochis, Steve

From: Czapla, Kim <Kim.Czapla@ct.gov>
Sent: Friday, August 21, 2020 9:30 AM
To: Kochis, Steve
Cc: Aaron Bertrand-Svedlow; Aileen Kenney; jon@northlightsolar.com; Lee Hoffman; Moberg, Sue; Carman, Kristin; O'Neill, Steve; Blatt, David; Allen, Karen; Milne, Beatriz; Lugli, Nicole
Subject: [External] RE: Gravel Pit Solar - APA

Hi Steve,

Thank you for sending the Gravel Pit Solar APA Map of the proposed project plan that shows this project is partially located on the Connecticut Water Company's Hunt Well Field Aquifer Protection Area.

The proposed solar farm is not a regulated activity under the Aquifer Protection Area Regulations, Connecticut General Statutes Sections 22a-354a-bb, and not required to register with the Aquifer Protection Area Program. Like the Simsbury project, this one is partially in an Aquifer Protection Area and every effort should be taken to protect this sensitive drinking water area. As you are familiar and mentioned in your email, Best Management Practices (BMPs) should be implemented during and after the construction/placement of the solar farm.

Good luck with your project!

Best,
Kim

Kim Czapla
Environmental Analyst 3
Aquifer Protection Area Program
Land and Water Resources Division
Bureau of Water Protection and Land Reuse
Connecticut Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
P: 860.424.3335 | F: 860.424.4054 | E: kim.czapla@ct.gov



www.ct.gov/deep

*Conserving, improving and protecting our natural resources and environment;
Ensuring a clean, affordable, reliable, and sustainable energy supply.*

www.ct.gov/deep/aquiferprotection

From: Kochis, Steve <skochis@VHB.com>
Sent: Thursday, August 20, 2020 3:08 PM
To: Czapla, Kim <Kim.Czapla@ct.gov>
Cc: Aaron Bertrand-Svedlow <aaron@nleservices.com>; Aileen Kenney <kenney.aileen@gmail.com>; jon@northlightsolar.com; Lee Hoffman <LHoffman@PULLCOM.COM>; Moberg, Sue <smoberg@VHB.com>; Carman, Kristin <kcarman@vhb.com>; O'Neill, Steve <soneill@VHB.com>
Subject: Gravel Pit Solar - APA

Hi Kim,

In following up on your request during the pre-application meeting we had over Zoom for Gravel Pit Solar in East Windsor on June 23, 2020, we have put together the attached maps for your review and reference. On the call, you had requested that we put together a map that overlaid the APA over the proposed project plan. I have also attached the town APA map.

As described on the APA Layout Map, a significant portion of the proposed development area is already disturbed under existing conditions by virtue of active gravel mining and farming operations – approximately 41 acres of the 52 acres of APA that is depicted on the site.

Lastly, I have attached a copy of the APA BMP document that we received from you with regards to our Tobacco Valley Solar project in Simsbury in the past. It is still our understanding that solar is not regulated under APA as you noted previously, but we intend to incorporate BMP's into our site design, which will also include a full stormwater management design for quality and quantity, as well as mandated weekly inspections for sedimentation.

Can you kindly review the attached information along with this email here and let us know if you have further questions or need anything else from us on this, in anticipation of our filing of a CTDEEP Stormwater General Permit in the near future?

Thank you for your assistance in the matter.

Steve Kochis, PE
Senior Project Engineer



100 Great Meadow Road
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P 860.807.4375 | F 860.372.4570
skochis@vhb.com

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Appendix B:

- NRCS Soil Survey Information
- Field-conducted Soil Test Information



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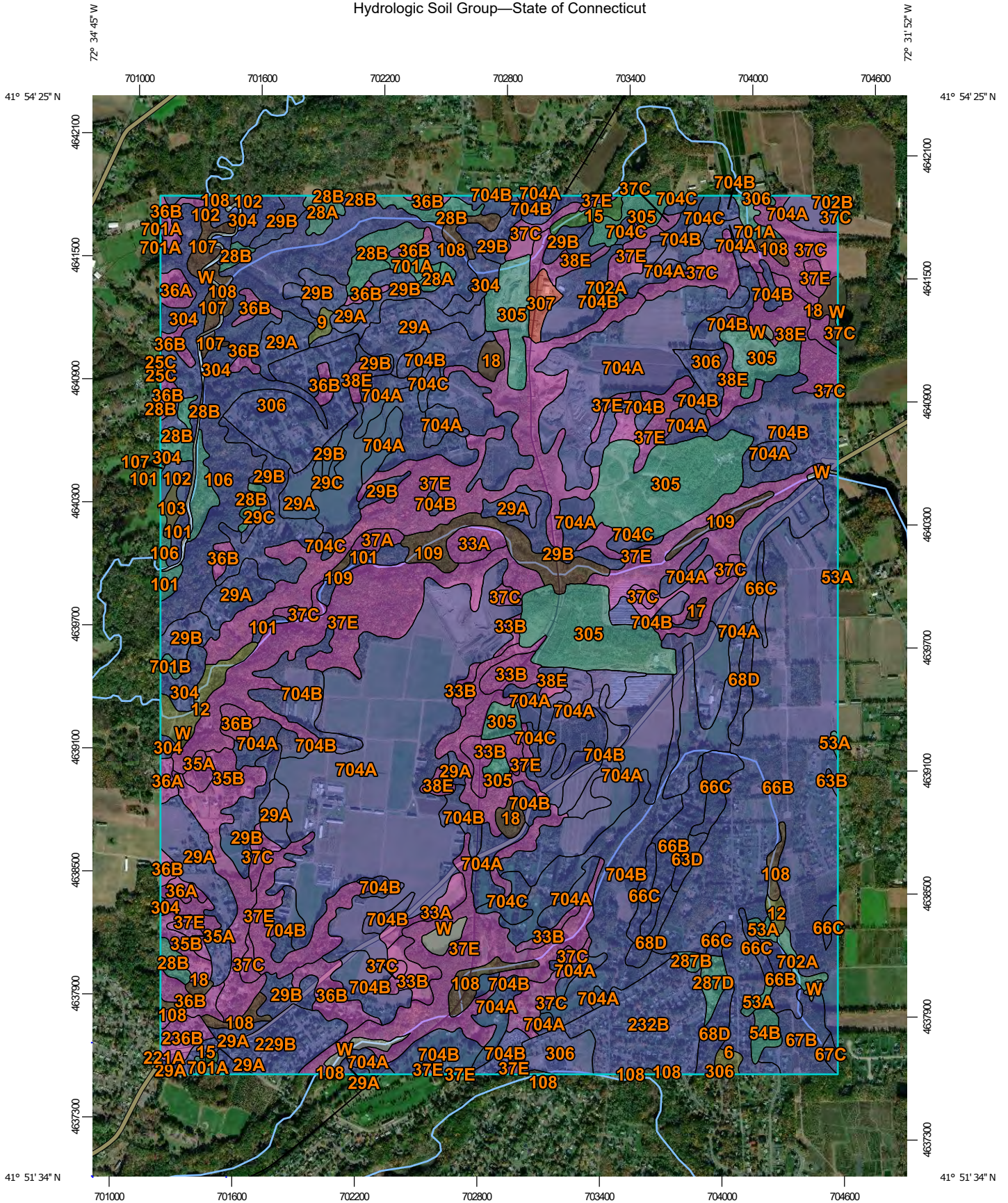


NRCS Soil Survey Information



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Hydrologic Soil Group—State of Connecticut



Map Scale: 1:25,700 if printed on A portrait (8.5" x 11") sheet.



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




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

1/20/2020
Page 1 of 6

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 1:12,000.

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

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

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

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

Soil Survey Area: State of Connecticut
 Survey Area Data: Version 19, Sep 13, 2019

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

Date(s) aerial images were photographed: Aug 27, 2016—Oct 30, 2017

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
6	Wilbraham and Menlo soils, 0 to 8 percent slopes, extremely stony	C/D	3.0	0.1%
9	Scitico, Shaker, and Maybid soils	C/D	2.5	0.1%
12	Raypol silt loam	C/D	17.5	0.5%
15	Scarboro muck, 0 to 3 percent slopes	A/D	6.6	0.2%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	B/D	1.4	0.0%
18	Catden and Freetown soils, 0 to 2 percent slopes	B/D	17.3	0.5%
25C	Brancroft silt loam, 8 to 15 percent slopes	C	0.1	0.0%
28A	Elmridge fine sandy loam, 0 to 3 percent slopes	C	10.0	0.3%
28B	Elmridge fine sandy loam, 3 to 8 percent slopes	C	40.7	1.2%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	B	128.5	3.6%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	B	150.1	4.3%
29C	Agawam fine sandy loam, 8 to 15 percent slopes	B	6.4	0.2%
33A	Hartford sandy loam, 0 to 3 percent slopes	A	19.0	0.5%
33B	Hartford sandy loam, 3 to 8 percent slopes	A	39.7	1.1%
35A	Penwood loamy sand, 0 to 3 percent slopes	A	8.6	0.2%
35B	Penwood loamy sand, 3 to 8 percent slopes	A	53.2	1.5%
36A	Windsor loamy sand, 0 to 3 percent slopes	A	13.9	0.4%
36B	Windsor loamy sand, 3 to 8 percent slopes	A	67.5	1.9%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
37A	Manchester gravelly sandy loam, 0 to 3 percent slopes	A	5.0	0.1%
37C	Manchester gravelly sandy loam, 3 to 15 percent slopes	A	90.9	2.6%
37E	Manchester gravelly sandy loam, 15 to 45 percent slopes	A	470.8	13.4%
38E	Hinckley loamy sand, 15 to 45 percent slopes	A	51.6	1.5%
53A	Wapping very fine sandy loam, 0 to 3 percent slopes	C	6.6	0.2%
54B	Wapping very fine sandy loam, 2 to 8 percent slopes, very stony	C	6.7	0.2%
63B	Cheshire fine sandy loam, 3 to 8 percent slopes	B	0.9	0.0%
63D	Cheshire fine sandy loam, 15 to 25 percent slopes	B	5.2	0.1%
66B	Narragansett silt loam, 2 to 8 percent slopes	B	315.5	9.0%
66C	Narragansett silt loam, 8 to 15 percent slopes	B	33.5	1.0%
67B	Narragansett silt loam, 3 to 8 percent slopes, very stony	B	21.5	0.6%
67C	Narragansett silt loam, 8 to 15 percent slopes, very stony	B	2.3	0.1%
68D	Narragansett silt loam, 15 to 25 percent slopes, extremely stony	B	24.4	0.7%
101	Occum fine sandy loam	B	14.8	0.4%
102	Pootatuck fine sandy loam	B	13.4	0.4%
103	Rippowam fine sandy loam	B/D	3.8	0.1%
106	Winooski silt loam	C	13.7	0.4%
107	Limerick and Lim soils	B/D	12.6	0.4%
108	Saco silt loam	B/D	32.9	0.9%
109	Fluvaquents-Udfluvents complex, frequently flooded	B/D	36.1	1.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
221A	Ninigret-Urban land complex, 0 to 5 percent slopes	B	0.6	0.0%
229B	Agawam-Urban land complex, 0 to 8 percent slopes	B	34.7	1.0%
232B	Haven-Urban land complex, 0 to 8 percent slopes	B	63.9	1.8%
236B	Windsor-Urban land complex, 0 to 8 percent slopes	A	10.0	0.3%
287B	Wethersfield-Urban land complex, 3 to 8 percent slopes	C	2.5	0.1%
287D	Wethersfield-Urban land complex, 15 to 25 percent slopes	C	7.2	0.2%
304	Udorthents, loamy, very steep	B	190.4	5.4%
305	Udorthents-Pits complex, gravelly	C	189.8	5.4%
306	Udorthents-Urban land complex	B	82.2	2.3%
307	Urban land	D	7.9	0.2%
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	C	13.3	0.4%
701B	Ninigret fine sandy loam, 3 to 8 percent slopes	C	1.7	0.0%
702A	Tisbury silt loam, 0 to 3 percent slopes	C	8.1	0.2%
702B	Tisbury silt loam, 3 to 8 percent slopes	C	0.9	0.0%
704A	Enfield silt loam, 0 to 3 percent slopes	B	647.3	18.4%
704B	Enfield silt loam, 3 to 8 percent slopes	B	445.5	12.6%
704C	Enfield silt loam, 8 to 15 percent slopes	B	47.4	1.3%
W	Water		22.2	0.6%
Totals for Area of Interest			3,523.6	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

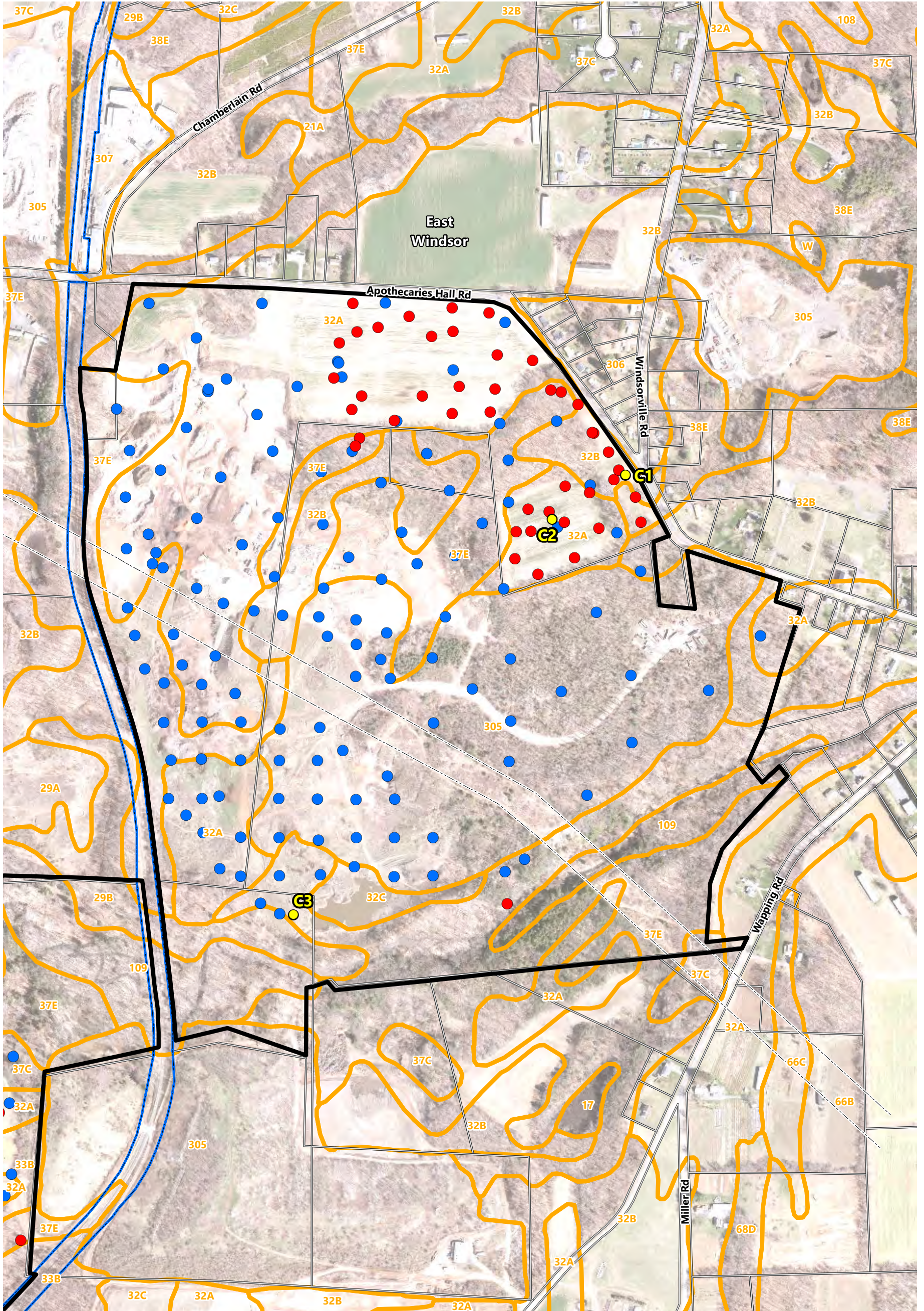
Tie-break Rule: Higher



Field-conducted Soil Test Information



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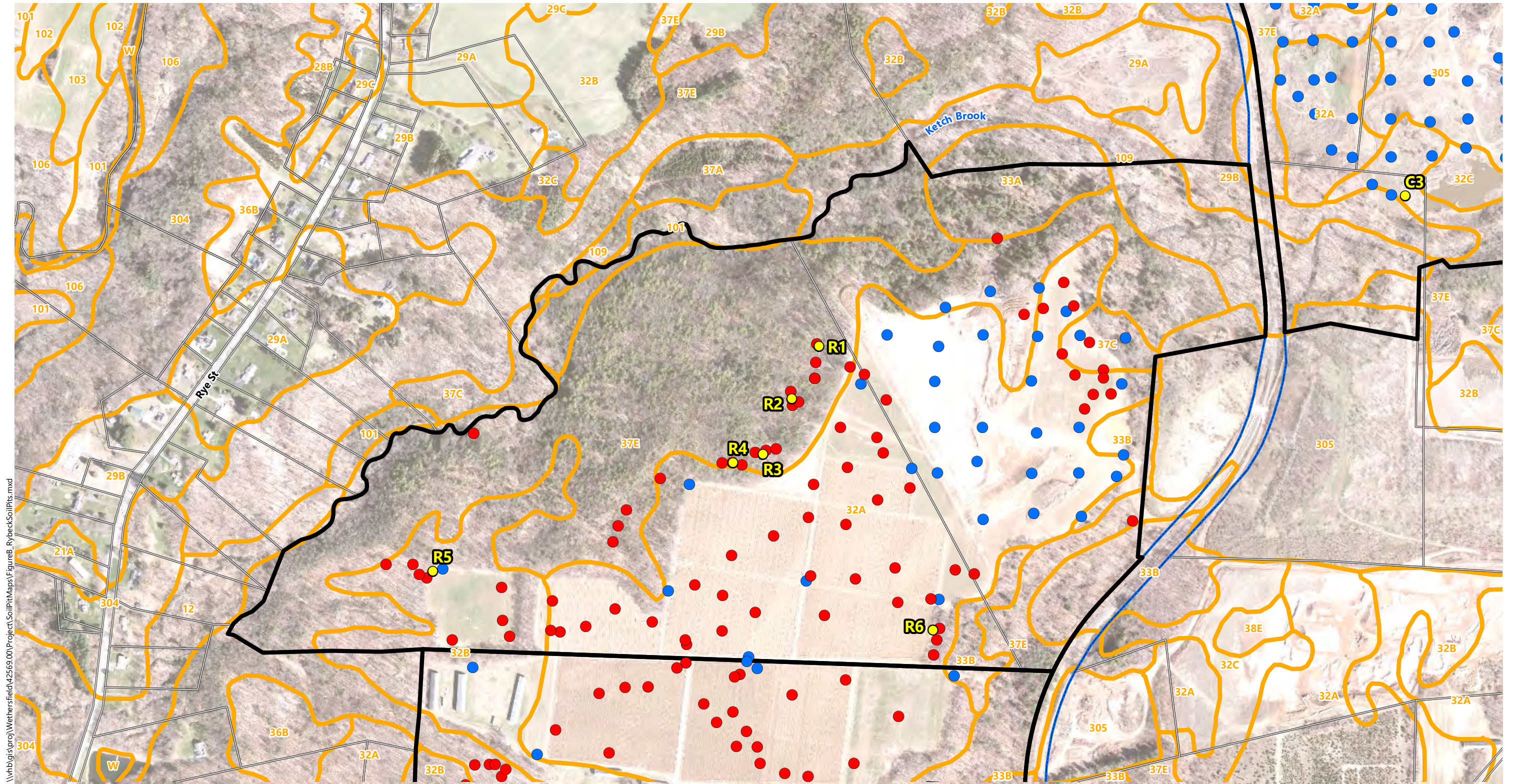
Gravel Pit Solar

East Windsor, Connecticut

- Project Site
- Parcel Boundary
- Approximate Eversource ROW
- Approximate Railroad ROW
- Stormwater Test Pits
- GPS Soil Test Pit Locations
- Site-Specific HSG Soil Survey
- NRSC Soil Boundary

Figure A
Charbonneau Test Pit Locations

Source: VHB, CTDEEP, FEMA, AGO



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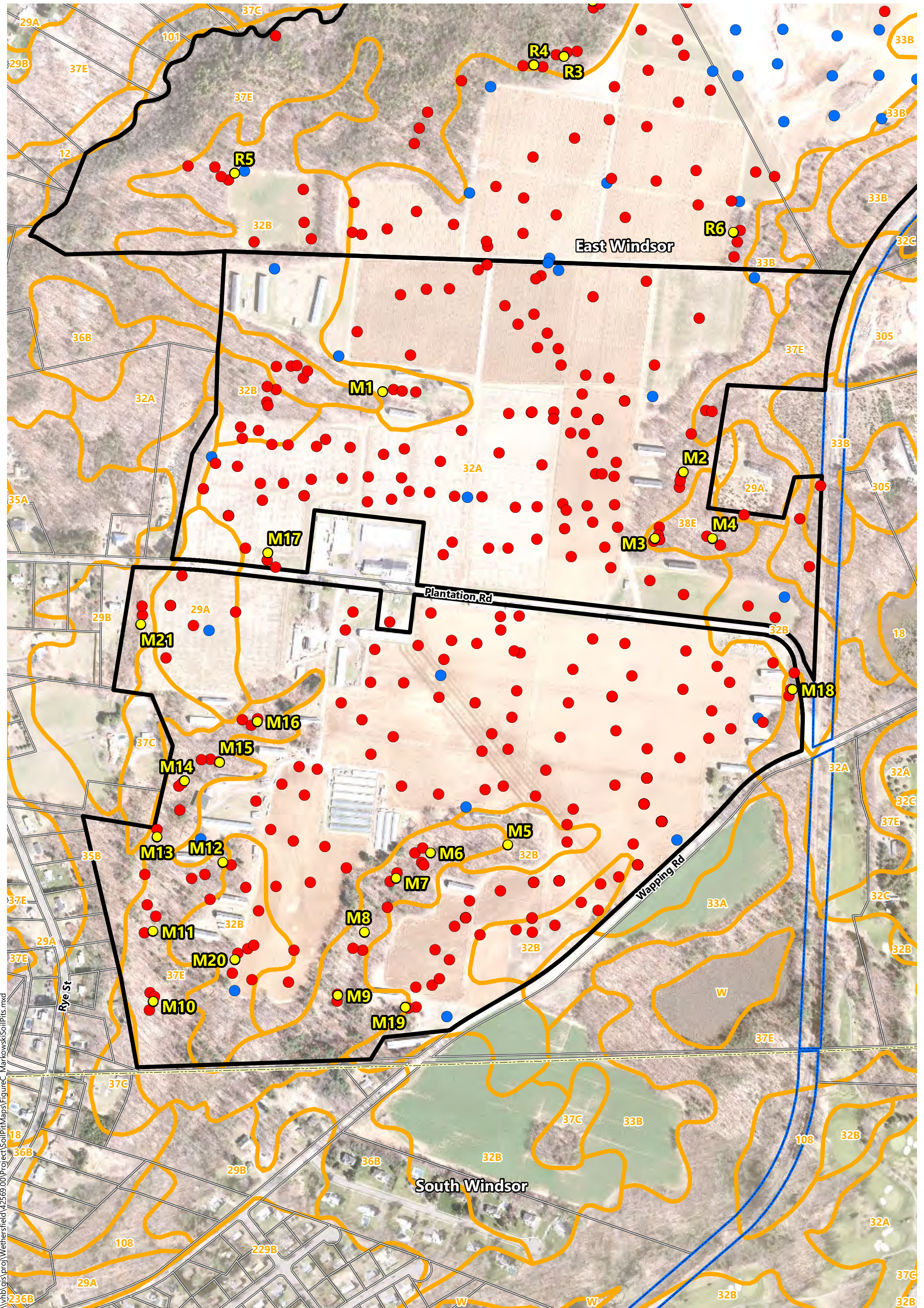
- Project Site
- Parcel Boundary
- Approximate Railroad ROW
- Stormwater Test Pits
- GPS Soil Test Pit Locations
- Site-Specific HSG Soil Survey
- NRSC Soil Boundary

Gravel Pit Solar

East Windsor, Connecticut

Figure B
Rybeck Test Pit Locations

Source: VHB, CTDEEP, FEMA, AGO



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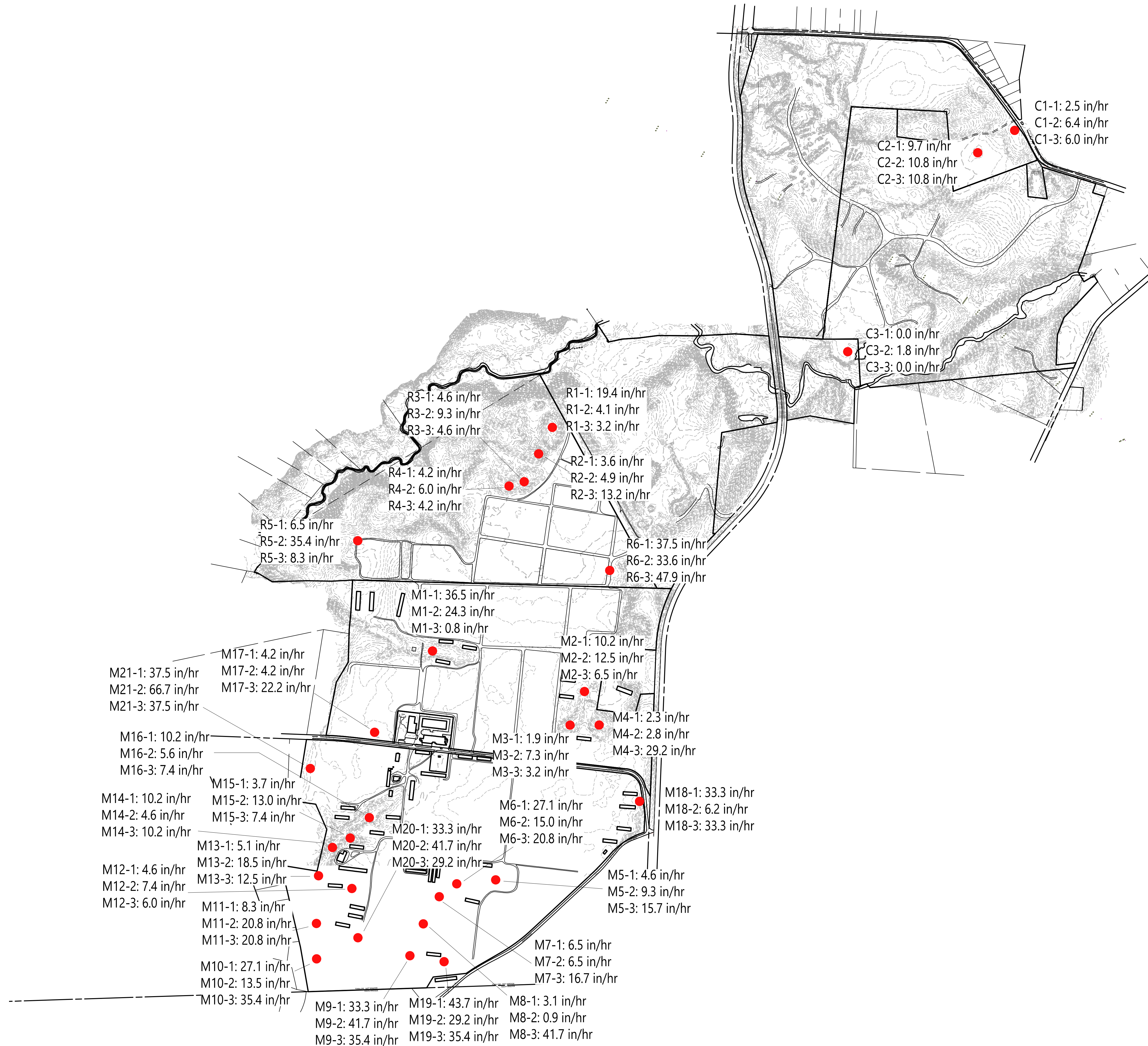
Gravel Pit Solar

East Windsor, Connecticut

- Project Site
- Parcel Boundary
- Approximate Railroad ROW
- Stormwater Test Pits
- GPS Soil Test Pit Locations
- Site-Specific HSG Soil Survey
- NRSC Soil Boundary

Figure C
Markowski Test Pit Locations

Source: VHB, CTDEEP, FEMA, AGO



East Windsor, Connecticut

Revision	Date	Appr'd

Designed by	Checked by
Issued for	Date

Soil Test Pit Results

Drawing Number

Gravel Pit Solar Soil Test Pit Descriptions

VHB C1-1

A	0 to 4 inches	Dark brown (10YR 3/3) silt loam; moderate medium granular structure, friable, many fine roots, abrupt smooth boundary.
Ap1	4 to 16 inches	Dark brown (10YR 3/3) silt loam; weak medium subangular blocky structure, friable, common fine roots, clear smooth boundary.
Ap2	16 to 20 inches	Dark brown (10YR 3/3) silt loam; massive structureless; friable, few fine roots, clear smooth boundary.
Bw1	20 to 33 inches	Dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable, few fine roots, clear smooth boundary.
Bw2	33 to 45 inches	Dark yellowish brown (10YR 4/6) silt loam; weak medium subangular blocky structure; friable, few fine roots, clear smooth boundary.
2C1	45 to 54 inches	Yellowish red (5YR 5/6) sand and strong brown (7.5YR 4/4) silt loam, interbedded, weak medium geogenic platy structure, friable, no roots clear smooth boundary.
3C2	54 to 64 inches	Reddish brown (5YR 4/3) sand; single grain structureless; friable, few fine roots, abrupt smooth boundary.
4C3	64 to 70 inches	Strong brown (7.5YR 4/4) interbedded very fine sand and silty clay loam, with common medium 7.5YR 4/2 depletions, weak, fine geogenic platy structure to massive, firm, ASHWT at 64 inches.

VHB C1-2

A	0 to 3 inches	Very dark brown (10YR 2/2) silt loam; moderate medium granular structure, friable, many fine roots, abrupt smooth boundary.
Ap	3 to 13 inches	Dark yellowish brown (10YR 4/4) very fine sandy loam; weak fine subangular blocky structure, friable, common fine roots, clear smooth boundary.
Bw	13 to 25 inches	Yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable, few fine roots, abrupt smooth boundary.
2C1	25 to 35 inches	Brown (7.5YR 5/4) gravelly sand; single grain; loose, few fine roots, clear smooth boundary.
3C2	35 to 68 inches	Strong brown (7.5YR 4/4) gravelly sand interbedded with yellowish brown (10YR 5/4) loamy fine sand weak medium single grain, loose to massive friable, no roots, clear smooth boundary.
4C3	68 to 102 inches	Reddish brown (5YR 4/4) interbedded coarse sand/sand/loamy sand; single grain; loose.

VHB C2-3

Ap	0 to 9 inches	Dark yellowish brown (10YR 3/4) silt loam; weak medium subangular blocky structure, friable, many fine roots, abrupt smooth boundary.
Bw1	9 to 15 inches	Dark yellowish brown (10YR 4/6) silt loam; weak medium subangular blocky structure; friable, common medium roots, clear smooth boundary.
Bw2	15 to 31 inches	Light olive brown (2,5Y 5/6) silt loam; weak medium subangular blocky structure; friable, common medium roots, abrupt smooth boundary.
2C1	31 to 37 inches	Reddish brown (5YR 5/3) interbedded loamy very fine sand, fine sandy loam, and loamy fine sand with common coarse 7.5YR 4/6 redox concentrations; weak fine/medium geogenic platy structure, very friable, clear smooth boundary.
2C2	37 to 57 inches	Reddish brown (5YR 5/3) interbedded loamy very fine sand, fine sandy loam, and loamy fine sand with common coarse 5YR 4/4 redox concentrations; massive, friable, with thin layers of silt interbedded in matrix, abrupt smooth boundary.
3C3	57 to 80 inches	Reddish brown (5YR 5/4) sand; single grain; loose.

VHB C2-1

Ap	0 to 6 inches	Brown (10YR 4/3) gravelly fine sandy loam; massive, firm, common fine roots, clear smooth boundary.
Bw1	6 to 11 inches	Dark yellowish brown (10YR 4/4) loamy fine sand; massive; firm, common medium roots, abrupt smooth boundary.
2C1	11 to 22 inches	Reddish brown (5YR 4/4) loamy sand; massive; very friable, few medium roots, abrupt smooth boundary.
2C1	22 to 35 inches	Reddish brown (5YR 5/3) gravelly coarse sand; single grain, loose, many medium roots, clear smooth boundary.
2C2	35 to 41 inches	Dark reddish brown (5YR 3/4) medium sand; single grain, loose, no roots, clear smooth boundary.
3C3	41 to 52 inches	Reddish brown (5YR 4/4) very gravelly coarse sand; single grain; loose, no roots, clear smooth boundary.
4C4	52 to 70 inches	Reddish brown (5YR 4/4)/5YR 4/6) sand; single grain; loose, no roots.

VHB C2-2

Bw1	0 to 13 inches	Brown (10YR 4/3) fine sandy loam; massive; firm, few medium roots, abrupt smooth boundary.
2C1	13 to 24 inches	Reddish brown (5YR 4/4) fine sand; single grain; loose, no roots, abrupt smooth boundary.
3C2	24 to 43 inches	Reddish brown (5YR 4/4) gravelly coarse sand; single grain, loose, many fine roots, clear smooth boundary.
4C3	43 to 60 inches	Dark reddish brown (5YR 4/4) very cobbly coarse sand; single grain, loose, no roots.

VHB C2-3

Ap	0 to 2 inches	Brown (10YR 4/3) silt loam; weak thin platy, firm, many medium roots, abrupt smooth boundary.
Bw1	2 to 9 inches	Yellowish brown (10YR 5/6) silt loam; weak fine subangular blocky structure; friable, common medium roots, clear smooth boundary.
Bw2	9 to 24 inches	Light olive brown (2.5Y 5/6) silt loam; weak fine subangular blocky structure, common medium roots, abrupt smooth boundary.
2C1	24 to 28 inches	Reddish brown (5YR 4/4) loamy sand; massive, firm, common medium roots, clear smooth boundary.
2C2	28 to 35 inches	Dark reddish brown (5YR 4/4) sand; single grain, loose, no roots, clear smooth boundary.
3C3	35 to 64 inches	Reddish brown (5YR 4/4) gravelly coarse sand interbedded with loamy; single grain; loose, few fine roots, clear smooth boundary.
4C4	64 to 72 inches	Reddish brown (5YR 4/4) very cobbly coarse sand; single grain; loose.

VHB C3-1

C^	0-16 inches	Yellowish brown (10YR 5/4) sandy loam, massive structureless, friable, many fine clear wavy boundary
2C2^	16-24 inches	Reddish brown (5YR 5/4) sandy loam, massive structureless, friable, few roots, abrupt wavy boundary
3C3^	24-48 inches	Brown (10YR 5/3) gravelly and stony sandy loam, massive structure, friable; coarse, many 10YR 6/2 (light brownish gray) silt loam

VHB C3-2

C1^	0-20 inches	Reddish brown (5YR 4/4) gravelly and stony sandy loam, massive structure, friable, many fine roots, wavy smooth boundary
2C2^	20-42 inches	Reddish brown (5YR 5/4) gravelly sandy loam, massive structure, friable, few medium roots, wavy smooth boundary
3C3^	42-54 inches	Reddish brown (5YR 4/4) gravelly sand, single grain, loose

VHB C3-3

C1^	0-20 inches	Reddish brown (5YR 4/4) gravelly sandy loam, massive structure, friable, many fine roots, abrupt wavy boundary
2C2^	20-59 inches	Brown (7.5YR 4/3) gravelly stony silt loam, massive structure, structure, firm

VHB R1-1

A	0-3 inches	Dark brown (10YR 3/3) fine sandy loam, medium granular structure, friable, many roots, abrupt smooth boundary
Bw1	3-20 inches	Yellowish brown (10YR 5/4) silt loam, medium subangular blocky structure, few roots, friable, abrupt smooth boundary
Bw2	20-26 inches	Dark yellowish brown (10YR 4/4) sandy loam, massive structure, friable, abrupt smooth boundary
Ab	26-31 inches	Dark brown (10YR 3/3) sandy loam, weak medium subangular blocky structure, friable, abrupt smooth boundary

Bwb	31-37 inches	Brown (7.5YR 4/4) sandy loam, weak medium subangular blocky structure, friable, clear smooth boundary
C	37-49 inches	Strong brown (7.5YR 4/6) sandy loam, massive, friable
VHB R1-2		
A	0-2 inches	Dark brown (10YR 3/3) fine sandy loam, medium granular structure, friable, many fine roots, abrupt smooth boundary
Bw1	2-15 inches	Yellowish brown (10YR 5/4) silt loam, weak medium subangular blocky structure, common fine roots, friable, abrupt wavy boundary
Ab	15-23 inches	Dark brown (10YR 3/3) sandy loam, weak medium subangular blocky, friable, few medium roots, abrupt wavy boundary
Bw1b	23-34 inches	Brown (7.5YR 4/5) sandy loam, weak fine to medium subangular blocky structure, friable, few medium roots, clear smooth boundary
Bw2b	34-44 inches	Strong brown (7.5YR 5/6) sandy loam, massive structure, friable, few medium roots, abrupt wavy boundary
C	44-52 inches	Brown (7.5YR 5/3) loamy sand, massive structure, friable, many, coarse, brownish yellow (10YR 6/6) concentrations

SHWT estimated at 44 inches

VHB R1-3

A	0-2 inches	Dark brown (10YR 3/3) fine sandy loam, medium granular structure, friable, many fine roots, abrupt smooth boundary
Bw1	2-9 inches	Brown (10YR 4/3) silt loam, weak medium subangular blocky structure, many fine roots, friable, interbedded with coarse, many, grayish brown (10YR 5/2) silt loam, abrupt wavy boundary
Ab	9-16 inches	Dark brown (10YR 3/3) fine sandy loam, weak medium subangular blocky, friable, abrupt smooth boundary
Bwb	16-25 inches	Brown (7.5YR 4/3) fine sandy loam, weak medium subangular blocky structure, friable, clear smooth boundary
B/C	25-33 inches	Brown (7.5YR 4/4) sandy loam, massive structure, friable, few large roots, clear smooth boundary
C	33-48 inches	Strong brown (7.5YR 4/6) sand, single grain, loose, many, coarse, reddish yellow (7.5YR 6/8) concentrations

SHWT estimated at 33 inches

VHB R2-1

A	0-4 inches	Dark brown (10YR 3/3) sandy loam, fine to medium granular, many fine roots, abrupt smooth boundary
Bw1	4-17 inches	Dark yellowish brown (10YR 4/4) sandy loam, weak medium subangular blocky, friable, common medium roots, abrupt smooth boundary
Bw2	17-31 inches	Dark yellowish brown (10YR 4/6) fine sandy loam, weak medium subangular blocky structure, friable, few large roots, clear wavy boundary
C	31-58 inches	Yellowish brown (10YR 5/6) silt loam, massive, friable, few large roots

VHB R2-2

A	0-13 inches	Dark brown (10YR 3/3) sandy loam, fine medium granular structure, friable, many fine roots, abrupt wavy boundary
Bw1	3-20 inches	Dark yellowish brown (10YR 4/6) fine sandy loam, weak medium subangular blocky structure, friable, common medium roots, abrupt smooth boundary
Ab	20-29 inches	Dark yellowish brown (10YR 3/4) sandy loam, weak medium subangular blocky structure, friable, few medium roots, abrupt wavy boundary
Bwb	29-45 inches	Strong brown (7.5YR 4/6) silt loam, weak medium subangular blocky structure, friable, smooth wavy boundary
C	45-55 inches	Dark yellowish brown (10YR 4/6) silt loam, massive, friable

VHB R2-3

A	0-2 inches	Dark brown (10YR 3/3) sandy loam, fine to medium granular structure, friable, many fine roots, abrupt smooth boundary
Bw1	2-26 inches	Dark yellowish brown (10YR 4/6) silt loam, weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary
Bw2	26-35 inches	Dark yellowish brown (10YR 4/4) silt loam, weak medium subangular blocky structure, clear smooth boundary
C	35-41 inches	Dark yellowish brown (10YR 4/4) sandy loam, massive structure, friable, abrupt wavy boundary
Ab	41-48 inches	Very dark brown (10YR 2/2) fine sandy loam, massive structure, friable, few medium roots, clear smooth boundary
Bwb	48-57 inches	Very dark grayish brown (10YR 3/2) sandy loam, massive, friable, few medium roots, clear smooth boundary
2Cb	57-64 inches	Dark brown (7.5YR 3/3) sandy loam, massive, friable

VHB R3-1

A	0-3 inches	Very dark grayish brown (10YR 3/2) sandy loam, fine to medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	3-14 inches	Dark yellowish brown (10YR 4/4) sandy loam, weak medium subangular blocky structure, friable, few medium roots, interbedded with many, coarse yellowish brown (10YR 5/6) silt loam, clear smooth boundary
Bw2	14-21 inches	Dark yellowish brown (10YR 3/4) sandy loam, weak fine to medium subangular blocky structure, friable, abrupt wavy boundary
Bw3	21-46 inches	Yellowish brown (10YR 5/6) silt loam, massive structure, friable, abrupt smooth boundary
C	46-54 inches	Strong brown (7.5YR 4/6) sand, single grain, loose

VHB R3-2

A	0-3 inches	Very dark grayish brown (10YR 3/2) sandy loam, fine to medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	3-10 inches	Yellowish brown (10YR 5/4) silt loam, weak medium subangular blocky structure, friable, many fine roots, clear smooth boundary
Bw2	10-20 inches	Dark yellowish brown (10YR 4/6) loamy sand, weak fine to medium subangular blocky structure, friable abrupt smooth boundary
C	20-24 inches	Strong brown (7.5YR 4/6) gravelly sand, single grain, loose, abrupt wavy boundary
C2	24-48 inches	Dark yellowish brown (10YR 4/6) sandy loam, massive structure, friable, abrupt wavy boundary
Ab	48-54 inches	Dark brown (10YR 3/3) sandy loam, massive, friable

VHB R3-3

A	0-2 inches	Dark brown (10YR 3/3) sandy loam; fine to medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	2-9 inches	Dark yellowish brown (10YR 4/6) loamy sand; weak medium subangular blocky structure, friable, common fine roots, abrupt smooth boundary
1C1	9-13 inches	Brown (7.5YR 5/4) sand; single grain, loose, friable, few medium roots, abrupt smooth boundary
2C1	13-44 inches	Dark yellowish brown (10YR 4/4) silt loam, massive structureless, few medium roots, abrupt wavy boundary
2C2	44-54 inches	Brown (7.5YR 5/4) silt loam with common fine yellow (7.5YR 6/8) redox concentrations, massive structureless, friable, no roots

VHB R4-1

A	0-3 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, many fine roots, abrupt smooth boundary
Bw1	3-29 inches	Dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure, friable, common fine roots, clear smooth boundary
C1	29-39 inches	Brown (10YR 4/3) silt loam with common coarse brownish yellow (10YR 6/8) redox concentrations; massive structureless, friable, no roots, abrupt wavy boundary
Ab	39-43 inches	Very dark brown (10YR 2/2) fine sandy loam; massive structureless, few medium roots, abrupt smooth boundary
Bwb	43-54 inches	Strong brown (7.5YR 4/6) fine sandy loam, massive structureless, friable, no roots

VHB R4-2

A	0-2 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, many fine roots, abrupt smooth boundary
Bw1	2-19 inches	Dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure, friable, common fine roots, clear smooth boundary
Bw2	19-28 inches	Yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure, few medium roots, clear smooth boundary
C1	28-41 inches	Dark yellowish brown (10YR 4/4) sandy loam; massive structureless, no roots, clear smooth boundary
C2	41-55 inches	Dark yellowish brown (10YR 4/4) fine sandy loam with common medium brownish yellow (10YR 6/8) redox concentrations; massive structureless, friable, no roots, abrupt wavy boundary
Ab	55-61 inches	Dark brown (10YR 3/3) sandy loam; massive structureless, friable, no roots

VHB R4-3

A	0-3 inches	Dark brown (10YR 3/3) loamy sand; medium granular structure, friable, many fine roots, abrupt smooth boundary
Bw1	3-23 inches	Dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure, friable, few medium roots, abrupt smooth boundary
Bw2	23-44 inches	Yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure, few medium roots, clear smooth boundary
B/C	44-49 inches	Strong brown (7.5YR 4/6) loamy sand; massive structureless, no roots, clear smooth boundary
C1	49-58 inches	Reddish brown (5YR 4/4) sand; single grain, loose, no roots

VHB R5-1

A	0-2 inches	Dark yellowish brown (10YR 4/3) fine sandy loam; medium granular structure, friable, many fine roots, smooth clear boundary
Ap	2-12 inches	Dark yellowish brown (10YR 4/3) fine sandy loam; weak fine to medium subangular blocky structure, friable, many fine roots, clear smooth boundary
Bw1	12-23 inches	Dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure, friable, few medium roots, abrupt smooth boundary
Ab	23-29 inches	Dark brown (7.5YR 3/4) sandy loam; massive structureless, friable, few medium roots, abrupt wavy boundary
Bwb	29-38 inches	Strong brown (7.5YR 4/6) sandy loam; massive structureless, friable, few large roots, clear smooth boundary
BC	38-55 inches	Brown (7.5YR 5/4) sandy loam, massive structureless, friable, no roots

VHB R5-2

A	0-2 inches	Dark brown (10YR 3/3) fine sandy loam; medium granular structure, friable, many fine roots, smooth clear boundary
Ap	2-11 inches	Dark yellowish brown (10YR 3/4) fine sandy loam; weak fine to medium subangular blocky structure, friable, many fine roots, abrupt wavy boundary
Bw1	11-21 inches	Strong brown (7.5YR 4/6) fine sandy loam; weak medium subangular blocky structure, friable, common medium roots, clear smooth boundary
Bw2	21-36 inches	Dark brown (10YR 5/3) silt loam; weak fine to medium subangular blocky structure, friable, few medium roots, clear smooth boundary
C	36-48 inches	Yellowish brown (10YR 5/4) silt loam; massive structureless, friable, no roots

VHB R5-2

A	0 to 1 inch	Very dark grayish brown (10YR 3/2) fine sandy loam; weak medium granular structure, friable, many fine roots, abrupt smooth boundary.
Bw1	1 to 12 inches	Dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable, common coarse roots, clear smooth boundary.
Bw2	12 to 23 inches	Dark yellowish brown (10YR 4/3) silt loam; weak medium subangular blocky structure, friable, common medium roots, abrupt smooth boundary.
2C1	23 to 33 inches	Brown (7.5YR 4/4) gravelly coarse sand; single grain, loose, few fine roots, abrupt smooth boundary.
3C2	33 to 52 inches	Brown (7.5YR 4/3) sand; single grain, loose, few medium roots.

VHB R6-1

A	0-3 inches	Dark brown (10YR 3/3) fine sandy loam; fine to medium granular structure, friable, many fine roots, clear smooth boundary
Ap	3-10 inches	Dark brown (10YR 3/3) fine sandy loam; weak medium platy structure, friable, many fine roots, clear smooth
Bw1	10-18 inches	Dark yellowish brown (10YR 4/6) fine sandy loam; weak medium subangular blocky structure, friable, few medium roots, abrupt wavy boundary
2C1	18-24 inches	Brown (7.5YR 4/4) gravelly loamy sand; massive structureless, friable, few fine roots, clear smooth boundary
3C2	24-34 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots, clear smooth boundary
3C3	34-80 inches	Reddish brown (5YR 4/4) sand, single grain, loose, no roots

VHB R6-2

A	0-4 inches	Dark brown (10YR 3/3) fine sandy loam; fine to medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	4-9 inches	Dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure, friable, many fine roots, abrupt smooth boundary
2C1	9-13 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots, clear smooth boundary
2C2	13-20 inches	Reddish brown (5YR 4/4) sand; single grain, loose, no roots, clear smooth boundary
2C3	20-54 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots, clear smooth boundary
3C3	54-81 inches	Reddish brown (5YR 4/4) sand; single grain, loose, no roots

VHB R6-3

Apd	0 to 10 inches	Dark brown (7.5YR 3/3) fine sandy loam; moderate medium platy structure, firm, common fine roots, abrupt smooth boundary.
Bw1	10 to 20 inches	Dark yellowish brown (10YR 4/6) silt loam; weak medium subangular blocky structure; friable, few medium roots, abrupt smooth boundary.
Apb	20 to 27 inches	Dark brown (7.5YR 3/3) fine sandy loam; massive, firm, no roots, abrupt smooth boundary.
Bwb1	27 to 37 inches	Yellowish brown (10YR 5/8) fine sandy loam; massive, firm, no roots, clear smooth boundary.
Bwb2	37 to 43 inches	Brown (7.5YR 4/4) loamy sand; single grain, loose, common medium roots, abrupt smooth boundary.
2C1	43 to 54 inches	Reddish brown (5YR 4/4) very gravelly coarse sand, single grain, loose, no roots, clear smooth boundary
2C2	54 to 87 inches	Reddish brown (5YR 4/4) coarse sand, single grain, loose, no roots.

Note 20 inches of fill over original surface, original surface horizons compacted and slowly permeable.

VHB M1-1

A	0-4 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, many fine roots, abrupt smooth boundary
Bw1	4-12 inches	Brown (10YR 4/3) silt loam with common fine strong brown (7.5YR 5/6) redox concentrations; weak medium subangular blocky structure, firm, common medium roots, smooth clear boundary
Bw2	12-21 inches	Brown (10YR 4/3) loamy sand with many coarse brownish yellow (10YR 6/8) redox concentrations and many coarse light yellowish brown (10 6/4) depletions; weak medium subangular blocky structure, firm, few large roots, abrupt smooth boundary
C1	21-52 inches	Strong brown (7.5YR 4/6) sand interbedded with brown (10YR 4/3) silt loam; single grain, loose no roots, abrupt smooth boundary
2C2	52-56 inches	Brown (10YR 4/3) silt loam; massive structureless, friable, no roots

VHB M1-2

A	0-9 inches	Dark yellowish brown (10YR 4/3) silt loam with fine many brownish yellow (10YR 6/8) redox concentrations; medium platy structure, firm, few fine roots, abrupt smooth boundary
C1	9-11 inches	Strong brown (7.5YR 4/6) loamy sand, massive structureless, friable, few medium roots, abrupt smooth boundary
C2	11-16 inches	Brown (7.5YR 4/4) sand interbedded with brown (10YR 4/3) silt loam; single grain, loose, no roots, abrupt smooth boundary
Bwb	16-22 inches	Dark yellowish brown (10YR 4/6) silt loam, massive structureless, no roots, abrupt smooth boundary
2C3	22-32 inches	Brown (7.5YR 4/4) gravelly loamy sand; massive structureless, friable, no roots
3C3	32-53 inches	Brown (10YR 4/3) silt loam with many coarse strong brown (7.5YR 5/6) redox concentrations and many coarse yellowish brown (10YR 5/6) depletions; massive structureless, friable, no roots

VHB M1-3

A	0-9 inches	Dark yellowish brown (10YR 4/3) silt loam with fine many brownish yellow (10YR 6/8) redox concentrations; medium platy structure, firm, many fine roots, abrupt smooth boundary
Bw1	9-22 inches	Dark yellowish brown (10YR 4/4) silt loam, weak medium subangular blocky structure, friable, few medium roots, smooth clear boundary
C1	22-34 inches	Dark yellowish brown (10YR 4/6) gravelly sandy loam with common coarse 10YR 5/8 redox concentrations; massive structureless, friable, no roots, clear smooth boundary
C2	34-58 inches	Dark yellowish brown (10YR 4/6) sandy loam; massive structureless, friable, no roots

VHB M2-1

A	0-7 inches	Dark yellowish brown (10YR 4/4) silt loam; medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	7-10 inches	Dark yellowish brown (10YR 4/4) silt loam, weak medium subangular blocky structure, friable, many medium roots, smooth clear boundary
Bw2	10-27 inches	Strong brown (7.5YR 4/6) sandy loam; weak medium subangular blocky structure, common medium roots, clear smooth boundary
C1	27-58 inches	Yellowish brown (10YR 5/6) silt loam; massive structureless, friable, no roots

VHB M2-2

A	0-3 inches	Dark brown (10YR 3/3) sandy loam; medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	3-23 inches	Dark yellowish brown (10YR 4/6) sandy loam, weak medium subangular blocky structure, friable, many medium roots, smooth clear boundary
C1	23-29 inches	Strong brown (7.5YR 4/6) sand; single grain, loose, no roots clear smooth boundary
C2	29-53 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots

VHB M2-3

A	0-4 inches	Dark brown (10YR 3/3) sandy loam; medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	4-26 inches	Dark yellowish brown (10YR 4/6) sandy loam, weak medium subangular blocky structure, friable, many medium roots, smooth clear boundary
C1	26-37 inches	Yellowish brown (10YR 5/6) silt loam; massive structureless, friable, common medium roots, abrupt smooth boundary
2C2	37-41 inches	Yellowish red (5YR 4/6) sand; single grain, loose, no roots clear smooth boundary
2C3	41-57 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots

VHB M3-1

A	0-6 inches	Dark brown (10YR 3/3) sandy loam; medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	6-28 inches	Brown (10YR 4/3) sandy loam, weak medium subangular blocky structure, friable, common fine roots, abrupt wavy boundary
Ab	28-34 inches	Dark brown (10YR 3/3) sandy loam; massive structureless, friable, few medium roots, abrupt smooth boundary
Bwb	34-40 inches	Dark yellowish brown (10YR 4/4) sandy loam; massive structureless, few medium roots, clear smooth boundary
C1	40-59 inches	Brown (7.5YR 4/4) sandy loam; massive structureless, no roots

*Old glass containers and metal throughout the A horizon

VHB M3-2

A	0-7 inches	Dark brown (10YR 3/3) loamy sand; medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	7-22 inches	Dark brown (7.5YR 3/4) sandy loam, weak medium subangular blocky structure, friable, common fine roots, abrupt wavy boundary
Bw2	22-36 inches	Dark yellowish brown (10YR 4/6) loamy sand; weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary
BC	36-49 inches	Yellowish brown (10YR 5/6) coarse loamy sand; massive structureless, few medium roots, clear smooth boundary
C1	40-55 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots

*Old glass containers and metal throughout the A horizon

VHB M3-3

A	0-8 inches	Dark brown (10YR 3/3) loamy sand; medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	8-21 inches	Dark yellowish brown (10YR 4/4) sandy loam, weak fine to medium subangular blocky structure, friable, common fine roots, abrupt smooth boundary
Bw2	21-31 inches	Dark yellowish brown (10YR 4/6) sandy loam; weak medium subangular blocky structure, friable, common medium roots, clear smooth boundary
BC	31-38 inches	Yellowish brown (10YR 5/6) coarse loamy sand; massive structureless, friable, few medium roots, abrupt smooth boundary
C1	38-53 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots

*Old glass containers and metal throughout the A horizon

VHB M4-1

A	0-2 inches	Dark brown (10YR 3/3) loamy sand; medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	2-15 inches	Brown (7.5YR 4/4) fine sandy loam, weak fine to medium subangular blocky structure, friable, common fine roots, abrupt smooth boundary
Bw2	15-23 inches	Yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary
C1	23-39 inches	Light yellowish brown (10YR 6/4) silt loam; massive structureless, friable, few medium roots, abrupt smooth boundary
C2	39-59 inches	Light yellowish brown (10YR 6/4) sandy loam with many coarse yellowish brown (7.5YR 5/8) redox concentrations; massive structureless, friable, no roots

*SHWT estimated at 39 inches

VHB M4-2

A1	0-3 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, many fine roots, clear smooth boundary
Ap	3-22 inches	Dark brown (10YR 3/3) silt loam; medium sub angular blocky structure, friable, many fine roots, abrupt smooth boundary
Bw1	22-30 inches	Brown (7.5YR 4/4) fine sandy loam, weak medium subangular blocky structure, friable, common fine roots, clear smooth boundary
Bw2	30-44 inches	Yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary
BC	44-54 inches	Yellowish brown (10YR 5/4) coarse sandy loam with few coarse brownish yellow (10YR 6/8) redox concentrations; massive structureless, firm, no roots, abrupt smooth boundary
C1	54-58 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots

*SHWT estimated at 44 inches

VHB M4-3

A1	0-3 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, many fine roots, clear smooth boundary
Ap	3-12 inches	Dark brown (10YR 3/3) silt loam; medium sub angular blocky structure, friable, many fine roots, abrupt smooth boundary
Bw1	12-21 inches	Dark yellowish brown (10YR 4/6) silt loam, weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary
Bw2	21-41 inches	Yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary
BC	41-48 inches	Yellowish brown (10YR 5/6) loamy sand with many coarse reddish yellow (7.5YR 6/8) redox concentrations; massive structureless, firm, no roots, abrupt smooth boundary
C1	48-55 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots

*SHWT estimated at 41 inches

VHB M5-1

A1	0-1 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, many fine roots, clear smooth boundary
A2	1-36 inches	Dark yellowish brown (10YR 3/4) silt loam; medium sub angular blocky structure, friable, common fine roots, clear smooth boundary
Bw1	36-50 inches	Dark yellowish brown (10YR 4/4) sandy loam; medium sub angular blocky structure, no roots, clear smooth boundary
Ab	50-58 inches	Dark brown (10YR 3/3) loamy sand; massive structureless, friable, no roots, abrupt smooth boundary
Bwb	58-66 inches	Dark yellowish brown (10YR 4/6) loamy sand; massive structureless, friable, no roots

VHB M5-2

A2	0-36 inches	Dark yellowish brown (10YR 4/4) silt loam; medium sub angular blocky structure, friable, common fine roots, clear smooth boundary
Bwb	36-55 inches	Dark yellowish brown (10YR 4/6) loamy sand; massive structureless, friable, no roots

VHB M5-3

A1	0-2 inches	Dark brown (10YR 3/3) loamy sand; medium granular structure, friable, many fine roots, clear smooth boundary
Ap	2-9 inches	Dark brown (10YR 3/3) loamy sand; medium sub angular blocky structure, friable, many fine roots, clear smooth boundary
Bw1	9-27 inches	Dark yellowish brown (10YR 4/6) silt loam; medium sub angular blocky structure, many large roots, clear smooth boundary
C1	27-43 inches	Dark yellowish brown (10YR4/6) sandy loam; massive structureless, friable, few medium roots, abrupt smooth boundary,
Ab	43-47 inches	Dark brown (7.5YR 3/4) sandy loam; massive structureless, friable, no roots, abrupt smooth boundary
Bwb	47-54	Strong brown (7.5YR 4/6) sandy loam massive structureless, friable, no roots

VHB M6-1

A1	0 to 2 inches	Brown (7.5YR 4/3) very fine sandy loam; moderate fine granular structure, friable, many fine roots, abrupt wavy boundary.
A2	2 to 16 inches	Dark brown (7.5YR 3/3) sandy loam; weak fine granular structure; friable, many fine roots, clear wavy boundary.
C	16 to 34 inches	Brown (7.5Y 4/4) loamy sand; weak fine subangular blocky structure, common medium roots, abrupt smooth boundary.
Ab	34 to 43 inches	Very dark brown (10YR 2/2) loamy sand; massive, friable, few medium roots, abrupt smooth boundary.
Bwb	43 to 49 inches	Brown (7.5YR 4/4) loamy sand; single grain, loose, no roots, gradual smooth boundary.
BC	49 to 64 inches	Brown (7.5YR 4/4) fine sand; single grain; loose.

Notes: 34 inches of sediment over old surface.

VHB M6-2

A	0 to 9 inches	Very dark brown (7.5YR 2.5/2) sandy loam; weak medium subangular blocky structure, friable, common fine roots, clear wavy boundary.
C1	9 to 22 inches	Reddish brown (7.5YR 4/4) loamy fine sand interbedded with loamy sand; massive; friable to single grain; loose, common medium roots, clear wavy boundary.
C2	22 to 30 inches	Reddish brown (5YR 3/4) loamy sand; single grain, loose; common medium roots, clear wavy boundary.
Bwb	30 to 48 inches	Reddish brown (5YR 4/4) loamy sand; single grain, loose, common medium roots, clear smooth boundary.
2C3	48 to 60 inches	Dark reddish brown (5YR 4/4) sand; single grain, loose, no roots, clear smooth boundary.

Notes: 30 inches of sediment over truncated old soil surface.

VHB M6-3

A	0 to 6 inches	Very dark brown (7.5YR 2.5/2) loamy fine sand; weak medium granular structure, very friable, many fine roots, clear wavy boundary.
Bw	5 to 21 inches	Brown (7.5YR 5/4) loamy sand; weak medium subangular blocky structure; very friable, many medium roots, clear smooth boundary.
BC	21 to 37 inches	Brown (7.5Y 4/4) loamy sand; weak fine subangular blocky structure, common medium roots, abrupt smooth boundary.
2C	37 to 64 inches	Brown (7.5YR 5/4) very gravelly coarse sand; single grain, loose.

VHB M7-1

A1	0 to 9 inches	Dark brown (7.5YR 3/3) fine sandy loam; weak medium granular structure, friable, many fine roots, clear smooth boundary.
A2	9 to 19 inches	Dark brown (7.5YR 3/4) fine sandy loam; weak medium granular structure; friable, common fine roots, clear wavy boundary.
C1	19 to 23 inches	Brown (7.5Y 4/4) loamy fine sand; weak medium subangular blocky structure to massive, friable, few medium roots, clear smooth boundary.
C2	23 to 37 inches	Brown (7.5YR 4/3) sandy loam; massive; friable, few medium roots, clear smooth boundary.
C3	37 to 42 inches	Brown (7.5YR 4/3) loamy sand; single grain, loose, no roots, gradual smooth boundary.
Ab1	42 to 47 inches	Dark brown (7.5YR 3/3) loamy sand; single grain; loose, clear smooth boundary.
Ab2	47 to 54 inches	Very dark gray (10YR 3/1) sandy loam, massive, friable, few medium roots, abrupt smooth boundary.
BwB	54 to 63 inches	Reddish brown (5YR 4/4) loamy fine sand, massive, friable, few medium roots

Notes: 42 inches of sediment over old surface.

VHB M7-2

A1	0 to 2 inches	Very dark brown (10YR 2/2) sandy loam; weak medium granular structure, friable, many fine roots, abrupt smooth boundary.
A2	2 to 14 inches	Dark brown (10YR 3/3) sandy loam; weak medium subangular blocky structure; friable, common coarse roots, clear wavy boundary.
C1	14 to 37 inches	Brown (7.5Y 4/4) sandy loam; massive, friable, few medium roots, clear smooth boundary.
Apb	37 to 44 inches	Black (2.5Y 2.5/1) sandy loam; massive; friable, common fine roots, abrupt smooth boundary.
Bwb	44 to 58 inches	Reddish brown (5YR 4/4) sandy loam; massive, friable, no roots.

Notes: 37 inches of sediment over old surface.

VHB M7-3

A1	0 to 3 inches	Very dark brown (7.5YR 2.5/2) fine sandy loam; moderate medium/fine granular structure, friable, many fine roots, abrupt smooth boundary.
A2	3 to 13 inches	Dark reddish brown (5YR 3/2) loamy fine sand; single grain; loose to weak medium subangular blocky, friable, common fine roots, clear wavy boundary.
C1	13 to 26 inches	Reddish brown (5Y 4/3) loamy fine sand; single grain loose to massive, very friable, few coarse roots, abrupt smooth boundary.
Ab	26 to 33 inches	Dark olive gray (5Y 3/2) loamy fine sand; massive; friable, common medium roots, clear smooth boundary.
Bwb	33 to 40 inches	Brown (7.5YR 4/4) loamy fine sand; massive, friable, common medium roots, clear smooth boundary.
C2	40 to 59 inches	Reddish brown (5YR 4/4) fine sand; single grain; loose. Notes: 26 inches of sediment over old surface.

VHB M8-1

A1	0 to 6 inches	Dark reddish brown (5YR 2.5/2) sandy loam; weak fine granular structure, friable, common fine roots, clear smooth boundary.
A2	6 to 21 inches	Dark brown (7.5YR 3/3) silt loam; weak medium subangular blocky structure; friable, common medium roots, clear smooth boundary.
Ab	21 to 31 inches	Very dark gray (7.5Y 3/1) loamy fine sand; weak medium subangular blocky structure, many medium roots, clear smooth boundary.
C1	31 to 43 inches	Very dark brown (7.5YR 3/4) loamy fine sand; massive; friable, few medium roots, clear smooth boundary.
Ab2	43 to 50 inches	Dark reddish brown (5YR 3/2) loamy fine sand; massive, friable, many fine roots, clear smooth boundary.
Bwb	50 to 62 inches	Reddish brown (5YR 4/4) loamy sand; massive; friable. Notes: 43 inches of sediment over old surface.

VHB M8-2

A	0 to 4 inches	Dark reddish brown (5YR 3/2) fine sandy loam; moderate fine granular structure, friable, many fine roots, clear smooth boundary.
AB	4 to 8 inches	Brown (7.5YR 4/3) silt loam; weak medium subangular blocky structure; friable, common fine roots, clear smooth boundary.
BC	8 to 28 inches	Brown (7.5Y 4/4) silt loam; weak coarse subangular blocky structure, friable, common coarse roots, abrupt smooth boundary.
Ab	28 to 38 inches	Dark brown (7.5YR 3/3) sandy loam; massive; friable, few medium roots, clear smooth boundary.
C	38 to 64 inches	Brown (7.5YR 4/3) loamy sand; single grain, loose, few roots, clear smooth boundary.
Ab	64 to 68 inches	Dark reddish brown (5YR 3/2) loamy fine sand; massive; friable. Notes: 64 inches of sediment over old surface.

VHB M8-3

A1	0 to 5 inches	Dark brown (7.5YR 3/3) silt loam; moderate fine granular structure, friable, common fine roots, abrupt smooth boundary.
A2	5 to 12 inches	Dark reddish brown (5YR 3/3) loamy sand; weak medium subangular blocky structure; very friable, common fine roots, abrupt smooth boundary.
C1	12 to 18 inches	Dark reddish brown (5Y 3/4) fine sand interbedded with sand; single grain, loose, common medium roots, clear smooth boundary.
Ab1	18 to 24 inches	Dark reddish brown (5YR 3/3) loamy sand; massive; very friable, many medium roots, clear smooth boundary.
C2	24 to 45 inches	Reddish brown (5YR 4/4) sand; single grain, loose, no roots, clear smooth boundary.
C3	45 to 55 inches	Yellowish red (5YR 4/6) interbedded loamy sand/sand/loamy fine sand; weak thin to medium geogenic platy structure, very friable, few roots, clear smooth boundary.
Ab2	55 to 60 inches	Dark brown (10YR 3/2) loamy sand; massive; friable, no roots.

Notes: 55 inches of sediment over old surface.

VHB M9-1

A	0 to 5 inches	Vert dark gray (7.5YR 3/1) fine sandy loam; moderate medium granular structure, friable, many fine roots, abrupt smooth boundary.
2C1	5 to 18 inches	Brown (7.5YR 4/4) very gravelly coarse sand; single grain; loose, common medium/coarse roots, abrupt smooth boundary.
C	18 to 60 inches	Reddish brown (5YR 4/4) fine sand; single grain, loose, no roots.

VHB M9-2

A	0 to 7 inches	Very dark brown (7.5YR 2.5/2) silt loam; weak fine granular structure, friable, many fine roots, abrupt smooth boundary.
A/C	7 to 15 inches	Very dark brown (7.5YR 2.5/2) silt loam and 7.5YR 3/3 fine sandy loam; massive; friable, many fine roots, abrupt smooth boundary.
C	15 to 31 inches	Brown (7.5Y 4/4) loamy sand; single grain, loose, common medium roots, abrupt smooth boundary.
Ab1	31 to 37 inches	Dark reddish brown (5YR 3/2) loamy fine sand; massive; friable, few coarse roots, clear smooth boundary.
C	37 to 45 inches	Reddish brown (5YR 4/4) loamy sand; weak coarse subangular blocky structure, friable, no roots, clear smooth boundary.
C	45 to 55 inches	Reddish brown (5YR 4/4) gravelly sand, single grain, loose, no roots.

Notes: 31 inches of sediment over old surface.

VHB M9-3

A1	0 to 8 inches	Dark brown (7.5YR 3/3) silt loam; weak medium granular structure, friable, many fine roots, abrupt smooth boundary.
C1	8 to 18 inches	Dark reddish brown (7.5YR 4/3) silt loam; massive; friable, many medium roots, abrupt smooth boundary.
A2	18 to 25 inches	Very dark brown (7.5YR 2.5/2) sand; single grain, loose, few medium roots, abrupt wavy boundary.
Ab1	25 to 37 inches	Reddish brown (5YR 4/4) loamy sand; massive; friable, common medium roots, abrupt wavy boundary.
Ab	37 to 45 inches	Dark reddish brown (5YR 3/3) sandy loam; massive, friable, few medium roots, abrupt wavy boundary.
Bwb	45 to 58 inches	Dark yellowish brown (10YR 4/6) loamy fine sand; massive, friable, no roots.

Notes: 37 inches of sediment over old surface.

7/27/20

VHB M10-1

A1	0 to 3 inches	Dark brown (7.5YR 3/3) silt loam; weak fine granular structure, friable, common fine roots, abrupt smooth boundary.
BC	3 to 8 inches	Yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure to massive; friable, common fine roots, abrupt smooth boundary.
2C1	8 to 21 inches	Reddish brown (7.5YR 4/4) and dark brown (7.5YR 3/3) loamy sand; massive, friable, few medium roots, clear smooth boundary.
3Ab	21 to 34 inches	Black (5YR 2.5/1) loamy sand; massive; friable, many medium roots, abrupt smooth boundary.
3C2	34 to 54 inches	Reddish brown (5YR 4/4) loamy sand; massive, friable, common medium roots, clear smooth boundary.
3C3	54 to 60 inches	Reddish brown (5YR 5/4) loamy sand; massive, friable, no roots.

Note: 21 inches of sediment over Hartford series

VHB M10-2

A1	0 to 1 inch	Black (5YR 2.5/1) silt loam; weak fine granular structure, friable, common fine roots, abrupt smooth boundary.
BC	1 to 8 inches	Yellowish brown (10YR 5/4) loamy very fine sand; weak fine subangular blocky structure; very friable, common medium roots, abrupt smooth boundary.
A/C	8 to 24 inches	Very dark brown (7.5YR 2.5/2) and reddish brown (5YR 4/4) loamy sand; massive, firm, common medium roots, clear smooth boundary.
Ab	24 to 32 inches	Dark reddish brown (5YR 2.5/2) loamy fine sand; massive; friable, many medium roots, abrupt smooth boundary.
3C2	32 to 51 inches	Reddish brown (5YR 4/4) loamy sand; massive, friable, common medium roots, clear smooth boundary.
3C3	51 to 60 inches	Brown (7.5YR 5/3) loamy sand; massive, friable, no roots.

Note 24 inches of sediment over Hartford series

VHB M10-2

A1	0 to 1 inch	Black (5YR 2.5/1) silt loam; weak fine granular structure, friable, common fine roots, abrupt smooth boundary.
CB	1 to 8 inches	Yellowish brown (10YR 5/4) loamy very fine sand; weak fine subangular blocky structure; very friable, common medium roots, abrupt smooth boundary.
A/C	8 to 24 inches	Very dark brown (7.5YR 2.5/2) and reddish brown (5YR 4/4) loamy sand; massive, firm, common medium roots, clear smooth boundary.
Ab	24 to 32 inches	Dark reddish brown (5YR 2.5/2) loamy fine sand; massive; friable, many medium roots, abrupt smooth boundary.
Bwb	32 to 51 inches	Reddish brown (5YR 4/4) loamy sand; massive, friable, few medium roots, abrupt smooth boundary.
2C	51 to 60 inches	Brown (7.5YR 5/3) very gravelly coarse sand; single grain, loose, no roots.

Note 24 inches of sediment over Hartford series

VHB M10-3

A1	0 to 1 inch	Very dark gray (7.5YR 3/1) silt loam; moderate fine granular structure, friable, many fine roots, abrupt smooth boundary.
CB	1 to 10 inches	Yellowish brown (10YR 5/4) silt loam; weak fine subangular blocky structure; very friable, few medium roots, abrupt smooth boundary.
A/C	10 to 18 inches	Very dark brown (7.5YR 2.5/2) and reddish brown (5YR 4/4) loamy sand; massive, friable, many medium roots, abrupt smooth boundary.
A/Eb	18 to 20 inches	Very dark brown (7.5YR 2.5/2) and 7.5YR 4/3 loamy fine sand; massive; friable, many medium roots, abrupt smooth boundary.
Bwb	20 to 36 inches	Reddish brown (5YR 4/4) loamy sand; single grain, loose to weak medium subangular blocky, few medium roots, clear smooth boundary.
C	36 to 58 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots.

Note 18 inches of sediment over Manchester series?

VHB M11-1

A1	0 to 7 inches	Dark brown (7.5YR 3/2) silt loam; weak fine granular structure, very friable, many fine roots, clear wavy boundary.
CB	7 to 14 inches	Dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable, many medium roots, clear smooth boundary.
AC	14 to 19 inches	Dark brown (7.5YR 3/2) loamy fine sand; weak fine subangular blocky structure, very friable, many medium roots, clear smooth boundary.
C/A	19 to 25 inches	Reddish brown (5YR 5/3) sand and dark brown 7.5YR 3/2 loamy fine sand mixed; massive; very friable, few medium roots, clear smooth boundary.
Ab	25 to 38 inches	Dusky red (2.5YR 3/2) loamy sand; massive, very friable, few medium roots, clear smooth boundary.
Bw	38 to 52 inches	Reddish brown (5YR 4/4) loamy sand; massive, very friable, no roots, clear smooth boundary.
2C	52 to 58 inches	Brown (7.5YR 5/3) very gravelly coarse sand, single grain, loose

Note 25 inches of sediment over Manchester series

VHB M11-2	0 to 7 inches	Very dark brown (7.5YR 2.5/2) loamy fine sand; weak medium granular structure, very friable, common fine roots, clear smooth boundary.
A		
BA	7 to 13 inches	Dark reddish brown (5YR 3/3) loamy sand; weak fine subangular blocky structure; friable, common medium roots, clear wavy boundary.
AC	13 to 24 inches	Reddish brown (5YR 4/4) loamy sand; weak medium subangular blocky structure, very friable, common medium roots, clear smooth boundary.
BC	24 to 42 inches	Brown (7.5YR 4/3) loamy sand; weak medium subangular blocky structure; very friable, few medium roots, clear smooth boundary.
2C1	42 to 51 inches	Brown (5YR 4/3) gravelly coarse sand; single grain, loose, no roots, abrupt smooth boundary.
3C2	51 to 54 inches	Reddish brown (5YR 4/3) sand; single grain, loose, no roots, abrupt smooth boundary.
4C3	52 to 58 inches	Brown (5YR 4/3) gravelly coarse sand, single grain, loose

Note 13 inches of sediment over Manchester series

VHB M11-3

A1	0 to 4 inches	Very dark brown (7.5YR 2.5/2) loamy fine sand; moderate fine granular structure, very friable, many fine roots, clear wavy boundary.
CB	4 to 7 inches	Dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable, many medium roots, clear smooth boundary.
AC	7 to 21 inches	Dark brown (7.5YR 3/2) loamy fine sand; weak fine subangular blocky structure, very friable, many medium roots, clear smooth boundary.
C/A	21 to 31 inches	Reddish brown (5YR 5/3) sand and dark brown 7.5YR 3/2 loamy fine sand mixed; massive; very friable, few medium roots, clear smooth boundary.
Ab	31 to 40 inches	Dusky red (2.5YR 3/2) loamy sand; massive, very friable , few medium roots, clear smooth boundary.
Bw	40 to 57 inches	Reddish brown (5YR 4/4) loamy sand; massive, very friable, no roots.

Note 25 inches of sediment over Hartford series

VHB M12-1

A1	0 to 1 inch	Dark brown (7.5YR 3/2) silt loam; moderate fine granular structure, friable, many fine roots, abrupt wavy boundary.
CB	1 to 21 inches	Yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure to massive; friable, few medium roots, clear smooth boundary.
C1	21 to 27 inches	Dark yellowish brown (10YR 4/4) fine sandy loam interbedded with loamy fine sand; weak fine/medium geogenic platy structure, very friable, few medium roots, clear smooth boundary.
Bw1b	27 to 39 inches	Dark yellowish brown (10YR 4/6) fine sandy loam; massive; friable, many coarse roots, clear smooth boundary.
Bw2b	39 to 56 inches	Yellowish brown (10YR 5/6) sandy loam; massive, very friable , few medium roots, abrupt smooth boundary.
A/Bb	56 to 60 inches	Very dark brown (10YR 2/2) and dark yellowish brown (10YR 4/6) fine sandy loam; massive, friable, no roots.

Note 25 inches of sediment over Hartford series

VHB M12-2

A	0 to 22 inches	Yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure, friable, common fine roots, clear smooth boundary.
C	22 to 36 inches	Brown (7.5YR 5/4) silt loam interbedded with sandy loam; weak medium subangular blocky structure to massive; friable, many coarse roots, clear smooth boundary.
B/A	36 to 53 inches	Dark yellowish brown (10YR 4/4) and very dark grayish brown(10YR 3/2) fine sandy loam; weak medium subangular blocky structure, friable, common medium roots, clear smooth boundary.
A/B	53 to 62 inches	Very dark grayish brown(10YR 3/2) and dark yellowish brown (10YR 4/4) fine sandy loam; massive; friable, few medium roots.

Note 53 inches of sediment over original soil surface.

VHB M12-3

A1	0 to 1 inch	Very dark brown (10YR 2/2) silt loam; moderate medium granular structure, friable, many fine roots, abrupt smooth boundary.
CB	1 to 28 inches	Yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky and weak fine platy structure; friable, many coarse roots, clear smooth boundary.
B/Ab	28 to 36 inches	Brown (7.5YR 4/4) and very dark brown (7.5YR 2.5/2) loamy sand; weak medium subangular blocky structure, very friable, many coarse roots, clear smooth boundary.
Bwb	36 to 53 inches	Brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; friable, many medium roots, clear smooth boundary.
BC	53 to 60 inches	Brown (7.5YR 4/4) loamy sand; massive, friable, no roots.

Note 28 inches of sediment over Merrimac series

VHB M13-1

A1	0 to 5 inches	Dark brown (7.5YR 3/2) fine sandy loam; weak medium granular structure, friable, many fine roots, clear smooth boundary.
A2	5 to 16 inches	Dark brown (7.5YR 3/3) silt loam; weak medium subangular blocky structure to massive; friable, few medium roots, clear smooth boundary.
A/B	16 to 30 inches	Dark brown (7.5YR 3/3) and brown (7.5YR 4/4) fine sandy loam interbedded with loamy sand, weak medium subangular blocky structure, friable, common medium roots, clear smooth boundary.
Ab	30 to 38 inches	Dark brown (7.5YR 3/2) fine sandy loam; massive; friable, common medium roots, clear smooth boundary.
Bwb	38 to 59 inches	Brown (10YR 4/4) sandy loam; massive, very friable, few medium roots.

Note 30 inches of sediment over Merrimac series?

VHB M13-2

A1	0 to 3 inches	Dark brown (7.5YR 3/2) fine sandy loam; moderate fine granular structure, friable, many fine roots, abrupt smooth boundary.
C1	3 to 10 inches	Dark brown (7.5YR 3/3) fine sandy loam; weak medium subangular blocky structure; friable, many fine roots, abrupt smooth boundary.
C2	10 to 13 inches	Brown (7.5YR 4/3) fine sand; single grain, loose, many medium roots, abrupt smooth boundary.
C3	13 to 30 inches	Brown (7.5YR 4/3) fine sandy loam/loamy fine sand; weak medium subangular blocky structure; friable, many medium roots, clear smooth boundary.
Bw2b	30 to 39 inches	Brown (7.5YR 4/3) sand; single grain., loose, abrupt smooth boundary.
Ab	39 to 47 inches	Dark brown (7.5YR 3/3) loamy sand; weak medium subangular blocky structure, friable, no roots, clear smooth boundary
Bwb	47 to 55 inches	Brown (7.5YR 4/3) loamy fine sand; weak medium subangular blocky structure, few fine roots.

Note: 39 inches of sediment over Manchester series

VHB M13-3

A1	0 to 13 inches	Dark brown (7.5YR 3/3) fine sandy loam; weak medium granular structure, friable, many fine roots, abrupt smooth boundary.
C1	13 to 28 inches	Brown (7.5YR 4/3) loamy sand; single grain; loose, few fine roots, abrupt wavy boundary.
C2	28 to 38 inches	Dark brown (7.5YR 3/3) fine sand; single grain, loose, many medium roots, abrupt smooth boundary.
C3	38 to 50 inches	Brown (7.5YR 4/3) sand; single grain, loose, no roots, abrupt wavy boundary.
Ab	50 to 61 inches	Dark brown (7.5YR 3/3) fine sandy loam; weak medium subangular blocky structure, friable, many medium roots.

Note: 50 inches of sediment over original soil surface.

VHB M14-1

A	0-2 inches	Dark brown (10YR 3/3) loamy sand; medium granular structure, friable, many fine roots, smooth clear boundary
Bw1	2-24 inches	Dark yellowish brown (10YR 4/4) fine sandy loam; medium subangular blocky structure, friable, common fine roots, clear smooth boundary
Bw2	24-38 inches	Dark yellowish brown (10YR 4/6) sandy loam; medium sub angular blocky structure, friable, few medium roots, abrupt smooth boundary
Ab	38-42 inches	Dark brown (10YR 3/3) sandy loam; massive structureless, friable, few medium roots, clear smooth boundary
Bwb	42-53 inches	Reddish brown (5YR 4/4) loamy sand; massive structureless, friable, no roots

VHB M14-2

A	0-2 inches	Dark yellowish brown (10YR 4/4) silt loam; medium granular structure, friable, many fine roots, smooth clear boundary
A2	2-31 inches	Dark yellowish brown (10YR 4/4) silt loam; medium subangular blocky structure, friable, common fine roots, clear smooth boundary
Ab	31-36 inches	Dark brown (10YR 3/3) sandy loam; massive structureless, friable, few medium roots, clear smooth boundary
Bw1	36-50 inches	Red (5YR 4/6) loamy sand; massive structureless, friable, few medium roots, clear smooth boundary
Bw2	50-56 inches	Red (5YR 5/6) loamy sand; massive structureless, friable, no roots

VHB M14-3

A	0-2 inches	Dark yellowish brown (10YR 4/4) fine sandy loam; medium granular structure, friable, many fine roots, smooth clear boundary
A2	2-11 inches	Dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure, friable, many fine roots, clear smooth boundary
Bw1	11-29 inches	Dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure, friable, few medium roots, abrupt wavy boundary
2C2	29-32 inches	Red (5YR 4/6) sand; single grain, loose, few medium roots, abrupt wavy boundary
3C3	32-46 inches	Strong brown (7.5YR 4/6) silt loam; massive structureless, friable, few medium roots, abrupt wavy boundary
4C4	46-60 inches	Reddish brown (10YR 4/4) sand, single grain, loose, no roots

VHB M15-1

A1	0-3 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, many fine roots, clear smooth boundary
A2	3-19 inches	Dark brown (10YR 3/3) silt loam; medium subangular blocky structure, friable, many fine roots, smooth clear boundary
Bw1	19-28 inches	Dark yellowish brown (10YR 4/6) silt loam; medium sub angular blocky structure, many fine roots, clear smooth boundary
C1	28-49 inches	Yellowish brown (10YR 5/4) silt loam; massive structureless, friable, common medium roots

VHB M15-2

A1	0-2 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, many fine roots, clear smooth boundary
A2	2-9 inches	Dark brown (10YR 3/3) silt loam; medium subangular blocky structure, friable, many fine roots, smooth clear boundary
Bw1	9-29 inches	Yellowish brown (10YR 5/4) silt loam; medium sub angular blocky structure, friable, many fine roots, abrupt smooth boundary
C1	29-32 inches	Reddish brown (5YR 4/4) sand; single grain, loose, no roots, abrupt smooth boundary
C2	32-56 inches	Dark yellowish brown (10YR 4/4) sandy loam; medium subangular blocky, friable, few medium roots

VHB M15-3

A1	0-18 inches	Brown (10YR 4/3) sandy loam; medium granular structure, friable, many fine roots, abrupt wavy boundary
A2	18-21 inches	Yellowish brown (10YR 5/4) silt loam; medium subangular blocky structure, friable, few medium roots, abrupt wavy boundary
Bw1	21-34 inches	Brown (7.5YR 4/3) fine sandy loam; medium sub angular blocky structure, friable, few medium roots, clear smooth boundary
Ab	34-37 inches	Dark brown (10YR 3/3) sandy loam; massive structureless, friable, few medium roots, clear smooth boundary
Bwb	37-52	Red (5YR 4/6) loamy sand; massive structureless, friable, few large roots, smooth clear boundary
C1	52-61	Red (5YR 5/6) loamy sand; massive structureless, friable no roots

*Bricks, wire and other objects throughout the A horizon\

VHB M16-1

A1	0-3 inches	Dark brown (10YR 3/3) fine sandy loam; medium granular structure, friable, many fine roots, clear smooth boundary
Ap	2-12 inches	Dark brown (10YR 3/3) fine sandy loam; medium granular structure, friable, many fine roots, abrupt smooth boundary
Bw1	12-18 inches	Dark yellowish brown (10YR 4/6) fine sandy loam; medium sub angular blocky structure, many fine roots, clear smooth boundary
Bw2	18-22 inches	Dark yellowish brown (10YR 3/4) silt loam; medium sub angular blocky structure, friable, few medium roots, abrupt smooth boundary
C1	22-45 inches	Yellowish brown (10YR 5/6) silt loam; massive structureless, friable, few large roots, abrupt smooth boundary
2C2	47-53 inches	Strong brown (7.5YR 5/6) sand; single grain, loose, no roots

VHB M16-2

A1	0-5 inches	Dark brown (10YR 3/3) silt loam; medium granular structure, friable, common fine roots, clear smooth boundary
Bw1	5-30 inches	Dark yellowish brown (10YR 4/6) fine sandy loam; medium granular structure, friable, common fine roots, clear smooth boundary
Bw2	30-56 inches	Yellowish brown (10YR 5/6) silt loam; medium sub angular blocky structure, friable, few large roots, abrupt smooth boundary
C1	56-60 inches	Yellowish red (5YR 4/6) sand; single grain, loose, no roots

VHB M16-3

A1	0-3 inches	Dark yellowish brown (10YR 3/4) sandy loam; medium granular structure, friable, common fine roots, clear smooth boundary
A2	2-22 inches	Dark yellowish brown (10YR 3/4) sandy loam; medium subangular structure, friable, common fine roots, abrupt wavy boundary
Ab	22-26 inches	Dark brown (10YR 3/3) silt loam; medium sub angular blocky structure, many fine roots, clear smooth boundary
Bw	26-40 inches	Brown (10YR 5/3) silt loam; medium sub angular blocky structure, friable, few medium roots, abrupt smooth boundary
C1	40-59 inches	Yellowish brown (10YR 5/6) silt loam; massive structureless, friable, few large roots

VHB M17-1

A	0 to 3 inches	Very dark grayish brown (10YR 3/2) fine sandy loam; moderate medium granular structure, friable, many fine roots, abrupt smooth boundary.
Ap	3 to 15 inches	Dark brown (10YR 3/3) fine sandy loam; weak fine subangular blocky structure; friable, few medium roots, abrupt smooth boundary.
Bw1	15 to 24 inches	Brown (7.5YR 4/3) loamy fine sand; weak medium subangular blocky structure, very friable, common medium roots, clear smooth boundary.
Bw2	24 to 36 inches	Reddish brown (5YR 4/4) loamy fine sand; weak medium subangular blocky structure, friable, common fine roots, gradual smooth boundary.
3C2	36 to 52 inches	Yellowish red (5YR 5/6) sand; single grain, loose, no roots.

VHB M17-2

Ap1	0 to 7 inches	Dark yellowish brown (10YR 3/4) fine sandy loam; moderate medium granular structure, friable, many fine roots, clear smooth boundary.
Ap2	7 to 17 inches	Dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable, common medium roots, abrupt smooth boundary.
B/A	17 to 21 inches	Strong brown (7.5YR 4/6) and dark yellowish brown (10YR 4/4) fine sandy loam; massive, friable, few fine roots, abrupt smooth boundary.
Bw	21 to 28 inches	Strong brown (7.5YR 4/6) fine sandy loam; weak medium subangular blocky structure, friable, common medium roots, abrupt smooth boundary.
BC	28 to 38 inches	Brown (7.5YR 4/4) loamy fine sand; single grain, loose, few fine roots, clear smooth boundary.
2C1	38 to 53 inches	Reddish brown (5YR 5/3) sand, single grain, loose, no roots.

VHB M18-1

A	0 to 2 inches	Very dark grayish brown (10YR 3/2) sandy loam; moderate medium granular structure, friable, many fine roots, abrupt smooth boundary.
Ap	2 to 6 inches	Dark brown (10YR 3/3) sandy loam; weak medium granular structure; friable, common medium roots, abrupt wavy boundary.
Bw	6 to 10 inches	Dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure, friable, common medium roots, abrupt wavy boundary.
2C1	10 to 34 inches	Reddish brown (5YR 4/4) gravelly coarse sand; single grain, loose, no roots, clear wavy boundary.
3C2	34 to 80 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots.

VHB M18-2

A	0 to 1 inch	Dark brown (10YR 3/3) fine sandy loam; weak medium granular structure, friable, common fine roots, abrupt smooth boundary.
Bw1	1 to 10 inches	Dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure, friable, common medium roots, clear smooth boundary.
Bw2	10 to 30 inches	Yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary.
BC	30 to 36 inches	Pale brown (10YR 6/3) silt loam; many coarse 7.5YR 4/4 redox concentrations, massive, friable, many coarse roots, abrupt smooth boundary.
2C1	36 to 41 inches	Yellowish red (5YR 4/6) gravelly sand; single grain, loose, few fine roots, clear smooth boundary.
3C2	41 to 49 inches	Reddish brown (5YR 4/4) gravelly sand, single grain, loose, few fine roots, clear smooth boundary.
4C3	49 to 70 inches	Reddish brown (5YR 5/3) sand, single grain, loose, no roots, clear smooth boundary.
5C4	70 to 89 inches	Reddish brown (5YR 5/3) loamy very fine sand, massive, very friable.

VHB M18-3

^A	0 to 11 inches	Dark yellowish brown (10YR 4/4) sandy loam; weak medium platy structure, friable, many fine roots, abrupt smooth boundary.
^C	11 to 16 inches	Dark reddish brown (5YR 3/3) coarse sand; single grain, loose, common fine roots, abrupt smooth boundary.
Bwb1	16 to 22 inches	Brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure, friable, few fine roots, clear wavy boundary.
Bwb2	22 to 31 inches	Strong brown (7.5YR 4/6) gravelly loamy sand; massive, friable, few fine roots, abrupt smooth boundary.
2C1	31 to 48 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots, clear wavy boundary.
3C2	48 to 65 inches	Reddish brown (5YR 4/4) gravelly coarse sand, single grain, loose, no roots clear smooth boundary.
4C3	65 to 92 inches	Reddish brown (5YR 4/3) fine sand, single grain loose.

VHB M19-1

A	0-2 inches	Dark brown (10YR 3/4) fine sandy loam; fine to medium granular structure, friable, many fine roots, clear smooth boundary
Bw1	2-19 inches	Dark yellowish brown (10YR 4/6) sandy loam; weak medium subangular blocky structure, friable, many medium roots, abrupt smooth boundary
2C1	19-45 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots, clear smooth boundary
2C2	45-60 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots, clear smooth boundary
2C3	60-96 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots

VHB M19-2

A	0-3 inches	Dark brown (10YR 3/4) loamy sand; fine granular structure, friable, many fine roots, clear smooth boundary
2C1	2-89 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots

VHB M19-3

A	0-2 inches	Dark brown (10YR 3/4) fine sandy loam; fine to medium granular structure, friable, many fine roots, clear smooth boundary
Ap	2-6 inches	Dark brown (10YR 3/4) silt loam; weak medium subangular blocky structure, friable, many fine roots, abrupt smooth boundary
Bw1	6-16 inches	Dark yellowish brown (10YR 4/6) fine sandy loam; weak medium subangular blocky structure, friable, many medium roots, abrupt smooth boundary
2C1	16-52 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots, clear smooth boundary
2C2	52-106 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots, clear smooth boundary

VHB M20-1

Ap1	0-2 inches	Dark brown (10YR 3/4) fine sandy loam; fine to medium granular structure, friable, many fine roots, clear smooth boundary
Ap2	2-7 inches	Dark brown (10YR 3/4) fine sandy loam; weak medium platy structure, friable, many fine roots, clear smooth boundary
Ap3	7-13 inches	Dark brown (10YR 3/4) fine sandy loam; weak medium subangular blocky structure, friable, few medium roots, abrupt wavy boundary
Bw1	13-32 inches	Brown (7.5YR 4/4) fine sandy loam; weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary
C1	32-46 inches	Yellowish brown (10YR 5/4) silt loam; massive structureless, friable, few medium roots, clear smooth boundary
C2	46-64 inches	Brown (10YR 5/3) silt loam with many coarse reddish yellow (7.5 YR 6/8) redox concentrations; massive structureless, friable, few large roots, clear smooth boundary
2C3	64-96 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots

*SHWT estimated at 46 inches

VHB M20-2

Ap1	0-12 inches	Dark brown (10YR 3/4) silt loam; medium platy structure, firm, many fine roots, clear smooth boundary
Ap2	12-23 inches	Dark brown (10YR 3/4) silt loam; weak medium platy structure, friable, common fine roots, abrupt wavy boundary
Bw1	23-34 inches	Dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure, friable, few large roots, clear smooth boundary
C1	34-50 inches	Yellowish brown (10YR 5/6) fine sandy loam; massive structureless, friable, few large roots, clear smooth boundary
C2	50-64 inches	Brown (10YR 5/3) silt loam with many coarse reddish yellow (7.5 YR 6/8) redox concentrations; massive structureless, friable, few medium roots, clear smooth boundary
2C3	64-99 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots

*SHWT estimated at 50 inches

VHB M20-3

Ap1	0-12 inches	Dark brown (10YR 3/3) fine sandy loam; fine to medium platy structure, firm, many fine roots, clear smooth boundary
Ap2	12-27 inches	Dark brown (10YR 3/3) fine sandy loam; weak medium subangular blocky structure, friable, many fine roots, abrupt wavy boundary
Bw1	27-41 inches	Strong brown (7.5YR 4/6) fine sandy loam; weak medium subangular blocky structure, friable, many large roots, clear smooth boundary
C1	41-69 inches	Pale brown (10YR 6/3) fine sandy loam with many coarse reddish yellow (7.5YR 6/8) redox concentrations; massive structureless, friable, few large roots, abrupt smooth boundary
2C2	69-97 inches	Reddish brown (5YR 4/4) sand; single grain, loose, no roots

M21-1

Ap1	0-3 inches	Dark brown (10YR 3/3) fine sandy loam; fine to medium platy structure, firm, many fine roots, clear smooth boundary
Ap2	3-16 inches	Dark yellowish brown (10YR 3/4) fine sandy loam; weak medium subangular blocky structure, friable, common fine roots, abrupt wavy boundary
Bw1	16-24 inches	Dark yellowish brown (10YR 4/6) fine sandy loam; weak medium subangular blocky structure, friable, few fine roots, abrupt smooth boundary
C1	24-29 inches	Reddish brown (5YR 5/4) gravelly sand; single grain, loose, no roots, clear smooth boundary
C2	29-91 inches	Reddish brown (5YR 5/4) sand; single grain, loose, no roots

M21-2

Ap1	0-5 inches	Dark brown (7.5YR 3/3) gravelly sandy loam; medium platy structure, firm, many fine roots, clear smooth boundary
Ap2	5-21 inches	Dark yellowish brown (10YR 3/4) loamy sand; weak medium subangular blocky structure, friable, common fine roots, abrupt wavy boundary
Bw1	21-31 inches	Yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary
C1	31-50 inches	Reddish brown (5YR 4/4) gravelly sand; single grain, loose, no roots, clear smooth boundary
C2	50-87 inches	Light reddish brown (5YR 6/4) sand; single grain, loose, no roots

M21-3

Ap1	0-9 inches	Dark brown (7.5YR 3/3) gravelly sandy loam; medium platy structure, firm, many fine roots, clear smooth boundary
Ap2	9-20 inches	Brown (7.5YR 4/3) sandy loam; weak medium subangular blocky structure, friable, many fine roots, abrupt wavy boundary
Bw1	20-39 inches	Dark yellowish brown (10YR 4/6) sandy loam; weak medium subangular blocky structure, friable, fine roots, clear smooth boundary
C1	39-92 inches	Light reddish brown (5YR 6/4) sand; single grain, loose, no roots

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **51.98** **Ksat: in/hr** **2.5** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** C1-1
Diameter of Hole(in): 3.5 **Water Column Height (in):** 4 **Boring Depth (in):** 27.5
Boring Conversion Factor (BCF): 1.65 **Head Conversion Factor (HCF):** 0.67
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
		Borehole diameter	
Texture		3.0 in	3.5 in
			4.0 in
Sands		0.09	0.107
Structured loams and clays		0.069	0.082
Unstructured loams and clays		0.04	0.048

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
	11:40:00	2.00	0.03333	15.2	14.3	0.9	2.222	1.65	0.67	0.90	0.048	3.2	10
		2.00	0.03333	14.3	13.5	0.8	2.500	1.65	0.67	1.01	0.048	2.9	9
		2.00	0.03333	13.5	12.7	0.8	2.500	1.65	0.67	1.01	0.048	2.9	9
		2.00	0.03333	12.7	11.8	0.9	2.222	1.65	0.67	0.90	0.048	3.2	10
		2.00	0.03333	11.8	11.2	0.6	3.333	1.65	0.67	1.35	0.048	2.1	6
		10.00	0.16667	11.2	7.3	3.9	2.564	1.65	0.67	1.04	0.048	2.8	8
		2.00	0.03333	7.3	6.6	0.7	2.857	1.65	0.67	1.15	0.048	2.5	7
		4.00	0.06667	6.6	5.2	1.4	2.857	1.65	0.67	1.15	0.048	2.5	7
		4.00	0.06667	5.2	3.8	1.4	2.857	1.65	0.67	1.15	0.048	2.5	7

STEADY STATE ARITHMETIC AVERAGE **1.15** **2.7** **8**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	70.88	Ksat: in/hr	6.4	LR:	gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS						
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		C1-2				
Diameter of Hole(in): 3				Water Column Height (in): 4				Boring Depth (in):		25				
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent				Head Conversion Factor (HCF):		0.67				
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)						
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter						
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture						
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in						
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands						
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124						
in a structured clay loam soil								Structured loams and clays						
								0.069 0.082 0.096						
								Unstructured loams and clays						
								0.04 0.048 0.057						
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading	
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf	
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10	
		dt				dh				(P*HCF)/BCF			Safety Factor	
	initial	next		initial	next		P			Adj P			of Ksat	
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf	
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12	
1:40:00		2.00	0.03333	11.3	10.1	1.2	1.667	2.25	0.67	0.49	0.09	10.9	33	
		2.25	0.03750	10.1	8.8	1.3	1.731	2.25	0.67	0.51	0.09	10.5	32	
		1.75	0.02917	8.8	7.9	0.9	1.944	2.25	0.67	0.58	0.09	9.4	28	
		2.00	0.03333	7.9	6.9	1.0	2.000	2.25	0.67	0.59	0.09	9.1	27	
		2.00	0.03333	6.9	6.1	0.8	2.500	2.25	0.67	0.74	0.09	7.3	22	
		2.00	0.03333	6.1	5.5	0.6	3.333	2.25	0.67	0.99	0.09	5.5	16	
		2.00	0.03333	5.5	4.8	0.7	2.857	2.25	0.67	0.85	0.09	6.4	19	
		2.00	0.03333	4.8	4.1	0.7	2.857	2.25	0.67	0.85	0.09	6.4	19	
		2.00	0.03333	4.1	3.4	0.7	2.857	2.25	0.67	0.85	0.09	6.4	19	
STEADY STATE ARITHMETIC AVERAGE										0.85		8.0	24	

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	miin/hr	150.43	Ksat: in/hr	6.0	LR:	gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS						
Soil Series: Enfield								Soil Horizon: Bw						
Diameter of Hole(in): 3								Water Column Height (in): 3.5						
Boring Conversion Factor (BCF): 2.25								Head Conversion Factor (HCF): 0.58						
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent!						
BCF of 4 in auger is 4.25 in diameter boring = 1								F Value (Radcliffe and West, 2000)						
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Borehole diameter						
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								Texture						
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								3.0 in						
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								4.0 in						
in a structured clay loam soil								Sands						
								0.09						
								0.107						
								0.124						
								0.069						
								0.082						
								0.048						
								0.057						
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading	
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf	
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10	
		dt				dh				(P*HCF)/BCF			Safety Factor	
	initial	next		initial	next		P			Adj P			of Ksat	
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf	
Example 0	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12	
2:20:00		2.00	0.03333	13.5	12.1	1.4	1.429	1.65	0.58	0.51	0.04	4.8	14	
		2.75	0.04583	12.1	10.1	2	1.375	2.25	0.58	0.36	0.04	6.7	20	
		1.25	0.02083	10.1	9.5	0.6	2.083	2.25	0.58	0.54	0.04	4.4	13	
		5.50	0.09167	9.5	5.9	3.6	1.528	2.25	0.58	0.40	0.04	6.1	18	
		1.50	0.02500	5.9	5.6	0.3	5.000	2.25	0.58	1.30	0.04	1.9	6	
		2.00	0.03333	5.6	4.3	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18	
		2.00	0.03333	4.3	3	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18	
		2.00	0.03333	3	1.7	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18	
STEADY STATE ARITHMETIC AVERAGE										0.40		5.2	16	

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	90.51	Ksat: in/hr	9.7	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: C2-1					
Diameter of Hole(in): 3.5				Water Column Height (in): 3.5				Boring Depth (in): 24					
Boring Conversion Factor (BCF): 1.65				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent					
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124					
in a structured clay loam soil								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
3:56:00		2.00	0.03333	12	8	4	0.500	1.65	0.58	0.18	0.107	36.3	109
		2.25	0.03750	8	4	4	0.563	1.65	0.58	0.20	0.107	32.3	97
		1.75	0.02917	4	0.4	3.6	0.486	1.65	0.58	0.17	0.107	37.4	112
		0.75	0.01250	0.4	0	0.4	1.875	1.65	0.58	0.66	0.107	9.7	29
STEADY STATE ARITHMETIC AVERAGE										0.66		28.9	87

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **101.25** **Ksat: in/hr** **10.8** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** C2-2
Diameter of Hole(in): 3 **Water Column Height (in):** 4 **Boring Depth (in):** 25
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.67
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next	in	P			Adj P			of Ksat
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
4:57:00		2.25	0.03750	10.2	8.7	1.5	1.500	2.25	0.67	0.44	0.107	14.4	43
		1.75	0.02917	8.7	7.5	1.2	1.458	2.25	0.67	0.43	0.107	14.9	44
		2.00	0.03333	7.5	6.3	1.2	1.667	2.25	0.67	0.49	0.107	13.0	39
		2.00	0.03333	6.3	5.3	1.0	2.000	2.25	0.67	0.59	0.107	10.8	32
		2.00	0.03333	5.3	4.3	1.0	2.000	2.25	0.67	0.59	0.107	10.8	32
		2.00	0.03333	4.3	3.3	1	2.000	2.25	0.67	0.59	0.107	10.8	32
		2.00	0.03333	3.3	2.3	1	2.000	2.25	0.67	0.59	0.107	10.8	32
		2.00	0.03333	2.3	1.3	1	2.000	2.25	0.67	0.59	0.107	10.8	32

STEADY STATE ARITHMETIC AVERAGE **0.59** **12.1** **36**

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr 101.25 **Ksat:** in/hr 10.8 **LR:** gdsf

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** C2-3
Diameter of Hole(in): 3 **Water Column Height (in):** 4 **Boring Depth (in):** 24
Head Conversion Factor (HCF): 0.67
Boring Conversion Factor (BCF): 2.25 **Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent**

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
4:21:00		2.00	0.03333	8.6	7.5	1.1	1.818	2.25	0.67	0.54	0.107	11.9	36
		2.00	0.03333	7.5	6.3	1.2	1.667	2.25	0.67	0.49	0.107	13.0	39
		2.00	0.03333	6.3	5.5	0.8	2.500	2.25	0.67	0.74	0.107	8.7	26
		2.00	0.03333	5.5	4.5	1.0	2.000	2.25	0.67	0.59	0.107	10.8	32
		2.00	0.03333	4.5	3.5	1.0	2.000	2.25	0.67	0.59	0.107	10.8	32
		2.00	0.03333	3.5	2.5	1	2.000	2.25	0.67	0.59	0.107	10.8	32
		2.00	0.03333	2.5	1.5	1	2.000	2.25	0.67	0.59	0.107	10.8	32

STEADY STATE ARITHMETIC AVERAGE **0.59** **11.0** **33**

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 0.00** **Ksat: in/hr 0.0** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** C3-1
Diameter of Hole(in): 4 **Water Column Height (in):** 4 **Boring Depth (in):** 63
Boring Conversion Factor (BCF): 1 **Head Conversion Factor (HCF):** 0.67
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
Borehole diameter			
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
	min	min		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
9:36:00		2.00	0.03333	16.2	16.2	0	0.000	1	0.67	0.00	0.057	0.0	0
		2.00	0.03333	16.2	16.2	0	0.000	1	0.67	0.00	0.057	0.0	0
		2.00	0.03333	16.2	16.2	0.0	0.000	1	0.67	0.00	0.057	0.0	0
		3.00	0.05000	16.2	16.2	0.0	0.000	1	0.67	0.00	0.057	0.0	0
		1.00	0.01667	16.2	16.2	0.0	0.000	1	0.67	0.00	0.057	0.0	0
		2.00	0.03333	16.2	16.2	0	0.000	1	0.67	0.00	0.057	0.0	0
		3.00	0.05000	16.2	16.2	0	0.000	1	0.67	0.00	0.057	0.0	0
		1.00	0.01667	16.2	16.2	0	0.000	1	0.67	0.00	0.057	0.0	0

STEADY STATE ARITHMETIC AVERAGE **0.00** **0.0** **0**

Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate: in/hr	20.25	Ksat: in/hr	1.8	LR: gdsf			
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS		Boring Number: C3-2					
Soil Series: Enfield			Soil Horizon Bw		Boring Depth (in): 50									
Diameter of Hole(in): 3			Water Column Height (in): 4		Head Conversion Factor (HCF): 0.67									
Boring Conversion Factor (BCF): 2.25			Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir							F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1							Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65							Texture			3.0 in		3.5 in		4.0 in
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86														
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm							Sands					0.09	0.107	0.124
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil							Structured loams and clays					0.069	0.082	0.096
							Unstructured loams and clays					0.04	0.048	0.057
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading	
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf	
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10	
		dt				dh				(P*HCF)/BCF			Safety Factor	
	initial	next		initial	next		P			Adj P			of Ksat	
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf	
<i>Example 08:00</i>	<i>8:45</i>	<i>45</i>	<i>0.75</i>	<i>14.5</i>	<i>14</i>	<i>0.5</i>	<i>90</i>	<i>1.65</i>	<i>1.166667</i>	<i>64</i>	<i>0.082</i>	<i>0.08</i>	<i>0.12</i>	
10:19:00		2.00	0.03333	12.2	12.2	0	0.000	2.25	0.67	0.00	0.09	0.0	0	
		3.00	0.05000	12.2	11.6	0.6	5.000	2.25	0.67	1.48	0.09	3.6	11	
		1.00	0.01667	11.6	11.4	0.2	5.000	2.25	0.67	1.48	0.09	3.6	11	
		2.00	0.03333	11.4	11.2	0.2	10.000	2.25	0.67	2.96	0.09	1.8	5	
		2.00	0.03333	11.2	11	0.2	10.000	2.25	0.67	2.96	0.09	1.8	5	
		2.00	0.03333	11	10.8	0.2	10.000	2.25	0.67	2.96	0.09	1.8	5	
STEADY STATE ARITHMETIC AVERAGE										2.96		2.6	8	

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	0.00	Ksat: in/hr	0.0	LR: gdsf	
Date: 7/2/2020 Operator: Whittier						Site: East Windsor CT, GPS							
Soil Series: Enfield		Soil Horizon: Bw		Boring Number: C3-3		Boring Depth (in): 48							
Diameter of Hole(in): 3		Water Column Height (in): 3		Head Conversion Factor (HCF): 0.50									
Boring Conversion Factor (BCF): 2.25		Design Loading Rate = $K_{sat} * 14.96 * \text{safety factor}$ of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								Sands					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Structured loams and clays					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Unstructured loams and clays					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
		min		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
10:50:00		2.00	0.03333	15.8	15.8	0	0.000	2.25	0.50	0.00	0.04	0.0	0
		2.00	0.03333	15.8	15.8	0	0.000	2.25	0.50	0.00	0.04	0.0	0
		2.00	0.03333	15.8	15.8	0.0	0.000	2.25	0.50	0.00	0.04	0.0	0
		2.00	0.03333	15.8	15.8	0.0	0.000	2.25	0.50	0.00	0.04	0.0	0
		2.00	0.03333	15.8	15.8	0	0.000	2.25	0.50	0.00	0.04	0.0	0
		2.00	0.03333	15.8	15.8	0	0.000	2.25	0.50	0.00	0.04	0.0	0
		2.00	0.03333	15.8	15.8	0	0.000	2.25	0.50	0.00	0.04	0.0	0
STEADY STATE ARITHMETIC AVERAGE										0.00		0.0	0

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	405.00	Ksat:	in/hr	36.5	LR:	gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield								Soil Horizon: Bw							
Diameter of Hole(in): 3								Boring Number: M1-1							
Boring Conversion Factor (BCF): 2.25								Boring Depth (in): 27.5							
Water Column Height (in): 3								Head Conversion Factor (HCF): 0.50							
Design Loading Rate = $K_{sat} * 14.96 * \text{safety factor of 0.05 to 0.5 system dependent}$															
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture							
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands							
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124							
in a structured clay loam soil								Structured loams and clays							
								0.069 0.082 0.096							
								Unstructured loams and clays							
								0.04 0.048 0.057							
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
12:36:00		0.50	0.00833	9	8	1	0.500	2.25	0.50	0.11	0.09	48.6	145		
		0.50	0.00833	8	7.1	0.9	0.556	2.25	0.50	0.12	0.09	43.7	131		
		0.50	0.00833	7.1	6.4	0.7	0.714	2.25	0.50	0.16	0.09	34.0	102		
		0.50	0.00833	6.4	5.5	0.9	0.556	2.25	0.50	0.12	0.09	43.7	131		
		0.50	0.00833	5.5	4.8	0.7	0.714	2.25	0.50	0.16	0.09	34.0	102		
		1.00	0.01667	4.8	3.4	1.4	0.714	2.25	0.50	0.16	0.09	34.0	102		
		1.00	0.01667	3.4	1.6	1.8	0.556	2.25	0.50	0.12	0.09	43.7	131		
		1.00	0.01667	1.6	0.1	1.5	0.667	2.25	0.50	0.15	0.09	36.5	109		
		0.20	0.00333	0.1	0	0.1	2.000	2.25	0.50	0.44	0.09	12.2	36		
STEADY STATE ARITHMETIC AVERAGE										0.15		36.7	110		

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **270.00** **Ksat: in/hr** **24.3** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M1-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3 **Boring Depth (in) :** 26.5
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.50
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
Borehole diameter			
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
12:56:00		1.00	0.01667	10.5	9.2	1.3	0.769	2.25	0.50	0.17	0.09	31.6	95
		1.00	0.01667	9.2	8	1.2	0.833	2.25	0.50	0.19	0.09	29.2	87
		1.00	0.01667	8	7	1.0	1.000	2.25	0.50	0.22	0.09	24.3	73
		1.00	0.01667	7	6	1.0	1.000	2.25	0.50	0.22	0.09	24.3	73
		1.00	0.01667	6	5	1.0	1.000	2.25	0.50	0.22	0.09	24.3	73
		1.00	0.01667	5	4	1	1.000	2.25	0.50	0.22	0.09	24.3	73
		1.00	0.01667	4	3	1	1.000	2.25	0.50	0.22	0.09	24.3	73
		2.00	0.03333	3	1	2	1.000	2.25	0.50	0.22	0.09	24.3	73
		1.00	0.01667	1	0	1	1.000	2.25	0.50	0.22	0.09	24.3	73

STEADY STATE ARITHMETIC AVERAGE **0.22** **25.7** **77**

Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate:	in/hr	13.50	Ksat:	in/hr	0.5	LR:	gdsf
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS							
Soil Series: Enfield			Soil Horizon: Bw				Boring Number:			M1-3				
Diameter of Hole(in): 3			Water Column Height (in): 3				Boring Depth (in):			27				
Boring Conversion Factor (BCF): 2.25			Head Conversion Factor (HCF): 0.50				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent							
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir							F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1							Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65							Texture							
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86							3.0 in 3.5 in 4.0 in							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm							Sands							
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil							0.09 0.107 0.124							
							Structured loams and clays							
							0.069 0.082 0.096							
							Unstructured loams and clays							
							0.04 0.048 0.057							
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading	
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf	
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10	
		dt				dh				(P*HCF)/BCF			Safety Factor	
	initial	next		initial	next		P			Adj P			of Ksat	
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf	
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12	
1:27:00		2.00	0.03333	11.3	11.1	0.2	10.000	2.25	0.50	2.22	0.04	1.1	3	
		2.00	0.03333	11.1	10.9	0.2	10.000	2.25	0.50	2.22	0.04	1.1	3	
		2.00	0.03333	10.9	10.7	0.2	10.000	2.25	0.50	2.22	0.04	1.1	3	
		2.00	0.03333	10.7	10.6	0.1	20.000	2.25	0.50	4.44	0.04	0.5	2	
		2.00	0.03333	10.6	10.5	0.1	20.000	2.25	0.50	4.44	0.04	0.5	2	
		2.50	0.04167	10.5	10.3	0.2	12.500	2.25	0.50	2.78	0.04	0.9	3	
		1.50	0.02500	10.3	10.2	0.1	15.000	2.25	0.50	3.33	0.04	0.7	2	
		2.00	0.03333	10.2	10.1	0.1	20.000	2.25	0.50	4.44	0.04	0.5	2	
		2.00	0.03333	10.1	10	0.1	20.000	2.25	0.50	4.44	0.04	0.5	2	
STEADY STATE ARITHMETIC AVERAGE										4.44		0.8	2	

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	254.57	Ksat: in/hr	10.2	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M2-1					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in): 26.5					
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = $K_{sat} * 14.96 * \text{safety factor of } 0.05 \text{ to } 0.5 \text{ system dependent}$					
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124					
in a structured clay loam soil								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Fctor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in					in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
2:27:00		2.00	0.03333	10.1	7.2	2.9	0.690	2.25	0.58	0.18	0.04	13.4	40
		1.00	0.01667	7.2	6.2	1	1.000	2.25	0.58	0.26	0.04	9.3	28
		1.00	0.01667	6.2	5.2	1.0	1.000	2.25	0.58	0.26	0.04	9.3	28
		1.00	0.01667	5.2	4.2	1.0	1.000	2.25	0.58	0.26	0.04	9.3	28
		1.00	0.01667	4.2	3.2	1.0	1.000	2.25	0.58	0.26	0.04	9.3	28
		1.00	0.01667	3.2	2.1	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
		1.00	0.01667	2.1	1	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
		0.88	0.01472	1	0	1	0.883	2.25	0.58	0.23	0.04	10.5	31
STEADY STATE ARITHMETIC AVERAGE										0.24		10.2	30

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **138.86** **Ksat: in/hr** **12.5** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M2-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 28
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
Borehole diameter			
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
	2:52:00	1.00	0.01667	10.8	9.9	0.9	1.111	2.25	0.58	0.29	0.09	18.7	56
		1.00	0.01667	9.9	9	0.9	1.111	2.25	0.58	0.29	0.09	18.7	56
		1.00	0.01667	9	8.4	0.6	1.667	2.25	0.58	0.43	0.09	12.5	37
		1.00	0.01667	8.4	7.7	0.7	1.429	2.25	0.58	0.37	0.09	14.6	44
		1.00	0.01667	7.7	7	0.7	1.429	2.25	0.58	0.37	0.09	14.6	44
		1.00	0.01667	7	6.3	0.7	1.429	2.25	0.58	0.37	0.09	14.6	44
		1.00	0.01667	6.3	5.7	0.6	1.667	2.25	0.58	0.43	0.09	12.5	37
		4.00	0.06667	5.7	3.3	2.4	1.667	2.25	0.58	0.43	0.09	12.5	37
		1.00	0.01667	3.3	2.7	0.6	1.667	2.25	0.58	0.43	0.09	12.5	37

STEADY STATE ARITHMETIC AVERAGE **0.43** **14.6** **44**

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr **162.00** **Ksat:** in/hr **6.5** **LR:** **gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M2-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 29
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
Borehole diameter			
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
	3:16:00	1.00	0.01667	8.7	7	1.7	0.588	2.25	0.58	0.15	0.04	15.7	47
		1.00	0.01667	7	6.2	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22
		1.00	0.01667	6.2	5.5	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19
		1.00	0.01667	5.5	4.7	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22
		1.00	0.01667	4.7	4.2	0.5	2.000	2.25	0.58	0.52	0.04	4.6	14
		3.00	0.05000	4.2	2	2.2	1.364	2.25	0.58	0.35	0.04	6.8	20
		1.00	0.01667	2	1.2	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22
		1.00	0.01667	1.2	0.5	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19
		0.60	0.01000	0.5	0	0.5	1.200	2.25	0.58	0.31	0.04	7.7	23

STEADY STATE ARITHMETIC AVERAGE **0.37** **7.8** **23**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	46.29	Ksat: in/hr	1.9	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M3-1					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in): 27					
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent					
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								0.09 0.107 0.124					
								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in					in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
9:34:00		2.00	0.03333	15.3	14.7	0.6	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	14.7	14.2	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	14.2	13.7	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	13.7	13.2	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	13.2	12.7	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	12.7	12.3	0.4	5.000	2.25	0.58	1.30	0.04	1.9	6
		2.00	0.03333	12.3	11.8	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		6.00	0.10000	11.8	10.6	1.2	5.000	2.25	0.58	1.30	0.04	1.9	6
		2.00	0.03333	10.6	10.2	0.4	5.000	2.25	0.58	1.30	0.04	1.9	6
STEADY STATE ARITHMETIC AVERAGE										1.30		2.2	7

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **81.00** **Ksat: in/hr** **7.3** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M3-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 26
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
10:29:00		2.00	0.03333	12.5	11.5	1	2.000	2.25	0.58	0.52	0.09	10.4	31
		2.00	0.03333	11.5	10.6	0.9	2.222	2.25	0.58	0.58	0.09	9.4	28
		2.00	0.03333	10.6	9.8	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	9.8	9	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	9	8.2	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	8.2	7.5	0.7	2.857	2.25	0.58	0.74	0.09	7.3	22
		2.00	0.03333	7.5	6.8	0.7	2.857	2.25	0.58	0.74	0.09	7.3	22
		8.00	0.13333	6.8	4	2.8	2.857	2.25	0.58	0.74	0.09	7.3	22
		2.00	0.03333	4	3.3	0.7	2.857	2.25	0.58	0.74	0.09	7.3	22

STEADY STATE ARITHMETIC AVERAGE **0.74** **8.2** **25**

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr **81.00** **Ksat:** in/hr **3.2** **LR:** gdsf

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M3-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 26
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
	11:16:00	2.00	0.03333	14.3	13.5	0.8	2.500	2.25	0.58	0.65	0.04	3.7	11
		2.00	0.03333	13.5	12.7	0.8	2.500	2.25	0.58	0.65	0.04	3.7	11
		2.00	0.03333	12.7	12.2	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	12.2	11.6	0.6	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	11.6	11	0.6	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	11	10.4	0.6	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	10.4	9.9	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		4.00	0.06667	9.9	8.7	1.2	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	8.7	8	0.7	2.857	2.25	0.58	0.74	0.04	3.2	10

STEADY STATE ARITHMETIC AVERAGE **0.74** **2.9** **9**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	57.86	Ksat: in/hr	2.3	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield			Soil Horizon: Bw			Boring Number: M4-1			Boring Depth (in): 25				
Diameter of Hole(in): 3			Water Column Height (in): 3.5			Head Conversion Factor (HCF): 0.58							
Boring Conversion Factor (BCF): 2.25			Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent										
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Structured loams and clays					
in a structured clay loam soil								Unstructured loams and clays					
								0.09 0.107 0.124					
								0.069 0.082 0.096					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
12:00:00		2.00	0.03333	14.3	13.7	0.6	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	13.7	13	0.7	2.857	2.25	0.58	0.74	0.04	3.2	10
		2.00	0.03333	13	12.5	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	12.5	12	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	12	11.5	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	11.5	11	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	11	10.5	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		6.00	0.10000	10.5	9	1.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	9	8.5	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
STEADY STATE ARITHMETIC AVERAGE										1.04		2.5	7

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **69.43** **Ksat: in/hr** **2.8** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M4-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 28
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
12:38:00		2.00	0.03333	15.3	14.5	0.8	2.500	2.25	0.58	0.65	0.04	3.7	11
		4.00	0.06667	14.5	13.3	1.2	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	13.3	12.8	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	12.8	12.2	0.6	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	12.2	11.7	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		2.00	0.03333	11.7	11.1	0.6	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	11.1	10.6	0.5	4.000	2.25	0.58	1.04	0.04	2.3	7
		4.00	0.06667	10.6	9.4	1.2	3.333	2.25	0.58	0.86	0.04	2.8	8
		2.00	0.03333	9.4	8.8	0.6	3.333	2.25	0.58	0.86	0.04	2.8	8

STEADY STATE ARITHMETIC AVERAGE **0.86** **2.7** **8**

Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate: in/hr 729.00			Ksat: in/hr 29.2		LR: gdsf	
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS						
Soil Series: Enfield				Soil Horizon: Bw			Boring Number:		M4-3				
Diameter of Hole(in): 3				Water Column Height (in): 4			Boring Depth (in):		28				
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.67			Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent						
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir							F Value (Radcliffe and West, 2000)						
BCF of 4 in auger is 4.25 in diameter boring = 1							Borehole diameter						
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65							Texture						
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86							3.0 in 3.5 in 4.0 in						
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm							Sands						
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes							Structured loams and clays						
in a structured clay loam soil							Unstructured loams and clays						
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
STEADY STATE ARITHMETIC AVERAGE										0.08		28.8	86

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	115.71	Ksat: in/hr	4.6	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield		Soil Horizon: Bw			Boring Number: M5-1		Boring Depth (in): 27						
Diameter of Hole(in): 3		Water Column Height (in): 3.5			Head Conversion Factor (HCF): 0.58								
Boring Conversion Factor (BCF): 2.25		Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124					
in a structured clay loam soil								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next	in	P			Adj P			of Ksat
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
2:09:00		2.00	0.03333	13	11.7	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	11.7	10.5	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	10.5	9.4	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	9.4	8.3	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	8.3	7.2	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	7.2	6.2	1	2.000	2.25	0.58	0.52	0.04	4.6	14
		8.00	0.13333	6.2	2.2	4	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	2.2	1.2	1	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	1.2	0.2	1	2.000	2.25	0.58	0.52	0.04	4.6	14
STEADY STATE ARITHMETIC AVERAGE										0.52		5.0	15

Percolation or Ksat Rates using Aardvark Soil Permeameter Perc Rate: **in/hr** **231.43** **Ksat: in/hr** **9.3** **LR: gdsf**

Date: **7/2/2020** Operator: Whittier Site: **East Windsor CT, GPS**
Soil Series: **Enfield** Soil Horizon: **Bw** Boring Number: **M5-2**
Diameter of Hole(in): **3** Water Column Height (in): **3.5** Head Conversion Factor (HCF): **0.58**
Boring Conversion Factor (BCF): **2.25** Design Loading Rate = **Ksat*14.96*safety factor of 0.05 to 0.5 system dependent**

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
BCF of 4 in auger is 4.25 in diameter boring = 1
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	<i>8:45</i>	<i>45</i>	<i>0.75</i>	<i>14.5</i>	<i>14</i>	<i>0.5</i>	<i>90</i>	<i>1.65</i>	<i>1.166667</i>	<i>64</i>	<i>0.082</i>	<i>0.08</i>	<i>0.12</i>
<i>2:24:00</i>		<i>2.00</i>	<i>0.03333</i>	<i>13.5</i>	<i>9.3</i>	<i>4.2</i>	<i>0.476</i>	<i>2.25</i>	<i>0.58</i>	<i>0.12</i>	<i>0.04</i>	<i>19.4</i>	<i>58</i>
		<i>2.00</i>	<i>0.03333</i>	<i>9.3</i>	<i>5.2</i>	<i>4.1</i>	<i>0.488</i>	<i>2.25</i>	<i>0.58</i>	<i>0.13</i>	<i>0.04</i>	<i>19.0</i>	<i>57</i>
		<i>2.00</i>	<i>0.03333</i>	<i>5.2</i>	<i>2.6</i>	<i>2.6</i>	<i>0.769</i>	<i>2.25</i>	<i>0.58</i>	<i>0.20</i>	<i>0.04</i>	<i>12.0</i>	<i>36</i>
		<i>2.00</i>	<i>0.03333</i>	<i>2.6</i>	<i>0.6</i>	<i>2.0</i>	<i>1.000</i>	<i>2.25</i>	<i>0.58</i>	<i>0.26</i>	<i>0.04</i>	<i>9.3</i>	<i>28</i>
		<i>0.75</i>	<i>0.01250</i>	<i>0.6</i>	<i>0</i>	<i>0.6</i>	<i>1.250</i>	<i>2.25</i>	<i>0.58</i>	<i>0.32</i>	<i>0.04</i>	<i>7.4</i>	<i>22</i>
STEADY STATE ARITHMETIC AVERAGE										0.26		13.4	40

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	393.43	Ksat:	in/hr	15.7	LR:	gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield			Soil Horizon: Bw					Boring Number: M5-3							
Diameter of Hole(in): 3			Water Column Height (in): 3.5			Boring Depth (in) : 27				Head Conversion Factor (HCF): 0.58					
Boring Conversion Factor (BCF): 2.25			Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent												
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture							
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands							
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124							
in a structured clay loam soil								Structured loams and clays							
								0.069 0.082 0.096							
								Unstructured loams and clays							
								0.04 0.048 0.057							
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next	hr	initial	next		P			Adj P			of Ksat		
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
<i>Example 08:00</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12		
	2:51:00	2.00	0.03333	14	10.3	3.7	0.541	2.25	0.58	0.14	0.04	17.1	51		
		2.00	0.03333	10.3	6.7	3.6	0.556	2.25	0.58	0.14	0.04	16.7	50		
		2.00	0.03333	6.7	3.4	3.3	0.606	2.25	0.58	0.16	0.04	15.3	46		
		2.00	0.03333	3.4	0	3.4	0.588	2.25	0.58	0.15	0.04	15.7	47		
STEADY STATE ARITHMETIC AVERAGE										0.15		16.2	48		

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 300.86** **Ksat: in/hr 27.1** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M6-1
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 27.5
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
Borehole diameter			
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next	in	P			Adj P		in/hr	of Ksat
	min	min		in	in	in	min/in					gdsf	
<i>Example 08:00</i>	<i>8:45</i>	<i>45</i>	<i>0.75</i>	<i>14.5</i>	<i>14</i>	<i>0.5</i>	<i>90</i>	<i>1.65</i>	<i>1.166667</i>	<i>64</i>	<i>0.082</i>	<i>0.08</i>	<i>0.12</i>
9:16:00		2.00	0.03333	10.6	7.9	2.7	0.741	2.25	0.58	0.19	0.09	28.1	84
		2.00	0.03333	7.9	5.3	2.6	0.769	2.25	0.58	0.20	0.09	27.1	81
		1.00	0.01667	5.3	4.3	1.0	1.000	2.25	0.58	0.26	0.09	20.8	62
		1.00	0.01667	4.3	3	1.3	0.769	2.25	0.58	0.20	0.09	27.1	81
		1.00	0.01667	3	1.8	1.2	0.833	2.25	0.58	0.22	0.09	25.0	75
		1.00	0.01667	1.8	0.5	1.3	0.769	2.25	0.58	0.20	0.09	27.1	81
		0.53	0.00889	0.5	0	0.5	1.067	2.25	0.58	0.28	0.09	19.5	58

STEADY STATE ARITHMETIC AVERAGE **0.20** **25.0** **75**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	166.63	Ksat: in/hr	15.0	LR: gdsf						
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS										
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M6-2										
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in): 25										
Boring Conversion Factor (BCF): 2.25								Head Conversion Factor (HCF): 0.58										
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent																		
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)										
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter										
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture			3.0 in		3.5 in		4.0 in			
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86																		
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					0.09		0.107		0.124	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Structured loams and clays					0.069		0.082		0.096	
in a structured clay loam soil								Unstructured loams and clays					0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading					
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf					
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10					
		dt				dh				(P*HCF)/BCF			Safety Factor					
	initial	next		initial	next		P			Adj P			of Ksat					
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf					
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12					
9:41:00		2.00	0.03333	11.9	10.1	1.8	1.111	2.25	0.58	0.29	0.09	18.7	56					
		1.00	0.01667	10.1	9.3	0.8	1.250	2.25	0.58	0.32	0.09	16.7	50					
		1.00	0.01667	9.3	8.4	0.9	1.111	2.25	0.58	0.29	0.09	18.7	56					
		2.00	0.03333	8.4	6	2.4	0.833	2.25	0.58	0.22	0.09	25.0	75					
		1.00	0.01667	6	5.4	0.6	1.667	2.25	0.58	0.43	0.09	12.5	37					
		3.00	0.05000	5.4	3.3	2.1	1.429	2.25	0.58	0.37	0.09	14.6	44					
		2.00	0.03333	3.3	1.7	1.6	1.250	2.25	0.58	0.32	0.09	16.7	50					
		1.50	0.02500	1.7	0.6	1.1	1.364	2.25	0.58	0.35	0.09	15.3	46					
		0.83	0.01389	0.6	0	0.6	1.389	2.25	0.58	0.36	0.09	15.0	45					
STEADY STATE ARITHMETIC AVERAGE										0.36		17.0	51					

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	231.43	Ksat:	in/hr	20.8	LR:	gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		M6-3					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in) :		27		Head Conversion Factor (HCF): 0.58			
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture							
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands							
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124							
in a structureded clay loam soil								Structured loams and clays							
								0.069 0.082 0.096							
								Unstructured loams and clays							
								0.04 0.048 0.057							
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next	hr	initial	next		P			Adj P			of Ksat		
		min		in	in	in	min/in			min/in		in/hr	gdsf		
<i>Example 08:00</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12		
10:12:00		2.00	0.03333	11.7	9.4	2.3	0.870	2.25	0.58	0.23	0.09	24.0	72		
		1.00	0.01667	9.4	8.3	1.1	0.909	2.25	0.58	0.24	0.09	22.9	69		
		1.00	0.01667	8.3	7.3	1.0	1.000	2.25	0.58	0.26	0.09	20.8	62		
		1.00	0.01667	7.3	6.3	1.0	1.000	2.25	0.58	0.26	0.09	20.8	62		
		1.00	0.01667	6.3	5.3	1.0	1.000	2.25	0.58	0.26	0.09	20.8	62		
		1.00	0.01667	5.3	4.2	1.1	0.909	2.25	0.58	0.24	0.09	22.9	69		
		1.00	0.01667	4.2	3.2	1	1.000	2.25	0.58	0.26	0.09	20.8	62		
		2.00	0.03333	3.2	1.2	2	1.000	2.25	0.58	0.26	0.09	20.8	62		
		1.00	0.01667	1.2	0.2	1	1.000	2.25	0.58	0.26	0.09	20.8	62		
STEADY STATE ARITHMETIC AVERAGE										0.26		21.6	65		

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	162.00	Ksat: in/hr	6.5	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M7-1		Boring Depth (in): 26.5			
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Head Conversion Factor (HCF): 0.58					
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent									
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								0.09 0.107 0.124					
								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
10:57:00		2.00	0.03333	13.1	11.4	1.7	1.176	2.25	0.58	0.31	0.04	7.9	24
		1.00	0.01667	11.4	10.5	0.9	1.111	2.25	0.58	0.29	0.04	8.3	25
		1.00	0.01667	10.5	9.9	0.6	1.667	2.25	0.58	0.43	0.04	5.6	17
		3.00	0.05000	9.9	7.5	2.4	1.250	2.25	0.58	0.32	0.04	7.4	22
		3.00	0.05000	7.5	5.4	2.1	1.429	2.25	0.58	0.37	0.04	6.5	19
		1.00	0.01667	5.4	4.8	0.6	1.667	2.25	0.58	0.43	0.04	5.6	17
		1.00	0.01667	4.8	4	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22
		3.00	0.05000	4	1.9	2.1	1.429	2.25	0.58	0.37	0.04	6.5	19
		1.00	0.01667	1.9	1.2	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19
STEADY STATE ARITHMETIC AVERAGE										0.37		6.8	20

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **162.00** **Ksat: in/hr** **6.5** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M7-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 27
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
11:26:00		2.00	0.03333	11.6	9.9	1.7	1.176	2.25	0.58	0.31	0.04	7.9	24
		1.00	0.01667	9.9	9.2	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19
		3.00	0.05000	9.2	7	2.2	1.364	2.25	0.58	0.35	0.04	6.8	20
		1.00	0.01667	7	6.4	0.6	1.667	2.25	0.58	0.43	0.04	5.6	17
		1.00	0.01667	6.4	5.7	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19
		1.00	0.01667	5.7	5.1	0.6	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	5.1	3.7	1.4	1.429	2.25	0.58	0.37	0.04	6.5	19
		1.00	0.01667	3.7	3	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19
		1.00	0.01667	3	2.3	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19

STEADY STATE ARITHMETIC AVERAGE **0.37** **6.5** **19**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	185.14	Ksat:	in/hr	16.7	LR:	gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		M7-3					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in) :		27		Head Conversion Factor (HCF): 0.58			
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture							
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands							
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124							
in a structured clay loam soil								Structured loams and clays							
								0.069 0.082 0.096							
								Unstructured loams and clays							
								0.04 0.048 0.057							
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next	hr	initial	next		P			Adj P			of Ksat		
		min		in	in	in	min/in			min/in		in/hr	gdsf		
<i>Example 08:00</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12		
11:49:00		2.50	0.04167	13.9	11.5	2.4	1.042	2.25	0.58	0.27	0.09	20.0	60		
		0.50	0.00833	11.5	11	0.5	1.000	2.25	0.58	0.26	0.09	20.8	62		
		1.00	0.01667	11	10.2	0.8	1.250	2.25	0.58	0.32	0.09	16.7	50		
		1.00	0.01667	10.2	9.4	0.8	1.250	2.25	0.58	0.32	0.09	16.7	50		
		1.00	0.01667	9.4	8.6	0.8	1.250	2.25	0.58	0.32	0.09	16.7	50		
		1.50	0.02500	8.6	7.3	1.3	1.154	2.25	0.58	0.30	0.09	18.1	54		
		0.50	0.00833	7.3	7	0.3	1.667	2.25	0.58	0.43	0.09	12.5	37		
		4.00	0.06667	7	3.8	3.2	1.250	2.25	0.58	0.32	0.09	16.7	50		
		1.00	0.01667	3.8	3	0.8	1.250	2.25	0.58	0.32	0.09	16.7	50		
STEADY STATE ARITHMETIC AVERAGE										0.32		17.2	51		

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	34.71	Ksat: in/hr	3.1	LR: gdsf		
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield								Soil Horizon: Bw		Boring Number: M8-1		Boring Depth (in): 27.5			
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Head Conversion Factor (HCF): 0.58							
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture		3.0 in		3.5 in		4.0 in	
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86															
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands		0.09		0.107		0.124	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Structured loams and clays		0.069		0.082		0.096	
								Unstructured loams and clays		0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
1:00:00		2.00	0.03333	14.8	14.5	0.3	6.667	2.25	0.58	1.73	0.09	3.1	9		
		2.00	0.03333	14.5	14.1	0.4	5.000	2.25	0.58	1.30	0.09	4.2	12		
		2.50	0.04167	14.1	13.7	0.4	6.250	2.25	0.58	1.62	0.09	3.3	10		
		1.50	0.02500	13.7	13.5	0.2	7.500	2.25	0.58	1.94	0.09	2.8	8		
		2.00	0.03333	13.5	13.1	0.4	5.000	2.25	0.58	1.30	0.09	4.2	12		
		4.00	0.06667	13.1	12.5	0.6	6.667	2.25	0.58	1.73	0.09	3.1	9		
		2.00	0.03333	12.5	12.3	0.2	10.000	2.25	0.58	2.59	0.09	2.1	6		
		14.00	0.23333	12.3	10.2	2.1	6.667	2.25	0.58	1.73	0.09	3.1	9		
		2.00	0.03333	10.2	9.9	0.3	6.667	2.25	0.58	1.73	0.09	3.1	9		
STEADY STATE ARITHMETIC AVERAGE										1.73		3.2	10		

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	23.14	Ksat: in/hr	0.9	LR: gdsf
Date: 7/2/2020 Operator: Whittier Soil Series: Enfield Soil Horizon: Bw Diameter of Hole(in): 3 Water Column Height (in): 3.5 Head Conversion Factor (HCF): 0.58 Boring Conversion Factor (BCF): 2.25 Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent								Site: East Windsor CT, GPS		Boring Number: M8-2		Boring Depth (in): 25	
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir BCF of 4 in auger is 4.25 in diameter boring = 1 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structureded clay loam soil								F Value (Radcliffe and West, 2000)			Borehole diameter		
								Texture			3.0 in	3.5 in	4.0 in
								Sands			0.09	0.107	0.124
								Structured loams and clays			0.069	0.082	0.096
								Unstructured loams and clays			0.04	0.048	0.057
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:0	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
1:19:00		2.00	0.03333	11.3	9.3	2	1.000	2.25	0.58	0.26	0.04	9.3	28
		2.00	0.03333	9.3	9.3	0	0.000	2.25	0.58	0.00	0.04	0.0	0
		2.00	0.03333	9.3	9.2	0.1	20.000	2.25	0.58	5.19	0.04	0.5	1
		2.00	0.03333	9.2	8.9	0.3	6.667	2.25	0.58	1.73	0.04	1.4	4
		2.00	0.03333	8.9	8.6	0.3	6.667	2.25	0.58	1.73	0.04	1.4	4
		2.00	0.03333	8.6	8.4	0.2	10.000	2.25	0.58	2.59	0.04	0.9	3
		2.00	0.03333	8.4	8.2	0.2	10.000	2.25	0.58	2.59	0.04	0.9	3
		10.00	0.16667	8.2	7.2	1	10.000	2.25	0.58	2.59	0.04	0.9	3
		2.00	0.03333	7.2	7	0.2	10.000	2.25	0.58	2.59	0.04	0.9	3
STEADY STATE ARITHMETIC AVERAGE										2.59		1.8	5

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	370.29	Ksat: in/hr	33.3	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M9-1					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in): 25					
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent					
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								0.09 0.107 0.124					
								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next	in	P			Adj P		in/hr	of Ksat
	min	min		in	in	in	min/in					gdsf	
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
2:43:00		1.00	0.01667	13	11.3	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	11.3	9.7	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	9.7	8	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	8	6.4	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	6.4	4.9	1.5	0.667	2.25	0.58	0.17	0.09	31.2	93
		1.00	0.01667	4.9	3.3	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	3.3	1.7	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	1.7	0.1	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
STEADY STATE ARITHMETIC AVERAGE										0.16		33.6	100

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **462.86** **Ksat: in/hr** **41.7** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M9-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 26
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
3:00:00		1.00	0.01667	13	10.8	2.2	0.455	2.25	0.58	0.12	0.09	45.8	137
		1.00	0.01667	10.8	9	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112
		1.00	0.01667	9	7	2.0	0.500	2.25	0.58	0.13	0.09	41.7	125
		1.00	0.01667	7	5	2.0	0.500	2.25	0.58	0.13	0.09	41.7	125
		1.00	0.01667	5	3	2.0	0.500	2.25	0.58	0.13	0.09	41.7	125
		1.00	0.01667	3	1	2	0.500	2.25	0.58	0.13	0.09	41.7	125
		0.50	0.00833	1	0	1	0.500	2.25	0.58	0.13	0.09	41.7	125

STEADY STATE ARITHMETIC AVERAGE **0.13** **41.7** **125**

Percolation or Ksat Rates using Aardvark Soil Permeameter Perc Rate: in/hr 393.43 Ksat: in/hr 35.4 LR: gdsf

Date: 7/2/2020 Operator: Whittier Site: East Windsor CT, GPS
 Soil Series: Enfield Soil Horizon: Bw Boring Number: M9-3
 Diameter of Hole(in): 3 Water Column Height (in): 3.5 Boring Depth (in): 28
 Boring Conversion Factor (BCF): 2.25 Head Conversion Factor (HCF): 0.58
 Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
Borehole diameter			
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
		min		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
3:21:00		1.00	0.01667	14	11.9	2.1	0.476	2.25	0.58	0.12	0.09	43.7	131
		1.00	0.01667	11.9	10.4	1.5	0.667	2.25	0.58	0.17	0.09	31.2	93
		1.00	0.01667	10.4	8.4	2.0	0.500	2.25	0.58	0.13	0.09	41.7	125
		1.00	0.01667	8.4	6.8	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	6.8	5.1	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	5.1	3.4	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	3.4	1.7	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		0.88	0.01472	1.7	0	1.7	0.520	2.25	0.58	0.13	0.09	40.1	120

STEADY STATE ARITHMETIC AVERAGE 0.15 37.0 111

Percolation or Ksat Rates using Aardvark Soil Permeameter						Perc Rate: in/hr		300.86	Ksat: in/hr	27.1	LR: gdsf
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Date: 7/2/2020	Operator: Whittier	Site: East Windsor CT, GPS					
Soil Series: Enfield	Soil Horizon: Bw	Boring Number: M10-1					
Diameter of Hole(in): 3	Water Column Height (in): 3.5	Boring Depth (in): 25					
Boring Conversion Factor (BCF): 2.25	Head Conversion Factor (HCF): 0.58						
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent							

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir					F Value (Radcliffe and West, 2000)		
BCF of 4 in auger is 4.25 in diameter boring = 1					Borehole diameter		
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65					Texture		
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86					3.0 in 3.5 in 4.0 in		
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm					Sands		
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil					0.09 0.107 0.124		
					Structured loams and clays		
					0.069 0.082 0.096		
					Unstructured loams and clays		
					0.04 0.048 0.057		

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation Rate (min/in)	BCF	HCF	Percolation Rate	F value	Ksat	Design Loading Rate gdsf
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
	ti	t+1	(ti+1)-ti	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in					in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
7:50:00		1.00	0.01667	9	7.6	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	7.6	6.4	1.2	0.833	2.25	0.58	0.22	0.09	25.0	75
		1.00	0.01667	6.4	5.3	1.1	0.909	2.25	0.58	0.24	0.09	22.9	69
		1.00	0.01667	5.3	4.1	1.2	0.833	2.25	0.58	0.22	0.09	25.0	75
		1.00	0.01667	4.1	2.9	1.2	0.833	2.25	0.58	0.22	0.09	25.0	75
		1.00	0.01667	2.9	1.5	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	1.5	0.2	1.3	0.769	2.25	0.58	0.20	0.09	27.1	81

STEADY STATE ARITHMETIC AVERAGE										0.20		26.2	78
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Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **150.43** **Ksat: in/hr** **13.5** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M10-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 26.5
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
8:05:00		2.00	0.03333	13.8	12.1	1.7	1.176	2.25	0.58	0.31	0.09	17.7	53
		2.00	0.03333	12.1	10.5	1.6	1.250	2.25	0.58	0.32	0.09	16.7	50
		2.00	0.03333	10.5	9.1	1.4	1.429	2.25	0.58	0.37	0.09	14.6	44
		2.00	0.03333	9.1	7.6	1.5	1.333	2.25	0.58	0.35	0.09	15.6	47
		2.00	0.03333	7.6	6.3	1.3	1.538	2.25	0.58	0.40	0.09	13.5	41
		2.00	0.03333	6.3	5	1.3	1.538	2.25	0.58	0.40	0.09	13.5	41
		2.00	0.03333	5	3.6	1.4	1.429	2.25	0.58	0.37	0.09	14.6	44
		4.00	0.06667	3.6	1	2.6	1.538	2.25	0.58	0.40	0.09	13.5	41
		1.23	0.02056	1	0	1	1.233	2.25	0.58	0.32	0.107	20.1	60
STEADY STATE ARITHMETIC AVERAGE										0.40		15.5	46

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	393.43	Ksat: in/hr	35.4	LR: gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		M10-3			
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in) :		26			
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent					
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124					
in a structured clay loam soil								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
		min		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:00</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
8:48:00		1.00	0.01667	11.3	9.3	2	0.500	2.25	0.58	0.13	0.09	41.7	125
		1.00	0.01667	9.3	7.6	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	7.6	5.9	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	5.9	4.2	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	4.2	2.5	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	2.5	0.8	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		0.68	0.01139	0.8	0	0.8	0.854	2.25	0.58	0.22	0.09	24.4	73
STEADY STATE ARITHMETIC AVERAGE										0.15		34.7	104

Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate: in/hr	92.57	Ksat: in/hr	8.3	LR: gdsf		
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS						
Soil Series: Enfield			Soil Horizon: Bw		Boring Number: M11-1		Boring Depth (in): 24						
Diameter of Hole(in): 3			Water Column Height (in): 3.5		Head Conversion Factor (HCF): 0.58								
Boring Conversion Factor (BCF): 2.25			Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent										
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir							F Value (Radcliffe and West, 2000)						
BCF of 4 in auger is 4.25 in diameter boring = 1							Borehole diameter						
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65							Texture						
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86							3.0 in 3.5 in 4.0 in						
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm							Sands						
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil							Structured loams and clays						
							Unstructured loams and clays						
							0.09 0.107 0.124						
							0.069 0.082 0.096						
							0.04 0.048 0.057						
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
9:31:00		2.00	0.03333	12.5	11.4	1.1	1.818	2.25	0.58	0.47	0.09	11.5	34
		2.00	0.03333	11.4	10.4	1	2.000	2.25	0.58	0.52	0.09	10.4	31
		2.00	0.03333	10.4	9.5	0.9	2.222	2.25	0.58	0.58	0.09	9.4	28
		2.00	0.03333	9.5	8.7	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	8.7	7.9	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	7.9	7.1	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		4.00	0.06667	7.1	5.5	1.6	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	5.5	4.7	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	4.7	3.9	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
STEADY STATE ARITHMETIC AVERAGE										0.65		9.0	27

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **231.43** **Ksat: in/hr** **20.8** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M11-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in) :** 26.5
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
10:24:00		2.00	0.03333	12.5	10	2.5	0.800	2.25	0.58	0.21	0.09	26.0	78
		1.00	0.01667	10	8.7	1.3	0.769	2.25	0.58	0.20	0.09	27.1	81
		1.00	0.01667	8.7	7.6	1.1	0.909	2.25	0.58	0.24	0.09	22.9	69
		1.00	0.01667	7.6	6.5	1.1	0.909	2.25	0.58	0.24	0.09	22.9	69
		2.00	0.03333	6.5	4.5	2.0	1.000	2.25	0.58	0.26	0.09	20.8	62
		1.00	0.01667	4.5	3.5	1	1.000	2.25	0.58	0.26	0.09	20.8	62
		1.00	0.01667	3.5	2.5	1	1.000	2.25	0.58	0.26	0.09	20.8	62
		1.00	0.01667	2.5	1.5	1	1.000	2.25	0.58	0.26	0.09	20.8	62
		1.00	0.01667	1.5	0.5	1	1.000	2.25	0.58	0.26	0.09	20.8	62

STEADY STATE ARITHMETIC AVERAGE **0.26** **22.6** **68**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	231.43	Ksat: in/hr	20.8	LR:	gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS						
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		M11-3				
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in):		27				
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent						
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)						
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter						
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture						
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in						
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands 0.09 0.107 0.124						
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structureded clay loam soil								Structured loams and clays 0.069 0.082 0.096						
								Unstructured loams and clays 0.04 0.048 0.057						
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading	
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf	
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10	
		dt				dh				(P*HCF)/BCF			Safety Factor	
	initial	next	hr	initial	next		P			Adj P			of Ksat	
		min		in	in	in	min/in			min/in		in/hr	gdsf	
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12	
10:01:00		2.00	0.03333	10.9	8.7	2.2	0.909	2.25	0.58	0.24	0.09	22.9	69	
		2.00	0.03333	8.7	6.6	2.1	0.952	2.25	0.58	0.25	0.09	21.9	65	
		1.00	0.01667	6.6	5.6	1.0	1.000	2.25	0.58	0.26	0.09	20.8	62	
		1.00	0.01667	5.6	4.6	1.0	1.000	2.25	0.58	0.26	0.09	20.8	62	
		1.00	0.01667	4.6	3.5	1.1	0.909	2.25	0.58	0.24	0.09	22.9	69	
		1.00	0.01667	3.5	2.5	1	1.000	2.25	0.58	0.26	0.09	20.8	62	
		1.00	0.01667	2.5	1.5	1	1.000	2.25	0.58	0.26	0.09	20.8	62	
		1.00	0.01667	1.5	0.5	1	1.000	2.25	0.58	0.26	0.09	20.8	62	
STEADY STATE ARITHMETIC AVERAGE										0.26		21.5	64	

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	115.71	Ksat: in/hr	4.6	LR: gdsf	
Date: 7/2/2020 Operator: Whittier						Site: East Windsor CT, GPS							
Soil Series: Enfield			Soil Horizon: Bw			Boring Number: M12-1			Boring Depth (in): 27.5				
Diameter of Hole(in): 3		Water Column Height (in): 3.5		Head Conversion Factor (HCF): 0.58									
Boring Conversion Factor (BCF): 2.25		Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture		3.0 in	3.5 in	4.0 in	
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								Sands		0.09	0.107	0.124	
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Structured loams and clays		0.069	0.082	0.096	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Unstructured loams and clays		0.04	0.048	0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
11:14:00		2.00	0.03333	13	11.9	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	11.9	10.8	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	10.8	9.8	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	9.8	8.8	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	8.8	7.8	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		4.00	0.06667	7.8	5.8	2	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	5.8	4.9	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		4.00	0.06667	4.9	2.9	2	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	2.9	1.9	1	2.000	2.25	0.58	0.52	0.04	4.6	14
STEADY STATE ARITHMETIC AVERAGE										0.52		4.7	14

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	185.14	Ksat: in/hr	7.4	LR: gdsf		
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		M12-2					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in):		27.5					
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent							
Boring Conversion Factor (BCF) = (rad) ² /5.06 for Aardvark Reservoir BCF of 4 in auger is 4.25 in diameter boring = 1 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								F Value (Radcliffe and West, 2000)							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htc/15cm Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Borehole diameter							
								Texture		3.0 in		3.5 in		4.0 in	
								Sands		0.09		0.107		0.124	
								Structured loams and clays		0.069		0.082		0.096	
								Unstructured loams and clays		0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F/(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:0	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
11:46:00		2.00	0.03333	12.3	10.5	1.8	1.111	2.25	0.58	0.29	0.04	8.3	25		
		2.00	0.03333	10.5	8.6	1.9	1.053	2.25	0.58	0.27	0.04	8.8	26		
		2.00	0.03333	8.6	7.2	1.4	1.429	2.25	0.58	0.37	0.04	6.5	19		
		1.00	0.01667	7.2	6.4	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22		
		1.00	0.01667	6.4	5.6	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22		
		1.00	0.01667	5.6	4.9	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19		
		1.00	0.01667	4.9	4.2	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19		
		4.00	0.06667	4.2	1	3.2	1.250	2.25	0.58	0.32	0.04	7.4	22		
		1.00	0.01667	1	0.2	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22		
STEADY STATE ARITHMETIC AVERAGE										0.32		7.4	22		

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr **150.43** **Ksat:** in/hr **6.0** **LR:** **gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M12-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 25
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
	Borehole diameter		
	3.0 in	3.5 in	4.0 in
Texture			
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
	12:17:00	2.00	0.03333	12	10.5	1.5	1.333	2.25	0.58	0.35	0.04	6.9	21
		2.00	0.03333	10.5	9.1	1.4	1.429	2.25	0.58	0.37	0.04	6.5	19
		2.00	0.03333	9.1	7.4	1.7	1.176	2.25	0.58	0.31	0.04	7.9	24
		2.00	0.03333	7.4	6.4	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	6.4	5.3	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	5.3	4.1	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	4.1	2.8	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	2.8	1.5	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	1.5	0.2	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18

STEADY STATE ARITHMETIC AVERAGE **0.40** **6.1** **18**

Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate: in/hr	127.29	Ksat: in/hr	5.1	LR: gdsf		
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS						
Soil Series: Enfield			Soil Horizon: Bw				Boring Number: M13-1						
Diameter of Hole(in): 3			Water Column Height (in): 3.5				Boring Depth (in): 27						
Boring Conversion Factor (BCF): 2.25			Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent						
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir							F Value (Radcliffe and West, 2000)						
BCF of 4 in auger is 4.25 in diameter boring = 1										Borehole diameter			
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65										Texture			
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86										3.0 in			
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm										3.5 in			
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes										4.0 in			
in a structured clay loam soil										Sands			
										0.09			
										0.107			
										0.124			
										Structured loams and clays			
										0.069			
										0.082			
										0.096			
										Unstructured loams and clays			
										0.04			
										0.048			
										0.057			
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:00</i>	<i>8:45</i>	<i>45</i>	<i>0.75</i>	<i>14.5</i>	<i>14</i>	<i>0.5</i>	<i>90</i>	<i>1.65</i>	<i>1.166667</i>	<i>64</i>	<i>0.082</i>	<i>0.08</i>	<i>0.12</i>
1:34:00		2.00	0.03333	11.3	9.9	1.4	1.429	2.25	0.58	0.37	0.04	6.5	19
		2.00	0.03333	9.9	8.7	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	8.7	7.5	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	7.5	6.4	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	6.4	5.4	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	5.4	4.3	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	4.3	3.2	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	3.2	2.1	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
STEADY STATE ARITHMETIC AVERAGE										0.47		5.3	16

Percolation or Ksat Rates using Aardvark Soil Permeameter | **Perc Rate: in/hr** 462.86 | **Ksat: in/hr** 18.5 | **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M13-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 25
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in		min/in			min/in			gdsf
Example 08:0	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
1:59:00		1.00	0.01667	6.7	4.8	1.9	0.526	2.25	0.58	0.14	0.04	17.6	53
		1.00	0.01667	4.8	2.8	2	0.500	2.25	0.58	0.13	0.04	18.5	55
		0.50	0.00833	2.8	1.8	1.0	0.500	2.25	0.58	0.13	0.04	18.5	55
		0.50	0.00833	1.8	0.8	1.0	0.500	2.25	0.58	0.13	0.04	18.5	55
STEADY STATE ARITHMETIC AVERAGE										0.13		18.3	55

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr **138.86** **Ksat:** in/hr **12.5** **LR:** **gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M13-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 25
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
	2:12:00	2.00	0.03333	11.8	10.3	1.5	1.333	2.25	0.58	0.35	0.09	15.6	47
		2.00	0.03333	10.3	9.2	1.1	1.818	2.25	0.58	0.47	0.09	11.5	34
		2.00	0.03333	9.2	8	1.2	1.667	2.25	0.58	0.43	0.09	12.5	37
		2.00	0.03333	8	6.8	1.2	1.667	2.25	0.58	0.43	0.09	12.5	37
		2.00	0.03333	6.8	5.6	1.2	1.667	2.25	0.58	0.43	0.09	12.5	37
		2.00	0.03333	5.6	4.4	1.2	1.667	2.25	0.58	0.43	0.09	12.5	37
		2.00	0.03333	4.4	3.3	1.1	1.818	2.25	0.58	0.47	0.09	11.5	34
		2.00	0.03333	3.3	2.1	1.2	1.667	2.25	0.58	0.43	0.09	12.5	37
		2.00	0.03333	2.1	0.9	1.2	1.667	2.25	0.58	0.43	0.09	12.5	37

STEADY STATE ARITHMETIC AVERAGE **0.43** **12.6** **38**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	254.57	Ksat: in/hr	10.2	LR: gdsf		
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		M14-1					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in):		27.5					
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent							
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1										Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture		3.0 in		3.5 in		4.0 in	
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86															
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands		0.09		0.107		0.124	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Structured loams and clays		0.069		0.082		0.096	
in a structured clay loam soil								Unstructured loams and clays		0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
12:26:00		1.00	0.01667	10.9	9.5	1.4	0.714	2.25	0.58	0.19	0.04	13.0	39		
		1.00	0.01667	9.5	8.4	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30		
		1.00	0.01667	8.4	7.3	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30		
		1.00	0.01667	7.3	6.2	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30		
		1.00	0.01667	6.2	5.1	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30		
		1.00	0.01667	5.1	4.1	1	1.000	2.25	0.58	0.26	0.04	9.3	28		
		1.00	0.01667	4.1	3.1	1	1.000	2.25	0.58	0.26	0.04	9.3	28		
		1.00	0.01667	3.1	2	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30		
		1.00	0.01667	2	0.9	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30		
STEADY STATE ARITHMETIC AVERAGE										0.24		10.3	31		

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **115.71** **Ksat: in/hr** **4.6** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M14-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in) :** 26
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)		
Borehole diameter		
Texture	3.0 in	4.0 in
Sands	0.09	0.107
Structured loams and clays	0.069	0.082
Unstructured loams and clays	0.04	0.048

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
12:48:00		2.00	0.03333	11.9	10.6	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	10.6	9.6	1	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	9.6	8.4	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	8.4	7.4	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	7.4	6.4	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	6.4	5.5	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		3.00	0.05000	5.5	4	1.5	2.000	2.25	0.58	0.52	0.04	4.6	14
		1.00	0.01667	4	3.5	0.5	2.000	2.25	0.58	0.52	0.04	4.6	14

STEADY STATE ARITHMETIC AVERAGE **0.52** **4.9** **15**

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr **254.57** **Ksat:** in/hr **10.2** **LR:** **gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M14-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 25.5
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
		Borehole diameter	
Texture		3.0 in	3.5 in
Sands		0.09	0.107
Structured loams and clays		0.069	0.082
Unstructured loams and clays		0.04	0.048

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
	1:12:00	2.00	0.03333	12.5	9.7	2.8	0.714	2.25	0.58	0.19	0.04	13.0	39
		1.00	0.01667	9.7	8.7	1	1.000	2.25	0.58	0.26	0.04	9.3	28
		1.00	0.01667	8.7	7.6	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
		1.00	0.01667	7.6	6.5	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
		1.00	0.01667	6.5	5.4	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
		1.00	0.01667	5.4	4.4	1	1.000	2.25	0.58	0.26	0.04	9.3	28
		1.00	0.01667	4.4	3.3	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
		1.00	0.01667	3.3	2.2	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
		1.00	0.01667	2.2	1.1	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30

STEADY STATE ARITHMETIC AVERAGE **0.24** **10.3** **31**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	92.57	Ksat: in/hr	3.7	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M15-1		Boring Depth (in): 26			
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Head Conversion Factor (HCF): 0.58					
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent									
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								0.09 0.107 0.124					
								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
10:21:00		2.50	0.04167	13	11.8	1.2	2.083	2.25	0.58	0.54	0.04	4.4	13
		1.50	0.02500	11.8	11.2	0.6	2.500	2.25	0.58	0.65	0.04	3.7	11
		2.00	0.03333	11.2	10.3	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	10.3	9.5	0.8	2.500	2.25	0.58	0.65	0.04	3.7	11
		2.00	0.03333	9.5	8.7	0.8	2.500	2.25	0.58	0.65	0.04	3.7	11
		2.00	0.03333	8.7	7.8	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	7.8	7.1	0.7	2.857	2.25	0.58	0.74	0.04	3.2	10
		4.00	0.06667	7.1	5.5	1.6	2.500	2.25	0.58	0.65	0.04	3.7	11
		2.00	0.03333	5.5	4.7	0.8	2.500	2.25	0.58	0.65	0.04	3.7	11
STEADY STATE ARITHMETIC AVERAGE										0.65		3.8	11

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **360.00** **Ksat: in/hr** **13.0** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M15-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 27.5
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
10:46:00		0.50	0.00833	10.5	9.4	1.1	0.455	2.25	0.58	0.12	0.04	20.4	61
		0.50	0.00833	9.4	8.4	1	0.500	2.25	0.58	0.13	0.04	18.5	55
		0.50	0.00833	8.4	7.4	1.0	0.500	2.25	0.58	0.13	0.04	18.5	55
		0.50	0.00833	7.4	6.6	0.8	0.625	2.25	0.58	0.16	0.04	14.8	44
		1.00	0.01667	6.6	5	1.6	0.625	2.25	0.58	0.16	0.04	14.8	44
		1.50	0.02500	5	2.9	2.1	0.714	2.25	0.58	0.19	0.04	13.0	39
		0.50	0.00833	2.9	1.9	1	0.500	2.25	0.58	0.13	0.04	18.5	55
		0.50	0.00833	1.9	1.2	0.7	0.714	2.25	0.58	0.19	0.04	13.0	39
		0.50	0.00833	1.2	0.5	0.7	0.714	2.25	0.58	0.19	0.04	13.0	39

STEADY STATE ARITHMETIC AVERAGE **0.17** **16.0** **48**

Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate:	in/hr	185.14	Ksat:	in/hr	7.4	LR:	gdsf
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS							
Soil Series: Enfield			Soil Horizon: Bw				Boring Number:		M15-3					
Diameter of Hole(in): 3			Water Column Height (in): 3.5				Boring Depth (in):		25					
Boring Conversion Factor (BCF): 2.25			Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent							
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir							F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1							Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65							Texture							
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86							3.0 in 3.5 in 4.0 in							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm							Sands							
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes							0.09 0.107 0.124							
in a structured clay loam soil							Structured loams and clays							
							0.069 0.082 0.096							
							Unstructured loams and clays							
							0.04 0.048 0.057							
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading	
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf	
t _i	t+1	(t _i +1)-t _i	dt/60min/hr	h _i	h+1	(h+1)-h _i	dt/dh			Adjusted			with a 0.10	
		dt				dh				(P*HCF)/BCF			Safety Factor	
	initial	next		initial	next		P			Adj P			of Ksat	
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf	
<i>Example 08:00</i>	<i>8:45</i>	<i>45</i>	<i>0.75</i>	<i>14.5</i>	<i>14</i>	<i>0.5</i>	<i>90</i>	<i>1.65</i>	<i>1.17</i>	<i>64</i>	<i>0.082</i>	<i>0.08</i>	<i>0.12</i>	
	11:05:00	2.00	0.03333	11.7	10.1	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22	
		2.00	0.03333	10.1	8.4	1.7	1.176	2.25	0.58	0.31	0.04	7.9	24	
		2.00	0.03333	8.4	6.8	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22	
		2.00	0.03333	6.8	5.4	1.4	1.429	2.25	0.58	0.37	0.04	6.5	19	
		2.00	0.03333	5.4	3.8	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22	
		2.00	0.03333	3.8	2.2	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22	
		2.00	0.03333	2.2	0.6	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22	
STEADY STATE ARITHMETIC AVERAGE										0.32		7.3	22	

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	254.57	Ksat: in/hr	10.2	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M16-1		Boring Depth (in): 25			
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Head Conversion Factor (HCF): 0.58					
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent									
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								0.09 0.107 0.124					
								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
8:56:00		2.00	0.03333	10.6	8.2	2.4	0.833	2.25	0.58	0.22	0.04	11.1	33
		2.00	0.03333	8.2	5.8	2.4	0.833	2.25	0.58	0.22	0.04	11.1	33
		1.25	0.02083	5.8	4.5	1.3	0.962	2.25	0.58	0.25	0.04	9.6	29
		0.75	0.01250	4.5	3.6	0.9	0.833	2.25	0.58	0.22	0.04	11.1	33
		1.00	0.01667	3.6	2.5	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
		1.00	0.01667	2.5	1.4	1.1	0.909	2.25	0.58	0.24	0.04	10.2	30
STEADY STATE ARITHMETIC AVERAGE										0.24		10.6	32

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 138.86** **Ksat: in/hr 5.6** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M16-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 24
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
	min	min		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
9:15:00		2.00	0.03333	10.6	9.2	1.4	1.429	2.25	0.58	0.37	0.04	6.5	19
		2.00	0.03333	9.2	7.8	1.4	1.429	2.25	0.58	0.37	0.04	6.5	19
		2.00	0.03333	7.8	6.5	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	6.5	5.3	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	5.3	4.1	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	4.1	2.9	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	2.9	1.7	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17

STEADY STATE ARITHMETIC AVERAGE **0.43** **5.9** **18**

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr 185.14 **Ksat:** in/hr 7.4 **LR:** gdsf

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M16-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 26
Head Conversion Factor (HCF): 0.58
Boring Conversion Factor (BCF): 2.25 **Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent**

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
		Borehole diameter	
Texture		3.0 in	3.5 in
			4.0 in
Sands		0.09	0.107
Structured loams and clays		0.069	0.082
Unstructured loams and clays		0.04	0.048

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
	9:42:00	2.00	0.03333	11.6	9.7	1.9	1.053	2.25	0.58	0.27	0.04	8.8	26
		2.00	0.03333	9.7	7.9	1.8	1.111	2.25	0.58	0.29	0.04	8.3	25
		2.00	0.03333	7.9	6.3	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22
		2.00	0.03333	6.3	4.7	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22
		2.00	0.03333	4.7	3.1	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22
		2.00	0.03333	3.1	1.5	1.6	1.250	2.25	0.58	0.32	0.04	7.4	22

STEADY STATE ARITHMETIC AVERAGE **0.32** **7.8** **23**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	46.29	Ksat: in/hr	4.2	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M17-1					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in): 26					
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent					
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124					
in a structured clay loam soil								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
11:02:00		2.00	0.03333	14	13.4	0.6	3.333	2.25	0.58	0.86	0.09	6.2	19
		2.00	0.03333	13.4	13	0.4	5.000	2.25	0.58	1.30	0.09	4.2	12
		2.00	0.03333	13	12.5	0.5	4.000	2.25	0.58	1.04	0.09	5.2	16
		2.00	0.03333	12.5	12	0.5	4.000	2.25	0.58	1.04	0.09	5.2	16
		2.00	0.03333	12	11.6	0.4	5.000	2.25	0.58	1.30	0.09	4.2	12
		2.00	0.03333	11.6	11.2	0.4	5.000	2.25	0.58	1.30	0.09	4.2	12
		4.00	0.06667	11.2	10.4	0.8	5.000	2.25	0.58	1.30	0.09	4.2	12
		2.00	0.03333	10.4	10	0.4	5.000	2.25	0.58	1.30	0.09	4.2	12
		2.00	0.03333	10	9.6	0.4	5.000	2.25	0.58	1.30	0.09	4.2	12
STEADY STATE ARITHMETIC AVERAGE										1.30		4.6	14

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **104.14** **Ksat: in/hr** **4.2** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M17-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 27
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
11:31:00		2.00	0.03333	13.7	12.7	1	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	12.7	11.8	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	11.8	10.9	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	10.9	10	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	10	9.1	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	9.1	8.2	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	8.2	7.3	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12

STEADY STATE ARITHMETIC AVERAGE **0.58** **4.2** **13**

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 555.43 Ksat: in/hr 22.2 LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Boring Number:** M17-3
Soil Horizon: Bw **Boring Depth (in) :** 24
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Head Conversion Factor (HCF):** 0.58
Boring Conversion Factor (BCF): 2.25 **Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent**

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
t _i	t+1	(t _i +1)-t _i	dt/60min/hr	h _i	h+1	(h+1)-h _i	dt/dh			Adjusted			with a 0.10
	initial	next	dt	initial	next	dh	P			(P*HCF)/BCF			Safety Factor
		min	hr	in	in	in	min/in			Adj P			of Ksat
										min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
11:51:00		1.00	0.01667	11	8.8	2.2	0.455	2.25	0.58	0.12	0.04	20.4	61
		1.00	0.01667	8.8	6.5	2.3	0.435	2.25	0.58	0.11	0.04	21.3	64
		1.00	0.01667	6.5	4.3	2.2	0.455	2.25	0.58	0.12	0.04	20.4	61
		0.50	0.00833	4.3	3.2	1.1	0.455	2.25	0.58	0.12	0.04	20.4	61
		0.50	0.00833	3.2	2	1.2	0.417	2.25	0.58	0.11	0.04	22.2	66
		0.50	0.00833	2	0.8	1.2	0.417	2.25	0.58	0.11	0.04	22.2	66
STEADY STATE ARITHMETIC AVERAGE										0.11		21.1	63

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 370.29** **Ksat: in/hr 33.3** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M18-1
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 66
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next	in	P			Adj P			of Ksat
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:00</i>	<i>8:45</i>	<i>45</i>	<i>0.75</i>	<i>14.5</i>	<i>14</i>	<i>0.5</i>	<i>90</i>	<i>1.65</i>	<i>1.166667</i>	<i>64</i>	<i>0.082</i>	<i>0.08</i>	<i>0.12</i>
1:37:00		1.00	0.01667	10.6	9	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	9	7.2	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112
		1.00	0.01667	7.2	5.8	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	5.8	4.2	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	4.2	2.6	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	2.6	1	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100

STEADY STATE ARITHMETIC AVERAGE **0.16** **33.3** **100**

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 69.43** **Ksat: in/hr 6.2** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M18-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 66
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in		min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
1:12:00		2.00	0.03333	15.5	14.8	0.7	2.857	2.25	0.58	0.74	0.09	7.3	22
		2.00	0.03333	14.8	14.1	0.7	2.857	2.25	0.58	0.74	0.09	7.3	22
		2.00	0.03333	14.1	13.4	0.7	2.857	2.25	0.58	0.74	0.09	7.3	22
		2.00	0.03333	13.4	12.8	0.6	3.333	2.25	0.58	0.86	0.09	6.2	19
		2.00	0.03333	12.8	12.1	0.7	2.857	2.25	0.58	0.74	0.09	7.3	22
		2.00	0.03333	12.1	11.6	0.5	4.000	2.25	0.58	1.04	0.09	5.2	16
		2.00	0.03333	11.6	11.1	0.5	4.000	2.25	0.58	1.04	0.09	5.2	16
		2.00	0.03333	11.1	10.5	0.6	3.333	2.25	0.58	0.86	0.09	6.2	19
		2.00	0.03333	10.5	9.9	0.6	3.333	2.25	0.58	0.86	0.09	6.2	19

STEADY STATE ARITHMETIC AVERAGE **0.86** **6.5** **19**

Percolation or Ksat Rates using Aardvark Soil Permeameter Perc Rate: in/hr 370.29 Ksat: in/hr 33.3 LR: gdsf

Date: 7/2/2020 Operator: Whittier Site: East Windsor CT, GPS
 Soil Series: Enfield Soil Horizon: Bw Boring Number: M18-3
 Diameter of Hole(in): 3 Water Column Height (in): 3.5 Boring Depth (in): 70.5
 Boring Conversion Factor (BCF): 2.25 Head Conversion Factor (HCF): 0.58
 Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structureded clay loam soil

F Value (Radcliffe and West, 2000)			
Borehole diameter			
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
	min	min		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
1:54:00		1.00	0.01667	9.9	8.3	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	8.3	6.6	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	6.6	5	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	5	3.4	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	3.4	1.8	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	1.8	0.2	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100

STEADY STATE ARITHMETIC AVERAGE 0.16 33.7 101

Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate: in/hr	486.00	Ksat: in/hr	43.7	LR: gdsf		
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS						
Soil Series: Enfield			Soil Horizon: Bw		Boring Number: M19-1								
Diameter of Hole(in): 3			Water Column Height (in): 3.5		Boring Depth (in): 70		Head Conversion Factor (HCF): 0.58						
Boring Conversion Factor (BCF): 2.25			Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent										
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir							F Value (Radcliffe and West, 2000)						
BCF of 4 in auger is 4.25 in diameter boring = 1							Borehole diameter						
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65							Texture		3.0 in		3.5 in		4.0 in
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86													
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm							Sands						
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes							Structured loams and clays		0.069		0.082		0.096
in a structured clay loam soil							Unstructured loams and clays		0.04		0.048		0.057
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in		min/in			min/in		in/hr	gdsf
Example 08:0	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
8:04:00		1.00	0.01667	12.6	10.5	2.1	0.476	2.25	0.58	0.12	0.09	43.7	131
		1.00	0.01667	10.5	8.6	1.9	0.526	2.25	0.58	0.14	0.09	39.6	118
		1.00	0.01667	8.6	6.6	2.0	0.500	2.25	0.58	0.13	0.09	41.7	125
		1.00	0.01667	6.6	4.8	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112
		1.00	0.01667	4.8	3	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112
		1.00	0.01667	3	0.9	2.1	0.476	2.25	0.58	0.12	0.09	43.7	131
STEADY STATE ARITHMETIC AVERAGE										0.12		40.6	122

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	324.00	Ksat: in/hr	29.2	LR: gdsf					
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS										
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		M19-2								
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in) :		68								
Boring Conversion Factor (BCF): 2.25								Head Conversion Factor (HCF): 0.58										
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent																		
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)										
BCF of 4 in auger is 4.25 in diameter boring = 1													Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65													3.0 in		3.5 in		4.0 in	
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86																		
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					0.09		0.107		0.124	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Structured loams and clays					0.069		0.082		0.096	
								Unstructured loams and clays					0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading					
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf					
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10					
		dt				dh				(P*HCF)/BCF			Safety Factor					
	initial	next		initial	next		P			Adj P			of Ksat					
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf					
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12					
7:49:00		1.00	0.01667	11.8	10.6	1.2	0.833	2.25	0.58	0.22	0.09	25.0	75					
		1.00	0.01667	10.6	9.2	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87					
		1.00	0.01667	9.2	7.8	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87					
		1.00	0.01667	7.8	6.5	1.3	0.769	2.25	0.58	0.20	0.09	27.1	81					
		1.00	0.01667	6.5	5.3	1.2	0.833	2.25	0.58	0.22	0.09	25.0	75					
		1.00	0.01667	5.3	4	1.3	0.769	2.25	0.58	0.20	0.09	27.1	81					
		1.00	0.01667	4	2.5	1.5	0.667	2.25	0.58	0.17	0.09	31.2	93					
		1.00	0.01667	2.5	1.1	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87					
STEADY STATE ARITHMETIC AVERAGE										0.19		27.9	83					

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 439.71** **Ksat: in/hr 35.4** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M19-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in) :** 70
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
Borehole diameter			
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
	min	min		in	in		min/in			min/in		in/hr	gdsf
<i>Example 08:00</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
8:23:00		1.00	0.01667	11	9.2	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112
		1.00	0.01667	9.2	7.5	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	7.5	5.8	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	5.8	4.1	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	4.1	2.4	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	2.4	0.5	1.9	0.526	2.25	0.58	0.14	0.09	39.6	118
STEADY STATE ARITHMETIC AVERAGE										0.14		36.5	109

Percolation or Ksat Rates using Aardvark Soil Permeameter										Perc Rate: in/hr 370.29			Ksat: in/hr 33.3		LR: gdsf	
Date: 7/2/2020 Operator: Whittier										Site: East Windsor CT, GPS						
Soil Series: Enfield				Soil Horizon: Bw			Boring Number: M20-1		Boring Depth (in): 68.5							
Diameter of Hole(in): 3				Water Column Height (in): 3.5			Head Conversion Factor (HCF): 0.58									
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent												
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir BCF of 4 in auger is 4.25 in diameter boring = 1 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								F Value (Radcliffe and West, 2000)			Borehole diameter					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Texture			3.0 in 3.5 in 4.0 in					
								Sands			0.09 0.107 0.124					
								Structured loams and clays			0.069 0.082 0.096					
								Unstructured loams and clays			0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading			
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf			
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10			
		dt				dh				(P*HCF)/BCF			Safety Factor			
	initial	next		initial	next		P			Adj P			of Ksat			
		min	hr	in	in	in	min/in					in/hr	gdsf			
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12			
9:47:00		1.00	0.01667	13.2	11.5	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106			
		1.00	0.01667	11.5	9.9	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100			
		1.00	0.01667	9.9	8.3	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100			
		1.00	0.01667	8.3	6.7	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100			
		1.00	0.01667	6.7	5.1	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100			
		1.00	0.01667	5.1	3.5	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100			
		1.00	0.01667	3.5	1.9	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100			
		1.00	0.01667	1.9	0.3	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100			
STEADY STATE ARITHMETIC AVERAGE										0.16		33.6	100			

Percolation or Ksat Rates using Aardvark Soil Permeameter	Perc Rate: in/hr 462.86	Ksat: in/hr 41.7	LR: gdsf
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Date: 7/2/2020 **Operator:** Whittier
Soil Series: Enfield **Soil Horizon:** Bw
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Head Conversion Factor (HCF):** 0.58
Boring Conversion Factor (BCF): 2.25 **Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent**
Site: East Windsor CT, GPS
Boring Number: M20-2
Boring Depth (in): 65

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
BCF of 4 in auger is 4.25 in diameter boring = 1
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next	in	P			Adj P		in/hr	of Ksat
	min	min		in	in	in	min/in			min/in			gdsf

<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
9:31:00		1.00	0.01667	12.5	10.3	2.2	0.455	2.25	0.58	0.12	0.09	45.8	137
		1.00	0.01667	10.3	8.5	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112
		1.00	0.01667	8.5	6.6	1.9	0.526	2.25	0.58	0.14	0.09	39.6	118
		1.00	0.01667	6.6	4.8	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112
		1.00	0.01667	4.8	2.8	2.0	0.500	2.25	0.58	0.13	0.09	41.7	125
		1.00	0.01667	2.8	0.8	2	0.500	2.25	0.58	0.13	0.09	41.7	125

STEADY STATE ARITHMETIC AVERAGE										0.13		40.6	122
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Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	324.00	Ksat: in/hr	29.2	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield			Soil Horizon: Bw		Boring Number: M20-3			Boring Depth (in): 66					
Diameter of Hole(in): 3			Water Column Height (in): 3.5			Head Conversion Factor (HCF): 0.58			Boring Conversion Factor (BCF): 2.25				
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent													
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								0.09 0.107 0.124					
								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
		min		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
10:16:00		1.00	0.01667	12.3	10.7	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	10.7	9.3	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	9.3	7.9	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	7.9	6.5	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	6.5	5.1	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	5.1	3.7	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	3.7	2.3	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
		1.00	0.01667	2.3	0.9	1.4	0.714	2.25	0.58	0.19	0.09	29.2	87
STEADY STATE ARITHMETIC AVERAGE										0.19		29.7	89

Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate: in/hr	416.57	Ksat: in/hr	37.5	LR: gdsf				
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS								
Soil Series: Enfield			Soil Horizon: Bw		Boring Number: M21-1										
Diameter of Hole(in): 3			Water Column Height (in): 3.5		Boring Depth (in): 57			Head Conversion Factor (HCF): 0.58							
Boring Conversion Factor (BCF): 2.25			Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent												
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir BCF of 4 in auger is 4.25 in diameter boring = 1 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86							F Value (Radcliffe and West, 2000)			Borehole diameter					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil							Texture			3.0 in		3.5 in		4.0 in	
							Sands			0.09		0.107		0.124	
							Structured loams and clays			0.069		0.082		0.096	
							Unstructured loams and clays			0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next	hr	initial	next	in	P			Adj P			of Ksat		
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
11:31:00		1.00	0.01667	11.5	9.6	1.9	0.526	2.25	0.58	0.14	0.09	39.6	118		
		1.00	0.01667	9.6	7.8	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	7.8	6	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	6	4.2	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	4.2	2.4	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	2.4	0.6	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
STEADY STATE ARITHMETIC AVERAGE										0.14		37.8	113		

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 740.57** **Ksat: in/hr 66.7** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** M21-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 61
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
11:47:00		0.50	0.00833	11.8	10.2	1.6	0.313	2.25	0.58	0.08	0.09	66.7	199
		0.50	0.00833	10.2	8.6	1.6	0.313	2.25	0.58	0.08	0.09	66.7	199
		0.50	0.00833	8.6	7	1.6	0.313	2.25	0.58	0.08	0.09	66.7	199
		0.50	0.00833	7	5.4	1.6	0.313	2.25	0.58	0.08	0.09	66.7	199
		0.50	0.00833	5.4	3.8	1.6	0.313	2.25	0.58	0.08	0.09	66.7	199
		0.50	0.00833	3.8	2.2	1.6	0.313	2.25	0.58	0.08	0.09	66.7	199
		0.50	0.00833	2.2	0.6	1.6	0.313	2.25	0.58	0.08	0.09	66.7	199

STEADY STATE ARITHMETIC AVERAGE **0.08** **66.7** **199**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	416.57	Ksat:	in/hr	37.5	LR:	gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: M21-3							
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in): 61							
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent							
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture							
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands							
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Structured loams and clays							
in a structured clay loam soil								Unstructured loams and clays							
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12		
12:05:00		1.00	0.01667	12.1	11	1.1	0.909	2.25	0.58	0.24	0.09	22.9	69		
		1.00	0.01667	11	10	1	1.000	2.25	0.58	0.26	0.09	20.8	62		
		1.00	0.01667	10	9	1.0	1.000	2.25	0.58	0.26	0.09	20.8	62		
		1.00	0.01667	9	7.5	1.5	0.667	2.25	0.58	0.17	0.09	31.2	93		
		1.00	0.01667	7.5	5.9	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100		
		1.00	0.01667	5.9	4.1	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	4.1	2.3	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	2.3	0.5	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
STEADY STATE ARITHMETIC AVERAGE										0.14		30.2	90		

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	486.00	Ksat: in/hr	19.4	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: R1-1		Boring Depth (in): 26.5			
Diameter of Hole(in): 3				Water Column Height (in): 3				Head Conversion Factor (HCF): 0.50					
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent									
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Structured loams and clays					
in a structured clay loam soil								Unstructured loams and clays					
								0.09 0.107 0.124					
								0.069 0.082 0.096					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
1:35:00		2.00	0.03333	9.8	5.7	4.1	0.488	2.25	0.50	0.11	0.04	22.1	66
		1.00	0.01667	5.7	4	1.7	0.588	2.25	0.50	0.13	0.04	18.4	55
		1.00	0.01667	4	2	2.0	0.500	2.25	0.50	0.11	0.04	21.6	65
		1.00	0.01667	2	0.2	1.8	0.556	2.25	0.50	0.12	0.04	19.4	58
STEADY STATE ARITHMETIC AVERAGE										0.12		20.4	61

Percolation or Ksat Rates using Aardvark Soil Permeameter Perc Rate: **in/hr** **101.25** Ksat: **in/hr** **4.1** LR: **gdsf**

Date: **7/2/2020** Operator: **Whittier** Site: **East Windsor CT, GPS**
 Soil Series: **Enfield** Soil Horizon: **Bw** Boring Number: **R1-2**
 Diameter of Hole(in): **3** Water Column Height (in): **4** Boring Depth (in) : **26**
 Head Conversion Factor (HCF): **0.67**
 Boring Conversion Factor (BCF): **2.25** Design Loading Rate = $K_{sat} * 14.96 * \text{safety factor of } 0.05 \text{ to } 0.5 \text{ system dependent}$

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in		min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
	2:02:00	2.00	0.03333	14.5	13.5	1	2.000	2.25	0.67	0.59	0.04	4.1	12
		2.00	0.03333	13.5	12.5	1	2.000	2.25	0.67	0.59	0.04	4.1	12
		2.00	0.03333	12.5	11.5	1.0	2.000	2.25	0.67	0.59	0.04	4.1	12
		2.00	0.03333	11.5	10.5	1.0	2.000	2.25	0.67	0.59	0.04	4.1	12
		2.00	0.03333	10.5	9.5	1.0	2.000	2.25	0.67	0.59	0.04	4.1	12
		4.00	0.06667	9.5	7.5	2	2.000	2.25	0.67	0.59	0.04	4.1	12
		2.00	0.03333	7.5	6.5	1	2.000	2.25	0.67	0.59	0.04	4.1	12
		2.00	0.03333	6.5	5.5	1	2.000	2.25	0.67	0.59	0.04	4.1	12
		2.00	0.03333	5.5	4.5	1	2.000	2.25	0.67	0.59	0.04	4.1	12

STEADY STATE ARITHMETIC AVERAGE **0.59** **4.1** **12**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	81.00	Ksat:	in/hr	3.2	LR:	gdsf					
Date: 7/2/2020 Operator: Whittier										Site: East Windsor CT, GPS										
Soil Series: Enfield			Soil Horizon: Bw			Boring Number: R1-3														
Diameter of Hole(in): 3		Water Column Height (in): 4		Boring Depth (in): 27.5																
Boring Conversion Factor (BCF): 2.25		Head Conversion Factor (HCF): 0.67																		
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent																				
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)												
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter												
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture			3.0 in		3.5 in		4.0 in					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86																				
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands							0.09		0.107		0.124	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Structured loams and clays							0.069		0.082		0.096	
								Unstructured loams and clays							0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading							
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf							
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10							
		dt				dh				(P*HCF)/BCF			Safety Factor							
	initial	next		initial	next		P			Adj P			of Ksat							
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf							
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12							
2:54:00		2.50	0.04167	14.4	13.3	1.1	2.273	2.25	0.67	0.67	0.04	3.6	11							
		1.50	0.02500	13.3	12.6	0.7	2.143	2.25	0.67	0.63	0.04	3.8	11							
		2.00	0.03333	12.6	11.7	0.9	2.222	2.25	0.67	0.66	0.04	3.6	11							
		2.00	0.03333	11.7	10.9	0.8	2.500	2.25	0.67	0.74	0.04	3.2	10							
		2.00	0.03333	10.9	10.1	0.8	2.500	2.25	0.67	0.74	0.04	3.2	10							
		8.00	0.13333	10.1	7.3	2.8	2.857	2.25	0.67	0.85	0.04	2.8	8							
		2.00	0.03333	7.3	6.5	0.8	2.500	2.25	0.67	0.74	0.04	3.2	10							
		2.00	0.03333	6.5	5.7	0.8	2.500	2.25	0.67	0.74	0.04	3.2	10							
		2.00	0.03333	5.7	4.9	0.8	2.500	2.25	0.67	0.74	0.04	3.2	10							
STEADY STATE ARITHMETIC AVERAGE										0.74		3.3	10							

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	91.13	Ksat: in/hr	3.6	LR: gdsf		
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield								Soil Horizon: Bw		Boring Number: R2-1		Boring Depth (in): 27			
Diameter of Hole(in): 3				Water Column Height (in): 4				Head Conversion Factor (HCF): 0.67							
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture		3.0 in		3.5 in		4.0 in	
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86															
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands		0.09		0.107		0.124	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Structured loams and clays		0.069		0.082		0.096	
								Unstructured loams and clays		0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
4:09:00		2.00	0.03333	12.5	11.4	1.1	1.818	2.25	0.67	0.54	0.04	4.5	13		
		2.00	0.03333	11.4	10.3	1.1	1.818	2.25	0.67	0.54	0.04	4.5	13		
		2.00	0.03333	10.3	9.4	0.9	2.222	2.25	0.67	0.66	0.04	3.6	11		
		2.50	0.04167	9.4	8.2	1.2	2.083	2.25	0.67	0.62	0.04	3.9	12		
		1.50	0.02500	8.2	7.5	0.7	2.143	2.25	0.67	0.63	0.04	3.8	11		
		10.00	0.16667	7.5	3.4	4.1	2.439	2.25	0.67	0.72	0.04	3.3	10		
		2.00	0.03333	3.4	2.4	1	2.000	2.25	0.67	0.59	0.04	4.1	12		
		2.00	0.03333	2.4	1.5	0.9	2.222	2.25	0.67	0.66	0.04	3.6	11		
		2.00	0.03333	1.5	0.6	0.9	2.222	2.25	0.67	0.66	0.04	3.6	11		
STEADY STATE ARITHMETIC AVERAGE										0.66		3.9	12		

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr **121.50** **Ksat:** in/hr **4.9** **LR:** **gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** R2-2
Diameter of Hole(in): 3 **Water Column Height (in):** 4 **Boring Depth (in):** 28
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.67
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
4:54:00		2.00	0.03333	13.7	12.2	1.5	1.333	2.25	0.67	0.40	0.04	6.1	18
		2.00	0.03333	12.2	11	1.2	1.667	2.25	0.67	0.49	0.04	4.9	15
		2.00	0.03333	11	9.8	1.2	1.667	2.25	0.67	0.49	0.04	4.9	15
		2.00	0.03333	9.8	8.6	1.2	1.667	2.25	0.67	0.49	0.04	4.9	15
		2.00	0.03333	8.6	7.4	1.2	1.667	2.25	0.67	0.49	0.04	4.9	15
		2.00	0.03333	7.4	6.2	1.2	1.667	2.25	0.67	0.49	0.04	4.9	15
		2.00	0.03333	6.2	5	1.2	1.667	2.25	0.67	0.49	0.04	4.9	15
		2.00	0.03333	5	3.8	1.2	1.667	2.25	0.67	0.49	0.04	4.9	15
		2.00	0.03333	3.8	2.6	1.2	1.667	2.25	0.67	0.49	0.04	4.9	15

STEADY STATE ARITHMETIC AVERAGE **0.49** **5.0** **15**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	329.79	Ksat: in/hr	13.2	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS						
Soil Series: Enfield			Soil Horizon: Bw			Boring Number:		R2-3						
Diameter of Hole(in): 3			Water Column Height (in): 4			Boring Depth (in):		26						
Boring Conversion Factor (BCF): 2.25			Head Conversion Factor (HCF):					0.67						
Design Loading Rate = $K_{sat} * 14.96 * \text{safety factor of } 0.05 \text{ to } 0.5 \text{ system dependent}$														
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)						
BCF of 4 in auger is 4.25 in diameter boring = 1										Borehole diameter				
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture		3.0 in		3.5 in		4.0 in
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86														
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands		0.09		0.107		0.124
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Structured loams and clays		0.069		0.082		0.096
in a structured clay loam soil								Unstructured loams and clays		0.04		0.048		0.057
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading	
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf	
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10	
		dt				dh				(P*HCF)/BCF			Safety Factor	
	initial	next		initial	next		P			Adj P			of Ksat	
	min	hr		in	in		min/in			min/in		in/hr	gdsf	
Example 08:0	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12	
5:31:00		2.00	0.03333	13.3	9.1	4.2	0.476	2.25	0.67	0.14	0.04	17.0	51	
		2.00	0.03333	9.1	5.4	3.7	0.541	2.25	0.67	0.16	0.04	15.0	45	
		2.00	0.03333	5.4	1.9	3.5	0.571	2.25	0.67	0.17	0.04	14.2	42	
		1.17	0.01944	1.9	0	1.9	0.614	2.25	0.67	0.18	0.04	13.2	39	
STEADY STATE ARITHMETIC AVERAGE										0.18		14.8	44	

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	115.71	Ksat: in/hr	4.6	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number: R3-1					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in): 28					
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent					
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								0.09 0.107 0.124					
								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next	in	P			Adj P			of Ksat
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
9:07:00		2.00	0.03333	13.8	12.6	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	12.6	11.6	1	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	11.6	10.5	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	10.5	9.5	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	9.5	8.5	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	8.5	7.5	1	2.000	2.25	0.58	0.52	0.04	4.6	14
		4.00	0.06667	7.5	5.5	2	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	5.5	3.5	2	1.000	2.25	0.58	0.26	0.04	9.3	28
		2.00	0.03333	3.5	2.5	1	2.000	2.25	0.58	0.52	0.04	4.6	14
STEADY STATE ARITHMETIC AVERAGE										0.52		5.3	16

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	232.88	Ksat: in/hr	9.3	LR:	gdsf	
Date: 7/2/2020 Operator: Whittier						Site: East Windsor CT, GPS		Boring Number: R3-2							
Soil Series: Enfield			Soil Horizon: Bw			Boring Depth (in):		29							
Diameter of Hole(in):		3		Water Column Height (in):		4		Head Conversion Factor (HCF):		0.67					
Boring Conversion Factor (BCF):		2.25		Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1										Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture		3.0 in		3.5 in		4.0 in	
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86															
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands		0.09		0.107		0.124	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Structured loams and clays		0.069		0.082		0.096	
in a structured clay loam soil								Unstructured loams and clays		0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:0	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
9:20:00		2.00	0.03333	13	8.7	4.3	0.465	2.25	0.67	0.14	0.04	17.4	52		
		2.00	0.03333	8.7	3.9	4.8	0.417	2.25	0.67	0.12	0.04	19.4	58		
		2.00	0.03333	3.9	1.6	2.3	0.870	2.25	0.67	0.26	0.04	9.3	28		
		0.62	0.01028	1.6	0	1.6	0.385	2.25	0.67	0.11	0.04	21.0	63		
STEADY STATE ARITHMETIC AVERAGE										0.26		16.8	50		

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate:** in/hr **115.71** **Ksat:** in/hr **4.6** **LR:** gdsf

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** R3-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 27
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
	9:43:00	2.00	0.03333	10.2	8.8	1.4	1.429	2.25	0.58	0.37	0.04	6.5	19
		2.00	0.03333	8.8	7.6	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.00	0.03333	7.6	6.4	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17
		2.28	0.03806	6.4	5.4	1.0	2.283	2.25	0.58	0.59	0.04	4.1	12
		1.72	0.02861	5.4	4.4	1.0	1.717	2.25	0.58	0.45	0.04	5.4	16
		1.00	0.01667	4.4	3.9	0.5	2.000	2.25	0.58	0.52	0.04	4.6	14
		1.00	0.01667	3.9	3.4	0.5	2.000	2.25	0.58	0.52	0.04	4.6	14
		1.00	0.01667	3.4	2.9	0.5	2.000	2.25	0.58	0.52	0.04	4.6	14

STEADY STATE ARITHMETIC AVERAGE **0.52** **5.1** **15**

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	92.57	Ksat: in/hr	4.2	LR: gdsf	
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield		Soil Horizon: Bw			Boring Number: R4-1		Boring Depth (in): 28						
Diameter of Hole(in): 3		Water Column Height (in): 3.5			Head Conversion Factor (HCF): 0.58								
Boring Conversion Factor (BCF): 2.25		Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent											
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Structured loams and clays					
								Unstructured loams and clays					
								0.09 0.107 0.124					
								0.069 0.082 0.096					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next	in	P			Adj P			of Ksat
		min		in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
10:44:00		2.00	0.03333	10.6	7.3	3.3	0.606	2.25	0.58	0.16	0.04	15.3	46
		2.00	0.03333	7.3	6.5	0.8	2.500	2.25	0.58	0.65	0.04	3.7	11
		2.75	0.04583	6.5	5.5	1.0	2.750	2.25	0.58	0.71	0.04	3.4	10
		1.25	0.02083	5.5	5	0.5	2.500	2.25	0.58	0.65	0.04	3.7	11
		2.00	0.03333	5	4.3	0.7	2.857	2.25	0.58	0.74	0.04	3.2	10
		2.18	0.03639	4.3	3.5	0.8	2.729	2.25	0.58	0.71	0.04	3.4	10
		1.82	0.03028	3.5	2.7	0.8	2.271	2.25	0.58	0.59	0.04	4.1	12
		2.25	0.03750	2.7	1.9	0.8	2.813	2.25	0.58	0.73	0.04	3.3	10
		1.75	0.02917	1.9	1.1	0.8	2.188	2.25	0.58	0.57	0.04	4.2	13
STEADY STATE ARITHMETIC AVERAGE										0.65		4.9	15

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr 150.43** **Ksat: in/hr 6.0** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** R4-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in) :** 30 **Head Conversion Factor (HCF):** 0.58
Boring Conversion Factor (BCF): 2.25 **Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent**

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)		
Borehole diameter		
Texture	3.0 in	4.0 in
Sands	0.09	0.107
Structured loams and clays	0.069	0.082
Unstructured loams and clays	0.04	0.048

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
	initial	next		initial	next		P			(P*HCF)/BCF			Safety Factor
	min	hr		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
	11:08:00	2.00	0.03333	8.6	7.3	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	7.3	6	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	6	4.7	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	4.7	3.6	1.1	1.818	2.25	0.58	0.47	0.04	5.1	15
		2.00	0.03333	3.6	2.3	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		2.00	0.03333	2.3	1	1.3	1.538	2.25	0.58	0.40	0.04	6.0	18
		1.80	0.03000	1	0	1	1.800	2.25	0.58	0.47	0.04	5.1	15
STEADY STATE ARITHMETIC AVERAGE										0.40		5.8	17

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	104.14	Ksat: in/hr	4.2	LR: gdsf
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS					
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		R4-3			
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in) :		25			
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent					
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)					
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter					
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture					
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								3.0 in 3.5 in 4.0 in					
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands					
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								0.09 0.107 0.124					
in a structured clay loam soil								Structured loams and clays					
								0.069 0.082 0.096					
								Unstructured loams and clays					
								0.04 0.048 0.057					
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
	min	min	hr	in	in	in	min/in			min/in		in/hr	gdsf
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
11:09:00		2.00	0.03333	6.3	5.3	1	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	5.3	4.4	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	4.4	3.4	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	3.4	2.4	1.0	2.000	2.25	0.58	0.52	0.04	4.6	14
		2.00	0.03333	2.4	1.5	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		2.00	0.03333	1.5	0.6	0.9	2.222	2.25	0.58	0.58	0.04	4.2	12
		1.50	0.02500	0.6	0	0.6	2.500	2.25	0.58	0.65	0.04	3.7	11
STEADY STATE ARITHMETIC AVERAGE										0.58		4.3	13

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate: in/hr	162.00	Ksat: in/hr	6.5	LR: gdsf			
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS								
Soil Series: Enfield			Soil Horizon: Bw		Boring Number: R5-1			Boring Depth (in): 65.5							
Diameter of Hole(in): 3			Water Column Height (in): 3.5			Head Conversion Factor (HCF): 0.58									
Boring Conversion Factor (BCF): 2.25			Design Loading Rate = $K_{sat} * 14.96 * \text{safety factor of 0.05 to 0.5 system dependent}$												
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)							
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter							
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65															
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								Texture							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								3.0 in					3.5 in	4.0 in	
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Sands					0.09	0.107	0.124
in a structured clay loam soil								Structured loams and clays					0.069	0.082	0.096
								Unstructured loams and clays					0.04	0.048	0.057
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
7:40:00		2.00	0.03333	12.4	10.7	1.7	1.176	2.25	0.58	0.31	0.04	7.9	24		
		1.00	0.01667	10.7	9.8	0.9	1.111	2.25	0.58	0.29	0.04	8.3	25		
		1.00	0.01667	9.8	9	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22		
		1.00	0.01667	9	8.4	0.6	1.667	2.25	0.58	0.43	0.04	5.6	17		
		1.00	0.01667	8.4	7.6	0.8	1.250	2.25	0.58	0.32	0.04	7.4	22		
		3.00	0.05000	7.6	5.6	2	1.500	2.25	0.58	0.39	0.04	6.2	18		
		2.00	0.03333	5.6	4.4	1.2	1.667	2.25	0.58	0.43	0.04	5.6	17		
		4.00	0.06667	4.4	1.6	2.8	1.429	2.25	0.58	0.37	0.04	6.5	19		
		1.00	0.01667	1.6	0.9	0.7	1.429	2.25	0.58	0.37	0.04	6.5	19		
STEADY STATE ARITHMETIC AVERAGE										0.37		6.8	20		

Percolation or Ksat Rates using Aardvark Soil Permeameter **Perc Rate: in/hr** **393.43** **Ksat: in/hr** **35.4** **LR: gdsf**

Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** R5-2
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 59.5
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next		initial	next		P			Adj P			of Ksat
	min	hr		in	in		min/in			min/in		in/hr	gdsf
<i>Example 08:0</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12
8:32:00		2.00	0.03333	10.7	7.5	3.2	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	7.5	5.9	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100
		1.00	0.01667	5.9	4.4	1.5	0.667	2.25	0.58	0.17	0.09	31.2	93
		1.00	0.01667	4.4	2.7	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106
		1.00	0.01667	2.7	1	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106

STEADY STATE ARITHMETIC AVERAGE **0.15** **33.7** **101**

Percolation or Ksat Rates using Aardvark Soil Permeameter	Perc Rate: in/hr	92.57	Ksat: in/hr	8.3	LR: gdsf
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Date: 7/2/2020 **Operator:** Whittier **Site:** East Windsor CT, GPS
Soil Series: Enfield **Soil Horizon:** Bw **Boring Number:** R5-3
Diameter of Hole(in): 3 **Water Column Height (in):** 3.5 **Boring Depth (in):** 68
Boring Conversion Factor (BCF): 2.25 **Head Conversion Factor (HCF):** 0.58
Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent

Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir
 BCF of 4 in auger is 4.25 in diameter boring = 1
 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86
 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
 Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes
 in a structured clay loam soil

F Value (Radcliffe and West, 2000)			
	Borehole diameter		
Texture	3.0 in	3.5 in	4.0 in
Sands	0.09	0.107	0.124
Structured loams and clays	0.069	0.082	0.096
Unstructured loams and clays	0.04	0.048	0.057

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf
t _i	t+1	(t _{i+1})-t _i	dt/60min/hr	h _i	h+1	(h+1)-h _i	dt/dh			Adjusted			with a 0.10
		dt				dh				(P*HCF)/BCF			Safety Factor
	initial	next	hr	initial	next		P			Adj P			of Ksat
		min		in	in	in	min/in			min/in		in/hr	gdsf
<i>Example 08:00</i>	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12
8:05:00		2.00	0.03333	14.2	13.1	1.1	1.818	2.25	0.58	0.47	0.09	11.5	34
		2.00	0.03333	13.1	12.2	0.9	2.222	2.25	0.58	0.58	0.09	9.4	28
		2.00	0.03333	12.2	11.4	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	11.4	10.5	0.9	2.222	2.25	0.58	0.58	0.09	9.4	28
		2.00	0.03333	10.5	9.7	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	9.7	8.5	1.2	1.667	2.25	0.58	0.43	0.09	12.5	37
		2.00	0.03333	8.5	8.1	0.4	5.000	2.25	0.58	1.30	0.09	4.2	12
		2.00	0.03333	8.1	7.3	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25
		2.00	0.03333	7.3	6.5	0.8	2.500	2.25	0.58	0.65	0.09	8.3	25

STEADY STATE ARITHMETIC AVERAGE										0.65		8.9	27
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Percolation or Ksat Rates using Aardvark Soil Permeameter							Perc Rate: in/hr	416.57	Ksat: in/hr	37.5	LR: gdsf				
Date: 7/2/2020 Operator: Whittier							Site: East Windsor CT, GPS								
Soil Series: Enfield			Soil Horizon: Bw		Boring Number: R6-1			Boring Depth (in): 59							
Diameter of Hole(in): 3			Water Column Height (in): 3.5		Head Conversion Factor (HCF): 0.58										
Boring Conversion Factor (BCF): 2.25			Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent												
<p>Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir BCF of 4 in auger is 4.25 in diameter boring = 1 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86 Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil</p>							F Value (Radcliffe and West, 2000)			Borehole diameter					
							Texture			3.0 in	3.5 in	4.0 in			
							Sands			0.09	0.107	0.124			
							Structured loams and clays			0.069	0.082	0.096			
Unstructured loams and clays			0.04			0.048			0.057						
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next	hr	initial	next	in	P			Adj P			of Ksat		
	min	min		in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
10:06:00		1.00	0.01667	12.1	10.4	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106		
		1.00	0.01667	10.4	8.6	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	8.6	7	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100		
		1.00	0.01667	7	5.3	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106		
		1.00	0.01667	5.3	3.8	1.5	0.667	2.25	0.58	0.17	0.09	31.2	93		
		1.00	0.01667	3.8	2	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	2	0.2	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
STEADY STATE ARITHMETIC AVERAGE										0.14		35.4	106		

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	372.19	Ksat: in/hr	33.6	LR: gdsf		
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS							
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		R6-2					
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in):		64					
Boring Conversion Factor (BCF): 2.25				Head Conversion Factor (HCF): 0.58				Design Loading Rate = Ksat*14.96*safety factor of 0.05 to 0.5 system dependent							
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir BCF of 4 in auger is 4.25 in diameter boring = 1 BCF of 3.25 in auger is 3.5 in diameter boring = 1.65 BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86								F Value (Radcliffe and West, 2000)							
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structured clay loam soil								Borehole diameter							
								Texture		3.0 in		3.5 in		4.0 in	
								Sands		0.09		0.107		0.124	
								Structured loams and clays		0.069		0.082		0.096	
								Unstructured loams and clays		0.04		0.048		0.057	
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading		
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf		
ti	t+1	(ti+1)-ti	dt/60min/hr	hi	h+1	(h+1)-hi	dt/dh			Adjusted			with a 0.10		
		dt				dh				(P*HCF)/BCF			Safety Factor		
	initial	next		initial	next		P			Adj P			of Ksat		
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf		
Example 08:0	8:45	45	0.75	14.5	14	0.5	90	1.65	1.166667	64	0.082	0.08	0.12		
9:28:00		1.00	0.01667	12	10.3	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106		
		1.00	0.01667	10.3	8.8	1.5	0.667	2.25	0.58	0.17	0.09	31.2	93		
		1.00	0.01667	8.8	7	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112		
		1.00	0.01667	7	5.8	1.2	0.833	2.25	0.58	0.22	0.09	25.0	75		
		1.00	0.01667	5.8	4.2	1.6	0.625	2.25	0.58	0.16	0.09	33.3	100		
		1.00	0.01667	4.2	2.5	1.7	0.588	2.25	0.58	0.15	0.09	35.4	106		
		1.50	0.02500	2.5	0.2	2.3	0.652	2.25	0.58	0.17	0.09	31.9	96		
STEADY STATE ARITHMETIC AVERAGE										0.16		32.8	98		

Percolation or Ksat Rates using Aardvark Soil Permeameter								Perc Rate:	in/hr	532.29	Ksat:	in/hr	47.9	LR:	gdsf			
Date: 7/2/2020 Operator: Whittier								Site: East Windsor CT, GPS										
Soil Series: Enfield				Soil Horizon: Bw				Boring Number:		R6-3								
Diameter of Hole(in): 3				Water Column Height (in): 3.5				Boring Depth (in):		64.5		Head Conversion Factor (HCF): 0.58						
Boring Conversion Factor (BCF): 2.25				Design Loading Rate = $K_{sat} * 14.96 * \text{safety factor of } 0.05 \text{ to } 0.5 \text{ system dependent}$														
Boring Conversion Factor (BCF) = (rad)squared/5.06 for Aardvark Reservoir								F Value (Radcliffe and West, 2000)										
BCF of 4 in auger is 4.25 in diameter boring = 1								Borehole diameter										
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65								Texture								3.0 in	3.5 in	4.0 in
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.86																		
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm								Sands								0.09	0.107	0.124
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes								Structured loams and clays								0.069	0.082	0.096
in a structured clay loam soil								Unstructured loams and clays								0.04	0.048	0.057
Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Percolation	BCF	HCF	Percolation	F value	Ksat	Design Loading					
2400 hours	2400 hours	Elapsed	Elapsed	Reading, in	Reading in	Change	Rate (min/in)			Rate	from table	= F(1/P)	Rate gdsf					
t _i	t+1	(t _i +1)-t _i	dt/60min/hr	h _i	h+1	(h+1)-h _i	dt/dh			Adjusted			with a 0.10					
		dt				dh				(P*HCF)/BCF			Safety Factor					
	initial	next		initial	next		P			Adj P			of Ksat					
		min	hr	in	in	in	min/in			min/in		in/hr	gdsf					
Example 08:00	8:45	45	0.75	14.5	14	0.5	90	1.65	1.17	64	0.082	0.08	0.12					
10:26:00		1.00	0.01667	11.7	9.4	2.3	0.435	2.25	0.58	0.11	0.09	47.9	143					
		1.00	0.01667	9.4	7.2	2.2	0.455	2.25	0.58	0.12	0.09	45.8	137					
		1.00	0.01667	7.2	5.4	1.8	0.556	2.25	0.58	0.14	0.09	37.5	112					
		1.00	0.01667	5.4	3.3	2.1	0.476	2.25	0.58	0.12	0.09	43.7	131					
		1.00	0.01667	3.3	1	2.3	0.435	2.25	0.58	0.11	0.09	47.9	143					
STEADY STATE ARITHMETIC AVERAGE										0.11		44.6	133					



Appendix C:

- Erosion and Sedimentation Control Checklist
- Long Term Stormwater Operation and Maintenance Measures



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Erosion and Sedimentation Control Checklist



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Gravel Pit Solar – East Windsor, CT – Windsorville Road and Planation Road
Best Management Practices – Maintenance/ Evaluation Checklist

Construction Practices

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed <input type="checkbox"/> yes <input type="checkbox"/> no (List Items)	Date of Cleaning/Repair	Performed by
Silt Fencing	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Compost Filter Sock	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Straw Wattles	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Stabilized Construction Exit	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Temporary Sediment Trap/Basin & Diversion Swales	Once per week or after a 0.5" or greater storm event			Inspect for damage to side slopes, blockages, or ruts and rills.			
Vegetated Slope Stabilization	Once per week or after a 0.5" or greater storm event			Inspect for damage to side slopes, blockages, or ruts and rills.			
Energy Dissipators	Once per week or after a 0.5" or greater storm event			Inspect that level spreader lip remains level over time. Inspect for damage to side slopes, blockages, or ruts and rills.			
E-Fence	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			
Wood Chip Mulch Berm	Once per week or after a 0.5" or greater storm event			Inspect for damage and silt accumulation.			

Stormwater Control Manager _____



Long Term Stormwater Operation and Maintenance Measures



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Gravel Pit Solar – East Windsor, CT – Windsorville Road and Planation Road

Best Management Practices – Maintenance/ Evaluation Checklist

Long Term Practices

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed <input type="checkbox"/> yes <input type="checkbox"/> no (List Items)	Date of Cleaning/Repair	Performed by
Trash/Litter	Routinely pick up and remove litter from entire property as required.						
Vegetated Areas	Inspect bi-annually. Replant bare areas upon identification.			Inspect for bare spots and to ensure seed is taking hold and germinating. Also inspect for any ruts and rills.			
Energy Dissipators	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect that level spreader lip remains level over time. Inspect for damage to side slopes, blockages, or ruts and rills.			
Diversion Swales	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect for damage to side slopes, blockages, or ruts and rills.			
Valley Berm	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect for damage to side slopes, blockages, or ruts and rills.			
Kettle Hole	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect for damage to side slopes, blockages, or ruts and rills.			
Infiltration Basin	Inspect monthly for the first 3 months and after any rain event exceeding 0.5". Inspect 2x per year thereafter.			Inspect for damage to side slopes, blockages, or ruts and rills.			

Stormwater Control Manager _____



Project Information

Site

Project Name: Gravel Pit Solar
Address or Locus: Windsorville Road & Plantation Road
City, State & Zip: East Windsor, CT 06016

Developer

Client Name: Gravel Pit Solar, LLC
Client Address: 1166 Avenue of the Americas, 9th Floor
Client City, State & Zip: New York, NY 10036
Client Telephone No.:
Client Cell Phone: (207) 233-3644
Client E-Mail: aaron@nleservices.com

Site Supervisor

Site Manager Name: To be determined
Site Manager Address:
Site Manager City, State & Zip:
Site Manager Telephone No.:
Site Manager Cell Phone:
Site Manager E-Mail:



Appendix D:

- Sediment & Water Quality Volume Computations
- HydroCAD: Existing Conditions
- HydroCAD: Proposed Conditions



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Sediment & Water Quality Volume Computations



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Sediment Collection & Water Quality Sizing Computations
 Gravel Pit Solar, East Windsor, CT
 February 2021

Basin #	Tributary Acreage, ac	(134 cy / acre)*		Imperviousness, ac	Required Water Quality Volume, cf	Volume Provided in Permanent Basin Below Crest of Spillway, cf	Notes
		Sediment Collection Volume Required Below Top of Spillway, cf	Volume Provided in Permanent Basin Below Top of Spillway, cf				
1	0.9	3,256	4,312	0.1	562	2,589	
2	4.5	16,281	19,725	0.6	2,826	9,405	
3	2.7	9,769	95,578	1.3	4,606	95,578	
4	3.6	13,025	16,375	1.6	5,734	7,629	
5	8.7	31,477	41,848	3.6	13,242	29,469	
6	6.5	23,517	32,568	2.1	8,191	22,599	
7	17.0	61,506	188,598	8.2	29,712	188,598	
8	3.1	11,216	14,375	0.2	1,245	6,519	
10	3.1	11,216	270,543	0.5	2,304	270,543	
11	5.7	20,623	585,038	0.7	3,364	585,038	
11A	6.4	23,155	127,579	0.0	1,162	127,579	
12	3.3	11,939	52,117	0.8	3,173	52,117	
13	18.0	65,124	126,275	7.9	29,024	126,275	
14	0.6	0	0				discharges to Basin 13
15	2.5	9,045	33,327	0.1	669	33,327	
16	4.7	17,005	106,646	1.6	6,097	20,027	
17	4.9	17,728	81,430	2.0	7,521	26,497	
18	1.8	6,512	7,596	0.8	2,865		
19	21.6	78,149	126,793	8.7	32,337	81,818	
20	1.6	5,789	11,904	0.3	1,290	7,578	
21	4.0	14,472	72,609	1.5	5,483	44,959	
22	17.7	64,039	84,452	8.5	31,129	47,132	
23	0.3	0	0	0.1	378	0	
24	2.8	10,130	21,509	1.2	4,327	12,222	
25	12.1	43,778	118,500	4.8	17,881	76,745	
27	2.2	7,960	10,257	0.6	2,324	6,734	
28	7.4	26,773	703,547	1.7	6,874	703,547	
29	1.6	5,789	135,567	0.1	728	135,567	
30	3.9	14,110	177,312	2.3	8,372	177,312	
31	3.6	13,025	580,458	0.4	1,905	580,458	
33	14.3	51,737	91,856	7.1	25,726	75,161	
34	7.9	28,582	55,083	4.7	16,897	55,083	
35	7.6	27,497	40,239	2.9	10,890	40,239	
36	8.7	31,477	40,645	2.9	10,972	25,146	discharges to DP54
37	1.1	3,980	7,138	0.1	664	2,062	discharges to DP47
38	3.9	14,110	25,279	1.9	6,928	10,605	discharges to DP47
39	2.0	7,236	38,968	0.6	2,274	20,657	discharges to DP47
40	0.7	2,533	3,218	0.1	513	2,417	
41	0.9	3,256	5,750	0.2	960	5,646	
42	1.8	6,512	9,408	0.4	1,741	6,084	
43	0.9	3,256	5,295	0.2	738	3,285	
44	2.1	7,598	43,325	0.8	2,923	13,687	discharges to DP47
45	2.4	8,683	180,186	1.0	3,569	126,143	discharges to DP47
46	3.1	11,216	12,608	1.3	4,842	6,133	discharges to DP47
47	3.8	13,748	69,383	0.9	3,476	33,567	discharges to DP47
DP47	64.6	233,723	541,507	24.2	90,888	297,438	
48	5.3	19,175	44,628	1.0	4,356	22,627	discharges to DP47
49	3.2	11,578	36,103	0.6	2,636	16,772	discharges to DP47
50	7.4	26,773	49,733	2.0	7,864	25,630	discharges to DP47
51	27.6	99,857	21,537	12.6	46,272	12,972	discharges to DP47
53	4.8	17,366	56,099	0.2	1,361	25,364	discharges to DP54
54	5.0	18,090	84,939	0.0	908	39,035	discharges to DP54
DP54	71.8	259,772	342,697	26.7	100,577	300,561	
55	2.7	9,769	12,619	1.4	5,083	6,583	discharges to DP47
56	7.2	26,050	33,293	3.7	13,401	18,812	discharges to DP54
57	5.7	20,623	10,399	2.4	8,869	5,229	discharges to DP54
58	2.9	10,492	32,853	0.6	2,643	14,282	discharges to DP54
59	4.1	14,834	27,865	0.7	3,103	12,677	discharges to DP54
60	7.4	26,773	6,691	3.1	11,497	2,468	discharges to DP54
62	24.2	87,556	36,392	7.9	30,100	15,247	discharges to DP54
64	1.8	6,512	13,521	0.8	2,842	6,691	discharges to DP54
65	3.6	13,025	16,187	1.4	5,312	11,029	
66	1.9	6,874	8,547	0.4	1,671	5,614	

Basin #	Tributary Acreage, ac	(134 cy / acre)*		Imperviousness, ac	Required Water Quality Volume, cf	Volume Provided in Permanent Basin Below Crest of Spillway, cf	Notes
		Sediment Collection Volume Required Below Top of Spillway, cf	Volume Provided in Permanent Basin Below Top of Spillway, cf				
67	1.3	4,703	23,969	0.1	566	23,969	
68	18.6	67,295	543,774	8.1	29,750	543,774	
69	6.8	24,602	115,744	1.7	6,749	115,744	
70	3.2	11,578	32,894	0.1	757	12,203	
71	8.2	29,668	73,900	1.9	7,601	68,476	
72	8.3	30,029	238,273	0.5	2,980	238,273	
73	28.7	103,837	258,571	10.0	37,941	213,720	
74	74.0	267,732	1,810,898	22.1	85,498	1,810,898	
74A	9.0	32,562	40,277	0.0	1,634	33,395	
75	47.9	173,302	872,691	22.9	83,417	872,691	

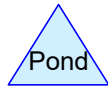
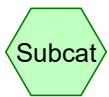
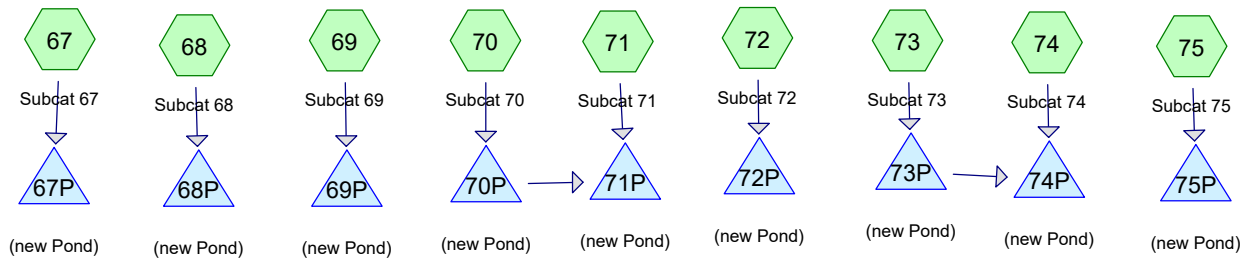
* Panels have been considered to be impervious to be conservative



HydroCAD Analysis: Existing Conditions



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Existing Conditions - Windsorville

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.000	0	, HSG B (72)
0.000	0	, HSG C (72, 74)
0.210	70	1/2 acre lots, 25% imp, HSG B (72)
1.640	49	50-75% Grass cover, Fair, HSG A (74, 75)
6.478	69	50-75% Grass cover, Fair, HSG B (74, 75)
4.061	79	50-75% Grass cover, Fair, HSG C (74)
10.203	39	>75% Grass cover, Good, HSG A (74)
11.877	61	>75% Grass cover, Good, HSG B (74)
11.563	74	>75% Grass cover, Good, HSG C (74)
1.440	35	Brush, Fair, HSG A (74, 75)
0.093	56	Brush, Fair, HSG B (74, 75)
5.348	70	Brush, Fair, HSG C (73, 74, 75)
14.115	77	Fallow, bare soil, HSG A (74, 75)
31.311	86	Fallow, bare soil, HSG B (67, 68, 74, 75)
11.233	91	Fallow, bare soil, HSG C (72, 73, 74)
0.103	83	Paved roads w/open ditches, 50% imp, HSG A (71)
2.527	89	Paved roads w/open ditches, 50% imp, HSG B (67, 68, 69, 71, 72)
0.236	92	Paved roads w/open ditches, 50% imp, HSG C (72)
0.298	67	Row crops, straight row, Good, HSG A (68, 69, 70, 73)
24.451	78	Row crops, straight row, Good, HSG B (67, 68, 69, 70, 71, 73, 75)
13.272	36	Woods, Fair, HSG A (68, 69, 70, 71, 73, 74, 75)
19.322	60	Woods, Fair, HSG B (67, 68, 69, 70, 71, 72, 73, 74, 75)
36.001	73	Woods, Fair, HSG C (71, 72, 73, 74, 75)
205.781	71	TOTAL AREA

Existing Conditions - Windsorville

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
41.071	HSG A	68, 69, 70, 71, 73, 74, 75
96.267	HSG B	67, 68, 69, 70, 71, 72, 73, 74, 75
68.443	HSG C	71, 72, 73, 74, 75
0.000	HSG D	
0.000	Other	
205.781		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.000	0.000		
0.000	0.210	0.000	0.000	0.000	0.210	1/2 acre lots, 25% imp	
1.640	6.478	4.061	0.000	0.000	12.179	50-75% Grass cover, Fair	
10.203	11.877	11.563	0.000	0.000	33.643	>75% Grass cover, Good	
1.440	0.093	5.348	0.000	0.000	6.881	Brush, Fair	
14.115	31.311	11.233	0.000	0.000	56.659	Fallow, bare soil	
0.103	2.527	0.236	0.000	0.000	2.865	Paved roads w/open ditches, 50% imp	
0.298	24.451	0.000	0.000	0.000	24.749	Row crops, straight row, Good	
13.272	19.322	36.001	0.000	0.000	68.594	Woods, Fair	
41.071	96.267	68.443	0.000	0.000	205.781	TOTAL AREA	

Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 67: Subcat 67

Runoff = 1.91 cfs @ 12.16 hrs, Volume= 0.159 af, Depth> 0.77"

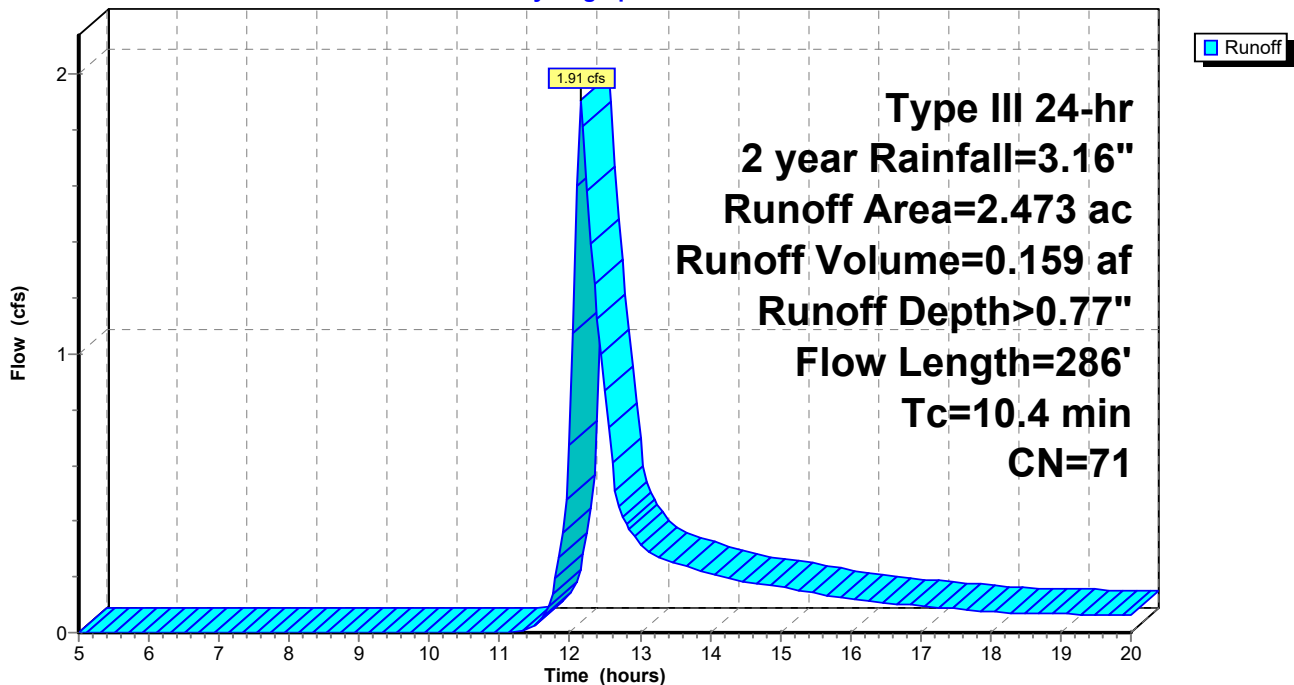
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.541	86	Fallow, bare soil, HSG B
0.288	89	Paved roads w/open ditches, 50% imp, HSG B
0.308	78	Row crops, straight row, Good, HSG B
1.335	60	Woods, Fair, HSG B
2.473	71	Weighted Average
2.329		94.17% Pervious Area
0.144		5.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.2	119	0.0588	1.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.7	117	0.0513	1.13		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	286	Total			

Subcatchment 67: Subcat 67

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 68: Subcat 68

Runoff = 10.88 cfs @ 12.35 hrs, Volume= 1.218 af, Depth> 0.68"

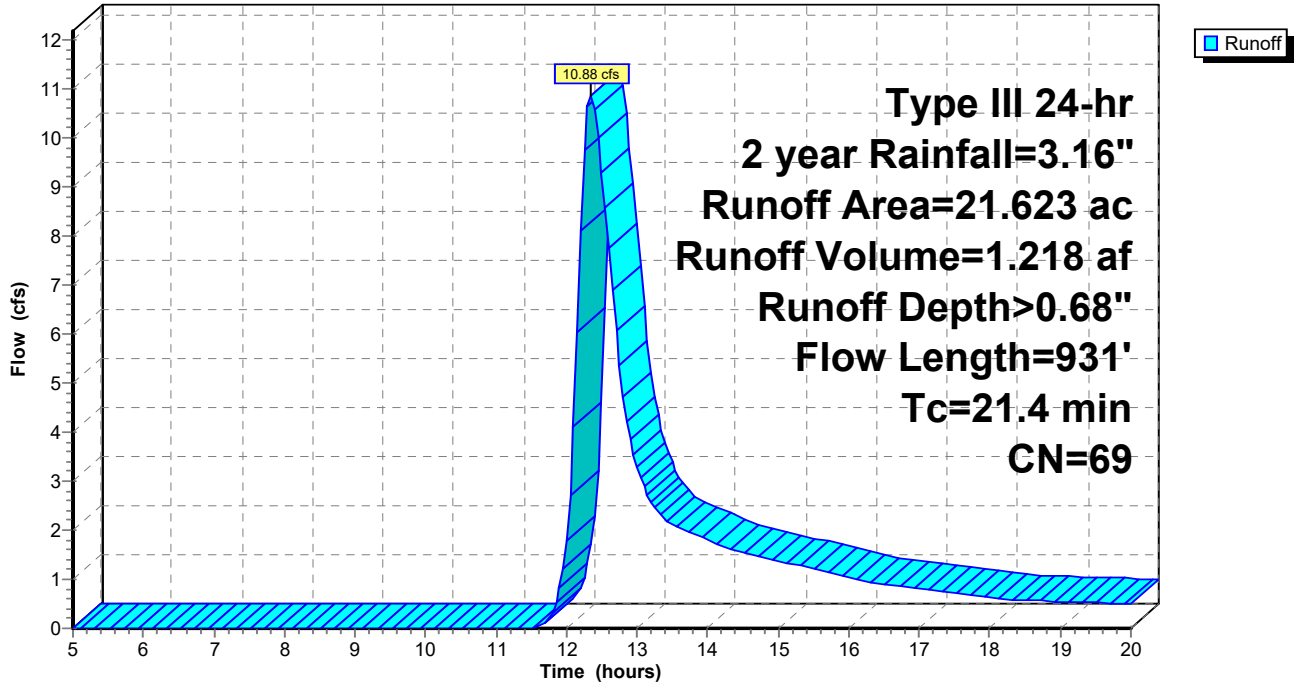
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.017	86	Fallow, bare soil, HSG B
0.977	89	Paved roads w/open ditches, 50% imp, HSG B
0.036	67	Row crops, straight row, Good, HSG A
14.261	78	Row crops, straight row, Good, HSG B
3.381	36	Woods, Fair, HSG A
2.951	60	Woods, Fair, HSG B
21.623	69	Weighted Average
21.134		97.74% Pervious Area
0.489		2.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.2	244	0.0123	0.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.5	637	0.0126	1.01		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.4	931	Total			

Subcatchment 68: Subcat 68

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 69: Subcat 69

Runoff = 2.65 cfs @ 12.20 hrs, Volume= 0.271 af, Depth> 0.48"

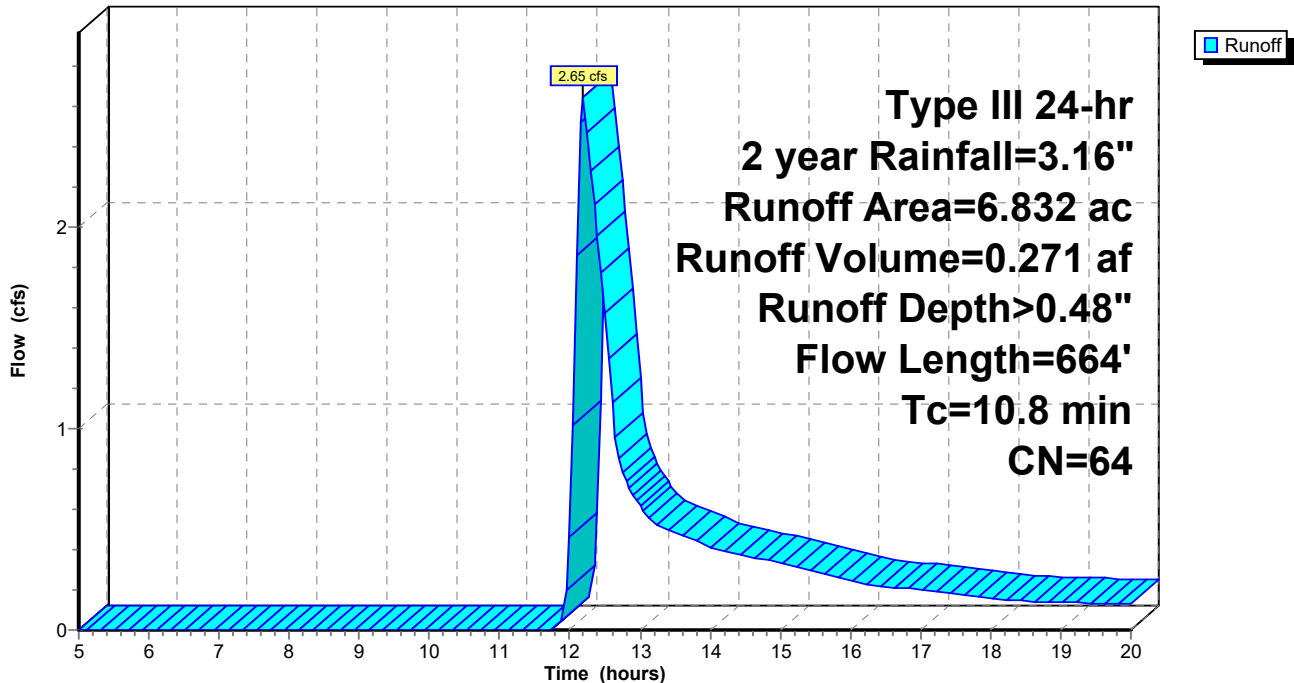
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.449	89	Paved roads w/open ditches, 50% imp, HSG B
0.027	67	Row crops, straight row, Good, HSG A
3.162	78	Row crops, straight row, Good, HSG B
1.668	36	Woods, Fair, HSG A
1.526	60	Woods, Fair, HSG B
6.832	64	Weighted Average
6.608		96.72% Pervious Area
0.224		3.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.19		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
7.1	446	0.0134	1.04		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.0	168	0.0357	0.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.8	664	Total			

Subcatchment 69: Subcat 69

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 70: Subcat 70

Runoff = 2.89 cfs @ 12.16 hrs, Volume= 0.233 af, Depth> 0.87"

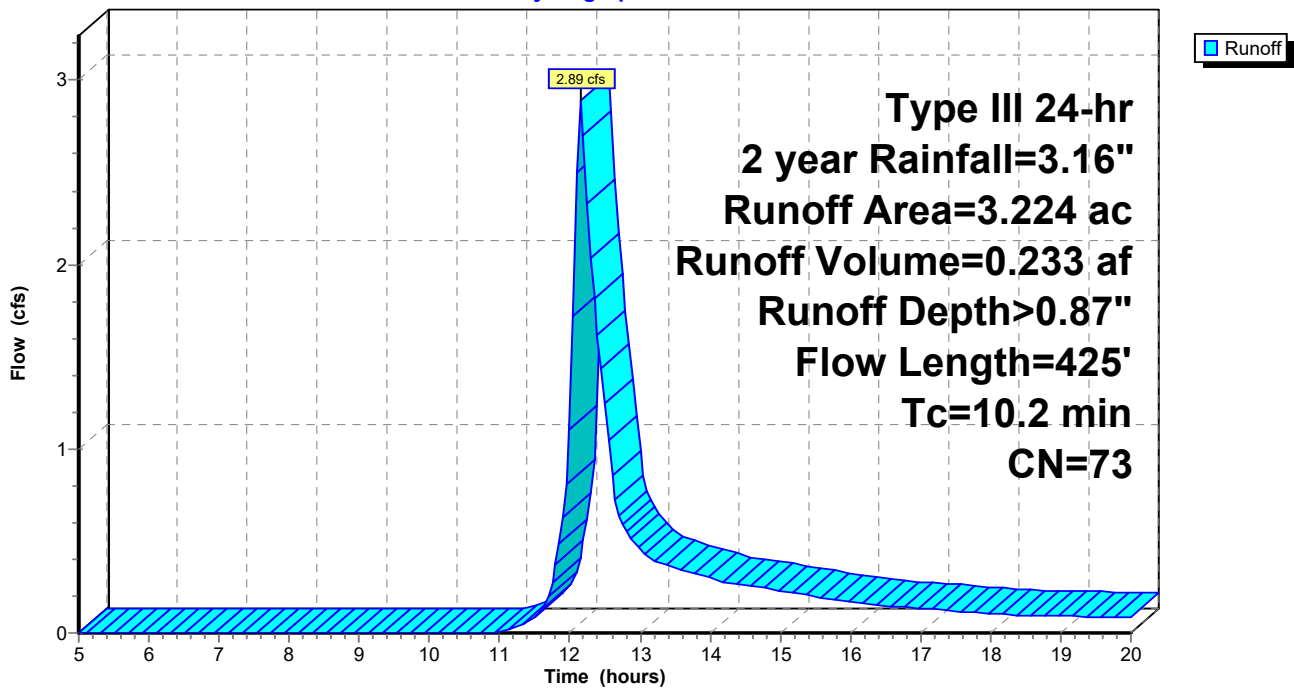
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.235	67	Row crops, straight row, Good, HSG A
2.565	78	Row crops, straight row, Good, HSG B
0.288	36	Woods, Fair, HSG A
0.136	60	Woods, Fair, HSG B
3.224	73	Weighted Average
3.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.2000	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
0.7	82	0.1707	2.07		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.6	293	0.0137	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
10.2	425	Total			

Subcatchment 70: Subcat 70

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 71: Subcat 71

Runoff = 2.79 cfs @ 12.28 hrs, Volume= 0.323 af, Depth> 0.48"

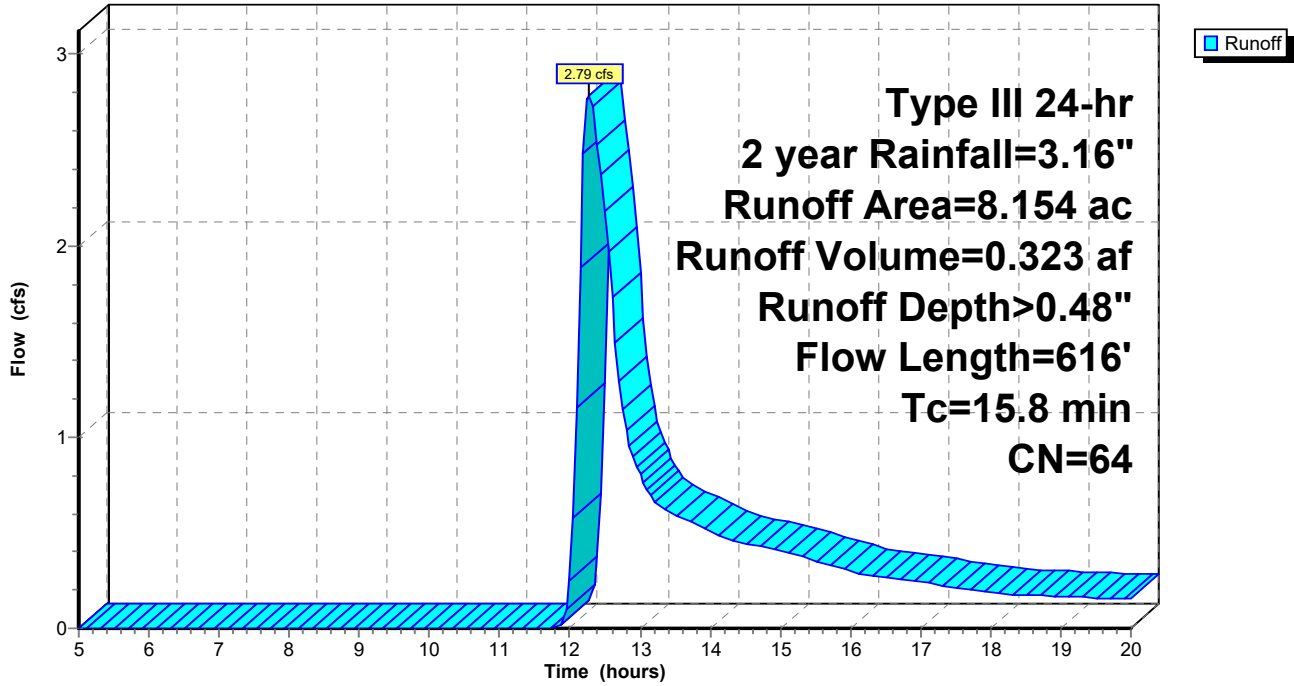
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.103	83	Paved roads w/open ditches, 50% imp, HSG A
0.705	89	Paved roads w/open ditches, 50% imp, HSG B
2.058	78	Row crops, straight row, Good, HSG B
1.051	36	Woods, Fair, HSG A
4.165	60	Woods, Fair, HSG B
0.071	73	Woods, Fair, HSG C
8.154	64	Weighted Average
7.750		95.04% Pervious Area
0.404		4.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.9	369	0.0135	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.6	197	0.0812	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.8	616	Total			

Subcatchment 71: Subcat 71

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 72: Subcat 72

Runoff = 5.15 cfs @ 12.24 hrs, Volume= 0.501 af, Depth> 0.72"

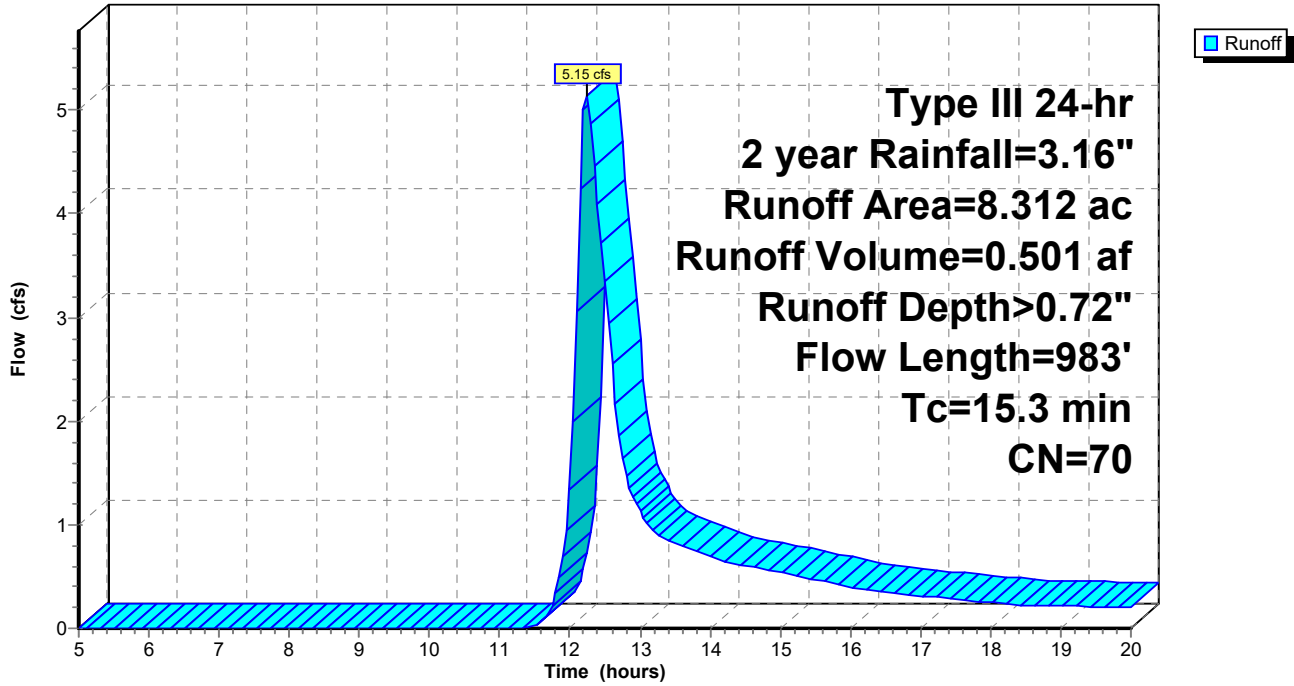
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.000	0	, HSG B
* 0.000	0	, HSG C
0.210	70	1/2 acre lots, 25% imp, HSG B
0.503	91	Fallow, bare soil, HSG C
0.107	89	Paved roads w/open ditches, 50% imp, HSG B
0.236	92	Paved roads w/open ditches, 50% imp, HSG C
3.121	60	Woods, Fair, HSG B
4.135	73	Woods, Fair, HSG C
8.312	70	Weighted Average
8.088		97.31% Pervious Area
0.224		2.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.1400	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
6.5	610	0.0492	1.55		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0303	3.53		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	290	0.1138	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	983	Total			

Subcatchment 72: Subcat 72

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 73: Subcat 73

Runoff = 22.25 cfs @ 12.32 hrs, Volume= 2.315 af, Depth> 0.97"

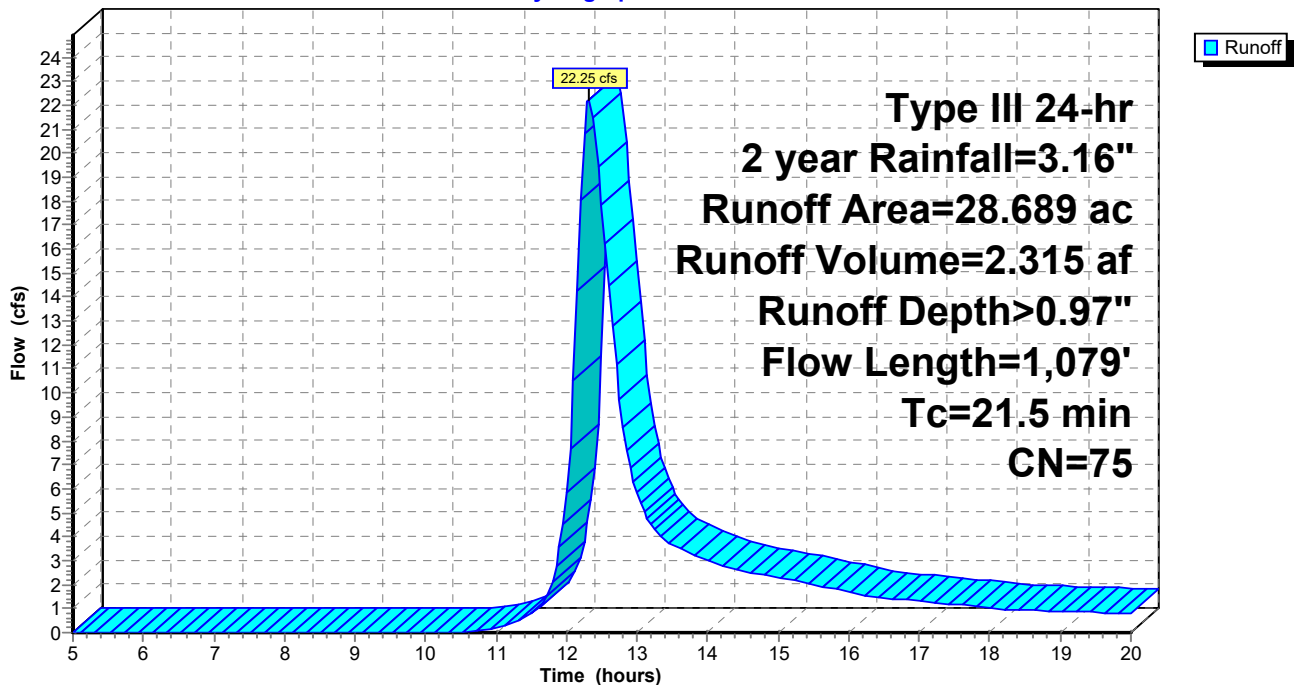
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.050	70	Brush, Fair, HSG C
3.727	91	Fallow, bare soil, HSG C
0.000	67	Row crops, straight row, Good, HSG A
0.499	78	Row crops, straight row, Good, HSG B
0.223	36	Woods, Fair, HSG A
1.034	60	Woods, Fair, HSG B
23.155	73	Woods, Fair, HSG C
28.689	75	Weighted Average
28.689		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1200	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
15.4	1,029	0.0496	1.11		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	1,079	Total			

Subcatchment 73: Subcat 73

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 74: Subcat 74

Runoff = 25.61 cfs @ 12.58 hrs, Volume= 3.653 af, Depth> 0.59"

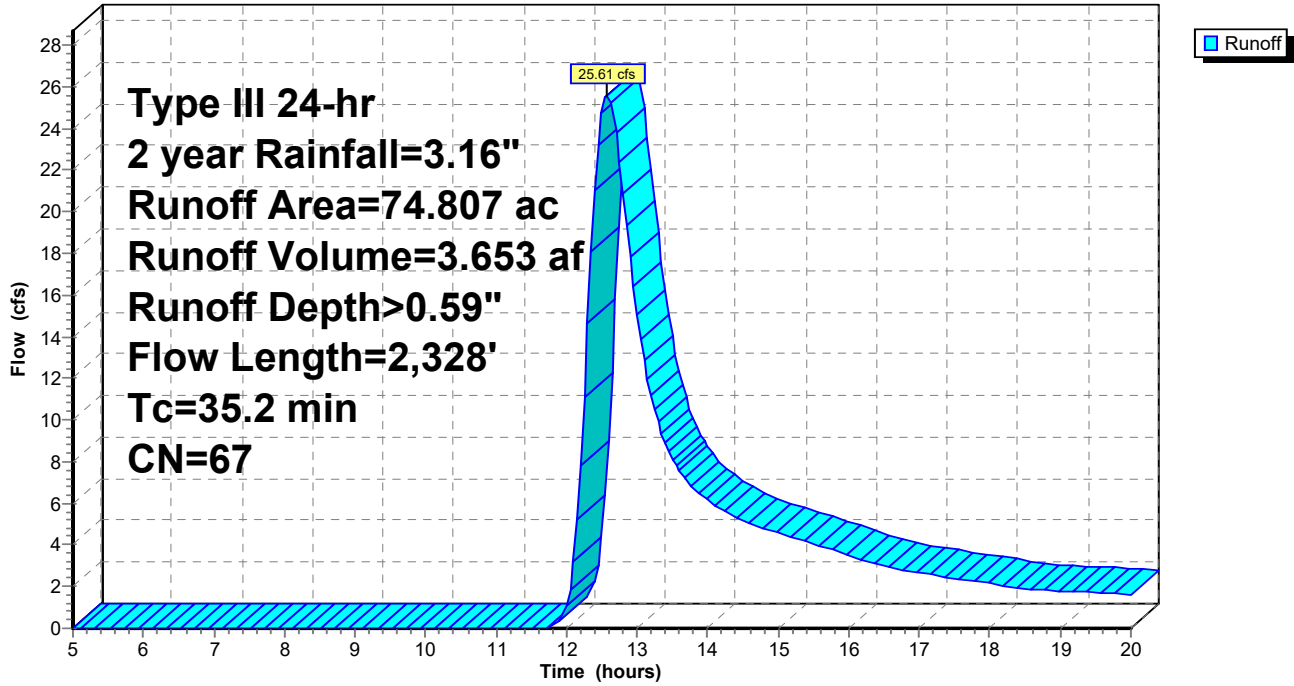
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.000	0	, HSG C
1.215	49	50-75% Grass cover, Fair, HSG A
4.711	69	50-75% Grass cover, Fair, HSG B
4.061	79	50-75% Grass cover, Fair, HSG C
10.203	39	>75% Grass cover, Good, HSG A
11.877	61	>75% Grass cover, Good, HSG B
11.563	74	>75% Grass cover, Good, HSG C
0.819	35	Brush, Fair, HSG A
0.042	56	Brush, Fair, HSG B
5.256	70	Brush, Fair, HSG C
2.416	77	Fallow, bare soil, HSG A
2.938	86	Fallow, bare soil, HSG B
7.003	91	Fallow, bare soil, HSG C
2.006	36	Woods, Fair, HSG A
2.059	60	Woods, Fair, HSG B
8.639	73	Woods, Fair, HSG C
74.807	67	Weighted Average
74.807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.16"
4.4	484	0.0331	1.82		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
1.2	207	0.0821	2.87		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
4.1	404	0.0272	1.65		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
17.3	923	0.0162	0.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	260	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
35.2	2,328	Total			

Subcatchment 74: Subcat 74

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 75: Subcat 75

Runoff = 47.30 cfs @ 12.25 hrs, Volume= 4.412 af, Depth> 1.02"

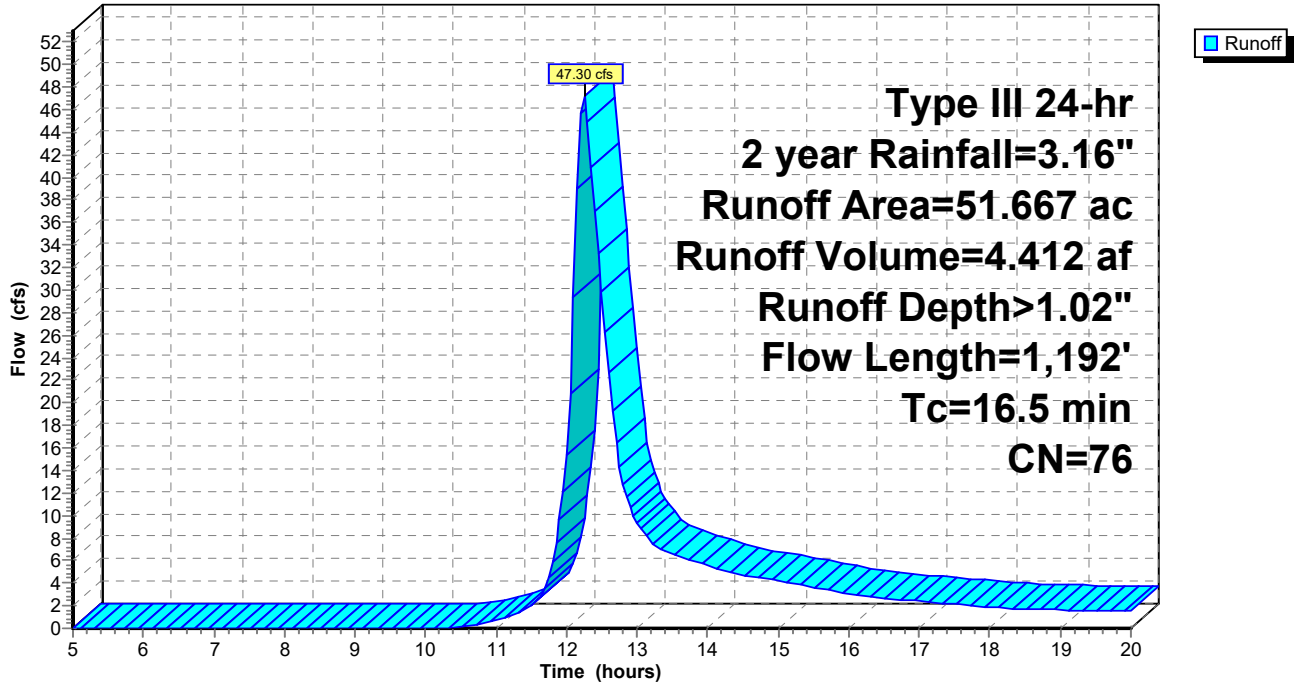
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.425	49	50-75% Grass cover, Fair, HSG A
1.766	69	50-75% Grass cover, Fair, HSG B
0.621	35	Brush, Fair, HSG A
0.051	56	Brush, Fair, HSG B
0.043	70	Brush, Fair, HSG C
11.699	77	Fallow, bare soil, HSG A
27.815	86	Fallow, bare soil, HSG B
1.597	78	Row crops, straight row, Good, HSG B
4.655	36	Woods, Fair, HSG A
2.995	60	Woods, Fair, HSG B
0.000	73	Woods, Fair, HSG C
51.667	76	Weighted Average
51.667		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.5	178	0.0281	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.5	964	0.0612	2.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
16.5	1,192	Total			

Subcatchment 75: Subcat 75

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 67P: (new Pond)

Inflow Area = 2.473 ac, 5.83% Impervious, Inflow Depth > 0.77" for 2 year event
 Inflow = 1.91 cfs @ 12.16 hrs, Volume= 0.159 af
 Outflow = 0.25 cfs @ 13.53 hrs, Volume= 0.150 af, Atten= 87%, Lag= 82.1 min
 Discarded = 0.25 cfs @ 13.53 hrs, Volume= 0.150 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 172.38' @ 13.53 hrs Surf.Area= 8,884 sf Storage= 2,797 cf

Plug-Flow detention time= 135.7 min calculated for 0.150 af (95% of inflow)
 Center-of-Mass det. time= 117.1 min (946.9 - 829.8)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	98,033 cf	Custom Stage Data (Conic) Listed below (Recalc)

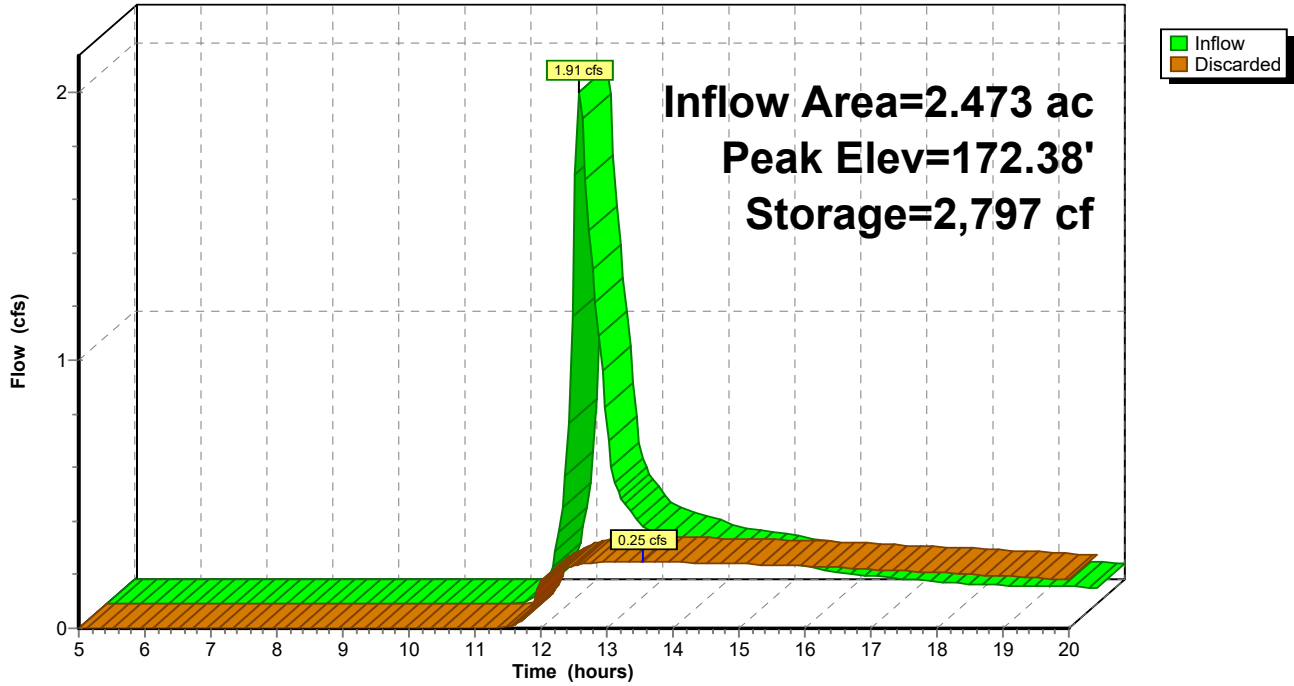
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.00	6,117	0	0	6,117
174.00	26,818	30,495	30,495	26,836
176.00	41,235	67,538	98,033	41,311

Device	Routing	Invert	Outlet Devices
#1	Discarded	172.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.25 cfs @ 13.53 hrs HW=172.38' (Free Discharge)
 ↑1=Exfiltration (Controls 0.25 cfs)

Pond 67P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 68P: (new Pond)

Inflow Area = 21.623 ac, 2.26% Impervious, Inflow Depth > 0.68" for 2 year event
 Inflow = 10.88 cfs @ 12.35 hrs, Volume= 1.218 af
 Outflow = 1.64 cfs @ 14.26 hrs, Volume= 0.979 af, Atten= 85%, Lag= 114.6 min
 Discarded = 1.64 cfs @ 14.26 hrs, Volume= 0.979 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 174.53' @ 14.26 hrs Surf.Area= 58,847 sf Storage= 22,893 cf

Plug-Flow detention time= 165.9 min calculated for 0.979 af (80% of inflow)
 Center-of-Mass det. time= 113.0 min (956.1 - 843.2)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	576,430 cf	Custom Stage Data (Conic) Listed below (Recalc)

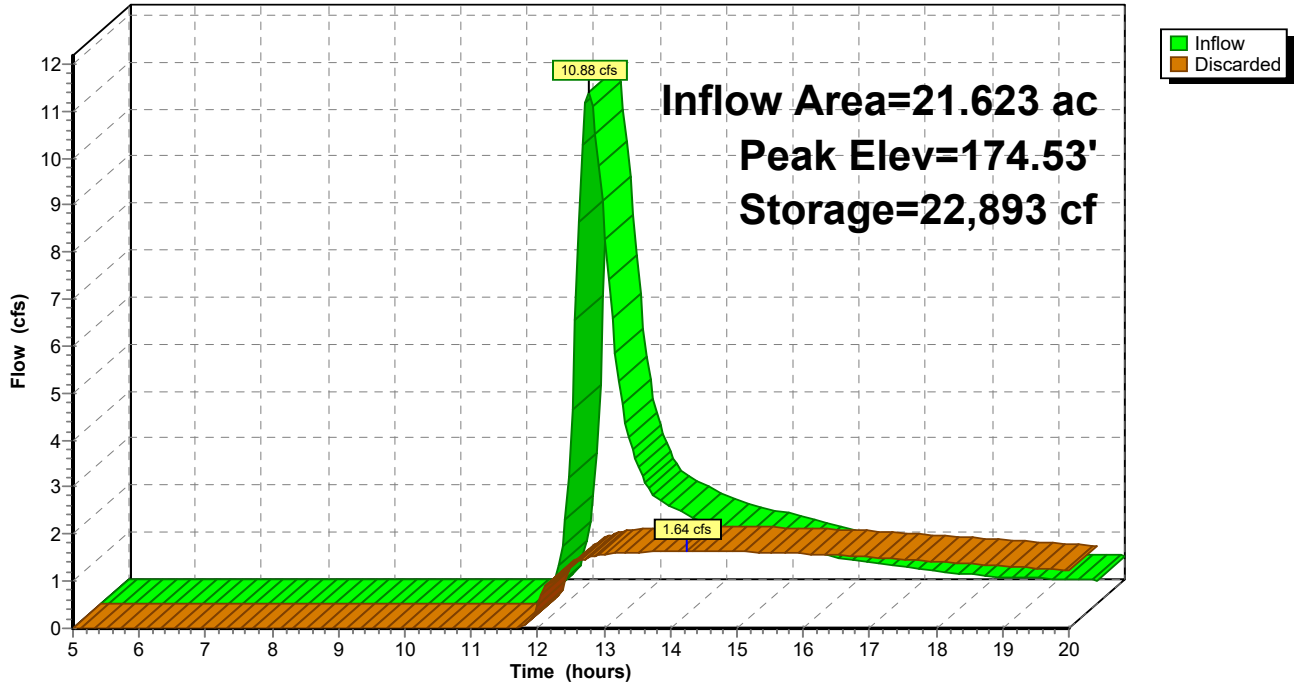
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	29,899	0	0	29,899
176.00	191,906	198,369	198,369	191,920
177.50	317,411	378,061	576,430	317,454

Device	Routing	Invert	Outlet Devices
#1	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.64 cfs @ 14.26 hrs HW=174.53' (Free Discharge)
 ↑1=Exfiltration (Controls 1.64 cfs)

Pond 68P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 69P: (new Pond)

Inflow Area = 6.832 ac, 3.28% Impervious, Inflow Depth > 0.48" for 2 year event
 Inflow = 2.65 cfs @ 12.20 hrs, Volume= 0.271 af
 Outflow = 0.25 cfs @ 15.99 hrs, Volume= 0.153 af, Atten= 91%, Lag= 227.5 min
 Discarded = 0.25 cfs @ 15.99 hrs, Volume= 0.153 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 171.03' @ 15.99 hrs Surf.Area= 8,832 sf Storage= 6,199 cf

Plug-Flow detention time= 212.6 min calculated for 0.153 af (56% of inflow)
 Center-of-Mass det. time= 118.1 min (968.5 - 850.4)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	115,744 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	3,610	0	0	3,610
172.00	15,882	18,043	18,043	15,900
174.00	24,667	40,228	58,271	24,742
176.00	33,009	57,474	115,744	33,170

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.25 cfs @ 15.99 hrs HW=171.03' (Free Discharge)
 ↑1=Exfiltration (Controls 0.25 cfs)

Existing Conditions - Windsorville

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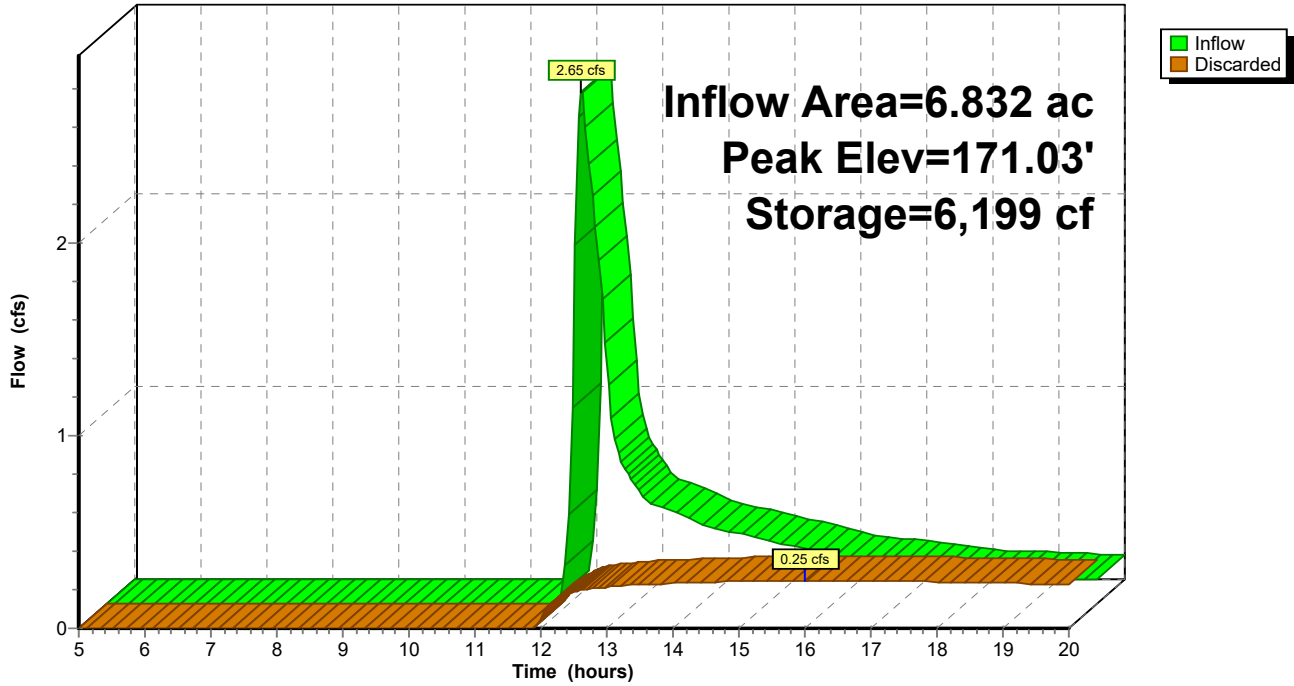
Type III 24-hr 2 year Rainfall=3.16"

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Pond 69P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 70P: (new Pond)

Inflow Area = 3.224 ac, 0.00% Impervious, Inflow Depth > 0.87" for 2 year event
 Inflow = 2.89 cfs @ 12.16 hrs, Volume= 0.233 af
 Outflow = 1.20 cfs @ 12.51 hrs, Volume= 0.232 af, Atten= 58%, Lag= 21.1 min
 Discarded = 1.20 cfs @ 12.51 hrs, Volume= 0.232 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 197.89' @ 12.51 hrs Surf.Area= 10,384 sf Storage= 2,395 cf

Plug-Flow detention time= 22.5 min calculated for 0.232 af (100% of inflow)
 Center-of-Mass det. time= 20.8 min (845.4 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	197.20'	32,894 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.20	0	0	0	0
198.00	13,877	3,701	3,701	13,878
198.40	29,617	8,502	12,203	29,619
199.00	39,593	20,691	32,894	39,603

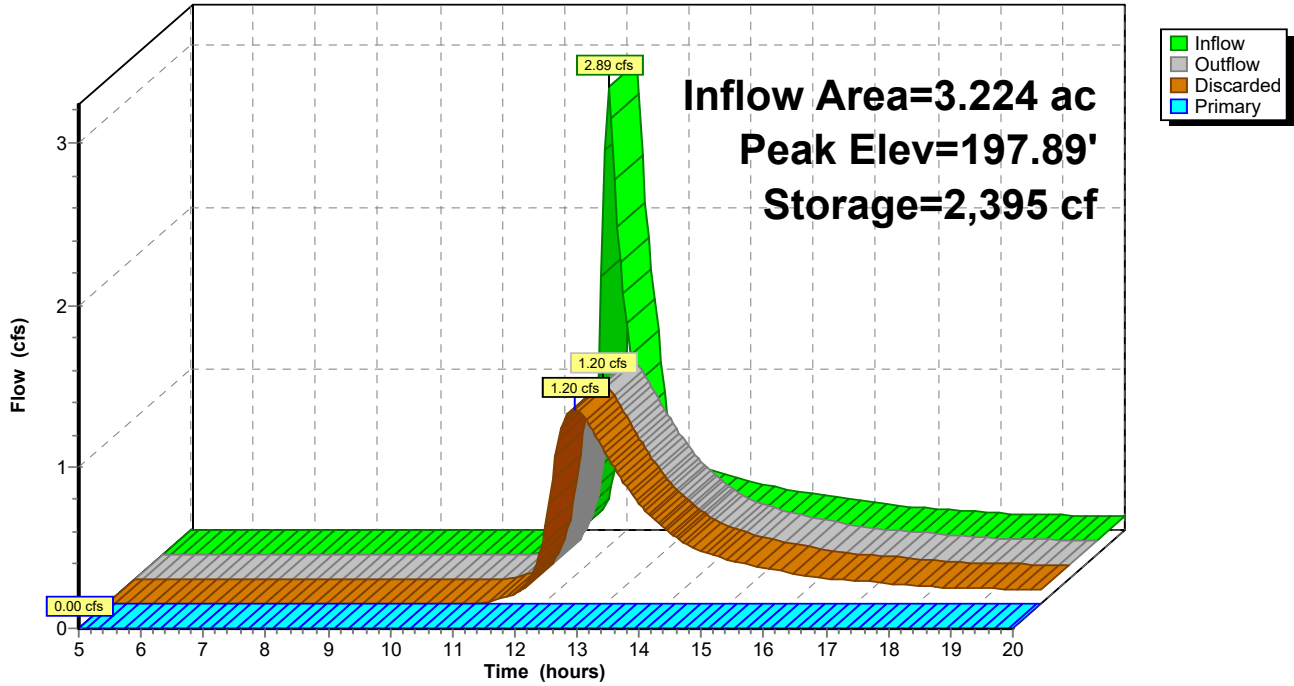
Device	Routing	Invert	Outlet Devices
#1	Primary	198.40'	50.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	197.20'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.20 cfs @ 12.51 hrs HW=197.89' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.20 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=197.20' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 70P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 71P: (new Pond)

Inflow Area = 11.378 ac, 3.55% Impervious, Inflow Depth > 0.34" for 2 year event
 Inflow = 2.79 cfs @ 12.28 hrs, Volume= 0.323 af
 Outflow = 0.42 cfs @ 14.83 hrs, Volume= 0.242 af, Atten= 85%, Lag= 152.6 min
 Discarded = 0.42 cfs @ 14.83 hrs, Volume= 0.242 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 177.82' @ 14.83 hrs Surf.Area= 15,015 sf Storage= 5,980 cf

Plug-Flow detention time= 171.5 min calculated for 0.242 af (75% of inflow)
 Center-of-Mass det. time= 106.8 min (960.8 - 854.0)

Volume	Invert	Avail.Storage	Storage Description
#1	177.00'	70,235 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
177.00	1,770	0	0	1,770
178.00	19,737	9,139	9,139	19,740
179.30	33,402	34,153	43,292	33,425
180.00	43,811	26,942	70,235	43,846

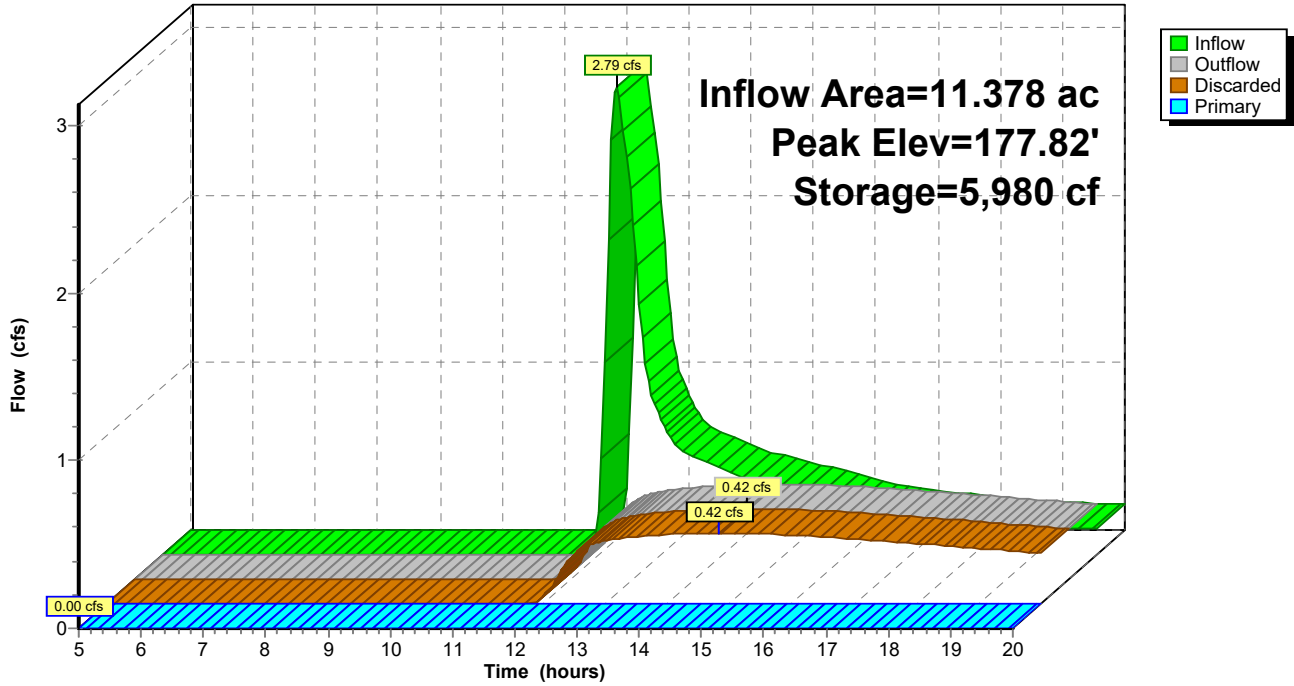
Device	Routing	Invert	Outlet Devices
#1	Primary	179.30'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	177.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.42 cfs @ 14.83 hrs HW=177.82' (Free Discharge)
 ↑2=Exfiltration (Controls 0.42 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=177.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 71P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 72P: (new Pond)

Inflow Area = 8.312 ac, 2.69% Impervious, Inflow Depth > 0.72" for 2 year event
 Inflow = 5.15 cfs @ 12.24 hrs, Volume= 0.501 af
 Outflow = 0.24 cfs @ 18.12 hrs, Volume= 0.145 af, Atten= 95%, Lag= 352.7 min
 Discarded = 0.24 cfs @ 18.12 hrs, Volume= 0.145 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 174.24' @ 18.12 hrs Surf.Area= 8,488 sf Storage= 15,664 cf

Plug-Flow detention time= 245.7 min calculated for 0.144 af (29% of inflow)
 Center-of-Mass det. time= 141.8 min (977.8 - 836.0)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	247,588 cf	Custom Stage Data (Conic) Listed below (Recalc)

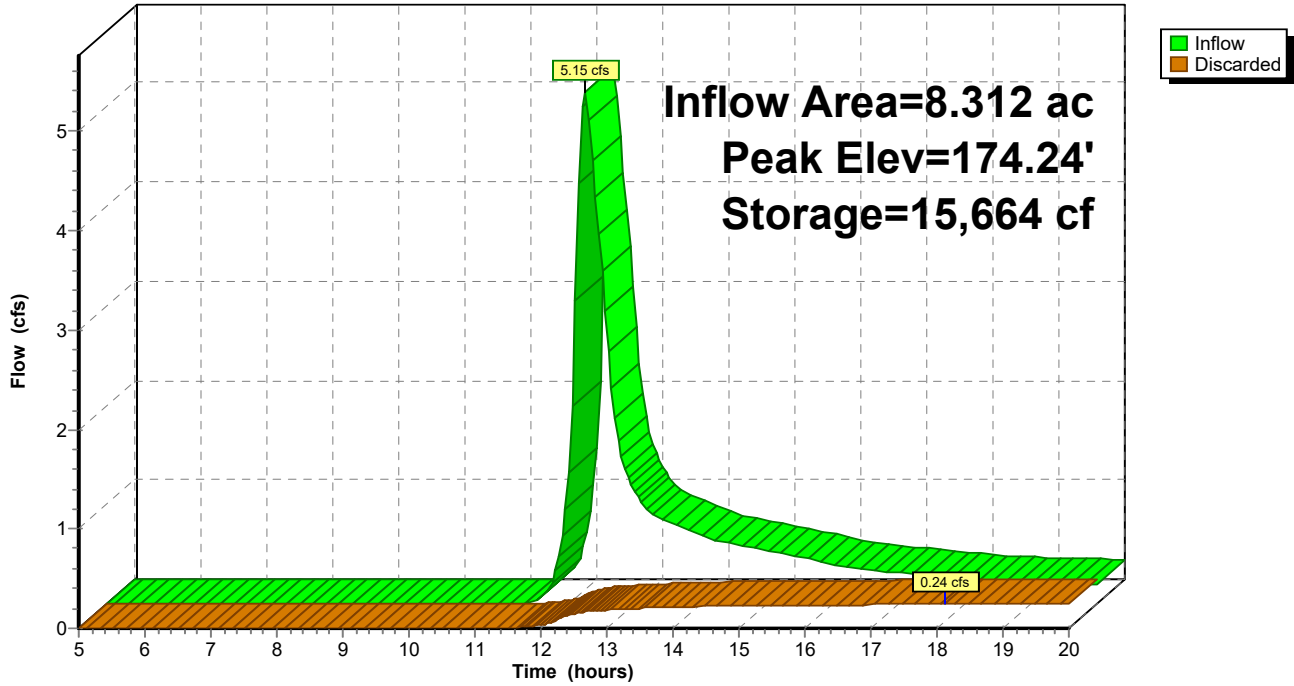
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	704	0	0	704
172.00	2,903	3,358	3,358	2,921
174.00	7,882	10,379	13,737	7,926
176.00	13,742	21,354	35,091	13,831
178.00	18,516	32,140	67,231	18,689
180.00	25,003	43,357	110,588	25,259
182.00	32,623	57,457	168,045	32,973
184.00	47,378	79,544	247,588	47,796

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.24 cfs @ 18.12 hrs HW=174.24' (Free Discharge)
 ↑1=Exfiltration (Controls 0.24 cfs)

Pond 72P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 73P: (new Pond)

Inflow Area = 28.689 ac, 0.00% Impervious, Inflow Depth > 0.97" for 2 year event
 Inflow = 22.25 cfs @ 12.32 hrs, Volume= 2.315 af
 Outflow = 1.39 cfs @ 16.71 hrs, Volume= 0.853 af, Atten= 94%, Lag= 263.4 min
 Discarded = 1.39 cfs @ 16.71 hrs, Volume= 0.853 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 152.78' @ 16.71 hrs Surf.Area= 49,751 sf Storage= 67,859 cf

Plug-Flow detention time= 240.5 min calculated for 0.853 af (37% of inflow)
 Center-of-Mass det. time= 145.8 min (974.0 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	393,366 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	0	0	0
150.00	2,638	2,638	2,638
152.00	30,938	33,576	36,214
154.00	78,907	109,845	146,059
156.00	168,400	247,307	393,366

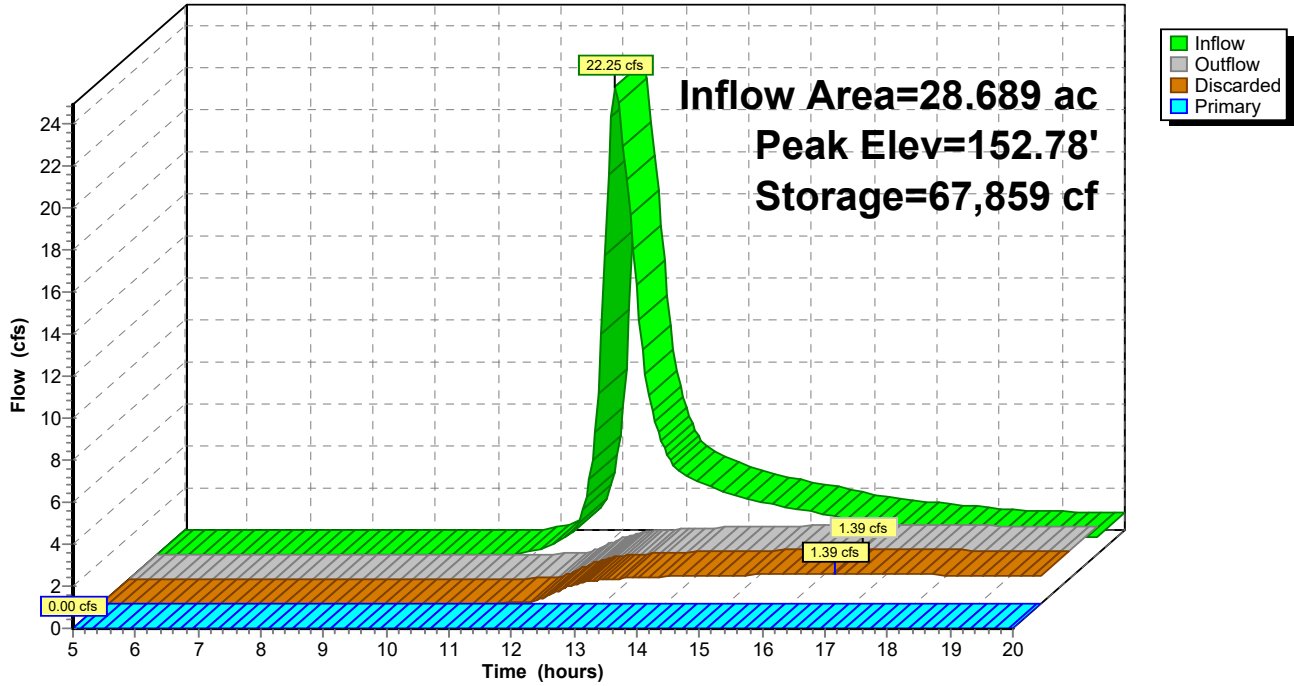
Device	Routing	Invert	Outlet Devices
#1	Primary	154.00'	30.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	148.00'	1.200 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.39 cfs @ 16.71 hrs HW=152.78' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.39 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=148.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 73P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 74P: (new Pond)

Inflow Area = 103.496 ac, 0.00% Impervious, Inflow Depth > 0.42" for 2 year event
 Inflow = 25.61 cfs @ 12.58 hrs, Volume= 3.653 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 124.21' @ 20.00 hrs Surf.Area= 85,597 sf Storage= 158,962 cf

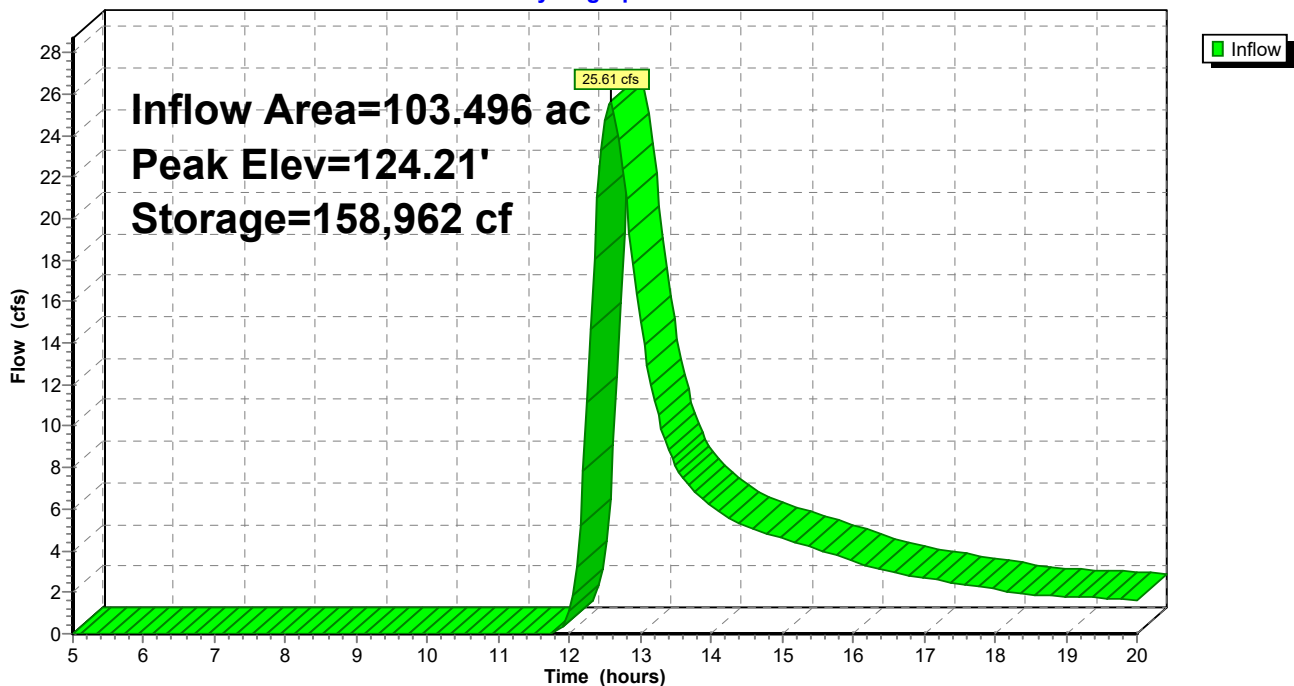
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	1,975,364 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.00	59,766	0	0
124.00	81,926	141,692	141,692
126.00	117,535	199,461	341,153
128.00	400,767	518,302	859,455
130.00	715,142	1,115,909	1,975,364

Pond 74P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 75P: (new Pond)

Inflow Area = 51.667 ac, 0.00% Impervious, Inflow Depth > 1.02" for 2 year event
 Inflow = 47.30 cfs @ 12.25 hrs, Volume= 4.412 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 124.47' @ 20.00 hrs Surf.Area= 51,898 sf Storage= 192,042 cf

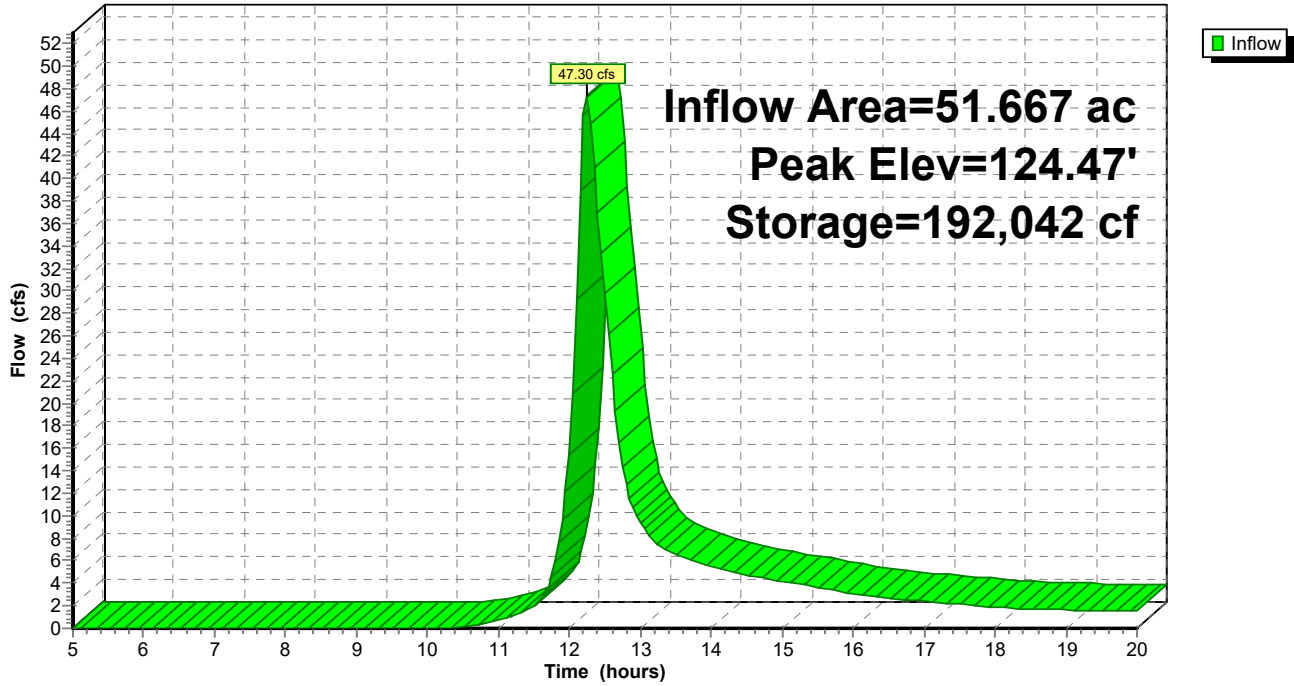
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	118.00'	1,658,604 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
118.00	2,009	0	0
120.00	20,404	22,413	22,413
122.00	38,043	58,447	80,860
124.00	49,484	87,527	168,387
126.00	59,831	109,315	277,702
128.00	76,945	136,776	414,478
130.00	87,570	164,515	578,993
132.00	96,760	184,330	763,323
134.00	104,766	201,526	964,849
136.00	111,675	216,441	1,181,290
138.00	119,097	230,772	1,412,062
140.00	127,445	246,542	1,658,604

Pond 75P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 67: Subcat 67

Runoff = 7.52 cfs @ 12.15 hrs, Volume= 0.581 af, Depth> 2.82"

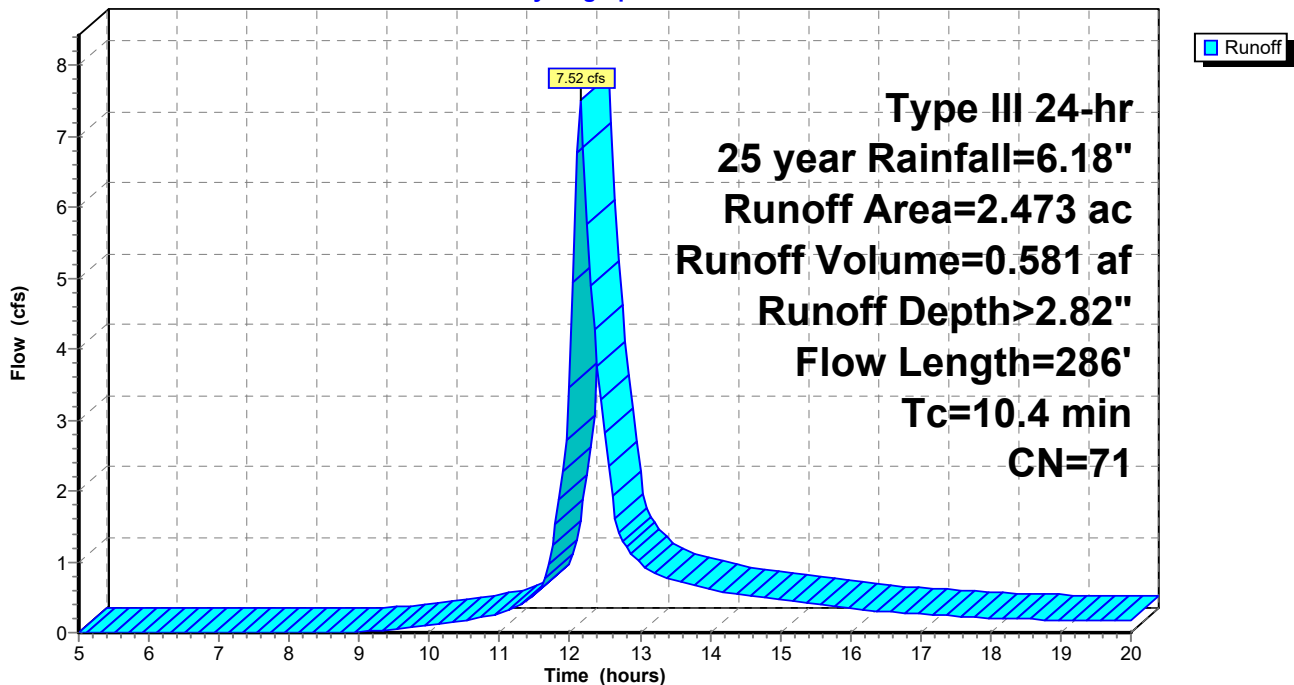
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.541	86	Fallow, bare soil, HSG B
0.288	89	Paved roads w/open ditches, 50% imp, HSG B
0.308	78	Row crops, straight row, Good, HSG B
1.335	60	Woods, Fair, HSG B
2.473	71	Weighted Average
2.329		94.17% Pervious Area
0.144		5.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.2	119	0.0588	1.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.7	117	0.0513	1.13		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	286	Total			

Subcatchment 67: Subcat 67

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 68: Subcat 68

Runoff = 46.87 cfs @ 12.31 hrs, Volume= 4.732 af, Depth> 2.63"

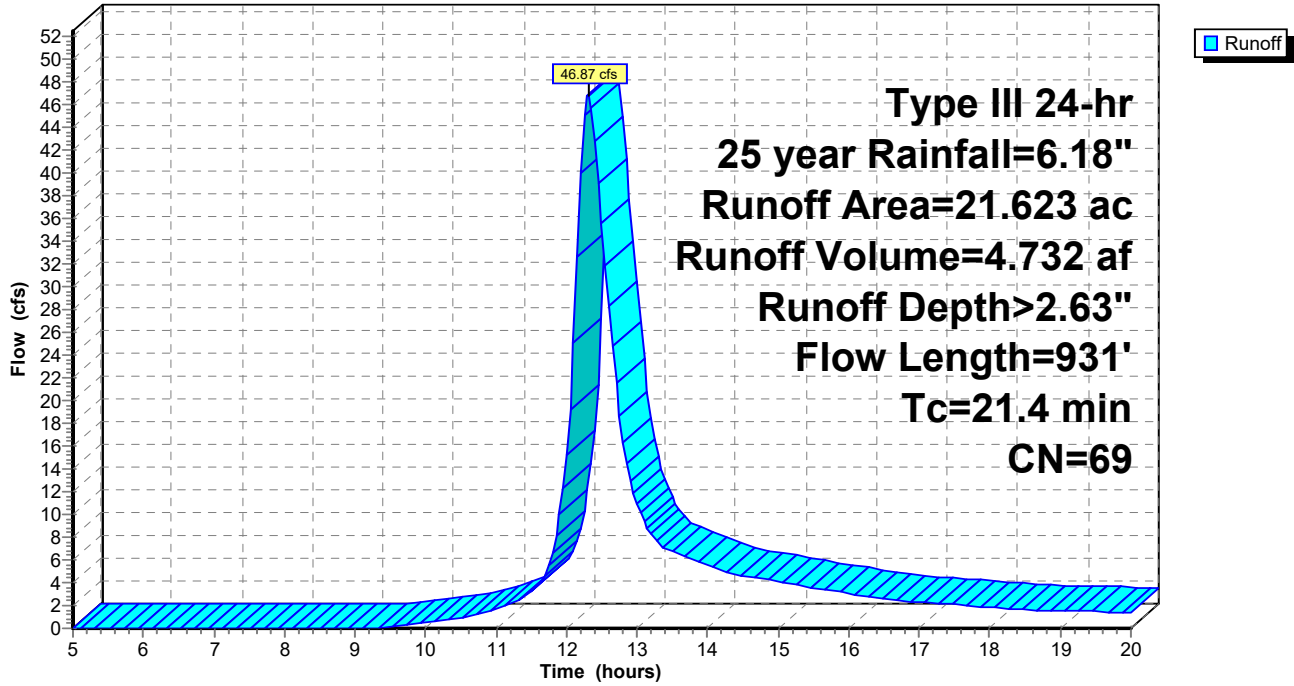
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.017	86	Fallow, bare soil, HSG B
0.977	89	Paved roads w/open ditches, 50% imp, HSG B
0.036	67	Row crops, straight row, Good, HSG A
14.261	78	Row crops, straight row, Good, HSG B
3.381	36	Woods, Fair, HSG A
2.951	60	Woods, Fair, HSG B
21.623	69	Weighted Average
21.134		97.74% Pervious Area
0.489		2.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.2	244	0.0123	0.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.5	637	0.0126	1.01		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.4	931	Total			

Subcatchment 68: Subcat 68

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 69: Subcat 69

Runoff = 15.77 cfs @ 12.16 hrs, Volume= 1.249 af, Depth> 2.19"

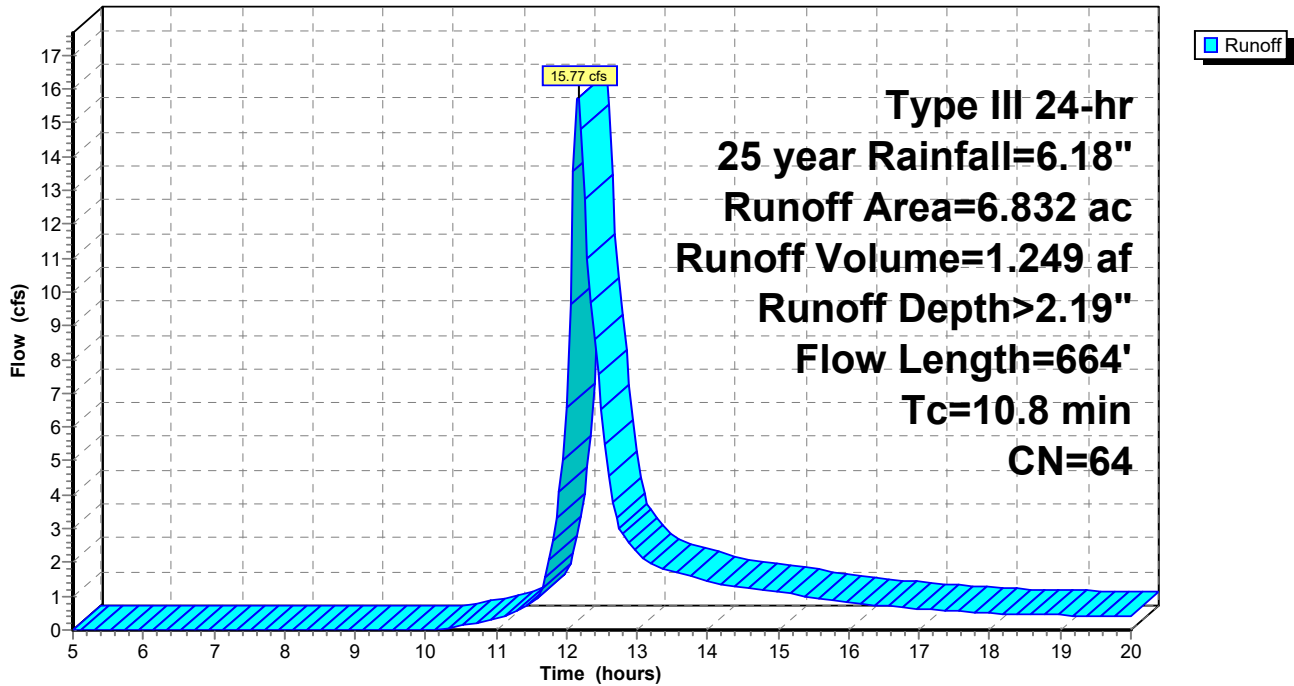
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.449	89	Paved roads w/open ditches, 50% imp, HSG B
0.027	67	Row crops, straight row, Good, HSG A
3.162	78	Row crops, straight row, Good, HSG B
1.668	36	Woods, Fair, HSG A
1.526	60	Woods, Fair, HSG B
6.832	64	Weighted Average
6.608		96.72% Pervious Area
0.224		3.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.19		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
7.1	446	0.0134	1.04		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.0	168	0.0357	0.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.8	664	Total			

Subcatchment 69: Subcat 69

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 70: Subcat 70

Runoff = 10.51 cfs @ 12.15 hrs, Volume= 0.808 af, Depth> 3.01"

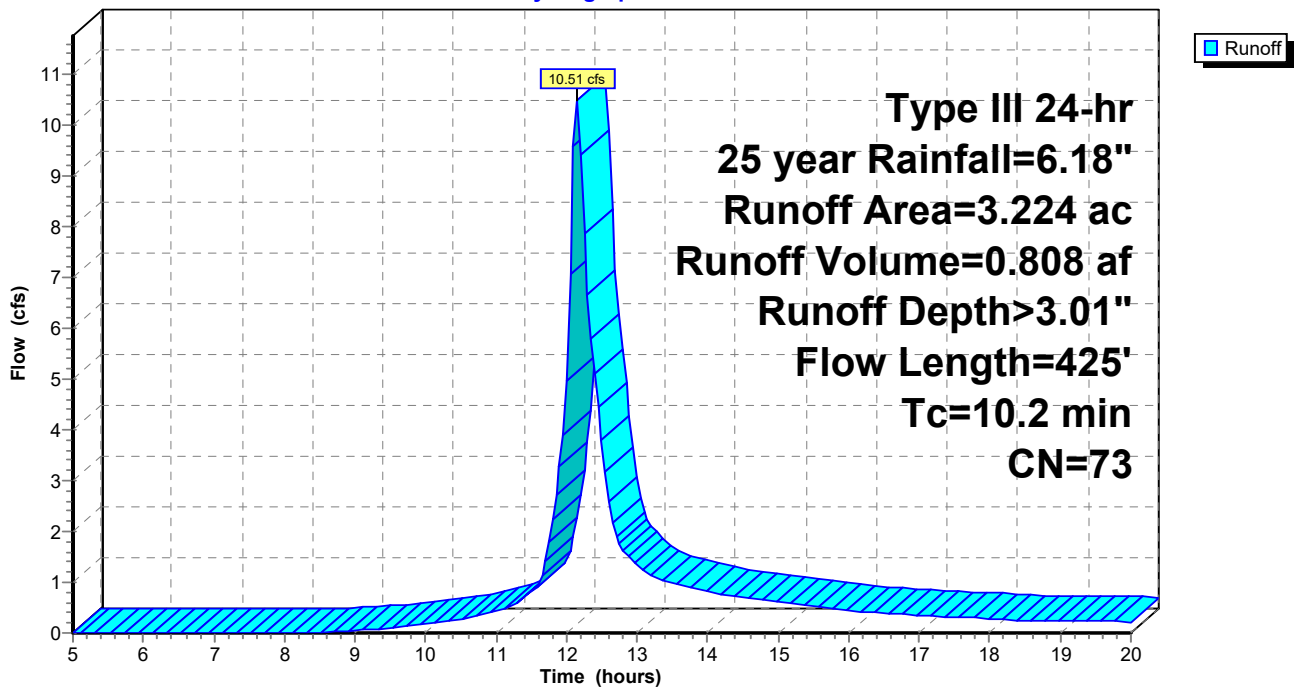
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.235	67	Row crops, straight row, Good, HSG A
2.565	78	Row crops, straight row, Good, HSG B
0.288	36	Woods, Fair, HSG A
0.136	60	Woods, Fair, HSG B
3.224	73	Weighted Average
3.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.2000	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
0.7	82	0.1707	2.07		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.6	293	0.0137	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
10.2	425	Total			

Subcatchment 70: Subcat 70

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 71: Subcat 71

Runoff = 16.33 cfs @ 12.23 hrs, Volume= 1.488 af, Depth> 2.19"

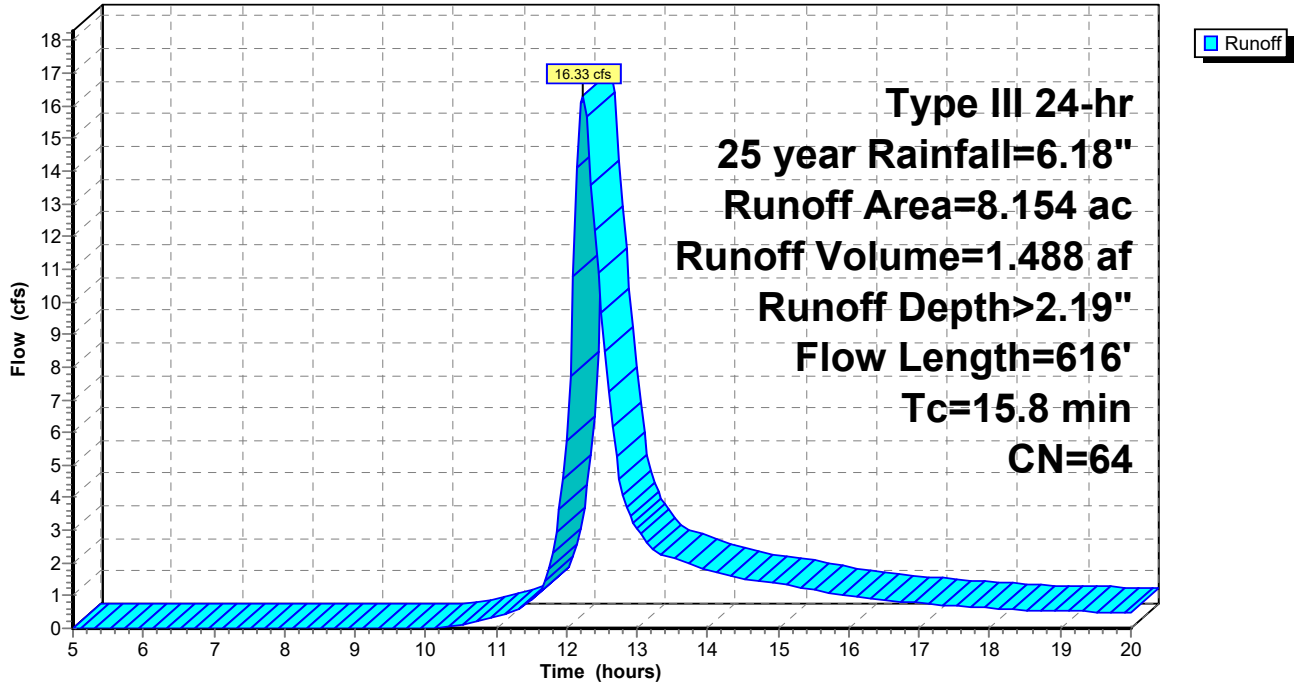
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.103	83	Paved roads w/open ditches, 50% imp, HSG A
0.705	89	Paved roads w/open ditches, 50% imp, HSG B
2.058	78	Row crops, straight row, Good, HSG B
1.051	36	Woods, Fair, HSG A
4.165	60	Woods, Fair, HSG B
0.071	73	Woods, Fair, HSG C
8.154	64	Weighted Average
7.750		95.04% Pervious Area
0.404		4.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.9	369	0.0135	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.6	197	0.0812	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.8	616	Total			

Subcatchment 71: Subcat 71

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 72: Subcat 72

Runoff = 21.36 cfs @ 12.22 hrs, Volume= 1.887 af, Depth> 2.72"

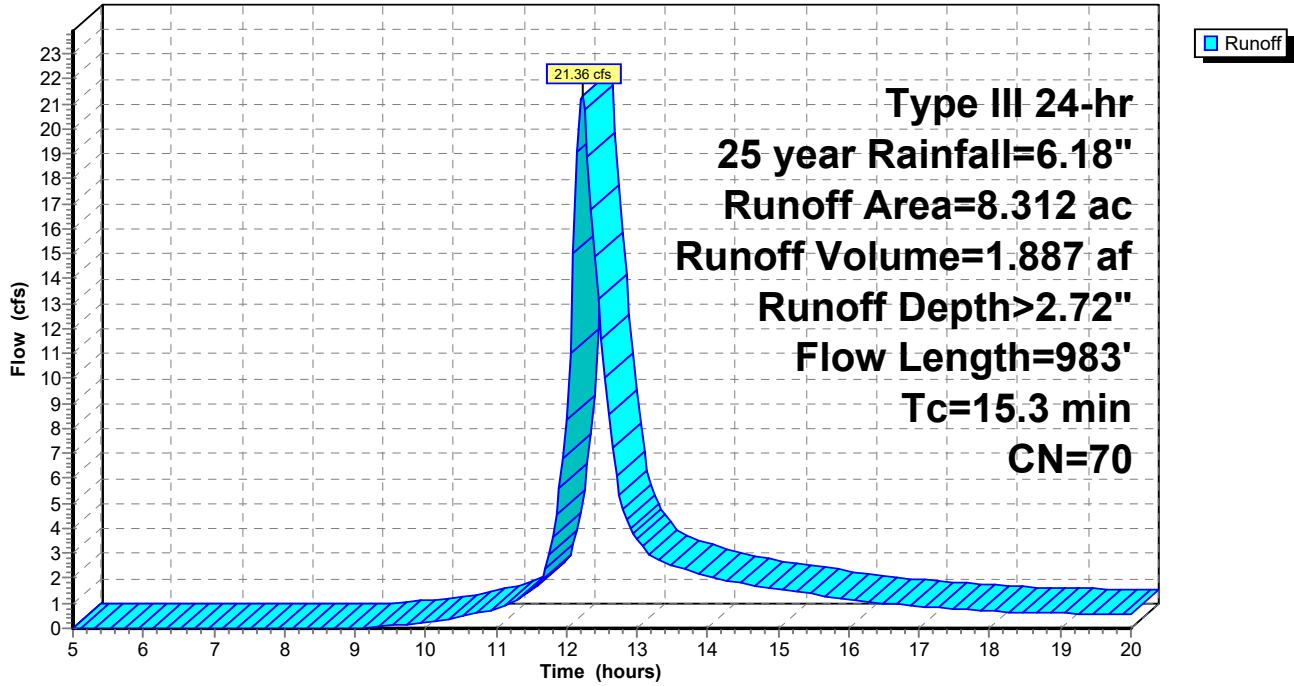
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.000	0	, HSG B
* 0.000	0	, HSG C
0.210	70	1/2 acre lots, 25% imp, HSG B
0.503	91	Fallow, bare soil, HSG C
0.107	89	Paved roads w/open ditches, 50% imp, HSG B
0.236	92	Paved roads w/open ditches, 50% imp, HSG C
3.121	60	Woods, Fair, HSG B
4.135	73	Woods, Fair, HSG C
8.312	70	Weighted Average
8.088		97.31% Pervious Area
0.224		2.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.1400	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
6.5	610	0.0492	1.55		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0303	3.53		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	290	0.1138	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	983	Total			

Subcatchment 72: Subcat 72

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 73: Subcat 73

Runoff = 75.42 cfs @ 12.30 hrs, Volume= 7.621 af, Depth> 3.19"

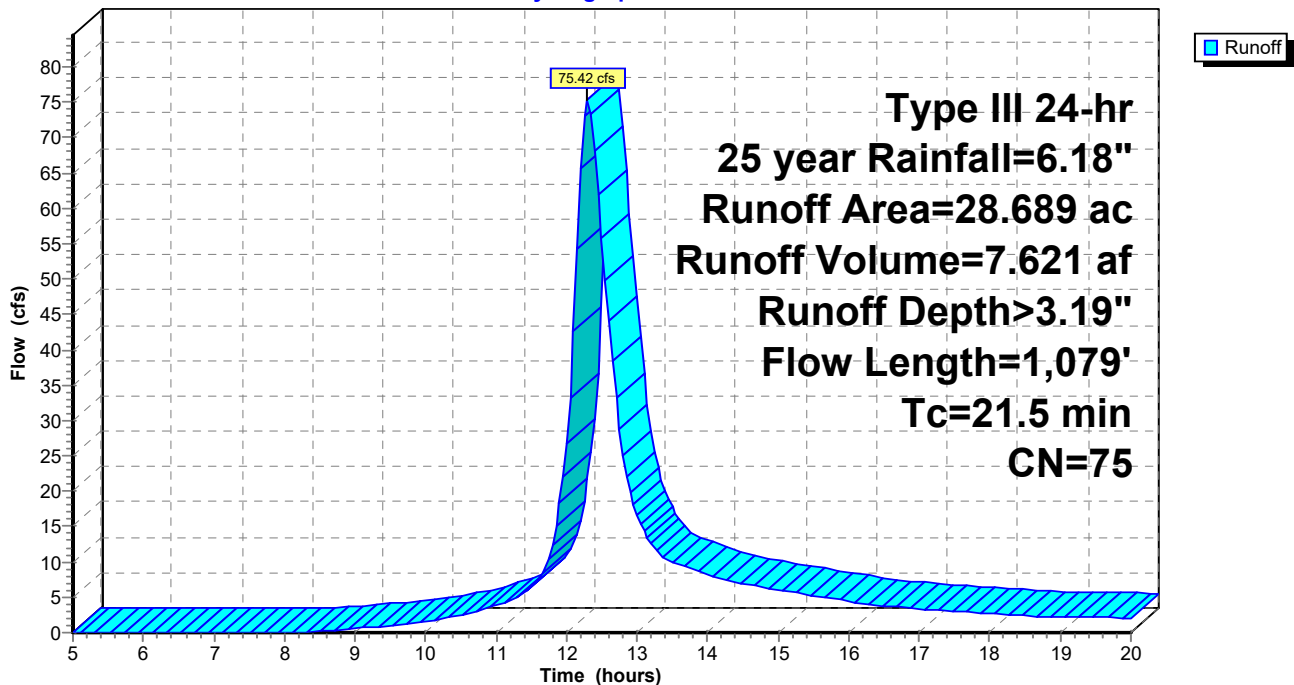
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.050	70	Brush, Fair, HSG C
3.727	91	Fallow, bare soil, HSG C
0.000	67	Row crops, straight row, Good, HSG A
0.499	78	Row crops, straight row, Good, HSG B
0.223	36	Woods, Fair, HSG A
1.034	60	Woods, Fair, HSG B
23.155	73	Woods, Fair, HSG C
28.689	75	Weighted Average
28.689		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1200	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
15.4	1,029	0.0496	1.11		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	1,079	Total			

Subcatchment 73: Subcat 73

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 74: Subcat 74

Runoff = 120.79 cfs @ 12.51 hrs, Volume= 15.168 af, Depth> 2.43"

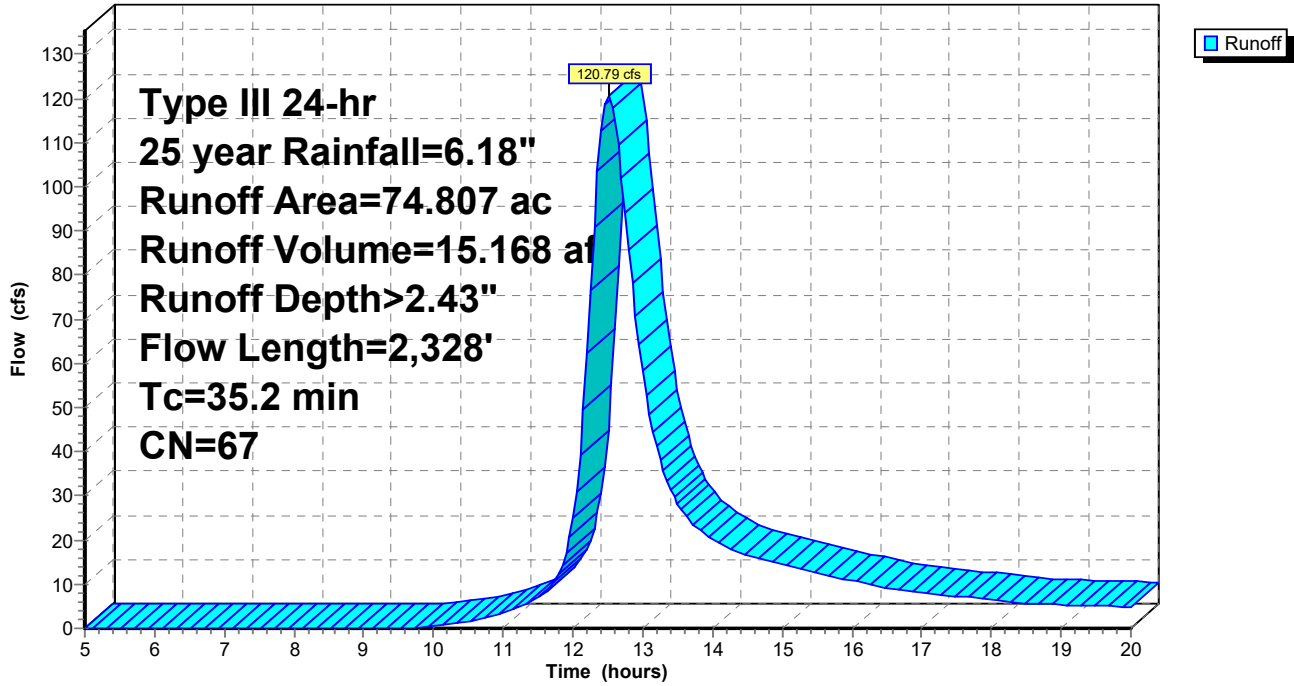
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.000	0	, HSG C
1.215	49	50-75% Grass cover, Fair, HSG A
4.711	69	50-75% Grass cover, Fair, HSG B
4.061	79	50-75% Grass cover, Fair, HSG C
10.203	39	>75% Grass cover, Good, HSG A
11.877	61	>75% Grass cover, Good, HSG B
11.563	74	>75% Grass cover, Good, HSG C
0.819	35	Brush, Fair, HSG A
0.042	56	Brush, Fair, HSG B
5.256	70	Brush, Fair, HSG C
2.416	77	Fallow, bare soil, HSG A
2.938	86	Fallow, bare soil, HSG B
7.003	91	Fallow, bare soil, HSG C
2.006	36	Woods, Fair, HSG A
2.059	60	Woods, Fair, HSG B
8.639	73	Woods, Fair, HSG C
74.807	67	Weighted Average
74.807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.16"
4.4	484	0.0331	1.82		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
1.2	207	0.0821	2.87		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
4.1	404	0.0272	1.65		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
17.3	923	0.0162	0.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	260	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
35.2	2,328	Total			

Subcatchment 74: Subcat 74

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 75: Subcat 75

Runoff = 155.15 cfs @ 12.23 hrs, Volume= 14.166 af, Depth> 3.29"

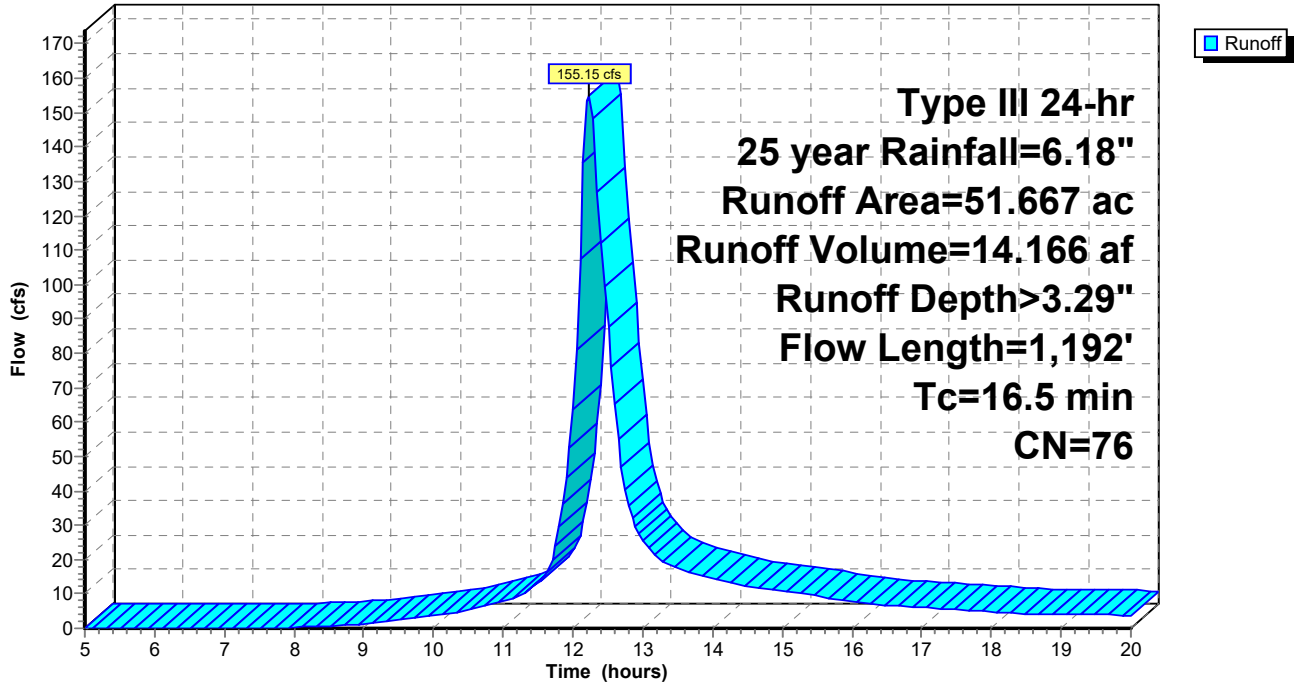
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.425	49	50-75% Grass cover, Fair, HSG A
1.766	69	50-75% Grass cover, Fair, HSG B
0.621	35	Brush, Fair, HSG A
0.051	56	Brush, Fair, HSG B
0.043	70	Brush, Fair, HSG C
11.699	77	Fallow, bare soil, HSG A
27.815	86	Fallow, bare soil, HSG B
1.597	78	Row crops, straight row, Good, HSG B
4.655	36	Woods, Fair, HSG A
2.995	60	Woods, Fair, HSG B
0.000	73	Woods, Fair, HSG C
51.667	76	Weighted Average
51.667		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.5	178	0.0281	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.5	964	0.0612	2.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
16.5	1,192	Total			

Subcatchment 75: Subcat 75

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 67P: (new Pond)

Inflow Area = 2.473 ac, 5.83% Impervious, Inflow Depth > 2.82" for 25 year event
 Inflow = 7.52 cfs @ 12.15 hrs, Volume= 0.581 af
 Outflow = 0.49 cfs @ 14.81 hrs, Volume= 0.335 af, Atten= 93%, Lag= 159.4 min
 Discarded = 0.49 cfs @ 14.81 hrs, Volume= 0.335 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 173.27' @ 14.81 hrs Surf.Area= 17,590 sf Storage= 14,452 cf

Plug-Flow detention time= 212.1 min calculated for 0.333 af (57% of inflow)
 Center-of-Mass det. time= 134.3 min (935.0 - 800.6)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	98,033 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.00	6,117	0	0	6,117
174.00	26,818	30,495	30,495	26,836
176.00	41,235	67,538	98,033	41,311

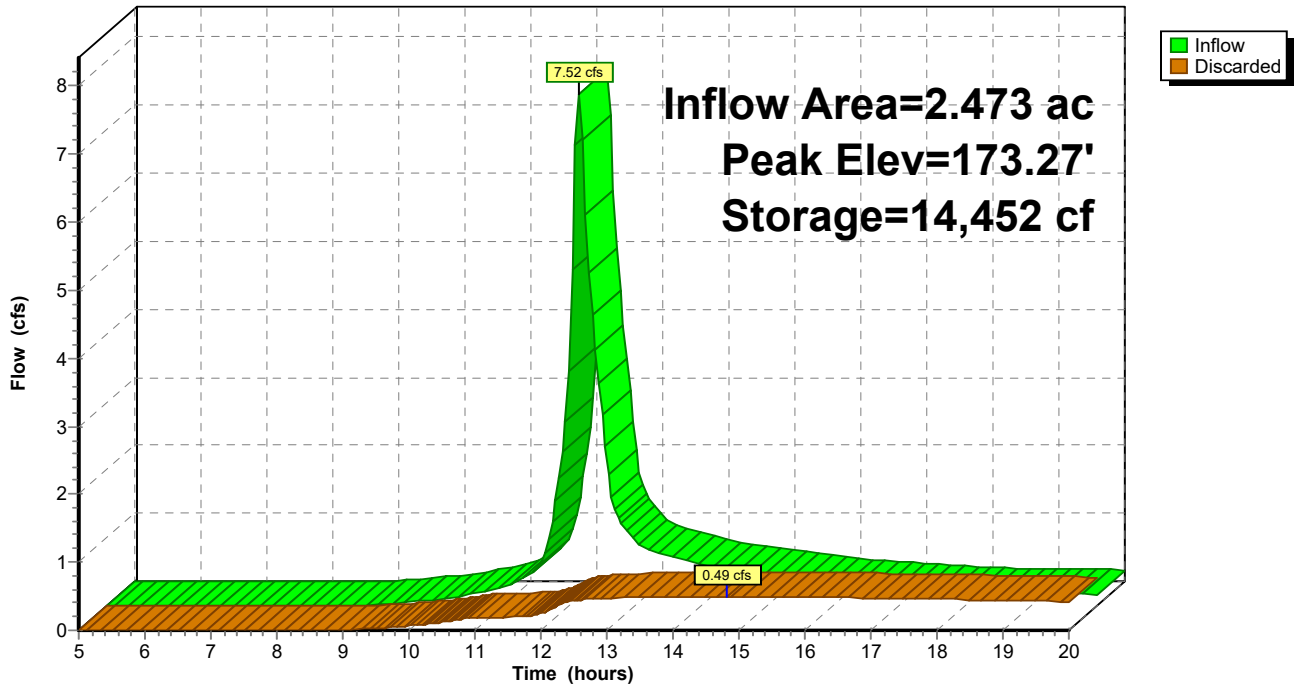
Device	Routing	Invert	Outlet Devices
#1	Discarded	172.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.49 cfs @ 14.81 hrs HW=173.27' (Free Discharge)

↑**1=Exfiltration** (Controls 0.49 cfs)

Pond 67P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 68P: (new Pond)

Inflow Area = 21.623 ac, 2.26% Impervious, Inflow Depth > 2.63" for 25 year event
 Inflow = 46.87 cfs @ 12.31 hrs, Volume= 4.732 af
 Outflow = 3.95 cfs @ 15.15 hrs, Volume= 2.566 af, Atten= 92%, Lag= 170.5 min
 Discarded = 3.95 cfs @ 15.15 hrs, Volume= 2.566 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 175.53' @ 15.15 hrs Surf.Area= 141,638 sf Storage= 121,023 cf

Plug-Flow detention time= 215.9 min calculated for 2.566 af (54% of inflow)
 Center-of-Mass det. time= 135.5 min (948.4 - 812.8)

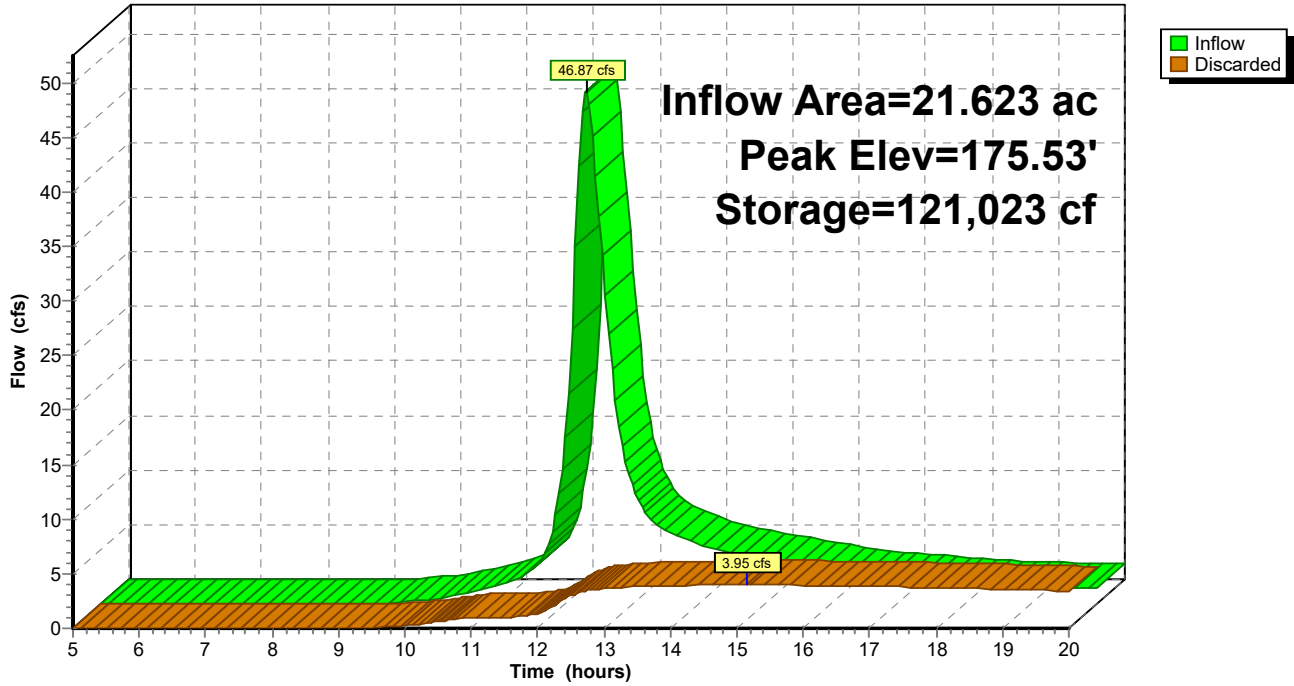
Volume	Invert	Avail.Storage	Storage Description	
#1	174.00'	576,430 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	29,899	0	0	29,899
176.00	191,906	198,369	198,369	191,920
177.50	317,411	378,061	576,430	317,454

Device	Routing	Invert	Outlet Devices
#1	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.95 cfs @ 15.15 hrs HW=175.53' (Free Discharge)
 ↑1=Exfiltration (Controls 3.95 cfs)

Pond 68P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 69P: (new Pond)

Inflow Area = 6.832 ac, 3.28% Impervious, Inflow Depth > 2.19" for 25 year event
 Inflow = 15.77 cfs @ 12.16 hrs, Volume= 1.249 af
 Outflow = 0.58 cfs @ 17.43 hrs, Volume= 0.384 af, Atten= 96%, Lag= 316.1 min
 Discarded = 0.58 cfs @ 17.43 hrs, Volume= 0.384 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 173.14' @ 17.43 hrs Surf.Area= 20,645 sf Storage= 38,768 cf

Plug-Flow detention time= 238.7 min calculated for 0.383 af (31% of inflow)
 Center-of-Mass det. time= 143.4 min (957.0 - 813.7)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	115,744 cf	Custom Stage Data (Conic) Listed below (Recalc)

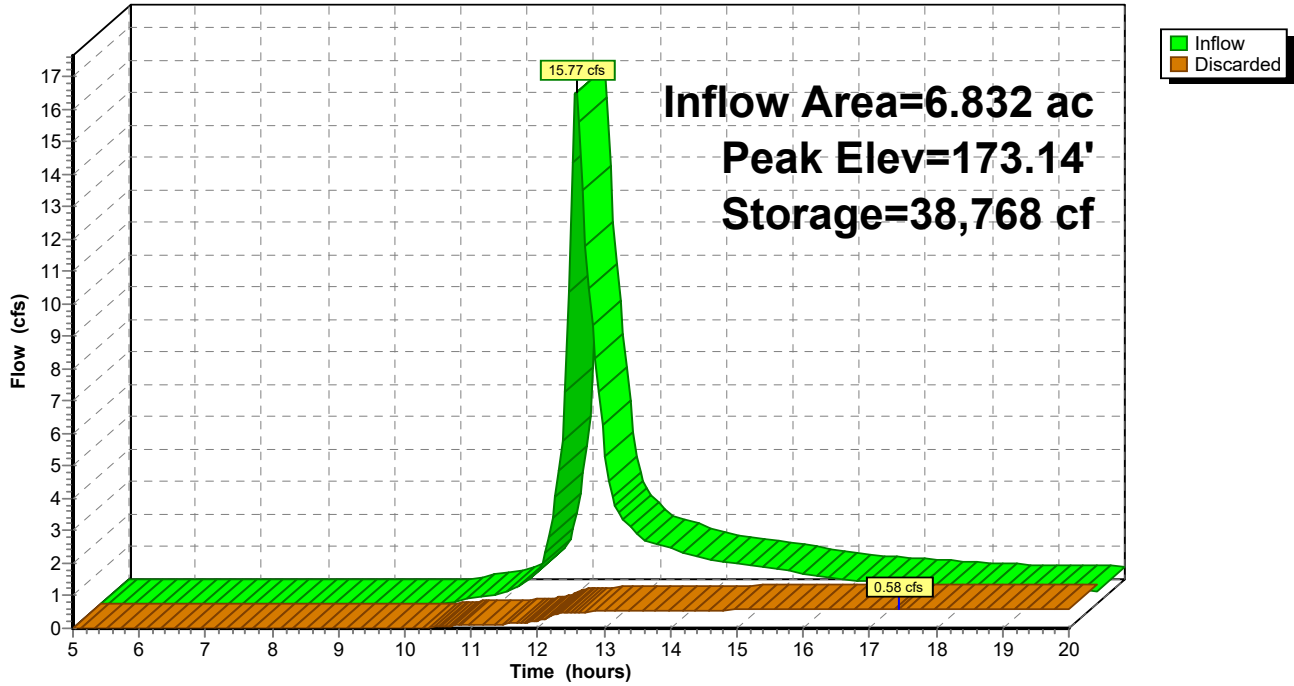
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	3,610	0	0	3,610
172.00	15,882	18,043	18,043	15,900
174.00	24,667	40,228	58,271	24,742
176.00	33,009	57,474	115,744	33,170

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.58 cfs @ 17.43 hrs HW=173.14' (Free Discharge)
 ↑1=Exfiltration (Controls 0.58 cfs)

Pond 69P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 70P: (new Pond)

Inflow Area = 3.224 ac, 0.00% Impervious, Inflow Depth > 3.01" for 25 year event
 Inflow = 10.51 cfs @ 12.15 hrs, Volume= 0.808 af
 Outflow = 3.24 cfs @ 12.55 hrs, Volume= 0.804 af, Atten= 69%, Lag= 23.8 min
 Discarded = 3.24 cfs @ 12.55 hrs, Volume= 0.804 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 198.36' @ 12.55 hrs Surf.Area= 27,931 sf Storage= 11,149 cf

Plug-Flow detention time= 39.5 min calculated for 0.804 af (99% of inflow)
 Center-of-Mass det. time= 37.3 min (834.0 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	197.20'	32,894 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.20	0	0	0	0
198.00	13,877	3,701	3,701	13,878
198.40	29,617	8,502	12,203	29,619
199.00	39,593	20,691	32,894	39,603

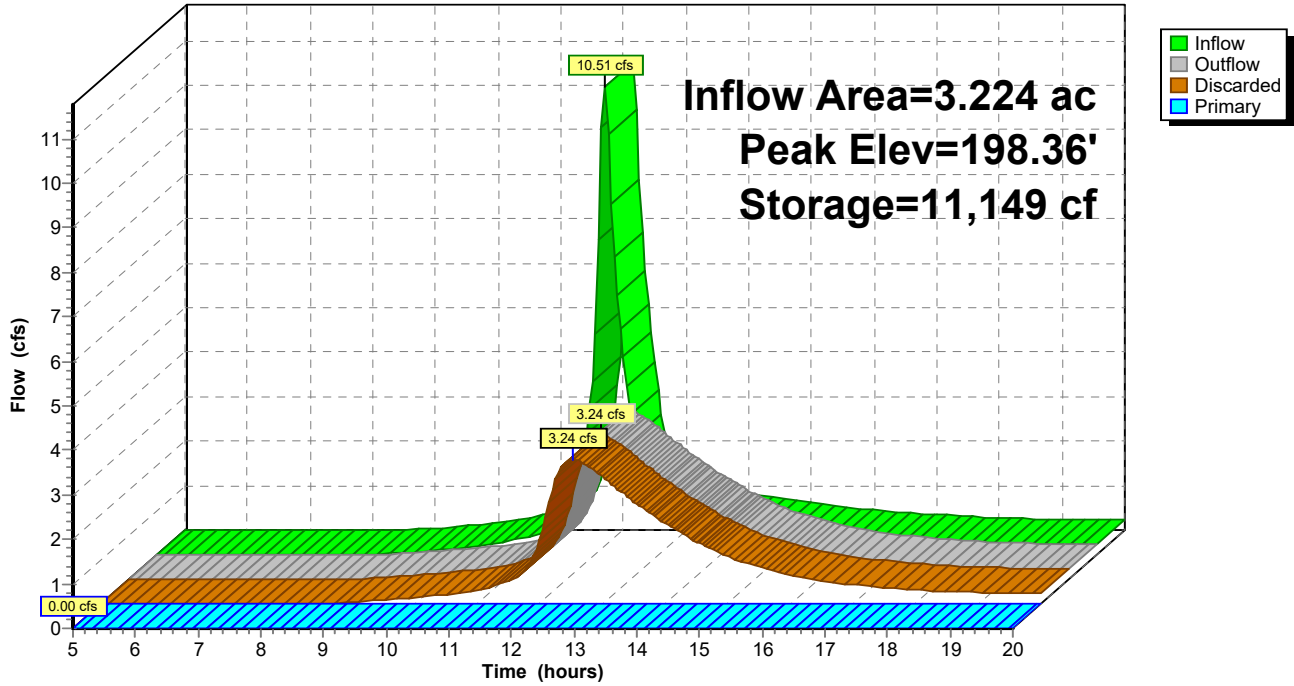
Device	Routing	Invert	Outlet Devices
#1	Primary	198.40'	50.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	197.20'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.24 cfs @ 12.55 hrs HW=198.36' (Free Discharge)
 ↑2=Exfiltration (Controls 3.24 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=197.20' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 70P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 71P: (new Pond)

Inflow Area = 11.378 ac, 3.55% Impervious, Inflow Depth > 1.57" for 25 year event
 Inflow = 16.33 cfs @ 12.23 hrs, Volume= 1.488 af
 Outflow = 0.93 cfs @ 16.19 hrs, Volume= 0.602 af, Atten= 94%, Lag= 237.8 min
 Discarded = 0.93 cfs @ 16.19 hrs, Volume= 0.602 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 179.27' @ 16.19 hrs Surf.Area= 33,049 sf Storage= 42,303 cf

Plug-Flow detention time= 231.9 min calculated for 0.600 af (40% of inflow)
 Center-of-Mass det. time= 141.8 min (959.3 - 817.5)

Volume	Invert	Avail.Storage	Storage Description
#1	177.00'	70,235 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
177.00	1,770	0	0 1,770
178.00	19,737	9,139	9,139 19,740
179.30	33,402	34,153	43,292 33,425
180.00	43,811	26,942	70,235 43,846

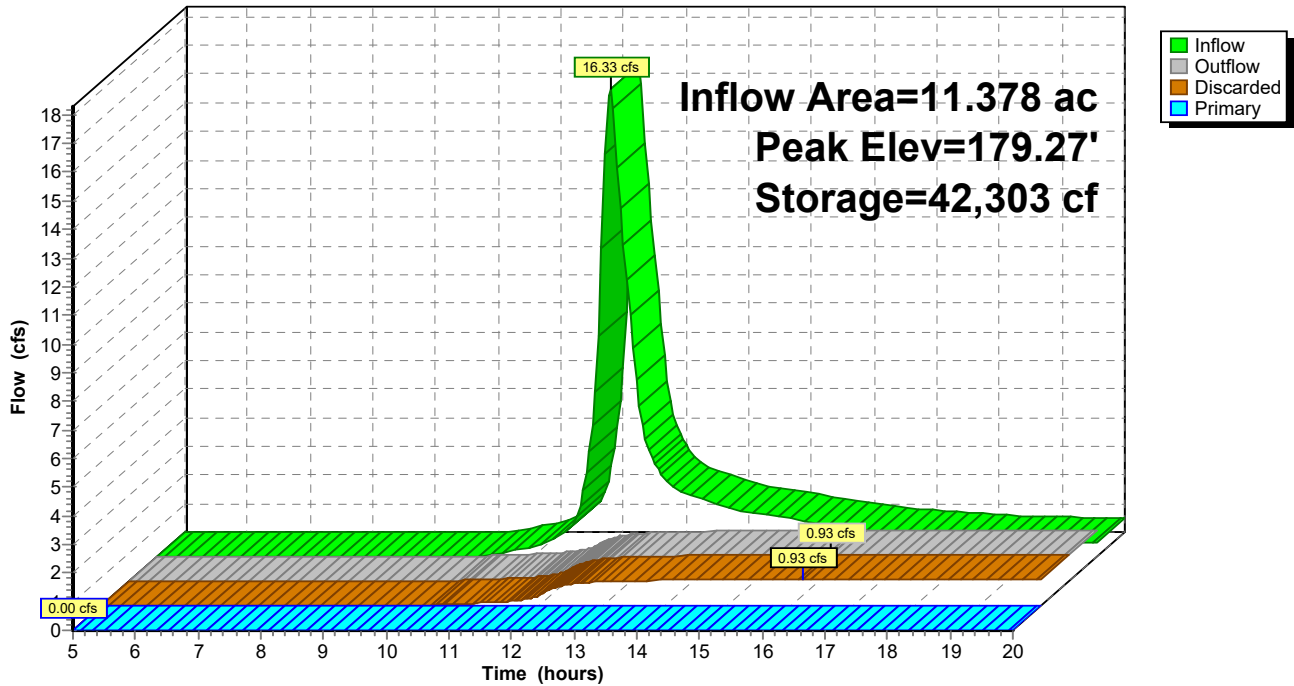
Device	Routing	Invert	Outlet Devices
#1	Primary	179.30'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	177.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.93 cfs @ 16.19 hrs HW=179.27' (Free Discharge)
 ↑2=Exfiltration (Controls 0.93 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=177.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 71P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 72P: (new Pond)

Inflow Area = 8.312 ac, 2.69% Impervious, Inflow Depth > 2.72" for 25 year event
 Inflow = 21.36 cfs @ 12.22 hrs, Volume= 1.887 af
 Outflow = 0.53 cfs @ 20.00 hrs, Volume= 0.340 af, Atten= 98%, Lag= 467.0 min
 Discarded = 0.53 cfs @ 20.00 hrs, Volume= 0.340 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 178.01' @ 20.00 hrs Surf.Area= 18,535 sf Storage= 67,347 cf

Plug-Flow detention time= 264.3 min calculated for 0.340 af (18% of inflow)
 Center-of-Mass det. time= 155.1 min (961.4 - 806.3)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	247,588 cf	Custom Stage Data (Conic) Listed below (Recalc)

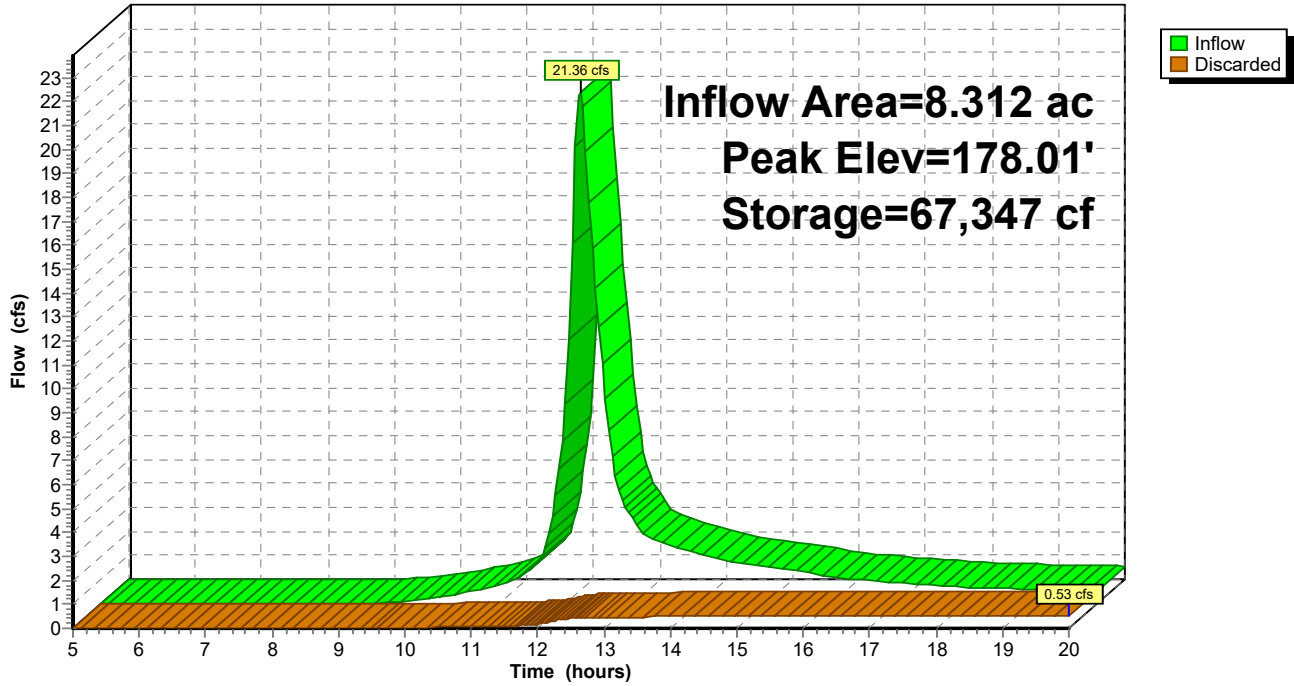
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	704	0	0	704
172.00	2,903	3,358	3,358	2,921
174.00	7,882	10,379	13,737	7,926
176.00	13,742	21,354	35,091	13,831
178.00	18,516	32,140	67,231	18,689
180.00	25,003	43,357	110,588	25,259
182.00	32,623	57,457	168,045	32,973
184.00	47,378	79,544	247,588	47,796

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.53 cfs @ 20.00 hrs HW=178.01' (Free Discharge)
 ↑1=Exfiltration (Controls 0.53 cfs)

Pond 72P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

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Summary for Pond 73P: (new Pond)

Inflow Area = 28.689 ac, 0.00% Impervious, Inflow Depth > 3.19" for 25 year event
 Inflow = 75.42 cfs @ 12.30 hrs, Volume= 7.621 af
 Outflow = 19.17 cfs @ 12.92 hrs, Volume= 4.260 af, Atten= 75%, Lag= 37.1 min
 Discarded = 2.65 cfs @ 12.92 hrs, Volume= 1.629 af
 Primary = 16.51 cfs @ 12.92 hrs, Volume= 2.631 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 154.35' @ 12.92 hrs Surf.Area= 94,381 sf Storage= 176,023 cf

Plug-Flow detention time= 165.6 min calculated for 4.246 af (56% of inflow)
 Center-of-Mass det. time= 89.1 min (891.0 - 801.9)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	393,366 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	0	0	0
150.00	2,638	2,638	2,638
152.00	30,938	33,576	36,214
154.00	78,907	109,845	146,059
156.00	168,400	247,307	393,366

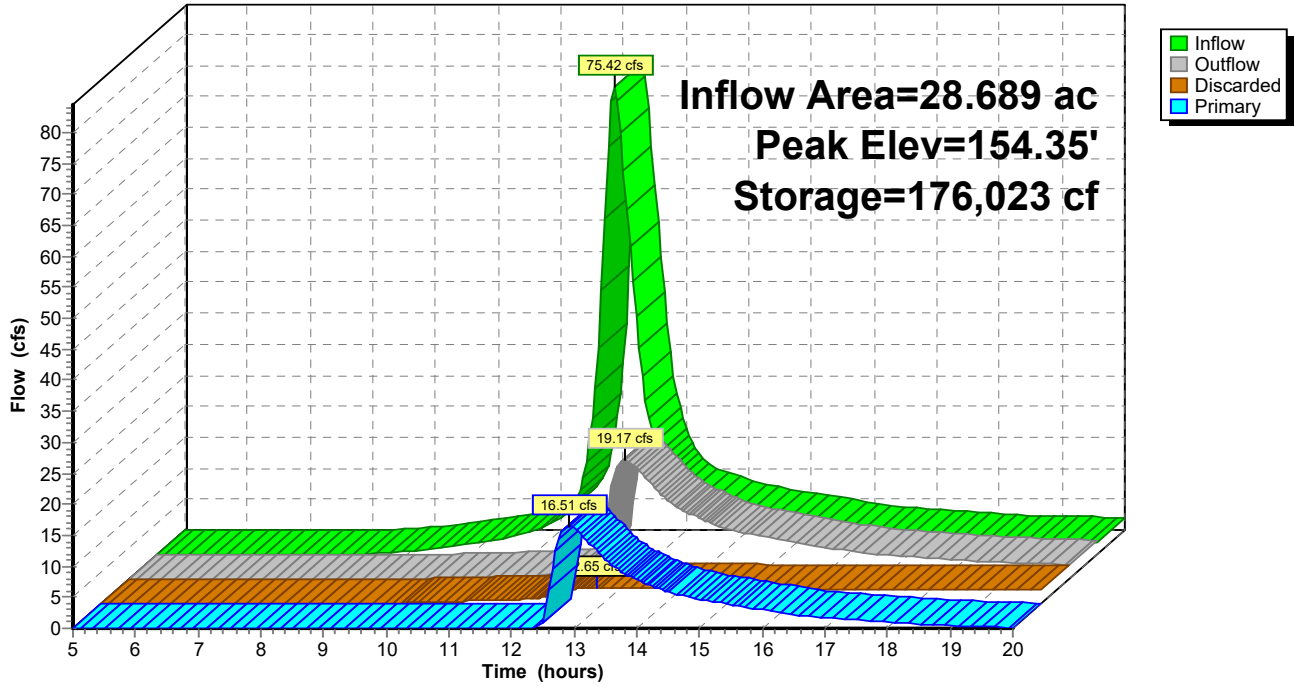
Device	Routing	Invert	Outlet Devices
#1	Primary	154.00'	30.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	148.00'	1.200 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.65 cfs @ 12.92 hrs HW=154.35' (Free Discharge)
 ↑ **2=Exfiltration** (Controls 2.65 cfs)

Primary OutFlow Max=16.41 cfs @ 12.92 hrs HW=154.35' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir**(Weir Controls 16.41 cfs @ 1.58 fps)

Pond 73P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 74P: (new Pond)

Inflow Area = 103.496 ac, 0.00% Impervious, Inflow Depth > 2.06" for 25 year event
 Inflow = 122.18 cfs @ 12.57 hrs, Volume= 17.799 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 127.78' @ 20.00 hrs Surf.Area= 369,637 sf Storage= 774,781 cf

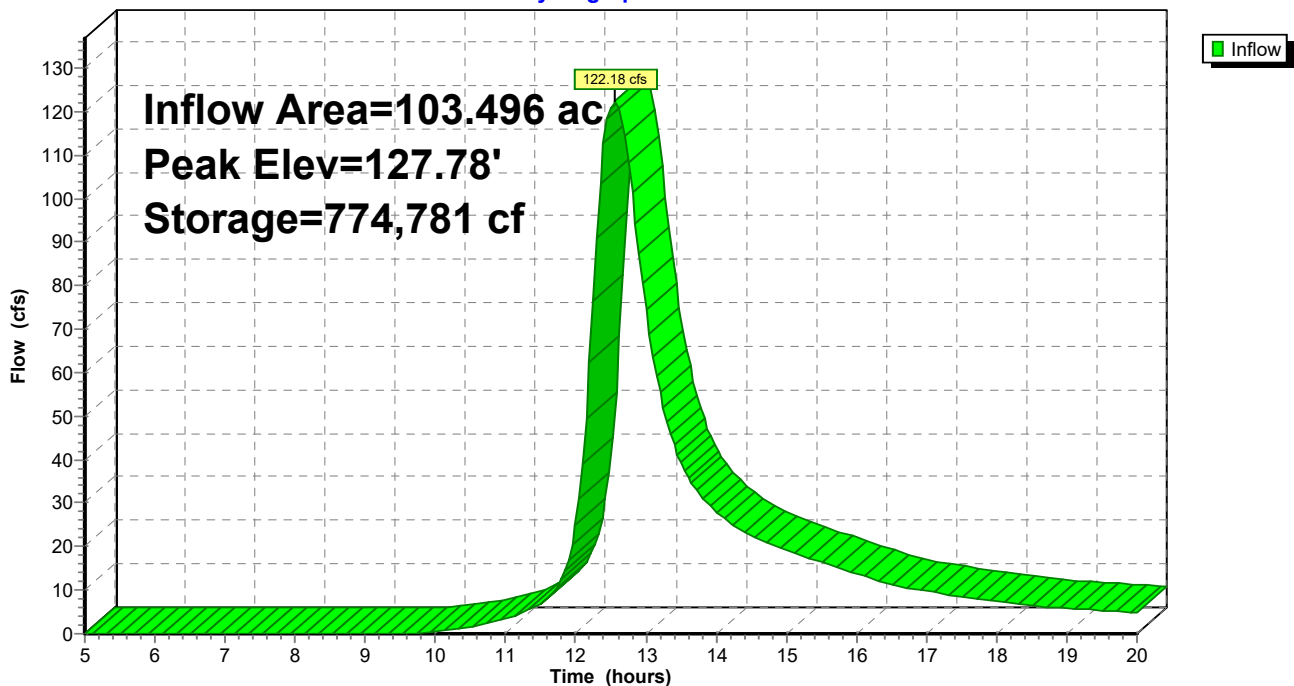
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	1,975,364 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.00	59,766	0	0
124.00	81,926	141,692	141,692
126.00	117,535	199,461	341,153
128.00	400,767	518,302	859,455
130.00	715,142	1,115,909	1,975,364

Pond 74P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 75P: (new Pond)

Inflow Area = 51.667 ac, 0.00% Impervious, Inflow Depth > 3.29" for 25 year event
Inflow = 155.15 cfs @ 12.23 hrs, Volume= 14.166 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 130.43' @ 20.00 hrs Surf.Area= 89,527 sf Storage= 616,698 cf

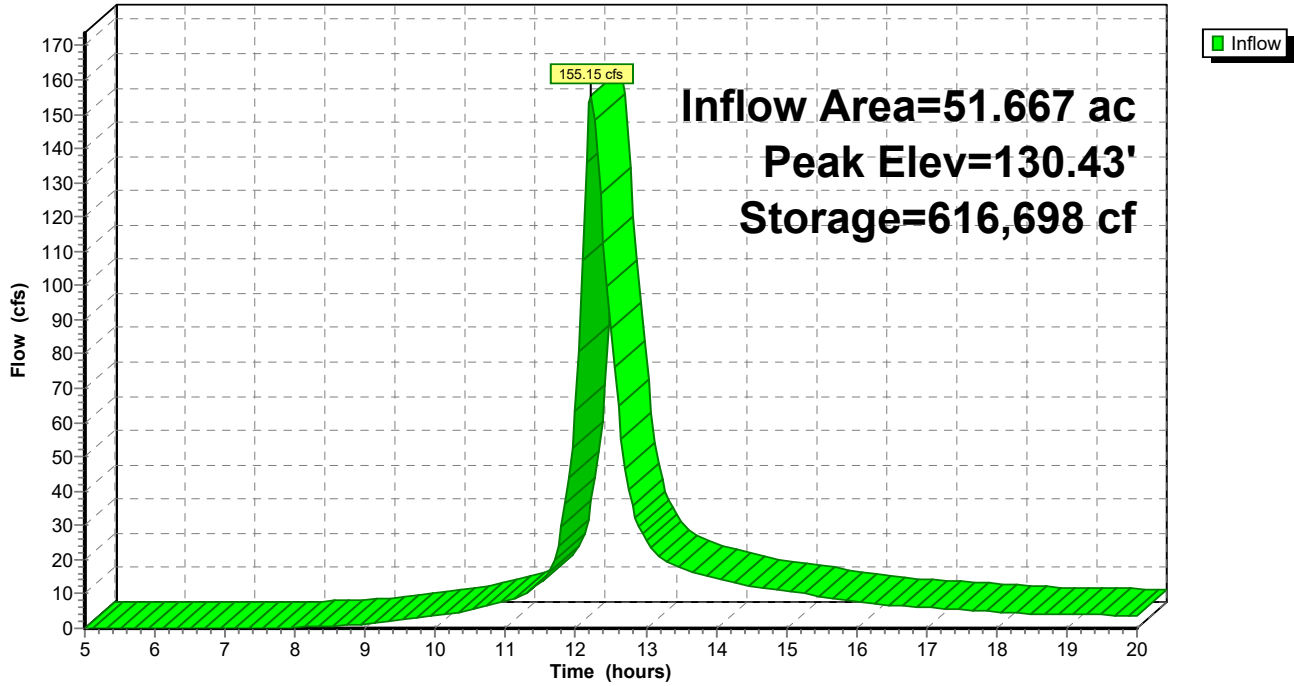
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	118.00'	1,658,604 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
118.00	2,009	0	0
120.00	20,404	22,413	22,413
122.00	38,043	58,447	80,860
124.00	49,484	87,527	168,387
126.00	59,831	109,315	277,702
128.00	76,945	136,776	414,478
130.00	87,570	164,515	578,993
132.00	96,760	184,330	763,323
134.00	104,766	201,526	964,849
136.00	111,675	216,441	1,181,290
138.00	119,097	230,772	1,412,062
140.00	127,445	246,542	1,658,604

Pond 75P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 67: Subcat 67

Runoff = 9.26 cfs @ 12.15 hrs, Volume= 0.717 af, Depth> 3.48"

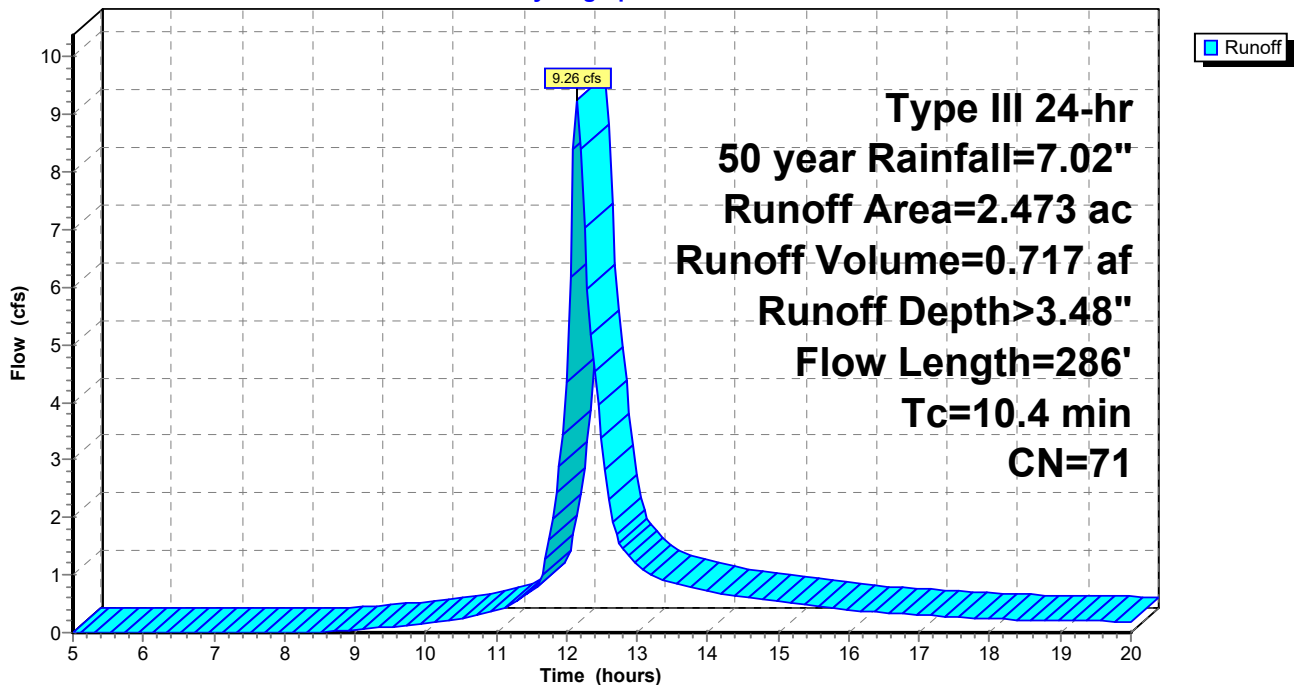
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.541	86	Fallow, bare soil, HSG B
0.288	89	Paved roads w/open ditches, 50% imp, HSG B
0.308	78	Row crops, straight row, Good, HSG B
1.335	60	Woods, Fair, HSG B
2.473	71	Weighted Average
2.329		94.17% Pervious Area
0.144		5.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.2	119	0.0588	1.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.7	117	0.0513	1.13		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	286	Total			

Subcatchment 67: Subcat 67

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 68: Subcat 68

Runoff = 58.32 cfs @ 12.30 hrs, Volume= 5.876 af, Depth> 3.26"

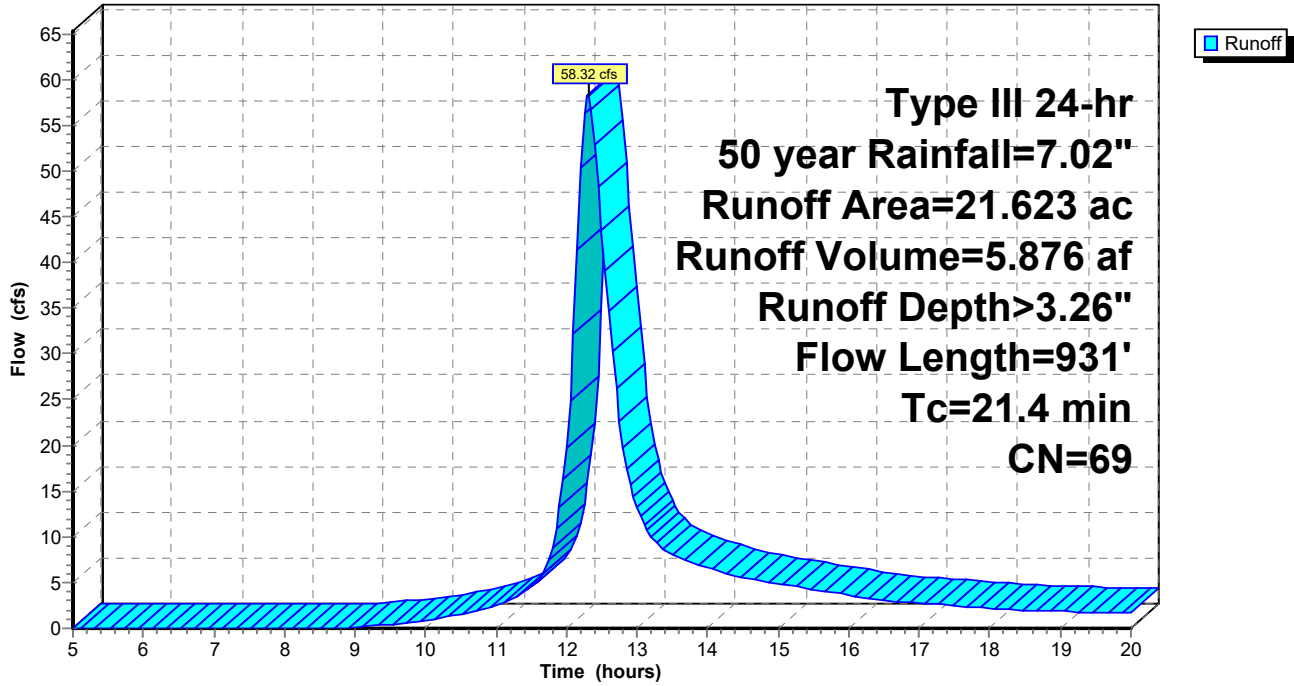
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.017	86	Fallow, bare soil, HSG B
0.977	89	Paved roads w/open ditches, 50% imp, HSG B
0.036	67	Row crops, straight row, Good, HSG A
14.261	78	Row crops, straight row, Good, HSG B
3.381	36	Woods, Fair, HSG A
2.951	60	Woods, Fair, HSG B
21.623	69	Weighted Average
21.134		97.74% Pervious Area
0.489		2.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.2	244	0.0123	0.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.5	637	0.0126	1.01		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.4	931	Total			

Subcatchment 68: Subcat 68

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 69: Subcat 69

Runoff = 20.14 cfs @ 12.16 hrs, Volume= 1.582 af, Depth> 2.78"

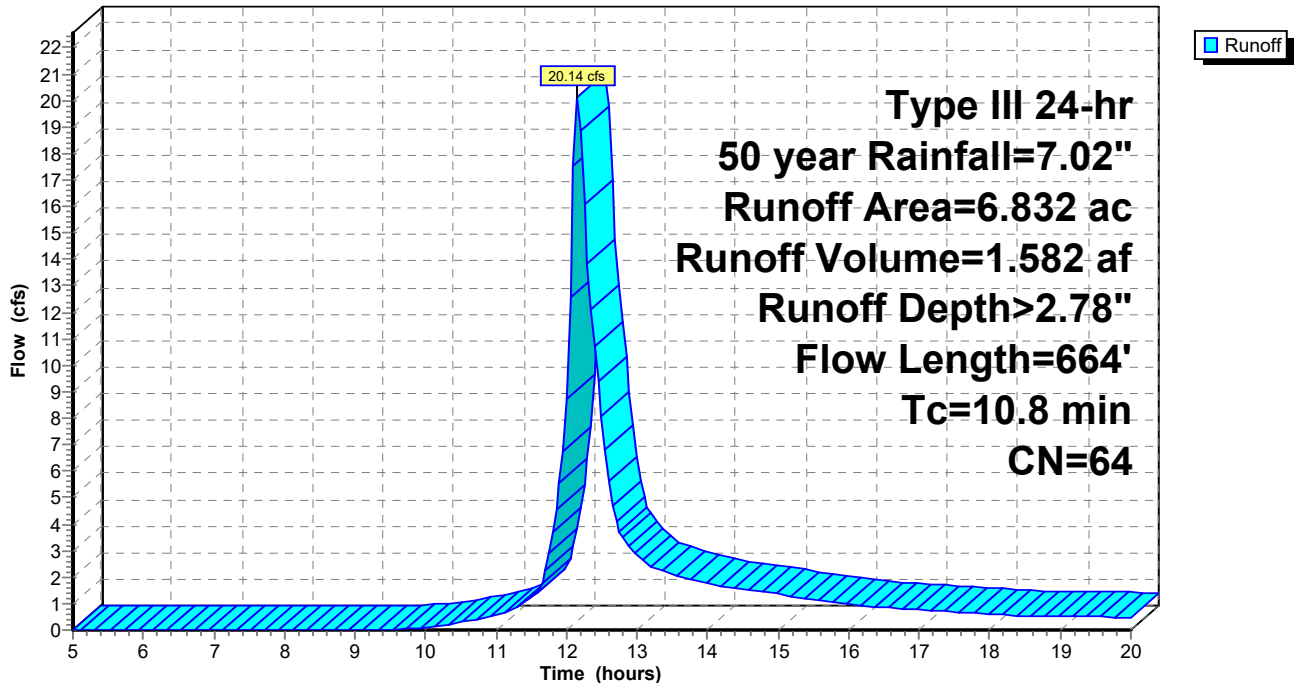
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.449	89	Paved roads w/open ditches, 50% imp, HSG B
0.027	67	Row crops, straight row, Good, HSG A
3.162	78	Row crops, straight row, Good, HSG B
1.668	36	Woods, Fair, HSG A
1.526	60	Woods, Fair, HSG B
6.832	64	Weighted Average
6.608		96.72% Pervious Area
0.224		3.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.19		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
7.1	446	0.0134	1.04		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.0	168	0.0357	0.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.8	664	Total			

Subcatchment 69: Subcat 69

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 70: Subcat 70

Runoff = 12.84 cfs @ 12.15 hrs, Volume= 0.990 af, Depth> 3.68"

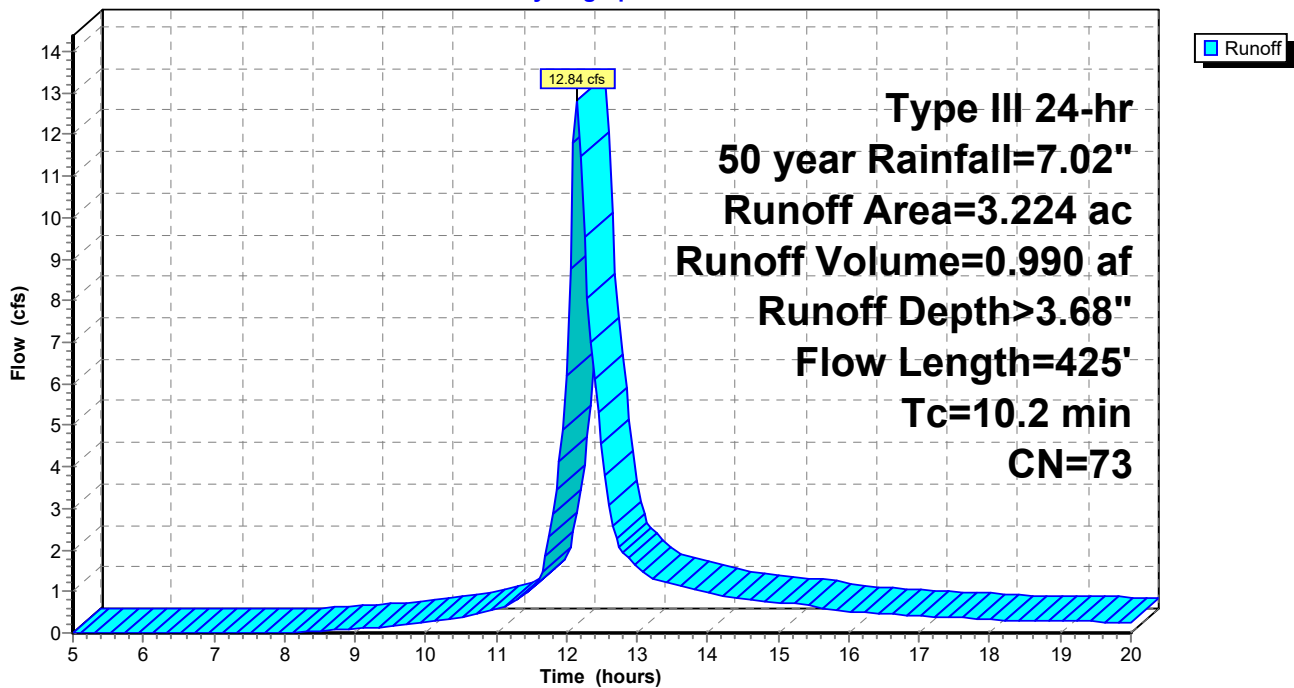
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.235	67	Row crops, straight row, Good, HSG A
2.565	78	Row crops, straight row, Good, HSG B
0.288	36	Woods, Fair, HSG A
0.136	60	Woods, Fair, HSG B
3.224	73	Weighted Average
3.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.2000	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
0.7	82	0.1707	2.07		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.6	293	0.0137	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
10.2	425	Total			

Subcatchment 70: Subcat 70

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 71: Subcat 71

Runoff = 20.87 cfs @ 12.23 hrs, Volume= 1.884 af, Depth> 2.77"

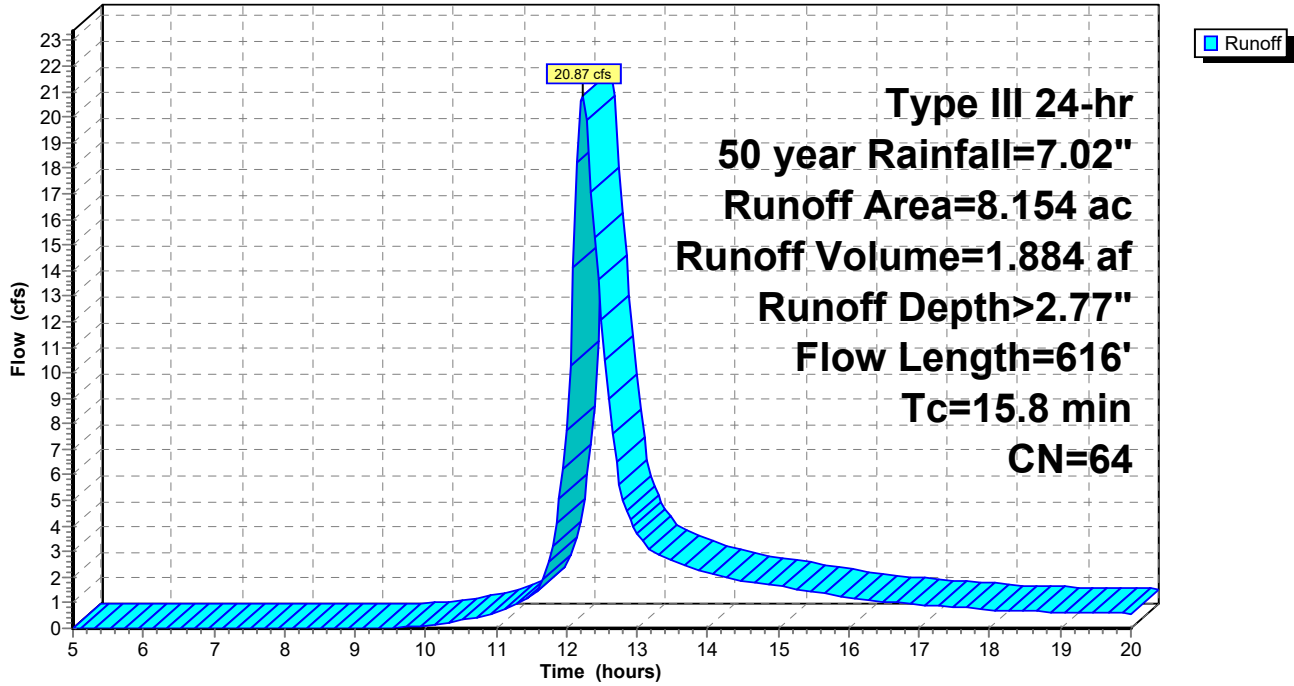
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.103	83	Paved roads w/open ditches, 50% imp, HSG A
0.705	89	Paved roads w/open ditches, 50% imp, HSG B
2.058	78	Row crops, straight row, Good, HSG B
1.051	36	Woods, Fair, HSG A
4.165	60	Woods, Fair, HSG B
0.071	73	Woods, Fair, HSG C
8.154	64	Weighted Average
7.750		95.04% Pervious Area
0.404		4.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.9	369	0.0135	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.6	197	0.0812	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.8	616	Total			

Subcatchment 71: Subcat 71

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 72: Subcat 72

Runoff = 26.45 cfs @ 12.21 hrs, Volume= 2.334 af, Depth> 3.37"

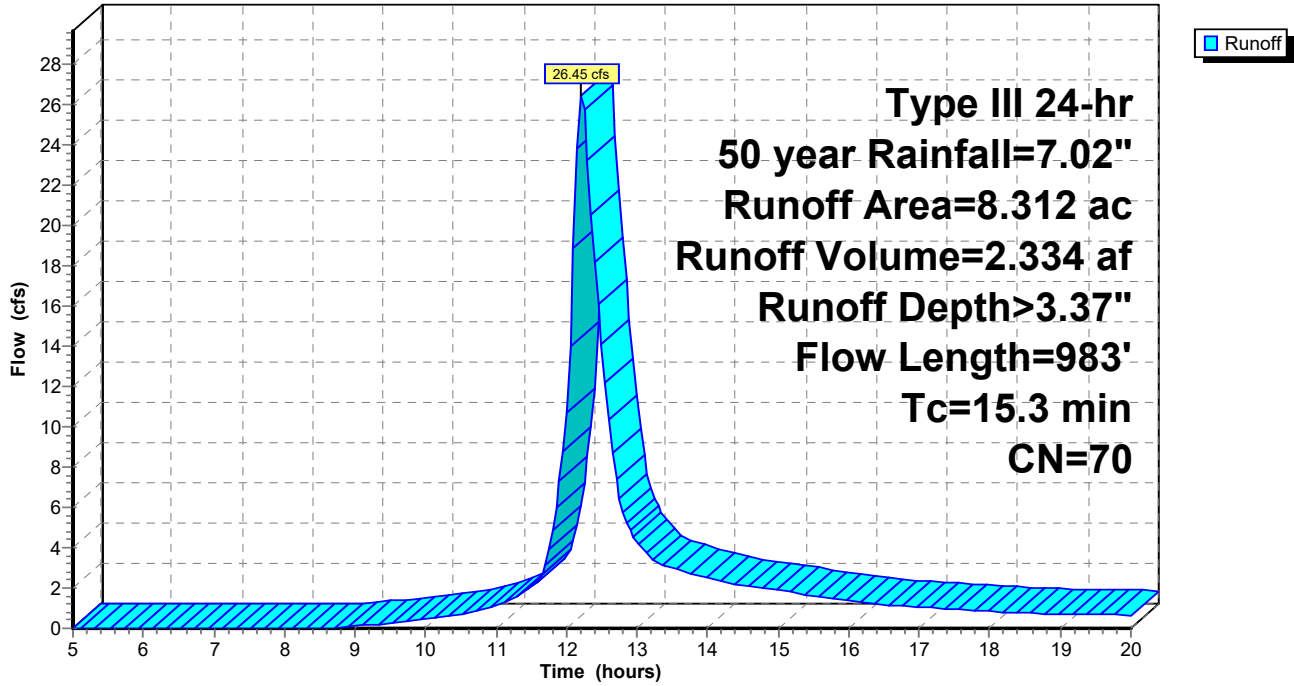
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.000	0	, HSG B
* 0.000	0	, HSG C
0.210	70	1/2 acre lots, 25% imp, HSG B
0.503	91	Fallow, bare soil, HSG C
0.107	89	Paved roads w/open ditches, 50% imp, HSG B
0.236	92	Paved roads w/open ditches, 50% imp, HSG C
3.121	60	Woods, Fair, HSG B
4.135	73	Woods, Fair, HSG C
8.312	70	Weighted Average
8.088		97.31% Pervious Area
0.224		2.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.1400	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
6.5	610	0.0492	1.55		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0303	3.53		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	290	0.1138	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	983	Total			

Subcatchment 72: Subcat 72

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 73: Subcat 73

Runoff = 91.45 cfs @ 12.30 hrs, Volume= 9.269 af, Depth> 3.88"

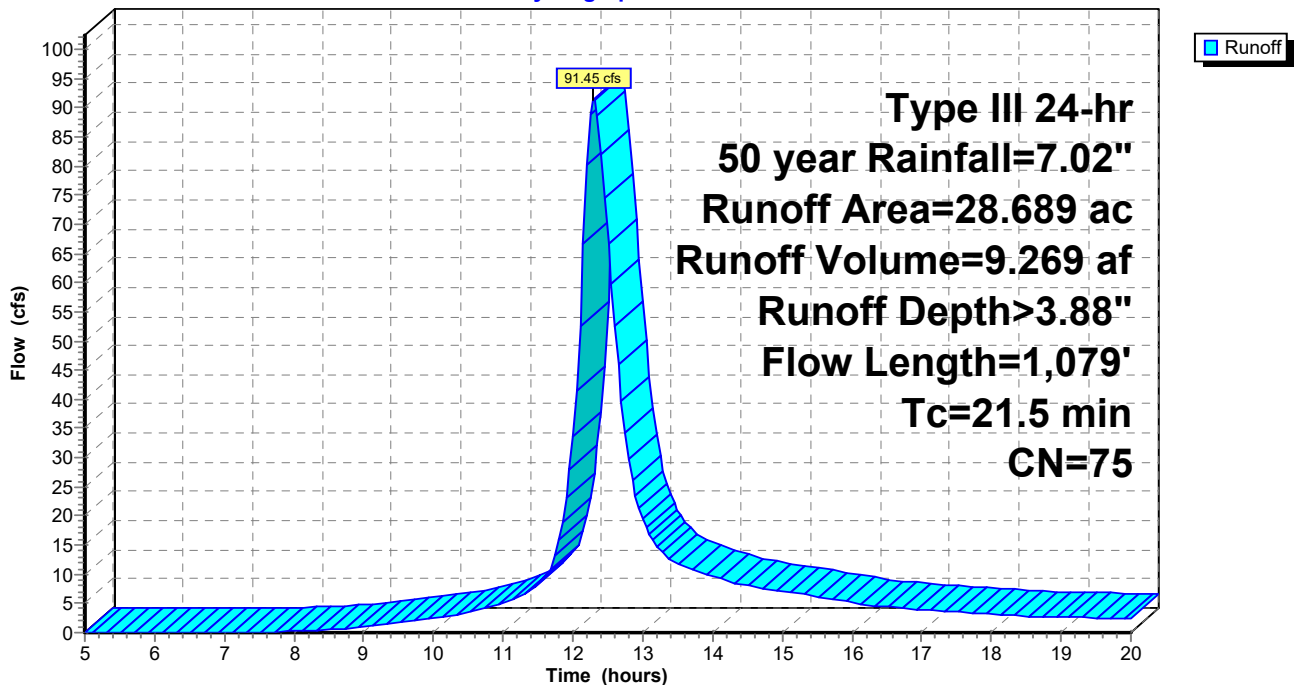
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.050	70	Brush, Fair, HSG C
3.727	91	Fallow, bare soil, HSG C
0.000	67	Row crops, straight row, Good, HSG A
0.499	78	Row crops, straight row, Good, HSG B
0.223	36	Woods, Fair, HSG A
1.034	60	Woods, Fair, HSG B
23.155	73	Woods, Fair, HSG C
28.689	75	Weighted Average
28.689		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1200	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
15.4	1,029	0.0496	1.11		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	1,079	Total			

Subcatchment 73: Subcat 73

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 74: Subcat 74

Runoff = 151.69 cfs @ 12.50 hrs, Volume= 18.983 af, Depth> 3.05"

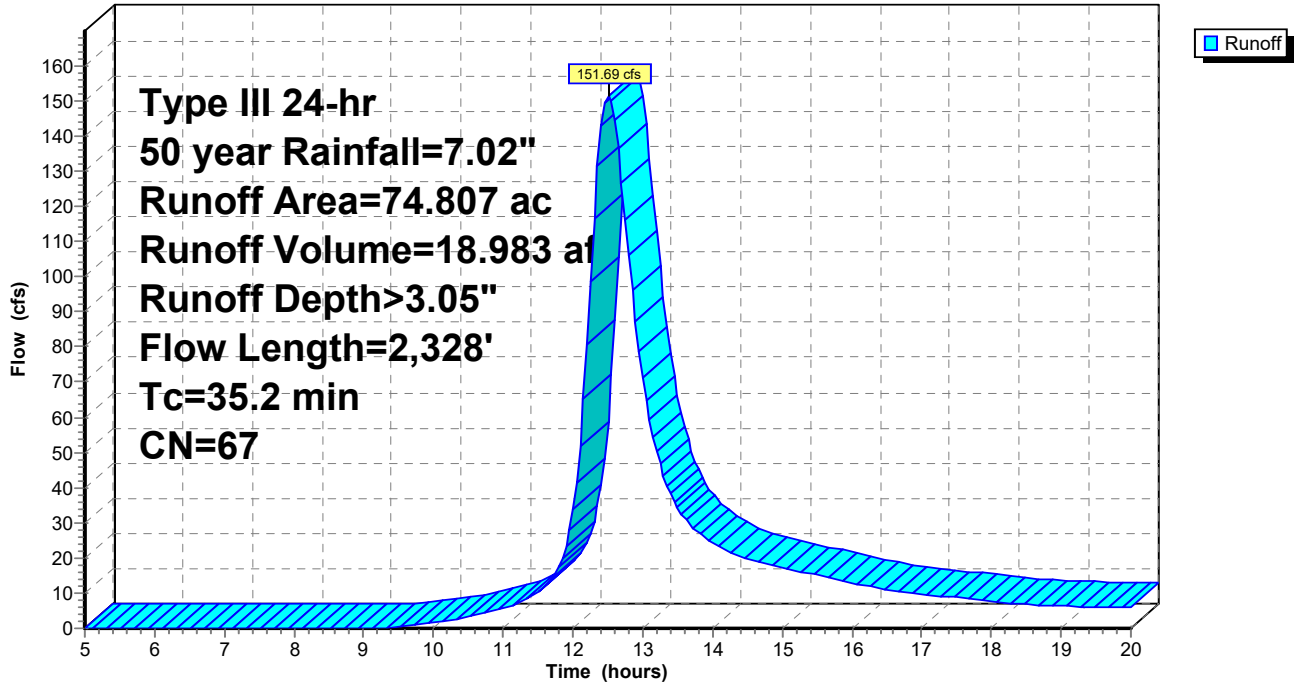
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.000	0	, HSG C
1.215	49	50-75% Grass cover, Fair, HSG A
4.711	69	50-75% Grass cover, Fair, HSG B
4.061	79	50-75% Grass cover, Fair, HSG C
10.203	39	>75% Grass cover, Good, HSG A
11.877	61	>75% Grass cover, Good, HSG B
11.563	74	>75% Grass cover, Good, HSG C
0.819	35	Brush, Fair, HSG A
0.042	56	Brush, Fair, HSG B
5.256	70	Brush, Fair, HSG C
2.416	77	Fallow, bare soil, HSG A
2.938	86	Fallow, bare soil, HSG B
7.003	91	Fallow, bare soil, HSG C
2.006	36	Woods, Fair, HSG A
2.059	60	Woods, Fair, HSG B
8.639	73	Woods, Fair, HSG C
74.807	67	Weighted Average
74.807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.16"
4.4	484	0.0331	1.82		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
1.2	207	0.0821	2.87		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
4.1	404	0.0272	1.65		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
17.3	923	0.0162	0.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	260	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
35.2	2,328	Total			

Subcatchment 74: Subcat 74

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 75: Subcat 75

Runoff = 187.39 cfs @ 12.23 hrs, Volume= 17.173 af, Depth> 3.99"

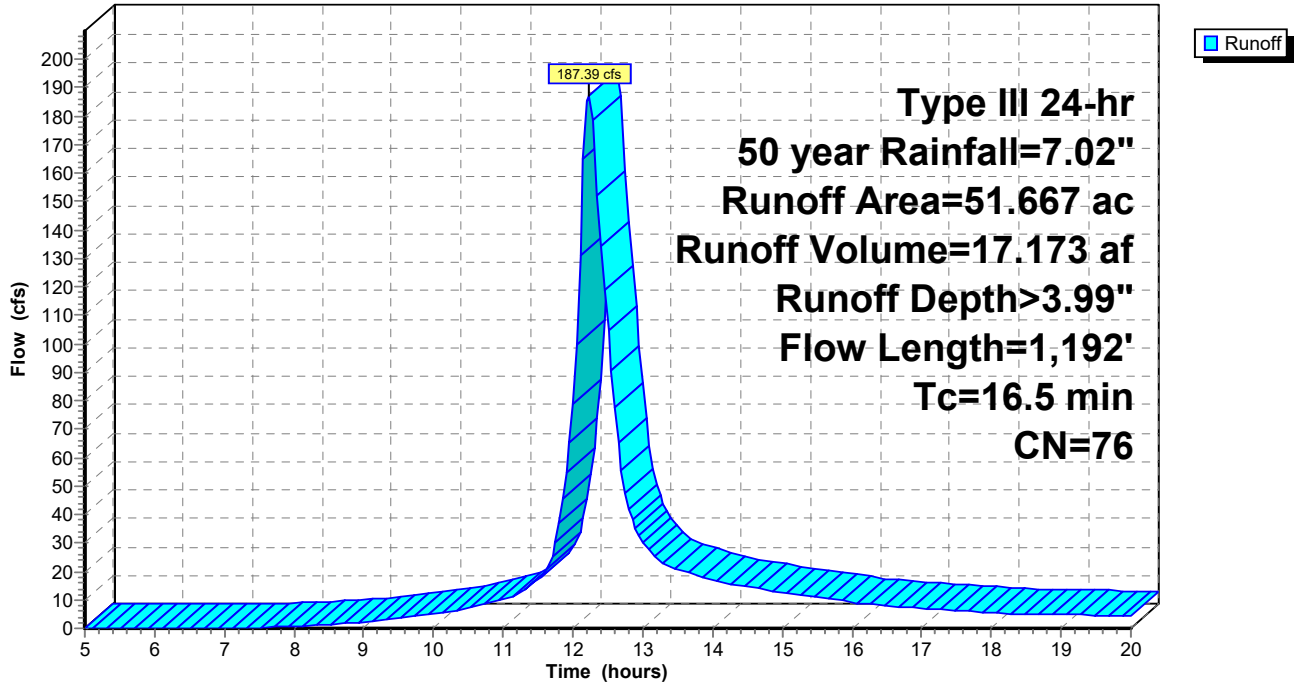
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.425	49	50-75% Grass cover, Fair, HSG A
1.766	69	50-75% Grass cover, Fair, HSG B
0.621	35	Brush, Fair, HSG A
0.051	56	Brush, Fair, HSG B
0.043	70	Brush, Fair, HSG C
11.699	77	Fallow, bare soil, HSG A
27.815	86	Fallow, bare soil, HSG B
1.597	78	Row crops, straight row, Good, HSG B
4.655	36	Woods, Fair, HSG A
2.995	60	Woods, Fair, HSG B
0.000	73	Woods, Fair, HSG C
51.667	76	Weighted Average
51.667		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.5	178	0.0281	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.5	964	0.0612	2.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
16.5	1,192	Total			

Subcatchment 75: Subcat 75

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 67P: (new Pond)

Inflow Area = 2.473 ac, 5.83% Impervious, Inflow Depth > 3.48" for 50 year event
 Inflow = 9.26 cfs @ 12.15 hrs, Volume= 0.717 af
 Outflow = 0.56 cfs @ 14.95 hrs, Volume= 0.387 af, Atten= 94%, Lag= 168.1 min
 Discarded = 0.56 cfs @ 14.95 hrs, Volume= 0.387 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 173.48' @ 14.95 hrs Surf.Area= 20,077 sf Storage= 18,440 cf

Plug-Flow detention time= 215.8 min calculated for 0.387 af (54% of inflow)
 Center-of-Mass det. time= 135.9 min (931.8 - 795.9)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	98,033 cf	Custom Stage Data (Conic) Listed below (Recalc)

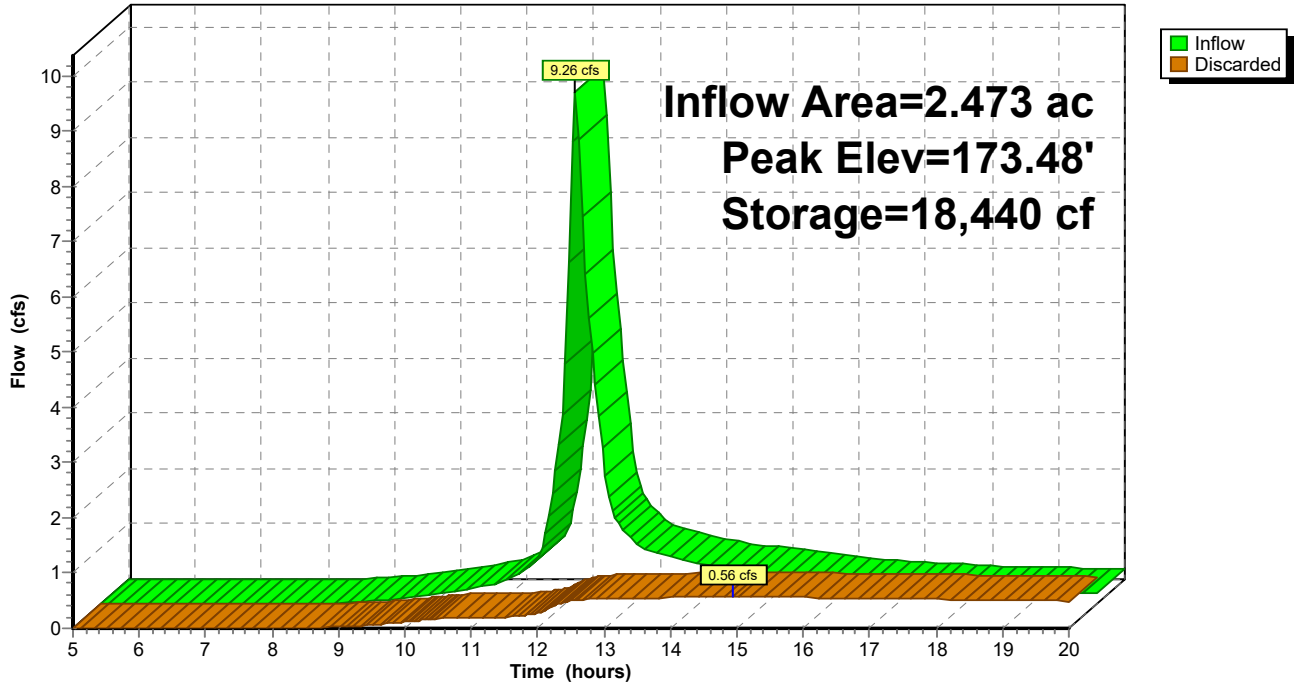
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.00	6,117	0	0	6,117
174.00	26,818	30,495	30,495	26,836
176.00	41,235	67,538	98,033	41,311

Device	Routing	Invert	Outlet Devices
#1	Discarded	172.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.56 cfs @ 14.95 hrs HW=173.48' (Free Discharge)
 ↑1=Exfiltration (Controls 0.56 cfs)

Pond 67P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 68P: (new Pond)

Inflow Area = 21.623 ac, 2.26% Impervious, Inflow Depth > 3.26" for 50 year event
 Inflow = 58.32 cfs @ 12.30 hrs, Volume= 5.876 af
 Outflow = 4.60 cfs @ 15.24 hrs, Volume= 3.019 af, Atten= 92%, Lag= 176.2 min
 Discarded = 4.60 cfs @ 15.24 hrs, Volume= 3.019 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 175.76' @ 15.24 hrs Surf.Area= 164,628 sf Storage= 154,944 cf

Plug-Flow detention time= 219.2 min calculated for 3.019 af (51% of inflow)
 Center-of-Mass det. time= 137.9 min (946.0 - 808.0)

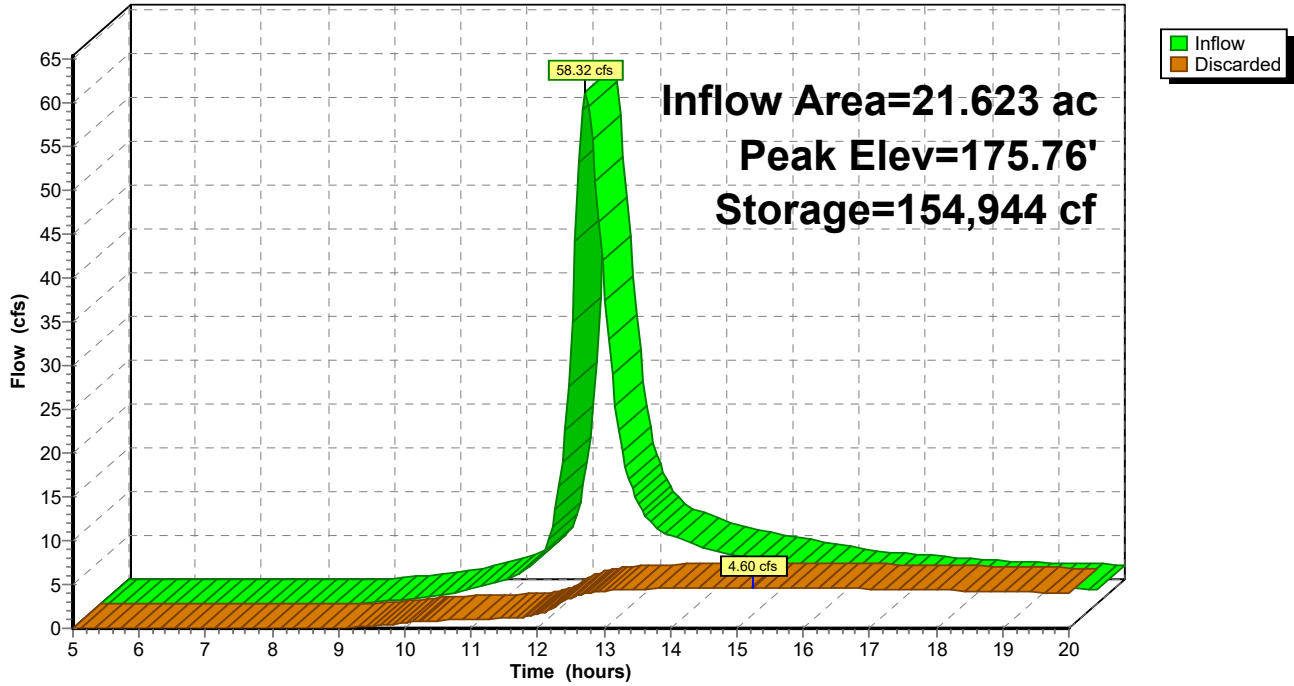
Volume	Invert	Avail.Storage	Storage Description		
#1	174.00'	576,430 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
174.00	29,899	0	0	29,899	
176.00	191,906	198,369	198,369	191,920	
177.50	317,411	378,061	576,430	317,454	

Device	Routing	Invert	Outlet Devices
#1	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=4.60 cfs @ 15.24 hrs HW=175.76' (Free Discharge)
 ↑1=Exfiltration (Controls 4.60 cfs)

Pond 68P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 69P: (new Pond)

Inflow Area = 6.832 ac, 3.28% Impervious, Inflow Depth > 2.78" for 50 year event
 Inflow = 20.14 cfs @ 12.16 hrs, Volume= 1.582 af
 Outflow = 0.65 cfs @ 17.70 hrs, Volume= 0.436 af, Atten= 97%, Lag= 332.3 min
 Discarded = 0.65 cfs @ 17.70 hrs, Volume= 0.436 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 173.69' @ 17.70 hrs Surf.Area= 23,174 sf Storage= 50,829 cf

Plug-Flow detention time= 242.0 min calculated for 0.435 af (27% of inflow)
 Center-of-Mass det. time= 145.3 min (953.7 - 808.4)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	115,744 cf	Custom Stage Data (Conic) Listed below (Recalc)

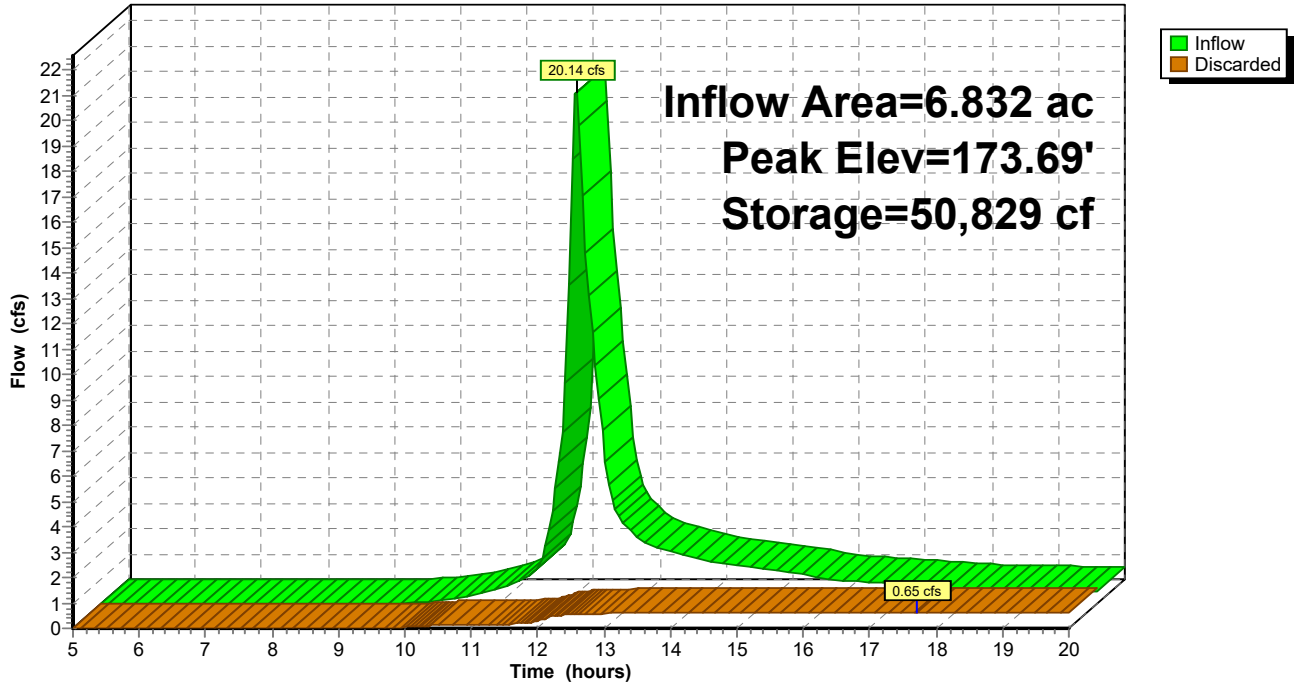
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	3,610	0	0	3,610
172.00	15,882	18,043	18,043	15,900
174.00	24,667	40,228	58,271	24,742
176.00	33,009	57,474	115,744	33,170

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.65 cfs @ 17.70 hrs HW=173.69' (Free Discharge)
 ↑1=Exfiltration (Controls 0.65 cfs)

Pond 69P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 70P: (new Pond)

Inflow Area = 3.224 ac, 0.00% Impervious, Inflow Depth > 3.68" for 50 year event
 Inflow = 12.84 cfs @ 12.15 hrs, Volume= 0.990 af
 Outflow = 4.77 cfs @ 12.49 hrs, Volume= 0.984 af, Atten= 63%, Lag= 20.5 min
 Discarded = 3.52 cfs @ 12.49 hrs, Volume= 0.955 af
 Primary = 1.25 cfs @ 12.49 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 198.45' @ 12.49 hrs Surf.Area= 30,334 sf Storage= 13,587 cf

Plug-Flow detention time= 41.3 min calculated for 0.981 af (99% of inflow)
 Center-of-Mass det. time= 38.9 min (831.0 - 792.2)

Volume	Invert	Avail.Storage	Storage Description
#1	197.20'	32,894 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.20	0	0	0	0
198.00	13,877	3,701	3,701	13,878
198.40	29,617	8,502	12,203	29,619
199.00	39,593	20,691	32,894	39,603

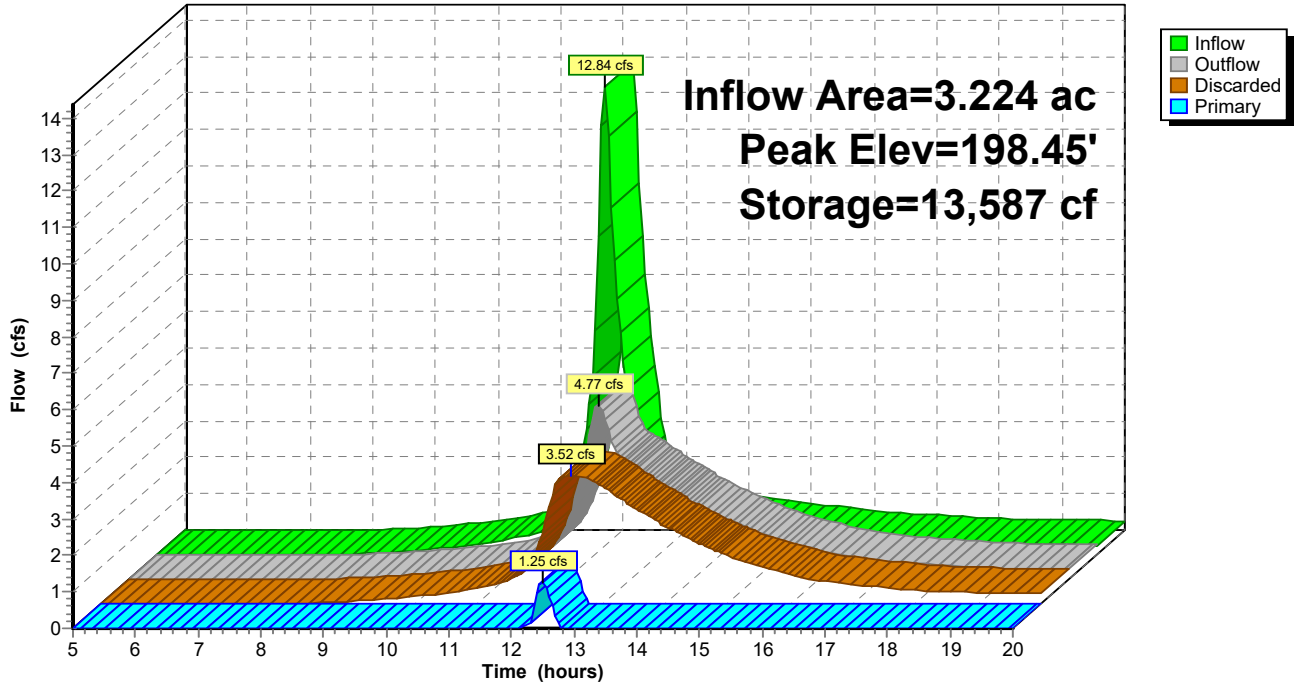
Device	Routing	Invert	Outlet Devices
#1	Primary	198.40'	50.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	197.20'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.52 cfs @ 12.49 hrs HW=198.45' (Free Discharge)
 ↑**2=Exfiltration** (Controls 3.52 cfs)

Primary OutFlow Max=1.22 cfs @ 12.49 hrs HW=198.45' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 1.22 cfs @ 0.53 fps)

Pond 70P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 71P: (new Pond)

Inflow Area = 11.378 ac, 3.55% Impervious, Inflow Depth > 2.02" for 50 year event
 Inflow = 20.87 cfs @ 12.23 hrs, Volume= 1.913 af
 Outflow = 3.15 cfs @ 13.16 hrs, Volume= 0.972 af, Atten= 85%, Lag= 56.0 min
 Discarded = 0.96 cfs @ 13.16 hrs, Volume= 0.640 af
 Primary = 2.19 cfs @ 13.16 hrs, Volume= 0.332 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 179.36' @ 13.16 hrs Surf.Area= 34,293 sf Storage= 45,453 cf

Plug-Flow detention time= 188.0 min calculated for 0.972 af (51% of inflow)
 Center-of-Mass det. time= 105.2 min (916.6 - 811.4)

Volume	Invert	Avail.Storage	Storage Description
#1	177.00'	70,235 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
177.00	1,770	0	0 1,770
178.00	19,737	9,139	9,139 19,740
179.30	33,402	34,153	43,292 33,425
180.00	43,811	26,942	70,235 43,846

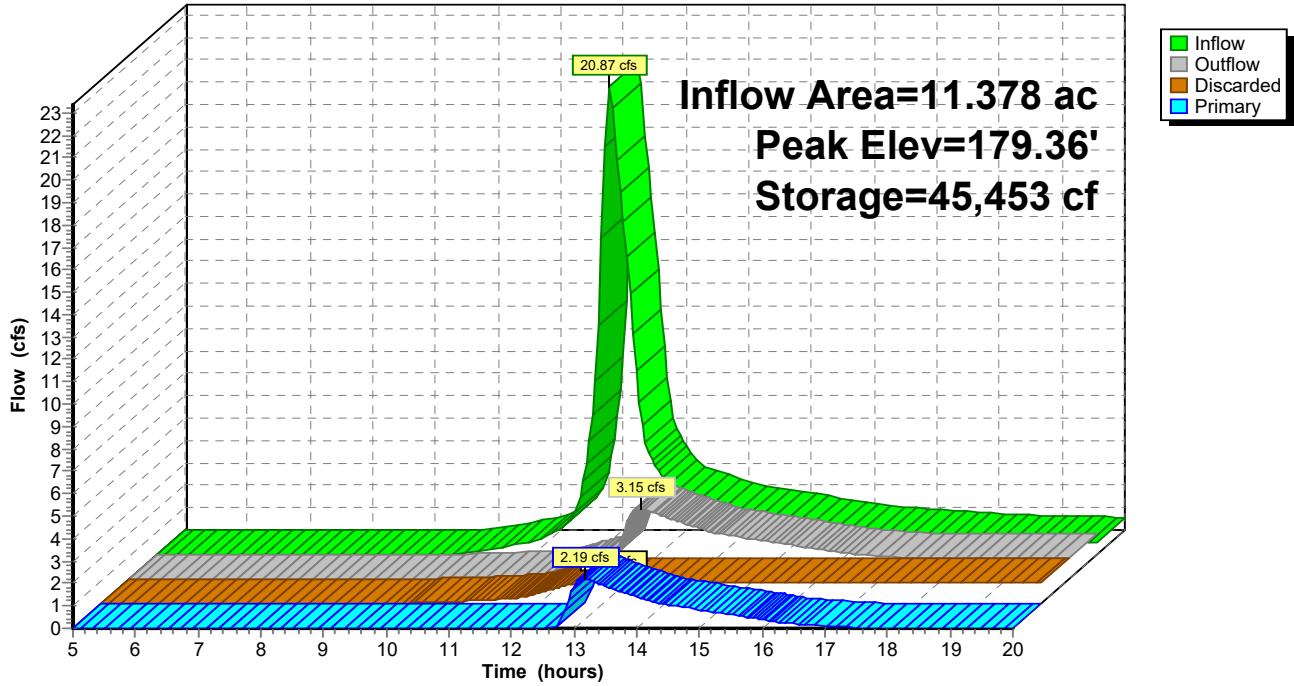
Device	Routing	Invert	Outlet Devices
#1	Primary	179.30'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	177.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.96 cfs @ 13.16 hrs HW=179.36' (Free Discharge)
 ↑2=Exfiltration (Controls 0.96 cfs)

Primary OutFlow Max=2.16 cfs @ 13.16 hrs HW=179.36' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 2.16 cfs @ 0.68 fps)

Pond 71P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 72P: (new Pond)

Inflow Area = 8.312 ac, 2.69% Impervious, Inflow Depth > 3.37" for 50 year event
 Inflow = 26.45 cfs @ 12.21 hrs, Volume= 2.334 af
 Outflow = 0.61 cfs @ 20.00 hrs, Volume= 0.392 af, Atten= 98%, Lag= 467.1 min
 Discarded = 0.61 cfs @ 20.00 hrs, Volume= 0.392 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 178.87' @ 20.00 hrs Surf.Area= 21,228 sf Storage= 84,567 cf

Plug-Flow detention time= 272.7 min calculated for 0.392 af (17% of inflow)
 Center-of-Mass det. time= 157.3 min (958.8 - 801.5)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	247,588 cf	Custom Stage Data (Conic) Listed below (Recalc)

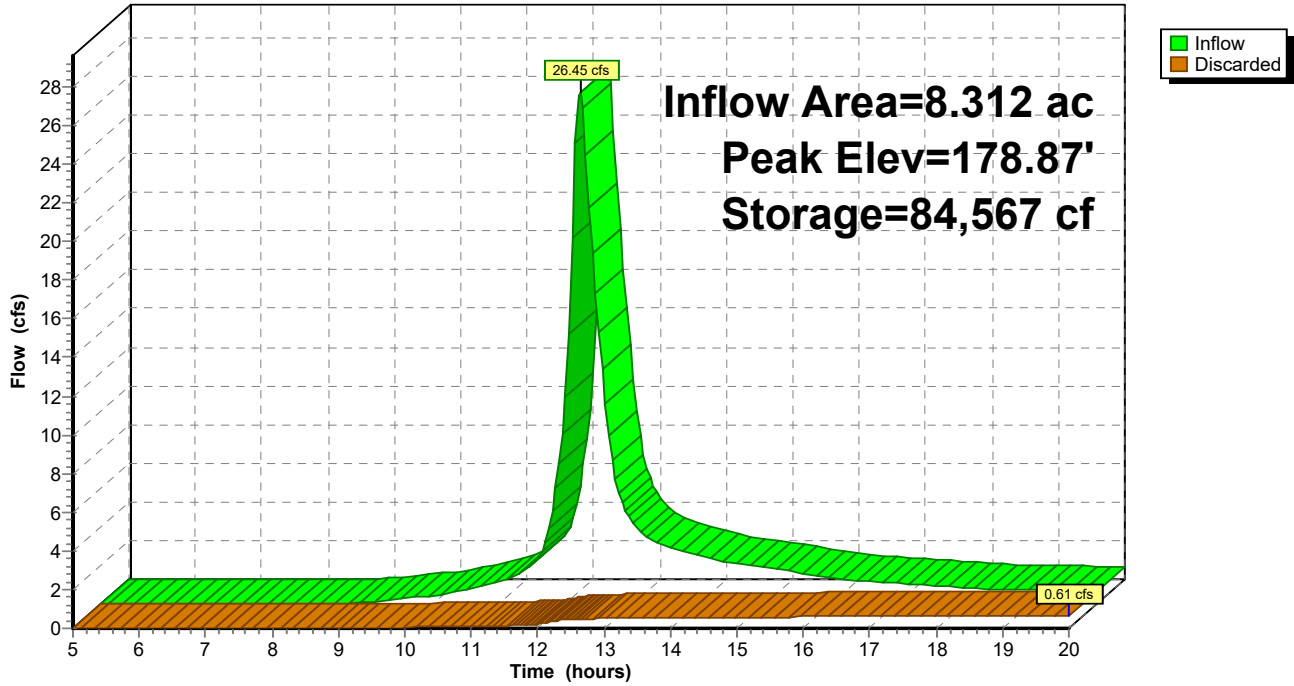
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	704	0	0	704
172.00	2,903	3,358	3,358	2,921
174.00	7,882	10,379	13,737	7,926
176.00	13,742	21,354	35,091	13,831
178.00	18,516	32,140	67,231	18,689
180.00	25,003	43,357	110,588	25,259
182.00	32,623	57,457	168,045	32,973
184.00	47,378	79,544	247,588	47,796

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.61 cfs @ 20.00 hrs HW=178.87' (Free Discharge)
 ↑1=Exfiltration (Controls 0.61 cfs)

Pond 72P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 73P: (new Pond)

Inflow Area = 28.689 ac, 0.00% Impervious, Inflow Depth > 3.88" for 50 year event
 Inflow = 91.45 cfs @ 12.30 hrs, Volume= 9.269 af
 Outflow = 34.87 cfs @ 12.75 hrs, Volume= 5.878 af, Atten= 62%, Lag= 27.0 min
 Discarded = 2.90 cfs @ 12.75 hrs, Volume= 1.708 af
 Primary = 31.97 cfs @ 12.75 hrs, Volume= 4.171 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 154.54' @ 12.75 hrs Surf.Area= 102,958 sf Storage= 194,934 cf

Plug-Flow detention time= 144.5 min calculated for 5.878 af (63% of inflow)
 Center-of-Mass det. time= 73.2 min (870.7 - 797.5)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	393,366 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	0	0	0
150.00	2,638	2,638	2,638
152.00	30,938	33,576	36,214
154.00	78,907	109,845	146,059
156.00	168,400	247,307	393,366

Device	Routing	Invert	Outlet Devices
#1	Primary	154.00'	30.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	148.00'	1.200 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.89 cfs @ 12.75 hrs HW=154.54' (Free Discharge)
 ↑ **2=Exfiltration** (Controls 2.89 cfs)

Primary OutFlow Max=31.90 cfs @ 12.75 hrs HW=154.54' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir**(Weir Controls 31.90 cfs @ 1.98 fps)

Existing Conditions - Windsorville

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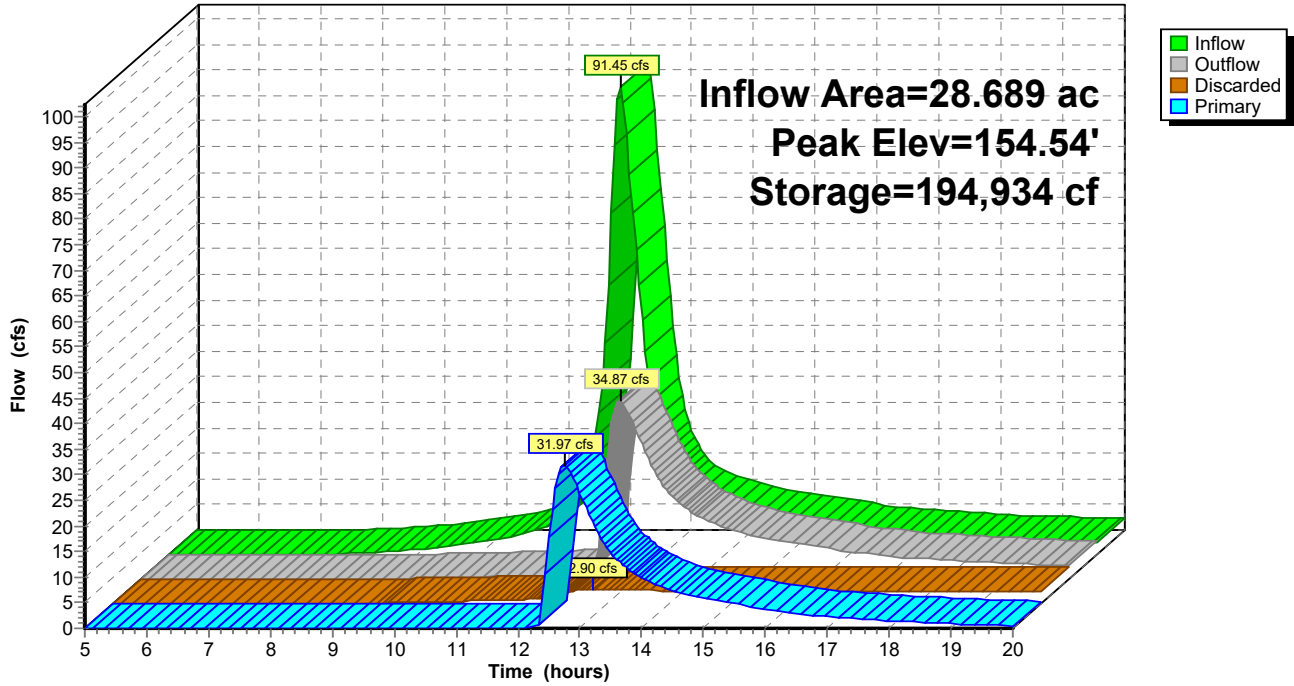
Type III 24-hr 50 year Rainfall=7.02"

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Pond 73P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 74P: (new Pond)

Inflow Area = 103.496 ac, 0.00% Impervious, Inflow Depth > 2.68" for 50 year event
 Inflow = 173.52 cfs @ 12.56 hrs, Volume= 23.154 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 128.35' @ 20.00 hrs Surf.Area= 455,291 sf Storage= 1,007,926 cf

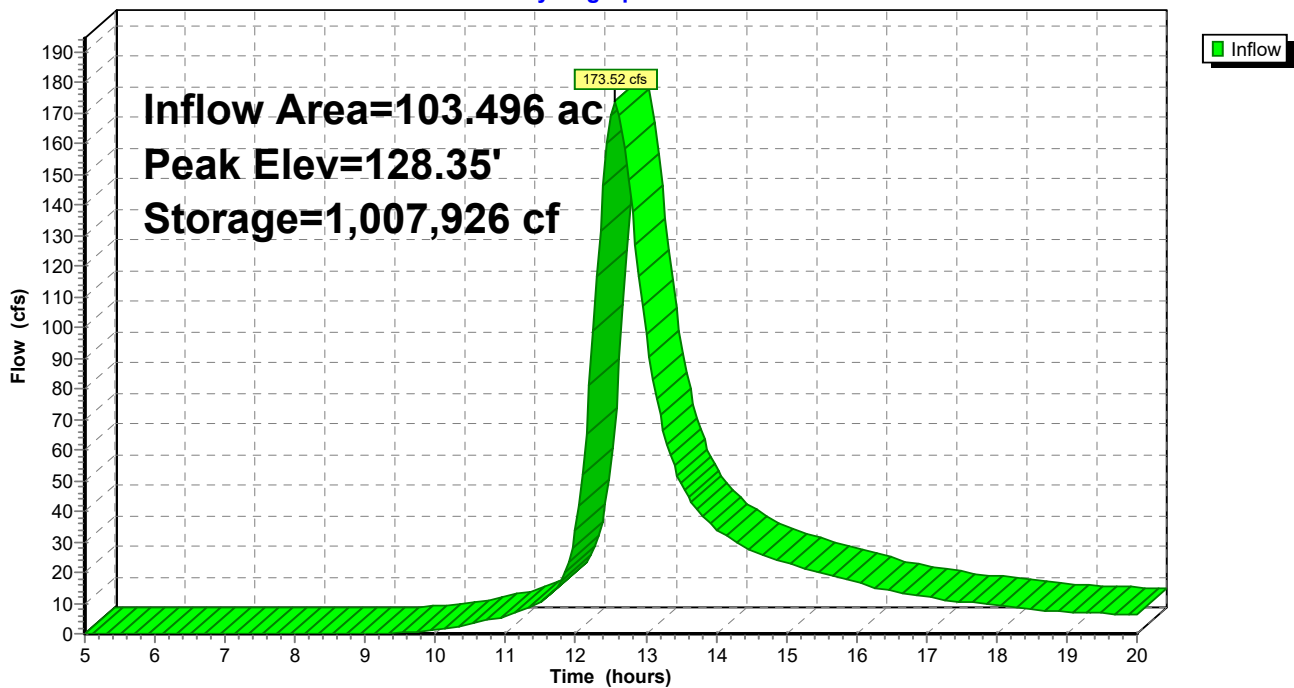
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	1,975,364 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.00	59,766	0	0
124.00	81,926	141,692	141,692
126.00	117,535	199,461	341,153
128.00	400,767	518,302	859,455
130.00	715,142	1,115,909	1,975,364

Pond 74P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 75P: (new Pond)

Inflow Area = 51.667 ac, 0.00% Impervious, Inflow Depth > 3.99" for 50 year event
Inflow = 187.39 cfs @ 12.23 hrs, Volume= 17.173 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 131.84' @ 20.00 hrs Surf.Area= 96,013 sf Storage= 747,654 cf

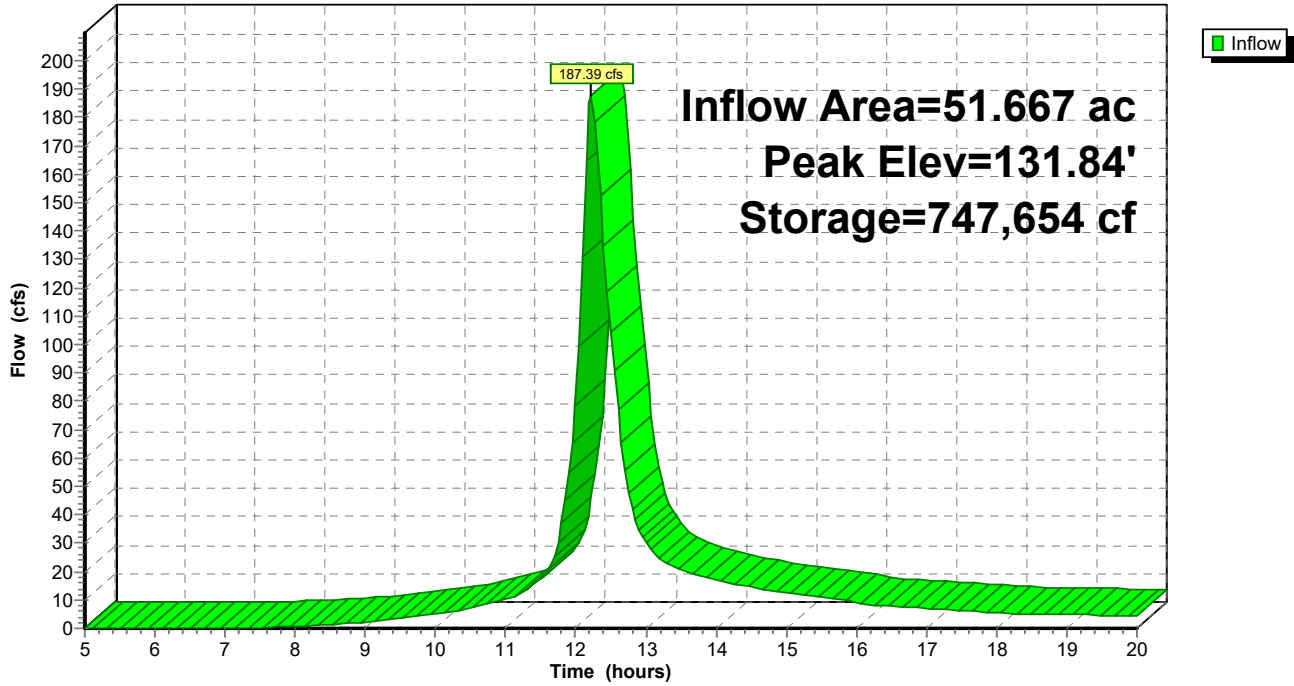
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	118.00'	1,658,604 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
118.00	2,009	0	0
120.00	20,404	22,413	22,413
122.00	38,043	58,447	80,860
124.00	49,484	87,527	168,387
126.00	59,831	109,315	277,702
128.00	76,945	136,776	414,478
130.00	87,570	164,515	578,993
132.00	96,760	184,330	763,323
134.00	104,766	201,526	964,849
136.00	111,675	216,441	1,181,290
138.00	119,097	230,772	1,412,062
140.00	127,445	246,542	1,658,604

Pond 75P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 67: Subcat 67

Runoff = 11.26 cfs @ 12.15 hrs, Volume= 0.873 af, Depth> 4.24"

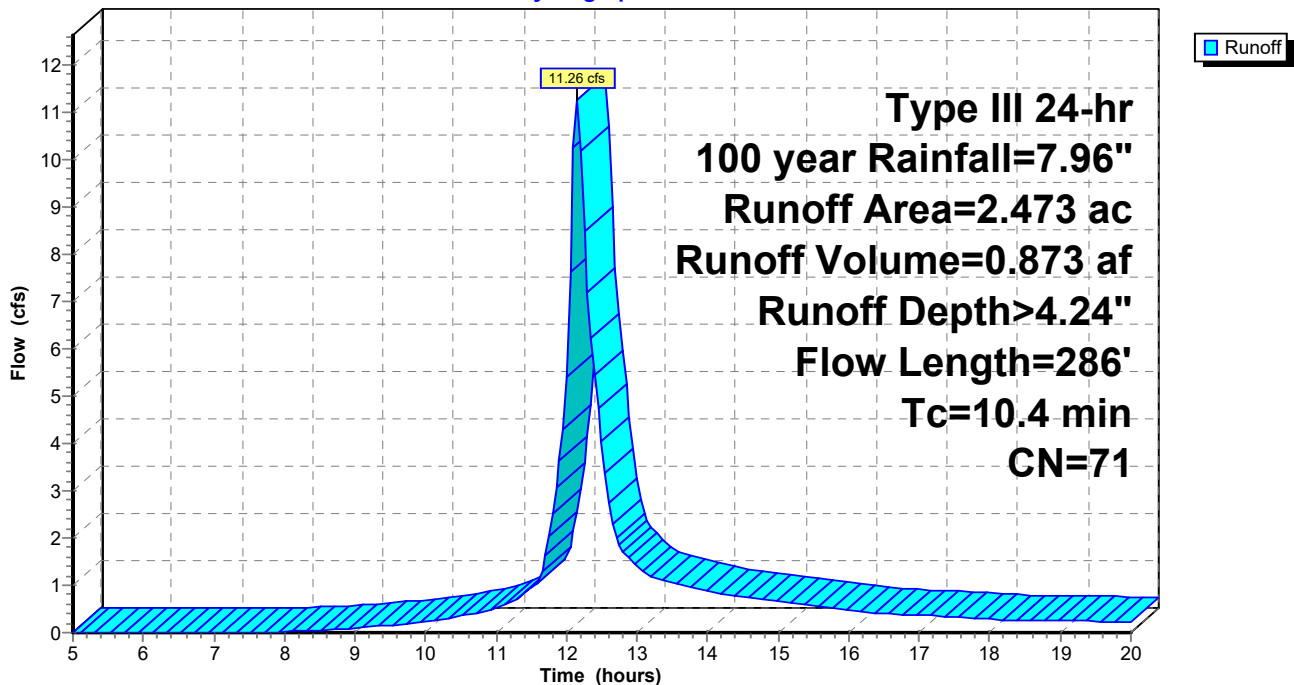
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.541	86	Fallow, bare soil, HSG B
0.288	89	Paved roads w/open ditches, 50% imp, HSG B
0.308	78	Row crops, straight row, Good, HSG B
1.335	60	Woods, Fair, HSG B
2.473	71	Weighted Average
2.329		94.17% Pervious Area
0.144		5.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.2	119	0.0588	1.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.7	117	0.0513	1.13		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.4	286	Total			

Subcatchment 67: Subcat 67

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 68: Subcat 68

Runoff = 71.49 cfs @ 12.30 hrs, Volume= 7.207 af, Depth> 4.00"

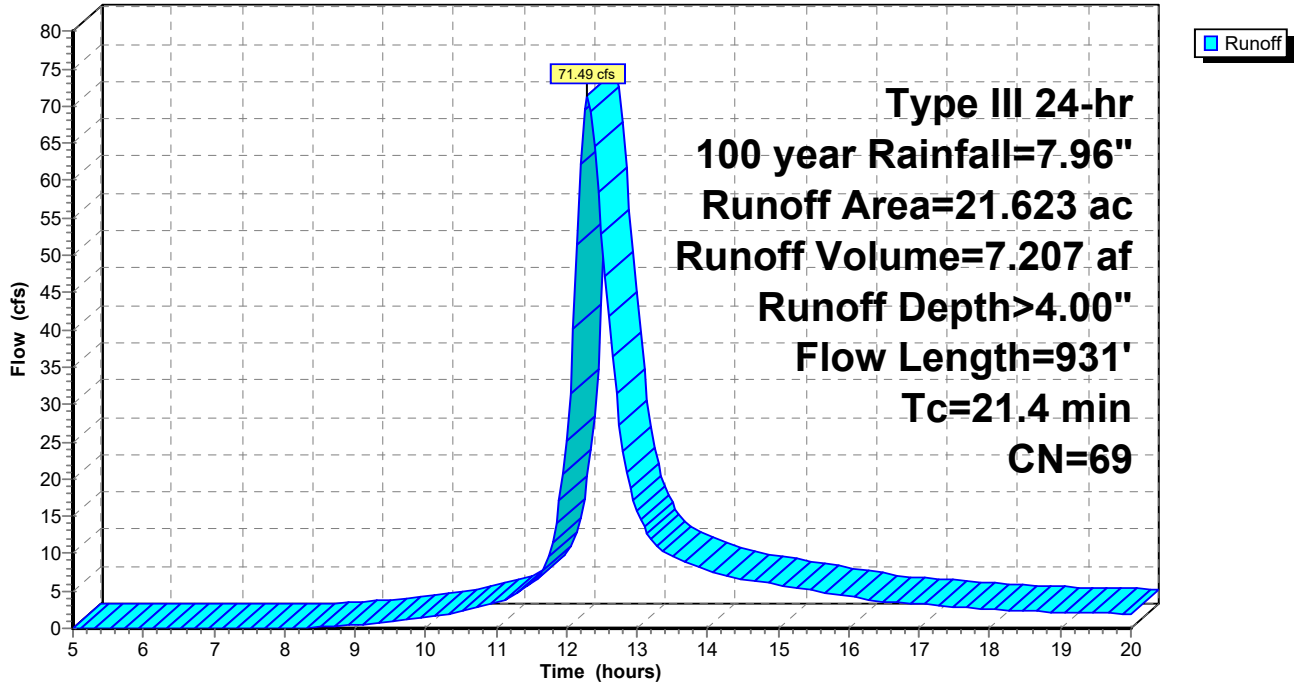
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.017	86	Fallow, bare soil, HSG B
0.977	89	Paved roads w/open ditches, 50% imp, HSG B
0.036	67	Row crops, straight row, Good, HSG A
14.261	78	Row crops, straight row, Good, HSG B
3.381	36	Woods, Fair, HSG A
2.951	60	Woods, Fair, HSG B
21.623	69	Weighted Average
21.134		97.74% Pervious Area
0.489		2.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.2	244	0.0123	0.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.5	637	0.0126	1.01		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.4	931	Total			

Subcatchment 68: Subcat 68

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 69: Subcat 69

Runoff = 25.23 cfs @ 12.16 hrs, Volume= 1.974 af, Depth> 3.47"

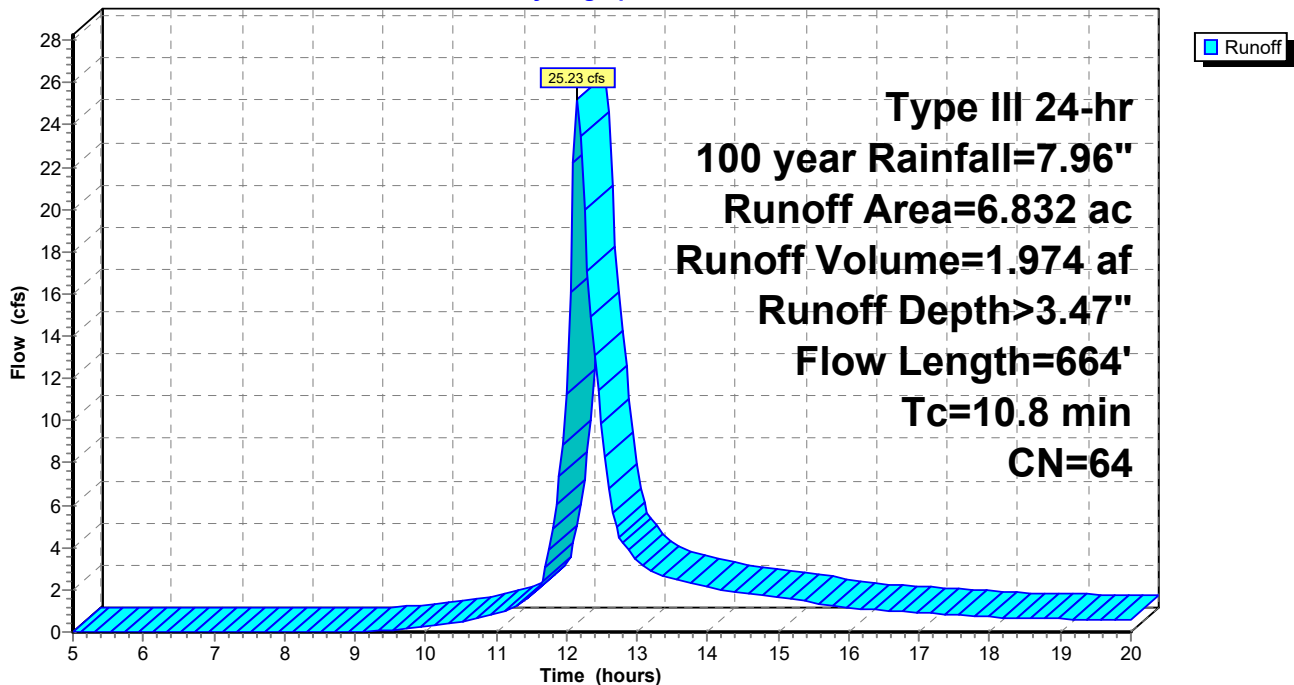
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.449	89	Paved roads w/open ditches, 50% imp, HSG B
0.027	67	Row crops, straight row, Good, HSG A
3.162	78	Row crops, straight row, Good, HSG B
1.668	36	Woods, Fair, HSG A
1.526	60	Woods, Fair, HSG B
6.832	64	Weighted Average
6.608		96.72% Pervious Area
0.224		3.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.19		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
7.1	446	0.0134	1.04		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.0	168	0.0357	0.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
10.8	664	Total			

Subcatchment 69: Subcat 69

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 70: Subcat 70

Runoff = 15.49 cfs @ 12.15 hrs, Volume= 1.199 af, Depth> 4.46"

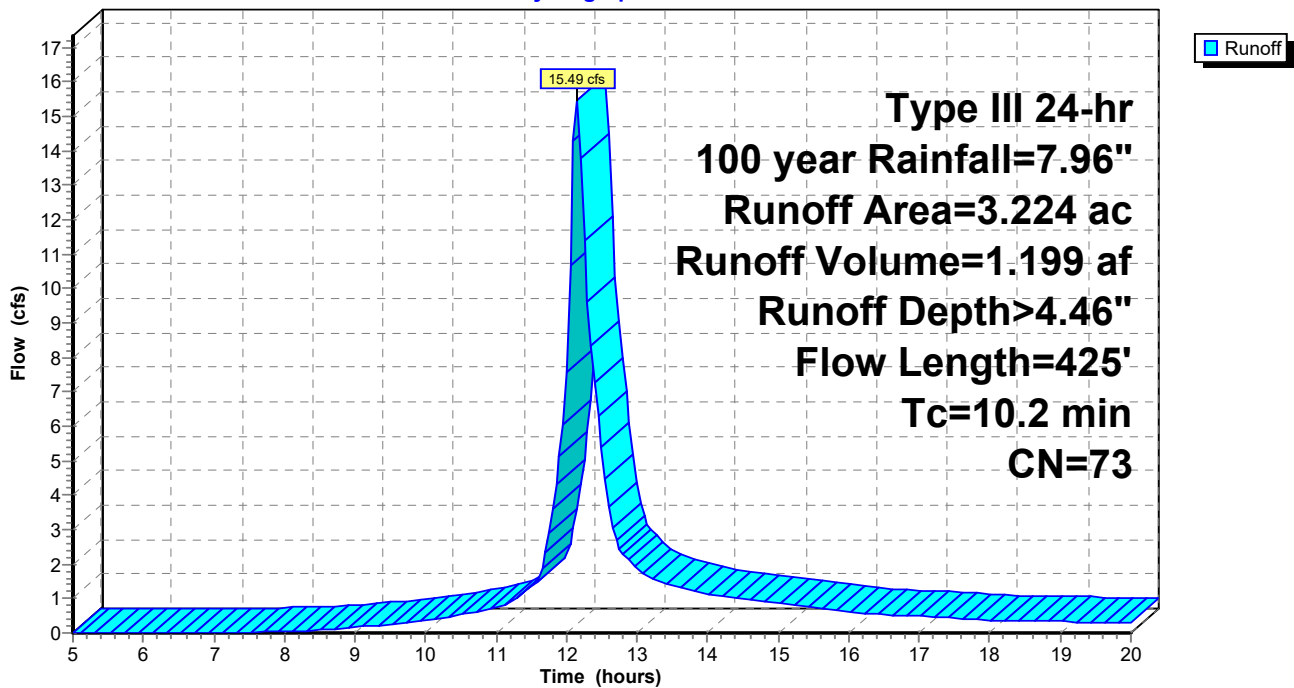
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.235	67	Row crops, straight row, Good, HSG A
2.565	78	Row crops, straight row, Good, HSG B
0.288	36	Woods, Fair, HSG A
0.136	60	Woods, Fair, HSG B
3.224	73	Weighted Average
3.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.2000	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
0.7	82	0.1707	2.07		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.6	293	0.0137	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
10.2	425	Total			

Subcatchment 70: Subcat 70

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 71: Subcat 71

Runoff = 26.28 cfs @ 12.22 hrs, Volume= 2.352 af, Depth> 3.46"

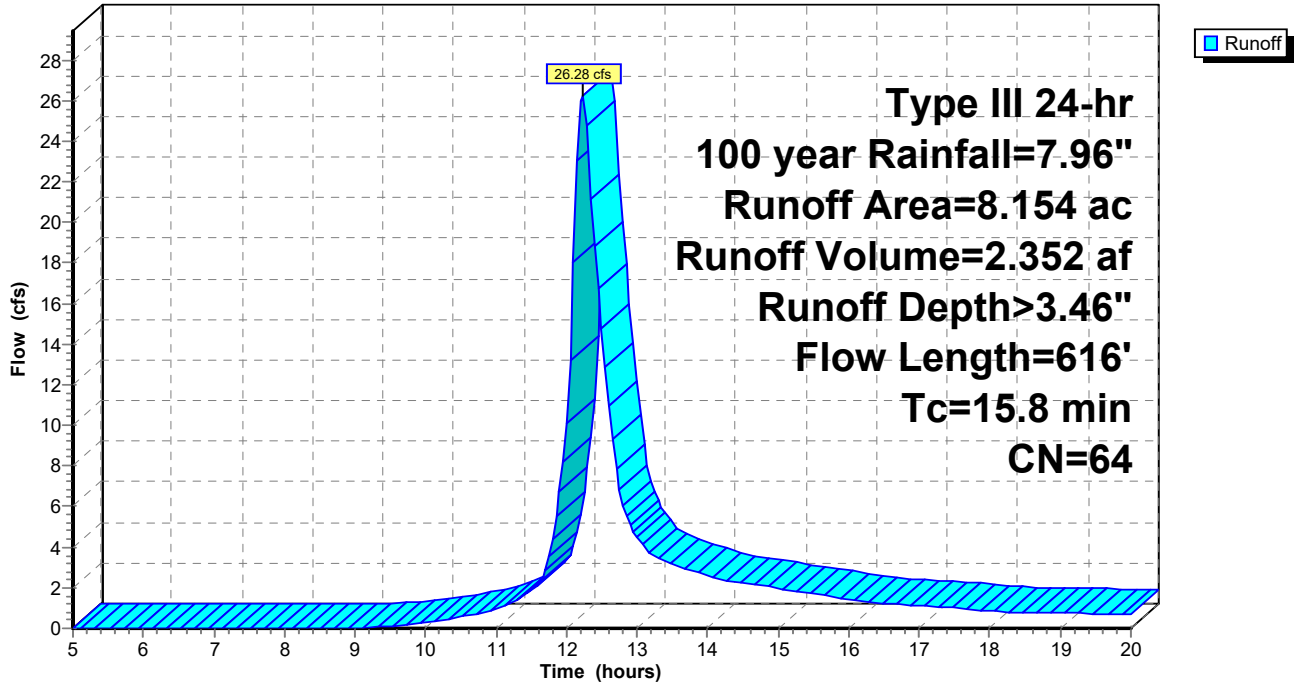
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.103	83	Paved roads w/open ditches, 50% imp, HSG A
0.705	89	Paved roads w/open ditches, 50% imp, HSG B
2.058	78	Row crops, straight row, Good, HSG B
1.051	36	Woods, Fair, HSG A
4.165	60	Woods, Fair, HSG B
0.071	73	Woods, Fair, HSG C
8.154	64	Weighted Average
7.750		95.04% Pervious Area
0.404		4.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.9	369	0.0135	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.6	197	0.0812	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.8	616	Total			

Subcatchment 71: Subcat 71

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 72: Subcat 72

Runoff = 32.30 cfs @ 12.21 hrs, Volume= 2.853 af, Depth> 4.12"

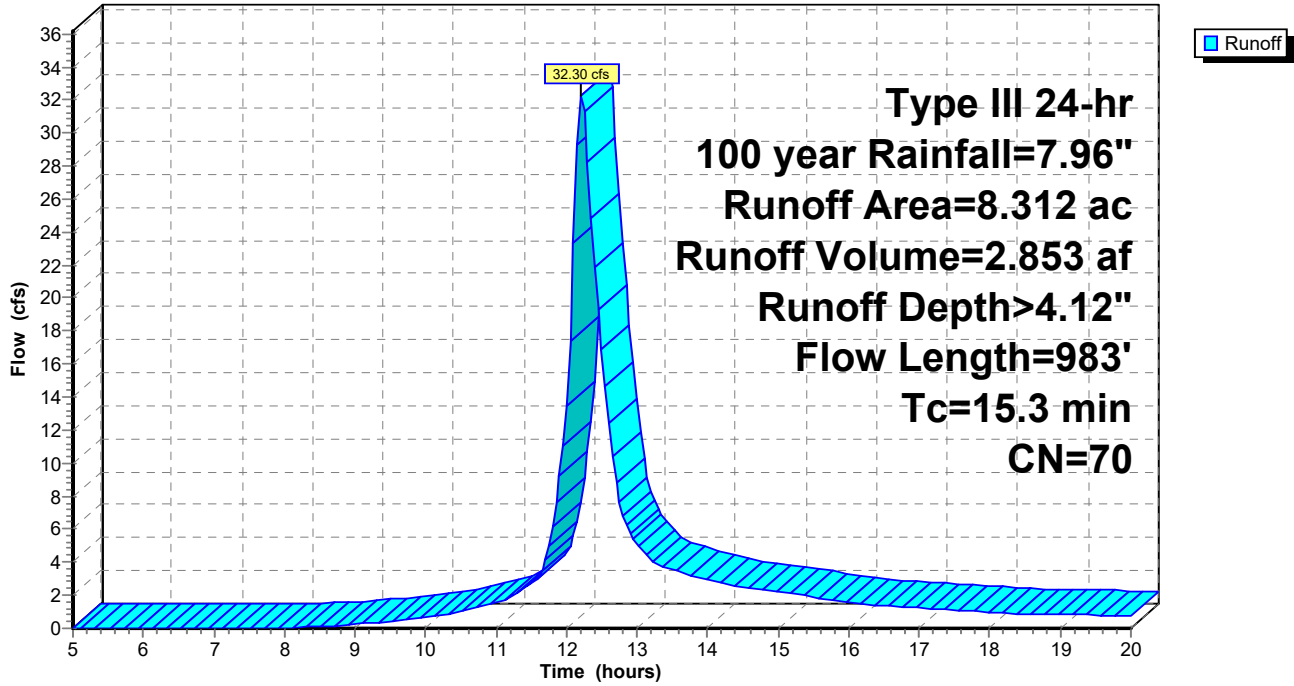
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.000	0	, HSG B
* 0.000	0	, HSG C
0.210	70	1/2 acre lots, 25% imp, HSG B
0.503	91	Fallow, bare soil, HSG C
0.107	89	Paved roads w/open ditches, 50% imp, HSG B
0.236	92	Paved roads w/open ditches, 50% imp, HSG C
3.121	60	Woods, Fair, HSG B
4.135	73	Woods, Fair, HSG C
8.312	70	Weighted Average
8.088		97.31% Pervious Area
0.224		2.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.1400	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
6.5	610	0.0492	1.55		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0303	3.53		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	290	0.1138	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	983	Total			

Subcatchment 72: Subcat 72

Hydrograph



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Summary for Subcatchment 73: Subcat 73

Runoff = 109.64 cfs @ 12.30 hrs, Volume= 11.163 af, Depth> 4.67"

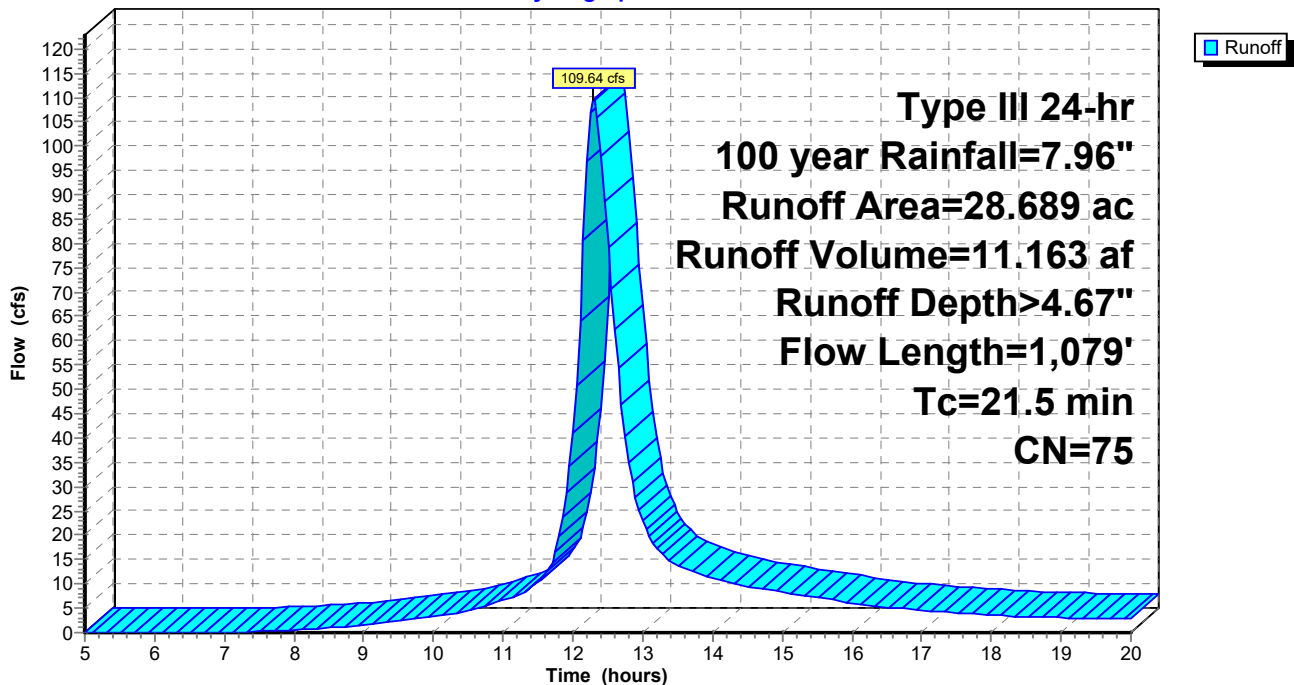
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.050	70	Brush, Fair, HSG C
3.727	91	Fallow, bare soil, HSG C
0.000	67	Row crops, straight row, Good, HSG A
0.499	78	Row crops, straight row, Good, HSG B
0.223	36	Woods, Fair, HSG A
1.034	60	Woods, Fair, HSG B
23.155	73	Woods, Fair, HSG C
28.689	75	Weighted Average
28.689		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1200	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
15.4	1,029	0.0496	1.11		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	1,079	Total			

Subcatchment 73: Subcat 73

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 74: Subcat 74

Runoff = 187.46 cfs @ 12.50 hrs, Volume= 23.444 af, Depth> 3.76"

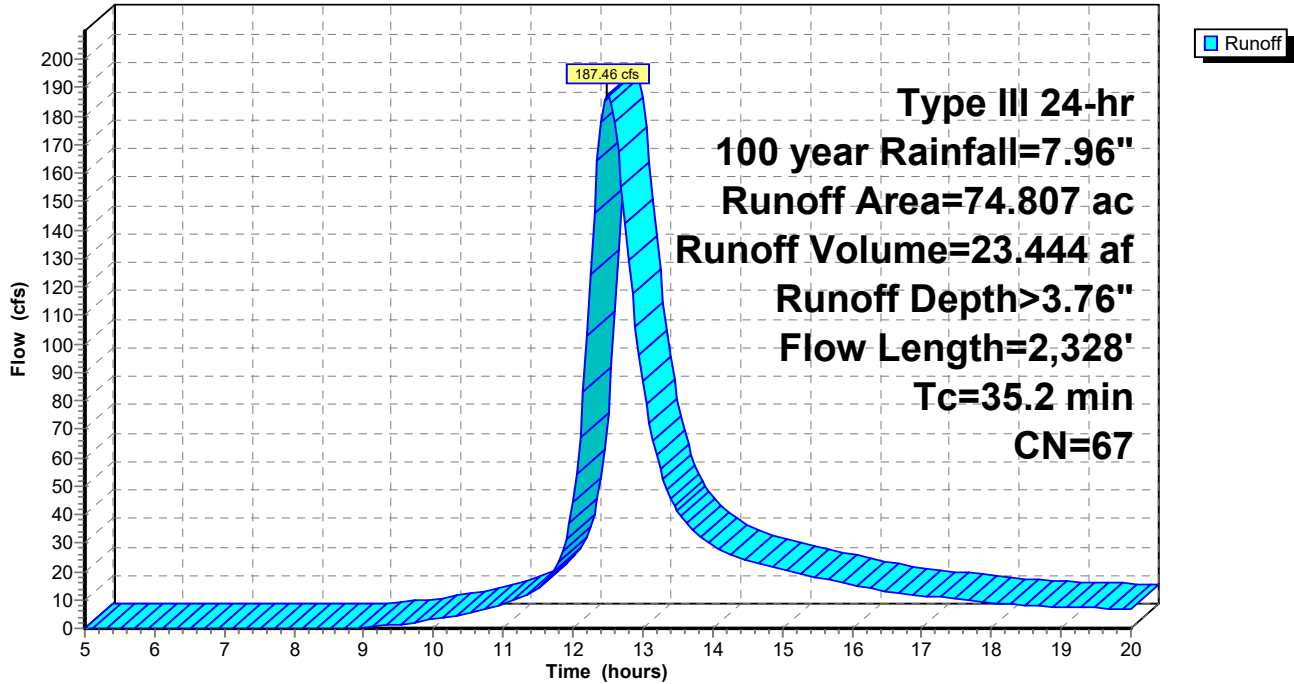
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.000	0	, HSG C
1.215	49	50-75% Grass cover, Fair, HSG A
4.711	69	50-75% Grass cover, Fair, HSG B
4.061	79	50-75% Grass cover, Fair, HSG C
10.203	39	>75% Grass cover, Good, HSG A
11.877	61	>75% Grass cover, Good, HSG B
11.563	74	>75% Grass cover, Good, HSG C
0.819	35	Brush, Fair, HSG A
0.042	56	Brush, Fair, HSG B
5.256	70	Brush, Fair, HSG C
2.416	77	Fallow, bare soil, HSG A
2.938	86	Fallow, bare soil, HSG B
7.003	91	Fallow, bare soil, HSG C
2.006	36	Woods, Fair, HSG A
2.059	60	Woods, Fair, HSG B
8.639	73	Woods, Fair, HSG C
74.807	67	Weighted Average
74.807		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.16"
4.4	484	0.0331	1.82		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
1.2	207	0.0821	2.87		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
4.1	404	0.0272	1.65		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
17.3	923	0.0162	0.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	260	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
35.2	2,328	Total			

Subcatchment 74: Subcat 74

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 75: Subcat 75

Runoff = 224.70 cfs @ 12.22 hrs, Volume= 20.621 af, Depth> 4.79"

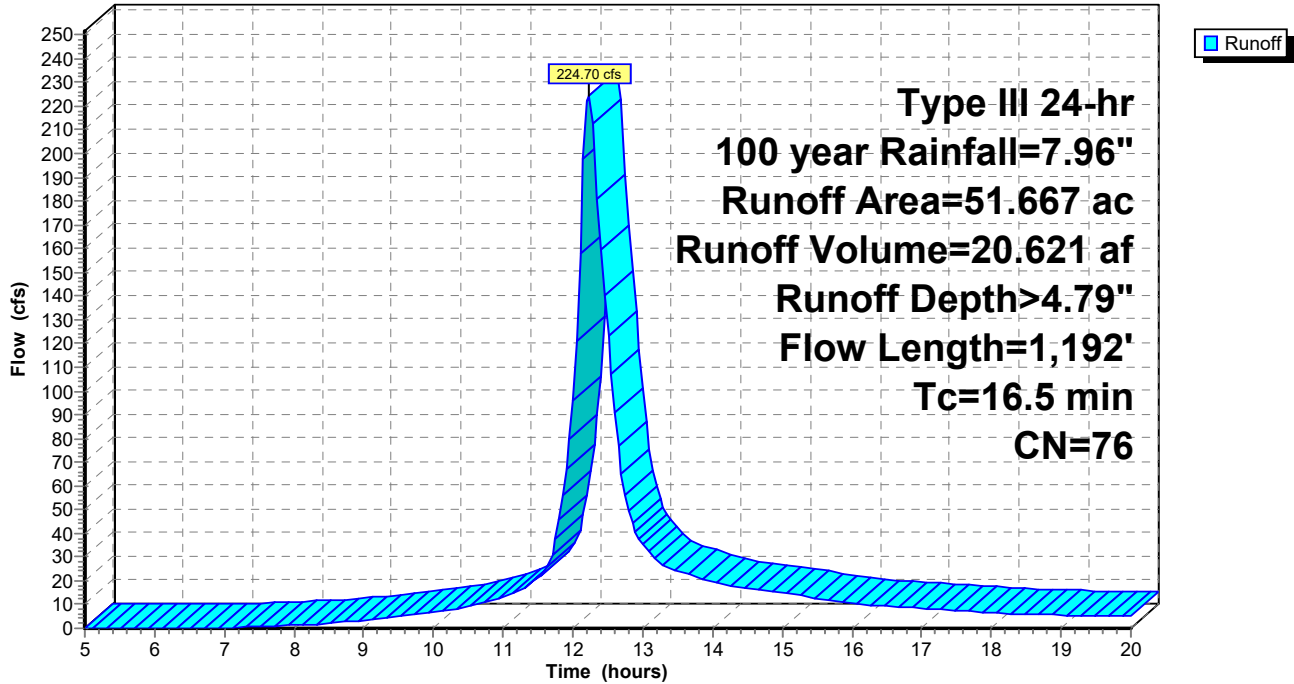
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.425	49	50-75% Grass cover, Fair, HSG A
1.766	69	50-75% Grass cover, Fair, HSG B
0.621	35	Brush, Fair, HSG A
0.051	56	Brush, Fair, HSG B
0.043	70	Brush, Fair, HSG C
11.699	77	Fallow, bare soil, HSG A
27.815	86	Fallow, bare soil, HSG B
1.597	78	Row crops, straight row, Good, HSG B
4.655	36	Woods, Fair, HSG A
2.995	60	Woods, Fair, HSG B
0.000	73	Woods, Fair, HSG C
51.667	76	Weighted Average
51.667		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.5	178	0.0281	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.5	964	0.0612	2.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
16.5	1,192	Total			

Subcatchment 75: Subcat 75

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 67P: (new Pond)

Inflow Area = 2.473 ac, 5.83% Impervious, Inflow Depth > 4.24" for 100 year event
 Inflow = 11.26 cfs @ 12.15 hrs, Volume= 0.873 af
 Outflow = 0.64 cfs @ 15.07 hrs, Volume= 0.446 af, Atten= 94%, Lag= 175.3 min
 Discarded = 0.64 cfs @ 15.07 hrs, Volume= 0.446 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 173.70' @ 15.07 hrs Surf.Area= 22,827 sf Storage= 23,147 cf

Plug-Flow detention time= 218.0 min calculated for 0.444 af (51% of inflow)
 Center-of-Mass det. time= 137.4 min (928.8 - 791.4)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	98,033 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.00	6,117	0	0	6,117
174.00	26,818	30,495	30,495	26,836
176.00	41,235	67,538	98,033	41,311

Device	Routing	Invert	Outlet Devices
#1	Discarded	172.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.64 cfs @ 15.07 hrs HW=173.70' (Free Discharge)

↑**1=Exfiltration** (Controls 0.64 cfs)

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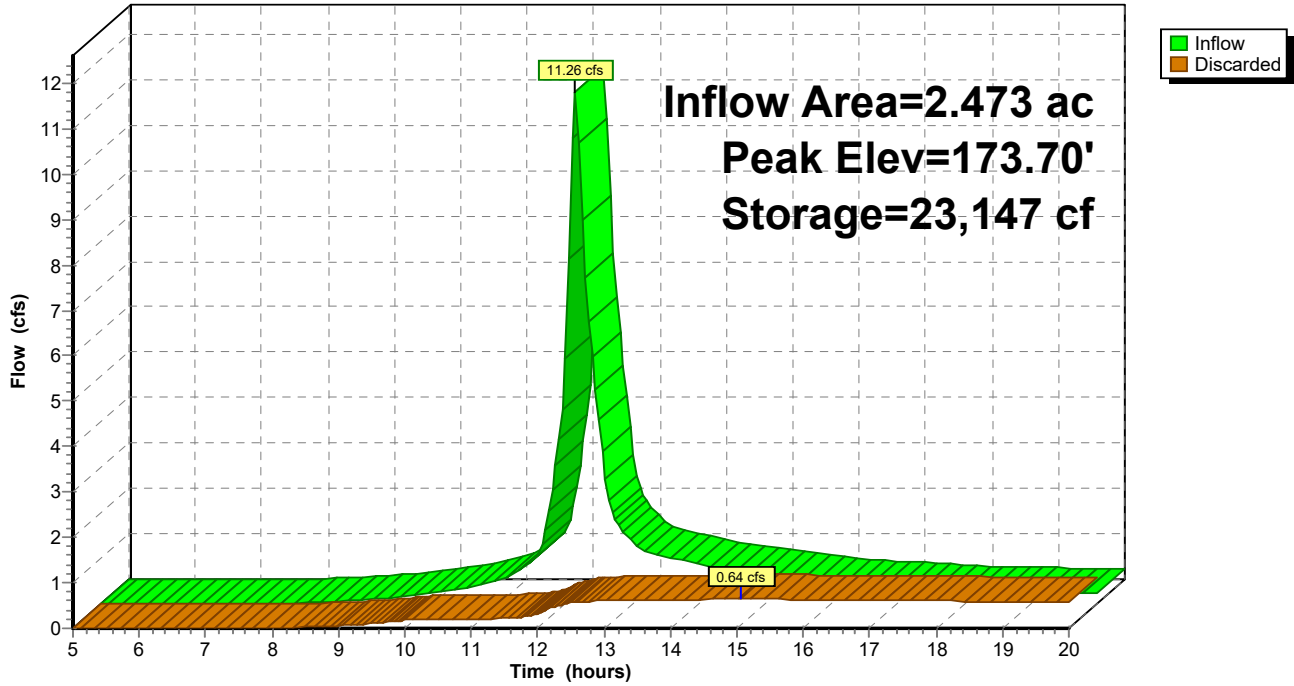
Type III 24-hr 100 year Rainfall=7.96"

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Pond 67P: (new Pond)

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 68P: (new Pond)

Inflow Area = 21.623 ac, 2.26% Impervious, Inflow Depth > 4.00" for 100 year event
 Inflow = 71.49 cfs @ 12.30 hrs, Volume= 7.207 af
 Outflow = 5.31 cfs @ 15.32 hrs, Volume= 3.521 af, Atten= 93%, Lag= 181.2 min
 Discarded = 5.31 cfs @ 15.32 hrs, Volume= 3.521 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 175.98' @ 15.32 hrs Surf.Area= 189,940 sf Storage= 195,130 cf

Plug-Flow detention time= 222.5 min calculated for 3.521 af (49% of inflow)
 Center-of-Mass det. time= 140.1 min (943.6 - 803.5)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	576,430 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	29,899	0	0	29,899
176.00	191,906	198,369	198,369	191,920
177.50	317,411	378,061	576,430	317,454

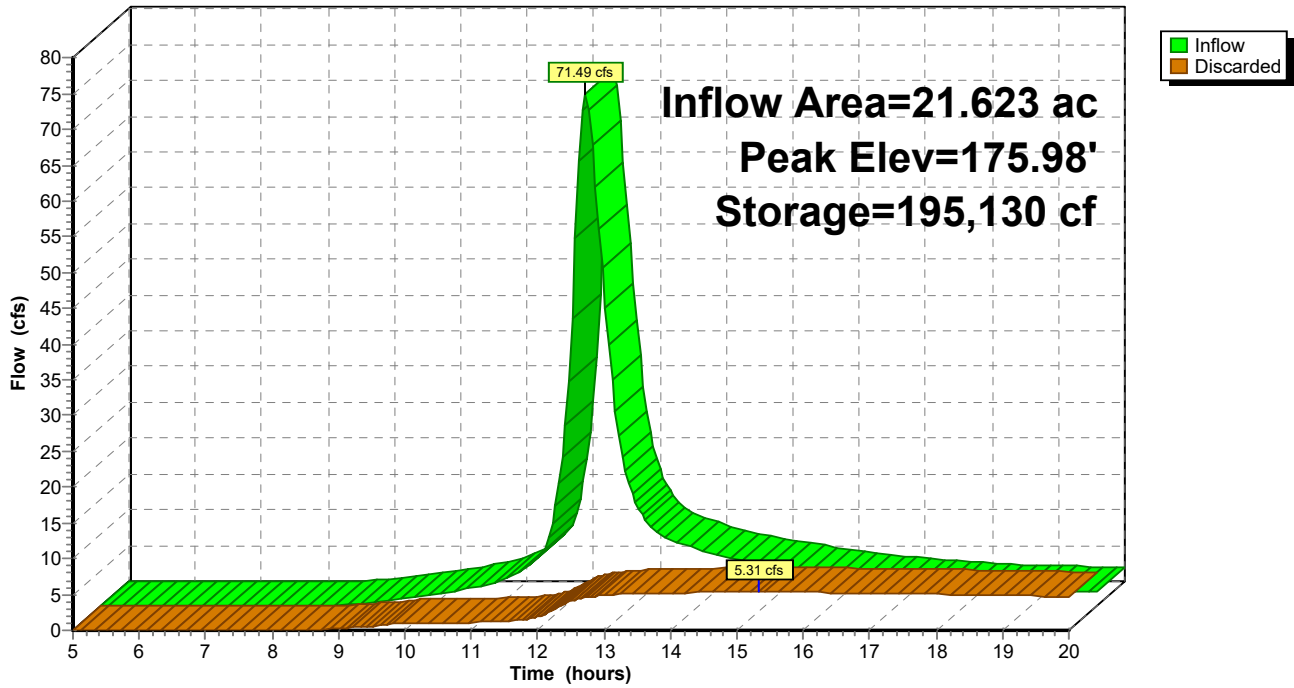
Device	Routing	Invert	Outlet Devices
#1	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=5.31 cfs @ 15.32 hrs HW=175.98' (Free Discharge)

↑**1=Exfiltration** (Controls 5.31 cfs)

Pond 68P: (new Pond)

Hydrograph



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Summary for Pond 69P: (new Pond)

Inflow Area = 6.832 ac, 3.28% Impervious, Inflow Depth > 3.47" for 100 year event
 Inflow = 25.23 cfs @ 12.16 hrs, Volume= 1.974 af
 Outflow = 0.73 cfs @ 17.94 hrs, Volume= 0.492 af, Atten= 97%, Lag= 347.0 min
 Discarded = 0.73 cfs @ 17.94 hrs, Volume= 0.492 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 174.28' @ 17.94 hrs Surf.Area= 25,748 sf Storage= 65,242 cf

Plug-Flow detention time= 245.7 min calculated for 0.491 af (25% of inflow)
 Center-of-Mass det. time= 146.2 min (949.7 - 803.5)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	115,744 cf	Custom Stage Data (Conic) Listed below (Recalc)

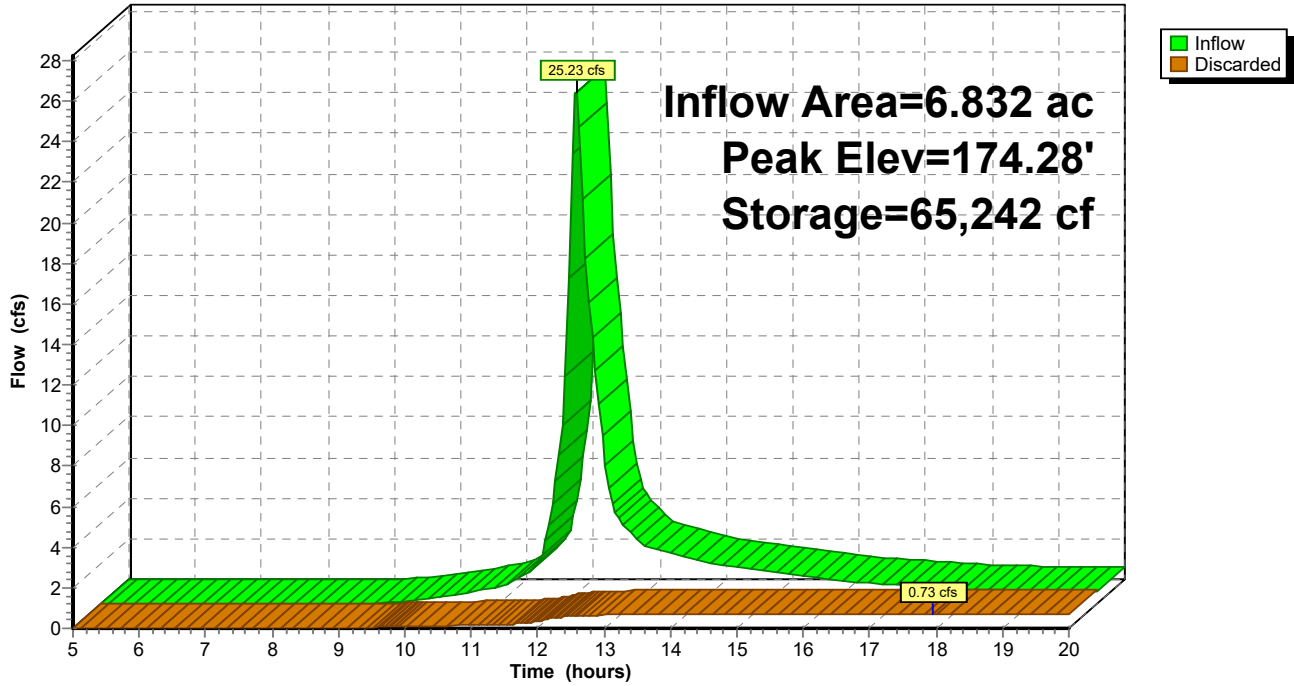
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	3,610	0	0	3,610
172.00	15,882	18,043	18,043	15,900
174.00	24,667	40,228	58,271	24,742
176.00	33,009	57,474	115,744	33,170

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.73 cfs @ 17.94 hrs HW=174.28' (Free Discharge)
 ↑1=Exfiltration (Controls 0.73 cfs)

Pond 69P: (new Pond)

Hydrograph



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Summary for Pond 70P: (new Pond)

Inflow Area = 3.224 ac, 0.00% Impervious, Inflow Depth > 4.46" for 100 year event
 Inflow = 15.49 cfs @ 12.15 hrs, Volume= 1.199 af
 Outflow = 7.45 cfs @ 12.40 hrs, Volume= 1.191 af, Atten= 52%, Lag= 15.1 min
 Discarded = 3.61 cfs @ 12.40 hrs, Volume= 1.075 af
 Primary = 3.83 cfs @ 12.40 hrs, Volume= 0.117 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 198.50' @ 12.40 hrs Surf.Area= 31,149 sf Storage= 15,183 cf

Plug-Flow detention time= 39.8 min calculated for 1.187 af (99% of inflow)
 Center-of-Mass det. time= 37.2 min (825.0 - 787.8)

Volume	Invert	Avail.Storage	Storage Description
#1	197.20'	32,894 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.20	0	0	0	0
198.00	13,877	3,701	3,701	13,878
198.40	29,617	8,502	12,203	29,619
199.00	39,593	20,691	32,894	39,603

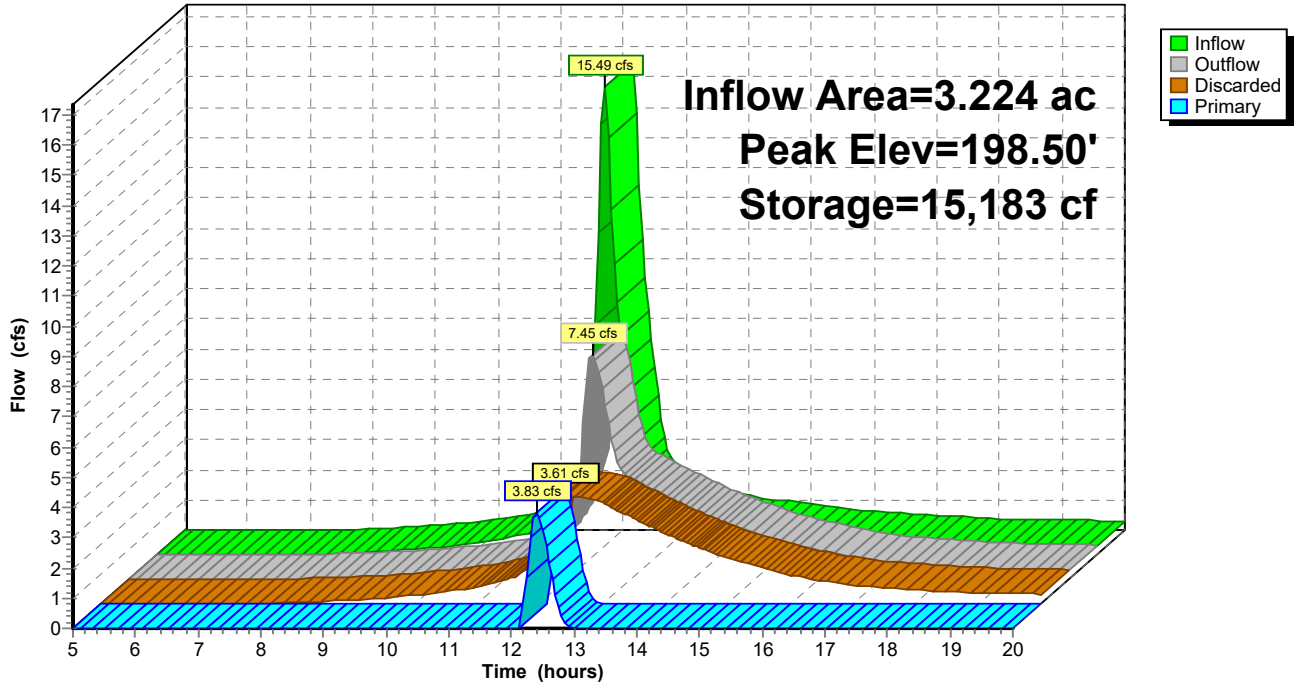
Device	Routing	Invert	Outlet Devices
#1	Primary	198.40'	50.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	197.20'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.61 cfs @ 12.40 hrs HW=198.50' (Free Discharge)
 ↑ **2=Exfiltration** (Controls 3.61 cfs)

Primary OutFlow Max=3.82 cfs @ 12.40 hrs HW=198.50' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir**(Weir Controls 3.82 cfs @ 0.78 fps)

Pond 70P: (new Pond)

Hydrograph



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Summary for Pond 71P: (new Pond)

Inflow Area = 11.378 ac, 3.55% Impervious, Inflow Depth > 2.60" for 100 year event
 Inflow = 27.59 cfs @ 12.26 hrs, Volume= 2.468 af
 Outflow = 11.87 cfs @ 12.63 hrs, Volume= 1.500 af, Atten= 57%, Lag= 22.4 min
 Discarded = 1.01 cfs @ 12.63 hrs, Volume= 0.664 af
 Primary = 10.86 cfs @ 12.63 hrs, Volume= 0.836 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 179.49' @ 12.63 hrs Surf.Area= 36,048 sf Storage= 49,792 cf

Plug-Flow detention time= 141.1 min calculated for 1.495 af (61% of inflow)
 Center-of-Mass det. time= 68.6 min (873.2 - 804.6)

Volume	Invert	Avail.Storage	Storage Description
#1	177.00'	70,235 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
177.00	1,770	0	0 1,770
178.00	19,737	9,139	9,139 19,740
179.30	33,402	34,153	43,292 33,425
180.00	43,811	26,942	70,235 43,846

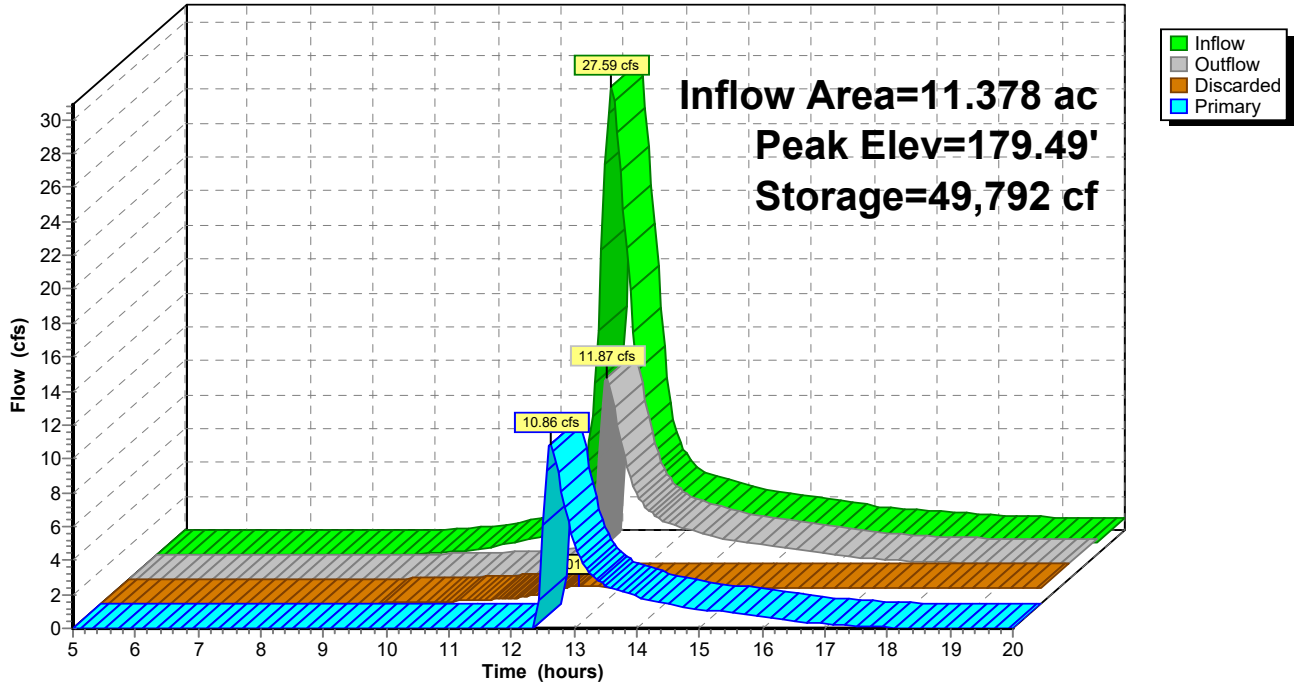
Device	Routing	Invert	Outlet Devices
#1	Primary	179.30'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	177.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.01 cfs @ 12.63 hrs HW=179.49' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.01 cfs)

Primary OutFlow Max=10.76 cfs @ 12.63 hrs HW=179.49' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 10.76 cfs @ 1.16 fps)

Pond 71P: (new Pond)

Hydrograph



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Summary for Pond 72P: (new Pond)

Inflow Area = 8.312 ac, 2.69% Impervious, Inflow Depth > 4.12" for 100 year event
 Inflow = 32.30 cfs @ 12.21 hrs, Volume= 2.853 af
 Outflow = 0.69 cfs @ 20.00 hrs, Volume= 0.451 af, Atten= 98%, Lag= 467.2 min
 Discarded = 0.69 cfs @ 20.00 hrs, Volume= 0.451 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 179.76' @ 20.00 hrs Surf.Area= 24,161 sf Storage= 104,598 cf

Plug-Flow detention time= 280.8 min calculated for 0.450 af (16% of inflow)
 Center-of-Mass det. time= 158.6 min (955.6 - 797.0)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	247,588 cf	Custom Stage Data (Conic) Listed below (Recalc)

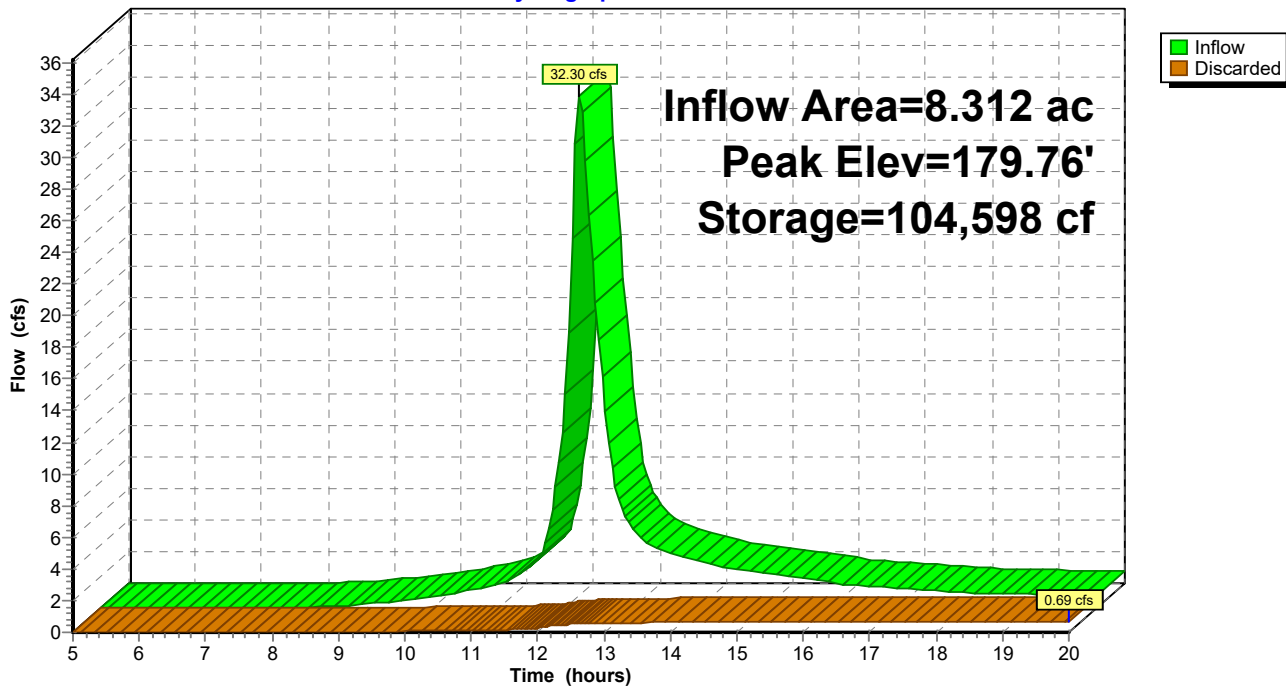
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	704	0	0	704
172.00	2,903	3,358	3,358	2,921
174.00	7,882	10,379	13,737	7,926
176.00	13,742	21,354	35,091	13,831
178.00	18,516	32,140	67,231	18,689
180.00	25,003	43,357	110,588	25,259
182.00	32,623	57,457	168,045	32,973
184.00	47,378	79,544	247,588	47,796

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.69 cfs @ 20.00 hrs HW=179.76' (Free Discharge)
 ↑1=Exfiltration (Controls 0.69 cfs)

Pond 72P: (new Pond)

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Summary for Pond 73P: (new Pond)

Inflow Area = 28.689 ac, 0.00% Impervious, Inflow Depth > 4.67" for 100 year event
 Inflow = 109.64 cfs @ 12.30 hrs, Volume= 11.163 af
 Outflow = 52.95 cfs @ 12.66 hrs, Volume= 7.740 af, Atten= 52%, Lag= 22.0 min
 Discarded = 3.14 cfs @ 12.66 hrs, Volume= 1.792 af
 Primary = 49.81 cfs @ 12.66 hrs, Volume= 5.948 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 154.73' @ 12.66 hrs Surf.Area= 111,574 sf Storage= 215,589 cf

Plug-Flow detention time= 128.6 min calculated for 7.740 af (69% of inflow)
 Center-of-Mass det. time= 63.0 min (856.2 - 793.2)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	393,366 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.00	0	0	0
150.00	2,638	2,638	2,638
152.00	30,938	33,576	36,214
154.00	78,907	109,845	146,059
156.00	168,400	247,307	393,366

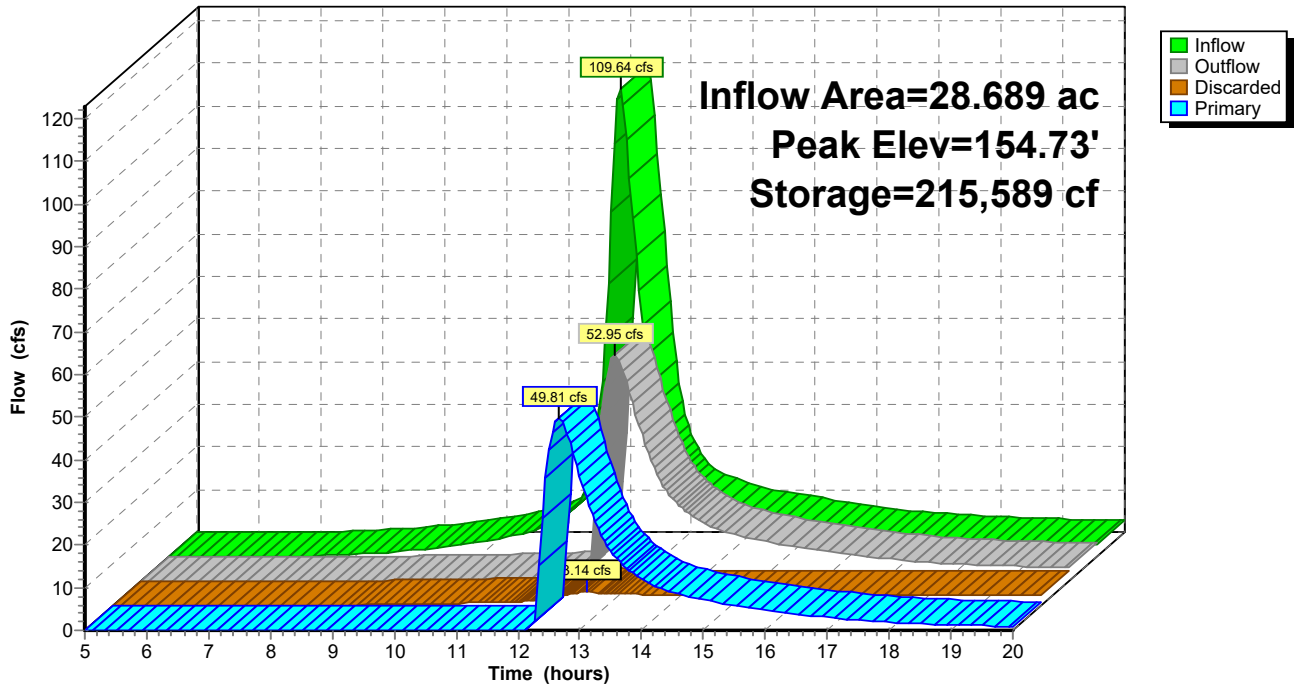
Device	Routing	Invert	Outlet Devices
#1	Primary	154.00'	30.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	148.00'	1.200 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.14 cfs @ 12.66 hrs HW=154.73' (Free Discharge)
 ↑**2=Exfiltration** (Controls 3.14 cfs)

Primary OutFlow Max=49.69 cfs @ 12.66 hrs HW=154.73' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 49.69 cfs @ 2.27 fps)

Pond 73P: (new Pond)

Hydrograph



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Summary for Pond 74P: (new Pond)

Inflow Area = 103.496 ac, 0.00% Impervious, Inflow Depth > 3.41" for 100 year event
 Inflow = 231.34 cfs @ 12.54 hrs, Volume= 29.392 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 128.89' @ 20.00 hrs Surf.Area= 541,004 sf Storage= 1,279,563 cf

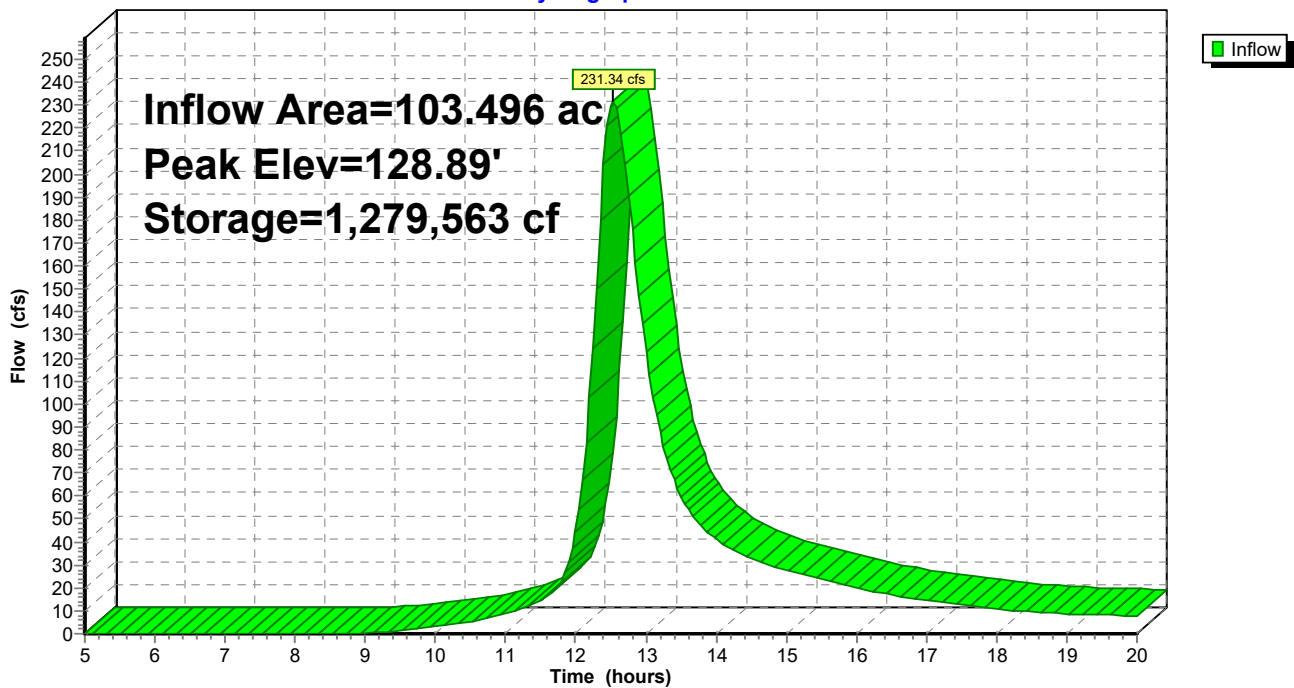
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	1,975,364 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.00	59,766	0	0
124.00	81,926	141,692	141,692
126.00	117,535	199,461	341,153
128.00	400,767	518,302	859,455
130.00	715,142	1,115,909	1,975,364

Pond 74P: (new Pond)

Hydrograph



Existing Conditions - Windsorville

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 75P: (new Pond)

Inflow Area = 51.667 ac, 0.00% Impervious, Inflow Depth > 4.79" for 100 year event
Inflow = 224.70 cfs @ 12.22 hrs, Volume= 20.621 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 133.35' @ 20.00 hrs Surf.Area= 102,172 sf Storage= 897,797 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	118.00'	1,658,604 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
118.00	2,009	0	0
120.00	20,404	22,413	22,413
122.00	38,043	58,447	80,860
124.00	49,484	87,527	168,387
126.00	59,831	109,315	277,702
128.00	76,945	136,776	414,478
130.00	87,570	164,515	578,993
132.00	96,760	184,330	763,323
134.00	104,766	201,526	964,849
136.00	111,675	216,441	1,181,290
138.00	119,097	230,772	1,412,062
140.00	127,445	246,542	1,658,604

Existing Conditions - Windsorville

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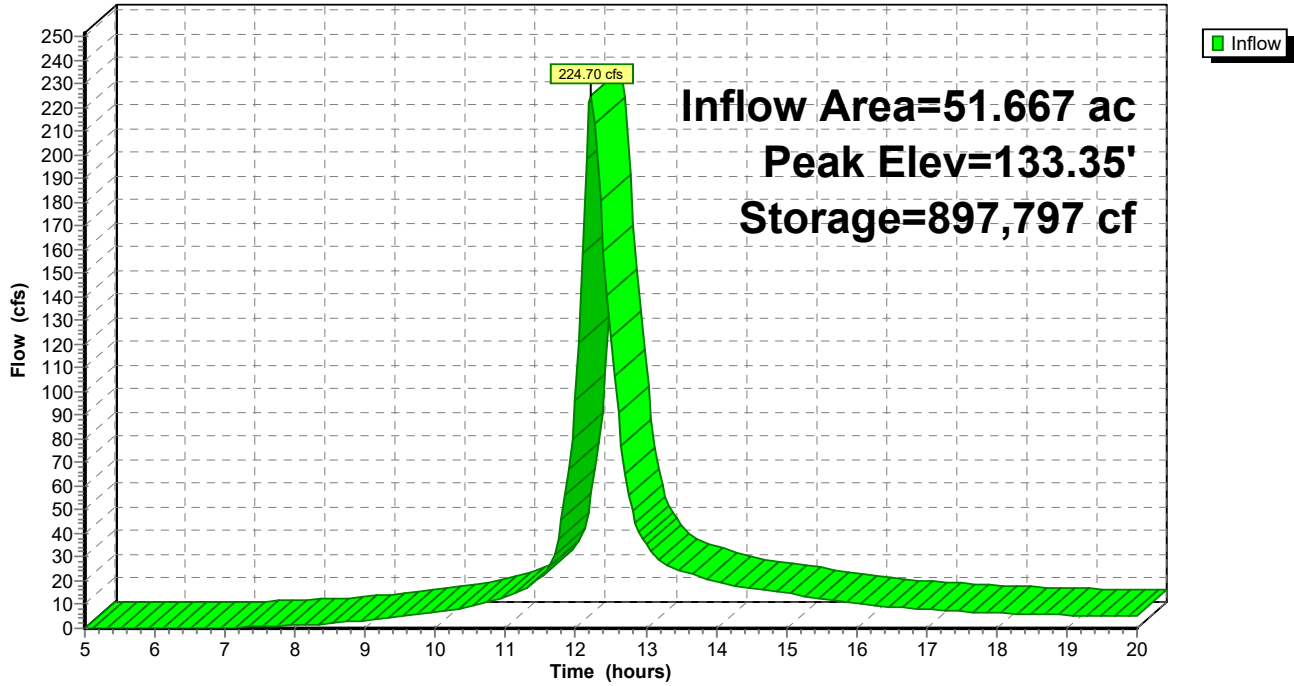
Type III 24-hr 100 year Rainfall=7.96"

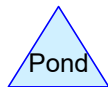
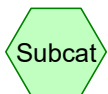
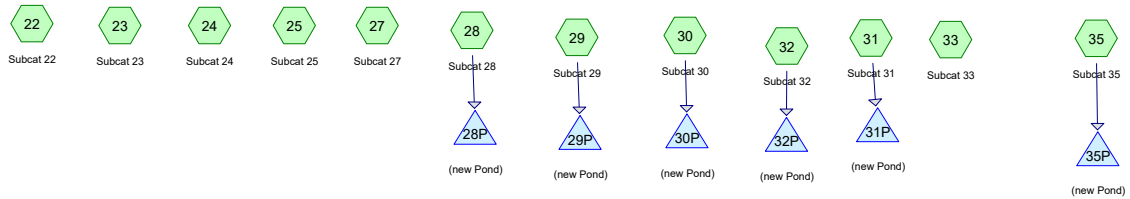
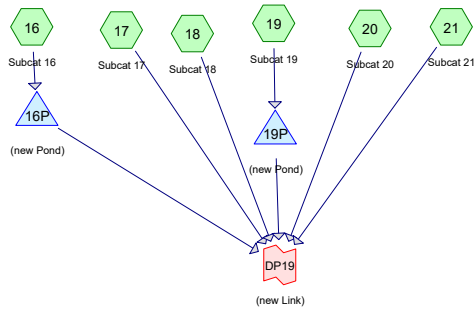
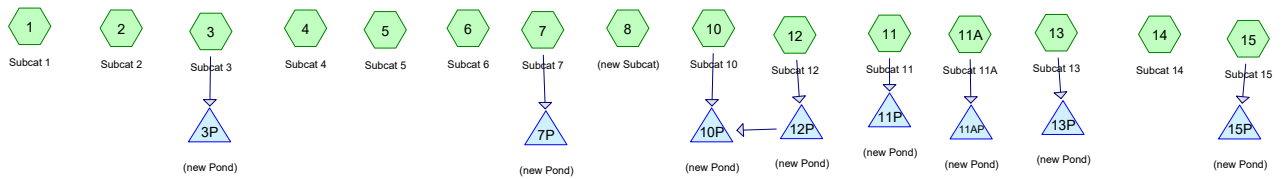
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Pond 75P: (new Pond)

Hydrograph





Routing Diagram for Existing Conditions - North Plantation
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Existing Conditions - North Plantation

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.028	65	2 acre lots, 12% imp, HSG B (15)
0.440	49	50-75% Grass cover, Fair, HSG A (4, 19, 21, 28, 29, 30, 31, 32)
21.336	69	50-75% Grass cover, Fair, HSG B (4, 5, 6, 7, 10, 12, 17, 18, 19, 20, 21, 22, 25, 28, 29, 30, 31, 32, 33, 35)
2.120	56	Brush, Fair, HSG B (11, 11A, 22, 24)
4.892	77	Fallow, bare soil, HSG A (1, 2, 3, 4, 31, 32, 33, 35)
26.083	86	Fallow, bare soil, HSG B (1, 2, 3, 4, 30, 31, 32, 33, 35)
1.123	89	Paved roads w/open ditches, 50% imp, HSG B (11, 12, 13, 15, 16)
0.216	67	Row crops, straight row, Good, HSG A (6, 10, 11)
115.654	78	Row crops, straight row, Good, HSG B (4, 5, 6, 7, 8, 10, 11, 11A, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 30)
23.197	36	Woods, Fair, HSG A (1, 2, 3, 4, 5, 6, 10, 11, 11A, 19, 20, 21, 25, 27, 28, 29, 30, 31, 32, 35)
12.099	60	Woods, Fair, HSG B (1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 16, 17, 18, 19, 20, 21, 22, 24, 25, 27, 28, 29, 33, 35)
0.080	73	Woods, Fair, HSG C (2)
207.268	72	TOTAL AREA

Existing Conditions - North Plantation

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
28.744	HSG A	1, 2, 3, 4, 5, 6, 10, 11, 11A, 19, 20, 21, 25, 27, 28, 29, 30, 31, 32, 33, 35
178.444	HSG B	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 11A, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 35
0.080	HSG C	2
0.000	HSG D	
0.000	Other	
207.268		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.028	0.000	0.000	0.000	0.028	2 acre lots, 12% imp	
0.440	21.336	0.000	0.000	0.000	21.775	50-75% Grass cover, Fair	
0.000	2.120	0.000	0.000	0.000	2.120	Brush, Fair	
4.892	26.083	0.000	0.000	0.000	30.975	Fallow, bare soil	
0.000	1.123	0.000	0.000	0.000	1.123	Paved roads w/open ditches, 50% imp	
0.216	115.654	0.000	0.000	0.000	115.870	Row crops, straight row, Good	
23.197	12.099	0.080	0.000	0.000	35.377	Woods, Fair	
28.744	178.444	0.080	0.000	0.000	207.268	TOTAL AREA	

Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 1: Subcat 1

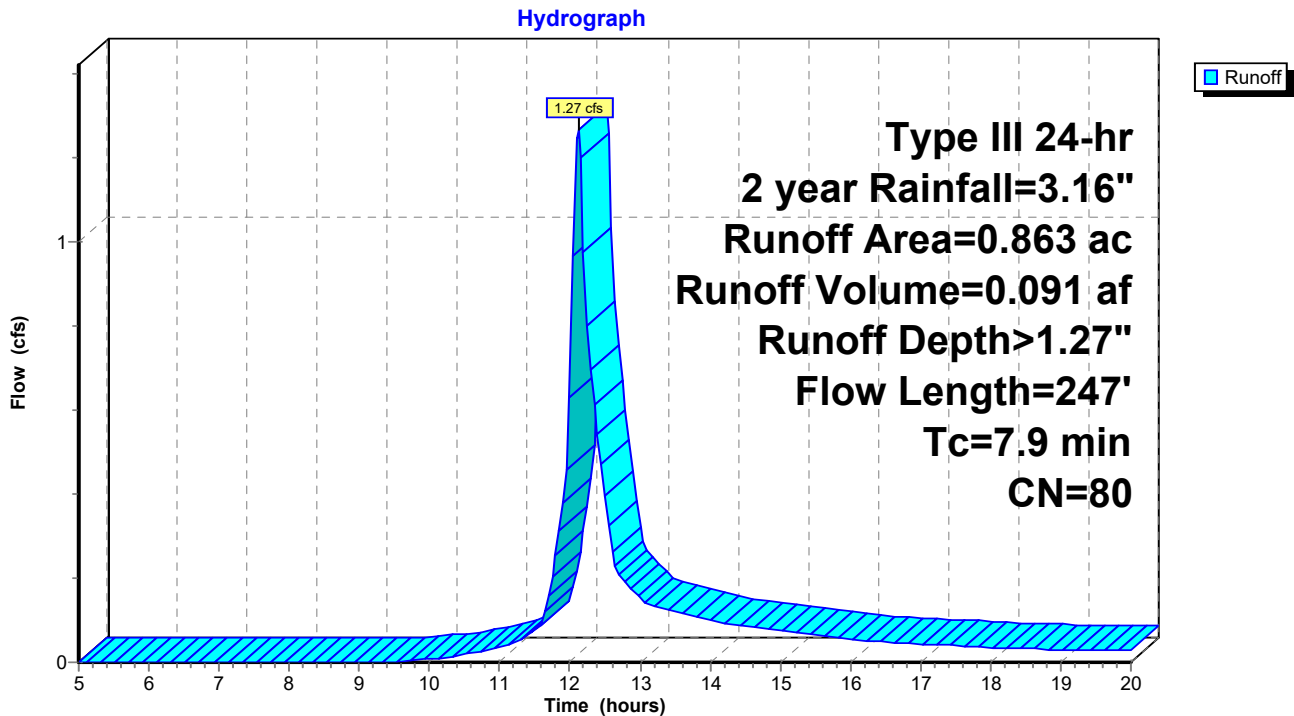
Runoff = 1.27 cfs @ 12.12 hrs, Volume= 0.091 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.029	77	Fallow, bare soil, HSG A
0.663	86	Fallow, bare soil, HSG B
0.035	36	Woods, Fair, HSG A
0.137	60	Woods, Fair, HSG B
0.863	80	Weighted Average
0.863		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
1.6	197	0.0508	2.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
7.9	247	Total			

Subcatchment 1: Subcat 1



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 2: Subcat 2

Runoff = 0.22 cfs @ 12.56 hrs, Volume= 0.060 af, Depth> 0.13"

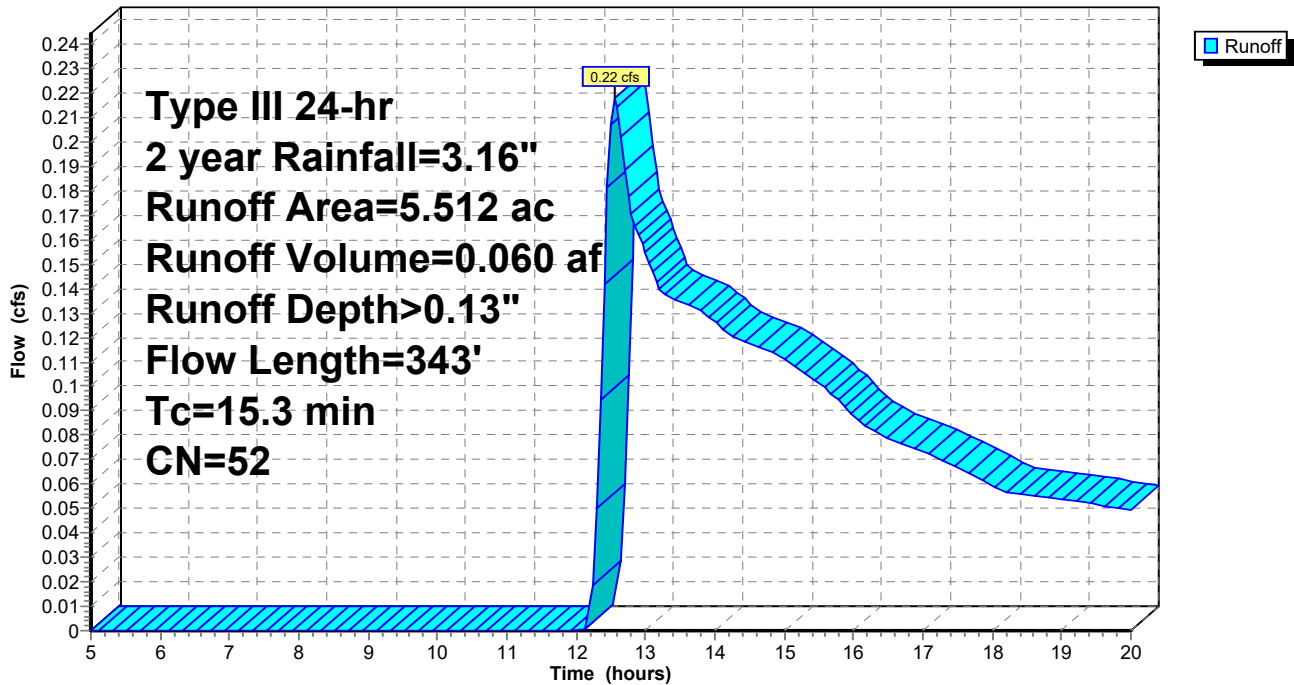
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
1.277	77	Fallow, bare soil, HSG A
0.528	86	Fallow, bare soil, HSG B
3.264	36	Woods, Fair, HSG A
0.363	60	Woods, Fair, HSG B
0.080	73	Woods, Fair, HSG C
5.512	52	Weighted Average
5.512		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
2.9	293	0.0343	1.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
15.3	343	Total			

Subcatchment 2: Subcat 2

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 3: Subcat 3

Runoff = 0.83 cfs @ 12.34 hrs, Volume= 0.101 af, Depth> 0.47"

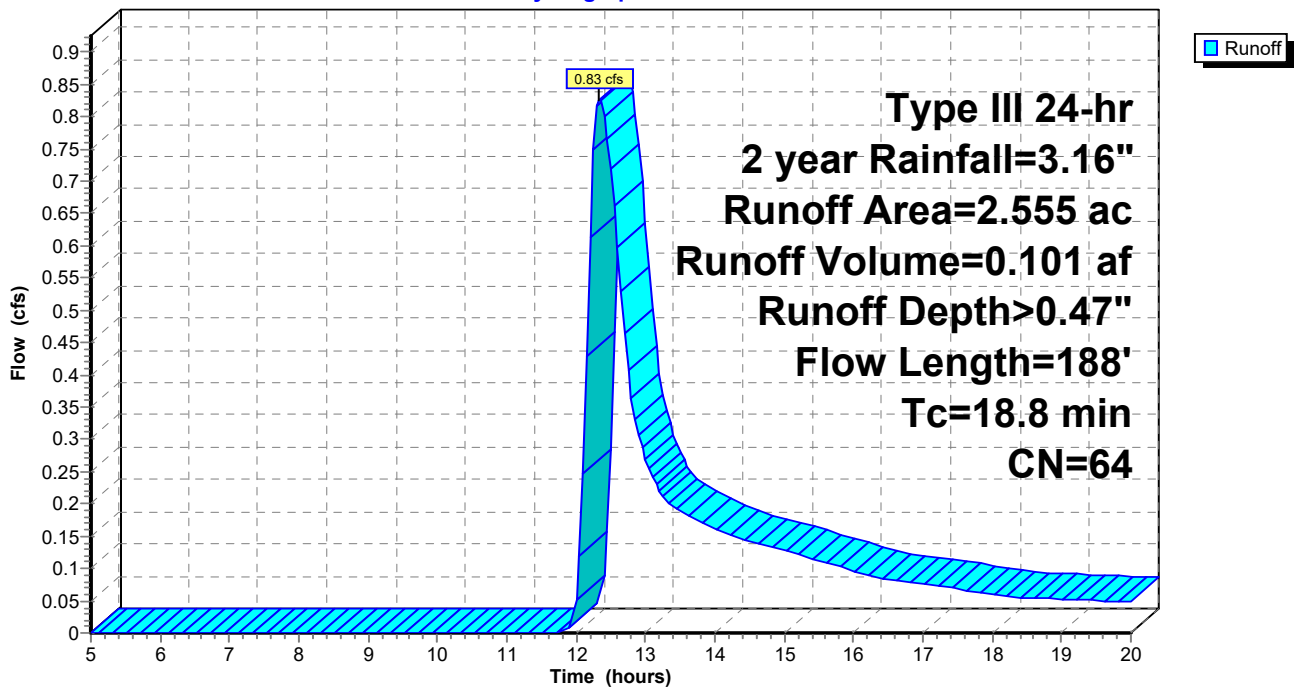
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.730	77	Fallow, bare soil, HSG A
0.609	86	Fallow, bare soil, HSG B
0.716	36	Woods, Fair, HSG A
0.500	60	Woods, Fair, HSG B
2.555	64	Weighted Average
2.555		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
1.8	66	0.0152	0.62		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	72	0.0556	2.12		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.8	188	Total			

Subcatchment 3: Subcat 3

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 4: Subcat 4

Runoff = 1.41 cfs @ 12.20 hrs, Volume= 0.145 af, Depth> 0.48"

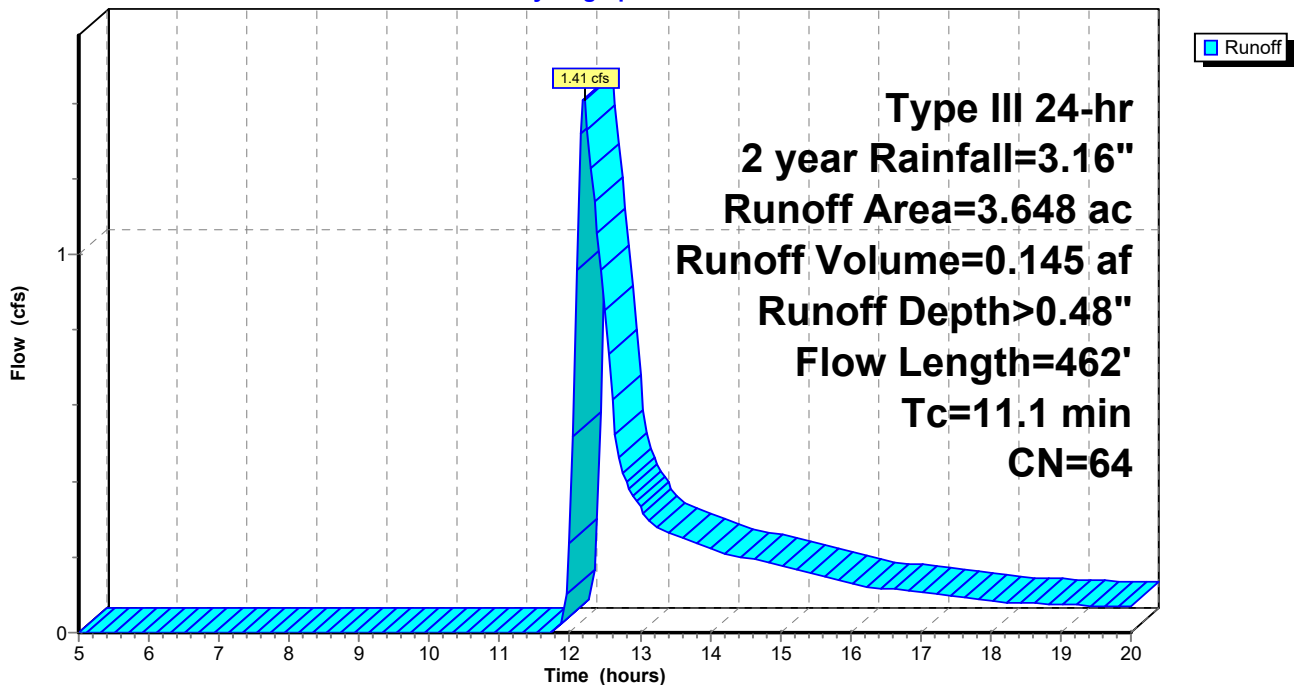
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.026	49	50-75% Grass cover, Fair, HSG A
2.636	69	50-75% Grass cover, Fair, HSG B
0.035	77	Fallow, bare soil, HSG A
0.019	86	Fallow, bare soil, HSG B
0.194	78	Row crops, straight row, Good, HSG B
0.605	36	Woods, Fair, HSG A
0.133	60	Woods, Fair, HSG B
3.648	64	Weighted Average
3.648		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	412	0.0243	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	462	Total			

Subcatchment 4: Subcat 4

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 5: Subcat 5

Runoff = 6.26 cfs @ 12.33 hrs, Volume= 0.663 af, Depth> 0.92"

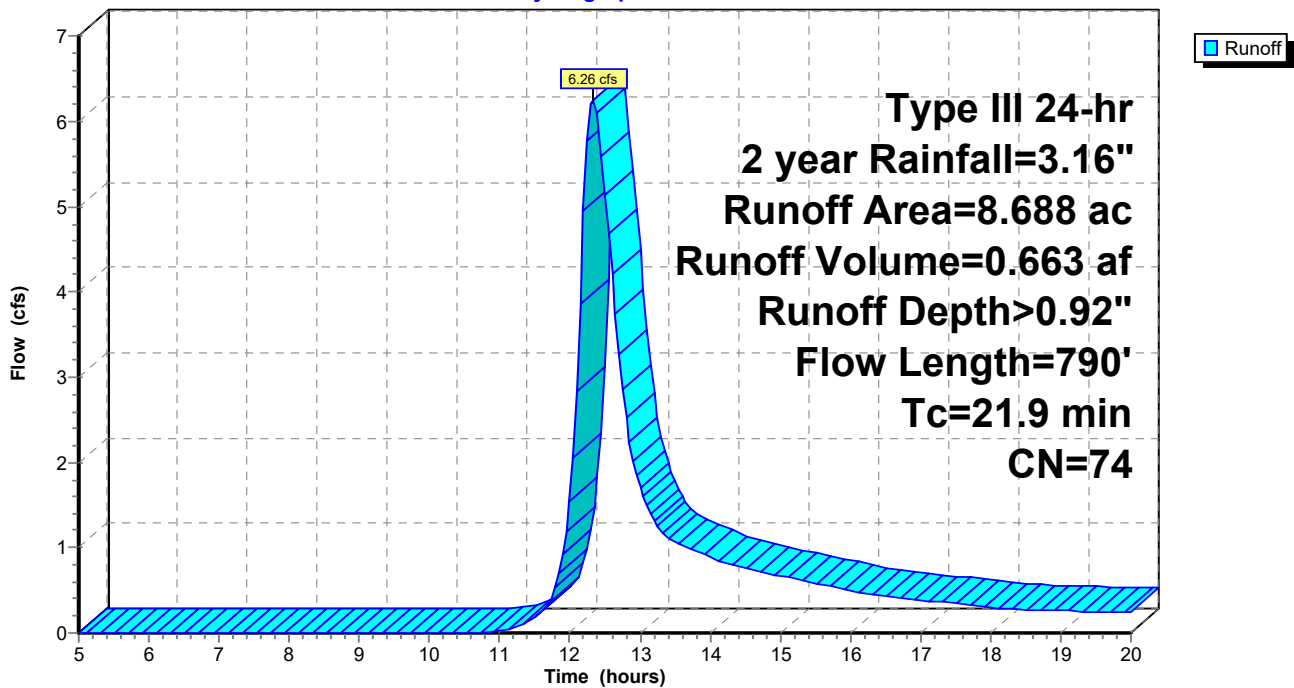
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
1.072	69	50-75% Grass cover, Fair, HSG B
6.772	78	Row crops, straight row, Good, HSG B
0.436	36	Woods, Fair, HSG A
0.407	60	Woods, Fair, HSG B
8.688	74	Weighted Average
8.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
10.6	583	0.0103	0.91		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.0	157	0.0159	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.9	790	Total			

Subcatchment 5: Subcat 5

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 6: Subcat 6

Runoff = 5.00 cfs @ 12.23 hrs, Volume= 0.468 af, Depth> 0.87"

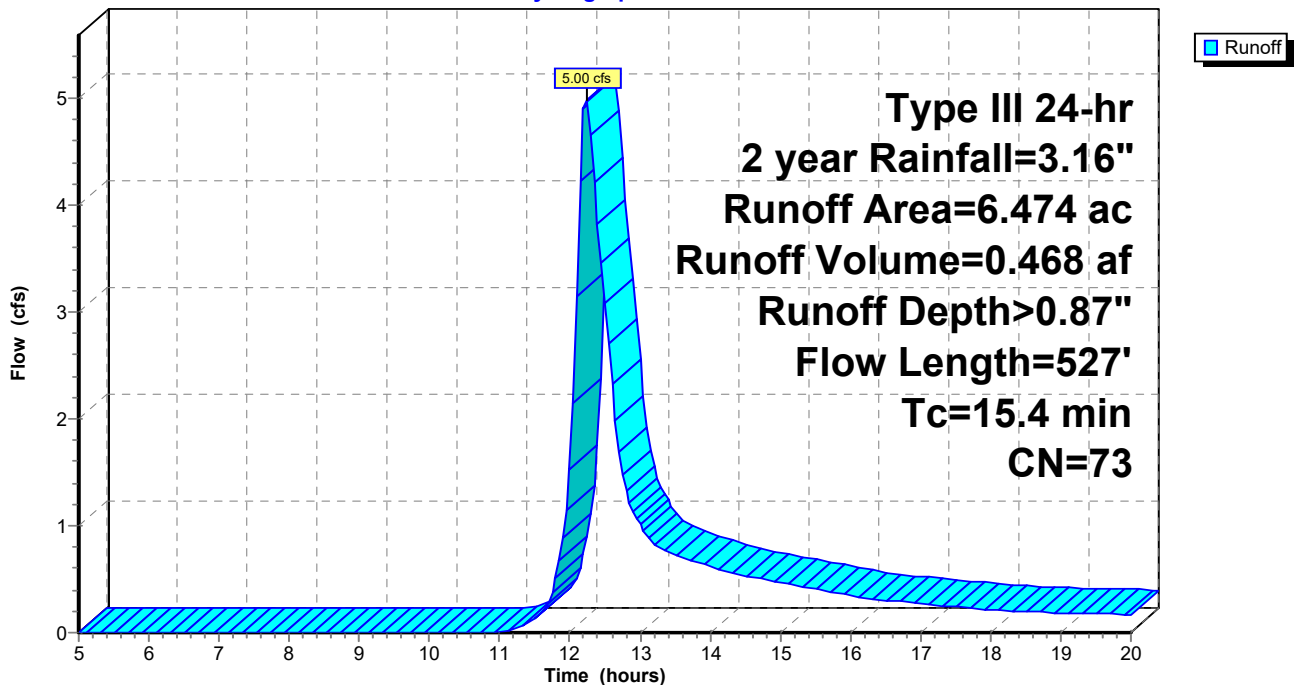
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.098	69	50-75% Grass cover, Fair, HSG B
0.096	67	Row crops, straight row, Good, HSG A
5.190	78	Row crops, straight row, Good, HSG B
0.452	36	Woods, Fair, HSG A
0.638	60	Woods, Fair, HSG B
6.474	73	Weighted Average
6.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.4	415	0.0145	1.08		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
0.7	62	0.0806	1.42		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.4	527	Total			

Subcatchment 6: Subcat 6

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 7: Subcat 7

Runoff = 11.14 cfs @ 12.60 hrs, Volume= 1.523 af, Depth> 1.07"

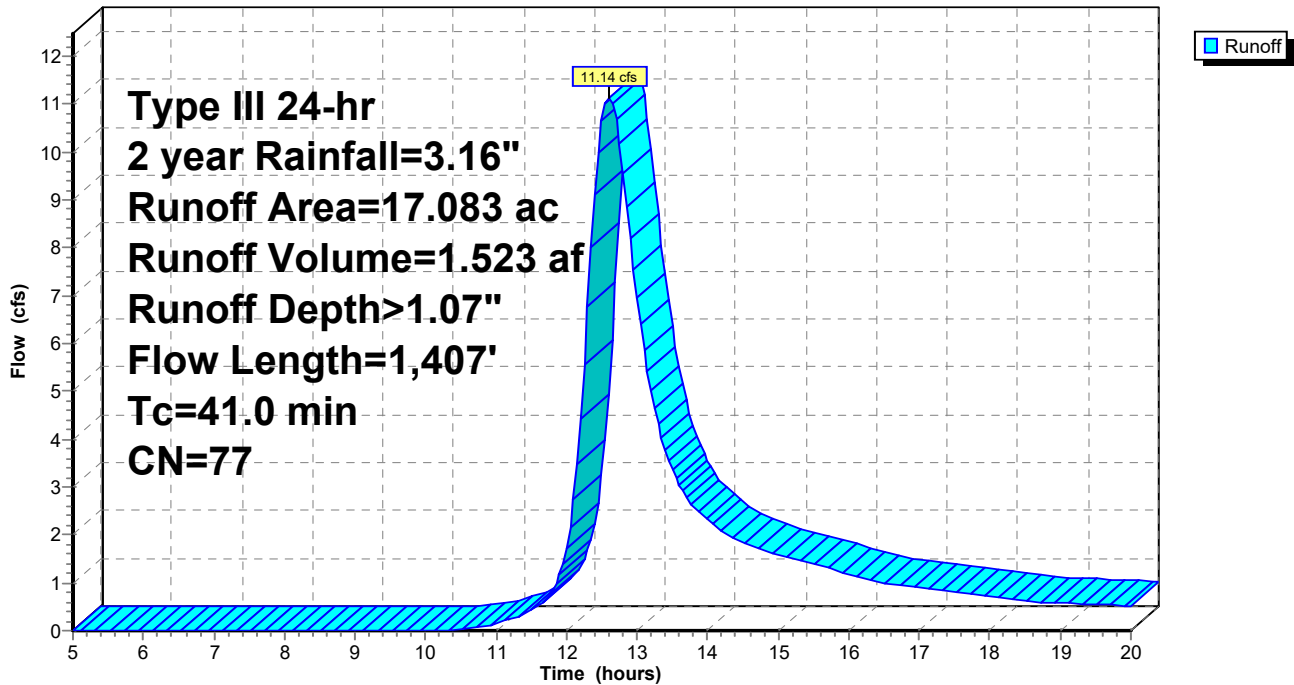
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.999	69	50-75% Grass cover, Fair, HSG B
15.573	78	Row crops, straight row, Good, HSG B
0.511	60	Woods, Fair, HSG B
17.083	77	Weighted Average
17.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
32.7	1,357	0.0059	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
41.0	1,407	Total			

Subcatchment 7: Subcat 7

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 8: (new Subcat)

Runoff = 2.26 cfs @ 12.16 hrs, Volume= 0.189 af, Depth> 0.72"

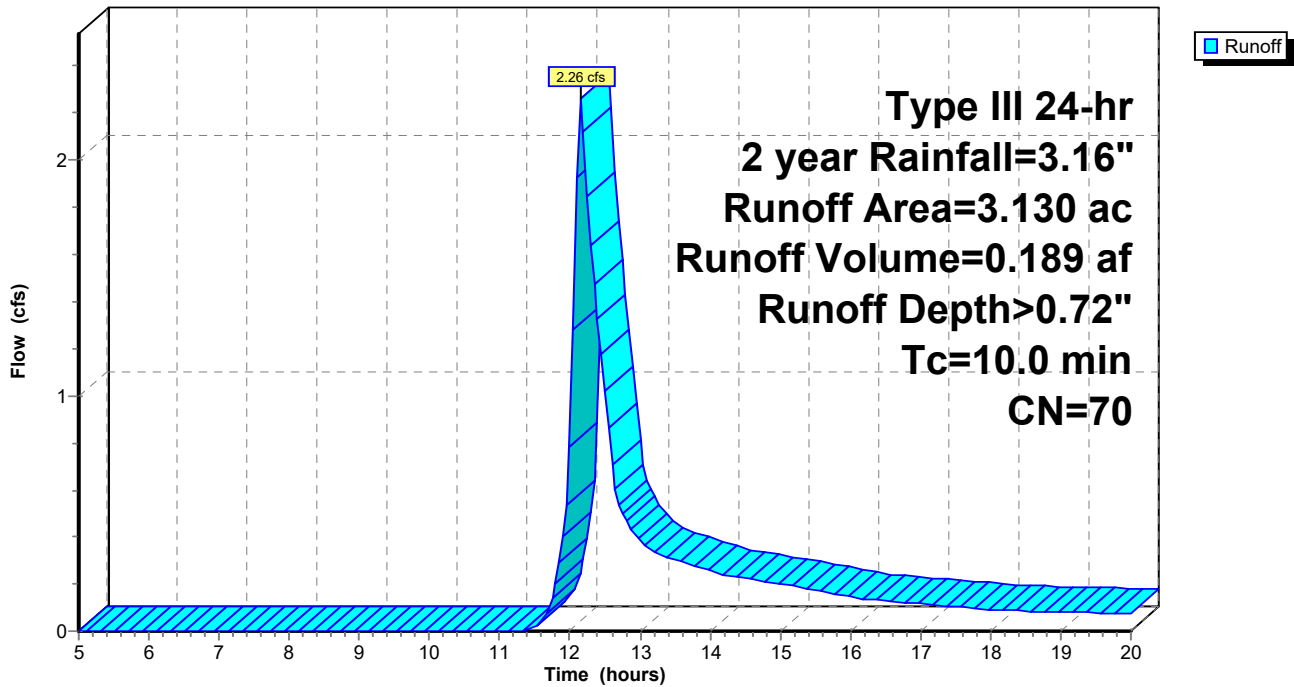
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
1.670	78	Row crops, straight row, Good, HSG B
* 1.460	60	Woods, Fair, HSG B
3.130	70	Weighted Average
3.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8: (new Subcat)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 10: Subcat 10

Runoff = 1.19 cfs @ 12.24 hrs, Volume= 0.134 af, Depth> 0.44"

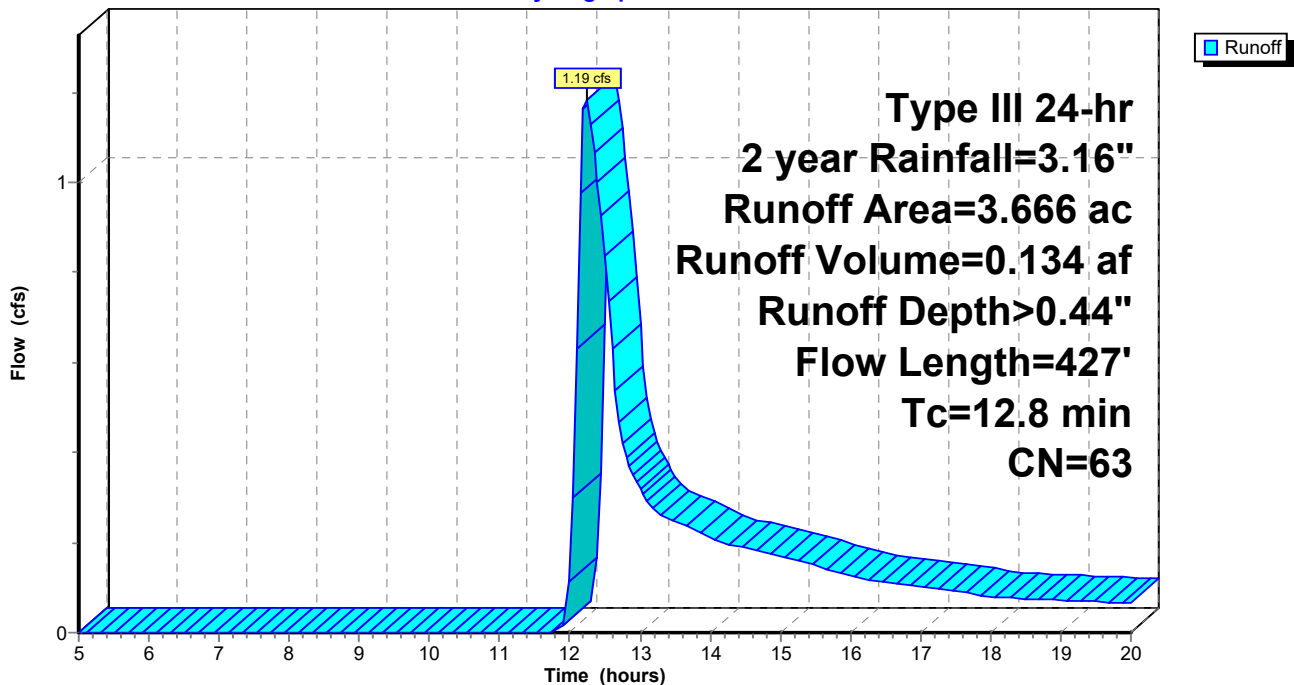
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.042	69	50-75% Grass cover, Fair, HSG B
0.022	67	Row crops, straight row, Good, HSG A
1.722	78	Row crops, straight row, Good, HSG B
0.840	36	Woods, Fair, HSG A
1.039	60	Woods, Fair, HSG B
3.666	63	Weighted Average
3.666		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
3.5	261	0.0192	1.25		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.0	116	0.1379	1.86		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
12.8	427	Total			

Subcatchment 10: Subcat 10

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 11: Subcat 11

Runoff = 0.84 cfs @ 12.42 hrs, Volume= 0.131 af, Depth> 0.28"

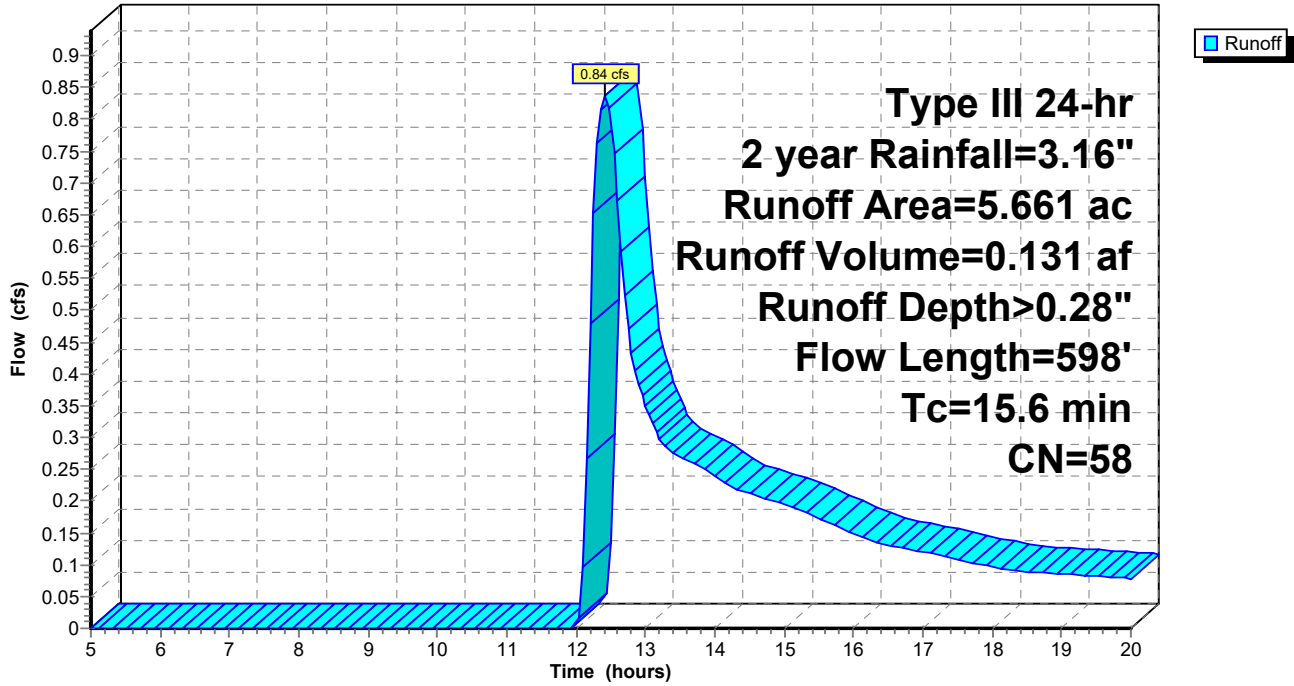
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.368	56	Brush, Fair, HSG B
0.096	89	Paved roads w/open ditches, 50% imp, HSG B
0.097	67	Row crops, straight row, Good, HSG A
2.068	78	Row crops, straight row, Good, HSG B
2.107	36	Woods, Fair, HSG A
0.925	60	Woods, Fair, HSG B
5.661	58	Weighted Average
5.613		99.15% Pervious Area
0.048		0.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.7	316	0.0158	1.13		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.6	232	0.0862	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.6	598	Total			

Subcatchment 11: Subcat 11

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 11A: Subcat 11A

Runoff = 0.02 cfs @ 16.87 hrs, Volume= 0.009 af, Depth> 0.02"

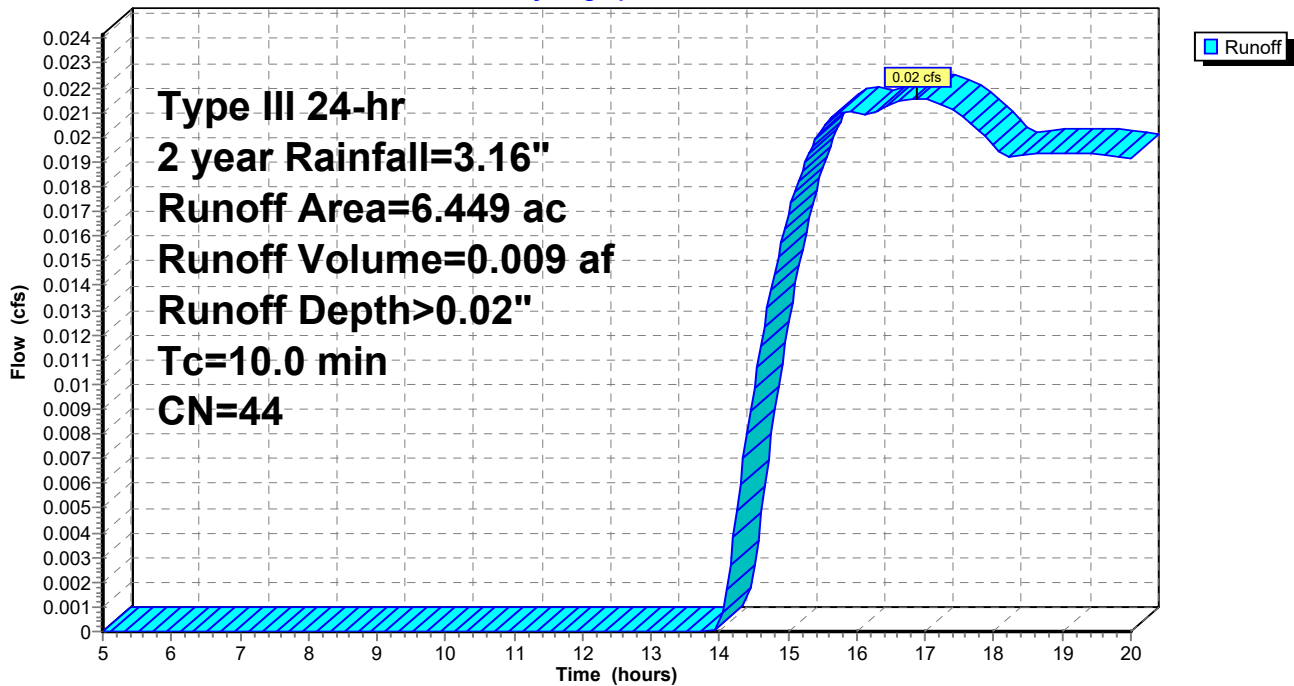
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.874	56	Brush, Fair, HSG B
0.859	78	Row crops, straight row, Good, HSG B
4.716	36	Woods, Fair, HSG A
6.449	44	Weighted Average
6.449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11A: Subcat 11A

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 12: Subcat 12

Runoff = 2.97 cfs @ 12.20 hrs, Volume= 0.256 af, Depth> 1.14"

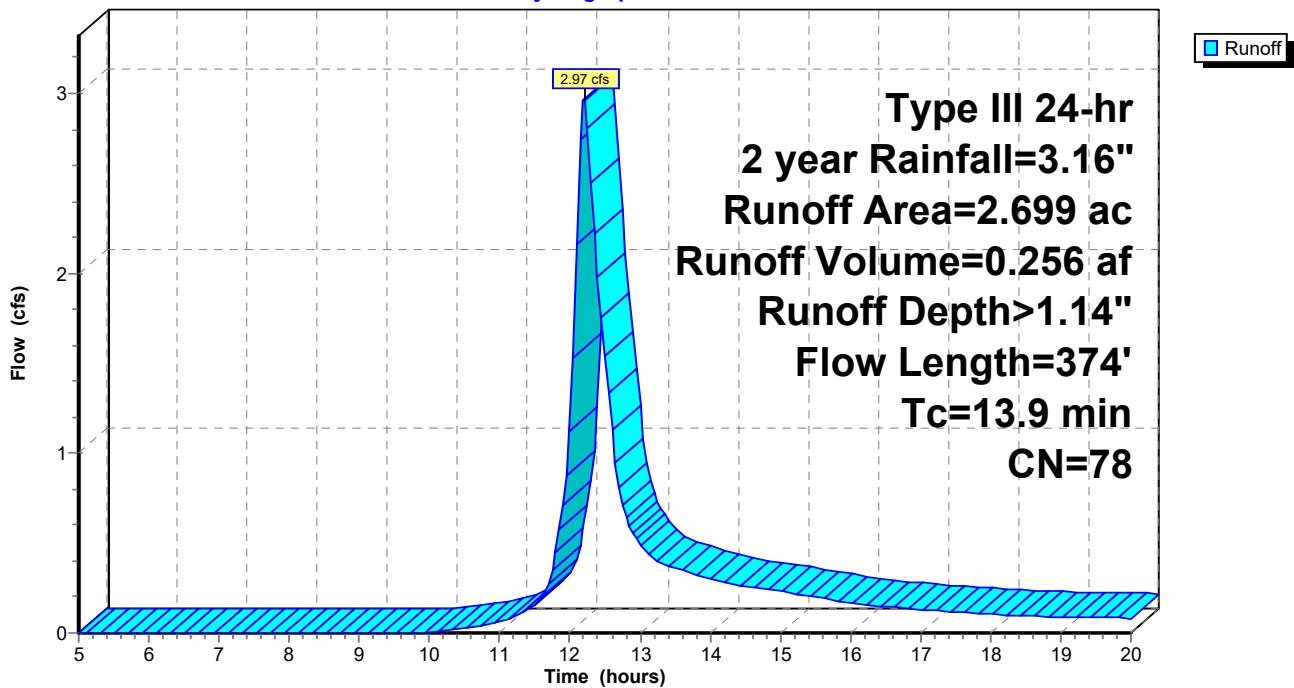
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.525	69	50-75% Grass cover, Fair, HSG B
0.318	89	Paved roads w/open ditches, 50% imp, HSG B
1.856	78	Row crops, straight row, Good, HSG B
2.699	78	Weighted Average
2.540		94.11% Pervious Area
0.159		5.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.4	225	0.0089	0.85		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	99	0.0404	1.41		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.9	374	Total			

Subcatchment 12: Subcat 12

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 13: Subcat 13

Runoff = 10.96 cfs @ 12.75 hrs, Volume= 1.692 af, Depth> 1.12"

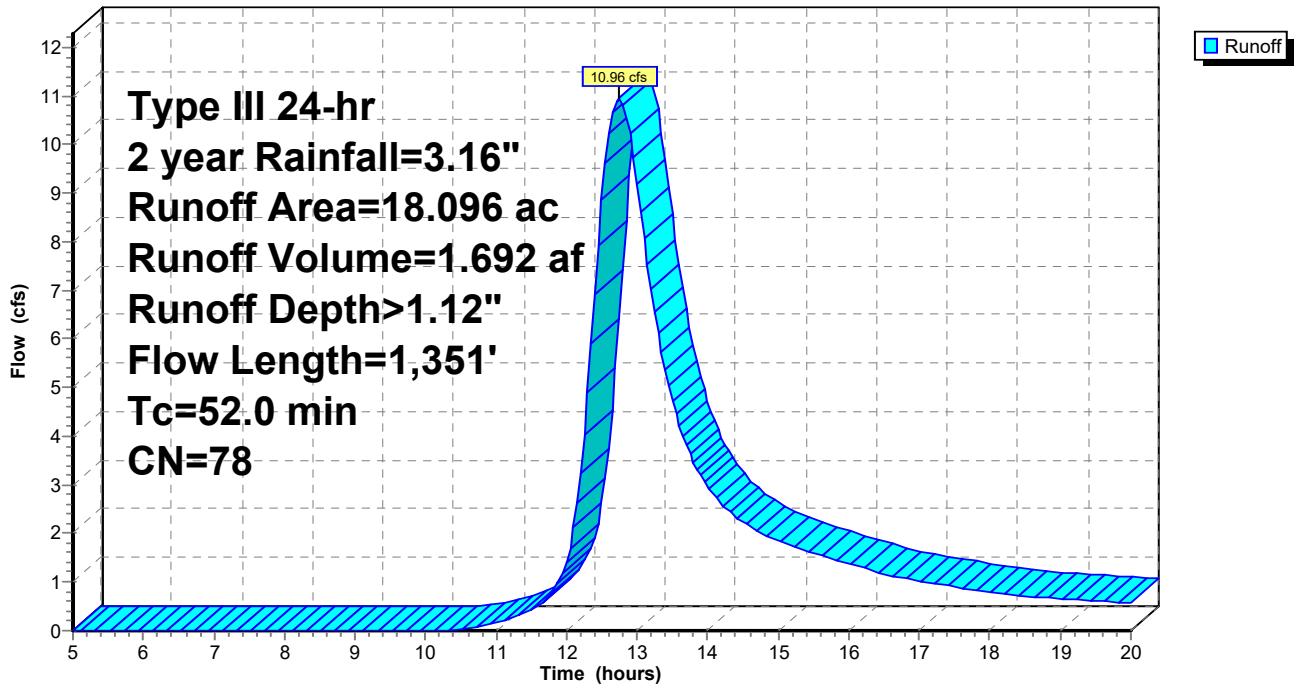
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.387	89	Paved roads w/open ditches, 50% imp, HSG B
17.709	78	Row crops, straight row, Good, HSG B
18.096	78	Weighted Average
17.902		98.93% Pervious Area
0.193		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
26.8	752	0.0027	0.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.9	549	0.0036	0.54		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
52.0	1,351	Total			

Subcatchment 13: Subcat 13

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 14: Subcat 14

Runoff = 0.68 cfs @ 12.19 hrs, Volume= 0.057 af, Depth> 1.14"

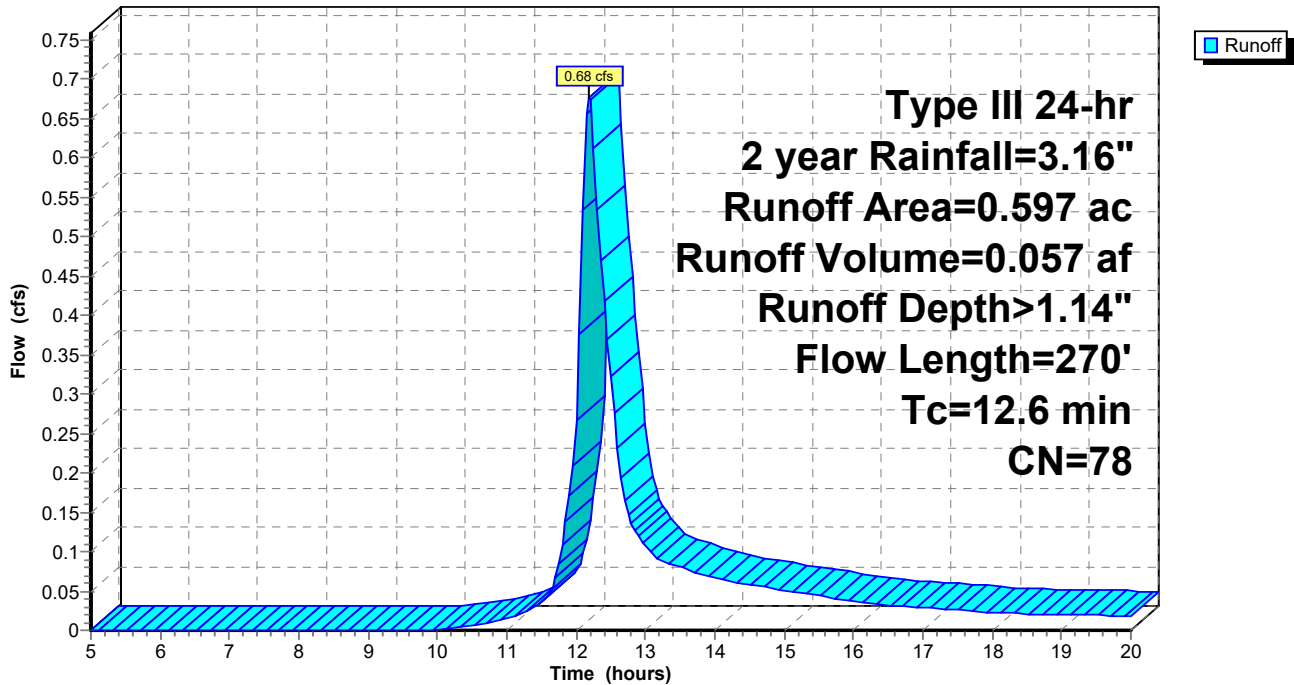
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.597	78	Row crops, straight row, Good, HSG B
0.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.3	220	0.0091	0.86		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
12.6	270	Total			

Subcatchment 14: Subcat 14

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 15: Subcat 15

Runoff = 2.64 cfs @ 12.26 hrs, Volume= 0.252 af, Depth> 1.20"

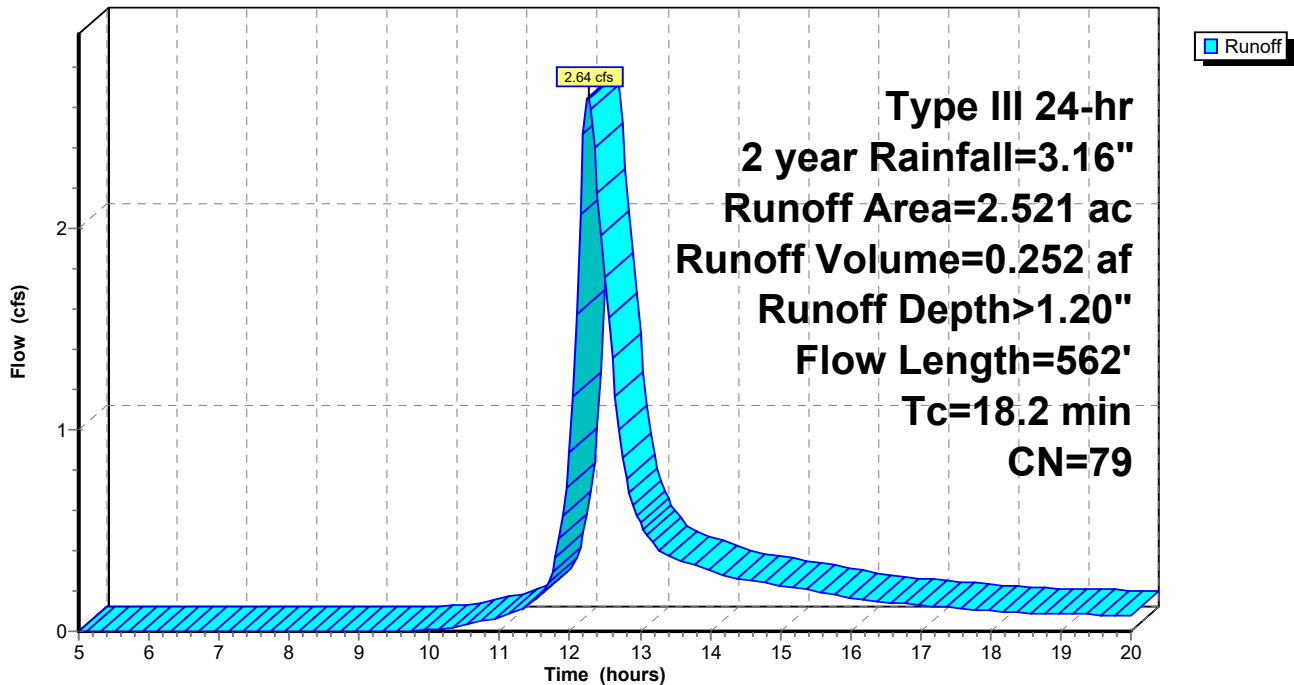
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.028	65	2 acre lots, 12% imp, HSG B
0.235	89	Paved roads w/open ditches, 50% imp, HSG B
2.257	78	Row crops, straight row, Good, HSG B
2.521	79	Weighted Average
2.400		95.19% Pervious Area
0.121		4.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
10.7	512	0.0078	0.79		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.2	562	Total			

Subcatchment 15: Subcat 15

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 16: Subcat 16

Runoff = 4.17 cfs @ 12.35 hrs, Volume= 0.446 af, Depth> 1.14"

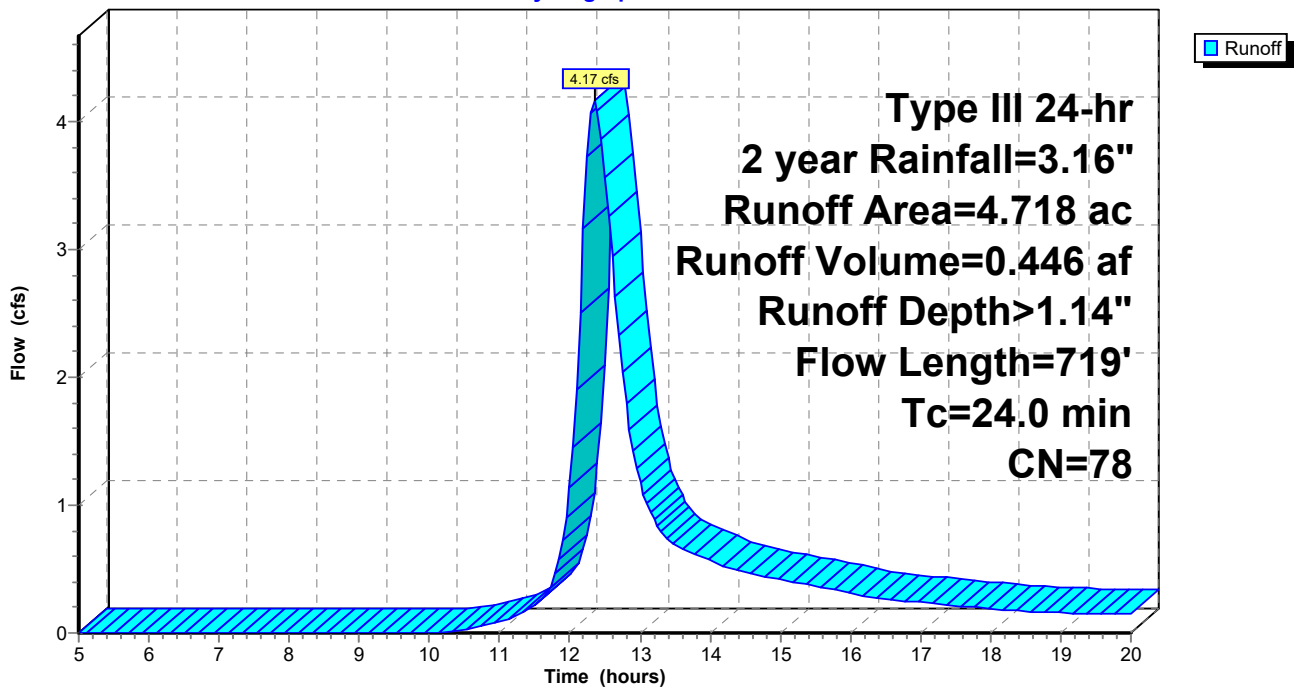
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.087	89	Paved roads w/open ditches, 50% imp, HSG B
4.601	78	Row crops, straight row, Good, HSG B
0.030	60	Woods, Fair, HSG B
4.718	78	Weighted Average
4.674		99.08% Pervious Area
0.044		0.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.1	390	0.0103	0.91		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
8.6	279	0.0036	0.54		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
24.0	719	Total			

Subcatchment 16: Subcat 16

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 17: Subcat 17

Runoff = 4.26 cfs @ 12.30 hrs, Volume= 0.431 af, Depth> 0.97"

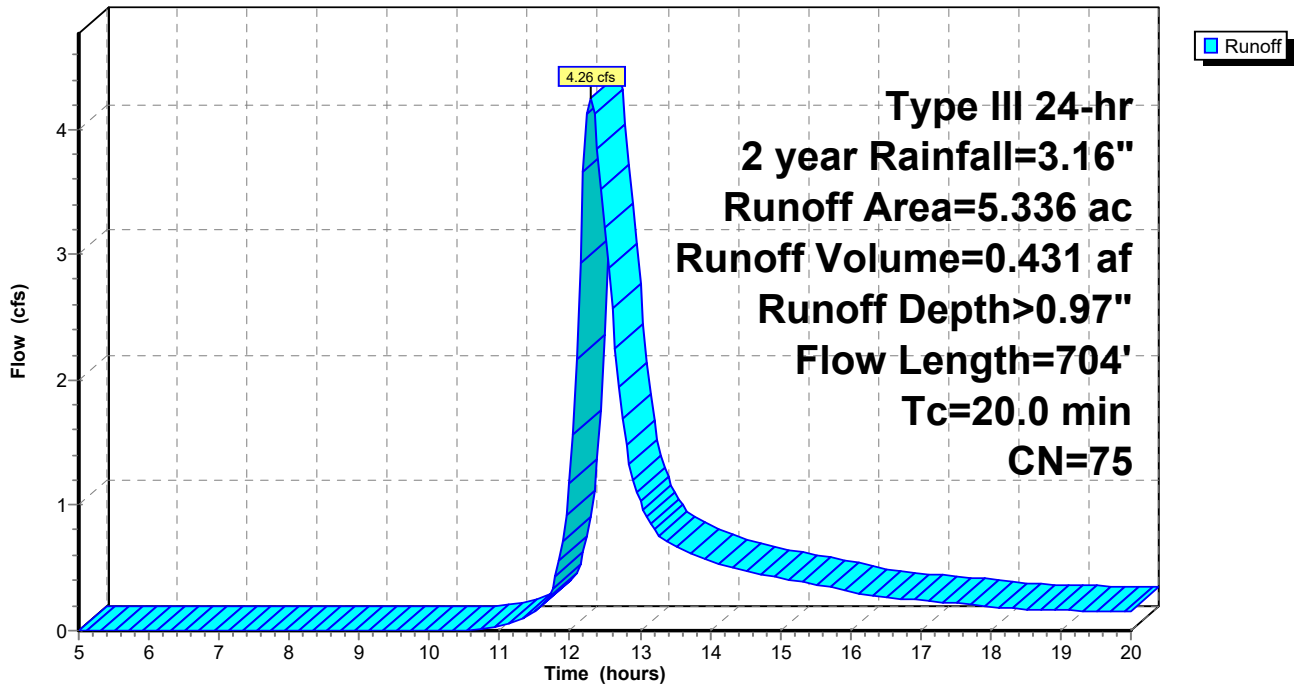
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.000	69	50-75% Grass cover, Fair, HSG B
4.585	78	Row crops, straight row, Good, HSG B
0.752	60	Woods, Fair, HSG B
5.336	75	Weighted Average
5.336		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.7	654	0.0107	0.93		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.0	704	Total			

Subcatchment 17: Subcat 17

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 18: Subcat 18

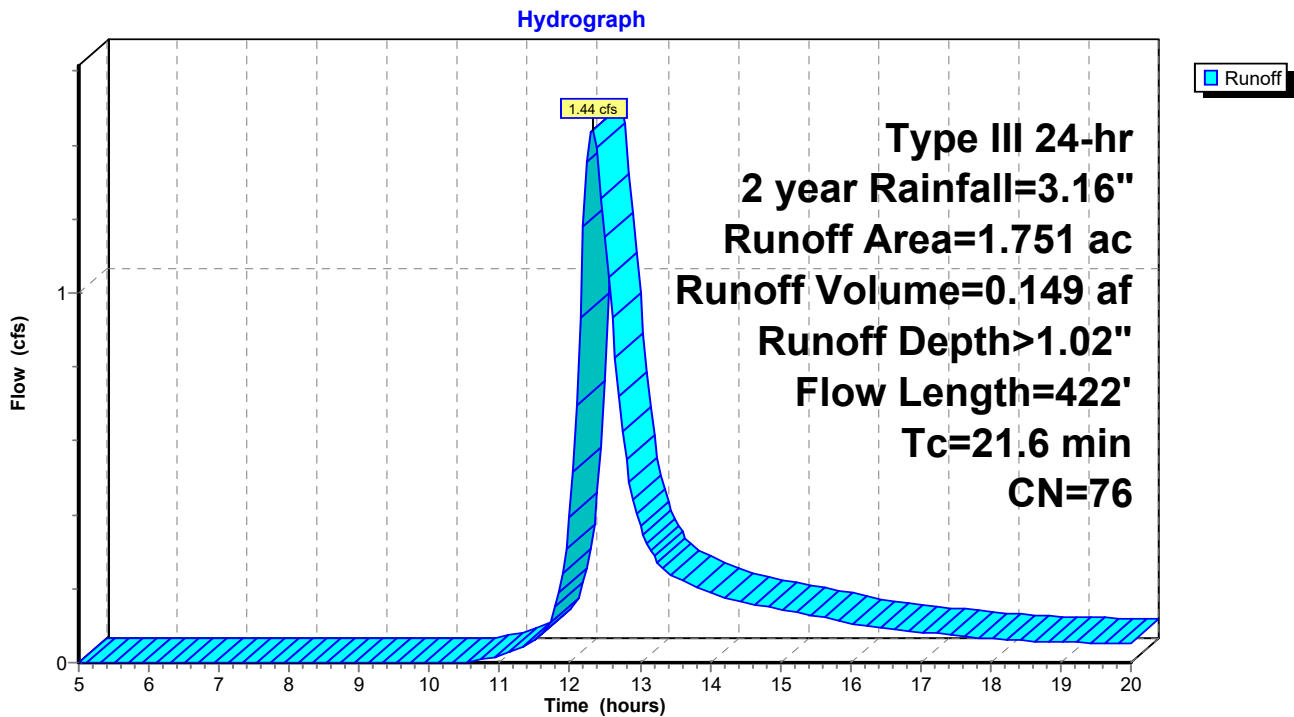
Runoff = 1.44 cfs @ 12.32 hrs, Volume= 0.149 af, Depth> 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.028	69	50-75% Grass cover, Fair, HSG B
1.540	78	Row crops, straight row, Good, HSG B
0.183	60	Woods, Fair, HSG B
1.751	76	Weighted Average
1.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
13.3	372	0.0027	0.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.6	422	Total			

Subcatchment 18: Subcat 18



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 19: Subcat 19

Runoff = 12.72 cfs @ 12.59 hrs, Volume= 1.726 af, Depth> 0.96"

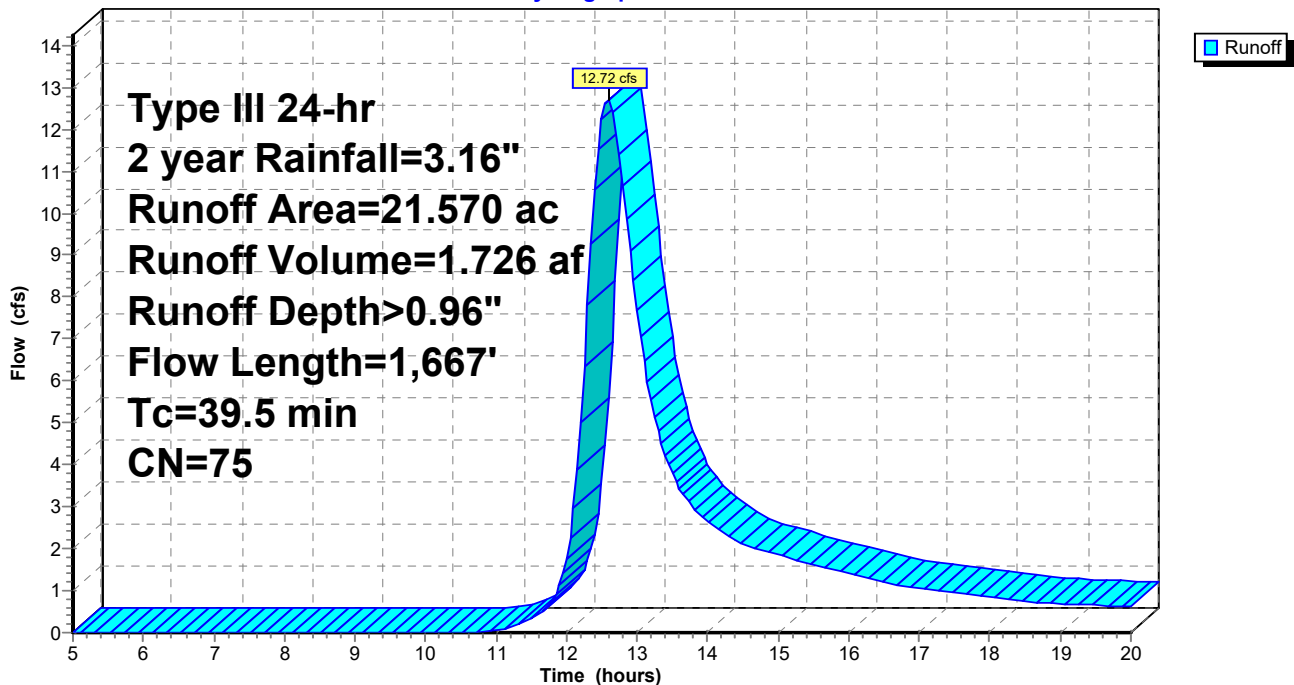
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.134	49	50-75% Grass cover, Fair, HSG A
3.781	69	50-75% Grass cover, Fair, HSG B
17.007	78	Row crops, straight row, Good, HSG B
0.294	36	Woods, Fair, HSG A
0.355	60	Woods, Fair, HSG B
21.570	75	Weighted Average
21.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
23.6	1,090	0.0073	0.77		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.6	527	0.0171	0.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
39.5	1,667	Total			

Subcatchment 19: Subcat 19

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 20: Subcat 20

Runoff = 1.17 cfs @ 12.28 hrs, Volume= 0.117 af, Depth> 0.87"

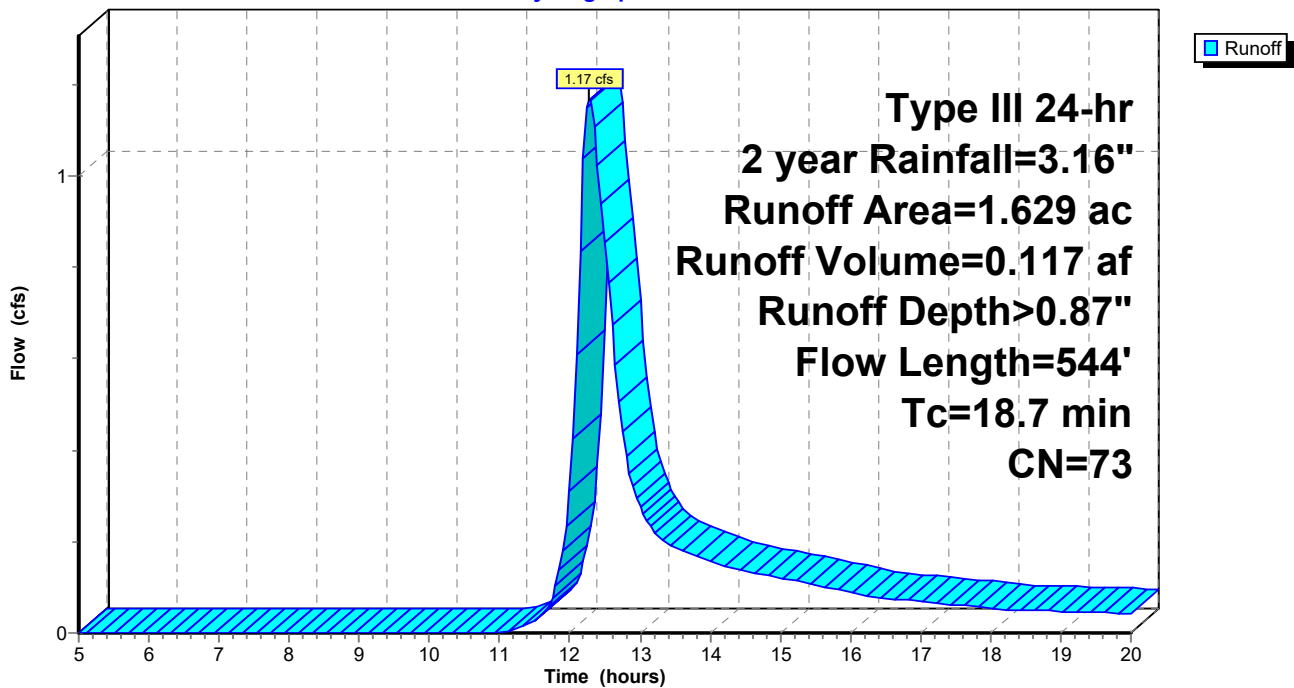
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.573	69	50-75% Grass cover, Fair, HSG B
0.876	78	Row crops, straight row, Good, HSG B
0.002	36	Woods, Fair, HSG A
0.178	60	Woods, Fair, HSG B
1.629	73	Weighted Average
1.629		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.3	251	0.0040	0.57		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.1	243	0.0206	1.29		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.7	544	Total			

Subcatchment 20: Subcat 20

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 21: Subcat 21

Runoff = 1.98 cfs @ 12.43 hrs, Volume= 0.239 af, Depth> 0.72"

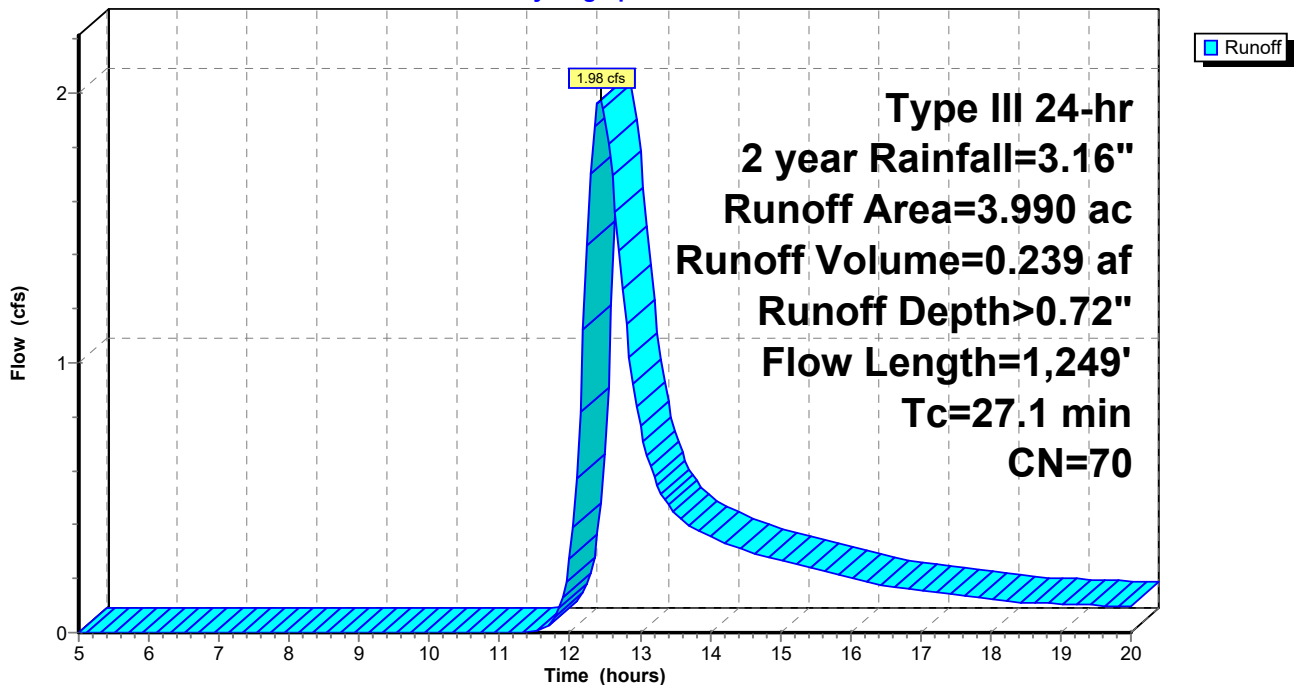
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.039	49	50-75% Grass cover, Fair, HSG A
1.109	69	50-75% Grass cover, Fair, HSG B
2.328	78	Row crops, straight row, Good, HSG B
0.426	36	Woods, Fair, HSG A
0.089	60	Woods, Fair, HSG B
3.990	70	Weighted Average
3.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.7	584	0.0086	0.83		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.1	615	0.0260	1.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
27.1	1,249	Total			

Subcatchment 21: Subcat 21

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 22: Subcat 22

Runoff = 7.61 cfs @ 12.81 hrs, Volume= 1.256 af, Depth> 0.85"

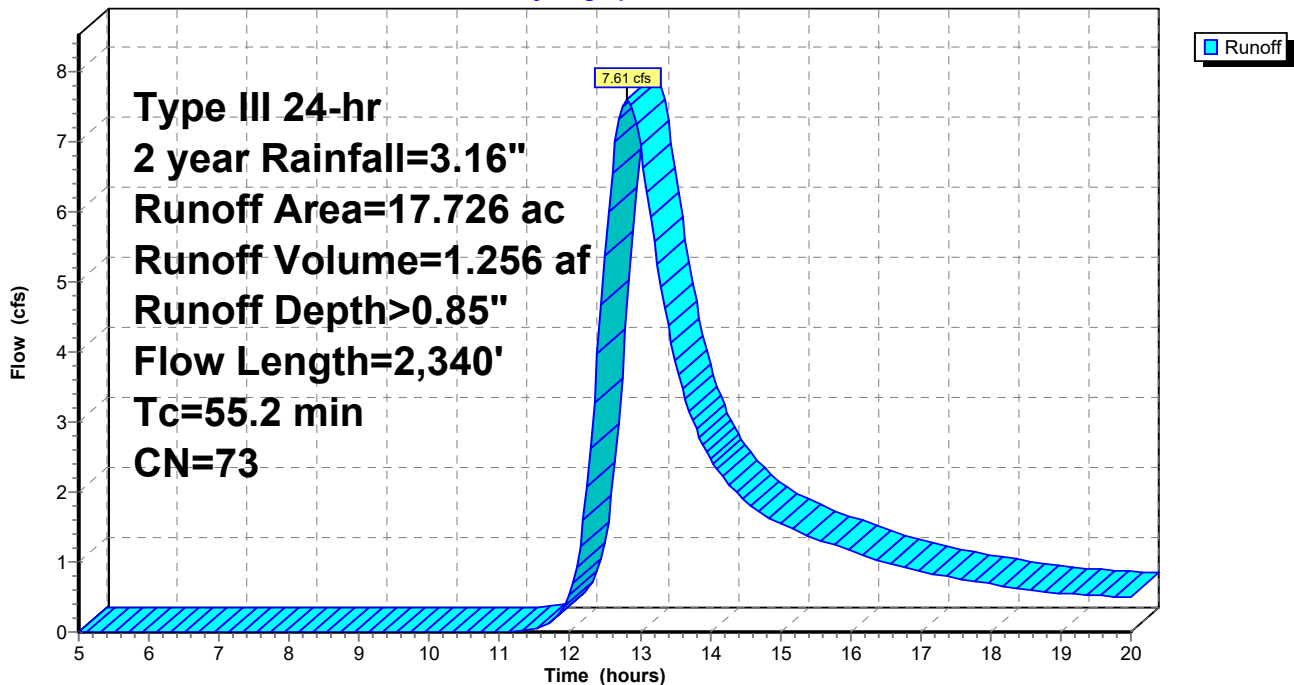
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
4.876	69	50-75% Grass cover, Fair, HSG B
0.440	56	Brush, Fair, HSG B
10.915	78	Row crops, straight row, Good, HSG B
1.496	60	Woods, Fair, HSG B
17.726	73	Weighted Average
17.726		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
35.0	1,416	0.0056	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
8.8	636	0.0299	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.1	238	0.0336	1.28		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
55.2	2,340	Total			

Subcatchment 22: Subcat 22

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 23: Subcat 23

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.025 af, Depth> 1.14"

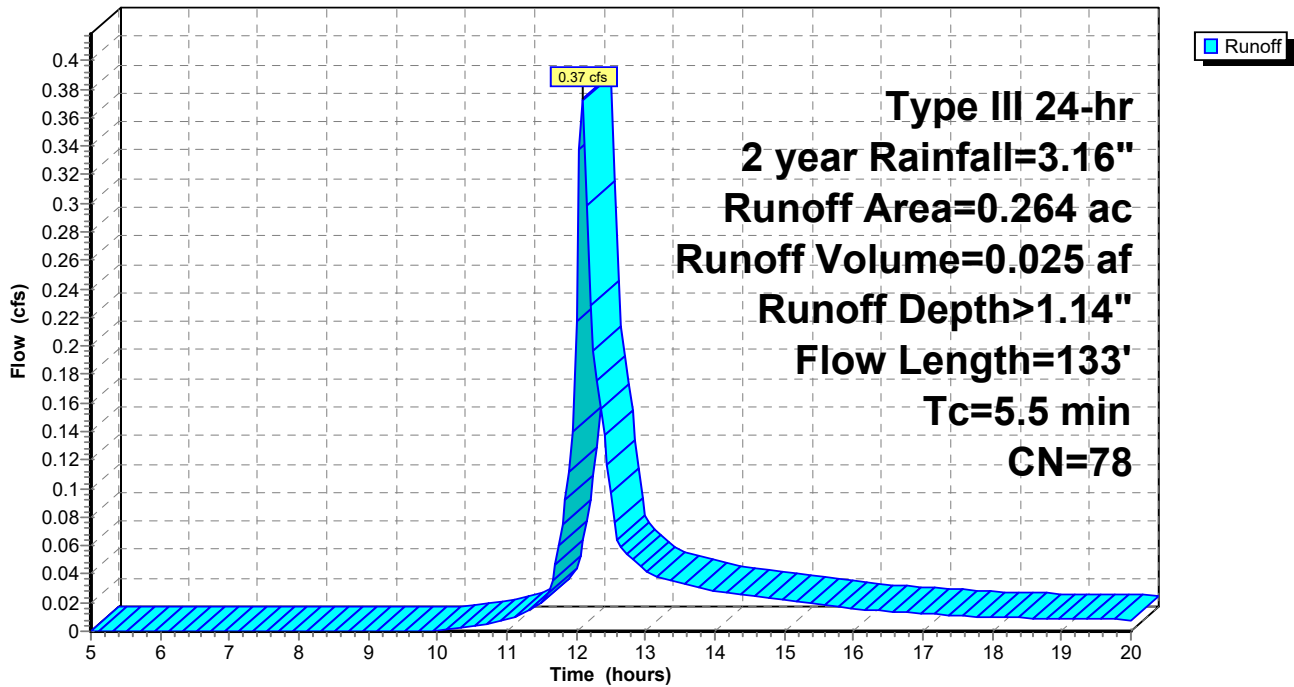
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.264	78	Row crops, straight row, Good, HSG B
0.264		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0400	0.18		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
0.8	83	0.0361	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
5.5	133	Total			

Subcatchment 23: Subcat 23

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 24: Subcat 24

Runoff = 2.27 cfs @ 12.24 hrs, Volume= 0.214 af, Depth> 0.92"

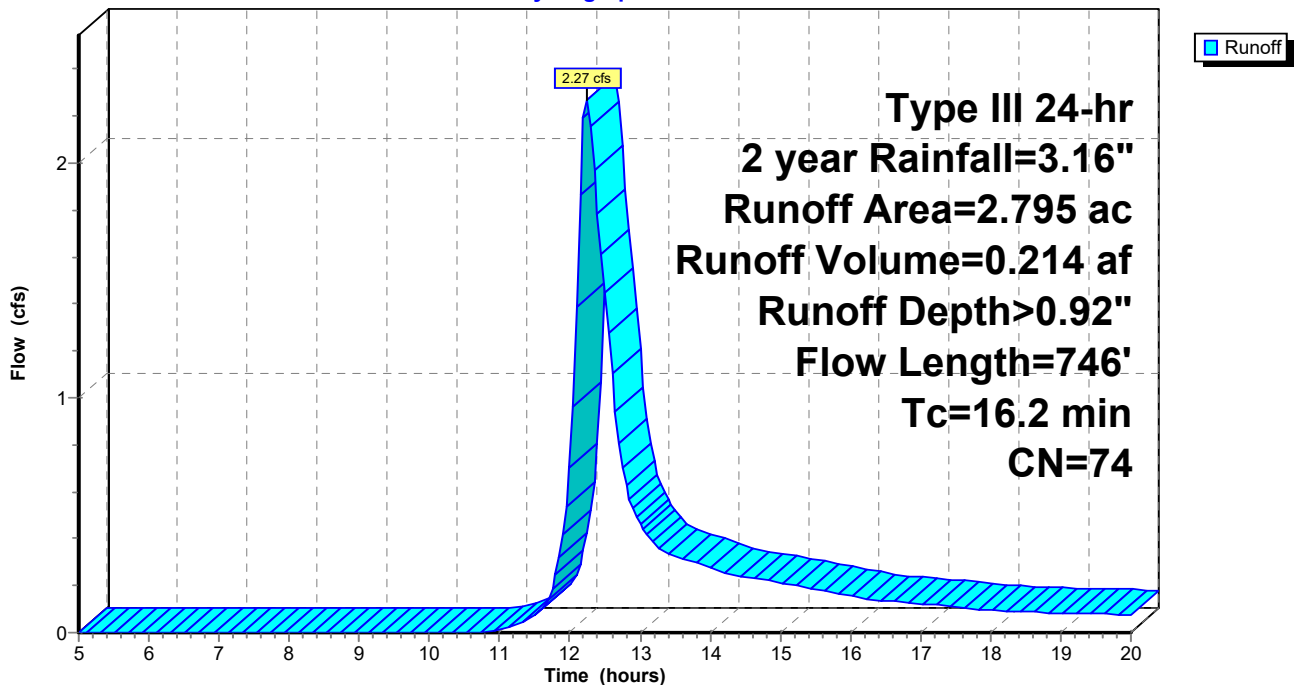
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.439	56	Brush, Fair, HSG B
2.345	78	Row crops, straight row, Good, HSG B
0.012	60	Woods, Fair, HSG B
2.795	74	Weighted Average
2.795		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.4	284	0.0141	1.07		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
0.8	112	0.1071	2.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.7	300	0.0433	1.87		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.2	746	Total			

Subcatchment 24: Subcat 24

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 25: Subcat 25

Runoff = 7.76 cfs @ 12.56 hrs, Volume= 1.029 af, Depth> 1.02"

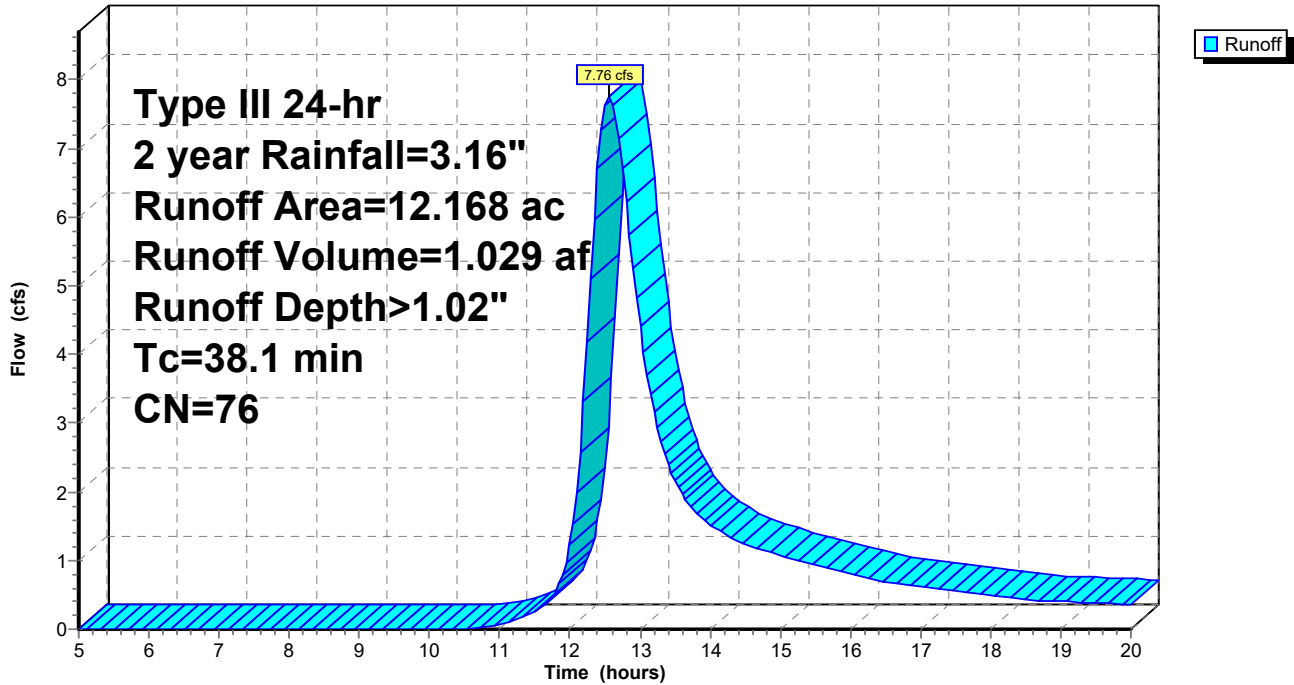
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.022	69	50-75% Grass cover, Fair, HSG B
11.271	78	Row crops, straight row, Good, HSG B
0.129	36	Woods, Fair, HSG A
0.746	60	Woods, Fair, HSG B
12.168	76	Weighted Average
12.168		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.1					Direct Entry,

Subcatchment 25: Subcat 25

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 27: Subcat 27

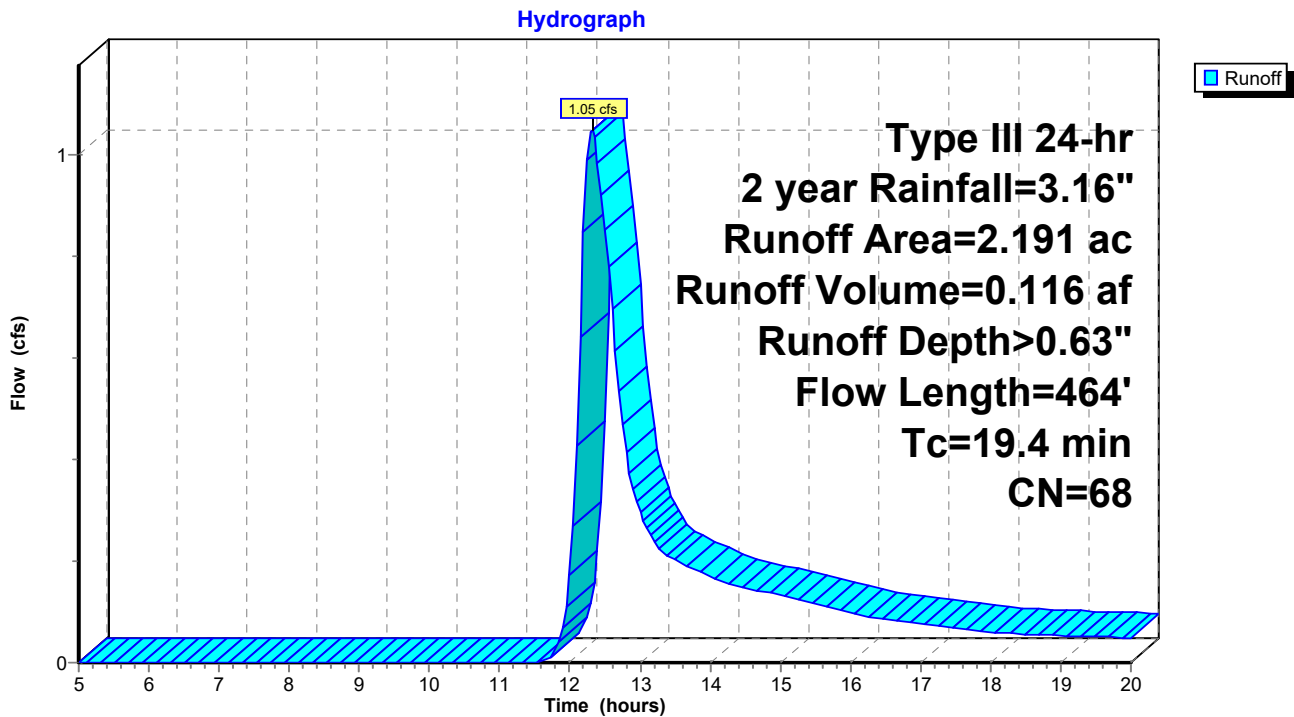
Runoff = 1.05 cfs @ 12.32 hrs, Volume= 0.116 af, Depth> 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
1.050	78	Row crops, straight row, Good, HSG B
0.036	36	Woods, Fair, HSG A
1.105	60	Woods, Fair, HSG B
2.191	68	Weighted Average
2.191		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.1	414	0.0048	0.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
19.4	464	Total			

Subcatchment 27: Subcat 27



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 28: Subcat 28

Runoff = 1.09 cfs @ 12.41 hrs, Volume= 0.171 af, Depth> 0.28"

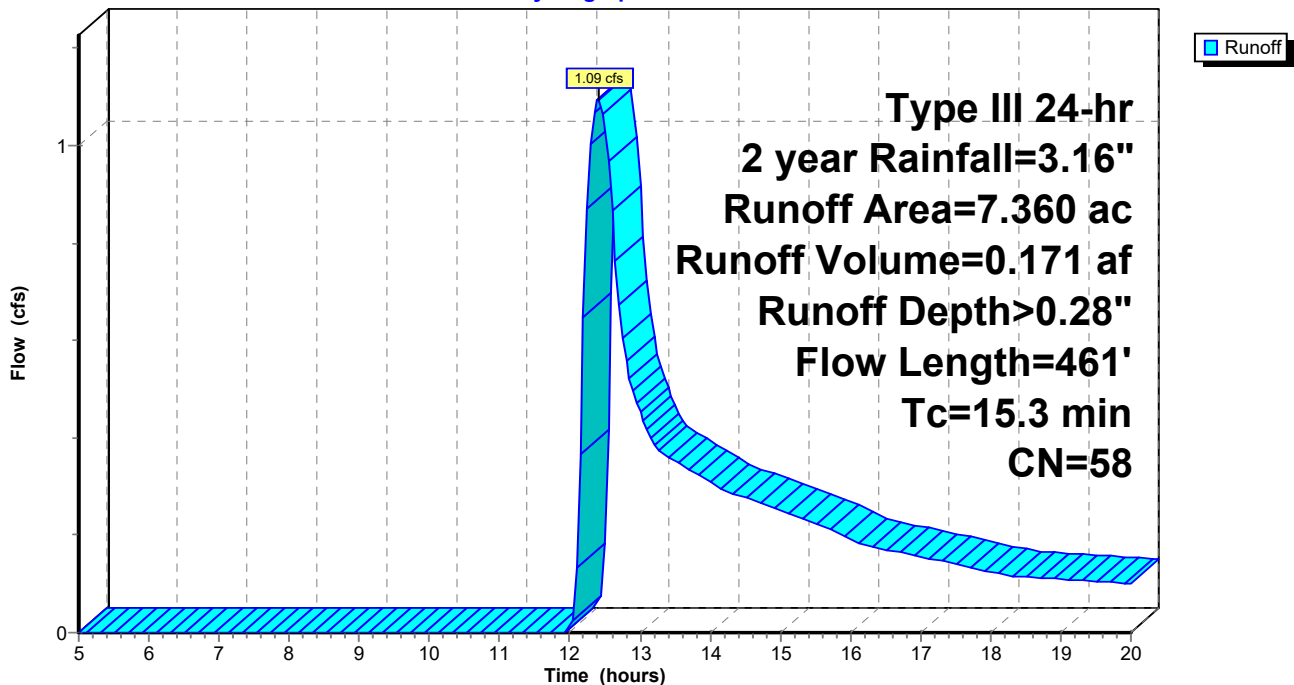
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.095	49	50-75% Grass cover, Fair, HSG A
1.457	69	50-75% Grass cover, Fair, HSG B
2.094	78	Row crops, straight row, Good, HSG B
2.776	36	Woods, Fair, HSG A
0.938	60	Woods, Fair, HSG B
7.360	58	Weighted Average
7.360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.8	269	0.0074	0.77		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	142	0.1479	1.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	461	Total			

Subcatchment 28: Subcat 28

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 29: Subcat 29

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

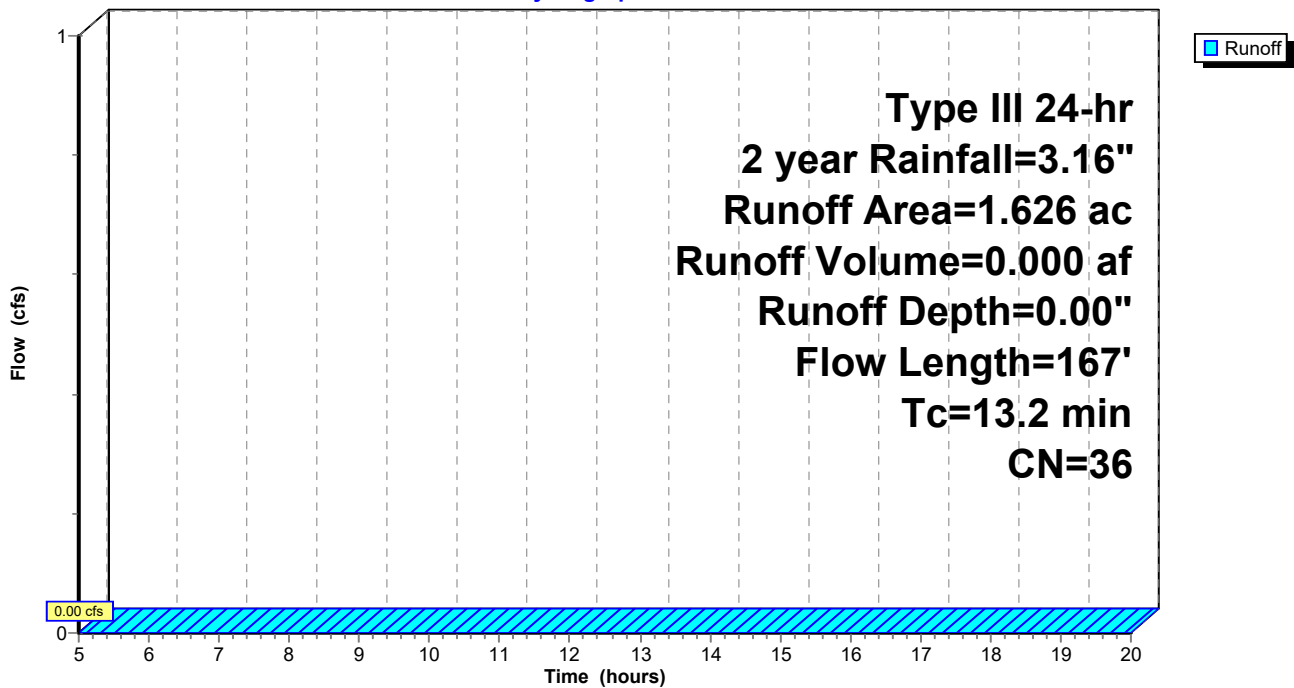
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.000	49	50-75% Grass cover, Fair, HSG A
0.006	69	50-75% Grass cover, Fair, HSG B
1.620	36	Woods, Fair, HSG A
0.000	60	Woods, Fair, HSG B
1.626	36	Weighted Average
1.626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
0.8	117	0.2222	2.36		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.2	167	Total			

Subcatchment 29: Subcat 29

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 30: Subcat 30

Runoff = 2.69 cfs @ 12.18 hrs, Volume= 0.236 af, Depth> 0.72"

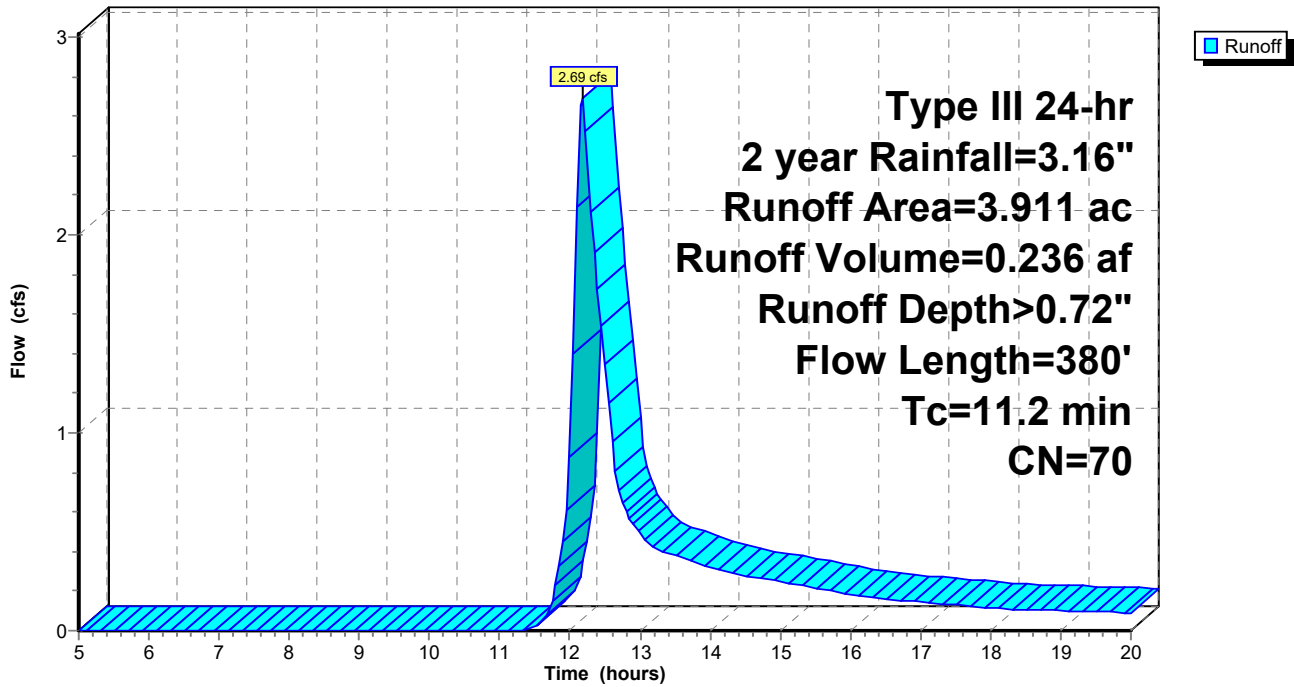
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.008	49	50-75% Grass cover, Fair, HSG A
3.548	69	50-75% Grass cover, Fair, HSG B
0.040	86	Fallow, bare soil, HSG B
0.311	78	Row crops, straight row, Good, HSG B
0.004	36	Woods, Fair, HSG A
3.911	70	Weighted Average
3.911		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.4	330	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.2	380	Total			

Subcatchment 30: Subcat 30

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 31: Subcat 31

[73] Warning: Peak may fall outside time span

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth> 0.00"

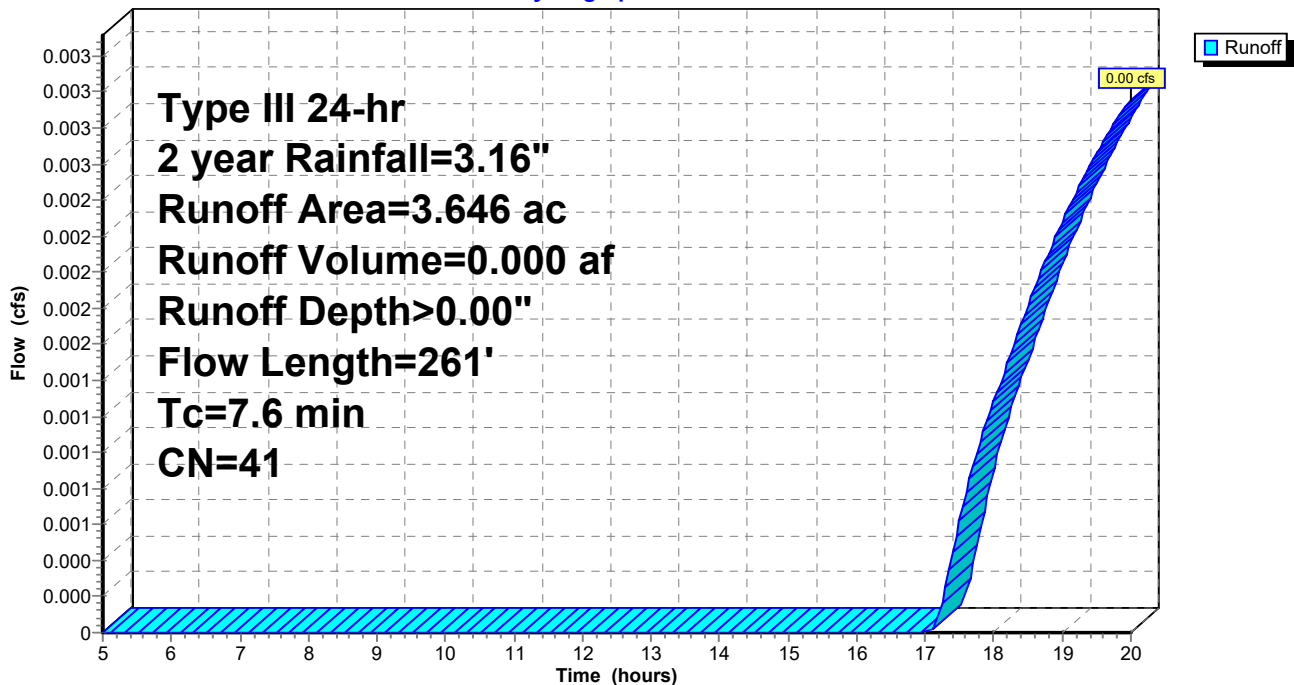
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.132	49	50-75% Grass cover, Fair, HSG A
0.518	69	50-75% Grass cover, Fair, HSG B
0.014	77	Fallow, bare soil, HSG A
0.011	86	Fallow, bare soil, HSG B
2.971	36	Woods, Fair, HSG A
3.646	41	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.9	211	0.1374	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.6	261	Total			

Subcatchment 31: Subcat 31

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 32: Subcat 32

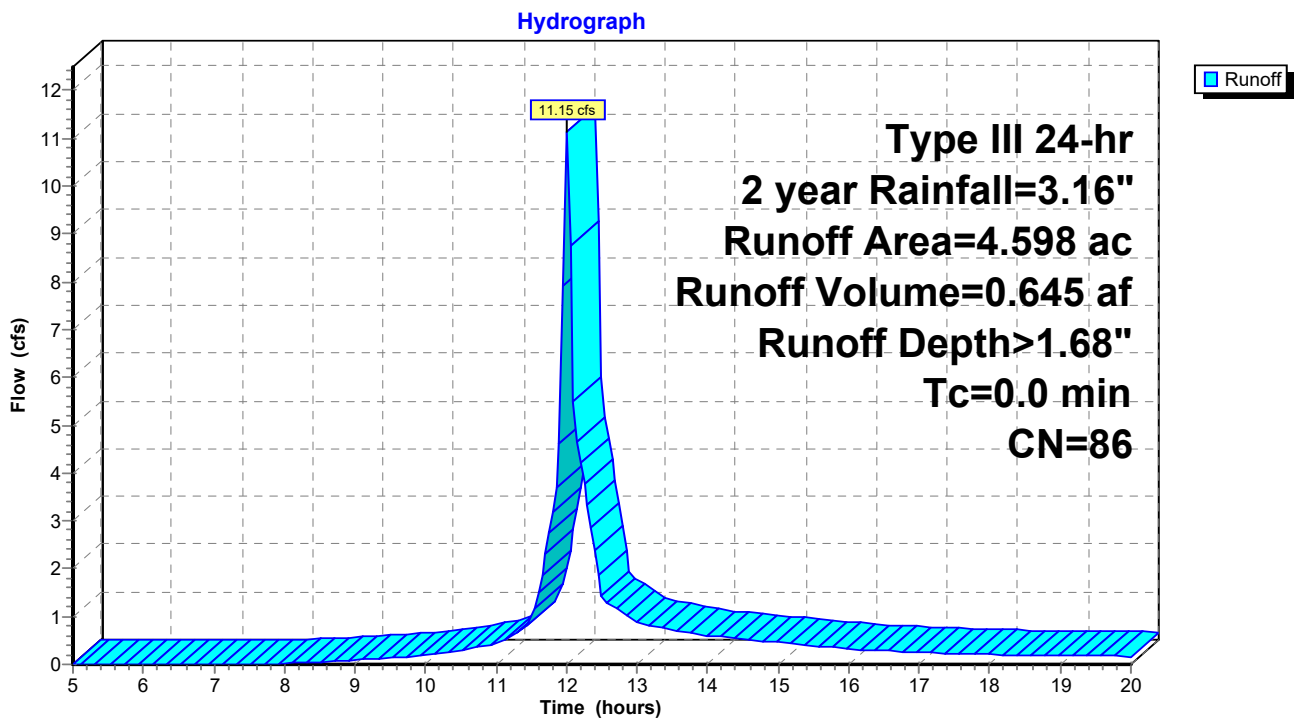
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 11.15 cfs @ 12.00 hrs, Volume= 0.645 af, Depth> 1.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.006	49	50-75% Grass cover, Fair, HSG A
0.012	69	50-75% Grass cover, Fair, HSG B
0.089	77	Fallow, bare soil, HSG A
4.486	86	Fallow, bare soil, HSG B
0.006	36	Woods, Fair, HSG A
4.598	86	Weighted Average
4.598		100.00% Pervious Area

Subcatchment 32: Subcat 32



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 33: Subcat 33

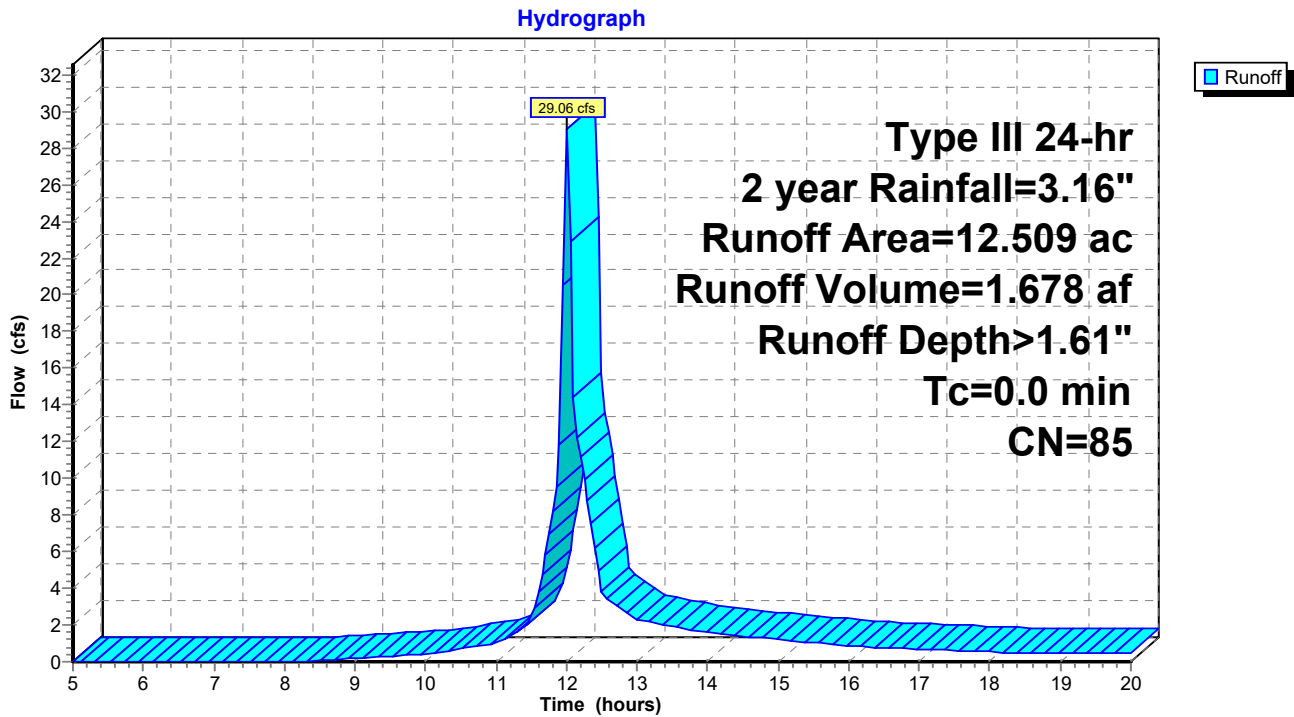
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 29.06 cfs @ 12.00 hrs, Volume= 1.678 af, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.007	69	50-75% Grass cover, Fair, HSG B
1.702	77	Fallow, bare soil, HSG A
10.799	86	Fallow, bare soil, HSG B
0.001	60	Woods, Fair, HSG B
12.509	85	Weighted Average
12.509		100.00% Pervious Area

Subcatchment 33: Subcat 33



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 35: Subcat 35

Runoff = 10.93 cfs @ 12.32 hrs, Volume= 1.121 af, Depth> 1.14"

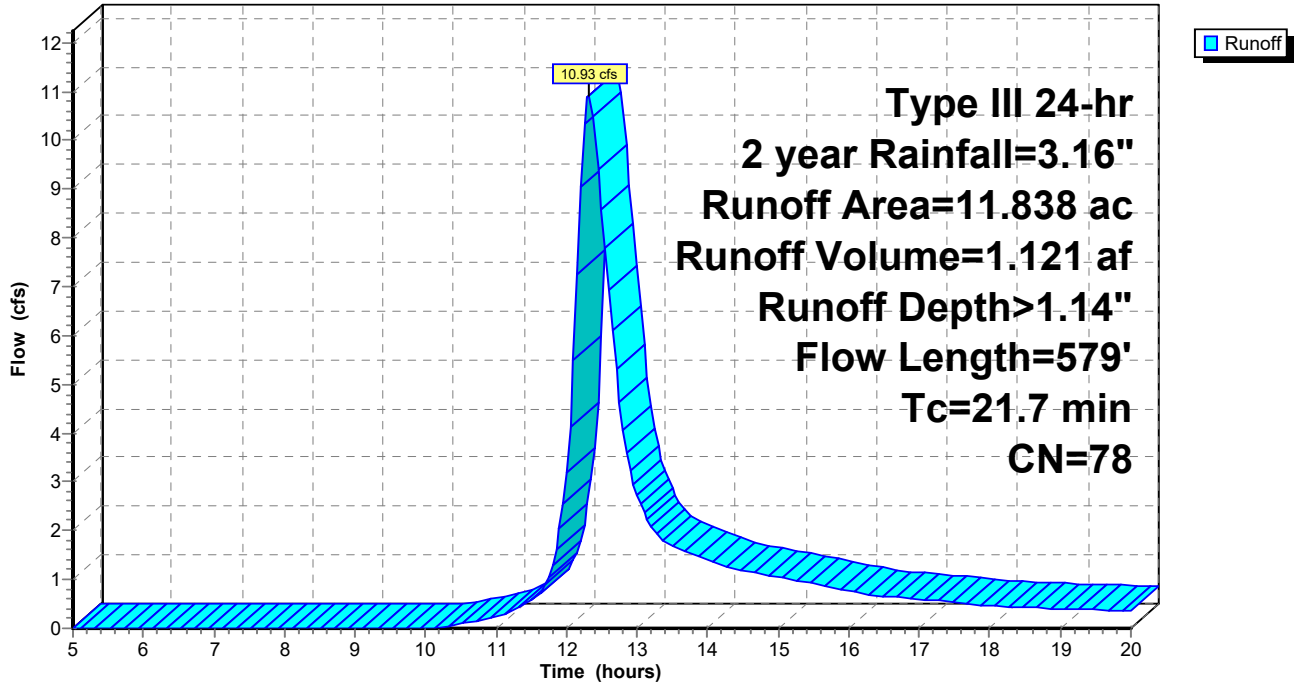
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.028	69	50-75% Grass cover, Fair, HSG B
1.016	77	Fallow, bare soil, HSG A
8.929	86	Fallow, bare soil, HSG B
1.764	36	Woods, Fair, HSG A
0.101	60	Woods, Fair, HSG B
11.838	78	Weighted Average
11.838		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	217	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	97	0.1237	3.52		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.7	215	0.0093	0.96		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
21.7	579	Total			

Subcatchment 35: Subcat 35

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 3P: (new Pond)

Inflow Area = 2.555 ac, 0.00% Impervious, Inflow Depth > 0.47" for 2 year event
 Inflow = 0.83 cfs @ 12.34 hrs, Volume= 0.101 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

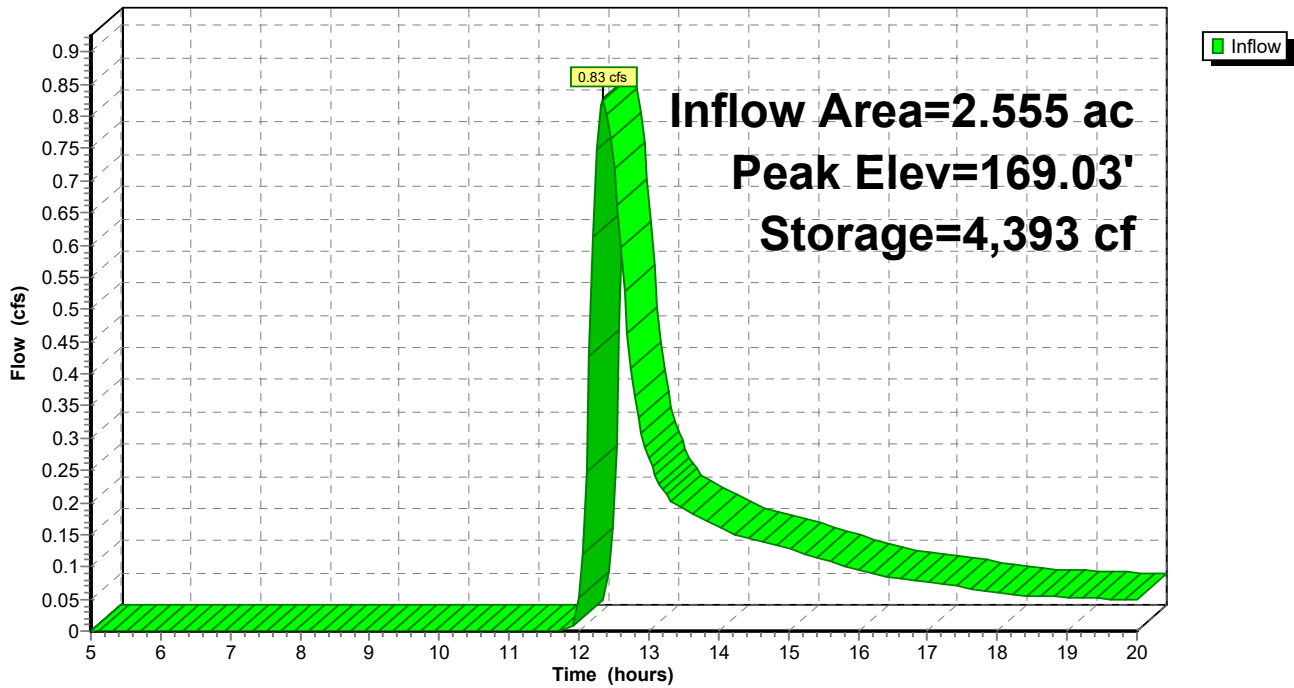
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 169.03' @ 20.00 hrs Surf.Area= 8,554 sf Storage= 4,393 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	95,578 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	0	0	0
170.00	16,657	16,657	16,657
172.00	28,677	45,334	61,991
173.00	38,496	33,587	95,578

Pond 3P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 7P: (new Pond)

Inflow Area = 17.083 ac, 0.00% Impervious, Inflow Depth > 1.07" for 2 year event
 Inflow = 11.14 cfs @ 12.60 hrs, Volume= 1.523 af
 Outflow = 4.56 cfs @ 13.26 hrs, Volume= 1.496 af, Atten= 59%, Lag= 39.8 min
 Discarded = 4.56 cfs @ 13.26 hrs, Volume= 1.496 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.04' @ 13.26 hrs Surf.Area= 65,461 sf Storage= 21,489 cf

Plug-Flow detention time= 64.6 min calculated for 1.496 af (98% of inflow)
 Center-of-Mass det. time= 58.4 min (896.7 - 838.3)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	188,598 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.00	0	0	0	0
164.00	57,239	19,080	19,080	57,241
164.50	203,000	61,339	80,418	203,003
165.00	230,000	108,180	188,598	230,015

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=4.55 cfs @ 13.26 hrs HW=164.04' (Free Discharge)
 ↑2=Exfiltration (Controls 4.55 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=163.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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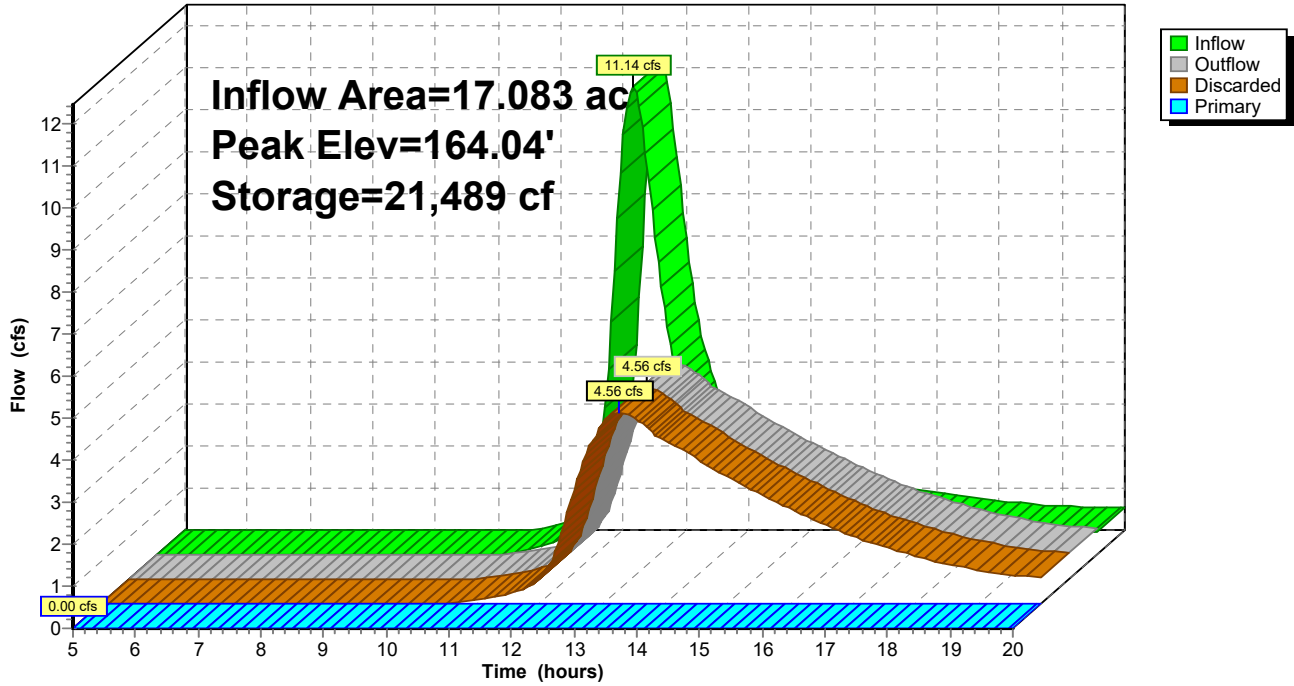
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Pond 7P: (new Pond)

Hydrograph



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Summary for Pond 10P: (new Pond)

Inflow Area = 6.364 ac, 2.50% Impervious, Inflow Depth > 0.25" for 2 year event
 Inflow = 1.19 cfs @ 12.24 hrs, Volume= 0.134 af
 Outflow = 0.09 cfs @ 17.38 hrs, Volume= 0.057 af, Atten= 92%, Lag= 308.8 min
 Discarded = 0.09 cfs @ 17.38 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.32' @ 17.38 hrs Surf.Area= 4,020 sf Storage= 3,528 cf

Plug-Flow detention time= 229.6 min calculated for 0.057 af (43% of inflow)
 Center-of-Mass det. time= 120.2 min (975.5 - 855.3)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	274,837 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	1,534	0	0	1,534
148.00	5,773	6,855	6,855	5,793
150.00	12,558	17,897	24,752	12,610
152.00	19,547	31,848	56,601	19,656
154.00	26,610	45,976	102,576	26,800
156.00	32,562	59,072	161,648	32,876
158.00	39,456	71,908	233,556	39,899
159.00	43,134	41,281	274,837	43,647

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.09 cfs @ 17.38 hrs HW=147.32' (Free Discharge)
 ↑1=Exfiltration (Controls 0.09 cfs)

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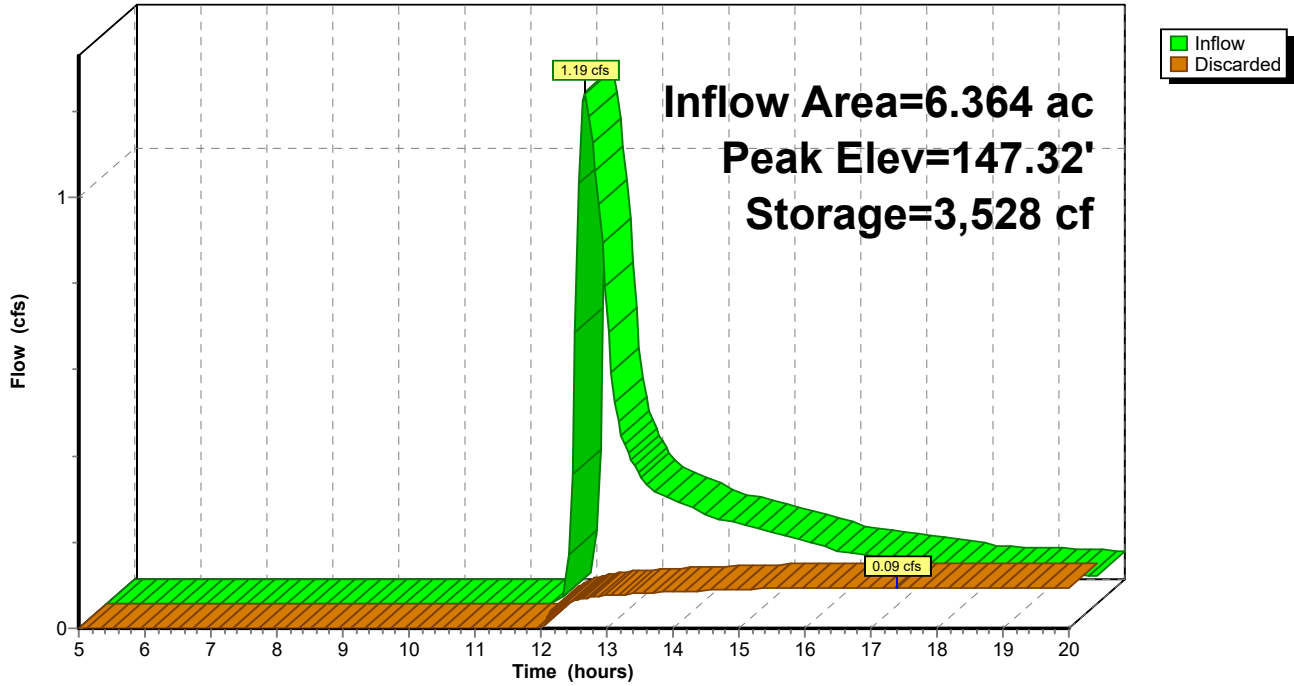
Type III 24-hr 2 year Rainfall=3.16"

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Pond 10P: (new Pond)

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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 11AP: (new Pond)

Inflow Area = 6.449 ac, 0.00% Impervious, Inflow Depth > 0.02" for 2 year event
 Inflow = 0.02 cfs @ 16.87 hrs, Volume= 0.009 af
 Outflow = 0.02 cfs @ 17.53 hrs, Volume= 0.008 af, Atten= 3%, Lag= 39.6 min
 Discarded = 0.02 cfs @ 17.53 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 126.02' @ 17.53 hrs Surf.Area= 3,138 sf Storage= 51 cf

Plug-Flow detention time= 38.7 min calculated for 0.008 af (88% of inflow)
 Center-of-Mass det. time= 18.5 min (1,053.3 - 1,034.7)

Volume	Invert	Avail.Storage	Storage Description
#1	126.00'	127,579 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
126.00	3,074	0	0	3,074
128.00	15,883	17,296	17,296	15,899
130.00	28,094	43,401	60,697	28,154
132.00	39,090	66,882	127,579	39,226

Device	Routing	Invert	Outlet Devices
#1	Discarded	126.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.07 cfs @ 17.53 hrs HW=126.02' (Free Discharge)
 ↑1=Exfiltration (Controls 0.07 cfs)

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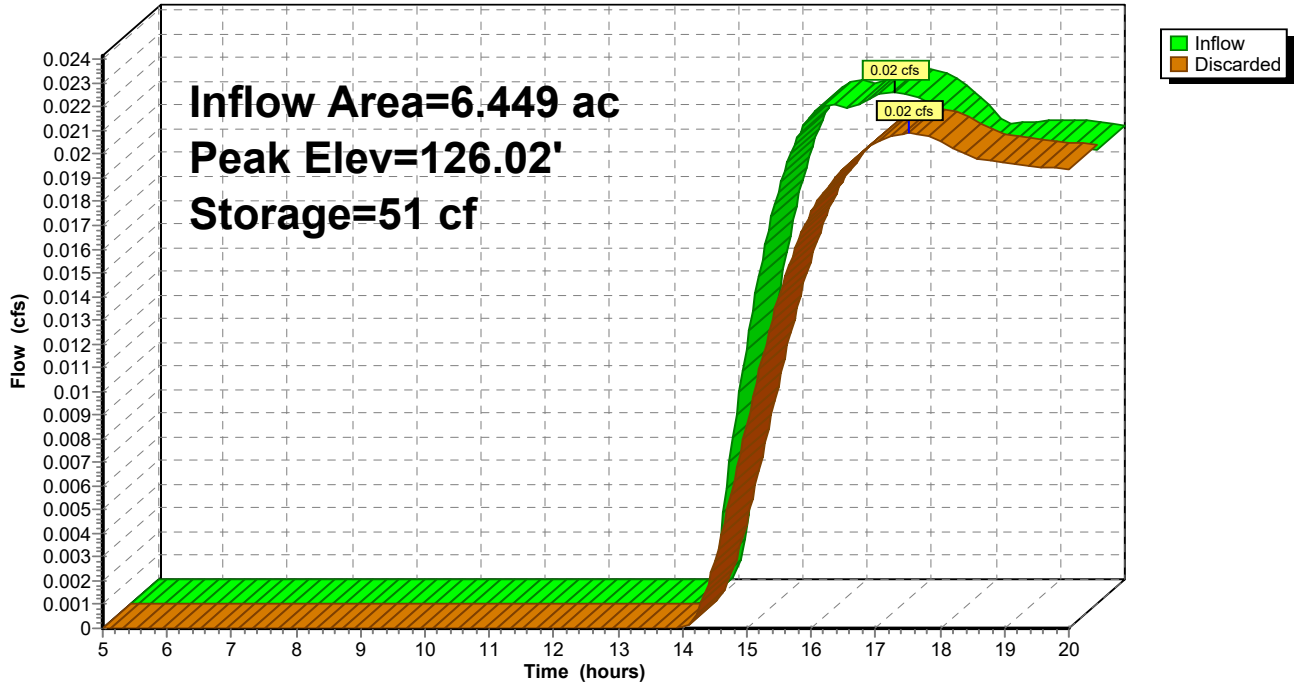
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Pond 11AP: (new Pond)

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Summary for Pond 11P: (new Pond)

Inflow Area = 5.661 ac, 0.85% Impervious, Inflow Depth > 0.28" for 2 year event
 Inflow = 0.84 cfs @ 12.42 hrs, Volume= 0.131 af
 Outflow = 0.11 cfs @ 17.24 hrs, Volume= 0.070 af, Atten= 86%, Lag= 289.3 min
 Discarded = 0.11 cfs @ 17.24 hrs, Volume= 0.070 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 142.73' @ 17.24 hrs Surf.Area= 4,913 sf Storage= 2,908 cf

Plug-Flow detention time= 199.8 min calculated for 0.070 af (53% of inflow)
 Center-of-Mass det. time= 98.0 min (976.2 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	518,849 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	3,101	0	0	3,101
144.00	9,033	11,618	11,618	9,057
146.00	14,143	22,986	34,604	14,223
148.00	20,595	34,537	69,140	20,742
150.00	26,222	46,704	115,844	26,472
152.00	32,411	58,524	174,368	32,779
154.00	41,950	74,156	248,524	42,415
156.00	49,984	91,817	340,341	50,591
158.00	62,571	112,320	452,660	63,289
159.00	69,874	66,189	518,849	70,649

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.11 cfs @ 17.24 hrs HW=142.73' (Free Discharge)
 ↑1=Exfiltration (Controls 0.11 cfs)

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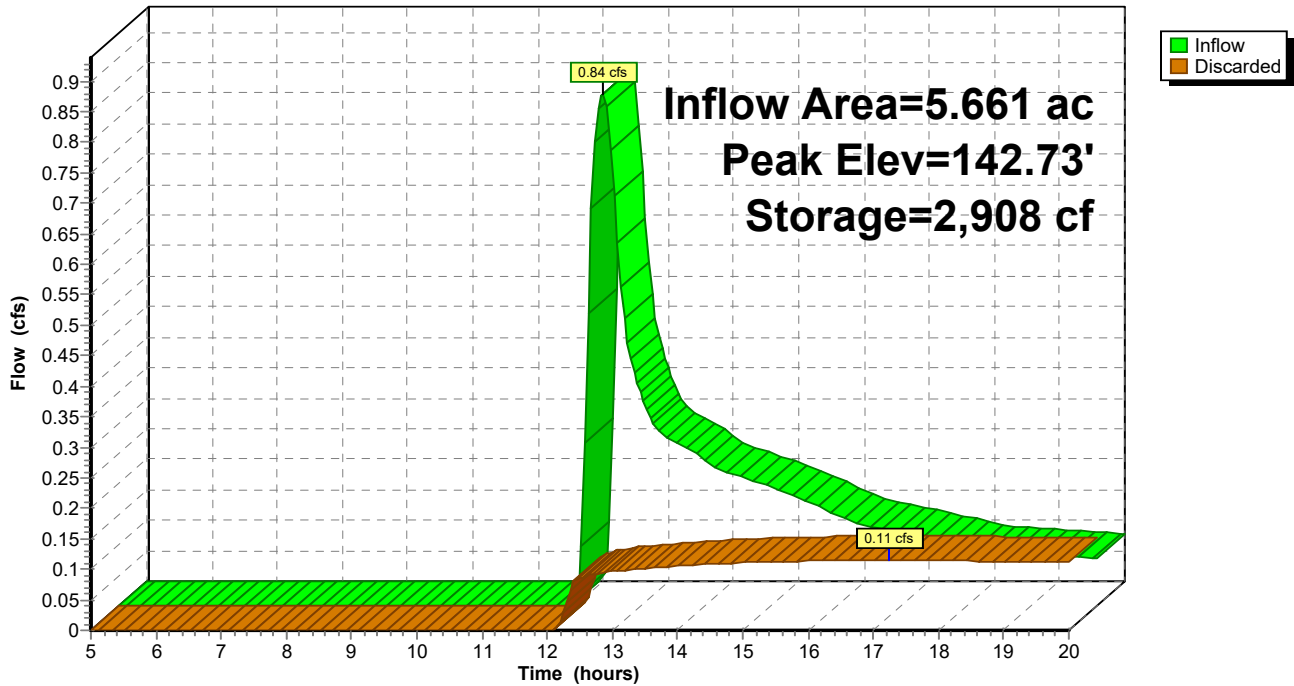
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Pond 11P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 12P: (new Pond)

Inflow Area = 2.699 ac, 5.89% Impervious, Inflow Depth > 1.14" for 2 year event
 Inflow = 2.97 cfs @ 12.20 hrs, Volume= 0.256 af
 Outflow = 0.75 cfs @ 12.73 hrs, Volume= 0.253 af, Atten= 75%, Lag= 31.4 min
 Discarded = 0.75 cfs @ 12.73 hrs, Volume= 0.253 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.06' @ 12.73 hrs Surf.Area= 10,813 sf Storage= 3,989 cf

Plug-Flow detention time= 64.7 min calculated for 0.253 af (99% of inflow)
 Center-of-Mass det. time= 59.4 min (874.6 - 815.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	161.00'	52,117 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
161.00	0	0	0	0	
162.00	10,223	3,408	3,408	10,225	
164.00	42,096	48,709	52,117	42,116	

Device	Routing	Invert	Outlet Devices
#1	Primary	163.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	161.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.75 cfs @ 12.73 hrs HW=162.06' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.75 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=161.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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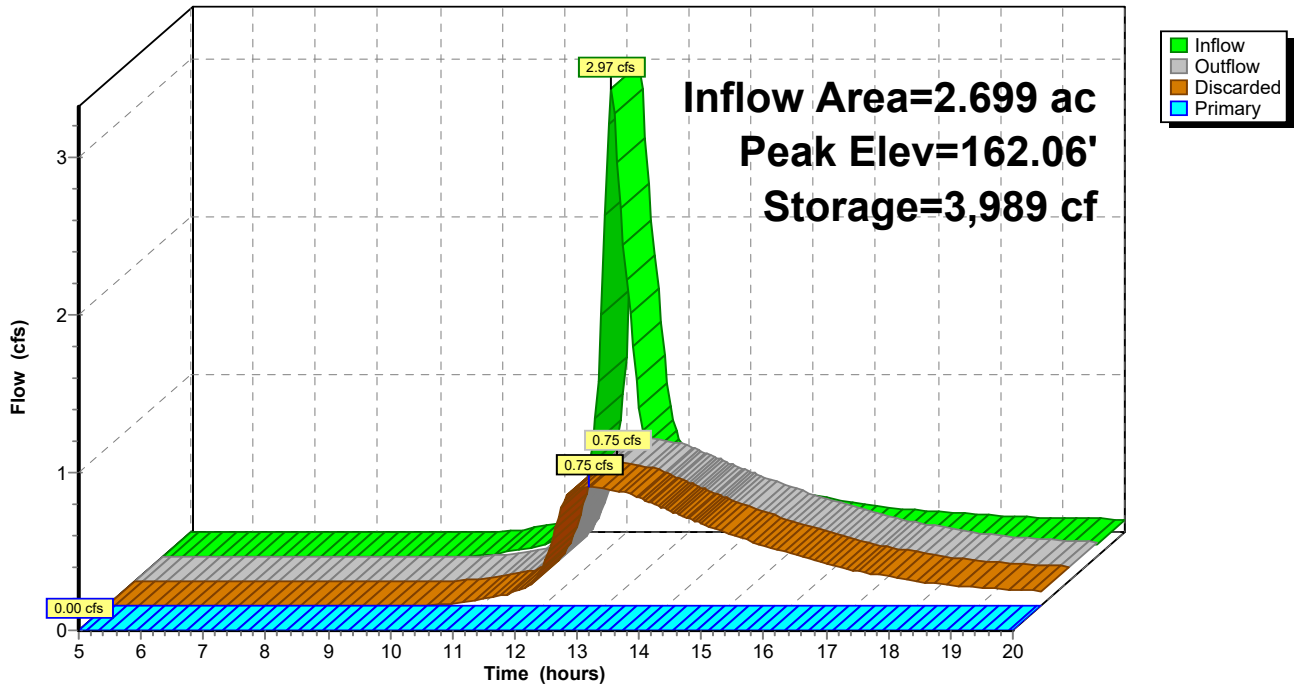
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Pond 12P: (new Pond)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 13P: (new Pond)

Inflow Area = 18.096 ac, 1.07% Impervious, Inflow Depth > 1.12" for 2 year event
 Inflow = 10.96 cfs @ 12.75 hrs, Volume= 1.692 af
 Outflow = 4.02 cfs @ 13.65 hrs, Volume= 1.631 af, Atten= 63%, Lag= 54.1 min
 Discarded = 4.02 cfs @ 13.65 hrs, Volume= 1.631 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.35' @ 13.65 hrs Surf.Area= 57,765 sf Storage= 26,390 cf

Plug-Flow detention time= 87.8 min calculated for 1.631 af (96% of inflow)
 Center-of-Mass det. time= 75.8 min (920.2 - 844.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	84,396 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	0	0	0	0	
161.00	32,678	10,893	10,893	32,680	
162.00	124,141	73,504	84,396	124,147	

Device	Routing	Invert	Outlet Devices									
#1	Primary	161.50'	70.0' long x 50.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=4.02 cfs @ 13.65 hrs HW=161.35' (Free Discharge)
 ↑2=Exfiltration (Controls 4.02 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=160.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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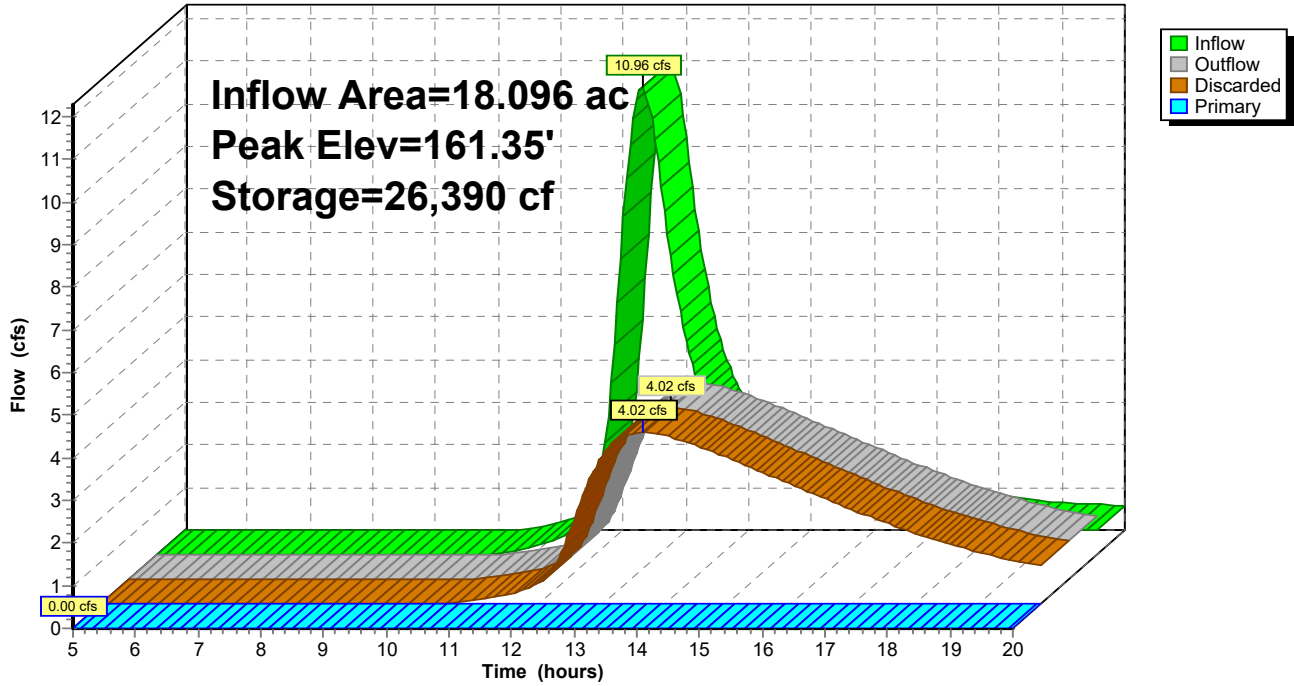
Type III 24-hr 2 year Rainfall=3.16"

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Pond 13P: (new Pond)

Hydrograph



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Summary for Pond 15P: (new Pond)

Inflow Area = 2.521 ac, 4.81% Impervious, Inflow Depth > 1.20" for 2 year event
 Inflow = 2.64 cfs @ 12.26 hrs, Volume= 0.252 af
 Outflow = 0.79 cfs @ 12.79 hrs, Volume= 0.249 af, Atten= 70%, Lag= 31.6 min
 Discarded = 0.79 cfs @ 12.79 hrs, Volume= 0.249 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.92' @ 12.79 hrs Surf.Area= 11,288 sf Storage= 3,833 cf

Plug-Flow detention time= 61.7 min calculated for 0.248 af (98% of inflow)
 Center-of-Mass det. time= 56.7 min (872.8 - 816.1)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	33,327 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	100	0	0	100
164.00	47,707	33,327	33,327	47,714

Device	Routing	Invert	Outlet Devices
#1	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.79 cfs @ 12.79 hrs HW=162.92' (Free Discharge)
 ↑1=Exfiltration (Controls 0.79 cfs)

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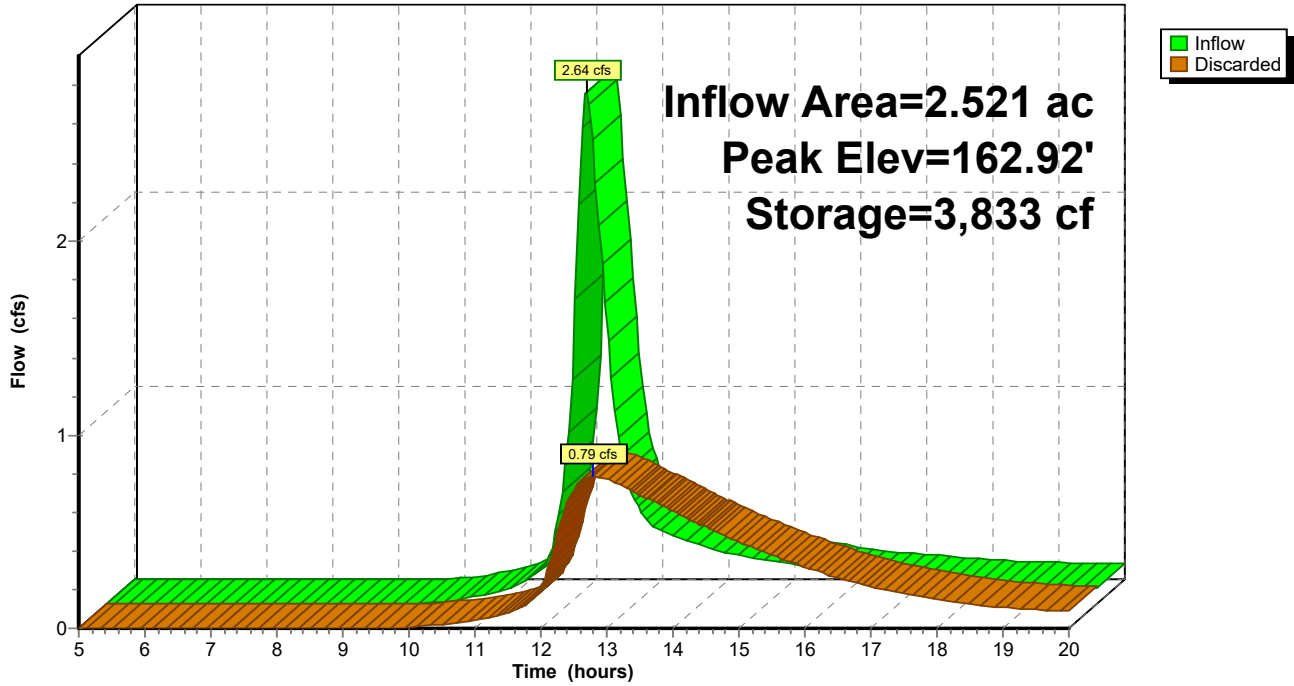
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Pond 15P: (new Pond)

Hydrograph



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Summary for Pond 16P: (new Pond)

Inflow Area = 4.718 ac, 0.92% Impervious, Inflow Depth > 1.14" for 2 year event
 Inflow = 4.17 cfs @ 12.35 hrs, Volume= 0.446 af
 Outflow = 1.46 cfs @ 12.89 hrs, Volume= 0.446 af, Atten= 65%, Lag= 32.2 min
 Discarded = 1.46 cfs @ 12.89 hrs, Volume= 0.446 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.57' @ 12.89 hrs Surf.Area= 21,022 sf Storage= 6,114 cf

Plug-Flow detention time= 47.1 min calculated for 0.444 af (99% of inflow)
 Center-of-Mass det. time= 46.2 min (869.2 - 823.0)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	106,646 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	3,106	0	0	3,106
164.00	136,289	106,646	106,646	136,298

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	50.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.46 cfs @ 12.89 hrs HW=162.57' (Free Discharge)
 ↑2=Exfiltration (Controls 1.46 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=162.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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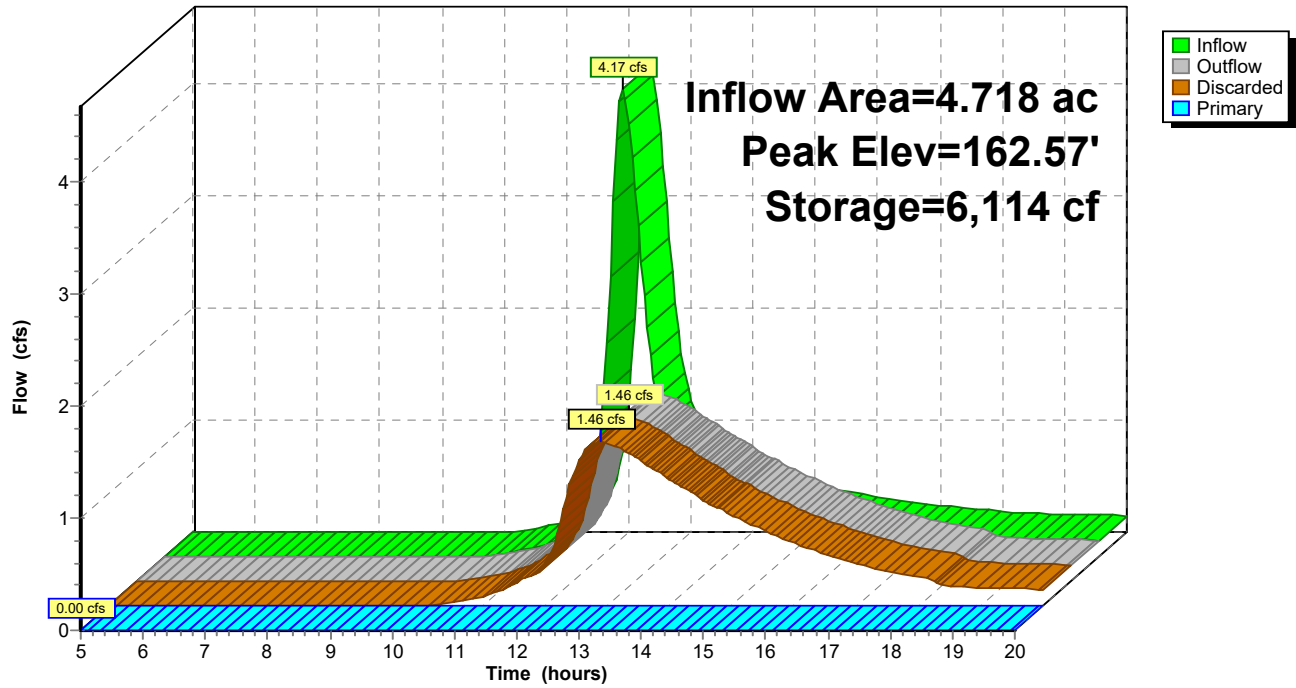
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Pond 16P: (new Pond)

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Summary for Pond 19P: (new Pond)

Inflow Area = 21.570 ac, 0.00% Impervious, Inflow Depth > 0.96" for 2 year event
 Inflow = 12.72 cfs @ 12.59 hrs, Volume= 1.726 af
 Outflow = 6.13 cfs @ 13.14 hrs, Volume= 1.660 af, Atten= 52%, Lag= 32.9 min
 Discarded = 3.22 cfs @ 13.14 hrs, Volume= 1.485 af
 Primary = 2.90 cfs @ 13.14 hrs, Volume= 0.176 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.15' @ 13.14 hrs Surf.Area= 27,667 sf Storage= 25,056 cf

Plug-Flow detention time= 88.6 min calculated for 1.655 af (96% of inflow)
 Center-of-Mass det. time= 75.8 min (917.7 - 841.9)

Volume	Invert	Avail.Storage	Storage Description
#1	151.00'	104,899 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
151.00	0	0	0	0
152.00	10,885	3,628	3,628	10,887
154.00	45,019	52,027	55,655	45,039
155.00	53,593	49,244	104,899	53,649

Device	Routing	Invert	Outlet Devices
#1	Primary	153.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	151.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.22 cfs @ 13.14 hrs HW=153.15' (Free Discharge)
 ↑2=Exfiltration (Controls 3.22 cfs)

Primary OutFlow Max=2.88 cfs @ 13.14 hrs HW=153.15' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 2.88 cfs @ 0.96 fps)

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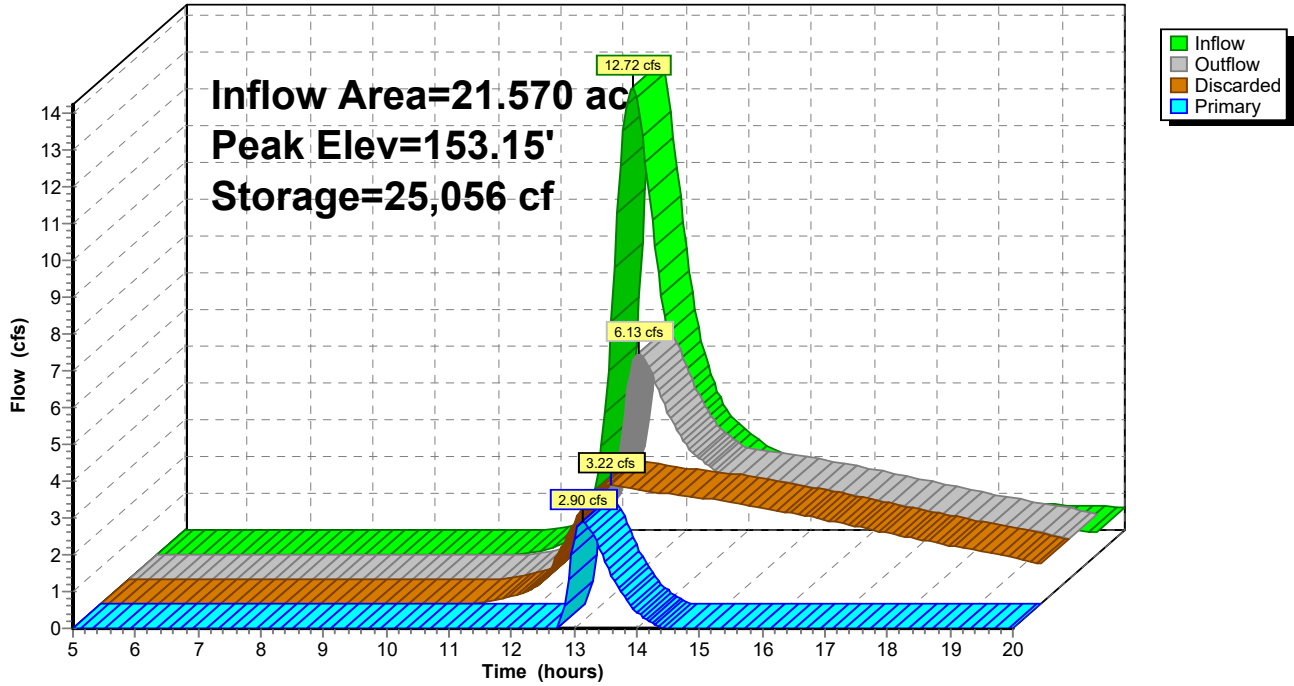
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Pond 19P: (new Pond)

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Summary for Pond 28P: (new Pond)

Inflow Area = 7.360 ac, 0.00% Impervious, Inflow Depth > 0.28" for 2 year event
 Inflow = 1.09 cfs @ 12.41 hrs, Volume= 0.171 af
 Outflow = 0.17 cfs @ 16.65 hrs, Volume= 0.098 af, Atten= 85%, Lag= 254.2 min
 Discarded = 0.17 cfs @ 16.65 hrs, Volume= 0.098 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 151.28' @ 16.65 hrs Surf.Area= 4,742 sf Storage= 3,632 cf

Plug-Flow detention time= 197.4 min calculated for 0.098 af (57% of inflow)
 Center-of-Mass det. time= 101.3 min (979.3 - 878.0)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	703,547 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	1,301	0	0	1,301
152.00	7,637	8,060	8,060	7,652
154.00	17,812	24,741	32,802	17,857
156.00	31,769	48,913	81,714	31,858
158.00	44,943	76,332	158,046	45,104
160.00	56,203	100,936	258,983	56,476
162.00	68,079	124,092	383,075	68,483
164.00	79,954	147,874	530,949	80,513
166.00	92,803	172,598	703,547	93,530

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.17 cfs @ 16.65 hrs HW=151.28' (Free Discharge)

↑**1=Exfiltration** (Controls 0.17 cfs)

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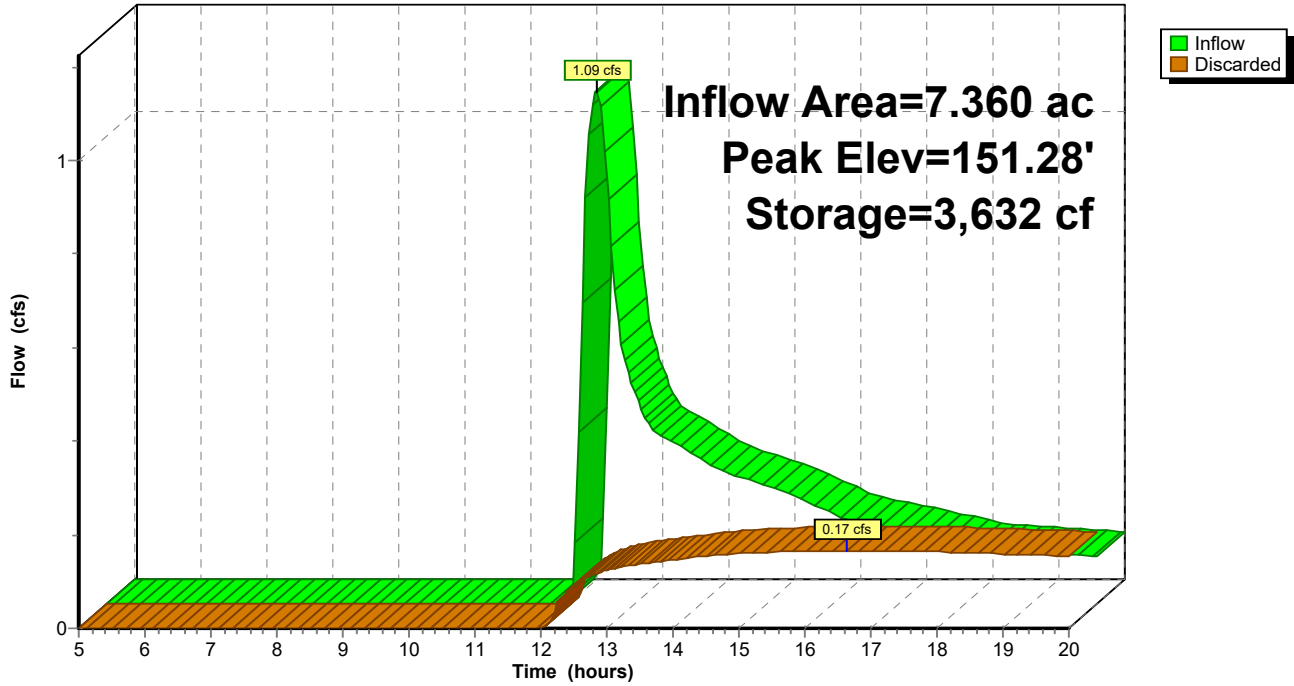
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Pond 28P: (new Pond)

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Summary for Pond 29P: (new Pond)

Inflow Area = 1.626 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 year event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.00' @ 5.00 hrs Surf.Area= 883 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	140,344 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	883	0	0	883
148.00	2,535	3,276	3,276	2,559
150.00	4,534	6,973	10,249	4,601
152.00	6,834	11,290	21,539	6,962
154.00	10,301	17,017	38,555	10,490
156.00	14,424	24,610	63,165	14,687
158.00	19,416	33,717	96,882	19,763
160.00	24,132	43,463	140,344	24,593

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=146.00' (Free Discharge)

↑1=Exfiltration (Passes 0.00 cfs of 0.03 cfs potential flow)

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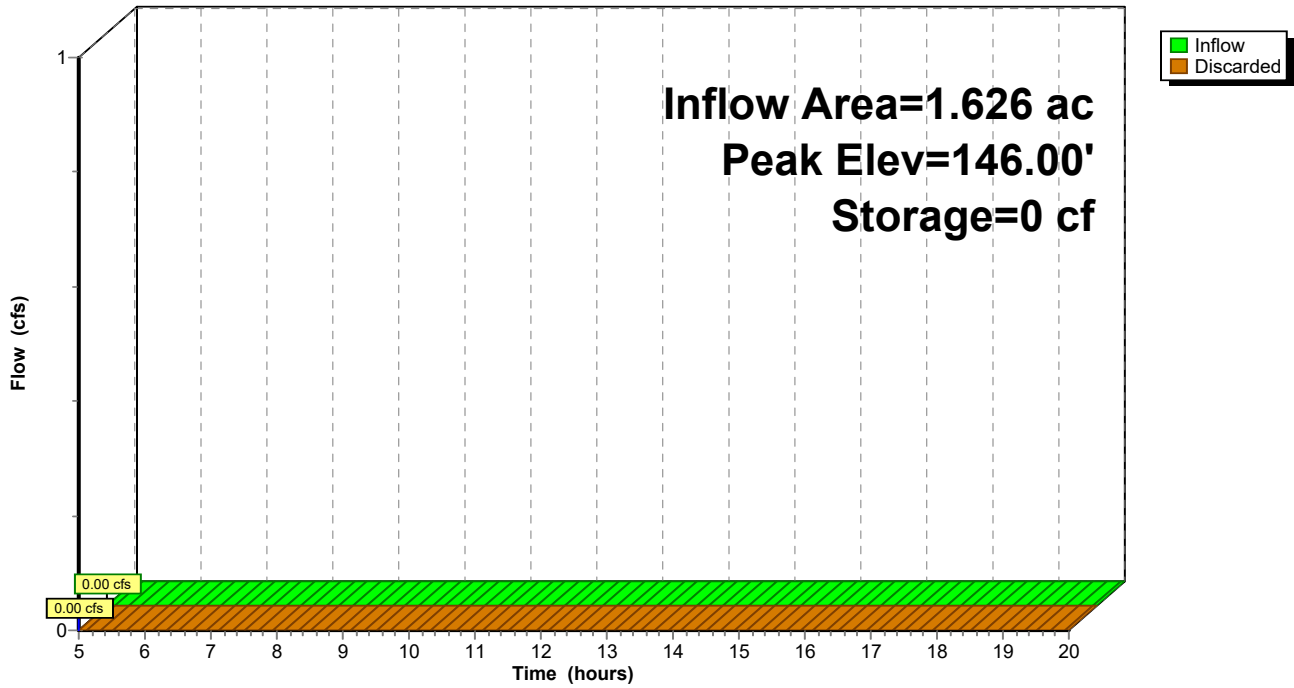
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Pond 29P: (new Pond)

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Summary for Pond 30P: (new Pond)

Inflow Area = 3.911 ac, 0.00% Impervious, Inflow Depth > 0.72" for 2 year event
 Inflow = 2.69 cfs @ 12.18 hrs, Volume= 0.236 af
 Outflow = 0.81 cfs @ 12.65 hrs, Volume= 0.233 af, Atten= 70%, Lag= 28.7 min
 Discarded = 0.81 cfs @ 12.65 hrs, Volume= 0.233 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 169.78' @ 12.65 hrs Surf.Area= 11,625 sf Storage= 3,030 cf

Plug-Flow detention time= 47.0 min calculated for 0.233 af (99% of inflow)
 Center-of-Mass det. time= 42.5 min (875.5 - 833.0)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	177,312 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	0	0	0	0
170.00	19,015	6,338	6,338	19,017
172.00	61,742	76,681	83,019	61,766
173.00	131,151	94,293	177,312	131,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	169.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.81 cfs @ 12.65 hrs HW=169.78' (Free Discharge)
 ↑1=Exfiltration (Controls 0.81 cfs)

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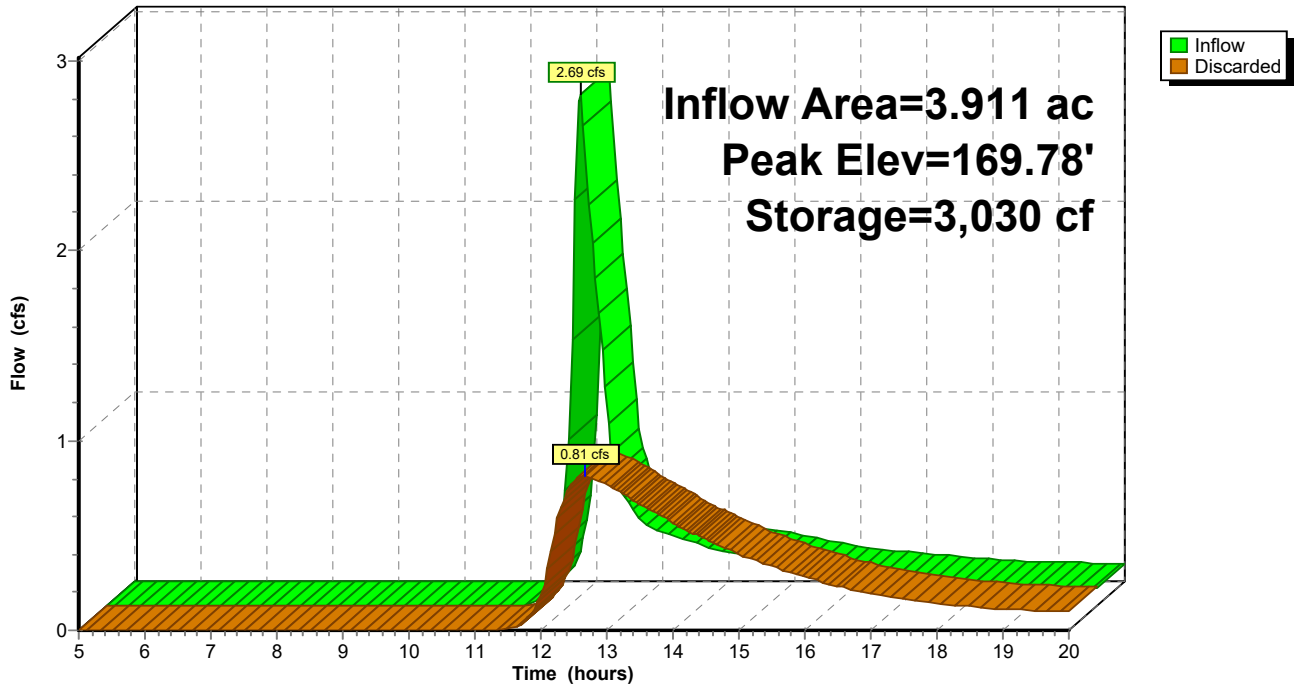
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Pond 30P: (new Pond)

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Summary for Pond 31P: (new Pond)

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 0.00" for 2 year event
 Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 30%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.02' @ 20.00 hrs Surf.Area= 454 sf Storage= 7 cf

Plug-Flow detention time= 46.2 min calculated for 0.000 af (52% of inflow)
 Center-of-Mass det. time= 12.2 min (1,150.6 - 1,138.4)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	577,917 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
144.00	435	0	0	435
146.00	5,720	5,155	5,155	5,731
148.00	14,467	19,523	24,677	14,506
150.00	23,981	38,049	62,727	24,069
152.00	31,477	55,288	118,015	31,657
154.00	37,463	68,853	186,868	37,786
156.00	43,468	80,857	267,725	43,958
158.00	49,047	92,459	360,184	49,741
160.00	54,411	103,412	463,596	55,342
162.00	59,955	114,321	577,917	61,140

Device	Routing	Invert	Outlet Devices
#1	Discarded	144.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.02 cfs @ 20.00 hrs HW=144.02' (Free Discharge)
 ↑1=Exfiltration (Controls 0.02 cfs)

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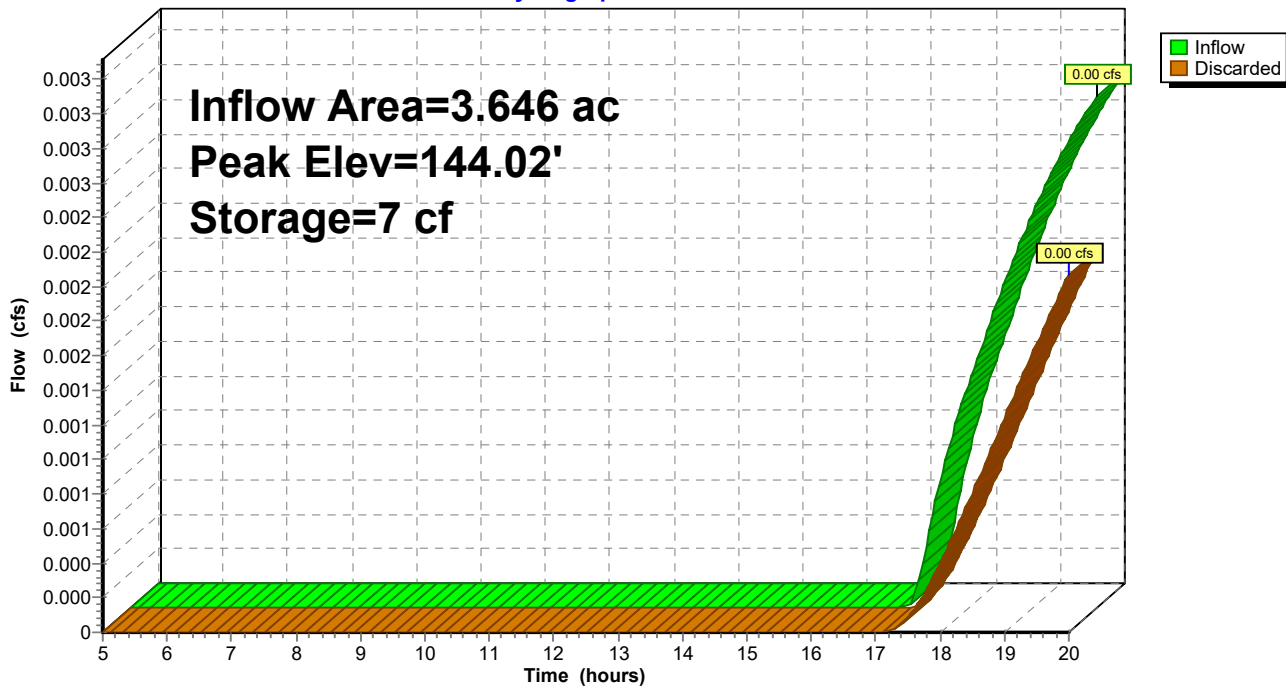
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Pond 31P: (new Pond)

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Summary for Pond 32P: (new Pond)

Inflow Area = 4.598 ac, 0.00% Impervious, Inflow Depth > 1.68" for 2 year event
 Inflow = 11.15 cfs @ 12.00 hrs, Volume= 0.645 af
 Outflow = 1.01 cfs @ 12.85 hrs, Volume= 0.576 af, Atten= 91%, Lag= 50.9 min
 Discarded = 1.01 cfs @ 12.85 hrs, Volume= 0.576 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.25' @ 12.85 hrs Surf.Area= 14,495 sf Storage= 13,480 cf

Plug-Flow detention time= 157.7 min calculated for 0.574 af (89% of inflow)
 Center-of-Mass det. time= 123.4 min (906.7 - 783.3)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	564,324 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	153	0	0	153
144.00	13,412	9,998	9,998	13,420
146.00	23,273	36,235	46,233	23,327
148.00	33,979	56,915	103,149	34,099
150.00	46,946	80,576	183,725	47,144
152.00	58,364	105,103	288,828	58,677
154.00	68,242	126,477	415,306	68,714
156.00	80,957	149,018	564,324	81,576

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.01 cfs @ 12.85 hrs HW=144.25' (Free Discharge)
 ↑1=Exfiltration (Controls 1.01 cfs)

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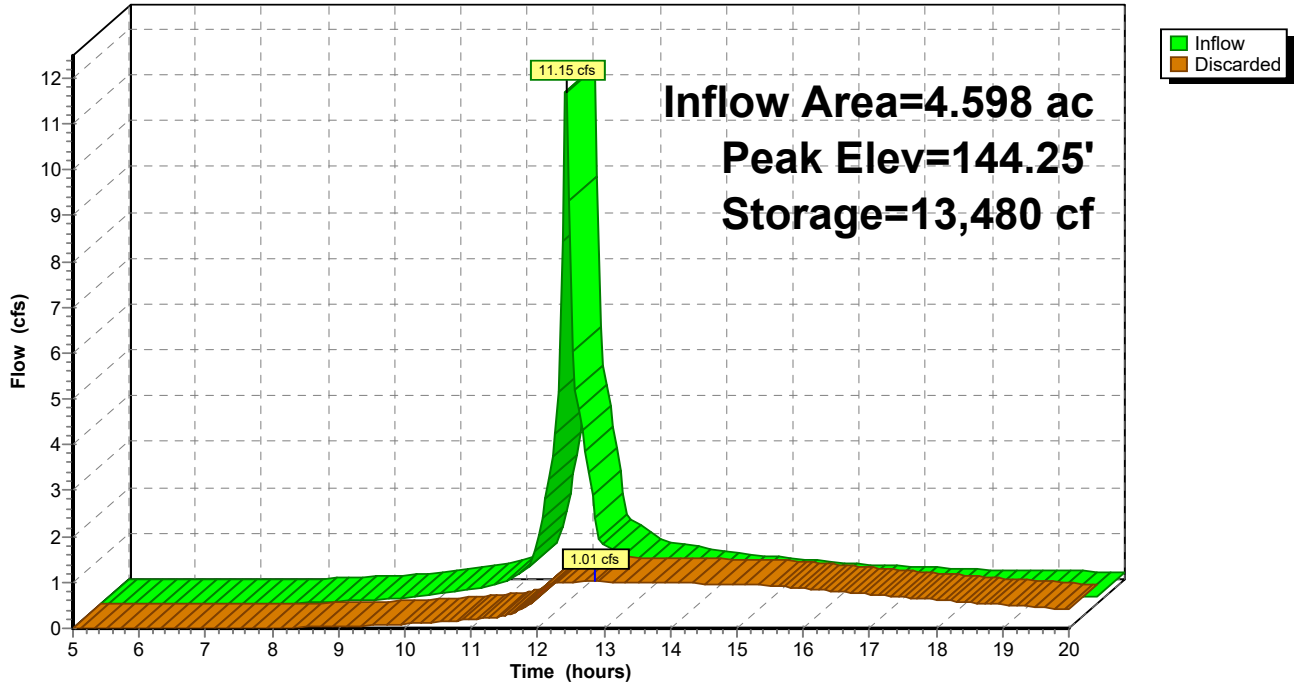
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Pond 32P: (new Pond)

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Summary for Pond 35P: (new Pond)

Inflow Area = 11.838 ac, 0.00% Impervious, Inflow Depth > 1.14" for 2 year event
 Inflow = 10.93 cfs @ 12.32 hrs, Volume= 1.121 af
 Outflow = 2.45 cfs @ 13.07 hrs, Volume= 1.098 af, Atten= 78%, Lag= 45.5 min
 Discarded = 2.45 cfs @ 13.07 hrs, Volume= 1.098 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.11' @ 13.07 hrs Surf.Area= 21,069 sf Storage= 19,292 cf

Plug-Flow detention time= 96.6 min calculated for 1.094 af (98% of inflow)
 Center-of-Mass det. time= 88.7 min (909.9 - 821.2)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	476,244 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	9,108	3,036	3,036	9,110
156.00	34,300	40,722	43,758	34,321
158.00	119,103	144,879	188,637	119,145
160.00	170,010	287,607	476,244	170,123

Device	Routing	Invert	Outlet Devices
#1	Discarded	153.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.45 cfs @ 13.07 hrs HW=155.11' (Free Discharge)

↑1=Exfiltration (Controls 2.45 cfs)

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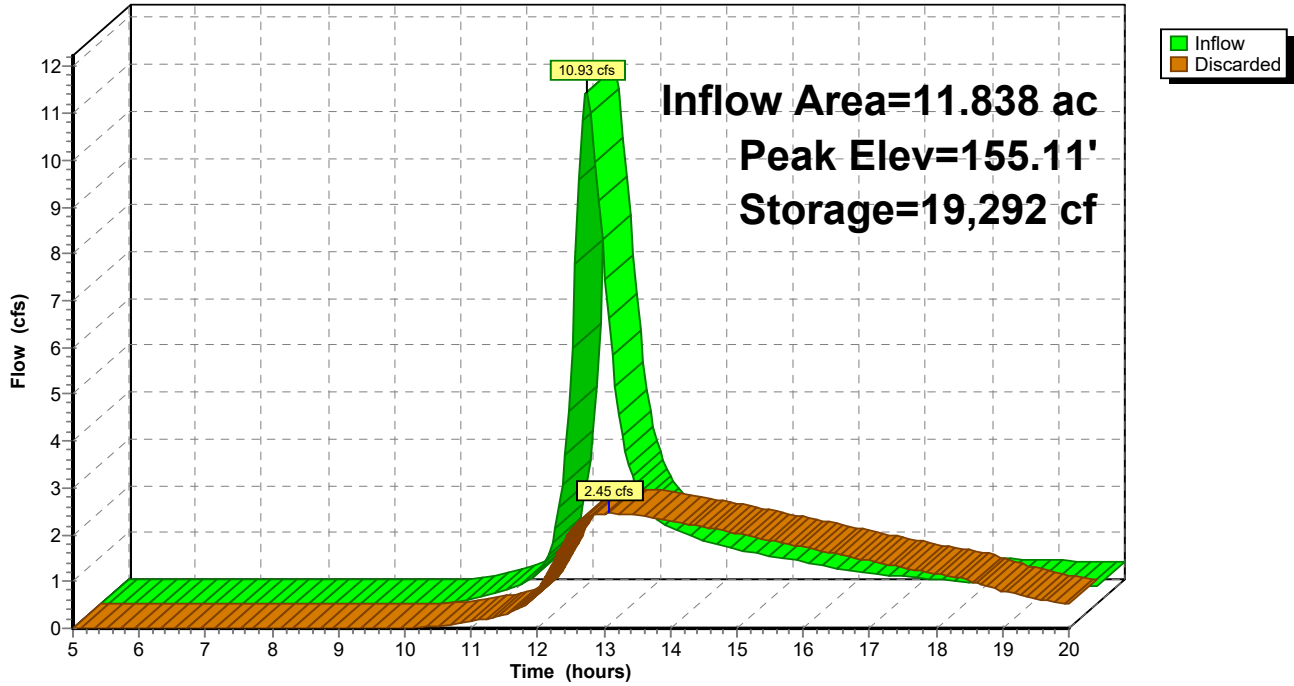
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Pond 35P: (new Pond)

Hydrograph



Existing Conditions - North Plantation

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Type III 24-hr 2 year Rainfall=3.16"

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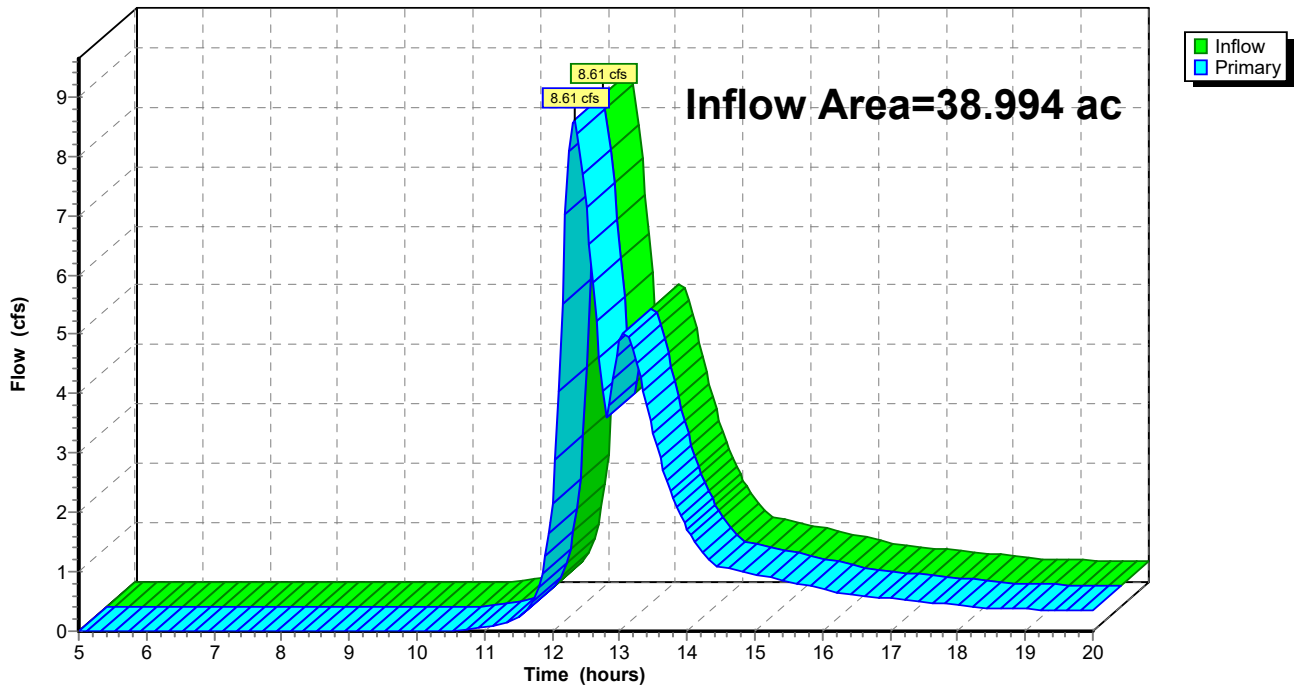
Summary for Link DP19: (new Link)

Inflow Area = 38.994 ac, 0.11% Impervious, Inflow Depth > 0.34" for 2 year event
Inflow = 8.61 cfs @ 12.32 hrs, Volume= 1.112 af
Primary = 8.61 cfs @ 12.32 hrs, Volume= 1.112 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP19: (new Link)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 1: Subcat 1

Runoff = 3.68 cfs @ 12.11 hrs, Volume= 0.266 af, Depth> 3.70"

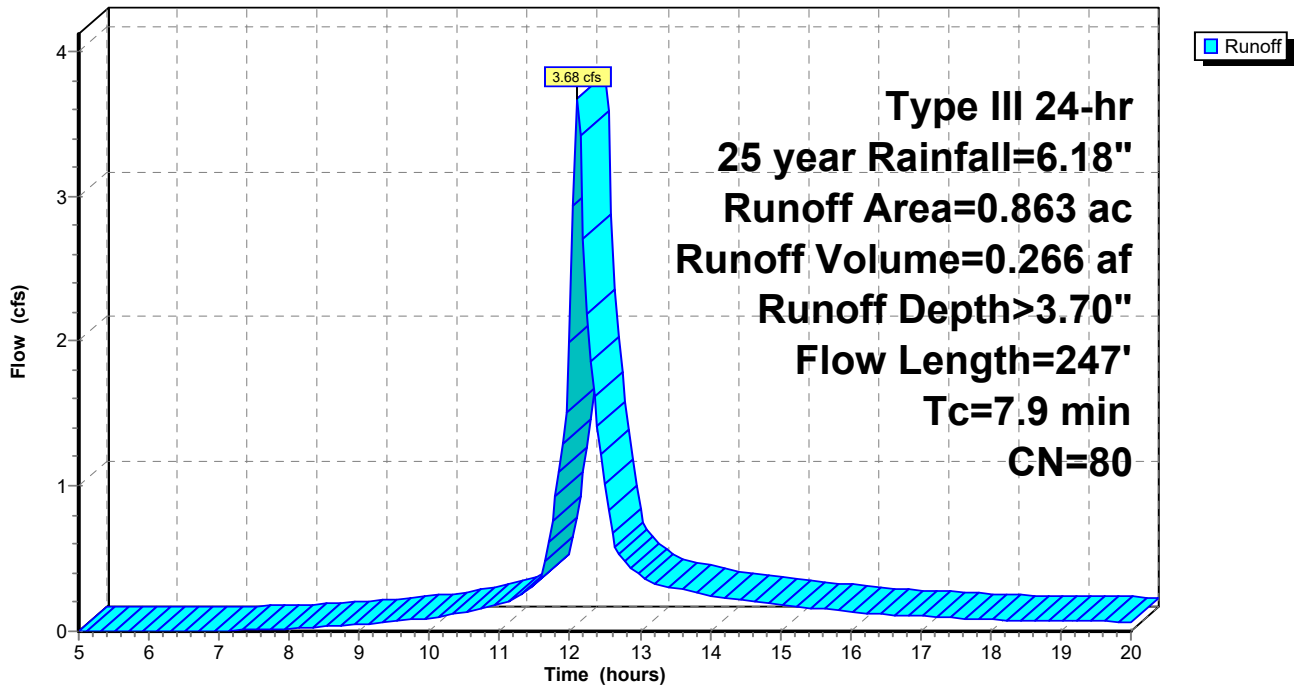
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.029	77	Fallow, bare soil, HSG A
0.663	86	Fallow, bare soil, HSG B
0.035	36	Woods, Fair, HSG A
0.137	60	Woods, Fair, HSG B
0.863	80	Weighted Average
0.863		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
1.6	197	0.0508	2.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
7.9	247	Total			

Subcatchment 1: Subcat 1

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 2: Subcat 2

Runoff = 5.61 cfs @ 12.25 hrs, Volume= 0.568 af, Depth> 1.24"

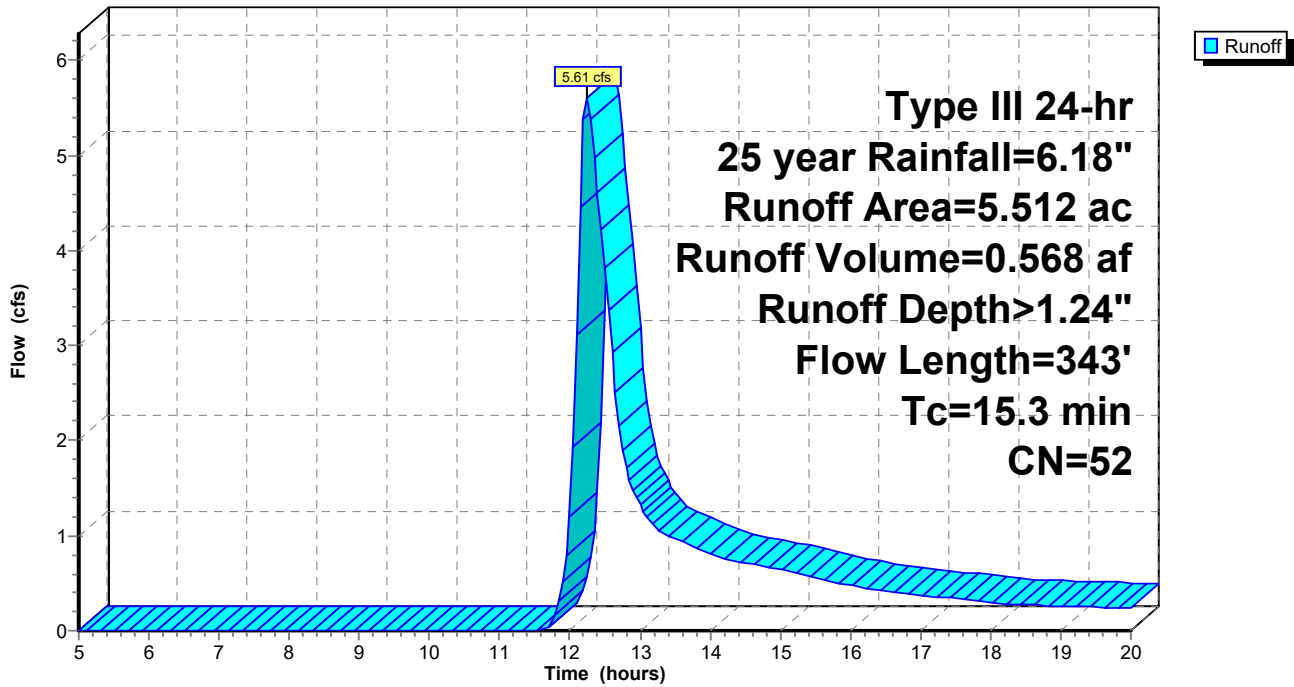
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
1.277	77	Fallow, bare soil, HSG A
0.528	86	Fallow, bare soil, HSG B
3.264	36	Woods, Fair, HSG A
0.363	60	Woods, Fair, HSG B
0.080	73	Woods, Fair, HSG C
5.512	52	Weighted Average
5.512		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
2.9	293	0.0343	1.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
15.3	343	Total			

Subcatchment 2: Subcat 2

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 3: Subcat 3

Runoff = 4.80 cfs @ 12.27 hrs, Volume= 0.466 af, Depth> 2.19"

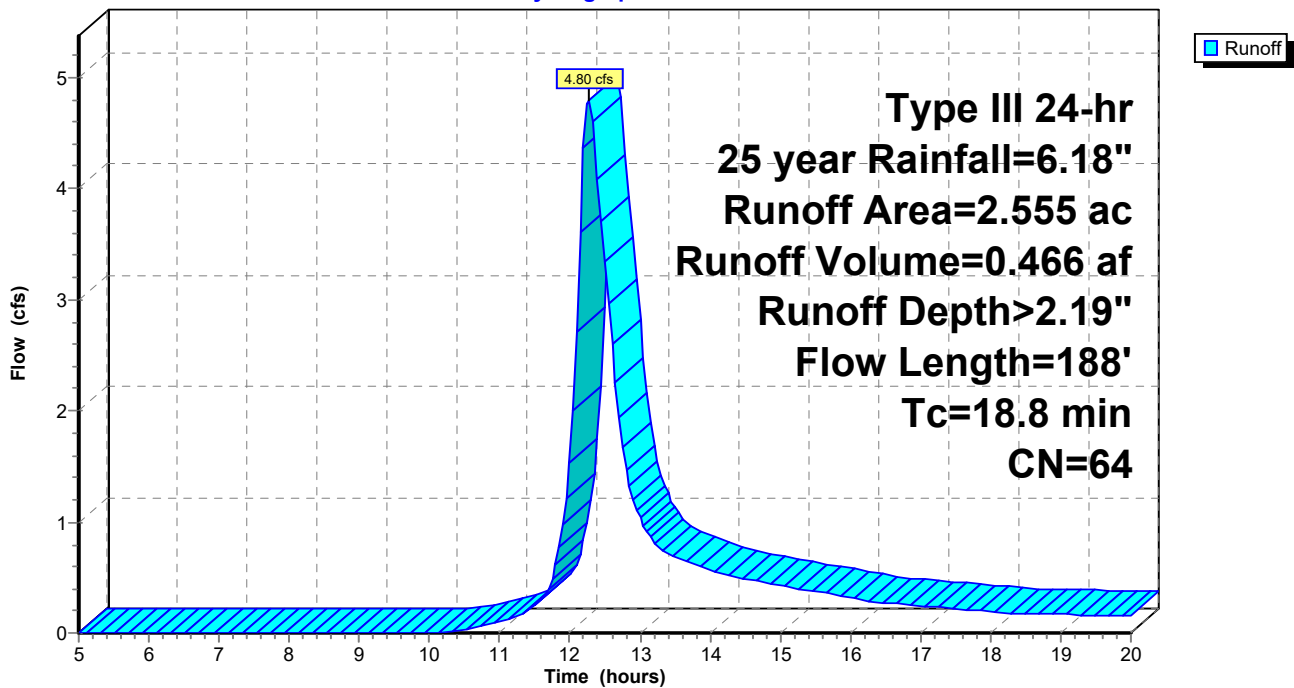
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.730	77	Fallow, bare soil, HSG A
0.609	86	Fallow, bare soil, HSG B
0.716	36	Woods, Fair, HSG A
0.500	60	Woods, Fair, HSG B
2.555	64	Weighted Average
2.555		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
1.8	66	0.0152	0.62		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	72	0.0556	2.12		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.8	188	Total			

Subcatchment 3: Subcat 3

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 4: Subcat 4

Runoff = 8.35 cfs @ 12.16 hrs, Volume= 0.667 af, Depth> 2.19"

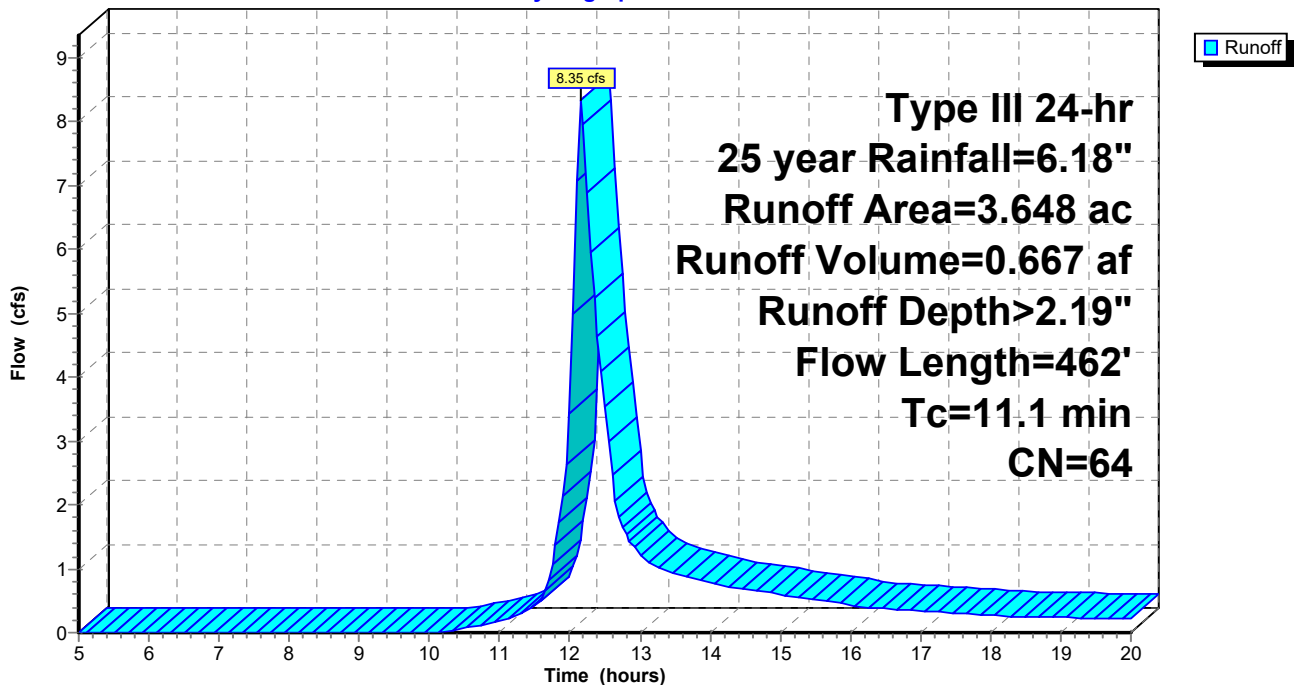
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.026	49	50-75% Grass cover, Fair, HSG A
2.636	69	50-75% Grass cover, Fair, HSG B
0.035	77	Fallow, bare soil, HSG A
0.019	86	Fallow, bare soil, HSG B
0.194	78	Row crops, straight row, Good, HSG B
0.605	36	Woods, Fair, HSG A
0.133	60	Woods, Fair, HSG B
3.648	64	Weighted Average
3.648		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	412	0.0243	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	462	Total			

Subcatchment 4: Subcat 4

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 5: Subcat 5

Runoff = 22.00 cfs @ 12.31 hrs, Volume= 2.238 af, Depth> 3.09"

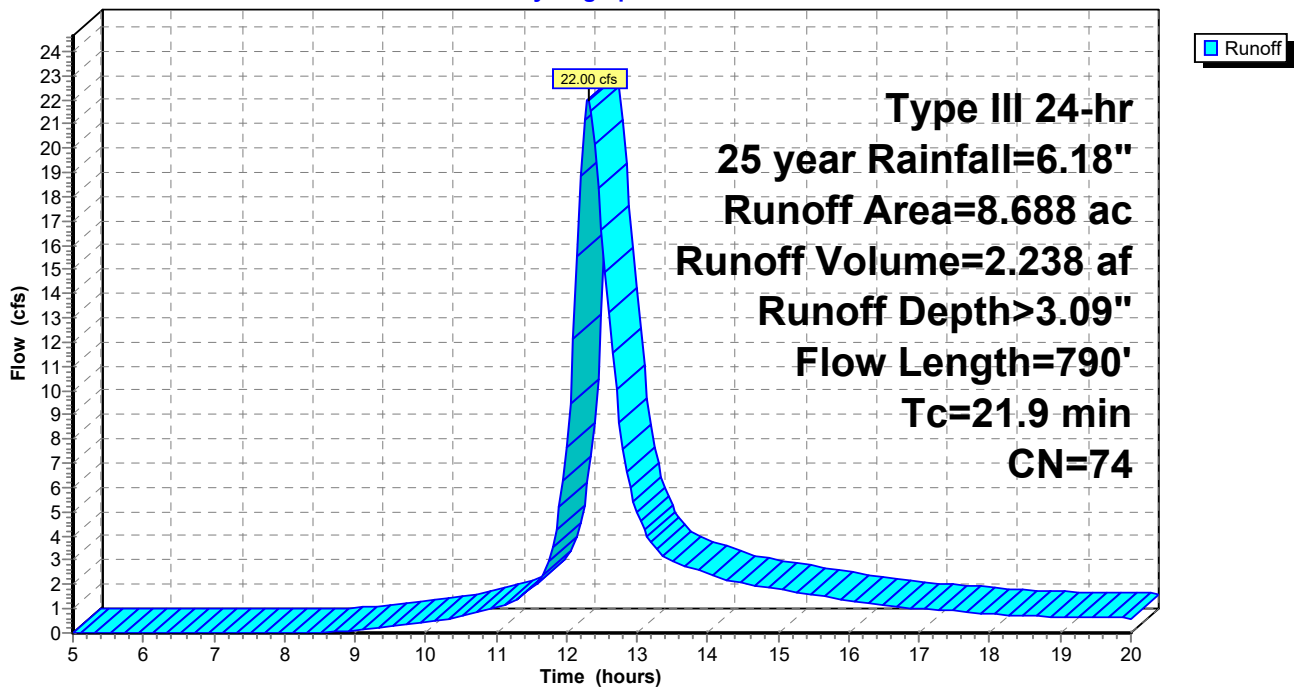
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
1.072	69	50-75% Grass cover, Fair, HSG B
6.772	78	Row crops, straight row, Good, HSG B
0.436	36	Woods, Fair, HSG A
0.407	60	Woods, Fair, HSG B
8.688	74	Weighted Average
8.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
10.6	583	0.0103	0.91		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.0	157	0.0159	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.9	790	Total			

Subcatchment 5: Subcat 5

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 6: Subcat 6

Runoff = 18.32 cfs @ 12.22 hrs, Volume= 1.620 af, Depth> 3.00"

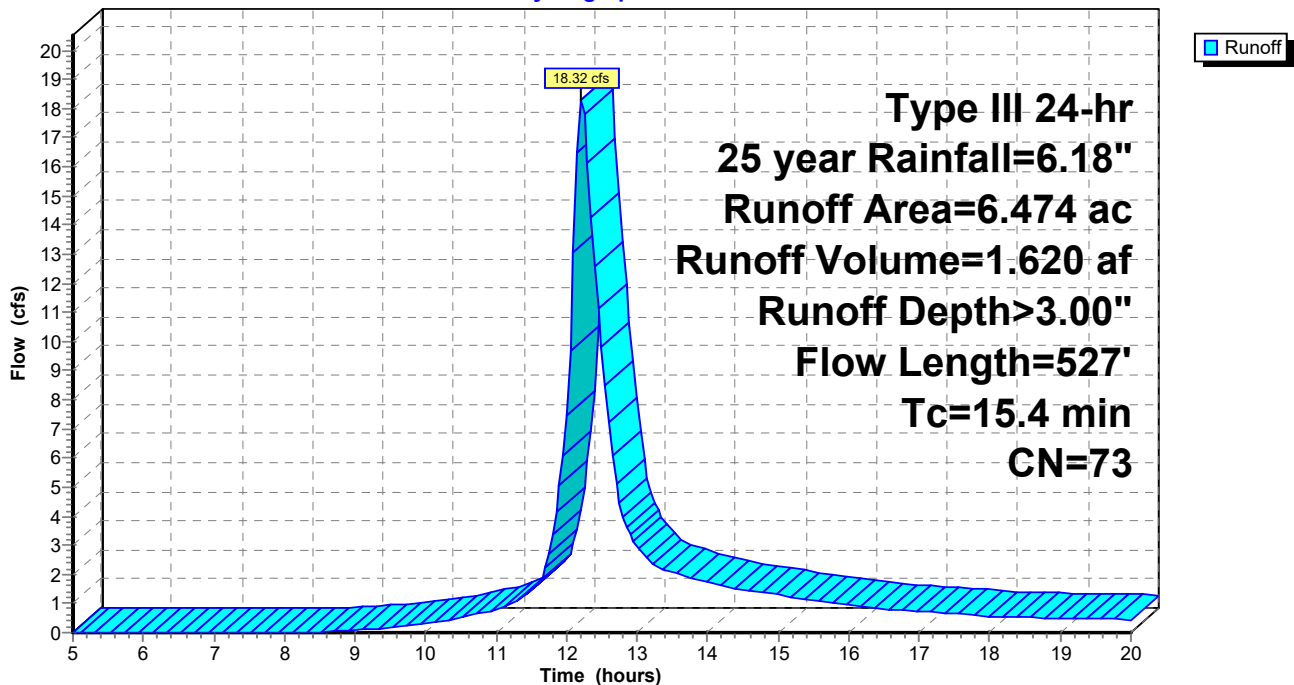
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.098	69	50-75% Grass cover, Fair, HSG B
0.096	67	Row crops, straight row, Good, HSG A
5.190	78	Row crops, straight row, Good, HSG B
0.452	36	Woods, Fair, HSG A
0.638	60	Woods, Fair, HSG B
6.474	73	Weighted Average
6.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.4	415	0.0145	1.08		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
0.7	62	0.0806	1.42		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.4	527	Total			

Subcatchment 6: Subcat 6

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 7: Subcat 7

Runoff = 35.39 cfs @ 12.56 hrs, Volume= 4.783 af, Depth> 3.36"

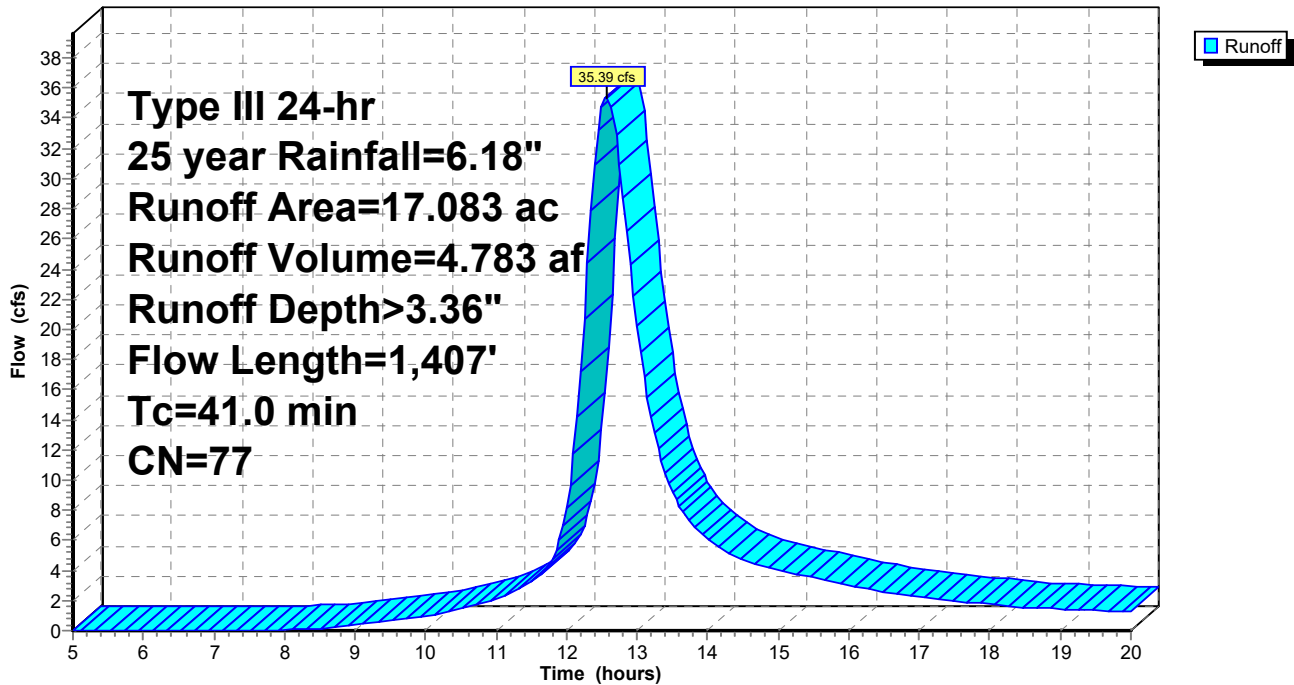
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.999	69	50-75% Grass cover, Fair, HSG B
15.573	78	Row crops, straight row, Good, HSG B
0.511	60	Woods, Fair, HSG B
17.083	77	Weighted Average
17.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
32.7	1,357	0.0059	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
41.0	1,407	Total			

Subcatchment 7: Subcat 7

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 8: (new Subcat)

Runoff = 9.30 cfs @ 12.15 hrs, Volume= 0.712 af, Depth> 2.73"

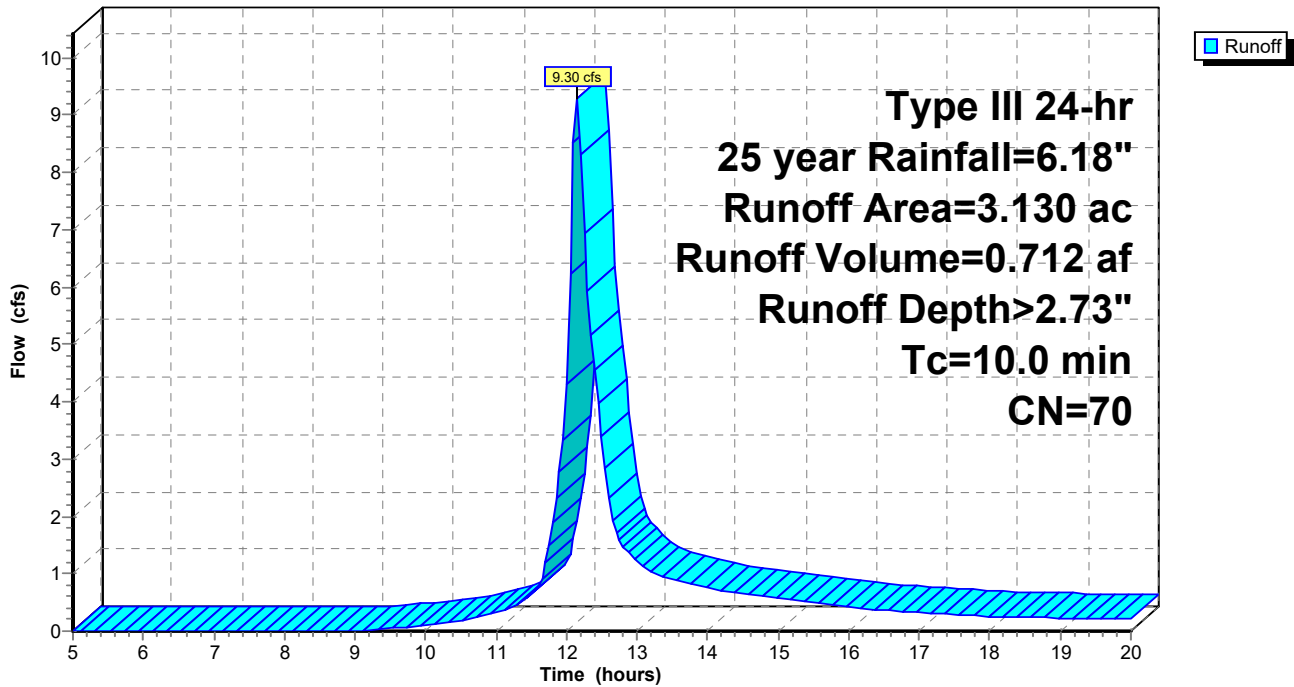
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
1.670	78	Row crops, straight row, Good, HSG B
* 1.460	60	Woods, Fair, HSG B
3.130	70	Weighted Average
3.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8: (new Subcat)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 10: Subcat 10

Runoff = 7.60 cfs @ 12.19 hrs, Volume= 0.644 af, Depth> 2.11"

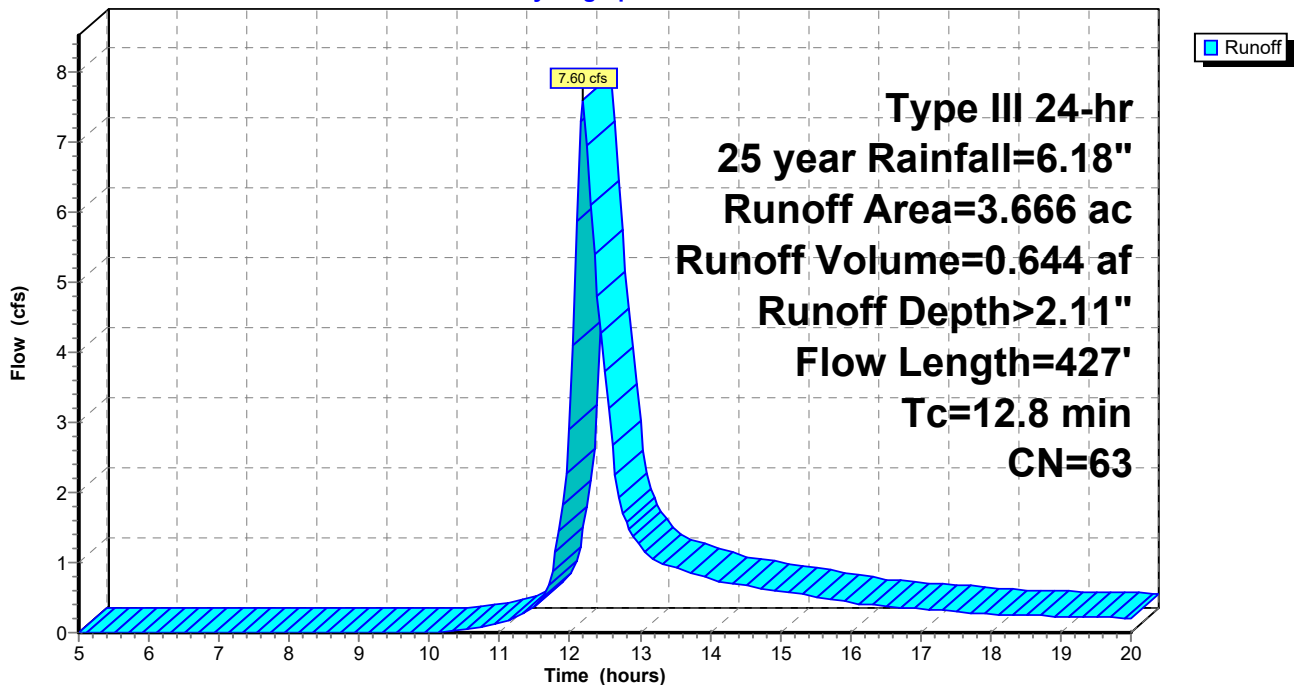
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.042	69	50-75% Grass cover, Fair, HSG B
0.022	67	Row crops, straight row, Good, HSG A
1.722	78	Row crops, straight row, Good, HSG B
0.840	36	Woods, Fair, HSG A
1.039	60	Woods, Fair, HSG B
3.666	63	Weighted Average
3.666		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
3.5	261	0.0192	1.25		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.0	116	0.1379	1.86		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
12.8	427	Total			

Subcatchment 10: Subcat 10

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 11: Subcat 11

Runoff = 8.50 cfs @ 12.24 hrs, Volume= 0.799 af, Depth> 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.368	56	Brush, Fair, HSG B
0.096	89	Paved roads w/open ditches, 50% imp, HSG B
0.097	67	Row crops, straight row, Good, HSG A
2.068	78	Row crops, straight row, Good, HSG B
2.107	36	Woods, Fair, HSG A
0.925	60	Woods, Fair, HSG B
5.661	58	Weighted Average
5.613		99.15% Pervious Area
0.048		0.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.7	316	0.0158	1.13		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.6	232	0.0862	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.6	598	Total			

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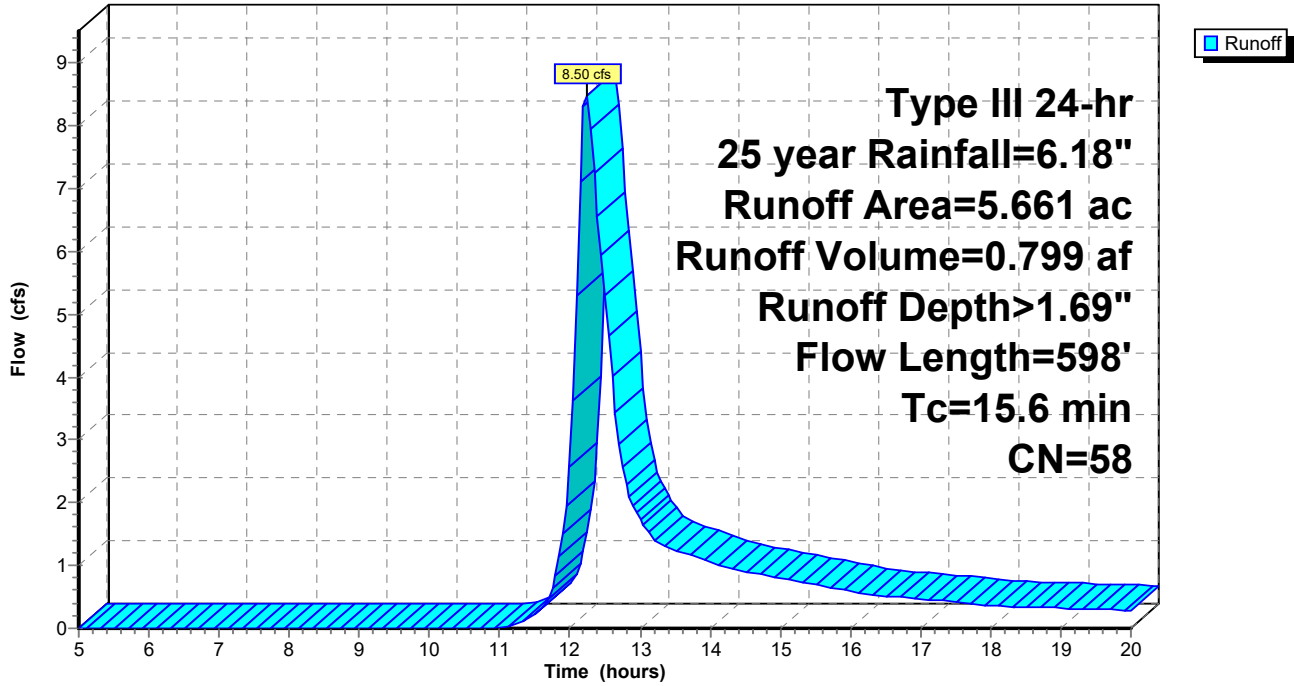
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 11: Subcat 11

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 11A: Subcat 11A

Runoff = 3.10 cfs @ 12.21 hrs, Volume= 0.377 af, Depth> 0.70"

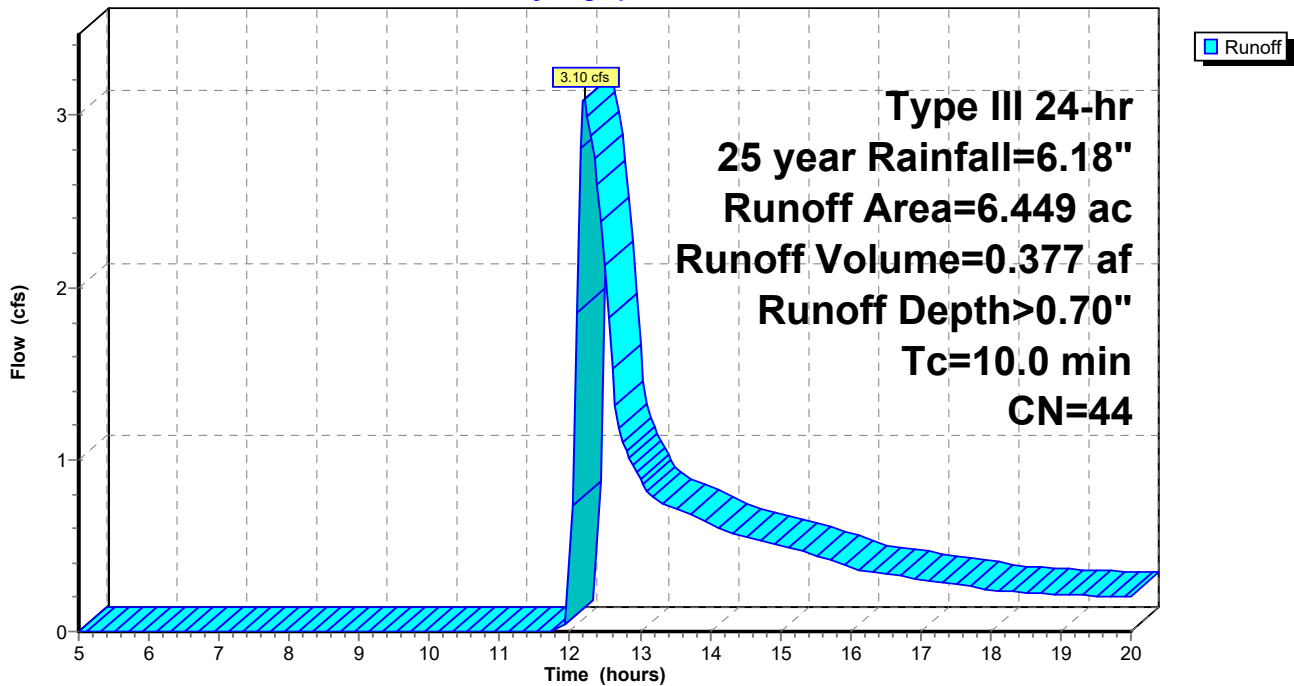
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.874	56	Brush, Fair, HSG B
0.859	78	Row crops, straight row, Good, HSG B
4.716	36	Woods, Fair, HSG A
6.449	44	Weighted Average
6.449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11A: Subcat 11A

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 12: Subcat 12

Runoff = 9.14 cfs @ 12.19 hrs, Volume= 0.785 af, Depth> 3.49"

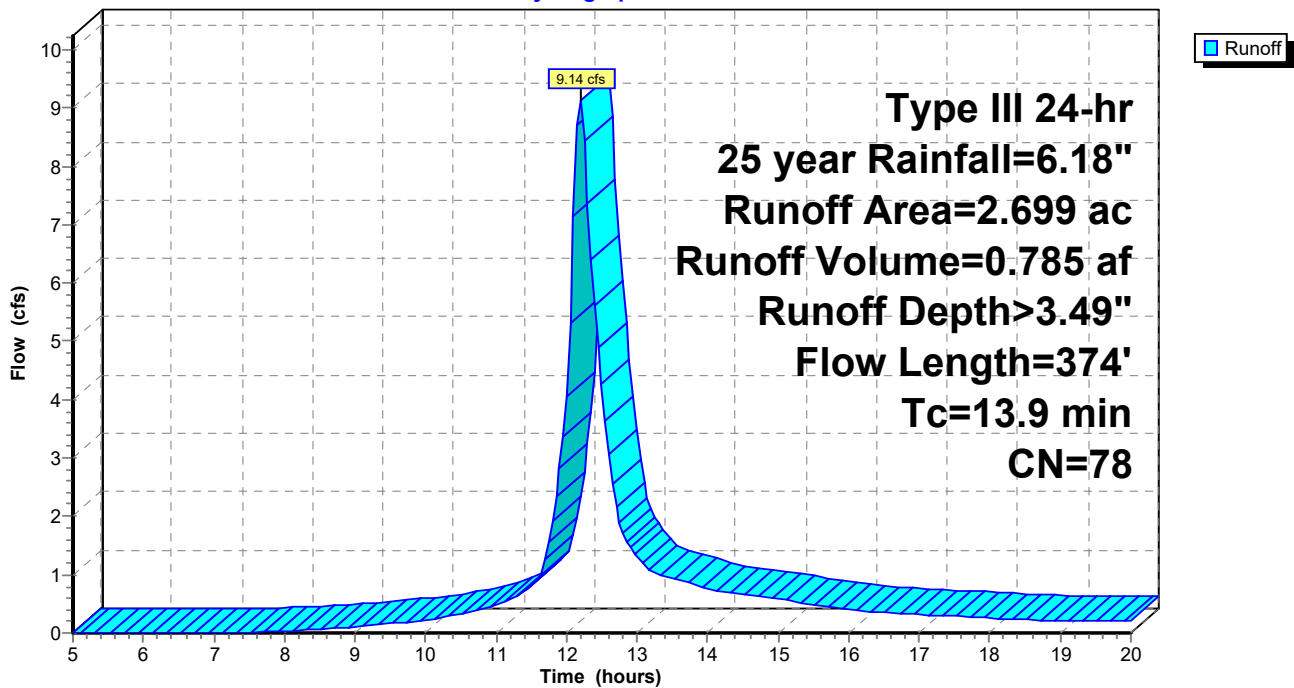
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.525	69	50-75% Grass cover, Fair, HSG B
0.318	89	Paved roads w/open ditches, 50% imp, HSG B
1.856	78	Row crops, straight row, Good, HSG B
2.699	78	Weighted Average
2.540		94.11% Pervious Area
0.159		5.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.4	225	0.0089	0.85		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	99	0.0404	1.41		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.9	374	Total			

Subcatchment 12: Subcat 12

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 13: Subcat 13

Runoff = 33.84 cfs @ 12.71 hrs, Volume= 5.195 af, Depth> 3.45"

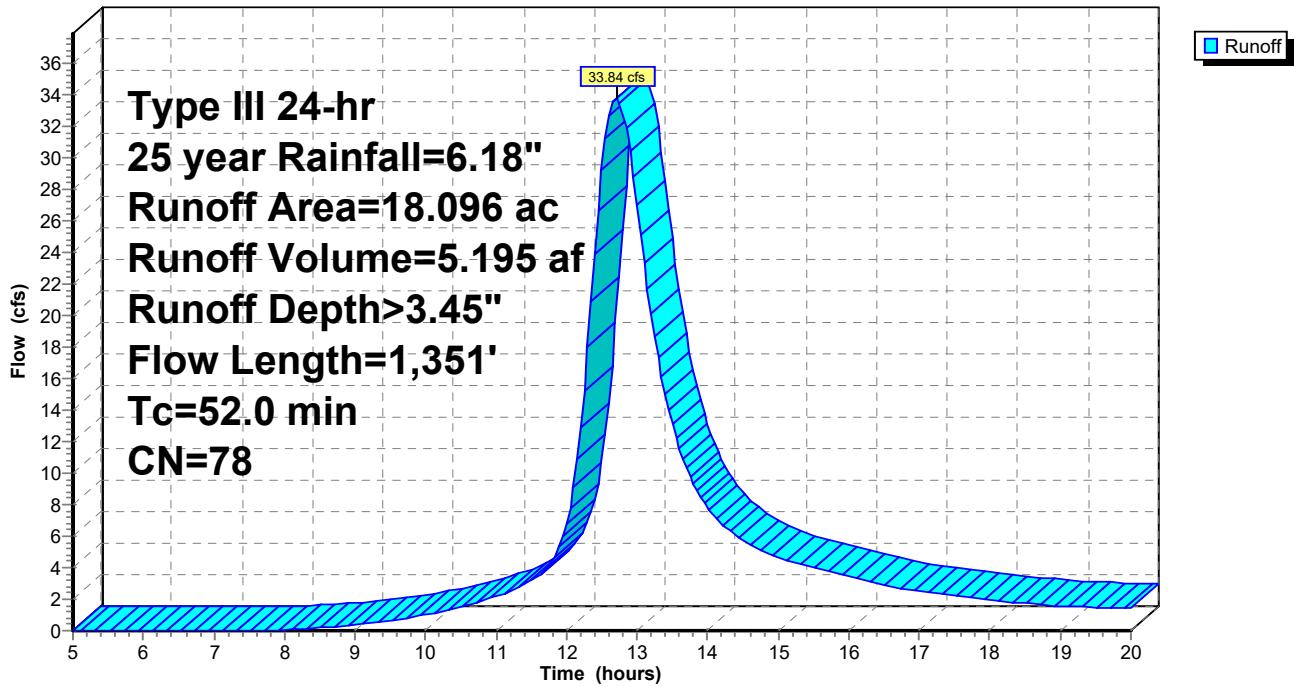
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.387	89	Paved roads w/open ditches, 50% imp, HSG B
17.709	78	Row crops, straight row, Good, HSG B
18.096	78	Weighted Average
17.902		98.93% Pervious Area
0.193		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
26.8	752	0.0027	0.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.9	549	0.0036	0.54		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
52.0	1,351	Total			

Subcatchment 13: Subcat 13

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 14: Subcat 14

Runoff = 2.10 cfs @ 12.17 hrs, Volume= 0.174 af, Depth> 3.49"

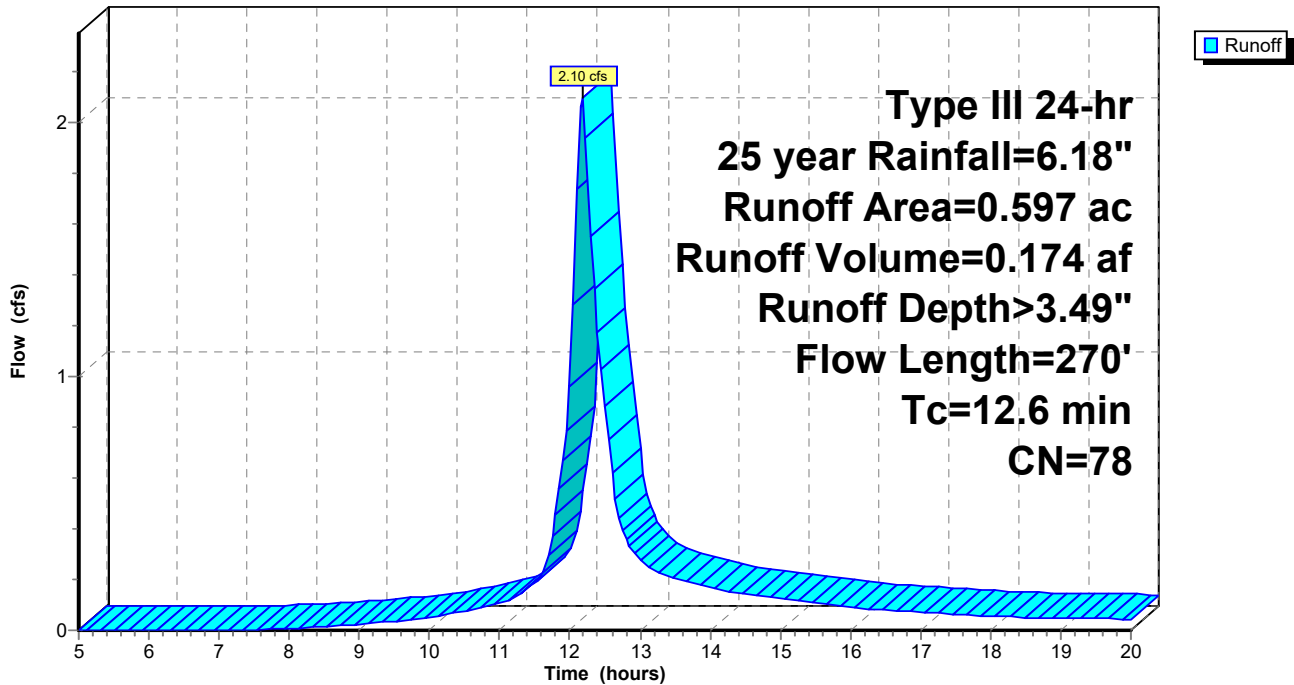
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.597	78	Row crops, straight row, Good, HSG B
0.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.3	220	0.0091	0.86		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
12.6	270	Total			

Subcatchment 14: Subcat 14

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 15: Subcat 15

Runoff = 7.92 cfs @ 12.25 hrs, Volume= 0.753 af, Depth> 3.58"

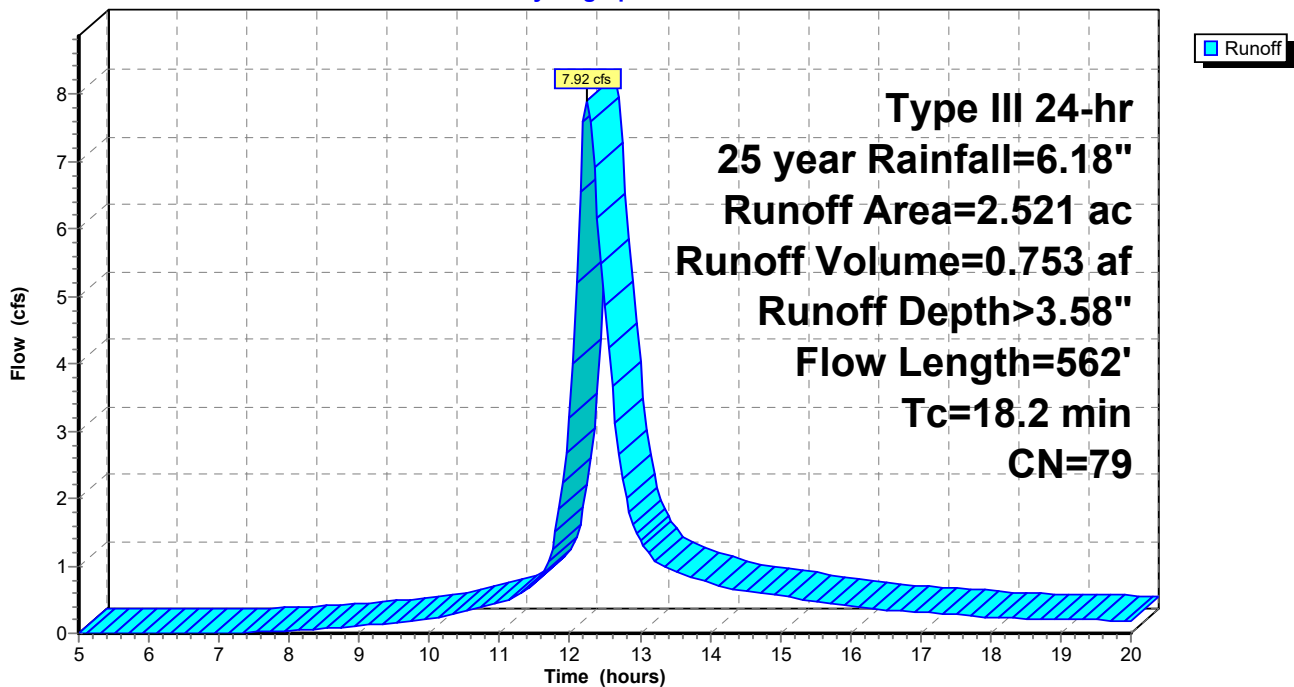
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.028	65	2 acre lots, 12% imp, HSG B
0.235	89	Paved roads w/open ditches, 50% imp, HSG B
2.257	78	Row crops, straight row, Good, HSG B
2.521	79	Weighted Average
2.400		95.19% Pervious Area
0.121		4.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
10.7	512	0.0078	0.79		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.2	562	Total			

Subcatchment 15: Subcat 15

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 16: Subcat 16

Runoff = 12.86 cfs @ 12.33 hrs, Volume= 1.367 af, Depth> 3.48"

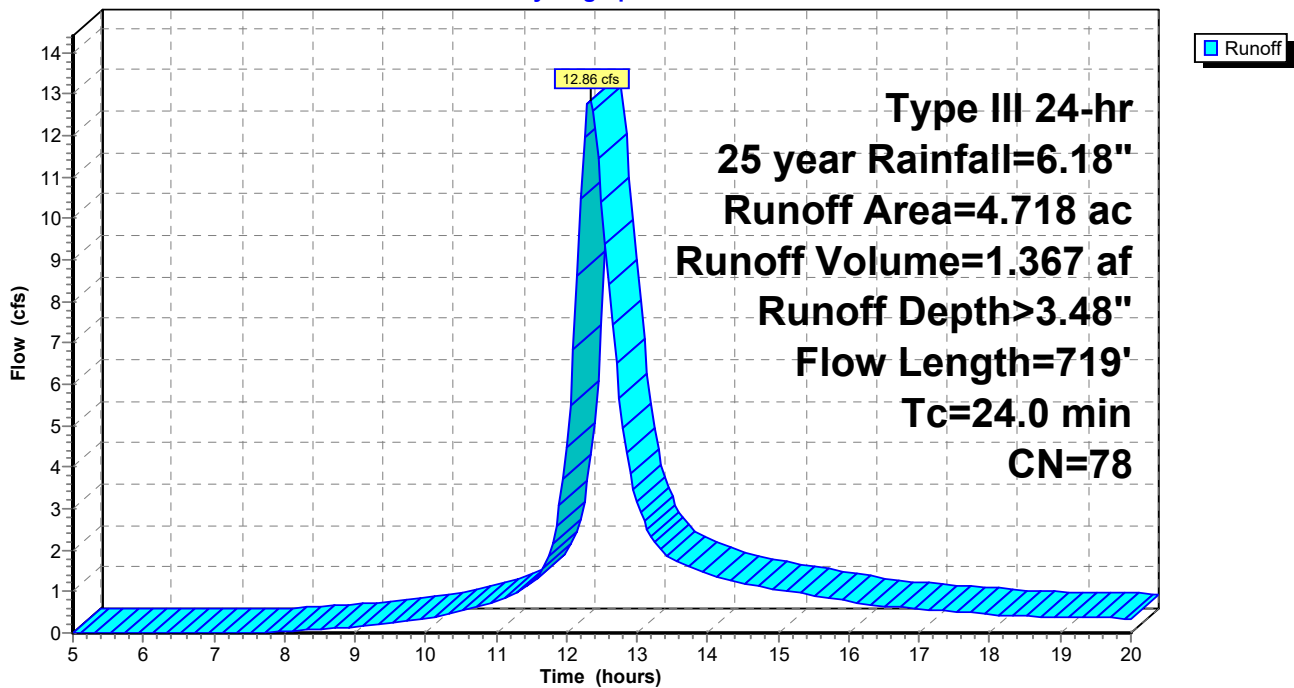
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.087	89	Paved roads w/open ditches, 50% imp, HSG B
4.601	78	Row crops, straight row, Good, HSG B
0.030	60	Woods, Fair, HSG B
4.718	78	Weighted Average
4.674		99.08% Pervious Area
0.044		0.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.1	390	0.0103	0.91		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
8.6	279	0.0036	0.54		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
24.0	719	Total			

Subcatchment 16: Subcat 16

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 17: Subcat 17

Runoff = 14.43 cfs @ 12.28 hrs, Volume= 1.418 af, Depth> 3.19"

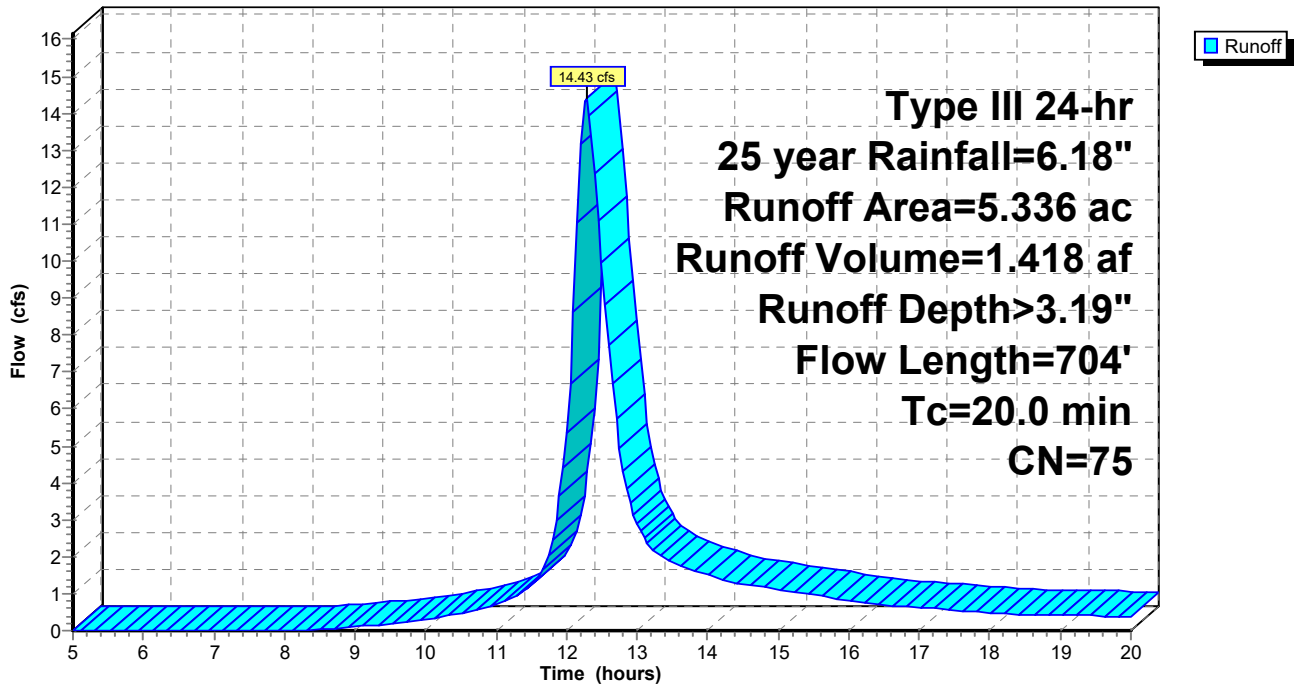
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.000	69	50-75% Grass cover, Fair, HSG B
4.585	78	Row crops, straight row, Good, HSG B
0.752	60	Woods, Fair, HSG B
5.336	75	Weighted Average
5.336		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.7	654	0.0107	0.93		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.0	704	Total			

Subcatchment 17: Subcat 17

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 18: Subcat 18

Runoff = 4.73 cfs @ 12.30 hrs, Volume= 0.479 af, Depth> 3.28"

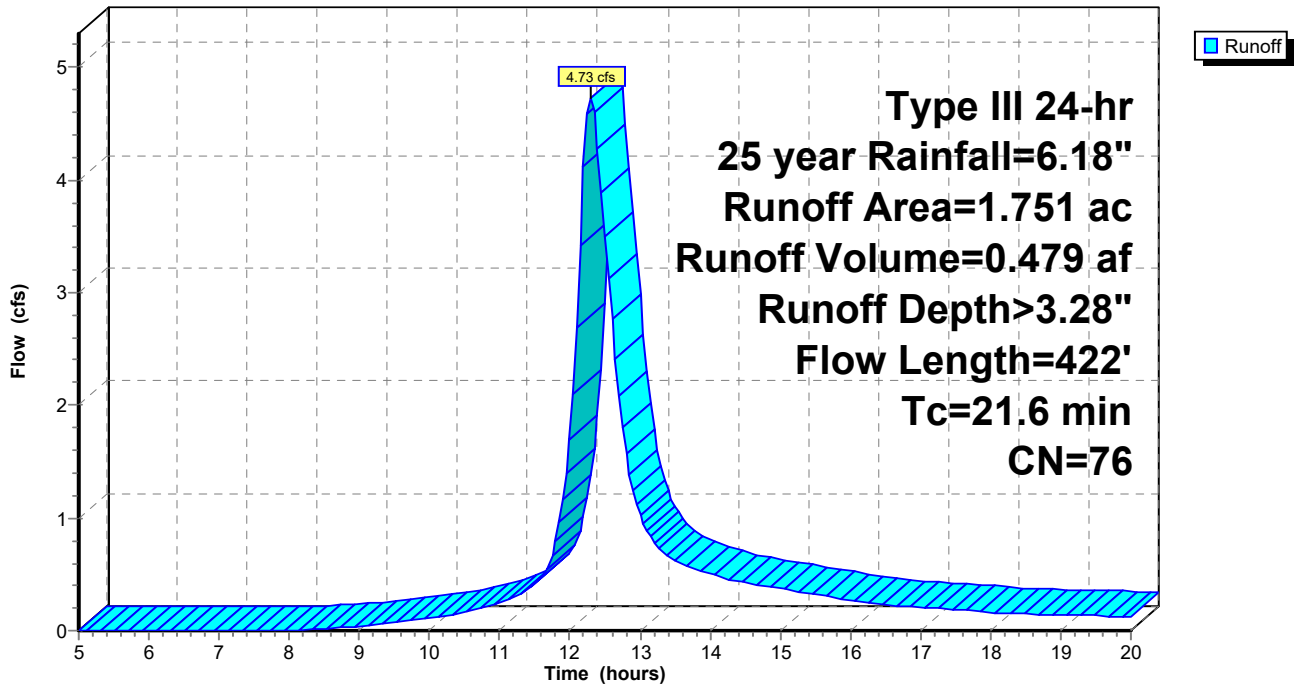
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.028	69	50-75% Grass cover, Fair, HSG B
1.540	78	Row crops, straight row, Good, HSG B
0.183	60	Woods, Fair, HSG B
1.751	76	Weighted Average
1.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
13.3	372	0.0027	0.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.6	422	Total			

Subcatchment 18: Subcat 18

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 19: Subcat 19

Runoff = 42.97 cfs @ 12.55 hrs, Volume= 5.694 af, Depth> 3.17"

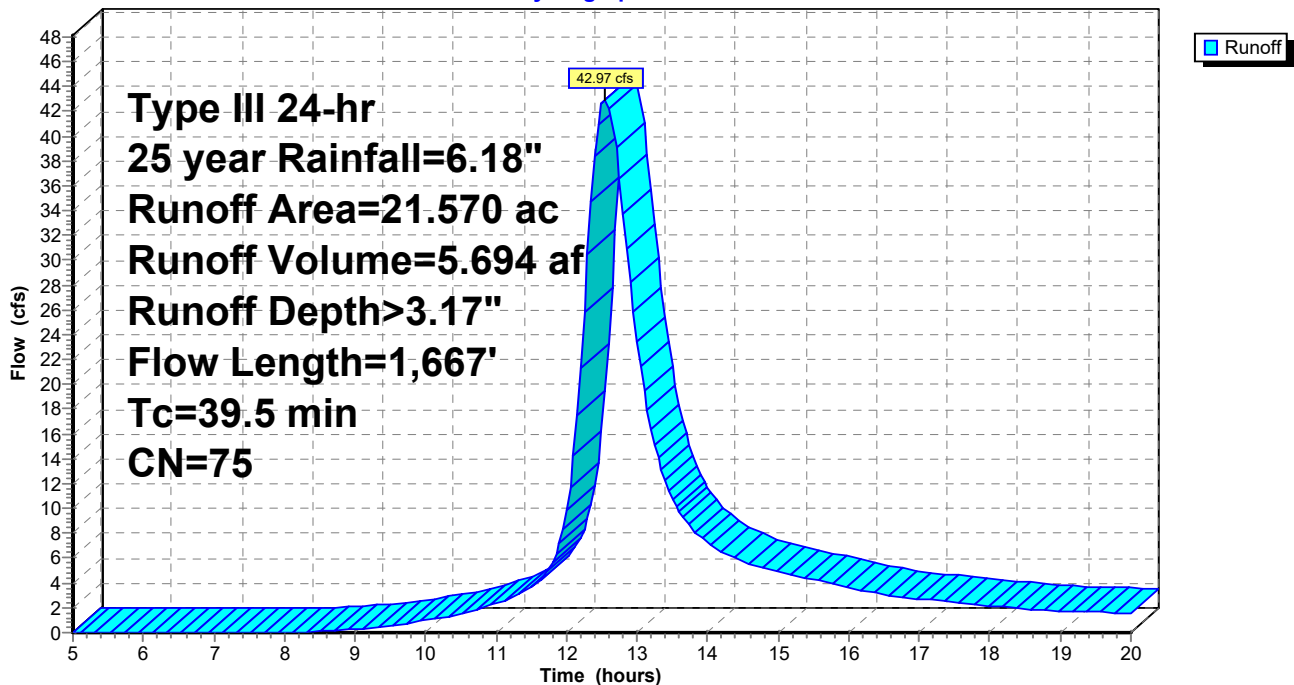
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.134	49	50-75% Grass cover, Fair, HSG A
3.781	69	50-75% Grass cover, Fair, HSG B
17.007	78	Row crops, straight row, Good, HSG B
0.294	36	Woods, Fair, HSG A
0.355	60	Woods, Fair, HSG B
21.570	75	Weighted Average
21.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
23.6	1,090	0.0073	0.77		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.6	527	0.0171	0.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
39.5	1,667	Total			

Subcatchment 19: Subcat 19

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 20: Subcat 20

Runoff = 4.27 cfs @ 12.26 hrs, Volume= 0.407 af, Depth> 3.00"

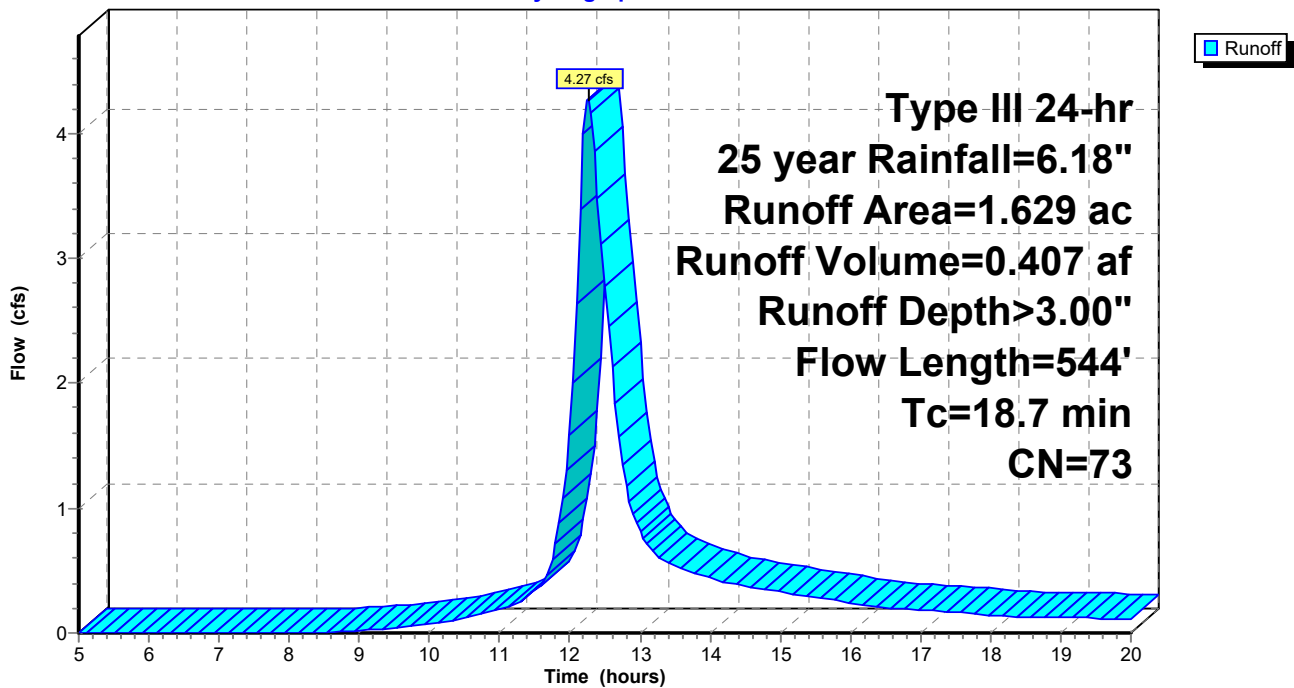
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.573	69	50-75% Grass cover, Fair, HSG B
0.876	78	Row crops, straight row, Good, HSG B
0.002	36	Woods, Fair, HSG A
0.178	60	Woods, Fair, HSG B
1.629	73	Weighted Average
1.629		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.3	251	0.0040	0.57		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.1	243	0.0206	1.29		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.7	544	Total			

Subcatchment 20: Subcat 20

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 21: Subcat 21

Runoff = 8.10 cfs @ 12.39 hrs, Volume= 0.902 af, Depth> 2.71"

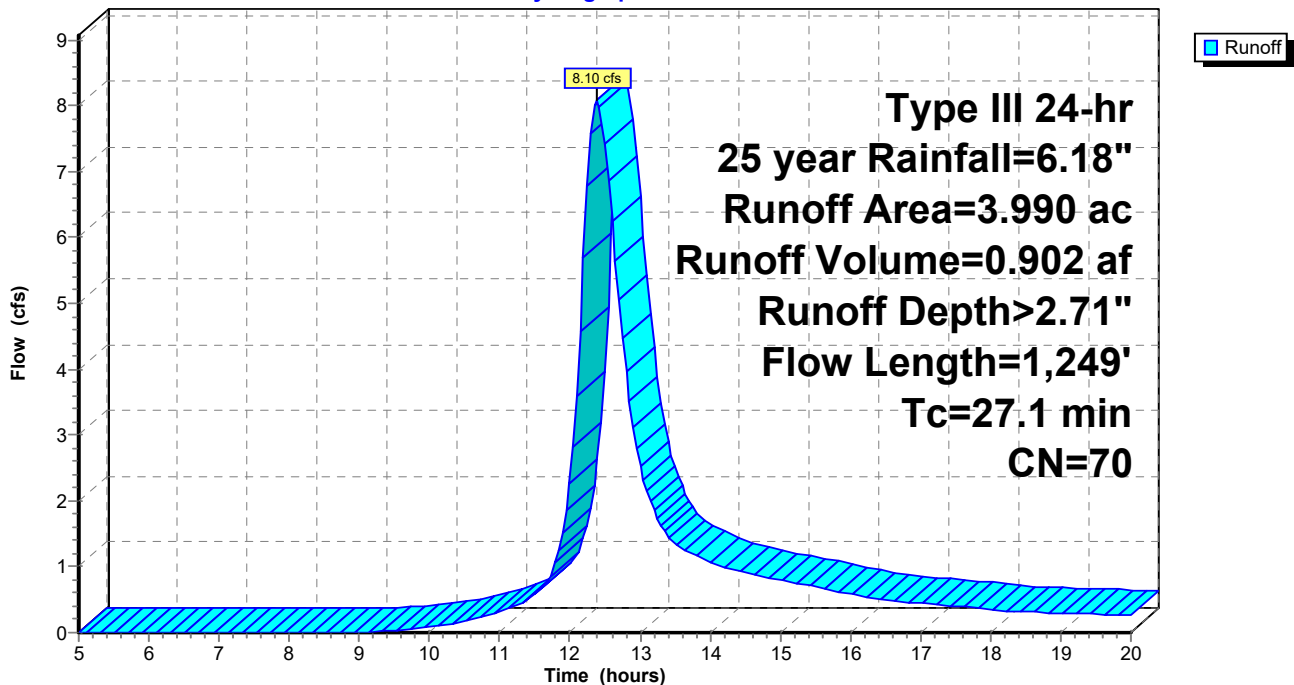
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.039	49	50-75% Grass cover, Fair, HSG A
1.109	69	50-75% Grass cover, Fair, HSG B
2.328	78	Row crops, straight row, Good, HSG B
0.426	36	Woods, Fair, HSG A
0.089	60	Woods, Fair, HSG B
3.990	70	Weighted Average
3.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.7	584	0.0086	0.83		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.1	615	0.0260	1.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
27.1	1,249	Total			

Subcatchment 21: Subcat 21

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 22: Subcat 22

Runoff = 27.68 cfs @ 12.76 hrs, Volume= 4.372 af, Depth> 2.96"

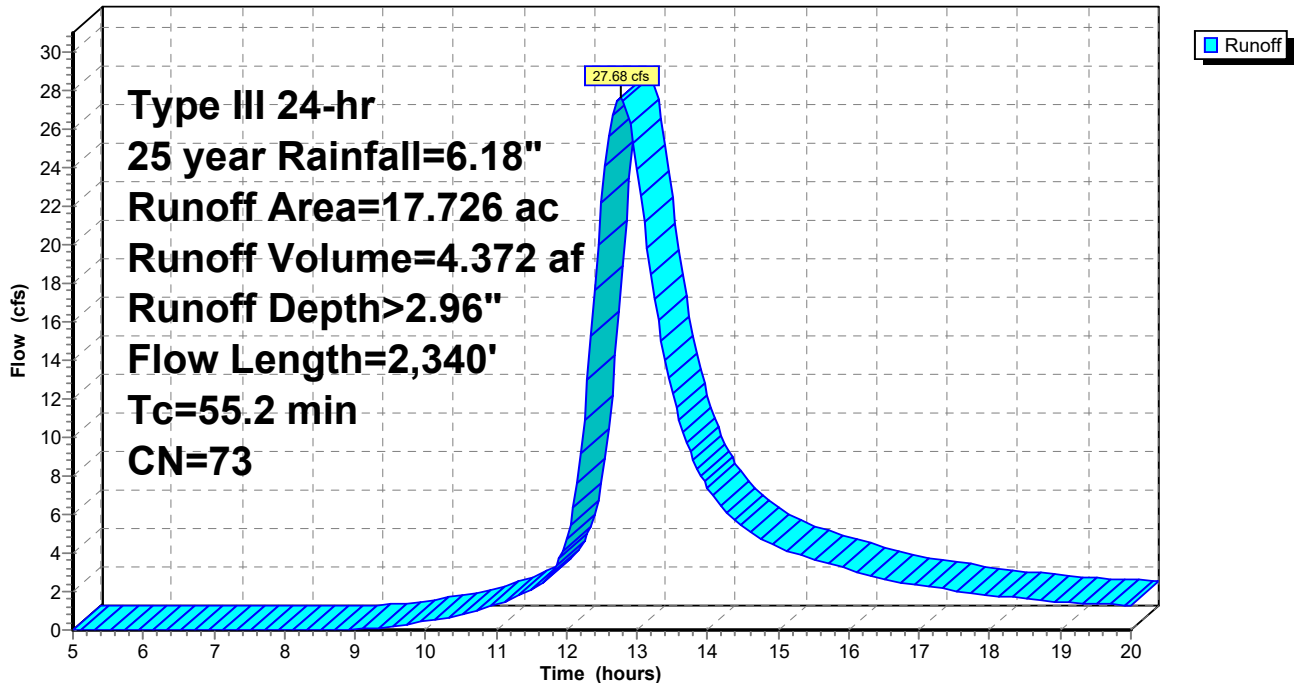
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
4.876	69	50-75% Grass cover, Fair, HSG B
0.440	56	Brush, Fair, HSG B
10.915	78	Row crops, straight row, Good, HSG B
1.496	60	Woods, Fair, HSG B
17.726	73	Weighted Average
17.726		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
35.0	1,416	0.0056	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
8.8	636	0.0299	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.1	238	0.0336	1.28		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
55.2	2,340	Total			

Subcatchment 22: Subcat 22

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 23: Subcat 23

[49] Hint: Tc<2dt may require smaller dt

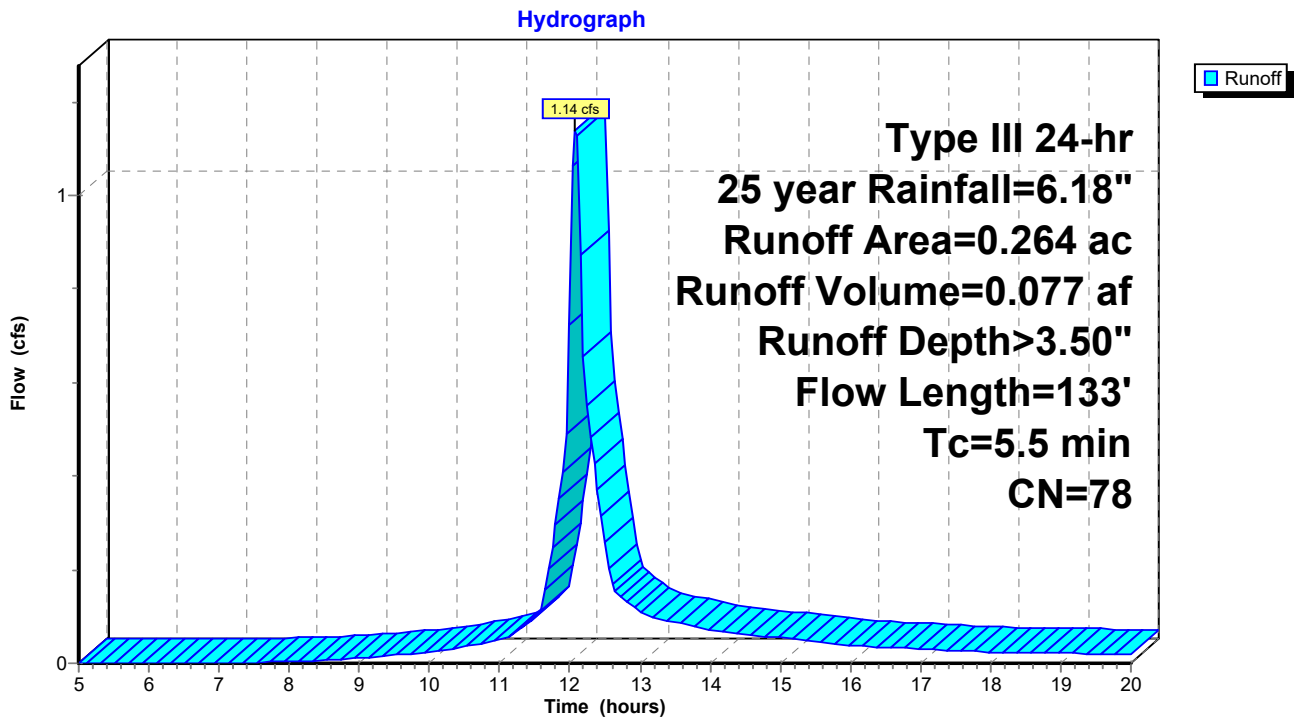
Runoff = 1.14 cfs @ 12.08 hrs, Volume= 0.077 af, Depth> 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.264	78	Row crops, straight row, Good, HSG B
0.264		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0400	0.18		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
0.8	83	0.0361	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
5.5	133	Total			

Subcatchment 23: Subcat 23



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 24: Subcat 24

Runoff = 8.00 cfs @ 12.22 hrs, Volume= 0.722 af, Depth> 3.10"

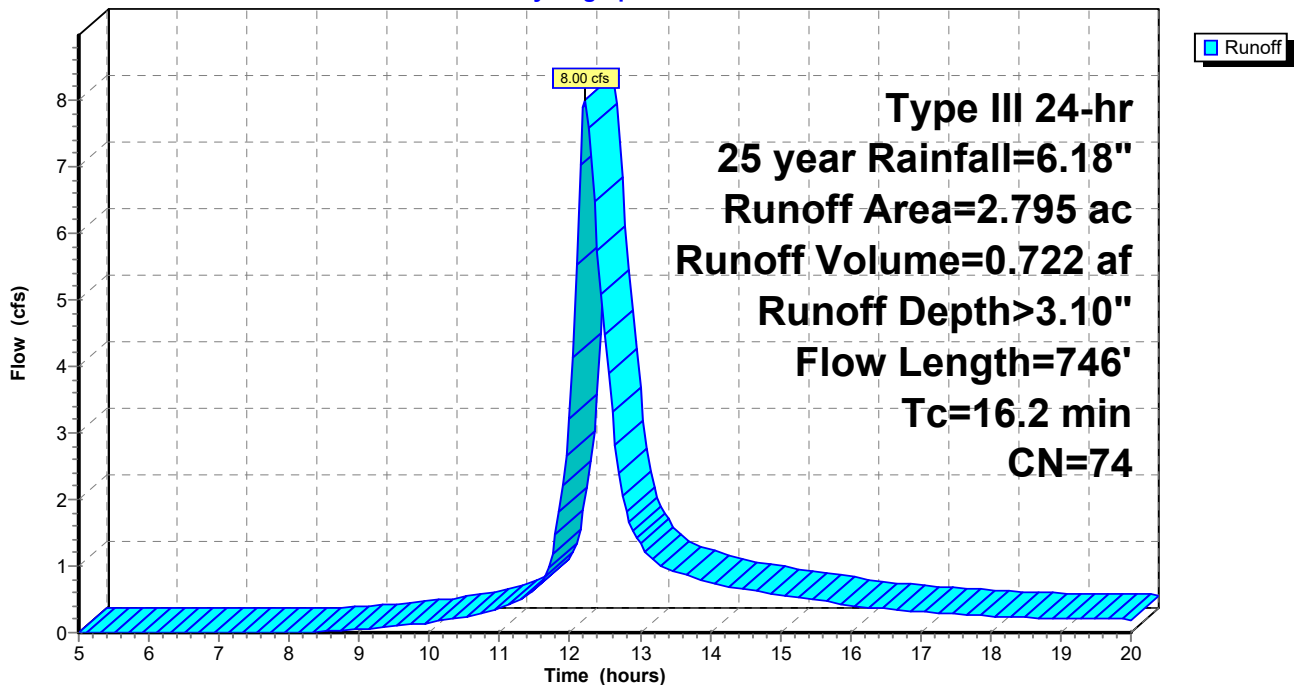
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.439	56	Brush, Fair, HSG B
2.345	78	Row crops, straight row, Good, HSG B
0.012	60	Woods, Fair, HSG B
2.795	74	Weighted Average
2.795		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.4	284	0.0141	1.07		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
0.8	112	0.1071	2.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.7	300	0.0433	1.87		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.2	746	Total			

Subcatchment 24: Subcat 24

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 25: Subcat 25

Runoff = 25.42 cfs @ 12.53 hrs, Volume= 3.311 af, Depth> 3.27"

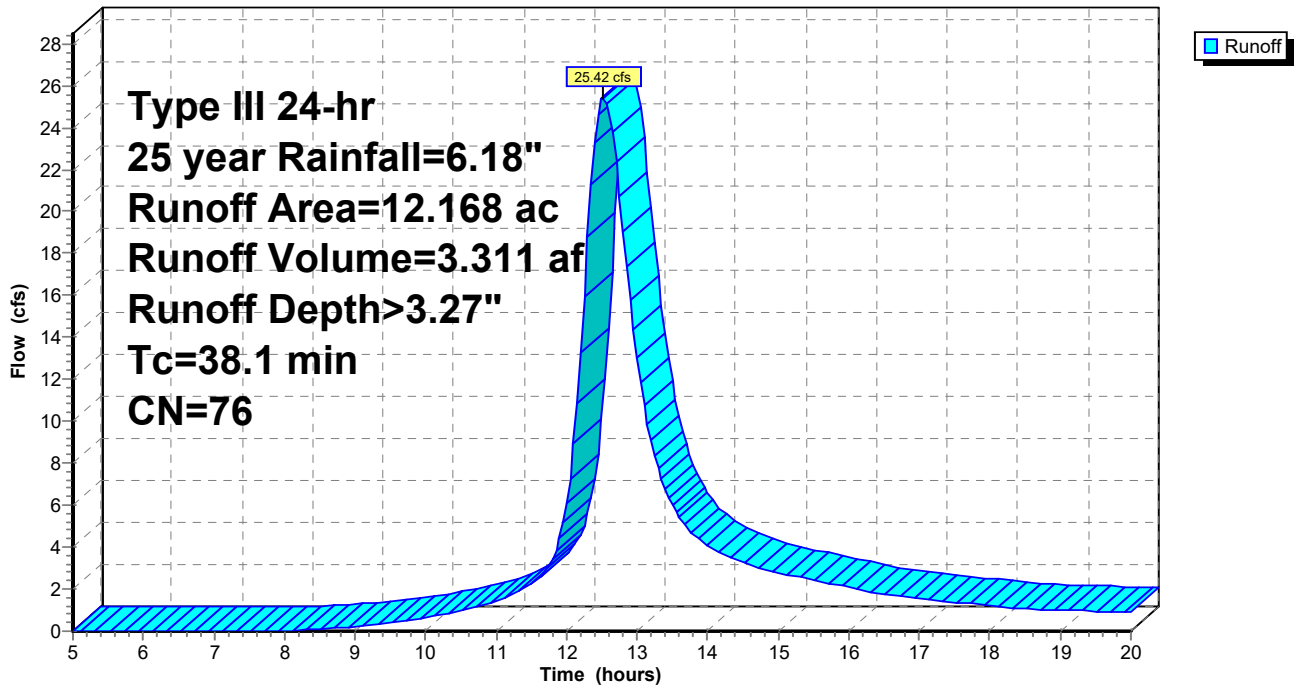
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.022	69	50-75% Grass cover, Fair, HSG B
11.271	78	Row crops, straight row, Good, HSG B
0.129	36	Woods, Fair, HSG A
0.746	60	Woods, Fair, HSG B
12.168	76	Weighted Average
12.168		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.1					Direct Entry,

Subcatchment 25: Subcat 25

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 27: Subcat 27

Runoff = 4.76 cfs @ 12.28 hrs, Volume= 0.463 af, Depth> 2.54"

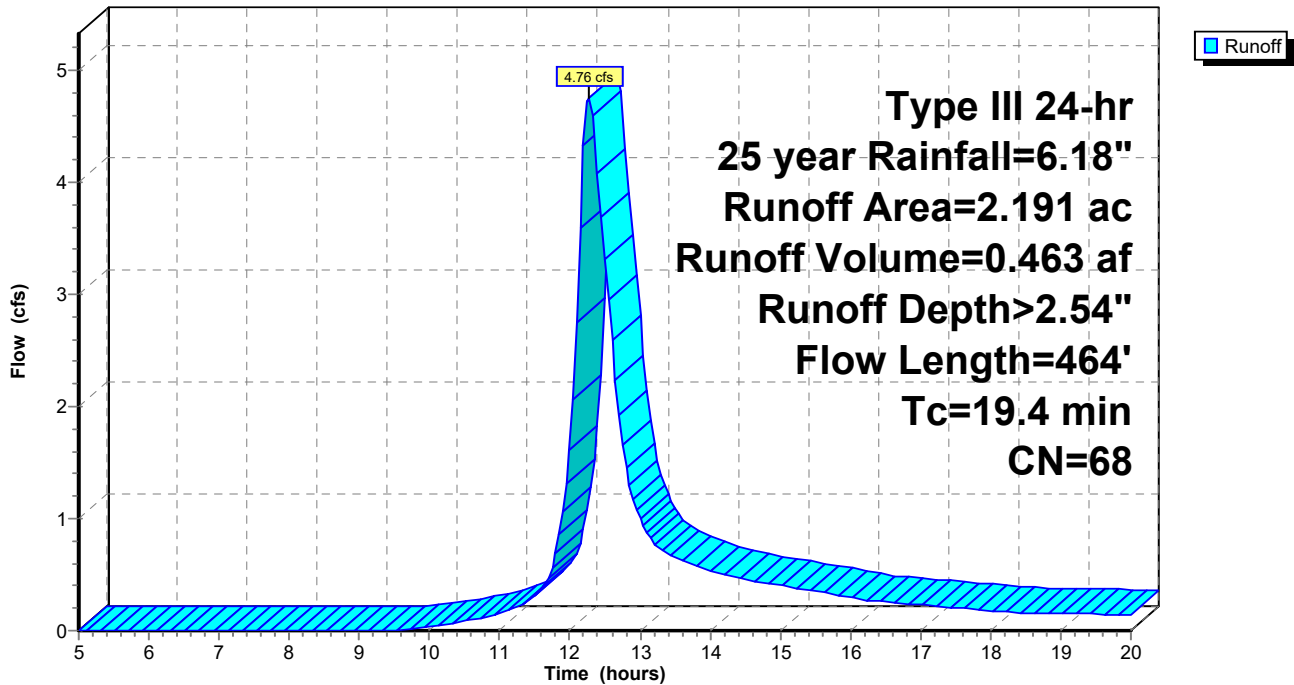
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
1.050	78	Row crops, straight row, Good, HSG B
0.036	36	Woods, Fair, HSG A
1.105	60	Woods, Fair, HSG B
2.191	68	Weighted Average
2.191		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.1	414	0.0048	0.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
19.4	464	Total			

Subcatchment 27: Subcat 27

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 28: Subcat 28

Runoff = 11.12 cfs @ 12.23 hrs, Volume= 1.038 af, Depth> 1.69"

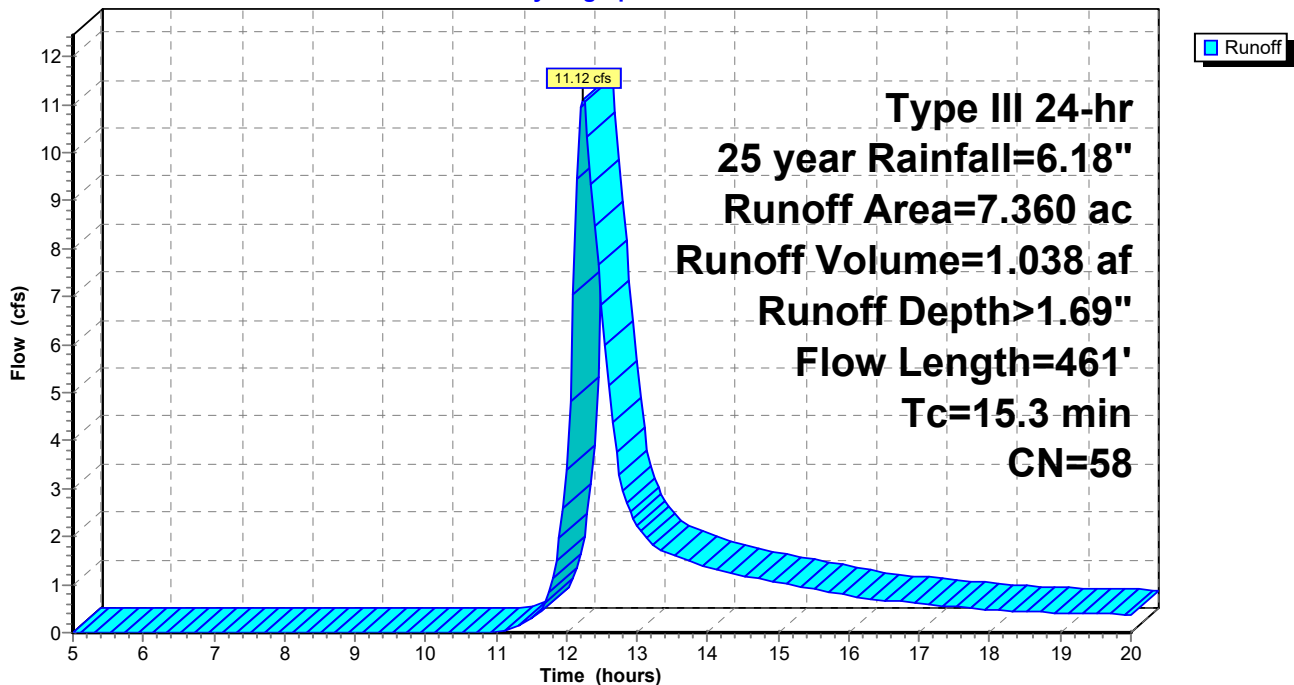
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.095	49	50-75% Grass cover, Fair, HSG A
1.457	69	50-75% Grass cover, Fair, HSG B
2.094	78	Row crops, straight row, Good, HSG B
2.776	36	Woods, Fair, HSG A
0.938	60	Woods, Fair, HSG B
7.360	58	Weighted Average
7.360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.8	269	0.0074	0.77		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	142	0.1479	1.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	461	Total			

Subcatchment 28: Subcat 28

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 29: Subcat 29

Runoff = 0.15 cfs @ 12.52 hrs, Volume= 0.037 af, Depth> 0.27"

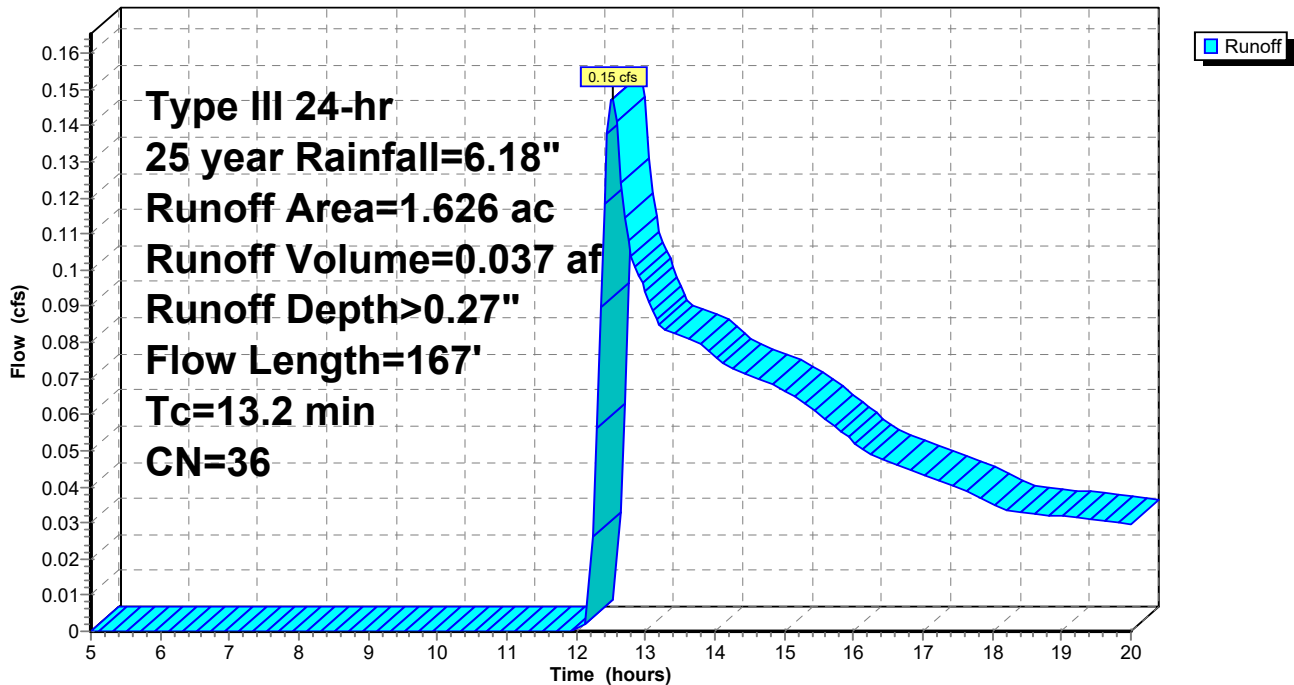
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.000	49	50-75% Grass cover, Fair, HSG A
0.006	69	50-75% Grass cover, Fair, HSG B
1.620	36	Woods, Fair, HSG A
0.000	60	Woods, Fair, HSG B
1.626	36	Weighted Average
1.626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
0.8	117	0.2222	2.36		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.2	167	Total			

Subcatchment 29: Subcat 29

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 30: Subcat 30

Runoff = 11.24 cfs @ 12.16 hrs, Volume= 0.889 af, Depth> 2.73"

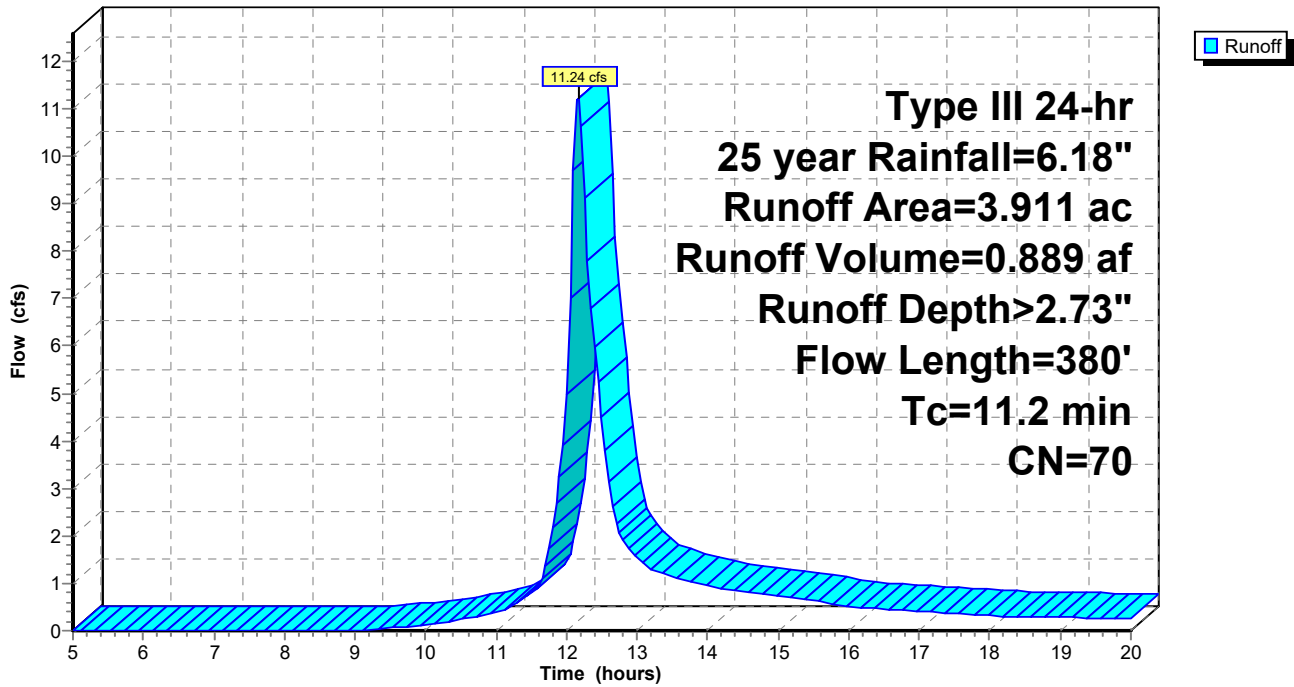
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.008	49	50-75% Grass cover, Fair, HSG A
3.548	69	50-75% Grass cover, Fair, HSG B
0.040	86	Fallow, bare soil, HSG B
0.311	78	Row crops, straight row, Good, HSG B
0.004	36	Woods, Fair, HSG A
3.911	70	Weighted Average
3.911		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.4	330	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.2	380	Total			

Subcatchment 30: Subcat 30

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 31: Subcat 31

Runoff = 1.07 cfs @ 12.29 hrs, Volume= 0.160 af, Depth> 0.53"

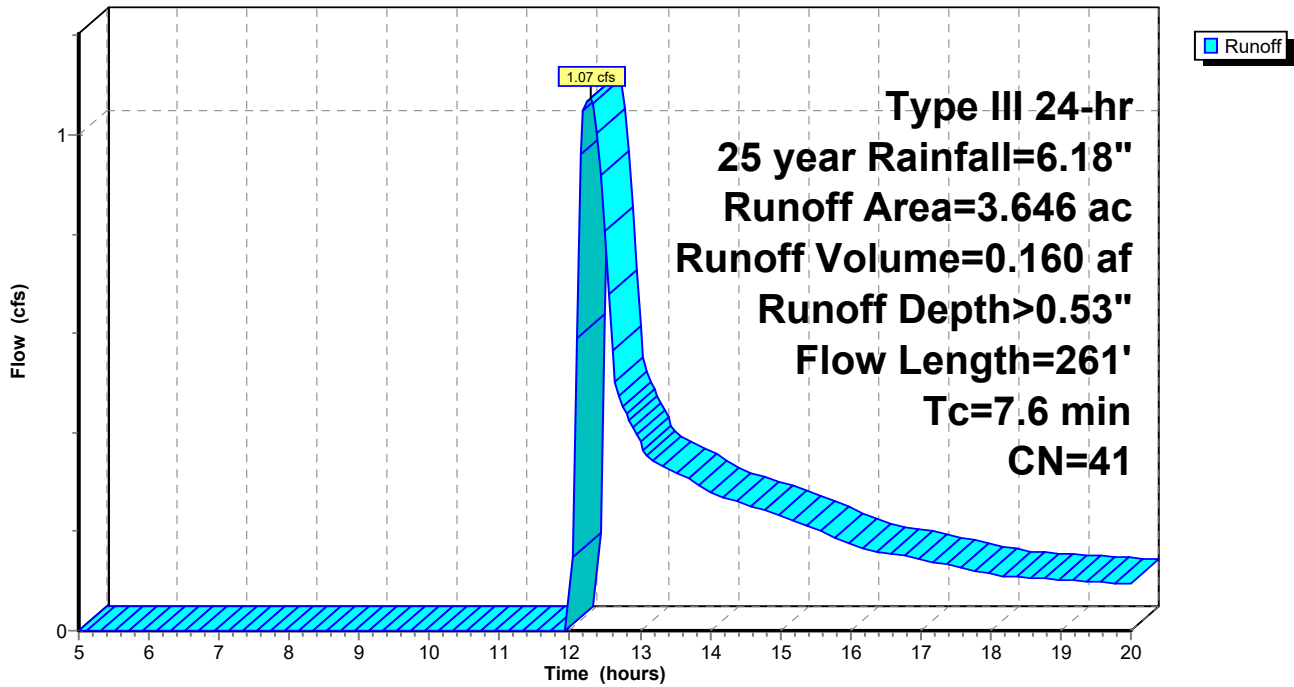
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.132	49	50-75% Grass cover, Fair, HSG A
0.518	69	50-75% Grass cover, Fair, HSG B
0.014	77	Fallow, bare soil, HSG A
0.011	86	Fallow, bare soil, HSG B
2.971	36	Woods, Fair, HSG A
3.646	41	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.9	211	0.1374	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.6	261	Total			

Subcatchment 31: Subcat 31

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 32: Subcat 32

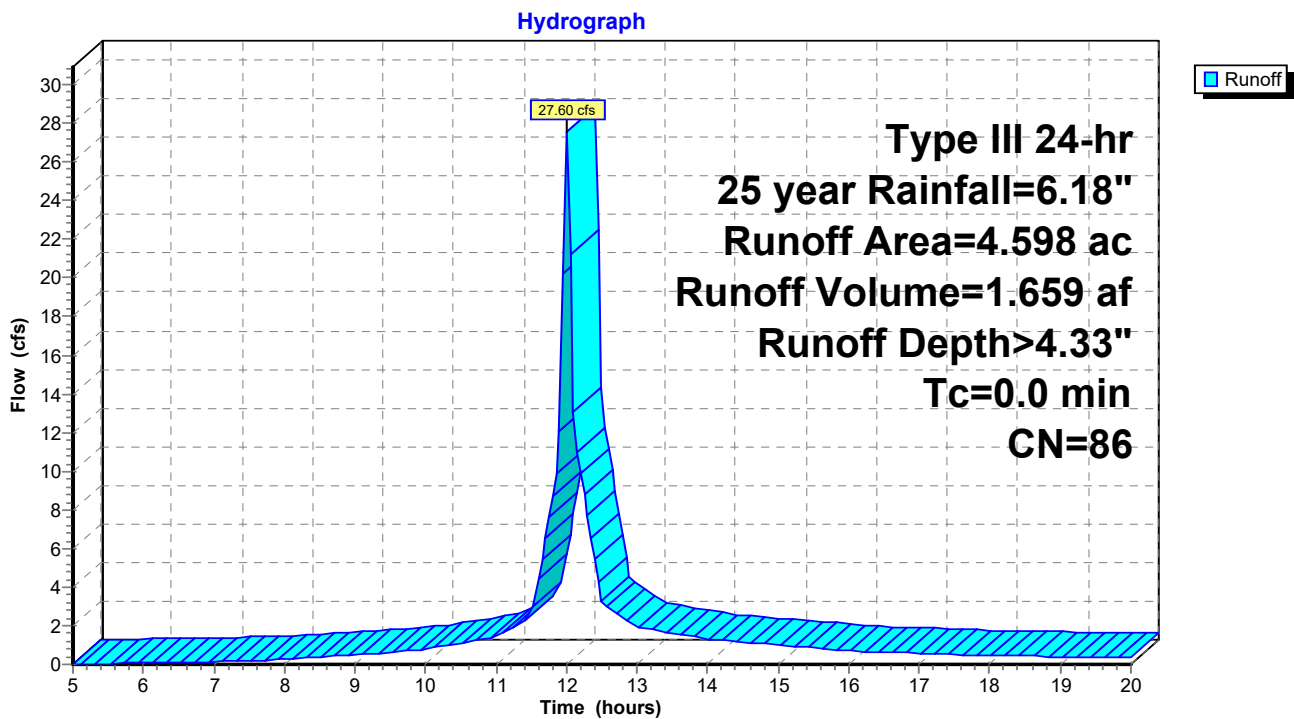
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 27.60 cfs @ 12.00 hrs, Volume= 1.659 af, Depth> 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.006	49	50-75% Grass cover, Fair, HSG A
0.012	69	50-75% Grass cover, Fair, HSG B
0.089	77	Fallow, bare soil, HSG A
4.486	86	Fallow, bare soil, HSG B
0.006	36	Woods, Fair, HSG A
4.598	86	Weighted Average
4.598		100.00% Pervious Area

Subcatchment 32: Subcat 32



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 33: Subcat 33

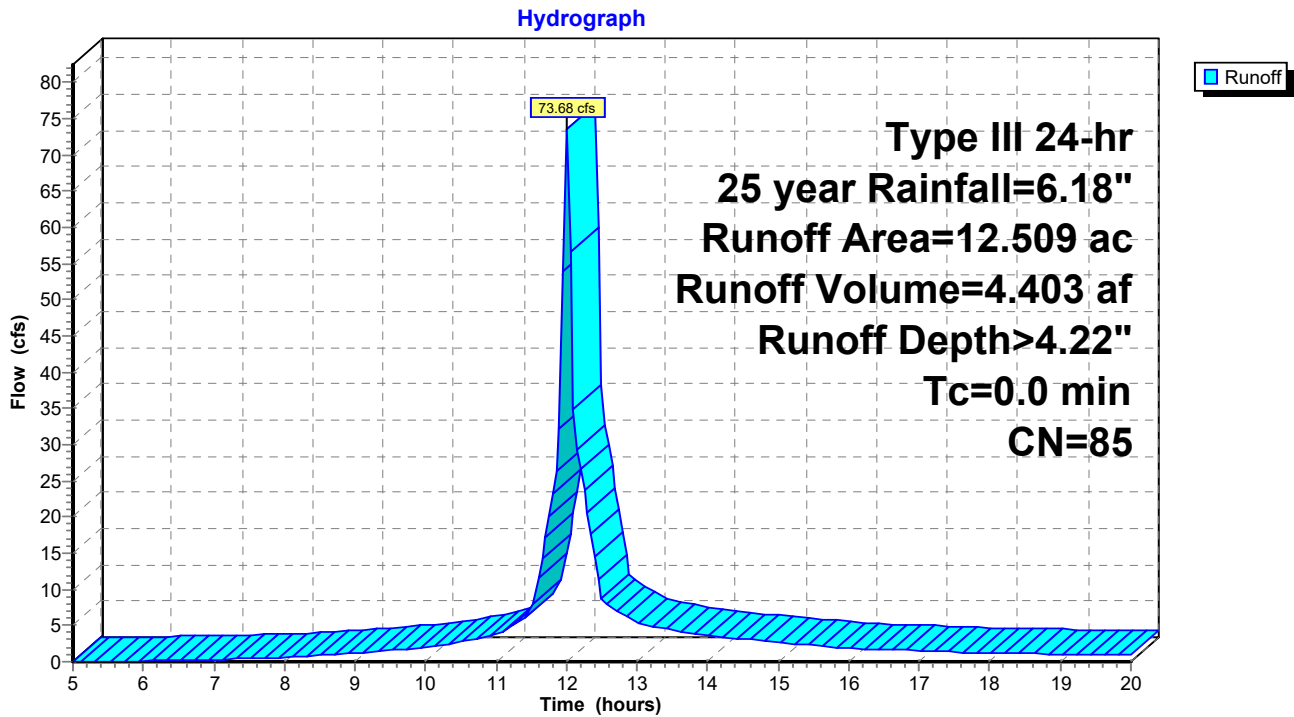
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 73.68 cfs @ 12.00 hrs, Volume= 4.403 af, Depth> 4.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.007	69	50-75% Grass cover, Fair, HSG B
1.702	77	Fallow, bare soil, HSG A
10.799	86	Fallow, bare soil, HSG B
0.001	60	Woods, Fair, HSG B
12.509	85	Weighted Average
12.509		100.00% Pervious Area

Subcatchment 33: Subcat 33



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 35: Subcat 35

Runoff = 33.70 cfs @ 12.30 hrs, Volume= 3.434 af, Depth> 3.48"

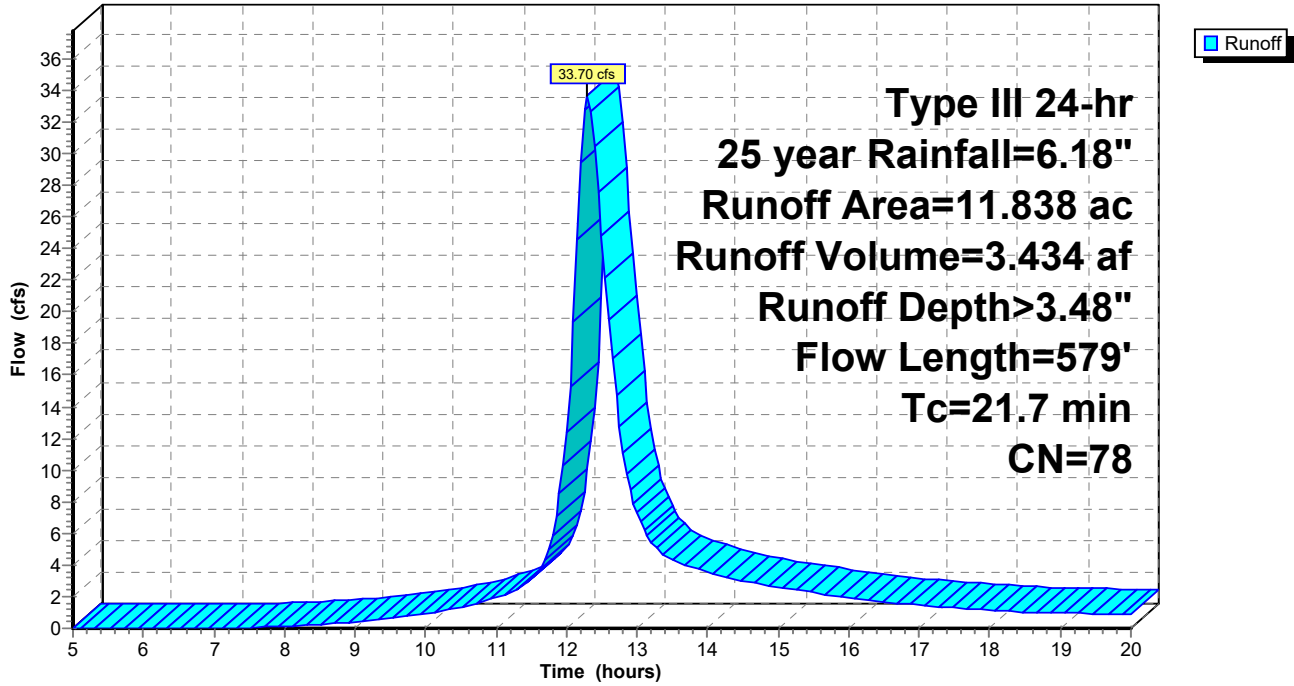
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.028	69	50-75% Grass cover, Fair, HSG B
1.016	77	Fallow, bare soil, HSG A
8.929	86	Fallow, bare soil, HSG B
1.764	36	Woods, Fair, HSG A
0.101	60	Woods, Fair, HSG B
11.838	78	Weighted Average
11.838		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	217	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	97	0.1237	3.52		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.7	215	0.0093	0.96		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
21.7	579	Total			

Subcatchment 35: Subcat 35

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 3P: (new Pond)

Inflow Area = 2.555 ac, 0.00% Impervious, Inflow Depth > 2.19" for 25 year event
 Inflow = 4.80 cfs @ 12.27 hrs, Volume= 0.466 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.21' @ 20.00 hrs Surf.Area= 17,913 sf Storage= 20,268 cf

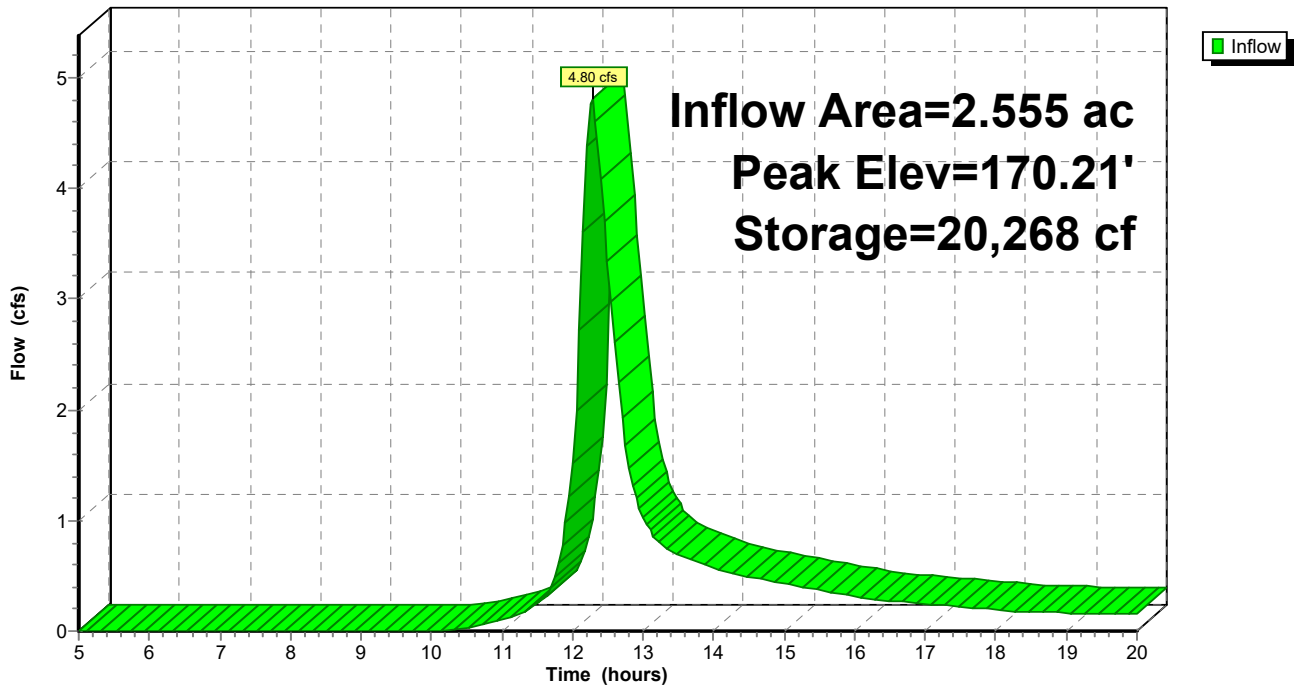
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	95,578 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	0	0	0
170.00	16,657	16,657	16,657
172.00	28,677	45,334	61,991
173.00	38,496	33,587	95,578

Pond 3P: (new Pond)

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 7P: (new Pond)

Inflow Area = 17.083 ac, 0.00% Impervious, Inflow Depth > 3.36" for 25 year event
 Inflow = 35.39 cfs @ 12.56 hrs, Volume= 4.783 af
 Outflow = 13.54 cfs @ 13.23 hrs, Volume= 4.637 af, Atten= 62%, Lag= 39.9 min
 Discarded = 13.54 cfs @ 13.23 hrs, Volume= 4.637 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.48' @ 13.23 hrs Surf.Area= 194,478 sf Storage= 75,924 cf

Plug-Flow detention time= 79.9 min calculated for 4.621 af (97% of inflow)
 Center-of-Mass det. time= 68.9 min (882.4 - 813.5)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	188,598 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.00	0	0	0	0
164.00	57,239	19,080	19,080	57,241
164.50	203,000	61,339	80,418	203,003
165.00	230,000	108,180	188,598	230,015

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=13.53 cfs @ 13.23 hrs HW=164.48' (Free Discharge)
 ↑**2=Exfiltration** (Controls 13.53 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=163.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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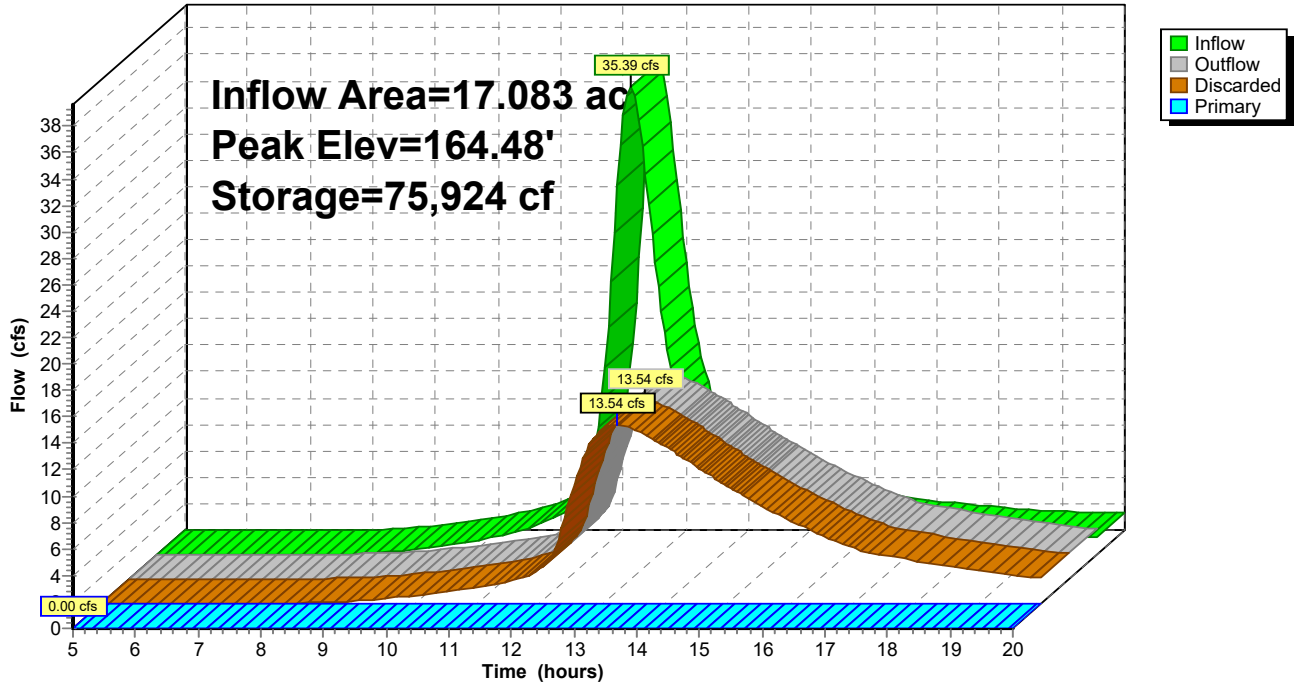
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Pond 7P: (new Pond)

Hydrograph



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Summary for Pond 10P: (new Pond)

Inflow Area = 6.364 ac, 2.50% Impervious, Inflow Depth > 1.21" for 25 year event
 Inflow = 7.60 cfs @ 12.19 hrs, Volume= 0.644 af
 Outflow = 0.27 cfs @ 17.98 hrs, Volume= 0.168 af, Atten= 97%, Lag= 347.6 min
 Discarded = 0.27 cfs @ 17.98 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 149.68' @ 17.98 hrs Surf.Area= 11,300 sf Storage= 20,945 cf

Plug-Flow detention time= 248.5 min calculated for 0.168 af (26% of inflow)
 Center-of-Mass det. time= 149.5 min (966.5 - 817.0)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	274,837 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	1,534	0	0	1,534
148.00	5,773	6,855	6,855	5,793
150.00	12,558	17,897	24,752	12,610
152.00	19,547	31,848	56,601	19,656
154.00	26,610	45,976	102,576	26,800
156.00	32,562	59,072	161,648	32,876
158.00	39,456	71,908	233,556	39,899
159.00	43,134	41,281	274,837	43,647

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.27 cfs @ 17.98 hrs HW=149.68' (Free Discharge)
 ↑1=Exfiltration (Controls 0.27 cfs)

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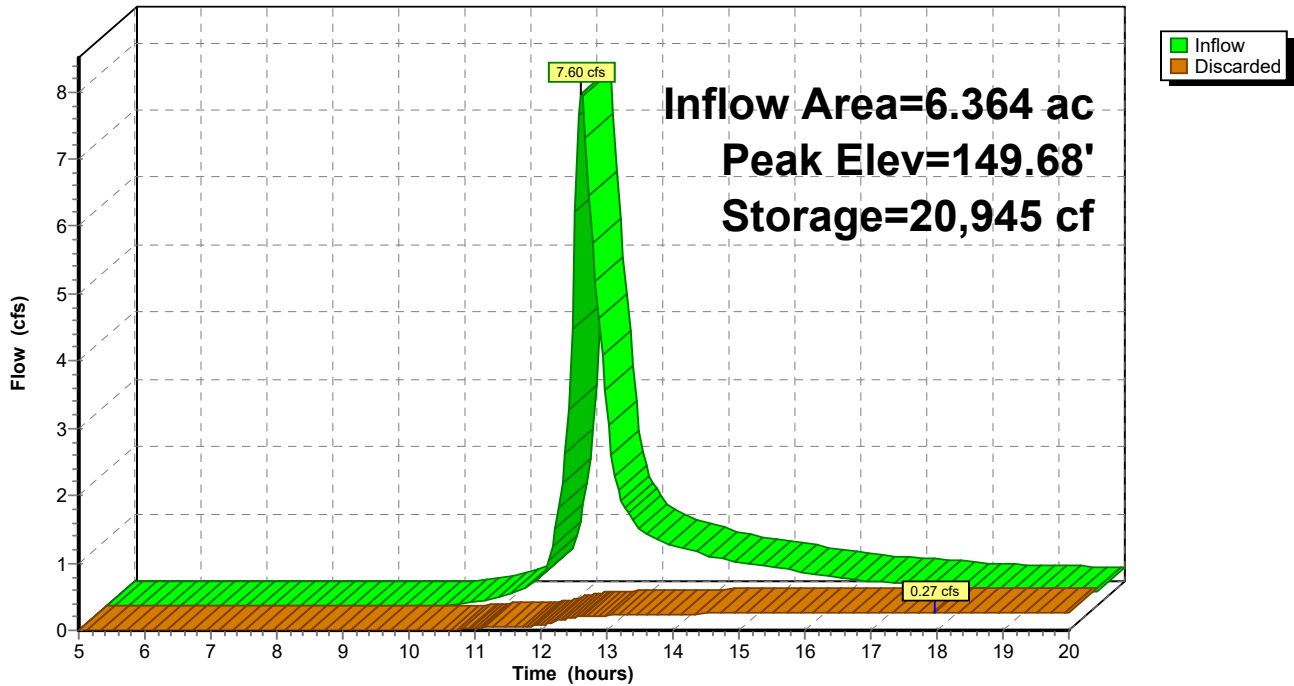
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Pond 10P: (new Pond)

Hydrograph



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Summary for Pond 11AP: (new Pond)

Inflow Area = 6.449 ac, 0.00% Impervious, Inflow Depth > 0.70" for 25 year event
 Inflow = 3.10 cfs @ 12.21 hrs, Volume= 0.377 af
 Outflow = 0.27 cfs @ 17.65 hrs, Volume= 0.159 af, Atten= 91%, Lag= 326.2 min
 Discarded = 0.27 cfs @ 17.65 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 127.45' @ 17.65 hrs Surf.Area= 11,371 sf Storage= 9,843 cf

Plug-Flow detention time= 230.3 min calculated for 0.159 af (42% of inflow)
 Center-of-Mass det. time= 116.2 min (978.8 - 862.6)

Volume	Invert	Avail.Storage	Storage Description
#1	126.00'	127,579 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
126.00	3,074	0	0	3,074
128.00	15,883	17,296	17,296	15,899
130.00	28,094	43,401	60,697	28,154
132.00	39,090	66,882	127,579	39,226

Device	Routing	Invert	Outlet Devices
#1	Discarded	126.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.27 cfs @ 17.65 hrs HW=127.45' (Free Discharge)
 ↑1=Exfiltration (Controls 0.27 cfs)

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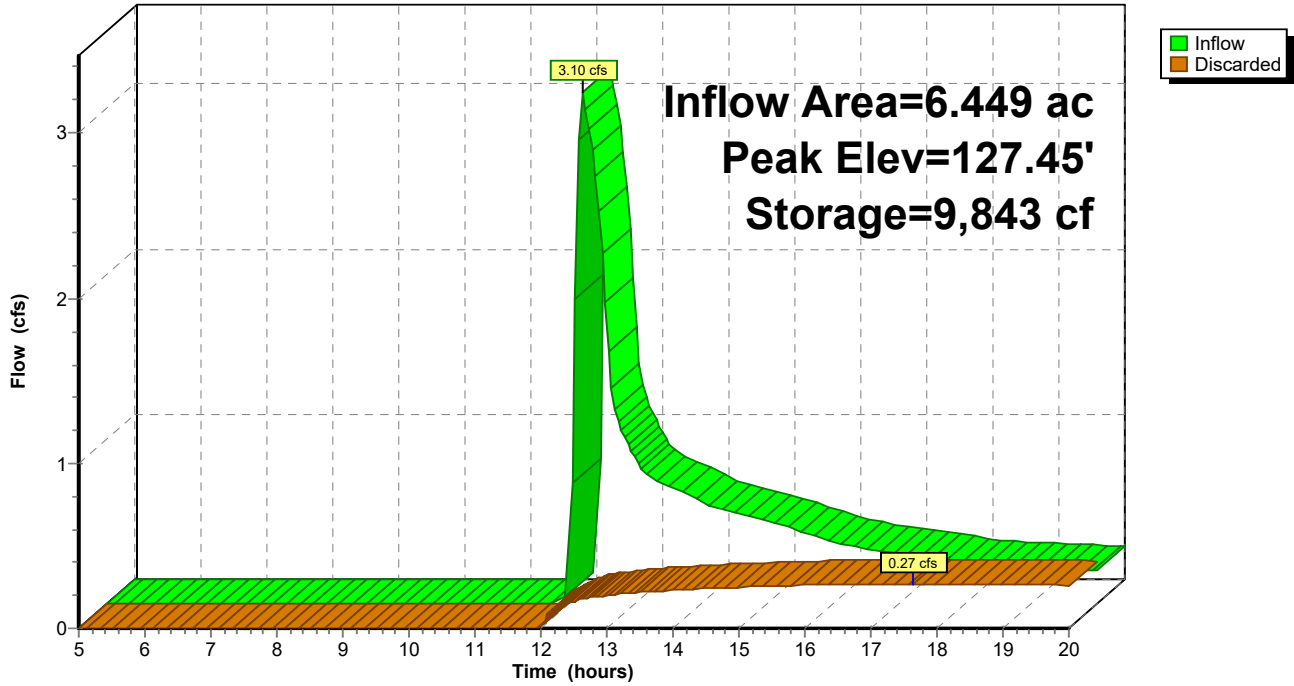
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Pond 11AP: (new Pond)

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Summary for Pond 11P: (new Pond)

Inflow Area = 5.661 ac, 0.85% Impervious, Inflow Depth > 1.69" for 25 year event
 Inflow = 8.50 cfs @ 12.24 hrs, Volume= 0.799 af
 Outflow = 0.30 cfs @ 19.83 hrs, Volume= 0.184 af, Atten= 97%, Lag= 455.6 min
 Discarded = 0.30 cfs @ 19.83 hrs, Volume= 0.184 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 145.41' @ 19.83 hrs Surf.Area= 12,518 sf Storage= 26,751 cf

Plug-Flow detention time= 244.5 min calculated for 0.184 af (23% of inflow)
 Center-of-Mass det. time= 141.0 min (969.7 - 828.7)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	518,849 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	3,101	0	0	3,101
144.00	9,033	11,618	11,618	9,057
146.00	14,143	22,986	34,604	14,223
148.00	20,595	34,537	69,140	20,742
150.00	26,222	46,704	115,844	26,472
152.00	32,411	58,524	174,368	32,779
154.00	41,950	74,156	248,524	42,415
156.00	49,984	91,817	340,341	50,591
158.00	62,571	112,320	452,660	63,289
159.00	69,874	66,189	518,849	70,649

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.30 cfs @ 19.83 hrs HW=145.41' (Free Discharge)
 ↑1=Exfiltration (Controls 0.30 cfs)

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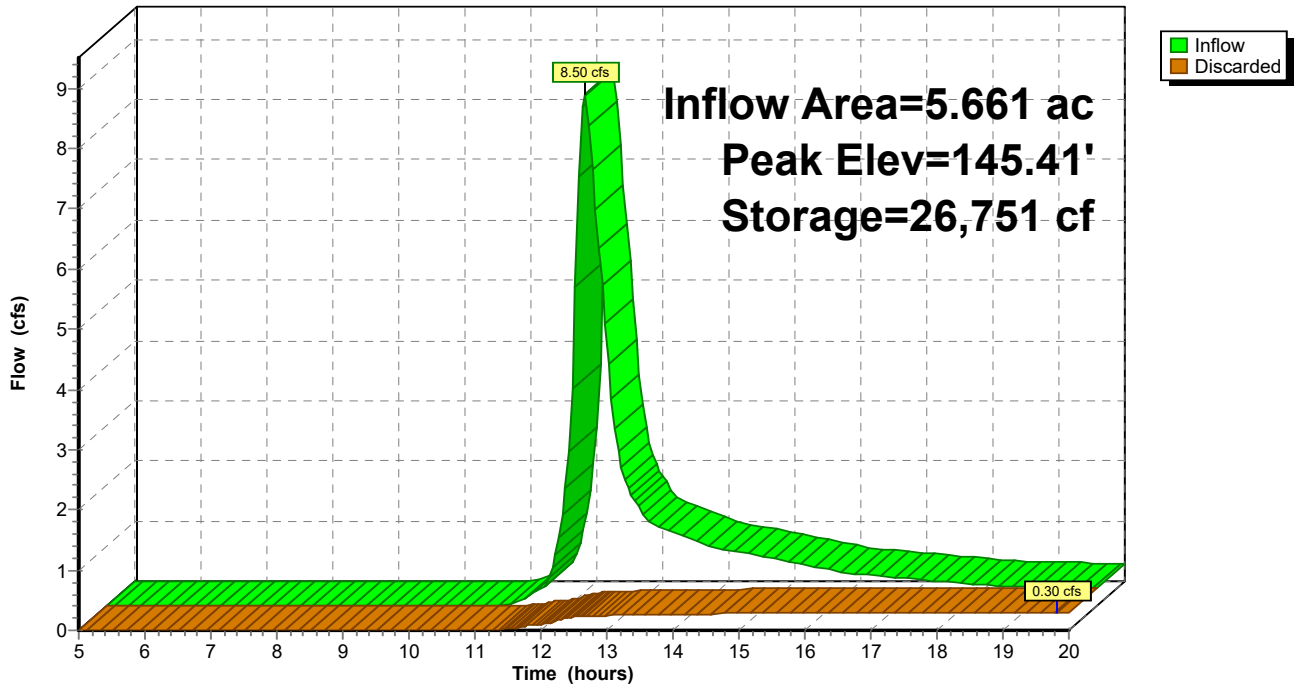
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Pond 11P: (new Pond)

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Summary for Pond 12P: (new Pond)

Inflow Area = 2.699 ac, 5.89% Impervious, Inflow Depth > 3.49" for 25 year event
 Inflow = 9.14 cfs @ 12.19 hrs, Volume= 0.785 af
 Outflow = 1.42 cfs @ 12.93 hrs, Volume= 0.745 af, Atten= 84%, Lag= 43.9 min
 Discarded = 1.42 cfs @ 12.93 hrs, Volume= 0.745 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.80' @ 12.93 hrs Surf.Area= 20,369 sf Storage= 15,410 cf

Plug-Flow detention time= 130.3 min calculated for 0.745 af (95% of inflow)
 Center-of-Mass det. time= 112.1 min (902.2 - 790.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	161.00'	52,117 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
161.00	0	0	0	0	
162.00	10,223	3,408	3,408	10,225	
164.00	42,096	48,709	52,117	42,116	

Device	Routing	Invert	Outlet Devices									
#1	Primary	163.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									
#2	Discarded	161.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.42 cfs @ 12.93 hrs HW=162.80' (Free Discharge)
 ↑2=Exfiltration (Controls 1.42 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=161.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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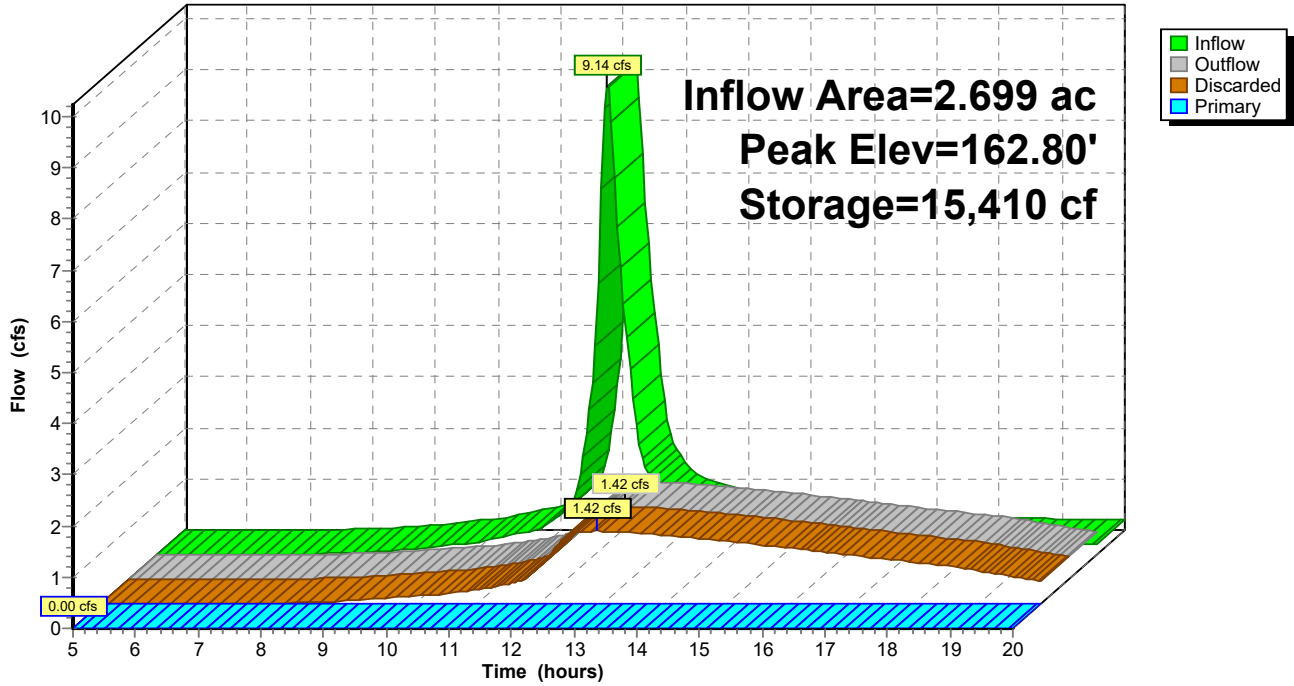
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Pond 12P: (new Pond)

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Summary for Pond 13P: (new Pond)

Inflow Area = 18.096 ac, 1.07% Impervious, Inflow Depth > 3.45" for 25 year event
 Inflow = 33.84 cfs @ 12.71 hrs, Volume= 5.195 af
 Outflow = 28.34 cfs @ 12.96 hrs, Volume= 4.916 af, Atten= 16%, Lag= 15.6 min
 Discarded = 6.58 cfs @ 12.96 hrs, Volume= 3.160 af
 Primary = 21.76 cfs @ 12.96 hrs, Volume= 1.755 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.74' @ 12.96 hrs Surf.Area= 94,439 sf Storage= 55,802 cf

Plug-Flow detention time= 68.8 min calculated for 4.916 af (95% of inflow)
 Center-of-Mass det. time= 50.9 min (871.1 - 820.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	84,396 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	0	0	0	0	
161.00	32,678	10,893	10,893	32,680	
162.00	124,141	73,504	84,396	124,147	

Device	Routing	Invert	Outlet Devices									
#1	Primary	161.50'	70.0' long x 50.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=6.58 cfs @ 12.96 hrs HW=161.74' (Free Discharge)
 ↑**2=Exfiltration** (Controls 6.58 cfs)

Primary OutFlow Max=21.70 cfs @ 12.96 hrs HW=161.74' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 21.70 cfs @ 1.31 fps)

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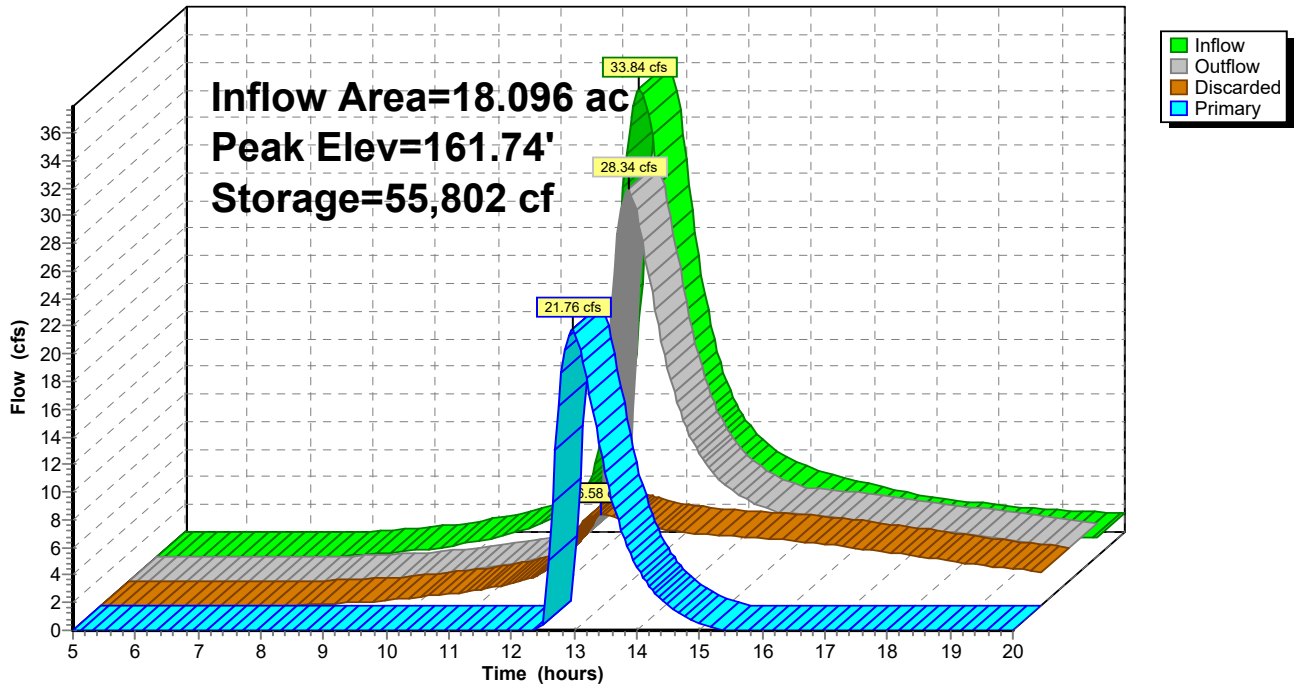
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Pond 13P: (new Pond)

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Summary for Pond 15P: (new Pond)

Inflow Area = 2.521 ac, 4.81% Impervious, Inflow Depth > 3.58" for 25 year event
 Inflow = 7.92 cfs @ 12.25 hrs, Volume= 0.753 af
 Outflow = 1.83 cfs @ 12.84 hrs, Volume= 0.733 af, Atten= 77%, Lag= 35.5 min
 Discarded = 1.83 cfs @ 12.84 hrs, Volume= 0.733 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.46' @ 12.84 hrs Surf.Area= 26,220 sf Storage= 13,577 cf

Plug-Flow detention time= 95.1 min calculated for 0.733 af (97% of inflow)
 Center-of-Mass det. time= 85.1 min (876.5 - 791.5)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	33,327 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	100	0	0	100
164.00	47,707	33,327	33,327	47,714

Device	Routing	Invert	Outlet Devices
#1	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.83 cfs @ 12.84 hrs HW=163.46' (Free Discharge)
 ↑1=Exfiltration (Controls 1.83 cfs)

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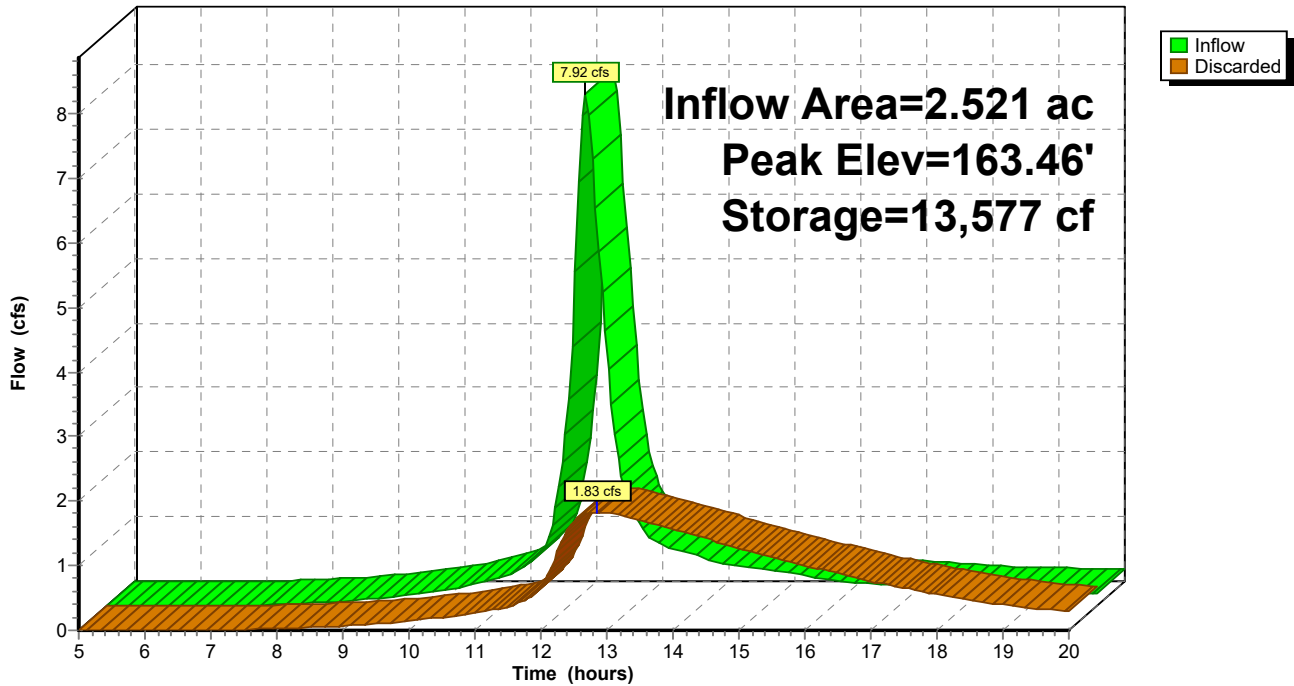
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Pond 15P: (new Pond)

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Summary for Pond 16P: (new Pond)

Inflow Area = 4.718 ac, 0.92% Impervious, Inflow Depth > 3.48" for 25 year event
 Inflow = 12.86 cfs @ 12.33 hrs, Volume= 1.367 af
 Outflow = 4.81 cfs @ 12.81 hrs, Volume= 1.347 af, Atten= 63%, Lag= 29.0 min
 Discarded = 3.37 cfs @ 12.81 hrs, Volume= 1.295 af
 Primary = 1.44 cfs @ 12.81 hrs, Volume= 0.052 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.05' @ 12.81 hrs Surf.Area= 48,396 sf Storage= 22,277 cf

Plug-Flow detention time= 78.0 min calculated for 1.343 af (98% of inflow)
 Center-of-Mass det. time= 72.1 min (870.2 - 798.1)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	106,646 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
162.00	3,106	0	0 3,106
164.00	136,289	106,646	106,646 136,298

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	50.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.37 cfs @ 12.81 hrs HW=163.05' (Free Discharge)
 ↑2=Exfiltration (Controls 3.37 cfs)

Primary OutFlow Max=1.40 cfs @ 12.81 hrs HW=163.05' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 1.40 cfs @ 0.59 fps)

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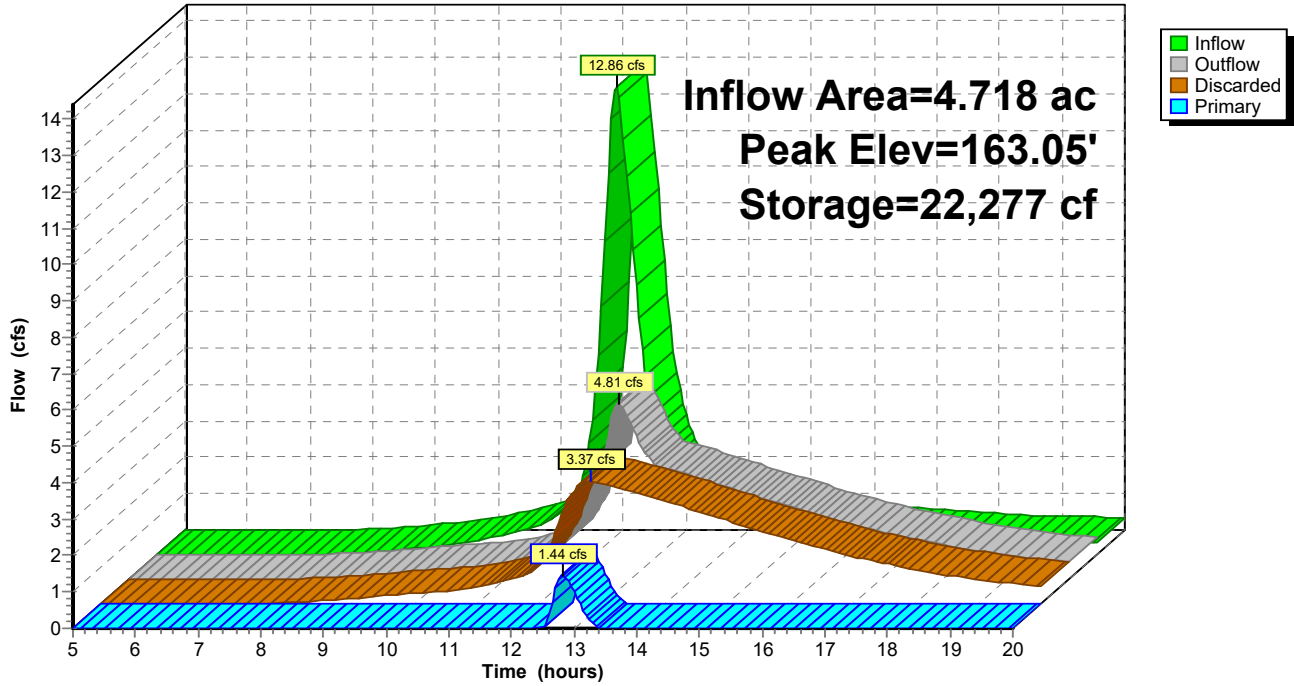
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Pond 16P: (new Pond)

Hydrograph



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Summary for Pond 19P: (new Pond)

Inflow Area = 21.570 ac, 0.00% Impervious, Inflow Depth > 3.17" for 25 year event
 Inflow = 42.97 cfs @ 12.55 hrs, Volume= 5.694 af
 Outflow = 38.74 cfs @ 12.71 hrs, Volume= 5.370 af, Atten= 10%, Lag= 9.6 min
 Discarded = 4.58 cfs @ 12.71 hrs, Volume= 2.307 af
 Primary = 34.17 cfs @ 12.71 hrs, Volume= 3.063 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.74' @ 12.71 hrs Surf.Area= 39,227 sf Storage= 44,635 cf

Plug-Flow detention time= 47.7 min calculated for 5.370 af (94% of inflow)
 Center-of-Mass det. time= 28.6 min (844.7 - 816.1)

Volume	Invert	Avail.Storage	Storage Description
#1	151.00'	104,899 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
151.00	0	0	0	0
152.00	10,885	3,628	3,628	10,887
154.00	45,019	52,027	55,655	45,039
155.00	53,593	49,244	104,899	53,649

Device	Routing	Invert	Outlet Devices
#1	Primary	153.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	151.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=4.57 cfs @ 12.71 hrs HW=153.74' (Free Discharge)
 ↑**2=Exfiltration** (Controls 4.57 cfs)

Primary OutFlow Max=34.10 cfs @ 12.71 hrs HW=153.74' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 34.10 cfs @ 2.31 fps)

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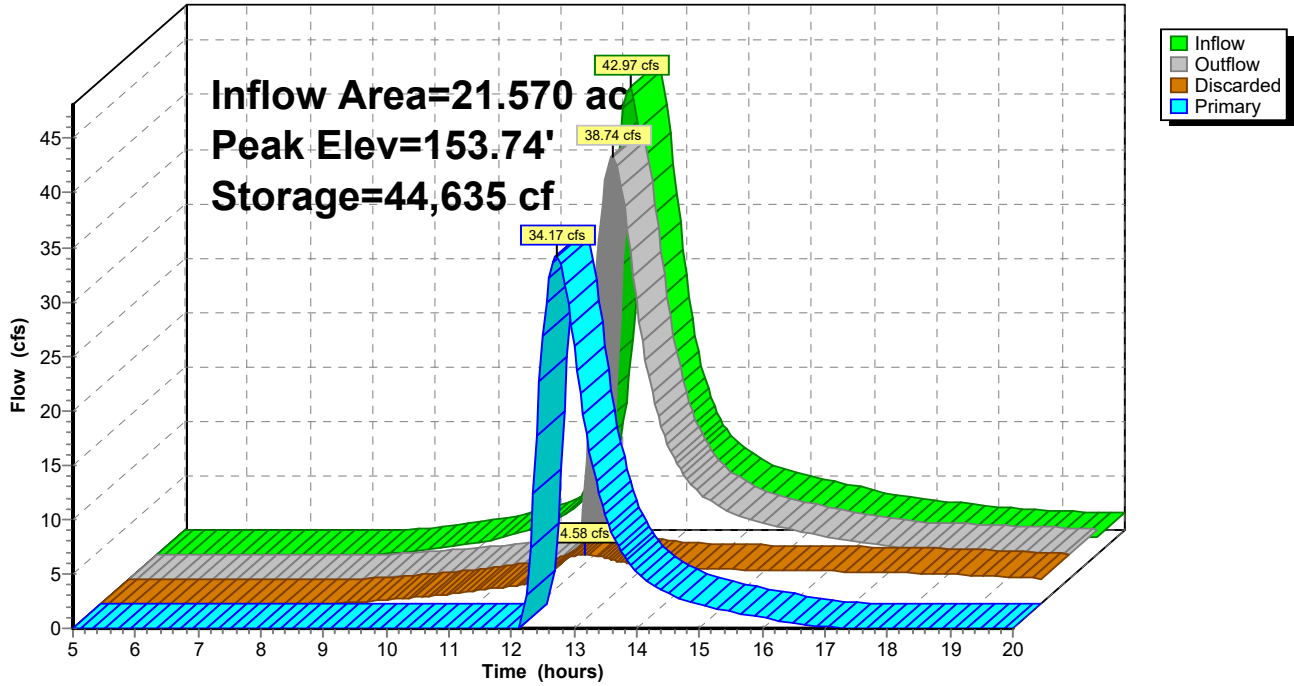
Type III 24-hr 25 year Rainfall=6.18"

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Pond 19P: (new Pond)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 28P: (new Pond)

Inflow Area = 7.360 ac, 0.00% Impervious, Inflow Depth > 1.69" for 25 year event
 Inflow = 11.12 cfs @ 12.23 hrs, Volume= 1.038 af
 Outflow = 0.60 cfs @ 17.05 hrs, Volume= 0.371 af, Atten= 95%, Lag= 289.1 min
 Discarded = 0.60 cfs @ 17.05 hrs, Volume= 0.371 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.87' @ 17.05 hrs Surf.Area= 17,013 sf Storage= 30,512 cf

Plug-Flow detention time= 240.7 min calculated for 0.371 af (36% of inflow)
 Center-of-Mass det. time= 143.1 min (971.5 - 828.5)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	703,547 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	1,301	0	0	1,301
152.00	7,637	8,060	8,060	7,652
154.00	17,812	24,741	32,802	17,857
156.00	31,769	48,913	81,714	31,858
158.00	44,943	76,332	158,046	45,104
160.00	56,203	100,936	258,983	56,476
162.00	68,079	124,092	383,075	68,483
164.00	79,954	147,874	530,949	80,513
166.00	92,803	172,598	703,547	93,530

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.60 cfs @ 17.05 hrs HW=153.87' (Free Discharge)

↑**1=Exfiltration** (Controls 0.60 cfs)

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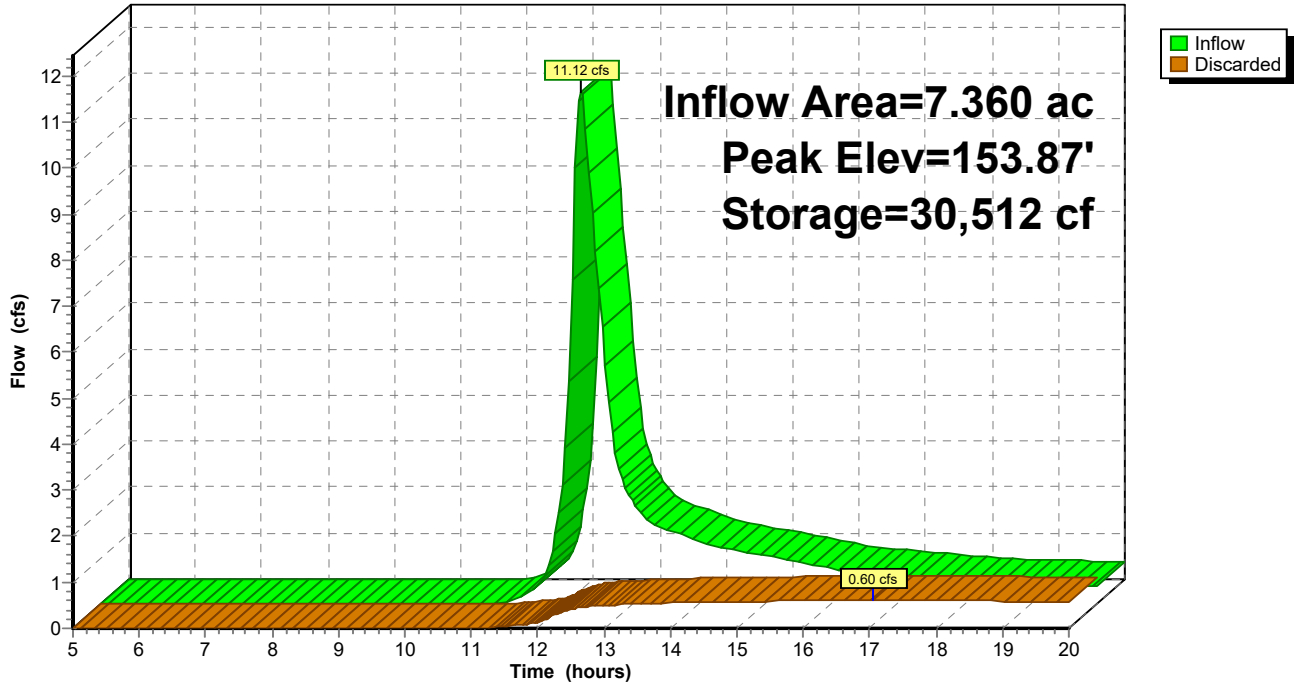
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Pond 28P: (new Pond)

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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 29P: (new Pond)

Inflow Area = 1.626 ac, 0.00% Impervious, Inflow Depth > 0.27" for 25 year event
 Inflow = 0.15 cfs @ 12.52 hrs, Volume= 0.037 af
 Outflow = 0.04 cfs @ 16.99 hrs, Volume= 0.026 af, Atten= 70%, Lag= 268.4 min
 Discarded = 0.04 cfs @ 16.99 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.54' @ 16.99 hrs Surf.Area= 1,246 sf Storage= 573 cf

Plug-Flow detention time= 139.0 min calculated for 0.026 af (70% of inflow)
 Center-of-Mass det. time= 67.3 min (980.3 - 912.9)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	140,344 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	883	0	0	883
148.00	2,535	3,276	3,276	2,559
150.00	4,534	6,973	10,249	4,601
152.00	6,834	11,290	21,539	6,962
154.00	10,301	17,017	38,555	10,490
156.00	14,424	24,610	63,165	14,687
158.00	19,416	33,717	96,882	19,763
160.00	24,132	43,463	140,344	24,593

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.04 cfs @ 16.99 hrs HW=146.54' (Free Discharge)
 ↑1=Exfiltration (Controls 0.04 cfs)

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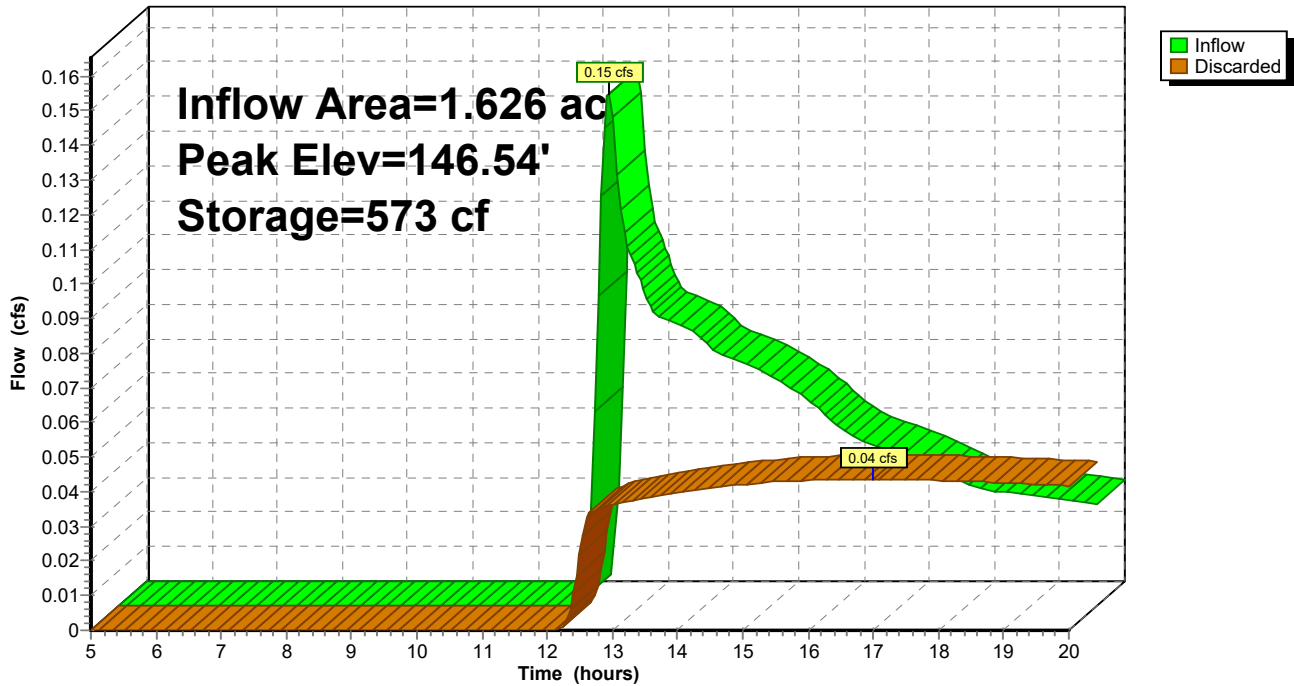
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Pond 29P: (new Pond)

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Summary for Pond 30P: (new Pond)

Inflow Area = 3.911 ac, 0.00% Impervious, Inflow Depth > 2.73" for 25 year event
 Inflow = 11.24 cfs @ 12.16 hrs, Volume= 0.889 af
 Outflow = 1.83 cfs @ 12.84 hrs, Volume= 0.867 af, Atten= 84%, Lag= 40.5 min
 Discarded = 1.83 cfs @ 12.84 hrs, Volume= 0.867 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.44' @ 12.84 hrs Surf.Area= 26,271 sf Storage= 16,201 cf

Plug-Flow detention time= 102.6 min calculated for 0.867 af (98% of inflow)
 Center-of-Mass det. time= 93.3 min (896.4 - 803.1)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	177,312 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	0	0	0	0
170.00	19,015	6,338	6,338	19,017
172.00	61,742	76,681	83,019	61,766
173.00	131,151	94,293	177,312	131,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	169.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.83 cfs @ 12.84 hrs HW=170.44' (Free Discharge)
 ↑1=Exfiltration (Controls 1.83 cfs)

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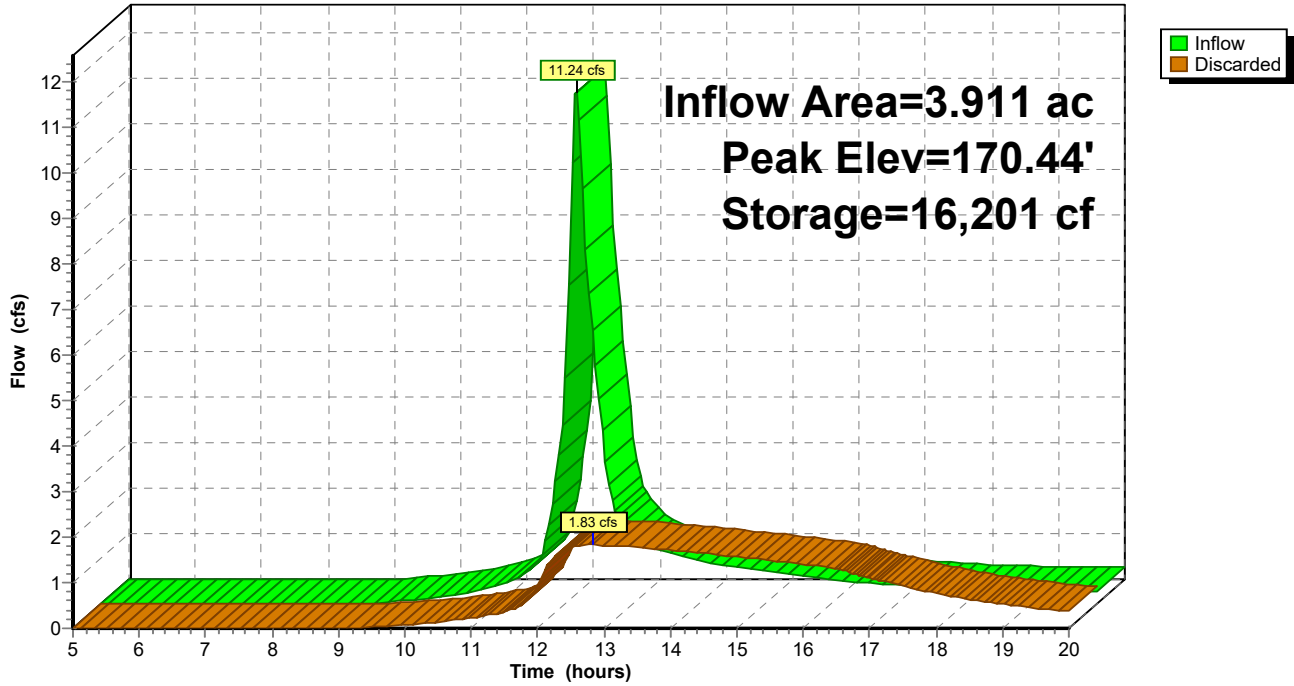
Type III 24-hr 25 year Rainfall=6.18"

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Pond 30P: (new Pond)

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 31P: (new Pond)

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 0.53" for 25 year event
 Inflow = 1.07 cfs @ 12.29 hrs, Volume= 0.160 af
 Outflow = 0.15 cfs @ 16.64 hrs, Volume= 0.090 af, Atten= 86%, Lag= 261.3 min
 Discarded = 0.15 cfs @ 16.64 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 145.66' @ 16.64 hrs Surf.Area= 4,387 sf Storage= 3,426 cf

Plug-Flow detention time= 202.6 min calculated for 0.090 af (56% of inflow)
 Center-of-Mass det. time= 104.3 min (979.1 - 874.8)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	577,917 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
144.00	435	0	0	435
146.00	5,720	5,155	5,155	5,731
148.00	14,467	19,523	24,677	14,506
150.00	23,981	38,049	62,727	24,069
152.00	31,477	55,288	118,015	31,657
154.00	37,463	68,853	186,868	37,786
156.00	43,468	80,857	267,725	43,958
158.00	49,047	92,459	360,184	49,741
160.00	54,411	103,412	463,596	55,342
162.00	59,955	114,321	577,917	61,140

Device	Routing	Invert	Outlet Devices
#1	Discarded	144.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.15 cfs @ 16.64 hrs HW=145.66' (Free Discharge)
 ↑1=Exfiltration (Controls 0.15 cfs)

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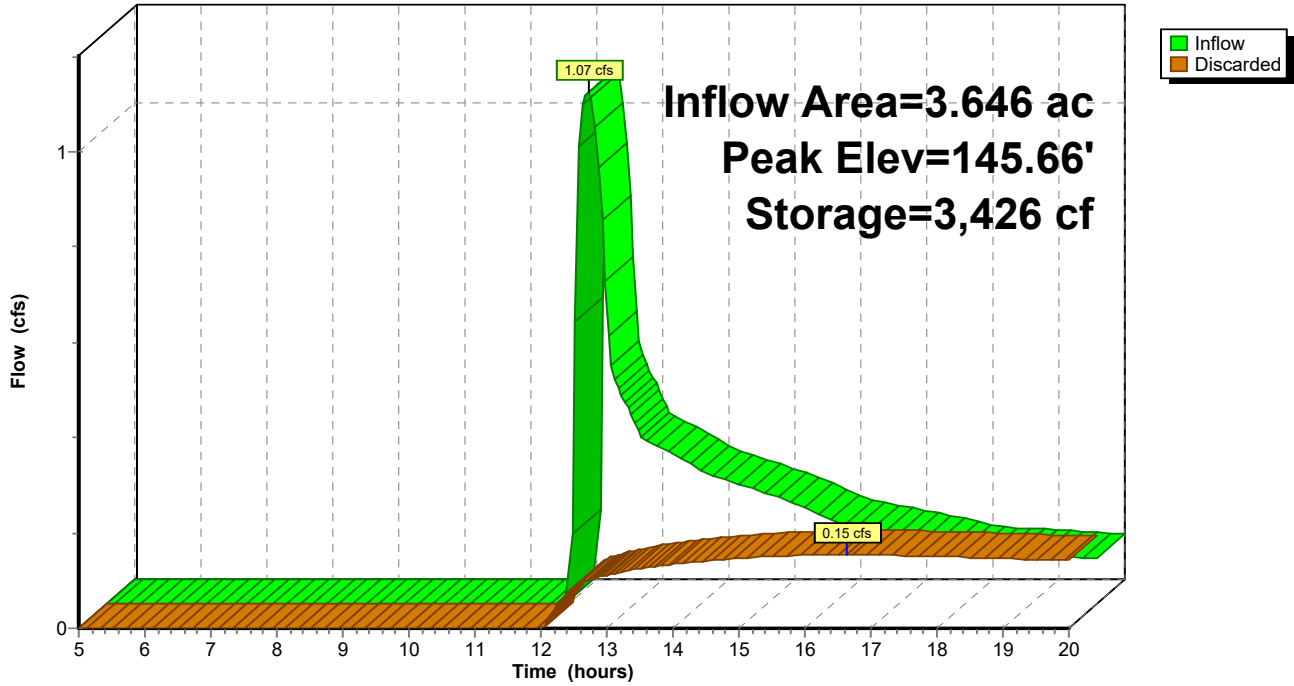
Type III 24-hr 25 year Rainfall=6.18"

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Pond 31P: (new Pond)

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Summary for Pond 32P: (new Pond)

Inflow Area = 4.598 ac, 0.00% Impervious, Inflow Depth > 4.33" for 25 year event
 Inflow = 27.60 cfs @ 12.00 hrs, Volume= 1.659 af
 Outflow = 1.54 cfs @ 13.63 hrs, Volume= 1.107 af, Atten= 94%, Lag= 97.9 min
 Discarded = 1.54 cfs @ 13.63 hrs, Volume= 1.107 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 145.75' @ 13.63 hrs Surf.Area= 21,877 sf Storage= 40,527 cf

Plug-Flow detention time= 214.7 min calculated for 1.107 af (67% of inflow)
 Center-of-Mass det. time= 144.5 min (905.4 - 760.9)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	564,324 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	153	0	0	153
144.00	13,412	9,998	9,998	13,420
146.00	23,273	36,235	46,233	23,327
148.00	33,979	56,915	103,149	34,099
150.00	46,946	80,576	183,725	47,144
152.00	58,364	105,103	288,828	58,677
154.00	68,242	126,477	415,306	68,714
156.00	80,957	149,018	564,324	81,576

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.54 cfs @ 13.63 hrs HW=145.75' (Free Discharge)
 ↑1=Exfiltration (Controls 1.54 cfs)

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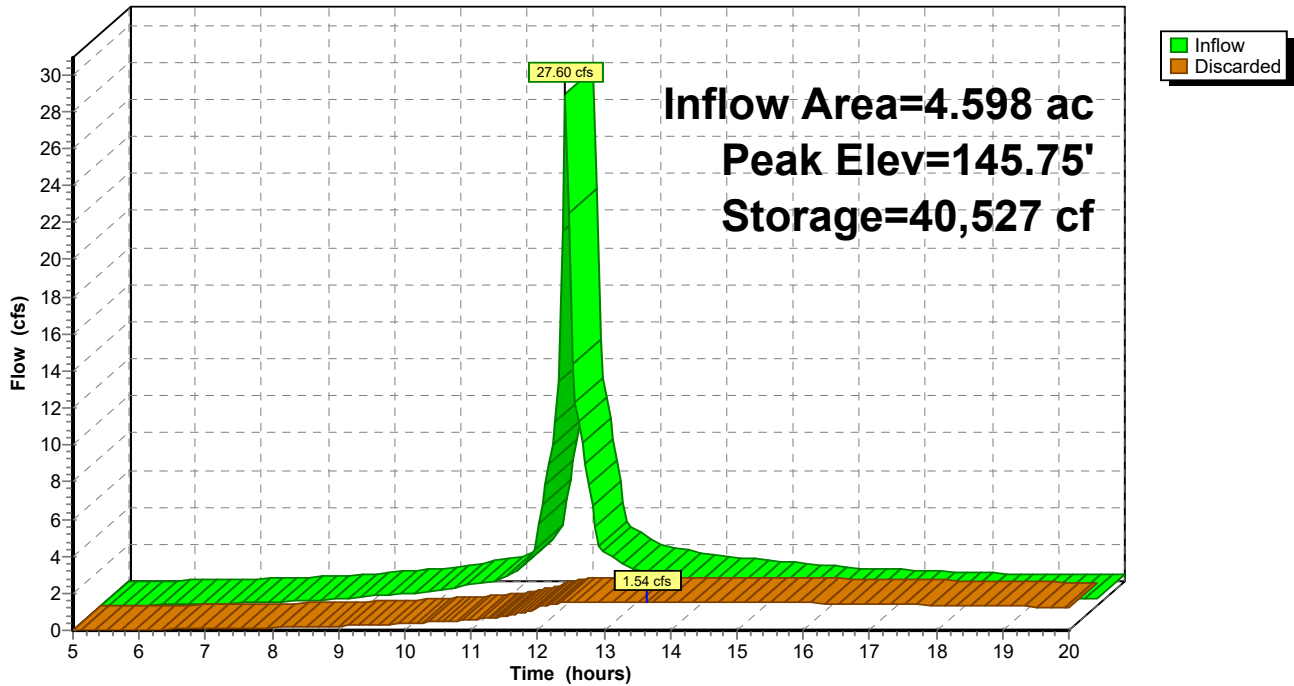
Type III 24-hr 25 year Rainfall=6.18"

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Pond 32P: (new Pond)

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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 35P: (new Pond)

Inflow Area = 11.838 ac, 0.00% Impervious, Inflow Depth > 3.48" for 25 year event
 Inflow = 33.70 cfs @ 12.30 hrs, Volume= 3.434 af
 Outflow = 6.30 cfs @ 13.10 hrs, Volume= 3.031 af, Atten= 81%, Lag= 47.7 min
 Discarded = 6.30 cfs @ 13.10 hrs, Volume= 3.031 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 156.59' @ 13.10 hrs Surf.Area= 53,989 sf Storage= 69,573 cf

Plug-Flow detention time= 145.5 min calculated for 3.021 af (88% of inflow)
 Center-of-Mass det. time= 110.0 min (906.3 - 796.3)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	476,244 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	9,108	3,036	3,036	9,110
156.00	34,300	40,722	43,758	34,321
158.00	119,103	144,879	188,637	119,145
160.00	170,010	287,607	476,244	170,123

Device	Routing	Invert	Outlet Devices
#1	Discarded	153.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=6.30 cfs @ 13.10 hrs HW=156.59' (Free Discharge)

↑**1=Exfiltration** (Controls 6.30 cfs)

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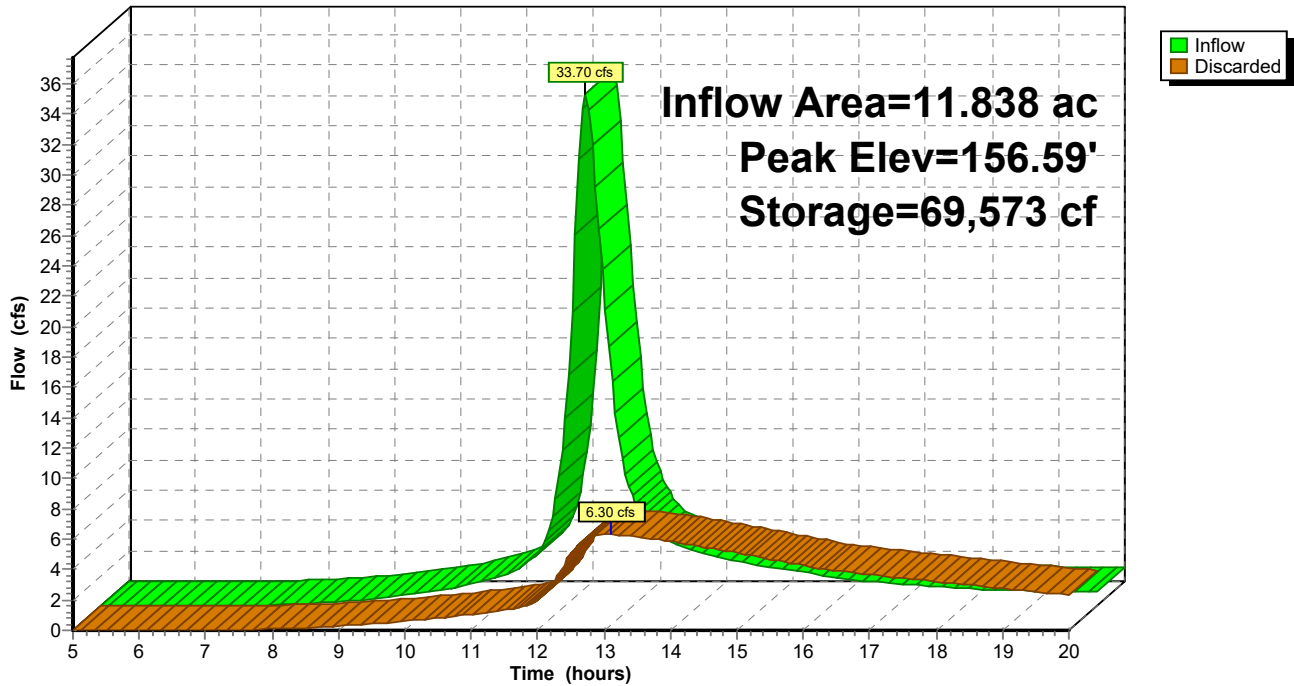
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Pond 35P: (new Pond)

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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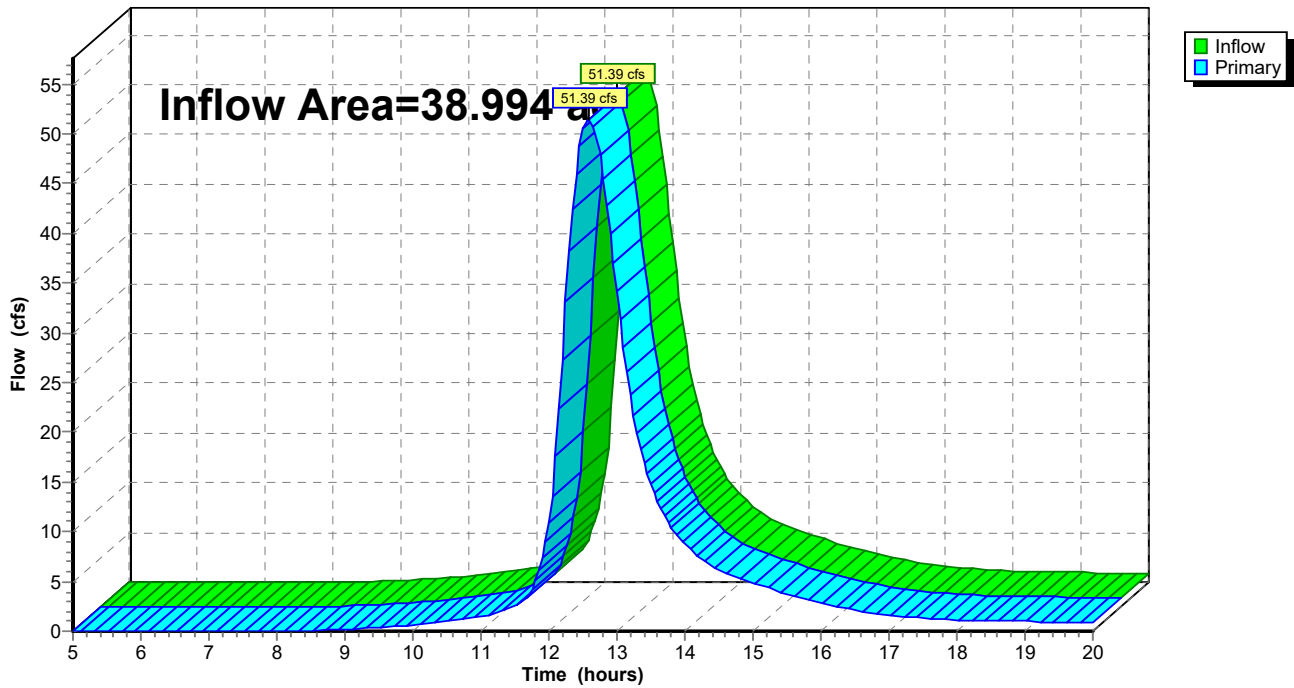
Summary for Link DP19: (new Link)

Inflow Area = 38.994 ac, 0.11% Impervious, Inflow Depth > 1.95" for 25 year event
Inflow = 51.39 cfs @ 12.59 hrs, Volume= 6.321 af
Primary = 51.39 cfs @ 12.59 hrs, Volume= 6.321 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP19: (new Link)

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Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 1: Subcat 1

Runoff = 4.37 cfs @ 12.11 hrs, Volume= 0.319 af, Depth> 4.43"

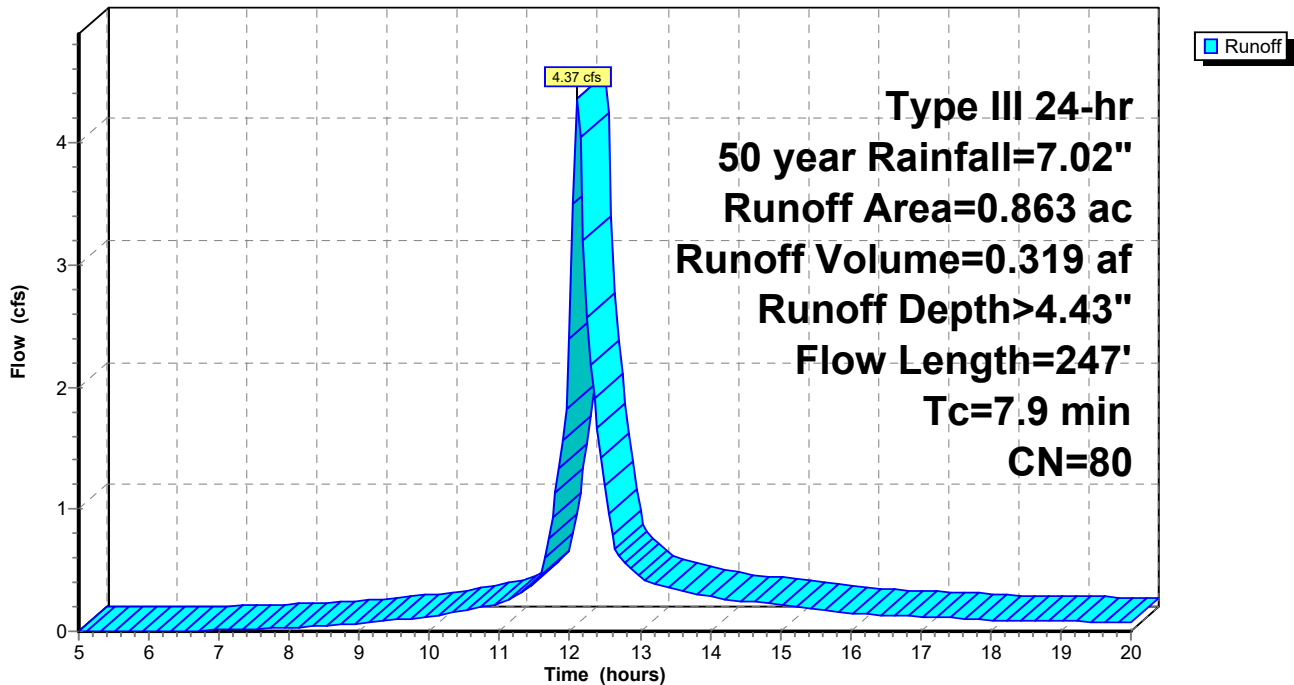
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.029	77	Fallow, bare soil, HSG A
0.663	86	Fallow, bare soil, HSG B
0.035	36	Woods, Fair, HSG A
0.137	60	Woods, Fair, HSG B
0.863	80	Weighted Average
0.863		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
1.6	197	0.0508	2.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
7.9	247	Total			

Subcatchment 1: Subcat 1

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Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 2: Subcat 2

Runoff = 7.98 cfs @ 12.24 hrs, Volume= 0.768 af, Depth> 1.67"

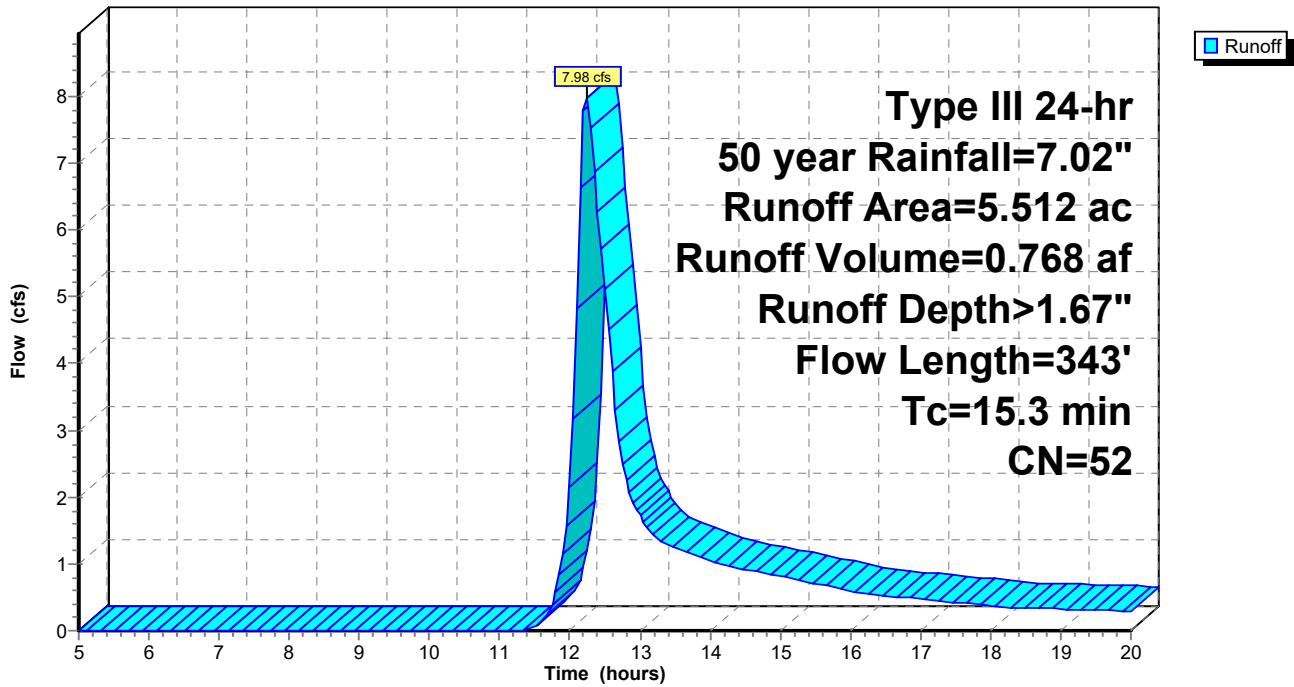
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
1.277	77	Fallow, bare soil, HSG A
0.528	86	Fallow, bare soil, HSG B
3.264	36	Woods, Fair, HSG A
0.363	60	Woods, Fair, HSG B
0.080	73	Woods, Fair, HSG C
5.512	52	Weighted Average
5.512		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
2.9	293	0.0343	1.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
15.3	343	Total			

Subcatchment 2: Subcat 2

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 3: Subcat 3

Runoff = 6.13 cfs @ 12.27 hrs, Volume= 0.590 af, Depth> 2.77"

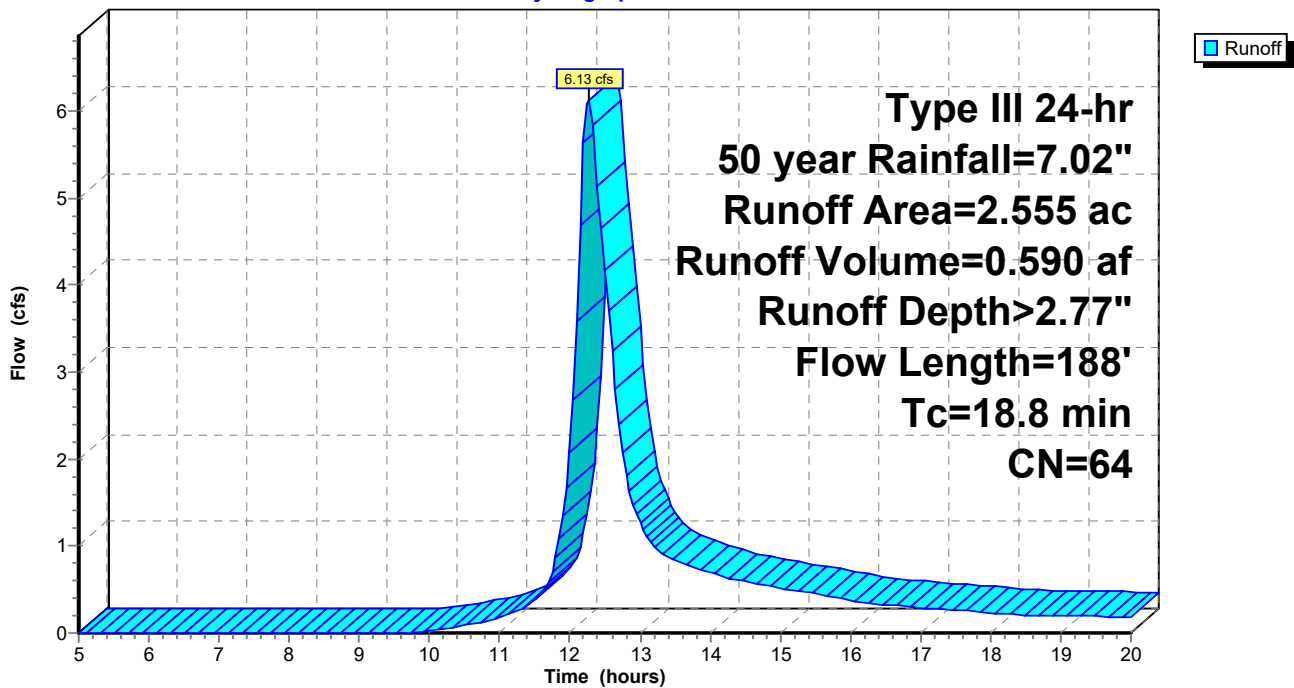
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.730	77	Fallow, bare soil, HSG A
0.609	86	Fallow, bare soil, HSG B
0.716	36	Woods, Fair, HSG A
0.500	60	Woods, Fair, HSG B
2.555	64	Weighted Average
2.555		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
1.8	66	0.0152	0.62		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	72	0.0556	2.12		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.8	188	Total			

Subcatchment 3: Subcat 3

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 4: Subcat 4

Runoff = 10.66 cfs @ 12.16 hrs, Volume= 0.845 af, Depth> 2.78"

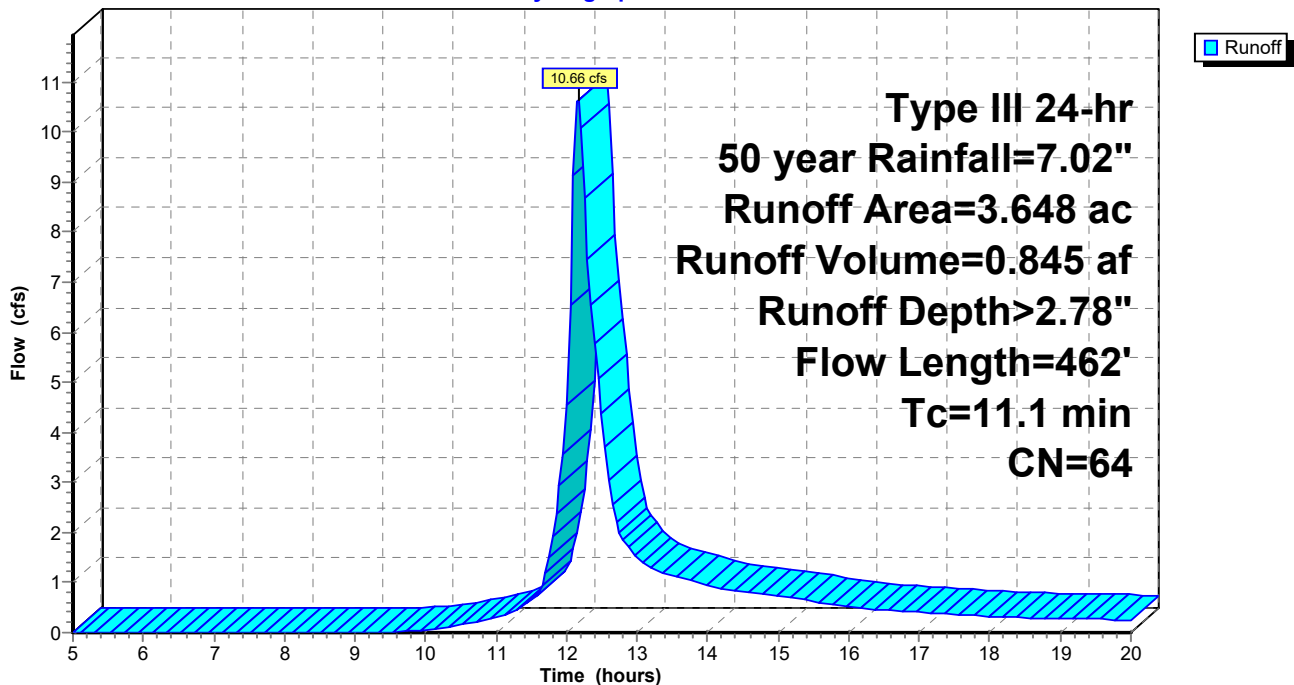
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.026	49	50-75% Grass cover, Fair, HSG A
2.636	69	50-75% Grass cover, Fair, HSG B
0.035	77	Fallow, bare soil, HSG A
0.019	86	Fallow, bare soil, HSG B
0.194	78	Row crops, straight row, Good, HSG B
0.605	36	Woods, Fair, HSG A
0.133	60	Woods, Fair, HSG B
3.648	64	Weighted Average
3.648		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	412	0.0243	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	462	Total			

Subcatchment 4: Subcat 4

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 5: Subcat 5

Runoff = 26.78 cfs @ 12.30 hrs, Volume= 2.731 af, Depth> 3.77"

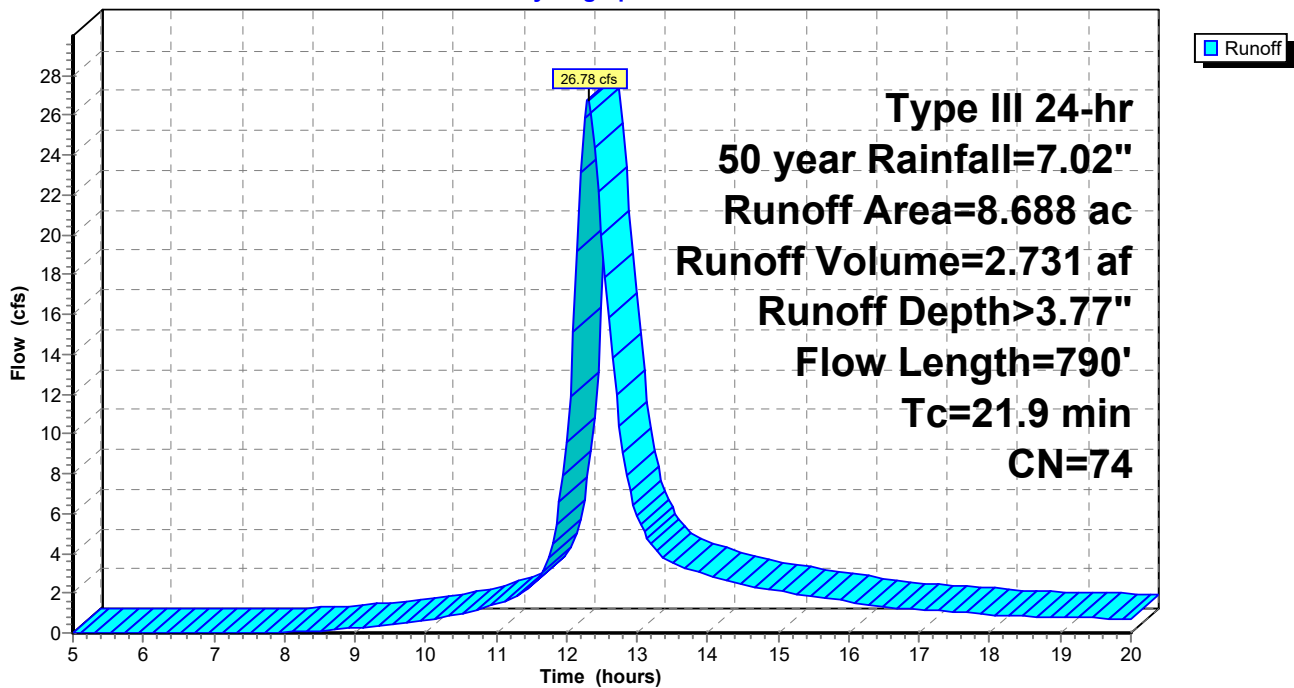
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
1.072	69	50-75% Grass cover, Fair, HSG B
6.772	78	Row crops, straight row, Good, HSG B
0.436	36	Woods, Fair, HSG A
0.407	60	Woods, Fair, HSG B
8.688	74	Weighted Average
8.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
10.6	583	0.0103	0.91		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.0	157	0.0159	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.9	790	Total			

Subcatchment 5: Subcat 5

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 6: Subcat 6

Runoff = 22.39 cfs @ 12.21 hrs, Volume= 1.983 af, Depth> 3.68"

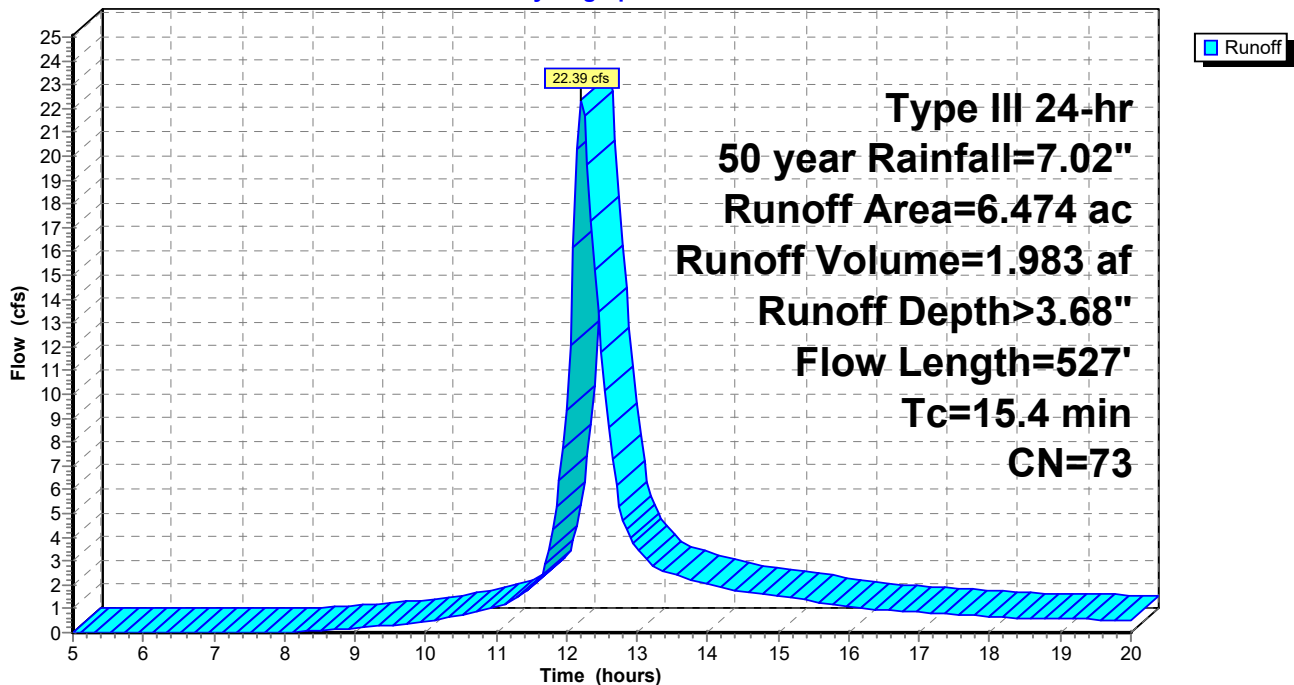
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.098	69	50-75% Grass cover, Fair, HSG B
0.096	67	Row crops, straight row, Good, HSG A
5.190	78	Row crops, straight row, Good, HSG B
0.452	36	Woods, Fair, HSG A
0.638	60	Woods, Fair, HSG B
6.474	73	Weighted Average
6.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.4	415	0.0145	1.08		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
0.7	62	0.0806	1.42		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.4	527	Total			

Subcatchment 6: Subcat 6

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 7: Subcat 7

Runoff = 42.59 cfs @ 12.56 hrs, Volume= 5.782 af, Depth> 4.06"

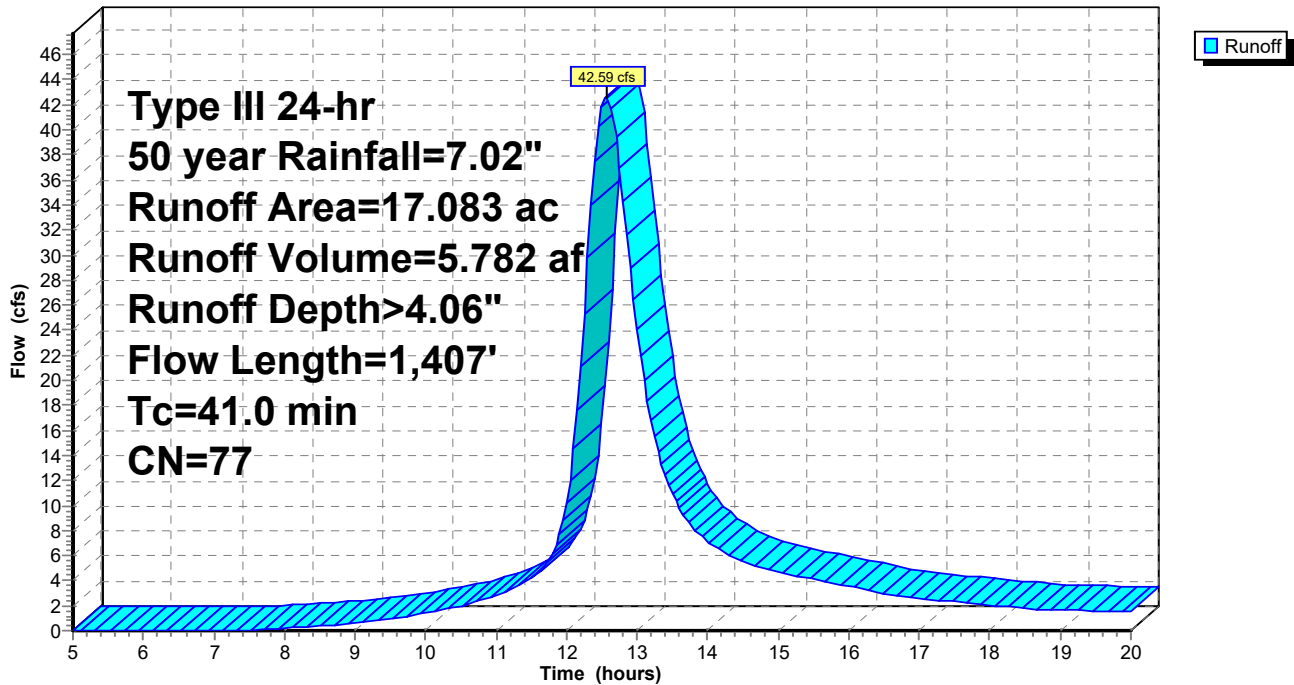
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.999	69	50-75% Grass cover, Fair, HSG B
15.573	78	Row crops, straight row, Good, HSG B
0.511	60	Woods, Fair, HSG B
17.083	77	Weighted Average
17.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
32.7	1,357	0.0059	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
41.0	1,407	Total			

Subcatchment 7: Subcat 7

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 8: (new Subcat)

Runoff = 11.51 cfs @ 12.15 hrs, Volume= 0.880 af, Depth> 3.38"

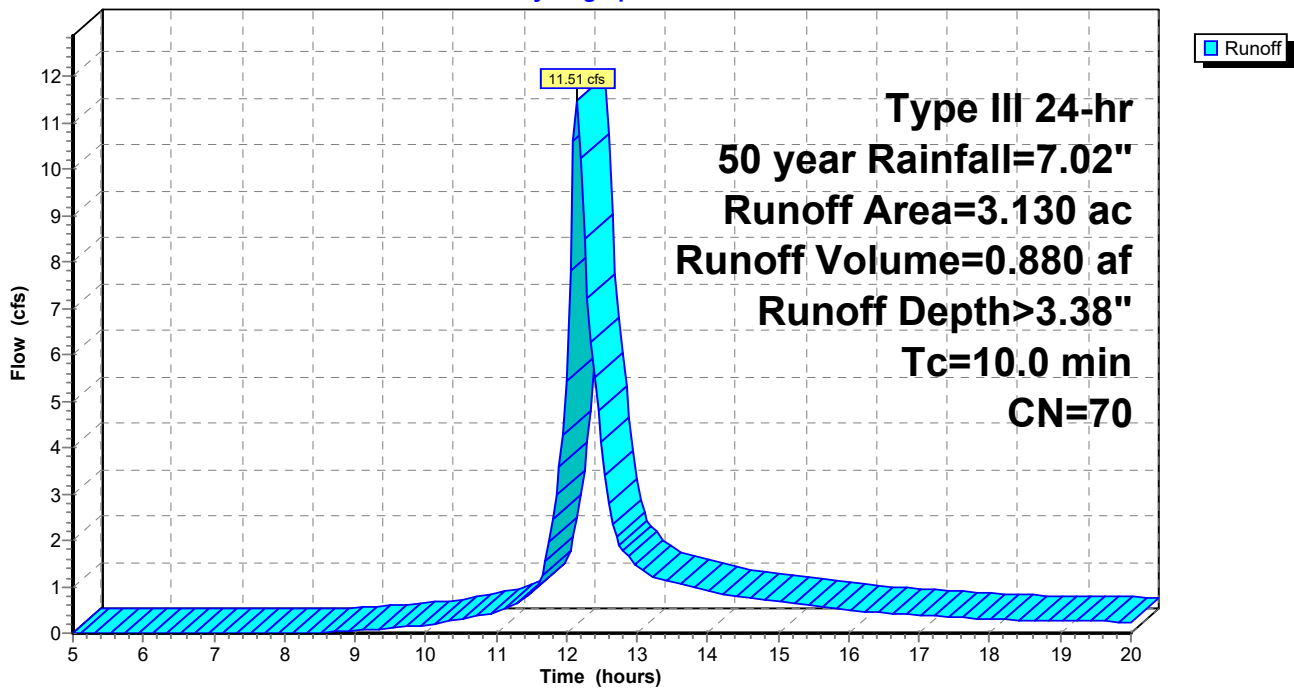
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
1.670	78	Row crops, straight row, Good, HSG B
* 1.460	60	Woods, Fair, HSG B
3.130	70	Weighted Average
3.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8: (new Subcat)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 10: Subcat 10

Runoff = 9.76 cfs @ 12.19 hrs, Volume= 0.819 af, Depth> 2.68"

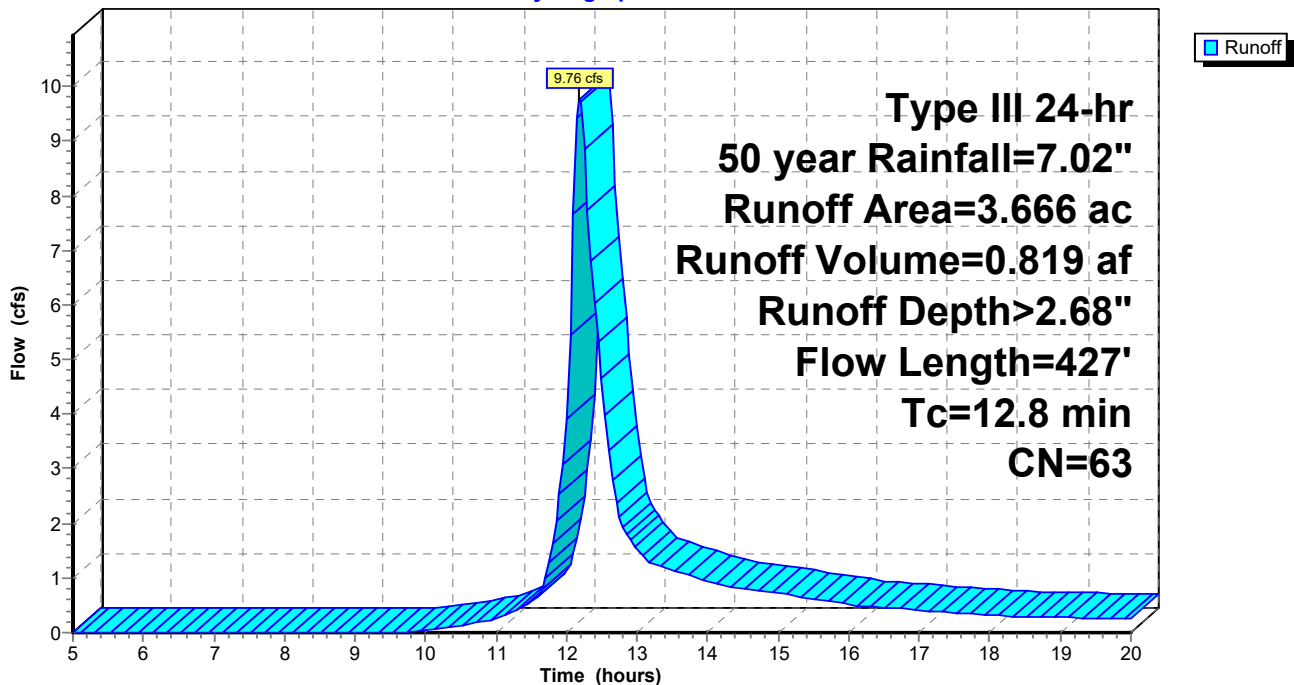
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.042	69	50-75% Grass cover, Fair, HSG B
0.022	67	Row crops, straight row, Good, HSG A
1.722	78	Row crops, straight row, Good, HSG B
0.840	36	Woods, Fair, HSG A
1.039	60	Woods, Fair, HSG B
3.666	63	Weighted Average
3.666		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
3.5	261	0.0192	1.25		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.0	116	0.1379	1.86		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
12.8	427	Total			

Subcatchment 10: Subcat 10

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 11: Subcat 11

Runoff = 11.32 cfs @ 12.23 hrs, Volume= 1.041 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.368	56	Brush, Fair, HSG B
0.096	89	Paved roads w/open ditches, 50% imp, HSG B
0.097	67	Row crops, straight row, Good, HSG A
2.068	78	Row crops, straight row, Good, HSG B
2.107	36	Woods, Fair, HSG A
0.925	60	Woods, Fair, HSG B
5.661	58	Weighted Average
5.613		99.15% Pervious Area
0.048		0.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.7	316	0.0158	1.13		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.6	232	0.0862	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.6	598	Total			

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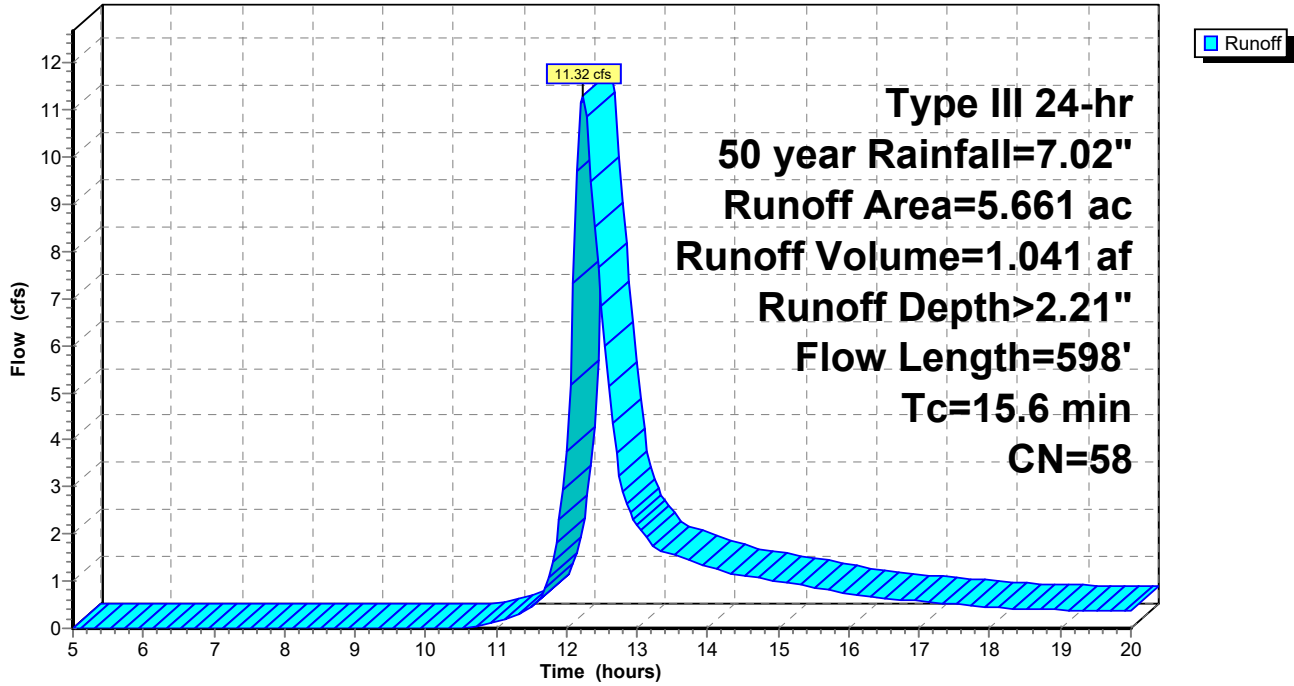
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 11: Subcat 11

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 11A: Subcat 11A

Runoff = 5.38 cfs @ 12.18 hrs, Volume= 0.551 af, Depth> 1.03"

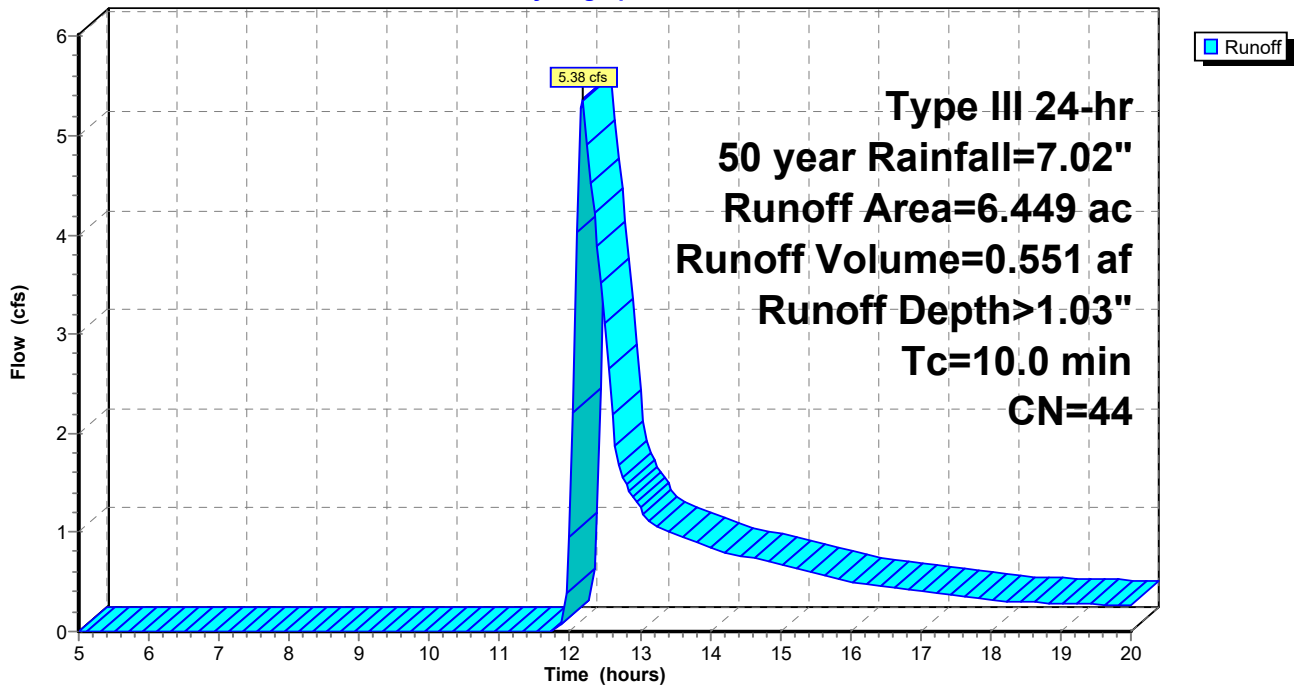
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.874	56	Brush, Fair, HSG B
0.859	78	Row crops, straight row, Good, HSG B
4.716	36	Woods, Fair, HSG A
6.449	44	Weighted Average
6.449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11A: Subcat 11A

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 12: Subcat 12

Runoff = 10.95 cfs @ 12.19 hrs, Volume= 0.945 af, Depth> 4.20"

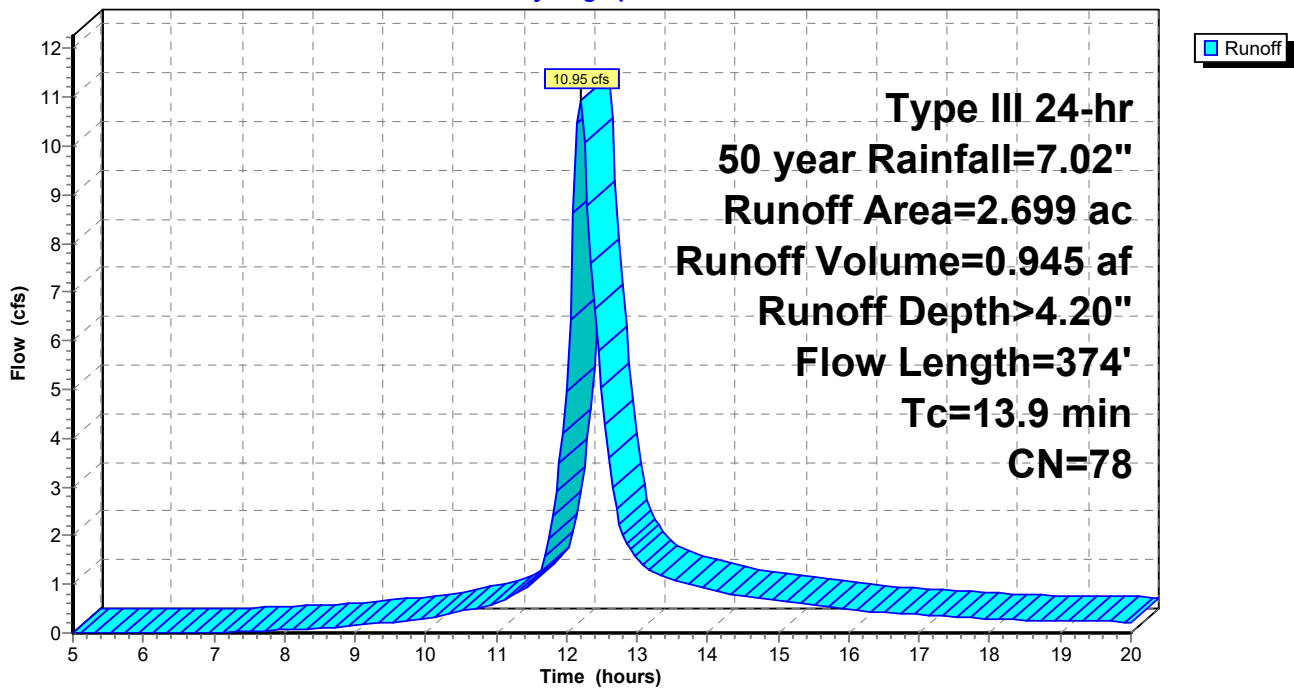
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.525	69	50-75% Grass cover, Fair, HSG B
0.318	89	Paved roads w/open ditches, 50% imp, HSG B
1.856	78	Row crops, straight row, Good, HSG B
2.699	78	Weighted Average
2.540		94.11% Pervious Area
0.159		5.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.4	225	0.0089	0.85		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	99	0.0404	1.41		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.9	374	Total			

Subcatchment 12: Subcat 12

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 13: Subcat 13

Runoff = 40.60 cfs @ 12.70 hrs, Volume= 6.262 af, Depth> 4.15"

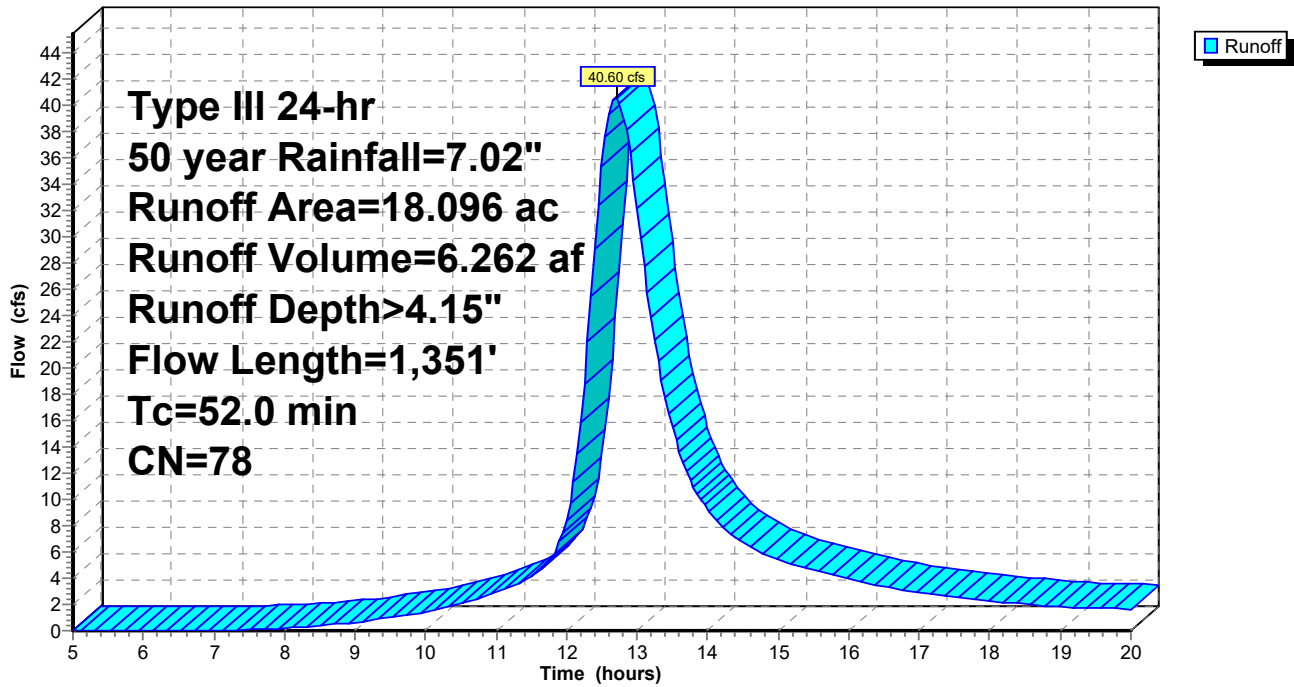
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.387	89	Paved roads w/open ditches, 50% imp, HSG B
17.709	78	Row crops, straight row, Good, HSG B
18.096	78	Weighted Average
17.902		98.93% Pervious Area
0.193		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
26.8	752	0.0027	0.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.9	549	0.0036	0.54		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
52.0	1,351	Total			

Subcatchment 13: Subcat 13

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 14: Subcat 14

Runoff = 2.52 cfs @ 12.17 hrs, Volume= 0.209 af, Depth> 4.21"

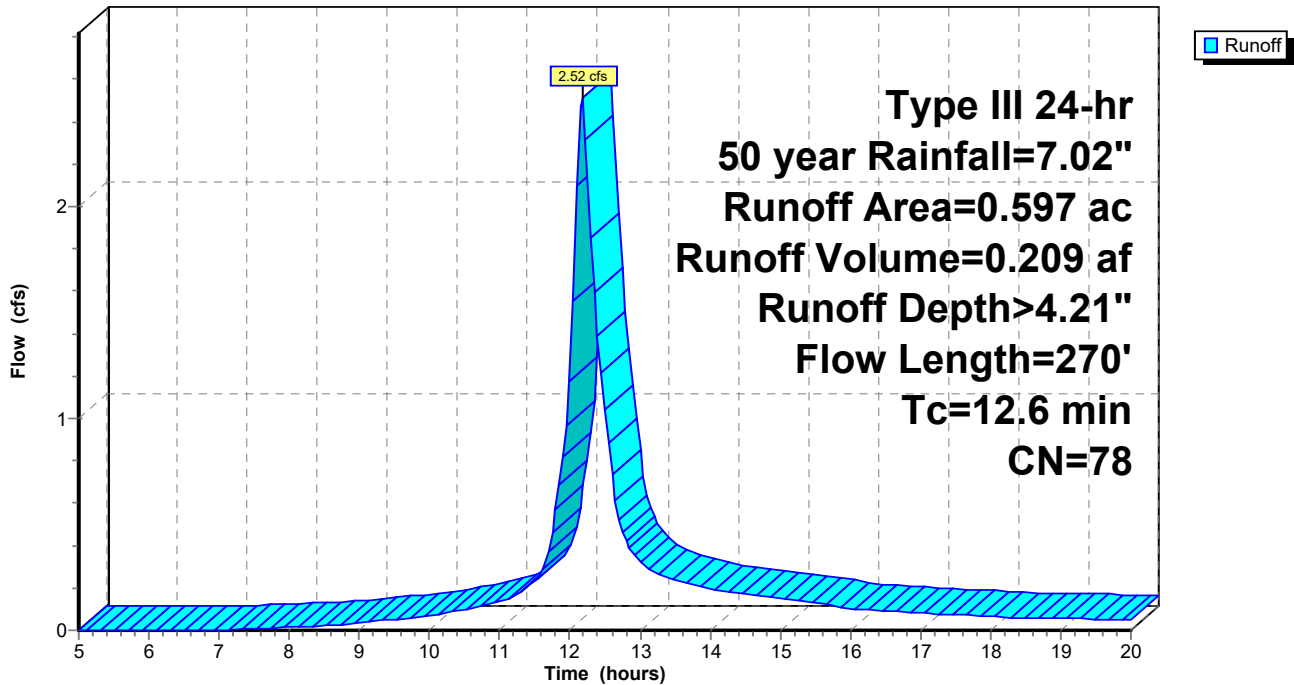
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.597	78	Row crops, straight row, Good, HSG B
0.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.3	220	0.0091	0.86		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
12.6	270	Total			

Subcatchment 14: Subcat 14

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 15: Subcat 15

Runoff = 9.46 cfs @ 12.25 hrs, Volume= 0.905 af, Depth> 4.31"

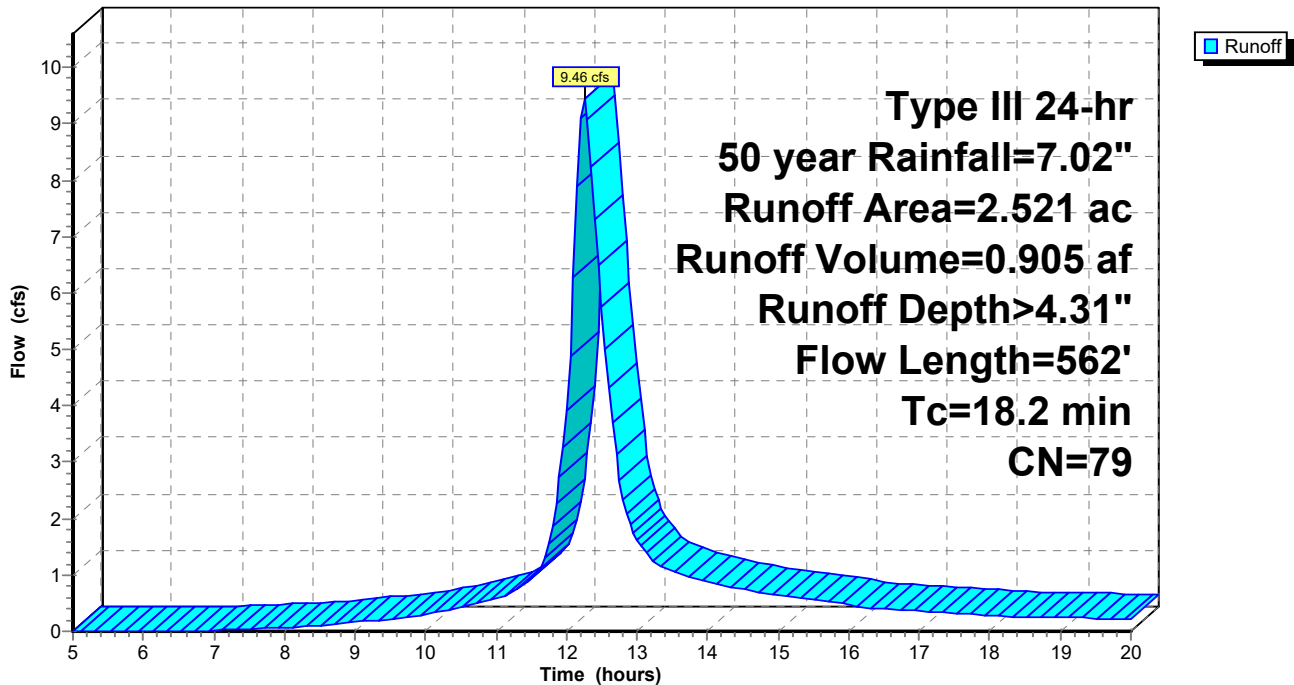
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.028	65	2 acre lots, 12% imp, HSG B
0.235	89	Paved roads w/open ditches, 50% imp, HSG B
2.257	78	Row crops, straight row, Good, HSG B
2.521	79	Weighted Average
2.400		95.19% Pervious Area
0.121		4.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
10.7	512	0.0078	0.79		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.2	562	Total			

Subcatchment 15: Subcat 15

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 16: Subcat 16

Runoff = 15.42 cfs @ 12.33 hrs, Volume= 1.648 af, Depth> 4.19"

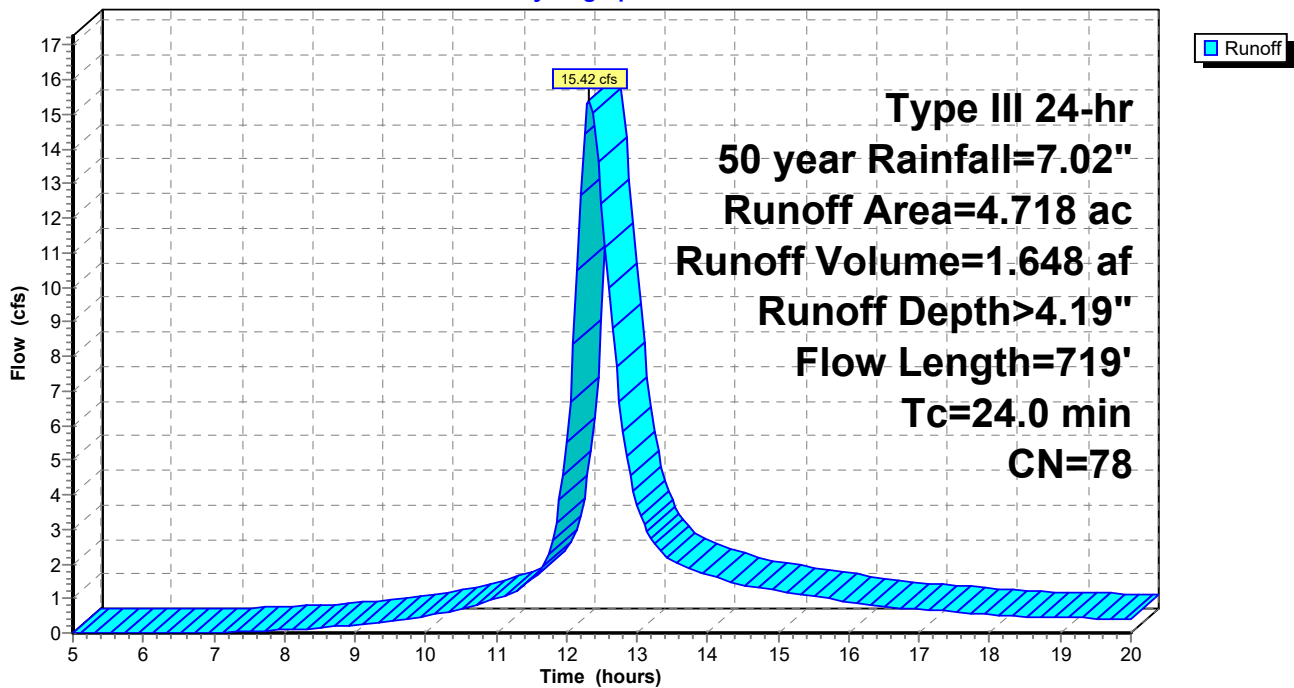
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.087	89	Paved roads w/open ditches, 50% imp, HSG B
4.601	78	Row crops, straight row, Good, HSG B
0.030	60	Woods, Fair, HSG B
4.718	78	Weighted Average
4.674		99.08% Pervious Area
0.044		0.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.1	390	0.0103	0.91		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
8.6	279	0.0036	0.54		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
24.0	719	Total			

Subcatchment 16: Subcat 16

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 17: Subcat 17

Runoff = 17.55 cfs @ 12.27 hrs, Volume= 1.725 af, Depth> 3.88"

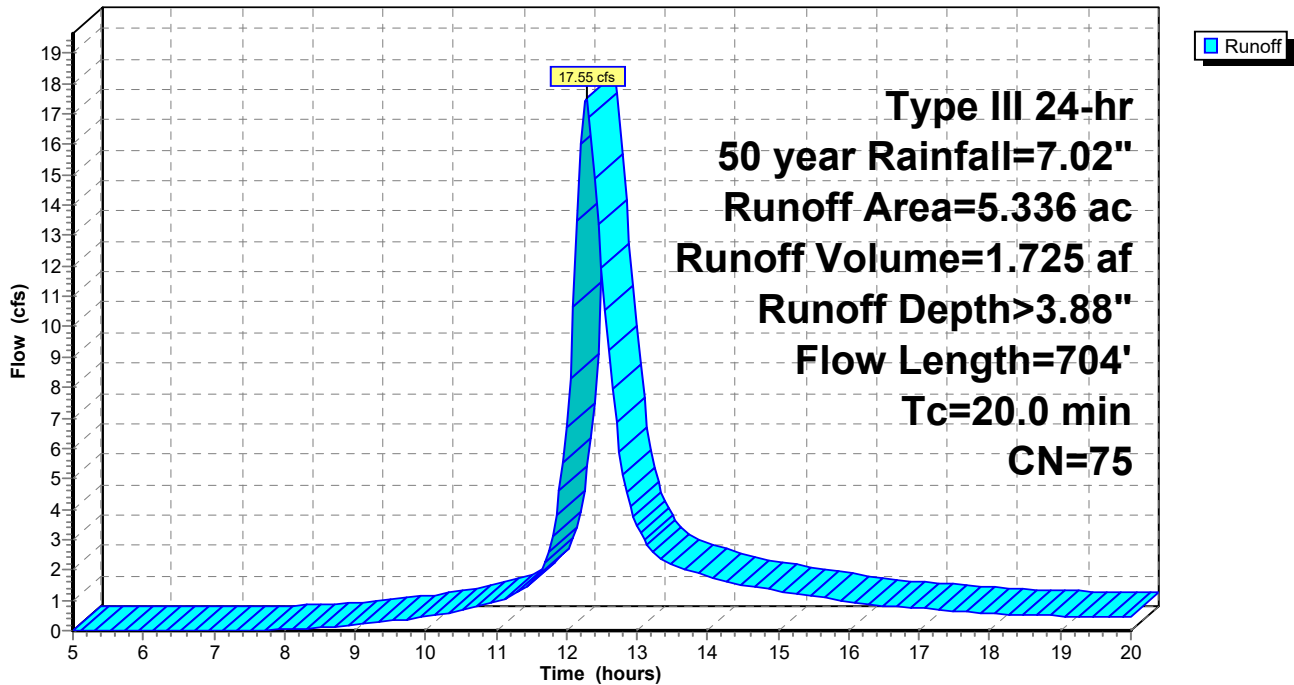
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.000	69	50-75% Grass cover, Fair, HSG B
4.585	78	Row crops, straight row, Good, HSG B
0.752	60	Woods, Fair, HSG B
5.336	75	Weighted Average
5.336		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.7	654	0.0107	0.93		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.0	704	Total			

Subcatchment 17: Subcat 17

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 18: Subcat 18

Runoff = 5.71 cfs @ 12.30 hrs, Volume= 0.581 af, Depth> 3.98"

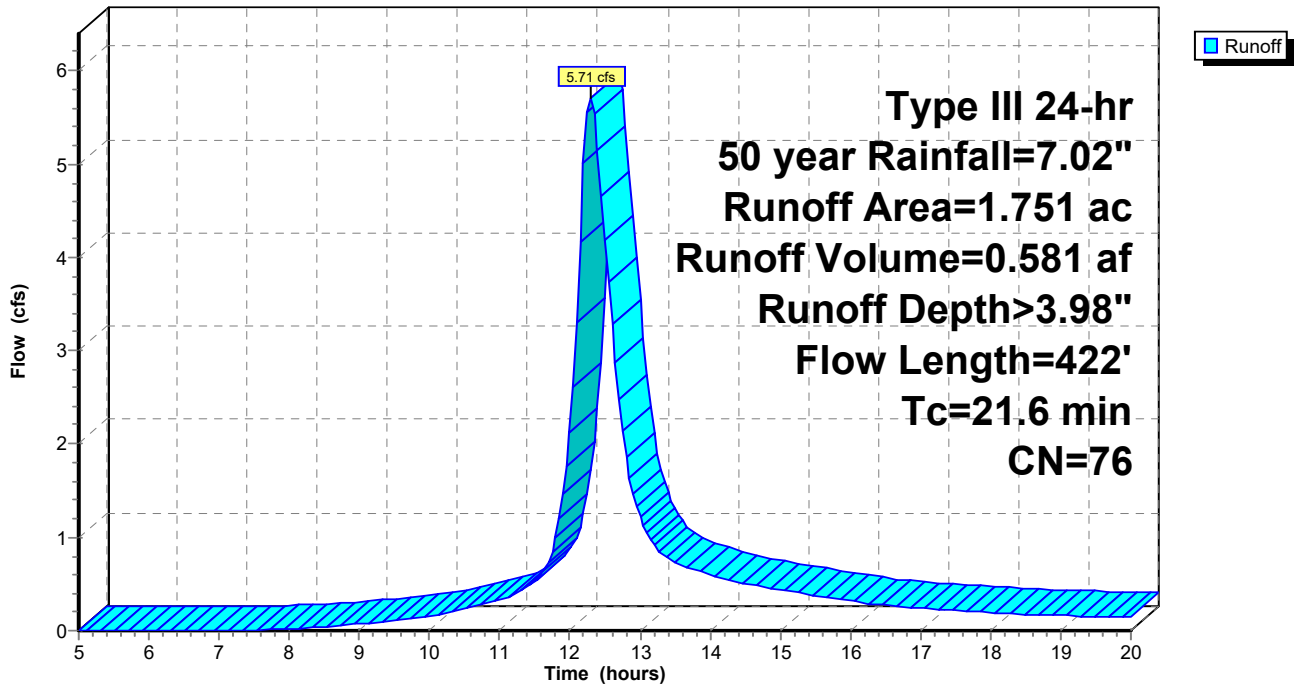
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.028	69	50-75% Grass cover, Fair, HSG B
1.540	78	Row crops, straight row, Good, HSG B
0.183	60	Woods, Fair, HSG B
1.751	76	Weighted Average
1.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
13.3	372	0.0027	0.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.6	422	Total			

Subcatchment 18: Subcat 18

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 19: Subcat 19

Runoff = 52.11 cfs @ 12.54 hrs, Volume= 6.927 af, Depth> 3.85"

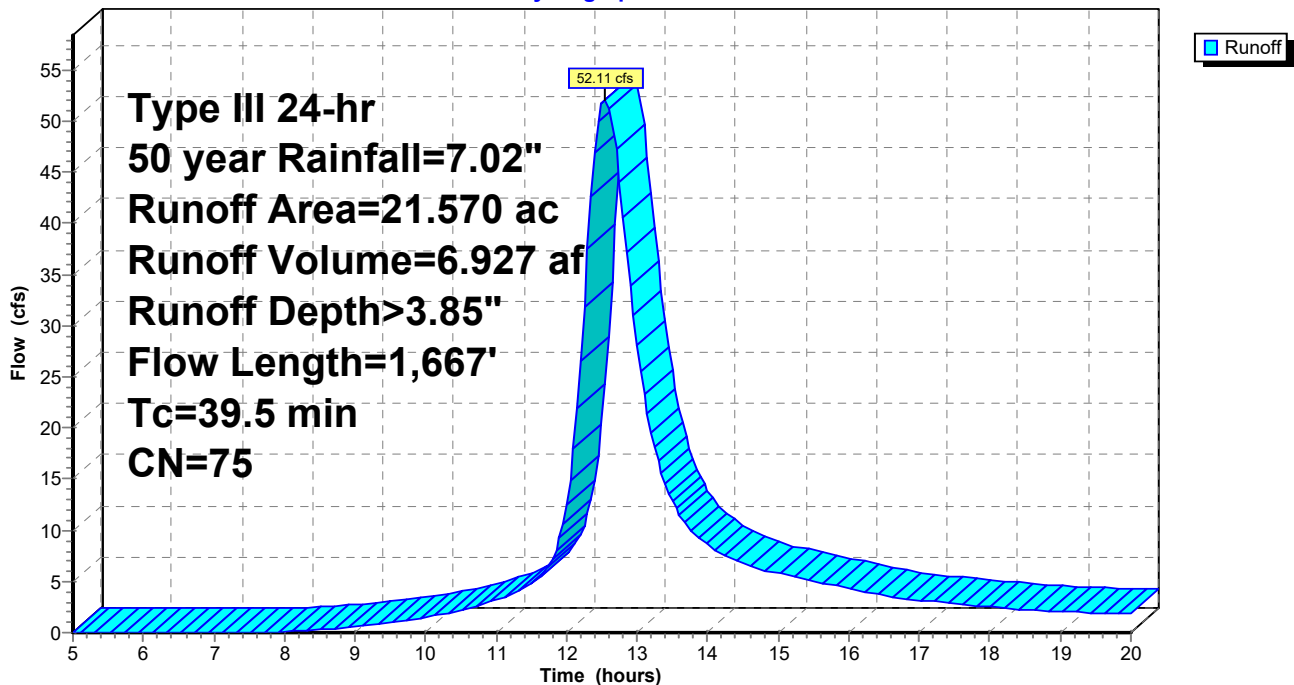
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.134	49	50-75% Grass cover, Fair, HSG A
3.781	69	50-75% Grass cover, Fair, HSG B
17.007	78	Row crops, straight row, Good, HSG B
0.294	36	Woods, Fair, HSG A
0.355	60	Woods, Fair, HSG B
21.570	75	Weighted Average
21.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
23.6	1,090	0.0073	0.77		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.6	527	0.0171	0.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
39.5	1,667	Total			

Subcatchment 19: Subcat 19

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 20: Subcat 20

Runoff = 5.22 cfs @ 12.26 hrs, Volume= 0.499 af, Depth> 3.67"

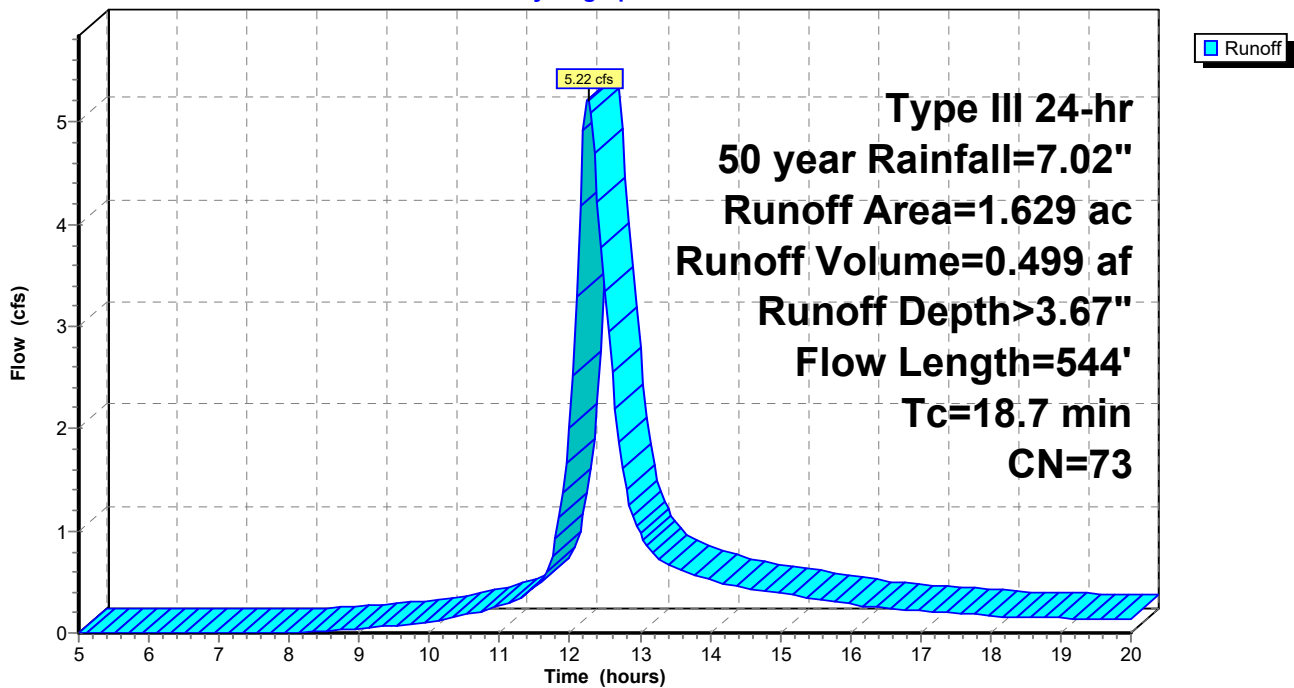
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.573	69	50-75% Grass cover, Fair, HSG B
0.876	78	Row crops, straight row, Good, HSG B
0.002	36	Woods, Fair, HSG A
0.178	60	Woods, Fair, HSG B
1.629	73	Weighted Average
1.629		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.3	251	0.0040	0.57		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.1	243	0.0206	1.29		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.7	544	Total			

Subcatchment 20: Subcat 20

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 21: Subcat 21

Runoff = 10.02 cfs @ 12.38 hrs, Volume= 1.115 af, Depth> 3.36"

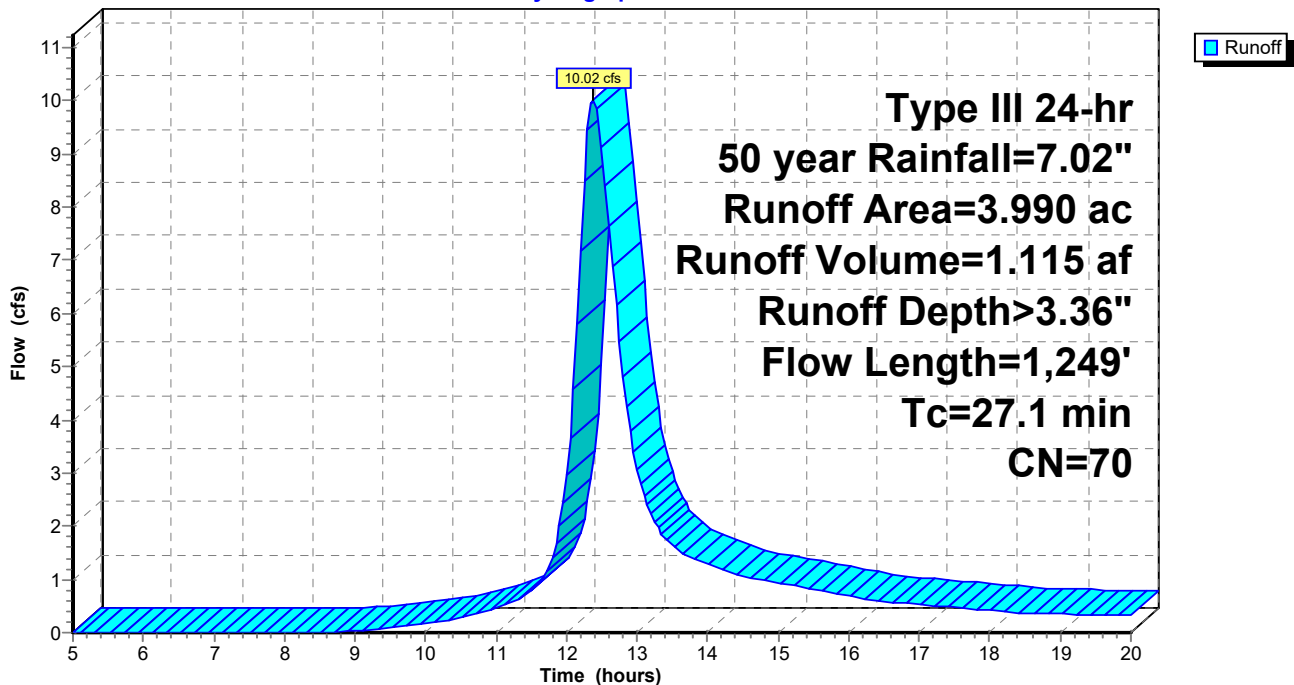
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.039	49	50-75% Grass cover, Fair, HSG A
1.109	69	50-75% Grass cover, Fair, HSG B
2.328	78	Row crops, straight row, Good, HSG B
0.426	36	Woods, Fair, HSG A
0.089	60	Woods, Fair, HSG B
3.990	70	Weighted Average
3.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.7	584	0.0086	0.83		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.1	615	0.0260	1.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
27.1	1,249	Total			

Subcatchment 21: Subcat 21

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 22: Subcat 22

Runoff = 33.86 cfs @ 12.75 hrs, Volume= 5.355 af, Depth> 3.63"

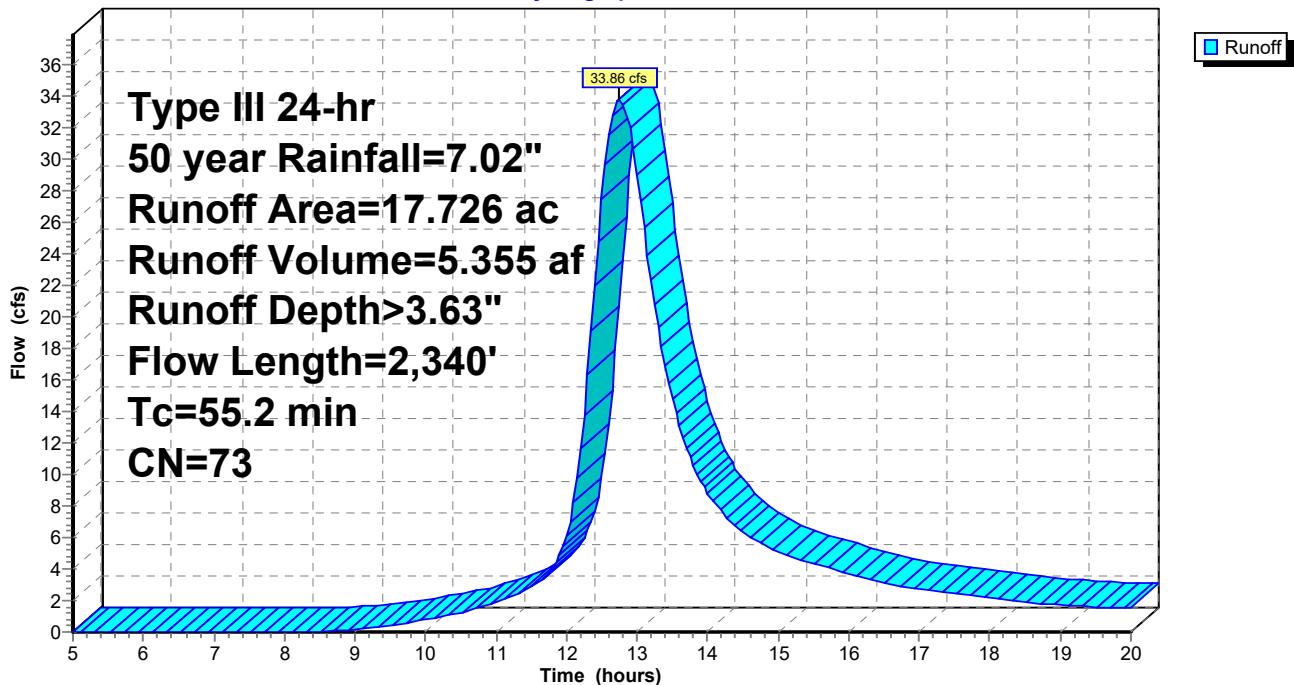
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
4.876	69	50-75% Grass cover, Fair, HSG B
0.440	56	Brush, Fair, HSG B
10.915	78	Row crops, straight row, Good, HSG B
1.496	60	Woods, Fair, HSG B
17.726	73	Weighted Average
17.726		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
35.0	1,416	0.0056	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
8.8	636	0.0299	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.1	238	0.0336	1.28		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
55.2	2,340	Total			

Subcatchment 22: Subcat 22

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 23: Subcat 23

[49] Hint: Tc<2dt may require smaller dt

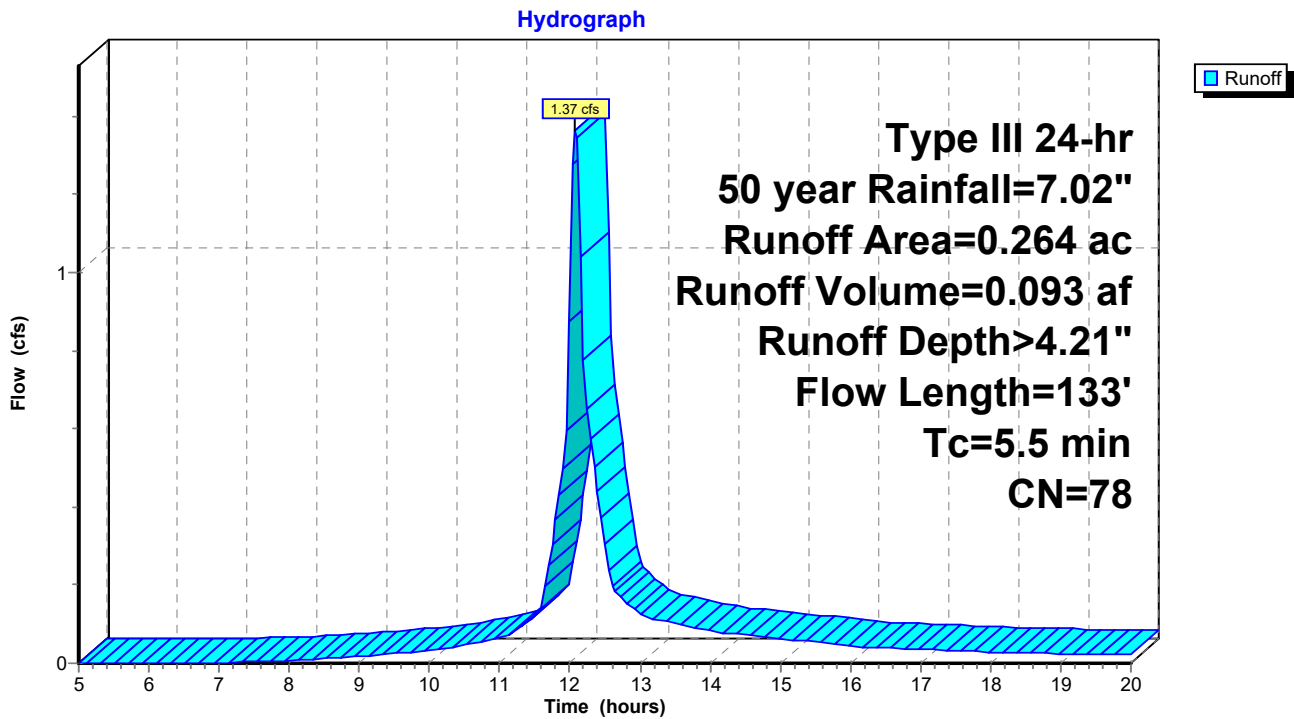
Runoff = 1.37 cfs @ 12.08 hrs, Volume= 0.093 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.264	78	Row crops, straight row, Good, HSG B
0.264		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0400	0.18		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
0.8	83	0.0361	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
5.5	133	Total			

Subcatchment 23: Subcat 23



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 24: Subcat 24

Runoff = 9.74 cfs @ 12.22 hrs, Volume= 0.880 af, Depth> 3.78"

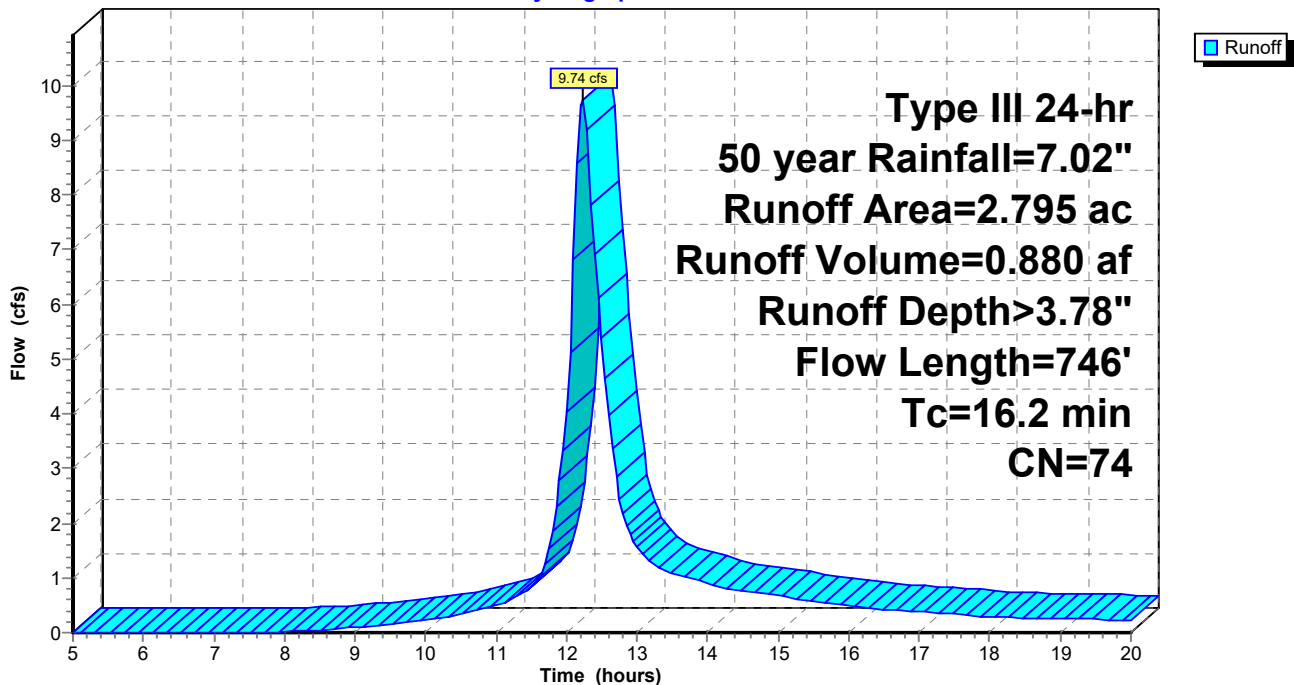
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.439	56	Brush, Fair, HSG B
2.345	78	Row crops, straight row, Good, HSG B
0.012	60	Woods, Fair, HSG B
2.795	74	Weighted Average
2.795		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.4	284	0.0141	1.07		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
0.8	112	0.1071	2.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.7	300	0.0433	1.87		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.2	746	Total			

Subcatchment 24: Subcat 24

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 25: Subcat 25

Runoff = 30.73 cfs @ 12.52 hrs, Volume= 4.015 af, Depth> 3.96"

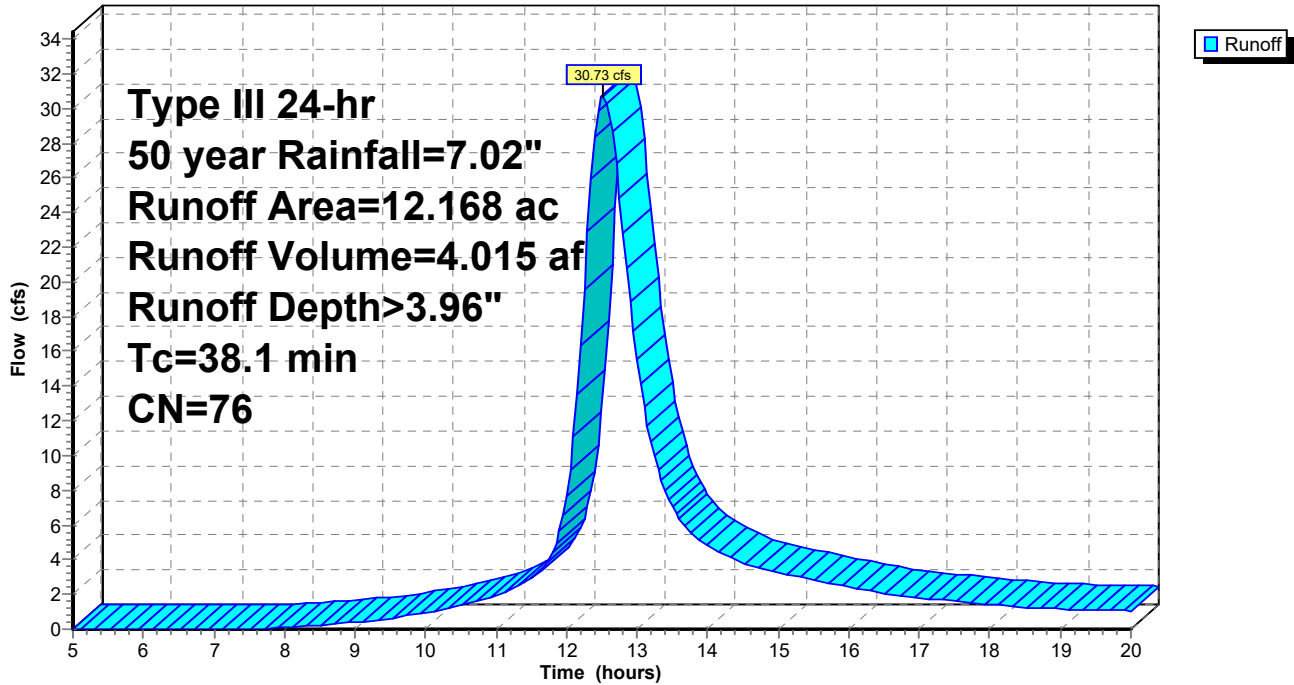
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.022	69	50-75% Grass cover, Fair, HSG B
11.271	78	Row crops, straight row, Good, HSG B
0.129	36	Woods, Fair, HSG A
0.746	60	Woods, Fair, HSG B
12.168	76	Weighted Average
12.168		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.1					Direct Entry,

Subcatchment 25: Subcat 25

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 27: Subcat 27

Runoff = 5.97 cfs @ 12.27 hrs, Volume= 0.578 af, Depth> 3.16"

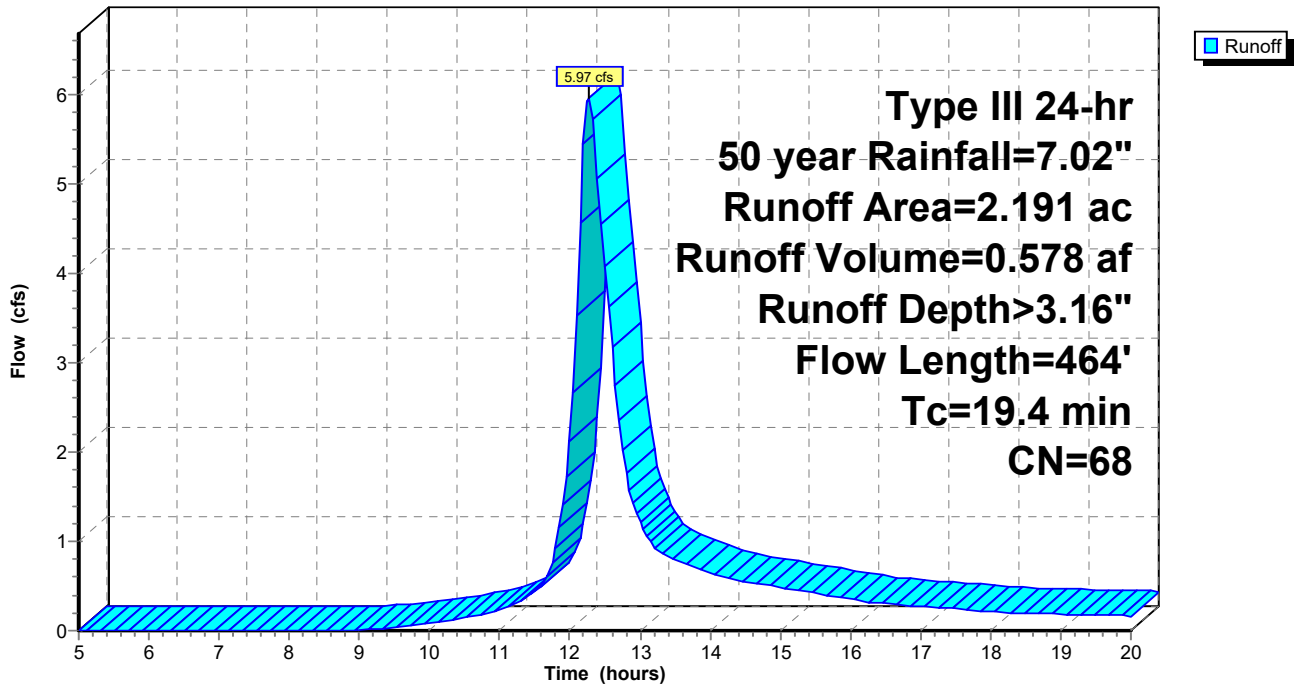
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
1.050	78	Row crops, straight row, Good, HSG B
0.036	36	Woods, Fair, HSG A
1.105	60	Woods, Fair, HSG B
2.191	68	Weighted Average
2.191		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.1	414	0.0048	0.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
19.4	464	Total			

Subcatchment 27: Subcat 27

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 28: Subcat 28

Runoff = 14.81 cfs @ 12.23 hrs, Volume= 1.353 af, Depth> 2.21"

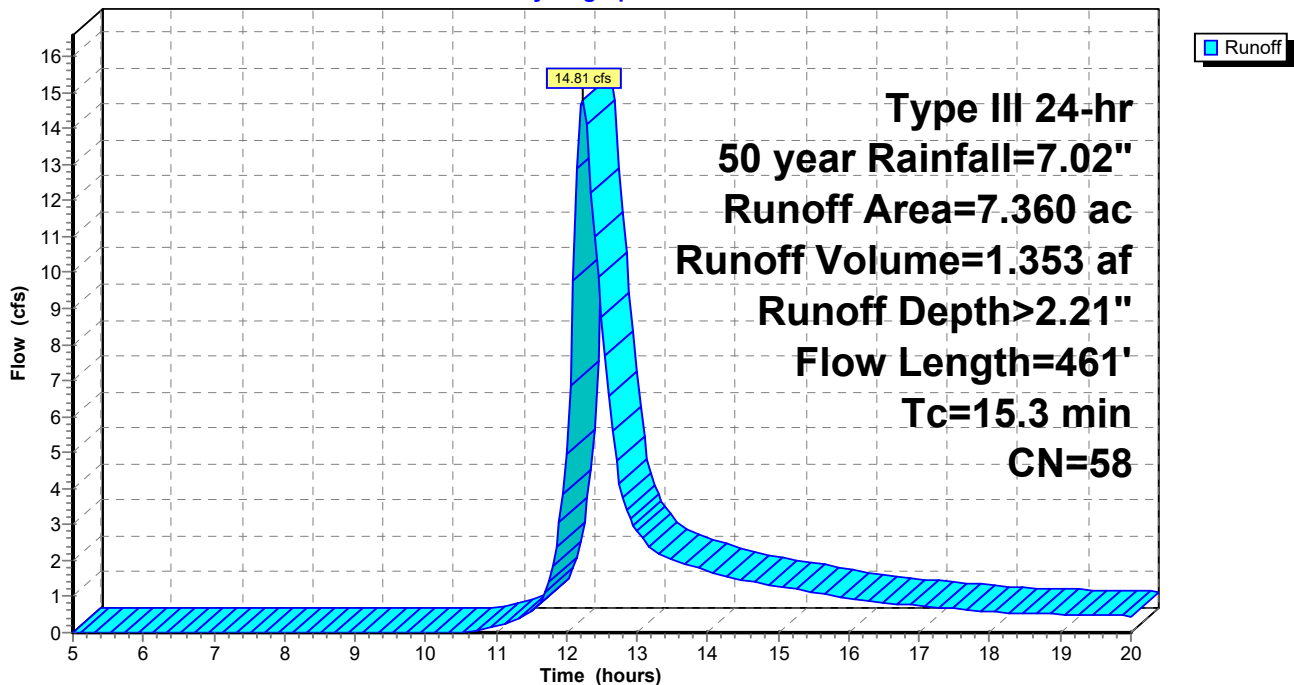
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.095	49	50-75% Grass cover, Fair, HSG A
1.457	69	50-75% Grass cover, Fair, HSG B
2.094	78	Row crops, straight row, Good, HSG B
2.776	36	Woods, Fair, HSG A
0.938	60	Woods, Fair, HSG B
7.360	58	Weighted Average
7.360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.8	269	0.0074	0.77		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	142	0.1479	1.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	461	Total			

Subcatchment 28: Subcat 28

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 29: Subcat 29

Runoff = 0.36 cfs @ 12.44 hrs, Volume= 0.064 af, Depth> 0.47"

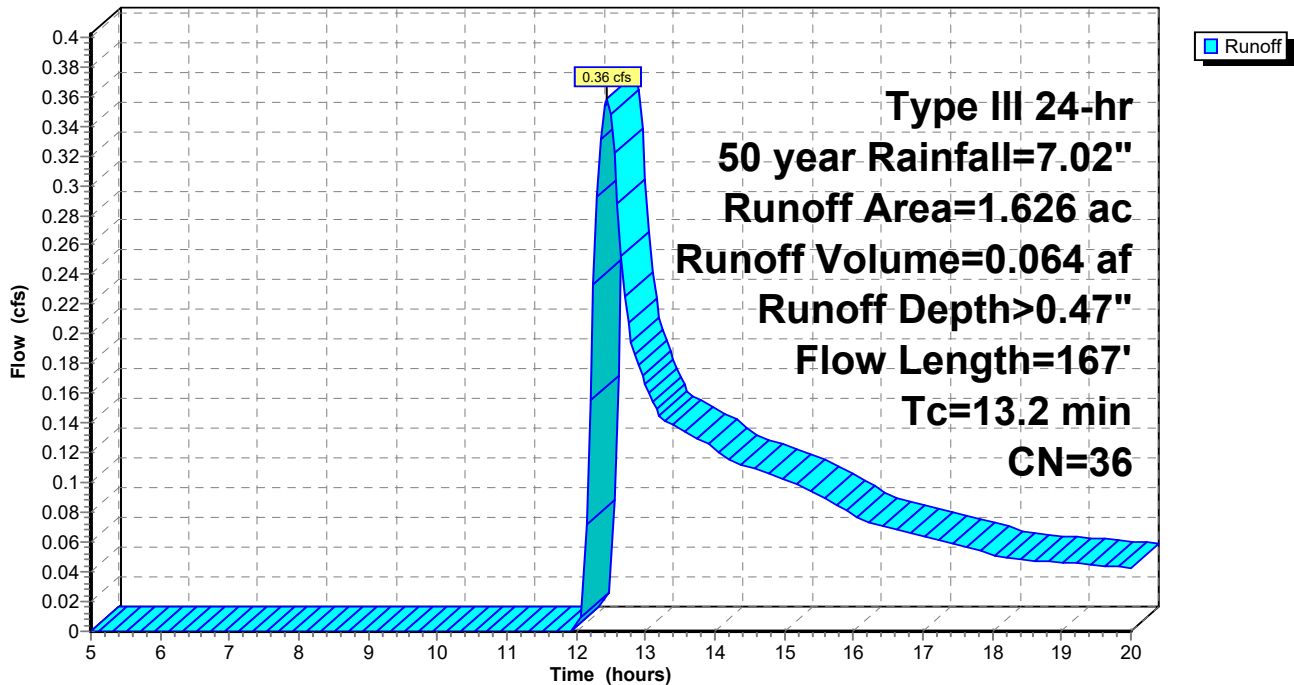
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.000	49	50-75% Grass cover, Fair, HSG A
0.006	69	50-75% Grass cover, Fair, HSG B
1.620	36	Woods, Fair, HSG A
0.000	60	Woods, Fair, HSG B
1.626	36	Weighted Average
1.626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
0.8	117	0.2222	2.36		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.2	167	Total			

Subcatchment 29: Subcat 29

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 30: Subcat 30

Runoff = 13.91 cfs @ 12.16 hrs, Volume= 1.100 af, Depth> 3.37"

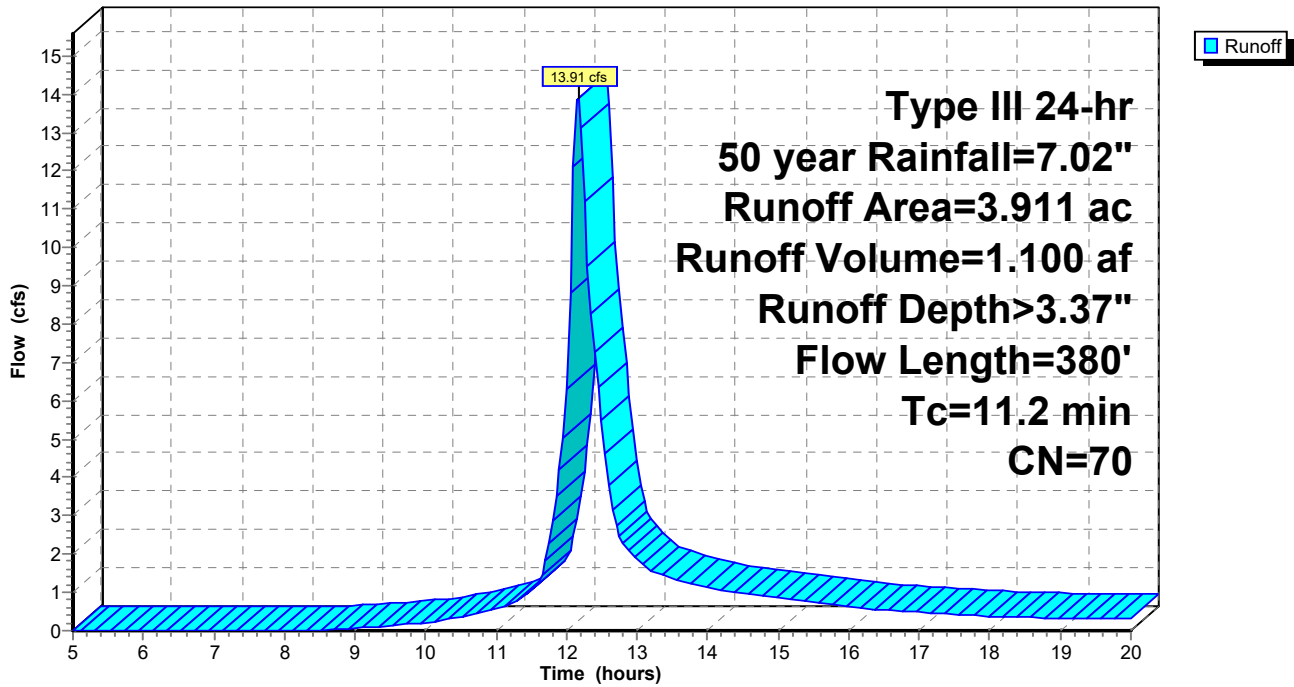
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.008	49	50-75% Grass cover, Fair, HSG A
3.548	69	50-75% Grass cover, Fair, HSG B
0.040	86	Fallow, bare soil, HSG B
0.311	78	Row crops, straight row, Good, HSG B
0.004	36	Woods, Fair, HSG A
3.911	70	Weighted Average
3.911		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.4	330	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.2	380	Total			

Subcatchment 30: Subcat 30

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 31: Subcat 31

Runoff = 2.20 cfs @ 12.16 hrs, Volume= 0.245 af, Depth> 0.81"

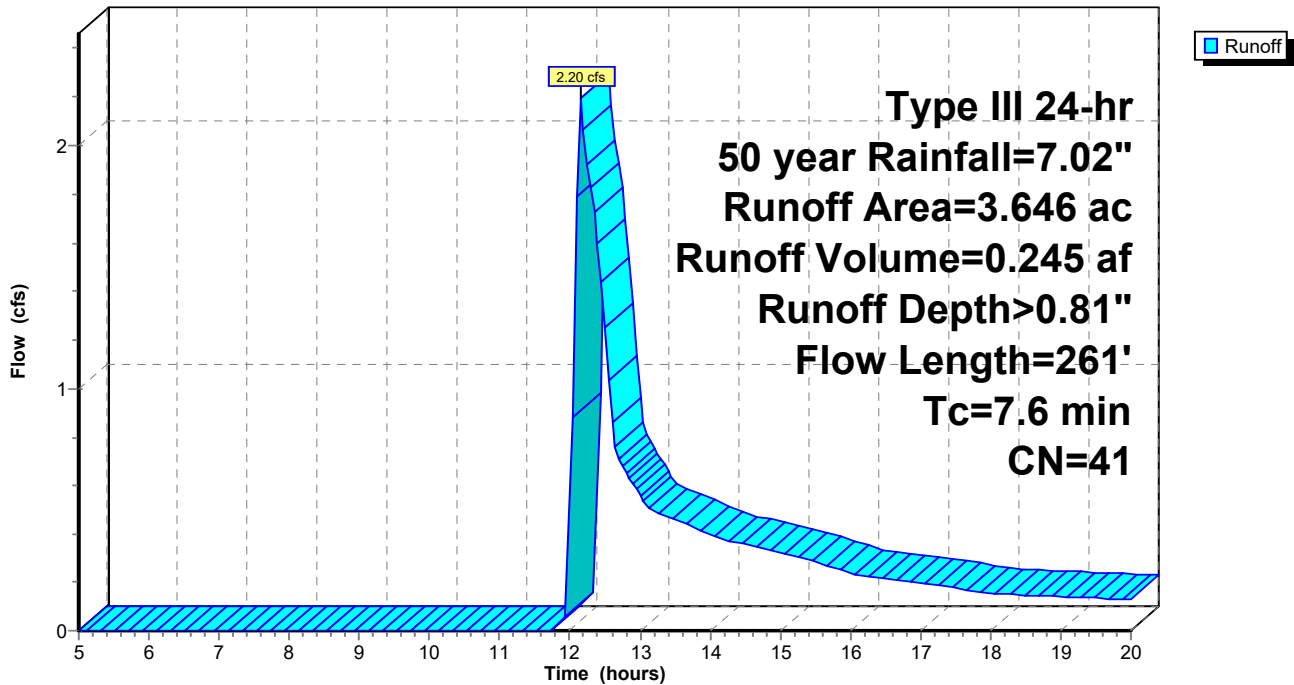
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.132	49	50-75% Grass cover, Fair, HSG A
0.518	69	50-75% Grass cover, Fair, HSG B
0.014	77	Fallow, bare soil, HSG A
0.011	86	Fallow, bare soil, HSG B
2.971	36	Woods, Fair, HSG A
3.646	41	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.9	211	0.1374	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.6	261	Total			

Subcatchment 31: Subcat 31

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 32: Subcat 32

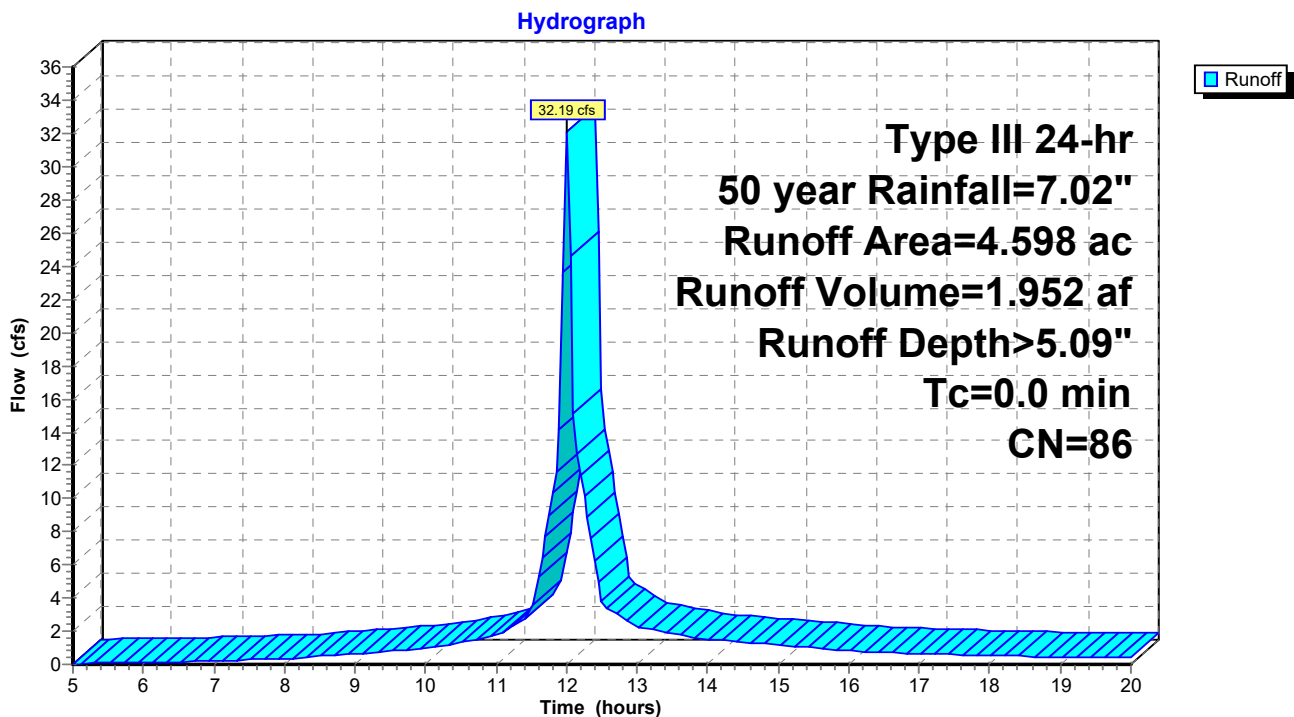
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 32.19 cfs @ 12.00 hrs, Volume= 1.952 af, Depth> 5.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.006	49	50-75% Grass cover, Fair, HSG A
0.012	69	50-75% Grass cover, Fair, HSG B
0.089	77	Fallow, bare soil, HSG A
4.486	86	Fallow, bare soil, HSG B
0.006	36	Woods, Fair, HSG A
4.598	86	Weighted Average
4.598		100.00% Pervious Area

Subcatchment 32: Subcat 32



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 33: Subcat 33

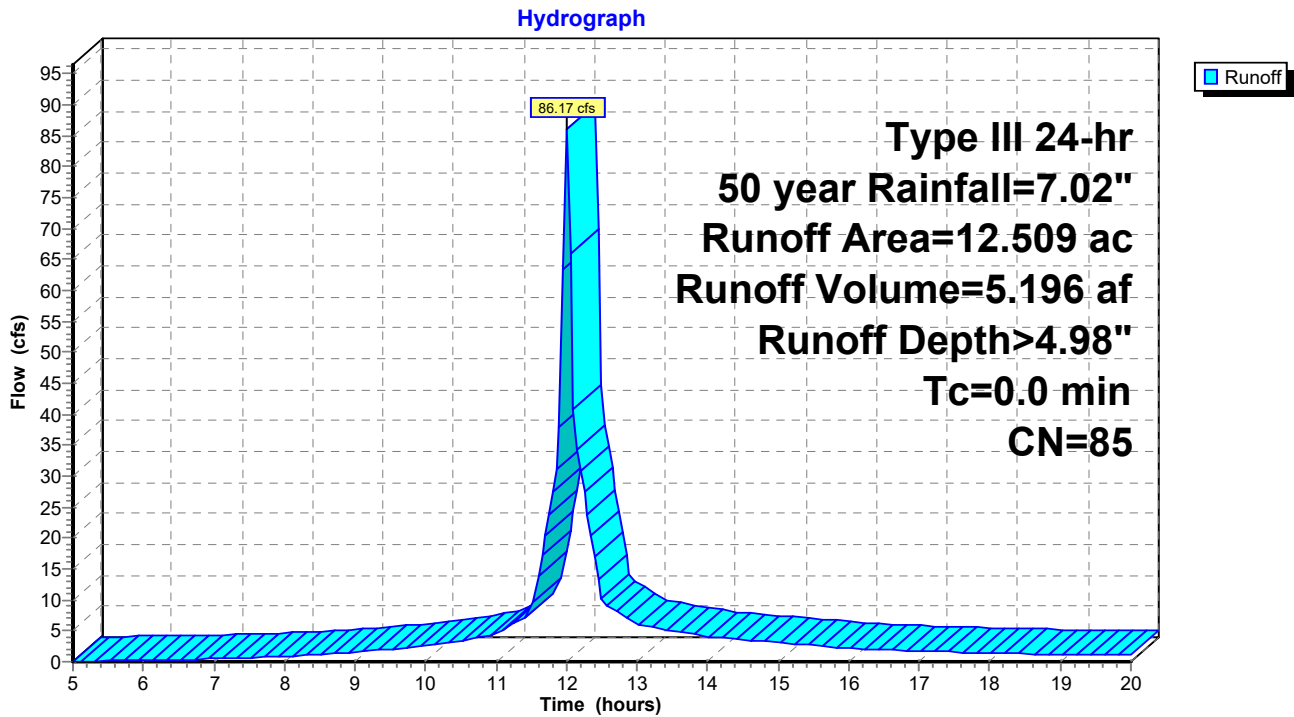
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 86.17 cfs @ 12.00 hrs, Volume= 5.196 af, Depth> 4.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.007	69	50-75% Grass cover, Fair, HSG B
1.702	77	Fallow, bare soil, HSG A
10.799	86	Fallow, bare soil, HSG B
0.001	60	Woods, Fair, HSG B
12.509	85	Weighted Average
12.509		100.00% Pervious Area

Subcatchment 33: Subcat 33



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 35: Subcat 35

Runoff = 40.41 cfs @ 12.30 hrs, Volume= 4.137 af, Depth> 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.028	69	50-75% Grass cover, Fair, HSG B
1.016	77	Fallow, bare soil, HSG A
8.929	86	Fallow, bare soil, HSG B
1.764	36	Woods, Fair, HSG A
0.101	60	Woods, Fair, HSG B
11.838	78	Weighted Average
11.838		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	217	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	97	0.1237	3.52		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.7	215	0.0093	0.96		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
21.7	579	Total			

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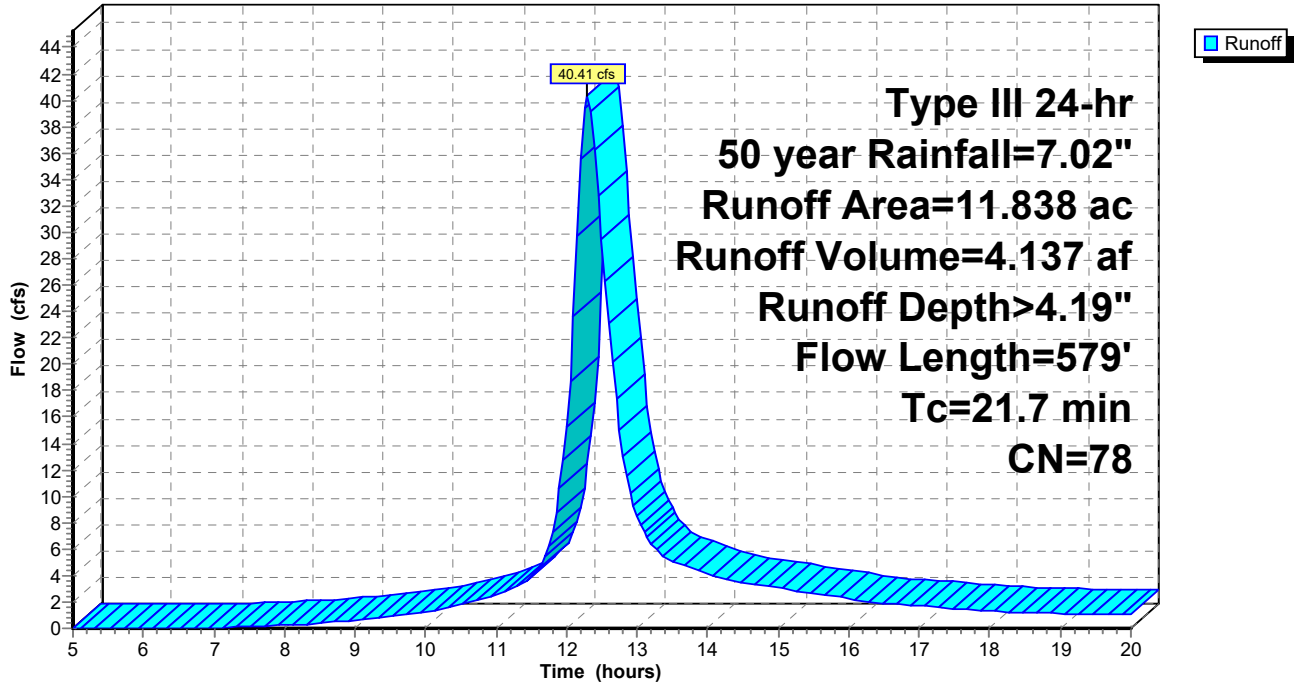
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 35: Subcat 35

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 3P: (new Pond)

Inflow Area = 2.555 ac, 0.00% Impervious, Inflow Depth > 2.77" for 50 year event
 Inflow = 6.13 cfs @ 12.27 hrs, Volume= 0.590 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.50' @ 20.00 hrs Surf.Area= 19,643 sf Storage= 25,673 cf

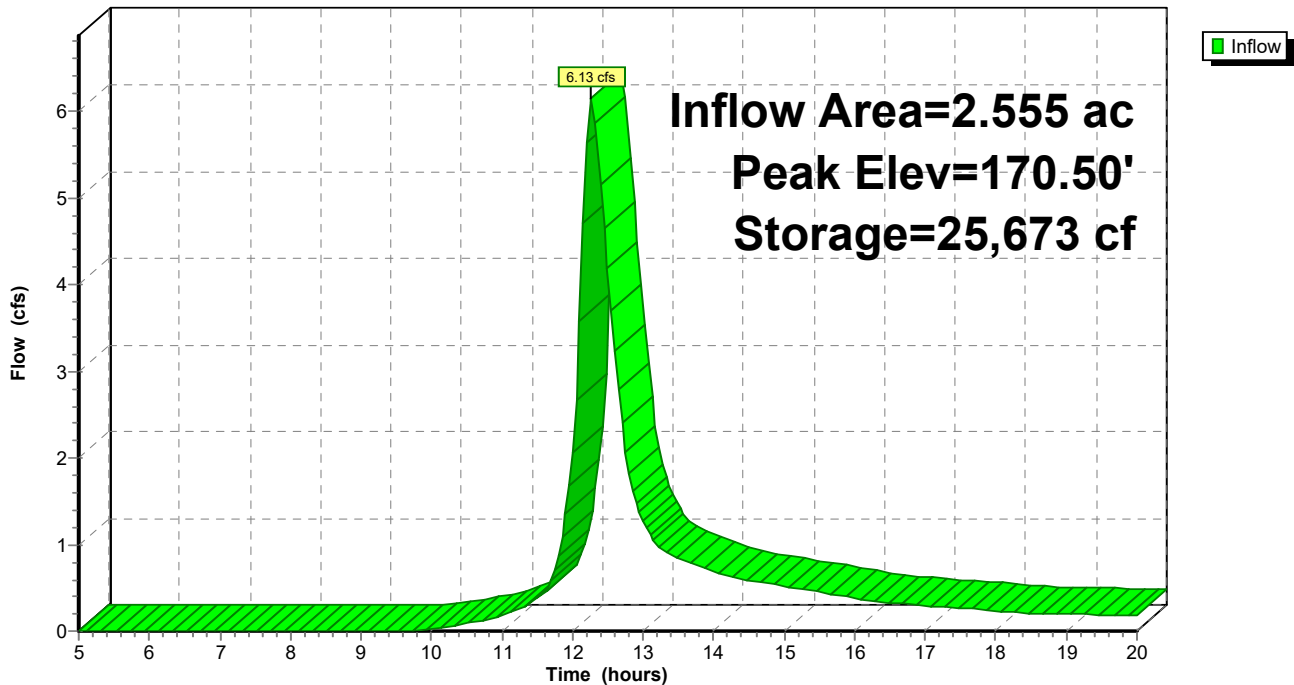
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	95,578 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	0	0	0
170.00	16,657	16,657	16,657
172.00	28,677	45,334	61,991
173.00	38,496	33,587	95,578

Pond 3P: (new Pond)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 7P: (new Pond)

Inflow Area = 17.083 ac, 0.00% Impervious, Inflow Depth > 4.06" for 50 year event
 Inflow = 42.59 cfs @ 12.56 hrs, Volume= 5.782 af
 Outflow = 15.29 cfs @ 13.26 hrs, Volume= 5.590 af, Atten= 64%, Lag= 42.0 min
 Discarded = 14.39 cfs @ 13.26 hrs, Volume= 5.537 af
 Primary = 0.90 cfs @ 13.26 hrs, Volume= 0.053 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.57' @ 13.26 hrs Surf.Area= 206,613 sf Storage= 94,501 cf

Plug-Flow detention time= 84.2 min calculated for 5.572 af (96% of inflow)
 Center-of-Mass det. time= 72.3 min (881.5 - 809.2)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	188,598 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.00	0	0	0	0
164.00	57,239	19,080	19,080	57,241
164.50	203,000	61,339	80,418	203,003
165.00	230,000	108,180	188,598	230,015

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=14.39 cfs @ 13.26 hrs HW=164.57' (Free Discharge)
 ↑**2=Exfiltration** (Controls 14.39 cfs)

Primary OutFlow Max=0.90 cfs @ 13.26 hrs HW=164.57' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.90 cfs @ 0.65 fps)

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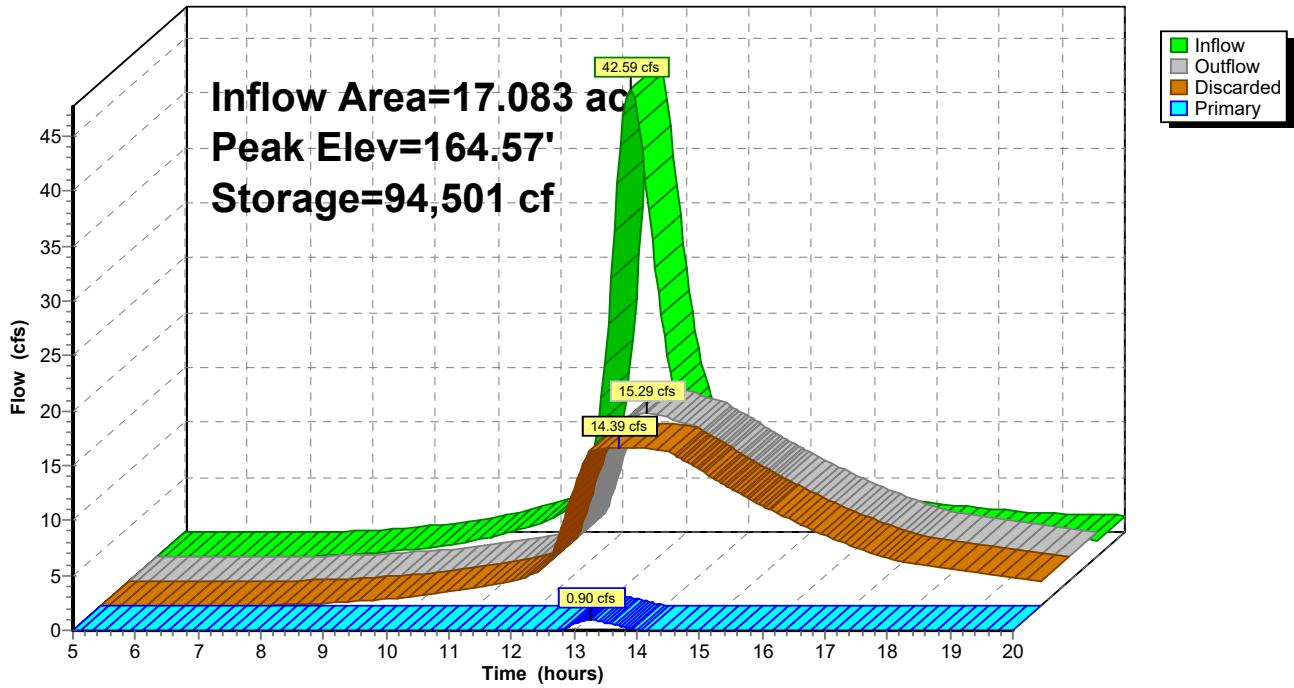
Type III 24-hr 50 year Rainfall=7.02"

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Pond 7P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 10P: (new Pond)

Inflow Area = 6.364 ac, 2.50% Impervious, Inflow Depth > 1.54" for 50 year event
 Inflow = 9.76 cfs @ 12.19 hrs, Volume= 0.819 af
 Outflow = 0.31 cfs @ 18.11 hrs, Volume= 0.199 af, Atten= 97%, Lag= 355.1 min
 Discarded = 0.31 cfs @ 18.11 hrs, Volume= 0.199 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 150.19' @ 18.11 hrs Surf.Area= 13,158 sf Storage= 27,204 cf

Plug-Flow detention time= 250.4 min calculated for 0.198 af (24% of inflow)
 Center-of-Mass det. time= 151.3 min (963.0 - 811.7)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	274,837 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	1,534	0	0	1,534
148.00	5,773	6,855	6,855	5,793
150.00	12,558	17,897	24,752	12,610
152.00	19,547	31,848	56,601	19,656
154.00	26,610	45,976	102,576	26,800
156.00	32,562	59,072	161,648	32,876
158.00	39,456	71,908	233,556	39,899
159.00	43,134	41,281	274,837	43,647

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.31 cfs @ 18.11 hrs HW=150.19' (Free Discharge)
 ↑1=Exfiltration (Controls 0.31 cfs)

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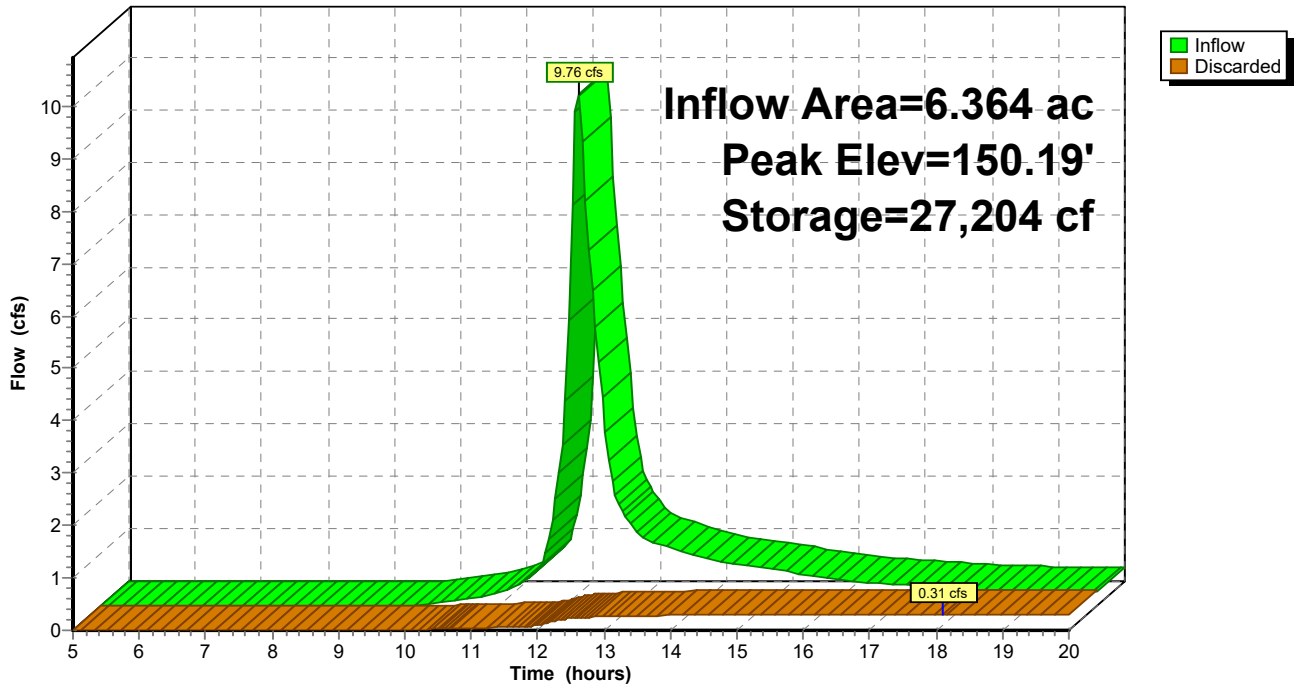
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Pond 10P: (new Pond)

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Summary for Pond 11AP: (new Pond)

Inflow Area = 6.449 ac, 0.00% Impervious, Inflow Depth > 1.03" for 50 year event
 Inflow = 5.38 cfs @ 12.18 hrs, Volume= 0.551 af
 Outflow = 0.35 cfs @ 17.71 hrs, Volume= 0.208 af, Atten= 94%, Lag= 331.8 min
 Discarded = 0.35 cfs @ 17.71 hrs, Volume= 0.208 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 127.87' @ 17.71 hrs Surf.Area= 14,778 sf Storage= 15,358 cf

Plug-Flow detention time= 237.9 min calculated for 0.207 af (38% of inflow)
 Center-of-Mass det. time= 126.3 min (977.5 - 851.3)

Volume	Invert	Avail.Storage	Storage Description
#1	126.00'	127,579 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
126.00	3,074	0	0	3,074
128.00	15,883	17,296	17,296	15,899
130.00	28,094	43,401	60,697	28,154
132.00	39,090	66,882	127,579	39,226

Device	Routing	Invert	Outlet Devices
#1	Discarded	126.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.35 cfs @ 17.71 hrs HW=127.87' (Free Discharge)
 ↑1=Exfiltration (Controls 0.35 cfs)

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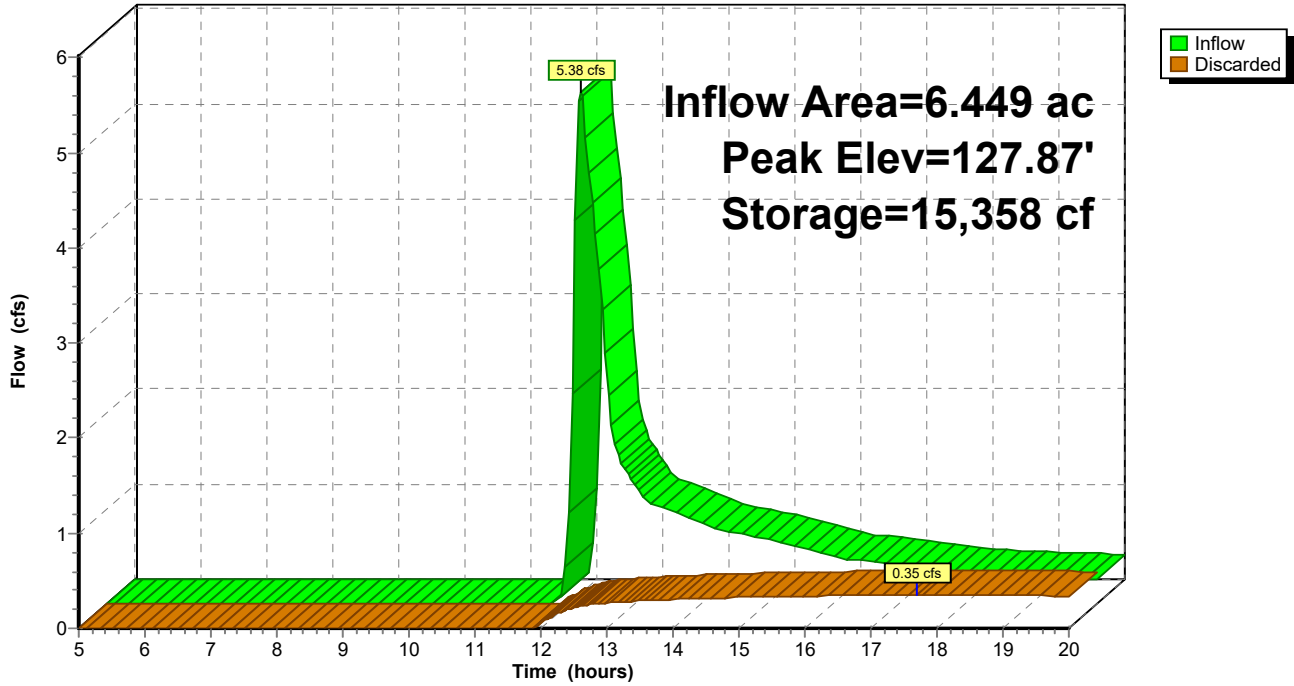
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Pond 11AP: (new Pond)

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Summary for Pond 11P: (new Pond)

Inflow Area = 5.661 ac, 0.85% Impervious, Inflow Depth > 2.21" for 50 year event
 Inflow = 11.32 cfs @ 12.23 hrs, Volume= 1.041 af
 Outflow = 0.34 cfs @ 20.00 hrs, Volume= 0.215 af, Atten= 97%, Lag= 466.1 min
 Discarded = 0.34 cfs @ 20.00 hrs, Volume= 0.215 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.10' @ 20.00 hrs Surf.Area= 14,428 sf Storage= 35,987 cf

Plug-Flow detention time= 247.3 min calculated for 0.215 af (21% of inflow)
 Center-of-Mass det. time= 144.2 min (967.0 - 822.8)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	518,849 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	3,101	0	0	3,101
144.00	9,033	11,618	11,618	9,057
146.00	14,143	22,986	34,604	14,223
148.00	20,595	34,537	69,140	20,742
150.00	26,222	46,704	115,844	26,472
152.00	32,411	58,524	174,368	32,779
154.00	41,950	74,156	248,524	42,415
156.00	49,984	91,817	340,341	50,591
158.00	62,571	112,320	452,660	63,289
159.00	69,874	66,189	518,849	70,649

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.34 cfs @ 20.00 hrs HW=146.10' (Free Discharge)
 ↑1=Exfiltration (Controls 0.34 cfs)

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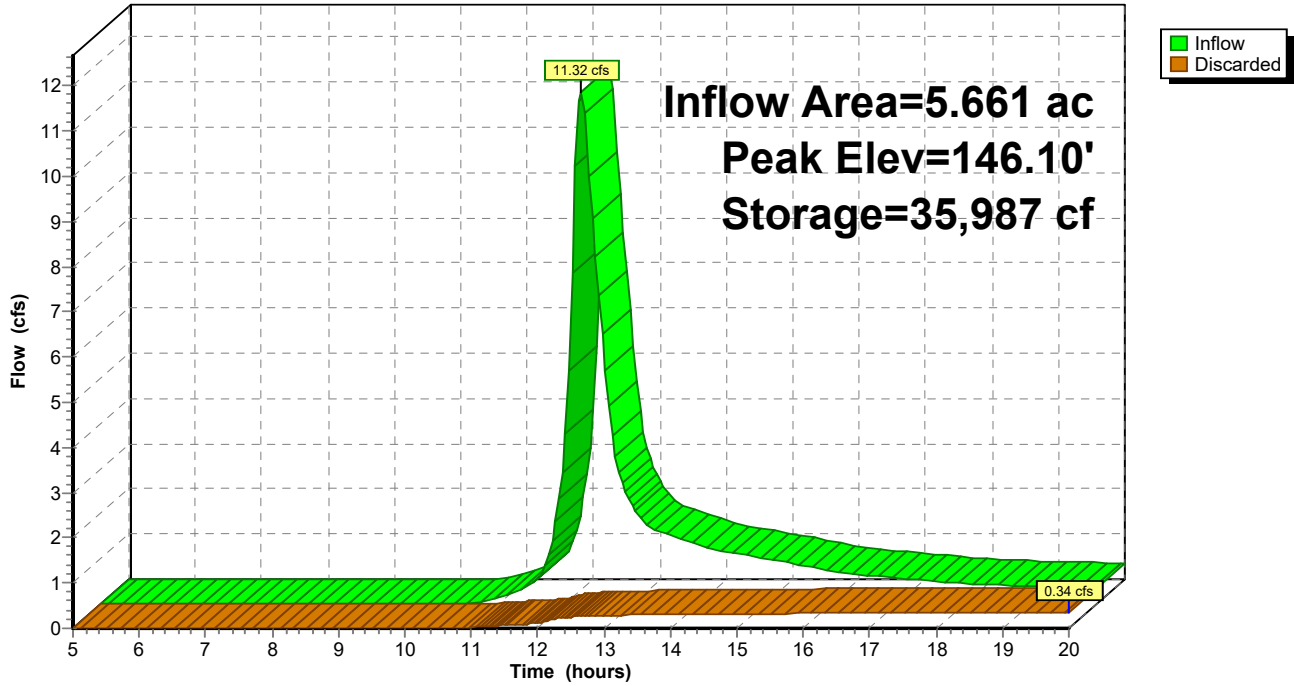
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Pond 11P: (new Pond)

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Summary for Pond 12P: (new Pond)

Inflow Area = 2.699 ac, 5.89% Impervious, Inflow Depth > 4.20" for 50 year event
 Inflow = 10.95 cfs @ 12.19 hrs, Volume= 0.945 af
 Outflow = 1.60 cfs @ 12.96 hrs, Volume= 0.877 af, Atten= 85%, Lag= 46.2 min
 Discarded = 1.60 cfs @ 12.96 hrs, Volume= 0.877 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.97' @ 12.96 hrs Surf.Area= 22,953 sf Storage= 19,063 cf

Plug-Flow detention time= 142.7 min calculated for 0.874 af (92% of inflow)
 Center-of-Mass det. time= 117.8 min (903.5 - 785.7)

Volume	Invert	Avail.Storage	Storage Description
#1	161.00'	52,117 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
161.00	0	0	0 0
162.00	10,223	3,408	3,408 10,225
164.00	42,096	48,709	52,117 42,116

Device	Routing	Invert	Outlet Devices
#1	Primary	163.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	161.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.60 cfs @ 12.96 hrs HW=162.97' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.60 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=161.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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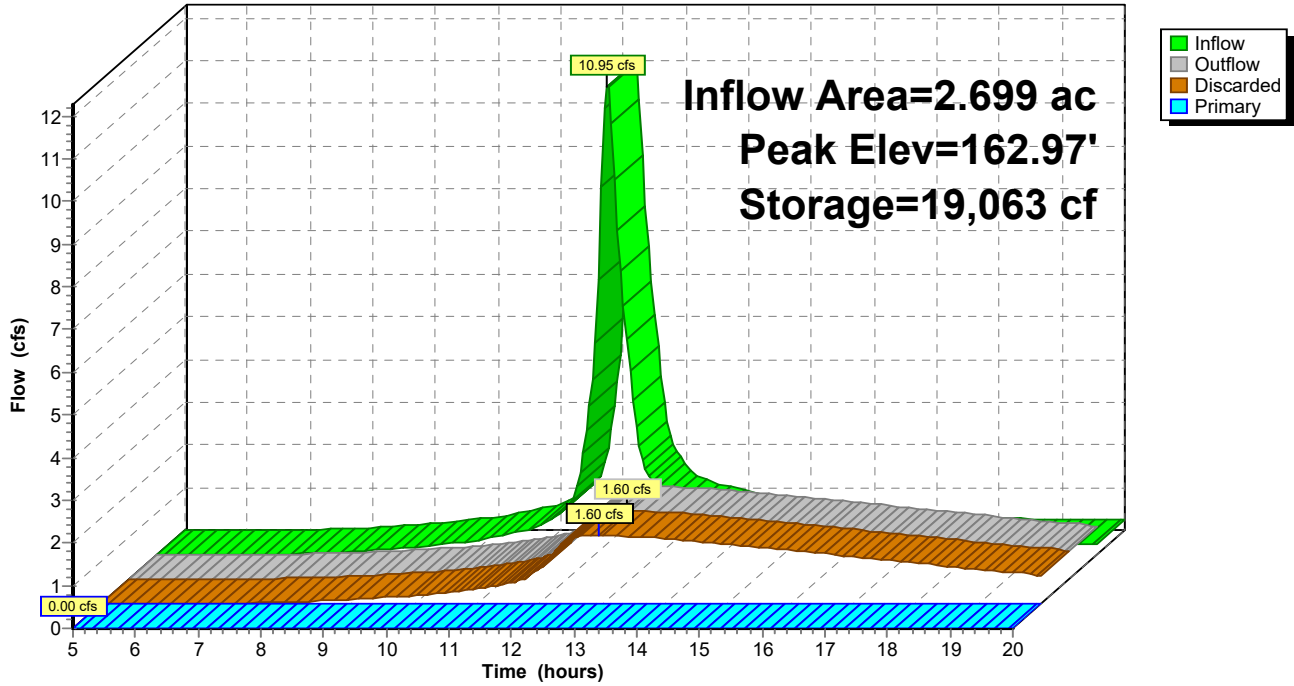
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Pond 12P: (new Pond)

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Summary for Pond 13P: (new Pond)

Inflow Area = 18.096 ac, 1.07% Impervious, Inflow Depth > 4.15" for 50 year event
 Inflow = 40.60 cfs @ 12.70 hrs, Volume= 6.262 af
 Outflow = 35.69 cfs @ 12.92 hrs, Volume= 5.922 af, Atten= 12%, Lag= 13.2 min
 Discarded = 6.94 cfs @ 12.92 hrs, Volume= 3.428 af
 Primary = 28.75 cfs @ 12.92 hrs, Volume= 2.494 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.79' @ 12.92 hrs Surf.Area= 99,585 sf Storage= 60,473 cf

Plug-Flow detention time= 62.5 min calculated for 5.902 af (94% of inflow)
 Center-of-Mass det. time= 44.5 min (860.6 - 816.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	84,396 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	0	0	0	0	
161.00	32,678	10,893	10,893	32,680	
162.00	124,141	73,504	84,396	124,147	

Device	Routing	Invert	Outlet Devices
#1	Primary	161.50'	70.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=6.94 cfs @ 12.92 hrs HW=161.79' (Free Discharge)
 ↑2=Exfiltration (Controls 6.94 cfs)

Primary OutFlow Max=28.67 cfs @ 12.92 hrs HW=161.79' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 28.67 cfs @ 1.44 fps)

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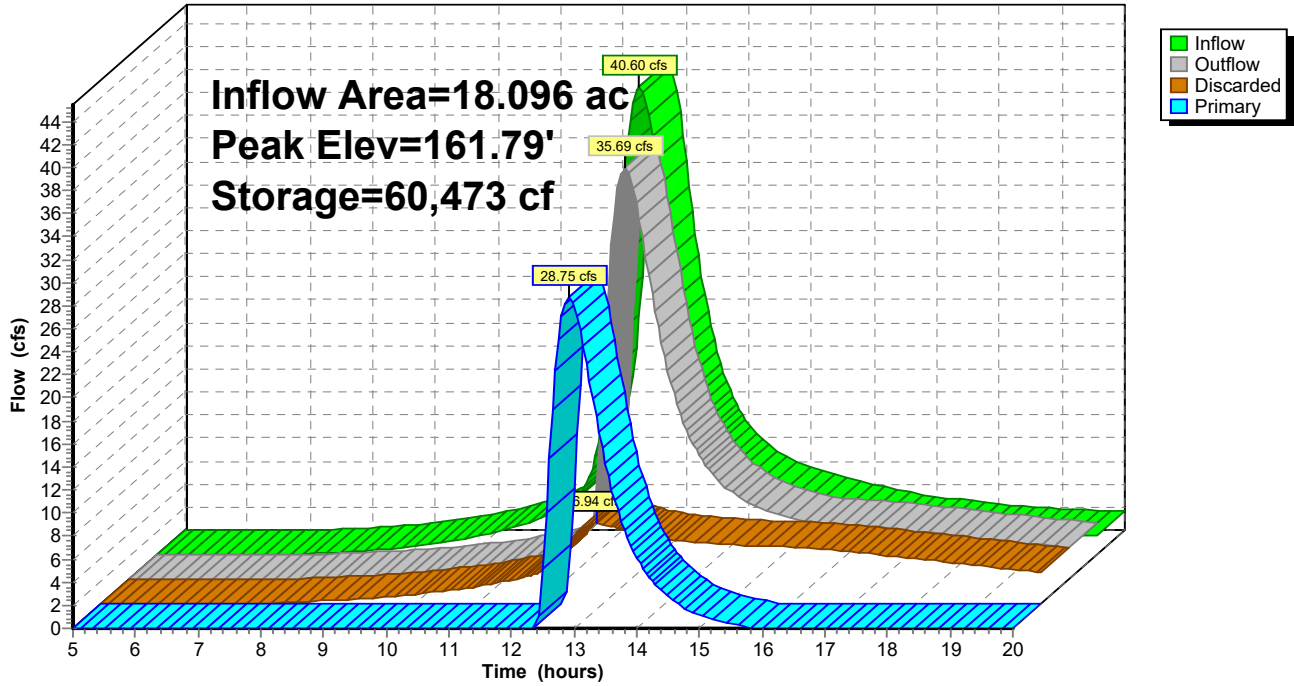
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Pond 13P: (new Pond)

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Summary for Pond 15P: (new Pond)

Inflow Area = 2.521 ac, 4.81% Impervious, Inflow Depth > 4.31" for 50 year event
 Inflow = 9.46 cfs @ 12.25 hrs, Volume= 0.905 af
 Outflow = 2.09 cfs @ 12.85 hrs, Volume= 0.877 af, Atten= 78%, Lag= 36.3 min
 Discarded = 2.09 cfs @ 12.85 hrs, Volume= 0.877 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.57' @ 12.85 hrs Surf.Area= 30,056 sf Storage= 16,664 cf

Plug-Flow detention time= 101.8 min calculated for 0.877 af (97% of inflow)
 Center-of-Mass det. time= 89.9 min (877.1 - 787.2)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	33,327 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	100	0	0	100
164.00	47,707	33,327	33,327	47,714

Device	Routing	Invert	Outlet Devices
#1	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.09 cfs @ 12.85 hrs HW=163.57' (Free Discharge)
 ↑1=Exfiltration (Controls 2.09 cfs)

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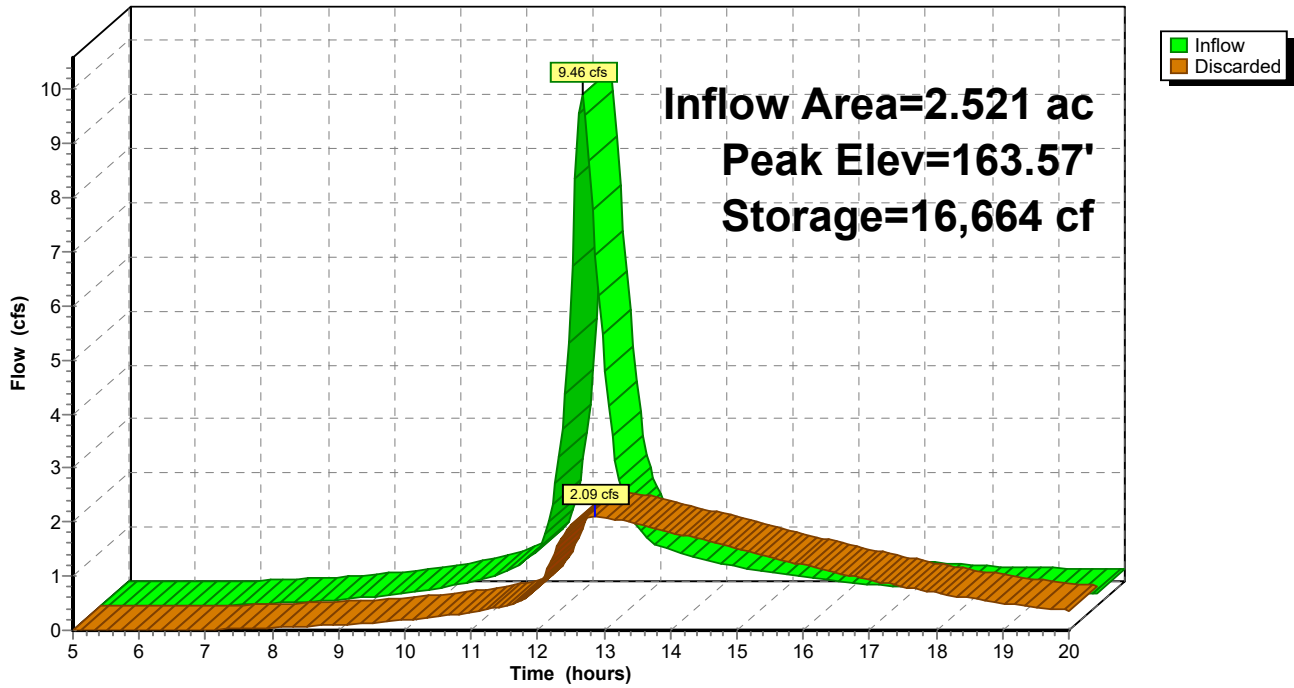
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Pond 15P: (new Pond)

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Summary for Pond 16P: (new Pond)

Inflow Area = 4.718 ac, 0.92% Impervious, Inflow Depth > 4.19" for 50 year event
 Inflow = 15.42 cfs @ 12.33 hrs, Volume= 1.648 af
 Outflow = 7.78 cfs @ 12.70 hrs, Volume= 1.618 af, Atten= 50%, Lag= 22.3 min
 Discarded = 3.62 cfs @ 12.70 hrs, Volume= 1.435 af
 Primary = 4.17 cfs @ 12.70 hrs, Volume= 0.184 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.10' @ 12.70 hrs Surf.Area= 51,956 sf Storage= 24,820 cf

Plug-Flow detention time= 73.8 min calculated for 1.613 af (98% of inflow)
 Center-of-Mass det. time= 66.9 min (860.7 - 793.8)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	106,646 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
162.00	3,106	0	0 3,106
164.00	136,289	106,646	106,646 136,298

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	50.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.62 cfs @ 12.70 hrs HW=163.10' (Free Discharge)
 ↑**2=Exfiltration** (Controls 3.62 cfs)

Primary OutFlow Max=4.16 cfs @ 12.70 hrs HW=163.10' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 4.16 cfs @ 0.84 fps)

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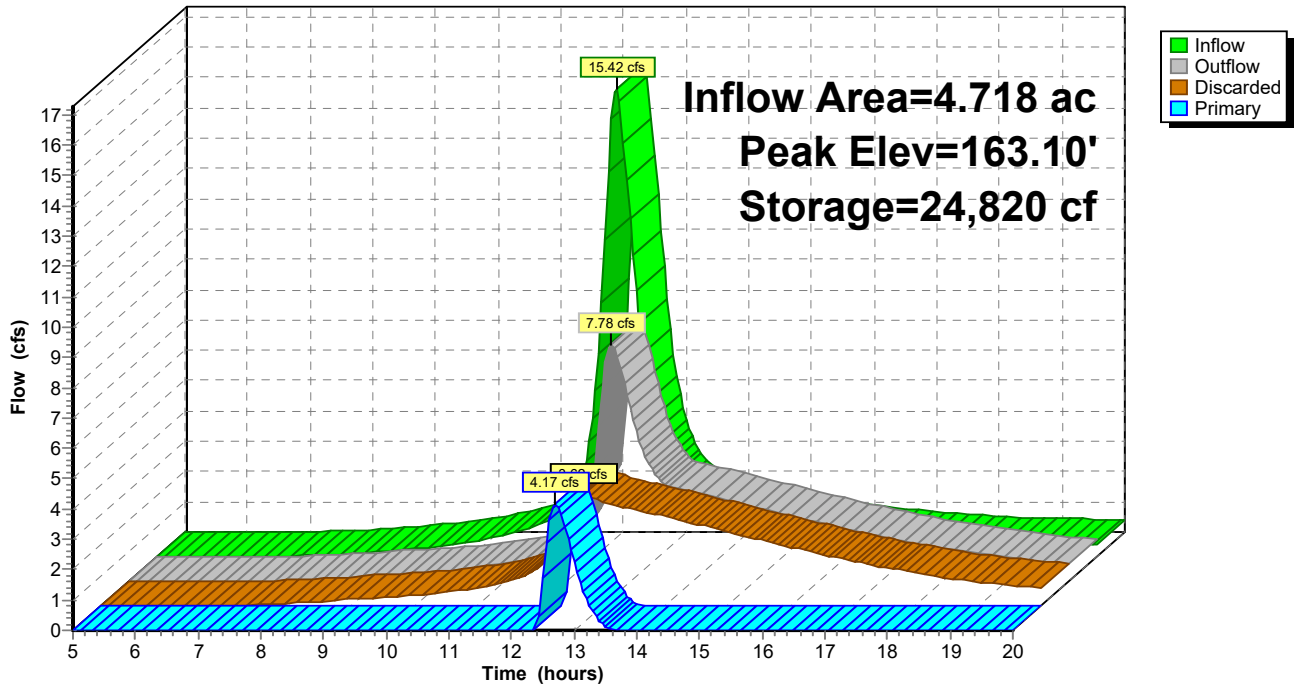
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Pond 16P: (new Pond)

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Summary for Pond 19P: (new Pond)

Inflow Area = 21.570 ac, 0.00% Impervious, Inflow Depth > 3.85" for 50 year event
 Inflow = 52.11 cfs @ 12.54 hrs, Volume= 6.927 af
 Outflow = 47.54 cfs @ 12.69 hrs, Volume= 6.550 af, Atten= 9%, Lag= 9.0 min
 Discarded = 4.88 cfs @ 12.69 hrs, Volume= 2.479 af
 Primary = 42.67 cfs @ 12.69 hrs, Volume= 4.071 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.86' @ 12.69 hrs Surf.Area= 41,812 sf Storage= 49,460 cf

Plug-Flow detention time= 42.8 min calculated for 6.550 af (95% of inflow)
 Center-of-Mass det. time= 24.3 min (836.0 - 811.7)

Volume	Invert	Avail.Storage	Storage Description
#1	151.00'	104,899 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
151.00	0	0	0	0
152.00	10,885	3,628	3,628	10,887
154.00	45,019	52,027	55,655	45,039
155.00	53,593	49,244	104,899	53,649

Device	Routing	Invert	Outlet Devices
#1	Primary	153.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	151.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=4.88 cfs @ 12.69 hrs HW=153.86' (Free Discharge)
 ↑**2=Exfiltration** (Controls 4.88 cfs)

Primary OutFlow Max=42.61 cfs @ 12.69 hrs HW=153.86' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 42.61 cfs @ 2.49 fps)

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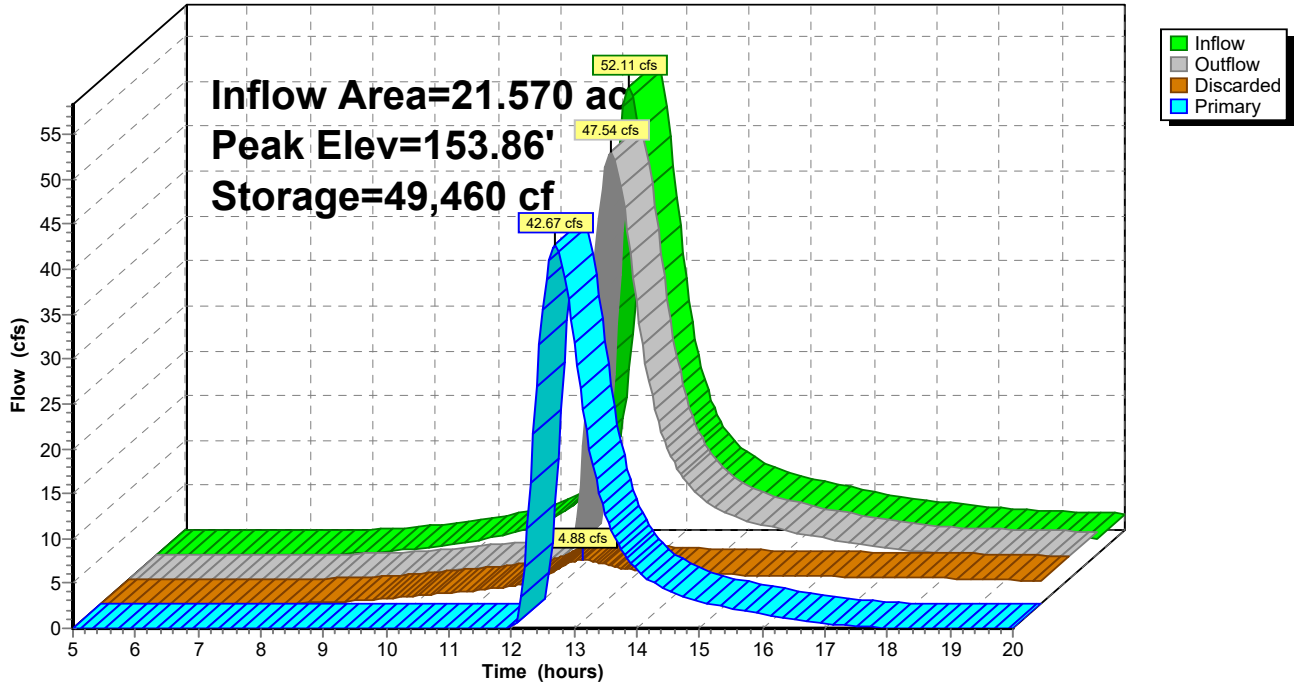
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Pond 19P: (new Pond)

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Summary for Pond 28P: (new Pond)

Inflow Area = 7.360 ac, 0.00% Impervious, Inflow Depth > 2.21" for 50 year event
 Inflow = 14.81 cfs @ 12.23 hrs, Volume= 1.353 af
 Outflow = 0.72 cfs @ 17.15 hrs, Volume= 0.451 af, Atten= 95%, Lag= 295.4 min
 Discarded = 0.72 cfs @ 17.15 hrs, Volume= 0.451 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 154.43' @ 17.15 hrs Surf.Area= 20,450 sf Storage= 40,947 cf

Plug-Flow detention time= 243.0 min calculated for 0.451 af (33% of inflow)
 Center-of-Mass det. time= 146.8 min (969.3 - 822.5)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	703,547 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	1,301	0	0	1,301
152.00	7,637	8,060	8,060	7,652
154.00	17,812	24,741	32,802	17,857
156.00	31,769	48,913	81,714	31,858
158.00	44,943	76,332	158,046	45,104
160.00	56,203	100,936	258,983	56,476
162.00	68,079	124,092	383,075	68,483
164.00	79,954	147,874	530,949	80,513
166.00	92,803	172,598	703,547	93,530

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.72 cfs @ 17.15 hrs HW=154.43' (Free Discharge)

↑**1=Exfiltration** (Controls 0.72 cfs)

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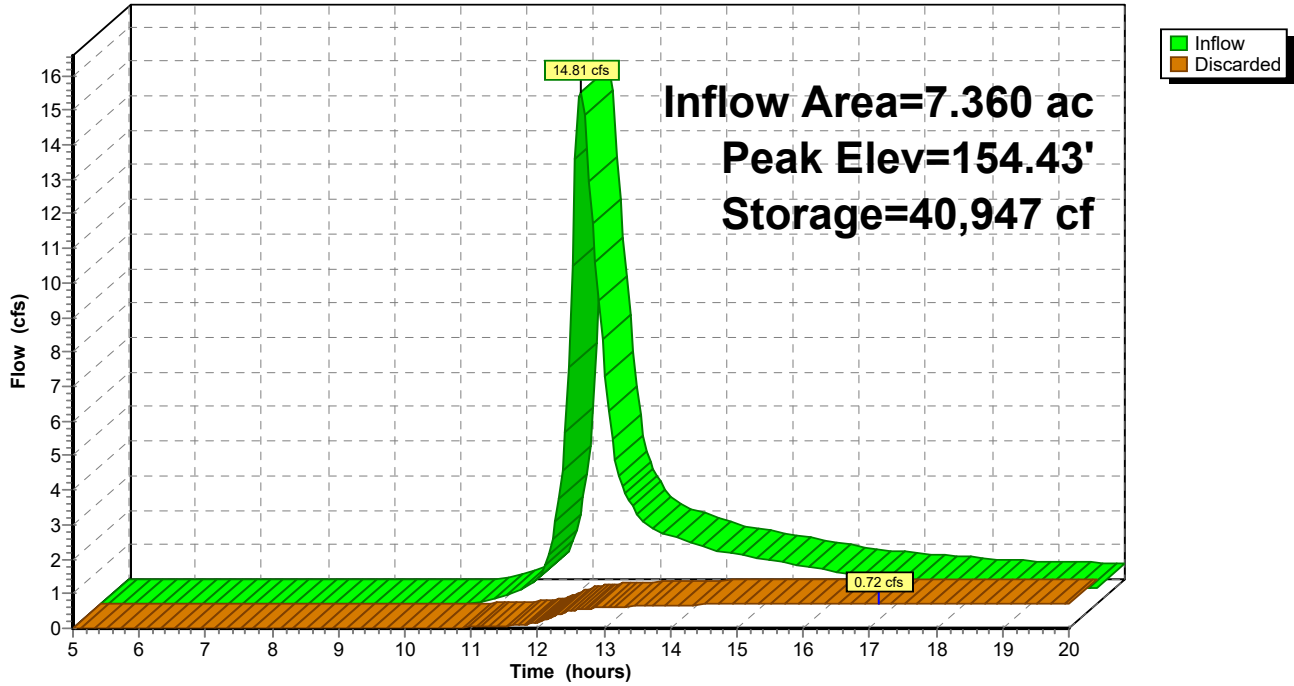
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Pond 28P: (new Pond)

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Summary for Pond 29P: (new Pond)

Inflow Area = 1.626 ac, 0.00% Impervious, Inflow Depth > 0.47" for 50 year event
 Inflow = 0.36 cfs @ 12.44 hrs, Volume= 0.064 af
 Outflow = 0.06 cfs @ 17.45 hrs, Volume= 0.035 af, Atten= 84%, Lag= 300.8 min
 Discarded = 0.06 cfs @ 17.45 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.08' @ 17.45 hrs Surf.Area= 1,669 sf Storage= 1,356 cf

Plug-Flow detention time= 190.6 min calculated for 0.035 af (55% of inflow)
 Center-of-Mass det. time= 89.3 min (979.5 - 890.2)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	140,344 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	883	0	0	883
148.00	2,535	3,276	3,276	2,559
150.00	4,534	6,973	10,249	4,601
152.00	6,834	11,290	21,539	6,962
154.00	10,301	17,017	38,555	10,490
156.00	14,424	24,610	63,165	14,687
158.00	19,416	33,717	96,882	19,763
160.00	24,132	43,463	140,344	24,593

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.06 cfs @ 17.45 hrs HW=147.08' (Free Discharge)
 ↑1=Exfiltration (Controls 0.06 cfs)

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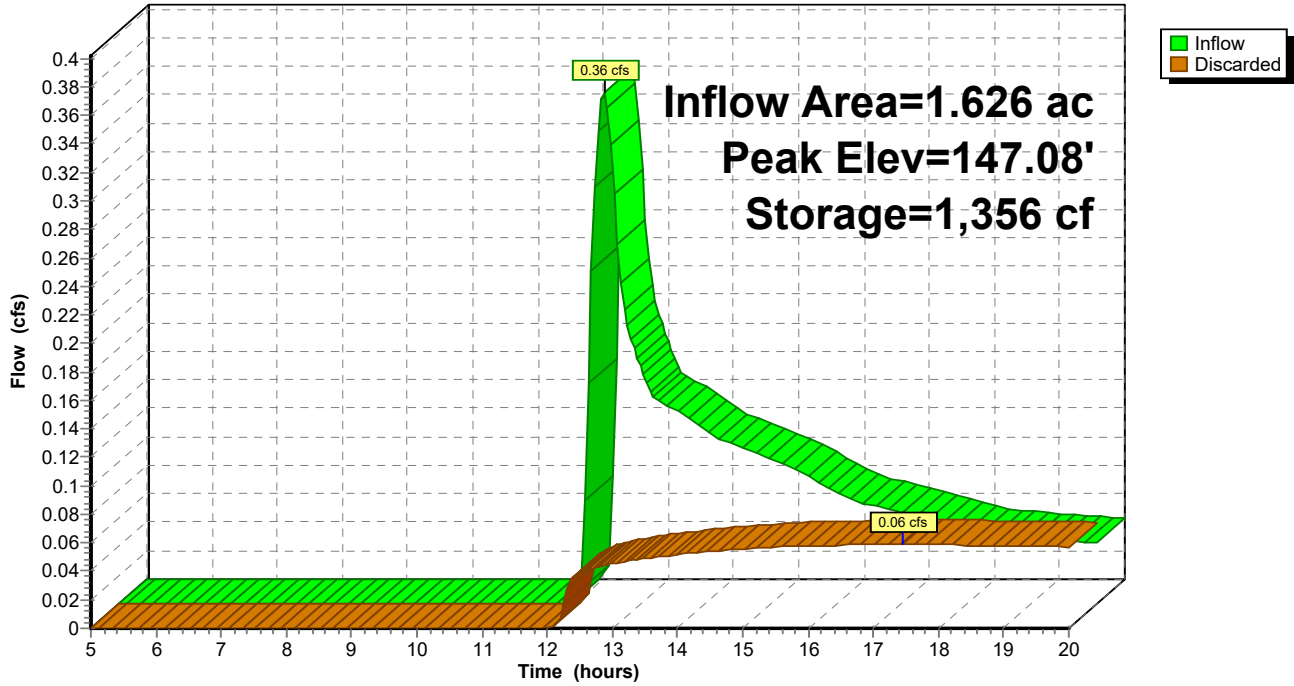
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Pond 29P: (new Pond)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 30P: (new Pond)

Inflow Area = 3.911 ac, 0.00% Impervious, Inflow Depth > 3.37" for 50 year event
 Inflow = 13.91 cfs @ 12.16 hrs, Volume= 1.100 af
 Outflow = 2.05 cfs @ 12.90 hrs, Volume= 1.060 af, Atten= 85%, Lag= 44.4 min
 Discarded = 2.05 cfs @ 12.90 hrs, Volume= 1.060 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.61' @ 12.90 hrs Surf.Area= 29,416 sf Storage= 20,947 cf

Plug-Flow detention time= 120.0 min calculated for 1.057 af (96% of inflow)
 Center-of-Mass det. time= 106.6 min (905.0 - 798.3)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	177,312 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	0	0	0	0
170.00	19,015	6,338	6,338	19,017
172.00	61,742	76,681	83,019	61,766
173.00	131,151	94,293	177,312	131,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	169.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.05 cfs @ 12.90 hrs HW=170.61' (Free Discharge)
 ↑1=Exfiltration (Controls 2.05 cfs)

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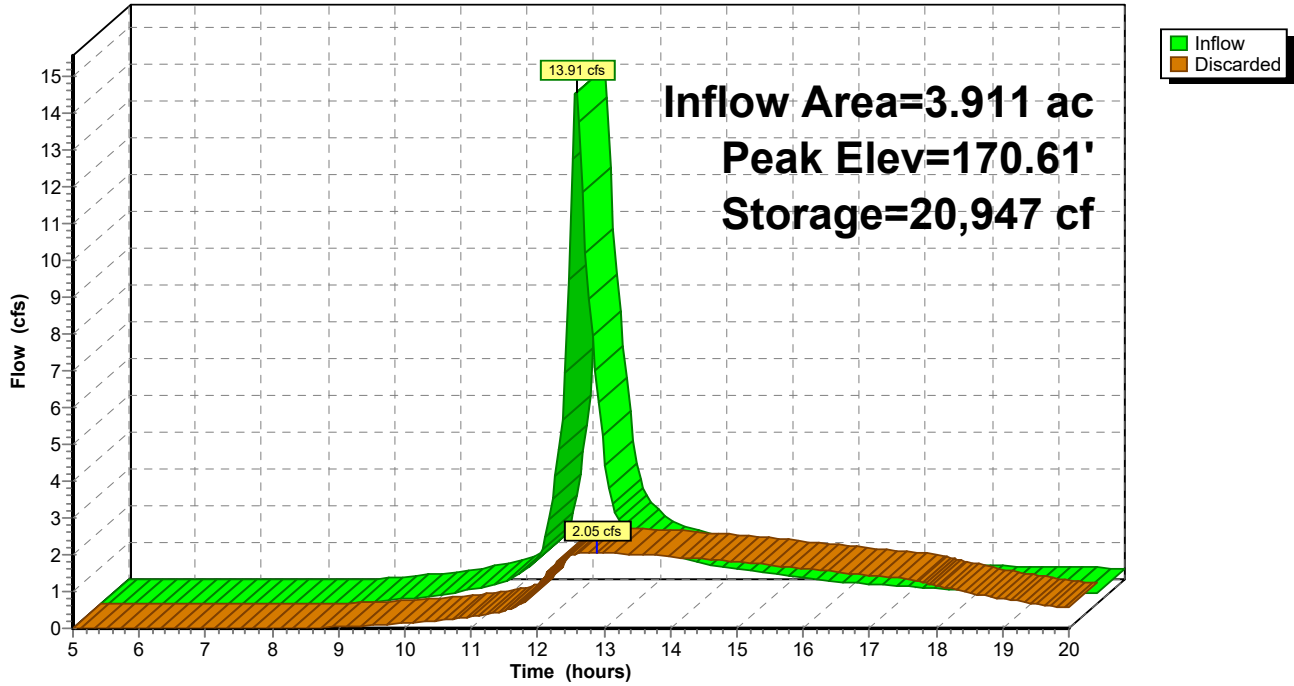
Type III 24-hr 50 year Rainfall=7.02"

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Pond 30P: (new Pond)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 31P: (new Pond)

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 0.81" for 50 year event
 Inflow = 2.20 cfs @ 12.16 hrs, Volume= 0.245 af
 Outflow = 0.21 cfs @ 16.60 hrs, Volume= 0.127 af, Atten= 90%, Lag= 266.2 min
 Discarded = 0.21 cfs @ 16.60 hrs, Volume= 0.127 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.09' @ 16.60 hrs Surf.Area= 6,042 sf Storage= 5,708 cf

Plug-Flow detention time= 218.3 min calculated for 0.127 af (52% of inflow)
 Center-of-Mass det. time= 115.7 min (976.2 - 860.5)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	577,917 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
144.00	435	0	0	435
146.00	5,720	5,155	5,155	5,731
148.00	14,467	19,523	24,677	14,506
150.00	23,981	38,049	62,727	24,069
152.00	31,477	55,288	118,015	31,657
154.00	37,463	68,853	186,868	37,786
156.00	43,468	80,857	267,725	43,958
158.00	49,047	92,459	360,184	49,741
160.00	54,411	103,412	463,596	55,342
162.00	59,955	114,321	577,917	61,140

Device	Routing	Invert	Outlet Devices
#1	Discarded	144.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.21 cfs @ 16.60 hrs HW=146.09' (Free Discharge)
 ↑1=Exfiltration (Controls 0.21 cfs)

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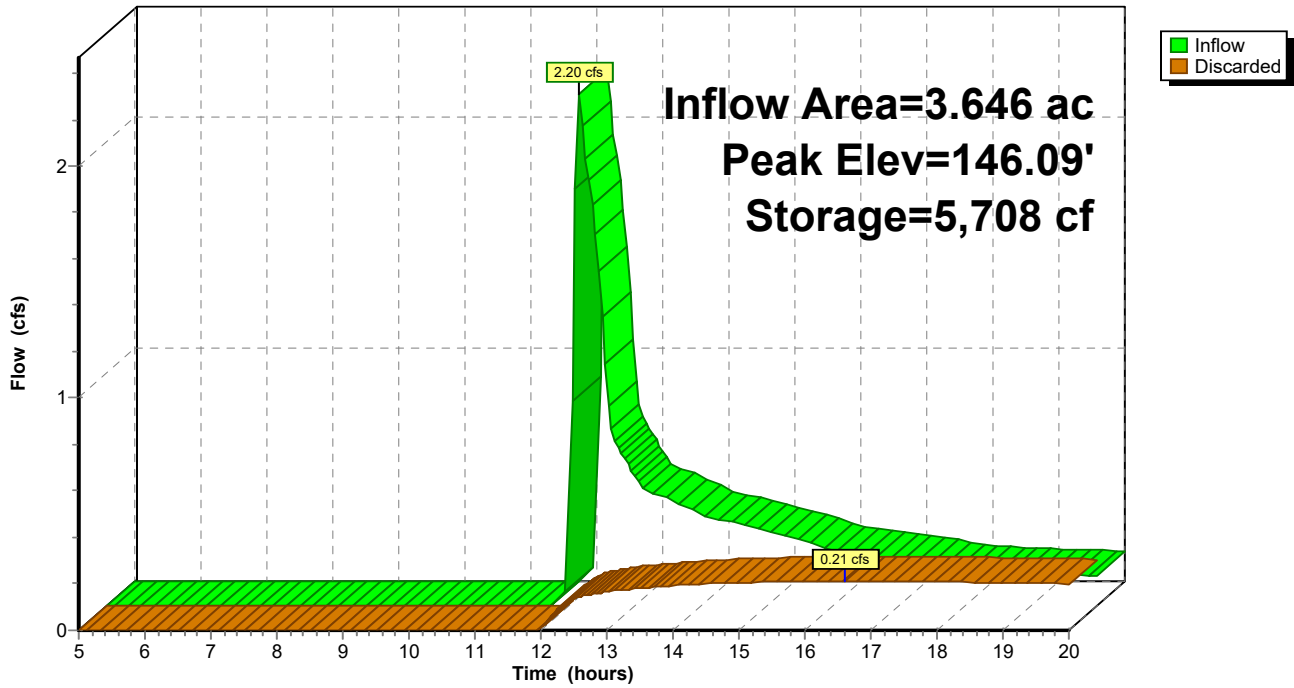
Type III 24-hr 50 year Rainfall=7.02"

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Pond 31P: (new Pond)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 32P: (new Pond)

[82] Warning: Early inflow requires earlier time span

Inflow Area = 4.598 ac, 0.00% Impervious, Inflow Depth > 5.09" for 50 year event
 Inflow = 32.19 cfs @ 12.00 hrs, Volume= 1.952 af
 Outflow = 1.68 cfs @ 13.77 hrs, Volume= 1.233 af, Atten= 95%, Lag= 105.8 min
 Discarded = 1.68 cfs @ 13.77 hrs, Volume= 1.233 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.11' @ 13.77 hrs Surf.Area= 23,795 sf Storage= 48,755 cf

Plug-Flow detention time= 217.0 min calculated for 1.229 af (63% of inflow)
 Center-of-Mass det. time= 144.3 min (901.5 - 757.2)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	564,324 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	153	0	0	153
144.00	13,412	9,998	9,998	13,420
146.00	23,273	36,235	46,233	23,327
148.00	33,979	56,915	103,149	34,099
150.00	46,946	80,576	183,725	47,144
152.00	58,364	105,103	288,828	58,677
154.00	68,242	126,477	415,306	68,714
156.00	80,957	149,018	564,324	81,576

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.68 cfs @ 13.77 hrs HW=146.11' (Free Discharge)
 ↑1=Exfiltration (Controls 1.68 cfs)

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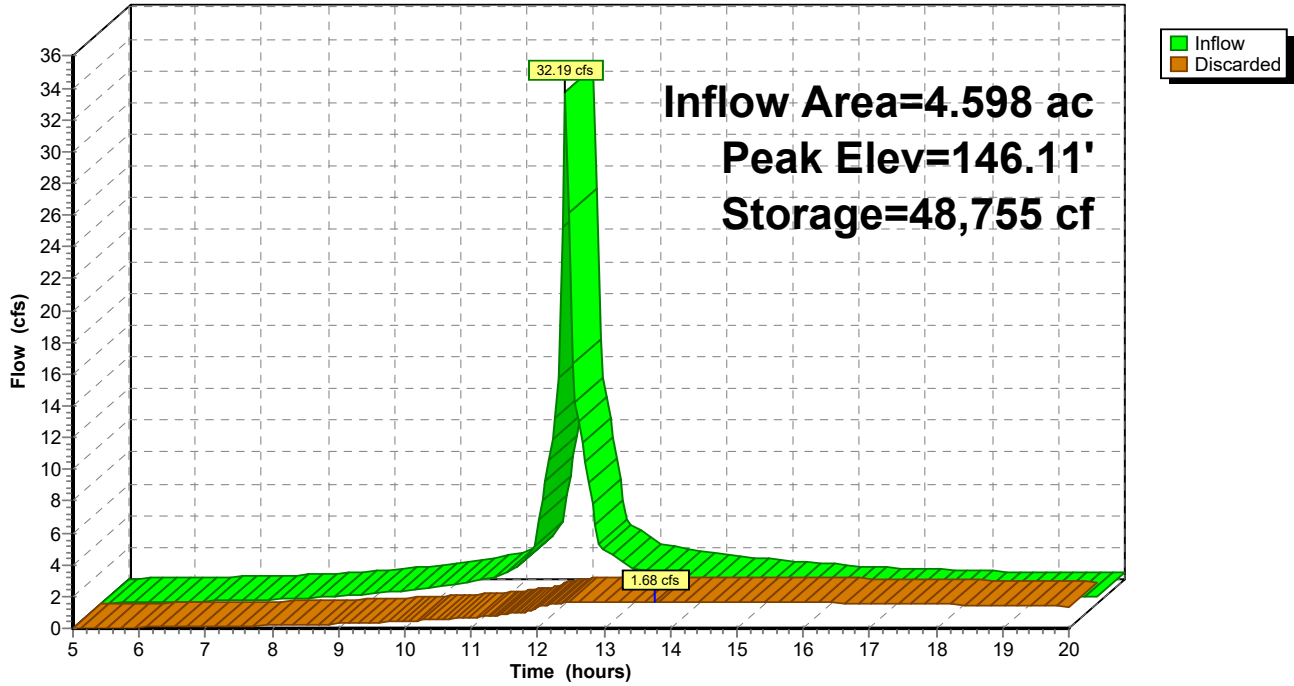
Type III 24-hr 50 year Rainfall=7.02"

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Pond 32P: (new Pond)

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 35P: (new Pond)

Inflow Area = 11.838 ac, 0.00% Impervious, Inflow Depth > 4.19" for 50 year event
 Inflow = 40.41 cfs @ 12.30 hrs, Volume= 4.137 af
 Outflow = 7.50 cfs @ 13.09 hrs, Volume= 3.612 af, Atten= 81%, Lag= 47.4 min
 Discarded = 7.50 cfs @ 13.09 hrs, Volume= 3.612 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 156.85' @ 13.09 hrs Surf.Area= 64,196 sf Storage= 85,085 cf

Plug-Flow detention time= 147.8 min calculated for 3.600 af (87% of inflow)
 Center-of-Mass det. time= 110.2 min (902.1 - 792.0)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	476,244 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	9,108	3,036	3,036	9,110
156.00	34,300	40,722	43,758	34,321
158.00	119,103	144,879	188,637	119,145
160.00	170,010	287,607	476,244	170,123

Device	Routing	Invert	Outlet Devices
#1	Discarded	153.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=7.50 cfs @ 13.09 hrs HW=156.85' (Free Discharge)

↑1=Exfiltration (Controls 7.50 cfs)

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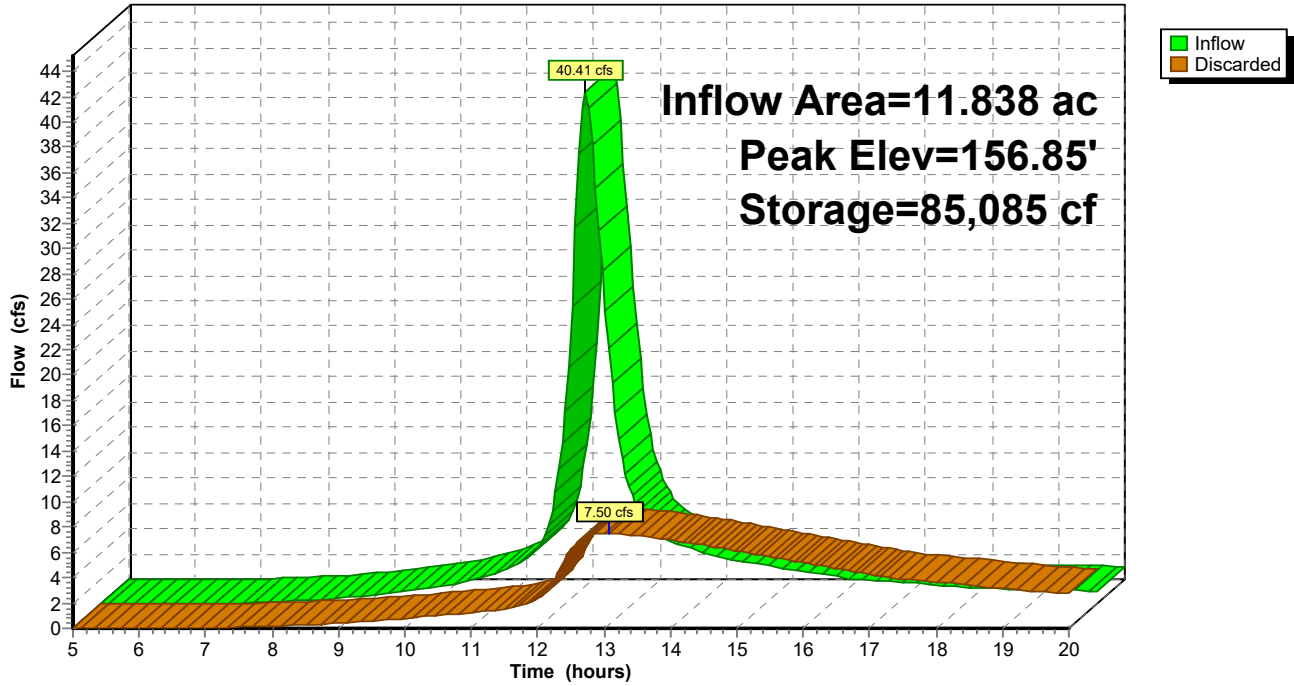
Type III 24-hr 50 year Rainfall=7.02"

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Pond 35P: (new Pond)

Hydrograph



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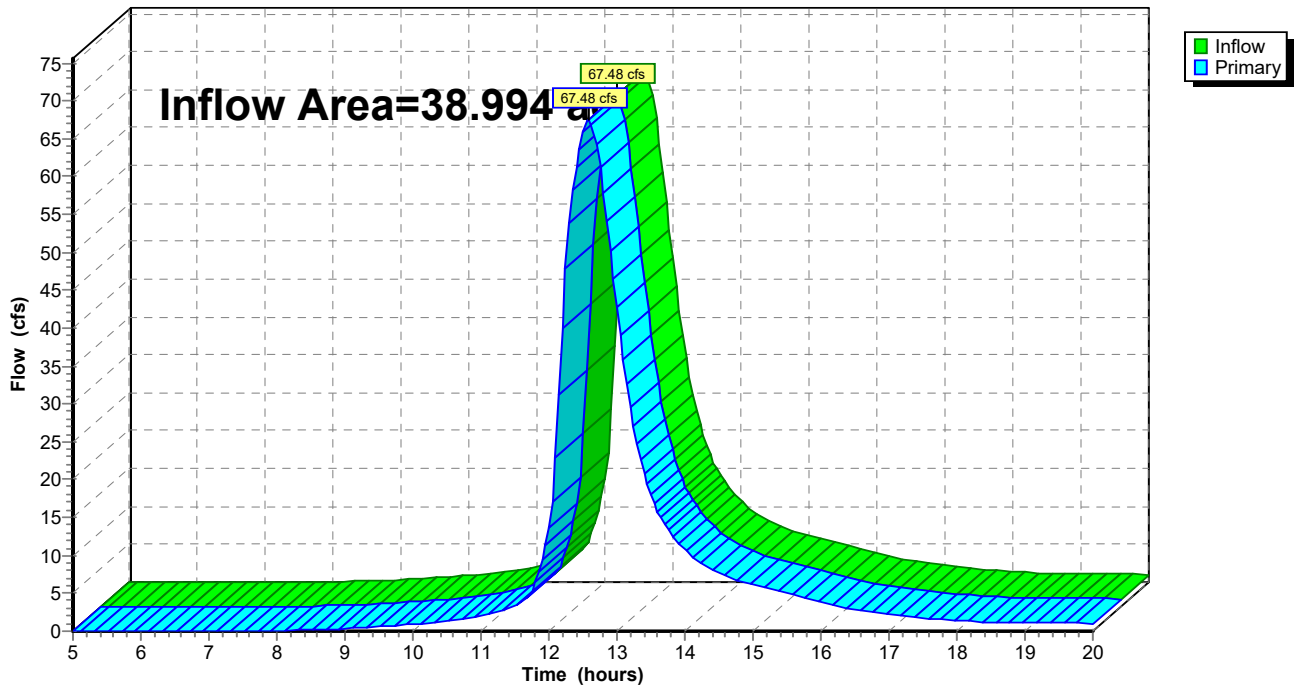
Summary for Link DP19: (new Link)

Inflow Area = 38.994 ac, 0.11% Impervious, Inflow Depth > 2.52" for 50 year event
Inflow = 67.48 cfs @ 12.58 hrs, Volume= 8.175 af
Primary = 67.48 cfs @ 12.58 hrs, Volume= 8.175 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP19: (new Link)

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Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 1: Subcat 1

Runoff = 5.15 cfs @ 12.11 hrs, Volume= 0.378 af, Depth> 5.26"

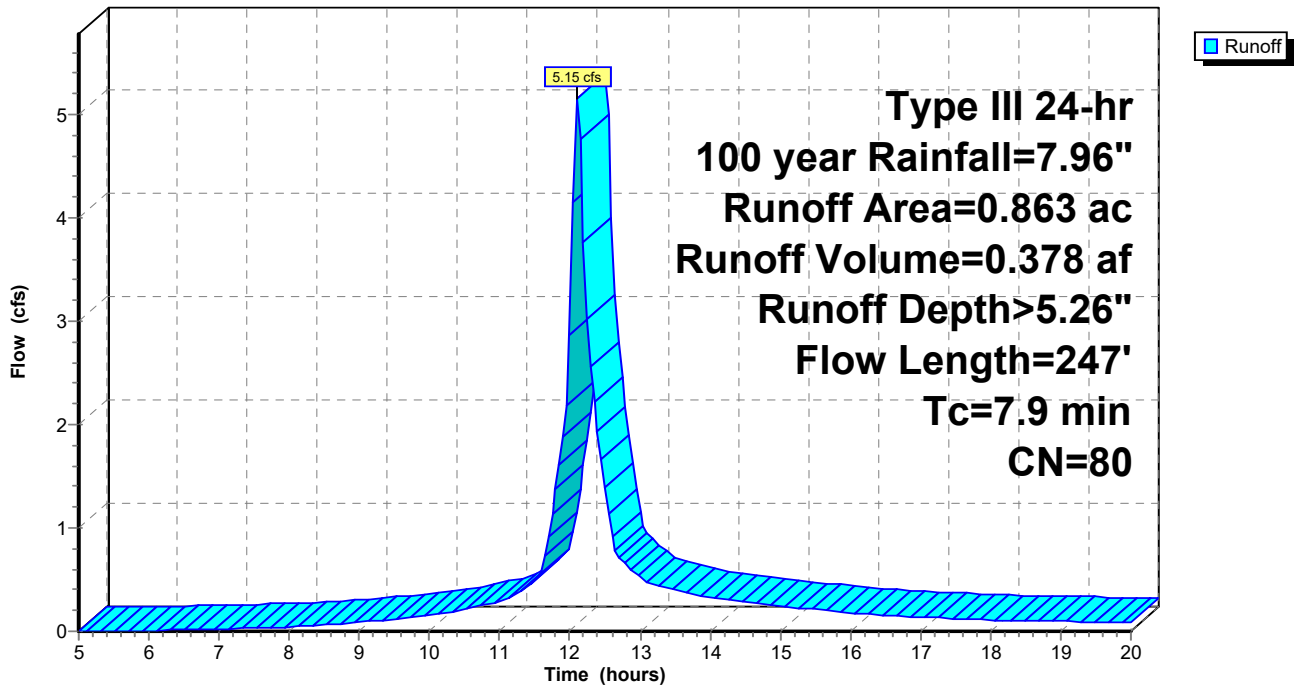
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.029	77	Fallow, bare soil, HSG A
0.663	86	Fallow, bare soil, HSG B
0.035	36	Woods, Fair, HSG A
0.137	60	Woods, Fair, HSG B
0.863	80	Weighted Average
0.863		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
1.6	197	0.0508	2.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
7.9	247	Total			

Subcatchment 1: Subcat 1

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 2: Subcat 2

Runoff = 10.87 cfs @ 12.23 hrs, Volume= 1.014 af, Depth> 2.21"

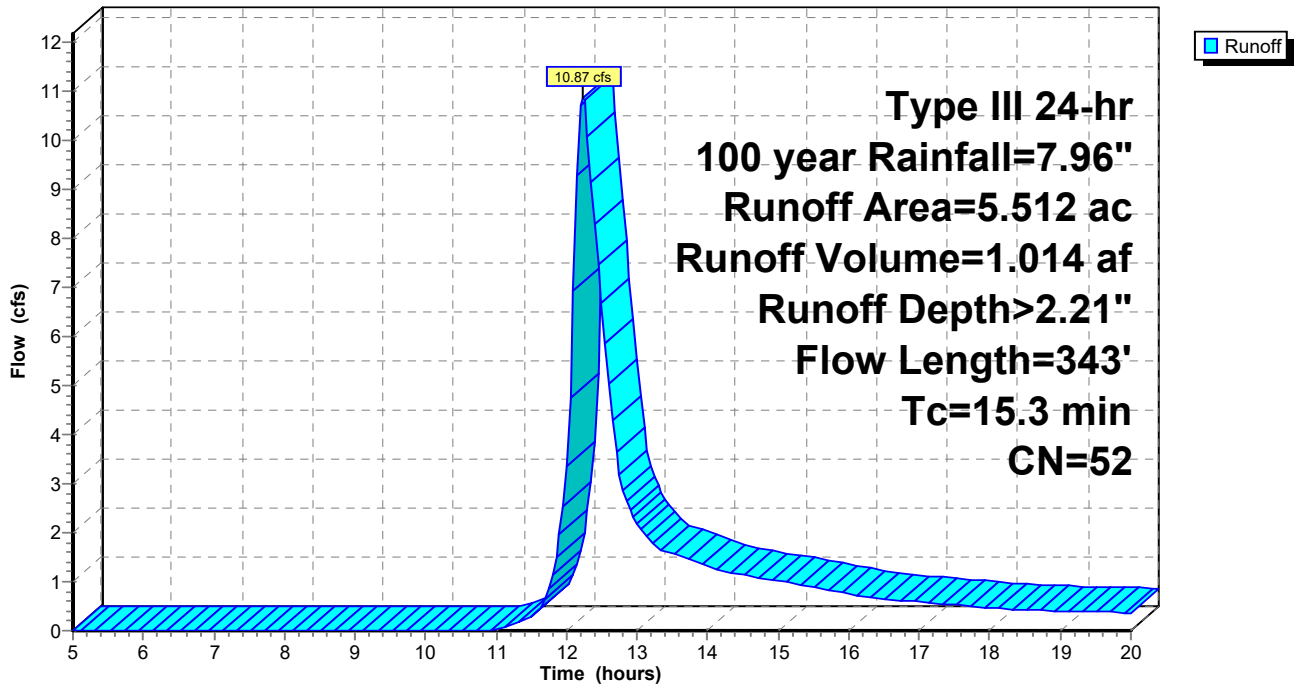
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
1.277	77	Fallow, bare soil, HSG A
0.528	86	Fallow, bare soil, HSG B
3.264	36	Woods, Fair, HSG A
0.363	60	Woods, Fair, HSG B
0.080	73	Woods, Fair, HSG C
5.512	52	Weighted Average
5.512		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
2.9	293	0.0343	1.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
15.3	343	Total			

Subcatchment 2: Subcat 2

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 3: Subcat 3

Runoff = 7.69 cfs @ 12.27 hrs, Volume= 0.736 af, Depth> 3.46"

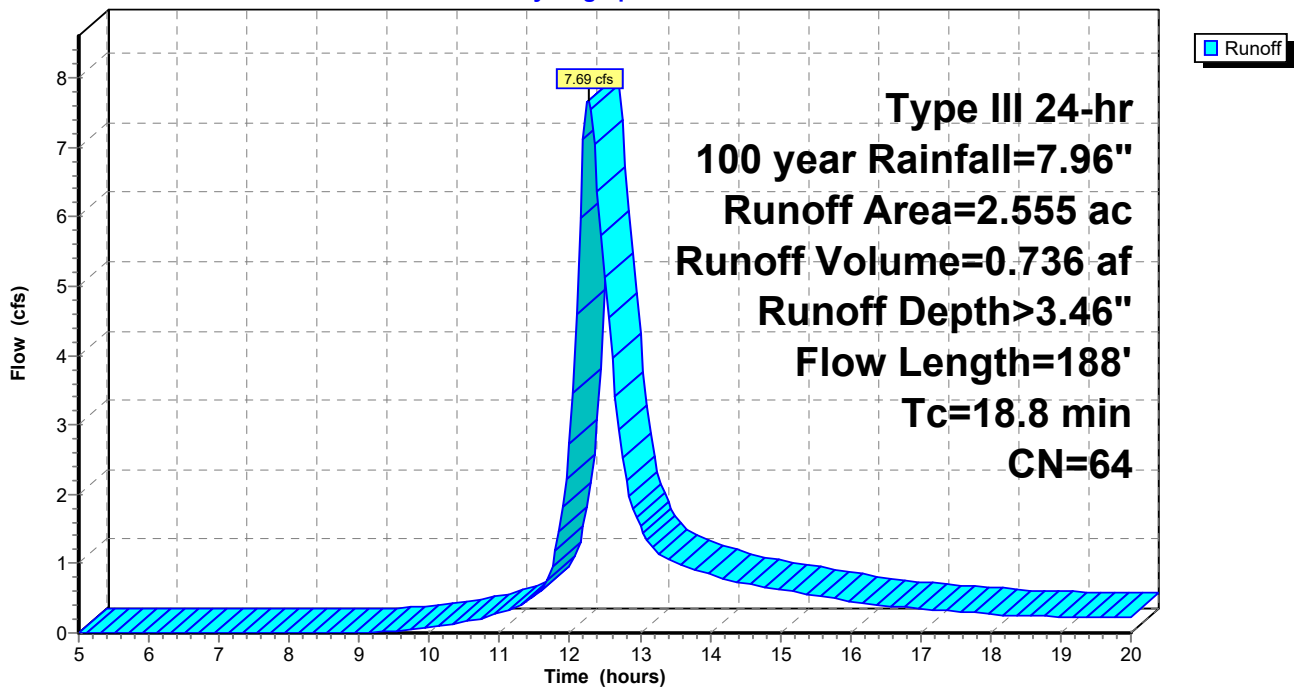
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.730	77	Fallow, bare soil, HSG A
0.609	86	Fallow, bare soil, HSG B
0.716	36	Woods, Fair, HSG A
0.500	60	Woods, Fair, HSG B
2.555	64	Weighted Average
2.555		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	50	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
1.8	66	0.0152	0.62		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	72	0.0556	2.12		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.8	188	Total			

Subcatchment 3: Subcat 3

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 4: Subcat 4

Runoff = 13.36 cfs @ 12.16 hrs, Volume= 1.054 af, Depth> 3.47"

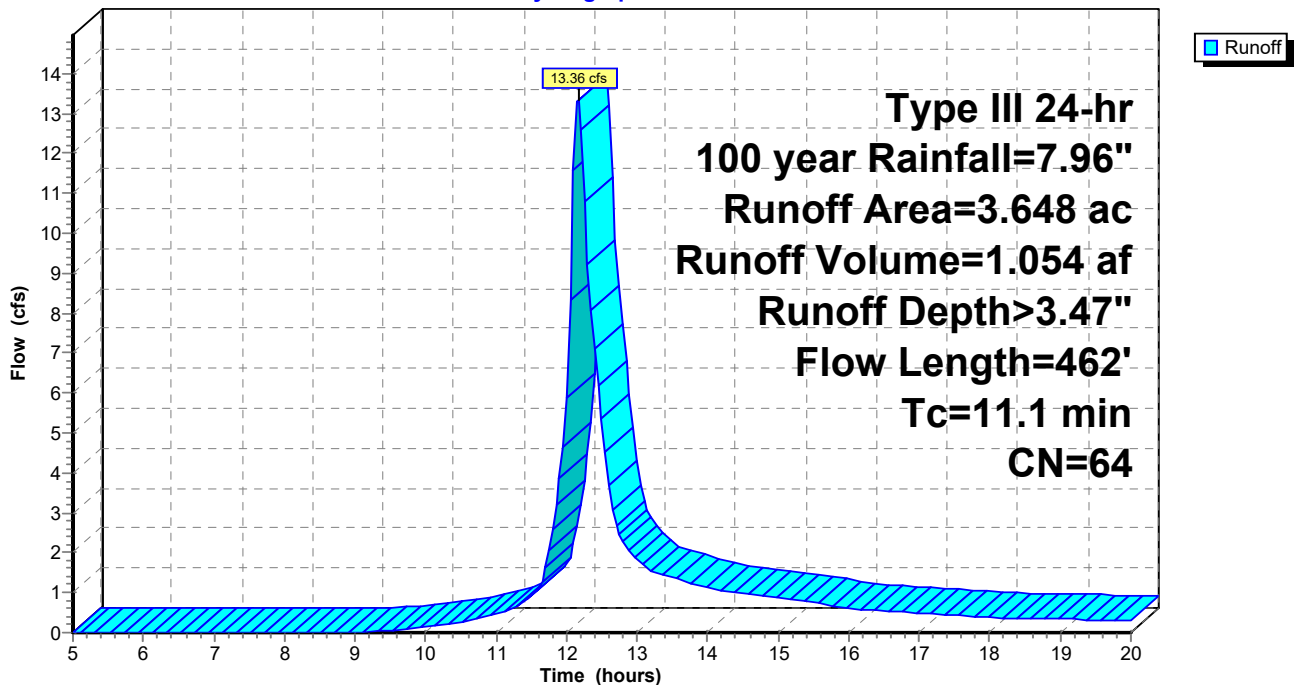
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.026	49	50-75% Grass cover, Fair, HSG A
2.636	69	50-75% Grass cover, Fair, HSG B
0.035	77	Fallow, bare soil, HSG A
0.019	86	Fallow, bare soil, HSG B
0.194	78	Row crops, straight row, Good, HSG B
0.605	36	Woods, Fair, HSG A
0.133	60	Woods, Fair, HSG B
3.648	64	Weighted Average
3.648		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	412	0.0243	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	462	Total			

Subcatchment 4: Subcat 4

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 5: Subcat 5

Runoff = 32.22 cfs @ 12.30 hrs, Volume= 3.298 af, Depth> 4.56"

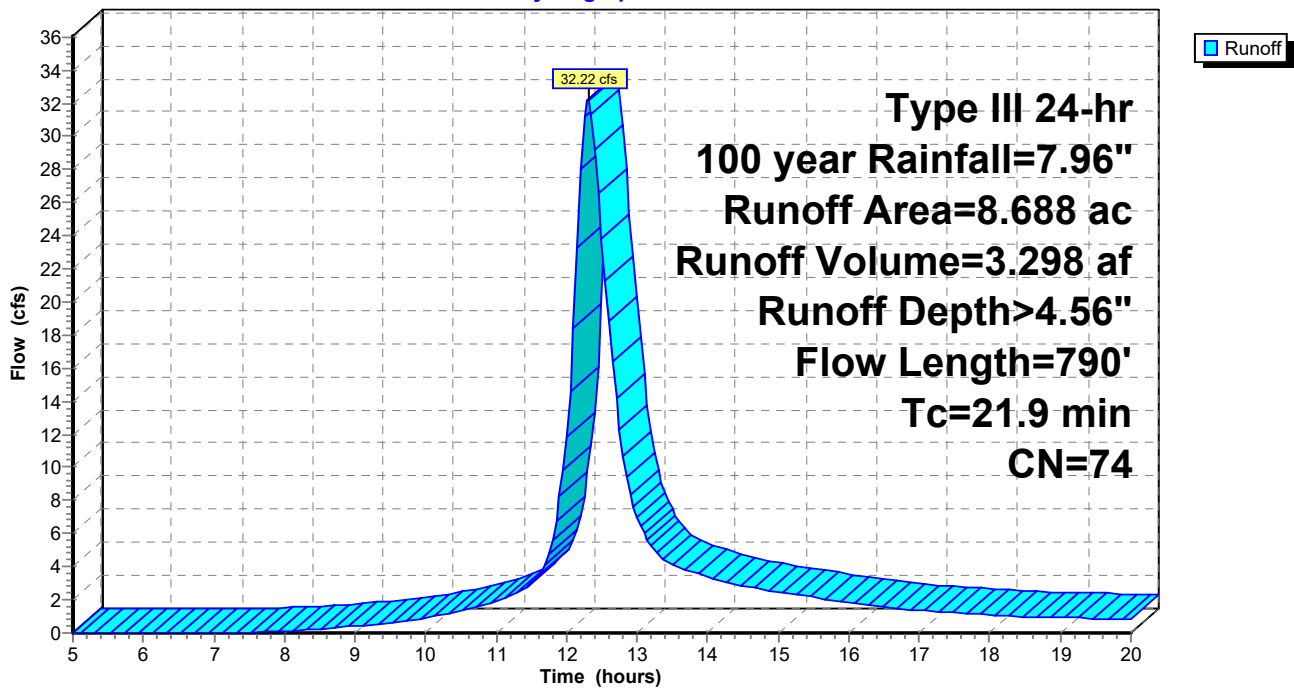
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
1.072	69	50-75% Grass cover, Fair, HSG B
6.772	78	Row crops, straight row, Good, HSG B
0.436	36	Woods, Fair, HSG A
0.407	60	Woods, Fair, HSG B
8.688	74	Weighted Average
8.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
10.6	583	0.0103	0.91		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.0	157	0.0159	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.9	790	Total			

Subcatchment 5: Subcat 5

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 6: Subcat 6

Runoff = 27.03 cfs @ 12.21 hrs, Volume= 2.402 af, Depth> 4.45"

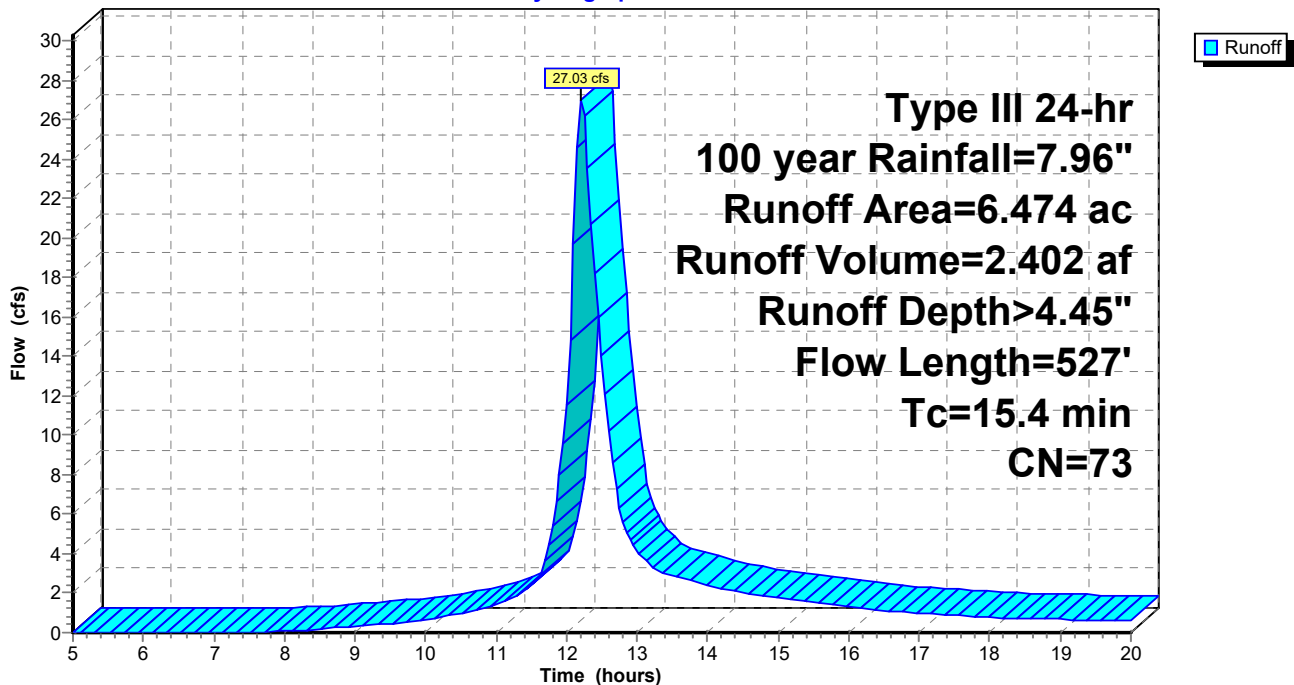
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.098	69	50-75% Grass cover, Fair, HSG B
0.096	67	Row crops, straight row, Good, HSG A
5.190	78	Row crops, straight row, Good, HSG B
0.452	36	Woods, Fair, HSG A
0.638	60	Woods, Fair, HSG B
6.474	73	Weighted Average
6.474		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.4	415	0.0145	1.08		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
0.7	62	0.0806	1.42		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.4	527	Total			

Subcatchment 6: Subcat 6

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 7: Subcat 7

Runoff = 50.74 cfs @ 12.56 hrs, Volume= 6.926 af, Depth> 4.87"

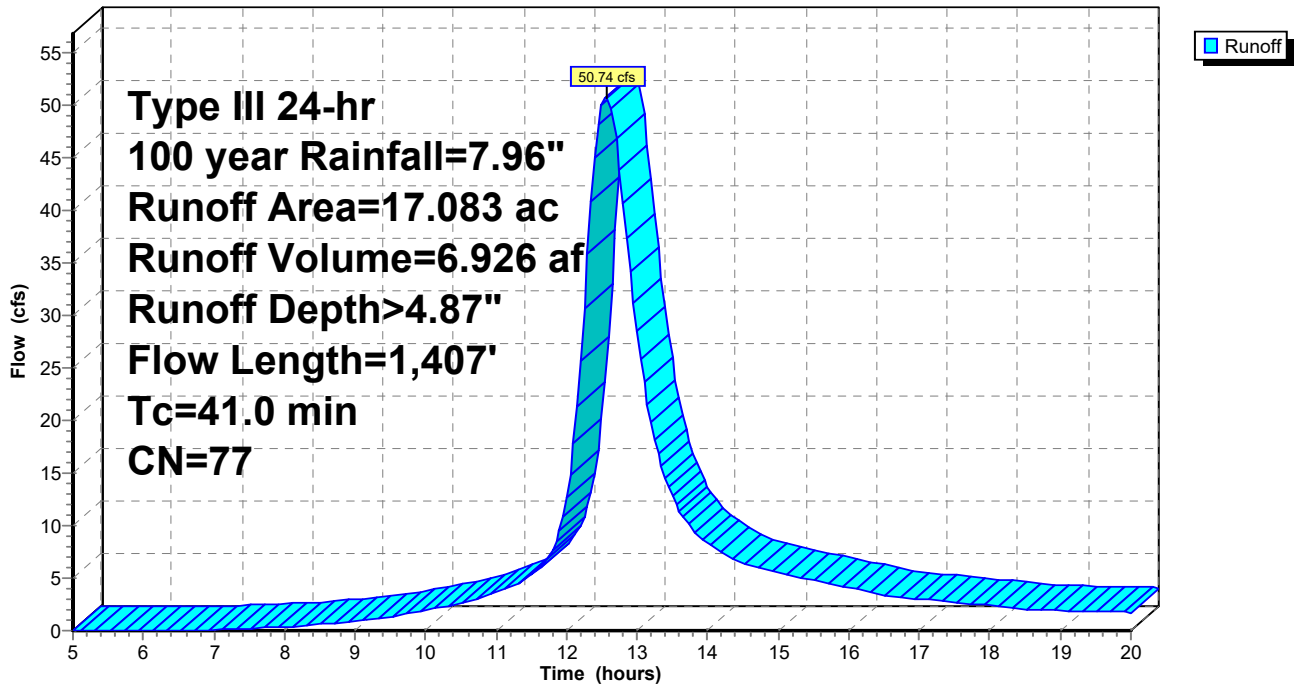
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.999	69	50-75% Grass cover, Fair, HSG B
15.573	78	Row crops, straight row, Good, HSG B
0.511	60	Woods, Fair, HSG B
17.083	77	Weighted Average
17.083		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
32.7	1,357	0.0059	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
41.0	1,407	Total			

Subcatchment 7: Subcat 7

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 8: (new Subcat)

Runoff = 14.04 cfs @ 12.14 hrs, Volume= 1.076 af, Depth> 4.13"

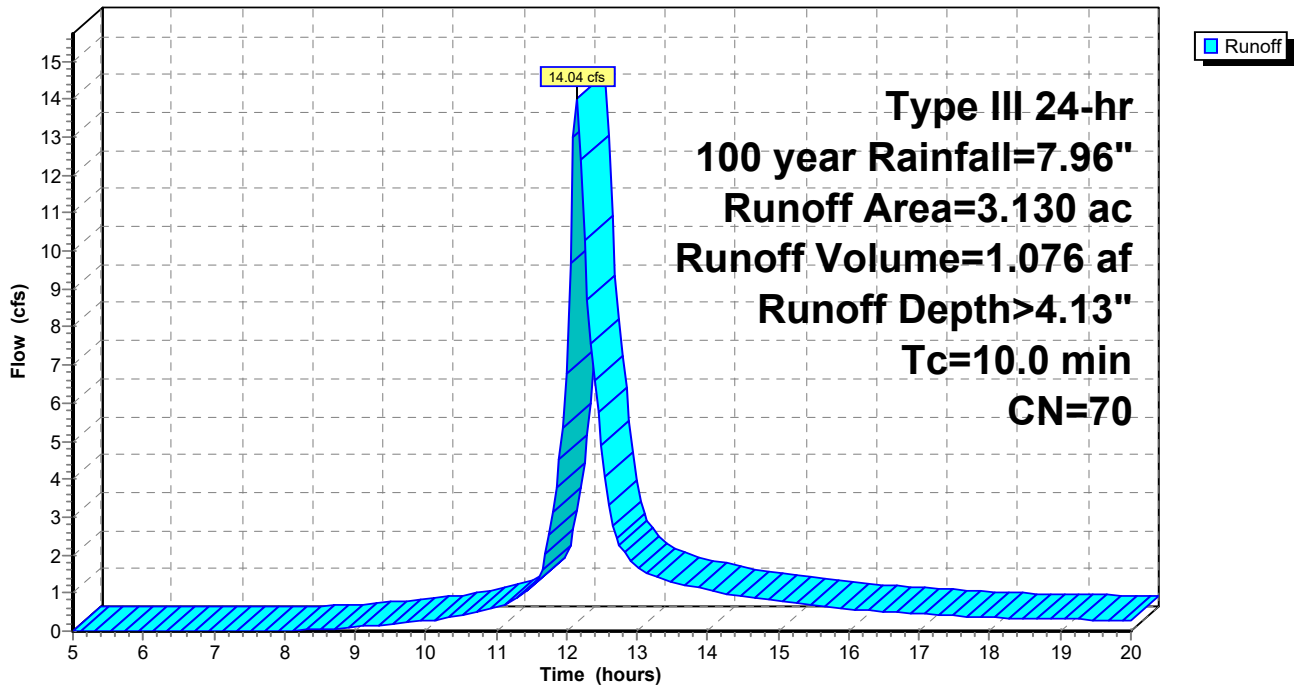
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
1.670	78	Row crops, straight row, Good, HSG B
* 1.460	60	Woods, Fair, HSG B
3.130	70	Weighted Average
3.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8: (new Subcat)

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 10: Subcat 10

Runoff = 12.30 cfs @ 12.18 hrs, Volume= 1.025 af, Depth> 3.36"

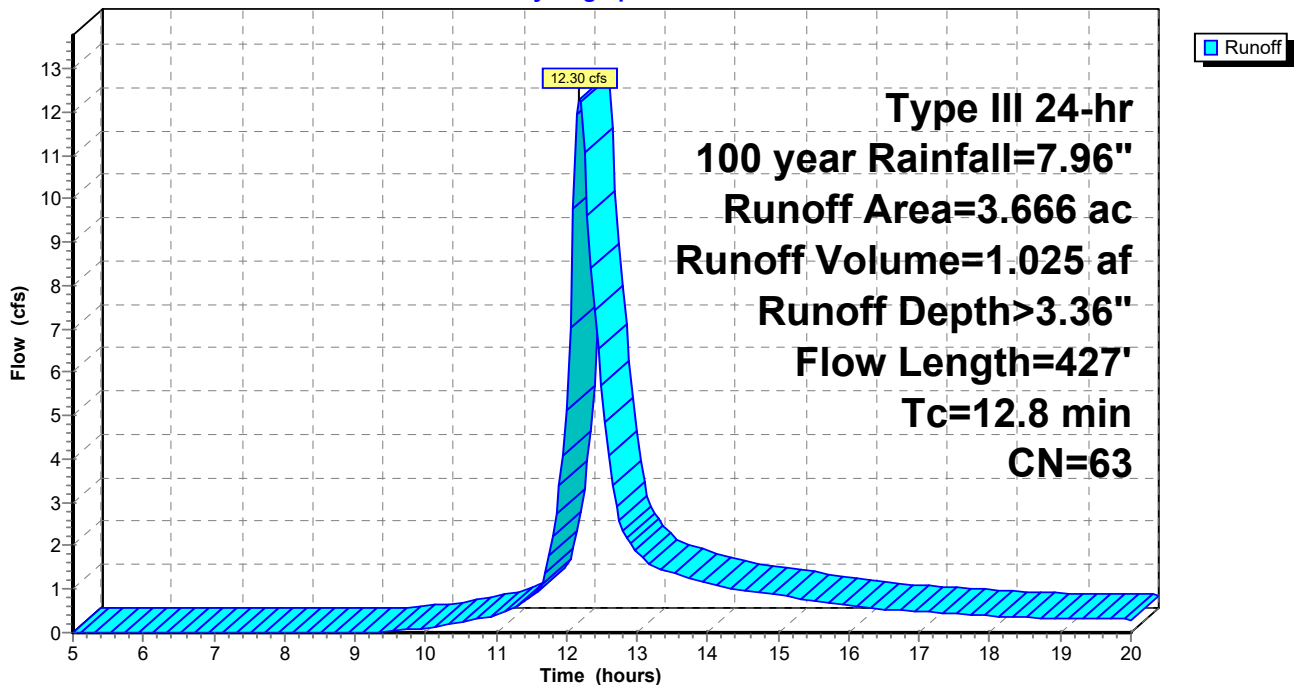
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.042	69	50-75% Grass cover, Fair, HSG B
0.022	67	Row crops, straight row, Good, HSG A
1.722	78	Row crops, straight row, Good, HSG B
0.840	36	Woods, Fair, HSG A
1.039	60	Woods, Fair, HSG B
3.666	63	Weighted Average
3.666		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
3.5	261	0.0192	1.25		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.0	116	0.1379	1.86		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
12.8	427	Total			

Subcatchment 10: Subcat 10

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 11: Subcat 11

Runoff = 14.68 cfs @ 12.23 hrs, Volume= 1.331 af, Depth> 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.368	56	Brush, Fair, HSG B
0.096	89	Paved roads w/open ditches, 50% imp, HSG B
0.097	67	Row crops, straight row, Good, HSG A
2.068	78	Row crops, straight row, Good, HSG B
2.107	36	Woods, Fair, HSG A
0.925	60	Woods, Fair, HSG B
5.661	58	Weighted Average
5.613		99.15% Pervious Area
0.048		0.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.7	316	0.0158	1.13		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.6	232	0.0862	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.6	598	Total			

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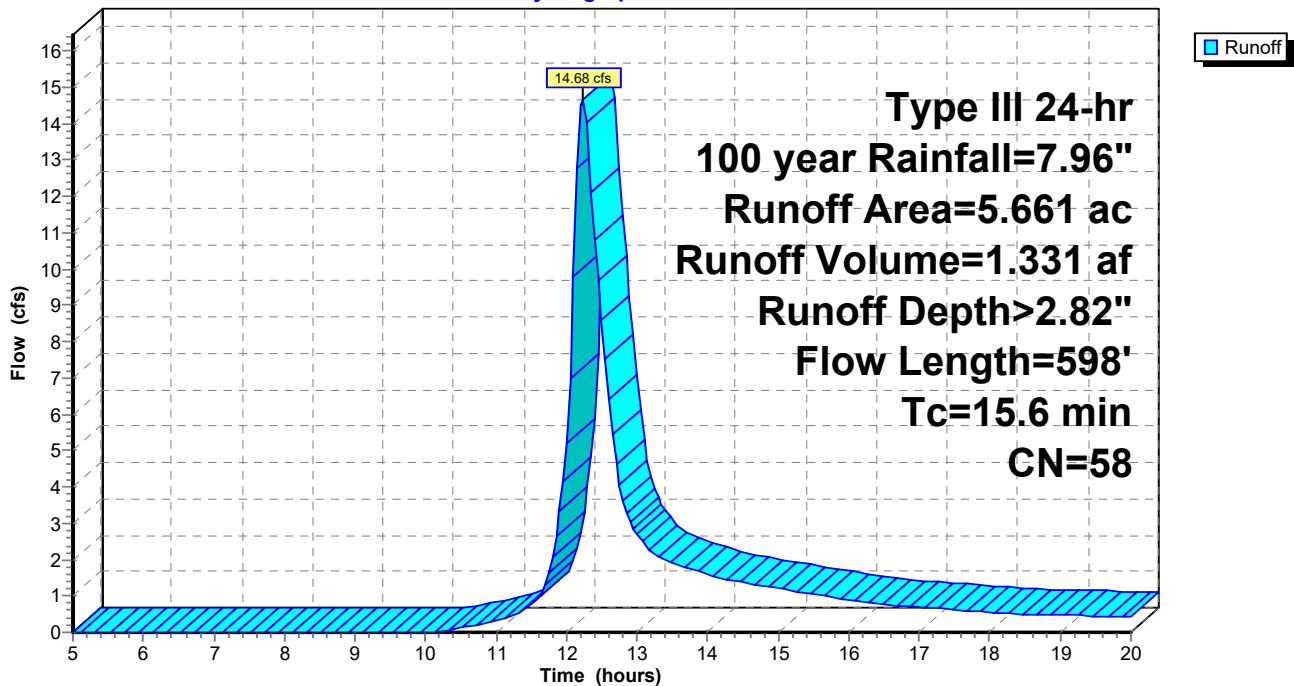
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 11: Subcat 11

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 11A: Subcat 11A

Runoff = 8.54 cfs @ 12.17 hrs, Volume= 0.773 af, Depth> 1.44"

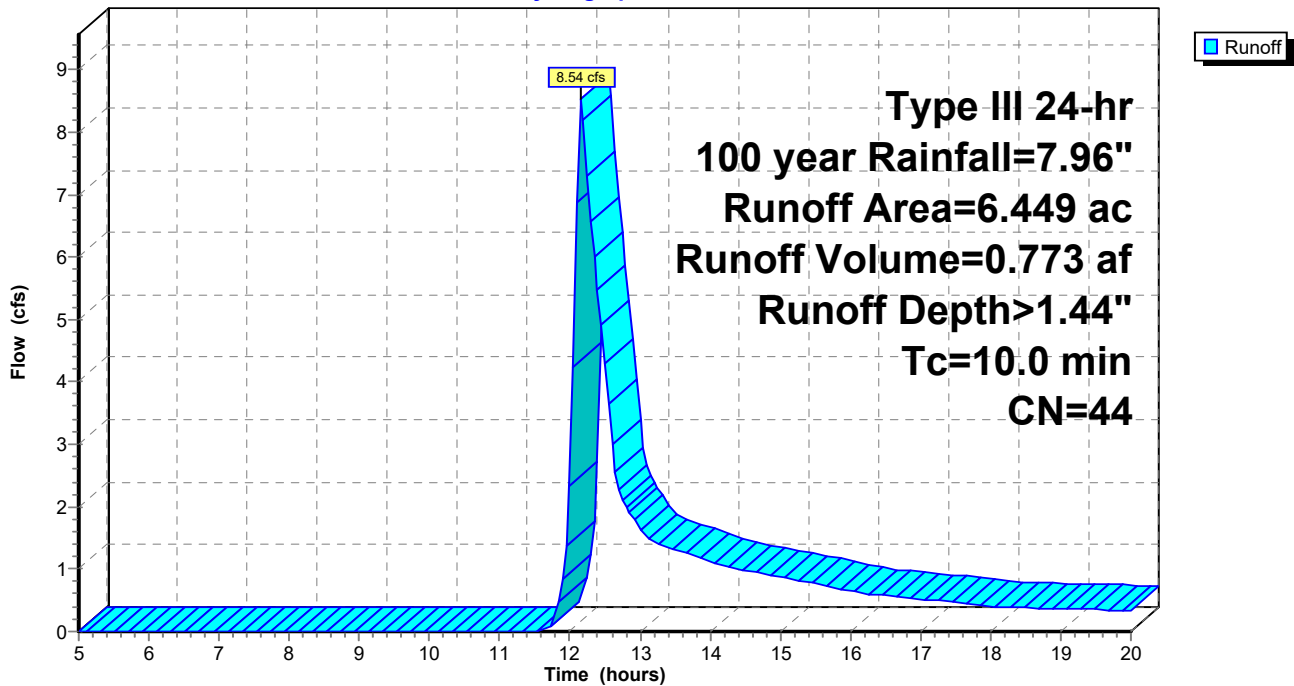
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.874	56	Brush, Fair, HSG B
0.859	78	Row crops, straight row, Good, HSG B
4.716	36	Woods, Fair, HSG A
6.449	44	Weighted Average
6.449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11A: Subcat 11A

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 12: Subcat 12

Runoff = 13.00 cfs @ 12.19 hrs, Volume= 1.129 af, Depth> 5.02"

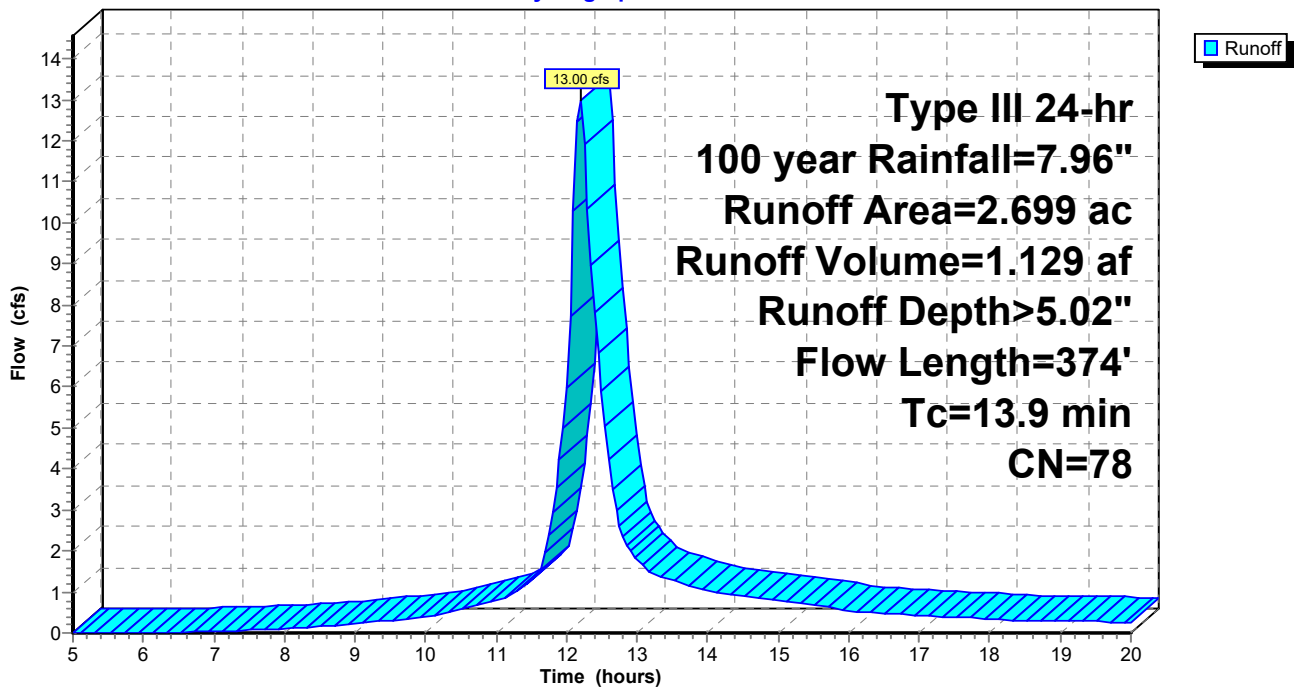
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.525	69	50-75% Grass cover, Fair, HSG B
0.318	89	Paved roads w/open ditches, 50% imp, HSG B
1.856	78	Row crops, straight row, Good, HSG B
2.699	78	Weighted Average
2.540		94.11% Pervious Area
0.159		5.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.4	225	0.0089	0.85		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	99	0.0404	1.41		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.9	374	Total			

Subcatchment 12: Subcat 12

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 13: Subcat 13

Runoff = 48.23 cfs @ 12.69 hrs, Volume= 7.481 af, Depth> 4.96"

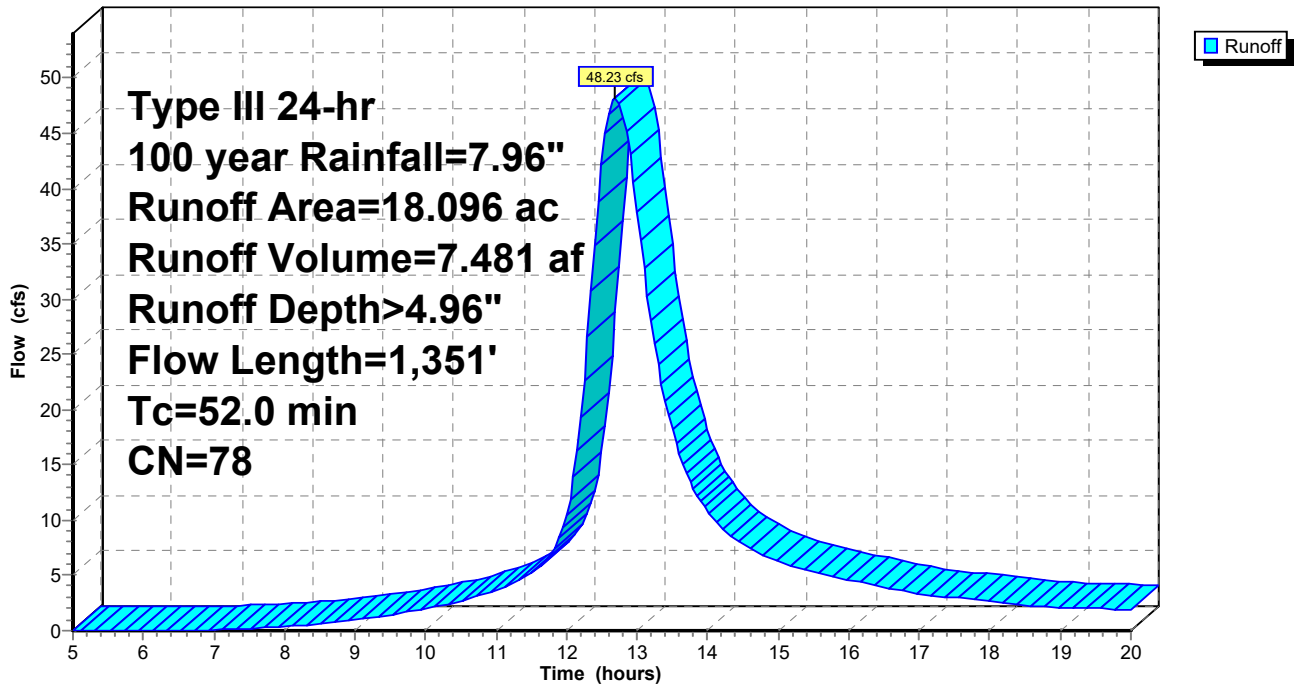
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.387	89	Paved roads w/open ditches, 50% imp, HSG B
17.709	78	Row crops, straight row, Good, HSG B
18.096	78	Weighted Average
17.902		98.93% Pervious Area
0.193		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
26.8	752	0.0027	0.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.9	549	0.0036	0.54		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
52.0	1,351	Total			

Subcatchment 13: Subcat 13

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 14: Subcat 14

Runoff = 2.98 cfs @ 12.17 hrs, Volume= 0.250 af, Depth> 5.02"

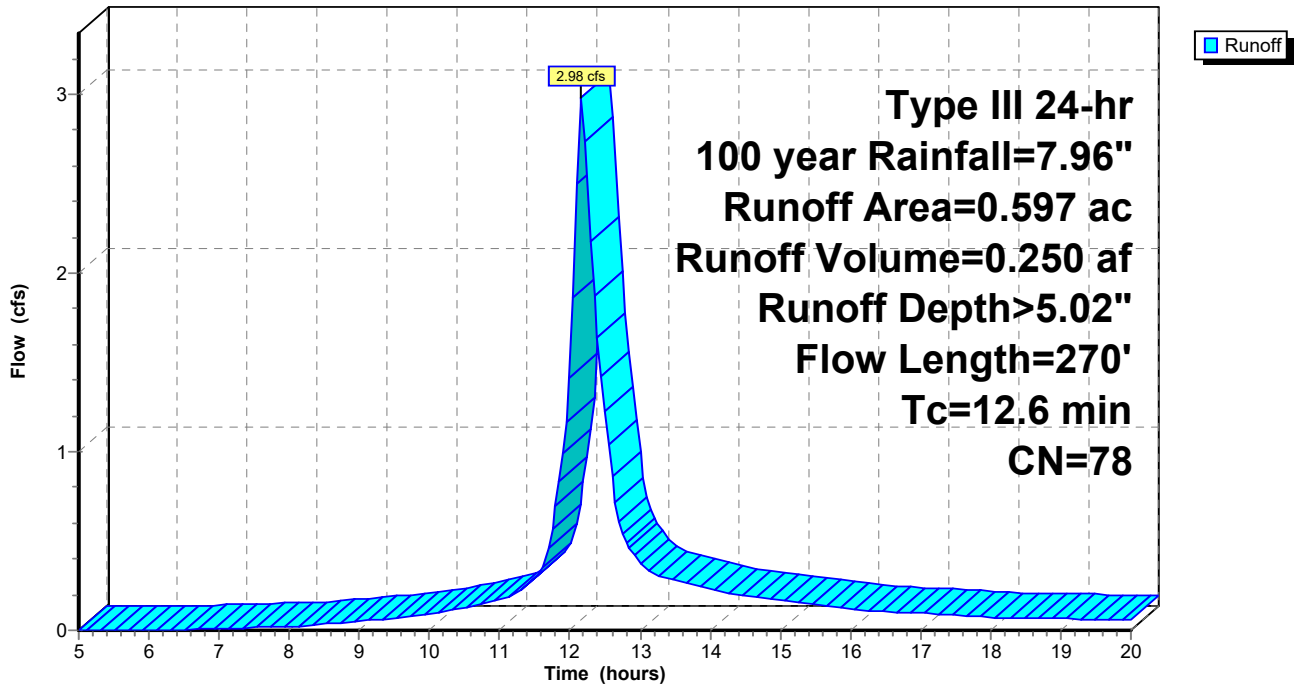
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.597	78	Row crops, straight row, Good, HSG B
0.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.3	220	0.0091	0.86		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
12.6	270	Total			

Subcatchment 14: Subcat 14

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 15: Subcat 15

Runoff = 11.19 cfs @ 12.25 hrs, Volume= 1.077 af, Depth> 5.13"

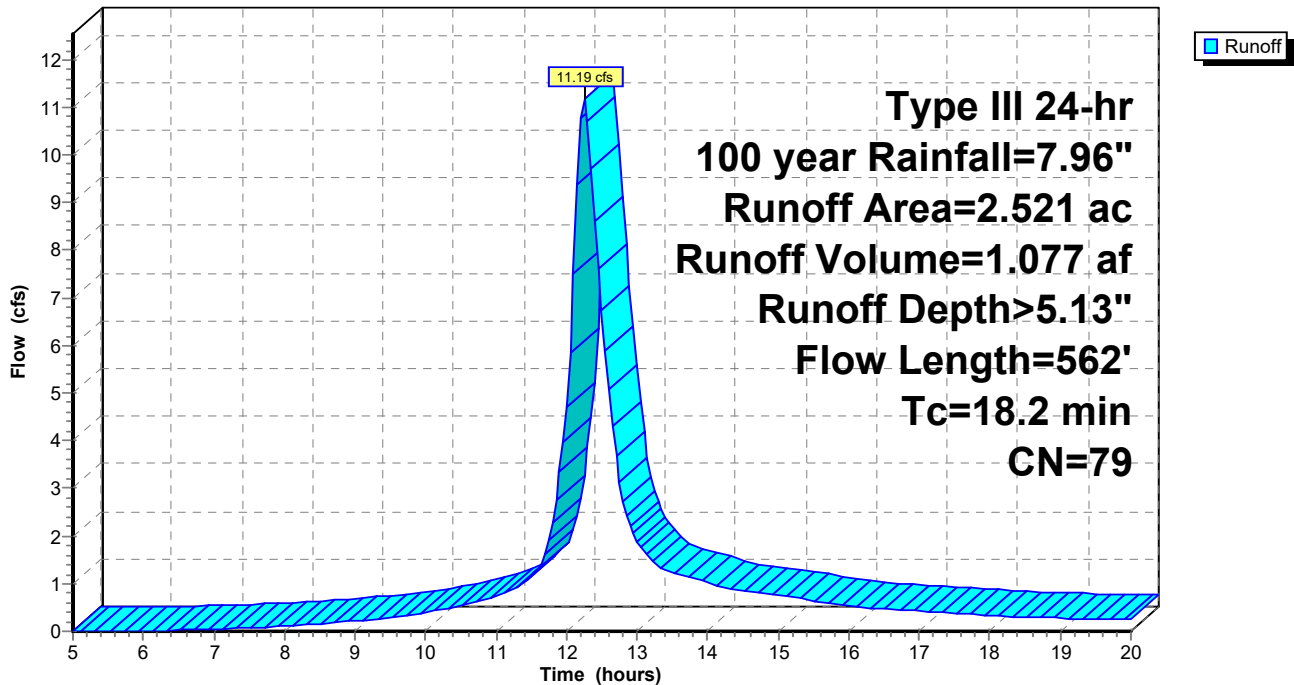
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.028	65	2 acre lots, 12% imp, HSG B
0.235	89	Paved roads w/open ditches, 50% imp, HSG B
2.257	78	Row crops, straight row, Good, HSG B
2.521	79	Weighted Average
2.400		95.19% Pervious Area
0.121		4.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
10.7	512	0.0078	0.79		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.2	562	Total			

Subcatchment 15: Subcat 15

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 16: Subcat 16

Runoff = 18.31 cfs @ 12.33 hrs, Volume= 1.968 af, Depth> 5.01"

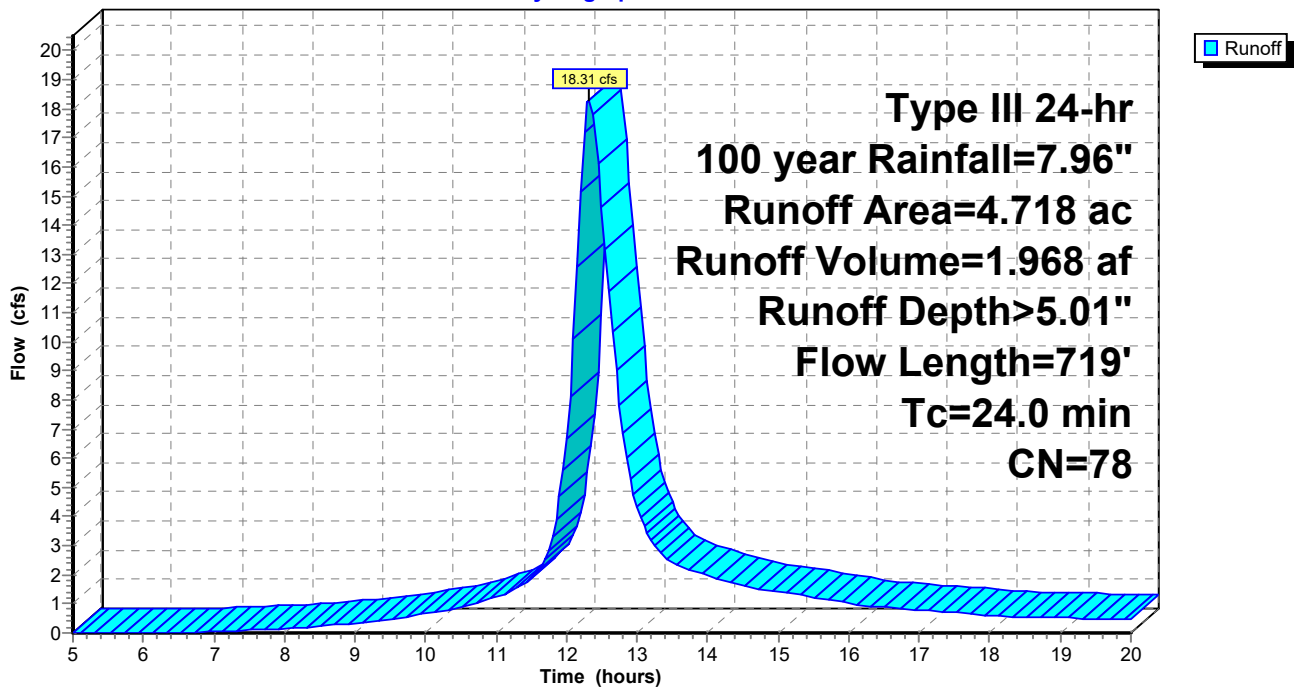
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.087	89	Paved roads w/open ditches, 50% imp, HSG B
4.601	78	Row crops, straight row, Good, HSG B
0.030	60	Woods, Fair, HSG B
4.718	78	Weighted Average
4.674		99.08% Pervious Area
0.044		0.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.1	390	0.0103	0.91		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
8.6	279	0.0036	0.54		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
24.0	719	Total			

Subcatchment 16: Subcat 16

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 17: Subcat 17

Runoff = 21.04 cfs @ 12.27 hrs, Volume= 2.077 af, Depth> 4.67"

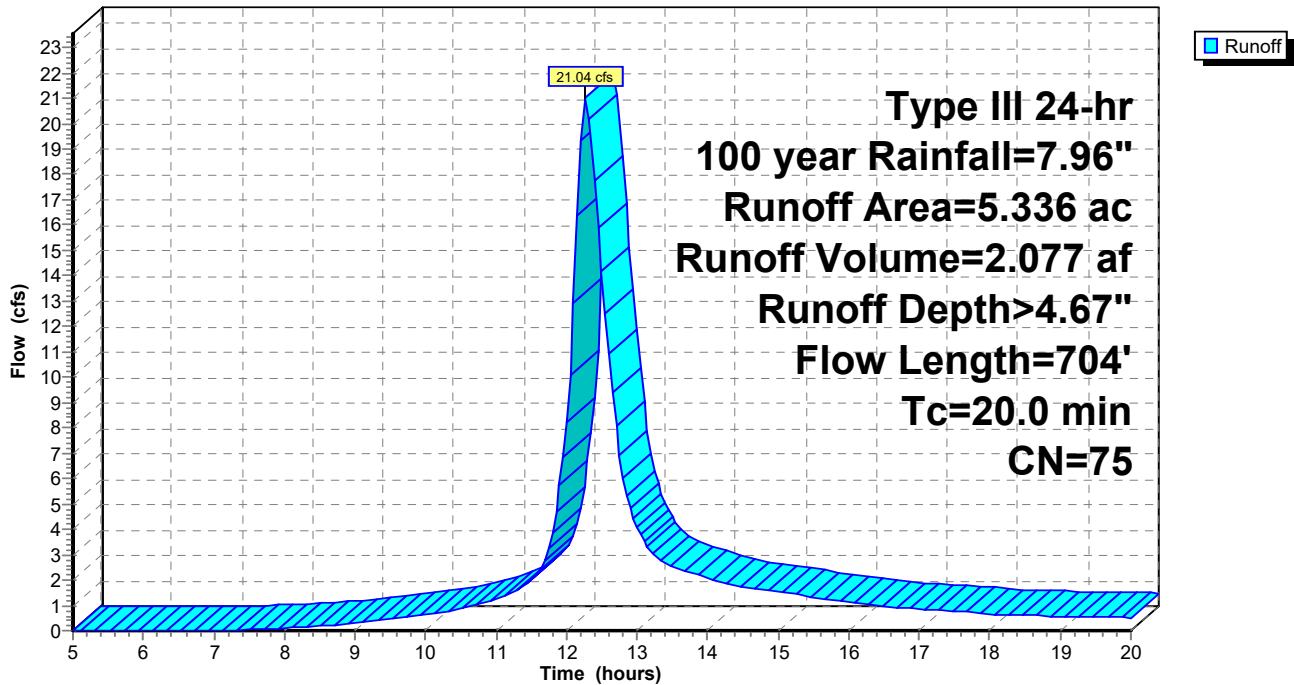
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.000	69	50-75% Grass cover, Fair, HSG B
4.585	78	Row crops, straight row, Good, HSG B
0.752	60	Woods, Fair, HSG B
5.336	75	Weighted Average
5.336		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.7	654	0.0107	0.93		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.0	704	Total			

Subcatchment 17: Subcat 17

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 18: Subcat 18

Runoff = 6.83 cfs @ 12.30 hrs, Volume= 0.698 af, Depth> 4.78"

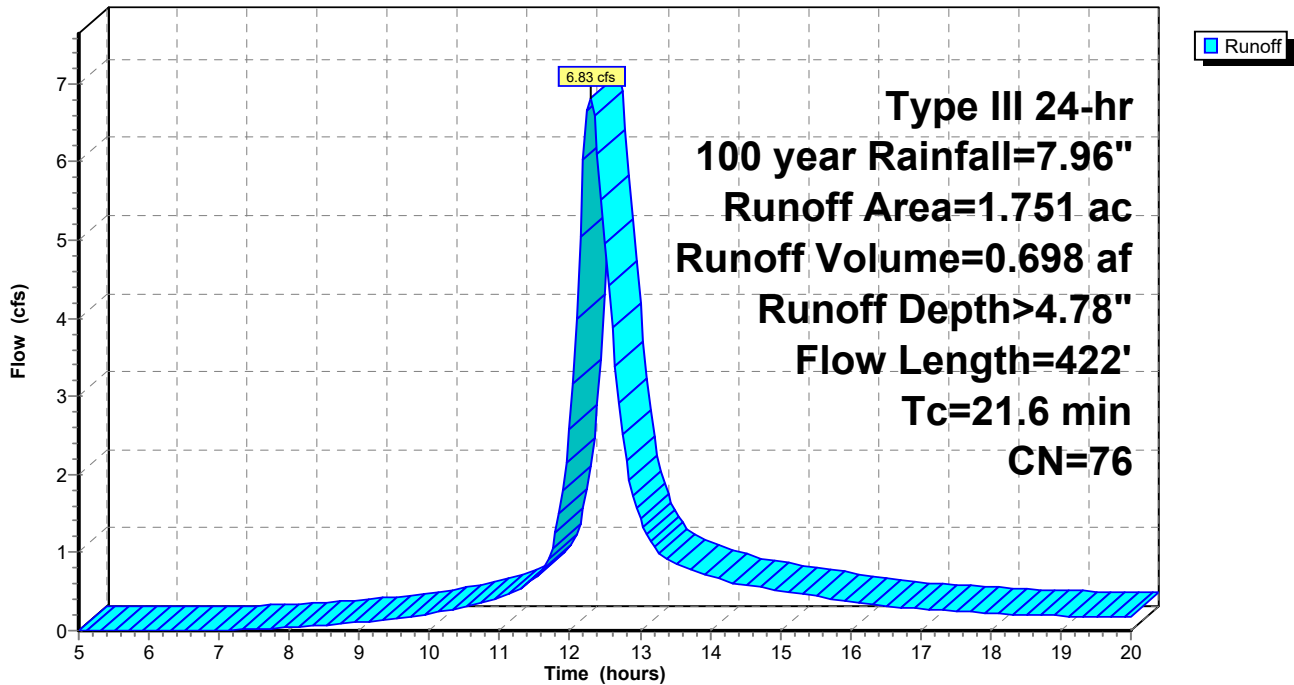
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.028	69	50-75% Grass cover, Fair, HSG B
1.540	78	Row crops, straight row, Good, HSG B
0.183	60	Woods, Fair, HSG B
1.751	76	Weighted Average
1.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
13.3	372	0.0027	0.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.6	422	Total			

Subcatchment 18: Subcat 18

Hydrograph



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Summary for Subcatchment 19: Subcat 19

Runoff = 62.49 cfs @ 12.54 hrs, Volume= 8.343 af, Depth> 4.64"

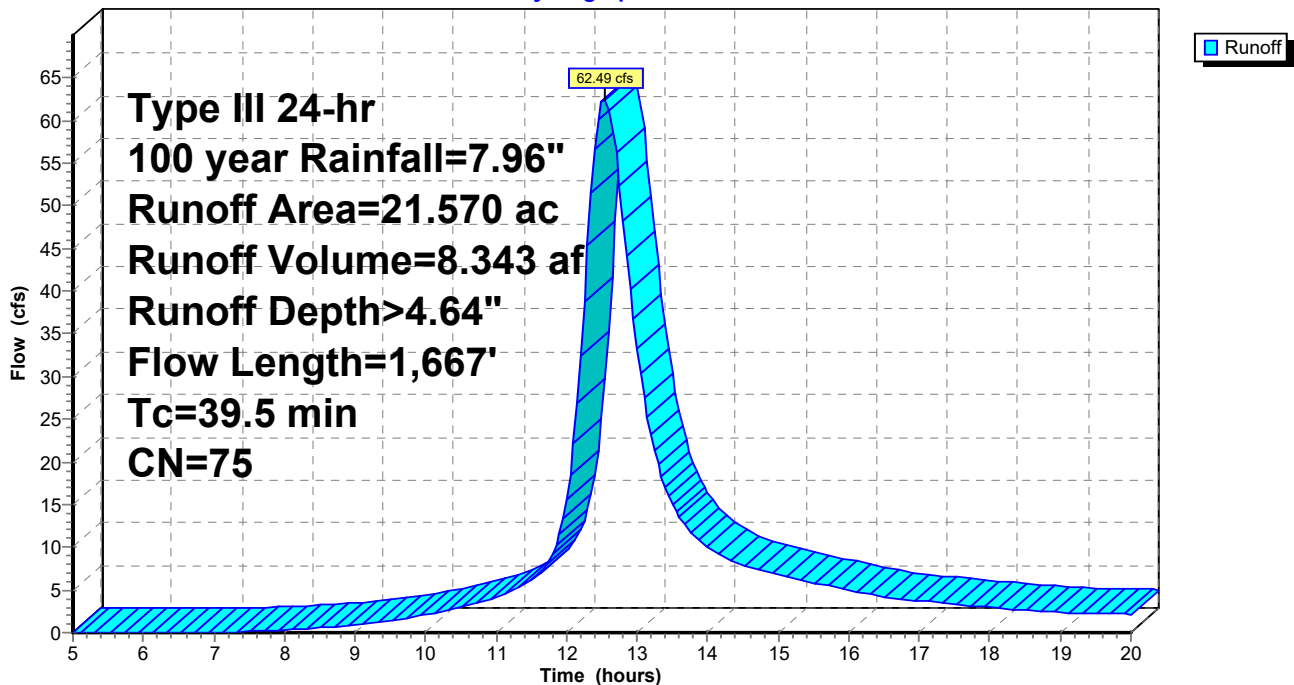
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.134	49	50-75% Grass cover, Fair, HSG A
3.781	69	50-75% Grass cover, Fair, HSG B
17.007	78	Row crops, straight row, Good, HSG B
0.294	36	Woods, Fair, HSG A
0.355	60	Woods, Fair, HSG B
21.570	75	Weighted Average
21.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
23.6	1,090	0.0073	0.77		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.6	527	0.0171	0.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
39.5	1,667	Total			

Subcatchment 19: Subcat 19

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 20: Subcat 20

Runoff = 6.30 cfs @ 12.26 hrs, Volume= 0.604 af, Depth> 4.45"

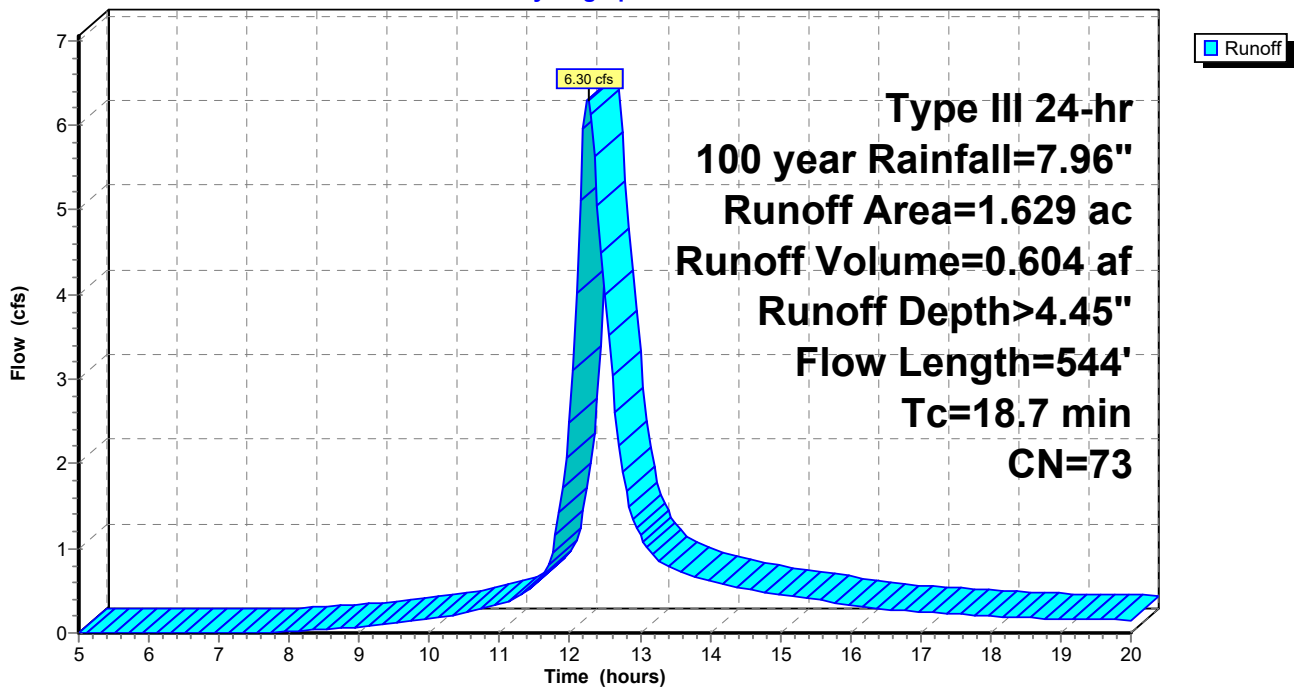
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.573	69	50-75% Grass cover, Fair, HSG B
0.876	78	Row crops, straight row, Good, HSG B
0.002	36	Woods, Fair, HSG A
0.178	60	Woods, Fair, HSG B
1.629	73	Weighted Average
1.629		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.3	251	0.0040	0.57		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
3.1	243	0.0206	1.29		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
18.7	544	Total			

Subcatchment 20: Subcat 20

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 21: Subcat 21

Runoff = 12.24 cfs @ 12.38 hrs, Volume= 1.364 af, Depth> 4.10"

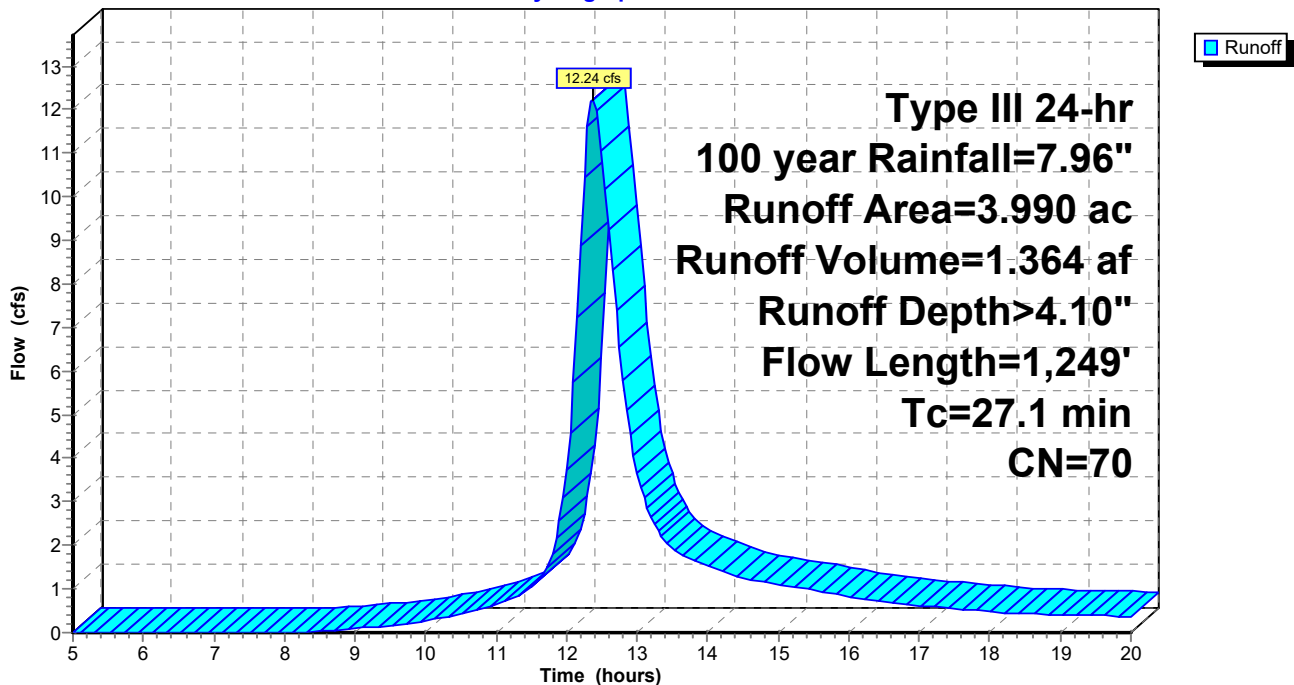
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.039	49	50-75% Grass cover, Fair, HSG A
1.109	69	50-75% Grass cover, Fair, HSG B
2.328	78	Row crops, straight row, Good, HSG B
0.426	36	Woods, Fair, HSG A
0.089	60	Woods, Fair, HSG B
3.990	70	Weighted Average
3.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.7	584	0.0086	0.83		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.1	615	0.0260	1.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
27.1	1,249	Total			

Subcatchment 21: Subcat 21

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 22: Subcat 22

Runoff = 40.91 cfs @ 12.74 hrs, Volume= 6.490 af, Depth> 4.39"

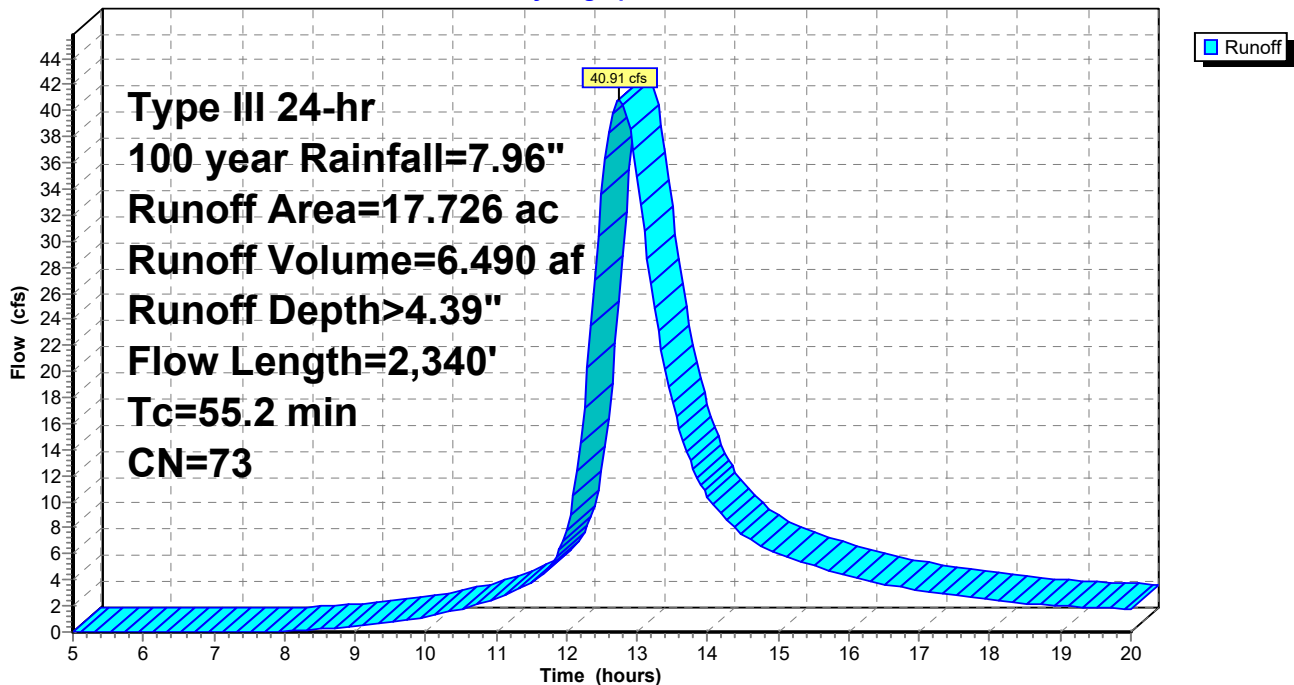
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
4.876	69	50-75% Grass cover, Fair, HSG B
0.440	56	Brush, Fair, HSG B
10.915	78	Row crops, straight row, Good, HSG B
1.496	60	Woods, Fair, HSG B
17.726	73	Weighted Average
17.726		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
35.0	1,416	0.0056	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
8.8	636	0.0299	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.1	238	0.0336	1.28		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
55.2	2,340	Total			

Subcatchment 22: Subcat 22

Hydrograph



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Summary for Subcatchment 23: Subcat 23

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.62 cfs @ 12.08 hrs, Volume= 0.111 af, Depth> 5.03"

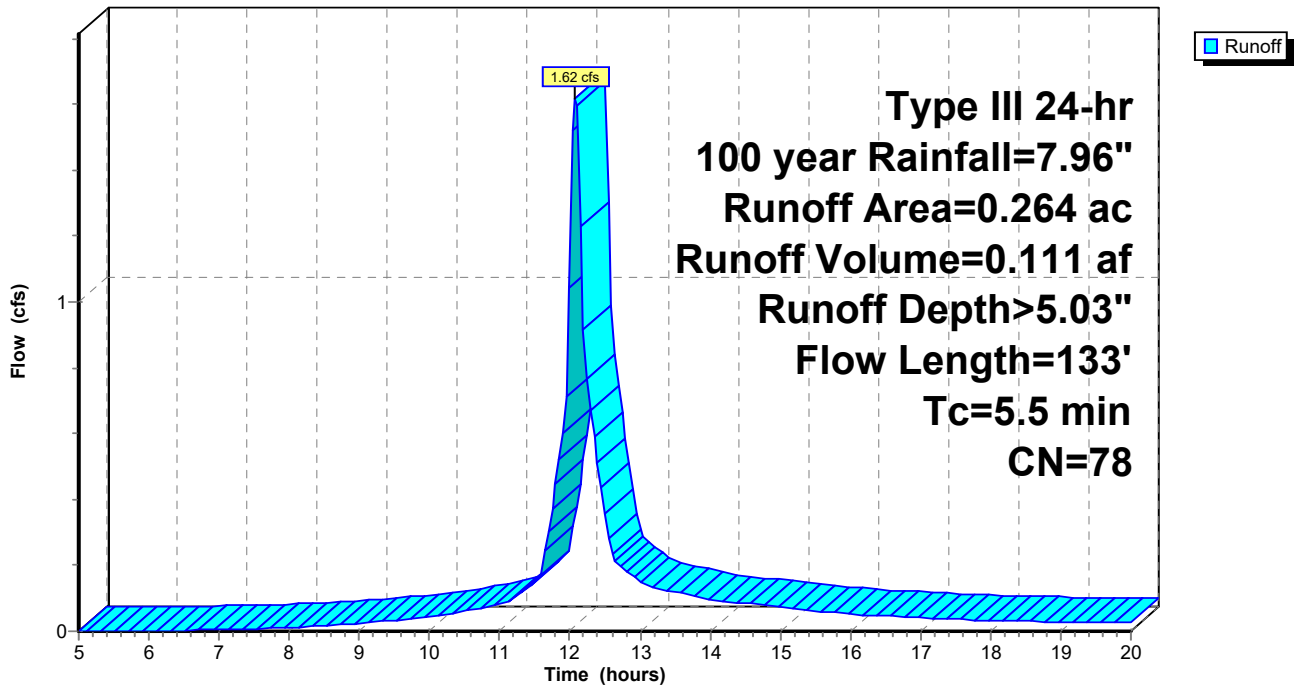
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.264	78	Row crops, straight row, Good, HSG B
0.264		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	50	0.0400	0.18		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
0.8	83	0.0361	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
5.5	133	Total			

Subcatchment 23: Subcat 23

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 24: Subcat 24

Runoff = 11.72 cfs @ 12.22 hrs, Volume= 1.063 af, Depth> 4.56"

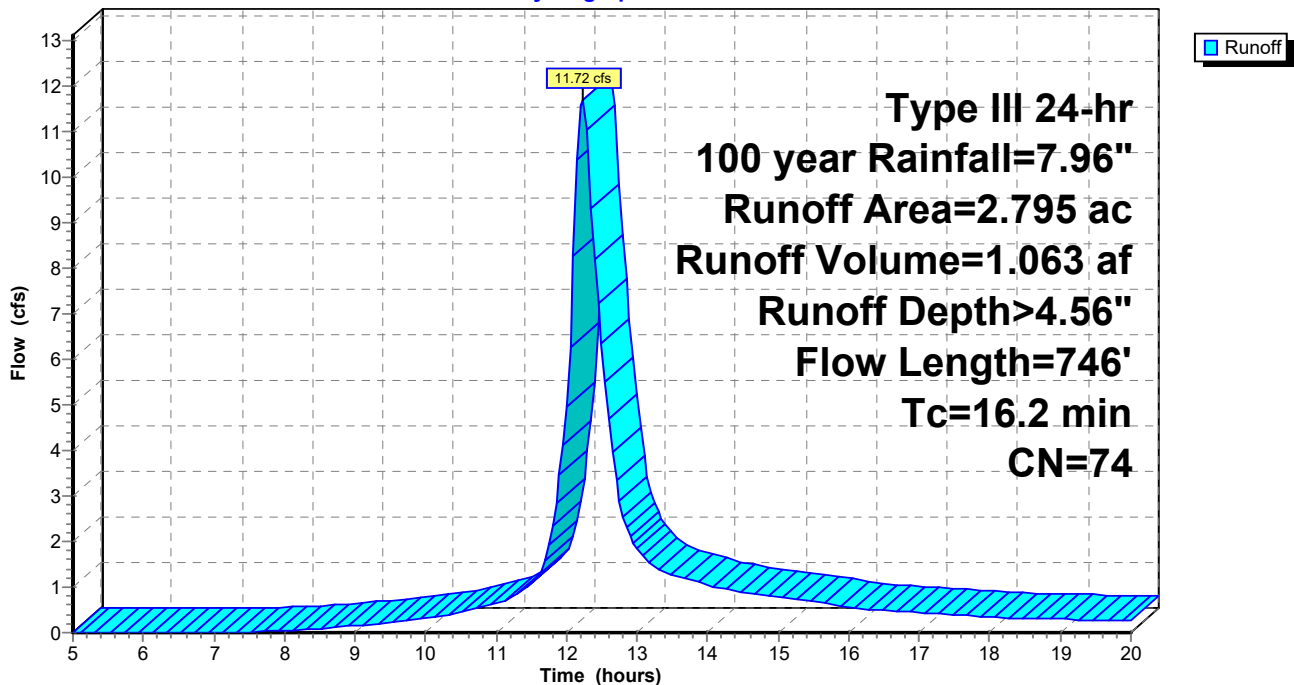
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.439	56	Brush, Fair, HSG B
2.345	78	Row crops, straight row, Good, HSG B
0.012	60	Woods, Fair, HSG B
2.795	74	Weighted Average
2.795		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.4	284	0.0141	1.07		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
0.8	112	0.1071	2.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.7	300	0.0433	1.87		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.2	746	Total			

Subcatchment 24: Subcat 24

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 25: Subcat 25

Runoff = 36.73 cfs @ 12.52 hrs, Volume= 4.823 af, Depth> 4.76"

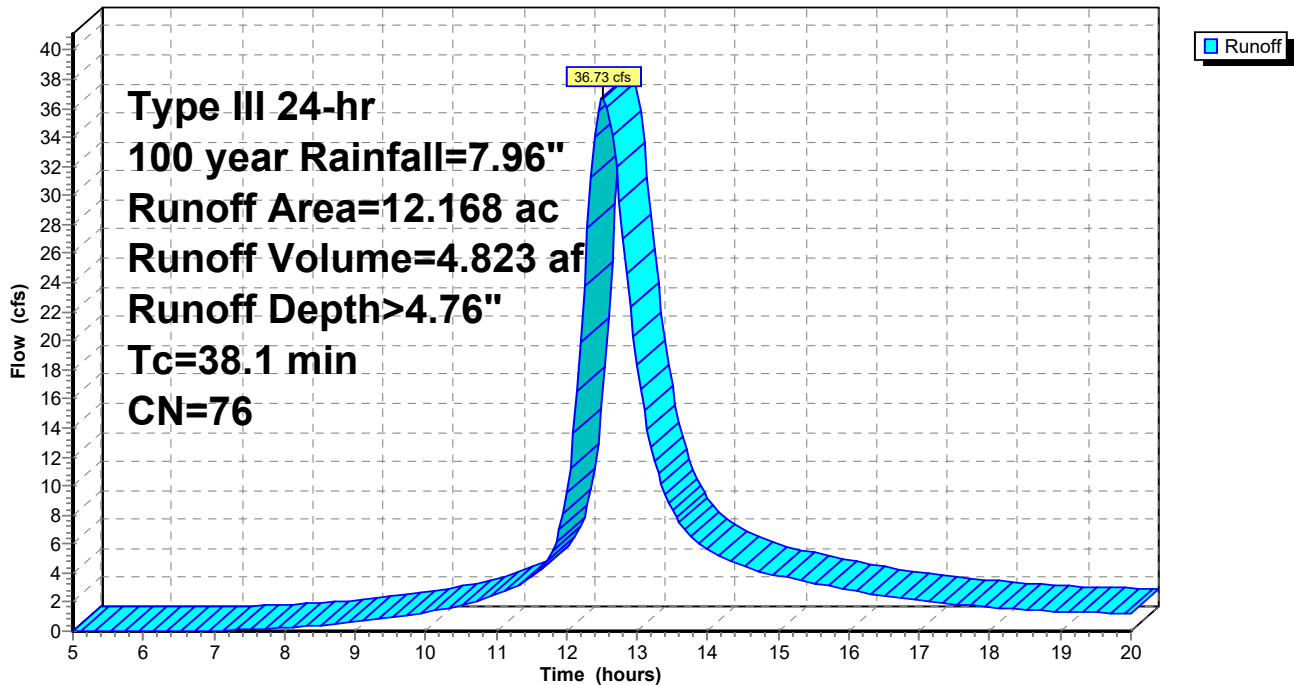
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.022	69	50-75% Grass cover, Fair, HSG B
11.271	78	Row crops, straight row, Good, HSG B
0.129	36	Woods, Fair, HSG A
0.746	60	Woods, Fair, HSG B
12.168	76	Weighted Average
12.168		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
38.1					Direct Entry,

Subcatchment 25: Subcat 25

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 27: Subcat 27

Runoff = 7.35 cfs @ 12.27 hrs, Volume= 0.711 af, Depth> 3.89"

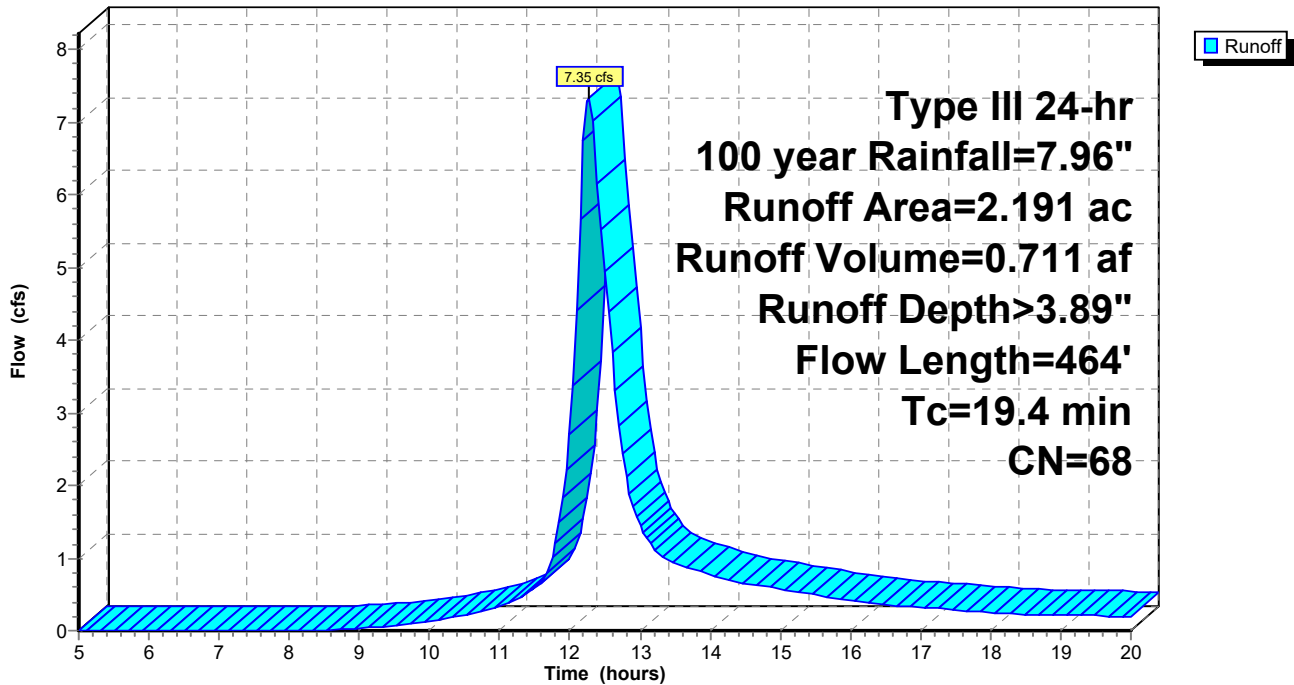
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
1.050	78	Row crops, straight row, Good, HSG B
0.036	36	Woods, Fair, HSG A
1.105	60	Woods, Fair, HSG B
2.191	68	Weighted Average
2.191		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
11.1	414	0.0048	0.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
19.4	464	Total			

Subcatchment 27: Subcat 27

Hydrograph



Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 28: Subcat 28

Runoff = 19.33 cfs @ 12.22 hrs, Volume= 1.731 af, Depth> 2.82"

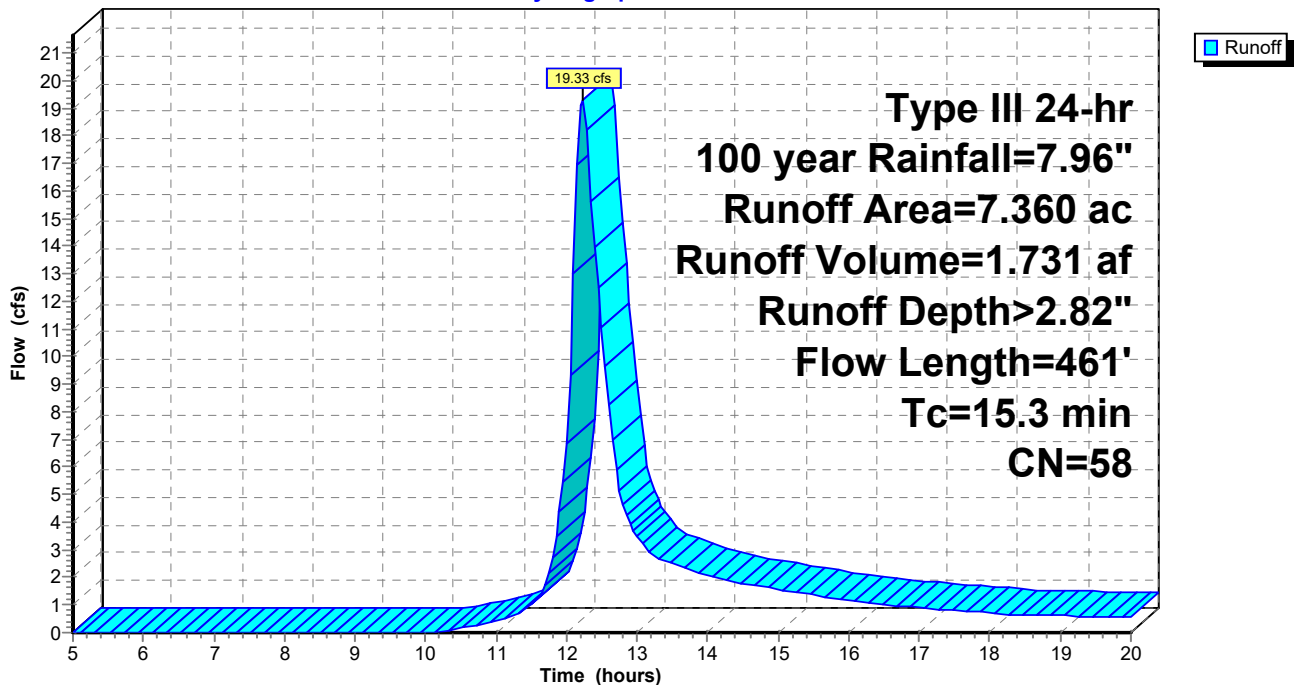
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.095	49	50-75% Grass cover, Fair, HSG A
1.457	69	50-75% Grass cover, Fair, HSG B
2.094	78	Row crops, straight row, Good, HSG B
2.776	36	Woods, Fair, HSG A
0.938	60	Woods, Fair, HSG B
7.360	58	Weighted Average
7.360		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.8	269	0.0074	0.77		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	142	0.1479	1.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	461	Total			

Subcatchment 28: Subcat 28

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 29: Subcat 29

Runoff = 0.69 cfs @ 12.36 hrs, Volume= 0.102 af, Depth> 0.75"

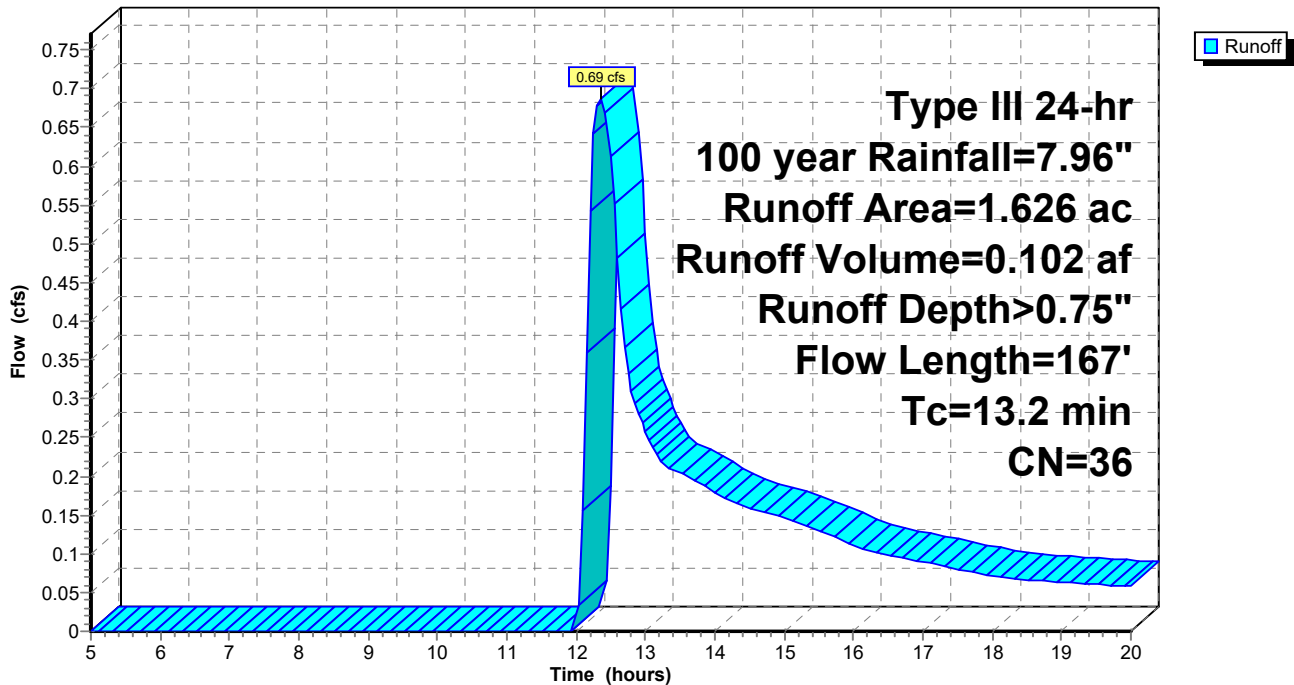
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.000	49	50-75% Grass cover, Fair, HSG A
0.006	69	50-75% Grass cover, Fair, HSG B
1.620	36	Woods, Fair, HSG A
0.000	60	Woods, Fair, HSG B
1.626	36	Weighted Average
1.626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
0.8	117	0.2222	2.36		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.2	167	Total			

Subcatchment 29: Subcat 29

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 30: Subcat 30

Runoff = 16.98 cfs @ 12.16 hrs, Volume= 1.344 af, Depth> 4.12"

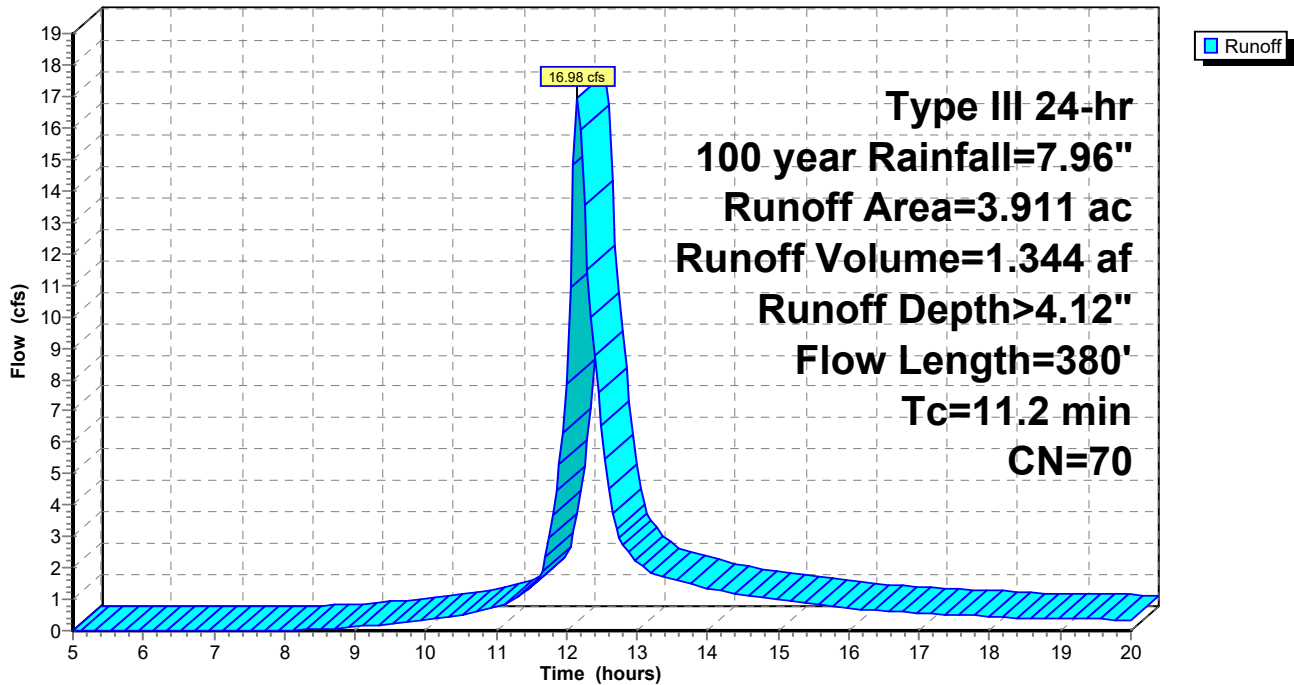
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.008	49	50-75% Grass cover, Fair, HSG A
3.548	69	50-75% Grass cover, Fair, HSG B
0.040	86	Fallow, bare soil, HSG B
0.311	78	Row crops, straight row, Good, HSG B
0.004	36	Woods, Fair, HSG A
3.911	70	Weighted Average
3.911		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.4	330	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.2	380	Total			

Subcatchment 30: Subcat 30

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 31: Subcat 31

Runoff = 3.79 cfs @ 12.15 hrs, Volume= 0.356 af, Depth> 1.17"

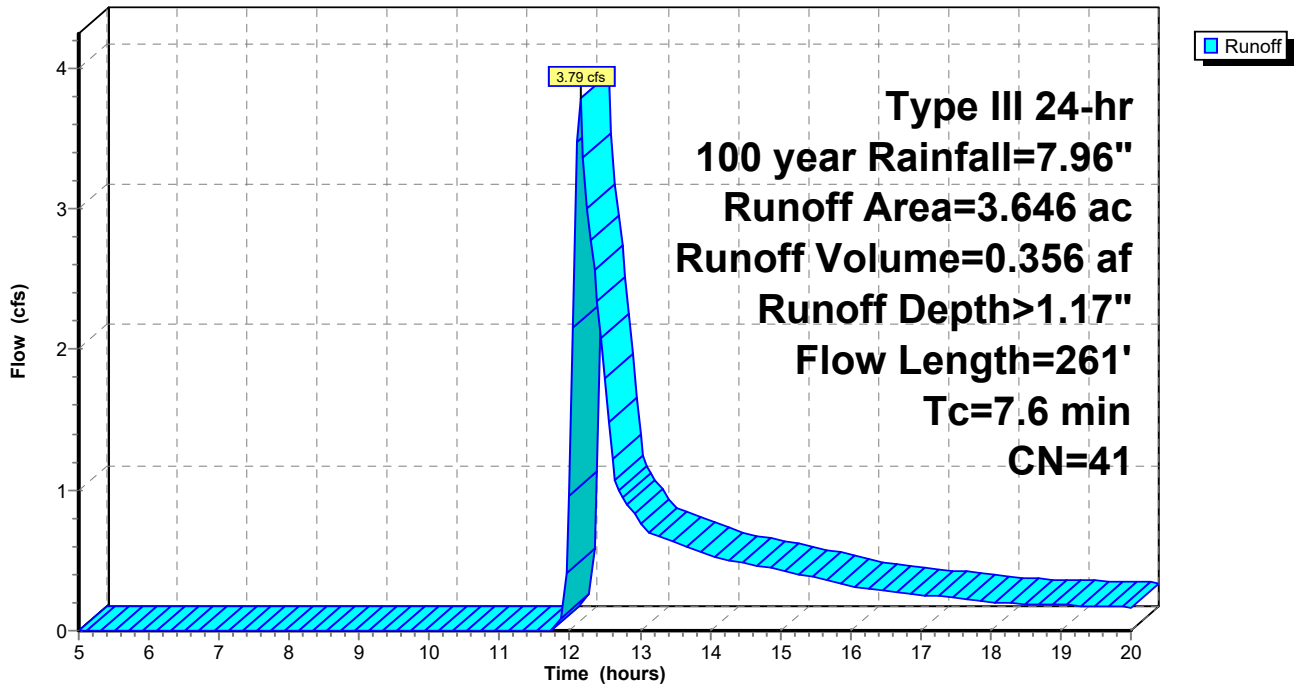
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.132	49	50-75% Grass cover, Fair, HSG A
0.518	69	50-75% Grass cover, Fair, HSG B
0.014	77	Fallow, bare soil, HSG A
0.011	86	Fallow, bare soil, HSG B
2.971	36	Woods, Fair, HSG A
3.646	41	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.9	211	0.1374	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.6	261	Total			

Subcatchment 31: Subcat 31

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 32: Subcat 32

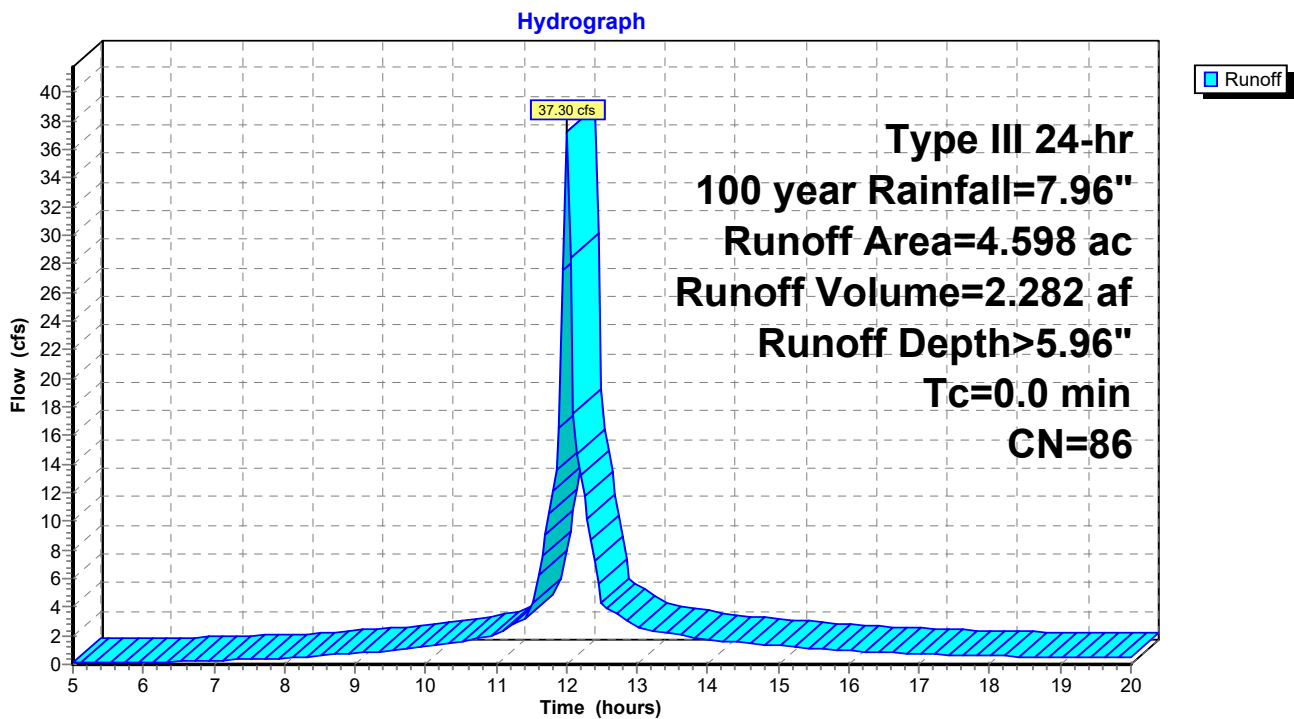
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 37.30 cfs @ 12.00 hrs, Volume= 2.282 af, Depth> 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.006	49	50-75% Grass cover, Fair, HSG A
0.012	69	50-75% Grass cover, Fair, HSG B
0.089	77	Fallow, bare soil, HSG A
4.486	86	Fallow, bare soil, HSG B
0.006	36	Woods, Fair, HSG A
4.598	86	Weighted Average
4.598		100.00% Pervious Area

Subcatchment 32: Subcat 32



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 33: Subcat 33

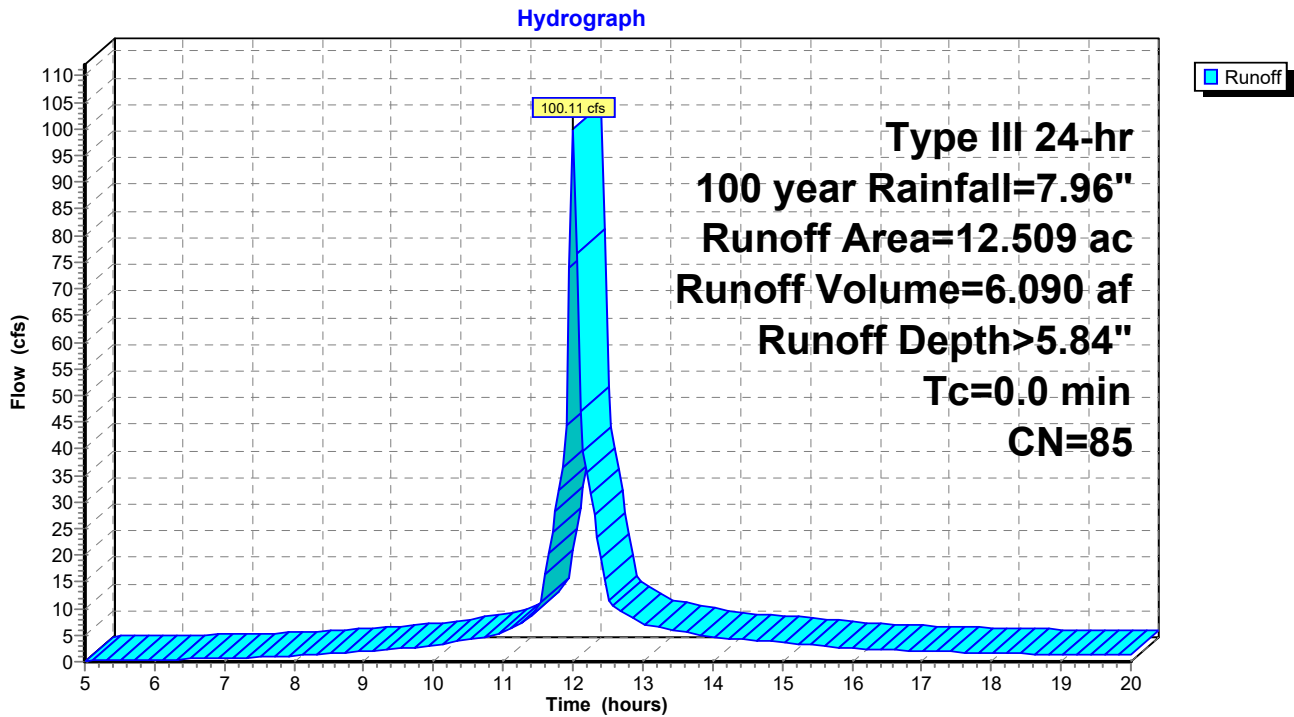
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 100.11 cfs @ 12.00 hrs, Volume= 6.090 af, Depth> 5.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.007	69	50-75% Grass cover, Fair, HSG B
1.702	77	Fallow, bare soil, HSG A
10.799	86	Fallow, bare soil, HSG B
0.001	60	Woods, Fair, HSG B
12.509	85	Weighted Average
12.509		100.00% Pervious Area

Subcatchment 33: Subcat 33



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 35: Subcat 35

Runoff = 47.97 cfs @ 12.30 hrs, Volume= 4.941 af, Depth> 5.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.028	69	50-75% Grass cover, Fair, HSG B
1.016	77	Fallow, bare soil, HSG A
8.929	86	Fallow, bare soil, HSG B
1.764	36	Woods, Fair, HSG A
0.101	60	Woods, Fair, HSG B
11.838	78	Weighted Average
11.838		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	217	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	97	0.1237	3.52		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.7	215	0.0093	0.96		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
21.7	579	Total			

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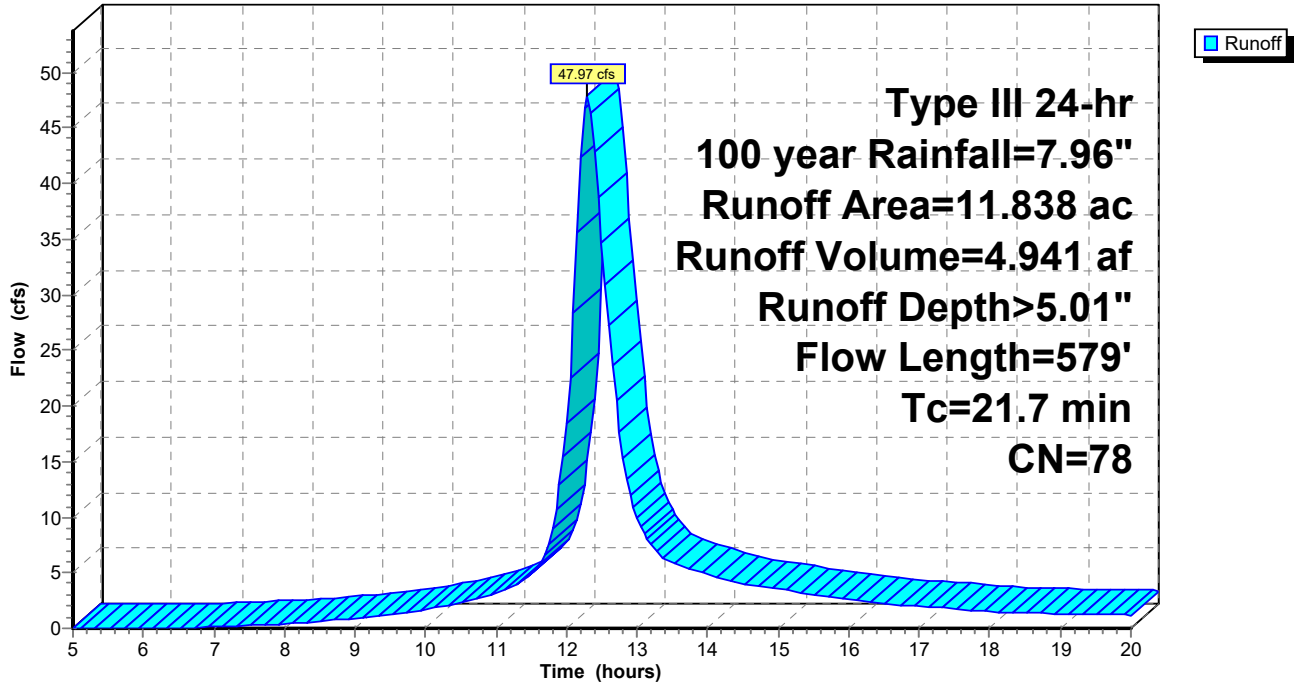
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Subcatchment 35: Subcat 35

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Summary for Pond 3P: (new Pond)

Inflow Area = 2.555 ac, 0.00% Impervious, Inflow Depth > 3.46" for 100 year event
 Inflow = 7.69 cfs @ 12.27 hrs, Volume= 0.736 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.81' @ 20.00 hrs Surf.Area= 21,502 sf Storage= 32,039 cf

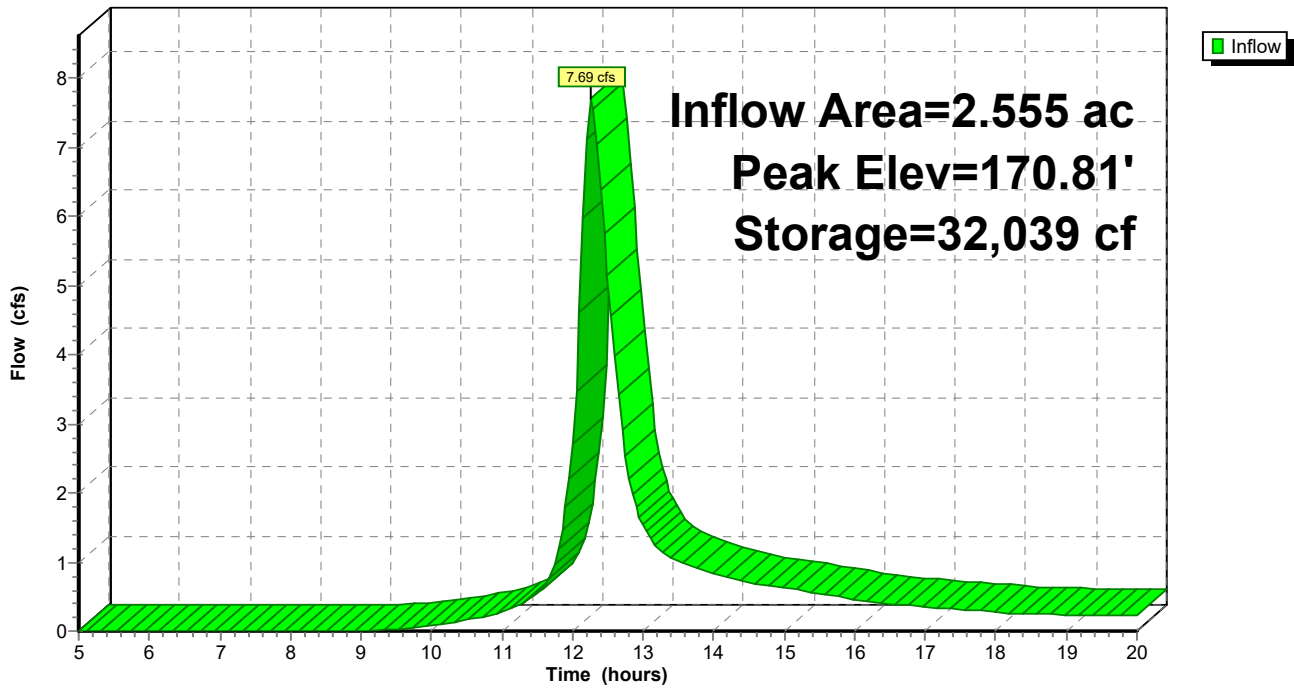
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	95,578 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	0	0	0
170.00	16,657	16,657	16,657
172.00	28,677	45,334	61,991
173.00	38,496	33,587	95,578

Pond 3P: (new Pond)

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Existing Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 7P: (new Pond)

Inflow Area = 17.083 ac, 0.00% Impervious, Inflow Depth > 4.87" for 100 year event
 Inflow = 50.74 cfs @ 12.56 hrs, Volume= 6.926 af
 Outflow = 18.20 cfs @ 13.25 hrs, Volume= 6.680 af, Atten= 64%, Lag= 41.7 min
 Discarded = 14.76 cfs @ 13.25 hrs, Volume= 6.370 af
 Primary = 3.44 cfs @ 13.25 hrs, Volume= 0.310 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.67' @ 13.25 hrs Surf.Area= 211,897 sf Storage= 115,317 cf

Plug-Flow detention time= 88.1 min calculated for 6.680 af (96% of inflow)
 Center-of-Mass det. time= 75.3 min (880.4 - 805.1)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	188,598 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.00	0	0	0	0
164.00	57,239	19,080	19,080	57,241
164.50	203,000	61,339	80,418	203,003
165.00	230,000	108,180	188,598	230,015

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=14.76 cfs @ 13.25 hrs HW=164.67' (Free Discharge)
 ↑**2=Exfiltration** (Controls 14.76 cfs)

Primary OutFlow Max=3.44 cfs @ 13.25 hrs HW=164.67' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 3.44 cfs @ 1.02 fps)

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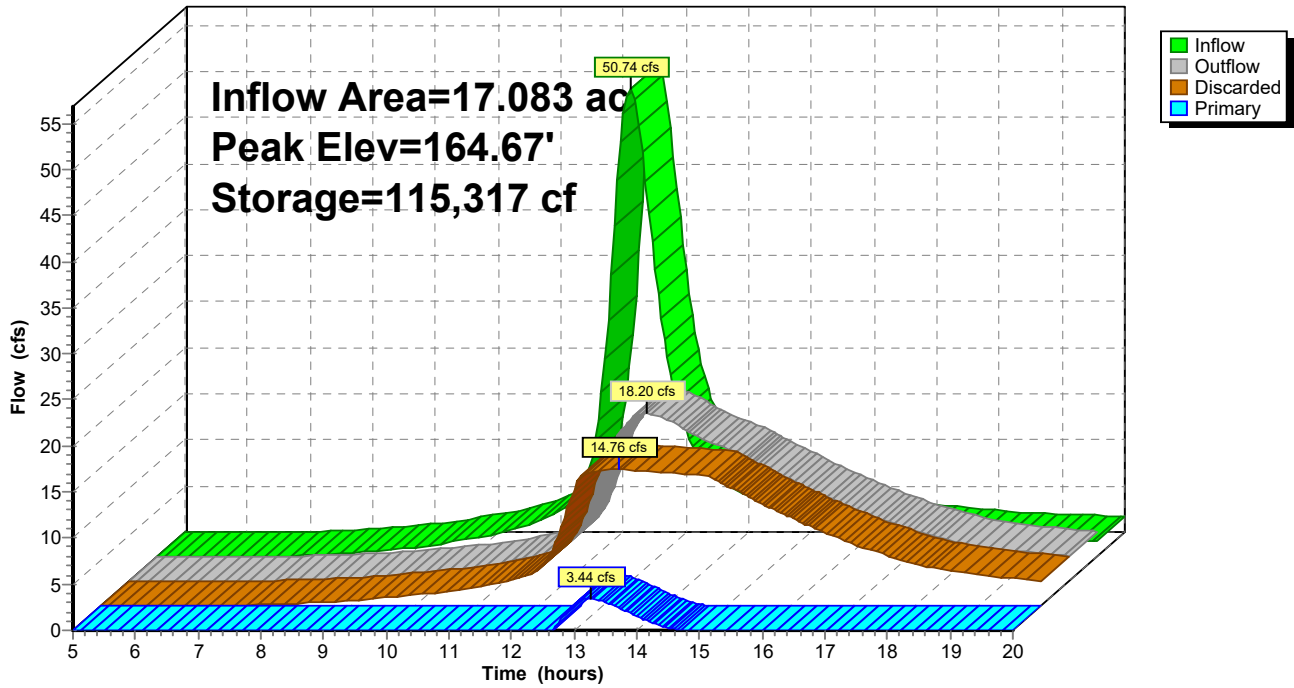
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Pond 7P: (new Pond)

Hydrograph



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Summary for Pond 10P: (new Pond)

Inflow Area = 6.364 ac, 2.50% Impervious, Inflow Depth > 1.93" for 100 year event
 Inflow = 12.30 cfs @ 12.18 hrs, Volume= 1.025 af
 Outflow = 0.35 cfs @ 18.42 hrs, Volume= 0.229 af, Atten= 97%, Lag= 374.0 min
 Discarded = 0.35 cfs @ 18.42 hrs, Volume= 0.229 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 150.73' @ 18.42 hrs Surf.Area= 14,940 sf Storage= 34,815 cf

Plug-Flow detention time= 254.2 min calculated for 0.229 af (22% of inflow)
 Center-of-Mass det. time= 152.5 min (959.2 - 806.7)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	274,837 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	1,534	0	0	1,534
148.00	5,773	6,855	6,855	5,793
150.00	12,558	17,897	24,752	12,610
152.00	19,547	31,848	56,601	19,656
154.00	26,610	45,976	102,576	26,800
156.00	32,562	59,072	161,648	32,876
158.00	39,456	71,908	233,556	39,899
159.00	43,134	41,281	274,837	43,647

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.35 cfs @ 18.42 hrs HW=150.73' (Free Discharge)
 ↑1=Exfiltration (Controls 0.35 cfs)

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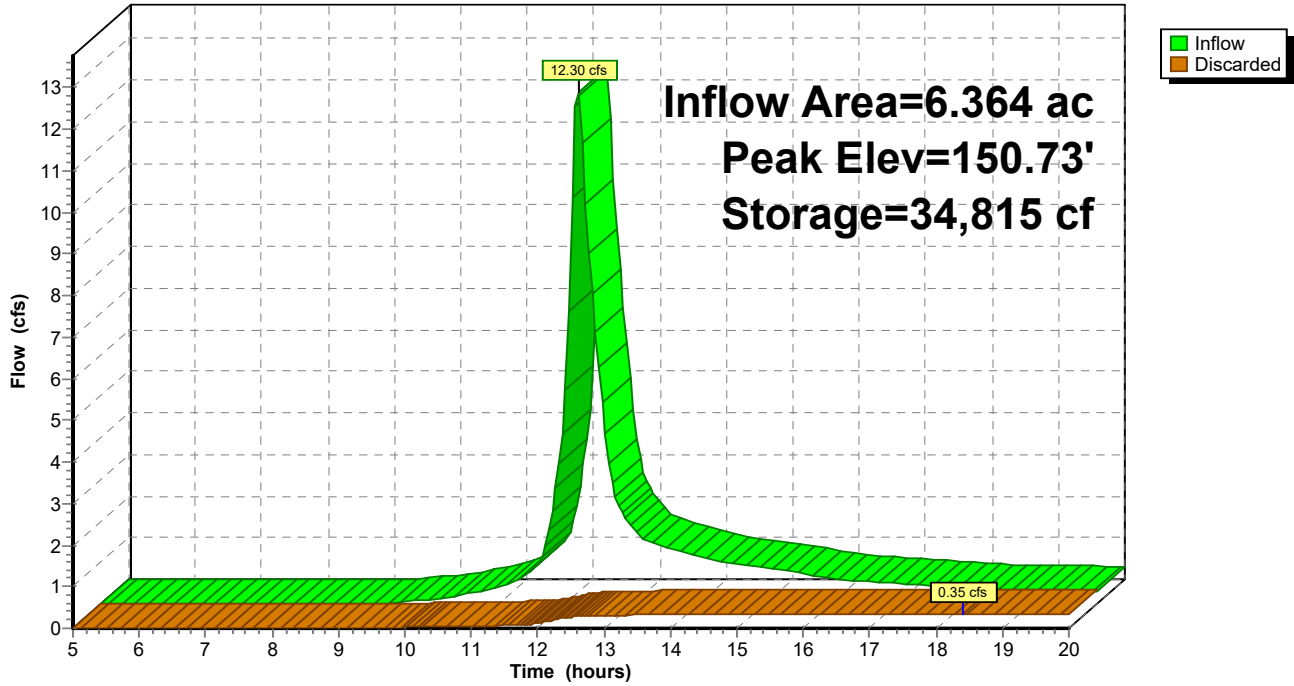
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Pond 10P: (new Pond)

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Summary for Pond 11AP: (new Pond)

Inflow Area = 6.449 ac, 0.00% Impervious, Inflow Depth > 1.44" for 100 year event
 Inflow = 8.54 cfs @ 12.17 hrs, Volume= 0.773 af
 Outflow = 0.41 cfs @ 17.98 hrs, Volume= 0.256 af, Atten= 95%, Lag= 348.7 min
 Discarded = 0.41 cfs @ 17.98 hrs, Volume= 0.256 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 128.33' @ 17.98 hrs Surf.Area= 17,677 sf Storage= 22,886 cf

Plug-Flow detention time= 240.3 min calculated for 0.255 af (33% of inflow)
 Center-of-Mass det. time= 131.7 min (973.7 - 842.1)

Volume	Invert	Avail.Storage	Storage Description
#1	126.00'	127,579 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
126.00	3,074	0	0	3,074
128.00	15,883	17,296	17,296	15,899
130.00	28,094	43,401	60,697	28,154
132.00	39,090	66,882	127,579	39,226

Device	Routing	Invert	Outlet Devices
#1	Discarded	126.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.41 cfs @ 17.98 hrs HW=128.33' (Free Discharge)
 ↑1=Exfiltration (Controls 0.41 cfs)

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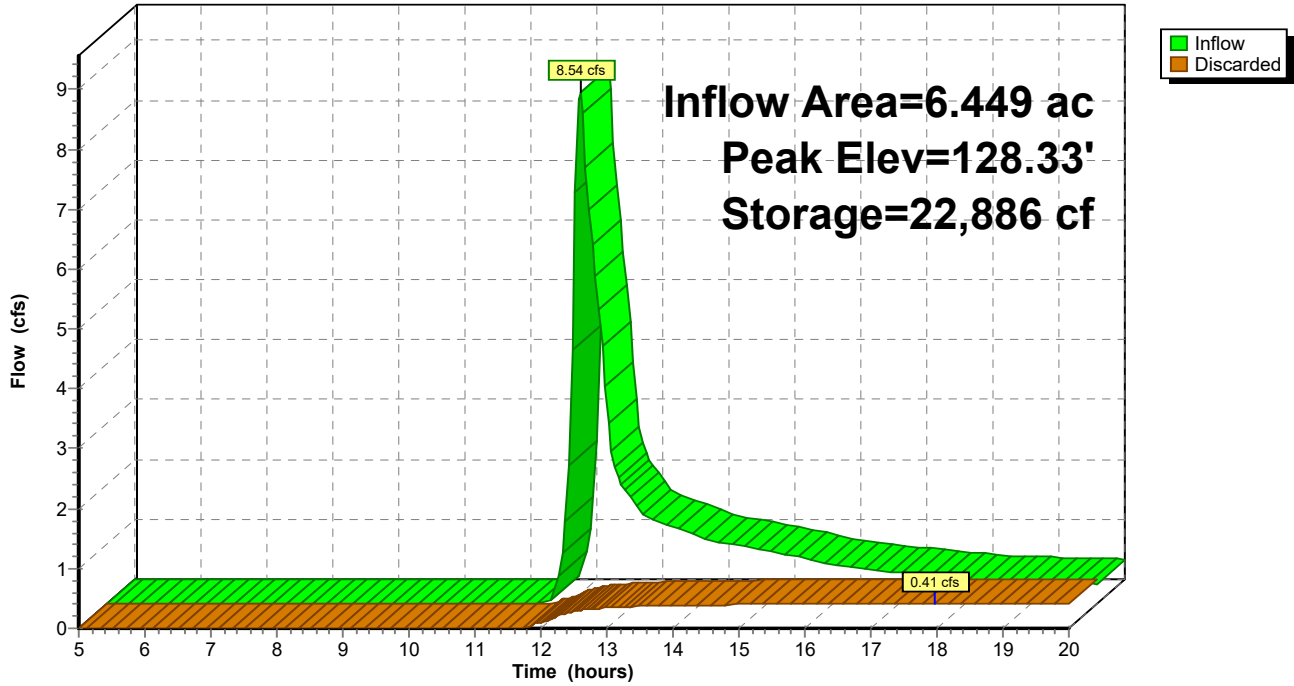
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Pond 11AP: (new Pond)

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Summary for Pond 11P: (new Pond)

Inflow Area = 5.661 ac, 0.85% Impervious, Inflow Depth > 2.82" for 100 year event
 Inflow = 14.68 cfs @ 12.23 hrs, Volume= 1.331 af
 Outflow = 0.39 cfs @ 20.00 hrs, Volume= 0.250 af, Atten= 97%, Lag= 466.4 min
 Discarded = 0.39 cfs @ 20.00 hrs, Volume= 0.250 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.81' @ 20.00 hrs Surf.Area= 16,620 sf Storage= 47,097 cf

Plug-Flow detention time= 250.9 min calculated for 0.250 af (19% of inflow)
 Center-of-Mass det. time= 146.6 min (963.9 - 817.3)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	518,849 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	3,101	0	0	3,101
144.00	9,033	11,618	11,618	9,057
146.00	14,143	22,986	34,604	14,223
148.00	20,595	34,537	69,140	20,742
150.00	26,222	46,704	115,844	26,472
152.00	32,411	58,524	174,368	32,779
154.00	41,950	74,156	248,524	42,415
156.00	49,984	91,817	340,341	50,591
158.00	62,571	112,320	452,660	63,289
159.00	69,874	66,189	518,849	70,649

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.39 cfs @ 20.00 hrs HW=146.81' (Free Discharge)
 ↑1=Exfiltration (Controls 0.39 cfs)

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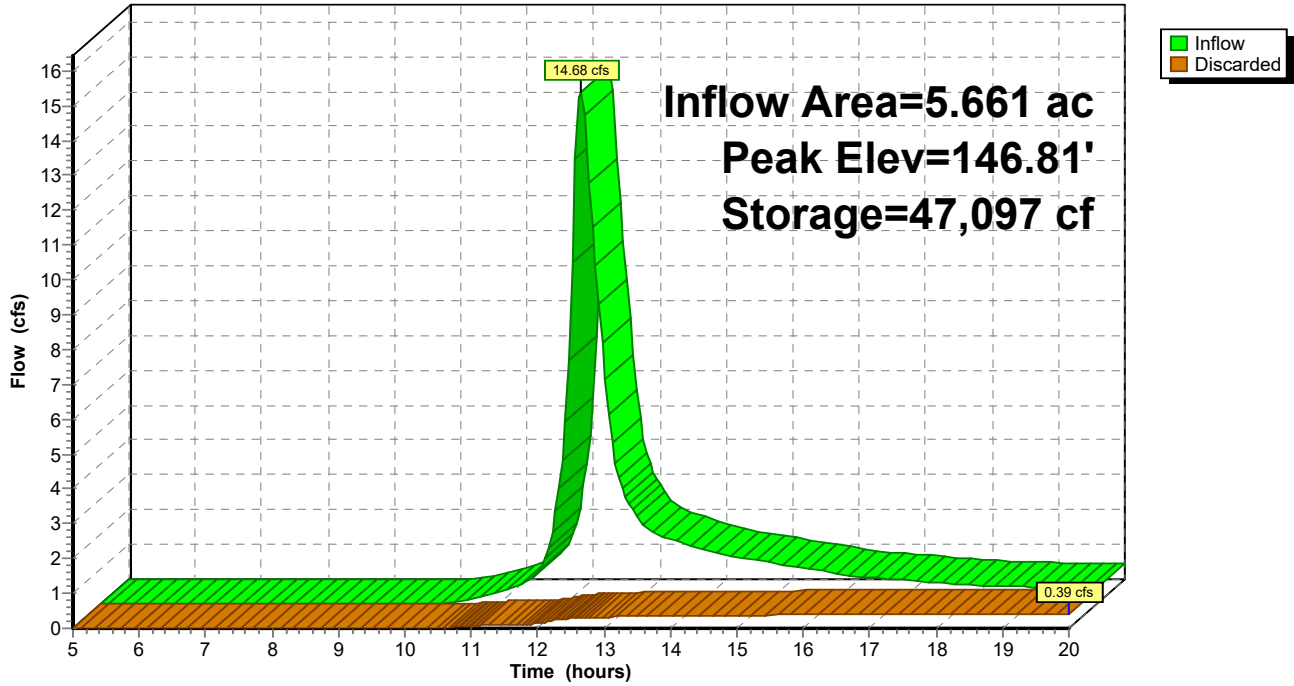
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Pond 11P: (new Pond)

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Summary for Pond 12P: (new Pond)

Inflow Area = 2.699 ac, 5.89% Impervious, Inflow Depth > 5.02" for 100 year event
 Inflow = 13.00 cfs @ 12.19 hrs, Volume= 1.129 af
 Outflow = 1.80 cfs @ 12.99 hrs, Volume= 1.016 af, Atten= 86%, Lag= 48.2 min
 Discarded = 1.80 cfs @ 12.99 hrs, Volume= 1.016 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.14' @ 12.99 hrs Surf.Area= 25,776 sf Storage= 23,298 cf

Plug-Flow detention time= 152.8 min calculated for 1.013 af (90% of inflow)
 Center-of-Mass det. time= 120.7 min (902.3 - 781.6)

Volume	Invert	Avail.Storage	Storage Description
#1	161.00'	52,117 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
161.00	0	0	0 0
162.00	10,223	3,408	3,408 10,225
164.00	42,096	48,709	52,117 42,116

Device	Routing	Invert	Outlet Devices
#1	Primary	163.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	161.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.80 cfs @ 12.99 hrs HW=163.14' (Free Discharge)
 ↑2=Exfiltration (Controls 1.80 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=161.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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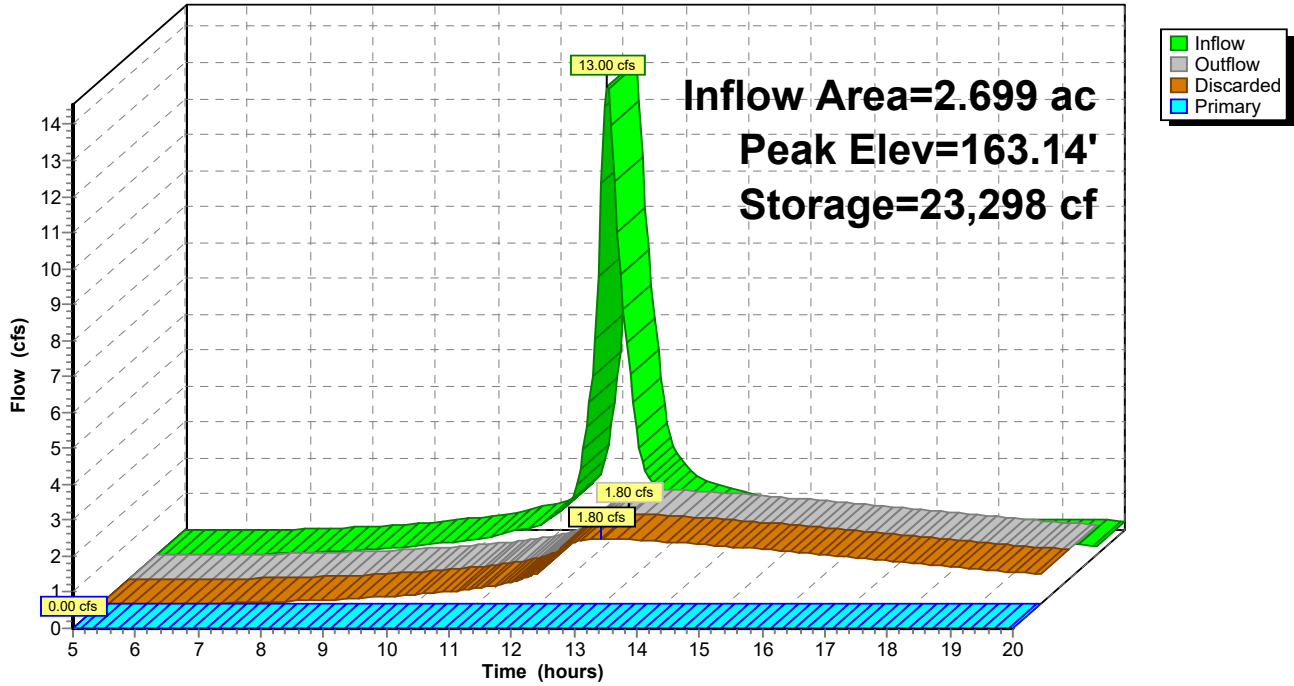
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Pond 12P: (new Pond)

Hydrograph



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Summary for Pond 13P: (new Pond)

Inflow Area = 18.096 ac, 1.07% Impervious, Inflow Depth > 4.96" for 100 year event
 Inflow = 48.23 cfs @ 12.69 hrs, Volume= 7.481 af
 Outflow = 43.62 cfs @ 12.89 hrs, Volume= 7.077 af, Atten= 10%, Lag= 11.7 min
 Discarded = 7.31 cfs @ 12.89 hrs, Volume= 3.704 af
 Primary = 36.31 cfs @ 12.89 hrs, Volume= 3.373 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.83' @ 12.89 hrs Surf.Area= 104,822 sf Storage= 65,352 cf

Plug-Flow detention time= 57.3 min calculated for 7.077 af (95% of inflow)
 Center-of-Mass det. time= 39.1 min (851.1 - 812.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	84,396 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	0	0	0	0	
161.00	32,678	10,893	10,893	32,680	
162.00	124,141	73,504	84,396	124,147	

Device	Routing	Invert	Outlet Devices
#1	Primary	161.50'	70.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=7.31 cfs @ 12.89 hrs HW=161.83' (Free Discharge)
 ↑**2=Exfiltration** (Controls 7.31 cfs)

Primary OutFlow Max=36.25 cfs @ 12.89 hrs HW=161.83' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 36.25 cfs @ 1.55 fps)

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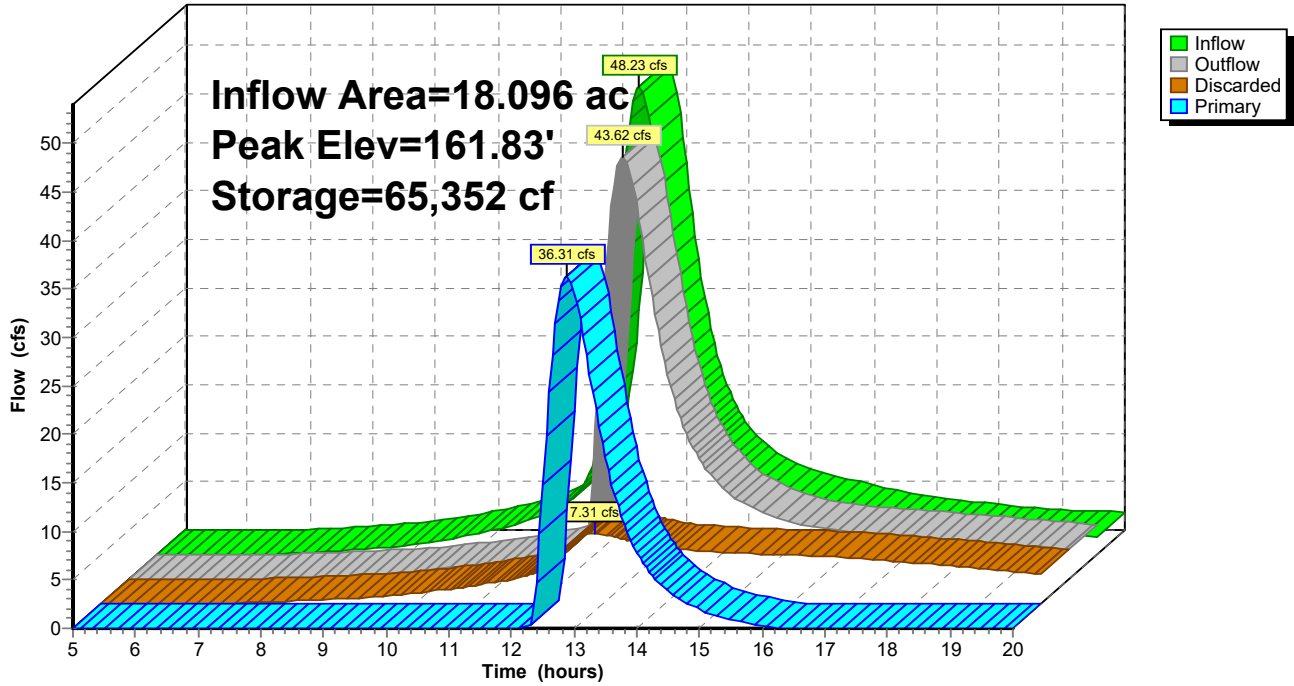
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Pond 13P: (new Pond)

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Summary for Pond 15P: (new Pond)

Inflow Area = 2.521 ac, 4.81% Impervious, Inflow Depth > 5.13" for 100 year event
 Inflow = 11.19 cfs @ 12.25 hrs, Volume= 1.077 af
 Outflow = 2.38 cfs @ 12.86 hrs, Volume= 1.038 af, Atten= 79%, Lag= 37.0 min
 Discarded = 2.38 cfs @ 12.86 hrs, Volume= 1.038 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.68' @ 12.86 hrs Surf.Area= 34,209 sf Storage= 20,236 cf

Plug-Flow detention time= 108.4 min calculated for 1.038 af (96% of inflow)
 Center-of-Mass det. time= 94.5 min (877.6 - 783.1)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	33,327 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	100	0	0	100
164.00	47,707	33,327	33,327	47,714

Device	Routing	Invert	Outlet Devices
#1	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.38 cfs @ 12.86 hrs HW=163.68' (Free Discharge)
 ↑1=Exfiltration (Controls 2.38 cfs)

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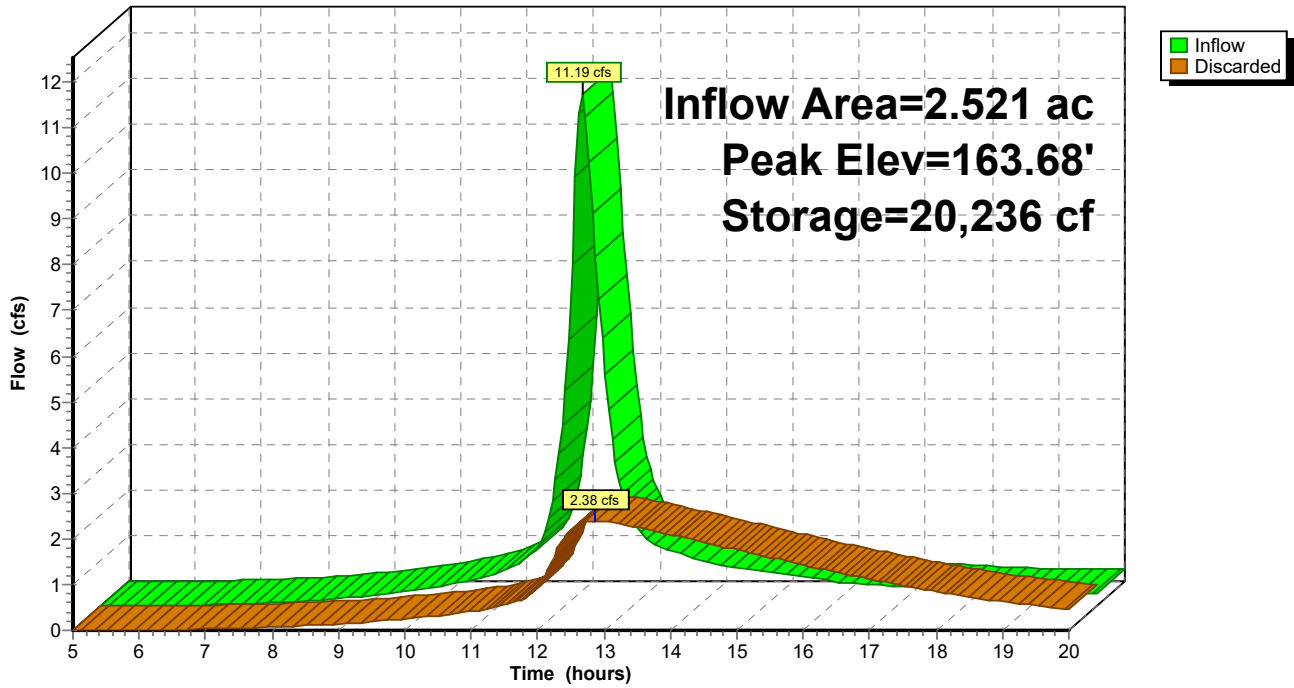
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Pond 15P: (new Pond)

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Summary for Pond 16P: (new Pond)

Inflow Area = 4.718 ac, 0.92% Impervious, Inflow Depth > 5.01" for 100 year event
 Inflow = 18.31 cfs @ 12.33 hrs, Volume= 1.968 af
 Outflow = 11.12 cfs @ 12.62 hrs, Volume= 1.928 af, Atten= 39%, Lag= 17.9 min
 Discarded = 3.84 cfs @ 12.62 hrs, Volume= 1.576 af
 Primary = 7.27 cfs @ 12.62 hrs, Volume= 0.352 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.14' @ 12.62 hrs Surf.Area= 55,181 sf Storage= 27,202 cf

Plug-Flow detention time= 69.5 min calculated for 1.921 af (98% of inflow)
 Center-of-Mass det. time= 61.6 min (851.2 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	106,646 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
162.00	3,106	0	0 3,106
164.00	136,289	106,646	106,646 136,298

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	50.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.84 cfs @ 12.62 hrs HW=163.14' (Free Discharge)
 ↑**2=Exfiltration** (Controls 3.84 cfs)

Primary OutFlow Max=7.22 cfs @ 12.62 hrs HW=163.14' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 7.22 cfs @ 1.01 fps)

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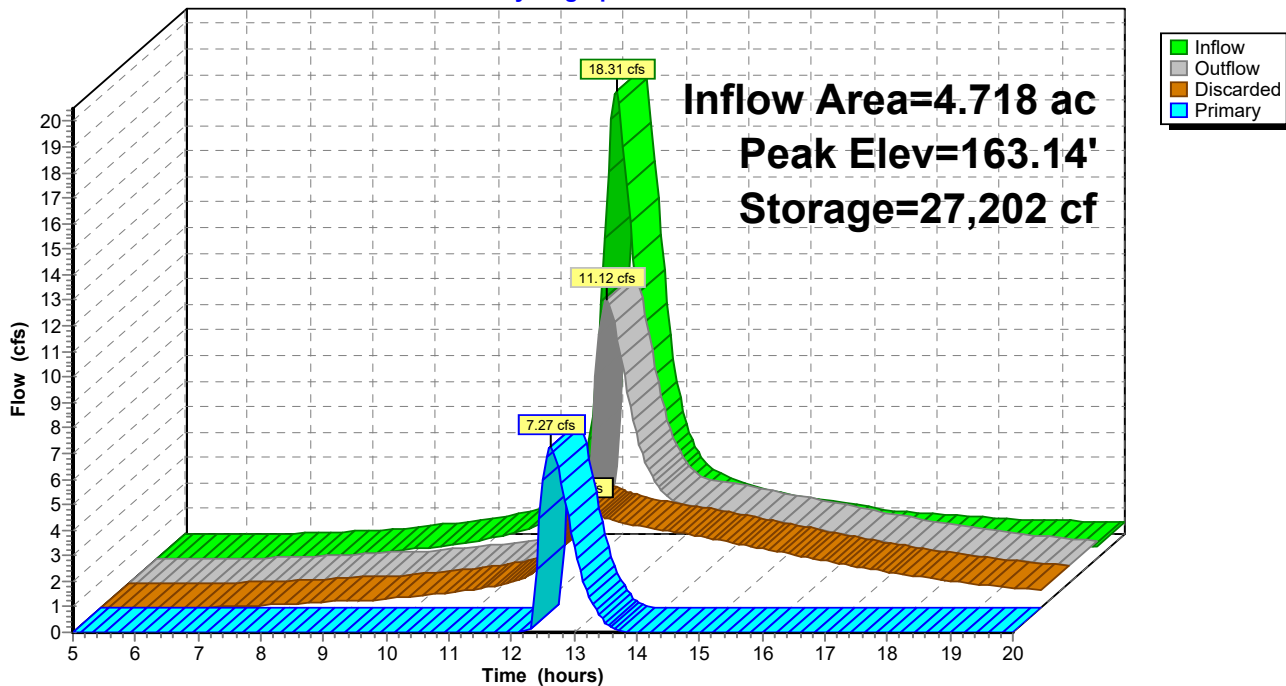
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Pond 16P: (new Pond)

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Summary for Pond 19P: (new Pond)

Inflow Area = 21.570 ac, 0.00% Impervious, Inflow Depth > 4.64" for 100 year event
 Inflow = 62.49 cfs @ 12.54 hrs, Volume= 8.343 af
 Outflow = 57.30 cfs @ 12.69 hrs, Volume= 7.918 af, Atten= 8%, Lag= 8.8 min
 Discarded = 5.20 cfs @ 12.69 hrs, Volume= 2.659 af
 Primary = 52.09 cfs @ 12.69 hrs, Volume= 5.260 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.98' @ 12.69 hrs Surf.Area= 44,582 sf Storage= 54,798 cf

Plug-Flow detention time= 38.7 min calculated for 7.918 af (95% of inflow)
 Center-of-Mass det. time= 21.1 min (828.6 - 807.5)

Volume	Invert	Avail.Storage	Storage Description
#1	151.00'	104,899 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
151.00	0	0	0	0
152.00	10,885	3,628	3,628	10,887
154.00	45,019	52,027	55,655	45,039
155.00	53,593	49,244	104,899	53,649

Device	Routing	Invert	Outlet Devices
#1	Primary	153.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	151.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=5.20 cfs @ 12.69 hrs HW=153.98' (Free Discharge)
 ↑**2=Exfiltration** (Controls 5.20 cfs)

Primary OutFlow Max=51.98 cfs @ 12.69 hrs HW=153.98' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 51.98 cfs @ 2.65 fps)

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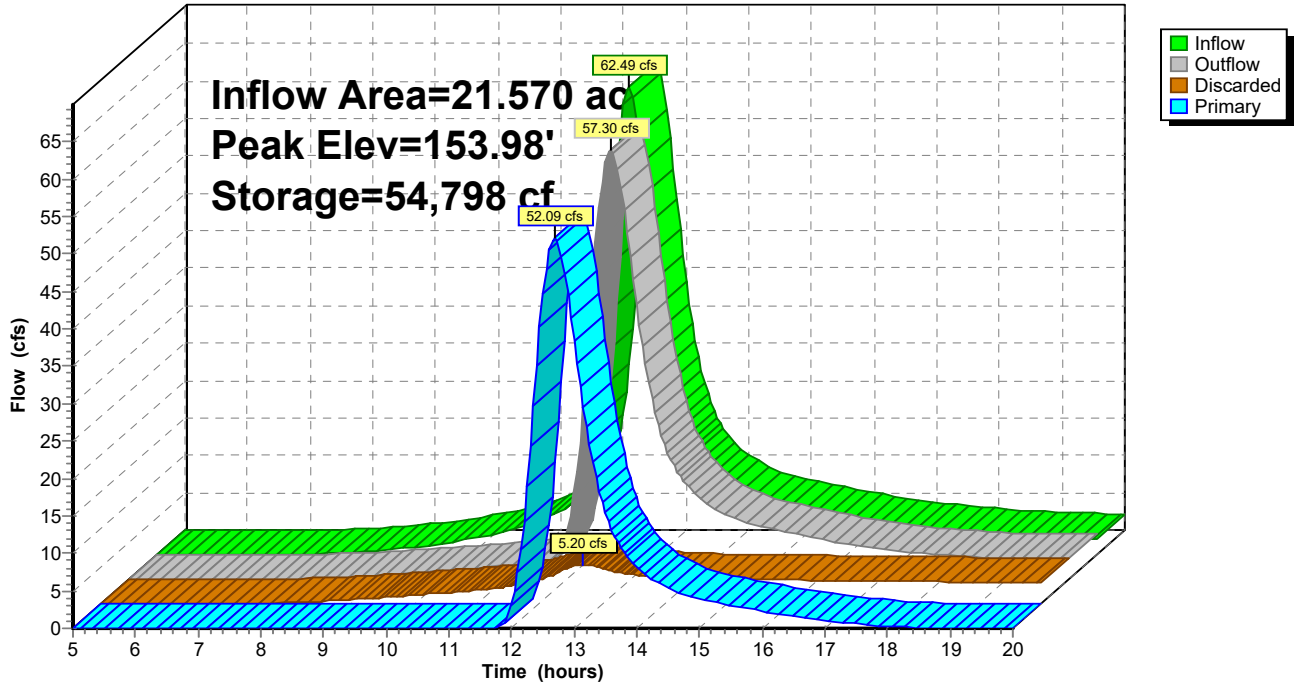
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Pond 19P: (new Pond)

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Summary for Pond 28P: (new Pond)

Inflow Area = 7.360 ac, 0.00% Impervious, Inflow Depth > 2.82" for 100 year event
 Inflow = 19.33 cfs @ 12.22 hrs, Volume= 1.731 af
 Outflow = 0.86 cfs @ 17.24 hrs, Volume= 0.541 af, Atten= 96%, Lag= 301.1 min
 Discarded = 0.86 cfs @ 17.24 hrs, Volume= 0.541 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.00' @ 17.24 hrs Surf.Area= 24,266 sf Storage= 53,689 cf

Plug-Flow detention time= 245.6 min calculated for 0.541 af (31% of inflow)
 Center-of-Mass det. time= 149.9 min (967.0 - 817.1)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	703,547 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	1,301	0	0	1,301
152.00	7,637	8,060	8,060	7,652
154.00	17,812	24,741	32,802	17,857
156.00	31,769	48,913	81,714	31,858
158.00	44,943	76,332	158,046	45,104
160.00	56,203	100,936	258,983	56,476
162.00	68,079	124,092	383,075	68,483
164.00	79,954	147,874	530,949	80,513
166.00	92,803	172,598	703,547	93,530

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.86 cfs @ 17.24 hrs HW=155.00' (Free Discharge)

↑**1=Exfiltration** (Controls 0.86 cfs)

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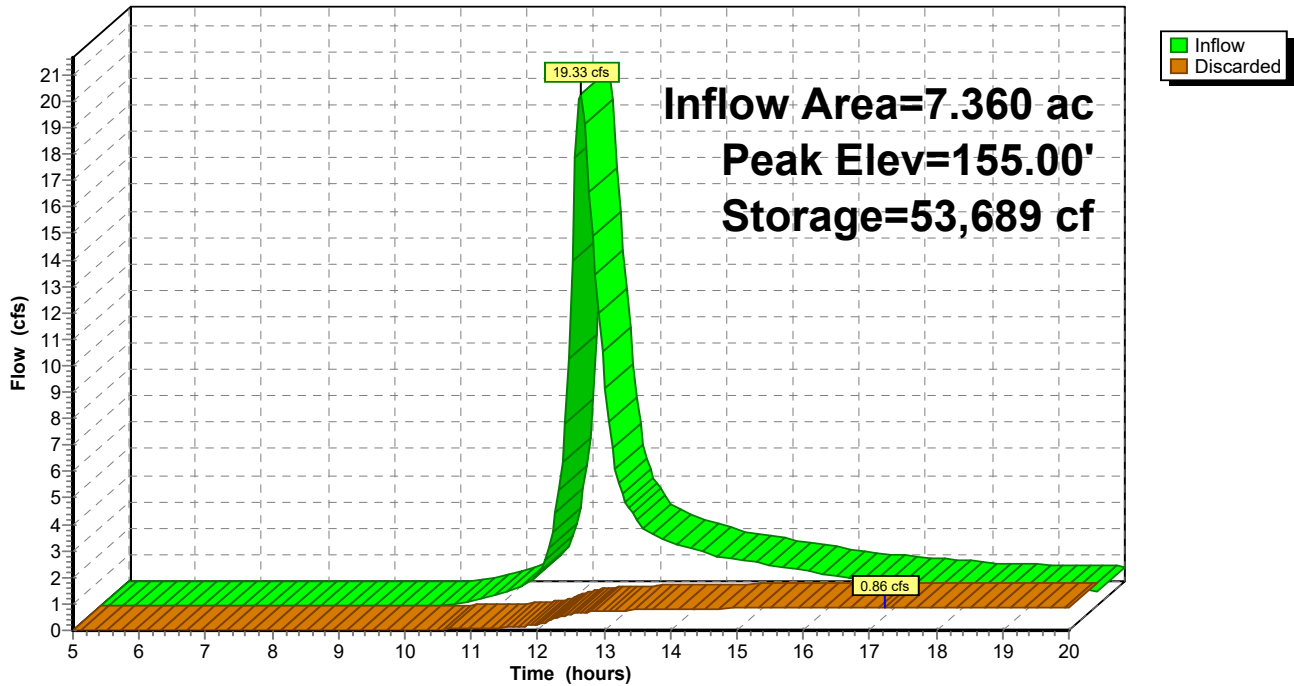
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Pond 28P: (new Pond)

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Summary for Pond 29P: (new Pond)

Inflow Area = 1.626 ac, 0.00% Impervious, Inflow Depth > 0.75" for 100 year event
 Inflow = 0.69 cfs @ 12.36 hrs, Volume= 0.102 af
 Outflow = 0.08 cfs @ 17.66 hrs, Volume= 0.046 af, Atten= 89%, Lag= 318.1 min
 Discarded = 0.08 cfs @ 17.66 hrs, Volume= 0.046 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.67' @ 17.66 hrs Surf.Area= 2,205 sf Storage= 2,498 cf

Plug-Flow detention time= 217.9 min calculated for 0.046 af (46% of inflow)
 Center-of-Mass det. time= 105.8 min (979.3 - 873.5)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	140,344 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	883	0	0	883
148.00	2,535	3,276	3,276	2,559
150.00	4,534	6,973	10,249	4,601
152.00	6,834	11,290	21,539	6,962
154.00	10,301	17,017	38,555	10,490
156.00	14,424	24,610	63,165	14,687
158.00	19,416	33,717	96,882	19,763
160.00	24,132	43,463	140,344	24,593

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.08 cfs @ 17.66 hrs HW=147.67' (Free Discharge)
 ↑1=Exfiltration (Controls 0.08 cfs)

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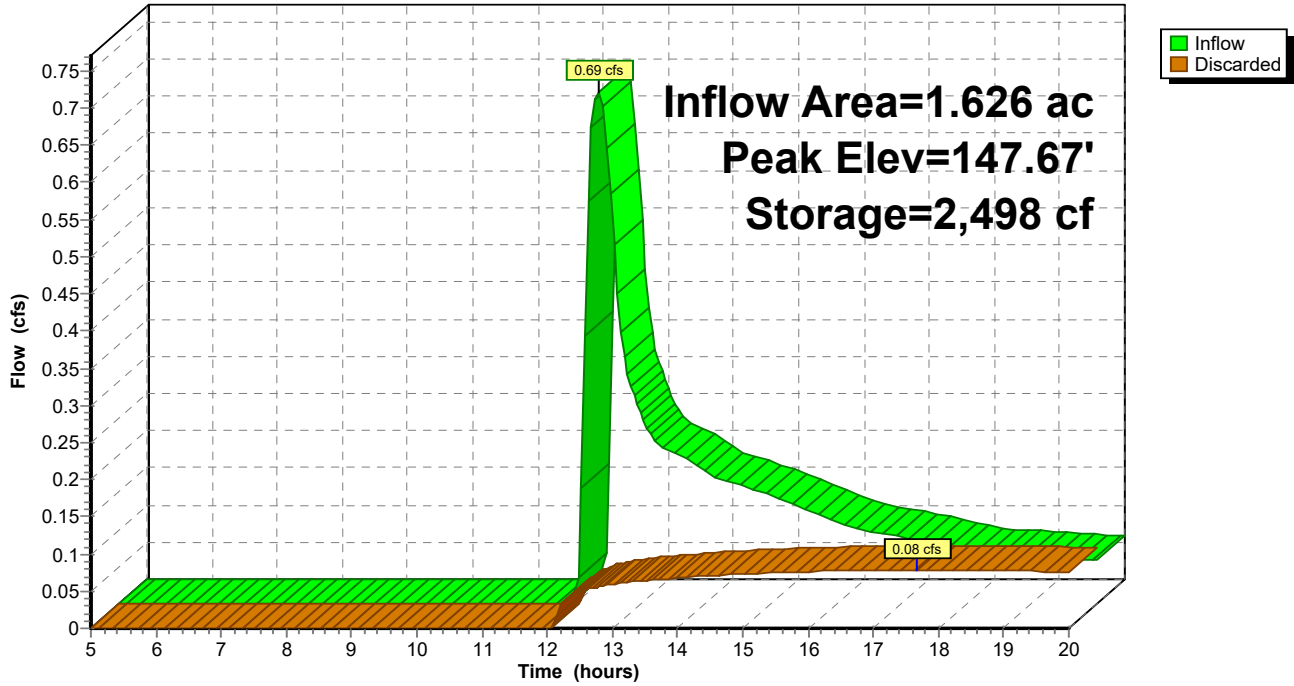
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Pond 29P: (new Pond)

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Summary for Pond 30P: (new Pond)

Inflow Area = 3.911 ac, 0.00% Impervious, Inflow Depth > 4.12" for 100 year event
 Inflow = 16.98 cfs @ 12.16 hrs, Volume= 1.344 af
 Outflow = 2.30 cfs @ 12.96 hrs, Volume= 1.269 af, Atten= 86%, Lag= 47.9 min
 Discarded = 2.30 cfs @ 12.96 hrs, Volume= 1.269 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.79' @ 12.96 hrs Surf.Area= 32,939 sf Storage= 26,570 cf

Plug-Flow detention time= 137.0 min calculated for 1.265 af (94% of inflow)
 Center-of-Mass det. time= 117.2 min (911.0 - 793.7)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	177,312 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	0	0	0	0
170.00	19,015	6,338	6,338	19,017
172.00	61,742	76,681	83,019	61,766
173.00	131,151	94,293	177,312	131,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	169.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.30 cfs @ 12.96 hrs HW=170.79' (Free Discharge)
 ↑1=Exfiltration (Controls 2.30 cfs)

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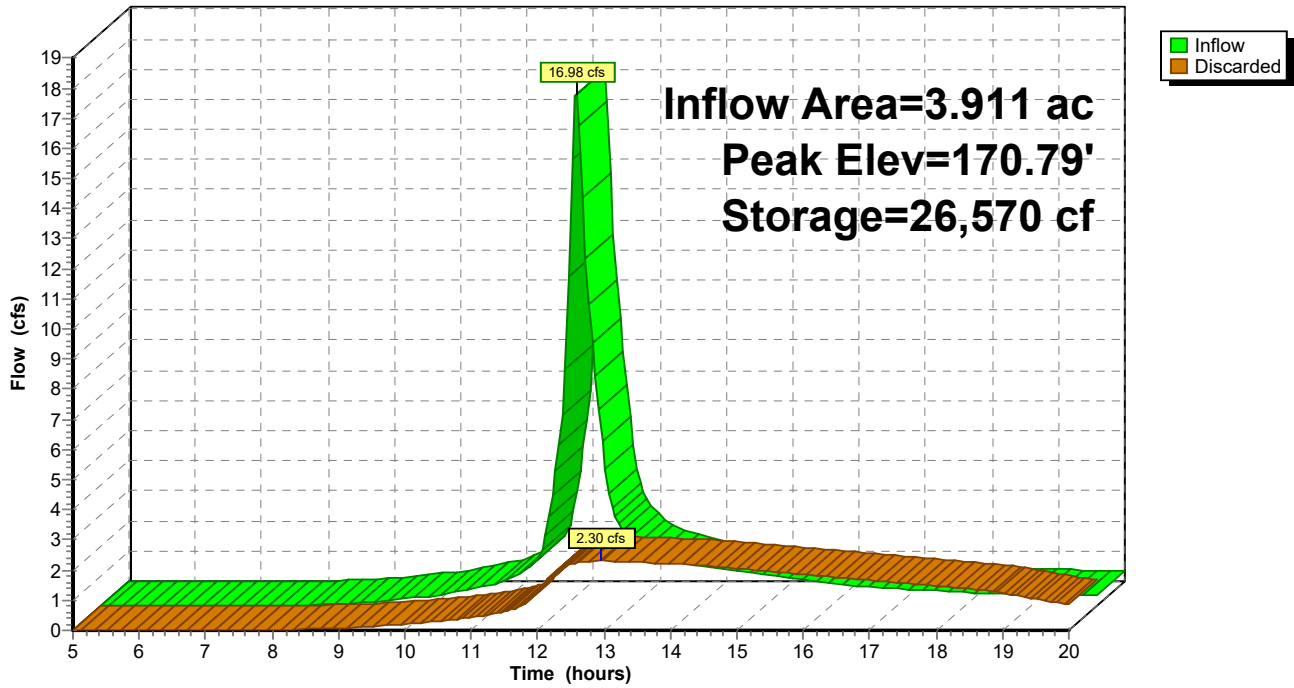
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Pond 30P: (new Pond)

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Summary for Pond 31P: (new Pond)

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 1.17" for 100 year event
 Inflow = 3.79 cfs @ 12.15 hrs, Volume= 0.356 af
 Outflow = 0.27 cfs @ 16.73 hrs, Volume= 0.167 af, Atten= 93%, Lag= 274.8 min
 Discarded = 0.27 cfs @ 16.73 hrs, Volume= 0.167 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.57' @ 16.73 hrs Surf.Area= 7,790 sf Storage= 8,962 cf

Plug-Flow detention time= 230.1 min calculated for 0.167 af (47% of inflow)
 Center-of-Mass det. time= 124.6 min (973.9 - 849.3)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	577,917 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
144.00	435	0	0	435
146.00	5,720	5,155	5,155	5,731
148.00	14,467	19,523	24,677	14,506
150.00	23,981	38,049	62,727	24,069
152.00	31,477	55,288	118,015	31,657
154.00	37,463	68,853	186,868	37,786
156.00	43,468	80,857	267,725	43,958
158.00	49,047	92,459	360,184	49,741
160.00	54,411	103,412	463,596	55,342
162.00	59,955	114,321	577,917	61,140

Device	Routing	Invert	Outlet Devices
#1	Discarded	144.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.27 cfs @ 16.73 hrs HW=146.57' (Free Discharge)
 ↑1=Exfiltration (Controls 0.27 cfs)

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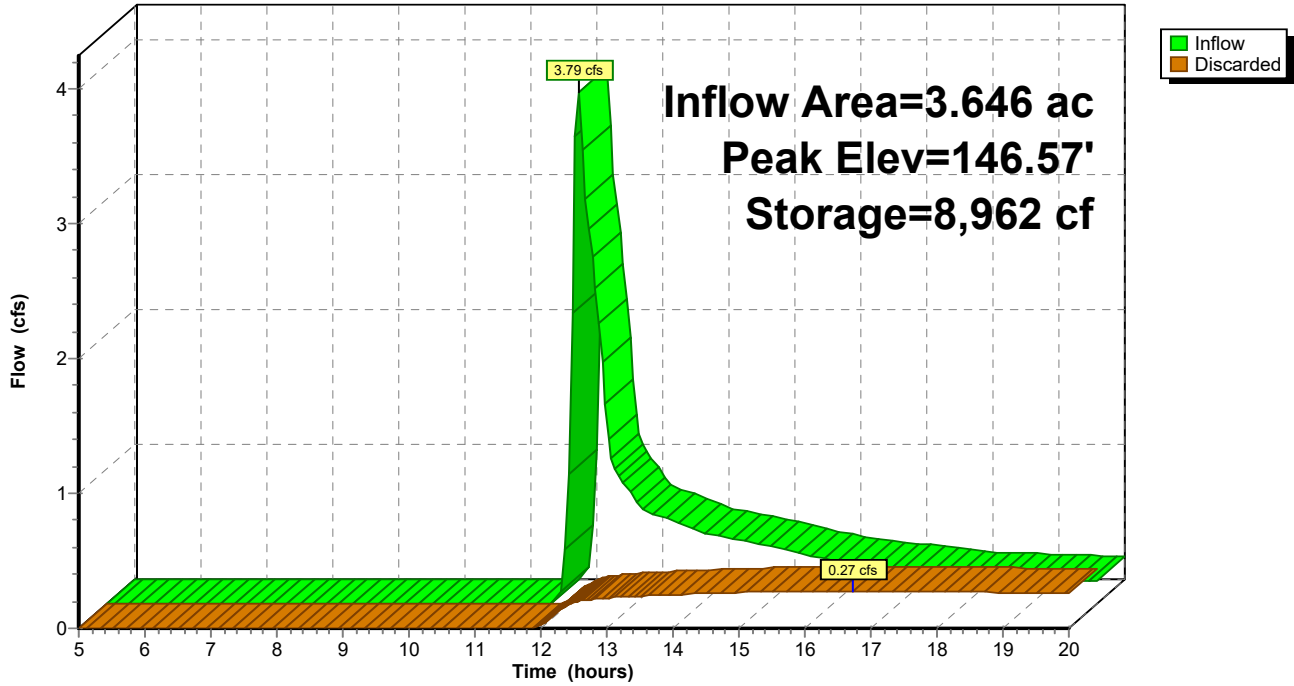
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Pond 31P: (new Pond)

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Summary for Pond 32P: (new Pond)

[82] Warning: Early inflow requires earlier time span

Inflow Area = 4.598 ac, 0.00% Impervious, Inflow Depth > 5.96" for 100 year event
 Inflow = 37.30 cfs @ 12.00 hrs, Volume= 2.282 af
 Outflow = 1.82 cfs @ 13.89 hrs, Volume= 1.365 af, Atten= 95%, Lag= 113.5 min
 Discarded = 1.82 cfs @ 13.89 hrs, Volume= 1.365 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.49' @ 13.89 hrs Surf.Area= 25,716 sf Storage= 58,263 cf

Plug-Flow detention time= 221.3 min calculated for 1.365 af (60% of inflow)
 Center-of-Mass det. time= 144.3 min (898.1 - 753.8)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	564,324 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	153	0	0	153
144.00	13,412	9,998	9,998	13,420
146.00	23,273	36,235	46,233	23,327
148.00	33,979	56,915	103,149	34,099
150.00	46,946	80,576	183,725	47,144
152.00	58,364	105,103	288,828	58,677
154.00	68,242	126,477	415,306	68,714
156.00	80,957	149,018	564,324	81,576

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.82 cfs @ 13.89 hrs HW=146.49' (Free Discharge)
 ↑1=Exfiltration (Controls 1.82 cfs)

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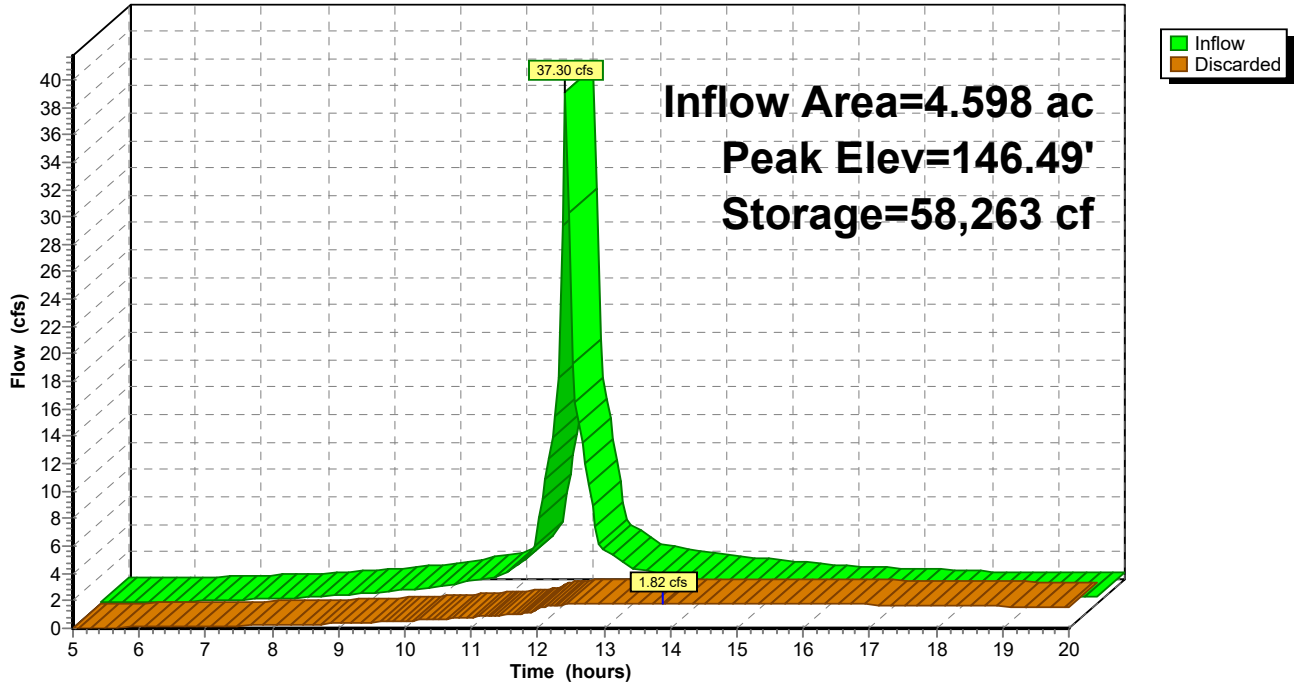
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Pond 32P: (new Pond)

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Summary for Pond 35P: (new Pond)

Inflow Area = 11.838 ac, 0.00% Impervious, Inflow Depth > 5.01" for 100 year event
 Inflow = 47.97 cfs @ 12.30 hrs, Volume= 4.941 af
 Outflow = 8.77 cfs @ 13.08 hrs, Volume= 4.277 af, Atten= 82%, Lag= 47.3 min
 Discarded = 8.77 cfs @ 13.08 hrs, Volume= 4.277 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 157.11' @ 13.08 hrs Surf.Area= 75,102 sf Storage= 103,079 cf

Plug-Flow detention time= 150.6 min calculated for 4.263 af (86% of inflow)
 Center-of-Mass det. time= 111.3 min (899.1 - 787.8)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	476,244 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	9,108	3,036	3,036	9,110
156.00	34,300	40,722	43,758	34,321
158.00	119,103	144,879	188,637	119,145
160.00	170,010	287,607	476,244	170,123

Device	Routing	Invert	Outlet Devices
#1	Discarded	153.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=8.77 cfs @ 13.08 hrs HW=157.11' (Free Discharge)

↑1=Exfiltration (Controls 8.77 cfs)

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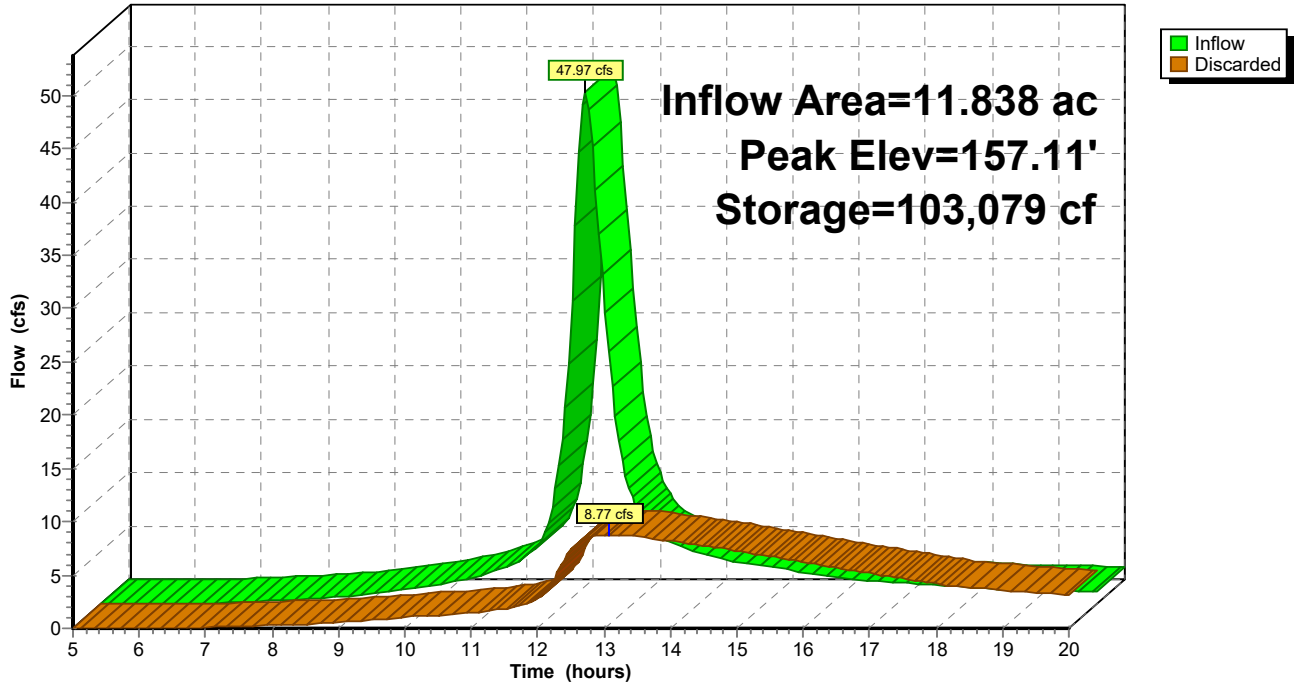
Type III 24-hr 100 year Rainfall=7.96"

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Pond 35P: (new Pond)

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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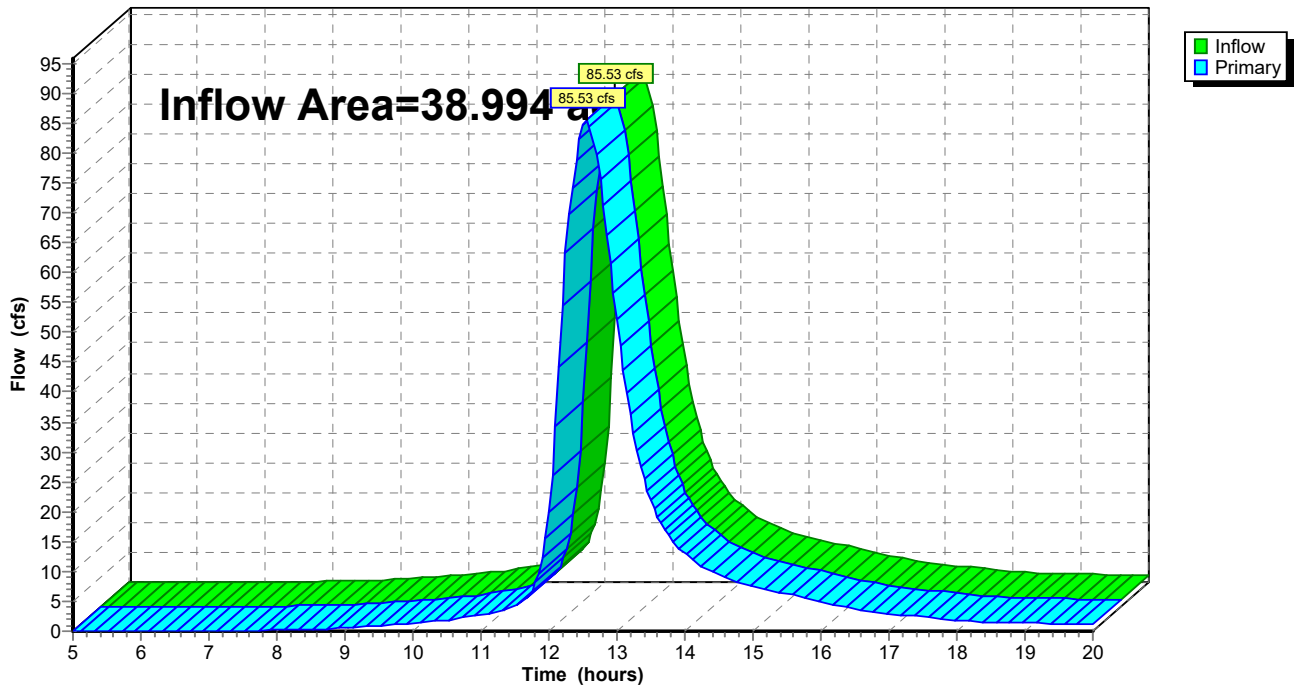
Summary for Link DP19: (new Link)

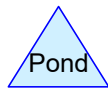
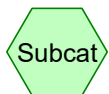
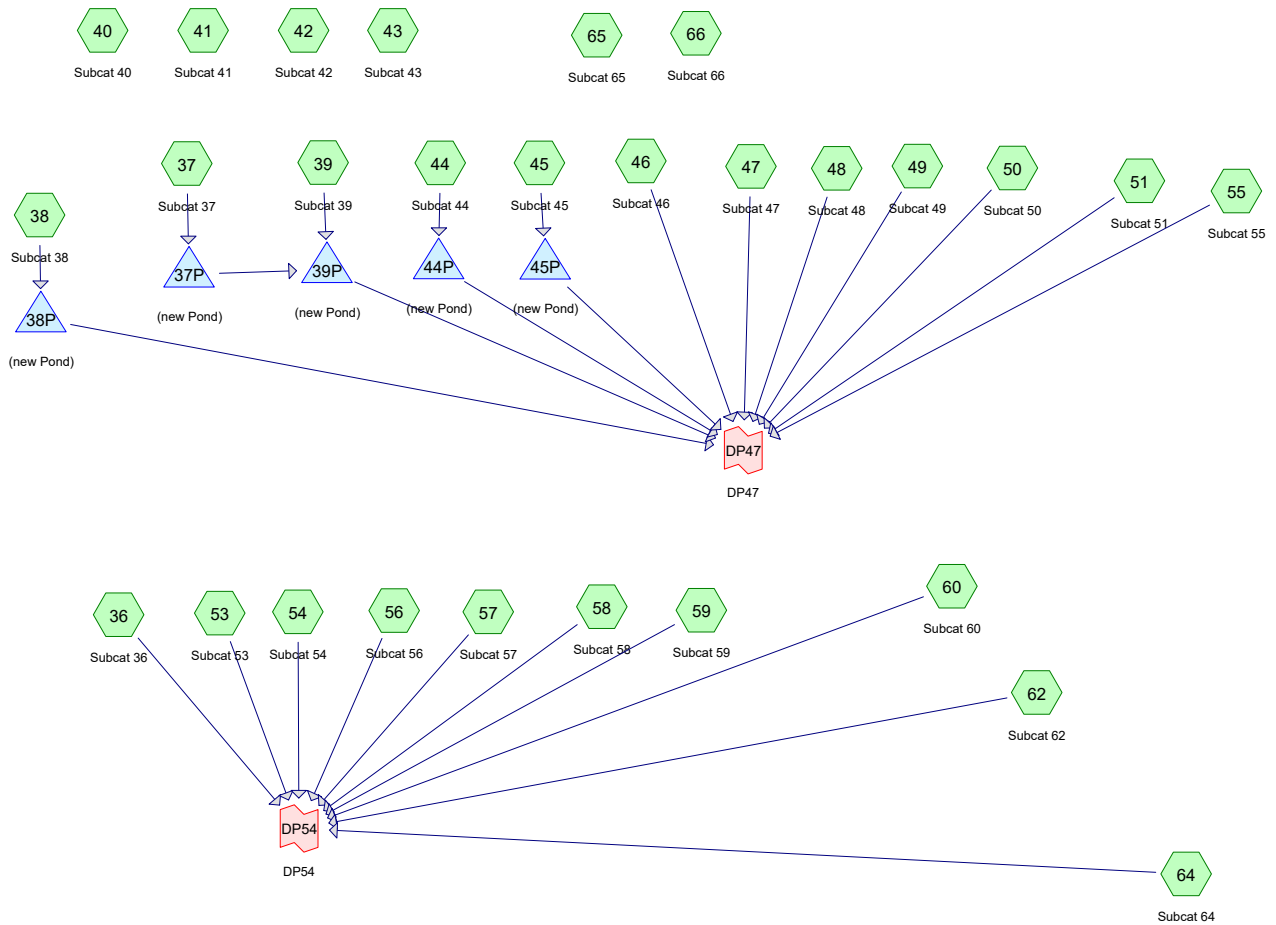
Inflow Area = 38.994 ac, 0.11% Impervious, Inflow Depth > 3.19" for 100 year event
Inflow = 85.53 cfs @ 12.55 hrs, Volume= 10.354 af
Primary = 85.53 cfs @ 12.55 hrs, Volume= 10.354 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP19: (new Link)

Hydrograph





Routing Diagram for Existing Conditions - South Plantation
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Existing Conditions - South Plantation

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.002	0	, HSG A (62)
0.001	0	, HSG B (62)
2.022	46	2 acre lots, 12% imp, HSG A (40, 41, 42, 43, 53, 56, 57, 58, 59, 60, 62, 64)
16.959	65	2 acre lots, 12% imp, HSG B (36, 39, 40, 41, 42, 43, 51, 53, 54, 56, 57, 58, 59, 60, 62)
0.107	89	Paved roads w/open ditches, 50% imp, HSG B (36, 37, 39, 62, 66)
2.256	98	Roofs, HSG B (49, 60)
1.324	67	Row crops, straight row, Good, HSG A (44, 45, 46, 47, 48, 49, 55, 59, 64, 65)
94.391	78	Row crops, straight row, Good, HSG B (36, 37, 38, 39, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 55, 56, 57, 59, 60, 62, 64, 65, 66)
20.938	36	Woods, Fair, HSG A (42, 43, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65)
7.953	60	Woods, Fair, HSG B (43, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 65, 66)
145.952	69	TOTAL AREA

Existing Conditions - South Plantation

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
24.286	HSG A	40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65
121.666	HSG B	36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65, 66
0.000	HSG C	
0.000	HSG D	
0.000	Other	
145.952		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcat Numbers
0.002	0.001	0.000	0.000	0.000	0.003		
2.022	16.959	0.000	0.000	0.000	18.981	2 acre lots, 12% imp	
0.000	0.107	0.000	0.000	0.000	0.107	Paved roads w/open ditches, 50% imp	
0.000	2.256	0.000	0.000	0.000	2.256	Roofs	
1.324	94.391	0.000	0.000	0.000	95.715	Row crops, straight row, Good	
20.938	7.953	0.000	0.000	0.000	28.890	Woods, Fair	
24.286	121.666	0.000	0.000	0.000	145.952	TOTAL AREA	

Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 36: Subcat 36

Runoff = 7.14 cfs @ 12.42 hrs, Volume= 0.820 af, Depth> 1.13"

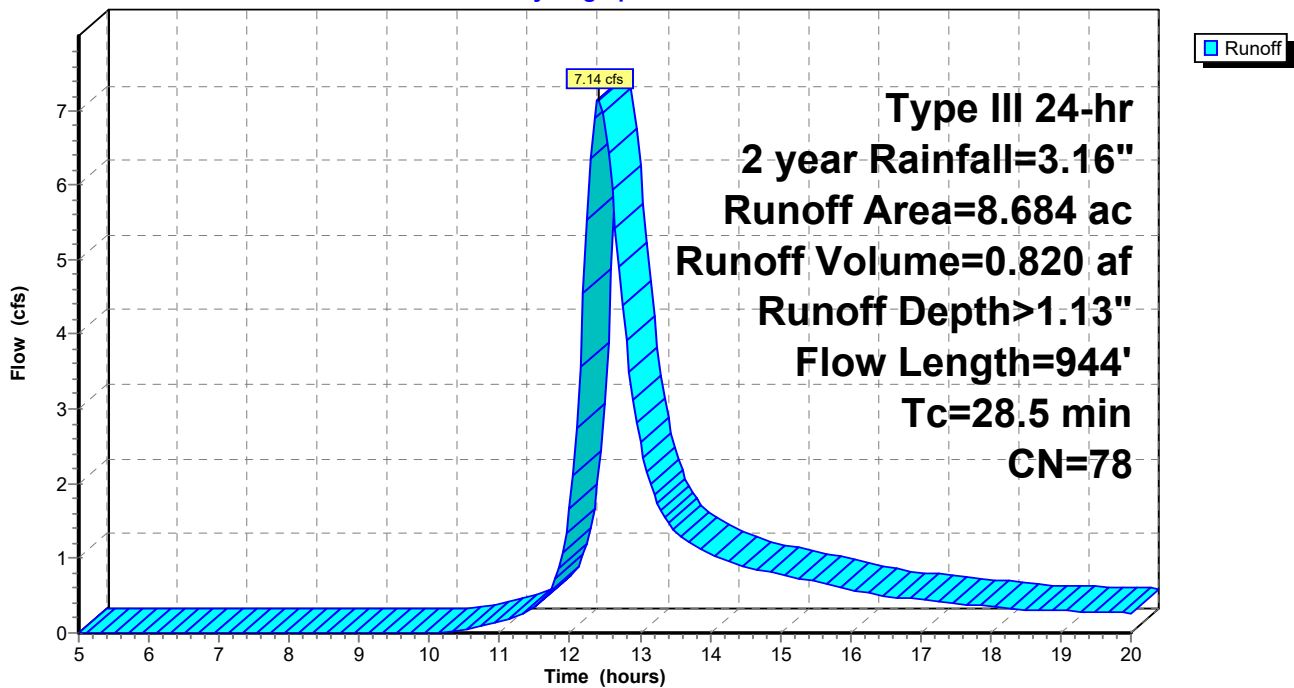
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.026	65	2 acre lots, 12% imp, HSG B
0.050	89	Paved roads w/open ditches, 50% imp, HSG B
8.608	78	Row crops, straight row, Good, HSG B
8.684	78	Weighted Average
8.656		99.67% Pervious Area
0.028		0.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.1	170	0.0059	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.1	724	0.0069	0.75		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.5	944	Total			

Subcatchment 36: Subcat 36

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 37: Subcat 37

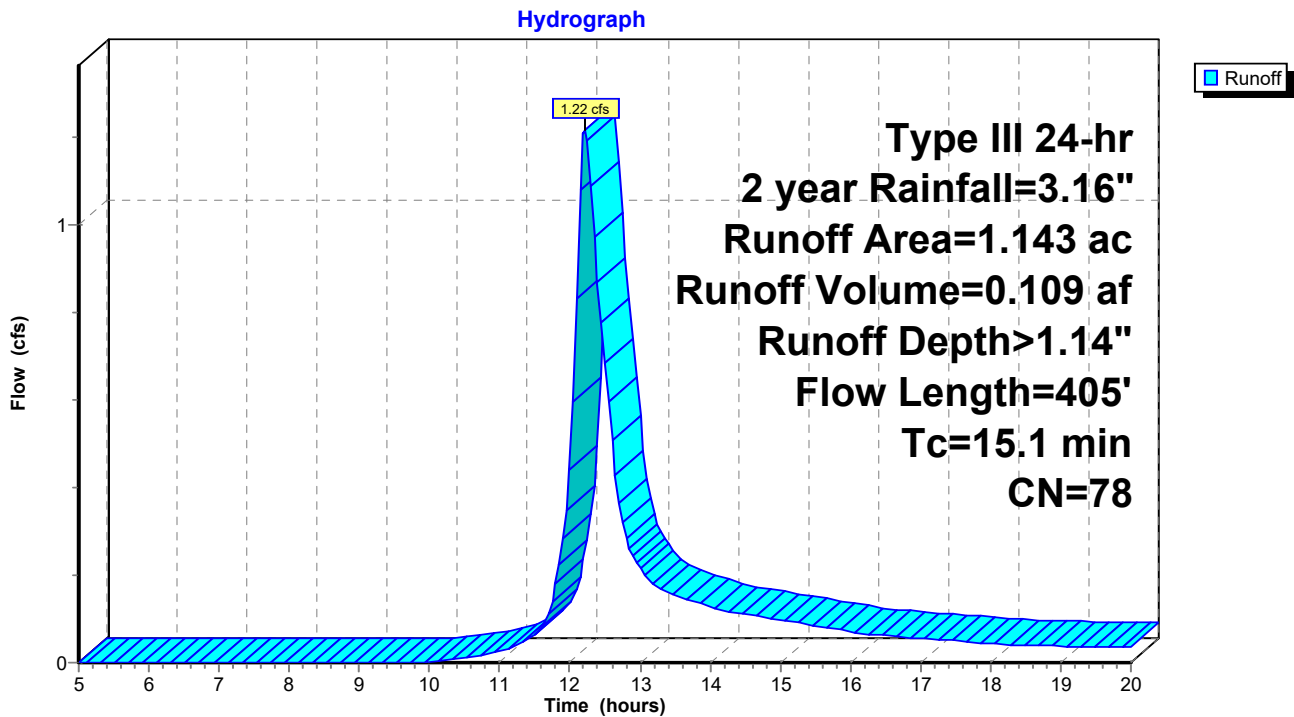
Runoff = 1.22 cfs @ 12.22 hrs, Volume= 0.109 af, Depth> 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.002	89	Paved roads w/open ditches, 50% imp, HSG B
1.140	78	Row crops, straight row, Good, HSG B
1.143	78	Weighted Average
1.142		99.90% Pervious Area
0.001		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
8.8	355	0.0056	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
15.1	405	Total			

Subcatchment 37: Subcat 37



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 38: Subcat 38

Runoff = 3.68 cfs @ 12.31 hrs, Volume= 0.372 af, Depth> 1.14"

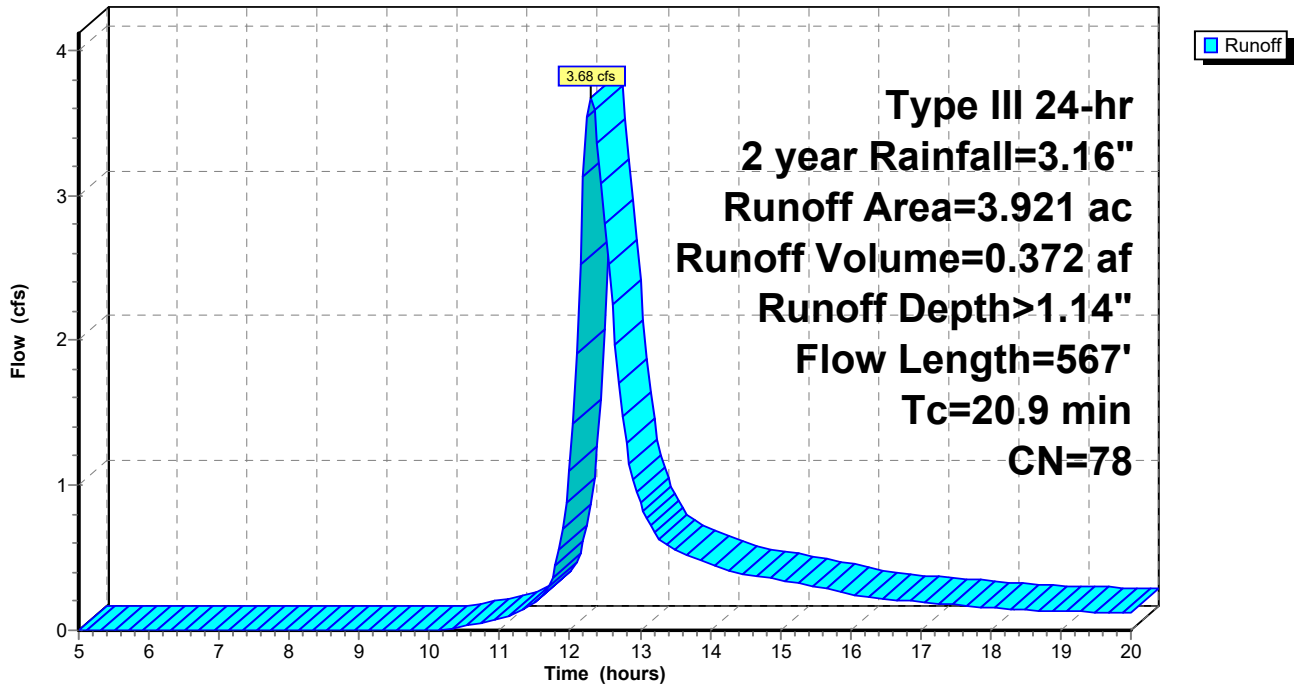
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
3.921	78	Row crops, straight row, Good, HSG B
3.921		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
12.6	517	0.0058	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.9	567	Total			

Subcatchment 38: Subcat 38

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 39: Subcat 39

Runoff = 1.81 cfs @ 12.16 hrs, Volume= 0.148 af, Depth> 0.87"

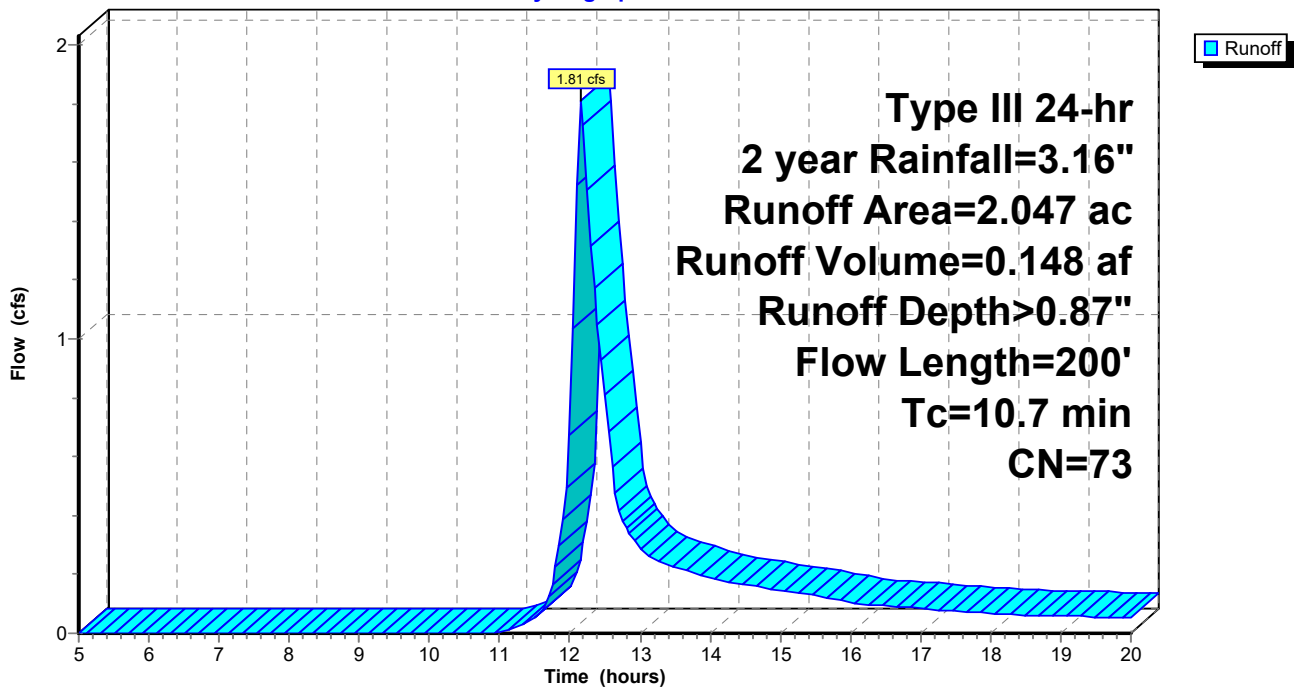
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.770	65	2 acre lots, 12% imp, HSG B
0.025	89	Paved roads w/open ditches, 50% imp, HSG B
1.252	78	Row crops, straight row, Good, HSG B
2.047	73	Weighted Average
1.942		94.89% Pervious Area
0.105		5.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
2.4	150	0.0133	1.04		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
10.7	200	Total			

Subcatchment 39: Subcat 39

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 40: Subcat 40

Runoff = 0.29 cfs @ 12.17 hrs, Volume= 0.028 af, Depth> 0.51"

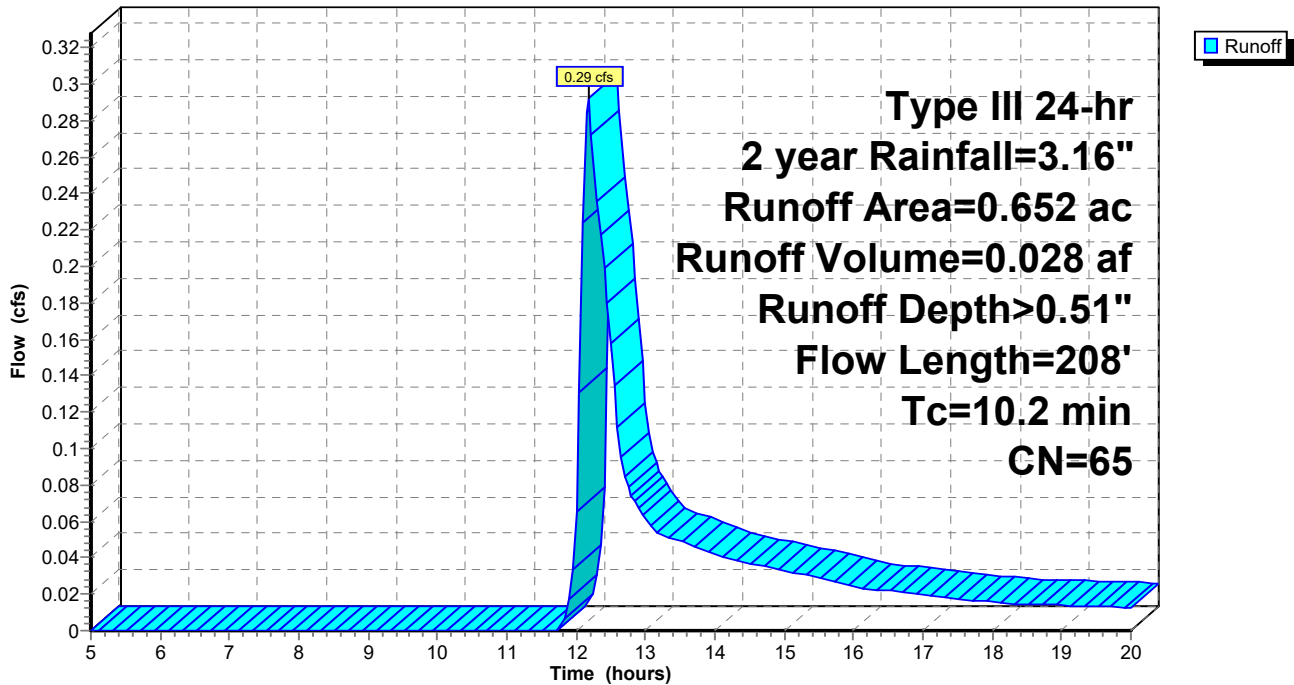
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.008	46	2 acre lots, 12% imp, HSG A
0.644	65	2 acre lots, 12% imp, HSG B
0.652	65	Weighted Average
0.574		88.00% Pervious Area
0.078		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.7	158	0.0190	0.96		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	208	Total			

Subcatchment 40: Subcat 40

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 41: Subcat 41

Runoff = 0.37 cfs @ 12.17 hrs, Volume= 0.035 af, Depth> 0.48"

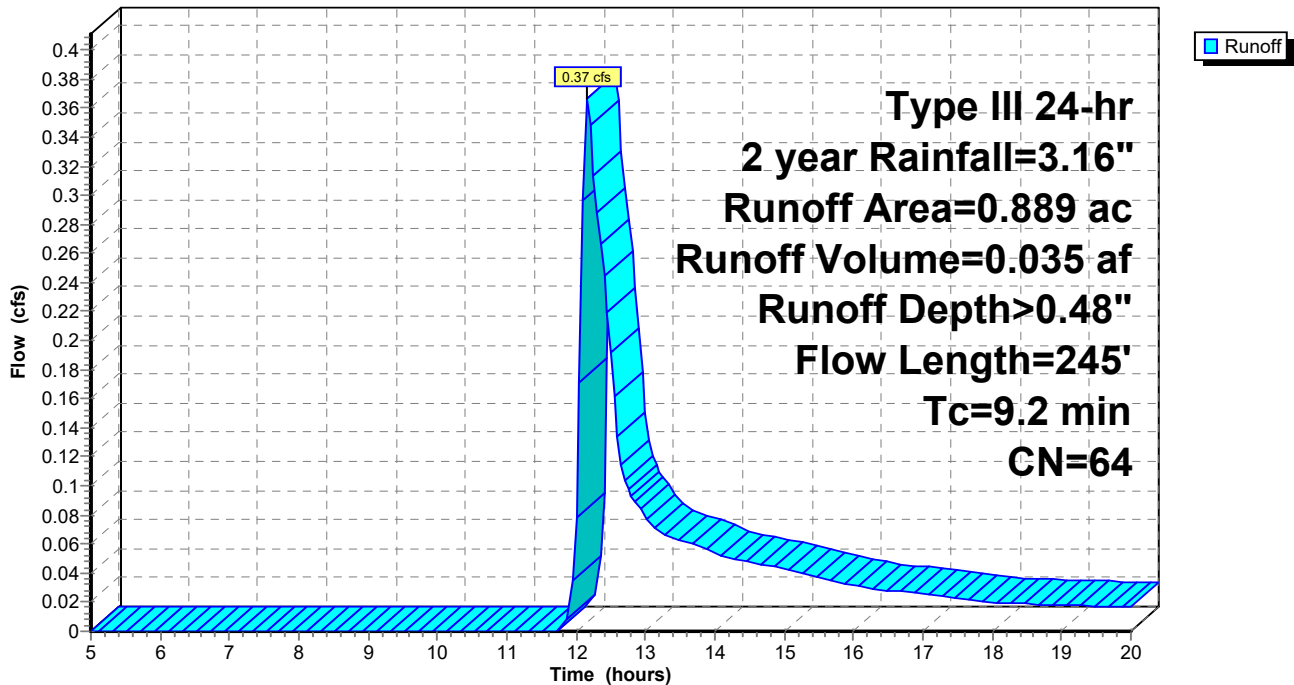
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.110	46	2 acre lots, 12% imp, HSG A
0.684	65	2 acre lots, 12% imp, HSG B
0.094	78	Row crops, straight row, Good, HSG B
0.889	64	Weighted Average
0.793		89.27% Pervious Area
0.095		10.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
2.9	195	0.0256	1.12		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	245	Total			

Subcatchment 41: Subcat 41

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 42: Subcat 42

Runoff = 0.75 cfs @ 12.24 hrs, Volume= 0.079 af, Depth> 0.51"

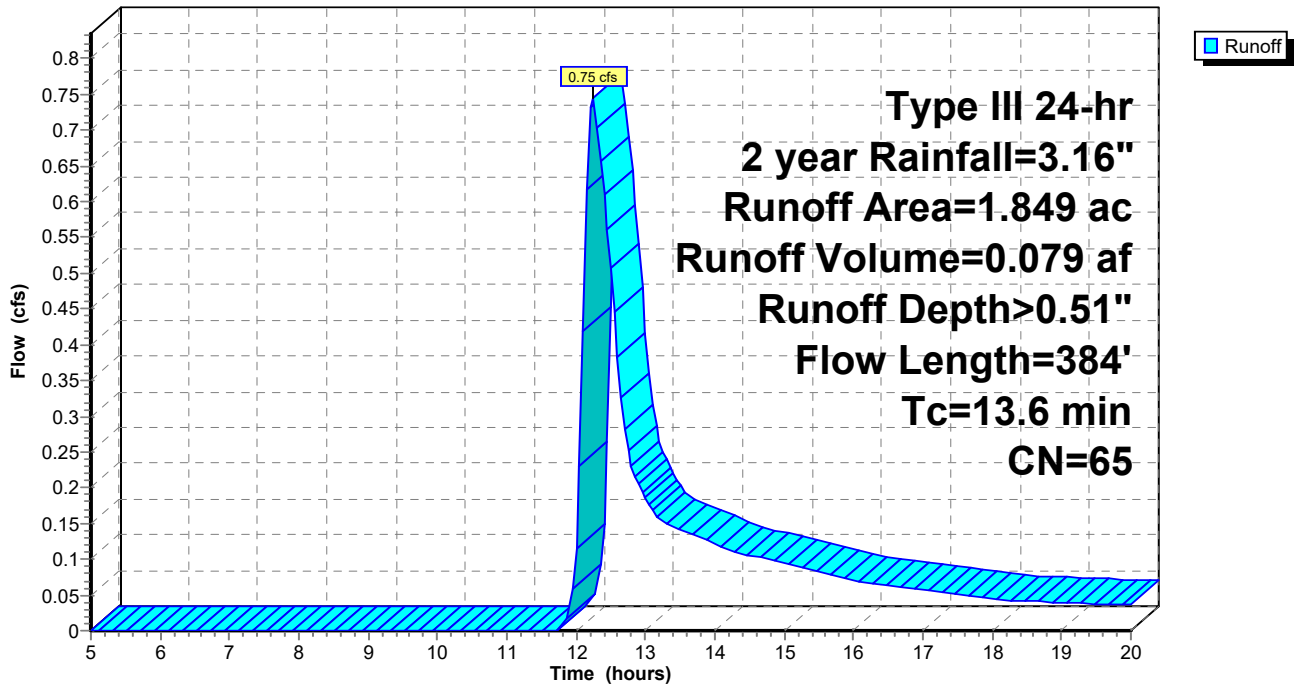
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.277	46	2 acre lots, 12% imp, HSG A
0.912	65	2 acre lots, 12% imp, HSG B
0.572	78	Row crops, straight row, Good, HSG B
0.088	36	Woods, Fair, HSG A
1.849	65	Weighted Average
1.706		92.28% Pervious Area
0.143		7.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.3	334	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.6	384	Total			

Subcatchment 42: Subcat 42

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 43: Subcat 43

Runoff = 0.29 cfs @ 12.27 hrs, Volume= 0.034 af, Depth> 0.44"

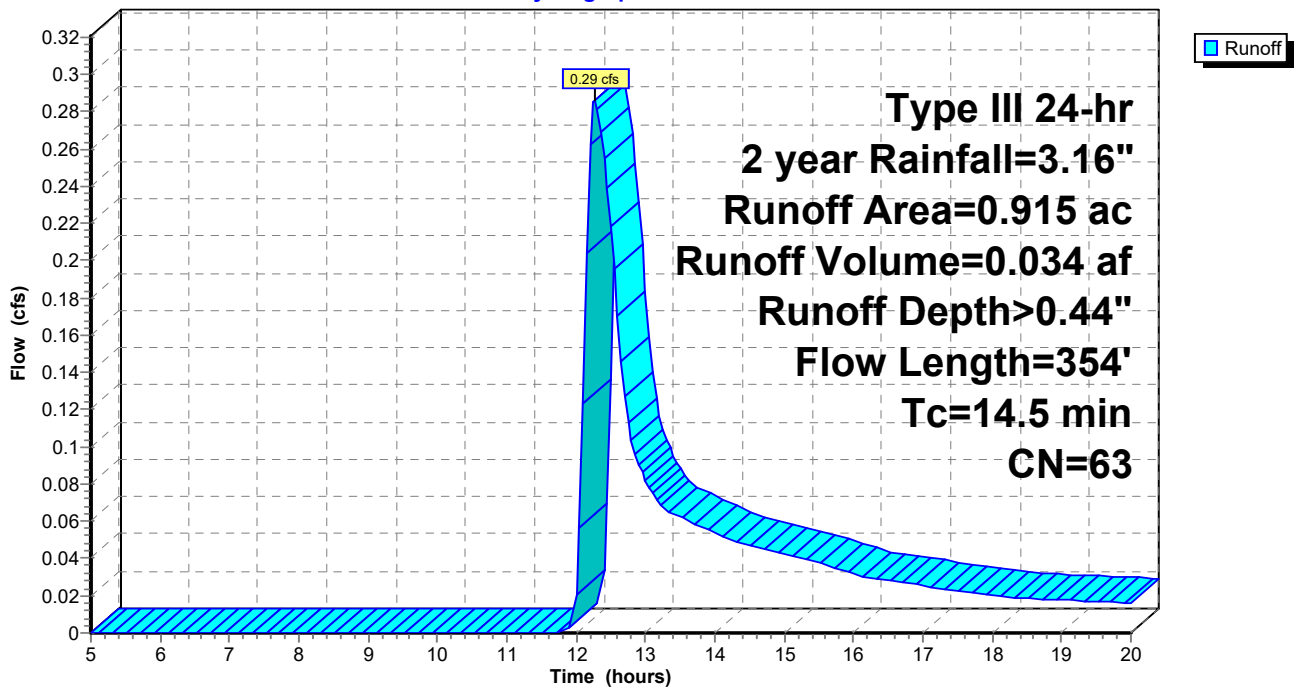
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.058	46	2 acre lots, 12% imp, HSG A
0.539	65	2 acre lots, 12% imp, HSG B
0.190	78	Row crops, straight row, Good, HSG B
0.121	36	Woods, Fair, HSG A
0.008	60	Woods, Fair, HSG B
0.915	63	Weighted Average
0.843		92.17% Pervious Area
0.072		7.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.2	304	0.0082	0.81		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
14.5	354	Total			

Subcatchment 43: Subcat 43

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 44: Subcat 44

Runoff = 2.44 cfs @ 12.15 hrs, Volume= 0.191 af, Depth> 1.08"

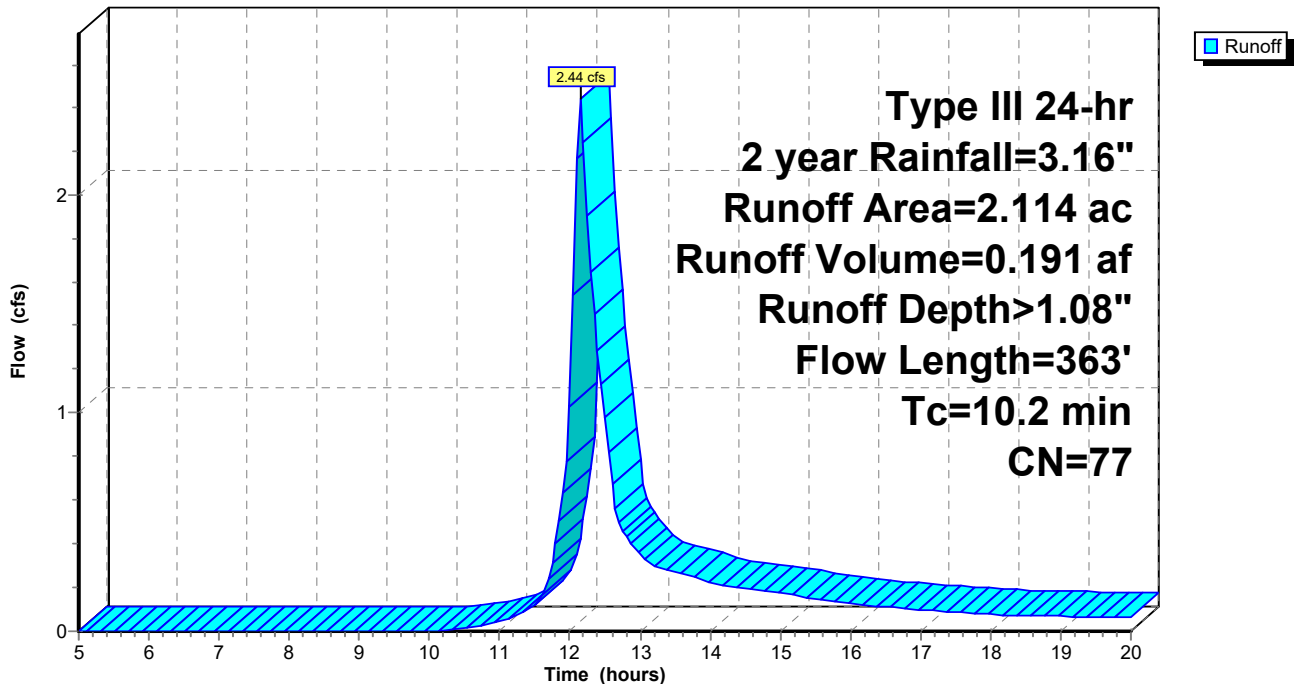
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.164	67	Row crops, straight row, Good, HSG A
1.950	78	Row crops, straight row, Good, HSG B
2.114	77	Weighted Average
2.114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.4	313	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	363	Total			

Subcatchment 44: Subcat 44

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 45: Subcat 45

Runoff = 3.08 cfs @ 12.10 hrs, Volume= 0.213 af, Depth> 1.09"

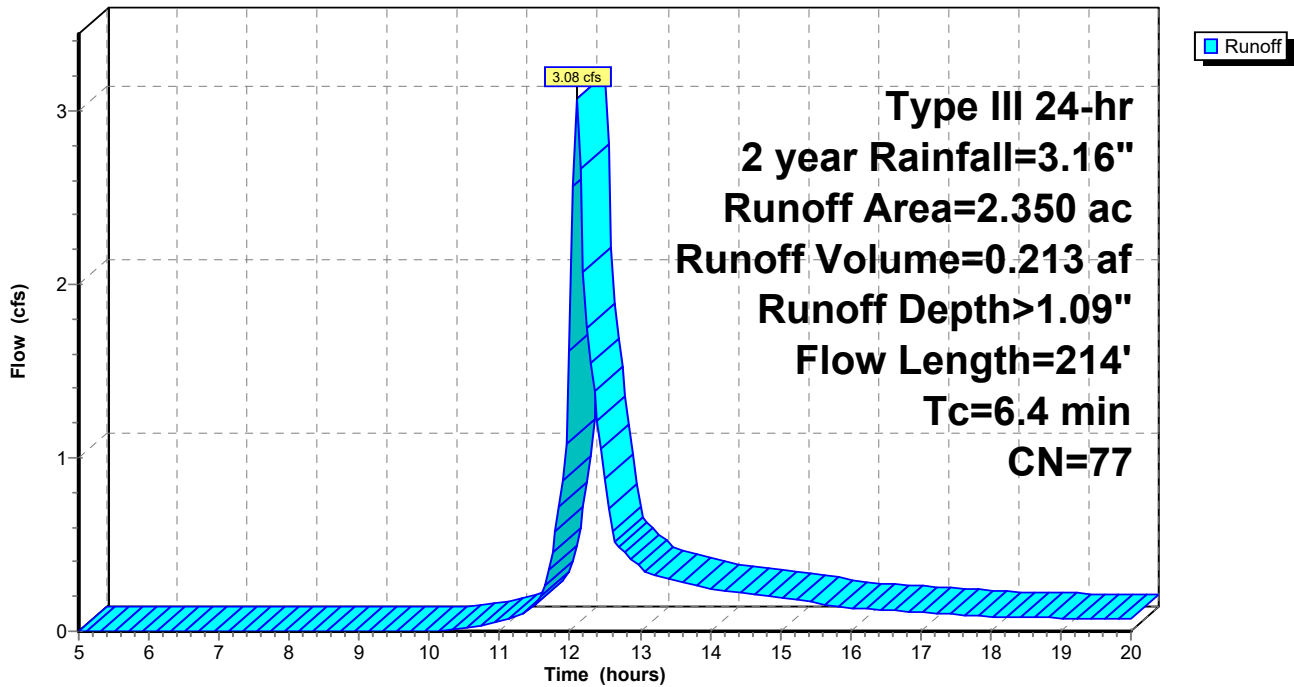
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.248	67	Row crops, straight row, Good, HSG A
2.102	78	Row crops, straight row, Good, HSG B
2.350	77	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.6	164	0.0610	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.4	214	Total			

Subcatchment 45: Subcat 45

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 46: Subcat 46

Runoff = 3.38 cfs @ 12.17 hrs, Volume= 0.276 af, Depth> 1.08"

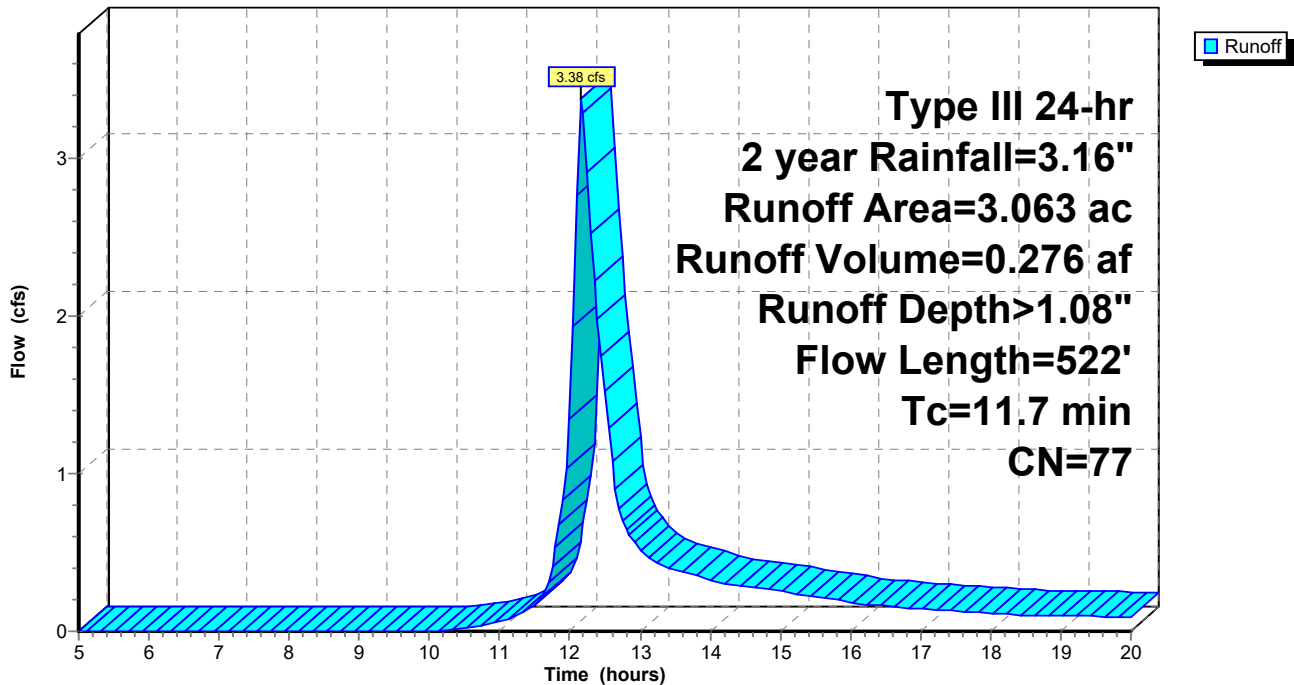
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.094	67	Row crops, straight row, Good, HSG A
2.903	78	Row crops, straight row, Good, HSG B
0.006	36	Woods, Fair, HSG A
0.060	60	Woods, Fair, HSG B
3.063	77	Weighted Average
3.063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	472	0.0233	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.7	522	Total			

Subcatchment 46: Subcat 46

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 47: Subcat 47

Runoff = 0.49 cfs @ 12.41 hrs, Volume= 0.079 af, Depth> 0.25"

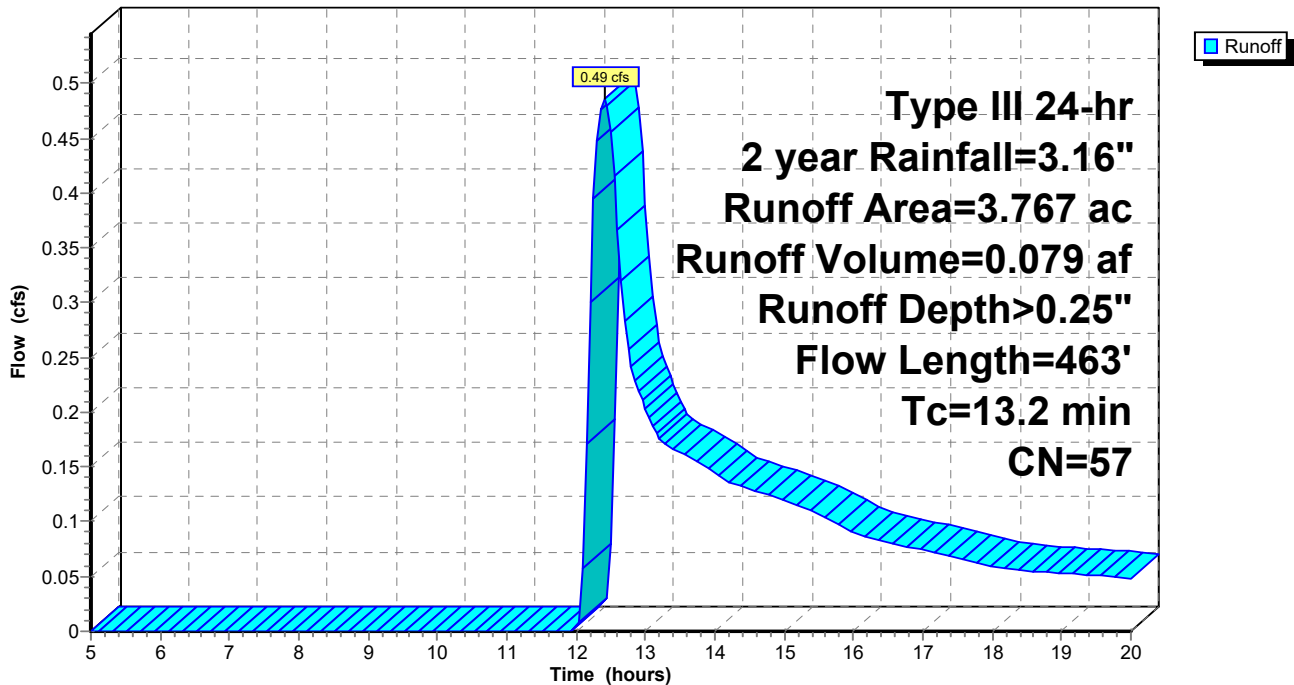
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.159	67	Row crops, straight row, Good, HSG A
1.564	78	Row crops, straight row, Good, HSG B
1.674	36	Woods, Fair, HSG A
0.369	60	Woods, Fair, HSG B
3.767	57	Weighted Average
3.767		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.9	413	0.0242	1.40		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.2	463	Total			

Subcatchment 47: Subcat 47

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 48: Subcat 48

Runoff = 1.77 cfs @ 12.22 hrs, Volume= 0.196 af, Depth> 0.44"

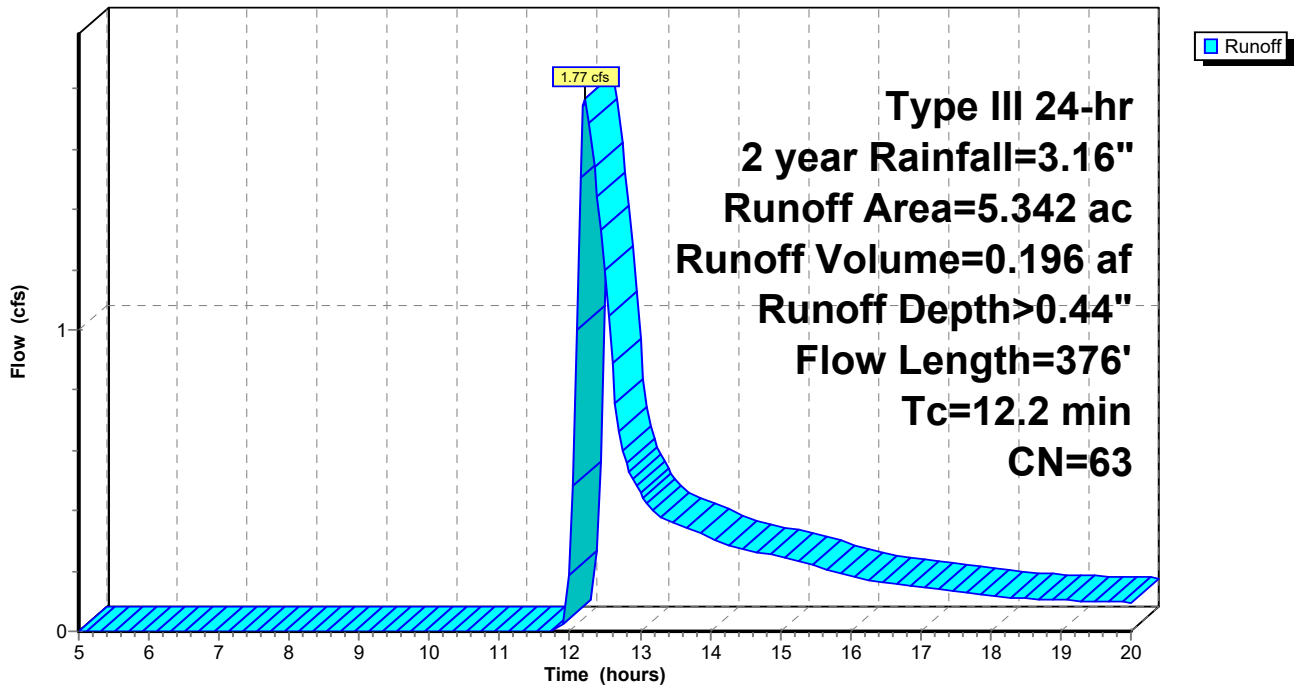
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.054	67	Row crops, straight row, Good, HSG A
3.042	78	Row crops, straight row, Good, HSG B
1.638	36	Woods, Fair, HSG A
0.608	60	Woods, Fair, HSG B
5.342	63	Weighted Average
5.342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
3.9	326	0.0245	1.41		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
12.2	376	Total			

Subcatchment 48: Subcat 48

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 49: Subcat 49

Runoff = 1.16 cfs @ 12.24 hrs, Volume= 0.127 af, Depth> 0.48"

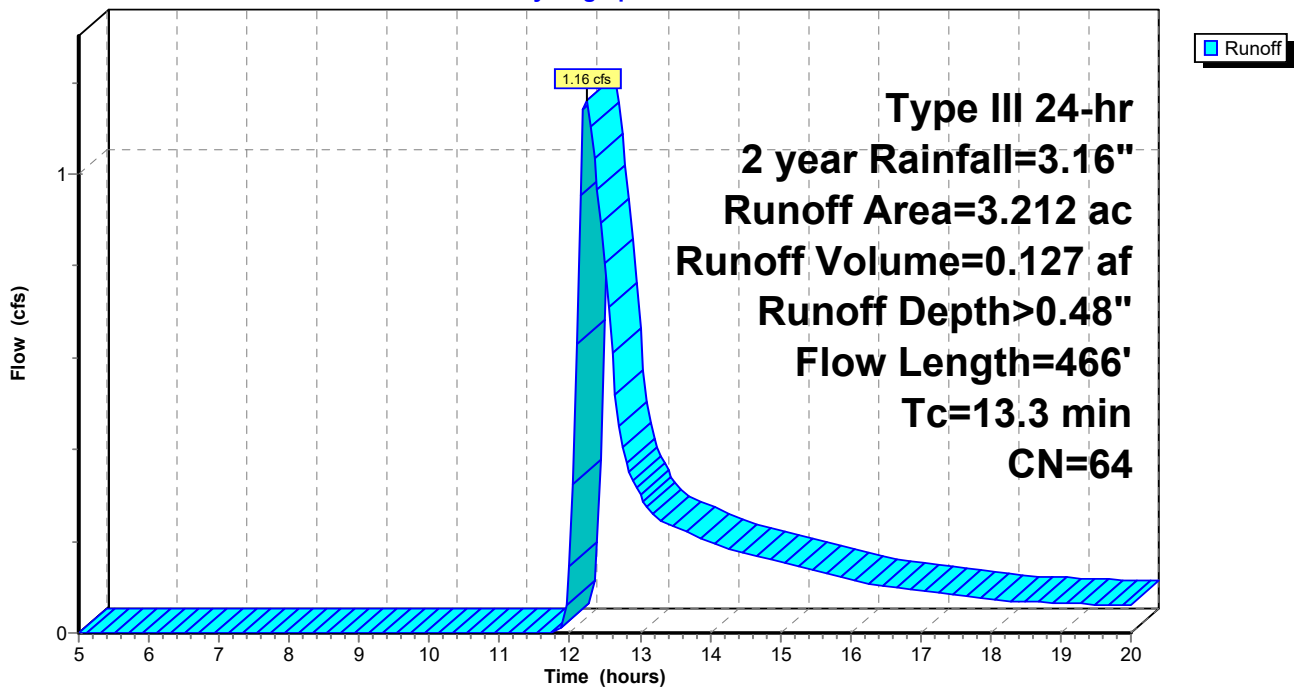
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.656	98	Roofs, HSG B
0.016	67	Row crops, straight row, Good, HSG A
1.136	78	Row crops, straight row, Good, HSG B
1.330	36	Woods, Fair, HSG A
0.074	60	Woods, Fair, HSG B
3.212	64	Weighted Average
2.556		79.59% Pervious Area
0.656		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.0	416	0.0120	0.99		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.3	466	Total			

Subcatchment 49: Subcat 49

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 50: Subcat 50

Runoff = 3.72 cfs @ 12.22 hrs, Volume= 0.365 af, Depth> 0.59"

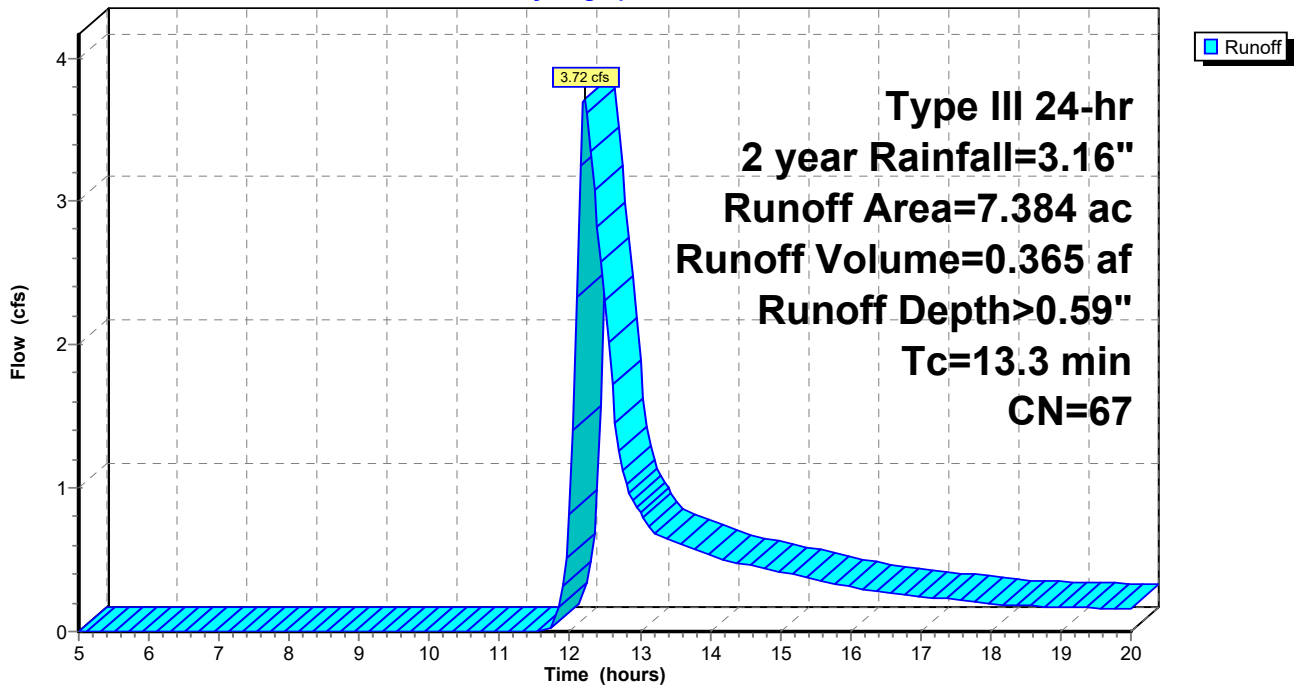
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
4.996	78	Row crops, straight row, Good, HSG B
1.655	36	Woods, Fair, HSG A
0.733	60	Woods, Fair, HSG B
7.384	67	Weighted Average
7.384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3					Direct Entry,

Subcatchment 50: Subcat 50

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 51: Subcat 51

Runoff = 19.86 cfs @ 12.50 hrs, Volume= 2.464 af, Depth> 1.07"

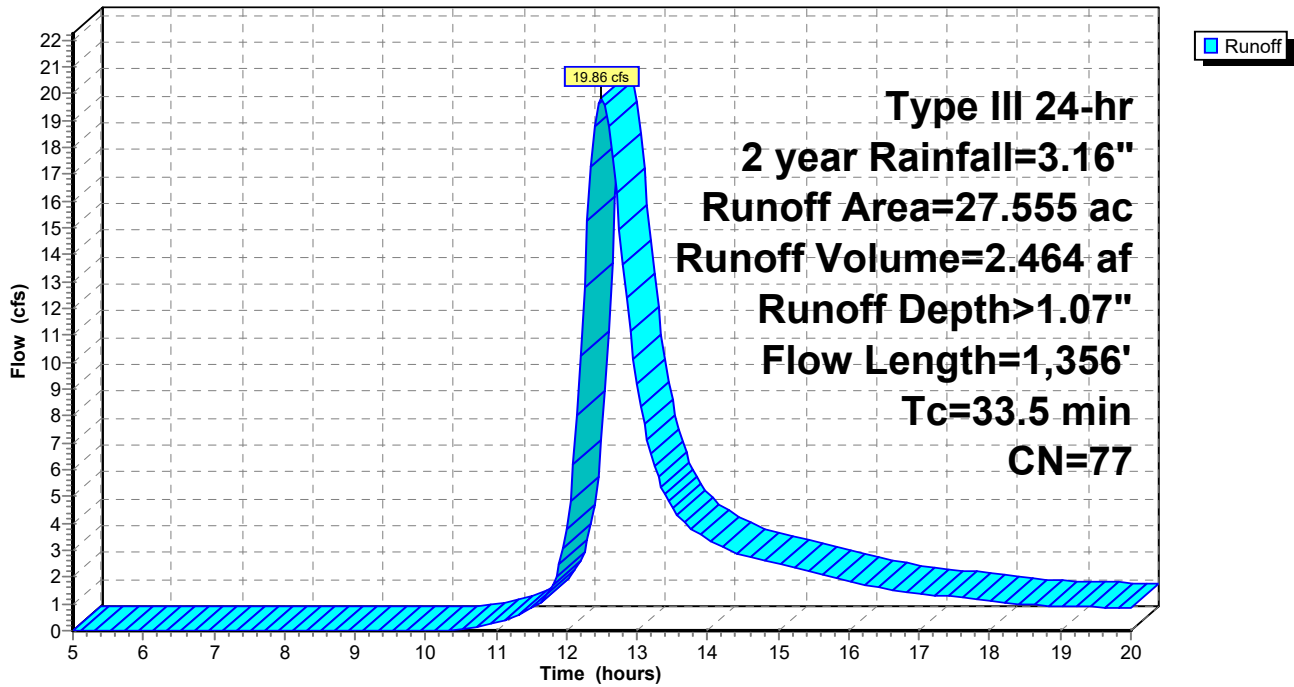
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.980	65	2 acre lots, 12% imp, HSG B
25.329	78	Row crops, straight row, Good, HSG B
0.074	36	Woods, Fair, HSG A
1.172	60	Woods, Fair, HSG B
27.555	77	Weighted Average
27.437		99.57% Pervious Area
0.118		0.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
25.2	1,306	0.0092	0.86		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.5	1,356	Total			

Subcatchment 51: Subcat 51

Hydrograph



Existing Conditions - South Plantation

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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 53: Subcat 53

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

[73] Warning: Peak may fall outside time span

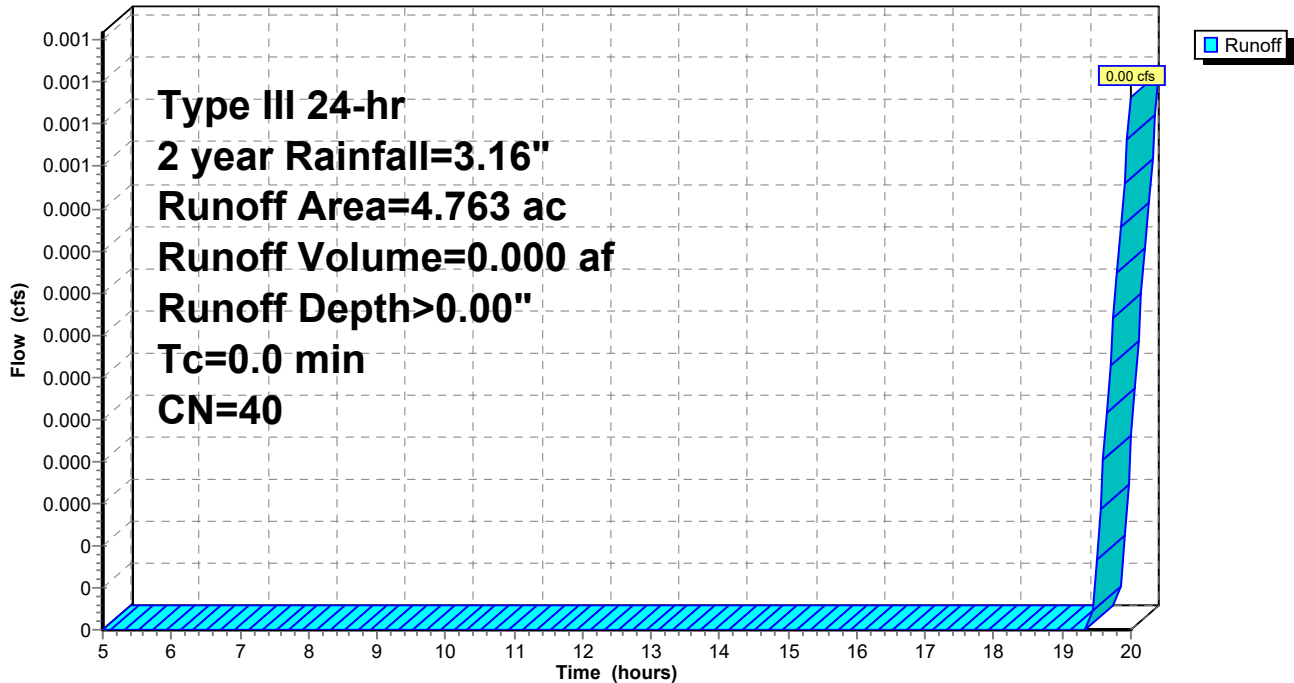
Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.120	46	2 acre lots, 12% imp, HSG A
0.419	65	2 acre lots, 12% imp, HSG B
3.953	36	Woods, Fair, HSG A
0.271	60	Woods, Fair, HSG B
4.763	40	Weighted Average
4.698		98.64% Pervious Area
0.065		1.36% Impervious Area

Subcatchment 53: Subcat 53

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 54: Subcat 54

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

[73] Warning: Peak may fall outside time span

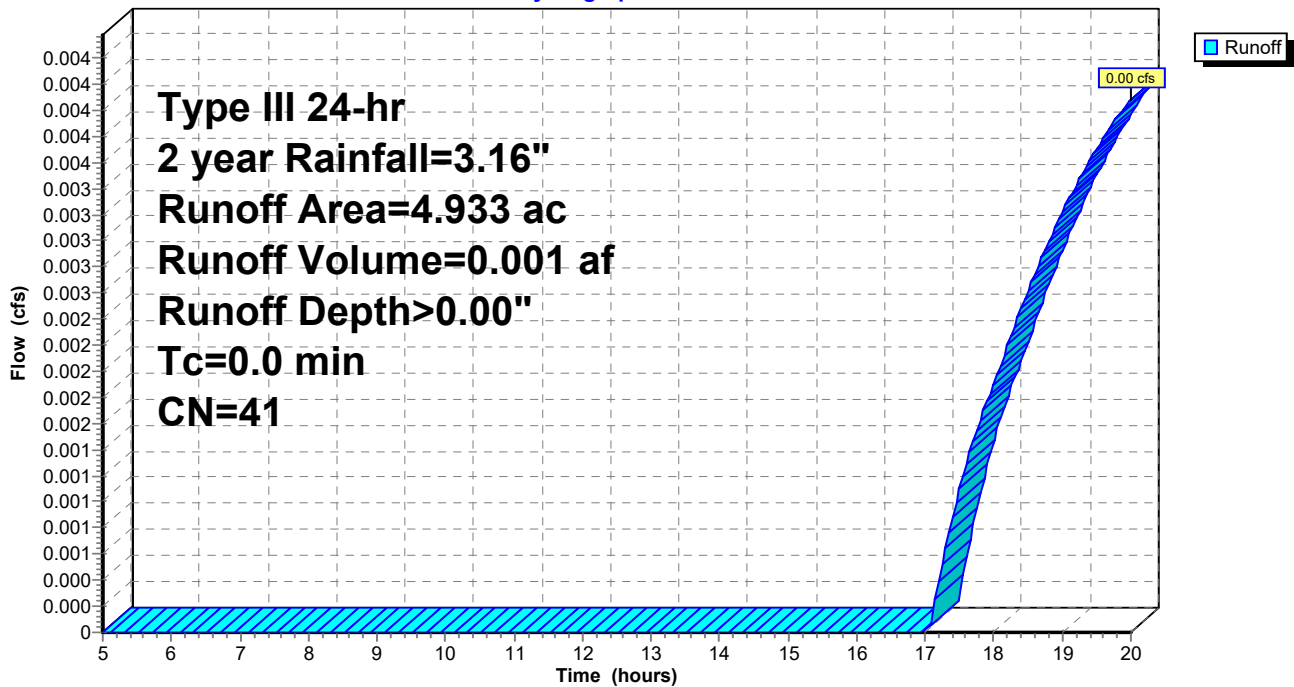
Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.001 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.060	65	2 acre lots, 12% imp, HSG B
3.830	36	Woods, Fair, HSG A
1.042	60	Woods, Fair, HSG B
4.933	41	Weighted Average
4.925		99.85% Pervious Area
0.007		0.15% Impervious Area

Subcatchment 54: Subcat 54

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 55: Subcat 55

Runoff = 2.12 cfs @ 12.31 hrs, Volume= 0.217 af, Depth> 0.97"

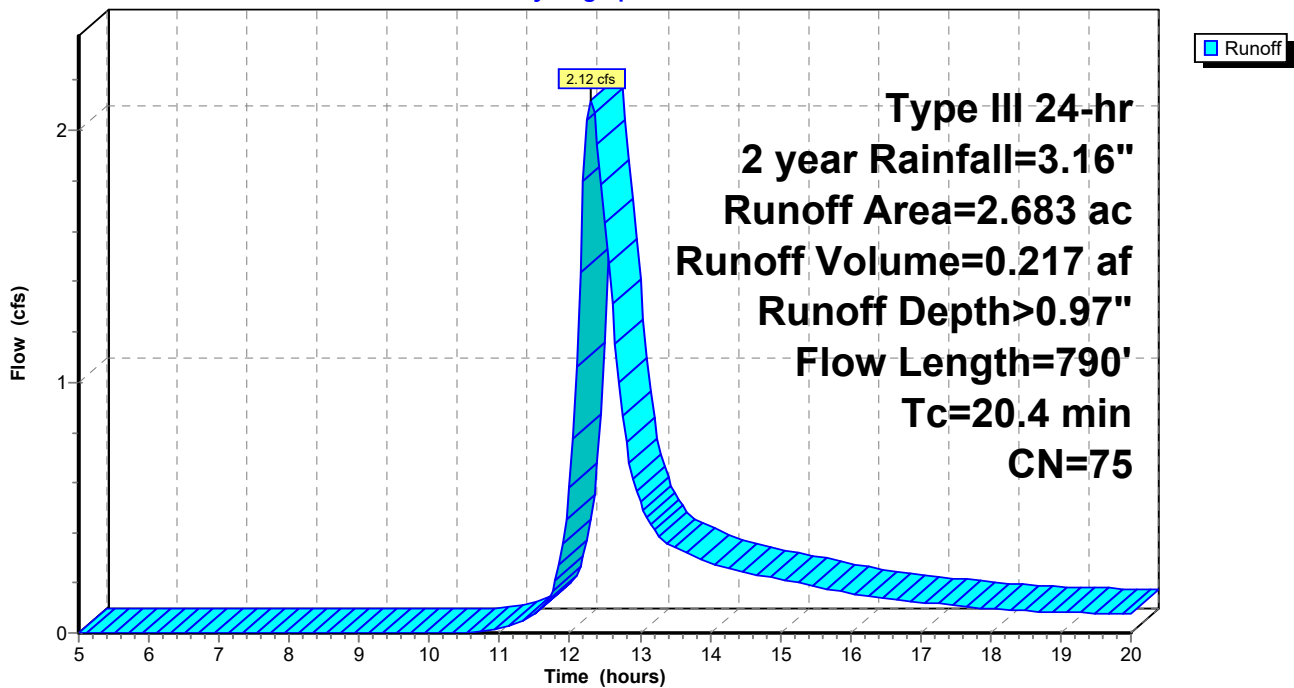
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.134	67	Row crops, straight row, Good, HSG A
2.236	78	Row crops, straight row, Good, HSG B
0.094	36	Woods, Fair, HSG A
0.219	60	Woods, Fair, HSG B
2.683	75	Weighted Average
2.683		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.9	216	0.0046	0.61		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
6.2	524	0.0248	1.42		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.4	790	Total			

Subcatchment 55: Subcat 55

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 56: Subcat 56

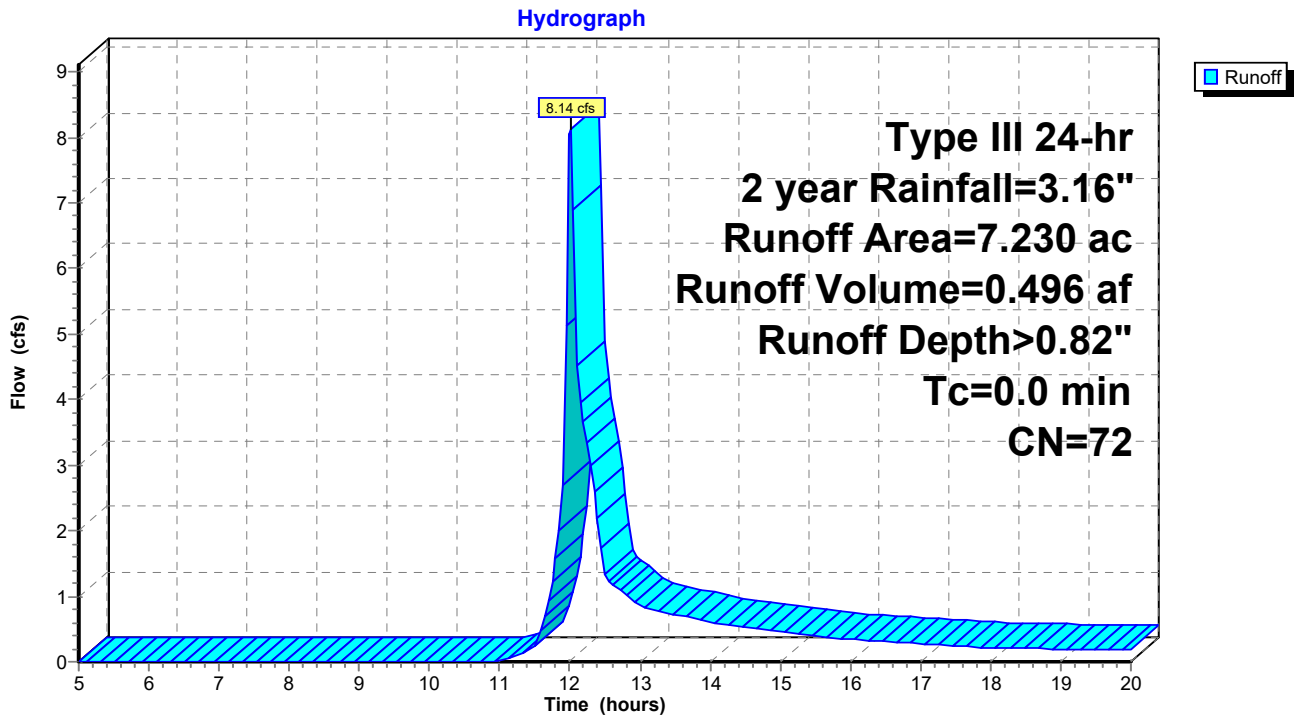
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 8.14 cfs @ 12.01 hrs, Volume= 0.496 af, Depth> 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.023	46	2 acre lots, 12% imp, HSG A
1.325	65	2 acre lots, 12% imp, HSG B
4.694	78	Row crops, straight row, Good, HSG B
0.051	36	Woods, Fair, HSG A
1.137	60	Woods, Fair, HSG B
7.230	72	Weighted Average
7.069		97.76% Pervious Area
0.162		2.24% Impervious Area

Subcatchment 56: Subcat 56



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 57: Subcat 57

Runoff = 3.73 cfs @ 12.25 hrs, Volume= 0.365 af, Depth> 0.77"

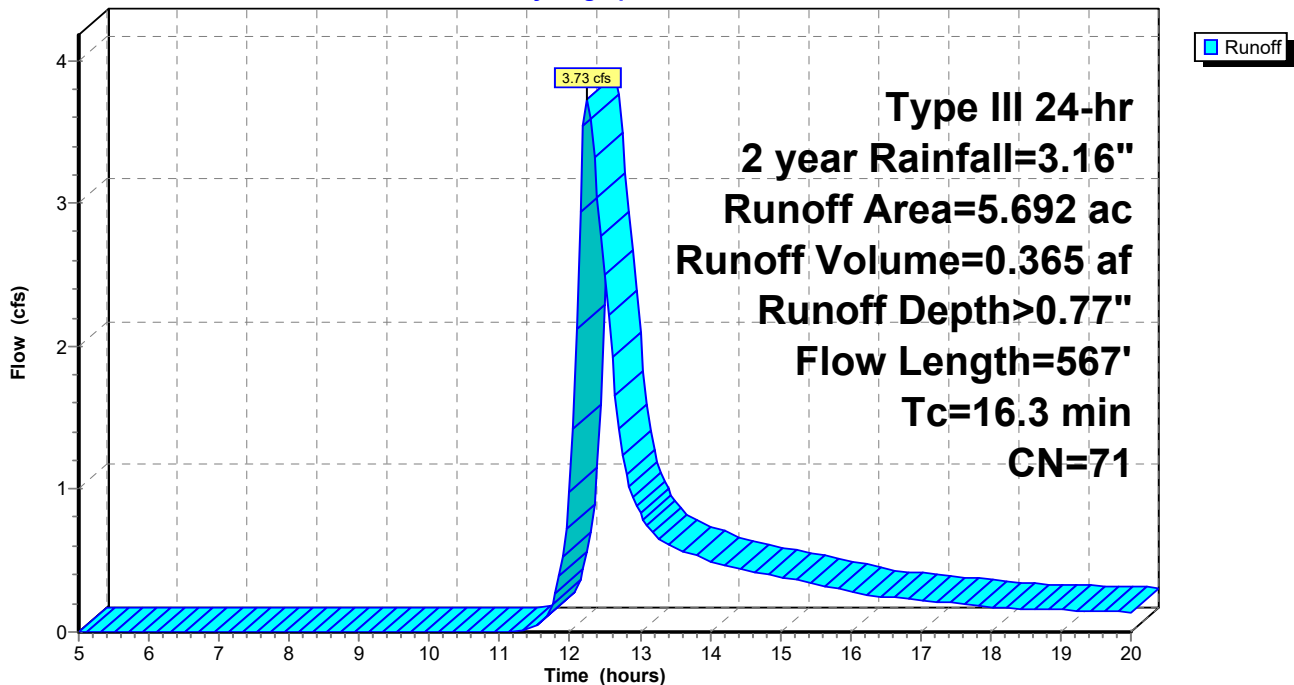
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.118	46	2 acre lots, 12% imp, HSG A
1.112	65	2 acre lots, 12% imp, HSG B
3.513	78	Row crops, straight row, Good, HSG B
0.138	36	Woods, Fair, HSG A
0.811	60	Woods, Fair, HSG B
5.692	71	Weighted Average
5.544		97.41% Pervious Area
0.148		2.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.7	266	0.0075	0.78		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.3	251	0.0398	1.80		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.3	567	Total			

Subcatchment 57: Subcat 57

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 58: Subcat 58

Runoff = 0.03 cfs @ 15.00 hrs, Volume= 0.011 af, Depth> 0.05"

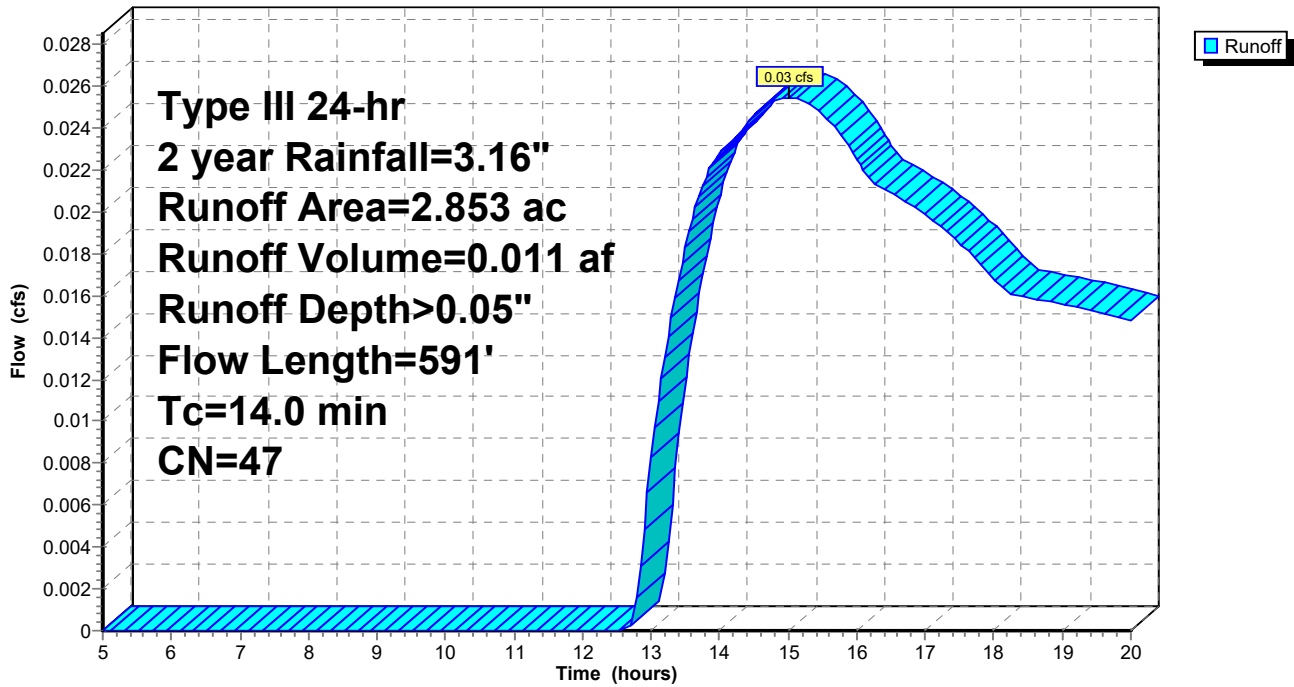
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.110	46	2 acre lots, 12% imp, HSG A
1.060	65	2 acre lots, 12% imp, HSG B
1.673	36	Woods, Fair, HSG A
0.010	60	Woods, Fair, HSG B
2.853	47	Weighted Average
2.712		95.08% Pervious Area
0.140		4.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.3	541	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	591	Total			

Subcatchment 58: Subcat 58

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 59: Subcat 59

Runoff = 0.04 cfs @ 14.97 hrs, Volume= 0.016 af, Depth> 0.05"

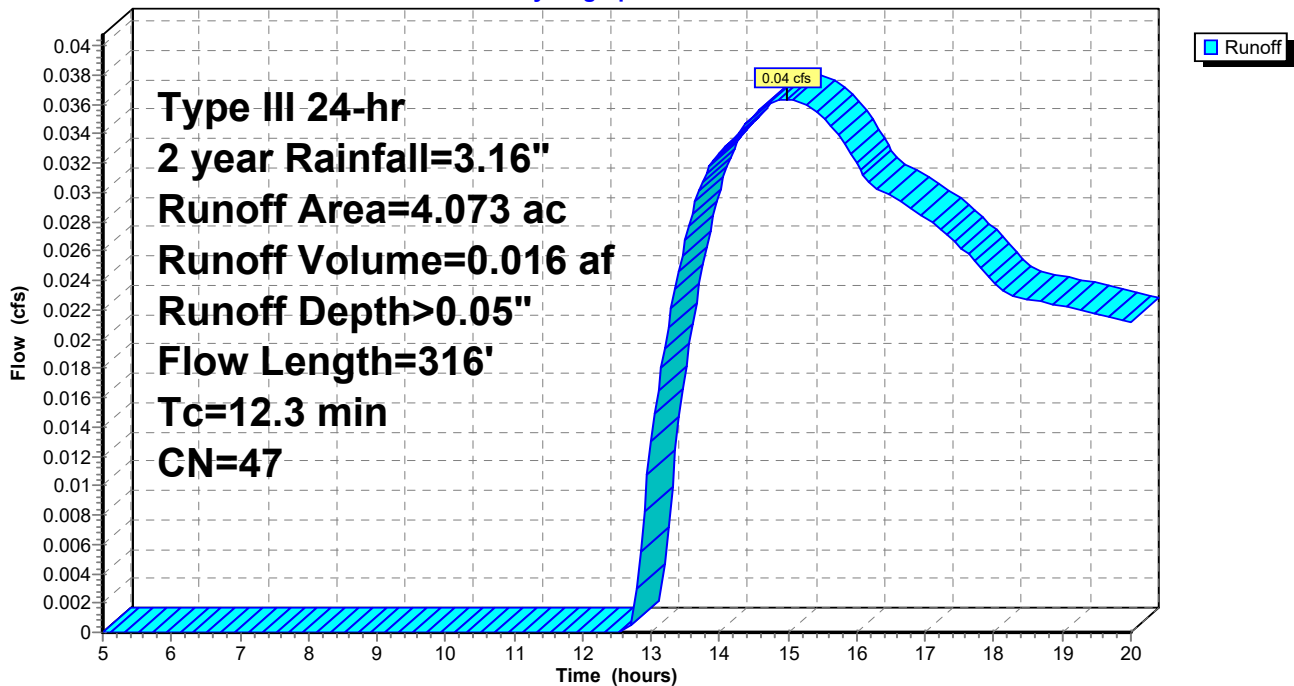
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.853	46	2 acre lots, 12% imp, HSG A
0.589	65	2 acre lots, 12% imp, HSG B
0.000	67	Row crops, straight row, Good, HSG A
0.285	78	Row crops, straight row, Good, HSG B
2.075	36	Woods, Fair, HSG A
0.270	60	Woods, Fair, HSG B
4.073	47	Weighted Average
3.899		95.75% Pervious Area
0.173		4.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	221	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1333	2.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	316	Total			

Subcatchment 59: Subcat 59

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 60: Subcat 60

Runoff = 5.72 cfs @ 12.48 hrs, Volume= 0.697 af, Depth> 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.099	46	2 acre lots, 12% imp, HSG A
0.385	65	2 acre lots, 12% imp, HSG B
1.600	98	Roofs, HSG B
4.709	78	Row crops, straight row, Good, HSG B
0.482	36	Woods, Fair, HSG A
0.114	60	Woods, Fair, HSG B
7.389	78	Weighted Average
5.731		77.56% Pervious Area
1.658		22.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
23.1	855	0.0047	0.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.0	98	0.0510	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.4	1,003	Total			

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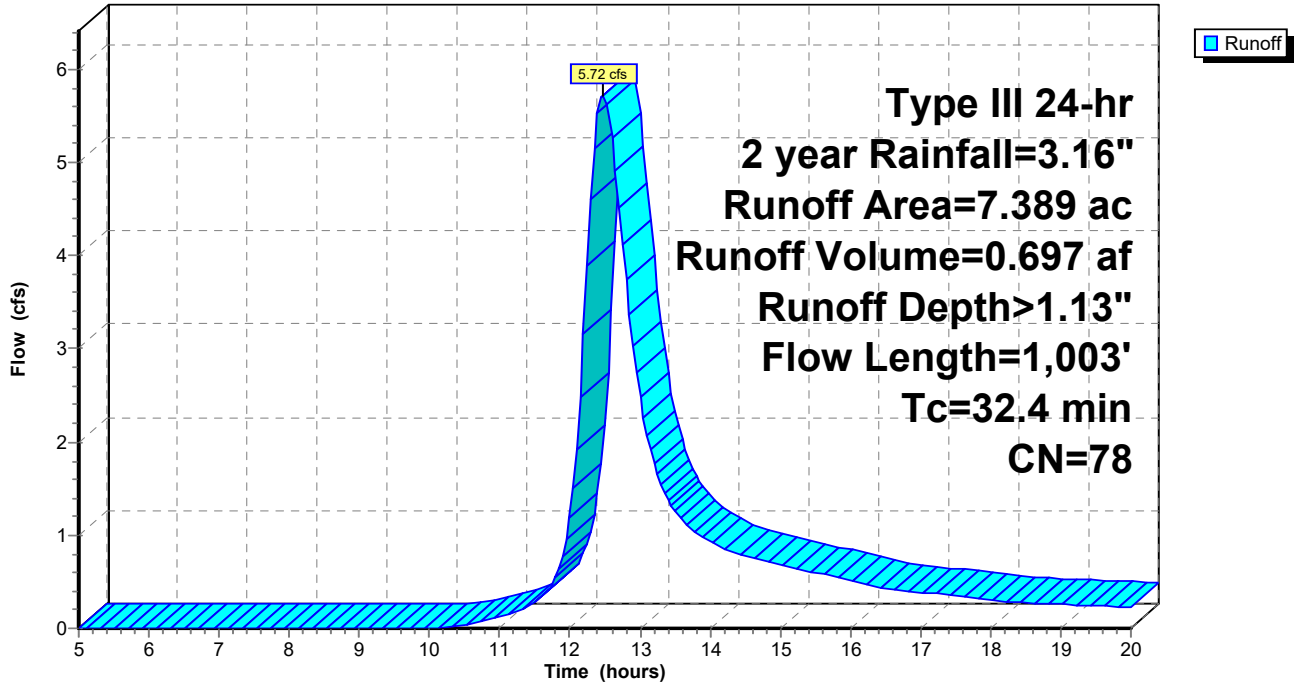
Type III 24-hr 2 year Rainfall=3.16"

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Subcatchment 60: Subcat 60

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 62: Subcat 62

Runoff = 12.47 cfs @ 12.46 hrs, Volume= 1.540 af, Depth> 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.002	0	, HSG A
* 0.001	0	, HSG B
0.233	46	2 acre lots, 12% imp, HSG A
7.452	65	2 acre lots, 12% imp, HSG B
0.010	89	Paved roads w/open ditches, 50% imp, HSG B
14.386	78	Row crops, straight row, Good, HSG B
1.590	36	Woods, Fair, HSG A
0.529	60	Woods, Fair, HSG B
24.202	71	Weighted Average
23.275		96.17% Pervious Area
0.927		3.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
12.2	757	0.0132	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.1	481	0.0312	0.88		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
29.6	1,288	Total			

Existing Conditions - South Plantation

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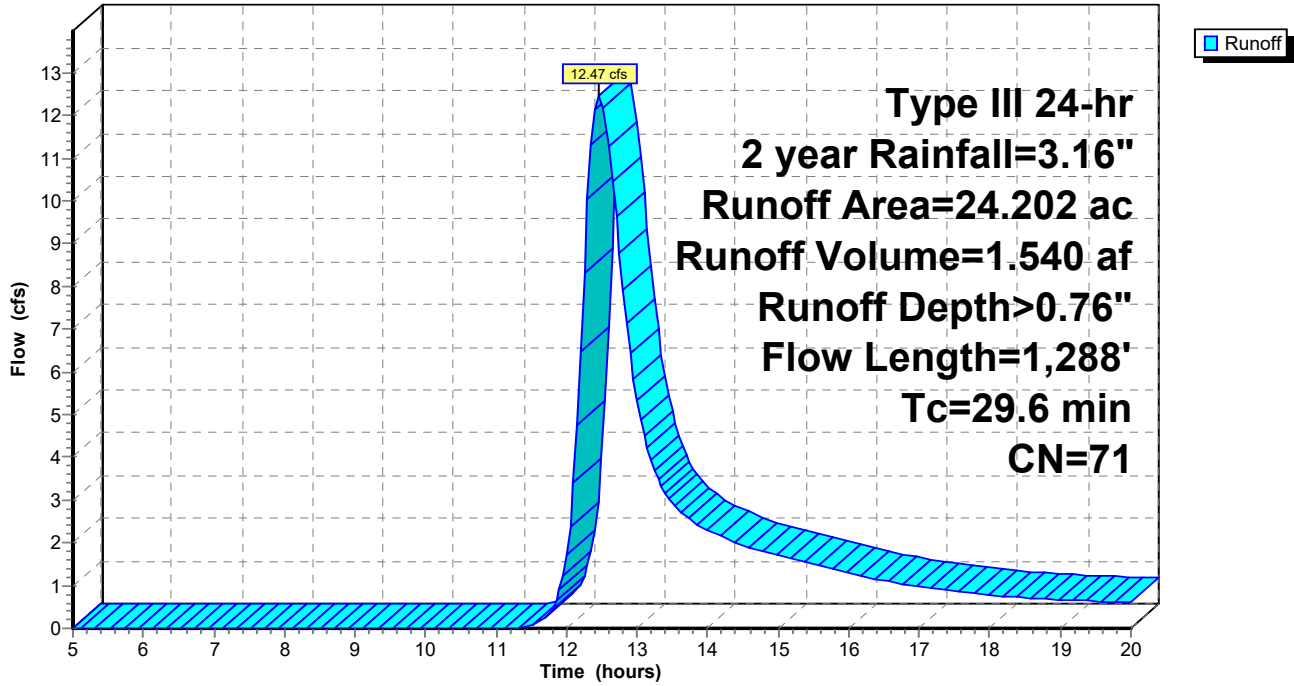
Type III 24-hr 2 year Rainfall=3.16"

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Subcatchment 62: Subcat 62

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 64: Subcat 64

Runoff = 0.94 cfs @ 12.24 hrs, Volume= 0.094 af, Depth> 0.63"

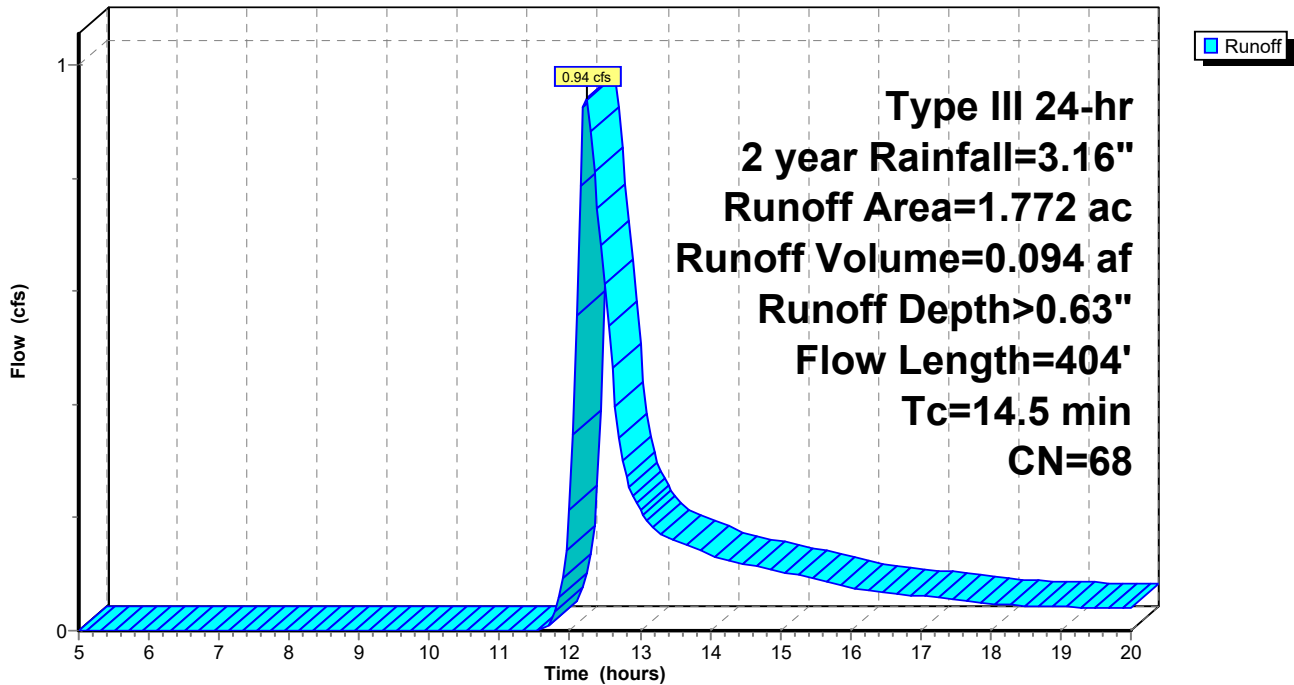
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.012	46	2 acre lots, 12% imp, HSG A
0.294	67	Row crops, straight row, Good, HSG A
1.126	78	Row crops, straight row, Good, HSG B
0.340	36	Woods, Fair, HSG A
1.772	68	Weighted Average
1.771		99.92% Pervious Area
0.001		0.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.2	354	0.0113	0.96		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
14.5	404	Total			

Subcatchment 64: Subcat 64

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 65: Subcat 65

Runoff = 2.73 cfs @ 12.33 hrs, Volume= 0.287 af, Depth> 0.97"

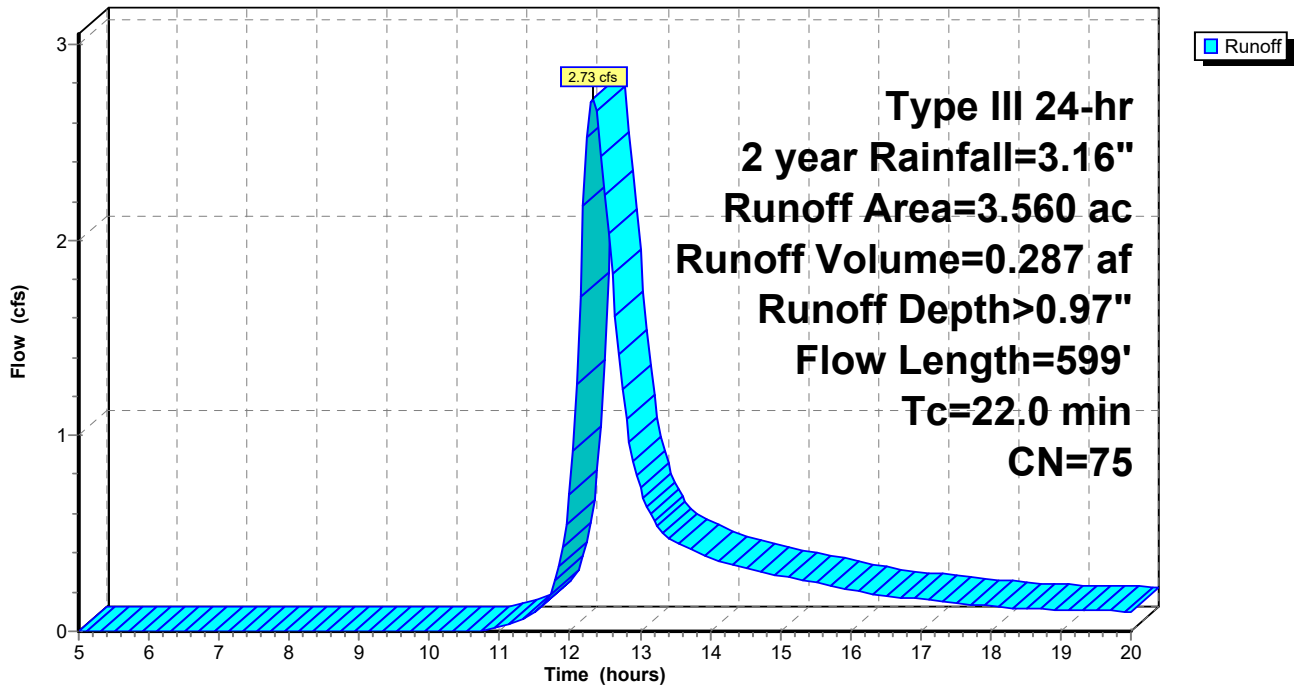
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.162	67	Row crops, straight row, Good, HSG A
2.990	78	Row crops, straight row, Good, HSG B
0.127	36	Woods, Fair, HSG A
0.282	60	Woods, Fair, HSG B
3.560	75	Weighted Average
3.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
13.7	549	0.0055	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.0	599	Total			

Subcatchment 65: Subcat 65

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 66: Subcat 66

Runoff = 1.89 cfs @ 12.20 hrs, Volume= 0.164 af, Depth> 1.03"

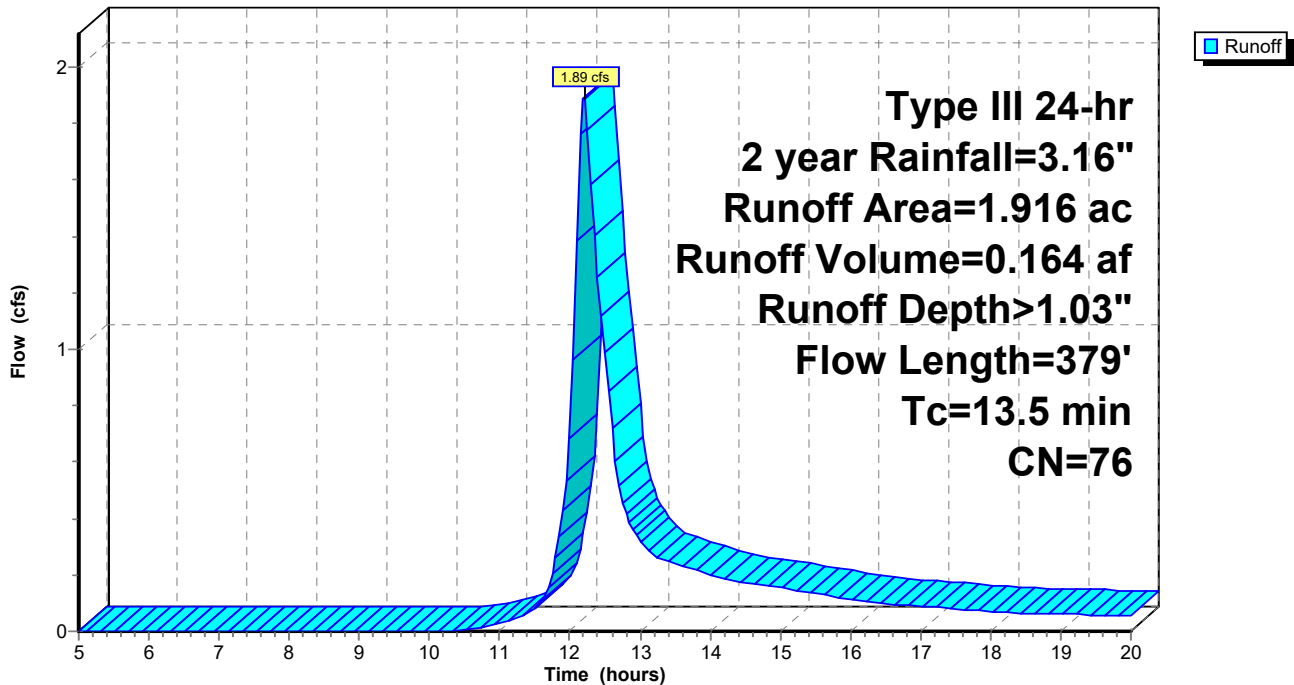
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.020	89	Paved roads w/open ditches, 50% imp, HSG B
1.653	78	Row crops, straight row, Good, HSG B
0.243	60	Woods, Fair, HSG B
1.916	76	Weighted Average
1.906		99.47% Pervious Area
0.010		0.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.2	329	0.0137	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.5	379	Total			

Subcatchment 66: Subcat 66

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 37P: (new Pond)

Inflow Area = 1.143 ac, 0.10% Impervious, Inflow Depth > 1.14" for 2 year event
 Inflow = 1.22 cfs @ 12.22 hrs, Volume= 0.109 af
 Outflow = 0.38 cfs @ 12.69 hrs, Volume= 0.108 af, Atten= 69%, Lag= 28.5 min
 Discarded = 0.38 cfs @ 12.69 hrs, Volume= 0.108 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.39' @ 12.69 hrs Surf.Area= 5,408 sf Storage= 1,389 cf

Plug-Flow detention time= 33.9 min calculated for 0.108 af (100% of inflow)
 Center-of-Mass det. time= 33.5 min (849.7 - 816.1)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	7,138 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
166.00	2,016	0	0 2,016
167.00	14,072	7,138	7,138 14,075

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	166.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.38 cfs @ 12.69 hrs HW=166.39' (Free Discharge)
 ↑2=Exfiltration (Controls 0.38 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=166.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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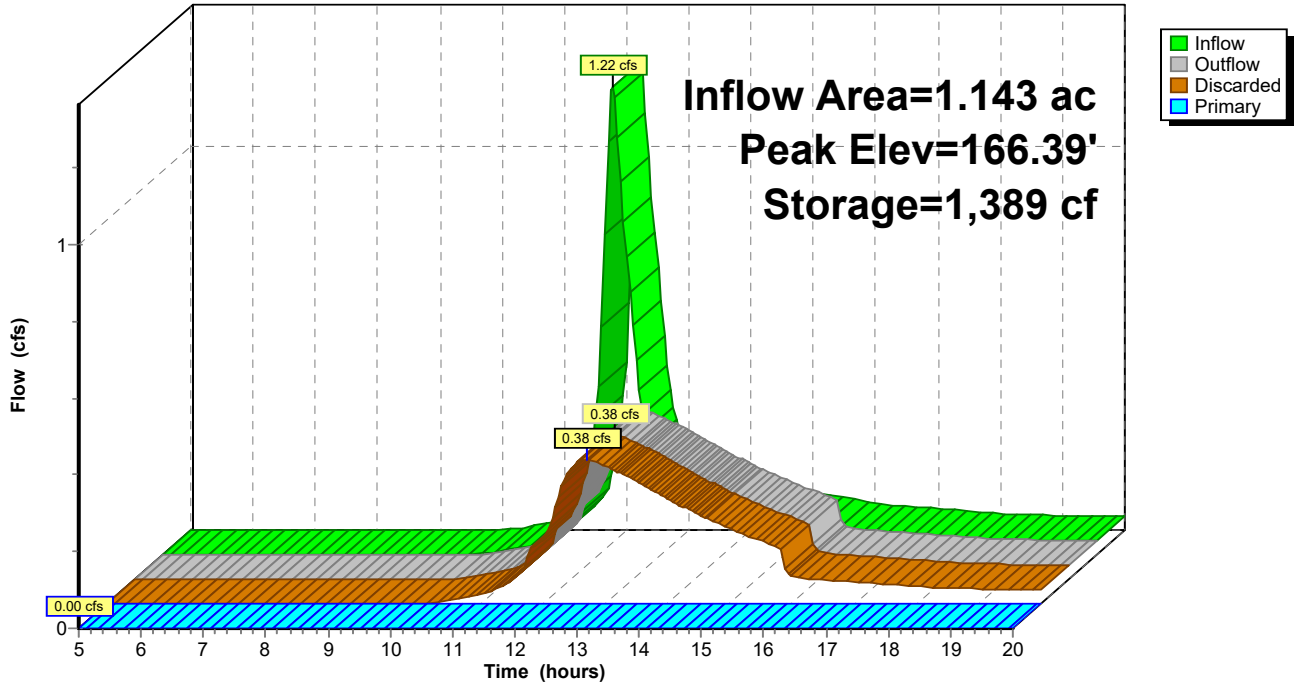
Type III 24-hr 2 year Rainfall=3.16"

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Pond 37P: (new Pond)

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 38P: (new Pond)

Inflow Area = 3.921 ac, 0.00% Impervious, Inflow Depth > 1.14" for 2 year event
 Inflow = 3.68 cfs @ 12.31 hrs, Volume= 0.372 af
 Outflow = 1.01 cfs @ 12.92 hrs, Volume= 0.363 af, Atten= 72%, Lag= 36.6 min
 Discarded = 1.01 cfs @ 12.92 hrs, Volume= 0.363 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.24' @ 12.92 hrs Surf.Area= 14,535 sf Storage= 5,982 cf

Plug-Flow detention time= 77.5 min calculated for 0.362 af (97% of inflow)
 Center-of-Mass det. time= 69.5 min (890.1 - 820.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	163.00'	25,279 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
163.00	0	0	0	0	
164.00	9,379	3,126	3,126	9,381	
165.00	38,160	22,152	25,279	38,166	

Device	Routing	Invert	Outlet Devices									
#1	Primary	164.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.01 cfs @ 12.92 hrs HW=164.24' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=163.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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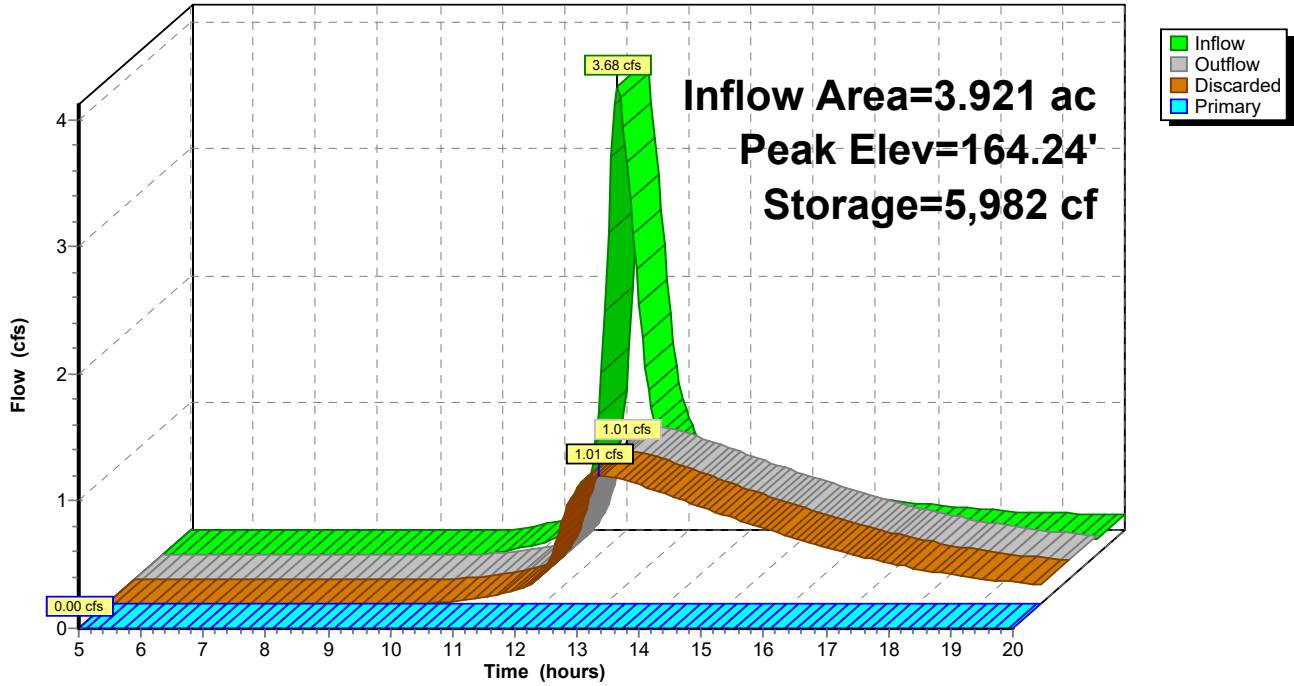
Type III 24-hr 2 year Rainfall=3.16"

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Pond 38P: (new Pond)

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 39P: (new Pond)

Inflow Area = 3.190 ac, 3.32% Impervious, Inflow Depth > 0.56" for 2 year event
 Inflow = 1.81 cfs @ 12.16 hrs, Volume= 0.148 af
 Outflow = 0.49 cfs @ 12.64 hrs, Volume= 0.148 af, Atten= 73%, Lag= 28.7 min
 Discarded = 0.49 cfs @ 12.64 hrs, Volume= 0.148 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.39' @ 12.64 hrs Surf.Area= 7,071 sf Storage= 1,879 cf

Plug-Flow detention time= 36.3 min calculated for 0.147 af (99% of inflow)
 Center-of-Mass det. time= 35.3 min (860.3 - 824.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	164.00'	38,968 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
164.00	2,834	0	0	2,834	
166.00	44,400	38,968	38,968	44,411	

Device	Routing	Invert	Outlet Devices									
#1	Primary	165.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	164.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=0.49 cfs @ 12.64 hrs HW=164.39' (Free Discharge)
 ↑2=Exfiltration (Controls 0.49 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=164.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Existing Conditions - South Plantation

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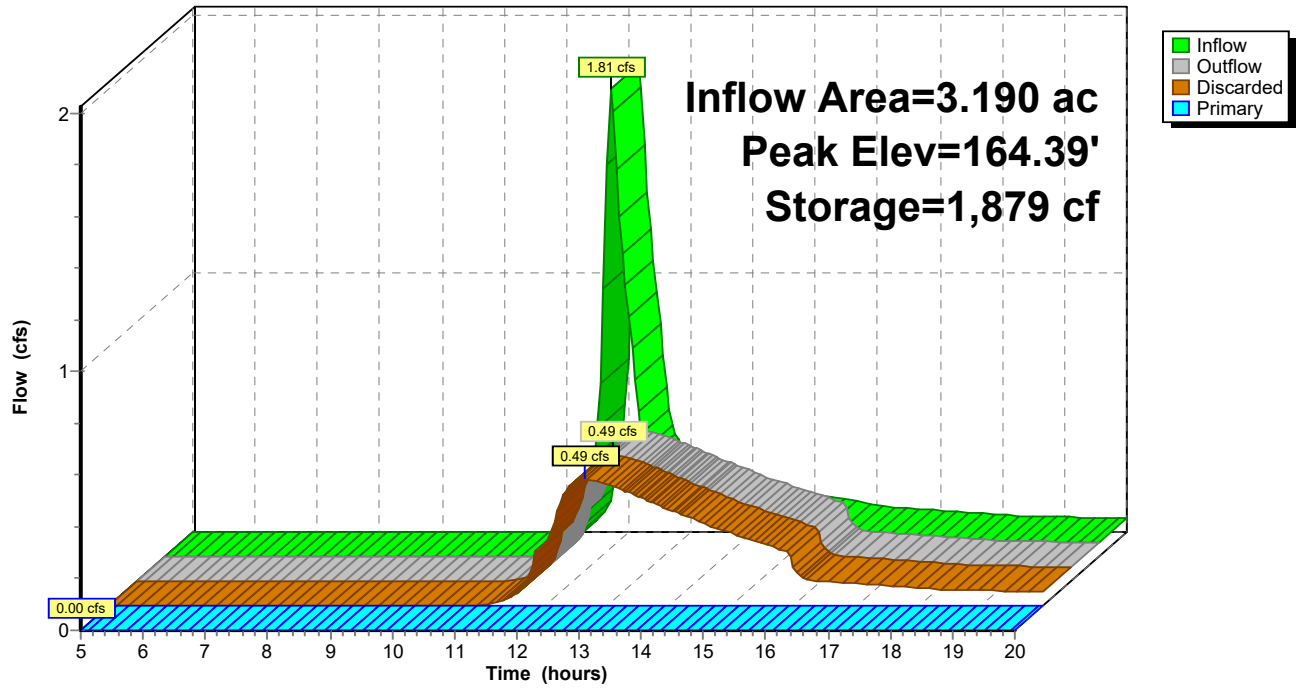
Type III 24-hr 2 year Rainfall=3.16"

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Pond 39P: (new Pond)

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 44P: (new Pond)

Inflow Area = 2.114 ac, 0.00% Impervious, Inflow Depth > 1.08" for 2 year event
 Inflow = 2.44 cfs @ 12.15 hrs, Volume= 0.191 af
 Outflow = 0.52 cfs @ 12.68 hrs, Volume= 0.187 af, Atten= 79%, Lag= 31.6 min
 Discarded = 0.52 cfs @ 12.68 hrs, Volume= 0.187 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.18' @ 12.68 hrs Surf.Area= 7,526 sf Storage= 3,075 cf

Plug-Flow detention time= 74.2 min calculated for 0.187 af (98% of inflow)
 Center-of-Mass det. time= 67.2 min (882.0 - 814.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	157.00'	43,325 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
157.00	0	0	0	0	
158.00	5,632	1,877	1,877	5,634	
160.00	41,290	41,448	43,325	41,305	

Device	Routing	Invert	Outlet Devices									
#1	Primary	159.00'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=0.52 cfs @ 12.68 hrs HW=158.18' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.52 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=157.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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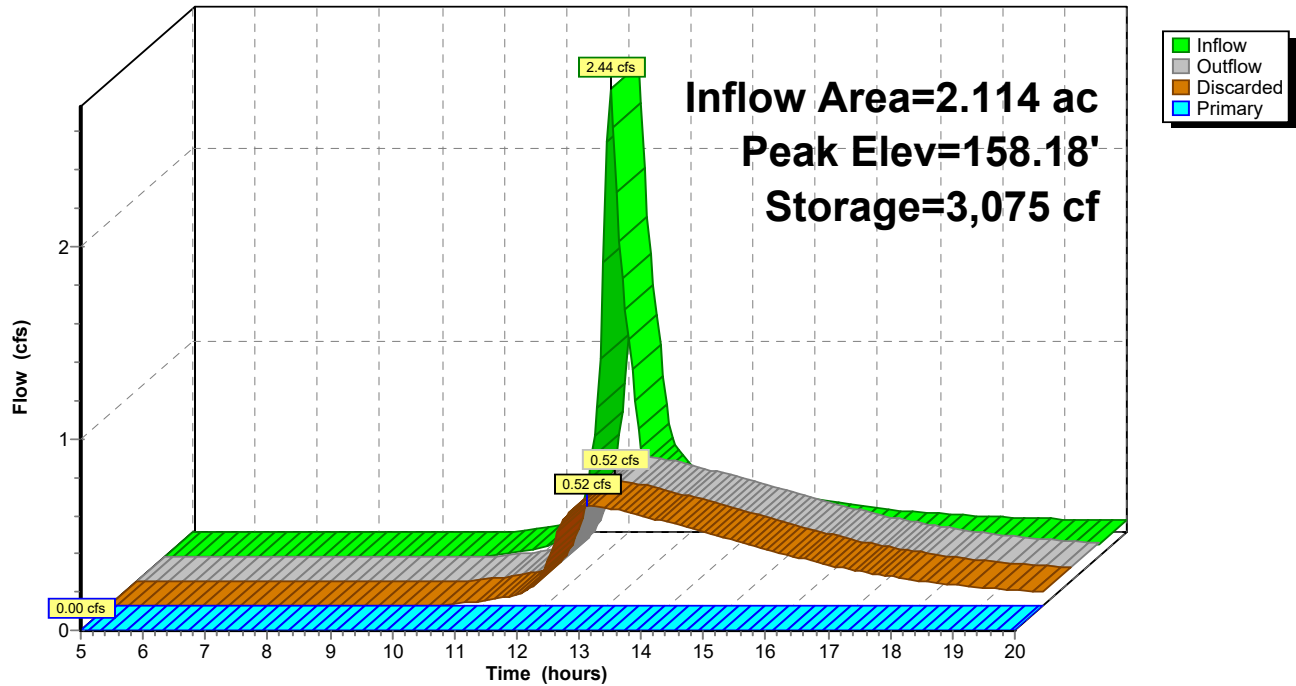
Type III 24-hr 2 year Rainfall=3.16"

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Pond 44P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 45P: (new Pond)

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth > 1.09" for 2 year event
 Inflow = 3.08 cfs @ 12.10 hrs, Volume= 0.213 af
 Outflow = 0.48 cfs @ 12.71 hrs, Volume= 0.208 af, Atten= 84%, Lag= 36.7 min
 Discarded = 0.48 cfs @ 12.71 hrs, Volume= 0.208 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 154.33' @ 12.71 hrs Surf.Area= 6,909 sf Storage= 3,637 cf

Plug-Flow detention time= 91.1 min calculated for 0.208 af (98% of inflow)
 Center-of-Mass det. time= 82.2 min (894.1 - 811.9)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	180,186 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	5,028	1,676	1,676	5,030
156.00	21,015	24,215	25,891	21,035
158.00	37,382	57,617	83,508	37,446
160.00	60,198	96,678	180,186	60,315

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	153.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.48 cfs @ 12.71 hrs HW=154.33' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.48 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=153.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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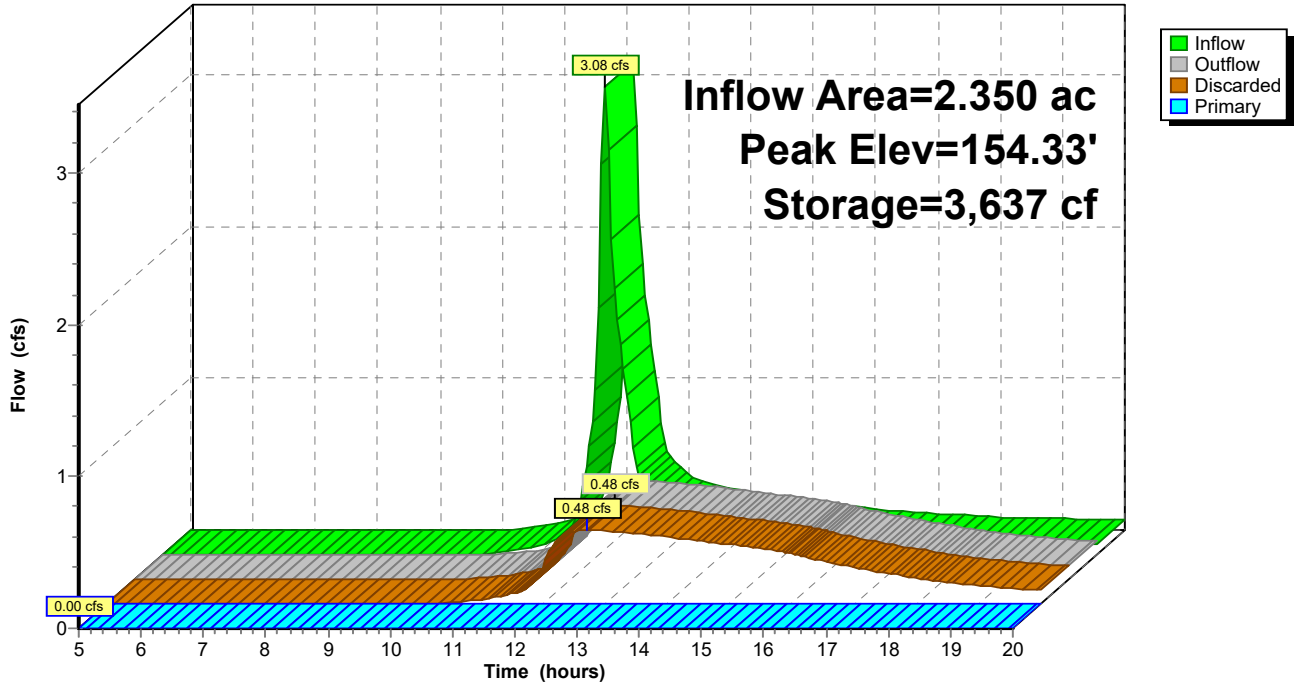
Type III 24-hr 2 year Rainfall=3.16"

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Pond 45P: (new Pond)

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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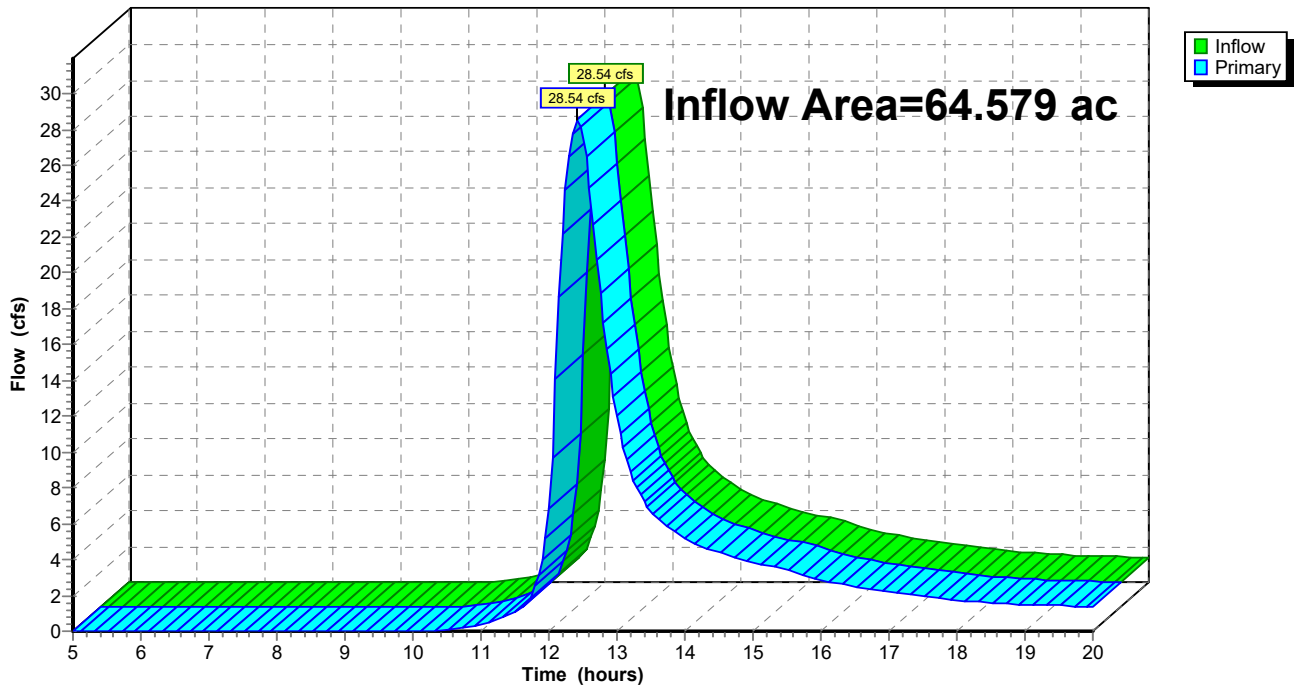
Summary for Link DP47: DP47

Inflow Area = 64.579 ac, 1.36% Impervious, Inflow Depth > 0.69" for 2 year event
Inflow = 28.54 cfs @ 12.42 hrs, Volume= 3.725 af
Primary = 28.54 cfs @ 12.42 hrs, Volume= 3.725 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP47: DP47

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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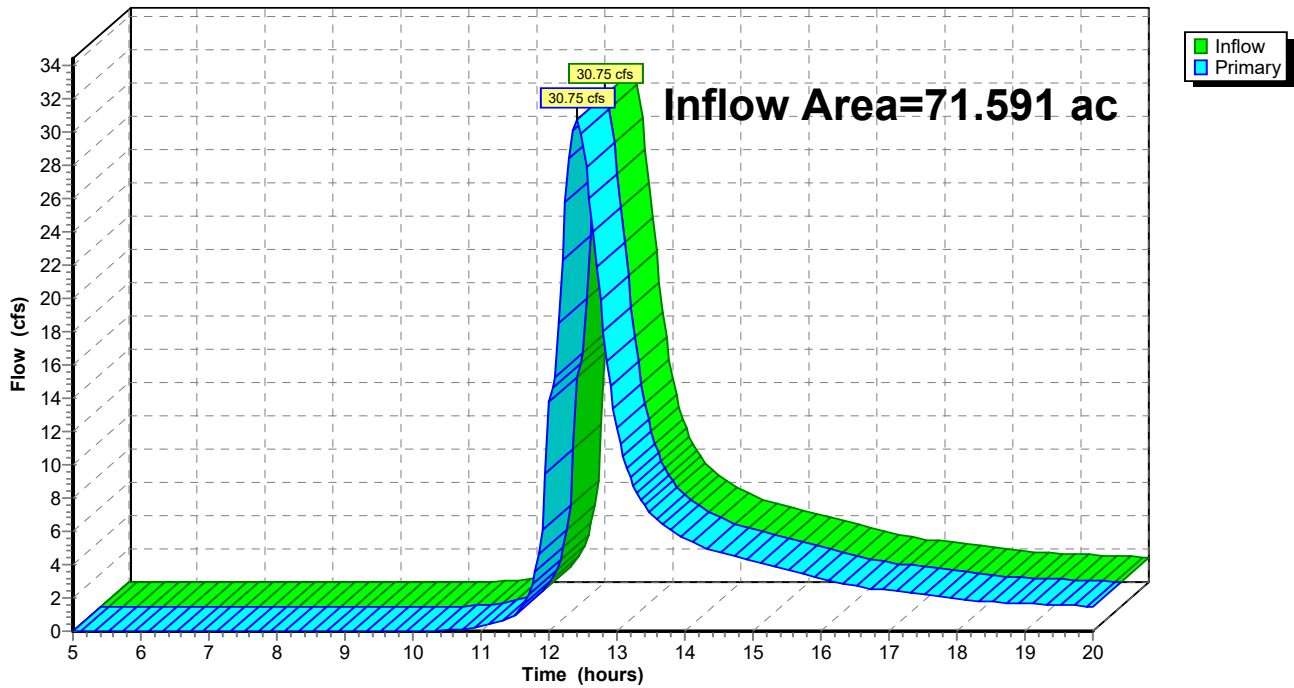
Summary for Link DP54: DP54

Inflow Area = 71.591 ac, 4.62% Impervious, Inflow Depth > 0.68" for 2 year event
Inflow = 30.75 cfs @ 12.41 hrs, Volume= 4.040 af
Primary = 30.75 cfs @ 12.41 hrs, Volume= 4.040 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP54: DP54

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 36: Subcat 36

Runoff = 21.99 cfs @ 12.39 hrs, Volume= 2.513 af, Depth> 3.47"

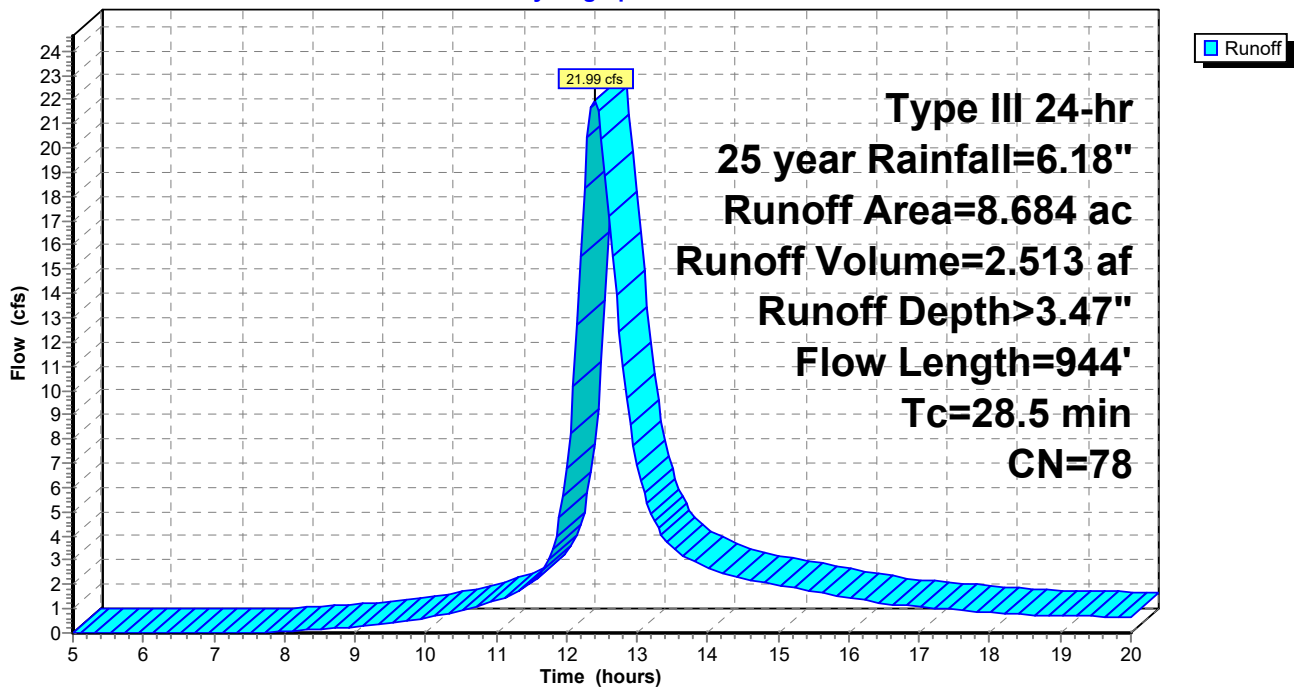
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.026	65	2 acre lots, 12% imp, HSG B
0.050	89	Paved roads w/open ditches, 50% imp, HSG B
8.608	78	Row crops, straight row, Good, HSG B
8.684	78	Weighted Average
8.656		99.67% Pervious Area
0.028		0.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.1	170	0.0059	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.1	724	0.0069	0.75		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.5	944	Total			

Subcatchment 36: Subcat 36

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 37: Subcat 37

Runoff = 3.76 cfs @ 12.21 hrs, Volume= 0.332 af, Depth> 3.49"

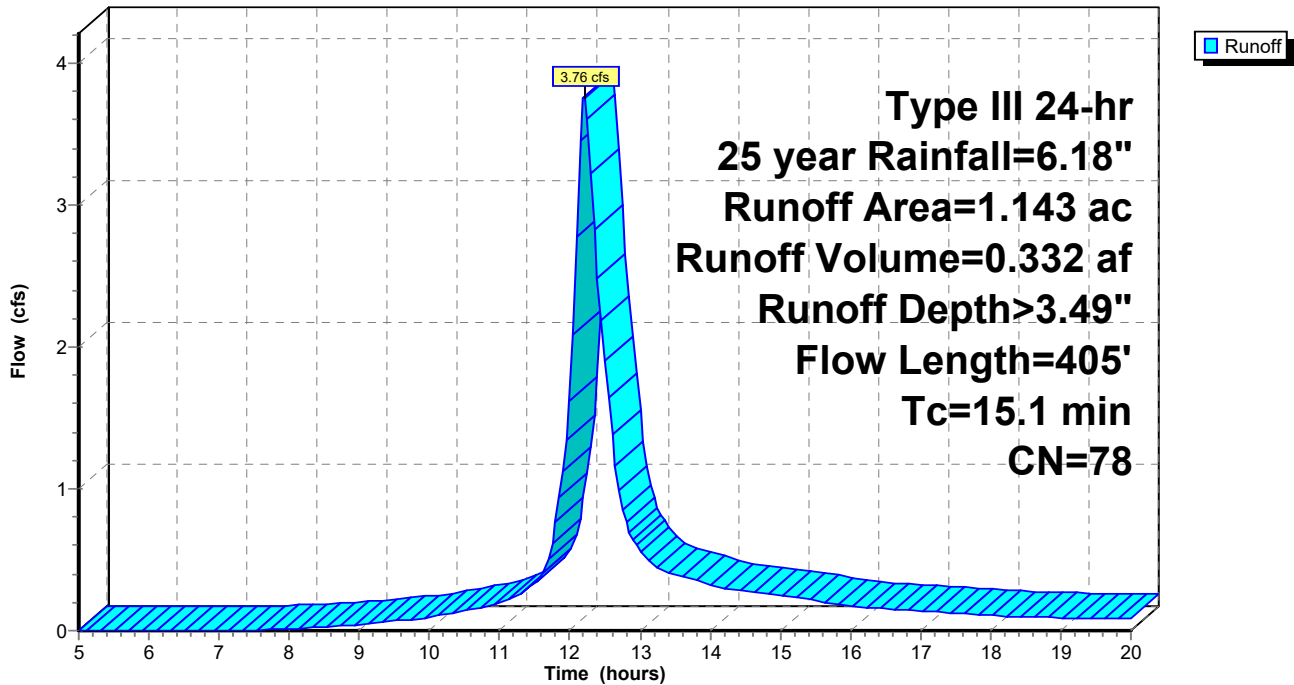
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.002	89	Paved roads w/open ditches, 50% imp, HSG B
1.140	78	Row crops, straight row, Good, HSG B
1.143	78	Weighted Average
1.142		99.90% Pervious Area
0.001		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
8.8	355	0.0056	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
15.1	405	Total			

Subcatchment 37: Subcat 37

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 38: Subcat 38

Runoff = 11.33 cfs @ 12.29 hrs, Volume= 1.138 af, Depth> 3.48"

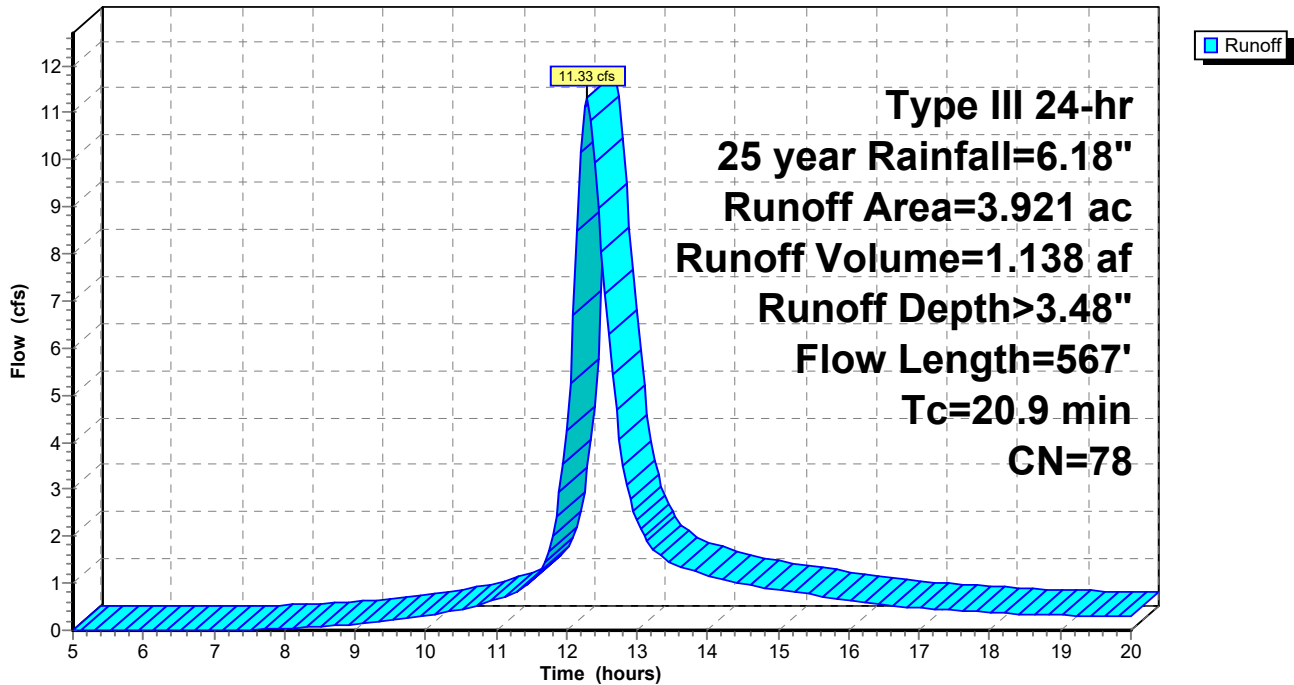
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
3.921	78	Row crops, straight row, Good, HSG B
3.921		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
12.6	517	0.0058	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.9	567	Total			

Subcatchment 38: Subcat 38

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 39: Subcat 39

Runoff = 6.58 cfs @ 12.15 hrs, Volume= 0.513 af, Depth> 3.01"

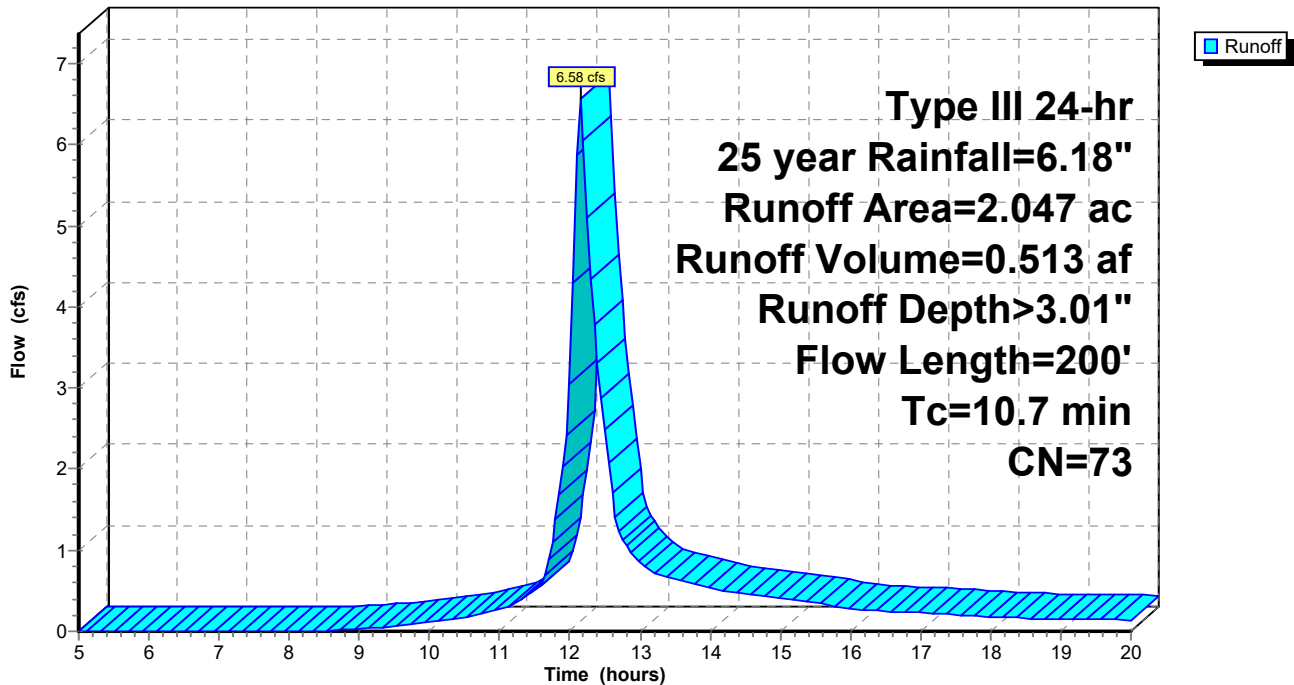
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.770	65	2 acre lots, 12% imp, HSG B
0.025	89	Paved roads w/open ditches, 50% imp, HSG B
1.252	78	Row crops, straight row, Good, HSG B
2.047	73	Weighted Average
1.942		94.89% Pervious Area
0.105		5.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
2.4	150	0.0133	1.04		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
10.7	200	Total			

Subcatchment 39: Subcat 39

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 40: Subcat 40

Runoff = 1.60 cfs @ 12.15 hrs, Volume= 0.124 af, Depth> 2.28"

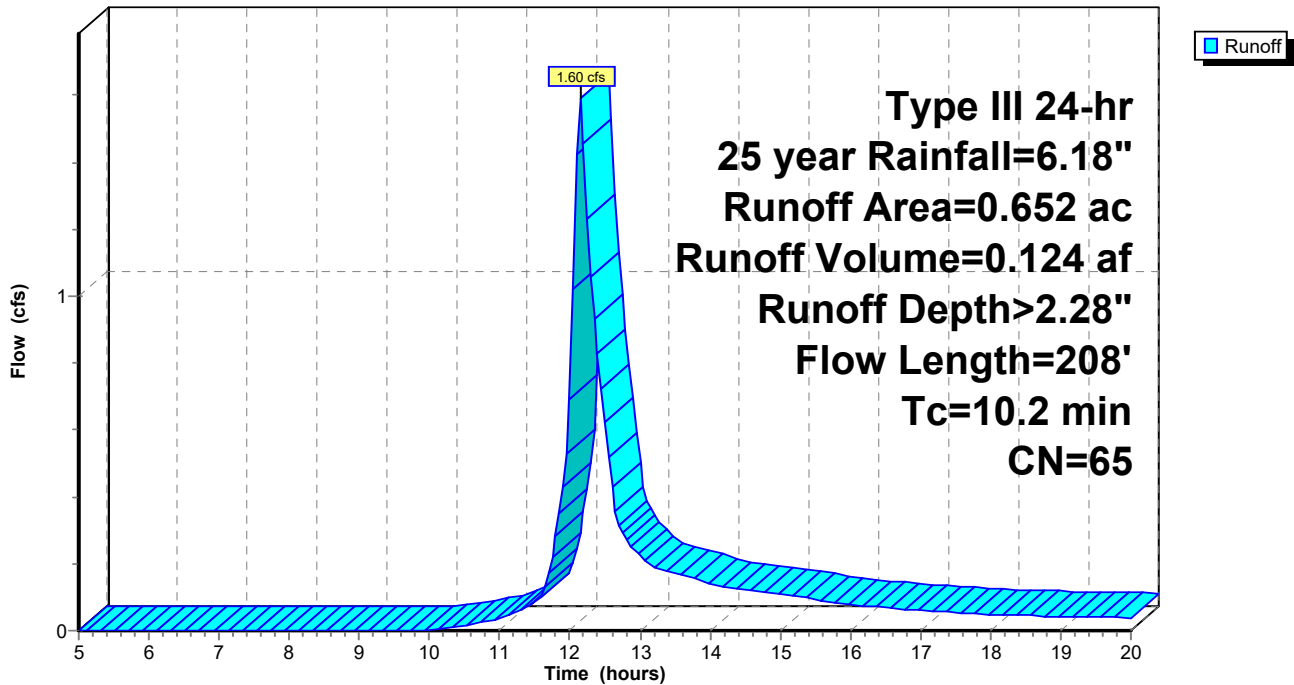
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.008	46	2 acre lots, 12% imp, HSG A
0.644	65	2 acre lots, 12% imp, HSG B
0.652	65	Weighted Average
0.574		88.00% Pervious Area
0.078		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.7	158	0.0190	0.96		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	208	Total			

Subcatchment 40: Subcat 40

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 41: Subcat 41

Runoff = 2.14 cfs @ 12.14 hrs, Volume= 0.163 af, Depth> 2.20"

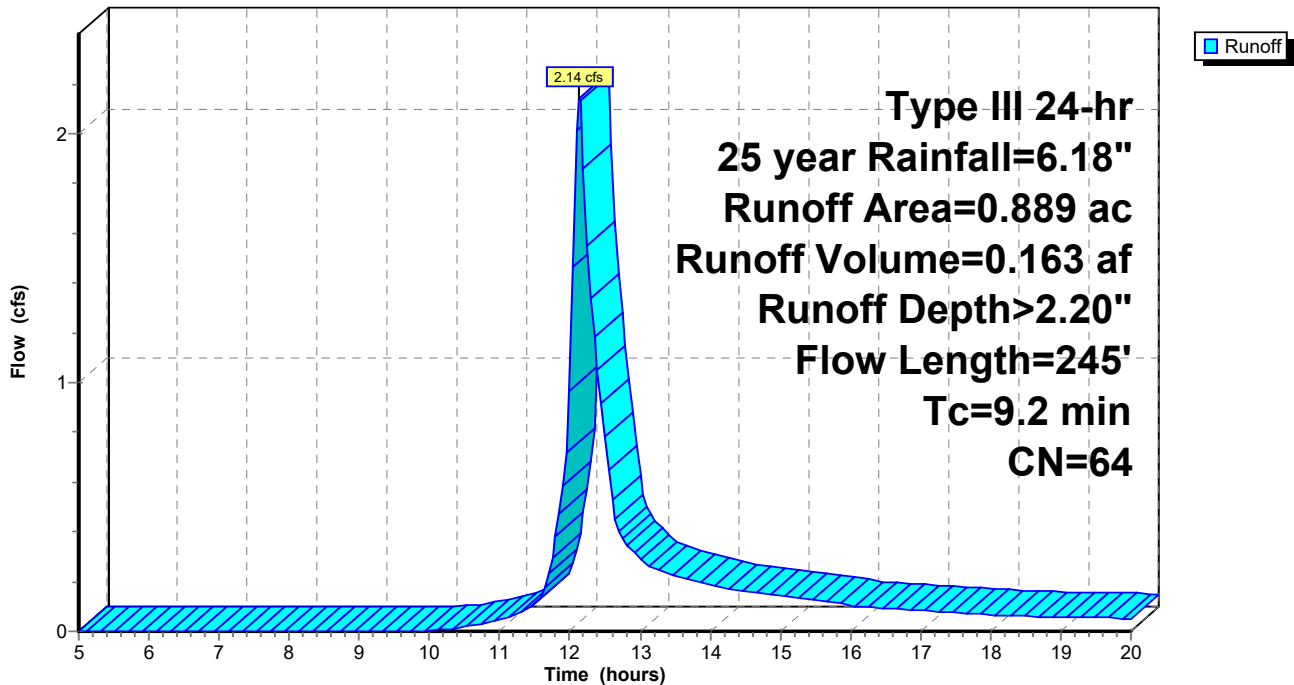
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.110	46	2 acre lots, 12% imp, HSG A
0.684	65	2 acre lots, 12% imp, HSG B
0.094	78	Row crops, straight row, Good, HSG B
0.889	64	Weighted Average
0.793		89.27% Pervious Area
0.095		10.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
2.9	195	0.0256	1.12		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	245	Total			

Subcatchment 41: Subcat 41

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 42: Subcat 42

Runoff = 4.10 cfs @ 12.20 hrs, Volume= 0.351 af, Depth> 2.28"

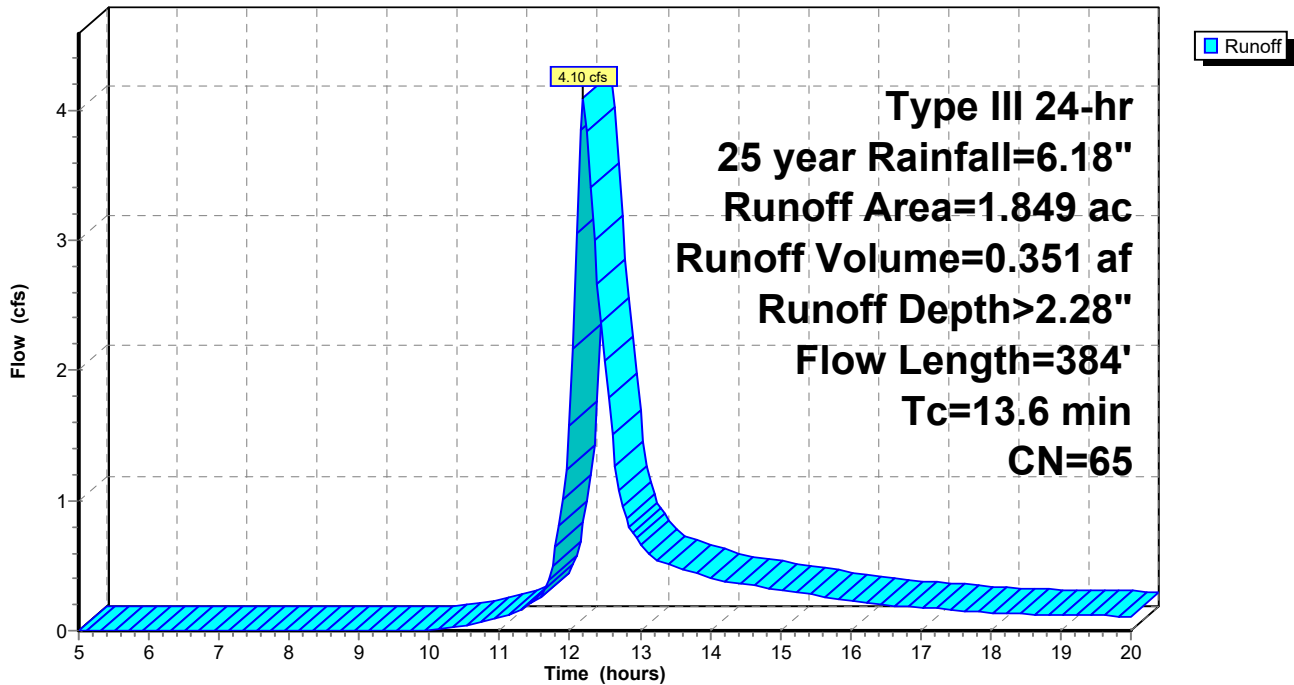
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.277	46	2 acre lots, 12% imp, HSG A
0.912	65	2 acre lots, 12% imp, HSG B
0.572	78	Row crops, straight row, Good, HSG B
0.088	36	Woods, Fair, HSG A
1.849	65	Weighted Average
1.706		92.28% Pervious Area
0.143		7.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.3	334	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.6	384	Total			

Subcatchment 42: Subcat 42

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 43: Subcat 43

Runoff = 1.82 cfs @ 12.21 hrs, Volume= 0.161 af, Depth> 2.11"

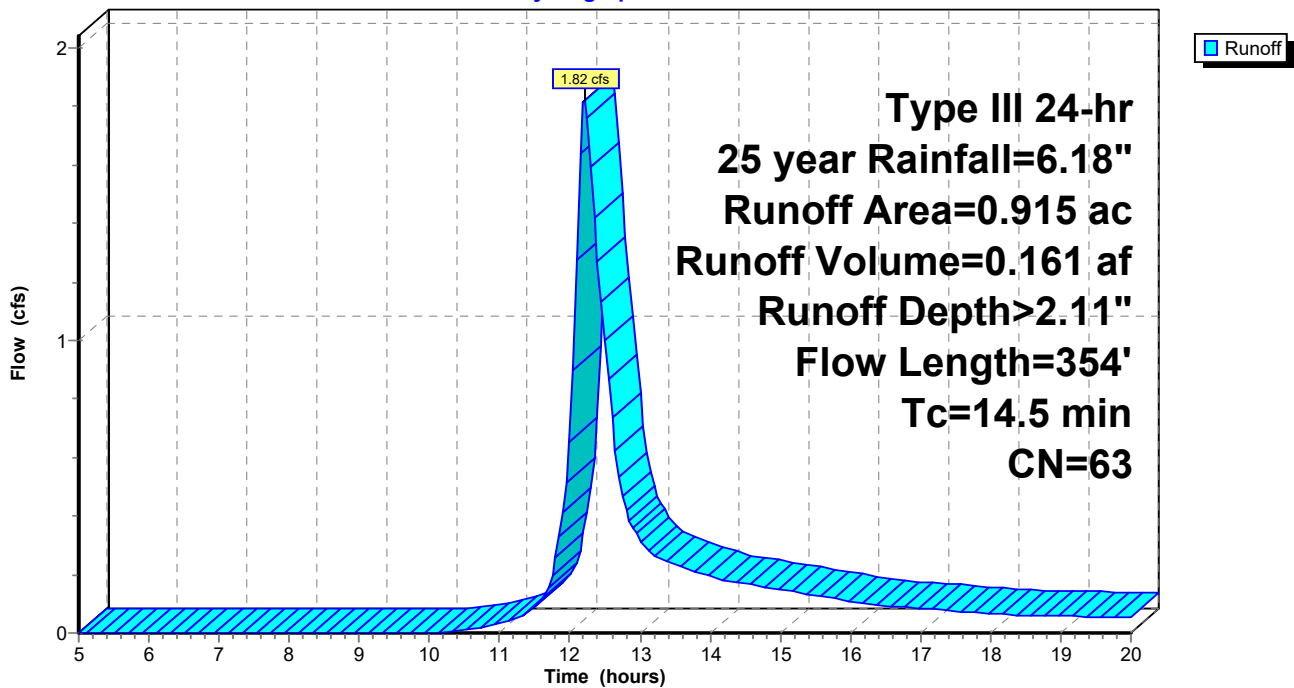
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.058	46	2 acre lots, 12% imp, HSG A
0.539	65	2 acre lots, 12% imp, HSG B
0.190	78	Row crops, straight row, Good, HSG B
0.121	36	Woods, Fair, HSG A
0.008	60	Woods, Fair, HSG B
0.915	63	Weighted Average
0.843		92.17% Pervious Area
0.072		7.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.2	304	0.0082	0.81		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
14.5	354	Total			

Subcatchment 43: Subcat 43

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 44: Subcat 44

Runoff = 7.74 cfs @ 12.15 hrs, Volume= 0.598 af, Depth> 3.39"

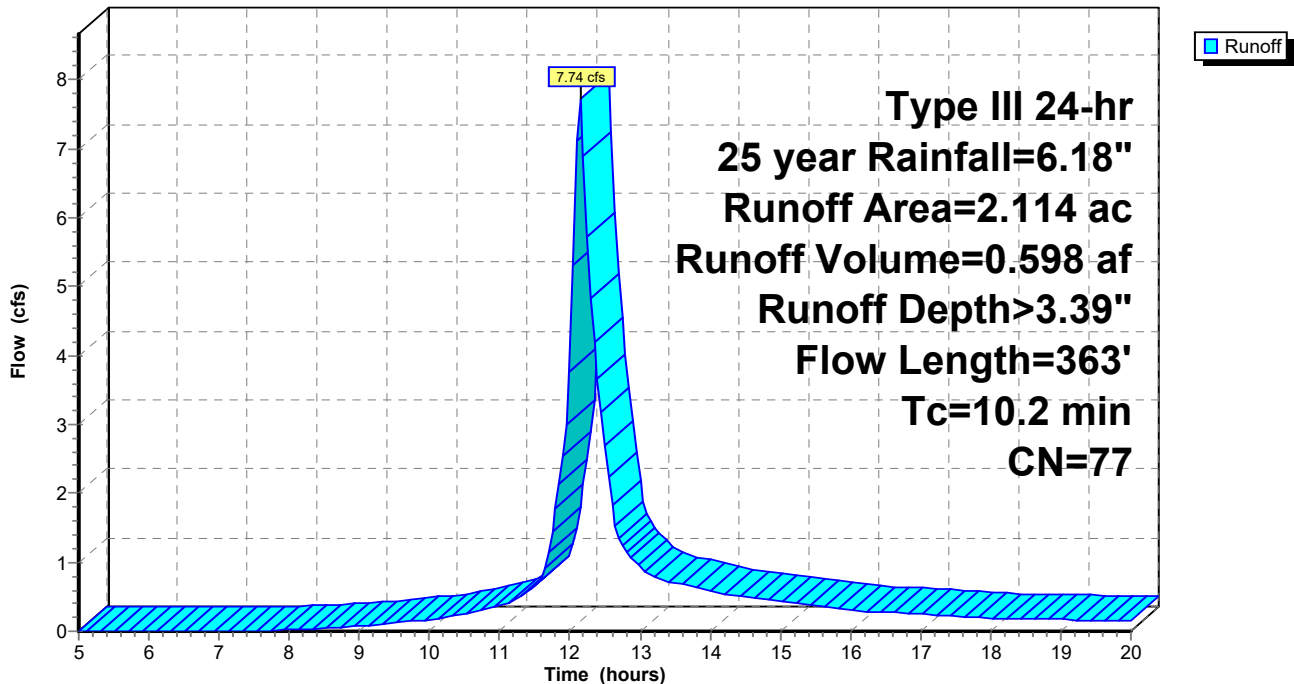
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.164	67	Row crops, straight row, Good, HSG A
1.950	78	Row crops, straight row, Good, HSG B
2.114	77	Weighted Average
2.114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.4	313	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	363	Total			

Subcatchment 44: Subcat 44

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 45: Subcat 45

Runoff = 9.72 cfs @ 12.10 hrs, Volume= 0.666 af, Depth> 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

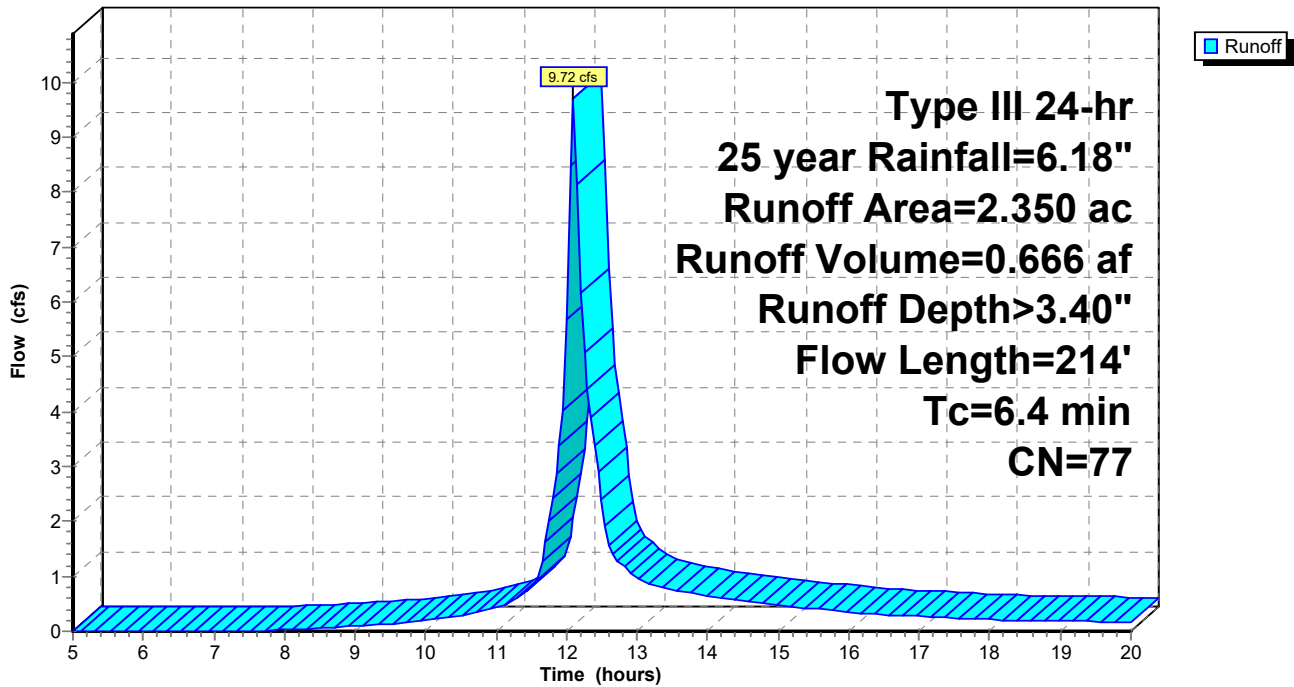
Area (ac)	CN	Description
0.248	67	Row crops, straight row, Good, HSG A
2.102	78	Row crops, straight row, Good, HSG B
2.350	77	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.6	164	0.0610	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps

6.4 214 Total

Subcatchment 45: Subcat 45

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 46: Subcat 46

Runoff = 10.76 cfs @ 12.16 hrs, Volume= 0.866 af, Depth> 3.39"

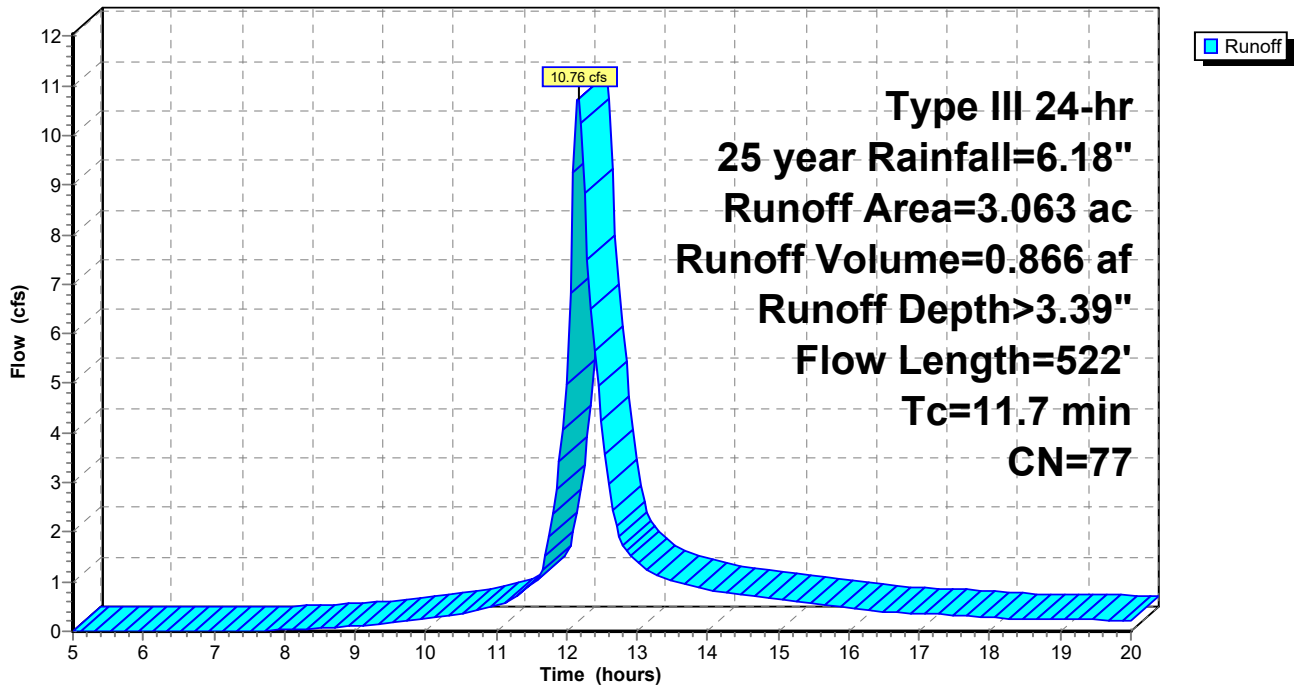
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.094	67	Row crops, straight row, Good, HSG A
2.903	78	Row crops, straight row, Good, HSG B
0.006	36	Woods, Fair, HSG A
0.060	60	Woods, Fair, HSG B
3.063	77	Weighted Average
3.063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	472	0.0233	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.7	522	Total			

Subcatchment 46: Subcat 46

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 47: Subcat 47

Runoff = 5.70 cfs @ 12.20 hrs, Volume= 0.507 af, Depth> 1.62"

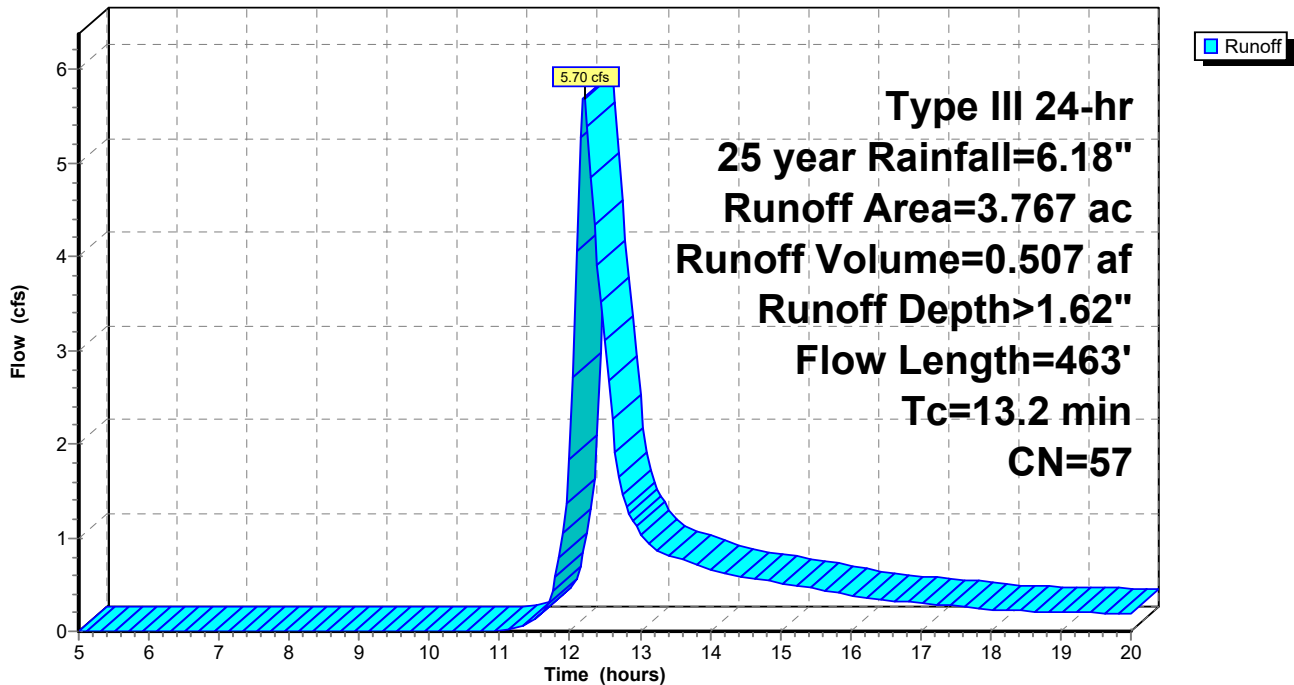
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.159	67	Row crops, straight row, Good, HSG A
1.564	78	Row crops, straight row, Good, HSG B
1.674	36	Woods, Fair, HSG A
0.369	60	Woods, Fair, HSG B
3.767	57	Weighted Average
3.767		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.9	413	0.0242	1.40		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.2	463	Total			

Subcatchment 47: Subcat 47

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 48: Subcat 48

Runoff = 11.23 cfs @ 12.18 hrs, Volume= 0.938 af, Depth> 2.11"

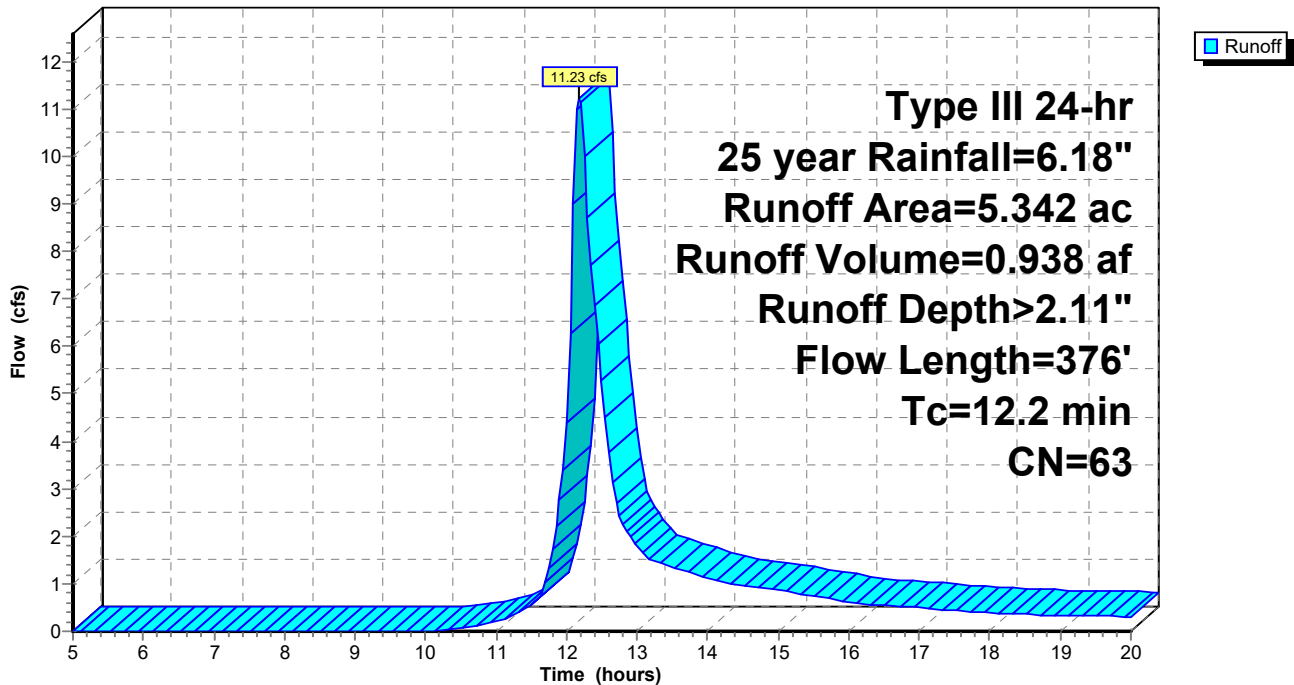
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.054	67	Row crops, straight row, Good, HSG A
3.042	78	Row crops, straight row, Good, HSG B
1.638	36	Woods, Fair, HSG A
0.608	60	Woods, Fair, HSG B
5.342	63	Weighted Average
5.342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
3.9	326	0.0245	1.41		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
12.2	376	Total			

Subcatchment 48: Subcat 48

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 49: Subcat 49

Runoff = 6.88 cfs @ 12.20 hrs, Volume= 0.587 af, Depth> 2.19"

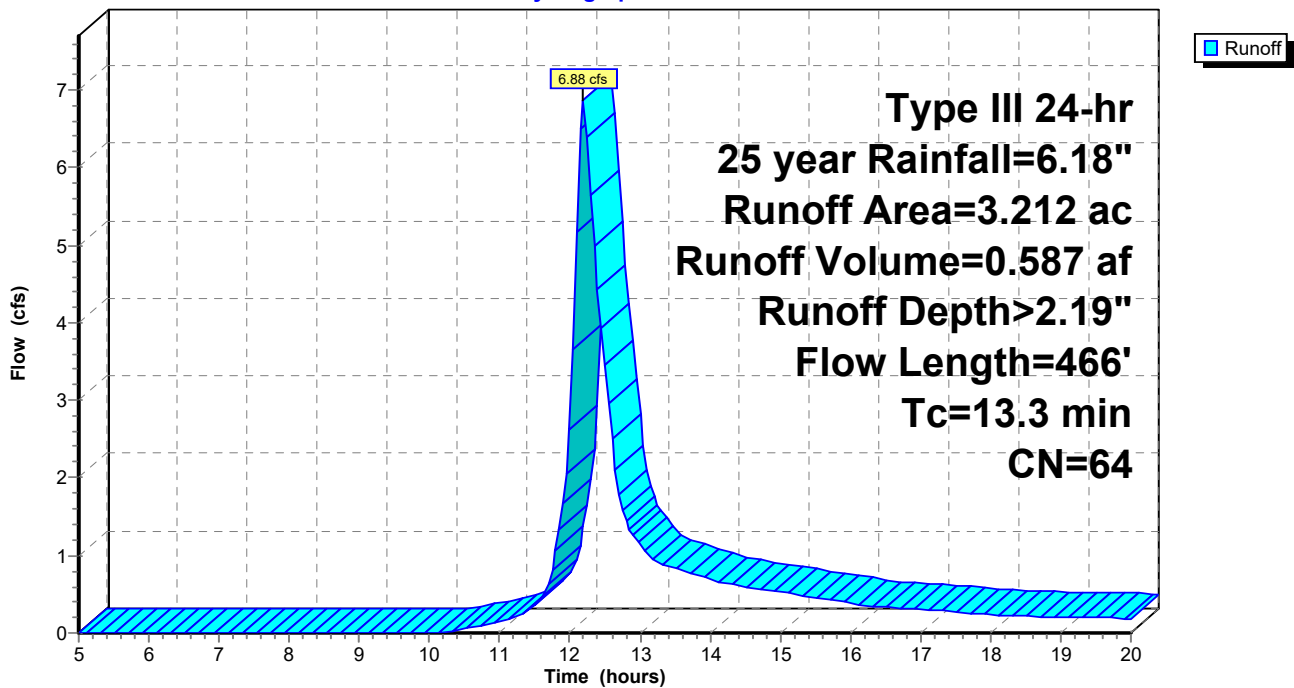
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.656	98	Roofs, HSG B
0.016	67	Row crops, straight row, Good, HSG A
1.136	78	Row crops, straight row, Good, HSG B
1.330	36	Woods, Fair, HSG A
0.074	60	Woods, Fair, HSG B
3.212	64	Weighted Average
2.556		79.59% Pervious Area
0.656		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.0	416	0.0120	0.99		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.3	466	Total			

Subcatchment 49: Subcat 49

Hydrograph



Existing Conditions - South Plantation

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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 50: Subcat 50

Runoff = 17.85 cfs @ 12.19 hrs, Volume= 1.510 af, Depth> 2.45"

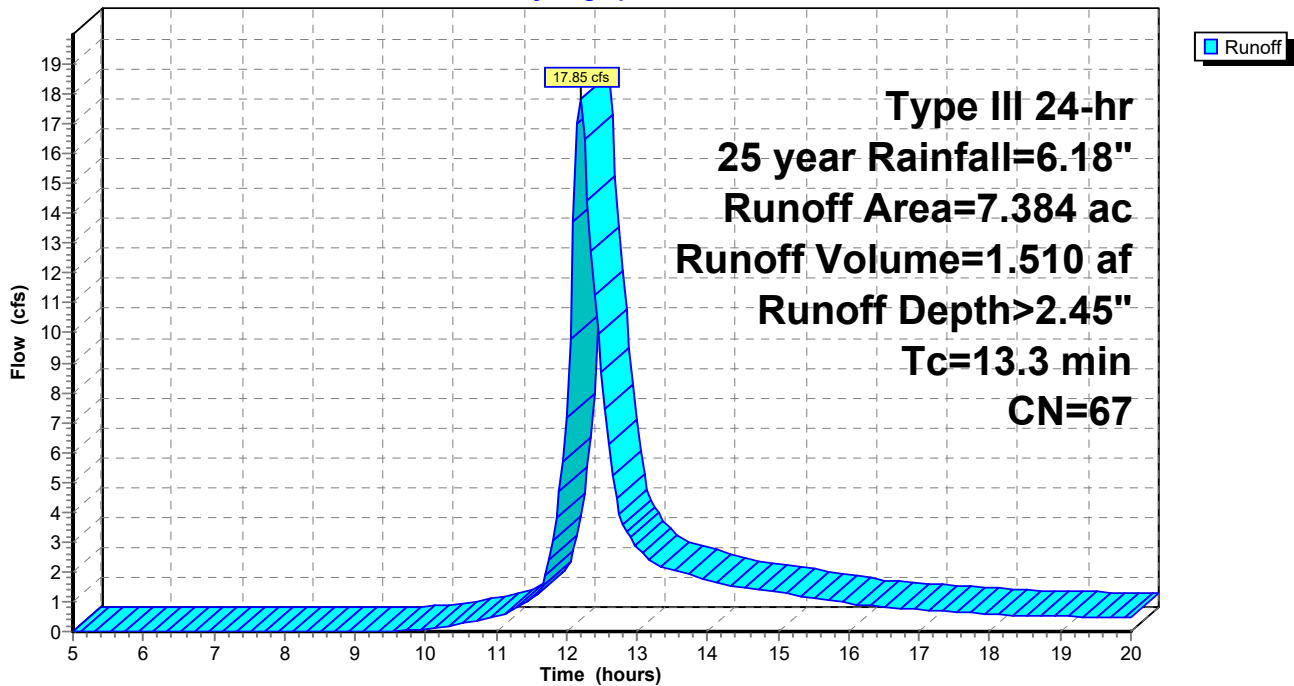
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
4.996	78	Row crops, straight row, Good, HSG B
1.655	36	Woods, Fair, HSG A
0.733	60	Woods, Fair, HSG B
7.384	67	Weighted Average
7.384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3					Direct Entry,

Subcatchment 50: Subcat 50

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 51: Subcat 51

Runoff = 63.05 cfs @ 12.46 hrs, Volume= 7.735 af, Depth> 3.37"

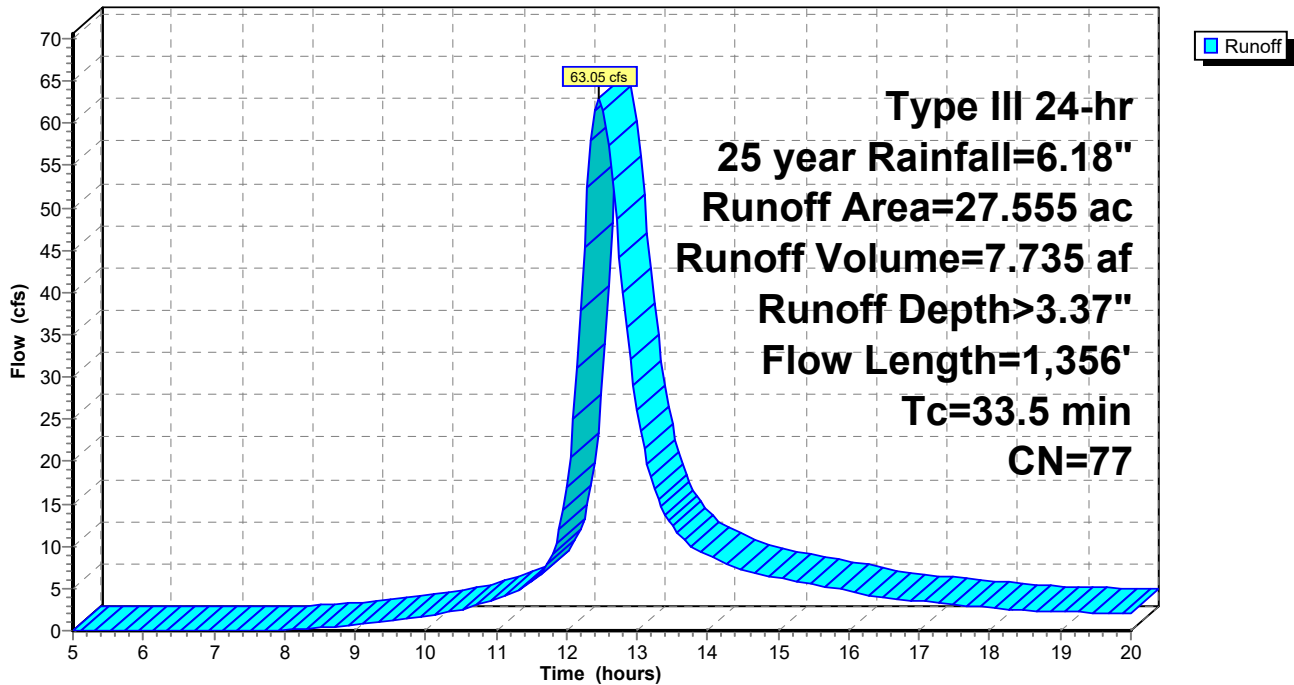
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.980	65	2 acre lots, 12% imp, HSG B
25.329	78	Row crops, straight row, Good, HSG B
0.074	36	Woods, Fair, HSG A
1.172	60	Woods, Fair, HSG B
27.555	77	Weighted Average
27.437		99.57% Pervious Area
0.118		0.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
25.2	1,306	0.0092	0.86		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.5	1,356	Total			

Subcatchment 51: Subcat 51

Hydrograph



Existing Conditions - South Plantation

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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 53: Subcat 53

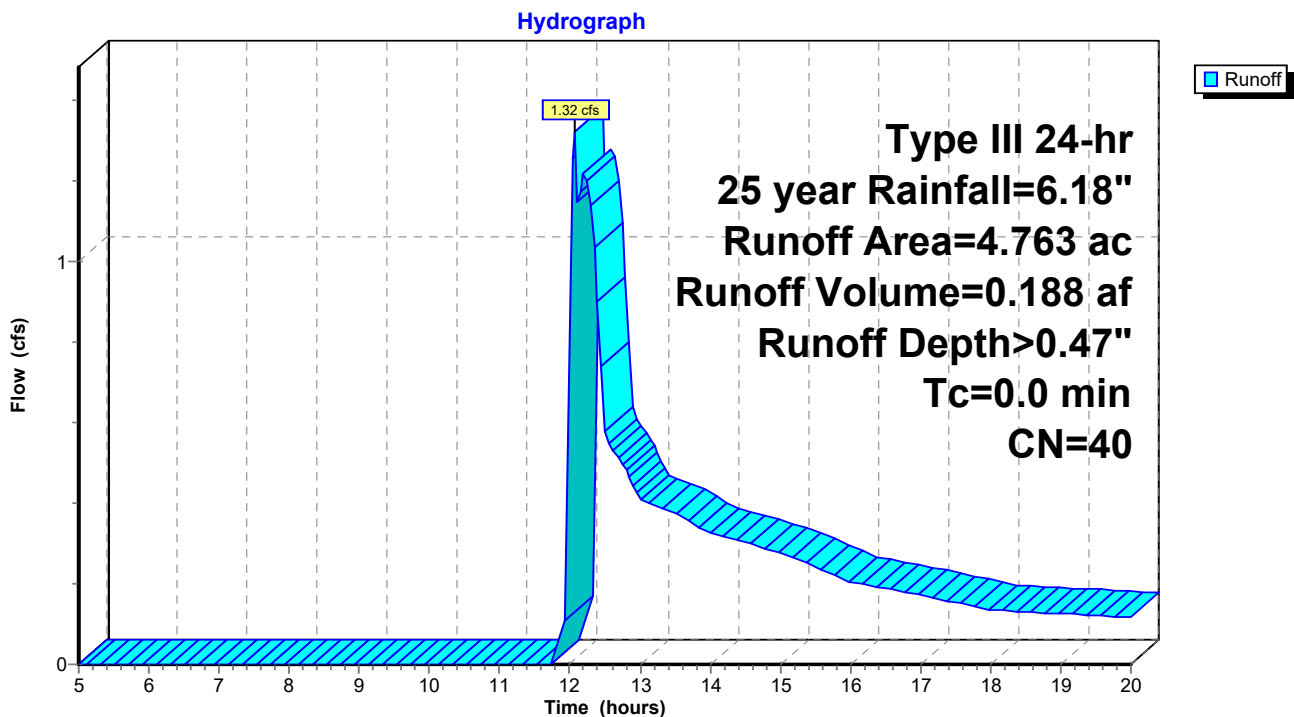
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.32 cfs @ 12.07 hrs, Volume= 0.188 af, Depth> 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.120	46	2 acre lots, 12% imp, HSG A
0.419	65	2 acre lots, 12% imp, HSG B
3.953	36	Woods, Fair, HSG A
0.271	60	Woods, Fair, HSG B
4.763	40	Weighted Average
4.698		98.64% Pervious Area
0.065		1.36% Impervious Area

Subcatchment 53: Subcat 53



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 54: Subcat 54

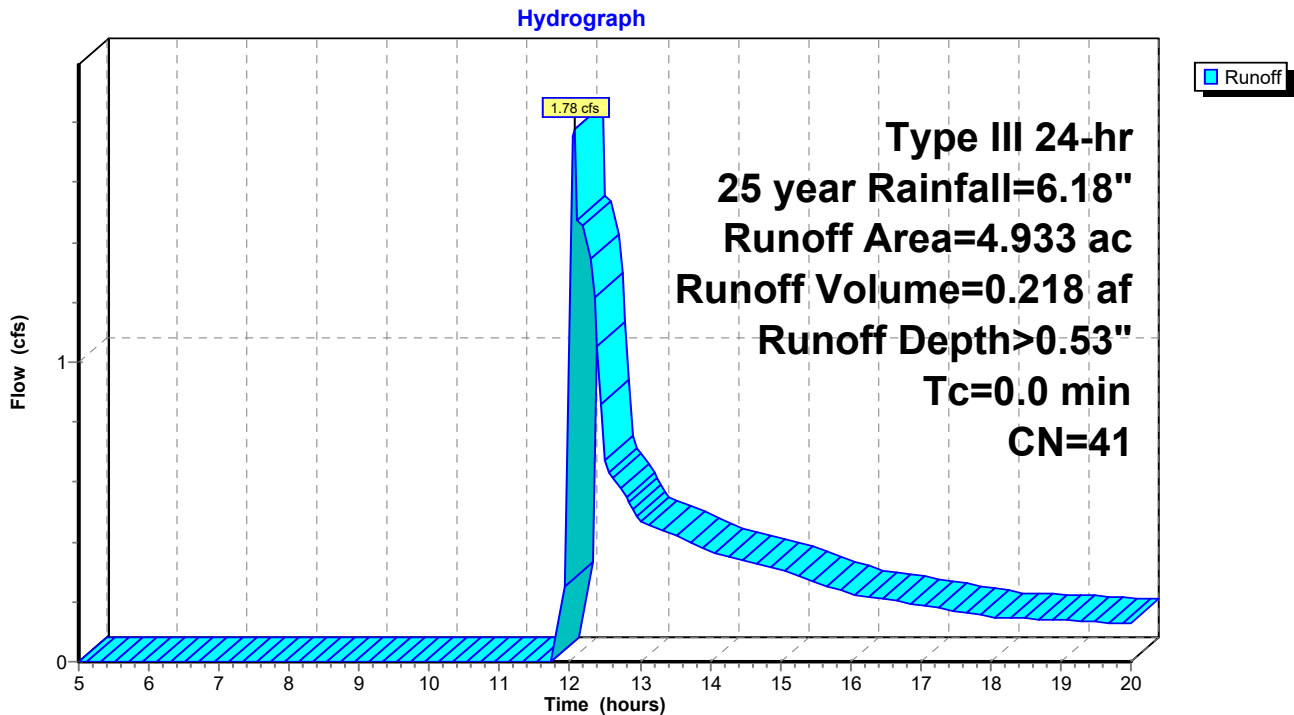
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.78 cfs @ 12.06 hrs, Volume= 0.218 af, Depth> 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.060	65	2 acre lots, 12% imp, HSG B
3.830	36	Woods, Fair, HSG A
1.042	60	Woods, Fair, HSG B
4.933	41	Weighted Average
4.925		99.85% Pervious Area
0.007		0.15% Impervious Area

Subcatchment 54: Subcat 54



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 55: Subcat 55

Runoff = 7.20 cfs @ 12.28 hrs, Volume= 0.713 af, Depth> 3.19"

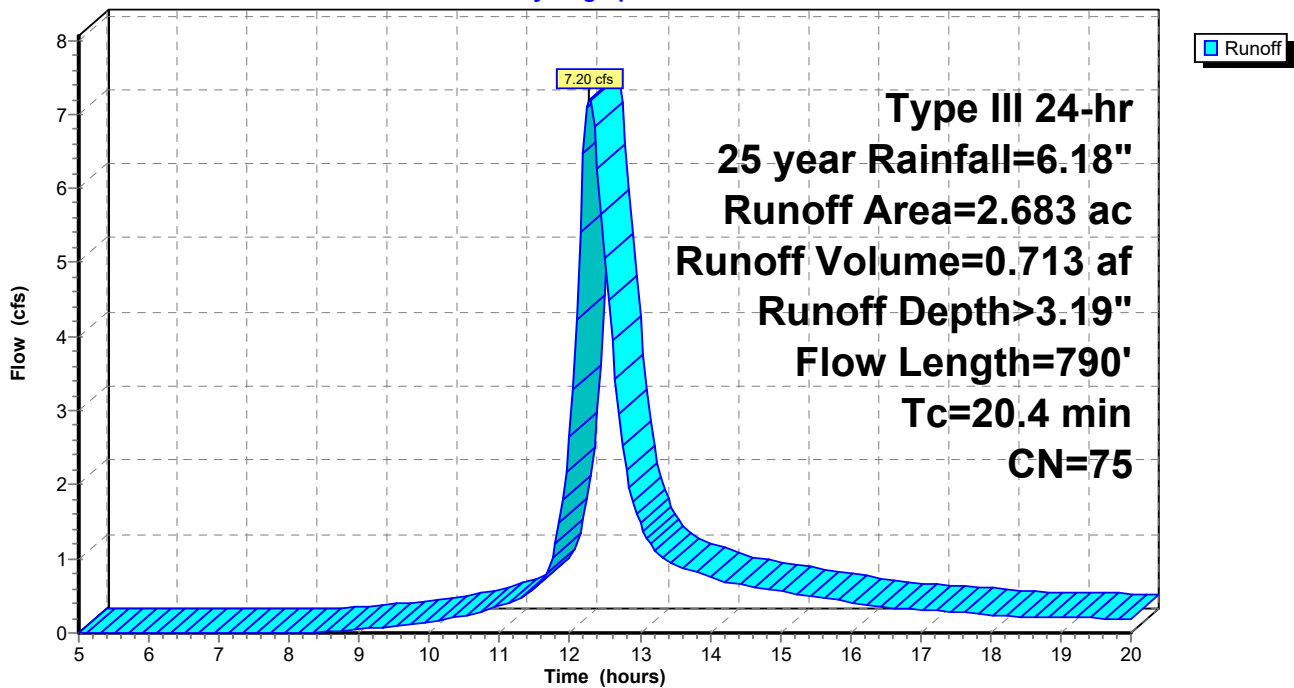
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.134	67	Row crops, straight row, Good, HSG A
2.236	78	Row crops, straight row, Good, HSG B
0.094	36	Woods, Fair, HSG A
0.219	60	Woods, Fair, HSG B
2.683	75	Weighted Average
2.683		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.9	216	0.0046	0.61		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
6.2	524	0.0248	1.42		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.4	790	Total			

Subcatchment 55: Subcat 55

Hydrograph



Existing Conditions - South Plantation

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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 56: Subcat 56

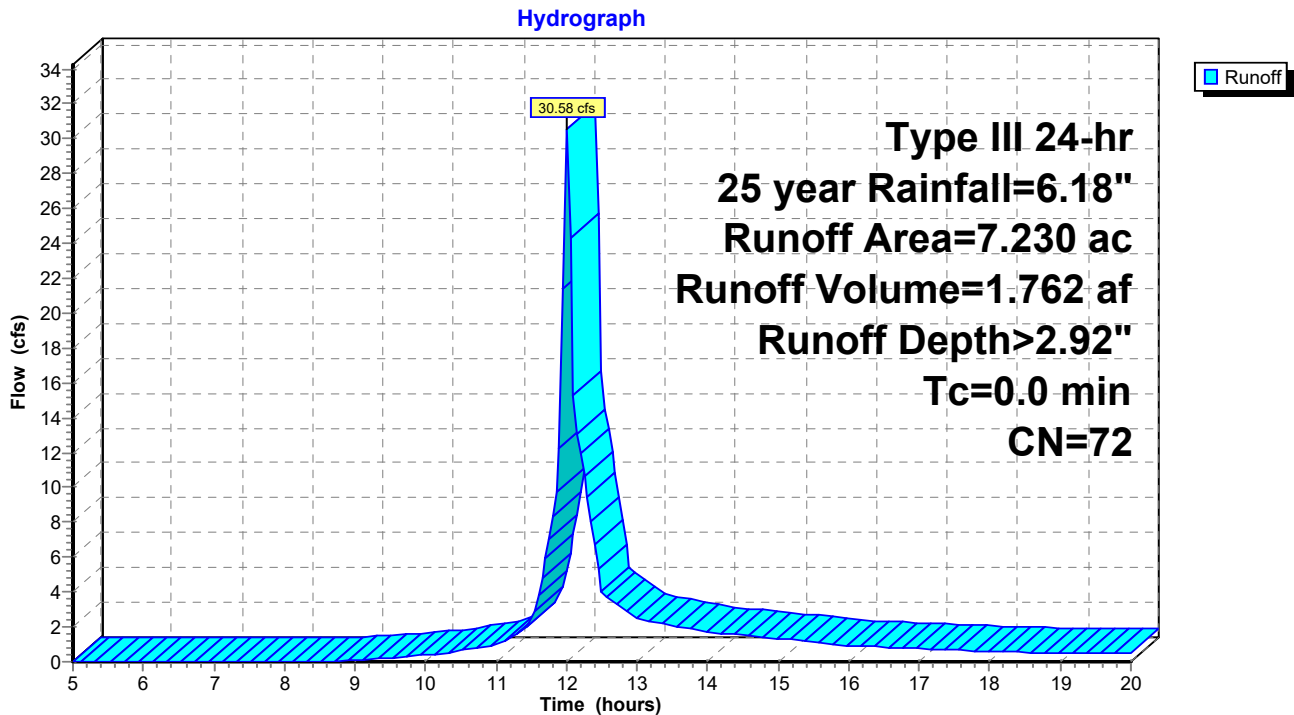
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 30.58 cfs @ 12.00 hrs, Volume= 1.762 af, Depth> 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.023	46	2 acre lots, 12% imp, HSG A
1.325	65	2 acre lots, 12% imp, HSG B
4.694	78	Row crops, straight row, Good, HSG B
0.051	36	Woods, Fair, HSG A
1.137	60	Woods, Fair, HSG B
7.230	72	Weighted Average
7.069		97.76% Pervious Area
0.162		2.24% Impervious Area

Subcatchment 56: Subcat 56



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 57: Subcat 57

Runoff = 14.71 cfs @ 12.23 hrs, Volume= 1.335 af, Depth> 2.81"

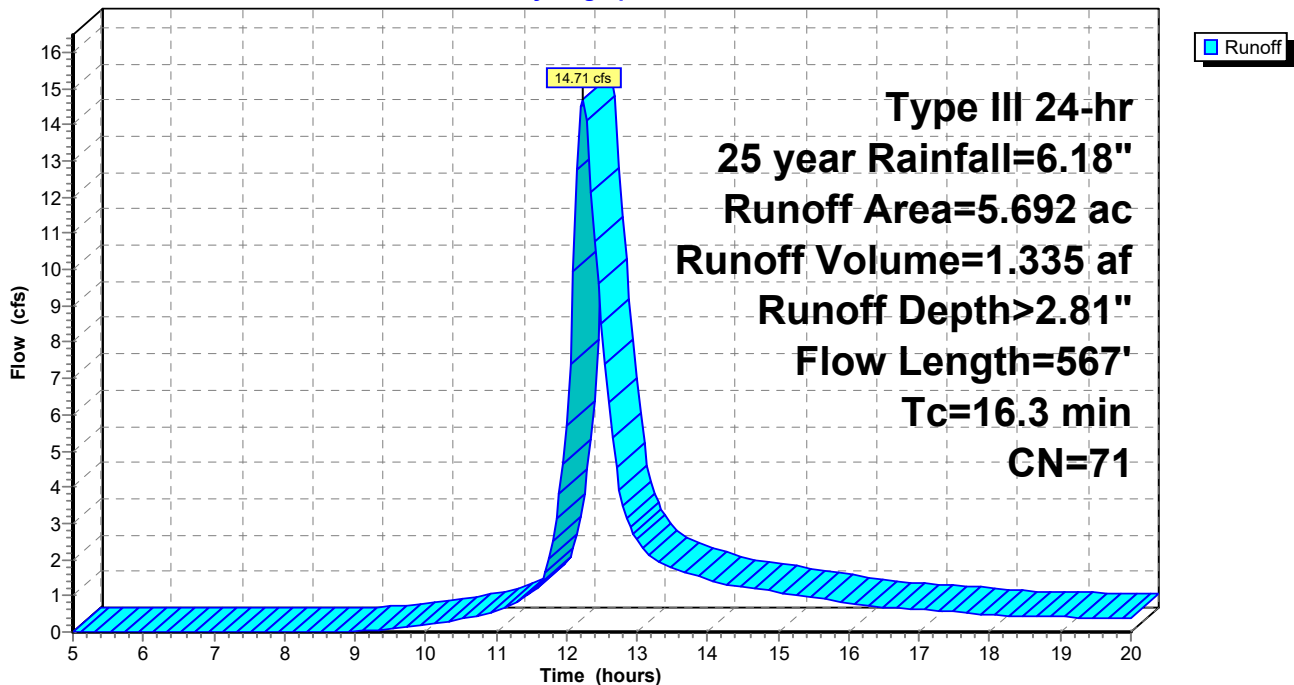
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.118	46	2 acre lots, 12% imp, HSG A
1.112	65	2 acre lots, 12% imp, HSG B
3.513	78	Row crops, straight row, Good, HSG B
0.138	36	Woods, Fair, HSG A
0.811	60	Woods, Fair, HSG B
5.692	71	Weighted Average
5.544		97.41% Pervious Area
0.148		2.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.7	266	0.0075	0.78		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.3	251	0.0398	1.80		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.3	567	Total			

Subcatchment 57: Subcat 57

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 58: Subcat 58

Runoff = 1.86 cfs @ 12.26 hrs, Volume= 0.212 af, Depth> 0.89"

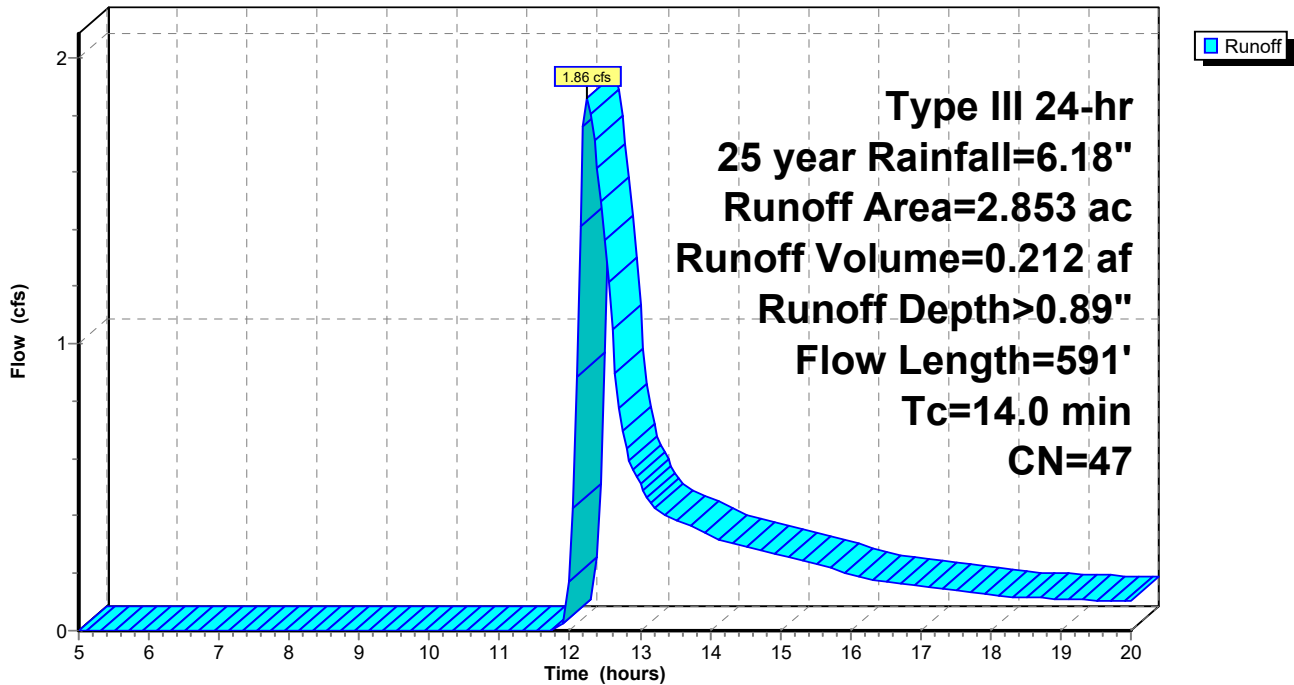
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.110	46	2 acre lots, 12% imp, HSG A
1.060	65	2 acre lots, 12% imp, HSG B
1.673	36	Woods, Fair, HSG A
0.010	60	Woods, Fair, HSG B
2.853	47	Weighted Average
2.712		95.08% Pervious Area
0.140		4.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.3	541	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	591	Total			

Subcatchment 58: Subcat 58

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 59: Subcat 59

Runoff = 2.78 cfs @ 12.22 hrs, Volume= 0.302 af, Depth> 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.853	46	2 acre lots, 12% imp, HSG A
0.589	65	2 acre lots, 12% imp, HSG B
0.000	67	Row crops, straight row, Good, HSG A
0.285	78	Row crops, straight row, Good, HSG B
2.075	36	Woods, Fair, HSG A
0.270	60	Woods, Fair, HSG B
4.073	47	Weighted Average
3.899		95.75% Pervious Area
0.173		4.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	221	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1333	2.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	316	Total			

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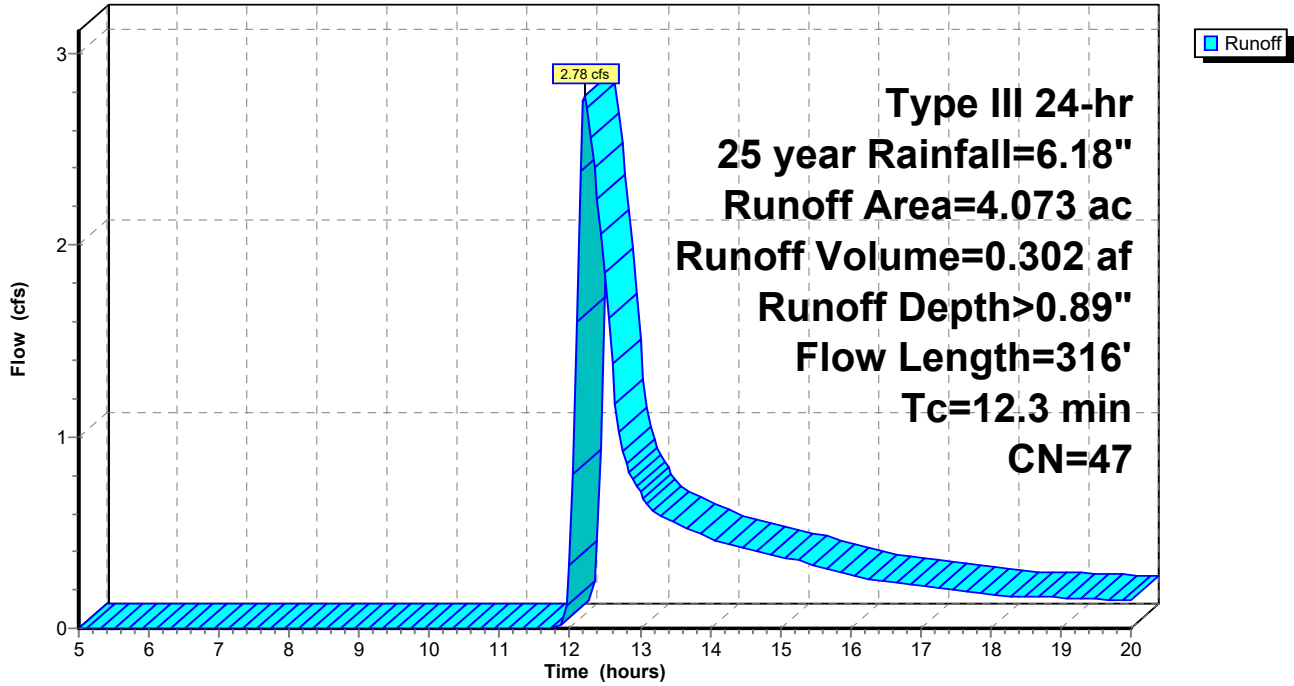
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 59: Subcat 59

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 60: Subcat 60

Runoff = 17.62 cfs @ 12.45 hrs, Volume= 2.136 af, Depth> 3.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.099	46	2 acre lots, 12% imp, HSG A
0.385	65	2 acre lots, 12% imp, HSG B
1.600	98	Roofs, HSG B
4.709	78	Row crops, straight row, Good, HSG B
0.482	36	Woods, Fair, HSG A
0.114	60	Woods, Fair, HSG B
7.389	78	Weighted Average
5.731		77.56% Pervious Area
1.658		22.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
23.1	855	0.0047	0.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.0	98	0.0510	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.4	1,003	Total			

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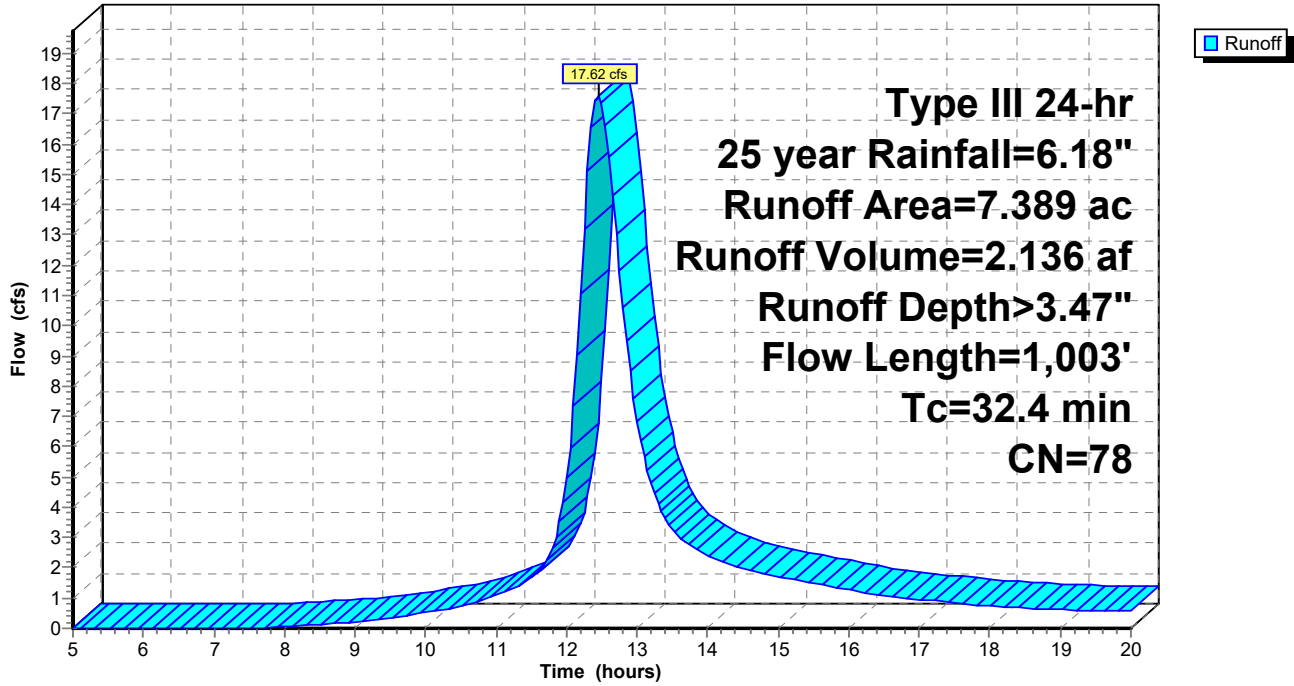
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 60: Subcat 60

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 62: Subcat 62

Runoff = 48.90 cfs @ 12.42 hrs, Volume= 5.649 af, Depth> 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.002	0	, HSG A
* 0.001	0	, HSG B
0.233	46	2 acre lots, 12% imp, HSG A
7.452	65	2 acre lots, 12% imp, HSG B
0.010	89	Paved roads w/open ditches, 50% imp, HSG B
14.386	78	Row crops, straight row, Good, HSG B
1.590	36	Woods, Fair, HSG A
0.529	60	Woods, Fair, HSG B
24.202	71	Weighted Average
23.275		96.17% Pervious Area
0.927		3.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
12.2	757	0.0132	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.1	481	0.0312	0.88		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
29.6	1,288	Total			

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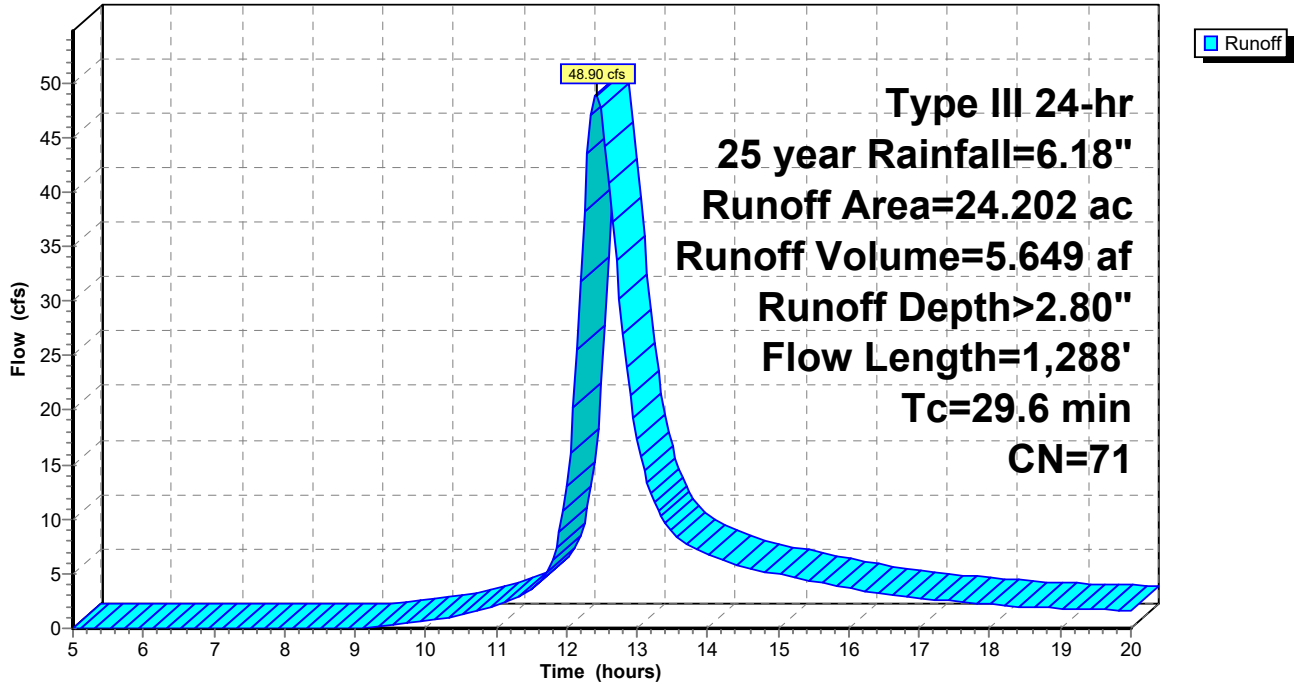
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 62: Subcat 62

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 64: Subcat 64

Runoff = 4.32 cfs @ 12.21 hrs, Volume= 0.376 af, Depth> 2.54"

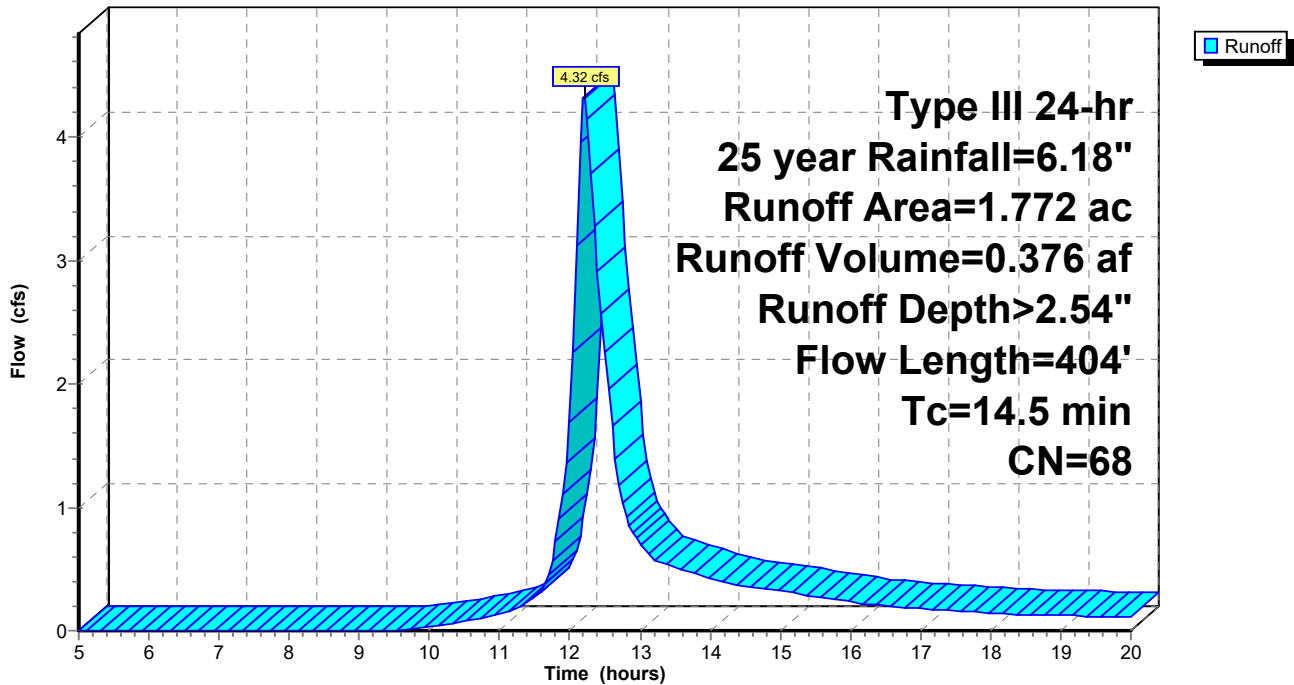
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.012	46	2 acre lots, 12% imp, HSG A
0.294	67	Row crops, straight row, Good, HSG A
1.126	78	Row crops, straight row, Good, HSG B
0.340	36	Woods, Fair, HSG A
1.772	68	Weighted Average
1.771		99.92% Pervious Area
0.001		0.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.2	354	0.0113	0.96		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
14.5	404	Total			

Subcatchment 64: Subcat 64

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 65: Subcat 65

Runoff = 9.27 cfs @ 12.31 hrs, Volume= 0.946 af, Depth> 3.19"

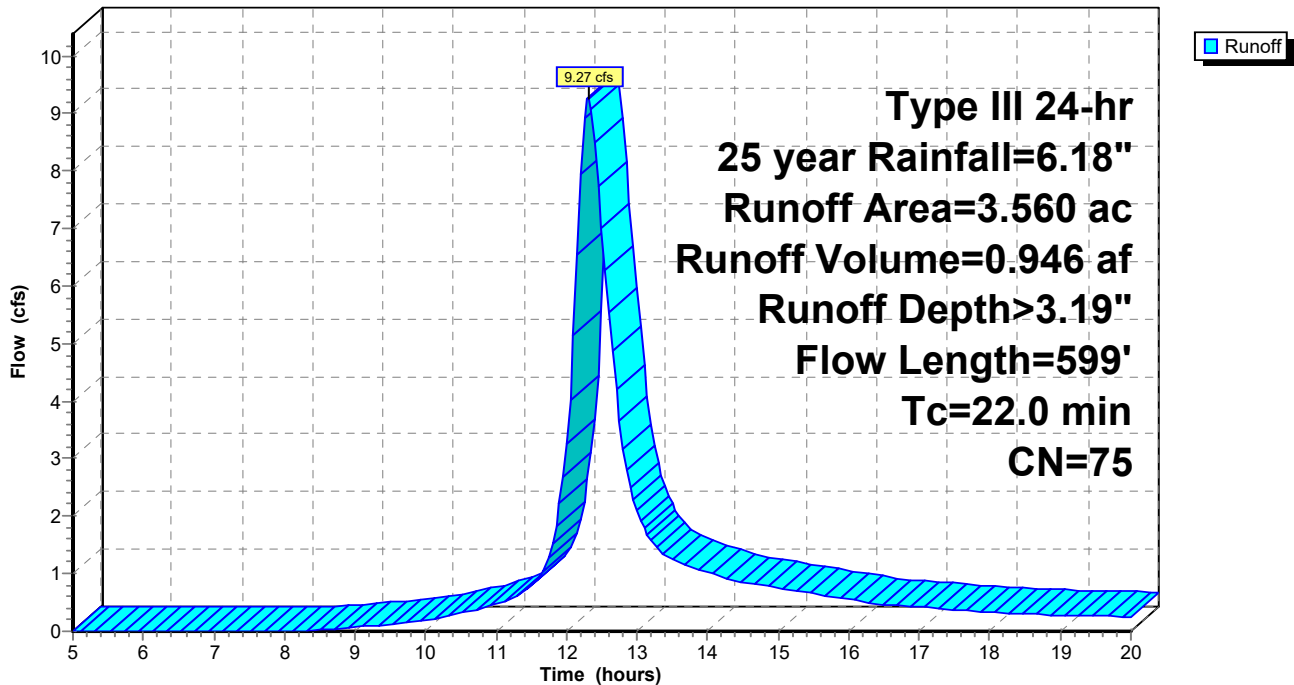
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.162	67	Row crops, straight row, Good, HSG A
2.990	78	Row crops, straight row, Good, HSG B
0.127	36	Woods, Fair, HSG A
0.282	60	Woods, Fair, HSG B
3.560	75	Weighted Average
3.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
13.7	549	0.0055	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.0	599	Total			

Subcatchment 65: Subcat 65

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 66: Subcat 66

Runoff = 6.20 cfs @ 12.19 hrs, Volume= 0.526 af, Depth> 3.29"

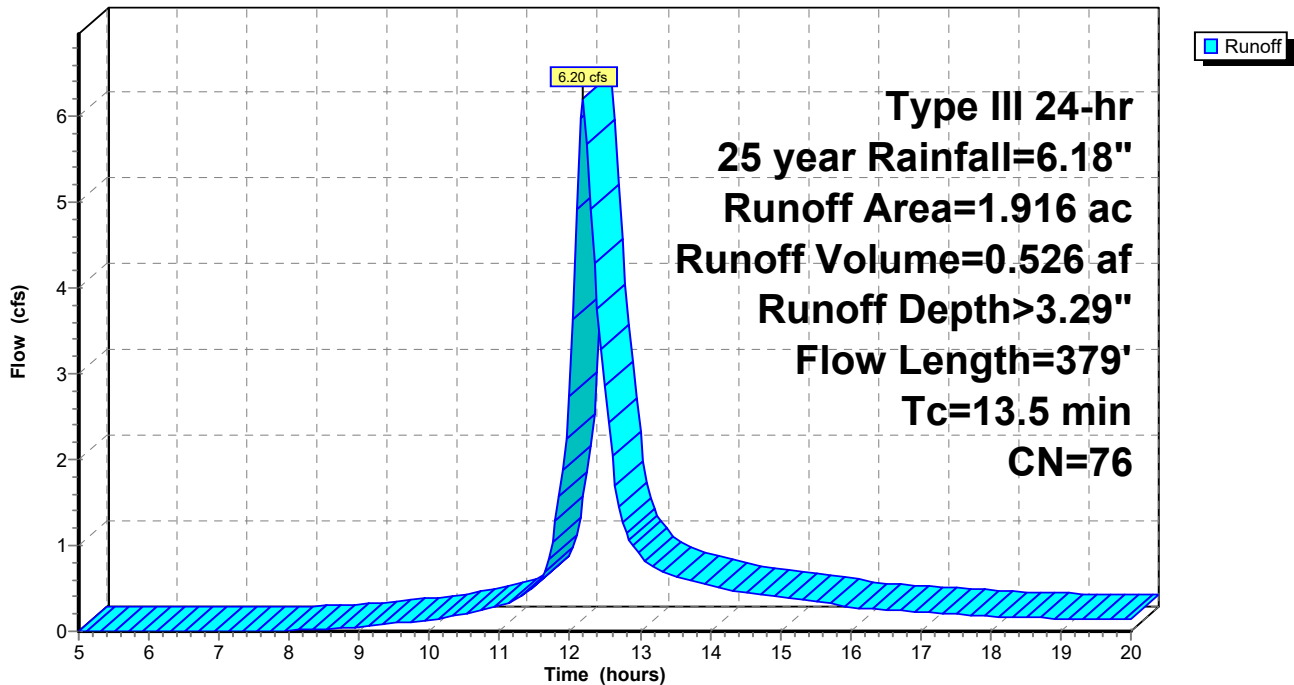
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.020	89	Paved roads w/open ditches, 50% imp, HSG B
1.653	78	Row crops, straight row, Good, HSG B
0.243	60	Woods, Fair, HSG B
1.916	76	Weighted Average
1.906		99.47% Pervious Area
0.010		0.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.2	329	0.0137	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.5	379	Total			

Subcatchment 66: Subcat 66

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 37P: (new Pond)

Inflow Area = 1.143 ac, 0.10% Impervious, Inflow Depth > 3.49" for 25 year event
 Inflow = 3.76 cfs @ 12.21 hrs, Volume= 0.332 af
 Outflow = 3.56 cfs @ 12.27 hrs, Volume= 0.332 af, Atten= 5%, Lag= 3.8 min
 Discarded = 0.53 cfs @ 12.27 hrs, Volume= 0.236 af
 Primary = 3.03 cfs @ 12.27 hrs, Volume= 0.096 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.58' @ 12.27 hrs Surf.Area= 7,683 sf Storage= 2,636 cf

Plug-Flow detention time= 35.7 min calculated for 0.331 af (100% of inflow)
 Center-of-Mass det. time= 35.2 min (826.3 - 791.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	166.00'	7,138 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
166.00	2,016	0	0	2,016	
167.00	14,072	7,138	7,138	14,075	

Device	Routing	Invert	Outlet Devices									
#1	Primary	166.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	166.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=0.53 cfs @ 12.27 hrs HW=166.58' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.53 cfs)

Primary OutFlow Max=2.93 cfs @ 12.27 hrs HW=166.58' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 2.93 cfs @ 0.75 fps)

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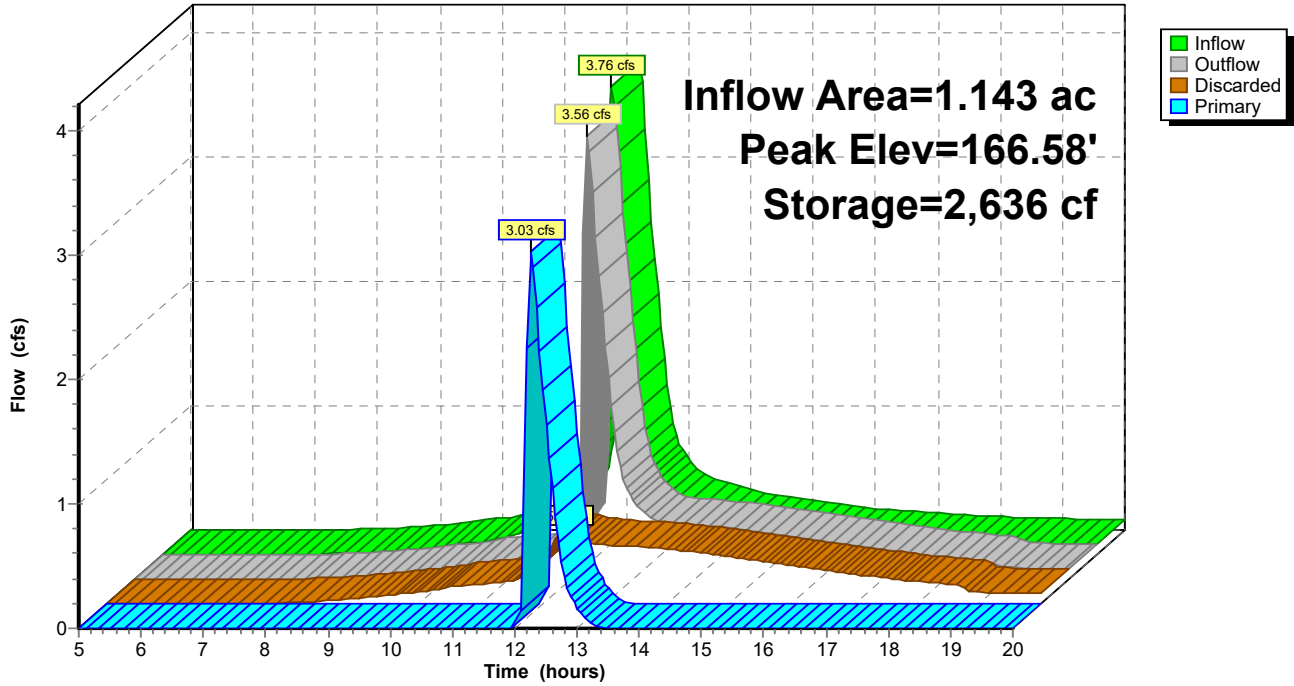
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Pond 37P: (new Pond)

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Summary for Pond 38P: (new Pond)

Inflow Area = 3.921 ac, 0.00% Impervious, Inflow Depth > 3.48" for 25 year event
 Inflow = 11.33 cfs @ 12.29 hrs, Volume= 1.138 af
 Outflow = 8.69 cfs @ 12.47 hrs, Volume= 1.095 af, Atten= 23%, Lag= 11.0 min
 Discarded = 1.78 cfs @ 12.47 hrs, Volume= 0.804 af
 Primary = 6.91 cfs @ 12.47 hrs, Volume= 0.290 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.64' @ 12.47 hrs Surf.Area= 25,516 sf Storage= 13,846 cf

Plug-Flow detention time= 73.0 min calculated for 1.091 af (96% of inflow)
 Center-of-Mass det. time= 59.2 min (854.8 - 795.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	163.00'	25,279 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
163.00	0	0	0	0	
164.00	9,379	3,126	3,126	9,381	
165.00	38,160	22,152	25,279	38,166	

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.78 cfs @ 12.47 hrs HW=164.64' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.78 cfs)

Primary OutFlow Max=6.83 cfs @ 12.47 hrs HW=164.64' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 6.83 cfs @ 0.99 fps)

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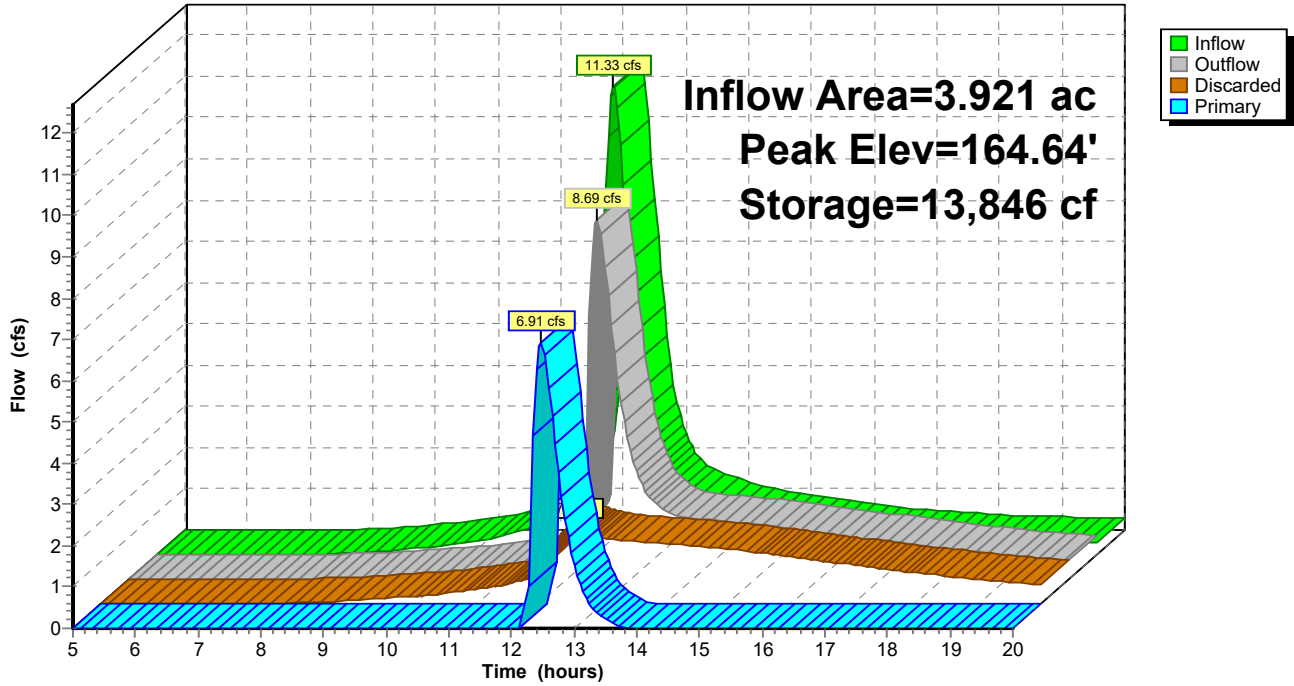
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Pond 38P: (new Pond)

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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 39P: (new Pond)

Inflow Area = 3.190 ac, 3.32% Impervious, Inflow Depth > 2.29" for 25 year event
 Inflow = 8.40 cfs @ 12.22 hrs, Volume= 0.609 af
 Outflow = 1.48 cfs @ 12.80 hrs, Volume= 0.601 af, Atten= 82%, Lag= 35.1 min
 Discarded = 1.48 cfs @ 12.80 hrs, Volume= 0.601 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 165.17' @ 12.80 hrs Surf.Area= 21,163 sf Storage= 12,394 cf

Plug-Flow detention time= 101.3 min calculated for 0.599 af (98% of inflow)
 Center-of-Mass det. time= 95.8 min (884.9 - 789.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	164.00'	38,968 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
164.00	2,834	0	0	2,834	
166.00	44,400	38,968	38,968	44,411	

Device	Routing	Invert	Outlet Devices									
#1	Primary	165.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	164.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.48 cfs @ 12.80 hrs HW=165.17' (Free Discharge)
 ↑2=Exfiltration (Controls 1.48 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=164.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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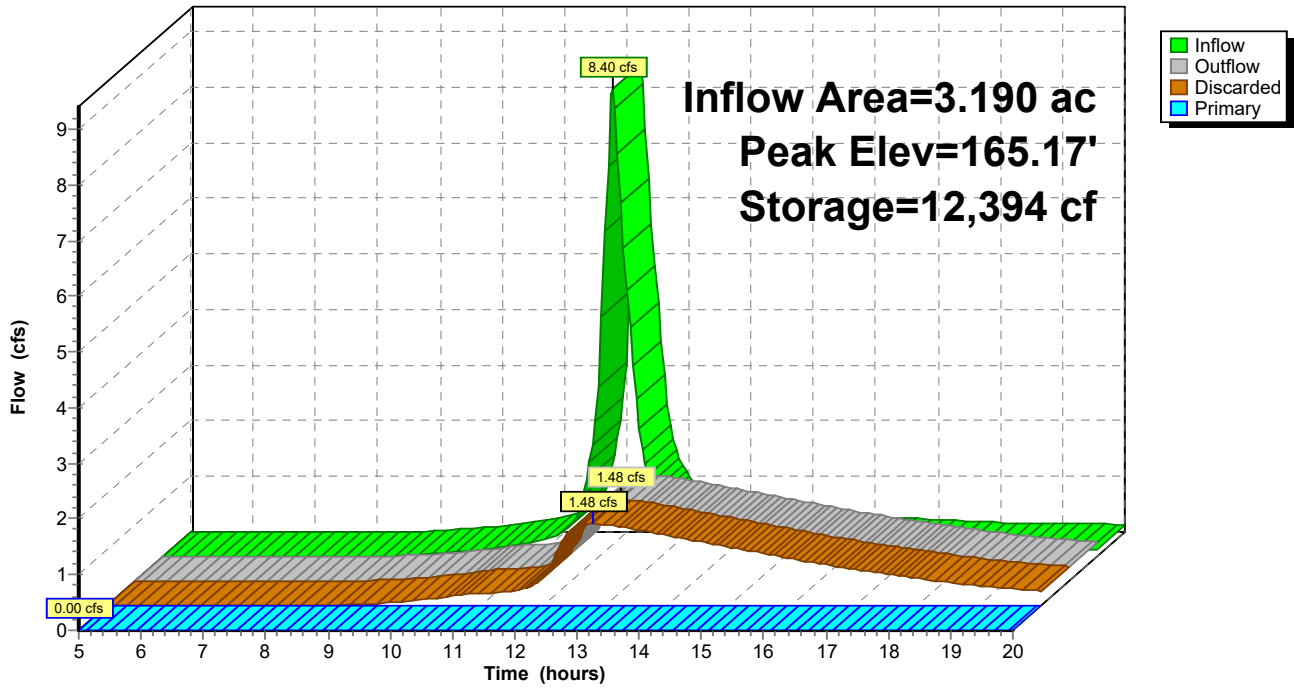
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Pond 39P: (new Pond)

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Summary for Pond 44P: (new Pond)

Inflow Area = 2.114 ac, 0.00% Impervious, Inflow Depth > 3.39" for 25 year event
 Inflow = 7.74 cfs @ 12.15 hrs, Volume= 0.598 af
 Outflow = 1.21 cfs @ 12.77 hrs, Volume= 0.567 af, Atten= 84%, Lag= 37.2 min
 Discarded = 1.21 cfs @ 12.77 hrs, Volume= 0.567 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.89' @ 12.77 hrs Surf.Area= 17,382 sf Storage= 11,600 cf

Plug-Flow detention time= 122.5 min calculated for 0.567 af (95% of inflow)
 Center-of-Mass det. time= 103.8 min (892.9 - 789.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	157.00'	43,325 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
157.00	0	0	0	0	
158.00	5,632	1,877	1,877	5,634	
160.00	41,290	41,448	43,325	41,305	

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.21 cfs @ 12.77 hrs HW=158.89' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.21 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=157.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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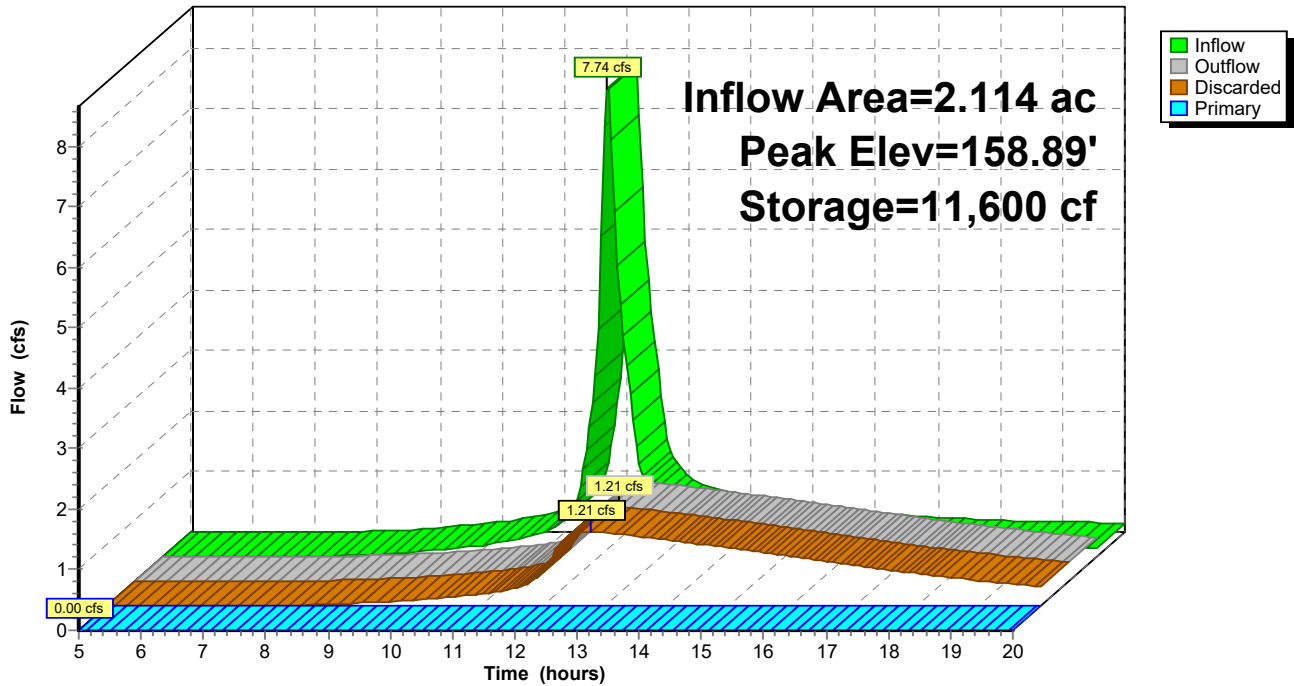
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Pond 44P: (new Pond)

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Summary for Pond 45P: (new Pond)

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth > 3.40" for 25 year event
 Inflow = 9.72 cfs @ 12.10 hrs, Volume= 0.666 af
 Outflow = 1.01 cfs @ 12.98 hrs, Volume= 0.576 af, Atten= 90%, Lag= 52.8 min
 Discarded = 1.01 cfs @ 12.98 hrs, Volume= 0.576 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.33' @ 12.98 hrs Surf.Area= 14,394 sf Storage= 14,012 cf

Plug-Flow detention time= 165.1 min calculated for 0.575 af (86% of inflow)
 Center-of-Mass det. time= 124.9 min (911.0 - 786.1)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	180,186 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	5,028	1,676	1,676	5,030
156.00	21,015	24,215	25,891	21,035
158.00	37,382	57,617	83,508	37,446
160.00	60,198	96,678	180,186	60,315

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	153.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.01 cfs @ 12.98 hrs HW=155.33' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.01 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=153.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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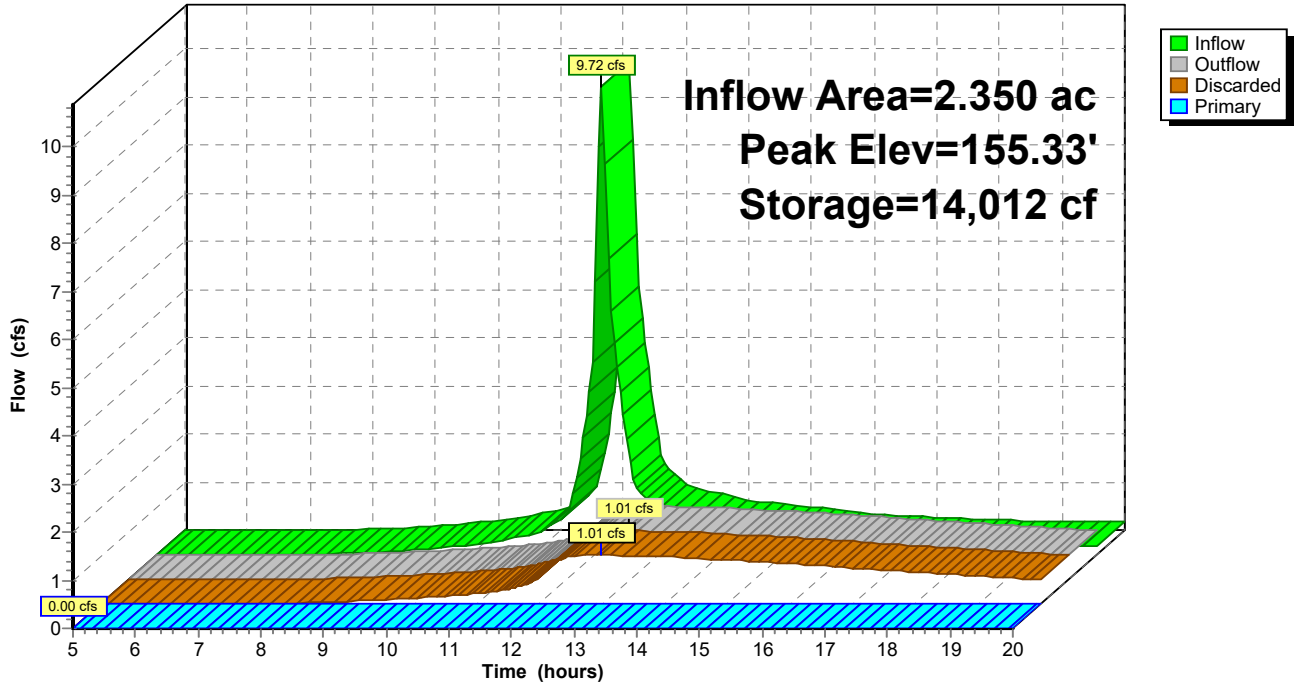
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Pond 45P: (new Pond)

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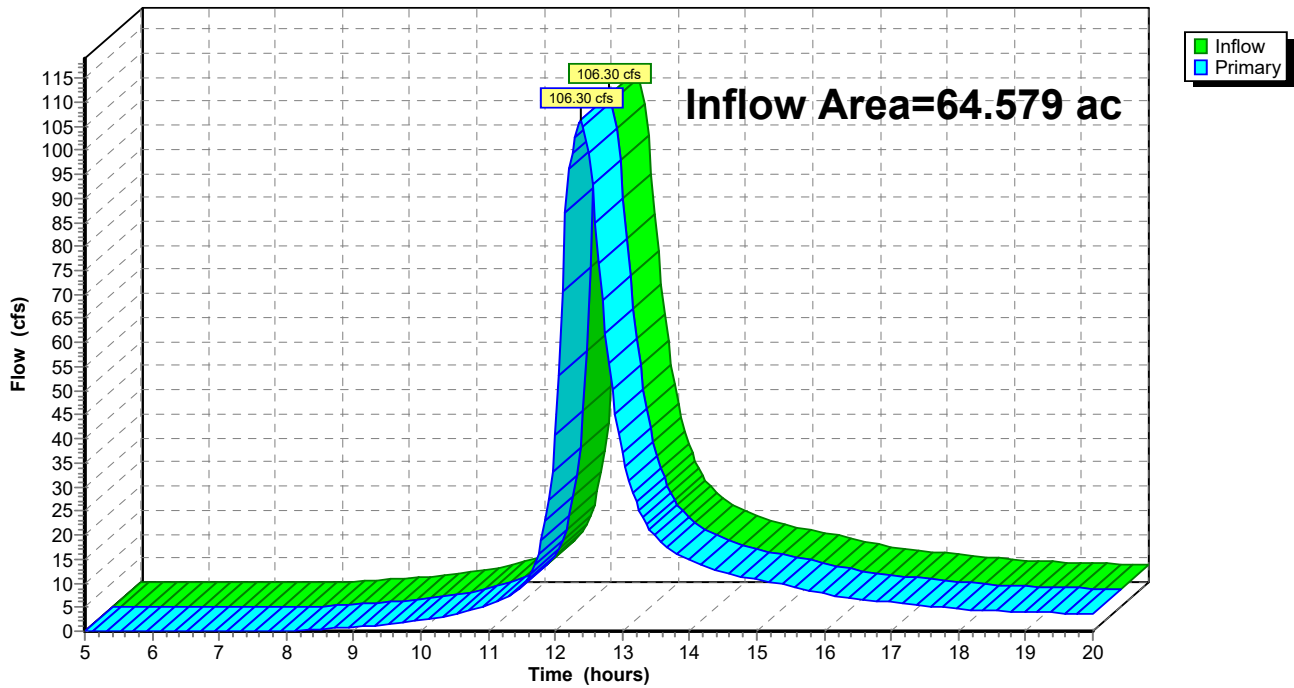
Summary for Link DP47: DP47

Inflow Area = 64.579 ac, 1.36% Impervious, Inflow Depth > 2.44" for 25 year event
Inflow = 106.30 cfs @ 12.38 hrs, Volume= 13.147 af
Primary = 106.30 cfs @ 12.38 hrs, Volume= 13.147 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP47: DP47

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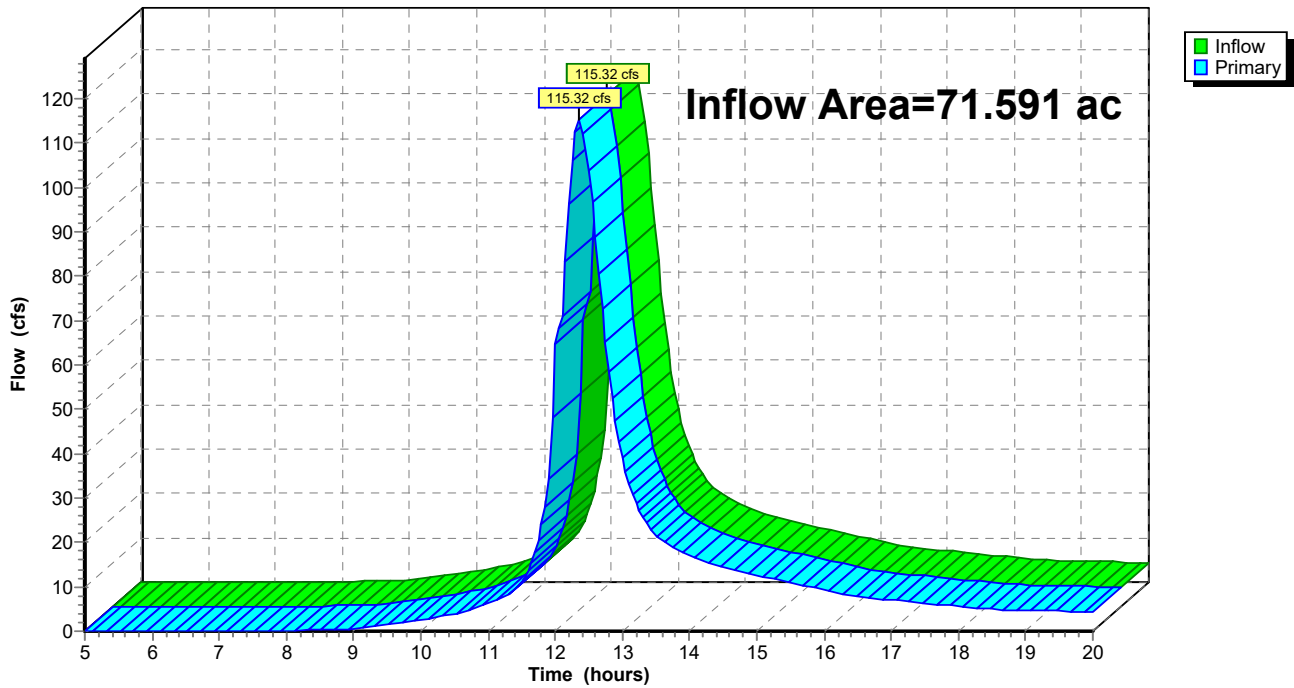
Summary for Link DP54: DP54

Inflow Area = 71.591 ac, 4.62% Impervious, Inflow Depth > 2.46" for 25 year event
Inflow = 115.32 cfs @ 12.36 hrs, Volume= 14.691 af
Primary = 115.32 cfs @ 12.36 hrs, Volume= 14.691 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP54: DP54

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 36: Subcat 36

Runoff = 26.36 cfs @ 12.39 hrs, Volume= 3.029 af, Depth> 4.18"

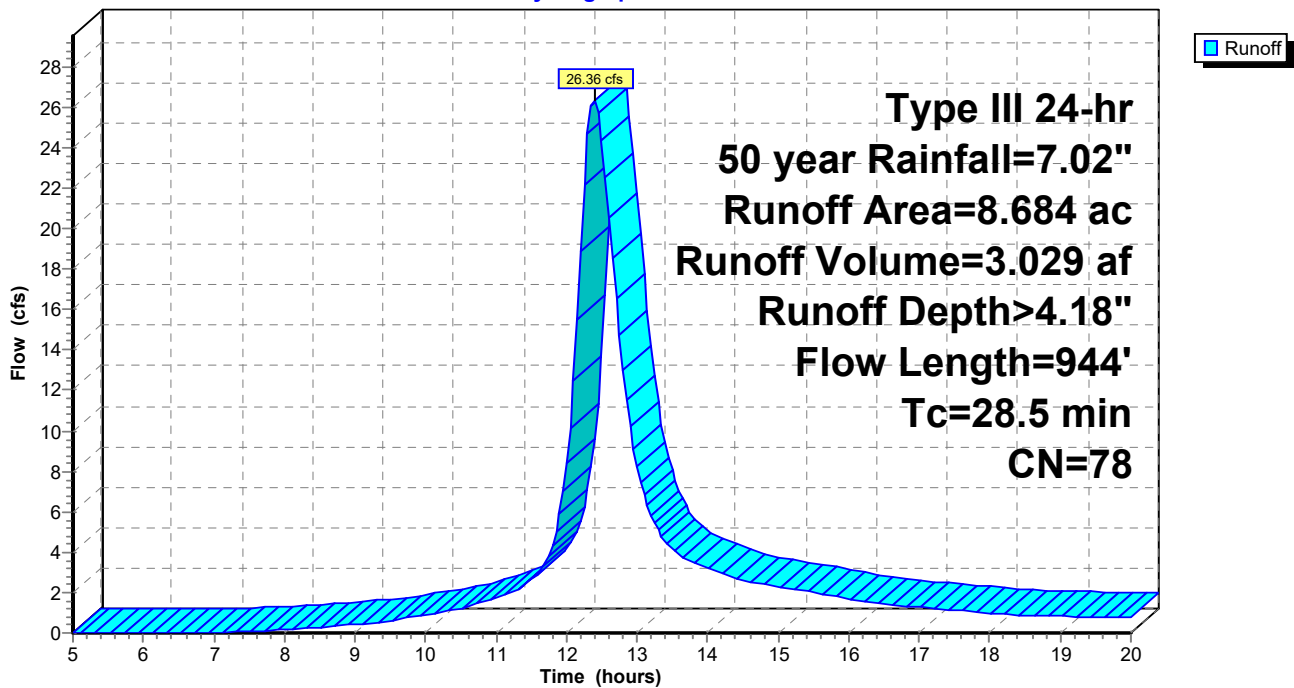
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.026	65	2 acre lots, 12% imp, HSG B
0.050	89	Paved roads w/open ditches, 50% imp, HSG B
8.608	78	Row crops, straight row, Good, HSG B
8.684	78	Weighted Average
8.656		99.67% Pervious Area
0.028		0.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.1	170	0.0059	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.1	724	0.0069	0.75		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.5	944	Total			

Subcatchment 36: Subcat 36

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 37: Subcat 37

Runoff = 4.51 cfs @ 12.21 hrs, Volume= 0.400 af, Depth> 4.20"

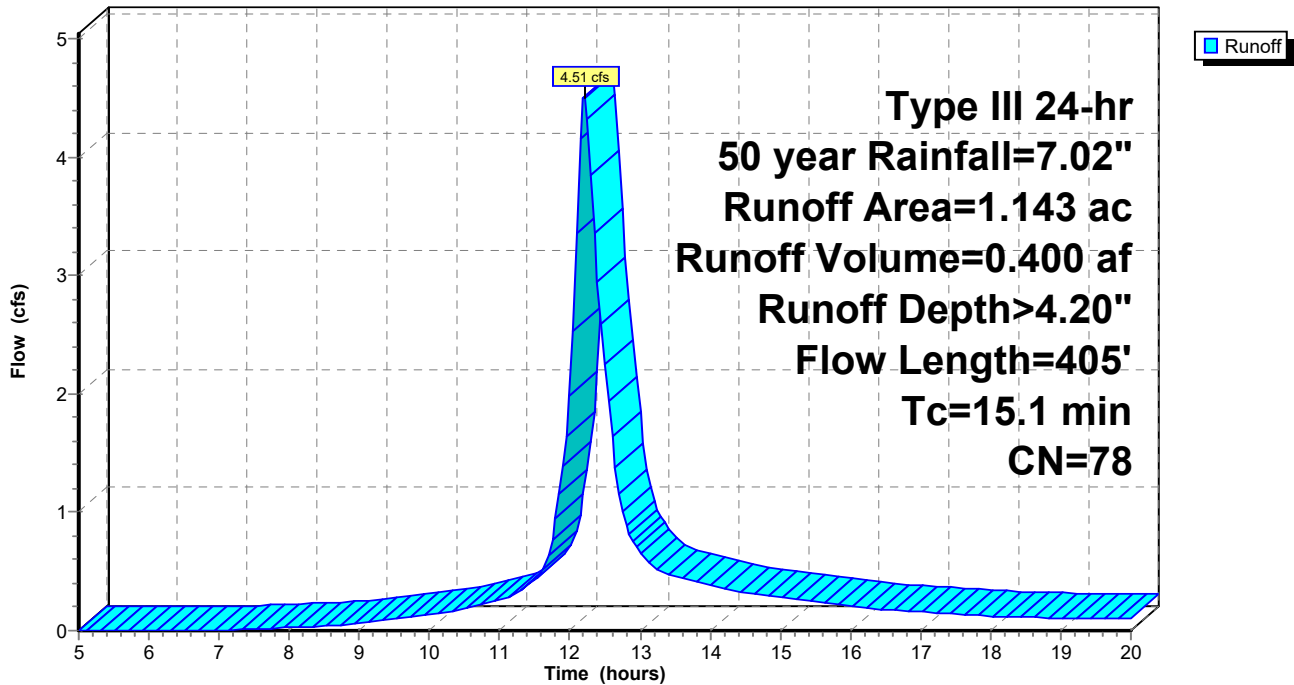
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.002	89	Paved roads w/open ditches, 50% imp, HSG B
1.140	78	Row crops, straight row, Good, HSG B
1.143	78	Weighted Average
1.142		99.90% Pervious Area
0.001		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
8.8	355	0.0056	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
15.1	405	Total			

Subcatchment 37: Subcat 37

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 38: Subcat 38

Runoff = 13.59 cfs @ 12.29 hrs, Volume= 1.371 af, Depth> 4.19"

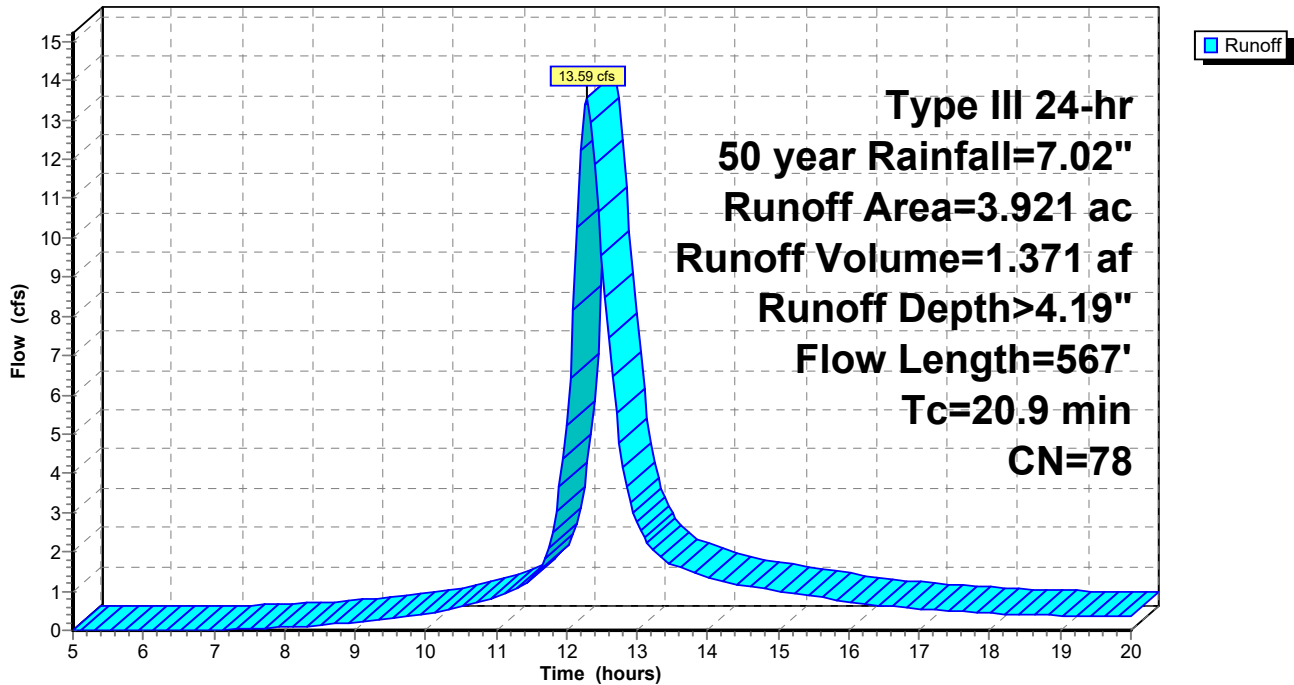
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
3.921	78	Row crops, straight row, Good, HSG B
3.921		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
12.6	517	0.0058	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.9	567	Total			

Subcatchment 38: Subcat 38

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 39: Subcat 39

Runoff = 8.04 cfs @ 12.15 hrs, Volume= 0.628 af, Depth> 3.68"

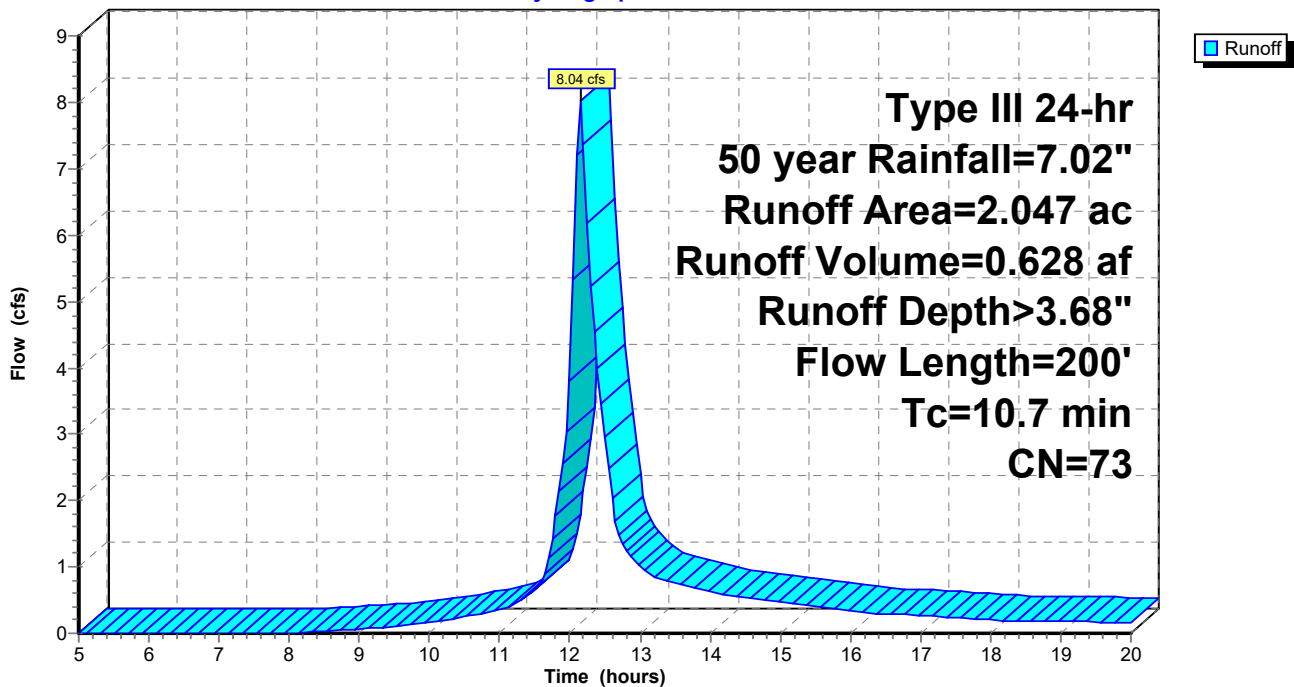
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.770	65	2 acre lots, 12% imp, HSG B
0.025	89	Paved roads w/open ditches, 50% imp, HSG B
1.252	78	Row crops, straight row, Good, HSG B
2.047	73	Weighted Average
1.942		94.89% Pervious Area
0.105		5.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
2.4	150	0.0133	1.04		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
10.7	200	Total			

Subcatchment 39: Subcat 39

Hydrograph



Existing Conditions - South Plantation

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 40: Subcat 40

Runoff = 2.03 cfs @ 12.15 hrs, Volume= 0.156 af, Depth> 2.88"

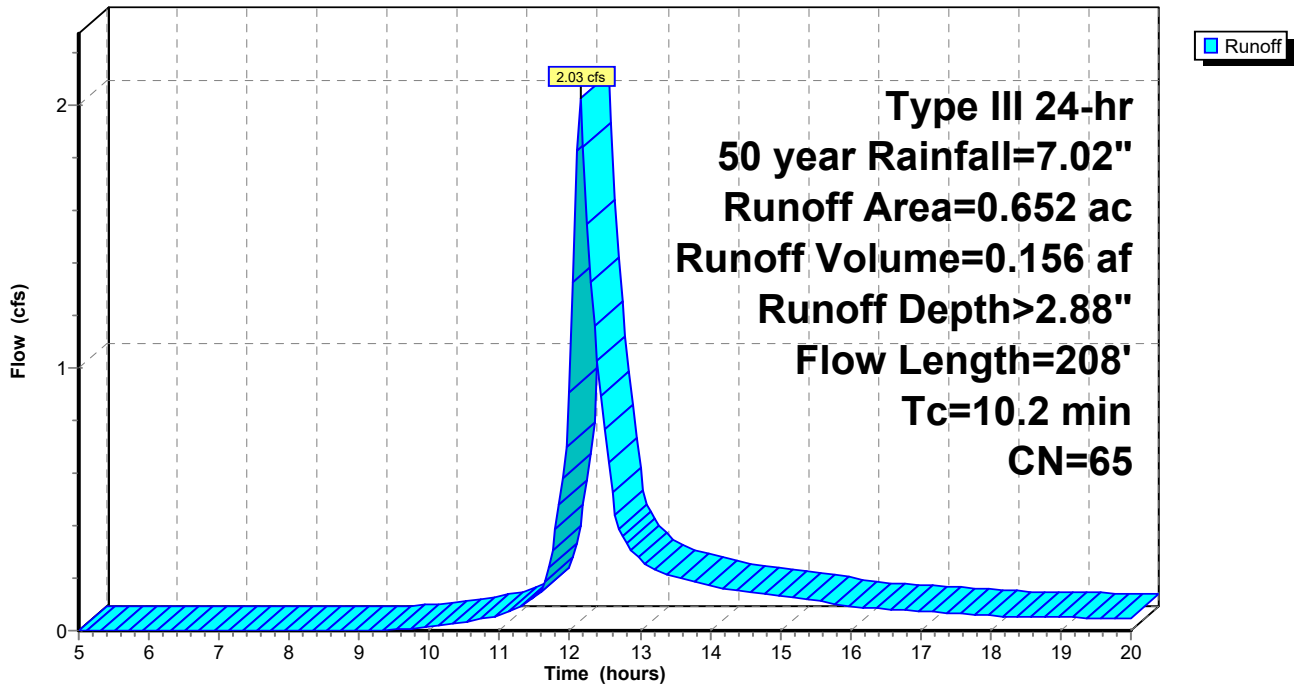
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.008	46	2 acre lots, 12% imp, HSG A
0.644	65	2 acre lots, 12% imp, HSG B
0.652	65	Weighted Average
0.574		88.00% Pervious Area
0.078		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.7	158	0.0190	0.96		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	208	Total			

Subcatchment 40: Subcat 40

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 41: Subcat 41

Runoff = 2.73 cfs @ 12.14 hrs, Volume= 0.206 af, Depth> 2.78"

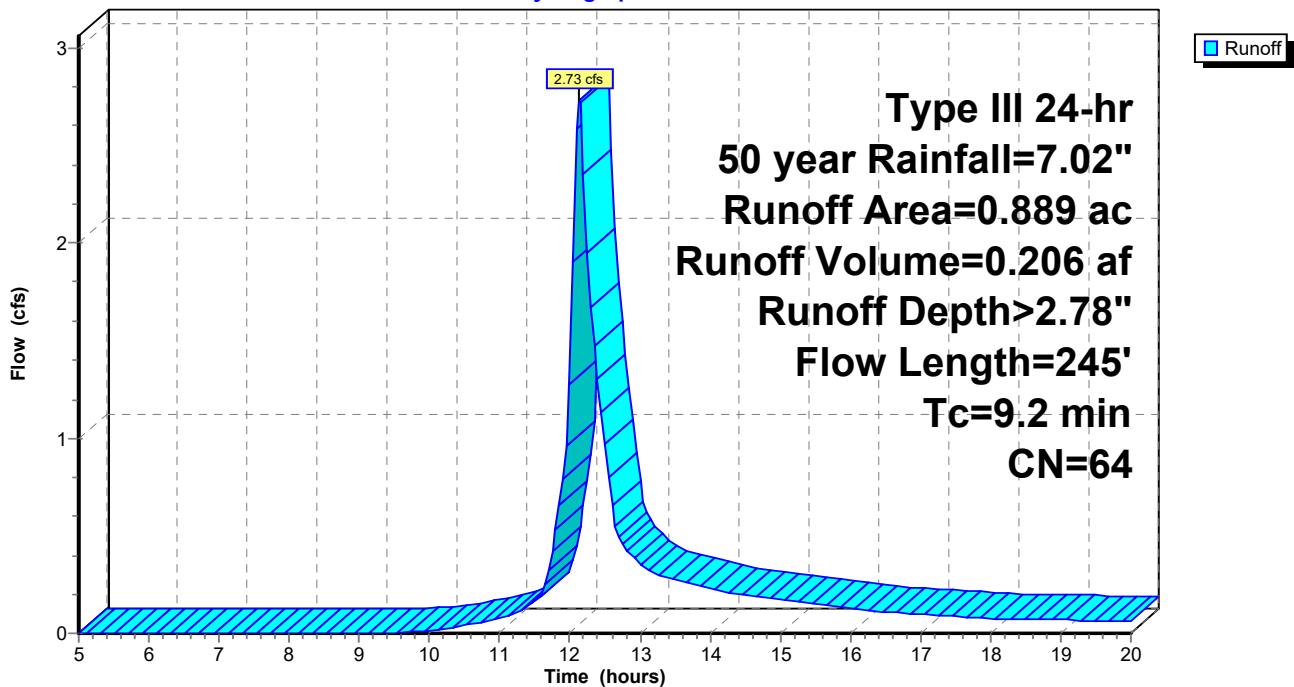
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.110	46	2 acre lots, 12% imp, HSG A
0.684	65	2 acre lots, 12% imp, HSG B
0.094	78	Row crops, straight row, Good, HSG B
0.889	64	Weighted Average
0.793		89.27% Pervious Area
0.095		10.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
2.9	195	0.0256	1.12		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	245	Total			

Subcatchment 41: Subcat 41

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 42: Subcat 42

Runoff = 5.21 cfs @ 12.20 hrs, Volume= 0.443 af, Depth> 2.87"

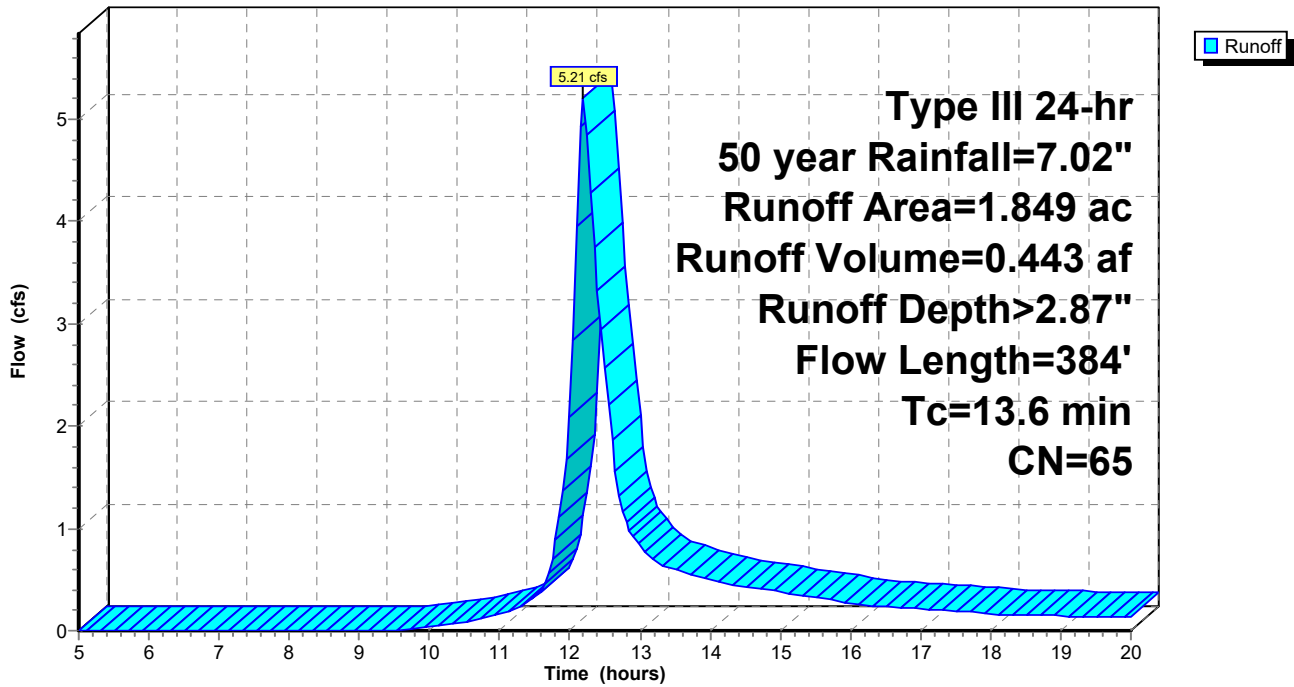
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.277	46	2 acre lots, 12% imp, HSG A
0.912	65	2 acre lots, 12% imp, HSG B
0.572	78	Row crops, straight row, Good, HSG B
0.088	36	Woods, Fair, HSG A
1.849	65	Weighted Average
1.706		92.28% Pervious Area
0.143		7.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.3	334	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.6	384	Total			

Subcatchment 42: Subcat 42

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 43: Subcat 43

Runoff = 2.34 cfs @ 12.21 hrs, Volume= 0.204 af, Depth> 2.68"

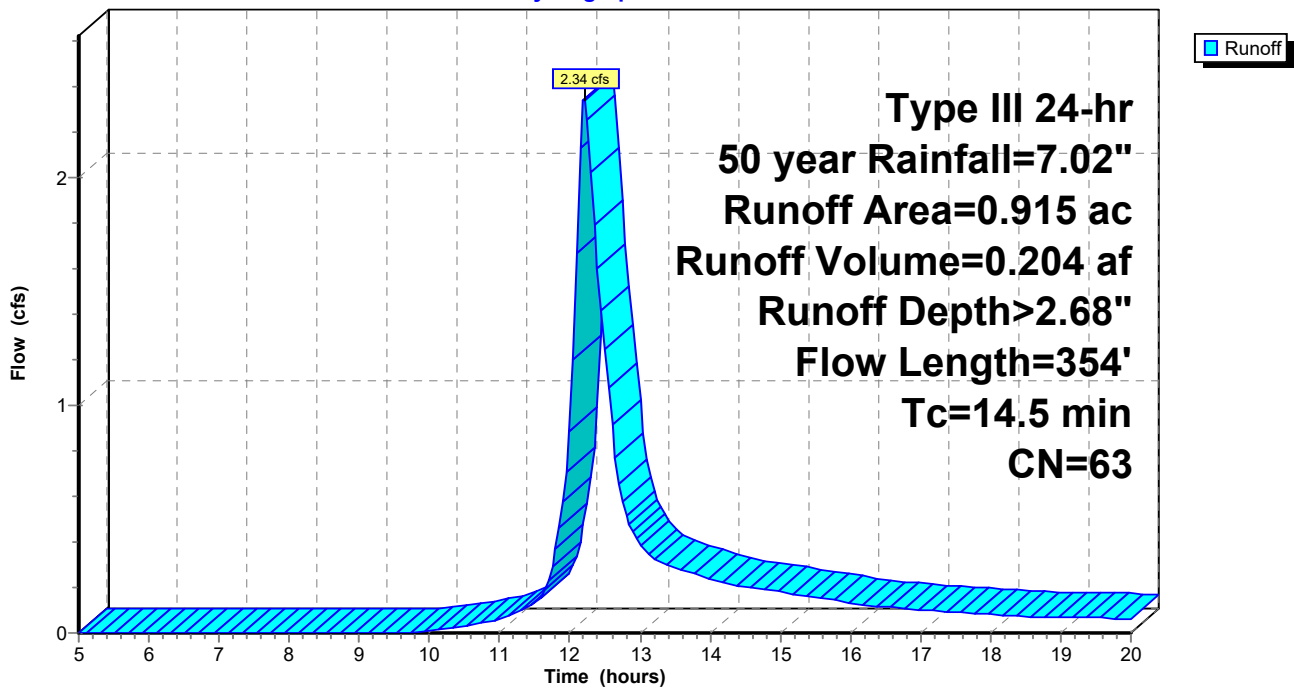
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.058	46	2 acre lots, 12% imp, HSG A
0.539	65	2 acre lots, 12% imp, HSG B
0.190	78	Row crops, straight row, Good, HSG B
0.121	36	Woods, Fair, HSG A
0.008	60	Woods, Fair, HSG B
0.915	63	Weighted Average
0.843		92.17% Pervious Area
0.072		7.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.2	304	0.0082	0.81		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
14.5	354	Total			

Subcatchment 43: Subcat 43

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 44: Subcat 44

Runoff = 9.30 cfs @ 12.15 hrs, Volume= 0.723 af, Depth> 4.10"

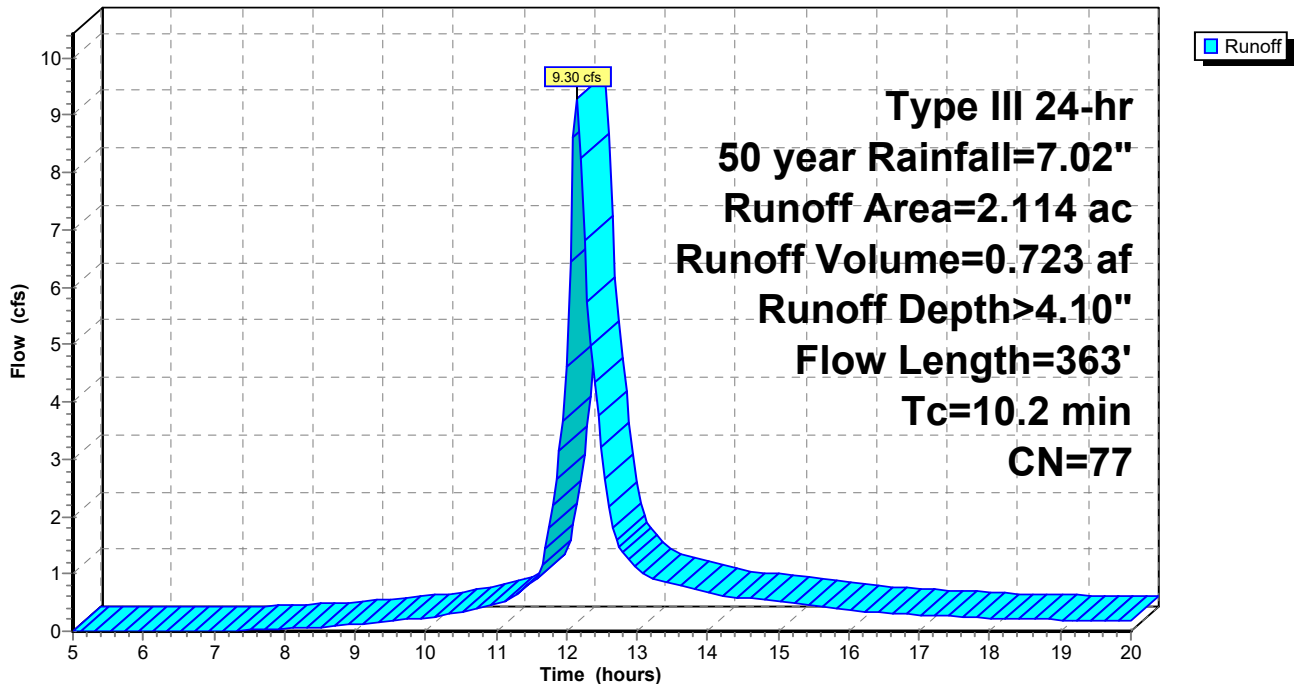
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.164	67	Row crops, straight row, Good, HSG A
1.950	78	Row crops, straight row, Good, HSG B
2.114	77	Weighted Average
2.114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.4	313	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	363	Total			

Subcatchment 44: Subcat 44

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 45: Subcat 45

Runoff = 11.68 cfs @ 12.10 hrs, Volume= 0.804 af, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

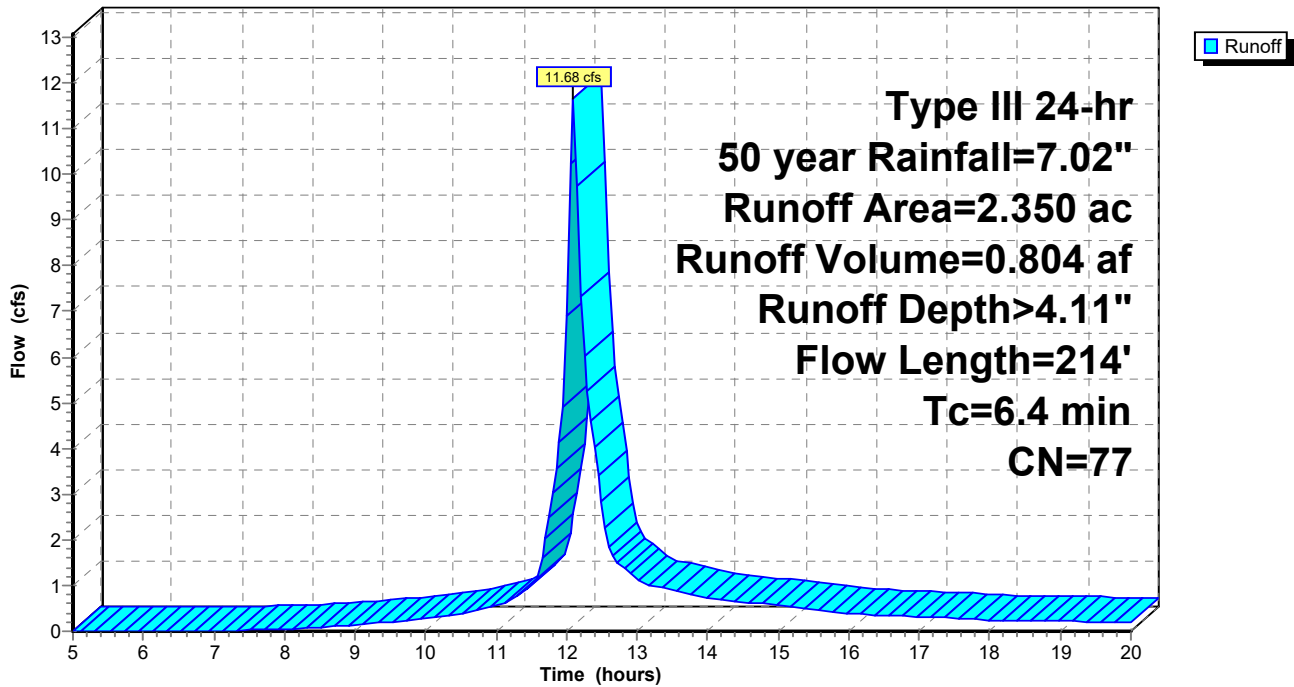
Area (ac)	CN	Description
0.248	67	Row crops, straight row, Good, HSG A
2.102	78	Row crops, straight row, Good, HSG B
2.350	77	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.6	164	0.0610	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps

6.4 214 Total

Subcatchment 45: Subcat 45

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 46: Subcat 46

Runoff = 12.94 cfs @ 12.16 hrs, Volume= 1.047 af, Depth> 4.10"

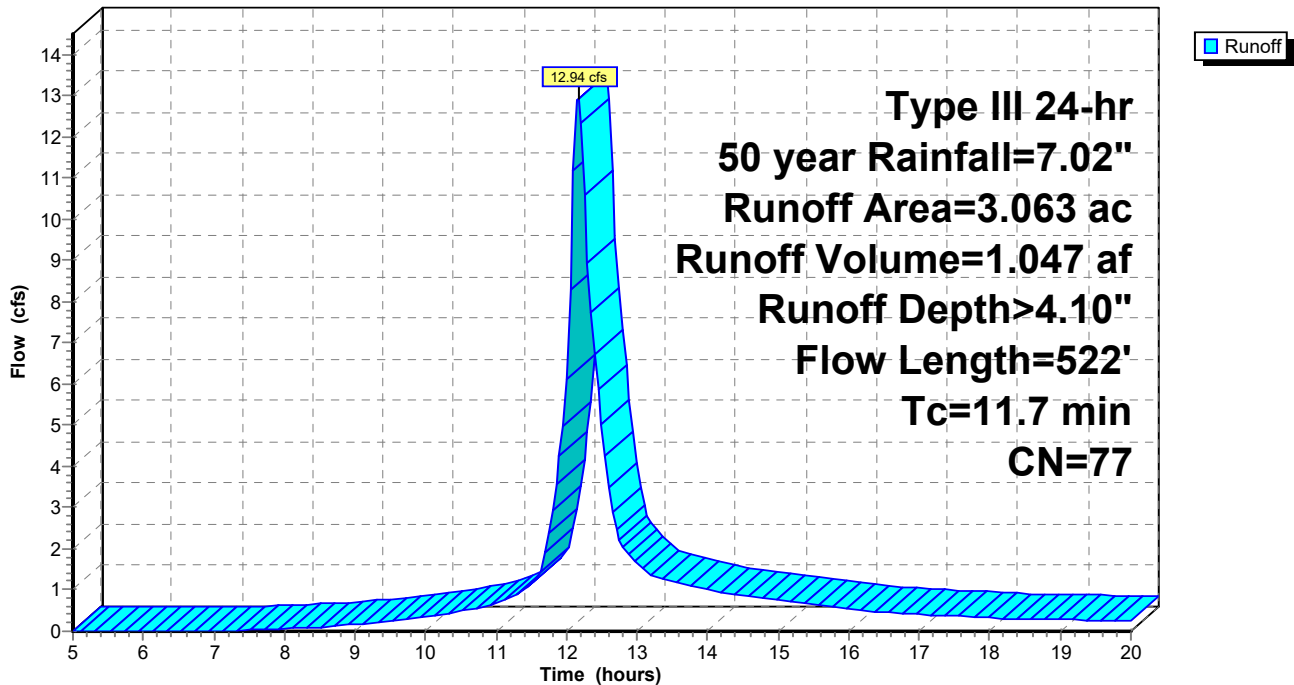
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.094	67	Row crops, straight row, Good, HSG A
2.903	78	Row crops, straight row, Good, HSG B
0.006	36	Woods, Fair, HSG A
0.060	60	Woods, Fair, HSG B
3.063	77	Weighted Average
3.063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	472	0.0233	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.7	522	Total			

Subcatchment 46: Subcat 46

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 47: Subcat 47

Runoff = 7.66 cfs @ 12.20 hrs, Volume= 0.665 af, Depth> 2.12"

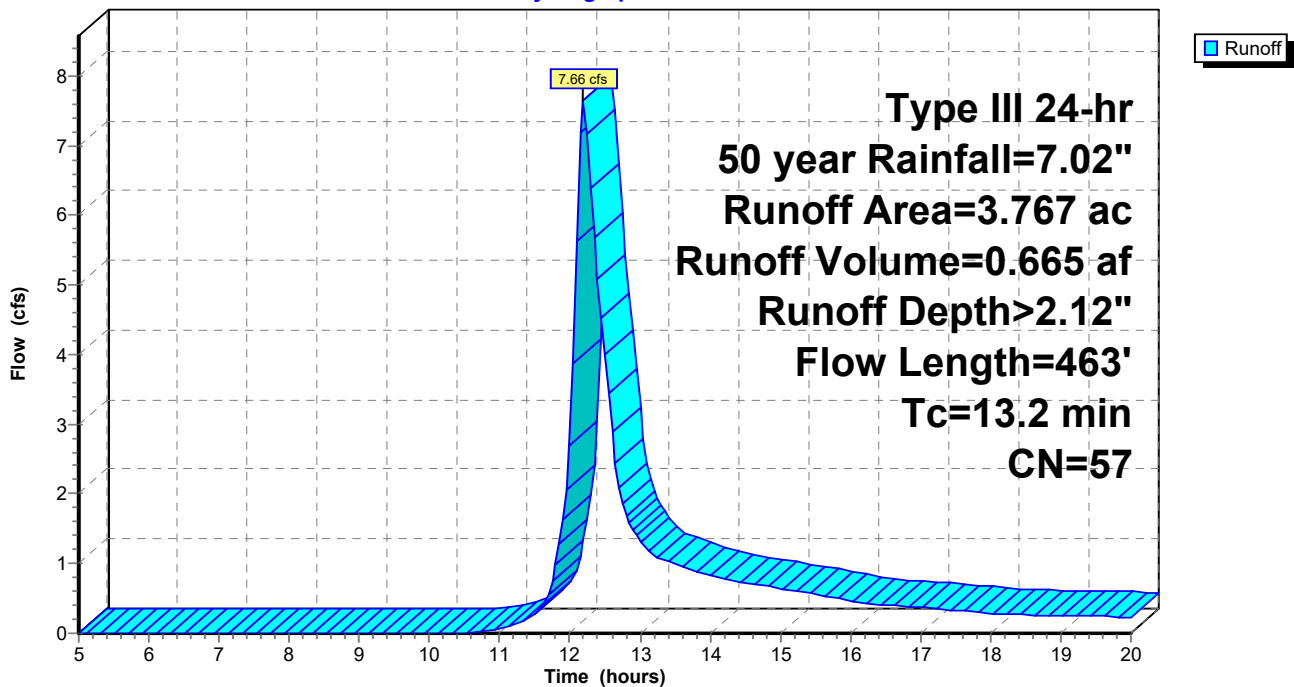
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.159	67	Row crops, straight row, Good, HSG A
1.564	78	Row crops, straight row, Good, HSG B
1.674	36	Woods, Fair, HSG A
0.369	60	Woods, Fair, HSG B
3.767	57	Weighted Average
3.767		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.9	413	0.0242	1.40		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.2	463	Total			

Subcatchment 47: Subcat 47

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 48: Subcat 48

Runoff = 14.44 cfs @ 12.18 hrs, Volume= 1.193 af, Depth> 2.68"

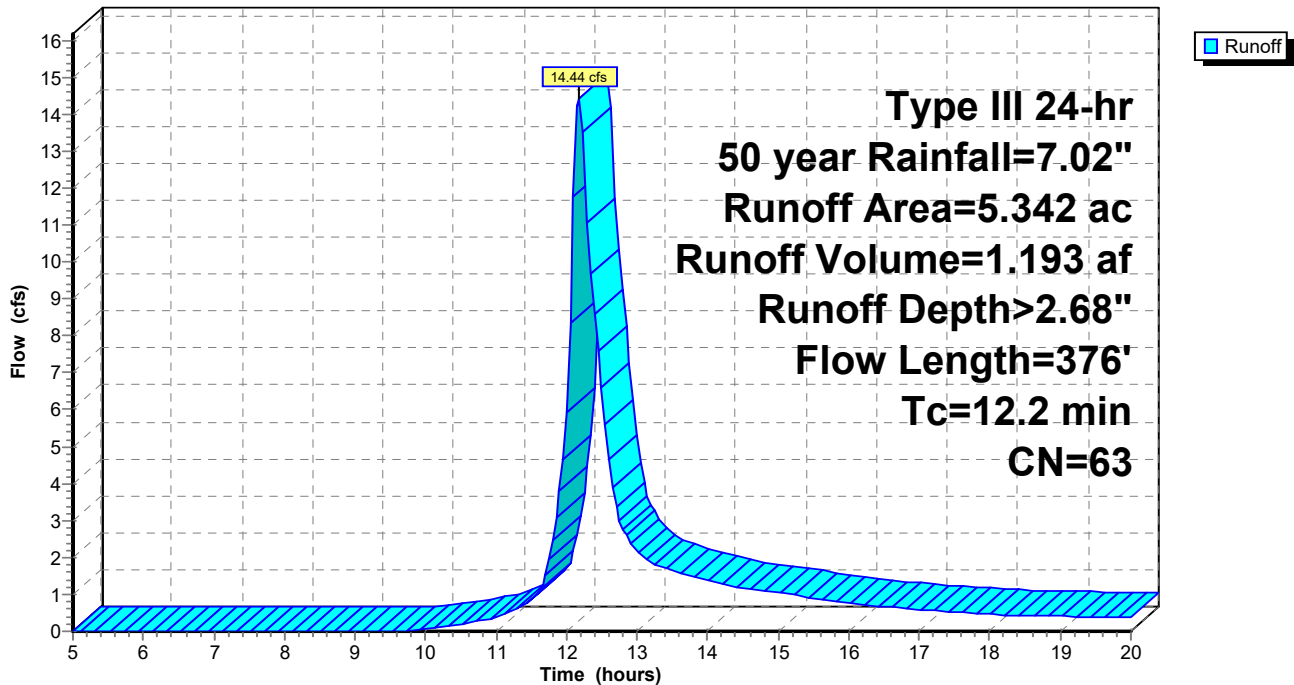
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.054	67	Row crops, straight row, Good, HSG A
3.042	78	Row crops, straight row, Good, HSG B
1.638	36	Woods, Fair, HSG A
0.608	60	Woods, Fair, HSG B
5.342	63	Weighted Average
5.342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
3.9	326	0.0245	1.41		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
12.2	376	Total			

Subcatchment 48: Subcat 48

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 49: Subcat 49

Runoff = 8.78 cfs @ 12.19 hrs, Volume= 0.743 af, Depth> 2.78"

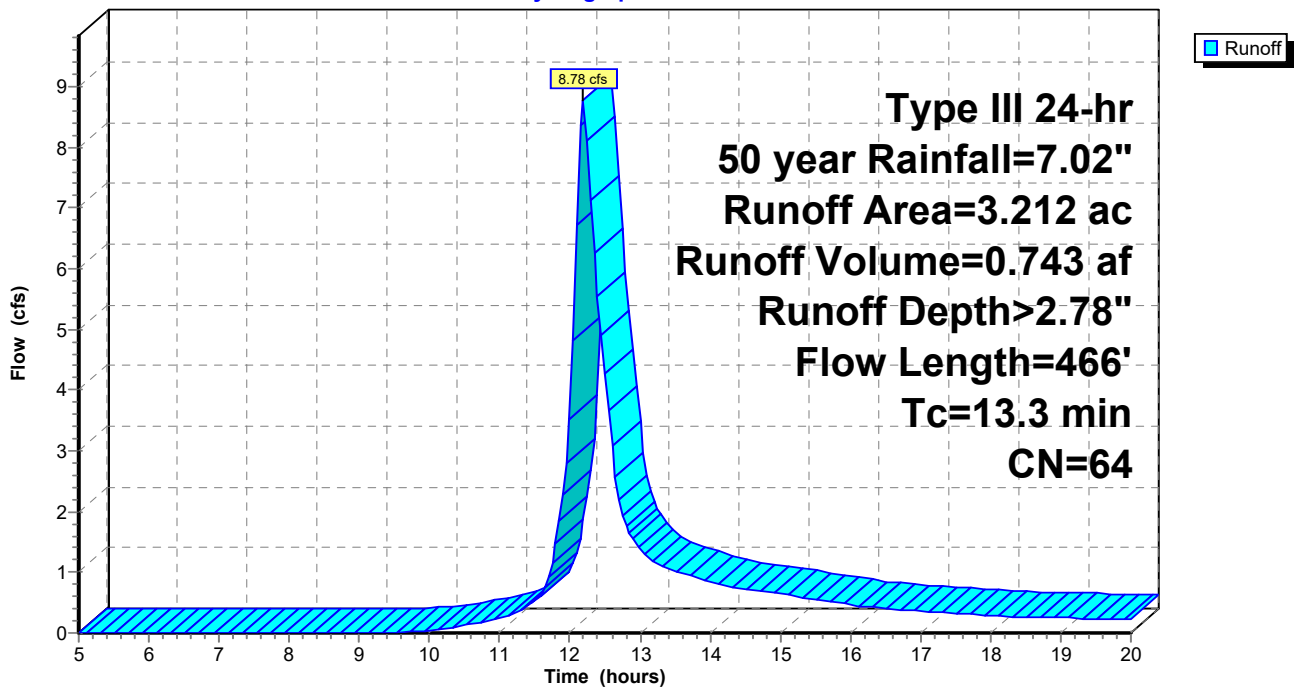
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.656	98	Roofs, HSG B
0.016	67	Row crops, straight row, Good, HSG A
1.136	78	Row crops, straight row, Good, HSG B
1.330	36	Woods, Fair, HSG A
0.074	60	Woods, Fair, HSG B
3.212	64	Weighted Average
2.556		79.59% Pervious Area
0.656		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.0	416	0.0120	0.99		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.3	466	Total			

Subcatchment 49: Subcat 49

Hydrograph



Existing Conditions - South Plantation

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 50: Subcat 50

Runoff = 22.43 cfs @ 12.19 hrs, Volume= 1.889 af, Depth> 3.07"

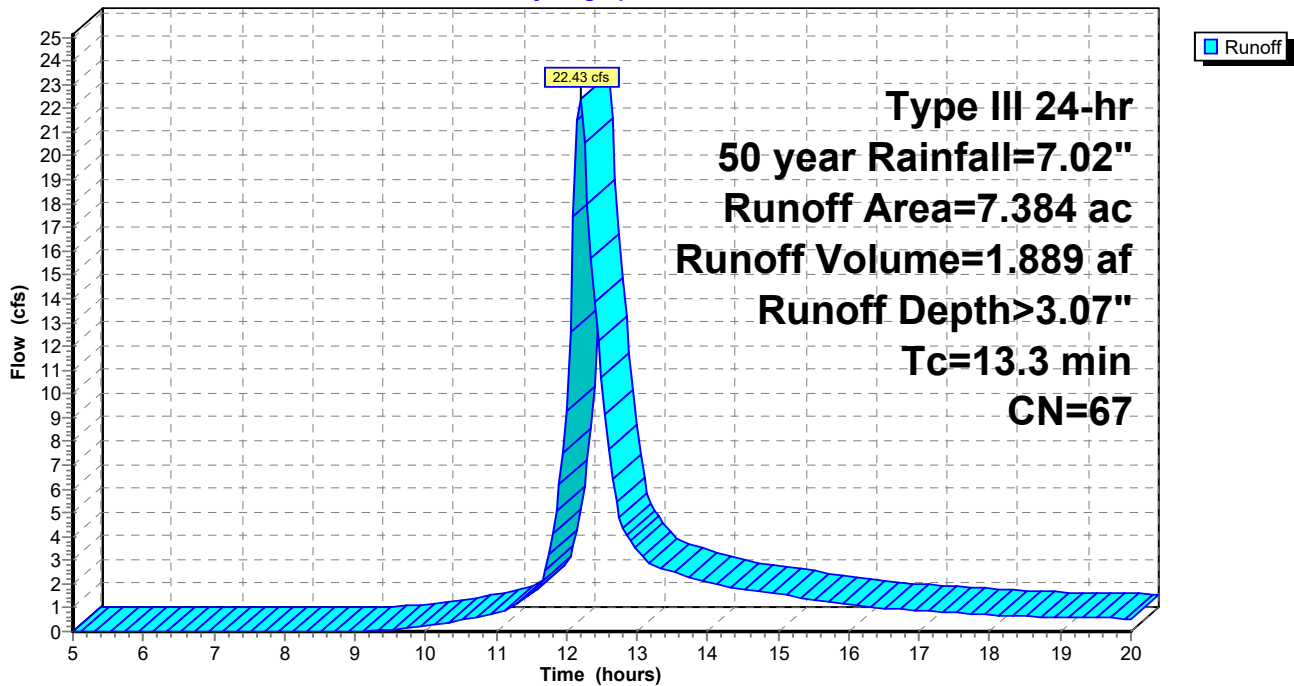
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
4.996	78	Row crops, straight row, Good, HSG B
1.655	36	Woods, Fair, HSG A
0.733	60	Woods, Fair, HSG B
7.384	67	Weighted Average
7.384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3					Direct Entry,

Subcatchment 50: Subcat 50

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 51: Subcat 51

Runoff = 75.88 cfs @ 12.46 hrs, Volume= 9.350 af, Depth> 4.07"

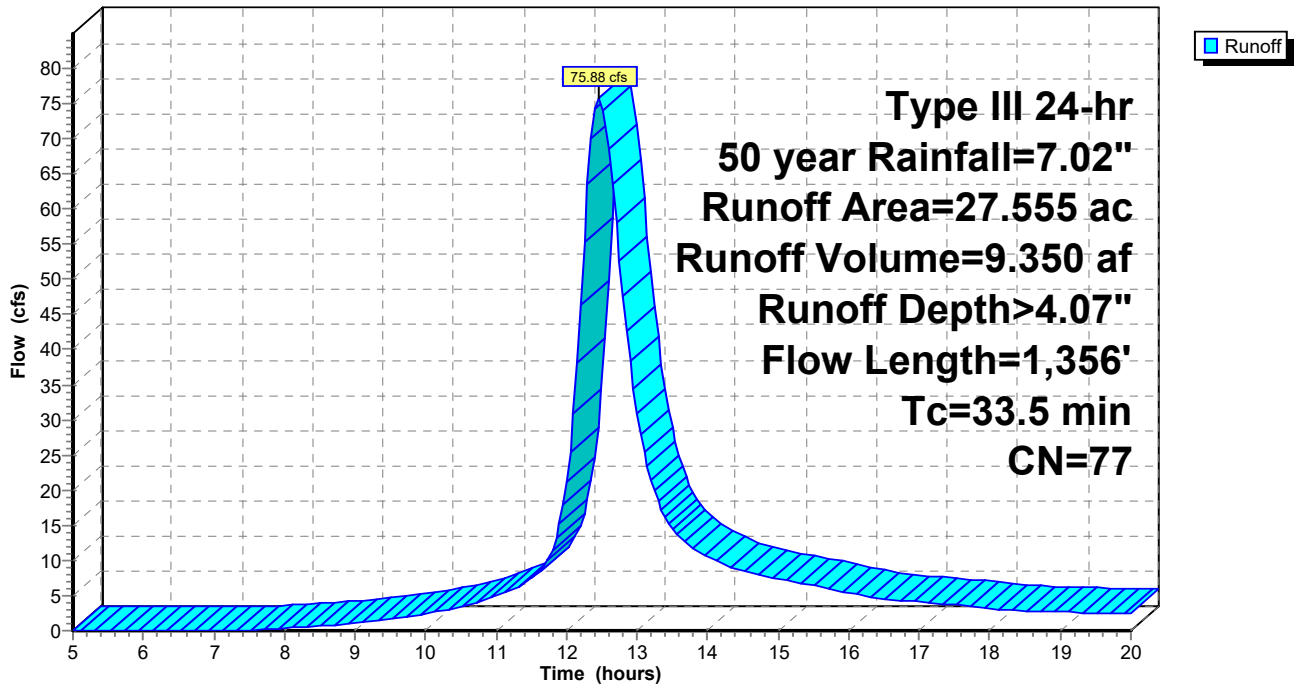
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.980	65	2 acre lots, 12% imp, HSG B
25.329	78	Row crops, straight row, Good, HSG B
0.074	36	Woods, Fair, HSG A
1.172	60	Woods, Fair, HSG B
27.555	77	Weighted Average
27.437		99.57% Pervious Area
0.118		0.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
25.2	1,306	0.0092	0.86		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.5	1,356	Total			

Subcatchment 51: Subcat 51

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 53: Subcat 53

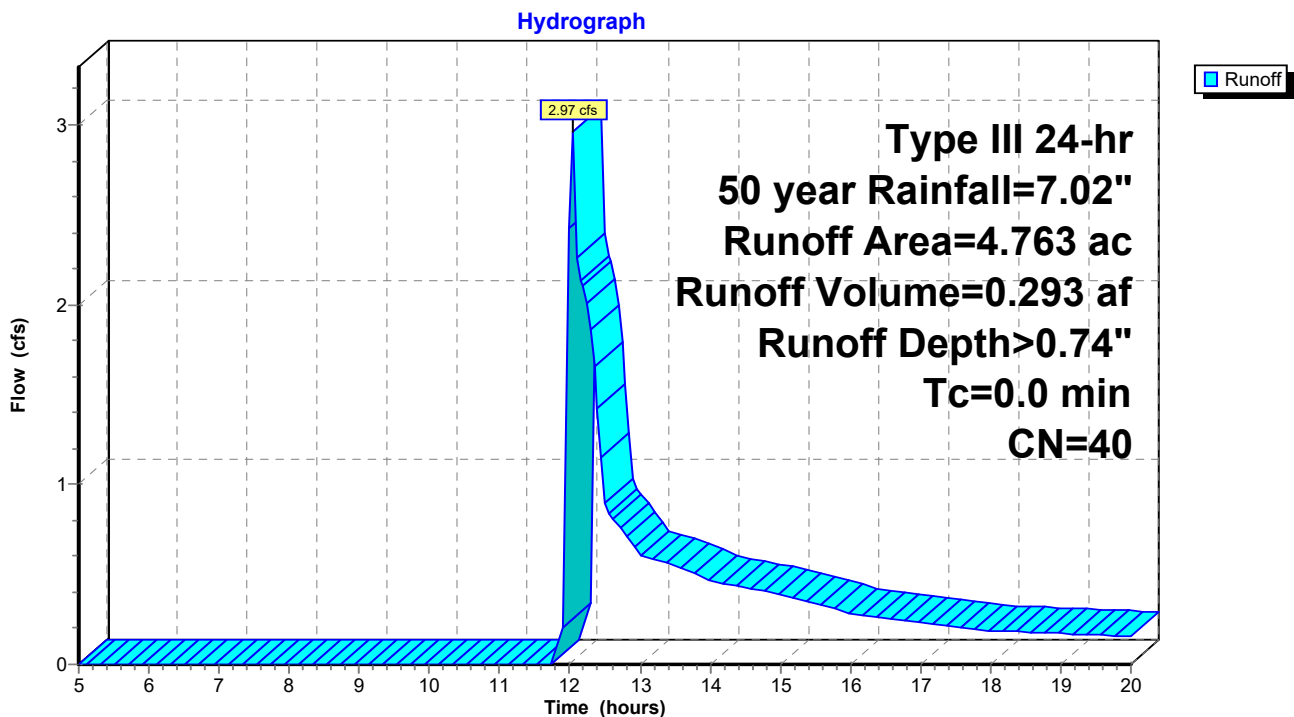
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.97 cfs @ 12.05 hrs, Volume= 0.293 af, Depth> 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.120	46	2 acre lots, 12% imp, HSG A
0.419	65	2 acre lots, 12% imp, HSG B
3.953	36	Woods, Fair, HSG A
0.271	60	Woods, Fair, HSG B
4.763	40	Weighted Average
4.698		98.64% Pervious Area
0.065		1.36% Impervious Area

Subcatchment 53: Subcat 53



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 54: Subcat 54

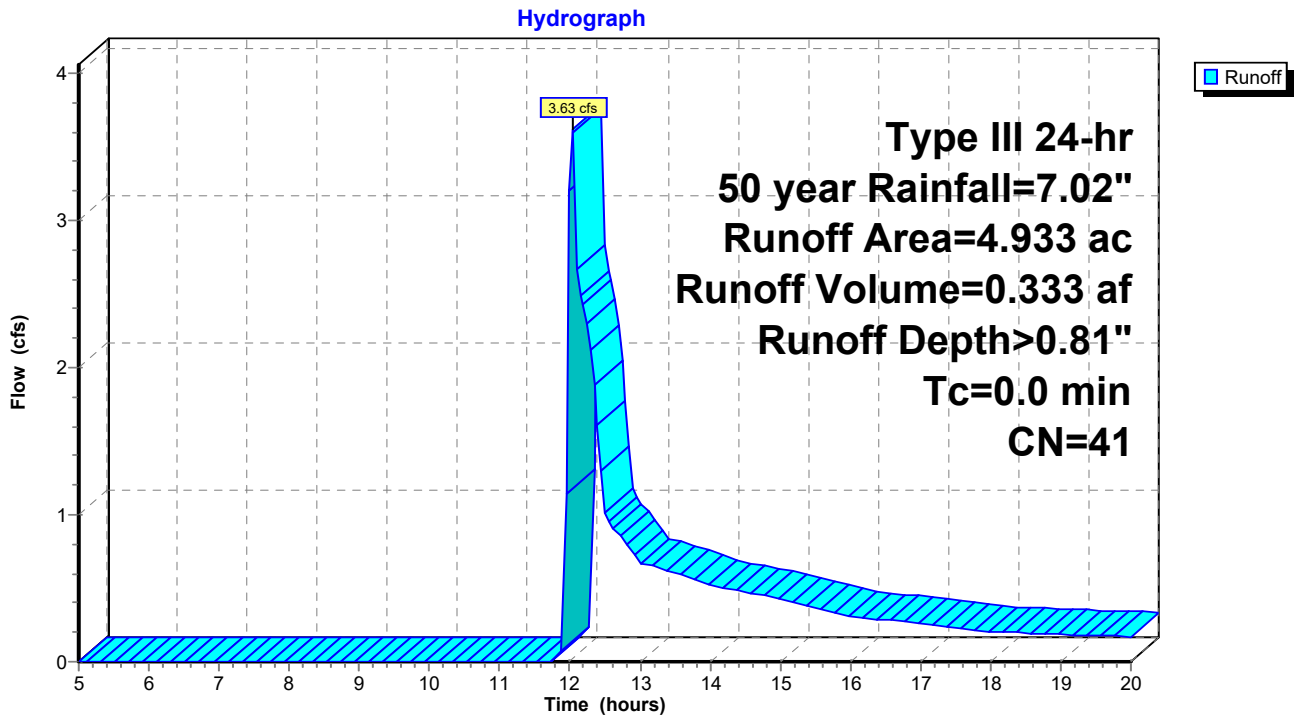
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.63 cfs @ 12.04 hrs, Volume= 0.333 af, Depth> 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.060	65	2 acre lots, 12% imp, HSG B
3.830	36	Woods, Fair, HSG A
1.042	60	Woods, Fair, HSG B
4.933	41	Weighted Average
4.925		99.85% Pervious Area
0.007		0.15% Impervious Area

Subcatchment 54: Subcat 54



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 55: Subcat 55

Runoff = 8.73 cfs @ 12.28 hrs, Volume= 0.867 af, Depth> 3.88"

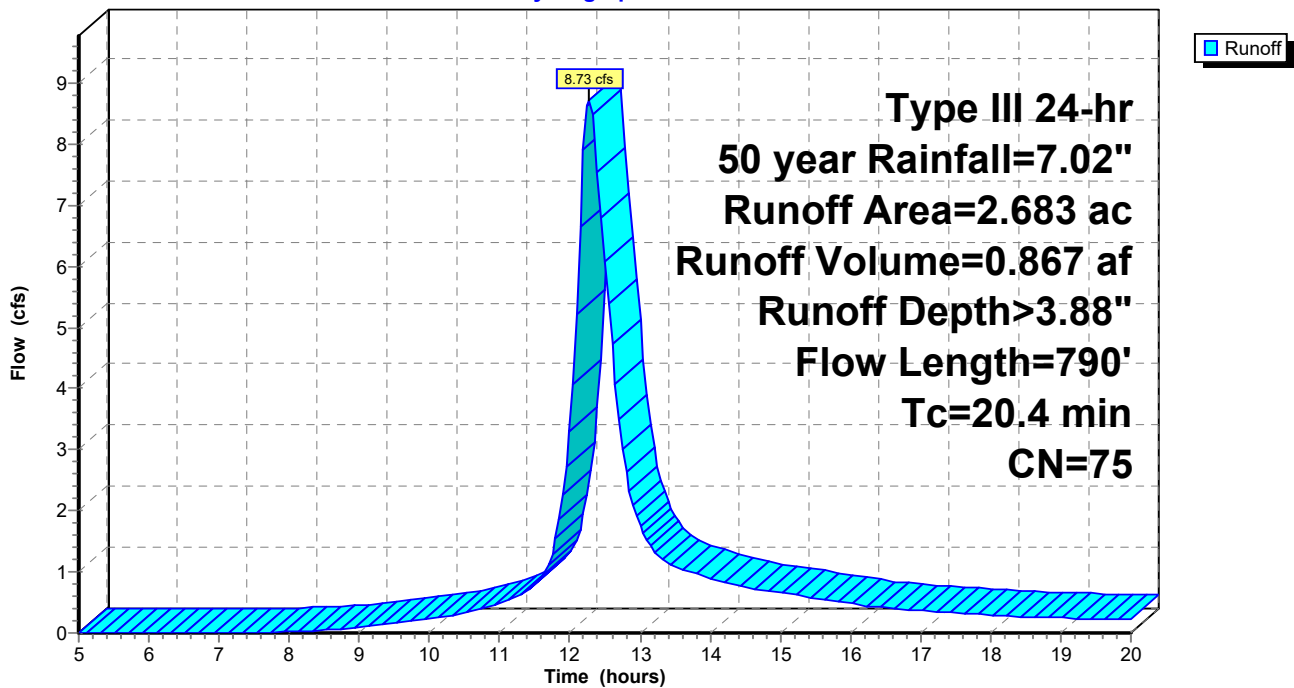
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.134	67	Row crops, straight row, Good, HSG A
2.236	78	Row crops, straight row, Good, HSG B
0.094	36	Woods, Fair, HSG A
0.219	60	Woods, Fair, HSG B
2.683	75	Weighted Average
2.683		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.9	216	0.0046	0.61		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
6.2	524	0.0248	1.42		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.4	790	Total			

Subcatchment 55: Subcat 55

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 56: Subcat 56

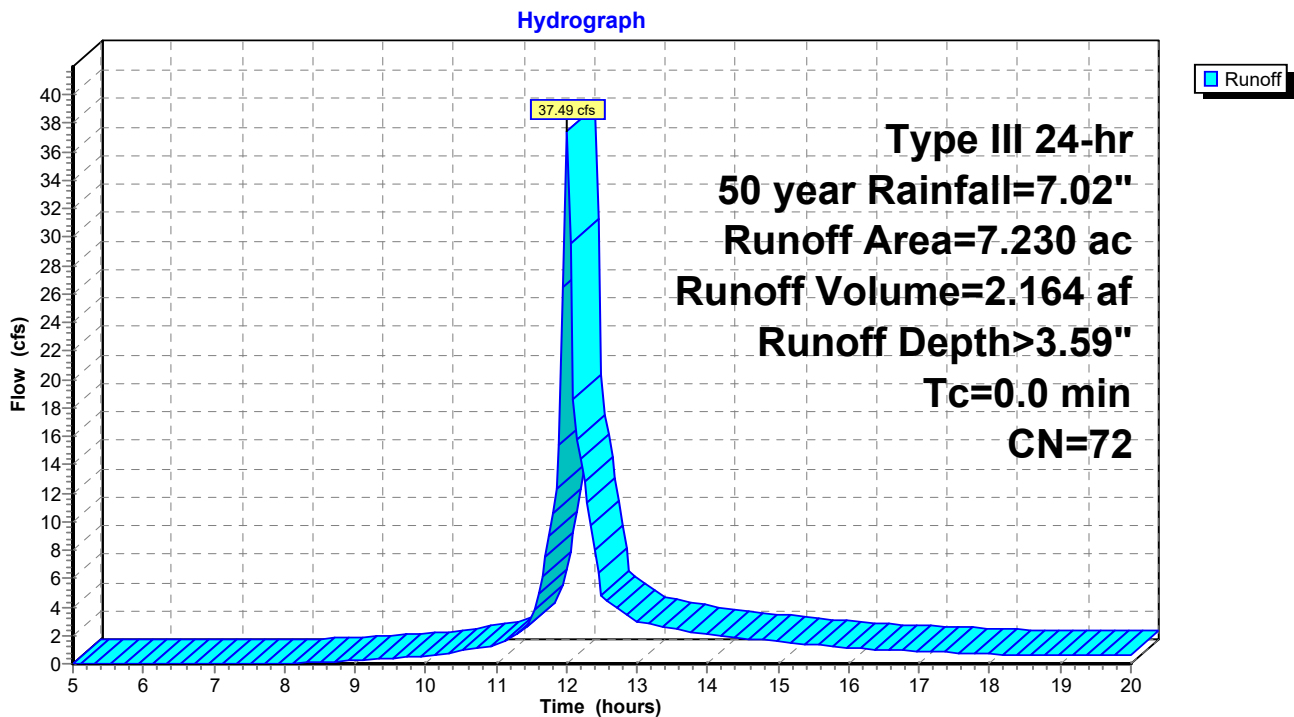
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 37.49 cfs @ 12.00 hrs, Volume= 2.164 af, Depth> 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.023	46	2 acre lots, 12% imp, HSG A
1.325	65	2 acre lots, 12% imp, HSG B
4.694	78	Row crops, straight row, Good, HSG B
0.051	36	Woods, Fair, HSG A
1.137	60	Woods, Fair, HSG B
7.230	72	Weighted Average
7.069		97.76% Pervious Area
0.162		2.24% Impervious Area

Subcatchment 56: Subcat 56



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 57: Subcat 57

Runoff = 18.14 cfs @ 12.23 hrs, Volume= 1.646 af, Depth> 3.47"

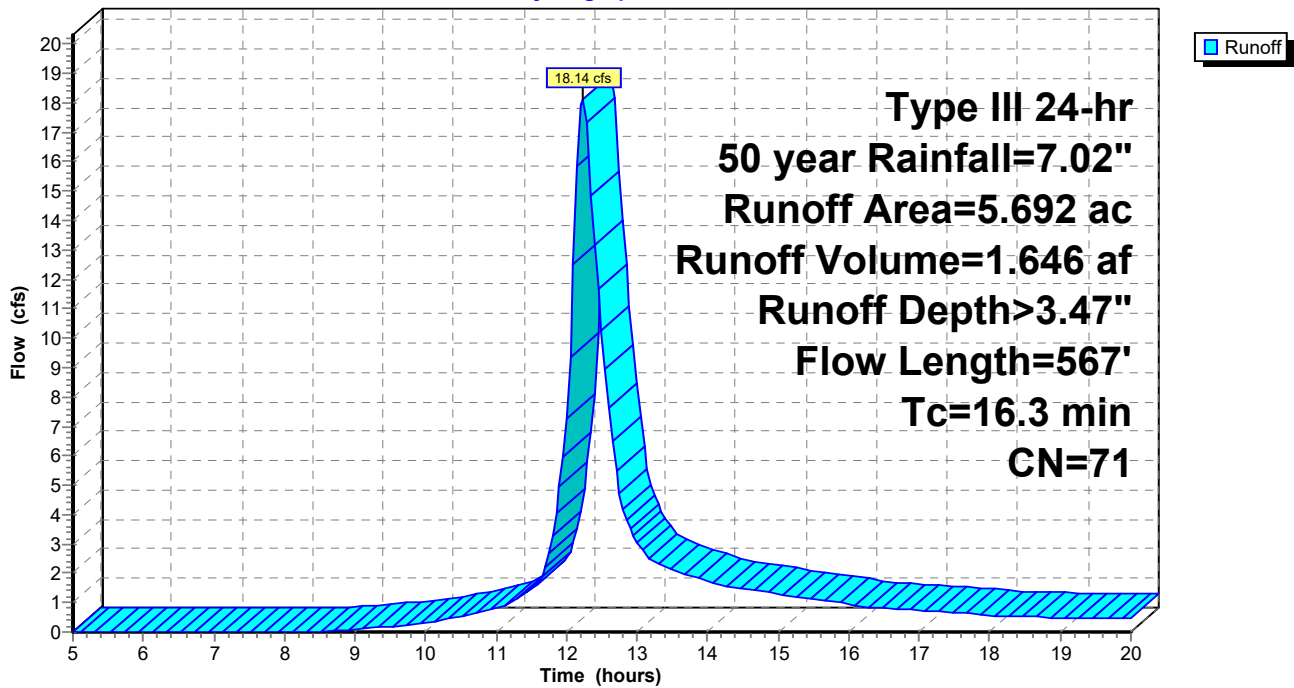
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.118	46	2 acre lots, 12% imp, HSG A
1.112	65	2 acre lots, 12% imp, HSG B
3.513	78	Row crops, straight row, Good, HSG B
0.138	36	Woods, Fair, HSG A
0.811	60	Woods, Fair, HSG B
5.692	71	Weighted Average
5.544		97.41% Pervious Area
0.148		2.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.7	266	0.0075	0.78		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.3	251	0.0398	1.80		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.3	567	Total			

Subcatchment 57: Subcat 57

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 58: Subcat 58

Runoff = 2.91 cfs @ 12.23 hrs, Volume= 0.299 af, Depth> 1.26"

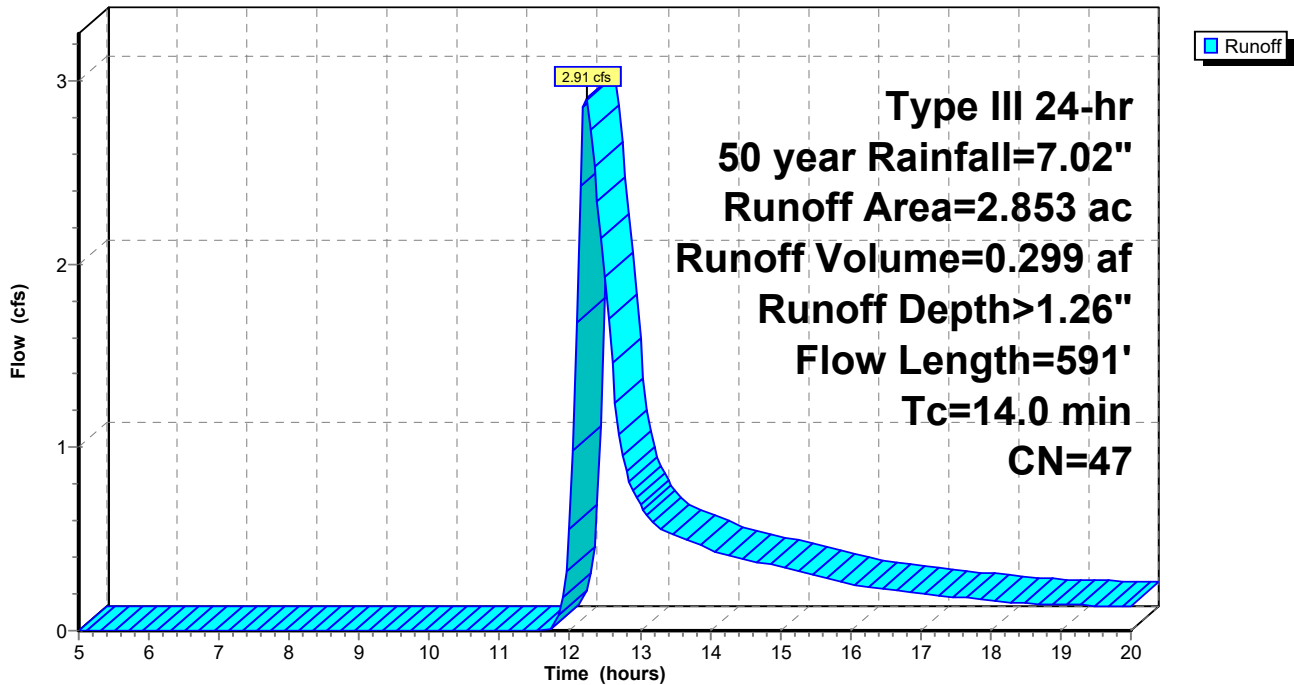
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.110	46	2 acre lots, 12% imp, HSG A
1.060	65	2 acre lots, 12% imp, HSG B
1.673	36	Woods, Fair, HSG A
0.010	60	Woods, Fair, HSG B
2.853	47	Weighted Average
2.712		95.08% Pervious Area
0.140		4.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.3	541	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	591	Total			

Subcatchment 58: Subcat 58

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 59: Subcat 59

Runoff = 4.38 cfs @ 12.21 hrs, Volume= 0.427 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.853	46	2 acre lots, 12% imp, HSG A
0.589	65	2 acre lots, 12% imp, HSG B
0.000	67	Row crops, straight row, Good, HSG A
0.285	78	Row crops, straight row, Good, HSG B
2.075	36	Woods, Fair, HSG A
0.270	60	Woods, Fair, HSG B
4.073	47	Weighted Average
3.899		95.75% Pervious Area
0.173		4.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	221	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1333	2.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	316	Total			

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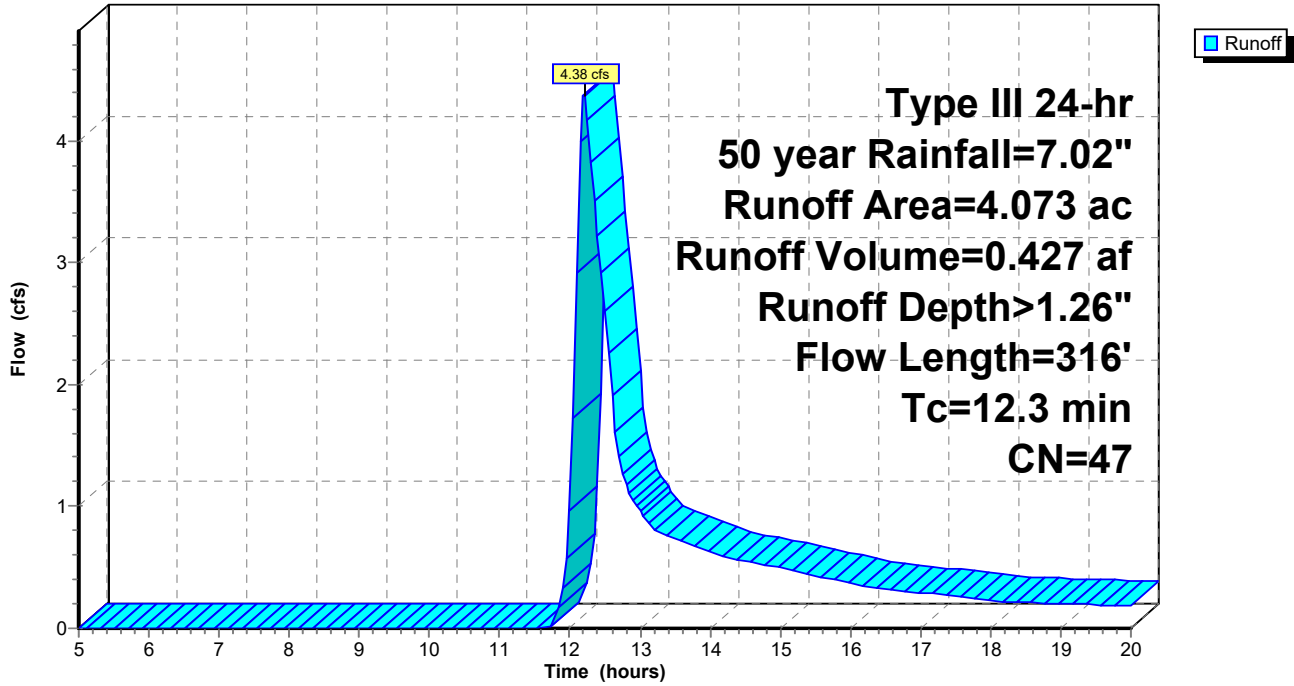
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 59: Subcat 59

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 60: Subcat 60

Runoff = 21.13 cfs @ 12.44 hrs, Volume= 2.573 af, Depth> 4.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.099	46	2 acre lots, 12% imp, HSG A
0.385	65	2 acre lots, 12% imp, HSG B
1.600	98	Roofs, HSG B
4.709	78	Row crops, straight row, Good, HSG B
0.482	36	Woods, Fair, HSG A
0.114	60	Woods, Fair, HSG B
7.389	78	Weighted Average
5.731		77.56% Pervious Area
1.658		22.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
23.1	855	0.0047	0.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.0	98	0.0510	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.4	1,003	Total			

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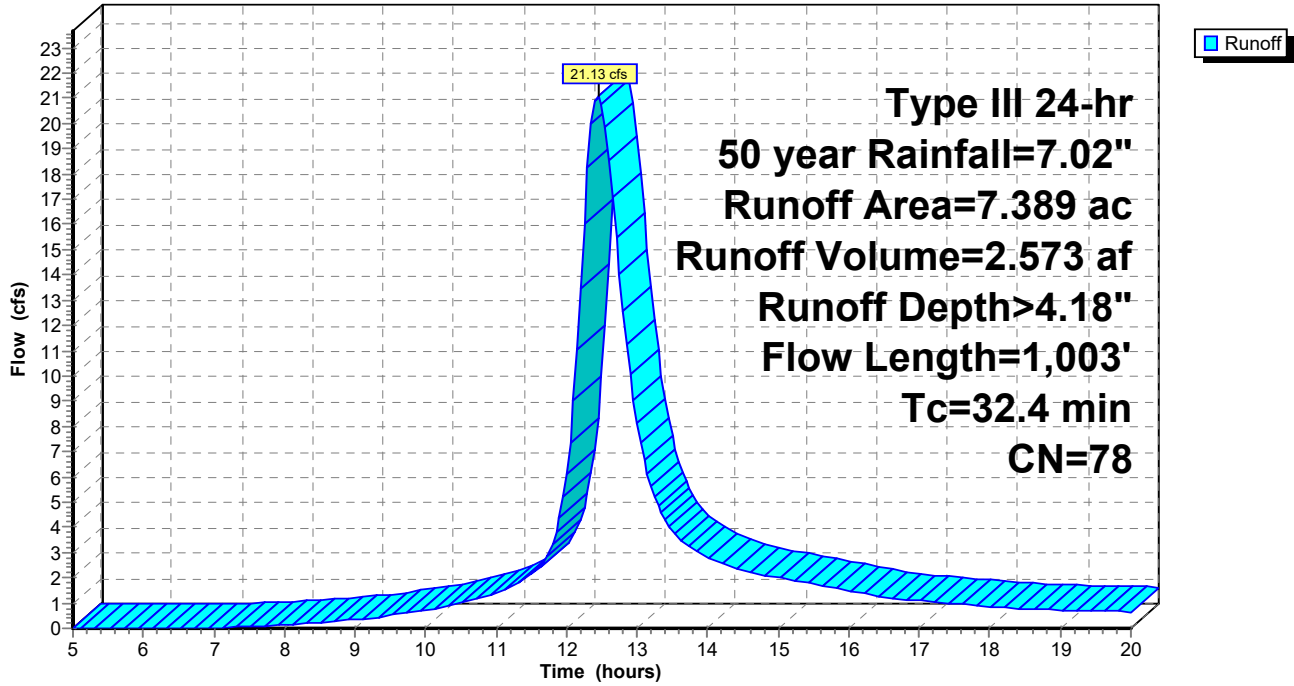
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 60: Subcat 60

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 62: Subcat 62

Runoff = 60.28 cfs @ 12.42 hrs, Volume= 6.965 af, Depth> 3.45"

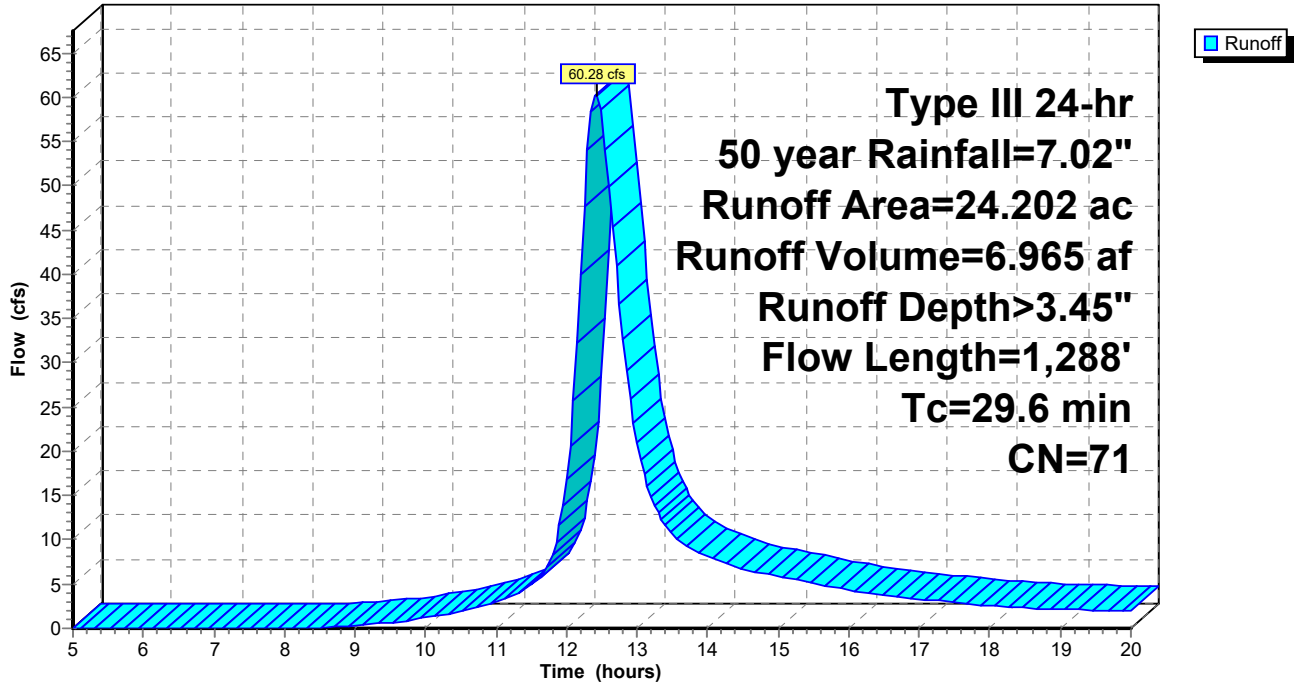
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.002	0	, HSG A
* 0.001	0	, HSG B
0.233	46	2 acre lots, 12% imp, HSG A
7.452	65	2 acre lots, 12% imp, HSG B
0.010	89	Paved roads w/open ditches, 50% imp, HSG B
14.386	78	Row crops, straight row, Good, HSG B
1.590	36	Woods, Fair, HSG A
0.529	60	Woods, Fair, HSG B
24.202	71	Weighted Average
23.275		96.17% Pervious Area
0.927		3.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
12.2	757	0.0132	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.1	481	0.0312	0.88		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
29.6	1,288	Total			

Subcatchment 62: Subcat 62

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 64: Subcat 64

Runoff = 5.40 cfs @ 12.21 hrs, Volume= 0.468 af, Depth> 3.17"

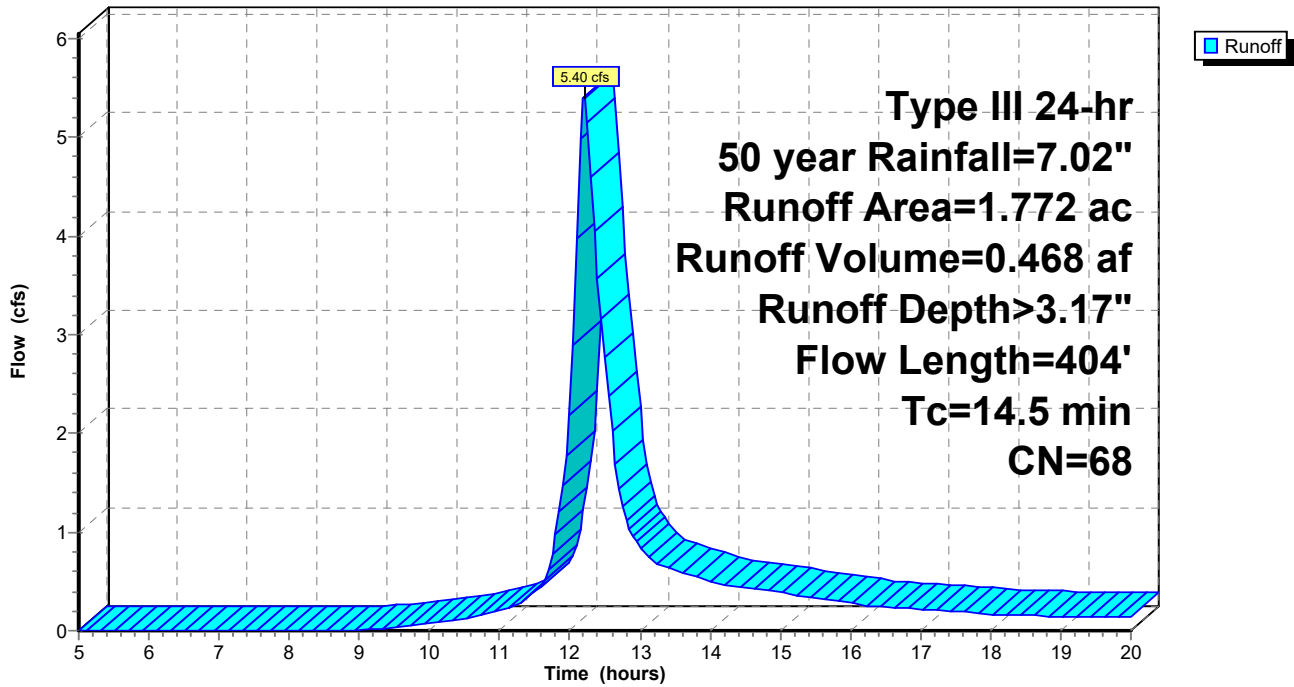
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.012	46	2 acre lots, 12% imp, HSG A
0.294	67	Row crops, straight row, Good, HSG A
1.126	78	Row crops, straight row, Good, HSG B
0.340	36	Woods, Fair, HSG A
1.772	68	Weighted Average
1.771		99.92% Pervious Area
0.001		0.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.2	354	0.0113	0.96		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
14.5	404	Total			

Subcatchment 64: Subcat 64

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 65: Subcat 65

Runoff = 11.24 cfs @ 12.30 hrs, Volume= 1.150 af, Depth> 3.88"

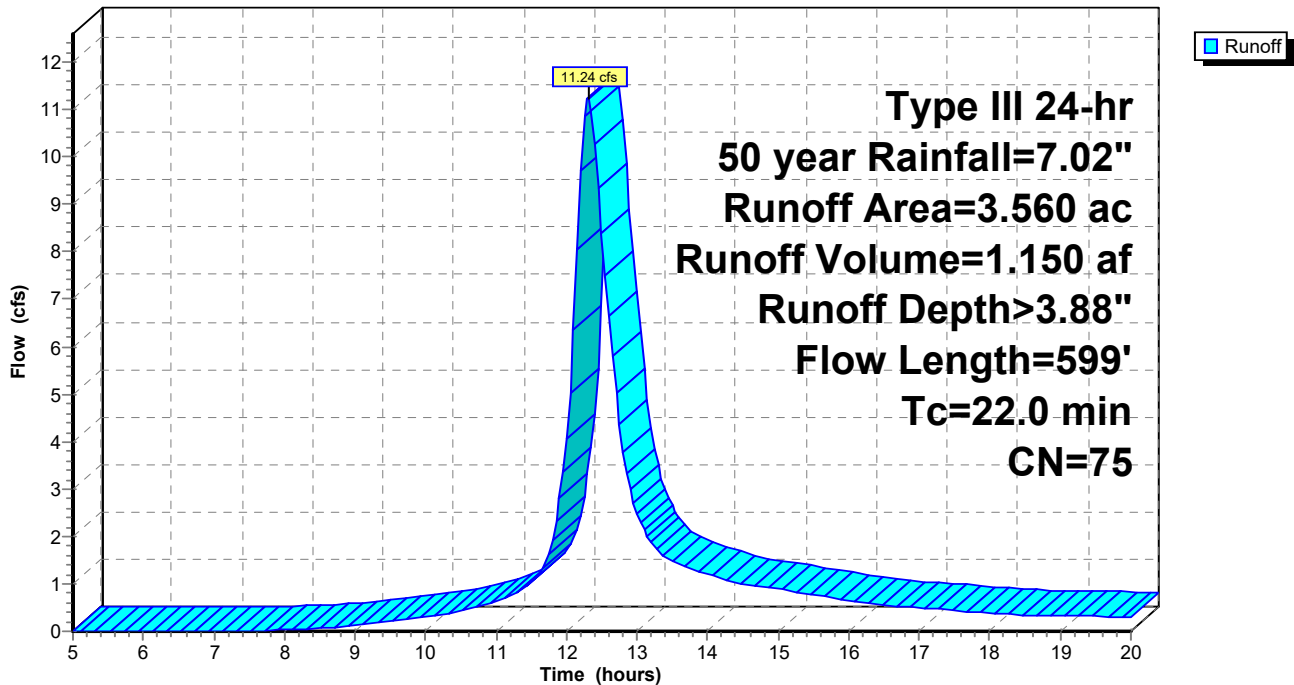
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.162	67	Row crops, straight row, Good, HSG A
2.990	78	Row crops, straight row, Good, HSG B
0.127	36	Woods, Fair, HSG A
0.282	60	Woods, Fair, HSG B
3.560	75	Weighted Average
3.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
13.7	549	0.0055	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.0	599	Total			

Subcatchment 65: Subcat 65

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 66: Subcat 66

Runoff = 7.49 cfs @ 12.19 hrs, Volume= 0.637 af, Depth> 3.99"

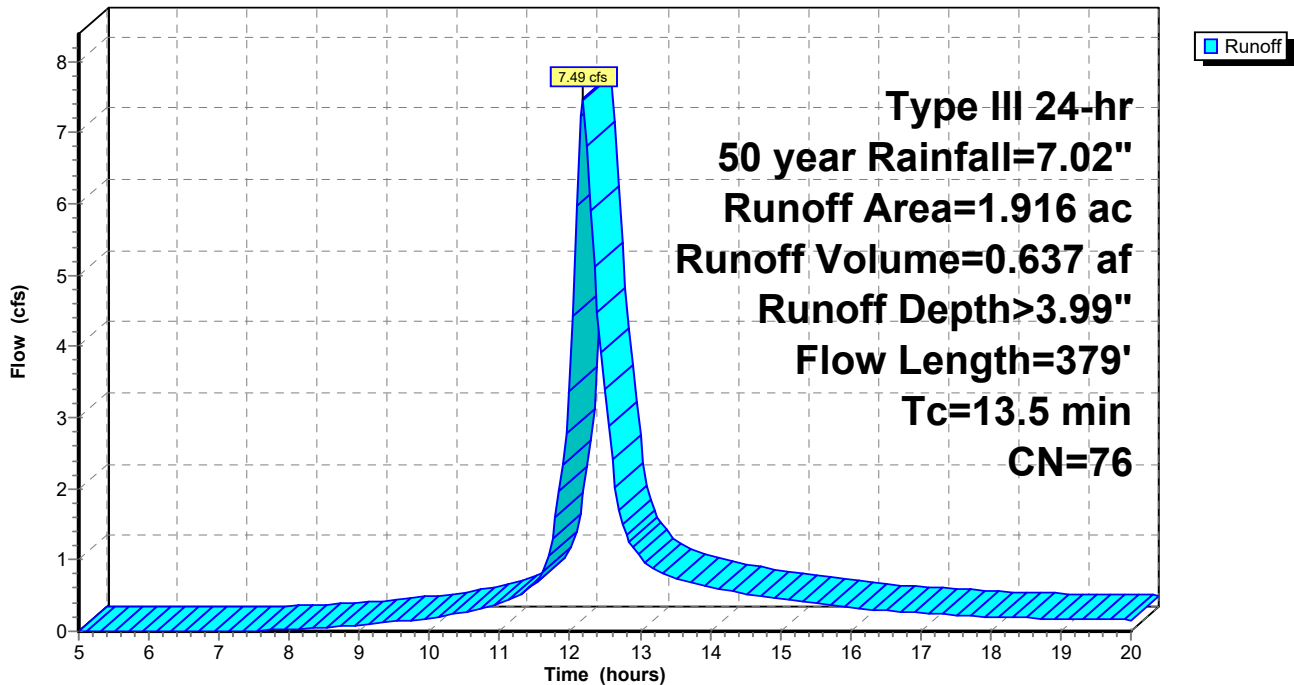
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.020	89	Paved roads w/open ditches, 50% imp, HSG B
1.653	78	Row crops, straight row, Good, HSG B
0.243	60	Woods, Fair, HSG B
1.916	76	Weighted Average
1.906		99.47% Pervious Area
0.010		0.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.2	329	0.0137	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.5	379	Total			

Subcatchment 66: Subcat 66

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 37P: (new Pond)

Inflow Area = 1.143 ac, 0.10% Impervious, Inflow Depth > 4.20" for 50 year event
 Inflow = 4.51 cfs @ 12.21 hrs, Volume= 0.400 af
 Outflow = 4.36 cfs @ 12.25 hrs, Volume= 0.400 af, Atten= 3%, Lag= 2.7 min
 Discarded = 0.55 cfs @ 12.25 hrs, Volume= 0.263 af
 Primary = 3.81 cfs @ 12.25 hrs, Volume= 0.137 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.59' @ 12.25 hrs Surf.Area= 7,854 sf Storage= 2,738 cf

Plug-Flow detention time= 34.3 min calculated for 0.399 af (100% of inflow)
 Center-of-Mass det. time= 33.9 min (820.6 - 786.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	166.00'	7,138 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
166.00	2,016	0	0	2,016
167.00	14,072	7,138	7,138	14,075

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	166.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.55 cfs @ 12.25 hrs HW=166.59' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.55 cfs)

Primary OutFlow Max=3.79 cfs @ 12.25 hrs HW=166.59' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 3.79 cfs @ 0.82 fps)

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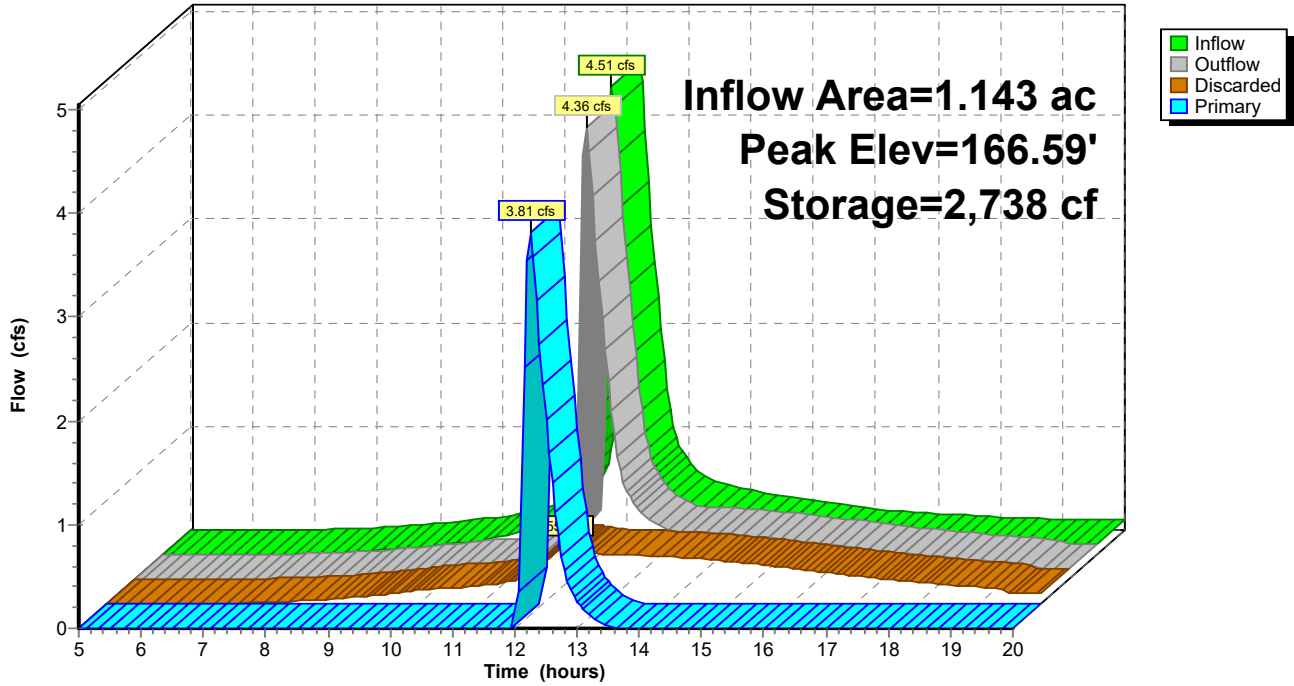
Type III 24-hr 50 year Rainfall=7.02"

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Pond 37P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 38P: (new Pond)

Inflow Area = 3.921 ac, 0.00% Impervious, Inflow Depth > 4.19" for 50 year event
 Inflow = 13.59 cfs @ 12.29 hrs, Volume= 1.371 af
 Outflow = 11.51 cfs @ 12.42 hrs, Volume= 1.316 af, Atten= 15%, Lag= 8.1 min
 Discarded = 1.85 cfs @ 12.42 hrs, Volume= 0.880 af
 Primary = 9.66 cfs @ 12.42 hrs, Volume= 0.436 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.67' @ 12.42 hrs Surf.Area= 26,616 sf Storage= 14,747 cf

Plug-Flow detention time= 67.4 min calculated for 1.316 af (96% of inflow)
 Center-of-Mass det. time= 52.7 min (844.0 - 791.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	163.00'	25,279 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
163.00	0	0	0	0	
164.00	9,379	3,126	3,126	9,381	
165.00	38,160	22,152	25,279	38,166	

Device	Routing	Invert	Outlet Devices									
#1	Primary	164.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.85 cfs @ 12.42 hrs HW=164.67' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.85 cfs)

Primary OutFlow Max=9.55 cfs @ 12.42 hrs HW=164.67' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 9.55 cfs @ 1.11 fps)

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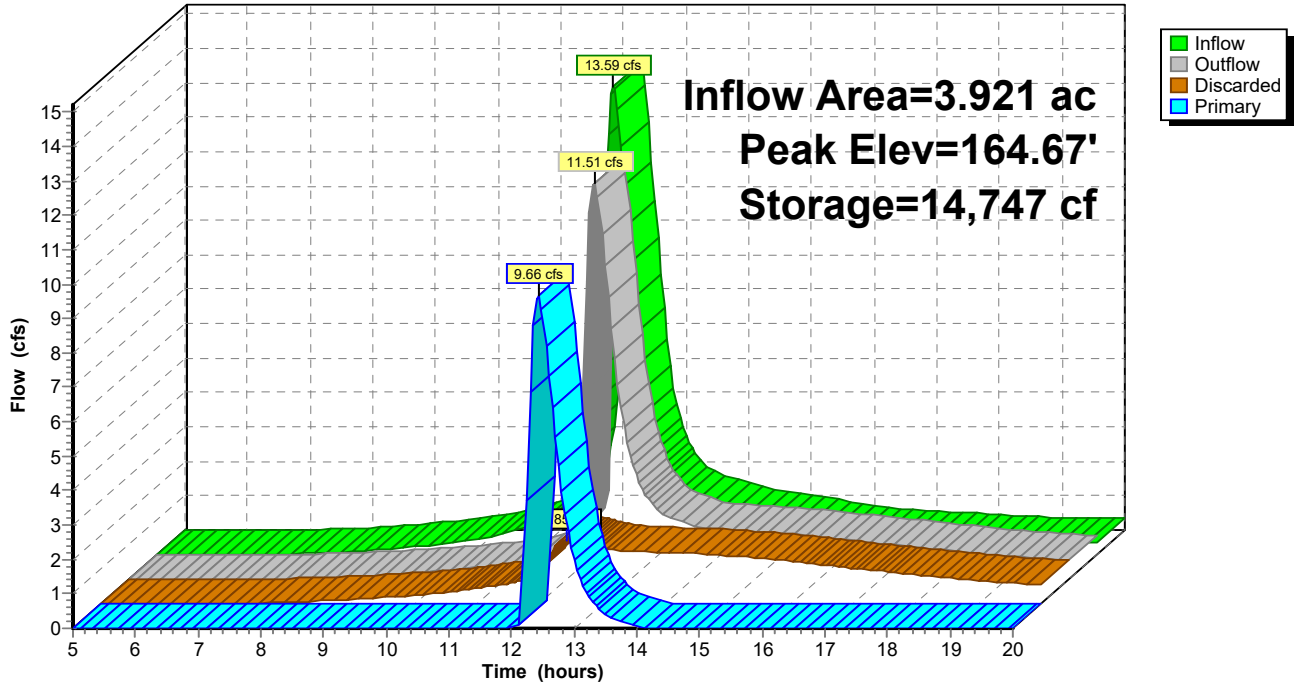
Type III 24-hr 50 year Rainfall=7.02"

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Pond 38P: (new Pond)

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 39P: (new Pond)

Inflow Area = 3.190 ac, 3.32% Impervious, Inflow Depth > 2.88" for 50 year event
 Inflow = 10.94 cfs @ 12.19 hrs, Volume= 0.765 af
 Outflow = 1.75 cfs @ 12.82 hrs, Volume= 0.745 af, Atten= 84%, Lag= 37.7 min
 Discarded = 1.75 cfs @ 12.82 hrs, Volume= 0.745 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 165.34' @ 12.82 hrs Surf.Area= 25,105 sf Storage= 16,201 cf

Plug-Flow detention time= 113.6 min calculated for 0.742 af (97% of inflow)
 Center-of-Mass det. time= 103.1 min (887.3 - 784.1)

Volume	Invert	Avail.Storage	Storage Description
#1	164.00'	38,968 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
164.00	2,834	0	0 2,834
166.00	44,400	38,968	38,968 44,411

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	164.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.75 cfs @ 12.82 hrs HW=165.34' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.75 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=164.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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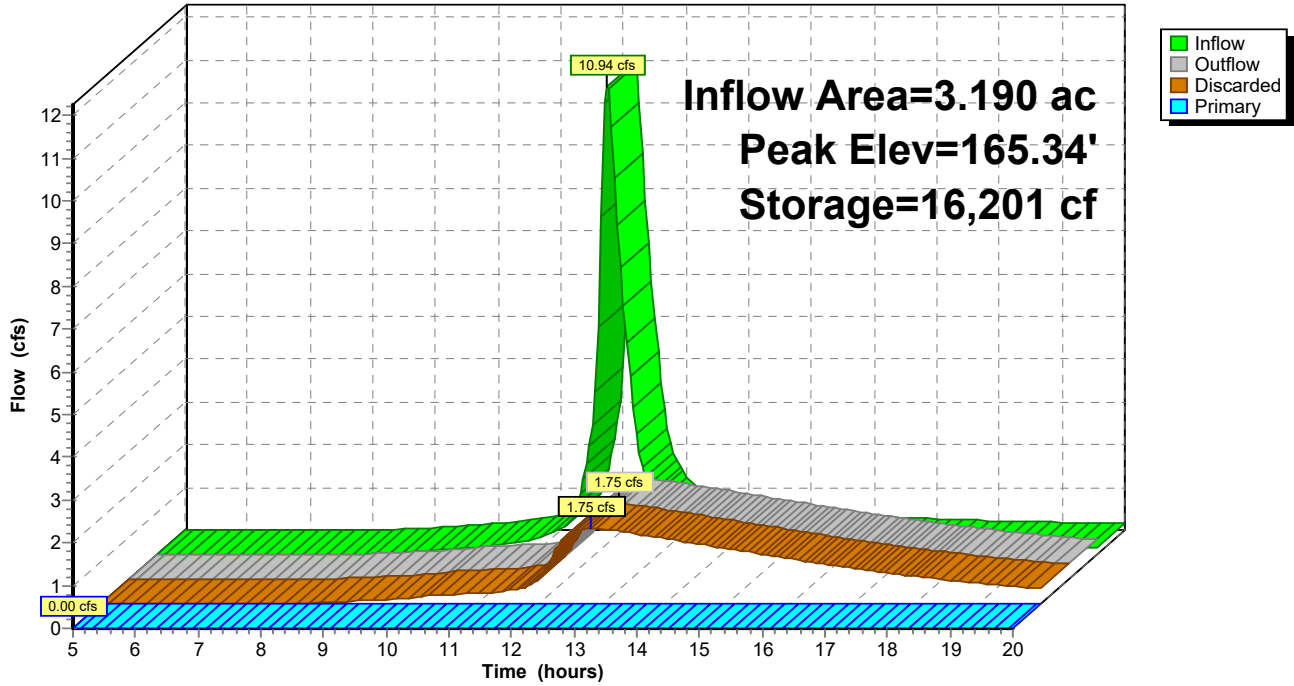
Type III 24-hr 50 year Rainfall=7.02"

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Pond 39P: (new Pond)

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 44P: (new Pond)

Inflow Area = 2.114 ac, 0.00% Impervious, Inflow Depth > 4.10" for 50 year event
 Inflow = 9.30 cfs @ 12.15 hrs, Volume= 0.723 af
 Outflow = 1.85 cfs @ 12.65 hrs, Volume= 0.678 af, Atten= 80%, Lag= 30.4 min
 Discarded = 1.38 cfs @ 12.65 hrs, Volume= 0.666 af
 Primary = 0.47 cfs @ 12.65 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.02' @ 12.65 hrs Surf.Area= 19,729 sf Storage= 14,095 cf

Plug-Flow detention time= 128.0 min calculated for 0.678 af (94% of inflow)
 Center-of-Mass det. time= 105.9 min (890.6 - 784.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	157.00'	43,325 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
157.00	0	0	0	0	
158.00	5,632	1,877	1,877	5,634	
160.00	41,290	41,448	43,325	41,305	

Device	Routing	Invert	Outlet Devices									
#1	Primary	159.00'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.38 cfs @ 12.65 hrs HW=159.02' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.38 cfs)

Primary OutFlow Max=0.40 cfs @ 12.65 hrs HW=159.02' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.40 cfs @ 0.39 fps)

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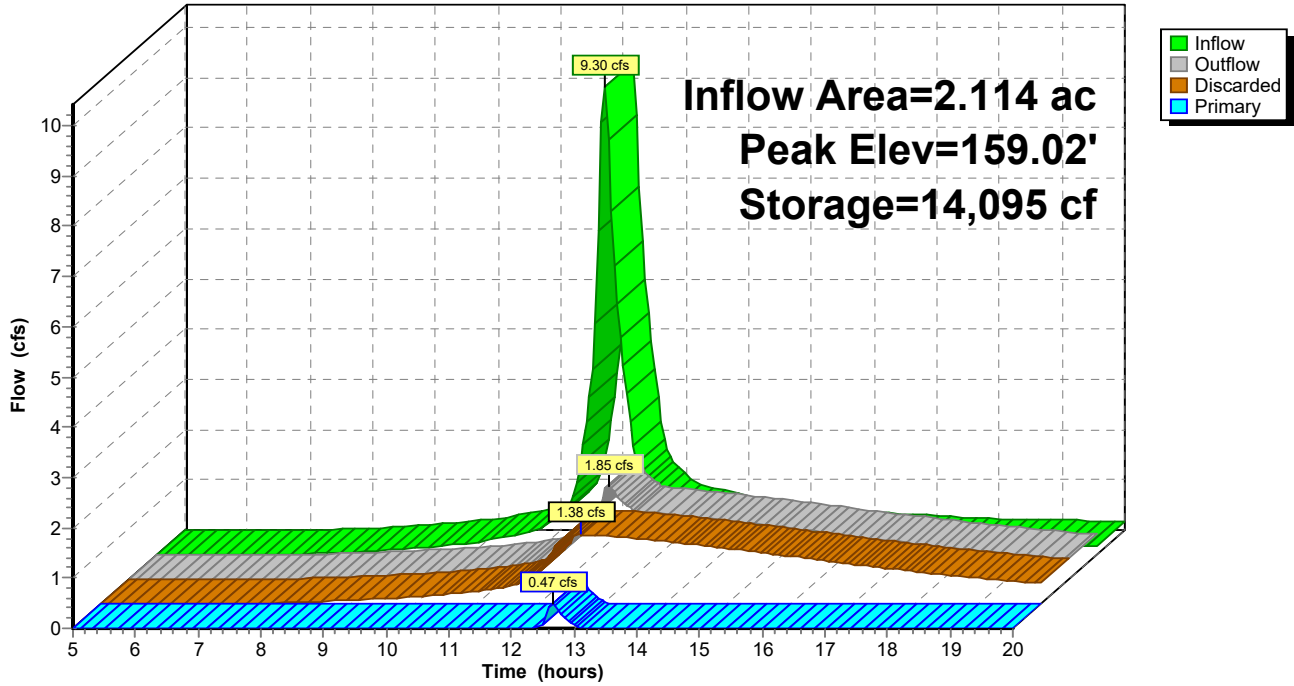
Type III 24-hr 50 year Rainfall=7.02"

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Pond 44P: (new Pond)

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 45P: (new Pond)

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth > 4.11" for 50 year event
 Inflow = 11.68 cfs @ 12.10 hrs, Volume= 0.804 af
 Outflow = 1.15 cfs @ 13.01 hrs, Volume= 0.675 af, Atten= 90%, Lag= 54.7 min
 Discarded = 1.15 cfs @ 13.01 hrs, Volume= 0.675 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.54' @ 13.01 hrs Surf.Area= 16,387 sf Storage= 17,350 cf

Plug-Flow detention time= 174.0 min calculated for 0.675 af (84% of inflow)
 Center-of-Mass det. time= 128.0 min (909.7 - 781.7)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	180,186 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	5,028	1,676	1,676	5,030
156.00	21,015	24,215	25,891	21,035
158.00	37,382	57,617	83,508	37,446
160.00	60,198	96,678	180,186	60,315

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	153.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.15 cfs @ 13.01 hrs HW=155.54' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.15 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=153.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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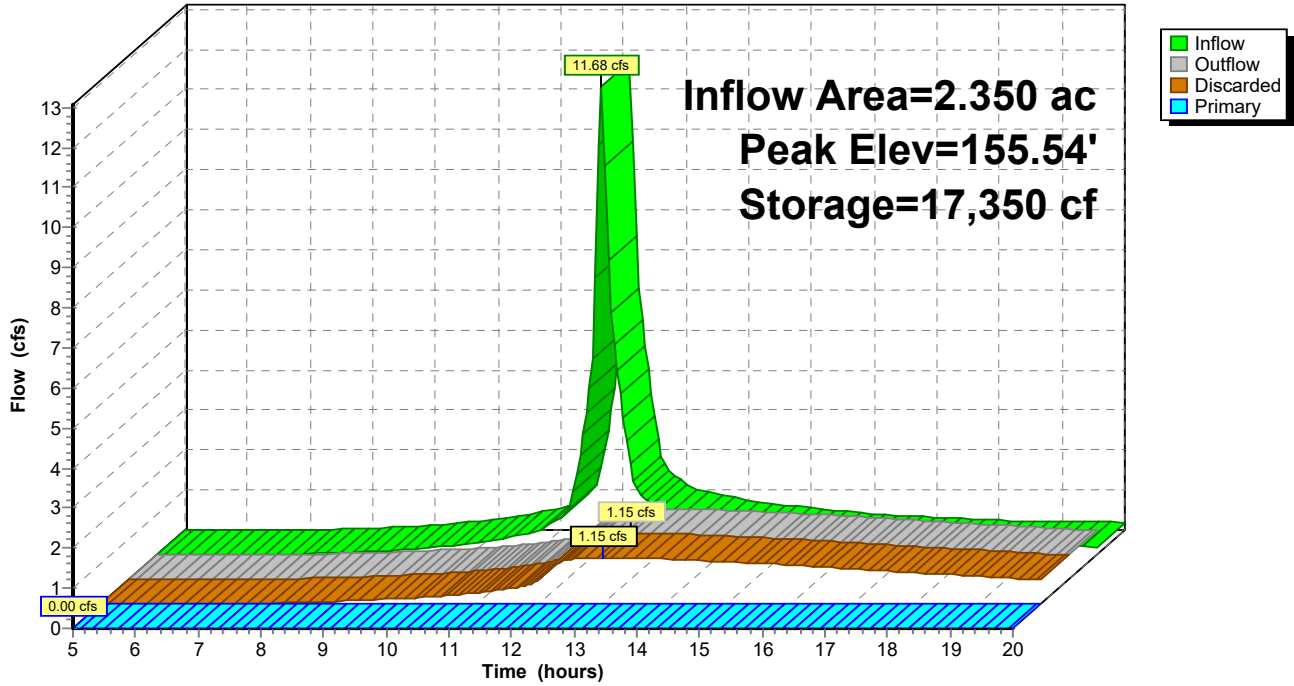
Type III 24-hr 50 year Rainfall=7.02"

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Pond 45P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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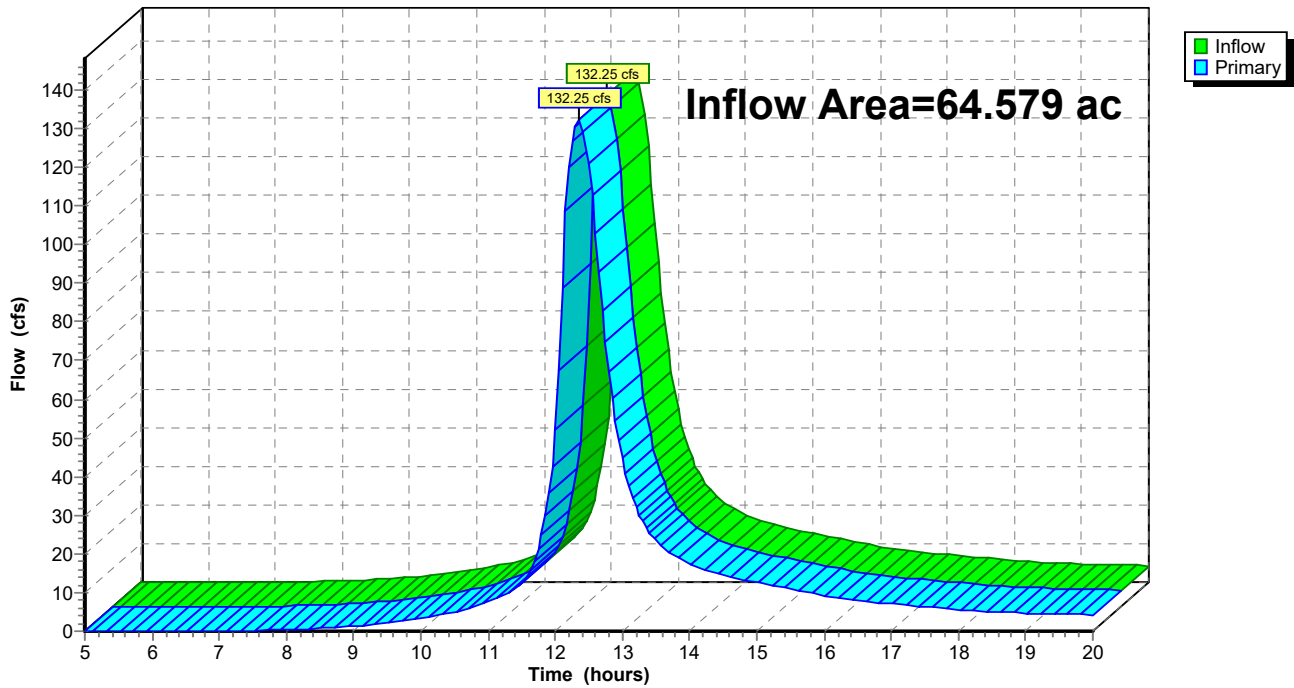
Summary for Link DP47: DP47

Inflow Area = 64.579 ac, 1.36% Impervious, Inflow Depth > 3.01" for 50 year event
Inflow = 132.25 cfs @ 12.36 hrs, Volume= 16.201 af
Primary = 132.25 cfs @ 12.36 hrs, Volume= 16.201 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP47: DP47

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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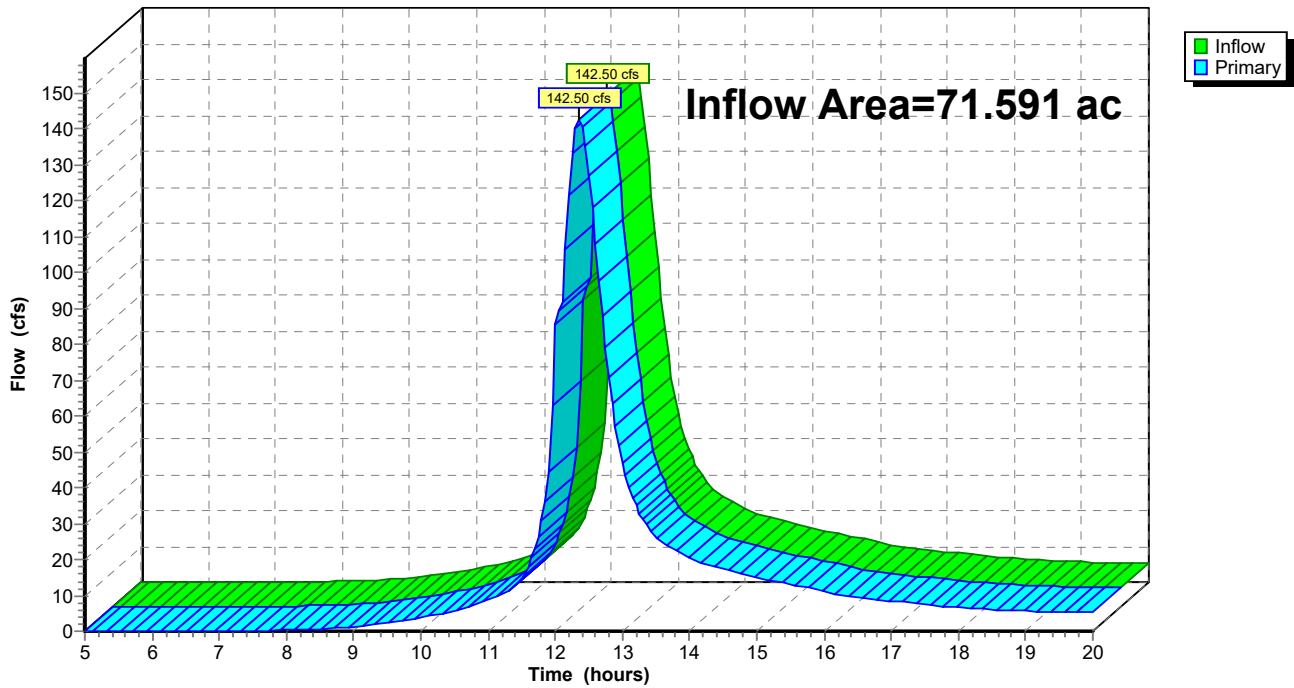
Summary for Link DP54: DP54

Inflow Area = 71.591 ac, 4.62% Impervious, Inflow Depth > 3.05" for 50 year event
Inflow = 142.50 cfs @ 12.35 hrs, Volume= 18.197 af
Primary = 142.50 cfs @ 12.35 hrs, Volume= 18.197 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP54: DP54

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 36: Subcat 36

Runoff = 31.30 cfs @ 12.39 hrs, Volume= 3.617 af, Depth> 5.00"

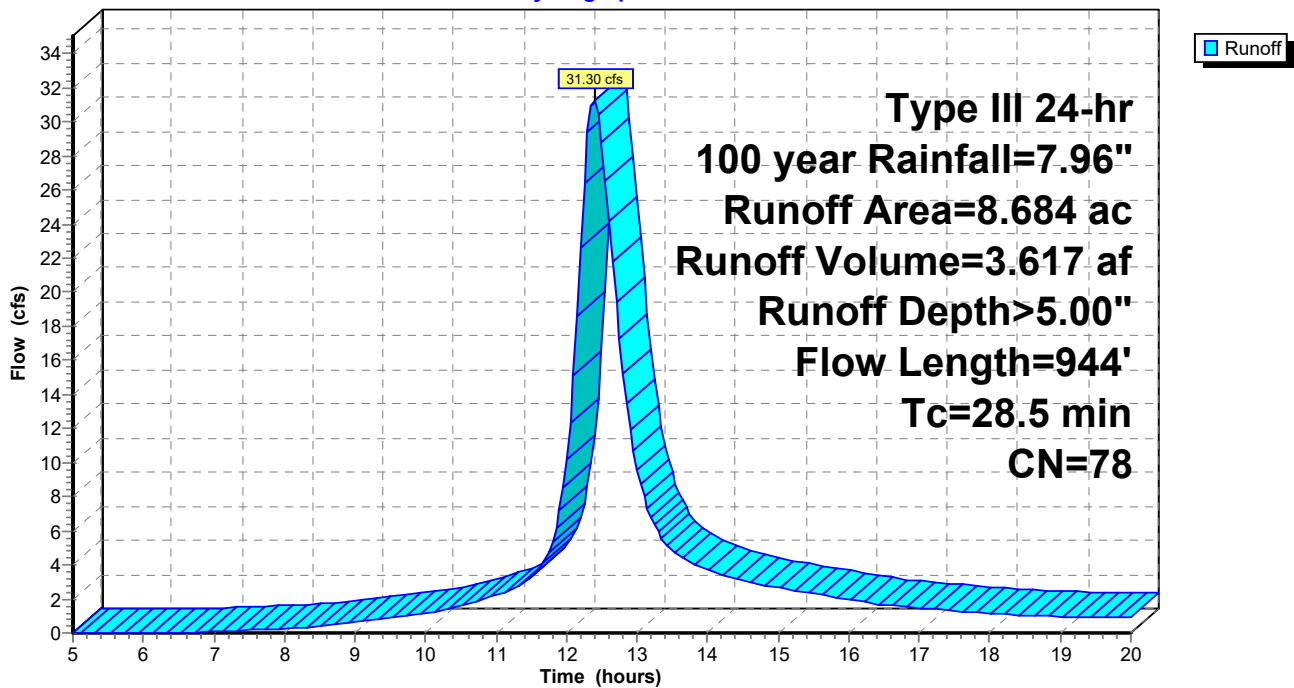
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.026	65	2 acre lots, 12% imp, HSG B
0.050	89	Paved roads w/open ditches, 50% imp, HSG B
8.608	78	Row crops, straight row, Good, HSG B
8.684	78	Weighted Average
8.656		99.67% Pervious Area
0.028		0.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.1	170	0.0059	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.1	724	0.0069	0.75		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.5	944	Total			

Subcatchment 36: Subcat 36

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 37: Subcat 37

Runoff = 5.35 cfs @ 12.21 hrs, Volume= 0.478 af, Depth> 5.02"

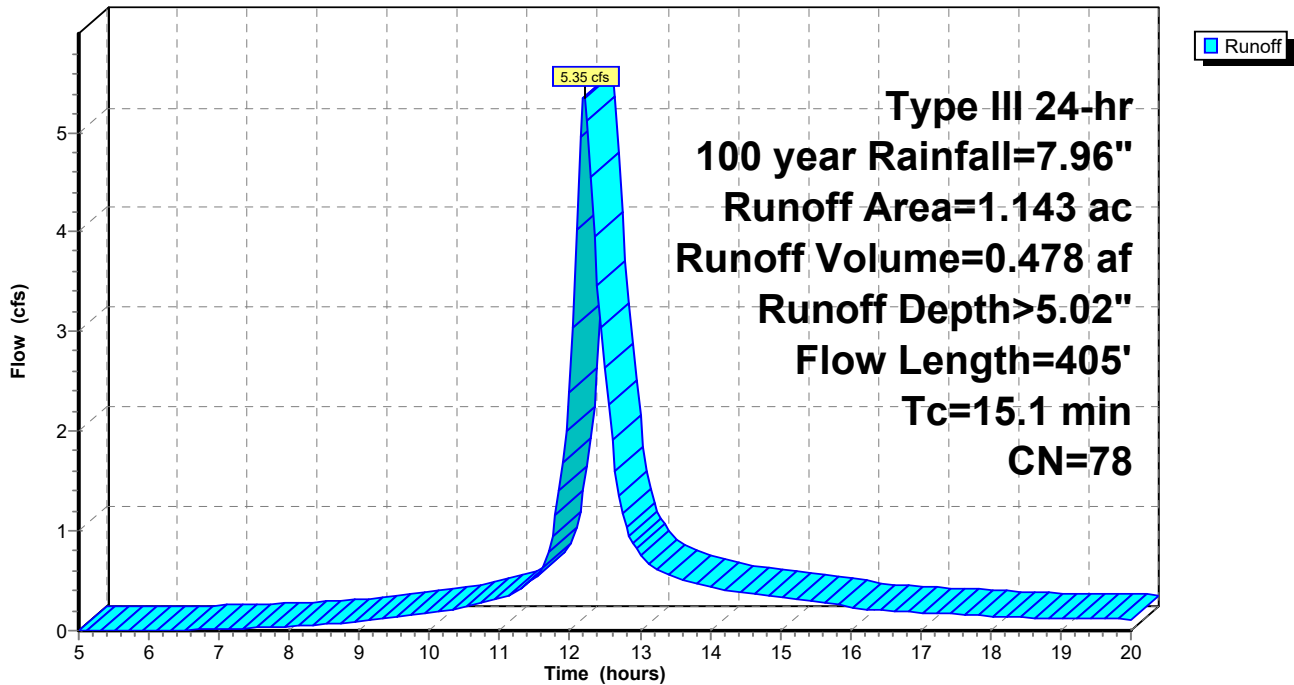
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.002	89	Paved roads w/open ditches, 50% imp, HSG B
1.140	78	Row crops, straight row, Good, HSG B
1.143	78	Weighted Average
1.142		99.90% Pervious Area
0.001		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
8.8	355	0.0056	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
15.1	405	Total			

Subcatchment 37: Subcat 37

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 38: Subcat 38

Runoff = 16.13 cfs @ 12.28 hrs, Volume= 1.637 af, Depth> 5.01"

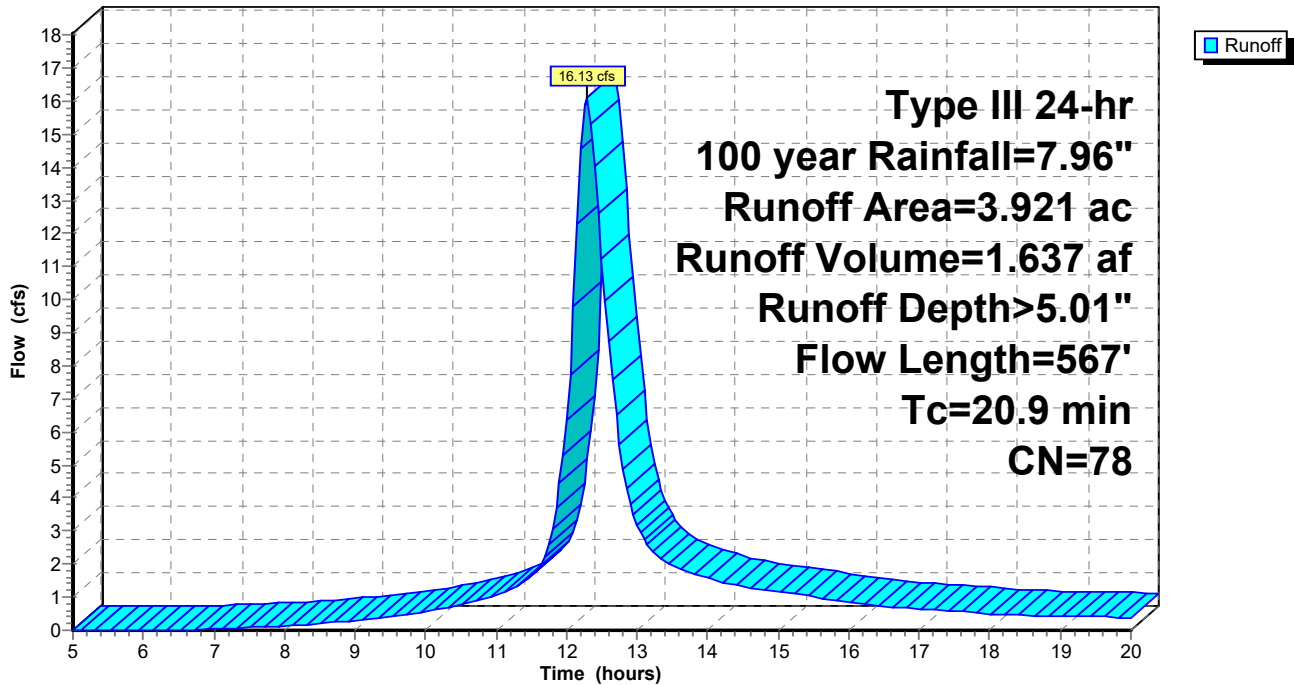
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
3.921	78	Row crops, straight row, Good, HSG B
3.921		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
12.6	517	0.0058	0.69		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.9	567	Total			

Subcatchment 38: Subcat 38

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 39: Subcat 39

Runoff = 9.70 cfs @ 12.15 hrs, Volume= 0.761 af, Depth> 4.46"

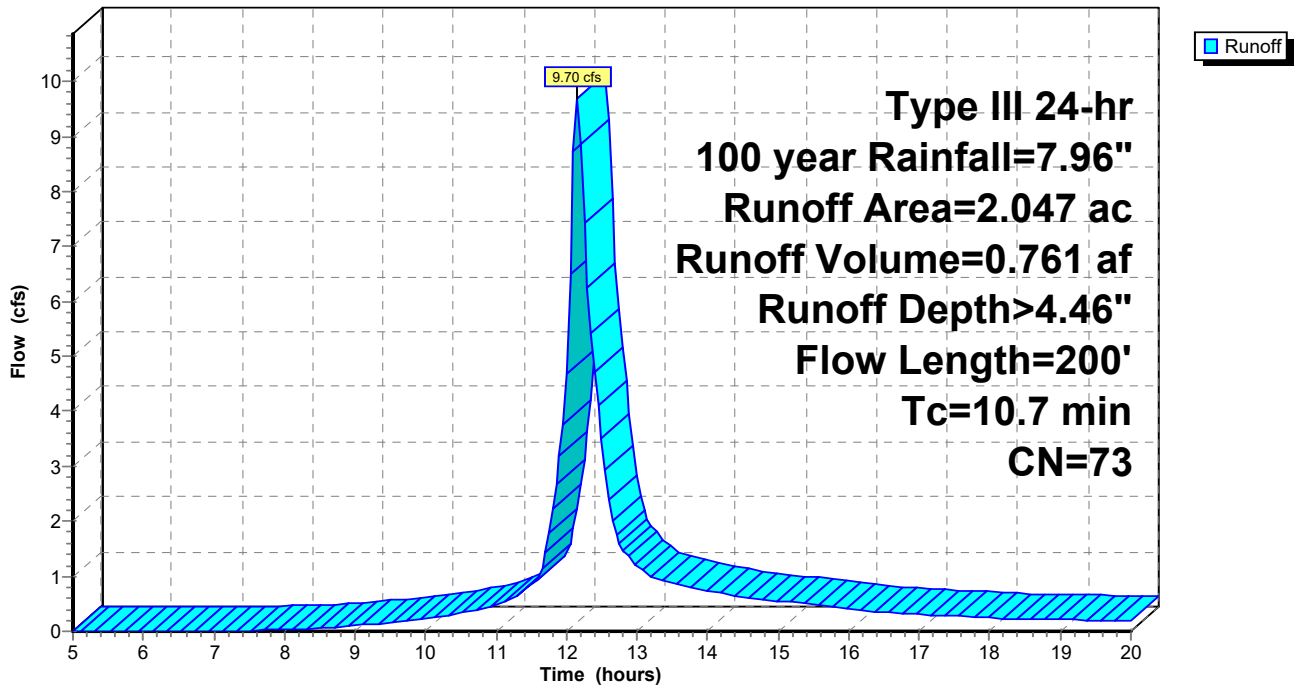
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.770	65	2 acre lots, 12% imp, HSG B
0.025	89	Paved roads w/open ditches, 50% imp, HSG B
1.252	78	Row crops, straight row, Good, HSG B
2.047	73	Weighted Average
1.942		94.89% Pervious Area
0.105		5.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
2.4	150	0.0133	1.04		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
10.7	200	Total			

Subcatchment 39: Subcat 39

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 40: Subcat 40

Runoff = 2.53 cfs @ 12.15 hrs, Volume= 0.194 af, Depth> 3.58"

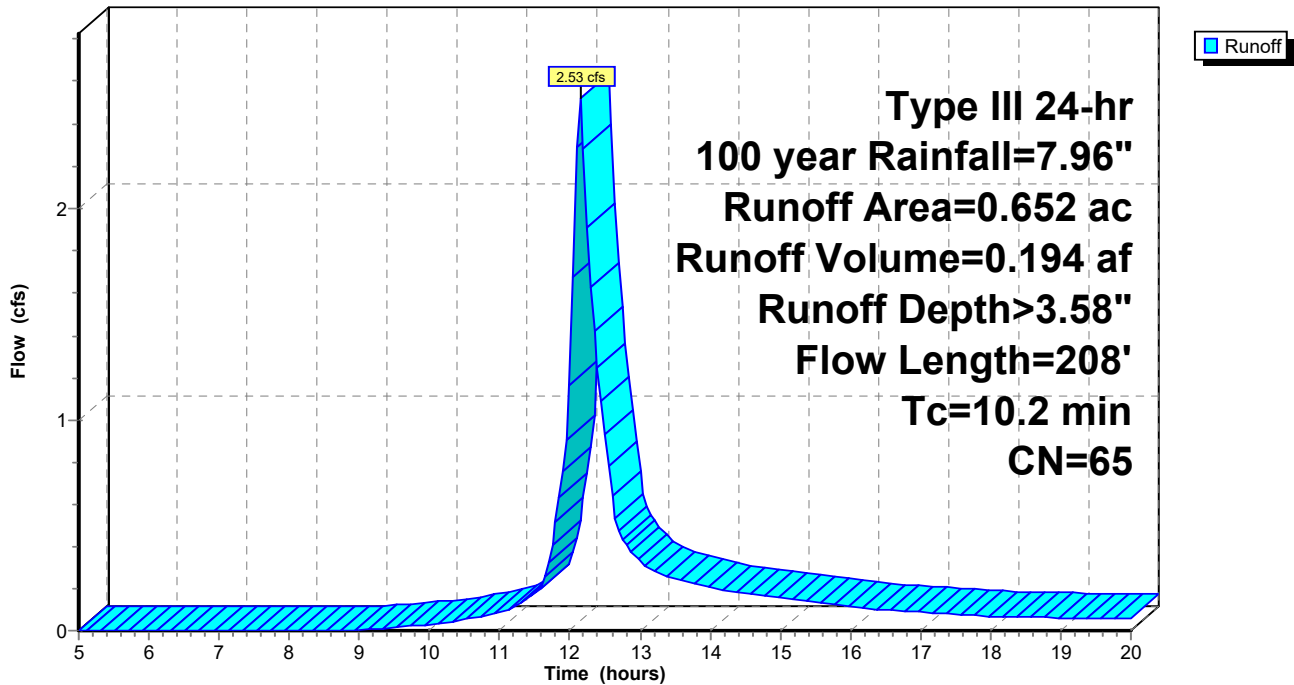
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.008	46	2 acre lots, 12% imp, HSG A
0.644	65	2 acre lots, 12% imp, HSG B
0.652	65	Weighted Average
0.574		88.00% Pervious Area
0.078		12.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.7	158	0.0190	0.96		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	208	Total			

Subcatchment 40: Subcat 40

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 41: Subcat 41

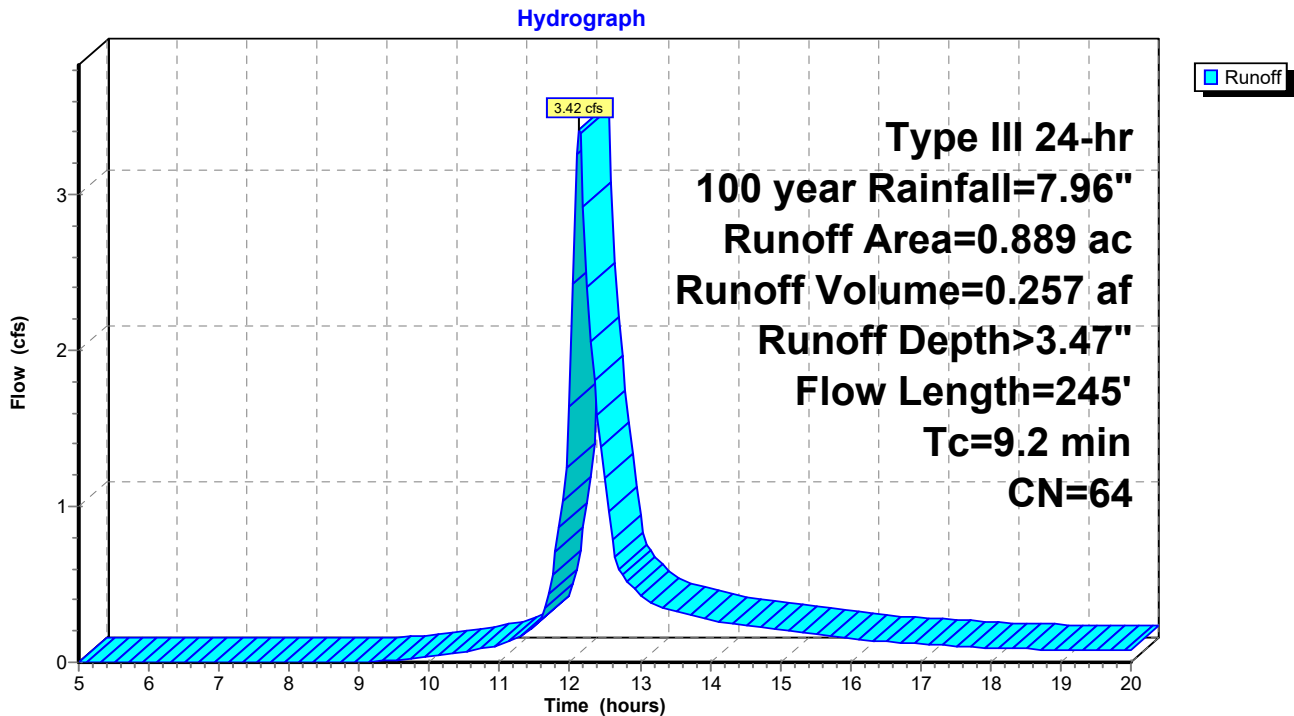
Runoff = 3.42 cfs @ 12.14 hrs, Volume= 0.257 af, Depth> 3.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.110	46	2 acre lots, 12% imp, HSG A
0.684	65	2 acre lots, 12% imp, HSG B
0.094	78	Row crops, straight row, Good, HSG B
0.889	64	Weighted Average
0.793		89.27% Pervious Area
0.095		10.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
2.9	195	0.0256	1.12		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	245	Total			

Subcatchment 41: Subcat 41



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 42: Subcat 42

Runoff = 6.49 cfs @ 12.19 hrs, Volume= 0.550 af, Depth> 3.57"

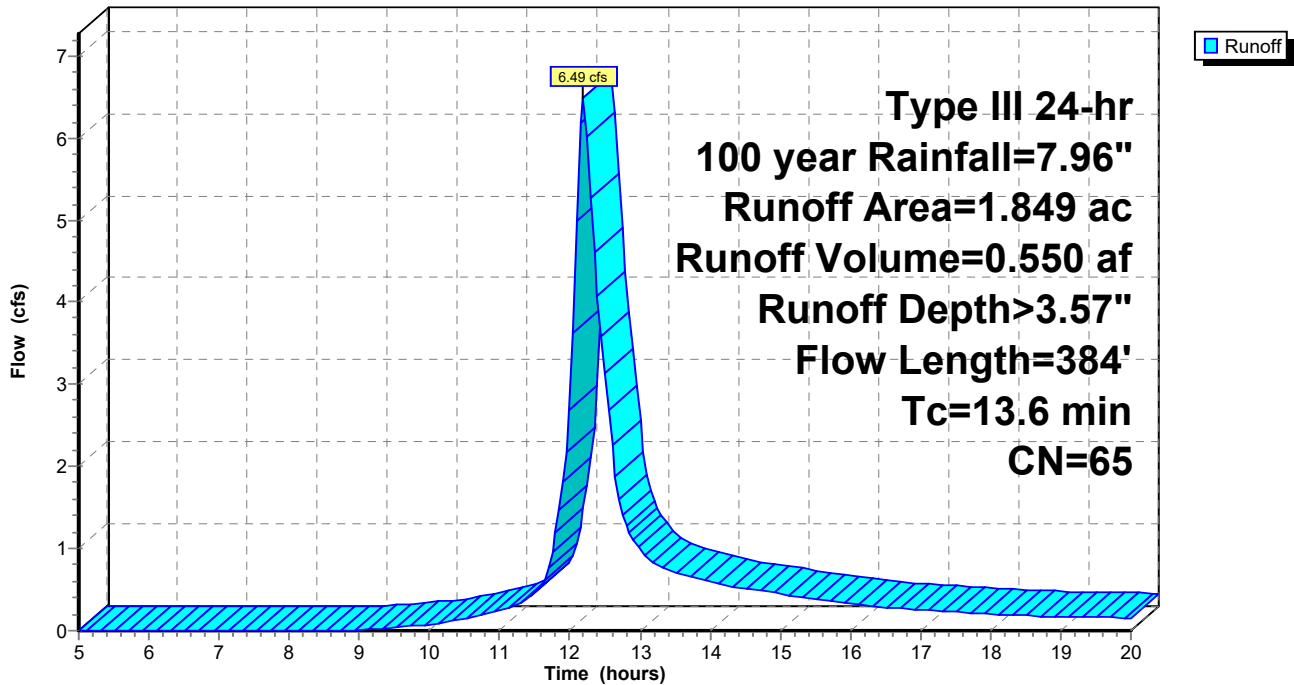
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.277	46	2 acre lots, 12% imp, HSG A
0.912	65	2 acre lots, 12% imp, HSG B
0.572	78	Row crops, straight row, Good, HSG B
0.088	36	Woods, Fair, HSG A
1.849	65	Weighted Average
1.706		92.28% Pervious Area
0.143		7.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.3	334	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.6	384	Total			

Subcatchment 42: Subcat 42

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 43: Subcat 43

Runoff = 2.95 cfs @ 12.21 hrs, Volume= 0.256 af, Depth> 3.35"

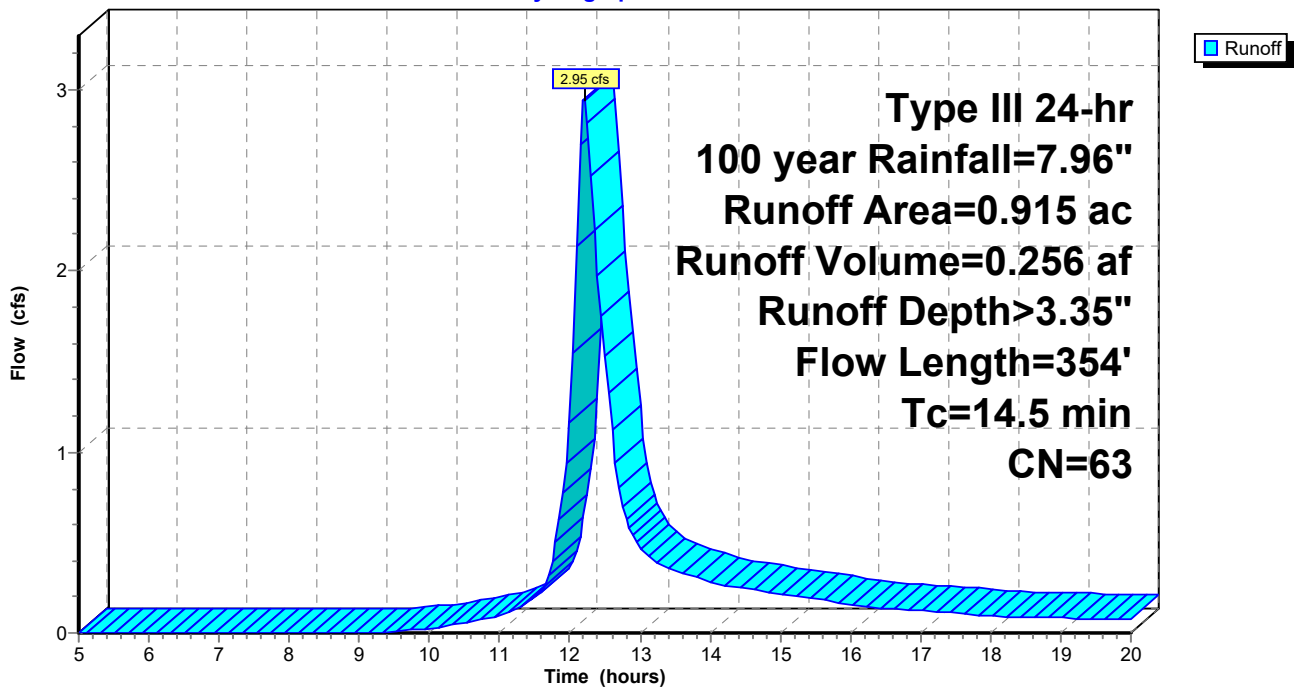
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.058	46	2 acre lots, 12% imp, HSG A
0.539	65	2 acre lots, 12% imp, HSG B
0.190	78	Row crops, straight row, Good, HSG B
0.121	36	Woods, Fair, HSG A
0.008	60	Woods, Fair, HSG B
0.915	63	Weighted Average
0.843		92.17% Pervious Area
0.072		7.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.2	304	0.0082	0.81		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
14.5	354	Total			

Subcatchment 43: Subcat 43

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 44: Subcat 44

Runoff = 11.07 cfs @ 12.14 hrs, Volume= 0.865 af, Depth> 4.91"

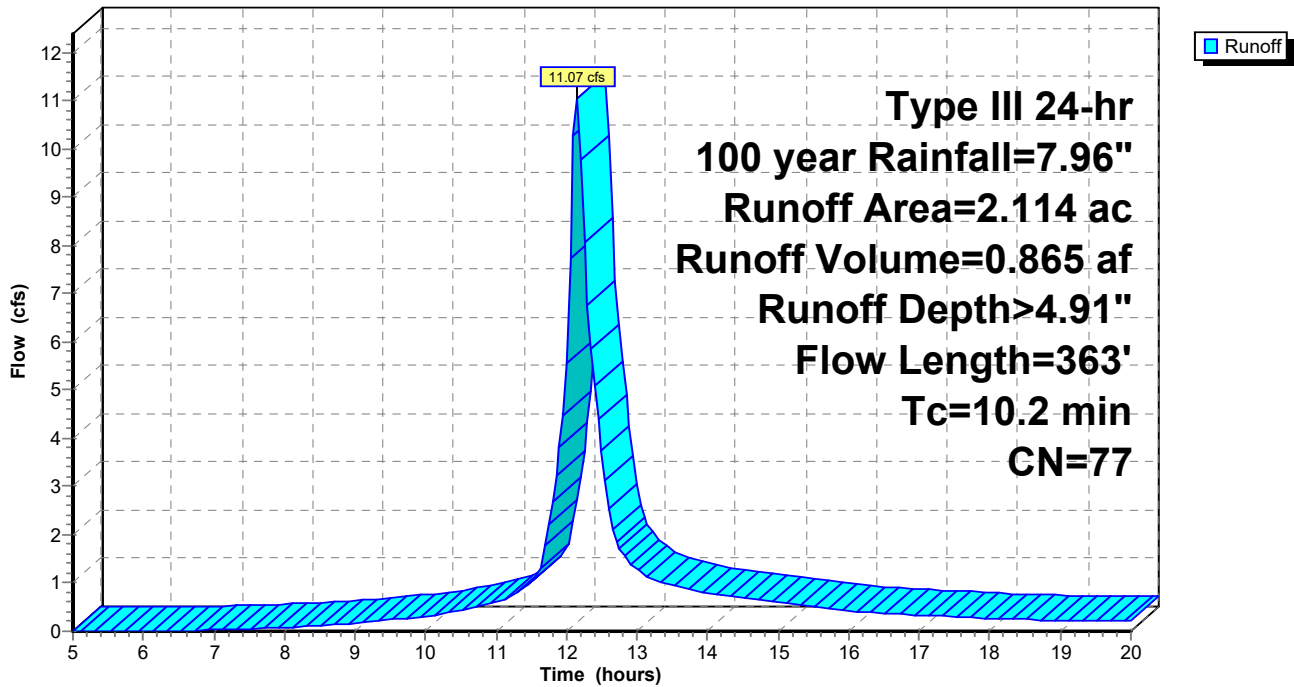
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.164	67	Row crops, straight row, Good, HSG A
1.950	78	Row crops, straight row, Good, HSG B
2.114	77	Weighted Average
2.114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.4	313	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	363	Total			

Subcatchment 44: Subcat 44

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 45: Subcat 45

Runoff = 13.89 cfs @ 12.10 hrs, Volume= 0.963 af, Depth> 4.92"

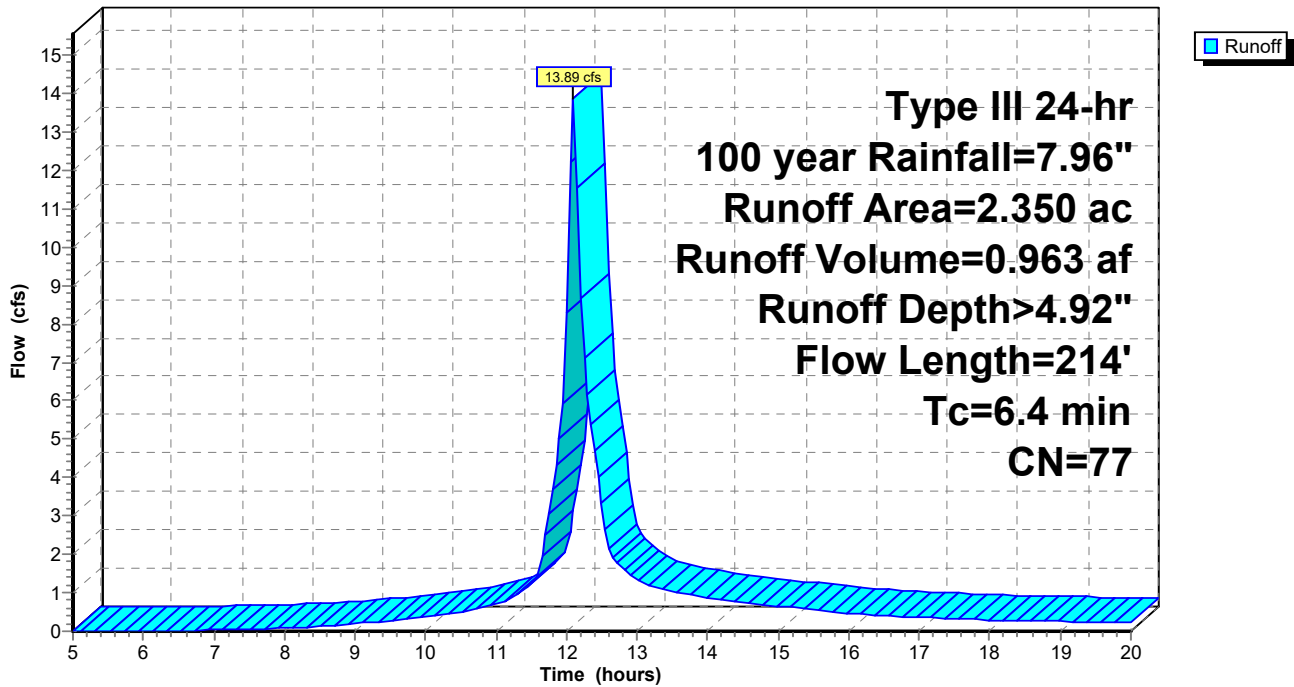
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.248	67	Row crops, straight row, Good, HSG A
2.102	78	Row crops, straight row, Good, HSG B
2.350	77	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.6	164	0.0610	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.4	214	Total			

Subcatchment 45: Subcat 45

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 46: Subcat 46

Runoff = 15.40 cfs @ 12.16 hrs, Volume= 1.253 af, Depth> 4.91"

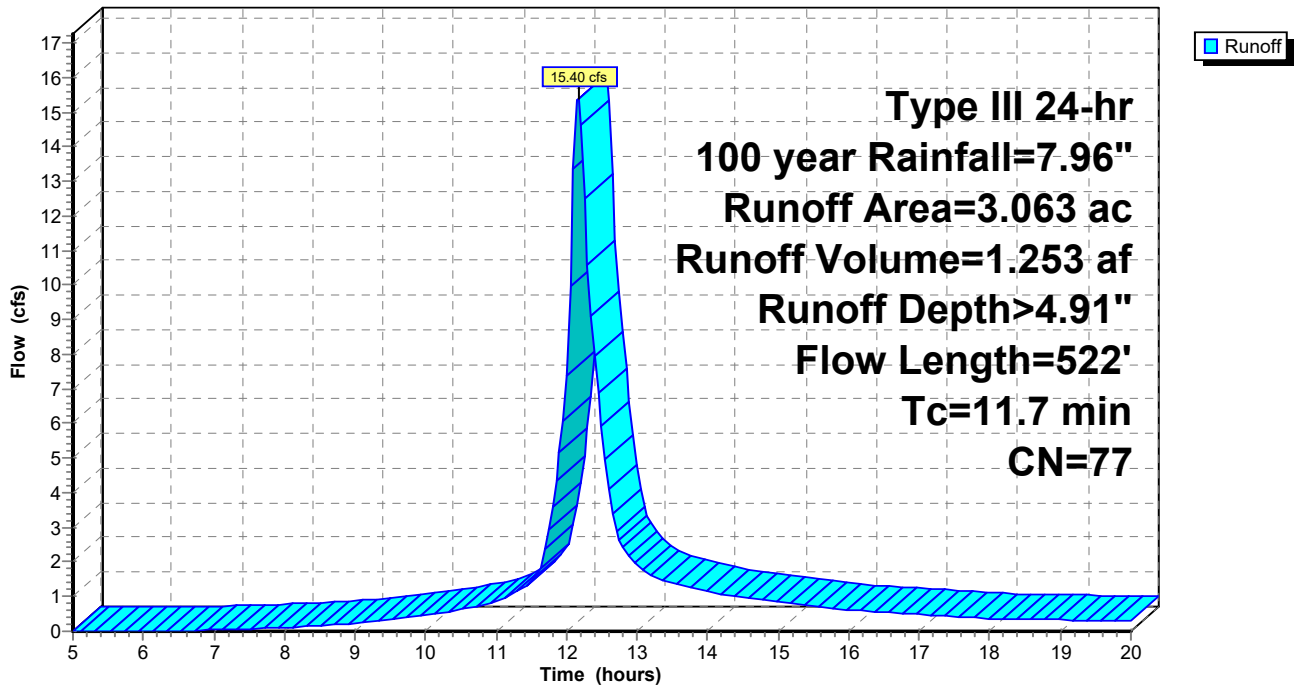
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.094	67	Row crops, straight row, Good, HSG A
2.903	78	Row crops, straight row, Good, HSG B
0.006	36	Woods, Fair, HSG A
0.060	60	Woods, Fair, HSG B
3.063	77	Weighted Average
3.063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	472	0.0233	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.7	522	Total			

Subcatchment 46: Subcat 46

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 47: Subcat 47

Runoff = 9.99 cfs @ 12.20 hrs, Volume= 0.854 af, Depth> 2.72"

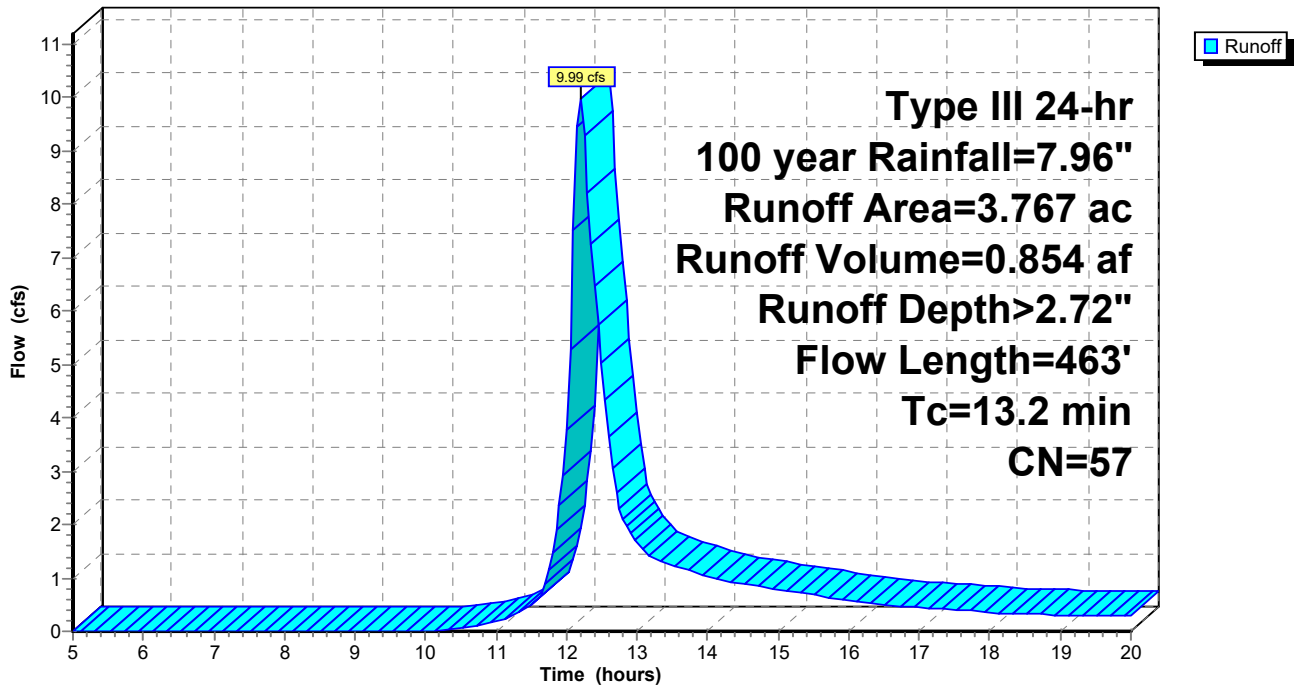
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.159	67	Row crops, straight row, Good, HSG A
1.564	78	Row crops, straight row, Good, HSG B
1.674	36	Woods, Fair, HSG A
0.369	60	Woods, Fair, HSG B
3.767	57	Weighted Average
3.767		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
4.9	413	0.0242	1.40		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.2	463	Total			

Subcatchment 47: Subcat 47

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 48: Subcat 48

Runoff = 18.31 cfs @ 12.17 hrs, Volume= 1.495 af, Depth> 3.36"

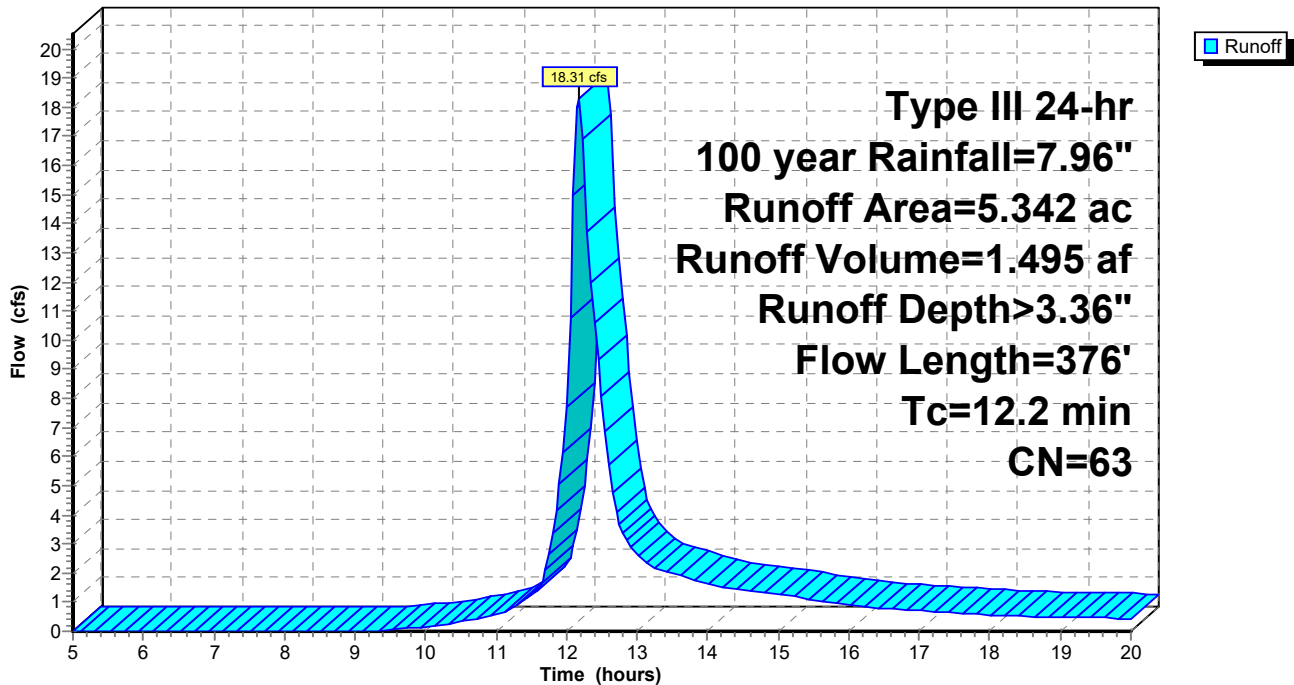
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.054	67	Row crops, straight row, Good, HSG A
3.042	78	Row crops, straight row, Good, HSG B
1.638	36	Woods, Fair, HSG A
0.608	60	Woods, Fair, HSG B
5.342	63	Weighted Average
5.342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
3.9	326	0.0245	1.41		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
12.2	376	Total			

Subcatchment 48: Subcat 48

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 49: Subcat 49

Runoff = 11.00 cfs @ 12.19 hrs, Volume= 0.927 af, Depth> 3.46"

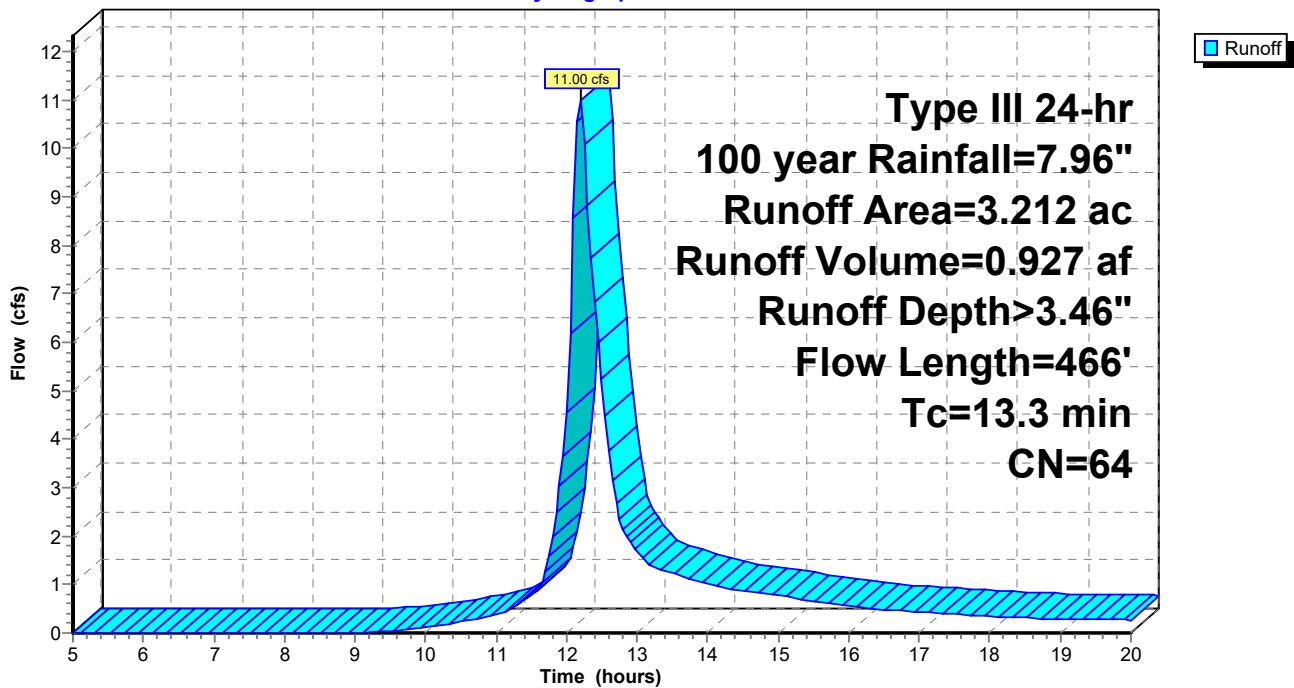
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.656	98	Roofs, HSG B
0.016	67	Row crops, straight row, Good, HSG A
1.136	78	Row crops, straight row, Good, HSG B
1.330	36	Woods, Fair, HSG A
0.074	60	Woods, Fair, HSG B
3.212	64	Weighted Average
2.556		79.59% Pervious Area
0.656		20.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0200	0.13		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
7.0	416	0.0120	0.99		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.3	466	Total			

Subcatchment 49: Subcat 49

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 50: Subcat 50

Runoff = 27.72 cfs @ 12.19 hrs, Volume= 2.332 af, Depth> 3.79"

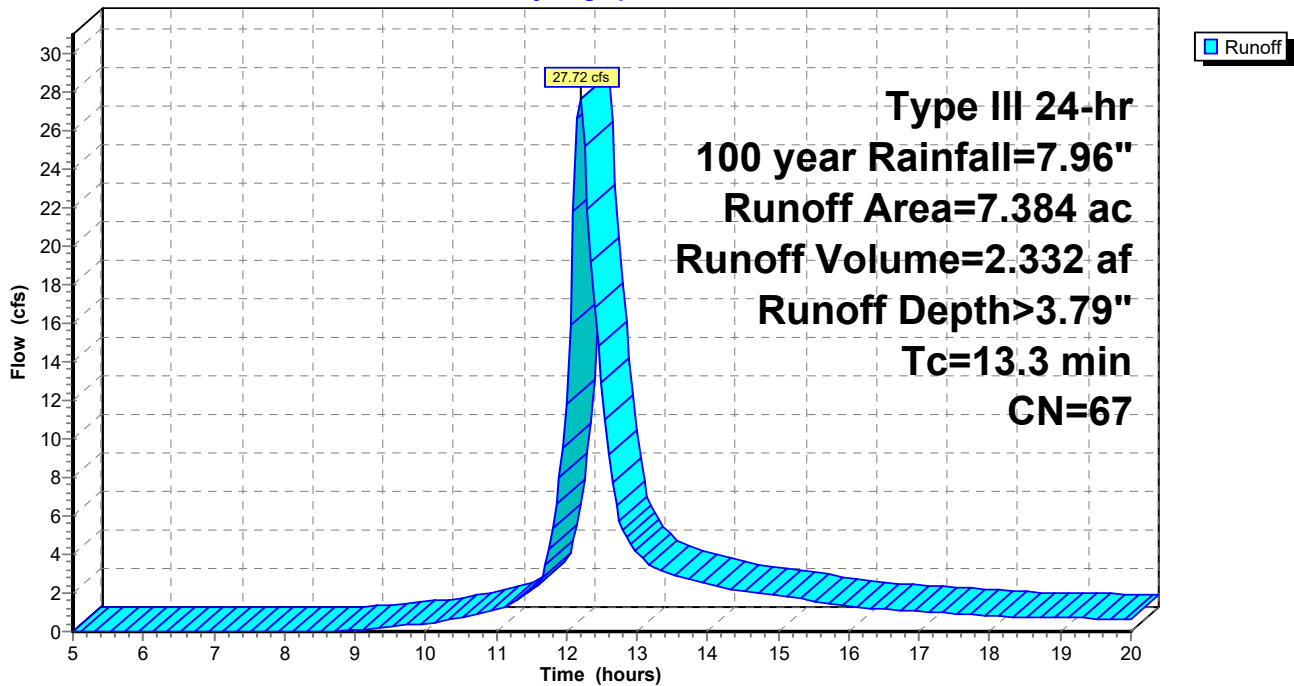
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
4.996	78	Row crops, straight row, Good, HSG B
1.655	36	Woods, Fair, HSG A
0.733	60	Woods, Fair, HSG B
7.384	67	Weighted Average
7.384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3					Direct Entry,

Subcatchment 50: Subcat 50

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 51: Subcat 51

Runoff = 90.38 cfs @ 12.46 hrs, Volume= 11.198 af, Depth> 4.88"

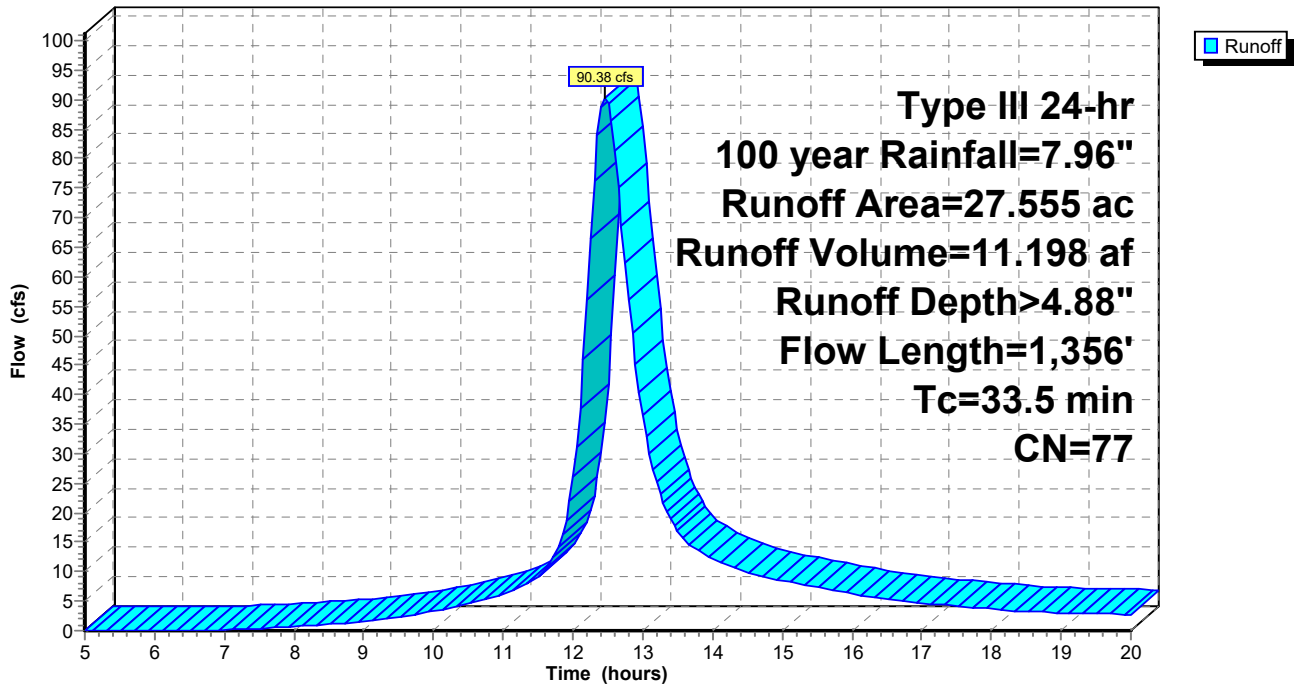
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.980	65	2 acre lots, 12% imp, HSG B
25.329	78	Row crops, straight row, Good, HSG B
0.074	36	Woods, Fair, HSG A
1.172	60	Woods, Fair, HSG B
27.555	77	Weighted Average
27.437		99.57% Pervious Area
0.118		0.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
25.2	1,306	0.0092	0.86		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.5	1,356	Total			

Subcatchment 51: Subcat 51

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 53: Subcat 53

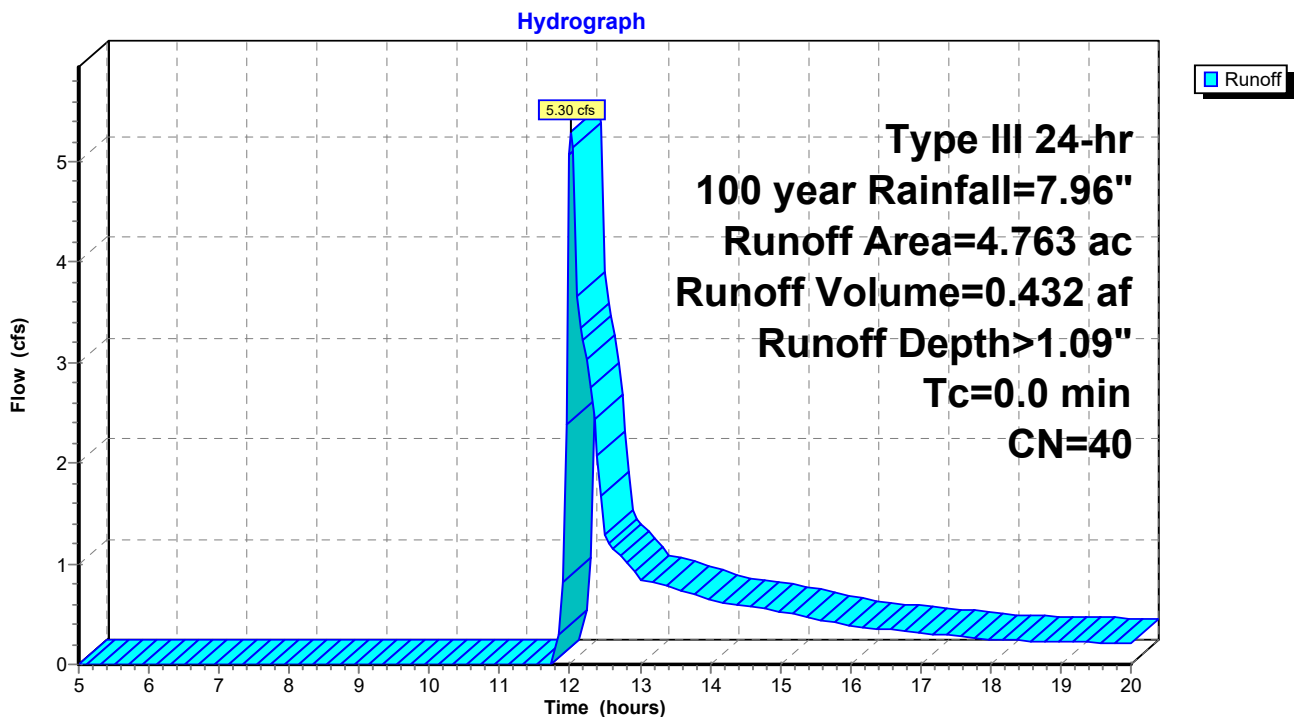
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 5.30 cfs @ 12.03 hrs, Volume= 0.432 af, Depth> 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.120	46	2 acre lots, 12% imp, HSG A
0.419	65	2 acre lots, 12% imp, HSG B
3.953	36	Woods, Fair, HSG A
0.271	60	Woods, Fair, HSG B
4.763	40	Weighted Average
4.698		98.64% Pervious Area
0.065		1.36% Impervious Area

Subcatchment 53: Subcat 53



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 54: Subcat 54

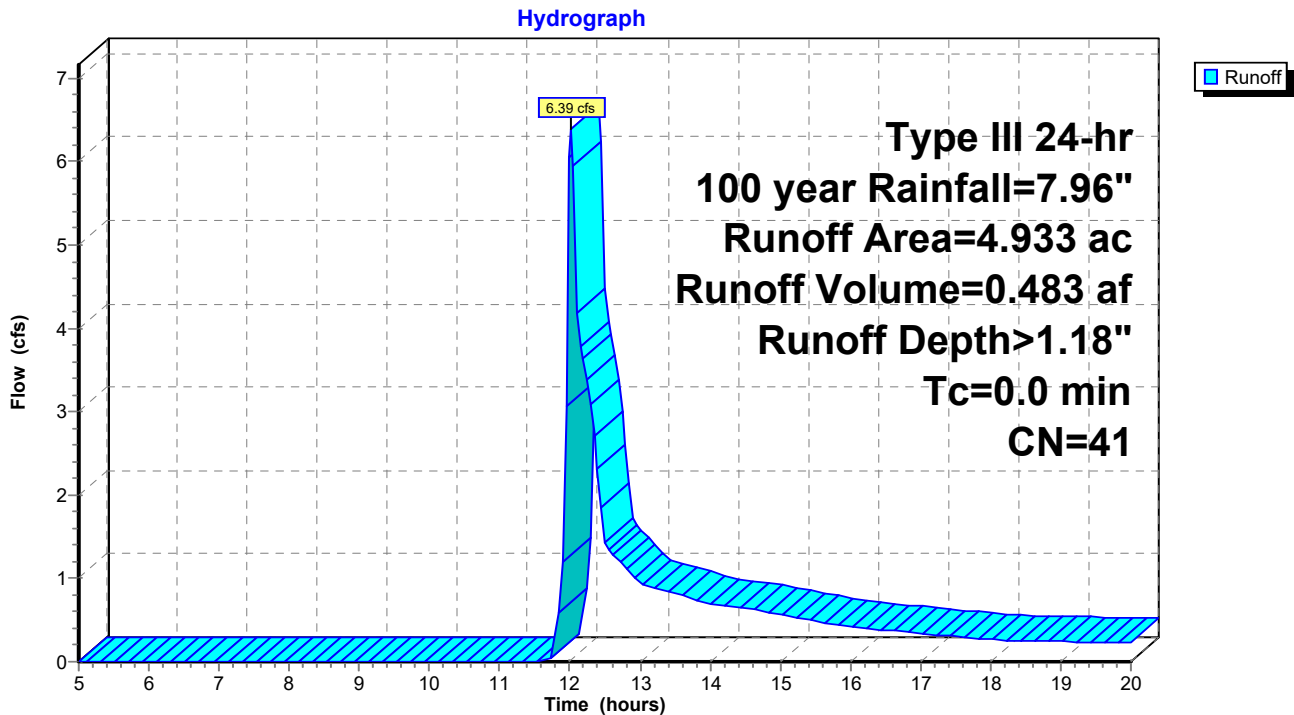
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 6.39 cfs @ 12.02 hrs, Volume= 0.483 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.060	65	2 acre lots, 12% imp, HSG B
3.830	36	Woods, Fair, HSG A
1.042	60	Woods, Fair, HSG B
4.933	41	Weighted Average
4.925		99.85% Pervious Area
0.007		0.15% Impervious Area

Subcatchment 54: Subcat 54



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 55: Subcat 55

Runoff = 10.46 cfs @ 12.28 hrs, Volume= 1.044 af, Depth> 4.67"

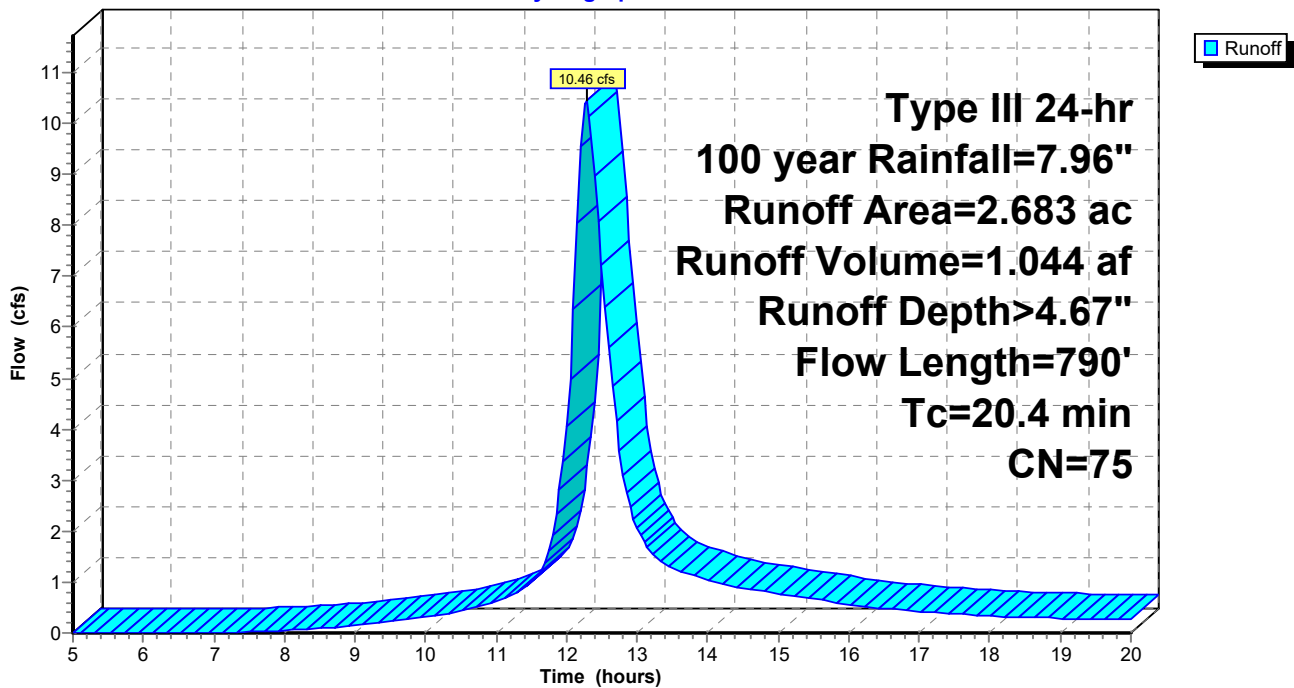
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.134	67	Row crops, straight row, Good, HSG A
2.236	78	Row crops, straight row, Good, HSG B
0.094	36	Woods, Fair, HSG A
0.219	60	Woods, Fair, HSG B
2.683	75	Weighted Average
2.683		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.9	216	0.0046	0.61		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
6.2	524	0.0248	1.42		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
20.4	790	Total			

Subcatchment 55: Subcat 55

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 56: Subcat 56

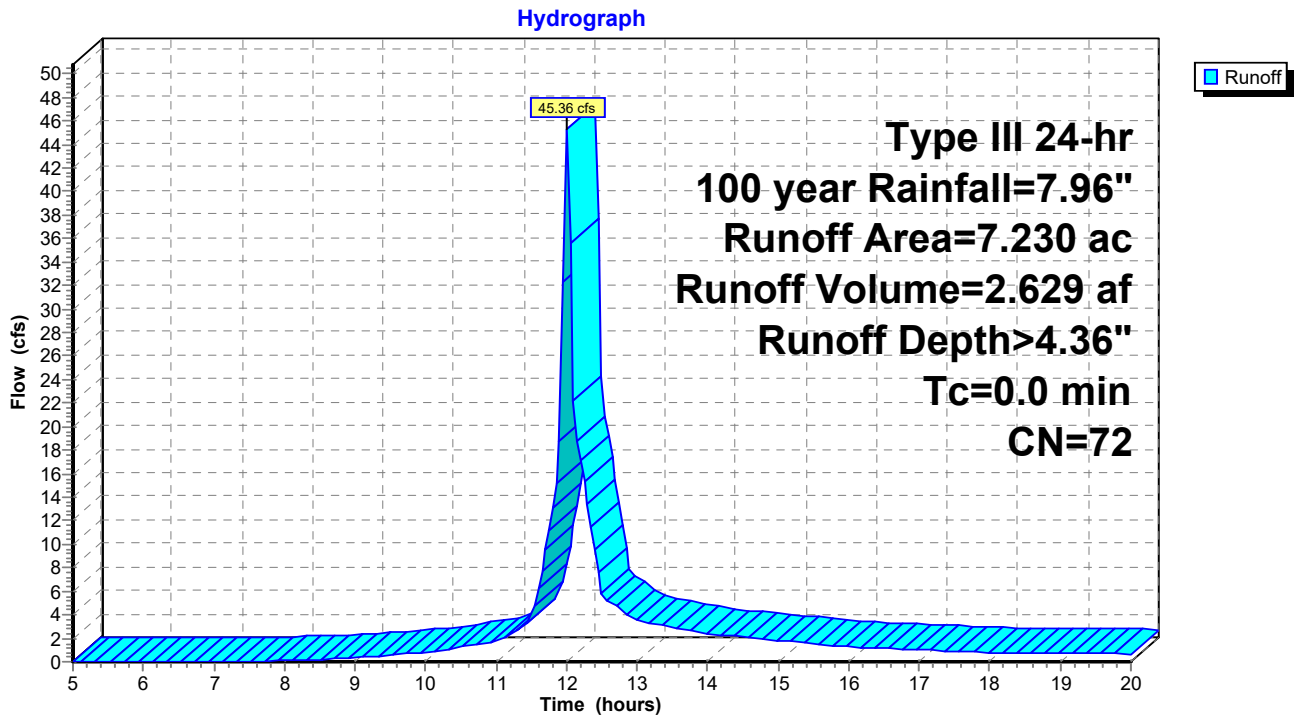
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 45.36 cfs @ 12.00 hrs, Volume= 2.629 af, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.023	46	2 acre lots, 12% imp, HSG A
1.325	65	2 acre lots, 12% imp, HSG B
4.694	78	Row crops, straight row, Good, HSG B
0.051	36	Woods, Fair, HSG A
1.137	60	Woods, Fair, HSG B
7.230	72	Weighted Average
7.069		97.76% Pervious Area
0.162		2.24% Impervious Area

Subcatchment 56: Subcat 56



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 57: Subcat 57

Runoff = 22.15 cfs @ 12.22 hrs, Volume= 2.006 af, Depth> 4.23"

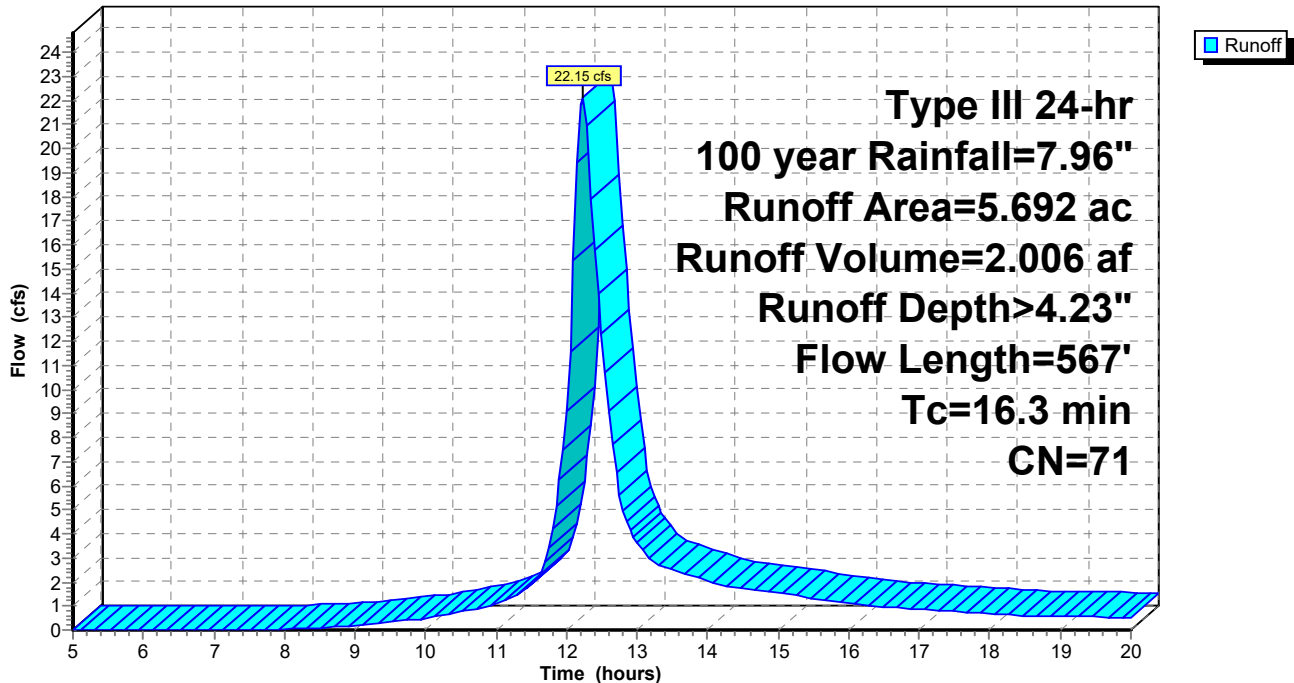
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.118	46	2 acre lots, 12% imp, HSG A
1.112	65	2 acre lots, 12% imp, HSG B
3.513	78	Row crops, straight row, Good, HSG B
0.138	36	Woods, Fair, HSG A
0.811	60	Woods, Fair, HSG B
5.692	71	Weighted Average
5.544		97.41% Pervious Area
0.148		2.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.7	266	0.0075	0.78		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.3	251	0.0398	1.80		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
16.3	567	Total			

Subcatchment 57: Subcat 57

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 58: Subcat 58

Runoff = 4.29 cfs @ 12.22 hrs, Volume= 0.408 af, Depth> 1.72"

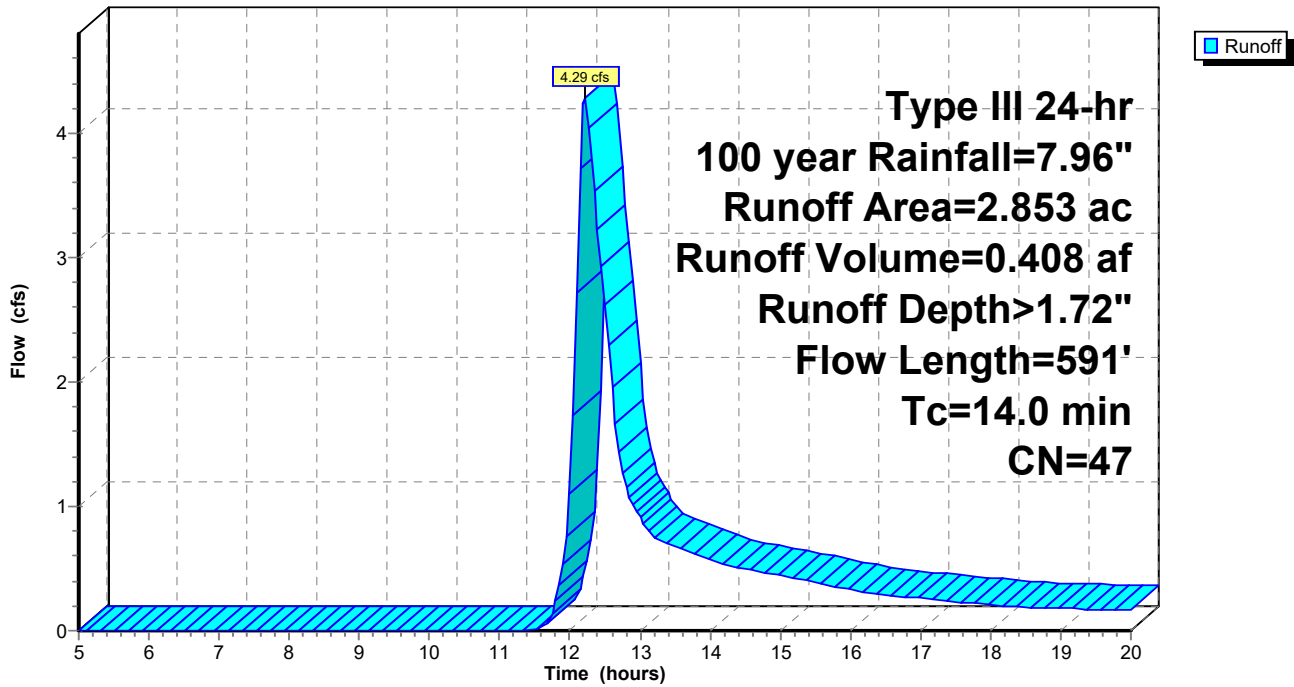
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.110	46	2 acre lots, 12% imp, HSG A
1.060	65	2 acre lots, 12% imp, HSG B
1.673	36	Woods, Fair, HSG A
0.010	60	Woods, Fair, HSG B
2.853	47	Weighted Average
2.712		95.08% Pervious Area
0.140		4.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.3	541	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	591	Total			

Subcatchment 58: Subcat 58

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 59: Subcat 59

Runoff = 6.38 cfs @ 12.20 hrs, Volume= 0.583 af, Depth> 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.853	46	2 acre lots, 12% imp, HSG A
0.589	65	2 acre lots, 12% imp, HSG B
0.000	67	Row crops, straight row, Good, HSG A
0.285	78	Row crops, straight row, Good, HSG B
2.075	36	Woods, Fair, HSG A
0.270	60	Woods, Fair, HSG B
4.073	47	Weighted Average
3.899		95.75% Pervious Area
0.173		4.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	221	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1333	2.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	316	Total			

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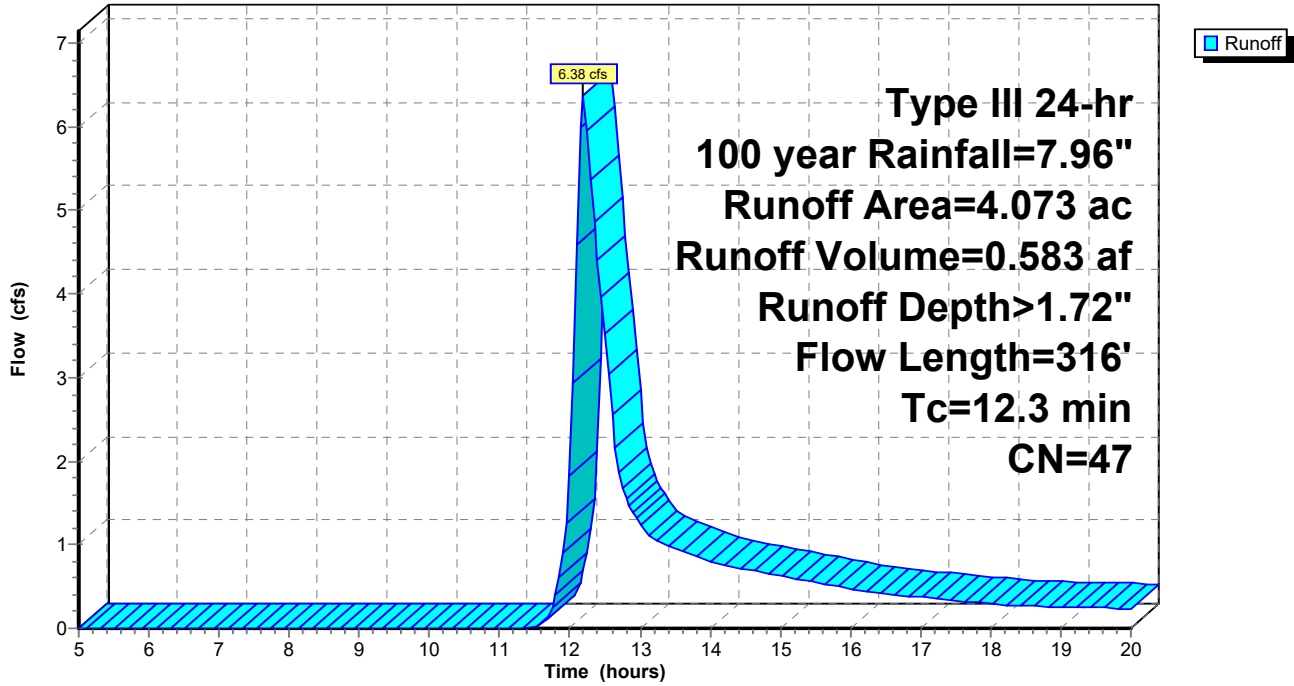
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 59: Subcat 59

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 60: Subcat 60

Runoff = 25.09 cfs @ 12.44 hrs, Volume= 3.074 af, Depth> 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.099	46	2 acre lots, 12% imp, HSG A
0.385	65	2 acre lots, 12% imp, HSG B
1.600	98	Roofs, HSG B
4.709	78	Row crops, straight row, Good, HSG B
0.482	36	Woods, Fair, HSG A
0.114	60	Woods, Fair, HSG B
7.389	78	Weighted Average
5.731		77.56% Pervious Area
1.658		22.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
23.1	855	0.0047	0.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.0	98	0.0510	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
32.4	1,003	Total			

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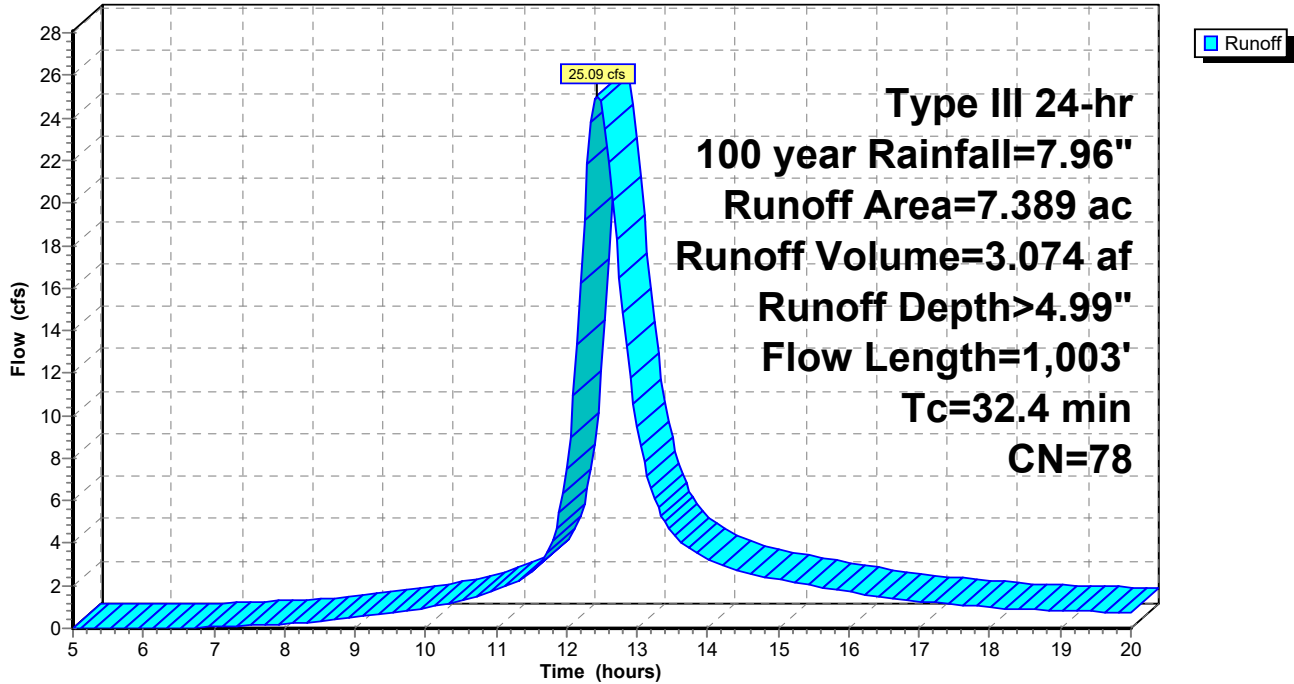
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 60: Subcat 60

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 62: Subcat 62

Runoff = 73.32 cfs @ 12.41 hrs, Volume= 8.490 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.002	0	, HSG A
* 0.001	0	, HSG B
0.233	46	2 acre lots, 12% imp, HSG A
7.452	65	2 acre lots, 12% imp, HSG B
0.010	89	Paved roads w/open ditches, 50% imp, HSG B
14.386	78	Row crops, straight row, Good, HSG B
1.590	36	Woods, Fair, HSG A
0.529	60	Woods, Fair, HSG B
24.202	71	Weighted Average
23.275		96.17% Pervious Area
0.927		3.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
12.2	757	0.0132	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
9.1	481	0.0312	0.88		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
29.6	1,288	Total			

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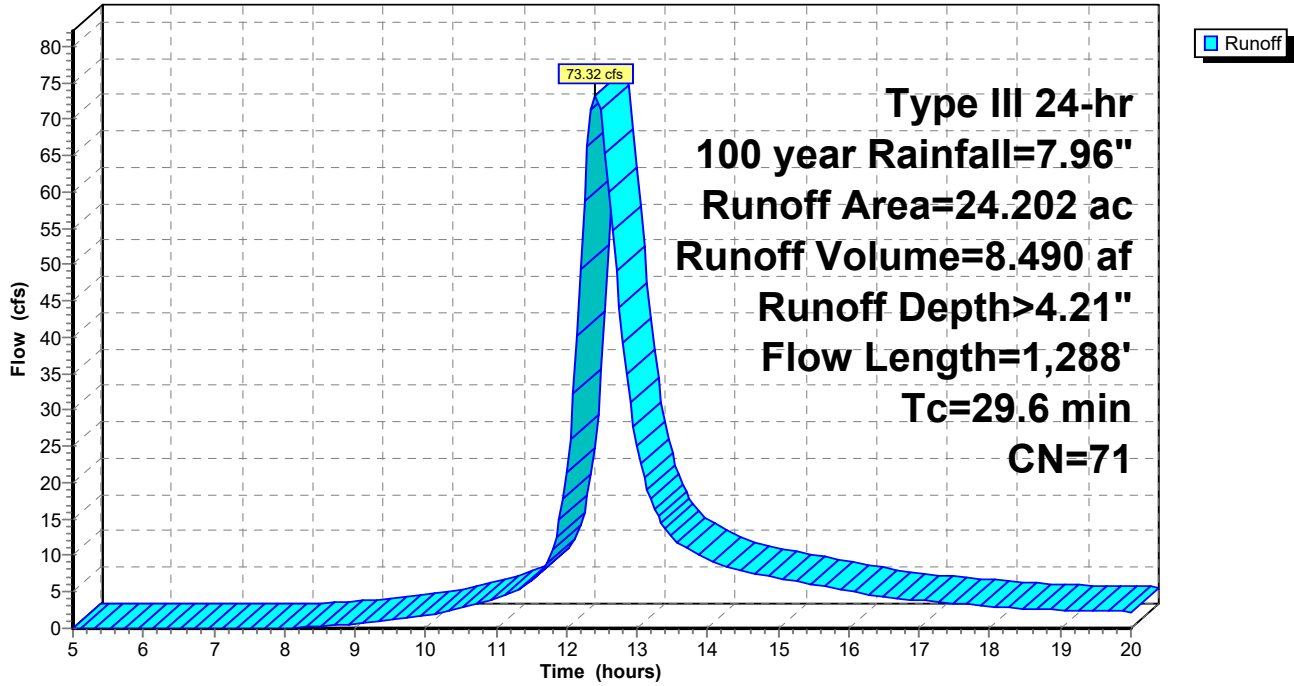
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 62: Subcat 62

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 64: Subcat 64

Runoff = 6.65 cfs @ 12.20 hrs, Volume= 0.576 af, Depth> 3.90"

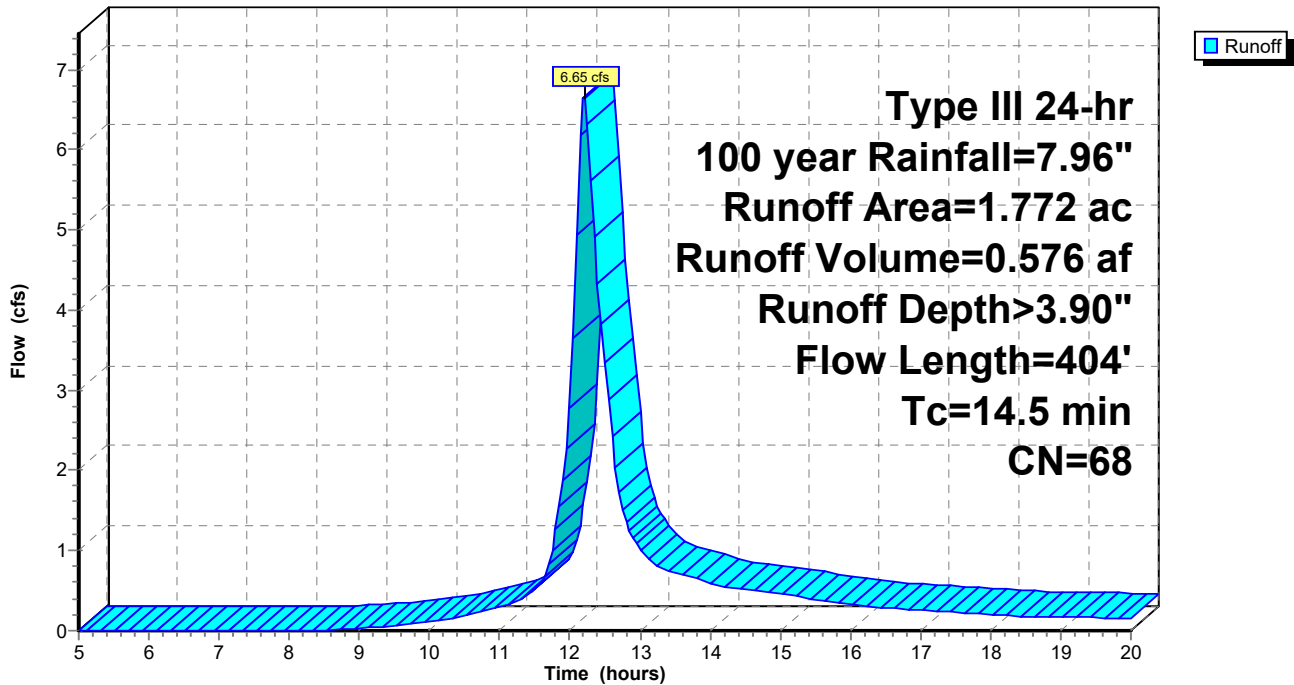
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.012	46	2 acre lots, 12% imp, HSG A
0.294	67	Row crops, straight row, Good, HSG A
1.126	78	Row crops, straight row, Good, HSG B
0.340	36	Woods, Fair, HSG A
1.772	68	Weighted Average
1.771		99.92% Pervious Area
0.001		0.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
6.2	354	0.0113	0.96		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
14.5	404	Total			

Subcatchment 64: Subcat 64

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 65: Subcat 65

Runoff = 13.48 cfs @ 12.30 hrs, Volume= 1.385 af, Depth> 4.67"

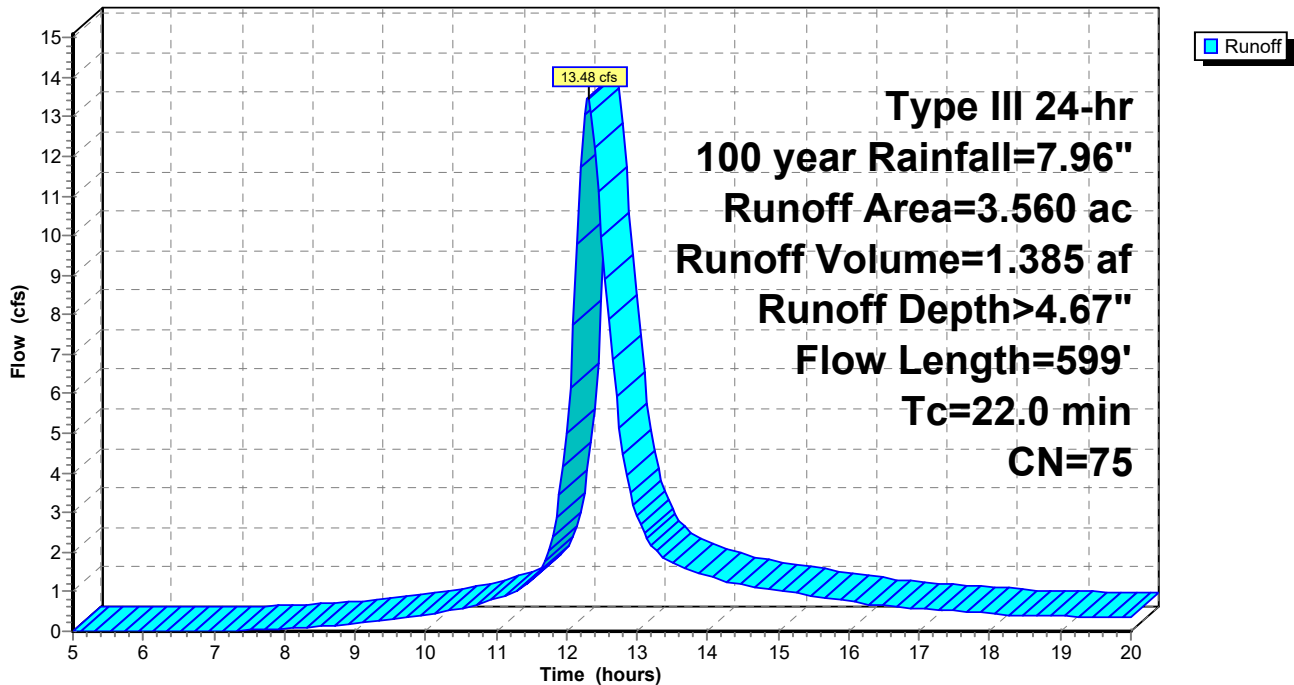
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.162	67	Row crops, straight row, Good, HSG A
2.990	78	Row crops, straight row, Good, HSG B
0.127	36	Woods, Fair, HSG A
0.282	60	Woods, Fair, HSG B
3.560	75	Weighted Average
3.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
13.7	549	0.0055	0.67		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.0	599	Total			

Subcatchment 65: Subcat 65

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 66: Subcat 66

Runoff = 8.95 cfs @ 12.19 hrs, Volume= 0.765 af, Depth> 4.79"

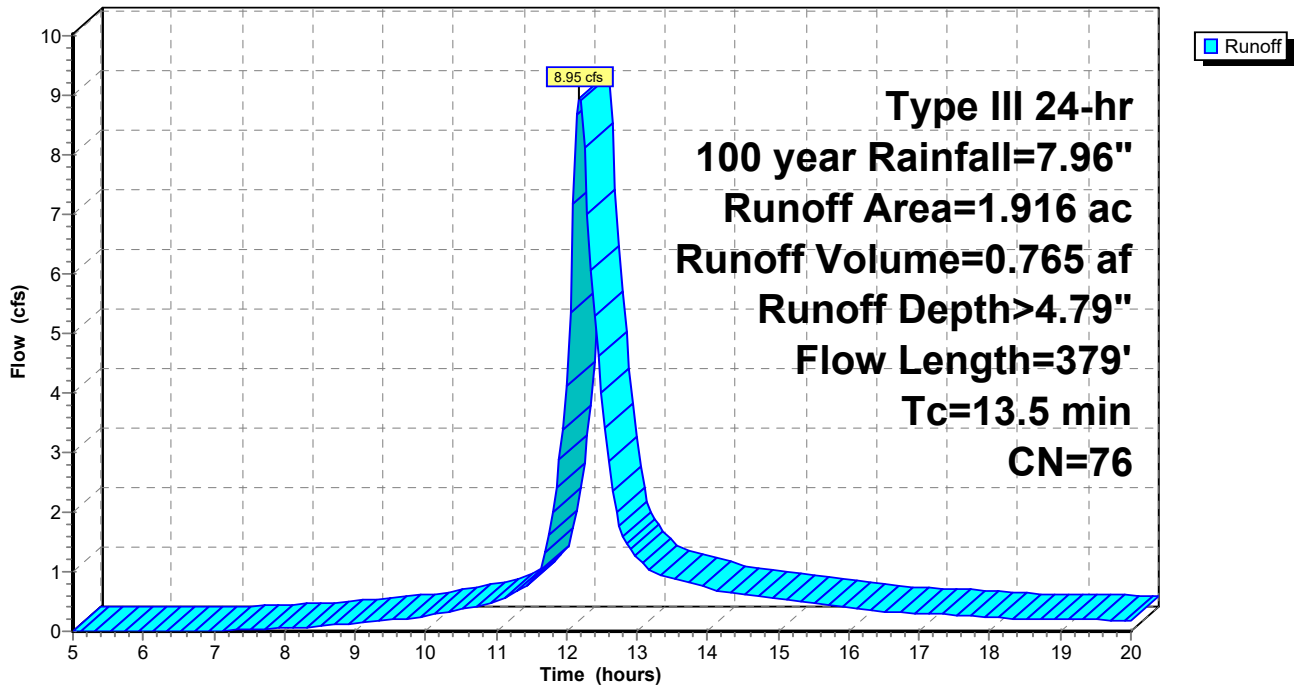
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.020	89	Paved roads w/open ditches, 50% imp, HSG B
1.653	78	Row crops, straight row, Good, HSG B
0.243	60	Woods, Fair, HSG B
1.916	76	Weighted Average
1.906		99.47% Pervious Area
0.010		0.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0100	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.16"
5.2	329	0.0137	1.05		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.5	379	Total			

Subcatchment 66: Subcat 66

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 37P: (new Pond)

Inflow Area = 1.143 ac, 0.10% Impervious, Inflow Depth > 5.02" for 100 year event
 Inflow = 5.35 cfs @ 12.21 hrs, Volume= 0.478 af
 Outflow = 5.20 cfs @ 12.24 hrs, Volume= 0.477 af, Atten= 3%, Lag= 2.3 min
 Discarded = 0.56 cfs @ 12.24 hrs, Volume= 0.290 af
 Primary = 4.64 cfs @ 12.24 hrs, Volume= 0.187 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.61' @ 12.24 hrs Surf.Area= 8,027 sf Storage= 2,842 cf

Plug-Flow detention time= 33.0 min calculated for 0.477 af (100% of inflow)
 Center-of-Mass det. time= 32.2 min (814.7 - 782.5)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	7,138 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
166.00	2,016	0	0 2,016
167.00	14,072	7,138	7,138 14,075

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	166.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.56 cfs @ 12.24 hrs HW=166.61' (Free Discharge)
 ↑2=Exfiltration (Controls 0.56 cfs)

Primary OutFlow Max=4.61 cfs @ 12.24 hrs HW=166.61' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 4.61 cfs @ 0.87 fps)

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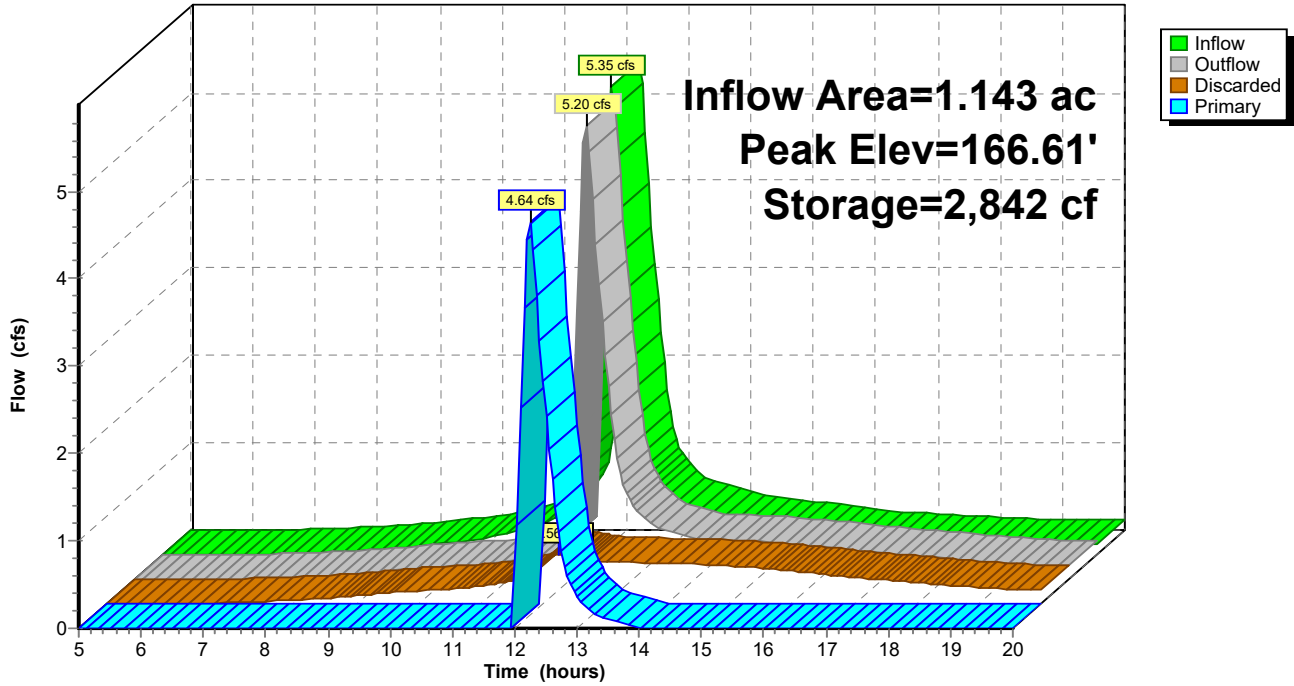
Type III 24-hr 100 year Rainfall=7.96"

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Pond 37P: (new Pond)

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 38P: (new Pond)

Inflow Area = 3.921 ac, 0.00% Impervious, Inflow Depth > 5.01" for 100 year event
 Inflow = 16.13 cfs @ 12.28 hrs, Volume= 1.637 af
 Outflow = 14.42 cfs @ 12.39 hrs, Volume= 1.570 af, Atten= 11%, Lag= 6.4 min
 Discarded = 1.93 cfs @ 12.39 hrs, Volume= 0.958 af
 Primary = 12.49 cfs @ 12.39 hrs, Volume= 0.612 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.71' @ 12.39 hrs Surf.Area= 27,667 sf Storage= 15,626 cf

Plug-Flow detention time= 62.1 min calculated for 1.565 af (96% of inflow)
 Center-of-Mass det. time= 47.0 min (834.2 - 787.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	163.00'	25,279 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
163.00	0	0	0	0	
164.00	9,379	3,126	3,126	9,381	
165.00	38,160	22,152	25,279	38,166	

Device	Routing	Invert	Outlet Devices									
#1	Primary	164.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.93 cfs @ 12.39 hrs HW=164.70' (Free Discharge)
 ↑2=Exfiltration (Controls 1.93 cfs)

Primary OutFlow Max=12.43 cfs @ 12.39 hrs HW=164.70' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 12.43 cfs @ 1.21 fps)

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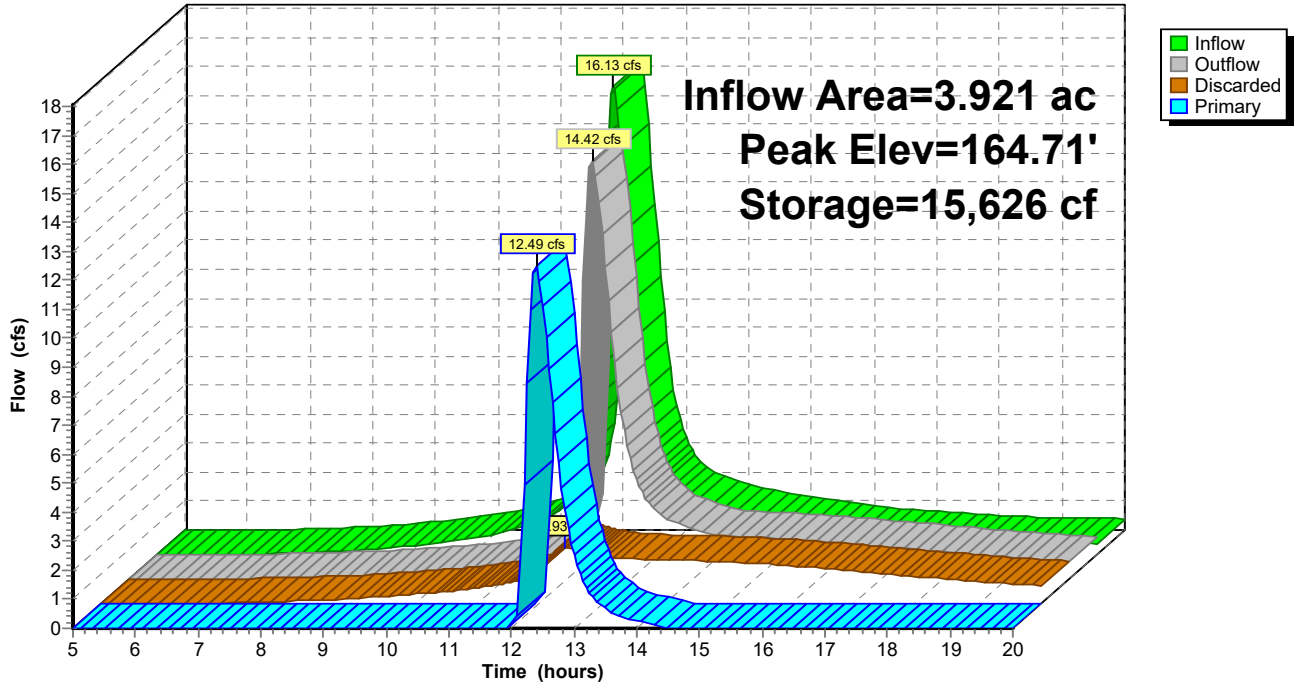
Type III 24-hr 100 year Rainfall=7.96"

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Pond 38P: (new Pond)

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 39P: (new Pond)

Inflow Area = 3.190 ac, 3.32% Impervious, Inflow Depth > 3.56" for 100 year event
 Inflow = 13.61 cfs @ 12.17 hrs, Volume= 0.948 af
 Outflow = 2.05 cfs @ 12.84 hrs, Volume= 0.908 af, Atten= 85%, Lag= 40.0 min
 Discarded = 2.05 cfs @ 12.84 hrs, Volume= 0.908 af
 Primary = 0.00 cfs @ 12.84 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 165.50' @ 12.83 hrs Surf.Area= 29,372 sf Storage= 20,672 cf

Plug-Flow detention time= 124.8 min calculated for 0.908 af (96% of inflow)
 Center-of-Mass det. time= 109.6 min (889.4 - 779.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	164.00'	38,968 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
164.00	2,834	0	0	2,834	
166.00	44,400	38,968	38,968	44,411	

Device	Routing	Invert	Outlet Devices									
#1	Primary	165.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	164.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=2.05 cfs @ 12.84 hrs HW=165.50' (Free Discharge)
 ↑2=Exfiltration (Controls 2.05 cfs)

Primary OutFlow Max=0.00 cfs @ 12.84 hrs HW=165.50' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.06 fps)

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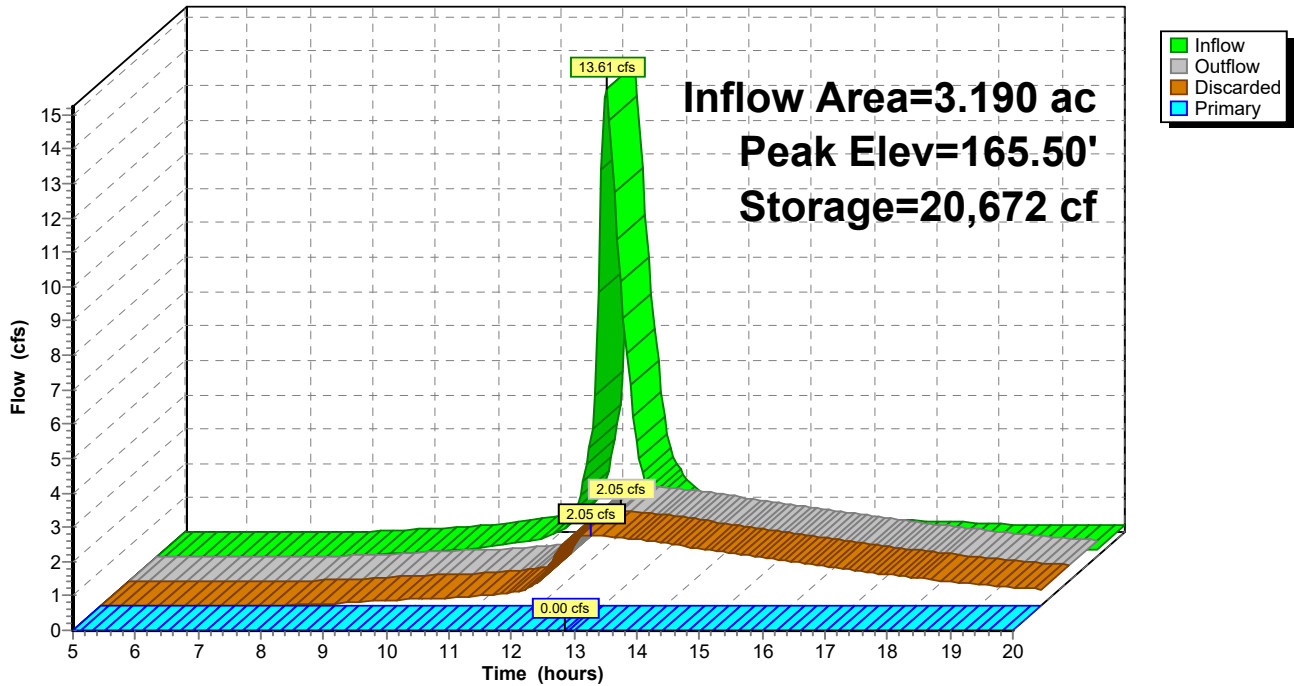
Type III 24-hr 100 year Rainfall=7.96"

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Pond 39P: (new Pond)

Hydrograph



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Summary for Pond 44P: (new Pond)

Inflow Area = 2.114 ac, 0.00% Impervious, Inflow Depth > 4.91" for 100 year event
 Inflow = 11.07 cfs @ 12.14 hrs, Volume= 0.865 af
 Outflow = 4.27 cfs @ 12.47 hrs, Volume= 0.809 af, Atten= 61%, Lag= 19.3 min
 Discarded = 1.45 cfs @ 12.47 hrs, Volume= 0.720 af
 Primary = 2.82 cfs @ 12.47 hrs, Volume= 0.089 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.08' @ 12.47 hrs Surf.Area= 20,731 sf Storage= 15,207 cf

Plug-Flow detention time= 117.2 min calculated for 0.809 af (94% of inflow)
 Center-of-Mass det. time= 94.3 min (874.8 - 780.5)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	43,325 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
157.00	0	0	0 0
158.00	5,632	1,877	1,877 5,634
160.00	41,290	41,448	43,325 41,305

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.45 cfs @ 12.47 hrs HW=159.08' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.45 cfs)

Primary OutFlow Max=2.76 cfs @ 12.47 hrs HW=159.08' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 2.76 cfs @ 0.73 fps)

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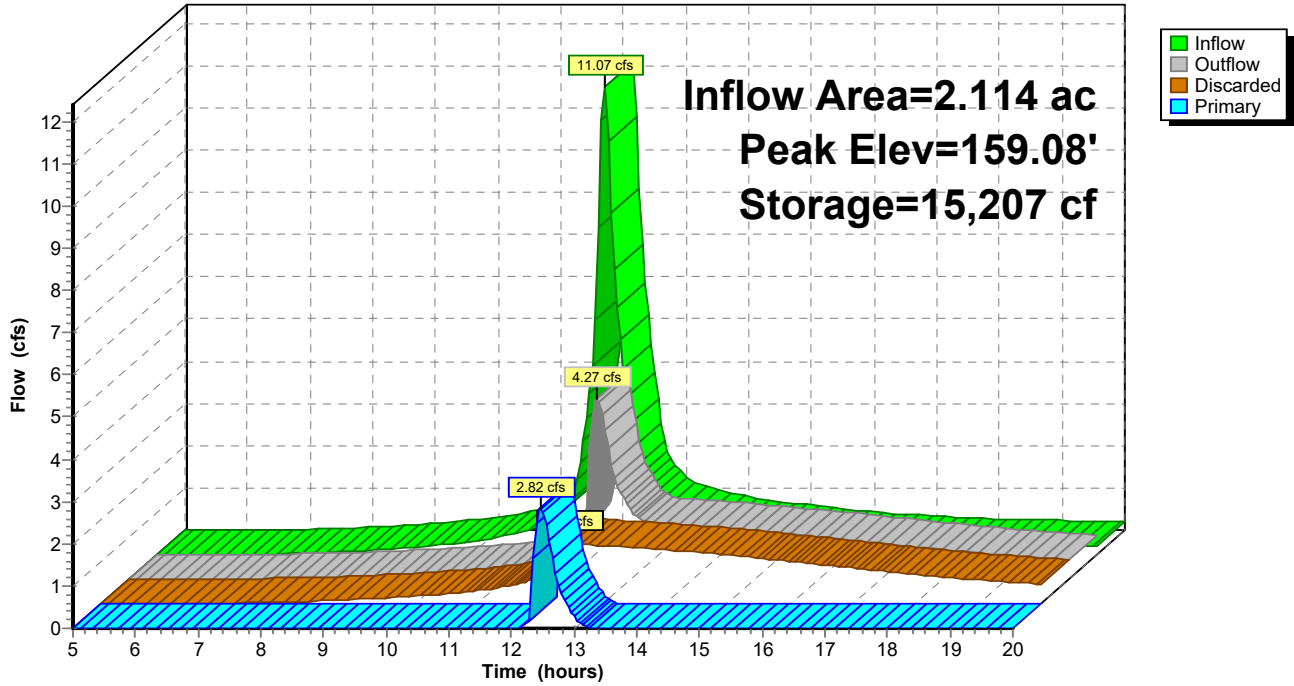
Type III 24-hr 100 year Rainfall=7.96"

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Pond 44P: (new Pond)

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 45P: (new Pond)

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth > 4.92" for 100 year event
 Inflow = 13.89 cfs @ 12.10 hrs, Volume= 0.963 af
 Outflow = 1.30 cfs @ 13.03 hrs, Volume= 0.785 af, Atten= 91%, Lag= 56.4 min
 Discarded = 1.30 cfs @ 13.03 hrs, Volume= 0.785 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.76' @ 13.03 hrs Surf.Area= 18,564 sf Storage= 21,237 cf

Plug-Flow detention time= 181.2 min calculated for 0.785 af (81% of inflow)
 Center-of-Mass det. time= 130.7 min (908.1 - 777.5)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	180,186 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	5,028	1,676	1,676	5,030
156.00	21,015	24,215	25,891	21,035
158.00	37,382	57,617	83,508	37,446
160.00	60,198	96,678	180,186	60,315

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	153.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.30 cfs @ 13.03 hrs HW=155.76' (Free Discharge)
 ↑2=Exfiltration (Controls 1.30 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=153.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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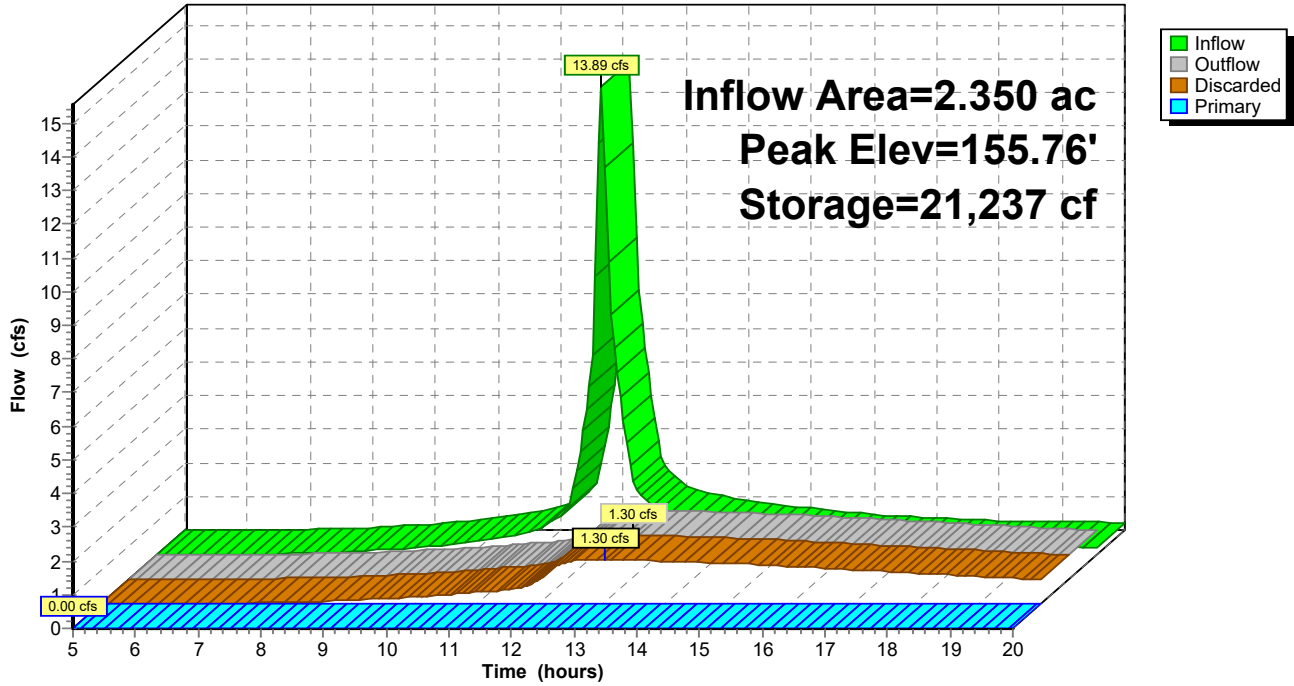
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Pond 45P: (new Pond)

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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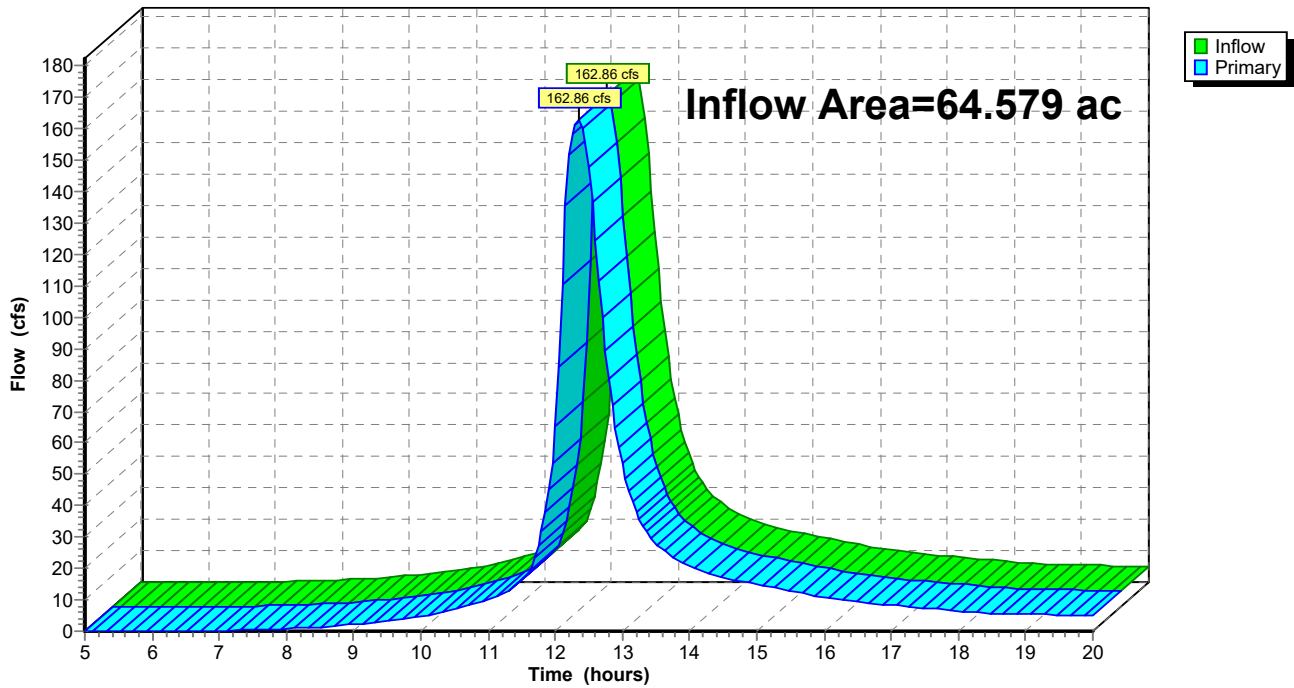
Summary for Link DP47: DP47

Inflow Area = 64.579 ac, 1.36% Impervious, Inflow Depth > 3.68" for 100 year event
Inflow = 162.86 cfs @ 12.35 hrs, Volume= 19.804 af
Primary = 162.86 cfs @ 12.35 hrs, Volume= 19.804 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP47: DP47

Hydrograph



Existing Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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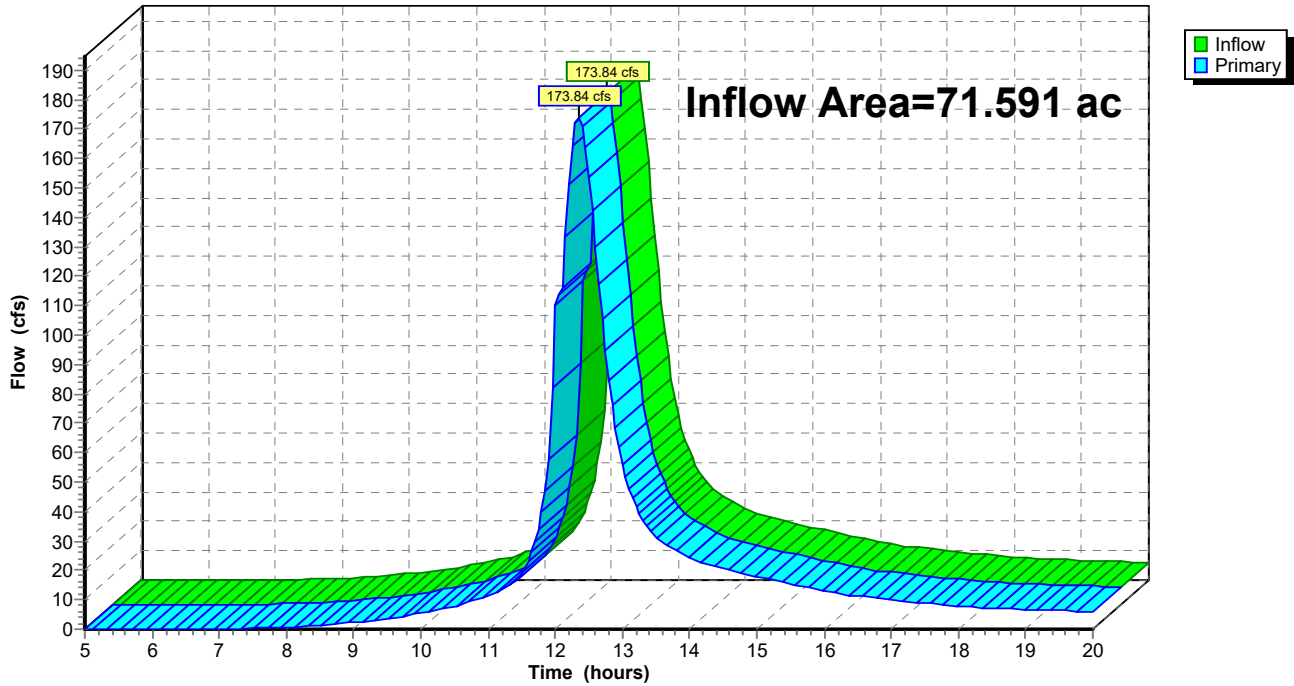
Summary for Link DP54: DP54

Inflow Area = 71.591 ac, 4.62% Impervious, Inflow Depth > 3.74" for 100 year event
Inflow = 173.84 cfs @ 12.35 hrs, Volume= 22.297 af
Primary = 173.84 cfs @ 12.35 hrs, Volume= 22.297 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP54: DP54

Hydrograph

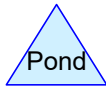
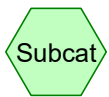
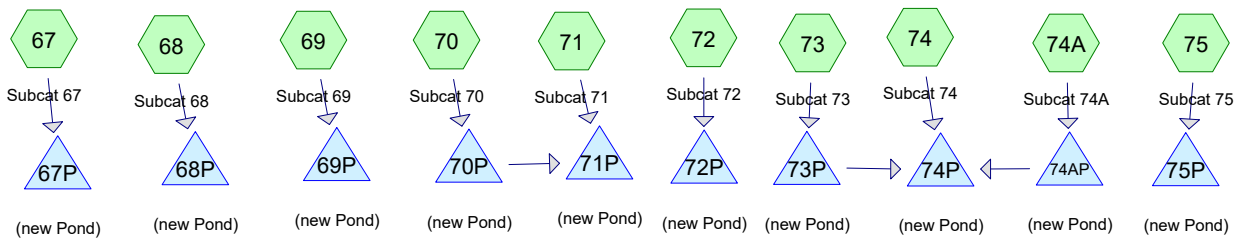




HydroCAD Analysis: Proposed Conditions



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Routing Diagram for Proposed Conditions - Windsorville
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Proposed Conditions - Windsorville

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.489	70	1/2 acre lots, 25% imp, HSG B (72)
12.199	51	50-75% Grass cover, Fair, HSG A (74)
7.379	49	50-75% Grass cover, Fair, HSG A (75)
2.056	59	50-75% Grass cover, Fair, HSG A-B (68, 69, 70, 71, 72, 73)
10.911	74	50-75% Grass cover, Fair, HSG B (74)
31.767	69	50-75% Grass cover, Fair, HSG B (75)
23.380	74	50-75% Grass cover, Fair, HSG B-C (67, 68, 69, 70, 71, 72, 73)
18.685	82	50-75% Grass cover, Fair, HSG C (74)
16.635	82	50-75% Grass cover, Fair, HSG C-D (71, 73)
0.188	77	Fallow, bare soil, HSG A (75)
3.921	91	Fallow, bare soil, HSG C (73, 74)
16.975	30	Meadow, non-grazed, HSG A (68, 69, 70, 71, 73, 74, 74A, 75)
24.573	58	Meadow, non-grazed, HSG B (67, 68, 69, 71, 72, 73, 74, 74A, 75)
17.645	71	Meadow, non-grazed, HSG C (72, 73, 74)
0.103	83	Paved roads w/open ditches, 50% imp, HSG A (71)
2.454	89	Paved roads w/open ditches, 50% imp, HSG B (67, 68, 69, 71, 72)
0.093	92	Paved roads w/open ditches, 50% imp, HSG C (72)
2.169	36	Woods, Fair, HSG A (69, 71, 73, 74, 74A)
4.177	60	Woods, Fair, HSG B (67, 69, 71, 72, 73, 74)
10.094	73	Woods, Fair, HSG C (72, 73, 74)
205.894	66	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
41.070	HSG A	68, 69, 70, 71, 72, 73, 74, 74A, 75
97.751	HSG B	67, 68, 69, 70, 71, 72, 73, 74, 74A, 75
67.073	HSG C	71, 72, 73, 74
0.000	HSG D	
0.000	Other	
205.894		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.489	0.000	0.000	0.000	0.489	1/2 acre lots, 25% imp	
21.634	66.058	35.320	0.000	0.000	123.012	50-75% Grass cover, Fair	
0.188	0.000	3.921	0.000	0.000	4.109	Fallow, bare soil	
16.975	24.573	17.645	0.000	0.000	59.193	Meadow, non-grazed	
0.103	2.454	0.093	0.000	0.000	2.650	Paved roads w/open ditches, 50% imp	
2.169	4.177	10.094	0.000	0.000	16.440	Woods, Fair	
41.070	97.751	67.073	0.000	0.000	205.894	TOTAL AREA	

Proposed Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 67: Subcat 67

Runoff = 0.71 cfs @ 12.17 hrs, Volume= 0.063 af, Depth> 0.59"

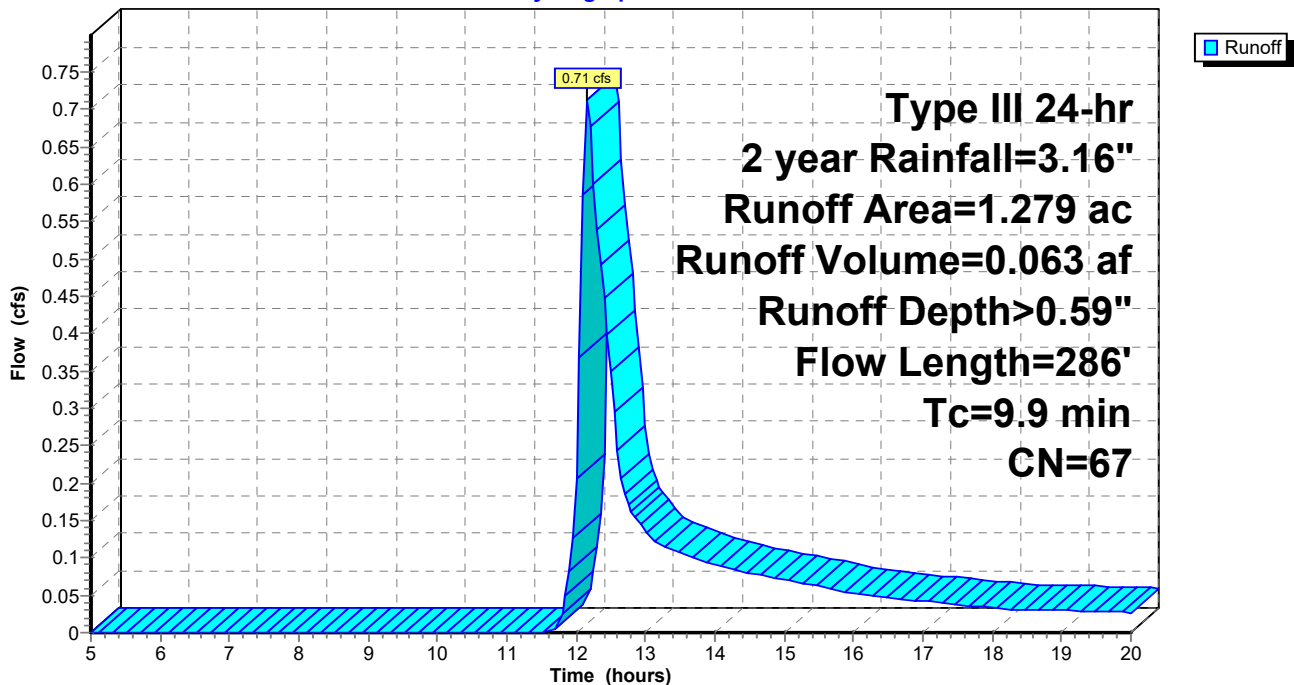
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.156	74	50-75% Grass cover, Fair, HSG B-C
0.743	58	Meadow, non-grazed, HSG B
0.288	89	Paved roads w/open ditches, 50% imp, HSG B
0.092	60	Woods, Fair, HSG B
1.279	67	Weighted Average
1.135		88.74% Pervious Area
0.144		11.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.2	119	0.0588	1.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	117	0.0513	1.59		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.9	286	Total			

Subcatchment 67: Subcat 67

Hydrograph



Proposed Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 68: Subcat 68

Runoff = 8.17 cfs @ 12.40 hrs, Volume= 0.980 af, Depth> 0.63"

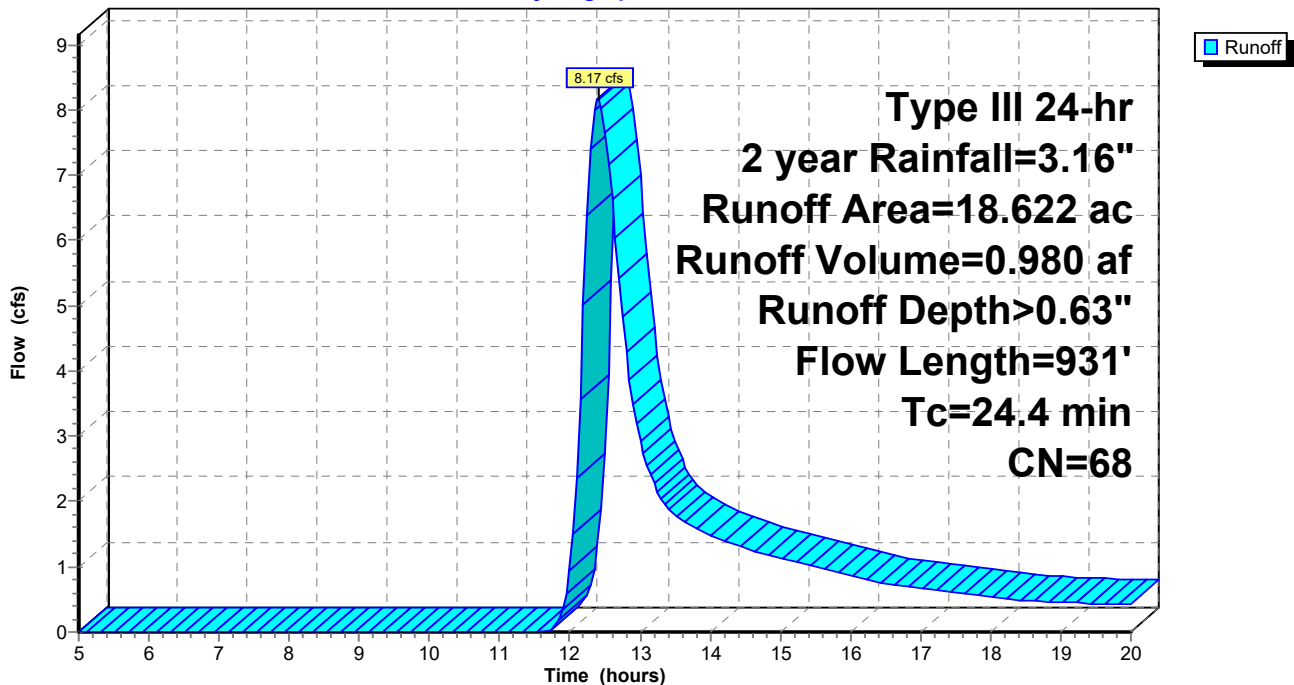
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 1.174	59	50-75% Grass cover, Fair, HSG A-B
* 12.385	74	50-75% Grass cover, Fair, HSG B-C
1.319	30	Meadow, non-grazed, HSG A
2.767	58	Meadow, non-grazed, HSG B
0.977	89	Paved roads w/open ditches, 50% imp, HSG B
18.622	68	Weighted Average
18.134		97.38% Pervious Area
0.489		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.2	244	0.0123	0.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.5	637	0.0126	0.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.4	931	Total			

Subcatchment 68: Subcat 68

Hydrograph



Proposed Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 69: Subcat 69

Runoff = 1.46 cfs @ 12.27 hrs, Volume= 0.193 af, Depth> 0.34"

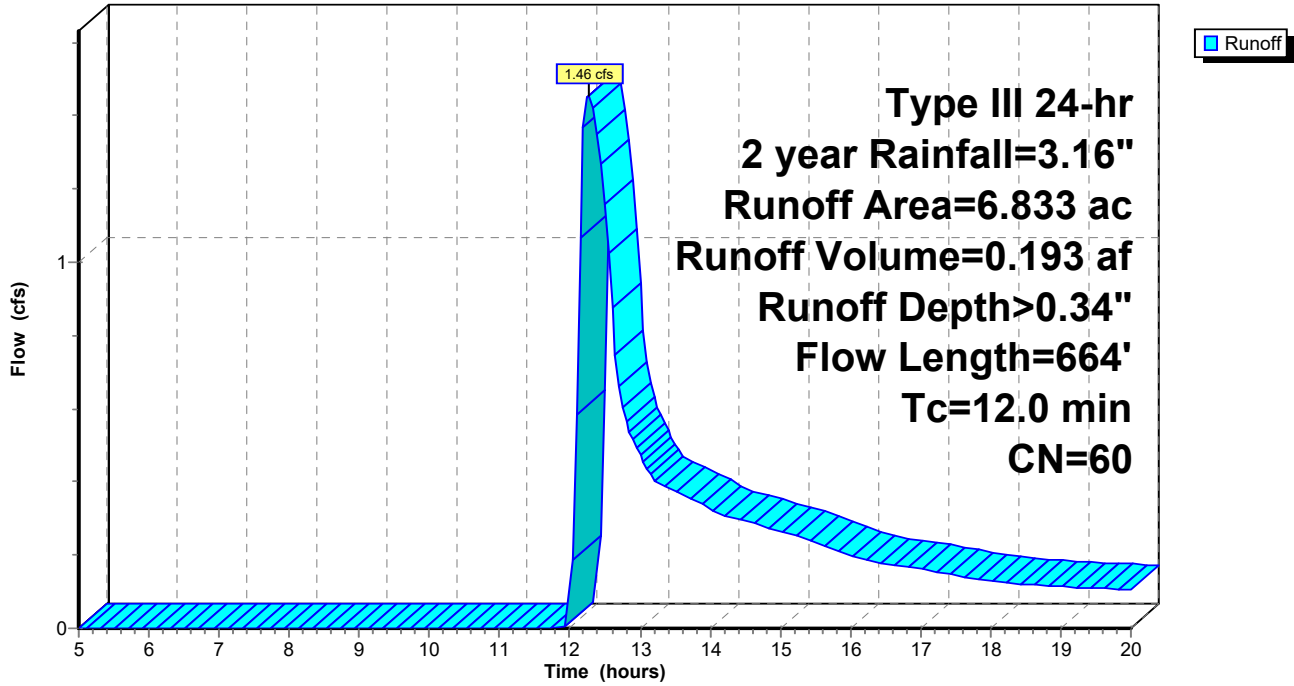
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.090	59	50-75% Grass cover, Fair, HSG A-B
* 2.629	74	50-75% Grass cover, Fair, HSG B-C
0.903	30	Meadow, non-grazed, HSG A
1.771	58	Meadow, non-grazed, HSG B
0.449	89	Paved roads w/open ditches, 50% imp, HSG B
0.703	36	Woods, Fair, HSG A
0.288	60	Woods, Fair, HSG B
6.833	60	Weighted Average
6.609		96.71% Pervious Area
0.224		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.19		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
9.2	446	0.0134	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.1	168	0.0357	1.32		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.0	664	Total			

Subcatchment 69: Subcat 69

Hydrograph



Proposed Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 70: Subcat 70

Runoff = 2.60 cfs @ 12.14 hrs, Volume= 0.207 af, Depth> 0.77"

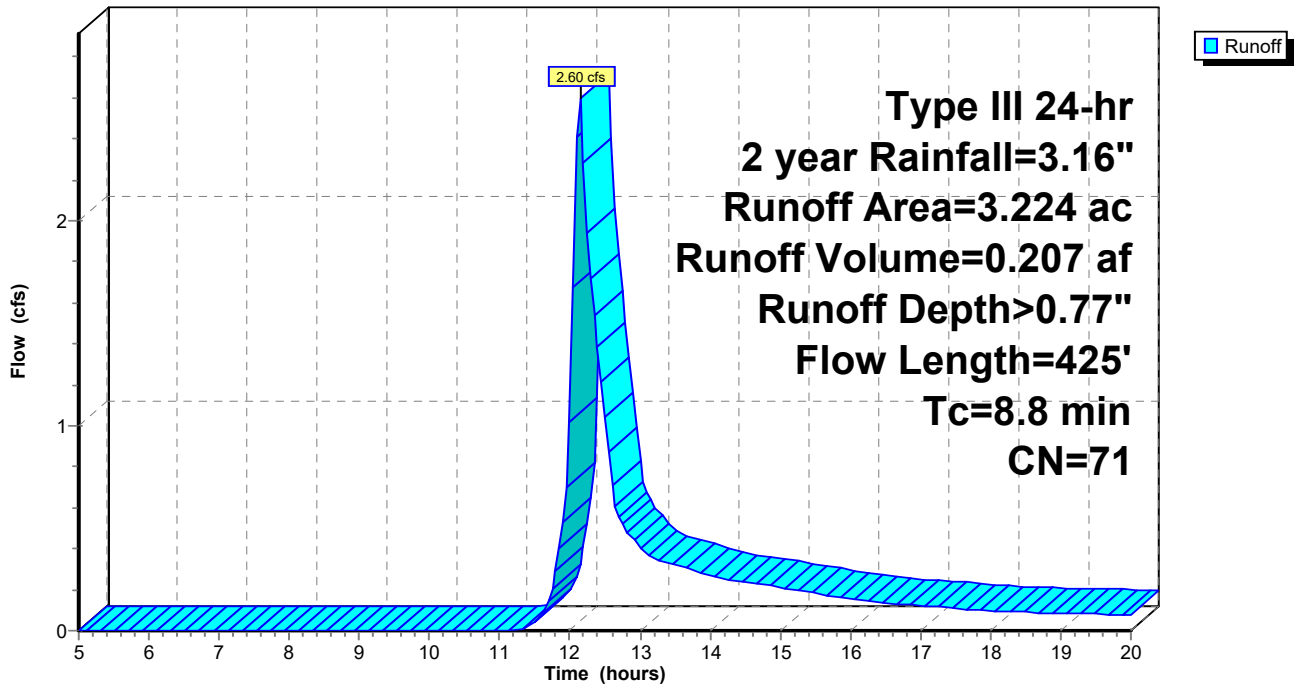
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.496	59	50-75% Grass cover, Fair, HSG A-B
* 2.701	74	50-75% Grass cover, Fair, HSG B-C
0.027	30	Meadow, non-grazed, HSG A
3.224	71	Weighted Average
3.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	50	0.2000	0.37		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
0.5	82	0.1707	2.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	293	0.0137	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.8	425	Total			

Subcatchment 70: Subcat 70

Hydrograph



Proposed Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 71: Subcat 71

Runoff = 3.07 cfs @ 12.29 hrs, Volume= 0.348 af, Depth> 0.51"

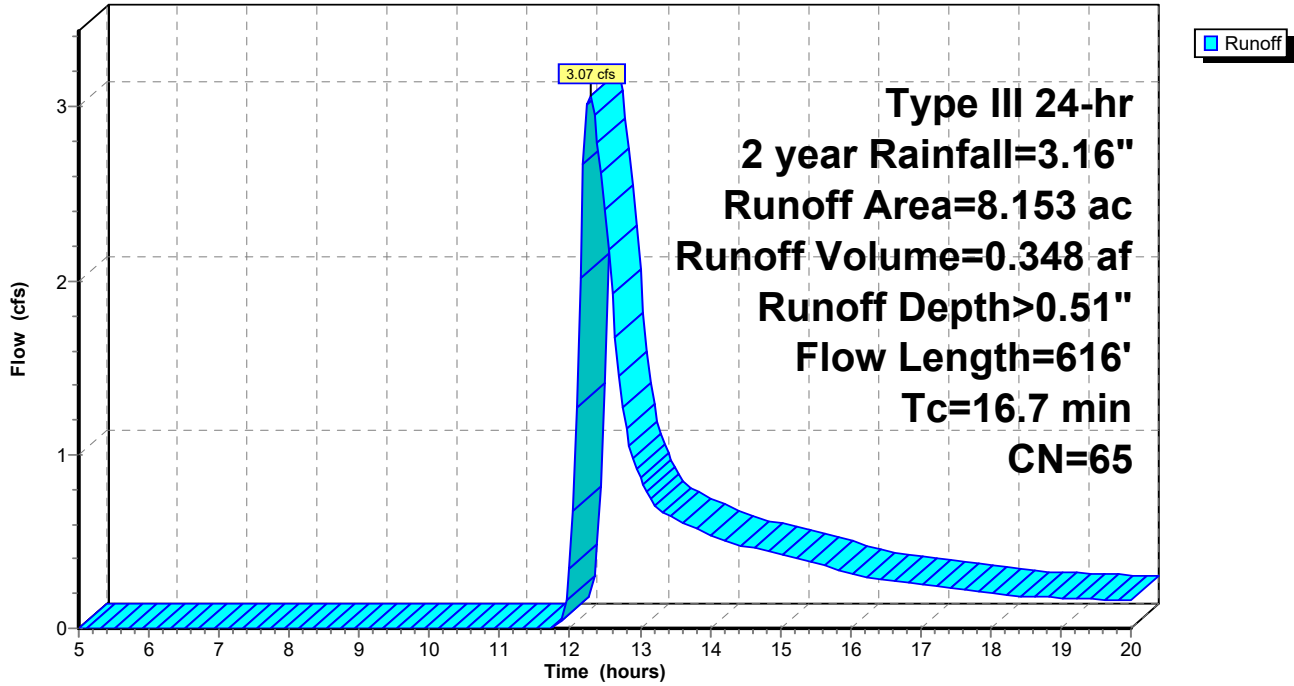
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.291	59	50-75% Grass cover, Fair, HSG A-B
* 3.331	74	50-75% Grass cover, Fair, HSG B-C
* 0.071	82	50-75% Grass cover, Fair, HSG C-D
0.664	30	Meadow, non-grazed, HSG A
2.241	58	Meadow, non-grazed, HSG B
0.103	83	Paved roads w/open ditches, 50% imp, HSG A
0.705	89	Paved roads w/open ditches, 50% imp, HSG B
0.096	36	Woods, Fair, HSG A
0.651	60	Woods, Fair, HSG B
8.153	65	Weighted Average
7.749		95.04% Pervious Area
0.404		4.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	369	0.0135	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.6	197	0.0812	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.7	616	Total			

Subcatchment 71: Subcat 71

Hydrograph



Proposed Conditions - Windsorville

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 72: Subcat 72

Runoff = 4.35 cfs @ 12.25 hrs, Volume= 0.439 af, Depth> 0.63"

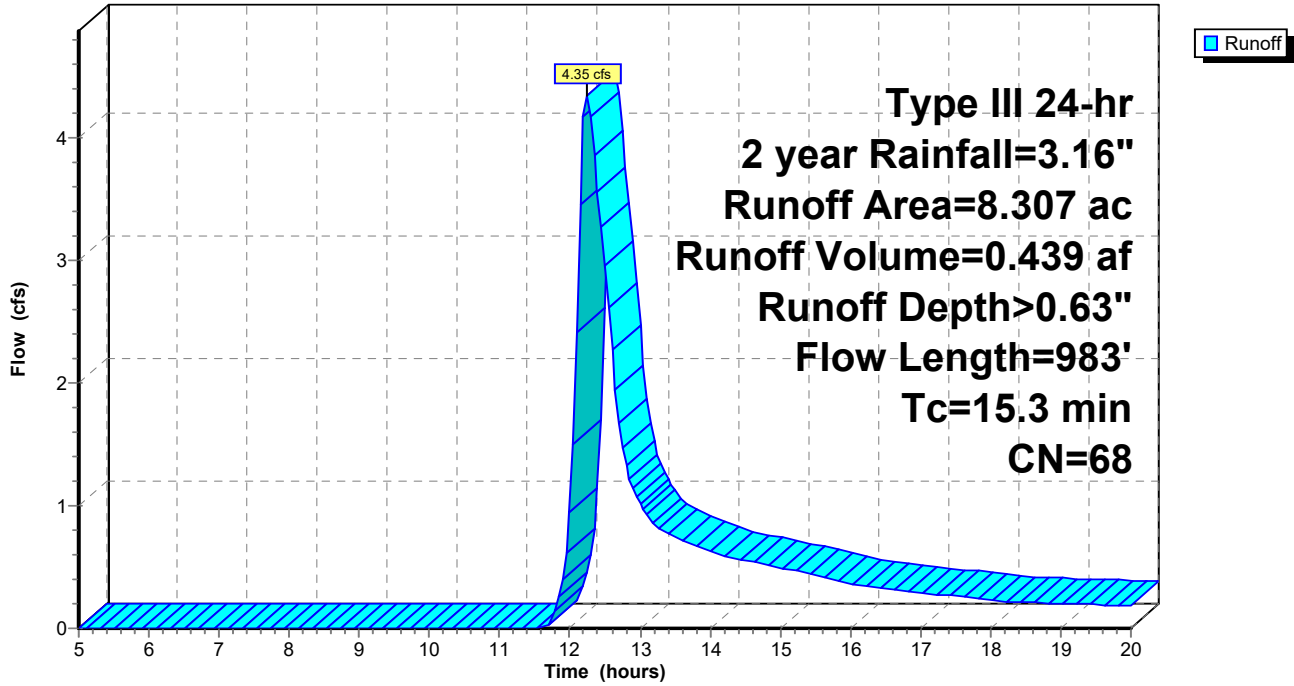
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.489	70	1/2 acre lots, 25% imp, HSG B
* 0.004	59	50-75% Grass cover, Fair, HSG A-B
* 1.377	74	50-75% Grass cover, Fair, HSG B-C
0.846	58	Meadow, non-grazed, HSG B
0.979	71	Meadow, non-grazed, HSG C
0.035	89	Paved roads w/open ditches, 50% imp, HSG B
0.093	92	Paved roads w/open ditches, 50% imp, HSG C
2.062	60	Woods, Fair, HSG B
2.422	73	Woods, Fair, HSG C
8.307	68	Weighted Average
8.121		97.76% Pervious Area
0.186		2.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.1400	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
6.5	610	0.0492	1.55		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0303	3.53		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	290	0.1138	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	983	Total			

Subcatchment 72: Subcat 72

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Summary for Subcatchment 73: Subcat 73

Runoff = 31.65 cfs @ 12.20 hrs, Volume= 2.727 af, Depth> 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.001	59	50-75% Grass cover, Fair, HSG A-B
* 0.801	74	50-75% Grass cover, Fair, HSG B-C
* 16.564	82	50-75% Grass cover, Fair, HSG C-D
1.566	91	Fallow, bare soil, HSG C
0.066	30	Meadow, non-grazed, HSG A
0.576	58	Meadow, non-grazed, HSG B
5.200	71	Meadow, non-grazed, HSG C
0.156	36	Woods, Fair, HSG A
0.156	60	Woods, Fair, HSG B
3.613	73	Woods, Fair, HSG C
28.699	78	Weighted Average
28.699		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1200	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
11.0	1,029	0.0496	1.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.8	1,079	Total			

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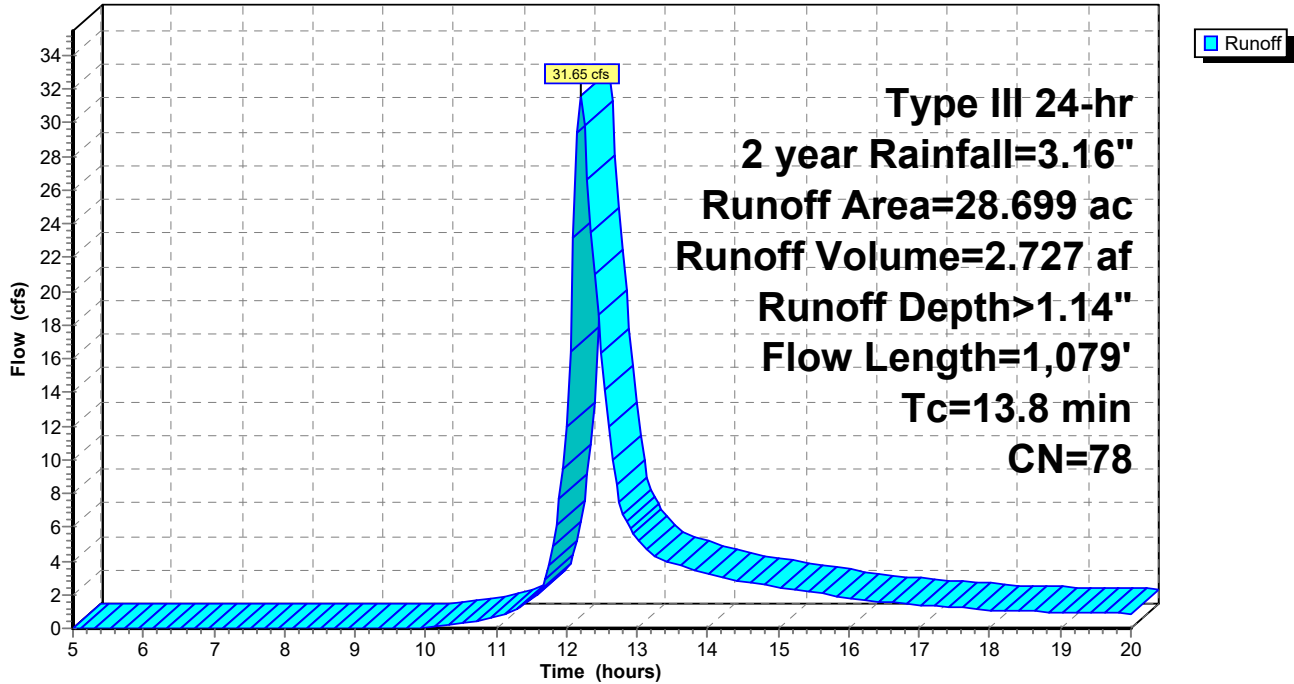
Type III 24-hr 2 year Rainfall=3.16"

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Subcatchment 73: Subcat 73

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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 74: Subcat 74

Runoff = 22.94 cfs @ 12.68 hrs, Volume= 3.593 af, Depth> 0.58"

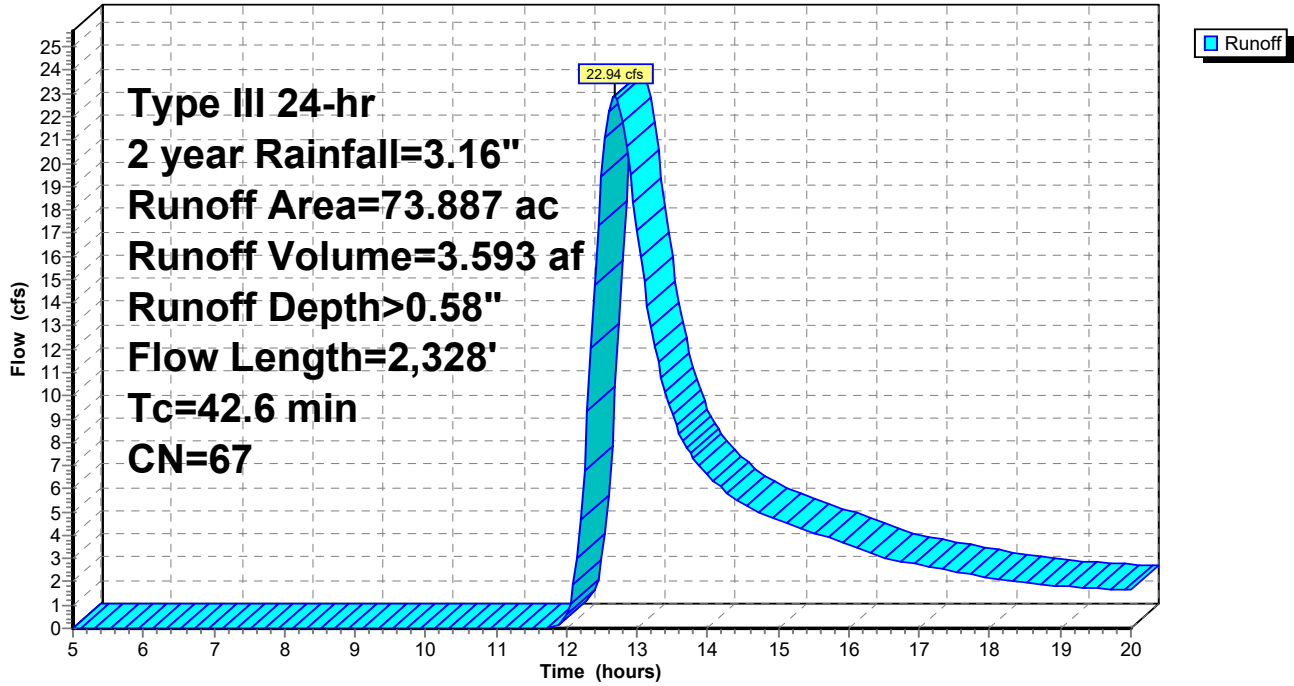
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 12.199	51	50-75% Grass cover, Fair, HSG A
* 10.911	74	50-75% Grass cover, Fair, HSG B
* 18.685	82	50-75% Grass cover, Fair, HSG C
0.000	77	Fallow, bare soil, HSG A
2.355	91	Fallow, bare soil, HSG C
6.249	30	Meadow, non-grazed, HSG A
6.321	58	Meadow, non-grazed, HSG B
11.466	71	Meadow, non-grazed, HSG C
0.714	36	Woods, Fair, HSG A
0.928	60	Woods, Fair, HSG B
4.059	73	Woods, Fair, HSG C
73.887	67	Weighted Average
73.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	484	0.0331	1.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.7	207	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	404	0.0272	1.15		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	923	0.0162	0.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	260	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
42.6	2,328	Total			

Subcatchment 74: Subcat 74

Hydrograph



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Summary for Subcatchment 74A: Subcat 74A

Runoff = 0.08 cfs @ 15.01 hrs, Volume= 0.036 af, Depth> 0.05"

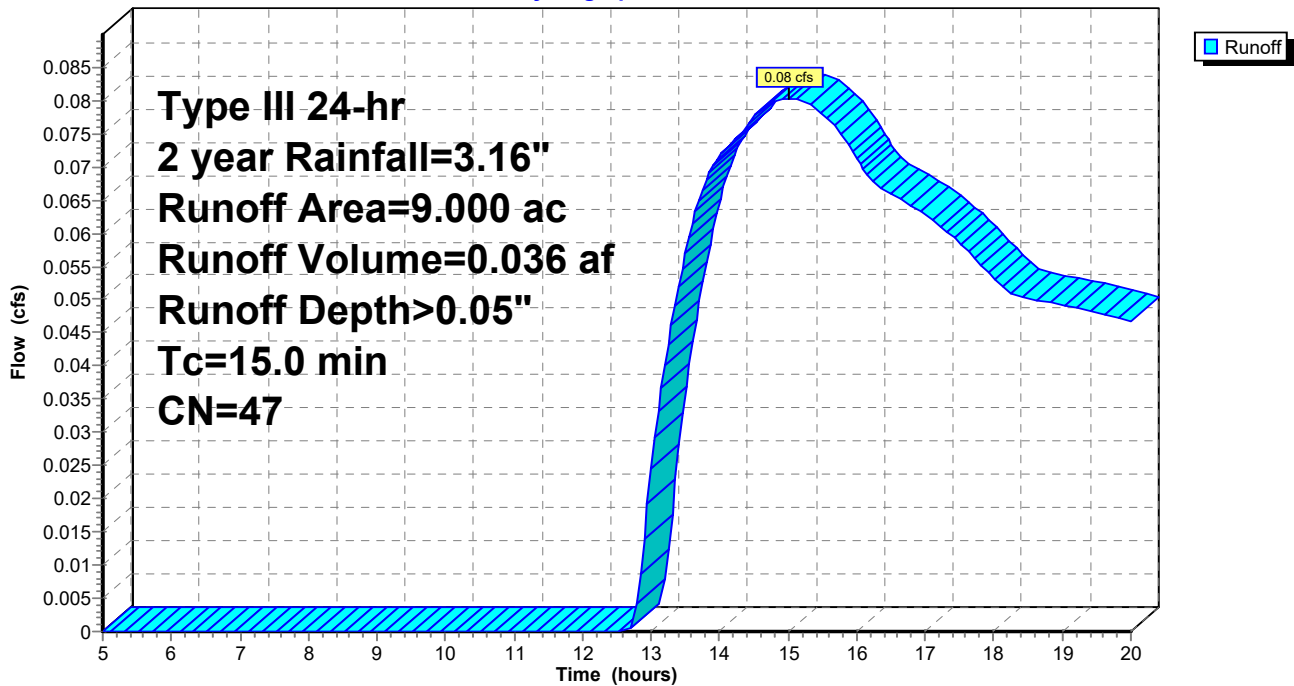
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
3.000	30	Meadow, non-grazed, HSG A
5.500	58	Meadow, non-grazed, HSG B
0.500	36	Woods, Fair, HSG A
9.000	47	Weighted Average
9.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 74A: Subcat 74A

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 75: Subcat 75

Runoff = 10.53 cfs @ 12.40 hrs, Volume= 1.476 af, Depth> 0.37"

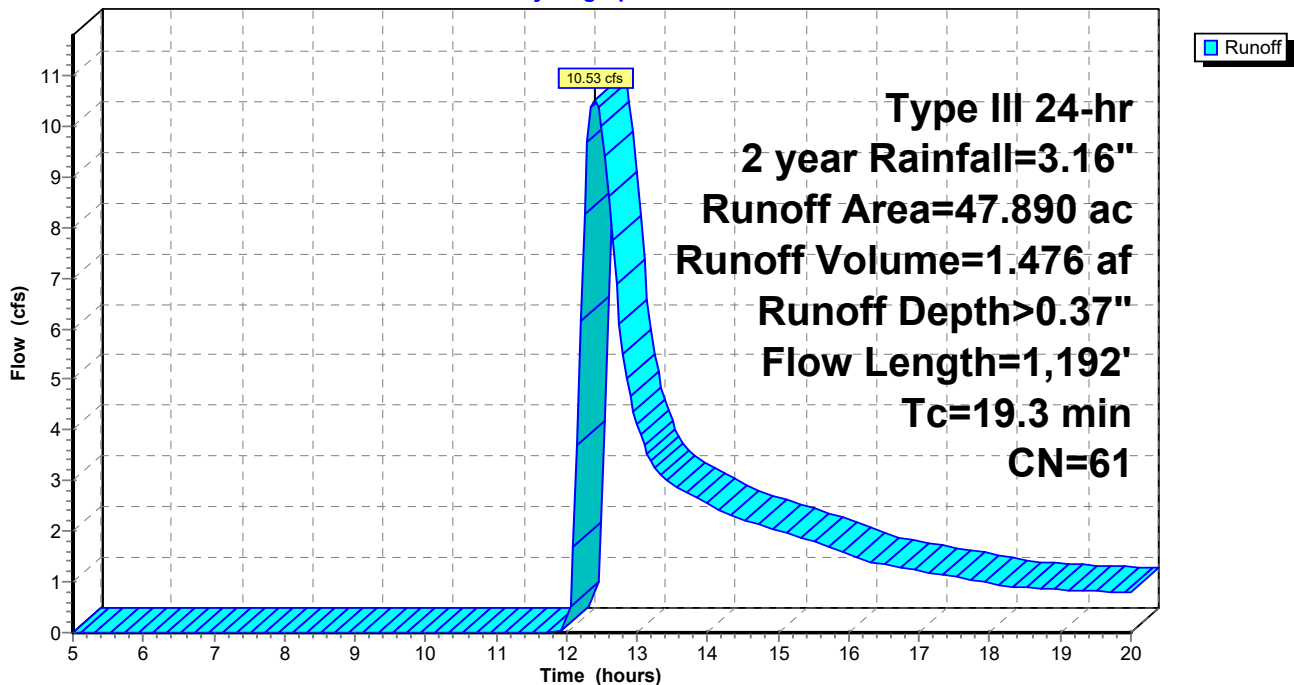
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
7.379	49	50-75% Grass cover, Fair, HSG A
31.767	69	50-75% Grass cover, Fair, HSG B
0.188	77	Fallow, bare soil, HSG A
4.747	30	Meadow, non-grazed, HSG A
3.808	58	Meadow, non-grazed, HSG B
47.890	61	Weighted Average
47.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.5	178	0.0281	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.3	964	0.0612	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
19.3	1,192	Total			

Subcatchment 75: Subcat 75

Hydrograph



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Summary for Pond 67P: (new Pond)

Inflow Area = 1.279 ac, 11.26% Impervious, Inflow Depth > 0.59" for 2 year event
 Inflow = 0.71 cfs @ 12.17 hrs, Volume= 0.063 af
 Outflow = 0.07 cfs @ 15.09 hrs, Volume= 0.043 af, Atten= 90%, Lag= 175.8 min
 Discarded = 0.07 cfs @ 15.09 hrs, Volume= 0.043 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 172.74' @ 15.09 hrs Surf.Area= 2,499 sf Storage= 1,314 cf

Plug-Flow detention time= 195.3 min calculated for 0.043 af (68% of inflow)
 Center-of-Mass det. time= 119.2 min (959.5 - 840.3)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	23,969 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.00	1,123	0	0	1,123
174.00	6,054	6,523	6,523	6,070
176.00	11,699	17,446	23,969	11,753

Device	Routing	Invert	Outlet Devices
#1	Discarded	172.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.07 cfs @ 15.09 hrs HW=172.74' (Free Discharge)
 ↑1=Exfiltration (Controls 0.07 cfs)

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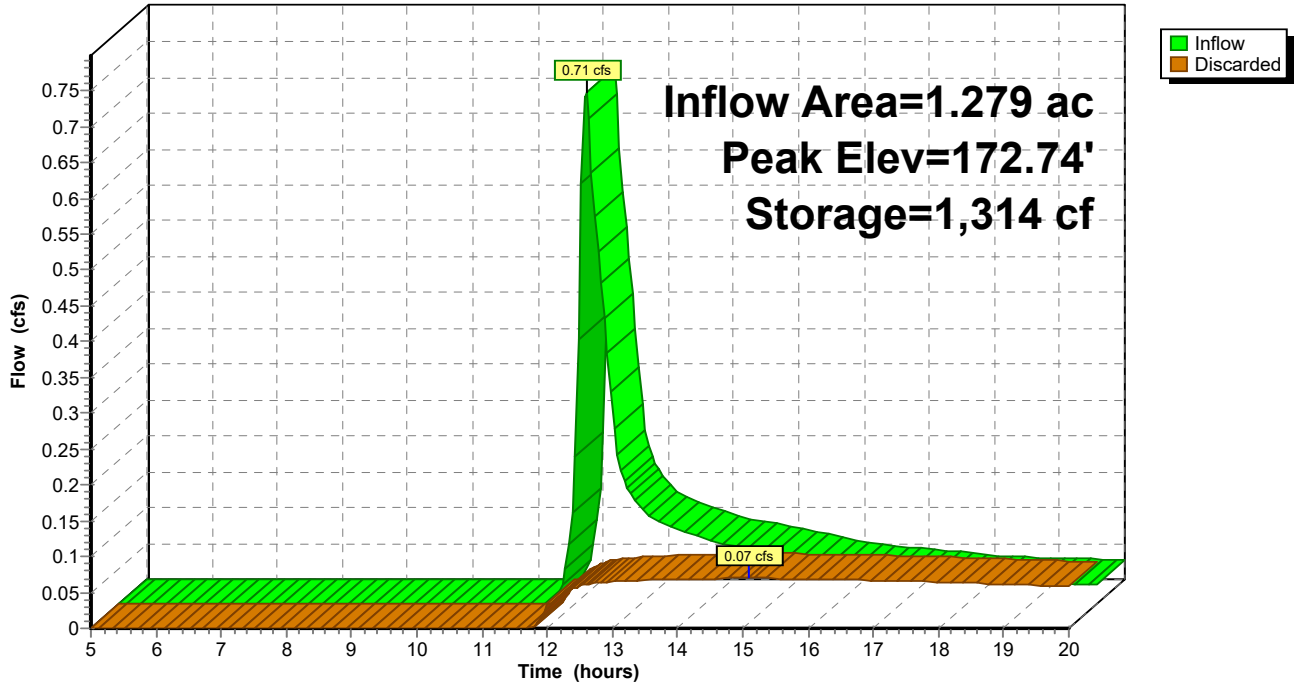
Type III 24-hr 2 year Rainfall=3.16"

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Pond 67P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 68P: (new Pond)

Inflow Area = 18.622 ac, 2.62% Impervious, Inflow Depth > 0.63" for 2 year event
 Inflow = 8.17 cfs @ 12.40 hrs, Volume= 0.980 af
 Outflow = 1.41 cfs @ 14.17 hrs, Volume= 0.839 af, Atten= 83%, Lag= 105.9 min
 Discarded = 1.41 cfs @ 14.17 hrs, Volume= 0.839 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 174.43' @ 14.17 hrs Surf.Area= 50,764 sf Storage= 17,288 cf

Plug-Flow detention time= 149.9 min calculated for 0.839 af (86% of inflow)
 Center-of-Mass det. time= 108.6 min (956.7 - 848.1)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	543,774 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	29,899	0	0	29,899
176.00	171,899	182,326	182,326	171,914
177.50	317,411	361,448	543,774	317,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.41 cfs @ 14.17 hrs HW=174.43' (Free Discharge)
 ↑1=Exfiltration (Controls 1.41 cfs)

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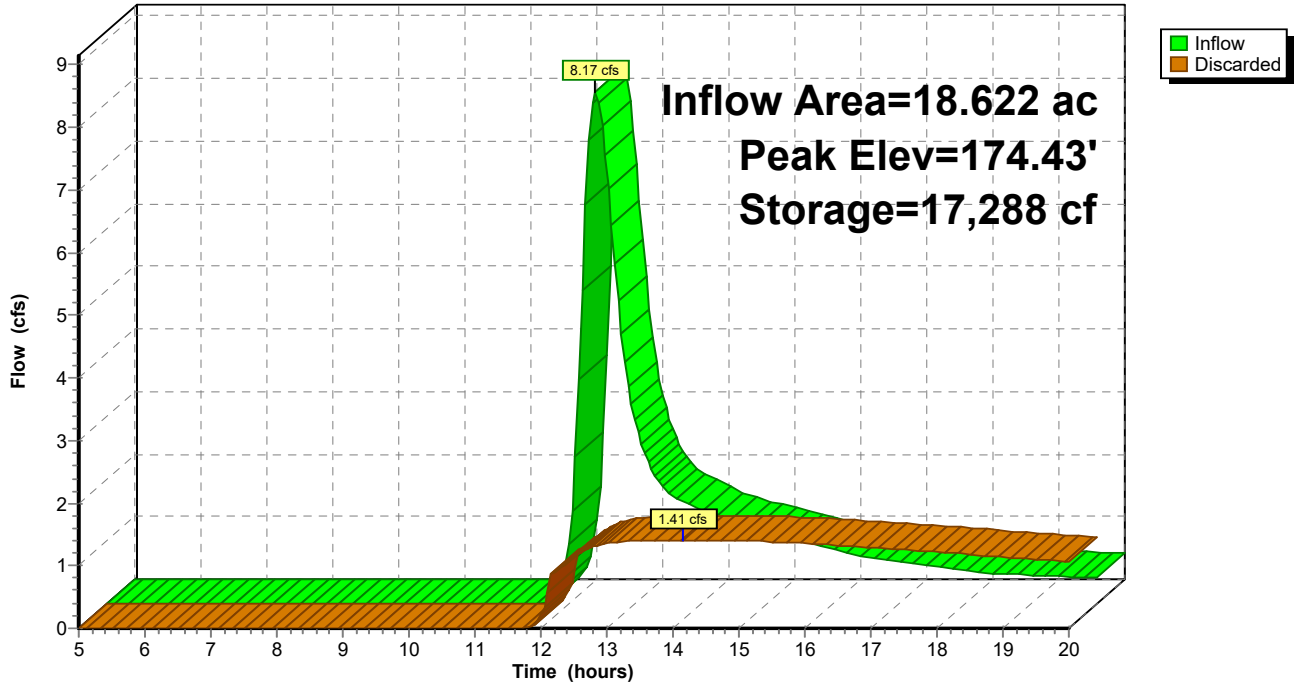
Type III 24-hr 2 year Rainfall=3.16"

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Pond 68P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 69P: (new Pond)

Inflow Area = 6.833 ac, 3.29% Impervious, Inflow Depth > 0.34" for 2 year event
 Inflow = 1.46 cfs @ 12.27 hrs, Volume= 0.193 af
 Outflow = 0.20 cfs @ 16.01 hrs, Volume= 0.122 af, Atten= 86%, Lag= 224.2 min
 Discarded = 0.20 cfs @ 16.01 hrs, Volume= 0.122 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.74' @ 16.01 hrs Surf.Area= 7,132 sf Storage= 3,896 cf

Plug-Flow detention time= 190.1 min calculated for 0.122 af (63% of inflow)
 Center-of-Mass det. time= 103.5 min (969.9 - 866.5)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	115,744 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	3,610	0	0	3,610
172.00	15,882	18,043	18,043	15,900
174.00	24,667	40,228	58,271	24,742
176.00	33,009	57,474	115,744	33,170

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.20 cfs @ 16.01 hrs HW=170.74' (Free Discharge)
 ↑1=Exfiltration (Controls 0.20 cfs)

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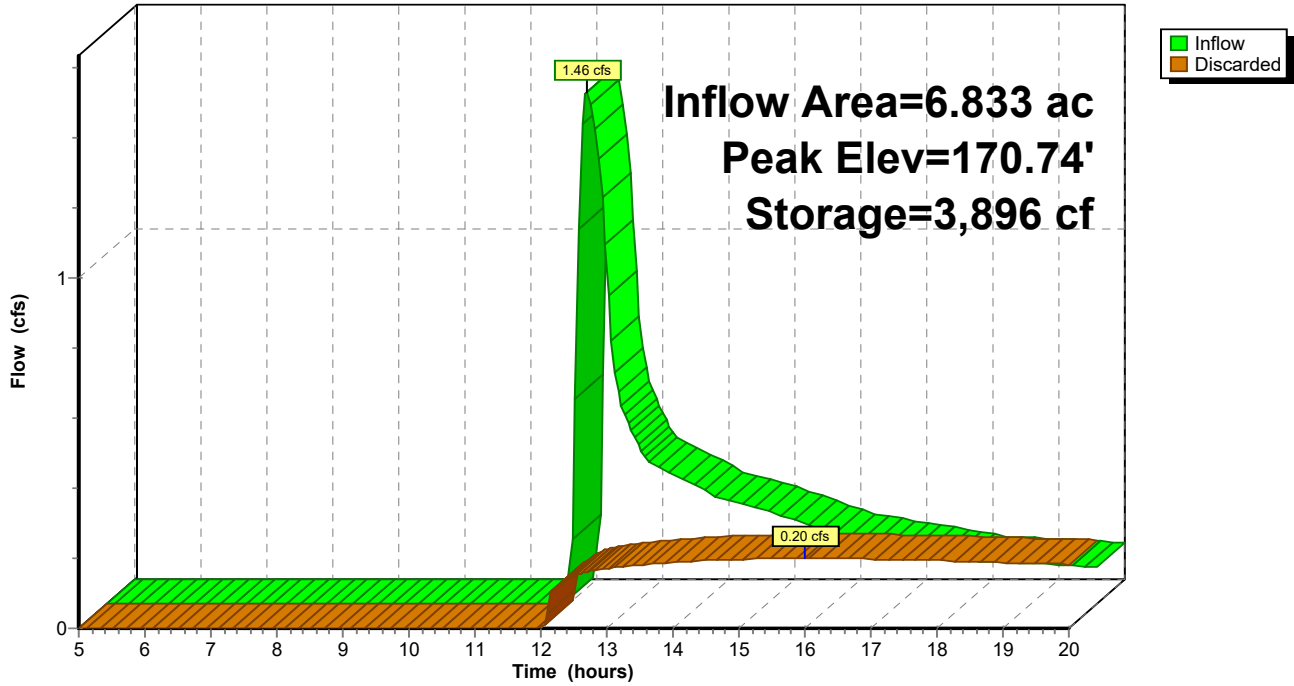
Type III 24-hr 2 year Rainfall=3.16"

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Pond 69P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 70P: (new Pond)

Inflow Area = 3.224 ac, 0.00% Impervious, Inflow Depth > 0.77" for 2 year event
 Inflow = 2.60 cfs @ 12.14 hrs, Volume= 0.207 af
 Outflow = 1.08 cfs @ 12.49 hrs, Volume= 0.206 af, Atten= 59%, Lag= 20.8 min
 Discarded = 1.08 cfs @ 12.49 hrs, Volume= 0.206 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 197.86' @ 12.49 hrs Surf.Area= 9,307 sf Storage= 2,033 cf

Plug-Flow detention time= 21.2 min calculated for 0.206 af (100% of inflow)
 Center-of-Mass det. time= 19.6 min (848.1 - 828.6)

Volume	Invert	Avail.Storage	Storage Description
#1	197.20'	32,894 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.20	0	0	0	0
198.00	13,877	3,701	3,701	13,878
198.40	29,617	8,502	12,203	29,619
199.00	39,593	20,691	32,894	39,603

Device	Routing	Invert	Outlet Devices
#1	Primary	198.40'	50.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	197.20'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.08 cfs @ 12.49 hrs HW=197.85' (Free Discharge)
 ↑2=Exfiltration (Controls 1.08 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=197.20' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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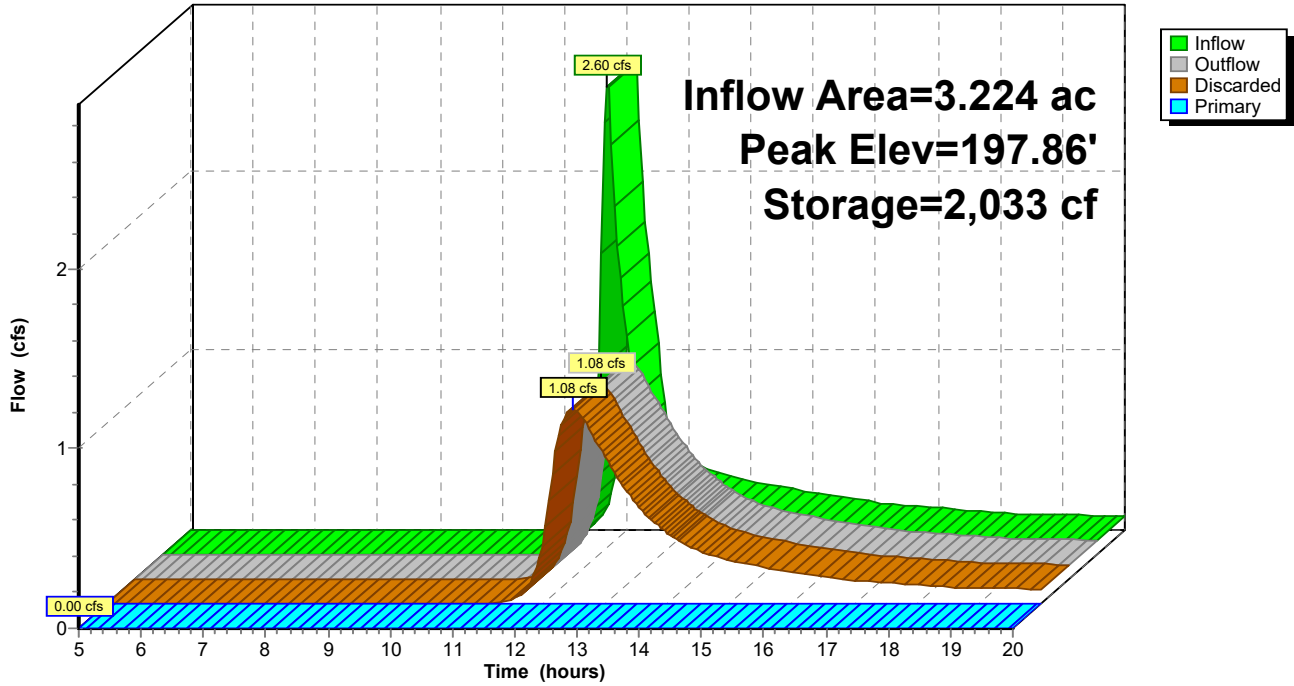
Type III 24-hr 2 year Rainfall=3.16"

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Pond 70P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 71P: (new Pond)

Inflow Area = 11.377 ac, 3.55% Impervious, Inflow Depth > 0.37" for 2 year event
 Inflow = 3.07 cfs @ 12.29 hrs, Volume= 0.348 af
 Outflow = 0.19 cfs @ 18.13 hrs, Volume= 0.111 af, Atten= 94%, Lag= 350.5 min
 Discarded = 0.19 cfs @ 18.13 hrs, Volume= 0.111 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 176.33' @ 18.13 hrs Surf.Area= 6,809 sf Storage= 10,453 cf

Plug-Flow detention time= 242.6 min calculated for 0.111 af (32% of inflow)
 Center-of-Mass det. time= 130.8 min (982.2 - 851.4)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	96,451 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	3,500	0	0	3,500
176.00	5,053	8,506	8,506	5,120
178.00	19,737	23,184	31,690	19,823
179.00	33,402	26,272	57,962	33,500
180.00	43,811	38,489	96,451	43,932

Device	Routing	Invert	Outlet Devices
#1	Primary	179.30'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.19 cfs @ 18.13 hrs HW=176.33' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.19 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=174.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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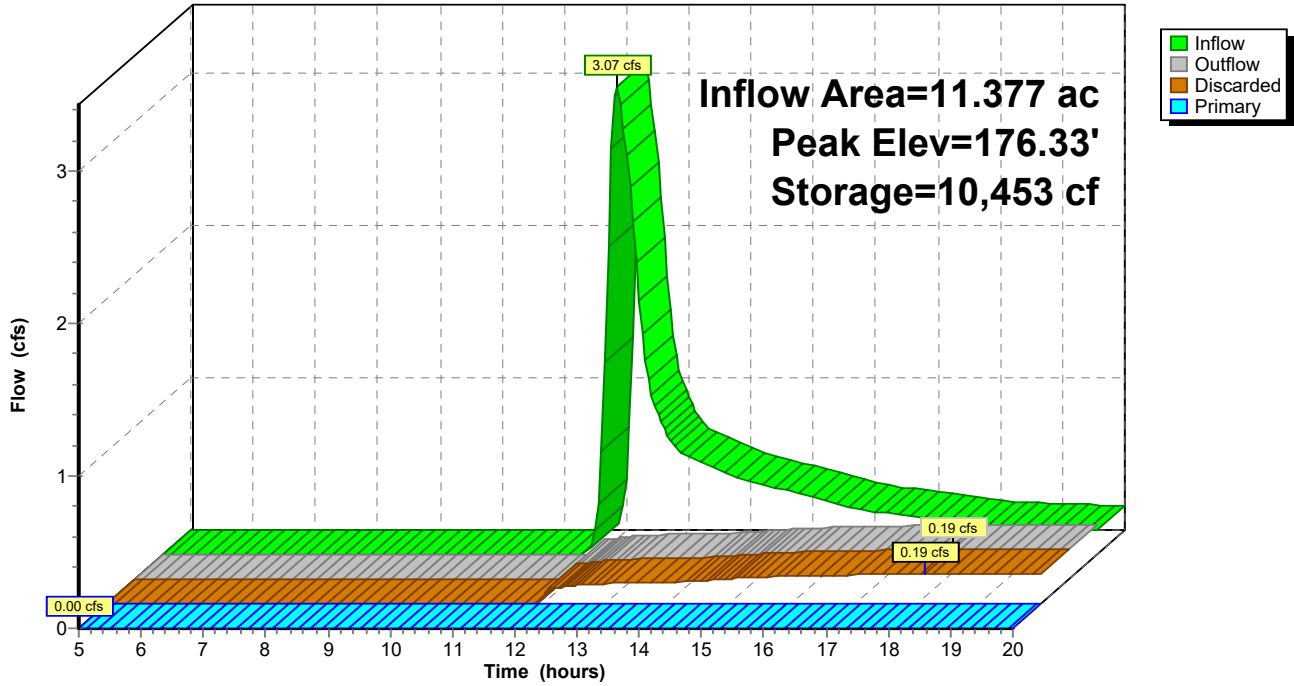
Type III 24-hr 2 year Rainfall=3.16"

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Pond 71P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 72P: (new Pond)

Inflow Area = 8.307 ac, 2.24% Impervious, Inflow Depth > 0.63" for 2 year event
 Inflow = 4.35 cfs @ 12.25 hrs, Volume= 0.439 af
 Outflow = 0.22 cfs @ 18.15 hrs, Volume= 0.131 af, Atten= 95%, Lag= 354.0 min
 Discarded = 0.22 cfs @ 18.15 hrs, Volume= 0.131 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 173.98' @ 18.15 hrs Surf.Area= 7,813 sf Storage= 13,561 cf

Plug-Flow detention time= 246.3 min calculated for 0.131 af (30% of inflow)
 Center-of-Mass det. time= 139.0 min (980.4 - 841.4)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	247,588 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	704	0	0	704
172.00	2,903	3,358	3,358	2,921
174.00	7,882	10,379	13,737	7,926
176.00	13,742	21,354	35,091	13,831
178.00	18,516	32,140	67,231	18,689
180.00	25,003	43,357	110,588	25,259
182.00	32,623	57,457	168,045	32,973
184.00	47,378	79,544	247,588	47,796

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.22 cfs @ 18.15 hrs HW=173.98' (Free Discharge)
 ↑1=Exfiltration (Controls 0.22 cfs)

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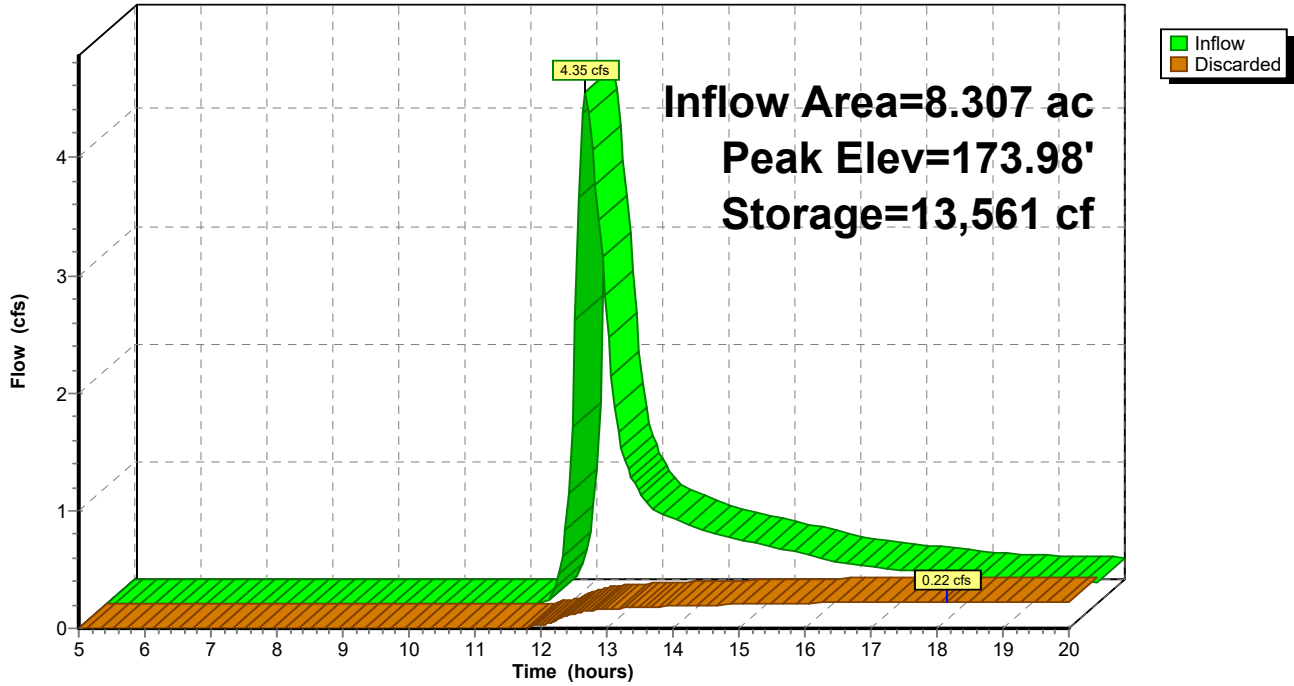
Type III 24-hr 2 year Rainfall=3.16"

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Pond 72P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 73P: (new Pond)

Inflow Area = 28.699 ac, 0.00% Impervious, Inflow Depth > 1.14" for 2 year event
 Inflow = 31.65 cfs @ 12.20 hrs, Volume= 2.727 af
 Outflow = 0.96 cfs @ 18.97 hrs, Volume= 0.643 af, Atten= 97%, Lag= 406.1 min
 Discarded = 0.96 cfs @ 18.97 hrs, Volume= 0.643 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 151.85' @ 18.97 hrs Surf.Area= 33,952 sf Storage= 90,985 cf

Plug-Flow detention time= 237.8 min calculated for 0.643 af (24% of inflow)
 Center-of-Mass det. time= 137.4 min (952.6 - 815.1)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	335,287 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
148.00	14,537	0	0	14,537
150.00	23,801	37,959	37,959	23,852
152.00	34,881	58,330	96,289	34,998
154.00	47,776	82,320	178,609	47,973
156.00	113,577	156,677	335,287	113,803

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	30.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	148.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.96 cfs @ 18.97 hrs HW=151.85' (Free Discharge)
 ↑2=Exfiltration (Controls 0.96 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=148.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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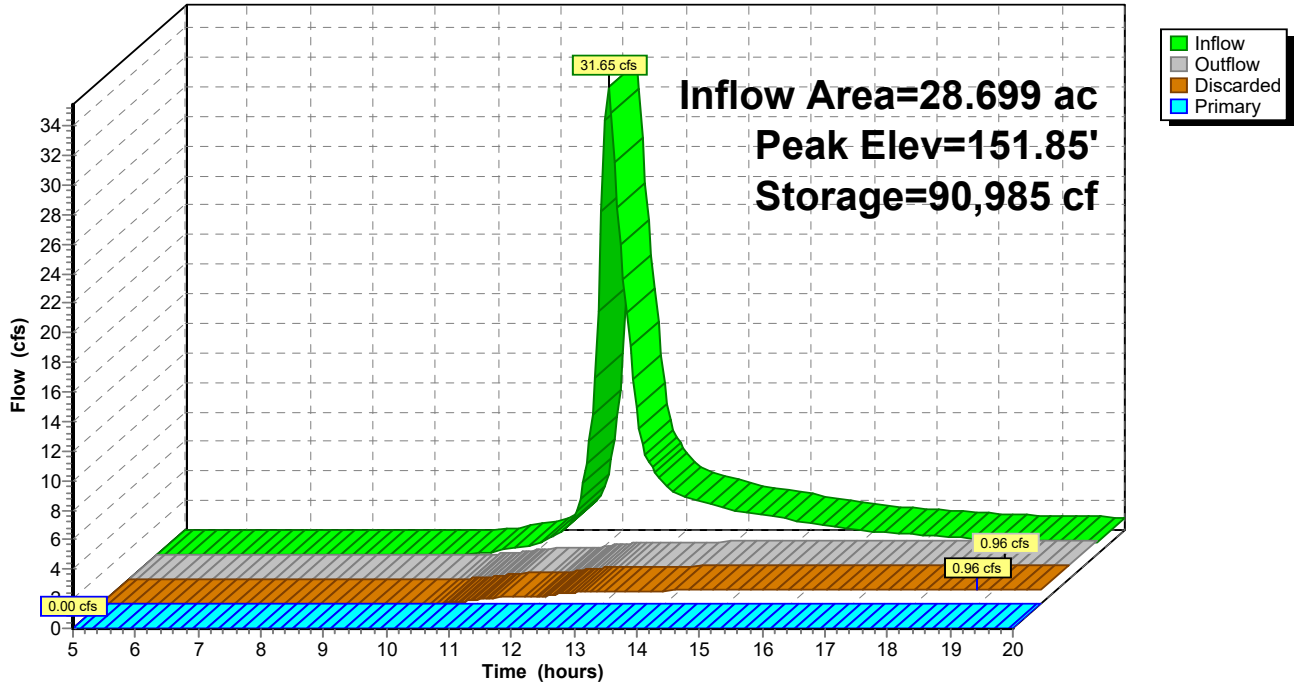
Type III 24-hr 2 year Rainfall=3.16"

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Pond 73P: (new Pond)

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Summary for Pond 74AP: (new Pond)

Inflow Area = 9.000 ac, 0.00% Impervious, Inflow Depth > 0.05" for 2 year event
 Inflow = 0.08 cfs @ 15.01 hrs, Volume= 0.036 af
 Outflow = 0.08 cfs @ 15.52 hrs, Volume= 0.034 af, Atten= 3%, Lag= 30.9 min
 Discarded = 0.08 cfs @ 15.52 hrs, Volume= 0.034 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 130.02' @ 15.52 hrs Surf.Area= 6,184 sf Storage= 138 cf

Plug-Flow detention time= 28.9 min calculated for 0.034 af (95% of inflow)
 Center-of-Mass det. time= 16.8 min (993.7 - 976.9)

Volume	Invert	Avail.Storage	Storage Description
#1	130.00'	55,787 cf	32.00'W x 192.00'L x 5.00'H Prismatic Z=4.0

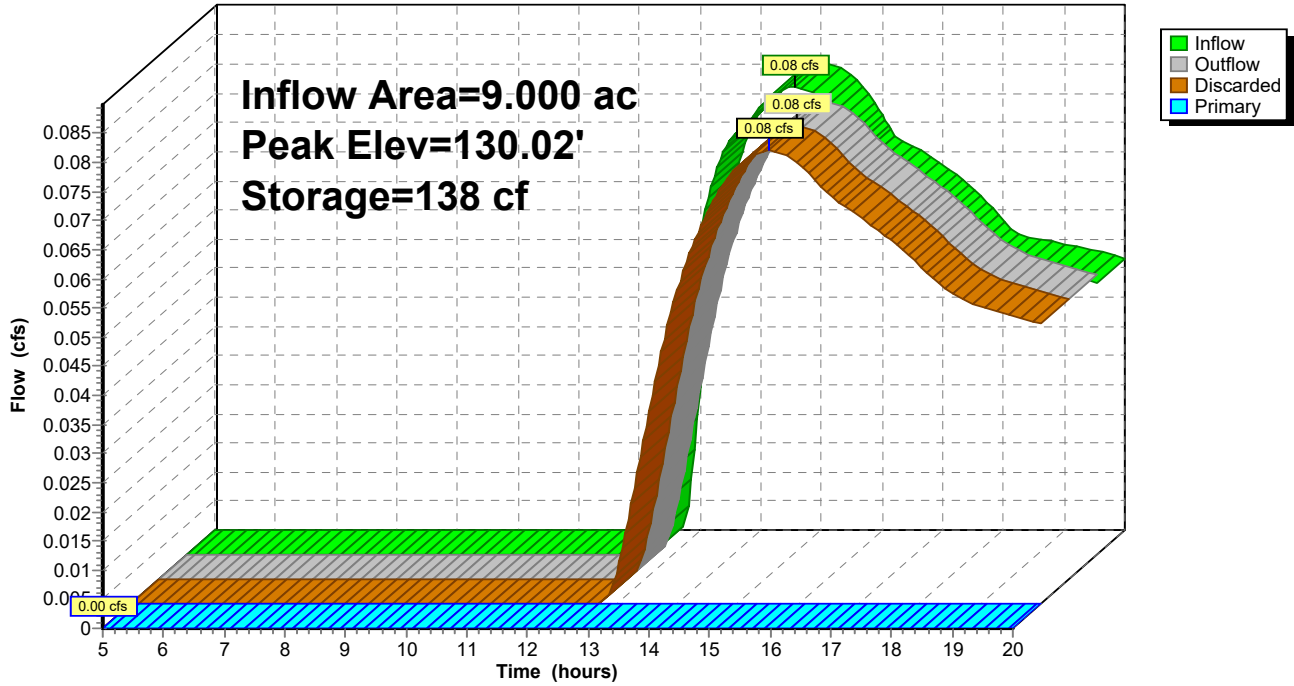
Device	Routing	Invert	Outlet Devices
#1	Primary	133.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	130.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.17 cfs @ 15.52 hrs HW=130.02' (Free Discharge)
 ↳2=Exfiltration (Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=130.00' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 74AP: (new Pond)

Hydrograph



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Summary for Pond 74P: (new Pond)

Inflow Area = 111.586 ac, 0.00% Impervious, Inflow Depth > 0.39" for 2 year event
Inflow = 22.94 cfs @ 12.68 hrs, Volume= 3.593 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 124.18' @ 20.00 hrs Surf.Area= 85,049 sf Storage= 156,334 cf

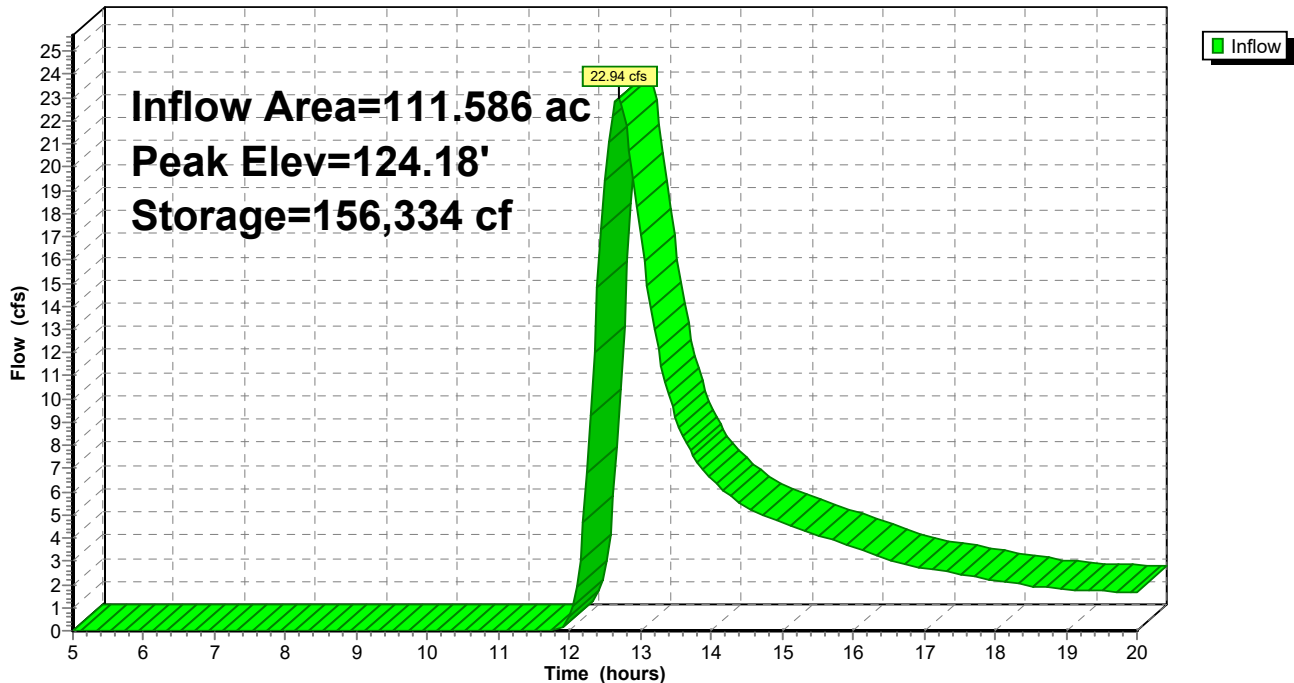
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	1,810,898 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.00	59,766	0	0
124.00	81,926	141,692	141,692
126.00	117,535	199,461	341,153
128.00	357,529	475,064	816,217
130.00	637,152	994,681	1,810,898

Pond 74P: (new Pond)

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Summary for Pond 75P: (new Pond)

Inflow Area = 47.890 ac, 0.00% Impervious, Inflow Depth > 0.37" for 2 year event
Inflow = 10.53 cfs @ 12.40 hrs, Volume= 1.476 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

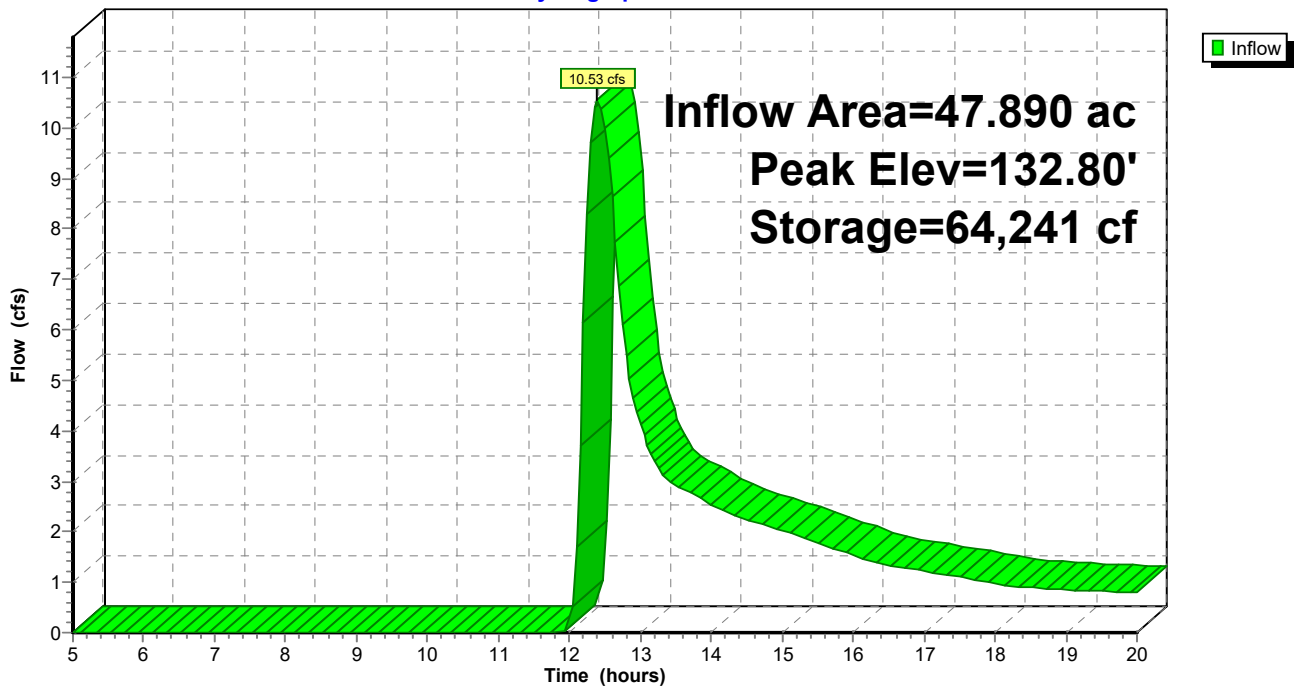
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 132.80' @ 20.00 hrs Surf.Area= 18,054 sf Storage= 64,241 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	128.00'	662,007 cf	93.00'W x 99.00'L x 20.00'H Prismatic Z=4.0

Pond 75P: (new Pond)

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 67: Subcat 67

Runoff = 3.42 cfs @ 12.15 hrs, Volume= 0.262 af, Depth> 2.46"

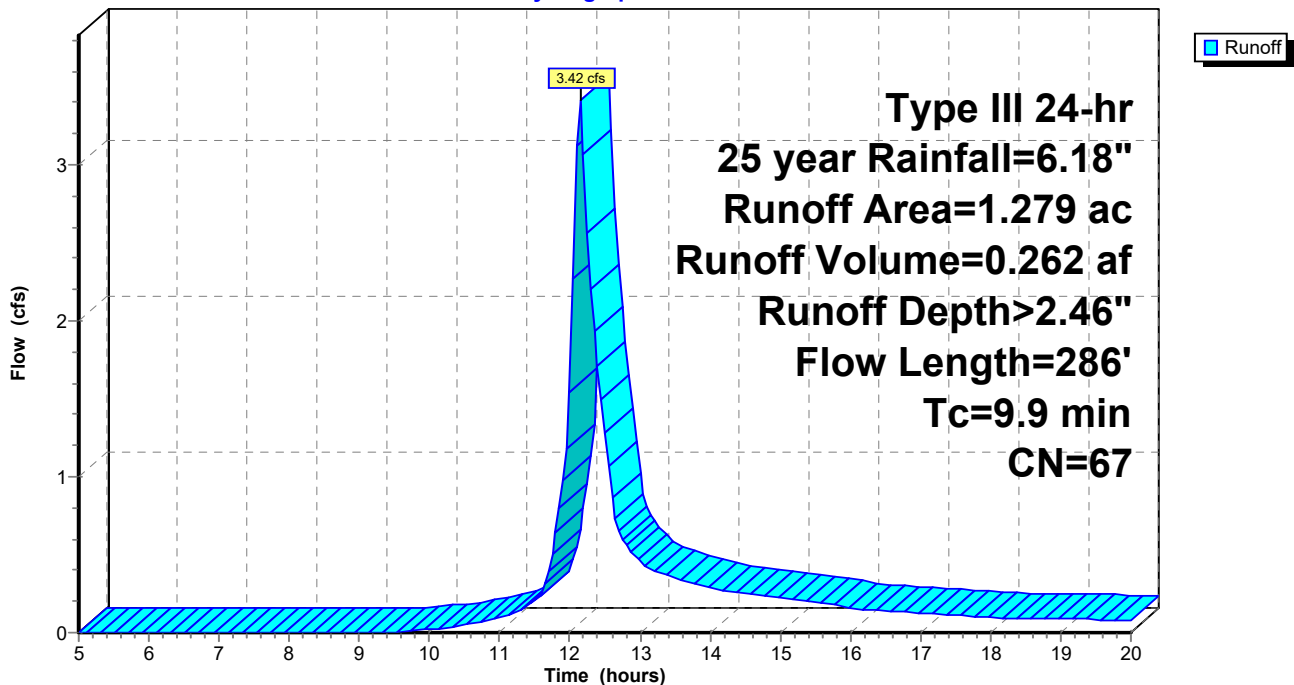
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.156	74	50-75% Grass cover, Fair, HSG B-C
0.743	58	Meadow, non-grazed, HSG B
0.288	89	Paved roads w/open ditches, 50% imp, HSG B
0.092	60	Woods, Fair, HSG B
1.279	67	Weighted Average
1.135		88.74% Pervious Area
0.144		11.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.2	119	0.0588	1.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	117	0.0513	1.59		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.9	286	Total			

Subcatchment 67: Subcat 67

Hydrograph



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Summary for Subcatchment 68: Subcat 68

Runoff = 36.84 cfs @ 12.35 hrs, Volume= 3.931 af, Depth> 2.53"

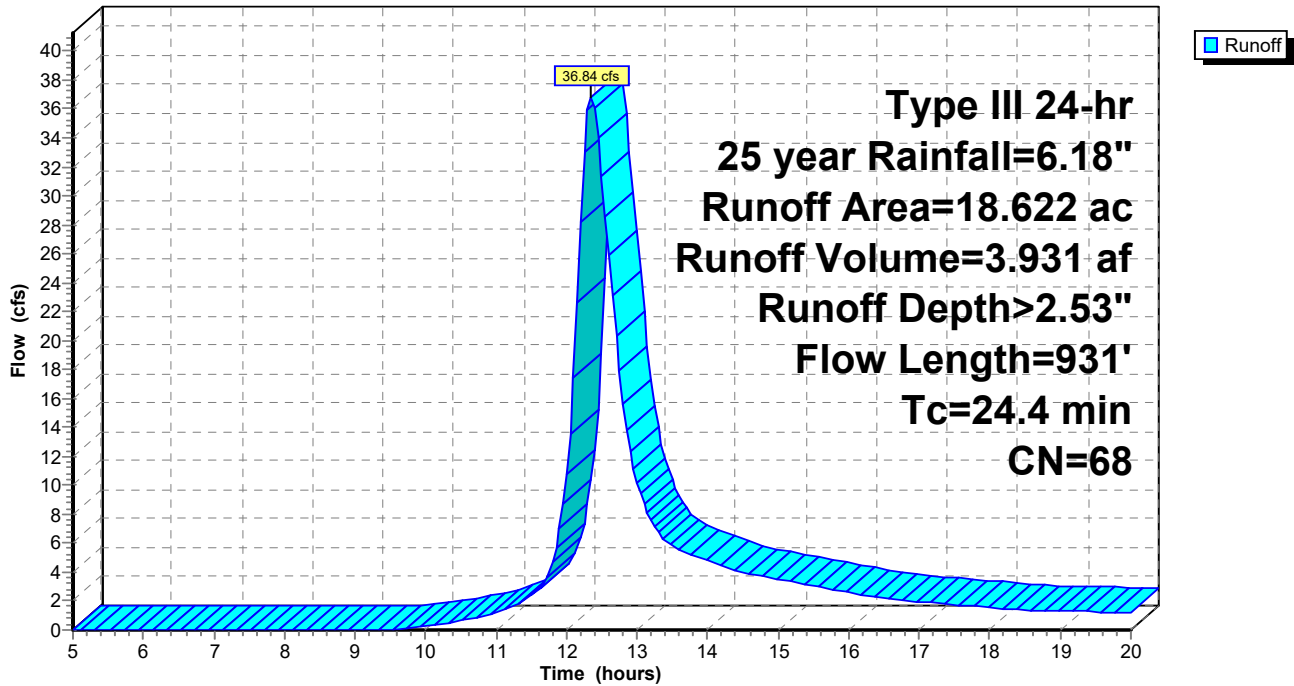
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 1.174	59	50-75% Grass cover, Fair, HSG A-B
* 12.385	74	50-75% Grass cover, Fair, HSG B-C
1.319	30	Meadow, non-grazed, HSG A
2.767	58	Meadow, non-grazed, HSG B
0.977	89	Paved roads w/open ditches, 50% imp, HSG B
18.622	68	Weighted Average
18.134		97.38% Pervious Area
0.489		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.2	244	0.0123	0.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.5	637	0.0126	0.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.4	931	Total			

Subcatchment 68: Subcat 68

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 69: Subcat 69

Runoff = 12.51 cfs @ 12.18 hrs, Volume= 1.058 af, Depth> 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.090	59	50-75% Grass cover, Fair, HSG A-B
* 2.629	74	50-75% Grass cover, Fair, HSG B-C
0.903	30	Meadow, non-grazed, HSG A
1.771	58	Meadow, non-grazed, HSG B
0.449	89	Paved roads w/open ditches, 50% imp, HSG B
0.703	36	Woods, Fair, HSG A
0.288	60	Woods, Fair, HSG B
6.833	60	Weighted Average
6.609		96.71% Pervious Area
0.224		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.19		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
9.2	446	0.0134	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.1	168	0.0357	1.32		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.0	664	Total			

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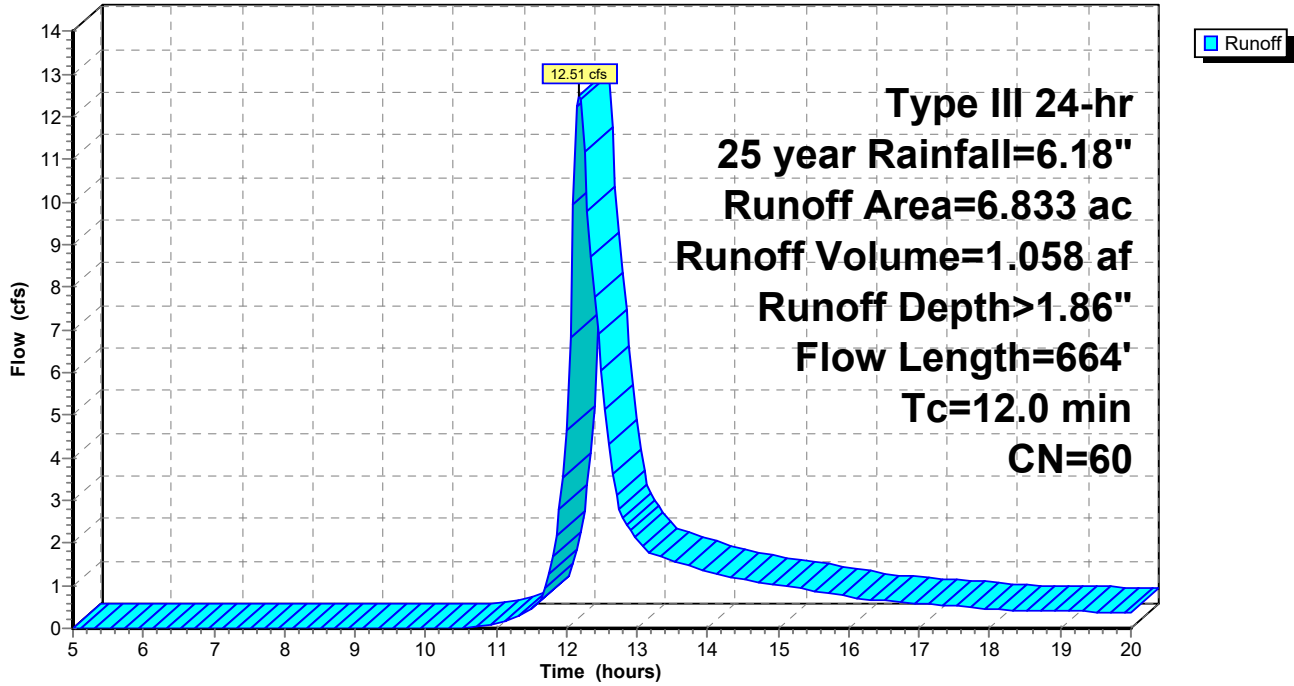
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 69: Subcat 69

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 70: Subcat 70

Runoff = 10.20 cfs @ 12.13 hrs, Volume= 0.758 af, Depth> 2.82"

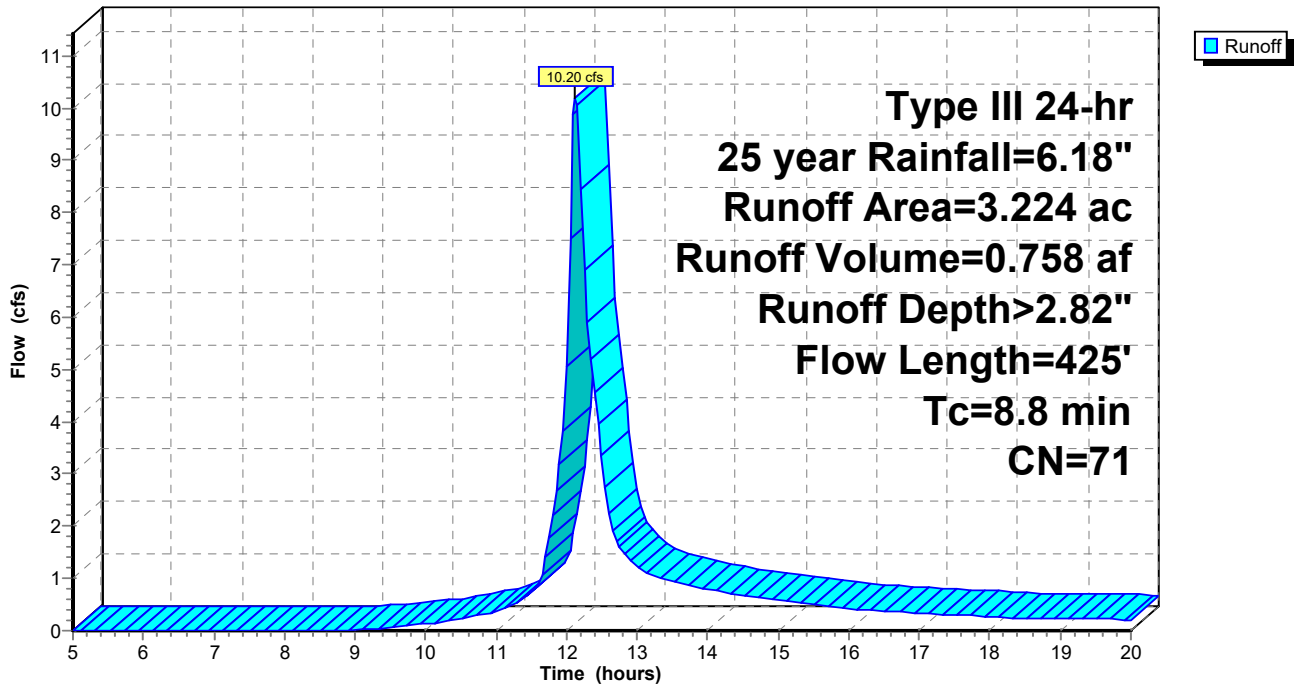
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.496	59	50-75% Grass cover, Fair, HSG A-B
* 2.701	74	50-75% Grass cover, Fair, HSG B-C
0.027	30	Meadow, non-grazed, HSG A
3.224	71	Weighted Average
3.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	50	0.2000	0.37		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
0.5	82	0.1707	2.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	293	0.0137	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.8	425	Total			

Subcatchment 70: Subcat 70

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 71: Subcat 71

Runoff = 16.72 cfs @ 12.24 hrs, Volume= 1.546 af, Depth> 2.28"

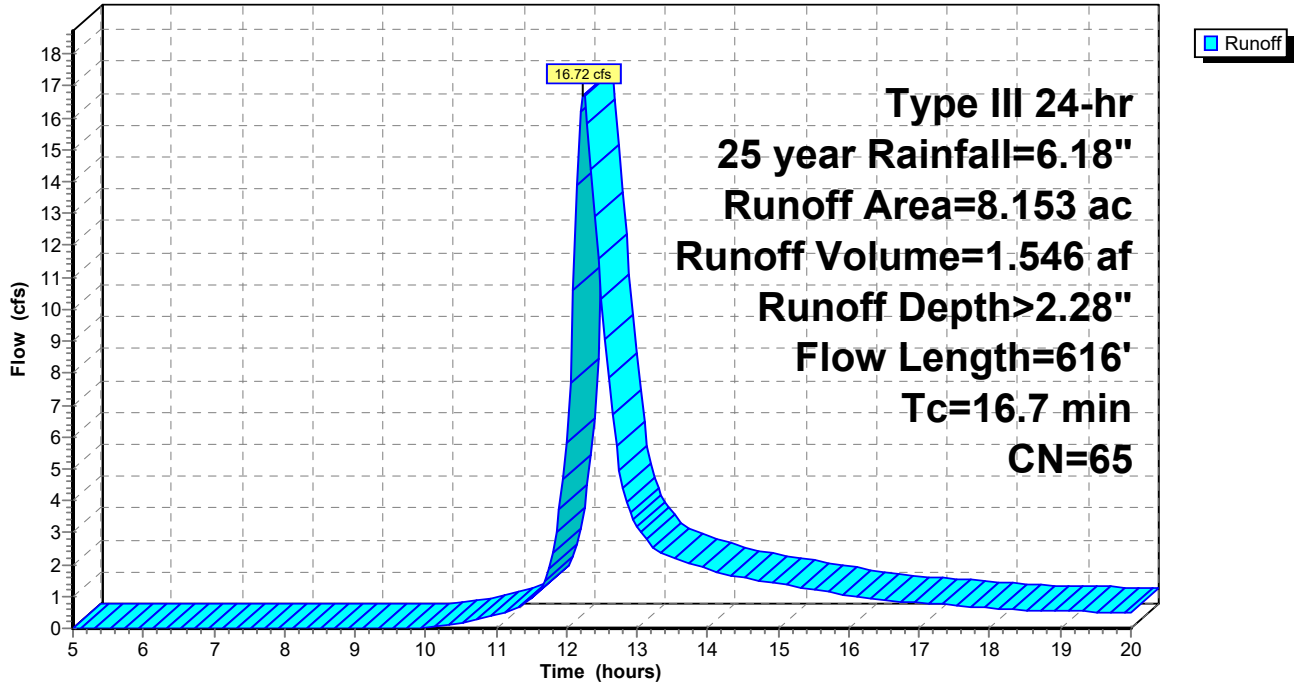
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.291	59	50-75% Grass cover, Fair, HSG A-B
* 3.331	74	50-75% Grass cover, Fair, HSG B-C
* 0.071	82	50-75% Grass cover, Fair, HSG C-D
0.664	30	Meadow, non-grazed, HSG A
2.241	58	Meadow, non-grazed, HSG B
0.103	83	Paved roads w/open ditches, 50% imp, HSG A
0.705	89	Paved roads w/open ditches, 50% imp, HSG B
0.096	36	Woods, Fair, HSG A
0.651	60	Woods, Fair, HSG B
8.153	65	Weighted Average
7.749		95.04% Pervious Area
0.404		4.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	369	0.0135	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.6	197	0.0812	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.7	616	Total			

Subcatchment 71: Subcat 71

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 72: Subcat 72

Runoff = 19.87 cfs @ 12.22 hrs, Volume= 1.760 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.489	70	1/2 acre lots, 25% imp, HSG B
* 0.004	59	50-75% Grass cover, Fair, HSG A-B
* 1.377	74	50-75% Grass cover, Fair, HSG B-C
0.846	58	Meadow, non-grazed, HSG B
0.979	71	Meadow, non-grazed, HSG C
0.035	89	Paved roads w/open ditches, 50% imp, HSG B
0.093	92	Paved roads w/open ditches, 50% imp, HSG C
2.062	60	Woods, Fair, HSG B
2.422	73	Woods, Fair, HSG C
8.307	68	Weighted Average
8.121		97.76% Pervious Area
0.186		2.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.1400	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
6.5	610	0.0492	1.55		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0303	3.53		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	290	0.1138	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	983	Total			

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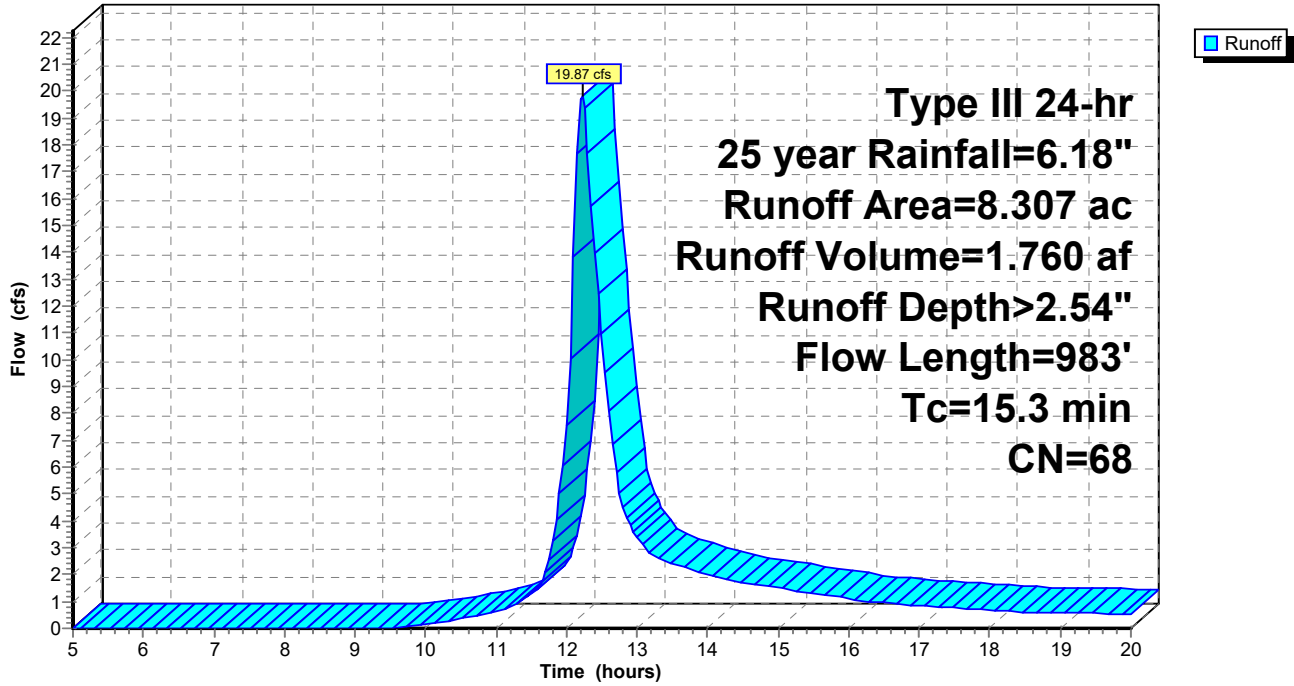
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 72: Subcat 72

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 73: Subcat 73

Runoff = 97.45 cfs @ 12.19 hrs, Volume= 8.346 af, Depth> 3.49"

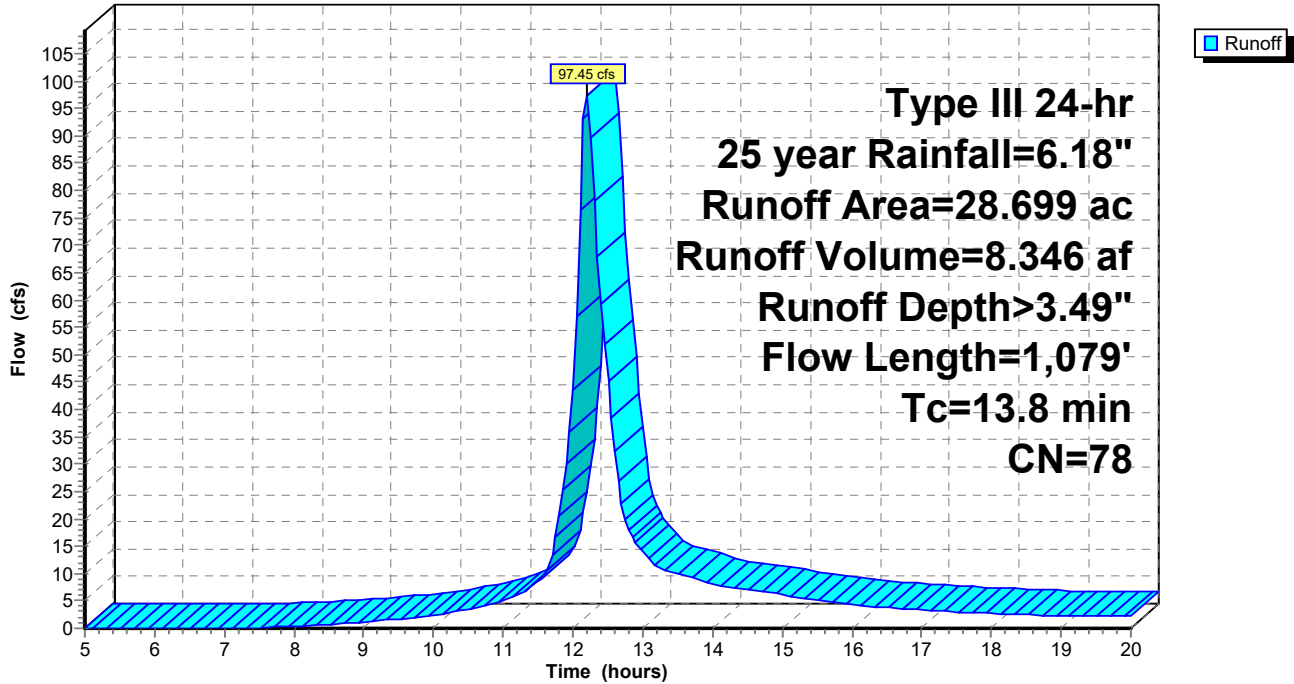
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.001	59	50-75% Grass cover, Fair, HSG A-B
* 0.801	74	50-75% Grass cover, Fair, HSG B-C
* 16.564	82	50-75% Grass cover, Fair, HSG C-D
1.566	91	Fallow, bare soil, HSG C
0.066	30	Meadow, non-grazed, HSG A
0.576	58	Meadow, non-grazed, HSG B
5.200	71	Meadow, non-grazed, HSG C
0.156	36	Woods, Fair, HSG A
0.156	60	Woods, Fair, HSG B
3.613	73	Woods, Fair, HSG C
28.699	78	Weighted Average
28.699		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1200	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
11.0	1,029	0.0496	1.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.8	1,079	Total			

Subcatchment 73: Subcat 73

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 74: Subcat 74

Runoff = 108.24 cfs @ 12.61 hrs, Volume= 14.936 af, Depth> 2.43"

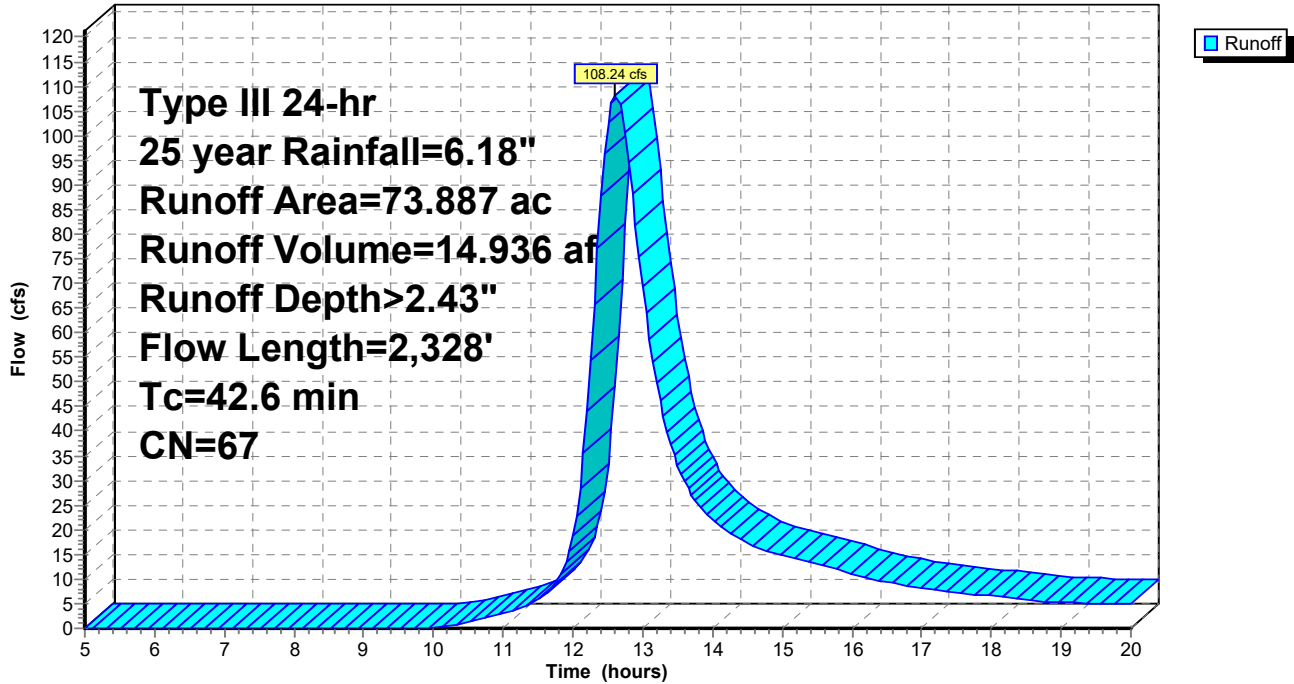
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 12.199	51	50-75% Grass cover, Fair, HSG A
* 10.911	74	50-75% Grass cover, Fair, HSG B
* 18.685	82	50-75% Grass cover, Fair, HSG C
0.000	77	Fallow, bare soil, HSG A
2.355	91	Fallow, bare soil, HSG C
6.249	30	Meadow, non-grazed, HSG A
6.321	58	Meadow, non-grazed, HSG B
11.466	71	Meadow, non-grazed, HSG C
0.714	36	Woods, Fair, HSG A
0.928	60	Woods, Fair, HSG B
4.059	73	Woods, Fair, HSG C
73.887	67	Weighted Average
73.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	484	0.0331	1.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.7	207	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	404	0.0272	1.15		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	923	0.0162	0.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	260	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
42.6	2,328	Total			

Subcatchment 74: Subcat 74

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 74A: Subcat 74A

Runoff = 5.75 cfs @ 12.27 hrs, Volume= 0.667 af, Depth> 0.89"

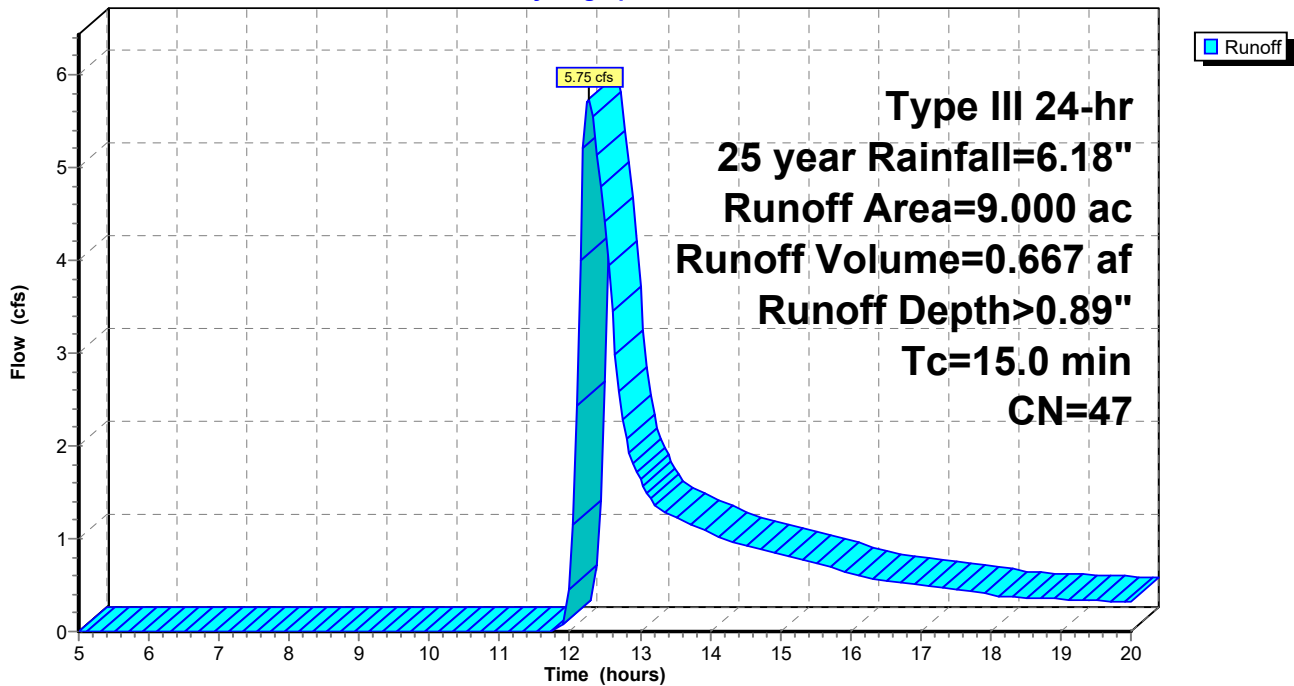
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
3.000	30	Meadow, non-grazed, HSG A
5.500	58	Meadow, non-grazed, HSG B
0.500	36	Woods, Fair, HSG A
9.000	47	Weighted Average
9.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 74A: Subcat 74A

Hydrograph



Proposed Conditions - Windsorville

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Summary for Subcatchment 75: Subcat 75

Runoff = 77.44 cfs @ 12.29 hrs, Volume= 7.716 af, Depth> 1.93"

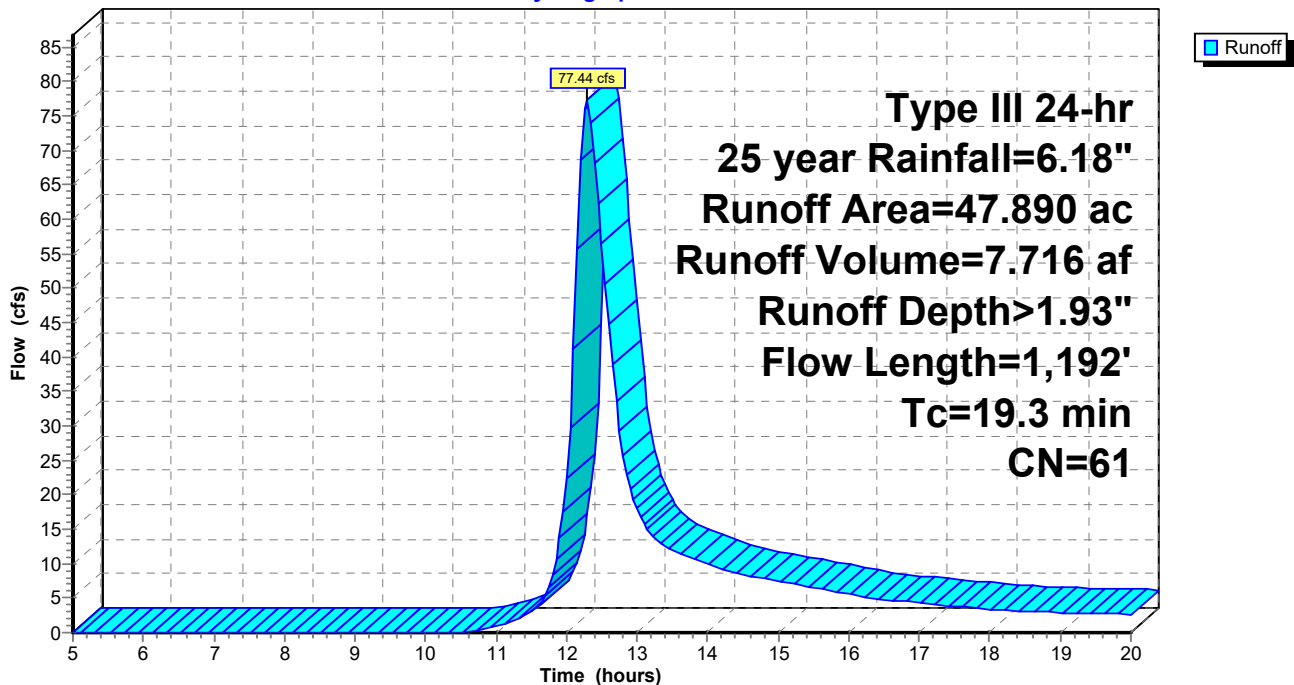
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
7.379	49	50-75% Grass cover, Fair, HSG A
31.767	69	50-75% Grass cover, Fair, HSG B
0.188	77	Fallow, bare soil, HSG A
4.747	30	Meadow, non-grazed, HSG A
3.808	58	Meadow, non-grazed, HSG B
47.890	61	Weighted Average
47.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.5	178	0.0281	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.3	964	0.0612	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
19.3	1,192	Total			

Subcatchment 75: Subcat 75

Hydrograph



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Summary for Pond 67P: (new Pond)

Inflow Area = 1.279 ac, 11.26% Impervious, Inflow Depth > 2.46" for 25 year event
 Inflow = 3.42 cfs @ 12.15 hrs, Volume= 0.262 af
 Outflow = 0.18 cfs @ 15.73 hrs, Volume= 0.118 af, Atten= 95%, Lag= 215.1 min
 Discarded = 0.18 cfs @ 15.73 hrs, Volume= 0.118 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 174.11' @ 15.73 hrs Surf.Area= 6,326 sf Storage= 7,229 cf

Plug-Flow detention time= 230.3 min calculated for 0.118 af (45% of inflow)
 Center-of-Mass det. time= 143.6 min (951.1 - 807.5)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	23,969 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.00	1,123	0	0	1,123
174.00	6,054	6,523	6,523	6,070
176.00	11,699	17,446	23,969	11,753

Device	Routing	Invert	Outlet Devices
#1	Discarded	172.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.18 cfs @ 15.73 hrs HW=174.11' (Free Discharge)
 ↑1=Exfiltration (Controls 0.18 cfs)

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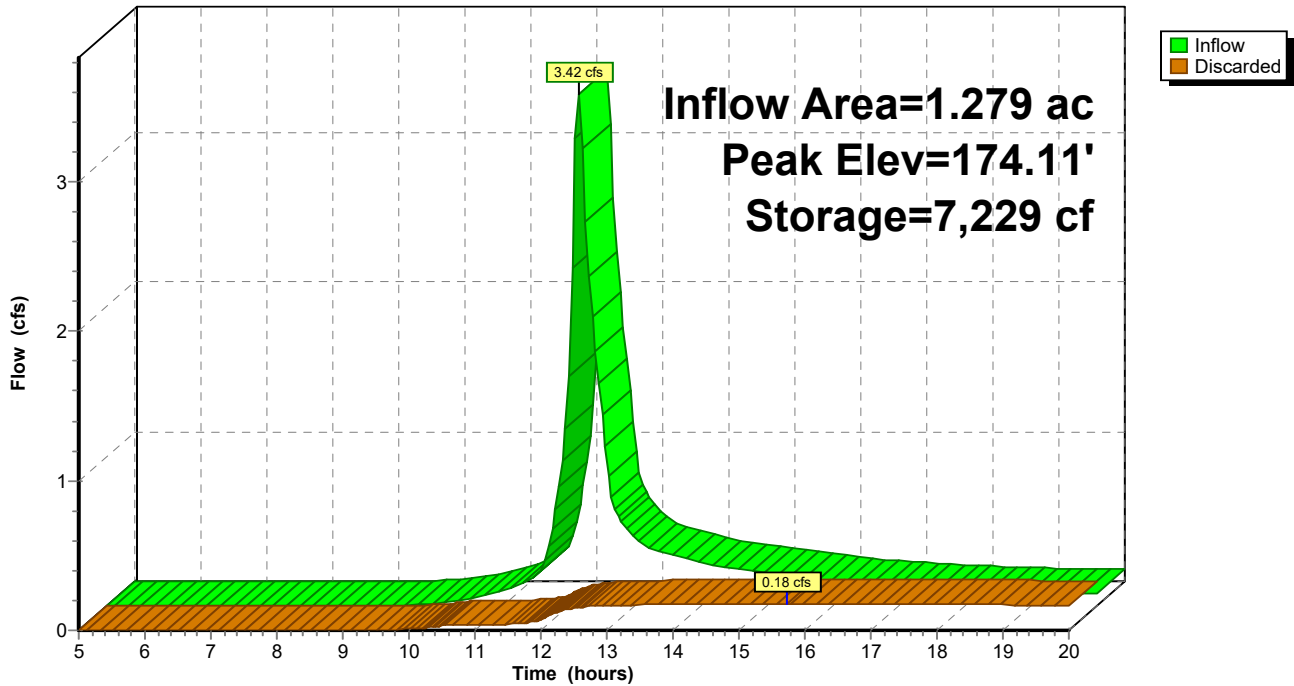
Type III 24-hr 25 year Rainfall=6.18"

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Pond 67P: (new Pond)

Hydrograph



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Summary for Pond 68P: (new Pond)

Inflow Area = 18.622 ac, 2.62% Impervious, Inflow Depth > 2.53" for 25 year event
 Inflow = 36.84 cfs @ 12.35 hrs, Volume= 3.931 af
 Outflow = 3.33 cfs @ 15.20 hrs, Volume= 2.154 af, Atten= 91%, Lag= 171.0 min
 Discarded = 3.33 cfs @ 15.20 hrs, Volume= 2.154 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 175.43' @ 15.20 hrs Surf.Area= 119,356 sf Storage= 99,479 cf

Plug-Flow detention time= 213.2 min calculated for 2.154 af (55% of inflow)
 Center-of-Mass det. time= 133.0 min (949.9 - 816.9)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	543,774 cf	Custom Stage Data (Conic) Listed below (Recalc)

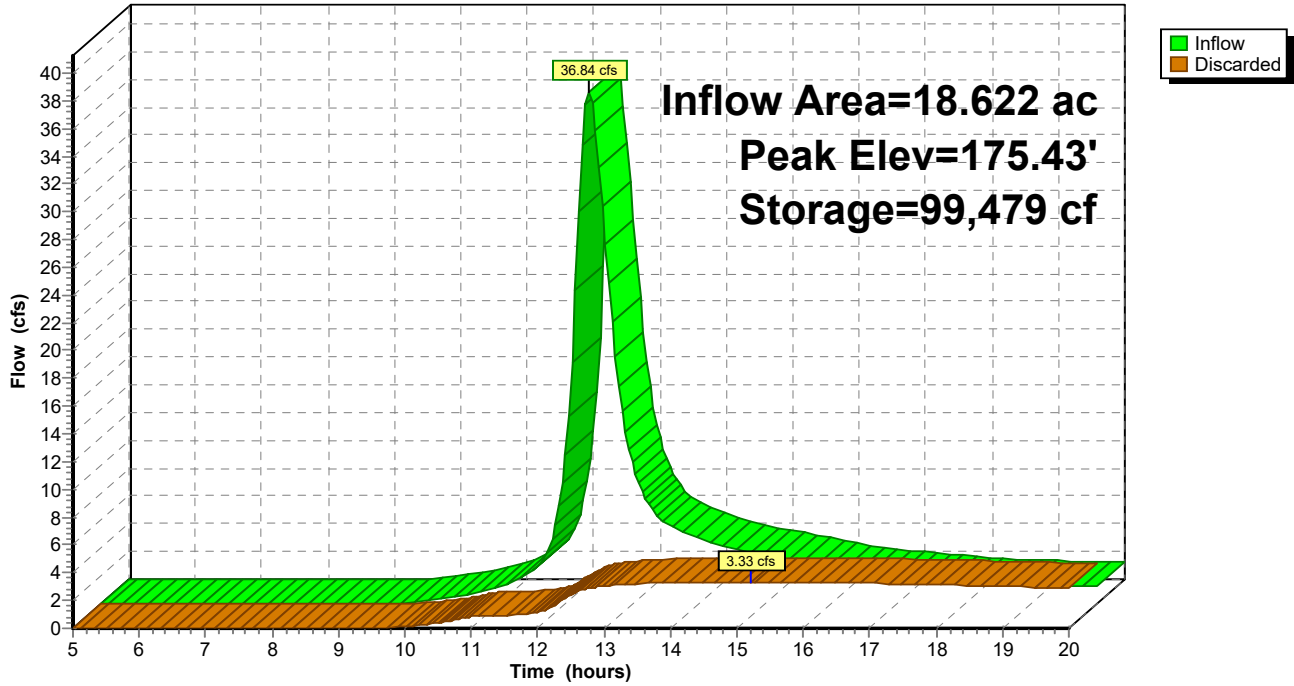
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	29,899	0	0	29,899
176.00	171,899	182,326	182,326	171,914
177.50	317,411	361,448	543,774	317,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.33 cfs @ 15.20 hrs HW=175.43' (Free Discharge)
 ↑1=Exfiltration (Controls 3.33 cfs)

Pond 68P: (new Pond)

Hydrograph



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Summary for Pond 69P: (new Pond)

Inflow Area = 6.833 ac, 3.29% Impervious, Inflow Depth > 1.86" for 25 year event
 Inflow = 12.51 cfs @ 12.18 hrs, Volume= 1.058 af
 Outflow = 0.54 cfs @ 17.38 hrs, Volume= 0.349 af, Atten= 96%, Lag= 312.2 min
 Discarded = 0.54 cfs @ 17.38 hrs, Volume= 0.349 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 172.79' @ 17.38 hrs Surf.Area= 19,136 sf Storage= 31,911 cf

Plug-Flow detention time= 237.8 min calculated for 0.349 af (33% of inflow)
 Center-of-Mass det. time= 140.4 min (962.5 - 822.1)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	115,744 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	3,610	0	0	3,610
172.00	15,882	18,043	18,043	15,900
174.00	24,667	40,228	58,271	24,742
176.00	33,009	57,474	115,744	33,170

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.54 cfs @ 17.38 hrs HW=172.79' (Free Discharge)
 ↑1=Exfiltration (Controls 0.54 cfs)

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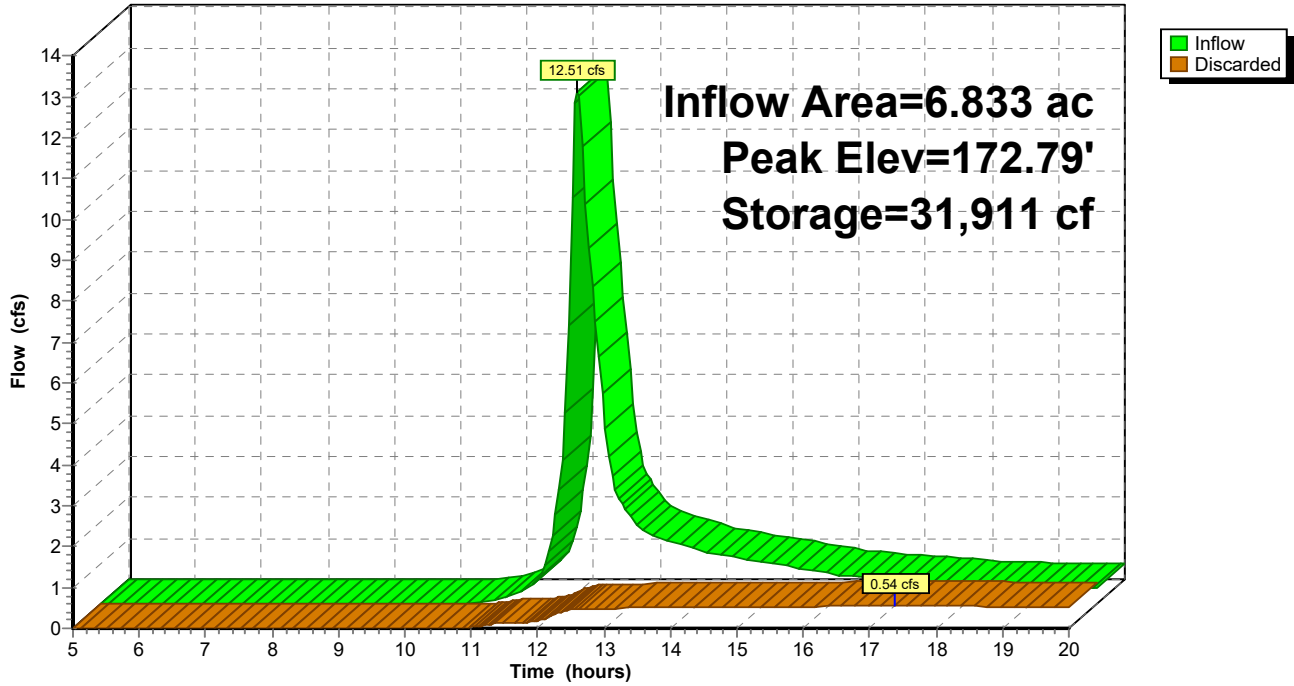
Type III 24-hr 25 year Rainfall=6.18"

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Pond 69P: (new Pond)

Hydrograph



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Summary for Pond 70P: (new Pond)

Inflow Area = 3.224 ac, 0.00% Impervious, Inflow Depth > 2.82" for 25 year event
 Inflow = 10.20 cfs @ 12.13 hrs, Volume= 0.758 af
 Outflow = 3.09 cfs @ 12.52 hrs, Volume= 0.754 af, Atten= 70%, Lag= 23.6 min
 Discarded = 3.09 cfs @ 12.52 hrs, Volume= 0.754 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 198.33' @ 12.52 hrs Surf.Area= 26,626 sf Storage= 10,355 cf

Plug-Flow detention time= 38.6 min calculated for 0.752 af (99% of inflow)
 Center-of-Mass det. time= 36.2 min (835.6 - 799.4)

Volume	Invert	Avail.Storage	Storage Description
#1	197.20'	32,894 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.20	0	0	0	0
198.00	13,877	3,701	3,701	13,878
198.40	29,617	8,502	12,203	29,619
199.00	39,593	20,691	32,894	39,603

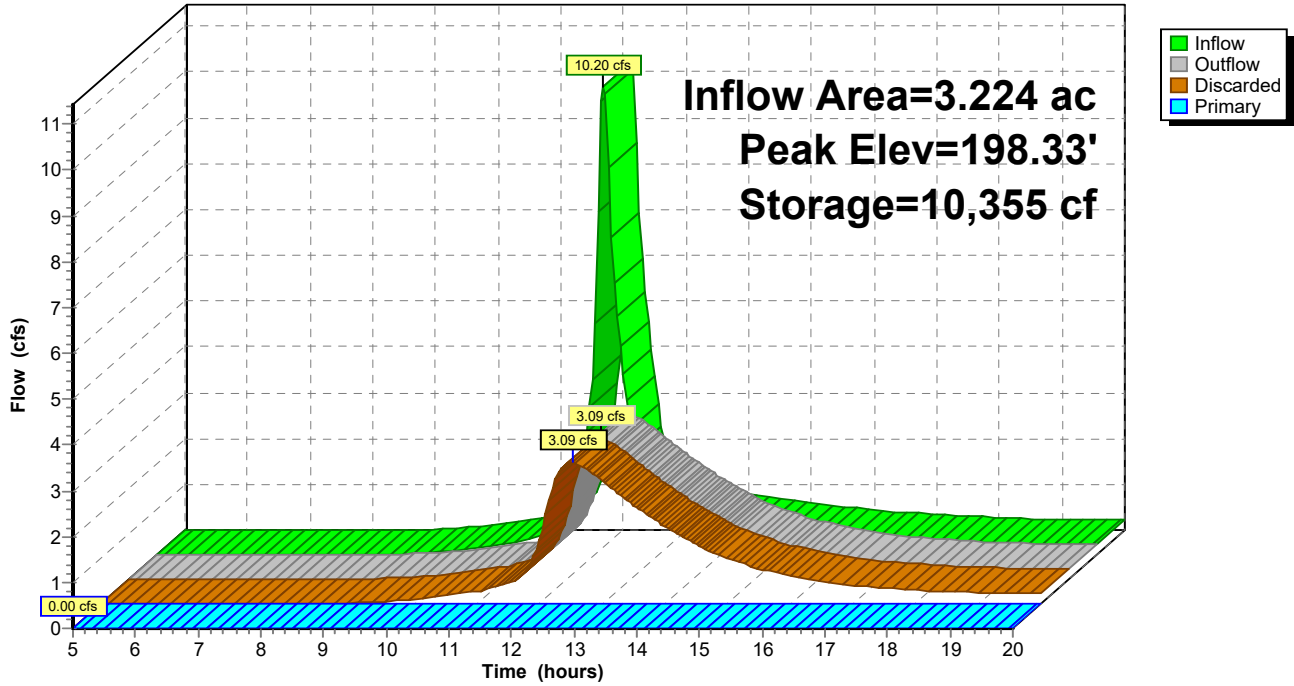
Device	Routing	Invert	Outlet Devices
#1	Primary	198.40'	50.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	197.20'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.09 cfs @ 12.52 hrs HW=198.33' (Free Discharge)
 ↑**2=Exfiltration** (Controls 3.09 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=197.20' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 70P: (new Pond)

Hydrograph



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Summary for Pond 71P: (new Pond)

Inflow Area = 11.377 ac, 3.55% Impervious, Inflow Depth > 1.63" for 25 year event
 Inflow = 16.72 cfs @ 12.24 hrs, Volume= 1.546 af
 Outflow = 0.80 cfs @ 16.98 hrs, Volume= 0.499 af, Atten= 95%, Lag= 284.0 min
 Discarded = 0.80 cfs @ 16.98 hrs, Volume= 0.499 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 178.67' @ 16.98 hrs Surf.Area= 28,466 sf Storage= 47,696 cf

Plug-Flow detention time= 246.0 min calculated for 0.497 af (32% of inflow)
 Center-of-Mass det. time= 151.9 min (968.3 - 816.4)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	96,451 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	3,500	0	0	3,500
176.00	5,053	8,506	8,506	5,120
178.00	19,737	23,184	31,690	19,823
179.00	33,402	26,272	57,962	33,500
180.00	43,811	38,489	96,451	43,932

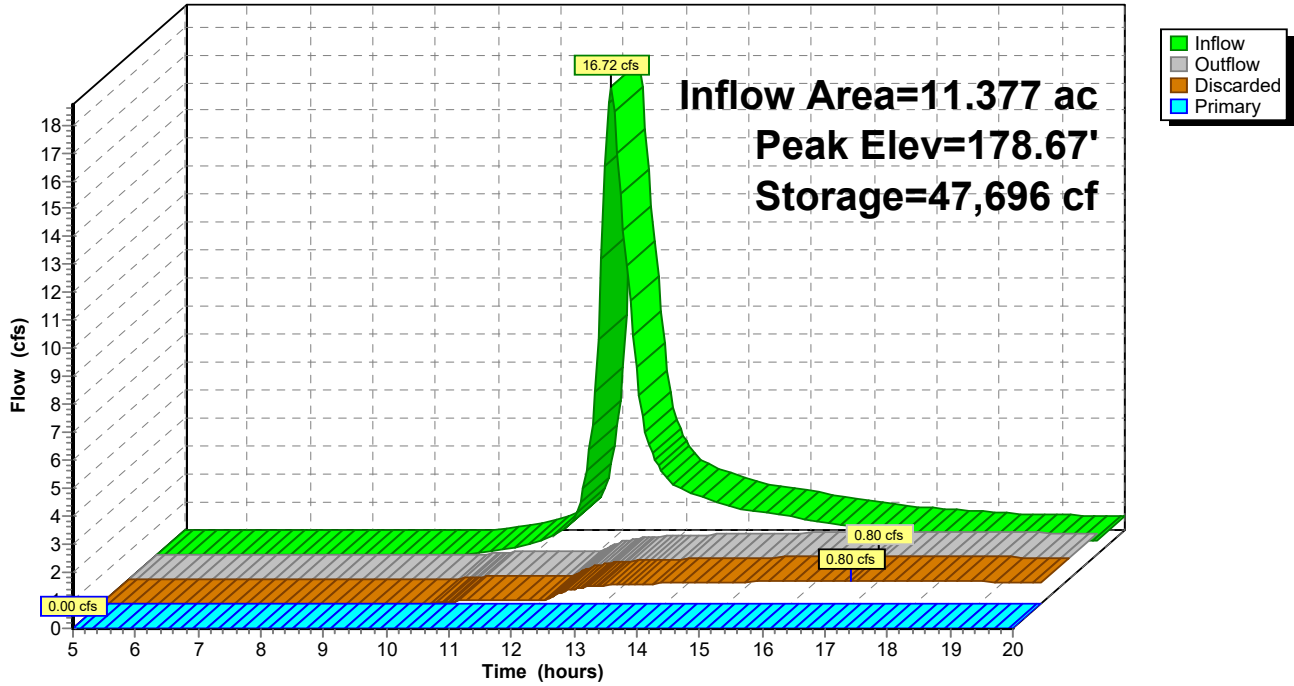
Device	Routing	Invert	Outlet Devices
#1	Primary	179.30'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.80 cfs @ 16.98 hrs HW=178.67' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.80 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=174.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 71P: (new Pond)

Hydrograph



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Summary for Pond 72P: (new Pond)

Inflow Area = 8.307 ac, 2.24% Impervious, Inflow Depth > 2.54" for 25 year event
 Inflow = 19.87 cfs @ 12.22 hrs, Volume= 1.760 af
 Outflow = 0.51 cfs @ 20.00 hrs, Volume= 0.325 af, Atten= 97%, Lag= 466.9 min
 Discarded = 0.51 cfs @ 20.00 hrs, Volume= 0.325 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 177.74' @ 20.00 hrs Surf.Area= 17,854 sf Storage= 62,496 cf

Plug-Flow detention time= 259.9 min calculated for 0.324 af (18% of inflow)
 Center-of-Mass det. time= 154.0 min (963.8 - 809.9)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	247,588 cf	Custom Stage Data (Conic) Listed below (Recalc)

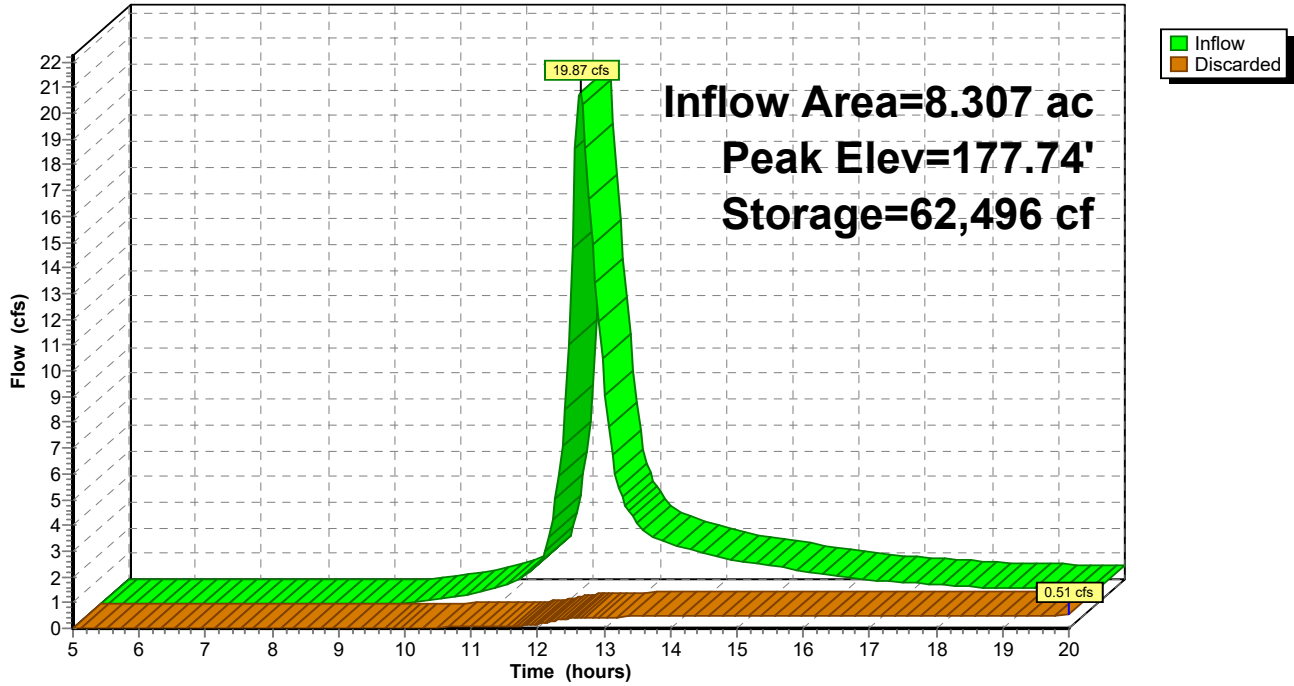
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	704	0	0	704
172.00	2,903	3,358	3,358	2,921
174.00	7,882	10,379	13,737	7,926
176.00	13,742	21,354	35,091	13,831
178.00	18,516	32,140	67,231	18,689
180.00	25,003	43,357	110,588	25,259
182.00	32,623	57,457	168,045	32,973
184.00	47,378	79,544	247,588	47,796

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.51 cfs @ 20.00 hrs HW=177.74' (Free Discharge)
 ↑1=Exfiltration (Controls 0.51 cfs)

Pond 72P: (new Pond)

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Summary for Pond 73P: (new Pond)

Inflow Area = 28.699 ac, 0.00% Impervious, Inflow Depth > 3.49" for 25 year event
 Inflow = 97.45 cfs @ 12.19 hrs, Volume= 8.346 af
 Outflow = 7.07 cfs @ 14.45 hrs, Volume= 2.798 af, Atten= 93%, Lag= 135.2 min
 Discarded = 2.34 cfs @ 14.45 hrs, Volume= 1.595 af
 Primary = 4.73 cfs @ 14.45 hrs, Volume= 1.204 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.16' @ 14.45 hrs Surf.Area= 82,396 sf Storage= 252,961 cf

Plug-Flow detention time= 240.4 min calculated for 2.789 af (33% of inflow)
 Center-of-Mass det. time= 145.0 min (935.0 - 790.0)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	335,287 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
148.00	14,537	0	0	14,537
150.00	23,801	37,959	37,959	23,852
152.00	34,881	58,330	96,289	34,998
154.00	47,776	82,320	178,609	47,973
156.00	113,577	156,677	335,287	113,803

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	30.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	148.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.34 cfs @ 14.45 hrs HW=155.16' (Free Discharge)
 ↑**2=Exfiltration** (Controls 2.34 cfs)

Primary OutFlow Max=4.61 cfs @ 14.45 hrs HW=155.16' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 4.61 cfs @ 0.98 fps)

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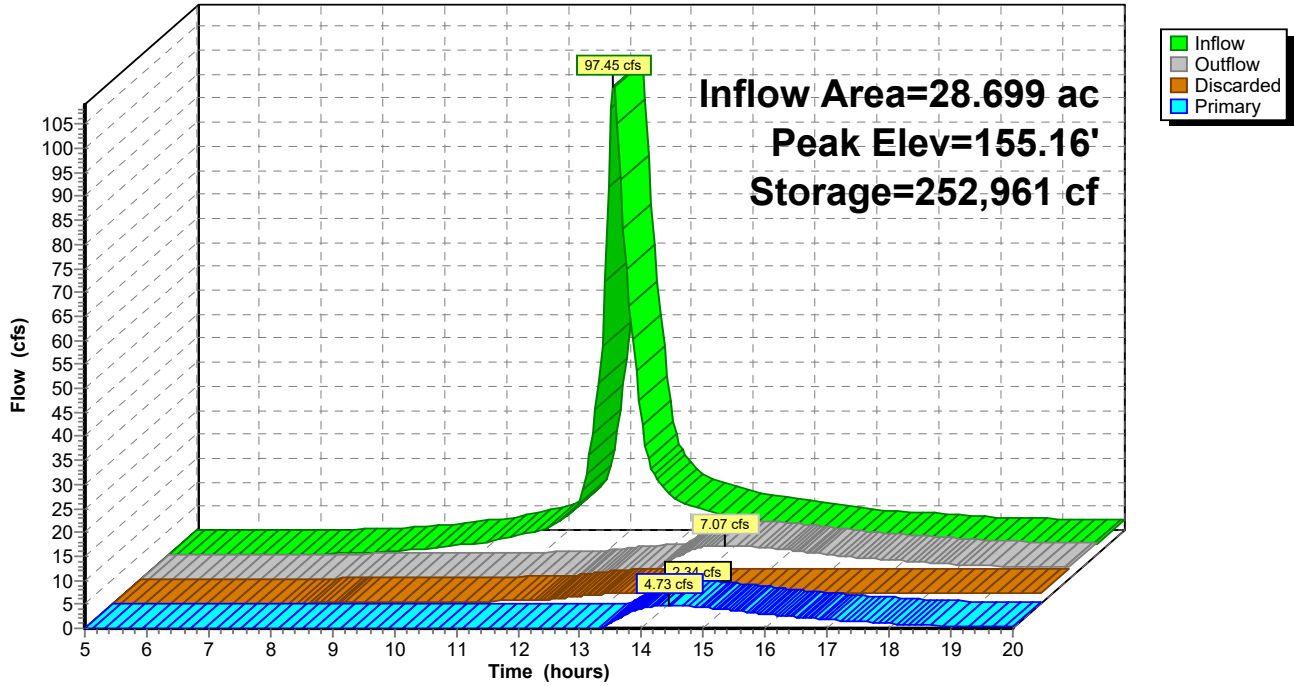
Type III 24-hr 25 year Rainfall=6.18"

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Pond 73P: (new Pond)

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 74AP: (new Pond)

Inflow Area = 9.000 ac, 0.00% Impervious, Inflow Depth > 0.89" for 25 year event
 Inflow = 5.75 cfs @ 12.27 hrs, Volume= 0.667 af
 Outflow = 0.31 cfs @ 20.00 hrs, Volume= 0.191 af, Atten= 95%, Lag= 463.7 min
 Discarded = 0.31 cfs @ 20.00 hrs, Volume= 0.191 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 132.45' @ 20.00 hrs Surf.Area= 10,916 sf Storage= 20,731 cf

Plug-Flow detention time= 234.5 min calculated for 0.190 af (29% of inflow)
 Center-of-Mass det. time= 118.4 min (973.7 - 855.4)

Volume	Invert	Avail.Storage	Storage Description
#1	130.00'	55,787 cf	32.00'W x 192.00'L x 5.00'H Prismatic Z=4.0

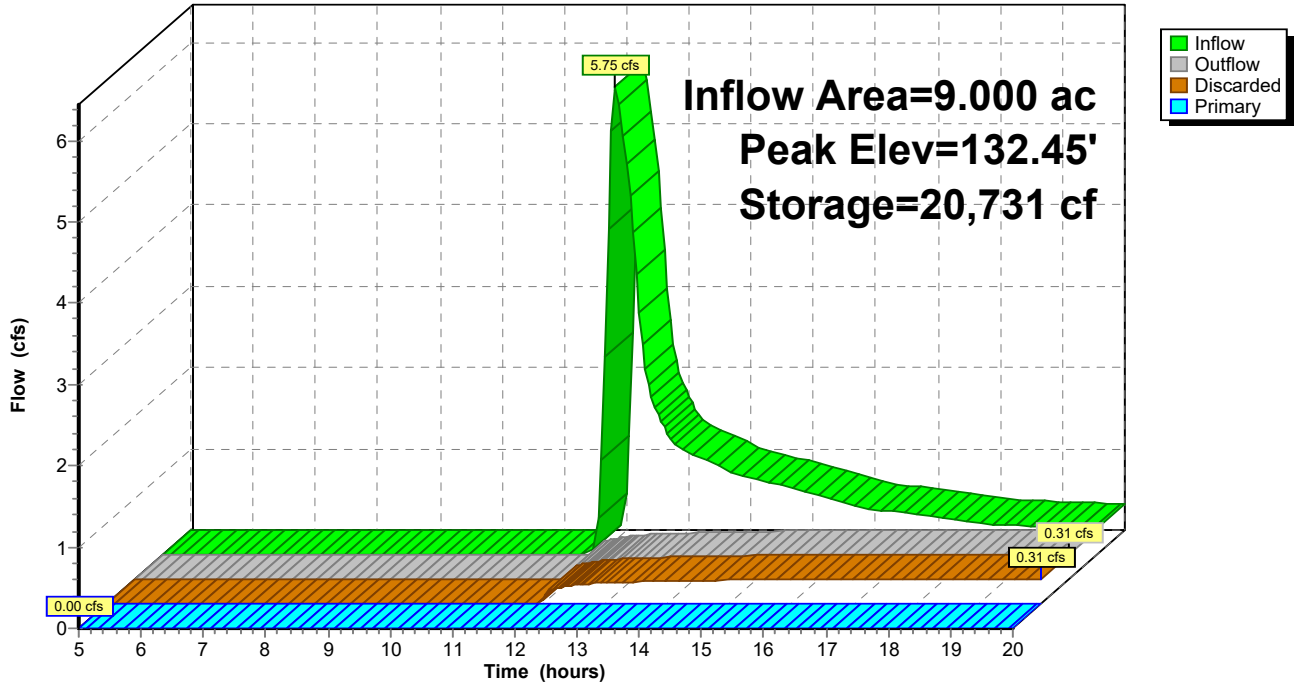
Device	Routing	Invert	Outlet Devices
#1	Primary	133.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	130.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.31 cfs @ 20.00 hrs HW=132.45' (Free Discharge)
 ↳2=Exfiltration (Controls 0.31 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=130.00' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 74AP: (new Pond)

Hydrograph



Proposed Conditions - Windsorville

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 74P: (new Pond)

Inflow Area = 111.586 ac, 0.00% Impervious, Inflow Depth > 1.74" for 25 year event
 Inflow = 108.24 cfs @ 12.61 hrs, Volume= 16.139 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 127.66' @ 20.00 hrs Surf.Area= 317,078 sf Storage= 702,511 cf

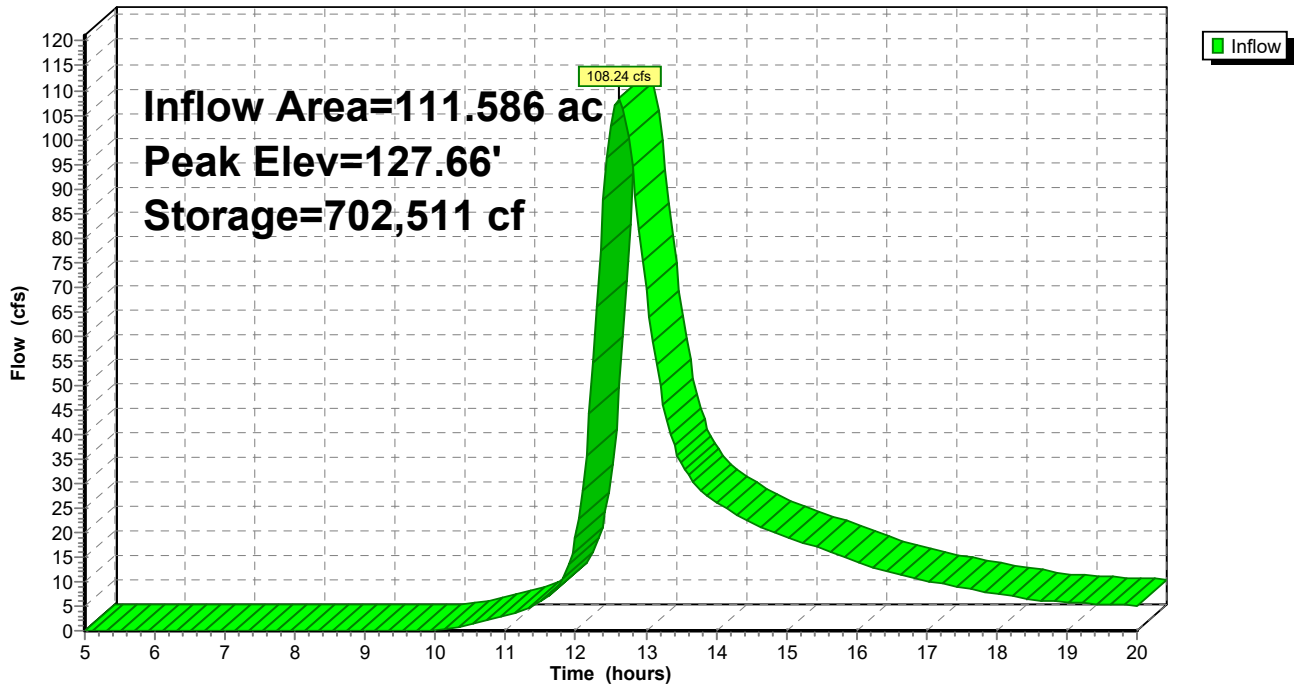
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	1,810,898 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.00	59,766	0	0
124.00	81,926	141,692	141,692
126.00	117,535	199,461	341,153
128.00	357,529	475,064	816,217
130.00	637,152	994,681	1,810,898

Pond 74P: (new Pond)

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 75P: (new Pond)

Inflow Area = 47.890 ac, 0.00% Impervious, Inflow Depth > 1.93" for 25 year event
Inflow = 77.44 cfs @ 12.29 hrs, Volume= 7.716 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

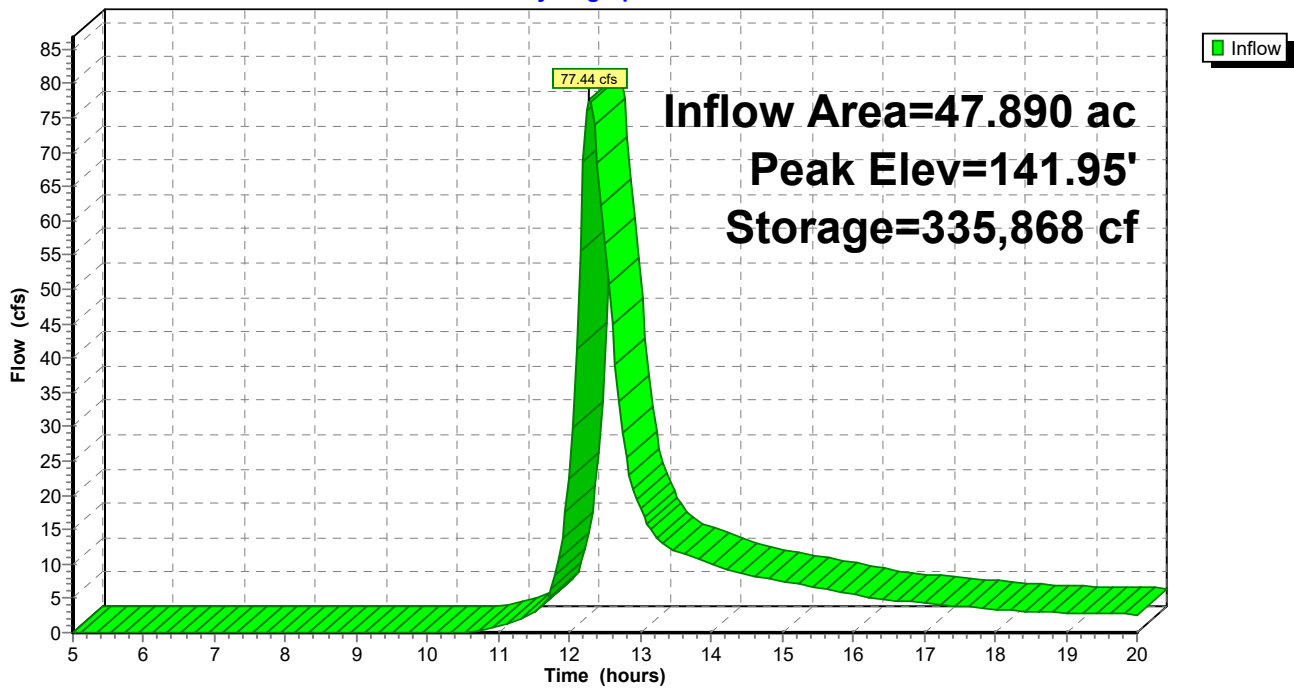
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 141.95' @ 20.00 hrs Surf.Area= 43,094 sf Storage= 335,868 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	128.00'	662,007 cf	93.00'W x 99.00'L x 20.00'H Prismatic Z=4.0

Pond 75P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 67: Subcat 67

Runoff = 4.29 cfs @ 12.15 hrs, Volume= 0.328 af, Depth> 3.07"

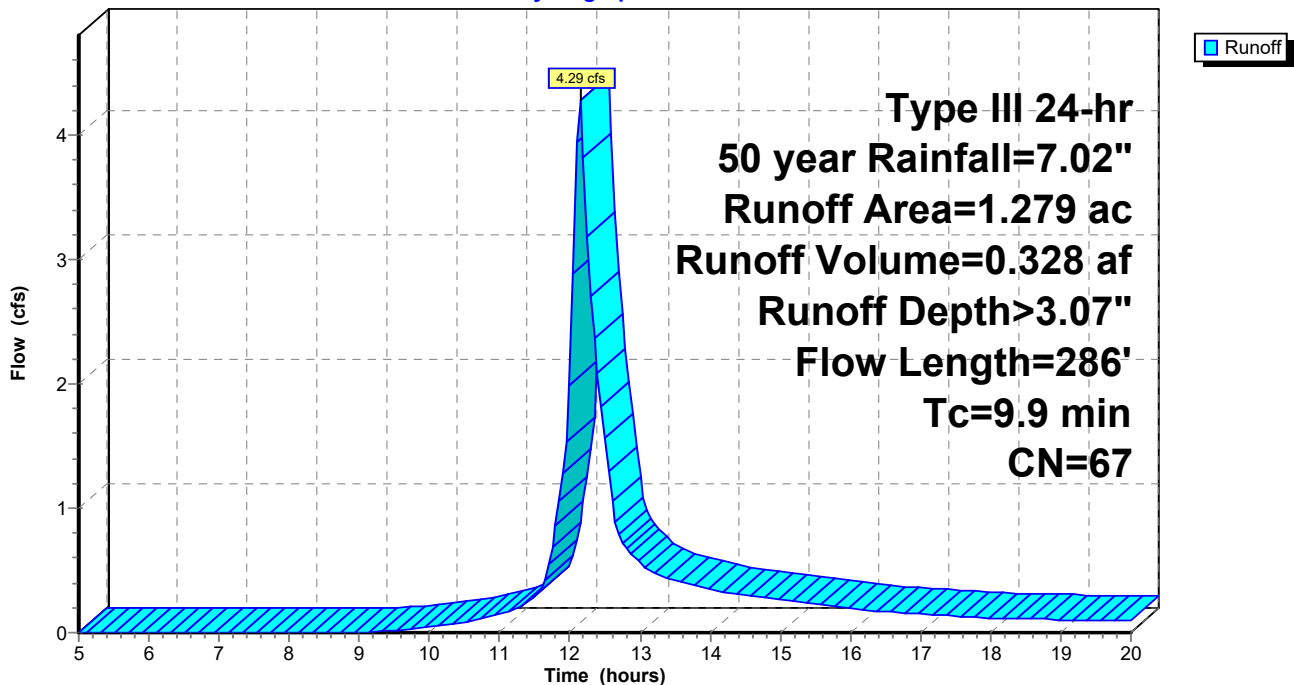
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.156	74	50-75% Grass cover, Fair, HSG B-C
0.743	58	Meadow, non-grazed, HSG B
0.288	89	Paved roads w/open ditches, 50% imp, HSG B
0.092	60	Woods, Fair, HSG B
1.279	67	Weighted Average
1.135		88.74% Pervious Area
0.144		11.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.2	119	0.0588	1.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	117	0.0513	1.59		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.9	286	Total			

Subcatchment 67: Subcat 67

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 68: Subcat 68

Runoff = 46.04 cfs @ 12.35 hrs, Volume= 4.900 af, Depth> 3.16"

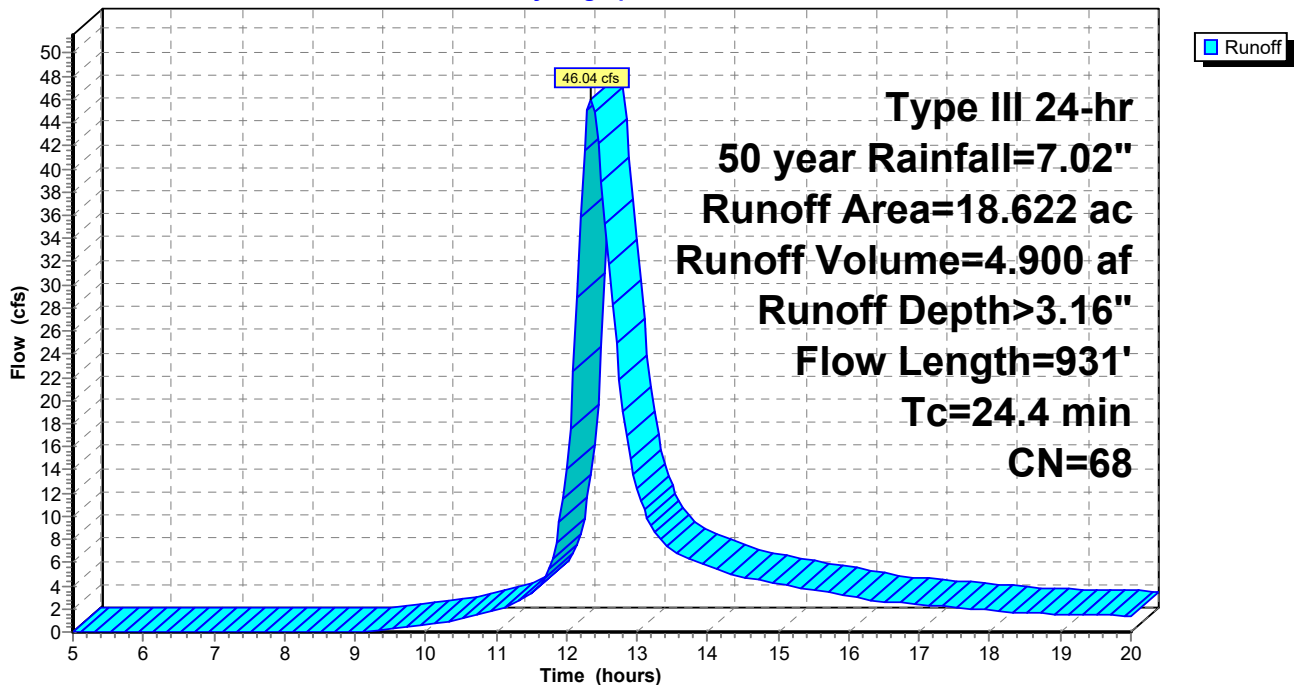
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.174	59	50-75% Grass cover, Fair, HSG A-B
* 12.385	74	50-75% Grass cover, Fair, HSG B-C
1.319	30	Meadow, non-grazed, HSG A
2.767	58	Meadow, non-grazed, HSG B
0.977	89	Paved roads w/open ditches, 50% imp, HSG B
18.622	68	Weighted Average
18.134		97.38% Pervious Area
0.489		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.2	244	0.0123	0.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.5	637	0.0126	0.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.4	931	Total			

Subcatchment 68: Subcat 68

Hydrograph



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Summary for Subcatchment 69: Subcat 69

Runoff = 16.41 cfs @ 12.18 hrs, Volume= 1.364 af, Depth> 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.090	59	50-75% Grass cover, Fair, HSG A-B
* 2.629	74	50-75% Grass cover, Fair, HSG B-C
0.903	30	Meadow, non-grazed, HSG A
1.771	58	Meadow, non-grazed, HSG B
0.449	89	Paved roads w/open ditches, 50% imp, HSG B
0.703	36	Woods, Fair, HSG A
0.288	60	Woods, Fair, HSG B
6.833	60	Weighted Average
6.609		96.71% Pervious Area
0.224		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.19		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
9.2	446	0.0134	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.1	168	0.0357	1.32		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.0	664	Total			

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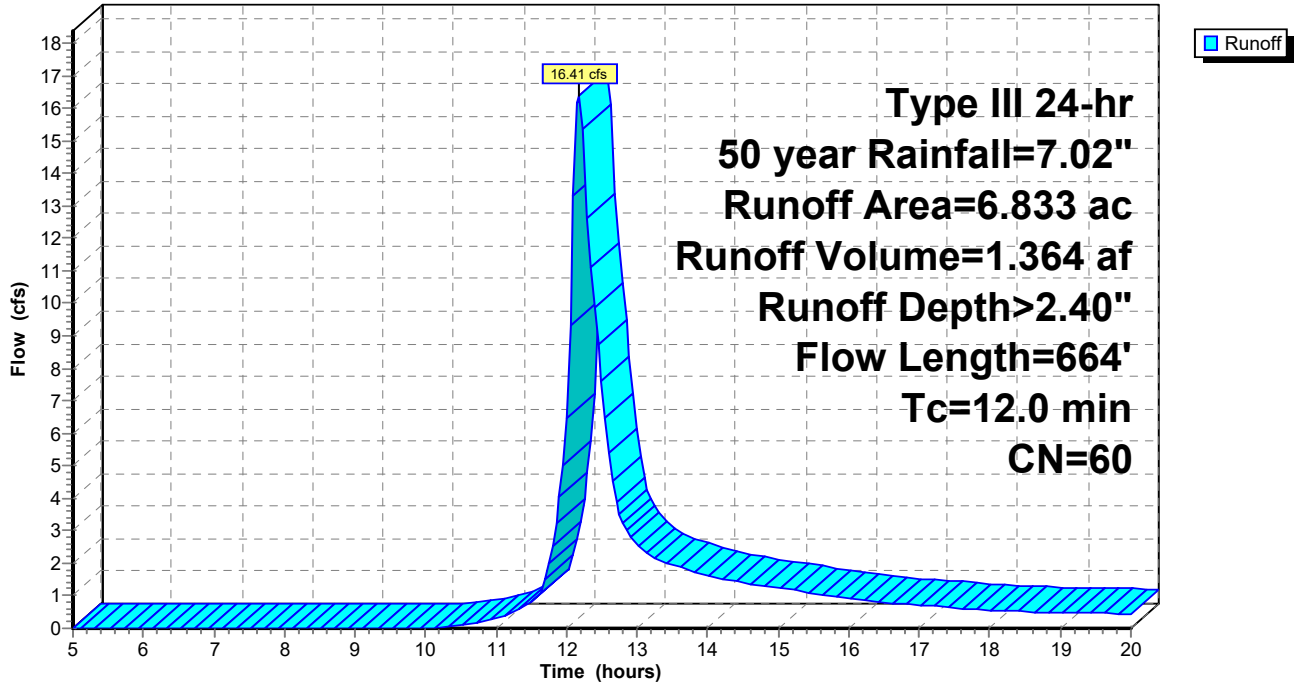
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 69: Subcat 69

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 70: Subcat 70

Runoff = 12.57 cfs @ 12.13 hrs, Volume= 0.935 af, Depth> 3.48"

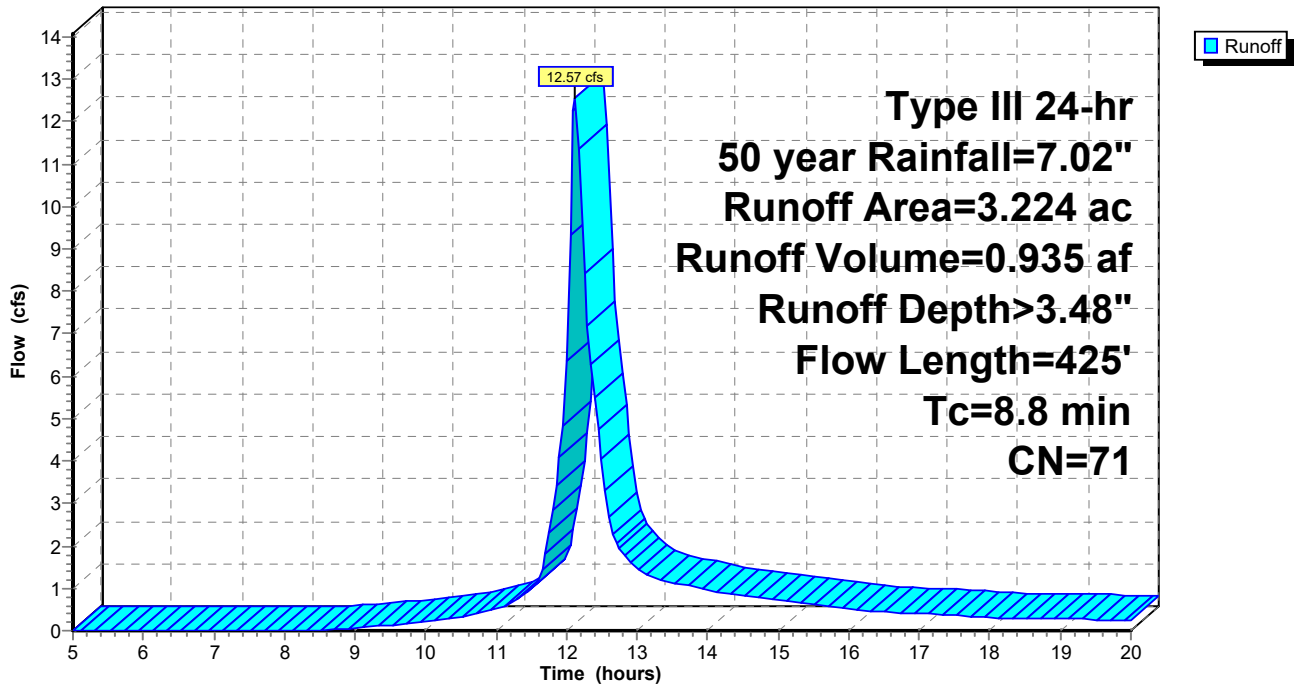
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.496	59	50-75% Grass cover, Fair, HSG A-B
* 2.701	74	50-75% Grass cover, Fair, HSG B-C
0.027	30	Meadow, non-grazed, HSG A
3.224	71	Weighted Average
3.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	50	0.2000	0.37		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
0.5	82	0.1707	2.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	293	0.0137	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.8	425	Total			

Subcatchment 70: Subcat 70

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 71: Subcat 71

Runoff = 21.23 cfs @ 12.24 hrs, Volume= 1.950 af, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.291	59	50-75% Grass cover, Fair, HSG A-B
* 3.331	74	50-75% Grass cover, Fair, HSG B-C
* 0.071	82	50-75% Grass cover, Fair, HSG C-D
0.664	30	Meadow, non-grazed, HSG A
2.241	58	Meadow, non-grazed, HSG B
0.103	83	Paved roads w/open ditches, 50% imp, HSG A
0.705	89	Paved roads w/open ditches, 50% imp, HSG B
0.096	36	Woods, Fair, HSG A
0.651	60	Woods, Fair, HSG B
8.153	65	Weighted Average
7.749		95.04% Pervious Area
0.404		4.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	369	0.0135	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.6	197	0.0812	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.7	616	Total			

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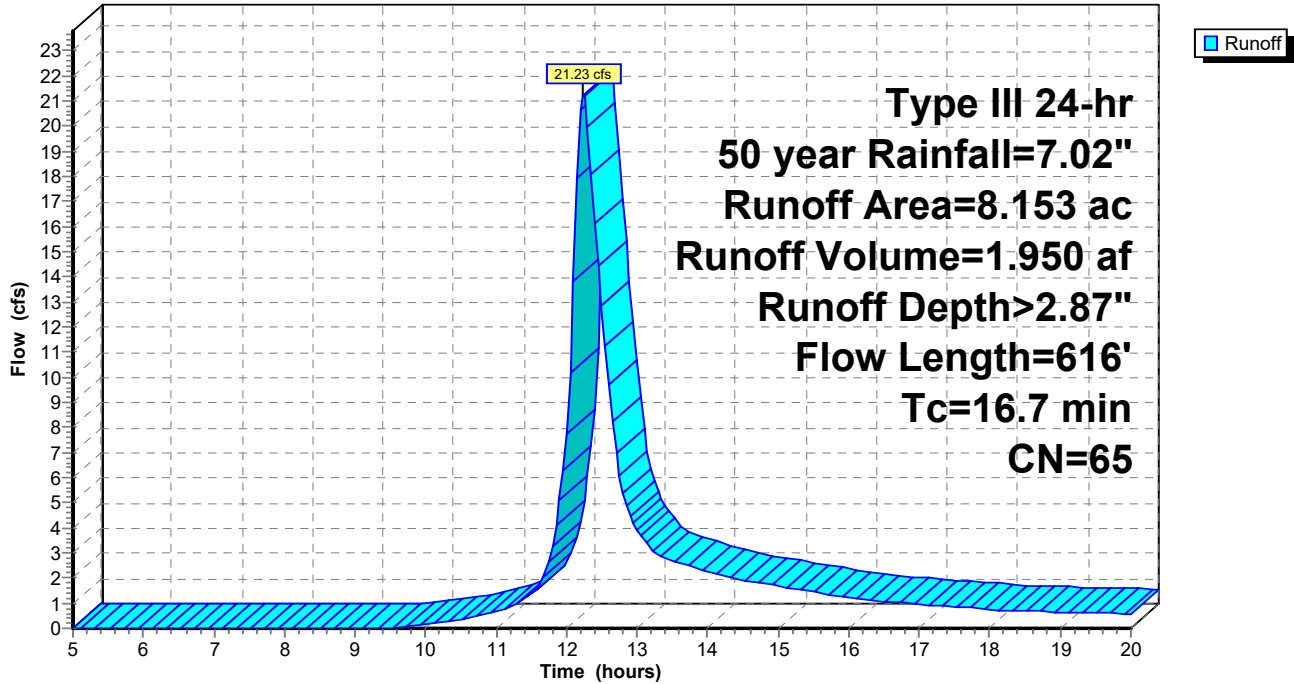
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 71: Subcat 71

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 72: Subcat 72

Runoff = 24.84 cfs @ 12.22 hrs, Volume= 2.193 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.489	70	1/2 acre lots, 25% imp, HSG B
* 0.004	59	50-75% Grass cover, Fair, HSG A-B
* 1.377	74	50-75% Grass cover, Fair, HSG B-C
0.846	58	Meadow, non-grazed, HSG B
0.979	71	Meadow, non-grazed, HSG C
0.035	89	Paved roads w/open ditches, 50% imp, HSG B
0.093	92	Paved roads w/open ditches, 50% imp, HSG C
2.062	60	Woods, Fair, HSG B
2.422	73	Woods, Fair, HSG C
8.307	68	Weighted Average
8.121		97.76% Pervious Area
0.186		2.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.1400	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
6.5	610	0.0492	1.55		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0303	3.53		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	290	0.1138	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	983	Total			

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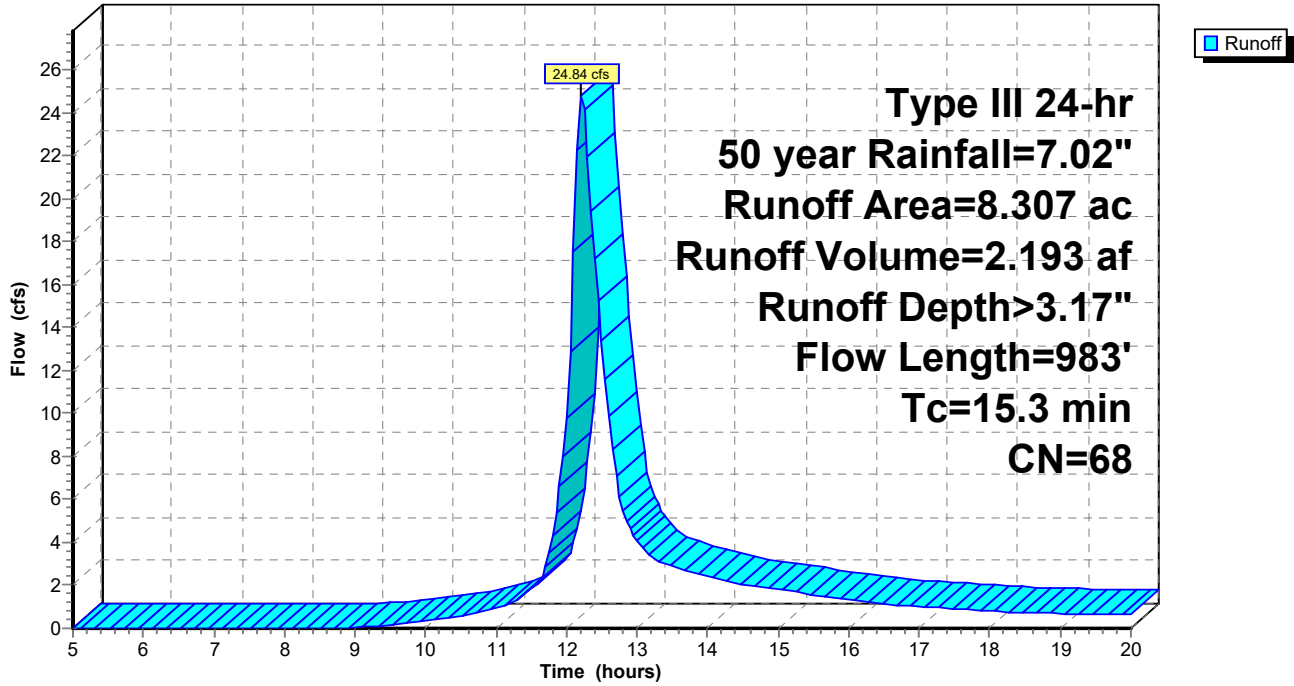
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 72: Subcat 72

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 73: Subcat 73

Runoff = 116.78 cfs @ 12.19 hrs, Volume= 10.055 af, Depth> 4.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.001	59	50-75% Grass cover, Fair, HSG A-B
* 0.801	74	50-75% Grass cover, Fair, HSG B-C
* 16.564	82	50-75% Grass cover, Fair, HSG C-D
1.566	91	Fallow, bare soil, HSG C
0.066	30	Meadow, non-grazed, HSG A
0.576	58	Meadow, non-grazed, HSG B
5.200	71	Meadow, non-grazed, HSG C
0.156	36	Woods, Fair, HSG A
0.156	60	Woods, Fair, HSG B
3.613	73	Woods, Fair, HSG C
28.699	78	Weighted Average
28.699		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1200	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
11.0	1,029	0.0496	1.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.8	1,079	Total			

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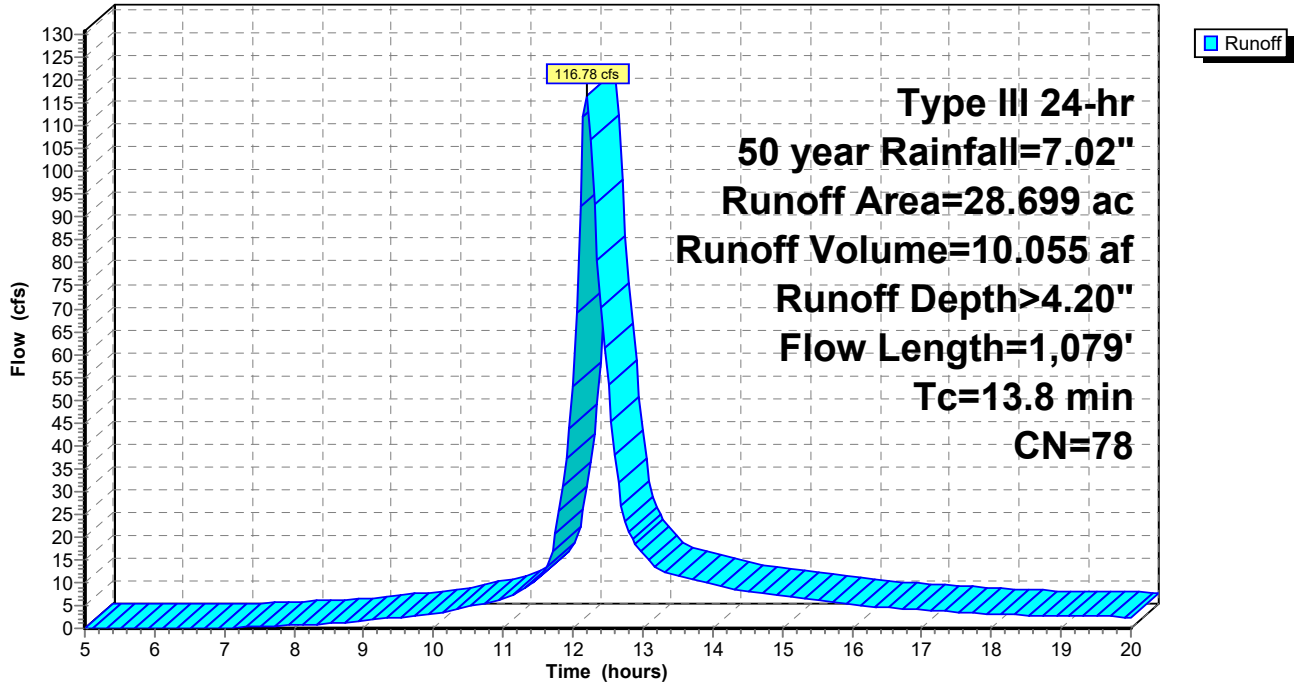
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 73: Subcat 73

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 74: Subcat 74

Runoff = 135.97 cfs @ 12.60 hrs, Volume= 18.695 af, Depth> 3.04"

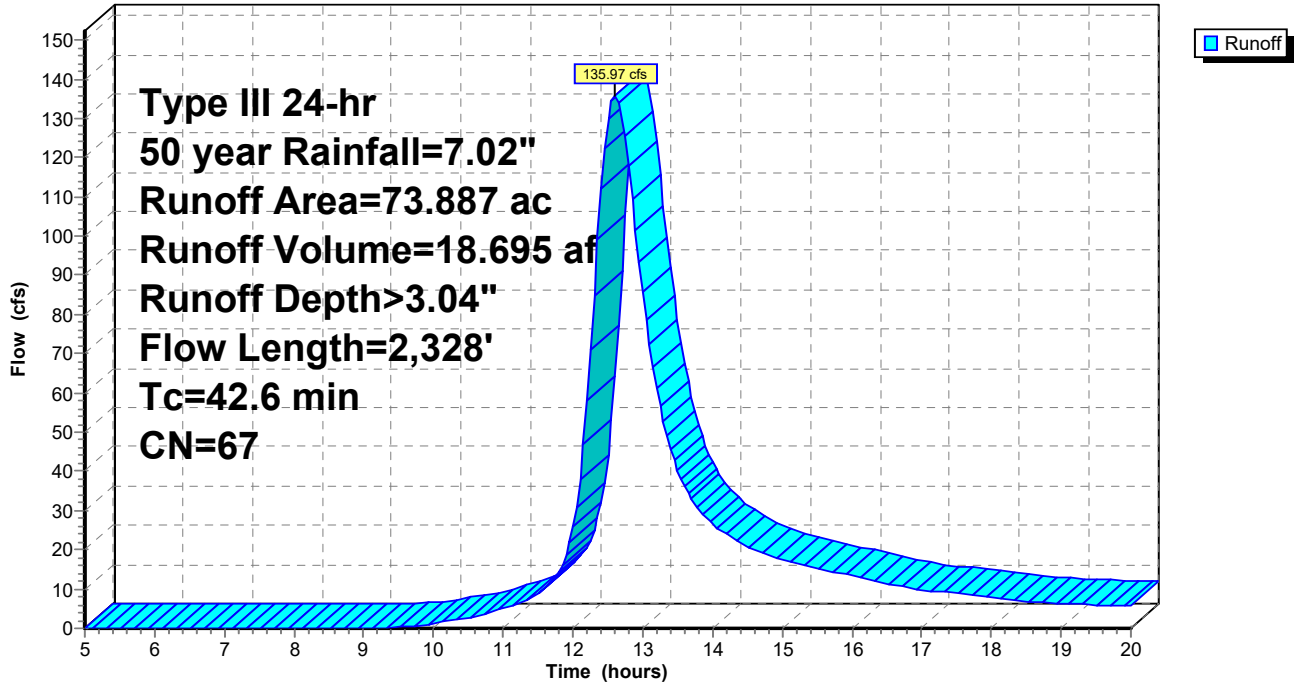
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 12.199	51	50-75% Grass cover, Fair, HSG A
* 10.911	74	50-75% Grass cover, Fair, HSG B
* 18.685	82	50-75% Grass cover, Fair, HSG C
0.000	77	Fallow, bare soil, HSG A
2.355	91	Fallow, bare soil, HSG C
6.249	30	Meadow, non-grazed, HSG A
6.321	58	Meadow, non-grazed, HSG B
11.466	71	Meadow, non-grazed, HSG C
0.714	36	Woods, Fair, HSG A
0.928	60	Woods, Fair, HSG B
4.059	73	Woods, Fair, HSG C
73.887	67	Weighted Average
73.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	484	0.0331	1.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.7	207	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	404	0.0272	1.15		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	923	0.0162	0.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	260	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
42.6	2,328	Total			

Subcatchment 74: Subcat 74

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 74A: Subcat 74A

Runoff = 9.00 cfs @ 12.25 hrs, Volume= 0.942 af, Depth> 1.26"

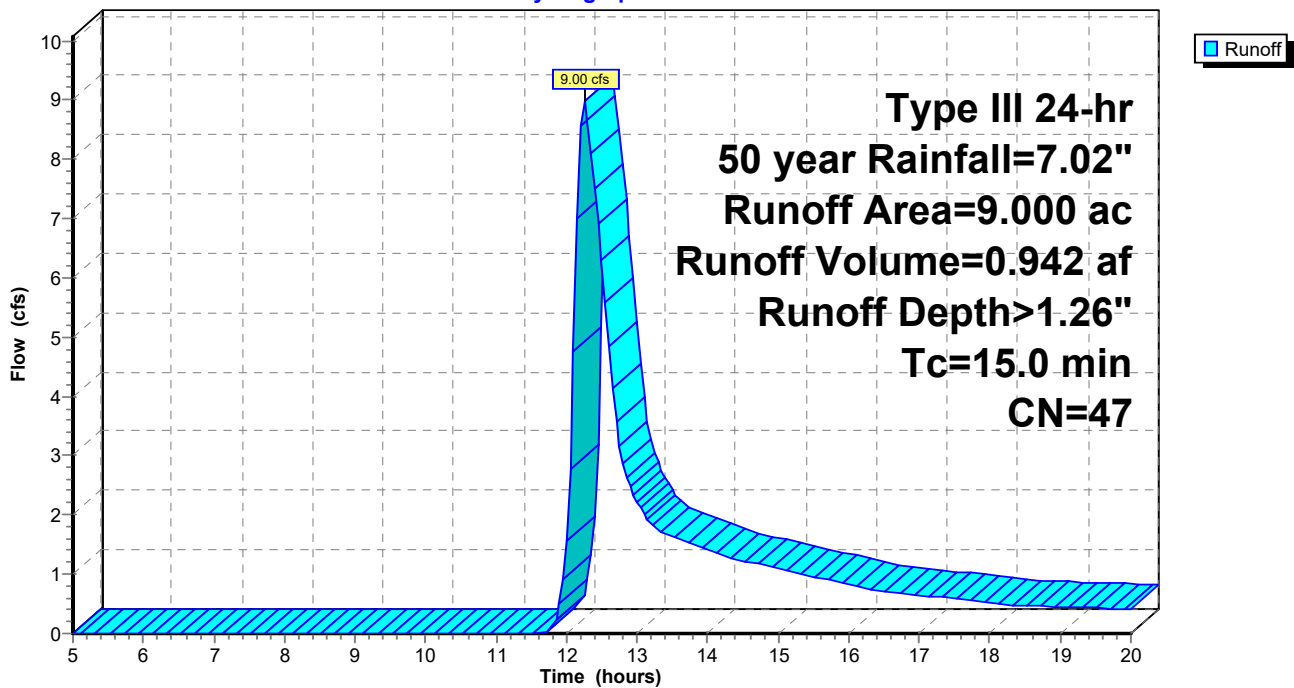
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
3.000	30	Meadow, non-grazed, HSG A
5.500	58	Meadow, non-grazed, HSG B
0.500	36	Woods, Fair, HSG A
9.000	47	Weighted Average
9.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 74A: Subcat 74A

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 75: Subcat 75

Runoff = 100.81 cfs @ 12.28 hrs, Volume= 9.907 af, Depth> 2.48"

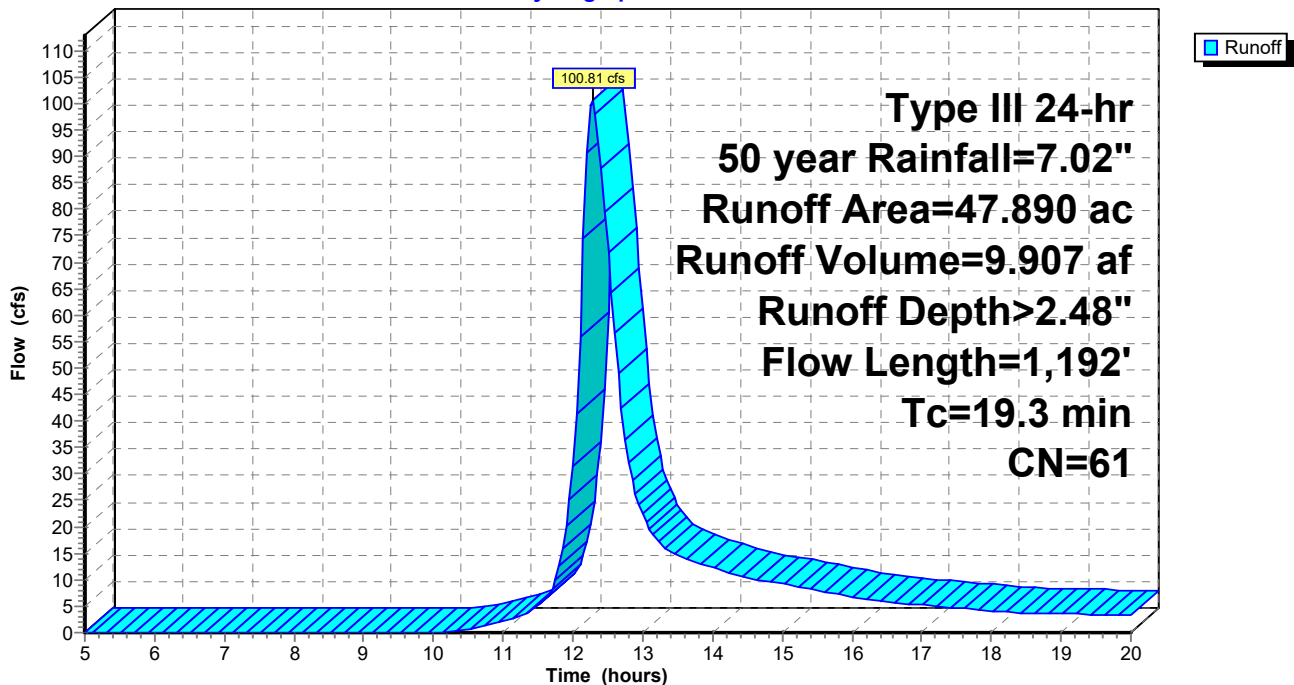
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
7.379	49	50-75% Grass cover, Fair, HSG A
31.767	69	50-75% Grass cover, Fair, HSG B
0.188	77	Fallow, bare soil, HSG A
4.747	30	Meadow, non-grazed, HSG A
3.808	58	Meadow, non-grazed, HSG B
47.890	61	Weighted Average
47.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.5	178	0.0281	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.3	964	0.0612	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
19.3	1,192	Total			

Subcatchment 75: Subcat 75

Hydrograph



Proposed Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 67P: (new Pond)

Inflow Area = 1.279 ac, 11.26% Impervious, Inflow Depth > 3.07" for 50 year event
 Inflow = 4.29 cfs @ 12.15 hrs, Volume= 0.328 af
 Outflow = 0.20 cfs @ 15.89 hrs, Volume= 0.135 af, Atten= 95%, Lag= 224.9 min
 Discarded = 0.20 cfs @ 15.89 hrs, Volume= 0.135 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 174.43' @ 15.89 hrs Surf.Area= 7,123 sf Storage= 9,381 cf

Plug-Flow detention time= 233.8 min calculated for 0.135 af (41% of inflow)
 Center-of-Mass det. time= 145.2 min (947.7 - 802.5)

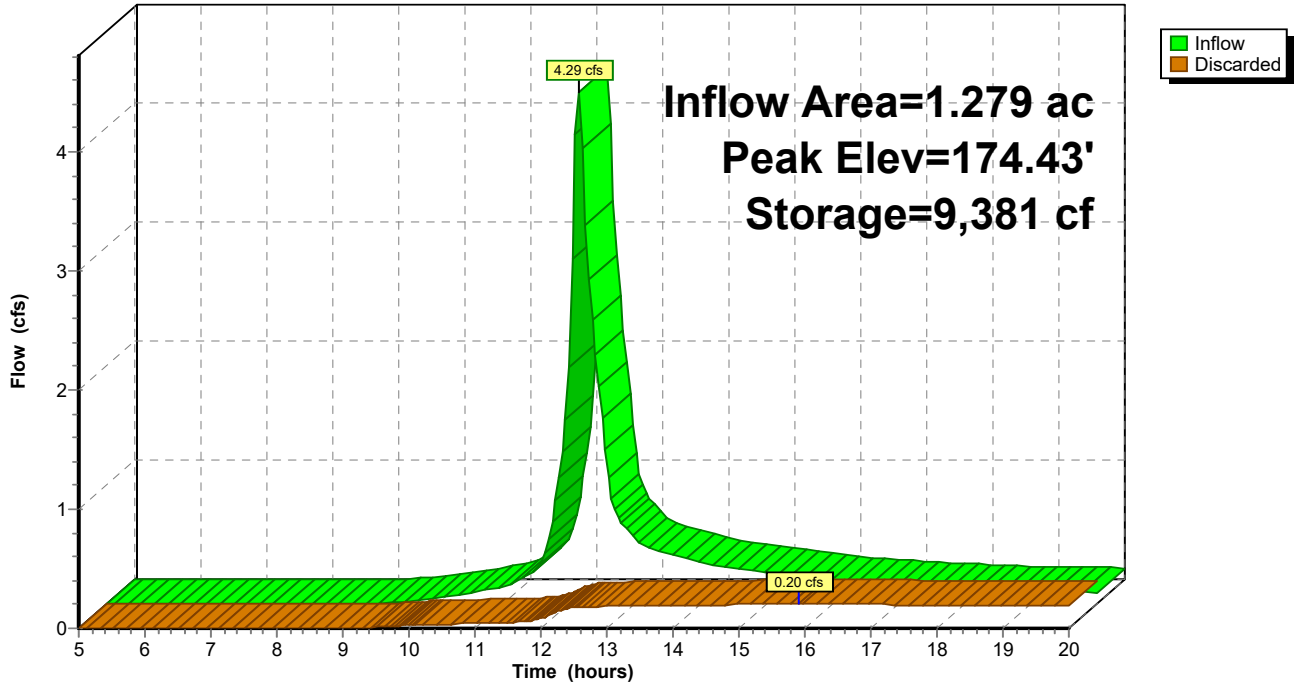
Volume	Invert	Avail.Storage	Storage Description		
#1	172.00'	23,969 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
172.00	1,123	0	0	1,123	
174.00	6,054	6,523	6,523	6,070	
176.00	11,699	17,446	23,969	11,753	

Device	Routing	Invert	Outlet Devices
#1	Discarded	172.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.20 cfs @ 15.89 hrs HW=174.43' (Free Discharge)
 ↑1=Exfiltration (Controls 0.20 cfs)

Pond 67P: (new Pond)

Hydrograph



Proposed Conditions - Windsorville

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 68P: (new Pond)

Inflow Area = 18.622 ac, 2.62% Impervious, Inflow Depth > 3.16" for 50 year event
 Inflow = 46.04 cfs @ 12.35 hrs, Volume= 4.900 af
 Outflow = 3.87 cfs @ 15.31 hrs, Volume= 2.535 af, Atten= 92%, Lag= 177.5 min
 Discarded = 3.87 cfs @ 15.31 hrs, Volume= 2.535 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 175.65' @ 15.31 hrs Surf.Area= 138,661 sf Storage= 128,161 cf

Plug-Flow detention time= 216.4 min calculated for 2.535 af (52% of inflow)
 Center-of-Mass det. time= 135.3 min (947.4 - 812.1)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	543,774 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	29,899	0	0	29,899
176.00	171,899	182,326	182,326	171,914
177.50	317,411	361,448	543,774	317,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.87 cfs @ 15.31 hrs HW=175.65' (Free Discharge)
 ↑1=Exfiltration (Controls 3.87 cfs)

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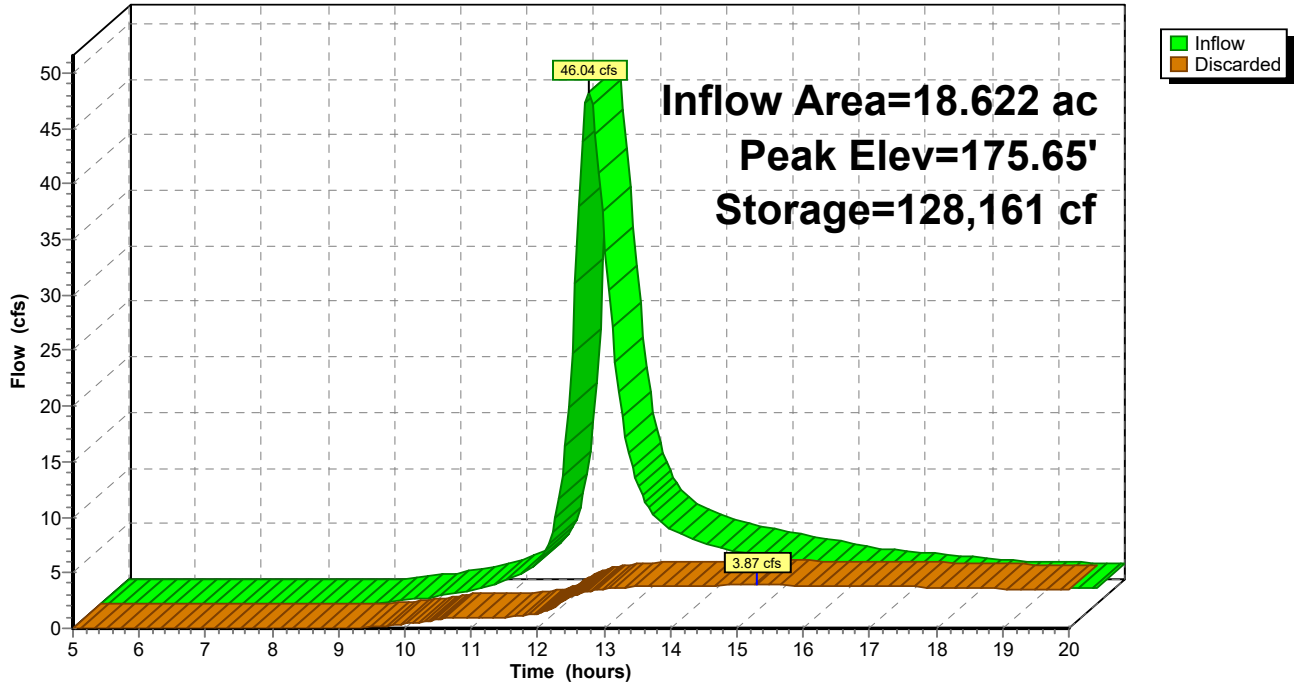
Type III 24-hr 50 year Rainfall=7.02"

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Pond 68P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 69P: (new Pond)

Inflow Area = 6.833 ac, 3.29% Impervious, Inflow Depth > 2.40" for 50 year event
 Inflow = 16.41 cfs @ 12.18 hrs, Volume= 1.364 af
 Outflow = 0.61 cfs @ 17.70 hrs, Volume= 0.397 af, Atten= 96%, Lag= 331.2 min
 Discarded = 0.61 cfs @ 17.70 hrs, Volume= 0.397 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 173.34' @ 17.70 hrs Surf.Area= 21,542 sf Storage= 42,968 cf

Plug-Flow detention time= 239.7 min calculated for 0.396 af (29% of inflow)
 Center-of-Mass det. time= 143.1 min (959.5 - 816.4)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	115,744 cf	Custom Stage Data (Conic) Listed below (Recalc)

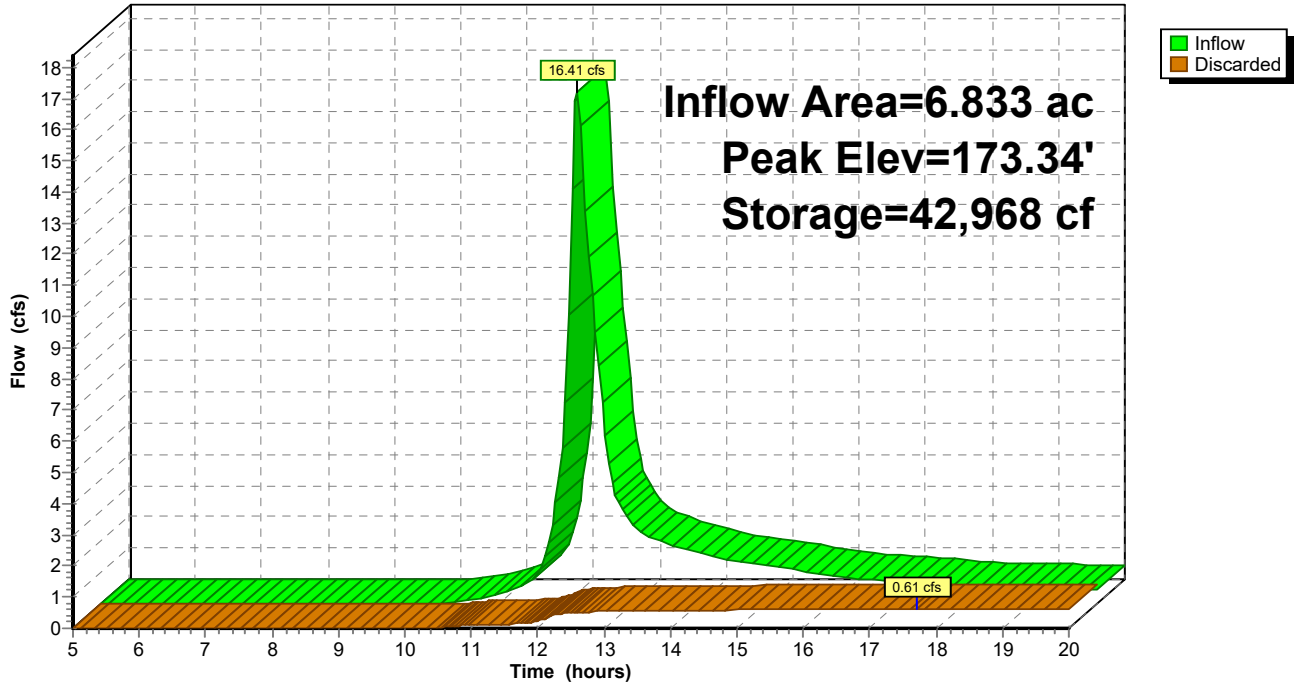
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	3,610	0	0	3,610
172.00	15,882	18,043	18,043	15,900
174.00	24,667	40,228	58,271	24,742
176.00	33,009	57,474	115,744	33,170

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.61 cfs @ 17.70 hrs HW=173.34' (Free Discharge)
 ↑1=Exfiltration (Controls 0.61 cfs)

Pond 69P: (new Pond)

Hydrograph



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Summary for Pond 70P: (new Pond)

Inflow Area = 3.224 ac, 0.00% Impervious, Inflow Depth > 3.48" for 50 year event
 Inflow = 12.57 cfs @ 12.13 hrs, Volume= 0.935 af
 Outflow = 4.10 cfs @ 12.50 hrs, Volume= 0.929 af, Atten= 67%, Lag= 22.2 min
 Discarded = 3.49 cfs @ 12.50 hrs, Volume= 0.918 af
 Primary = 0.61 cfs @ 12.50 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 198.43' @ 12.50 hrs Surf.Area= 30,057 sf Storage= 13,050 cf

Plug-Flow detention time= 41.5 min calculated for 0.926 af (99% of inflow)
 Center-of-Mass det. time= 39.1 min (833.7 - 794.7)

Volume	Invert	Avail.Storage	Storage Description
#1	197.20'	32,894 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.20	0	0	0	0
198.00	13,877	3,701	3,701	13,878
198.40	29,617	8,502	12,203	29,619
199.00	39,593	20,691	32,894	39,603

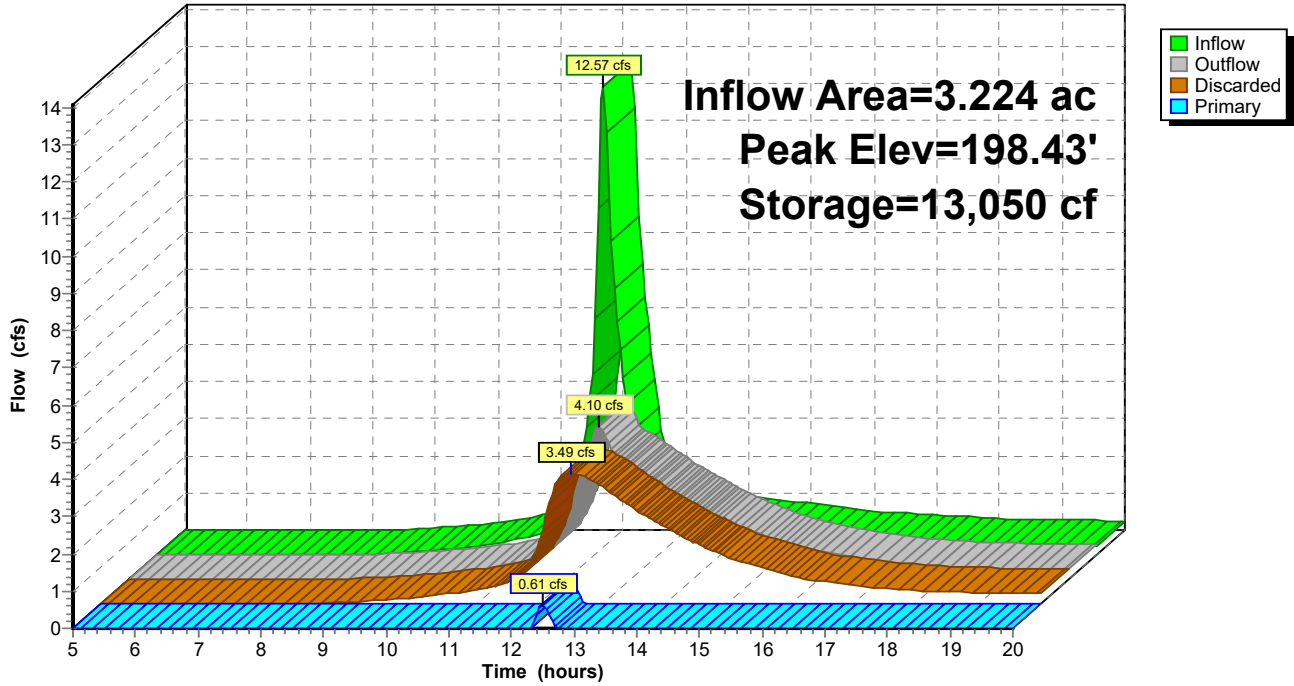
Device	Routing	Invert	Outlet Devices
#1	Primary	198.40'	50.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	197.20'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.49 cfs @ 12.50 hrs HW=198.43' (Free Discharge)
 ↑2=Exfiltration (Controls 3.49 cfs)

Primary OutFlow Max=0.59 cfs @ 12.50 hrs HW=198.43' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 0.59 cfs @ 0.42 fps)

Pond 70P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 71P: (new Pond)

Inflow Area = 11.377 ac, 3.55% Impervious, Inflow Depth > 2.07" for 50 year event
 Inflow = 21.23 cfs @ 12.24 hrs, Volume= 1.961 af
 Outflow = 0.97 cfs @ 16.95 hrs, Volume= 0.613 af, Atten= 95%, Lag= 282.8 min
 Discarded = 0.97 cfs @ 16.95 hrs, Volume= 0.613 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 179.10' @ 16.95 hrs Surf.Area= 34,371 sf Storage= 61,321 cf

Plug-Flow detention time= 248.7 min calculated for 0.613 af (31% of inflow)
 Center-of-Mass det. time= 154.4 min (965.3 - 810.9)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	96,451 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	3,500	0	0	3,500
176.00	5,053	8,506	8,506	5,120
178.00	19,737	23,184	31,690	19,823
179.00	33,402	26,272	57,962	33,500
180.00	43,811	38,489	96,451	43,932

Device	Routing	Invert	Outlet Devices
#1	Primary	179.30'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.97 cfs @ 16.95 hrs HW=179.10' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=174.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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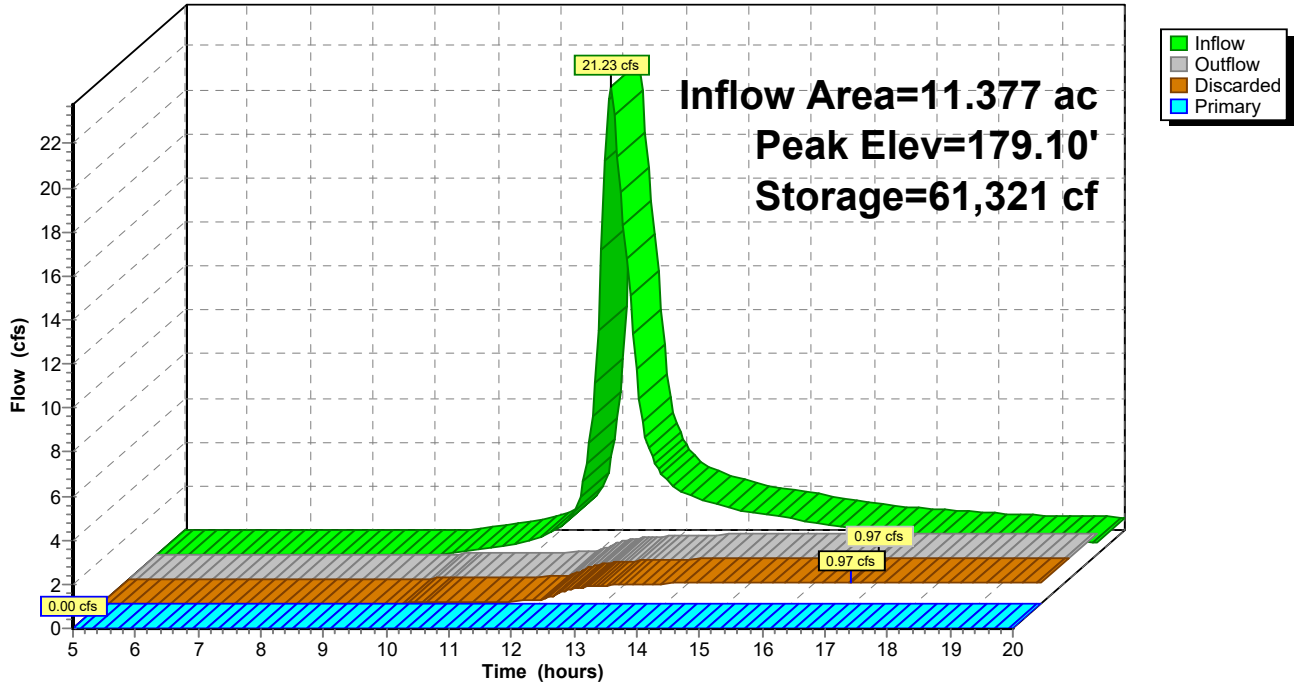
Type III 24-hr 50 year Rainfall=7.02"

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Pond 71P: (new Pond)

Hydrograph



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Summary for Pond 72P: (new Pond)

Inflow Area = 8.307 ac, 2.24% Impervious, Inflow Depth > 3.17" for 50 year event
 Inflow = 24.84 cfs @ 12.22 hrs, Volume= 2.193 af
 Outflow = 0.59 cfs @ 20.00 hrs, Volume= 0.374 af, Atten= 98%, Lag= 467.0 min
 Discarded = 0.59 cfs @ 20.00 hrs, Volume= 0.374 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 178.62' @ 20.00 hrs Surf.Area= 20,414 sf Storage= 79,241 cf

Plug-Flow detention time= 268.2 min calculated for 0.374 af (17% of inflow)
 Center-of-Mass det. time= 156.3 min (961.3 - 805.0)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	247,588 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	704	0	0	704
172.00	2,903	3,358	3,358	2,921
174.00	7,882	10,379	13,737	7,926
176.00	13,742	21,354	35,091	13,831
178.00	18,516	32,140	67,231	18,689
180.00	25,003	43,357	110,588	25,259
182.00	32,623	57,457	168,045	32,973
184.00	47,378	79,544	247,588	47,796

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.59 cfs @ 20.00 hrs HW=178.62' (Free Discharge)
 ↑1=Exfiltration (Controls 0.59 cfs)

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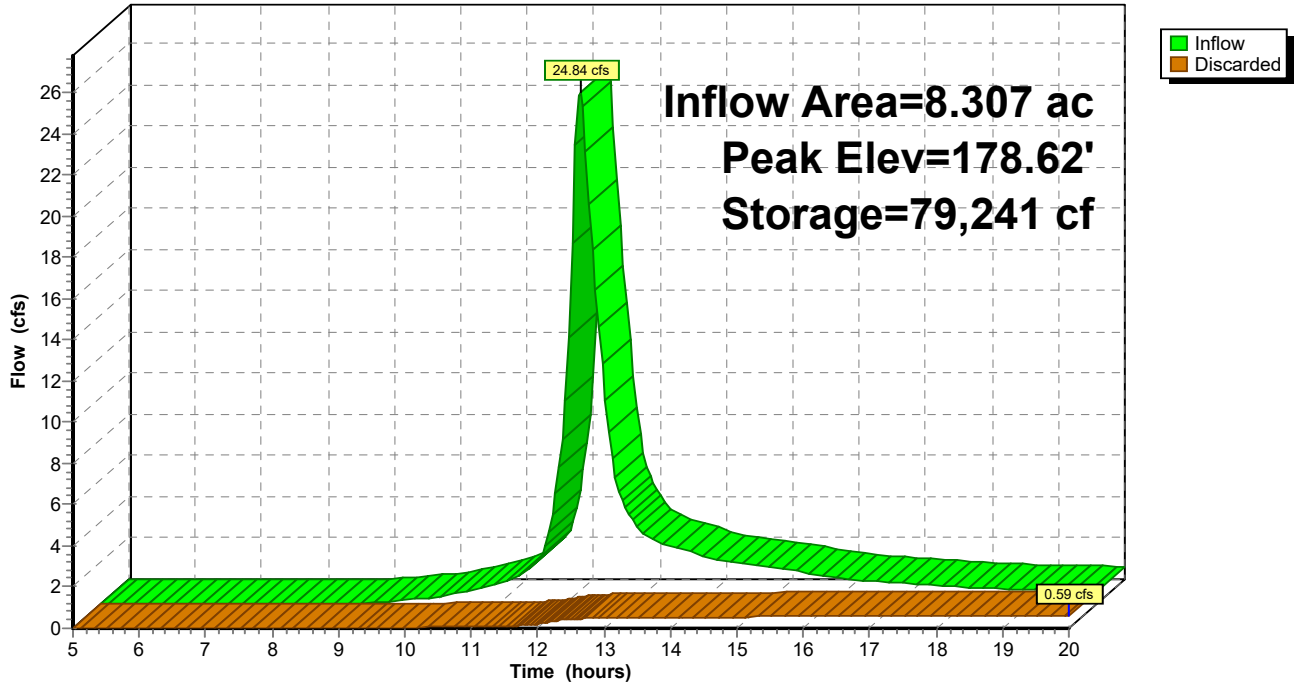
Type III 24-hr 50 year Rainfall=7.02"

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Pond 72P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 73P: (new Pond)

Inflow Area = 28.699 ac, 0.00% Impervious, Inflow Depth > 4.20" for 50 year event
 Inflow = 116.78 cfs @ 12.19 hrs, Volume= 10.055 af
 Outflow = 15.30 cfs @ 13.06 hrs, Volume= 4.474 af, Atten= 87%, Lag= 52.0 min
 Discarded = 2.49 cfs @ 13.06 hrs, Volume= 1.689 af
 Primary = 12.82 cfs @ 13.06 hrs, Volume= 2.785 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.30' @ 13.06 hrs Surf.Area= 87,512 sf Storage= 265,552 cf

Plug-Flow detention time= 196.4 min calculated for 4.460 af (44% of inflow)
 Center-of-Mass det. time= 110.7 min (896.4 - 785.7)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	335,287 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
148.00	14,537	0	0	14,537
150.00	23,801	37,959	37,959	23,852
152.00	34,881	58,330	96,289	34,998
154.00	47,776	82,320	178,609	47,973
156.00	113,577	156,677	335,287	113,803

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	30.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	148.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.49 cfs @ 13.06 hrs HW=155.30' (Free Discharge)
 ↑**2=Exfiltration** (Controls 2.49 cfs)

Primary OutFlow Max=12.73 cfs @ 13.06 hrs HW=155.30' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 12.73 cfs @ 1.39 fps)

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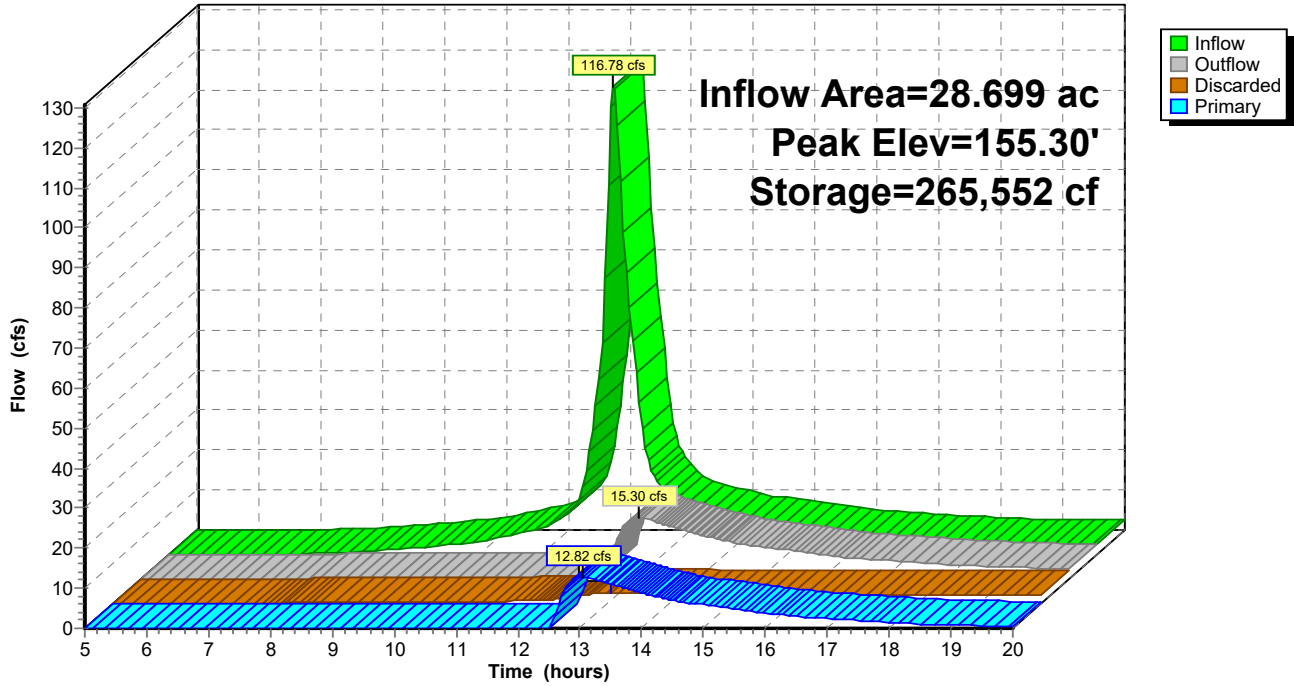
Type III 24-hr 50 year Rainfall=7.02"

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Pond 73P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 74AP: (new Pond)

Inflow Area = 9.000 ac, 0.00% Impervious, Inflow Depth > 1.26" for 50 year event
 Inflow = 9.00 cfs @ 12.25 hrs, Volume= 0.942 af
 Outflow = 0.37 cfs @ 20.00 hrs, Volume= 0.225 af, Atten= 96%, Lag= 464.8 min
 Discarded = 0.37 cfs @ 20.00 hrs, Volume= 0.225 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 133.33' @ 20.00 hrs Surf.Area= 12,829 sf Storage= 31,227 cf

Plug-Flow detention time= 240.3 min calculated for 0.225 af (24% of inflow)
 Center-of-Mass det. time= 127.3 min (973.3 - 846.0)

Volume	Invert	Avail.Storage	Storage Description
#1	130.00'	55,787 cf	32.00'W x 192.00'L x 5.00'H Prismatic Z=4.0

Device	Routing	Invert	Outlet Devices
#1	Primary	133.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	130.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.37 cfs @ 20.00 hrs HW=133.33' (Free Discharge)
 ↳2=Exfiltration (Controls 0.37 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=130.00' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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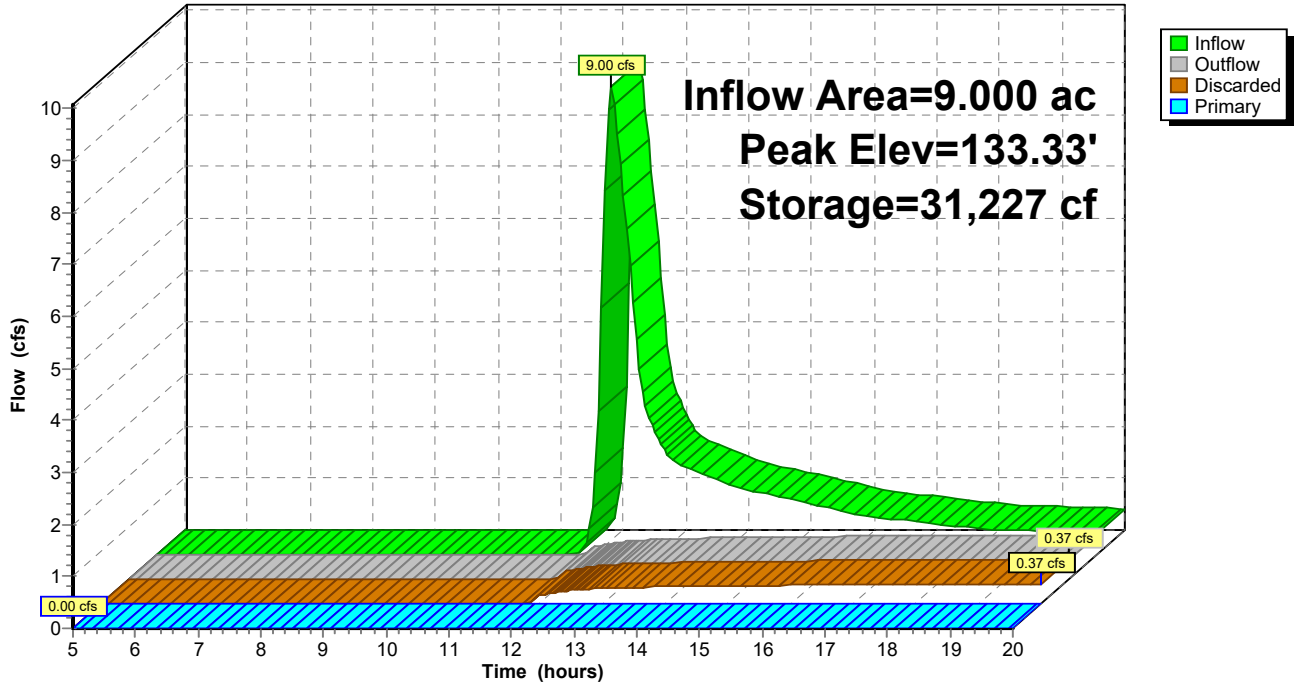
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Pond 74AP: (new Pond)

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Summary for Pond 74P: (new Pond)

Inflow Area = 111.586 ac, 0.00% Impervious, Inflow Depth > 2.31" for 50 year event
Inflow = 140.55 cfs @ 12.65 hrs, Volume= 21.481 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 128.31' @ 20.00 hrs Surf.Area= 401,334 sf Storage= 935,100 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

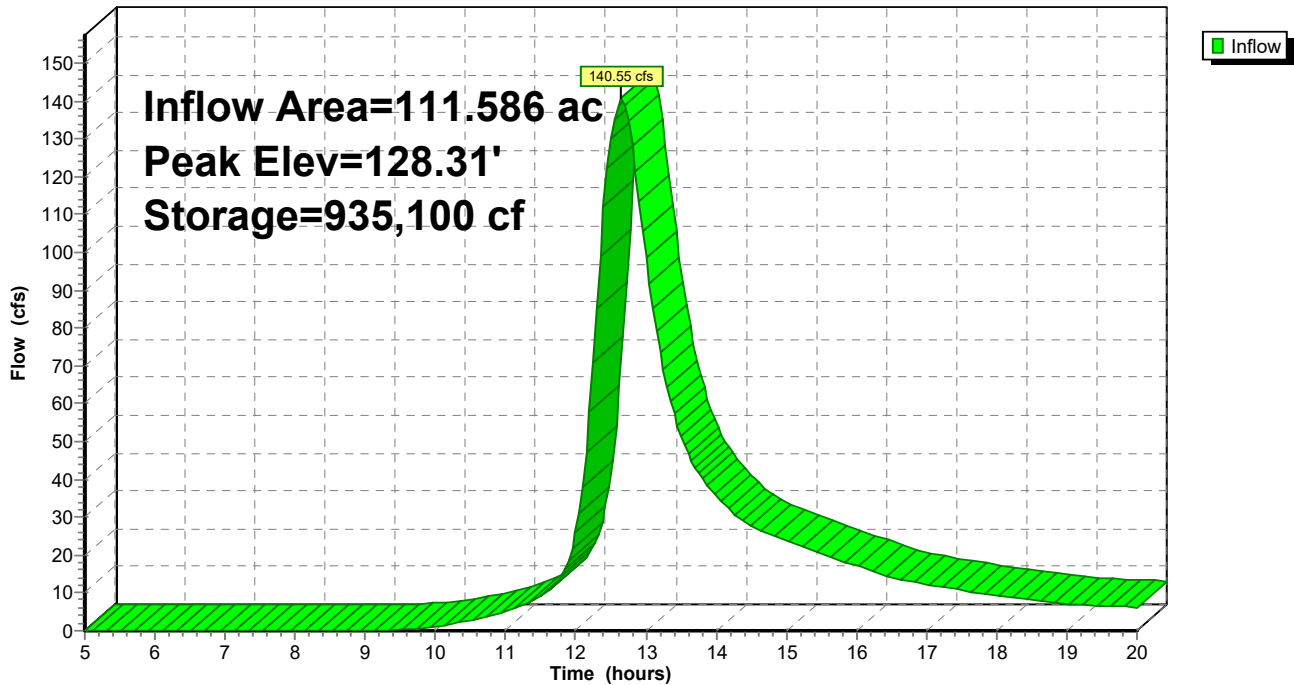
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	1,810,898 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.00	59,766	0	0
124.00	81,926	141,692	141,692
126.00	117,535	199,461	341,153
128.00	357,529	475,064	816,217
130.00	637,152	994,681	1,810,898

Pond 74P: (new Pond)

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Summary for Pond 75P: (new Pond)

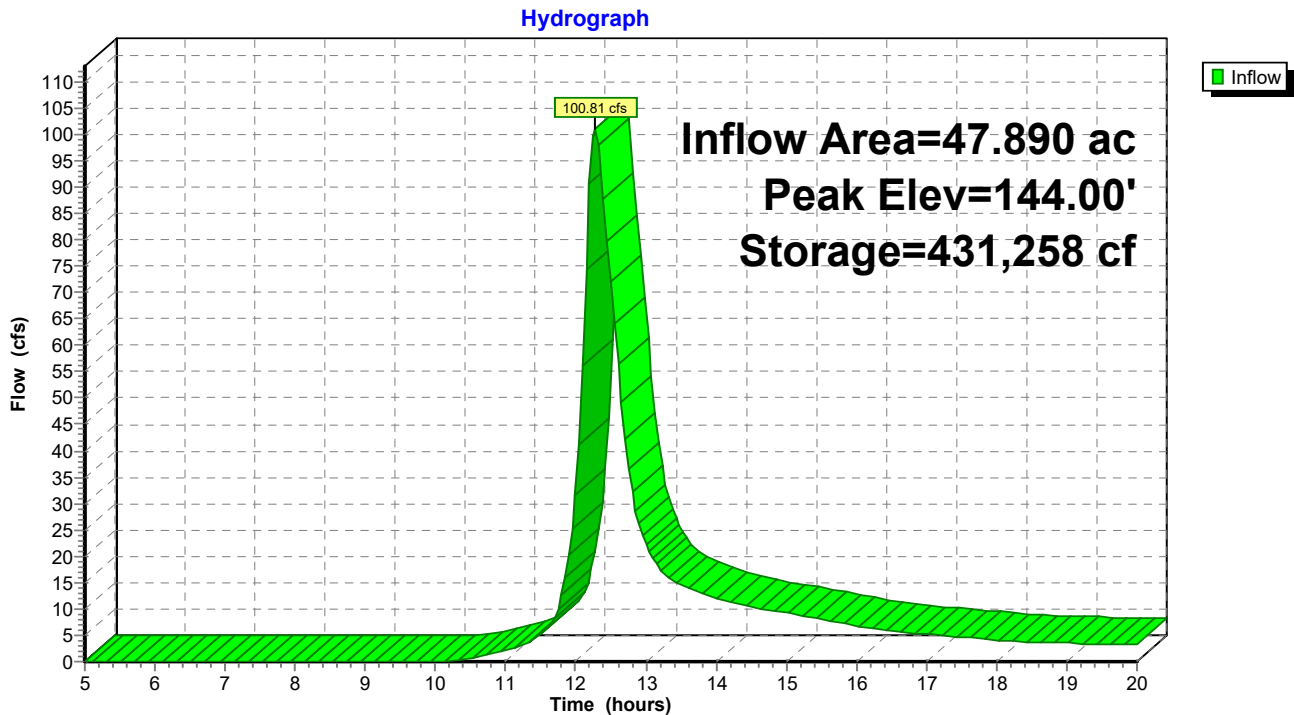
Inflow Area = 47.890 ac, 0.00% Impervious, Inflow Depth > 2.48" for 50 year event
Inflow = 100.81 cfs @ 12.28 hrs, Volume= 9.907 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 144.00' @ 20.00 hrs Surf.Area= 50,164 sf Storage= 431,258 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	128.00'	662,007 cf	93.00'W x 99.00'L x 20.00'H Prismatic Z=4.0

Pond 75P: (new Pond)



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 67: Subcat 67

Runoff = 5.30 cfs @ 12.14 hrs, Volume= 0.405 af, Depth> 3.80"

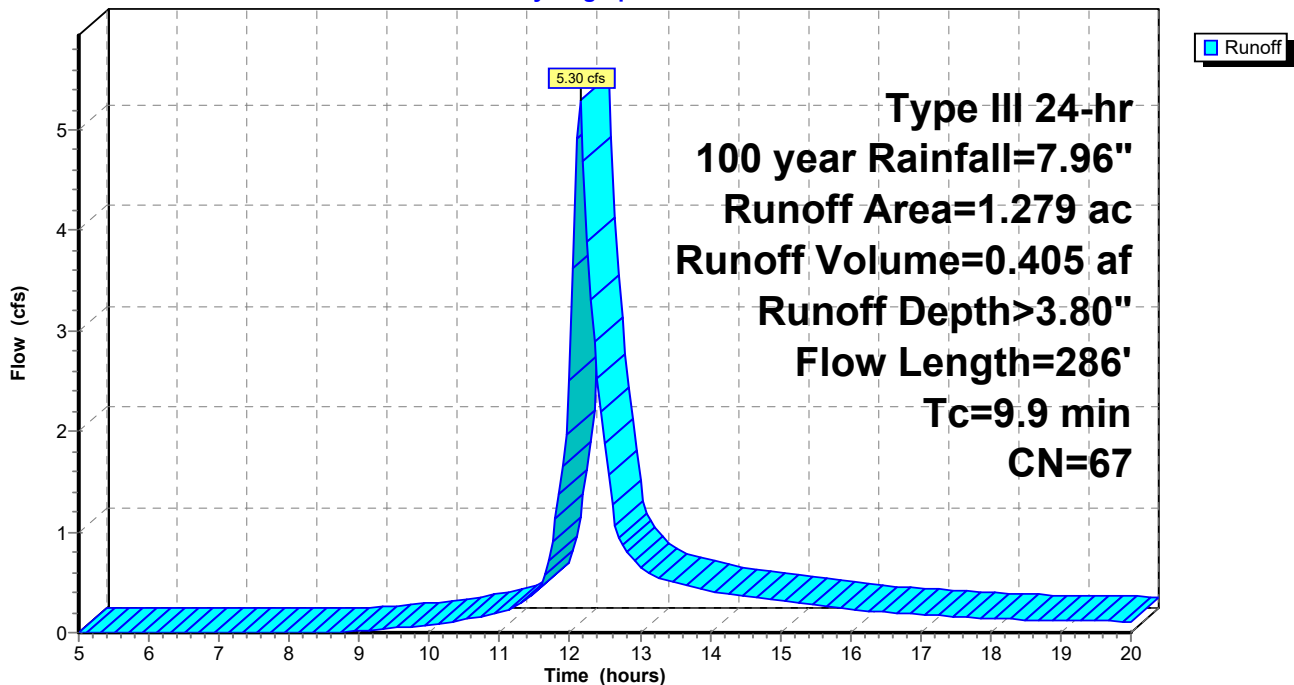
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.156	74	50-75% Grass cover, Fair, HSG B-C
0.743	58	Meadow, non-grazed, HSG B
0.288	89	Paved roads w/open ditches, 50% imp, HSG B
0.092	60	Woods, Fair, HSG B
1.279	67	Weighted Average
1.135		88.74% Pervious Area
0.144		11.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.2	119	0.0588	1.70		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	117	0.0513	1.59		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.9	286	Total			

Subcatchment 67: Subcat 67

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 68: Subcat 68

Runoff = 56.67 cfs @ 12.34 hrs, Volume= 6.029 af, Depth> 3.89"

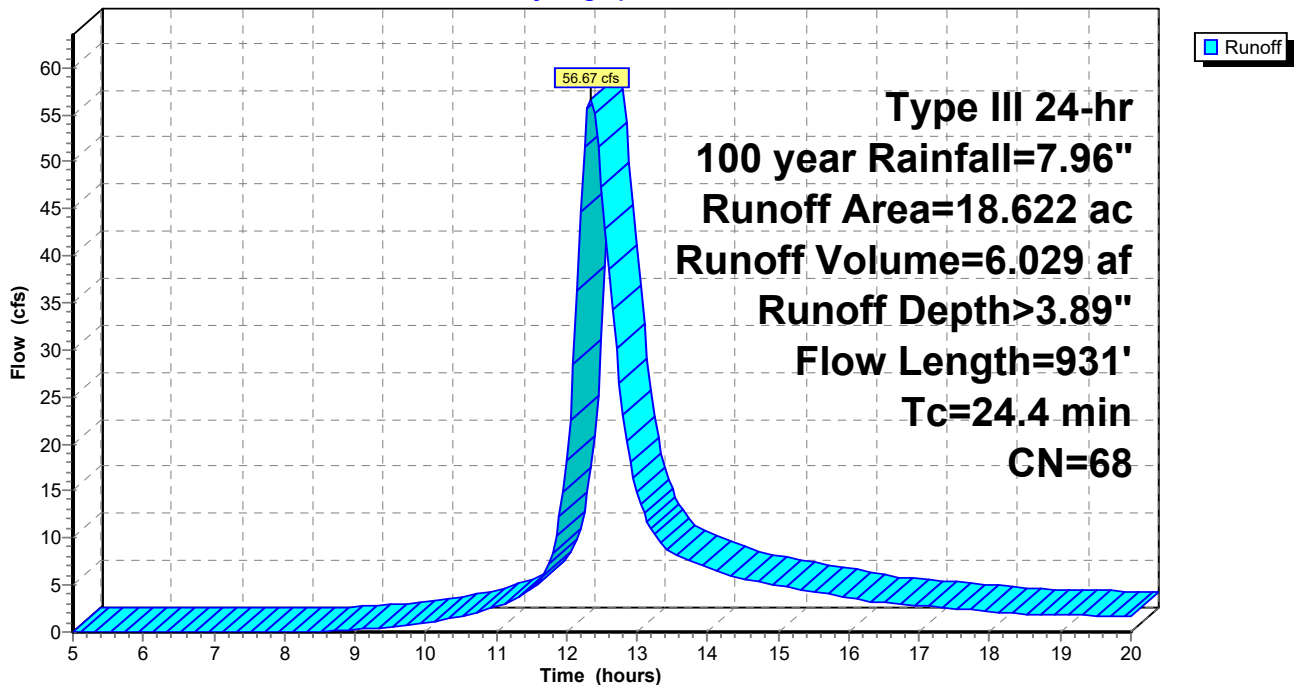
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.174	59	50-75% Grass cover, Fair, HSG A-B
* 12.385	74	50-75% Grass cover, Fair, HSG B-C
1.319	30	Meadow, non-grazed, HSG A
2.767	58	Meadow, non-grazed, HSG B
0.977	89	Paved roads w/open ditches, 50% imp, HSG B
18.622	68	Weighted Average
18.134		97.38% Pervious Area
0.489		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.2	244	0.0123	0.78		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.5	637	0.0126	0.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.4	931	Total			

Subcatchment 68: Subcat 68

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 69: Subcat 69

Runoff = 21.18 cfs @ 12.17 hrs, Volume= 1.729 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.090	59	50-75% Grass cover, Fair, HSG A-B
* 2.629	74	50-75% Grass cover, Fair, HSG B-C
0.903	30	Meadow, non-grazed, HSG A
1.771	58	Meadow, non-grazed, HSG B
0.449	89	Paved roads w/open ditches, 50% imp, HSG B
0.703	36	Woods, Fair, HSG A
0.288	60	Woods, Fair, HSG B
6.833	60	Weighted Average
6.609		96.71% Pervious Area
0.224		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.19		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.16"
9.2	446	0.0134	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.1	168	0.0357	1.32		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.0	664	Total			

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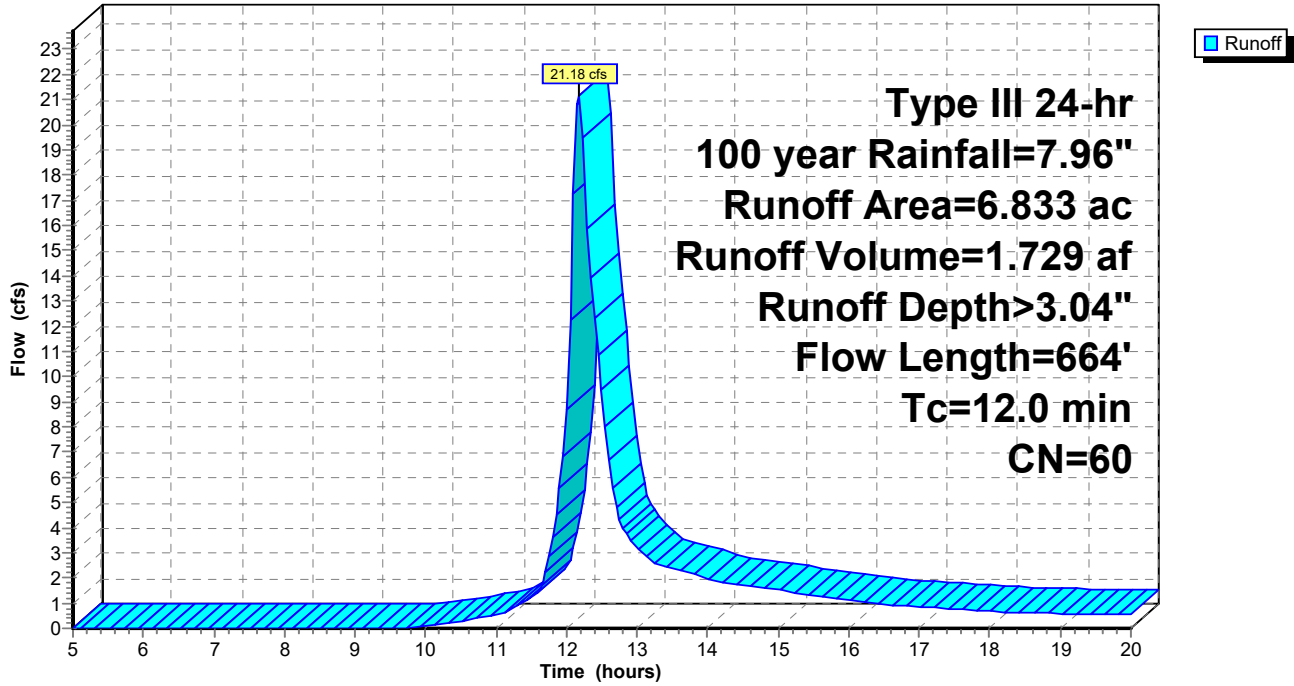
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 69: Subcat 69

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 70: Subcat 70

Runoff = 15.27 cfs @ 12.13 hrs, Volume= 1.139 af, Depth> 4.24"

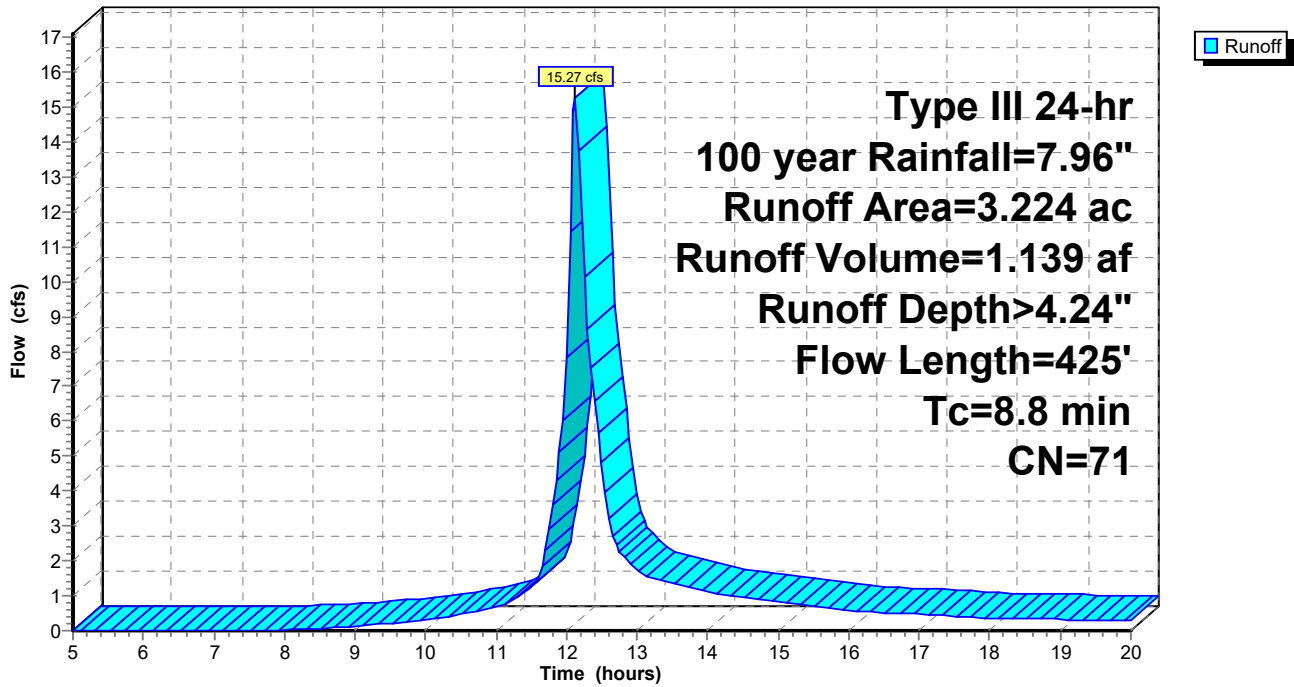
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.496	59	50-75% Grass cover, Fair, HSG A-B
* 2.701	74	50-75% Grass cover, Fair, HSG B-C
0.027	30	Meadow, non-grazed, HSG A
3.224	71	Weighted Average
3.224		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	50	0.2000	0.37		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
0.5	82	0.1707	2.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	293	0.0137	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.8	425	Total			

Subcatchment 70: Subcat 70

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 71: Subcat 71

Runoff = 26.48 cfs @ 12.24 hrs, Volume= 2.424 af, Depth> 3.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.291	59	50-75% Grass cover, Fair, HSG A-B
* 3.331	74	50-75% Grass cover, Fair, HSG B-C
* 0.071	82	50-75% Grass cover, Fair, HSG C-D
0.664	30	Meadow, non-grazed, HSG A
2.241	58	Meadow, non-grazed, HSG B
0.103	83	Paved roads w/open ditches, 50% imp, HSG A
0.705	89	Paved roads w/open ditches, 50% imp, HSG B
0.096	36	Woods, Fair, HSG A
0.651	60	Woods, Fair, HSG B
8.153	65	Weighted Average
7.749		95.04% Pervious Area
0.404		4.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	369	0.0135	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.6	197	0.0812	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.7	616	Total			

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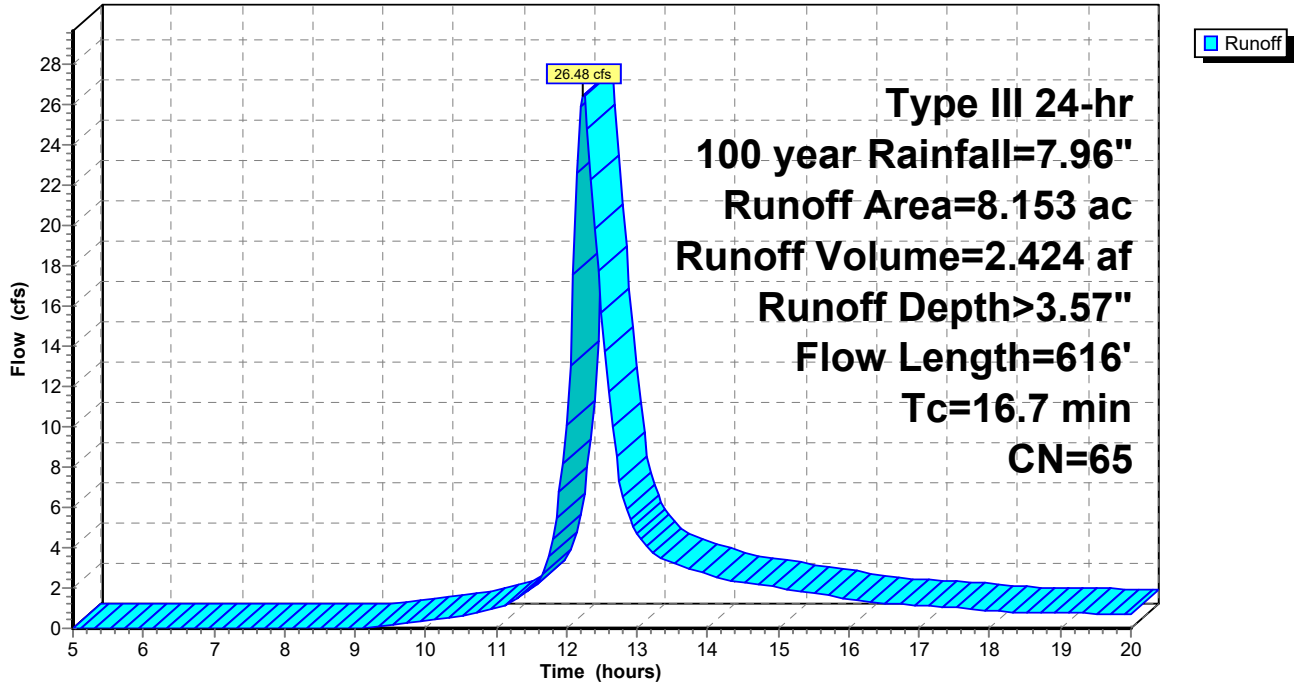
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 71: Subcat 71

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 72: Subcat 72

Runoff = 30.58 cfs @ 12.21 hrs, Volume= 2.698 af, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.489	70	1/2 acre lots, 25% imp, HSG B
* 0.004	59	50-75% Grass cover, Fair, HSG A-B
* 1.377	74	50-75% Grass cover, Fair, HSG B-C
0.846	58	Meadow, non-grazed, HSG B
0.979	71	Meadow, non-grazed, HSG C
0.035	89	Paved roads w/open ditches, 50% imp, HSG B
0.093	92	Paved roads w/open ditches, 50% imp, HSG C
2.062	60	Woods, Fair, HSG B
2.422	73	Woods, Fair, HSG C
8.307	68	Weighted Average
8.121		97.76% Pervious Area
0.186		2.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.1400	0.15		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.16"
6.5	610	0.0492	1.55		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0303	3.53		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	290	0.1138	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
15.3	983	Total			

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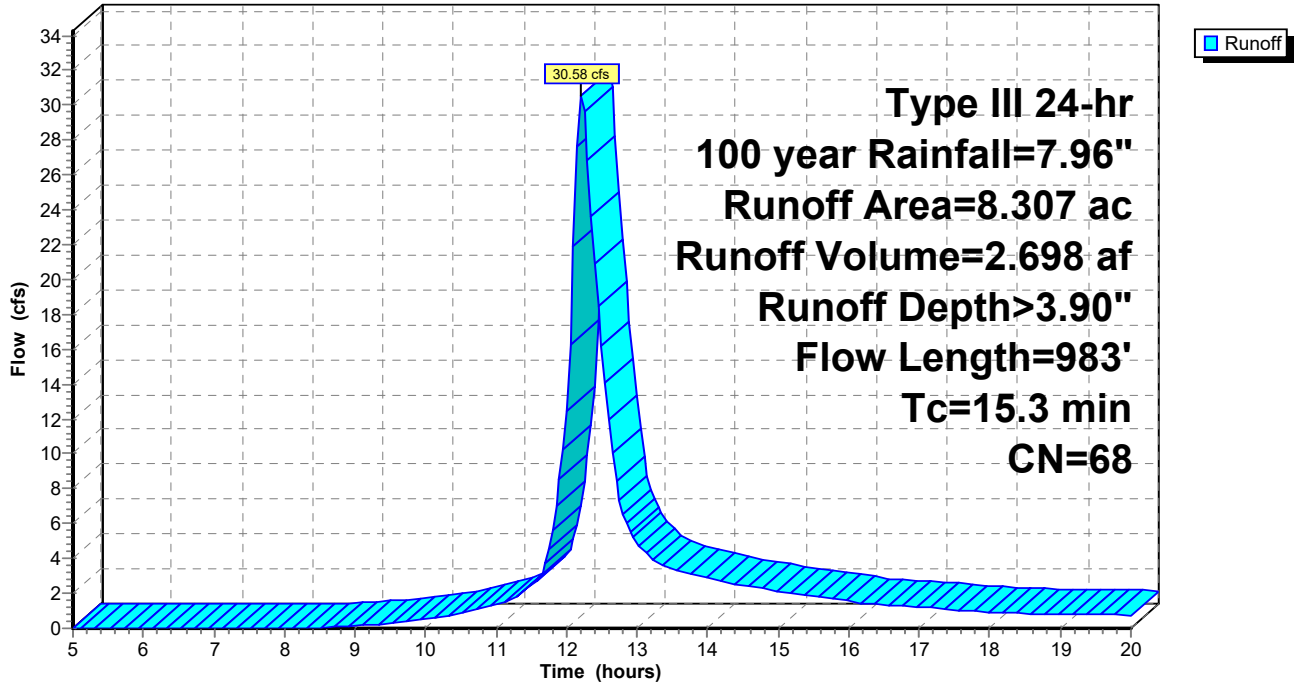
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 72: Subcat 72

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Summary for Subcatchment 73: Subcat 73

Runoff = 138.58 cfs @ 12.19 hrs, Volume= 12.007 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.001	59	50-75% Grass cover, Fair, HSG A-B
* 0.801	74	50-75% Grass cover, Fair, HSG B-C
* 16.564	82	50-75% Grass cover, Fair, HSG C-D
1.566	91	Fallow, bare soil, HSG C
0.066	30	Meadow, non-grazed, HSG A
0.576	58	Meadow, non-grazed, HSG B
5.200	71	Meadow, non-grazed, HSG C
0.156	36	Woods, Fair, HSG A
0.156	60	Woods, Fair, HSG B
3.613	73	Woods, Fair, HSG C
28.699	78	Weighted Average
28.699		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1200	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
11.0	1,029	0.0496	1.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.8	1,079	Total			

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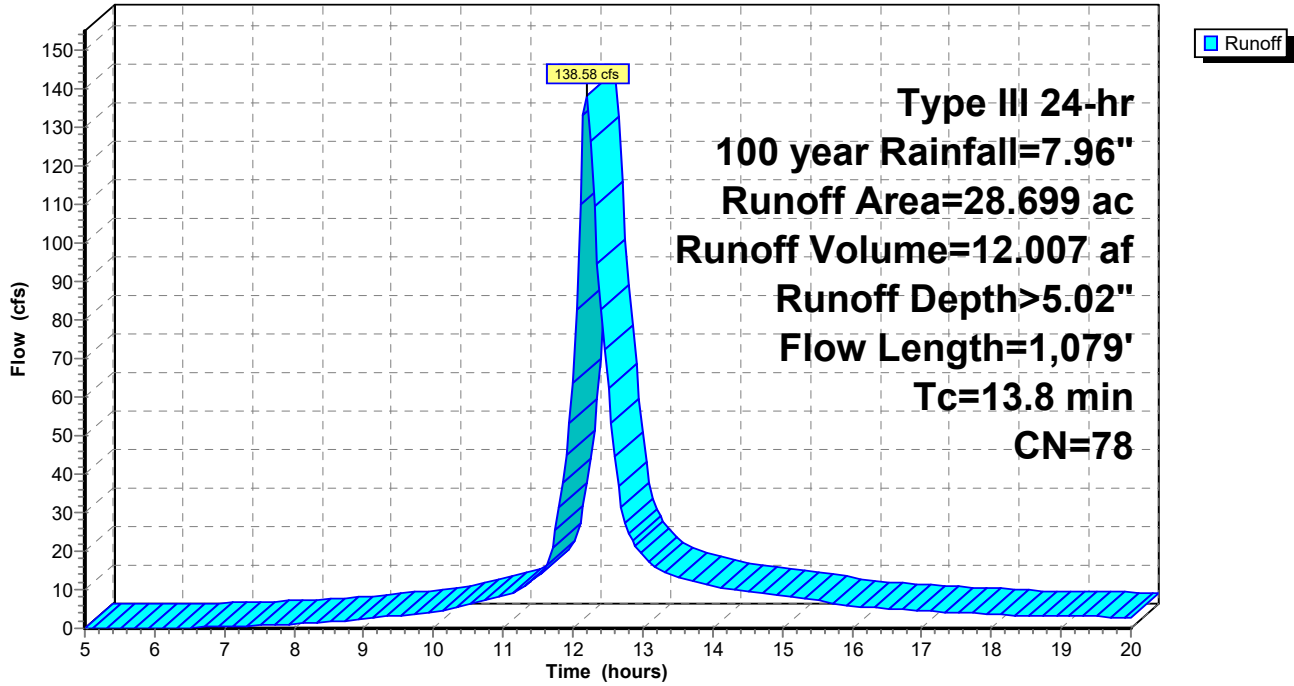
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 73: Subcat 73

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Summary for Subcatchment 74: Subcat 74

Runoff = 168.07 cfs @ 12.60 hrs, Volume= 23.091 af, Depth> 3.75"

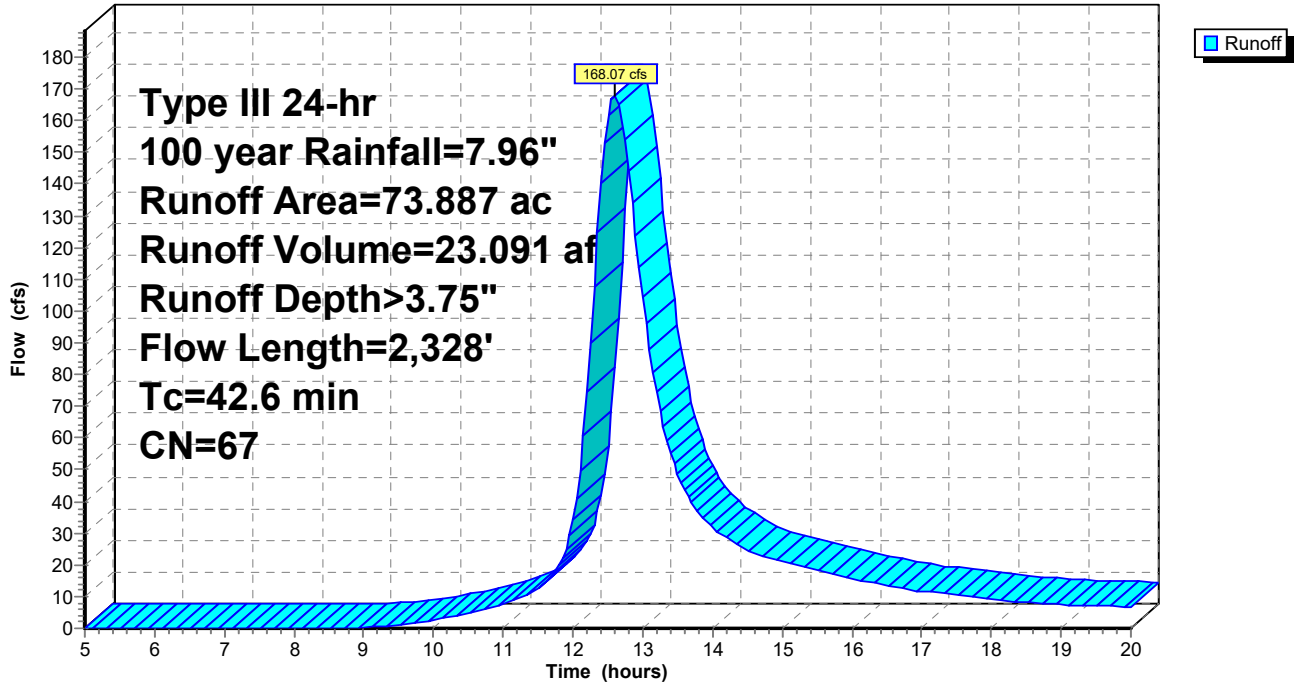
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 12.199	51	50-75% Grass cover, Fair, HSG A
* 10.911	74	50-75% Grass cover, Fair, HSG B
* 18.685	82	50-75% Grass cover, Fair, HSG C
0.000	77	Fallow, bare soil, HSG A
2.355	91	Fallow, bare soil, HSG C
6.249	30	Meadow, non-grazed, HSG A
6.321	58	Meadow, non-grazed, HSG B
11.466	71	Meadow, non-grazed, HSG C
0.714	36	Woods, Fair, HSG A
0.928	60	Woods, Fair, HSG B
4.059	73	Woods, Fair, HSG C
73.887	67	Weighted Average
73.887		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	484	0.0331	1.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.7	207	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	404	0.0272	1.15		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	923	0.0162	0.89		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	260	0.0115	0.75		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
42.6	2,328	Total			

Subcatchment 74: Subcat 74

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Summary for Subcatchment 74A: Subcat 74A

Runoff = 13.11 cfs @ 12.24 hrs, Volume= 1.287 af, Depth> 1.72"

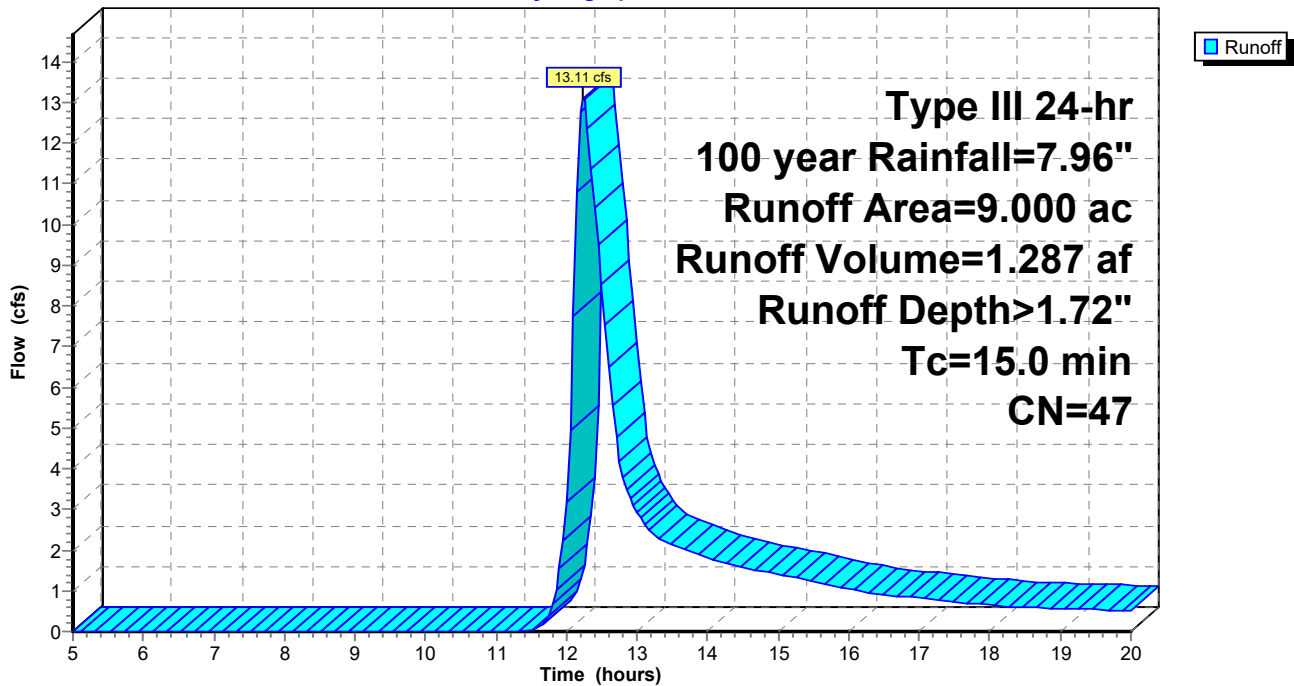
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
3.000	30	Meadow, non-grazed, HSG A
5.500	58	Meadow, non-grazed, HSG B
0.500	36	Woods, Fair, HSG A
9.000	47	Weighted Average
9.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 74A: Subcat 74A

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Summary for Subcatchment 75: Subcat 75

Runoff = 128.36 cfs @ 12.28 hrs, Volume= 12.509 af, Depth> 3.13"

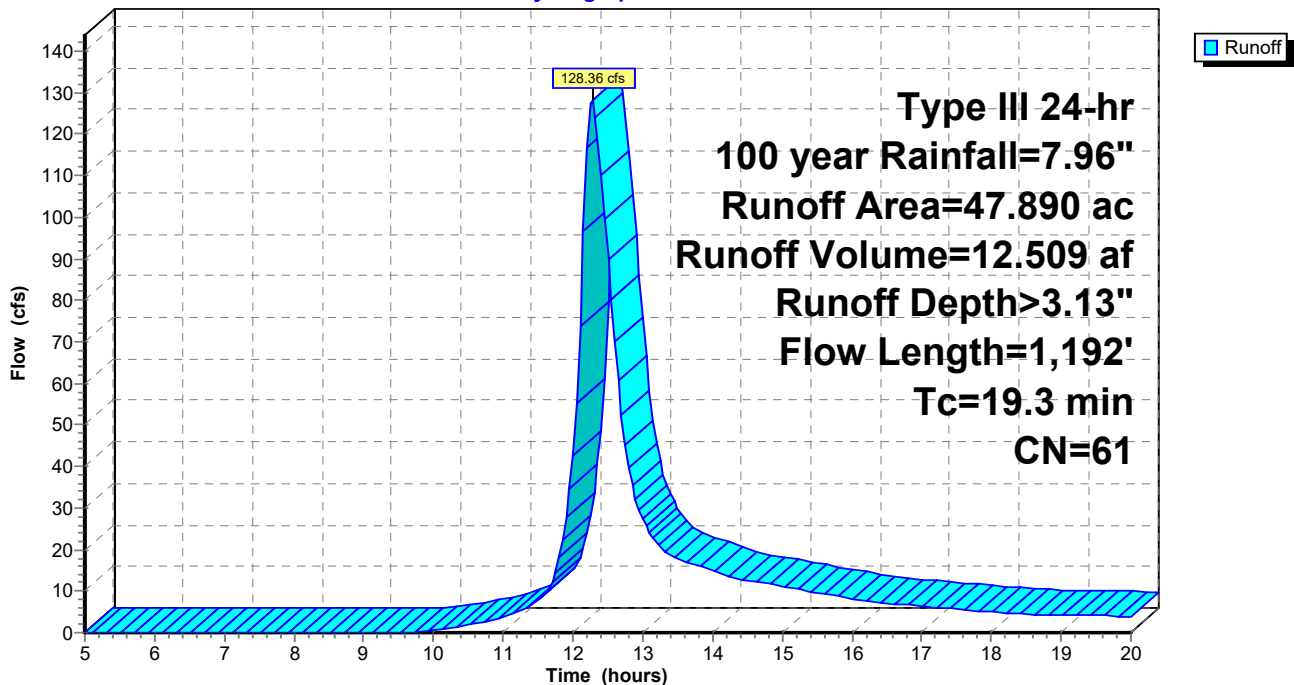
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
7.379	49	50-75% Grass cover, Fair, HSG A
31.767	69	50-75% Grass cover, Fair, HSG B
0.188	77	Fallow, bare soil, HSG A
4.747	30	Meadow, non-grazed, HSG A
3.808	58	Meadow, non-grazed, HSG B
47.890	61	Weighted Average
47.890		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.5	178	0.0281	1.17		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.3	964	0.0612	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
19.3	1,192	Total			

Subcatchment 75: Subcat 75

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Summary for Pond 67P: (new Pond)

Inflow Area = 1.279 ac, 11.26% Impervious, Inflow Depth > 3.80" for 100 year event
 Inflow = 5.30 cfs @ 12.14 hrs, Volume= 0.405 af
 Outflow = 0.23 cfs @ 16.02 hrs, Volume= 0.154 af, Atten= 96%, Lag= 232.6 min
 Discarded = 0.23 cfs @ 16.02 hrs, Volume= 0.154 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 174.77' @ 16.02 hrs Surf.Area= 8,016 sf Storage= 11,941 cf

Plug-Flow detention time= 237.1 min calculated for 0.154 af (38% of inflow)
 Center-of-Mass det. time= 146.8 min (944.6 - 797.8)

Volume	Invert	Avail.Storage	Storage Description
#1	172.00'	23,969 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.00	1,123	0	0	1,123
174.00	6,054	6,523	6,523	6,070
176.00	11,699	17,446	23,969	11,753

Device	Routing	Invert	Outlet Devices
#1	Discarded	172.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.23 cfs @ 16.02 hrs HW=174.77' (Free Discharge)
 ↑1=Exfiltration (Controls 0.23 cfs)

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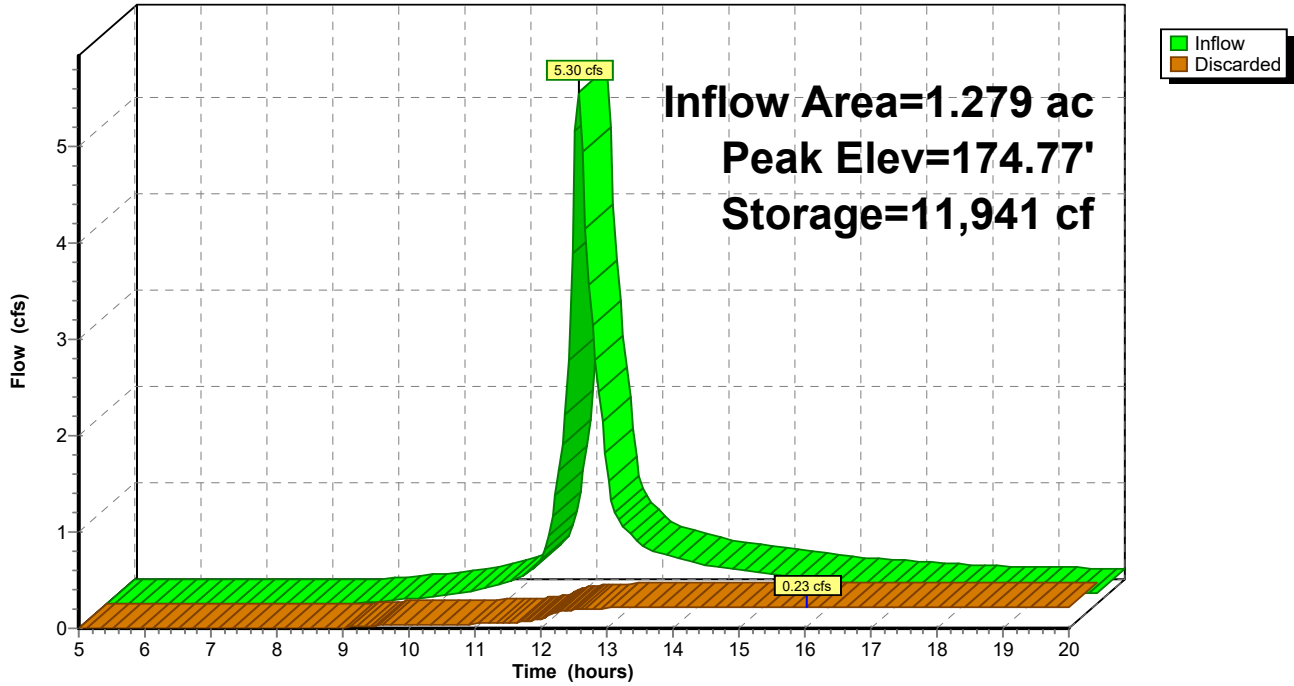
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Pond 67P: (new Pond)

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Summary for Pond 68P: (new Pond)

Inflow Area = 18.622 ac, 2.62% Impervious, Inflow Depth > 3.89" for 100 year event
 Inflow = 56.67 cfs @ 12.34 hrs, Volume= 6.029 af
 Outflow = 4.47 cfs @ 15.39 hrs, Volume= 2.957 af, Atten= 92%, Lag= 183.0 min
 Discarded = 4.47 cfs @ 15.39 hrs, Volume= 2.957 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 175.88' @ 15.39 hrs Surf.Area= 159,981 sf Storage= 162,240 cf

Plug-Flow detention time= 219.6 min calculated for 2.957 af (49% of inflow)
 Center-of-Mass det. time= 137.4 min (944.9 - 807.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	174.00'	543,774 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
174.00	29,899	0	0	29,899	
176.00	171,899	182,326	182,326	171,914	
177.50	317,411	361,448	543,774	317,450	

Device	Routing	Invert	Outlet Devices
#1	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=4.47 cfs @ 15.39 hrs HW=175.88' (Free Discharge)
 ↑1=Exfiltration (Controls 4.47 cfs)

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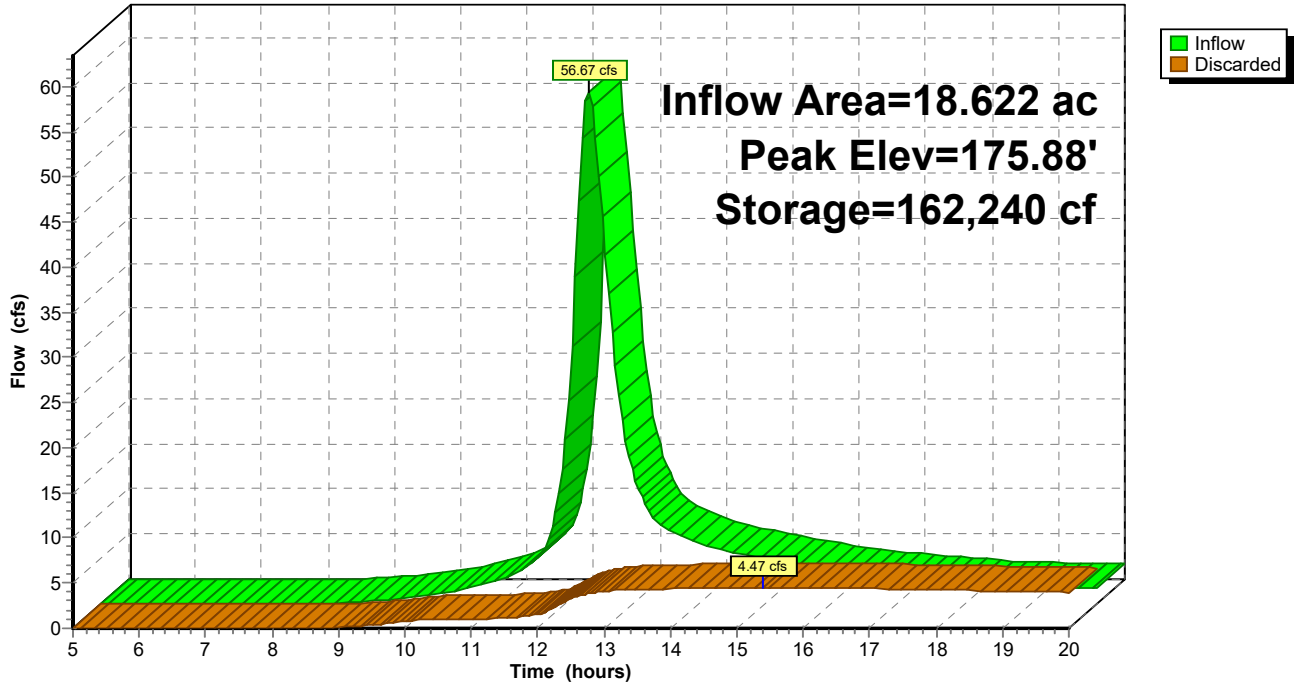
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Pond 68P: (new Pond)

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Summary for Pond 69P: (new Pond)

Inflow Area = 6.833 ac, 3.29% Impervious, Inflow Depth > 3.04" for 100 year event
 Inflow = 21.18 cfs @ 12.17 hrs, Volume= 1.729 af
 Outflow = 0.69 cfs @ 17.93 hrs, Volume= 0.452 af, Atten= 97%, Lag= 345.5 min
 Discarded = 0.69 cfs @ 17.93 hrs, Volume= 0.452 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 173.92' @ 17.93 hrs Surf.Area= 24,275 sf Storage= 56,296 cf

Plug-Flow detention time= 242.9 min calculated for 0.451 af (26% of inflow)
 Center-of-Mass det. time= 145.2 min (956.4 - 811.1)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	115,744 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	3,610	0	0	3,610
172.00	15,882	18,043	18,043	15,900
174.00	24,667	40,228	58,271	24,742
176.00	33,009	57,474	115,744	33,170

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.69 cfs @ 17.93 hrs HW=173.92' (Free Discharge)
 ↑1=Exfiltration (Controls 0.69 cfs)

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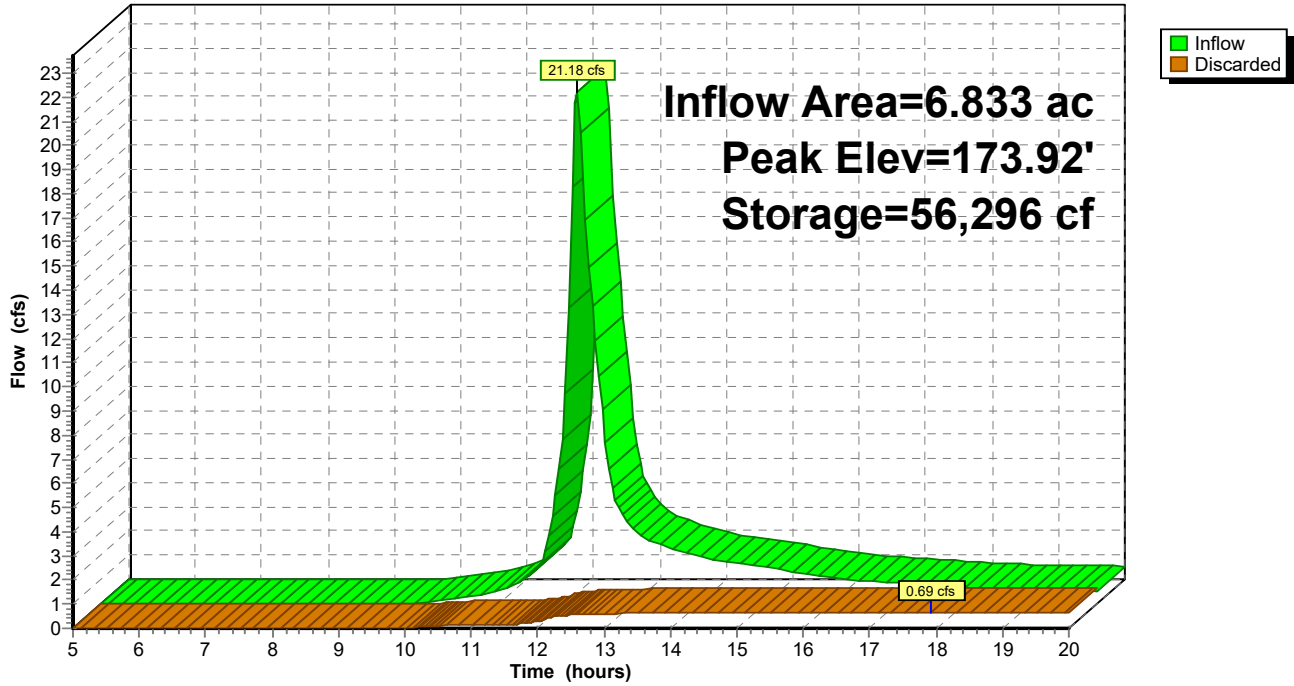
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Pond 69P: (new Pond)

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Summary for Pond 70P: (new Pond)

Inflow Area = 3.224 ac, 0.00% Impervious, Inflow Depth > 4.24" for 100 year event
 Inflow = 15.27 cfs @ 12.13 hrs, Volume= 1.139 af
 Outflow = 6.71 cfs @ 12.40 hrs, Volume= 1.132 af, Atten= 56%, Lag= 16.3 min
 Discarded = 3.59 cfs @ 12.40 hrs, Volume= 1.041 af
 Primary = 3.12 cfs @ 12.40 hrs, Volume= 0.091 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 198.49' @ 12.40 hrs Surf.Area= 30,948 sf Storage= 14,787 cf

Plug-Flow detention time= 40.2 min calculated for 1.132 af (99% of inflow)
 Center-of-Mass det. time= 37.7 min (827.9 - 790.1)

Volume	Invert	Avail.Storage	Storage Description
#1	197.20'	32,894 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.20	0	0	0	0
198.00	13,877	3,701	3,701	13,878
198.40	29,617	8,502	12,203	29,619
199.00	39,593	20,691	32,894	39,603

Device	Routing	Invert	Outlet Devices
#1	Primary	198.40'	50.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	197.20'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.59 cfs @ 12.40 hrs HW=198.49' (Free Discharge)
 ↑**2=Exfiltration** (Controls 3.59 cfs)

Primary OutFlow Max=3.10 cfs @ 12.40 hrs HW=198.49' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 3.10 cfs @ 0.73 fps)

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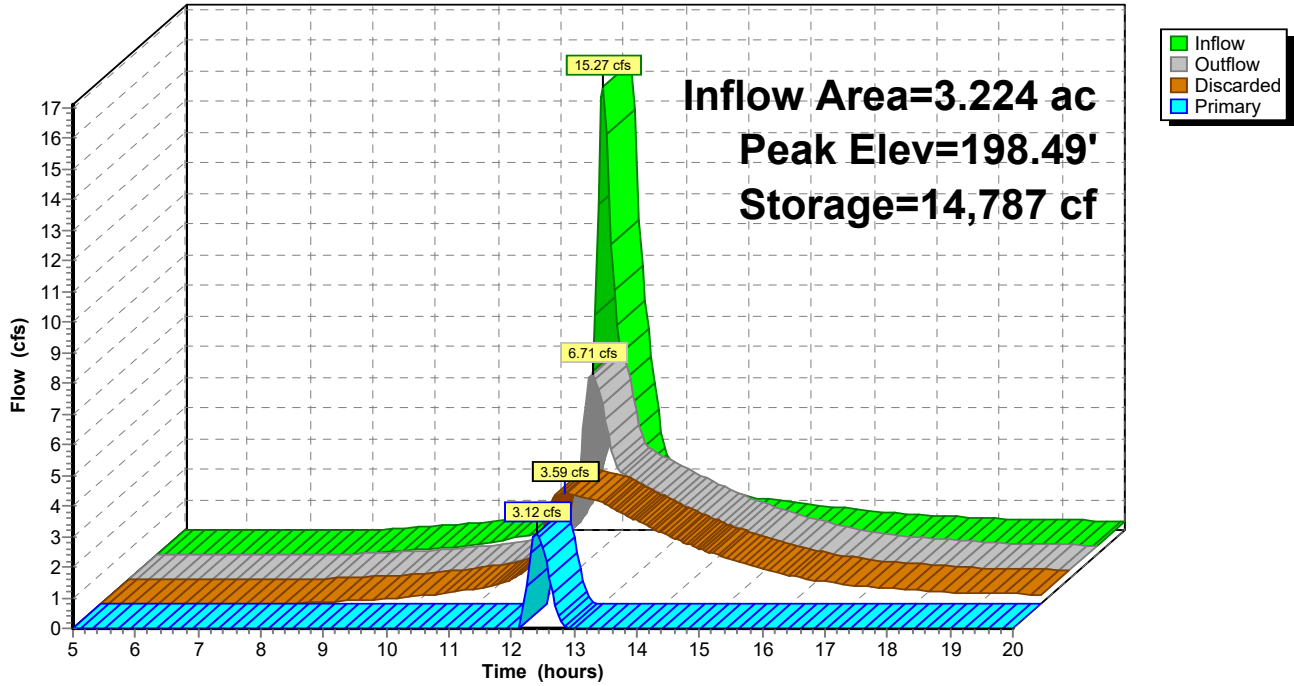
Type III 24-hr 100 year Rainfall=7.96"

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Pond 70P: (new Pond)

Hydrograph



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Summary for Pond 71P: (new Pond)

Inflow Area = 11.377 ac, 3.55% Impervious, Inflow Depth > 2.65" for 100 year event
 Inflow = 27.89 cfs @ 12.26 hrs, Volume= 2.515 af
 Outflow = 2.82 cfs @ 13.88 hrs, Volume= 0.987 af, Atten= 90%, Lag= 96.9 min
 Discarded = 1.04 cfs @ 13.88 hrs, Volume= 0.681 af
 Primary = 1.78 cfs @ 13.88 hrs, Volume= 0.305 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 179.35' @ 13.88 hrs Surf.Area= 36,921 sf Storage= 70,386 cf

Plug-Flow detention time= 217.6 min calculated for 0.987 af (39% of inflow)
 Center-of-Mass det. time= 131.3 min (935.6 - 804.3)

Volume	Invert	Avail.Storage	Storage Description
#1	174.00'	96,451 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
174.00	3,500	0	0	3,500
176.00	5,053	8,506	8,506	5,120
178.00	19,737	23,184	31,690	19,823
179.00	33,402	26,272	57,962	33,500
180.00	43,811	38,489	96,451	43,932

Device	Routing	Invert	Outlet Devices
#1	Primary	179.30'	50.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	174.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.04 cfs @ 13.88 hrs HW=179.35' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.04 cfs)

Primary OutFlow Max=1.66 cfs @ 13.88 hrs HW=179.35' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 1.66 cfs @ 0.62 fps)

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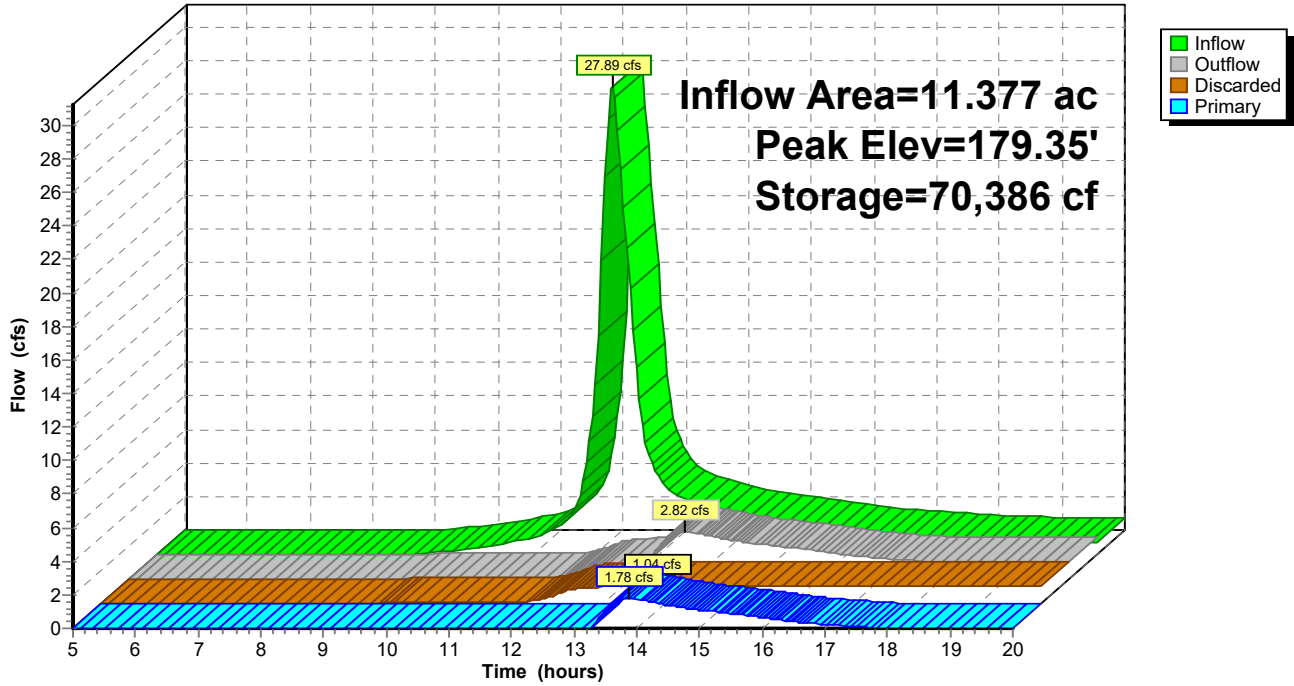
Type III 24-hr 100 year Rainfall=7.96"

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Pond 71P: (new Pond)

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Summary for Pond 72P: (new Pond)

Inflow Area = 8.307 ac, 2.24% Impervious, Inflow Depth > 3.90" for 100 year event
 Inflow = 30.58 cfs @ 12.21 hrs, Volume= 2.698 af
 Outflow = 0.67 cfs @ 20.00 hrs, Volume= 0.431 af, Atten= 98%, Lag= 467.1 min
 Discarded = 0.67 cfs @ 20.00 hrs, Volume= 0.431 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 179.51' @ 20.00 hrs Surf.Area= 23,323 sf Storage= 98,744 cf

Plug-Flow detention time= 276.5 min calculated for 0.431 af (16% of inflow)
 Center-of-Mass det. time= 158.1 min (958.4 - 800.4)

Volume	Invert	Avail.Storage	Storage Description
#1	170.00'	247,588 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
170.00	704	0	0	704
172.00	2,903	3,358	3,358	2,921
174.00	7,882	10,379	13,737	7,926
176.00	13,742	21,354	35,091	13,831
178.00	18,516	32,140	67,231	18,689
180.00	25,003	43,357	110,588	25,259
182.00	32,623	57,457	168,045	32,973
184.00	47,378	79,544	247,588	47,796

Device	Routing	Invert	Outlet Devices
#1	Discarded	170.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.67 cfs @ 20.00 hrs HW=179.51' (Free Discharge)
 ↑1=Exfiltration (Controls 0.67 cfs)

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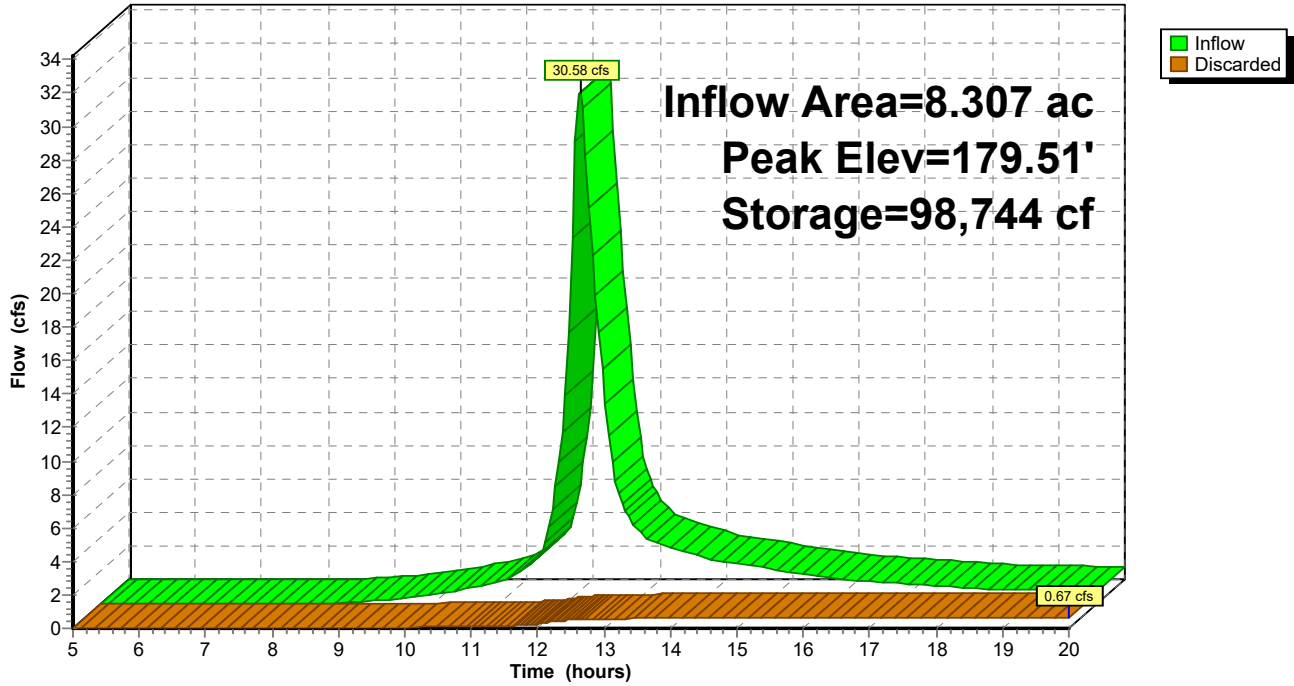
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Pond 72P: (new Pond)

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 73P: (new Pond)

Inflow Area = 28.699 ac, 0.00% Impervious, Inflow Depth > 5.02" for 100 year event
 Inflow = 138.58 cfs @ 12.19 hrs, Volume= 12.007 af
 Outflow = 35.47 cfs @ 12.67 hrs, Volume= 6.402 af, Atten= 74%, Lag= 28.6 min
 Discarded = 2.74 cfs @ 12.67 hrs, Volume= 1.766 af
 Primary = 32.73 cfs @ 12.67 hrs, Volume= 4.635 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.55' @ 12.67 hrs Surf.Area= 96,335 sf Storage= 288,136 cf

Plug-Flow detention time= 168.6 min calculated for 6.402 af (53% of inflow)
 Center-of-Mass det. time= 88.9 min (870.4 - 781.5)

Volume	Invert	Avail.Storage	Storage Description
#1	148.00'	335,287 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
148.00	14,537	0	0	14,537
150.00	23,801	37,959	37,959	23,852
152.00	34,881	58,330	96,289	34,998
154.00	47,776	82,320	178,609	47,973
156.00	113,577	156,677	335,287	113,803

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	30.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	148.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.73 cfs @ 12.67 hrs HW=155.55' (Free Discharge)
 ↑**2=Exfiltration** (Controls 2.73 cfs)

Primary OutFlow Max=32.49 cfs @ 12.67 hrs HW=155.55' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 32.49 cfs @ 1.97 fps)

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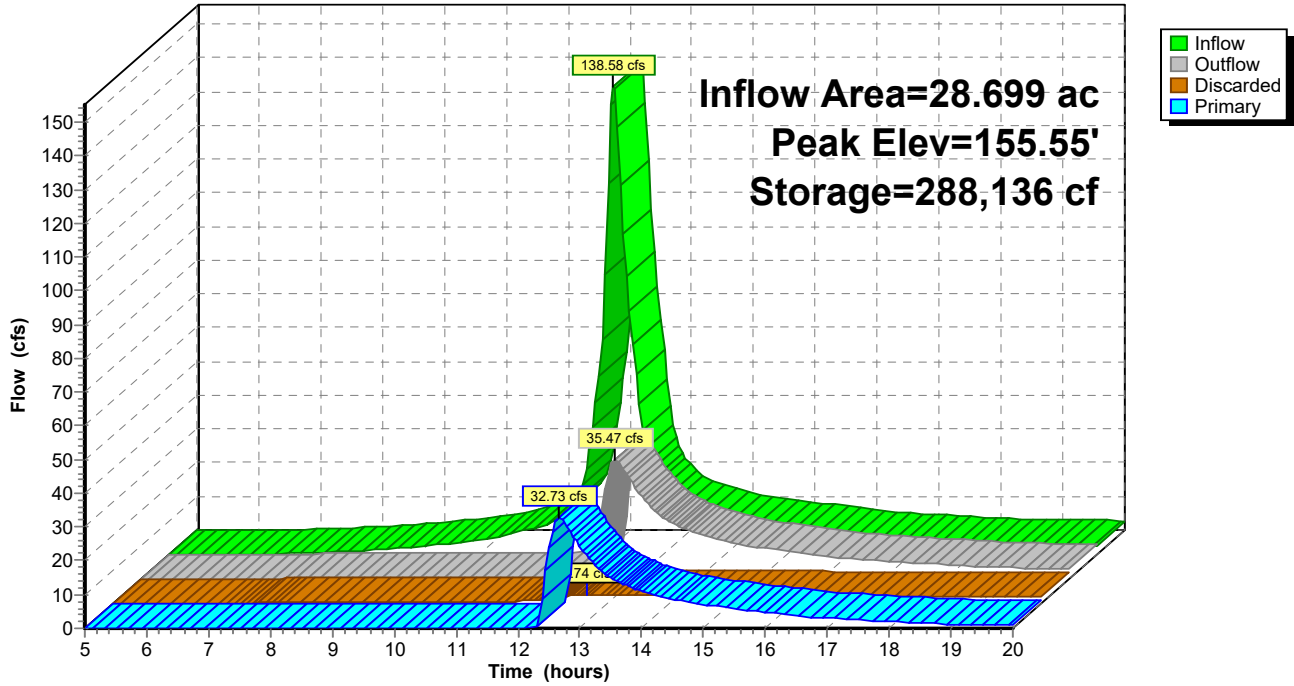
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Pond 73P: (new Pond)

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Summary for Pond 74AP: (new Pond)

Inflow Area = 9.000 ac, 0.00% Impervious, Inflow Depth > 1.72" for 100 year event
 Inflow = 13.11 cfs @ 12.24 hrs, Volume= 1.287 af
 Outflow = 1.44 cfs @ 14.92 hrs, Volume= 0.511 af, Atten= 89%, Lag= 160.9 min
 Discarded = 0.39 cfs @ 14.92 hrs, Volume= 0.248 af
 Primary = 1.05 cfs @ 14.92 hrs, Volume= 0.263 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 133.62' @ 14.92 hrs Surf.Area= 13,470 sf Storage= 34,997 cf

Plug-Flow detention time= 232.6 min calculated for 0.510 af (40% of inflow)
 Center-of-Mass det. time= 132.2 min (970.4 - 838.2)

Volume	Invert	Avail.Storage	Storage Description
#1	130.00'	55,787 cf	32.00'W x 192.00'L x 5.00'H Prismatic Z=4.0

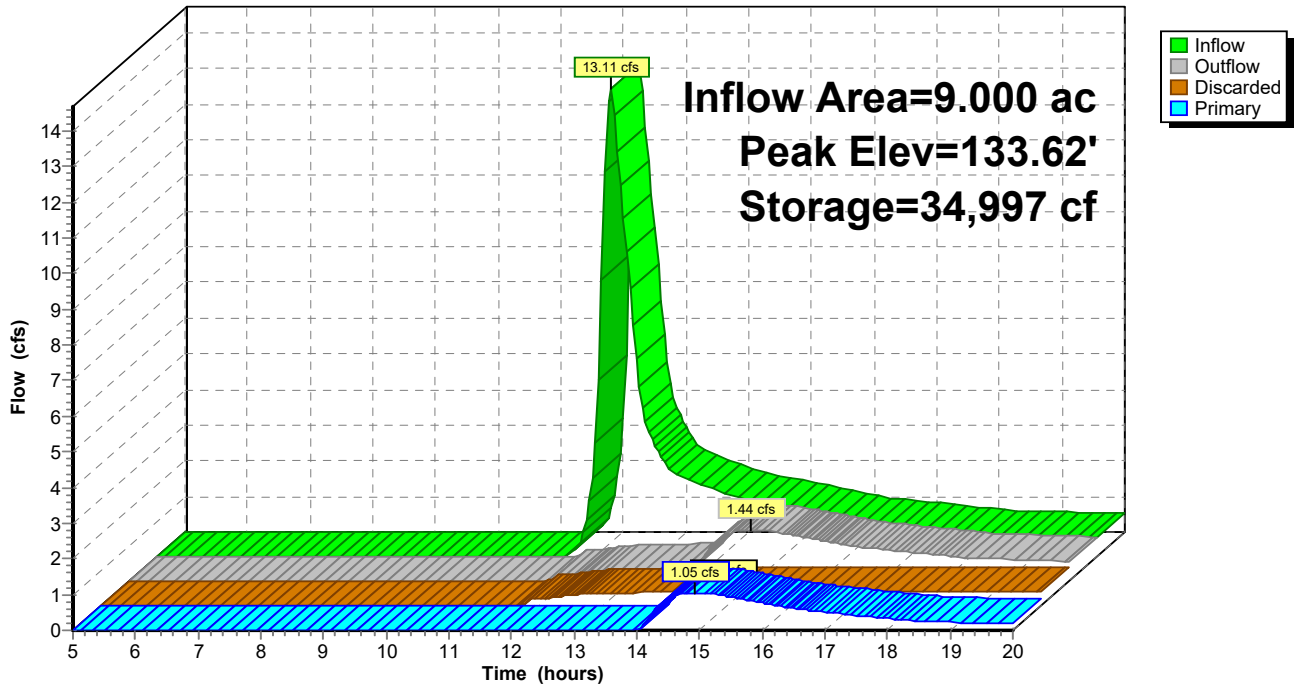
Device	Routing	Invert	Outlet Devices
#1	Primary	133.50'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	130.00'	1.200 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.39 cfs @ 14.92 hrs HW=133.62' (Free Discharge)
 ↳2=Exfiltration (Controls 0.39 cfs)

Primary OutFlow Max=1.04 cfs @ 14.92 hrs HW=133.62' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 1.04 cfs @ 0.86 fps)

Pond 74AP: (new Pond)

Hydrograph



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Summary for Pond 74P: (new Pond)

Inflow Area = 111.586 ac, 0.00% Impervious, Inflow Depth > 3.01" for 100 year event
 Inflow = 199.94 cfs @ 12.62 hrs, Volume= 27.989 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 128.95' @ 20.00 hrs Surf.Area= 490,207 sf Storage= 1,218,457 cf

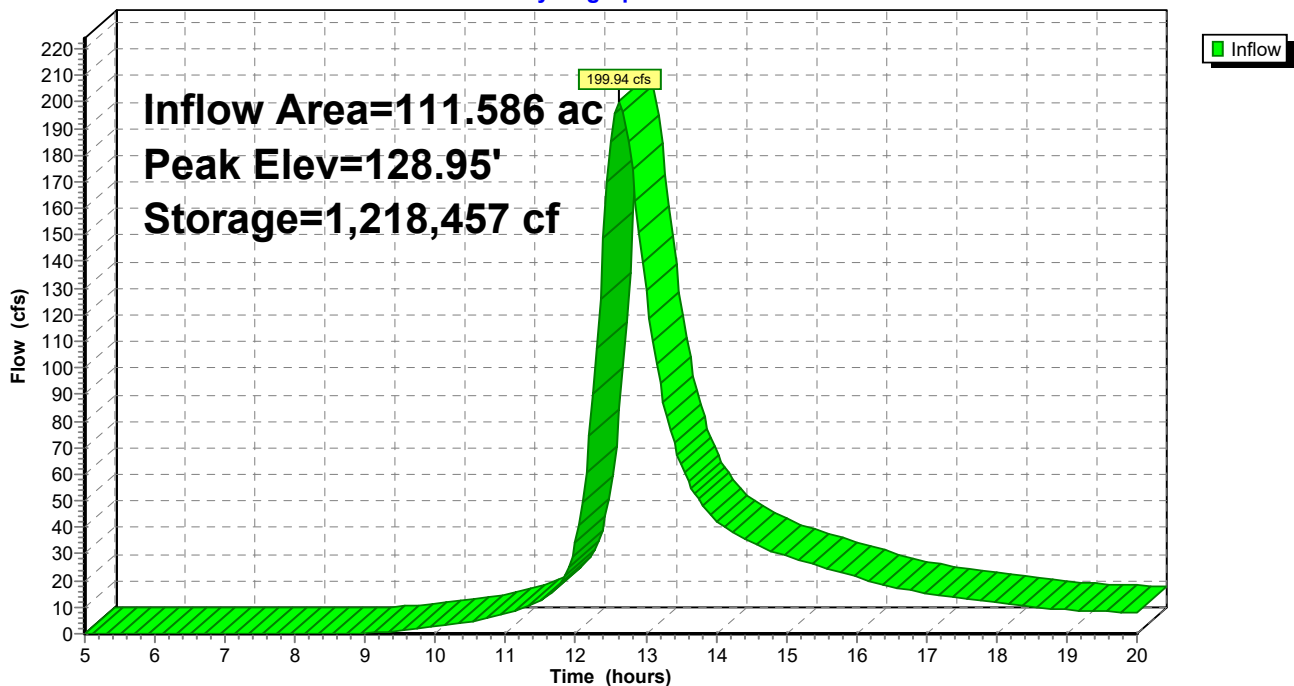
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	1,810,898 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
122.00	59,766	0	0
124.00	81,926	141,692	141,692
126.00	117,535	199,461	341,153
128.00	357,529	475,064	816,217
130.00	637,152	994,681	1,810,898

Pond 74P: (new Pond)

Hydrograph



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Summary for Pond 75P: (new Pond)

Inflow Area = 47.890 ac, 0.00% Impervious, Inflow Depth > 3.13" for 100 year event
Inflow = 128.36 cfs @ 12.28 hrs, Volume= 12.509 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

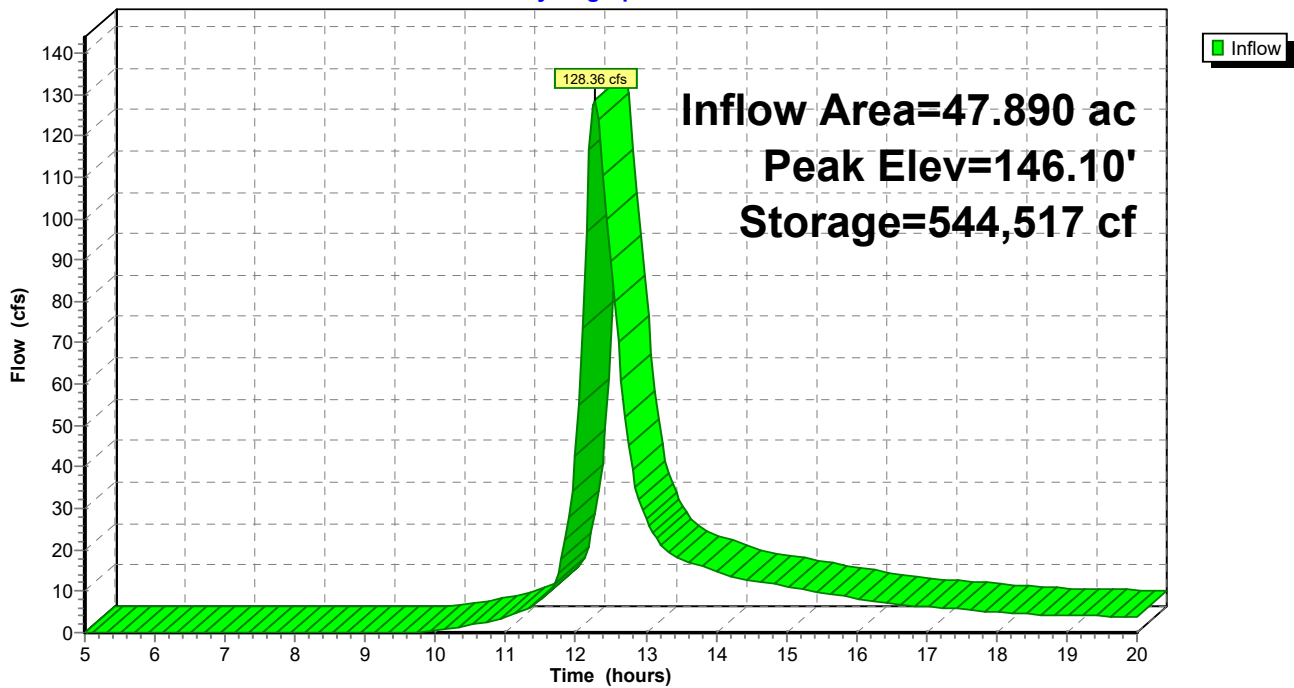
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 146.10' @ 20.00 hrs Surf.Area= 57,960 sf Storage= 544,517 cf

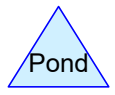
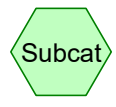
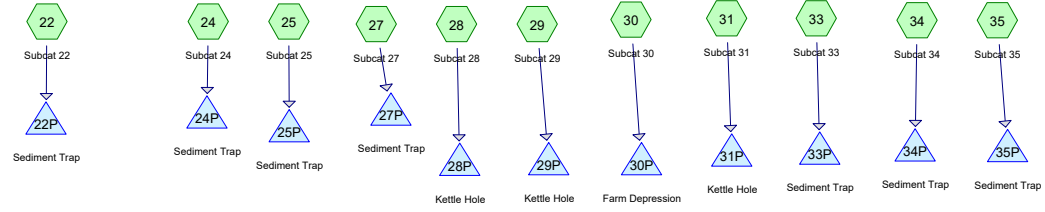
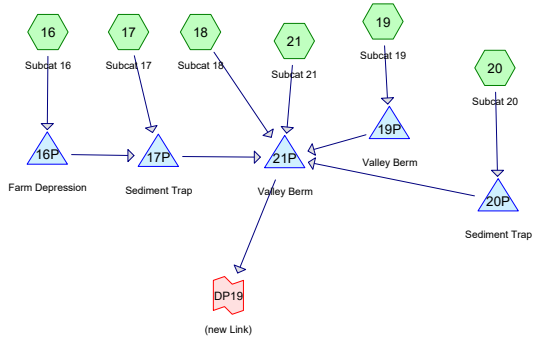
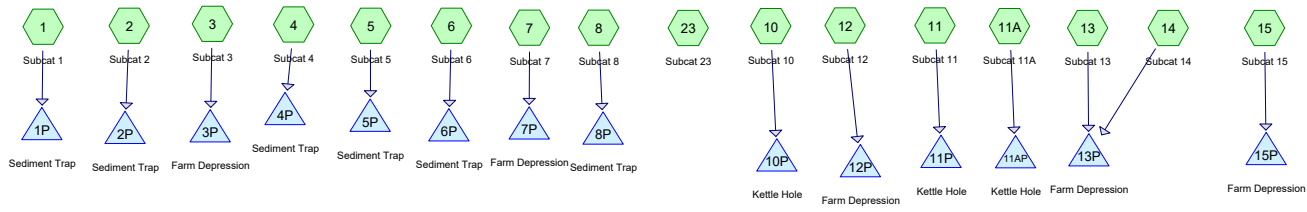
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	128.00'	662,007 cf	93.00'W x 99.00'L x 20.00'H Prismatic Z=4.0

Pond 75P: (new Pond)

Hydrograph





Routing Diagram for Proposed Conditions - North Plantation
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.028	65	2 acre lots, 12% imp, HSG B (15)
2.347	49	50-75% Grass cover, Fair, HSG A (33, 34, 35)
2.701	59	50-75% Grass cover, Fair, HSG A-B (2, 3, 4, 5, 6, 21, 28, 29, 30, 31)
23.596	69	50-75% Grass cover, Fair, HSG B (33, 34, 35)
130.469	74	50-75% Grass cover, Fair, HSG B-C (1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 11A, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31)
0.015	35	Brush, Fair, HSG A (11)
1.389	56	Brush, Fair, HSG B (11, 11A)
9.655	30	Meadow, non-grazed, HSG A (1, 2, 3, 4, 5, 6, 8, 10, 11, 19, 20, 21, 25, 27, 28, 29, 31, 33, 35)
21.544	58	Meadow, non-grazed, HSG B (1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 11A, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 31, 33, 35)
0.662	89	Paved roads w/open ditches, 50% imp, HSG B (11, 12, 13, 15, 16)
13.455	36	Woods, Fair, HSG A (2, 10, 11, 11A, 21, 28, 29, 31)
1.315	60	Woods, Fair, HSG B (2, 10, 11, 24, 28)
0.080	73	Woods, Fair, HSG C (2)
207.256	67	TOTAL AREA

Proposed Conditions - North Plantation

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
28.173	HSG A	1, 2, 3, 4, 5, 6, 8, 10, 11, 11A, 19, 20, 21, 25, 27, 28, 29, 30, 31, 33, 34, 35
179.003	HSG B	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 11A, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 33, 34, 35
0.080	HSG C	2
0.000	HSG D	
0.000	Other	
207.256		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.028	0.000	0.000	0.000	0.028	2 acre lots, 12% imp	
5.048	154.065	0.000	0.000	0.000	159.113	50-75% Grass cover, Fair	
0.015	1.389	0.000	0.000	0.000	1.404	Brush, Fair	
9.655	21.544	0.000	0.000	0.000	31.199	Meadow, non-grazed	
0.000	0.662	0.000	0.000	0.000	0.662	Paved roads w/open ditches, 50% imp	
13.455	1.315	0.080	0.000	0.000	14.850	Woods, Fair	
28.173	179.003	0.080	0.000	0.000	207.256	TOTAL AREA	

Proposed Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 1: Subcat 1

Runoff = 0.25 cfs @ 12.16 hrs, Volume= 0.027 af, Depth> 0.37"

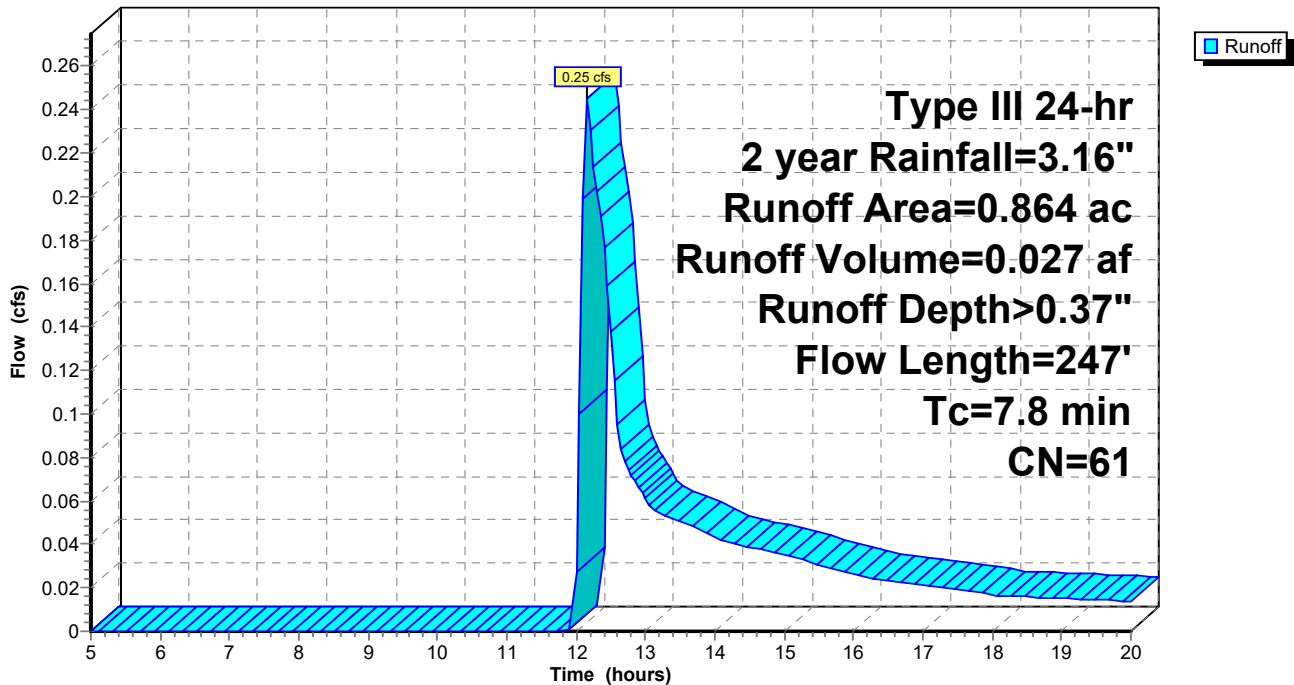
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.257	74	50-75% Grass cover, Fair, HSG B-C
0.063	30	Meadow, non-grazed, HSG A
0.544	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
0.864	61	Weighted Average
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.1	197	0.0508	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.8	247	Total			

Subcatchment 1: Subcat 1

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 2: Subcat 2

[73] Warning: Peak may fall outside time span

Runoff = 0.01 cfs @ 20.00 hrs, Volume= 0.002 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.853	59	50-75% Grass cover, Fair, HSG A-B
* 0.202	74	50-75% Grass cover, Fair, HSG B-C
1.504	30	Meadow, non-grazed, HSG A
0.309	58	Meadow, non-grazed, HSG B
1.560	36	Woods, Fair, HSG A
0.002	60	Woods, Fair, HSG B
0.080	73	Woods, Fair, HSG C
4.510	42	Weighted Average
4.510		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
3.8	293	0.0343	1.30		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	343	Total			

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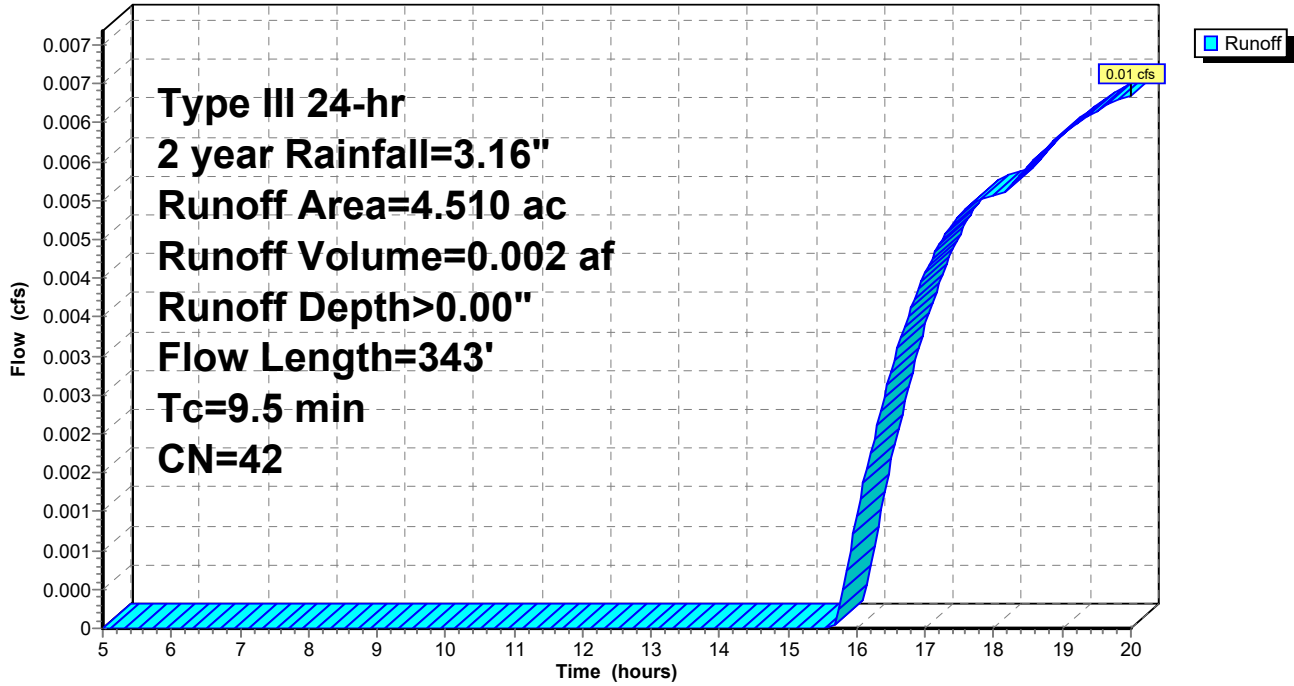
Type III 24-hr 2 year Rainfall=3.16"

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Subcatchment 2: Subcat 2

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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 3: Subcat 3

Runoff = 0.62 cfs @ 12.21 hrs, Volume= 0.077 af, Depth> 0.34"

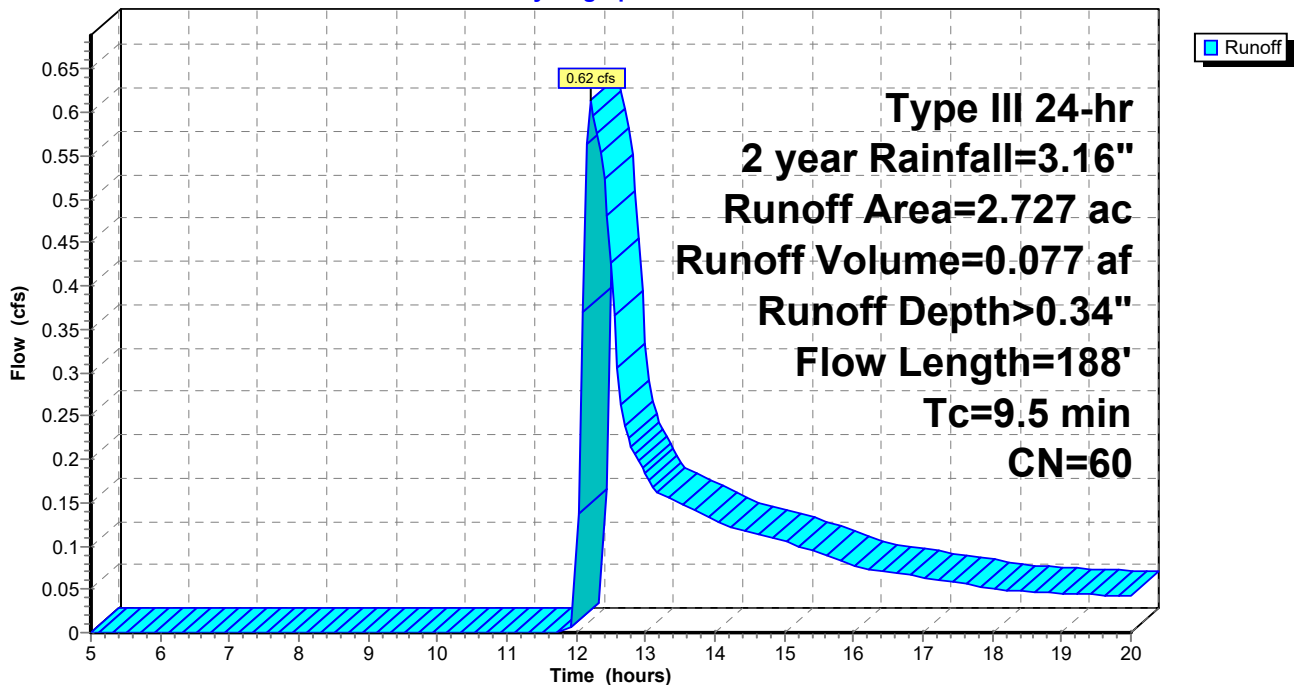
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 1.206	59	50-75% Grass cover, Fair, HSG A-B
* 0.893	74	50-75% Grass cover, Fair, HSG B-C
0.376	30	Meadow, non-grazed, HSG A
0.252	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
2.727	60	Weighted Average
2.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.3	66	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	72	0.0556	1.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	188	Total			

Subcatchment 3: Subcat 3

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 4: Subcat 4

Runoff = 1.58 cfs @ 12.20 hrs, Volume= 0.156 af, Depth> 0.51"

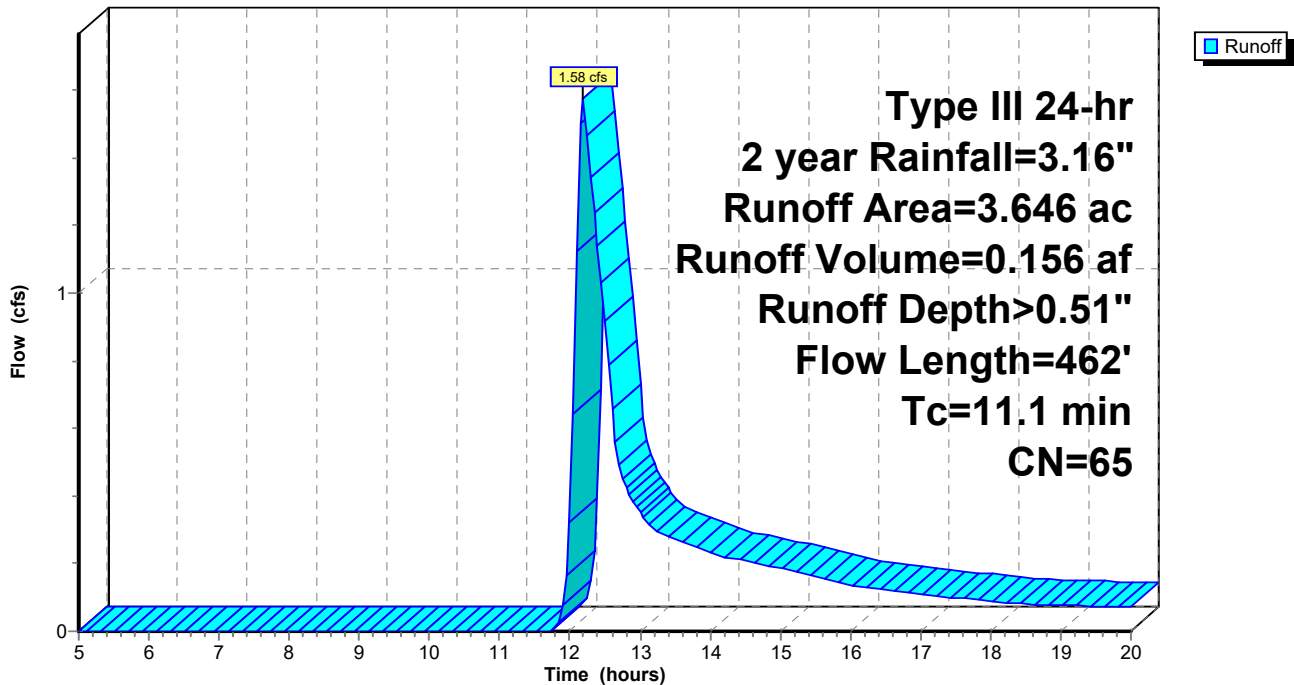
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.058	59	50-75% Grass cover, Fair, HSG A-B
* 2.741	74	50-75% Grass cover, Fair, HSG B-C
0.609	30	Meadow, non-grazed, HSG A
0.238	58	Meadow, non-grazed, HSG B
3.646	65	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	412	0.0243	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	462	Total			

Subcatchment 4: Subcat 4

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 5: Subcat 5

Runoff = 5.25 cfs @ 12.37 hrs, Volume= 0.589 af, Depth> 0.81"

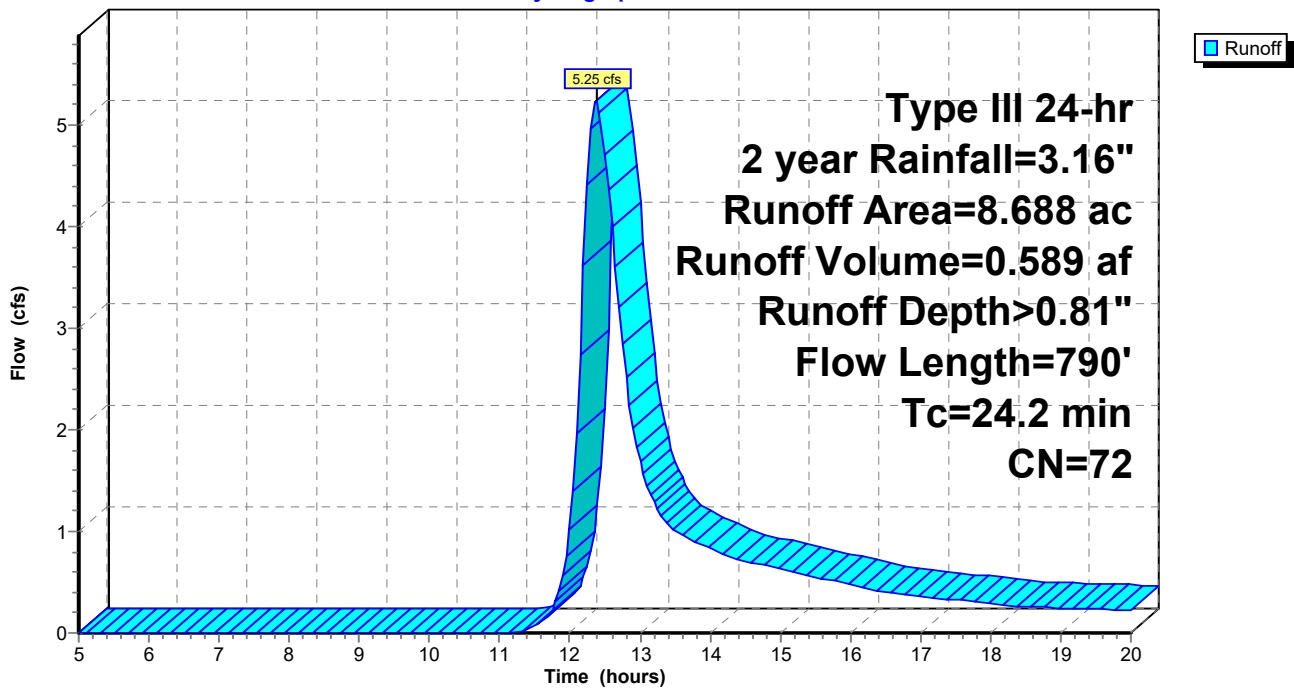
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.053	59	50-75% Grass cover, Fair, HSG A-B
* 8.049	74	50-75% Grass cover, Fair, HSG B-C
0.384	30	Meadow, non-grazed, HSG A
0.202	58	Meadow, non-grazed, HSG B
8.688	72	Weighted Average
8.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
13.7	583	0.0103	0.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	157	0.0159	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.2	790	Total			

Subcatchment 5: Subcat 5

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 6: Subcat 6

Runoff = 3.63 cfs @ 12.26 hrs, Volume= 0.365 af, Depth> 0.68"

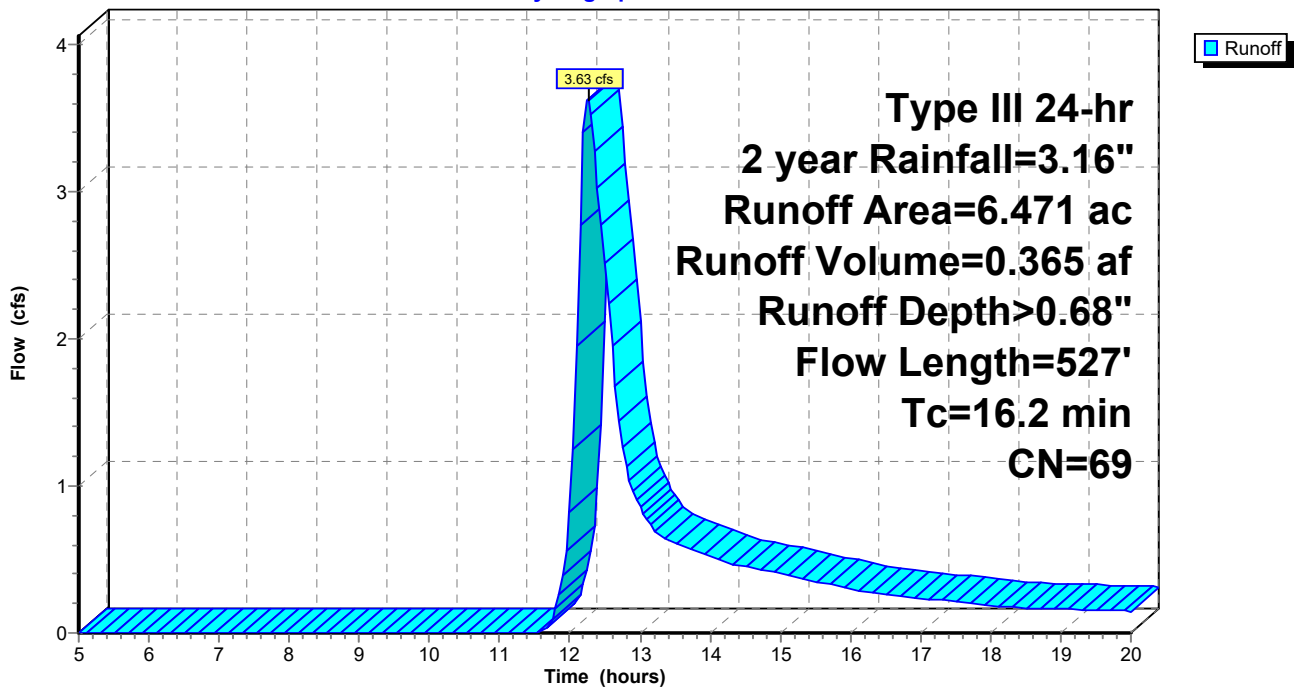
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.012	59	50-75% Grass cover, Fair, HSG A-B
* 5.334	74	50-75% Grass cover, Fair, HSG B-C
0.535	30	Meadow, non-grazed, HSG A
0.590	58	Meadow, non-grazed, HSG B
6.471	69	Weighted Average
6.471		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.2	415	0.0145	0.84		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0806	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.2	527	Total			

Subcatchment 6: Subcat 6

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 7: Subcat 7

Runoff = 8.33 cfs @ 12.73 hrs, Volume= 1.283 af, Depth> 0.90"

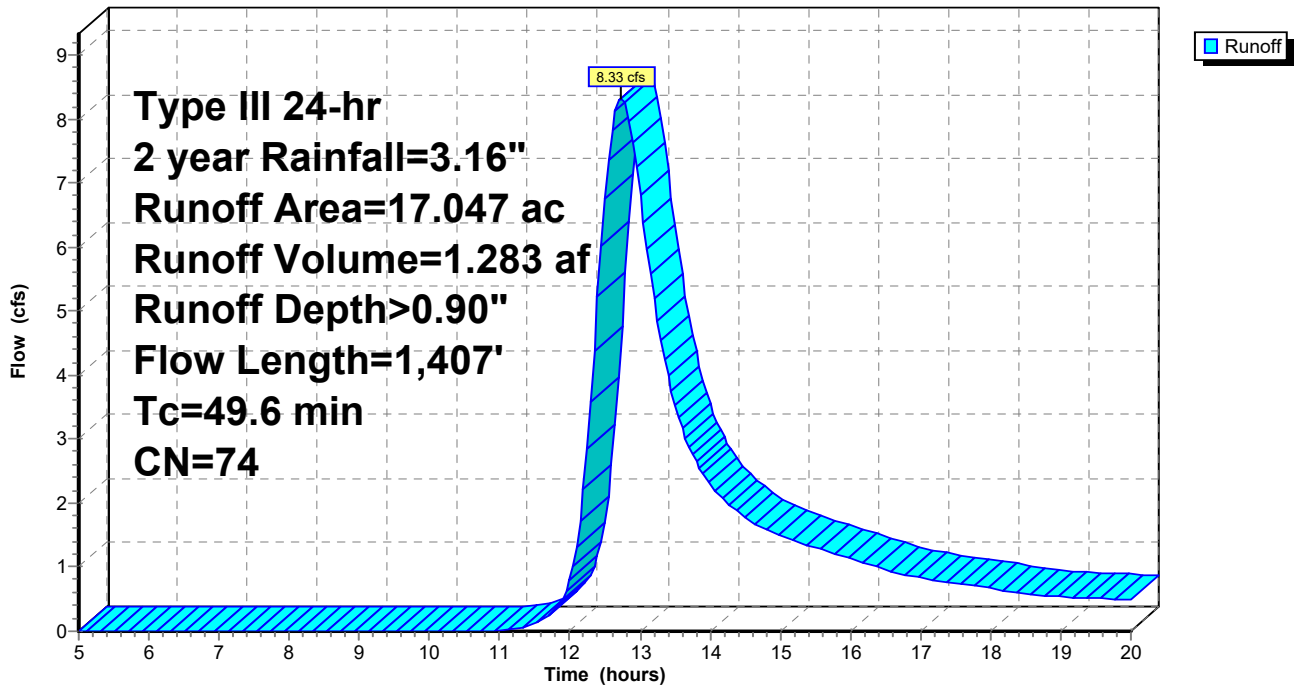
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 16.871	74	50-75% Grass cover, Fair, HSG B-C
0.176	58	Meadow, non-grazed, HSG B
17.047	74	Weighted Average
17.047		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
42.1	1,357	0.0059	0.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
49.6	1,407	Total			

Subcatchment 7: Subcat 7

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 8: Subcat 8

Runoff = 1.80 cfs @ 12.19 hrs, Volume= 0.166 af, Depth> 0.64"

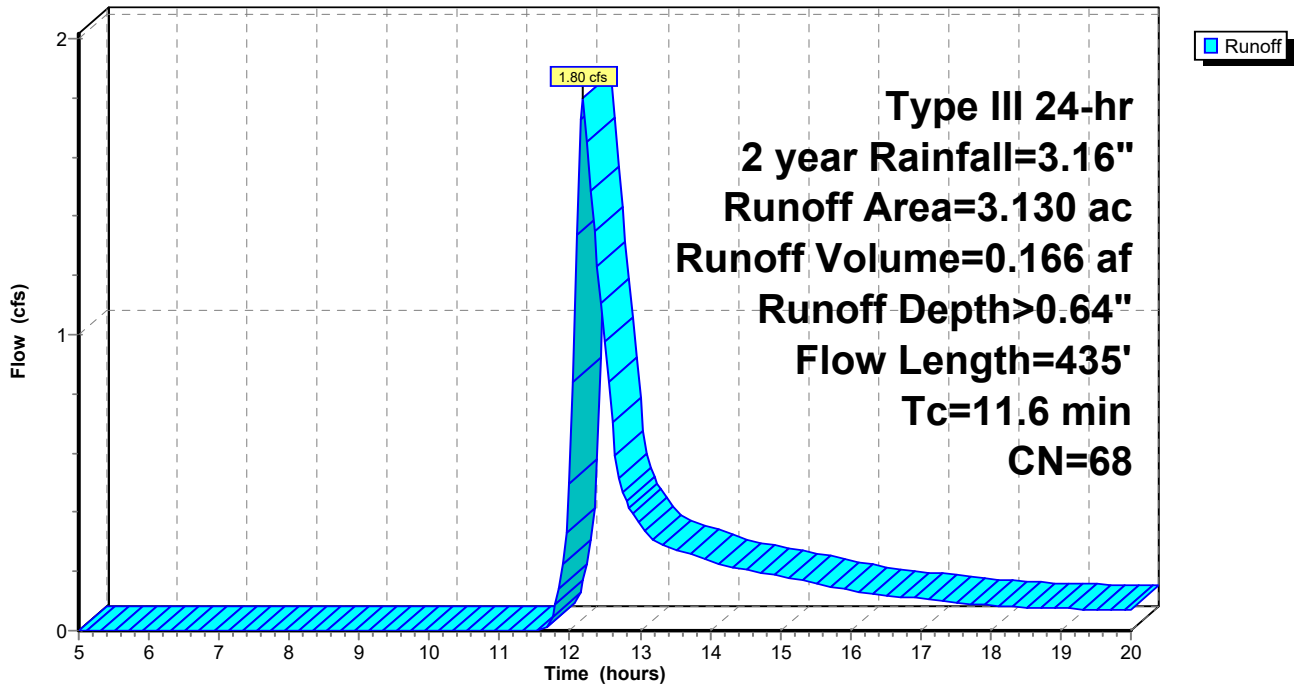
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 1.885	74	50-75% Grass cover, Fair, HSG B-C
0.011	30	Meadow, non-grazed, HSG A
1.234	58	Meadow, non-grazed, HSG B
3.130	68	Weighted Average
3.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.2	164	0.0305	1.22		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	221	0.1538	1.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.6	435	Total			

Subcatchment 8: Subcat 8

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 10: Subcat 10

Runoff = 0.23 cfs @ 12.47 hrs, Volume= 0.046 af, Depth> 0.18"

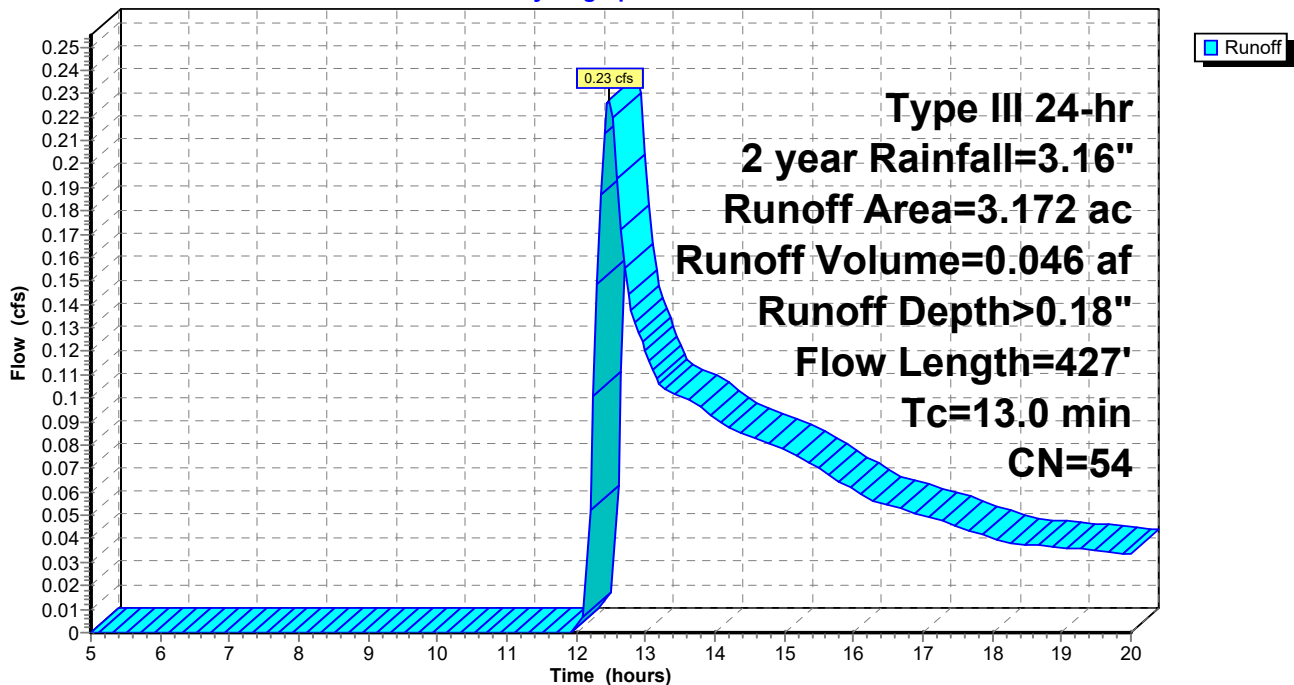
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.525	74	50-75% Grass cover, Fair, HSG B-C
0.635	30	Meadow, non-grazed, HSG A
1.717	58	Meadow, non-grazed, HSG B
0.226	36	Woods, Fair, HSG A
0.069	60	Woods, Fair, HSG B
3.172	54	Weighted Average
3.172		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	261	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	116	0.1379	1.86		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.0	427	Total			

Subcatchment 10: Subcat 10

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 11: Subcat 11

Runoff = 0.30 cfs @ 12.54 hrs, Volume= 0.072 af, Depth> 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 1.321	74	50-75% Grass cover, Fair, HSG B-C
0.015	35	Brush, Fair, HSG A
0.515	56	Brush, Fair, HSG B
0.051	30	Meadow, non-grazed, HSG A
1.157	58	Meadow, non-grazed, HSG B
0.037	89	Paved roads w/open ditches, 50% imp, HSG B
2.139	36	Woods, Fair, HSG A
0.427	60	Woods, Fair, HSG B
5.662	53	Weighted Average
5.643		99.67% Pervious Area
0.018		0.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.0	316	0.0158	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.6	232	0.0862	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	598	Total			

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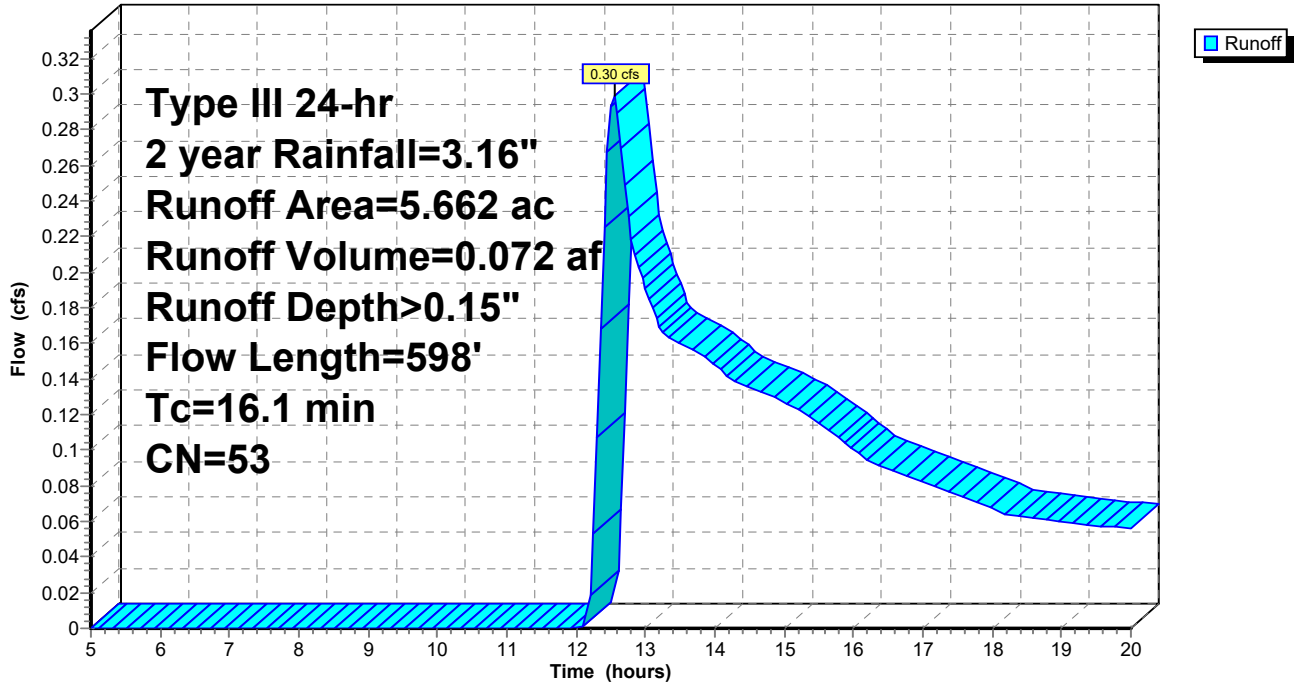
Type III 24-hr 2 year Rainfall=3.16"

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Subcatchment 11: Subcat 11

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 11A: Subcat 11A

Runoff = 0.03 cfs @ 15.51 hrs, Volume= 0.014 af, Depth> 0.03"

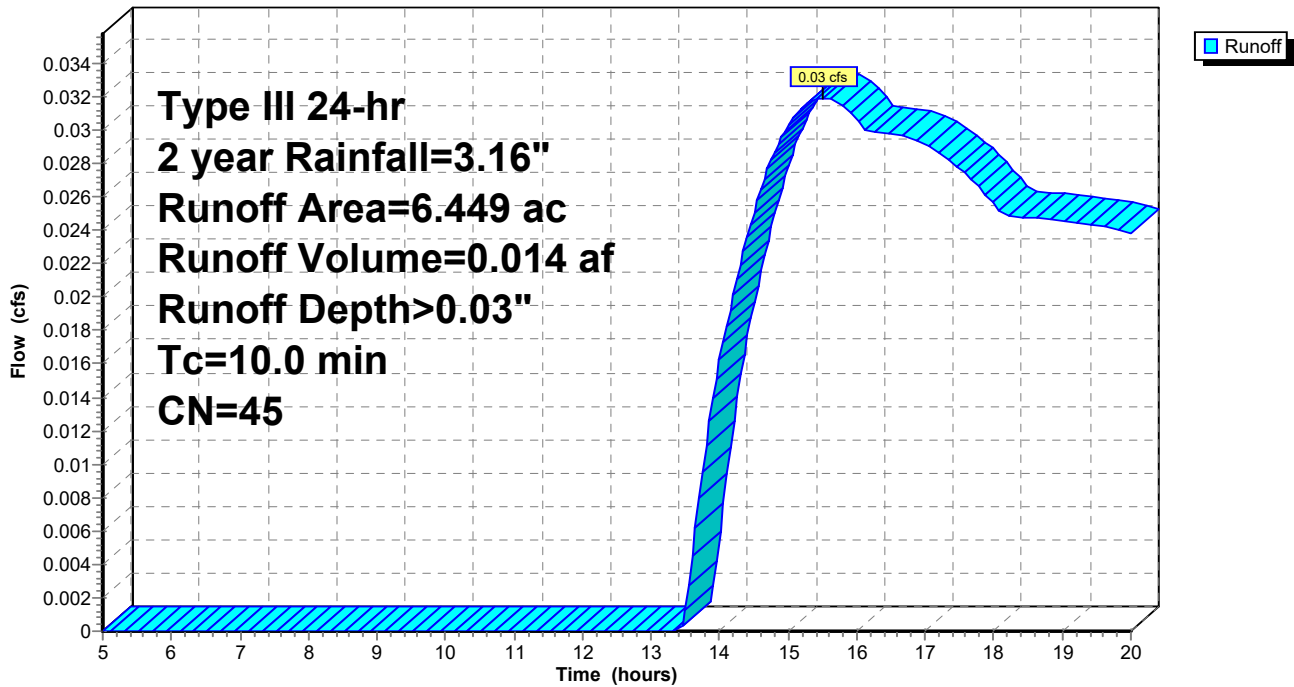
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.874	56	Brush, Fair, HSG B
* 4.133	36	Woods, Fair, HSG A
* 0.428	74	50-75% Grass cover, Fair, HSG B-C
* 1.014	58	Meadow, non-grazed, HSG B
6.449	45	Weighted Average
6.449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11A: Subcat 11A

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 12: Subcat 12

Runoff = 2.27 cfs @ 12.22 hrs, Volume= 0.211 af, Depth> 0.77"

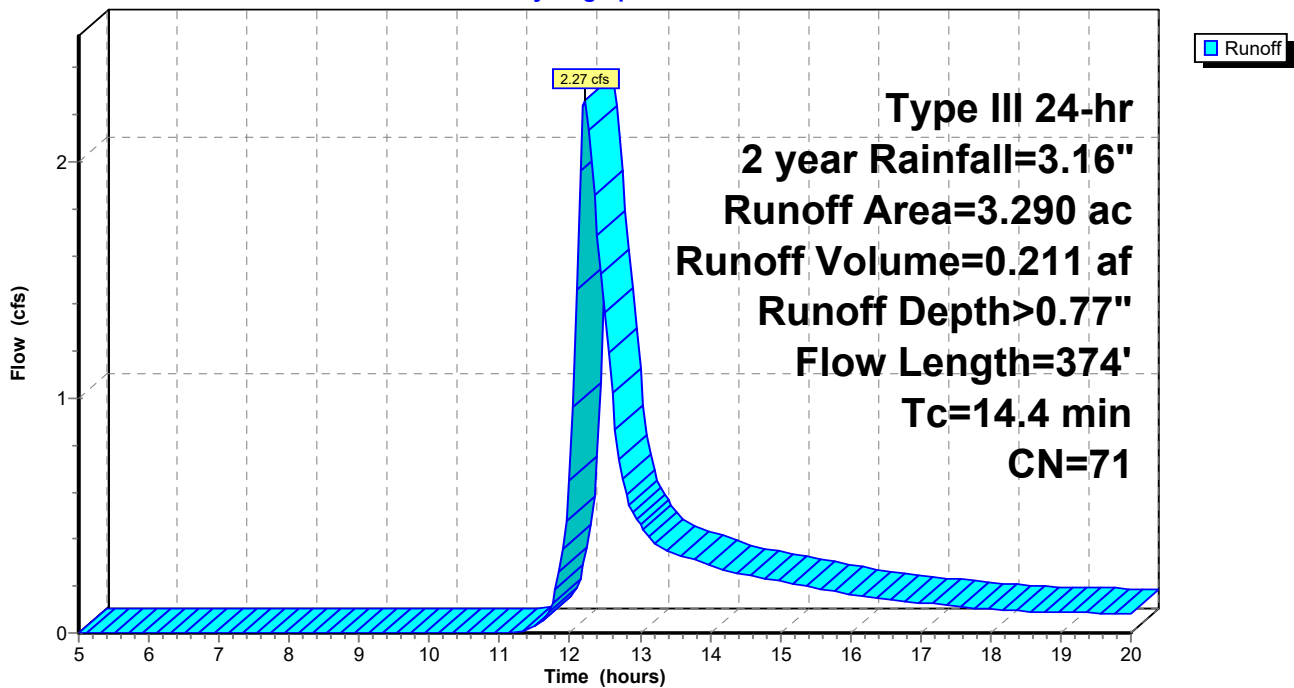
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 2.357	74	50-75% Grass cover, Fair, HSG B-C
0.777	58	Meadow, non-grazed, HSG B
0.156	89	Paved roads w/open ditches, 50% imp, HSG B
3.290	71	Weighted Average
3.212		97.63% Pervious Area
0.078		2.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.7	225	0.0089	0.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	99	0.0404	1.41		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.4	374	Total			

Subcatchment 12: Subcat 12

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 13: Subcat 13

Runoff = 7.07 cfs @ 12.93 hrs, Volume= 1.272 af, Depth> 0.85"

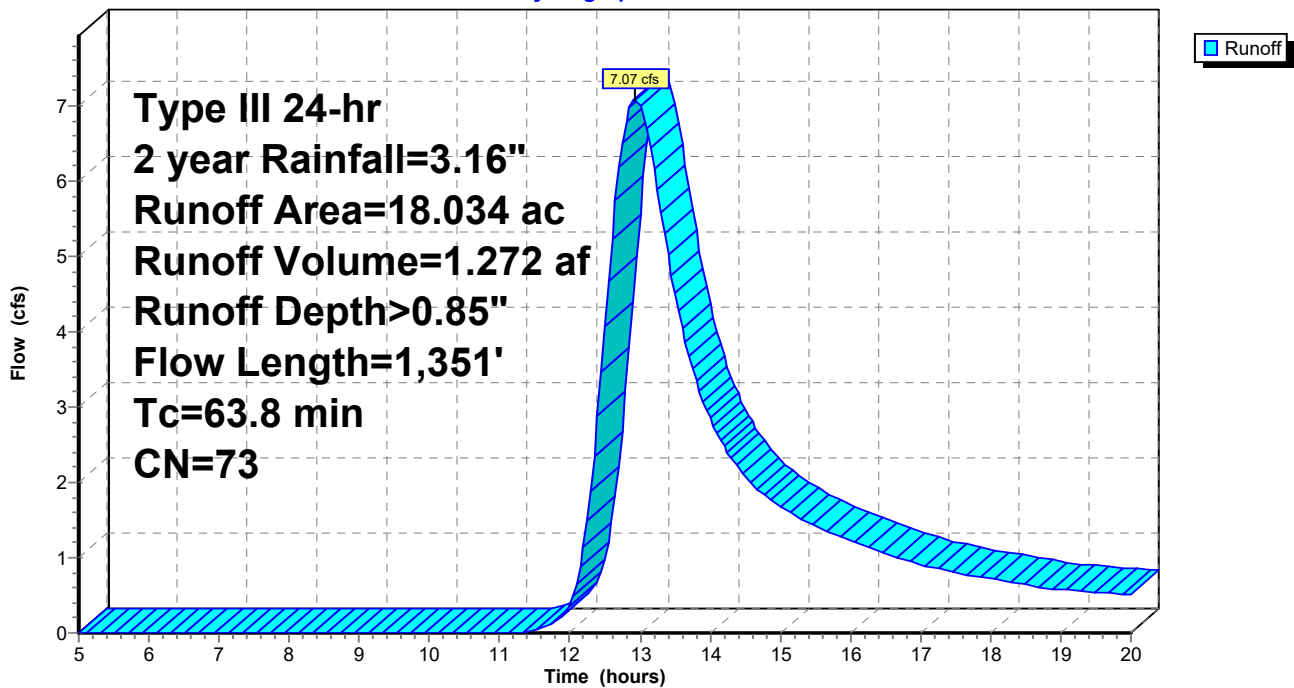
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 16.287	74	50-75% Grass cover, Fair, HSG B-C
1.589	58	Meadow, non-grazed, HSG B
0.158	89	Paved roads w/open ditches, 50% imp, HSG B
18.034	73	Weighted Average
17.955		99.56% Pervious Area
0.079		0.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
34.5	752	0.0027	0.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.8	549	0.0036	0.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
63.8	1,351	Total			

Subcatchment 13: Subcat 13

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 14: Subcat 14

Runoff = 0.27 cfs @ 12.22 hrs, Volume= 0.028 af, Depth> 0.55"

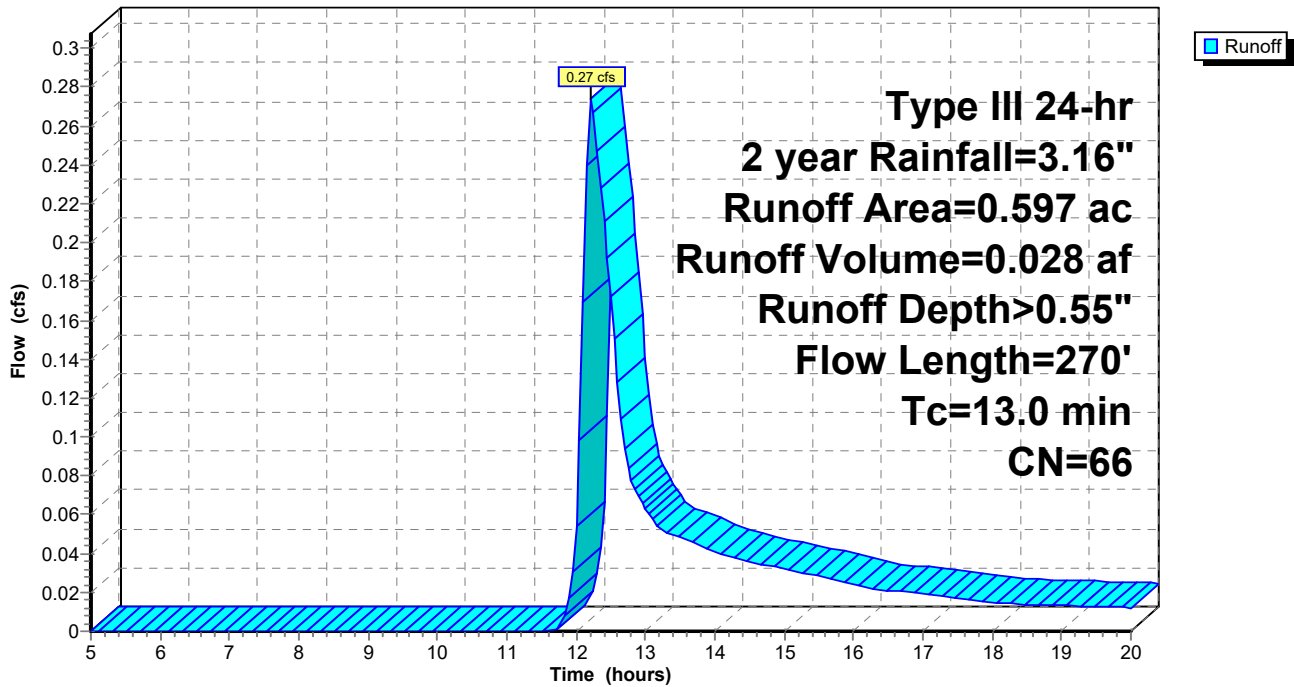
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.297	74	50-75% Grass cover, Fair, HSG B-C
0.300	58	Meadow, non-grazed, HSG B
0.597	66	Weighted Average
0.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.5	220	0.0091	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.0	270	Total			

Subcatchment 14: Subcat 14

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 15: Subcat 15

Runoff = 1.38 cfs @ 12.34 hrs, Volume= 0.151 af, Depth> 0.72"

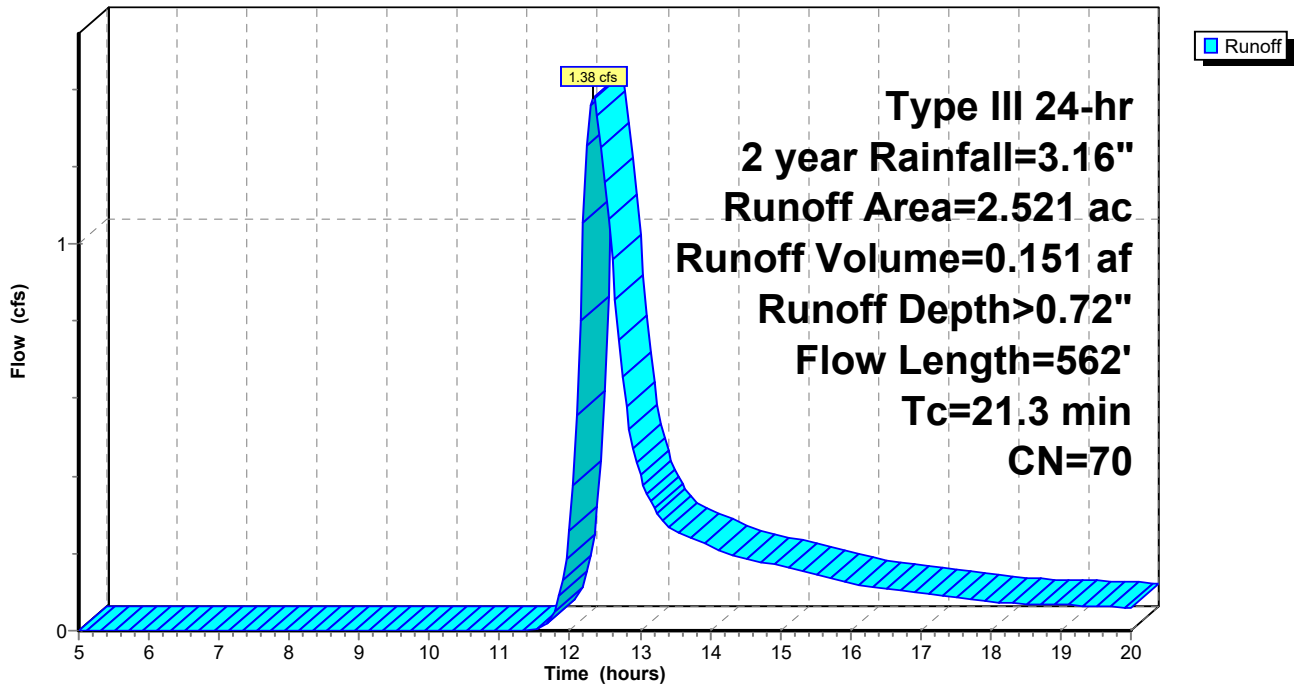
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.028	65	2 acre lots, 12% imp, HSG B
* 1.424	74	50-75% Grass cover, Fair, HSG B-C
0.823	58	Meadow, non-grazed, HSG B
0.246	89	Paved roads w/open ditches, 50% imp, HSG B
2.521	70	Weighted Average
2.395		94.99% Pervious Area
0.126		5.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
13.8	512	0.0078	0.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.3	562	Total			

Subcatchment 15: Subcat 15

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 16: Subcat 16

Runoff = 2.32 cfs @ 12.44 hrs, Volume= 0.282 af, Depth> 0.72"

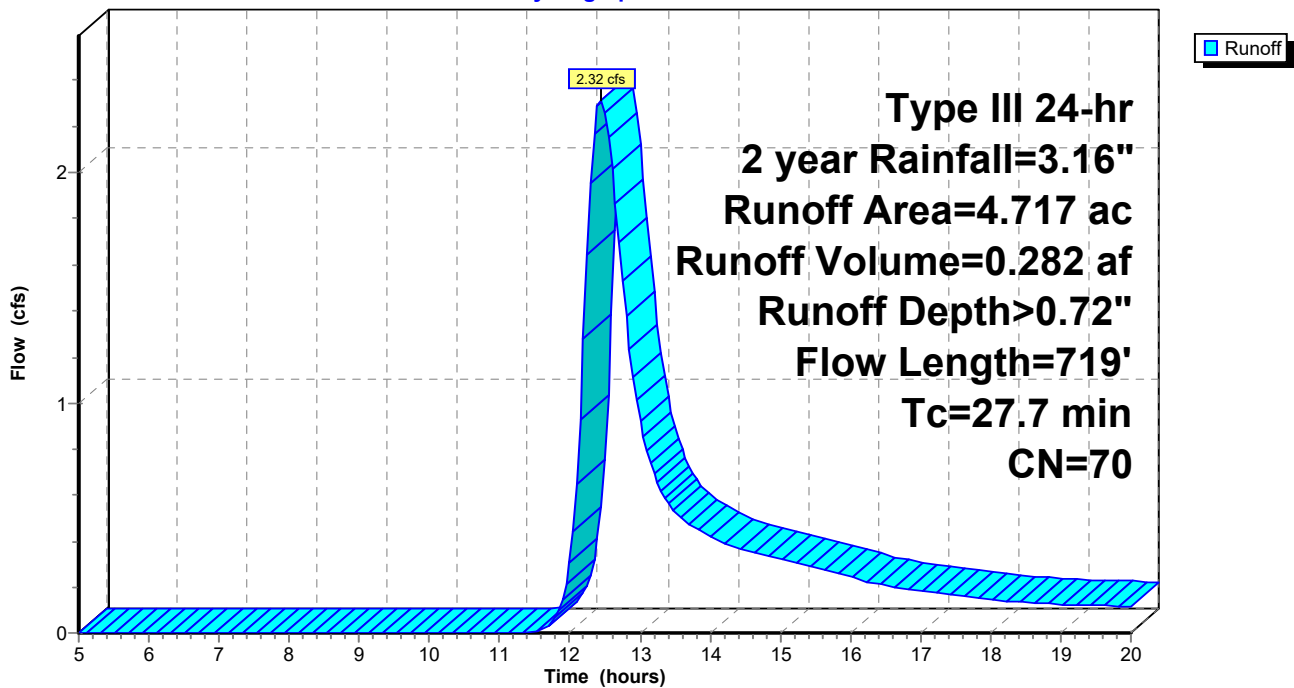
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 3.393	74	50-75% Grass cover, Fair, HSG B-C
1.259	58	Meadow, non-grazed, HSG B
0.065	89	Paved roads w/open ditches, 50% imp, HSG B
4.717	70	Weighted Average
4.684		99.31% Pervious Area
0.032		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.1	390	0.0103	0.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	279	0.0036	0.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
27.7	719	Total			

Subcatchment 16: Subcat 16

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 17: Subcat 17

Runoff = 3.31 cfs @ 12.35 hrs, Volume= 0.362 af, Depth> 0.81"

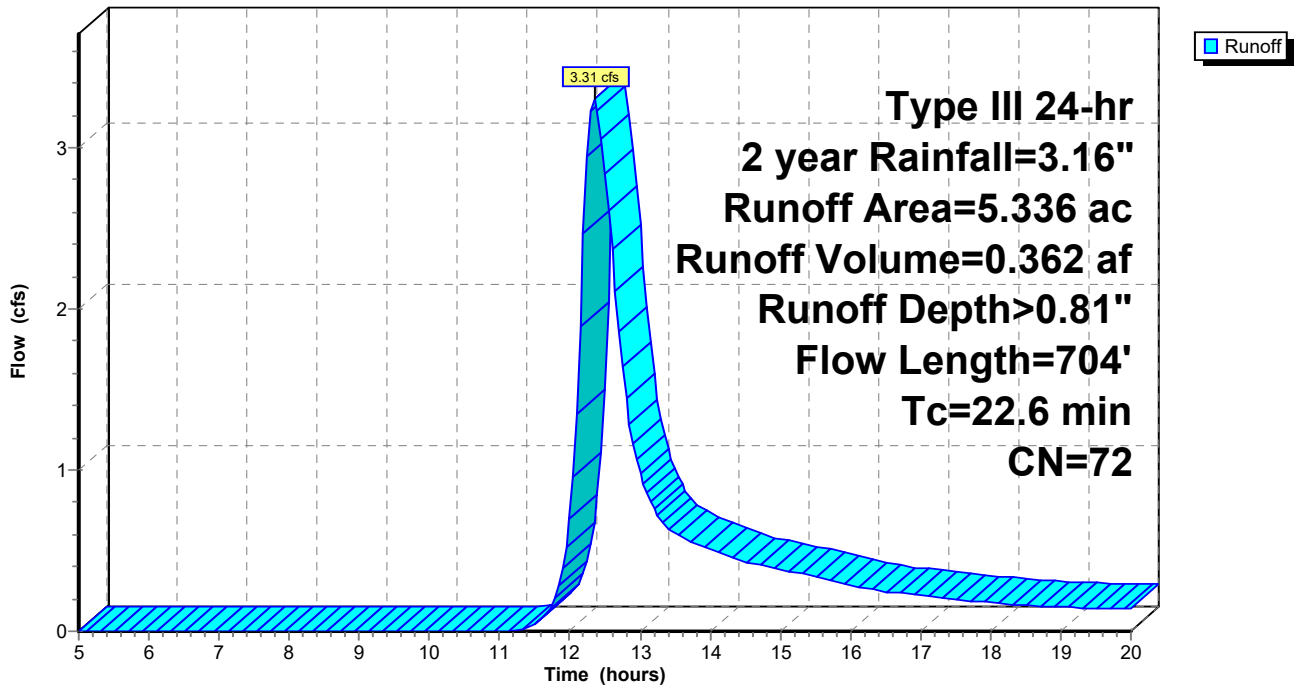
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 4.760	74	50-75% Grass cover, Fair, HSG B-C
0.576	58	Meadow, non-grazed, HSG B
5.336	72	Weighted Average
5.336		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.1	654	0.0107	0.72		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
22.6	704	Total			

Subcatchment 17: Subcat 17

Hydrograph



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Summary for Subcatchment 18: Subcat 18

Runoff = 1.13 cfs @ 12.38 hrs, Volume= 0.126 af, Depth> 0.86"

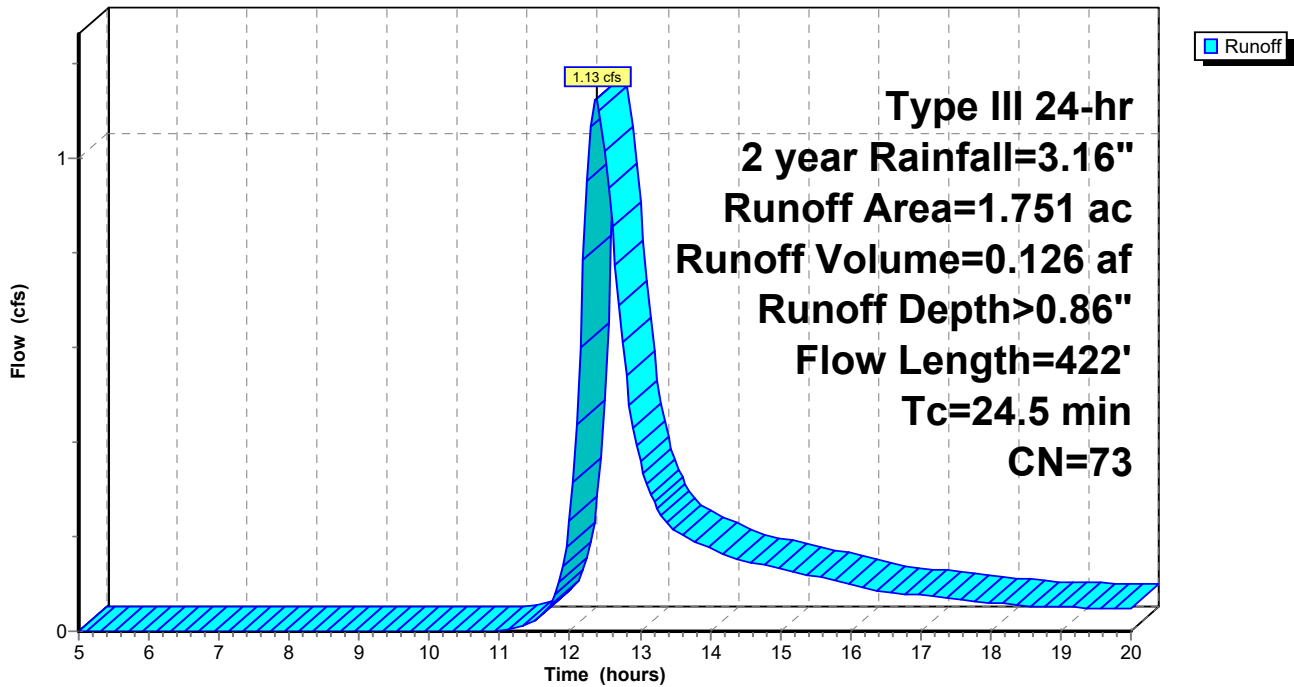
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 1.649	74	50-75% Grass cover, Fair, HSG B-C
0.102	58	Meadow, non-grazed, HSG B
1.751	73	Weighted Average
1.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
17.0	372	0.0027	0.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.5	422	Total			

Subcatchment 18: Subcat 18

Hydrograph



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Summary for Subcatchment 19: Subcat 19

Runoff = 8.95 cfs @ 12.70 hrs, Volume= 1.361 af, Depth> 0.76"

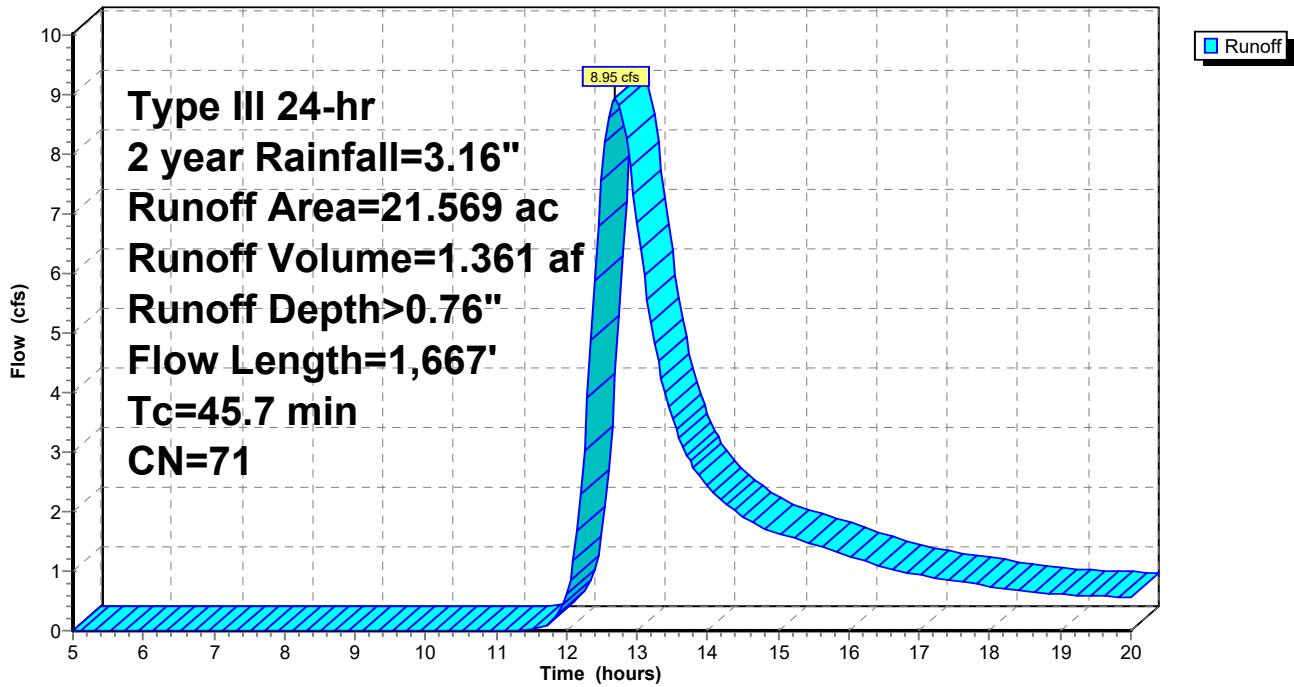
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 18.087	74	50-75% Grass cover, Fair, HSG B-C
0.427	30	Meadow, non-grazed, HSG A
3.055	58	Meadow, non-grazed, HSG B
21.569	71	Weighted Average
21.569		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
30.4	1,090	0.0073	0.60		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.6	527	0.0171	0.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
45.7	1,667	Total			

Subcatchment 19: Subcat 19

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 20: Subcat 20

Runoff = 0.90 cfs @ 12.33 hrs, Volume= 0.098 af, Depth> 0.72"

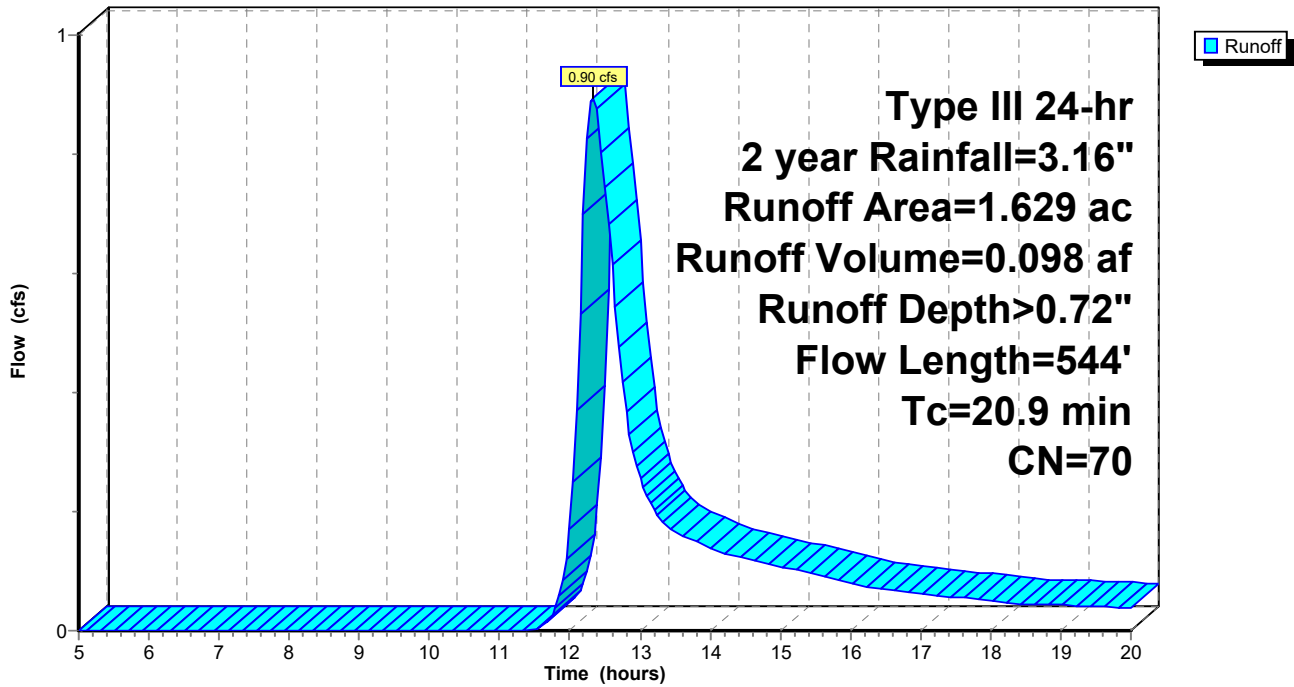
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 1.199	74	50-75% Grass cover, Fair, HSG B-C
0.002	30	Meadow, non-grazed, HSG A
0.428	58	Meadow, non-grazed, HSG B
1.629	70	Weighted Average
1.629		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.4	251	0.0040	0.44		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.0	243	0.0206	1.00		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.9	544	Total			

Subcatchment 20: Subcat 20

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 21: Subcat 21

Runoff = 1.47 cfs @ 12.50 hrs, Volume= 0.195 af, Depth> 0.59"

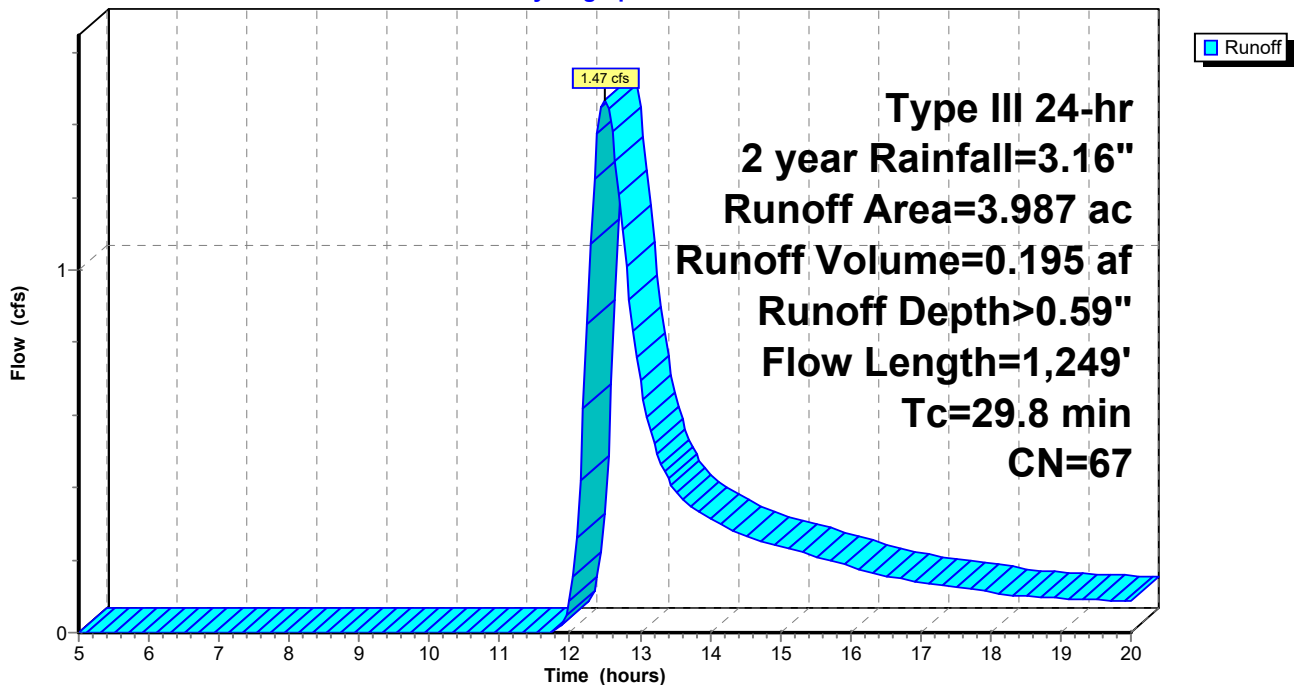
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.006	59	50-75% Grass cover, Fair, HSG A-B
* 3.103	74	50-75% Grass cover, Fair, HSG B-C
0.454	30	Meadow, non-grazed, HSG A
0.420	58	Meadow, non-grazed, HSG B
0.004	36	Woods, Fair, HSG A
3.987	67	Weighted Average
3.987		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.0	584	0.0086	0.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.1	615	0.0260	1.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
29.8	1,249	Total			

Subcatchment 21: Subcat 21

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 22: Subcat 22

Runoff = 6.90 cfs @ 12.94 hrs, Volume= 1.250 af, Depth> 0.85"

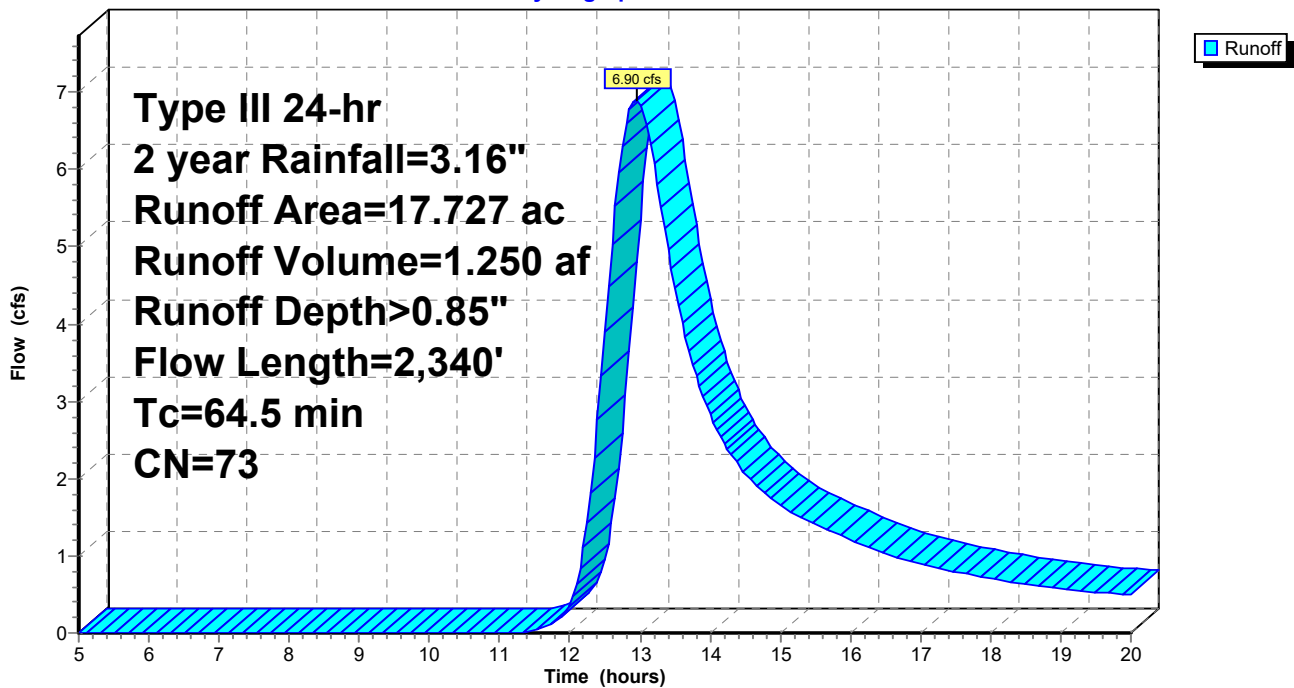
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 16.854	74	50-75% Grass cover, Fair, HSG B-C
0.873	58	Meadow, non-grazed, HSG B
17.727	73	Weighted Average
17.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
45.1	1,416	0.0056	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.8	636	0.0299	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.1	238	0.0336	1.28		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
64.5	2,340	Total			

Subcatchment 22: Subcat 22

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 23: Subcat 23

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 0.19 cfs @ 12.10 hrs, Volume= 0.014 af, Depth> 0.64"

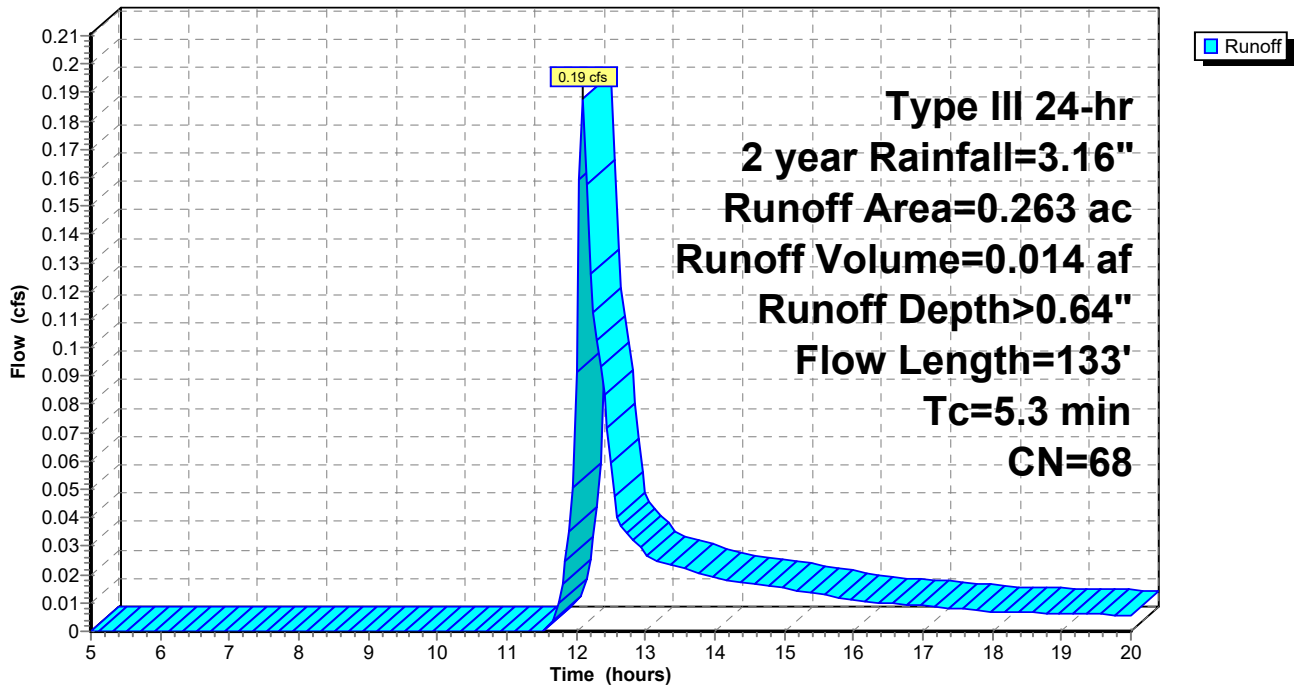
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.164	74	50-75% Grass cover, Fair, HSG B-C
0.099	58	Meadow, non-grazed, HSG B
0.263	68	Weighted Average
0.263		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.0	83	0.0361	1.33		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	133	Total			

Subcatchment 23: Subcat 23

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 24: Subcat 24

Runoff = 1.93 cfs @ 12.27 hrs, Volume= 0.190 af, Depth> 0.82"

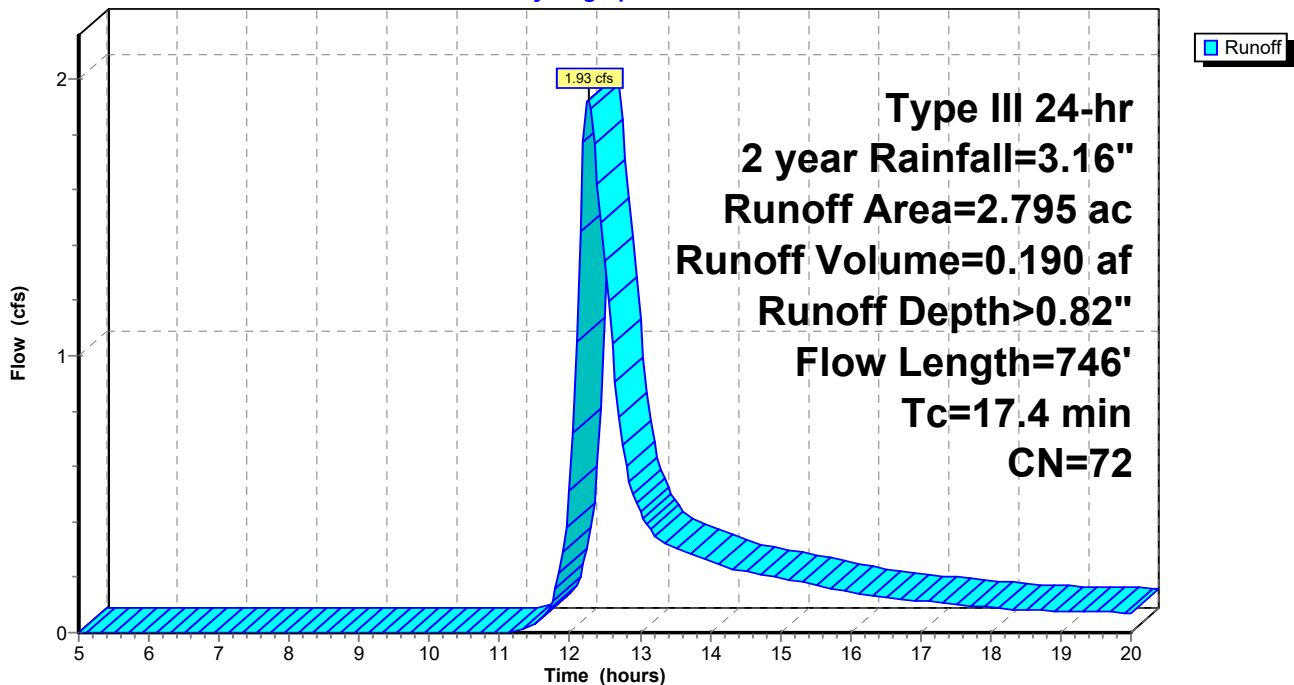
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 2.388	74	50-75% Grass cover, Fair, HSG B-C
0.406	58	Meadow, non-grazed, HSG B
0.001	60	Woods, Fair, HSG B
2.795	72	Weighted Average
2.795		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.7	284	0.0141	0.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	112	0.1071	2.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.4	300	0.0433	1.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.4	746	Total			

Subcatchment 24: Subcat 24

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 25: Subcat 25

Runoff = 5.43 cfs @ 12.69 hrs, Volume= 0.816 af, Depth> 0.80"

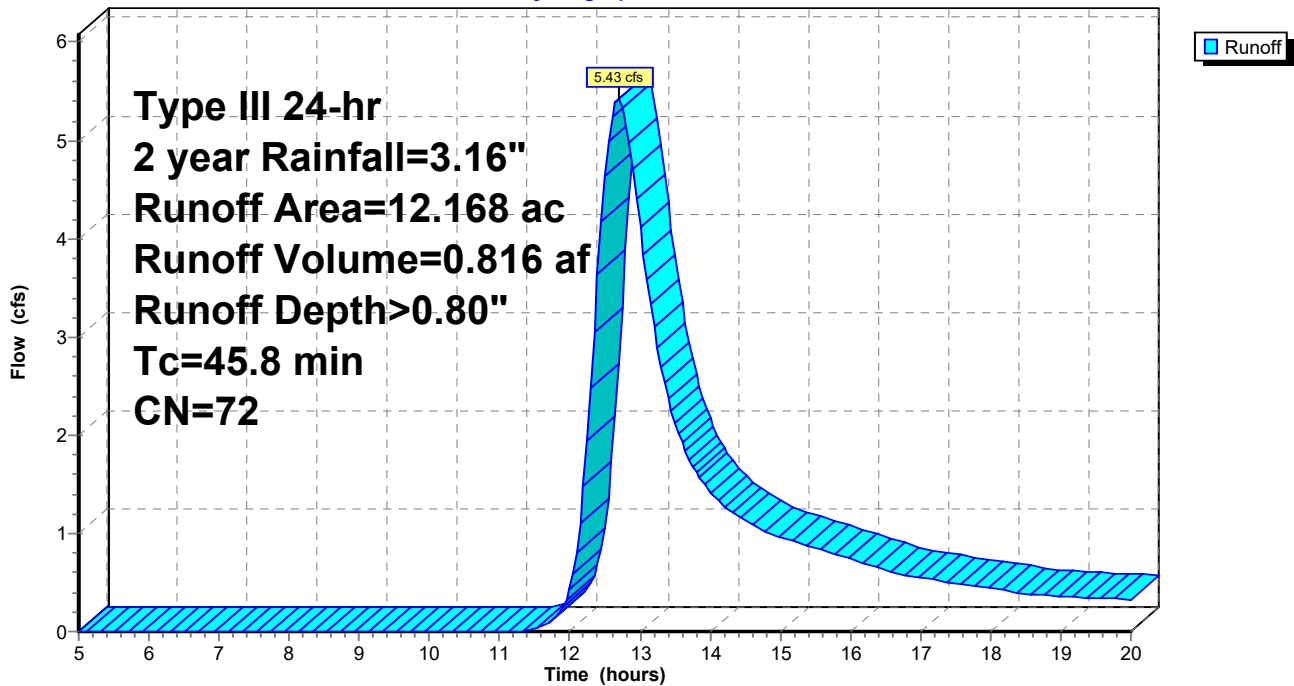
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 11.036	74	50-75% Grass cover, Fair, HSG B-C
0.129	30	Meadow, non-grazed, HSG A
1.003	58	Meadow, non-grazed, HSG B
12.168	72	Weighted Average
12.168		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.8					Direct Entry,

Subcatchment 25: Subcat 25

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 27: Subcat 27

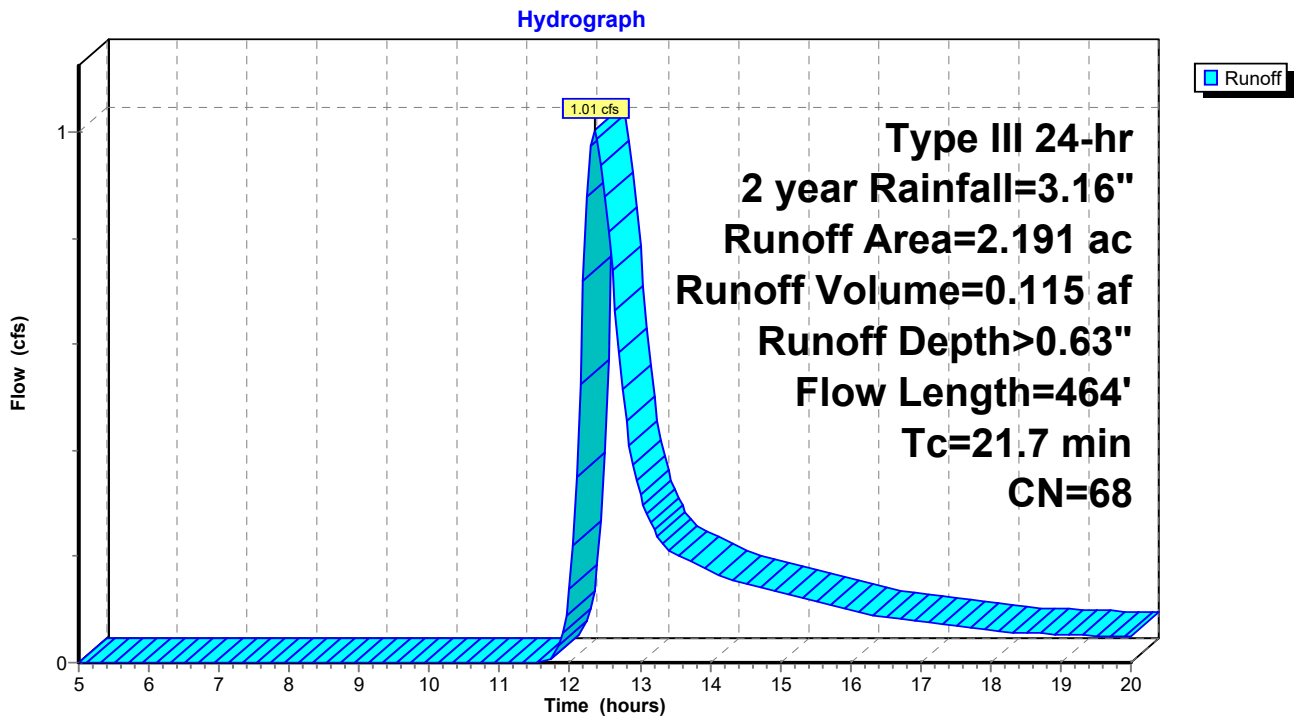
Runoff = 1.01 cfs @ 12.36 hrs, Volume= 0.115 af, Depth> 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 1.400	74	50-75% Grass cover, Fair, HSG B-C
0.036	30	Meadow, non-grazed, HSG A
0.755	58	Meadow, non-grazed, HSG B
2.191	68	Weighted Average
2.191		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
14.2	414	0.0048	0.48		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.7	464	Total			

Subcatchment 27: Subcat 27



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 28: Subcat 28

Runoff = 0.92 cfs @ 12.45 hrs, Volume= 0.154 af, Depth> 0.25"

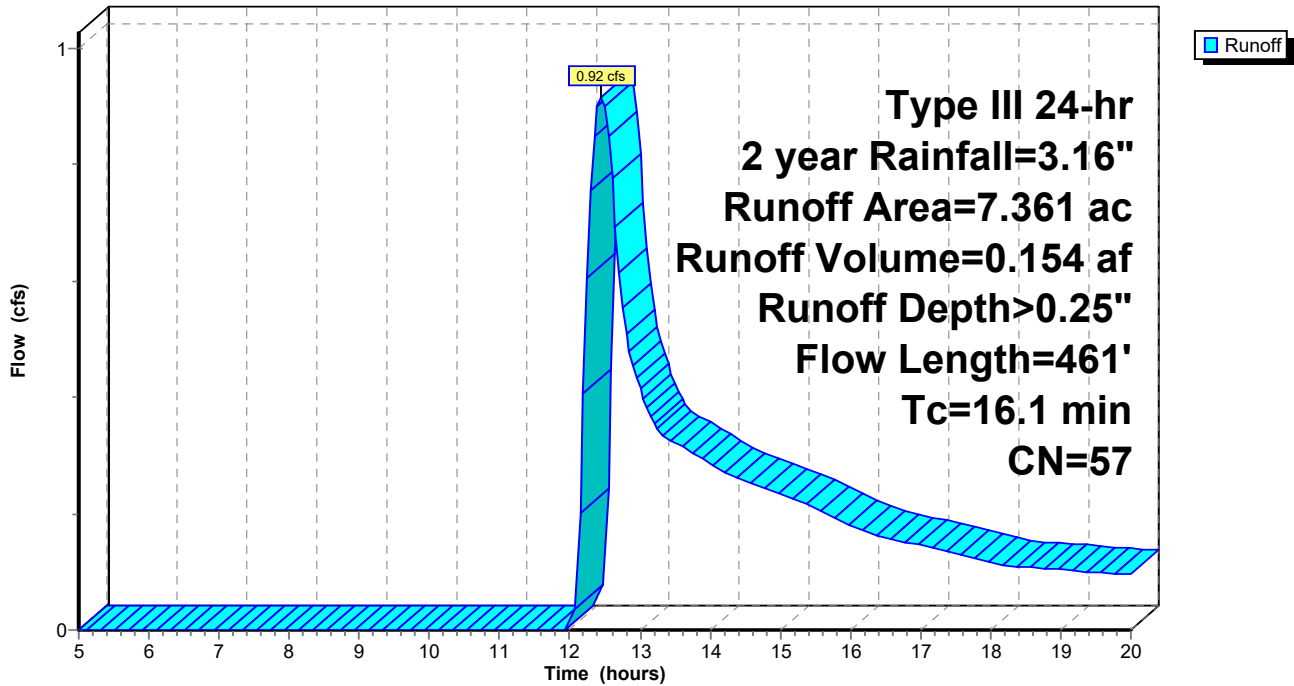
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.136	59	50-75% Grass cover, Fair, HSG A-B
* 3.195	74	50-75% Grass cover, Fair, HSG B-C
0.494	30	Meadow, non-grazed, HSG A
0.478	58	Meadow, non-grazed, HSG B
2.242	36	Woods, Fair, HSG A
0.816	60	Woods, Fair, HSG B
7.361	57	Weighted Average
7.361		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	269	0.0074	0.60		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	142	0.1479	1.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	461	Total			

Subcatchment 28: Subcat 28

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 29: Subcat 29

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

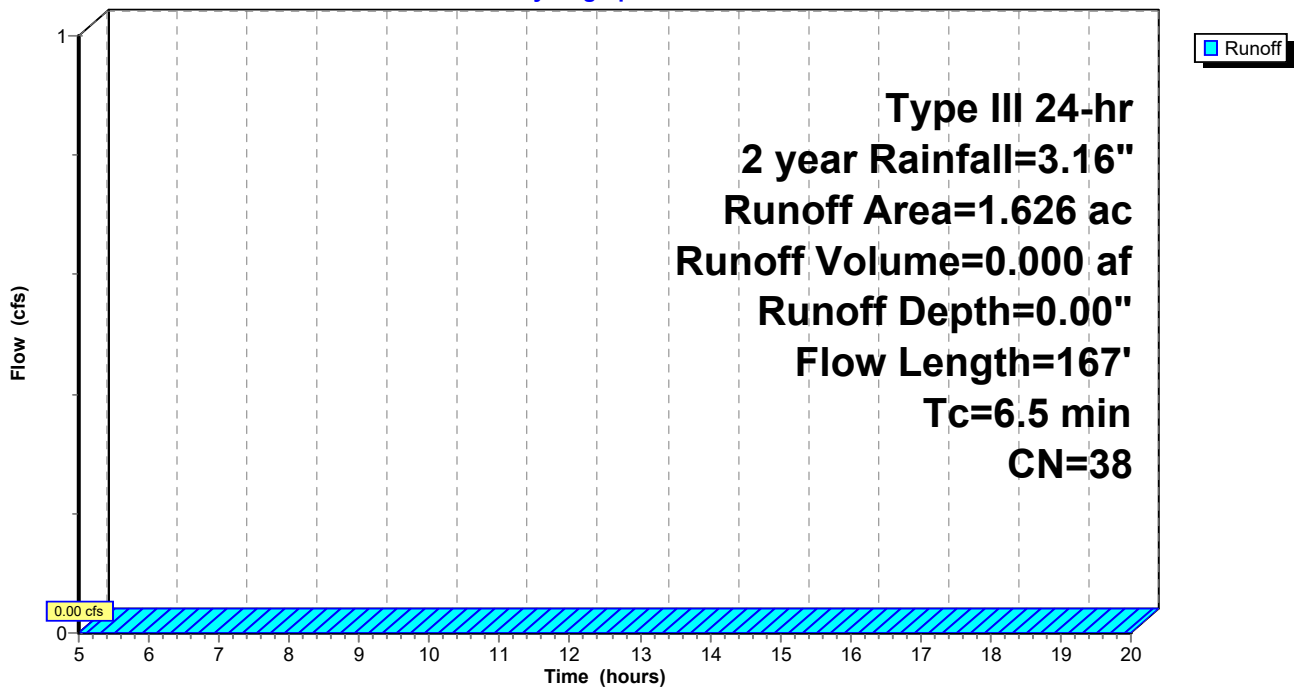
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.216	59	50-75% Grass cover, Fair, HSG A-B
* 0.006	74	50-75% Grass cover, Fair, HSG B-C
0.328	30	Meadow, non-grazed, HSG A
1.076	36	Woods, Fair, HSG A
1.626	38	Weighted Average
1.626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
0.8	117	0.2222	2.36		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.5	167	Total			

Subcatchment 29: Subcat 29

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 30: Subcat 30

Runoff = 3.64 cfs @ 12.17 hrs, Volume= 0.300 af, Depth> 0.92"

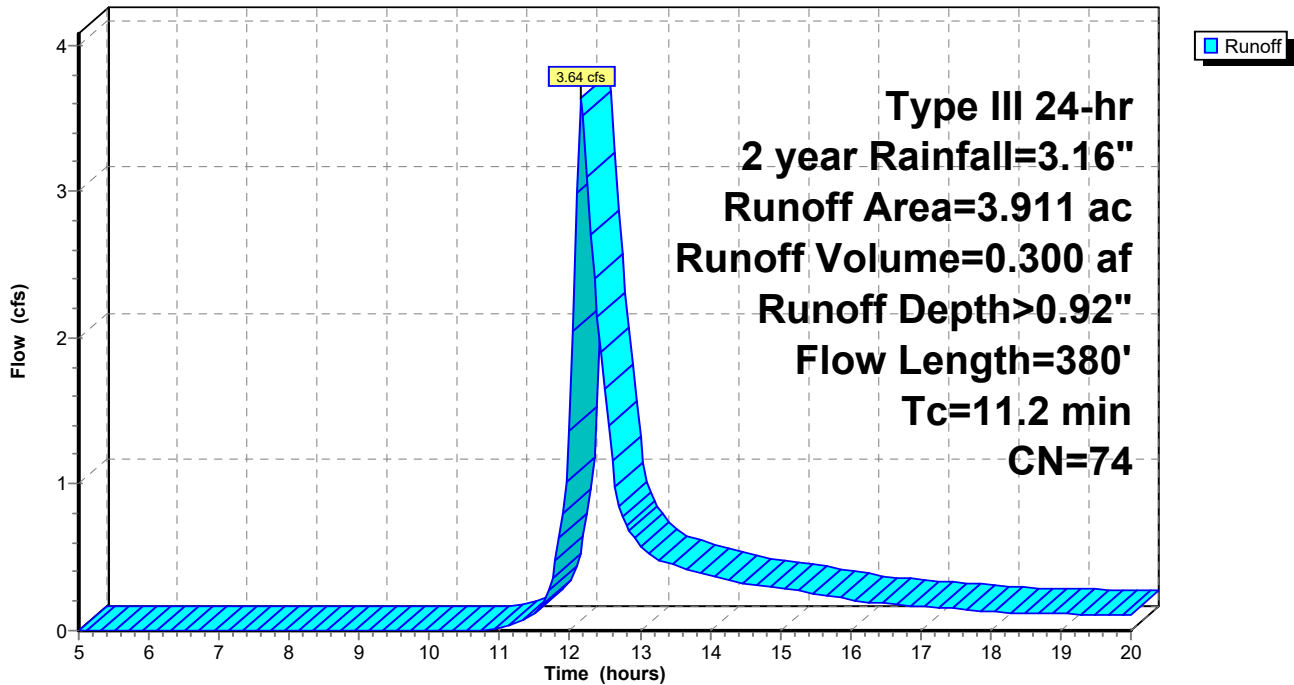
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.012	59	50-75% Grass cover, Fair, HSG A-B
* 3.899	74	50-75% Grass cover, Fair, HSG B-C
0.000	58	Meadow, non-grazed, HSG B
3.911	74	Weighted Average
3.911		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.4	330	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.2	380	Total			

Subcatchment 30: Subcat 30

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 31: Subcat 31

[73] Warning: Peak may fall outside time span

Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth> 0.00"

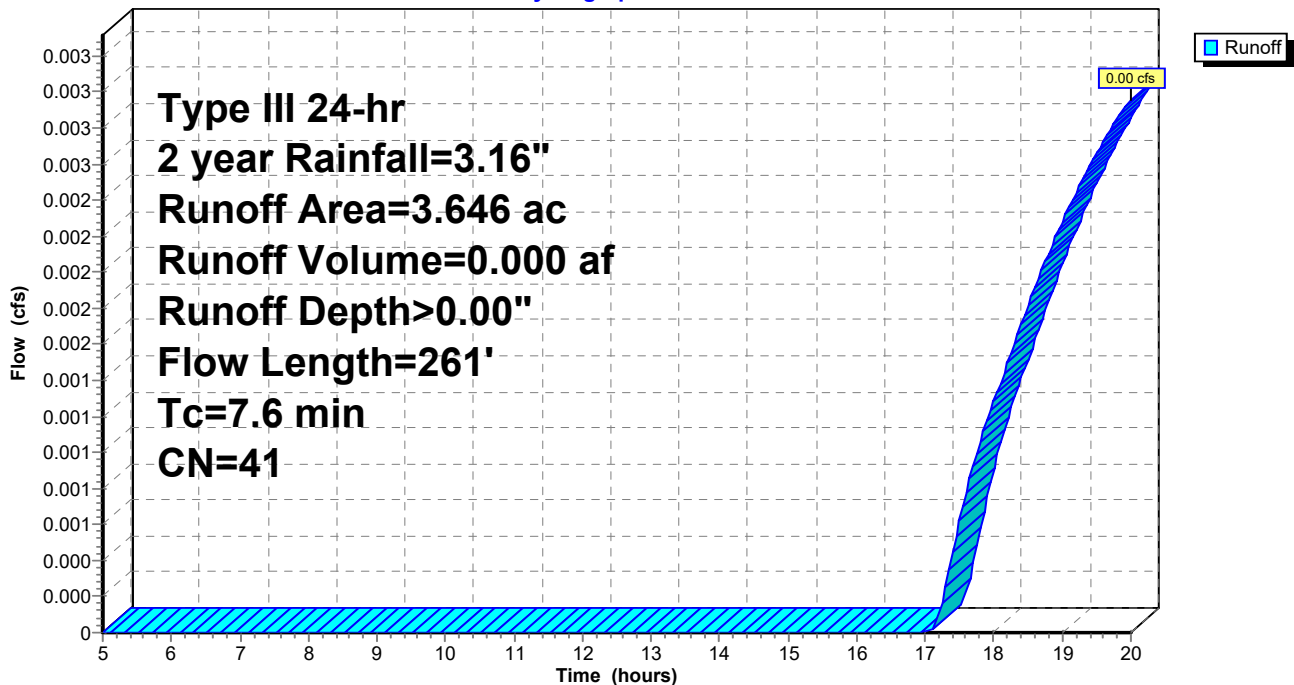
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.149	59	50-75% Grass cover, Fair, HSG A-B
* 0.465	74	50-75% Grass cover, Fair, HSG B-C
0.893	30	Meadow, non-grazed, HSG A
0.064	58	Meadow, non-grazed, HSG B
2.075	36	Woods, Fair, HSG A
3.646	41	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.9	211	0.1374	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.6	261	Total			

Subcatchment 31: Subcat 31

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 33: Subcat 33

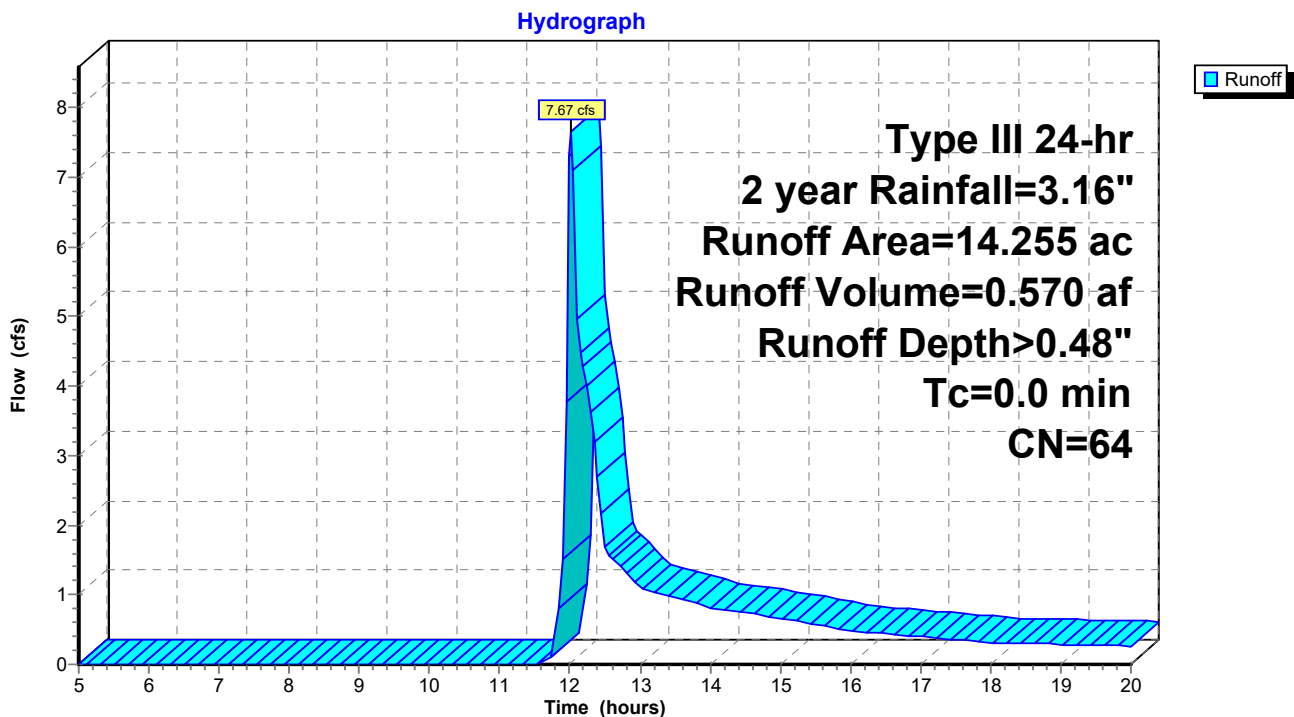
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 7.67 cfs @ 12.02 hrs, Volume= 0.570 af, Depth> 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

	Area (ac)	CN	Description
*	1.943	49	50-75% Grass cover, Fair, HSG A
*	11.166	69	50-75% Grass cover, Fair, HSG B
	0.485	30	Meadow, non-grazed, HSG A
	0.661	58	Meadow, non-grazed, HSG B
	0.000	36	Woods, Fair, HSG A
	14.255	64	Weighted Average
	14.255		100.00% Pervious Area

Subcatchment 33: Subcat 33



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 34: Subcat 34

Runoff = 3.76 cfs @ 12.40 hrs, Volume= 0.443 af, Depth> 0.67"

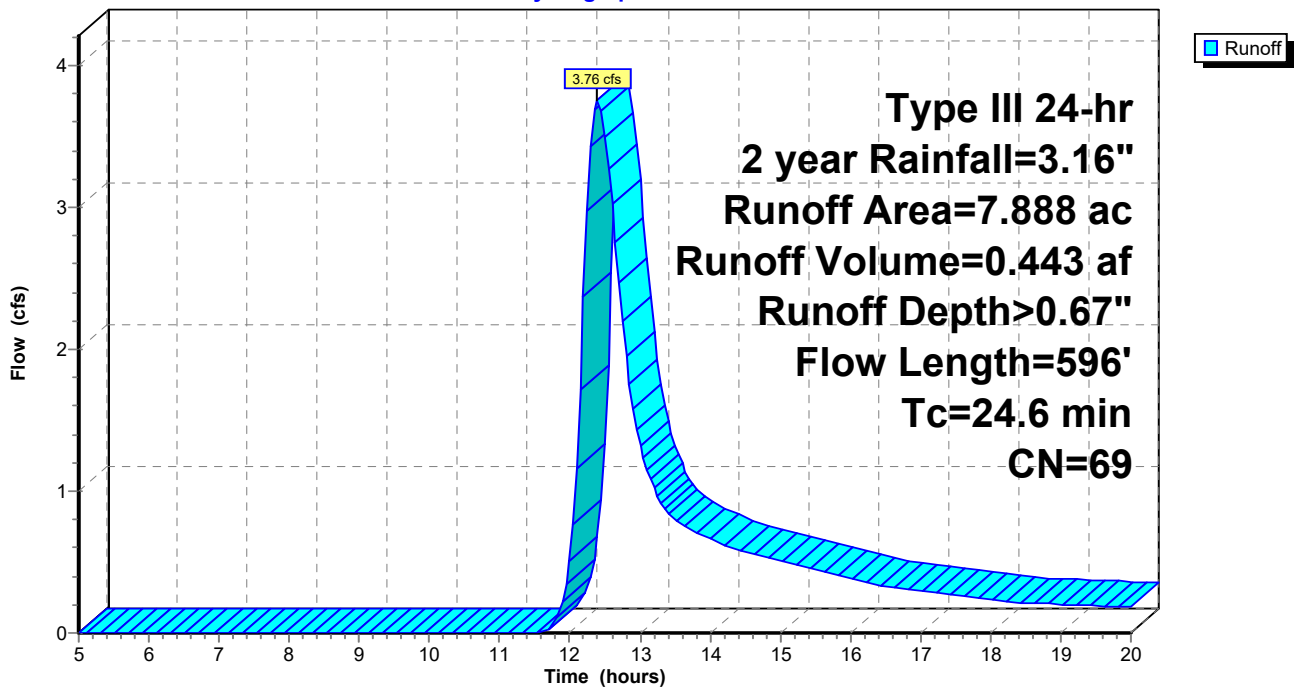
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.072	49	50-75% Grass cover, Fair, HSG A
* 7.816	69	50-75% Grass cover, Fair, HSG B
7.888	69	Weighted Average
7.888		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.1	244	0.0041	0.45		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	99	0.1313	2.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.9	203	0.0098	0.69		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.6	596	Total			

Subcatchment 34: Subcat 34

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 35: Subcat 35

Runoff = 0.72 cfs @ 12.58 hrs, Volume= 0.141 af, Depth> 0.22"

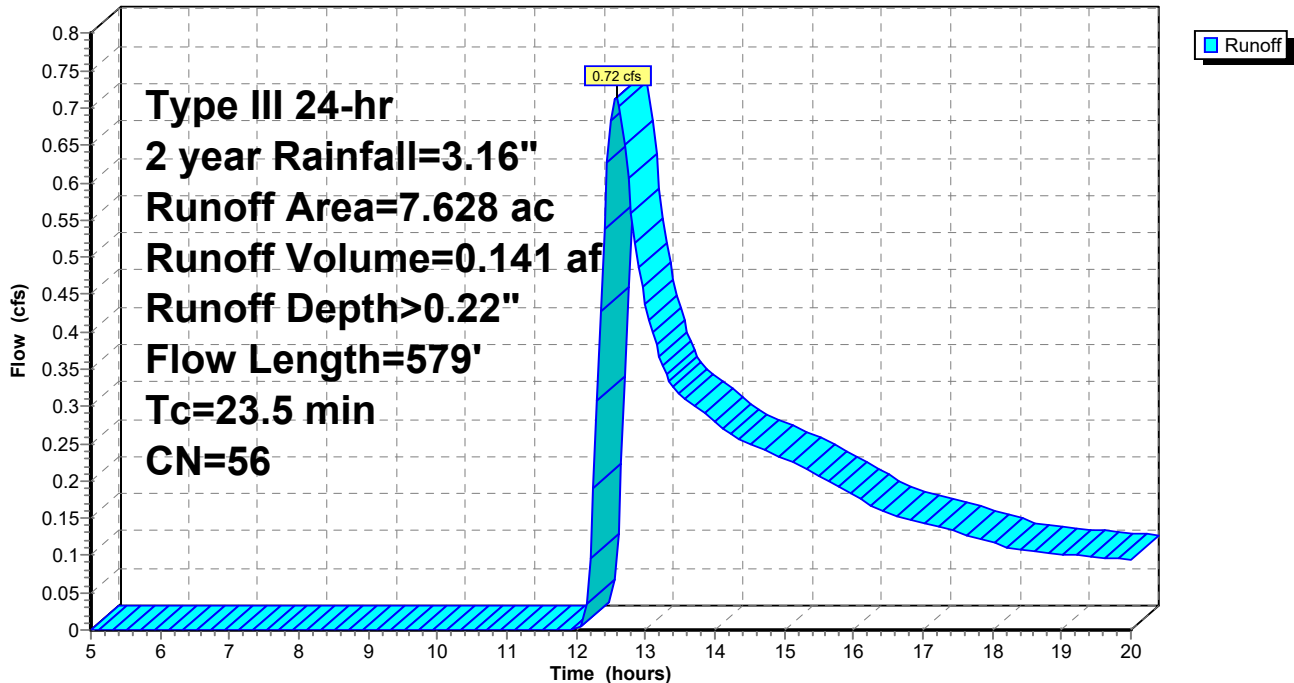
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.332	49	50-75% Grass cover, Fair, HSG A
* 4.614	69	50-75% Grass cover, Fair, HSG B
2.239	30	Meadow, non-grazed, HSG A
0.443	58	Meadow, non-grazed, HSG B
7.628	56	Weighted Average
7.628		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	217	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	97	0.1237	2.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	215	0.0093	0.68		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.5	579	Total			

Subcatchment 35: Subcat 35

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 1P: Sediment Trap

Inflow Area = 0.864 ac, 0.00% Impervious, Inflow Depth > 0.37" for 2 year event
 Inflow = 0.25 cfs @ 12.16 hrs, Volume= 0.027 af
 Outflow = 0.04 cfs @ 14.07 hrs, Volume= 0.025 af, Atten= 83%, Lag= 114.4 min
 Discarded = 0.04 cfs @ 14.07 hrs, Volume= 0.025 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 160.81' @ 14.07 hrs Surf.Area= 0.014 ac Storage= 0.009 af

Plug-Flow detention time= 116.2 min calculated for 0.025 af (92% of inflow)
 Center-of-Mass det. time= 92.3 min (951.6 - 859.4)

Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	0.099 af	35.00'W x 10.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.04 cfs @ 14.07 hrs HW=160.81' (Free Discharge)
 ↳2=Exfiltration (Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=160.00' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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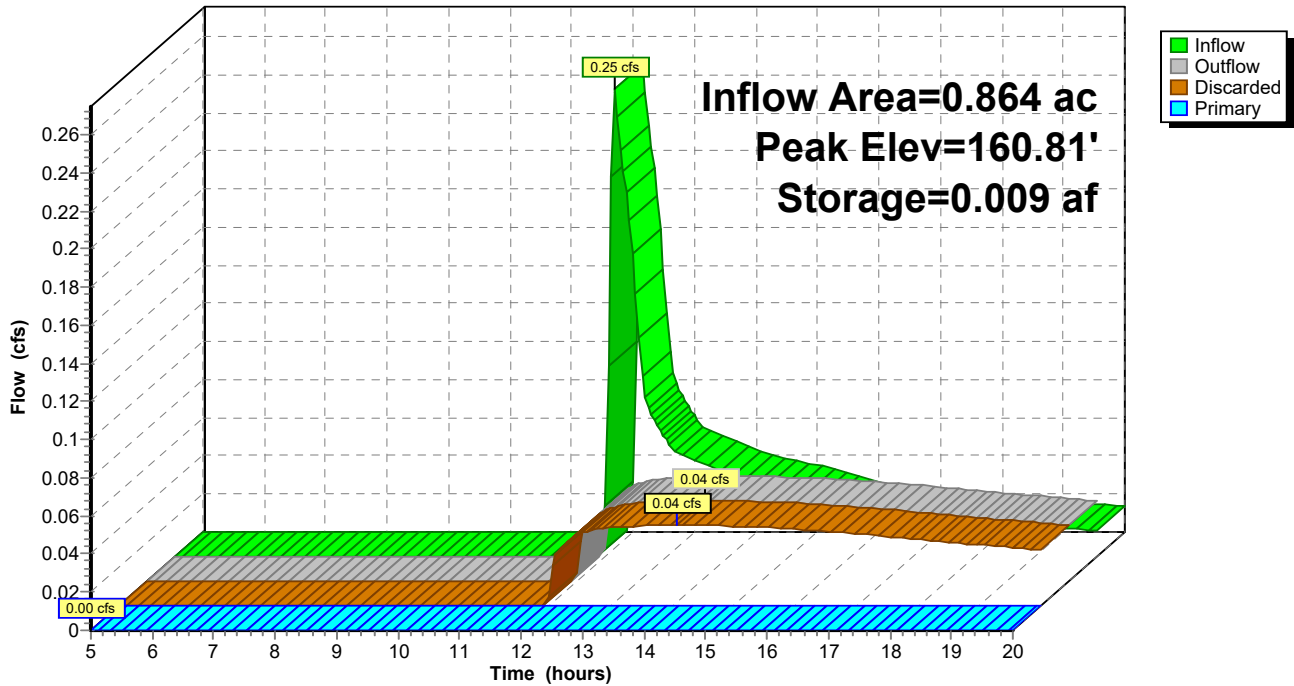
Type III 24-hr 2 year Rainfall=3.16"

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Pond 1P: Sediment Trap

Hydrograph



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Summary for Pond 2P: Sediment Trap

Inflow Area = 4.510 ac, 0.00% Impervious, Inflow Depth > 0.00" for 2 year event
 Inflow = 0.01 cfs @ 20.00 hrs, Volume= 0.002 af
 Outflow = 0.01 cfs @ 20.00 hrs, Volume= 0.002 af, Atten= 1%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 20.00 hrs, Volume= 0.002 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.00' @ 20.00 hrs Surf.Area= 2,101 sf Storage= 5 cf

Plug-Flow detention time= 11.5 min calculated for 0.002 af (94% of inflow)
 Center-of-Mass det. time= 4.8 min (1,101.2 - 1,096.4)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	19,725 cf	75.00'W x 28.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.15 cfs @ 20.00 hrs HW=158.00' (Free Discharge)
 ↑2=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=158.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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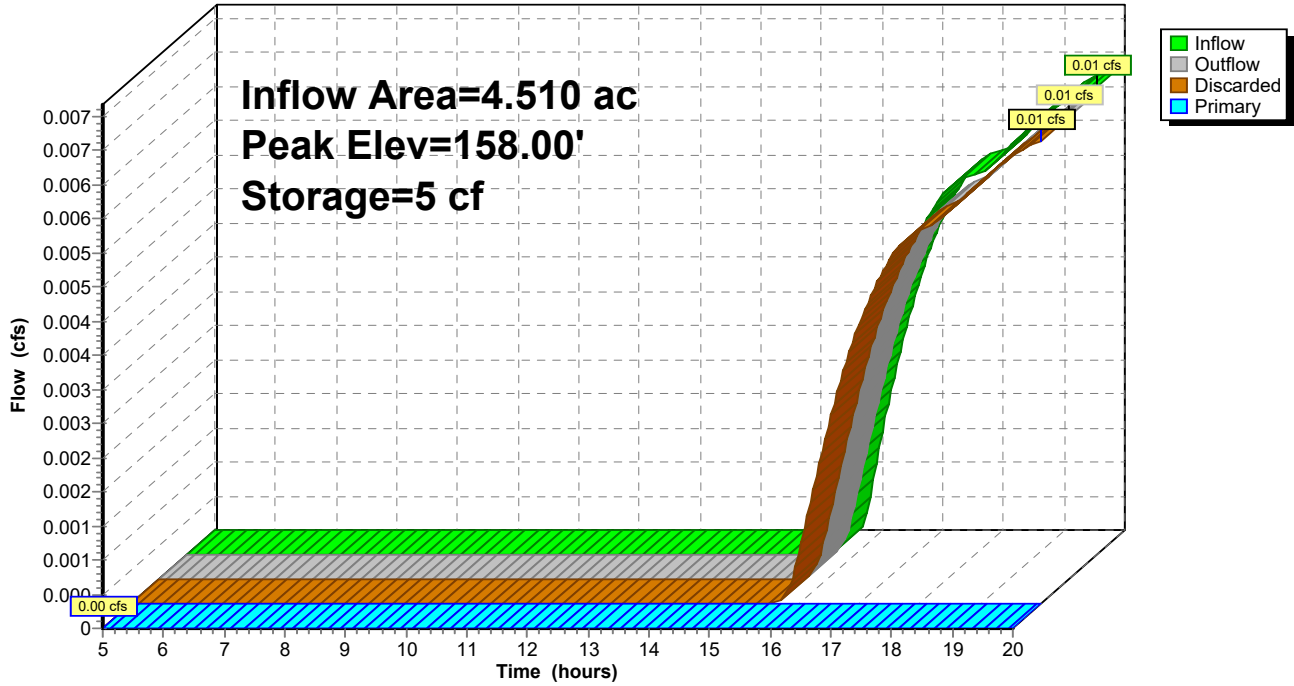
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Pond 2P: Sediment Trap

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 3P: Farm Depression

Inflow Area = 2.727 ac, 0.00% Impervious, Inflow Depth > 0.34" for 2 year event
 Inflow = 0.62 cfs @ 12.21 hrs, Volume= 0.077 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

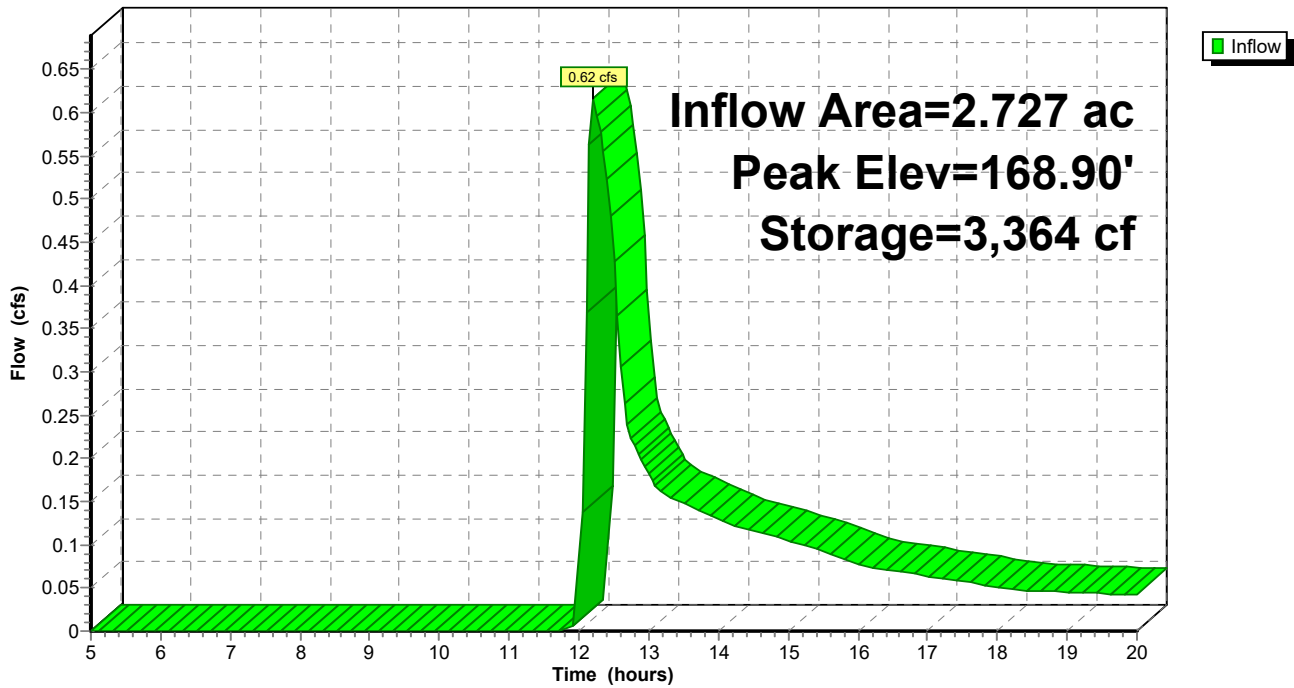
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 168.90' @ 20.00 hrs Surf.Area= 7,485 sf Storage= 3,364 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	95,578 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	0	0	0
170.00	16,657	16,657	16,657
172.00	28,677	45,334	61,991
173.00	38,496	33,587	95,578

Pond 3P: Farm Depression

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 4P: Sediment Trap

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 0.51" for 2 year event
 Inflow = 1.58 cfs @ 12.20 hrs, Volume= 0.156 af
 Outflow = 0.18 cfs @ 15.17 hrs, Volume= 0.112 af, Atten= 89%, Lag= 178.3 min
 Discarded = 0.18 cfs @ 15.17 hrs, Volume= 0.112 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 160.48' @ 15.17 hrs Surf.Area= 2,505 sf Storage= 3,043 cf

Plug-Flow detention time= 183.4 min calculated for 0.112 af (72% of inflow)
 Center-of-Mass det. time= 112.9 min (960.2 - 847.3)

Volume	Invert	Avail.Storage	Storage Description
#1	159.00'	16,375 cf	65.00'W x 25.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	159.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.18 cfs @ 15.17 hrs HW=160.48' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.18 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=159.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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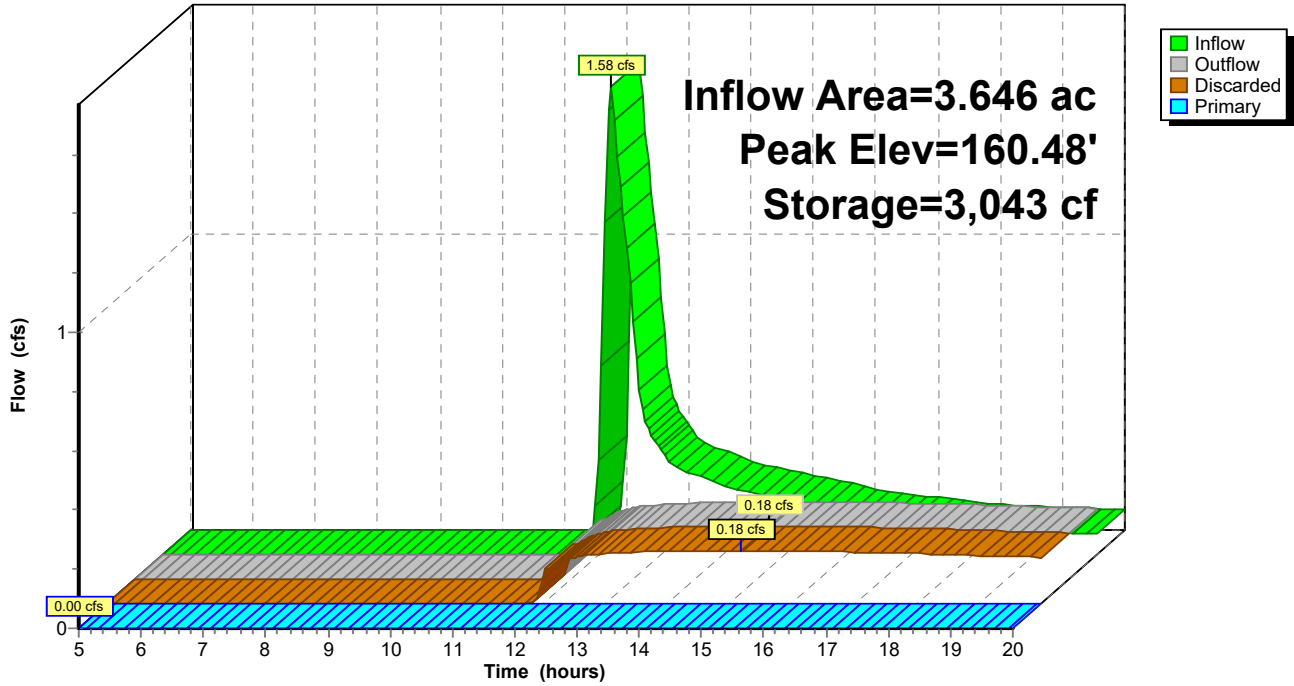
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Pond 4P: Sediment Trap

Hydrograph



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Summary for Pond 5P: Sediment Trap

Inflow Area = 8.688 ac, 0.00% Impervious, Inflow Depth > 0.81" for 2 year event
 Inflow = 5.25 cfs @ 12.37 hrs, Volume= 0.589 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.67' @ 20.00 hrs Surf.Area= 11,266 sf Storage= 25,641 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

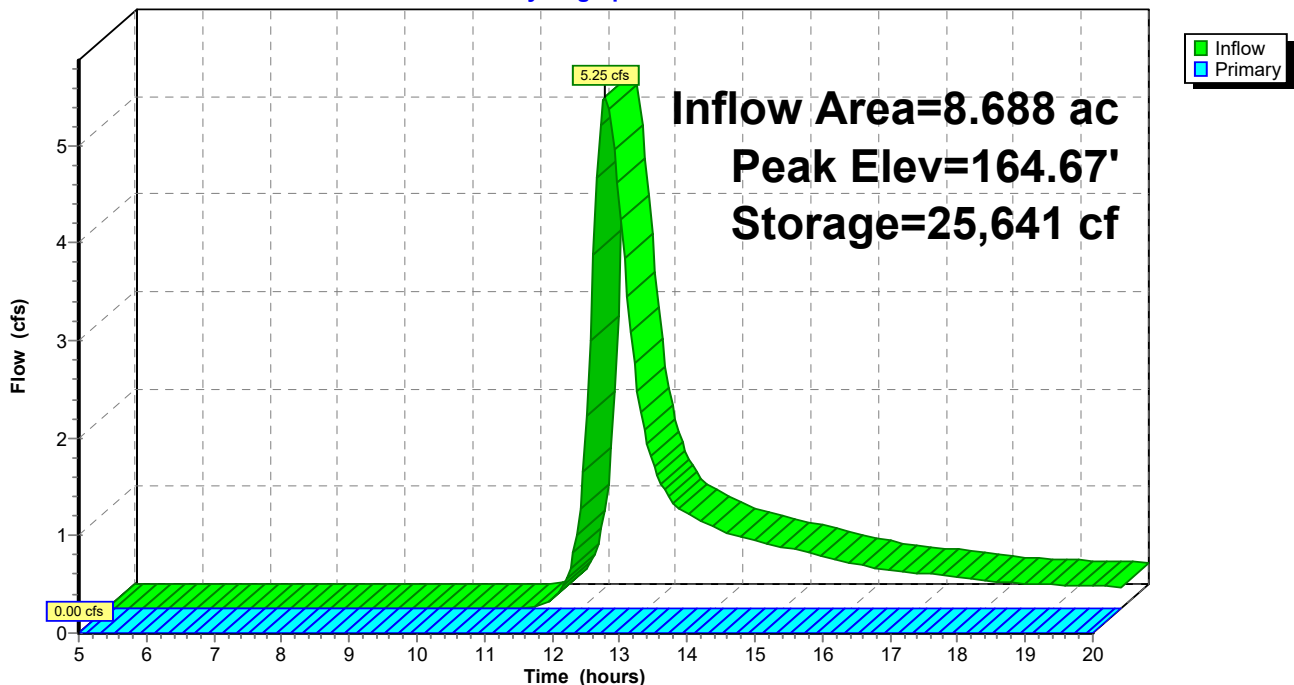
Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	41,848 cf	70.00'W x 115.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=162.00' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 5P: Sediment Trap

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 6P: Sediment Trap

Inflow Area = 6.471 ac, 0.00% Impervious, Inflow Depth > 0.68" for 2 year event
 Inflow = 3.63 cfs @ 12.26 hrs, Volume= 0.365 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.24' @ 20.00 hrs Surf.Area= 8,387 sf Storage= 15,903 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

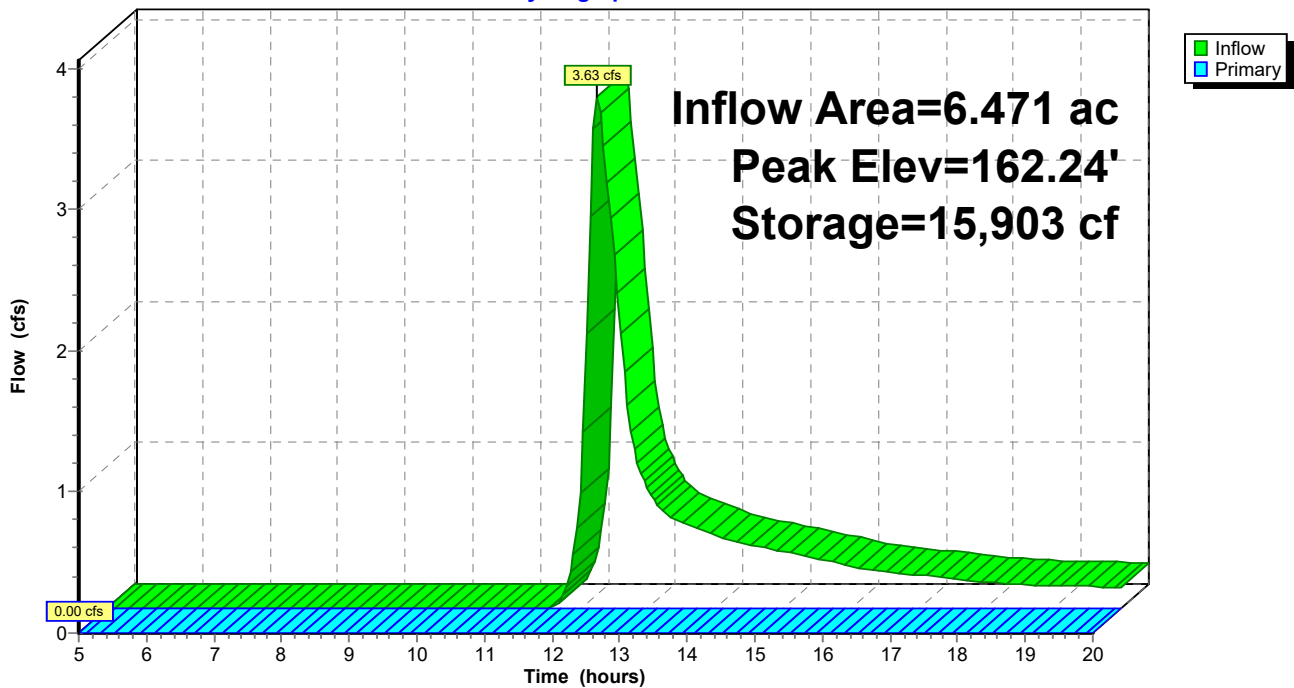
Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	32,568 cf	45.00'W x 130.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=160.00' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 6P: Sediment Trap

Hydrograph



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Summary for Pond 7P: Farm Depression

Inflow Area = 17.047 ac, 0.00% Impervious, Inflow Depth > 0.90" for 2 year event
 Inflow = 8.33 cfs @ 12.73 hrs, Volume= 1.283 af
 Outflow = 3.65 cfs @ 13.47 hrs, Volume= 1.259 af, Atten= 56%, Lag= 44.3 min
 Discarded = 3.65 cfs @ 13.47 hrs, Volume= 1.259 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.96' @ 13.47 hrs Surf.Area= 52,519 sf Storage= 16,769 cf

Plug-Flow detention time= 60.7 min calculated for 1.259 af (98% of inflow)
 Center-of-Mass det. time= 54.5 min (906.3 - 851.8)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	188,598 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.00	0	0	0	0
164.00	57,239	19,080	19,080	57,241
164.50	203,000	61,339	80,418	203,003
165.00	230,000	108,180	188,598	230,015

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.65 cfs @ 13.47 hrs HW=163.96' (Free Discharge)
 ↑2=Exfiltration (Controls 3.65 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=163.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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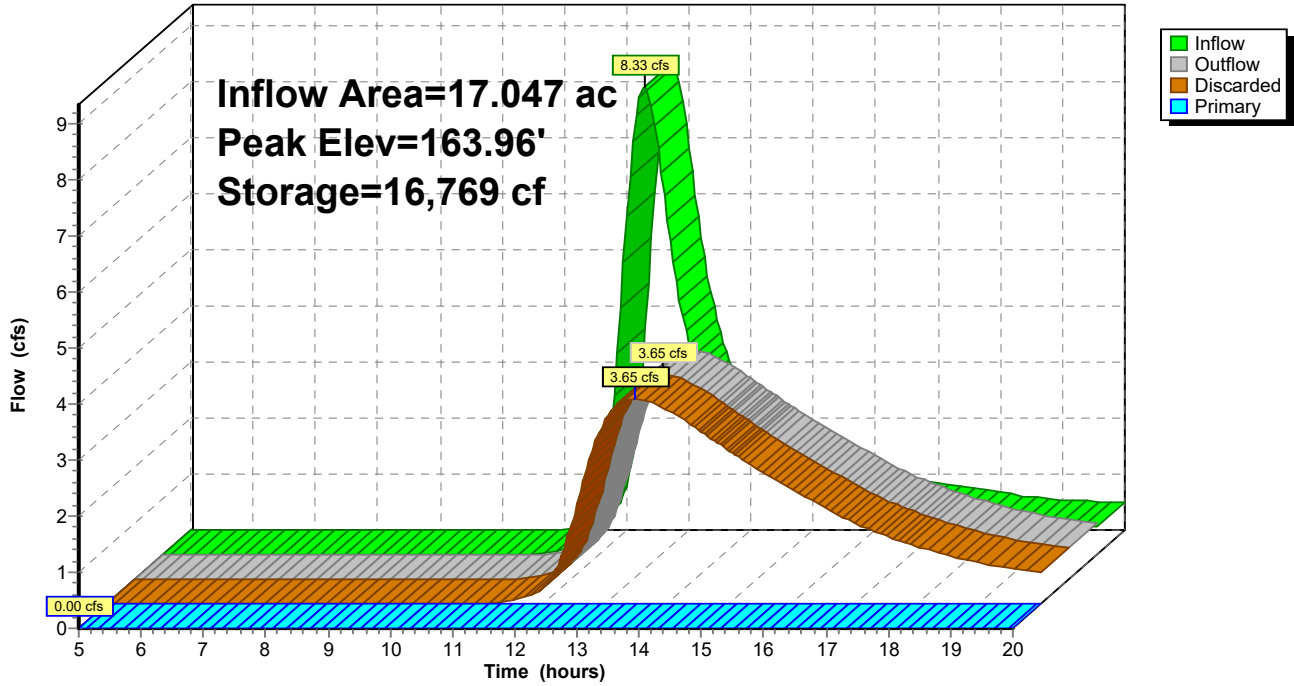
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Pond 7P: Farm Depression

Hydrograph



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Summary for Pond 8P: Sediment Trap

Inflow Area = 3.130 ac, 0.00% Impervious, Inflow Depth > 0.64" for 2 year event
 Inflow = 1.80 cfs @ 12.19 hrs, Volume= 0.166 af
 Outflow = 0.09 cfs @ 18.00 hrs, Volume= 0.015 af, Atten= 95%, Lag= 348.6 min
 Primary = 0.09 cfs @ 18.00 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.01' @ 18.00 hrs Surf.Area= 3,164 sf Storage= 6,561 cf

Plug-Flow detention time= 404.5 min calculated for 0.015 af (9% of inflow)
 Center-of-Mass det. time= 288.3 min (1,127.0 - 838.7)

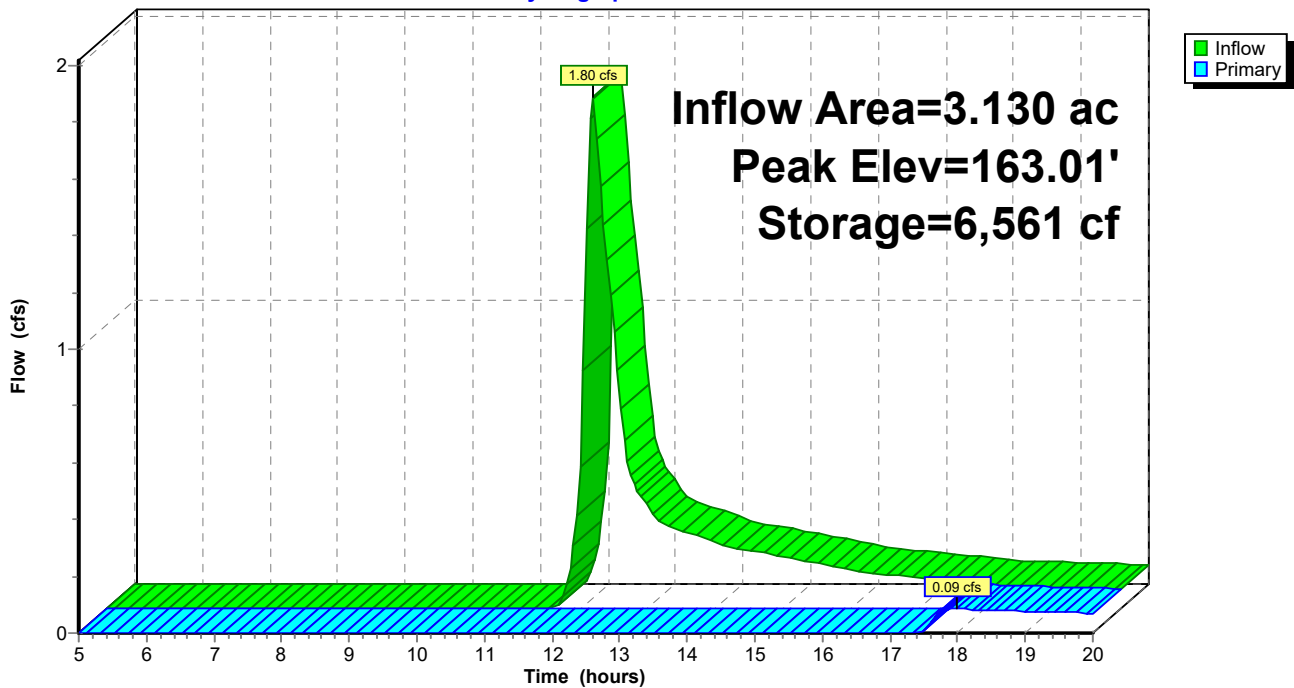
Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	14,375 cf	65.00'W x 20.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.04 cfs @ 18.00 hrs HW=163.01' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir (Weir Controls 0.04 cfs @ 0.27 fps)

Pond 8P: Sediment Trap

Hydrograph



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Summary for Pond 10P: Kettle Hole

Inflow Area = 3.172 ac, 0.00% Impervious, Inflow Depth > 0.18" for 2 year event
 Inflow = 0.23 cfs @ 12.47 hrs, Volume= 0.046 af
 Outflow = 0.05 cfs @ 16.84 hrs, Volume= 0.031 af, Atten= 77%, Lag= 262.2 min
 Discarded = 0.05 cfs @ 16.84 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.43' @ 16.84 hrs Surf.Area= 2,209 sf Storage= 792 cf

Plug-Flow detention time= 157.1 min calculated for 0.031 af (66% of inflow)
 Center-of-Mass det. time= 77.7 min (978.0 - 900.3)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	274,837 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	1,534	0	0	1,534
148.00	5,773	6,855	6,855	5,793
150.00	12,558	17,897	24,752	12,610
152.00	19,547	31,848	56,601	19,656
154.00	26,610	45,976	102,576	26,800
156.00	32,562	59,072	161,648	32,876
158.00	39,456	71,908	233,556	39,899
159.00	43,134	41,281	274,837	43,647

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.05 cfs @ 16.84 hrs HW=146.43' (Free Discharge)
 ↑1=Exfiltration (Controls 0.05 cfs)

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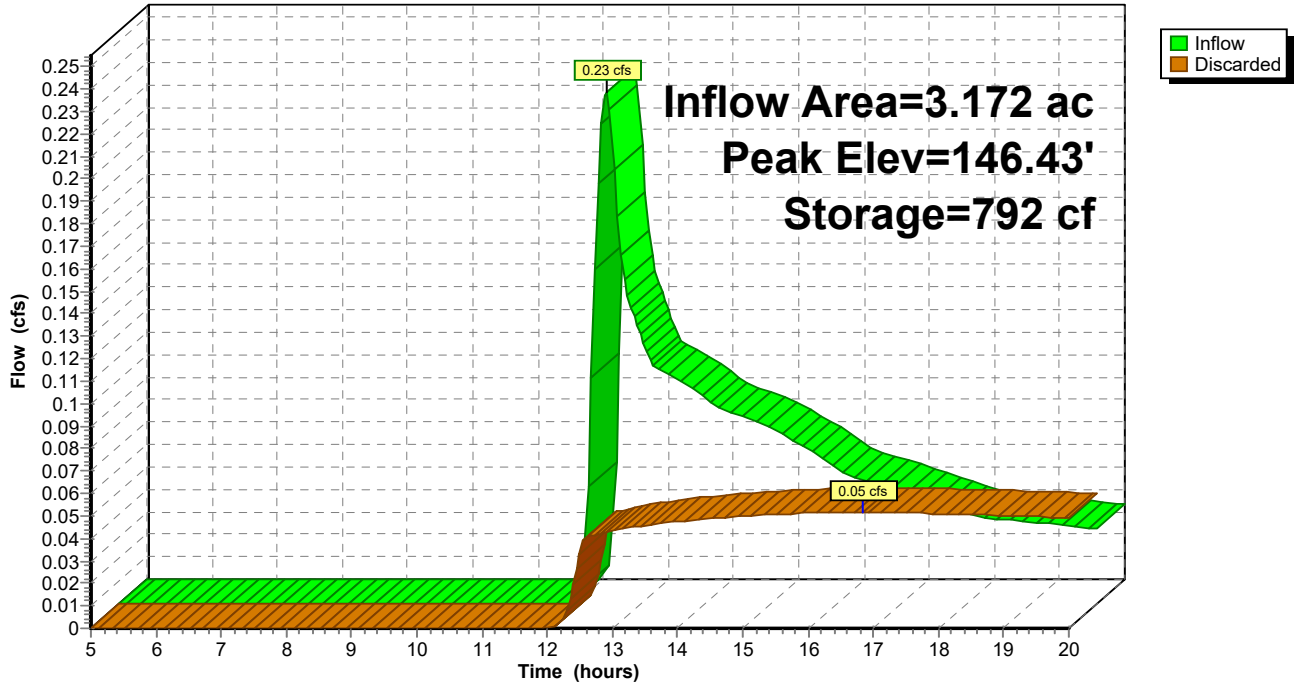
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Pond 10P: Kettle Hole

Hydrograph



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Summary for Pond 11AP: Kettle Hole

Inflow Area = 6.449 ac, 0.00% Impervious, Inflow Depth > 0.03" for 2 year event
 Inflow = 0.03 cfs @ 15.51 hrs, Volume= 0.014 af
 Outflow = 0.03 cfs @ 16.78 hrs, Volume= 0.012 af, Atten= 7%, Lag= 75.9 min
 Discarded = 0.03 cfs @ 16.78 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 126.02' @ 16.78 hrs Surf.Area= 3,165 sf Storage= 72 cf

Plug-Flow detention time= 39.2 min calculated for 0.012 af (90% of inflow)
 Center-of-Mass det. time= 20.2 min (1,031.6 - 1,011.4)

Volume	Invert	Avail.Storage	Storage Description
#1	126.00'	127,579 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
126.00	3,074	0	0	3,074
128.00	15,883	17,296	17,296	15,899
130.00	28,094	43,401	60,697	28,154
132.00	39,090	66,882	127,579	39,226

Device	Routing	Invert	Outlet Devices
#1	Discarded	126.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.07 cfs @ 16.78 hrs HW=126.02' (Free Discharge)
 ↑1=Exfiltration (Controls 0.07 cfs)

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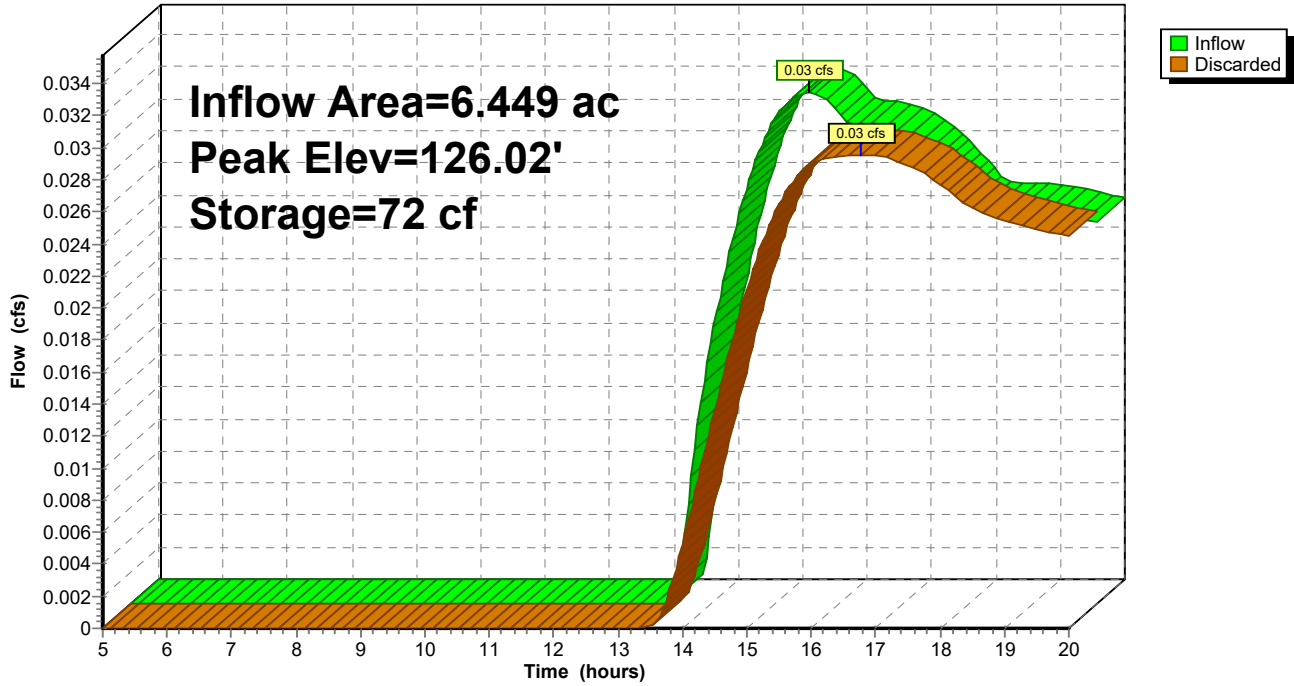
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Pond 11AP: Kettle Hole

Hydrograph



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Summary for Pond 11P: Kettle Hole

Inflow Area = 5.662 ac, 0.33% Impervious, Inflow Depth > 0.15" for 2 year event
 Inflow = 0.30 cfs @ 12.54 hrs, Volume= 0.072 af
 Outflow = 0.09 cfs @ 16.54 hrs, Volume= 0.053 af, Atten= 70%, Lag= 239.4 min
 Discarded = 0.09 cfs @ 16.54 hrs, Volume= 0.053 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 142.31' @ 16.54 hrs Surf.Area= 3,825 sf Storage= 1,083 cf

Plug-Flow detention time= 138.7 min calculated for 0.052 af (73% of inflow)
 Center-of-Mass det. time= 72.9 min (982.6 - 909.8)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	585,038 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	3,101	0	0	3,101
144.00	9,033	11,618	11,618	9,057
146.00	14,143	22,986	34,604	14,223
148.00	20,595	34,537	69,140	20,742
150.00	26,222	46,704	115,844	26,472
152.00	32,411	58,524	174,368	32,779
154.00	41,950	74,156	248,524	42,415
156.00	49,984	91,817	340,341	50,591
158.00	62,571	112,320	452,660	63,289
160.00	69,874	132,378	585,038	70,817

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.09 cfs @ 16.54 hrs HW=142.31' (Free Discharge)
 ↑1=Exfiltration (Controls 0.09 cfs)

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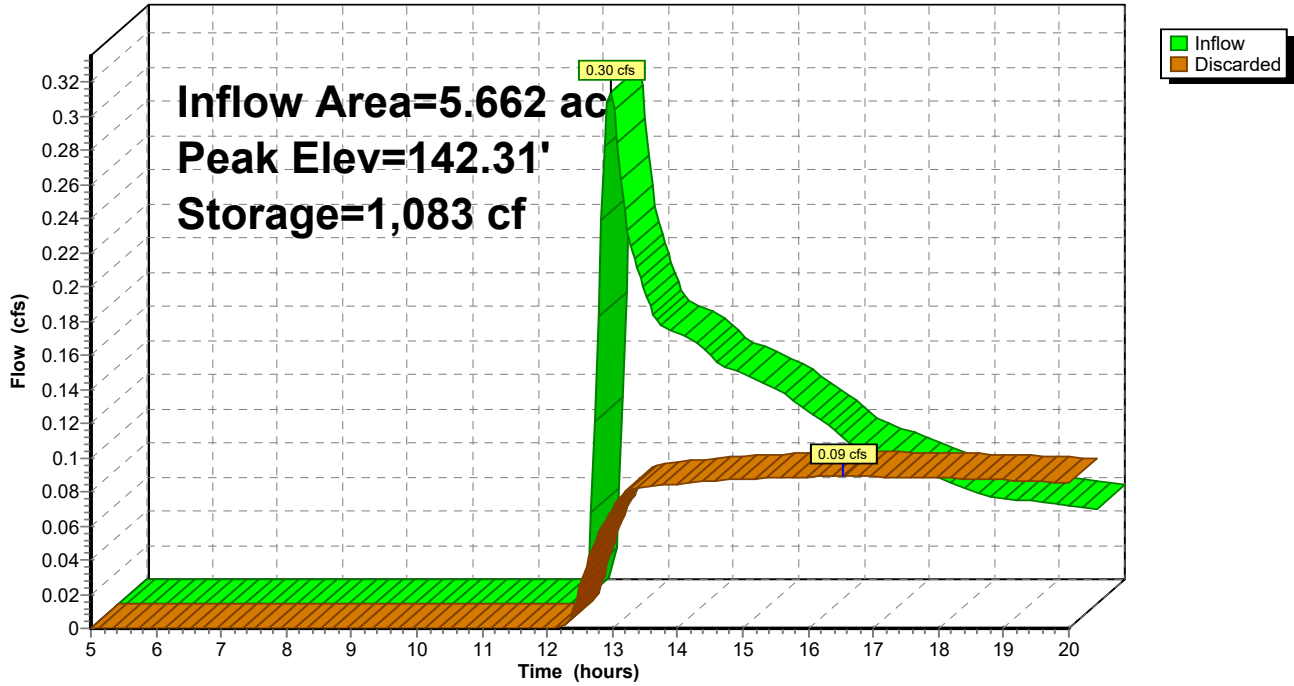
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Pond 11P: Kettle Hole

Hydrograph



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Summary for Pond 12P: Farm Depression

Inflow Area = 3.290 ac, 2.37% Impervious, Inflow Depth > 0.77" for 2 year event
 Inflow = 2.27 cfs @ 12.22 hrs, Volume= 0.211 af
 Outflow = 0.64 cfs @ 12.76 hrs, Volume= 0.207 af, Atten= 72%, Lag= 32.3 min
 Discarded = 0.64 cfs @ 12.76 hrs, Volume= 0.207 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.95' @ 12.76 hrs Surf.Area= 9,240 sf Storage= 2,928 cf

Plug-Flow detention time= 58.8 min calculated for 0.207 af (98% of inflow)
 Center-of-Mass det. time= 52.8 min (885.5 - 832.7)

Volume	Invert	Avail.Storage	Storage Description
#1	161.00'	52,117 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.00	0	0	0	0
162.00	10,223	3,408	3,408	10,225
164.00	42,096	48,709	52,117	42,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	161.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	163.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.64 cfs @ 12.76 hrs HW=161.95' (Free Discharge)
 ↑1=Exfiltration (Controls 0.64 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=161.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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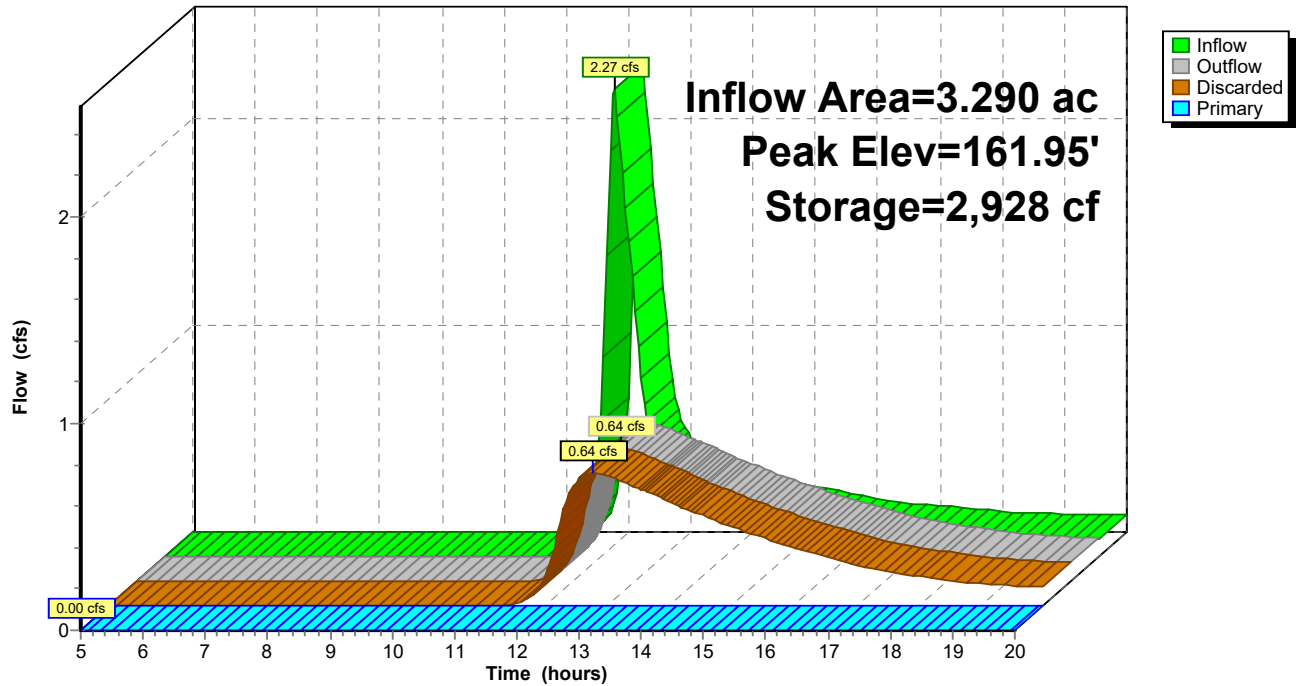
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Pond 12P: Farm Depression

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 13P: Farm Depression

Inflow Area = 18.631 ac, 0.42% Impervious, Inflow Depth > 0.84" for 2 year event
 Inflow = 7.14 cfs @ 12.93 hrs, Volume= 1.299 af
 Outflow = 2.81 cfs @ 14.04 hrs, Volume= 1.296 af, Atten= 61%, Lag= 66.2 min
 Discarded = 2.81 cfs @ 14.04 hrs, Volume= 1.296 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 160.61' @ 14.04 hrs Surf.Area= 40,386 sf Storage= 17,421 cf

Plug-Flow detention time= 70.8 min calculated for 1.292 af (99% of inflow)
 Center-of-Mass det. time= 69.7 min (933.9 - 864.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	126,275 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	18,000	0	0	18,000	
162.00	124,141	126,275	126,275	124,155	

Device	Routing	Invert	Outlet Devices									
#1	Primary	161.50'	70.0' long x 50.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=2.81 cfs @ 14.04 hrs HW=160.61' (Free Discharge)
 ↑2=Exfiltration (Controls 2.81 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=160.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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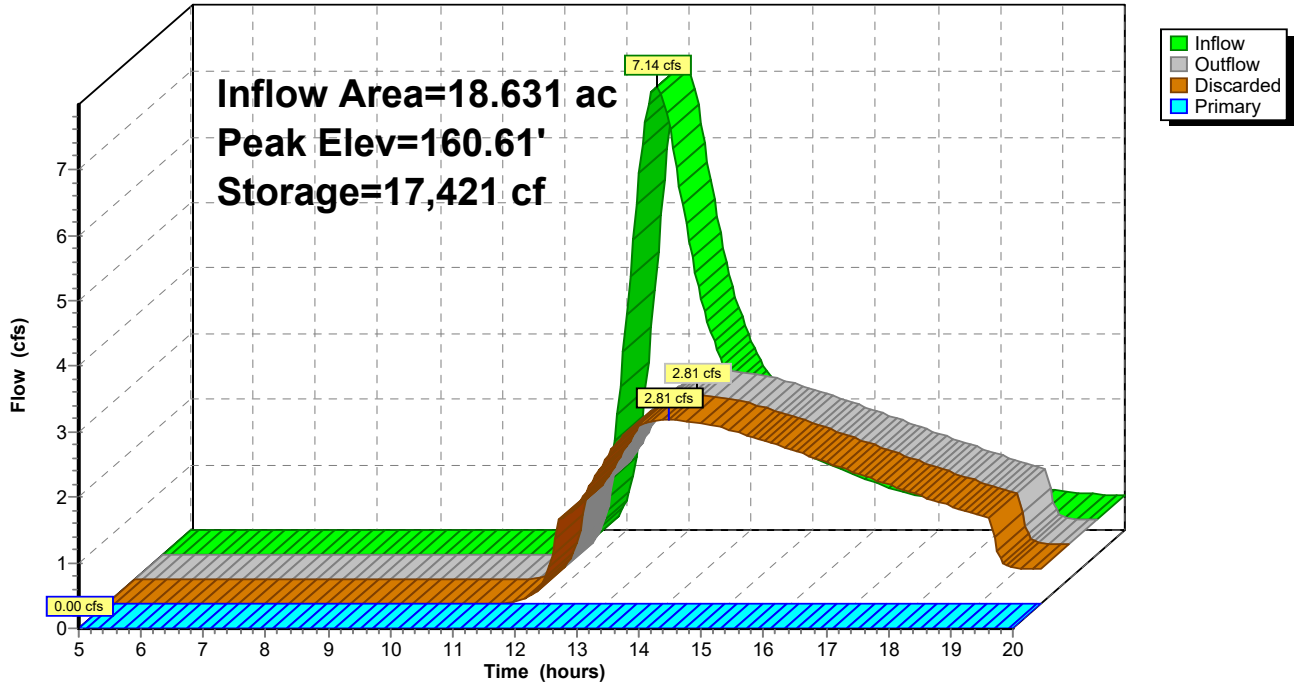
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Pond 13P: Farm Depression

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 15P: Farm Depression

Inflow Area = 2.521 ac, 5.01% Impervious, Inflow Depth > 0.72" for 2 year event
 Inflow = 1.38 cfs @ 12.34 hrs, Volume= 0.151 af
 Outflow = 0.49 cfs @ 12.88 hrs, Volume= 0.149 af, Atten= 64%, Lag= 32.2 min
 Discarded = 0.49 cfs @ 12.88 hrs, Volume= 0.149 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.71' @ 12.88 hrs Surf.Area= 7,105 sf Storage= 1,913 cf

Plug-Flow detention time= 49.2 min calculated for 0.149 af (98% of inflow)
 Center-of-Mass det. time= 44.4 min (884.9 - 840.4)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	33,327 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	100	0	0	100
164.00	47,707	33,327	33,327	47,714

Device	Routing	Invert	Outlet Devices
#1	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.49 cfs @ 12.88 hrs HW=162.71' (Free Discharge)
 ↑1=Exfiltration (Controls 0.49 cfs)

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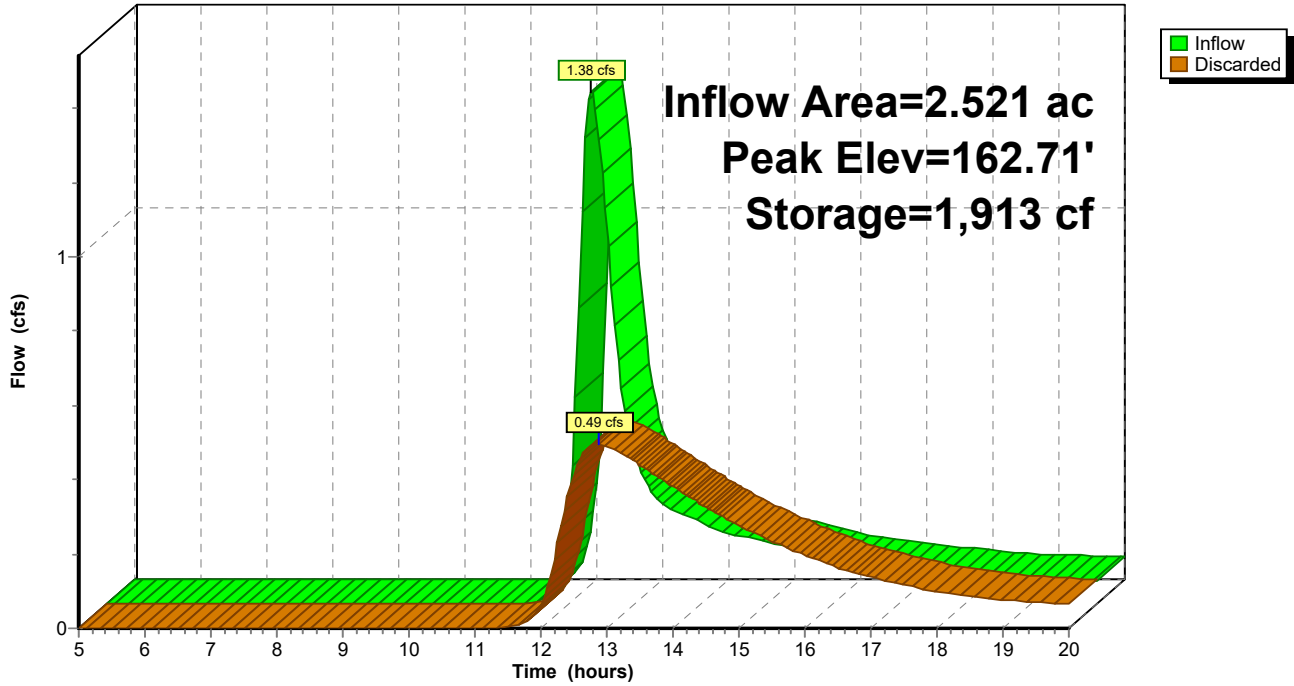
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Pond 15P: Farm Depression

Hydrograph



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Summary for Pond 16P: Farm Depression

Inflow Area = 4.717 ac, 0.69% Impervious, Inflow Depth > 0.72" for 2 year event
 Inflow = 2.32 cfs @ 12.44 hrs, Volume= 0.282 af
 Outflow = 0.97 cfs @ 12.97 hrs, Volume= 0.282 af, Atten= 58%, Lag= 31.8 min
 Discarded = 0.97 cfs @ 12.97 hrs, Volume= 0.282 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.40' @ 12.97 hrs Surf.Area= 13,974 sf Storage= 3,145 cf

Plug-Flow detention time= 34.6 min calculated for 0.281 af (99% of inflow)
 Center-of-Mass det. time= 33.6 min (878.8 - 845.2)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	106,646 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	3,106	0	0	3,106
164.00	136,289	106,646	106,646	136,298

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	50.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.97 cfs @ 12.97 hrs HW=162.40' (Free Discharge)
 ↑2=Exfiltration (Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=162.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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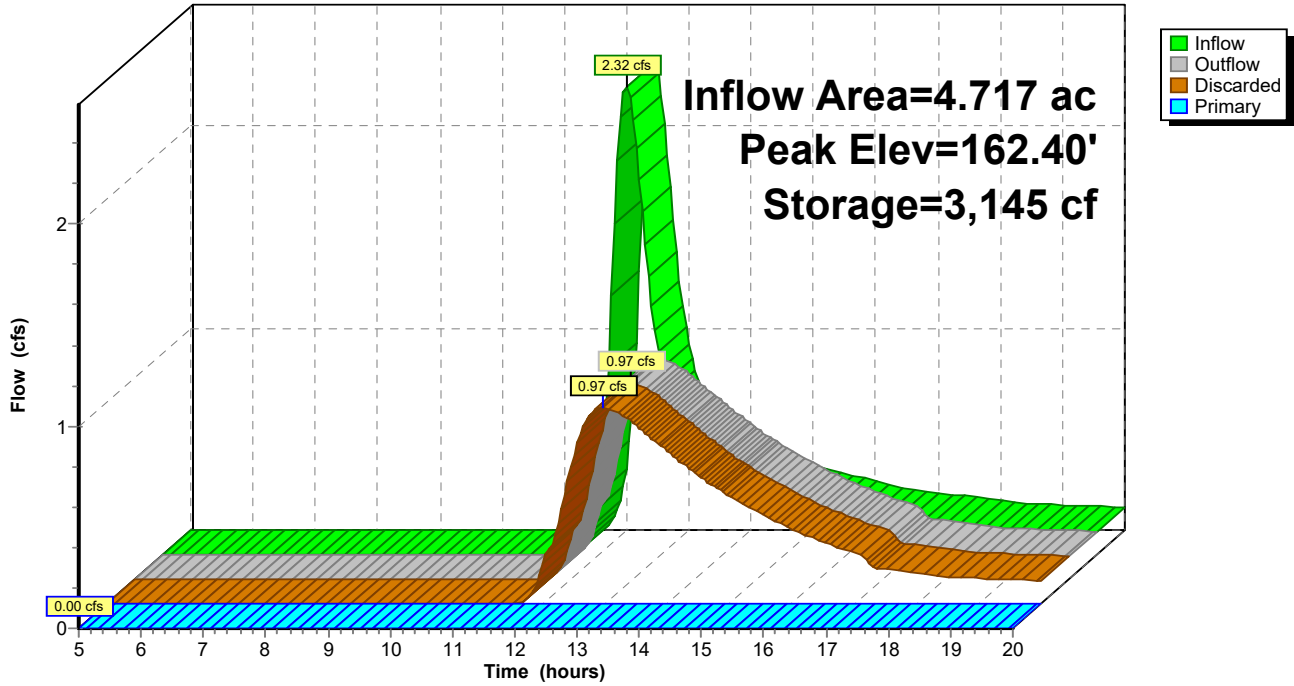
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Pond 16P: Farm Depression

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Summary for Pond 17P: Sediment Trap

Inflow Area = 10.053 ac, 0.32% Impervious, Inflow Depth > 0.43" for 2 year event
 Inflow = 3.31 cfs @ 12.35 hrs, Volume= 0.362 af
 Outflow = 0.96 cfs @ 13.02 hrs, Volume= 0.353 af, Atten= 71%, Lag= 40.0 min
 Discarded = 0.96 cfs @ 13.02 hrs, Volume= 0.353 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.18' @ 13.02 hrs Surf.Area= 13,761 sf Storage= 5,398 cf

Plug-Flow detention time= 75.0 min calculated for 0.353 af (97% of inflow)
 Center-of-Mass det. time= 65.9 min (902.3 - 836.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	81,430 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	0	0	0	0	
162.00	39,746	26,497	26,497	39,752	
163.00	71,678	54,933	81,430	71,695	

Device	Routing	Invert	Outlet Devices												
#1	Primary	162.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.96 cfs @ 13.02 hrs HW=161.18' (Free Discharge)
 ↑2=Exfiltration (Controls 0.96 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=160.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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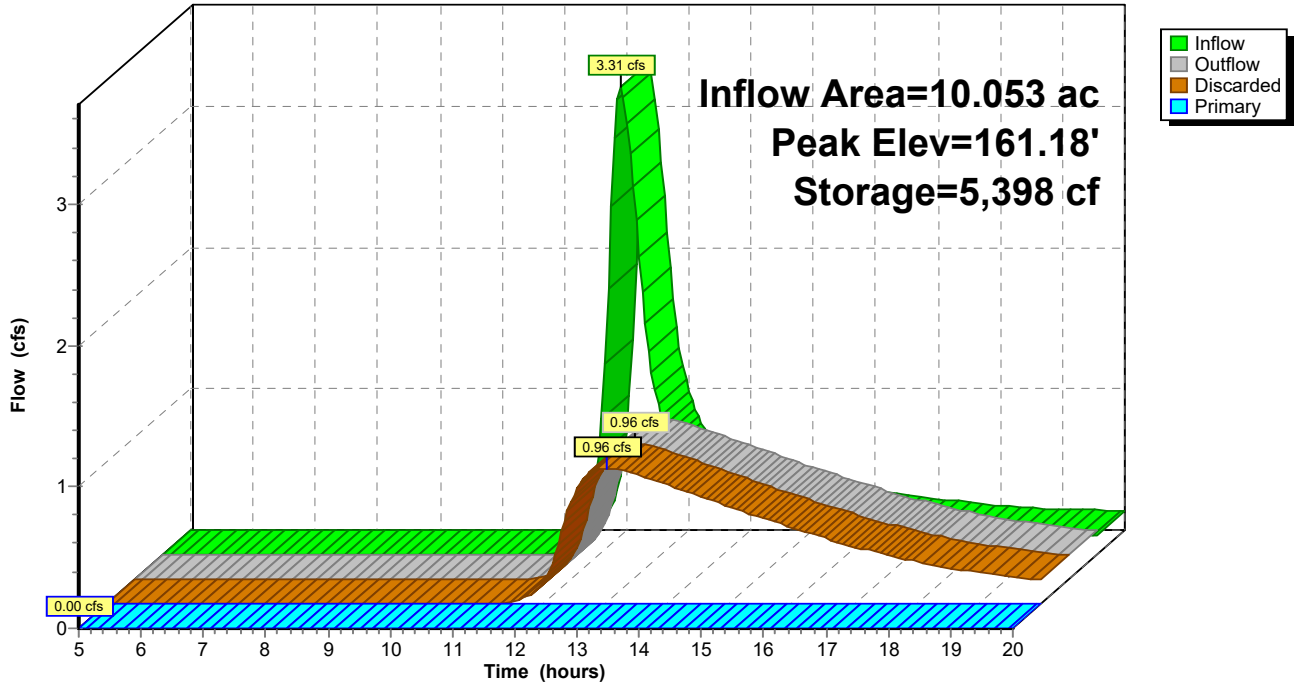
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Pond 17P: Sediment Trap

Hydrograph



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Summary for Pond 19P: Valley Berm

Inflow Area = 21.569 ac, 0.00% Impervious, Inflow Depth > 0.76" for 2 year event
 Inflow = 8.95 cfs @ 12.70 hrs, Volume= 1.361 af
 Outflow = 2.64 cfs @ 13.85 hrs, Volume= 1.277 af, Atten= 70%, Lag= 69.4 min
 Discarded = 2.64 cfs @ 13.85 hrs, Volume= 1.277 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.22' @ 13.85 hrs Surf.Area= 22,683 sf Storage= 21,823 cf

Plug-Flow detention time= 108.5 min calculated for 1.277 af (94% of inflow)
 Center-of-Mass det. time= 89.2 min (945.2 - 856.0)

Volume	Invert	Avail.Storage	Storage Description
#1	151.00'	126,793 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
151.00	0	0	0	0
152.00	9,106	3,035	3,035	9,108
154.00	34,526	40,909	43,944	34,547
156.00	48,730	82,849	126,793	48,824

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	151.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.64 cfs @ 13.85 hrs HW=153.22' (Free Discharge)
 ↑**2=Exfiltration** (Controls 2.64 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=151.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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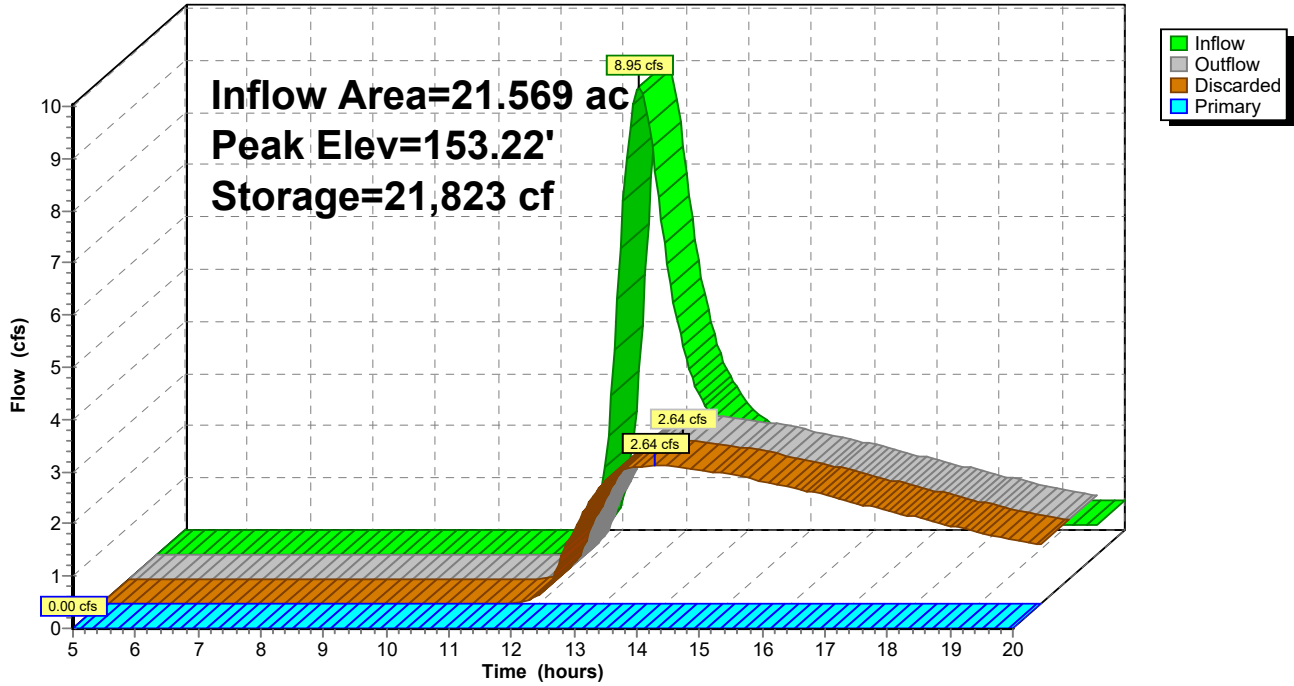
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Pond 19P: Valley Berm

Hydrograph



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Summary for Pond 20P: Sediment Trap

Inflow Area = 1.629 ac, 0.00% Impervious, Inflow Depth > 0.72" for 2 year event
 Inflow = 0.90 cfs @ 12.33 hrs, Volume= 0.098 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.02' @ 20.00 hrs Surf.Area= 2,945 sf Storage= 4,258 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

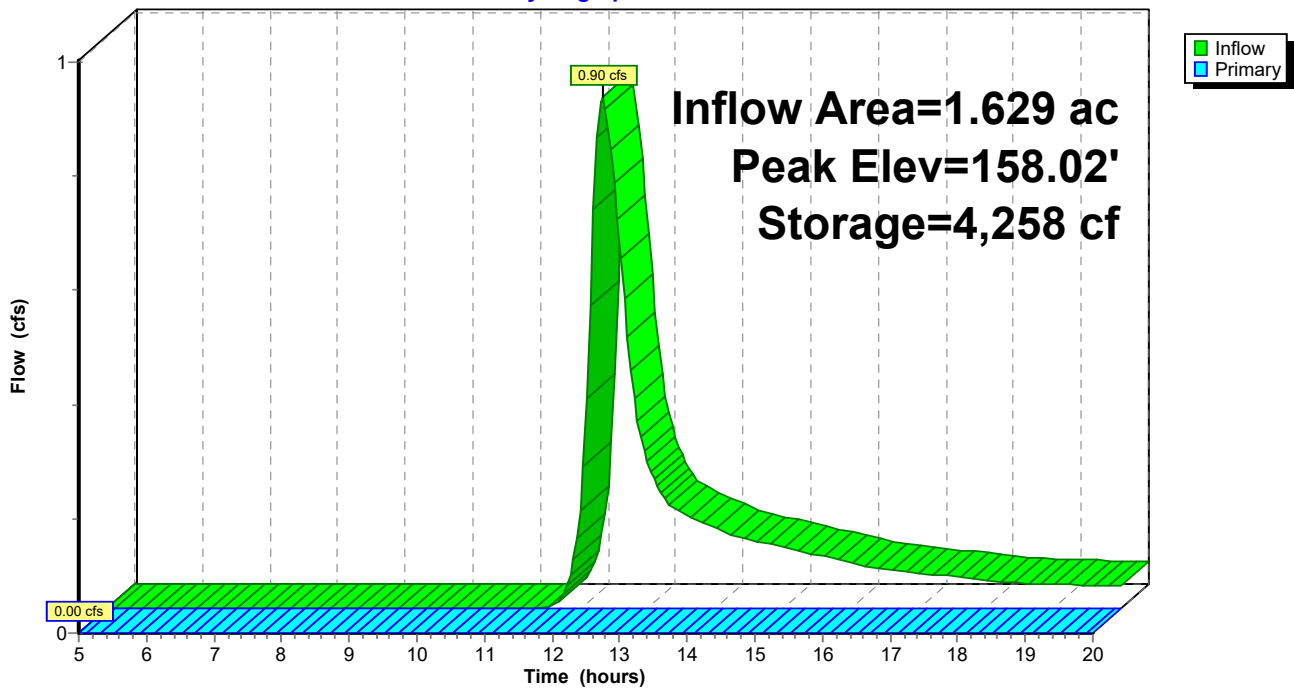
Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	11,904 cf	110.00'W x 12.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=156.00' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 20P: Sediment Trap

Hydrograph



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Summary for Pond 21P: Valley Berm

Inflow Area = 38.989 ac, 0.08% Impervious, Inflow Depth > 0.10" for 2 year event
 Inflow = 2.53 cfs @ 12.44 hrs, Volume= 0.321 af
 Outflow = 0.62 cfs @ 13.47 hrs, Volume= 0.315 af, Atten= 76%, Lag= 61.6 min
 Discarded = 0.62 cfs @ 13.47 hrs, Volume= 0.315 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.80' @ 13.47 hrs Surf.Area= 8,865 sf Storage= 4,902 cf

Plug-Flow detention time= 97.0 min calculated for 0.315 af (98% of inflow)
 Center-of-Mass det. time= 90.4 min (937.6 - 847.2)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	72,609 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
144.00	3,692	0	0 3,692
146.00	20,668	22,064	22,064 20,683
148.00	30,176	50,545	72,609 30,258

Device	Routing	Invert	Outlet Devices
#1	Primary	147.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	144.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.62 cfs @ 13.47 hrs HW=144.80' (Free Discharge)
 ↑2=Exfiltration (Controls 0.62 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=144.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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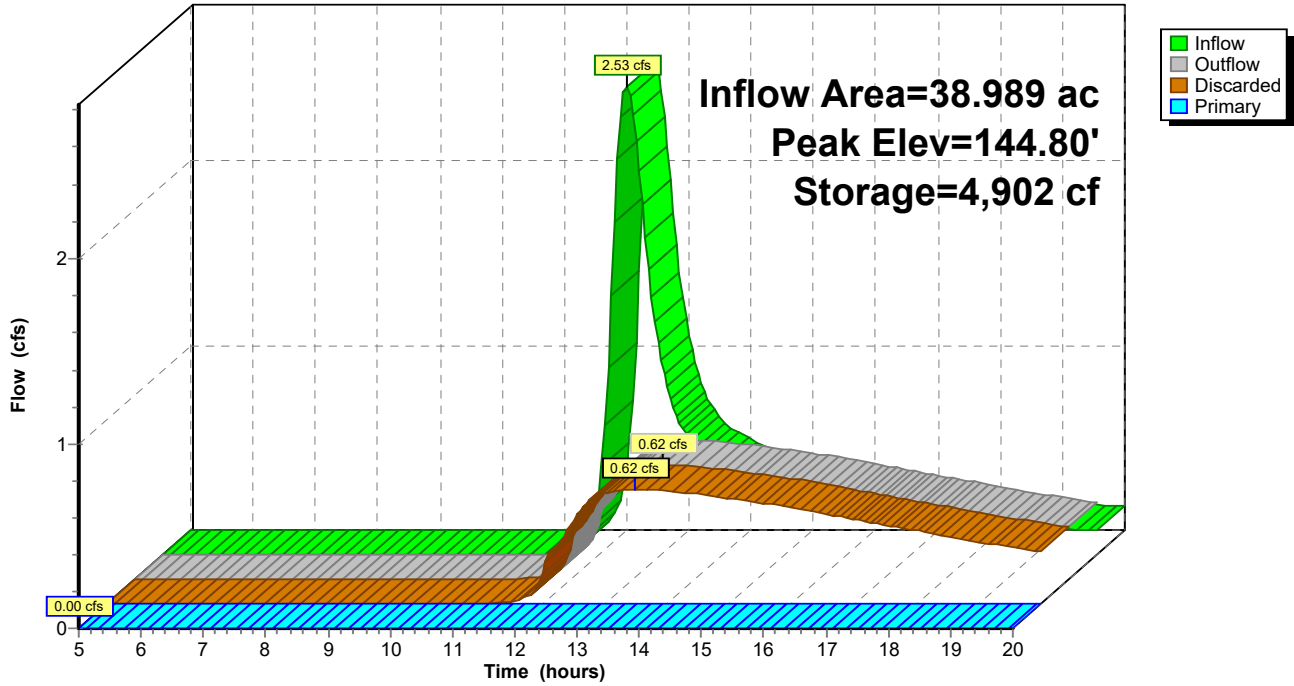
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Pond 21P: Valley Berm

Hydrograph



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Summary for Pond 22P: Sediment Trap

Inflow Area = 17.727 ac, 0.00% Impervious, Inflow Depth > 0.85" for 2 year event
 Inflow = 6.90 cfs @ 12.94 hrs, Volume= 1.250 af
 Outflow = 1.17 cfs @ 16.12 hrs, Volume= 0.696 af, Atten= 83%, Lag= 190.8 min
 Discarded = 1.17 cfs @ 16.12 hrs, Volume= 0.696 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 133.57' @ 16.12 hrs Surf.Area= 16,592 sf Storage= 29,637 cf

Plug-Flow detention time= 191.9 min calculated for 0.693 af (55% of inflow)
 Center-of-Mass det. time= 110.8 min (976.0 - 865.2)

Volume	Invert	Avail.Storage	Storage Description
#1	131.00'	84,211 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
131.00	7,145	0	0	7,145
132.00	10,375	8,710	8,710	10,392
133.00	14,183	12,229	20,939	14,220
134.00	18,569	16,327	37,266	18,629
135.00	23,407	20,941	58,208	23,494
136.00	28,690	26,004	84,211	28,808

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	131.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.17 cfs @ 16.12 hrs HW=133.57' (Free Discharge)
 ↑2=Exfiltration (Controls 1.17 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=131.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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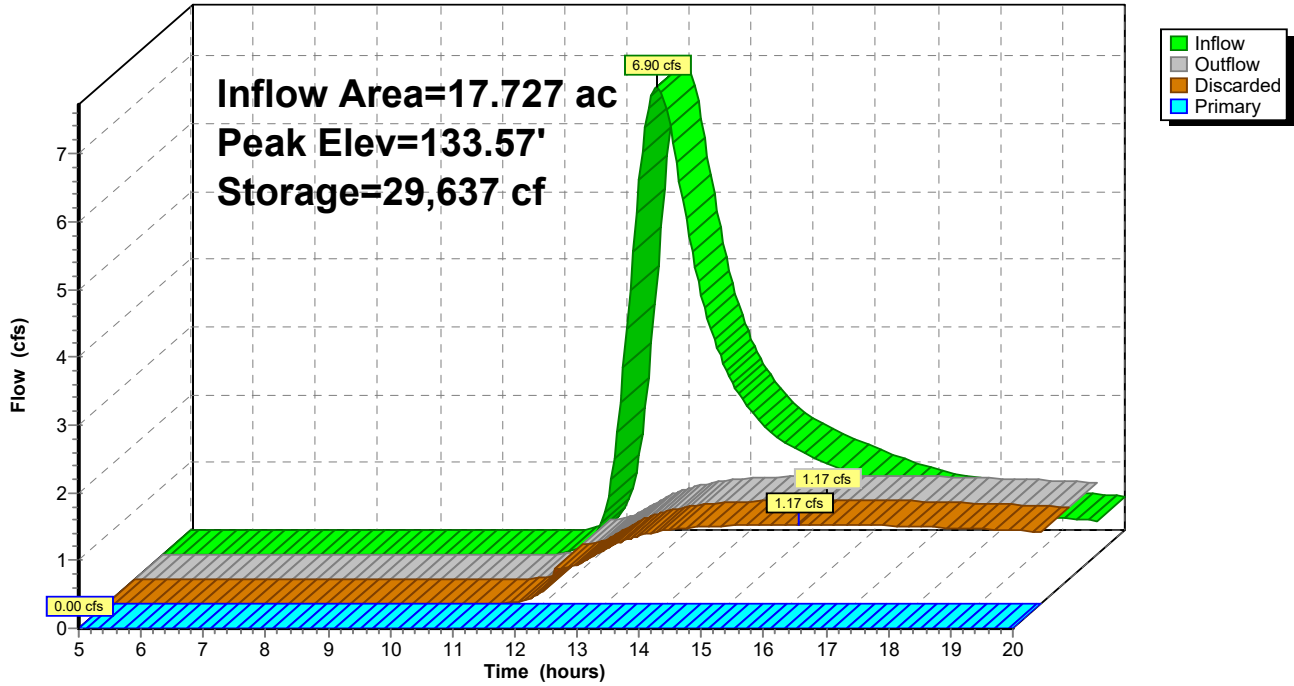
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Pond 22P: Sediment Trap

Hydrograph



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Summary for Pond 24P: Sediment Trap

Inflow Area = 2.795 ac, 0.00% Impervious, Inflow Depth > 0.82" for 2 year event
 Inflow = 1.93 cfs @ 12.27 hrs, Volume= 0.190 af
 Outflow = 0.27 cfs @ 13.90 hrs, Volume= 0.156 af, Atten= 86%, Lag= 97.7 min
 Discarded = 0.27 cfs @ 13.90 hrs, Volume= 0.156 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 137.48' @ 13.90 hrs Surf.Area= 3,815 sf Storage= 3,644 cf

Plug-Flow detention time= 164.4 min calculated for 0.156 af (82% of inflow)
 Center-of-Mass det. time= 114.5 min (946.9 - 832.5)

Volume	Invert	Avail.Storage	Storage Description
#1	136.00'	21,509 cf	44.00'W x 30.00'L x 4.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	139.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	136.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.27 cfs @ 13.90 hrs HW=137.48' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.27 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=136.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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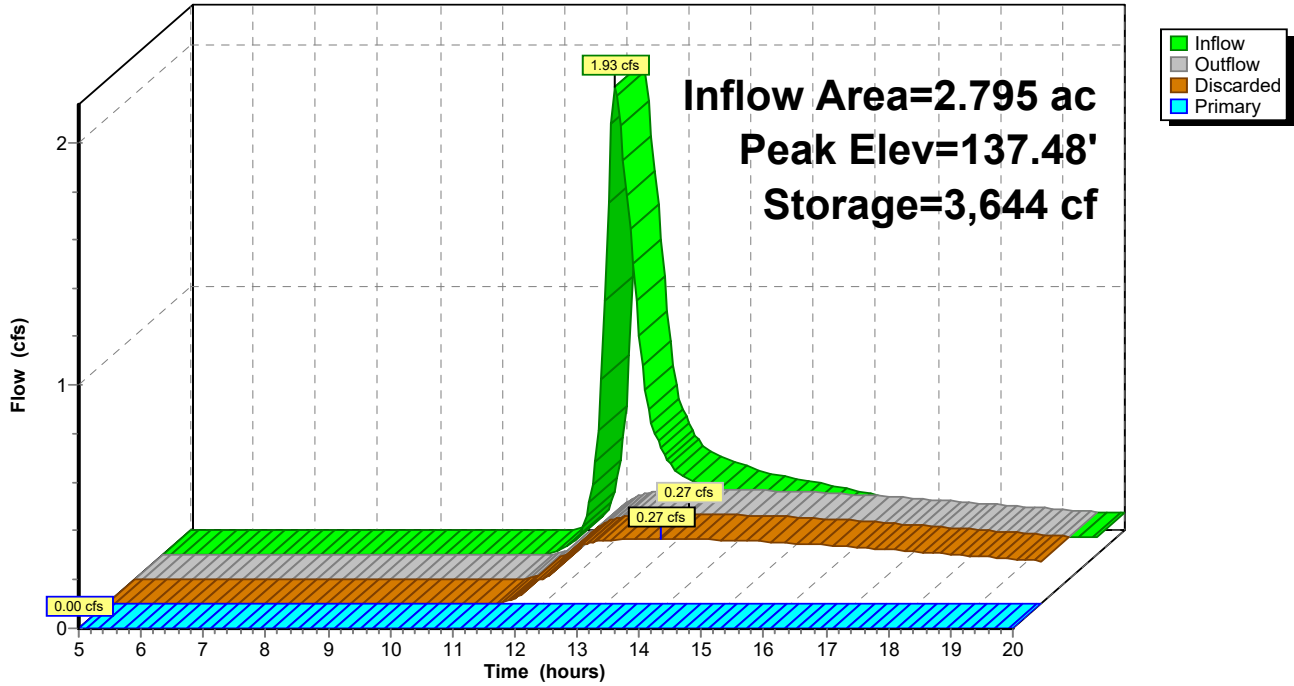
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Pond 24P: Sediment Trap

Hydrograph



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Summary for Pond 25P: Sediment Trap

Inflow Area = 12.168 ac, 0.00% Impervious, Inflow Depth > 0.80" for 2 year event
 Inflow = 5.43 cfs @ 12.69 hrs, Volume= 0.816 af
 Outflow = 1.36 cfs @ 14.09 hrs, Volume= 0.811 af, Atten= 75%, Lag= 83.6 min
 Discarded = 1.36 cfs @ 14.09 hrs, Volume= 0.811 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.68' @ 14.09 hrs Surf.Area= 19,489 sf Storage= 12,775 cf

Plug-Flow detention time= 98.3 min calculated for 0.811 af (99% of inflow)
 Center-of-Mass det. time= 95.9 min (949.6 - 853.6)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	118,500 cf	60.00'W x 300.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.36 cfs @ 14.09 hrs HW=163.68' (Free Discharge)
 ↳2=Exfiltration (Controls 1.36 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=163.00' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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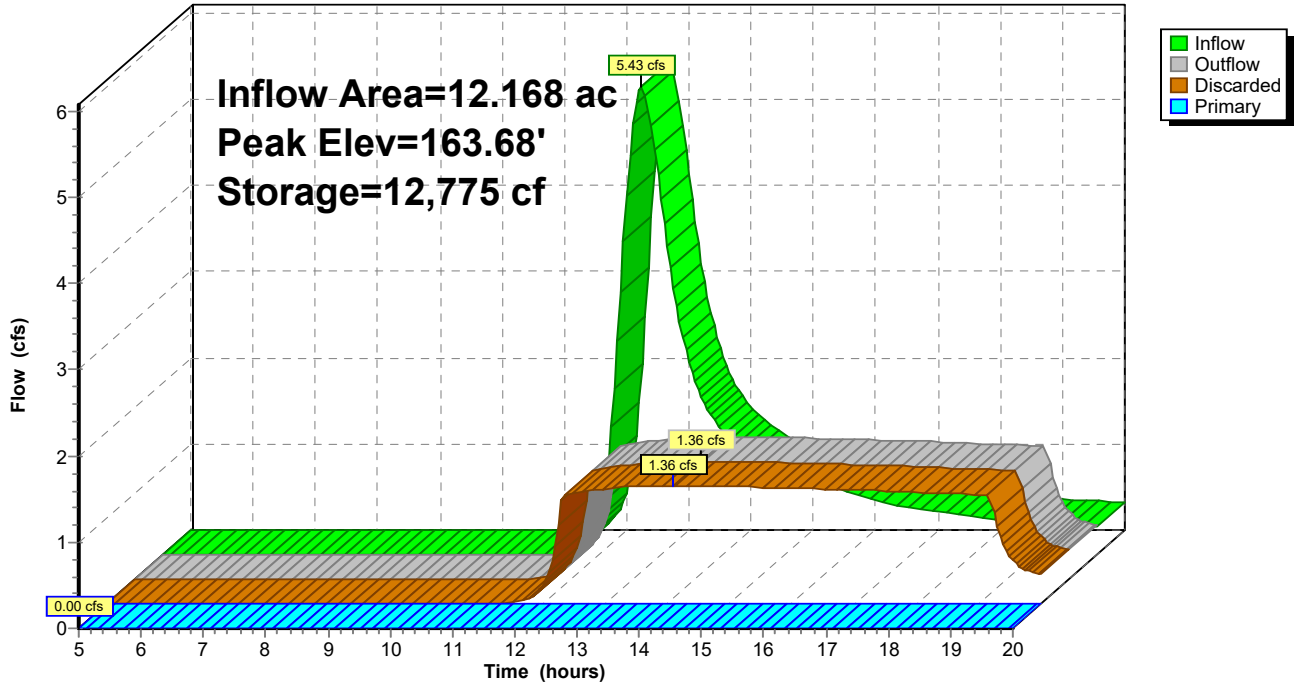
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Pond 25P: Sediment Trap

Hydrograph



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Summary for Pond 27P: Sediment Trap

Inflow Area = 2.191 ac, 0.00% Impervious, Inflow Depth > 0.63" for 2 year event
 Inflow = 1.01 cfs @ 12.36 hrs, Volume= 0.115 af
 Outflow = 0.15 cfs @ 14.57 hrs, Volume= 0.092 af, Atten= 85%, Lag= 132.9 min
 Discarded = 0.15 cfs @ 14.57 hrs, Volume= 0.092 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.23' @ 14.57 hrs Surf.Area= 2,074 sf Storage= 2,155 cf

Plug-Flow detention time= 167.6 min calculated for 0.092 af (79% of inflow)
 Center-of-Mass det. time= 112.5 min (958.6 - 846.1)

Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	10,198 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
165.00	1,448	0	0 1,448
166.00	1,953	1,694	1,694 1,974
168.00	3,133	5,040	6,734 3,206
169.00	3,807	3,465	10,198 3,911

Device	Routing	Invert	Outlet Devices
#1	Primary	168.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	165.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.15 cfs @ 14.57 hrs HW=166.23' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=165.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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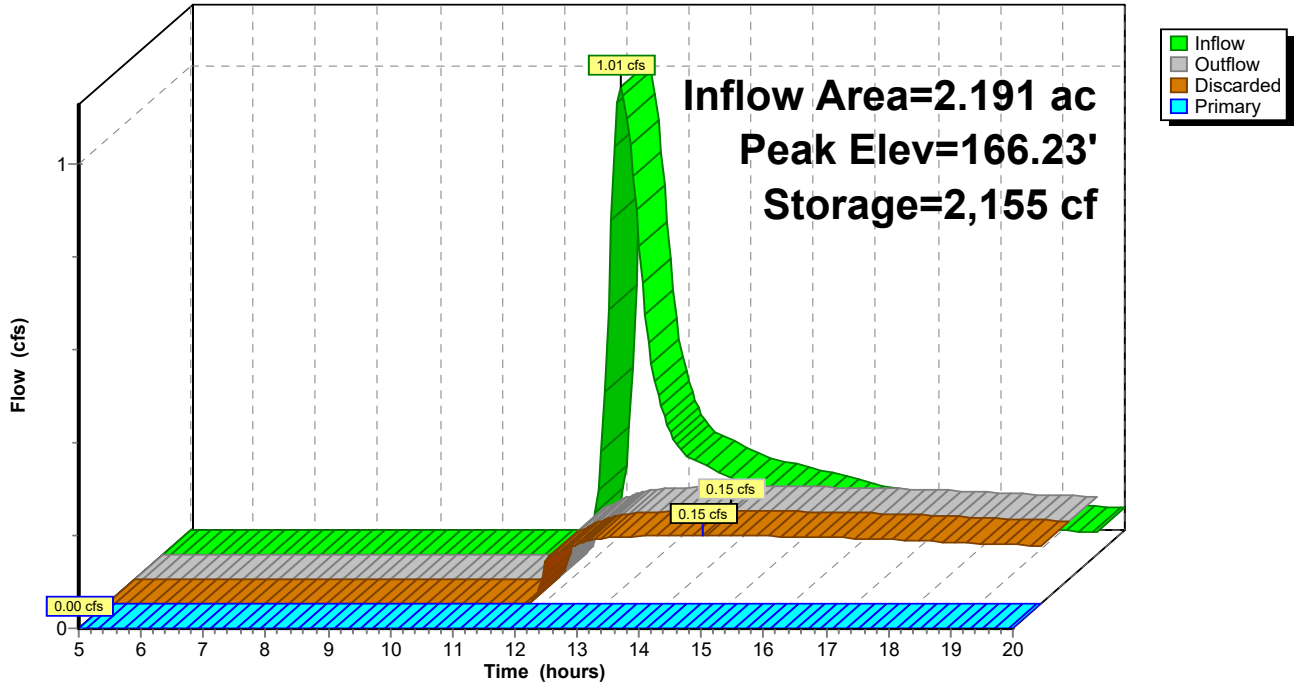
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Pond 27P: Sediment Trap

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 28P: Kettle Hole

Inflow Area = 7.361 ac, 0.00% Impervious, Inflow Depth > 0.25" for 2 year event
 Inflow = 0.92 cfs @ 12.45 hrs, Volume= 0.154 af
 Outflow = 0.15 cfs @ 16.73 hrs, Volume= 0.090 af, Atten= 83%, Lag= 257.0 min
 Discarded = 0.15 cfs @ 16.73 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 151.17' @ 16.73 hrs Surf.Area= 4,382 sf Storage= 3,159 cf

Plug-Flow detention time= 190.6 min calculated for 0.090 af (58% of inflow)
 Center-of-Mass det. time= 96.8 min (980.6 - 883.7)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	703,547 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	1,301	0	0	1,301
152.00	7,637	8,060	8,060	7,652
154.00	17,812	24,741	32,802	17,857
156.00	31,769	48,913	81,714	31,858
158.00	44,943	76,332	158,046	45,104
160.00	56,203	100,936	258,983	56,476
162.00	68,079	124,092	383,075	68,483
164.00	79,954	147,874	530,949	80,513
166.00	92,803	172,598	703,547	93,530

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.15 cfs @ 16.73 hrs HW=151.17' (Free Discharge)

↑1=Exfiltration (Controls 0.15 cfs)

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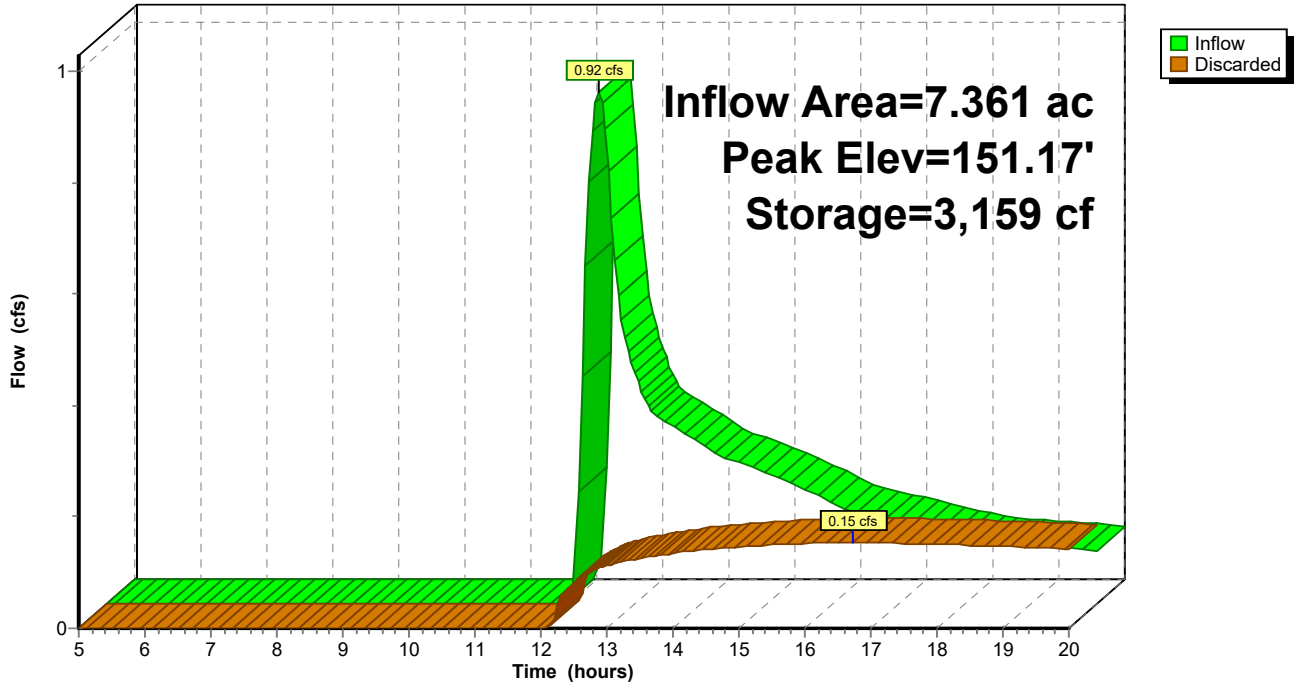
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Pond 28P: Kettle Hole

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 29P: Kettle Hole

Inflow Area = 1.626 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 year event
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.00' @ 5.00 hrs Surf.Area= 883 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	140,344 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	883	0	0	883
148.00	2,535	3,276	3,276	2,559
150.00	4,534	6,973	10,249	4,601
152.00	6,834	11,290	21,539	6,962
154.00	10,301	17,017	38,555	10,490
156.00	14,424	24,610	63,165	14,687
158.00	19,416	33,717	96,882	19,763
160.00	24,132	43,463	140,344	24,593

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=146.00' (Free Discharge)
 ↑1=Exfiltration (Passes 0.00 cfs of 0.03 cfs potential flow)

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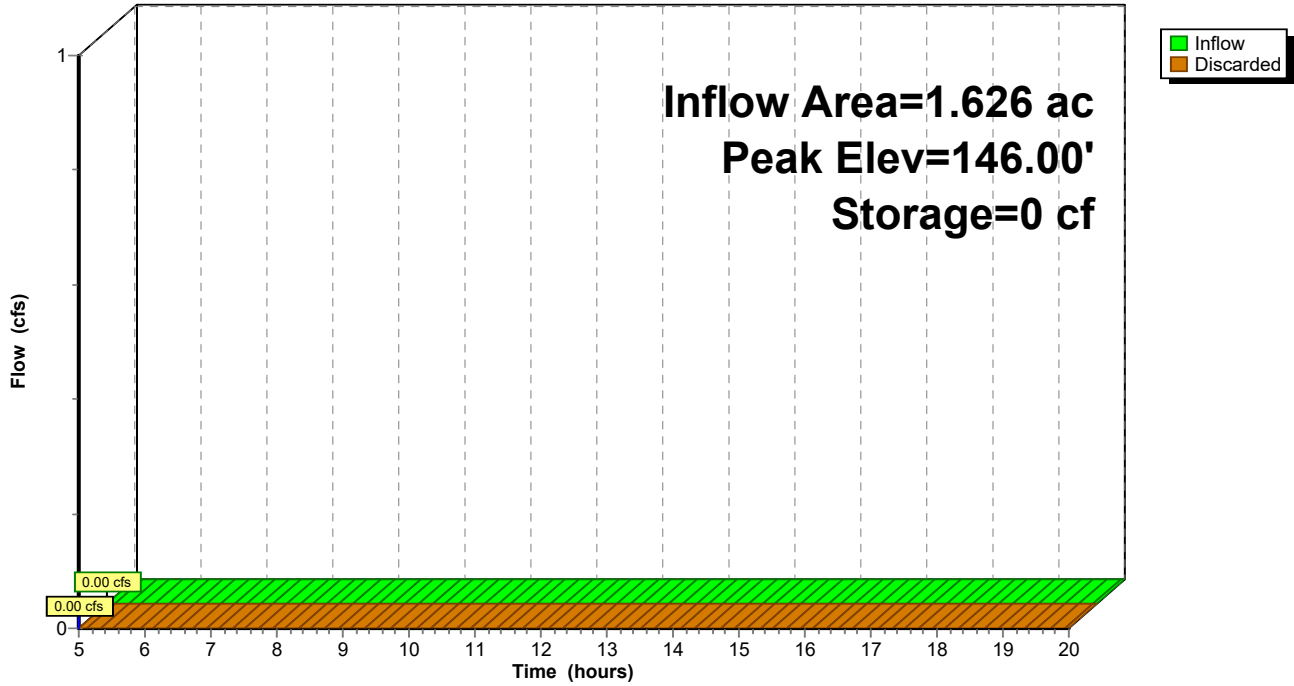
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Pond 29P: Kettle Hole

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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 30P: Farm Depression

Inflow Area = 3.911 ac, 0.00% Impervious, Inflow Depth > 0.92" for 2 year event
 Inflow = 3.64 cfs @ 12.17 hrs, Volume= 0.300 af
 Outflow = 1.01 cfs @ 12.64 hrs, Volume= 0.296 af, Atten= 72%, Lag= 28.5 min
 Discarded = 1.01 cfs @ 12.64 hrs, Volume= 0.296 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 169.87' @ 12.64 hrs Surf.Area= 14,504 sf Storage= 4,222 cf

Plug-Flow detention time= 52.5 min calculated for 0.296 af (99% of inflow)
 Center-of-Mass det. time= 48.0 min (870.8 - 822.9)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	177,312 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	0	0	0	0
170.00	19,015	6,338	6,338	19,017
172.00	61,742	76,681	83,019	61,766
173.00	131,151	94,293	177,312	131,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	169.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.01 cfs @ 12.64 hrs HW=169.87' (Free Discharge)
 ↑1=Exfiltration (Controls 1.01 cfs)

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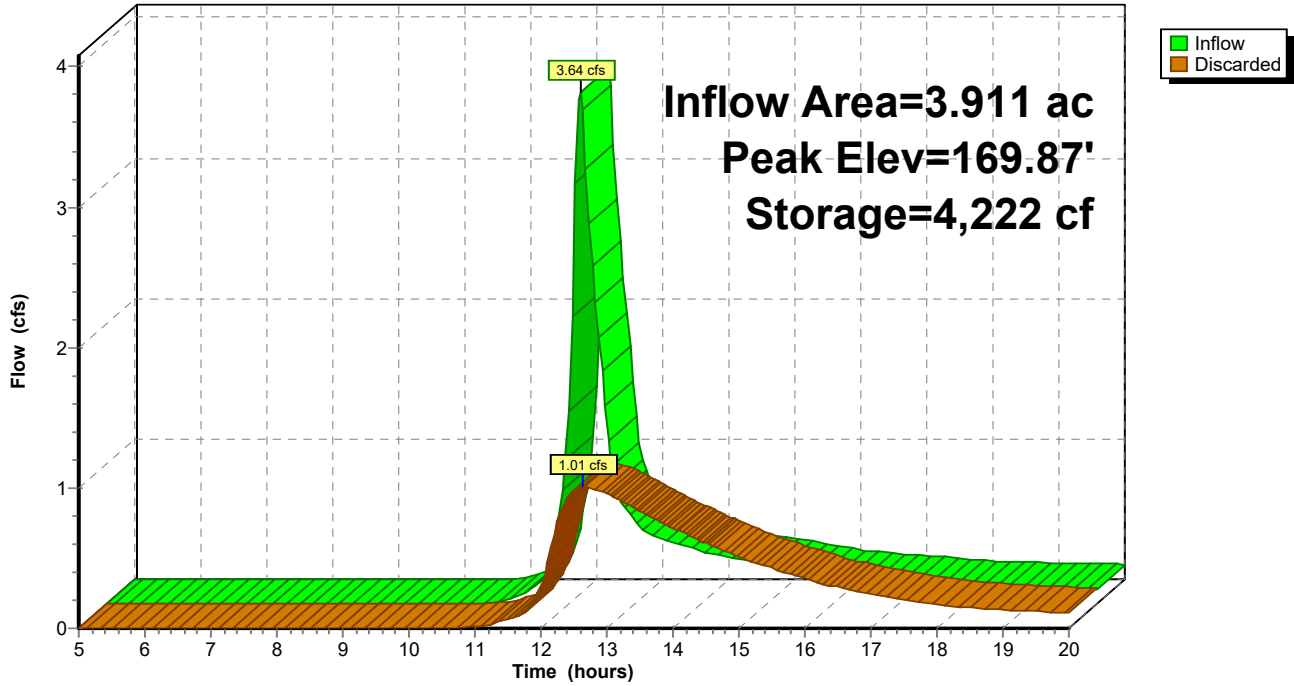
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Pond 30P: Farm Depression

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Summary for Pond 31P: Kettle Hole

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 0.00" for 2 year event
Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 144.03' @ 20.00 hrs Surf.Area= 506 sf Storage= 13 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	580,458 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
144.00	435	0	0
146.00	5,720	6,155	6,155
148.00	14,467	20,187	26,342
150.00	23,981	38,448	64,790
152.00	31,477	55,458	120,248
154.00	37,463	68,940	189,188
156.00	43,468	80,931	270,119
158.00	49,047	92,515	362,634
160.00	54,411	103,458	466,092
162.00	59,955	114,366	580,458

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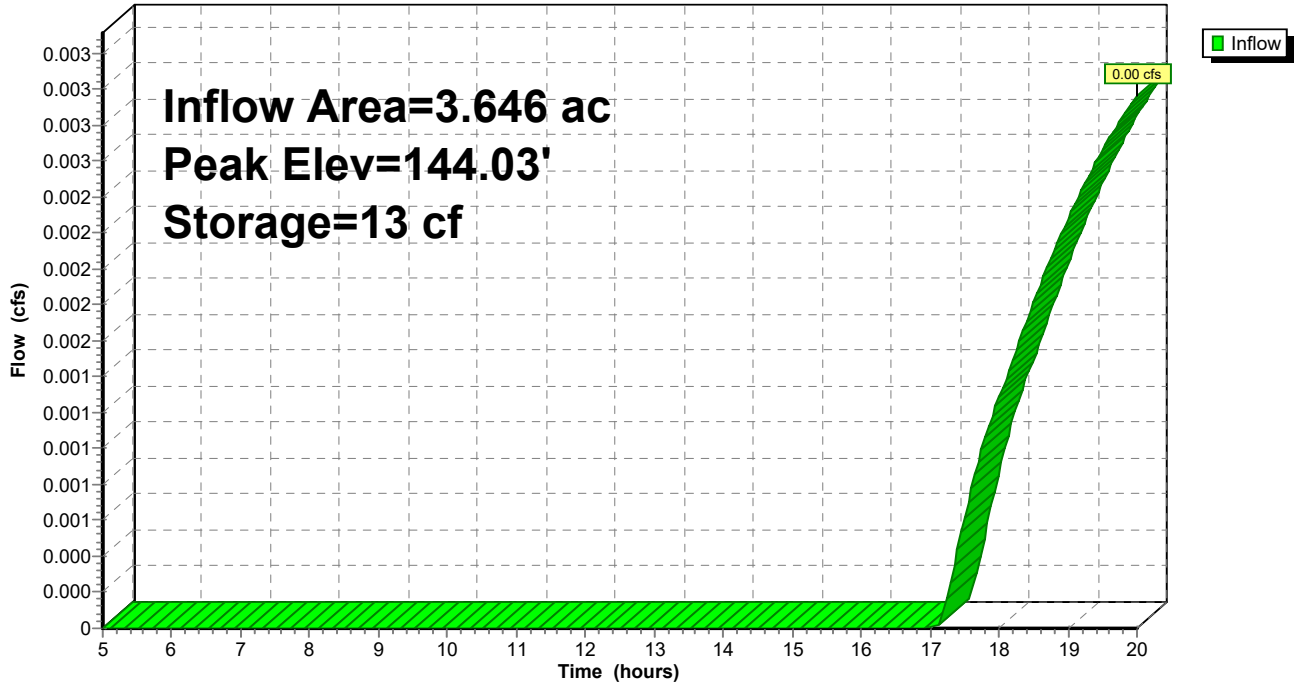
Type III 24-hr 2 year Rainfall=3.16"

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Pond 31P: Kettle Hole

Hydrograph



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Summary for Pond 33P: Sediment Trap

Inflow Area = 14.255 ac, 0.00% Impervious, Inflow Depth > 0.48" for 2 year event
 Inflow = 7.67 cfs @ 12.02 hrs, Volume= 0.570 af
 Outflow = 1.68 cfs @ 12.52 hrs, Volume= 0.568 af, Atten= 78%, Lag= 29.6 min
 Discarded = 1.68 cfs @ 12.52 hrs, Volume= 0.568 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 150.42' @ 12.52 hrs Surf.Area= 14,493 sf Storage= 5,685 cf

Plug-Flow detention time= 26.9 min calculated for 0.566 af (99% of inflow)
 Center-of-Mass det. time= 25.5 min (868.2 - 842.6)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	91,856 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	12,664	0	0	12,664
152.00	22,508	34,703	34,703	22,552
154.00	35,109	57,152	91,856	35,210

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	153.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=1.68 cfs @ 12.52 hrs HW=150.42' (Free Discharge)
 ↑1=Exfiltration (Controls 1.68 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=150.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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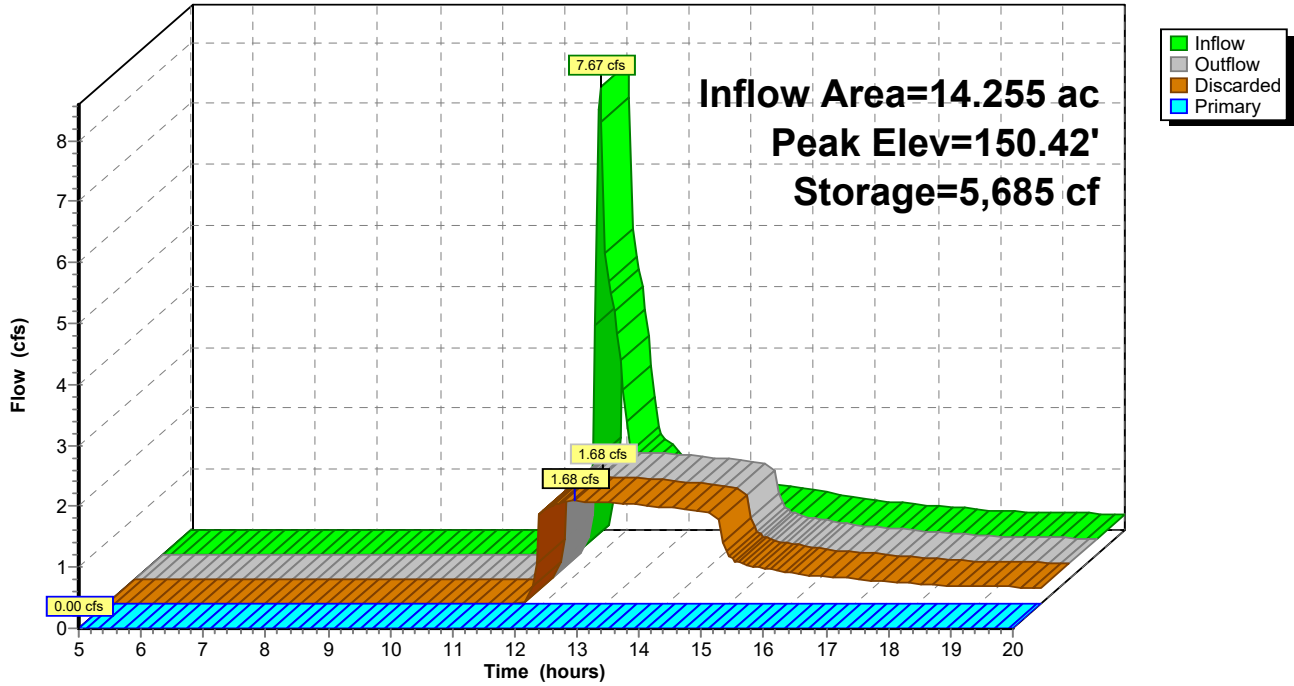
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Pond 33P: Sediment Trap

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Summary for Pond 34P: Sediment Trap

Inflow Area = 7.888 ac, 0.00% Impervious, Inflow Depth > 0.67" for 2 year event
 Inflow = 3.76 cfs @ 12.40 hrs, Volume= 0.443 af
 Outflow = 1.04 cfs @ 13.18 hrs, Volume= 0.441 af, Atten= 72%, Lag= 46.9 min
 Discarded = 1.04 cfs @ 13.18 hrs, Volume= 0.441 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 152.74' @ 13.18 hrs Surf.Area= 8,957 sf Storage= 5,760 cf

Plug-Flow detention time= 53.7 min calculated for 0.440 af (99% of inflow)
 Center-of-Mass det. time= 51.8 min (897.3 - 845.5)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	217,098 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
152.00	6,737	0	0	6,737
154.00	13,501	19,850	19,850	13,537
156.00	22,082	35,233	55,083	22,170
158.00	161,266	162,015	217,098	161,367

Device	Routing	Invert	Outlet Devices
#1	Discarded	152.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.04 cfs @ 13.18 hrs HW=152.74' (Free Discharge)
 ↑1=Exfiltration (Controls 1.04 cfs)

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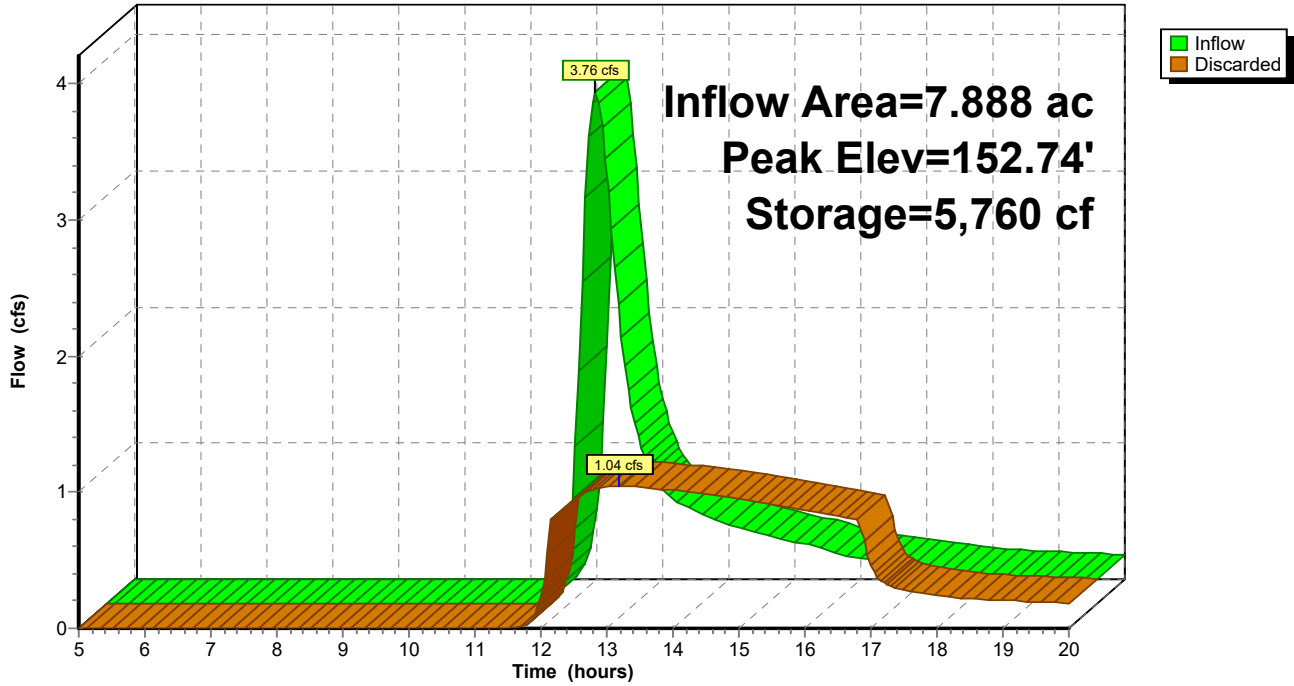
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Pond 34P: Sediment Trap

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Summary for Pond 35P: Sediment Trap

Inflow Area = 7.628 ac, 0.00% Impervious, Inflow Depth > 0.22" for 2 year event
Inflow = 0.72 cfs @ 12.58 hrs, Volume= 0.141 af
Outflow = 0.48 cfs @ 12.91 hrs, Volume= 0.140 af, Atten= 33%, Lag= 20.0 min
Discarded = 0.48 cfs @ 12.91 hrs, Volume= 0.140 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 150.12' @ 12.91 hrs Surf.Area= 4,156 sf Storage= 494 cf

Plug-Flow detention time= 12.2 min calculated for 0.140 af (99% of inflow)
Center-of-Mass det. time= 9.0 min (903.3 - 894.3)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	123,166 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	4,063	0	0	4,063
152.00	5,754	9,768	9,768	5,825
154.00	7,588	13,300	23,068	7,748
156.00	9,623	17,171	40,239	9,886
158.00	86,000	82,927	123,166	86,276

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.48 cfs @ 12.91 hrs HW=150.12' (Free Discharge)

↑1=Exfiltration (Controls 0.48 cfs)

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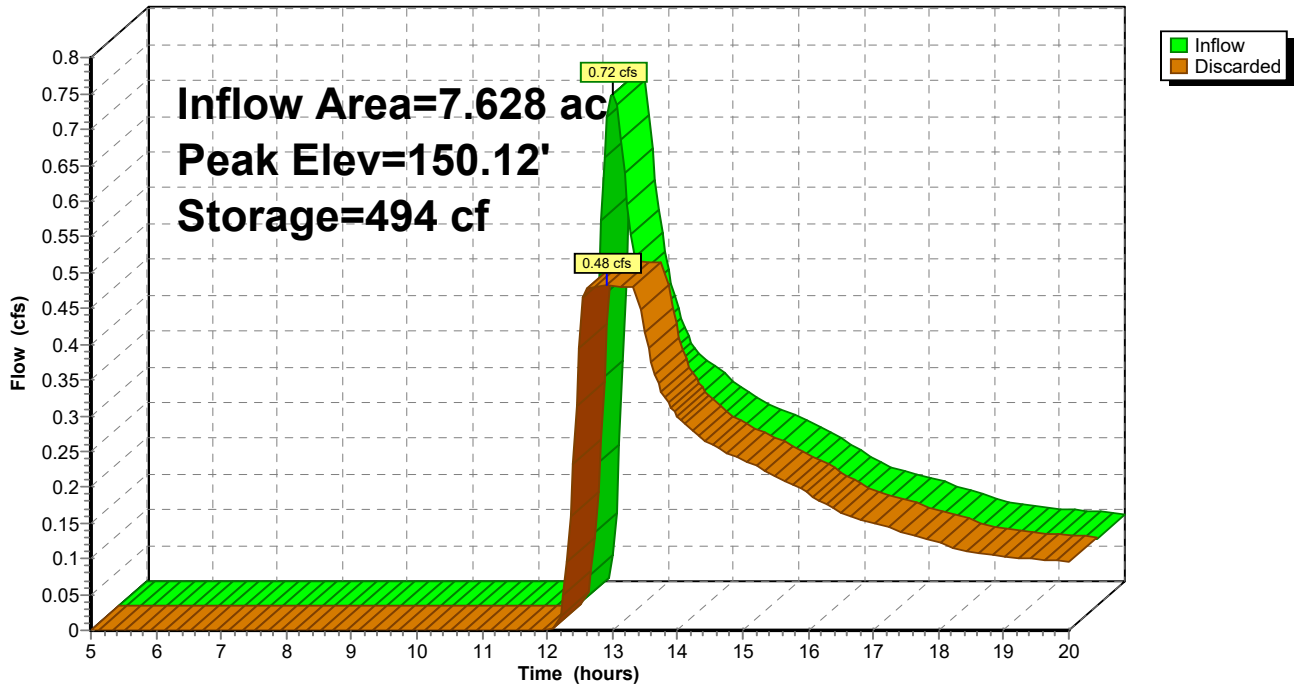
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Pond 35P: Sediment Trap

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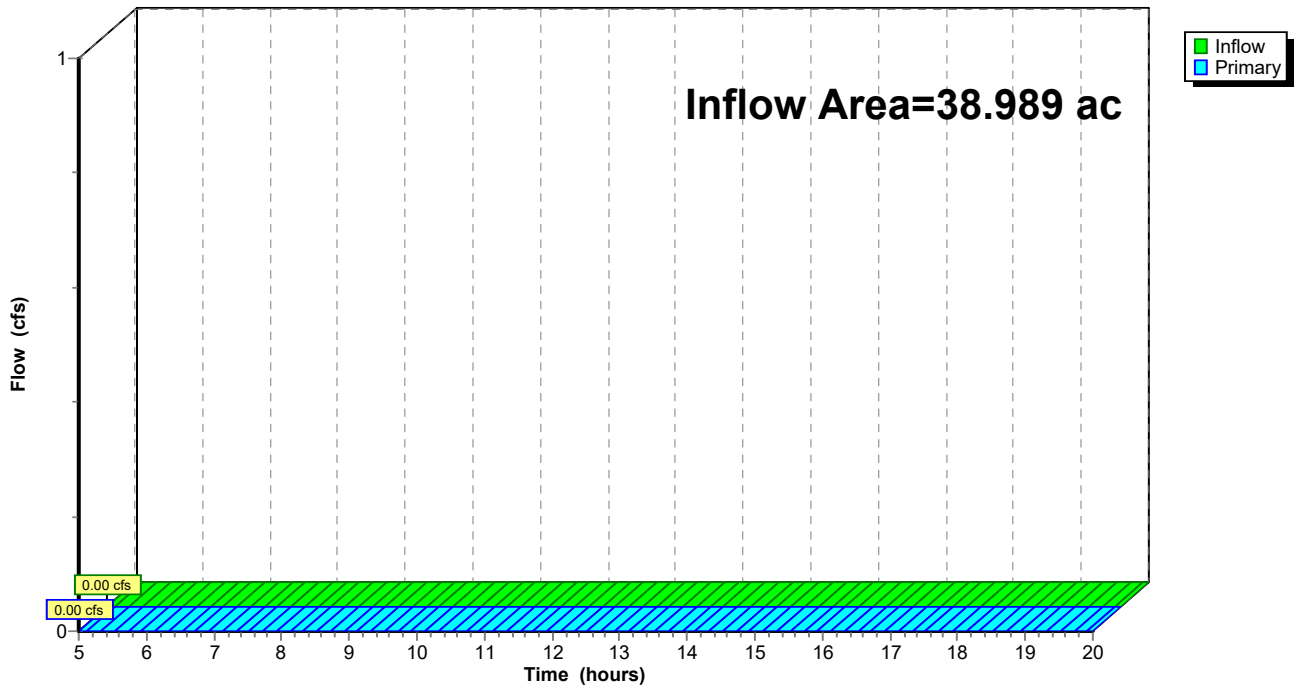
Summary for Link DP19: (new Link)

Inflow Area = 38.989 ac, 0.08% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP19: (new Link)

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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 1: Subcat 1

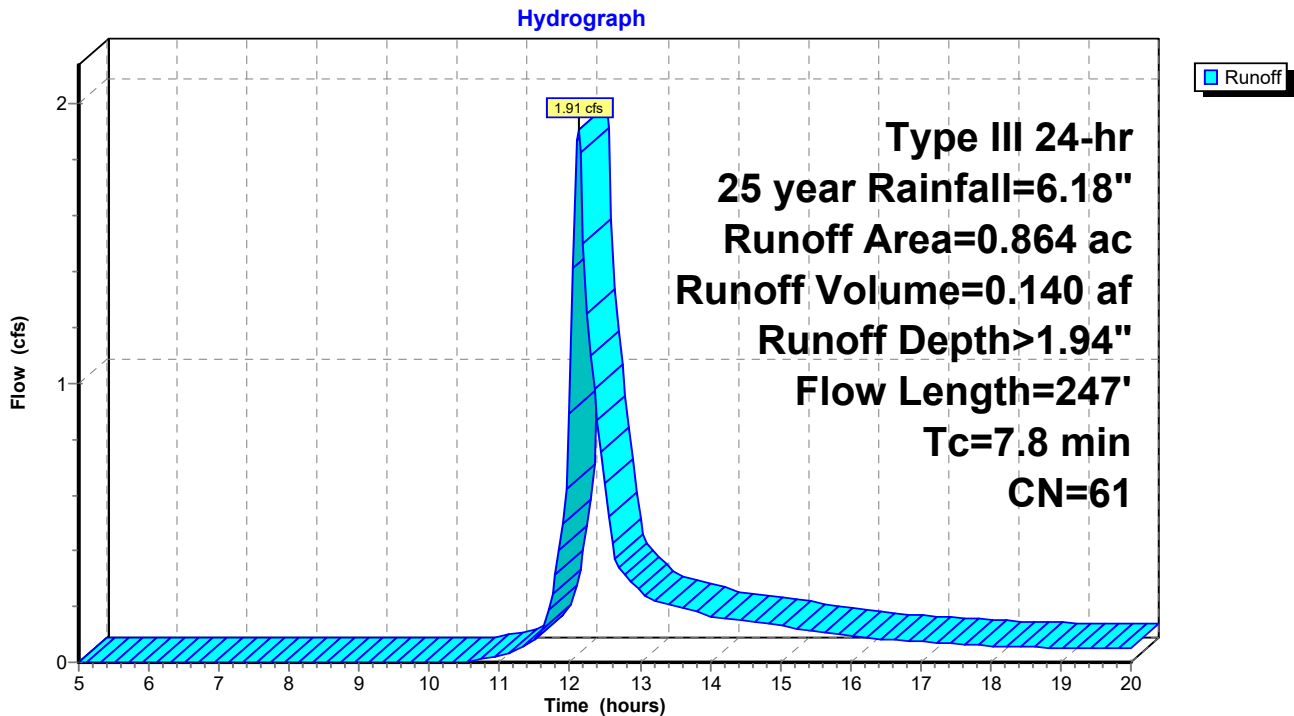
Runoff = 1.91 cfs @ 12.12 hrs, Volume= 0.140 af, Depth> 1.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.257	74	50-75% Grass cover, Fair, HSG B-C
0.063	30	Meadow, non-grazed, HSG A
0.544	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
0.864	61	Weighted Average
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.1	197	0.0508	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.8	247	Total			

Subcatchment 1: Subcat 1



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 2: Subcat 2

Runoff = 1.54 cfs @ 12.27 hrs, Volume= 0.219 af, Depth> 0.58"

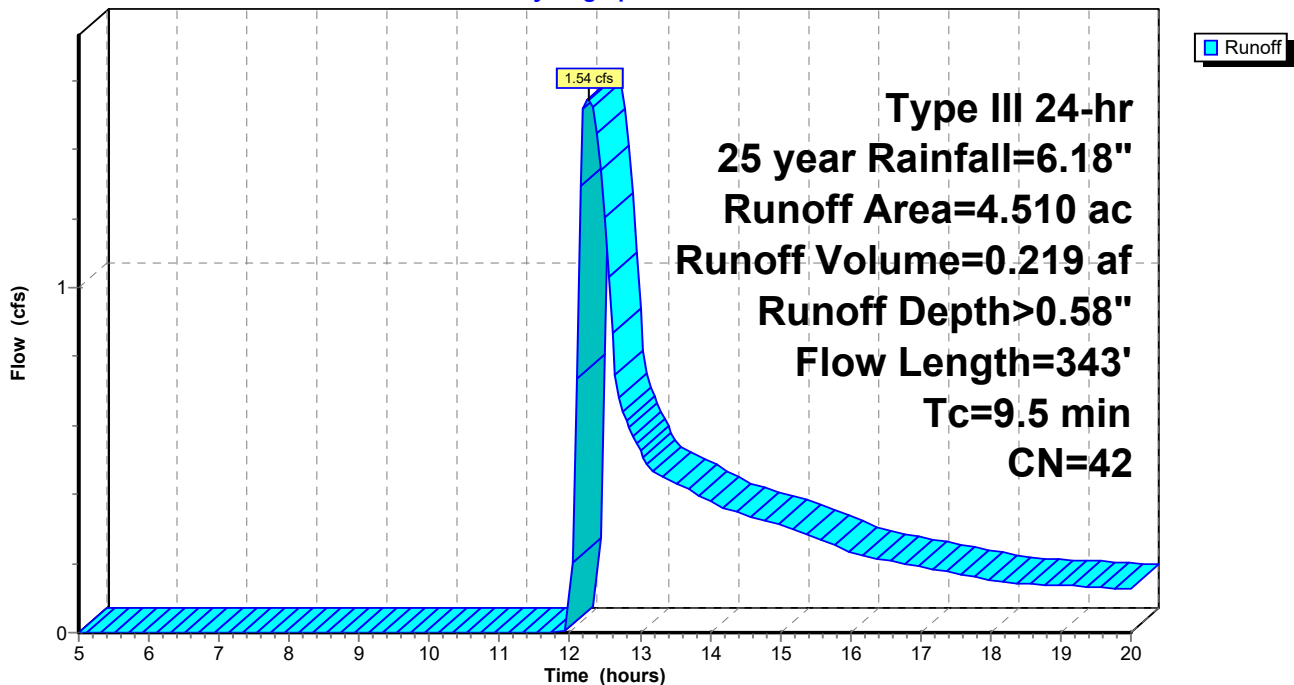
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.853	59	50-75% Grass cover, Fair, HSG A-B
* 0.202	74	50-75% Grass cover, Fair, HSG B-C
1.504	30	Meadow, non-grazed, HSG A
0.309	58	Meadow, non-grazed, HSG B
1.560	36	Woods, Fair, HSG A
0.002	60	Woods, Fair, HSG B
0.080	73	Woods, Fair, HSG C
4.510	42	Weighted Average
4.510		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
3.8	293	0.0343	1.30		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	343	Total			

Subcatchment 2: Subcat 2

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 3: Subcat 3

Runoff = 5.42 cfs @ 12.15 hrs, Volume= 0.423 af, Depth> 1.86"

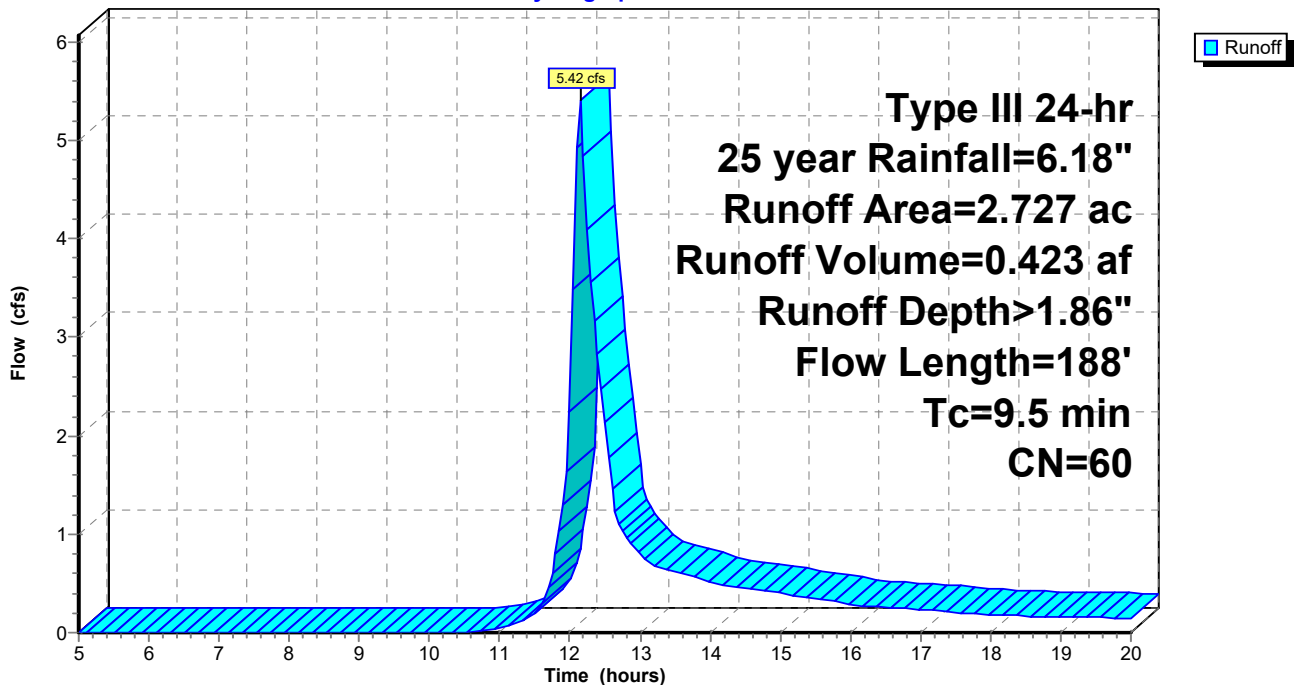
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 1.206	59	50-75% Grass cover, Fair, HSG A-B
* 0.893	74	50-75% Grass cover, Fair, HSG B-C
0.376	30	Meadow, non-grazed, HSG A
0.252	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
2.727	60	Weighted Average
2.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.3	66	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	72	0.0556	1.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	188	Total			

Subcatchment 3: Subcat 3

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 4: Subcat 4

Runoff = 8.70 cfs @ 12.16 hrs, Volume= 0.693 af, Depth> 2.28"

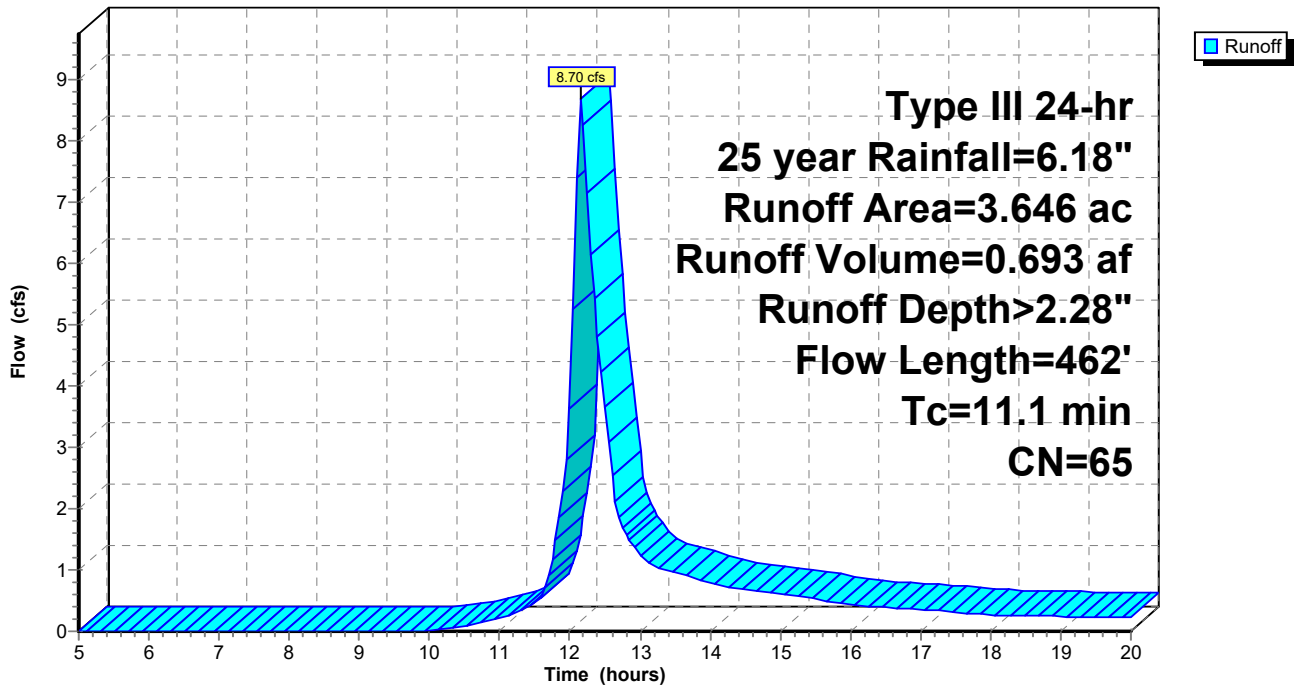
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.058	59	50-75% Grass cover, Fair, HSG A-B
* 2.741	74	50-75% Grass cover, Fair, HSG B-C
0.609	30	Meadow, non-grazed, HSG A
0.238	58	Meadow, non-grazed, HSG B
3.646	65	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	412	0.0243	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	462	Total			

Subcatchment 4: Subcat 4

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 5: Subcat 5

Runoff = 19.80 cfs @ 12.34 hrs, Volume= 2.099 af, Depth> 2.90"

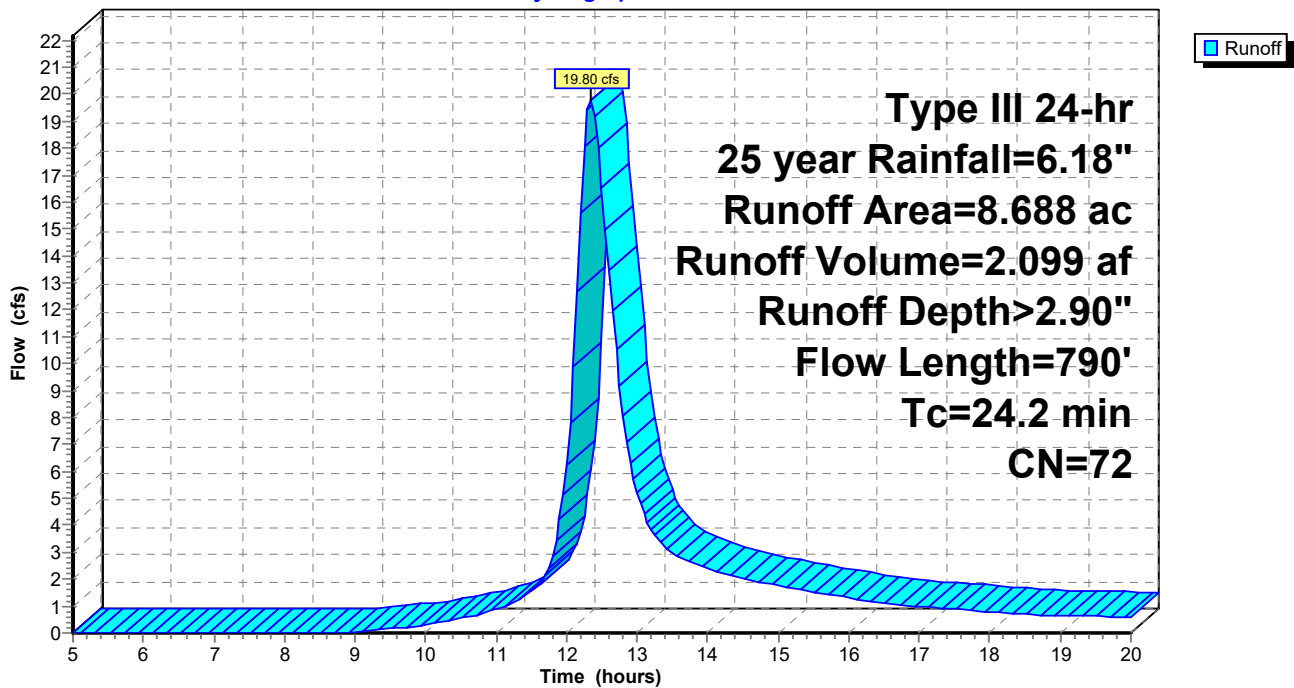
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.053	59	50-75% Grass cover, Fair, HSG A-B
* 8.049	74	50-75% Grass cover, Fair, HSG B-C
0.384	30	Meadow, non-grazed, HSG A
0.202	58	Meadow, non-grazed, HSG B
8.688	72	Weighted Average
8.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
13.7	583	0.0103	0.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	157	0.0159	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.2	790	Total			

Subcatchment 5: Subcat 5

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 6: Subcat 6

Runoff = 15.64 cfs @ 12.23 hrs, Volume= 1.419 af, Depth> 2.63"

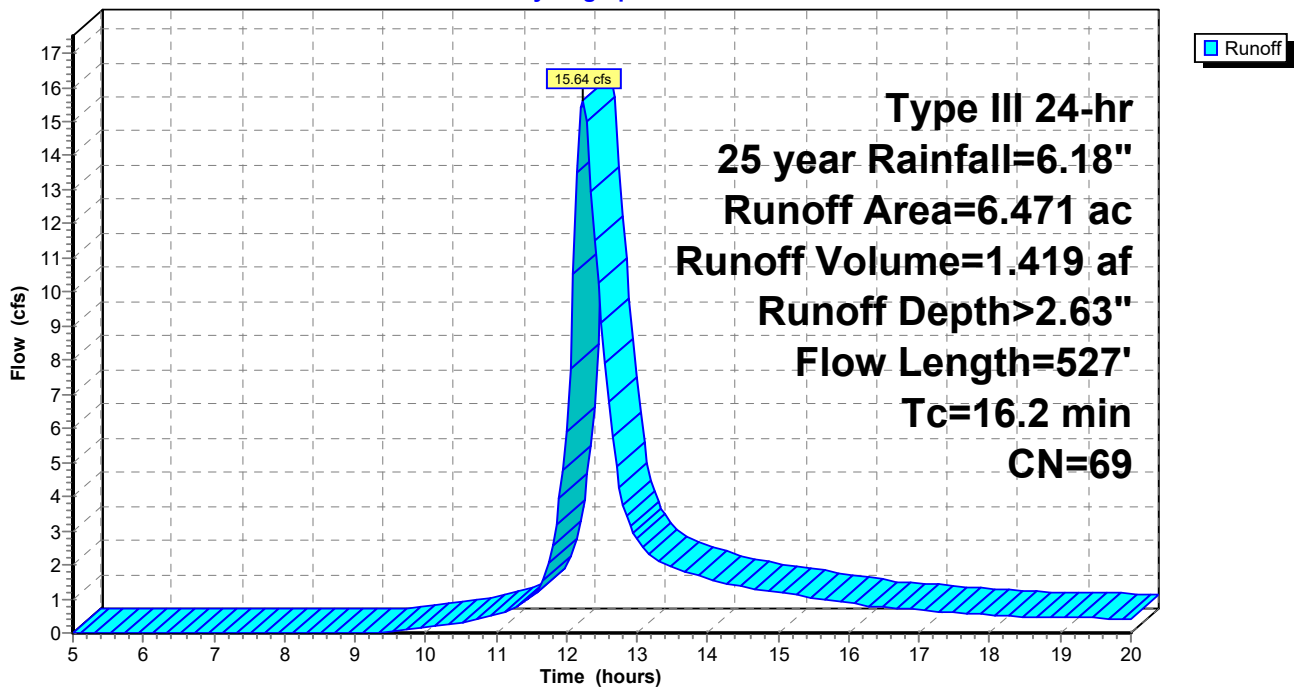
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.012	59	50-75% Grass cover, Fair, HSG A-B
* 5.334	74	50-75% Grass cover, Fair, HSG B-C
0.535	30	Meadow, non-grazed, HSG A
0.590	58	Meadow, non-grazed, HSG B
6.471	69	Weighted Average
6.471		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.2	415	0.0145	0.84		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0806	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.2	527	Total			

Subcatchment 6: Subcat 6

Hydrograph



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Summary for Subcatchment 7: Subcat 7

Runoff = 29.21 cfs @ 12.68 hrs, Volume= 4.348 af, Depth> 3.06"

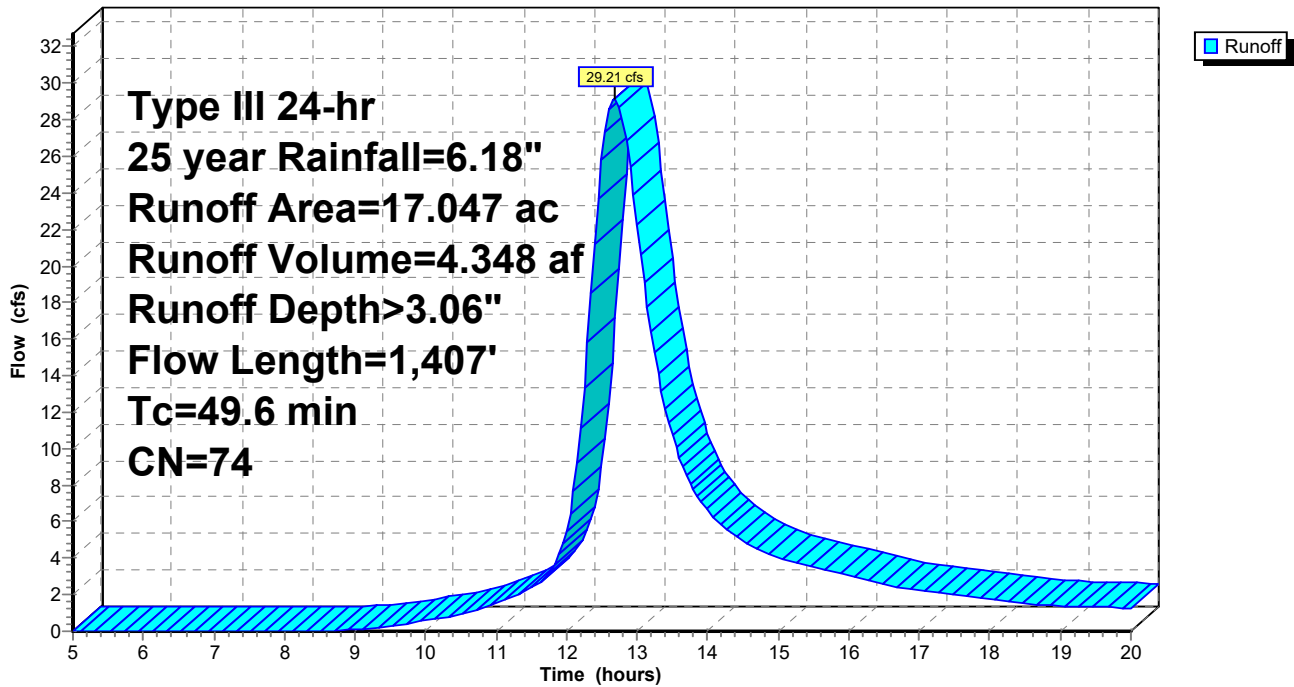
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 16.871	74	50-75% Grass cover, Fair, HSG B-C
0.176	58	Meadow, non-grazed, HSG B
17.047	74	Weighted Average
17.047		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
42.1	1,357	0.0059	0.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
49.6	1,407	Total			

Subcatchment 7: Subcat 7

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 8: Subcat 8

Runoff = 8.27 cfs @ 12.17 hrs, Volume= 0.664 af, Depth> 2.55"

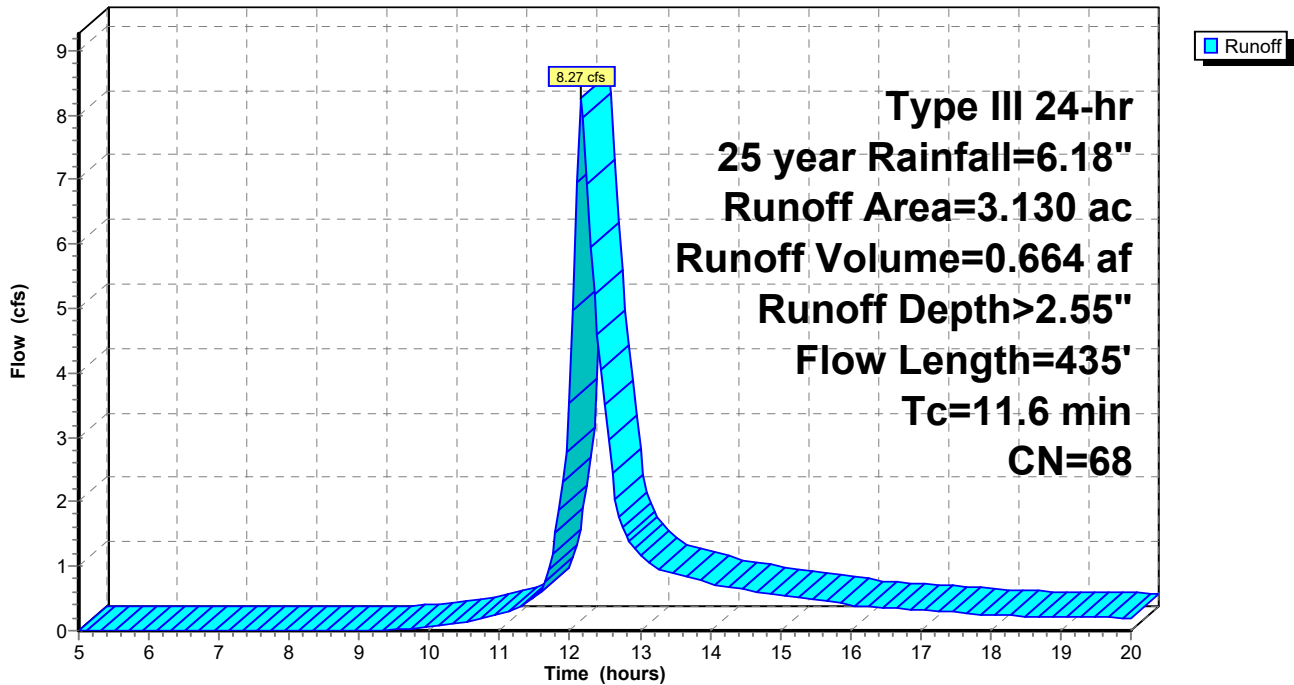
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 1.885	74	50-75% Grass cover, Fair, HSG B-C
0.011	30	Meadow, non-grazed, HSG A
1.234	58	Meadow, non-grazed, HSG B
3.130	68	Weighted Average
3.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.2	164	0.0305	1.22		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	221	0.1538	1.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.6	435	Total			

Subcatchment 8: Subcat 8

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 10: Subcat 10

Runoff = 3.98 cfs @ 12.21 hrs, Volume= 0.366 af, Depth> 1.38"

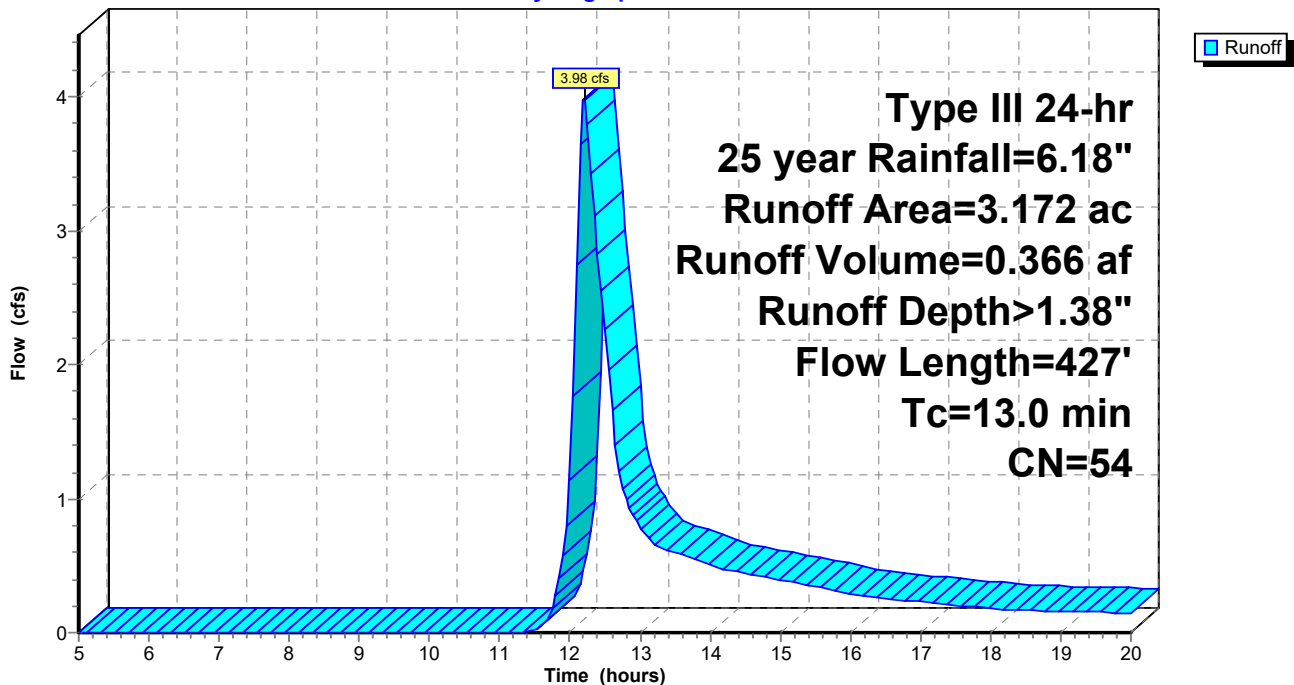
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.525	74	50-75% Grass cover, Fair, HSG B-C
0.635	30	Meadow, non-grazed, HSG A
1.717	58	Meadow, non-grazed, HSG B
0.226	36	Woods, Fair, HSG A
0.069	60	Woods, Fair, HSG B
3.172	54	Weighted Average
3.172		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	261	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	116	0.1379	1.86		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.0	427	Total			

Subcatchment 10: Subcat 10

Hydrograph



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Summary for Subcatchment 11: Subcat 11

Runoff = 6.11 cfs @ 12.26 hrs, Volume= 0.617 af, Depth> 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 1.321	74	50-75% Grass cover, Fair, HSG B-C
0.015	35	Brush, Fair, HSG A
0.515	56	Brush, Fair, HSG B
0.051	30	Meadow, non-grazed, HSG A
1.157	58	Meadow, non-grazed, HSG B
0.037	89	Paved roads w/open ditches, 50% imp, HSG B
2.139	36	Woods, Fair, HSG A
0.427	60	Woods, Fair, HSG B
5.662	53	Weighted Average
5.643		99.67% Pervious Area
0.018		0.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.0	316	0.0158	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.6	232	0.0862	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	598	Total			

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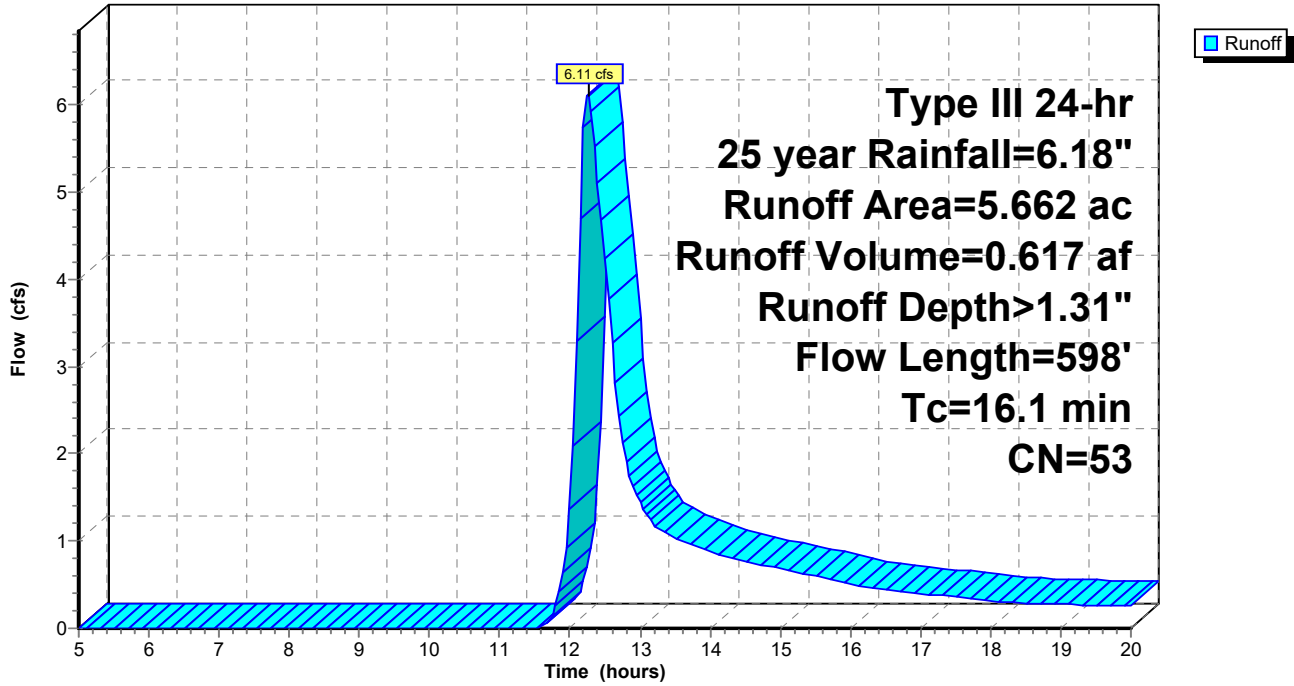
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 11: Subcat 11

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 11A: Subcat 11A

Runoff = 3.59 cfs @ 12.20 hrs, Volume= 0.410 af, Depth> 0.76"

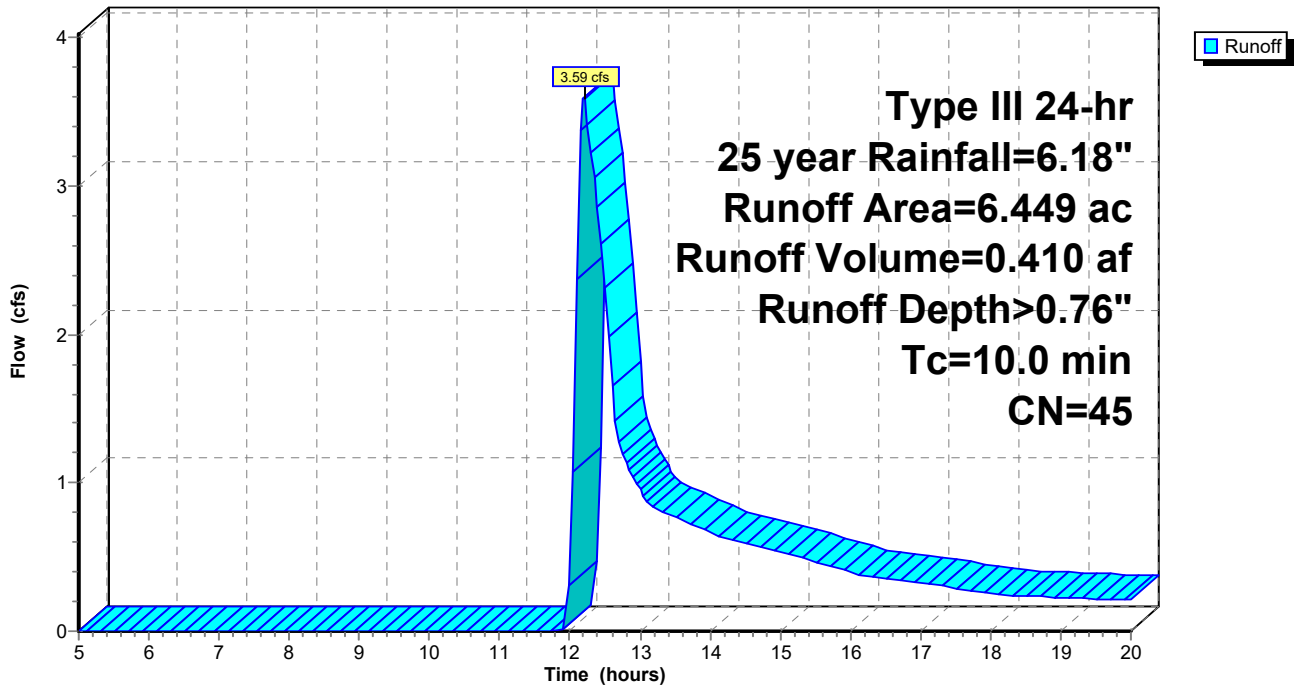
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.874	56	Brush, Fair, HSG B
* 4.133	36	Woods, Fair, HSG A
* 0.428	74	50-75% Grass cover, Fair, HSG B-C
* 1.014	58	Meadow, non-grazed, HSG B
6.449	45	Weighted Average
6.449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11A: Subcat 11A

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 12: Subcat 12

Runoff = 8.94 cfs @ 12.20 hrs, Volume= 0.772 af, Depth> 2.82"

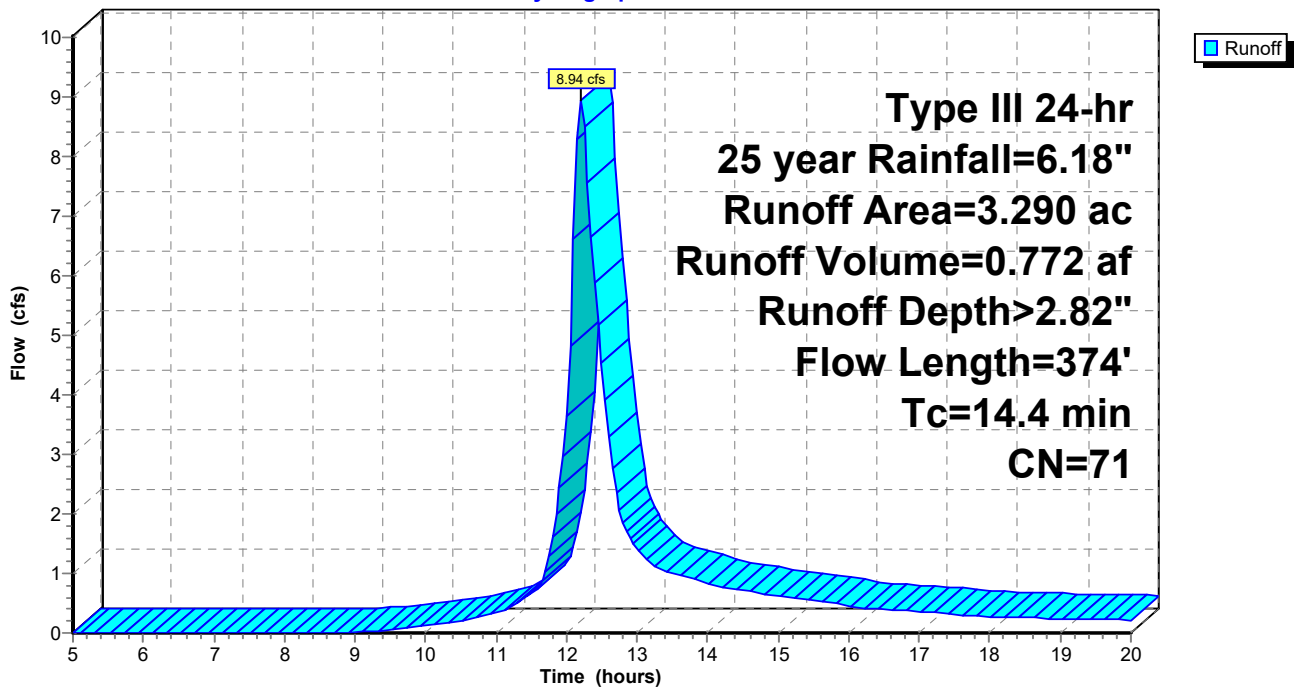
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 2.357	74	50-75% Grass cover, Fair, HSG B-C
0.777	58	Meadow, non-grazed, HSG B
0.156	89	Paved roads w/open ditches, 50% imp, HSG B
3.290	71	Weighted Average
3.212		97.63% Pervious Area
0.078		2.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.7	225	0.0089	0.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	99	0.0404	1.41		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.4	374	Total			

Subcatchment 12: Subcat 12

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 13: Subcat 13

Runoff = 25.89 cfs @ 12.86 hrs, Volume= 4.433 af, Depth> 2.95"

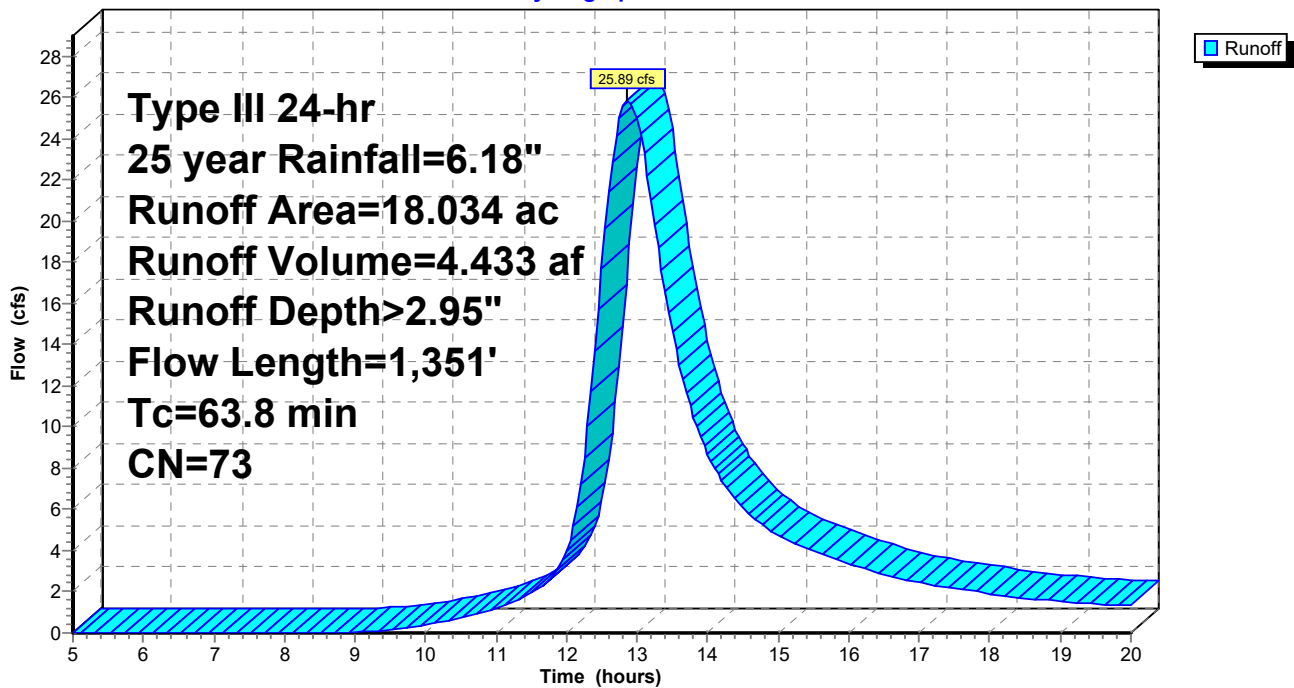
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 16.287	74	50-75% Grass cover, Fair, HSG B-C
1.589	58	Meadow, non-grazed, HSG B
0.158	89	Paved roads w/open ditches, 50% imp, HSG B
18.034	73	Weighted Average
17.955		99.56% Pervious Area
0.079		0.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
34.5	752	0.0027	0.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.8	549	0.0036	0.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
63.8	1,351	Total			

Subcatchment 13: Subcat 13

Hydrograph



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Summary for Subcatchment 14: Subcat 14

Runoff = 1.40 cfs @ 12.19 hrs, Volume= 0.118 af, Depth> 2.37"

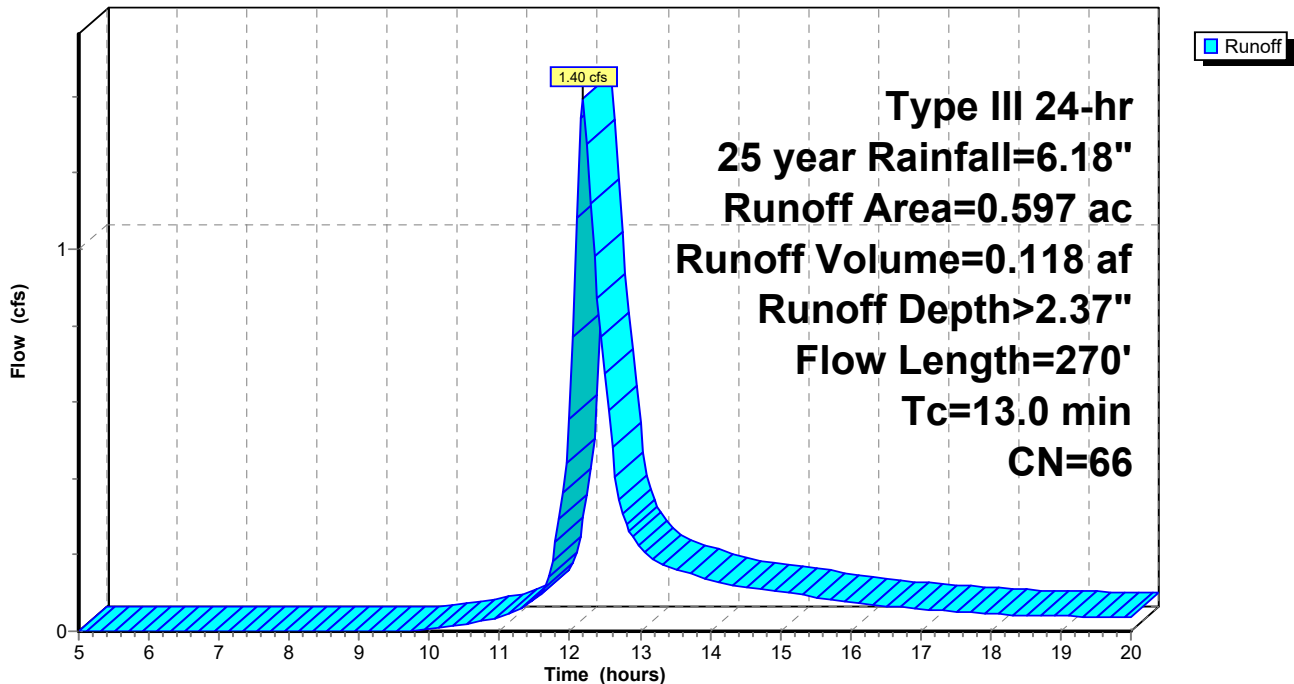
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.297	74	50-75% Grass cover, Fair, HSG B-C
0.300	58	Meadow, non-grazed, HSG B
0.597	66	Weighted Average
0.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.5	220	0.0091	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.0	270	Total			

Subcatchment 14: Subcat 14

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 15: Subcat 15

Runoff = 5.67 cfs @ 12.30 hrs, Volume= 0.571 af, Depth> 2.72"

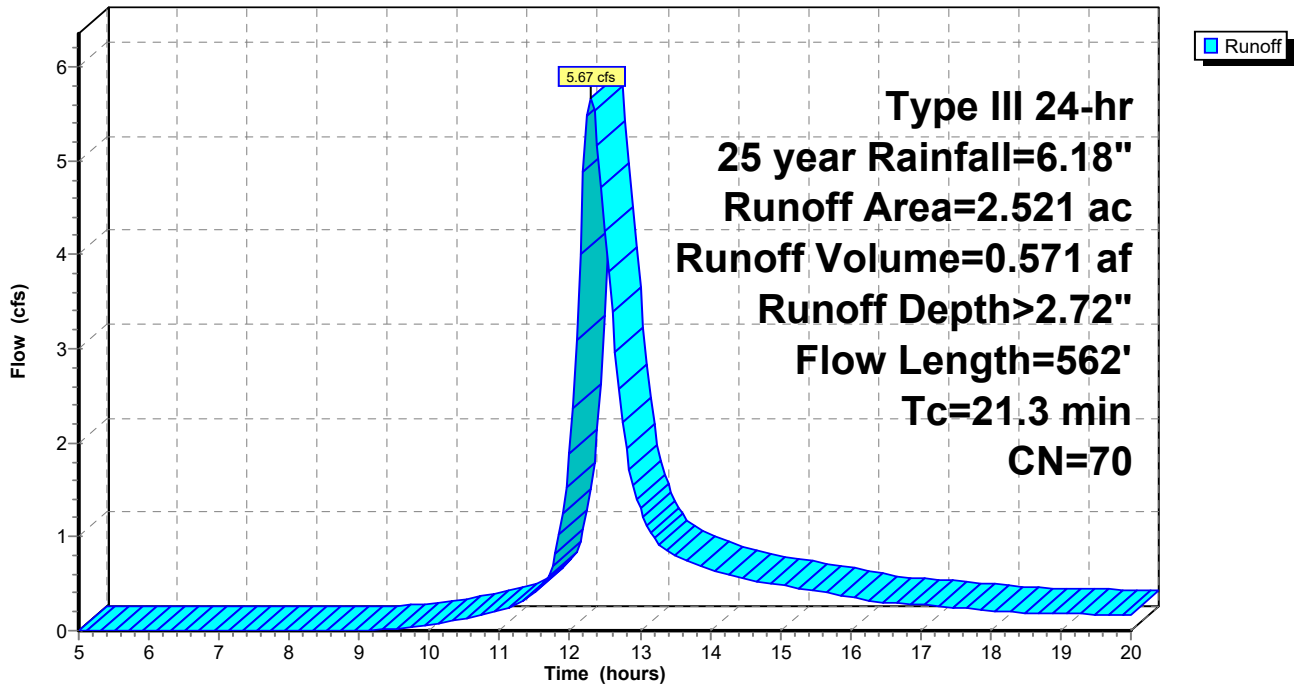
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.028	65	2 acre lots, 12% imp, HSG B
* 1.424	74	50-75% Grass cover, Fair, HSG B-C
0.823	58	Meadow, non-grazed, HSG B
0.246	89	Paved roads w/open ditches, 50% imp, HSG B
2.521	70	Weighted Average
2.395		94.99% Pervious Area
0.126		5.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
13.8	512	0.0078	0.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.3	562	Total			

Subcatchment 15: Subcat 15

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 16: Subcat 16

Runoff = 9.48 cfs @ 12.40 hrs, Volume= 1.066 af, Depth> 2.71"

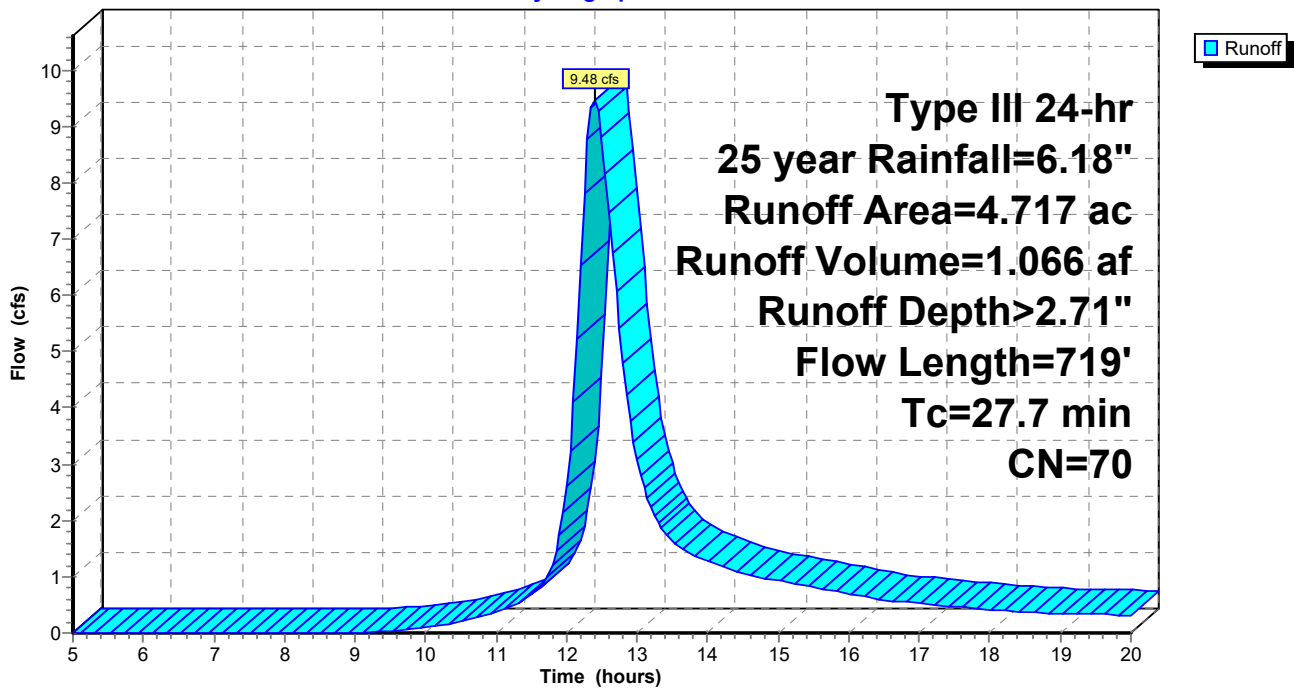
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 3.393	74	50-75% Grass cover, Fair, HSG B-C
1.259	58	Meadow, non-grazed, HSG B
0.065	89	Paved roads w/open ditches, 50% imp, HSG B
4.717	70	Weighted Average
4.684		99.31% Pervious Area
0.032		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.1	390	0.0103	0.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	279	0.0036	0.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
27.7	719	Total			

Subcatchment 16: Subcat 16

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 17: Subcat 17

Runoff = 12.53 cfs @ 12.32 hrs, Volume= 1.290 af, Depth> 2.90"

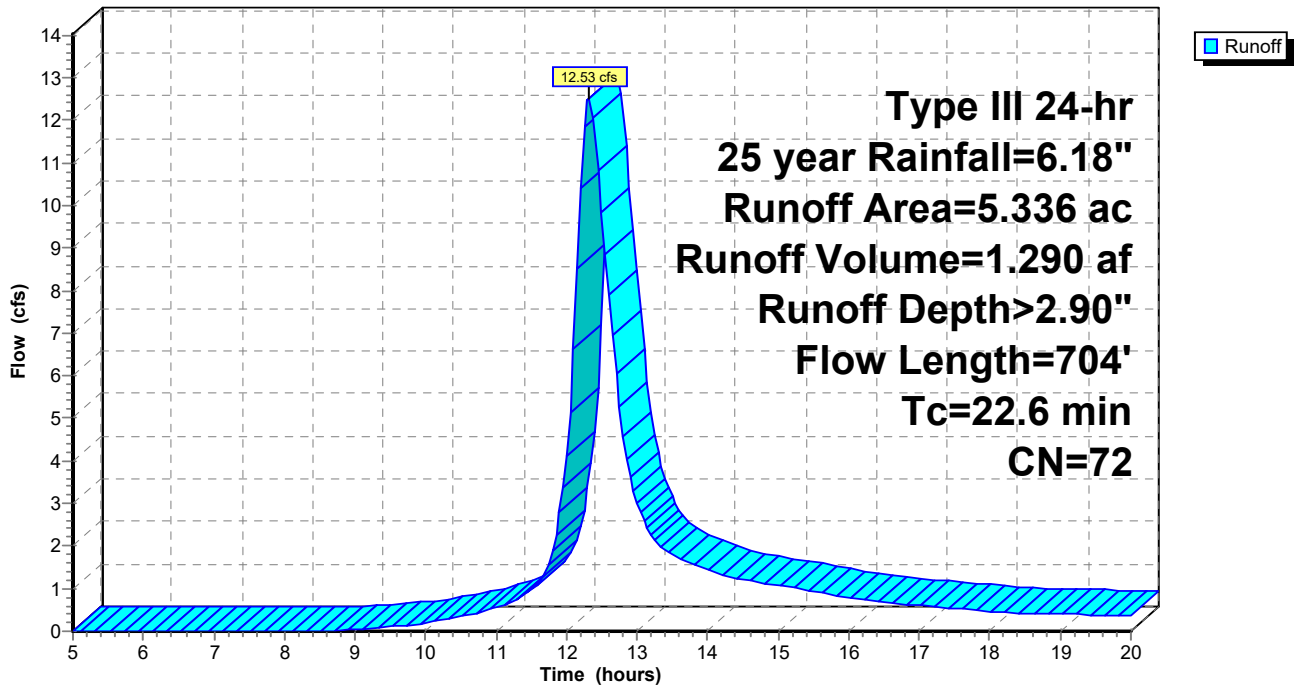
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 4.760	74	50-75% Grass cover, Fair, HSG B-C
0.576	58	Meadow, non-grazed, HSG B
5.336	72	Weighted Average
5.336		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.1	654	0.0107	0.72		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
22.6	704	Total			

Subcatchment 17: Subcat 17

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 18: Subcat 18

Runoff = 4.10 cfs @ 12.35 hrs, Volume= 0.437 af, Depth> 2.99"

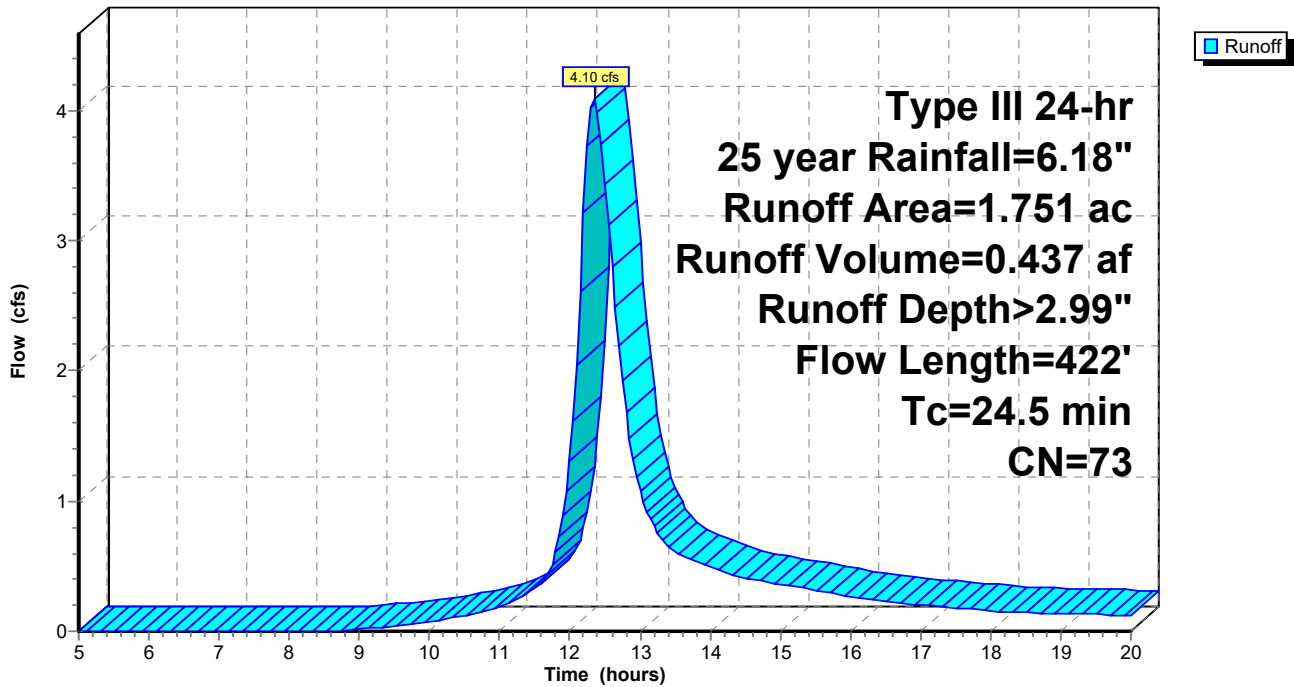
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 1.649	74	50-75% Grass cover, Fair, HSG B-C
0.102	58	Meadow, non-grazed, HSG B
1.751	73	Weighted Average
1.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
17.0	372	0.0027	0.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.5	422	Total			

Subcatchment 18: Subcat 18

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 19: Subcat 19

Runoff = 35.20 cfs @ 12.64 hrs, Volume= 5.004 af, Depth> 2.78"

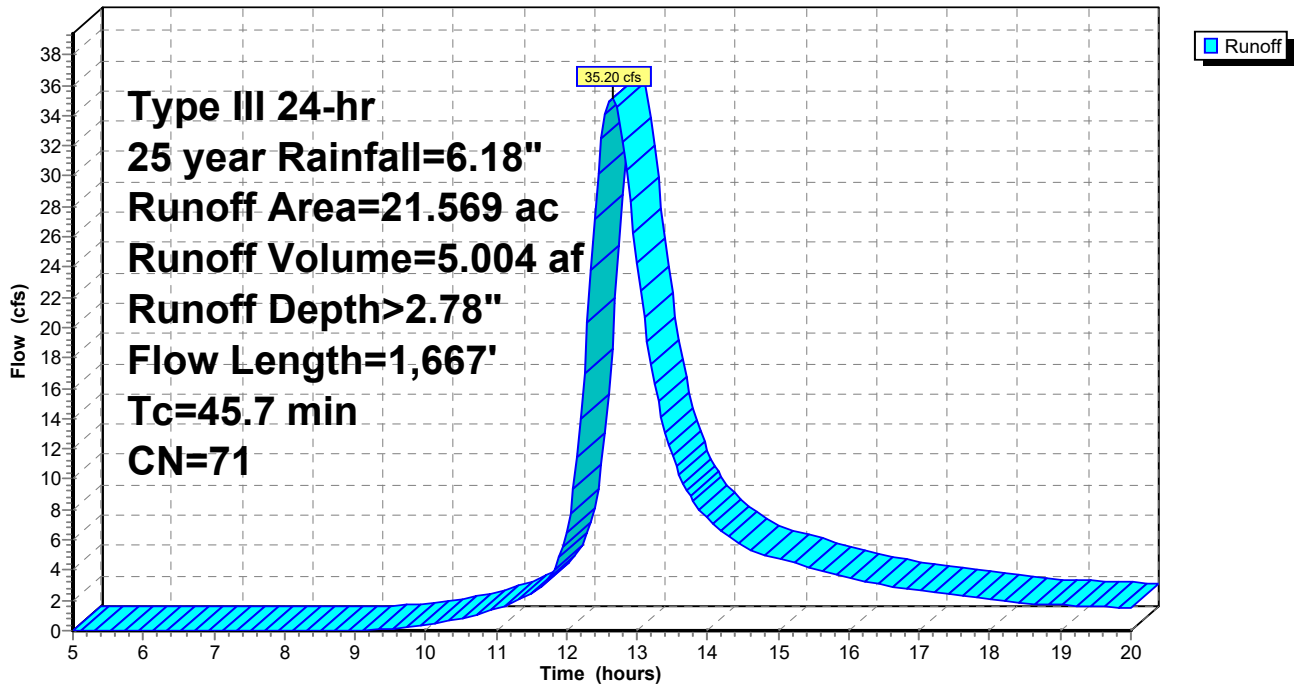
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 18.087	74	50-75% Grass cover, Fair, HSG B-C
0.427	30	Meadow, non-grazed, HSG A
3.055	58	Meadow, non-grazed, HSG B
21.569	71	Weighted Average
21.569		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
30.4	1,090	0.0073	0.60		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.6	527	0.0171	0.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
45.7	1,667	Total			

Subcatchment 19: Subcat 19

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 20: Subcat 20

Runoff = 3.69 cfs @ 12.30 hrs, Volume= 0.369 af, Depth> 2.72"

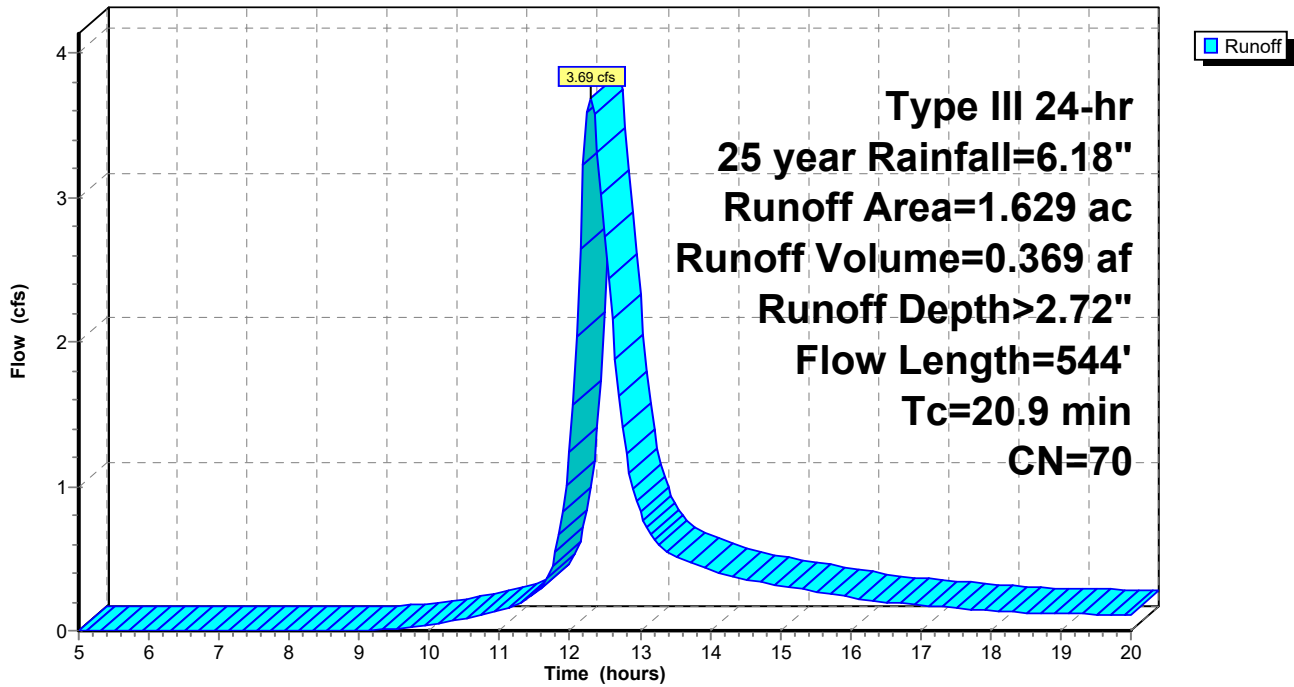
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 1.199	74	50-75% Grass cover, Fair, HSG B-C
0.002	30	Meadow, non-grazed, HSG A
0.428	58	Meadow, non-grazed, HSG B
1.629	70	Weighted Average
1.629		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.4	251	0.0040	0.44		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.0	243	0.0206	1.00		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.9	544	Total			

Subcatchment 20: Subcat 20

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 21: Subcat 21

Runoff = 6.95 cfs @ 12.43 hrs, Volume= 0.810 af, Depth> 2.44"

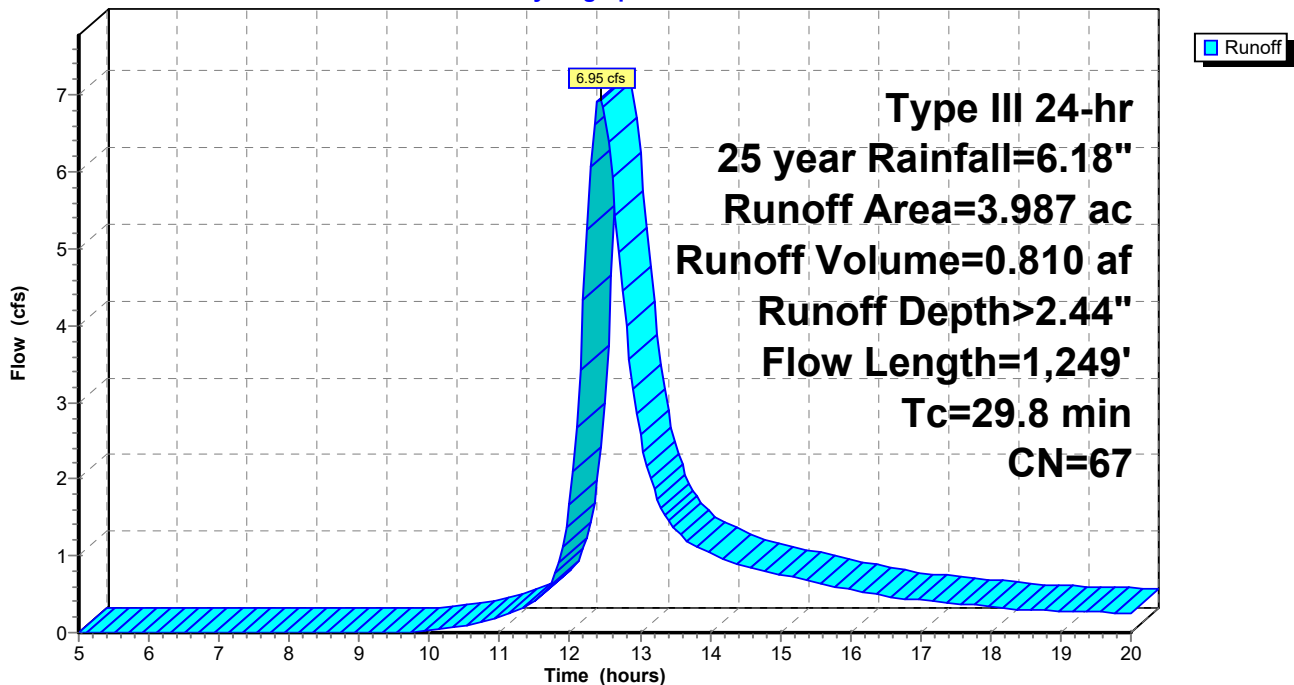
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.006	59	50-75% Grass cover, Fair, HSG A-B
* 3.103	74	50-75% Grass cover, Fair, HSG B-C
0.454	30	Meadow, non-grazed, HSG A
0.420	58	Meadow, non-grazed, HSG B
0.004	36	Woods, Fair, HSG A
3.987	67	Weighted Average
3.987		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.0	584	0.0086	0.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.1	615	0.0260	1.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
29.8	1,249	Total			

Subcatchment 21: Subcat 21

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 22: Subcat 22

Runoff = 25.25 cfs @ 12.87 hrs, Volume= 4.356 af, Depth> 2.95"

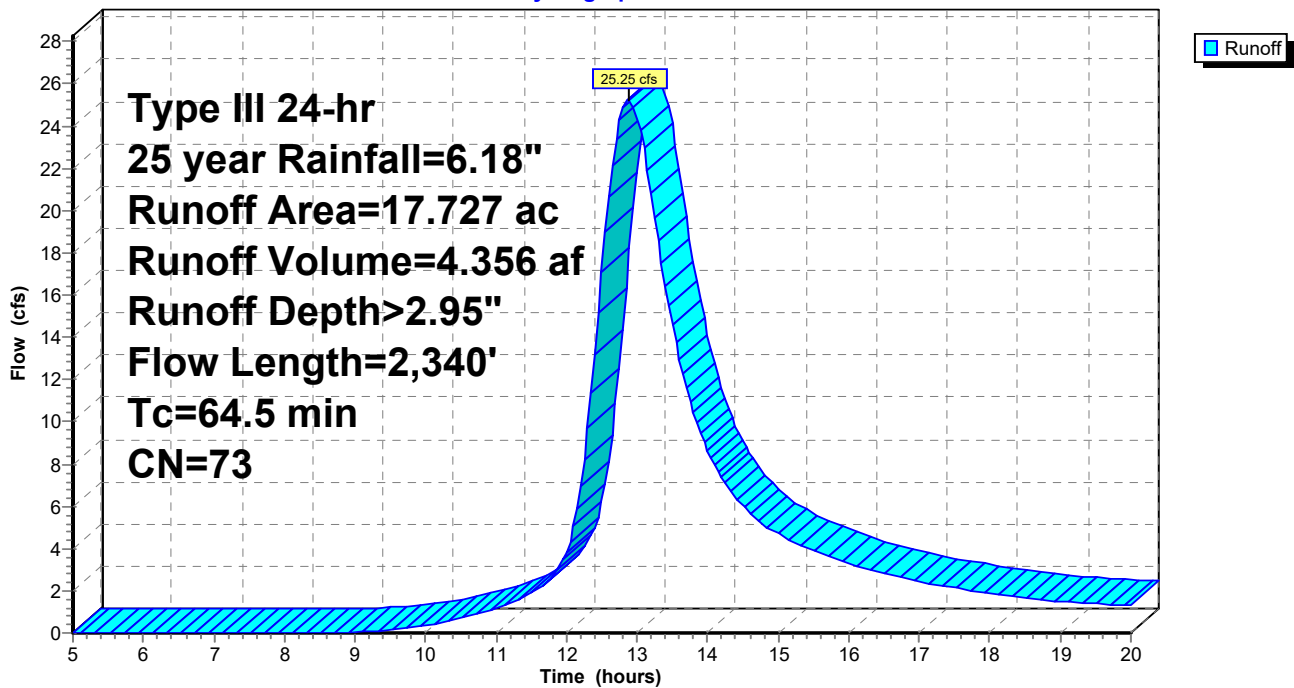
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 16.854	74	50-75% Grass cover, Fair, HSG B-C
0.873	58	Meadow, non-grazed, HSG B
17.727	73	Weighted Average
17.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
45.1	1,416	0.0056	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.8	636	0.0299	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.1	238	0.0336	1.28		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
64.5	2,340	Total			

Subcatchment 22: Subcat 22

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 23: Subcat 23

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.84 cfs @ 12.09 hrs, Volume= 0.056 af, Depth> 2.55"

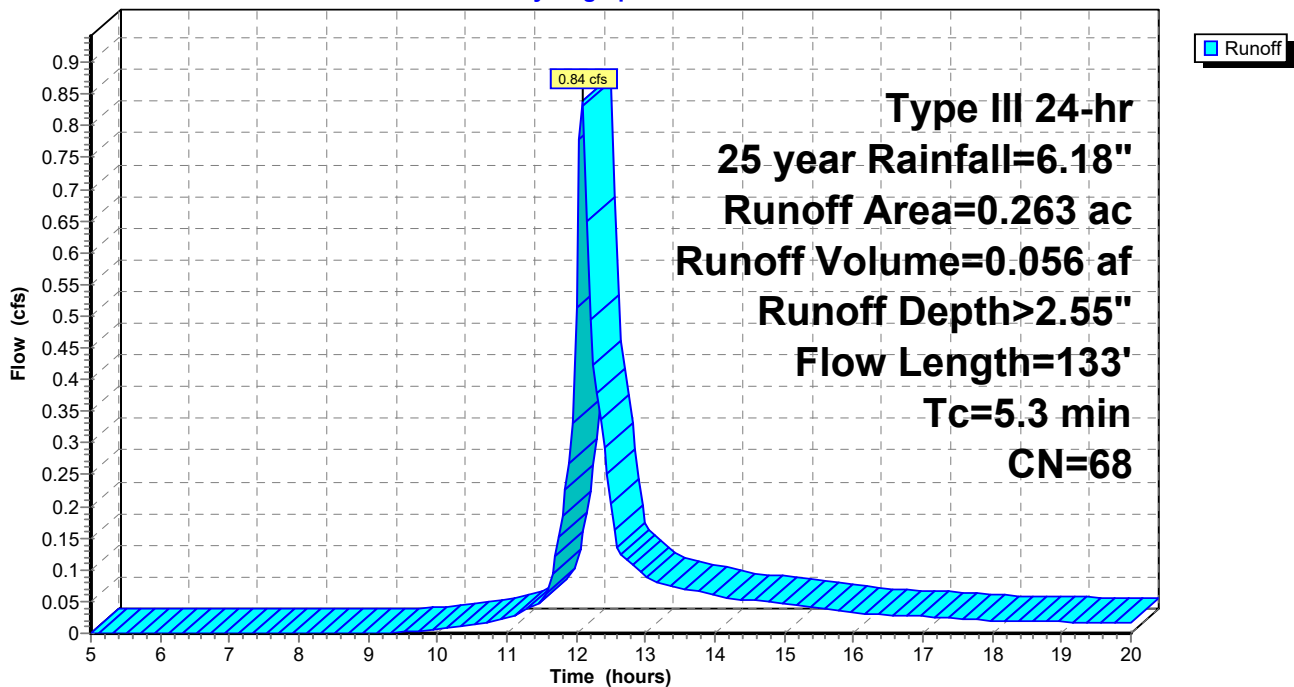
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.164	74	50-75% Grass cover, Fair, HSG B-C
0.099	58	Meadow, non-grazed, HSG B
0.263	68	Weighted Average
0.263		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.0	83	0.0361	1.33		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	133	Total			

Subcatchment 23: Subcat 23

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 24: Subcat 24

Runoff = 7.29 cfs @ 12.25 hrs, Volume= 0.677 af, Depth> 2.91"

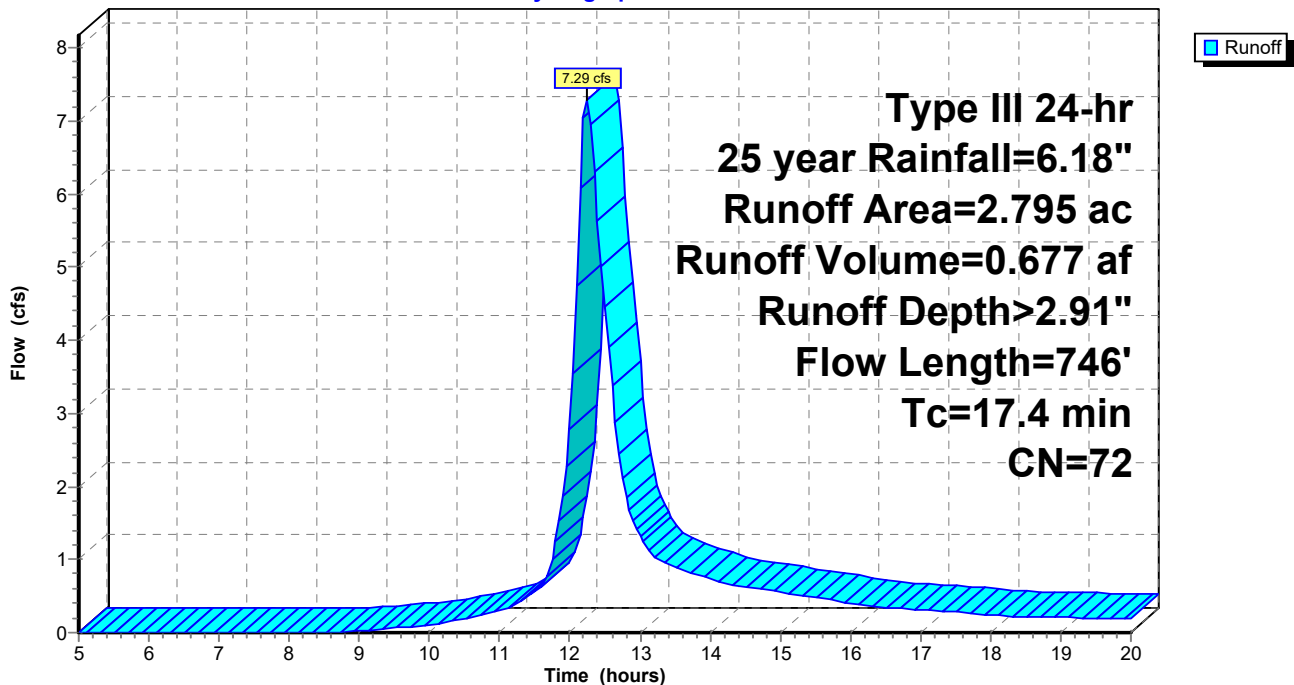
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 2.388	74	50-75% Grass cover, Fair, HSG B-C
0.406	58	Meadow, non-grazed, HSG B
0.001	60	Woods, Fair, HSG B
2.795	72	Weighted Average
2.795		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.7	284	0.0141	0.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	112	0.1071	2.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.4	300	0.0433	1.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.4	746	Total			

Subcatchment 24: Subcat 24

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 25: Subcat 25

Runoff = 20.47 cfs @ 12.64 hrs, Volume= 2.917 af, Depth> 2.88"

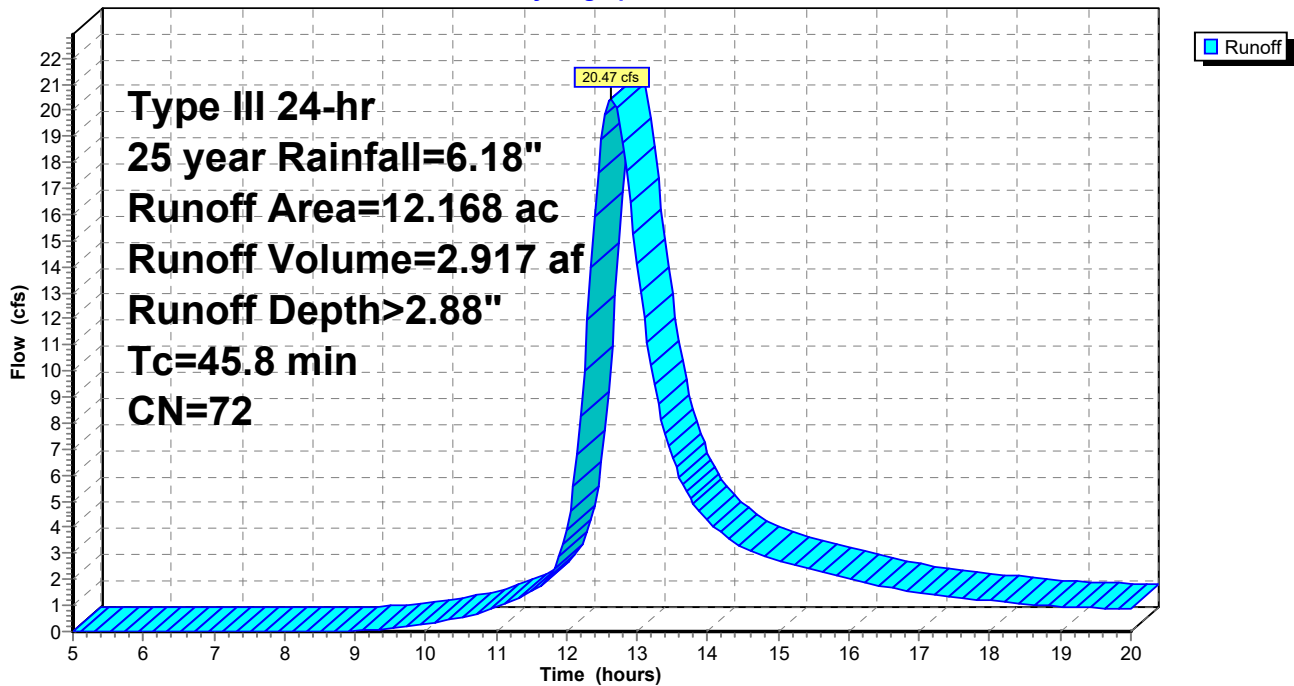
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 11.036	74	50-75% Grass cover, Fair, HSG B-C
0.129	30	Meadow, non-grazed, HSG A
1.003	58	Meadow, non-grazed, HSG B
12.168	72	Weighted Average
12.168		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.8					Direct Entry,

Subcatchment 25: Subcat 25

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 27: Subcat 27

Runoff = 4.55 cfs @ 12.31 hrs, Volume= 0.463 af, Depth> 2.54"

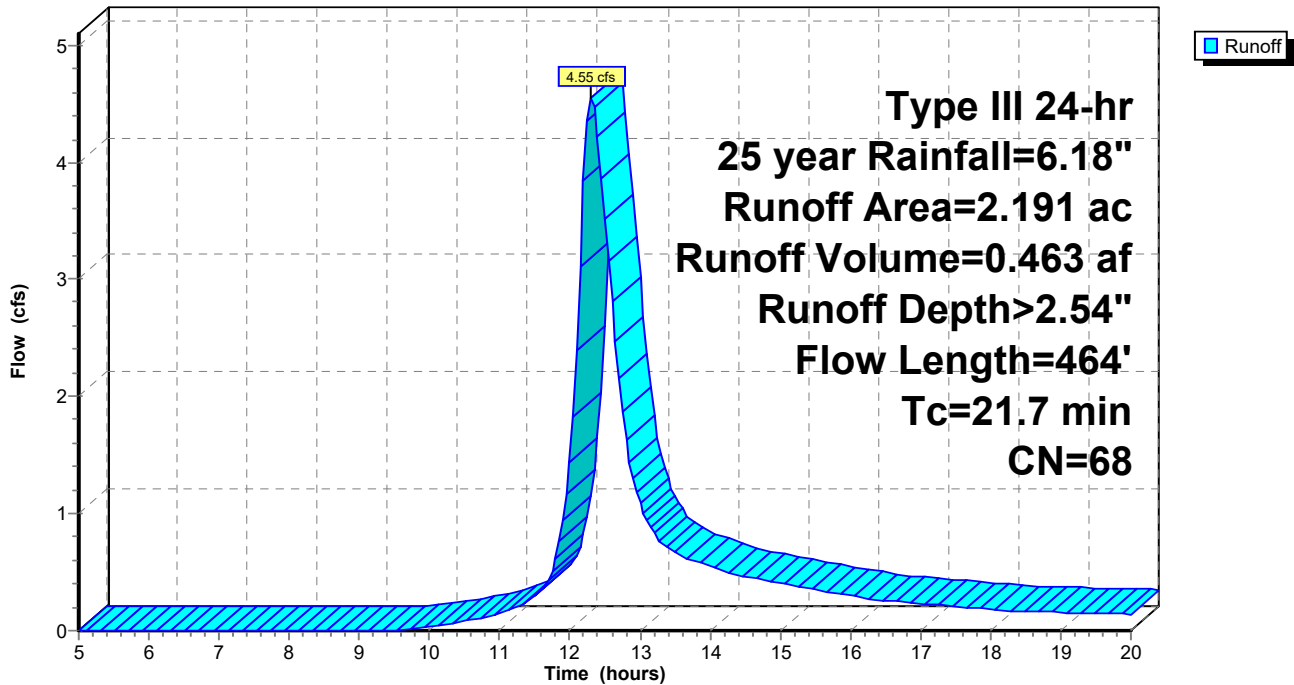
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 1.400	74	50-75% Grass cover, Fair, HSG B-C
0.036	30	Meadow, non-grazed, HSG A
0.755	58	Meadow, non-grazed, HSG B
2.191	68	Weighted Average
2.191		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
14.2	414	0.0048	0.48		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.7	464	Total			

Subcatchment 27: Subcat 27

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 28: Subcat 28

Runoff = 10.32 cfs @ 12.25 hrs, Volume= 0.990 af, Depth> 1.61"

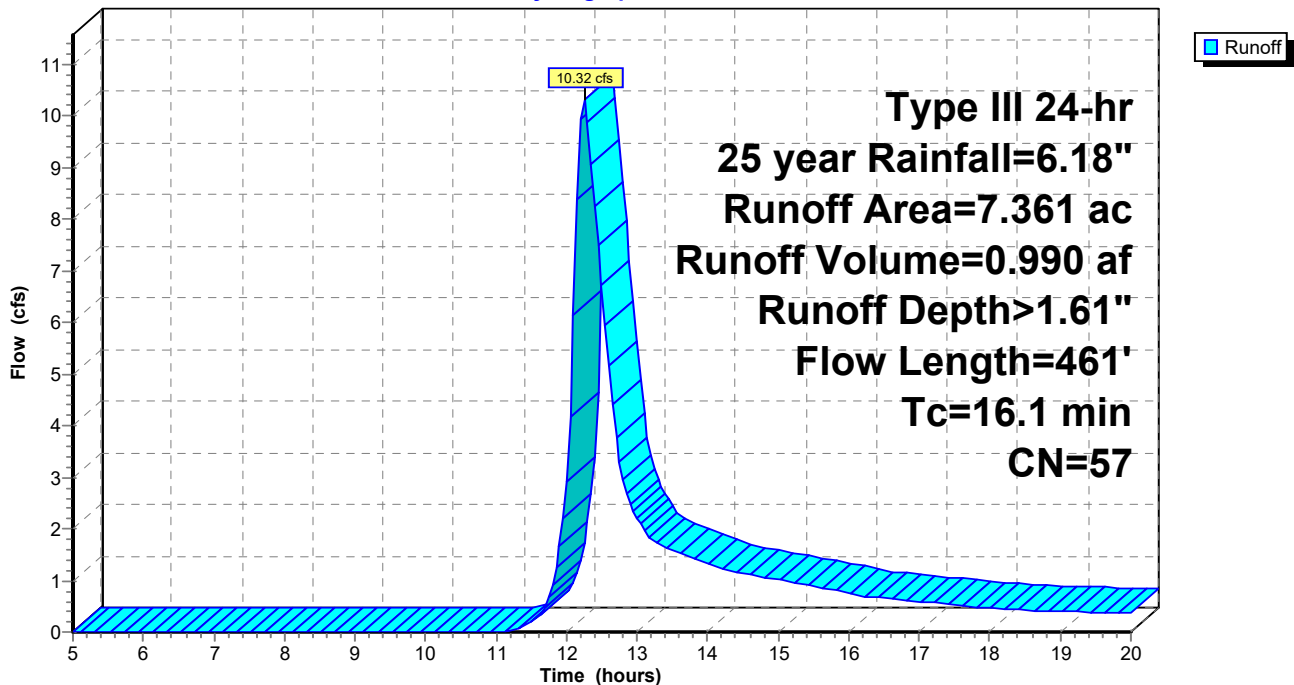
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.136	59	50-75% Grass cover, Fair, HSG A-B
* 3.195	74	50-75% Grass cover, Fair, HSG B-C
0.494	30	Meadow, non-grazed, HSG A
0.478	58	Meadow, non-grazed, HSG B
2.242	36	Woods, Fair, HSG A
0.816	60	Woods, Fair, HSG B
7.361	57	Weighted Average
7.361		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	269	0.0074	0.60		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	142	0.1479	1.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	461	Total			

Subcatchment 28: Subcat 28

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 29: Subcat 29

Runoff = 0.28 cfs @ 12.36 hrs, Volume= 0.050 af, Depth> 0.37"

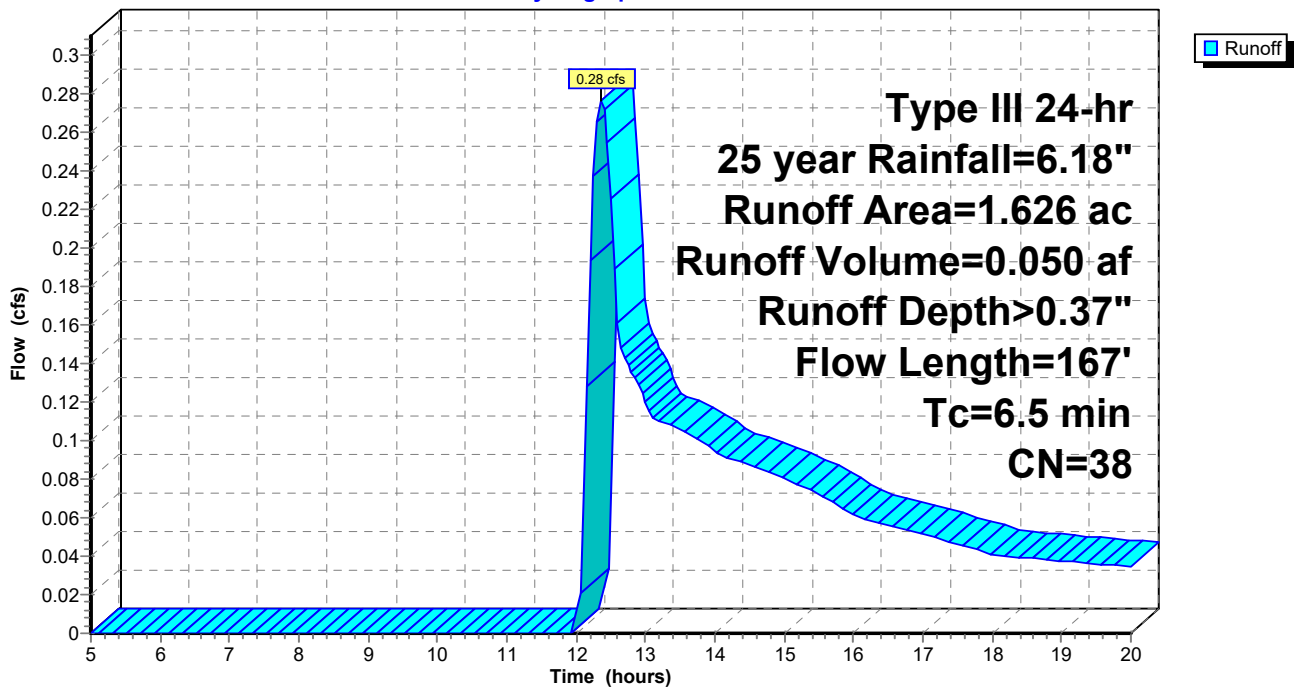
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.216	59	50-75% Grass cover, Fair, HSG A-B
* 0.006	74	50-75% Grass cover, Fair, HSG B-C
0.328	30	Meadow, non-grazed, HSG A
1.076	36	Woods, Fair, HSG A
1.626	38	Weighted Average
1.626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
0.8	117	0.2222	2.36		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.5	167	Total			

Subcatchment 29: Subcat 29

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 30: Subcat 30

Runoff = 12.79 cfs @ 12.16 hrs, Volume= 1.011 af, Depth> 3.10"

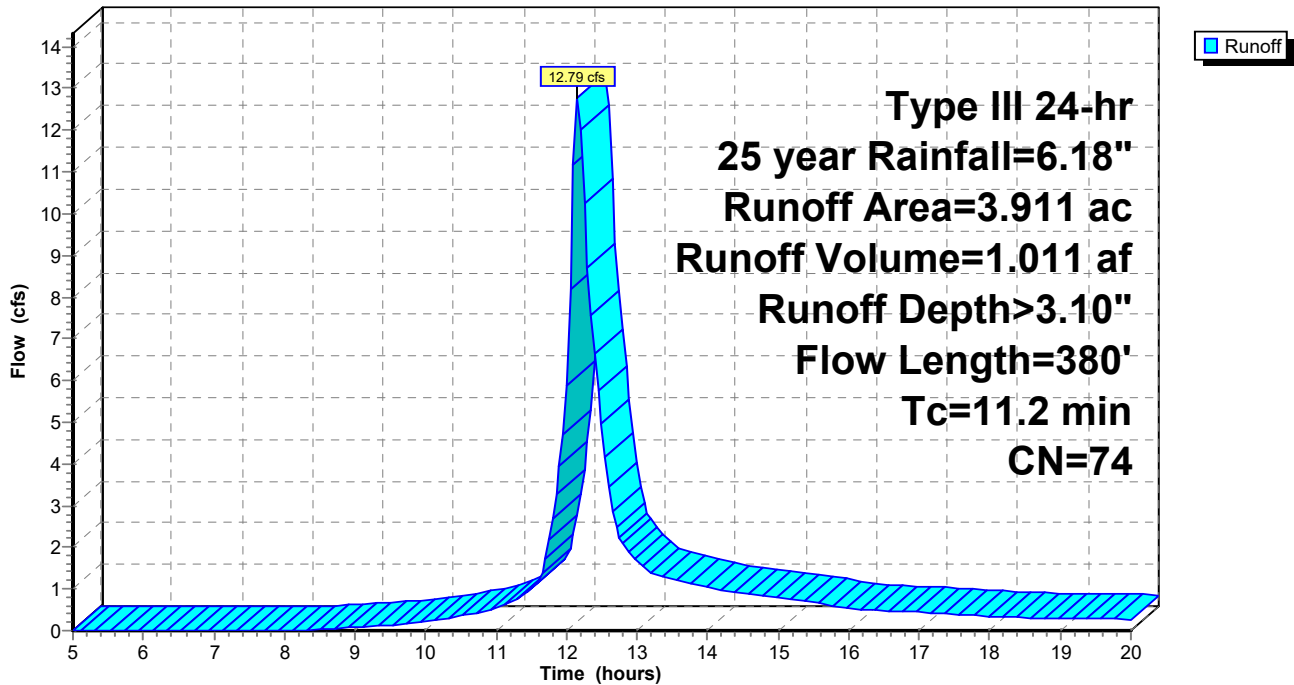
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.012	59	50-75% Grass cover, Fair, HSG A-B
* 3.899	74	50-75% Grass cover, Fair, HSG B-C
0.000	58	Meadow, non-grazed, HSG B
3.911	74	Weighted Average
3.911		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.4	330	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.2	380	Total			

Subcatchment 30: Subcat 30

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 31: Subcat 31

Runoff = 1.07 cfs @ 12.29 hrs, Volume= 0.160 af, Depth> 0.53"

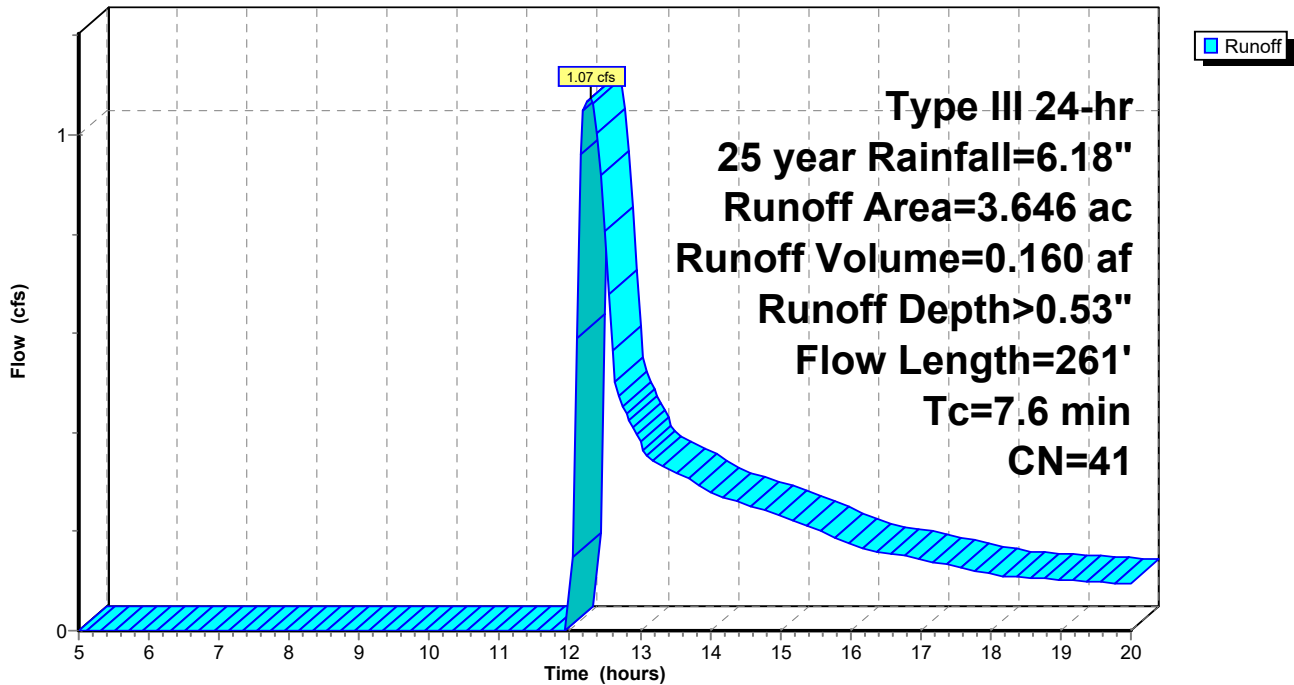
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.149	59	50-75% Grass cover, Fair, HSG A-B
* 0.465	74	50-75% Grass cover, Fair, HSG B-C
0.893	30	Meadow, non-grazed, HSG A
0.064	58	Meadow, non-grazed, HSG B
2.075	36	Woods, Fair, HSG A
3.646	41	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.9	211	0.1374	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.6	261	Total			

Subcatchment 31: Subcat 31

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 33: Subcat 33

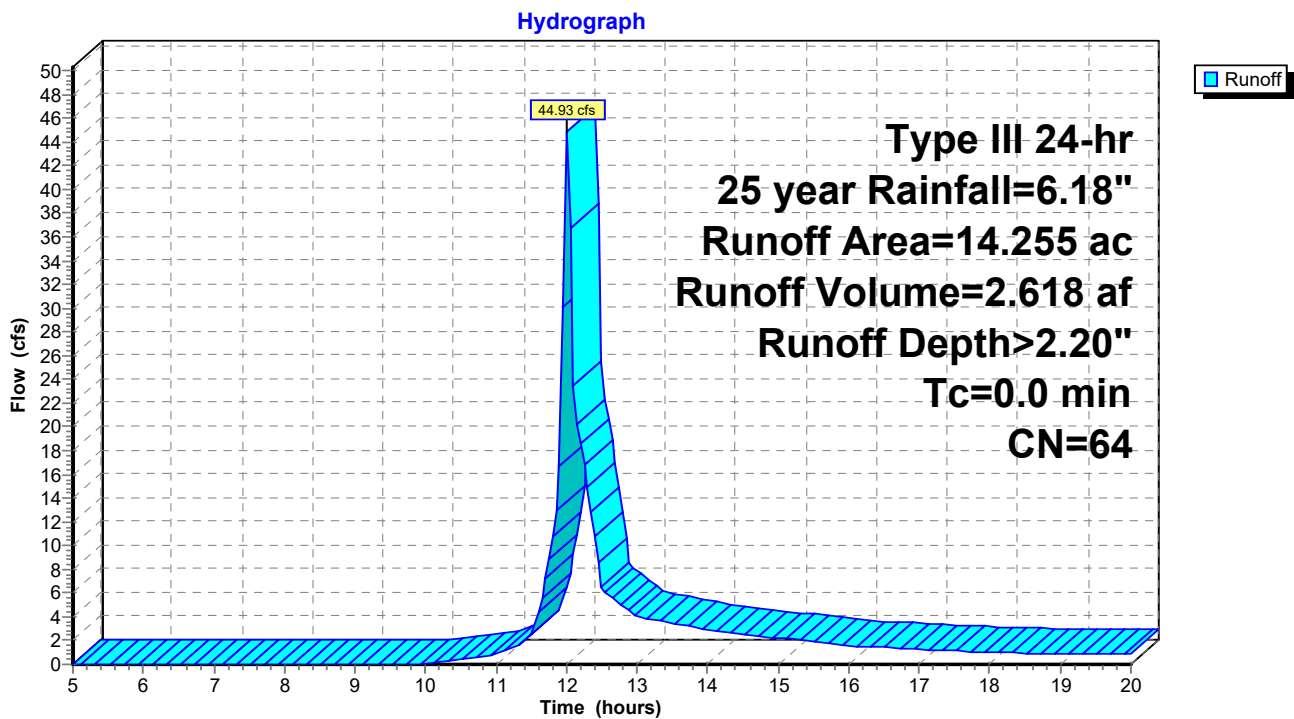
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 44.93 cfs @ 12.01 hrs, Volume= 2.618 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

	Area (ac)	CN	Description
*	1.943	49	50-75% Grass cover, Fair, HSG A
*	11.166	69	50-75% Grass cover, Fair, HSG B
	0.485	30	Meadow, non-grazed, HSG A
	0.661	58	Meadow, non-grazed, HSG B
	0.000	36	Woods, Fair, HSG A
	14.255	64	Weighted Average
	14.255		100.00% Pervious Area

Subcatchment 33: Subcat 33



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 34: Subcat 34

Runoff = 16.12 cfs @ 12.35 hrs, Volume= 1.724 af, Depth> 2.62"

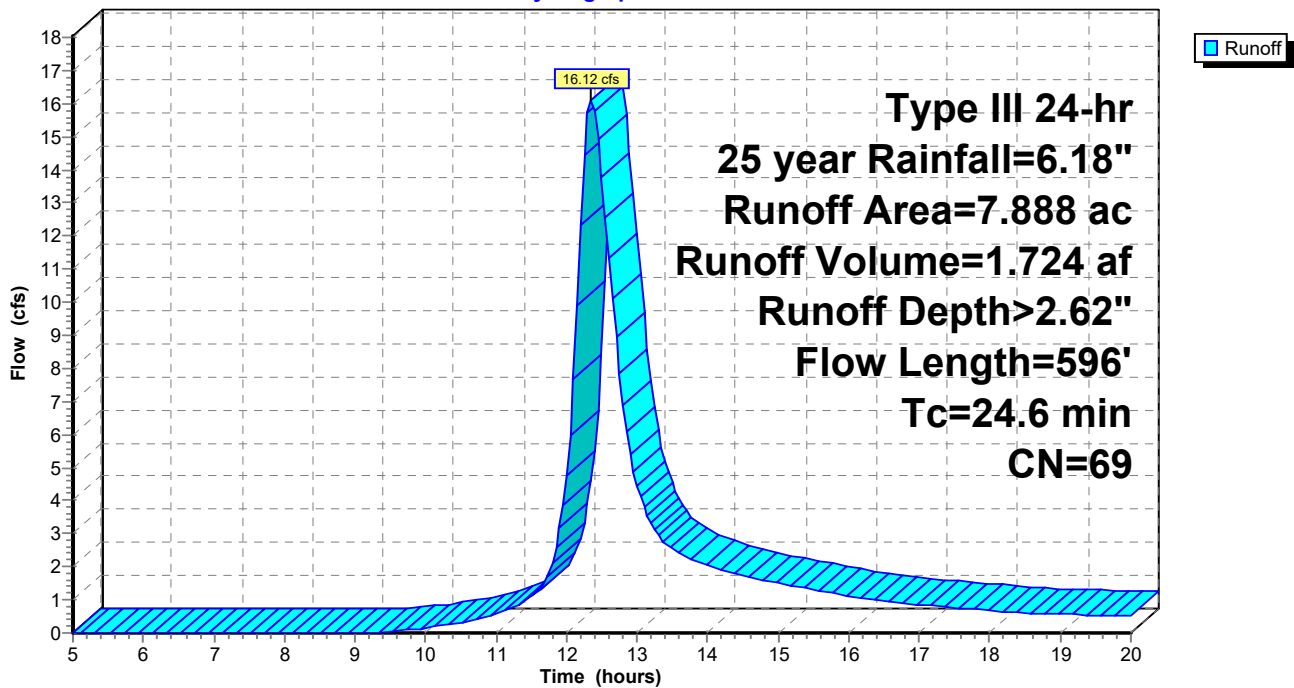
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.072	49	50-75% Grass cover, Fair, HSG A
* 7.816	69	50-75% Grass cover, Fair, HSG B
7.888	69	Weighted Average
7.888		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.1	244	0.0041	0.45		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	99	0.1313	2.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.9	203	0.0098	0.69		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.6	596	Total			

Subcatchment 34: Subcat 34

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 35: Subcat 35

Runoff = 8.69 cfs @ 12.37 hrs, Volume= 0.972 af, Depth> 1.53"

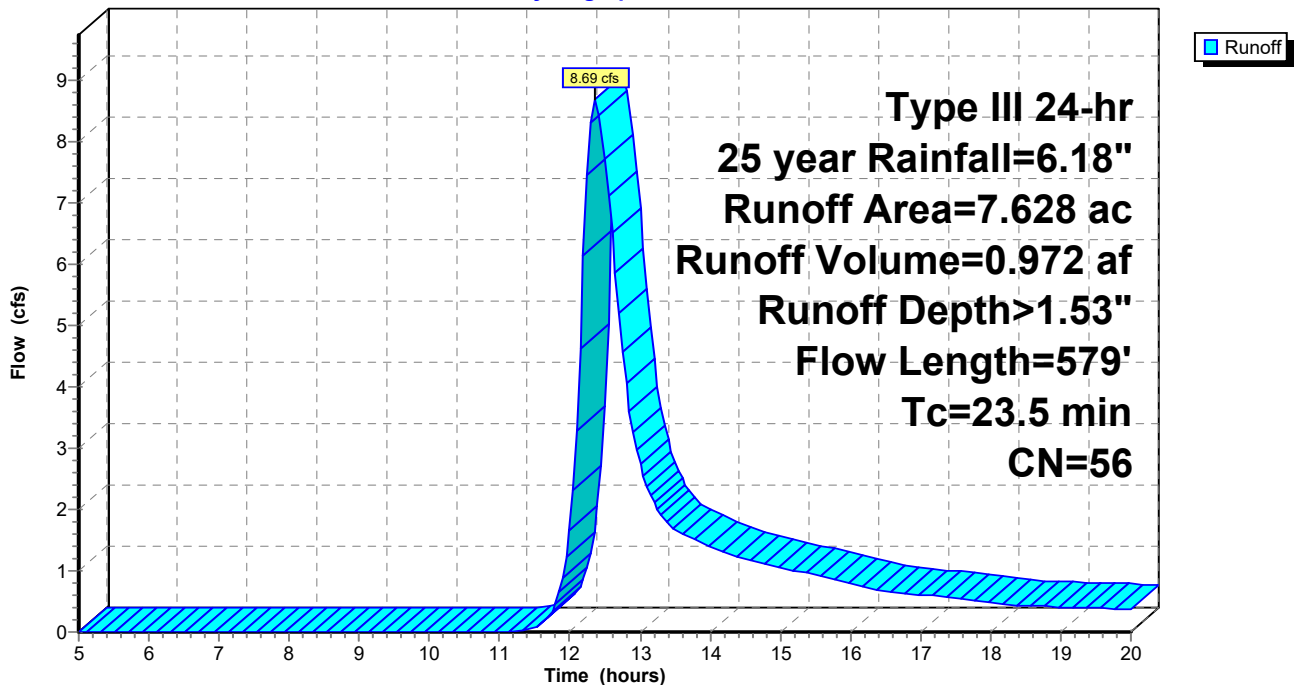
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.332	49	50-75% Grass cover, Fair, HSG A
* 4.614	69	50-75% Grass cover, Fair, HSG B
2.239	30	Meadow, non-grazed, HSG A
0.443	58	Meadow, non-grazed, HSG B
7.628	56	Weighted Average
7.628		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	217	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	97	0.1237	2.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	215	0.0093	0.68		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.5	579	Total			

Subcatchment 35: Subcat 35

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 1P: Sediment Trap

Inflow Area = 0.864 ac, 0.00% Impervious, Inflow Depth > 1.94" for 25 year event
 Inflow = 1.91 cfs @ 12.12 hrs, Volume= 0.140 af
 Outflow = 0.45 cfs @ 12.61 hrs, Volume= 0.094 af, Atten= 76%, Lag= 29.1 min
 Discarded = 0.11 cfs @ 12.61 hrs, Volume= 0.072 af
 Primary = 0.34 cfs @ 12.61 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.05' @ 12.61 hrs Surf.Area= 0.035 ac Storage= 0.061 af

Plug-Flow detention time= 170.5 min calculated for 0.093 af (67% of inflow)
 Center-of-Mass det. time= 96.7 min (913.7 - 817.0)

Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	0.099 af	35.00'W x 10.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.11 cfs @ 12.61 hrs HW=163.05' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=0.32 cfs @ 12.61 hrs HW=163.05' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.32 cfs @ 0.54 fps)

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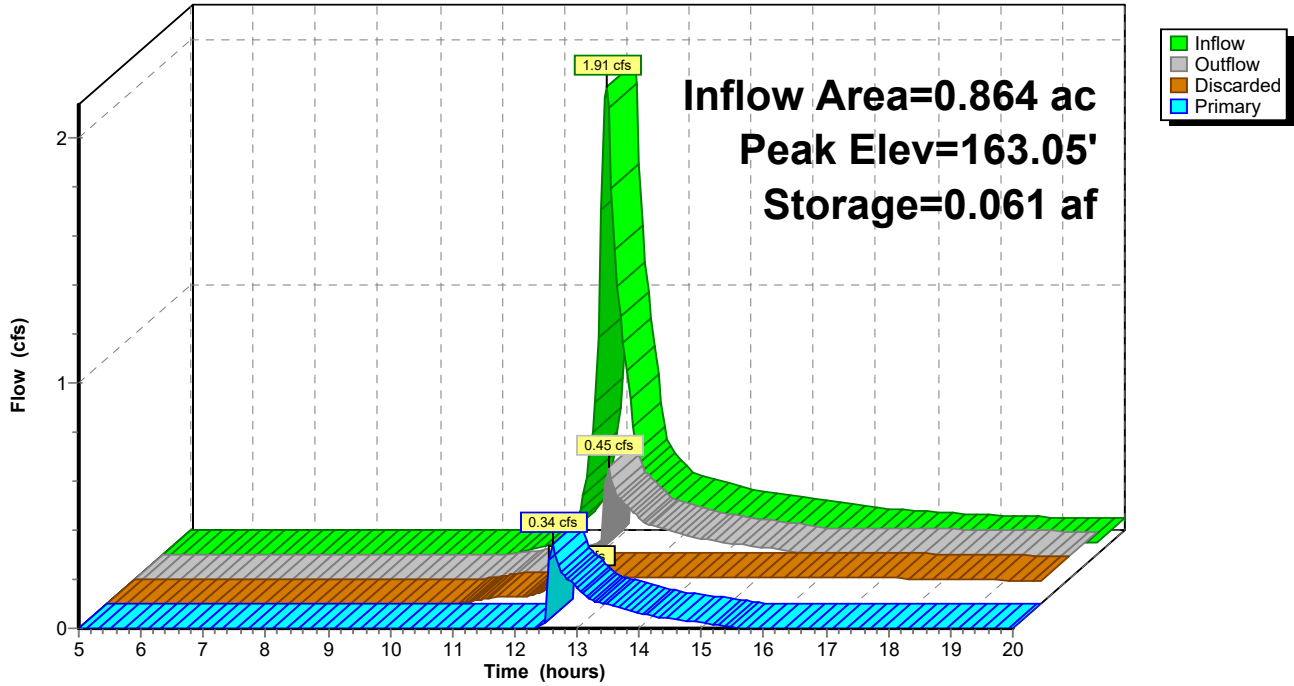
Type III 24-hr 25 year Rainfall=6.18"

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Pond 1P: Sediment Trap

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 2P: Sediment Trap

Inflow Area = 4.510 ac, 0.00% Impervious, Inflow Depth > 0.58" for 25 year event
 Inflow = 1.54 cfs @ 12.27 hrs, Volume= 0.219 af
 Outflow = 0.23 cfs @ 16.07 hrs, Volume= 0.142 af, Atten= 85%, Lag= 228.3 min
 Discarded = 0.23 cfs @ 16.07 hrs, Volume= 0.142 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.60' @ 16.07 hrs Surf.Area= 3,183 sf Storage= 4,210 cf

Plug-Flow detention time= 181.4 min calculated for 0.142 af (65% of inflow)
 Center-of-Mass det. time= 97.0 min (968.0 - 871.0)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	19,725 cf	75.00'W x 28.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.23 cfs @ 16.07 hrs HW=159.60' (Free Discharge)
 ↑2=Exfiltration (Controls 0.23 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=158.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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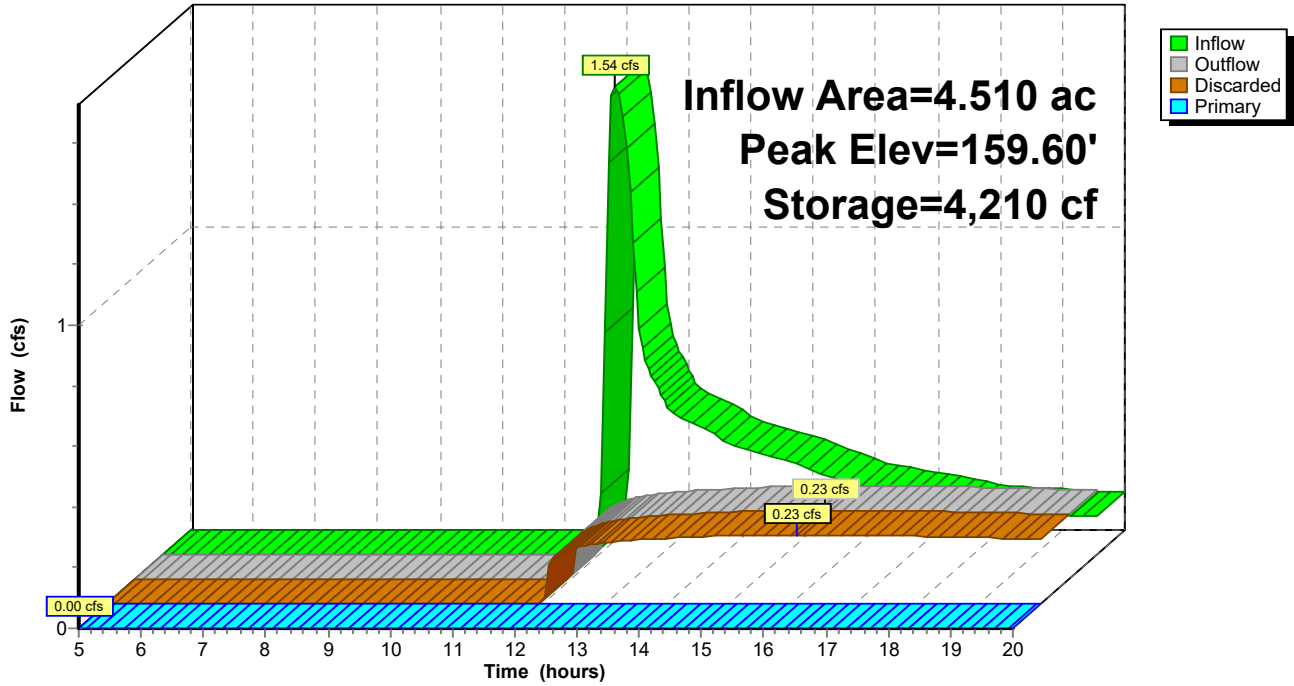
Type III 24-hr 25 year Rainfall=6.18"

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Pond 2P: Sediment Trap

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 3P: Farm Depression

Inflow Area = 2.727 ac, 0.00% Impervious, Inflow Depth > 1.86" for 25 year event
 Inflow = 5.42 cfs @ 12.15 hrs, Volume= 0.423 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.10' @ 20.00 hrs Surf.Area= 17,272 sf Storage= 18,392 cf

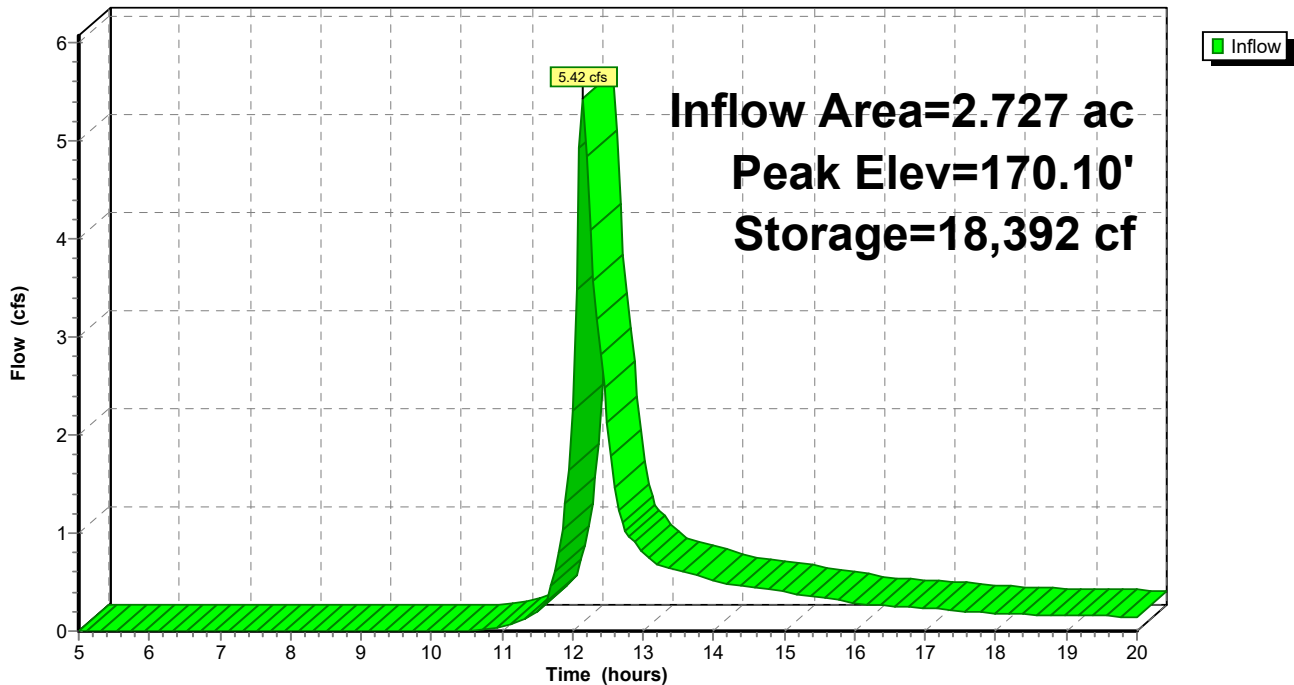
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	95,578 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	0	0	0
170.00	16,657	16,657	16,657
172.00	28,677	45,334	61,991
173.00	38,496	33,587	95,578

Pond 3P: Farm Depression

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 4P: Sediment Trap

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 2.28" for 25 year event
 Inflow = 8.70 cfs @ 12.16 hrs, Volume= 0.693 af
 Outflow = 6.21 cfs @ 12.32 hrs, Volume= 0.521 af, Atten= 29%, Lag= 9.4 min
 Discarded = 0.28 cfs @ 12.32 hrs, Volume= 0.188 af
 Primary = 5.93 cfs @ 12.32 hrs, Volume= 0.332 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.34' @ 12.32 hrs Surf.Area= 3,830 sf Storage= 8,887 cf

Plug-Flow detention time= 98.3 min calculated for 0.519 af (75% of inflow)
 Center-of-Mass det. time= 37.4 min (849.4 - 812.1)

Volume	Invert	Avail.Storage	Storage Description
#1	159.00'	16,375 cf	65.00'W x 25.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	159.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.28 cfs @ 12.32 hrs HW=162.33' (Free Discharge)
 ↑2=Exfiltration (Controls 0.28 cfs)

Primary OutFlow Max=5.65 cfs @ 12.32 hrs HW=162.33' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 5.65 cfs @ 1.43 fps)

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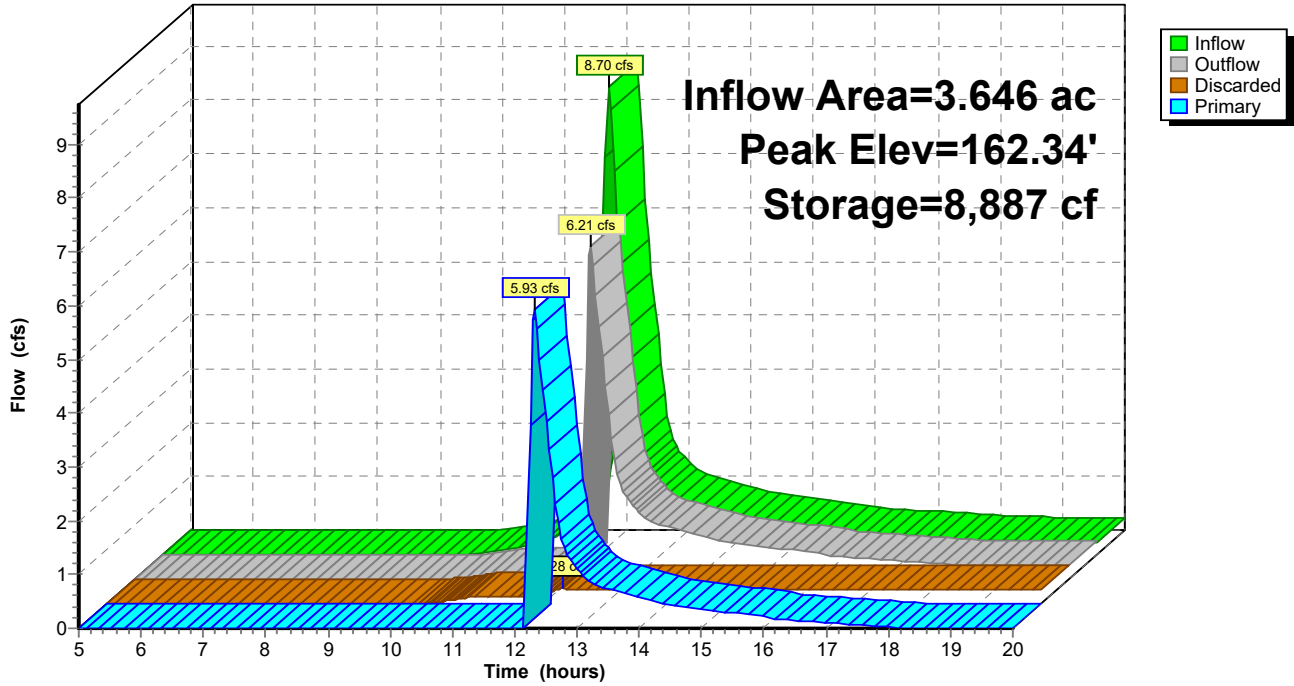
Type III 24-hr 25 year Rainfall=6.18"

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Pond 4P: Sediment Trap

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 5P: Sediment Trap

Inflow Area = 8.688 ac, 0.00% Impervious, Inflow Depth > 2.90" for 25 year event
 Inflow = 19.80 cfs @ 12.34 hrs, Volume= 2.099 af
 Outflow = 13.28 cfs @ 12.61 hrs, Volume= 1.402 af, Atten= 33%, Lag= 16.2 min
 Primary = 13.28 cfs @ 12.61 hrs, Volume= 1.402 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 165.56' @ 12.61 hrs Surf.Area= 12,454 sf Storage= 36,203 cf

Plug-Flow detention time= 122.4 min calculated for 1.398 af (67% of inflow)
 Center-of-Mass det. time= 54.3 min (863.9 - 809.6)

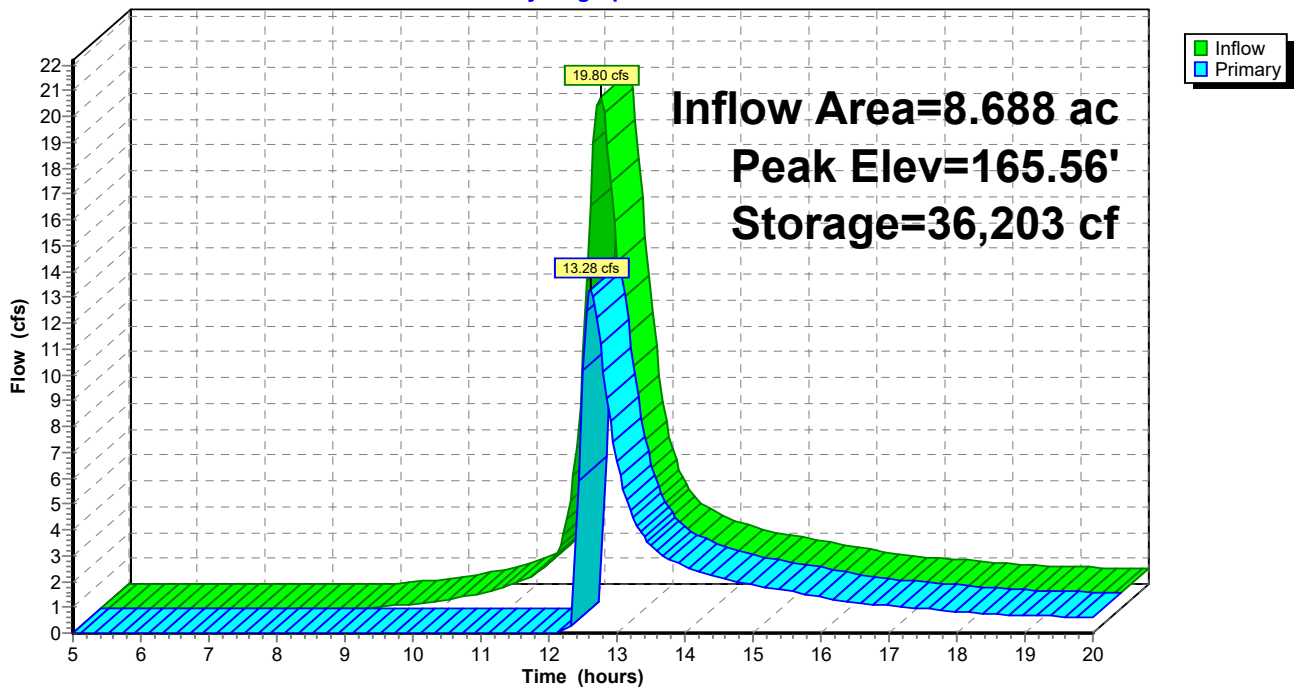
Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	41,848 cf	70.00'W x 115.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=13.18 cfs @ 12.61 hrs HW=165.56' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 13.18 cfs @ 1.98 fps)

Pond 5P: Sediment Trap

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 6P: Sediment Trap

Inflow Area = 6.471 ac, 0.00% Impervious, Inflow Depth > 2.63" for 25 year event
 Inflow = 15.64 cfs @ 12.23 hrs, Volume= 1.419 af
 Outflow = 7.21 cfs @ 12.59 hrs, Volume= 0.883 af, Atten= 54%, Lag= 21.4 min
 Primary = 7.21 cfs @ 12.59 hrs, Volume= 0.883 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.49' @ 12.59 hrs Surf.Area= 9,955 sf Storage= 27,336 cf

Plug-Flow detention time= 138.0 min calculated for 0.880 af (62% of inflow)
 Center-of-Mass det. time= 64.0 min (872.8 - 808.8)

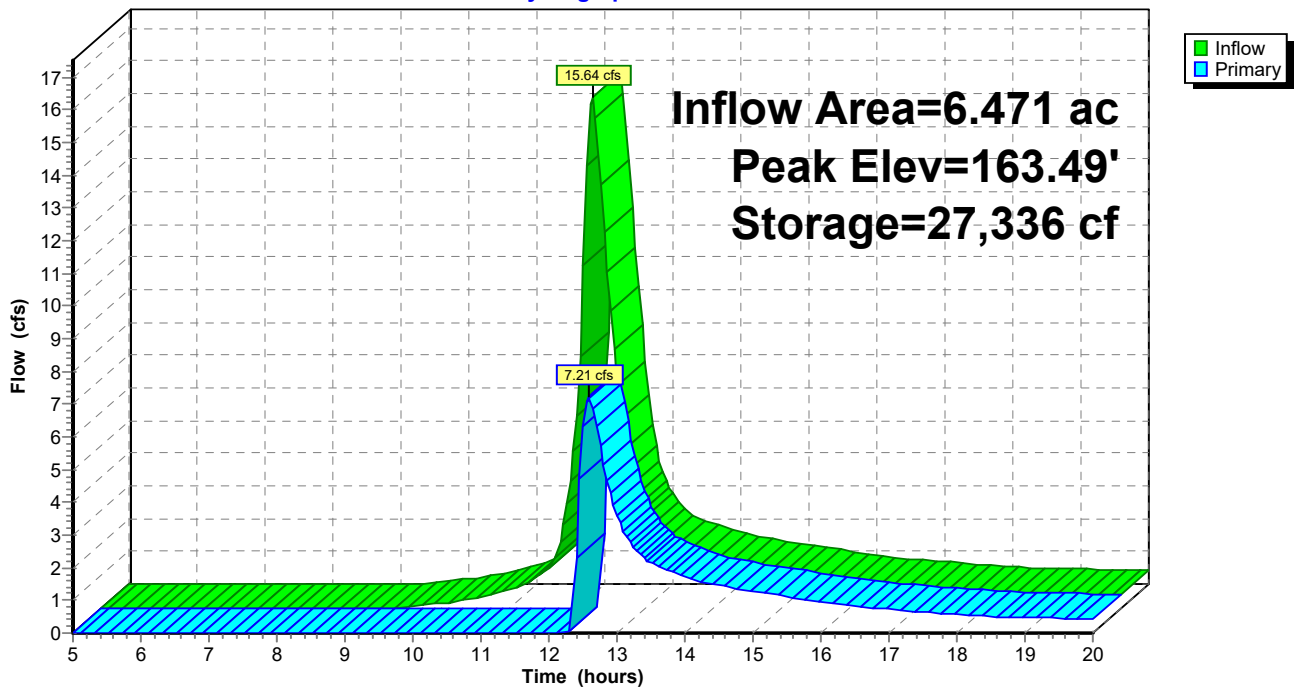
Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	32,568 cf	45.00'W x 130.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=7.16 cfs @ 12.59 hrs HW=163.49' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 7.16 cfs @ 1.83 fps)

Pond 6P: Sediment Trap

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 7P: Farm Depression

Inflow Area = 17.047 ac, 0.00% Impervious, Inflow Depth > 3.06" for 25 year event
 Inflow = 29.21 cfs @ 12.68 hrs, Volume= 4.348 af
 Outflow = 12.22 cfs @ 13.40 hrs, Volume= 4.206 af, Atten= 58%, Lag= 43.1 min
 Discarded = 12.22 cfs @ 13.40 hrs, Volume= 4.206 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.43' @ 13.40 hrs Surf.Area= 175,595 sf Storage= 66,315 cf

Plug-Flow detention time= 78.4 min calculated for 4.192 af (96% of inflow)
 Center-of-Mass det. time= 67.1 min (892.9 - 825.8)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	188,598 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.00	0	0	0	0
164.00	57,239	19,080	19,080	57,241
164.50	203,000	61,339	80,418	203,003
165.00	230,000	108,180	188,598	230,015

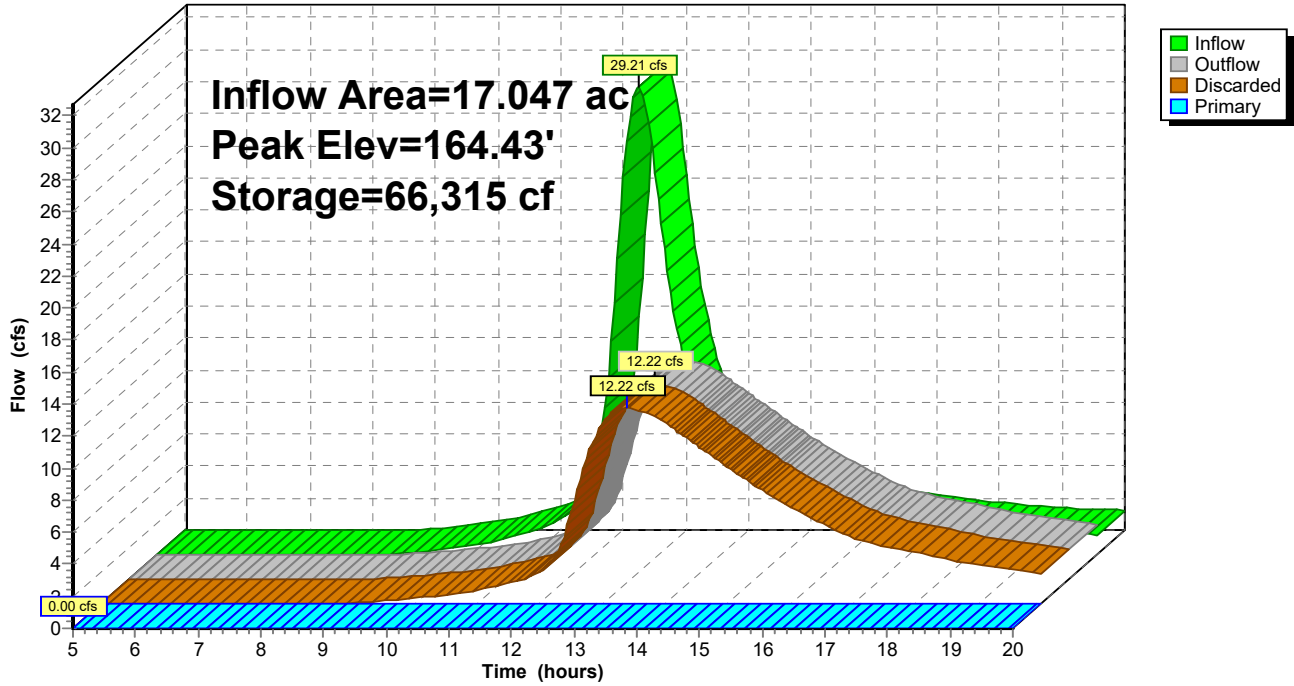
Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=12.22 cfs @ 13.40 hrs HW=164.43' (Free Discharge)
 ↑**2=Exfiltration** (Controls 12.22 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=163.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 7P: Farm Depression

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 8P: Sediment Trap

Inflow Area = 3.130 ac, 0.00% Impervious, Inflow Depth > 2.55" for 25 year event
 Inflow = 8.27 cfs @ 12.17 hrs, Volume= 0.664 af
 Outflow = 7.33 cfs @ 12.25 hrs, Volume= 0.512 af, Atten= 11%, Lag= 5.0 min
 Primary = 7.33 cfs @ 12.25 hrs, Volume= 0.512 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.39' @ 12.25 hrs Surf.Area= 3,441 sf Storage= 7,796 cf

Plug-Flow detention time= 90.5 min calculated for 0.510 af (77% of inflow)
 Center-of-Mass det. time= 33.4 min (840.4 - 807.0)

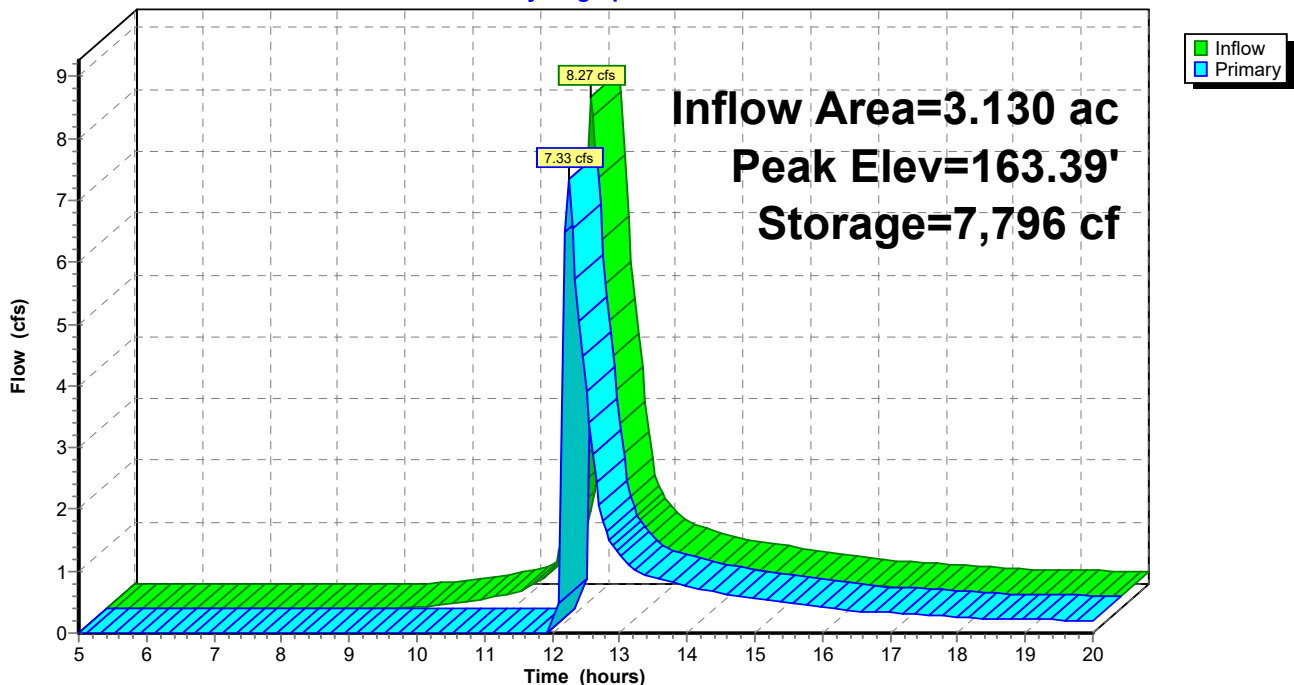
Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	14,375 cf	65.00'W x 20.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=7.30 cfs @ 12.25 hrs HW=163.39' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 7.30 cfs @ 1.57 fps)

Pond 8P: Sediment Trap

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 10P: Kettle Hole

Inflow Area = 3.172 ac, 0.00% Impervious, Inflow Depth > 1.38" for 25 year event
 Inflow = 3.98 cfs @ 12.21 hrs, Volume= 0.366 af
 Outflow = 0.18 cfs @ 18.00 hrs, Volume= 0.111 af, Atten= 95%, Lag= 347.3 min
 Discarded = 0.18 cfs @ 18.00 hrs, Volume= 0.111 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 148.66' @ 18.00 hrs Surf.Area= 7,714 sf Storage= 11,268 cf

Plug-Flow detention time= 243.4 min calculated for 0.110 af (30% of inflow)
 Center-of-Mass det. time= 139.4 min (974.6 - 835.2)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	274,837 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	1,534	0	0	1,534
148.00	5,773	6,855	6,855	5,793
150.00	12,558	17,897	24,752	12,610
152.00	19,547	31,848	56,601	19,656
154.00	26,610	45,976	102,576	26,800
156.00	32,562	59,072	161,648	32,876
158.00	39,456	71,908	233,556	39,899
159.00	43,134	41,281	274,837	43,647

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.18 cfs @ 18.00 hrs HW=148.66' (Free Discharge)
 ↑1=Exfiltration (Controls 0.18 cfs)

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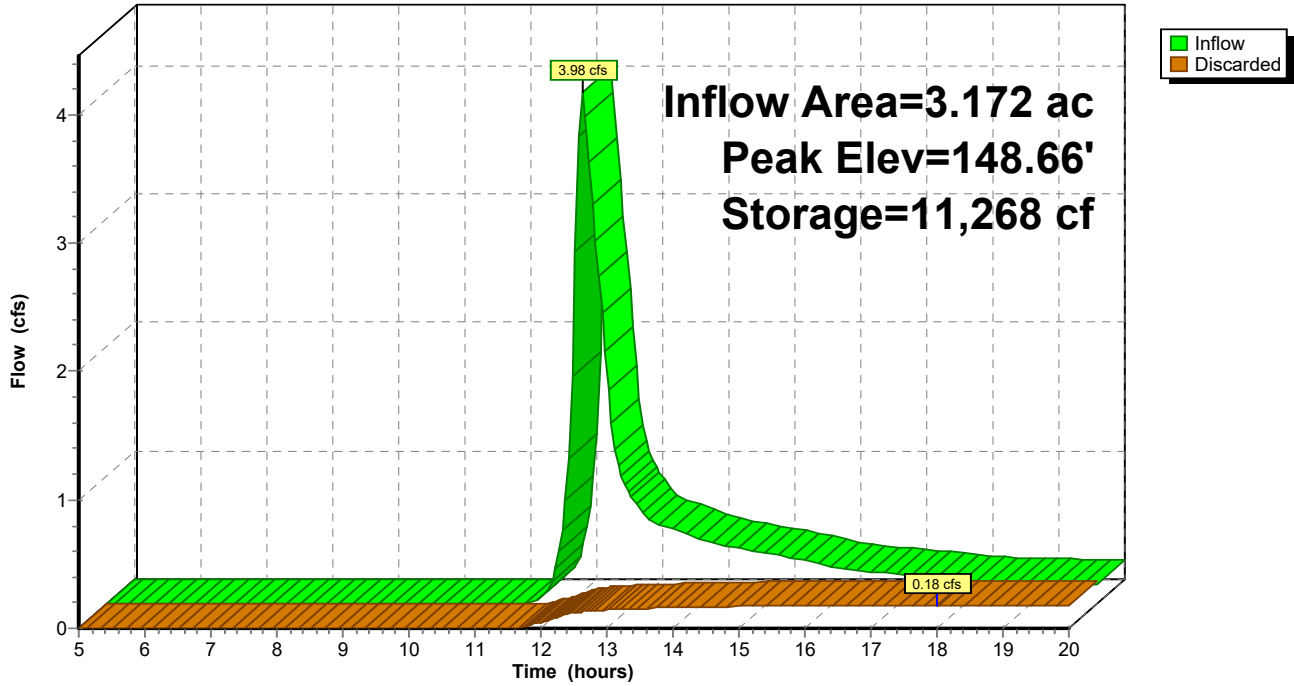
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Pond 10P: Kettle Hole

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 11AP: Kettle Hole

Inflow Area = 6.449 ac, 0.00% Impervious, Inflow Depth > 0.76" for 25 year event
 Inflow = 3.59 cfs @ 12.20 hrs, Volume= 0.410 af
 Outflow = 0.28 cfs @ 17.62 hrs, Volume= 0.169 af, Atten= 92%, Lag= 325.0 min
 Discarded = 0.28 cfs @ 17.62 hrs, Volume= 0.169 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 127.54' @ 17.62 hrs Surf.Area= 12,052 sf Storage= 10,888 cf

Plug-Flow detention time= 232.2 min calculated for 0.168 af (41% of inflow)
 Center-of-Mass det. time= 119.4 min (978.1 - 858.7)

Volume	Invert	Avail.Storage	Storage Description
#1	126.00'	127,579 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
126.00	3,074	0	0	3,074
128.00	15,883	17,296	17,296	15,899
130.00	28,094	43,401	60,697	28,154
132.00	39,090	66,882	127,579	39,226

Device	Routing	Invert	Outlet Devices
#1	Discarded	126.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.28 cfs @ 17.62 hrs HW=127.54' (Free Discharge)
 ↑1=Exfiltration (Controls 0.28 cfs)

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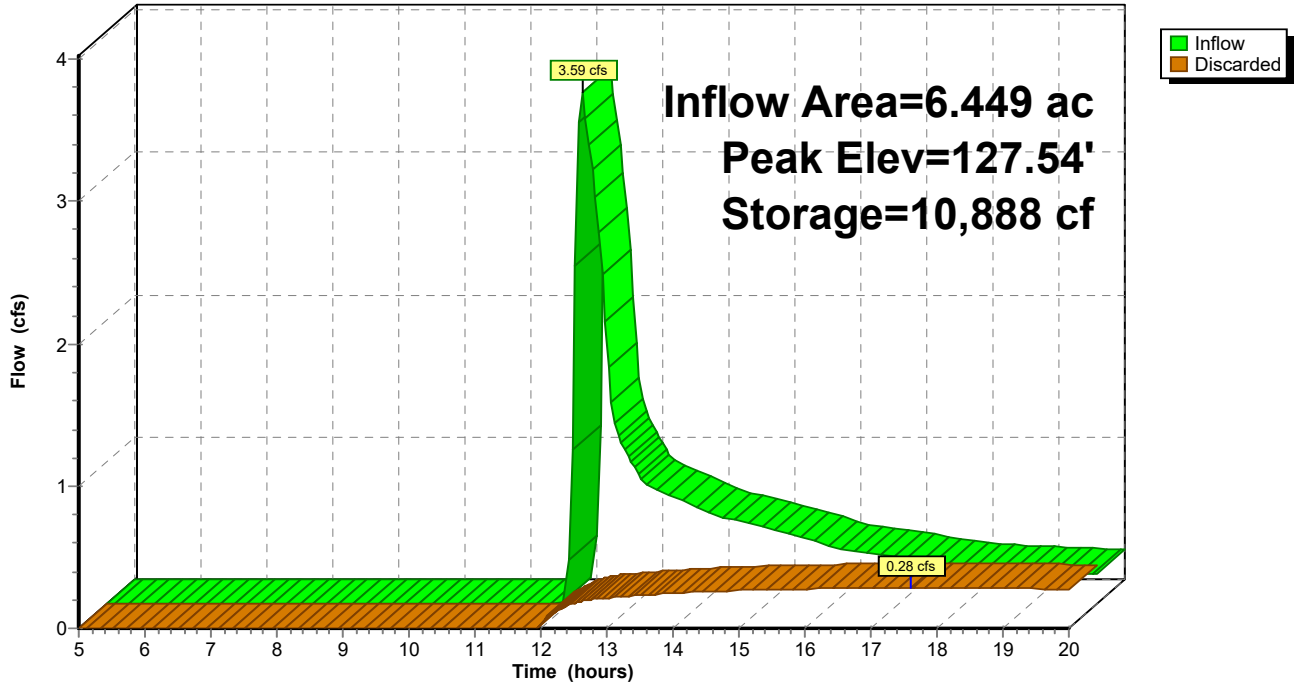
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Pond 11AP: Kettle Hole

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 11P: Kettle Hole

Inflow Area = 5.662 ac, 0.33% Impervious, Inflow Depth > 1.31" for 25 year event
 Inflow = 6.11 cfs @ 12.26 hrs, Volume= 0.617 af
 Outflow = 0.26 cfs @ 19.71 hrs, Volume= 0.159 af, Atten= 96%, Lag= 446.8 min
 Discarded = 0.26 cfs @ 19.71 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.83' @ 19.71 hrs Surf.Area= 11,020 sf Storage= 19,943 cf

Plug-Flow detention time= 241.1 min calculated for 0.159 af (26% of inflow)
 Center-of-Mass det. time= 134.1 min (973.9 - 839.8)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	585,038 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	3,101	0	0	3,101
144.00	9,033	11,618	11,618	9,057
146.00	14,143	22,986	34,604	14,223
148.00	20,595	34,537	69,140	20,742
150.00	26,222	46,704	115,844	26,472
152.00	32,411	58,524	174,368	32,779
154.00	41,950	74,156	248,524	42,415
156.00	49,984	91,817	340,341	50,591
158.00	62,571	112,320	452,660	63,289
160.00	69,874	132,378	585,038	70,817

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.26 cfs @ 19.71 hrs HW=144.83' (Free Discharge)
 ↑1=Exfiltration (Controls 0.26 cfs)

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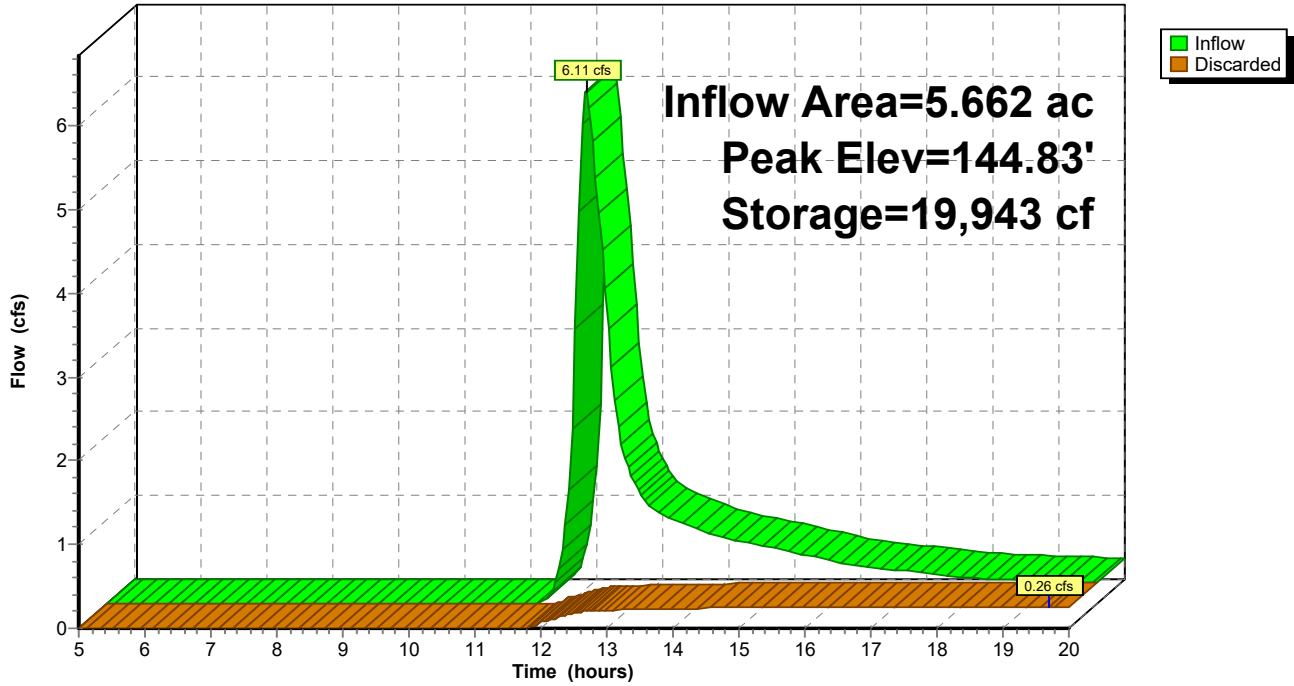
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Pond 11P: Kettle Hole

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 12P: Farm Depression

Inflow Area = 3.290 ac, 2.37% Impervious, Inflow Depth > 2.82" for 25 year event
 Inflow = 8.94 cfs @ 12.20 hrs, Volume= 0.772 af
 Outflow = 1.40 cfs @ 13.01 hrs, Volume= 0.727 af, Atten= 84%, Lag= 48.2 min
 Discarded = 1.40 cfs @ 13.01 hrs, Volume= 0.727 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.78' @ 13.01 hrs Surf.Area= 20,048 sf Storage= 14,971 cf

Plug-Flow detention time= 132.0 min calculated for 0.725 af (94% of inflow)
 Center-of-Mass det. time= 111.6 min (915.4 - 803.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	161.00'	52,117 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
161.00	0	0	0	0	
162.00	10,223	3,408	3,408	10,225	
164.00	42,096	48,709	52,117	42,116	

Device	Routing	Invert	Outlet Devices									
#1	Discarded	161.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'									
#2	Primary	163.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Discarded OutFlow Max=1.40 cfs @ 13.01 hrs HW=162.78' (Free Discharge)
 ↑1=Exfiltration (Controls 1.40 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=161.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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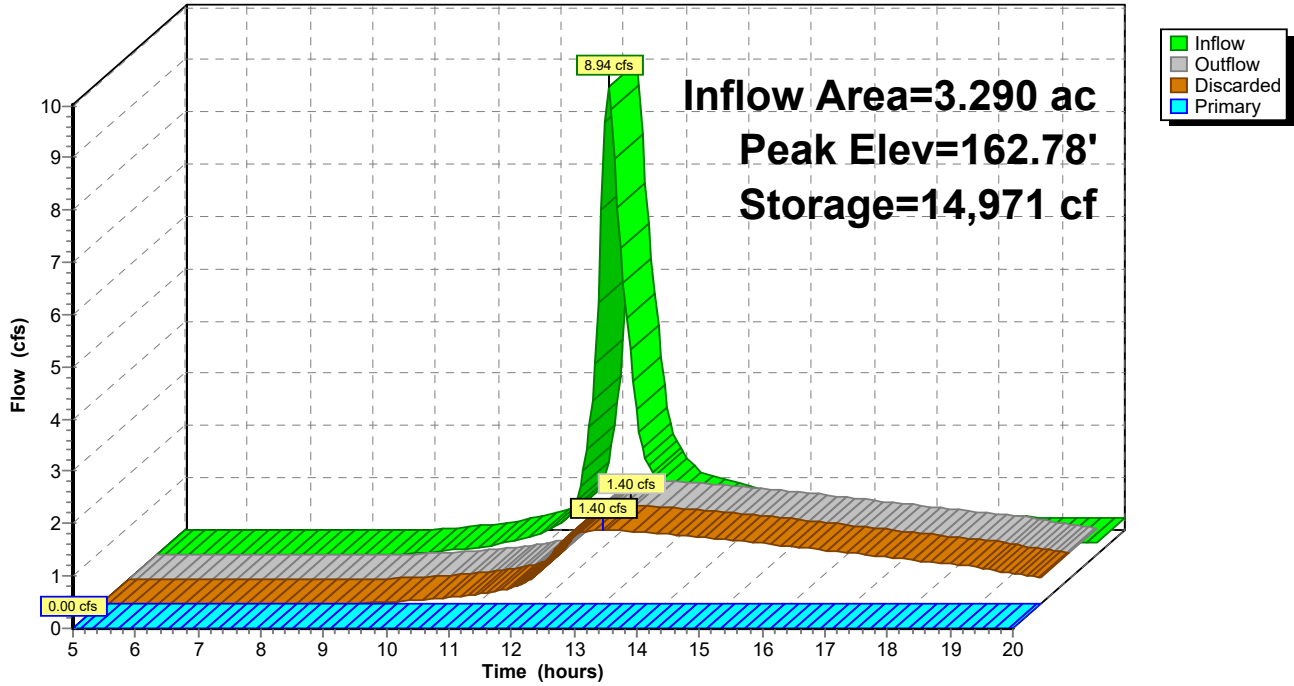
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Pond 12P: Farm Depression

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 13P: Farm Depression

Inflow Area = 18.631 ac, 0.42% Impervious, Inflow Depth > 2.93" for 25 year event
 Inflow = 26.15 cfs @ 12.86 hrs, Volume= 4.550 af
 Outflow = 11.16 cfs @ 13.76 hrs, Volume= 3.898 af, Atten= 57%, Lag= 53.7 min
 Discarded = 6.58 cfs @ 13.76 hrs, Volume= 3.562 af
 Primary = 4.58 cfs @ 13.76 hrs, Volume= 0.337 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.58' @ 13.76 hrs Surf.Area= 94,220 sf Storage= 80,994 cf

Plug-Flow detention time= 131.9 min calculated for 3.898 af (86% of inflow)
 Center-of-Mass det. time= 93.4 min (931.3 - 838.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	126,275 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	18,000	0	0	18,000	
162.00	124,141	126,275	126,275	124,155	

Device	Routing	Invert	Outlet Devices									
#1	Primary	161.50'	70.0' long x 50.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=6.58 cfs @ 13.76 hrs HW=161.58' (Free Discharge)
 ↑2=Exfiltration (Controls 6.58 cfs)

Primary OutFlow Max=4.56 cfs @ 13.76 hrs HW=161.58' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 4.56 cfs @ 0.78 fps)

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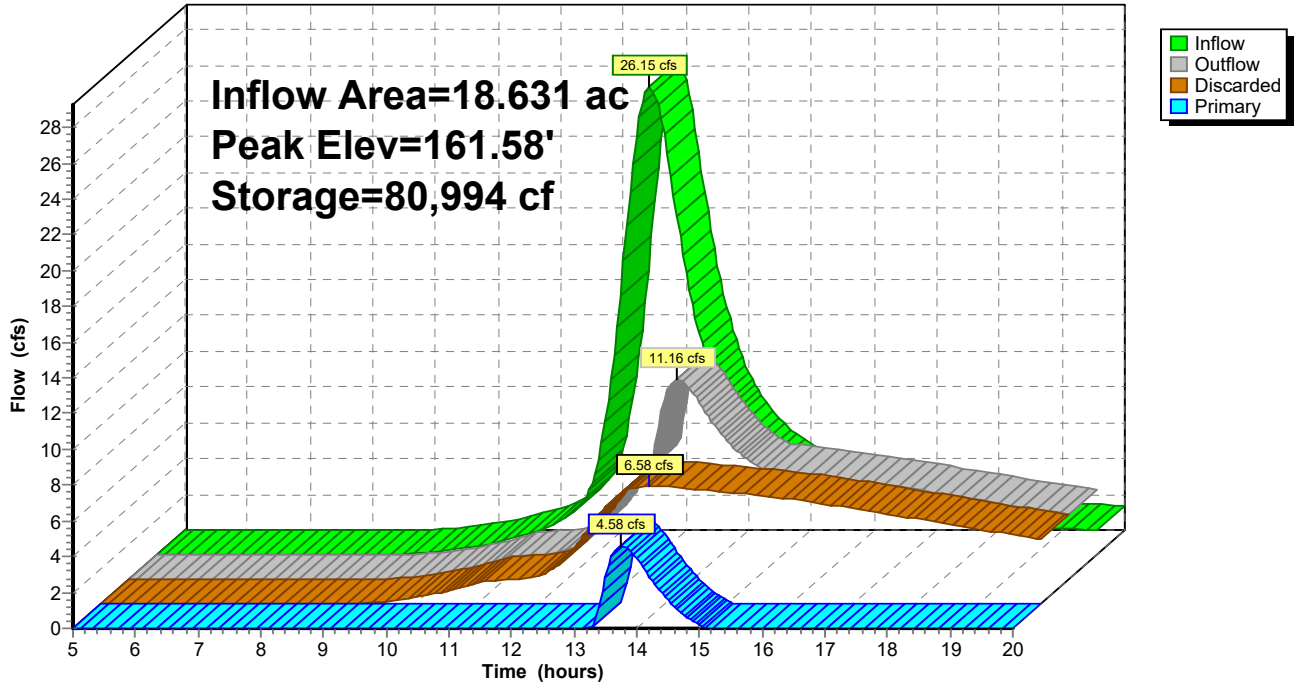
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Pond 13P: Farm Depression

Hydrograph



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Summary for Pond 15P: Farm Depression

Inflow Area = 2.521 ac, 5.01% Impervious, Inflow Depth > 2.72" for 25 year event
 Inflow = 5.67 cfs @ 12.30 hrs, Volume= 0.571 af
 Outflow = 1.46 cfs @ 12.93 hrs, Volume= 0.557 af, Atten= 74%, Lag= 37.5 min
 Discarded = 1.46 cfs @ 12.93 hrs, Volume= 0.557 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.30' @ 12.93 hrs Surf.Area= 21,028 sf Storage= 9,751 cf

Plug-Flow detention time= 86.7 min calculated for 0.555 af (97% of inflow)
 Center-of-Mass det. time= 77.5 min (888.4 - 811.0)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	33,327 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	100	0	0	100
164.00	47,707	33,327	33,327	47,714

Device	Routing	Invert	Outlet Devices
#1	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.46 cfs @ 12.93 hrs HW=163.30' (Free Discharge)
 ↑1=Exfiltration (Controls 1.46 cfs)

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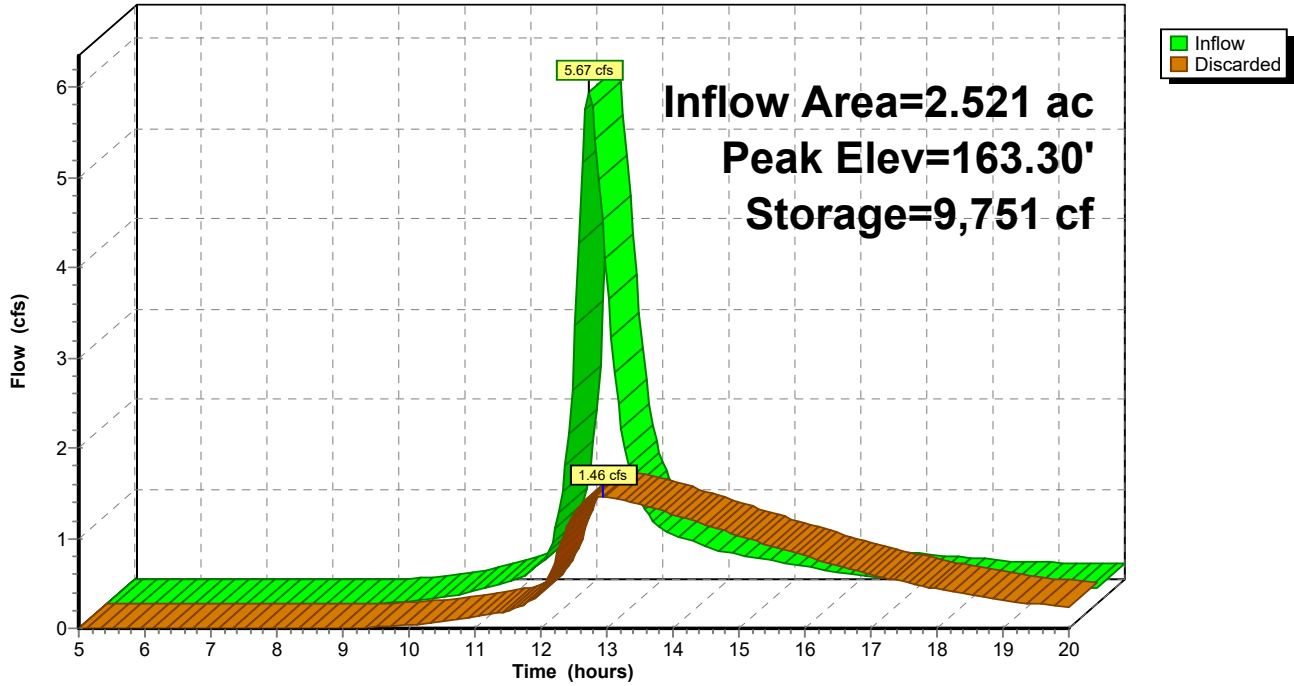
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Pond 15P: Farm Depression

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Summary for Pond 16P: Farm Depression

Inflow Area = 4.717 ac, 0.69% Impervious, Inflow Depth > 2.71" for 25 year event
 Inflow = 9.48 cfs @ 12.40 hrs, Volume= 1.066 af
 Outflow = 2.84 cfs @ 13.05 hrs, Volume= 1.052 af, Atten= 70%, Lag= 38.9 min
 Discarded = 2.84 cfs @ 13.05 hrs, Volume= 1.052 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.93' @ 13.05 hrs Surf.Area= 40,801 sf Storage= 17,161 cf

Plug-Flow detention time= 75.4 min calculated for 1.052 af (99% of inflow)
 Center-of-Mass det. time= 70.5 min (886.4 - 815.9)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	106,646 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
162.00	3,106	0	0 3,106
164.00	136,289	106,646	106,646 136,298

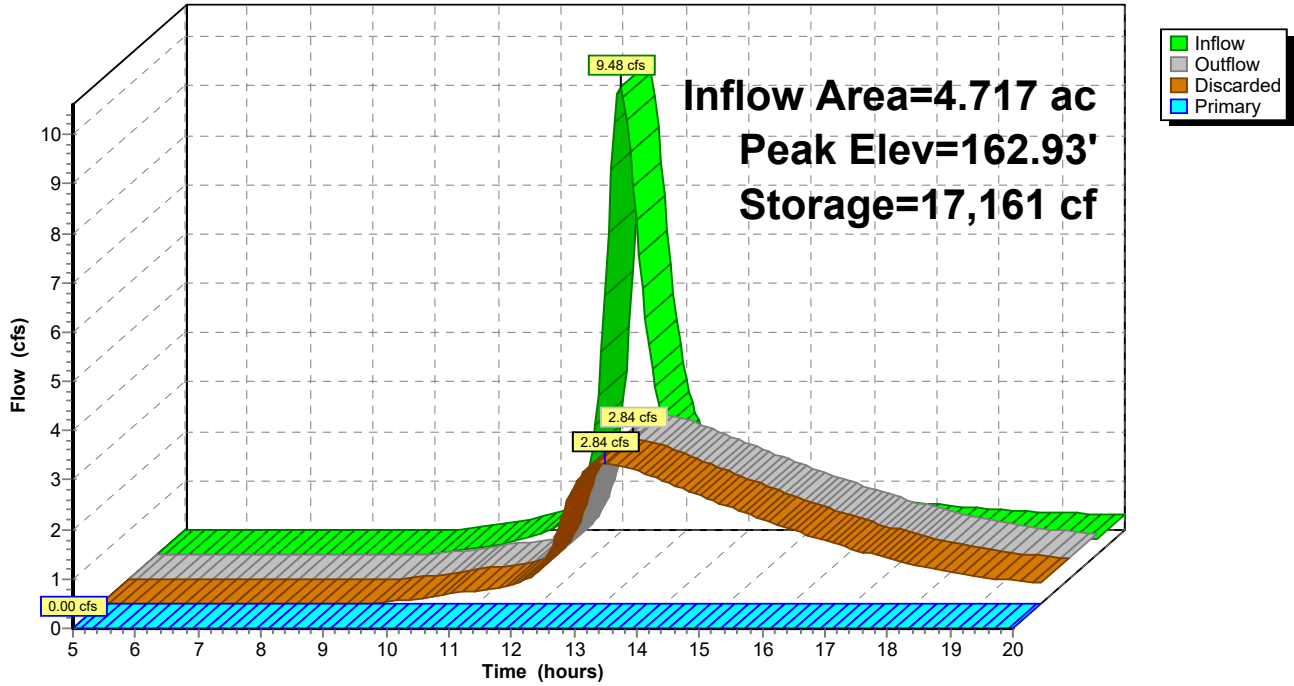
Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	50.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.84 cfs @ 13.05 hrs HW=162.93' (Free Discharge)
 ↑2=Exfiltration (Controls 2.84 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=162.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 16P: Farm Depression

Hydrograph



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Summary for Pond 17P: Sediment Trap

Inflow Area = 10.053 ac, 0.32% Impervious, Inflow Depth > 1.54" for 25 year event
 Inflow = 12.53 cfs @ 12.32 hrs, Volume= 1.290 af
 Outflow = 2.64 cfs @ 13.09 hrs, Volume= 1.205 af, Atten= 79%, Lag= 46.1 min
 Discarded = 2.64 cfs @ 13.09 hrs, Volume= 1.205 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.95' @ 13.09 hrs Surf.Area= 37,815 sf Storage= 24,590 cf

Plug-Flow detention time= 122.9 min calculated for 1.205 af (93% of inflow)
 Center-of-Mass det. time= 100.5 min (908.9 - 808.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	81,430 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	0	0	0	0	
162.00	39,746	26,497	26,497	39,752	
163.00	71,678	54,933	81,430	71,695	

Device	Routing	Invert	Outlet Devices												
#1	Primary	162.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=2.64 cfs @ 13.09 hrs HW=161.95' (Free Discharge)
 ↑2=Exfiltration (Controls 2.64 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=160.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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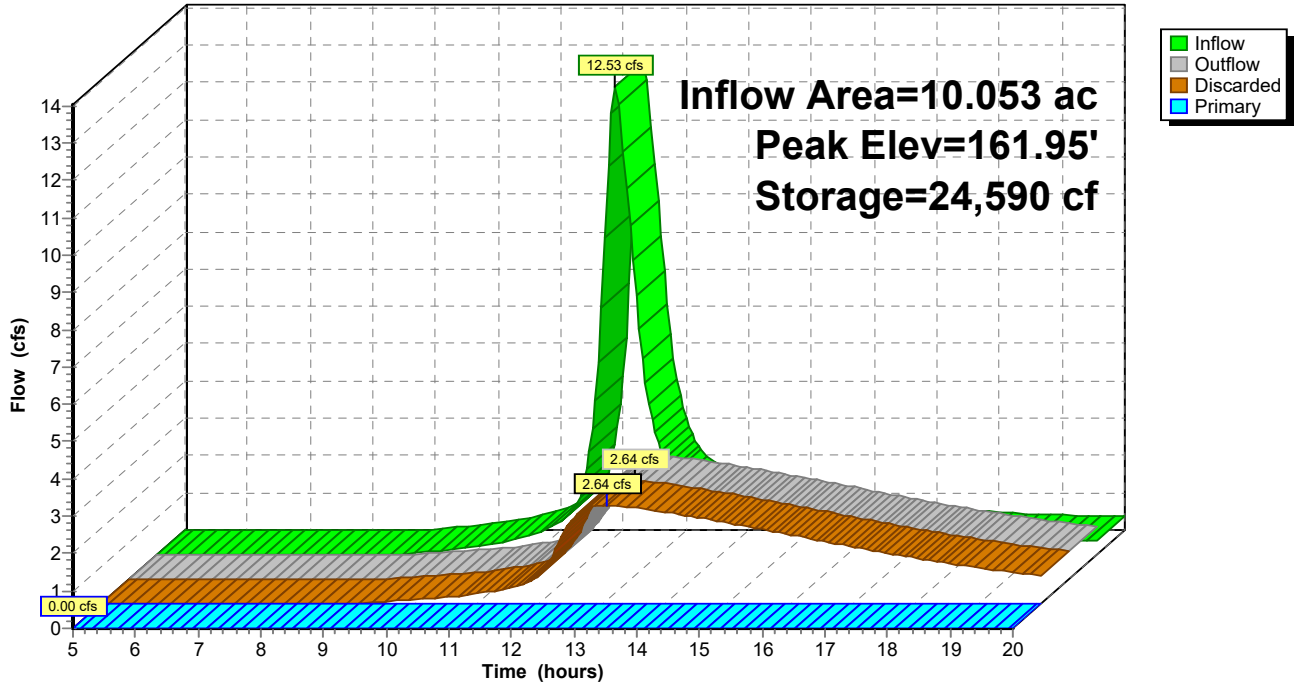
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Pond 17P: Sediment Trap

Hydrograph



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Summary for Pond 19P: Valley Berm

Inflow Area = 21.569 ac, 0.00% Impervious, Inflow Depth > 2.78" for 25 year event
 Inflow = 35.20 cfs @ 12.64 hrs, Volume= 5.004 af
 Outflow = 12.08 cfs @ 13.47 hrs, Volume= 3.892 af, Atten= 66%, Lag= 49.3 min
 Discarded = 5.18 cfs @ 13.47 hrs, Volume= 3.169 af
 Primary = 6.90 cfs @ 13.47 hrs, Volume= 0.723 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.37' @ 13.47 hrs Surf.Area= 44,014 sf Storage= 97,731 cf

Plug-Flow detention time= 153.3 min calculated for 3.879 af (78% of inflow)
 Center-of-Mass det. time= 100.2 min (928.4 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	151.00'	126,793 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
151.00	0	0	0	0
152.00	9,106	3,035	3,035	9,108
154.00	34,526	40,909	43,944	34,547
156.00	48,730	82,849	126,793	48,824

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	151.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=5.18 cfs @ 13.47 hrs HW=155.37' (Free Discharge)
 ↑**2=Exfiltration** (Controls 5.18 cfs)

Primary OutFlow Max=6.87 cfs @ 13.47 hrs HW=155.37' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 6.87 cfs @ 1.54 fps)

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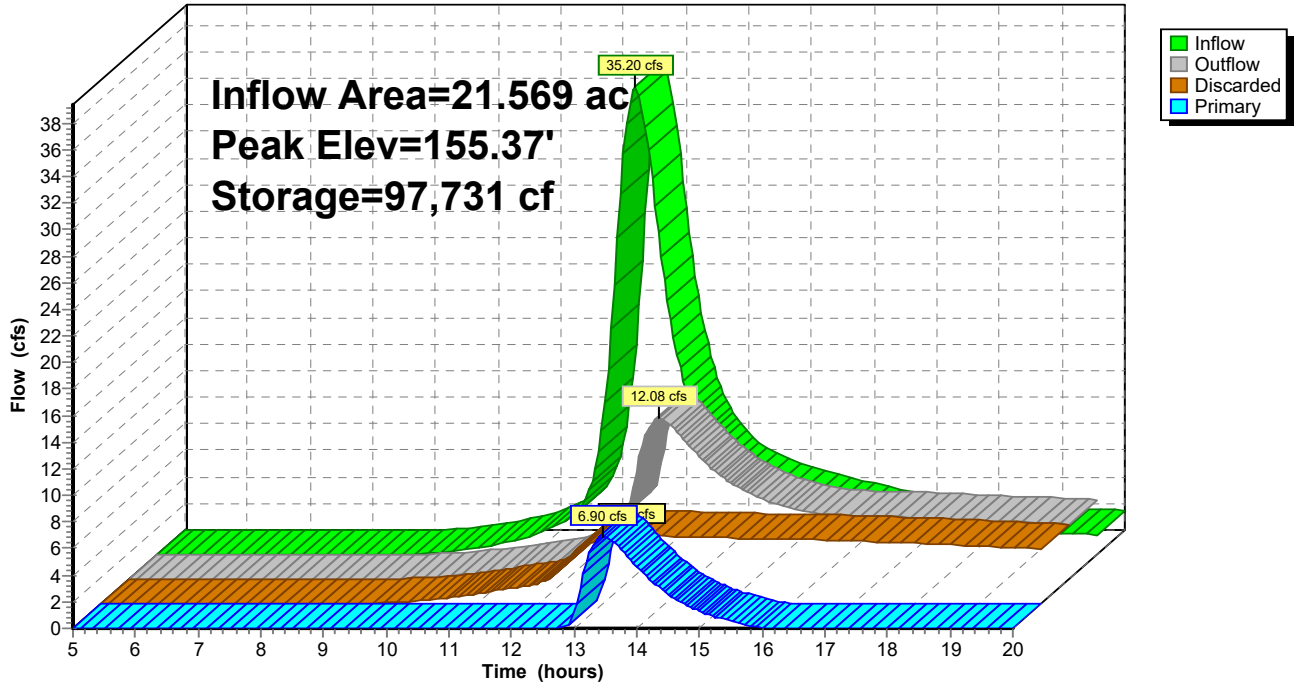
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Pond 19P: Valley Berm

Hydrograph



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Summary for Pond 20P: Sediment Trap

Inflow Area = 1.629 ac, 0.00% Impervious, Inflow Depth > 2.72" for 25 year event
 Inflow = 3.69 cfs @ 12.30 hrs, Volume= 0.369 af
 Outflow = 1.45 cfs @ 12.75 hrs, Volume= 0.193 af, Atten= 61%, Lag= 27.2 min
 Primary = 1.45 cfs @ 12.75 hrs, Volume= 0.193 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.14' @ 12.75 hrs Surf.Area= 3,970 sf Storage= 8,110 cf

Plug-Flow detention time= 162.5 min calculated for 0.193 af (52% of inflow)
 Center-of-Mass det. time= 81.6 min (892.3 - 810.7)

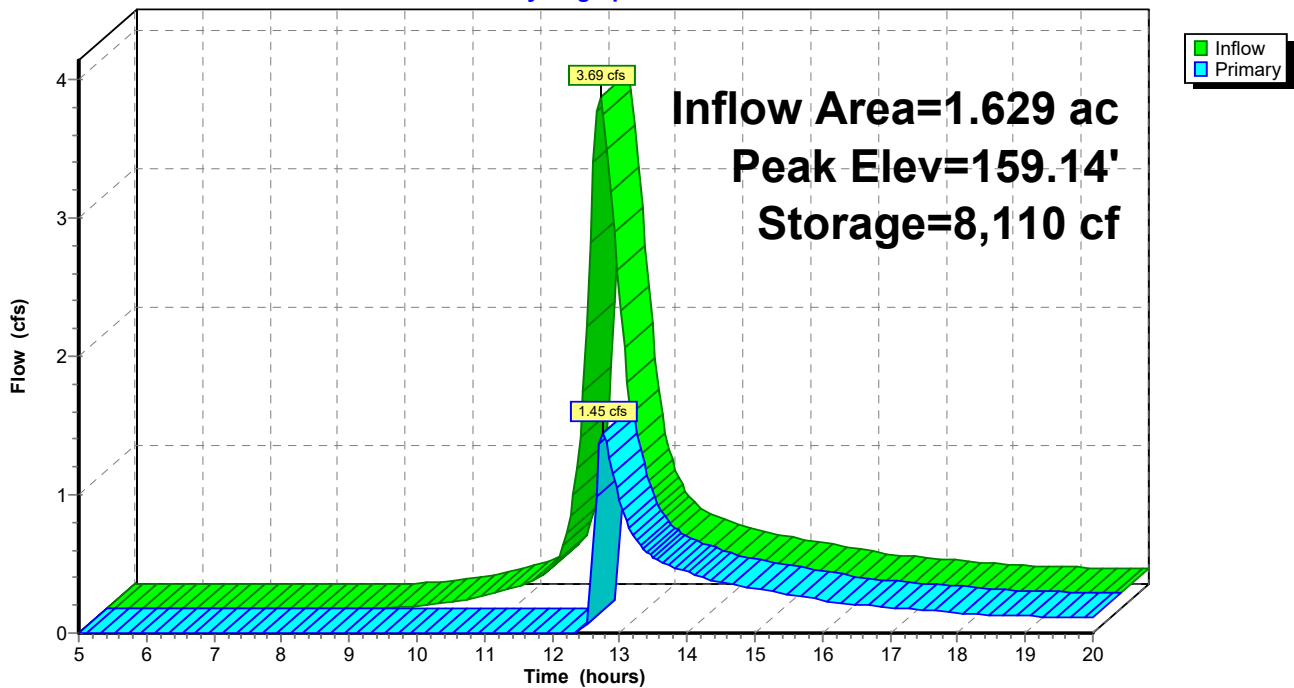
Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	11,904 cf	110.00'W x 12.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.43 cfs @ 12.75 hrs HW=159.14' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 1.43 cfs @ 0.88 fps)

Pond 20P: Sediment Trap

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Summary for Pond 21P: Valley Berm

Inflow Area = 38.989 ac, 0.08% Impervious, Inflow Depth > 0.67" for 25 year event
 Inflow = 10.90 cfs @ 12.40 hrs, Volume= 2.164 af
 Outflow = 4.87 cfs @ 14.34 hrs, Volume= 1.449 af, Atten= 55%, Lag= 116.6 min
 Discarded = 1.85 cfs @ 14.34 hrs, Volume= 1.139 af
 Primary = 3.01 cfs @ 14.34 hrs, Volume= 0.310 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.22' @ 14.34 hrs Surf.Area= 26,263 sf Storage= 50,662 cf

Plug-Flow detention time= 164.5 min calculated for 1.444 af (67% of inflow)
 Center-of-Mass det. time= 109.8 min (939.9 - 830.1)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	72,609 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
144.00	3,692	0	0 3,692
146.00	20,668	22,064	22,064 20,683
148.00	30,176	50,545	72,609 30,258

Device	Routing	Invert	Outlet Devices
#1	Primary	147.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	144.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.85 cfs @ 14.34 hrs HW=147.22' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.85 cfs)

Primary OutFlow Max=3.00 cfs @ 14.34 hrs HW=147.22' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 3.00 cfs @ 1.13 fps)

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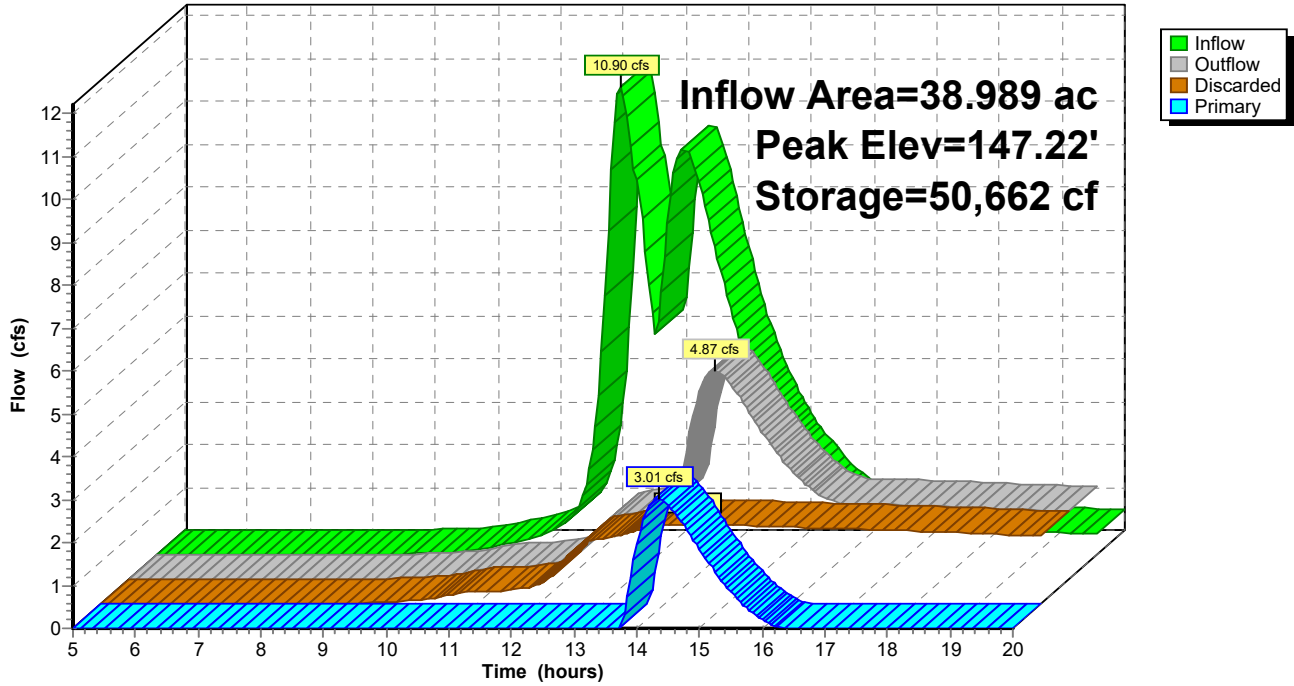
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Pond 21P: Valley Berm

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Summary for Pond 22P: Sediment Trap

Inflow Area = 17.727 ac, 0.00% Impervious, Inflow Depth > 2.95" for 25 year event
 Inflow = 25.25 cfs @ 12.87 hrs, Volume= 4.356 af
 Outflow = 17.73 cfs @ 13.34 hrs, Volume= 3.267 af, Atten= 30%, Lag= 28.2 min
 Discarded = 1.78 cfs @ 13.34 hrs, Volume= 1.102 af
 Primary = 15.95 cfs @ 13.34 hrs, Volume= 2.164 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 135.32' @ 13.34 hrs Surf.Area= 25,043 sf Storage= 65,978 cf

Plug-Flow detention time= 105.0 min calculated for 3.267 af (75% of inflow)
 Center-of-Mass det. time= 49.0 min (888.2 - 839.2)

Volume	Invert	Avail.Storage	Storage Description
#1	131.00'	84,211 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
131.00	7,145	0	0	7,145
132.00	10,375	8,710	8,710	10,392
133.00	14,183	12,229	20,939	14,220
134.00	18,569	16,327	37,266	18,629
135.00	23,407	20,941	58,208	23,494
136.00	28,690	26,004	84,211	28,808

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	131.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.78 cfs @ 13.34 hrs HW=135.32' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.78 cfs)

Primary OutFlow Max=15.93 cfs @ 13.34 hrs HW=135.32' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 15.93 cfs @ 2.43 fps)

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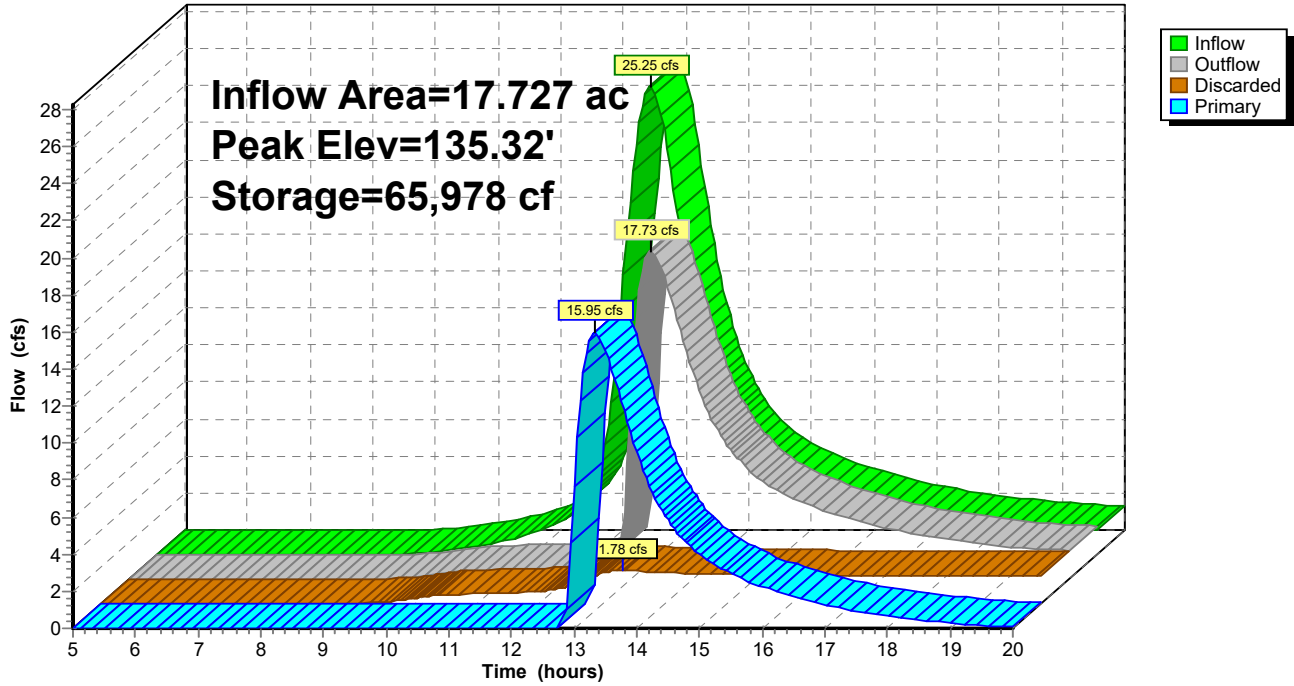
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Pond 22P: Sediment Trap

Hydrograph



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Summary for Pond 24P: Sediment Trap

Inflow Area = 2.795 ac, 0.00% Impervious, Inflow Depth > 2.91" for 25 year event
 Inflow = 7.29 cfs @ 12.25 hrs, Volume= 0.677 af
 Outflow = 2.36 cfs @ 12.72 hrs, Volume= 0.478 af, Atten= 68%, Lag= 28.2 min
 Discarded = 0.58 cfs @ 12.72 hrs, Volume= 0.366 af
 Primary = 1.79 cfs @ 12.72 hrs, Volume= 0.112 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 139.16' @ 12.72 hrs Surf.Area= 8,173 sf Storage= 13,471 cf

Plug-Flow detention time= 163.0 min calculated for 0.478 af (71% of inflow)
 Center-of-Mass det. time= 97.1 min (901.4 - 804.3)

Volume	Invert	Avail.Storage	Storage Description
#1	136.00'	21,509 cf	44.00'W x 30.00'L x 4.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	139.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	136.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.58 cfs @ 12.72 hrs HW=139.16' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.58 cfs)

Primary OutFlow Max=1.77 cfs @ 12.72 hrs HW=139.16' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 1.77 cfs @ 0.94 fps)

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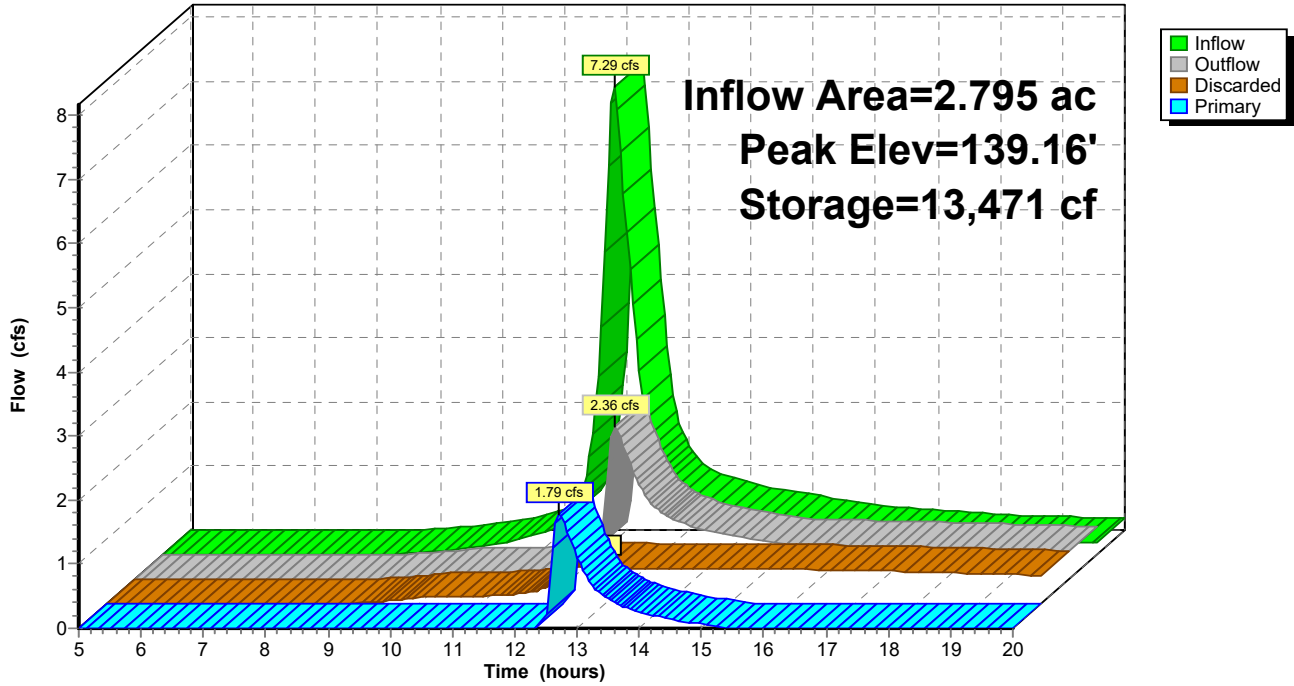
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Pond 24P: Sediment Trap

Hydrograph



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Summary for Pond 25P: Sediment Trap

Inflow Area = 12.168 ac, 0.00% Impervious, Inflow Depth > 2.88" for 25 year event
 Inflow = 20.47 cfs @ 12.64 hrs, Volume= 2.917 af
 Outflow = 2.05 cfs @ 15.98 hrs, Volume= 1.343 af, Atten= 90%, Lag= 200.5 min
 Discarded = 1.87 cfs @ 15.98 hrs, Volume= 1.327 af
 Primary = 0.18 cfs @ 15.98 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.53' @ 15.98 hrs Surf.Area= 26,068 sf Storage= 77,469 cf

Plug-Flow detention time= 194.7 min calculated for 1.343 af (46% of inflow)
 Center-of-Mass det. time= 110.2 min (936.6 - 826.5)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	118,500 cf	60.00'W x 300.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.87 cfs @ 15.98 hrs HW=166.53' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.87 cfs)

Primary OutFlow Max=0.13 cfs @ 15.98 hrs HW=166.53' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.13 cfs @ 0.40 fps)

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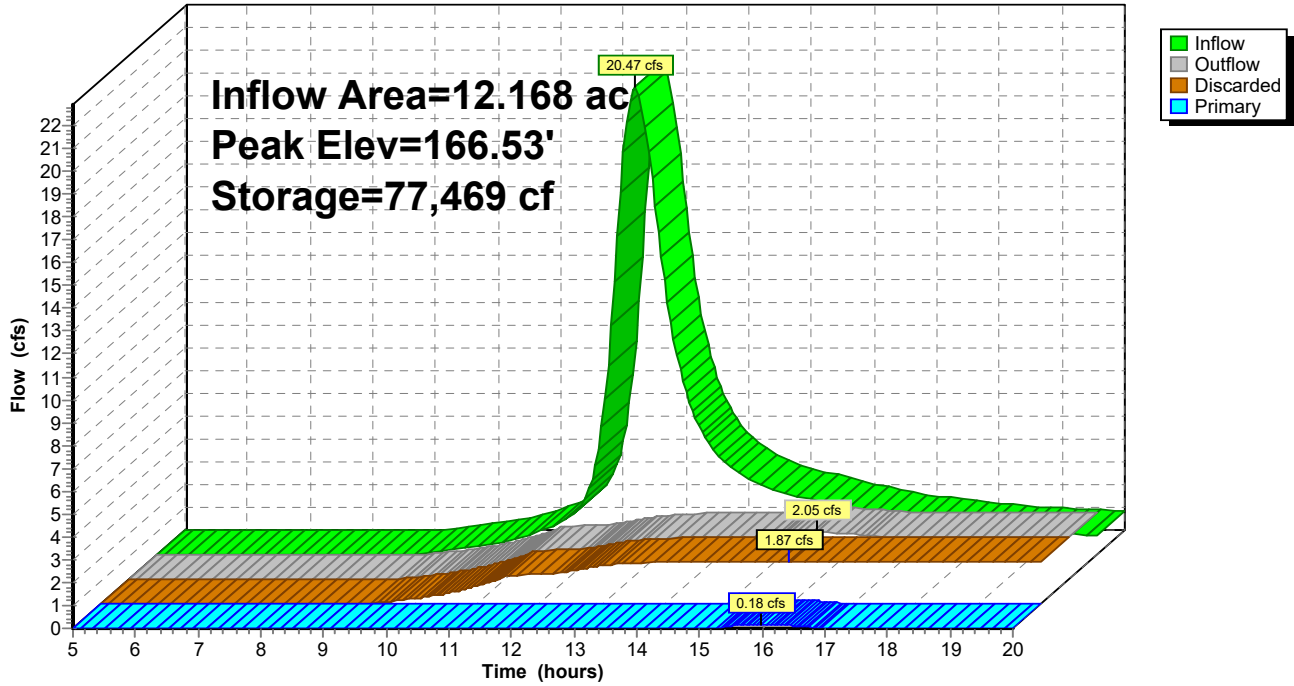
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Pond 25P: Sediment Trap

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Summary for Pond 27P: Sediment Trap

Inflow Area = 2.191 ac, 0.00% Impervious, Inflow Depth > 2.54" for 25 year event
 Inflow = 4.55 cfs @ 12.31 hrs, Volume= 0.463 af
 Outflow = 2.70 cfs @ 12.62 hrs, Volume= 0.321 af, Atten= 41%, Lag= 18.8 min
 Discarded = 0.24 cfs @ 12.62 hrs, Volume= 0.163 af
 Primary = 2.47 cfs @ 12.62 hrs, Volume= 0.158 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 168.25' @ 12.62 hrs Surf.Area= 3,298 sf Storage= 7,550 cf

Plug-Flow detention time= 125.6 min calculated for 0.321 af (69% of inflow)
 Center-of-Mass det. time= 57.7 min (872.5 - 814.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	165.00'	10,198 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
165.00	1,448	0	0	1,448	
166.00	1,953	1,694	1,694	1,974	
168.00	3,133	5,040	6,734	3,206	
169.00	3,807	3,465	10,198	3,911	

Device	Routing	Invert	Outlet Devices												
#1	Primary	168.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65												
			2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83												
#2	Discarded	165.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.24 cfs @ 12.62 hrs HW=168.25' (Free Discharge)
 ↑2=Exfiltration (Controls 0.24 cfs)

Primary OutFlow Max=2.41 cfs @ 12.62 hrs HW=168.25' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 2.41 cfs @ 1.20 fps)

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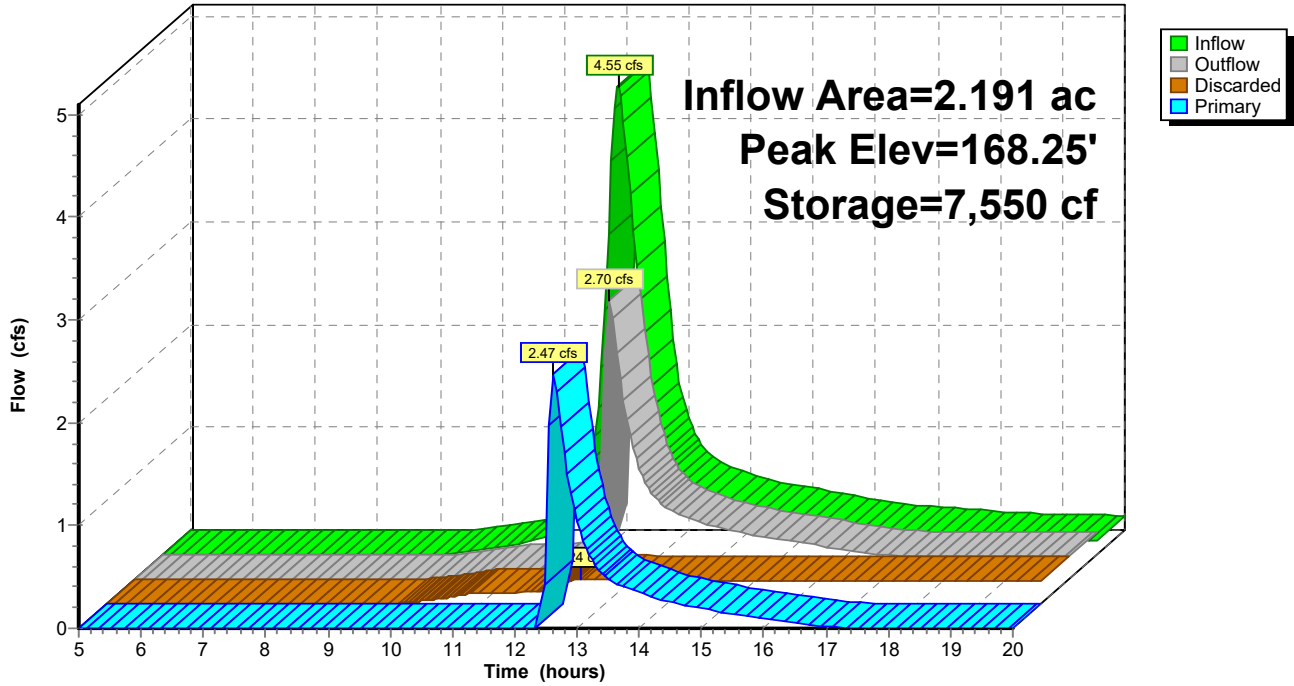
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Pond 27P: Sediment Trap

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Summary for Pond 28P: Kettle Hole

Inflow Area = 7.361 ac, 0.00% Impervious, Inflow Depth > 1.61" for 25 year event
 Inflow = 10.32 cfs @ 12.25 hrs, Volume= 0.990 af
 Outflow = 0.58 cfs @ 17.09 hrs, Volume= 0.357 af, Atten= 94%, Lag= 290.8 min
 Discarded = 0.58 cfs @ 17.09 hrs, Volume= 0.357 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.77' @ 17.09 hrs Surf.Area= 16,442 sf Storage= 28,910 cf

Plug-Flow detention time= 240.0 min calculated for 0.357 af (36% of inflow)
 Center-of-Mass det. time= 141.6 min (972.7 - 831.1)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	703,547 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	1,301	0	0	1,301
152.00	7,637	8,060	8,060	7,652
154.00	17,812	24,741	32,802	17,857
156.00	31,769	48,913	81,714	31,858
158.00	44,943	76,332	158,046	45,104
160.00	56,203	100,936	258,983	56,476
162.00	68,079	124,092	383,075	68,483
164.00	79,954	147,874	530,949	80,513
166.00	92,803	172,598	703,547	93,530

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.58 cfs @ 17.09 hrs HW=153.77' (Free Discharge)
 ↑1=Exfiltration (Controls 0.58 cfs)

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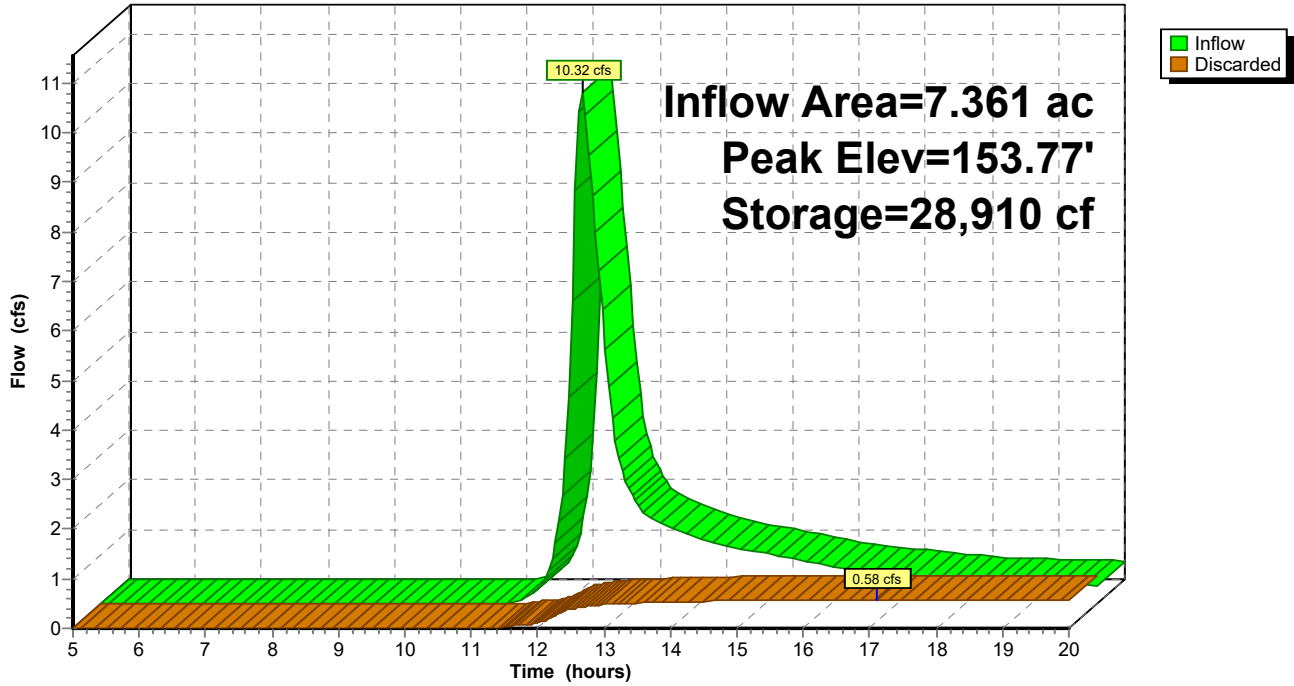
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Pond 28P: Kettle Hole

Hydrograph



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Summary for Pond 29P: Kettle Hole

Inflow Area = 1.626 ac, 0.00% Impervious, Inflow Depth > 0.37" for 25 year event
 Inflow = 0.28 cfs @ 12.36 hrs, Volume= 0.050 af
 Outflow = 0.05 cfs @ 17.04 hrs, Volume= 0.031 af, Atten= 82%, Lag= 280.9 min
 Discarded = 0.05 cfs @ 17.04 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.81' @ 17.04 hrs Surf.Area= 1,451 sf Storage= 938 cf

Plug-Flow detention time= 173.1 min calculated for 0.031 af (62% of inflow)
 Center-of-Mass det. time= 83.3 min (975.8 - 892.5)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	140,344 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	883	0	0	883
148.00	2,535	3,276	3,276	2,559
150.00	4,534	6,973	10,249	4,601
152.00	6,834	11,290	21,539	6,962
154.00	10,301	17,017	38,555	10,490
156.00	14,424	24,610	63,165	14,687
158.00	19,416	33,717	96,882	19,763
160.00	24,132	43,463	140,344	24,593

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.05 cfs @ 17.04 hrs HW=146.81' (Free Discharge)
 ↑1=Exfiltration (Controls 0.05 cfs)

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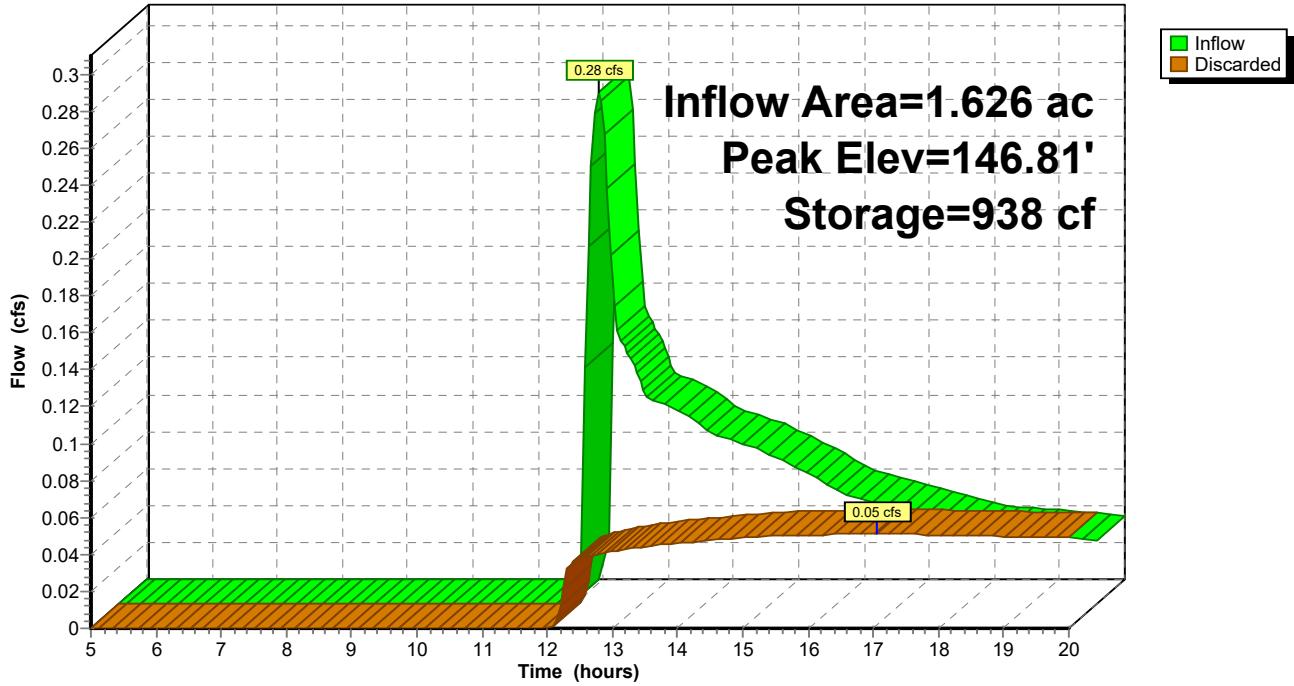
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Pond 29P: Kettle Hole

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Summary for Pond 30P: Farm Depression

Inflow Area = 3.911 ac, 0.00% Impervious, Inflow Depth > 3.10" for 25 year event
 Inflow = 12.79 cfs @ 12.16 hrs, Volume= 1.011 af
 Outflow = 1.96 cfs @ 12.85 hrs, Volume= 0.983 af, Atten= 85%, Lag= 41.4 min
 Discarded = 1.96 cfs @ 12.85 hrs, Volume= 0.983 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.54' @ 12.85 hrs Surf.Area= 28,168 sf Storage= 19,031 cf

Plug-Flow detention time= 112.1 min calculated for 0.983 af (97% of inflow)
 Center-of-Mass det. time= 101.3 min (897.0 - 795.7)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	177,312 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	0	0	0	0
170.00	19,015	6,338	6,338	19,017
172.00	61,742	76,681	83,019	61,766
173.00	131,151	94,293	177,312	131,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	169.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.96 cfs @ 12.85 hrs HW=170.54' (Free Discharge)
 ↑1=Exfiltration (Controls 1.96 cfs)

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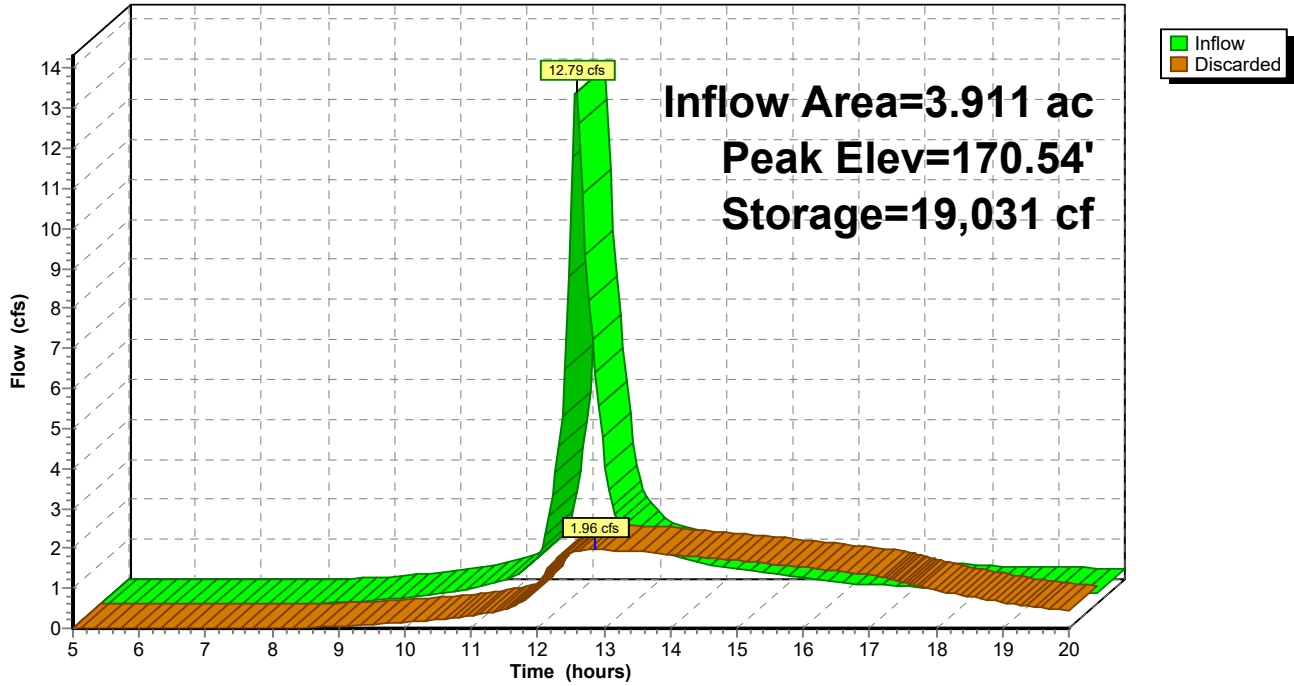
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Pond 30P: Farm Depression

Hydrograph



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Summary for Pond 31P: Kettle Hole

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 0.53" for 25 year event
Inflow = 1.07 cfs @ 12.29 hrs, Volume= 0.160 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 146.13' @ 20.00 hrs Surf.Area= 6,301 sf Storage= 6,953 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	580,458 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
144.00	435	0	0
146.00	5,720	6,155	6,155
148.00	14,467	20,187	26,342
150.00	23,981	38,448	64,790
152.00	31,477	55,458	120,248
154.00	37,463	68,940	189,188
156.00	43,468	80,931	270,119
158.00	49,047	92,515	362,634
160.00	54,411	103,458	466,092
162.00	59,955	114,366	580,458

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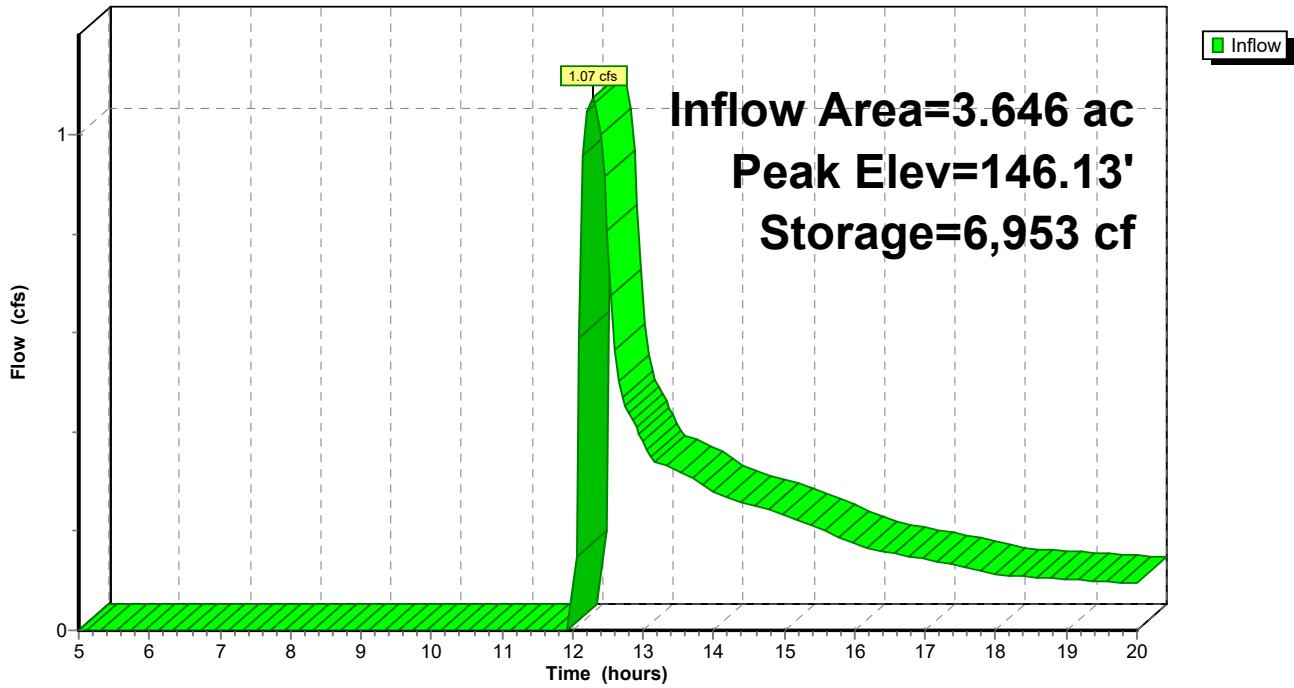
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Pond 31P: Kettle Hole

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Summary for Pond 33P: Sediment Trap

Inflow Area = 14.255 ac, 0.00% Impervious, Inflow Depth > 2.20" for 25 year event
 Inflow = 44.93 cfs @ 12.01 hrs, Volume= 2.618 af
 Outflow = 3.18 cfs @ 13.72 hrs, Volume= 2.055 af, Atten= 93%, Lag= 102.9 min
 Discarded = 3.18 cfs @ 13.72 hrs, Volume= 2.055 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 152.78' @ 13.72 hrs Surf.Area= 27,068 sf Storage= 53,920 cf

Plug-Flow detention time= 182.8 min calculated for 2.049 af (78% of inflow)
 Center-of-Mass det. time= 125.8 min (931.2 - 805.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	150.00'	91,856 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
150.00	12,664	0	0	12,664	
152.00	22,508	34,703	34,703	22,552	
154.00	35,109	57,152	91,856	35,210	

Device	Routing	Invert	Outlet Devices												
#1	Discarded	150.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'												
#2	Primary	153.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												

Discarded OutFlow Max=3.18 cfs @ 13.72 hrs HW=152.78' (Free Discharge)
 ↑1=Exfiltration (Controls 3.18 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=150.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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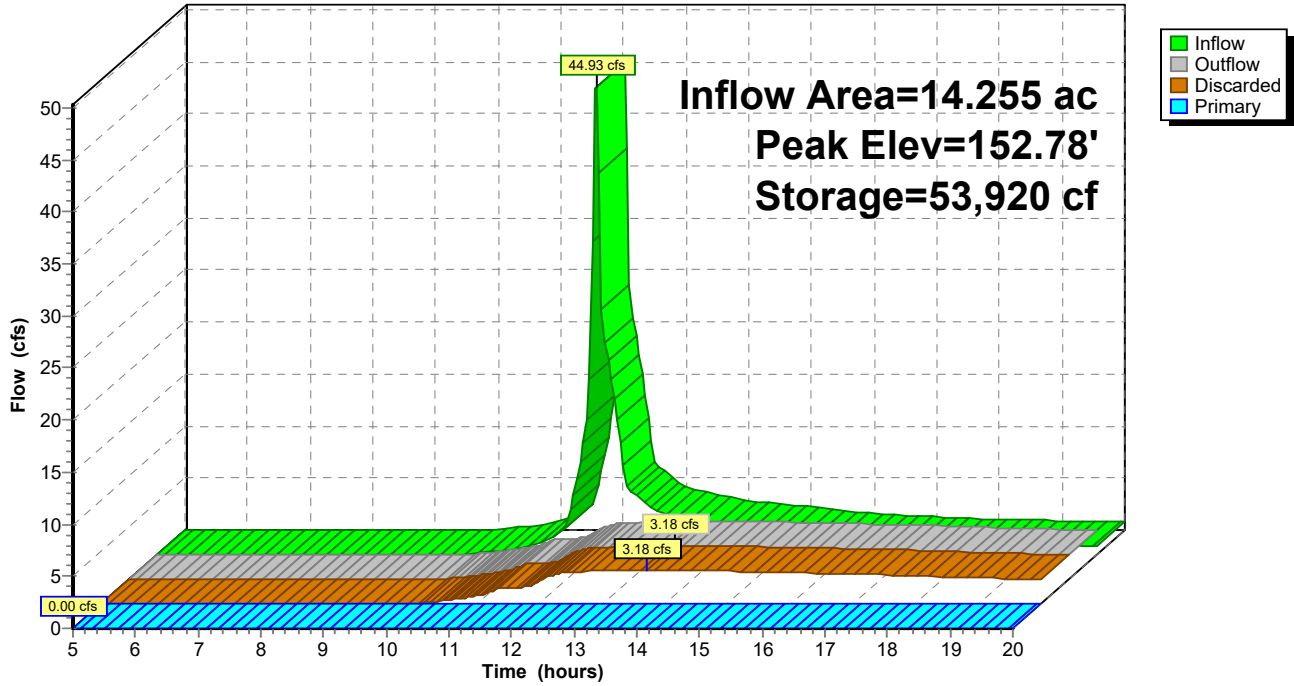
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Pond 33P: Sediment Trap

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Summary for Pond 34P: Sediment Trap

Inflow Area = 7.888 ac, 0.00% Impervious, Inflow Depth > 2.62" for 25 year event
Inflow = 16.12 cfs @ 12.35 hrs, Volume= 1.724 af
Outflow = 2.10 cfs @ 13.94 hrs, Volume= 1.316 af, Atten= 87%, Lag= 95.5 min
Discarded = 2.10 cfs @ 13.94 hrs, Volume= 1.316 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 155.07' @ 13.94 hrs Surf.Area= 17,847 sf Storage= 36,625 cf

Plug-Flow detention time= 178.6 min calculated for 1.312 af (76% of inflow)
Center-of-Mass det. time= 121.1 min (936.4 - 815.3)

Volume	Invert	Avail.Storage	Storage Description	
#1	152.00'	217,098 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
152.00	6,737	0	0	6,737
154.00	13,501	19,850	19,850	13,537
156.00	22,082	35,233	55,083	22,170
158.00	161,266	162,015	217,098	161,367

Device	Routing	Invert	Outlet Devices
#1	Discarded	152.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.10 cfs @ 13.94 hrs HW=155.07' (Free Discharge)
↑1=Exfiltration (Controls 2.10 cfs)

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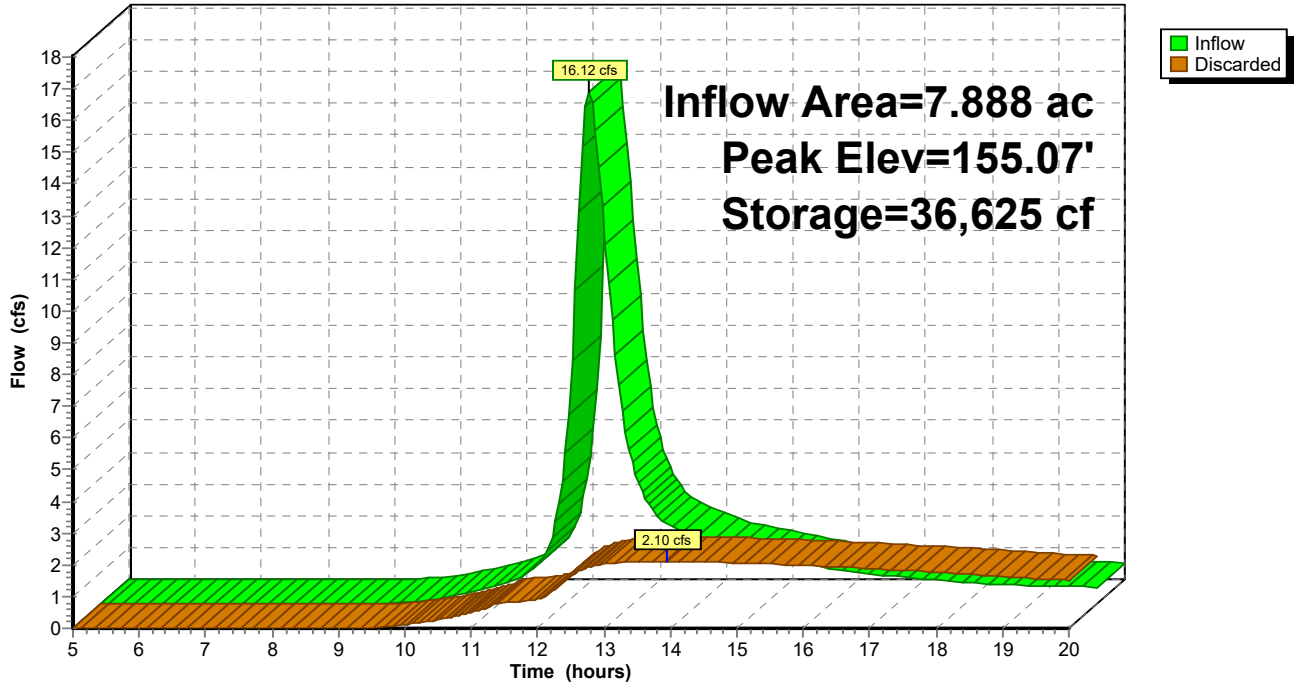
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Pond 34P: Sediment Trap

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Summary for Pond 35P: Sediment Trap

Inflow Area = 7.628 ac, 0.00% Impervious, Inflow Depth > 1.53" for 25 year event
 Inflow = 8.69 cfs @ 12.37 hrs, Volume= 0.972 af
 Outflow = 0.91 cfs @ 15.56 hrs, Volume= 0.574 af, Atten= 90%, Lag= 191.7 min
 Discarded = 0.91 cfs @ 15.56 hrs, Volume= 0.574 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.94' @ 15.56 hrs Surf.Area= 7,525 sf Storage= 22,578 cf

Plug-Flow detention time= 205.9 min calculated for 0.572 af (59% of inflow)
 Center-of-Mass det. time= 122.9 min (961.6 - 838.7)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	123,166 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	4,063	0	0	4,063
152.00	5,754	9,768	9,768	5,825
154.00	7,588	13,300	23,068	7,748
156.00	9,623	17,171	40,239	9,886
158.00	86,000	82,927	123,166	86,276

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.91 cfs @ 15.56 hrs HW=153.94' (Free Discharge)

↑**1=Exfiltration** (Controls 0.91 cfs)

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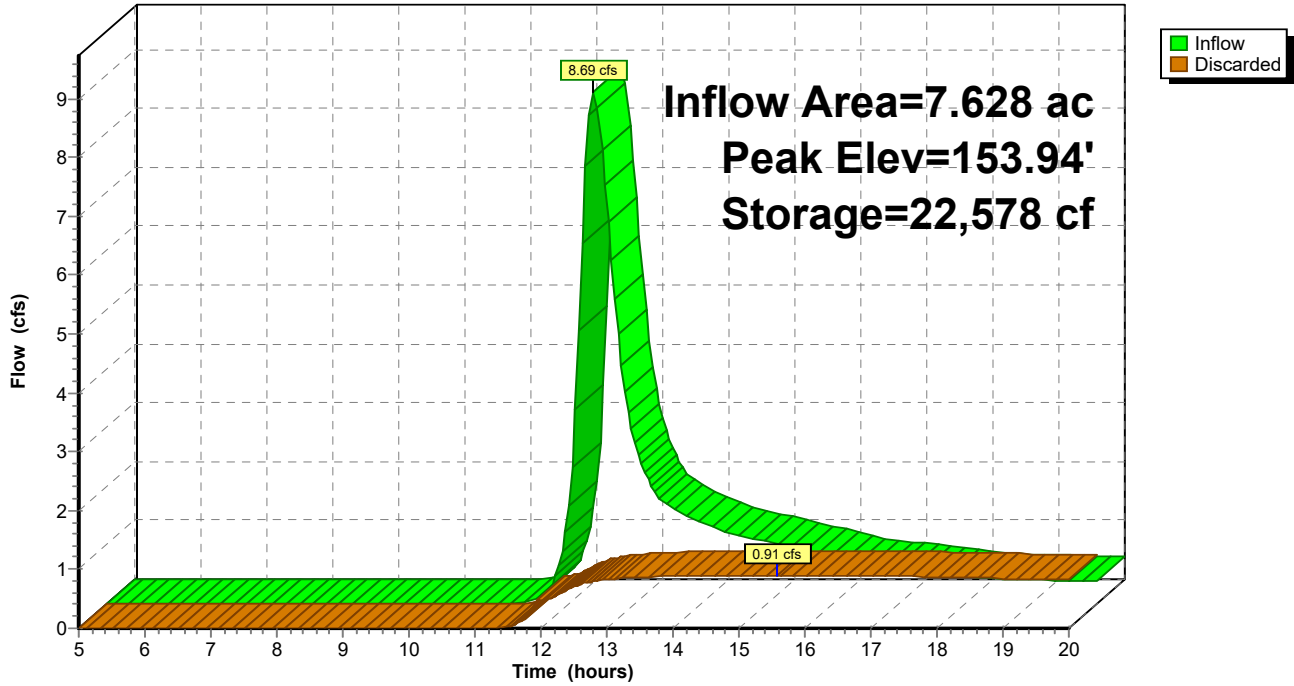
Type III 24-hr 25 year Rainfall=6.18"

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Pond 35P: Sediment Trap

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 25 year Rainfall=6.18"

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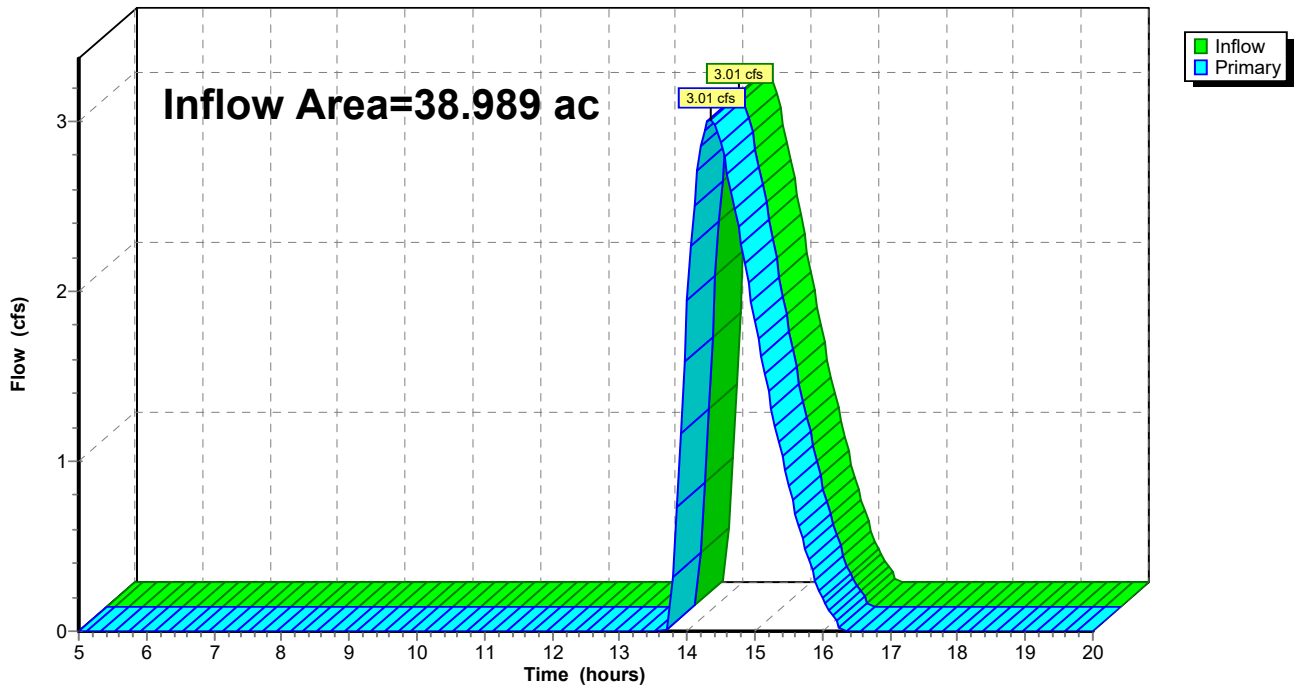
Summary for Link DP19: (new Link)

Inflow Area = 38.989 ac, 0.08% Impervious, Inflow Depth = 0.10" for 25 year event
Inflow = 3.01 cfs @ 14.34 hrs, Volume= 0.310 af
Primary = 3.01 cfs @ 14.34 hrs, Volume= 0.310 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP19: (new Link)

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 1: Subcat 1

Runoff = 2.49 cfs @ 12.12 hrs, Volume= 0.180 af, Depth> 2.49"

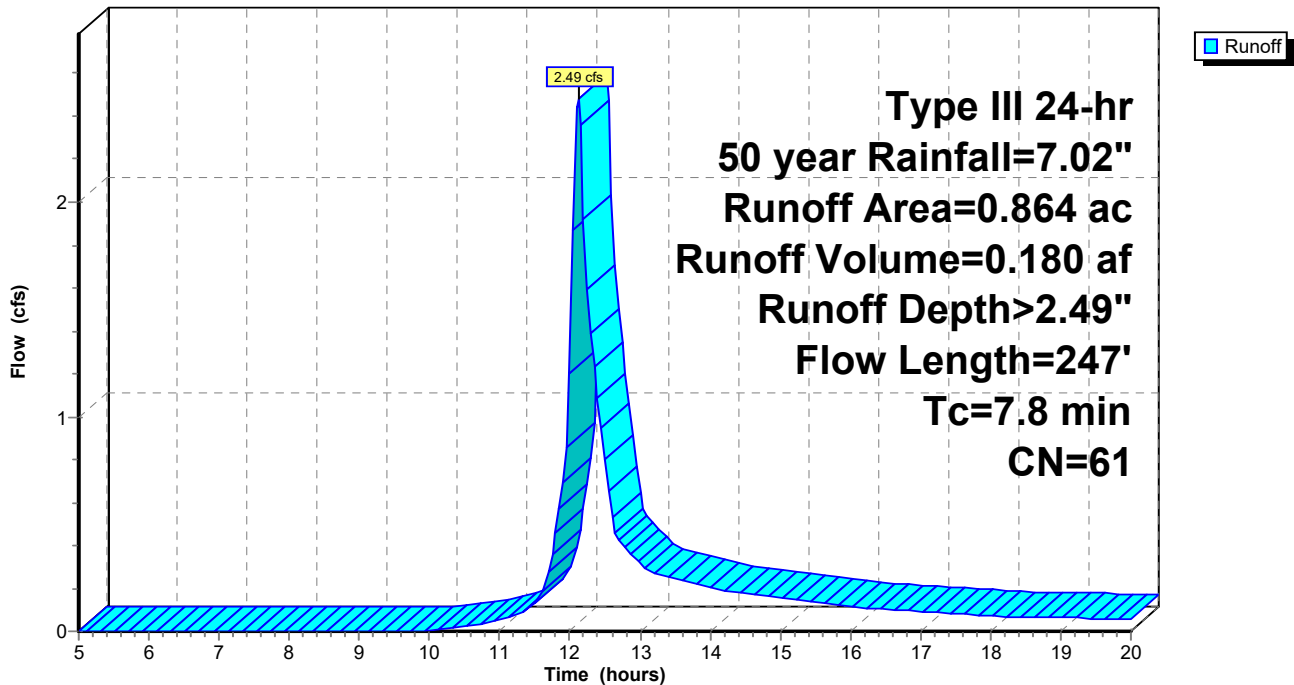
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.257	74	50-75% Grass cover, Fair, HSG B-C
0.063	30	Meadow, non-grazed, HSG A
0.544	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
0.864	61	Weighted Average
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.1	197	0.0508	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.8	247	Total			

Subcatchment 1: Subcat 1

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 2: Subcat 2

Runoff = 2.94 cfs @ 12.19 hrs, Volume= 0.329 af, Depth> 0.88"

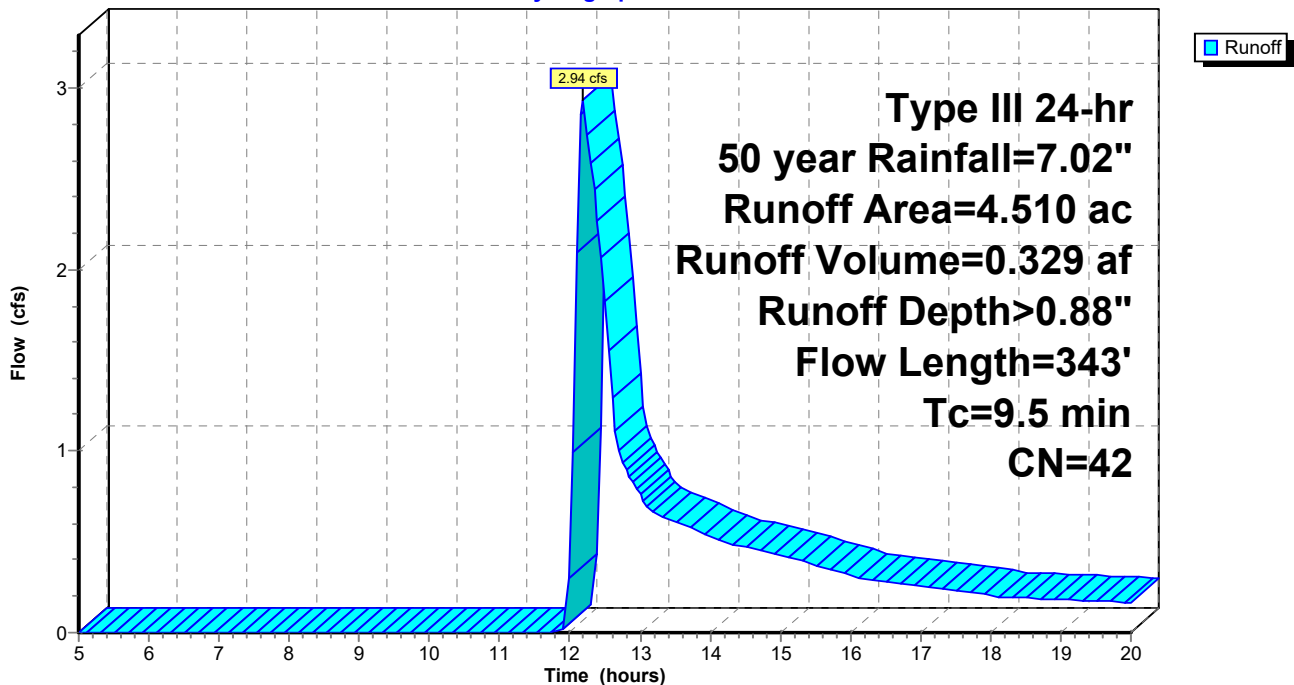
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.853	59	50-75% Grass cover, Fair, HSG A-B
* 0.202	74	50-75% Grass cover, Fair, HSG B-C
1.504	30	Meadow, non-grazed, HSG A
0.309	58	Meadow, non-grazed, HSG B
1.560	36	Woods, Fair, HSG A
0.002	60	Woods, Fair, HSG B
0.080	73	Woods, Fair, HSG C
4.510	42	Weighted Average
4.510		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
3.8	293	0.0343	1.30		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	343	Total			

Subcatchment 2: Subcat 2

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 3: Subcat 3

Runoff = 7.10 cfs @ 12.15 hrs, Volume= 0.545 af, Depth> 2.40"

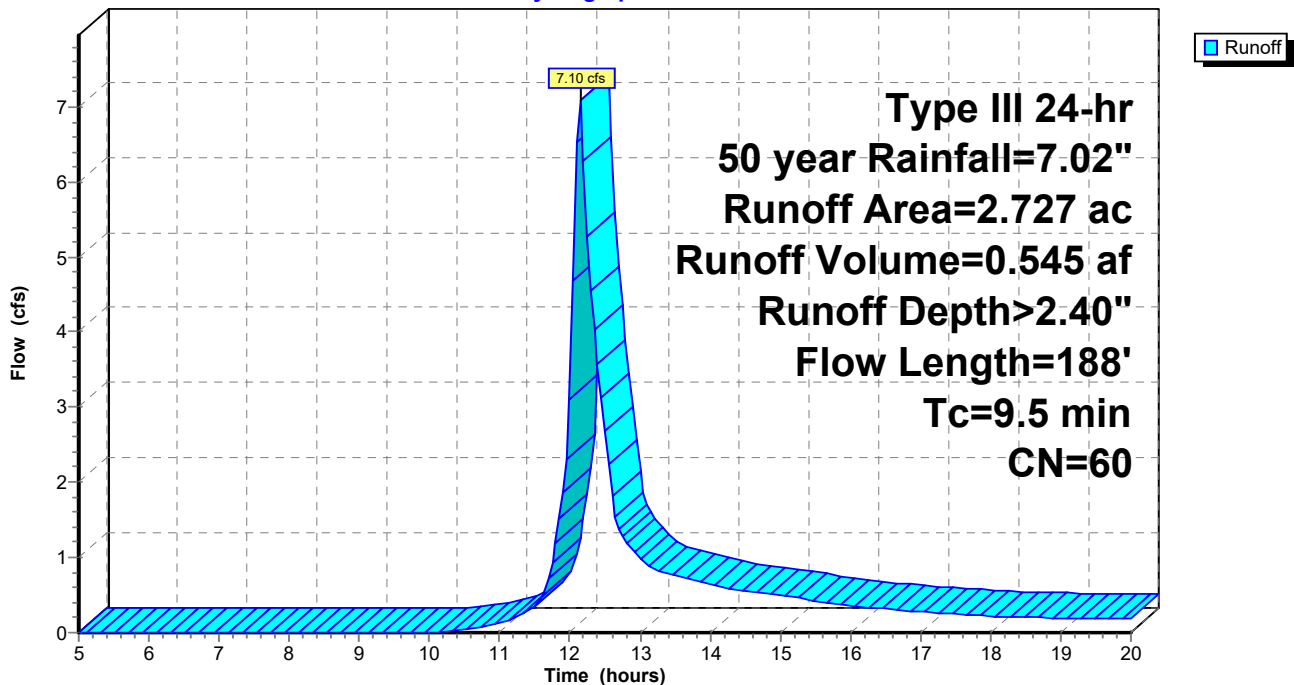
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.206	59	50-75% Grass cover, Fair, HSG A-B
* 0.893	74	50-75% Grass cover, Fair, HSG B-C
0.376	30	Meadow, non-grazed, HSG A
0.252	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
2.727	60	Weighted Average
2.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.3	66	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	72	0.0556	1.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	188	Total			

Subcatchment 3: Subcat 3

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 4: Subcat 4

Runoff = 11.05 cfs @ 12.16 hrs, Volume= 0.874 af, Depth> 2.88"

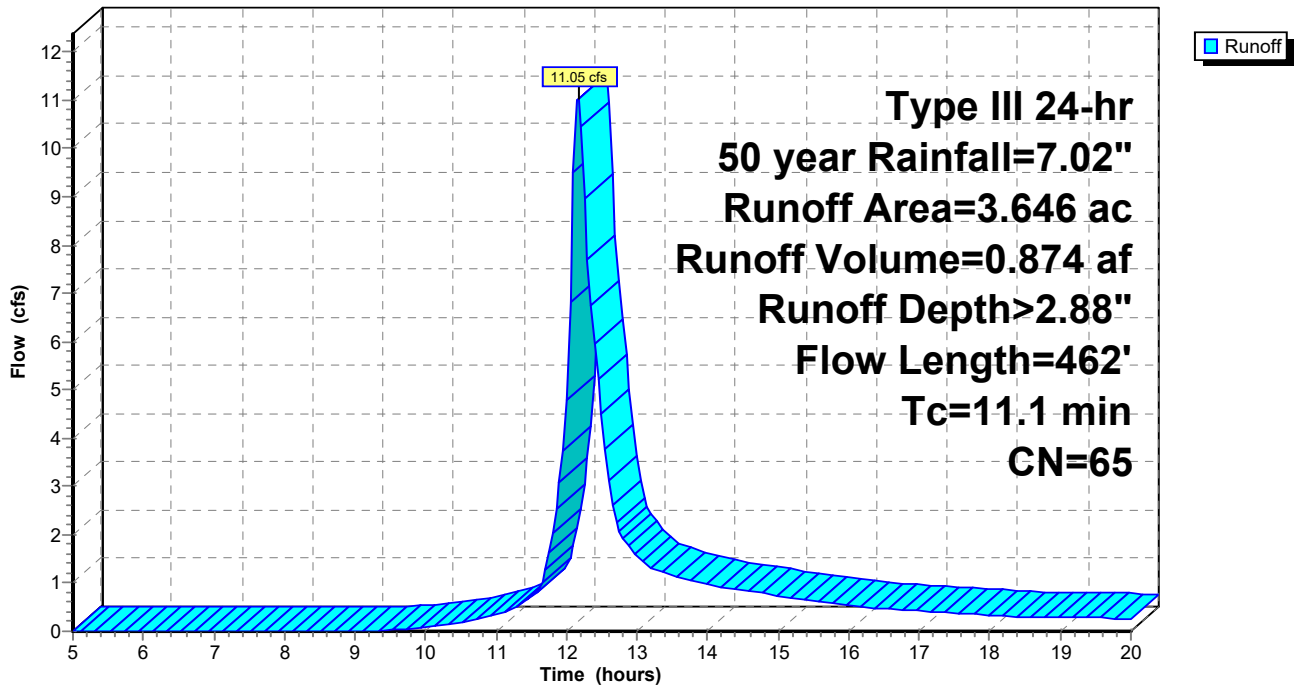
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.058	59	50-75% Grass cover, Fair, HSG A-B
* 2.741	74	50-75% Grass cover, Fair, HSG B-C
0.609	30	Meadow, non-grazed, HSG A
0.238	58	Meadow, non-grazed, HSG B
3.646	65	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	412	0.0243	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	462	Total			

Subcatchment 4: Subcat 4

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 5: Subcat 5

Runoff = 24.30 cfs @ 12.34 hrs, Volume= 2.579 af, Depth> 3.56"

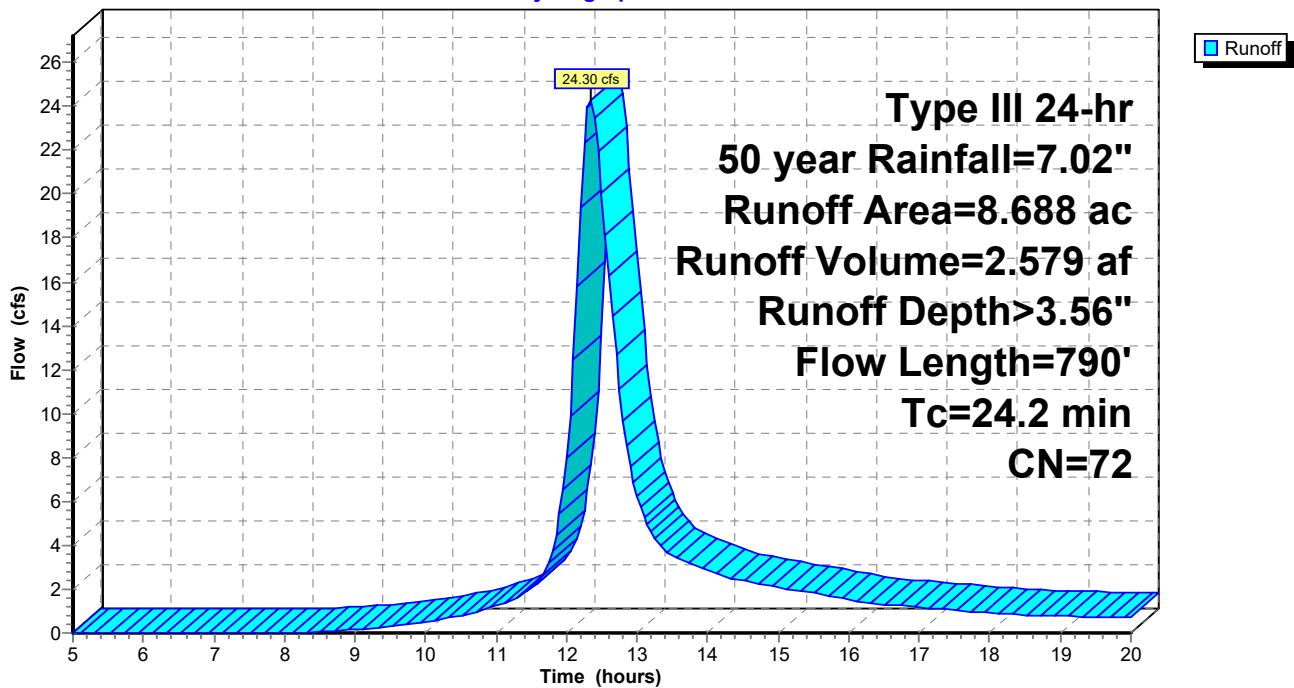
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.053	59	50-75% Grass cover, Fair, HSG A-B
* 8.049	74	50-75% Grass cover, Fair, HSG B-C
0.384	30	Meadow, non-grazed, HSG A
0.202	58	Meadow, non-grazed, HSG B
8.688	72	Weighted Average
8.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
13.7	583	0.0103	0.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	157	0.0159	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.2	790	Total			

Subcatchment 5: Subcat 5

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 6: Subcat 6

Runoff = 19.46 cfs @ 12.23 hrs, Volume= 1.762 af, Depth> 3.27"

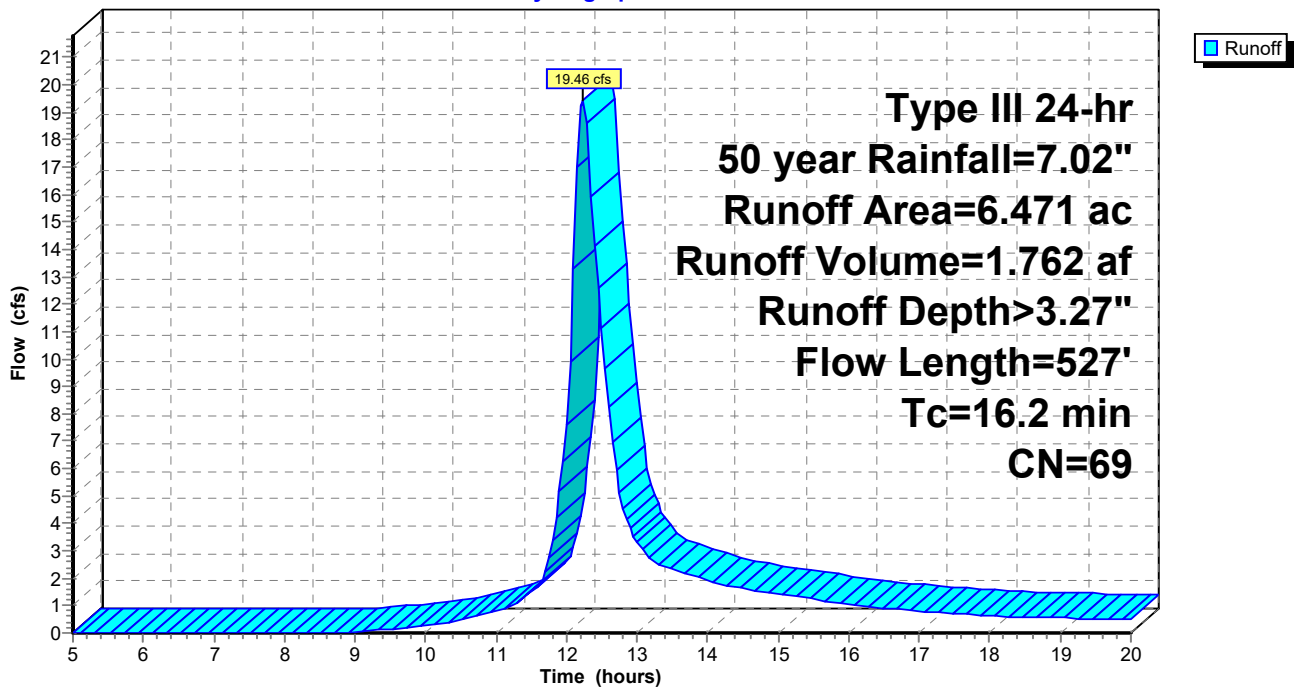
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.012	59	50-75% Grass cover, Fair, HSG A-B
* 5.334	74	50-75% Grass cover, Fair, HSG B-C
0.535	30	Meadow, non-grazed, HSG A
0.590	58	Meadow, non-grazed, HSG B
6.471	69	Weighted Average
6.471		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.2	415	0.0145	0.84		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0806	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.2	527	Total			

Subcatchment 6: Subcat 6

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 7: Subcat 7

Runoff = 35.57 cfs @ 12.68 hrs, Volume= 5.307 af, Depth> 3.74"

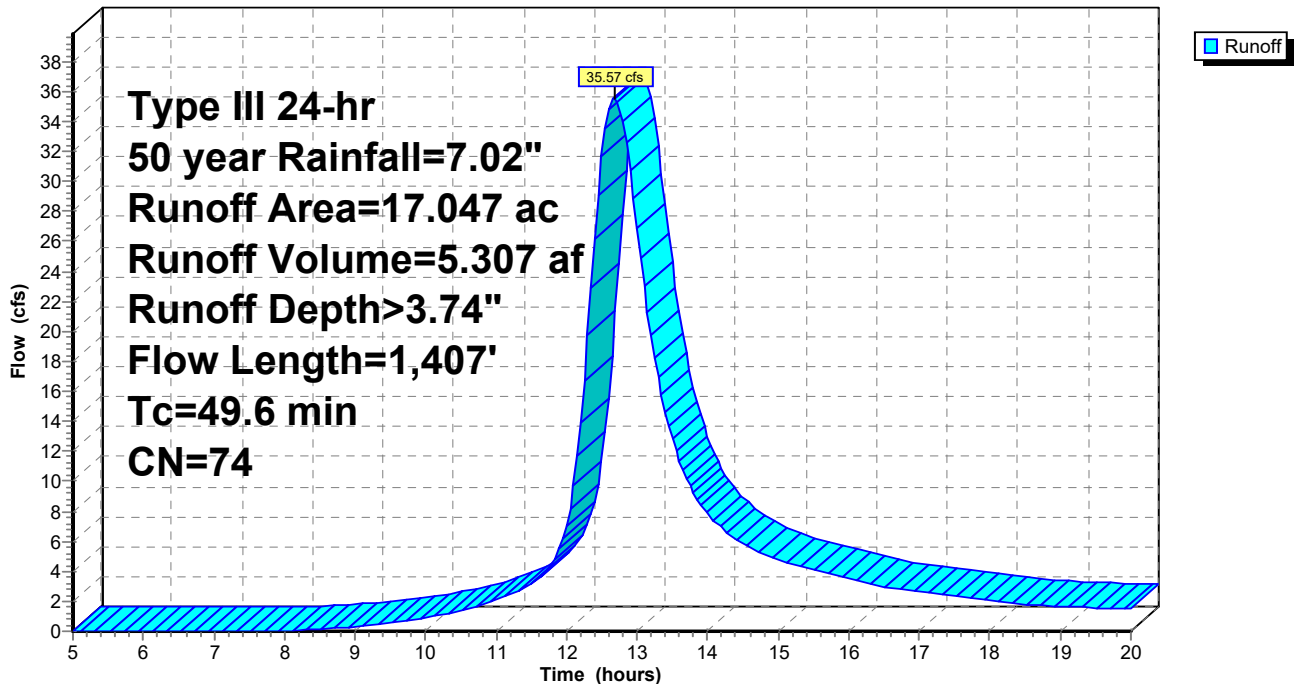
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 16.871	74	50-75% Grass cover, Fair, HSG B-C
0.176	58	Meadow, non-grazed, HSG B
17.047	74	Weighted Average
17.047		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
42.1	1,357	0.0059	0.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
49.6	1,407	Total			

Subcatchment 7: Subcat 7

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 8: Subcat 8

Runoff = 10.34 cfs @ 12.17 hrs, Volume= 0.827 af, Depth> 3.17"

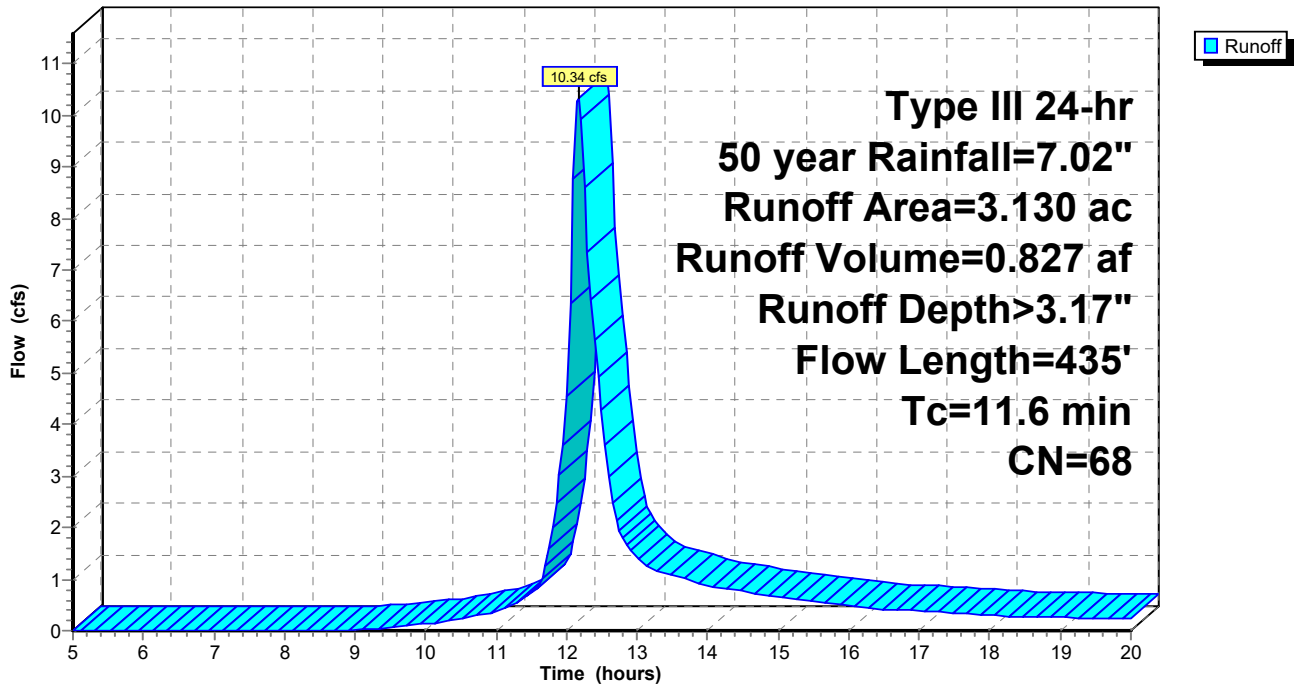
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.885	74	50-75% Grass cover, Fair, HSG B-C
0.011	30	Meadow, non-grazed, HSG A
1.234	58	Meadow, non-grazed, HSG B
3.130	68	Weighted Average
3.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.2	164	0.0305	1.22		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	221	0.1538	1.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.6	435	Total			

Subcatchment 8: Subcat 8

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 10: Subcat 10

Runoff = 5.52 cfs @ 12.20 hrs, Volume= 0.489 af, Depth> 1.85"

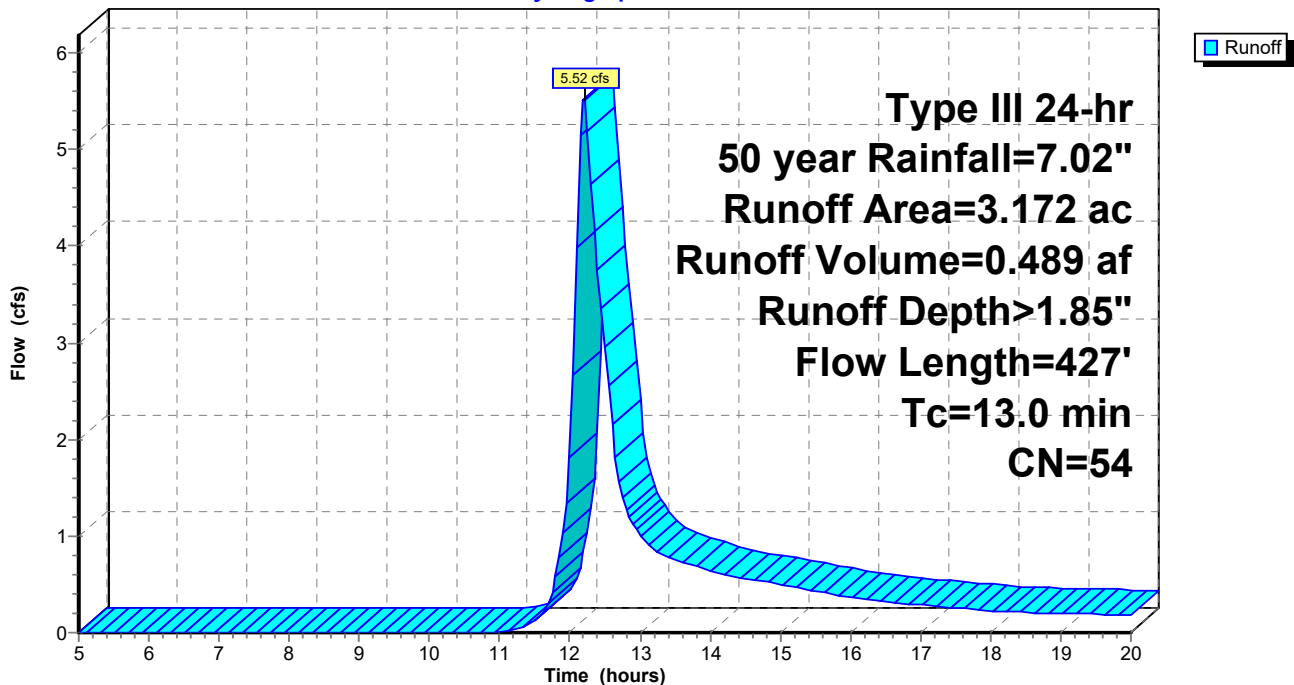
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.525	74	50-75% Grass cover, Fair, HSG B-C
0.635	30	Meadow, non-grazed, HSG A
1.717	58	Meadow, non-grazed, HSG B
0.226	36	Woods, Fair, HSG A
0.069	60	Woods, Fair, HSG B
3.172	54	Weighted Average
3.172		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	261	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	116	0.1379	1.86		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.0	427	Total			

Subcatchment 10: Subcat 10

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 11: Subcat 11

Runoff = 8.58 cfs @ 12.25 hrs, Volume= 0.829 af, Depth> 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.321	74	50-75% Grass cover, Fair, HSG B-C
0.015	35	Brush, Fair, HSG A
0.515	56	Brush, Fair, HSG B
0.051	30	Meadow, non-grazed, HSG A
1.157	58	Meadow, non-grazed, HSG B
0.037	89	Paved roads w/open ditches, 50% imp, HSG B
2.139	36	Woods, Fair, HSG A
0.427	60	Woods, Fair, HSG B
5.662	53	Weighted Average
5.643		99.67% Pervious Area
0.018		0.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.0	316	0.0158	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.6	232	0.0862	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	598	Total			

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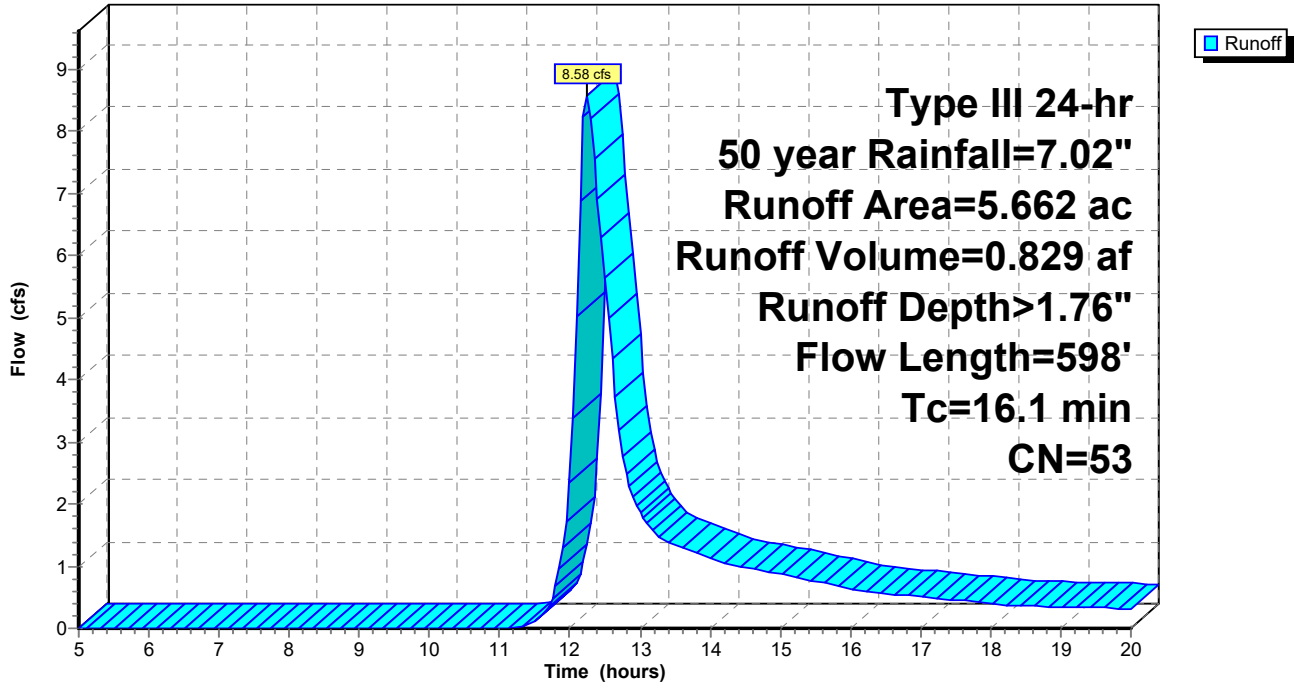
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 11: Subcat 11

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 11A: Subcat 11A

Runoff = 6.12 cfs @ 12.17 hrs, Volume= 0.592 af, Depth> 1.10"

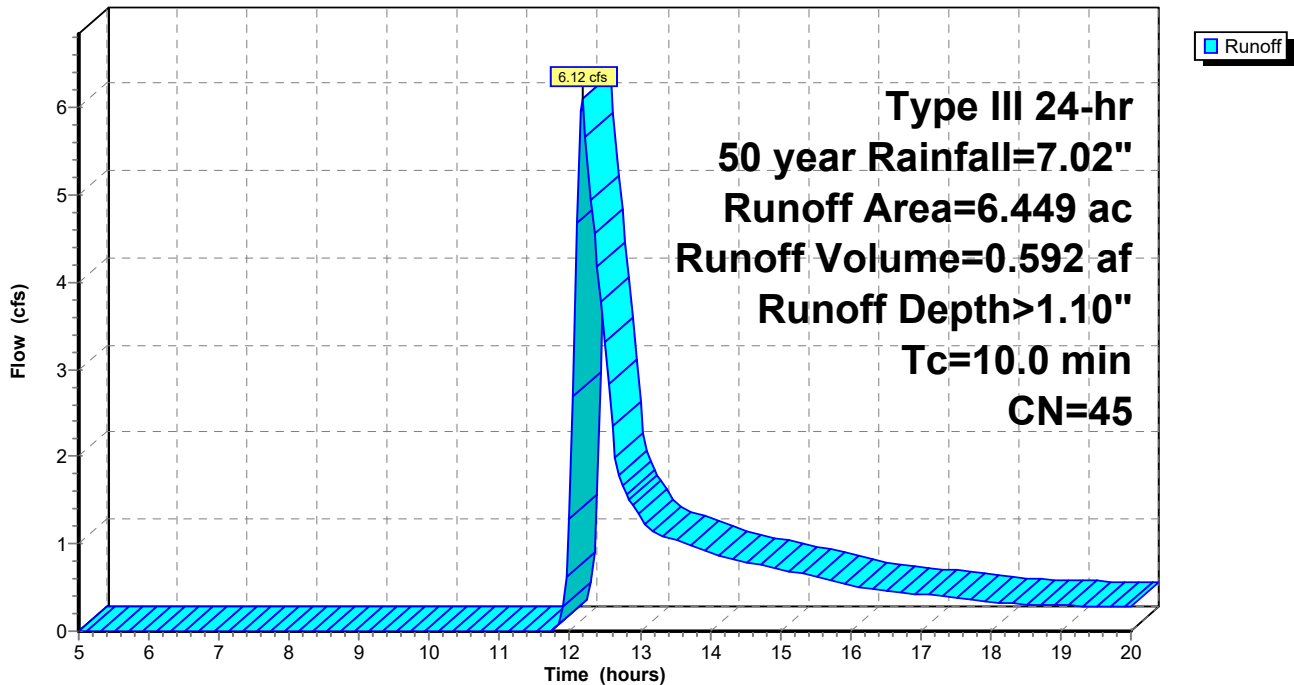
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.874	56	Brush, Fair, HSG B
* 4.133	36	Woods, Fair, HSG A
* 0.428	74	50-75% Grass cover, Fair, HSG B-C
* 1.014	58	Meadow, non-grazed, HSG B
6.449	45	Weighted Average
6.449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11A: Subcat 11A

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 12: Subcat 12

Runoff = 11.03 cfs @ 12.20 hrs, Volume= 0.952 af, Depth> 3.47"

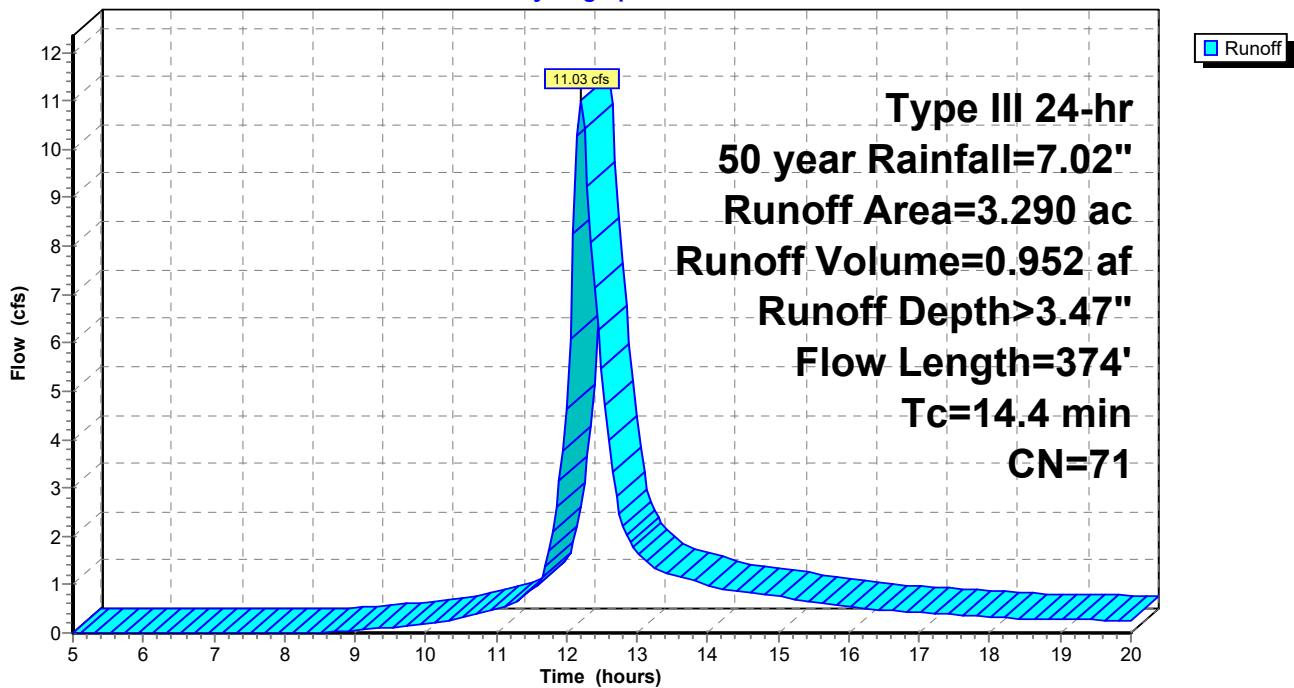
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 2.357	74	50-75% Grass cover, Fair, HSG B-C
0.777	58	Meadow, non-grazed, HSG B
0.156	89	Paved roads w/open ditches, 50% imp, HSG B
3.290	71	Weighted Average
3.212		97.63% Pervious Area
0.078		2.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.7	225	0.0089	0.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	99	0.0404	1.41		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.4	374	Total			

Subcatchment 12: Subcat 12

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 13: Subcat 13

Runoff = 31.69 cfs @ 12.86 hrs, Volume= 5.430 af, Depth> 3.61"

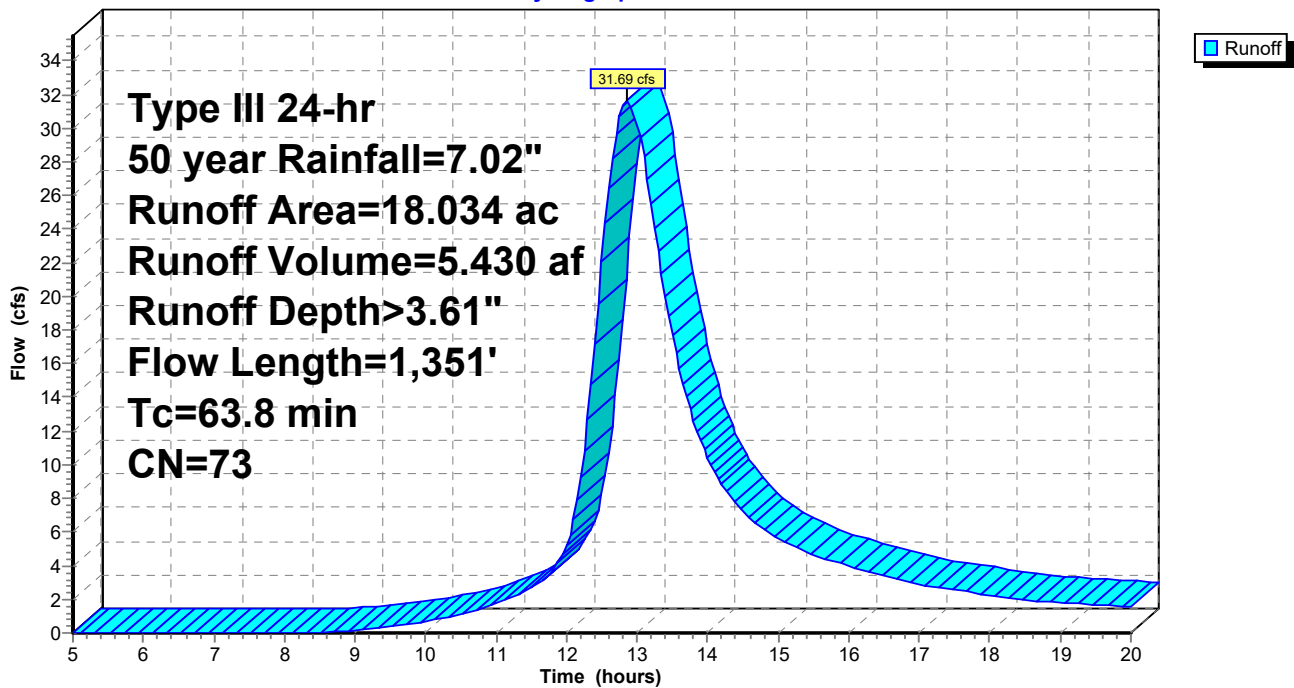
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 16.287	74	50-75% Grass cover, Fair, HSG B-C
1.589	58	Meadow, non-grazed, HSG B
0.158	89	Paved roads w/open ditches, 50% imp, HSG B
18.034	73	Weighted Average
17.955		99.56% Pervious Area
0.079		0.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
34.5	752	0.0027	0.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.8	549	0.0036	0.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
63.8	1,351	Total			

Subcatchment 13: Subcat 13

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 14: Subcat 14

Runoff = 1.76 cfs @ 12.19 hrs, Volume= 0.148 af, Depth> 2.97"

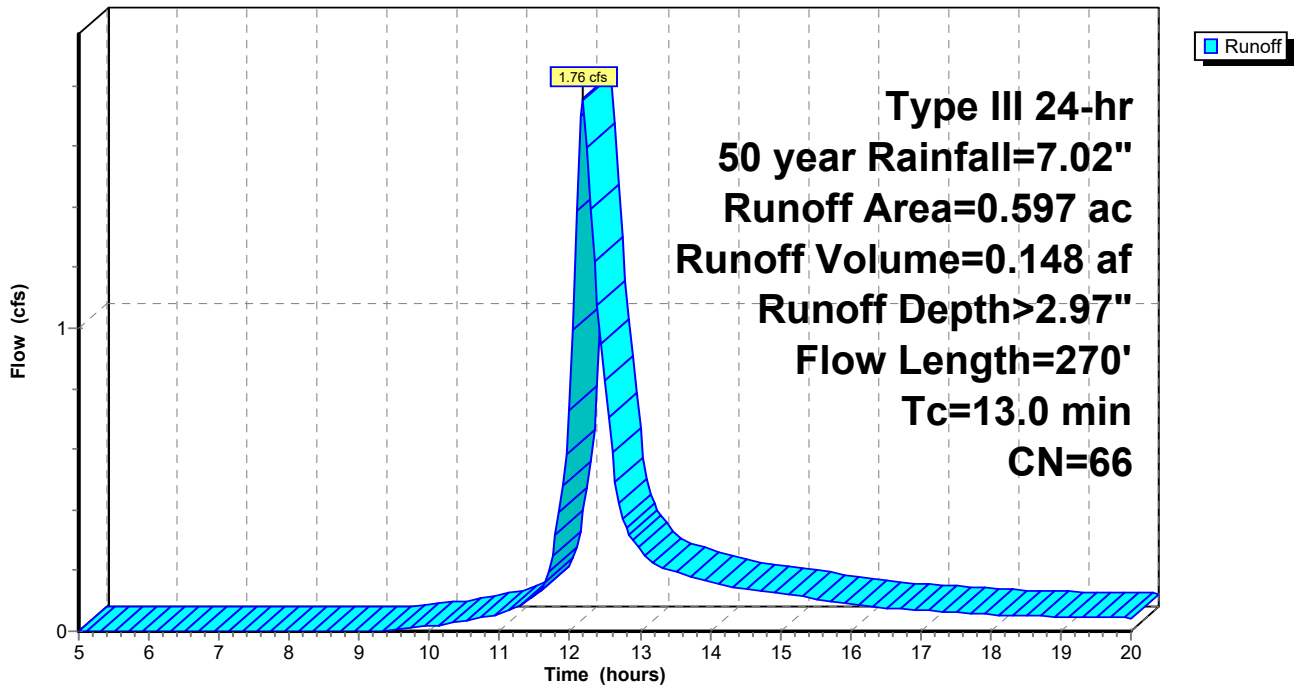
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.297	74	50-75% Grass cover, Fair, HSG B-C
0.300	58	Meadow, non-grazed, HSG B
0.597	66	Weighted Average
0.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.5	220	0.0091	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.0	270	Total			

Subcatchment 14: Subcat 14

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 15: Subcat 15

Runoff = 7.02 cfs @ 12.30 hrs, Volume= 0.706 af, Depth> 3.36"

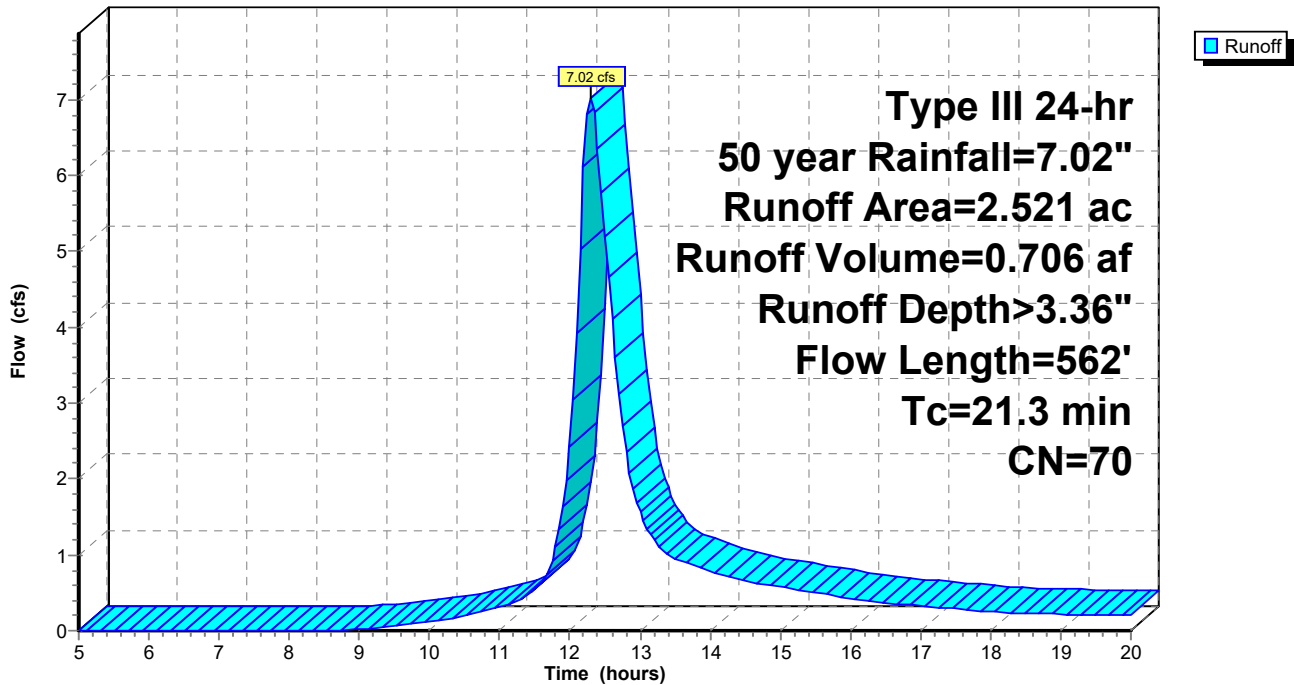
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.028	65	2 acre lots, 12% imp, HSG B
* 1.424	74	50-75% Grass cover, Fair, HSG B-C
0.823	58	Meadow, non-grazed, HSG B
0.246	89	Paved roads w/open ditches, 50% imp, HSG B
2.521	70	Weighted Average
2.395		94.99% Pervious Area
0.126		5.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
13.8	512	0.0078	0.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.3	562	Total			

Subcatchment 15: Subcat 15

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 16: Subcat 16

Runoff = 11.73 cfs @ 12.39 hrs, Volume= 1.319 af, Depth> 3.35"

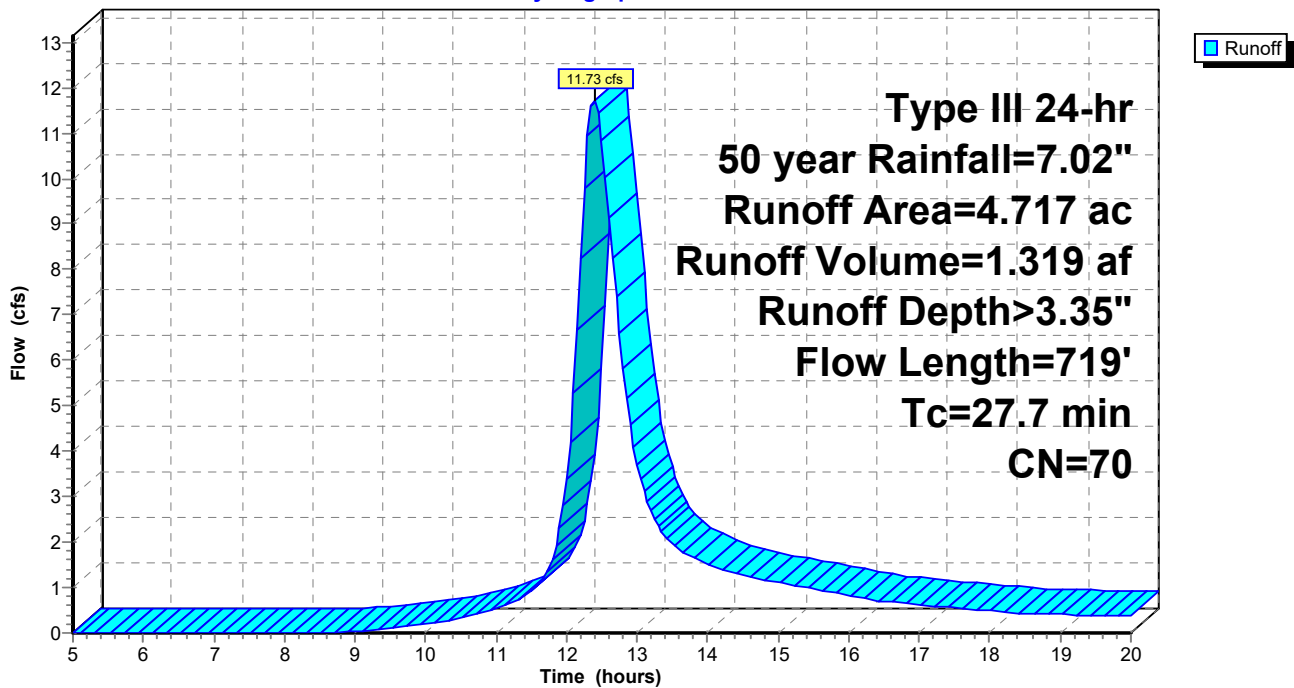
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 3.393	74	50-75% Grass cover, Fair, HSG B-C
1.259	58	Meadow, non-grazed, HSG B
0.065	89	Paved roads w/open ditches, 50% imp, HSG B
4.717	70	Weighted Average
4.684		99.31% Pervious Area
0.032		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.1	390	0.0103	0.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	279	0.0036	0.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
27.7	719	Total			

Subcatchment 16: Subcat 16

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 17: Subcat 17

Runoff = 15.38 cfs @ 12.32 hrs, Volume= 1.585 af, Depth> 3.56"

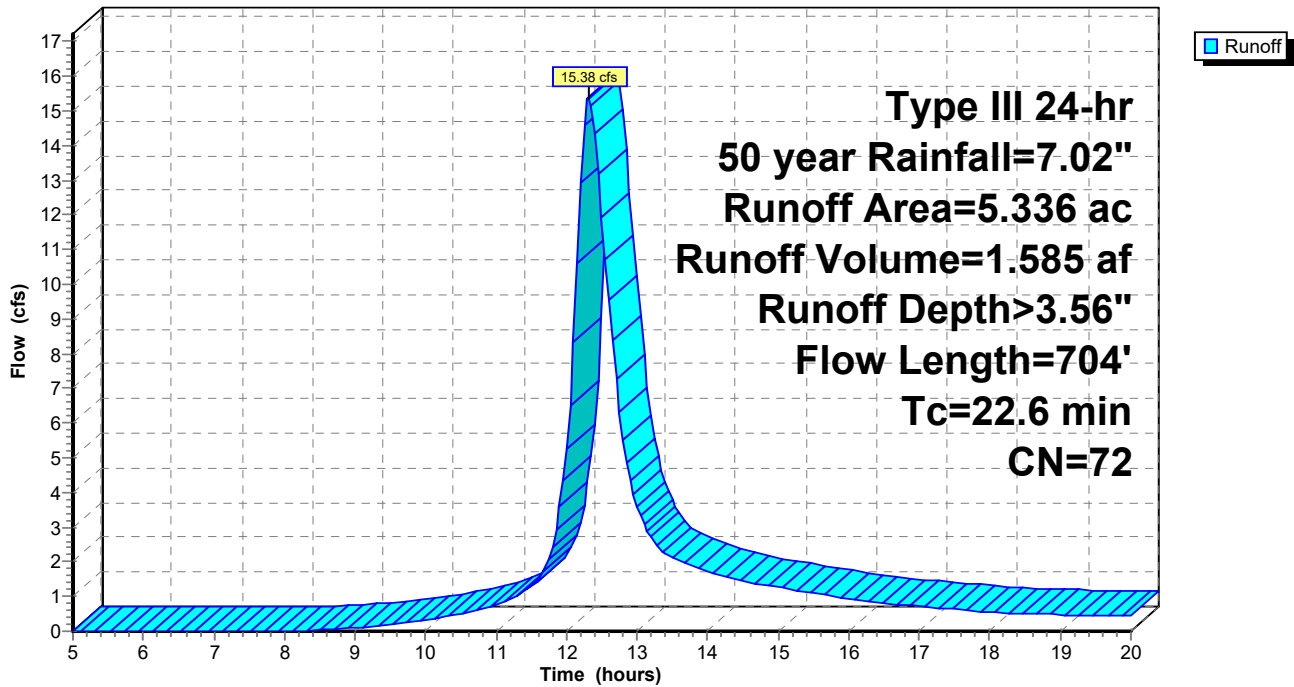
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 4.760	74	50-75% Grass cover, Fair, HSG B-C
0.576	58	Meadow, non-grazed, HSG B
5.336	72	Weighted Average
5.336		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.1	654	0.0107	0.72		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
22.6	704	Total			

Subcatchment 17: Subcat 17

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 18: Subcat 18

Runoff = 5.01 cfs @ 12.34 hrs, Volume= 0.535 af, Depth> 3.67"

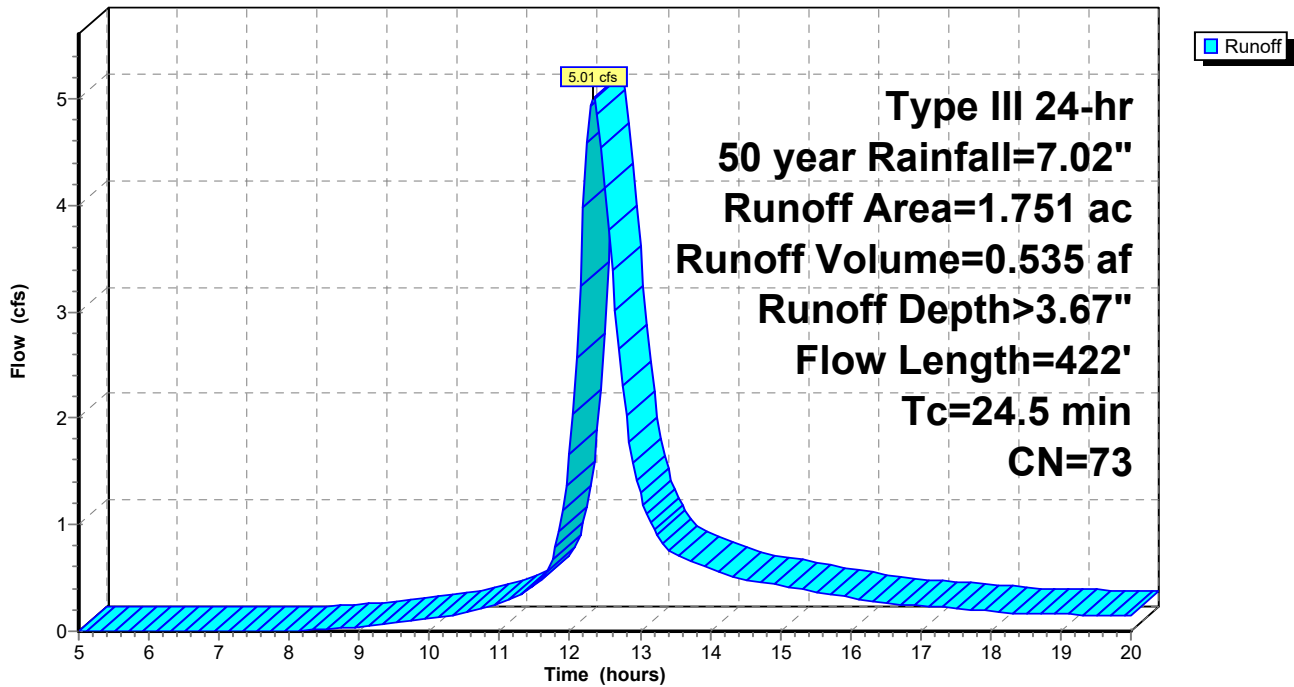
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.649	74	50-75% Grass cover, Fair, HSG B-C
0.102	58	Meadow, non-grazed, HSG B
1.751	73	Weighted Average
1.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
17.0	372	0.0027	0.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.5	422	Total			

Subcatchment 18: Subcat 18

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 19: Subcat 19

Runoff = 43.39 cfs @ 12.64 hrs, Volume= 6.171 af, Depth> 3.43"

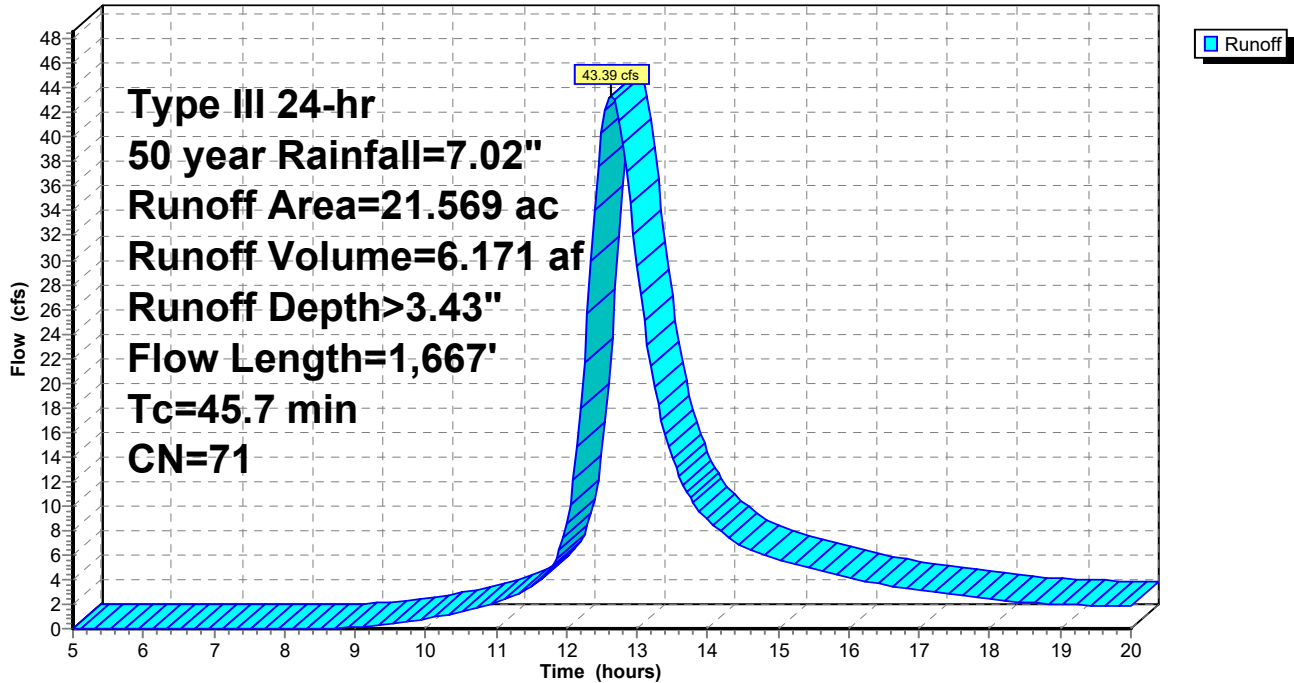
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 18.087	74	50-75% Grass cover, Fair, HSG B-C
0.427	30	Meadow, non-grazed, HSG A
3.055	58	Meadow, non-grazed, HSG B
21.569	71	Weighted Average
21.569		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
30.4	1,090	0.0073	0.60		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.6	527	0.0171	0.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
45.7	1,667	Total			

Subcatchment 19: Subcat 19

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 20: Subcat 20

Runoff = 4.57 cfs @ 12.29 hrs, Volume= 0.456 af, Depth> 3.36"

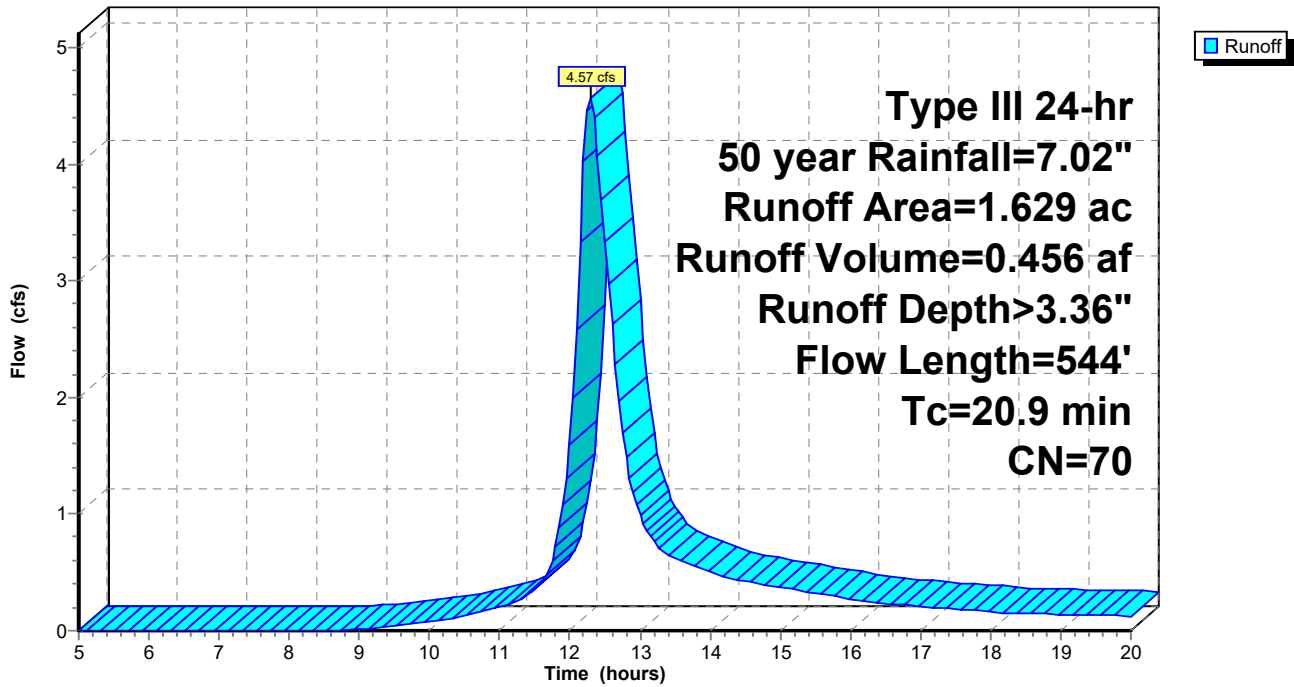
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.199	74	50-75% Grass cover, Fair, HSG B-C
0.002	30	Meadow, non-grazed, HSG A
0.428	58	Meadow, non-grazed, HSG B
1.629	70	Weighted Average
1.629		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.4	251	0.0040	0.44		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.0	243	0.0206	1.00		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.9	544	Total			

Subcatchment 20: Subcat 20

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 21: Subcat 21

Runoff = 8.73 cfs @ 12.43 hrs, Volume= 1.014 af, Depth> 3.05"

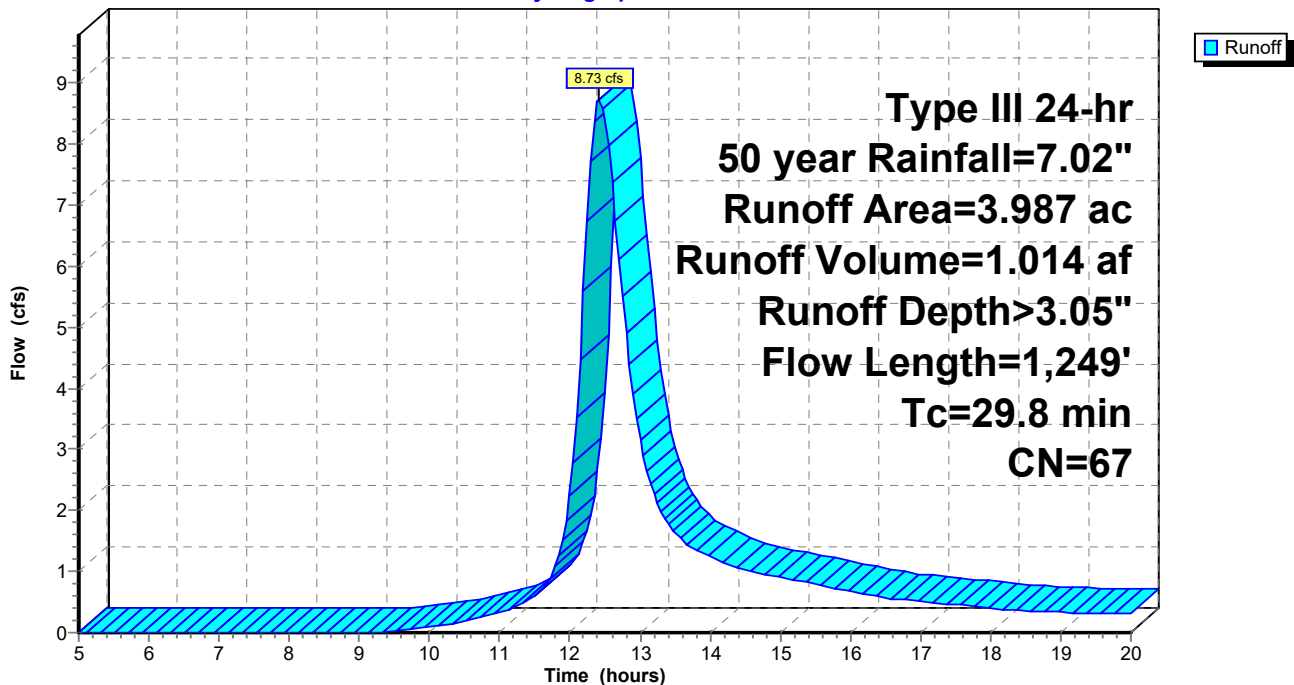
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.006	59	50-75% Grass cover, Fair, HSG A-B
* 3.103	74	50-75% Grass cover, Fair, HSG B-C
0.454	30	Meadow, non-grazed, HSG A
0.420	58	Meadow, non-grazed, HSG B
0.004	36	Woods, Fair, HSG A
3.987	67	Weighted Average
3.987		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.0	584	0.0086	0.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.1	615	0.0260	1.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
29.8	1,249	Total			

Subcatchment 21: Subcat 21

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 22: Subcat 22

Runoff = 30.90 cfs @ 12.87 hrs, Volume= 5.337 af, Depth> 3.61"

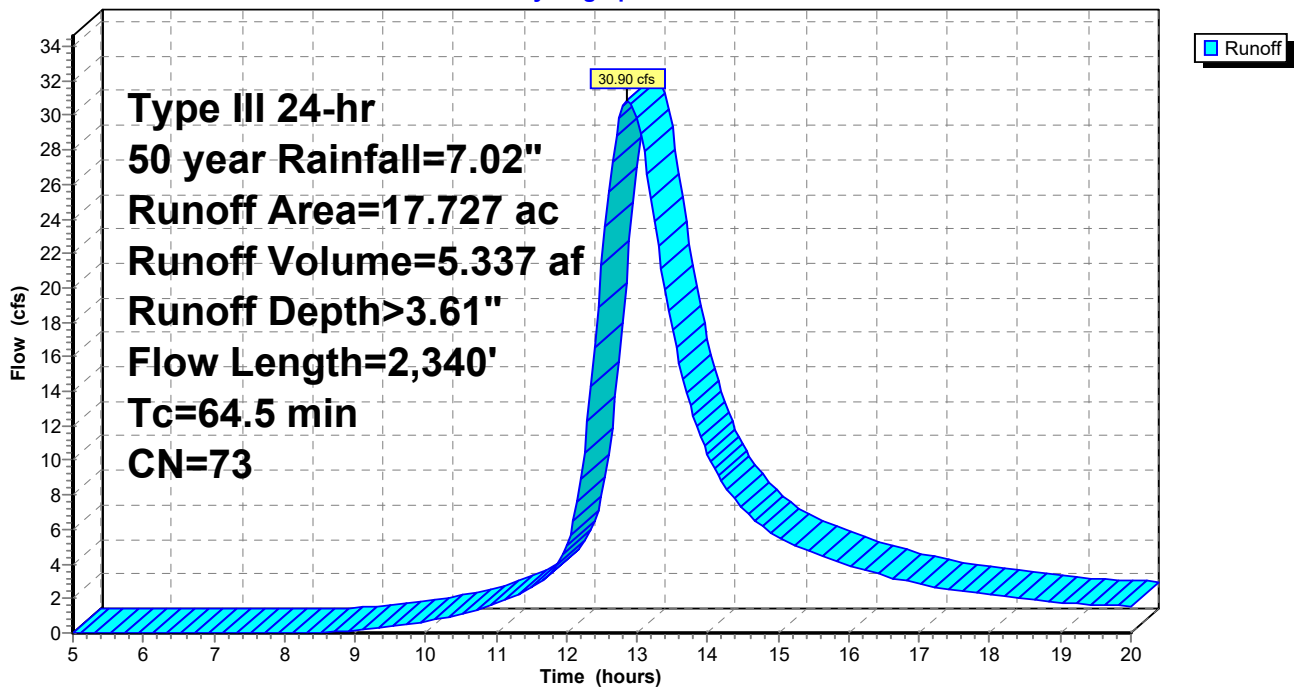
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 16.854	74	50-75% Grass cover, Fair, HSG B-C
0.873	58	Meadow, non-grazed, HSG B
17.727	73	Weighted Average
17.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
45.1	1,416	0.0056	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.8	636	0.0299	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.1	238	0.0336	1.28		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
64.5	2,340	Total			

Subcatchment 22: Subcat 22

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 23: Subcat 23

[49] Hint: $T_c < 2dt$ may require smaller dt

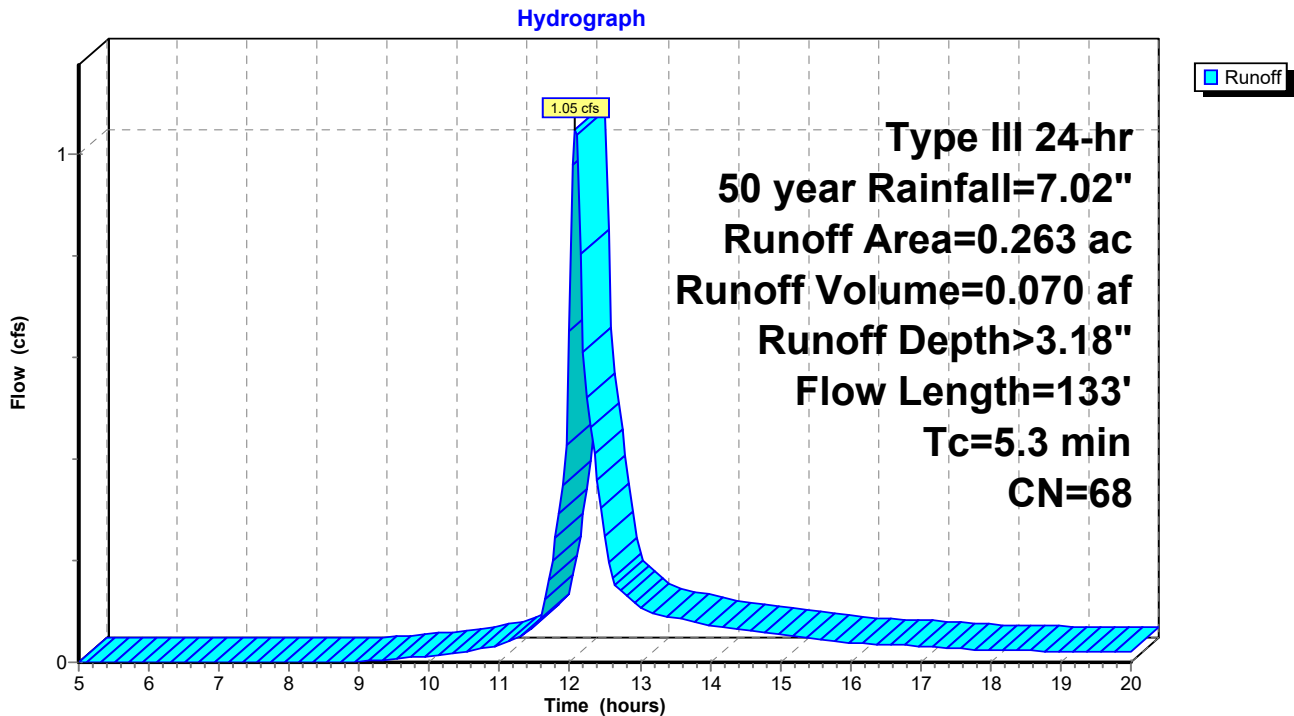
Runoff = 1.05 cfs @ 12.08 hrs, Volume= 0.070 af, Depth> 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.164	74	50-75% Grass cover, Fair, HSG B-C
0.099	58	Meadow, non-grazed, HSG B
0.263	68	Weighted Average
0.263		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.0	83	0.0361	1.33		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	133	Total			

Subcatchment 23: Subcat 23



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 24: Subcat 24

Runoff = 8.95 cfs @ 12.24 hrs, Volume= 0.832 af, Depth> 3.57"

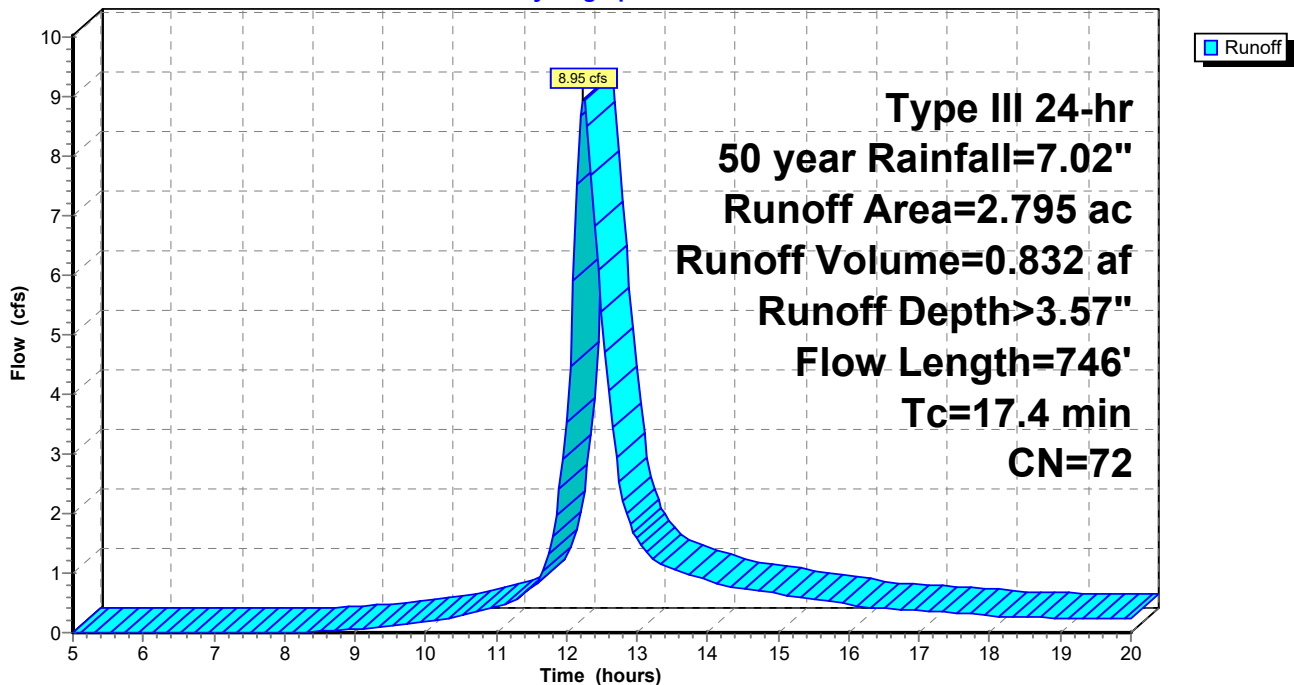
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 2.388	74	50-75% Grass cover, Fair, HSG B-C
0.406	58	Meadow, non-grazed, HSG B
0.001	60	Woods, Fair, HSG B
2.795	72	Weighted Average
2.795		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.7	284	0.0141	0.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	112	0.1071	2.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.4	300	0.0433	1.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.4	746	Total			

Subcatchment 24: Subcat 24

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 25: Subcat 25

Runoff = 25.13 cfs @ 12.63 hrs, Volume= 3.585 af, Depth> 3.54"

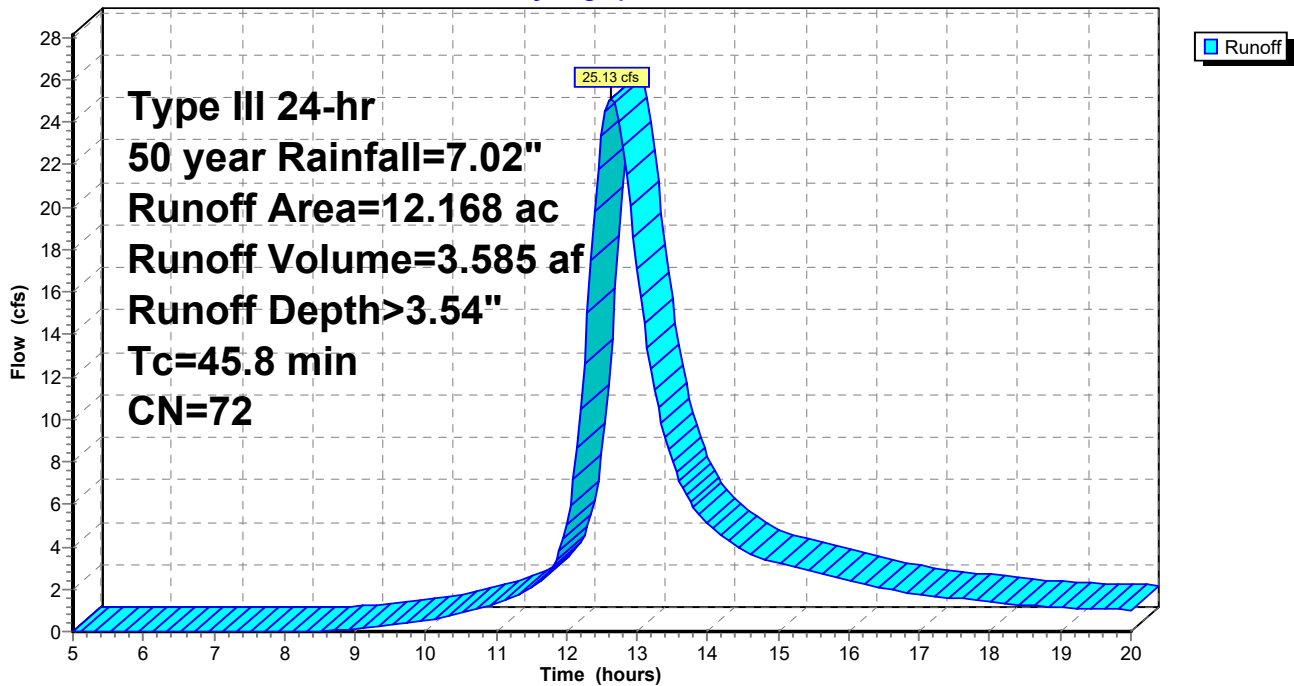
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 11.036	74	50-75% Grass cover, Fair, HSG B-C
0.129	30	Meadow, non-grazed, HSG A
1.003	58	Meadow, non-grazed, HSG B
12.168	72	Weighted Average
12.168		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.8					Direct Entry,

Subcatchment 25: Subcat 25

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 27: Subcat 27

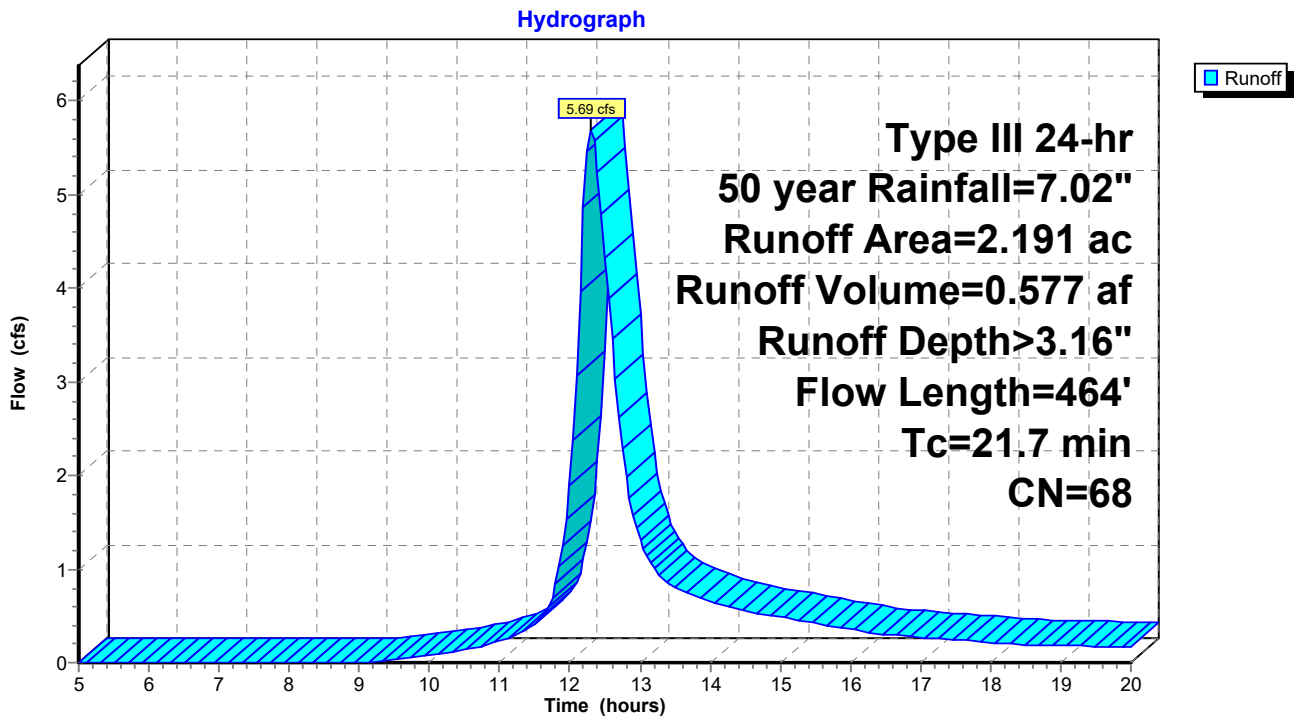
Runoff = 5.69 cfs @ 12.31 hrs, Volume= 0.577 af, Depth> 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.400	74	50-75% Grass cover, Fair, HSG B-C
0.036	30	Meadow, non-grazed, HSG A
0.755	58	Meadow, non-grazed, HSG B
2.191	68	Weighted Average
2.191		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
14.2	414	0.0048	0.48		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.7	464	Total			

Subcatchment 27: Subcat 27



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 28: Subcat 28

Runoff = 13.87 cfs @ 12.24 hrs, Volume= 1.297 af, Depth> 2.11"

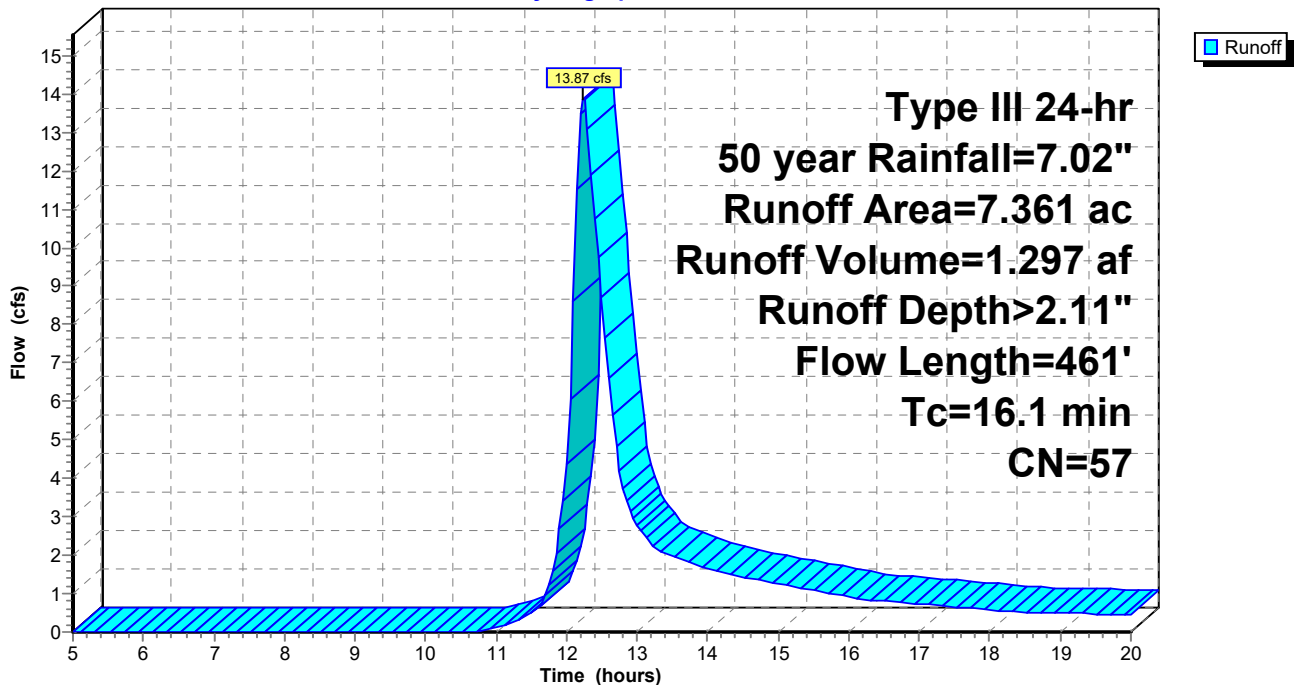
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.136	59	50-75% Grass cover, Fair, HSG A-B
* 3.195	74	50-75% Grass cover, Fair, HSG B-C
0.494	30	Meadow, non-grazed, HSG A
0.478	58	Meadow, non-grazed, HSG B
2.242	36	Woods, Fair, HSG A
0.816	60	Woods, Fair, HSG B
7.361	57	Weighted Average
7.361		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	269	0.0074	0.60		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	142	0.1479	1.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	461	Total			

Subcatchment 28: Subcat 28

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 29: Subcat 29

Runoff = 0.55 cfs @ 12.26 hrs, Volume= 0.082 af, Depth> 0.60"

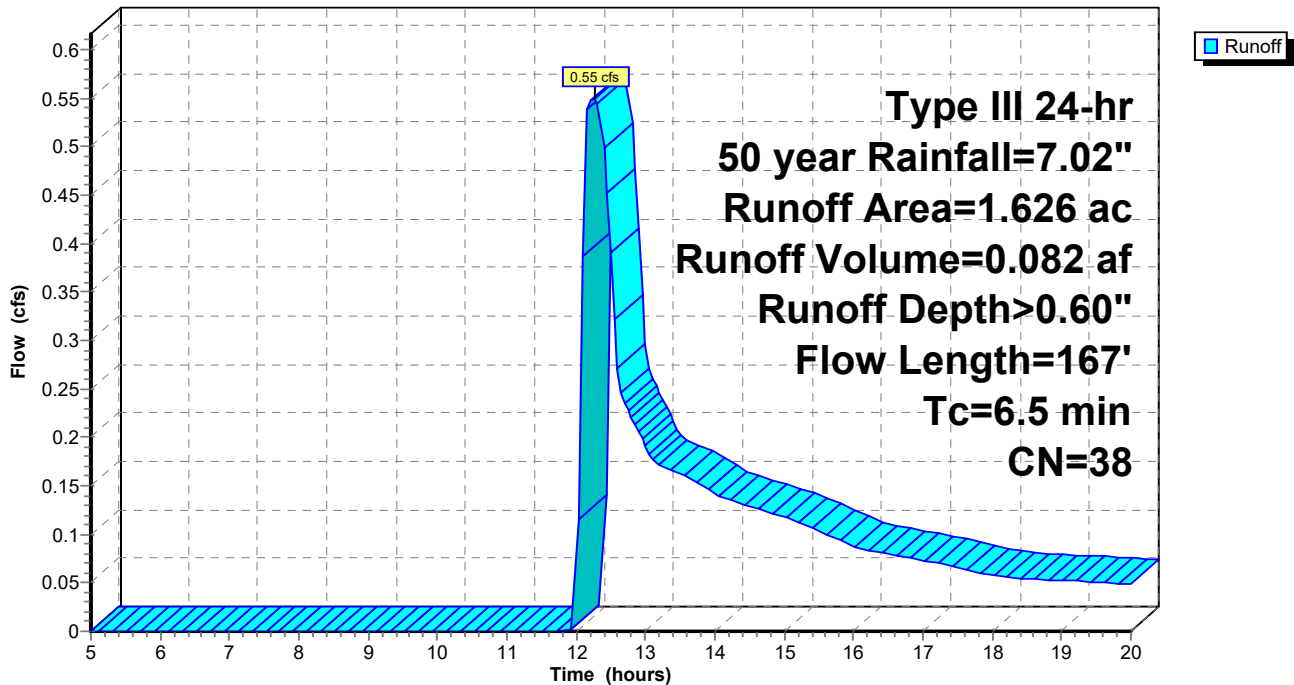
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.216	59	50-75% Grass cover, Fair, HSG A-B
* 0.006	74	50-75% Grass cover, Fair, HSG B-C
0.328	30	Meadow, non-grazed, HSG A
1.076	36	Woods, Fair, HSG A
1.626	38	Weighted Average
1.626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
0.8	117	0.2222	2.36		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.5	167	Total			

Subcatchment 29: Subcat 29

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 30: Subcat 30

Runoff = 15.56 cfs @ 12.16 hrs, Volume= 1.234 af, Depth> 3.79"

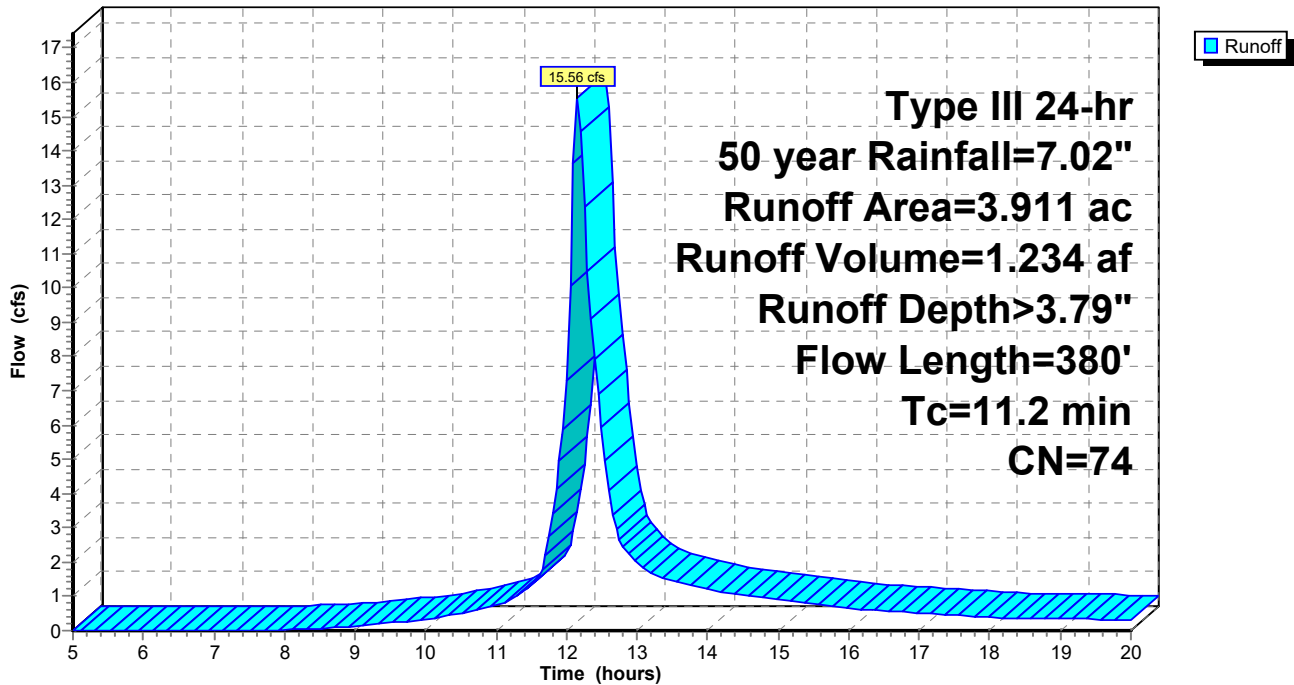
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.012	59	50-75% Grass cover, Fair, HSG A-B
* 3.899	74	50-75% Grass cover, Fair, HSG B-C
0.000	58	Meadow, non-grazed, HSG B
3.911	74	Weighted Average
3.911		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.4	330	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.2	380	Total			

Subcatchment 30: Subcat 30

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 31: Subcat 31

Runoff = 2.20 cfs @ 12.16 hrs, Volume= 0.245 af, Depth> 0.81"

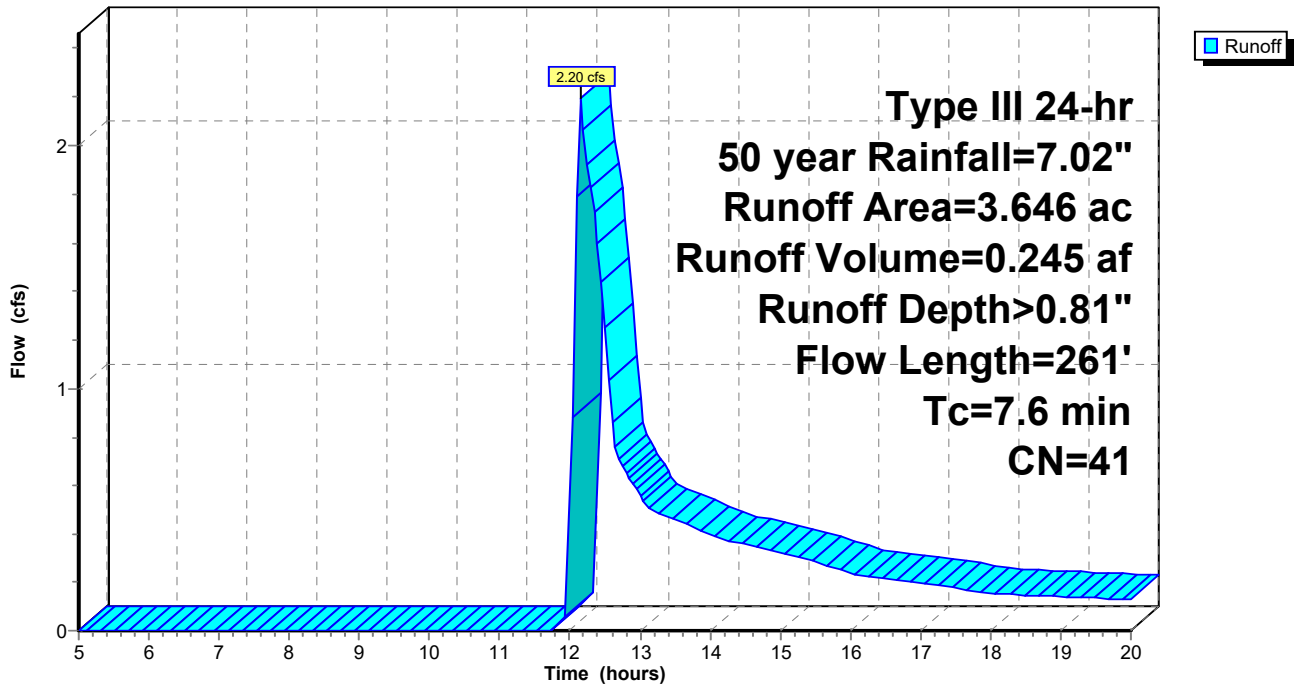
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.149	59	50-75% Grass cover, Fair, HSG A-B
* 0.465	74	50-75% Grass cover, Fair, HSG B-C
0.893	30	Meadow, non-grazed, HSG A
0.064	58	Meadow, non-grazed, HSG B
2.075	36	Woods, Fair, HSG A
3.646	41	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.9	211	0.1374	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.6	261	Total			

Subcatchment 31: Subcat 31

Hydrograph



Proposed Conditions - North Plantation

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 33: Subcat 33

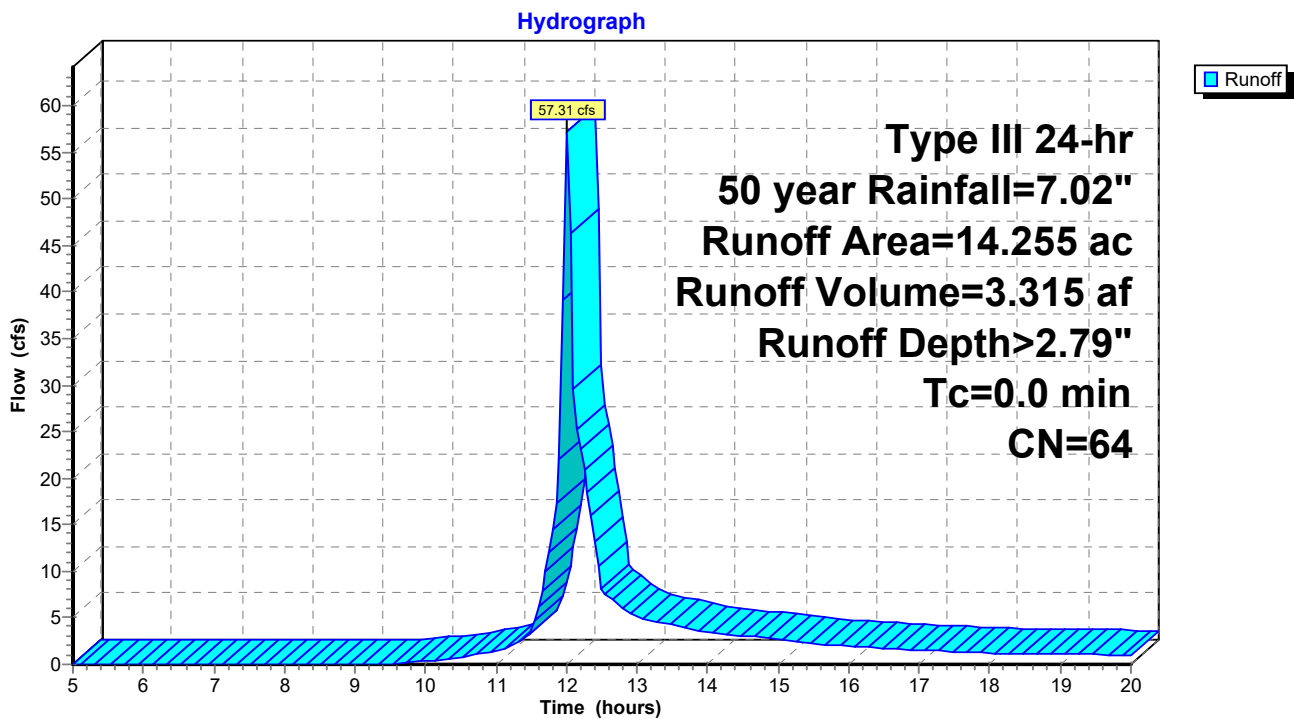
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 57.31 cfs @ 12.01 hrs, Volume= 3.315 af, Depth> 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.943	49	50-75% Grass cover, Fair, HSG A
* 11.166	69	50-75% Grass cover, Fair, HSG B
0.485	30	Meadow, non-grazed, HSG A
0.661	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
14.255	64	Weighted Average
14.255		100.00% Pervious Area

Subcatchment 33: Subcat 33



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 34: Subcat 34

Runoff = 20.06 cfs @ 12.35 hrs, Volume= 2.141 af, Depth> 3.26"

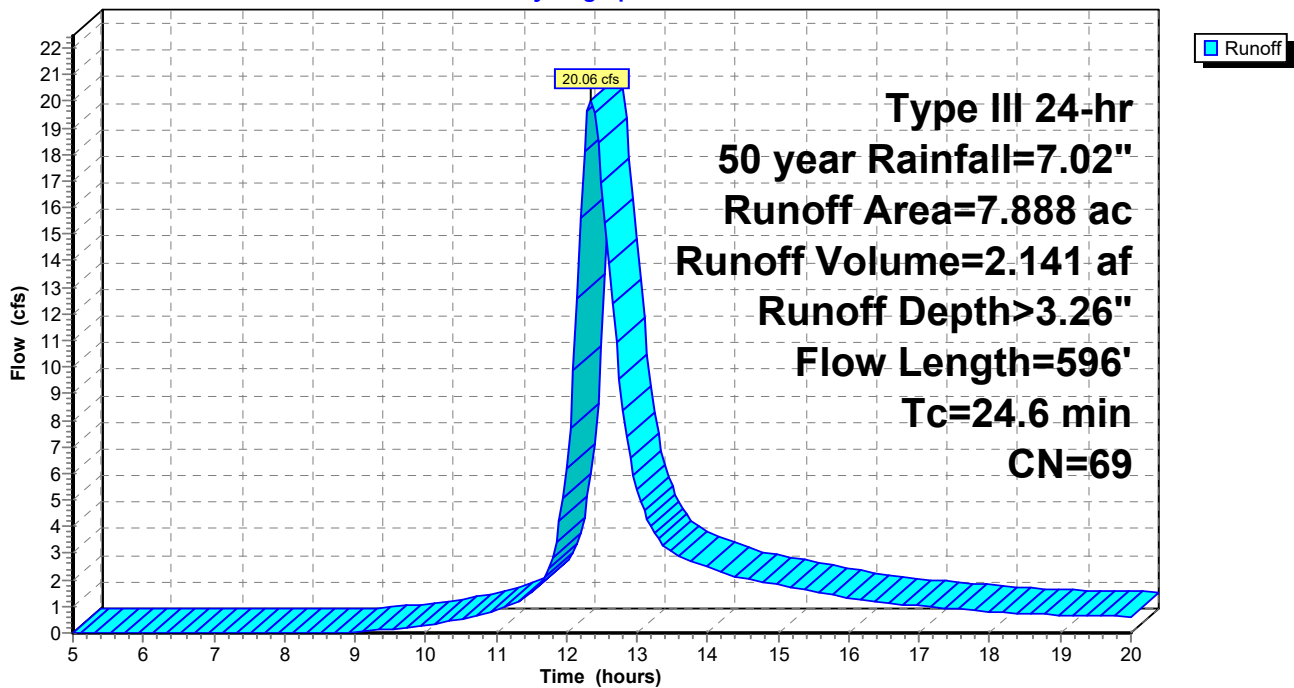
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.072	49	50-75% Grass cover, Fair, HSG A
* 7.816	69	50-75% Grass cover, Fair, HSG B
7.888	69	Weighted Average
7.888		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.1	244	0.0041	0.45		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	99	0.1313	2.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.9	203	0.0098	0.69		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.6	596	Total			

Subcatchment 34: Subcat 34

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 35: Subcat 35

Runoff = 11.77 cfs @ 12.36 hrs, Volume= 1.282 af, Depth> 2.02"

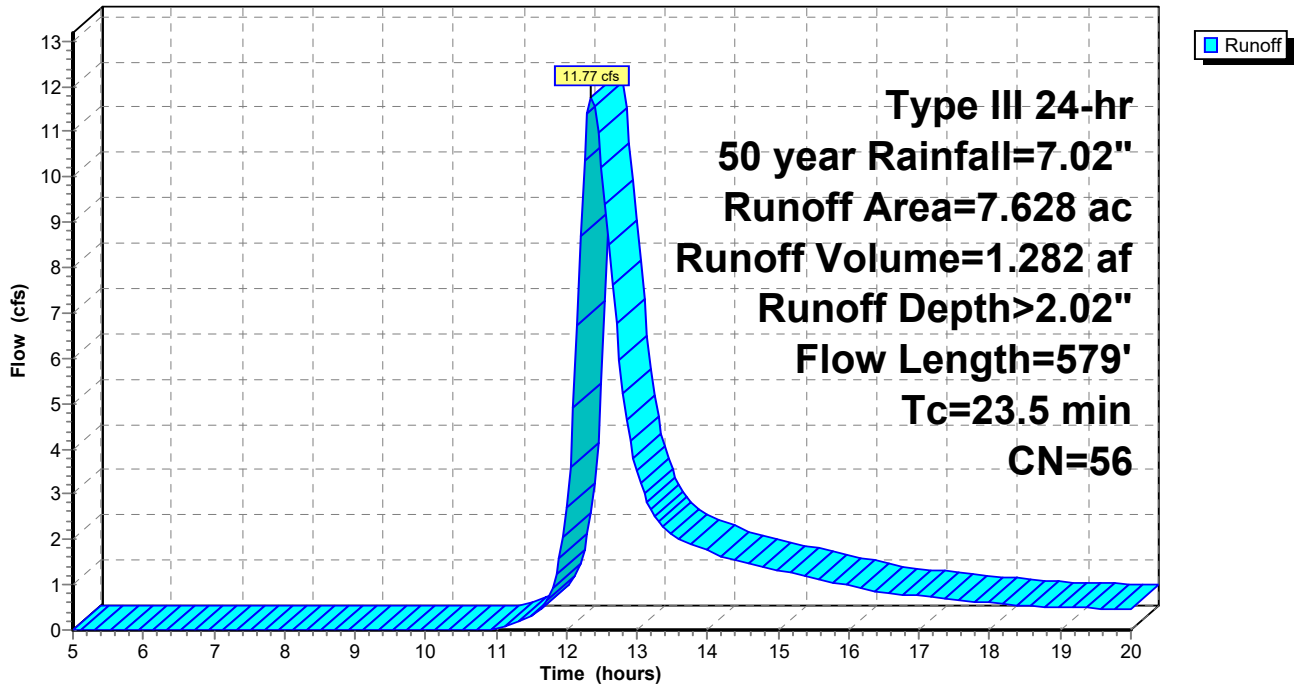
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.332	49	50-75% Grass cover, Fair, HSG A
* 4.614	69	50-75% Grass cover, Fair, HSG B
2.239	30	Meadow, non-grazed, HSG A
0.443	58	Meadow, non-grazed, HSG B
7.628	56	Weighted Average
7.628		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	217	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	97	0.1237	2.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	215	0.0093	0.68		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.5	579	Total			

Subcatchment 35: Subcat 35

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 1P: Sediment Trap

Inflow Area = 0.864 ac, 0.00% Impervious, Inflow Depth > 2.49" for 50 year event
 Inflow = 2.49 cfs @ 12.12 hrs, Volume= 0.180 af
 Outflow = 1.28 cfs @ 12.36 hrs, Volume= 0.129 af, Atten= 48%, Lag= 14.6 min
 Discarded = 0.11 cfs @ 12.36 hrs, Volume= 0.074 af
 Primary = 1.17 cfs @ 12.36 hrs, Volume= 0.055 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.12' @ 12.36 hrs Surf.Area= 0.035 ac Storage= 0.064 af

Plug-Flow detention time= 131.1 min calculated for 0.129 af (72% of inflow)
 Center-of-Mass det. time= 65.0 min (876.4 - 811.4)

Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	0.099 af	35.00'W x 10.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.11 cfs @ 12.36 hrs HW=163.12' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=1.13 cfs @ 12.36 hrs HW=163.12' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 1.13 cfs @ 0.81 fps)

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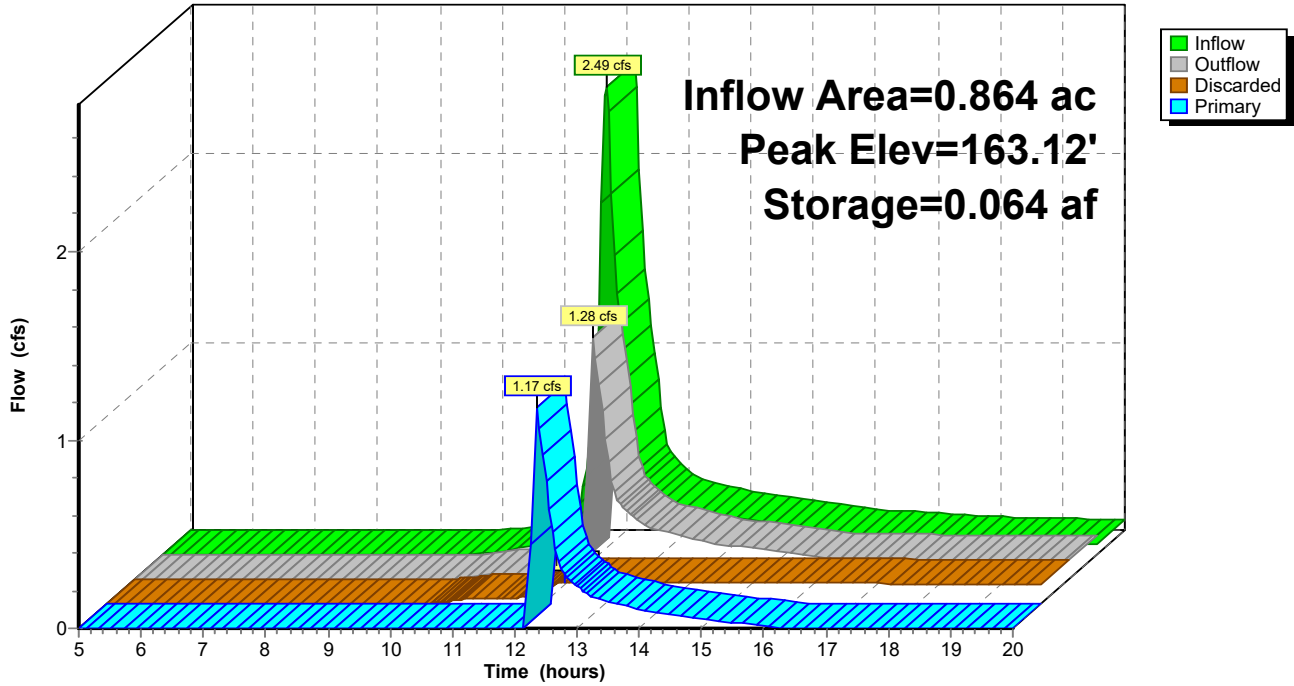
Type III 24-hr 50 year Rainfall=7.02"

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Pond 1P: Sediment Trap

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 2P: Sediment Trap

Inflow Area = 4.510 ac, 0.00% Impervious, Inflow Depth > 0.88" for 50 year event
 Inflow = 2.94 cfs @ 12.19 hrs, Volume= 0.329 af
 Outflow = 0.28 cfs @ 16.51 hrs, Volume= 0.176 af, Atten= 90%, Lag= 259.5 min
 Discarded = 0.28 cfs @ 16.51 hrs, Volume= 0.176 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 160.55' @ 16.51 hrs Surf.Area= 3,909 sf Storage= 7,560 cf

Plug-Flow detention time= 211.2 min calculated for 0.175 af (53% of inflow)
 Center-of-Mass det. time= 111.5 min (969.4 - 857.9)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	19,725 cf	75.00'W x 28.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.28 cfs @ 16.51 hrs HW=160.55' (Free Discharge)
 ↑2=Exfiltration (Controls 0.28 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=158.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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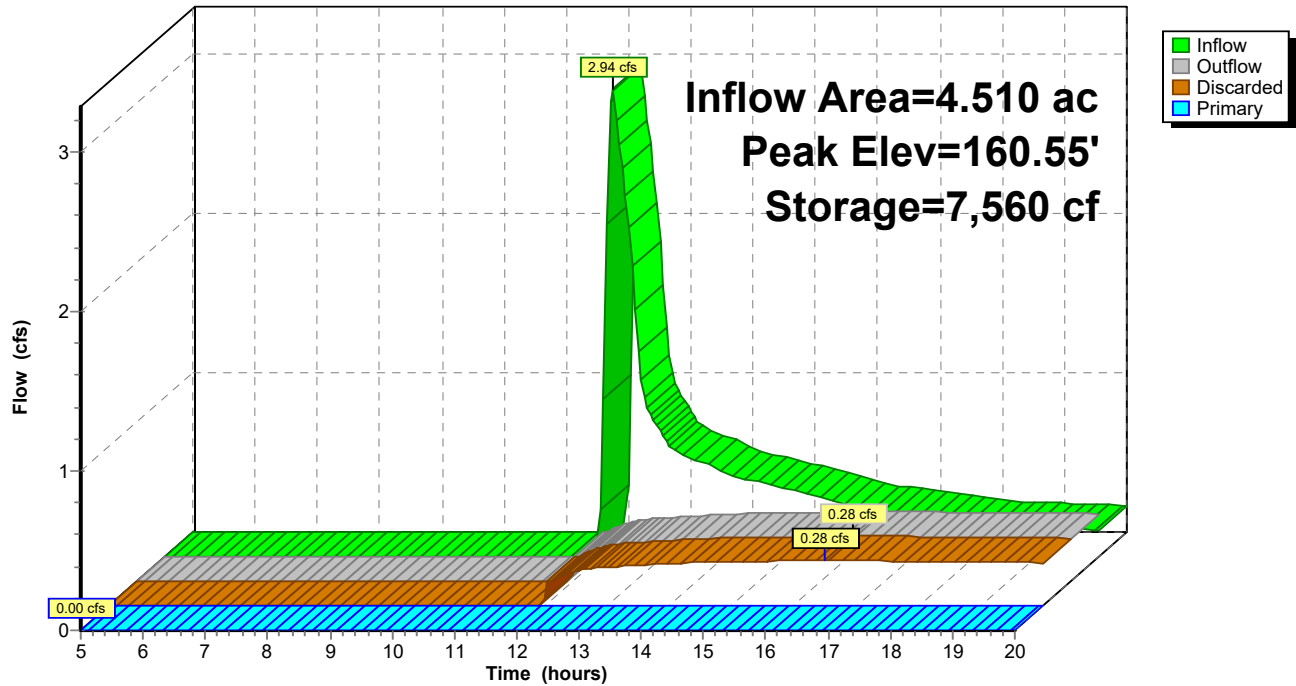
Type III 24-hr 50 year Rainfall=7.02"

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Pond 2P: Sediment Trap

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 3P: Farm Depression

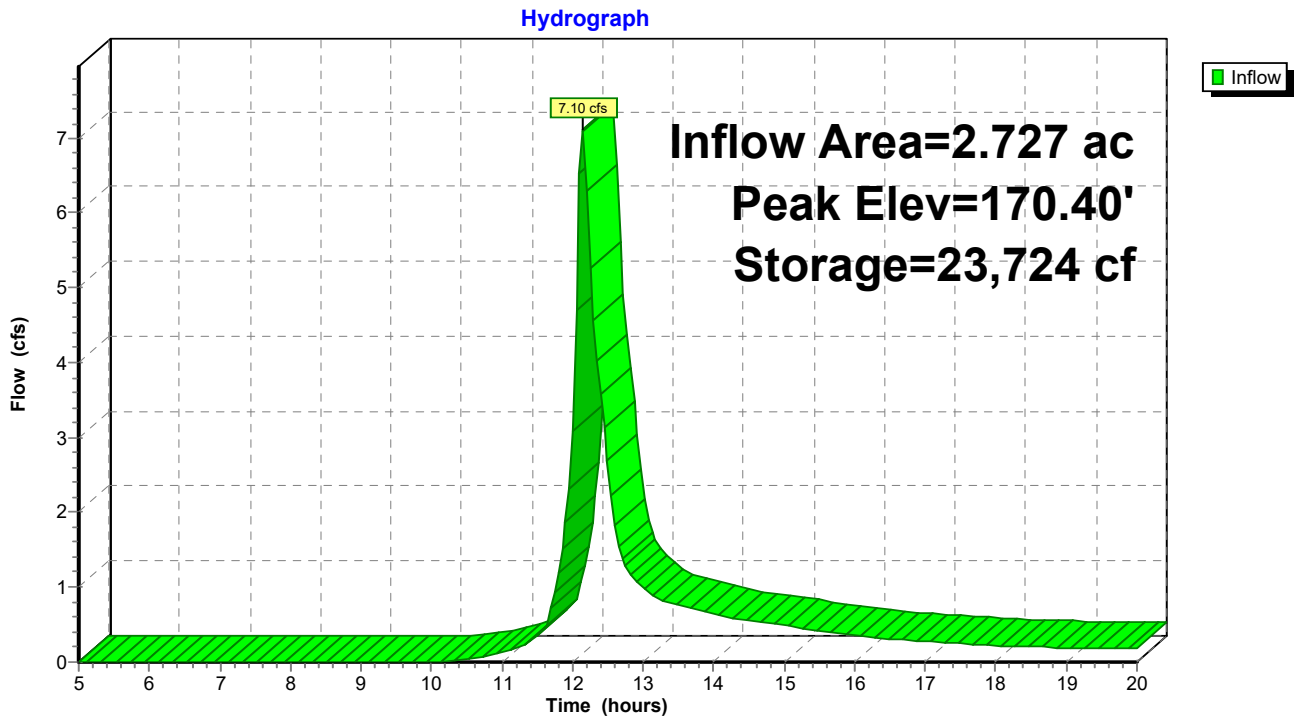
Inflow Area = 2.727 ac, 0.00% Impervious, Inflow Depth > 2.40" for 50 year event
Inflow = 7.10 cfs @ 12.15 hrs, Volume= 0.545 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 170.40' @ 20.00 hrs Surf.Area= 19,037 sf Storage= 23,724 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	95,578 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	0	0	0
170.00	16,657	16,657	16,657
172.00	28,677	45,334	61,991
173.00	38,496	33,587	95,578

Pond 3P: Farm Depression



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 4P: Sediment Trap

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 2.88" for 50 year event
 Inflow = 11.05 cfs @ 12.16 hrs, Volume= 0.874 af
 Outflow = 9.57 cfs @ 12.25 hrs, Volume= 0.699 af, Atten= 13%, Lag= 5.1 min
 Discarded = 0.28 cfs @ 12.25 hrs, Volume= 0.195 af
 Primary = 9.29 cfs @ 12.25 hrs, Volume= 0.503 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.45' @ 12.25 hrs Surf.Area= 3,915 sf Storage= 9,307 cf

Plug-Flow detention time= 81.4 min calculated for 0.699 af (80% of inflow)
 Center-of-Mass det. time= 28.0 min (834.9 - 806.9)

Volume	Invert	Avail.Storage	Storage Description
#1	159.00'	16,375 cf	65.00'W x 25.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	159.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.28 cfs @ 12.25 hrs HW=162.45' (Free Discharge)
 ↑2=Exfiltration (Controls 0.28 cfs)

Primary OutFlow Max=9.23 cfs @ 12.25 hrs HW=162.45' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 9.23 cfs @ 1.72 fps)

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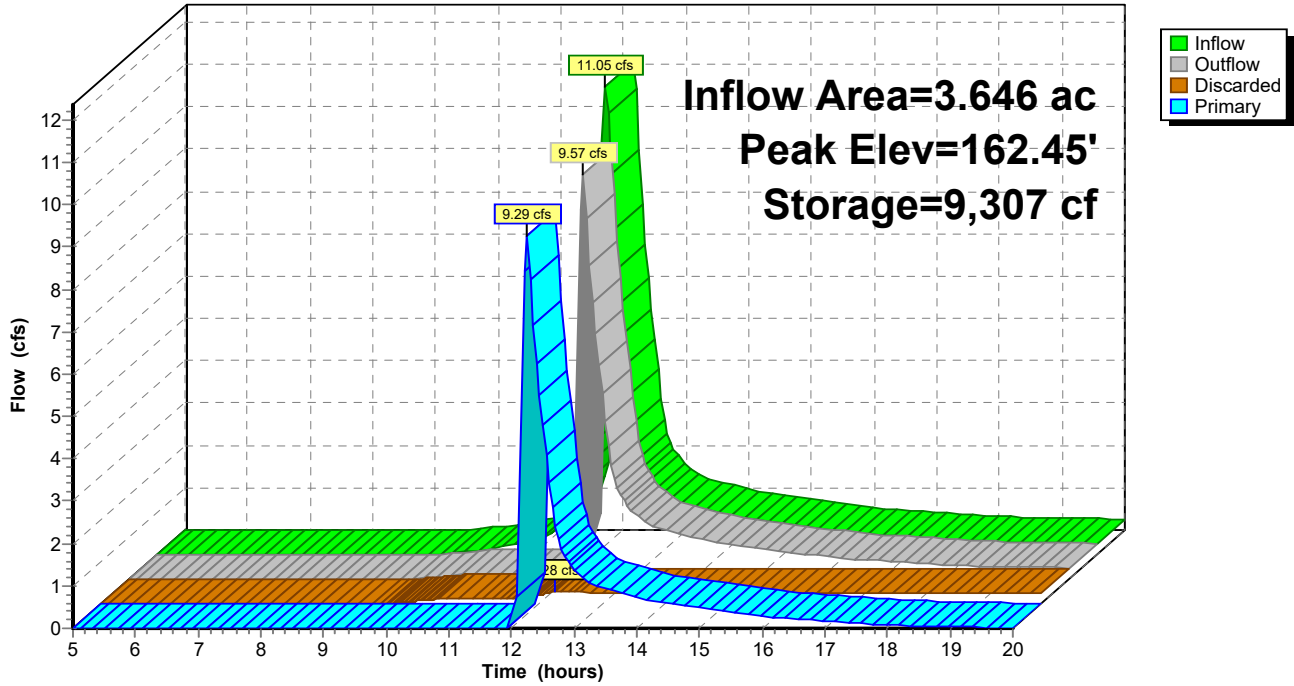
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Pond 4P: Sediment Trap

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 5P: Sediment Trap

Inflow Area = 8.688 ac, 0.00% Impervious, Inflow Depth > 3.56" for 50 year event
 Inflow = 24.30 cfs @ 12.34 hrs, Volume= 2.579 af
 Outflow = 19.63 cfs @ 12.52 hrs, Volume= 1.880 af, Atten= 19%, Lag= 10.7 min
 Primary = 19.63 cfs @ 12.52 hrs, Volume= 1.880 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 165.72' @ 12.52 hrs Surf.Area= 12,676 sf Storage= 38,229 cf

Plug-Flow detention time= 106.5 min calculated for 1.880 af (73% of inflow)
 Center-of-Mass det. time= 44.8 min (849.8 - 805.0)

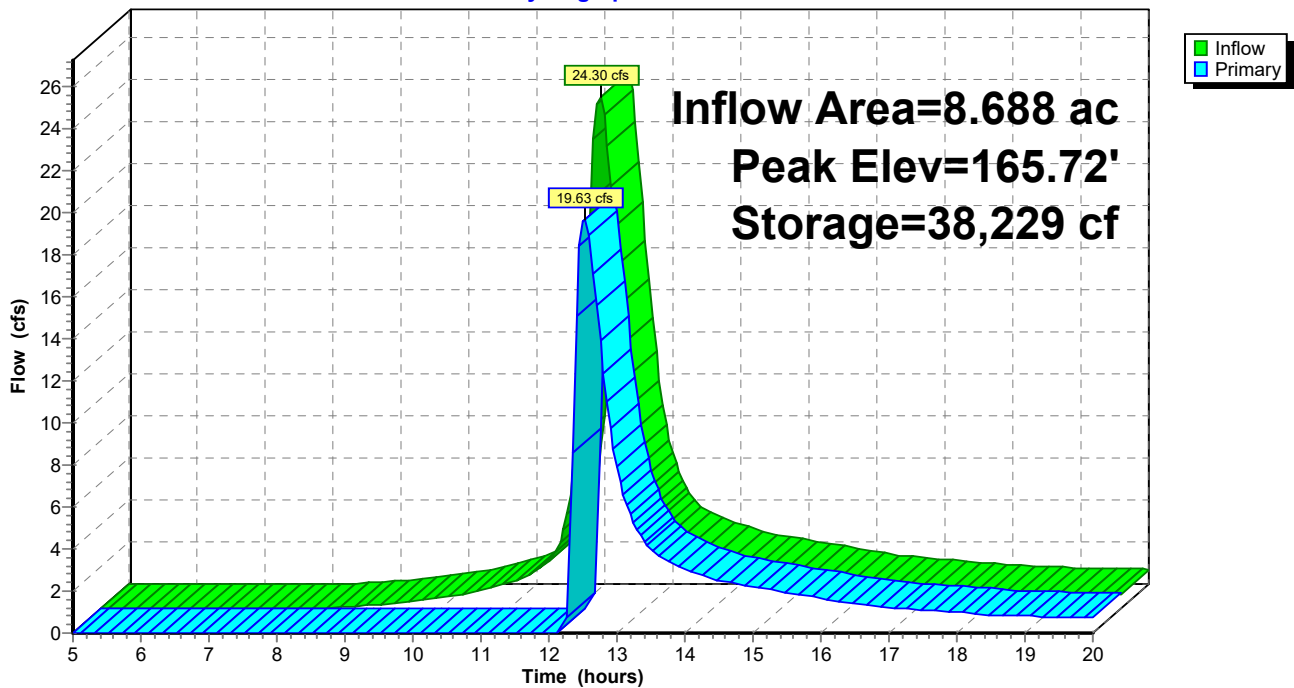
Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	41,848 cf	70.00'W x 115.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=19.47 cfs @ 12.52 hrs HW=165.71' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 19.47 cfs @ 2.27 fps)

Pond 5P: Sediment Trap

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 6P: Sediment Trap

Inflow Area = 6.471 ac, 0.00% Impervious, Inflow Depth > 3.27" for 50 year event
 Inflow = 19.46 cfs @ 12.23 hrs, Volume= 1.762 af
 Outflow = 12.20 cfs @ 12.47 hrs, Volume= 1.224 af, Atten= 37%, Lag= 14.4 min
 Primary = 12.20 cfs @ 12.47 hrs, Volume= 1.224 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.68' @ 12.47 hrs Surf.Area= 10,207 sf Storage= 29,278 cf

Plug-Flow detention time= 117.7 min calculated for 1.224 af (69% of inflow)
 Center-of-Mass det. time= 50.6 min (854.6 - 804.0)

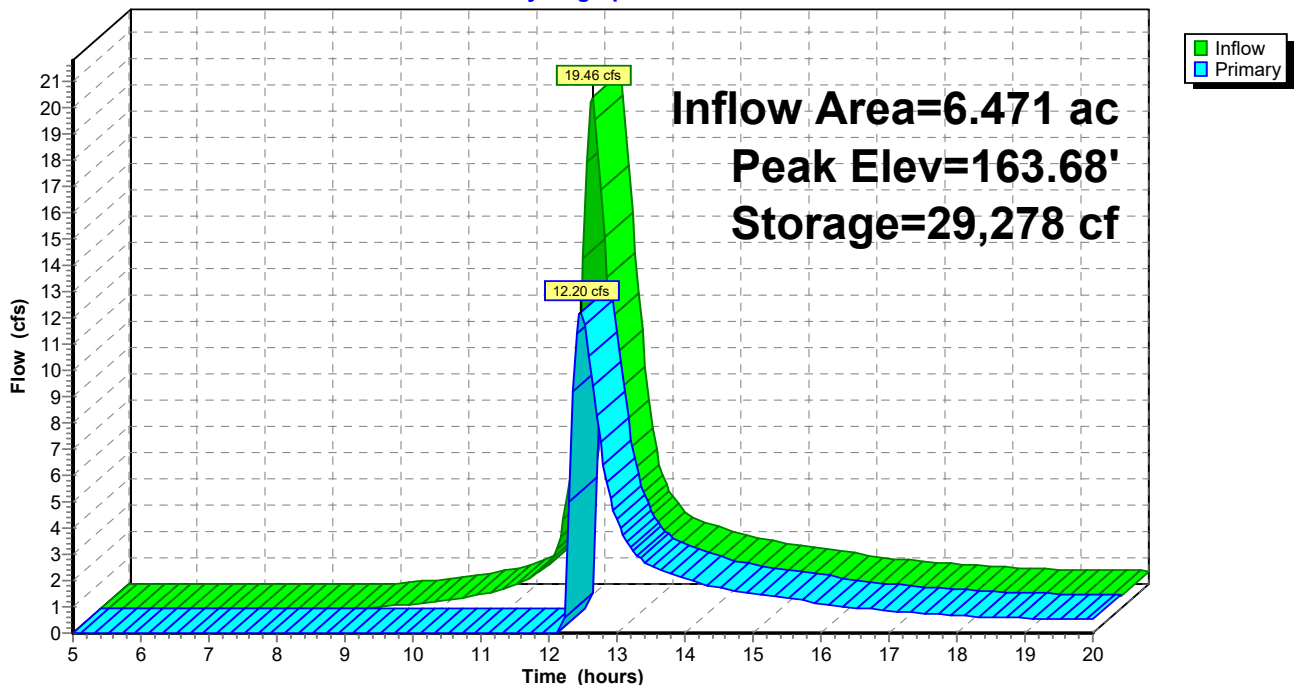
Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	32,568 cf	45.00'W x 130.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=12.10 cfs @ 12.47 hrs HW=163.68' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 12.10 cfs @ 2.22 fps)

Pond 6P: Sediment Trap

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 7P: Farm Depression

Inflow Area = 17.047 ac, 0.00% Impervious, Inflow Depth > 3.74" for 50 year event
 Inflow = 35.57 cfs @ 12.68 hrs, Volume= 5.307 af
 Outflow = 14.27 cfs @ 13.42 hrs, Volume= 5.120 af, Atten= 60%, Lag= 44.5 min
 Discarded = 14.18 cfs @ 13.42 hrs, Volume= 5.117 af
 Primary = 0.09 cfs @ 13.42 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.51' @ 13.42 hrs Surf.Area= 203,684 sf Storage= 83,077 cf

Plug-Flow detention time= 81.8 min calculated for 5.103 af (96% of inflow)
 Center-of-Mass det. time= 69.6 min (891.0 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	188,598 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.00	0	0	0	0
164.00	57,239	19,080	19,080	57,241
164.50	203,000	61,339	80,418	203,003
165.00	230,000	108,180	188,598	230,015

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=14.18 cfs @ 13.42 hrs HW=164.51' (Free Discharge)
 ↑2=Exfiltration (Controls 14.18 cfs)

Primary OutFlow Max=0.07 cfs @ 13.42 hrs HW=164.51' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 0.07 cfs @ 0.28 fps)

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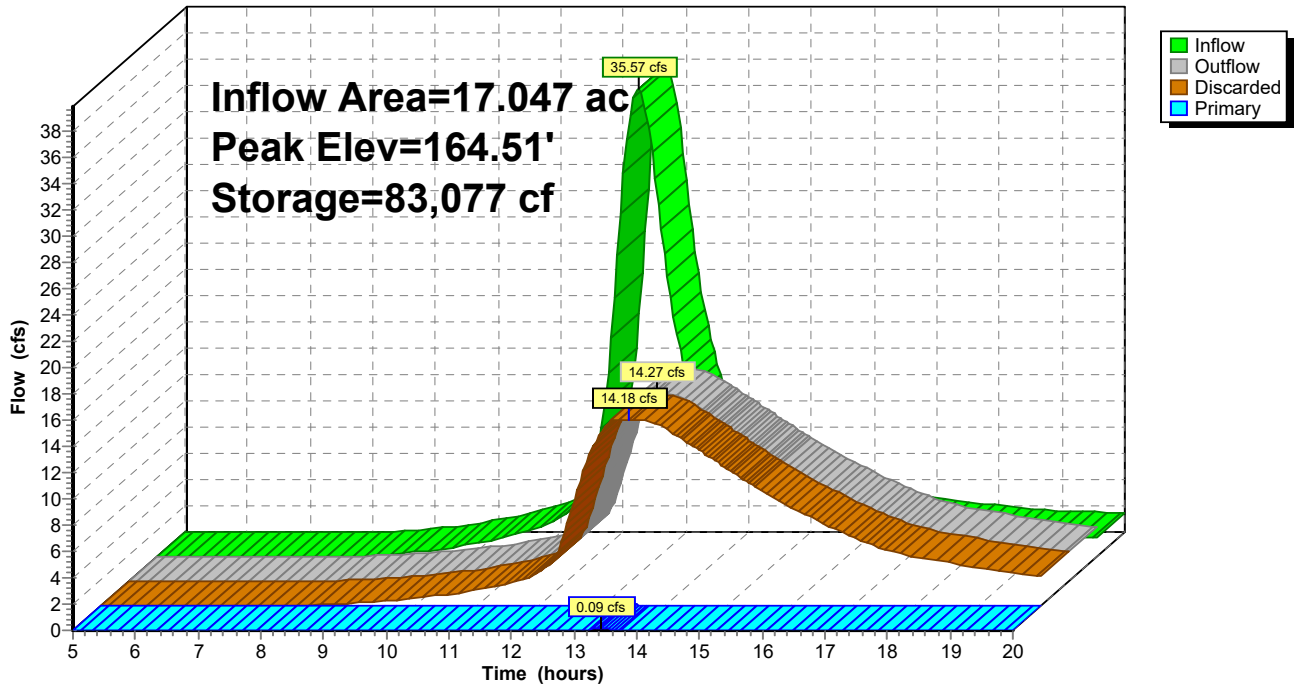
Type III 24-hr 50 year Rainfall=7.02"

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Pond 7P: Farm Depression

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 8P: Sediment Trap

Inflow Area = 3.130 ac, 0.00% Impervious, Inflow Depth > 3.17" for 50 year event
 Inflow = 10.34 cfs @ 12.17 hrs, Volume= 0.827 af
 Outflow = 10.02 cfs @ 12.21 hrs, Volume= 0.675 af, Atten= 3%, Lag= 2.4 min
 Primary = 10.02 cfs @ 12.21 hrs, Volume= 0.675 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.47' @ 12.21 hrs Surf.Area= 3,503 sf Storage= 8,081 cf

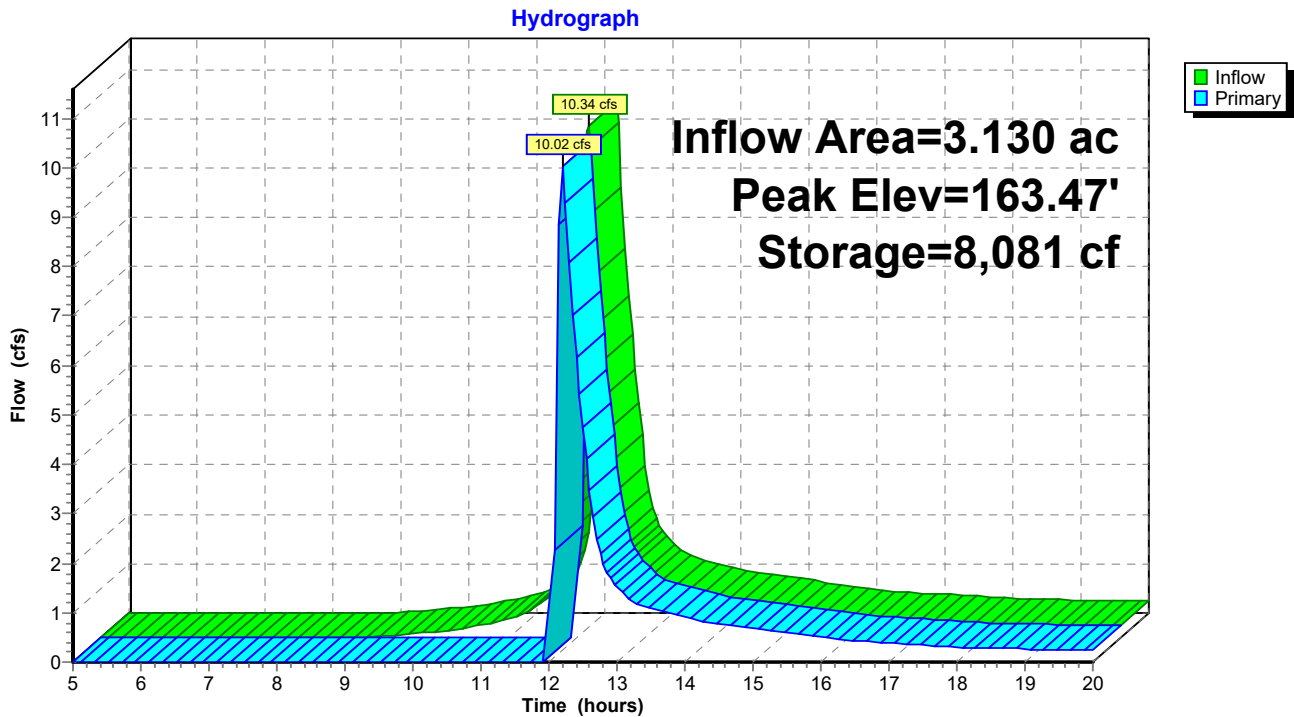
Plug-Flow detention time= 76.9 min calculated for 0.673 af (81% of inflow)
 Center-of-Mass det. time= 27.6 min (829.7 - 802.1)

Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	14,375 cf	65.00'W x 20.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=9.91 cfs @ 12.21 hrs HW=163.47' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 9.91 cfs @ 1.77 fps)

Pond 8P: Sediment Trap



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 10P: Kettle Hole

Inflow Area = 3.172 ac, 0.00% Impervious, Inflow Depth > 1.85" for 50 year event
 Inflow = 5.52 cfs @ 12.20 hrs, Volume= 0.489 af
 Outflow = 0.22 cfs @ 18.08 hrs, Volume= 0.136 af, Atten= 96%, Lag= 352.8 min
 Discarded = 0.22 cfs @ 18.08 hrs, Volume= 0.136 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 149.15' @ 18.08 hrs Surf.Area= 9,372 sf Storage= 15,515 cf

Plug-Flow detention time= 245.6 min calculated for 0.135 af (28% of inflow)
 Center-of-Mass det. time= 144.2 min (972.7 - 828.5)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	274,837 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	1,534	0	0	1,534
148.00	5,773	6,855	6,855	5,793
150.00	12,558	17,897	24,752	12,610
152.00	19,547	31,848	56,601	19,656
154.00	26,610	45,976	102,576	26,800
156.00	32,562	59,072	161,648	32,876
158.00	39,456	71,908	233,556	39,899
159.00	43,134	41,281	274,837	43,647

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.22 cfs @ 18.08 hrs HW=149.15' (Free Discharge)
 ↑1=Exfiltration (Controls 0.22 cfs)

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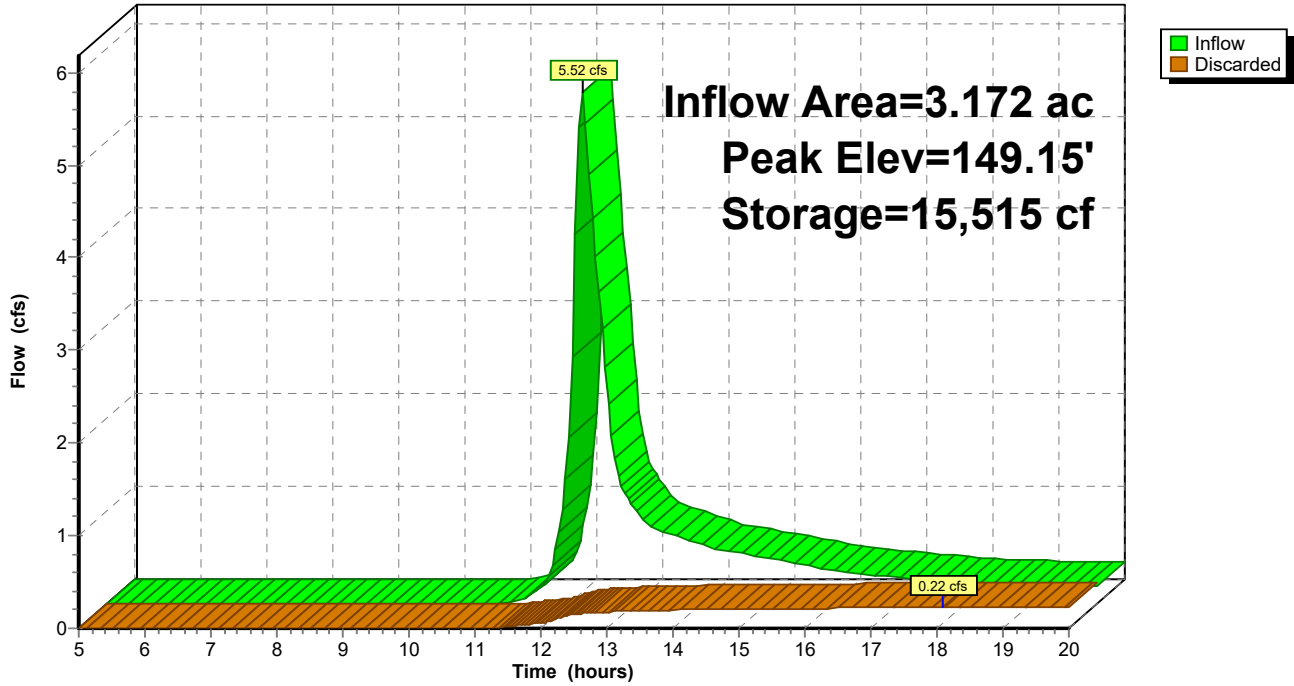
Type III 24-hr 50 year Rainfall=7.02"

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Pond 10P: Kettle Hole

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 11AP: Kettle Hole

Inflow Area = 6.449 ac, 0.00% Impervious, Inflow Depth > 1.10" for 50 year event
 Inflow = 6.12 cfs @ 12.17 hrs, Volume= 0.592 af
 Outflow = 0.36 cfs @ 17.68 hrs, Volume= 0.220 af, Atten= 94%, Lag= 330.5 min
 Discarded = 0.36 cfs @ 17.68 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 127.96' @ 17.68 hrs Surf.Area= 15,542 sf Storage= 16,691 cf

Plug-Flow detention time= 239.7 min calculated for 0.220 af (37% of inflow)
 Center-of-Mass det. time= 128.7 min (976.8 - 848.1)

Volume	Invert	Avail.Storage	Storage Description
#1	126.00'	127,579 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
126.00	3,074	0	0	3,074
128.00	15,883	17,296	17,296	15,899
130.00	28,094	43,401	60,697	28,154
132.00	39,090	66,882	127,579	39,226

Device	Routing	Invert	Outlet Devices
#1	Discarded	126.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.36 cfs @ 17.68 hrs HW=127.96' (Free Discharge)
 ↑1=Exfiltration (Controls 0.36 cfs)

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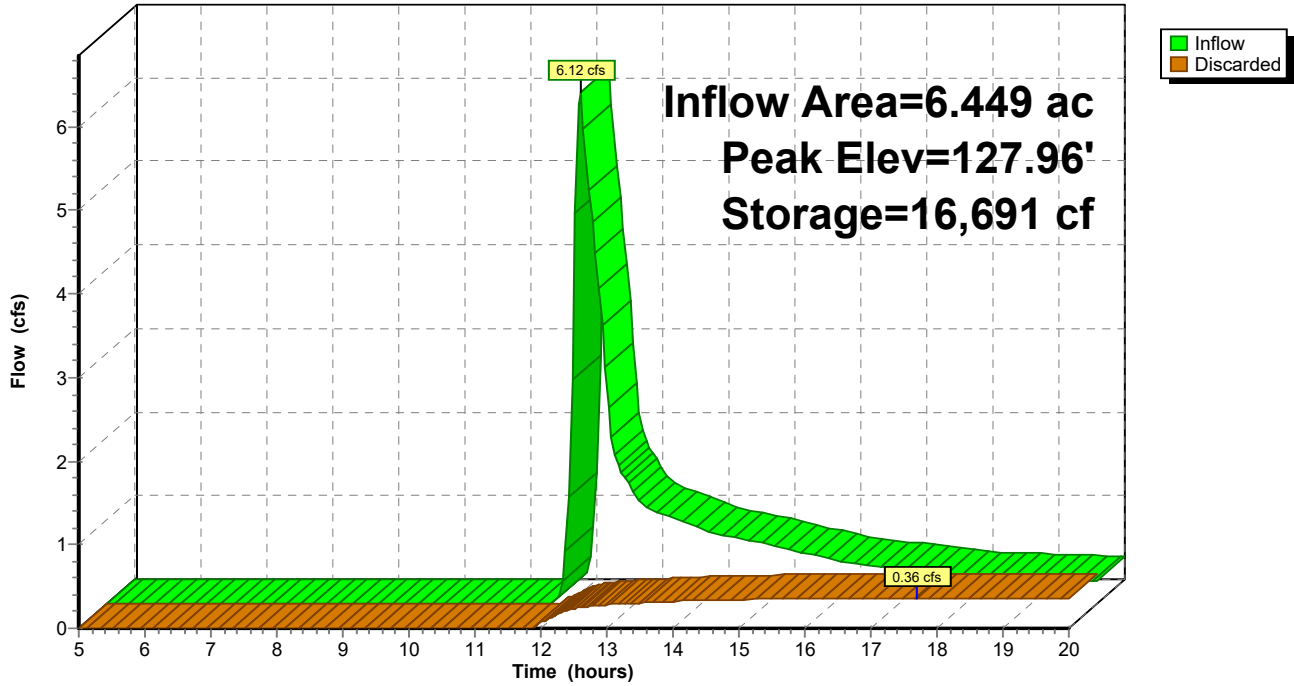
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Pond 11AP: Kettle Hole

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 11P: Kettle Hole

Inflow Area = 5.662 ac, 0.33% Impervious, Inflow Depth > 1.76" for 50 year event
 Inflow = 8.58 cfs @ 12.25 hrs, Volume= 0.829 af
 Outflow = 0.30 cfs @ 20.00 hrs, Volume= 0.186 af, Atten= 96%, Lag= 465.0 min
 Discarded = 0.30 cfs @ 20.00 hrs, Volume= 0.186 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 145.51' @ 20.00 hrs Surf.Area= 12,787 sf Storage= 28,016 cf

Plug-Flow detention time= 244.2 min calculated for 0.185 af (22% of inflow)
 Center-of-Mass det. time= 139.4 min (972.3 - 832.8)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	585,038 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	3,101	0	0	3,101
144.00	9,033	11,618	11,618	9,057
146.00	14,143	22,986	34,604	14,223
148.00	20,595	34,537	69,140	20,742
150.00	26,222	46,704	115,844	26,472
152.00	32,411	58,524	174,368	32,779
154.00	41,950	74,156	248,524	42,415
156.00	49,984	91,817	340,341	50,591
158.00	62,571	112,320	452,660	63,289
160.00	69,874	132,378	585,038	70,817

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.30 cfs @ 20.00 hrs HW=145.51' (Free Discharge)
 ↑1=Exfiltration (Controls 0.30 cfs)

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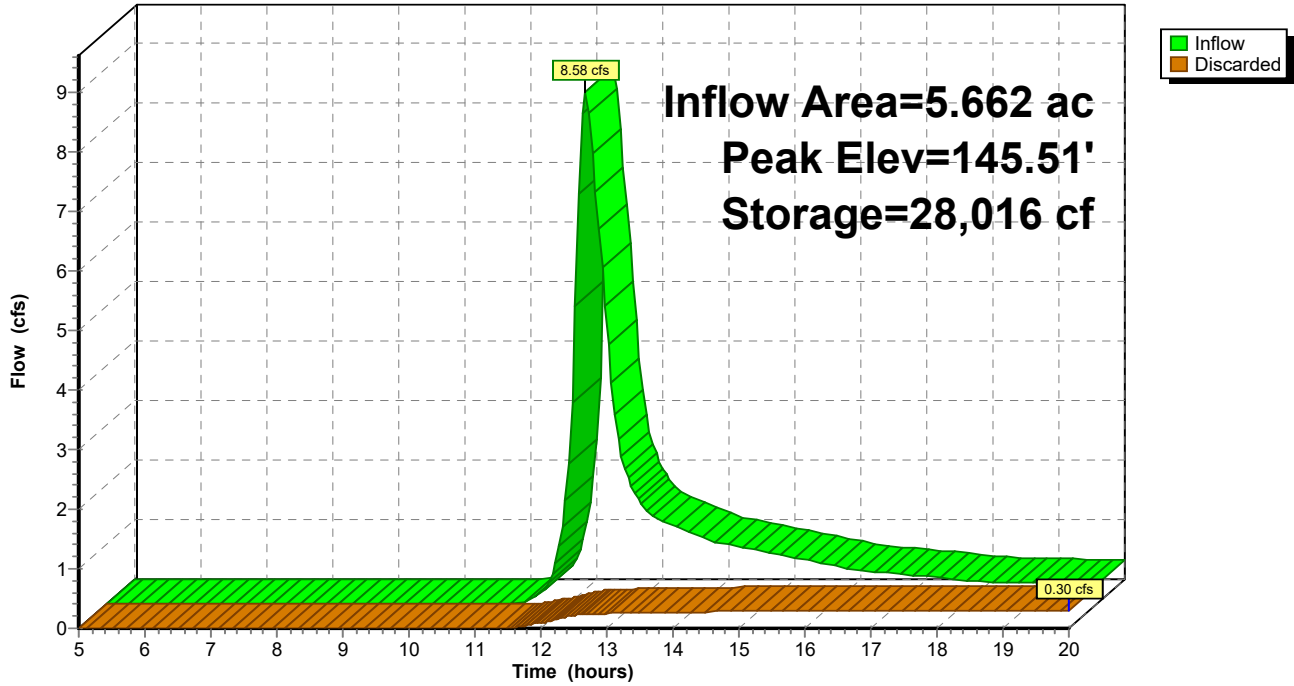
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Pond 11P: Kettle Hole

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 12P: Farm Depression

Inflow Area = 3.290 ac, 2.37% Impervious, Inflow Depth > 3.47" for 50 year event
 Inflow = 11.03 cfs @ 12.20 hrs, Volume= 0.952 af
 Outflow = 1.60 cfs @ 13.05 hrs, Volume= 0.869 af, Atten= 85%, Lag= 50.6 min
 Discarded = 1.60 cfs @ 13.05 hrs, Volume= 0.869 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.97' @ 13.05 hrs Surf.Area= 22,985 sf Storage= 19,110 cf

Plug-Flow detention time= 146.2 min calculated for 0.869 af (91% of inflow)
 Center-of-Mass det. time= 117.5 min (916.6 - 799.1)

Volume	Invert	Avail.Storage	Storage Description
#1	161.00'	52,117 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.00	0	0	0	0
162.00	10,223	3,408	3,408	10,225
164.00	42,096	48,709	52,117	42,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	161.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	163.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=1.60 cfs @ 13.05 hrs HW=162.97' (Free Discharge)
 ↑1=Exfiltration (Controls 1.60 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=161.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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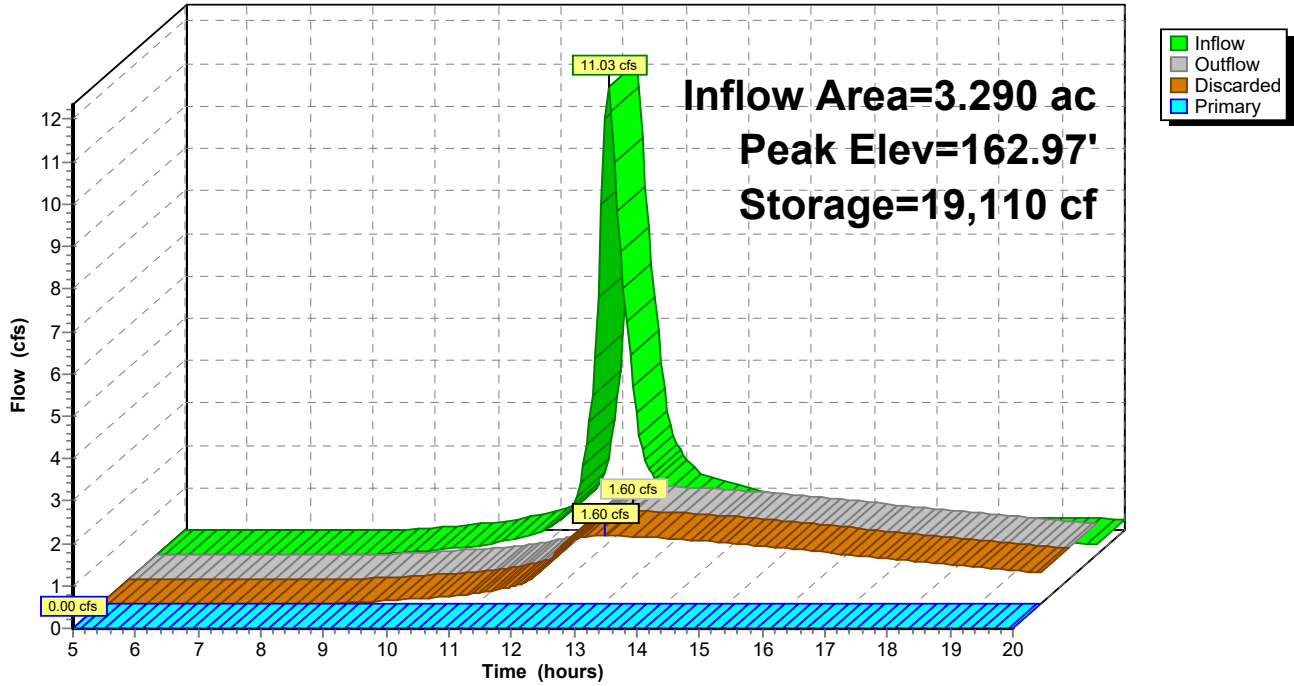
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Pond 12P: Farm Depression

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Summary for Pond 13P: Farm Depression

Inflow Area = 18.631 ac, 0.42% Impervious, Inflow Depth > 3.59" for 50 year event
 Inflow = 32.00 cfs @ 12.86 hrs, Volume= 5.578 af
 Outflow = 18.93 cfs @ 13.46 hrs, Volume= 4.816 af, Atten= 41%, Lag= 36.0 min
 Discarded = 6.94 cfs @ 13.46 hrs, Volume= 3.822 af
 Primary = 11.99 cfs @ 13.46 hrs, Volume= 0.995 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.66' @ 13.46 hrs Surf.Area= 99,370 sf Storage= 88,338 cf

Plug-Flow detention time= 115.7 min calculated for 4.800 af (86% of inflow)
 Center-of-Mass det. time= 78.9 min (912.5 - 833.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	126,275 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	18,000	0	0	18,000	
162.00	124,141	126,275	126,275	124,155	

Device	Routing	Invert	Outlet Devices									
#1	Primary	161.50'	70.0' long x 50.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=6.94 cfs @ 13.46 hrs HW=161.66' (Free Discharge)
 ↑2=Exfiltration (Controls 6.94 cfs)

Primary OutFlow Max=11.97 cfs @ 13.46 hrs HW=161.66' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 11.97 cfs @ 1.07 fps)

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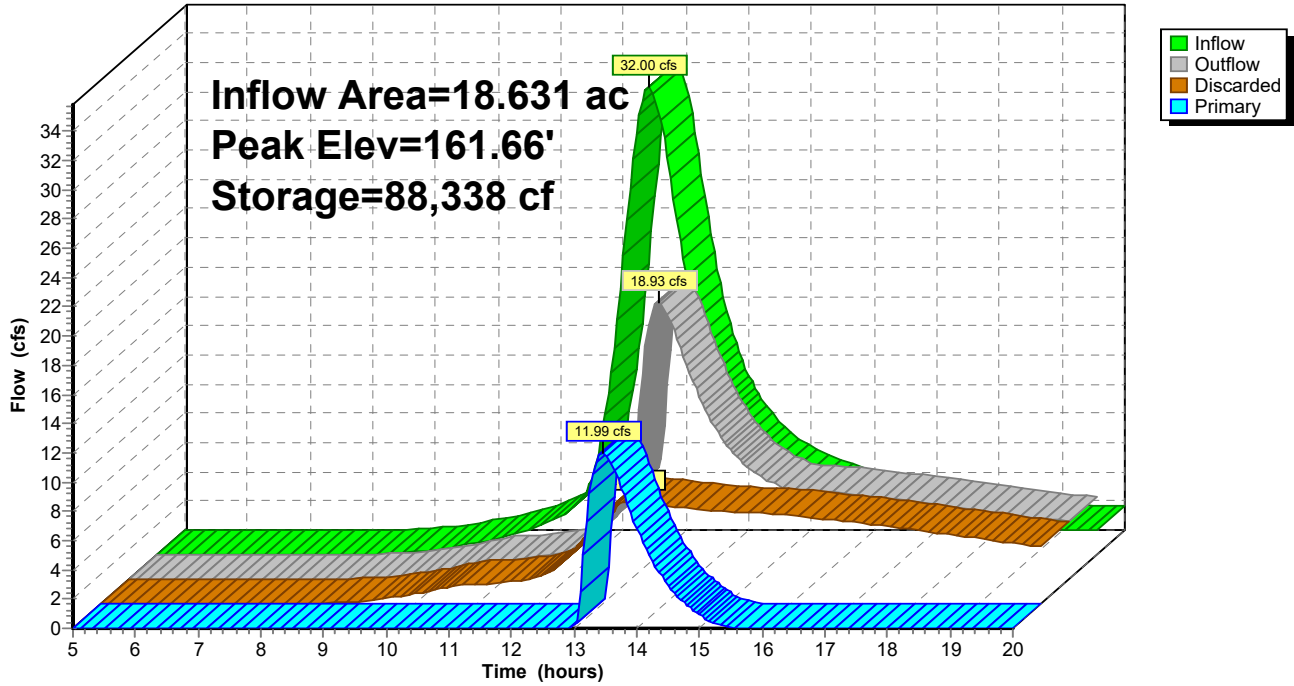
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Pond 13P: Farm Depression

Hydrograph



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Summary for Pond 15P: Farm Depression

Inflow Area = 2.521 ac, 5.01% Impervious, Inflow Depth > 3.36" for 50 year event
 Inflow = 7.02 cfs @ 12.30 hrs, Volume= 0.706 af
 Outflow = 1.73 cfs @ 12.94 hrs, Volume= 0.686 af, Atten= 75%, Lag= 38.5 min
 Discarded = 1.73 cfs @ 12.94 hrs, Volume= 0.686 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.41' @ 12.94 hrs Surf.Area= 24,772 sf Storage= 12,468 cf

Plug-Flow detention time= 94.1 min calculated for 0.686 af (97% of inflow)
 Center-of-Mass det. time= 83.3 min (889.5 - 806.2)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	33,327 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	100	0	0	100
164.00	47,707	33,327	33,327	47,714

Device	Routing	Invert	Outlet Devices
#1	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.73 cfs @ 12.94 hrs HW=163.41' (Free Discharge)
 ↑1=Exfiltration (Controls 1.73 cfs)

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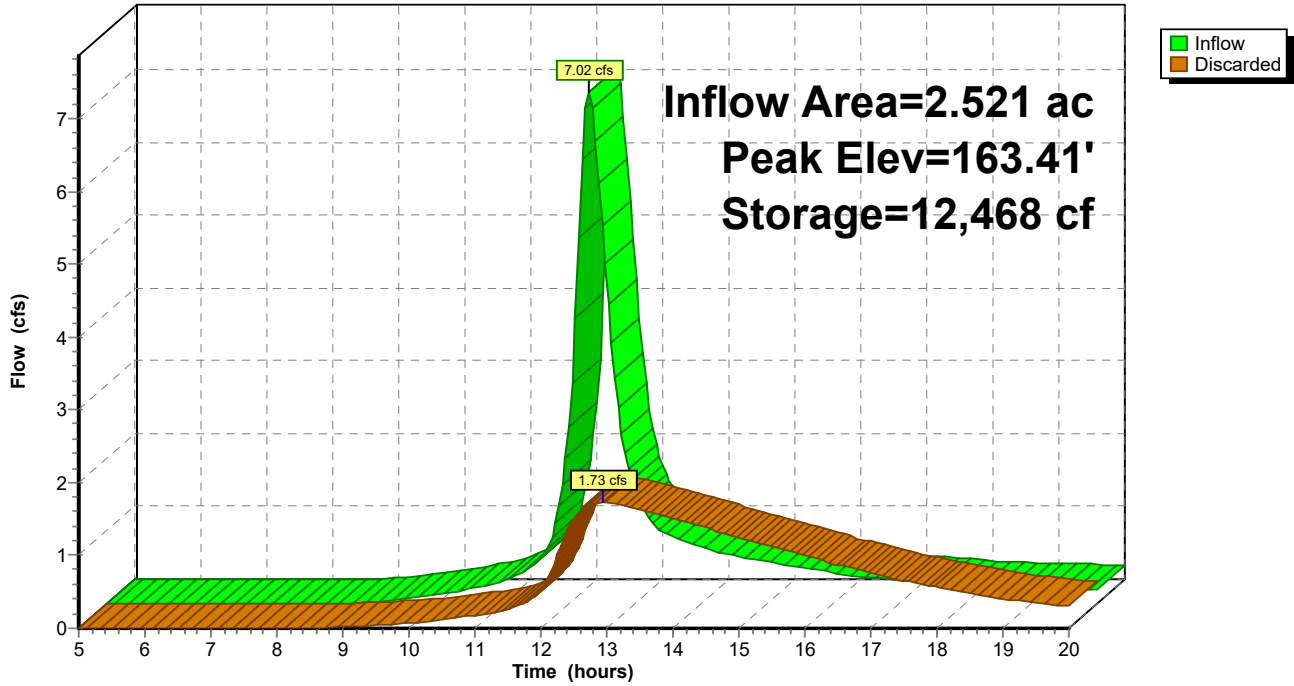
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Pond 15P: Farm Depression

Hydrograph



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Summary for Pond 16P: Farm Depression

Inflow Area = 4.717 ac, 0.69% Impervious, Inflow Depth > 3.35" for 50 year event
 Inflow = 11.73 cfs @ 12.39 hrs, Volume= 1.319 af
 Outflow = 4.09 cfs @ 12.96 hrs, Volume= 1.295 af, Atten= 65%, Lag= 33.9 min
 Discarded = 3.29 cfs @ 12.96 hrs, Volume= 1.268 af
 Primary = 0.80 cfs @ 12.96 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.03' @ 12.96 hrs Surf.Area= 47,299 sf Storage= 21,511 cf

Plug-Flow detention time= 80.3 min calculated for 1.295 af (98% of inflow)
 Center-of-Mass det. time= 73.5 min (884.8 - 811.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	162.00'	106,646 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
162.00	3,106	0	0	3,106	
164.00	136,289	106,646	106,646	136,298	

Device	Routing	Invert	Outlet Devices									
#1	Primary	163.00'	50.0' long x 50.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=3.29 cfs @ 12.96 hrs HW=163.03' (Free Discharge)
 ↑2=Exfiltration (Controls 3.29 cfs)

Primary OutFlow Max=0.77 cfs @ 12.96 hrs HW=163.03' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 0.77 cfs @ 0.48 fps)

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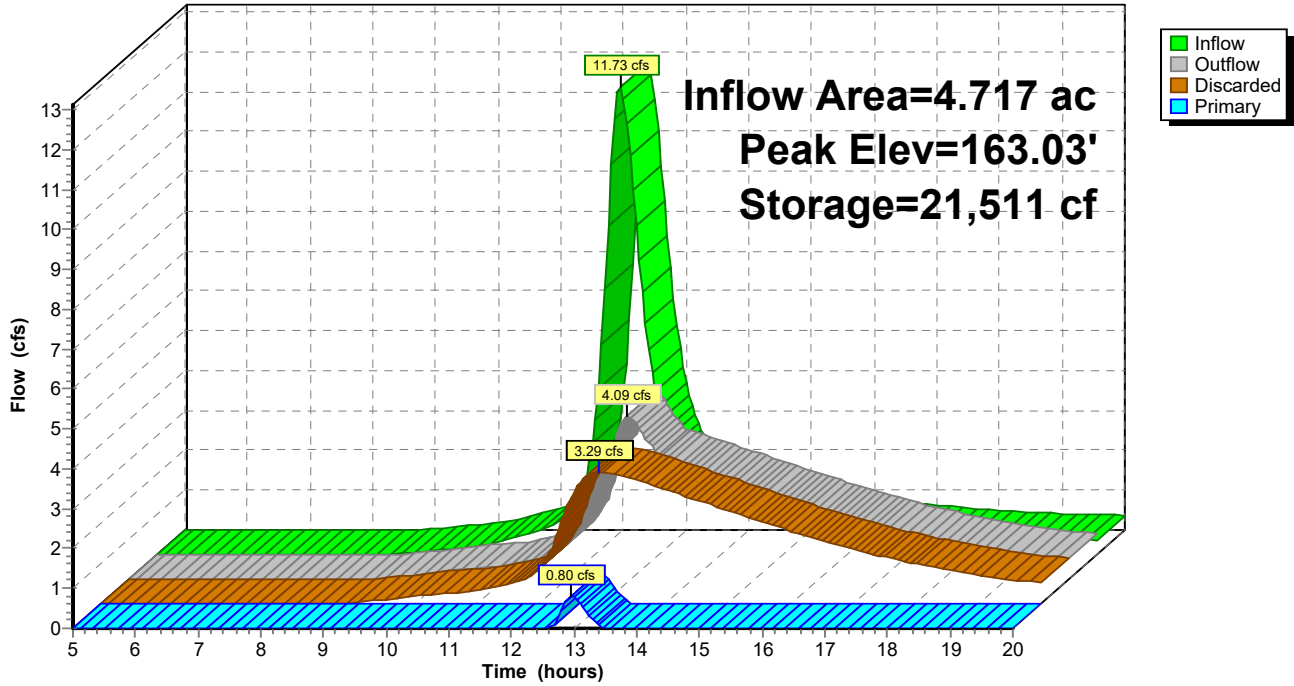
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Pond 16P: Farm Depression

Hydrograph



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Summary for Pond 17P: Sediment Trap

Inflow Area = 10.053 ac, 0.32% Impervious, Inflow Depth > 1.92" for 50 year event
 Inflow = 15.38 cfs @ 12.32 hrs, Volume= 1.612 af
 Outflow = 3.96 cfs @ 13.06 hrs, Volume= 1.492 af, Atten= 74%, Lag= 44.8 min
 Discarded = 2.98 cfs @ 13.06 hrs, Volume= 1.426 af
 Primary = 0.98 cfs @ 13.06 hrs, Volume= 0.066 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.11' @ 13.06 hrs Surf.Area= 42,671 sf Storage= 30,840 cf

Plug-Flow detention time= 125.0 min calculated for 1.487 af (92% of inflow)
 Center-of-Mass det. time= 100.4 min (903.8 - 803.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	160.00'	81,430 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
160.00	0	0	0	0	
162.00	39,746	26,497	26,497	39,752	
163.00	71,678	54,933	81,430	71,695	

Device	Routing	Invert	Outlet Devices												
#1	Primary	162.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=2.98 cfs @ 13.06 hrs HW=162.11' (Free Discharge)
 ↑2=Exfiltration (Controls 2.98 cfs)

Primary OutFlow Max=0.98 cfs @ 13.06 hrs HW=162.11' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 0.98 cfs @ 0.77 fps)

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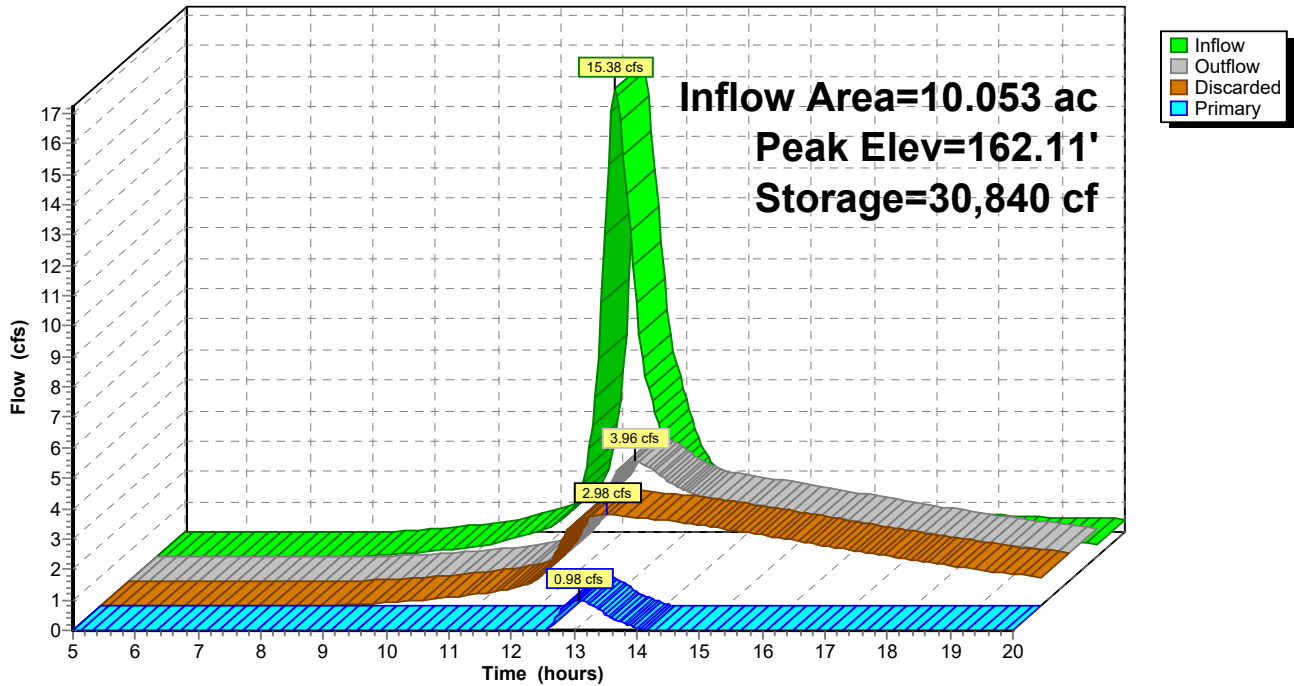
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Pond 17P: Sediment Trap

Hydrograph



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Summary for Pond 19P: Valley Berm

Inflow Area = 21.569 ac, 0.00% Impervious, Inflow Depth > 3.43" for 50 year event
 Inflow = 43.39 cfs @ 12.64 hrs, Volume= 6.171 af
 Outflow = 20.94 cfs @ 13.21 hrs, Volume= 4.915 af, Atten= 52%, Lag= 34.6 min
 Discarded = 5.39 cfs @ 13.21 hrs, Volume= 3.323 af
 Primary = 15.55 cfs @ 13.21 hrs, Volume= 1.593 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.61' @ 13.21 hrs Surf.Area= 45,801 sf Storage= 108,569 cf

Plug-Flow detention time= 131.6 min calculated for 4.915 af (80% of inflow)
 Center-of-Mass det. time= 81.1 min (904.7 - 823.6)

Volume	Invert	Avail.Storage	Storage Description
#1	151.00'	126,793 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
151.00	0	0	0	0
152.00	9,106	3,035	3,035	9,108
154.00	34,526	40,909	43,944	34,547
156.00	48,730	82,849	126,793	48,824

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	151.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=5.39 cfs @ 13.21 hrs HW=155.61' (Free Discharge)
 ↑**2=Exfiltration** (Controls 5.39 cfs)

Primary OutFlow Max=15.51 cfs @ 13.21 hrs HW=155.61' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 15.51 cfs @ 2.11 fps)

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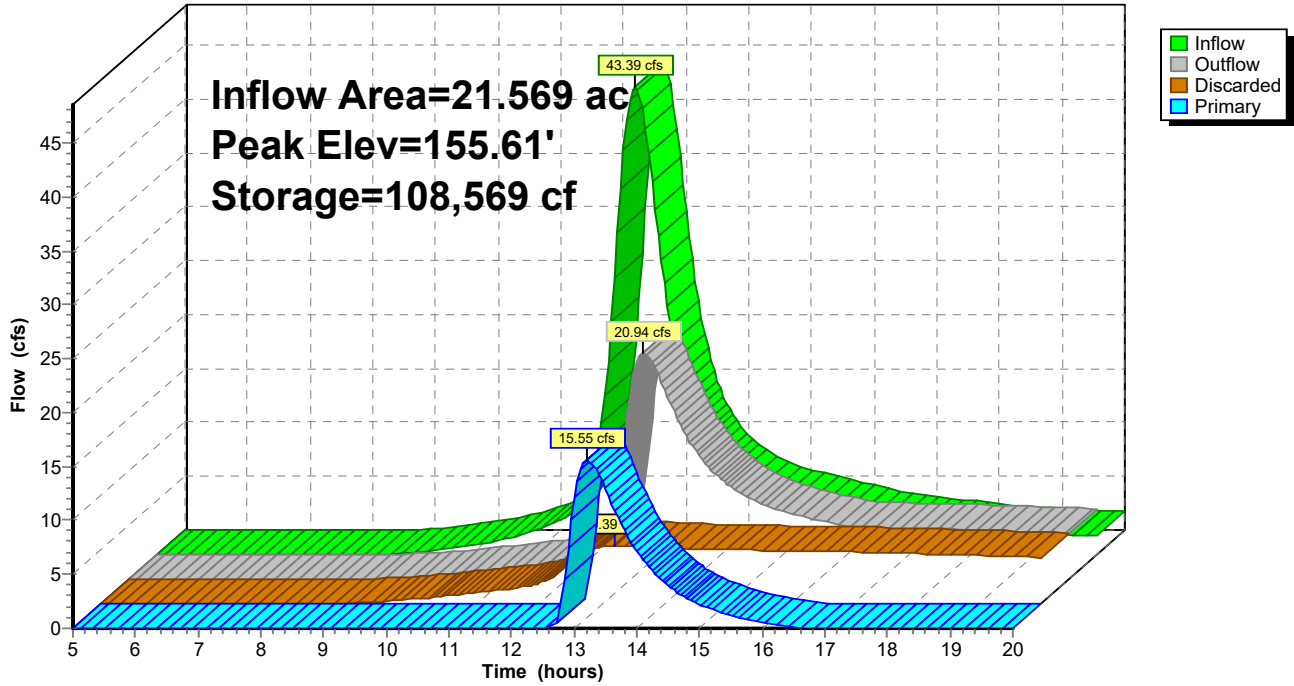
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Pond 19P: Valley Berm

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Summary for Pond 20P: Sediment Trap

Inflow Area = 1.629 ac, 0.00% Impervious, Inflow Depth > 3.36" for 50 year event
 Inflow = 4.57 cfs @ 12.29 hrs, Volume= 0.456 af
 Outflow = 2.97 cfs @ 12.56 hrs, Volume= 0.280 af, Atten= 35%, Lag= 16.1 min
 Primary = 2.97 cfs @ 12.56 hrs, Volume= 0.280 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.22' @ 12.56 hrs Surf.Area= 4,050 sf Storage= 8,445 cf

Plug-Flow detention time= 133.8 min calculated for 0.280 af (61% of inflow)
 Center-of-Mass det. time= 61.0 min (866.9 - 805.9)

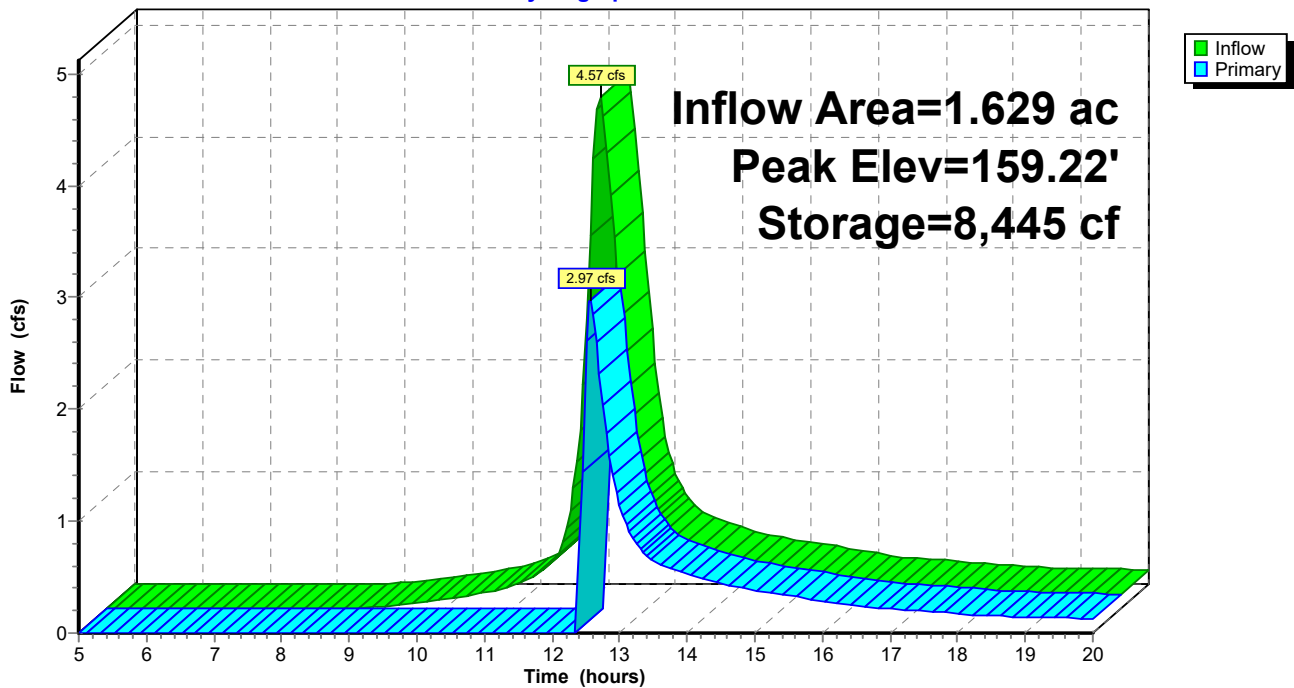
Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	11,904 cf	110.00'W x 12.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=2.92 cfs @ 12.56 hrs HW=159.22' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 2.92 cfs @ 1.12 fps)

Pond 20P: Sediment Trap

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Summary for Pond 21P: Valley Berm

Inflow Area = 38.989 ac, 0.08% Impervious, Inflow Depth > 1.07" for 50 year event
 Inflow = 20.65 cfs @ 13.16 hrs, Volume= 3.488 af
 Outflow = 15.92 cfs @ 13.54 hrs, Volume= 2.713 af, Atten= 23%, Lag= 22.8 min
 Discarded = 1.98 cfs @ 13.54 hrs, Volume= 1.204 af
 Primary = 13.94 cfs @ 13.54 hrs, Volume= 1.509 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.57' @ 13.54 hrs Surf.Area= 28,000 sf Storage= 60,219 cf

Plug-Flow detention time= 106.3 min calculated for 2.704 af (78% of inflow)
 Center-of-Mass det. time= 68.2 min (890.8 - 822.7)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	72,609 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
144.00	3,692	0	0	3,692
146.00	20,668	22,064	22,064	20,683
148.00	30,176	50,545	72,609	30,258

Device	Routing	Invert	Outlet Devices
#1	Primary	147.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	144.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.98 cfs @ 13.54 hrs HW=147.57' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.98 cfs)

Primary OutFlow Max=13.91 cfs @ 13.54 hrs HW=147.57' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 13.91 cfs @ 2.02 fps)

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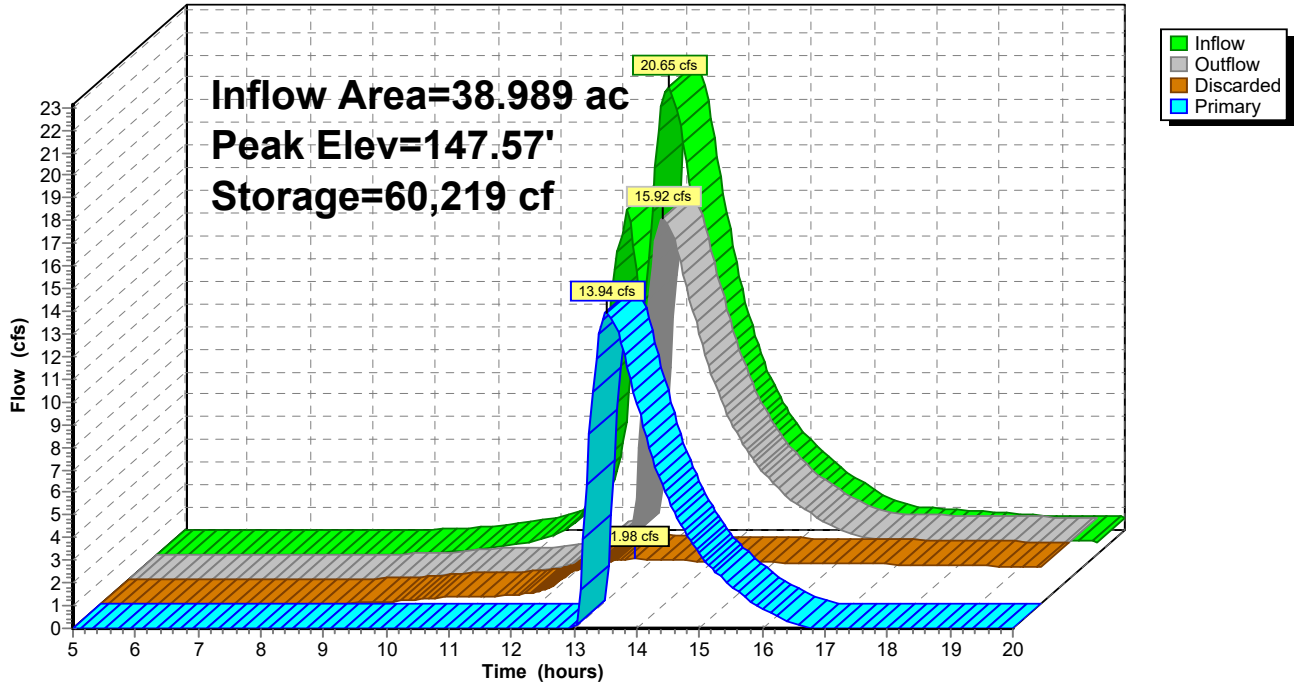
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Pond 21P: Valley Berm

Hydrograph



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Summary for Pond 22P: Sediment Trap

Inflow Area = 17.727 ac, 0.00% Impervious, Inflow Depth > 3.61" for 50 year event
 Inflow = 30.90 cfs @ 12.87 hrs, Volume= 5.337 af
 Outflow = 24.44 cfs @ 13.23 hrs, Volume= 4.230 af, Atten= 21%, Lag= 21.9 min
 Discarded = 1.86 cfs @ 13.23 hrs, Volume= 1.156 af
 Primary = 22.58 cfs @ 13.23 hrs, Volume= 3.074 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 135.54' @ 13.23 hrs Surf.Area= 26,169 sf Storage= 71,476 cf

Plug-Flow detention time= 91.8 min calculated for 4.230 af (79% of inflow)
 Center-of-Mass det. time= 42.2 min (877.0 - 834.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	131.00'	84,211 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
131.00	7,145	0	0	7,145
132.00	10,375	8,710	8,710	10,392
133.00	14,183	12,229	20,939	14,220
134.00	18,569	16,327	37,266	18,629
135.00	23,407	20,941	58,208	23,494
136.00	28,690	26,004	84,211	28,808

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	131.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.86 cfs @ 13.23 hrs HW=135.53' (Free Discharge)
 ↳2=Exfiltration (Controls 1.86 cfs)

Primary OutFlow Max=22.54 cfs @ 13.23 hrs HW=135.53' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 22.54 cfs @ 2.72 fps)

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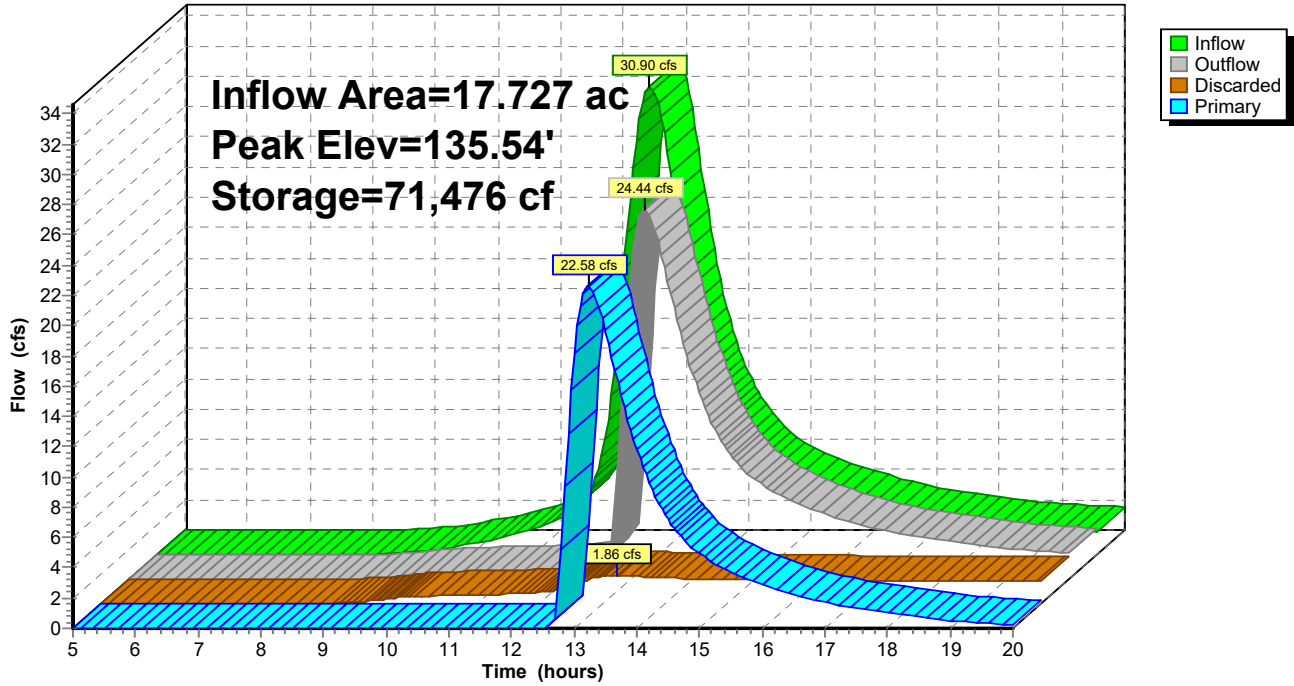
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Pond 22P: Sediment Trap

Hydrograph



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Summary for Pond 24P: Sediment Trap

Inflow Area = 2.795 ac, 0.00% Impervious, Inflow Depth > 3.57" for 50 year event
 Inflow = 8.95 cfs @ 12.24 hrs, Volume= 0.832 af
 Outflow = 4.73 cfs @ 12.55 hrs, Volume= 0.618 af, Atten= 47%, Lag= 18.7 min
 Discarded = 0.60 cfs @ 12.55 hrs, Volume= 0.382 af
 Primary = 4.13 cfs @ 12.55 hrs, Volume= 0.235 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 139.27' @ 12.55 hrs Surf.Area= 8,526 sf Storage= 14,417 cf

Plug-Flow detention time= 135.1 min calculated for 0.618 af (74% of inflow)
 Center-of-Mass det. time= 74.2 min (873.8 - 799.7)

Volume	Invert	Avail.Storage	Storage Description
#1	136.00'	21,509 cf	44.00'W x 30.00'L x 4.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	139.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	136.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.60 cfs @ 12.55 hrs HW=139.27' (Free Discharge)
 ↑2=Exfiltration (Controls 0.60 cfs)

Primary OutFlow Max=4.10 cfs @ 12.55 hrs HW=139.27' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 4.10 cfs @ 1.27 fps)

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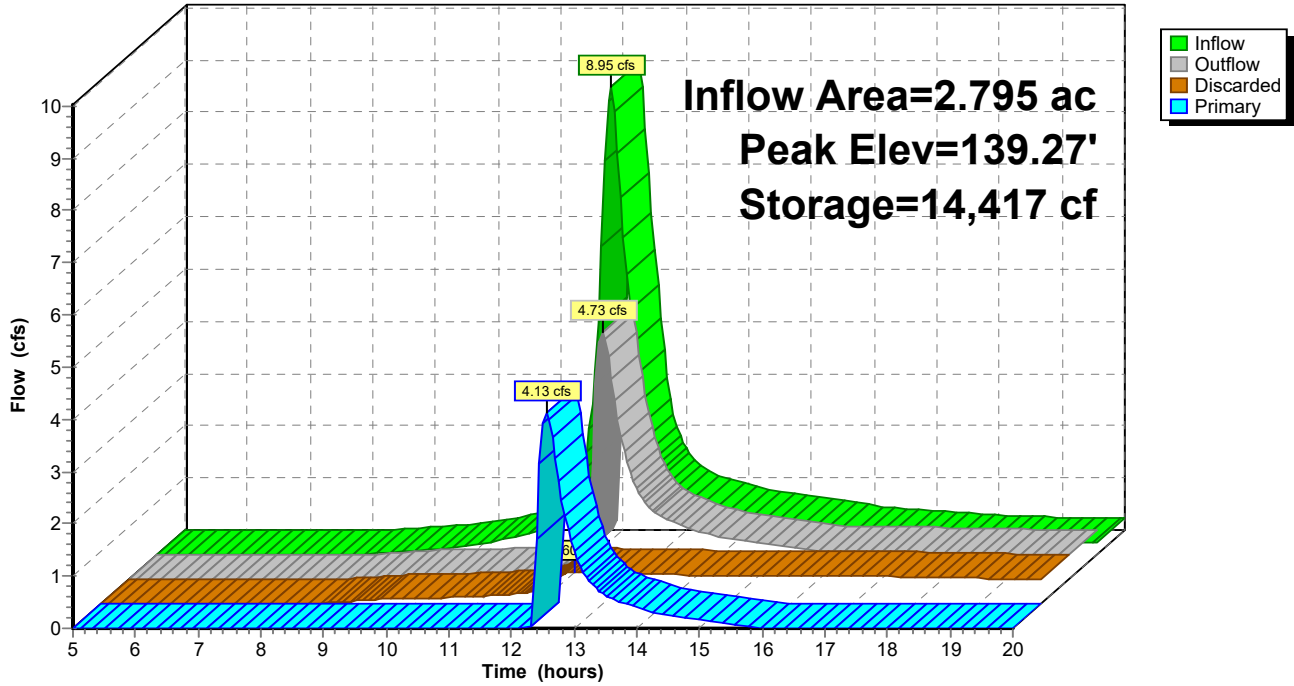
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Pond 24P: Sediment Trap

Hydrograph



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Summary for Pond 25P: Sediment Trap

Inflow Area = 12.168 ac, 0.00% Impervious, Inflow Depth > 3.54" for 50 year event
 Inflow = 25.13 cfs @ 12.63 hrs, Volume= 3.585 af
 Outflow = 5.58 cfs @ 13.87 hrs, Volume= 1.945 af, Atten= 78%, Lag= 73.9 min
 Discarded = 1.92 cfs @ 13.87 hrs, Volume= 1.400 af
 Primary = 3.66 cfs @ 13.87 hrs, Volume= 0.545 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.75' @ 13.87 hrs Surf.Area= 26,610 sf Storage= 83,357 cf

Plug-Flow detention time= 168.0 min calculated for 1.945 af (54% of inflow)
 Center-of-Mass det. time= 90.1 min (912.1 - 822.0)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	118,500 cf	60.00'W x 300.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.92 cfs @ 13.87 hrs HW=166.75' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.92 cfs)

Primary OutFlow Max=3.66 cfs @ 13.87 hrs HW=166.75' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 3.66 cfs @ 1.21 fps)

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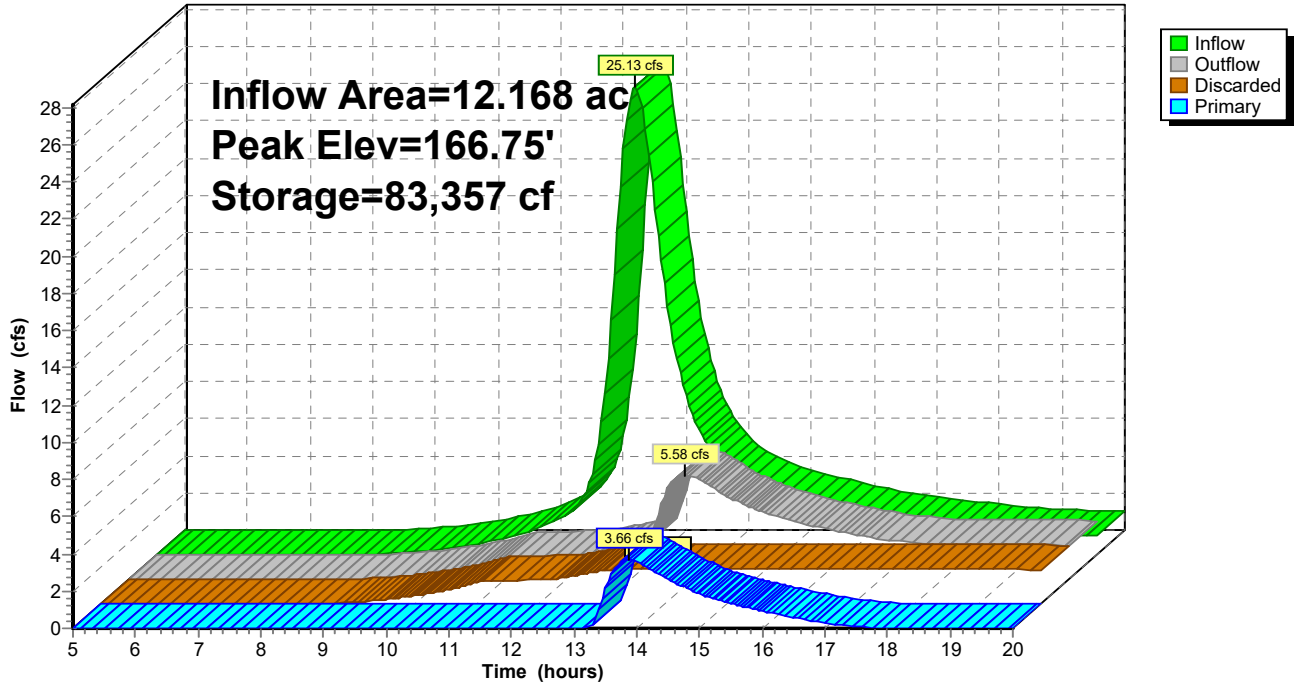
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Pond 25P: Sediment Trap

Hydrograph



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Summary for Pond 27P: Sediment Trap

Inflow Area = 2.191 ac, 0.00% Impervious, Inflow Depth > 3.16" for 50 year event
 Inflow = 5.69 cfs @ 12.31 hrs, Volume= 0.577 af
 Outflow = 4.43 cfs @ 12.50 hrs, Volume= 0.429 af, Atten= 22%, Lag= 11.6 min
 Discarded = 0.24 cfs @ 12.50 hrs, Volume= 0.169 af
 Primary = 4.19 cfs @ 12.50 hrs, Volume= 0.260 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 168.35' @ 12.50 hrs Surf.Area= 3,364 sf Storage= 7,885 cf

Plug-Flow detention time= 102.3 min calculated for 0.429 af (74% of inflow)
 Center-of-Mass det. time= 41.3 min (851.3 - 810.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	165.00'	10,198 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
165.00	1,448	0	0	1,448
166.00	1,953	1,694	1,694	1,974
168.00	3,133	5,040	6,734	3,206
169.00	3,807	3,465	10,198	3,911

Device	Routing	Invert	Outlet Devices
#1	Primary	168.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	165.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.24 cfs @ 12.50 hrs HW=168.35' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.24 cfs)

Primary OutFlow Max=4.18 cfs @ 12.50 hrs HW=168.35' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 4.18 cfs @ 1.47 fps)

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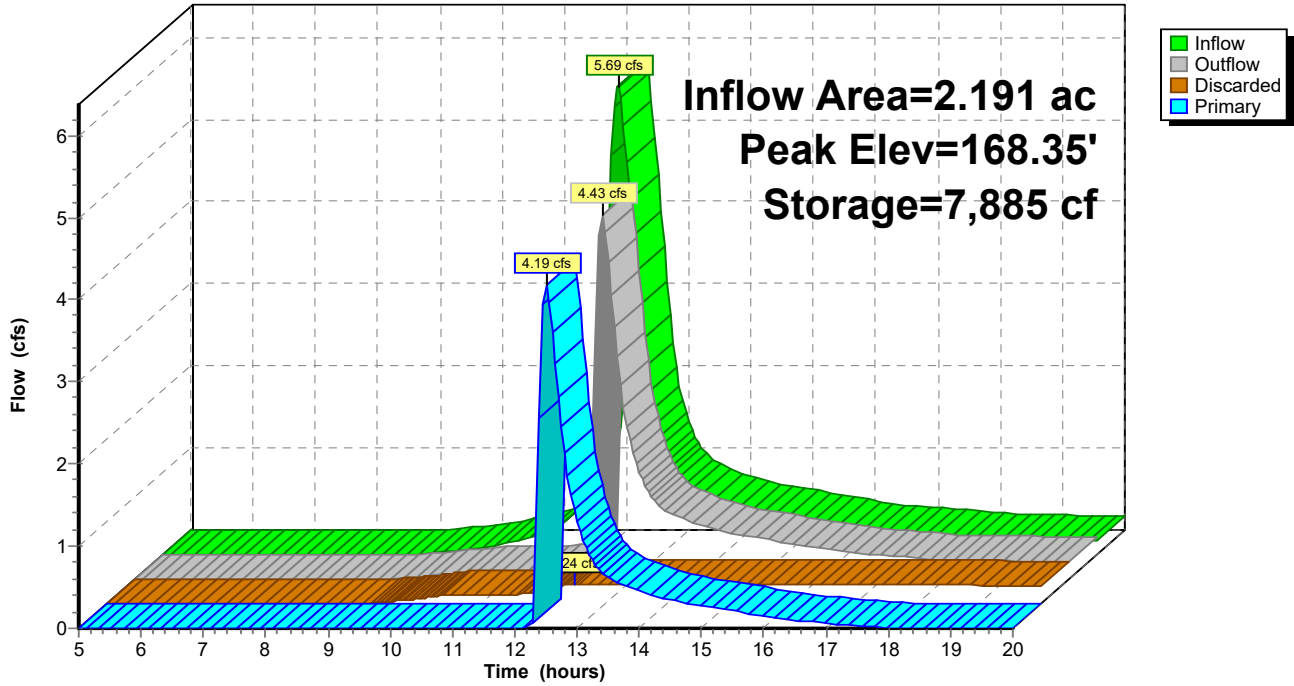
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Pond 27P: Sediment Trap

Hydrograph



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Summary for Pond 28P: Kettle Hole

Inflow Area = 7.361 ac, 0.00% Impervious, Inflow Depth > 2.11" for 50 year event
 Inflow = 13.87 cfs @ 12.24 hrs, Volume= 1.297 af
 Outflow = 0.70 cfs @ 17.19 hrs, Volume= 0.436 af, Atten= 95%, Lag= 296.7 min
 Discarded = 0.70 cfs @ 17.19 hrs, Volume= 0.436 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 154.33' @ 17.19 hrs Surf.Area= 19,860 sf Storage= 39,079 cf

Plug-Flow detention time= 241.6 min calculated for 0.434 af (33% of inflow)
 Center-of-Mass det. time= 145.6 min (970.6 - 825.0)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	703,547 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	1,301	0	0	1,301
152.00	7,637	8,060	8,060	7,652
154.00	17,812	24,741	32,802	17,857
156.00	31,769	48,913	81,714	31,858
158.00	44,943	76,332	158,046	45,104
160.00	56,203	100,936	258,983	56,476
162.00	68,079	124,092	383,075	68,483
164.00	79,954	147,874	530,949	80,513
166.00	92,803	172,598	703,547	93,530

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.70 cfs @ 17.19 hrs HW=154.33' (Free Discharge)

↑1=Exfiltration (Controls 0.70 cfs)

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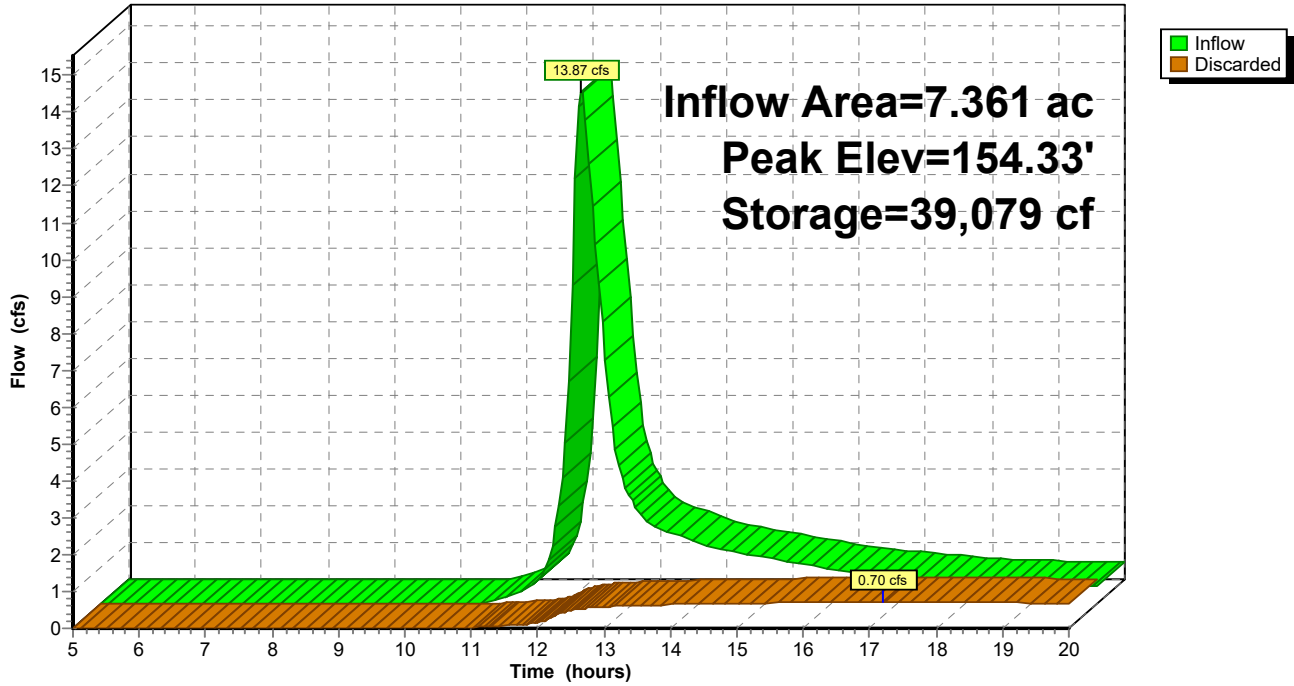
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Pond 28P: Kettle Hole

Hydrograph



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Summary for Pond 29P: Kettle Hole

Inflow Area = 1.626 ac, 0.00% Impervious, Inflow Depth > 0.60" for 50 year event
 Inflow = 0.55 cfs @ 12.26 hrs, Volume= 0.082 af
 Outflow = 0.07 cfs @ 17.35 hrs, Volume= 0.041 af, Atten= 88%, Lag= 305.7 min
 Discarded = 0.07 cfs @ 17.35 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.37' @ 17.35 hrs Surf.Area= 1,922 sf Storage= 1,874 cf

Plug-Flow detention time= 210.1 min calculated for 0.041 af (50% of inflow)
 Center-of-Mass det. time= 102.1 min (975.9 - 873.8)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	140,344 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	883	0	0	883
148.00	2,535	3,276	3,276	2,559
150.00	4,534	6,973	10,249	4,601
152.00	6,834	11,290	21,539	6,962
154.00	10,301	17,017	38,555	10,490
156.00	14,424	24,610	63,165	14,687
158.00	19,416	33,717	96,882	19,763
160.00	24,132	43,463	140,344	24,593

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.07 cfs @ 17.35 hrs HW=147.37' (Free Discharge)
 ↑1=Exfiltration (Controls 0.07 cfs)

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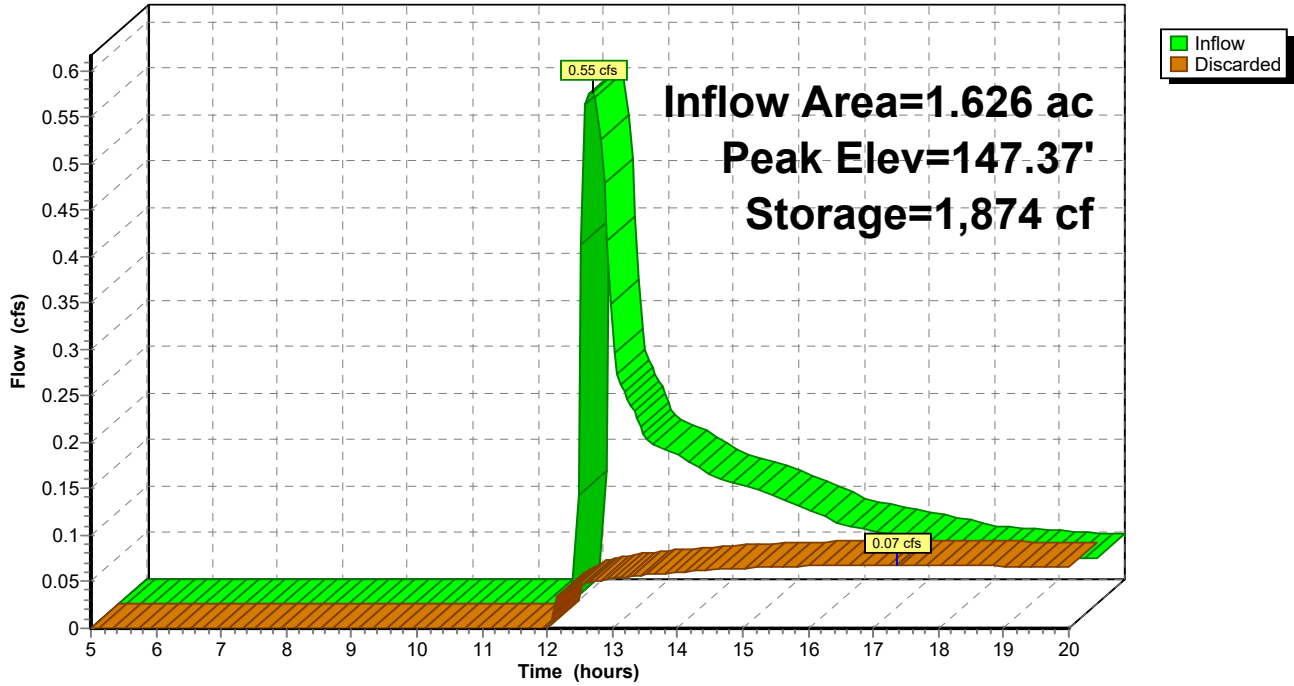
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Pond 29P: Kettle Hole

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Summary for Pond 30P: Farm Depression

Inflow Area = 3.911 ac, 0.00% Impervious, Inflow Depth > 3.79" for 50 year event
Inflow = 15.56 cfs @ 12.16 hrs, Volume= 1.234 af
Outflow = 2.19 cfs @ 12.91 hrs, Volume= 1.181 af, Atten= 86%, Lag= 44.9 min
Discarded = 2.19 cfs @ 12.91 hrs, Volume= 1.181 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 170.71' @ 12.91 hrs Surf.Area= 31,404 sf Storage= 24,082 cf

Plug-Flow detention time= 128.6 min calculated for 1.181 af (96% of inflow)
Center-of-Mass det. time= 112.8 min (904.0 - 791.2)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	177,312 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	0	0	0	0
170.00	19,015	6,338	6,338	19,017
172.00	61,742	76,681	83,019	61,766
173.00	131,151	94,293	177,312	131,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	169.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.19 cfs @ 12.91 hrs HW=170.71' (Free Discharge)
↑1=Exfiltration (Controls 2.19 cfs)

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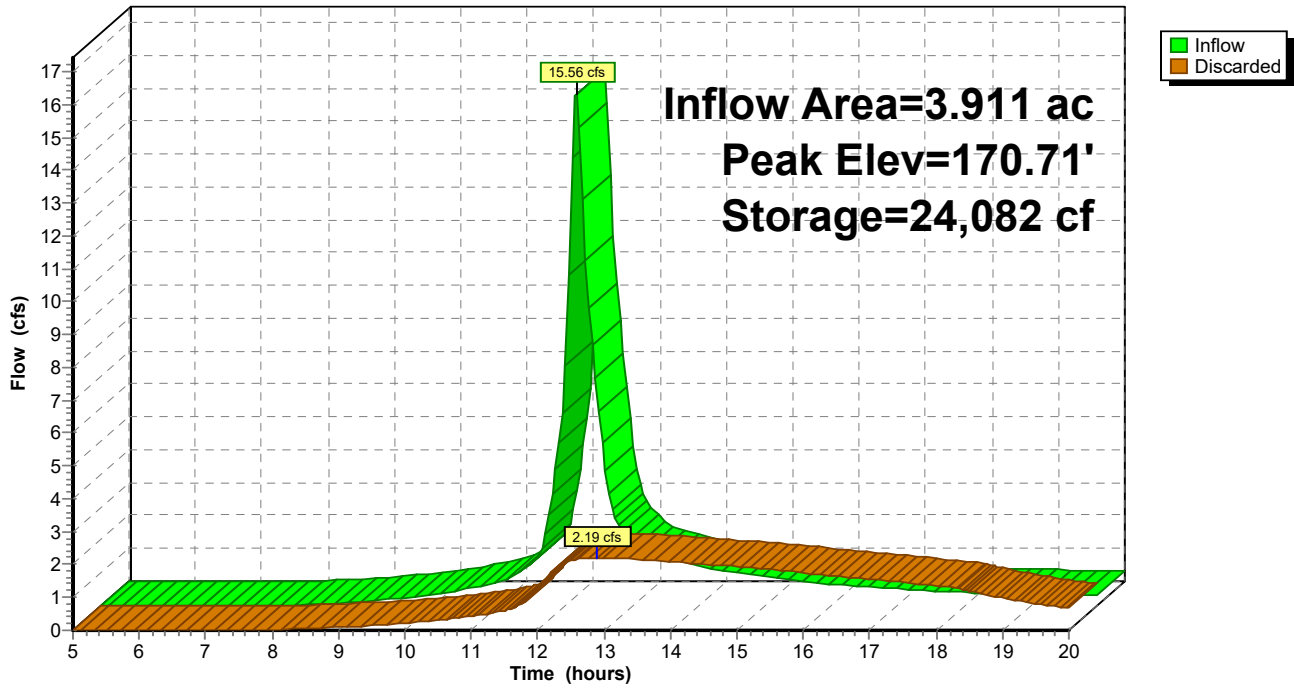
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Pond 30P: Farm Depression

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Summary for Pond 31P: Kettle Hole

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 0.81" for 50 year event
 Inflow = 2.20 cfs @ 12.16 hrs, Volume= 0.245 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.63' @ 20.00 hrs Surf.Area= 8,480 sf Storage= 10,635 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	580,458 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
144.00	435	0	0
146.00	5,720	6,155	6,155
148.00	14,467	20,187	26,342
150.00	23,981	38,448	64,790
152.00	31,477	55,458	120,248
154.00	37,463	68,940	189,188
156.00	43,468	80,931	270,119
158.00	49,047	92,515	362,634
160.00	54,411	103,458	466,092
162.00	59,955	114,366	580,458

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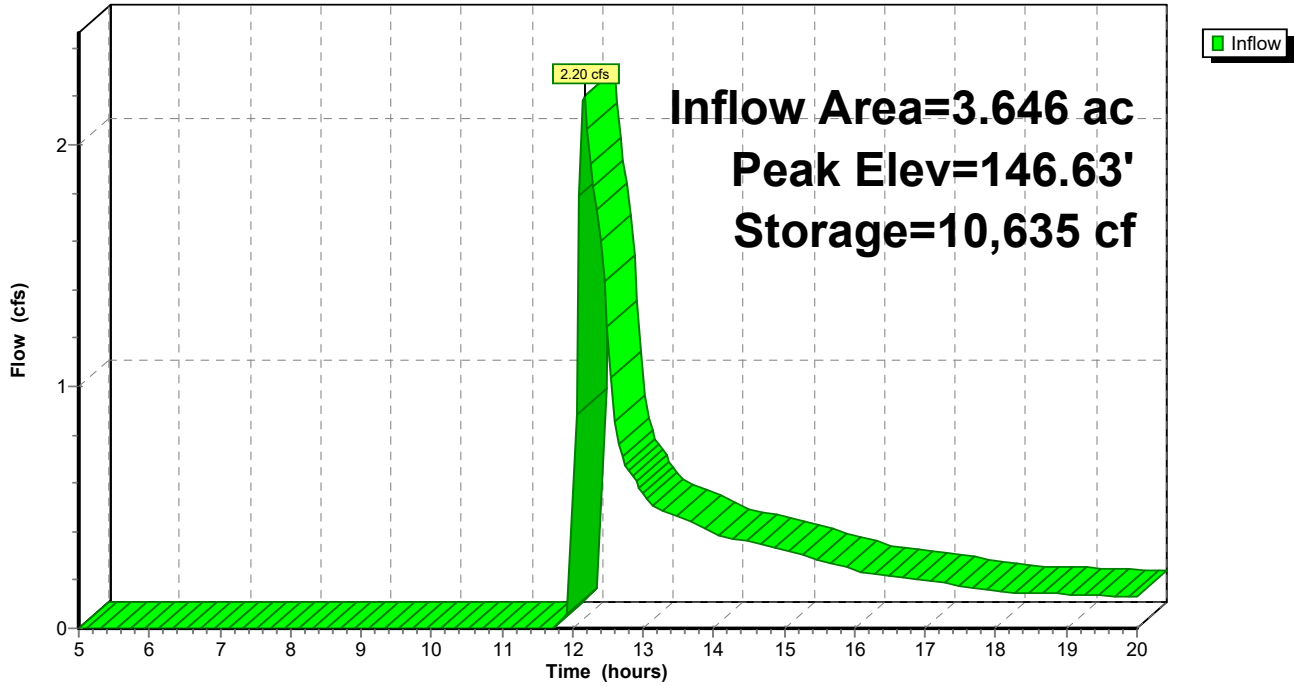
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Pond 31P: Kettle Hole

Hydrograph



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Summary for Pond 33P: Sediment Trap

Inflow Area = 14.255 ac, 0.00% Impervious, Inflow Depth > 2.79" for 50 year event
 Inflow = 57.31 cfs @ 12.01 hrs, Volume= 3.315 af
 Outflow = 3.66 cfs @ 13.86 hrs, Volume= 2.417 af, Atten= 94%, Lag= 111.2 min
 Discarded = 3.66 cfs @ 13.86 hrs, Volume= 2.417 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.40' @ 13.86 hrs Surf.Area= 31,048 sf Storage= 72,084 cf

Plug-Flow detention time= 194.1 min calculated for 2.409 af (73% of inflow)
 Center-of-Mass det. time= 128.8 min (928.9 - 800.1)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	91,856 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
150.00	12,664	0	0 12,664
152.00	22,508	34,703	34,703 22,552
154.00	35,109	57,152	91,856 35,210

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	153.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=3.66 cfs @ 13.86 hrs HW=153.40' (Free Discharge)

↑1=**Exfiltration** (Controls 3.66 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=150.00' (Free Discharge)

↑2=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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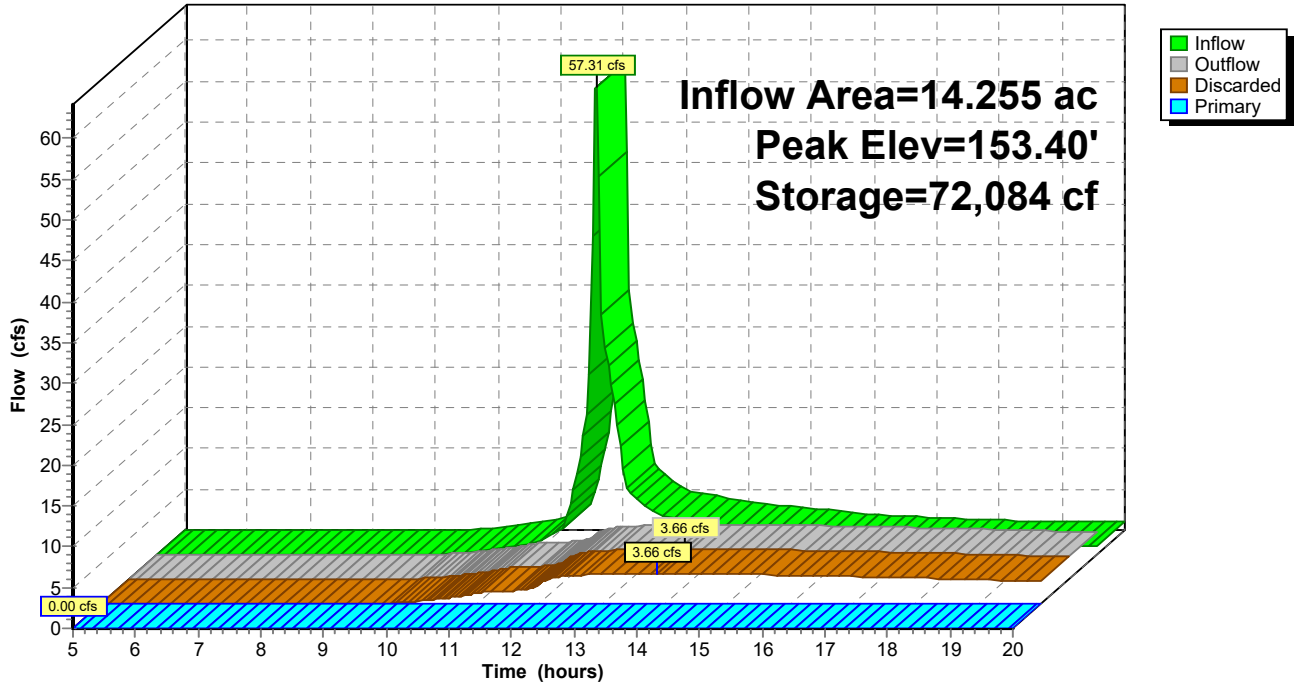
Type III 24-hr 50 year Rainfall=7.02"

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Pond 33P: Sediment Trap

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 34P: Sediment Trap

Inflow Area = 7.888 ac, 0.00% Impervious, Inflow Depth > 3.26" for 50 year event
 Inflow = 20.06 cfs @ 12.35 hrs, Volume= 2.141 af
 Outflow = 2.41 cfs @ 14.06 hrs, Volume= 1.538 af, Atten= 88%, Lag= 102.6 min
 Discarded = 2.41 cfs @ 14.06 hrs, Volume= 1.538 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.64' @ 14.06 hrs Surf.Area= 20,397 sf Storage= 47,507 cf

Plug-Flow detention time= 186.6 min calculated for 1.533 af (72% of inflow)
 Center-of-Mass det. time= 123.5 min (934.0 - 810.5)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	217,098 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
152.00	6,737	0	0	6,737
154.00	13,501	19,850	19,850	13,537
156.00	22,082	35,233	55,083	22,170
158.00	161,266	162,015	217,098	161,367

Device	Routing	Invert	Outlet Devices
#1	Discarded	152.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.41 cfs @ 14.06 hrs HW=155.64' (Free Discharge)
 ↑1=Exfiltration (Controls 2.41 cfs)

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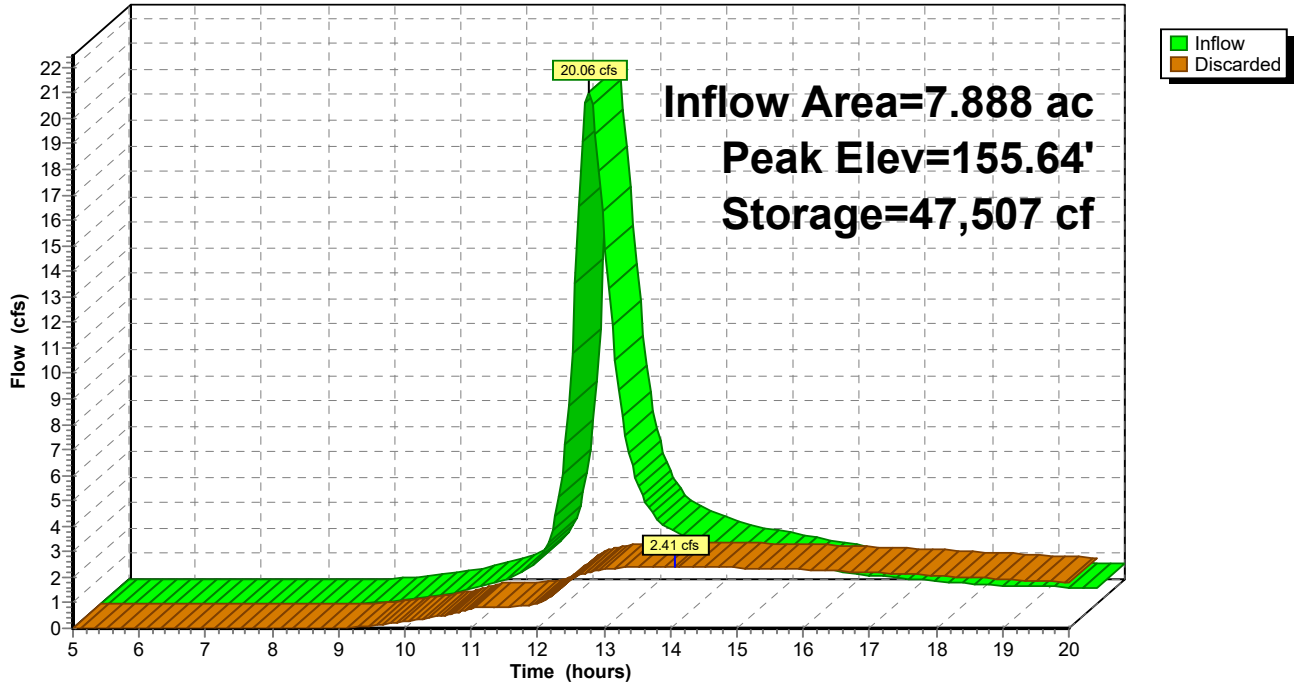
Type III 24-hr 50 year Rainfall=7.02"

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Pond 34P: Sediment Trap

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 35P: Sediment Trap

Inflow Area = 7.628 ac, 0.00% Impervious, Inflow Depth > 2.02" for 50 year event
 Inflow = 11.77 cfs @ 12.36 hrs, Volume= 1.282 af
 Outflow = 1.05 cfs @ 15.78 hrs, Volume= 0.676 af, Atten= 91%, Lag= 205.5 min
 Discarded = 1.05 cfs @ 15.78 hrs, Volume= 0.676 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.10' @ 15.78 hrs Surf.Area= 8,675 sf Storage= 31,983 cf

Plug-Flow detention time= 213.3 min calculated for 0.673 af (53% of inflow)
 Center-of-Mass det. time= 127.2 min (959.7 - 832.5)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	123,166 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	4,063	0	0	4,063
152.00	5,754	9,768	9,768	5,825
154.00	7,588	13,300	23,068	7,748
156.00	9,623	17,171	40,239	9,886
158.00	86,000	82,927	123,166	86,276

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.05 cfs @ 15.78 hrs HW=155.10' (Free Discharge)

↑**1=Exfiltration** (Controls 1.05 cfs)

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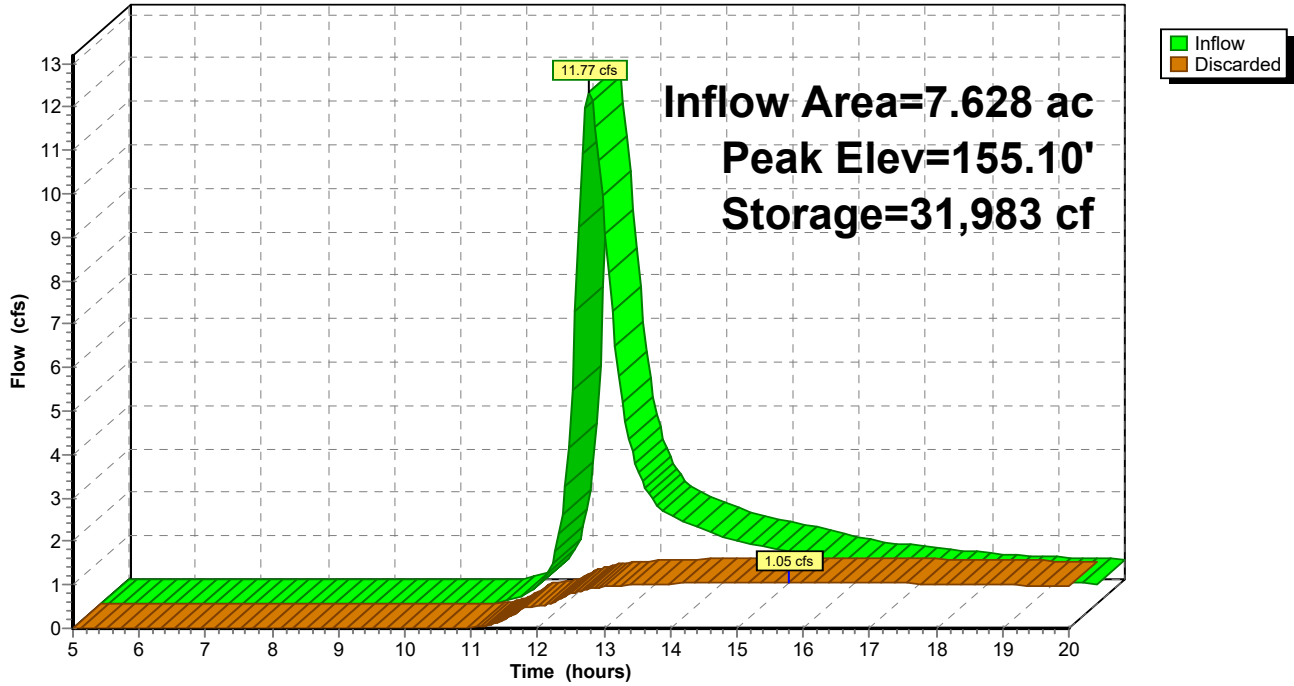
Type III 24-hr 50 year Rainfall=7.02"

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Pond 35P: Sediment Trap

Hydrograph



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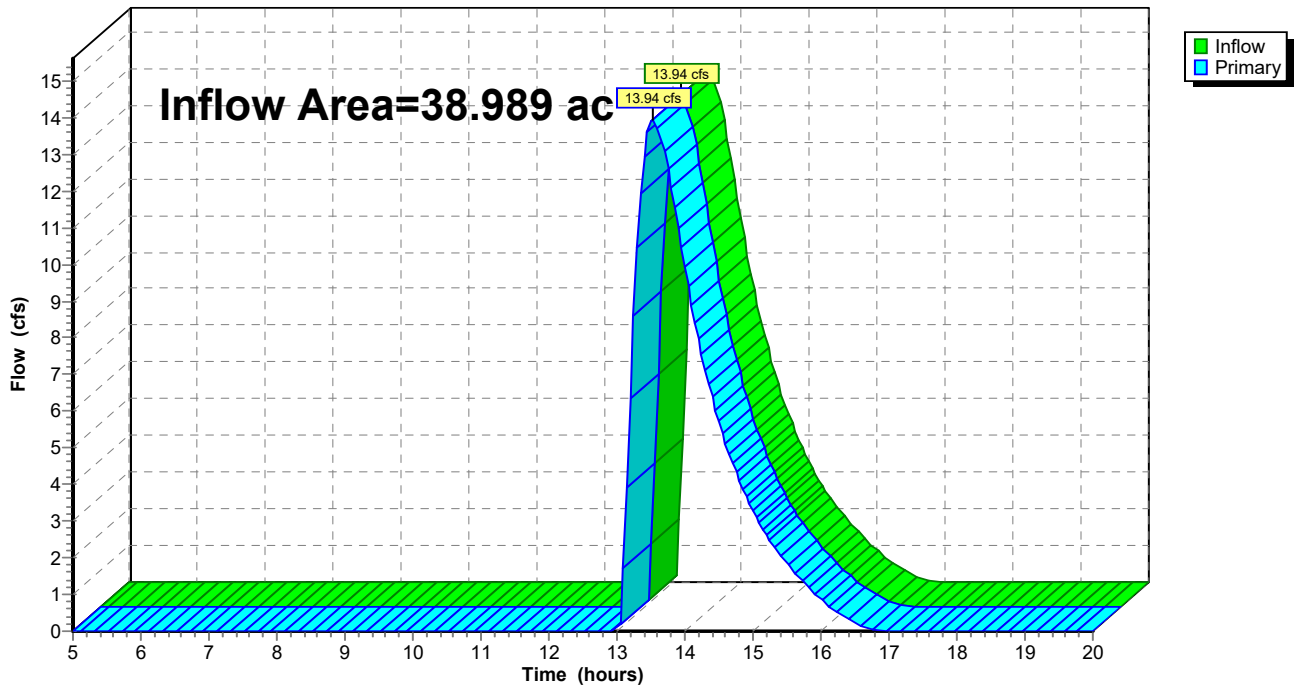
Summary for Link DP19: (new Link)

Inflow Area = 38.989 ac, 0.08% Impervious, Inflow Depth = 0.46" for 50 year event
Inflow = 13.94 cfs @ 13.54 hrs, Volume= 1.509 af
Primary = 13.94 cfs @ 13.54 hrs, Volume= 1.509 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP19: (new Link)

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 1: Subcat 1

Runoff = 3.16 cfs @ 12.12 hrs, Volume= 0.227 af, Depth> 3.15"

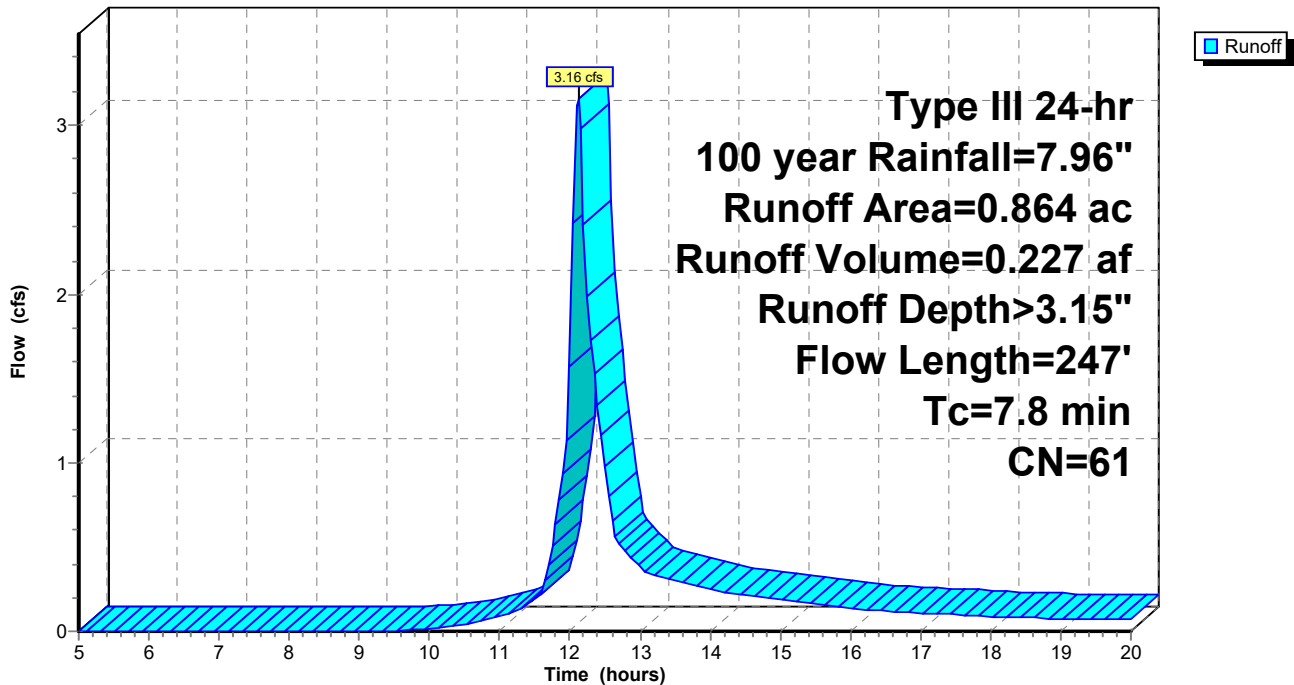
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.257	74	50-75% Grass cover, Fair, HSG B-C
0.063	30	Meadow, non-grazed, HSG A
0.544	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
0.864	61	Weighted Average
0.864		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.1	197	0.0508	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.8	247	Total			

Subcatchment 1: Subcat 1

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 2: Subcat 2

Runoff = 4.98 cfs @ 12.17 hrs, Volume= 0.473 af, Depth> 1.26"

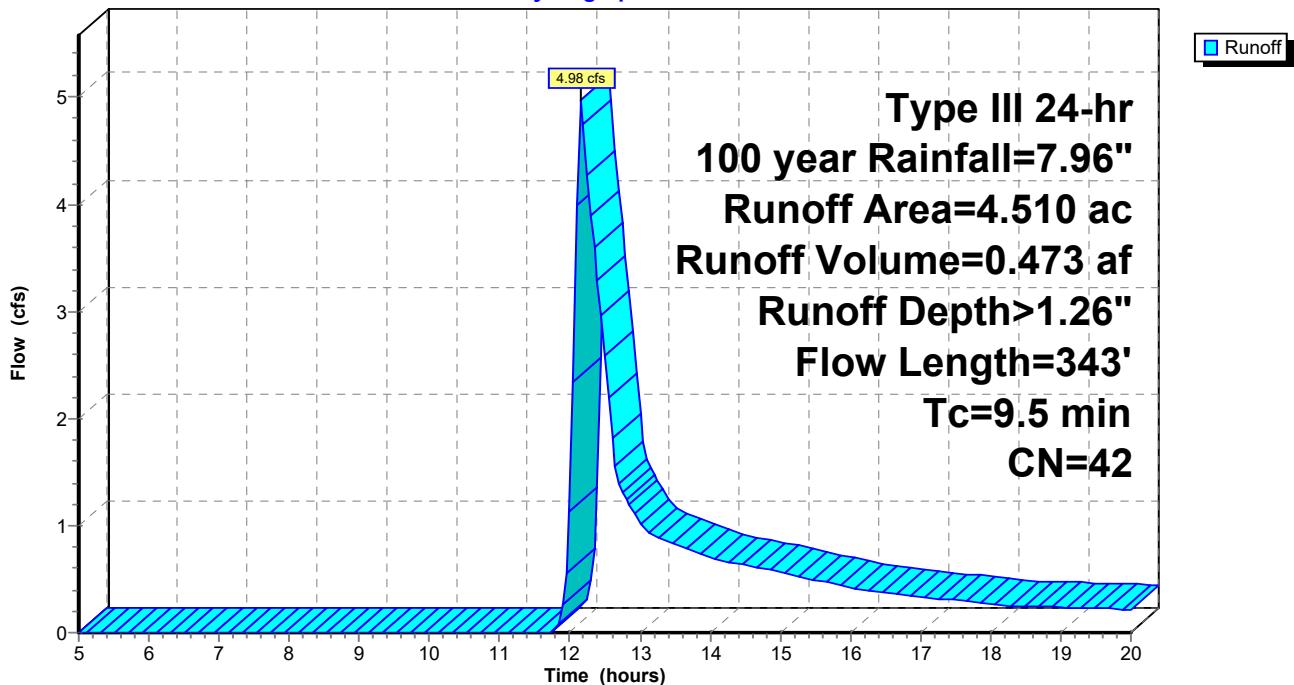
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.853	59	50-75% Grass cover, Fair, HSG A-B
* 0.202	74	50-75% Grass cover, Fair, HSG B-C
1.504	30	Meadow, non-grazed, HSG A
0.309	58	Meadow, non-grazed, HSG B
1.560	36	Woods, Fair, HSG A
0.002	60	Woods, Fair, HSG B
0.080	73	Woods, Fair, HSG C
4.510	42	Weighted Average
4.510		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
3.8	293	0.0343	1.30		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	343	Total			

Subcatchment 2: Subcat 2

Hydrograph



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Summary for Subcatchment 3: Subcat 3

Runoff = 9.08 cfs @ 12.14 hrs, Volume= 0.691 af, Depth> 3.04"

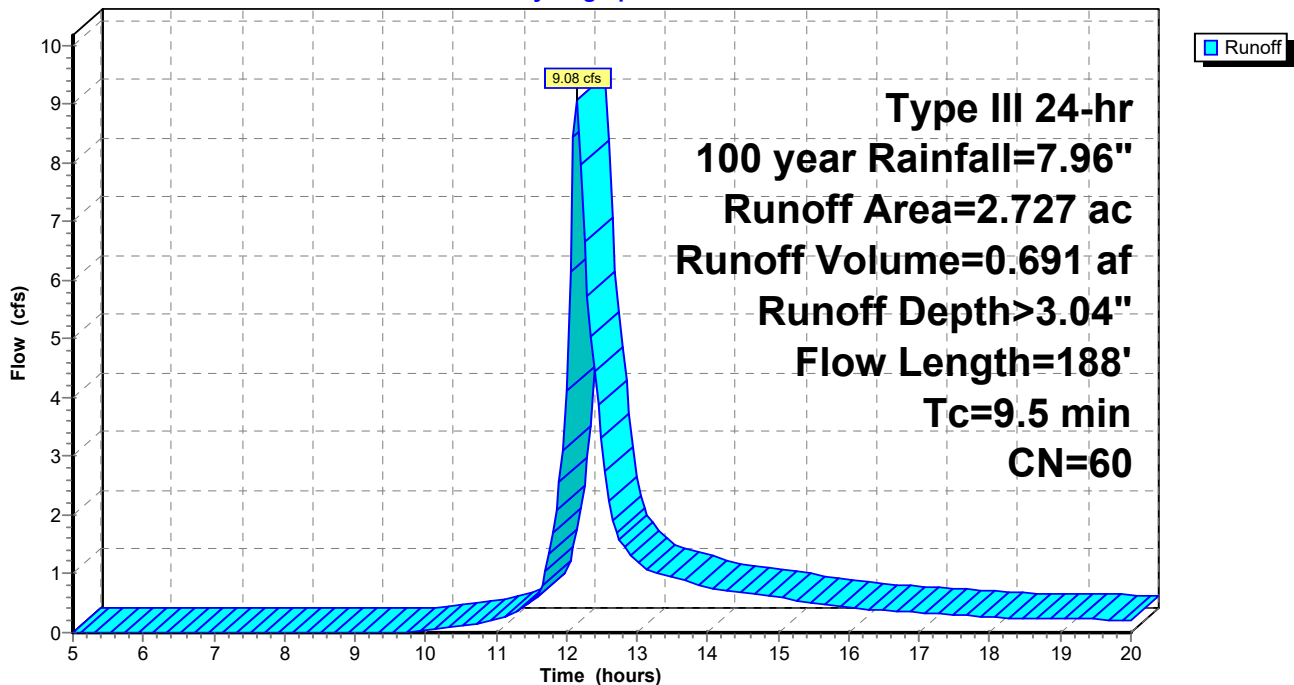
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.206	59	50-75% Grass cover, Fair, HSG A-B
* 0.893	74	50-75% Grass cover, Fair, HSG B-C
0.376	30	Meadow, non-grazed, HSG A
0.252	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
2.727	60	Weighted Average
2.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.3	66	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	72	0.0556	1.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	188	Total			

Subcatchment 3: Subcat 3

Hydrograph



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Summary for Subcatchment 4: Subcat 4

Runoff = 13.78 cfs @ 12.16 hrs, Volume= 1.086 af, Depth> 3.58"

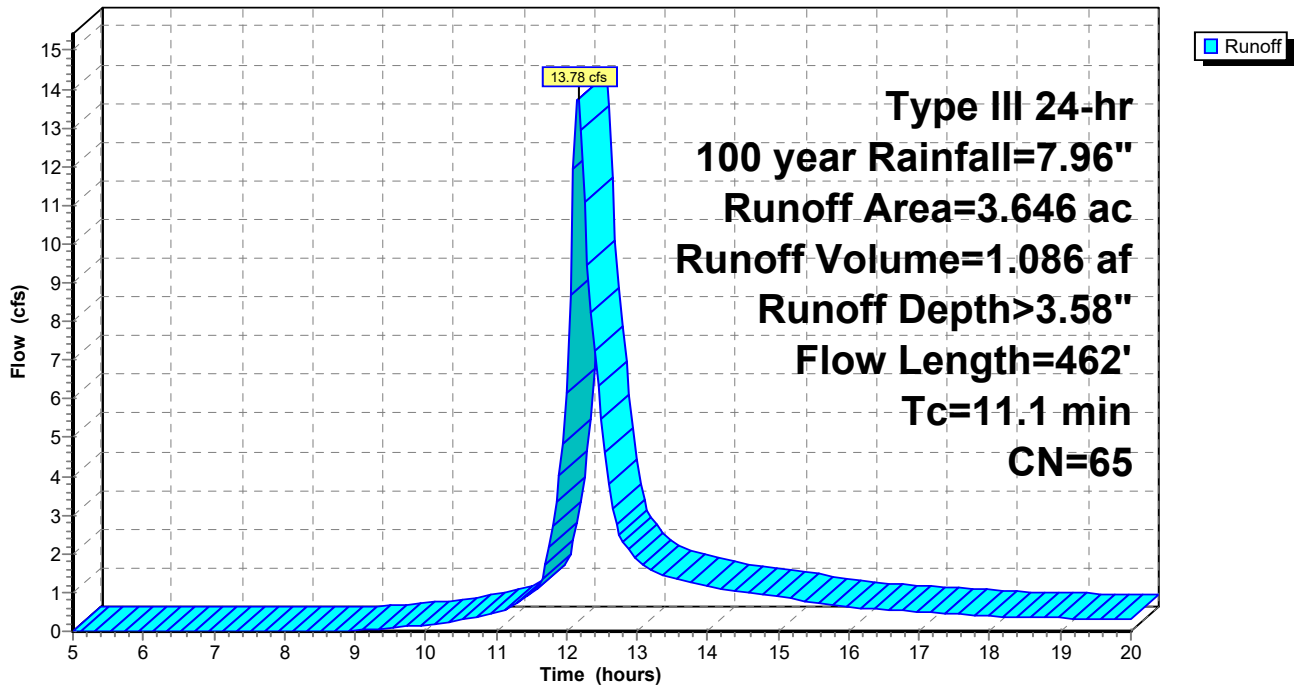
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.058	59	50-75% Grass cover, Fair, HSG A-B
* 2.741	74	50-75% Grass cover, Fair, HSG B-C
0.609	30	Meadow, non-grazed, HSG A
0.238	58	Meadow, non-grazed, HSG B
3.646	65	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	412	0.0243	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	462	Total			

Subcatchment 4: Subcat 4

Hydrograph



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Summary for Subcatchment 5: Subcat 5

Runoff = 29.45 cfs @ 12.34 hrs, Volume= 3.134 af, Depth> 4.33"

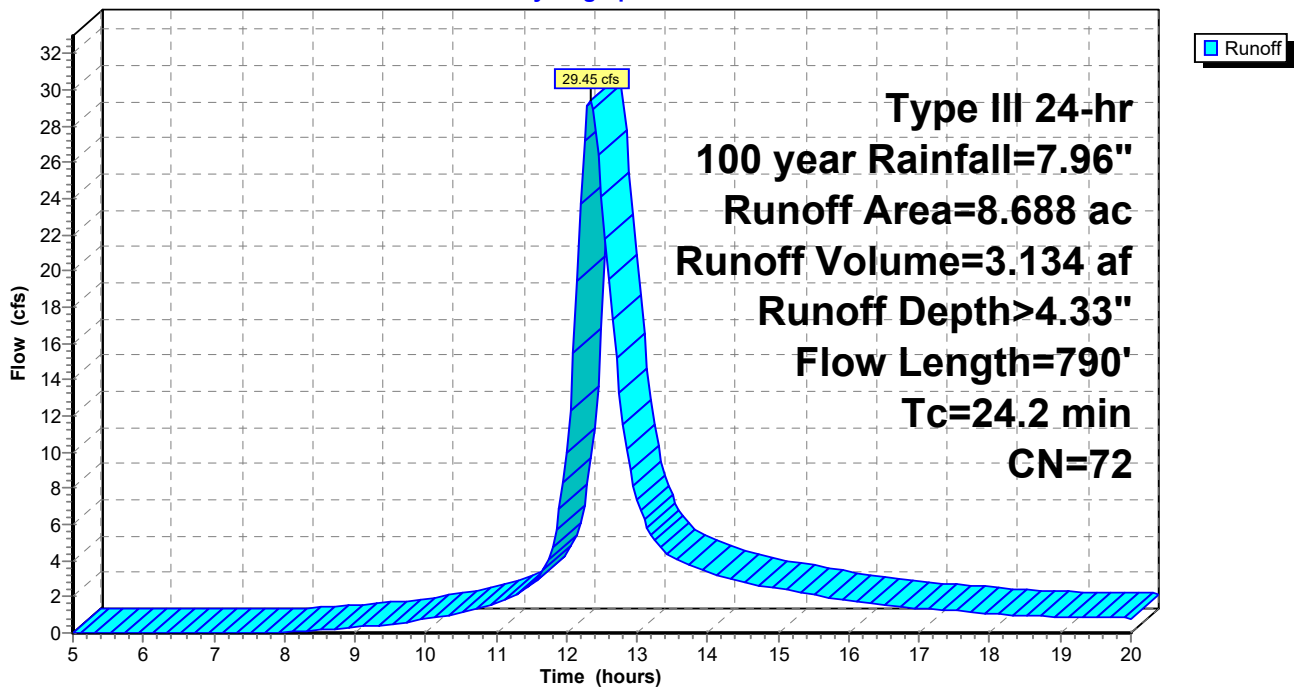
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.053	59	50-75% Grass cover, Fair, HSG A-B
* 8.049	74	50-75% Grass cover, Fair, HSG B-C
0.384	30	Meadow, non-grazed, HSG A
0.202	58	Meadow, non-grazed, HSG B
8.688	72	Weighted Average
8.688		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
13.7	583	0.0103	0.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	157	0.0159	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.2	790	Total			

Subcatchment 5: Subcat 5

Hydrograph



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Summary for Subcatchment 6: Subcat 6

Runoff = 23.96 cfs @ 12.22 hrs, Volume= 2.161 af, Depth> 4.01"

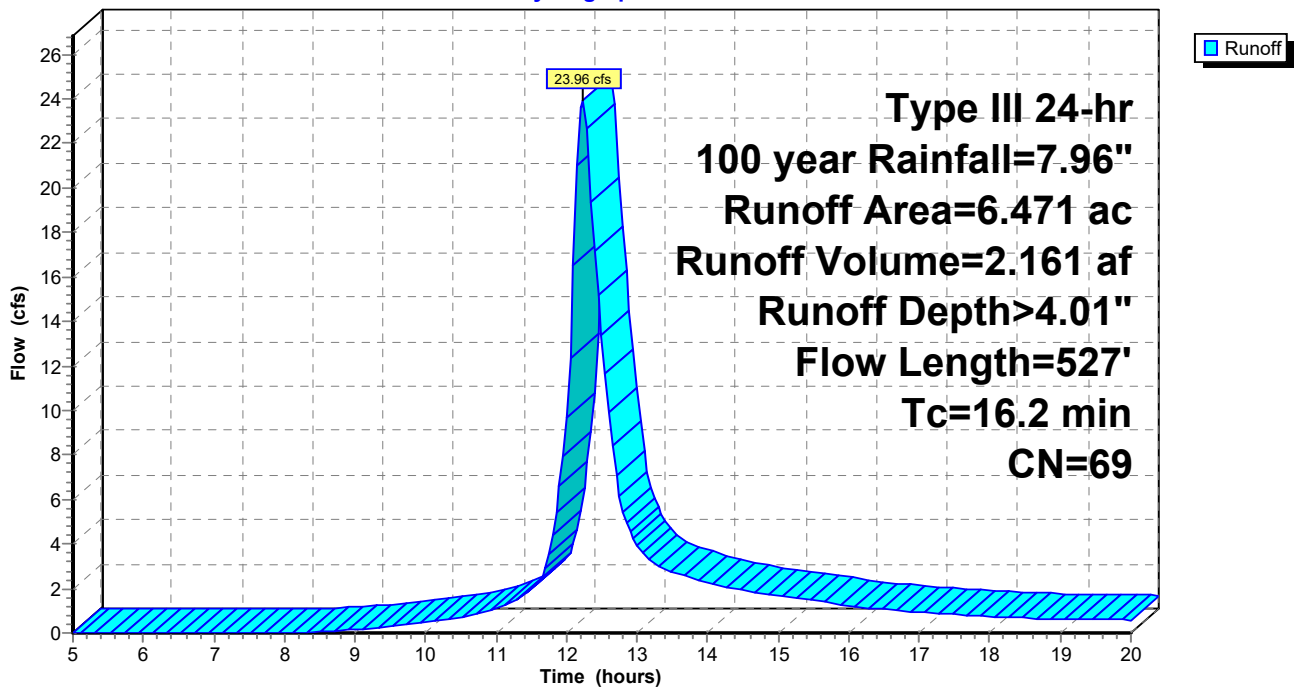
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.012	59	50-75% Grass cover, Fair, HSG A-B
* 5.334	74	50-75% Grass cover, Fair, HSG B-C
0.535	30	Meadow, non-grazed, HSG A
0.590	58	Meadow, non-grazed, HSG B
6.471	69	Weighted Average
6.471		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.2	415	0.0145	0.84		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0806	1.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
16.2	527	Total			

Subcatchment 6: Subcat 6

Hydrograph



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Summary for Subcatchment 7: Subcat 7

Runoff = 42.83 cfs @ 12.67 hrs, Volume= 6.412 af, Depth> 4.51"

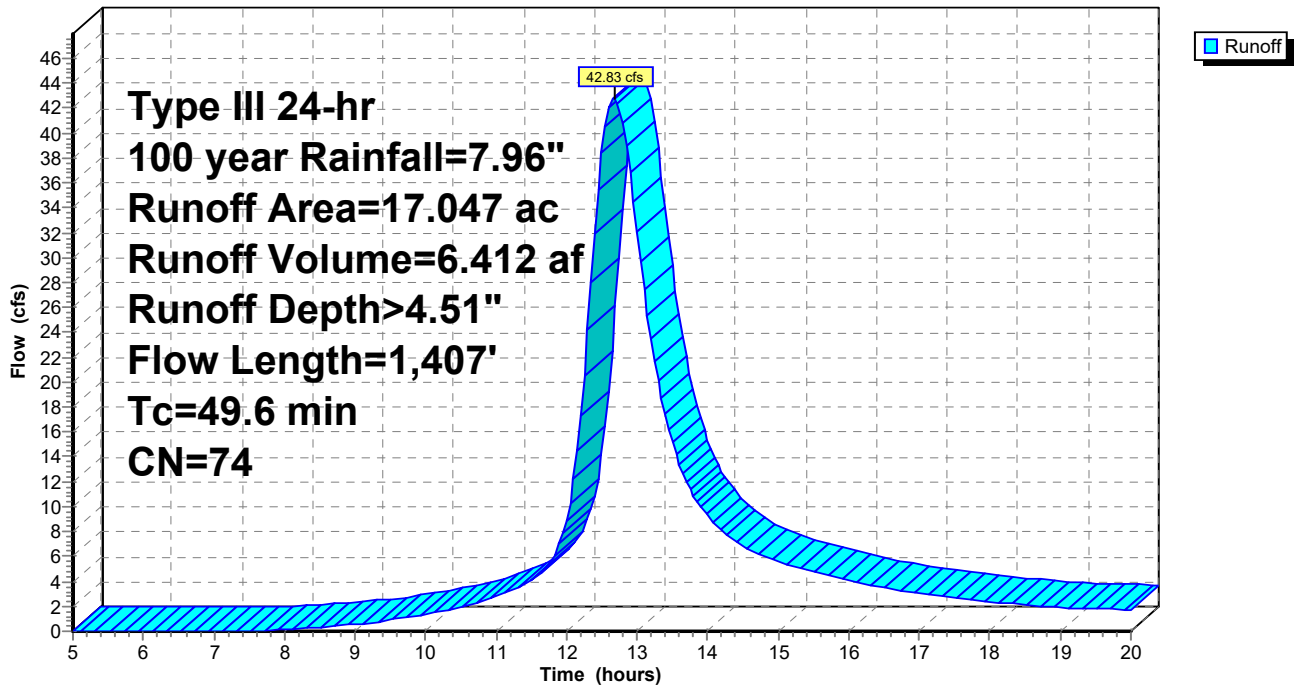
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 16.871	74	50-75% Grass cover, Fair, HSG B-C
0.176	58	Meadow, non-grazed, HSG B
17.047	74	Weighted Average
17.047		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
42.1	1,357	0.0059	0.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
49.6	1,407	Total			

Subcatchment 7: Subcat 7

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Summary for Subcatchment 8: Subcat 8

Runoff = 12.73 cfs @ 12.16 hrs, Volume= 1.018 af, Depth> 3.90"

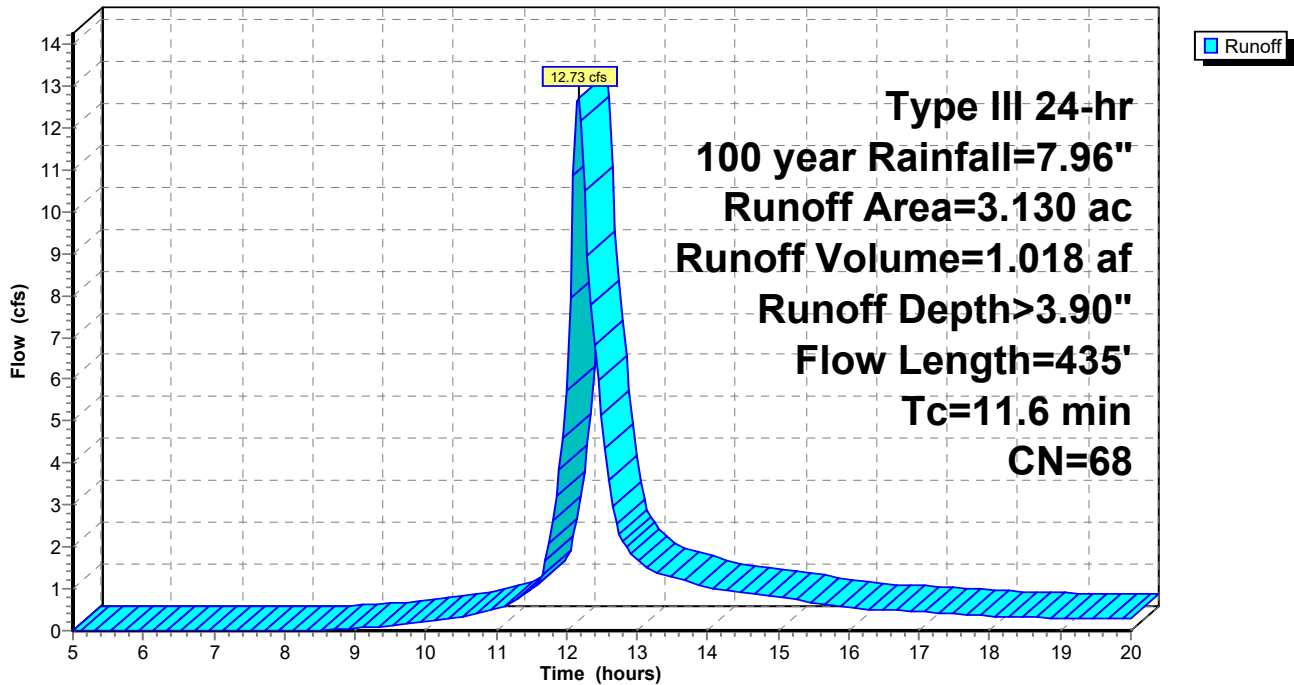
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.885	74	50-75% Grass cover, Fair, HSG B-C
0.011	30	Meadow, non-grazed, HSG A
1.234	58	Meadow, non-grazed, HSG B
3.130	68	Weighted Average
3.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.2	164	0.0305	1.22		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.9	221	0.1538	1.96		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
11.6	435	Total			

Subcatchment 8: Subcat 8

Hydrograph



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Summary for Subcatchment 10: Subcat 10

Runoff = 7.38 cfs @ 12.20 hrs, Volume= 0.637 af, Depth> 2.41"

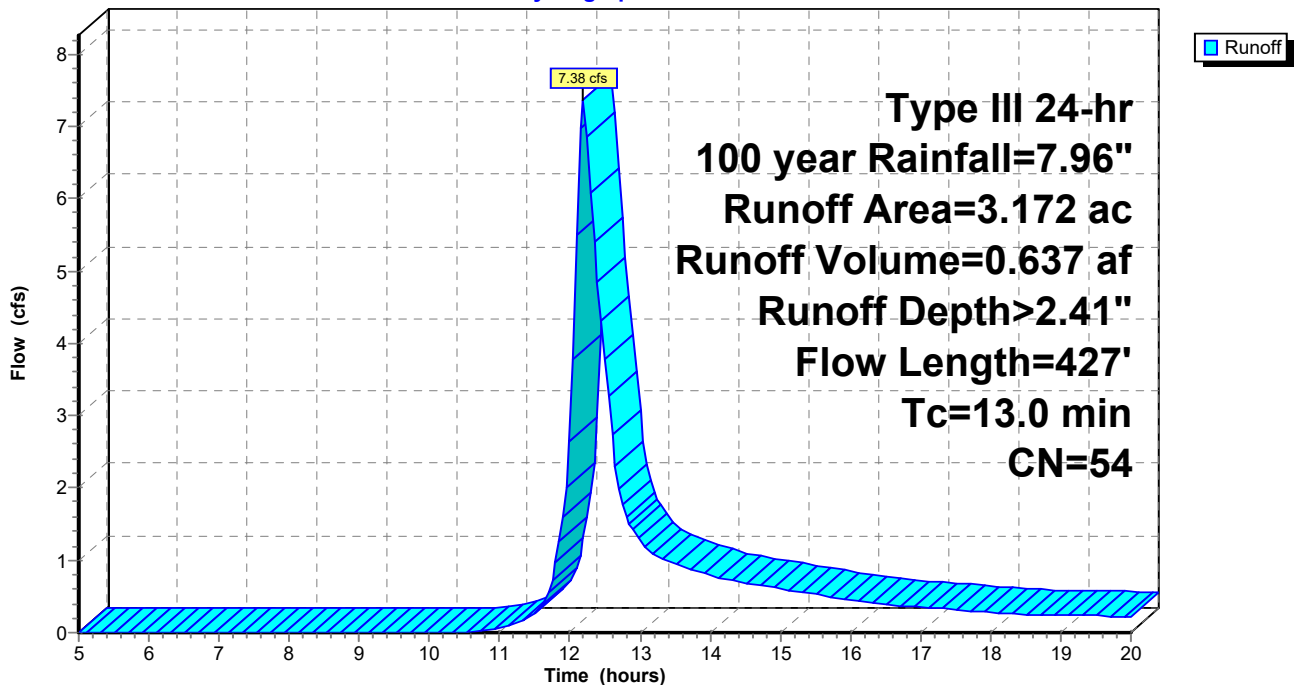
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.525	74	50-75% Grass cover, Fair, HSG B-C
0.635	30	Meadow, non-grazed, HSG A
1.717	58	Meadow, non-grazed, HSG B
0.226	36	Woods, Fair, HSG A
0.069	60	Woods, Fair, HSG B
3.172	54	Weighted Average
3.172		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	261	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	116	0.1379	1.86		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
13.0	427	Total			

Subcatchment 10: Subcat 10

Hydrograph



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Summary for Subcatchment 11: Subcat 11

Runoff = 11.57 cfs @ 12.24 hrs, Volume= 1.088 af, Depth> 2.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.321	74	50-75% Grass cover, Fair, HSG B-C
0.015	35	Brush, Fair, HSG A
0.515	56	Brush, Fair, HSG B
0.051	30	Meadow, non-grazed, HSG A
1.157	58	Meadow, non-grazed, HSG B
0.037	89	Paved roads w/open ditches, 50% imp, HSG B
2.139	36	Woods, Fair, HSG A
0.427	60	Woods, Fair, HSG B
5.662	53	Weighted Average
5.643		99.67% Pervious Area
0.018		0.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.0	316	0.0158	0.88		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.6	232	0.0862	1.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	598	Total			

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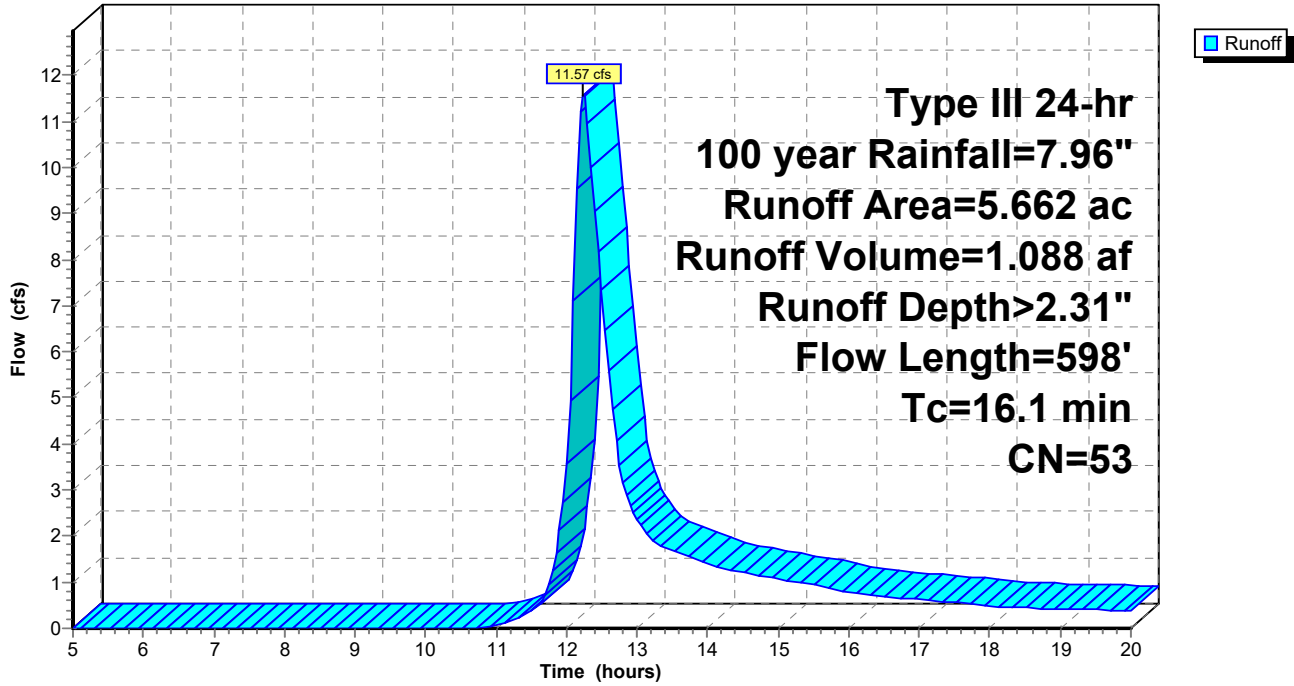
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 11: Subcat 11

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Summary for Subcatchment 11A: Subcat 11A

Runoff = 9.32 cfs @ 12.17 hrs, Volume= 0.823 af, Depth> 1.53"

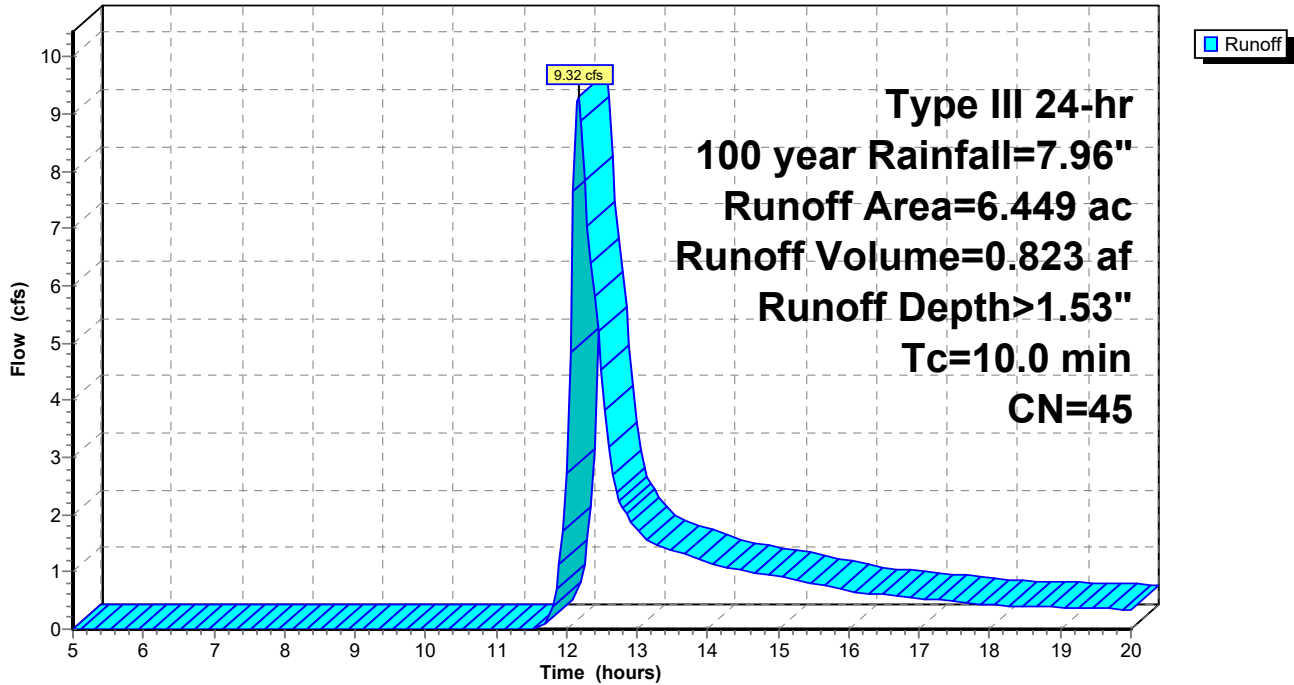
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.874	56	Brush, Fair, HSG B
* 4.133	36	Woods, Fair, HSG A
* 0.428	74	50-75% Grass cover, Fair, HSG B-C
* 1.014	58	Meadow, non-grazed, HSG B
6.449	45	Weighted Average
6.449		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 11A: Subcat 11A

Hydrograph



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Summary for Subcatchment 12: Subcat 12

Runoff = 13.41 cfs @ 12.20 hrs, Volume= 1.160 af, Depth> 4.23"

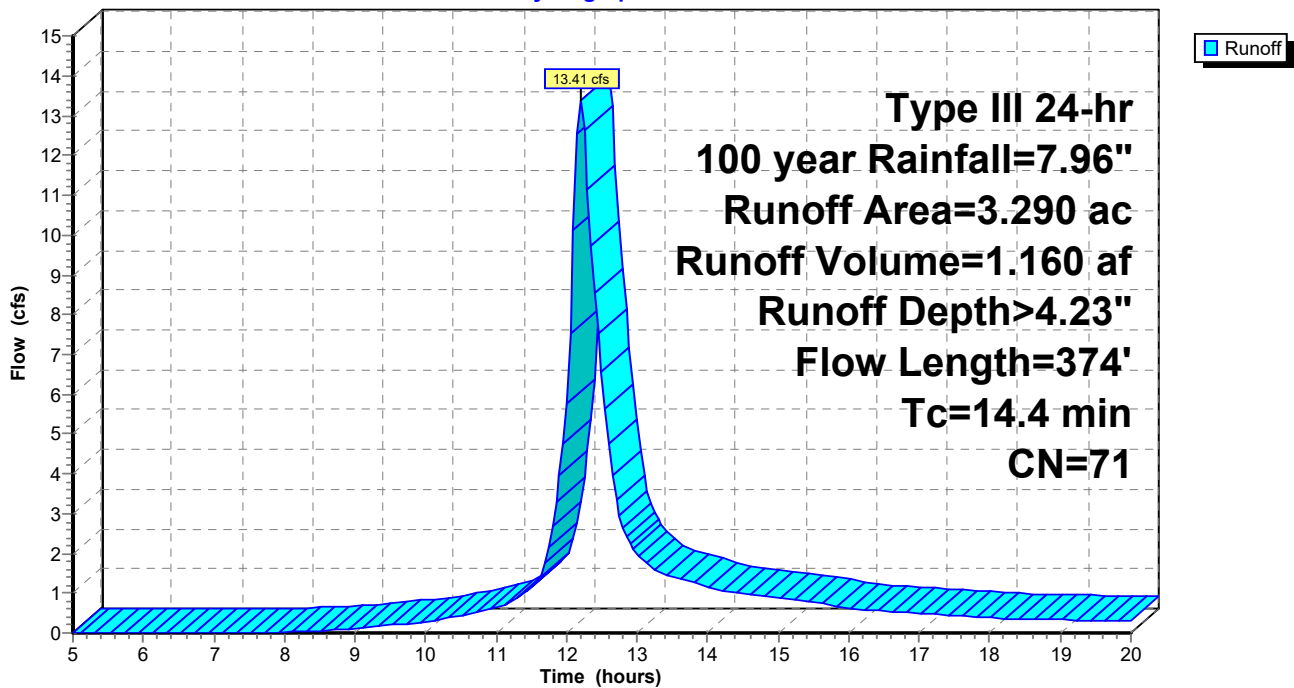
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 2.357	74	50-75% Grass cover, Fair, HSG B-C
0.777	58	Meadow, non-grazed, HSG B
0.156	89	Paved roads w/open ditches, 50% imp, HSG B
3.290	71	Weighted Average
3.212		97.63% Pervious Area
0.078		2.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.7	225	0.0089	0.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	99	0.0404	1.41		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.4	374	Total			

Subcatchment 12: Subcat 12

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 13: Subcat 13

Runoff = 38.30 cfs @ 12.85 hrs, Volume= 6.582 af, Depth> 4.38"

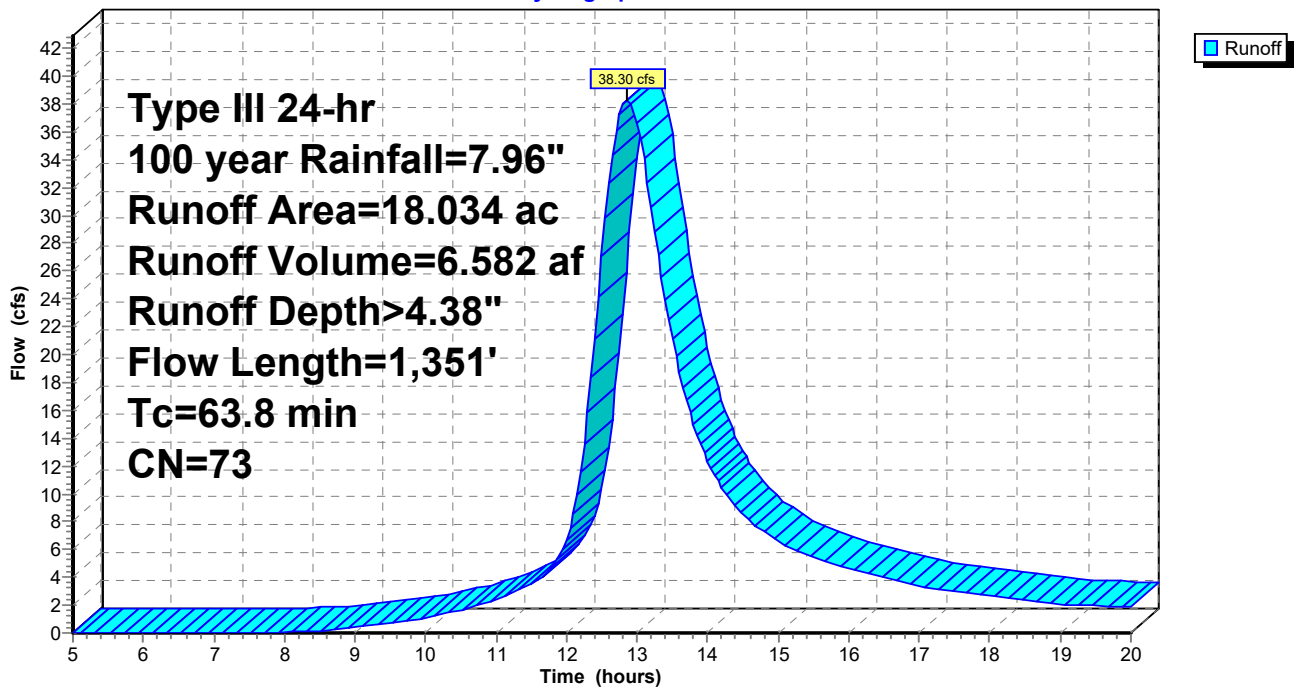
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 16.287	74	50-75% Grass cover, Fair, HSG B-C
1.589	58	Meadow, non-grazed, HSG B
0.158	89	Paved roads w/open ditches, 50% imp, HSG B
18.034	73	Weighted Average
17.955		99.56% Pervious Area
0.079		0.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
34.5	752	0.0027	0.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.8	549	0.0036	0.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
63.8	1,351	Total			

Subcatchment 13: Subcat 13

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 14: Subcat 14

Runoff = 2.19 cfs @ 12.19 hrs, Volume= 0.183 af, Depth> 3.68"

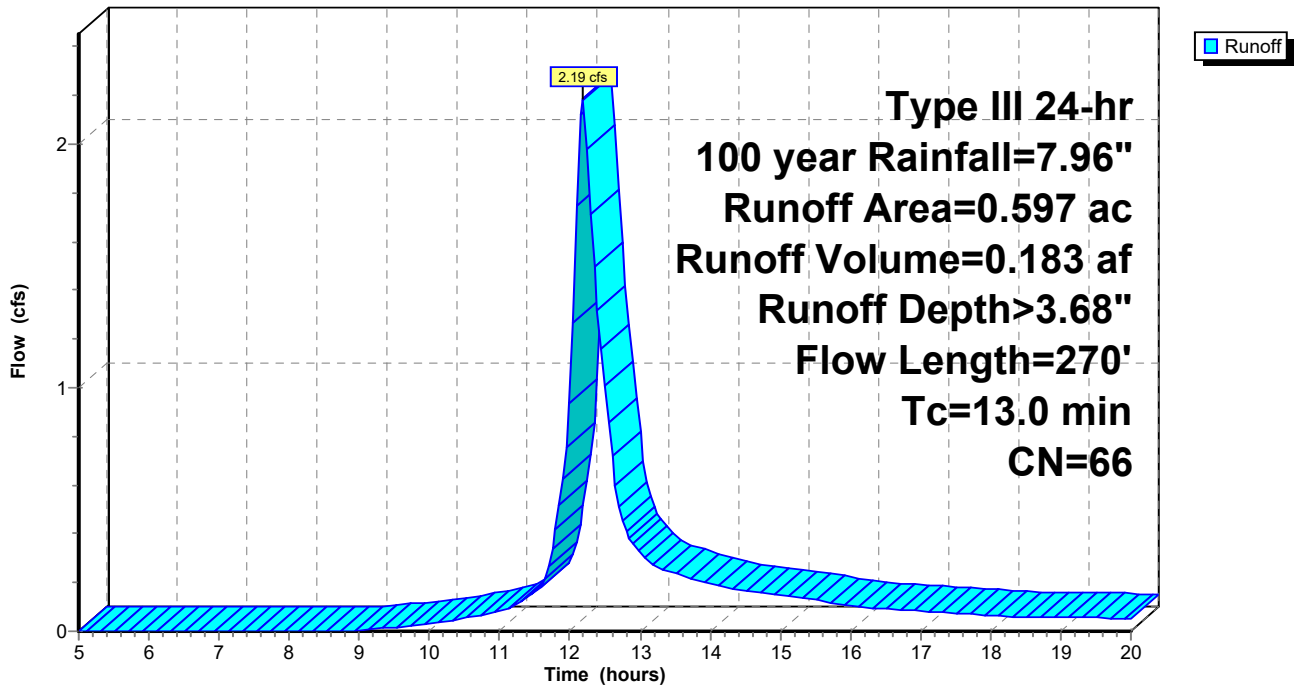
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.297	74	50-75% Grass cover, Fair, HSG B-C
0.300	58	Meadow, non-grazed, HSG B
0.597	66	Weighted Average
0.597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.5	220	0.0091	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.0	270	Total			

Subcatchment 14: Subcat 14

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 15: Subcat 15

Runoff = 8.57 cfs @ 12.30 hrs, Volume= 0.864 af, Depth> 4.11"

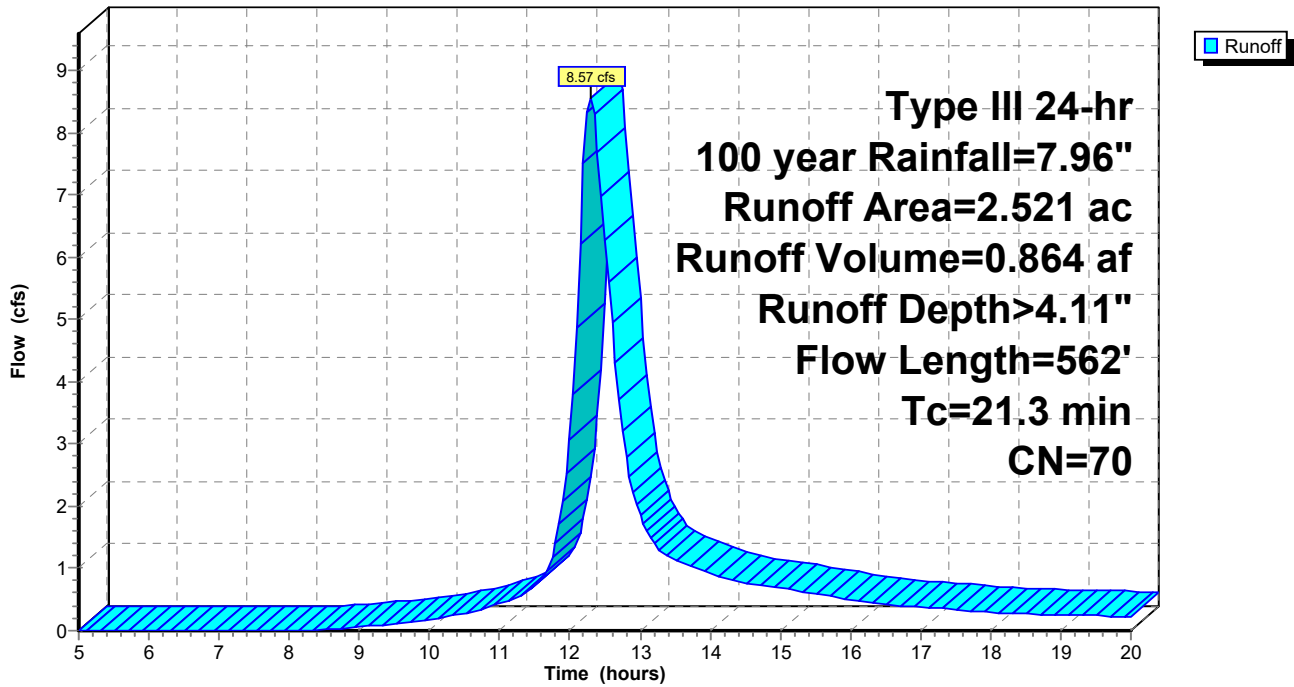
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.028	65	2 acre lots, 12% imp, HSG B
* 1.424	74	50-75% Grass cover, Fair, HSG B-C
0.823	58	Meadow, non-grazed, HSG B
0.246	89	Paved roads w/open ditches, 50% imp, HSG B
2.521	70	Weighted Average
2.395		94.99% Pervious Area
0.126		5.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
13.8	512	0.0078	0.62		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.3	562	Total			

Subcatchment 15: Subcat 15

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 16: Subcat 16

Runoff = 14.33 cfs @ 12.39 hrs, Volume= 1.612 af, Depth> 4.10"

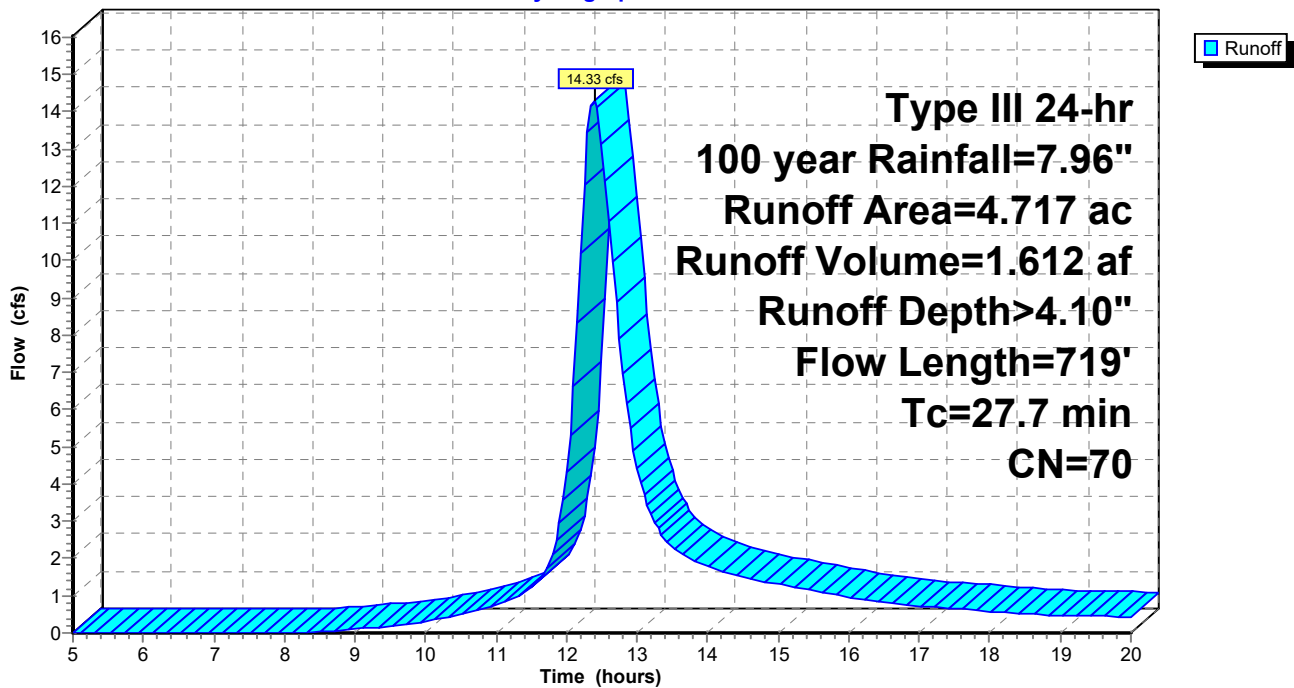
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 3.393	74	50-75% Grass cover, Fair, HSG B-C
1.259	58	Meadow, non-grazed, HSG B
0.065	89	Paved roads w/open ditches, 50% imp, HSG B
4.717	70	Weighted Average
4.684		99.31% Pervious Area
0.032		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.1	390	0.0103	0.71		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.1	279	0.0036	0.42		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
27.7	719	Total			

Subcatchment 16: Subcat 16

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 17: Subcat 17

Runoff = 18.64 cfs @ 12.31 hrs, Volume= 1.926 af, Depth> 4.33"

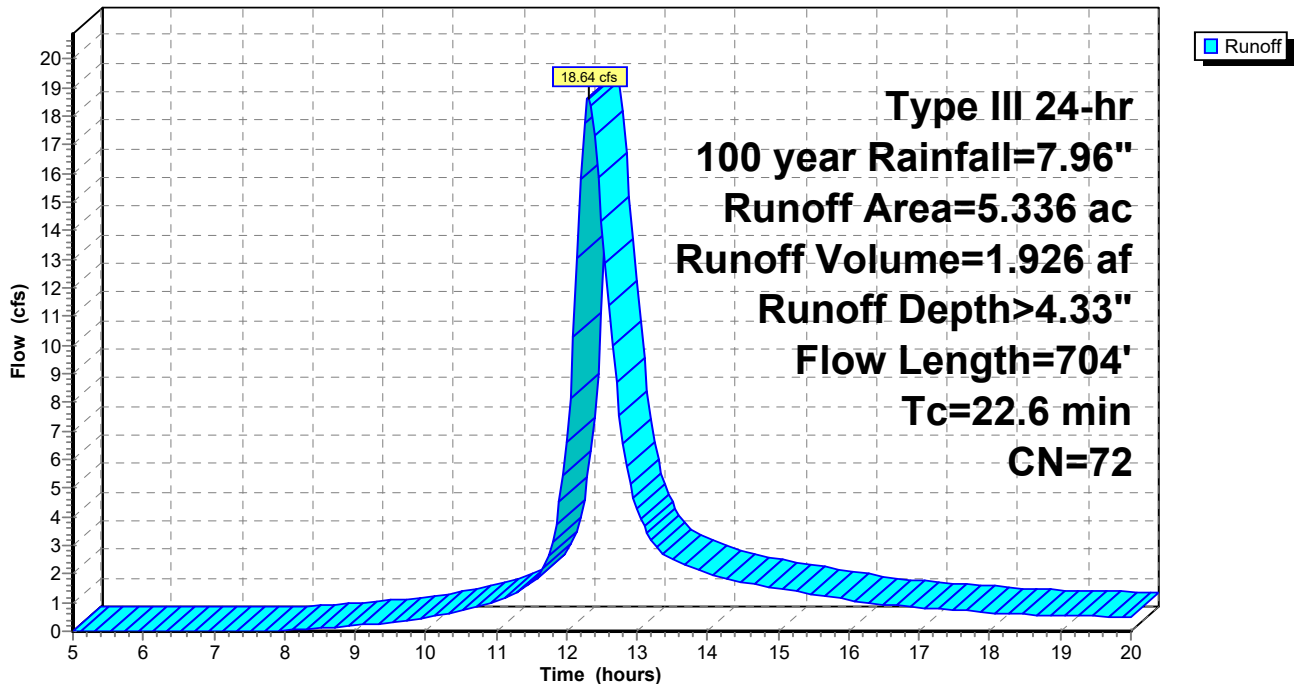
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 4.760	74	50-75% Grass cover, Fair, HSG B-C
0.576	58	Meadow, non-grazed, HSG B
5.336	72	Weighted Average
5.336		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.1	654	0.0107	0.72		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
22.6	704	Total			

Subcatchment 17: Subcat 17

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 18: Subcat 18

Runoff = 6.05 cfs @ 12.34 hrs, Volume= 0.648 af, Depth> 4.44"

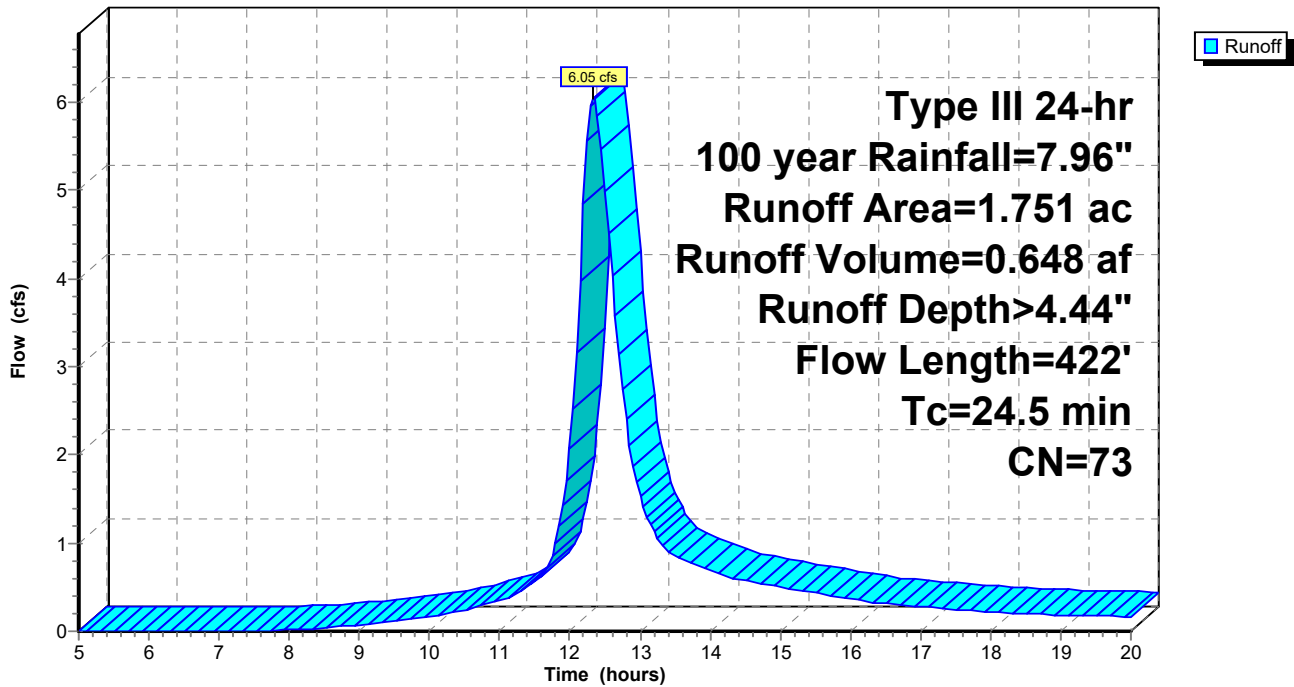
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.649	74	50-75% Grass cover, Fair, HSG B-C
0.102	58	Meadow, non-grazed, HSG B
1.751	73	Weighted Average
1.751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
17.0	372	0.0027	0.36		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.5	422	Total			

Subcatchment 18: Subcat 18

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 19: Subcat 19

Runoff = 52.78 cfs @ 12.63 hrs, Volume= 7.523 af, Depth> 4.19"

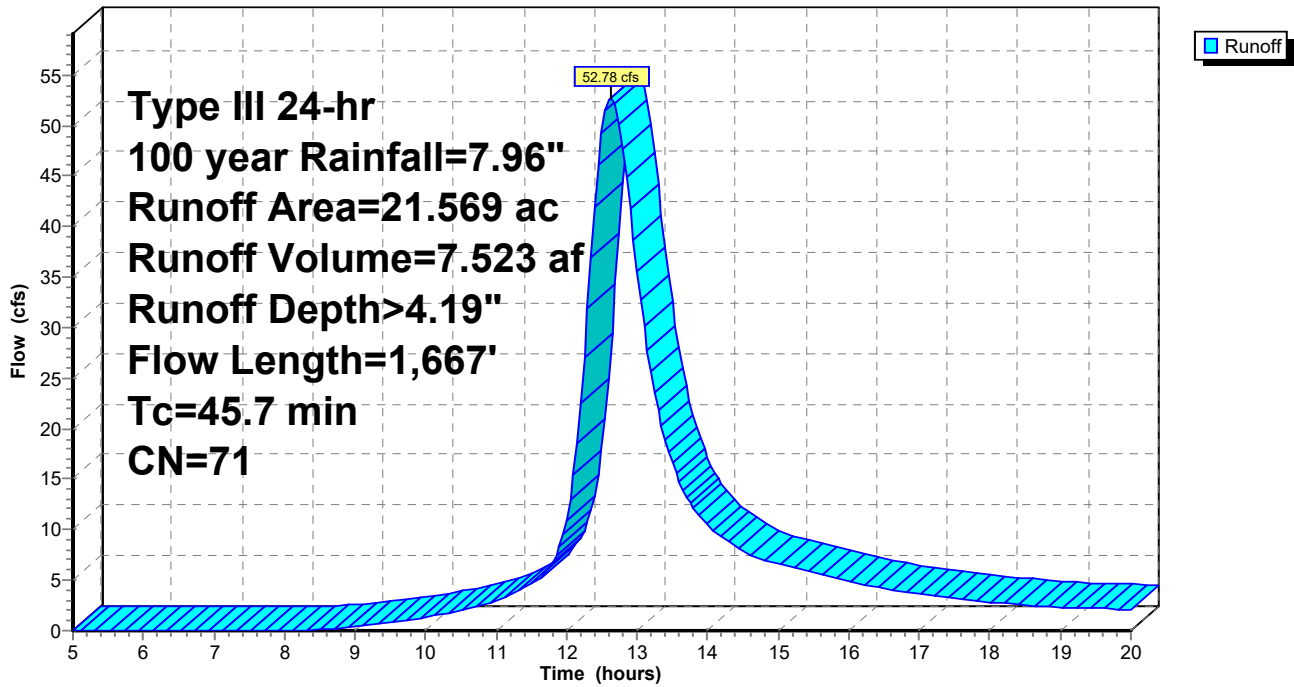
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 18.087	74	50-75% Grass cover, Fair, HSG B-C
0.427	30	Meadow, non-grazed, HSG A
3.055	58	Meadow, non-grazed, HSG B
21.569	71	Weighted Average
21.569		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
30.4	1,090	0.0073	0.60		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.6	527	0.0171	0.92		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
45.7	1,667	Total			

Subcatchment 19: Subcat 19

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 20: Subcat 20

Runoff = 5.58 cfs @ 12.29 hrs, Volume= 0.558 af, Depth> 4.11"

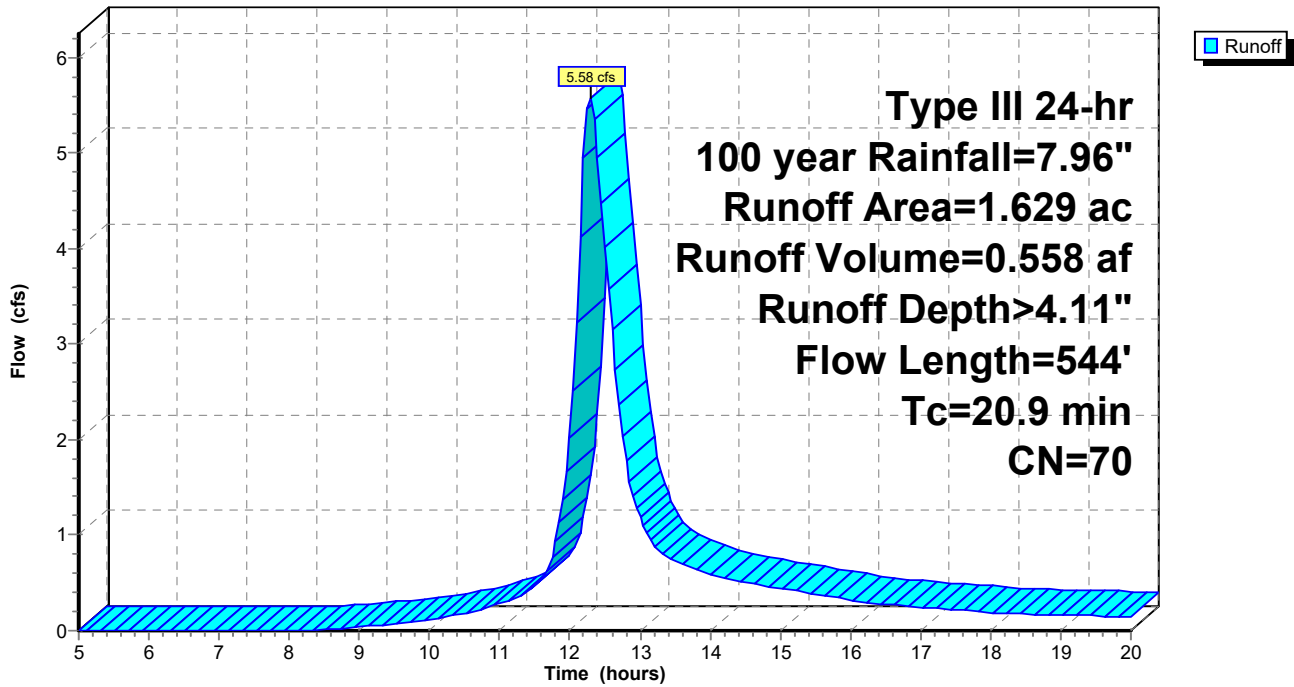
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.199	74	50-75% Grass cover, Fair, HSG B-C
0.002	30	Meadow, non-grazed, HSG A
0.428	58	Meadow, non-grazed, HSG B
1.629	70	Weighted Average
1.629		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.4	251	0.0040	0.44		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.0	243	0.0206	1.00		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.9	544	Total			

Subcatchment 20: Subcat 20

Hydrograph



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Summary for Subcatchment 21: Subcat 21

Runoff = 10.80 cfs @ 12.42 hrs, Volume= 1.252 af, Depth> 3.77"

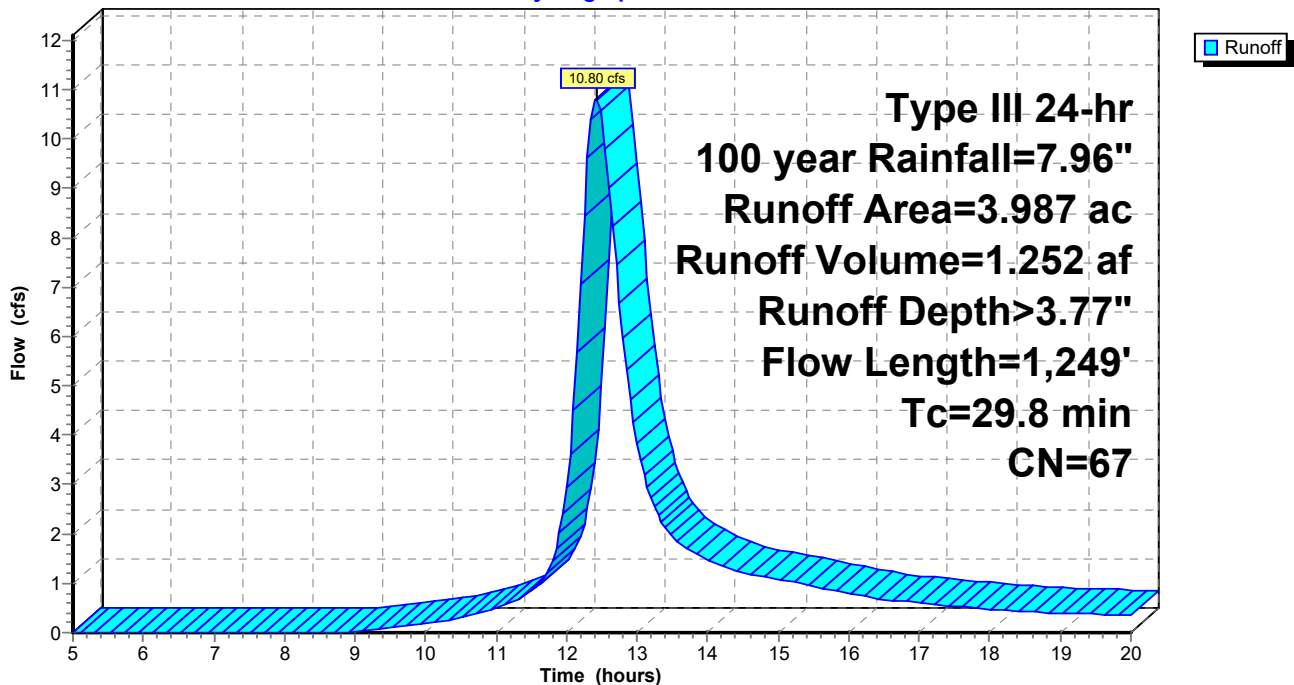
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.006	59	50-75% Grass cover, Fair, HSG A-B
* 3.103	74	50-75% Grass cover, Fair, HSG B-C
0.454	30	Meadow, non-grazed, HSG A
0.420	58	Meadow, non-grazed, HSG B
0.004	36	Woods, Fair, HSG A
3.987	67	Weighted Average
3.987		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.0	584	0.0086	0.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.1	615	0.0260	1.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
29.8	1,249	Total			

Subcatchment 21: Subcat 21

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 22: Subcat 22

Runoff = 37.36 cfs @ 12.86 hrs, Volume= 6.468 af, Depth> 4.38"

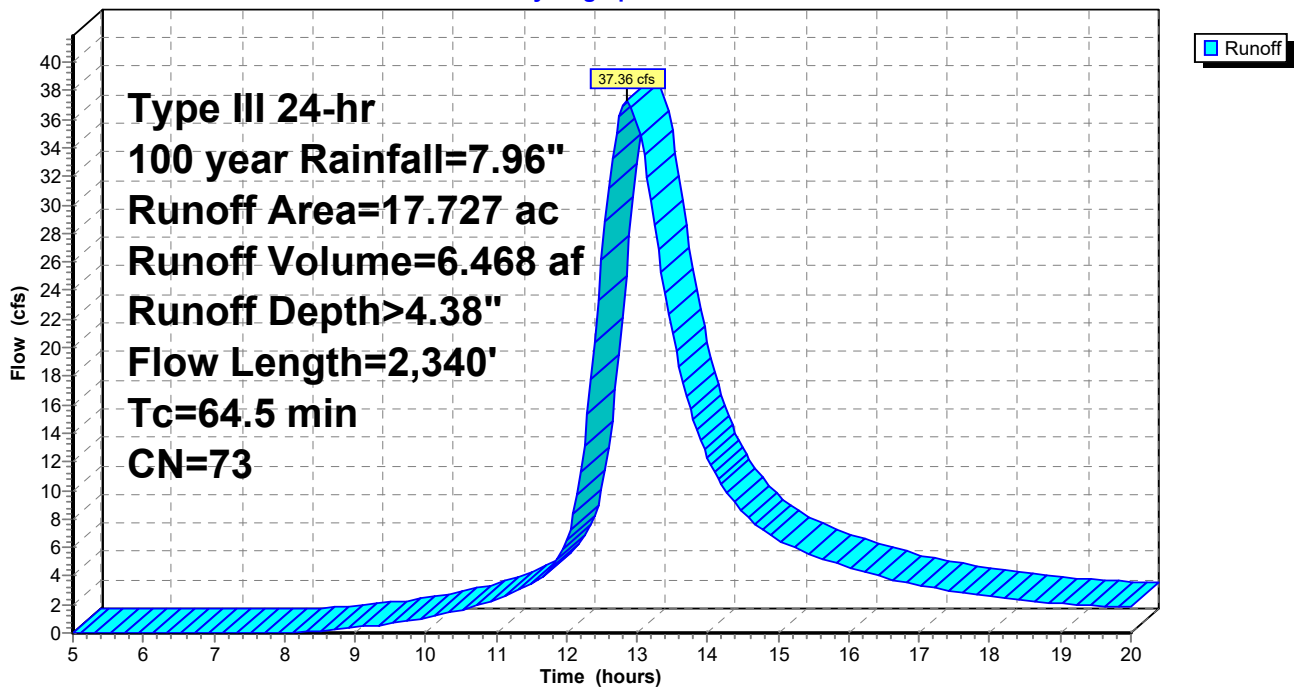
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 16.854	74	50-75% Grass cover, Fair, HSG B-C
0.873	58	Meadow, non-grazed, HSG B
17.727	73	Weighted Average
17.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
45.1	1,416	0.0056	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.8	636	0.0299	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.1	238	0.0336	1.28		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
64.5	2,340	Total			

Subcatchment 22: Subcat 22

Hydrograph



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Summary for Subcatchment 23: Subcat 23

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.29 cfs @ 12.08 hrs, Volume= 0.086 af, Depth> 3.91"

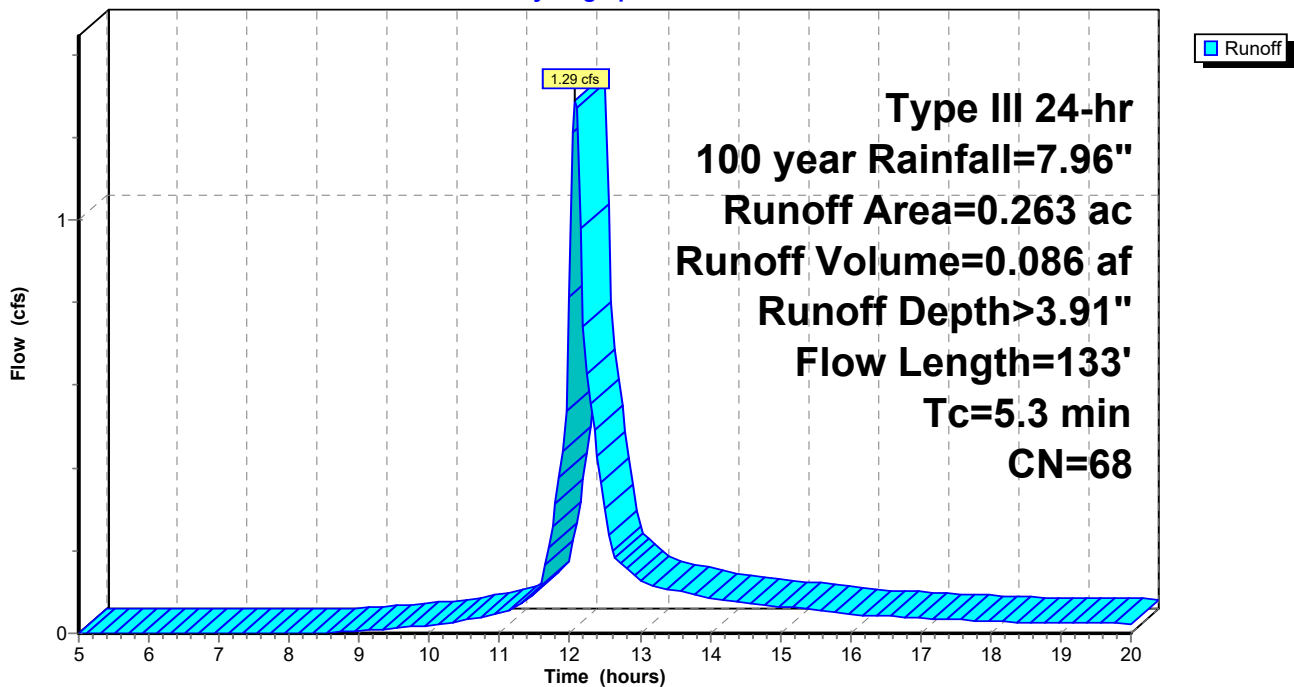
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.164	74	50-75% Grass cover, Fair, HSG B-C
0.099	58	Meadow, non-grazed, HSG B
0.263	68	Weighted Average
0.263		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.0	83	0.0361	1.33		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	133	Total			

Subcatchment 23: Subcat 23

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 24: Subcat 24

Runoff = 10.85 cfs @ 12.24 hrs, Volume= 1.010 af, Depth> 4.34"

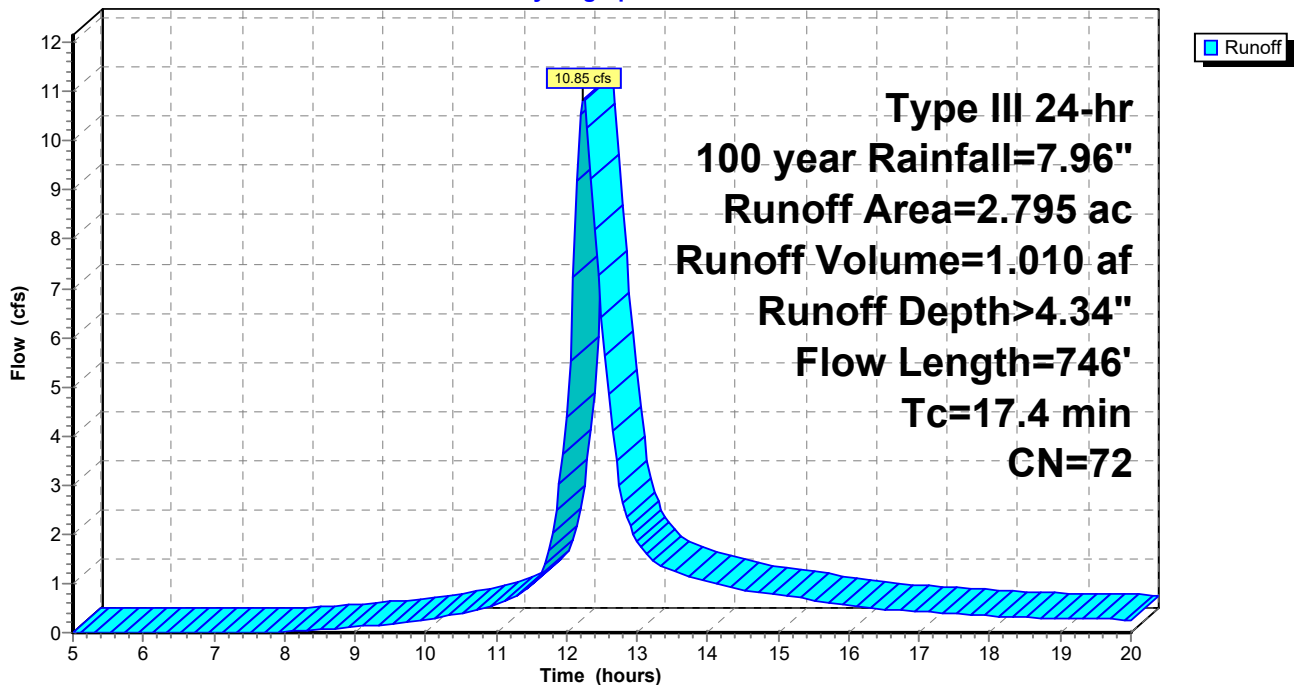
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 2.388	74	50-75% Grass cover, Fair, HSG B-C
0.406	58	Meadow, non-grazed, HSG B
0.001	60	Woods, Fair, HSG B
2.795	72	Weighted Average
2.795		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.7	284	0.0141	0.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	112	0.1071	2.29		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.4	300	0.0433	1.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.4	746	Total			

Subcatchment 24: Subcat 24

Hydrograph



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Summary for Subcatchment 25: Subcat 25

Runoff = 30.46 cfs @ 12.63 hrs, Volume= 4.357 af, Depth> 4.30"

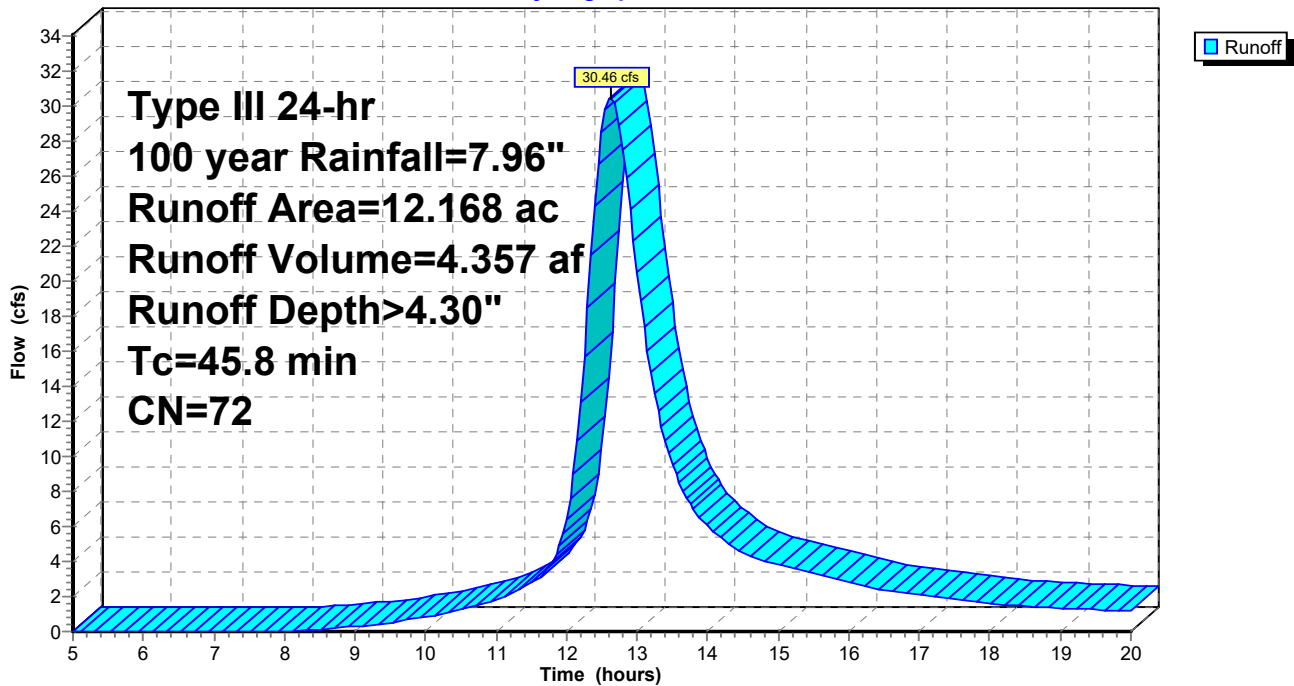
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 11.036	74	50-75% Grass cover, Fair, HSG B-C
0.129	30	Meadow, non-grazed, HSG A
1.003	58	Meadow, non-grazed, HSG B
12.168	72	Weighted Average
12.168		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.8					Direct Entry,

Subcatchment 25: Subcat 25

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 27: Subcat 27

Runoff = 7.01 cfs @ 12.30 hrs, Volume= 0.710 af, Depth> 3.89"

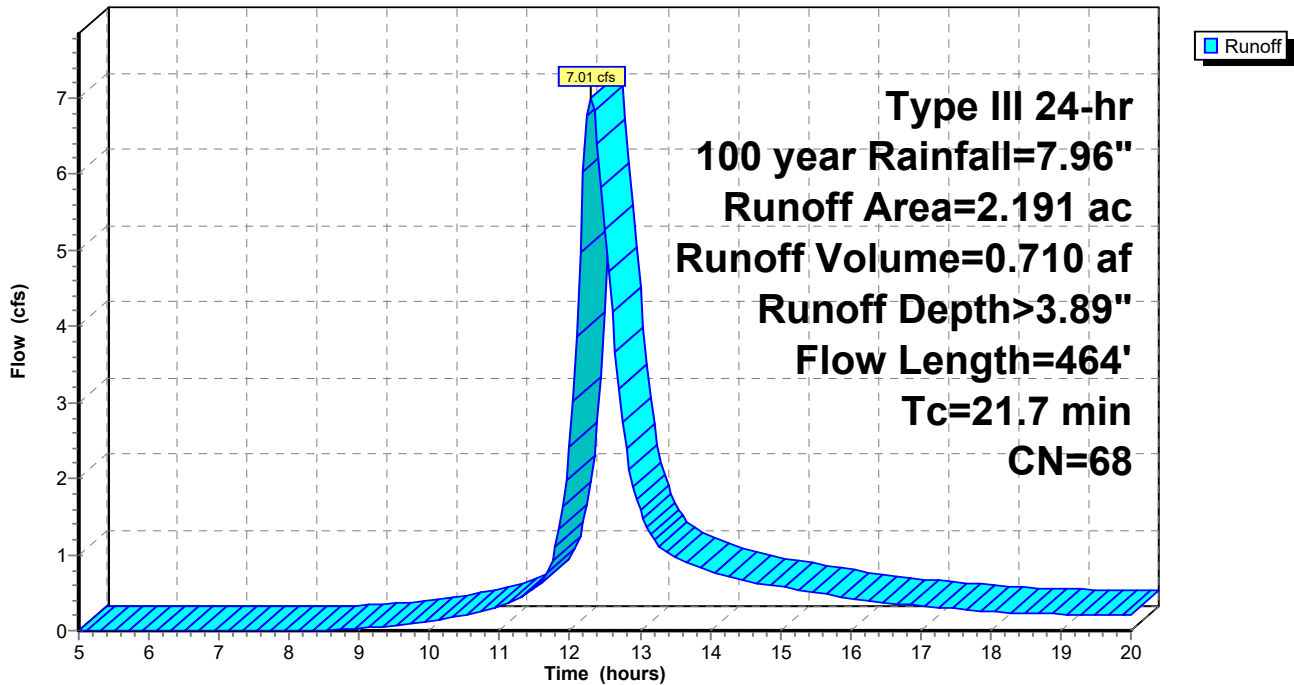
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.400	74	50-75% Grass cover, Fair, HSG B-C
0.036	30	Meadow, non-grazed, HSG A
0.755	58	Meadow, non-grazed, HSG B
2.191	68	Weighted Average
2.191		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
14.2	414	0.0048	0.48		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
21.7	464	Total			

Subcatchment 27: Subcat 27

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 28: Subcat 28

Runoff = 18.11 cfs @ 12.24 hrs, Volume= 1.667 af, Depth> 2.72"

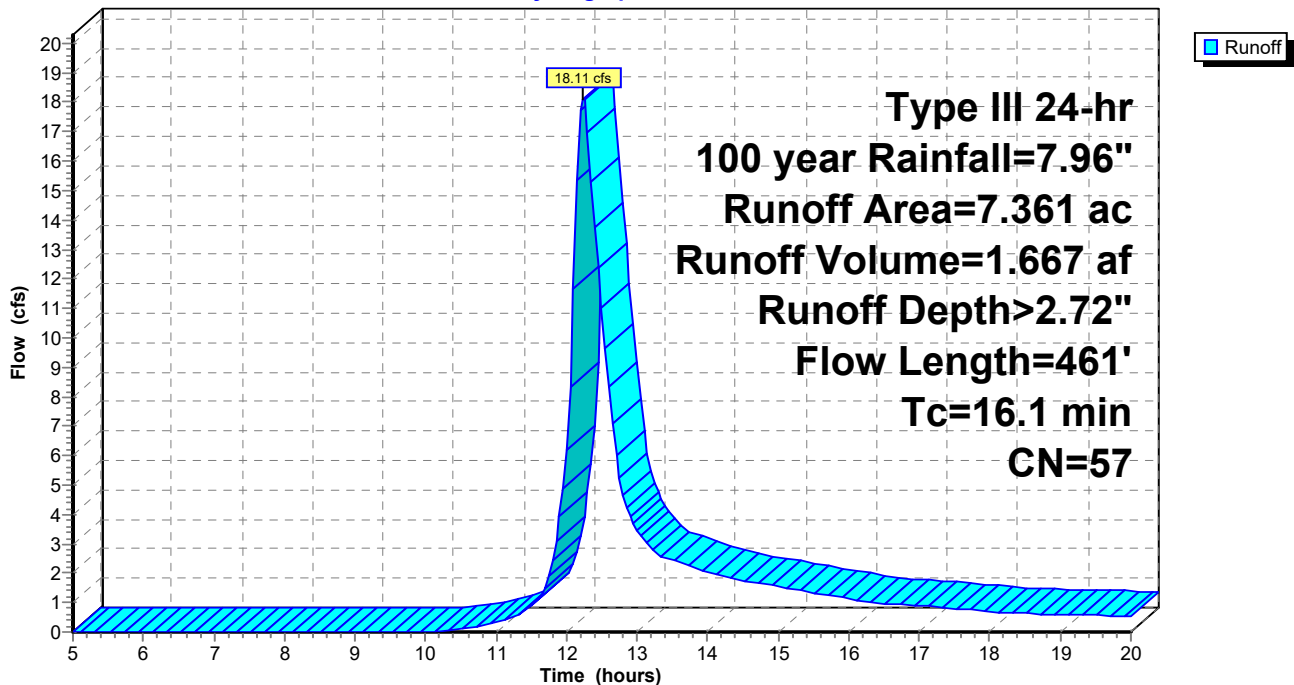
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.136	59	50-75% Grass cover, Fair, HSG A-B
* 3.195	74	50-75% Grass cover, Fair, HSG B-C
0.494	30	Meadow, non-grazed, HSG A
0.478	58	Meadow, non-grazed, HSG B
2.242	36	Woods, Fair, HSG A
0.816	60	Woods, Fair, HSG B
7.361	57	Weighted Average
7.361		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	269	0.0074	0.60		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.2	142	0.1479	1.92		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
16.1	461	Total			

Subcatchment 28: Subcat 28

Hydrograph



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Summary for Subcatchment 29: Subcat 29

Runoff = 1.14 cfs @ 12.15 hrs, Volume= 0.124 af, Depth> 0.91"

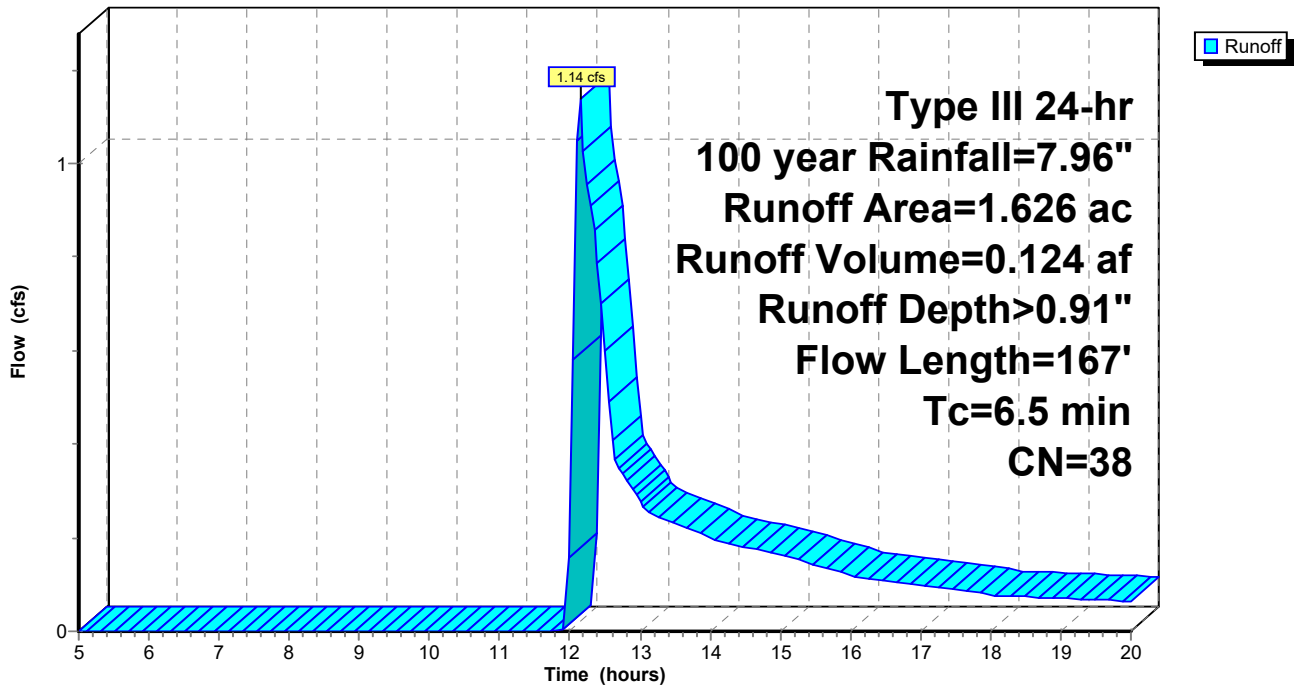
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.216	59	50-75% Grass cover, Fair, HSG A-B
* 0.006	74	50-75% Grass cover, Fair, HSG B-C
0.328	30	Meadow, non-grazed, HSG A
1.076	36	Woods, Fair, HSG A
1.626	38	Weighted Average
1.626		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
0.8	117	0.2222	2.36		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.5	167	Total			

Subcatchment 29: Subcat 29

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 30: Subcat 30

Runoff = 18.71 cfs @ 12.16 hrs, Volume= 1.490 af, Depth> 4.57"

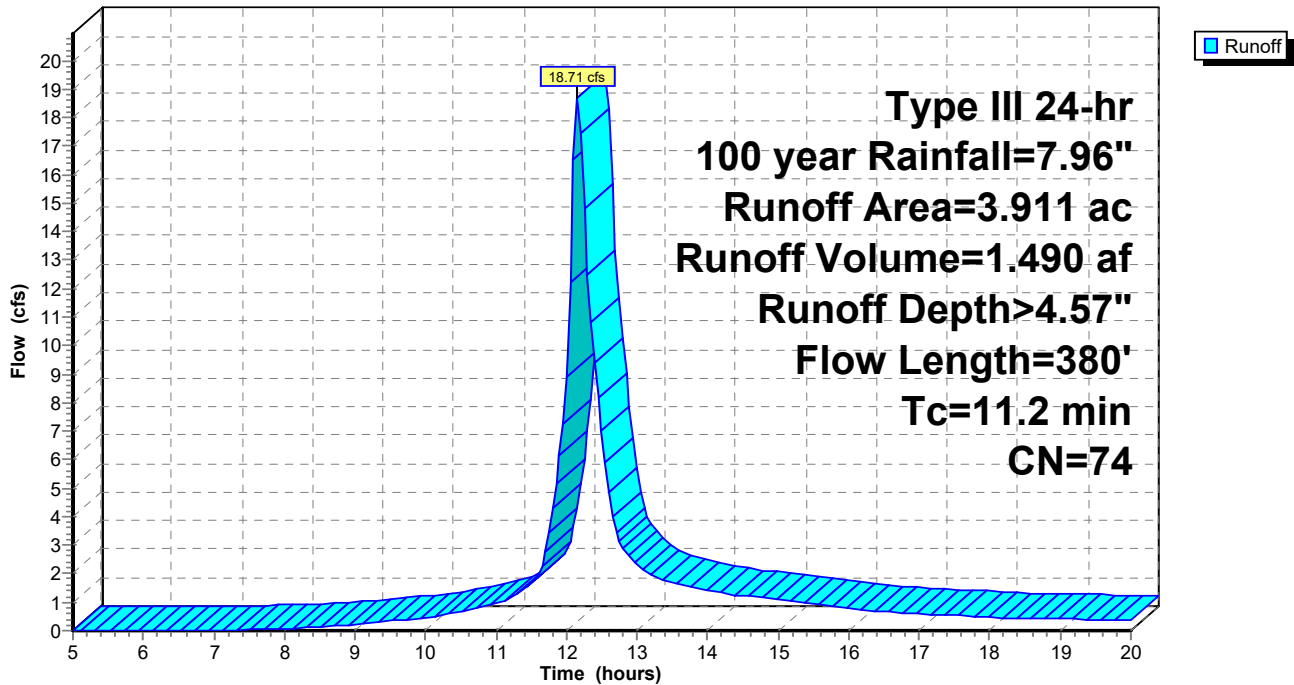
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.012	59	50-75% Grass cover, Fair, HSG A-B
* 3.899	74	50-75% Grass cover, Fair, HSG B-C
0.000	58	Meadow, non-grazed, HSG B
3.911	74	Weighted Average
3.911		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.4	330	0.0152	0.86		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.2	380	Total			

Subcatchment 30: Subcat 30

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 31: Subcat 31

Runoff = 3.79 cfs @ 12.15 hrs, Volume= 0.356 af, Depth> 1.17"

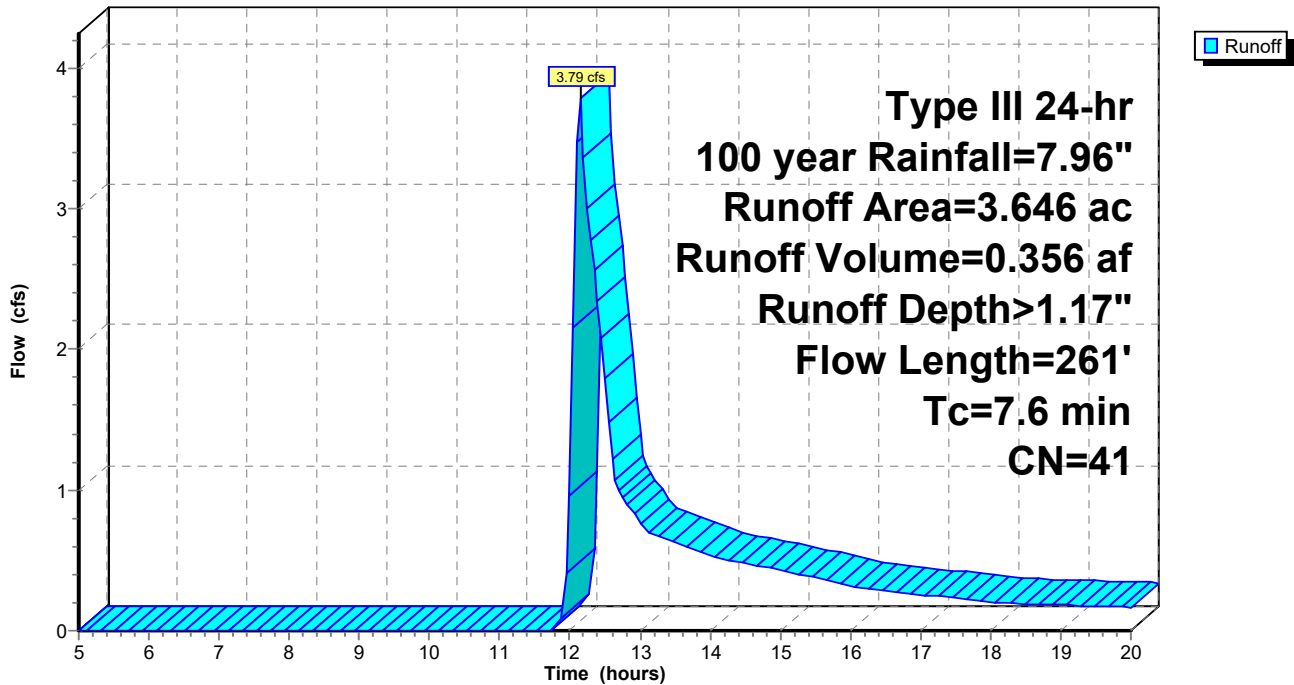
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.149	59	50-75% Grass cover, Fair, HSG A-B
* 0.465	74	50-75% Grass cover, Fair, HSG B-C
0.893	30	Meadow, non-grazed, HSG A
0.064	58	Meadow, non-grazed, HSG B
2.075	36	Woods, Fair, HSG A
3.646	41	Weighted Average
3.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.9	211	0.1374	1.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
7.6	261	Total			

Subcatchment 31: Subcat 31

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 33: Subcat 33

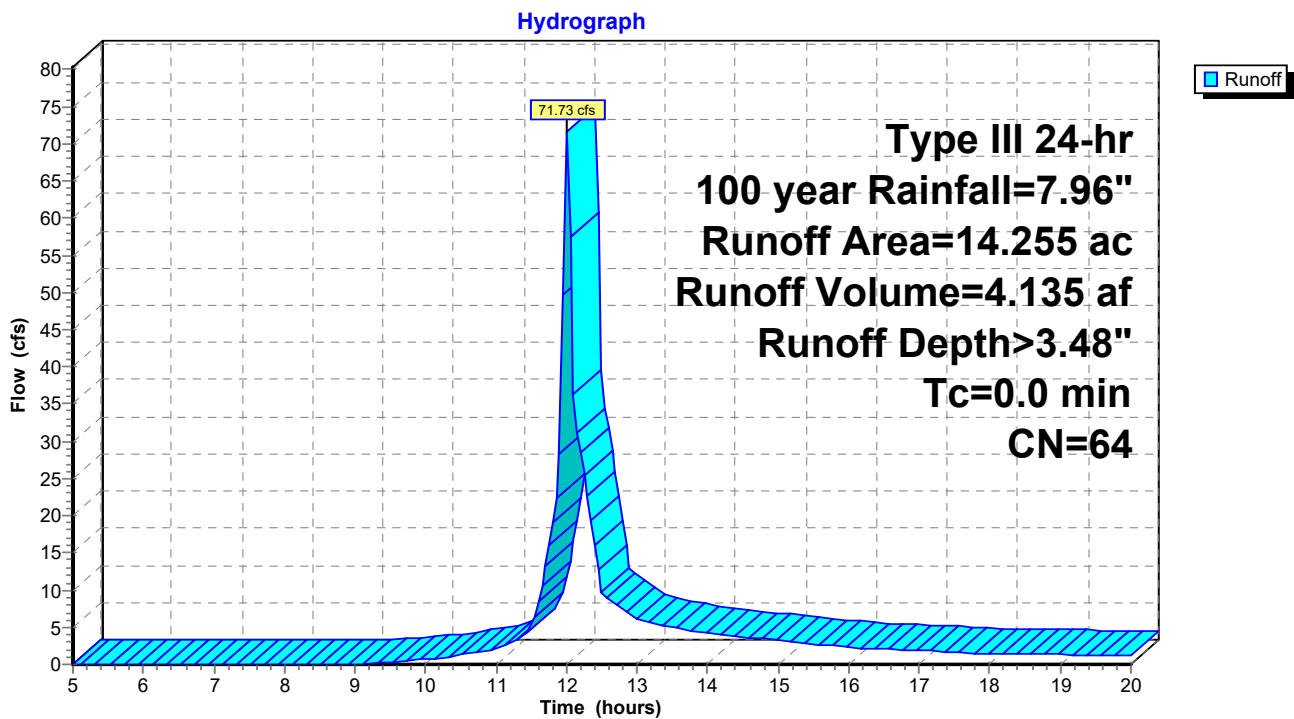
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 71.73 cfs @ 12.01 hrs, Volume= 4.135 af, Depth> 3.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.943	49	50-75% Grass cover, Fair, HSG A
* 11.166	69	50-75% Grass cover, Fair, HSG B
0.485	30	Meadow, non-grazed, HSG A
0.661	58	Meadow, non-grazed, HSG B
0.000	36	Woods, Fair, HSG A
14.255	64	Weighted Average
14.255		100.00% Pervious Area

Subcatchment 33: Subcat 33



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 34: Subcat 34

Runoff = 24.58 cfs @ 12.35 hrs, Volume= 2.626 af, Depth> 4.00"

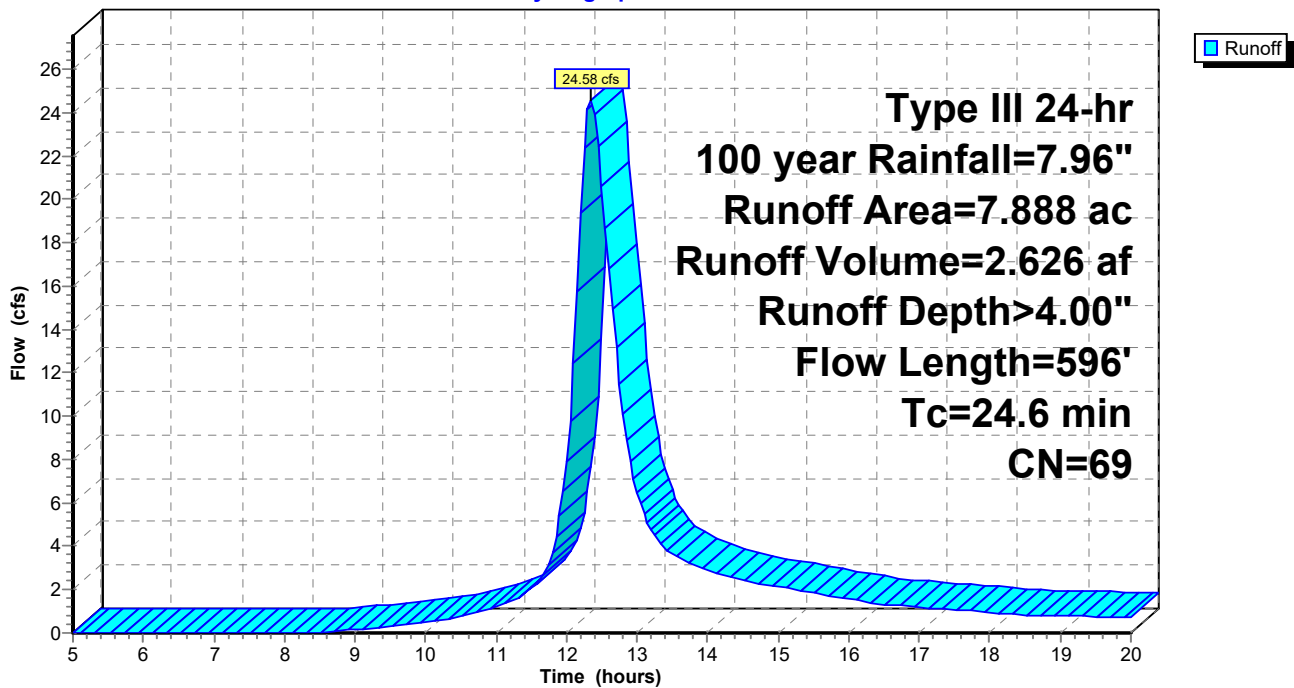
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.072	49	50-75% Grass cover, Fair, HSG A
* 7.816	69	50-75% Grass cover, Fair, HSG B
7.888	69	Weighted Average
7.888		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.1	244	0.0041	0.45		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	99	0.1313	2.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.9	203	0.0098	0.69		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
24.6	596	Total			

Subcatchment 34: Subcat 34

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 35: Subcat 35

Runoff = 15.47 cfs @ 12.35 hrs, Volume= 1.656 af, Depth> 2.61"

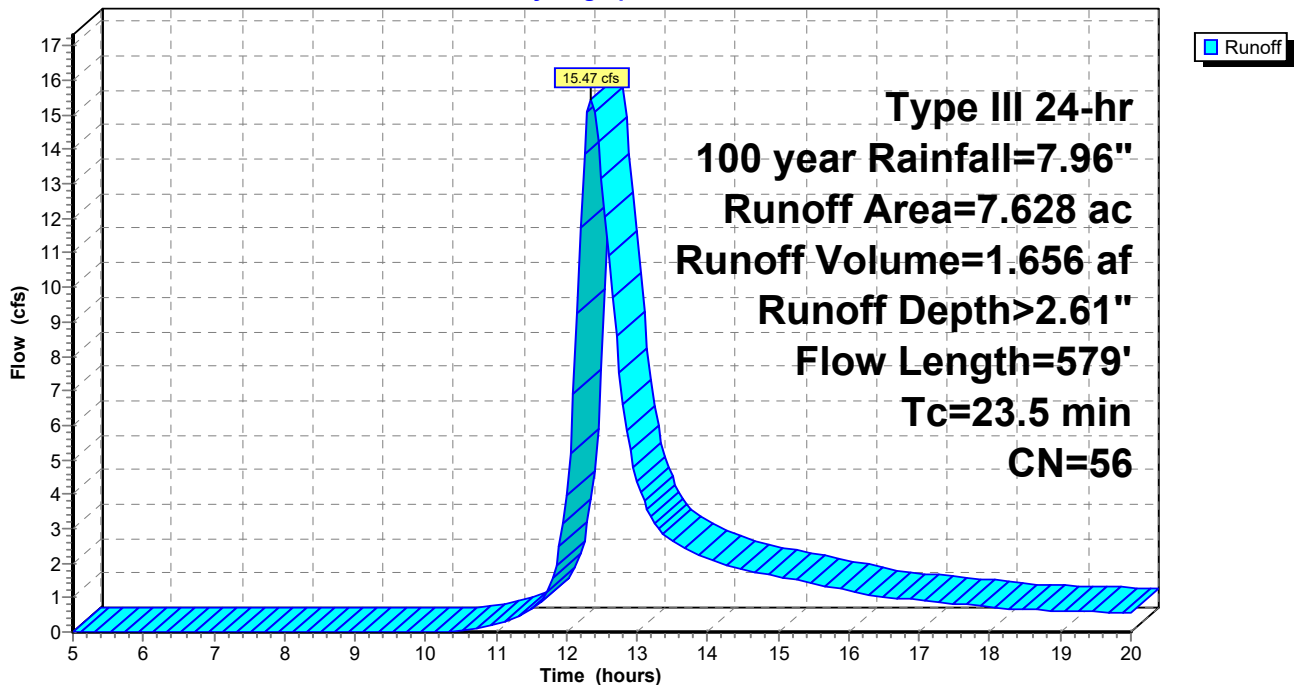
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.332	49	50-75% Grass cover, Fair, HSG A
* 4.614	69	50-75% Grass cover, Fair, HSG B
2.239	30	Meadow, non-grazed, HSG A
0.443	58	Meadow, non-grazed, HSG B
7.628	56	Weighted Average
7.628		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0050	0.08		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	217	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	97	0.1237	2.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	215	0.0093	0.68		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.5	579	Total			

Subcatchment 35: Subcat 35

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 1P: Sediment Trap

Inflow Area = 0.864 ac, 0.00% Impervious, Inflow Depth > 3.15" for 100 year event
 Inflow = 3.16 cfs @ 12.12 hrs, Volume= 0.227 af
 Outflow = 2.55 cfs @ 12.22 hrs, Volume= 0.173 af, Atten= 19%, Lag= 6.3 min
 Discarded = 0.12 cfs @ 12.22 hrs, Volume= 0.077 af
 Primary = 2.43 cfs @ 12.22 hrs, Volume= 0.096 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.18' @ 12.20 hrs Surf.Area= 0.036 ac Storage= 0.066 af

Plug-Flow detention time= 103.8 min calculated for 0.172 af (76% of inflow)
 Center-of-Mass det. time= 44.6 min (850.8 - 806.2)

Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	0.099 af	35.00'W x 10.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.11 cfs @ 12.22 hrs HW=163.18' (Free Discharge)
 ↑2=Exfiltration (Controls 0.11 cfs)

Primary OutFlow Max=2.14 cfs @ 12.22 hrs HW=163.18' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 2.14 cfs @ 1.00 fps)

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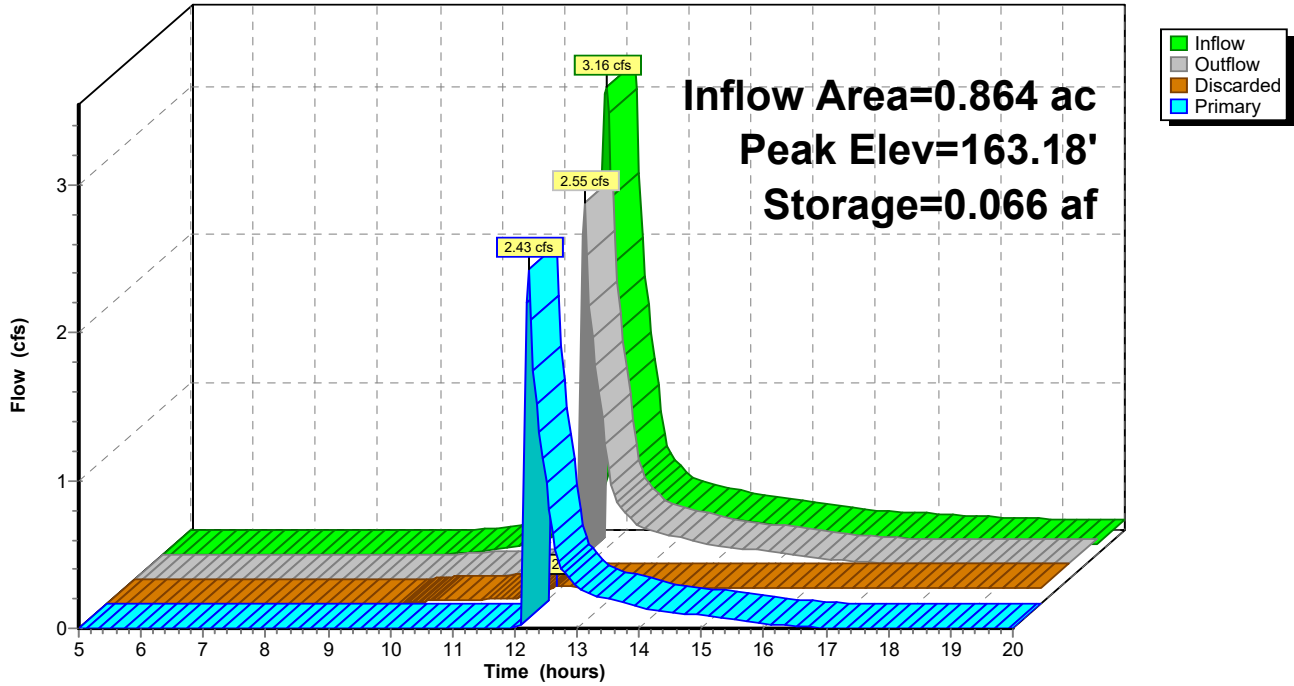
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Pond 1P: Sediment Trap

Hydrograph



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Summary for Pond 2P: Sediment Trap

Inflow Area = 4.510 ac, 0.00% Impervious, Inflow Depth > 1.26" for 100 year event
 Inflow = 4.98 cfs @ 12.17 hrs, Volume= 0.473 af
 Outflow = 0.75 cfs @ 13.83 hrs, Volume= 0.269 af, Atten= 85%, Lag= 99.9 min
 Discarded = 0.31 cfs @ 13.83 hrs, Volume= 0.201 af
 Primary = 0.44 cfs @ 13.83 hrs, Volume= 0.068 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.06' @ 13.83 hrs Surf.Area= 4,328 sf Storage= 9,665 cf

Plug-Flow detention time= 190.5 min calculated for 0.269 af (57% of inflow)
 Center-of-Mass det. time= 97.2 min (944.7 - 847.5)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	19,725 cf	75.00'W x 28.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.31 cfs @ 13.83 hrs HW=161.06' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.31 cfs)

Primary OutFlow Max=0.42 cfs @ 13.83 hrs HW=161.06' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.42 cfs @ 0.58 fps)

Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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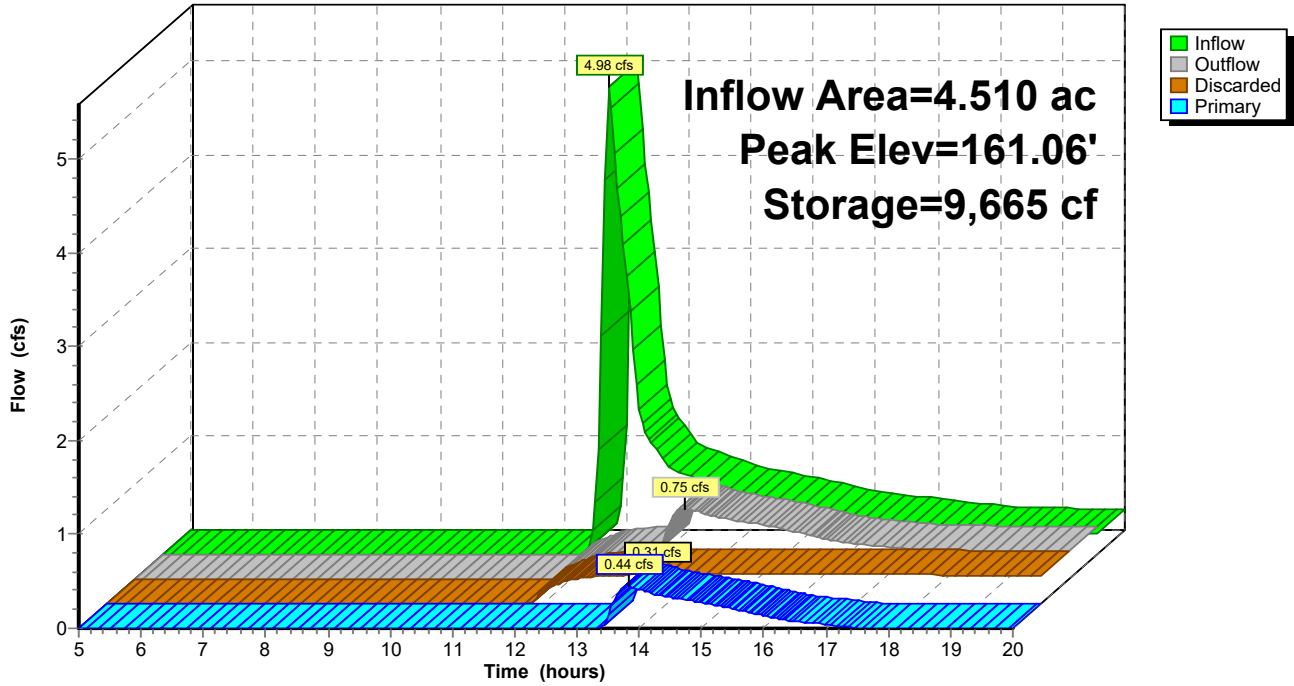
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Pond 2P: Sediment Trap

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 3P: Farm Depression

Inflow Area = 2.727 ac, 0.00% Impervious, Inflow Depth > 3.04" for 100 year event
 Inflow = 9.08 cfs @ 12.14 hrs, Volume= 0.691 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

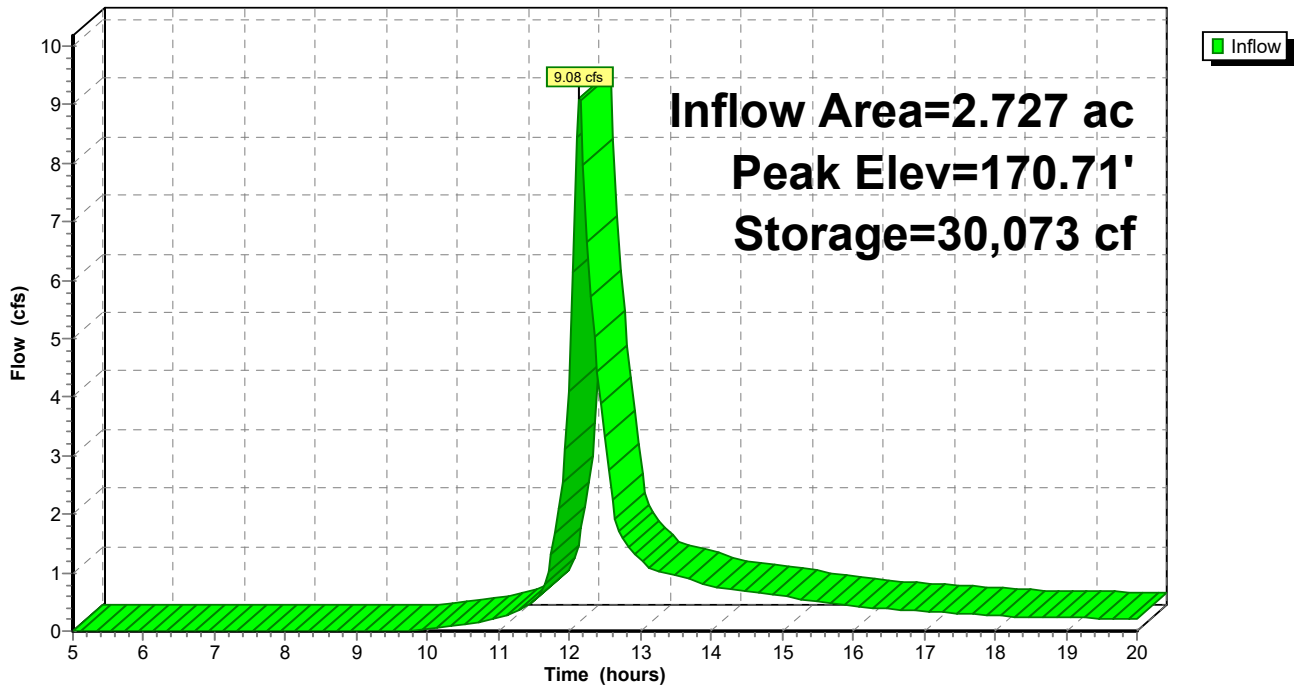
Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.71' @ 20.00 hrs Surf.Area= 20,946 sf Storage= 30,073 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	95,578 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	0	0	0
170.00	16,657	16,657	16,657
172.00	28,677	45,334	61,991
173.00	38,496	33,587	95,578

Pond 3P: Farm Depression

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 4P: Sediment Trap

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 3.58" for 100 year event
 Inflow = 13.78 cfs @ 12.16 hrs, Volume= 1.086 af
 Outflow = 13.22 cfs @ 12.20 hrs, Volume= 0.910 af, Atten= 4%, Lag= 2.7 min
 Discarded = 0.29 cfs @ 12.20 hrs, Volume= 0.203 af
 Primary = 12.93 cfs @ 12.20 hrs, Volume= 0.708 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.55' @ 12.20 hrs Surf.Area= 3,995 sf Storage= 9,703 cf

Plug-Flow detention time= 68.4 min calculated for 0.907 af (84% of inflow)
 Center-of-Mass det. time= 23.1 min (825.2 - 802.1)

Volume	Invert	Avail.Storage	Storage Description
#1	159.00'	16,375 cf	65.00'W x 25.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	159.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.29 cfs @ 12.20 hrs HW=162.55' (Free Discharge)
 ↑2=Exfiltration (Controls 0.29 cfs)

Primary OutFlow Max=12.83 cfs @ 12.20 hrs HW=162.55' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 12.83 cfs @ 1.96 fps)

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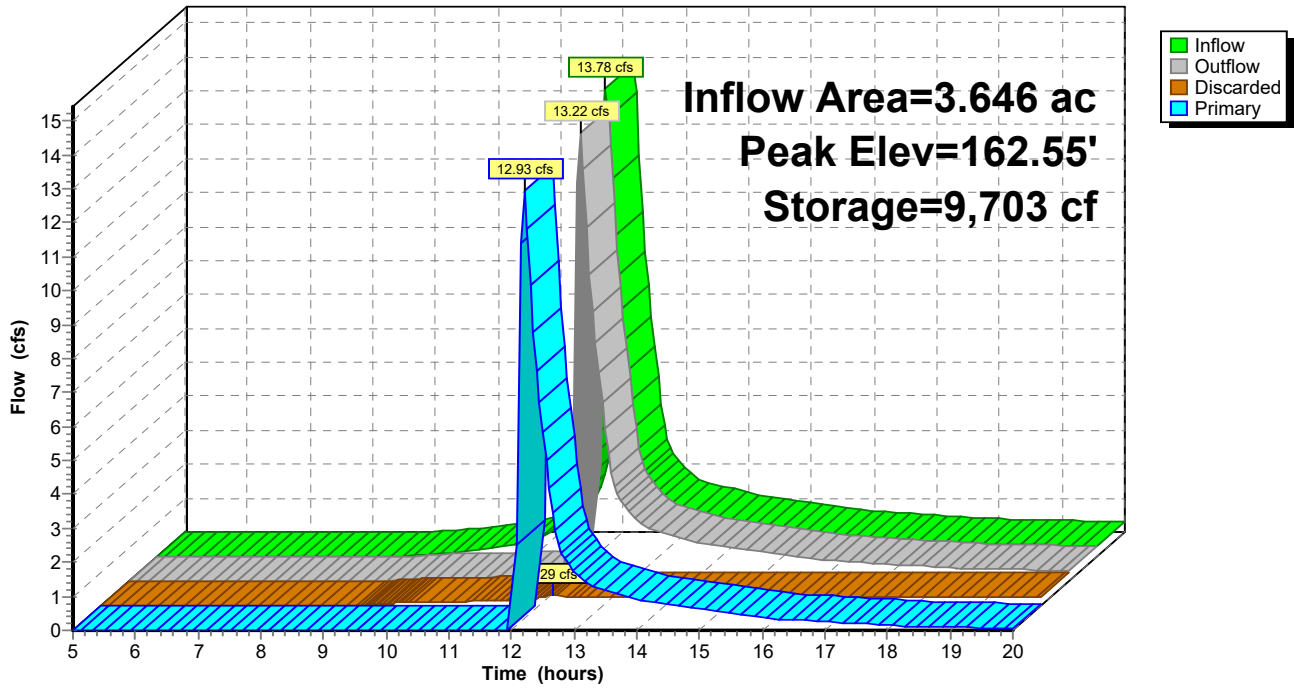
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Pond 4P: Sediment Trap

Hydrograph



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Summary for Pond 5P: Sediment Trap

Inflow Area = 8.688 ac, 0.00% Impervious, Inflow Depth > 4.33" for 100 year event
 Inflow = 29.45 cfs @ 12.34 hrs, Volume= 3.134 af
 Outflow = 26.31 cfs @ 12.46 hrs, Volume= 2.432 af, Atten= 11%, Lag= 7.4 min
 Primary = 26.31 cfs @ 12.46 hrs, Volume= 2.432 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 165.88' @ 12.46 hrs Surf.Area= 12,892 sf Storage= 40,232 cf

Plug-Flow detention time= 93.0 min calculated for 2.424 af (77% of inflow)
 Center-of-Mass det. time= 38.9 min (839.5 - 800.6)

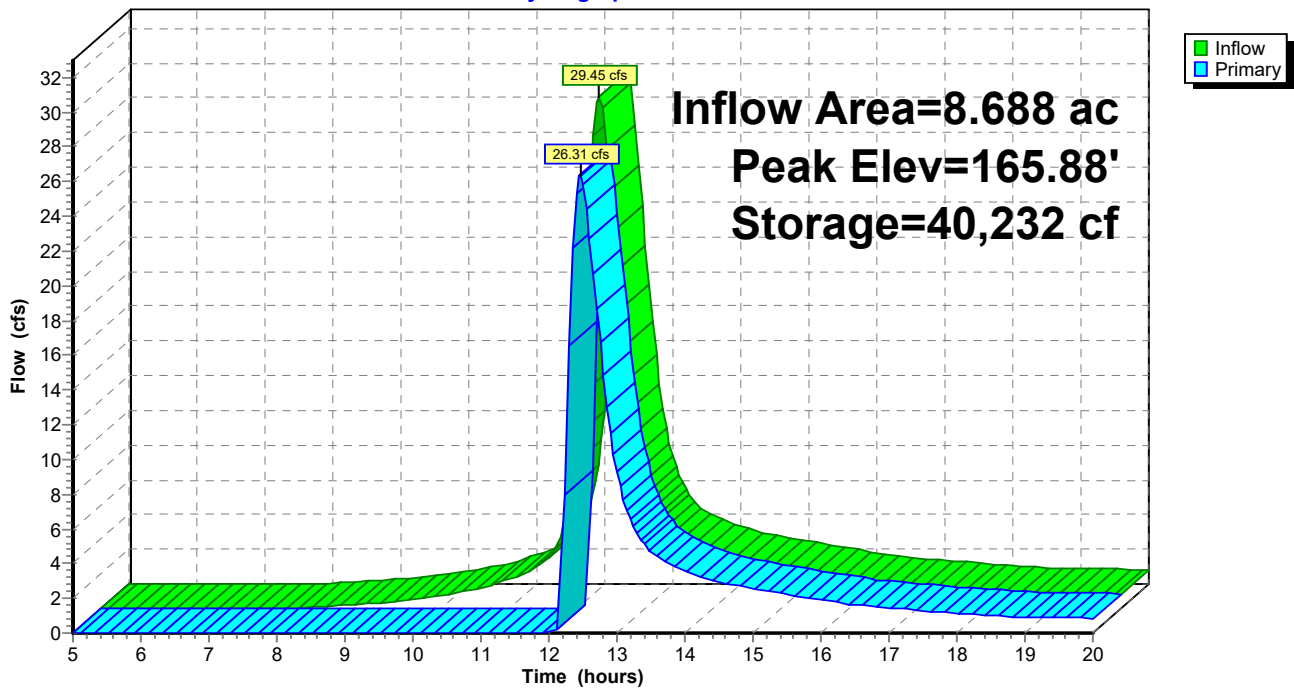
Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	41,848 cf	70.00'W x 115.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=26.20 cfs @ 12.46 hrs HW=165.87' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir (Weir Controls 26.20 cfs @ 2.50 fps)

Pond 5P: Sediment Trap

Hydrograph



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Summary for Pond 6P: Sediment Trap

Inflow Area = 6.471 ac, 0.00% Impervious, Inflow Depth > 4.01" for 100 year event
 Inflow = 23.96 cfs @ 12.22 hrs, Volume= 2.161 af
 Outflow = 17.89 cfs @ 12.39 hrs, Volume= 1.621 af, Atten= 25%, Lag= 9.8 min
 Primary = 17.89 cfs @ 12.39 hrs, Volume= 1.621 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.89' @ 12.39 hrs Surf.Area= 10,473 sf Storage= 31,355 cf

Plug-Flow detention time= 102.1 min calculated for 1.621 af (75% of inflow)
 Center-of-Mass det. time= 42.4 min (841.8 - 799.4)

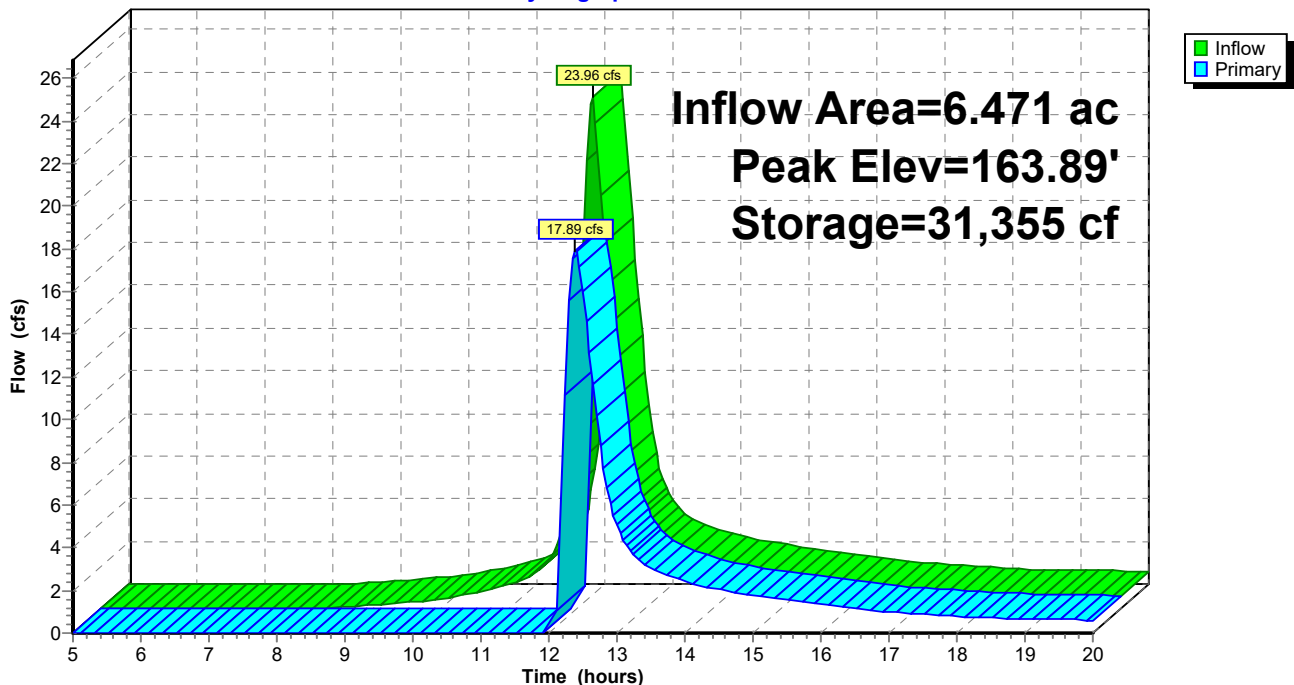
Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	32,568 cf	45.00'W x 130.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=17.81 cfs @ 12.39 hrs HW=163.88' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 17.81 cfs @ 2.52 fps)

Pond 6P: Sediment Trap

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 7P: Farm Depression

Inflow Area = 17.047 ac, 0.00% Impervious, Inflow Depth > 4.51" for 100 year event
 Inflow = 42.83 cfs @ 12.67 hrs, Volume= 6.412 af
 Outflow = 16.44 cfs @ 13.44 hrs, Volume= 6.170 af, Atten= 62%, Lag= 46.1 min
 Discarded = 14.55 cfs @ 13.44 hrs, Volume= 6.019 af
 Primary = 1.88 cfs @ 13.44 hrs, Volume= 0.151 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.61' @ 13.44 hrs Surf.Area= 208,929 sf Storage= 103,591 cf

Plug-Flow detention time= 86.7 min calculated for 6.170 af (96% of inflow)
 Center-of-Mass det. time= 73.5 min (890.7 - 817.2)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	188,598 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
163.00	0	0	0	0
164.00	57,239	19,080	19,080	57,241
164.50	203,000	61,339	80,418	203,003
165.00	230,000	108,180	188,598	230,015

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=14.55 cfs @ 13.44 hrs HW=164.61' (Free Discharge)
 ↑**2=Exfiltration** (Controls 14.55 cfs)

Primary OutFlow Max=1.88 cfs @ 13.44 hrs HW=164.61' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 1.88 cfs @ 0.83 fps)

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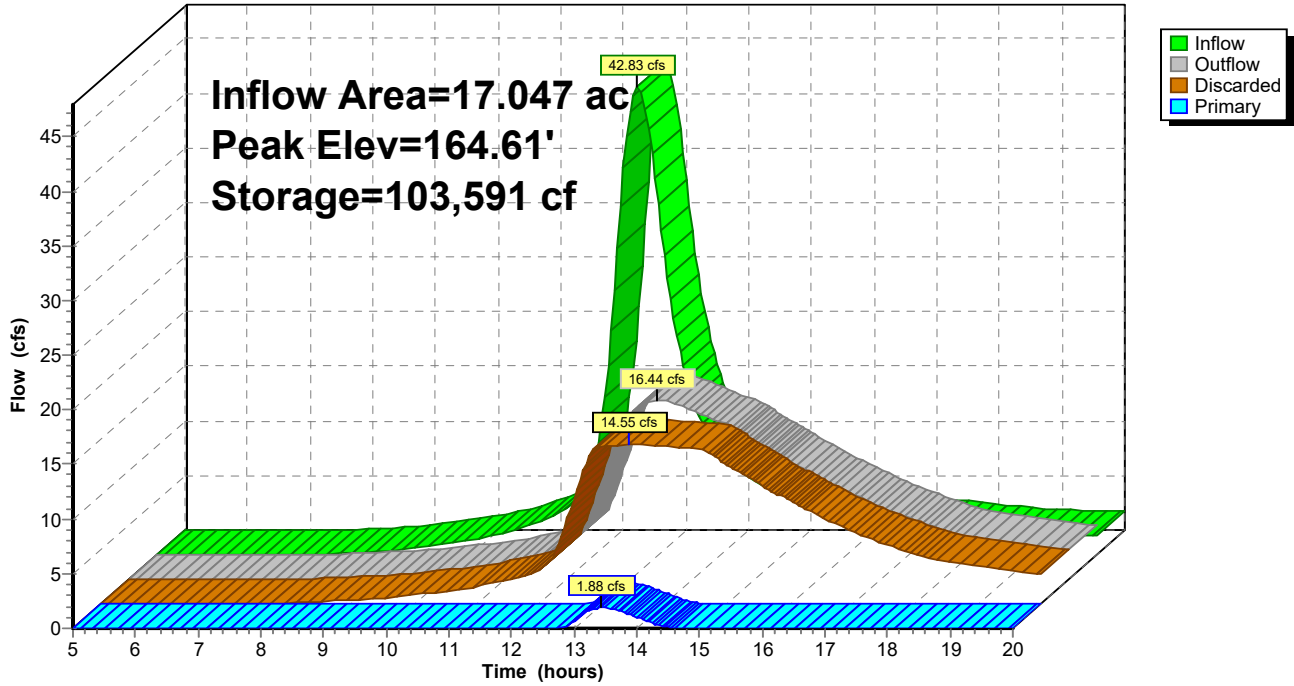
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Pond 7P: Farm Depression

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Summary for Pond 8P: Sediment Trap

Inflow Area = 3.130 ac, 0.00% Impervious, Inflow Depth > 3.90" for 100 year event
 Inflow = 12.73 cfs @ 12.16 hrs, Volume= 1.018 af
 Outflow = 12.39 cfs @ 12.20 hrs, Volume= 0.865 af, Atten= 3%, Lag= 1.9 min
 Primary = 12.39 cfs @ 12.20 hrs, Volume= 0.865 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.53' @ 12.20 hrs Surf.Area= 3,552 sf Storage= 8,309 cf

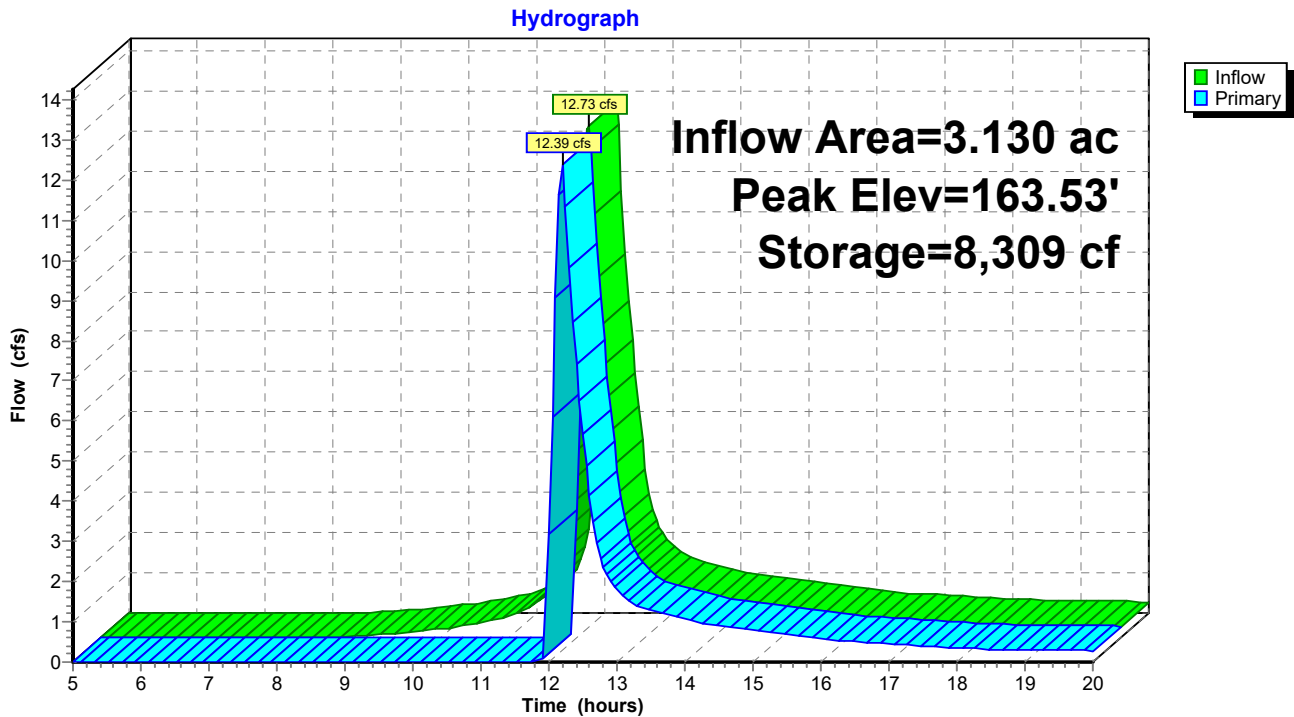
Plug-Flow detention time= 67.3 min calculated for 0.865 af (85% of inflow)
 Center-of-Mass det. time= 24.1 min (821.5 - 797.4)

Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	14,375 cf	65.00'W x 20.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=12.31 cfs @ 12.20 hrs HW=163.53' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 12.31 cfs @ 1.93 fps)

Pond 8P: Sediment Trap



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Summary for Pond 10P: Kettle Hole

Inflow Area = 3.172 ac, 0.00% Impervious, Inflow Depth > 2.41" for 100 year event
 Inflow = 7.38 cfs @ 12.20 hrs, Volume= 0.637 af
 Outflow = 0.26 cfs @ 18.17 hrs, Volume= 0.165 af, Atten= 96%, Lag= 358.6 min
 Discarded = 0.26 cfs @ 18.17 hrs, Volume= 0.165 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 149.66' @ 18.17 hrs Surf.Area= 11,233 sf Storage= 20,748 cf

Plug-Flow detention time= 248.3 min calculated for 0.165 af (26% of inflow)
 Center-of-Mass det. time= 147.8 min (970.2 - 822.4)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	274,837 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	1,534	0	0	1,534
148.00	5,773	6,855	6,855	5,793
150.00	12,558	17,897	24,752	12,610
152.00	19,547	31,848	56,601	19,656
154.00	26,610	45,976	102,576	26,800
156.00	32,562	59,072	161,648	32,876
158.00	39,456	71,908	233,556	39,899
159.00	43,134	41,281	274,837	43,647

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.26 cfs @ 18.17 hrs HW=149.66' (Free Discharge)
 ↑1=Exfiltration (Controls 0.26 cfs)

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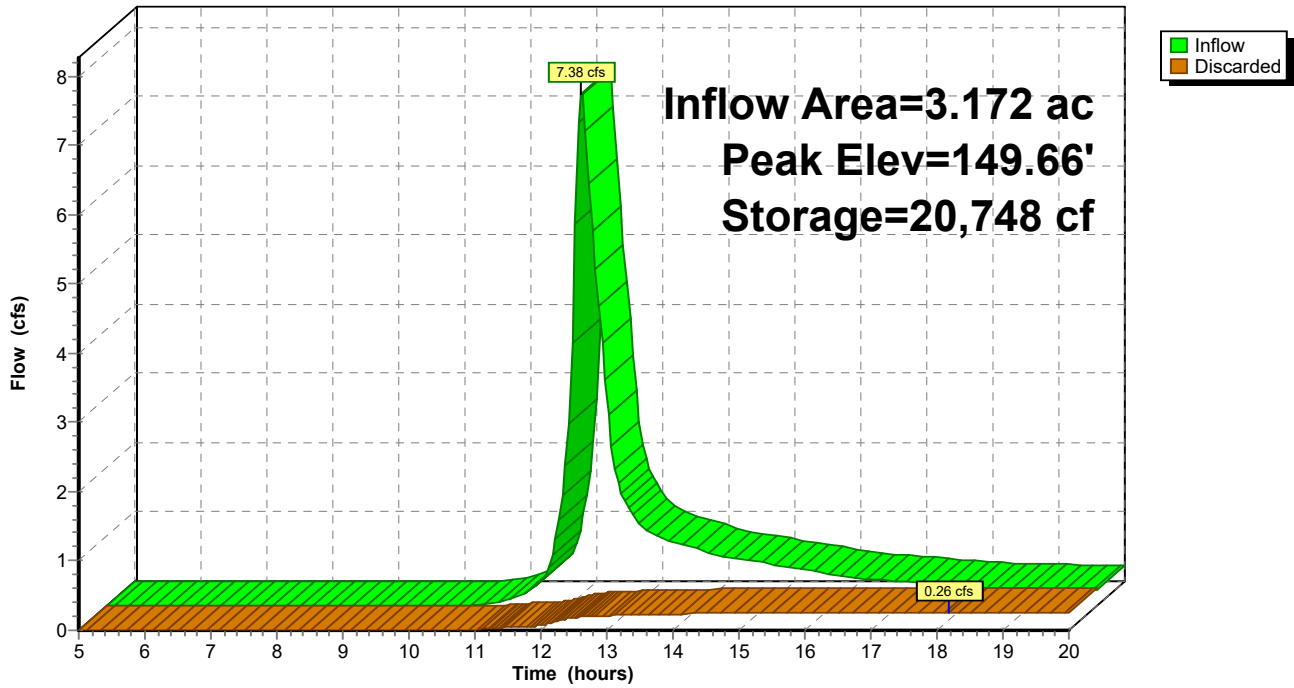
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Pond 10P: Kettle Hole

Hydrograph



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Summary for Pond 11AP: Kettle Hole

Inflow Area = 6.449 ac, 0.00% Impervious, Inflow Depth > 1.53" for 100 year event
 Inflow = 9.32 cfs @ 12.17 hrs, Volume= 0.823 af
 Outflow = 0.43 cfs @ 18.00 hrs, Volume= 0.265 af, Atten= 95%, Lag= 350.0 min
 Discarded = 0.43 cfs @ 18.00 hrs, Volume= 0.265 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 128.43' @ 18.00 hrs Surf.Area= 18,227 sf Storage= 24,655 cf

Plug-Flow detention time= 241.5 min calculated for 0.265 af (32% of inflow)
 Center-of-Mass det. time= 133.4 min (972.8 - 839.4)

Volume	Invert	Avail.Storage	Storage Description
#1	126.00'	127,579 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
126.00	3,074	0	0	3,074
128.00	15,883	17,296	17,296	15,899
130.00	28,094	43,401	60,697	28,154
132.00	39,090	66,882	127,579	39,226

Device	Routing	Invert	Outlet Devices
#1	Discarded	126.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.43 cfs @ 18.00 hrs HW=128.43' (Free Discharge)
 ↑1=Exfiltration (Controls 0.43 cfs)

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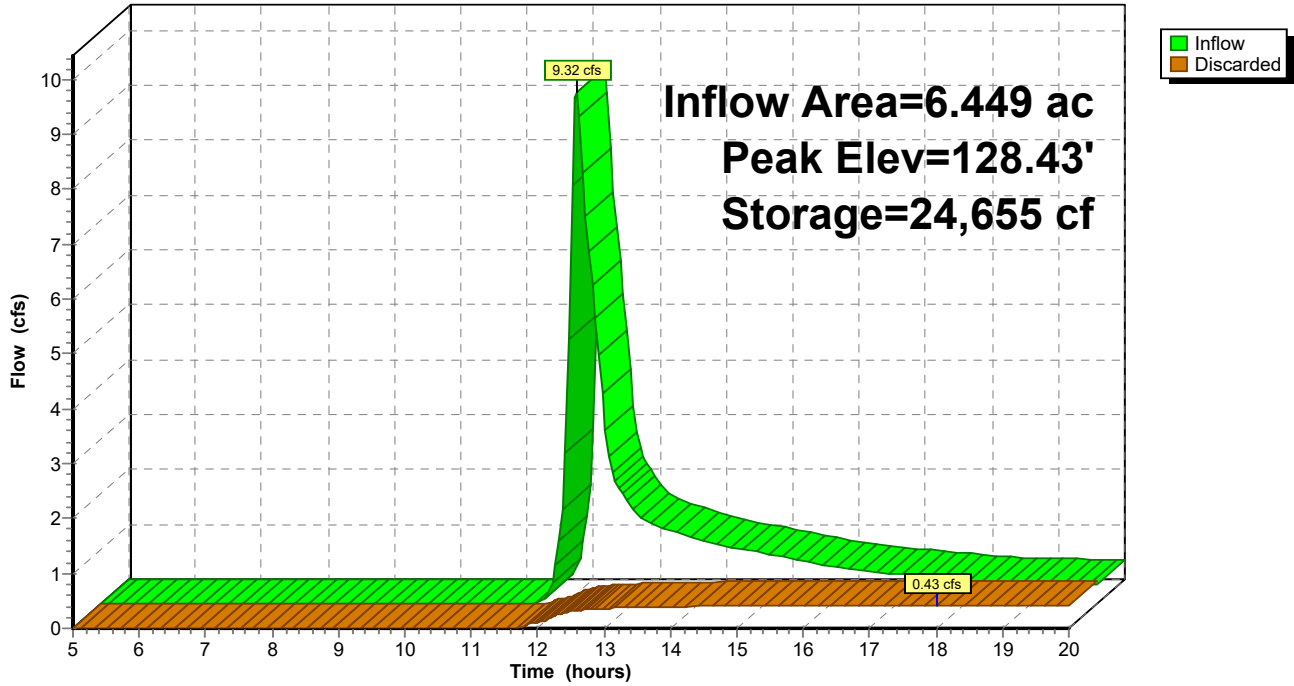
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Pond 11AP: Kettle Hole

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Summary for Pond 11P: Kettle Hole

Inflow Area = 5.662 ac, 0.33% Impervious, Inflow Depth > 2.31" for 100 year event
 Inflow = 11.57 cfs @ 12.24 hrs, Volume= 1.088 af
 Outflow = 0.35 cfs @ 20.00 hrs, Volume= 0.217 af, Atten= 97%, Lag= 465.4 min
 Discarded = 0.35 cfs @ 20.00 hrs, Volume= 0.217 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.23' @ 20.00 hrs Surf.Area= 14,822 sf Storage= 37,927 cf

Plug-Flow detention time= 247.0 min calculated for 0.217 af (20% of inflow)
 Center-of-Mass det. time= 143.4 min (970.0 - 826.7)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	585,038 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	3,101	0	0	3,101
144.00	9,033	11,618	11,618	9,057
146.00	14,143	22,986	34,604	14,223
148.00	20,595	34,537	69,140	20,742
150.00	26,222	46,704	115,844	26,472
152.00	32,411	58,524	174,368	32,779
154.00	41,950	74,156	248,524	42,415
156.00	49,984	91,817	340,341	50,591
158.00	62,571	112,320	452,660	63,289
160.00	69,874	132,378	585,038	70,817

Device	Routing	Invert	Outlet Devices
#1	Discarded	142.00'	1.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.35 cfs @ 20.00 hrs HW=146.23' (Free Discharge)
 ↑1=Exfiltration (Controls 0.35 cfs)

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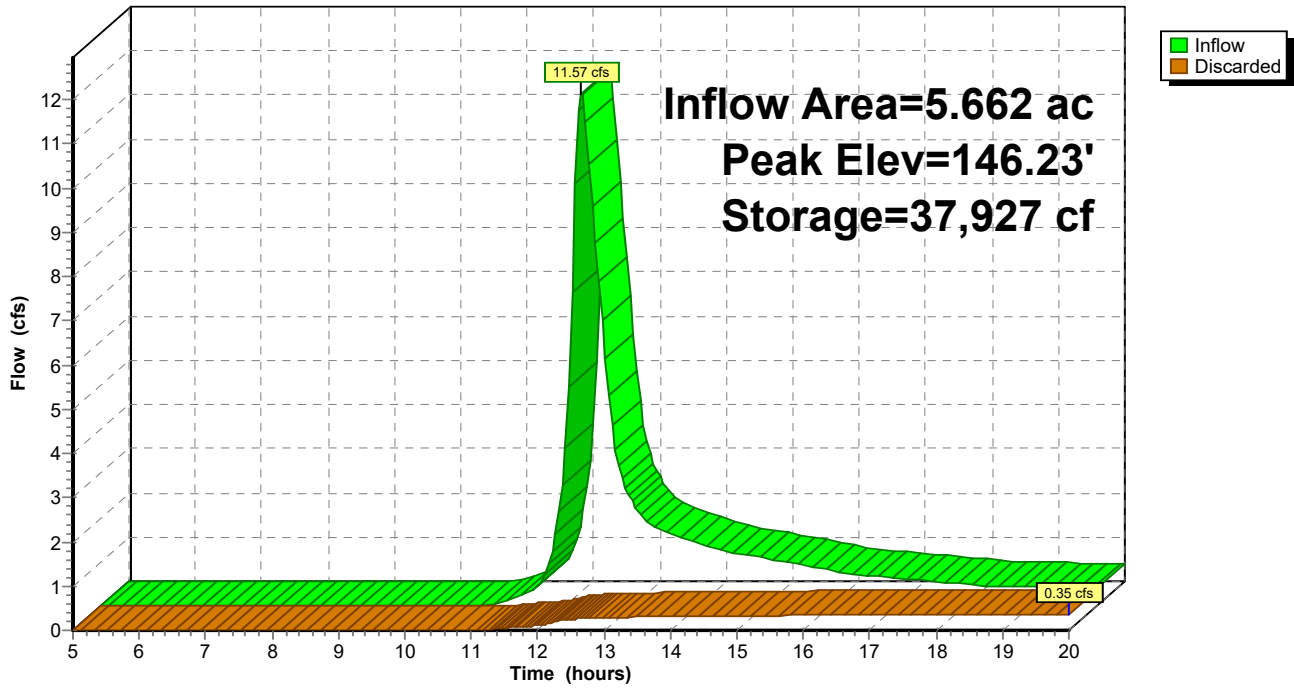
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Pond 11P: Kettle Hole

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Summary for Pond 12P: Farm Depression

Inflow Area = 3.290 ac, 2.37% Impervious, Inflow Depth > 4.23" for 100 year event
 Inflow = 13.41 cfs @ 12.20 hrs, Volume= 1.160 af
 Outflow = 1.83 cfs @ 13.08 hrs, Volume= 1.023 af, Atten= 86%, Lag= 52.8 min
 Discarded = 1.83 cfs @ 13.08 hrs, Volume= 1.023 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.17' @ 13.08 hrs Surf.Area= 26,221 sf Storage= 23,987 cf

Plug-Flow detention time= 157.2 min calculated for 1.020 af (88% of inflow)
 Center-of-Mass det. time= 121.1 min (915.7 - 794.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	161.00'	52,117 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
161.00	0	0	0	0	
162.00	10,223	3,408	3,408	10,225	
164.00	42,096	48,709	52,117	42,116	

Device	Routing	Invert	Outlet Devices									
#1	Discarded	161.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'									
#2	Primary	163.50'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Discarded OutFlow Max=1.83 cfs @ 13.08 hrs HW=163.17' (Free Discharge)
 ↑1=Exfiltration (Controls 1.83 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=161.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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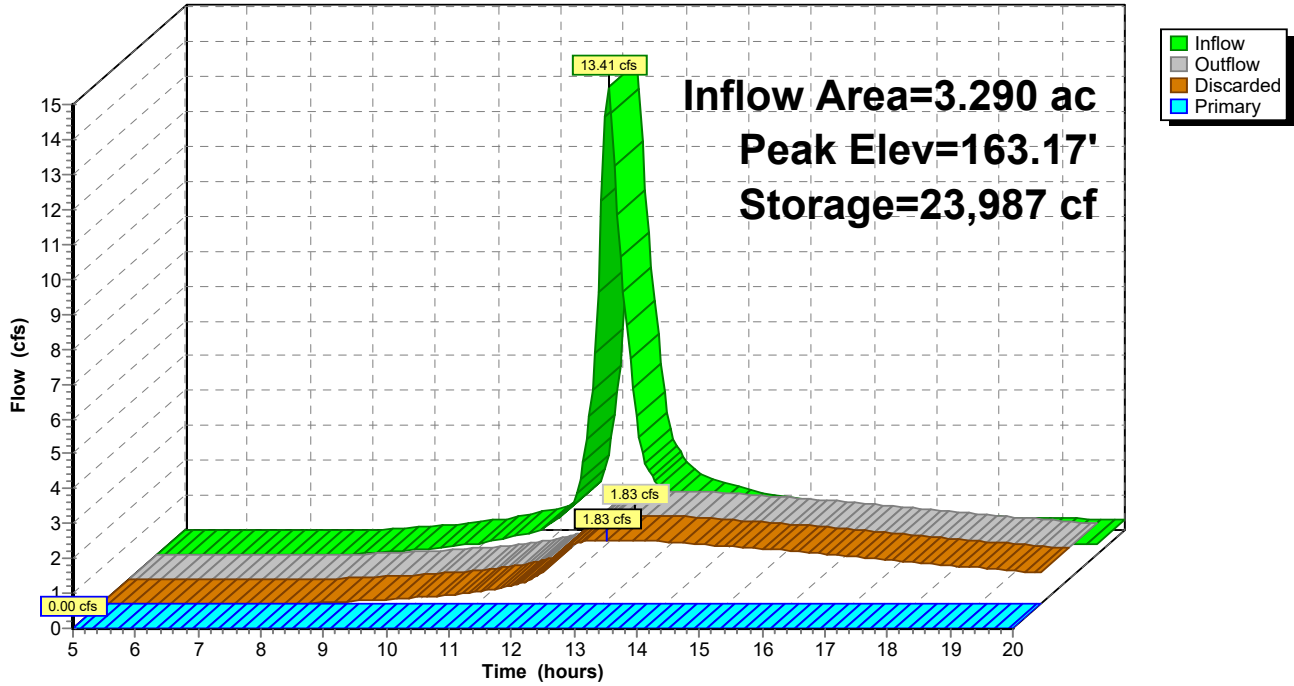
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Pond 12P: Farm Depression

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Summary for Pond 13P: Farm Depression

Inflow Area = 18.631 ac, 0.42% Impervious, Inflow Depth > 4.36" for 100 year event
 Inflow = 38.68 cfs @ 12.85 hrs, Volume= 6.765 af
 Outflow = 27.76 cfs @ 13.29 hrs, Volume= 5.889 af, Atten= 28%, Lag= 26.4 min
 Discarded = 7.27 cfs @ 13.29 hrs, Volume= 4.073 af
 Primary = 20.49 cfs @ 13.29 hrs, Volume= 1.817 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.73' @ 13.29 hrs Surf.Area= 104,128 sf Storage= 95,294 cf

Plug-Flow detention time= 101.8 min calculated for 5.870 af (87% of inflow)
 Center-of-Mass det. time= 66.4 min (895.8 - 829.3)

Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	126,275 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
160.00	18,000	0	0	18,000
162.00	124,141	126,275	126,275	124,155

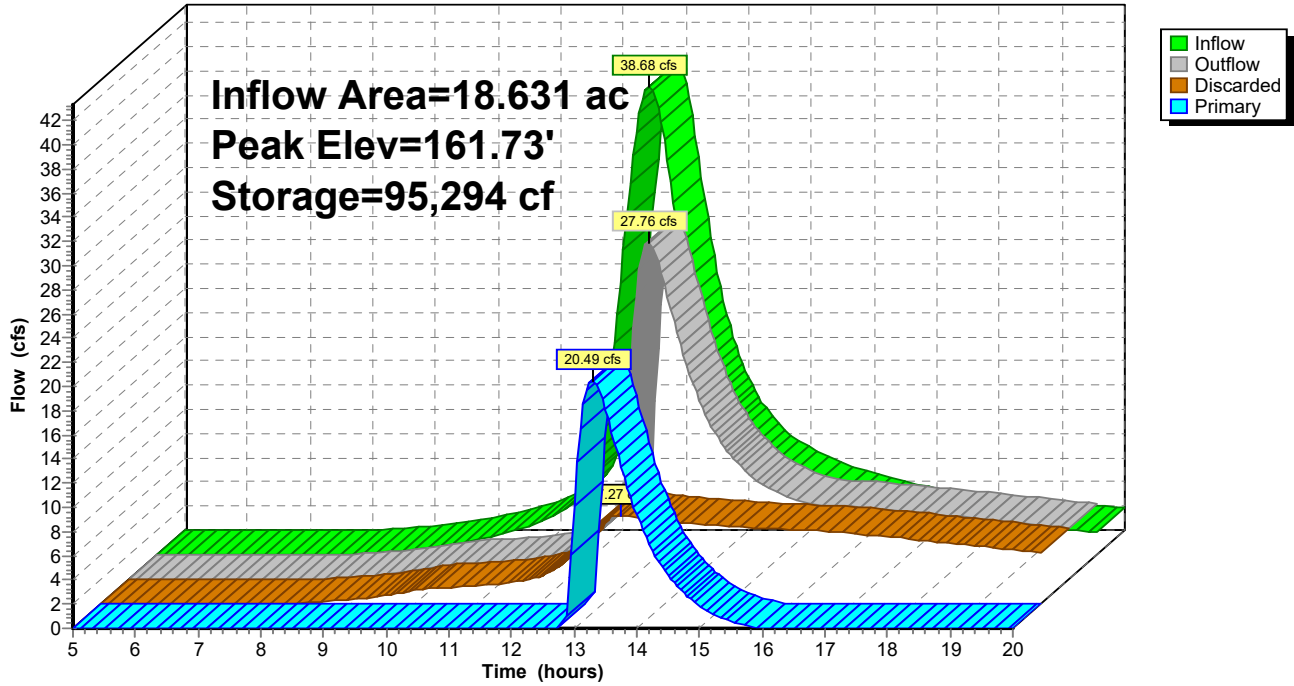
Device	Routing	Invert	Outlet Devices
#1	Primary	161.50'	70.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=7.27 cfs @ 13.29 hrs HW=161.73' (Free Discharge)
 ↑**2=Exfiltration** (Controls 7.27 cfs)

Primary OutFlow Max=20.45 cfs @ 13.29 hrs HW=161.73' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 20.45 cfs @ 1.28 fps)

Pond 13P: Farm Depression

Hydrograph



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Summary for Pond 15P: Farm Depression

Inflow Area = 2.521 ac, 5.01% Impervious, Inflow Depth > 4.11" for 100 year event
 Inflow = 8.57 cfs @ 12.30 hrs, Volume= 0.864 af
 Outflow = 2.01 cfs @ 12.95 hrs, Volume= 0.833 af, Atten= 77%, Lag= 39.4 min
 Discarded = 2.01 cfs @ 12.95 hrs, Volume= 0.833 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.53' @ 12.95 hrs Surf.Area= 28,868 sf Storage= 15,686 cf

Plug-Flow detention time= 101.5 min calculated for 0.833 af (96% of inflow)
 Center-of-Mass det. time= 88.7 min (890.4 - 801.7)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	33,327 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	100	0	0	100
164.00	47,707	33,327	33,327	47,714

Device	Routing	Invert	Outlet Devices
#1	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.01 cfs @ 12.95 hrs HW=163.53' (Free Discharge)
 ↑1=Exfiltration (Controls 2.01 cfs)

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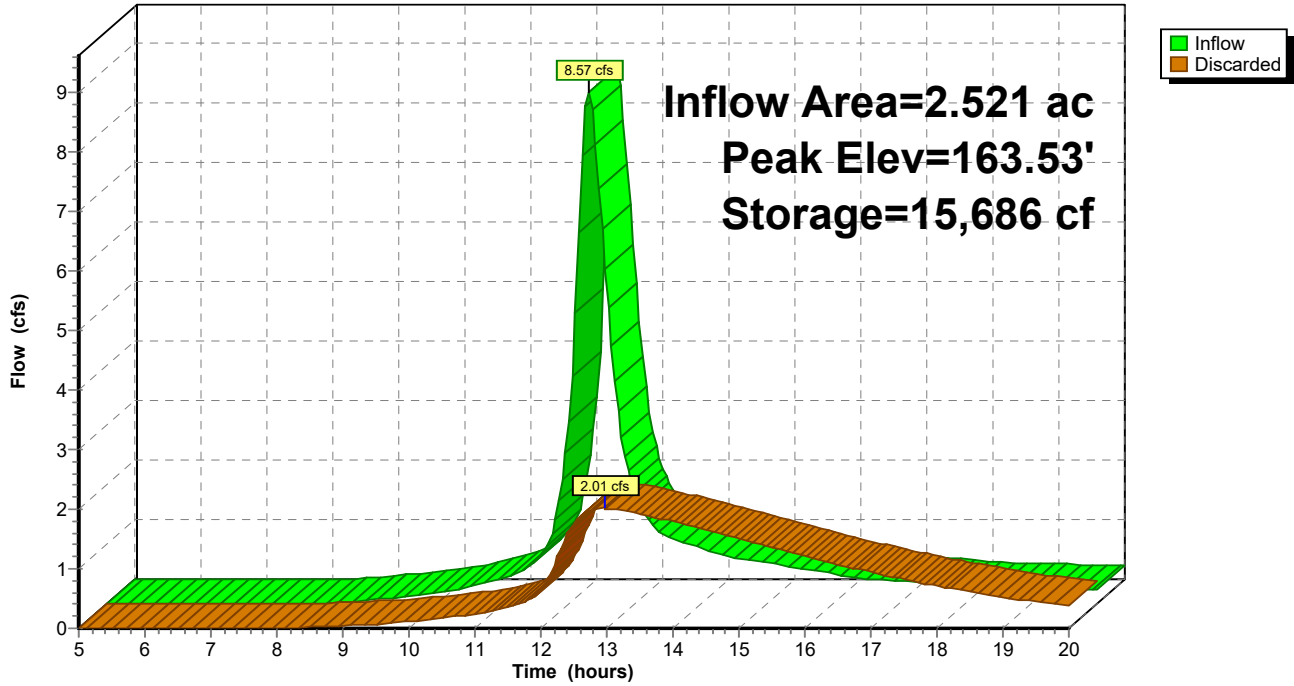
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Pond 15P: Farm Depression

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Summary for Pond 16P: Farm Depression

Inflow Area = 4.717 ac, 0.69% Impervious, Inflow Depth > 4.10" for 100 year event
 Inflow = 14.33 cfs @ 12.39 hrs, Volume= 1.612 af
 Outflow = 7.13 cfs @ 12.80 hrs, Volume= 1.578 af, Atten= 50%, Lag= 24.5 min
 Discarded = 3.57 cfs @ 12.80 hrs, Volume= 1.415 af
 Primary = 3.56 cfs @ 12.80 hrs, Volume= 0.162 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 163.09' @ 12.80 hrs Surf.Area= 51,244 sf Storage= 24,305 cf

Plug-Flow detention time= 76.0 min calculated for 1.578 af (98% of inflow)
 Center-of-Mass det. time= 68.0 min (874.7 - 806.8)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	106,646 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
162.00	3,106	0	0	3,106
164.00	136,289	106,646	106,646	136,298

Device	Routing	Invert	Outlet Devices
#1	Primary	163.00'	50.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	162.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.57 cfs @ 12.80 hrs HW=163.09' (Free Discharge)
 ↑**2=Exfiltration** (Controls 3.57 cfs)

Primary OutFlow Max=3.54 cfs @ 12.80 hrs HW=163.09' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 3.54 cfs @ 0.80 fps)

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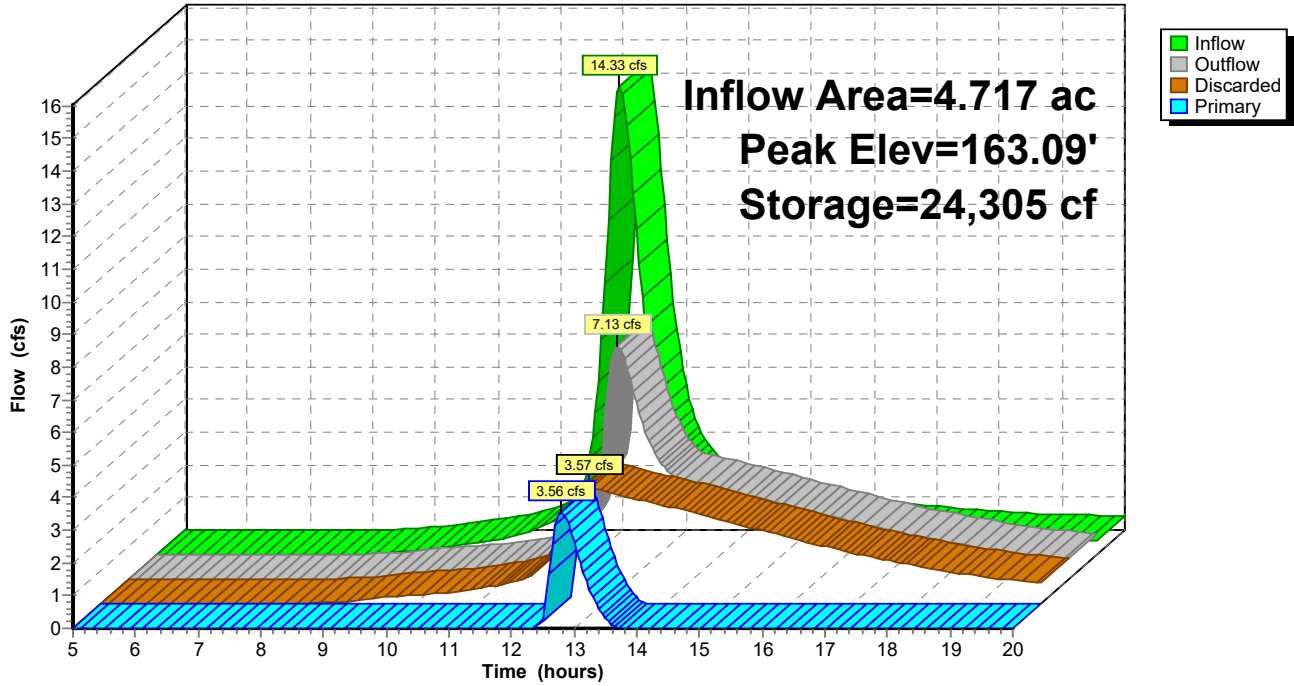
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Pond 16P: Farm Depression

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Summary for Pond 17P: Sediment Trap

Inflow Area = 10.053 ac, 0.32% Impervious, Inflow Depth > 2.49" for 100 year event
 Inflow = 18.64 cfs @ 12.31 hrs, Volume= 2.088 af
 Outflow = 7.39 cfs @ 12.97 hrs, Volume= 1.936 af, Atten= 60%, Lag= 39.2 min
 Discarded = 3.31 cfs @ 12.97 hrs, Volume= 1.594 af
 Primary = 4.08 cfs @ 12.97 hrs, Volume= 0.342 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.27' @ 12.97 hrs Surf.Area= 47,416 sf Storage= 38,204 cf

Plug-Flow detention time= 113.1 min calculated for 1.936 af (93% of inflow)
 Center-of-Mass det. time= 89.0 min (886.5 - 797.5)

Volume	Invert	Avail.Storage	Storage Description
#1	160.00'	81,430 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
160.00	0	0	0 0
162.00	39,746	26,497	26,497 39,752
163.00	71,678	54,933	81,430 71,695

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	160.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.31 cfs @ 12.97 hrs HW=162.27' (Free Discharge)
 ↑**2=Exfiltration** (Controls 3.31 cfs)

Primary OutFlow Max=4.07 cfs @ 12.97 hrs HW=162.27' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 4.07 cfs @ 1.26 fps)

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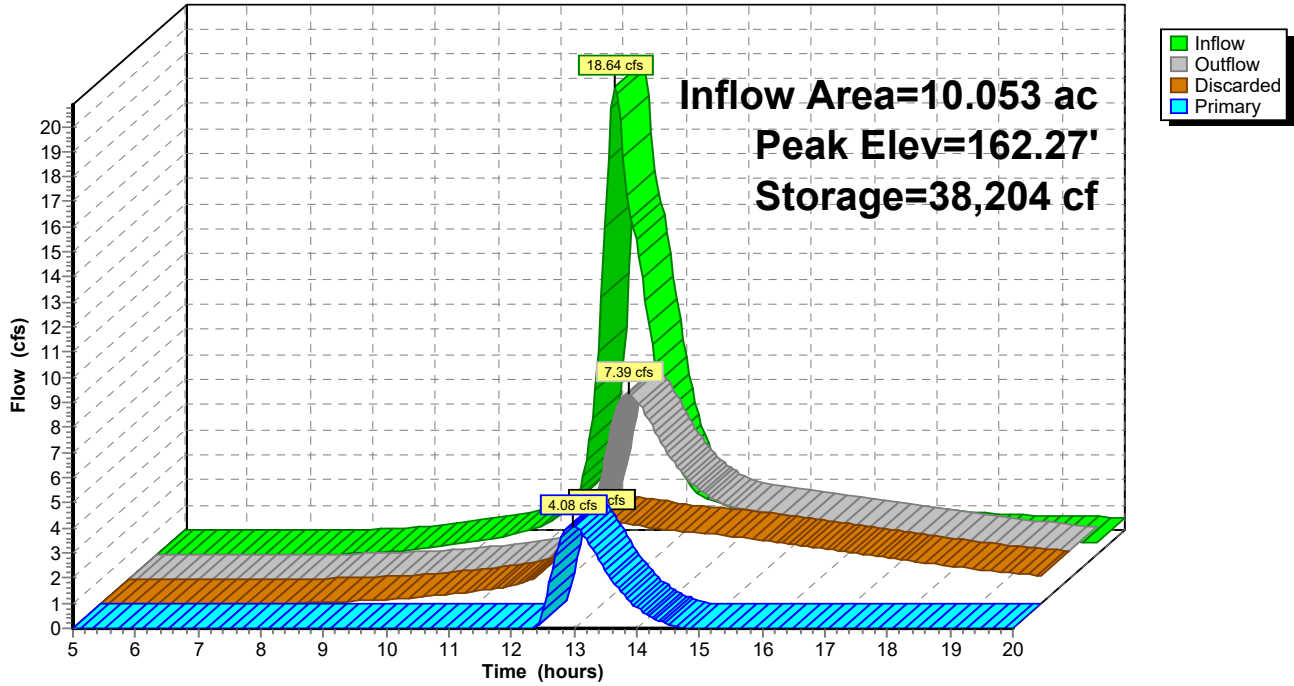
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Pond 17P: Sediment Trap

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Summary for Pond 19P: Valley Berm

Inflow Area = 21.569 ac, 0.00% Impervious, Inflow Depth > 4.19" for 100 year event
 Inflow = 52.78 cfs @ 12.63 hrs, Volume= 7.523 af
 Outflow = 31.12 cfs @ 13.08 hrs, Volume= 6.131 af, Atten= 41%, Lag= 27.1 min
 Discarded = 5.61 cfs @ 13.08 hrs, Volume= 3.480 af
 Primary = 25.50 cfs @ 13.08 hrs, Volume= 2.651 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.86' @ 13.08 hrs Surf.Area= 47,636 sf Storage= 119,917 cf

Plug-Flow detention time= 113.6 min calculated for 6.131 af (82% of inflow)
 Center-of-Mass det. time= 66.2 min (885.5 - 819.2)

Volume	Invert	Avail.Storage	Storage Description
#1	151.00'	126,793 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
151.00	0	0	0	0
152.00	9,106	3,035	3,035	9,108
154.00	34,526	40,909	43,944	34,547
156.00	48,730	82,849	126,793	48,824

Device	Routing	Invert	Outlet Devices
#1	Primary	155.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	151.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=5.61 cfs @ 13.08 hrs HW=155.86' (Free Discharge)
 ↑**2=Exfiltration** (Controls 5.61 cfs)

Primary OutFlow Max=25.46 cfs @ 13.08 hrs HW=155.86' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 25.46 cfs @ 2.48 fps)

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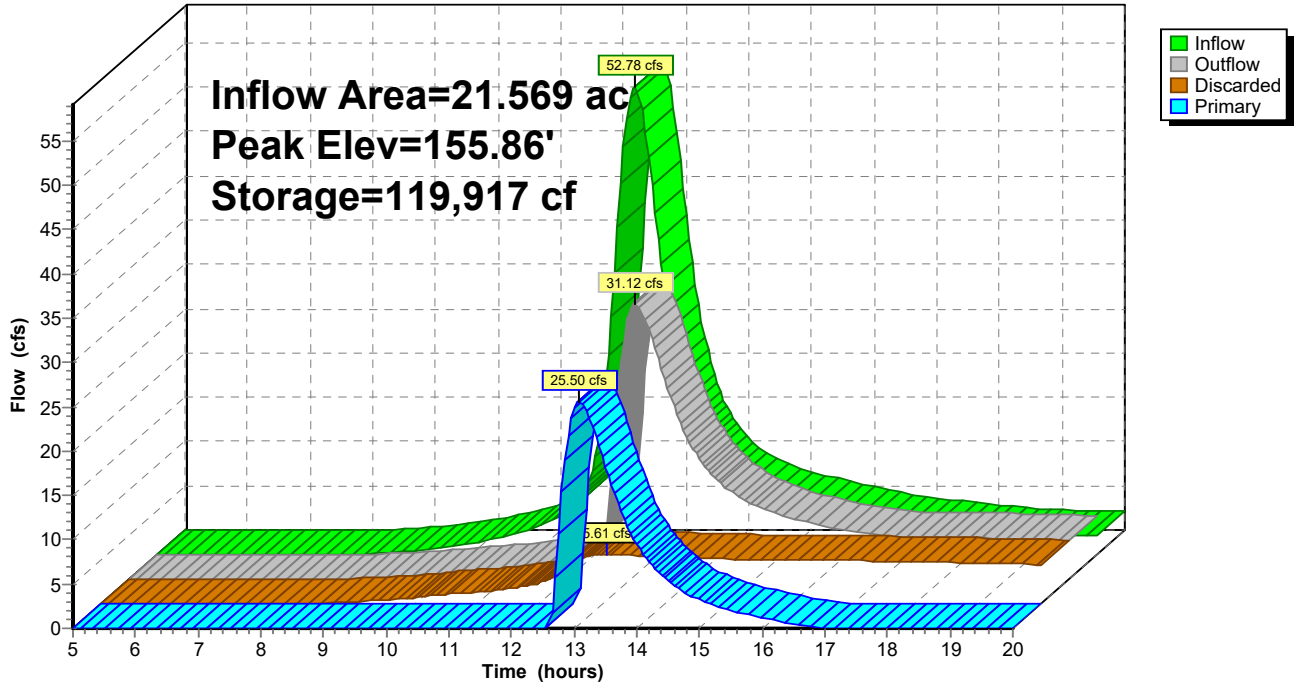
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Pond 19P: Valley Berm

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Summary for Pond 20P: Sediment Trap

Inflow Area = 1.629 ac, 0.00% Impervious, Inflow Depth > 4.11" for 100 year event
 Inflow = 5.58 cfs @ 12.29 hrs, Volume= 0.558 af
 Outflow = 4.61 cfs @ 12.45 hrs, Volume= 0.382 af, Atten= 17%, Lag= 9.4 min
 Primary = 4.61 cfs @ 12.45 hrs, Volume= 0.382 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.29' @ 12.45 hrs Surf.Area= 4,118 sf Storage= 8,734 cf

Plug-Flow detention time= 115.8 min calculated for 0.382 af (68% of inflow)
 Center-of-Mass det. time= 48.8 min (850.2 - 801.4)

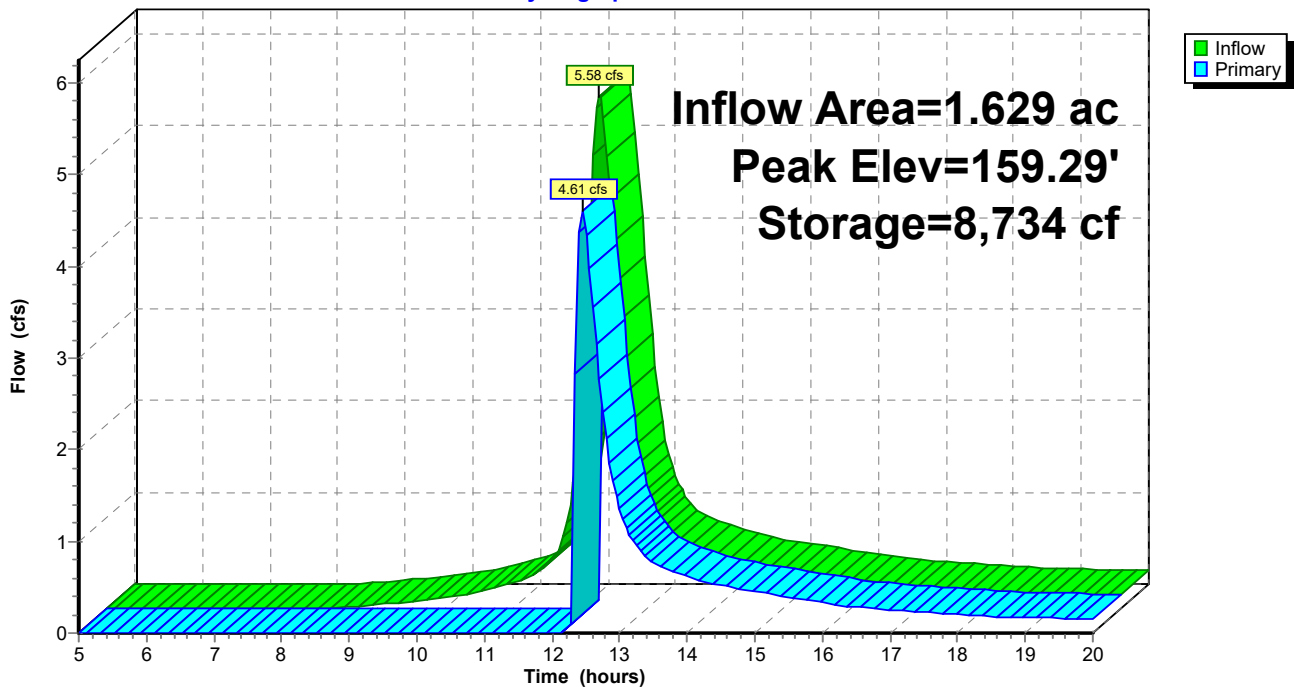
Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	11,904 cf	110.00'W x 12.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=4.60 cfs @ 12.45 hrs HW=159.29' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir (Weir Controls 4.60 cfs @ 1.32 fps)

Pond 20P: Sediment Trap

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 21P: Valley Berm

Inflow Area = 38.989 ac, 0.08% Impervious, Inflow Depth > 1.62" for 100 year event
 Inflow = 35.66 cfs @ 13.02 hrs, Volume= 5.275 af
 Outflow = 30.84 cfs @ 13.28 hrs, Volume= 4.444 af, Atten= 14%, Lag= 15.6 min
 Discarded = 2.11 cfs @ 13.28 hrs, Volume= 1.263 af
 Primary = 28.73 cfs @ 13.28 hrs, Volume= 3.181 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.93' @ 13.28 hrs Surf.Area= 29,808 sf Storage= 70,481 cf

Plug-Flow detention time= 74.7 min calculated for 4.429 af (84% of inflow)
 Center-of-Mass det. time= 45.8 min (862.5 - 816.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	144.00'	72,609 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
144.00	3,692	0	0	3,692
146.00	20,668	22,064	22,064	20,683
148.00	30,176	50,545	72,609	30,258

Device	Routing	Invert	Outlet Devices
#1	Primary	147.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	144.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.11 cfs @ 13.28 hrs HW=147.93' (Free Discharge)
 ↑2=Exfiltration (Controls 2.11 cfs)

Primary OutFlow Max=28.68 cfs @ 13.28 hrs HW=147.93' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 28.68 cfs @ 2.58 fps)

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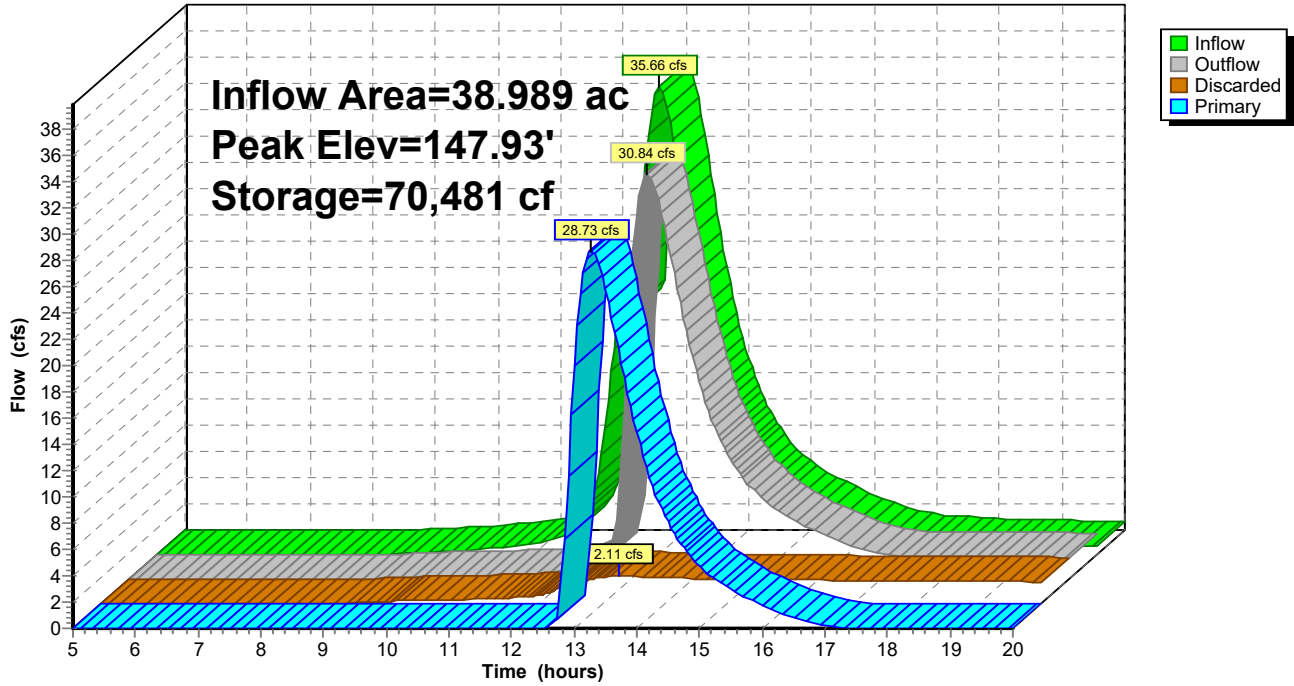
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Pond 21P: Valley Berm

Hydrograph



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Summary for Pond 22P: Sediment Trap

Inflow Area = 17.727 ac, 0.00% Impervious, Inflow Depth > 4.38" for 100 year event
 Inflow = 37.36 cfs @ 12.86 hrs, Volume= 6.468 af
 Outflow = 31.74 cfs @ 13.16 hrs, Volume= 5.345 af, Atten= 15%, Lag= 17.9 min
 Discarded = 1.95 cfs @ 13.16 hrs, Volume= 1.213 af
 Primary = 29.80 cfs @ 13.16 hrs, Volume= 4.132 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 135.75' @ 13.16 hrs Surf.Area= 27,319 sf Storage= 77,211 cf

Plug-Flow detention time= 81.0 min calculated for 5.327 af (82% of inflow)
 Center-of-Mass det. time= 37.6 min (868.2 - 830.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	131.00'	84,211 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
131.00	7,145	0	0	7,145
132.00	10,375	8,710	8,710	10,392
133.00	14,183	12,229	20,939	14,220
134.00	18,569	16,327	37,266	18,629
135.00	23,407	20,941	58,208	23,494
136.00	28,690	26,004	84,211	28,808

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	131.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.95 cfs @ 13.16 hrs HW=135.75' (Free Discharge)
 ↳2=Exfiltration (Controls 1.95 cfs)

Primary OutFlow Max=29.77 cfs @ 13.16 hrs HW=135.75' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Weir Controls 29.77 cfs @ 2.98 fps)

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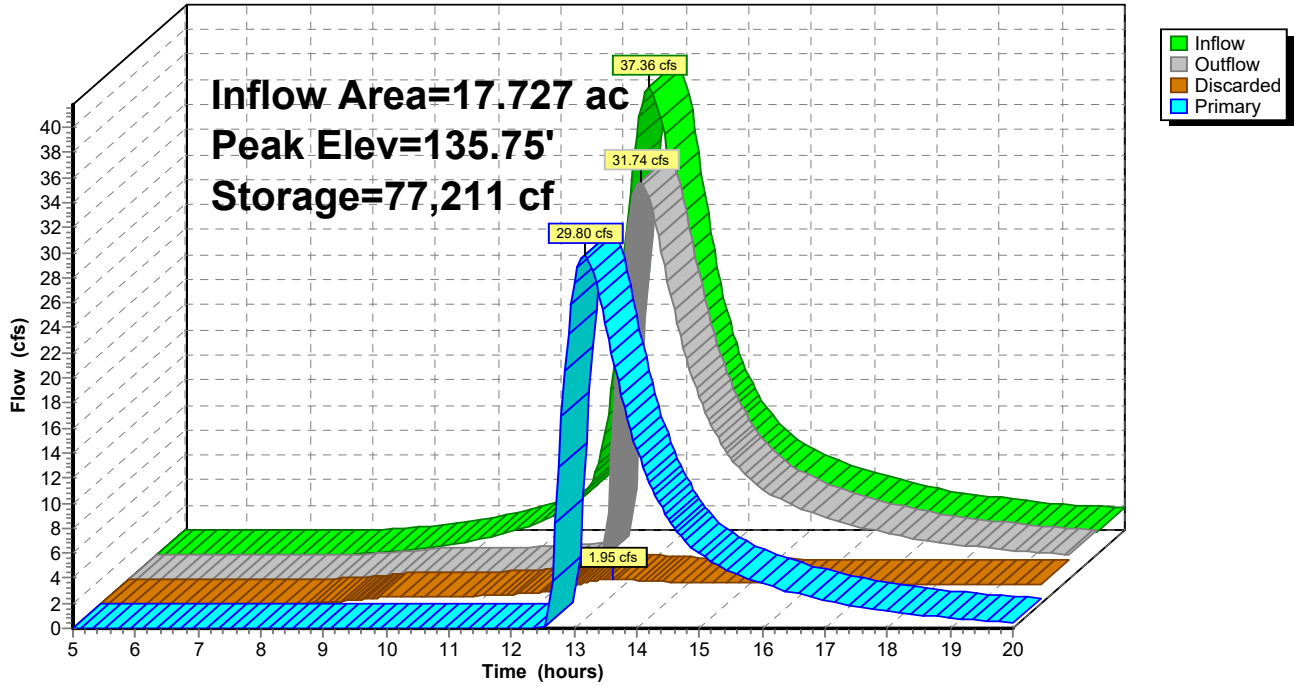
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Pond 22P: Sediment Trap

Hydrograph



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Summary for Pond 24P: Sediment Trap

Inflow Area = 2.795 ac, 0.00% Impervious, Inflow Depth > 4.34" for 100 year event
 Inflow = 10.85 cfs @ 12.24 hrs, Volume= 1.010 af
 Outflow = 7.41 cfs @ 12.45 hrs, Volume= 0.782 af, Atten= 32%, Lag= 12.6 min
 Discarded = 0.63 cfs @ 12.45 hrs, Volume= 0.399 af
 Primary = 6.78 cfs @ 12.45 hrs, Volume= 0.383 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 139.37' @ 12.45 hrs Surf.Area= 8,840 sf Storage= 15,273 cf

Plug-Flow detention time= 114.1 min calculated for 0.782 af (77% of inflow)
 Center-of-Mass det. time= 57.7 min (852.9 - 795.2)

Volume	Invert	Avail.Storage	Storage Description
#1	136.00'	21,509 cf	44.00'W x 30.00'L x 4.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	139.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	136.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.63 cfs @ 12.45 hrs HW=139.37' (Free Discharge)
 ↑2=Exfiltration (Controls 0.63 cfs)

Primary OutFlow Max=6.77 cfs @ 12.45 hrs HW=139.37' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 6.77 cfs @ 1.53 fps)

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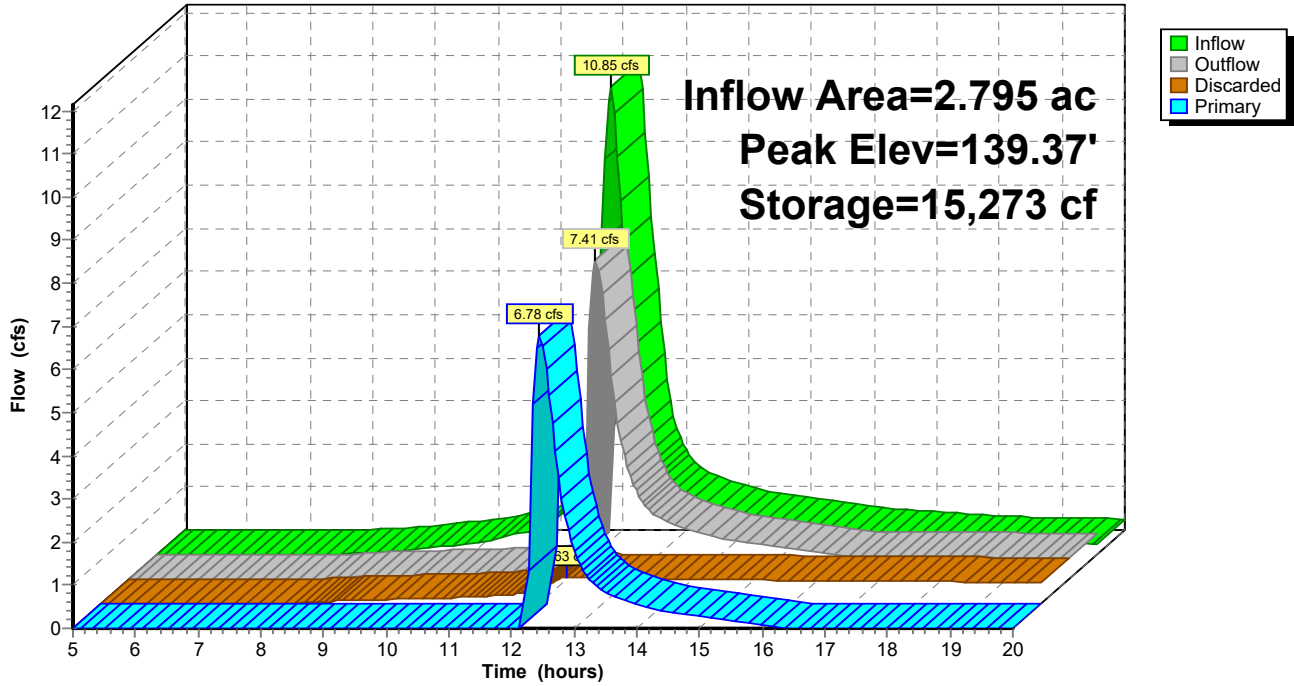
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Pond 24P: Sediment Trap

Hydrograph



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Summary for Pond 25P: Sediment Trap

Inflow Area = 12.168 ac, 0.00% Impervious, Inflow Depth > 4.30" for 100 year event
 Inflow = 30.46 cfs @ 12.63 hrs, Volume= 4.357 af
 Outflow = 11.78 cfs @ 13.35 hrs, Volume= 2.668 af, Atten= 61%, Lag= 43.2 min
 Discarded = 1.96 cfs @ 13.35 hrs, Volume= 1.465 af
 Primary = 9.82 cfs @ 13.35 hrs, Volume= 1.203 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.96' @ 13.35 hrs Surf.Area= 27,127 sf Storage= 89,062 cf

Plug-Flow detention time= 141.4 min calculated for 2.668 af (61% of inflow)
 Center-of-Mass det. time= 69.7 min (887.3 - 817.7)

Volume	Invert	Avail.Storage	Storage Description
#1	163.00'	118,500 cf	60.00'W x 300.00'L x 5.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.96 cfs @ 13.35 hrs HW=166.96' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.96 cfs)

Primary OutFlow Max=9.80 cfs @ 13.35 hrs HW=166.96' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 9.80 cfs @ 1.76 fps)

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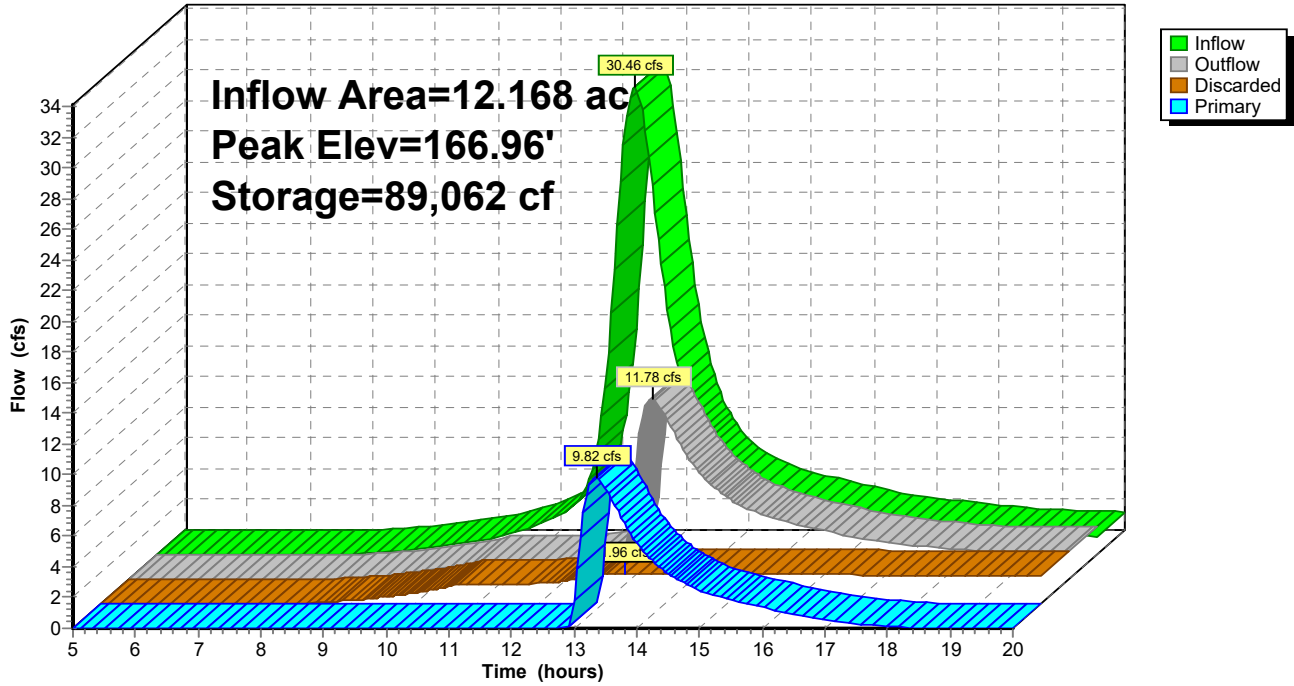
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Pond 25P: Sediment Trap

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Summary for Pond 27P: Sediment Trap

Inflow Area = 2.191 ac, 0.00% Impervious, Inflow Depth > 3.89" for 100 year event
 Inflow = 7.01 cfs @ 12.30 hrs, Volume= 0.710 af
 Outflow = 6.39 cfs @ 12.41 hrs, Volume= 0.557 af, Atten= 9%, Lag= 6.6 min
 Discarded = 0.25 cfs @ 12.42 hrs, Volume= 0.176 af
 Primary = 6.15 cfs @ 12.41 hrs, Volume= 0.381 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 168.45' @ 12.42 hrs Surf.Area= 3,427 sf Storage= 8,205 cf

Plug-Flow detention time= 85.9 min calculated for 0.557 af (78% of inflow)
 Center-of-Mass det. time= 31.3 min (836.7 - 805.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	165.00'	10,198 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
165.00	1,448	0	0	1,448	
166.00	1,953	1,694	1,694	1,974	
168.00	3,133	5,040	6,734	3,206	
169.00	3,807	3,465	10,198	3,911	

Device	Routing	Invert	Outlet Devices												
#1	Primary	168.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65												
			2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83												
#2	Discarded	165.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.25 cfs @ 12.42 hrs HW=168.44' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.25 cfs)

Primary OutFlow Max=6.05 cfs @ 12.41 hrs HW=168.44' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 6.05 cfs @ 1.70 fps)

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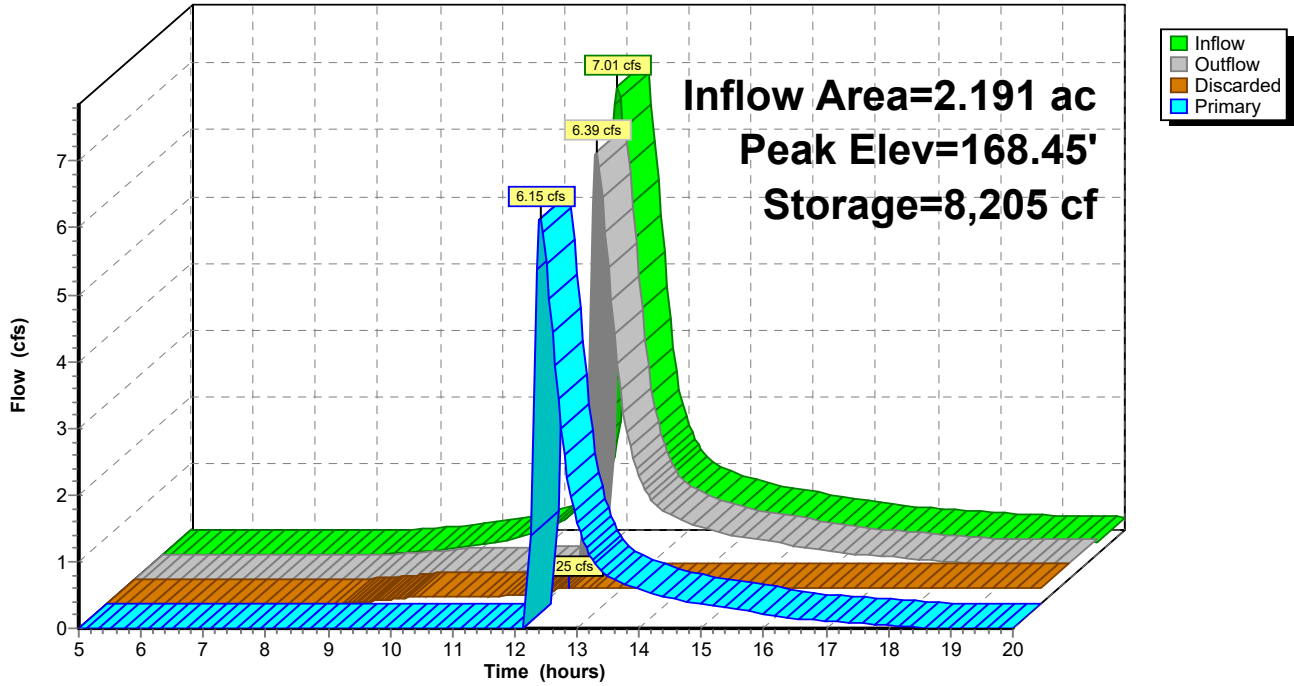
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Pond 27P: Sediment Trap

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Summary for Pond 28P: Kettle Hole

Inflow Area = 7.361 ac, 0.00% Impervious, Inflow Depth > 2.72" for 100 year event
 Inflow = 18.11 cfs @ 12.24 hrs, Volume= 1.667 af
 Outflow = 0.83 cfs @ 17.28 hrs, Volume= 0.524 af, Atten= 95%, Lag= 302.5 min
 Discarded = 0.83 cfs @ 17.28 hrs, Volume= 0.524 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 154.91' @ 17.28 hrs Surf.Area= 23,637 sf Storage= 51,512 cf

Plug-Flow detention time= 244.8 min calculated for 0.524 af (31% of inflow)
 Center-of-Mass det. time= 148.8 min (968.3 - 819.4)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	703,547 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	1,301	0	0	1,301
152.00	7,637	8,060	8,060	7,652
154.00	17,812	24,741	32,802	17,857
156.00	31,769	48,913	81,714	31,858
158.00	44,943	76,332	158,046	45,104
160.00	56,203	100,936	258,983	56,476
162.00	68,079	124,092	383,075	68,483
164.00	79,954	147,874	530,949	80,513
166.00	92,803	172,598	703,547	93,530

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.83 cfs @ 17.28 hrs HW=154.91' (Free Discharge)

↑1=Exfiltration (Controls 0.83 cfs)

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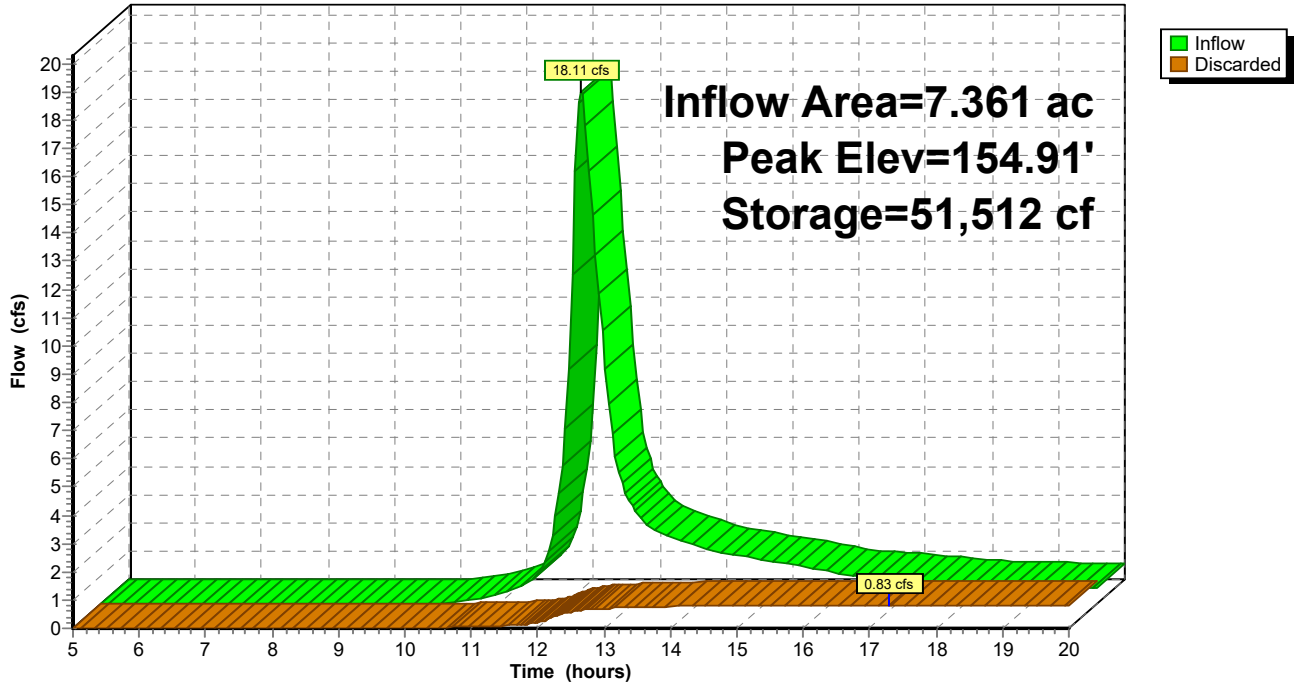
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Pond 28P: Kettle Hole

Hydrograph



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Summary for Pond 29P: Kettle Hole

Inflow Area = 1.626 ac, 0.00% Impervious, Inflow Depth > 0.91" for 100 year event
 Inflow = 1.14 cfs @ 12.15 hrs, Volume= 0.124 af
 Outflow = 0.09 cfs @ 17.51 hrs, Volume= 0.054 af, Atten= 92%, Lag= 322.0 min
 Discarded = 0.09 cfs @ 17.51 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 147.97' @ 17.51 hrs Surf.Area= 2,500 sf Storage= 3,190 cf

Plug-Flow detention time= 229.5 min calculated for 0.054 af (43% of inflow)
 Center-of-Mass det. time= 116.1 min (975.8 - 859.7)

Volume	Invert	Avail.Storage	Storage Description
#1	146.00'	140,344 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
146.00	883	0	0	883
148.00	2,535	3,276	3,276	2,559
150.00	4,534	6,973	10,249	4,601
152.00	6,834	11,290	21,539	6,962
154.00	10,301	17,017	38,555	10,490
156.00	14,424	24,610	63,165	14,687
158.00	19,416	33,717	96,882	19,763
160.00	24,132	43,463	140,344	24,593

Device	Routing	Invert	Outlet Devices
#1	Discarded	146.00'	1.500 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.09 cfs @ 17.51 hrs HW=147.97' (Free Discharge)
 ↑1=Exfiltration (Controls 0.09 cfs)

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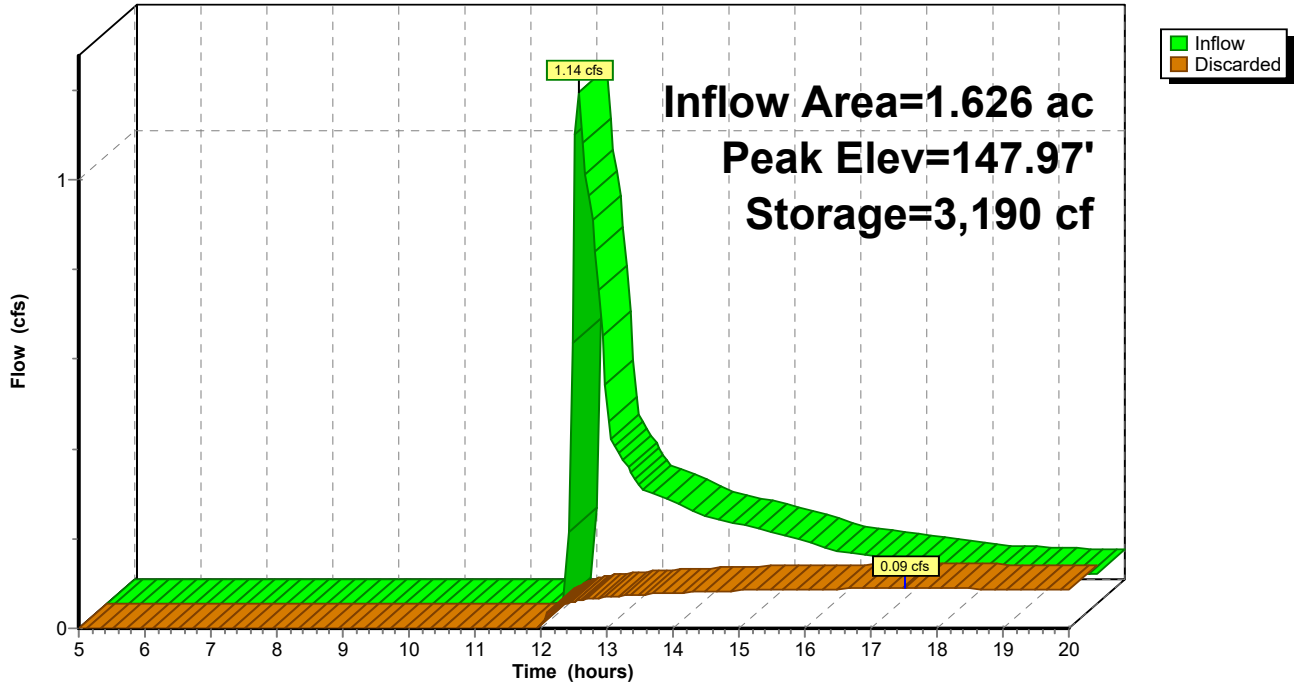
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Pond 29P: Kettle Hole

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Summary for Pond 30P: Farm Depression

Inflow Area = 3.911 ac, 0.00% Impervious, Inflow Depth > 4.57" for 100 year event
 Inflow = 18.71 cfs @ 12.16 hrs, Volume= 1.490 af
 Outflow = 2.44 cfs @ 12.96 hrs, Volume= 1.391 af, Atten= 87%, Lag= 48.0 min
 Discarded = 2.44 cfs @ 12.96 hrs, Volume= 1.391 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 170.89' @ 12.96 hrs Surf.Area= 34,997 sf Storage= 30,000 cf

Plug-Flow detention time= 144.2 min calculated for 1.391 af (93% of inflow)
 Center-of-Mass det. time= 120.9 min (907.7 - 786.8)

Volume	Invert	Avail.Storage	Storage Description
#1	169.00'	177,312 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
169.00	0	0	0	0
170.00	19,015	6,338	6,338	19,017
172.00	61,742	76,681	83,019	61,766
173.00	131,151	94,293	177,312	131,183

Device	Routing	Invert	Outlet Devices
#1	Discarded	169.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=2.44 cfs @ 12.96 hrs HW=170.89' (Free Discharge)
 ↑1=Exfiltration (Controls 2.44 cfs)

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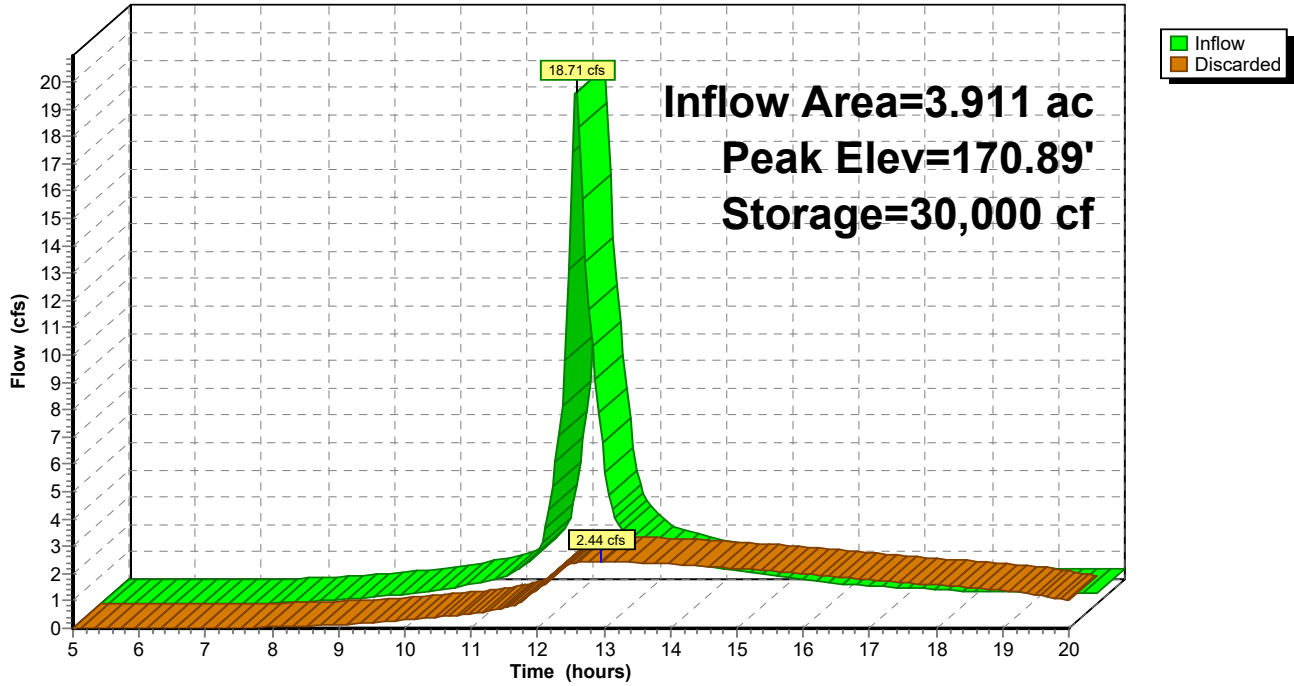
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Pond 30P: Farm Depression

Hydrograph



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Summary for Pond 31P: Kettle Hole

Inflow Area = 3.646 ac, 0.00% Impervious, Inflow Depth > 1.17" for 100 year event
Inflow = 3.79 cfs @ 12.15 hrs, Volume= 0.356 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 147.13' @ 20.00 hrs Surf.Area= 10,680 sf Storage= 15,454 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	144.00'	580,458 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
144.00	435	0	0
146.00	5,720	6,155	6,155
148.00	14,467	20,187	26,342
150.00	23,981	38,448	64,790
152.00	31,477	55,458	120,248
154.00	37,463	68,940	189,188
156.00	43,468	80,931	270,119
158.00	49,047	92,515	362,634
160.00	54,411	103,458	466,092
162.00	59,955	114,366	580,458

Proposed Conditions - North Plantation

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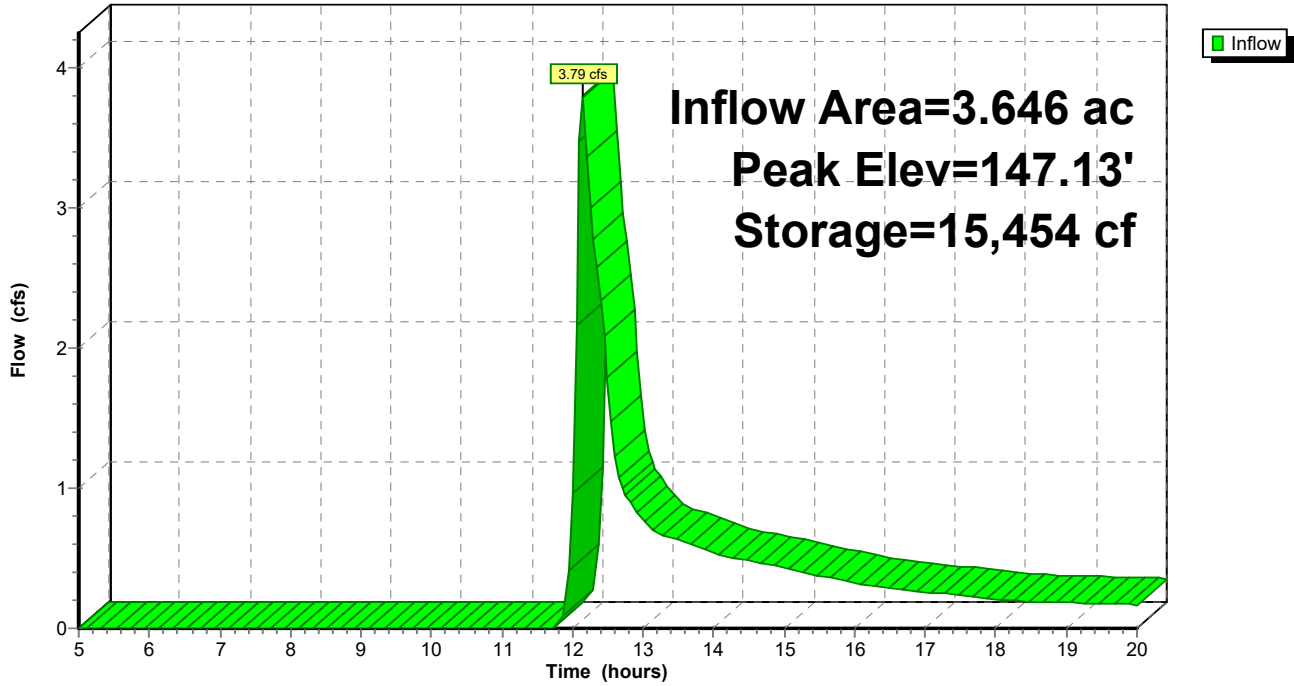
Type III 24-hr 100 year Rainfall=7.96"

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Pond 31P: Kettle Hole

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 33P: Sediment Trap

Inflow Area = 14.255 ac, 0.00% Impervious, Inflow Depth > 3.48" for 100 year event
 Inflow = 71.73 cfs @ 12.01 hrs, Volume= 4.135 af
 Outflow = 7.88 cfs @ 12.73 hrs, Volume= 3.058 af, Atten= 89%, Lag= 43.3 min
 Discarded = 3.95 cfs @ 12.73 hrs, Volume= 2.630 af
 Primary = 3.93 cfs @ 12.73 hrs, Volume= 0.429 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 153.76' @ 12.73 hrs Surf.Area= 33,467 sf Storage= 83,715 cf

Plug-Flow detention time= 172.7 min calculated for 3.048 af (74% of inflow)
 Center-of-Mass det. time= 109.4 min (904.5 - 795.1)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	91,856 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
150.00	12,664	0	0 12,664
152.00	22,508	34,703	34,703 22,552
154.00	35,109	57,152	91,856 35,210

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	153.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=3.95 cfs @ 12.73 hrs HW=153.76' (Free Discharge)
 ↑1=Exfiltration (Controls 3.95 cfs)

Primary OutFlow Max=3.92 cfs @ 12.73 hrs HW=153.76' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 3.92 cfs @ 1.24 fps)

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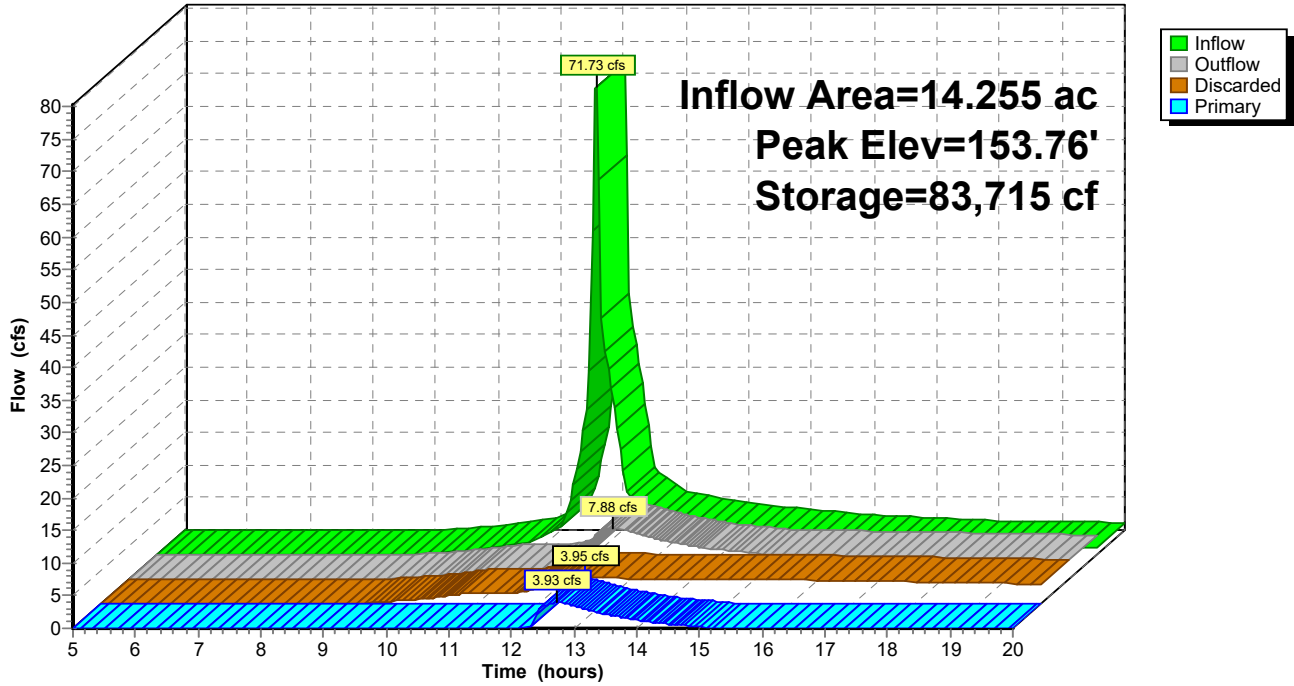
Type III 24-hr 100 year Rainfall=7.96"

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Pond 33P: Sediment Trap

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 34P: Sediment Trap

Inflow Area = 7.888 ac, 0.00% Impervious, Inflow Depth > 4.00" for 100 year event
 Inflow = 24.58 cfs @ 12.35 hrs, Volume= 2.626 af
 Outflow = 3.31 cfs @ 13.69 hrs, Volume= 1.833 af, Atten= 87%, Lag= 80.6 min
 Discarded = 3.31 cfs @ 13.69 hrs, Volume= 1.833 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 156.15' @ 13.69 hrs Surf.Area= 28,098 sf Storage= 58,847 cf

Plug-Flow detention time= 185.8 min calculated for 1.833 af (70% of inflow)
 Center-of-Mass det. time= 120.2 min (926.2 - 806.0)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	217,098 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
152.00	6,737	0	0	6,737
154.00	13,501	19,850	19,850	13,537
156.00	22,082	35,233	55,083	22,170
158.00	161,266	162,015	217,098	161,367

Device	Routing	Invert	Outlet Devices
#1	Discarded	152.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=3.31 cfs @ 13.69 hrs HW=156.15' (Free Discharge)
 ↑1=Exfiltration (Controls 3.31 cfs)

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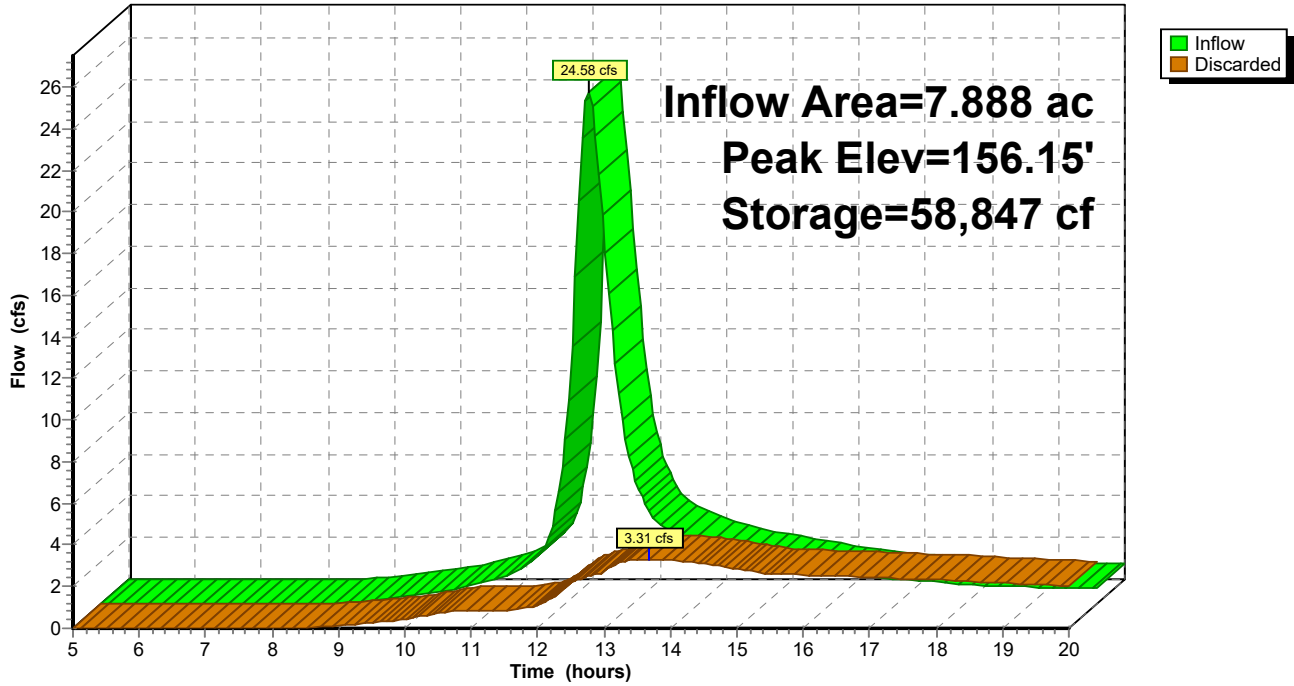
Type III 24-hr 100 year Rainfall=7.96"

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Pond 34P: Sediment Trap

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 35P: Sediment Trap

Inflow Area = 7.628 ac, 0.00% Impervious, Inflow Depth > 2.61" for 100 year event
 Inflow = 15.47 cfs @ 12.35 hrs, Volume= 1.656 af
 Outflow = 1.55 cfs @ 15.17 hrs, Volume= 0.842 af, Atten= 90%, Lag= 169.3 min
 Discarded = 1.55 cfs @ 15.17 hrs, Volume= 0.842 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 156.15' @ 15.17 hrs Surf.Area= 12,807 sf Storage= 41,965 cf

Plug-Flow detention time= 211.2 min calculated for 0.839 af (51% of inflow)
 Center-of-Mass det. time= 126.0 min (952.8 - 826.8)

Volume	Invert	Avail.Storage	Storage Description
#1	150.00'	123,166 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
150.00	4,063	0	0	4,063
152.00	5,754	9,768	9,768	5,825
154.00	7,588	13,300	23,068	7,748
156.00	9,623	17,171	40,239	9,886
158.00	86,000	82,927	123,166	86,276

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.00'	5.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.55 cfs @ 15.17 hrs HW=156.15' (Free Discharge)

↑1=Exfiltration (Controls 1.55 cfs)

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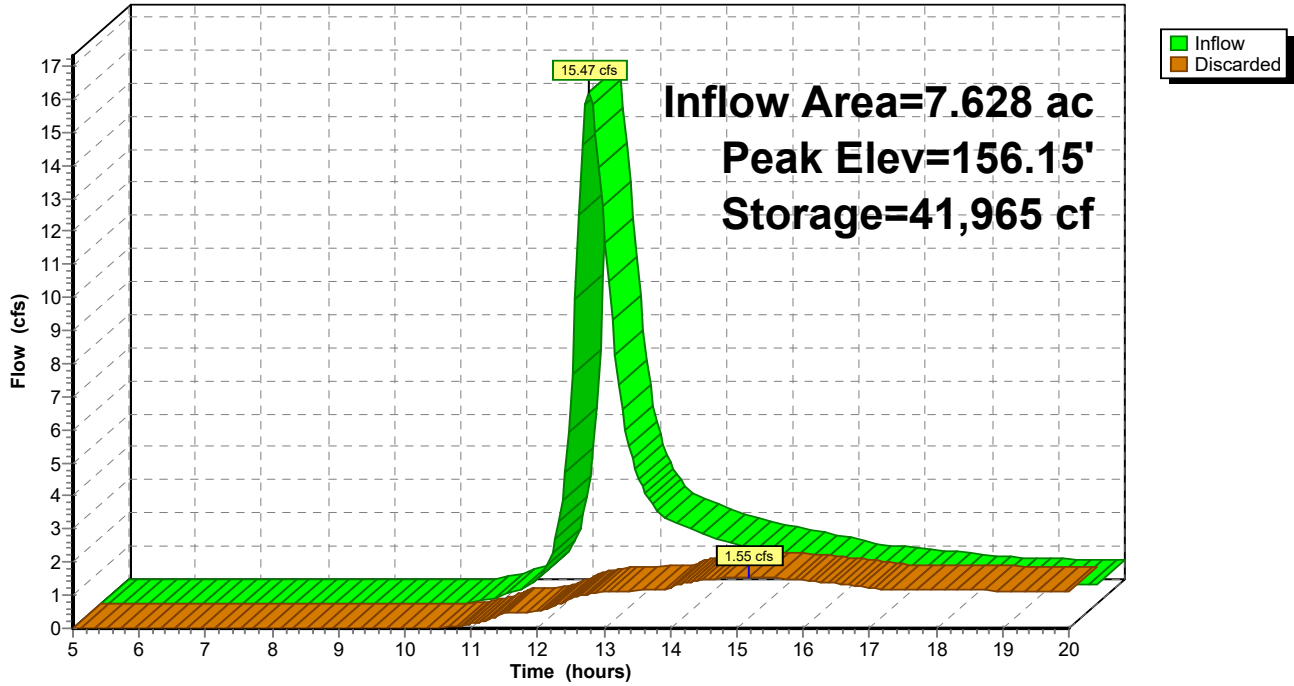
Type III 24-hr 100 year Rainfall=7.96"

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Pond 35P: Sediment Trap

Hydrograph



Proposed Conditions - North Plantation

Type III 24-hr 100 year Rainfall=7.96"

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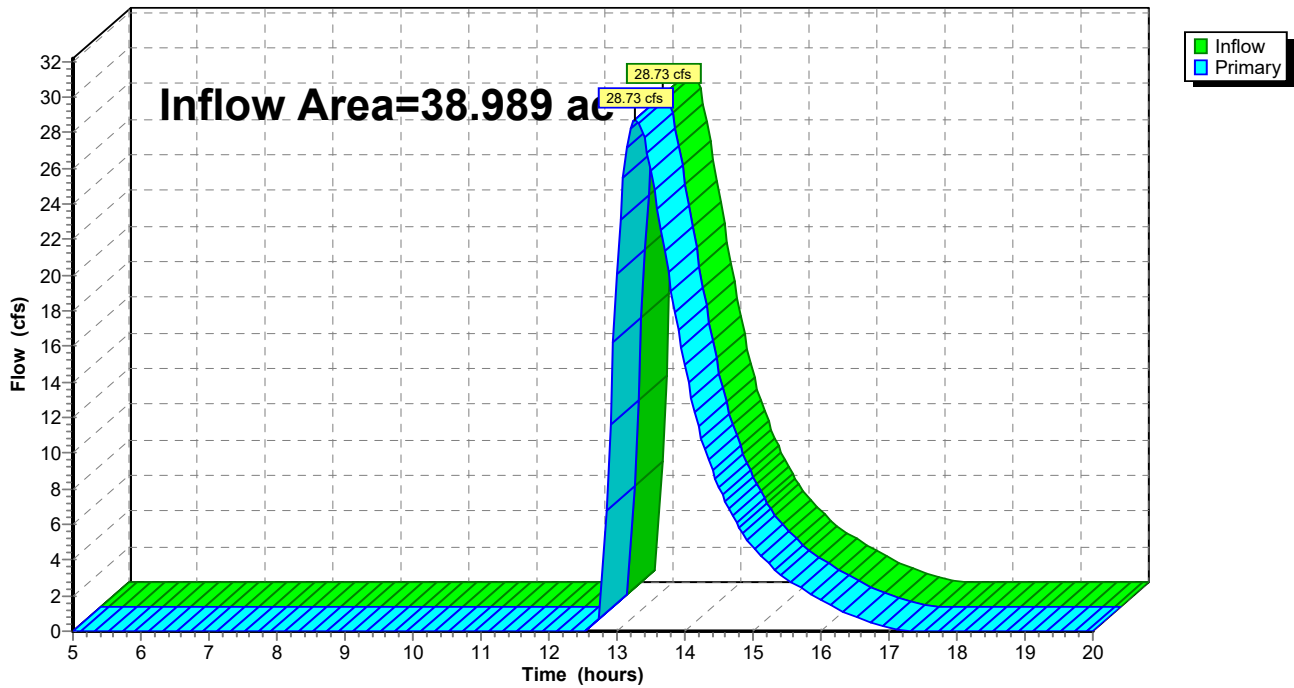
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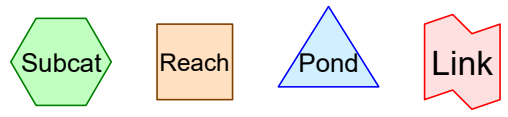
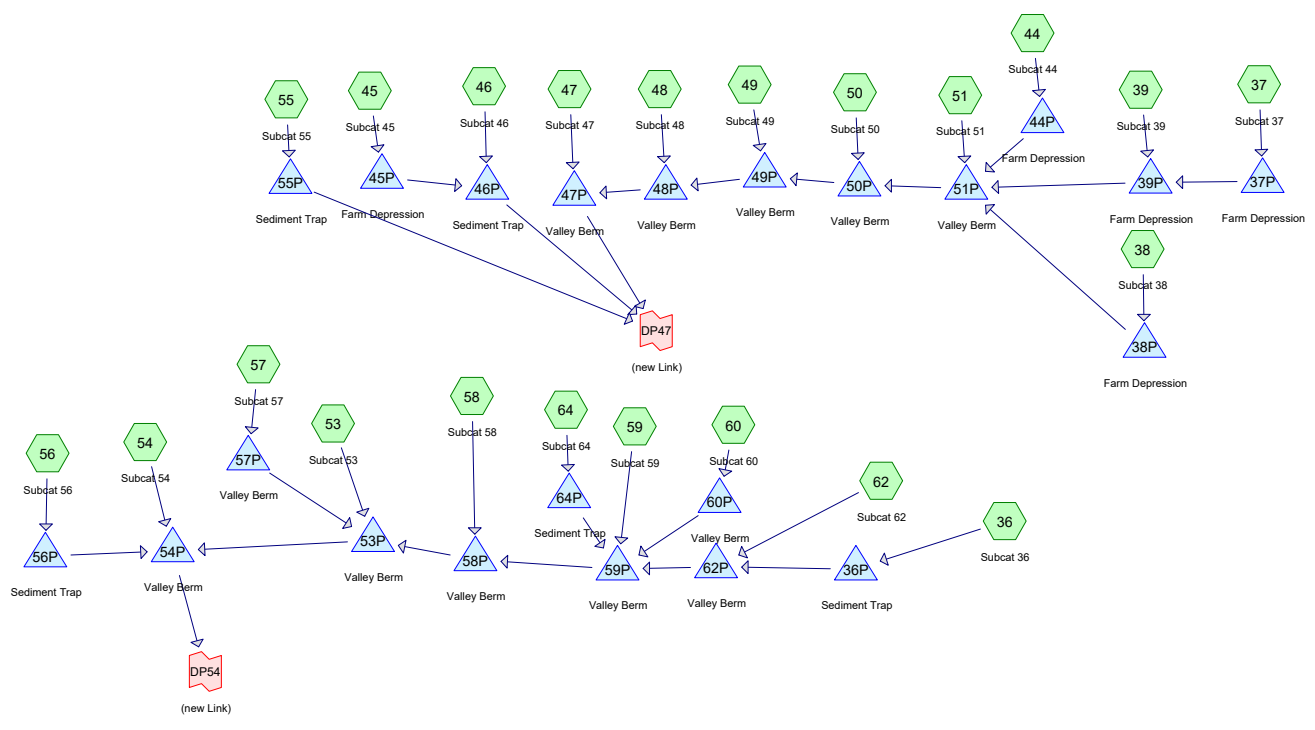
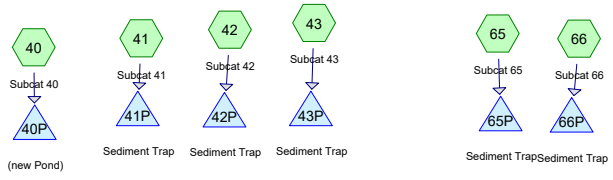
Inflow Area = 38.989 ac, 0.08% Impervious, Inflow Depth = 0.98" for 100 year event
Inflow = 28.73 cfs @ 13.28 hrs, Volume= 3.181 af
Primary = 28.73 cfs @ 13.28 hrs, Volume= 3.181 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP19: (new Link)

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Routing Diagram for Proposed Conditions - South Plantation
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.159	46	2 acre lots, 12% imp, HSG A (59, 64)
3.054	65	2 acre lots, 12% imp, HSG B (36, 62)
0.010	51	50-75% Grass cover, Fair, HSG A-B (44)
1.196	59	50-75% Grass cover, Fair, HSG A-B (45, 46, 47, 48, 49, 54, 55, 56, 57, 58, 59, 62, 64, 65)
95.619	74	50-75% Grass cover, Fair, HSG B-C (36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65, 66)
0.049	35	Brush, Fair, HSG A (65)
0.466	56	Brush, Fair, HSG B (65, 66)
11.935	30	Meadow, non-grazed, HSG A (40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65)
21.657	58	Meadow, non-grazed, HSG B (36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65, 66)
0.540	89	Paved roads w/open ditches, 50% imp, HSG B (36, 37, 39, 62, 65, 66)
10.941	36	Woods, Fair, HSG A (42, 43, 47, 48, 49, 50, 53, 54, 58, 59, 60, 64)
0.333	60	Woods, Fair, HSG B (42, 50, 54)
145.959	65	TOTAL AREA

Proposed Conditions - South Plantation

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
24.290	HSG A	40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65
121.669	HSG B	36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 64, 65, 66
0.000	HSG C	
0.000	HSG D	
0.000	Other	
145.959		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.159	3.054	0.000	0.000	0.000	3.213	2 acre lots, 12% imp	
1.206	95.619	0.000	0.000	0.000	96.825	50-75% Grass cover, Fair	
0.049	0.466	0.000	0.000	0.000	0.515	Brush, Fair	
11.935	21.657	0.000	0.000	0.000	33.592	Meadow, non-grazed	
0.000	0.540	0.000	0.000	0.000	0.540	Paved roads w/open ditches, 50% imp	
10.941	0.333	0.000	0.000	0.000	11.274	Woods, Fair	
24.290	121.669	0.000	0.000	0.000	145.959	TOTAL AREA	

Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 36: Subcat 36

Runoff = 3.91 cfs @ 12.53 hrs, Volume= 0.518 af, Depth> 0.72"

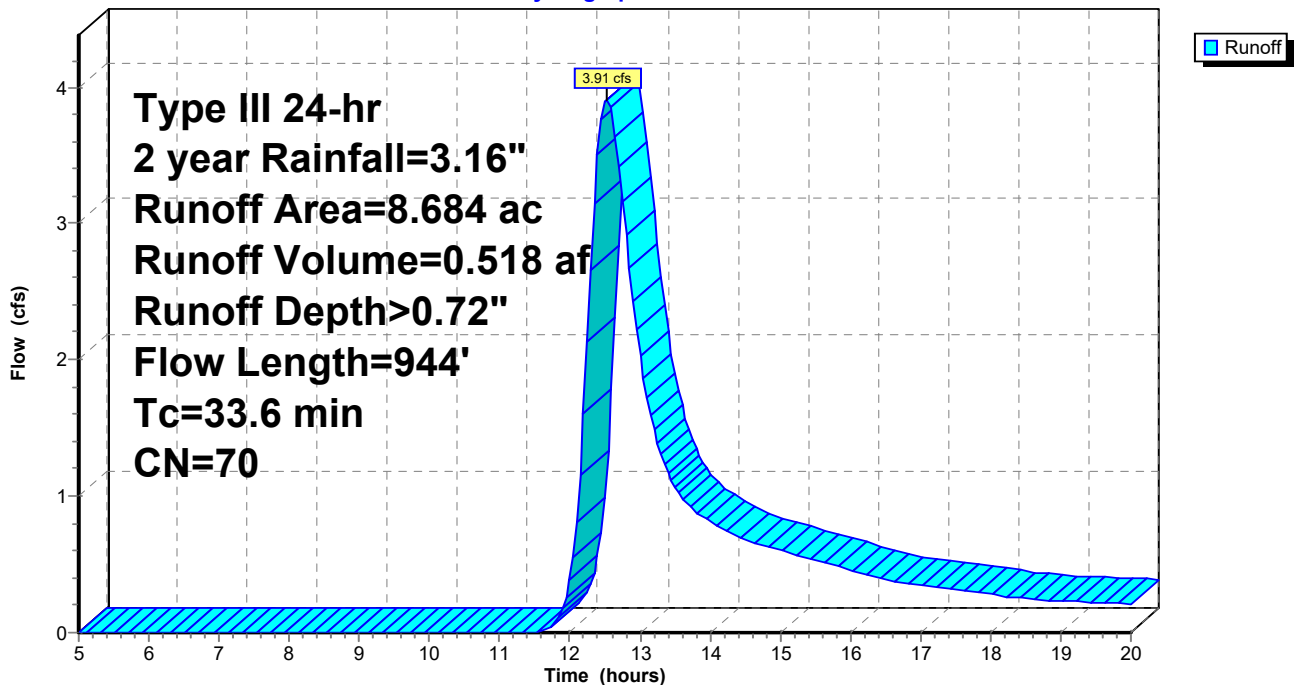
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.098	65	2 acre lots, 12% imp, HSG B
* 5.937	74	50-75% Grass cover, Fair, HSG B-C
2.424	58	Meadow, non-grazed, HSG B
0.225	89	Paved roads w/open ditches, 50% imp, HSG B
8.684	70	Weighted Average
8.560		98.57% Pervious Area
0.124		1.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.3	170	0.0059	0.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.8	724	0.0069	0.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.6	944	Total			

Subcatchment 36: Subcat 36

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 37: Subcat 37

Runoff = 0.38 cfs @ 12.31 hrs, Volume= 0.045 af, Depth> 0.47"

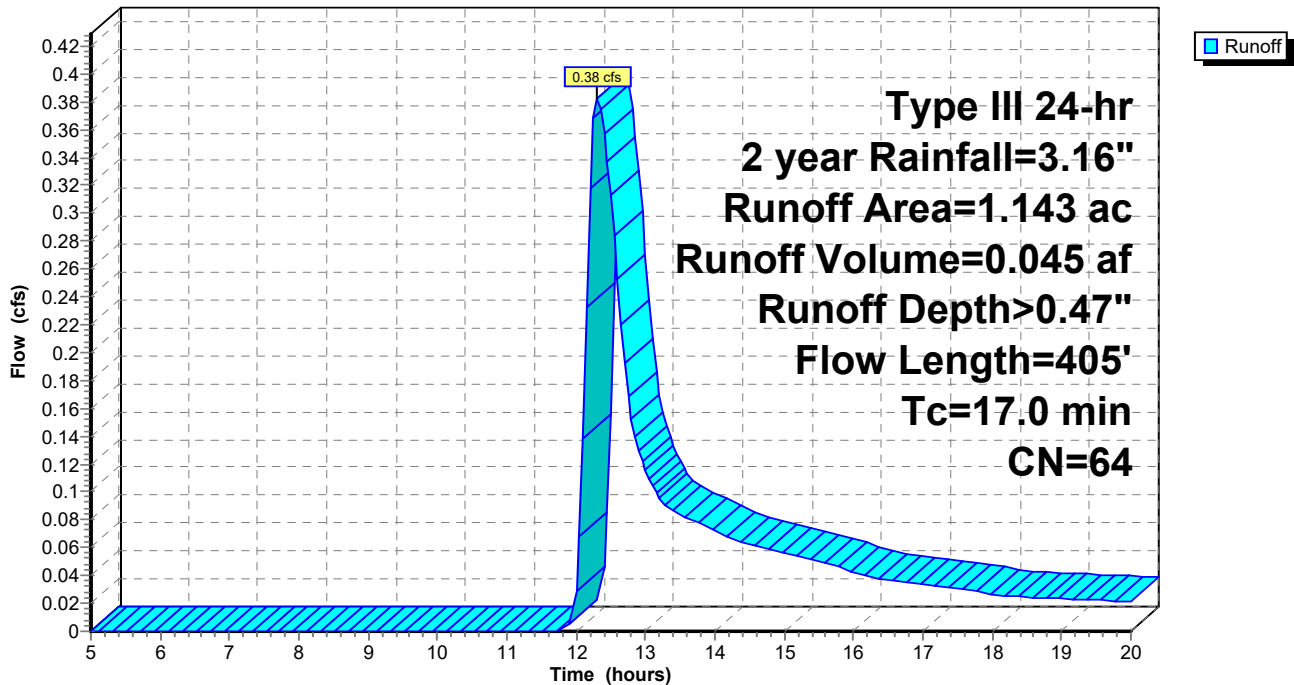
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.290	74	50-75% Grass cover, Fair, HSG B-C
0.785	58	Meadow, non-grazed, HSG B
0.068	89	Paved roads w/open ditches, 50% imp, HSG B
1.143	64	Weighted Average
1.109		97.03% Pervious Area
0.034		2.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
11.3	355	0.0056	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.0	405	Total			

Subcatchment 37: Subcat 37

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 38: Subcat 38

Runoff = 2.74 cfs @ 12.36 hrs, Volume= 0.299 af, Depth> 0.91"

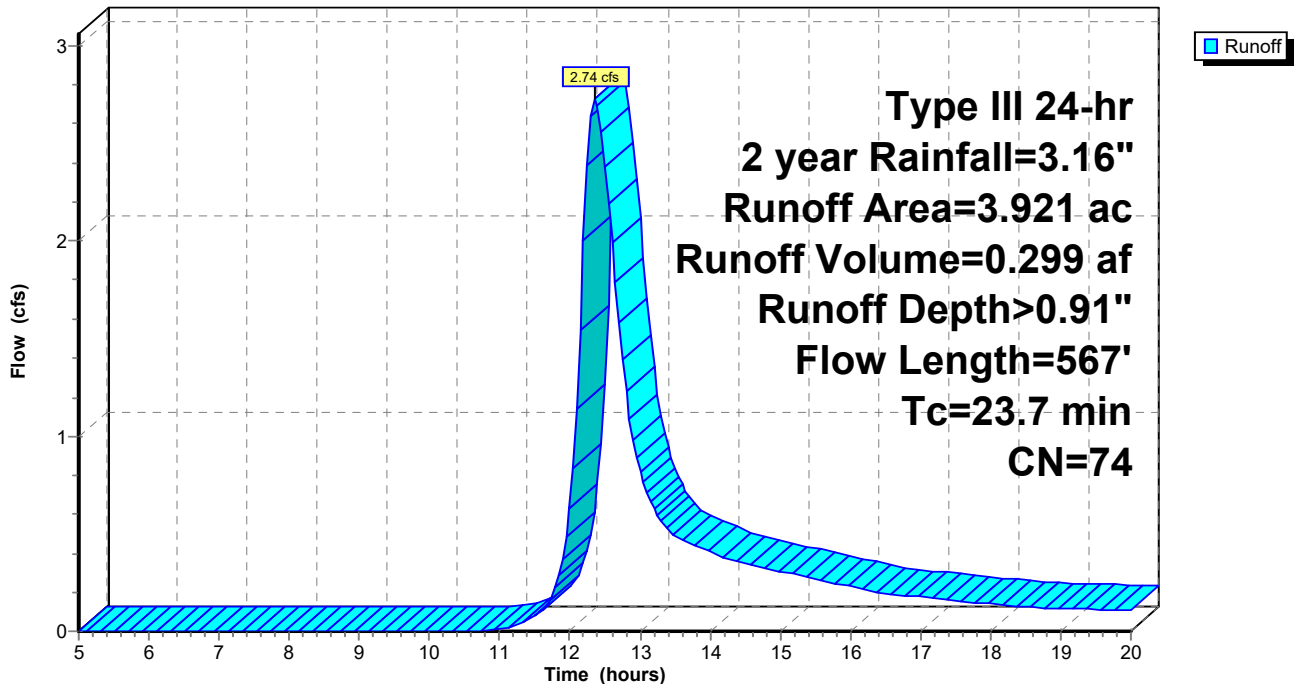
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 3.885	74	50-75% Grass cover, Fair, HSG B-C
0.036	58	Meadow, non-grazed, HSG B
3.921	74	Weighted Average
3.921		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
16.2	517	0.0058	0.53		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.7	567	Total			

Subcatchment 38: Subcat 38

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 39: Subcat 39

Runoff = 1.34 cfs @ 12.17 hrs, Volume= 0.116 af, Depth> 0.68"

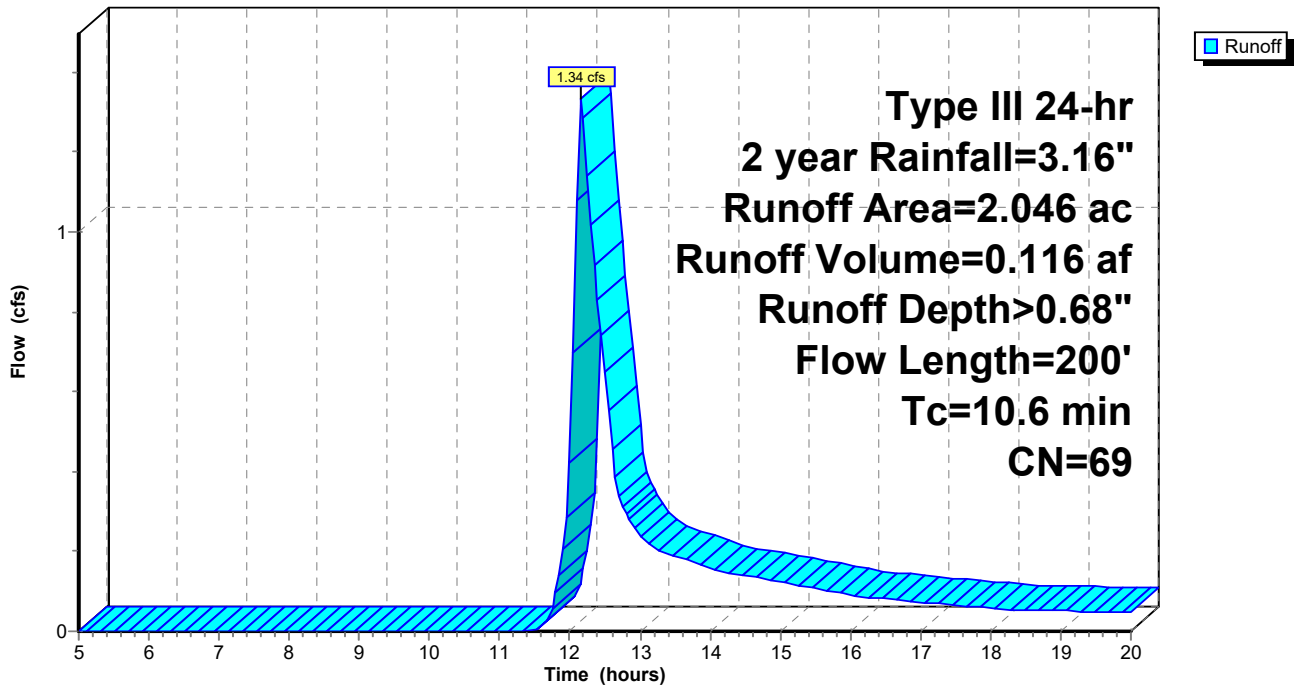
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 1.194	74	50-75% Grass cover, Fair, HSG B-C
0.761	58	Meadow, non-grazed, HSG B
0.091	89	Paved roads w/open ditches, 50% imp, HSG B
2.046	69	Weighted Average
2.000		97.78% Pervious Area
0.045		2.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
3.1	150	0.0133	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.6	200	Total			

Subcatchment 39: Subcat 39

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 40: Subcat 40

Runoff = 0.12 cfs @ 12.26 hrs, Volume= 0.017 af, Depth> 0.31"

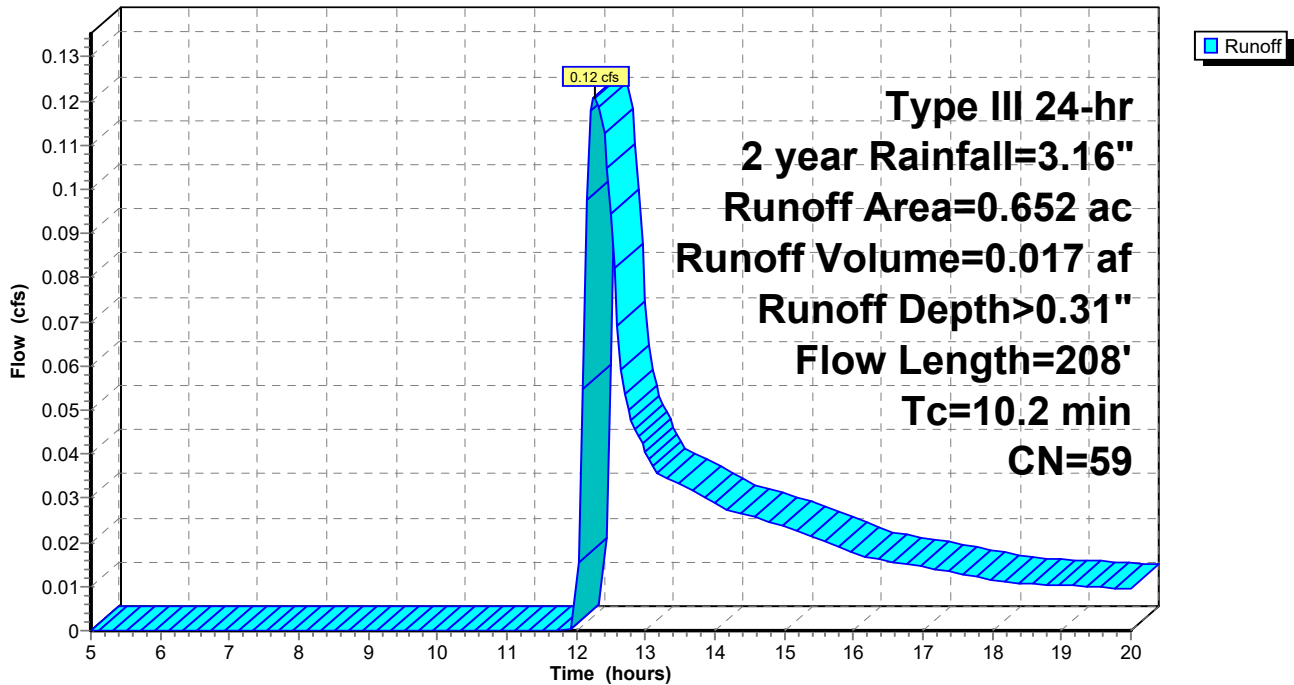
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.060	74	50-75% Grass cover, Fair, HSG B-C
0.008	30	Meadow, non-grazed, HSG A
0.584	58	Meadow, non-grazed, HSG B
0.652	59	Weighted Average
0.652		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.7	158	0.0190	0.96		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	208	Total			

Subcatchment 40: Subcat 40

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 41: Subcat 41

Runoff = 0.17 cfs @ 12.21 hrs, Volume= 0.023 af, Depth> 0.31"

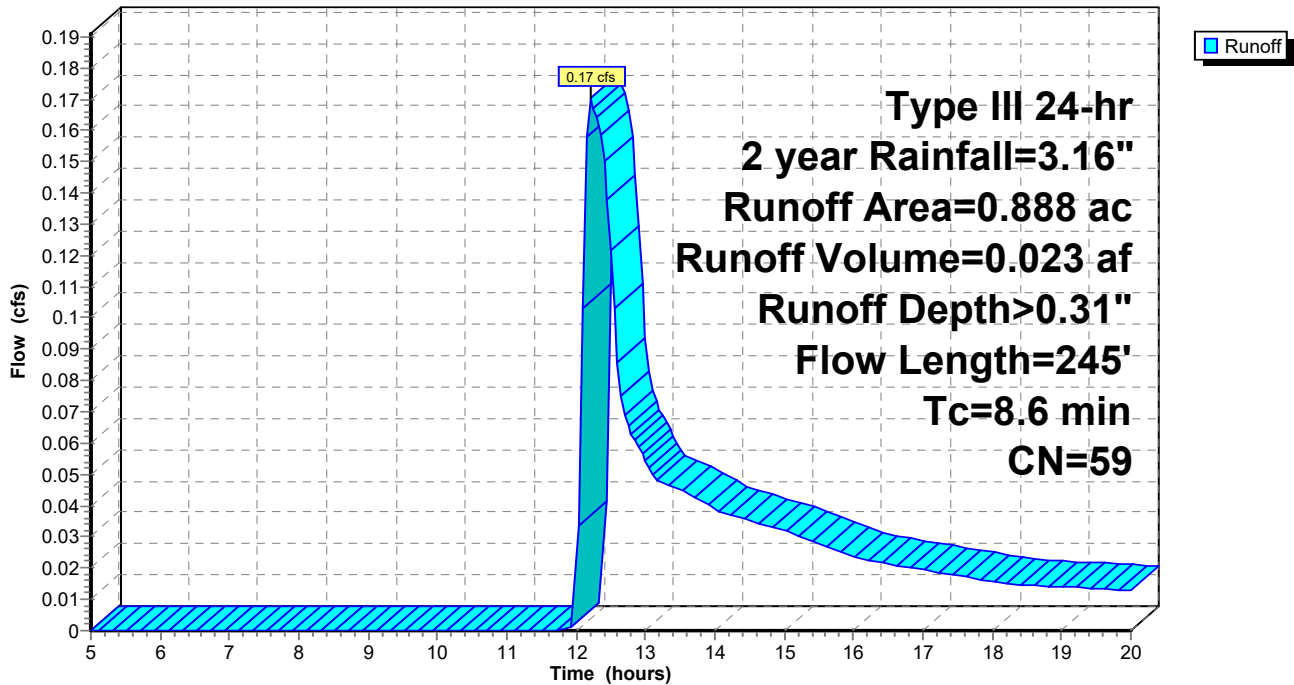
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.250	74	50-75% Grass cover, Fair, HSG B-C
0.110	30	Meadow, non-grazed, HSG A
0.528	58	Meadow, non-grazed, HSG B
0.888	59	Weighted Average
0.888		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.9	195	0.0256	1.12		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.6	245	Total			

Subcatchment 41: Subcat 41

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 42: Subcat 42

Runoff = 0.33 cfs @ 12.34 hrs, Volume= 0.048 af, Depth> 0.31"

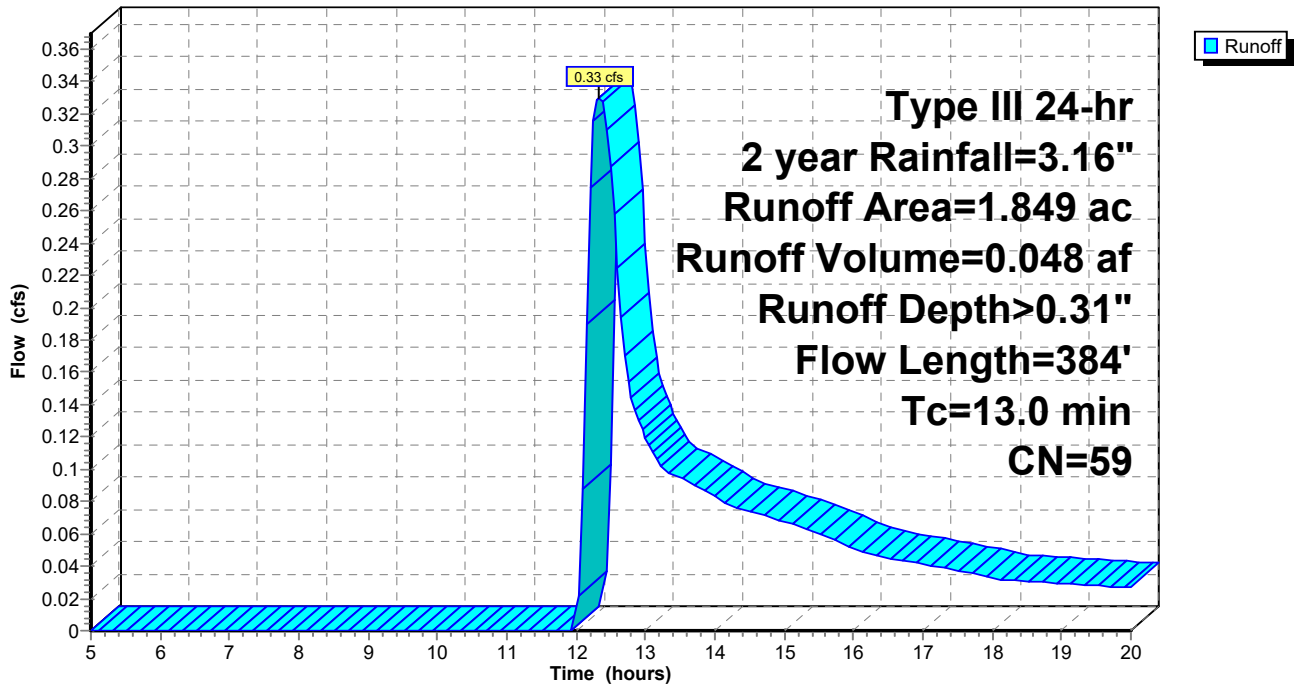
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.730	74	50-75% Grass cover, Fair, HSG B-C
0.181	30	Meadow, non-grazed, HSG A
0.698	58	Meadow, non-grazed, HSG B
0.184	36	Woods, Fair, HSG A
0.056	60	Woods, Fair, HSG B
1.849	59	Weighted Average
1.849		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.3	334	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.0	384	Total			

Subcatchment 42: Subcat 42

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 43: Subcat 43

Runoff = 0.14 cfs @ 12.41 hrs, Volume= 0.021 af, Depth> 0.28"

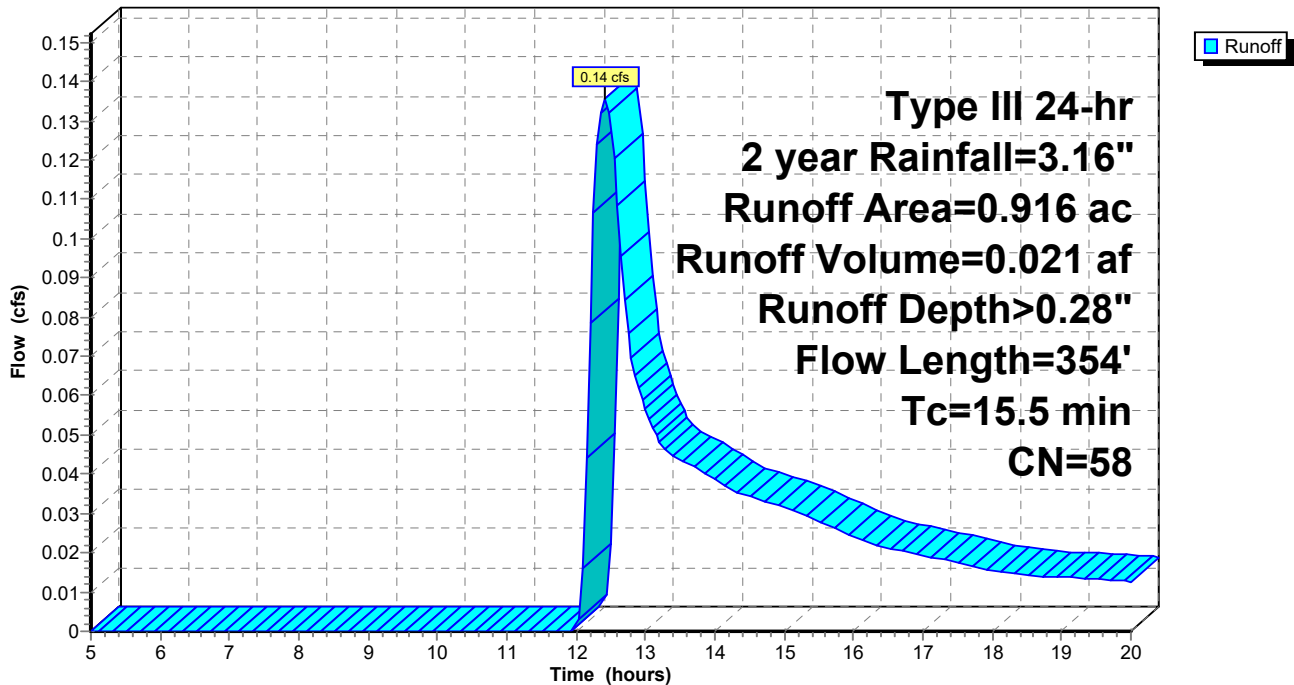
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.299	74	50-75% Grass cover, Fair, HSG B-C
0.104	30	Meadow, non-grazed, HSG A
0.438	58	Meadow, non-grazed, HSG B
0.075	36	Woods, Fair, HSG A
0.916	58	Weighted Average
0.916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.0	304	0.0082	0.63		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.5	354	Total			

Subcatchment 43: Subcat 43

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 44: Subcat 44

Runoff = 1.17 cfs @ 12.17 hrs, Volume= 0.105 af, Depth> 0.59"

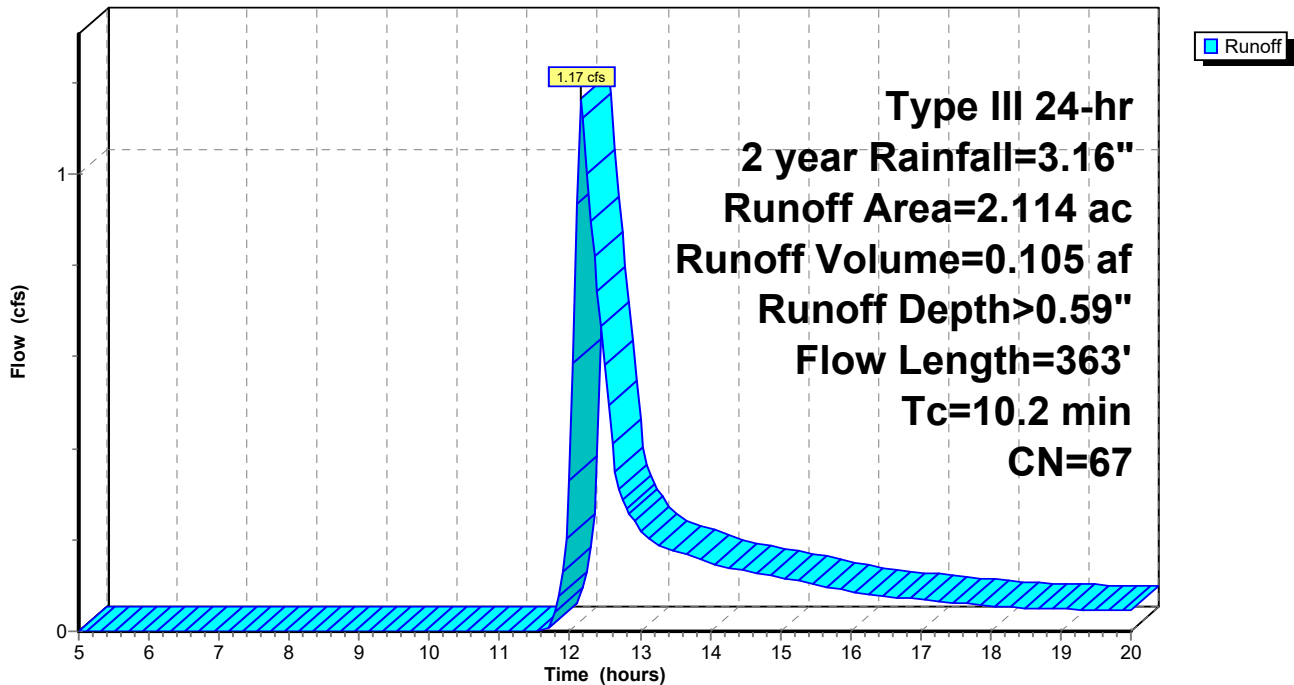
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.010	51	50-75% Grass cover, Fair, HSG A-B
* 1.465	74	50-75% Grass cover, Fair, HSG B-C
0.154	30	Meadow, non-grazed, HSG A
0.485	58	Meadow, non-grazed, HSG B
2.114	67	Weighted Average
2.114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.4	313	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	363	Total			

Subcatchment 44: Subcat 44

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 45: Subcat 45

Runoff = 1.62 cfs @ 12.11 hrs, Volume= 0.125 af, Depth> 0.64"

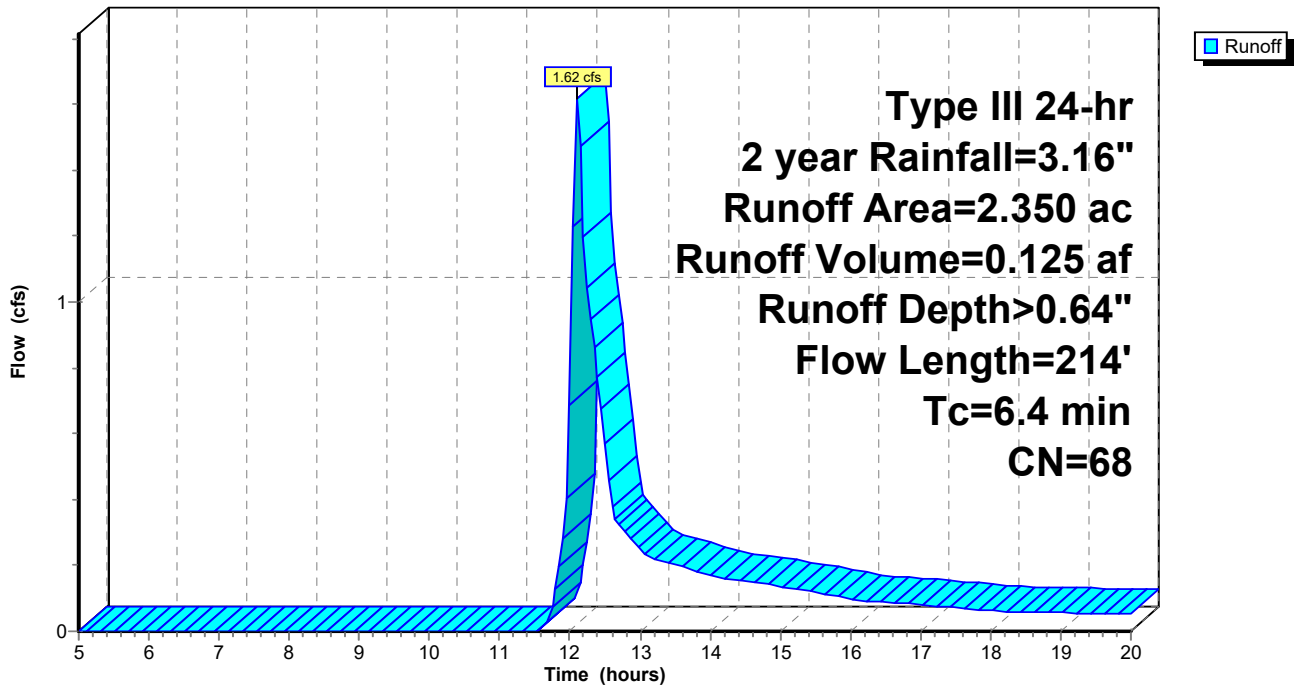
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 1.895	74	50-75% Grass cover, Fair, HSG B-C
0.246	30	Meadow, non-grazed, HSG A
0.207	58	Meadow, non-grazed, HSG B
2.350	68	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.6	164	0.0610	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.4	214	Total			

Subcatchment 45: Subcat 45

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 46: Subcat 46

Runoff = 2.08 cfs @ 12.19 hrs, Volume= 0.185 af, Depth> 0.72"

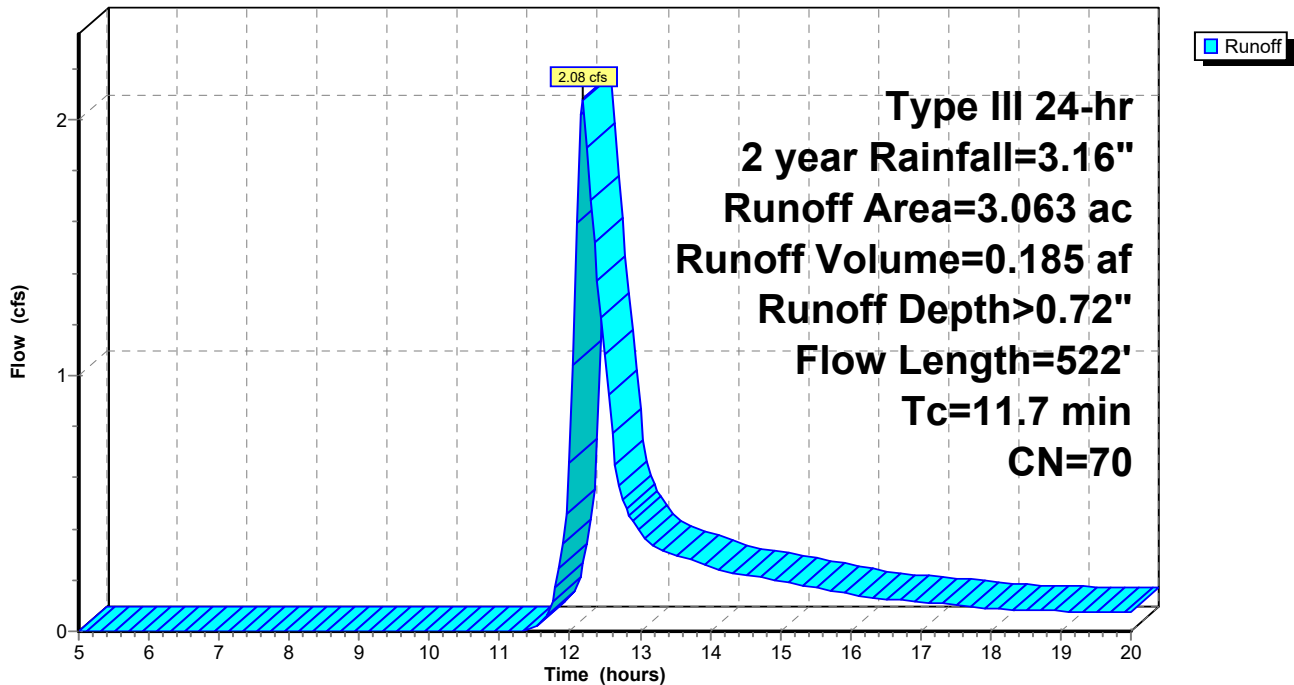
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.061	59	50-75% Grass cover, Fair, HSG A-B
* 2.381	74	50-75% Grass cover, Fair, HSG B-C
0.039	30	Meadow, non-grazed, HSG A
0.582	58	Meadow, non-grazed, HSG B
3.063	70	Weighted Average
3.063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	472	0.0233	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.7	522	Total			

Subcatchment 46: Subcat 46

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 47: Subcat 47

Runoff = 0.15 cfs @ 12.54 hrs, Volume= 0.041 af, Depth> 0.13"

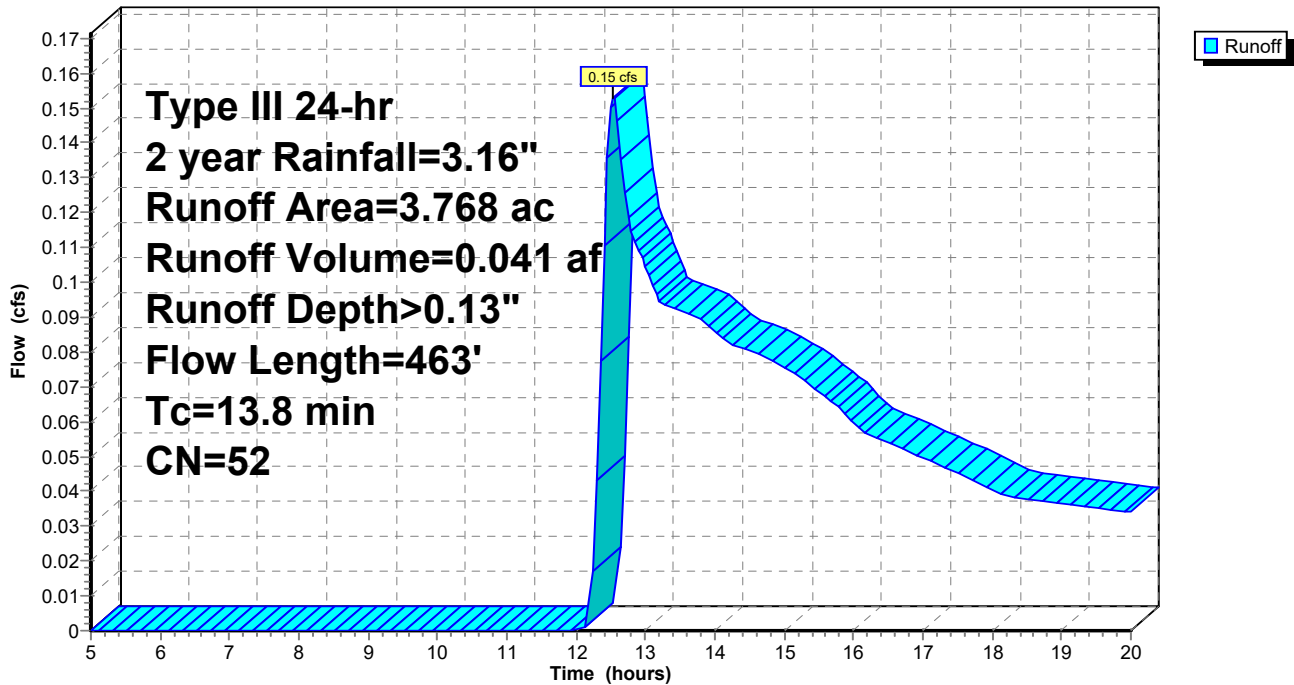
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.063	59	50-75% Grass cover, Fair, HSG A-B
* 1.444	74	50-75% Grass cover, Fair, HSG B-C
1.147	30	Meadow, non-grazed, HSG A
0.490	58	Meadow, non-grazed, HSG B
0.624	36	Woods, Fair, HSG A
3.768	52	Weighted Average
3.768		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	413	0.0242	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.8	463	Total			

Subcatchment 47: Subcat 47

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 48: Subcat 48

Runoff = 0.82 cfs @ 12.36 hrs, Volume= 0.124 af, Depth> 0.28"

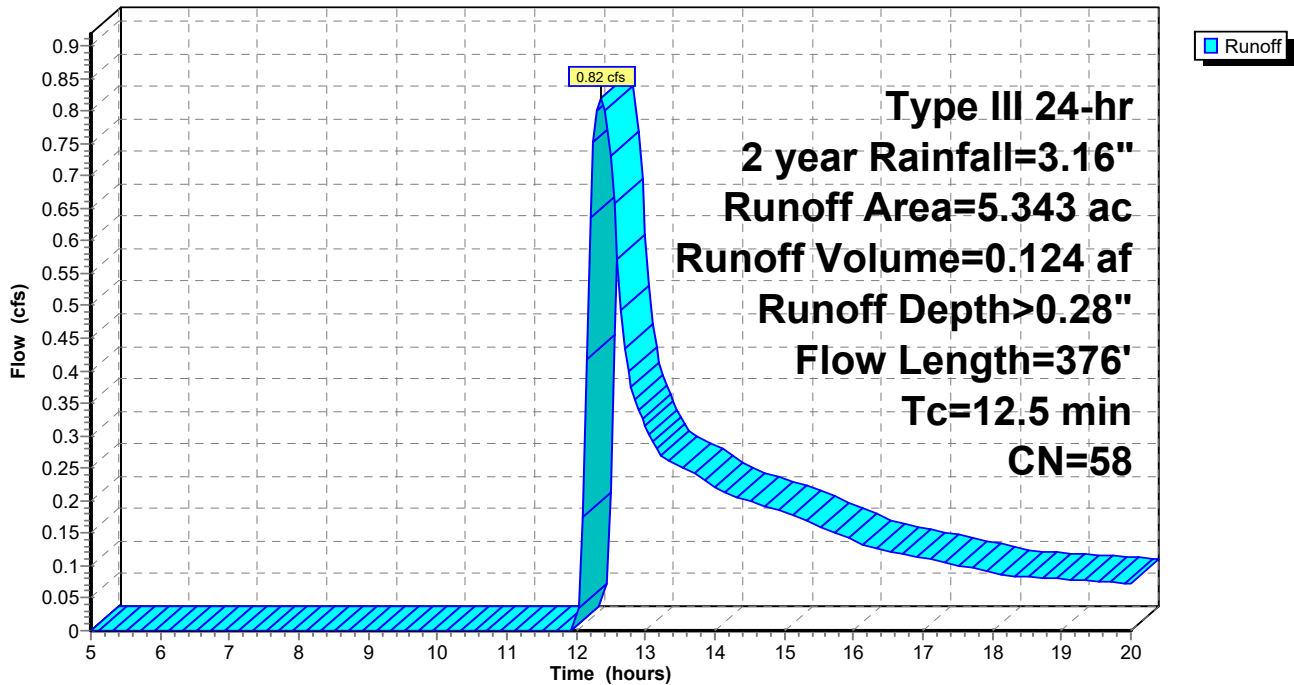
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 2.779	74	50-75% Grass cover, Fair, HSG B-C
1.268	30	Meadow, non-grazed, HSG A
0.872	58	Meadow, non-grazed, HSG B
0.422	36	Woods, Fair, HSG A
5.343	58	Weighted Average
5.343		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.0	326	0.0245	1.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	376	Total			

Subcatchment 48: Subcat 48

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 49: Subcat 49

Runoff = 0.22 cfs @ 12.50 hrs, Volume= 0.047 af, Depth> 0.18"

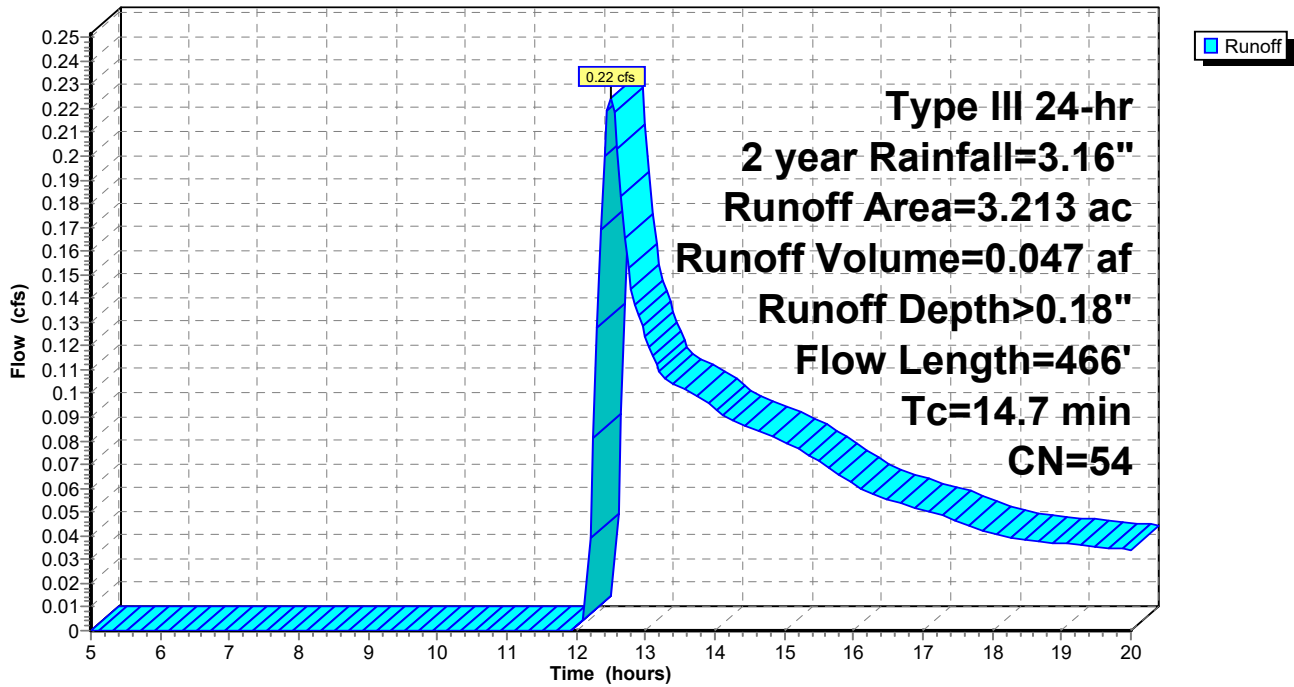
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.010	59	50-75% Grass cover, Fair, HSG A-B
* 1.407	74	50-75% Grass cover, Fair, HSG B-C
0.952	30	Meadow, non-grazed, HSG A
0.460	58	Meadow, non-grazed, HSG B
0.384	36	Woods, Fair, HSG A
3.213	54	Weighted Average
3.213		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.0	416	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.7	466	Total			

Subcatchment 49: Subcat 49

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 50: Subcat 50

Runoff = 1.74 cfs @ 12.31 hrs, Volume= 0.228 af, Depth> 0.37"

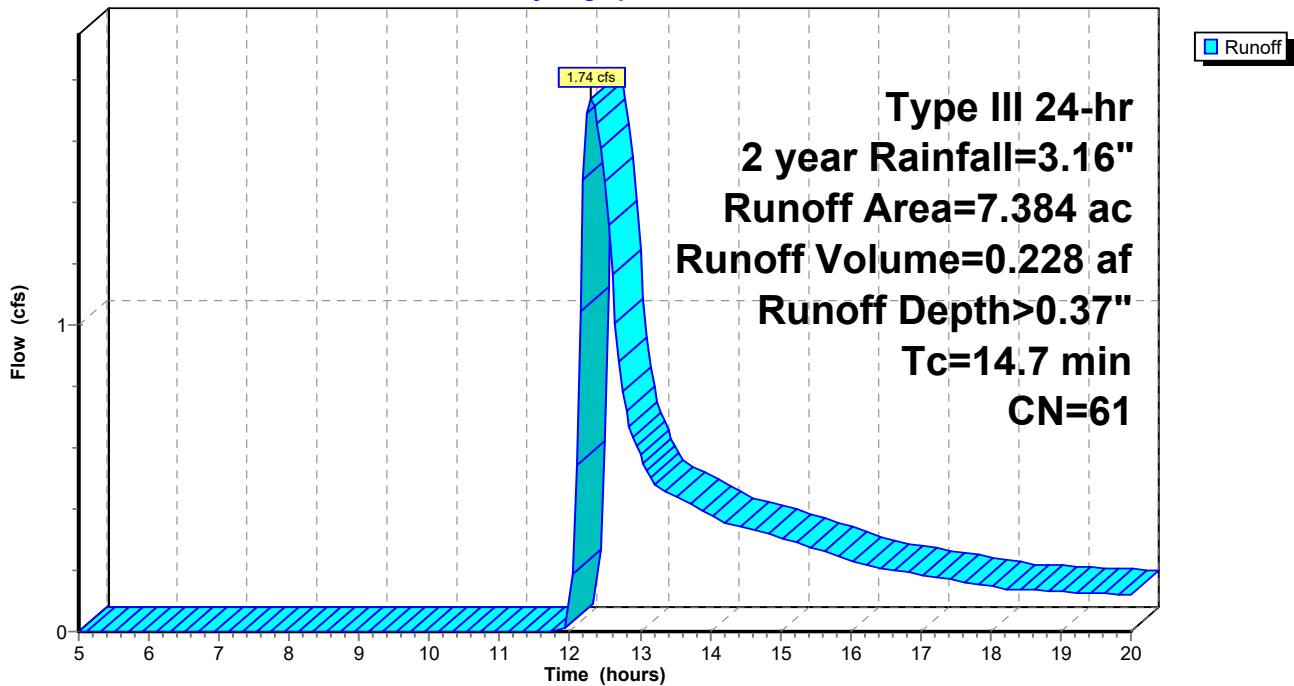
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 4.005	74	50-75% Grass cover, Fair, HSG B-C
0.989	30	Meadow, non-grazed, HSG A
1.720	58	Meadow, non-grazed, HSG B
0.666	36	Woods, Fair, HSG A
0.004	60	Woods, Fair, HSG B
7.384	61	Weighted Average
7.384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7					Direct Entry,

Subcatchment 50: Subcat 50

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 51: Subcat 51

Runoff = 13.23 cfs @ 12.61 hrs, Volume= 1.854 af, Depth> 0.81"

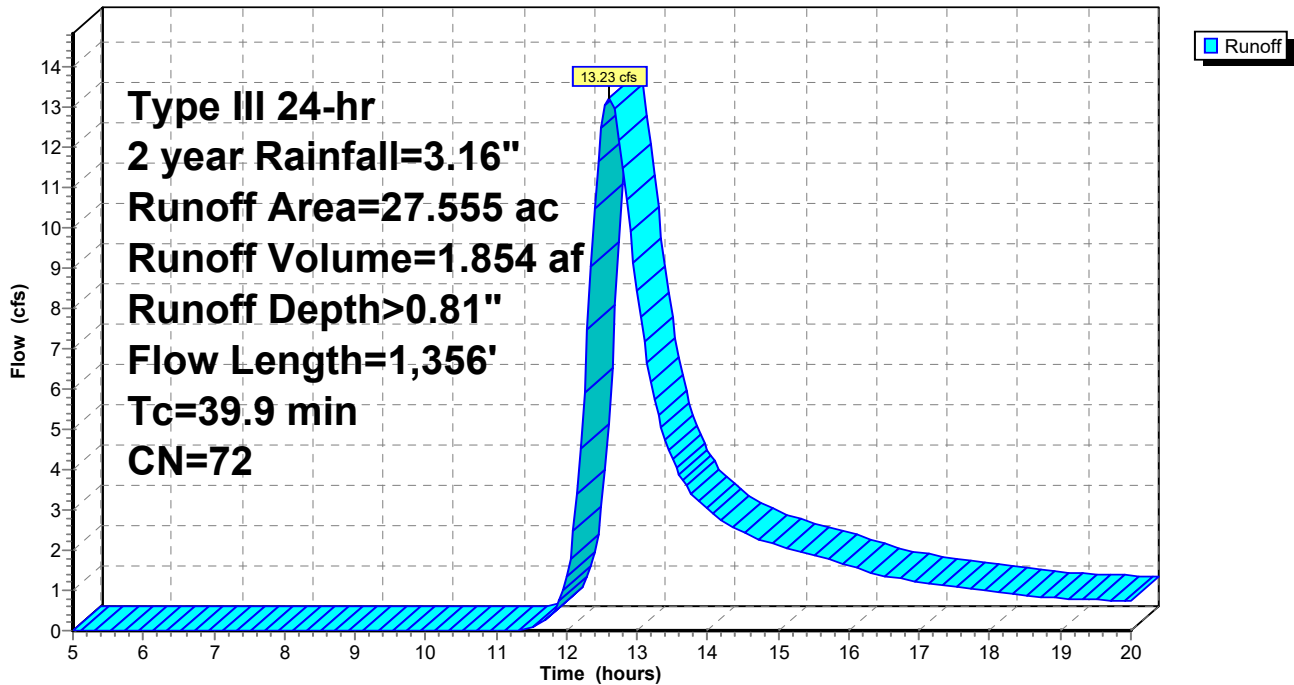
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 24.828	74	50-75% Grass cover, Fair, HSG B-C
0.074	30	Meadow, non-grazed, HSG A
2.653	58	Meadow, non-grazed, HSG B
27.555	72	Weighted Average
27.555		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
32.4	1,306	0.0092	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
39.9	1,356	Total			

Subcatchment 51: Subcat 51

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 53: Subcat 53

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

[45] Hint: Runoff=Zero

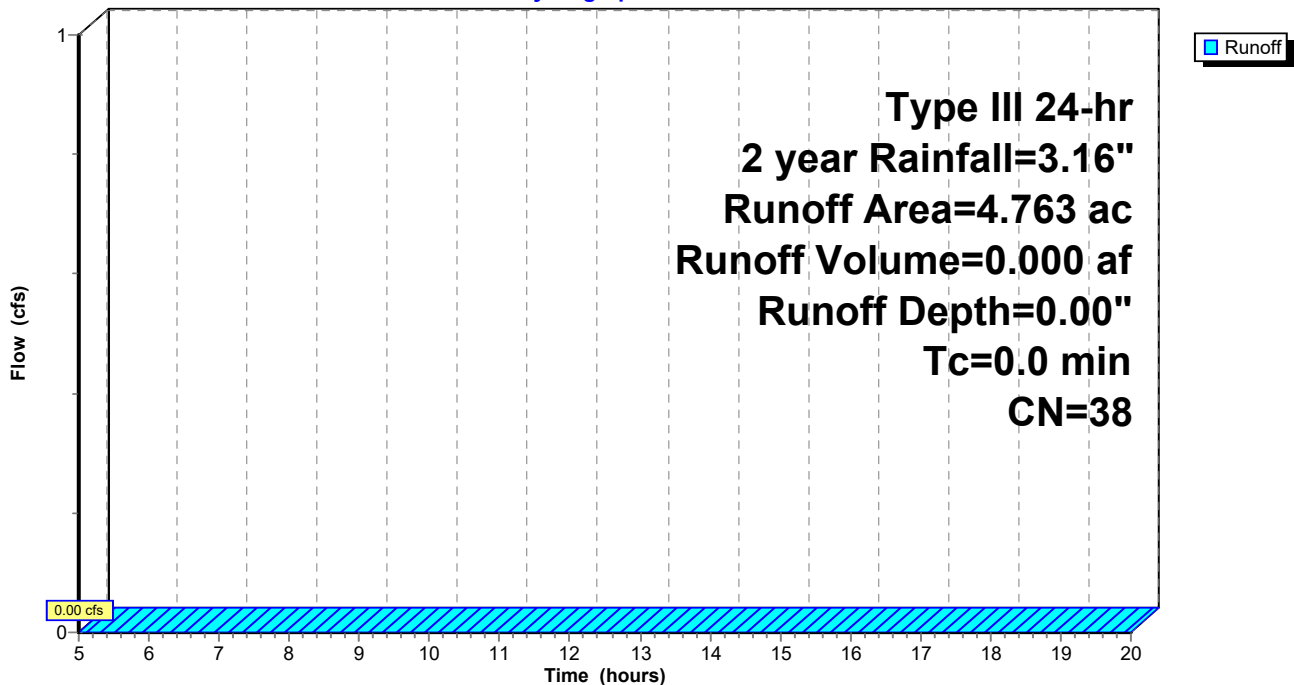
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

	Area (ac)	CN	Description
*	0.263	74	50-75% Grass cover, Fair, HSG B-C
	1.659	30	Meadow, non-grazed, HSG A
	0.427	58	Meadow, non-grazed, HSG B
	2.414	36	Woods, Fair, HSG A
	4.763	38	Weighted Average
	4.763		100.00% Pervious Area

Subcatchment 53: Subcat 53

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 54: Subcat 54

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

[73] Warning: Peak may fall outside time span

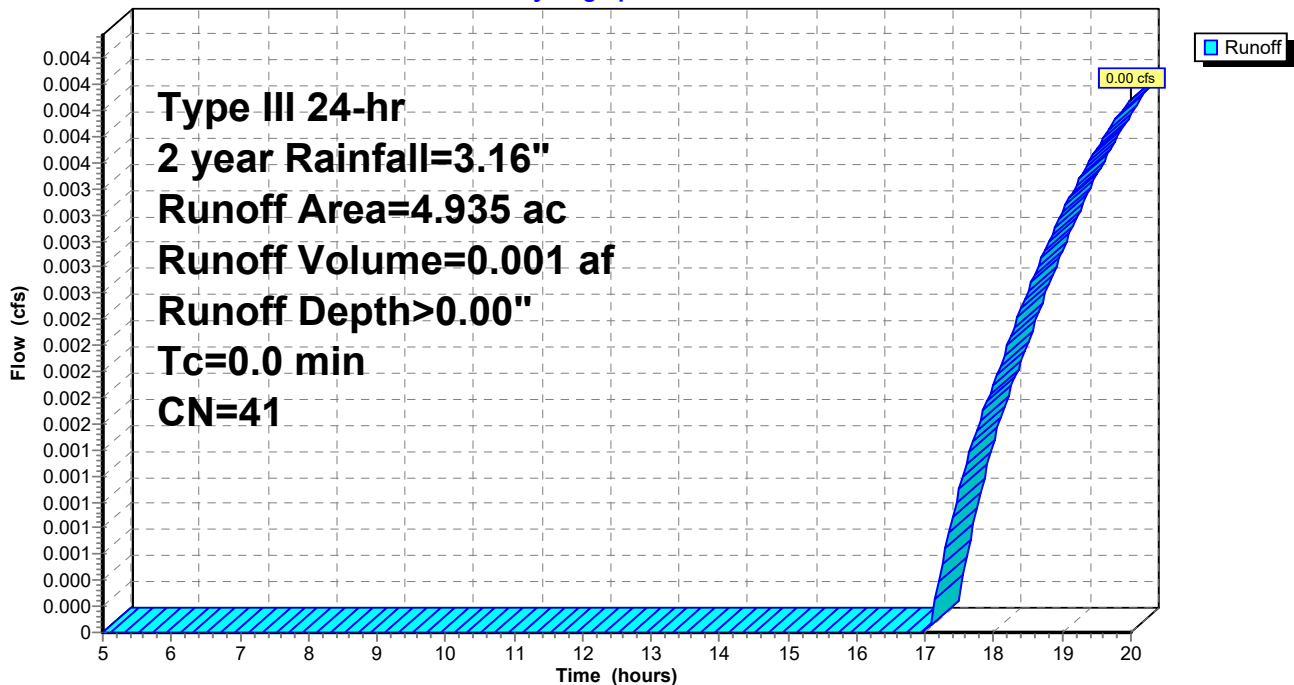
Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.001 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 0.006	74	50-75% Grass cover, Fair, HSG B-C
0.377	30	Meadow, non-grazed, HSG A
0.823	58	Meadow, non-grazed, HSG B
3.454	36	Woods, Fair, HSG A
0.273	60	Woods, Fair, HSG B
4.935	41	Weighted Average
4.935		100.00% Pervious Area

Subcatchment 54: Subcat 54

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 55: Subcat 55

Runoff = 1.54 cfs @ 12.36 hrs, Volume= 0.171 af, Depth> 0.77"

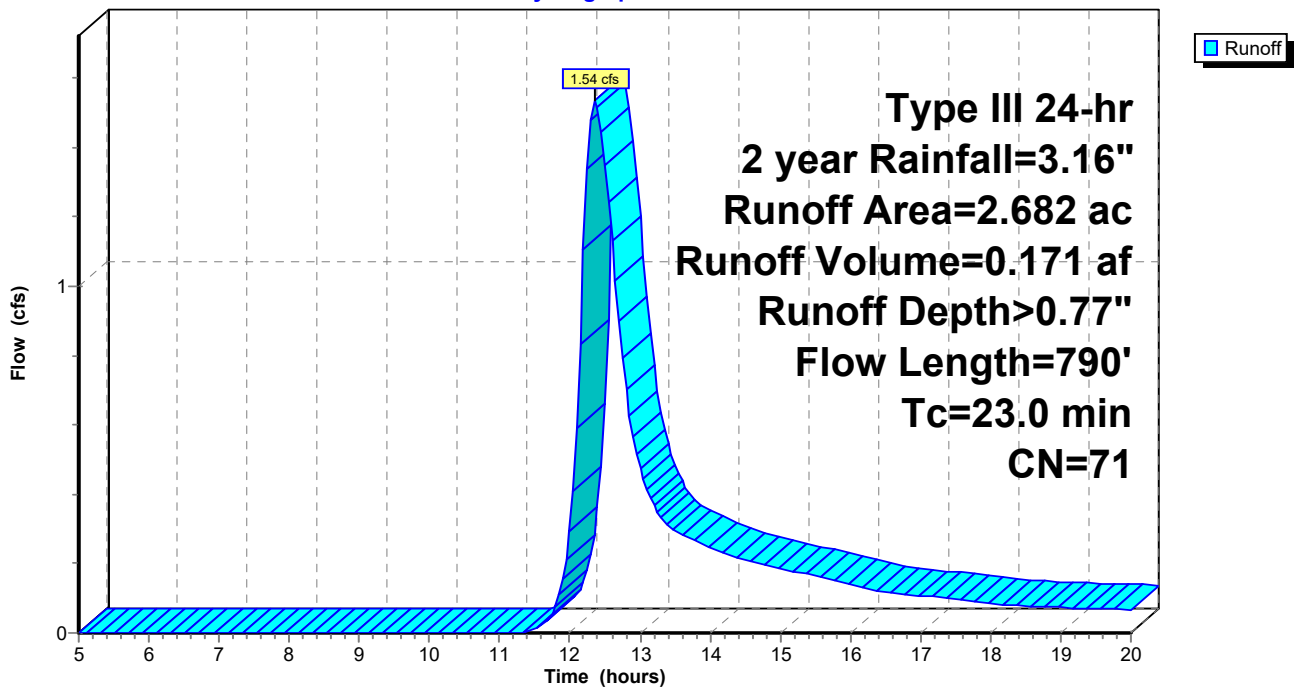
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.095	59	50-75% Grass cover, Fair, HSG A-B
* 2.333	74	50-75% Grass cover, Fair, HSG B-C
0.132	30	Meadow, non-grazed, HSG A
0.122	58	Meadow, non-grazed, HSG B
2.682	71	Weighted Average
2.682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	216	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.9	524	0.0248	1.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.0	790	Total			

Subcatchment 55: Subcat 55

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 56: Subcat 56

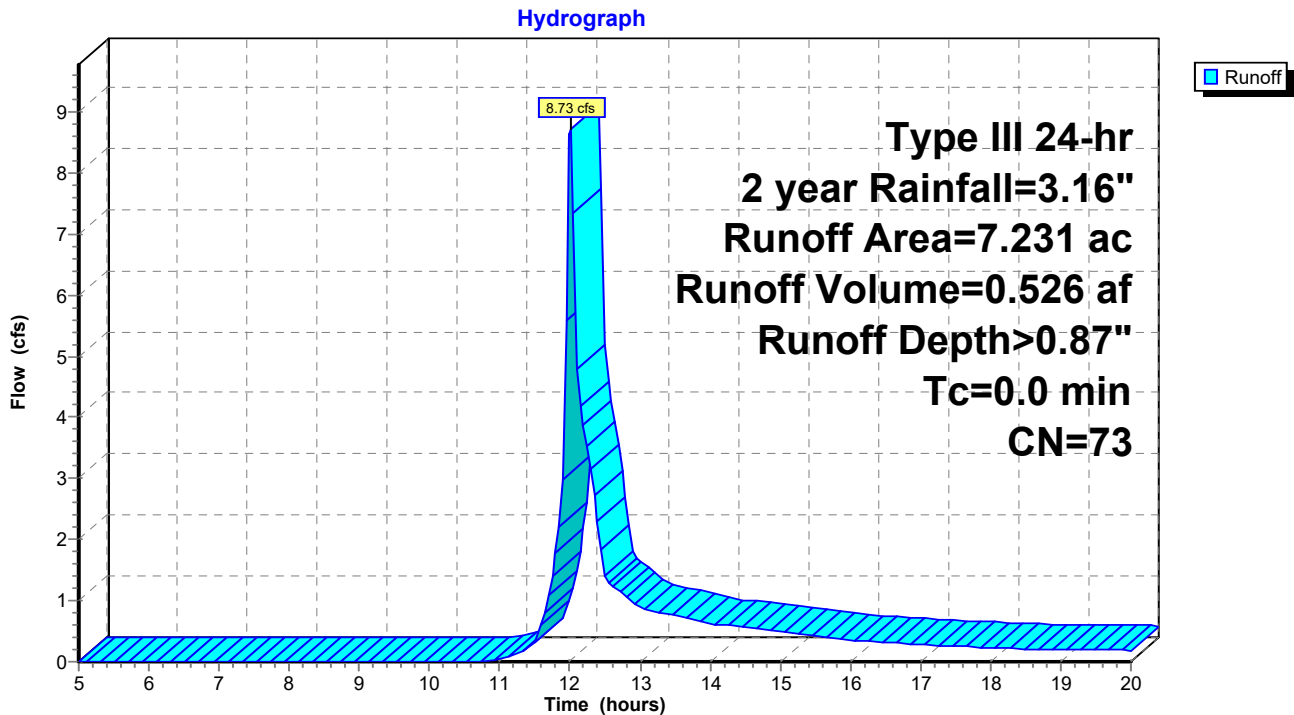
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 8.73 cfs @ 12.01 hrs, Volume= 0.526 af, Depth> 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

	Area (ac)	CN	Description
*	0.029	59	50-75% Grass cover, Fair, HSG A-B
*	6.843	74	50-75% Grass cover, Fair, HSG B-C
	0.045	30	Meadow, non-grazed, HSG A
	0.314	58	Meadow, non-grazed, HSG B
	7.231	73	Weighted Average
	7.231		100.00% Pervious Area

Subcatchment 56: Subcat 56



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 57: Subcat 57

Runoff = 2.81 cfs @ 12.29 hrs, Volume= 0.301 af, Depth> 0.63"

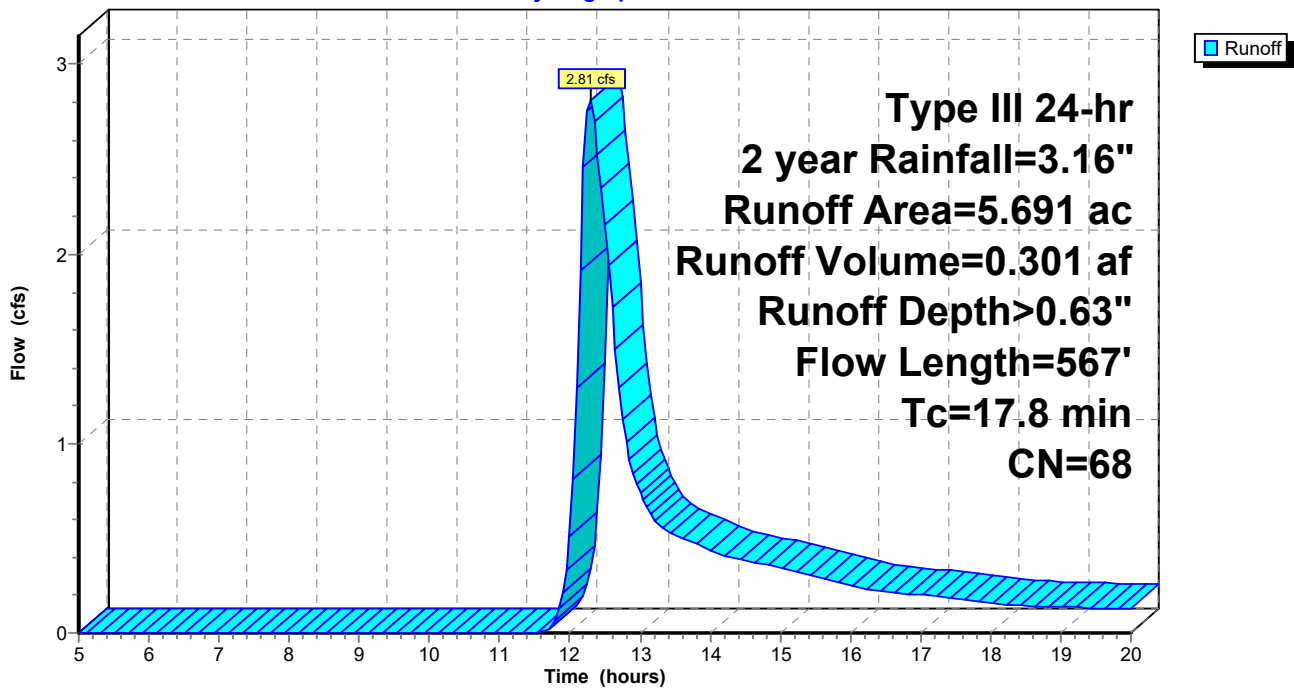
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.010	59	50-75% Grass cover, Fair, HSG A-B
* 3.857	74	50-75% Grass cover, Fair, HSG B-C
0.245	30	Meadow, non-grazed, HSG A
1.579	58	Meadow, non-grazed, HSG B
5.691	68	Weighted Average
5.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.3	266	0.0075	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	251	0.0398	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.8	567	Total			

Subcatchment 57: Subcat 57

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 58: Subcat 58

Runoff = 0.01 cfs @ 16.92 hrs, Volume= 0.004 af, Depth> 0.02"

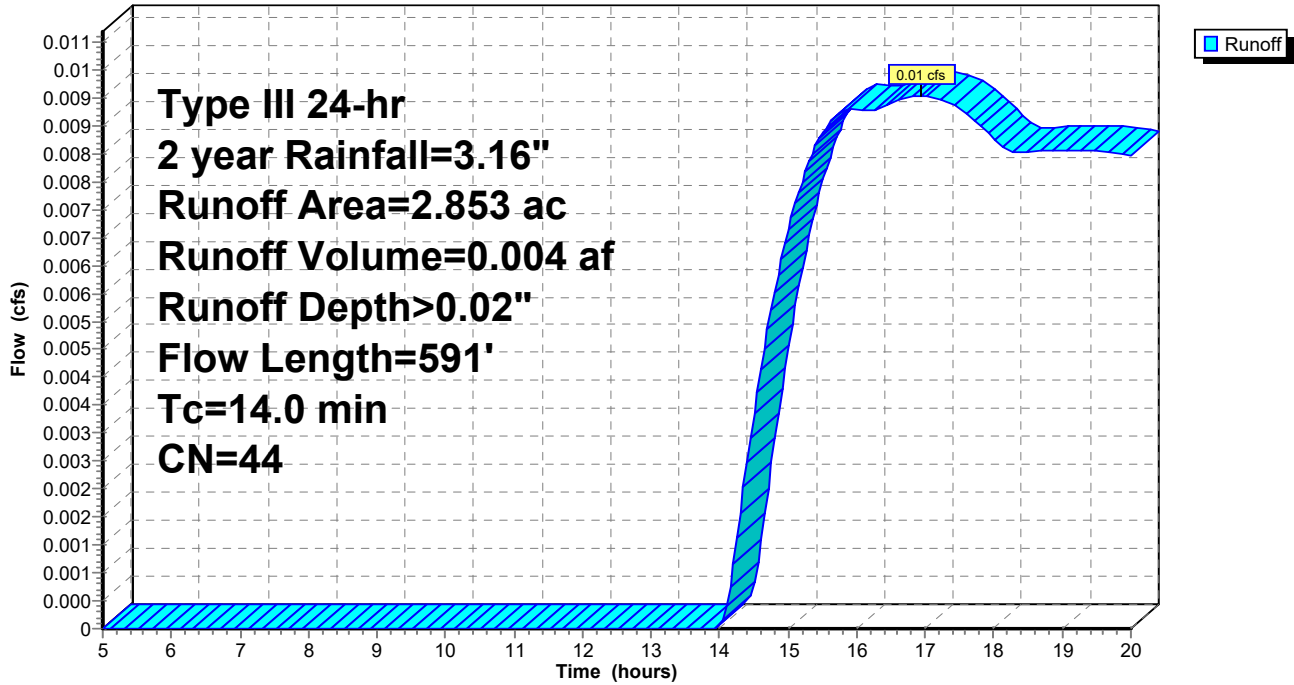
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.032	59	50-75% Grass cover, Fair, HSG A-B
* 0.244	74	50-75% Grass cover, Fair, HSG B-C
0.690	30	Meadow, non-grazed, HSG A
0.826	58	Meadow, non-grazed, HSG B
1.061	36	Woods, Fair, HSG A
2.853	44	Weighted Average
2.853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.3	541	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	591	Total			

Subcatchment 58: Subcat 58

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 59: Subcat 59

Runoff = 0.03 cfs @ 15.24 hrs, Volume= 0.012 af, Depth> 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.058	46	2 acre lots, 12% imp, HSG A
* 0.368	59	50-75% Grass cover, Fair, HSG A-B
* 0.684	74	50-75% Grass cover, Fair, HSG B-C
0.995	30	Meadow, non-grazed, HSG A
0.460	58	Meadow, non-grazed, HSG B
1.508	36	Woods, Fair, HSG A
4.073	46	Weighted Average
4.066		99.83% Pervious Area
0.007		0.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	221	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1333	2.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	316	Total			

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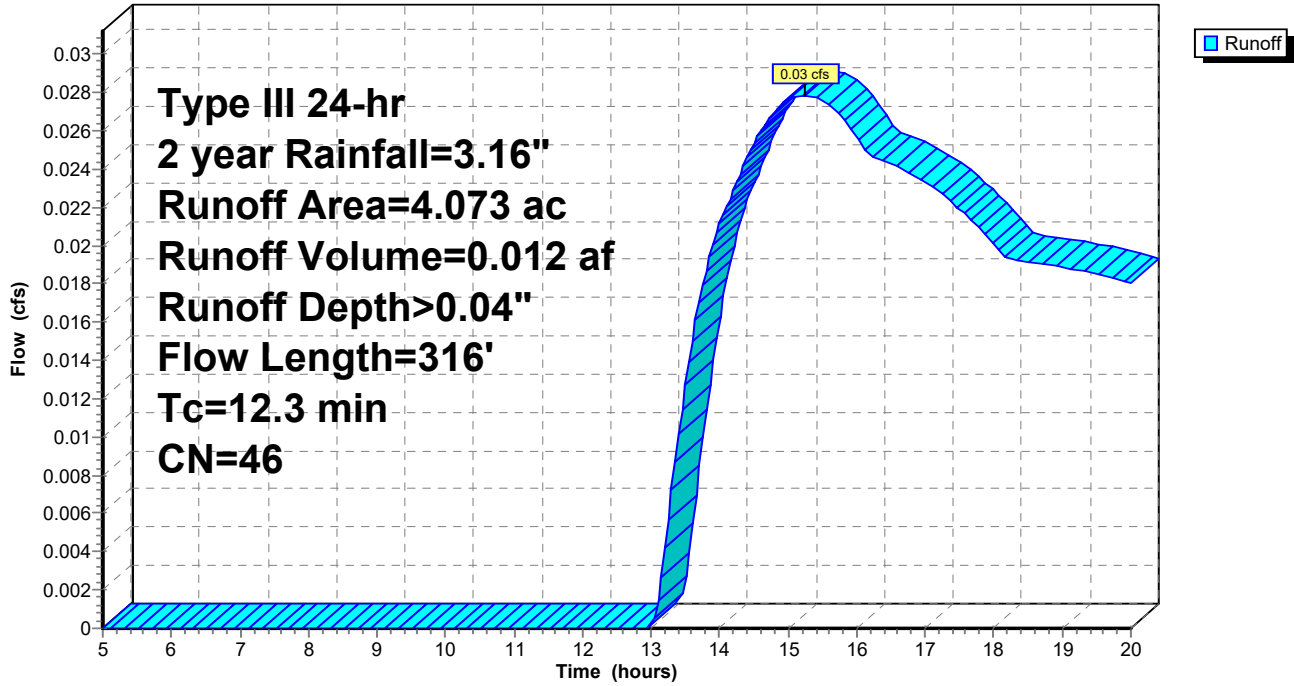
Type III 24-hr 2 year Rainfall=3.16"

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Subcatchment 59: Subcat 59

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 60: Subcat 60

Runoff = 3.13 cfs @ 12.60 hrs, Volume= 0.440 af, Depth> 0.71"

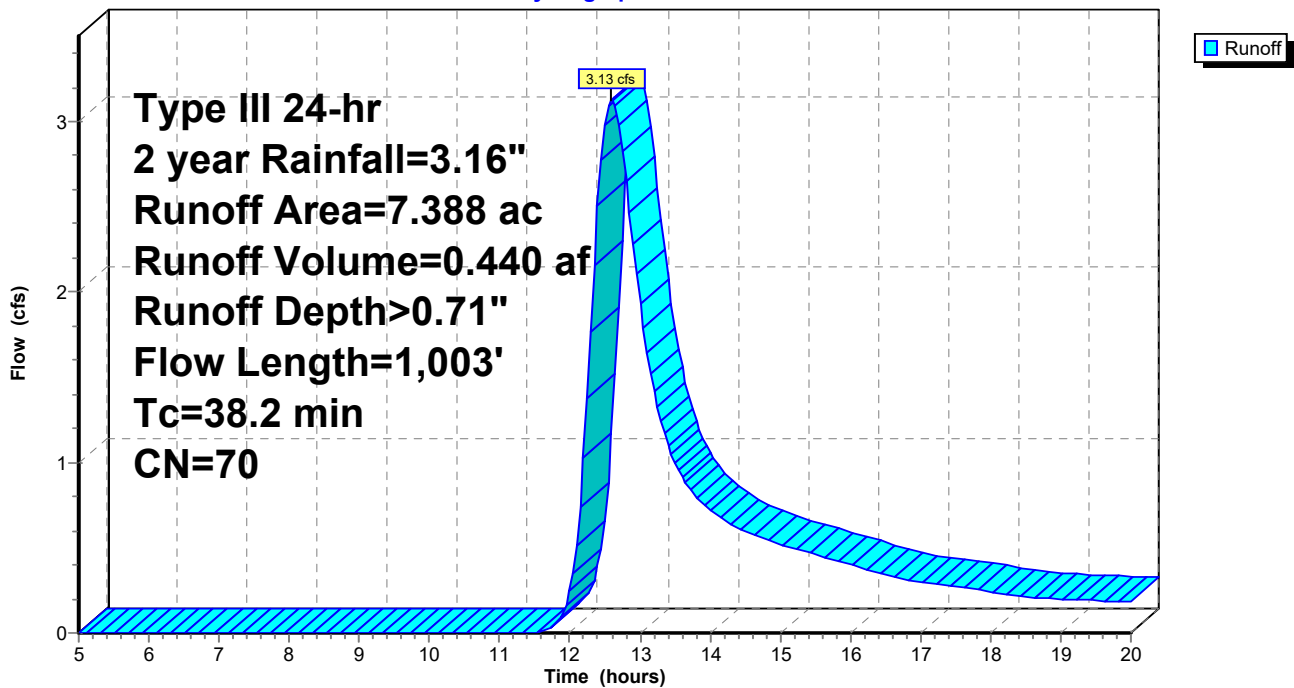
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 6.703	74	50-75% Grass cover, Fair, HSG B-C
0.511	30	Meadow, non-grazed, HSG A
0.105	58	Meadow, non-grazed, HSG B
0.069	36	Woods, Fair, HSG A
7.388	70	Weighted Average
7.388		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
29.7	855	0.0047	0.48		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	98	0.0510	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
38.2	1,003	Total			

Subcatchment 60: Subcat 60

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 62: Subcat 62

Runoff = 10.64 cfs @ 12.48 hrs, Volume= 1.357 af, Depth> 0.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
2.956	65	2 acre lots, 12% imp, HSG B
* 0.324	59	50-75% Grass cover, Fair, HSG A-B
* 17.404	74	50-75% Grass cover, Fair, HSG B-C
1.502	30	Meadow, non-grazed, HSG A
1.903	58	Meadow, non-grazed, HSG B
0.114	89	Paved roads w/open ditches, 50% imp, HSG B
24.203	69	Weighted Average
23.791		98.30% Pervious Area
0.412		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.7	757	0.0132	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.5	481	0.0312	1.24		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
29.7	1,288	Total			

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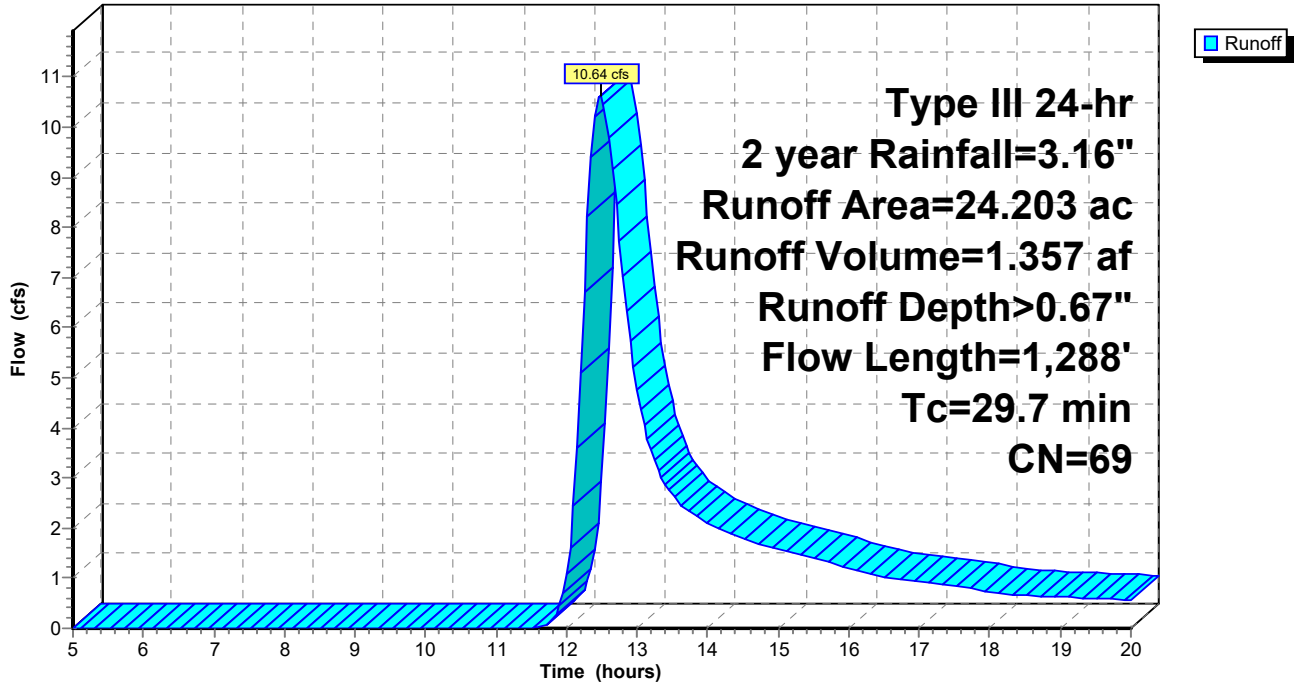
Type III 24-hr 2 year Rainfall=3.16"

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Subcatchment 62: Subcat 62

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 64: Subcat 64

Runoff = 0.48 cfs @ 12.30 hrs, Volume= 0.060 af, Depth> 0.40"

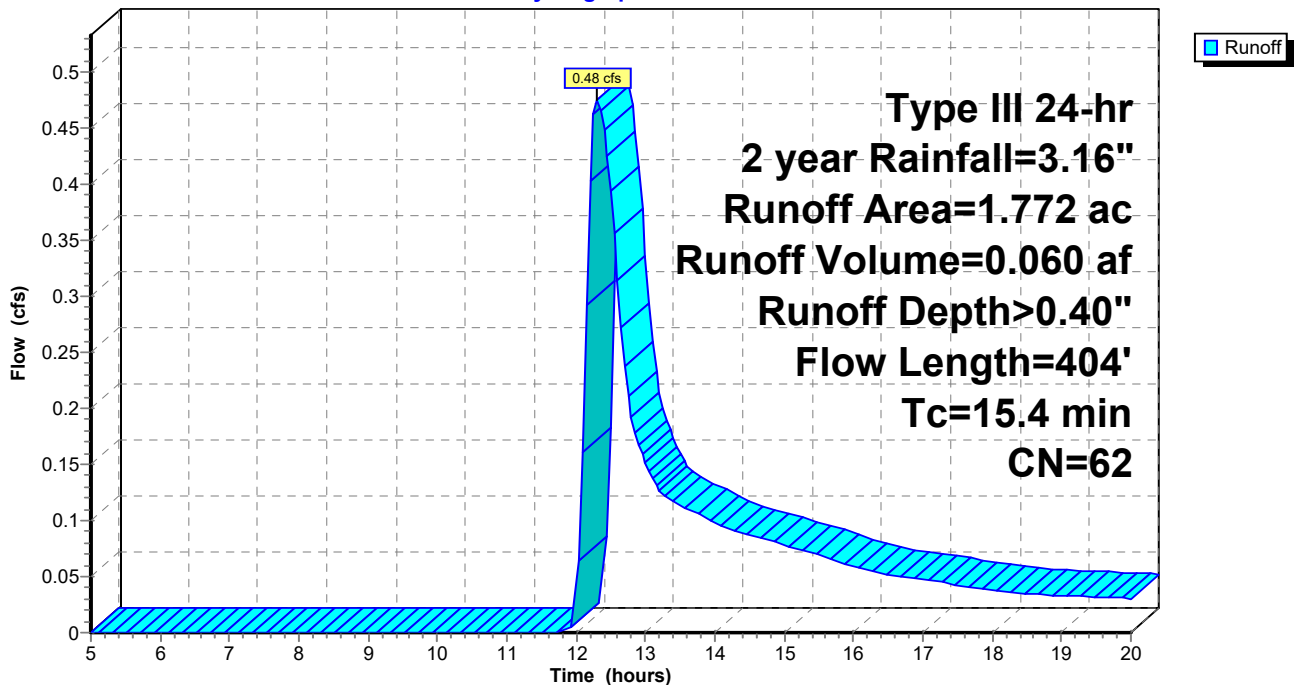
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
0.101	46	2 acre lots, 12% imp, HSG A
* 0.185	59	50-75% Grass cover, Fair, HSG A-B
* 1.123	74	50-75% Grass cover, Fair, HSG B-C
0.280	30	Meadow, non-grazed, HSG A
0.003	58	Meadow, non-grazed, HSG B
0.080	36	Woods, Fair, HSG A
1.772	62	Weighted Average
1.760		99.32% Pervious Area
0.012		0.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.9	354	0.0113	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.4	404	Total			

Subcatchment 64: Subcat 64

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 65: Subcat 65

Runoff = 1.41 cfs @ 12.42 hrs, Volume= 0.175 af, Depth> 0.59"

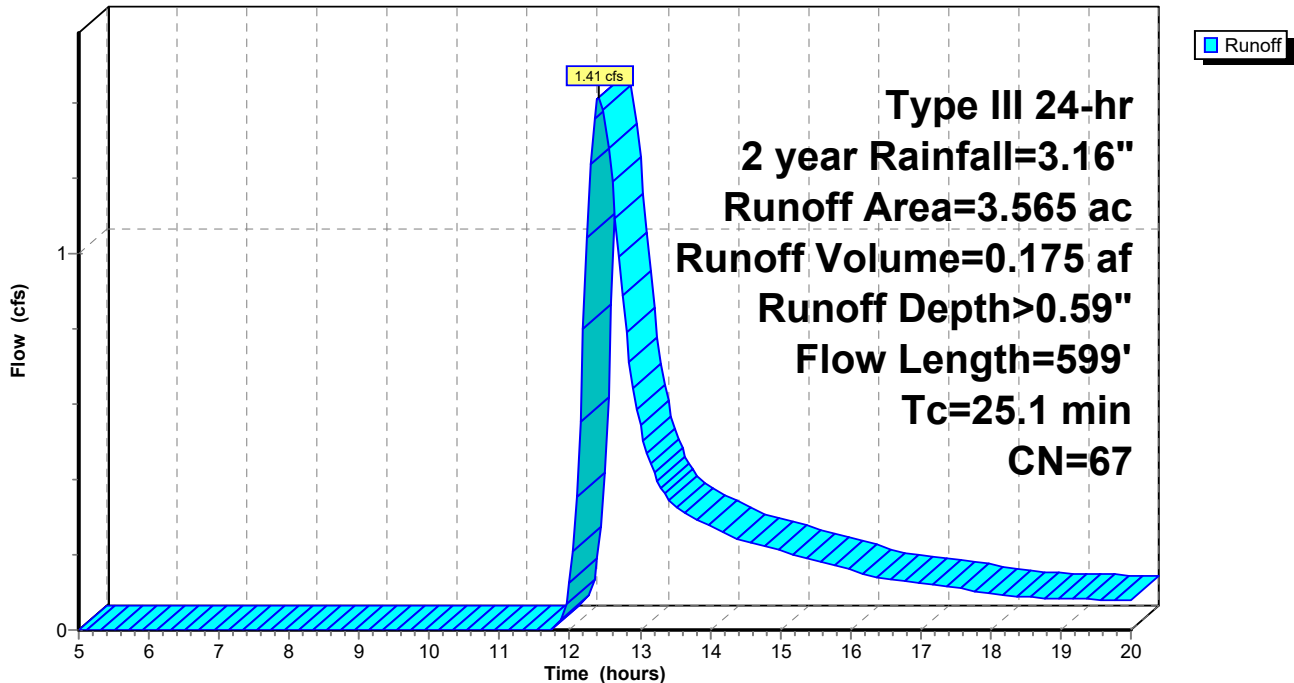
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.013	59	50-75% Grass cover, Fair, HSG A-B
* 2.513	74	50-75% Grass cover, Fair, HSG B-C
0.049	35	Brush, Fair, HSG A
0.267	56	Brush, Fair, HSG B
0.227	30	Meadow, non-grazed, HSG A
0.484	58	Meadow, non-grazed, HSG B
0.012	89	Paved roads w/open ditches, 50% imp, HSG B
3.565	67	Weighted Average
3.559		99.83% Pervious Area
0.006		0.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
17.6	549	0.0055	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.1	599	Total			

Subcatchment 65: Subcat 65

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Subcatchment 66: Subcat 66

Runoff = 0.76 cfs @ 12.25 hrs, Volume= 0.082 af, Depth> 0.51"

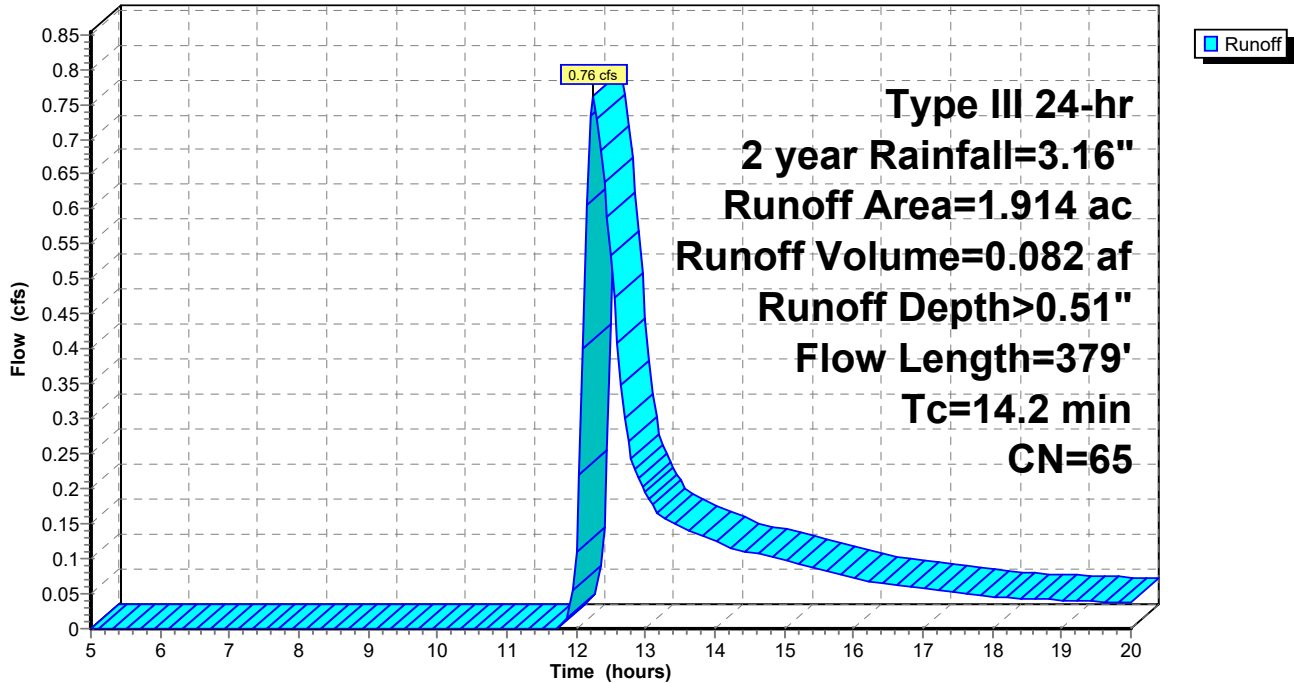
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.16"

Area (ac)	CN	Description
* 0.797	74	50-75% Grass cover, Fair, HSG B-C
0.199	56	Brush, Fair, HSG B
0.888	58	Meadow, non-grazed, HSG B
0.030	89	Paved roads w/open ditches, 50% imp, HSG B
1.914	65	Weighted Average
1.899		99.22% Pervious Area
0.015		0.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.7	329	0.0137	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.2	379	Total			

Subcatchment 66: Subcat 66

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 36P: Sediment Trap

Inflow Area = 8.684 ac, 1.43% Impervious, Inflow Depth > 0.72" for 2 year event
 Inflow = 3.91 cfs @ 12.53 hrs, Volume= 0.518 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 160.80' @ 20.00 hrs Surf.Area= 12,658 sf Storage= 22,552 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

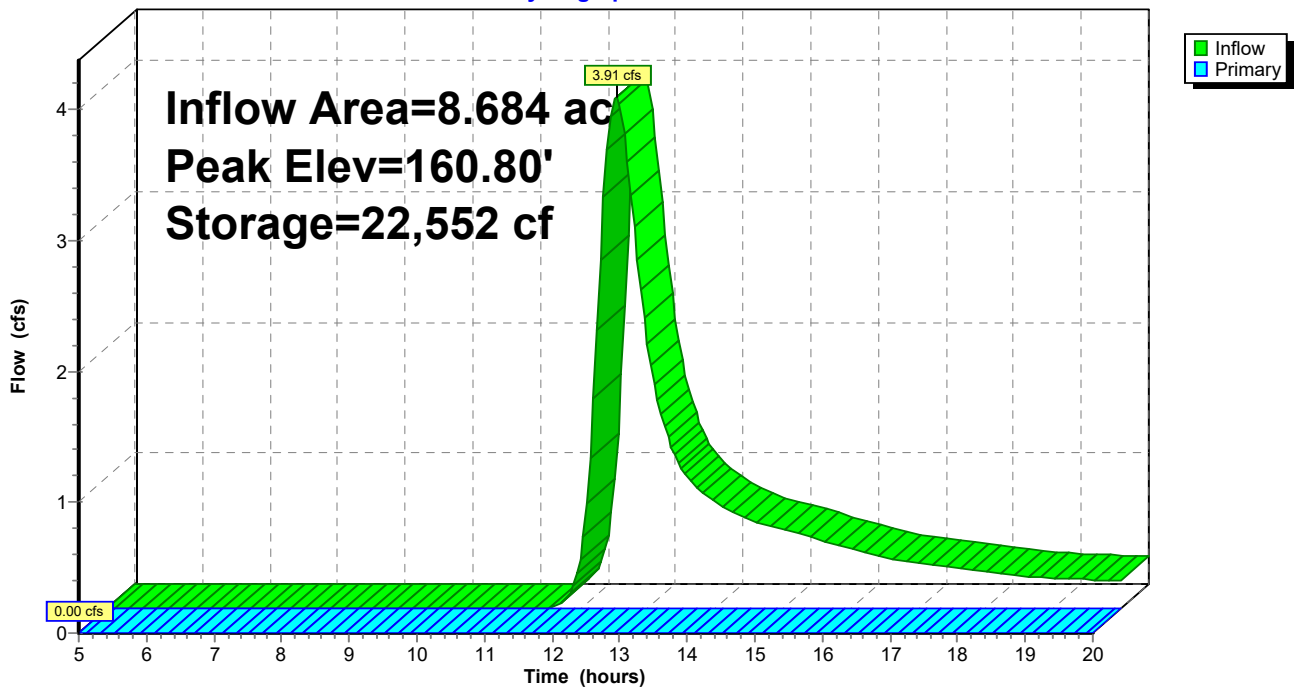
Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	40,645 cf	60.00'W x 70.00'L x 4.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=158.00' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 36P: Sediment Trap

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 37P: Farm Depression

Inflow Area = 1.143 ac, 2.97% Impervious, Inflow Depth > 0.47" for 2 year event
 Inflow = 0.38 cfs @ 12.31 hrs, Volume= 0.045 af
 Outflow = 0.20 cfs @ 12.69 hrs, Volume= 0.045 af, Atten= 48%, Lag= 22.9 min
 Discarded = 0.20 cfs @ 12.69 hrs, Volume= 0.045 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.12' @ 12.69 hrs Surf.Area= 2,869 sf Storage= 286 cf

Plug-Flow detention time= 9.5 min calculated for 0.045 af (100% of inflow)
 Center-of-Mass det. time= 9.0 min (863.8 - 854.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	166.00'	7,138 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
166.00	2,016	0	0	2,016	
167.00	14,072	7,138	7,138	14,075	

Device	Routing	Invert	Outlet Devices									
#1	Primary	166.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	166.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=0.20 cfs @ 12.69 hrs HW=166.12' (Free Discharge)
 ↑2=Exfiltration (Controls 0.20 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=166.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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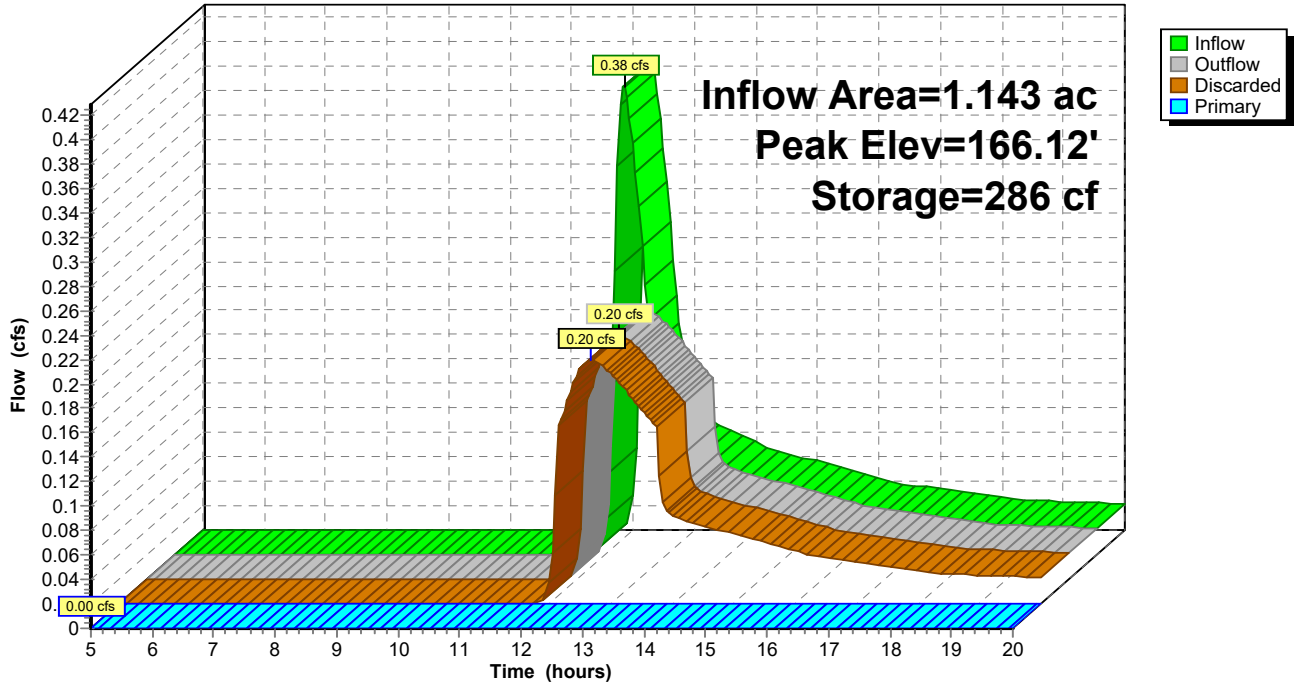
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Pond 37P: Farm Depression

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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 38P: Farm Depression

Inflow Area = 3.921 ac, 0.00% Impervious, Inflow Depth > 0.91" for 2 year event
 Inflow = 2.74 cfs @ 12.36 hrs, Volume= 0.299 af
 Outflow = 0.83 cfs @ 12.99 hrs, Volume= 0.292 af, Atten= 70%, Lag= 38.0 min
 Discarded = 0.83 cfs @ 12.99 hrs, Volume= 0.292 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.13' @ 12.99 hrs Surf.Area= 11,953 sf Storage= 4,475 cf

Plug-Flow detention time= 71.0 min calculated for 0.291 af (98% of inflow)
 Center-of-Mass det. time= 63.3 min (895.6 - 832.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	163.00'	25,279 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
163.00	0	0	0	0	
164.00	9,379	3,126	3,126	9,381	
165.00	38,160	22,152	25,279	38,166	

Device	Routing	Invert	Outlet Devices
#1	Primary	164.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.83 cfs @ 12.99 hrs HW=164.13' (Free Discharge)
 ↑2=Exfiltration (Controls 0.83 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=163.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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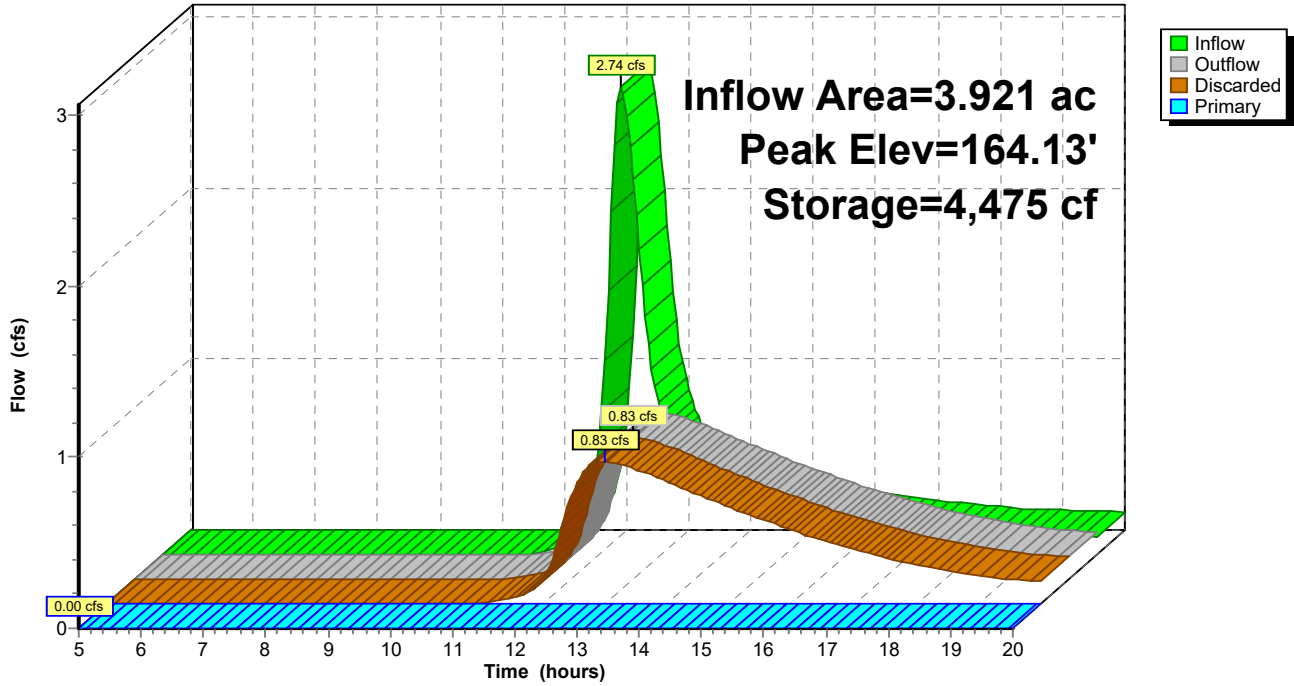
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Pond 38P: Farm Depression

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 39P: Farm Depression

Inflow Area = 3.189 ac, 2.49% Impervious, Inflow Depth > 0.44" for 2 year event
 Inflow = 1.34 cfs @ 12.17 hrs, Volume= 0.116 af
 Outflow = 0.41 cfs @ 12.63 hrs, Volume= 0.116 af, Atten= 69%, Lag= 27.9 min
 Discarded = 0.41 cfs @ 12.63 hrs, Volume= 0.116 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.30' @ 12.63 hrs Surf.Area= 5,902 sf Storage= 1,281 cf

Plug-Flow detention time= 27.5 min calculated for 0.116 af (100% of inflow)
 Center-of-Mass det. time= 26.5 min (861.7 - 835.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	164.00'	38,968 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
164.00	2,834	0	0	2,834	
166.00	44,400	38,968	38,968	44,411	

Device	Routing	Invert	Outlet Devices									
#1	Primary	165.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	164.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=0.41 cfs @ 12.63 hrs HW=164.30' (Free Discharge)
 ↑2=Exfiltration (Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=164.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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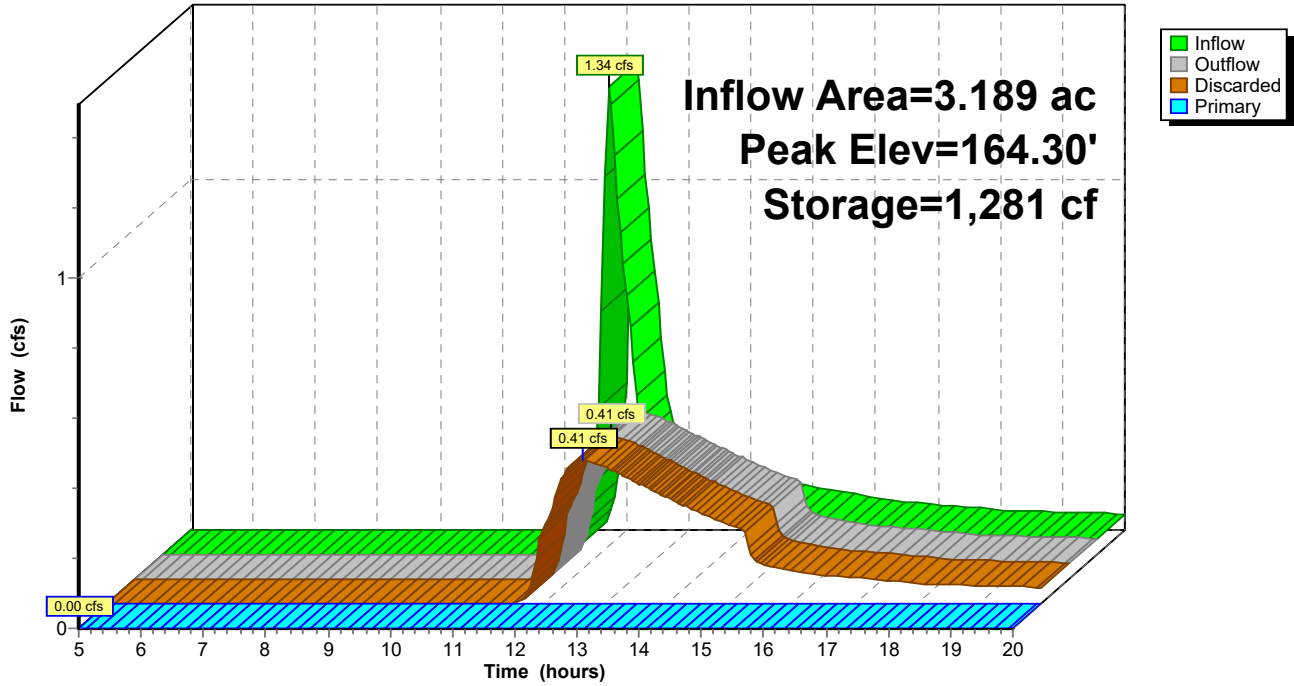
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Pond 39P: Farm Depression

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 40P: (new Pond)

Inflow Area = 0.652 ac, 0.00% Impervious, Inflow Depth > 0.31" for 2 year event
 Inflow = 0.12 cfs @ 12.26 hrs, Volume= 0.017 af
 Outflow = 0.03 cfs @ 14.33 hrs, Volume= 0.015 af, Atten= 78%, Lag= 124.1 min
 Discarded = 0.03 cfs @ 14.33 hrs, Volume= 0.015 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.76' @ 14.33 hrs Surf.Area= 376 sf Storage= 220 cf

Plug-Flow detention time= 108.7 min calculated for 0.015 af (92% of inflow)
 Center-of-Mass det. time= 84.3 min (954.0 - 869.7)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	3,119 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
158.00	210	0	0 210
160.00	748	903	903 768
162.00	1,512	2,216	3,119 1,567

Device	Routing	Invert	Outlet Devices
#1	Primary	161.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.03 cfs @ 14.33 hrs HW=158.76' (Free Discharge)
 ↑2=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=158.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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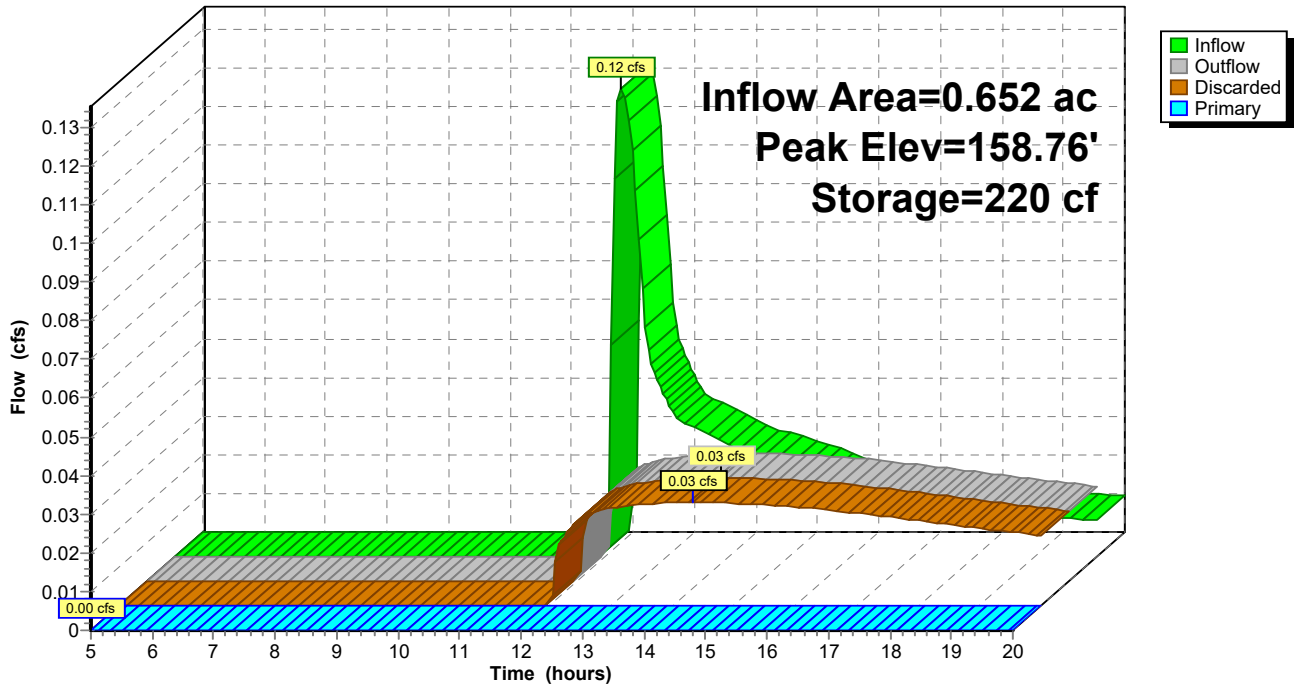
Type III 24-hr 2 year Rainfall=3.16"

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Pond 40P: (new Pond)

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 41P: Sediment Trap

Inflow Area = 0.888 ac, 0.00% Impervious, Inflow Depth > 0.31" for 2 year event
 Inflow = 0.17 cfs @ 12.21 hrs, Volume= 0.023 af
 Outflow = 0.03 cfs @ 14.54 hrs, Volume= 0.021 af, Atten= 80%, Lag= 139.5 min
 Discarded = 0.03 cfs @ 14.54 hrs, Volume= 0.021 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 156.80' @ 14.54 hrs Surf.Area= 493 sf Storage= 311 cf

Plug-Flow detention time= 116.6 min calculated for 0.021 af (90% of inflow)
 Center-of-Mass det. time= 87.1 min (955.7 - 868.6)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	5,646 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.00	292	0	0	292
158.00	893	1,130	1,130	916
160.00	1,712	2,561	3,691	1,773
161.00	2,207	1,954	5,646	2,292

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	156.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.03 cfs @ 14.54 hrs HW=156.80' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=156.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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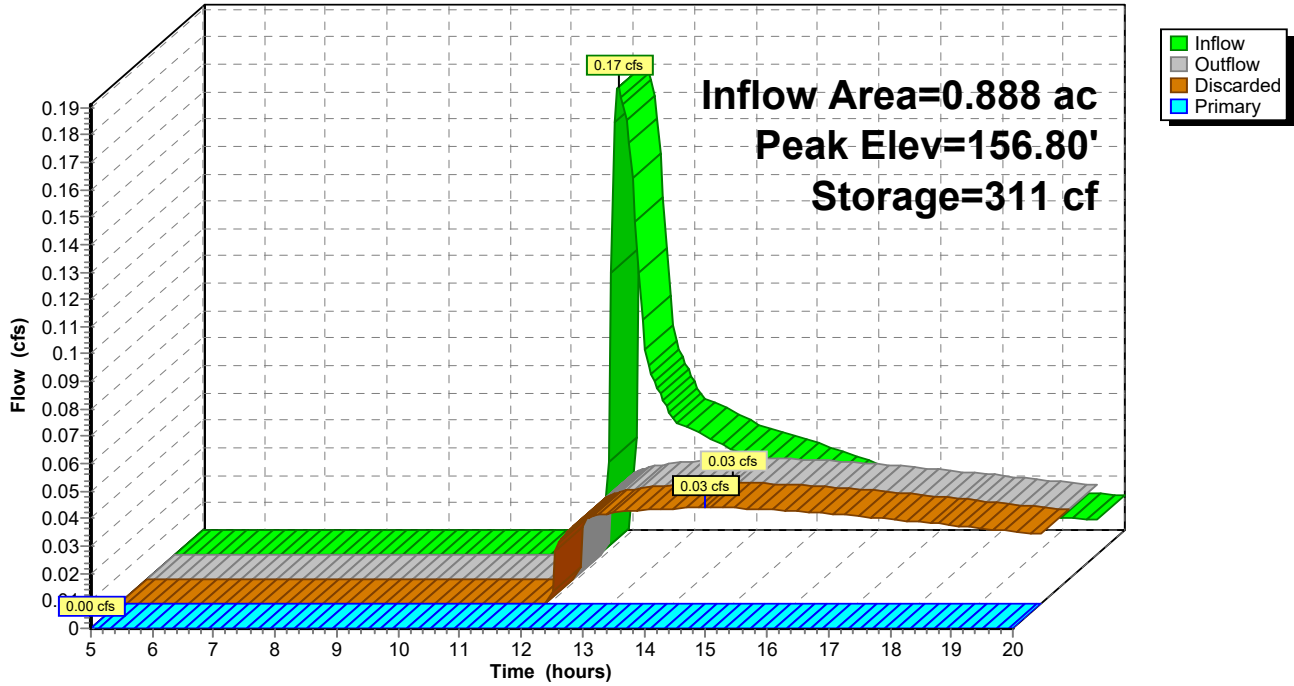
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Pond 41P: Sediment Trap

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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 42P: Sediment Trap

Inflow Area = 1.849 ac, 0.00% Impervious, Inflow Depth > 0.31" for 2 year event
 Inflow = 0.33 cfs @ 12.34 hrs, Volume= 0.048 af
 Outflow = 0.10 cfs @ 13.42 hrs, Volume= 0.047 af, Atten= 71%, Lag= 65.3 min
 Discarded = 0.10 cfs @ 13.42 hrs, Volume= 0.047 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.36' @ 13.42 hrs Surf.Area= 1,375 sf Storage= 458 cf

Plug-Flow detention time= 49.2 min calculated for 0.047 af (99% of inflow)
 Center-of-Mass det. time= 46.8 min (918.4 - 871.6)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	9,408 cf	20.00'W x 60.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	6.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.10 cfs @ 13.42 hrs HW=158.36' (Free Discharge)
 ↑2=Exfiltration (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=158.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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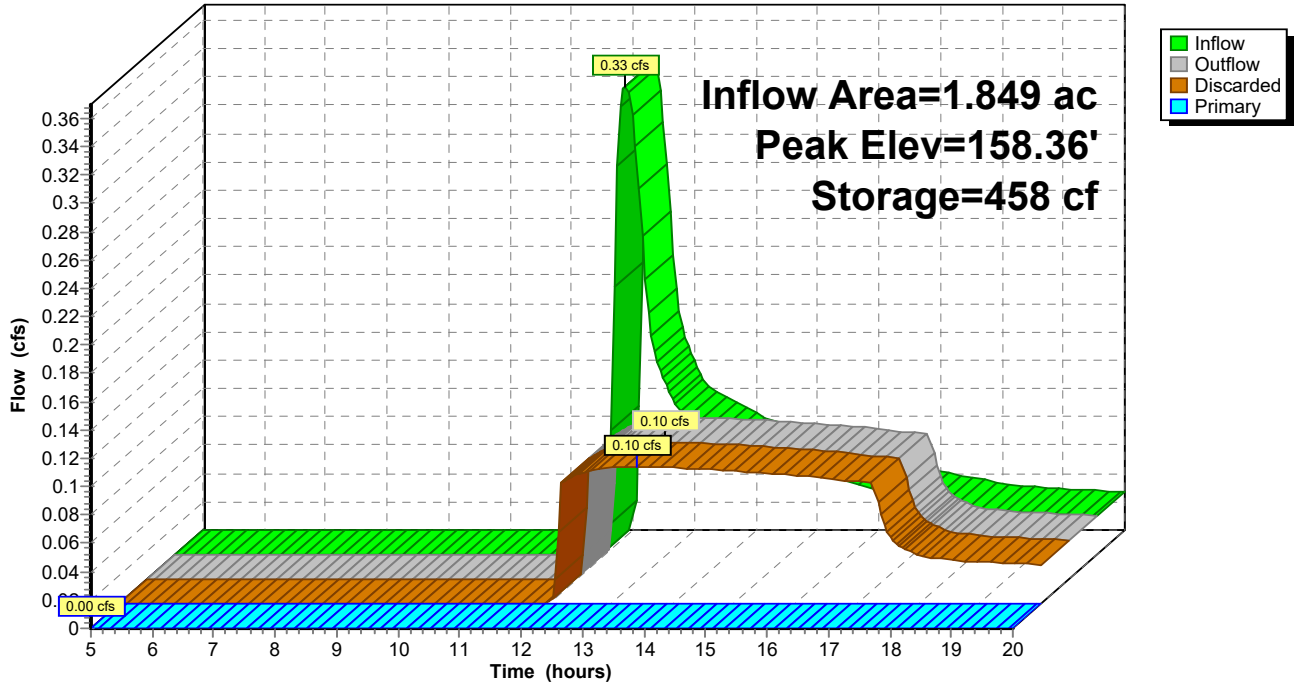
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Pond 42P: Sediment Trap

Hydrograph



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Summary for Pond 43P: Sediment Trap

Inflow Area = 0.916 ac, 0.00% Impervious, Inflow Depth > 0.28" for 2 year event
 Inflow = 0.14 cfs @ 12.41 hrs, Volume= 0.021 af
 Outflow = 0.05 cfs @ 13.31 hrs, Volume= 0.021 af, Atten= 66%, Lag= 53.9 min
 Discarded = 0.05 cfs @ 13.31 hrs, Volume= 0.021 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.29' @ 13.31 hrs Surf.Area= 655 sf Storage= 177 cf

Plug-Flow detention time= 38.7 min calculated for 0.021 af (99% of inflow)
 Center-of-Mass det. time= 36.1 min (914.2 - 878.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	159.00'	5,239 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
159.00	568	0	0	568	
160.00	893	724	724	907	
162.00	1,712	2,561	3,285	1,764	
163.00	2,206	1,954	5,239	2,282	

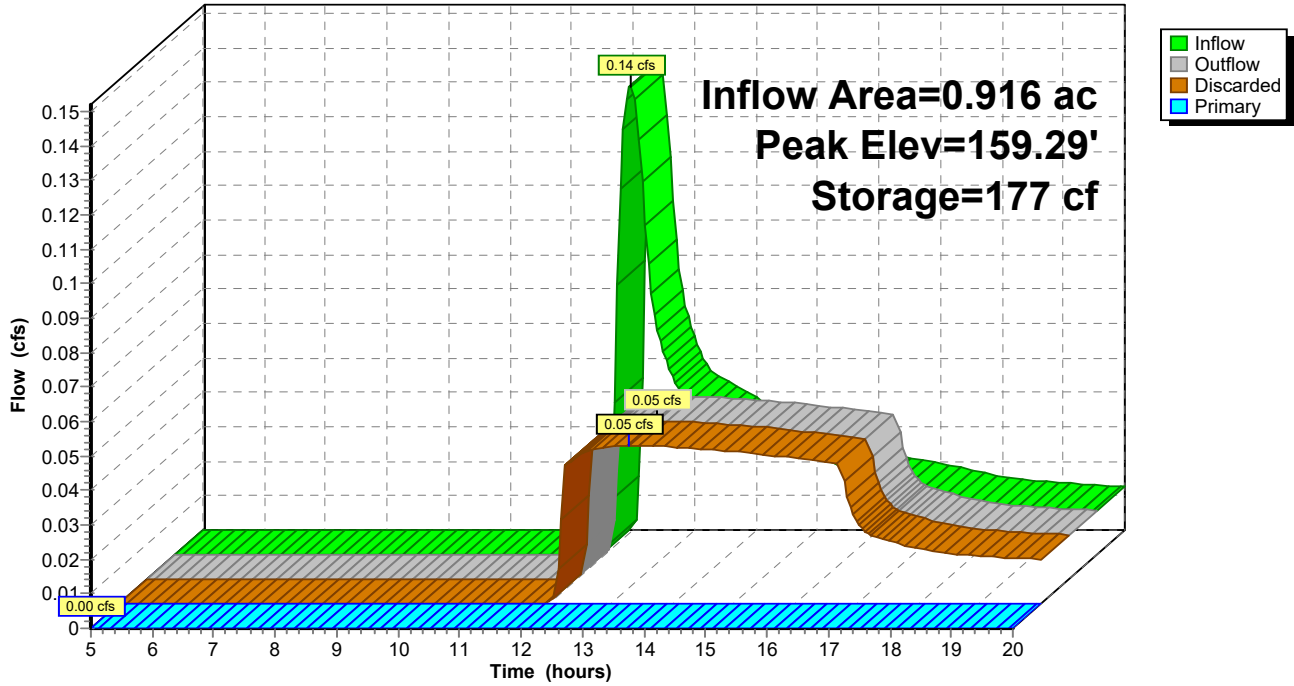
Device	Routing	Invert	Outlet Devices												
#1	Primary	162.00'	6.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	159.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.05 cfs @ 13.31 hrs HW=159.29' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=159.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 43P: Sediment Trap

Hydrograph



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Summary for Pond 44P: Farm Depression

Inflow Area = 2.114 ac, 0.00% Impervious, Inflow Depth > 0.59" for 2 year event
 Inflow = 1.17 cfs @ 12.17 hrs, Volume= 0.105 af
 Outflow = 0.31 cfs @ 12.70 hrs, Volume= 0.103 af, Atten= 73%, Lag= 32.0 min
 Discarded = 0.31 cfs @ 12.70 hrs, Volume= 0.103 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 157.89' @ 12.70 hrs Surf.Area= 4,474 sf Storage= 1,329 cf

Plug-Flow detention time= 55.5 min calculated for 0.102 af (98% of inflow)
 Center-of-Mass det. time= 49.0 min (889.6 - 840.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	157.00'	43,325 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
157.00	0	0	0	0	
158.00	5,632	1,877	1,877	5,634	
160.00	41,290	41,448	43,325	41,305	

Device	Routing	Invert	Outlet Devices									
#1	Primary	159.00'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=0.31 cfs @ 12.70 hrs HW=157.89' (Free Discharge)
 ↑2=Exfiltration (Controls 0.31 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=157.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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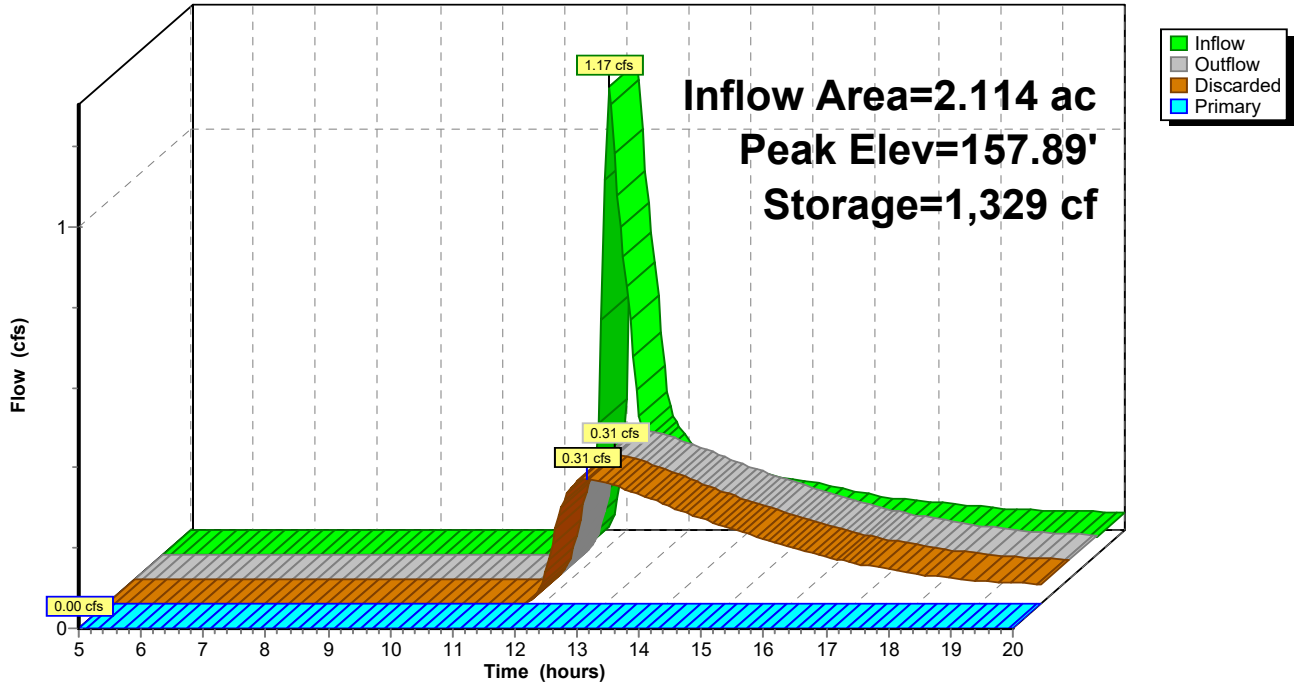
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Pond 44P: Farm Depression

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Summary for Pond 45P: Farm Depression

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth > 0.64" for 2 year event
 Inflow = 1.62 cfs @ 12.11 hrs, Volume= 0.125 af
 Outflow = 0.35 cfs @ 12.64 hrs, Volume= 0.122 af, Atten= 78%, Lag= 31.8 min
 Discarded = 0.35 cfs @ 12.64 hrs, Volume= 0.122 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 154.00' @ 12.64 hrs Surf.Area= 5,042 sf Storage= 1,690 cf

Plug-Flow detention time= 63.2 min calculated for 0.122 af (98% of inflow)
 Center-of-Mass det. time= 55.7 min (890.6 - 834.9)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	180,186 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	5,028	1,676	1,676	5,030
156.00	21,015	24,215	25,891	21,035
158.00	37,382	57,617	83,508	37,446
160.00	60,198	96,678	180,186	60,315

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	153.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.35 cfs @ 12.64 hrs HW=154.00' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.35 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=153.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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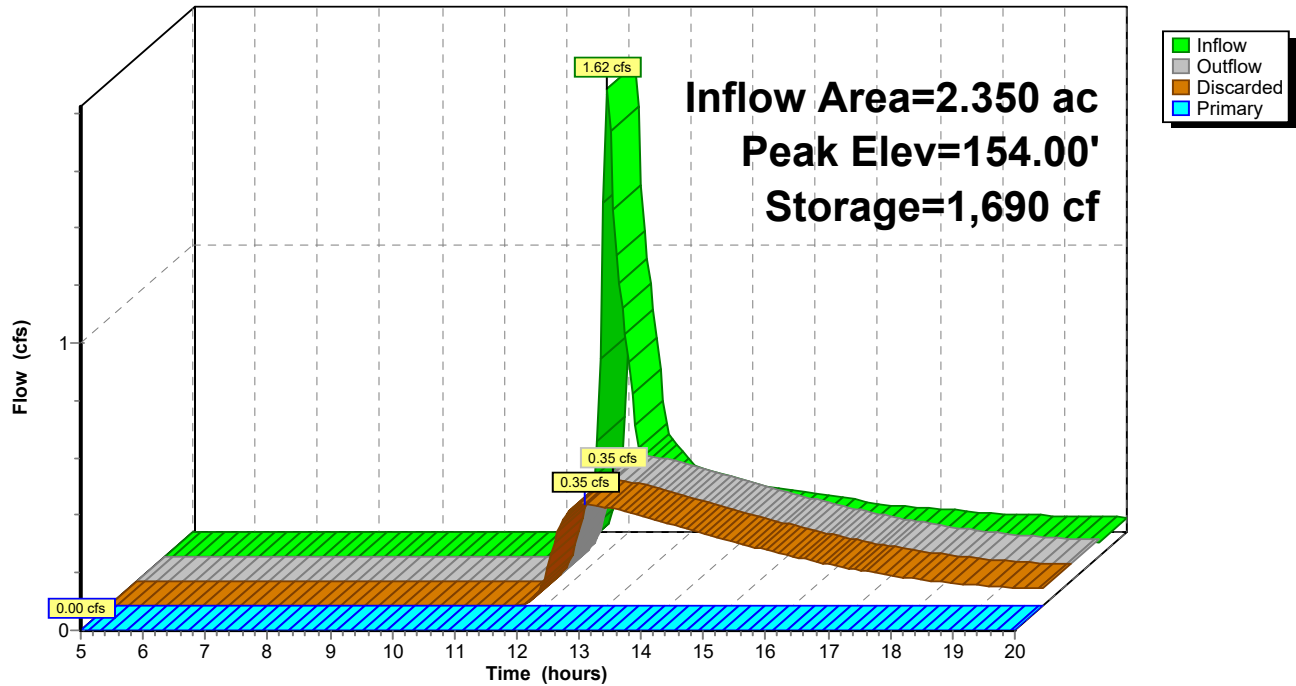
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Pond 45P: Farm Depression

Hydrograph



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Summary for Pond 46P: Sediment Trap

Inflow Area = 5.413 ac, 0.00% Impervious, Inflow Depth > 0.41" for 2 year event
 Inflow = 2.08 cfs @ 12.19 hrs, Volume= 0.185 af
 Outflow = 0.26 cfs @ 13.88 hrs, Volume= 0.154 af, Atten= 87%, Lag= 101.6 min
 Discarded = 0.26 cfs @ 13.88 hrs, Volume= 0.154 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 148.39' @ 13.88 hrs Surf.Area= 3,750 sf Storage= 3,430 cf

Plug-Flow detention time= 160.9 min calculated for 0.154 af (83% of inflow)
 Center-of-Mass det. time= 112.8 min (946.2 - 833.3)

Volume	Invert	Avail.Storage	Storage Description
#1	147.00'	12,608 cf	49.00'W x 28.00'L x 3.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Discarded	147.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	149.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=0.26 cfs @ 13.88 hrs HW=148.39' (Free Discharge)
 ↑1=Exfiltration (Controls 0.26 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=147.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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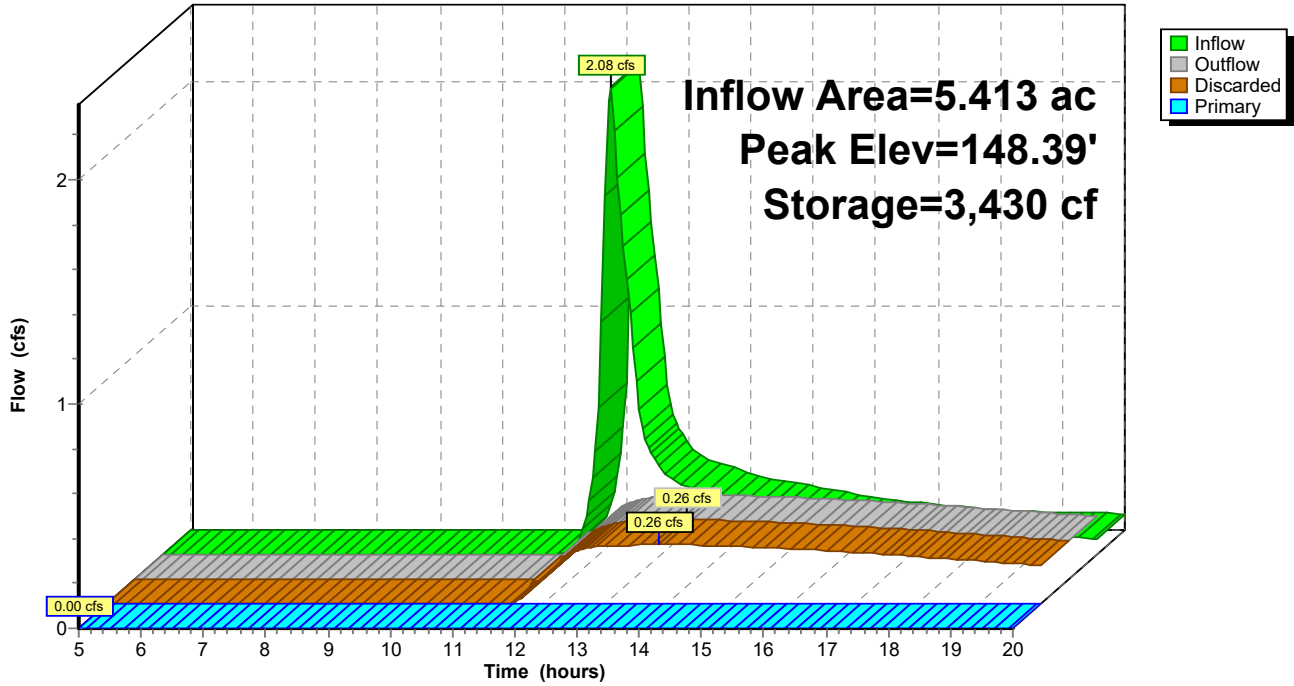
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Pond 46P: Sediment Trap

Hydrograph



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Summary for Pond 47P: Valley Berm

Inflow Area = 56.487 ac, 0.14% Impervious, Inflow Depth > 0.01" for 2 year event
 Inflow = 0.15 cfs @ 12.54 hrs, Volume= 0.041 af
 Outflow = 0.09 cfs @ 14.05 hrs, Volume= 0.041 af, Atten= 44%, Lag= 90.4 min
 Discarded = 0.09 cfs @ 14.05 hrs, Volume= 0.041 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 118.18' @ 14.05 hrs Surf.Area= 1,225 sf Storage= 177 cf

Plug-Flow detention time= 24.3 min calculated for 0.041 af (99% of inflow)
 Center-of-Mass det. time= 20.7 min (937.3 - 916.6)

Volume	Invert	Avail.Storage	Storage Description
#1	118.00'	69,383 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
118.00	782	0	0	782
120.00	11,520	10,202	10,202	11,531
122.00	23,374	34,202	44,405	23,421
123.00	26,618	24,978	69,383	26,713

Device	Routing	Invert	Outlet Devices
#1	Primary	121.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	118.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.09 cfs @ 14.05 hrs HW=118.18' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=118.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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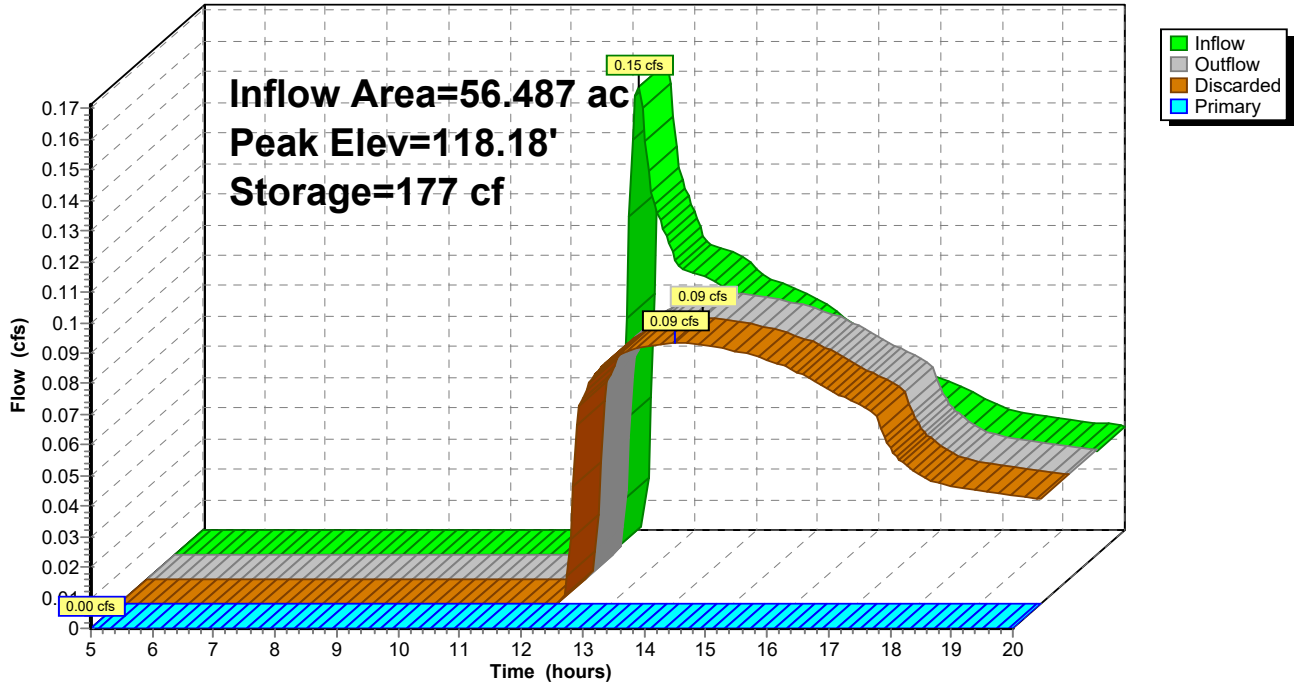
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Pond 47P: Valley Berm

Hydrograph



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Summary for Pond 48P: Valley Berm

Inflow Area = 52.719 ac, 0.15% Impervious, Inflow Depth > 0.03" for 2 year event
 Inflow = 0.82 cfs @ 12.36 hrs, Volume= 0.124 af
 Outflow = 0.22 cfs @ 14.09 hrs, Volume= 0.113 af, Atten= 74%, Lag= 103.2 min
 Discarded = 0.22 cfs @ 14.09 hrs, Volume= 0.113 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 123.00' @ 14.09 hrs Surf.Area= 3,094 sf Storage= 1,507 cf

Plug-Flow detention time= 98.9 min calculated for 0.113 af (91% of inflow)
 Center-of-Mass det. time= 71.3 min (947.4 - 876.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	122.00'	44,628 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
122.00	365	0	0	365	
124.00	8,490	7,077	7,077	8,500	
126.00	13,817	22,092	29,169	13,878	
127.00	17,162	15,459	44,628	17,252	

Device	Routing	Invert	Outlet Devices												
#1	Primary	125.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	122.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.22 cfs @ 14.09 hrs HW=123.00' (Free Discharge)
 ↑2=Exfiltration (Controls 0.22 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=122.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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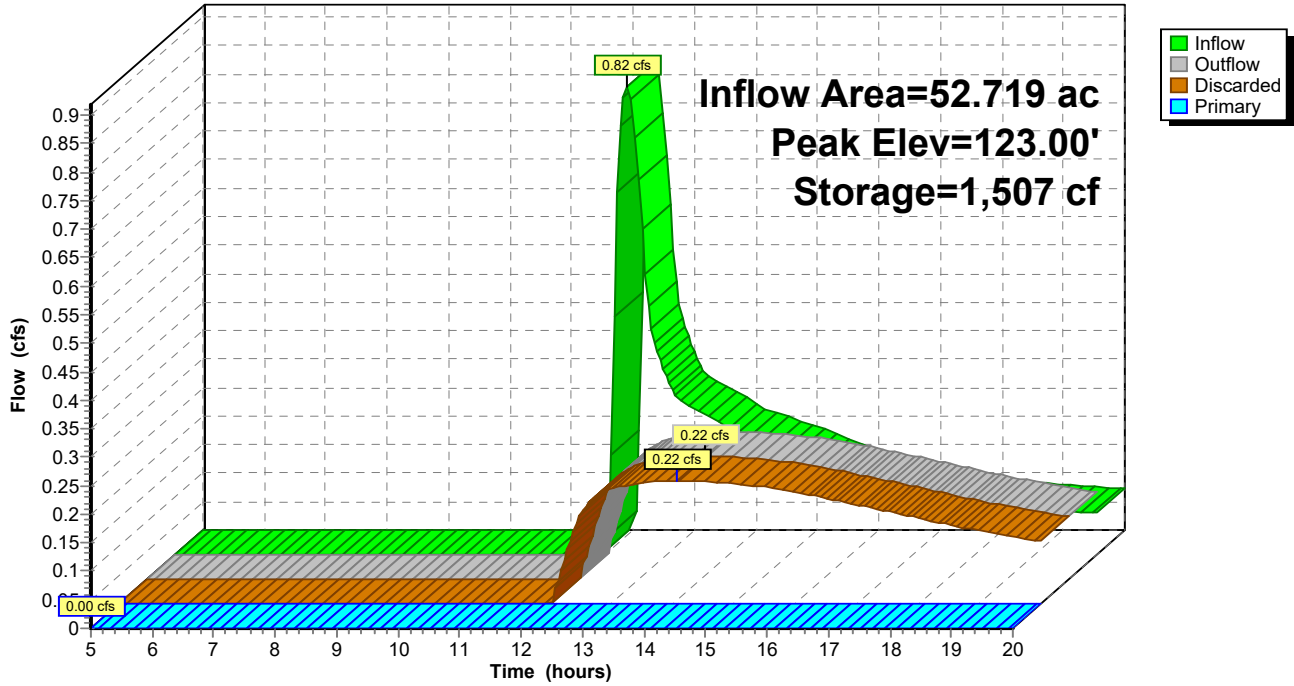
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Pond 48P: Valley Berm

Hydrograph



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Summary for Pond 49P: Valley Berm

Inflow Area = 47.376 ac, 0.17% Impervious, Inflow Depth > 0.10" for 2 year event
 Inflow = 3.07 cfs @ 13.62 hrs, Volume= 0.413 af
 Outflow = 0.55 cfs @ 16.12 hrs, Volume= 0.263 af, Atten= 82%, Lag= 150.1 min
 Discarded = 0.55 cfs @ 16.12 hrs, Volume= 0.263 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 130.92' @ 16.12 hrs Surf.Area= 7,862 sf Storage= 11,636 cf

Plug-Flow detention time= 164.6 min calculated for 0.262 af (63% of inflow)
 Center-of-Mass det. time= 125.1 min (998.3 - 873.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	128.00'	36,103 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
128.00	1,167	0	0	1,167	
130.00	5,025	5,742	5,742	5,043	
132.00	11,977	16,507	22,249	12,024	
133.00	15,820	13,854	36,103	15,890	

Device	Routing	Invert	Outlet Devices												
#1	Primary	131.50'	20.0' long x 6.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65												
			2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83												
#2	Discarded	128.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.55 cfs @ 16.12 hrs HW=130.92' (Free Discharge)
 ↑2=Exfiltration (Controls 0.55 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=128.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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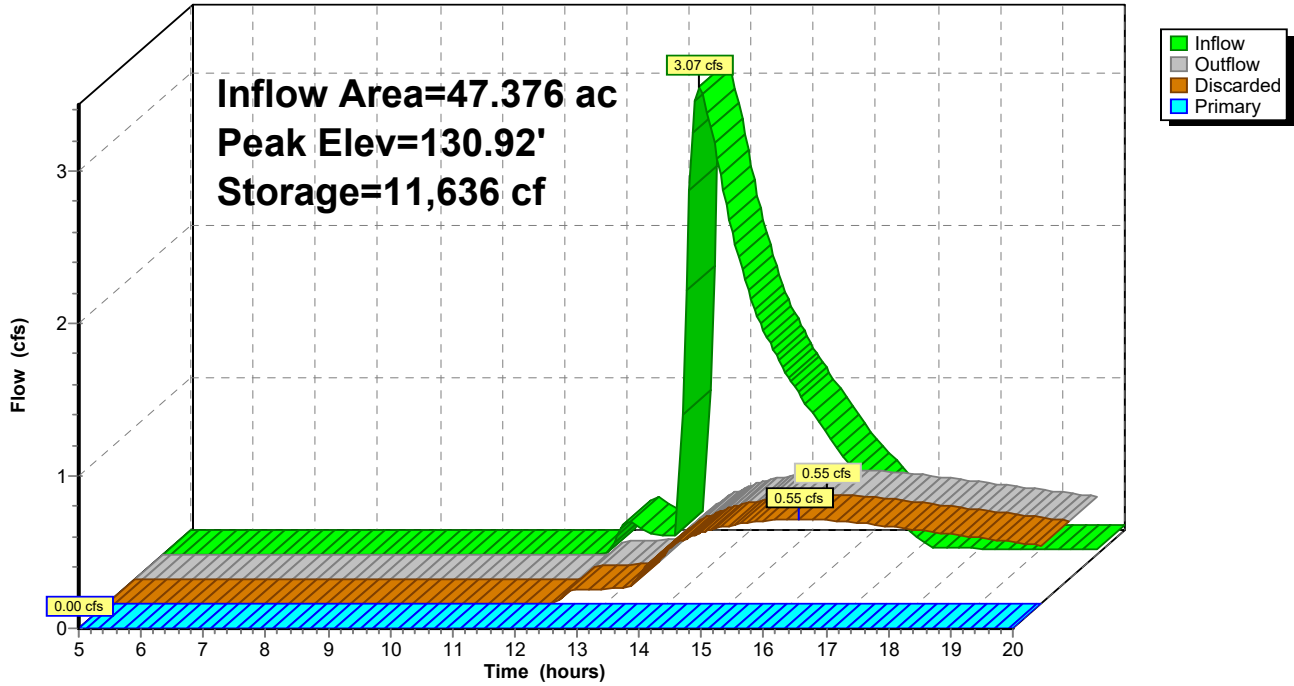
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Pond 49P: Valley Berm

Hydrograph



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Summary for Pond 50P: Valley Berm

Inflow Area = 44.163 ac, 0.18% Impervious, Inflow Depth > 0.39" for 2 year event
 Inflow = 13.05 cfs @ 12.71 hrs, Volume= 1.431 af
 Outflow = 3.93 cfs @ 13.62 hrs, Volume= 0.927 af, Atten= 70%, Lag= 54.7 min
 Discarded = 0.96 cfs @ 13.62 hrs, Volume= 0.561 af
 Primary = 2.97 cfs @ 13.62 hrs, Volume= 0.366 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 137.66' @ 13.62 hrs Surf.Area= 13,626 sf Storage= 27,719 cf

Plug-Flow detention time= 146.8 min calculated for 0.924 af (65% of inflow)
 Center-of-Mass det. time= 82.9 min (933.9 - 851.0)

Volume	Invert	Avail.Storage	Storage Description
#1	134.00'	49,733 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
134.00	2,742	0	0 2,742
136.00	7,845	10,150	10,150 7,869
138.00	15,022	22,482	32,632 15,085
139.00	19,268	17,101	49,733 19,357

Device	Routing	Invert	Outlet Devices
#1	Primary	137.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	134.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.96 cfs @ 13.62 hrs HW=137.66' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.96 cfs)

Primary OutFlow Max=2.95 cfs @ 13.62 hrs HW=137.66' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 2.95 cfs @ 0.94 fps)

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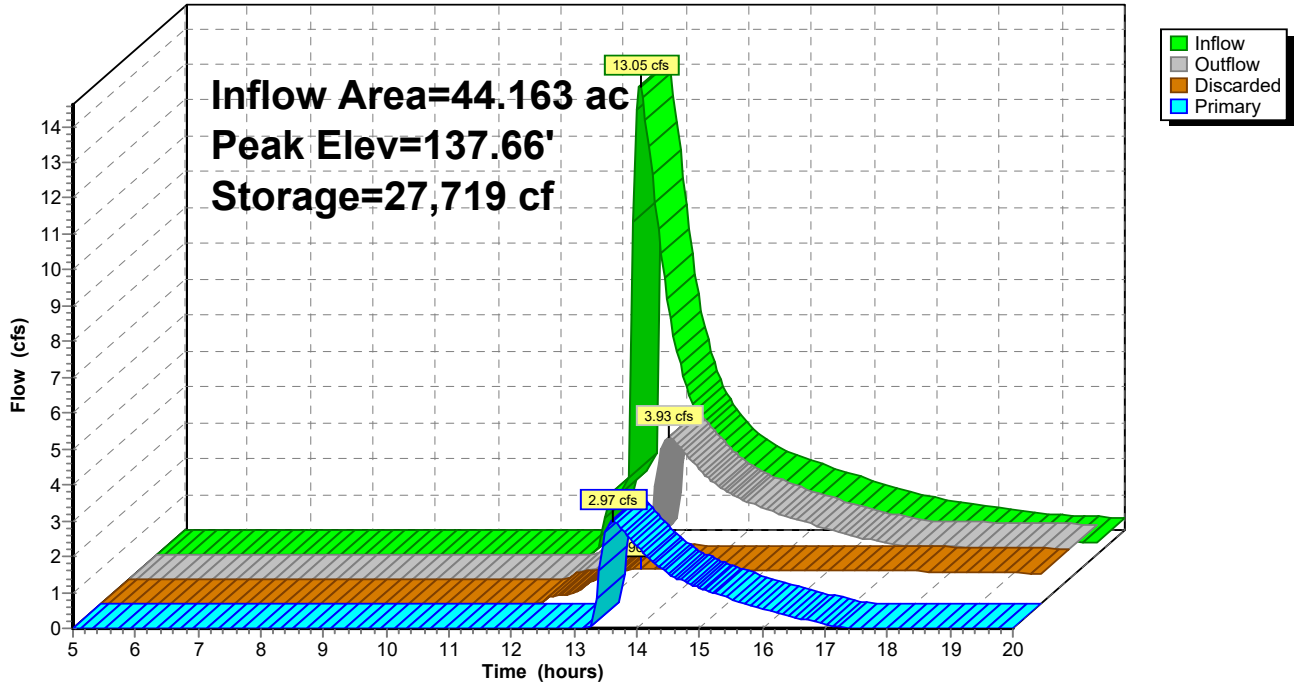
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Pond 50P: Valley Berm

Hydrograph



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Summary for Pond 51P: Valley Berm

Inflow Area = 36.779 ac, 0.22% Impervious, Inflow Depth > 0.60" for 2 year event
 Inflow = 13.23 cfs @ 12.61 hrs, Volume= 1.854 af
 Outflow = 12.77 cfs @ 12.71 hrs, Volume= 1.553 af, Atten= 3%, Lag= 6.3 min
 Discarded = 0.58 cfs @ 12.71 hrs, Volume= 0.350 af
 Primary = 12.19 cfs @ 12.71 hrs, Volume= 1.203 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 145.35' @ 12.71 hrs Surf.Area= 8,179 sf Storage= 15,659 cf

Plug-Flow detention time= 68.4 min calculated for 1.548 af (83% of inflow)
 Center-of-Mass det. time= 24.8 min (874.0 - 849.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	142.00'	21,537 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
142.00	1,705	0	0	1,705	
144.00	5,291	6,666	6,666	5,314	
146.00	9,810	14,870	21,537	9,874	

Device	Routing	Invert	Outlet Devices												
#1	Primary	145.00'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.58 cfs @ 12.71 hrs HW=145.34' (Free Discharge)
 ↑2=Exfiltration (Controls 0.58 cfs)

Primary OutFlow Max=12.07 cfs @ 12.71 hrs HW=145.34' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 12.07 cfs @ 1.46 fps)

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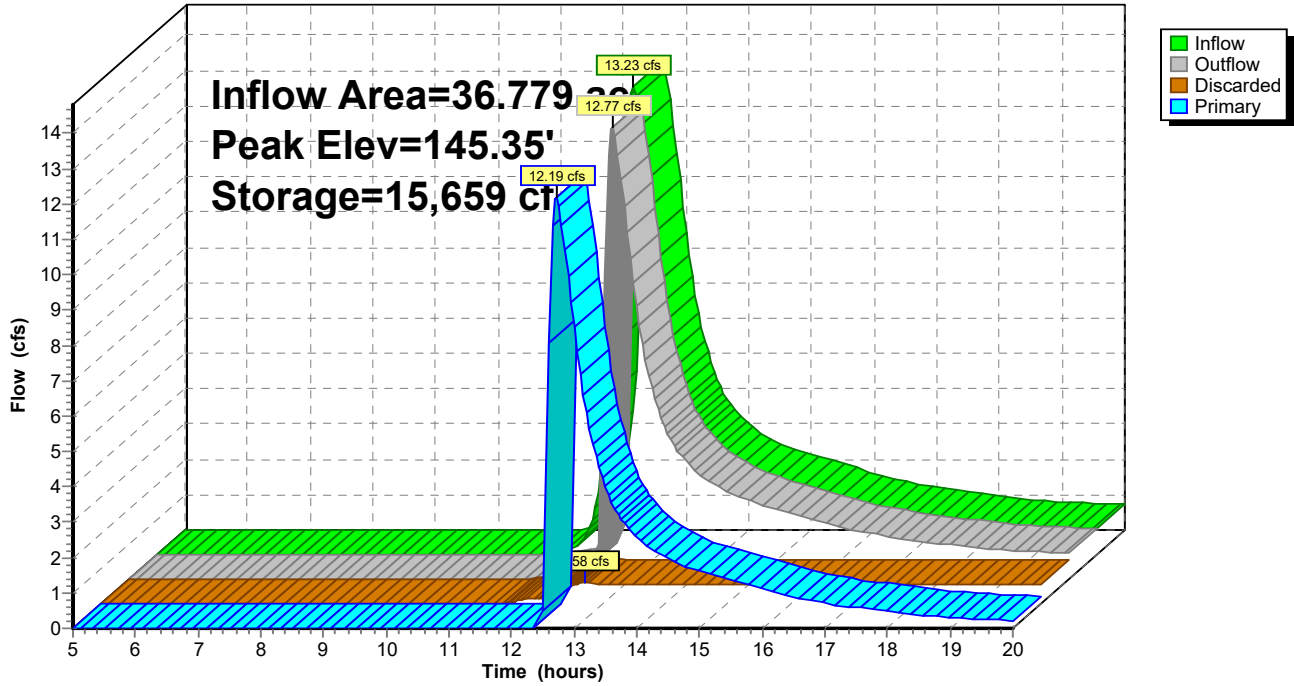
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Pond 51P: Valley Berm

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 53P: Valley Berm

Inflow Area = 59.427 ac, 0.93% Impervious, Inflow Depth = 0.00" for 2 year event
 Inflow = 0.18 cfs @ 13.22 hrs, Volume= 0.012 af
 Outflow = 0.09 cfs @ 13.81 hrs, Volume= 0.012 af, Atten= 49%, Lag= 35.4 min
 Discarded = 0.09 cfs @ 13.81 hrs, Volume= 0.012 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 114.16' @ 13.81 hrs Surf.Area= 1,345 sf Storage= 191 cf

Plug-Flow detention time= 24.9 min calculated for 0.012 af (100% of inflow)
 Center-of-Mass det. time= 25.0 min (835.1 - 810.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.00'	56,099 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
114.00	1,033	0	0	1,033	
116.00	7,810	7,789	7,789	7,823	
118.00	19,551	26,479	34,268	19,592	
119.00	24,195	21,832	56,099	24,266	

Device	Routing	Invert	Outlet Devices																	
#1	Primary	117.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir																	
			Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50
			Coef. (English)	2.38	2.54	2.69	2.68	2.67	2.67	2.65	2.66	2.66	2.68	2.72	2.73	2.76	2.79	2.88	3.07	3.32
#2	Discarded	114.00'	3.000 in/hr Exfiltration over Wetted area																	
			Conductivity to Groundwater Elevation = 1.00'																	

Discarded OutFlow Max=0.09 cfs @ 13.81 hrs HW=114.16' (Free Discharge)
 ↑2=Exfiltration (Controls 0.09 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=114.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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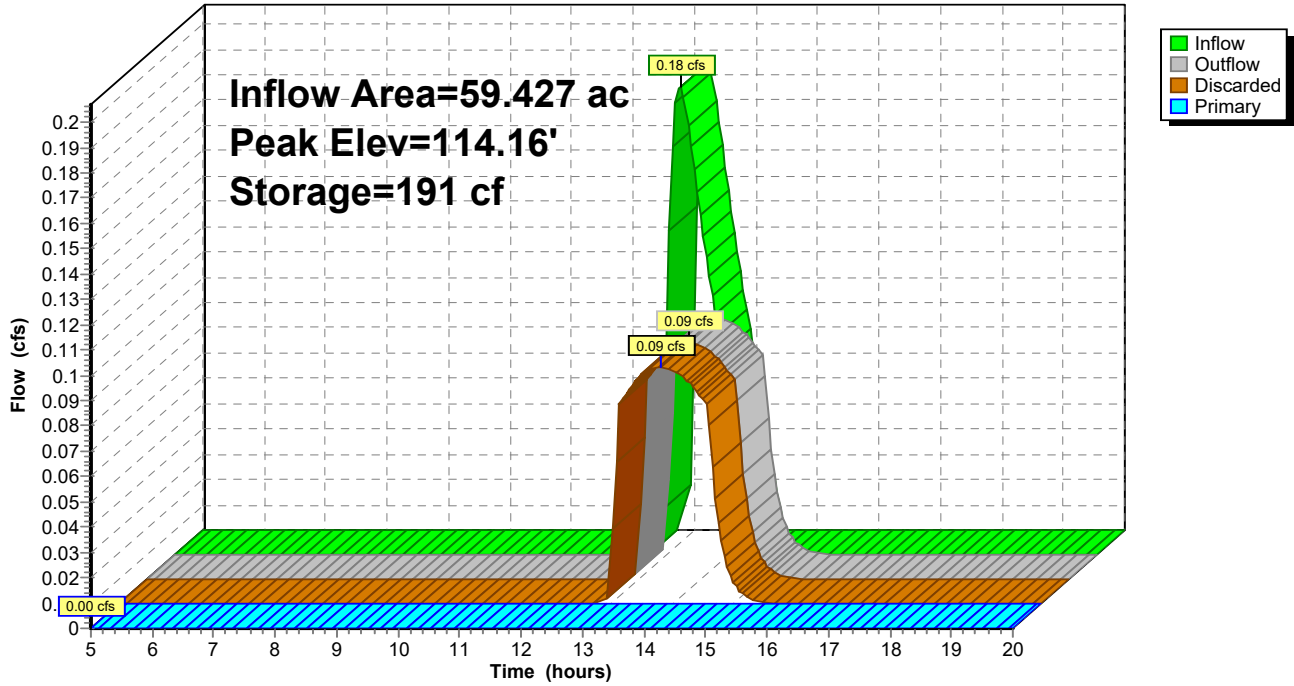
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Pond 53P: Valley Berm

Hydrograph



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Summary for Pond 54P: Valley Berm

Inflow Area = 71.593 ac, 0.78% Impervious, Inflow Depth > 0.00" for 2 year event
 Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 20.00 hrs, Volume= 0.001 af, Atten= 3%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 20.00 hrs, Volume= 0.001 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 108.00' @ 20.00 hrs Surf.Area= 593 sf Storage= 2 cf

Plug-Flow detention time= 10.4 min calculated for 0.001 af (90% of inflow)
 Center-of-Mass det. time= 3.8 min (1,139.5 - 1,135.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	108.00'	84,939 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
108.00	584	0	0	584	
110.00	13,292	11,108	11,108	13,302	
112.00	29,008	41,291	52,399	29,050	
113.00	36,205	32,540	84,939	36,276	

Device	Routing	Invert	Outlet Devices												
#1	Primary	111.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	108.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.04 cfs @ 20.00 hrs HW=108.00' (Free Discharge)
 ↑2=Exfiltration (Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=108.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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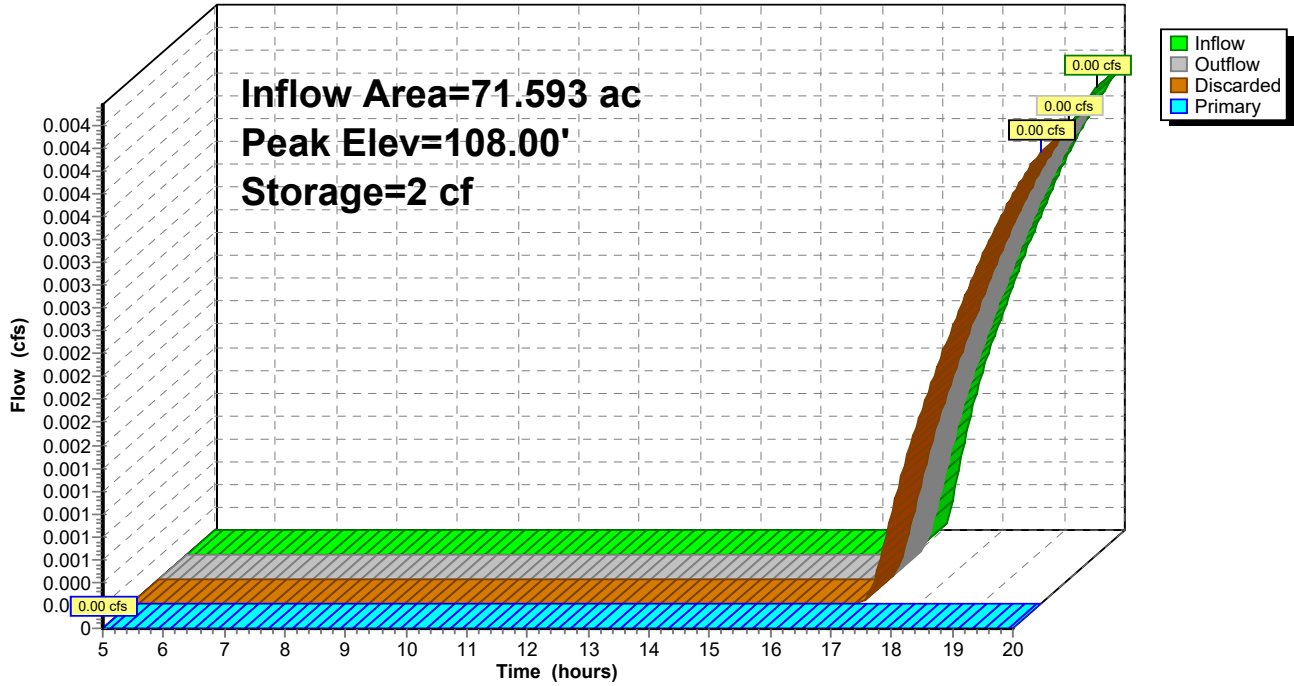
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Pond 54P: Valley Berm

Hydrograph



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Summary for Pond 55P: Sediment Trap

Inflow Area = 2.682 ac, 0.00% Impervious, Inflow Depth > 0.77" for 2 year event
 Inflow = 1.54 cfs @ 12.36 hrs, Volume= 0.171 af
 Outflow = 0.23 cfs @ 14.21 hrs, Volume= 0.129 af, Atten= 85%, Lag= 111.2 min
 Discarded = 0.23 cfs @ 14.21 hrs, Volume= 0.129 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 142.22' @ 14.21 hrs Surf.Area= 3,224 sf Storage= 3,449 cf

Plug-Flow detention time= 177.3 min calculated for 0.129 af (75% of inflow)
 Center-of-Mass det. time= 116.1 min (955.2 - 839.1)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	12,788 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
140.00	358	0	0 358
142.00	2,804	2,776	2,776 2,817
144.00	7,598	10,012	12,788 7,637

Device	Routing	Invert	Outlet Devices
#1	Primary	143.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	140.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.23 cfs @ 14.21 hrs HW=142.22' (Free Discharge)
 ↑2=Exfiltration (Controls 0.23 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=140.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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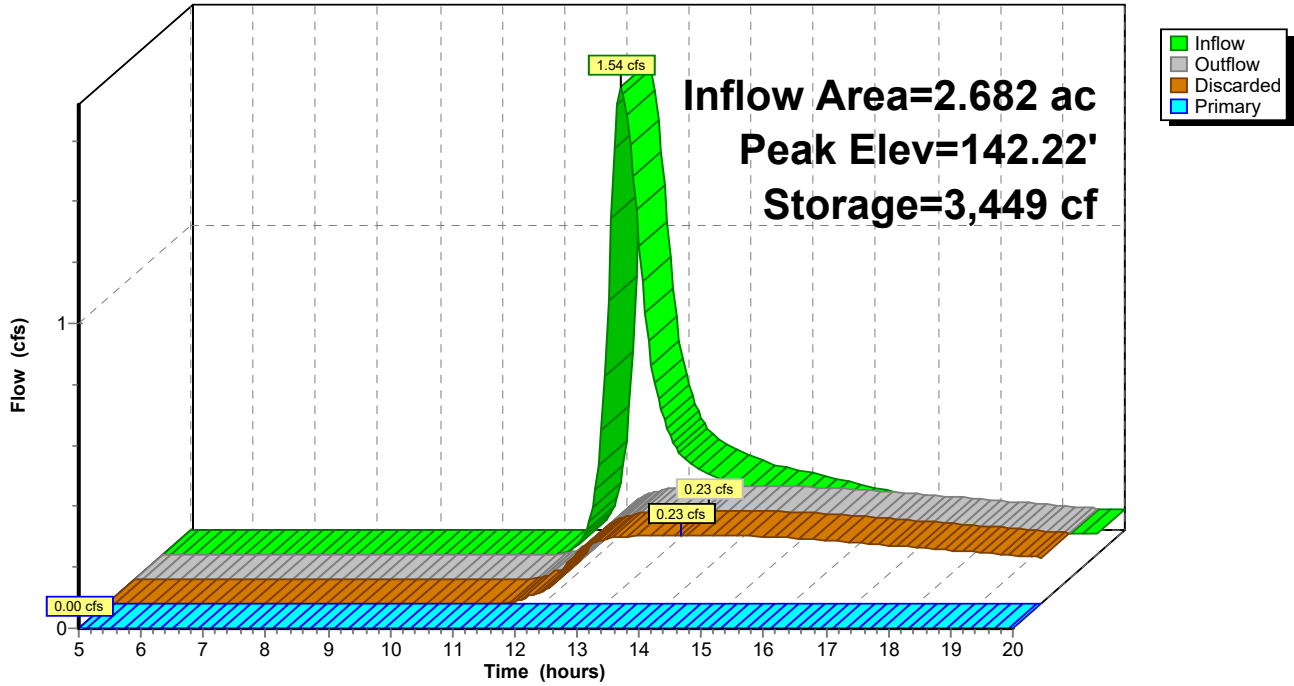
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Pond 55P: Sediment Trap

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Summary for Pond 56P: Sediment Trap

Inflow Area = 7.231 ac, 0.00% Impervious, Inflow Depth > 0.87" for 2 year event
 Inflow = 8.73 cfs @ 12.01 hrs, Volume= 0.526 af
 Outflow = 0.70 cfs @ 13.71 hrs, Volume= 0.450 af, Atten= 92%, Lag= 101.8 min
 Discarded = 0.70 cfs @ 13.71 hrs, Volume= 0.450 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 143.22' @ 13.71 hrs Surf.Area= 10,012 sf Storage= 9,982 cf

Plug-Flow detention time= 166.3 min calculated for 0.450 af (86% of inflow)
 Center-of-Mass det. time= 122.8 min (939.6 - 816.9)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	33,293 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	6,492	0	0	6,492
143.00	9,332	7,869	7,869	9,349
144.00	12,637	10,943	18,812	12,675
145.00	16,407	14,481	33,293	16,469

Device	Routing	Invert	Outlet Devices
#1	Primary	144.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.70 cfs @ 13.71 hrs HW=143.22' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.70 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=142.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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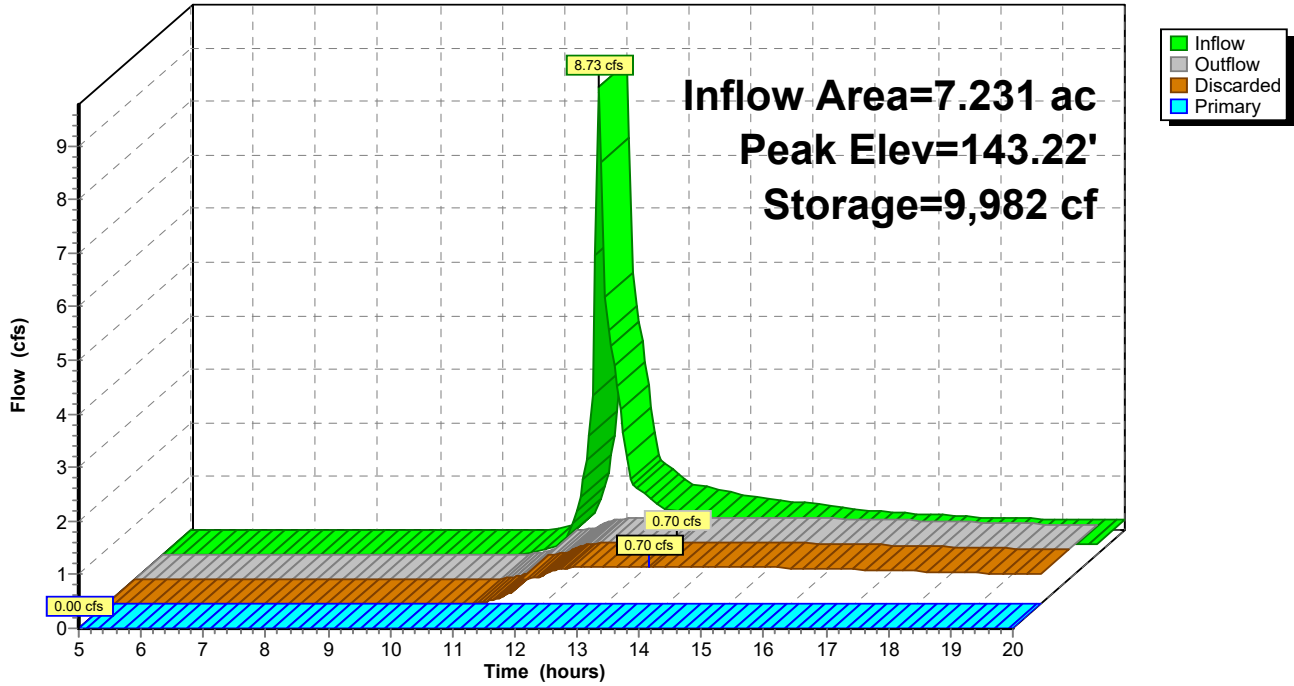
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Pond 56P: Sediment Trap

Hydrograph



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Summary for Pond 57P: Valley Berm

Inflow Area = 5.691 ac, 0.00% Impervious, Inflow Depth > 0.63" for 2 year event
 Inflow = 2.81 cfs @ 12.29 hrs, Volume= 0.301 af
 Outflow = 0.60 cfs @ 13.22 hrs, Volume= 0.231 af, Atten= 79%, Lag= 55.6 min
 Discarded = 0.41 cfs @ 13.22 hrs, Volume= 0.219 af
 Primary = 0.18 cfs @ 13.22 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 137.03' @ 13.22 hrs Surf.Area= 3,970 sf Storage= 5,356 cf

Plug-Flow detention time= 157.8 min calculated for 0.231 af (77% of inflow)
 Center-of-Mass det. time= 97.8 min (941.0 - 843.2)

Volume	Invert	Avail.Storage	Storage Description			
#1	134.00'	10,399 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
134.00	587	96.0	0	0	587	
136.00	1,920	175.0	2,379	2,379	2,312	
138.00	6,561	368.0	8,020	10,399	10,669	

Device	Routing	Invert	Outlet Devices												
#1	Primary	137.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	134.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.41 cfs @ 13.22 hrs HW=137.03' (Free Discharge)
 ↑2=Exfiltration (Controls 0.41 cfs)

Primary OutFlow Max=0.17 cfs @ 13.22 hrs HW=137.03' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 0.17 cfs @ 0.43 fps)

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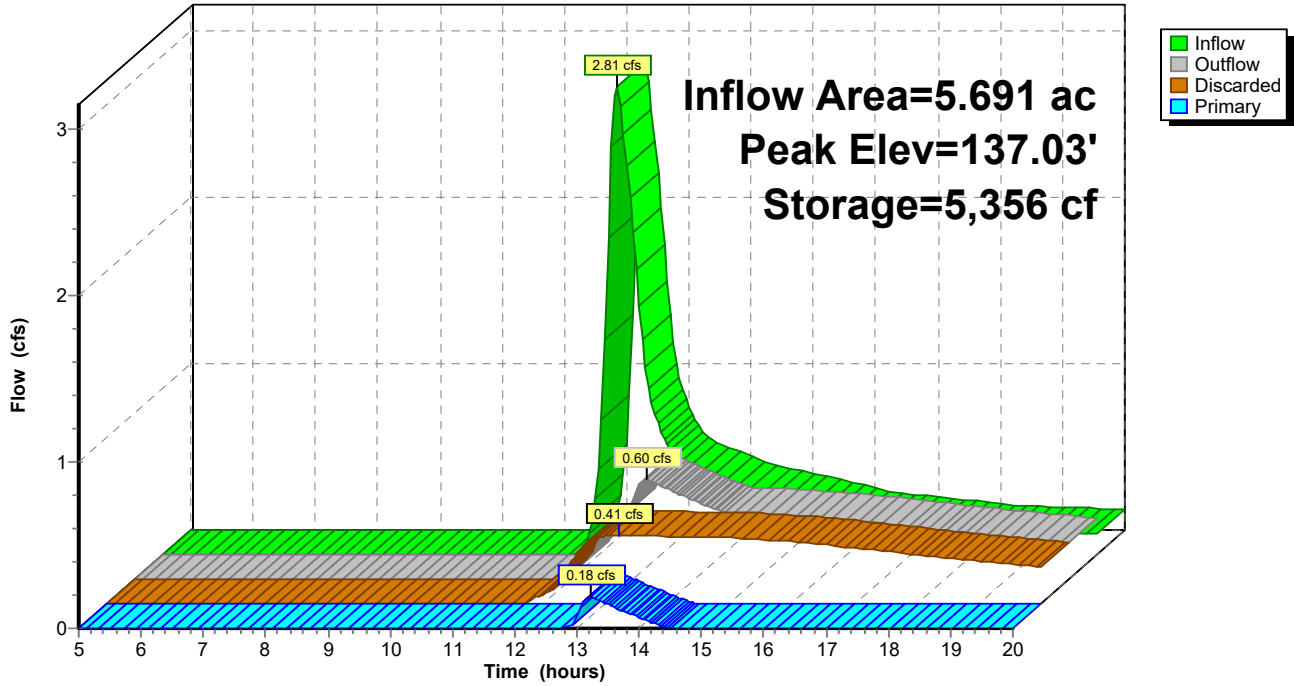
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Pond 57P: Valley Berm

Hydrograph



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Summary for Pond 58P: Valley Berm

Inflow Area = 48.973 ac, 1.13% Impervious, Inflow Depth > 0.07" for 2 year event
 Inflow = 3.19 cfs @ 13.34 hrs, Volume= 0.306 af
 Outflow = 0.49 cfs @ 15.59 hrs, Volume= 0.225 af, Atten= 85%, Lag= 134.7 min
 Discarded = 0.49 cfs @ 15.59 hrs, Volume= 0.225 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 124.83' @ 15.59 hrs Surf.Area= 6,974 sf Storage= 8,791 cf

Plug-Flow detention time= 166.0 min calculated for 0.225 af (74% of inflow)
 Center-of-Mass det. time= 140.1 min (991.4 - 851.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	122.00'	32,853 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
122.00	359	0	0	359	
124.00	4,500	4,087	4,087	4,511	
126.00	11,415	15,388	19,475	11,454	
127.00	15,442	13,378	32,853	15,501	

Device	Routing	Invert	Outlet Devices												
#1	Primary	125.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	122.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.49 cfs @ 15.59 hrs HW=124.83' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.49 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=122.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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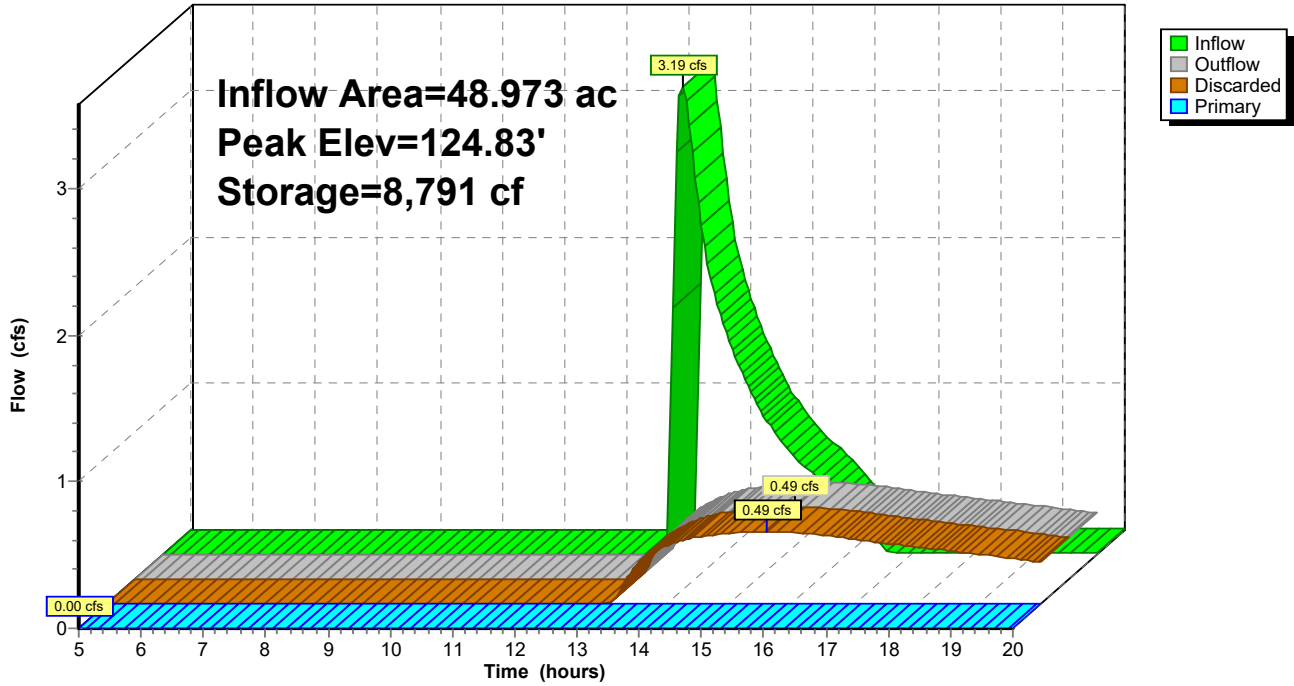
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Pond 58P: Valley Berm

Hydrograph



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Summary for Pond 59P: Valley Berm

Inflow Area = 46.120 ac, 1.20% Impervious, Inflow Depth > 0.22" for 2 year event
 Inflow = 8.18 cfs @ 12.82 hrs, Volume= 0.826 af
 Outflow = 3.79 cfs @ 13.34 hrs, Volume= 0.632 af, Atten= 54%, Lag= 31.4 min
 Discarded = 0.60 cfs @ 13.34 hrs, Volume= 0.330 af
 Primary = 3.19 cfs @ 13.34 hrs, Volume= 0.302 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 133.65' @ 13.34 hrs Surf.Area= 8,488 sf Storage= 13,883 cf

Plug-Flow detention time= 115.6 min calculated for 0.632 af (76% of inflow)
 Center-of-Mass det. time= 76.8 min (915.0 - 838.2)

Volume	Invert	Avail.Storage	Storage Description
#1	130.00'	27,865 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
130.00	297	0	0	297
132.00	4,143	3,700	3,700	4,154
134.00	9,624	13,388	17,087	9,665
135.00	11,974	10,778	27,865	12,044

Device	Routing	Invert	Outlet Devices
#1	Discarded	130.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	133.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=0.60 cfs @ 13.34 hrs HW=133.65' (Free Discharge)
 ↑1=Exfiltration (Controls 0.60 cfs)

Primary OutFlow Max=3.17 cfs @ 13.34 hrs HW=133.65' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 3.17 cfs @ 0.91 fps)

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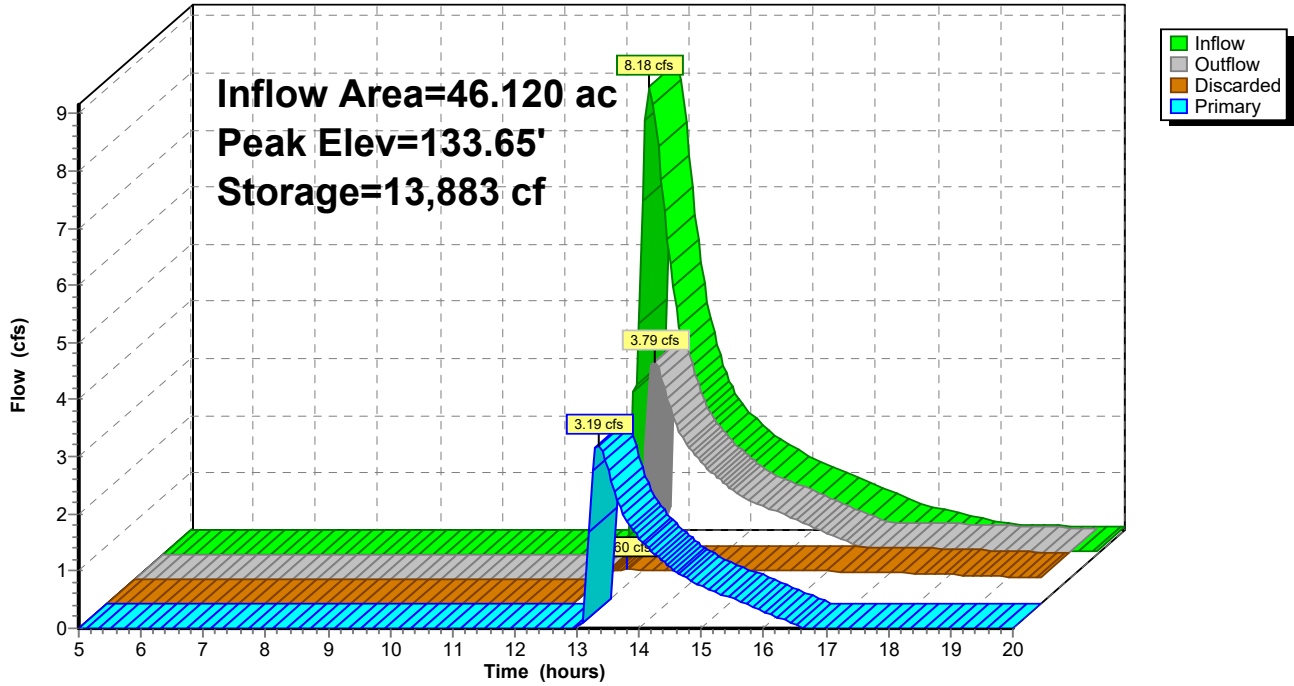
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Pond 59P: Valley Berm

Hydrograph



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Summary for Pond 60P: Valley Berm

Inflow Area = 7.388 ac, 0.00% Impervious, Inflow Depth > 0.71" for 2 year event
 Inflow = 3.13 cfs @ 12.60 hrs, Volume= 0.440 af
 Outflow = 3.12 cfs @ 12.60 hrs, Volume= 0.383 af, Atten= 0%, Lag= 0.1 min
 Discarded = 0.15 cfs @ 12.60 hrs, Volume= 0.093 af
 Primary = 2.97 cfs @ 12.60 hrs, Volume= 0.290 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 141.66' @ 12.60 hrs Surf.Area= 2,173 sf Storage= 2,796 cf

Plug-Flow detention time= 55.2 min calculated for 0.382 af (87% of inflow)
 Center-of-Mass det. time= 18.7 min (871.6 - 852.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	138.00'	6,691 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
138.00	0	0	0	0	
140.00	736	491	491	742	
142.00	2,566	3,118	3,608	2,593	
143.00	3,630	3,083	6,691	3,675	

Device	Routing	Invert	Outlet Devices												
#1	Primary	141.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	138.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.15 cfs @ 12.60 hrs HW=141.66' (Free Discharge)
 ↑2=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=2.96 cfs @ 12.60 hrs HW=141.66' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 2.96 cfs @ 0.94 fps)

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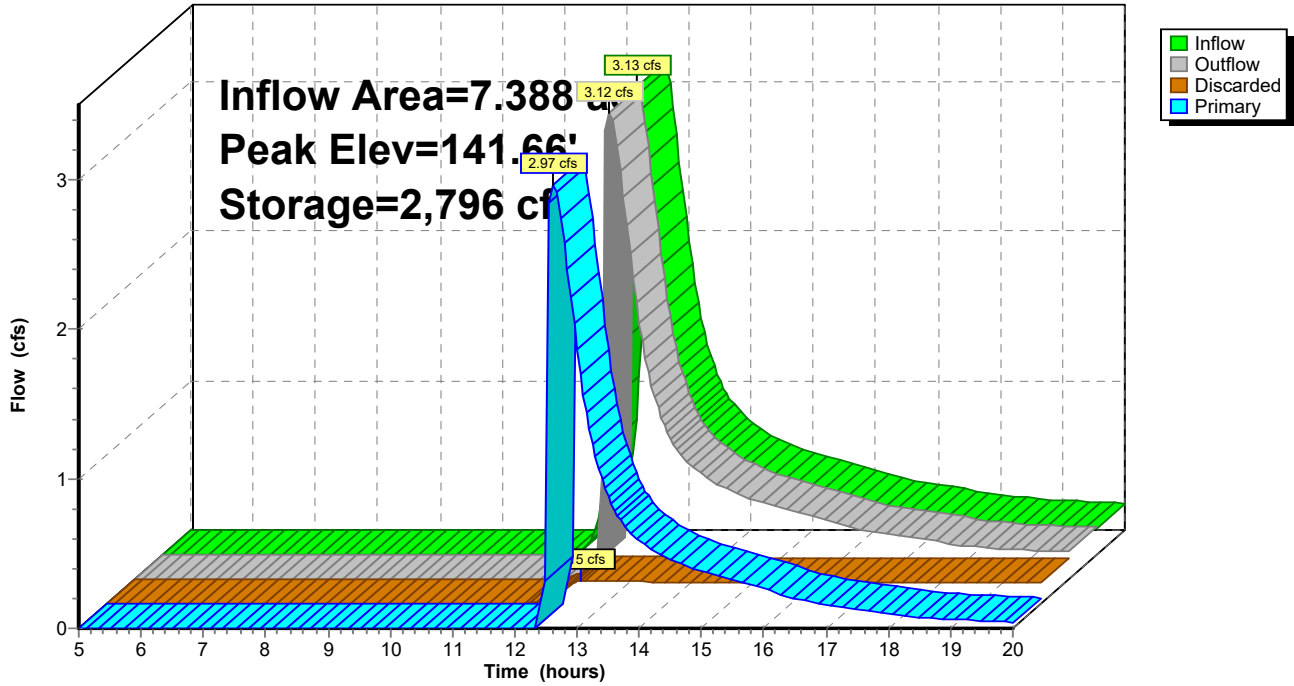
Type III 24-hr 2 year Rainfall=3.16"

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Pond 60P: Valley Berm

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 62P: Valley Berm

Inflow Area = 32.887 ac, 1.63% Impervious, Inflow Depth > 0.50" for 2 year event
 Inflow = 10.64 cfs @ 12.48 hrs, Volume= 1.357 af
 Outflow = 6.52 cfs @ 12.84 hrs, Volume= 1.029 af, Atten= 39%, Lag= 21.9 min
 Discarded = 0.86 cfs @ 12.84 hrs, Volume= 0.505 af
 Primary = 5.67 cfs @ 12.84 hrs, Volume= 0.524 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 143.74' @ 12.84 hrs Surf.Area= 12,164 sf Storage= 18,020 cf

Plug-Flow detention time= 108.6 min calculated for 1.026 af (76% of inflow)
 Center-of-Mass det. time= 48.6 min (897.9 - 849.3)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	36,392 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
140.00	0	0	0	0
142.00	5,126	3,417	3,417	5,132
144.00	13,477	17,943	21,360	13,510
145.00	16,642	15,032	36,392	16,704

Device	Routing	Invert	Outlet Devices
#1	Primary	143.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	140.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.86 cfs @ 12.84 hrs HW=143.74' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.86 cfs)

Primary OutFlow Max=5.63 cfs @ 12.84 hrs HW=143.74' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 5.63 cfs @ 1.18 fps)

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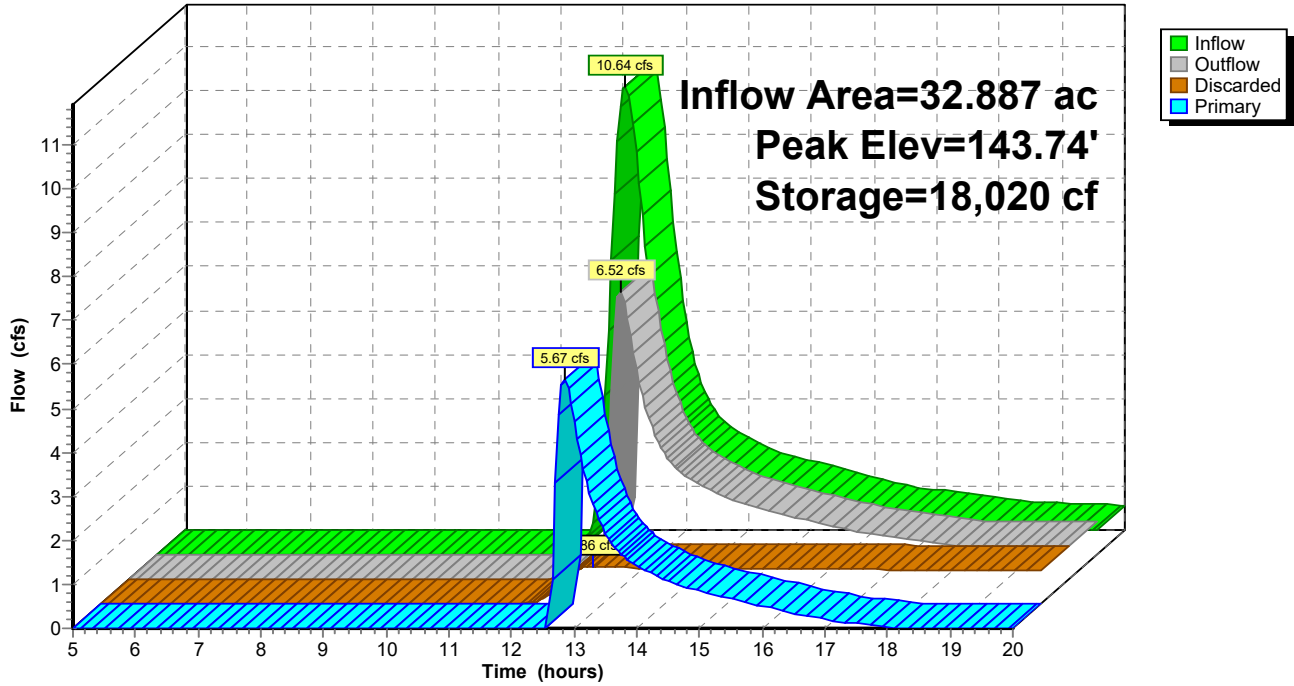
Type III 24-hr 2 year Rainfall=3.16"

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Pond 62P: Valley Berm

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 64P: Sediment Trap

Inflow Area = 1.772 ac, 0.68% Impervious, Inflow Depth > 0.40" for 2 year event
 Inflow = 0.48 cfs @ 12.30 hrs, Volume= 0.060 af
 Outflow = 0.14 cfs @ 13.05 hrs, Volume= 0.059 af, Atten= 70%, Lag= 44.6 min
 Discarded = 0.14 cfs @ 13.05 hrs, Volume= 0.059 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 157.33' @ 13.05 hrs Surf.Area= 2,079 sf Storage= 603 cf

Plug-Flow detention time= 39.2 min calculated for 0.059 af (99% of inflow)
 Center-of-Mass det. time= 37.5 min (898.2 - 860.8)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	13,521 cf	40.00'W x 40.00'L x 3.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.14 cfs @ 13.05 hrs HW=157.33' (Free Discharge)
 ↑2=Exfiltration (Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=157.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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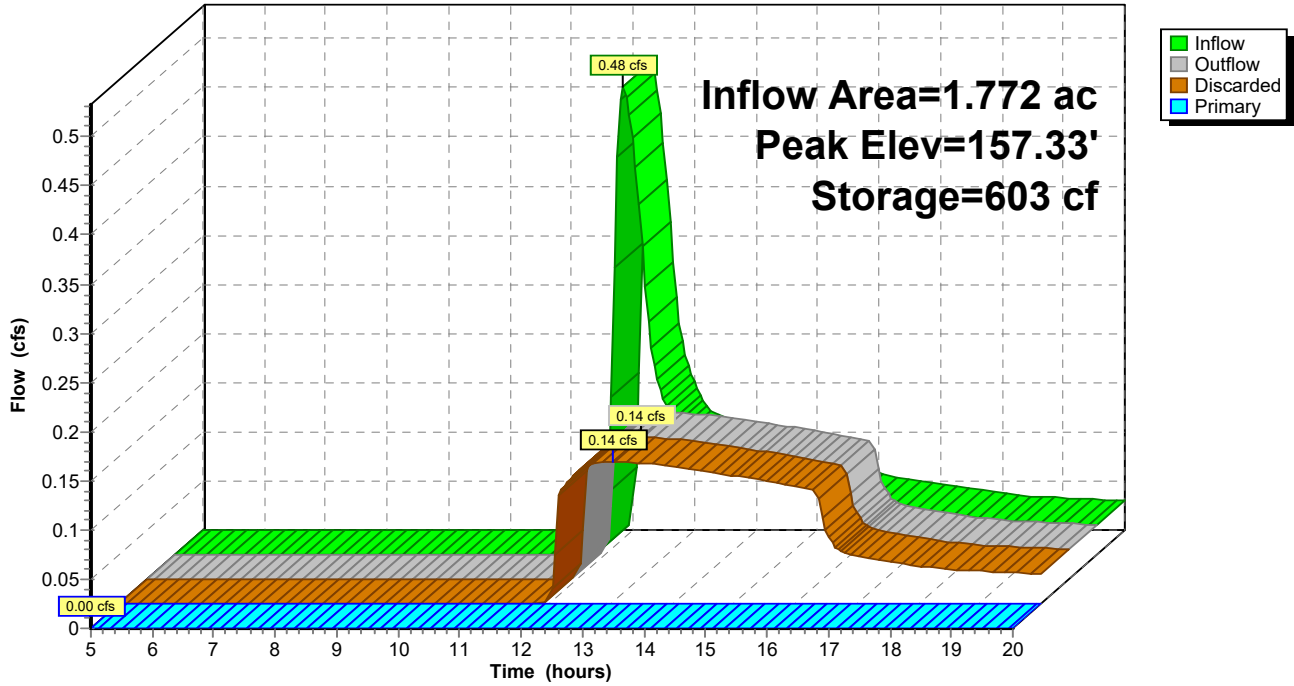
Type III 24-hr 2 year Rainfall=3.16"

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Pond 64P: Sediment Trap

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 65P: Sediment Trap

Inflow Area = 3.565 ac, 0.17% Impervious, Inflow Depth > 0.59" for 2 year event
 Inflow = 1.41 cfs @ 12.42 hrs, Volume= 0.175 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.24' @ 20.00 hrs Surf.Area= 4,175 sf Storage= 7,620 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	16,187 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
156.00	2,660	0	0
158.00	3,990	6,650	6,650
160.00	5,547	9,537	16,187

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=156.00' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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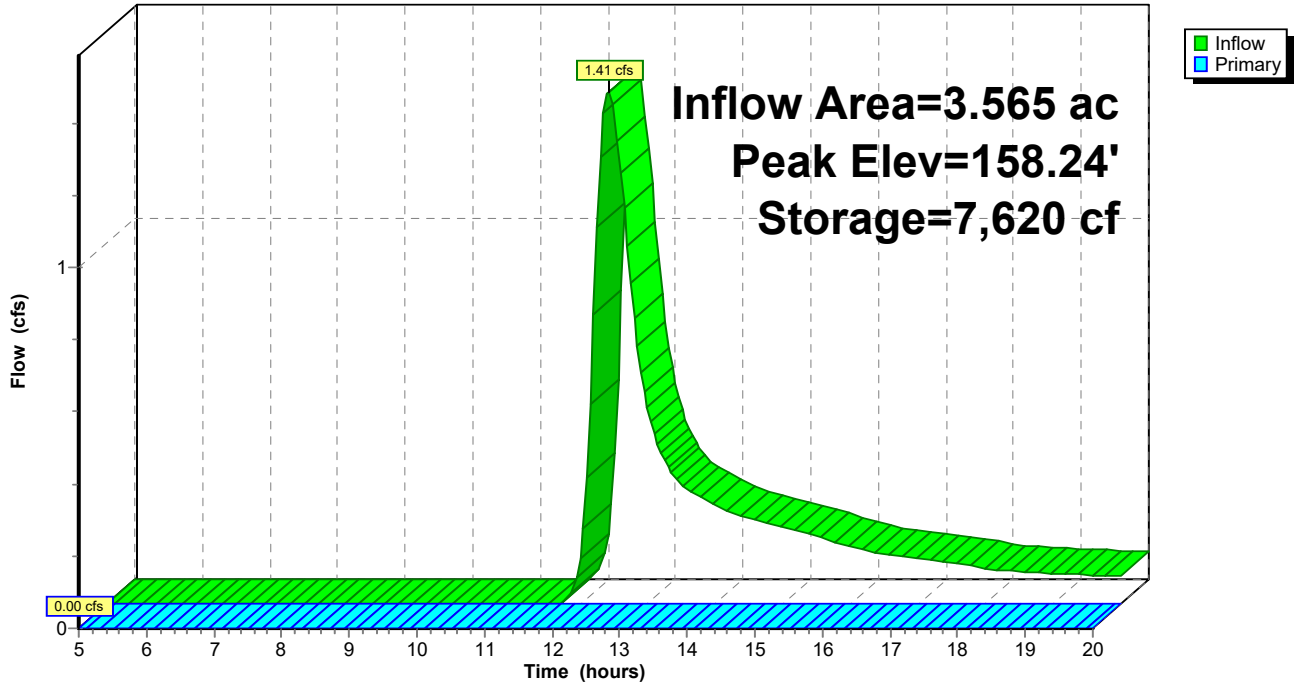
Type III 24-hr 2 year Rainfall=3.16"

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Pond 65P: Sediment Trap

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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Summary for Pond 66P: Sediment Trap

Inflow Area = 1.914 ac, 0.78% Impervious, Inflow Depth > 0.51" for 2 year event
 Inflow = 0.76 cfs @ 12.25 hrs, Volume= 0.082 af
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 156.15' @ 20.00 hrs Surf.Area= 2,164 sf Storage= 3,564 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	154.00'	8,547 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
154.00	1,170	0	0
156.00	2,080	3,250	3,250
158.00	3,217	5,297	8,547

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=154.00' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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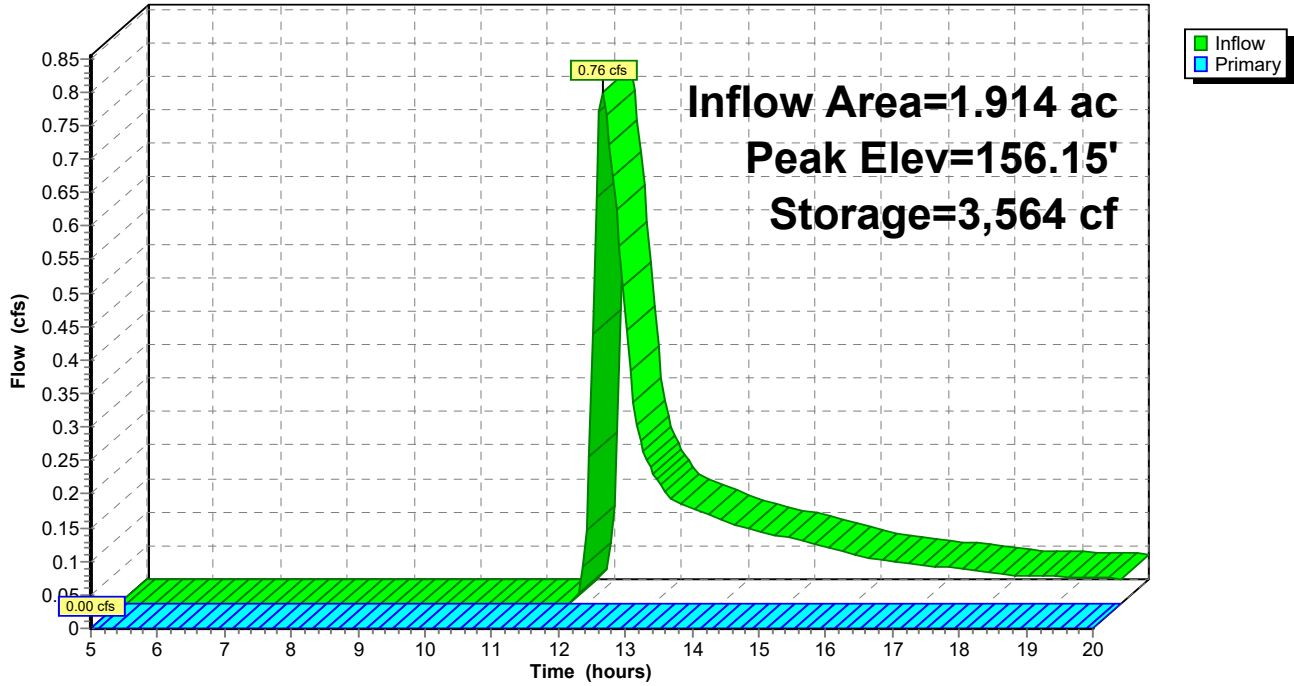
Type III 24-hr 2 year Rainfall=3.16"

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Pond 66P: Sediment Trap

Hydrograph



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Type III 24-hr 2 year Rainfall=3.16"

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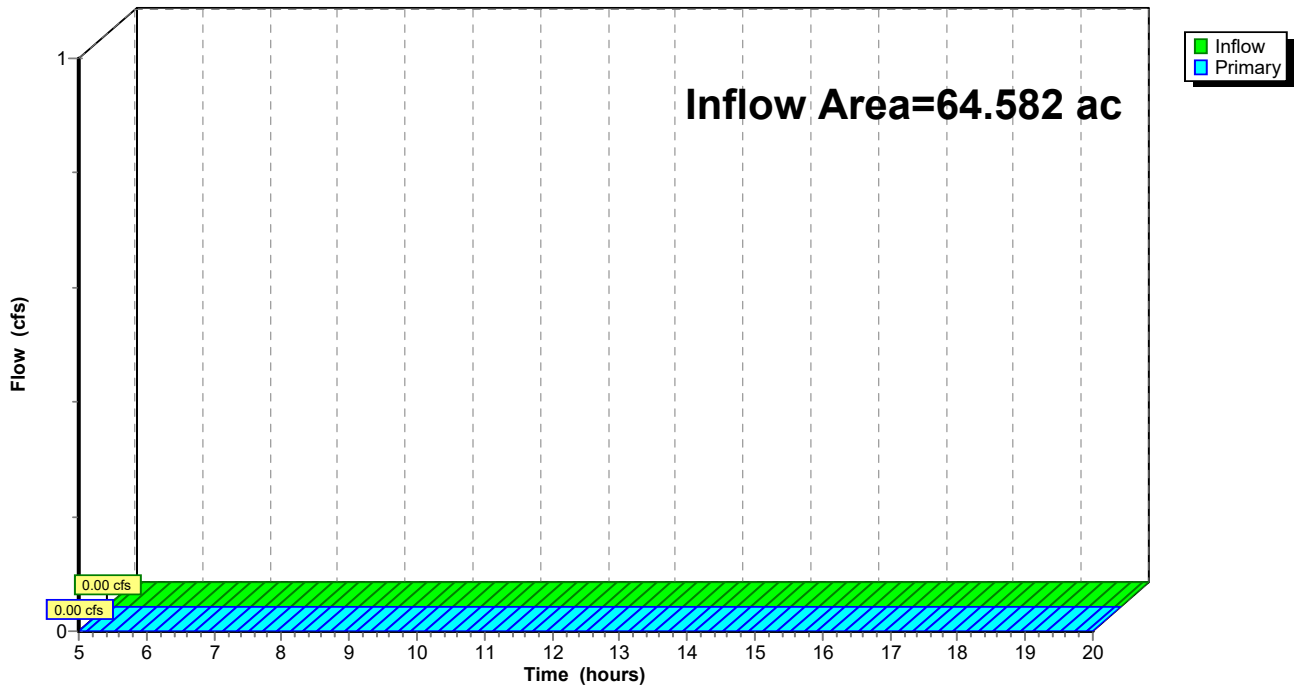
Summary for Link DP47: (new Link)

Inflow Area = 64.582 ac, 0.12% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP47: (new Link)

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 2 year Rainfall=3.16"

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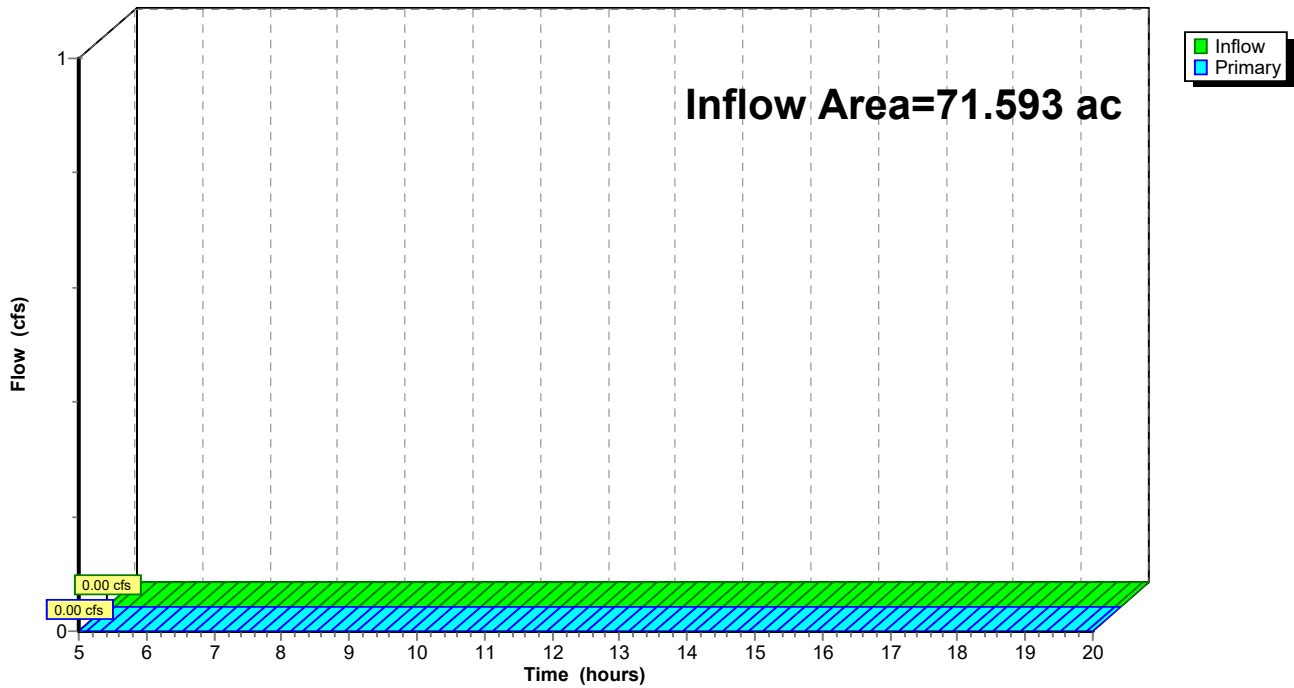
Summary for Link DP54: (new Link)

Inflow Area = 71.593 ac, 0.78% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP54: (new Link)

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 36: Subcat 36

Runoff = 15.98 cfs @ 12.48 hrs, Volume= 1.957 af, Depth> 2.70"

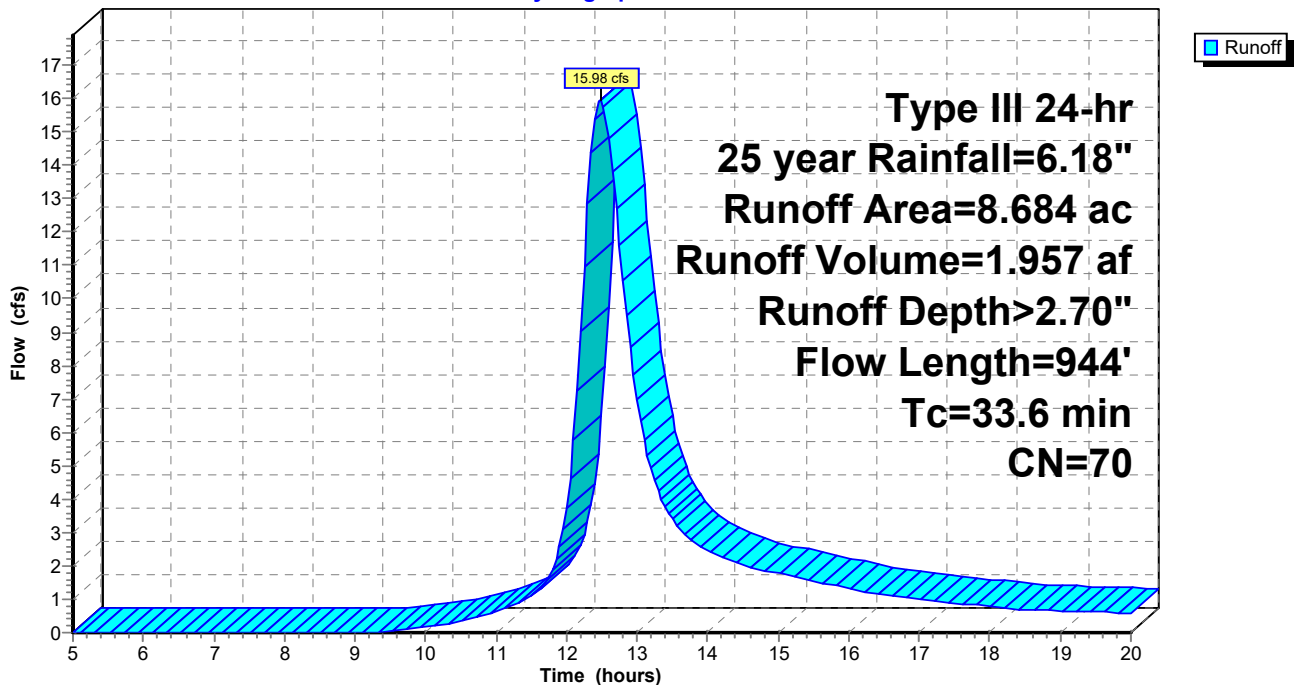
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.098	65	2 acre lots, 12% imp, HSG B
* 5.937	74	50-75% Grass cover, Fair, HSG B-C
2.424	58	Meadow, non-grazed, HSG B
0.225	89	Paved roads w/open ditches, 50% imp, HSG B
8.684	70	Weighted Average
8.560		98.57% Pervious Area
0.124		1.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.3	170	0.0059	0.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.8	724	0.0069	0.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.6	944	Total			

Subcatchment 36: Subcat 36

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 37: Subcat 37

Runoff = 2.23 cfs @ 12.25 hrs, Volume= 0.208 af, Depth> 2.19"

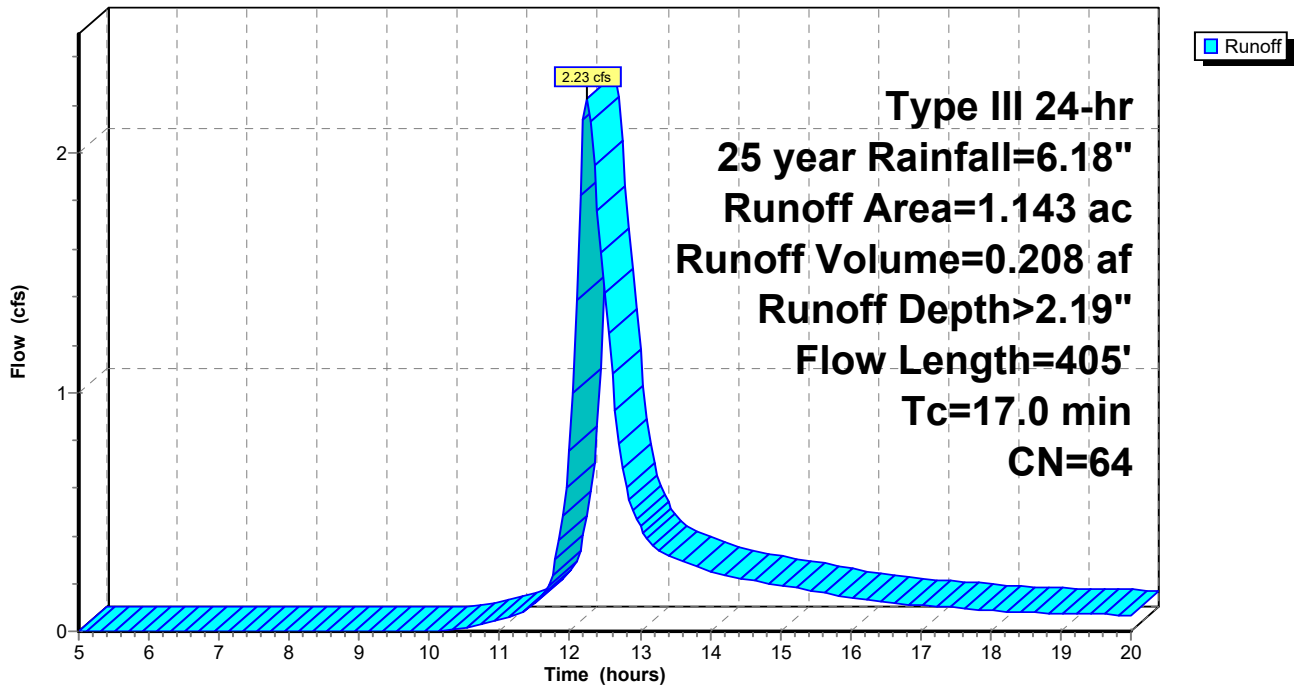
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.290	74	50-75% Grass cover, Fair, HSG B-C
0.785	58	Meadow, non-grazed, HSG B
0.068	89	Paved roads w/open ditches, 50% imp, HSG B
1.143	64	Weighted Average
1.109		97.03% Pervious Area
0.034		2.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
11.3	355	0.0056	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.0	405	Total			

Subcatchment 37: Subcat 37

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 38: Subcat 38

Runoff = 9.59 cfs @ 12.33 hrs, Volume= 1.009 af, Depth> 3.09"

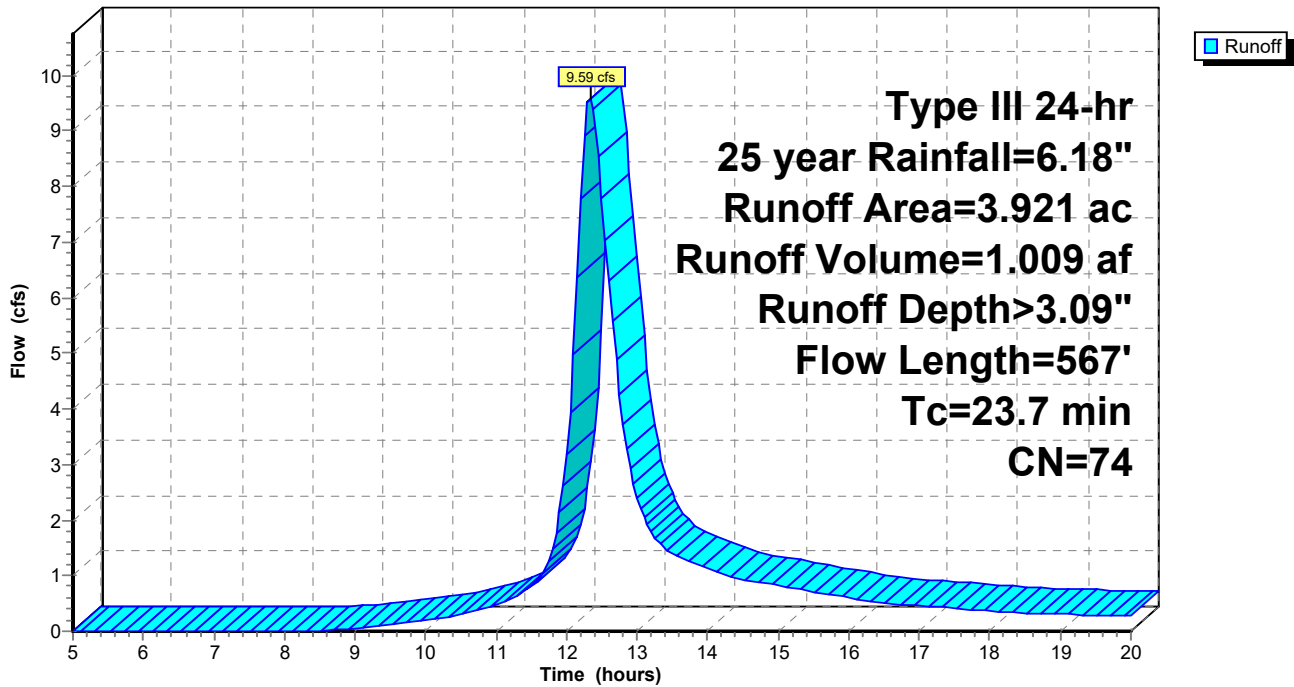
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 3.885	74	50-75% Grass cover, Fair, HSG B-C
0.036	58	Meadow, non-grazed, HSG B
3.921	74	Weighted Average
3.921		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
16.2	517	0.0058	0.53		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.7	567	Total			

Subcatchment 38: Subcat 38

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 39: Subcat 39

Runoff = 5.77 cfs @ 12.15 hrs, Volume= 0.450 af, Depth> 2.64"

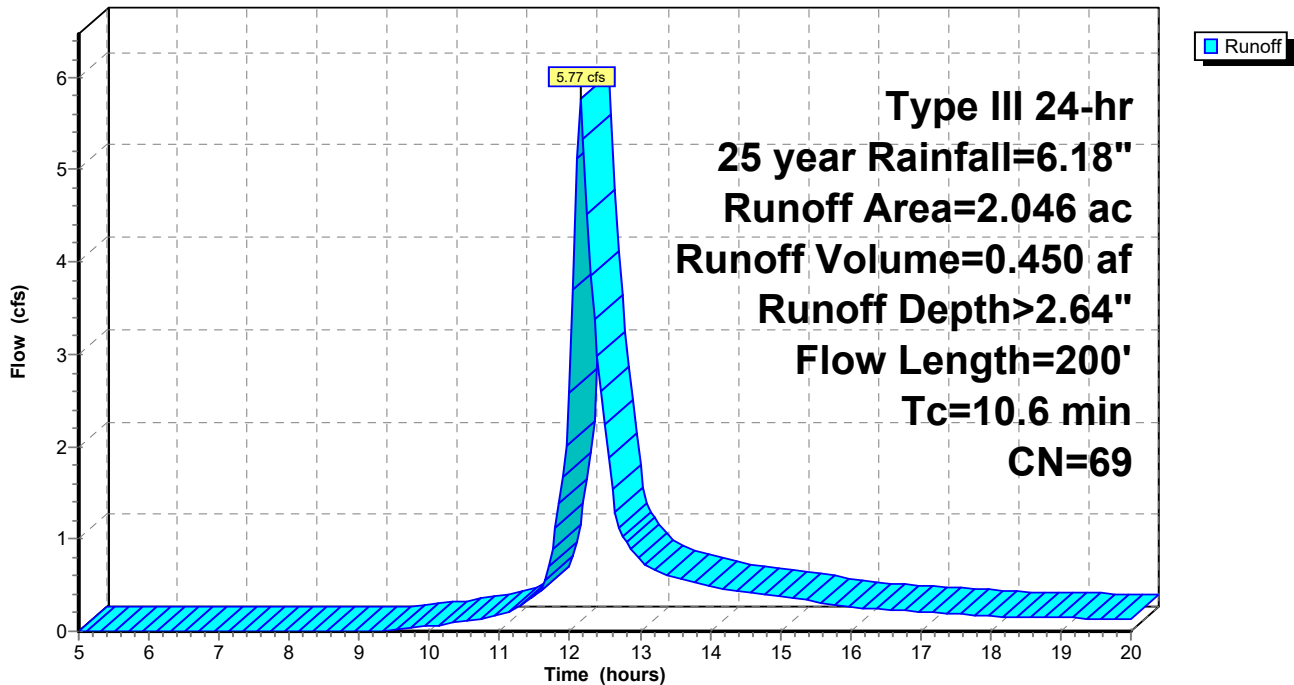
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 1.194	74	50-75% Grass cover, Fair, HSG B-C
0.761	58	Meadow, non-grazed, HSG B
0.091	89	Paved roads w/open ditches, 50% imp, HSG B
2.046	69	Weighted Average
2.000		97.78% Pervious Area
0.045		2.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
3.1	150	0.0133	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.6	200	Total			

Subcatchment 39: Subcat 39

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 40: Subcat 40

Runoff = 1.21 cfs @ 12.16 hrs, Volume= 0.097 af, Depth> 1.78"

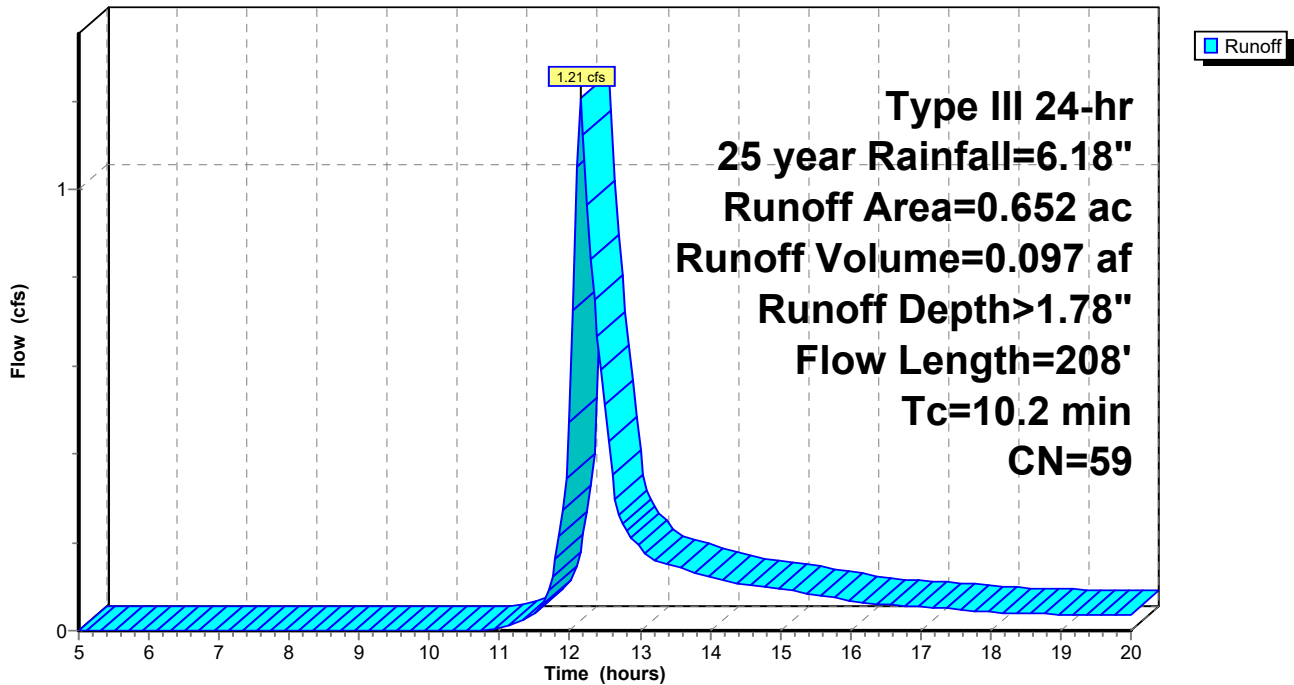
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.060	74	50-75% Grass cover, Fair, HSG B-C
0.008	30	Meadow, non-grazed, HSG A
0.584	58	Meadow, non-grazed, HSG B
0.652	59	Weighted Average
0.652		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.7	158	0.0190	0.96		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	208	Total			

Subcatchment 40: Subcat 40

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 41: Subcat 41

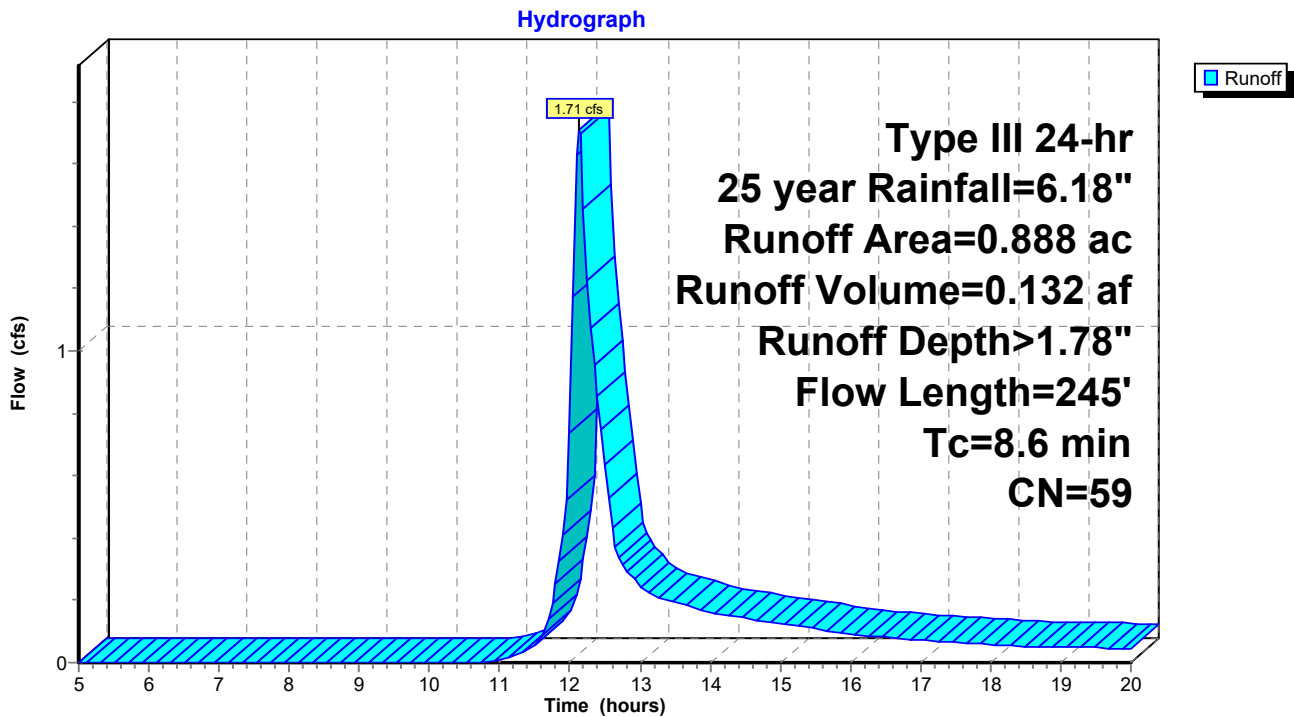
Runoff = 1.71 cfs @ 12.14 hrs, Volume= 0.132 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.250	74	50-75% Grass cover, Fair, HSG B-C
0.110	30	Meadow, non-grazed, HSG A
0.528	58	Meadow, non-grazed, HSG B
0.888	59	Weighted Average
0.888		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.9	195	0.0256	1.12		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.6	245	Total			

Subcatchment 41: Subcat 41



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 42: Subcat 42

Runoff = 3.14 cfs @ 12.20 hrs, Volume= 0.274 af, Depth> 1.78"

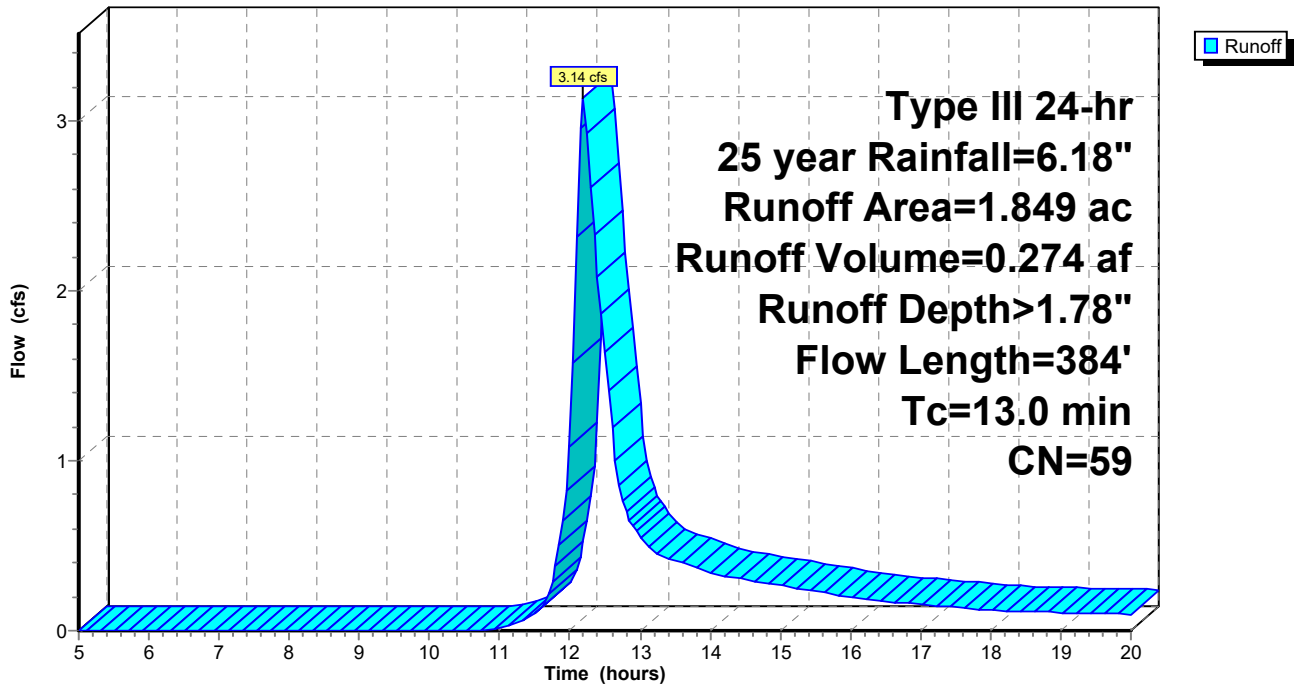
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Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.730	74	50-75% Grass cover, Fair, HSG B-C
0.181	30	Meadow, non-grazed, HSG A
0.698	58	Meadow, non-grazed, HSG B
0.184	36	Woods, Fair, HSG A
0.056	60	Woods, Fair, HSG B
1.849	59	Weighted Average
1.849		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.3	334	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.0	384	Total			

Subcatchment 42: Subcat 42

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 43: Subcat 43

Runoff = 1.38 cfs @ 12.24 hrs, Volume= 0.129 af, Depth> 1.69"

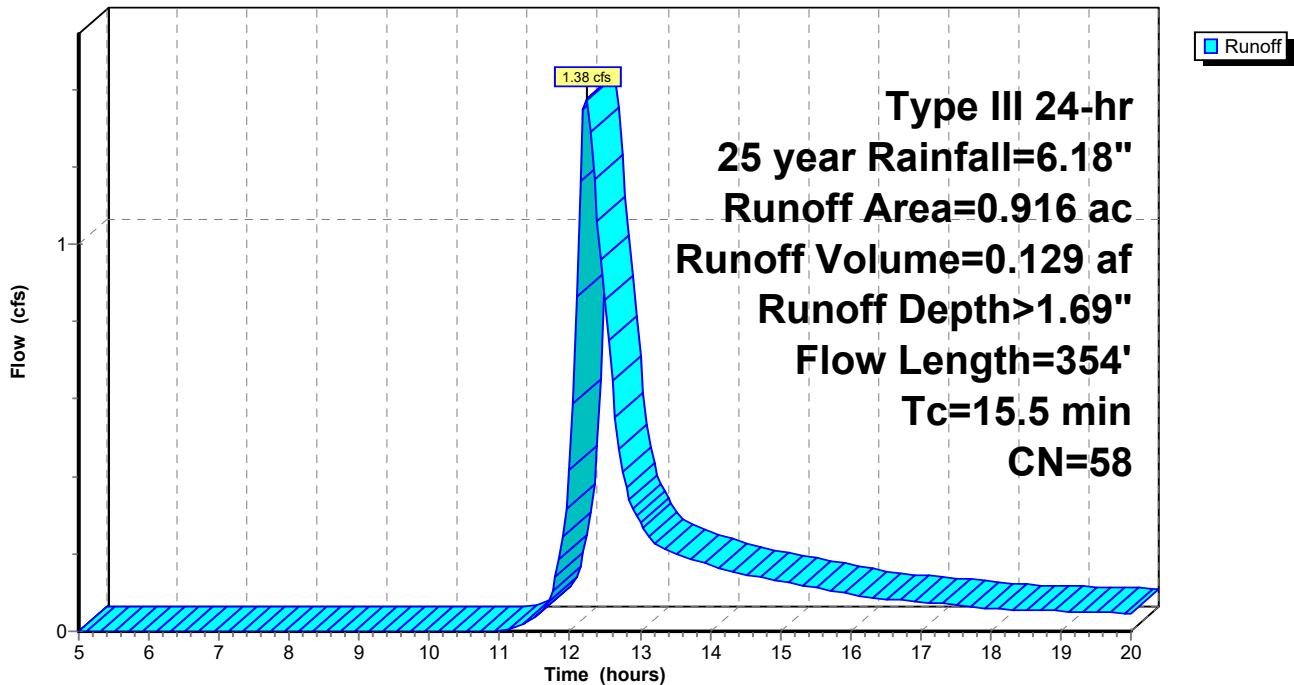
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.299	74	50-75% Grass cover, Fair, HSG B-C
0.104	30	Meadow, non-grazed, HSG A
0.438	58	Meadow, non-grazed, HSG B
0.075	36	Woods, Fair, HSG A
0.916	58	Weighted Average
0.916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.0	304	0.0082	0.63		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.5	354	Total			

Subcatchment 43: Subcat 43

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 44: Subcat 44

Runoff = 5.60 cfs @ 12.15 hrs, Volume= 0.433 af, Depth> 2.46"

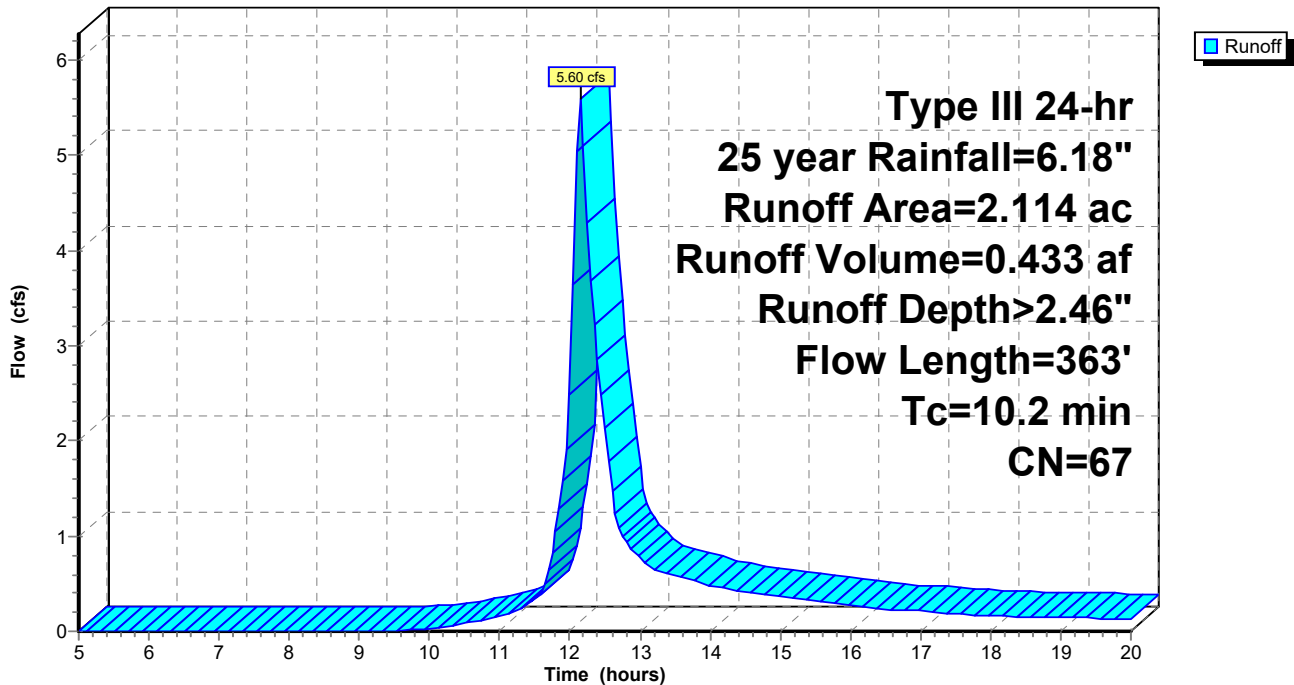
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.010	51	50-75% Grass cover, Fair, HSG A-B
* 1.465	74	50-75% Grass cover, Fair, HSG B-C
0.154	30	Meadow, non-grazed, HSG A
0.485	58	Meadow, non-grazed, HSG B
2.114	67	Weighted Average
2.114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.4	313	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	363	Total			

Subcatchment 44: Subcat 44

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 45: Subcat 45

Runoff = 7.32 cfs @ 12.10 hrs, Volume= 0.499 af, Depth> 2.55"

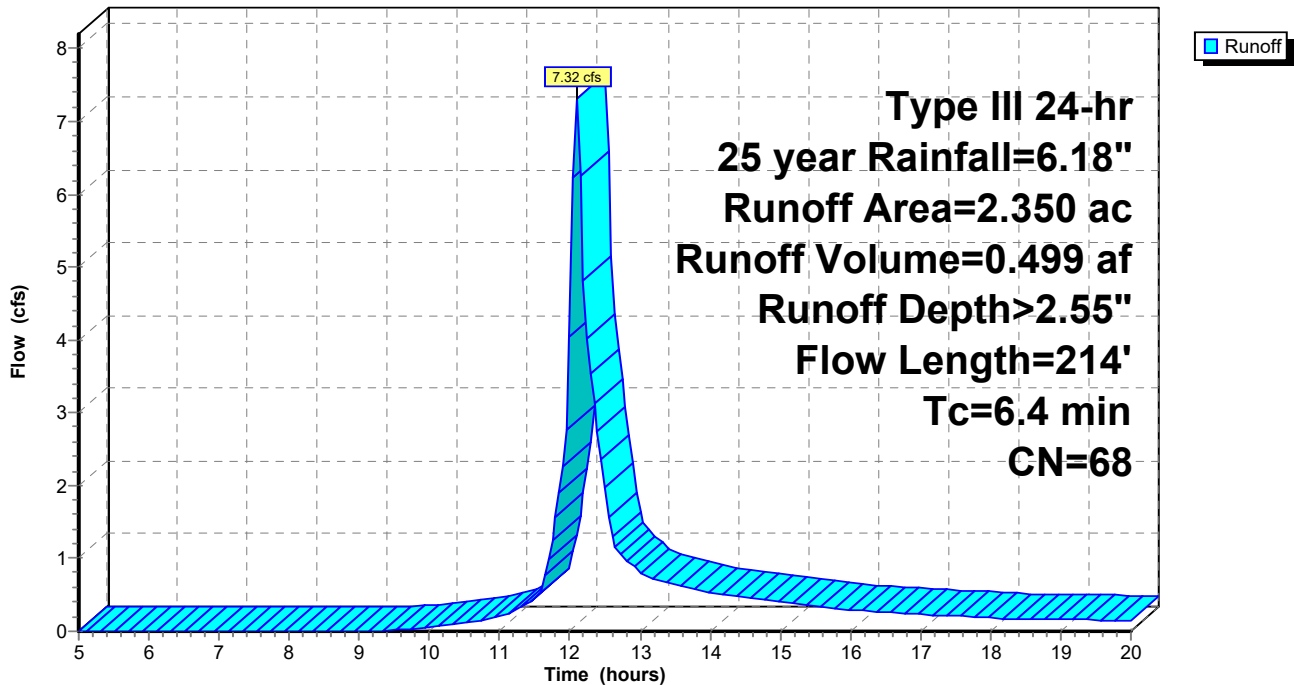
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 1.895	74	50-75% Grass cover, Fair, HSG B-C
0.246	30	Meadow, non-grazed, HSG A
0.207	58	Meadow, non-grazed, HSG B
2.350	68	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.6	164	0.0610	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.4	214	Total			

Subcatchment 45: Subcat 45

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 46: Subcat 46

Runoff = 8.67 cfs @ 12.17 hrs, Volume= 0.696 af, Depth> 2.73"

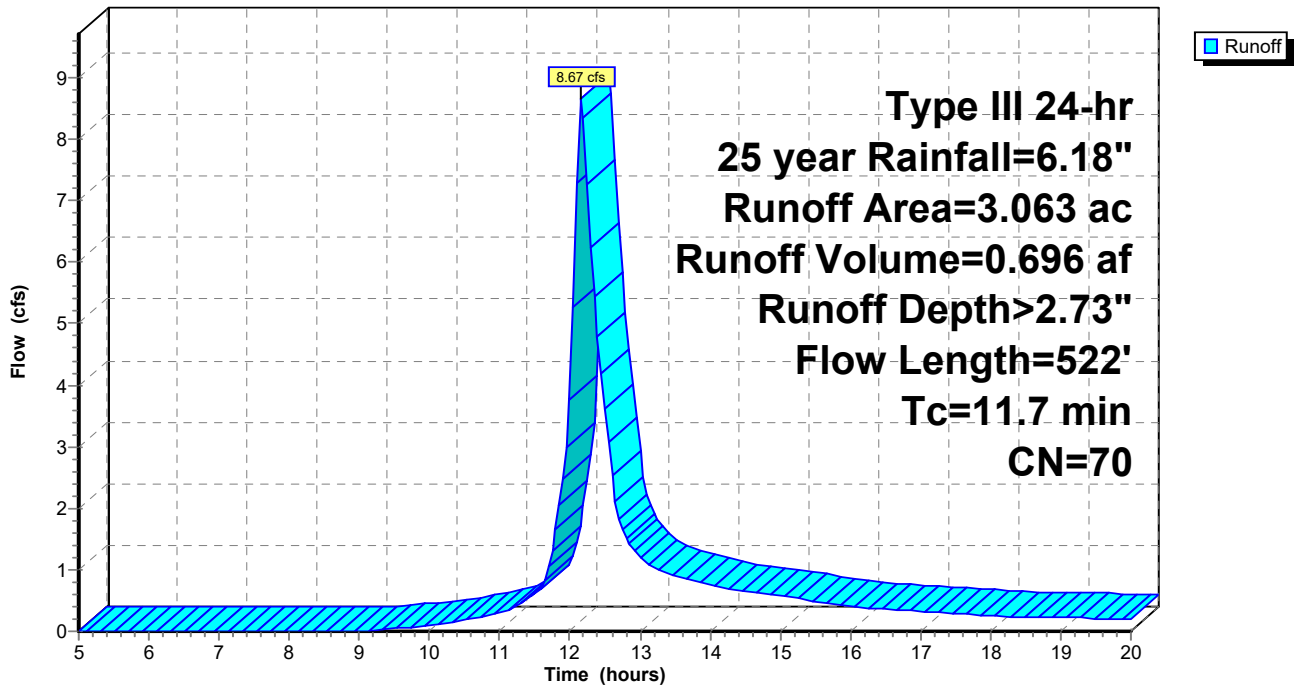
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.061	59	50-75% Grass cover, Fair, HSG A-B
* 2.381	74	50-75% Grass cover, Fair, HSG B-C
0.039	30	Meadow, non-grazed, HSG A
0.582	58	Meadow, non-grazed, HSG B
3.063	70	Weighted Average
3.063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	472	0.0233	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.7	522	Total			

Subcatchment 46: Subcat 46

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 47: Subcat 47

Runoff = 4.00 cfs @ 12.22 hrs, Volume= 0.388 af, Depth> 1.24"

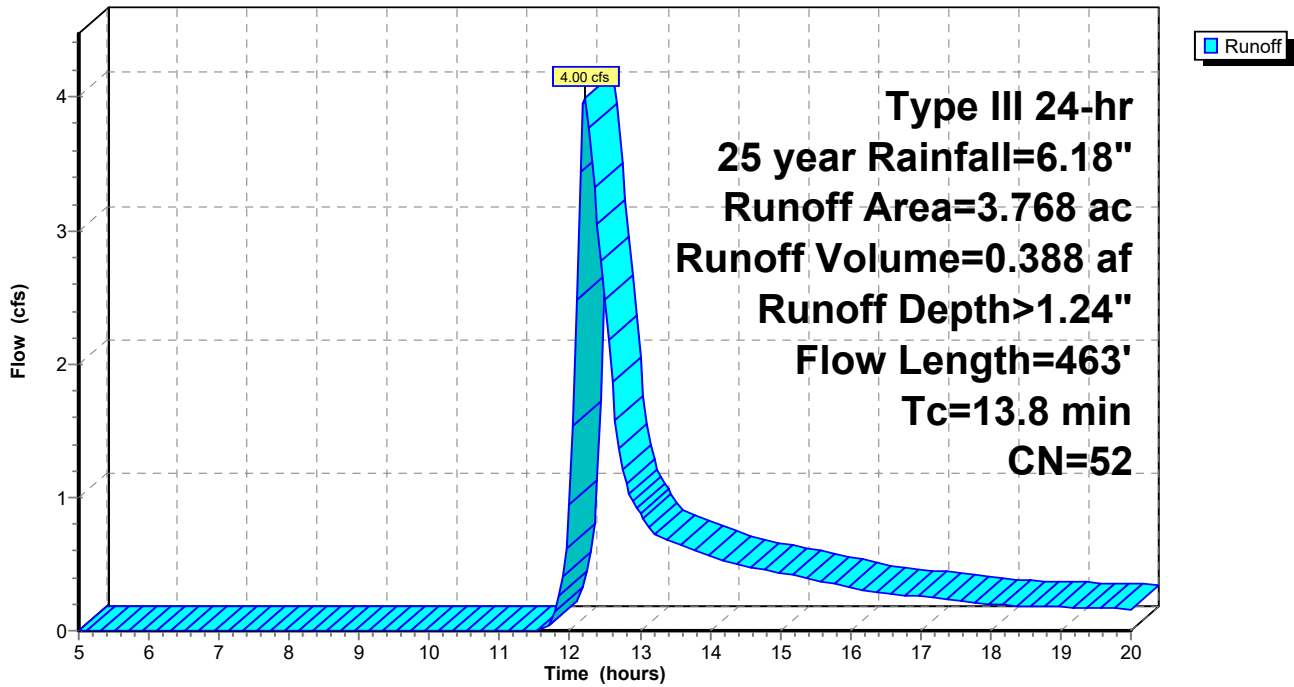
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.063	59	50-75% Grass cover, Fair, HSG A-B
* 1.444	74	50-75% Grass cover, Fair, HSG B-C
1.147	30	Meadow, non-grazed, HSG A
0.490	58	Meadow, non-grazed, HSG B
0.624	36	Woods, Fair, HSG A
3.768	52	Weighted Average
3.768		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	413	0.0242	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.8	463	Total			

Subcatchment 47: Subcat 47

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 48: Subcat 48

Runoff = 8.70 cfs @ 12.19 hrs, Volume= 0.755 af, Depth> 1.70"

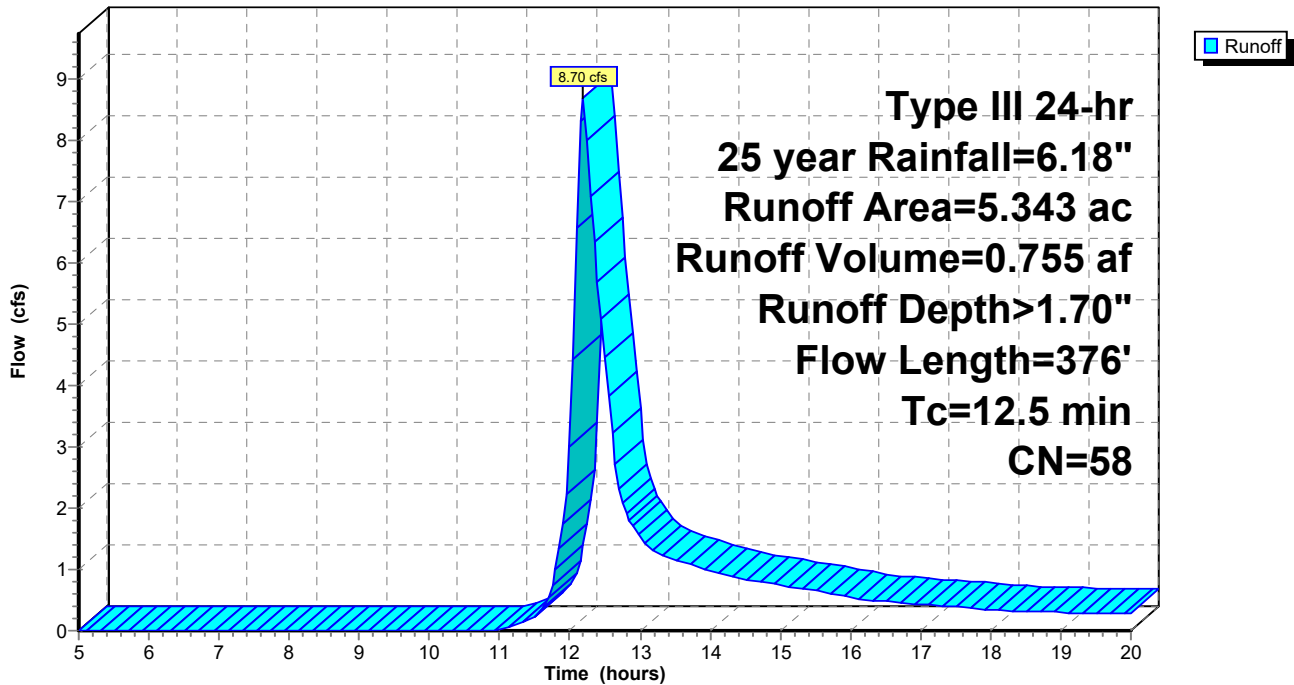
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 2.779	74	50-75% Grass cover, Fair, HSG B-C
1.268	30	Meadow, non-grazed, HSG A
0.872	58	Meadow, non-grazed, HSG B
0.422	36	Woods, Fair, HSG A
5.343	58	Weighted Average
5.343		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.0	326	0.0245	1.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	376	Total			

Subcatchment 48: Subcat 48

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 49: Subcat 49

Runoff = 3.84 cfs @ 12.23 hrs, Volume= 0.370 af, Depth> 1.38"

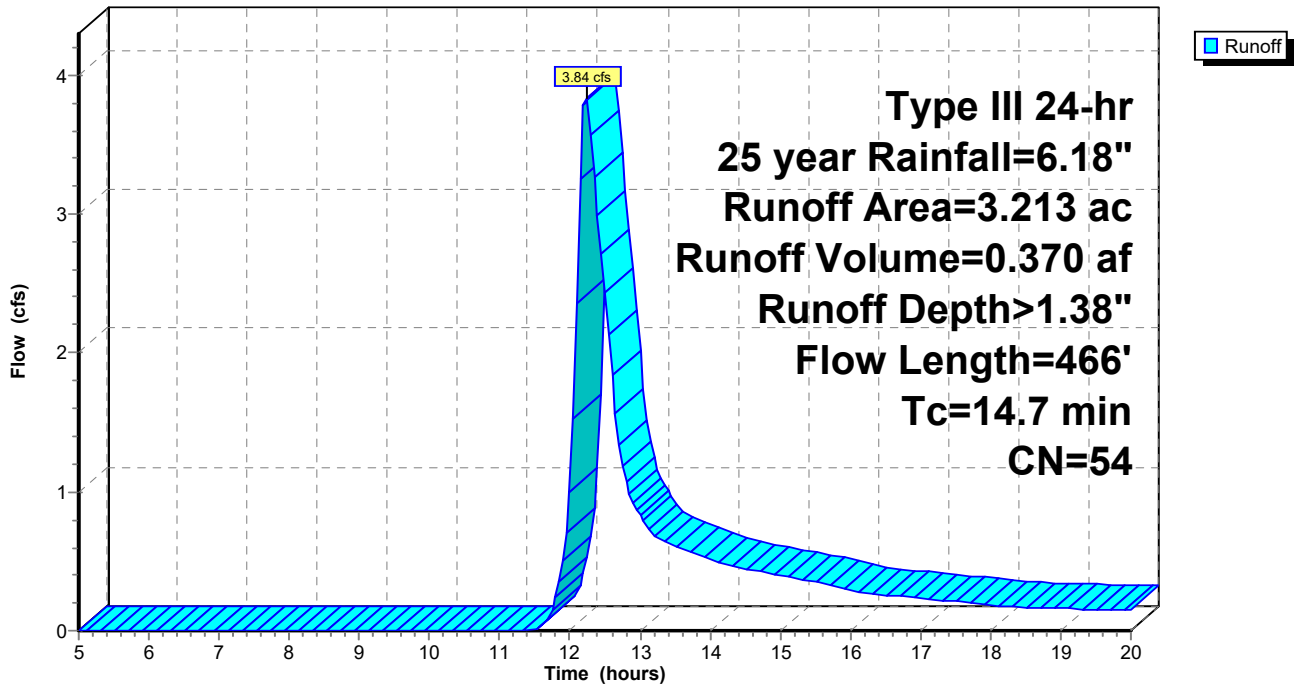
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.010	59	50-75% Grass cover, Fair, HSG A-B
* 1.407	74	50-75% Grass cover, Fair, HSG B-C
0.952	30	Meadow, non-grazed, HSG A
0.460	58	Meadow, non-grazed, HSG B
0.384	36	Woods, Fair, HSG A
3.213	54	Weighted Average
3.213		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.0	416	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.7	466	Total			

Subcatchment 49: Subcat 49

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 50: Subcat 50

Runoff = 13.32 cfs @ 12.22 hrs, Volume= 1.192 af, Depth> 1.94"

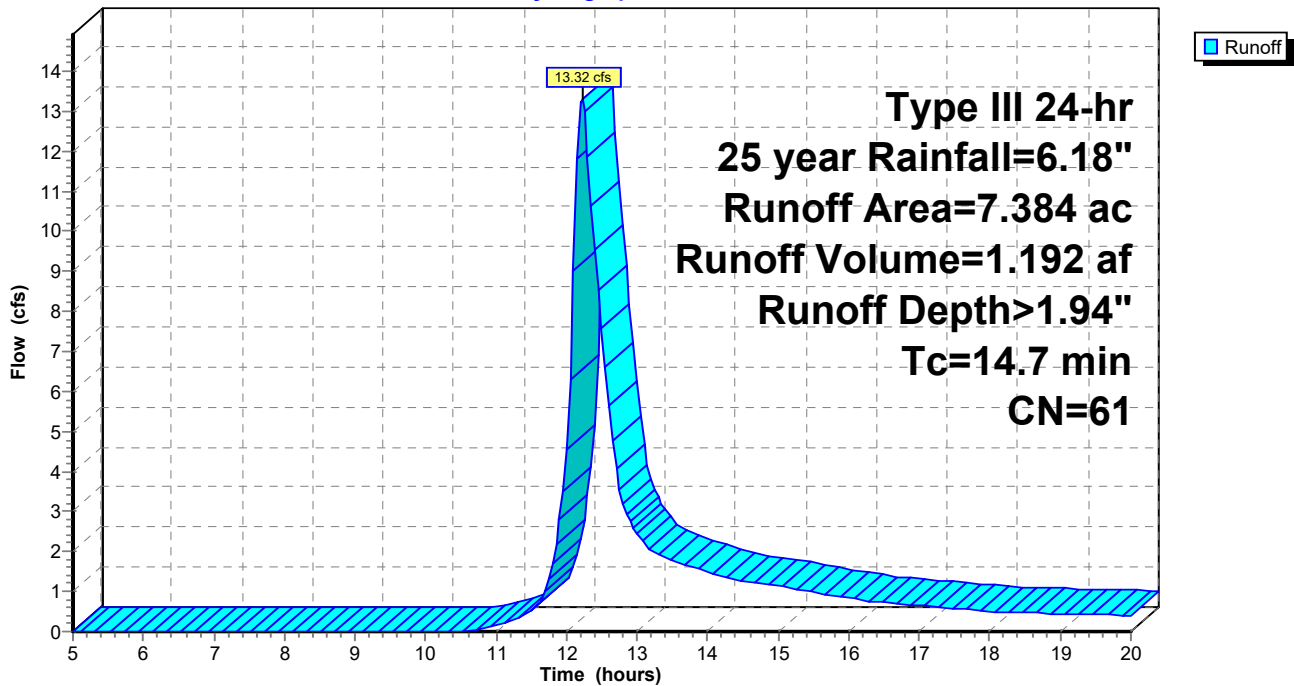
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 4.005	74	50-75% Grass cover, Fair, HSG B-C
0.989	30	Meadow, non-grazed, HSG A
1.720	58	Meadow, non-grazed, HSG B
0.666	36	Woods, Fair, HSG A
0.004	60	Woods, Fair, HSG B
7.384	61	Weighted Average
7.384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7					Direct Entry,

Subcatchment 50: Subcat 50

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 51: Subcat 51

Runoff = 49.88 cfs @ 12.56 hrs, Volume= 6.620 af, Depth> 2.88"

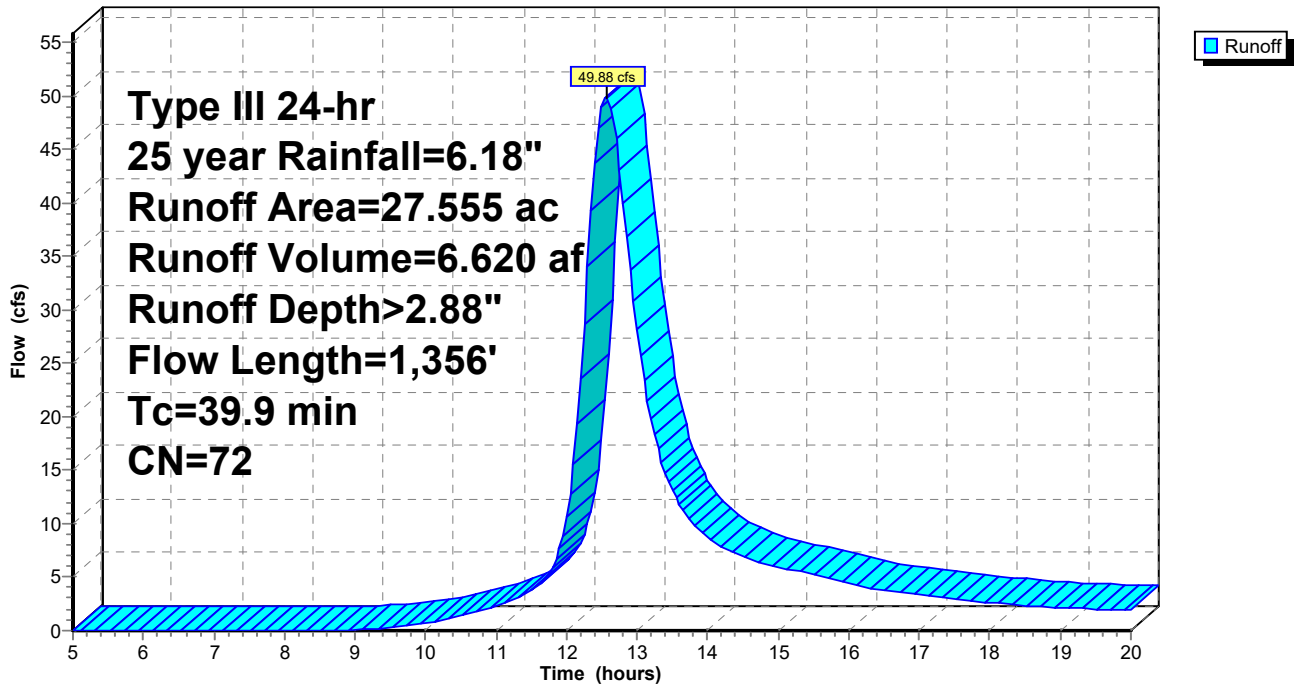
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 24.828	74	50-75% Grass cover, Fair, HSG B-C
0.074	30	Meadow, non-grazed, HSG A
2.653	58	Meadow, non-grazed, HSG B
27.555	72	Weighted Average
27.555		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
32.4	1,306	0.0092	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
39.9	1,356	Total			

Subcatchment 51: Subcat 51

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 53: Subcat 53

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

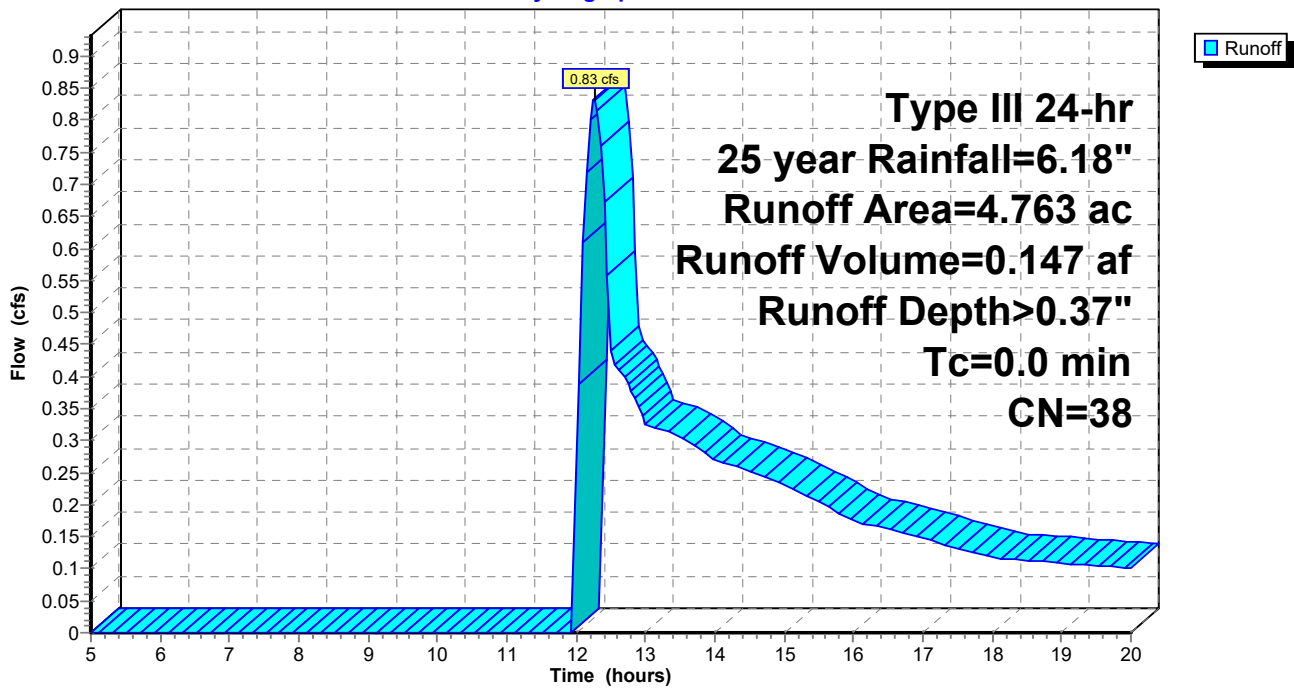
Runoff = 0.83 cfs @ 12.26 hrs, Volume= 0.147 af, Depth> 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.263	74	50-75% Grass cover, Fair, HSG B-C
1.659	30	Meadow, non-grazed, HSG A
0.427	58	Meadow, non-grazed, HSG B
2.414	36	Woods, Fair, HSG A
4.763	38	Weighted Average
4.763		100.00% Pervious Area

Subcatchment 53: Subcat 53

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 54: Subcat 54

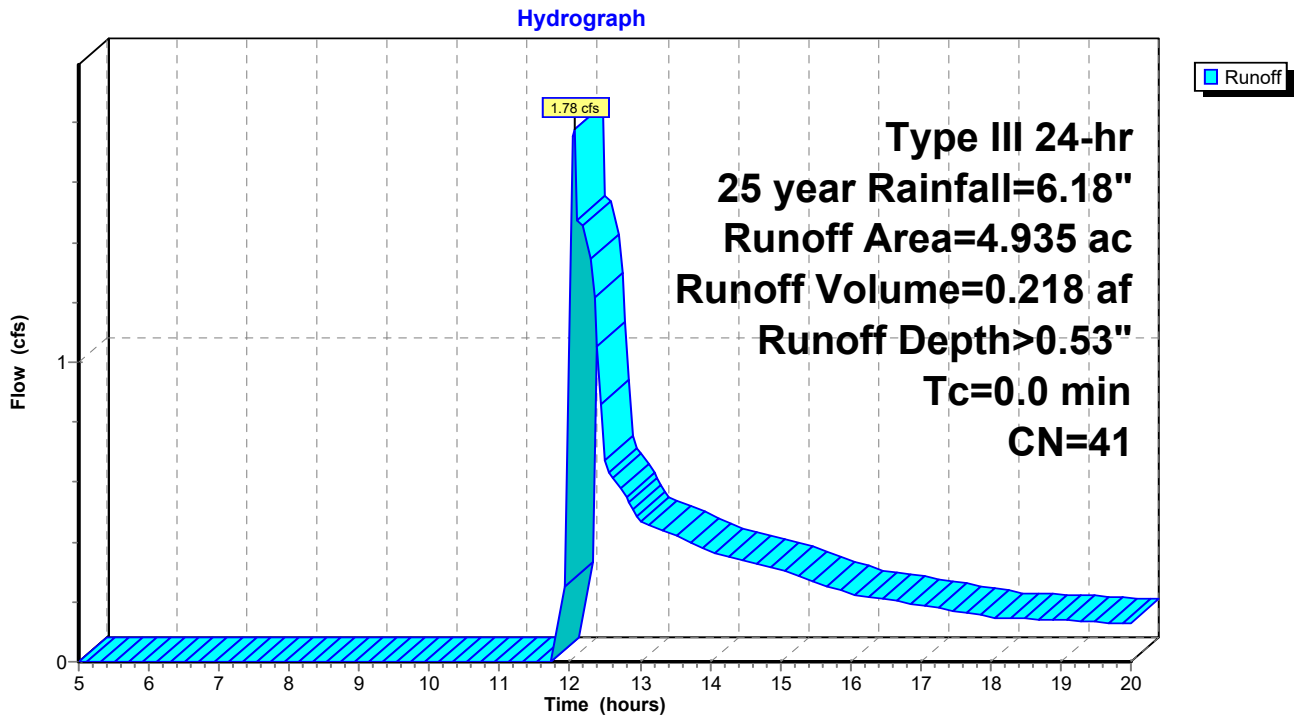
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.78 cfs @ 12.06 hrs, Volume= 0.218 af, Depth> 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 0.006	74	50-75% Grass cover, Fair, HSG B-C
0.377	30	Meadow, non-grazed, HSG A
0.823	58	Meadow, non-grazed, HSG B
3.454	36	Woods, Fair, HSG A
0.273	60	Woods, Fair, HSG B
4.935	41	Weighted Average
4.935		100.00% Pervious Area

Subcatchment 54: Subcat 54



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 55: Subcat 55

Runoff = 6.05 cfs @ 12.32 hrs, Volume= 0.628 af, Depth> 2.81"

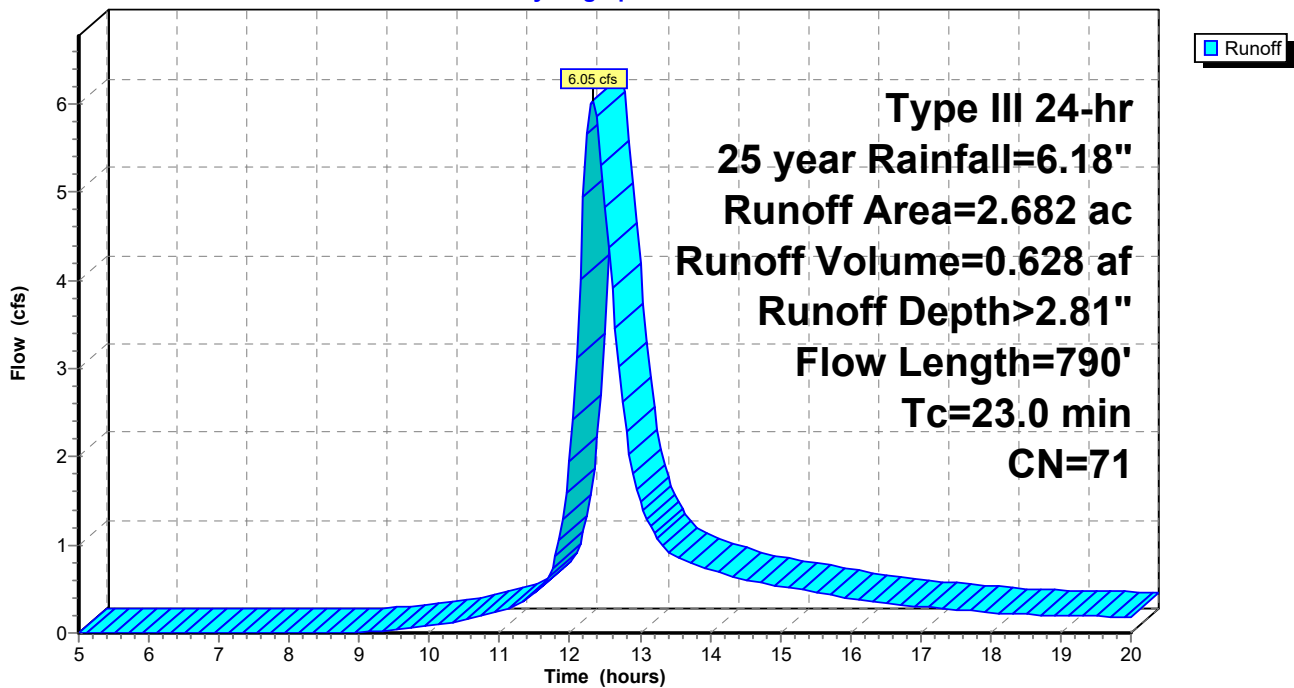
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.095	59	50-75% Grass cover, Fair, HSG A-B
* 2.333	74	50-75% Grass cover, Fair, HSG B-C
0.132	30	Meadow, non-grazed, HSG A
0.122	58	Meadow, non-grazed, HSG B
2.682	71	Weighted Average
2.682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	216	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.9	524	0.0248	1.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.0	790	Total			

Subcatchment 55: Subcat 55

Hydrograph



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Summary for Subcatchment 56: Subcat 56

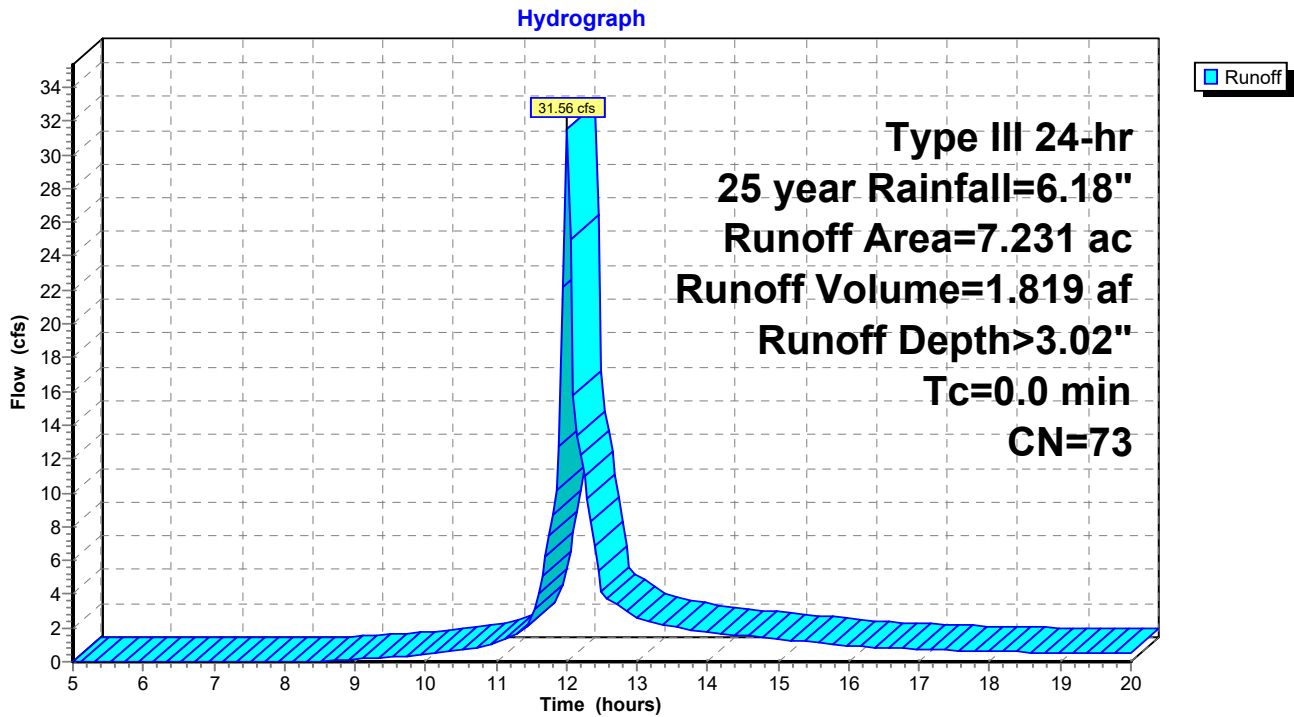
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 31.56 cfs @ 12.00 hrs, Volume= 1.819 af, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

	Area (ac)	CN	Description
*	0.029	59	50-75% Grass cover, Fair, HSG A-B
*	6.843	74	50-75% Grass cover, Fair, HSG B-C
	0.045	30	Meadow, non-grazed, HSG A
	0.314	58	Meadow, non-grazed, HSG B
	7.231	73	Weighted Average
	7.231		100.00% Pervious Area

Subcatchment 56: Subcat 56



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 57: Subcat 57

Runoff = 12.82 cfs @ 12.26 hrs, Volume= 1.204 af, Depth> 2.54"

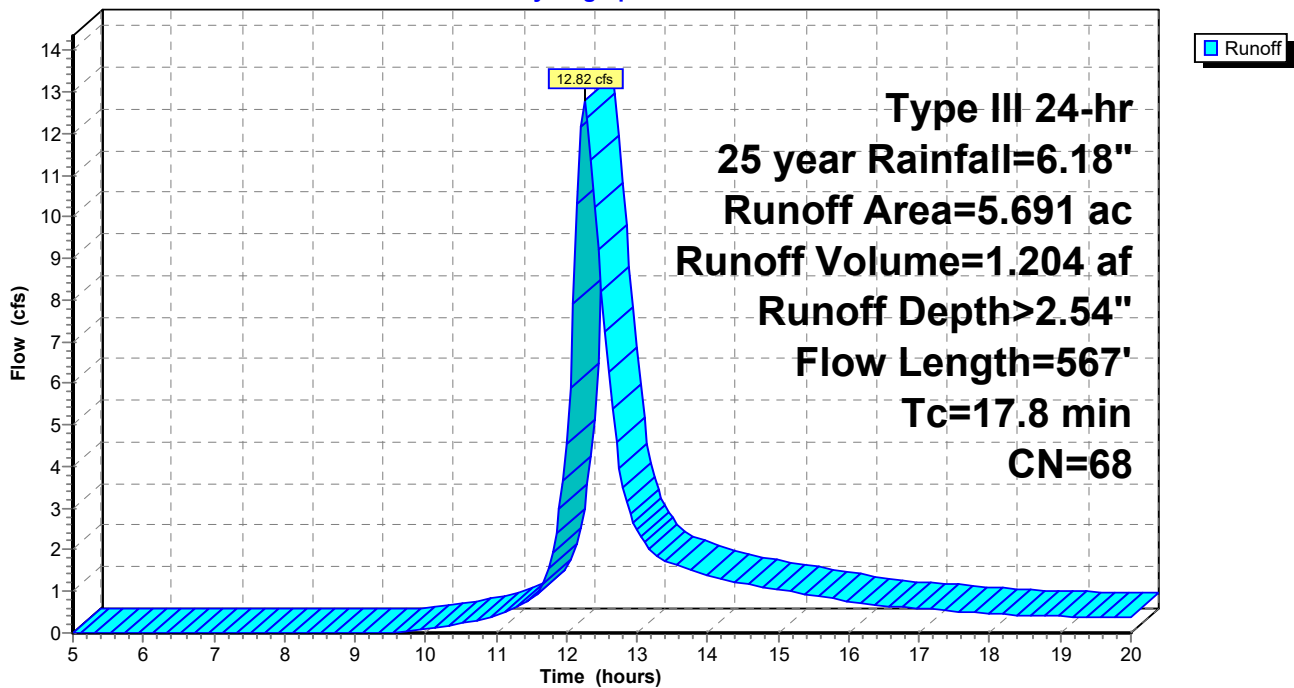
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.010	59	50-75% Grass cover, Fair, HSG A-B
* 3.857	74	50-75% Grass cover, Fair, HSG B-C
0.245	30	Meadow, non-grazed, HSG A
1.579	58	Meadow, non-grazed, HSG B
5.691	68	Weighted Average
5.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.3	266	0.0075	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	251	0.0398	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.8	567	Total			

Subcatchment 57: Subcat 57

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 58: Subcat 58

Runoff = 1.25 cfs @ 12.30 hrs, Volume= 0.166 af, Depth> 0.70"

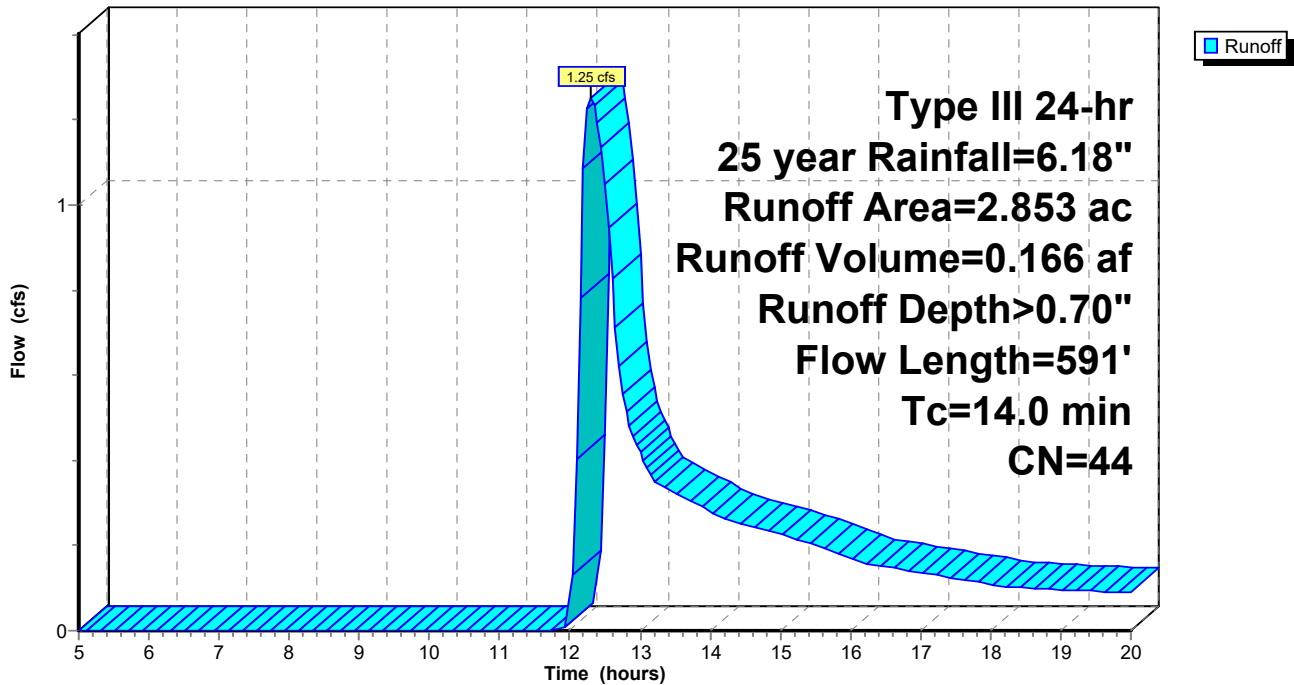
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.032	59	50-75% Grass cover, Fair, HSG A-B
* 0.244	74	50-75% Grass cover, Fair, HSG B-C
0.690	30	Meadow, non-grazed, HSG A
0.826	58	Meadow, non-grazed, HSG B
1.061	36	Woods, Fair, HSG A
2.853	44	Weighted Average
2.853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.3	541	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	591	Total			

Subcatchment 58: Subcat 58

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 59: Subcat 59

Runoff = 2.43 cfs @ 12.23 hrs, Volume= 0.280 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.058	46	2 acre lots, 12% imp, HSG A
* 0.368	59	50-75% Grass cover, Fair, HSG A-B
* 0.684	74	50-75% Grass cover, Fair, HSG B-C
0.995	30	Meadow, non-grazed, HSG A
0.460	58	Meadow, non-grazed, HSG B
1.508	36	Woods, Fair, HSG A
4.073	46	Weighted Average
4.066		99.83% Pervious Area
0.007		0.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	221	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1333	2.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	316	Total			

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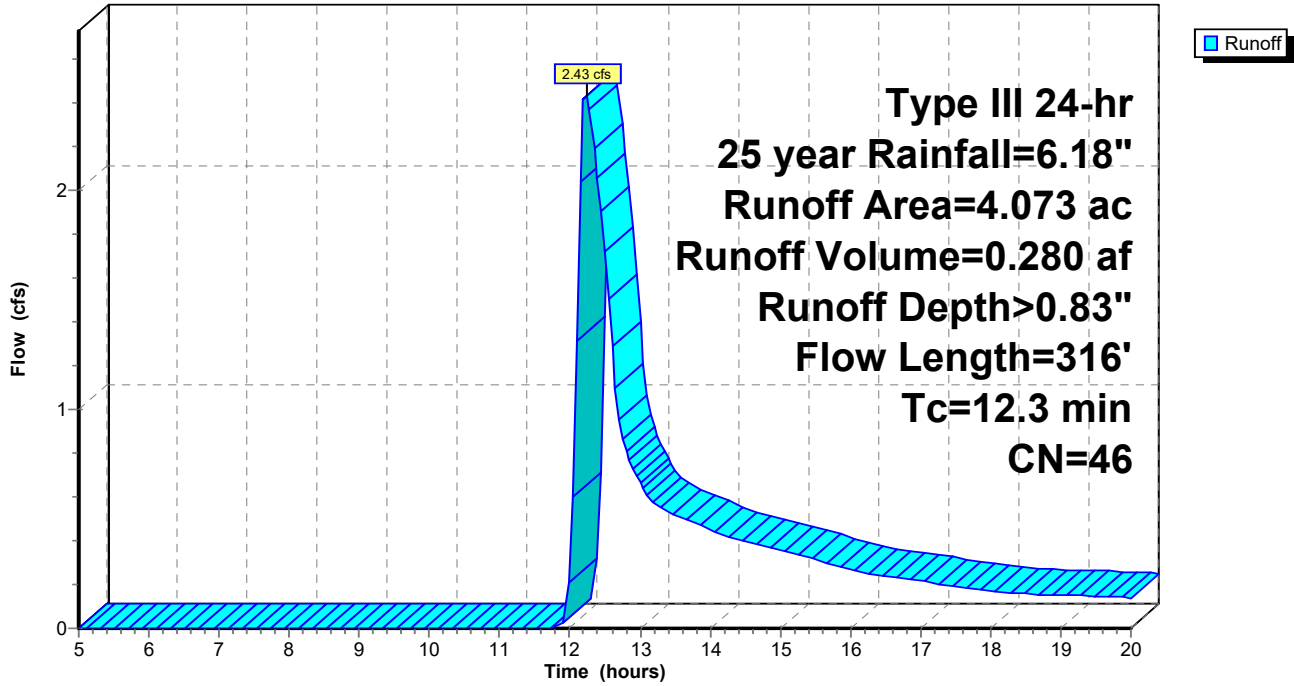
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 59: Subcat 59

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 60: Subcat 60

Runoff = 12.77 cfs @ 12.54 hrs, Volume= 1.662 af, Depth> 2.70"

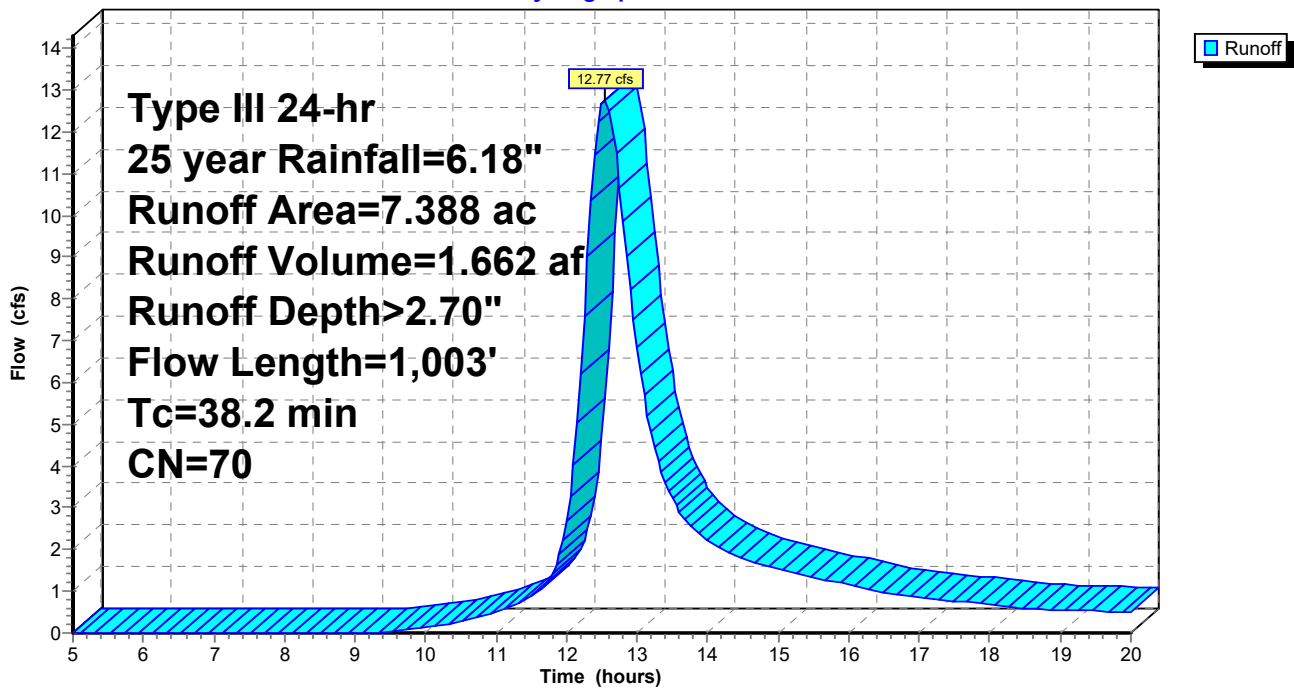
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 6.703	74	50-75% Grass cover, Fair, HSG B-C
0.511	30	Meadow, non-grazed, HSG A
0.105	58	Meadow, non-grazed, HSG B
0.069	36	Woods, Fair, HSG A
7.388	70	Weighted Average
7.388		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
29.7	855	0.0047	0.48		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	98	0.0510	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
38.2	1,003	Total			

Subcatchment 60: Subcat 60

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 62: Subcat 62

Runoff = 45.50 cfs @ 12.43 hrs, Volume= 5.280 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
2.956	65	2 acre lots, 12% imp, HSG B
* 0.324	59	50-75% Grass cover, Fair, HSG A-B
* 17.404	74	50-75% Grass cover, Fair, HSG B-C
1.502	30	Meadow, non-grazed, HSG A
1.903	58	Meadow, non-grazed, HSG B
0.114	89	Paved roads w/open ditches, 50% imp, HSG B
24.203	69	Weighted Average
23.791		98.30% Pervious Area
0.412		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.7	757	0.0132	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.5	481	0.0312	1.24		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
29.7	1,288	Total			

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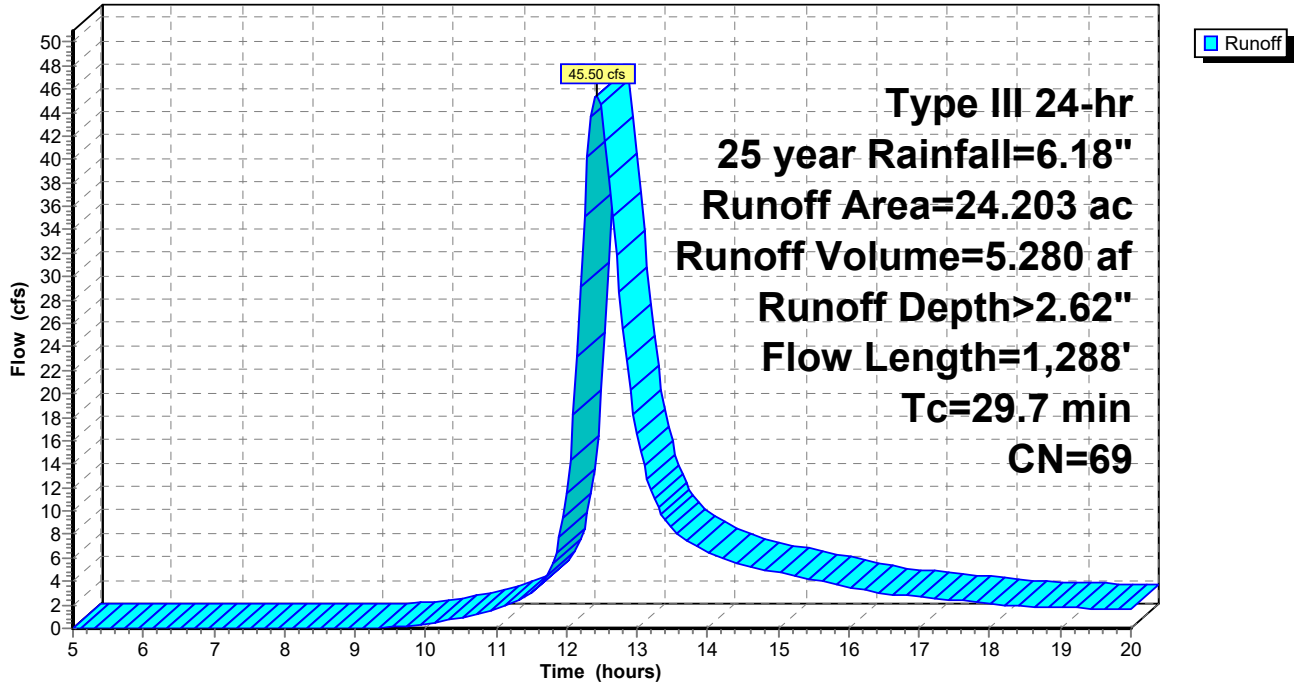
Type III 24-hr 25 year Rainfall=6.18"

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Subcatchment 62: Subcat 62

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 64: Subcat 64

Runoff = 3.27 cfs @ 12.23 hrs, Volume= 0.298 af, Depth> 2.02"

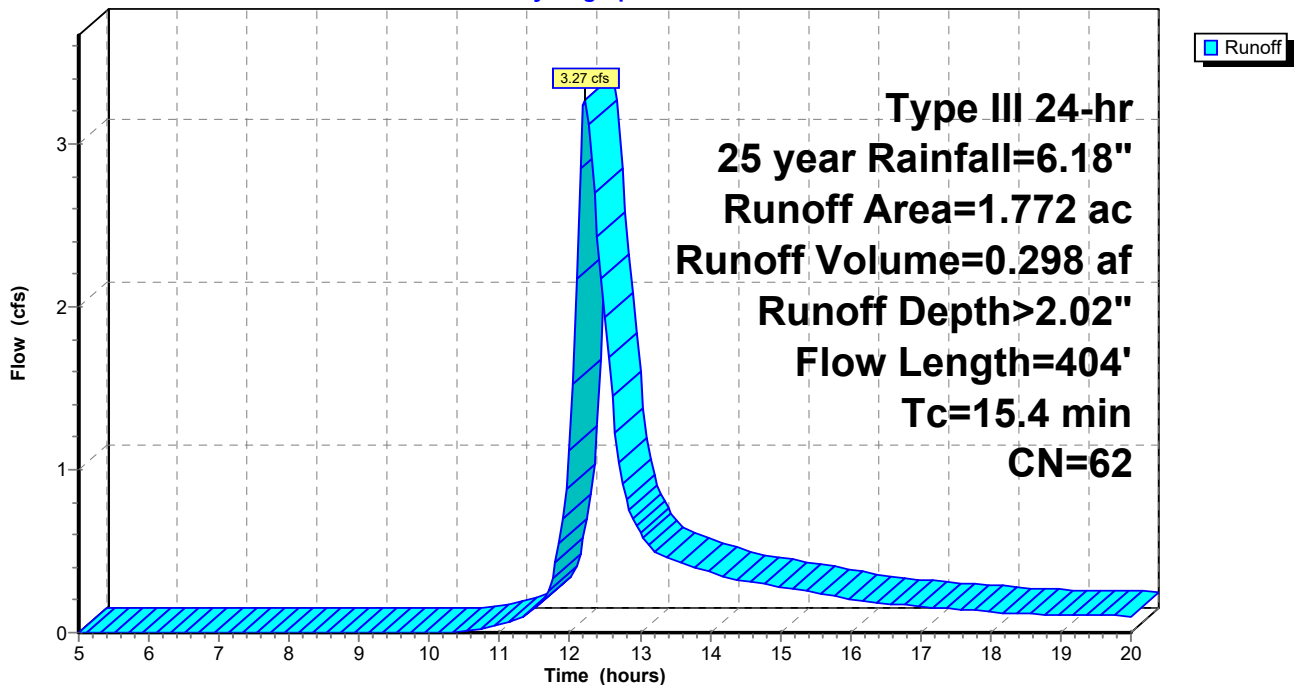
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
0.101	46	2 acre lots, 12% imp, HSG A
* 0.185	59	50-75% Grass cover, Fair, HSG A-B
* 1.123	74	50-75% Grass cover, Fair, HSG B-C
0.280	30	Meadow, non-grazed, HSG A
0.003	58	Meadow, non-grazed, HSG B
0.080	36	Woods, Fair, HSG A
1.772	62	Weighted Average
1.760		99.32% Pervious Area
0.012		0.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.9	354	0.0113	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.4	404	Total			

Subcatchment 64: Subcat 64

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 65: Subcat 65

Runoff = 6.71 cfs @ 12.36 hrs, Volume= 0.726 af, Depth> 2.44"

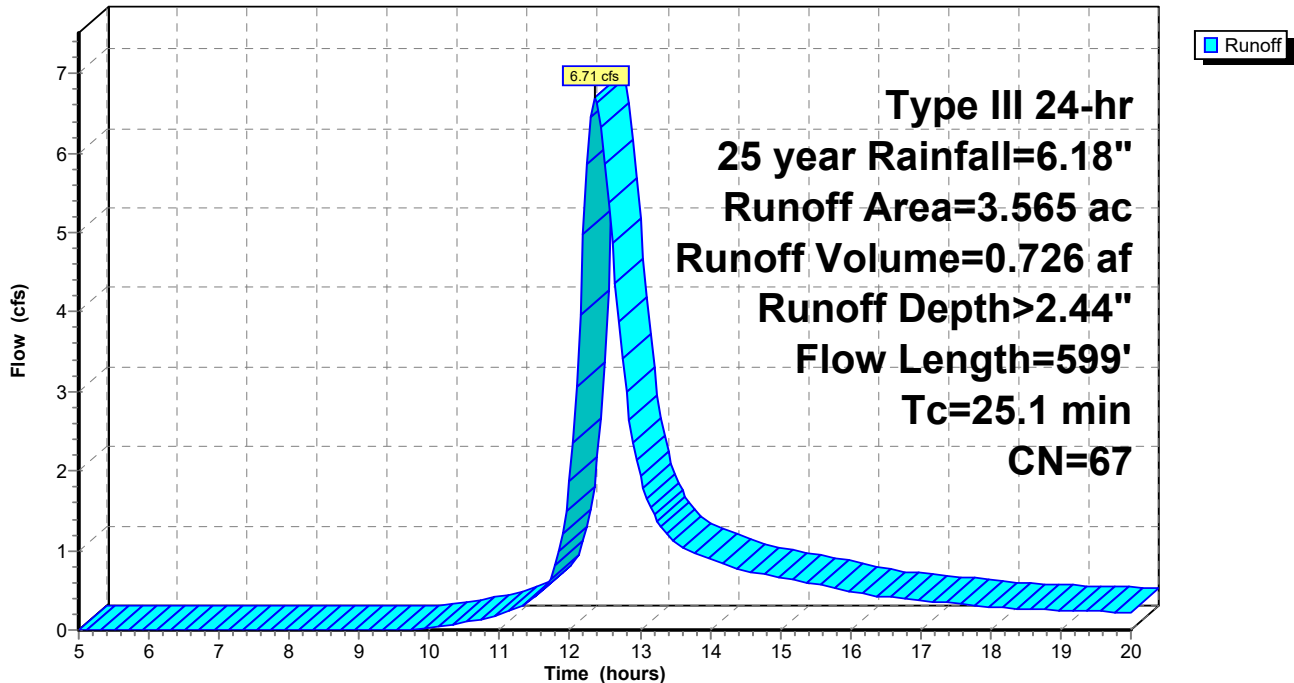
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.013	59	50-75% Grass cover, Fair, HSG A-B
* 2.513	74	50-75% Grass cover, Fair, HSG B-C
0.049	35	Brush, Fair, HSG A
0.267	56	Brush, Fair, HSG B
0.227	30	Meadow, non-grazed, HSG A
0.484	58	Meadow, non-grazed, HSG B
0.012	89	Paved roads w/open ditches, 50% imp, HSG B
3.565	67	Weighted Average
3.559		99.83% Pervious Area
0.006		0.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
17.6	549	0.0055	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.1	599	Total			

Subcatchment 65: Subcat 65

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Subcatchment 66: Subcat 66

Runoff = 4.18 cfs @ 12.21 hrs, Volume= 0.363 af, Depth> 2.28"

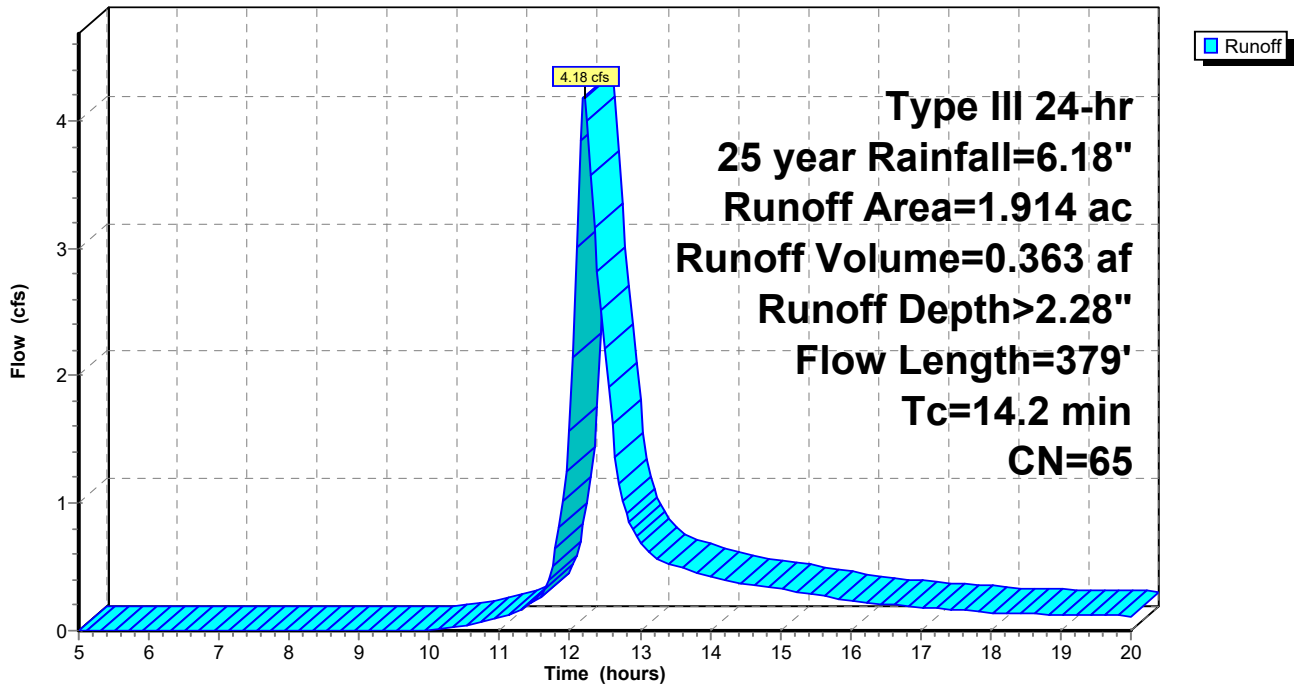
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.18"

Area (ac)	CN	Description
* 0.797	74	50-75% Grass cover, Fair, HSG B-C
0.199	56	Brush, Fair, HSG B
0.888	58	Meadow, non-grazed, HSG B
0.030	89	Paved roads w/open ditches, 50% imp, HSG B
1.914	65	Weighted Average
1.899		99.22% Pervious Area
0.015		0.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.7	329	0.0137	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.2	379	Total			

Subcatchment 66: Subcat 66

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 36P: Sediment Trap

Inflow Area = 8.684 ac, 1.43% Impervious, Inflow Depth > 2.70" for 25 year event
 Inflow = 15.98 cfs @ 12.48 hrs, Volume= 1.957 af
 Outflow = 9.89 cfs @ 12.83 hrs, Volume= 1.349 af, Atten= 38%, Lag= 21.4 min
 Primary = 9.89 cfs @ 12.83 hrs, Volume= 1.349 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.59' @ 12.83 hrs Surf.Area= 15,878 sf Storage= 33,849 cf

Plug-Flow detention time= 120.7 min calculated for 1.345 af (69% of inflow)
 Center-of-Mass det. time= 55.3 min (875.8 - 820.5)

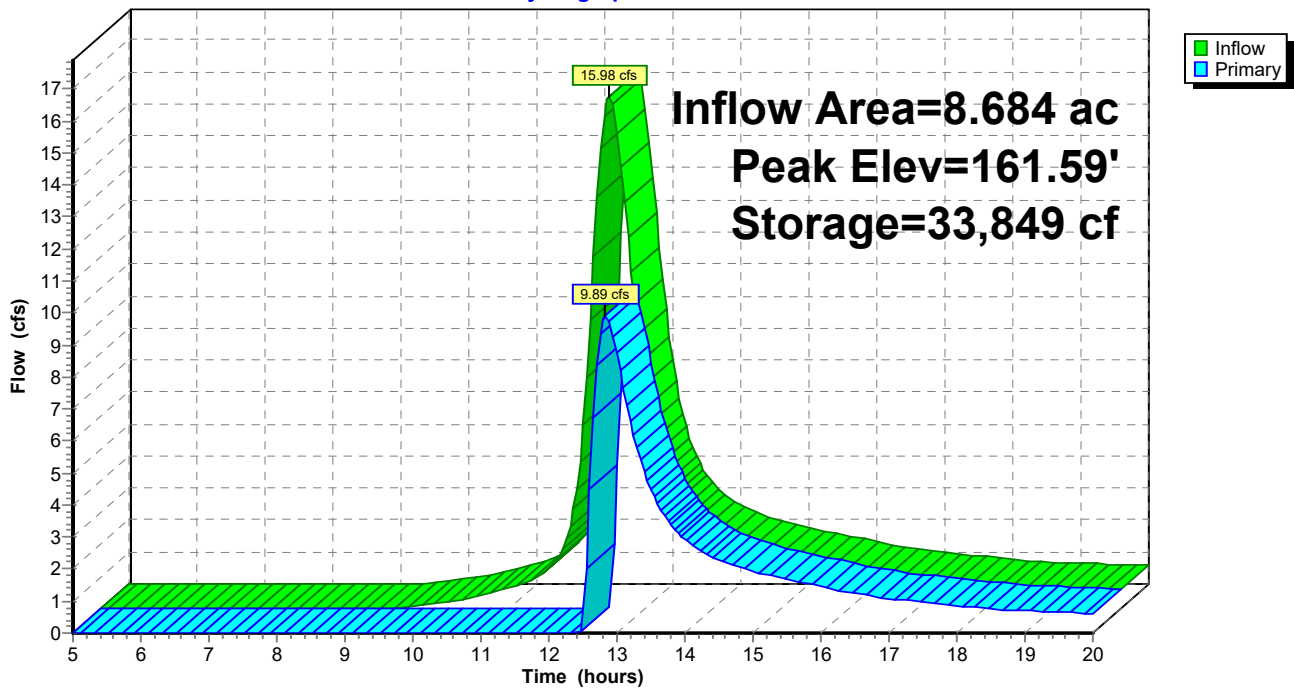
Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	40,645 cf	60.00'W x 70.00'L x 4.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=9.86 cfs @ 12.83 hrs HW=161.59' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 9.86 cfs @ 2.08 fps)

Pond 36P: Sediment Trap

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 37P: Farm Depression

Inflow Area = 1.143 ac, 2.97% Impervious, Inflow Depth > 2.19" for 25 year event
 Inflow = 2.23 cfs @ 12.25 hrs, Volume= 0.208 af
 Outflow = 1.49 cfs @ 12.48 hrs, Volume= 0.208 af, Atten= 33%, Lag= 14.0 min
 Discarded = 0.50 cfs @ 12.48 hrs, Volume= 0.182 af
 Primary = 1.00 cfs @ 12.48 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.54' @ 12.48 hrs Surf.Area= 7,151 sf Storage= 2,325 cf

Plug-Flow detention time= 43.0 min calculated for 0.208 af (100% of inflow)
 Center-of-Mass det. time= 42.4 min (860.9 - 818.4)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	7,138 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
166.00	2,016	0	0 2,016
167.00	14,072	7,138	7,138 14,075

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	166.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.50 cfs @ 12.48 hrs HW=166.54' (Free Discharge)
 ↑2=Exfiltration (Controls 0.50 cfs)

Primary OutFlow Max=0.98 cfs @ 12.48 hrs HW=166.54' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 0.98 cfs @ 0.52 fps)

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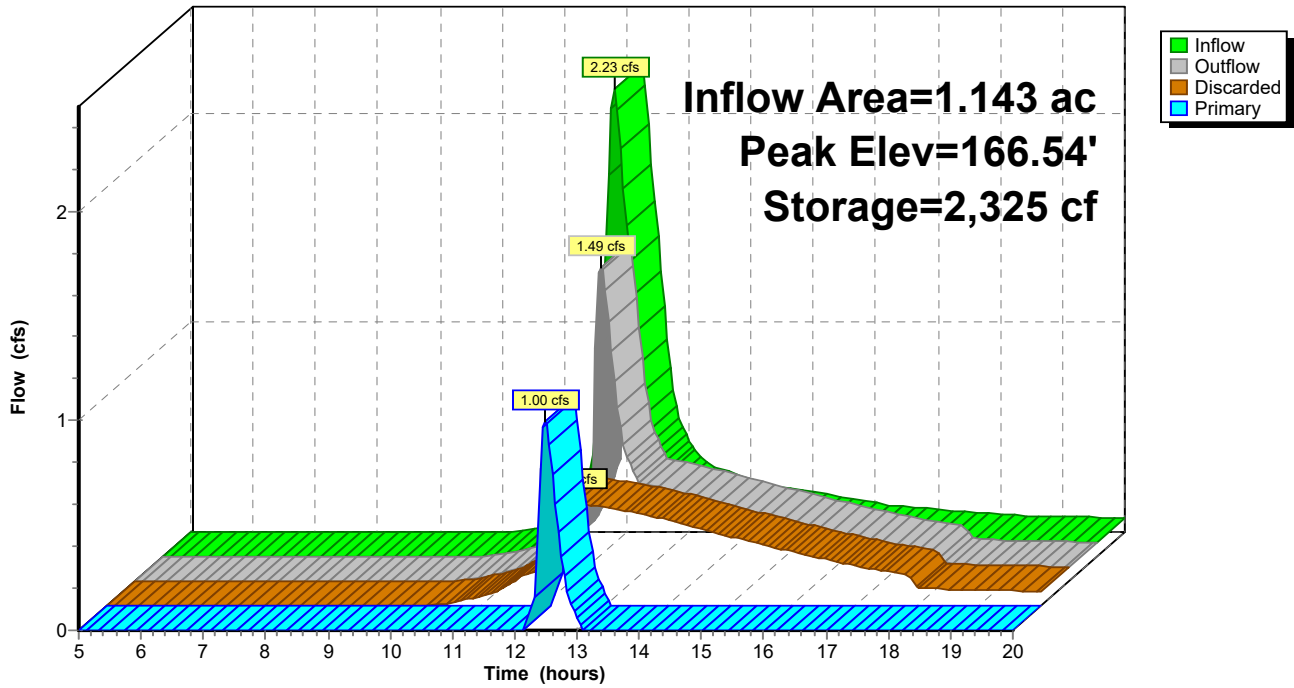
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Pond 37P: Farm Depression

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 38P: Farm Depression

Inflow Area = 3.921 ac, 0.00% Impervious, Inflow Depth > 3.09" for 25 year event
 Inflow = 9.59 cfs @ 12.33 hrs, Volume= 1.009 af
 Outflow = 6.81 cfs @ 12.57 hrs, Volume= 0.969 af, Atten= 29%, Lag= 14.4 min
 Discarded = 1.72 cfs @ 12.57 hrs, Volume= 0.758 af
 Primary = 5.09 cfs @ 12.57 hrs, Volume= 0.211 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.61' @ 12.57 hrs Surf.Area= 24,711 sf Storage= 13,198 cf

Plug-Flow detention time= 77.7 min calculated for 0.966 af (96% of inflow)
 Center-of-Mass det. time= 63.4 min (869.0 - 805.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	163.00'	25,279 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
163.00	0	0	0	0	
164.00	9,379	3,126	3,126	9,381	
165.00	38,160	22,152	25,279	38,166	

Device	Routing	Invert	Outlet Devices									
#1	Primary	164.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.72 cfs @ 12.57 hrs HW=164.61' (Free Discharge)
 ↑2=Exfiltration (Controls 1.72 cfs)

Primary OutFlow Max=5.01 cfs @ 12.57 hrs HW=164.61' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 5.01 cfs @ 0.90 fps)

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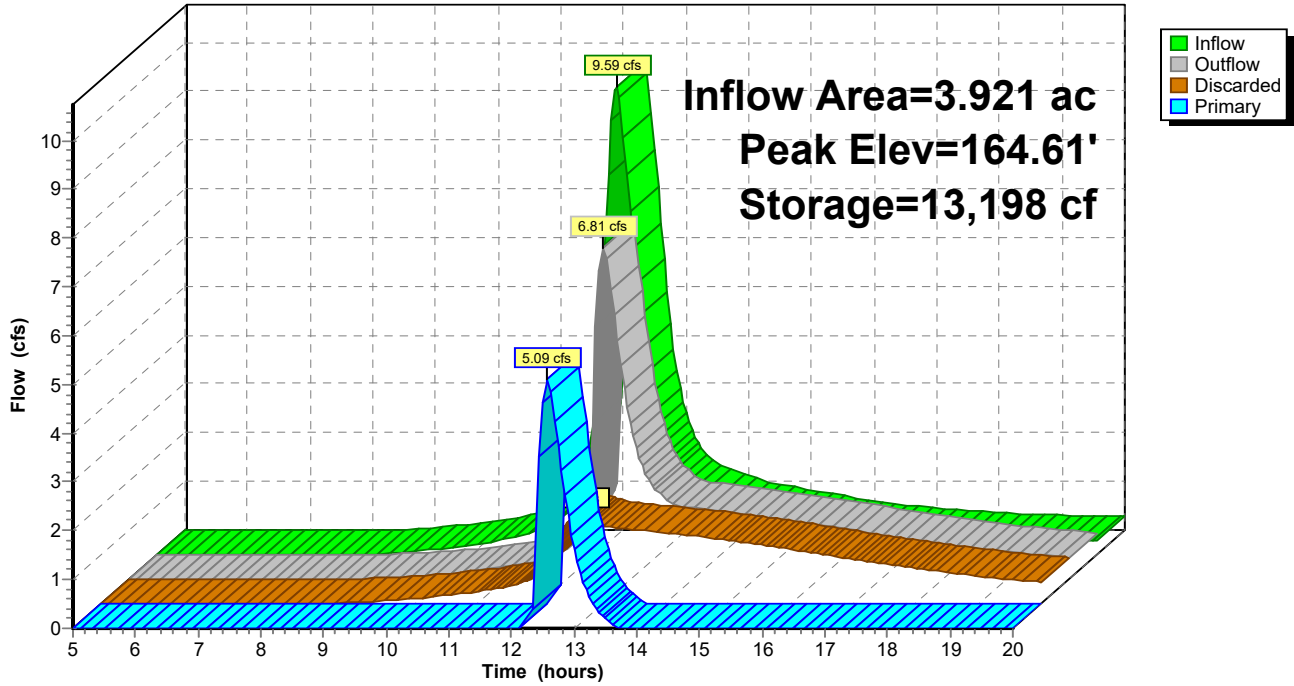
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Pond 38P: Farm Depression

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 39P: Farm Depression

Inflow Area = 3.189 ac, 2.49% Impervious, Inflow Depth > 1.79" for 25 year event
 Inflow = 5.77 cfs @ 12.15 hrs, Volume= 0.476 af
 Outflow = 1.17 cfs @ 12.82 hrs, Volume= 0.474 af, Atten= 80%, Lag= 39.9 min
 Discarded = 1.17 cfs @ 12.82 hrs, Volume= 0.474 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.97' @ 12.82 hrs Surf.Area= 16,745 sf Storage= 8,535 cf

Plug-Flow detention time= 86.3 min calculated for 0.474 af (100% of inflow)
 Center-of-Mass det. time= 84.9 min (886.6 - 801.7)

Volume	Invert	Avail.Storage	Storage Description
#1	164.00'	38,968 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
164.00	2,834	0	0 2,834
166.00	44,400	38,968	38,968 44,411

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	164.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.17 cfs @ 12.82 hrs HW=164.97' (Free Discharge)
 ↑2=Exfiltration (Controls 1.17 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=164.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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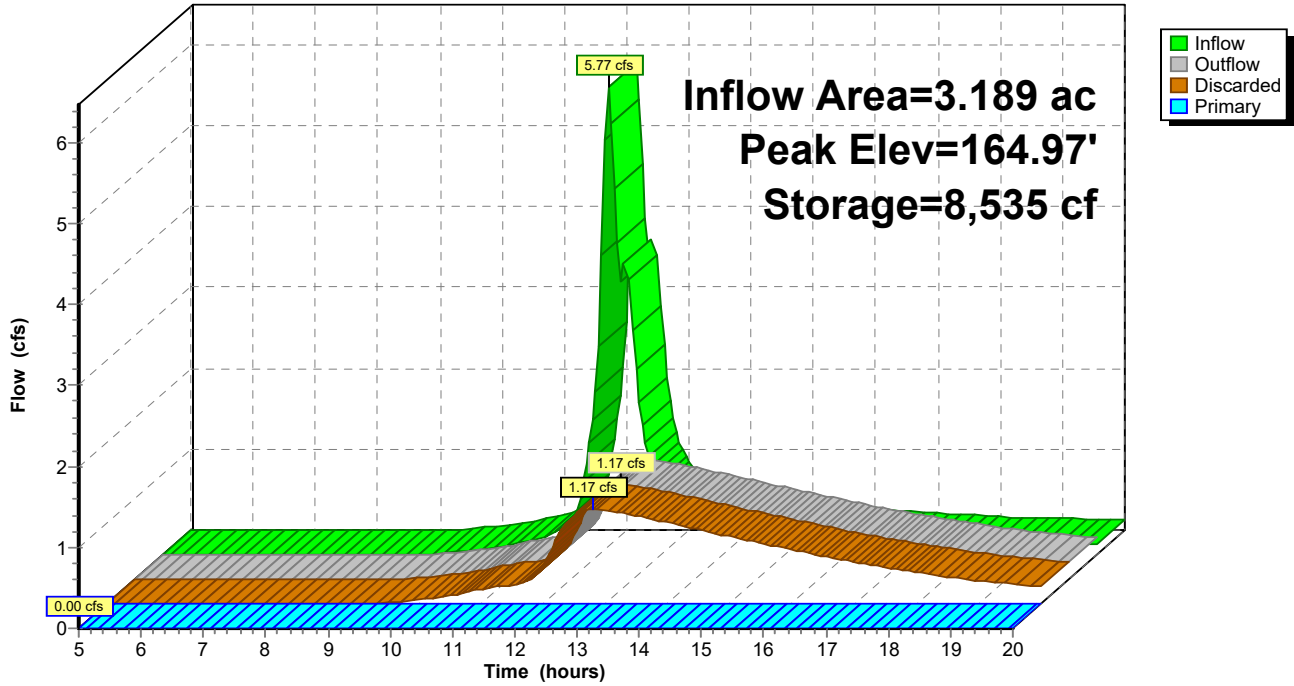
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Pond 39P: Farm Depression

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 40P: (new Pond)

Inflow Area = 0.652 ac, 0.00% Impervious, Inflow Depth > 1.78" for 25 year event
 Inflow = 1.21 cfs @ 12.16 hrs, Volume= 0.097 af
 Outflow = 0.09 cfs @ 15.09 hrs, Volume= 0.057 af, Atten= 92%, Lag= 175.8 min
 Discarded = 0.09 cfs @ 15.09 hrs, Volume= 0.057 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.41' @ 15.09 hrs Surf.Area= 1,259 sf Storage= 2,301 cf

Plug-Flow detention time= 216.0 min calculated for 0.057 af (59% of inflow)
 Center-of-Mass det. time= 133.4 min (956.1 - 822.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	158.00'	3,119 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
158.00	210	0	0	210	
160.00	748	903	903	768	
162.00	1,512	2,216	3,119	1,567	

Device	Routing	Invert	Outlet Devices												
#1	Primary	161.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.09 cfs @ 15.09 hrs HW=161.41' (Free Discharge)
 ↑2=Exfiltration (Controls 0.09 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=158.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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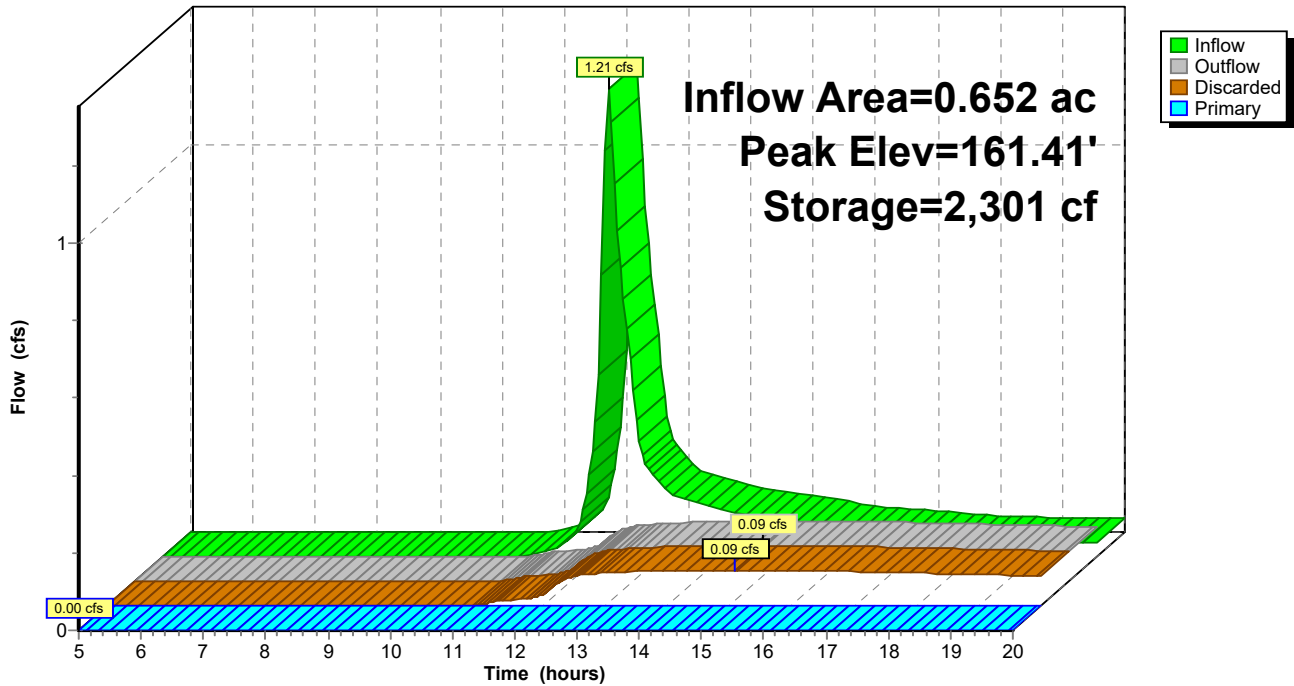
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Pond 40P: (new Pond)

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 41P: Sediment Trap

Inflow Area = 0.888 ac, 0.00% Impervious, Inflow Depth > 1.78" for 25 year event
 Inflow = 1.71 cfs @ 12.14 hrs, Volume= 0.132 af
 Outflow = 0.12 cfs @ 15.33 hrs, Volume= 0.073 af, Atten= 93%, Lag= 191.8 min
 Discarded = 0.12 cfs @ 15.33 hrs, Volume= 0.073 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.73' @ 15.33 hrs Surf.Area= 1,586 sf Storage= 3,245 cf

Plug-Flow detention time= 221.7 min calculated for 0.073 af (55% of inflow)
 Center-of-Mass det. time= 135.6 min (957.0 - 821.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	156.00'	5,646 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
156.00	292	0	0	292	
158.00	893	1,130	1,130	916	
160.00	1,712	2,561	3,691	1,773	
161.00	2,207	1,954	5,646	2,292	

Device	Routing	Invert	Outlet Devices												
#1	Primary	161.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	156.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.12 cfs @ 15.33 hrs HW=159.73' (Free Discharge)
 ↑2=Exfiltration (Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=156.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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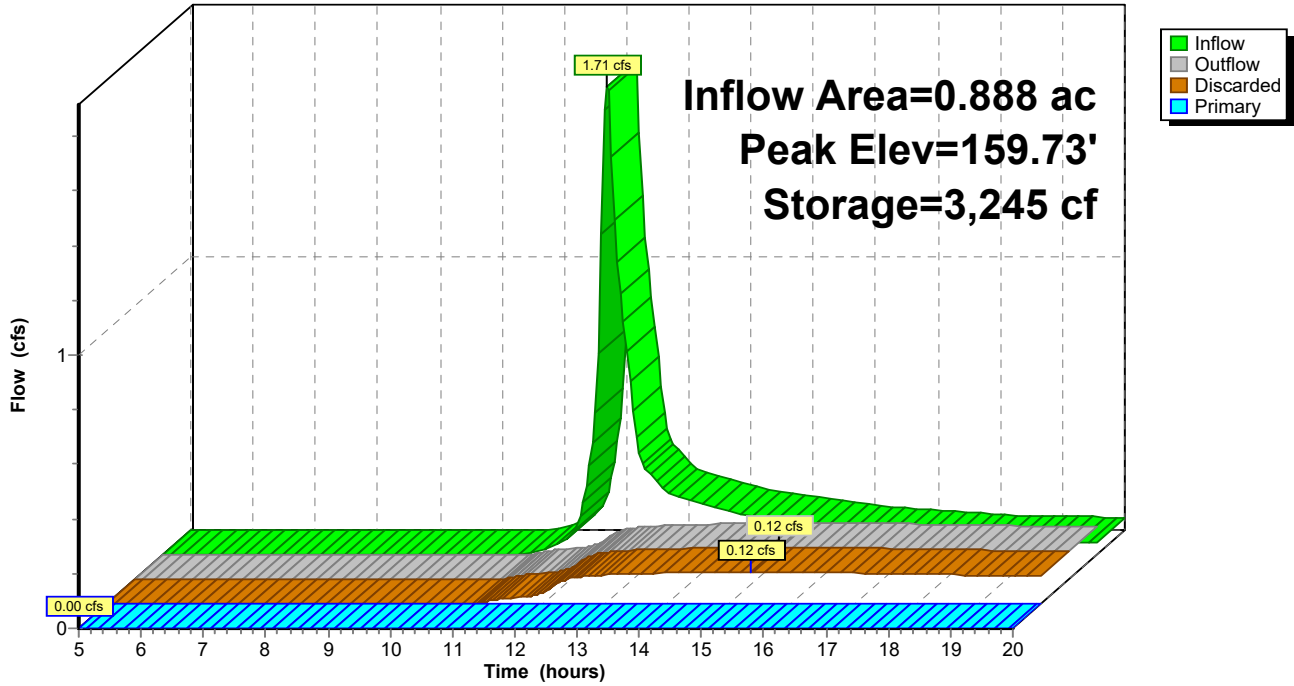
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Pond 41P: Sediment Trap

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 42P: Sediment Trap

Inflow Area = 1.849 ac, 0.00% Impervious, Inflow Depth > 1.78" for 25 year event
 Inflow = 3.14 cfs @ 12.20 hrs, Volume= 0.274 af
 Outflow = 0.37 cfs @ 13.86 hrs, Volume= 0.159 af, Atten= 88%, Lag= 99.6 min
 Discarded = 0.22 cfs @ 13.86 hrs, Volume= 0.142 af
 Primary = 0.15 cfs @ 13.86 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.05' @ 13.86 hrs Surf.Area= 2,997 sf Storage= 6,224 cf

Plug-Flow detention time= 202.3 min calculated for 0.159 af (58% of inflow)
 Center-of-Mass det. time= 119.0 min (943.7 - 824.8)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	9,408 cf	20.00'W x 60.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	6.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.22 cfs @ 13.86 hrs HW=161.05' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.22 cfs)

Primary OutFlow Max=0.15 cfs @ 13.86 hrs HW=161.05' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.15 cfs @ 0.52 fps)

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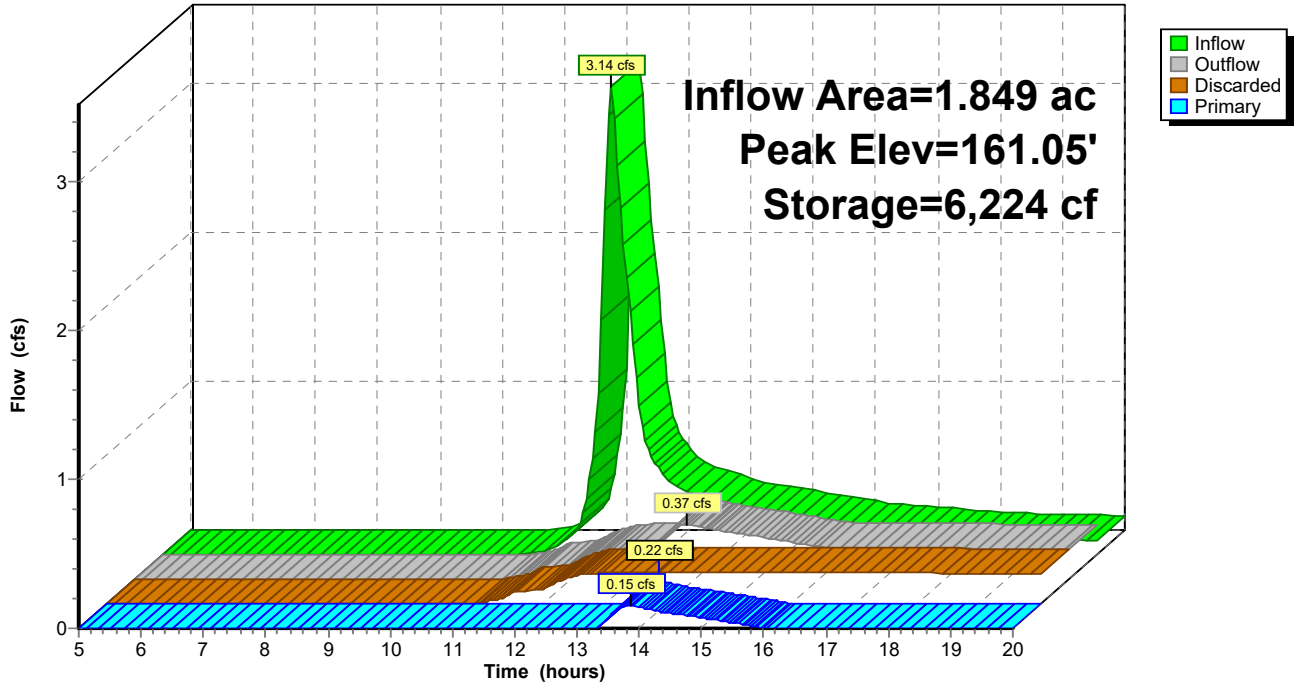
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Pond 42P: Sediment Trap

Hydrograph



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Summary for Pond 43P: Sediment Trap

Inflow Area = 0.916 ac, 0.00% Impervious, Inflow Depth > 1.69" for 25 year event
 Inflow = 1.38 cfs @ 12.24 hrs, Volume= 0.129 af
 Outflow = 0.12 cfs @ 15.33 hrs, Volume= 0.076 af, Atten= 91%, Lag= 185.6 min
 Discarded = 0.12 cfs @ 15.33 hrs, Volume= 0.076 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.87' @ 15.33 hrs Surf.Area= 1,651 sf Storage= 3,068 cf

Plug-Flow detention time= 212.4 min calculated for 0.075 af (58% of inflow)
 Center-of-Mass det. time= 129.1 min (957.7 - 828.6)

Volume	Invert	Avail.Storage	Storage Description
#1	159.00'	5,239 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
159.00	568	0	0	568
160.00	893	724	724	907
162.00	1,712	2,561	3,285	1,764
163.00	2,206	1,954	5,239	2,282

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	6.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	159.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.12 cfs @ 15.33 hrs HW=161.87' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=159.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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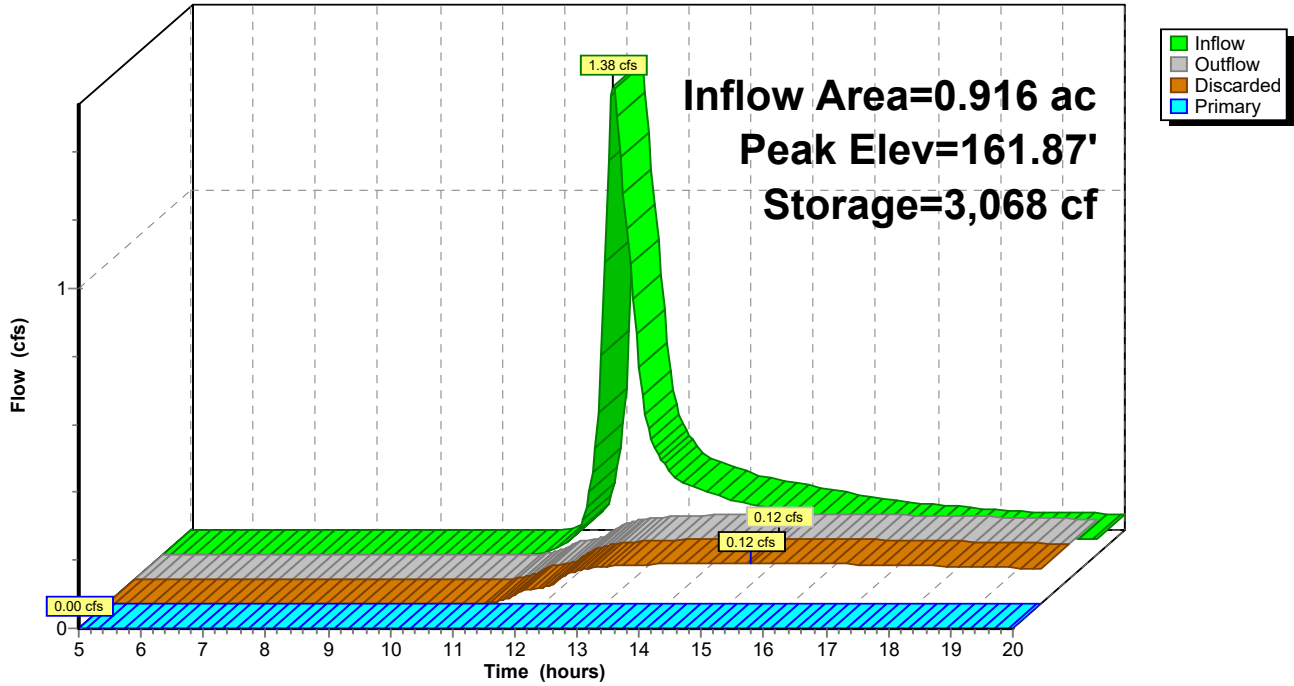
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Pond 43P: Sediment Trap

Hydrograph



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Summary for Pond 44P: Farm Depression

Inflow Area = 2.114 ac, 0.00% Impervious, Inflow Depth > 2.46" for 25 year event
 Inflow = 5.60 cfs @ 12.15 hrs, Volume= 0.433 af
 Outflow = 0.94 cfs @ 12.79 hrs, Volume= 0.415 af, Atten= 83%, Lag= 38.6 min
 Discarded = 0.94 cfs @ 12.79 hrs, Volume= 0.415 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.64' @ 12.79 hrs Surf.Area= 13,536 sf Storage= 7,871 cf

Plug-Flow detention time= 108.8 min calculated for 0.415 af (96% of inflow)
 Center-of-Mass det. time= 93.7 min (901.4 - 807.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	157.00'	43,325 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
157.00	0	0	0	0	
158.00	5,632	1,877	1,877	5,634	
160.00	41,290	41,448	43,325	41,305	

Device	Routing	Invert	Outlet Devices									
#1	Primary	159.00'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=0.94 cfs @ 12.79 hrs HW=158.64' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.94 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=157.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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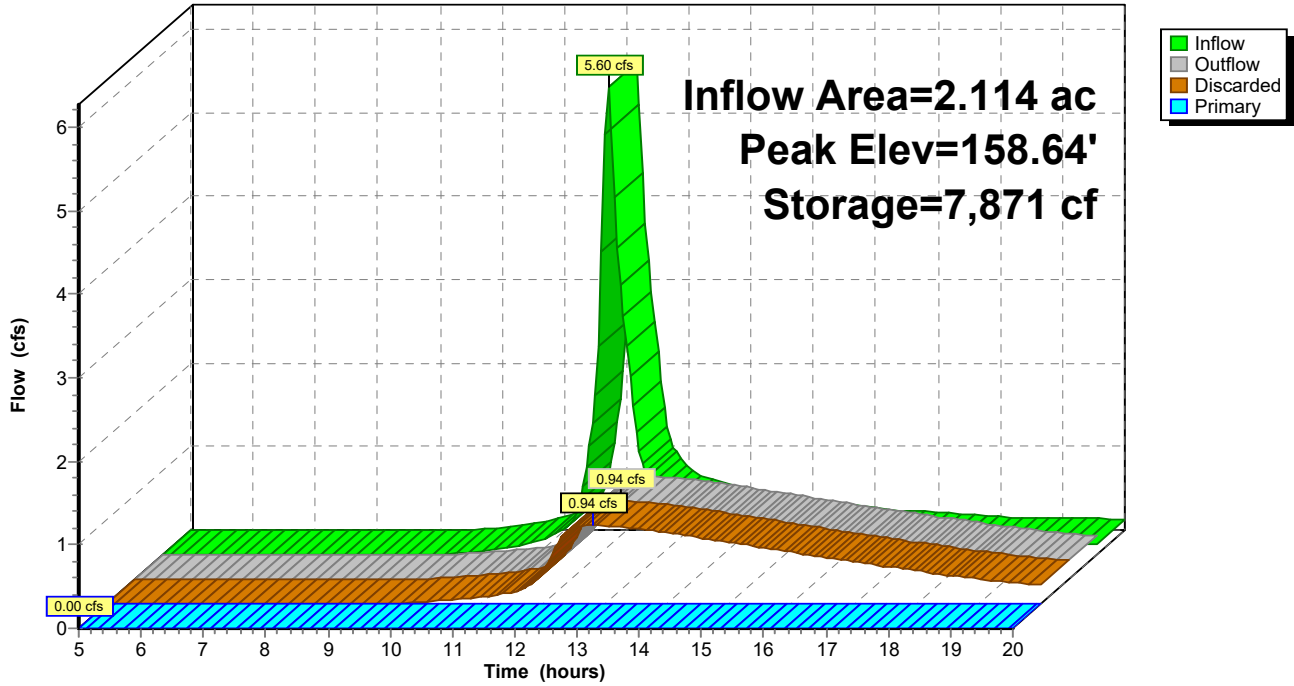
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Pond 44P: Farm Depression

Hydrograph



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Summary for Pond 45P: Farm Depression

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth > 2.55" for 25 year event
 Inflow = 7.32 cfs @ 12.10 hrs, Volume= 0.499 af
 Outflow = 0.82 cfs @ 13.00 hrs, Volume= 0.448 af, Atten= 89%, Lag= 53.9 min
 Discarded = 0.82 cfs @ 13.00 hrs, Volume= 0.448 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.01' @ 13.00 hrs Surf.Area= 11,753 sf Storage= 9,937 cf

Plug-Flow detention time= 151.6 min calculated for 0.448 af (90% of inflow)
 Center-of-Mass det. time= 118.5 min (921.5 - 803.0)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	180,186 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	5,028	1,676	1,676	5,030
156.00	21,015	24,215	25,891	21,035
158.00	37,382	57,617	83,508	37,446
160.00	60,198	96,678	180,186	60,315

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	153.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.82 cfs @ 13.00 hrs HW=155.01' (Free Discharge)
 ↑2=Exfiltration (Controls 0.82 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=153.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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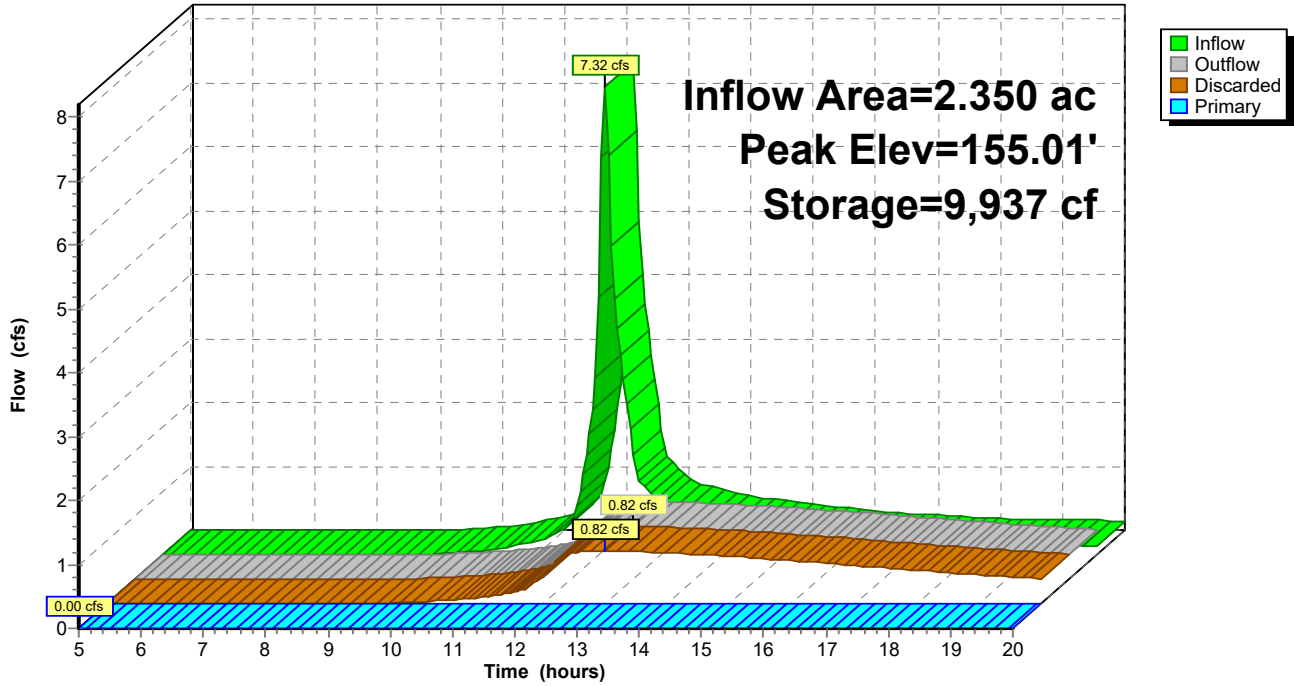
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Pond 45P: Farm Depression

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Summary for Pond 46P: Sediment Trap

Inflow Area = 5.413 ac, 0.00% Impervious, Inflow Depth > 1.54" for 25 year event
 Inflow = 8.67 cfs @ 12.17 hrs, Volume= 0.696 af
 Outflow = 6.60 cfs @ 12.29 hrs, Volume= 0.581 af, Atten= 24%, Lag= 7.5 min
 Discarded = 0.43 cfs @ 12.29 hrs, Volume= 0.265 af
 Primary = 6.17 cfs @ 12.29 hrs, Volume= 0.316 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 149.35' @ 12.29 hrs Surf.Area= 6,040 sf Storage= 8,079 cf

Plug-Flow detention time= 87.3 min calculated for 0.579 af (83% of inflow)
 Center-of-Mass det. time= 41.3 min (844.7 - 803.5)

Volume	Invert	Avail.Storage	Storage Description
#1	147.00'	12,608 cf	49.00'W x 28.00'L x 3.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Discarded	147.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	149.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=0.43 cfs @ 12.29 hrs HW=149.35' (Free Discharge)
 ↑1=Exfiltration (Controls 0.43 cfs)

Primary OutFlow Max=6.12 cfs @ 12.29 hrs HW=149.35' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 6.12 cfs @ 1.47 fps)

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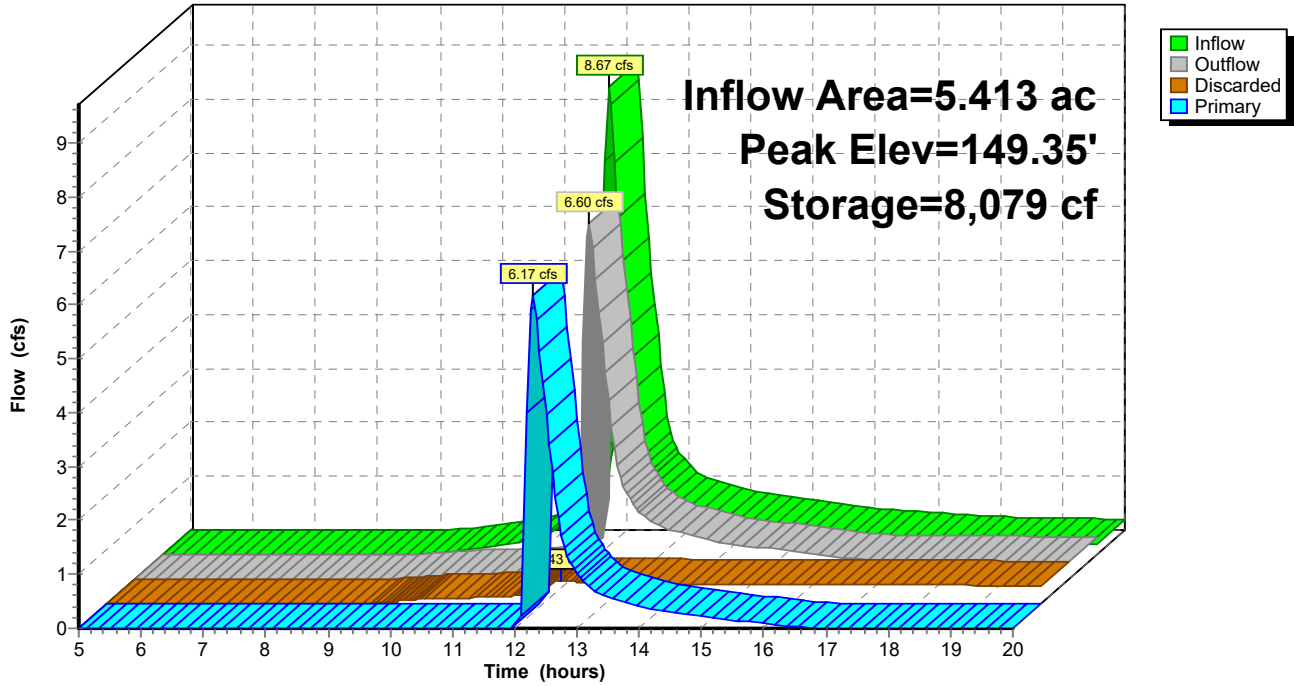
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Pond 46P: Sediment Trap

Hydrograph



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Summary for Pond 47P: Valley Berm

Inflow Area = 56.487 ac, 0.14% Impervious, Inflow Depth > 1.17" for 25 year event
 Inflow = 58.28 cfs @ 12.75 hrs, Volume= 5.487 af
 Outflow = 47.60 cfs @ 12.97 hrs, Volume= 4.848 af, Atten= 18%, Lag= 13.4 min
 Discarded = 1.75 cfs @ 12.97 hrs, Volume= 0.928 af
 Primary = 45.86 cfs @ 12.97 hrs, Volume= 3.921 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 122.40' @ 12.97 hrs Surf.Area= 24,654 sf Storage= 54,066 cf

Plug-Flow detention time= 52.4 min calculated for 4.832 af (88% of inflow)
 Center-of-Mass det. time= 29.0 min (854.6 - 825.6)

Volume	Invert	Avail.Storage	Storage Description
#1	118.00'	69,383 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
118.00	782	0	0	782
120.00	11,520	10,202	10,202	11,531
122.00	23,374	34,202	44,405	23,421
123.00	26,618	24,978	69,383	26,713

Device	Routing	Invert	Outlet Devices
#1	Primary	121.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	118.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.75 cfs @ 12.97 hrs HW=122.40' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.75 cfs)

Primary OutFlow Max=45.55 cfs @ 12.97 hrs HW=122.40' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 45.55 cfs @ 2.54 fps)

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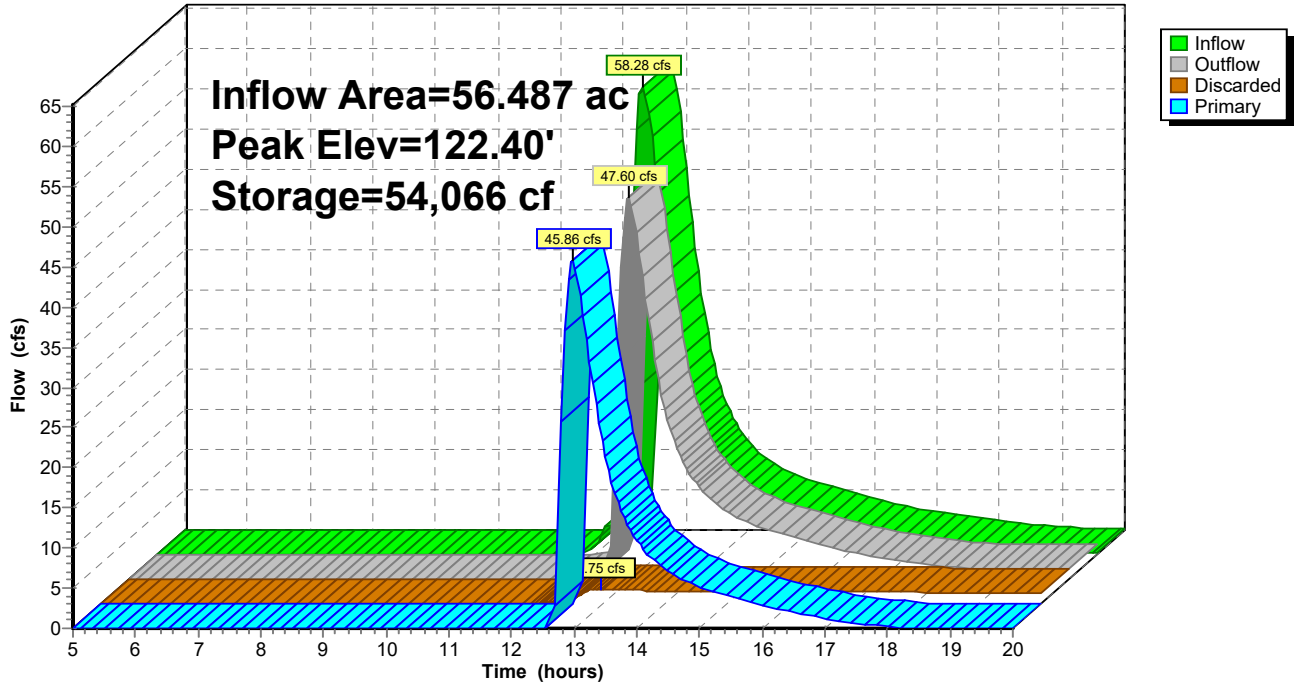
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Pond 47P: Valley Berm

Hydrograph



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Summary for Pond 48P: Valley Berm

Inflow Area = 52.719 ac, 0.15% Impervious, Inflow Depth > 1.42" for 25 year event
 Inflow = 60.03 cfs @ 12.66 hrs, Volume= 6.218 af
 Outflow = 58.18 cfs @ 12.75 hrs, Volume= 5.702 af, Atten= 3%, Lag= 5.3 min
 Discarded = 1.11 cfs @ 12.75 hrs, Volume= 0.604 af
 Primary = 57.07 cfs @ 12.75 hrs, Volume= 5.098 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 126.55' @ 12.75 hrs Surf.Area= 15,596 sf Storage= 37,183 cf

Plug-Flow detention time= 35.3 min calculated for 5.702 af (92% of inflow)
 Center-of-Mass det. time= 13.7 min (838.6 - 824.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	122.00'	44,628 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
122.00	365	0	0	365	
124.00	8,490	7,077	7,077	8,500	
126.00	13,817	22,092	29,169	13,878	
127.00	17,162	15,459	44,628	17,252	

Device	Routing	Invert	Outlet Devices												
#1	Primary	125.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	122.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.11 cfs @ 12.75 hrs HW=126.54' (Free Discharge)
 ↑2=Exfiltration (Controls 1.11 cfs)

Primary OutFlow Max=57.04 cfs @ 12.75 hrs HW=126.54' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 57.04 cfs @ 2.73 fps)

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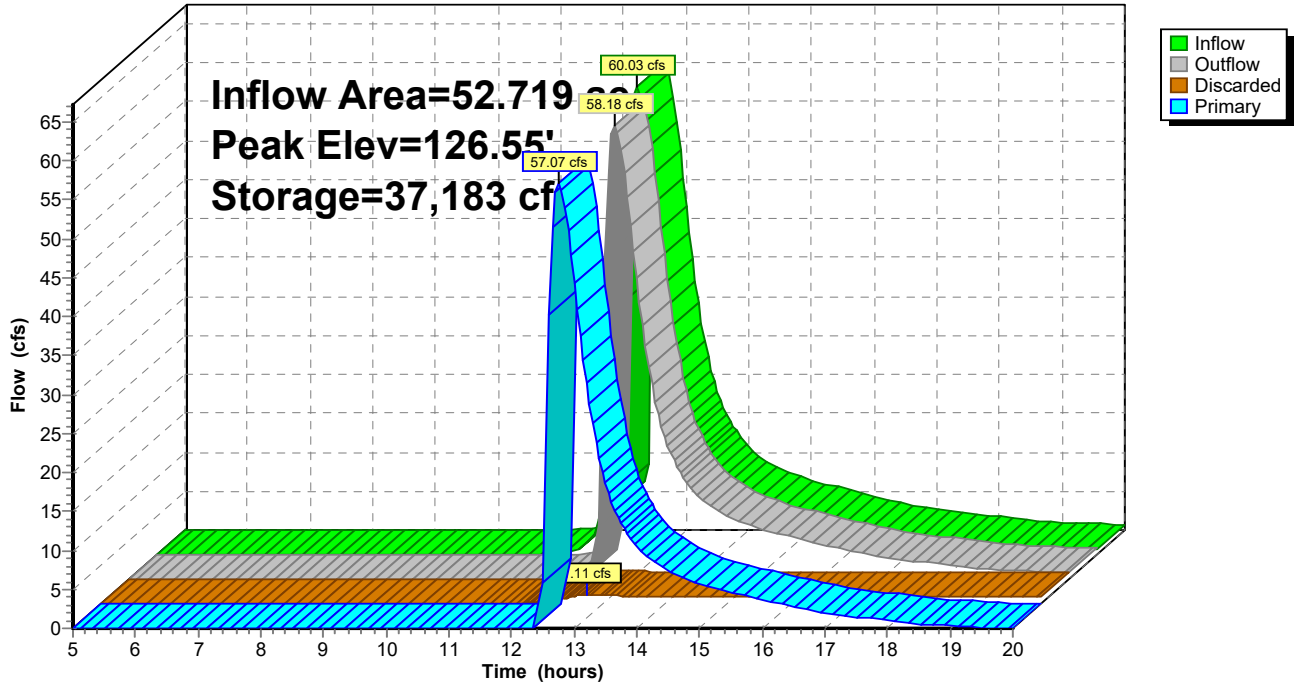
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Pond 48P: Valley Berm

Hydrograph



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Summary for Pond 49P: Valley Berm

Inflow Area = 47.376 ac, 0.17% Impervious, Inflow Depth > 1.61" for 25 year event
 Inflow = 59.30 cfs @ 12.62 hrs, Volume= 6.357 af
 Outflow = 58.48 cfs @ 12.67 hrs, Volume= 5.963 af, Atten= 1%, Lag= 3.3 min
 Discarded = 0.99 cfs @ 12.67 hrs, Volume= 0.499 af
 Primary = 57.49 cfs @ 12.67 hrs, Volume= 5.463 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 132.55' @ 12.67 hrs Surf.Area= 14,018 sf Storage= 29,369 cf

Plug-Flow detention time= 27.9 min calculated for 5.943 af (93% of inflow)
 Center-of-Mass det. time= 10.0 min (835.8 - 825.8)

Volume	Invert	Avail.Storage	Storage Description
#1	128.00'	36,103 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
128.00	1,167	0	0 1,167
130.00	5,025	5,742	5,742 5,043
132.00	11,977	16,507	22,249 12,024
133.00	15,820	13,854	36,103 15,890

Device	Routing	Invert	Outlet Devices
#1	Primary	131.50'	20.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	128.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.99 cfs @ 12.67 hrs HW=132.55' (Free Discharge)
 ↑2=Exfiltration (Controls 0.99 cfs)

Primary OutFlow Max=57.26 cfs @ 12.67 hrs HW=132.55' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 57.26 cfs @ 2.74 fps)

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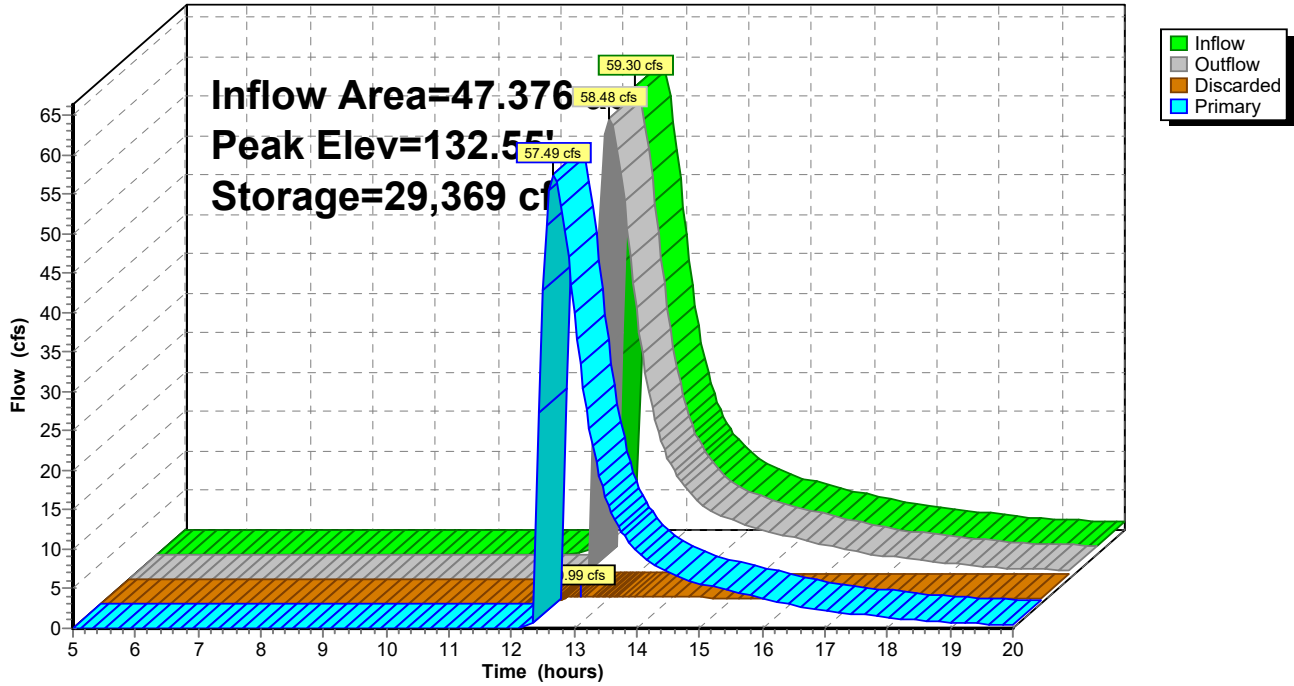
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Pond 49P: Valley Berm

Hydrograph



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Summary for Pond 50P: Valley Berm

Inflow Area = 44.163 ac, 0.18% Impervious, Inflow Depth > 1.98" for 25 year event
 Inflow = 60.01 cfs @ 12.57 hrs, Volume= 7.272 af
 Outflow = 58.79 cfs @ 12.63 hrs, Volume= 6.662 af, Atten= 2%, Lag= 3.8 min
 Discarded = 1.23 cfs @ 12.63 hrs, Volume= 0.675 af
 Primary = 57.56 cfs @ 12.63 hrs, Volume= 5.987 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 138.55' @ 12.63 hrs Surf.Area= 17,298 sf Storage= 41,534 cf

Plug-Flow detention time= 39.1 min calculated for 6.662 af (92% of inflow)
 Center-of-Mass det. time= 13.8 min (837.6 - 823.7)

Volume	Invert	Avail.Storage	Storage Description
#1	134.00'	49,733 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
134.00	2,742	0	0 2,742
136.00	7,845	10,150	10,150 7,869
138.00	15,022	22,482	32,632 15,085
139.00	19,268	17,101	49,733 19,357

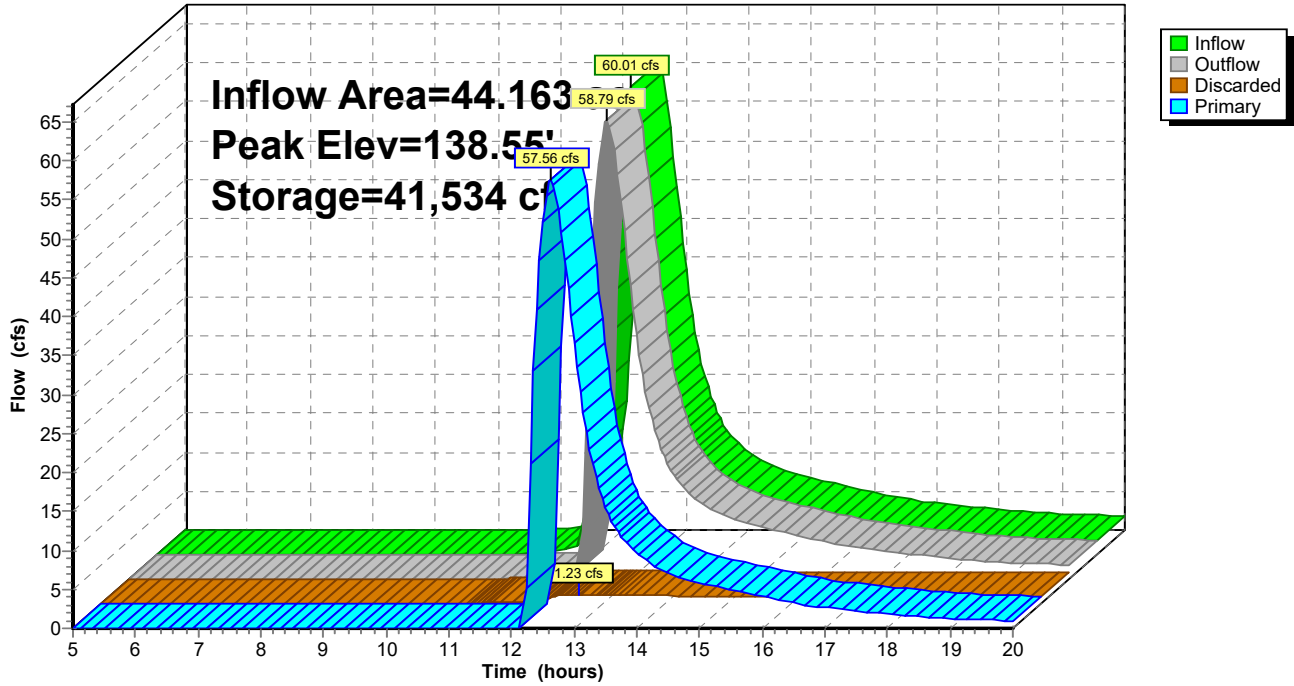
Device	Routing	Invert	Outlet Devices
#1	Primary	137.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	134.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.23 cfs @ 12.63 hrs HW=138.55' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.23 cfs)

Primary OutFlow Max=57.39 cfs @ 12.63 hrs HW=138.55' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 57.39 cfs @ 2.73 fps)

Pond 50P: Valley Berm

Hydrograph



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Summary for Pond 51P: Valley Berm

Inflow Area = 36.779 ac, 0.22% Impervious, Inflow Depth > 2.23" for 25 year event
 Inflow = 54.96 cfs @ 12.56 hrs, Volume= 6.831 af
 Outflow = 54.65 cfs @ 12.60 hrs, Volume= 6.519 af, Atten= 1%, Lag= 2.0 min
 Discarded = 0.68 cfs @ 12.60 hrs, Volume= 0.439 af
 Primary = 53.97 cfs @ 12.60 hrs, Volume= 6.080 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 145.89' @ 12.60 hrs Surf.Area= 9,527 sf Storage= 20,478 cf

Plug-Flow detention time= 25.3 min calculated for 6.519 af (95% of inflow)
 Center-of-Mass det. time= 9.7 min (829.8 - 820.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	142.00'	21,537 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
142.00	1,705	0	0	1,705	
144.00	5,291	6,666	6,666	5,314	
146.00	9,810	14,870	21,537	9,874	

Device	Routing	Invert	Outlet Devices												
#1	Primary	145.00'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.68 cfs @ 12.60 hrs HW=145.89' (Free Discharge)
 ↑2=Exfiltration (Controls 0.68 cfs)

Primary OutFlow Max=53.91 cfs @ 12.60 hrs HW=145.89' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 53.91 cfs @ 2.52 fps)

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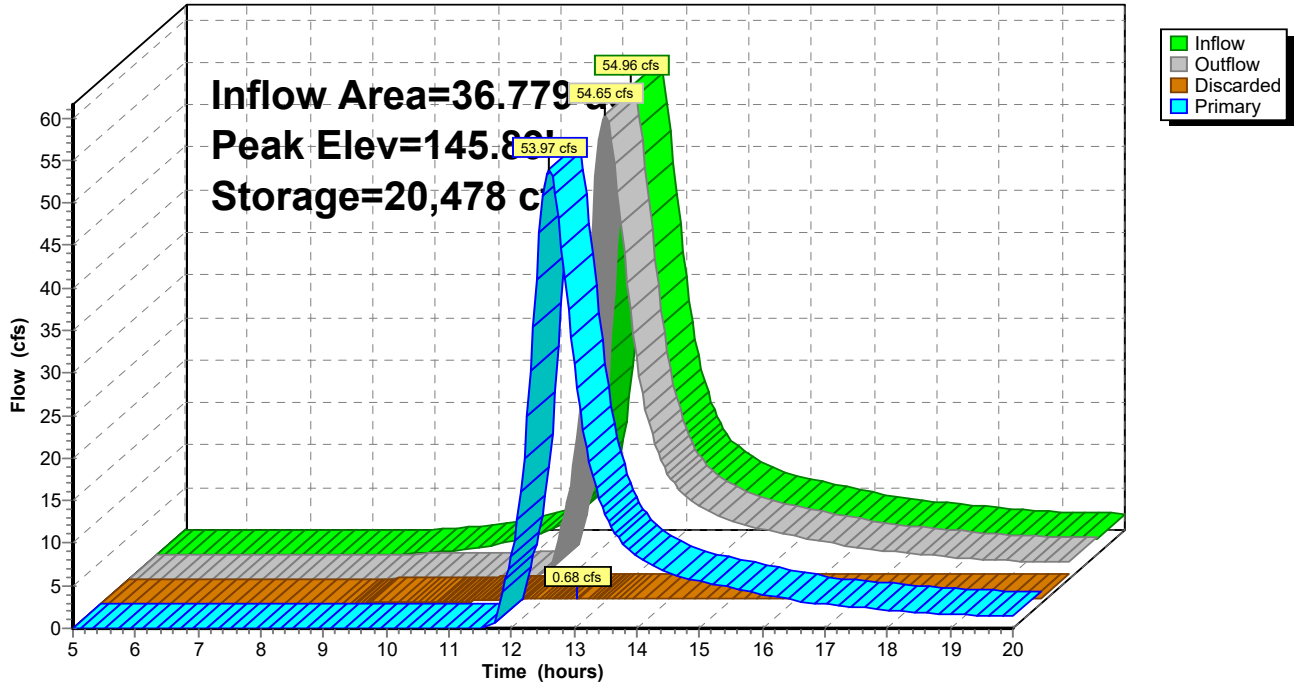
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Pond 51P: Valley Berm

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 53P: Valley Berm

Inflow Area = 59.427 ac, 0.93% Impervious, Inflow Depth > 1.41" for 25 year event
 Inflow = 63.74 cfs @ 12.56 hrs, Volume= 6.963 af
 Outflow = 59.35 cfs @ 12.71 hrs, Volume= 6.384 af, Atten= 7%, Lag= 9.1 min
 Discarded = 1.52 cfs @ 12.71 hrs, Volume= 0.792 af
 Primary = 57.83 cfs @ 12.71 hrs, Volume= 5.593 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 118.43' @ 12.71 hrs Surf.Area= 21,501 sf Storage= 43,150 cf

Plug-Flow detention time= 36.8 min calculated for 6.384 af (92% of inflow)
 Center-of-Mass det. time= 14.7 min (843.6 - 828.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.00'	56,099 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
114.00	1,033	0	0	1,033	
116.00	7,810	7,789	7,789	7,823	
118.00	19,551	26,479	34,268	19,592	
119.00	24,195	21,832	56,099	24,266	

Device	Routing	Invert	Outlet Devices												
#1	Primary	117.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	114.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.52 cfs @ 12.71 hrs HW=118.43' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.52 cfs)

Primary OutFlow Max=57.59 cfs @ 12.71 hrs HW=118.43' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 57.59 cfs @ 2.58 fps)

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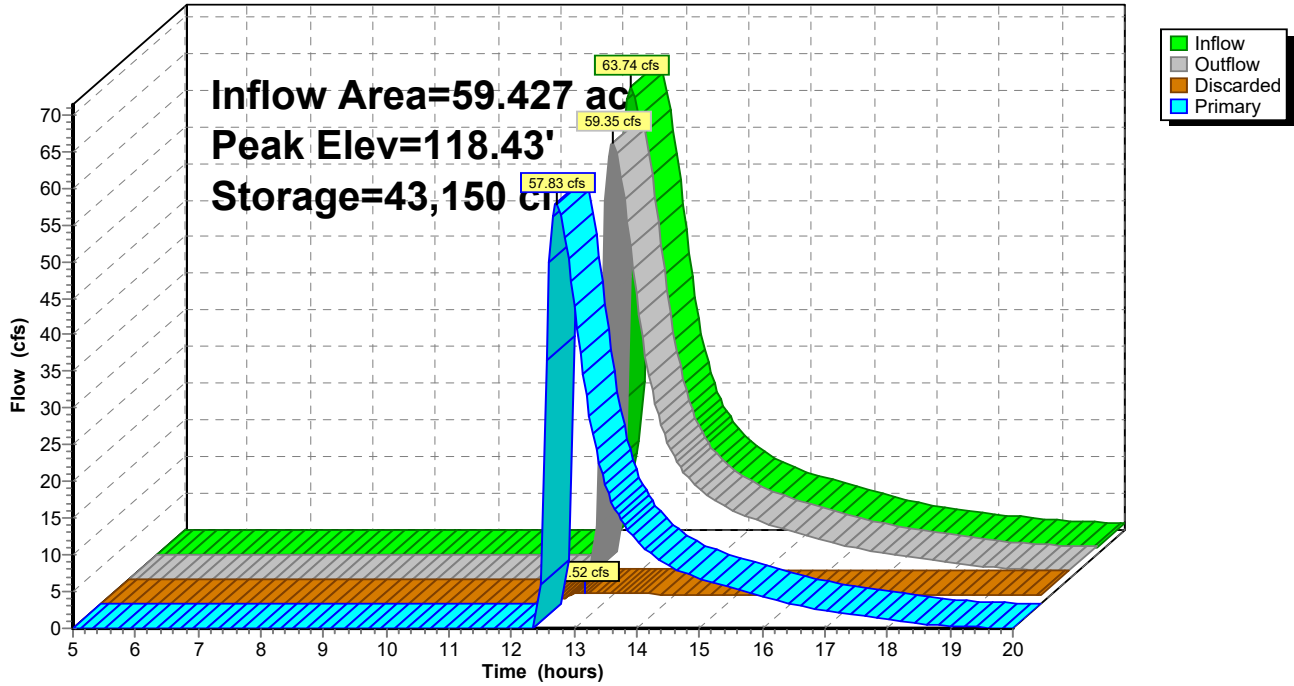
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Pond 53P: Valley Berm

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 54P: Valley Berm

Inflow Area = 71.593 ac, 0.78% Impervious, Inflow Depth > 1.10" for 25 year event
 Inflow = 61.96 cfs @ 12.71 hrs, Volume= 6.562 af
 Outflow = 52.49 cfs @ 12.92 hrs, Volume= 5.844 af, Atten= 15%, Lag= 12.8 min
 Discarded = 2.23 cfs @ 12.92 hrs, Volume= 1.162 af
 Primary = 50.27 cfs @ 12.92 hrs, Volume= 4.682 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 112.35' @ 12.92 hrs Surf.Area= 31,429 sf Storage= 62,940 cf

Plug-Flow detention time= 52.8 min calculated for 5.825 af (89% of inflow)
 Center-of-Mass det. time= 30.8 min (853.0 - 822.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	108.00'	84,939 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
108.00	584	0	0	584	
110.00	13,292	11,108	11,108	13,302	
112.00	29,008	41,291	52,399	29,050	
113.00	36,205	32,540	84,939	36,276	

Device	Routing	Invert	Outlet Devices												
#1	Primary	111.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	108.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=2.22 cfs @ 12.92 hrs HW=112.35' (Free Discharge)
 ↑**2=Exfiltration** (Controls 2.22 cfs)

Primary OutFlow Max=50.02 cfs @ 12.92 hrs HW=112.35' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 50.02 cfs @ 2.46 fps)

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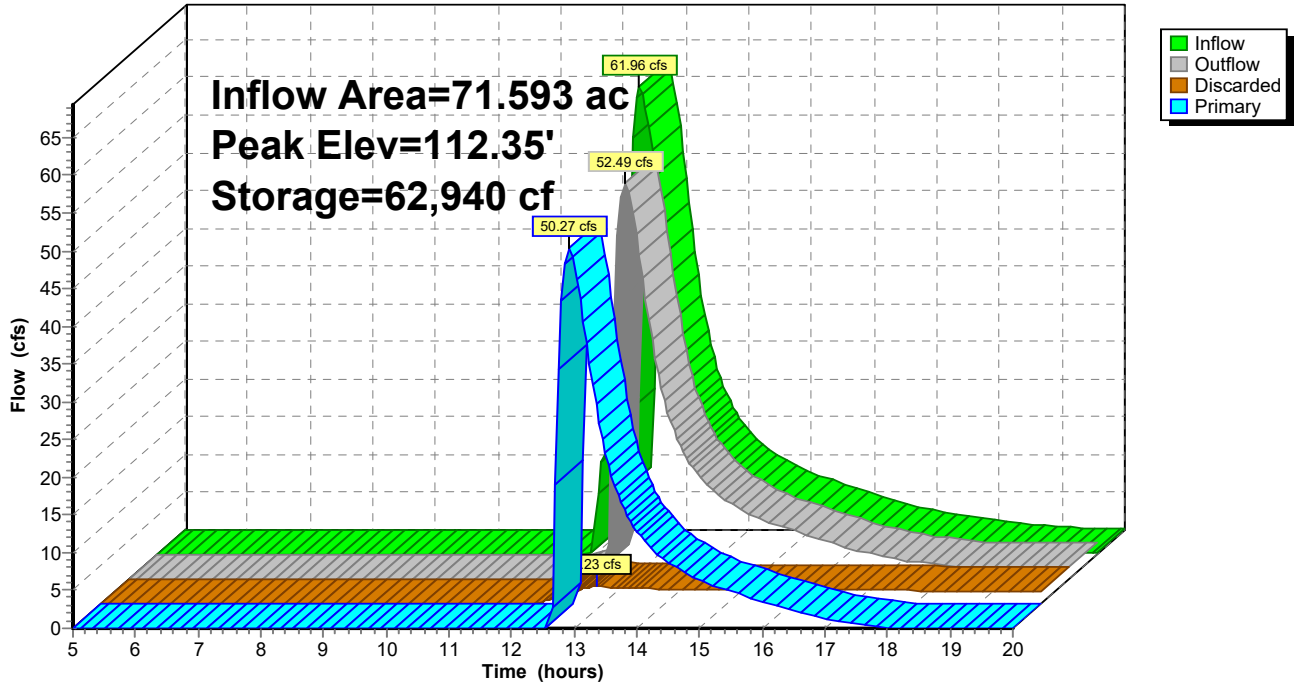
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Pond 54P: Valley Berm

Hydrograph



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Summary for Pond 55P: Sediment Trap

Inflow Area = 2.682 ac, 0.00% Impervious, Inflow Depth > 2.81" for 25 year event
 Inflow = 6.05 cfs @ 12.32 hrs, Volume= 0.628 af
 Outflow = 4.57 cfs @ 12.53 hrs, Volume= 0.503 af, Atten= 24%, Lag= 12.5 min
 Discarded = 0.41 cfs @ 12.53 hrs, Volume= 0.242 af
 Primary = 4.16 cfs @ 12.53 hrs, Volume= 0.261 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 143.35' @ 12.53 hrs Surf.Area= 5,791 sf Storage= 8,470 cf

Plug-Flow detention time= 102.2 min calculated for 0.503 af (80% of inflow)
 Center-of-Mass det. time= 50.5 min (861.0 - 810.5)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	12,788 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
140.00	358	0	0 358
142.00	2,804	2,776	2,776 2,817
144.00	7,598	10,012	12,788 7,637

Device	Routing	Invert	Outlet Devices
#1	Primary	143.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	140.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.41 cfs @ 12.53 hrs HW=143.35' (Free Discharge)
 ↑2=Exfiltration (Controls 0.41 cfs)

Primary OutFlow Max=4.13 cfs @ 12.53 hrs HW=143.35' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 4.13 cfs @ 1.47 fps)

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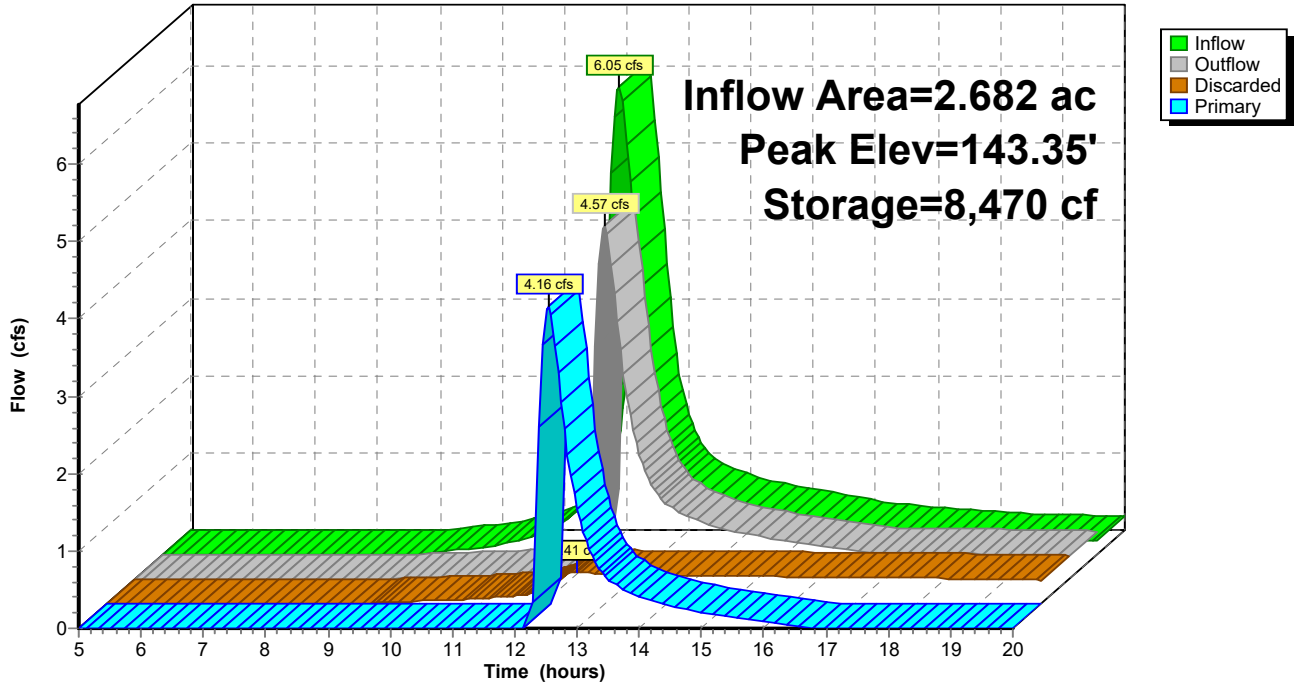
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Pond 55P: Sediment Trap

Hydrograph



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Summary for Pond 56P: Sediment Trap

Inflow Area = 7.231 ac, 0.00% Impervious, Inflow Depth > 3.02" for 25 year event
 Inflow = 31.56 cfs @ 12.00 hrs, Volume= 1.819 af
 Outflow = 13.01 cfs @ 12.17 hrs, Volume= 1.457 af, Atten= 59%, Lag= 10.1 min
 Discarded = 1.03 cfs @ 12.17 hrs, Volume= 0.705 af
 Primary = 11.99 cfs @ 12.17 hrs, Volume= 0.751 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.52' @ 12.17 hrs Surf.Area= 14,552 sf Storage= 25,932 cf

Plug-Flow detention time= 102.5 min calculated for 1.452 af (80% of inflow)
 Center-of-Mass det. time= 49.4 min (838.1 - 788.8)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	33,293 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	6,492	0	0	6,492
143.00	9,332	7,869	7,869	9,349
144.00	12,637	10,943	18,812	12,675
145.00	16,407	14,481	33,293	16,469

Device	Routing	Invert	Outlet Devices
#1	Primary	144.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.03 cfs @ 12.17 hrs HW=144.52' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.03 cfs)

Primary OutFlow Max=11.86 cfs @ 12.17 hrs HW=144.52' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 11.86 cfs @ 1.90 fps)

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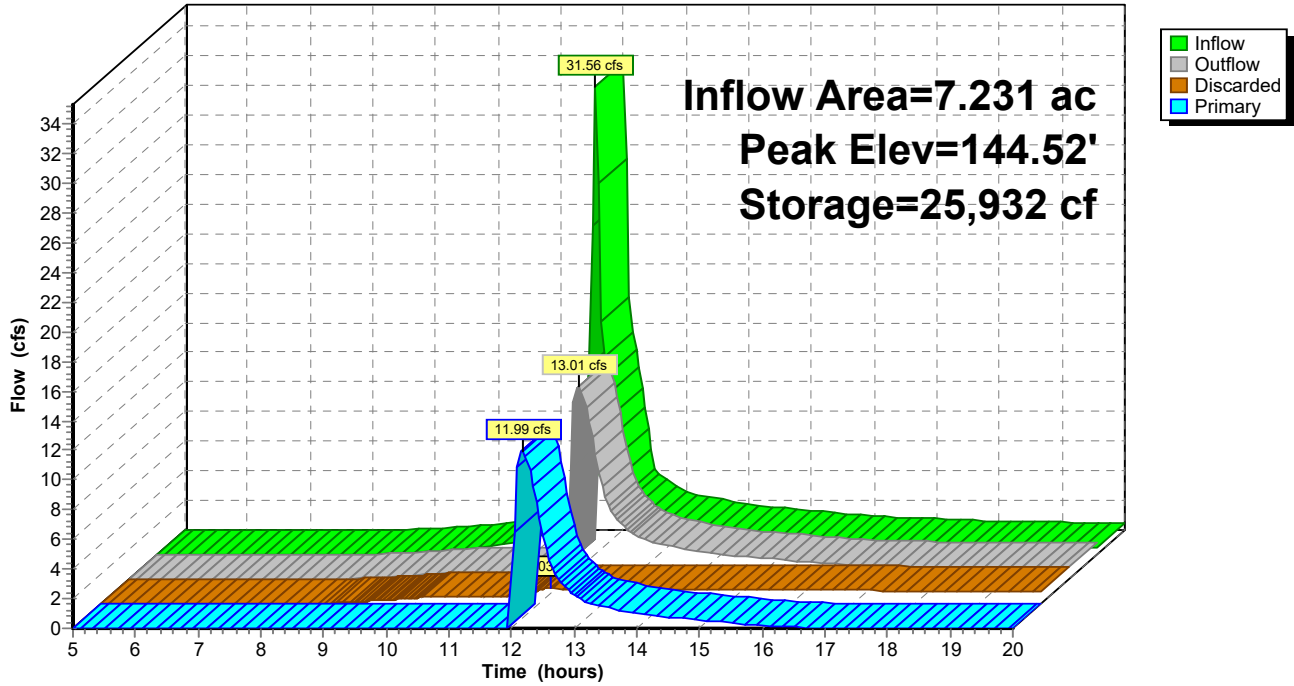
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Pond 56P: Sediment Trap

Hydrograph



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Summary for Pond 57P: Valley Berm

Inflow Area = 5.691 ac, 0.00% Impervious, Inflow Depth > 2.54" for 25 year event
 Inflow = 12.82 cfs @ 12.26 hrs, Volume= 1.204 af
 Outflow = 12.48 cfs @ 12.30 hrs, Volume= 1.086 af, Atten= 3%, Lag= 2.7 min
 Discarded = 0.57 cfs @ 12.30 hrs, Volume= 0.303 af
 Primary = 11.91 cfs @ 12.30 hrs, Volume= 0.783 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 137.52' @ 12.30 hrs Surf.Area= 5,200 sf Storage= 7,594 cf

Plug-Flow detention time= 48.3 min calculated for 1.086 af (90% of inflow)
 Center-of-Mass det. time= 17.1 min (829.0 - 811.8)

Volume	Invert	Avail.Storage	Storage Description			
#1	134.00'	10,399 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
134.00	587	96.0	0	0	587	
136.00	1,920	175.0	2,379	2,379	2,312	
138.00	6,561	368.0	8,020	10,399	10,669	

Device	Routing	Invert	Outlet Devices												
#1	Primary	137.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	134.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.57 cfs @ 12.30 hrs HW=137.52' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.57 cfs)

Primary OutFlow Max=11.90 cfs @ 12.30 hrs HW=137.52' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 11.90 cfs @ 1.90 fps)

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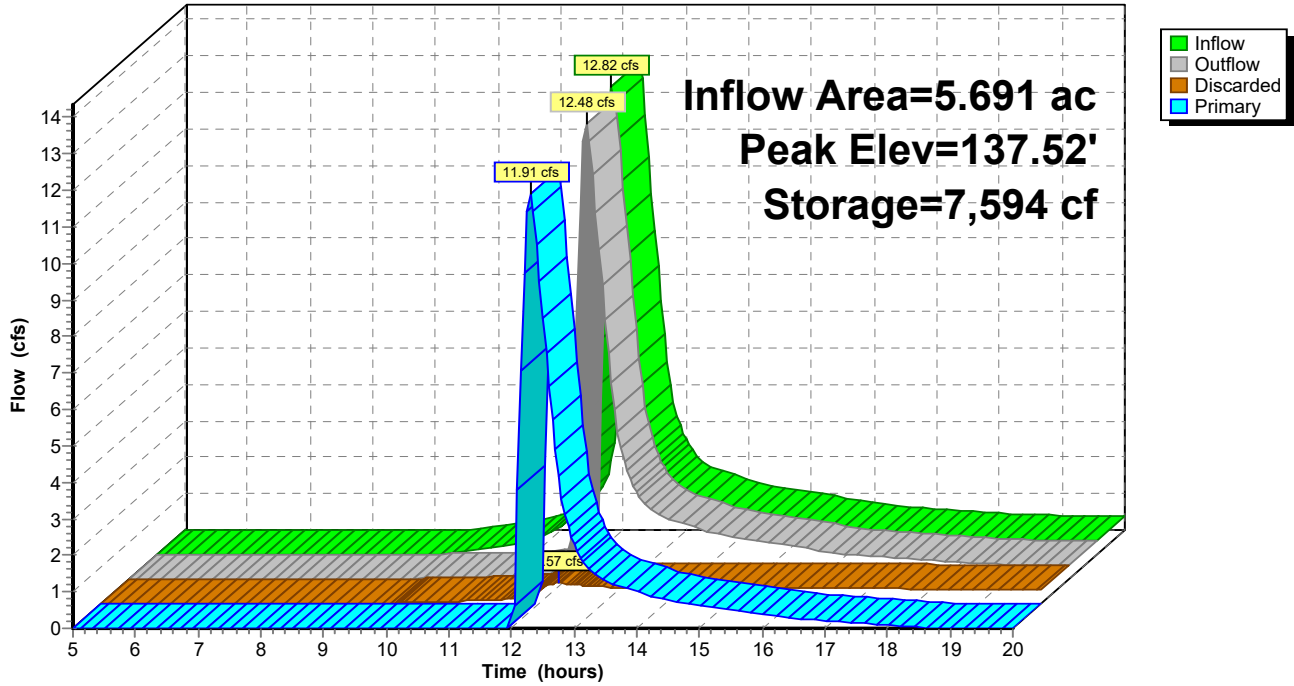
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Pond 57P: Valley Berm

Hydrograph



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Summary for Pond 58P: Valley Berm

Inflow Area = 48.973 ac, 1.13% Impervious, Inflow Depth > 1.68" for 25 year event
 Inflow = 57.54 cfs @ 12.54 hrs, Volume= 6.842 af
 Outflow = 57.06 cfs @ 12.60 hrs, Volume= 6.501 af, Atten= 1%, Lag= 3.5 min
 Discarded = 0.92 cfs @ 12.60 hrs, Volume= 0.469 af
 Primary = 56.14 cfs @ 12.60 hrs, Volume= 6.032 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 126.41' @ 12.60 hrs Surf.Area= 13,011 sf Storage= 24,533 cf

Plug-Flow detention time= 23.4 min calculated for 6.480 af (95% of inflow)
 Center-of-Mass det. time= 8.2 min (841.8 - 833.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	122.00'	32,853 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
122.00	359	0	0	359	
124.00	4,500	4,087	4,087	4,511	
126.00	11,415	15,388	19,475	11,454	
127.00	15,442	13,378	32,853	15,501	

Device	Routing	Invert	Outlet Devices												
#1	Primary	125.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	122.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.92 cfs @ 12.60 hrs HW=126.41' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.92 cfs)

Primary OutFlow Max=56.09 cfs @ 12.60 hrs HW=126.41' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 56.09 cfs @ 2.56 fps)

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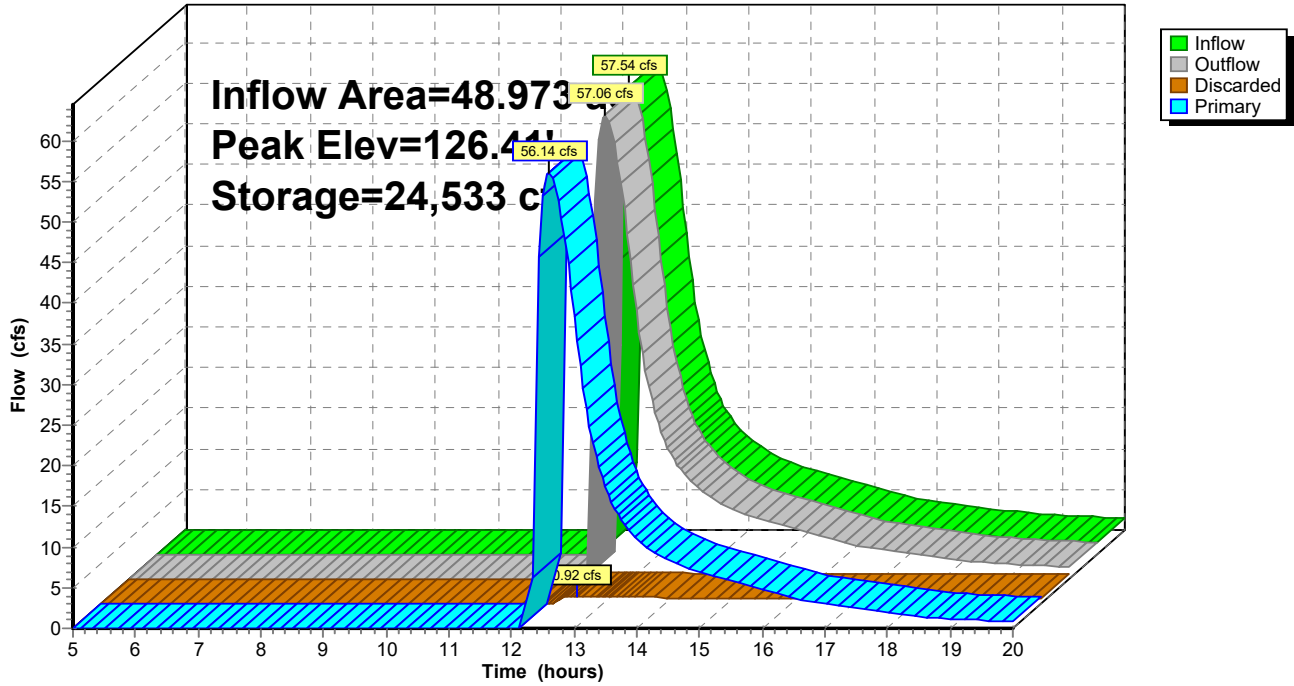
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Pond 58P: Valley Berm

Hydrograph



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Summary for Pond 59P: Valley Berm

Inflow Area = 46.120 ac, 1.20% Impervious, Inflow Depth > 1.92" for 25 year event
 Inflow = 57.60 cfs @ 12.50 hrs, Volume= 7.393 af
 Outflow = 57.32 cfs @ 12.54 hrs, Volume= 7.087 af, Atten= 0%, Lag= 2.4 min
 Discarded = 0.75 cfs @ 12.54 hrs, Volume= 0.411 af
 Primary = 56.57 cfs @ 12.54 hrs, Volume= 6.675 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 134.42' @ 12.54 hrs Surf.Area= 10,578 sf Storage= 21,320 cf

Plug-Flow detention time= 20.5 min calculated for 7.063 af (96% of inflow)
 Center-of-Mass det. time= 7.1 min (839.8 - 832.7)

Volume	Invert	Avail.Storage	Storage Description
#1	130.00'	27,865 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
130.00	297	0	0	297
132.00	4,143	3,700	3,700	4,154
134.00	9,624	13,388	17,087	9,665
135.00	11,974	10,778	27,865	12,044

Device	Routing	Invert	Outlet Devices
#1	Discarded	130.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	133.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=0.75 cfs @ 12.54 hrs HW=134.42' (Free Discharge)
 ↑1=Exfiltration (Controls 0.75 cfs)

Primary OutFlow Max=56.51 cfs @ 12.54 hrs HW=134.42' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 56.51 cfs @ 2.56 fps)

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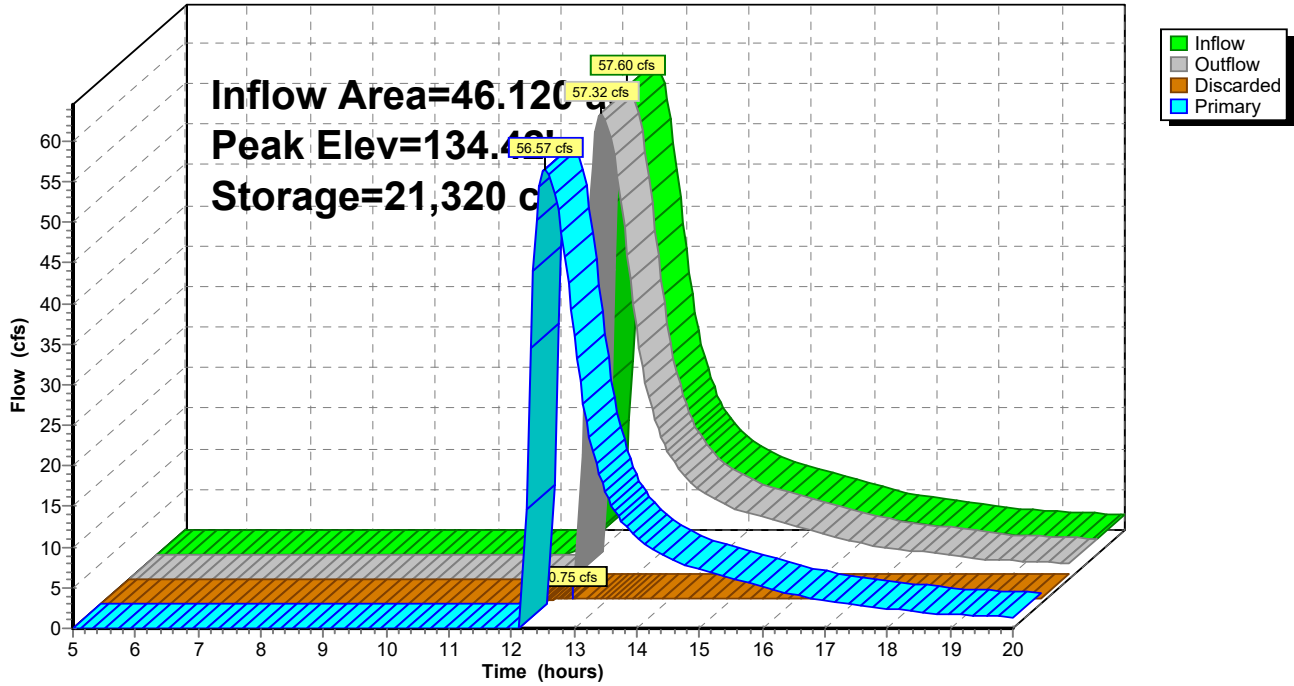
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Pond 59P: Valley Berm

Hydrograph



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Summary for Pond 60P: Valley Berm

Inflow Area = 7.388 ac, 0.00% Impervious, Inflow Depth > 2.70" for 25 year event
 Inflow = 12.77 cfs @ 12.54 hrs, Volume= 1.662 af
 Outflow = 12.77 cfs @ 12.56 hrs, Volume= 1.604 af, Atten= 0%, Lag= 0.8 min
 Discarded = 0.17 cfs @ 12.56 hrs, Volume= 0.114 af
 Primary = 12.59 cfs @ 12.56 hrs, Volume= 1.490 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 141.89' @ 12.56 hrs Surf.Area= 2,442 sf Storage= 3,345 cf

Plug-Flow detention time= 19.2 min calculated for 1.604 af (96% of inflow)
 Center-of-Mass det. time= 7.0 min (831.1 - 824.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	138.00'	6,691 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
138.00	0	0	0	0	
140.00	736	491	491	742	
142.00	2,566	3,118	3,608	2,593	
143.00	3,630	3,083	6,691	3,675	

Device	Routing	Invert	Outlet Devices												
#1	Primary	141.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	138.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.17 cfs @ 12.56 hrs HW=141.89' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.17 cfs)

Primary OutFlow Max=12.56 cfs @ 12.56 hrs HW=141.89' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 12.56 cfs @ 1.59 fps)

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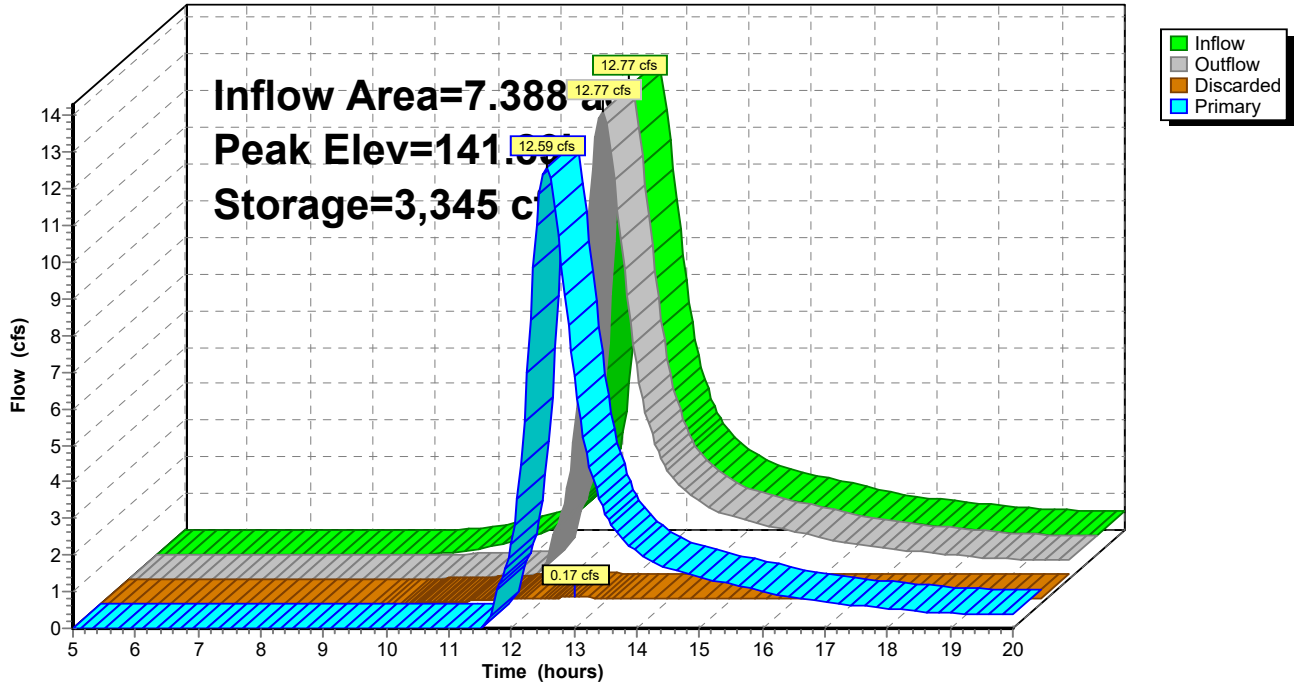
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Pond 60P: Valley Berm

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 62P: Valley Berm

Inflow Area = 32.887 ac, 1.63% Impervious, Inflow Depth > 2.42" for 25 year event
 Inflow = 45.48 cfs @ 12.43 hrs, Volume= 6.629 af
 Outflow = 44.52 cfs @ 12.50 hrs, Volume= 6.254 af, Atten= 2%, Lag= 4.2 min
 Discarded = 1.03 cfs @ 12.50 hrs, Volume= 0.631 af
 Primary = 43.49 cfs @ 12.50 hrs, Volume= 5.623 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.37' @ 12.50 hrs Surf.Area= 14,611 sf Storage= 26,562 cf

Plug-Flow detention time= 30.8 min calculated for 6.234 af (94% of inflow)
 Center-of-Mass det. time= 12.3 min (843.1 - 830.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	140.00'	36,392 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
140.00	0	0	0	0	
142.00	5,126	3,417	3,417	5,132	
144.00	13,477	17,943	21,360	13,510	
145.00	16,642	15,032	36,392	16,704	

Device	Routing	Invert	Outlet Devices												
#1	Primary	143.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	140.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.03 cfs @ 12.50 hrs HW=144.37' (Free Discharge)
 ↑2=Exfiltration (Controls 1.03 cfs)

Primary OutFlow Max=43.45 cfs @ 12.50 hrs HW=144.37' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 43.45 cfs @ 2.50 fps)

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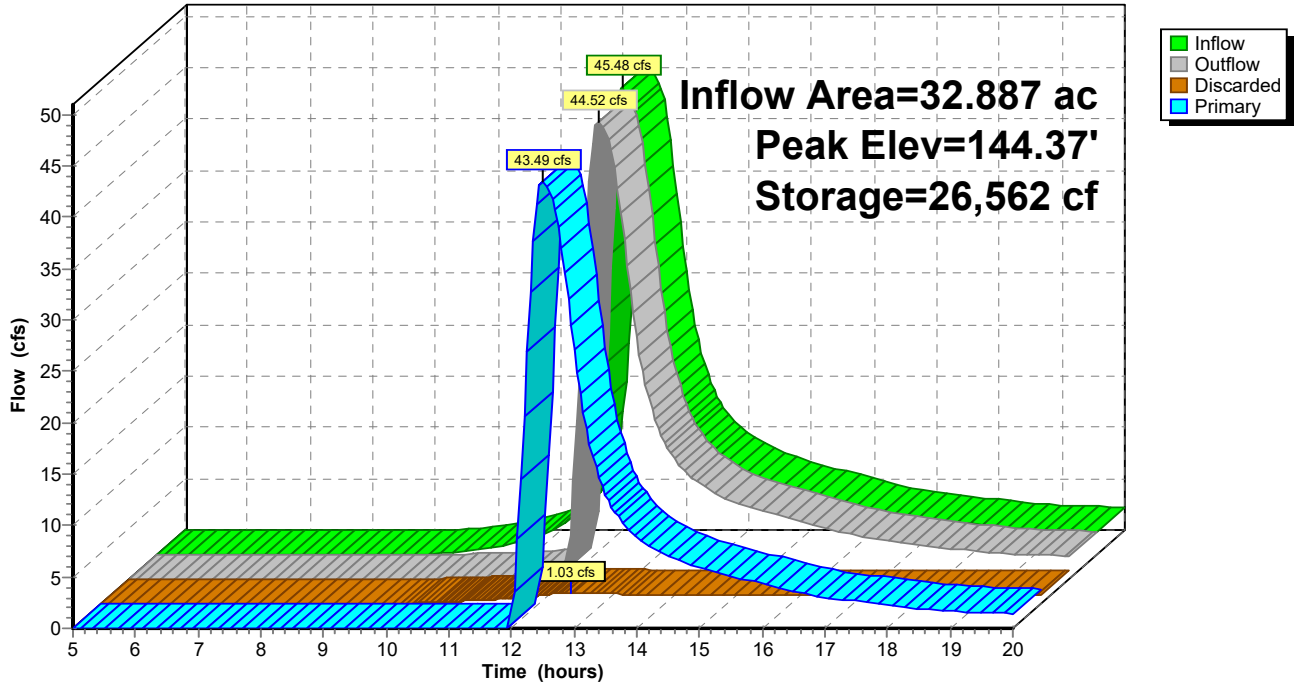
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Pond 62P: Valley Berm

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 64P: Sediment Trap

Inflow Area = 1.772 ac, 0.68% Impervious, Inflow Depth > 2.02" for 25 year event
 Inflow = 3.27 cfs @ 12.23 hrs, Volume= 0.298 af
 Outflow = 0.37 cfs @ 13.99 hrs, Volume= 0.225 af, Atten= 89%, Lag= 106.0 min
 Discarded = 0.37 cfs @ 13.99 hrs, Volume= 0.225 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.92' @ 13.99 hrs Surf.Area= 5,271 sf Storage= 6,249 cf

Plug-Flow detention time= 183.7 min calculated for 0.225 af (75% of inflow)
 Center-of-Mass det. time= 122.5 min (943.4 - 820.9)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	13,521 cf	40.00'W x 40.00'L x 3.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.37 cfs @ 13.99 hrs HW=158.92' (Free Discharge)
 ↑2=Exfiltration (Controls 0.37 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=157.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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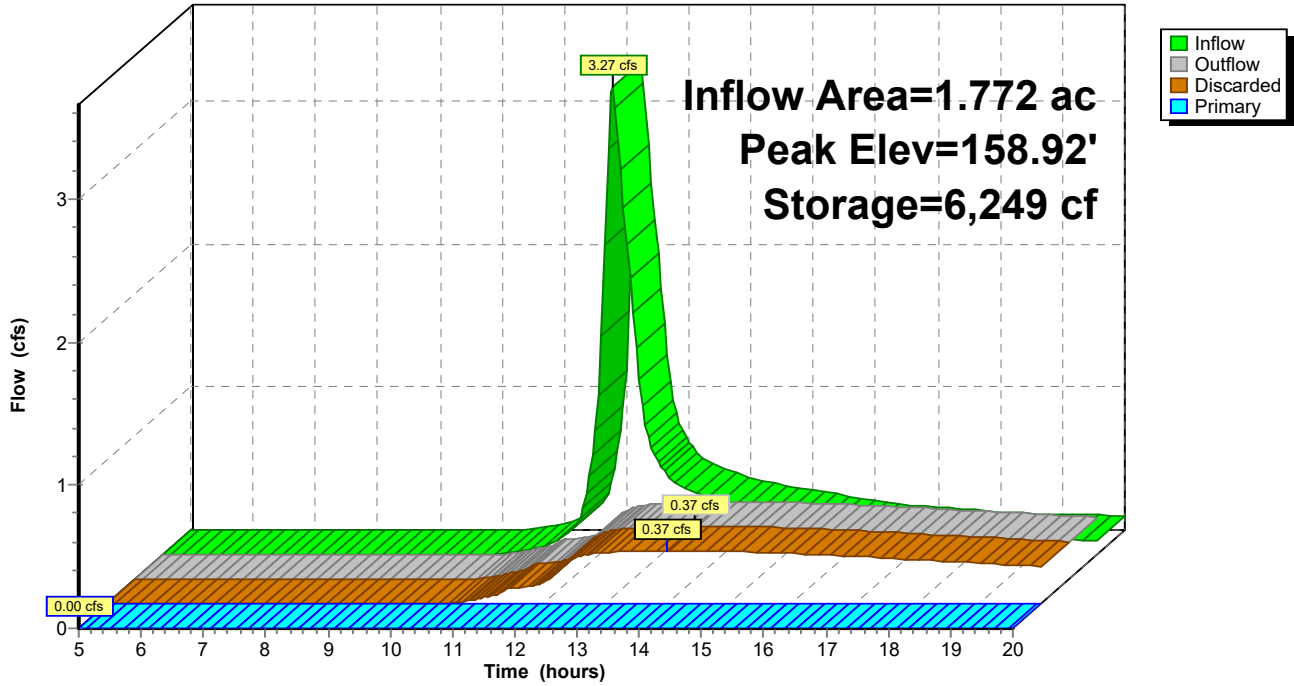
Type III 24-hr 25 year Rainfall=6.18"

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Pond 64P: Sediment Trap

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 65P: Sediment Trap

Inflow Area = 3.565 ac, 0.17% Impervious, Inflow Depth > 2.44" for 25 year event
 Inflow = 6.71 cfs @ 12.36 hrs, Volume= 0.726 af
 Outflow = 4.12 cfs @ 12.68 hrs, Volume= 0.467 af, Atten= 39%, Lag= 18.9 min
 Primary = 4.12 cfs @ 12.68 hrs, Volume= 0.467 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.35' @ 12.68 hrs Surf.Area= 5,042 sf Storage= 12,751 cf

Plug-Flow detention time= 128.9 min calculated for 0.465 af (64% of inflow)
 Center-of-Mass det. time= 57.0 min (876.2 - 819.3)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	16,187 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
156.00	2,660	0	0
158.00	3,990	6,650	6,650
160.00	5,547	9,537	16,187

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=4.09 cfs @ 12.68 hrs HW=159.35' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 4.09 cfs @ 1.46 fps)

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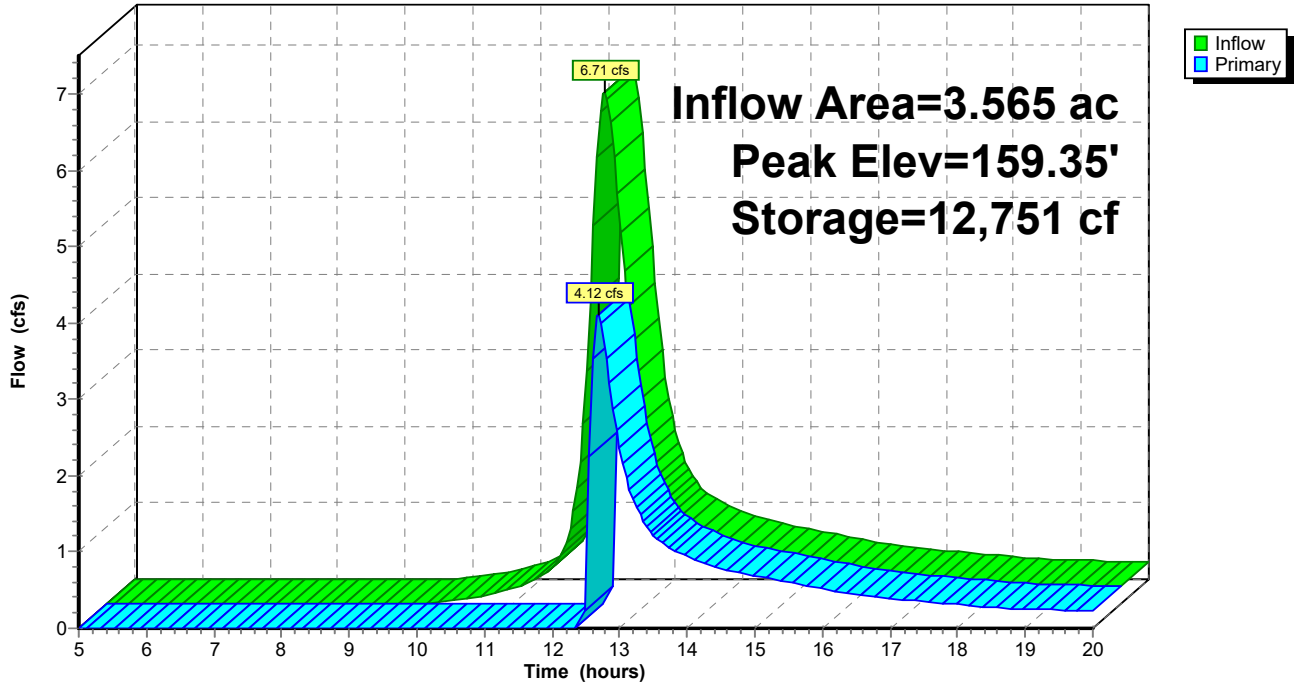
Type III 24-hr 25 year Rainfall=6.18"

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Pond 65P: Sediment Trap

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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Summary for Pond 66P: Sediment Trap

Inflow Area = 1.914 ac, 0.78% Impervious, Inflow Depth > 2.28" for 25 year event
 Inflow = 4.18 cfs @ 12.21 hrs, Volume= 0.363 af
 Outflow = 2.32 cfs @ 12.49 hrs, Volume= 0.233 af, Atten= 45%, Lag= 17.1 min
 Primary = 2.32 cfs @ 12.49 hrs, Volume= 0.233 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 157.24' @ 12.49 hrs Surf.Area= 2,787 sf Storage= 6,277 cf

Plug-Flow detention time= 130.7 min calculated for 0.232 af (64% of inflow)
 Center-of-Mass det. time= 56.4 min (870.9 - 814.5)

Volume	Invert	Avail.Storage	Storage Description
#1	154.00'	8,547 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
154.00	1,170	0	0
156.00	2,080	3,250	3,250
158.00	3,217	5,297	8,547

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=2.30 cfs @ 12.49 hrs HW=157.24' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 2.30 cfs @ 1.18 fps)

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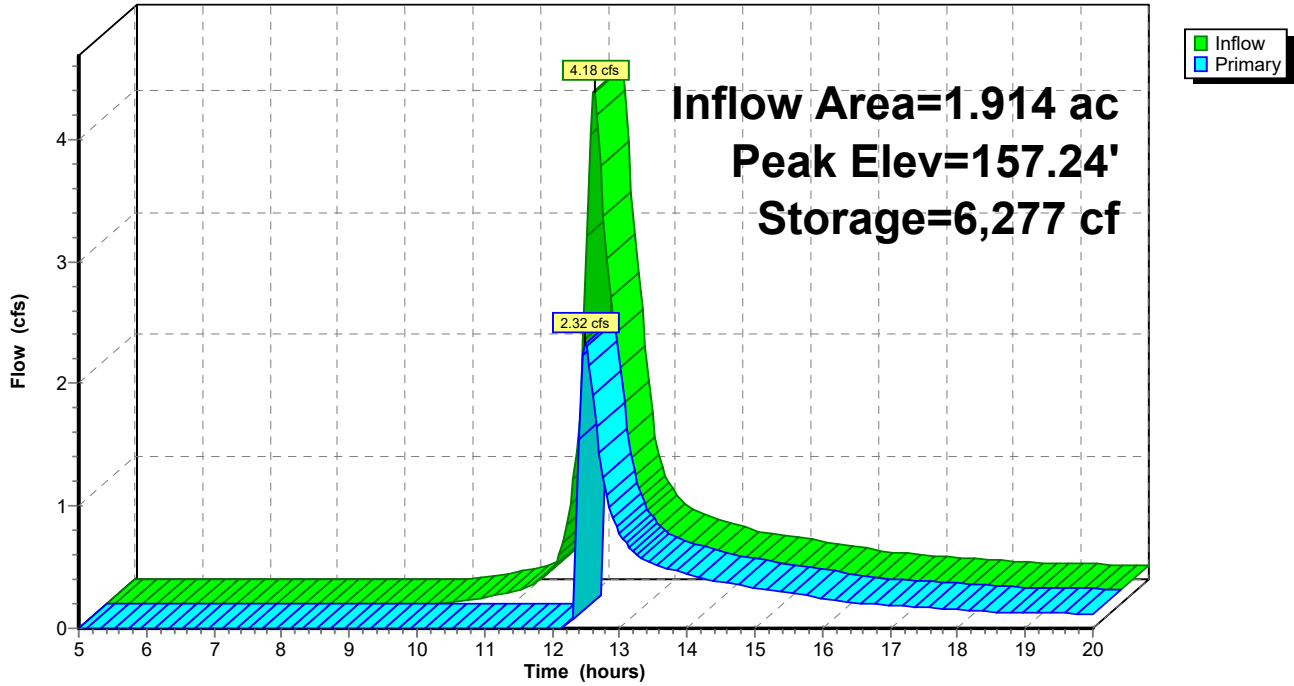
Type III 24-hr 25 year Rainfall=6.18"

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Pond 66P: Sediment Trap

Hydrograph



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Type III 24-hr 25 year Rainfall=6.18"

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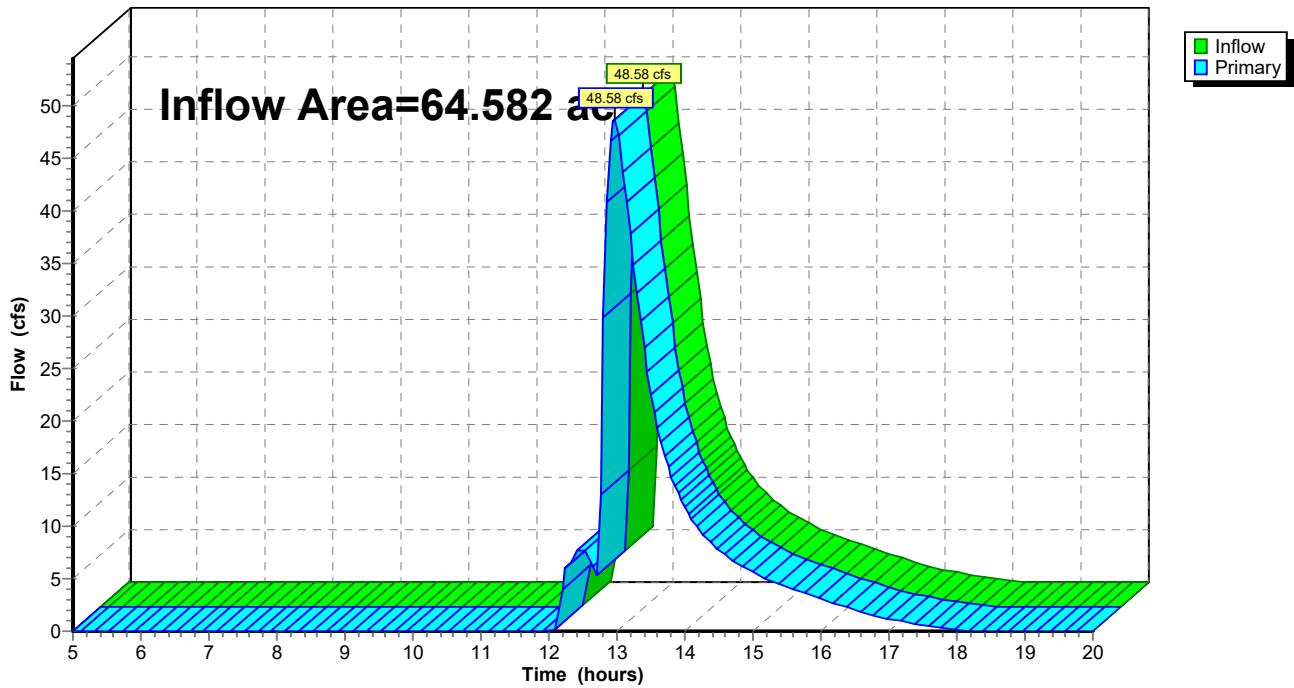
Summary for Link DP47: (new Link)

Inflow Area = 64.582 ac, 0.12% Impervious, Inflow Depth = 0.84" for 25 year event
Inflow = 48.58 cfs @ 12.97 hrs, Volume= 4.498 af
Primary = 48.58 cfs @ 12.97 hrs, Volume= 4.498 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP47: (new Link)

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Type III 24-hr 25 year Rainfall=6.18"

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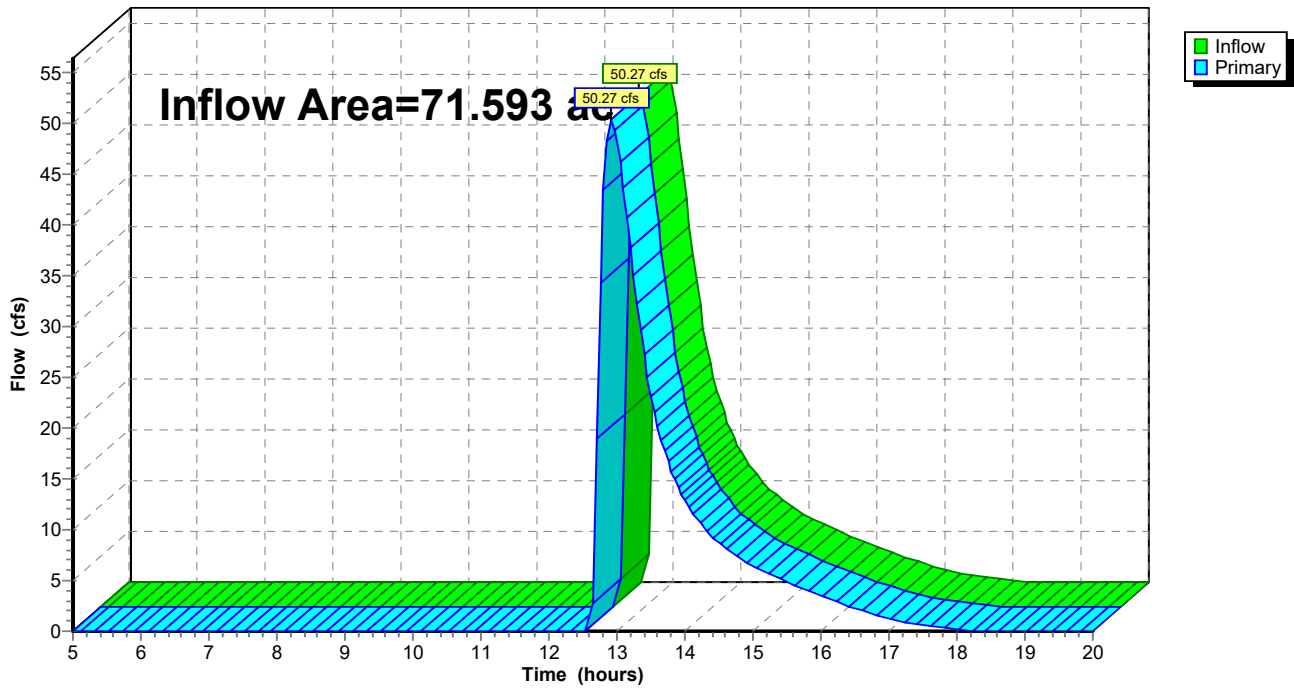
Summary for Link DP54: (new Link)

Inflow Area = 71.593 ac, 0.78% Impervious, Inflow Depth = 0.78" for 25 year event
Inflow = 50.27 cfs @ 12.92 hrs, Volume= 4.682 af
Primary = 50.27 cfs @ 12.92 hrs, Volume= 4.682 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP54: (new Link)

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Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 36: Subcat 36

Runoff = 19.79 cfs @ 12.47 hrs, Volume= 2.422 af, Depth> 3.35"

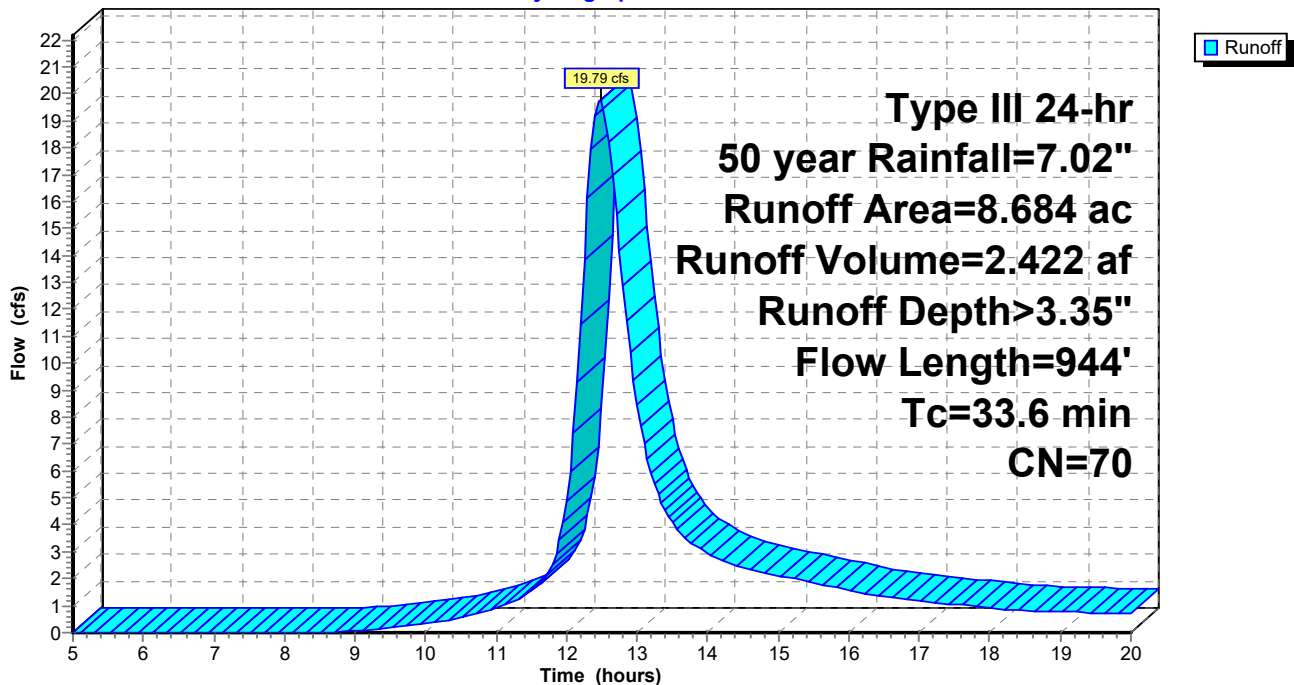
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.098	65	2 acre lots, 12% imp, HSG B
* 5.937	74	50-75% Grass cover, Fair, HSG B-C
2.424	58	Meadow, non-grazed, HSG B
0.225	89	Paved roads w/open ditches, 50% imp, HSG B
8.684	70	Weighted Average
8.560		98.57% Pervious Area
0.124		1.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.3	170	0.0059	0.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.8	724	0.0069	0.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.6	944	Total			

Subcatchment 36: Subcat 36

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 37: Subcat 37

Runoff = 2.85 cfs @ 12.25 hrs, Volume= 0.264 af, Depth> 2.77"

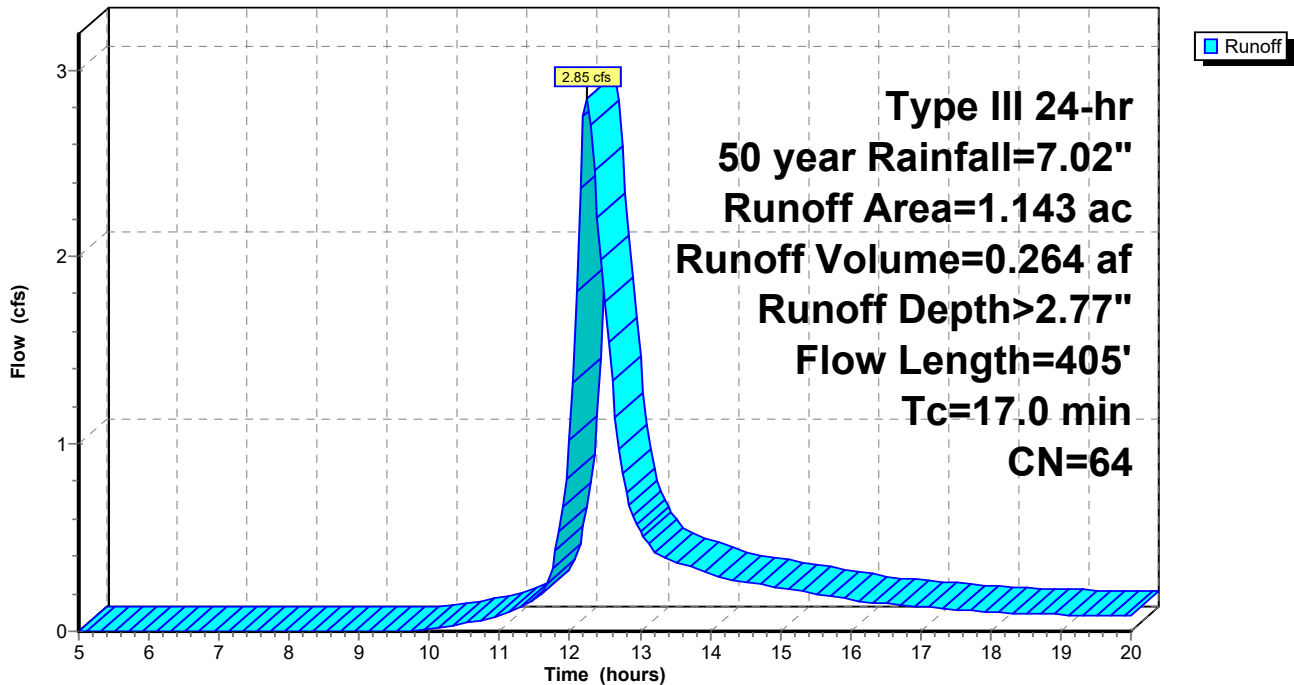
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.290	74	50-75% Grass cover, Fair, HSG B-C
0.785	58	Meadow, non-grazed, HSG B
0.068	89	Paved roads w/open ditches, 50% imp, HSG B
1.143	64	Weighted Average
1.109		97.03% Pervious Area
0.034		2.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
11.3	355	0.0056	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.0	405	Total			

Subcatchment 37: Subcat 37

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 38: Subcat 38

Runoff = 11.68 cfs @ 12.33 hrs, Volume= 1.232 af, Depth> 3.77"

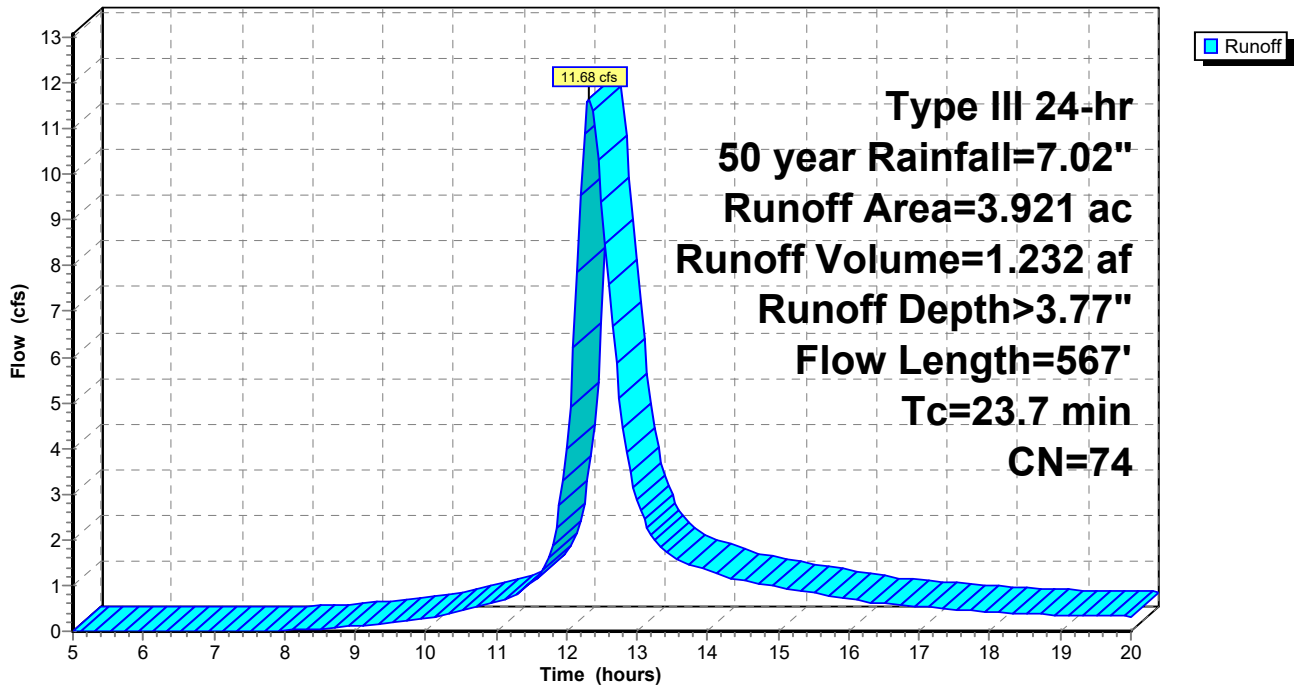
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 3.885	74	50-75% Grass cover, Fair, HSG B-C
0.036	58	Meadow, non-grazed, HSG B
3.921	74	Weighted Average
3.921		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
16.2	517	0.0058	0.53		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.7	567	Total			

Subcatchment 38: Subcat 38

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 39: Subcat 39

Runoff = 7.18 cfs @ 12.15 hrs, Volume= 0.558 af, Depth> 3.27"

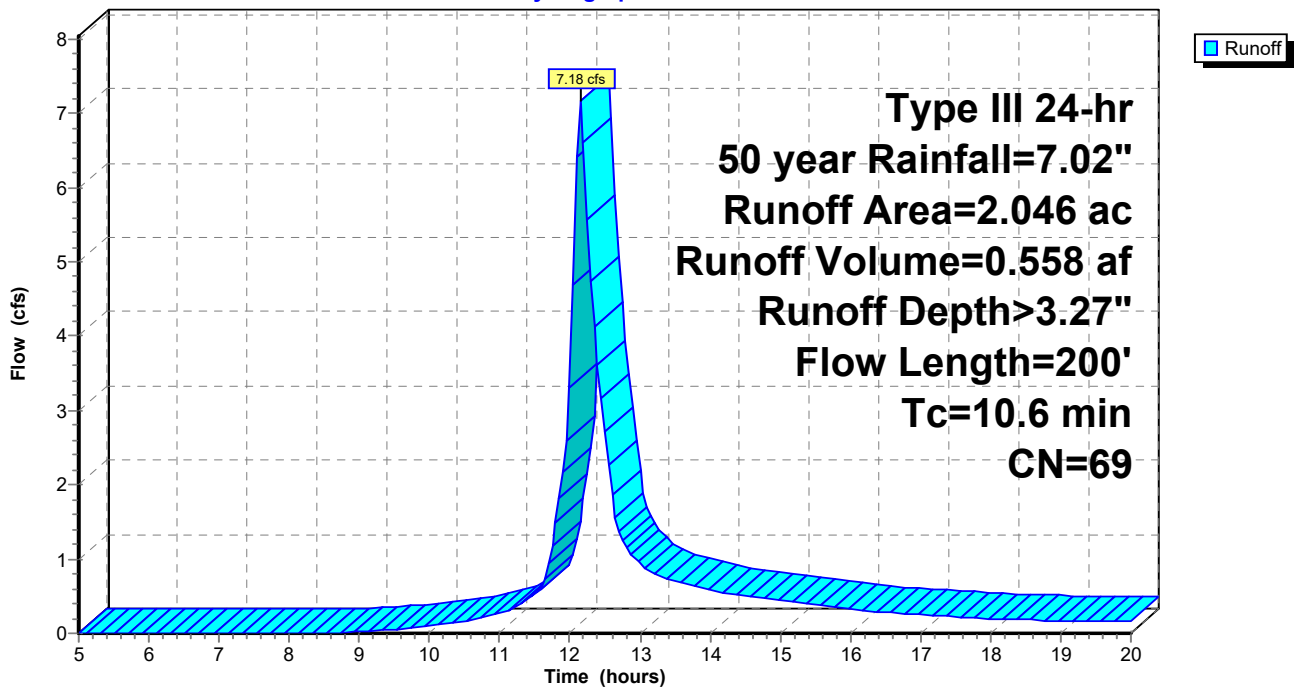
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 1.194	74	50-75% Grass cover, Fair, HSG B-C
0.761	58	Meadow, non-grazed, HSG B
0.091	89	Paved roads w/open ditches, 50% imp, HSG B
2.046	69	Weighted Average
2.000		97.78% Pervious Area
0.045		2.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
3.1	150	0.0133	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.6	200	Total			

Subcatchment 39: Subcat 39

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 40: Subcat 40

Runoff = 1.59 cfs @ 12.15 hrs, Volume= 0.125 af, Depth> 2.30"

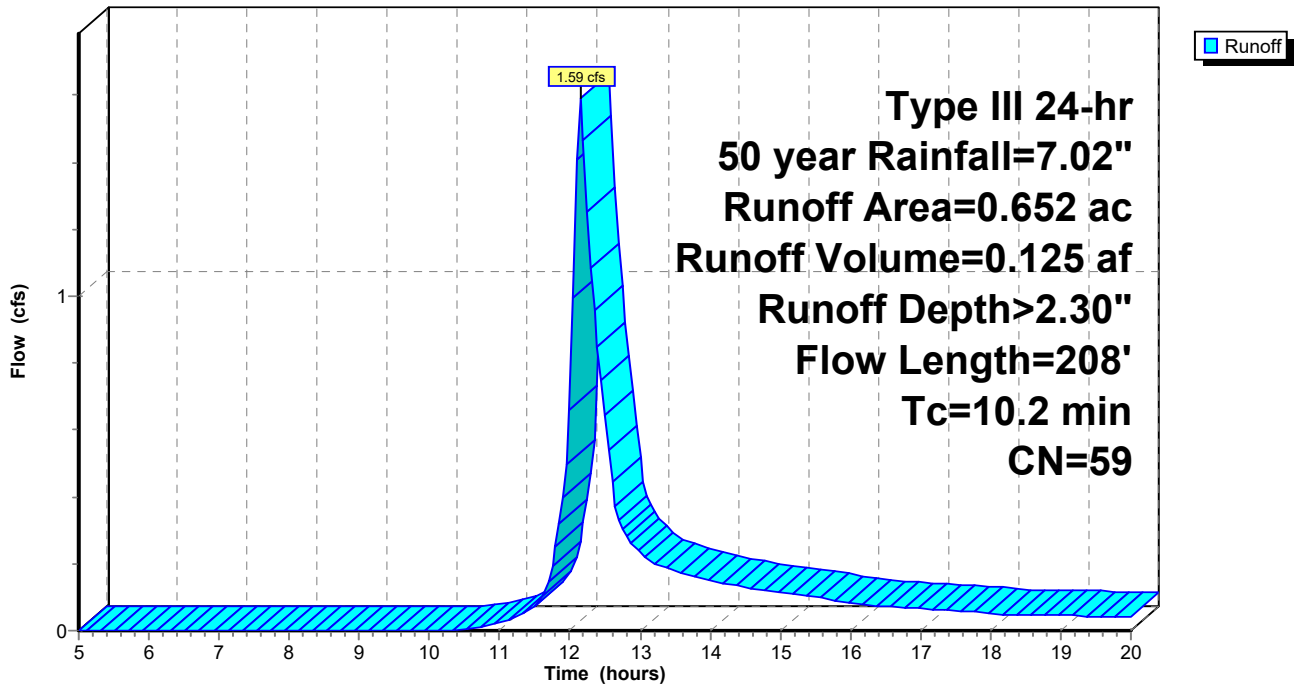
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.060	74	50-75% Grass cover, Fair, HSG B-C
0.008	30	Meadow, non-grazed, HSG A
0.584	58	Meadow, non-grazed, HSG B
0.652	59	Weighted Average
0.652		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.7	158	0.0190	0.96		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	208	Total			

Subcatchment 40: Subcat 40

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 41: Subcat 41

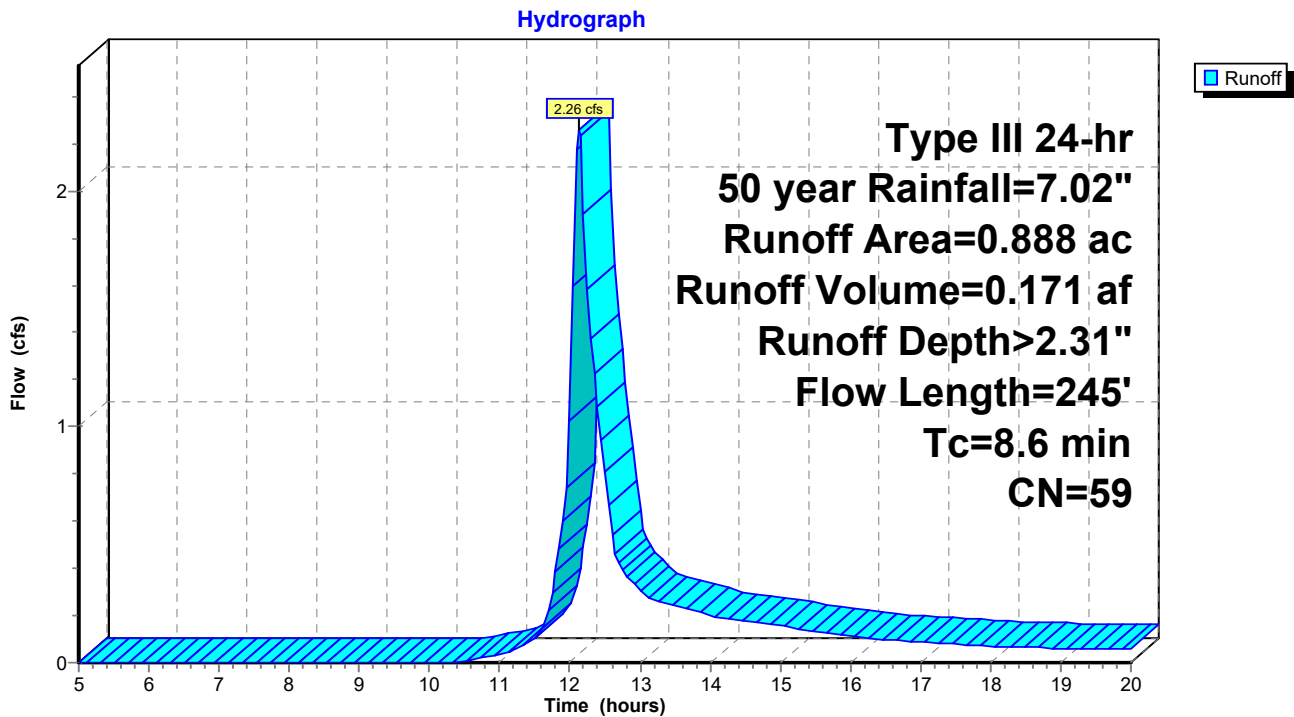
Runoff = 2.26 cfs @ 12.13 hrs, Volume= 0.171 af, Depth> 2.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.250	74	50-75% Grass cover, Fair, HSG B-C
0.110	30	Meadow, non-grazed, HSG A
0.528	58	Meadow, non-grazed, HSG B
0.888	59	Weighted Average
0.888		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.9	195	0.0256	1.12		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.6	245	Total			

Subcatchment 41: Subcat 41



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 42: Subcat 42

Runoff = 4.15 cfs @ 12.19 hrs, Volume= 0.355 af, Depth> 2.30"

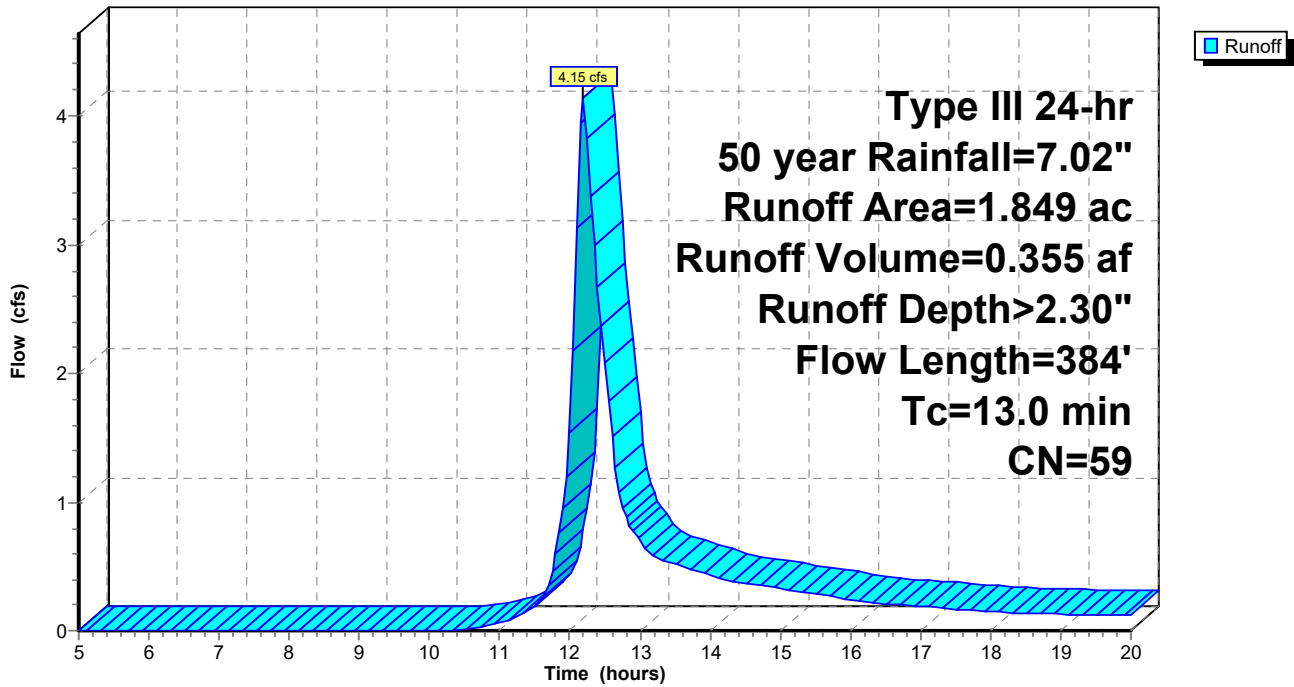
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.730	74	50-75% Grass cover, Fair, HSG B-C
0.181	30	Meadow, non-grazed, HSG A
0.698	58	Meadow, non-grazed, HSG B
0.184	36	Woods, Fair, HSG A
0.056	60	Woods, Fair, HSG B
1.849	59	Weighted Average
1.849		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.3	334	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.0	384	Total			

Subcatchment 42: Subcat 42

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 43: Subcat 43

Runoff = 1.84 cfs @ 12.23 hrs, Volume= 0.168 af, Depth> 2.21"

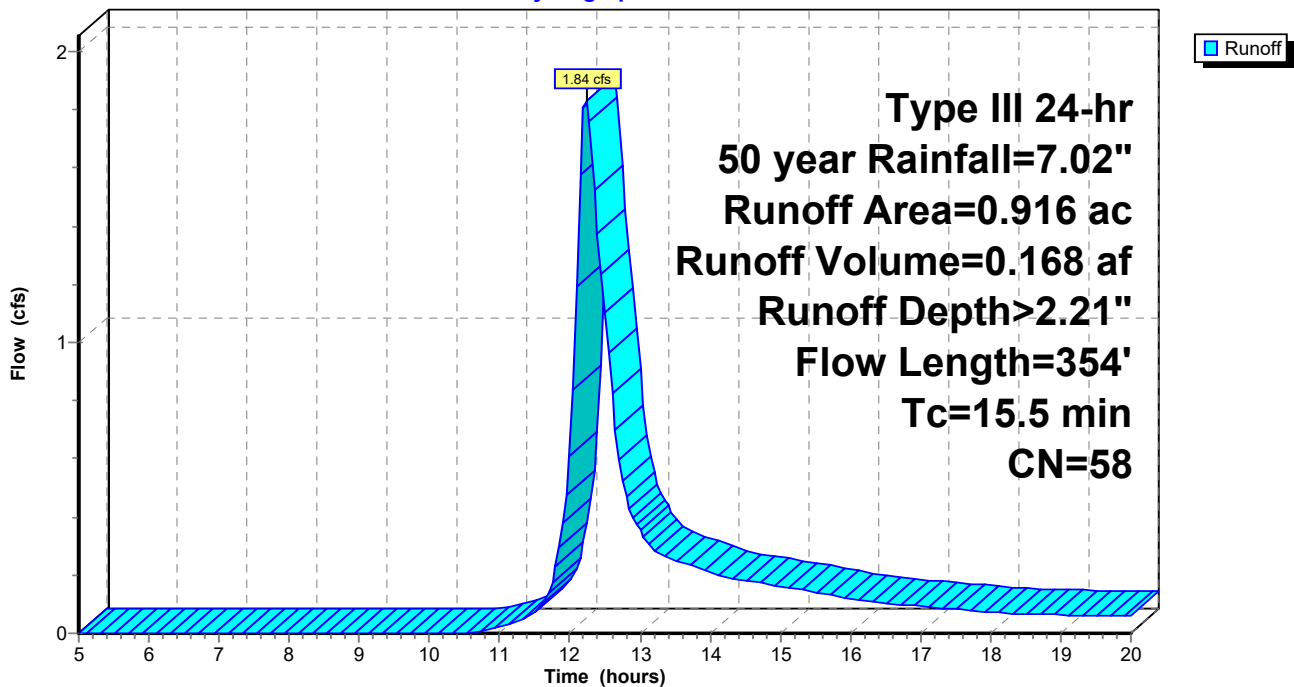
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.299	74	50-75% Grass cover, Fair, HSG B-C
0.104	30	Meadow, non-grazed, HSG A
0.438	58	Meadow, non-grazed, HSG B
0.075	36	Woods, Fair, HSG A
0.916	58	Weighted Average
0.916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.0	304	0.0082	0.63		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.5	354	Total			

Subcatchment 43: Subcat 43

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 44: Subcat 44

Runoff = 7.04 cfs @ 12.15 hrs, Volume= 0.542 af, Depth> 3.07"

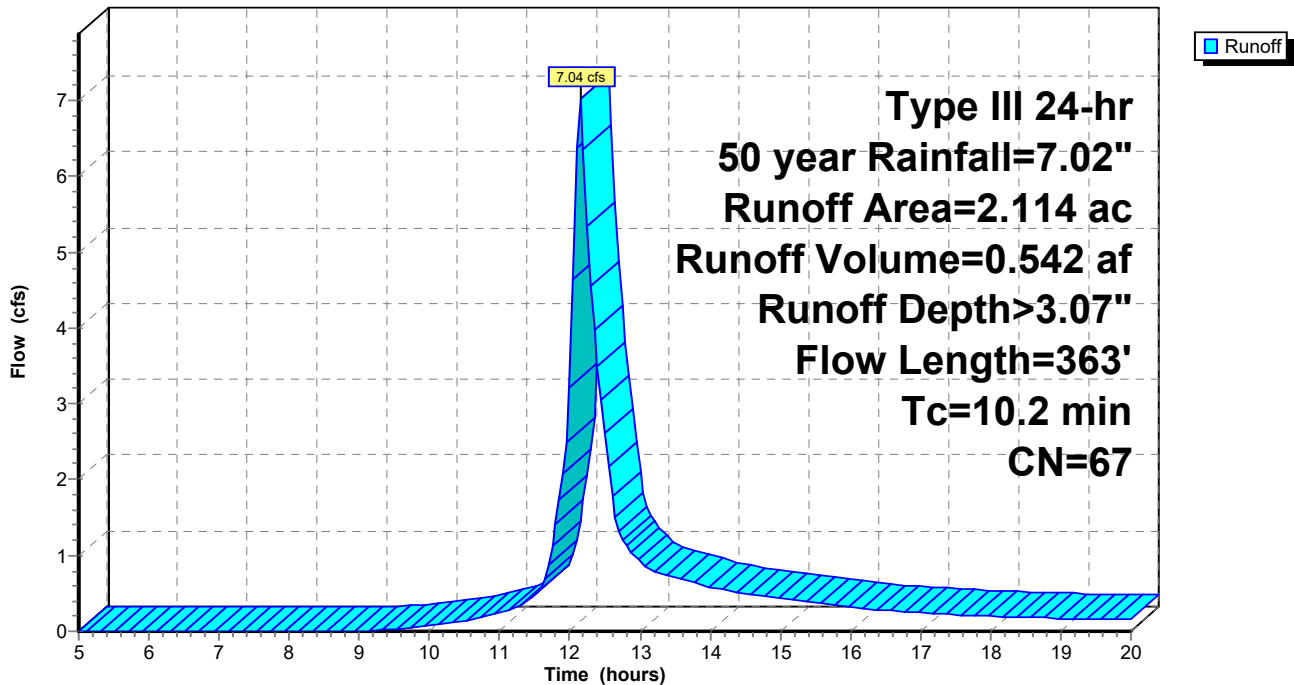
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.010	51	50-75% Grass cover, Fair, HSG A-B
* 1.465	74	50-75% Grass cover, Fair, HSG B-C
0.154	30	Meadow, non-grazed, HSG A
0.485	58	Meadow, non-grazed, HSG B
2.114	67	Weighted Average
2.114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.4	313	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	363	Total			

Subcatchment 44: Subcat 44

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 45: Subcat 45

Runoff = 9.14 cfs @ 12.10 hrs, Volume= 0.622 af, Depth> 3.18"

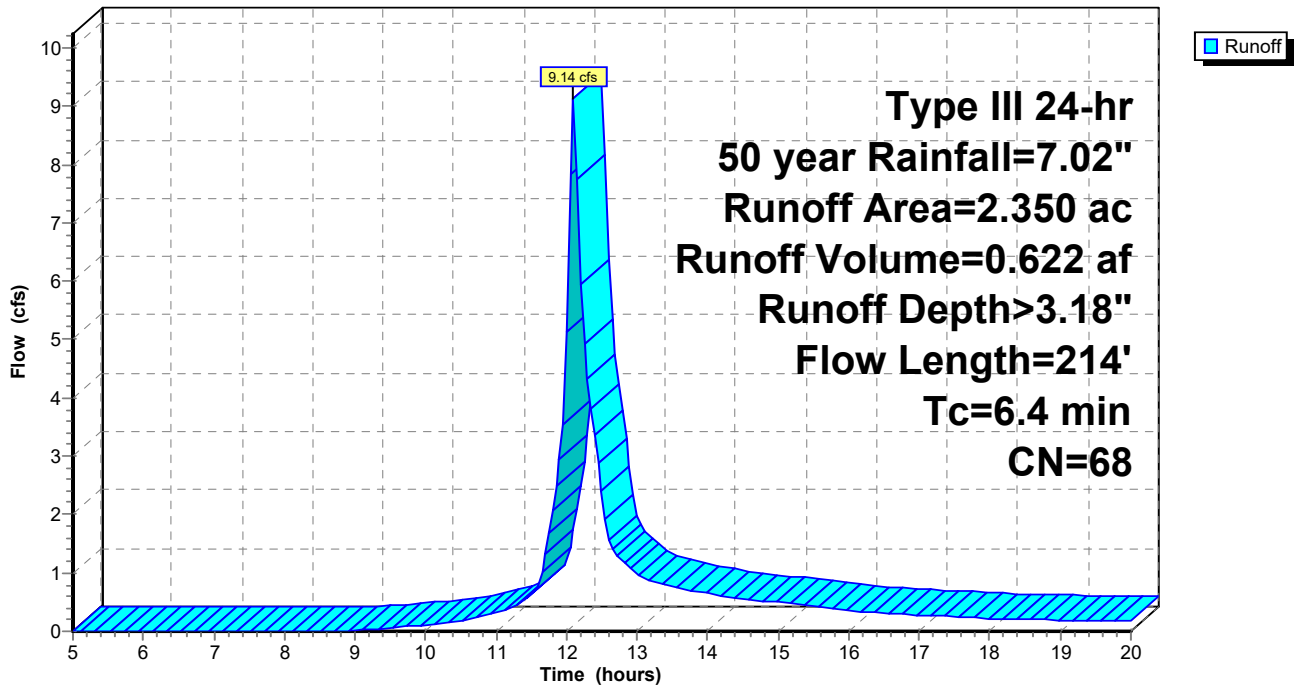
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 1.895	74	50-75% Grass cover, Fair, HSG B-C
0.246	30	Meadow, non-grazed, HSG A
0.207	58	Meadow, non-grazed, HSG B
2.350	68	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.6	164	0.0610	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.4	214	Total			

Subcatchment 45: Subcat 45

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 46: Subcat 46

Runoff = 10.74 cfs @ 12.17 hrs, Volume= 0.861 af, Depth> 3.37"

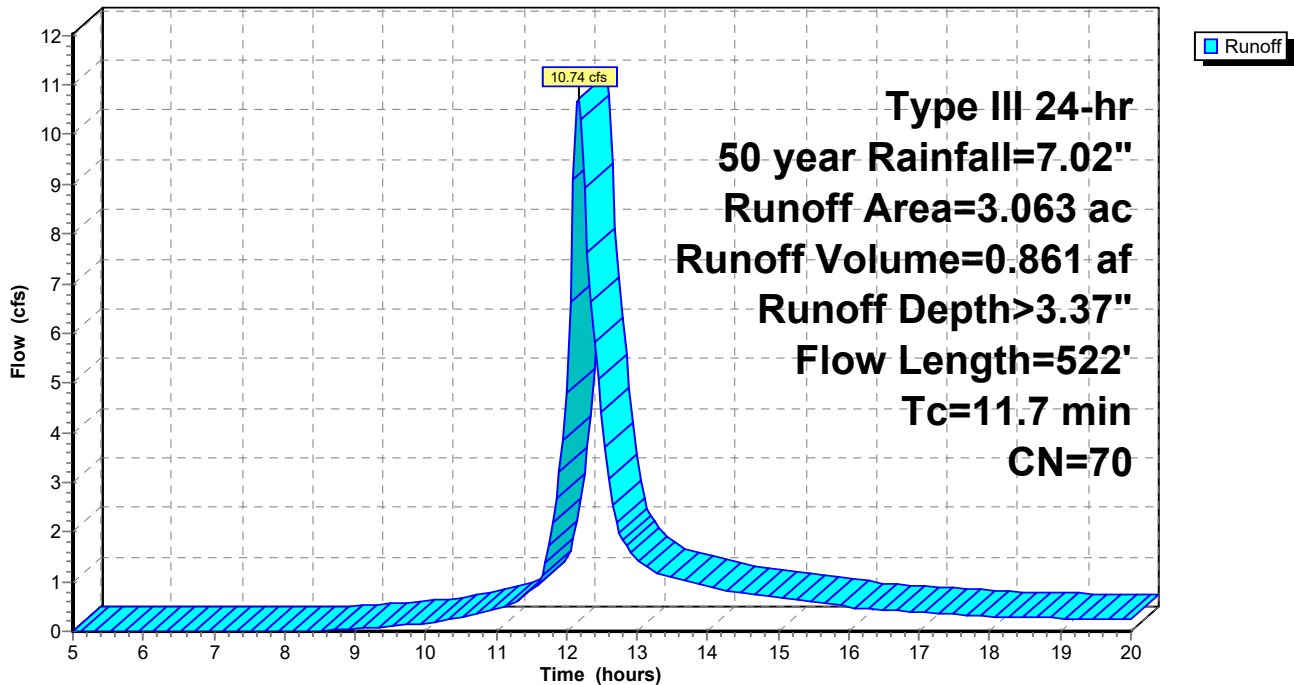
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.061	59	50-75% Grass cover, Fair, HSG A-B
* 2.381	74	50-75% Grass cover, Fair, HSG B-C
0.039	30	Meadow, non-grazed, HSG A
0.582	58	Meadow, non-grazed, HSG B
3.063	70	Weighted Average
3.063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	472	0.0233	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.7	522	Total			

Subcatchment 46: Subcat 46

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 47: Subcat 47

Runoff = 5.70 cfs @ 12.21 hrs, Volume= 0.525 af, Depth> 1.67"

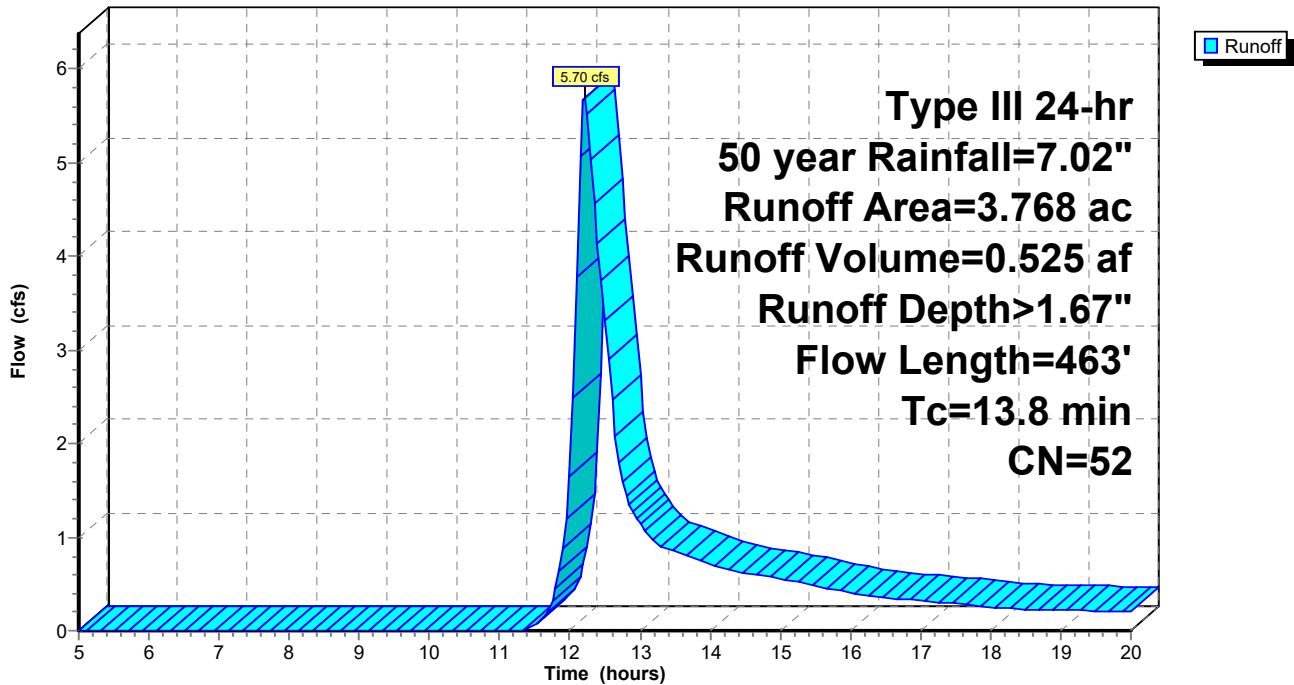
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.063	59	50-75% Grass cover, Fair, HSG A-B
* 1.444	74	50-75% Grass cover, Fair, HSG B-C
1.147	30	Meadow, non-grazed, HSG A
0.490	58	Meadow, non-grazed, HSG B
0.624	36	Woods, Fair, HSG A
3.768	52	Weighted Average
3.768		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	413	0.0242	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.8	463	Total			

Subcatchment 47: Subcat 47

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 48: Subcat 48

Runoff = 11.58 cfs @ 12.19 hrs, Volume= 0.984 af, Depth> 2.21"

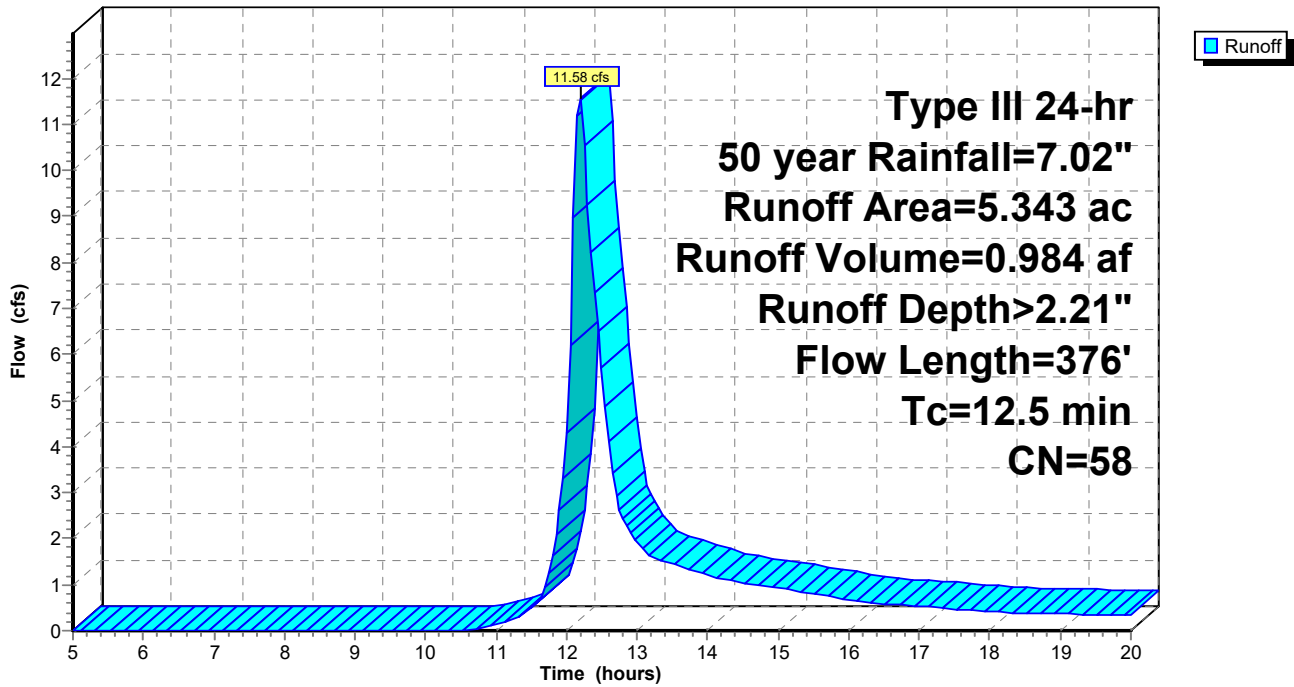
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 2.779	74	50-75% Grass cover, Fair, HSG B-C
1.268	30	Meadow, non-grazed, HSG A
0.872	58	Meadow, non-grazed, HSG B
0.422	36	Woods, Fair, HSG A
5.343	58	Weighted Average
5.343		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.0	326	0.0245	1.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	376	Total			

Subcatchment 48: Subcat 48

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 49: Subcat 49

Runoff = 5.36 cfs @ 12.22 hrs, Volume= 0.494 af, Depth> 1.85"

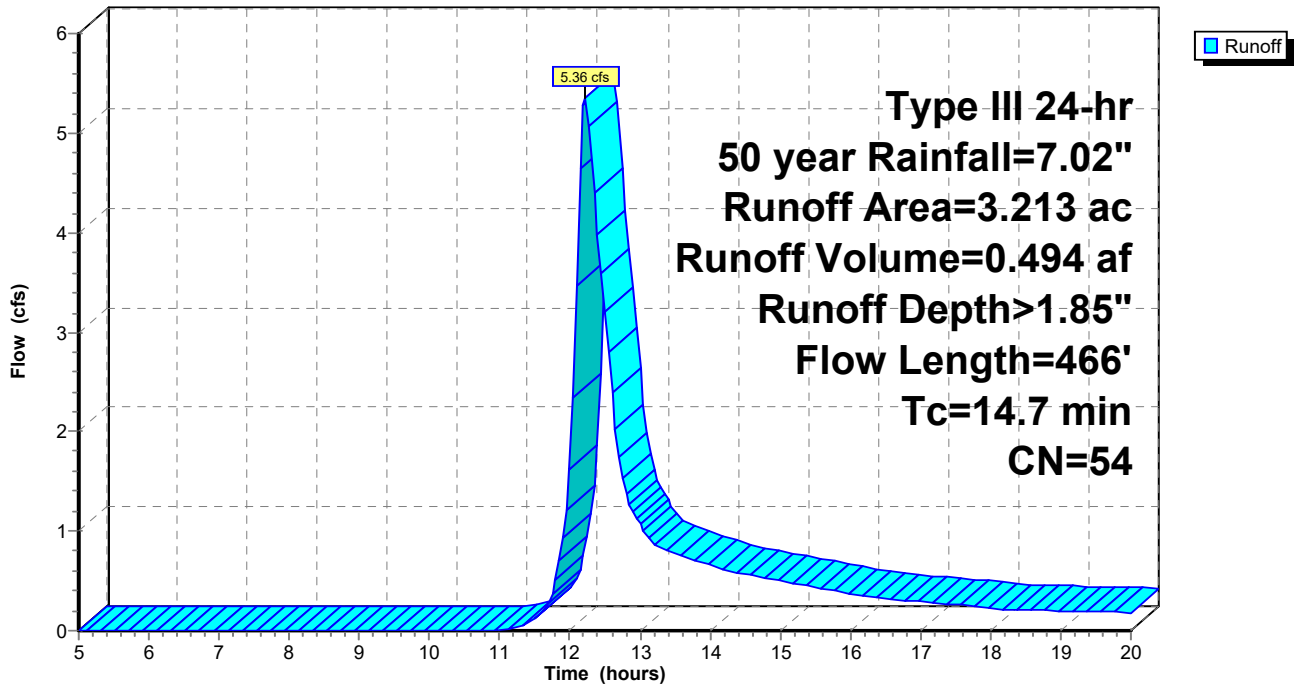
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.010	59	50-75% Grass cover, Fair, HSG A-B
* 1.407	74	50-75% Grass cover, Fair, HSG B-C
0.952	30	Meadow, non-grazed, HSG A
0.460	58	Meadow, non-grazed, HSG B
0.384	36	Woods, Fair, HSG A
3.213	54	Weighted Average
3.213		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.0	416	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.7	466	Total			

Subcatchment 49: Subcat 49

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 50: Subcat 50

Runoff = 17.34 cfs @ 12.21 hrs, Volume= 1.530 af, Depth> 2.49"

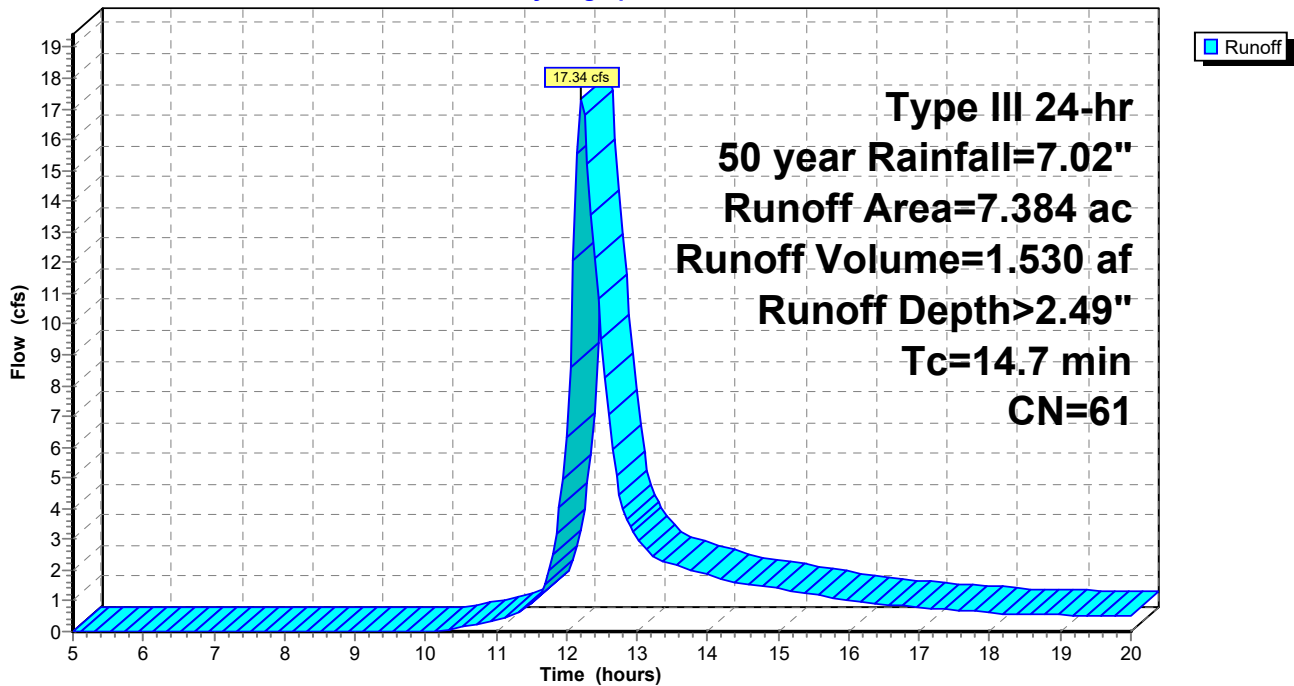
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 4.005	74	50-75% Grass cover, Fair, HSG B-C
0.989	30	Meadow, non-grazed, HSG A
1.720	58	Meadow, non-grazed, HSG B
0.666	36	Woods, Fair, HSG A
0.004	60	Woods, Fair, HSG B
7.384	61	Weighted Average
7.384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7					Direct Entry,

Subcatchment 50: Subcat 50

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 51: Subcat 51

Runoff = 61.23 cfs @ 12.56 hrs, Volume= 8.135 af, Depth> 3.54"

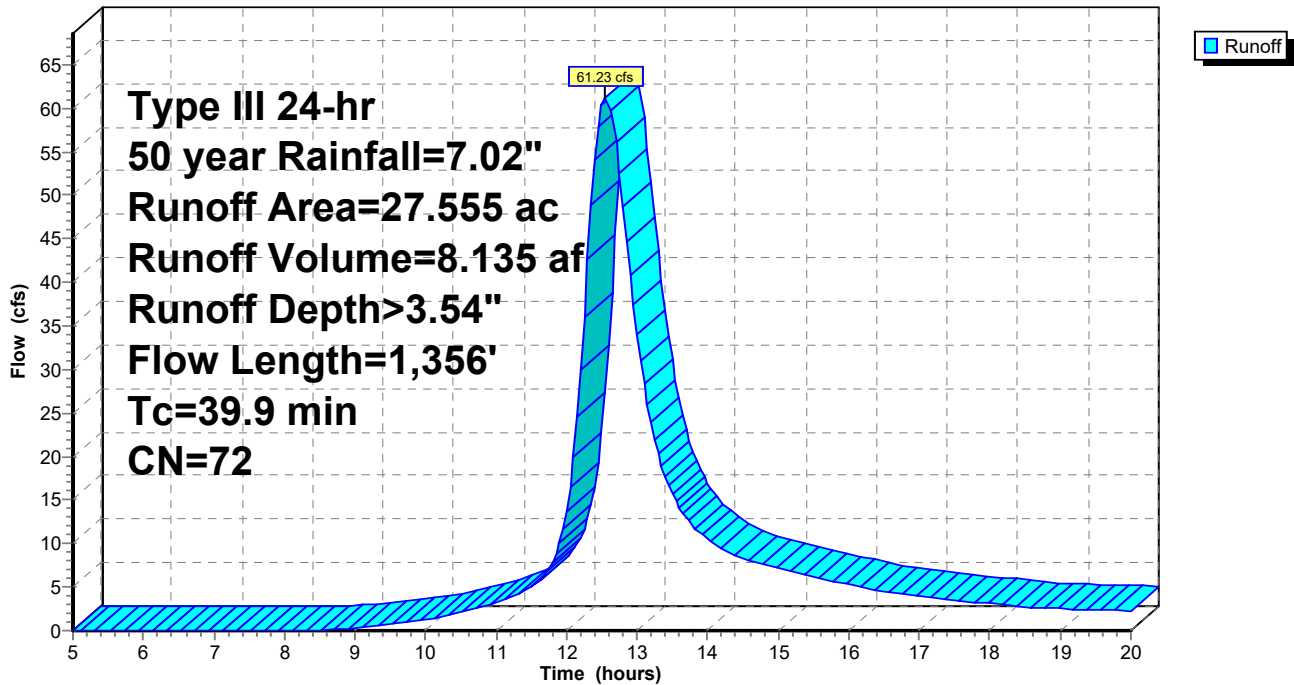
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 24.828	74	50-75% Grass cover, Fair, HSG B-C
0.074	30	Meadow, non-grazed, HSG A
2.653	58	Meadow, non-grazed, HSG B
27.555	72	Weighted Average
27.555		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
32.4	1,306	0.0092	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
39.9	1,356	Total			

Subcatchment 51: Subcat 51

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 53: Subcat 53

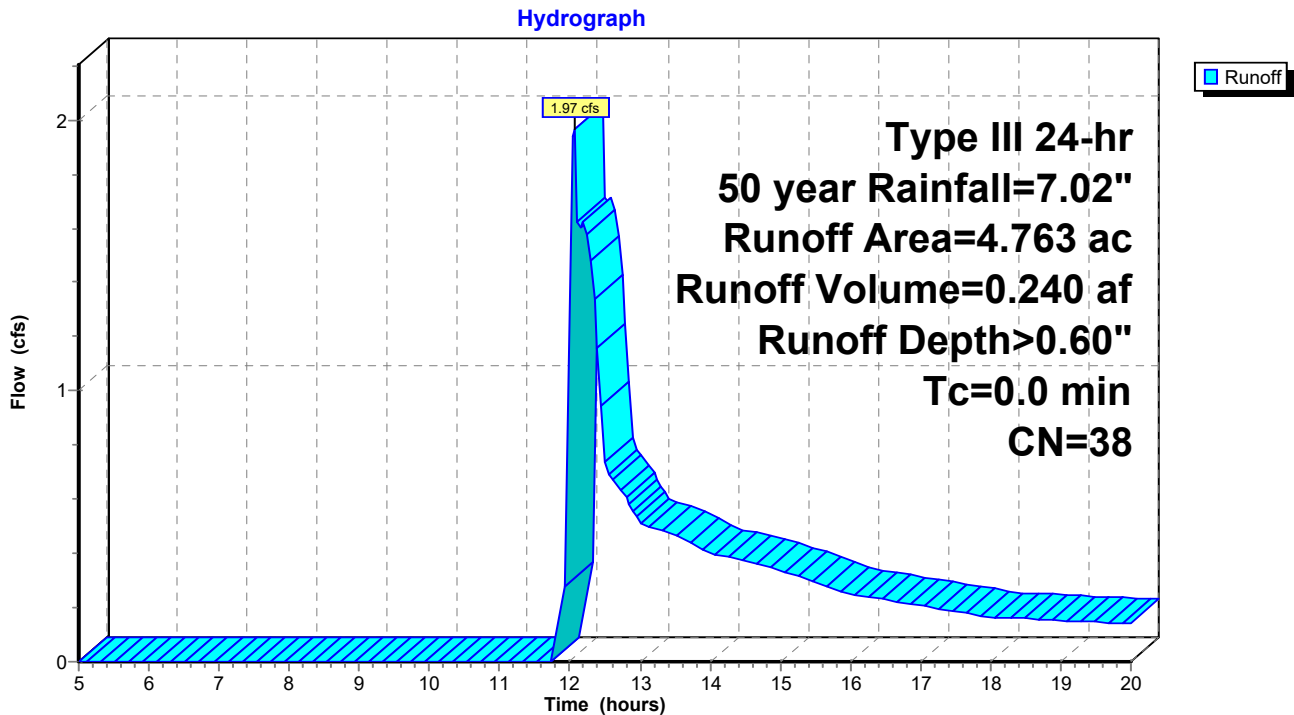
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.97 cfs @ 12.06 hrs, Volume= 0.240 af, Depth> 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.263	74	50-75% Grass cover, Fair, HSG B-C
1.659	30	Meadow, non-grazed, HSG A
0.427	58	Meadow, non-grazed, HSG B
2.414	36	Woods, Fair, HSG A
4.763	38	Weighted Average
4.763		100.00% Pervious Area

Subcatchment 53: Subcat 53



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 54: Subcat 54

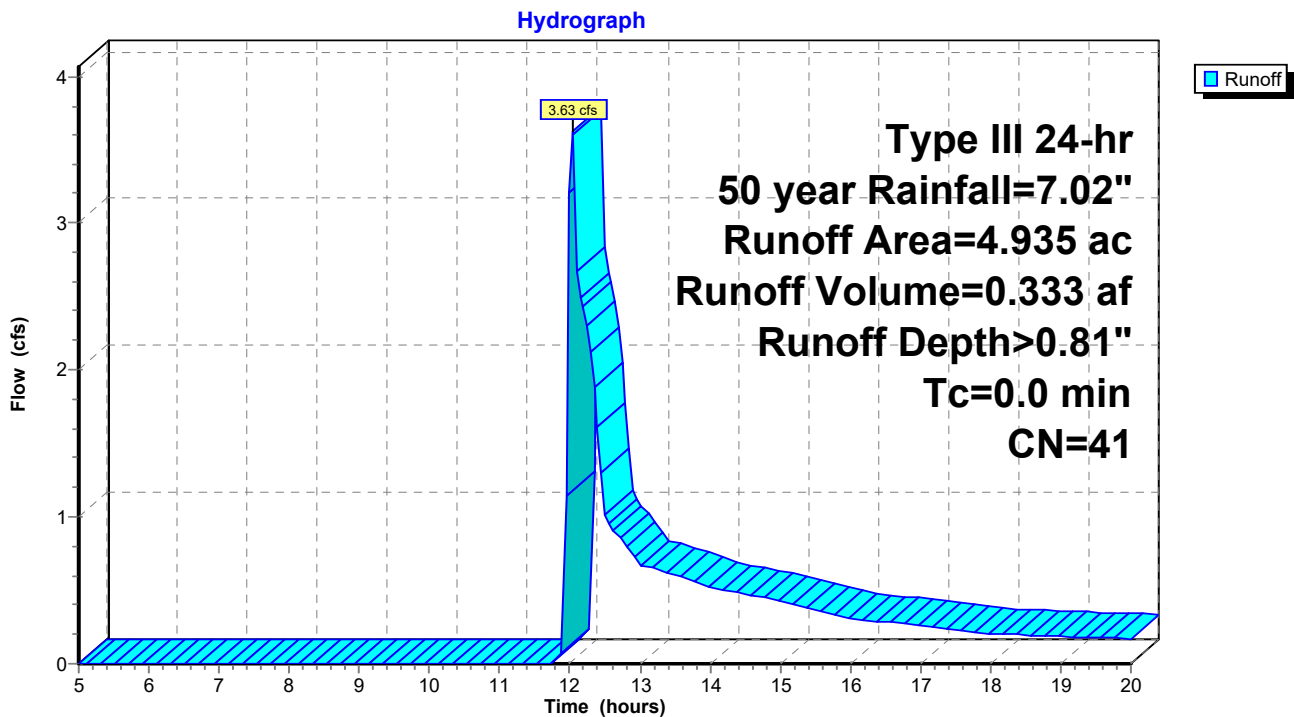
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.63 cfs @ 12.04 hrs, Volume= 0.333 af, Depth> 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 0.006	74	50-75% Grass cover, Fair, HSG B-C
0.377	30	Meadow, non-grazed, HSG A
0.823	58	Meadow, non-grazed, HSG B
3.454	36	Woods, Fair, HSG A
0.273	60	Woods, Fair, HSG B
4.935	41	Weighted Average
4.935		100.00% Pervious Area

Subcatchment 54: Subcat 54



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 55: Subcat 55

Runoff = 7.46 cfs @ 12.32 hrs, Volume= 0.774 af, Depth> 3.46"

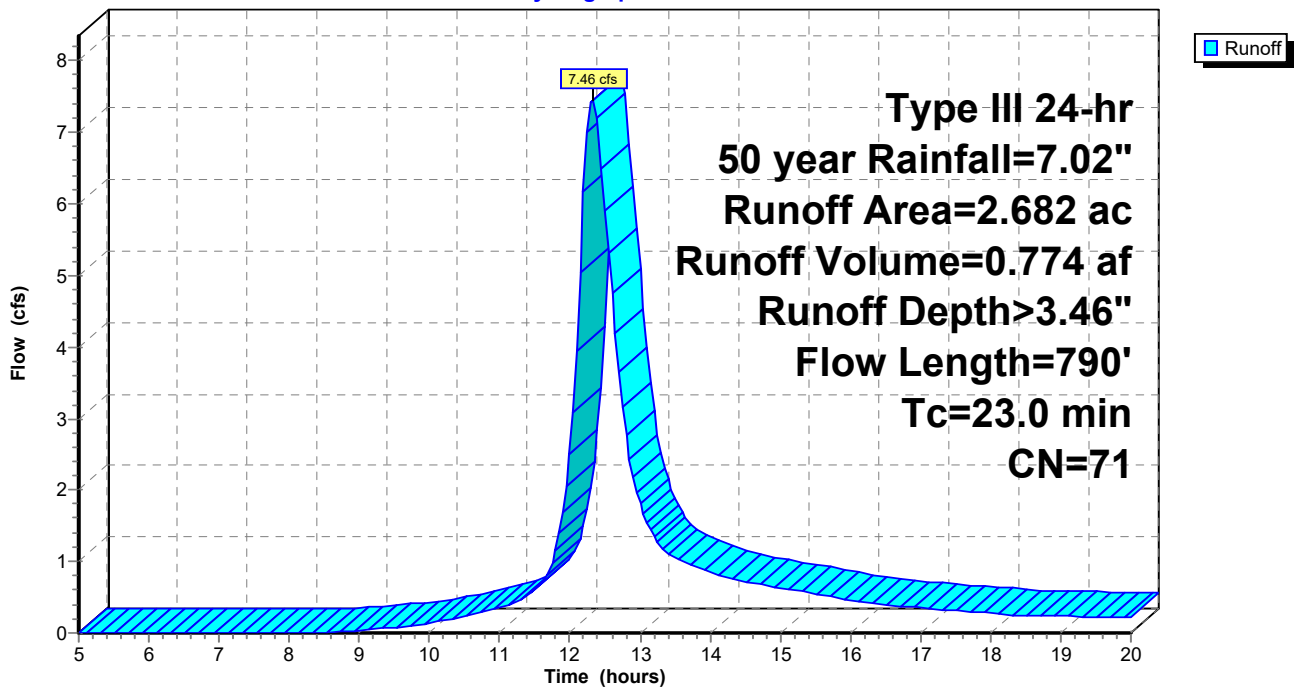
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.095	59	50-75% Grass cover, Fair, HSG A-B
* 2.333	74	50-75% Grass cover, Fair, HSG B-C
0.132	30	Meadow, non-grazed, HSG A
0.122	58	Meadow, non-grazed, HSG B
2.682	71	Weighted Average
2.682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	216	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.9	524	0.0248	1.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.0	790	Total			

Subcatchment 55: Subcat 55

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 56: Subcat 56

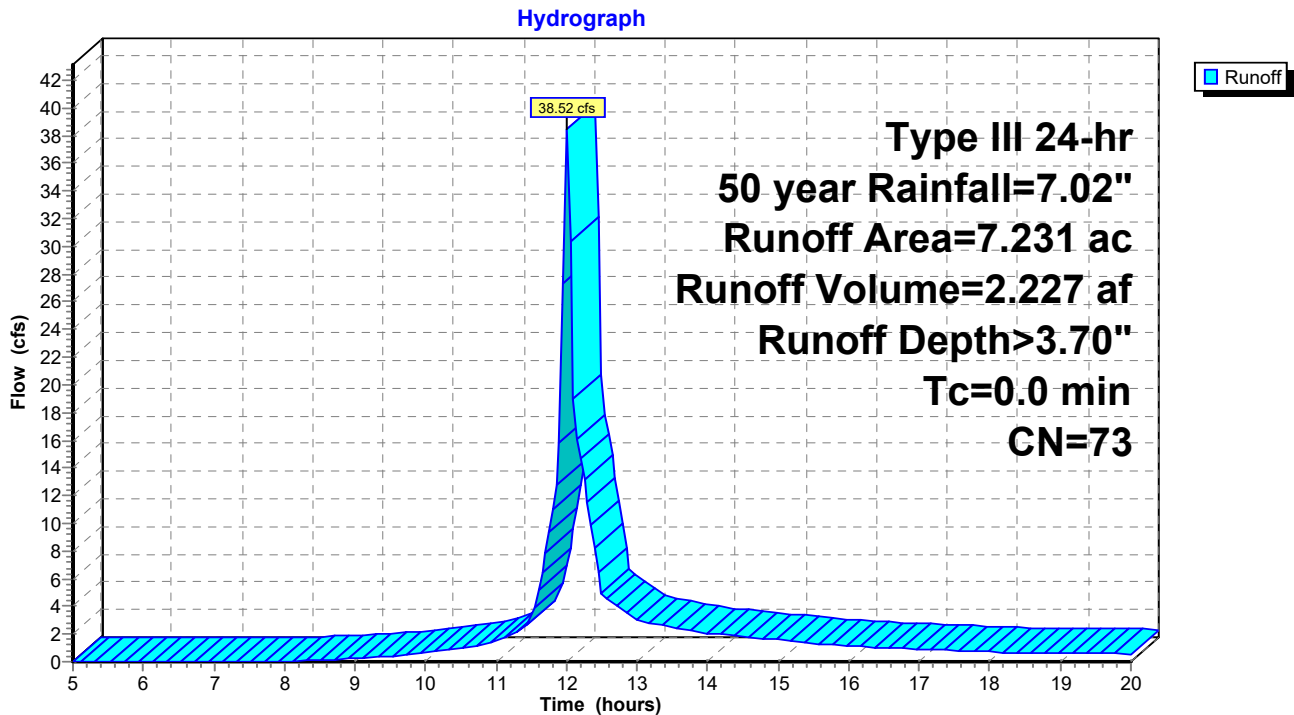
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 38.52 cfs @ 12.00 hrs, Volume= 2.227 af, Depth> 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

	Area (ac)	CN	Description
*	0.029	59	50-75% Grass cover, Fair, HSG A-B
*	6.843	74	50-75% Grass cover, Fair, HSG B-C
	0.045	30	Meadow, non-grazed, HSG A
	0.314	58	Meadow, non-grazed, HSG B
	7.231	73	Weighted Average
	7.231		100.00% Pervious Area

Subcatchment 56: Subcat 56



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 57: Subcat 57

Runoff = 16.03 cfs @ 12.25 hrs, Volume= 1.501 af, Depth> 3.17"

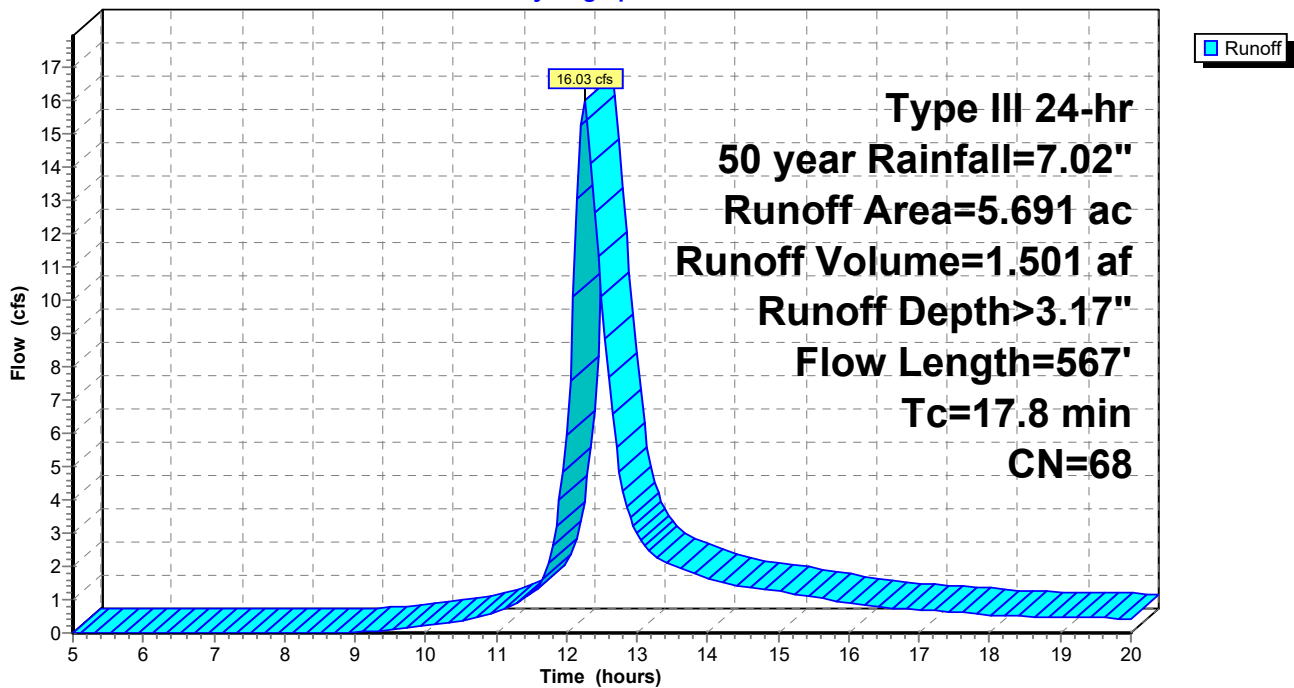
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.010	59	50-75% Grass cover, Fair, HSG A-B
* 3.857	74	50-75% Grass cover, Fair, HSG B-C
0.245	30	Meadow, non-grazed, HSG A
1.579	58	Meadow, non-grazed, HSG B
5.691	68	Weighted Average
5.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.3	266	0.0075	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	251	0.0398	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.8	567	Total			

Subcatchment 57: Subcat 57

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 58: Subcat 58

Runoff = 2.15 cfs @ 12.26 hrs, Volume= 0.243 af, Depth> 1.02"

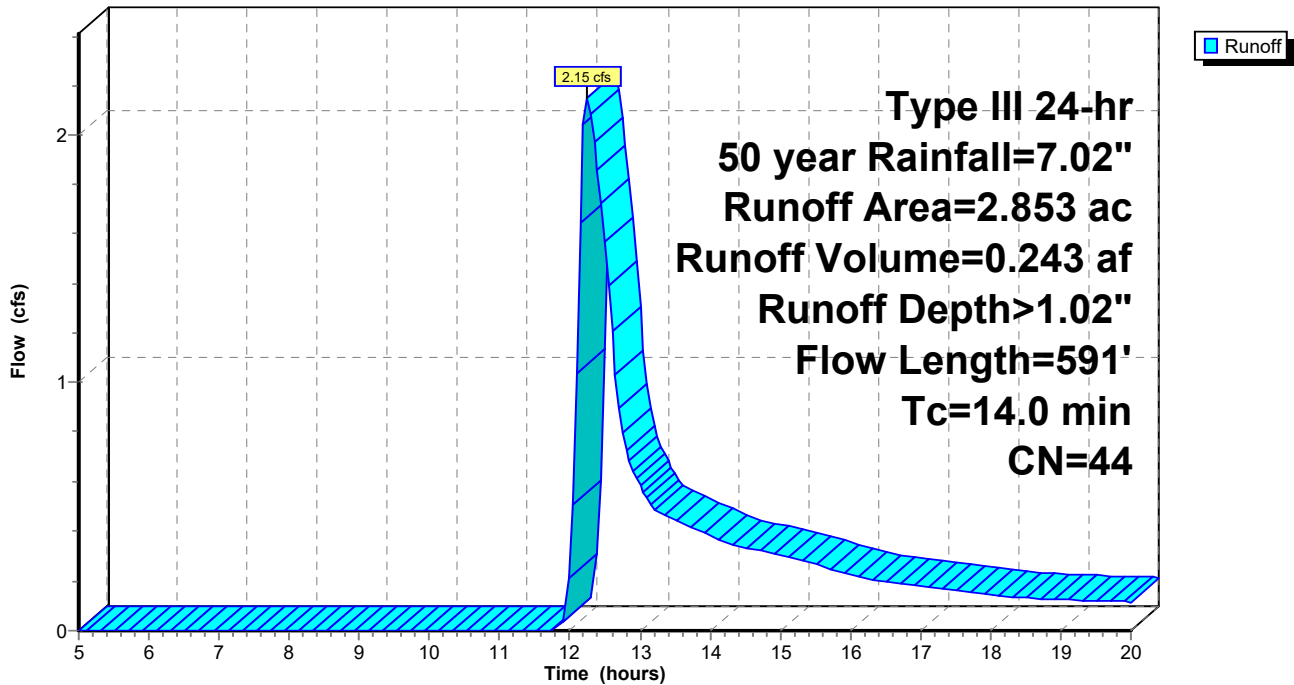
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.032	59	50-75% Grass cover, Fair, HSG A-B
* 0.244	74	50-75% Grass cover, Fair, HSG B-C
0.690	30	Meadow, non-grazed, HSG A
0.826	58	Meadow, non-grazed, HSG B
1.061	36	Woods, Fair, HSG A
2.853	44	Weighted Average
2.853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.3	541	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	591	Total			

Subcatchment 58: Subcat 58

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 59: Subcat 59

Runoff = 3.99 cfs @ 12.21 hrs, Volume= 0.400 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.058	46	2 acre lots, 12% imp, HSG A
* 0.368	59	50-75% Grass cover, Fair, HSG A-B
* 0.684	74	50-75% Grass cover, Fair, HSG B-C
0.995	30	Meadow, non-grazed, HSG A
0.460	58	Meadow, non-grazed, HSG B
1.508	36	Woods, Fair, HSG A
4.073	46	Weighted Average
4.066		99.83% Pervious Area
0.007		0.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	221	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1333	2.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	316	Total			

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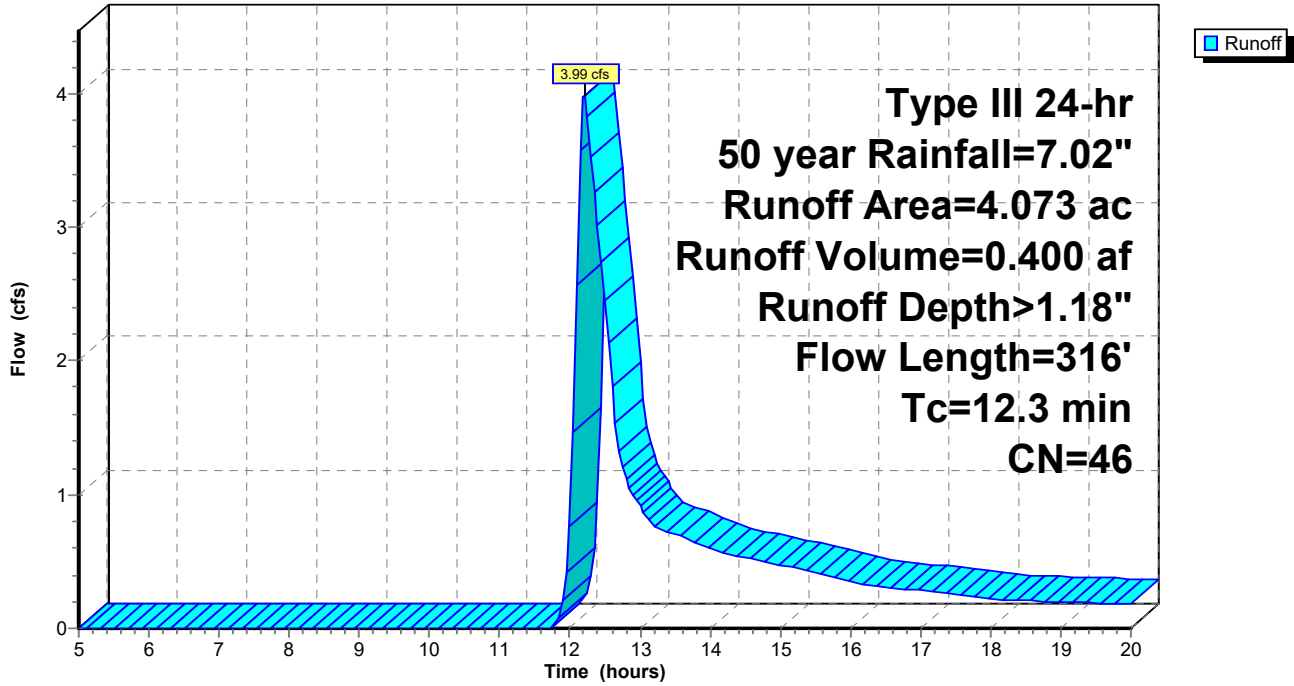
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 59: Subcat 59

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 60: Subcat 60

Runoff = 15.82 cfs @ 12.54 hrs, Volume= 2.057 af, Depth> 3.34"

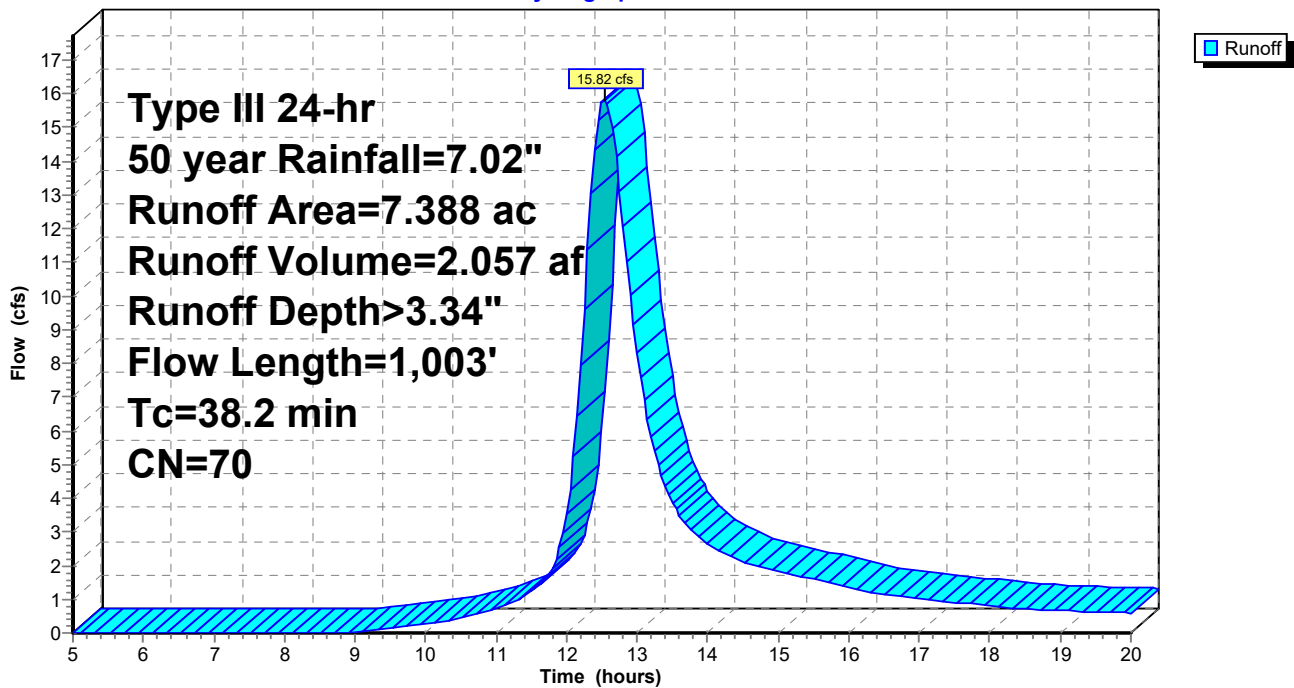
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 6.703	74	50-75% Grass cover, Fair, HSG B-C
0.511	30	Meadow, non-grazed, HSG A
0.105	58	Meadow, non-grazed, HSG B
0.069	36	Woods, Fair, HSG A
7.388	70	Weighted Average
7.388		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
29.7	855	0.0047	0.48		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	98	0.0510	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
38.2	1,003	Total			

Subcatchment 60: Subcat 60

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 62: Subcat 62

Runoff = 56.62 cfs @ 12.42 hrs, Volume= 6.557 af, Depth> 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
2.956	65	2 acre lots, 12% imp, HSG B
* 0.324	59	50-75% Grass cover, Fair, HSG A-B
* 17.404	74	50-75% Grass cover, Fair, HSG B-C
1.502	30	Meadow, non-grazed, HSG A
1.903	58	Meadow, non-grazed, HSG B
0.114	89	Paved roads w/open ditches, 50% imp, HSG B
24.203	69	Weighted Average
23.791		98.30% Pervious Area
0.412		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.7	757	0.0132	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.5	481	0.0312	1.24		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
29.7	1,288	Total			

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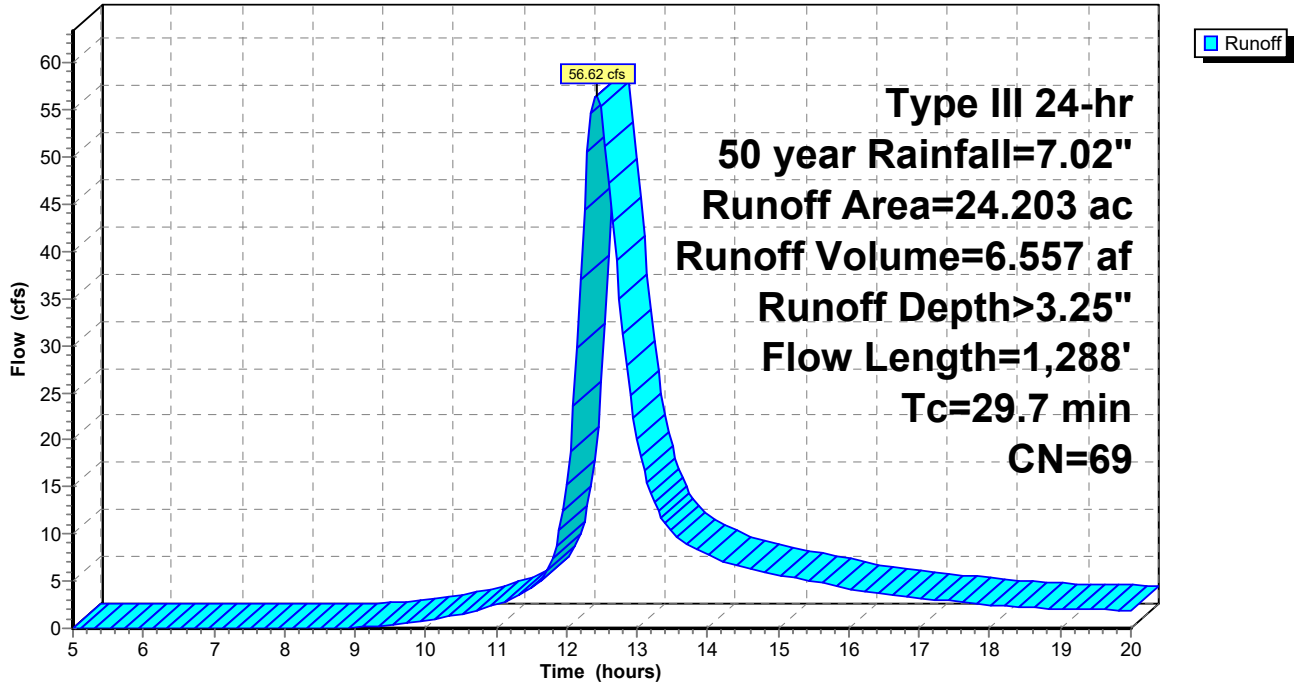
Type III 24-hr 50 year Rainfall=7.02"

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Subcatchment 62: Subcat 62

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 64: Subcat 64

Runoff = 4.26 cfs @ 12.22 hrs, Volume= 0.381 af, Depth> 2.58"

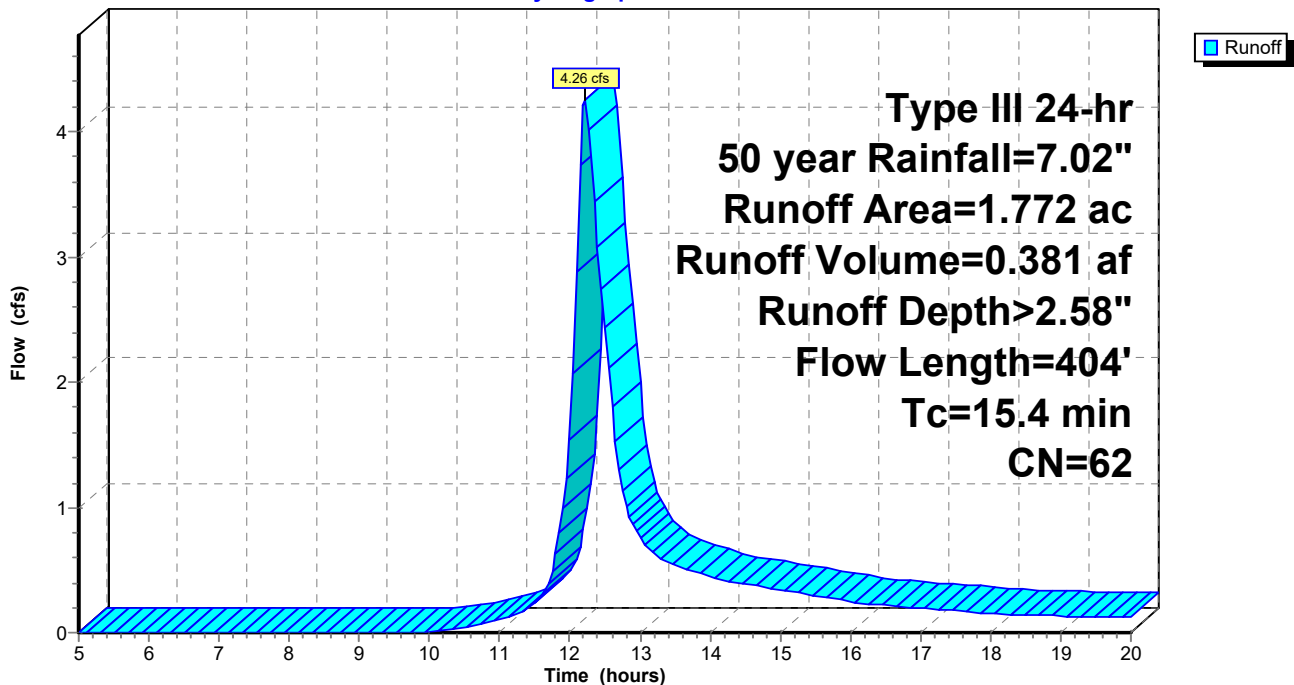
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
0.101	46	2 acre lots, 12% imp, HSG A
* 0.185	59	50-75% Grass cover, Fair, HSG A-B
* 1.123	74	50-75% Grass cover, Fair, HSG B-C
0.280	30	Meadow, non-grazed, HSG A
0.003	58	Meadow, non-grazed, HSG B
0.080	36	Woods, Fair, HSG A
1.772	62	Weighted Average
1.760		99.32% Pervious Area
0.012		0.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.9	354	0.0113	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.4	404	Total			

Subcatchment 64: Subcat 64

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 65: Subcat 65

Runoff = 8.43 cfs @ 12.36 hrs, Volume= 0.908 af, Depth> 3.06"

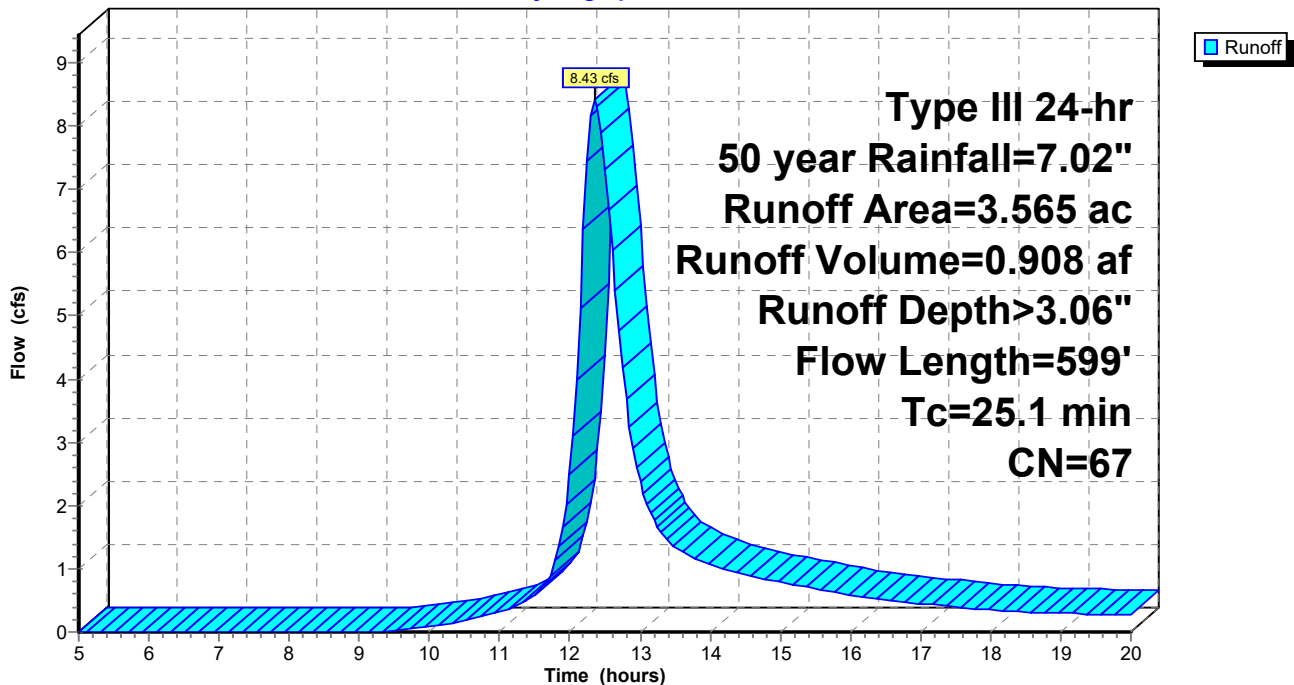
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.013	59	50-75% Grass cover, Fair, HSG A-B
* 2.513	74	50-75% Grass cover, Fair, HSG B-C
0.049	35	Brush, Fair, HSG A
0.267	56	Brush, Fair, HSG B
0.227	30	Meadow, non-grazed, HSG A
0.484	58	Meadow, non-grazed, HSG B
0.012	89	Paved roads w/open ditches, 50% imp, HSG B
3.565	67	Weighted Average
3.559		99.83% Pervious Area
0.006		0.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
17.6	549	0.0055	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.1	599	Total			

Subcatchment 65: Subcat 65

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Subcatchment 66: Subcat 66

Runoff = 5.31 cfs @ 12.20 hrs, Volume= 0.458 af, Depth> 2.87"

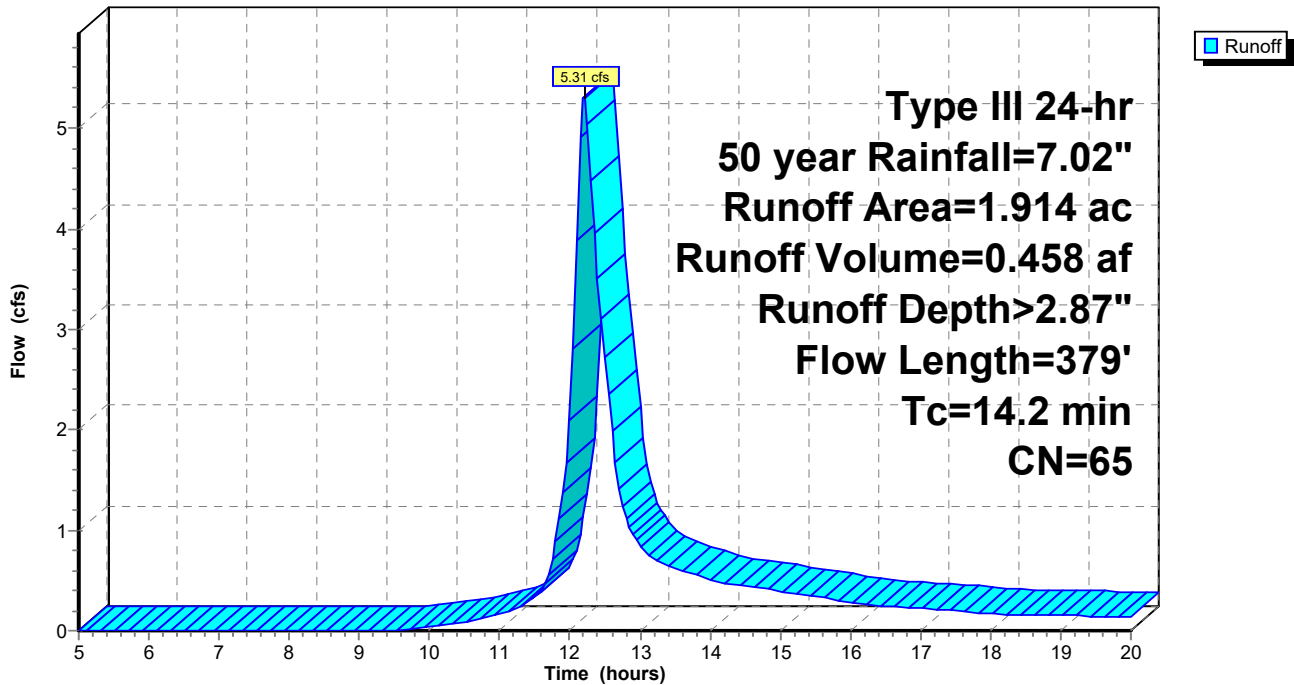
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=7.02"

Area (ac)	CN	Description
* 0.797	74	50-75% Grass cover, Fair, HSG B-C
0.199	56	Brush, Fair, HSG B
0.888	58	Meadow, non-grazed, HSG B
0.030	89	Paved roads w/open ditches, 50% imp, HSG B
1.914	65	Weighted Average
1.899		99.22% Pervious Area
0.015		0.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.7	329	0.0137	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.2	379	Total			

Subcatchment 66: Subcat 66

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 36P: Sediment Trap

Inflow Area = 8.684 ac, 1.43% Impervious, Inflow Depth > 3.35" for 50 year event
 Inflow = 19.79 cfs @ 12.47 hrs, Volume= 2.422 af
 Outflow = 14.56 cfs @ 12.74 hrs, Volume= 1.810 af, Atten= 26%, Lag= 16.0 min
 Primary = 14.56 cfs @ 12.74 hrs, Volume= 1.810 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.77' @ 12.74 hrs Surf.Area= 16,640 sf Storage= 36,704 cf

Plug-Flow detention time= 104.0 min calculated for 1.804 af (74% of inflow)
 Center-of-Mass det. time= 46.1 min (862.0 - 815.9)

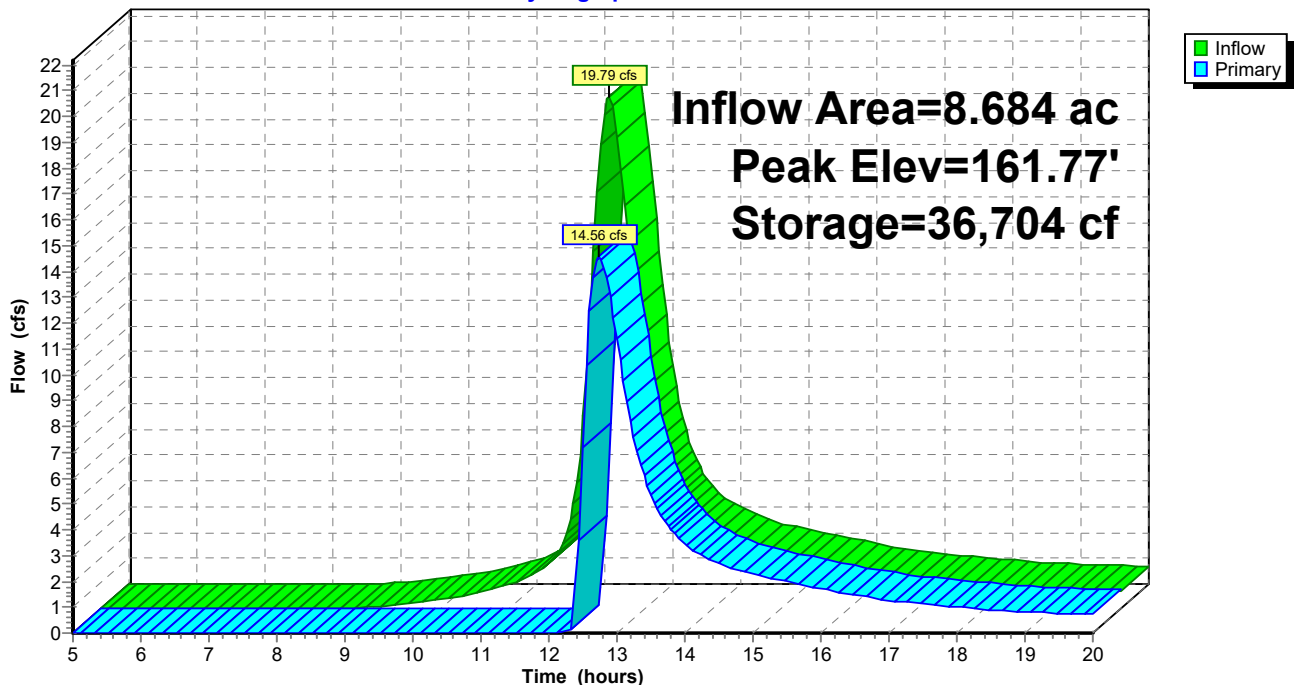
Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	40,645 cf	60.00'W x 70.00'L x 4.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=14.52 cfs @ 12.74 hrs HW=161.77' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir (Weir Controls 14.52 cfs @ 2.36 fps)

Pond 36P: Sediment Trap

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 37P: Farm Depression

Inflow Area = 1.143 ac, 2.97% Impervious, Inflow Depth > 2.77" for 50 year event
 Inflow = 2.85 cfs @ 12.25 hrs, Volume= 0.264 af
 Outflow = 2.34 cfs @ 12.38 hrs, Volume= 0.264 af, Atten= 18%, Lag= 8.2 min
 Discarded = 0.51 cfs @ 12.38 hrs, Volume= 0.207 af
 Primary = 1.83 cfs @ 12.38 hrs, Volume= 0.056 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.56' @ 12.38 hrs Surf.Area= 7,390 sf Storage= 2,463 cf

Plug-Flow detention time= 40.3 min calculated for 0.264 af (100% of inflow)
 Center-of-Mass det. time= 39.9 min (853.1 - 813.2)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	7,138 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
166.00	2,016	0	0 2,016
167.00	14,072	7,138	7,138 14,075

Device	Routing	Invert	Outlet Devices
#1	Primary	166.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	166.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.51 cfs @ 12.38 hrs HW=166.56' (Free Discharge)
 ↑2=Exfiltration (Controls 0.51 cfs)

Primary OutFlow Max=1.80 cfs @ 12.38 hrs HW=166.56' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 1.80 cfs @ 0.64 fps)

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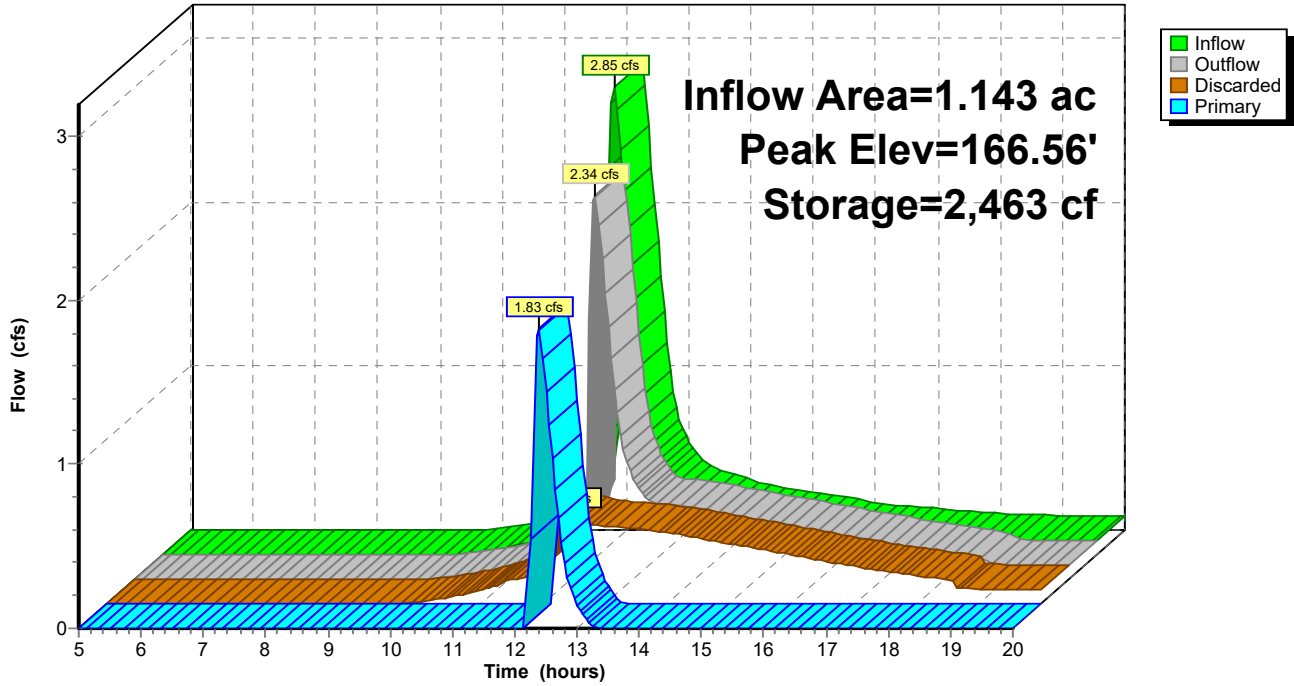
Type III 24-hr 50 year Rainfall=7.02"

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Pond 37P: Farm Depression

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 38P: Farm Depression

Inflow Area = 3.921 ac, 0.00% Impervious, Inflow Depth > 3.77" for 50 year event
 Inflow = 11.68 cfs @ 12.33 hrs, Volume= 1.232 af
 Outflow = 9.48 cfs @ 12.50 hrs, Volume= 1.180 af, Atten= 19%, Lag= 10.5 min
 Discarded = 1.80 cfs @ 12.50 hrs, Volume= 0.832 af
 Primary = 7.68 cfs @ 12.50 hrs, Volume= 0.348 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.65' @ 12.50 hrs Surf.Area= 25,830 sf Storage= 14,101 cf

Plug-Flow detention time= 71.1 min calculated for 1.180 af (96% of inflow)
 Center-of-Mass det. time= 56.0 min (857.0 - 801.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	163.00'	25,279 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
163.00	0	0	0	0	
164.00	9,379	3,126	3,126	9,381	
165.00	38,160	22,152	25,279	38,166	

Device	Routing	Invert	Outlet Devices									
#1	Primary	164.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.80 cfs @ 12.50 hrs HW=164.65' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.80 cfs)

Primary OutFlow Max=7.65 cfs @ 12.50 hrs HW=164.65' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 7.65 cfs @ 1.03 fps)

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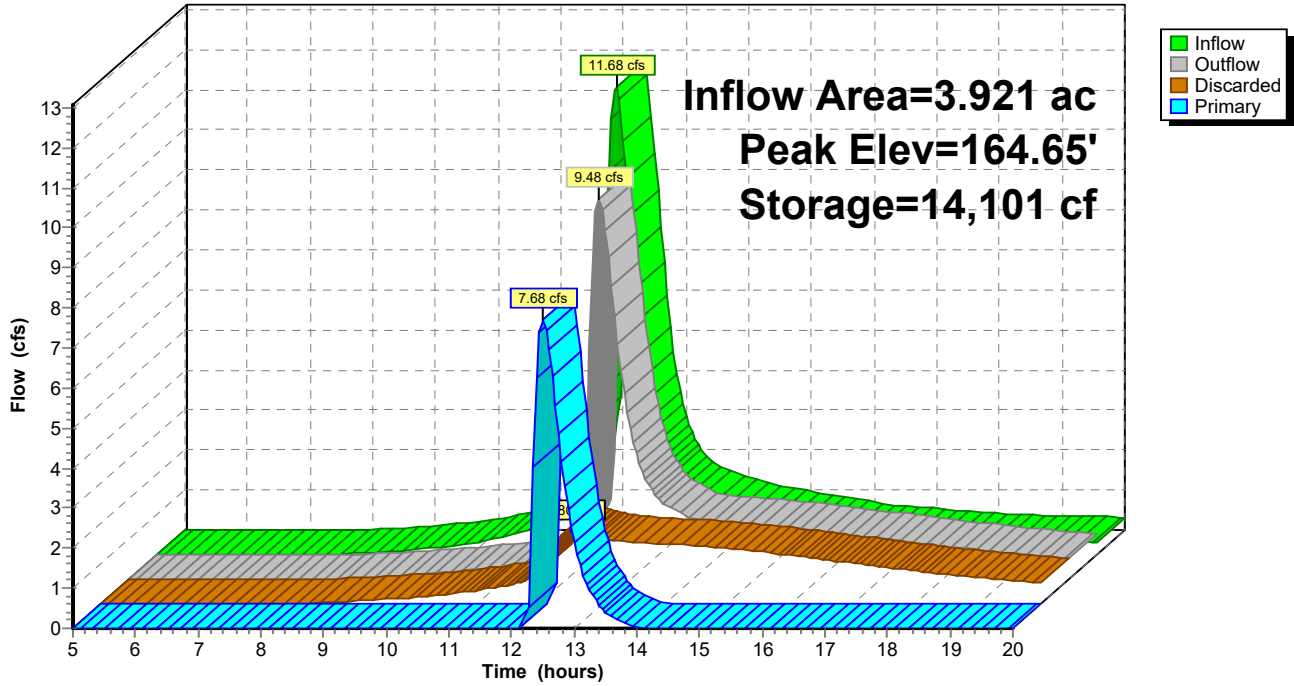
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Pond 38P: Farm Depression

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 39P: Farm Depression

Inflow Area = 3.189 ac, 2.49% Impervious, Inflow Depth > 2.31" for 50 year event
 Inflow = 7.18 cfs @ 12.15 hrs, Volume= 0.615 af
 Outflow = 1.43 cfs @ 12.84 hrs, Volume= 0.603 af, Atten= 80%, Lag= 41.4 min
 Discarded = 1.43 cfs @ 12.84 hrs, Volume= 0.603 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 165.14' @ 12.84 hrs Surf.Area= 20,555 sf Storage= 11,837 cf

Plug-Flow detention time= 100.5 min calculated for 0.603 af (98% of inflow)
 Center-of-Mass det. time= 93.5 min (888.7 - 795.2)

Volume	Invert	Avail.Storage	Storage Description
#1	164.00'	38,968 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
164.00	2,834	0	0 2,834
166.00	44,400	38,968	38,968 44,411

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	164.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.43 cfs @ 12.84 hrs HW=165.14' (Free Discharge)
 ↑2=Exfiltration (Controls 1.43 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=164.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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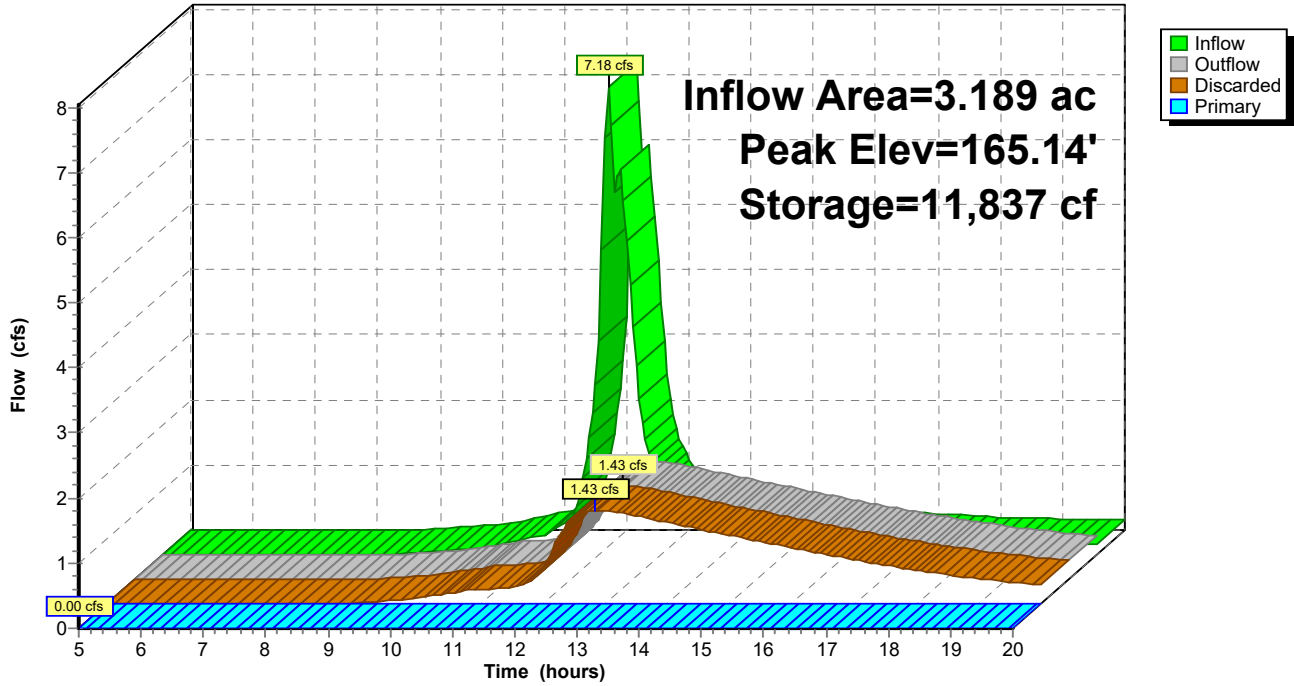
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Pond 39P: Farm Depression

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 40P: (new Pond)

Inflow Area = 0.652 ac, 0.00% Impervious, Inflow Depth > 2.30" for 50 year event
 Inflow = 1.59 cfs @ 12.15 hrs, Volume= 0.125 af
 Outflow = 0.38 cfs @ 12.67 hrs, Volume= 0.081 af, Atten= 76%, Lag= 30.7 min
 Discarded = 0.10 cfs @ 12.67 hrs, Volume= 0.062 af
 Primary = 0.29 cfs @ 12.67 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.54' @ 12.67 hrs Surf.Area= 1,314 sf Storage= 2,475 cf

Plug-Flow detention time= 176.3 min calculated for 0.081 af (65% of inflow)
 Center-of-Mass det. time= 99.8 min (916.6 - 816.8)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	3,119 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
158.00	210	0	0 210
160.00	748	903	903 768
162.00	1,512	2,216	3,119 1,567

Device	Routing	Invert	Outlet Devices
#1	Primary	161.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.10 cfs @ 12.67 hrs HW=161.54' (Free Discharge)
 ↑2=Exfiltration (Controls 0.10 cfs)

Primary OutFlow Max=0.25 cfs @ 12.67 hrs HW=161.54' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 0.25 cfs @ 0.49 fps)

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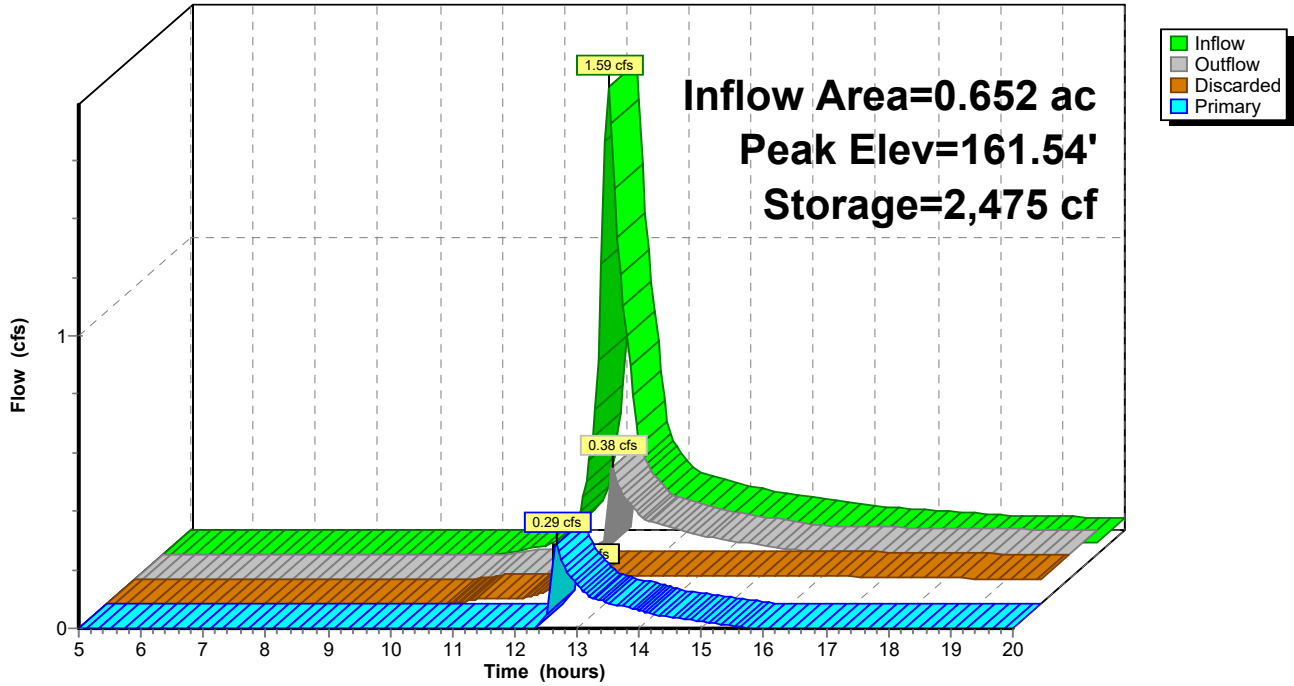
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Pond 40P: (new Pond)

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 41P: Sediment Trap

Inflow Area = 0.888 ac, 0.00% Impervious, Inflow Depth > 2.31" for 50 year event
 Inflow = 2.26 cfs @ 12.13 hrs, Volume= 0.171 af
 Outflow = 0.14 cfs @ 15.41 hrs, Volume= 0.089 af, Atten= 94%, Lag= 196.9 min
 Discarded = 0.14 cfs @ 15.41 hrs, Volume= 0.089 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 160.39' @ 15.41 hrs Surf.Area= 1,895 sf Storage= 4,386 cf

Plug-Flow detention time= 226.6 min calculated for 0.089 af (52% of inflow)
 Center-of-Mass det. time= 139.6 min (955.2 - 815.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	156.00'	5,646 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
156.00	292	0	0	292	
158.00	893	1,130	1,130	916	
160.00	1,712	2,561	3,691	1,773	
161.00	2,207	1,954	5,646	2,292	

Device	Routing	Invert	Outlet Devices												
#1	Primary	161.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	156.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.14 cfs @ 15.41 hrs HW=160.39' (Free Discharge)
 ↑2=Exfiltration (Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=156.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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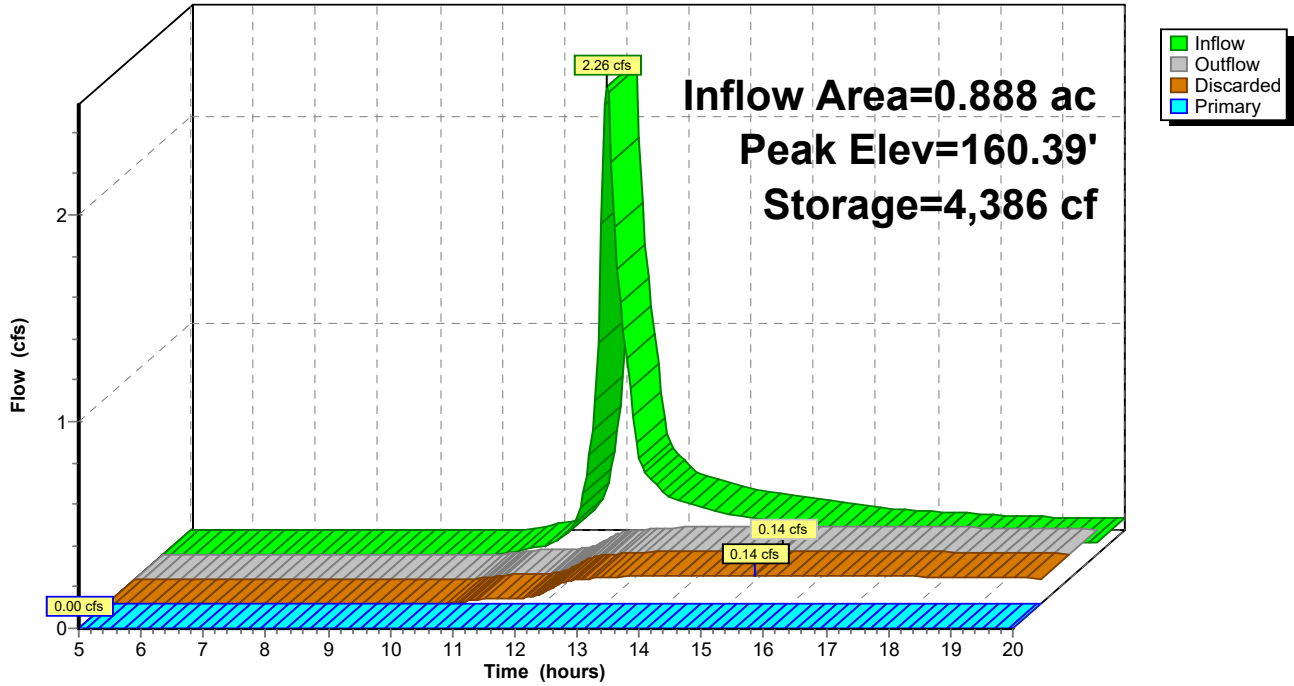
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Pond 41P: Sediment Trap

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Summary for Pond 42P: Sediment Trap

Inflow Area = 1.849 ac, 0.00% Impervious, Inflow Depth > 2.30" for 50 year event
 Inflow = 4.15 cfs @ 12.19 hrs, Volume= 0.355 af
 Outflow = 1.23 cfs @ 12.67 hrs, Volume= 0.232 af, Atten= 70%, Lag= 28.4 min
 Discarded = 0.22 cfs @ 12.67 hrs, Volume= 0.148 af
 Primary = 1.00 cfs @ 12.67 hrs, Volume= 0.084 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.17' @ 12.67 hrs Surf.Area= 3,083 sf Storage= 6,598 cf

Plug-Flow detention time= 155.2 min calculated for 0.232 af (65% of inflow)
 Center-of-Mass det. time= 79.9 min (898.9 - 819.0)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	9,408 cf	20.00'W x 60.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	6.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.22 cfs @ 12.67 hrs HW=161.17' (Free Discharge)
 ↑2=Exfiltration (Controls 0.22 cfs)

Primary OutFlow Max=0.99 cfs @ 12.67 hrs HW=161.17' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 0.99 cfs @ 0.98 fps)

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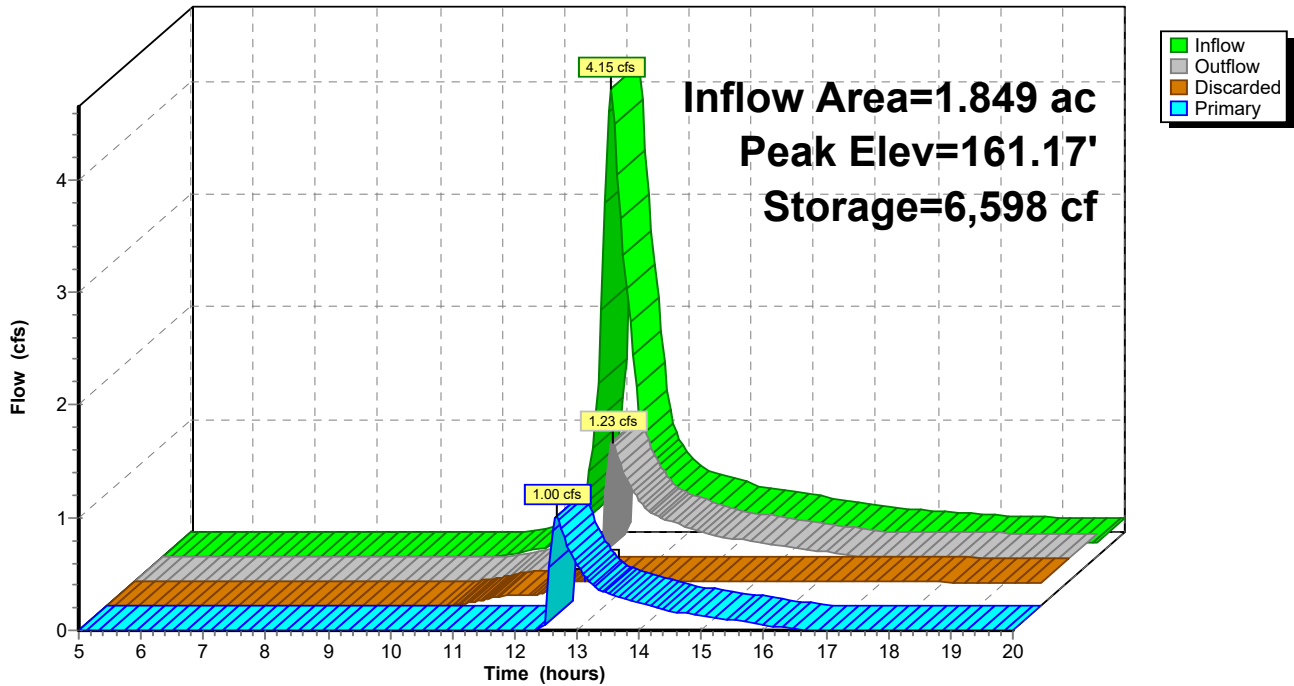
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Pond 42P: Sediment Trap

Hydrograph



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Summary for Pond 43P: Sediment Trap

Inflow Area = 0.916 ac, 0.00% Impervious, Inflow Depth > 2.21" for 50 year event
 Inflow = 1.84 cfs @ 12.23 hrs, Volume= 0.168 af
 Outflow = 0.38 cfs @ 12.94 hrs, Volume= 0.107 af, Atten= 79%, Lag= 42.5 min
 Discarded = 0.13 cfs @ 12.94 hrs, Volume= 0.082 af
 Primary = 0.26 cfs @ 12.94 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.07' @ 12.94 hrs Surf.Area= 1,743 sf Storage= 3,401 cf

Plug-Flow detention time= 176.1 min calculated for 0.106 af (63% of inflow)
 Center-of-Mass det. time= 99.1 min (921.8 - 822.7)

Volume	Invert	Avail.Storage	Storage Description
#1	159.00'	5,239 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
159.00	568	0	0 568
160.00	893	724	724 907
162.00	1,712	2,561	3,285 1,764
163.00	2,206	1,954	5,239 2,282

Device	Routing	Invert	Outlet Devices
#1	Primary	162.00'	6.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	159.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.13 cfs @ 12.94 hrs HW=162.07' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=0.25 cfs @ 12.94 hrs HW=162.07' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.25 cfs @ 0.62 fps)

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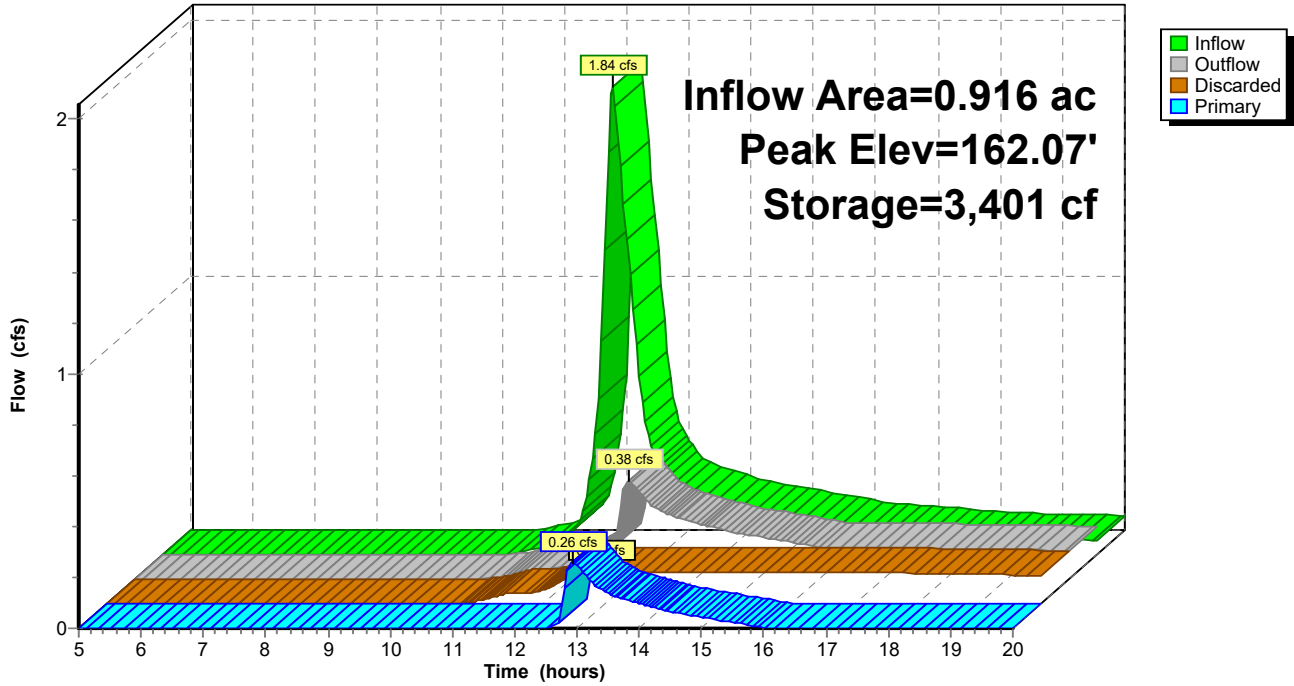
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Pond 43P: Sediment Trap

Hydrograph



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Summary for Pond 44P: Farm Depression

Inflow Area = 2.114 ac, 0.00% Impervious, Inflow Depth > 3.07" for 50 year event
 Inflow = 7.04 cfs @ 12.15 hrs, Volume= 0.542 af
 Outflow = 1.12 cfs @ 12.82 hrs, Volume= 0.513 af, Atten= 84%, Lag= 40.0 min
 Discarded = 1.12 cfs @ 12.82 hrs, Volume= 0.513 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.80' @ 12.82 hrs Surf.Area= 16,002 sf Storage= 10,209 cf

Plug-Flow detention time= 119.4 min calculated for 0.513 af (95% of inflow)
 Center-of-Mass det. time= 100.5 min (903.3 - 802.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	157.00'	43,325 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
157.00	0	0	0	0	
158.00	5,632	1,877	1,877	5,634	
160.00	41,290	41,448	43,325	41,305	

Device	Routing	Invert	Outlet Devices									
#1	Primary	159.00'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.12 cfs @ 12.82 hrs HW=158.80' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.12 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=157.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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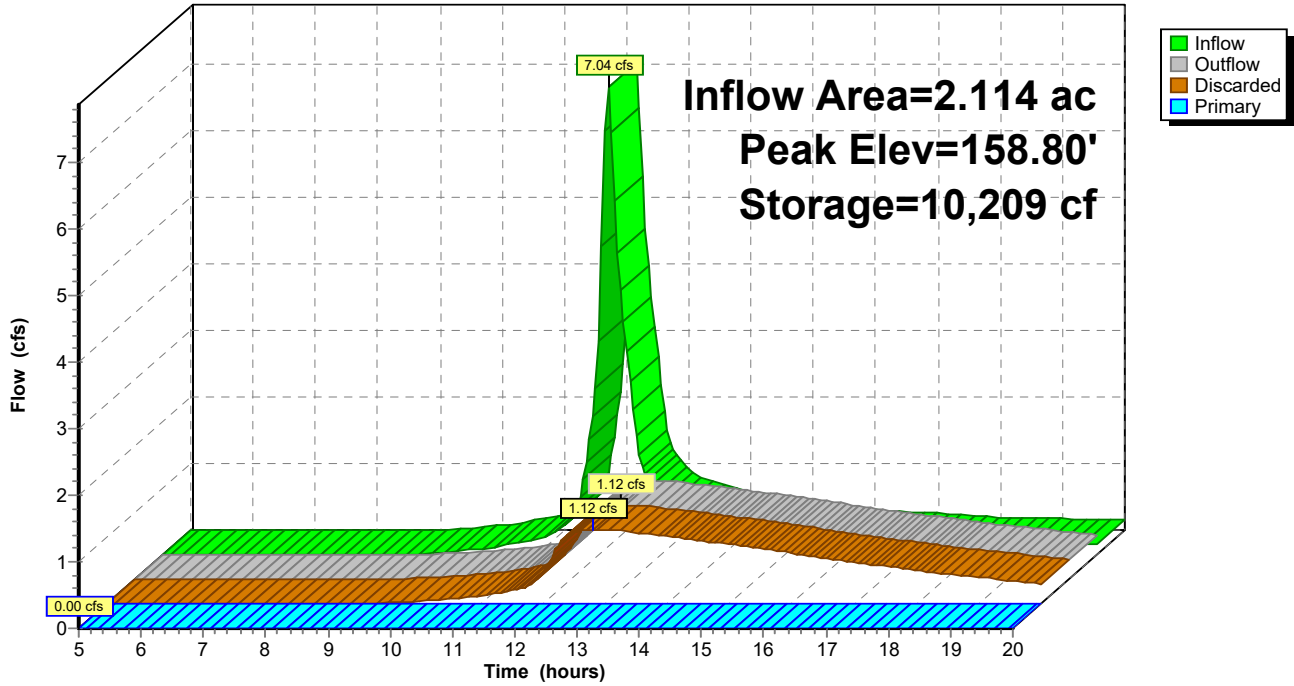
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Pond 44P: Farm Depression

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Summary for Pond 45P: Farm Depression

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth > 3.18" for 50 year event
 Inflow = 9.14 cfs @ 12.10 hrs, Volume= 0.622 af
 Outflow = 0.96 cfs @ 13.03 hrs, Volume= 0.538 af, Atten= 90%, Lag= 56.2 min
 Discarded = 0.96 cfs @ 13.03 hrs, Volume= 0.538 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.24' @ 13.03 hrs Surf.Area= 13,664 sf Storage= 12,844 cf

Plug-Flow detention time= 163.6 min calculated for 0.536 af (86% of inflow)
 Center-of-Mass det. time= 123.0 min (921.0 - 798.0)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	180,186 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	5,028	1,676	1,676	5,030
156.00	21,015	24,215	25,891	21,035
158.00	37,382	57,617	83,508	37,446
160.00	60,198	96,678	180,186	60,315

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	153.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.96 cfs @ 13.03 hrs HW=155.24' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.96 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=153.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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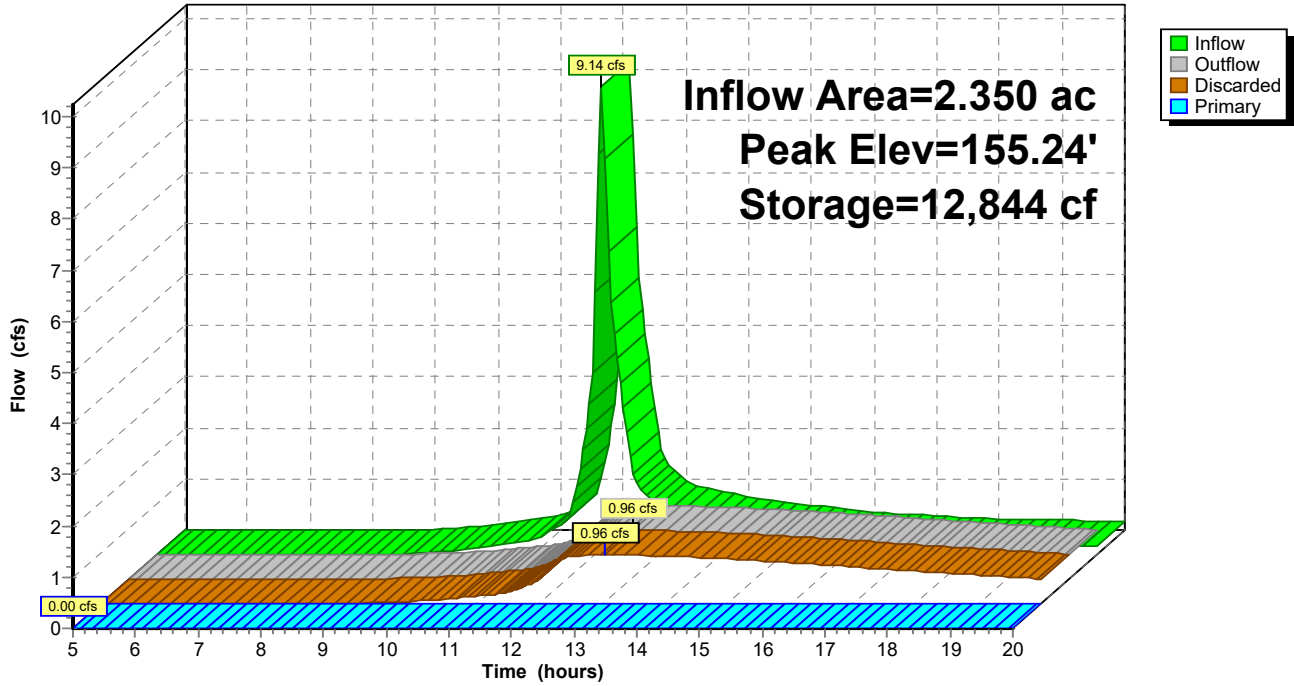
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Pond 45P: Farm Depression

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Summary for Pond 46P: Sediment Trap

Inflow Area = 5.413 ac, 0.00% Impervious, Inflow Depth > 1.91" for 50 year event
 Inflow = 10.74 cfs @ 12.17 hrs, Volume= 0.861 af
 Outflow = 9.34 cfs @ 12.25 hrs, Volume= 0.736 af, Atten= 13%, Lag= 4.8 min
 Discarded = 0.44 cfs @ 12.25 hrs, Volume= 0.277 af
 Primary = 8.90 cfs @ 12.25 hrs, Volume= 0.459 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 149.44' @ 12.25 hrs Surf.Area= 6,278 sf Storage= 8,624 cf

Plug-Flow detention time= 72.9 min calculated for 0.734 af (85% of inflow)
 Center-of-Mass det. time= 31.1 min (829.8 - 798.7)

Volume	Invert	Avail.Storage	Storage Description
#1	147.00'	12,608 cf	49.00'W x 28.00'L x 3.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Discarded	147.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	149.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=0.44 cfs @ 12.25 hrs HW=149.44' (Free Discharge)
 ↑1=Exfiltration (Controls 0.44 cfs)

Primary OutFlow Max=8.85 cfs @ 12.25 hrs HW=149.44' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 8.85 cfs @ 1.69 fps)

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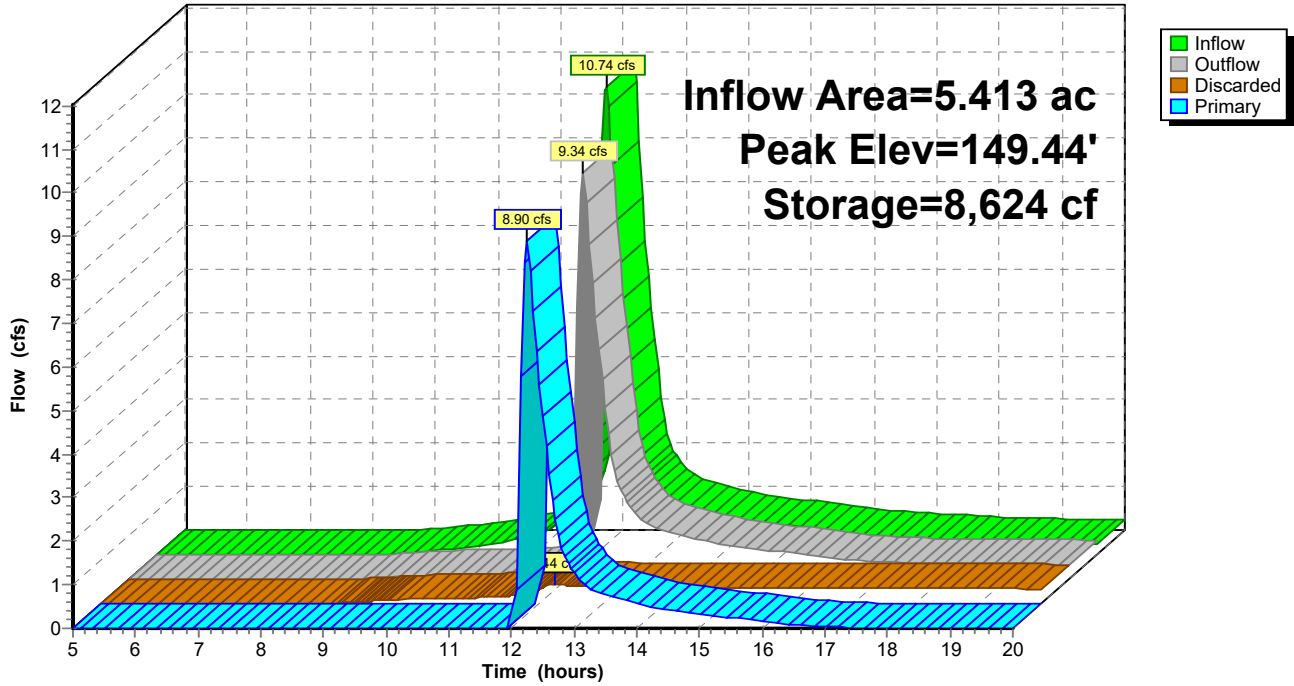
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Pond 46P: Sediment Trap

Hydrograph



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Summary for Pond 47P: Valley Berm

Inflow Area = 56.487 ac, 0.14% Impervious, Inflow Depth > 1.67" for 50 year event
 Inflow = 77.38 cfs @ 12.67 hrs, Volume= 7.841 af
 Outflow = 70.08 cfs @ 12.84 hrs, Volume= 7.120 af, Atten= 9%, Lag= 10.1 min
 Discarded = 1.82 cfs @ 12.84 hrs, Volume= 0.968 af
 Primary = 68.27 cfs @ 12.84 hrs, Volume= 6.152 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 122.68' @ 12.84 hrs Surf.Area= 25,550 sf Storage= 60,980 cf

Plug-Flow detention time= 40.7 min calculated for 7.097 af (91% of inflow)
 Center-of-Mass det. time= 19.1 min (842.2 - 823.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	118.00'	69,383 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
118.00	782	0	0	782	
120.00	11,520	10,202	10,202	11,531	
122.00	23,374	34,202	44,405	23,421	
123.00	26,618	24,978	69,383	26,713	

Device	Routing	Invert	Outlet Devices												
#1	Primary	121.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	118.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.81 cfs @ 12.84 hrs HW=122.68' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.81 cfs)

Primary OutFlow Max=68.06 cfs @ 12.84 hrs HW=122.68' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 68.06 cfs @ 2.89 fps)

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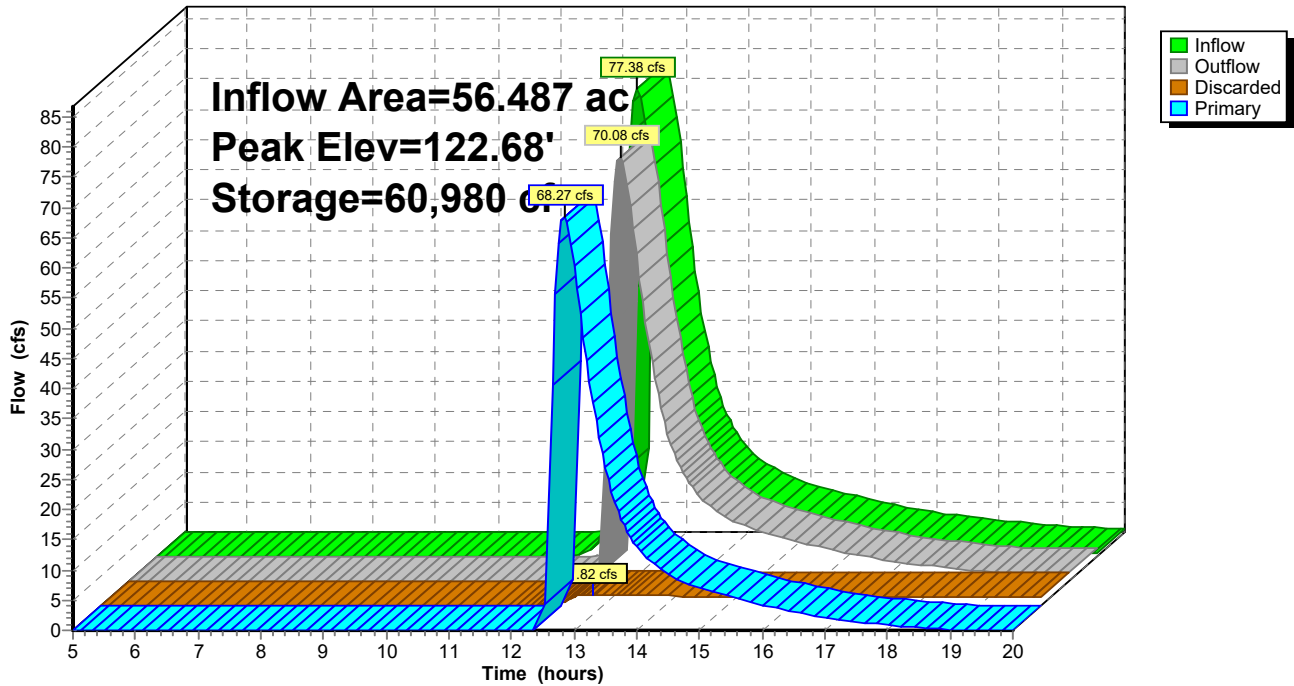
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Pond 47P: Valley Berm

Hydrograph



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Summary for Pond 48P: Valley Berm

Inflow Area = 52.719 ac, 0.15% Impervious, Inflow Depth > 1.93" for 50 year event
 Inflow = 77.92 cfs @ 12.61 hrs, Volume= 8.471 af
 Outflow = 76.59 cfs @ 12.67 hrs, Volume= 7.940 af, Atten= 2%, Lag= 3.7 min
 Discarded = 1.16 cfs @ 12.67 hrs, Volume= 0.624 af
 Primary = 75.43 cfs @ 12.67 hrs, Volume= 7.316 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 126.76' @ 12.67 hrs Surf.Area= 16,329 sf Storage= 40,623 cf

Plug-Flow detention time= 28.3 min calculated for 7.914 af (93% of inflow)
 Center-of-Mass det. time= 10.8 min (832.5 - 821.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	122.00'	44,628 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
122.00	365	0	0	365	
124.00	8,490	7,077	7,077	8,500	
126.00	13,817	22,092	29,169	13,878	
127.00	17,162	15,459	44,628	17,252	

Device	Routing	Invert	Outlet Devices												
#1	Primary	125.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	122.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.16 cfs @ 12.67 hrs HW=126.76' (Free Discharge)
 ↑2=Exfiltration (Controls 1.16 cfs)

Primary OutFlow Max=75.14 cfs @ 12.67 hrs HW=126.76' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 75.14 cfs @ 2.99 fps)

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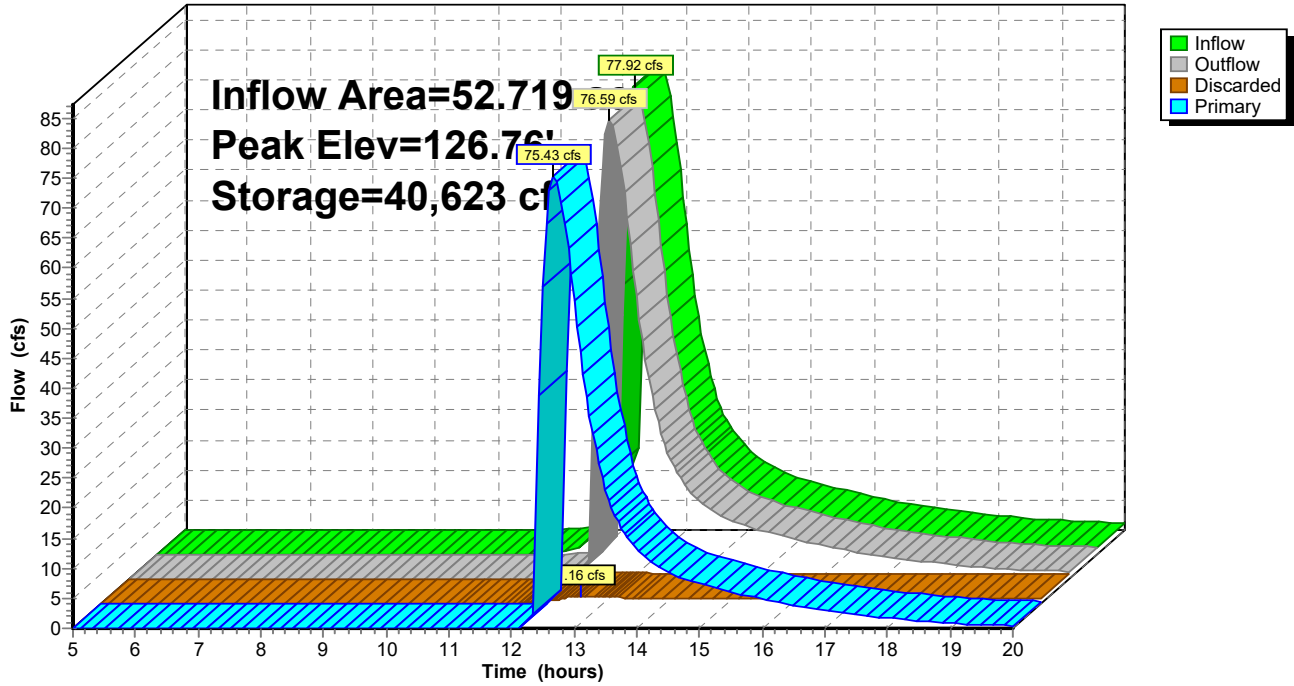
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Pond 48P: Valley Berm

Hydrograph



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Summary for Pond 49P: Valley Berm

Inflow Area = 47.376 ac, 0.17% Impervious, Inflow Depth > 2.13" for 50 year event
 Inflow = 76.16 cfs @ 12.58 hrs, Volume= 8.406 af
 Outflow = 75.08 cfs @ 12.63 hrs, Volume= 8.005 af, Atten= 1%, Lag= 3.2 min
 Discarded = 1.05 cfs @ 12.63 hrs, Volume= 0.518 af
 Primary = 74.03 cfs @ 12.63 hrs, Volume= 7.487 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 132.74' @ 12.63 hrs Surf.Area= 14,788 sf Storage= 32,195 cf

Plug-Flow detention time= 23.3 min calculated for 8.005 af (95% of inflow)
 Center-of-Mass det. time= 8.3 min (830.4 - 822.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	128.00'	36,103 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
128.00	1,167	0	0	1,167	
130.00	5,025	5,742	5,742	5,043	
132.00	11,977	16,507	22,249	12,024	
133.00	15,820	13,854	36,103	15,890	

Device	Routing	Invert	Outlet Devices												
#1	Primary	131.50'	20.0' long x 6.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65												
			2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83												
#2	Discarded	128.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.05 cfs @ 12.63 hrs HW=132.74' (Free Discharge)
 ↑2=Exfiltration (Controls 1.05 cfs)

Primary OutFlow Max=73.81 cfs @ 12.63 hrs HW=132.74' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 73.81 cfs @ 2.97 fps)

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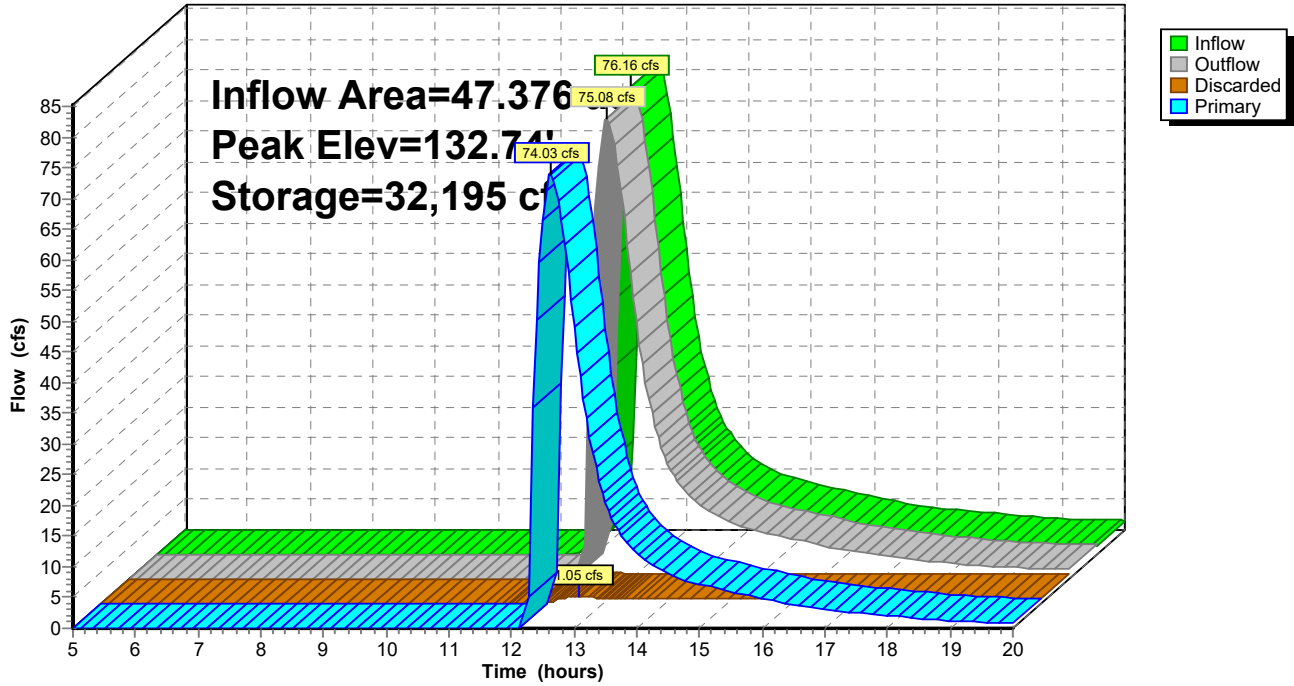
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Pond 49P: Valley Berm

Hydrograph



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Summary for Pond 50P: Valley Berm

Inflow Area = 44.163 ac, 0.18% Impervious, Inflow Depth > 2.51" for 50 year event
 Inflow = 77.32 cfs @ 12.52 hrs, Volume= 9.234 af
 Outflow = 74.89 cfs @ 12.59 hrs, Volume= 8.618 af, Atten= 3%, Lag= 4.2 min
 Discarded = 1.29 cfs @ 12.59 hrs, Volume= 0.707 af
 Primary = 73.61 cfs @ 12.59 hrs, Volume= 7.911 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 138.74' @ 12.59 hrs Surf.Area= 18,112 sf Storage= 44,869 cf

Plug-Flow detention time= 32.7 min calculated for 8.589 af (93% of inflow)
 Center-of-Mass det. time= 12.0 min (831.2 - 819.2)

Volume	Invert	Avail.Storage	Storage Description
#1	134.00'	49,733 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
134.00	2,742	0	0 2,742
136.00	7,845	10,150	10,150 7,869
138.00	15,022	22,482	32,632 15,085
139.00	19,268	17,101	49,733 19,357

Device	Routing	Invert	Outlet Devices
#1	Primary	137.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	134.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.29 cfs @ 12.59 hrs HW=138.74' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.29 cfs)

Primary OutFlow Max=73.40 cfs @ 12.59 hrs HW=138.74' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 73.40 cfs @ 2.97 fps)

Proposed Conditions - South Plantation

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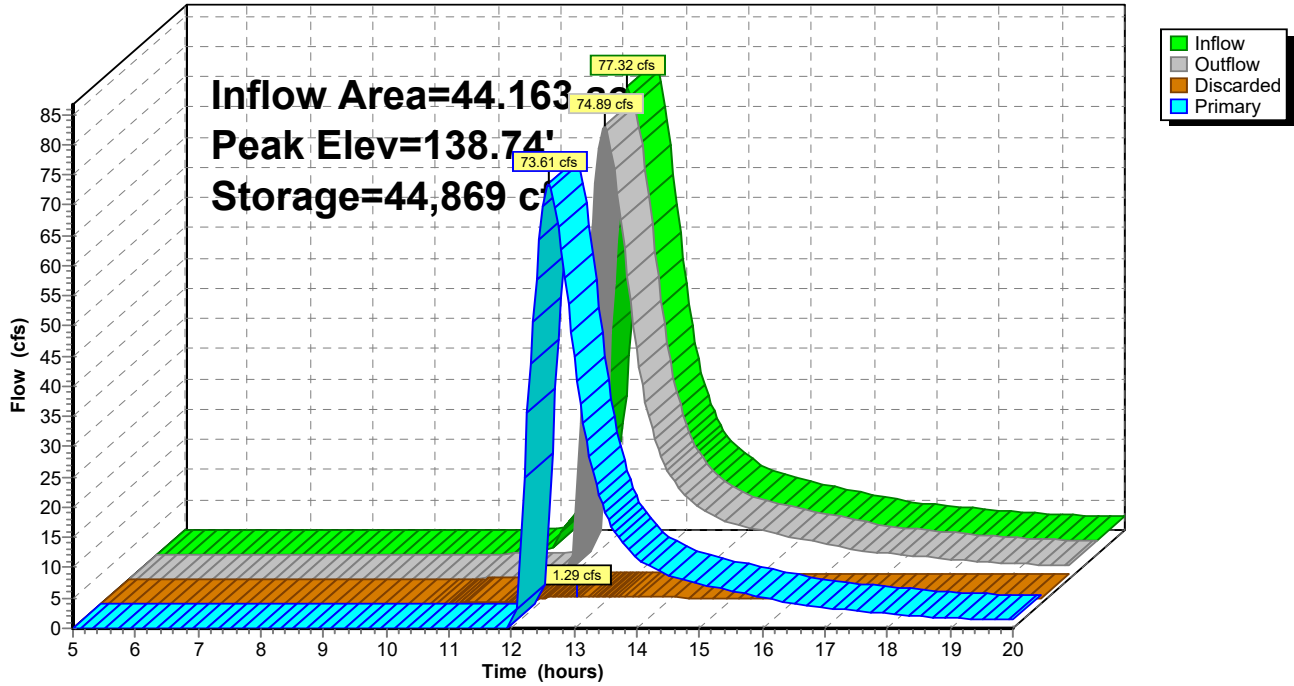
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Pond 50P: Valley Berm

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 51P: Valley Berm

[93] Warning: Storage range exceeded by 0.04'

Inflow Area = 36.779 ac, 0.22% Impervious, Inflow Depth > 2.77" for 50 year event
 Inflow = 68.68 cfs @ 12.54 hrs, Volume= 8.483 af
 Outflow = 68.44 cfs @ 12.54 hrs, Volume= 8.169 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.70 cfs @ 12.55 hrs, Volume= 0.465 af
 Primary = 67.75 cfs @ 12.54 hrs, Volume= 7.704 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.04' @ 12.54 hrs Surf.Area= 9,810 sf Storage= 21,537 cf

Plug-Flow detention time= 21.7 min calculated for 8.142 af (96% of inflow)
 Center-of-Mass det. time= 8.9 min (824.0 - 815.1)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	21,537 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
142.00	1,705	0	0 1,705
144.00	5,291	6,666	6,666 5,314
146.00	9,810	14,870	21,537 9,874

Device	Routing	Invert	Outlet Devices
#1	Primary	145.00'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.70 cfs @ 12.55 hrs HW=146.04' (Free Discharge)
 ↑2=Exfiltration (Controls 0.70 cfs)

Primary OutFlow Max=67.67 cfs @ 12.54 hrs HW=146.04' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 67.67 cfs @ 2.72 fps)

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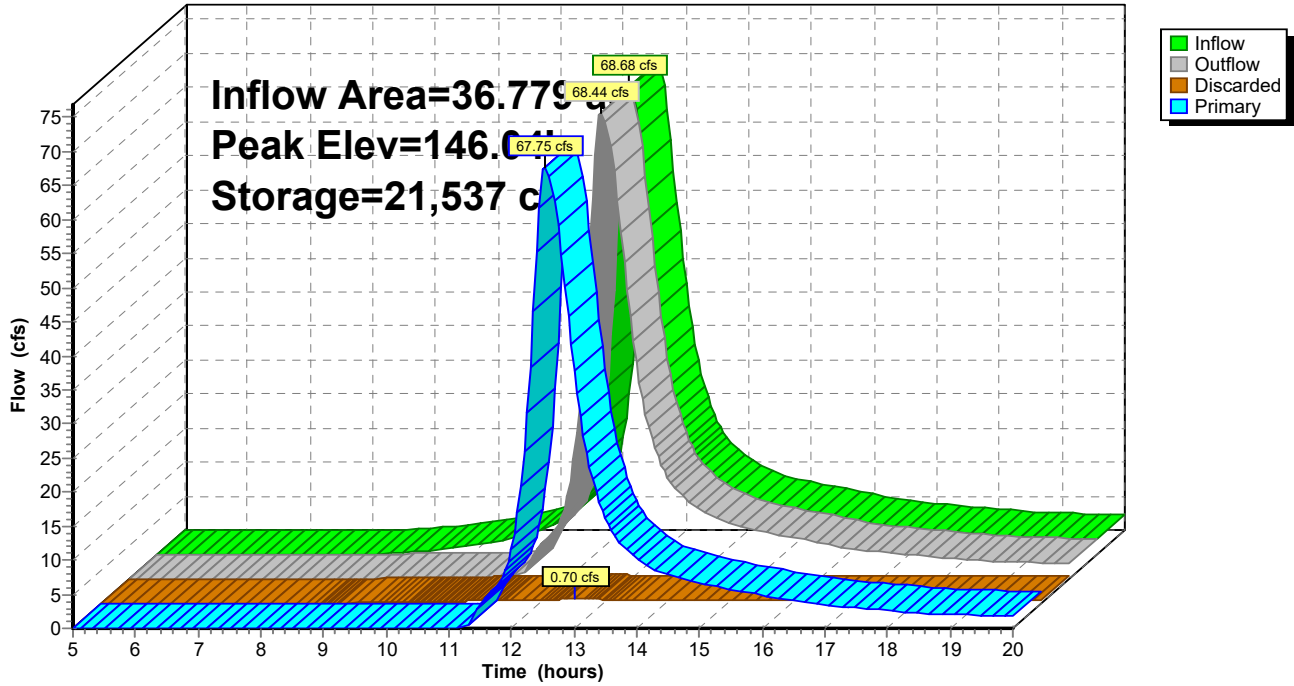
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Pond 51P: Valley Berm

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 53P: Valley Berm

Inflow Area = 59.427 ac, 0.93% Impervious, Inflow Depth > 1.94" for 50 year event
 Inflow = 84.84 cfs @ 12.59 hrs, Volume= 9.616 af
 Outflow = 83.16 cfs @ 12.67 hrs, Volume= 9.018 af, Atten= 2%, Lag= 4.5 min
 Discarded = 1.60 cfs @ 12.67 hrs, Volume= 0.821 af
 Primary = 81.55 cfs @ 12.67 hrs, Volume= 8.198 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 118.67' @ 12.67 hrs Surf.Area= 22,628 sf Storage= 48,474 cf

Plug-Flow detention time= 29.7 min calculated for 9.018 af (94% of inflow)
 Center-of-Mass det. time= 11.4 min (837.0 - 825.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.00'	56,099 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
114.00	1,033	0	0	1,033	
116.00	7,810	7,789	7,789	7,823	
118.00	19,551	26,479	34,268	19,592	
119.00	24,195	21,832	56,099	24,266	

Device	Routing	Invert	Outlet Devices												
#1	Primary	117.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	114.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.60 cfs @ 12.67 hrs HW=118.67' (Free Discharge)
 ↑2=Exfiltration (Controls 1.60 cfs)

Primary OutFlow Max=81.31 cfs @ 12.67 hrs HW=118.67' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 81.31 cfs @ 2.89 fps)

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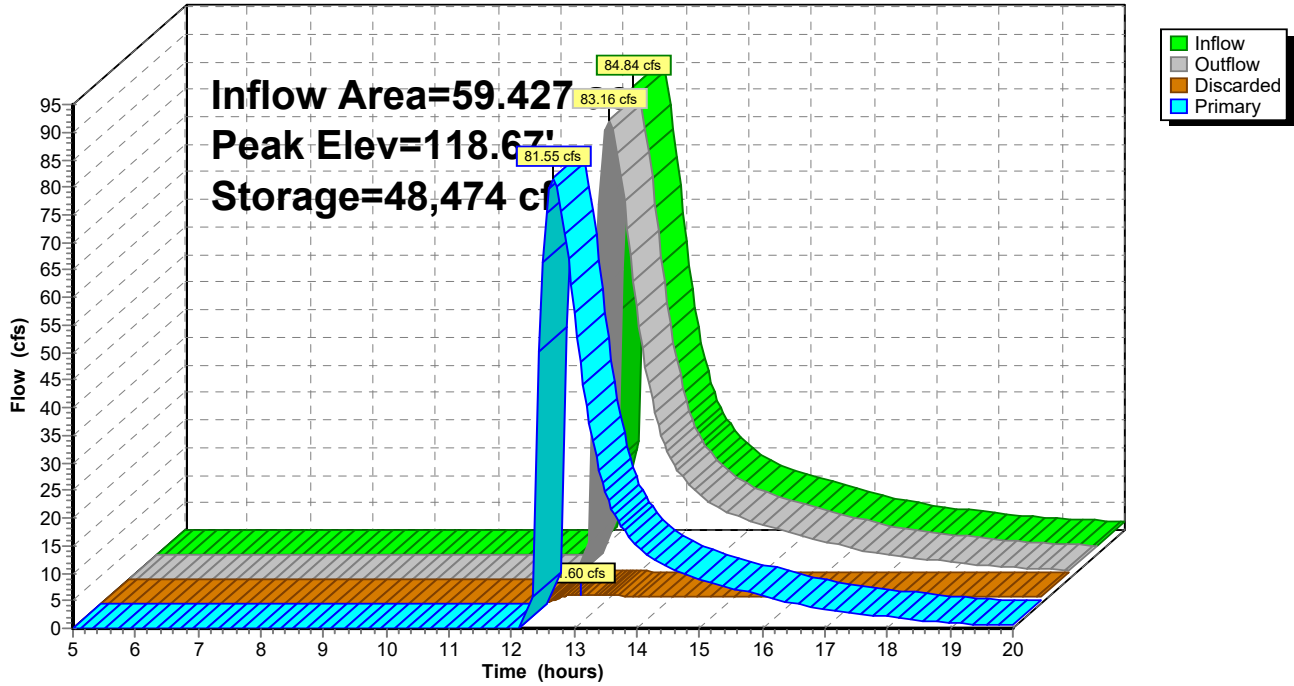
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Pond 53P: Valley Berm

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 54P: Valley Berm

Inflow Area = 71.593 ac, 0.78% Impervious, Inflow Depth > 1.61" for 50 year event
 Inflow = 87.20 cfs @ 12.65 hrs, Volume= 9.632 af
 Outflow = 80.95 cfs @ 12.80 hrs, Volume= 8.806 af, Atten= 7%, Lag= 8.6 min
 Discarded = 2.38 cfs @ 12.80 hrs, Volume= 1.221 af
 Primary = 78.57 cfs @ 12.80 hrs, Volume= 7.585 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 112.65' @ 12.80 hrs Surf.Area= 33,563 sf Storage= 72,578 cf

Plug-Flow detention time= 40.3 min calculated for 8.776 af (91% of inflow)
 Center-of-Mass det. time= 19.9 min (840.0 - 820.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	108.00'	84,939 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
108.00	584	0	0	584	
110.00	13,292	11,108	11,108	13,302	
112.00	29,008	41,291	52,399	29,050	
113.00	36,205	32,540	84,939	36,276	

Device	Routing	Invert	Outlet Devices												
#1	Primary	111.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	108.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=2.38 cfs @ 12.80 hrs HW=112.64' (Free Discharge)
 ↑**2=Exfiltration** (Controls 2.38 cfs)

Primary OutFlow Max=78.48 cfs @ 12.80 hrs HW=112.64' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 78.48 cfs @ 2.86 fps)

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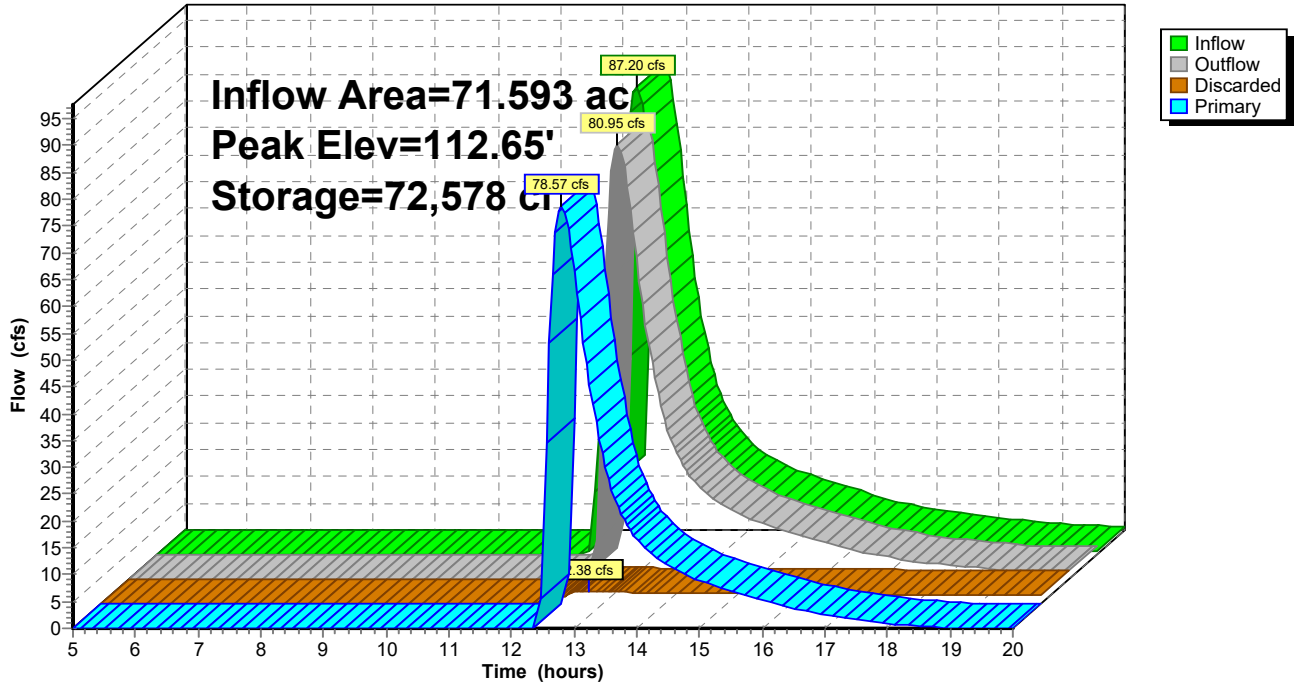
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Pond 54P: Valley Berm

Hydrograph



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Summary for Pond 55P: Sediment Trap

Inflow Area = 2.682 ac, 0.00% Impervious, Inflow Depth > 3.46" for 50 year event
 Inflow = 7.46 cfs @ 12.32 hrs, Volume= 0.774 af
 Outflow = 6.44 cfs @ 12.46 hrs, Volume= 0.640 af, Atten= 14%, Lag= 8.4 min
 Discarded = 0.43 cfs @ 12.46 hrs, Volume= 0.253 af
 Primary = 6.01 cfs @ 12.46 hrs, Volume= 0.387 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 143.44' @ 12.46 hrs Surf.Area= 6,027 sf Storage= 9,000 cf

Plug-Flow detention time= 85.3 min calculated for 0.638 af (82% of inflow)
 Center-of-Mass det. time= 39.0 min (844.8 - 805.8)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	12,788 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
140.00	358	0	0 358
142.00	2,804	2,776	2,776 2,817
144.00	7,598	10,012	12,788 7,637

Device	Routing	Invert	Outlet Devices
#1	Primary	143.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	140.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.42 cfs @ 12.46 hrs HW=143.44' (Free Discharge)
 ↑2=Exfiltration (Controls 0.42 cfs)

Primary OutFlow Max=5.97 cfs @ 12.46 hrs HW=143.44' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 5.97 cfs @ 1.69 fps)

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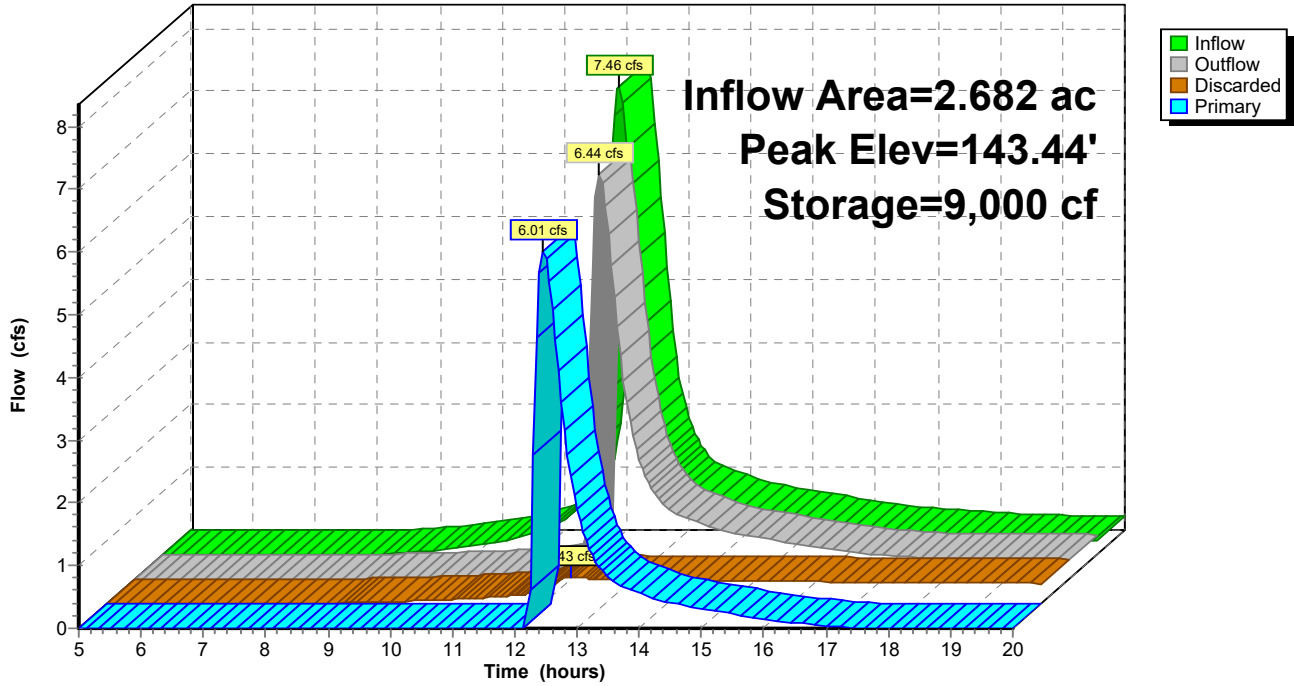
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Pond 55P: Sediment Trap

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 56P: Sediment Trap

Inflow Area = 7.231 ac, 0.00% Impervious, Inflow Depth > 3.70" for 50 year event
 Inflow = 38.52 cfs @ 12.00 hrs, Volume= 2.227 af
 Outflow = 21.16 cfs @ 12.11 hrs, Volume= 1.839 af, Atten= 45%, Lag= 6.1 min
 Discarded = 1.08 cfs @ 12.11 hrs, Volume= 0.737 af
 Primary = 20.07 cfs @ 12.11 hrs, Volume= 1.102 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.73' @ 12.11 hrs Surf.Area= 15,340 sf Storage= 29,004 cf

Plug-Flow detention time= 87.3 min calculated for 1.839 af (83% of inflow)
 Center-of-Mass det. time= 38.1 min (822.2 - 784.1)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	33,293 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	6,492	0	0	6,492
143.00	9,332	7,869	7,869	9,349
144.00	12,637	10,943	18,812	12,675
145.00	16,407	14,481	33,293	16,469

Device	Routing	Invert	Outlet Devices
#1	Primary	144.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.08 cfs @ 12.11 hrs HW=144.73' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.08 cfs)

Primary OutFlow Max=19.89 cfs @ 12.11 hrs HW=144.73' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 19.89 cfs @ 2.29 fps)

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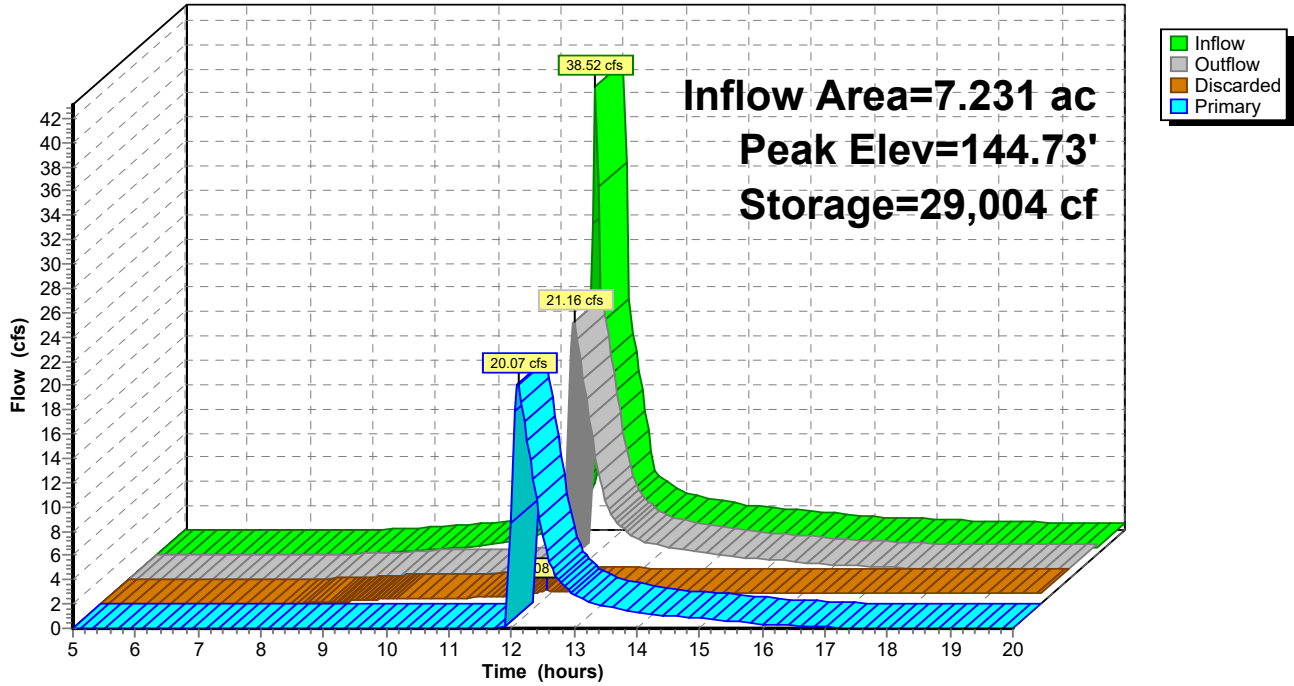
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Pond 56P: Sediment Trap

Hydrograph



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Summary for Pond 57P: Valley Berm

Inflow Area = 5.691 ac, 0.00% Impervious, Inflow Depth > 3.17" for 50 year event
 Inflow = 16.03 cfs @ 12.25 hrs, Volume= 1.501 af
 Outflow = 15.65 cfs @ 12.29 hrs, Volume= 1.380 af, Atten= 2%, Lag= 2.4 min
 Discarded = 0.60 cfs @ 12.29 hrs, Volume= 0.318 af
 Primary = 15.05 cfs @ 12.29 hrs, Volume= 1.063 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 137.60' @ 12.29 hrs Surf.Area= 5,415 sf Storage= 8,015 cf

Plug-Flow detention time= 40.9 min calculated for 1.376 af (92% of inflow)
 Center-of-Mass det. time= 14.8 min (821.8 - 807.0)

Volume	Invert	Avail.Storage	Storage Description			
#1	134.00'	10,399 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
134.00	587	96.0	0	0	587	
136.00	1,920	175.0	2,379	2,379	2,312	
138.00	6,561	368.0	8,020	10,399	10,669	

Device	Routing	Invert	Outlet Devices													
#1	Primary	137.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir													
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00													
			2.50 3.00 3.50 4.00 4.50 5.00 5.50													
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66													
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32													
#2	Discarded	134.00'	3.000 in/hr Exfiltration over Wetted area													
			Conductivity to Groundwater Elevation = 1.00'													

Discarded OutFlow Max=0.60 cfs @ 12.29 hrs HW=137.60' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.60 cfs)

Primary OutFlow Max=14.99 cfs @ 12.29 hrs HW=137.60' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 14.99 cfs @ 2.08 fps)

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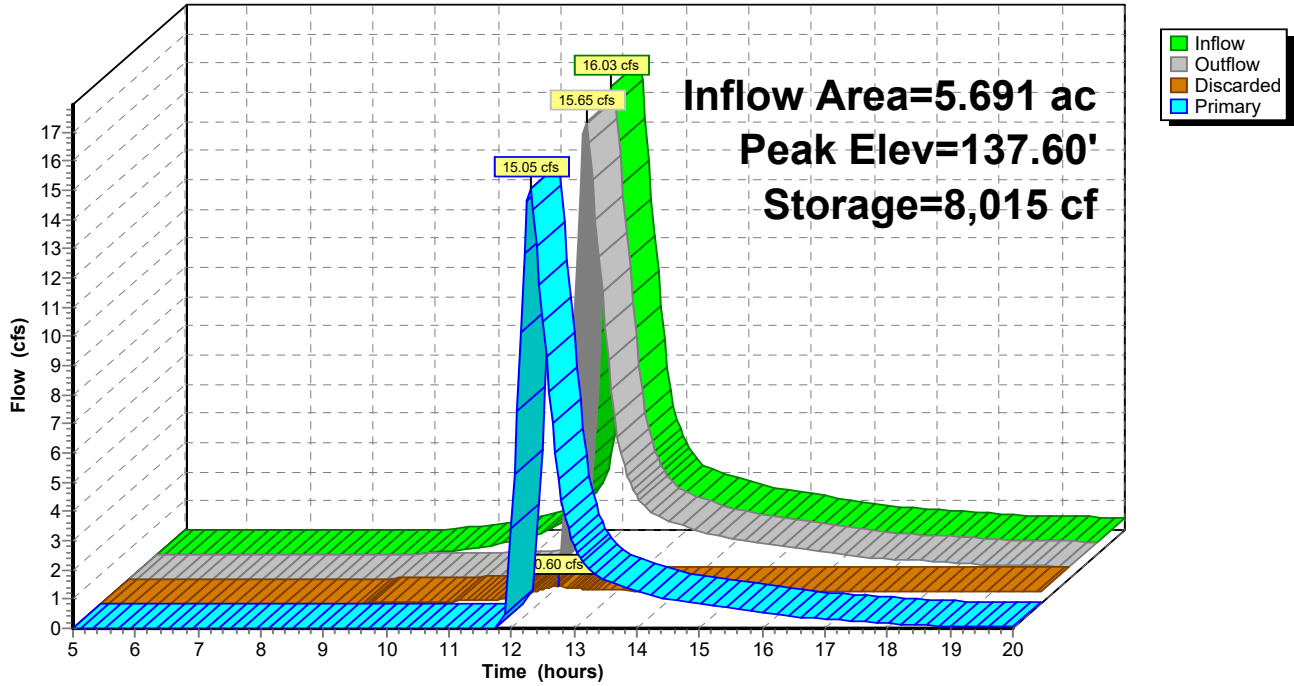
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Pond 57P: Valley Berm

Hydrograph



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Summary for Pond 58P: Valley Berm

Inflow Area = 48.973 ac, 1.13% Impervious, Inflow Depth > 2.24" for 50 year event
 Inflow = 77.68 cfs @ 12.59 hrs, Volume= 9.144 af
 Outflow = 77.19 cfs @ 12.63 hrs, Volume= 8.799 af, Atten= 1%, Lag= 2.3 min
 Discarded = 0.98 cfs @ 12.63 hrs, Volume= 0.485 af
 Primary = 76.21 cfs @ 12.63 hrs, Volume= 8.313 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 126.62' @ 12.63 hrs Surf.Area= 13,850 sf Storage= 27,325 cf

Plug-Flow detention time= 19.2 min calculated for 8.799 af (96% of inflow)
 Center-of-Mass det. time= 6.7 min (835.8 - 829.0)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	32,853 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
122.00	359	0	0 359
124.00	4,500	4,087	4,087 4,511
126.00	11,415	15,388	19,475 11,454
127.00	15,442	13,378	32,853 15,501

Device	Routing	Invert	Outlet Devices
#1	Primary	125.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	122.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.98 cfs @ 12.63 hrs HW=126.62' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.98 cfs)

Primary OutFlow Max=76.00 cfs @ 12.63 hrs HW=126.62' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 76.00 cfs @ 2.83 fps)

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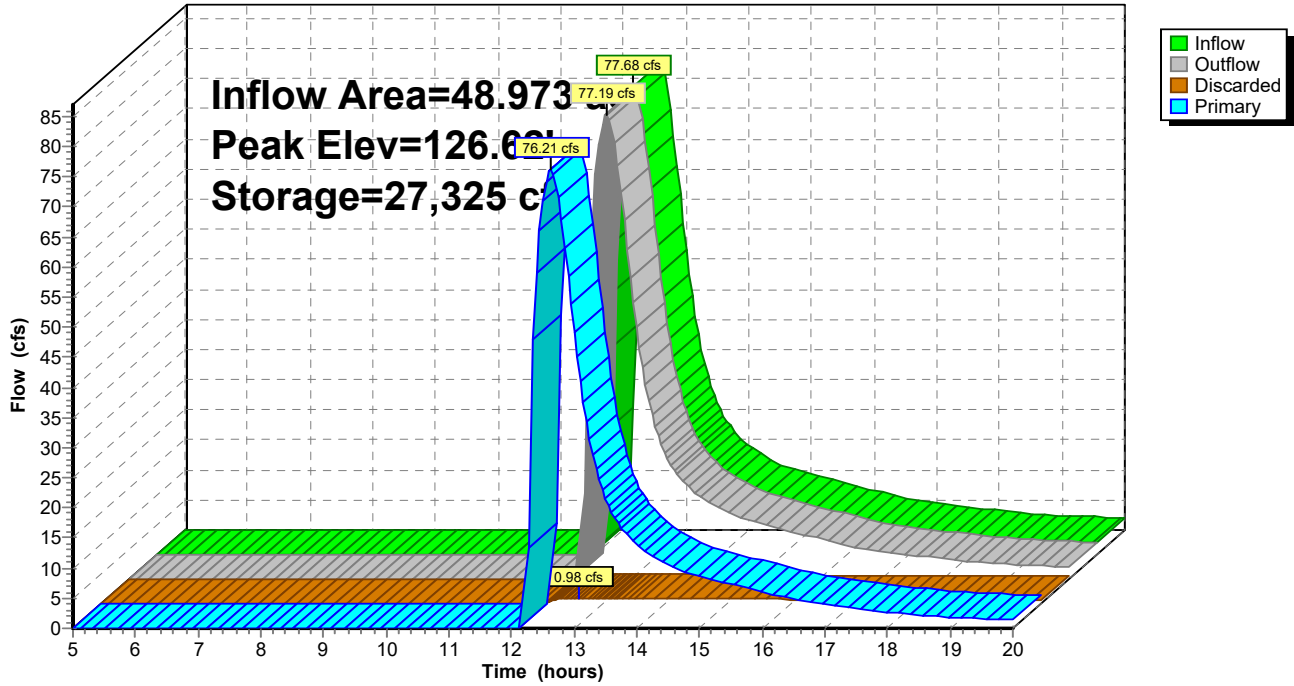
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Pond 58P: Valley Berm

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Summary for Pond 59P: Valley Berm

Inflow Area = 46.120 ac, 1.20% Impervious, Inflow Depth > 2.51" for 50 year event
 Inflow = 77.53 cfs @ 12.56 hrs, Volume= 9.641 af
 Outflow = 77.22 cfs @ 12.59 hrs, Volume= 9.331 af, Atten= 0%, Lag= 1.8 min
 Discarded = 0.78 cfs @ 12.59 hrs, Volume= 0.429 af
 Primary = 76.44 cfs @ 12.59 hrs, Volume= 8.901 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 134.62' @ 12.59 hrs Surf.Area= 11,062 sf Storage= 23,542 cf

Plug-Flow detention time= 17.0 min calculated for 9.331 af (97% of inflow)
 Center-of-Mass det. time= 6.0 min (833.8 - 827.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	130.00'	27,865 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
130.00	297	0	0	297	
132.00	4,143	3,700	3,700	4,154	
134.00	9,624	13,388	17,087	9,665	
135.00	11,974	10,778	27,865	12,044	

Device	Routing	Invert	Outlet Devices												
#1	Discarded	130.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'												
#2	Primary	133.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												

Discarded OutFlow Max=0.78 cfs @ 12.59 hrs HW=134.62' (Free Discharge)
 ↑1=Exfiltration (Controls 0.78 cfs)

Primary OutFlow Max=76.33 cfs @ 12.59 hrs HW=134.62' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 76.33 cfs @ 2.83 fps)

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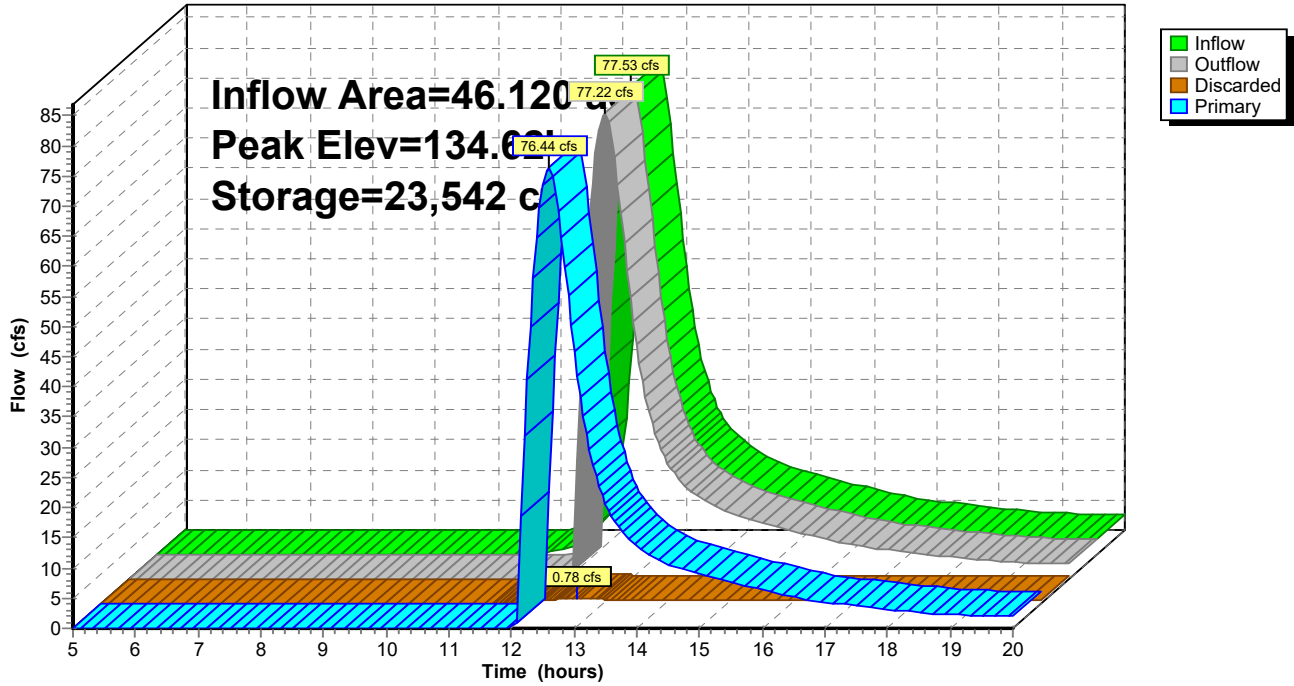
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Pond 59P: Valley Berm

Hydrograph



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Summary for Pond 60P: Valley Berm

Inflow Area = 7.388 ac, 0.00% Impervious, Inflow Depth > 3.34" for 50 year event
 Inflow = 15.82 cfs @ 12.54 hrs, Volume= 2.057 af
 Outflow = 15.81 cfs @ 12.55 hrs, Volume= 1.999 af, Atten= 0%, Lag= 0.8 min
 Discarded = 0.18 cfs @ 12.55 hrs, Volume= 0.121 af
 Primary = 15.63 cfs @ 12.55 hrs, Volume= 1.878 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 141.95' @ 12.55 hrs Surf.Area= 2,508 sf Storage= 3,484 cf

Plug-Flow detention time= 16.6 min calculated for 1.999 af (97% of inflow)
 Center-of-Mass det. time= 6.5 min (825.9 - 819.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	138.00'	6,691 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
138.00	0	0	0	0	
140.00	736	491	491	742	
142.00	2,566	3,118	3,608	2,593	
143.00	3,630	3,083	6,691	3,675	

Device	Routing	Invert	Outlet Devices												
#1	Primary	141.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	138.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.18 cfs @ 12.55 hrs HW=141.95' (Free Discharge)
 ↑2=Exfiltration (Controls 0.18 cfs)

Primary OutFlow Max=15.63 cfs @ 12.55 hrs HW=141.95' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 15.63 cfs @ 1.73 fps)

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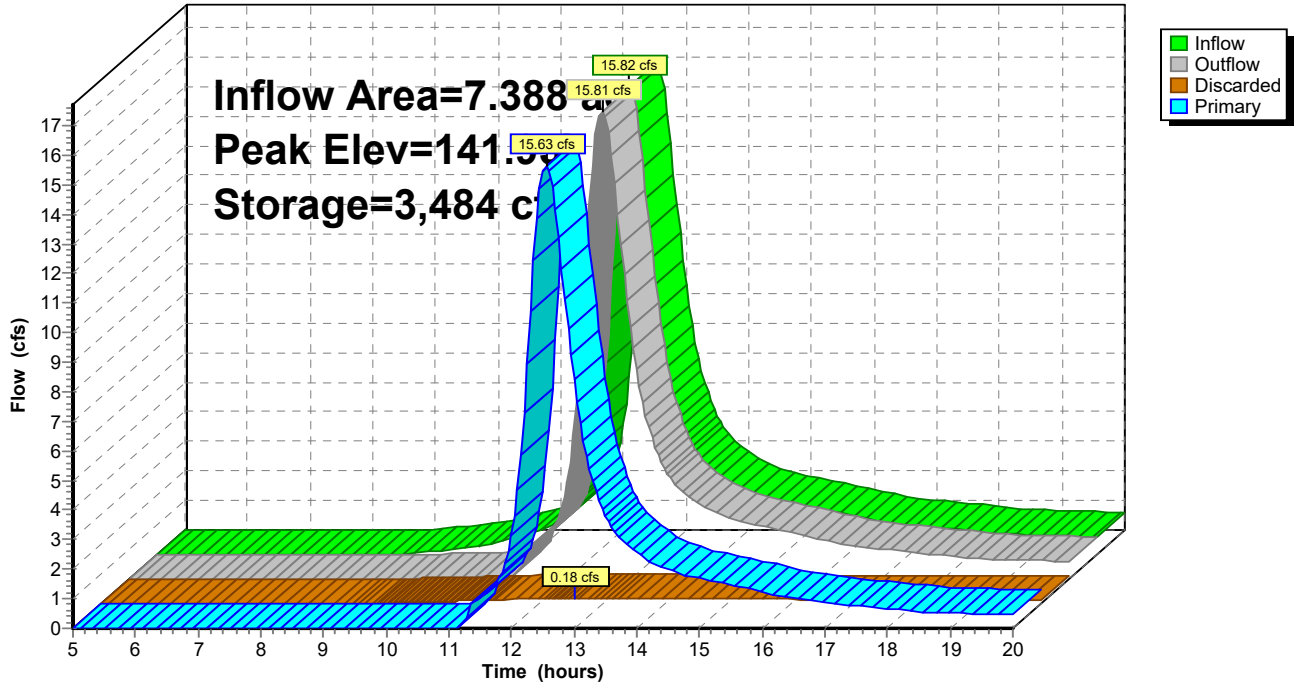
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Pond 60P: Valley Berm

Hydrograph



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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 62P: Valley Berm

Inflow Area = 32.887 ac, 1.63% Impervious, Inflow Depth > 3.05" for 50 year event
 Inflow = 61.76 cfs @ 12.52 hrs, Volume= 8.367 af
 Outflow = 60.93 cfs @ 12.57 hrs, Volume= 7.988 af, Atten= 1%, Lag= 2.8 min
 Discarded = 1.08 cfs @ 12.57 hrs, Volume= 0.668 af
 Primary = 59.85 cfs @ 12.57 hrs, Volume= 7.320 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.58' @ 12.57 hrs Surf.Area= 15,269 sf Storage= 29,675 cf

Plug-Flow detention time= 26.6 min calculated for 7.988 af (95% of inflow)
 Center-of-Mass det. time= 11.1 min (835.9 - 824.8)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	36,392 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
140.00	0	0	0	0
142.00	5,126	3,417	3,417	5,132
144.00	13,477	17,943	21,360	13,510
145.00	16,642	15,032	36,392	16,704

Device	Routing	Invert	Outlet Devices
#1	Primary	143.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	140.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.08 cfs @ 12.57 hrs HW=144.58' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.08 cfs)

Primary OutFlow Max=59.65 cfs @ 12.57 hrs HW=144.58' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 59.65 cfs @ 2.77 fps)

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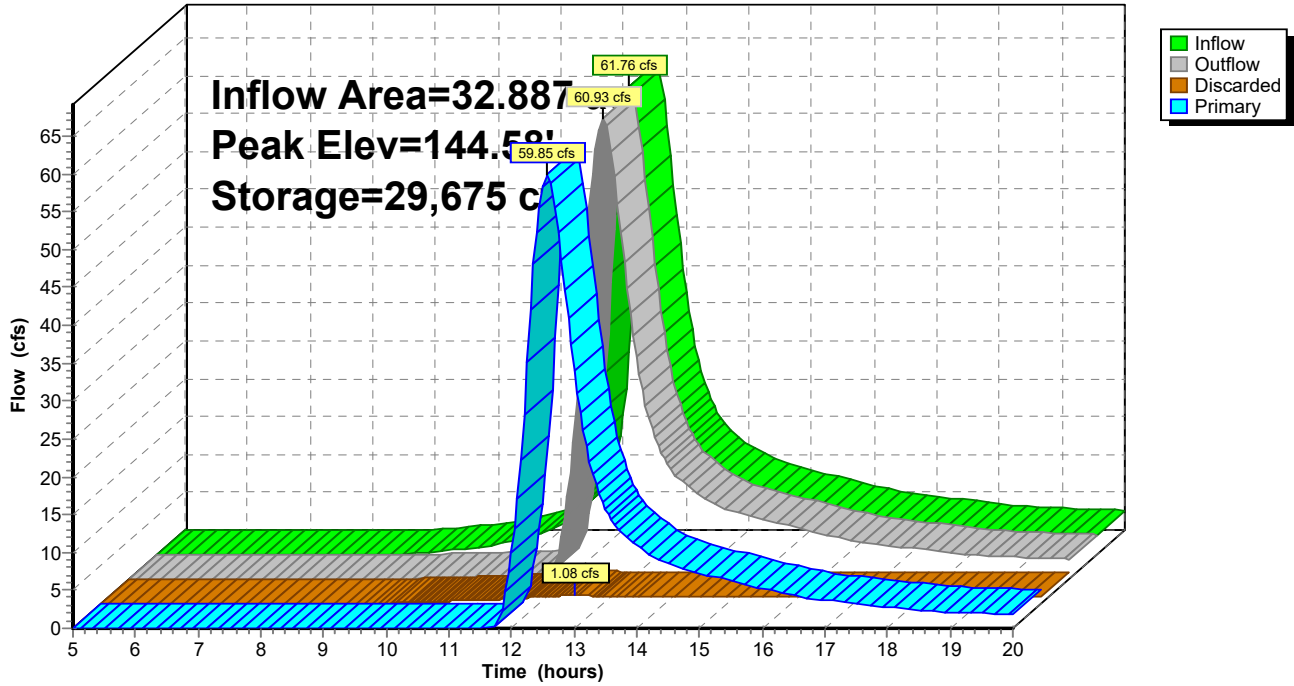
Type III 24-hr 50 year Rainfall=7.02"

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Pond 62P: Valley Berm

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 64P: Sediment Trap

Inflow Area = 1.772 ac, 0.68% Impervious, Inflow Depth > 2.58" for 50 year event
 Inflow = 4.26 cfs @ 12.22 hrs, Volume= 0.381 af
 Outflow = 1.13 cfs @ 12.76 hrs, Volume= 0.291 af, Atten= 74%, Lag= 32.3 min
 Discarded = 0.40 cfs @ 12.76 hrs, Volume= 0.248 af
 Primary = 0.73 cfs @ 12.76 hrs, Volume= 0.043 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.09' @ 12.76 hrs Surf.Area= 5,694 sf Storage= 7,171 cf

Plug-Flow detention time= 160.8 min calculated for 0.291 af (76% of inflow)
 Center-of-Mass det. time= 101.4 min (916.8 - 815.5)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	13,521 cf	40.00'W x 40.00'L x 3.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.40 cfs @ 12.76 hrs HW=159.09' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.40 cfs)

Primary OutFlow Max=0.71 cfs @ 12.76 hrs HW=159.09' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 0.71 cfs @ 0.70 fps)

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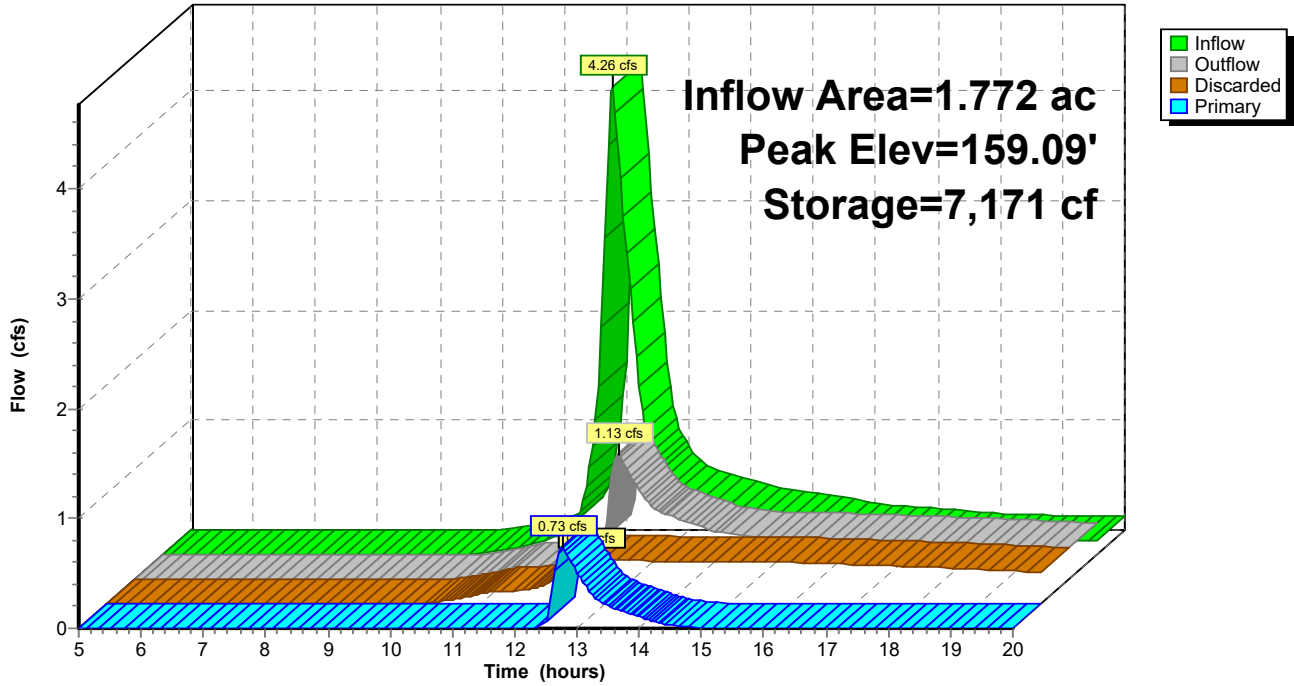
Type III 24-hr 50 year Rainfall=7.02"

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Pond 64P: Sediment Trap

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Type III 24-hr 50 year Rainfall=7.02"

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Summary for Pond 65P: Sediment Trap

Inflow Area = 3.565 ac, 0.17% Impervious, Inflow Depth > 3.06" for 50 year event
 Inflow = 8.43 cfs @ 12.36 hrs, Volume= 0.908 af
 Outflow = 6.74 cfs @ 12.55 hrs, Volume= 0.649 af, Atten= 20%, Lag= 11.7 min
 Primary = 6.74 cfs @ 12.55 hrs, Volume= 0.649 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.47' @ 12.55 hrs Surf.Area= 5,138 sf Storage= 13,378 cf

Plug-Flow detention time= 108.7 min calculated for 0.649 af (71% of inflow)
 Center-of-Mass det. time= 44.4 min (858.8 - 814.4)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	16,187 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
156.00	2,660	0	0
158.00	3,990	6,650	6,650
160.00	5,547	9,537	16,187

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=6.72 cfs @ 12.55 hrs HW=159.47' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 6.72 cfs @ 1.77 fps)

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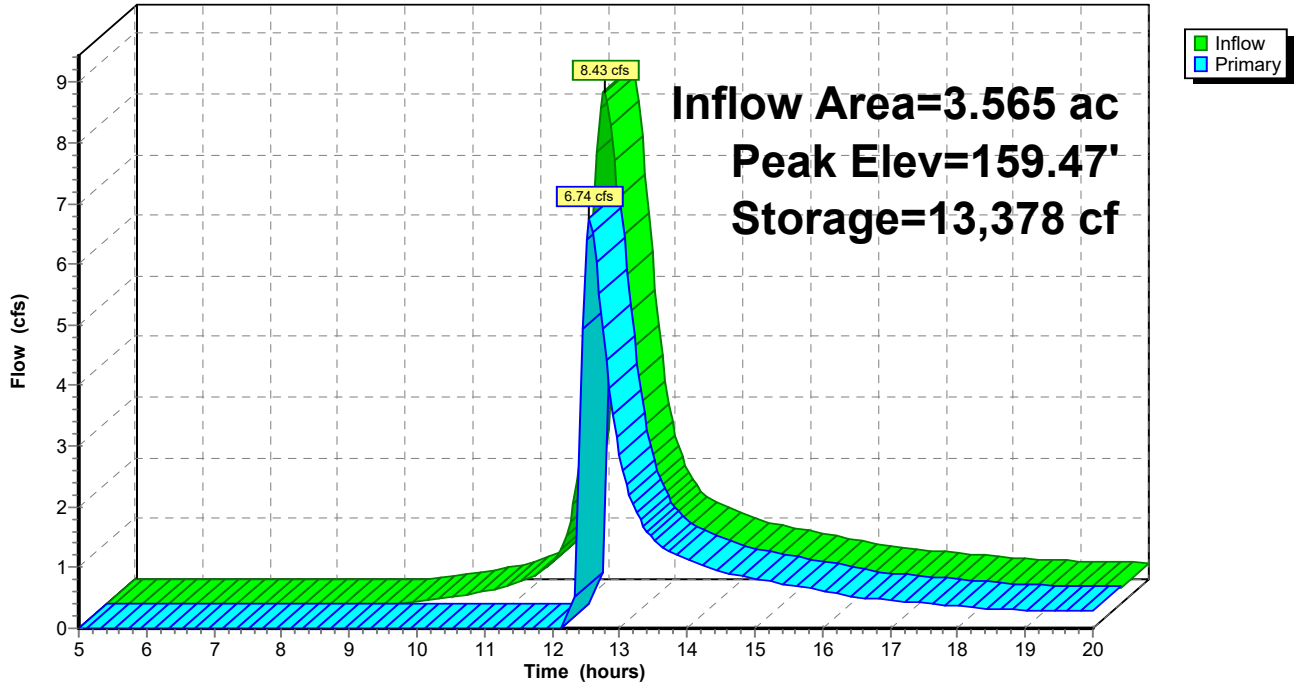
Type III 24-hr 50 year Rainfall=7.02"

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Pond 65P: Sediment Trap

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Summary for Pond 66P: Sediment Trap

Inflow Area = 1.914 ac, 0.78% Impervious, Inflow Depth > 2.87" for 50 year event
 Inflow = 5.31 cfs @ 12.20 hrs, Volume= 0.458 af
 Outflow = 4.02 cfs @ 12.36 hrs, Volume= 0.327 af, Atten= 24%, Lag= 9.5 min
 Primary = 4.02 cfs @ 12.36 hrs, Volume= 0.327 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 157.35' @ 12.36 hrs Surf.Area= 2,845 sf Storage= 6,563 cf

Plug-Flow detention time= 108.5 min calculated for 0.327 af (71% of inflow)
 Center-of-Mass det. time= 42.6 min (851.9 - 809.3)

Volume	Invert	Avail.Storage	Storage Description
#1	154.00'	8,547 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
154.00	1,170	0	0
156.00	2,080	3,250	3,250
158.00	3,217	5,297	8,547

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=3.93 cfs @ 12.36 hrs HW=157.34' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 3.93 cfs @ 1.44 fps)

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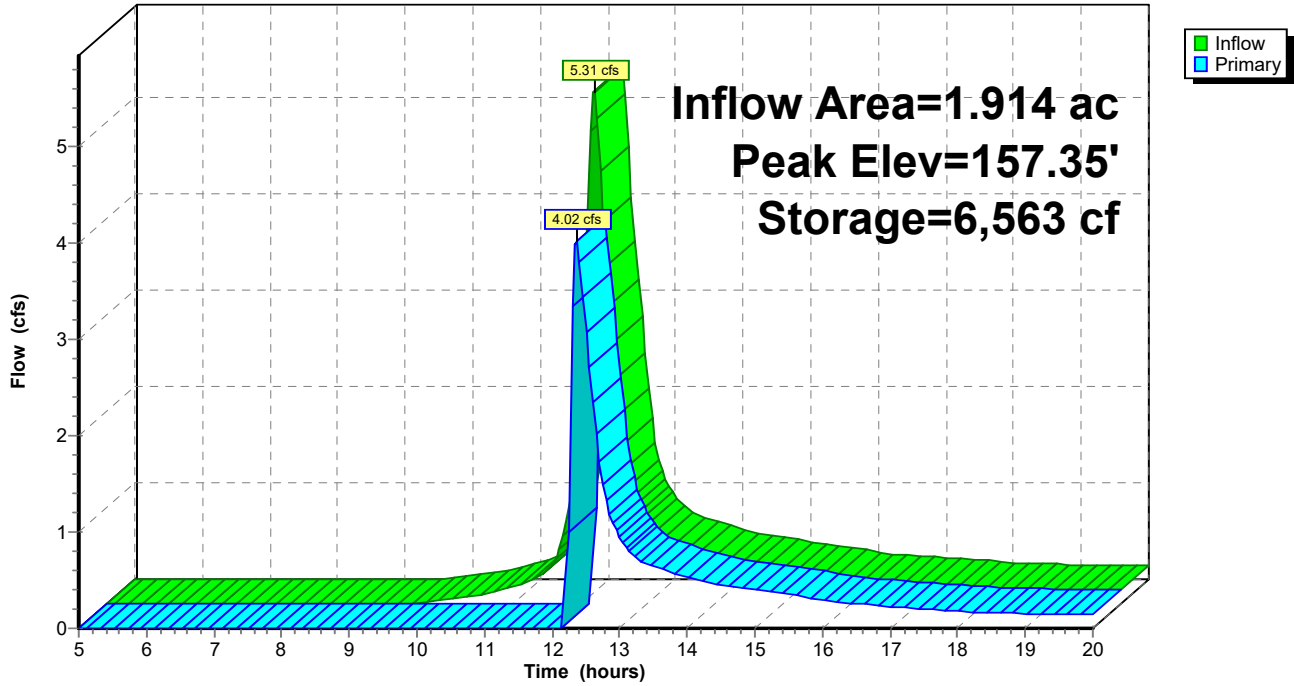
Type III 24-hr 50 year Rainfall=7.02"

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Pond 66P: Sediment Trap

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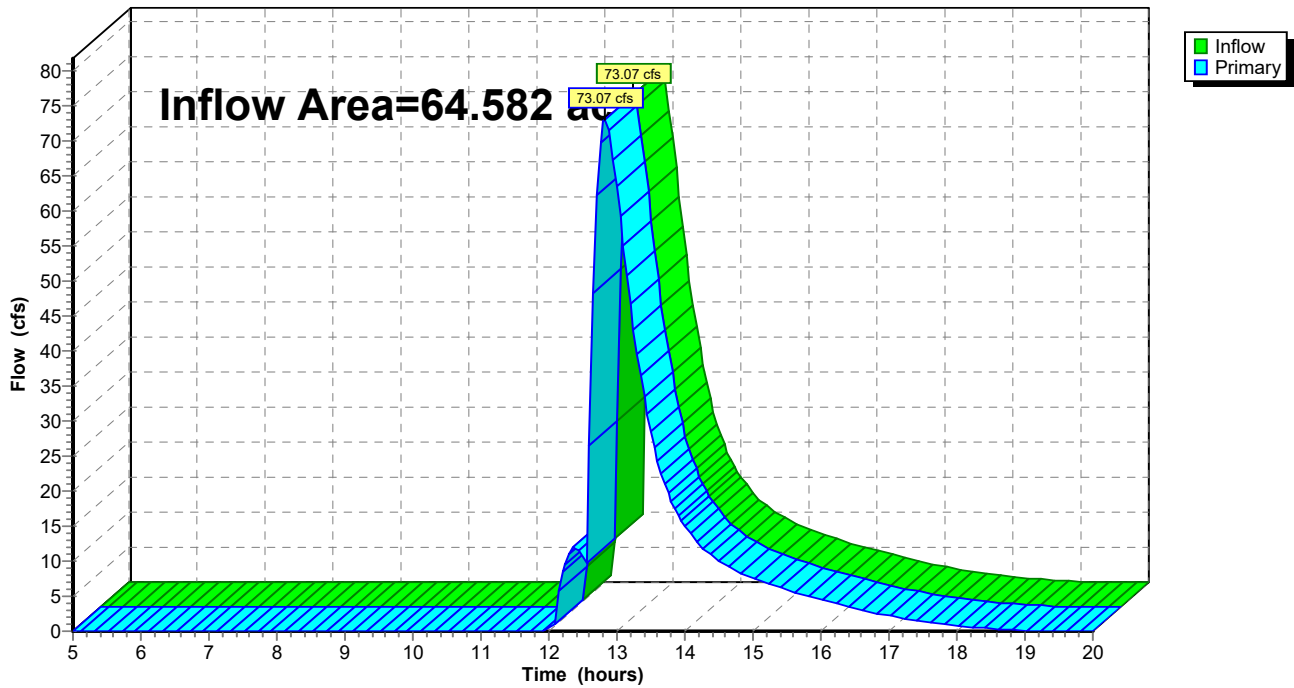
Summary for Link DP47: (new Link)

Inflow Area = 64.582 ac, 0.12% Impervious, Inflow Depth = 1.30" for 50 year event
Inflow = 73.07 cfs @ 12.82 hrs, Volume= 6.998 af
Primary = 73.07 cfs @ 12.82 hrs, Volume= 6.998 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP47: (new Link)

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Type III 24-hr 50 year Rainfall=7.02"

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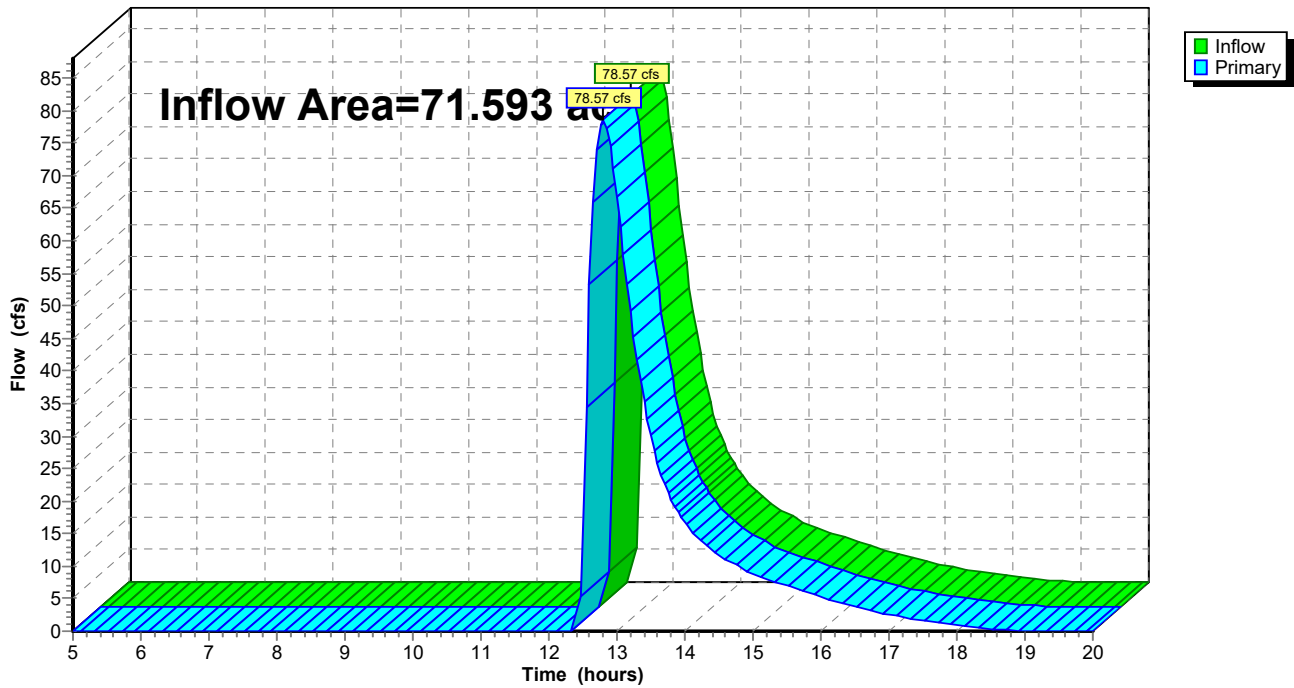
Summary for Link DP54: (new Link)

Inflow Area = 71.593 ac, 0.78% Impervious, Inflow Depth = 1.27" for 50 year event
Inflow = 78.57 cfs @ 12.80 hrs, Volume= 7.585 af
Primary = 78.57 cfs @ 12.80 hrs, Volume= 7.585 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP54: (new Link)

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 36: Subcat 36

Runoff = 24.17 cfs @ 12.47 hrs, Volume= 2.962 af, Depth> 4.09"

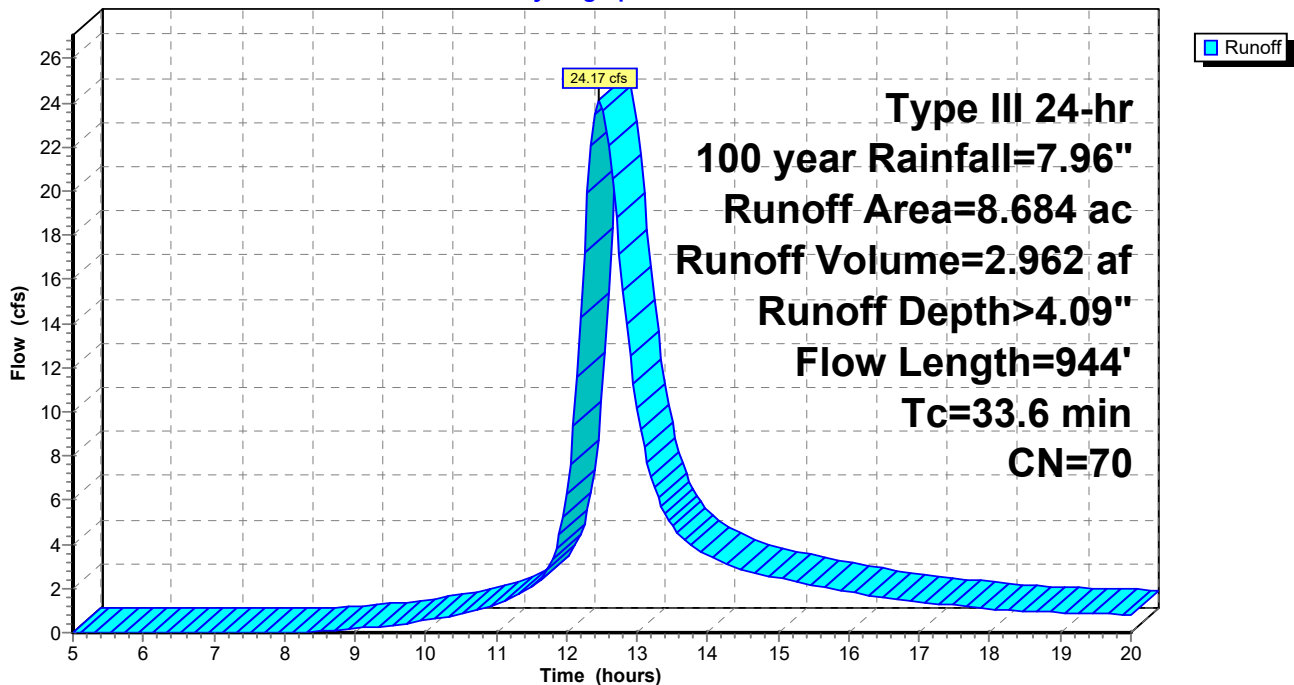
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.098	65	2 acre lots, 12% imp, HSG B
* 5.937	74	50-75% Grass cover, Fair, HSG B-C
2.424	58	Meadow, non-grazed, HSG B
0.225	89	Paved roads w/open ditches, 50% imp, HSG B
8.684	70	Weighted Average
8.560		98.57% Pervious Area
0.124		1.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.3	170	0.0059	0.54		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
20.8	724	0.0069	0.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.6	944	Total			

Subcatchment 36: Subcat 36

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 37: Subcat 37

Runoff = 3.57 cfs @ 12.24 hrs, Volume= 0.329 af, Depth> 3.46"

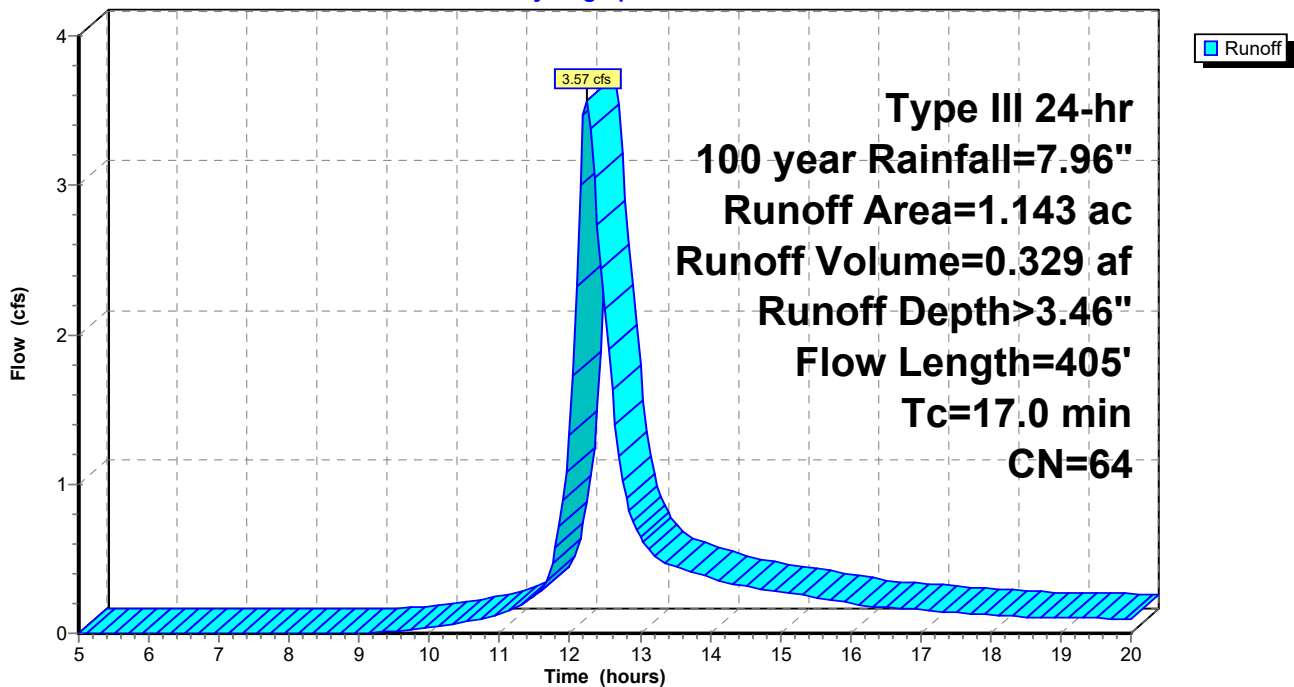
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.290	74	50-75% Grass cover, Fair, HSG B-C
0.785	58	Meadow, non-grazed, HSG B
0.068	89	Paved roads w/open ditches, 50% imp, HSG B
1.143	64	Weighted Average
1.109		97.03% Pervious Area
0.034		2.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
11.3	355	0.0056	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.0	405	Total			

Subcatchment 37: Subcat 37

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 38: Subcat 38

Runoff = 14.05 cfs @ 12.33 hrs, Volume= 1.488 af, Depth> 4.55"

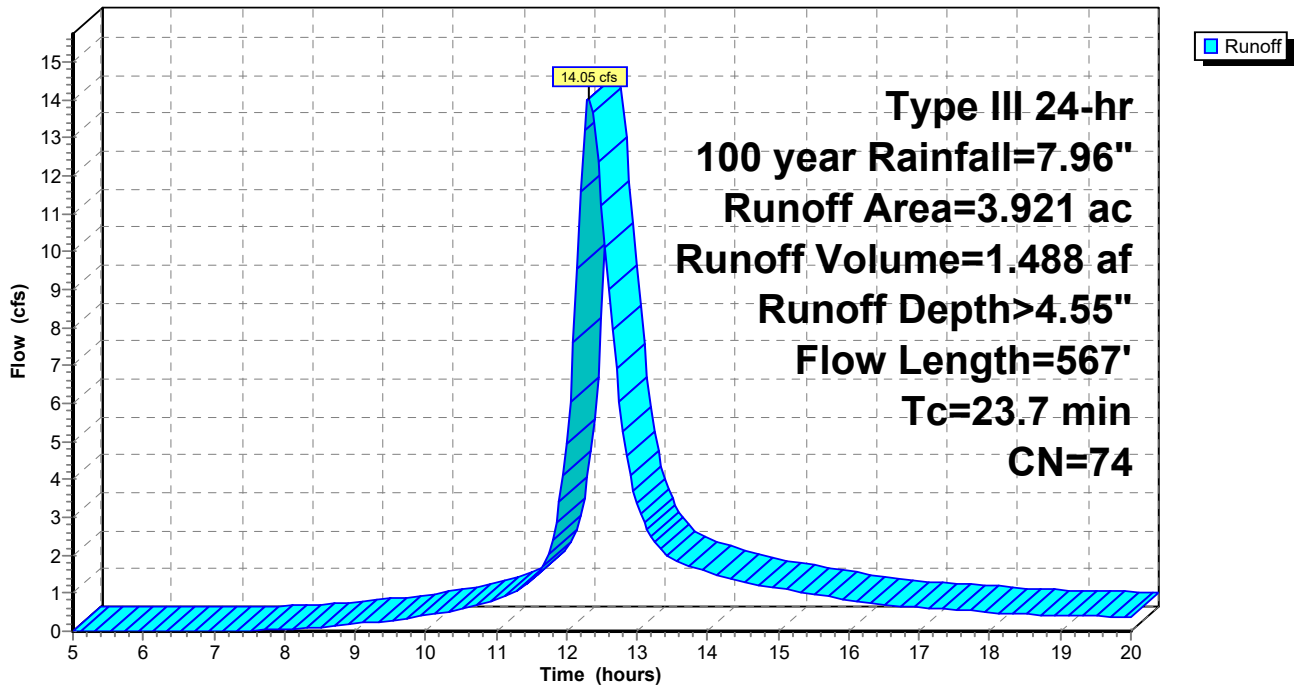
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 3.885	74	50-75% Grass cover, Fair, HSG B-C
0.036	58	Meadow, non-grazed, HSG B
3.921	74	Weighted Average
3.921		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
16.2	517	0.0058	0.53		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.7	567	Total			

Subcatchment 38: Subcat 38

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 39: Subcat 39

Runoff = 8.80 cfs @ 12.15 hrs, Volume= 0.684 af, Depth> 4.01"

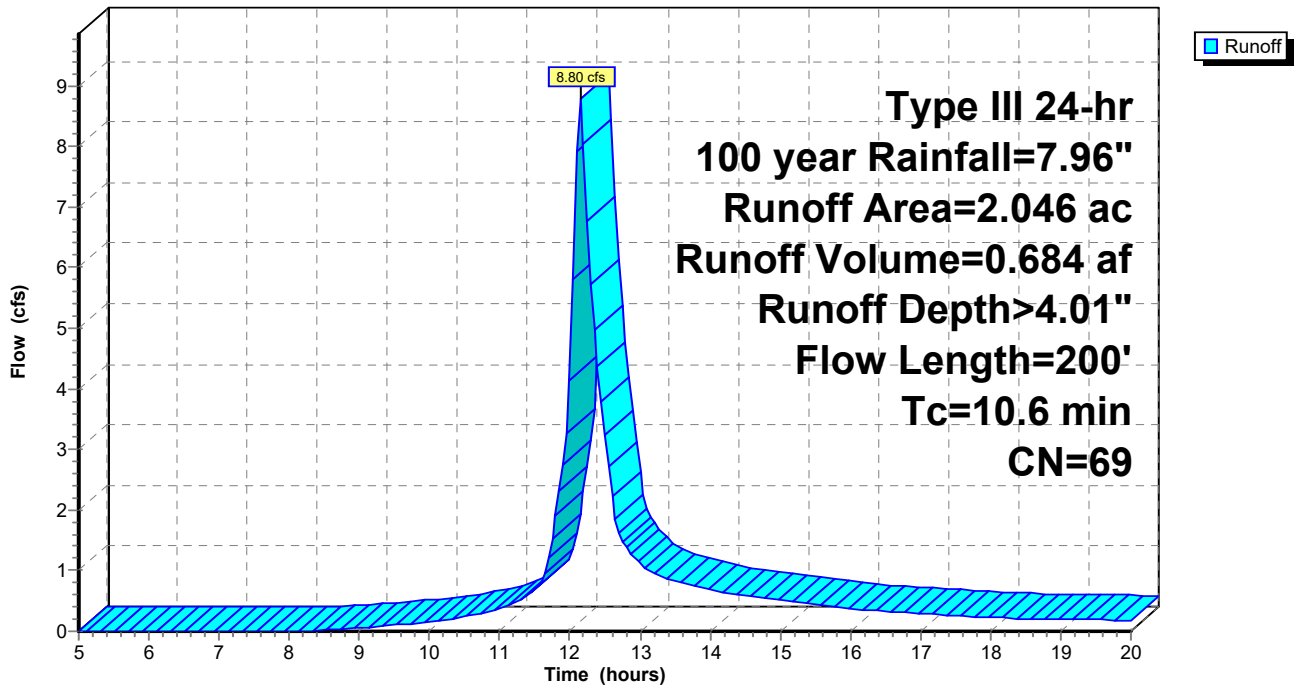
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 1.194	74	50-75% Grass cover, Fair, HSG B-C
0.761	58	Meadow, non-grazed, HSG B
0.091	89	Paved roads w/open ditches, 50% imp, HSG B
2.046	69	Weighted Average
2.000		97.78% Pervious Area
0.045		2.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
3.1	150	0.0133	0.81		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.6	200	Total			

Subcatchment 39: Subcat 39

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 40: Subcat 40

Runoff = 2.05 cfs @ 12.15 hrs, Volume= 0.159 af, Depth> 2.93"

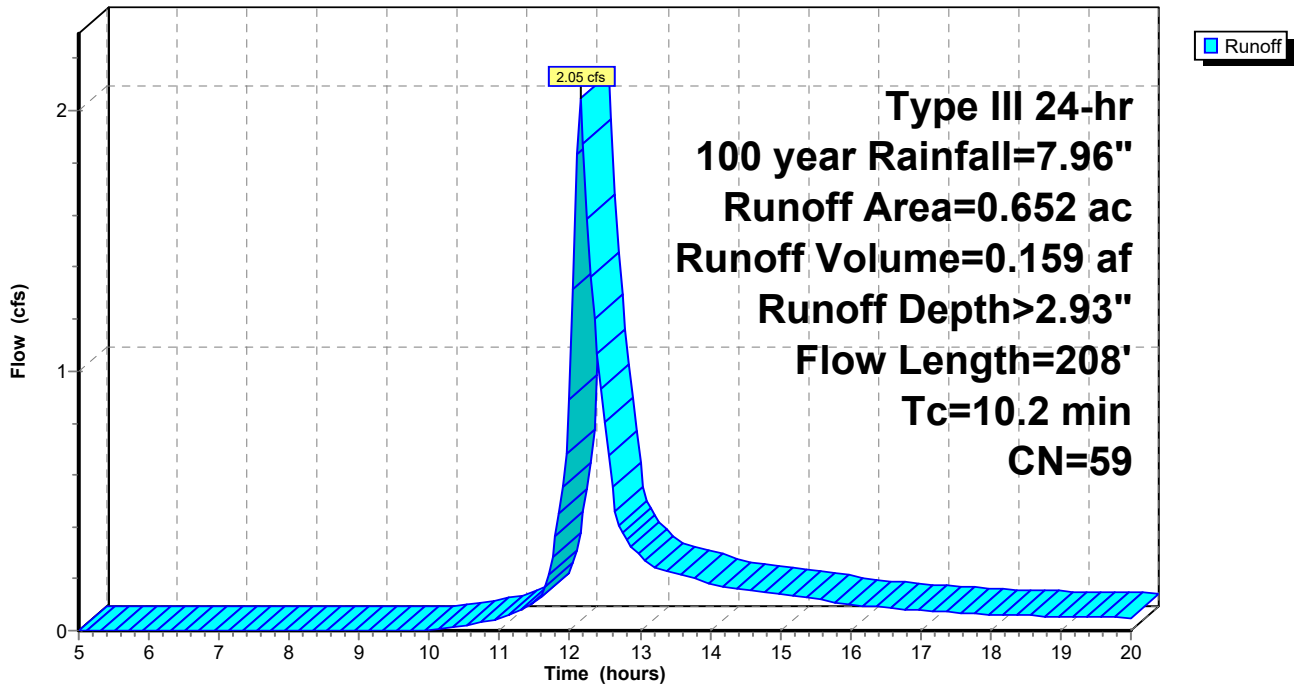
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.060	74	50-75% Grass cover, Fair, HSG B-C
0.008	30	Meadow, non-grazed, HSG A
0.584	58	Meadow, non-grazed, HSG B
0.652	59	Weighted Average
0.652		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.7	158	0.0190	0.96		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	208	Total			

Subcatchment 40: Subcat 40

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 41: Subcat 41

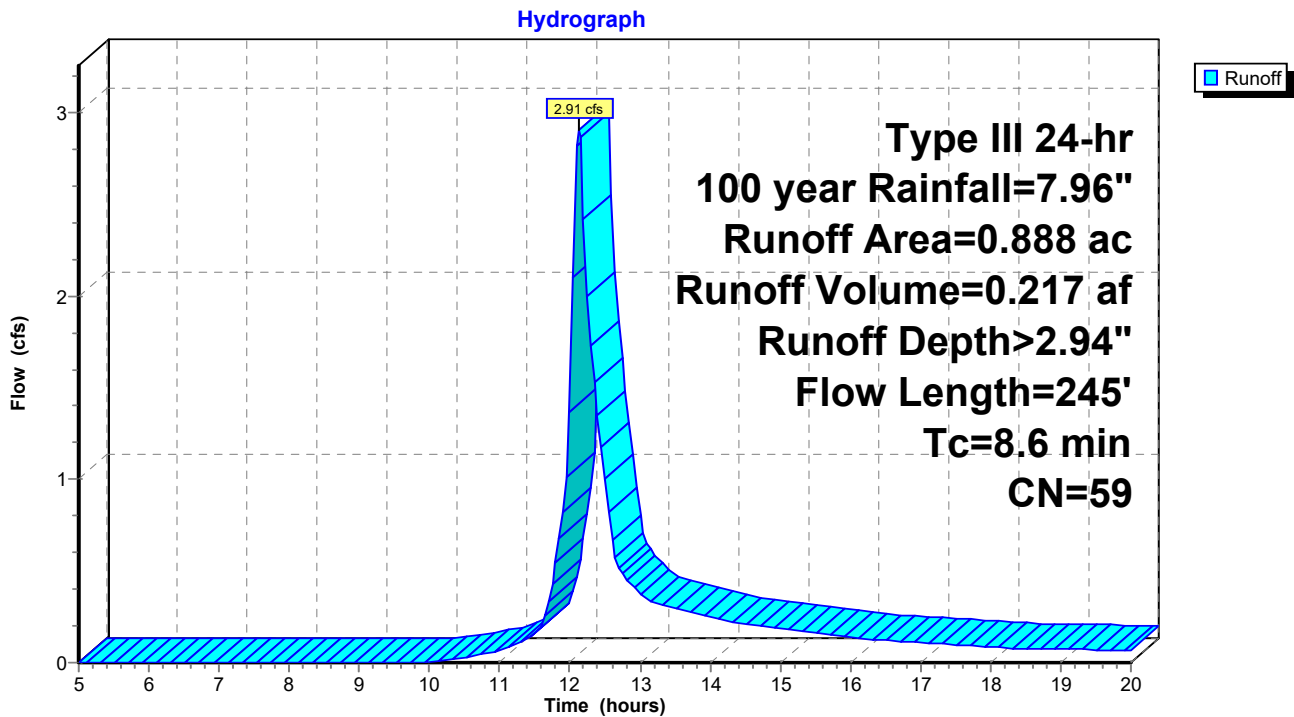
Runoff = 2.91 cfs @ 12.13 hrs, Volume= 0.217 af, Depth> 2.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.250	74	50-75% Grass cover, Fair, HSG B-C
0.110	30	Meadow, non-grazed, HSG A
0.528	58	Meadow, non-grazed, HSG B
0.888	59	Weighted Average
0.888		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
2.9	195	0.0256	1.12		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
8.6	245	Total			

Subcatchment 41: Subcat 41



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 42: Subcat 42

Runoff = 5.34 cfs @ 12.19 hrs, Volume= 0.451 af, Depth> 2.93"

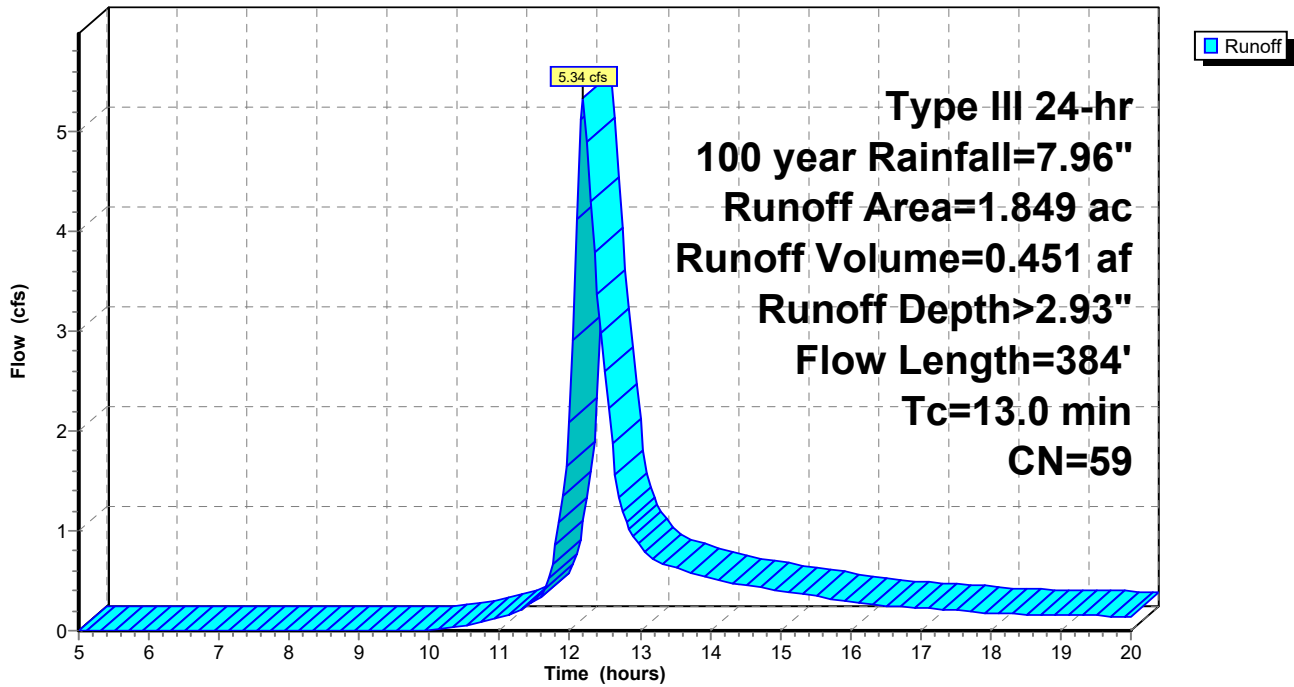
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Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.730	74	50-75% Grass cover, Fair, HSG B-C
0.181	30	Meadow, non-grazed, HSG A
0.698	58	Meadow, non-grazed, HSG B
0.184	36	Woods, Fair, HSG A
0.056	60	Woods, Fair, HSG B
1.849	59	Weighted Average
1.849		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.3	334	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.0	384	Total			

Subcatchment 42: Subcat 42

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 43: Subcat 43

Runoff = 2.39 cfs @ 12.22 hrs, Volume= 0.215 af, Depth> 2.82"

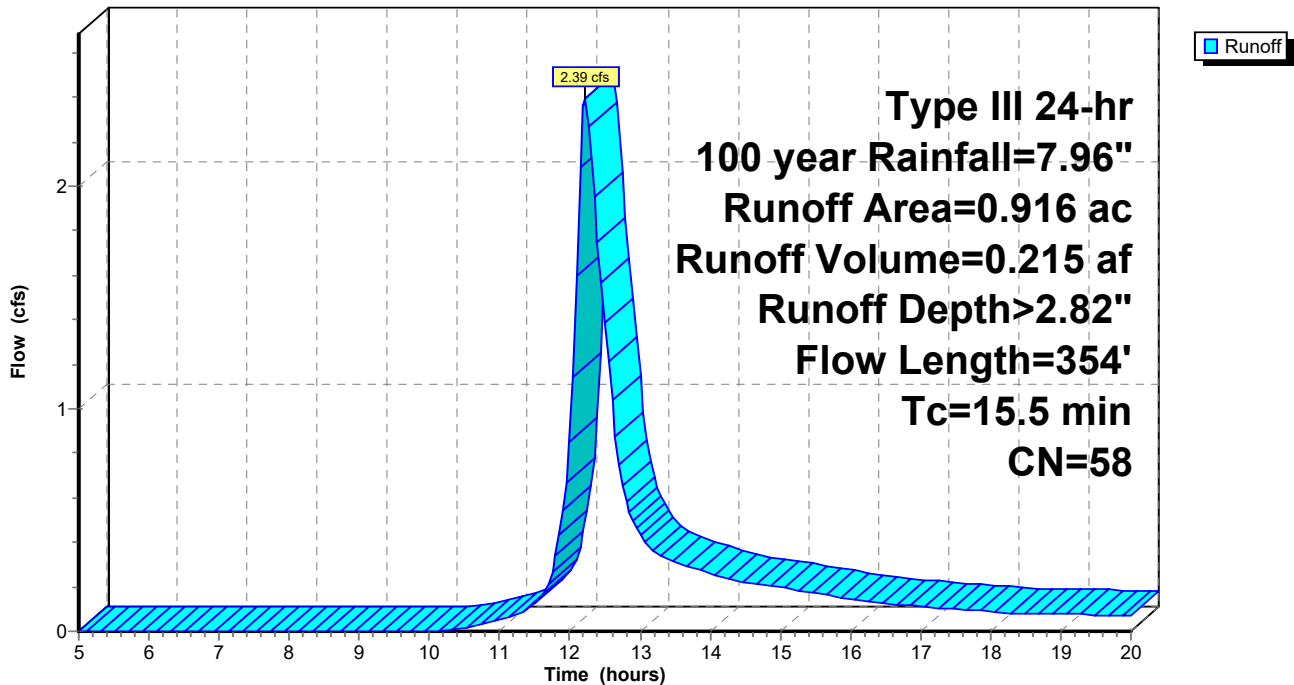
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.299	74	50-75% Grass cover, Fair, HSG B-C
0.104	30	Meadow, non-grazed, HSG A
0.438	58	Meadow, non-grazed, HSG B
0.075	36	Woods, Fair, HSG A
0.916	58	Weighted Average
0.916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.0	304	0.0082	0.63		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.5	354	Total			

Subcatchment 43: Subcat 43

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 44: Subcat 44

Runoff = 8.69 cfs @ 12.15 hrs, Volume= 0.669 af, Depth> 3.79"

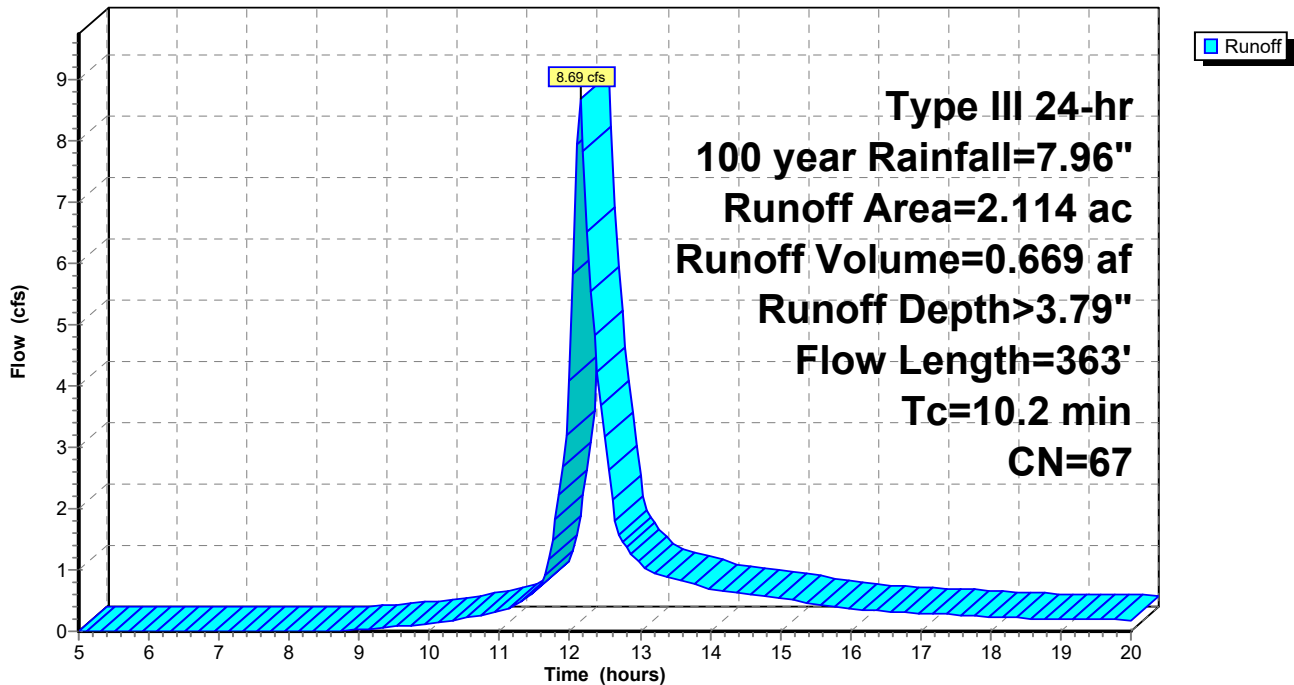
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.010	51	50-75% Grass cover, Fair, HSG A-B
* 1.465	74	50-75% Grass cover, Fair, HSG B-C
0.154	30	Meadow, non-grazed, HSG A
0.485	58	Meadow, non-grazed, HSG B
2.114	67	Weighted Average
2.114		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.4	313	0.0192	0.97		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	363	Total			

Subcatchment 44: Subcat 44

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 45: Subcat 45

Runoff = 11.24 cfs @ 12.10 hrs, Volume= 0.766 af, Depth> 3.91"

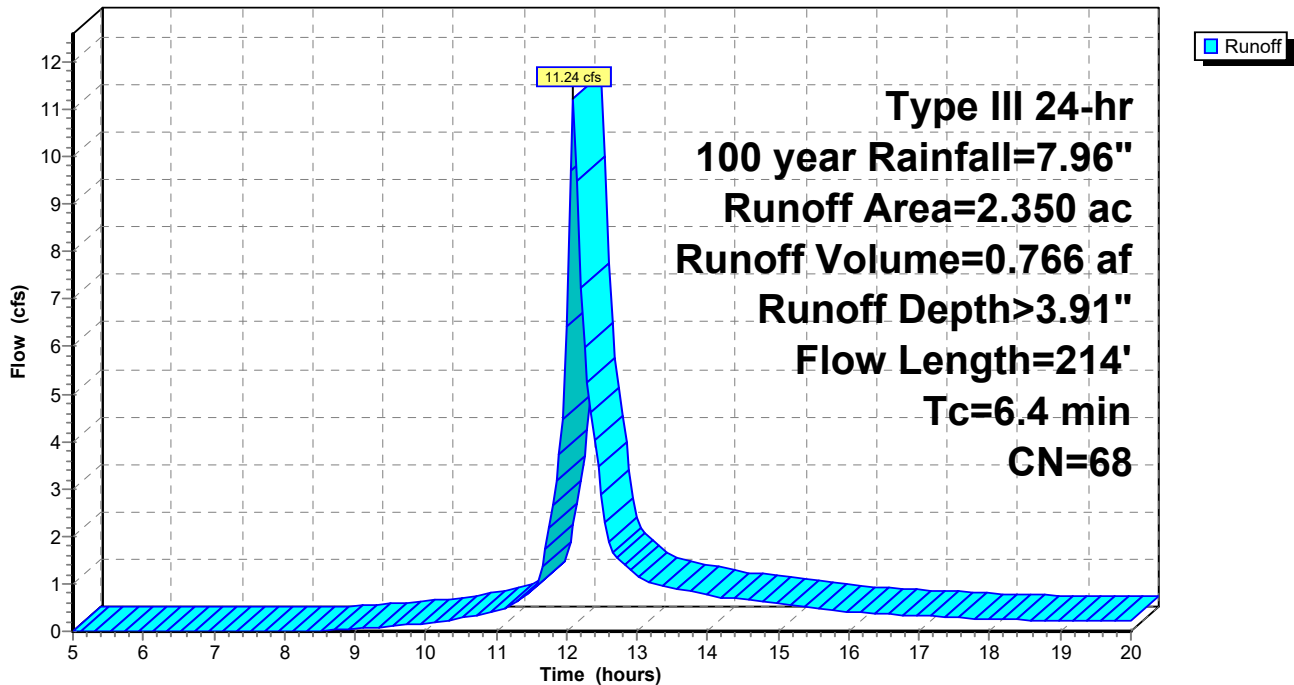
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 1.895	74	50-75% Grass cover, Fair, HSG B-C
0.246	30	Meadow, non-grazed, HSG A
0.207	58	Meadow, non-grazed, HSG B
2.350	68	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
1.6	164	0.0610	1.73		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.4	214	Total			

Subcatchment 45: Subcat 45

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 46: Subcat 46

Runoff = 13.11 cfs @ 12.16 hrs, Volume= 1.053 af, Depth> 4.12"

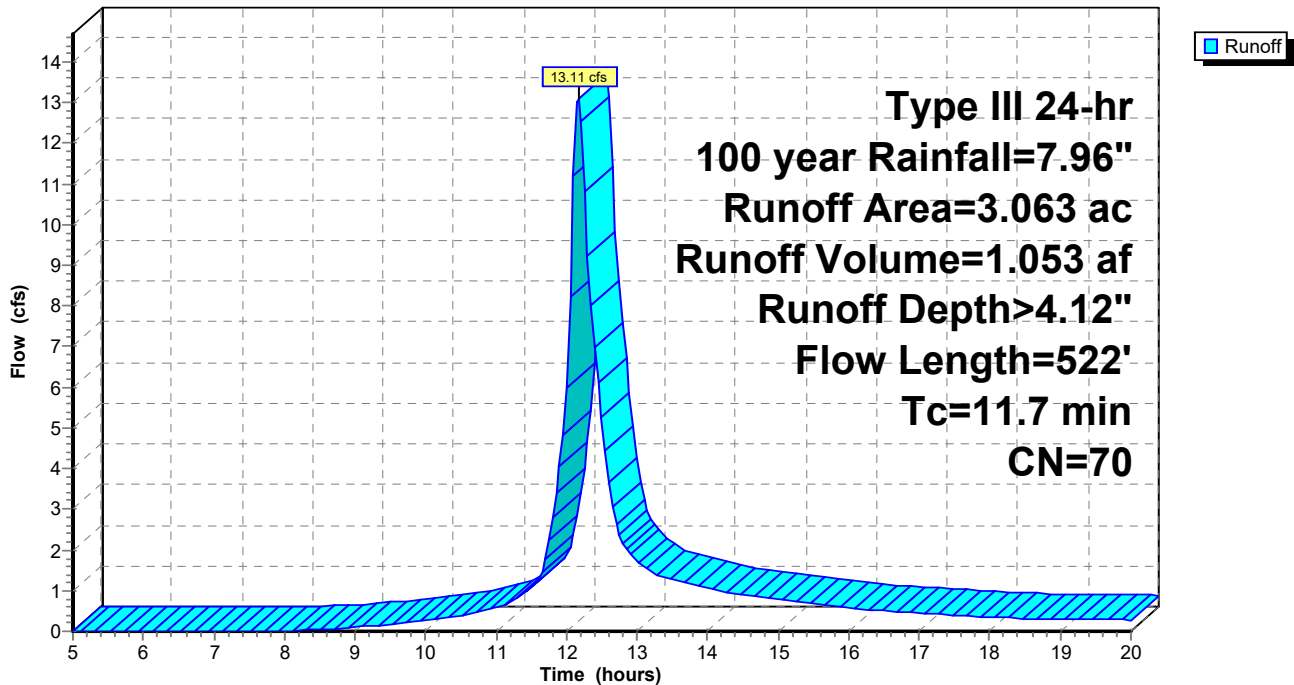
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.061	59	50-75% Grass cover, Fair, HSG A-B
* 2.381	74	50-75% Grass cover, Fair, HSG B-C
0.039	30	Meadow, non-grazed, HSG A
0.582	58	Meadow, non-grazed, HSG B
3.063	70	Weighted Average
3.063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.4	472	0.0233	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.7	522	Total			

Subcatchment 46: Subcat 46

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 47: Subcat 47

Runoff = 7.77 cfs @ 12.21 hrs, Volume= 0.693 af, Depth> 2.21"

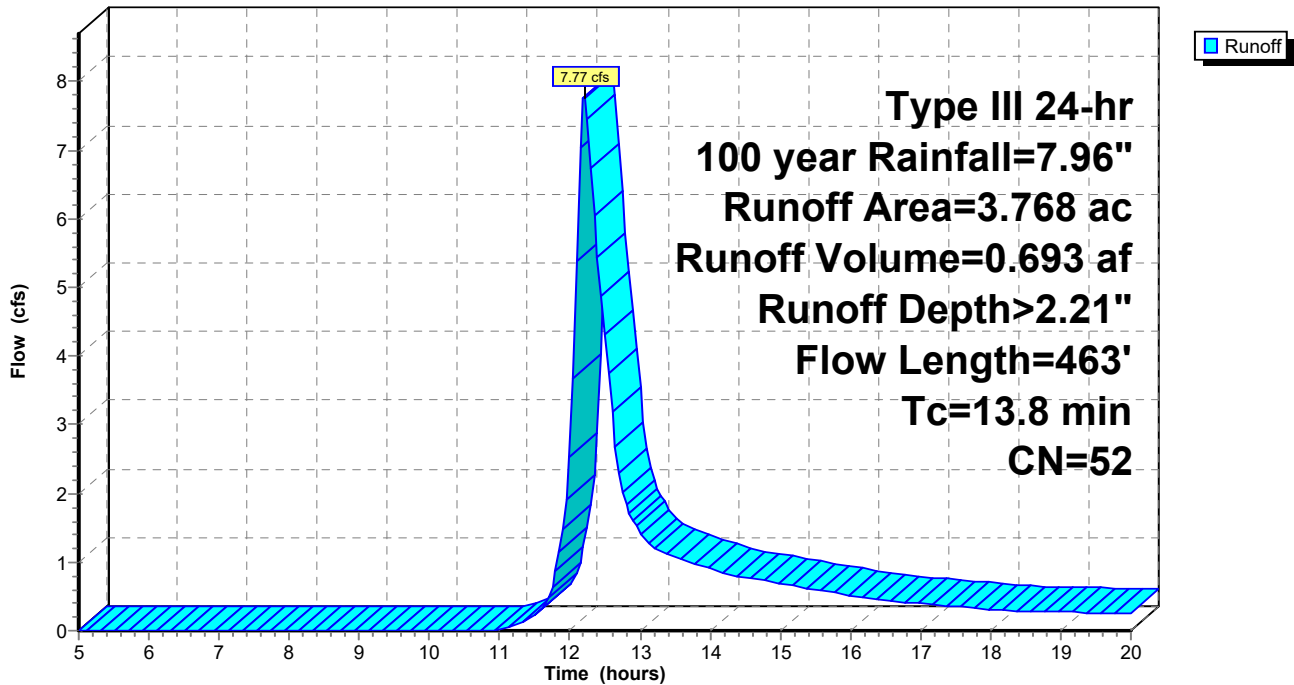
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.063	59	50-75% Grass cover, Fair, HSG A-B
* 1.444	74	50-75% Grass cover, Fair, HSG B-C
1.147	30	Meadow, non-grazed, HSG A
0.490	58	Meadow, non-grazed, HSG B
0.624	36	Woods, Fair, HSG A
3.768	52	Weighted Average
3.768		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.3	413	0.0242	1.09		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.8	463	Total			

Subcatchment 47: Subcat 47

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 48: Subcat 48

Runoff = 15.02 cfs @ 12.18 hrs, Volume= 1.258 af, Depth> 2.83"

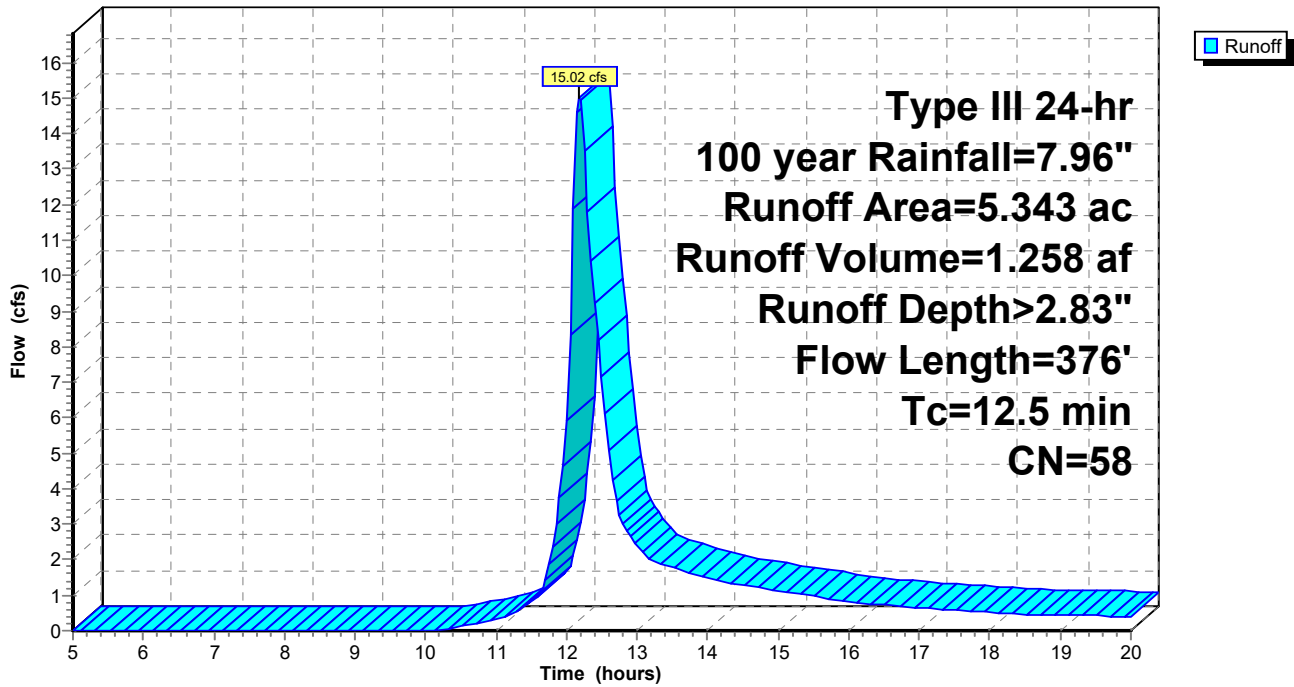
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.002	59	50-75% Grass cover, Fair, HSG A-B
* 2.779	74	50-75% Grass cover, Fair, HSG B-C
1.268	30	Meadow, non-grazed, HSG A
0.872	58	Meadow, non-grazed, HSG B
0.422	36	Woods, Fair, HSG A
5.343	58	Weighted Average
5.343		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
5.0	326	0.0245	1.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.5	376	Total			

Subcatchment 48: Subcat 48

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 49: Subcat 49

Runoff = 7.17 cfs @ 12.22 hrs, Volume= 0.645 af, Depth> 2.41"

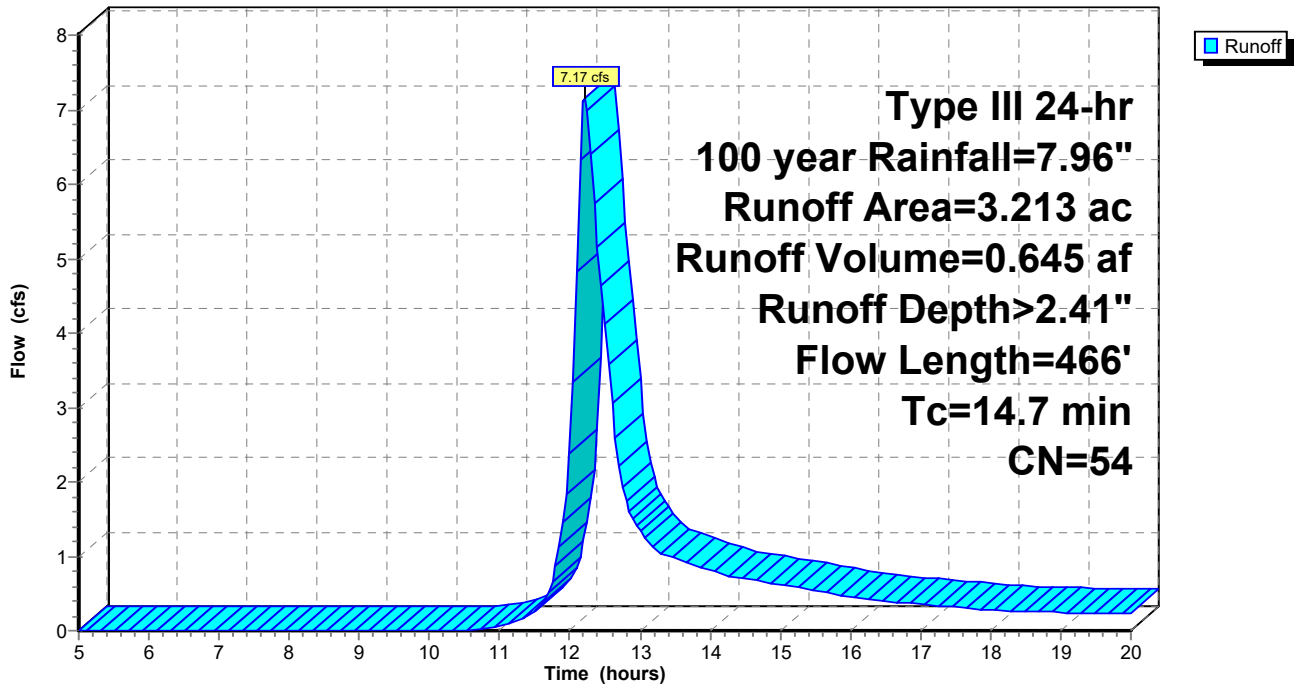
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.010	59	50-75% Grass cover, Fair, HSG A-B
* 1.407	74	50-75% Grass cover, Fair, HSG B-C
0.952	30	Meadow, non-grazed, HSG A
0.460	58	Meadow, non-grazed, HSG B
0.384	36	Woods, Fair, HSG A
3.213	54	Weighted Average
3.213		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
9.0	416	0.0120	0.77		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.7	466	Total			

Subcatchment 49: Subcat 49

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 50: Subcat 50

Runoff = 22.09 cfs @ 12.21 hrs, Volume= 1.932 af, Depth> 3.14"

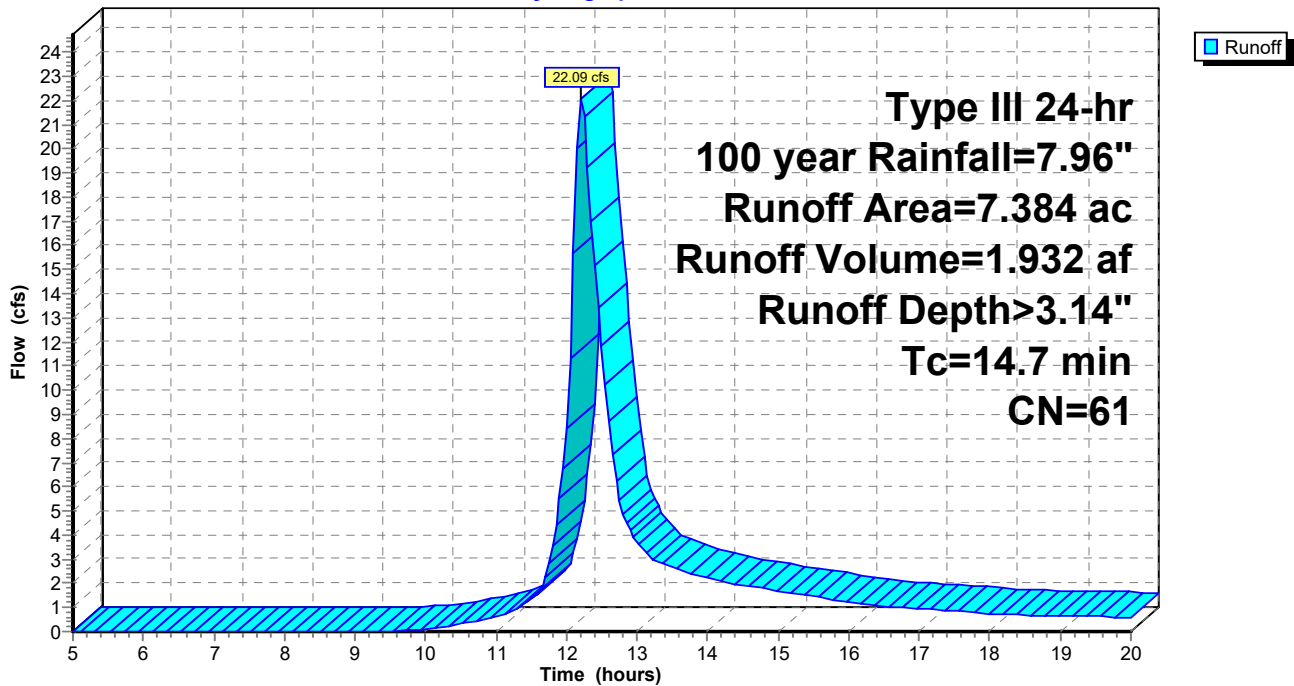
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 4.005	74	50-75% Grass cover, Fair, HSG B-C
0.989	30	Meadow, non-grazed, HSG A
1.720	58	Meadow, non-grazed, HSG B
0.666	36	Woods, Fair, HSG A
0.004	60	Woods, Fair, HSG B
7.384	61	Weighted Average
7.384		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7					Direct Entry,

Subcatchment 50: Subcat 50

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 51: Subcat 51

Runoff = 74.21 cfs @ 12.55 hrs, Volume= 9.886 af, Depth> 4.31"

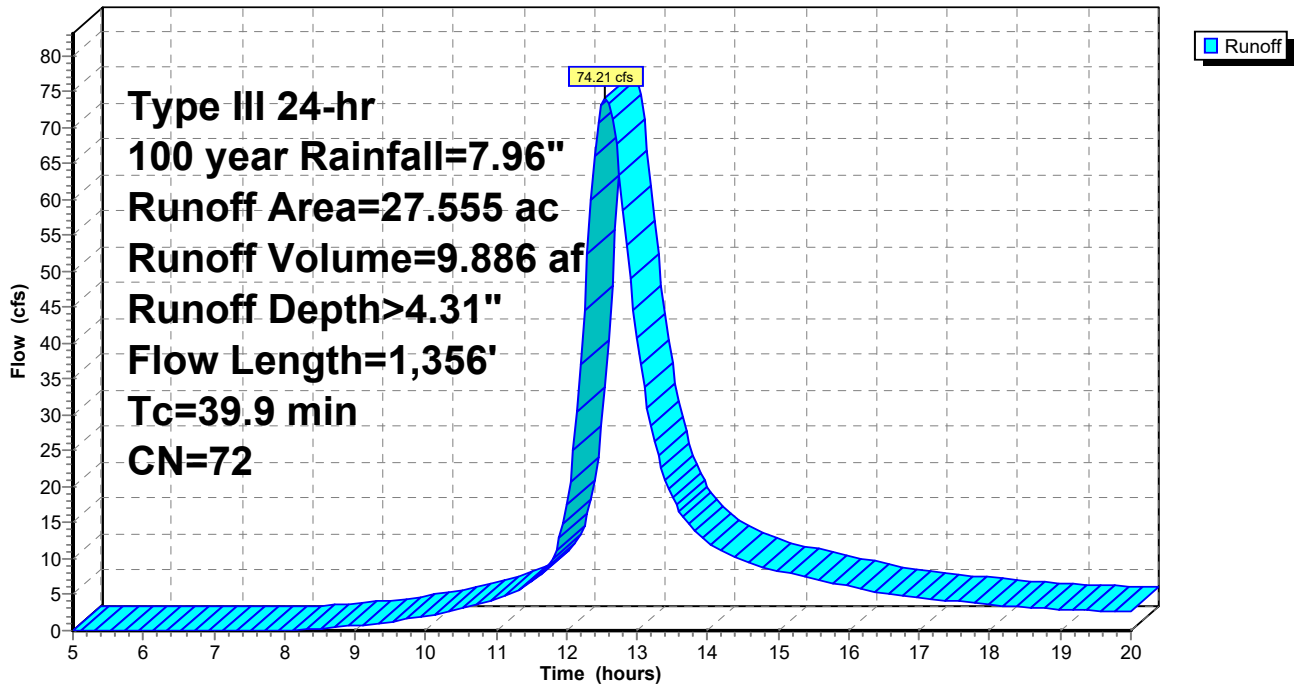
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 24.828	74	50-75% Grass cover, Fair, HSG B-C
0.074	30	Meadow, non-grazed, HSG A
2.653	58	Meadow, non-grazed, HSG B
27.555	72	Weighted Average
27.555		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
32.4	1,306	0.0092	0.67		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
39.9	1,356	Total			

Subcatchment 51: Subcat 51

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 53: Subcat 53

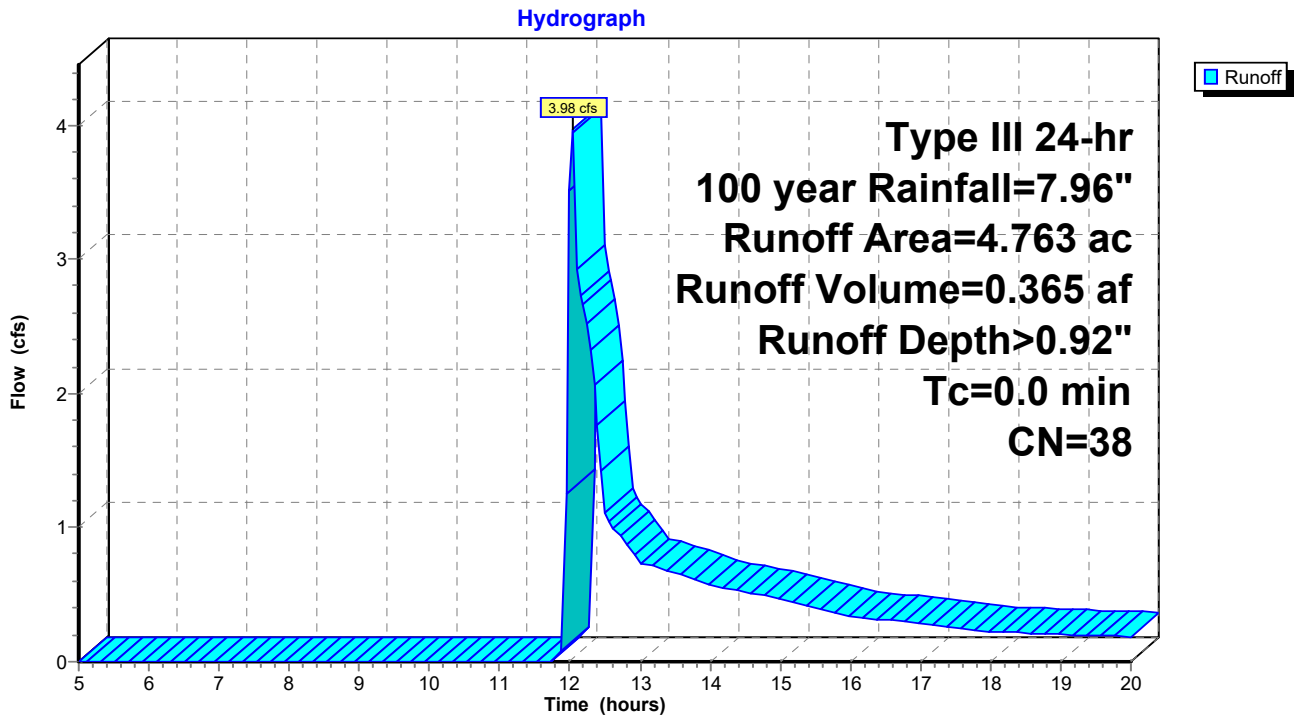
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.98 cfs @ 12.04 hrs, Volume= 0.365 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.263	74	50-75% Grass cover, Fair, HSG B-C
1.659	30	Meadow, non-grazed, HSG A
0.427	58	Meadow, non-grazed, HSG B
2.414	36	Woods, Fair, HSG A
4.763	38	Weighted Average
4.763		100.00% Pervious Area

Subcatchment 53: Subcat 53



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 54: Subcat 54

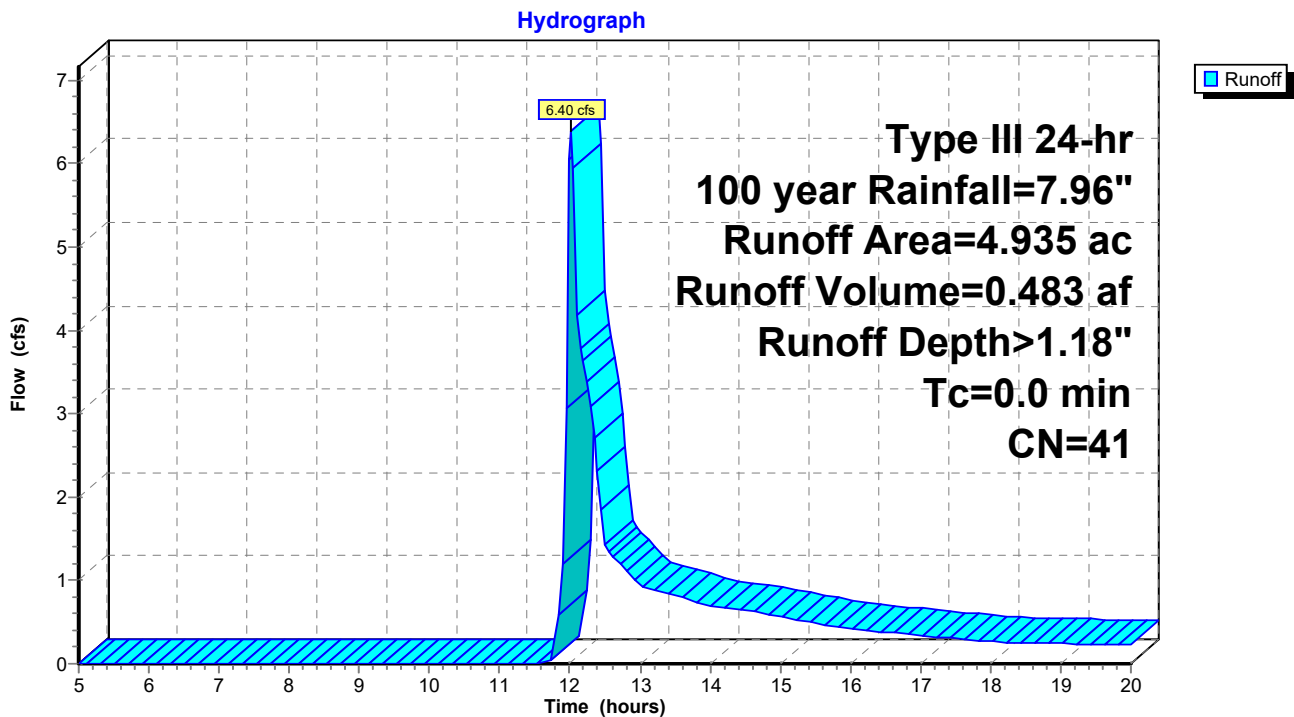
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 6.40 cfs @ 12.02 hrs, Volume= 0.483 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

	Area (ac)	CN	Description
*	0.002	59	50-75% Grass cover, Fair, HSG A-B
*	0.006	74	50-75% Grass cover, Fair, HSG B-C
	0.377	30	Meadow, non-grazed, HSG A
	0.823	58	Meadow, non-grazed, HSG B
	3.454	36	Woods, Fair, HSG A
	0.273	60	Woods, Fair, HSG B
	4.935	41	Weighted Average
	4.935		100.00% Pervious Area

Subcatchment 54: Subcat 54



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 55: Subcat 55

Runoff = 9.07 cfs @ 12.32 hrs, Volume= 0.943 af, Depth> 4.22"

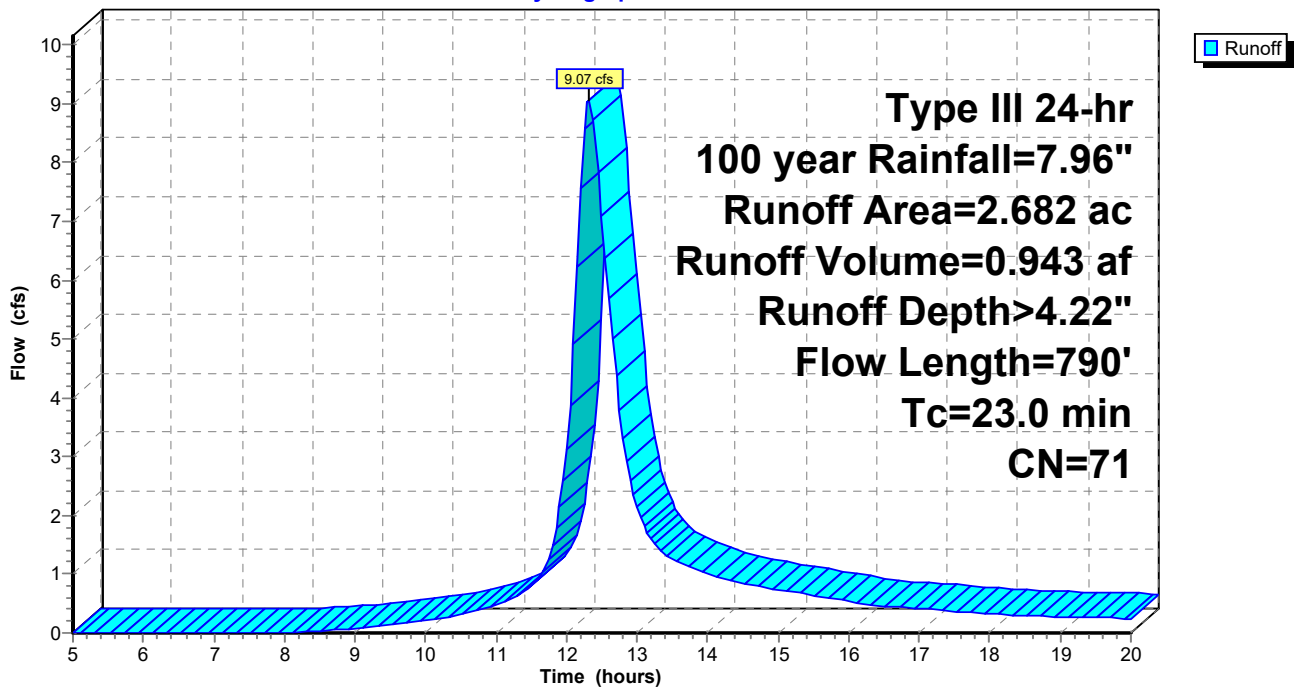
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.095	59	50-75% Grass cover, Fair, HSG A-B
* 2.333	74	50-75% Grass cover, Fair, HSG B-C
0.132	30	Meadow, non-grazed, HSG A
0.122	58	Meadow, non-grazed, HSG B
2.682	71	Weighted Average
2.682		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.6	216	0.0046	0.47		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.9	524	0.0248	1.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
23.0	790	Total			

Subcatchment 55: Subcat 55

Hydrograph



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Summary for Subcatchment 56: Subcat 56

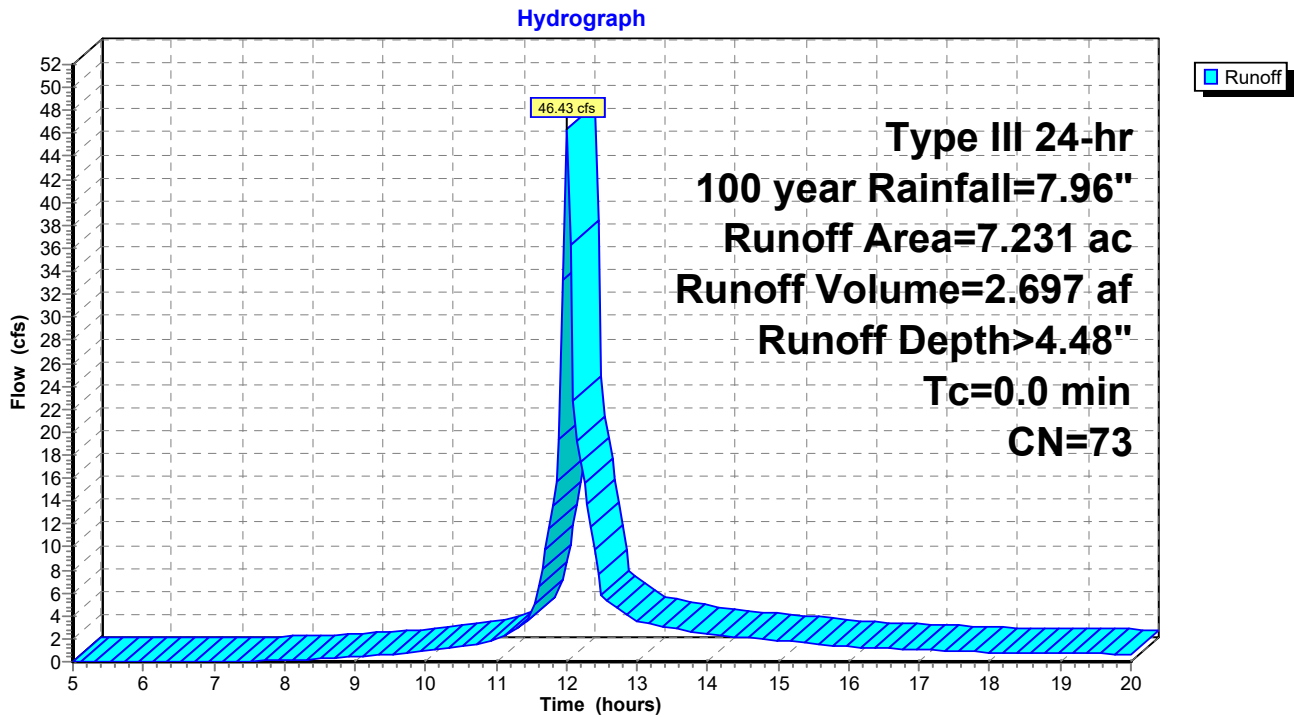
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 46.43 cfs @ 12.00 hrs, Volume= 2.697 af, Depth> 4.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

	Area (ac)	CN	Description
*	0.029	59	50-75% Grass cover, Fair, HSG A-B
*	6.843	74	50-75% Grass cover, Fair, HSG B-C
	0.045	30	Meadow, non-grazed, HSG A
	0.314	58	Meadow, non-grazed, HSG B
	7.231	73	Weighted Average
	7.231		100.00% Pervious Area

Subcatchment 56: Subcat 56



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 57: Subcat 57

Runoff = 19.73 cfs @ 12.25 hrs, Volume= 1.847 af, Depth> 3.89"

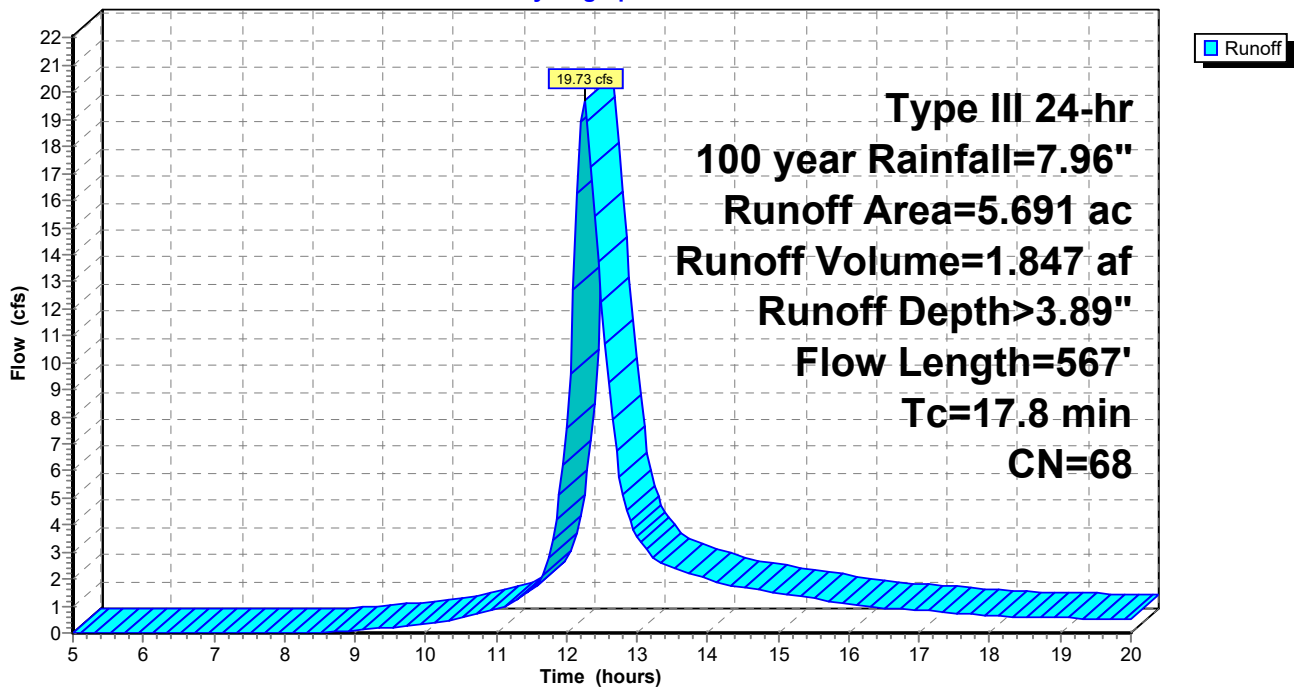
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.010	59	50-75% Grass cover, Fair, HSG A-B
* 3.857	74	50-75% Grass cover, Fair, HSG B-C
0.245	30	Meadow, non-grazed, HSG A
1.579	58	Meadow, non-grazed, HSG B
5.691	68	Weighted Average
5.691		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.3	266	0.0075	0.61		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	251	0.0398	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.8	567	Total			

Subcatchment 57: Subcat 57

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 58: Subcat 58

Runoff = 3.34 cfs @ 12.23 hrs, Volume= 0.341 af, Depth> 1.44"

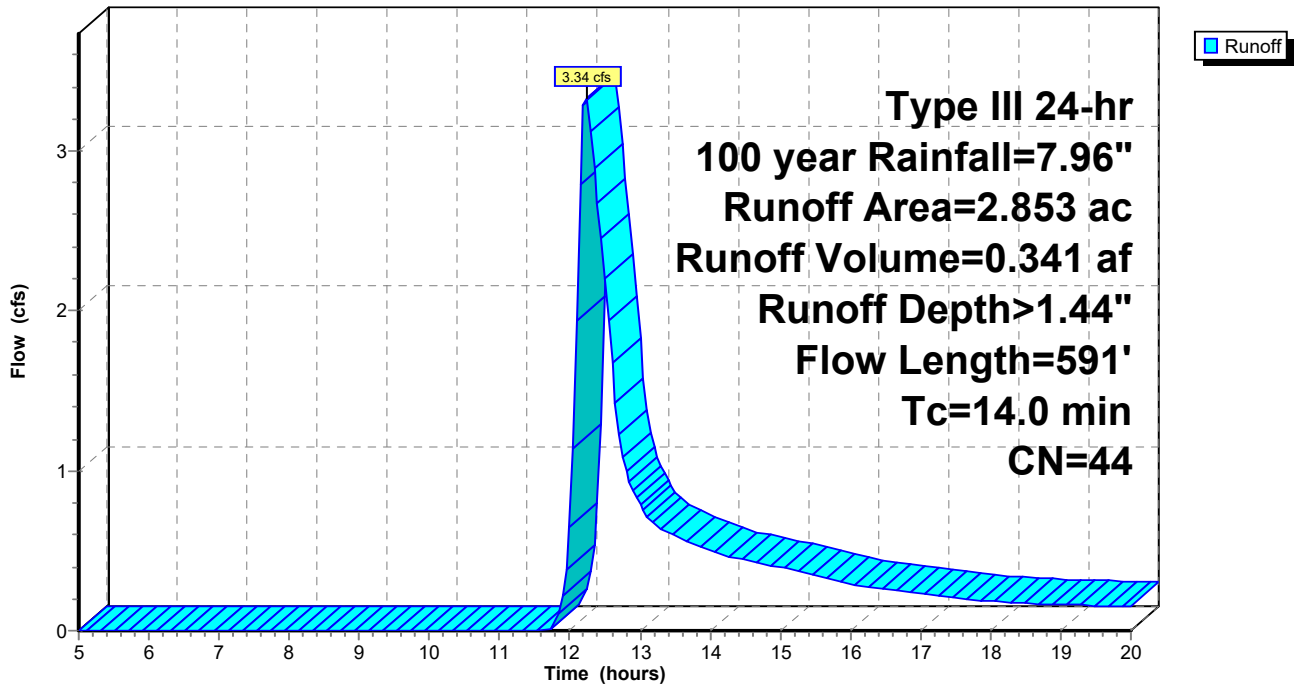
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.032	59	50-75% Grass cover, Fair, HSG A-B
* 0.244	74	50-75% Grass cover, Fair, HSG B-C
0.690	30	Meadow, non-grazed, HSG A
0.826	58	Meadow, non-grazed, HSG B
1.061	36	Woods, Fair, HSG A
2.853	44	Weighted Average
2.853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
8.3	541	0.0240	1.08		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	591	Total			

Subcatchment 58: Subcat 58

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 59: Subcat 59

Runoff = 5.92 cfs @ 12.20 hrs, Volume= 0.551 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.058	46	2 acre lots, 12% imp, HSG A
* 0.368	59	50-75% Grass cover, Fair, HSG A-B
* 0.684	74	50-75% Grass cover, Fair, HSG B-C
0.995	30	Meadow, non-grazed, HSG A
0.460	58	Meadow, non-grazed, HSG B
1.508	36	Woods, Fair, HSG A
4.073	46	Weighted Average
4.066		99.83% Pervious Area
0.007		0.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
4.5	221	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.3	45	0.1333	2.56		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
12.3	316	Total			

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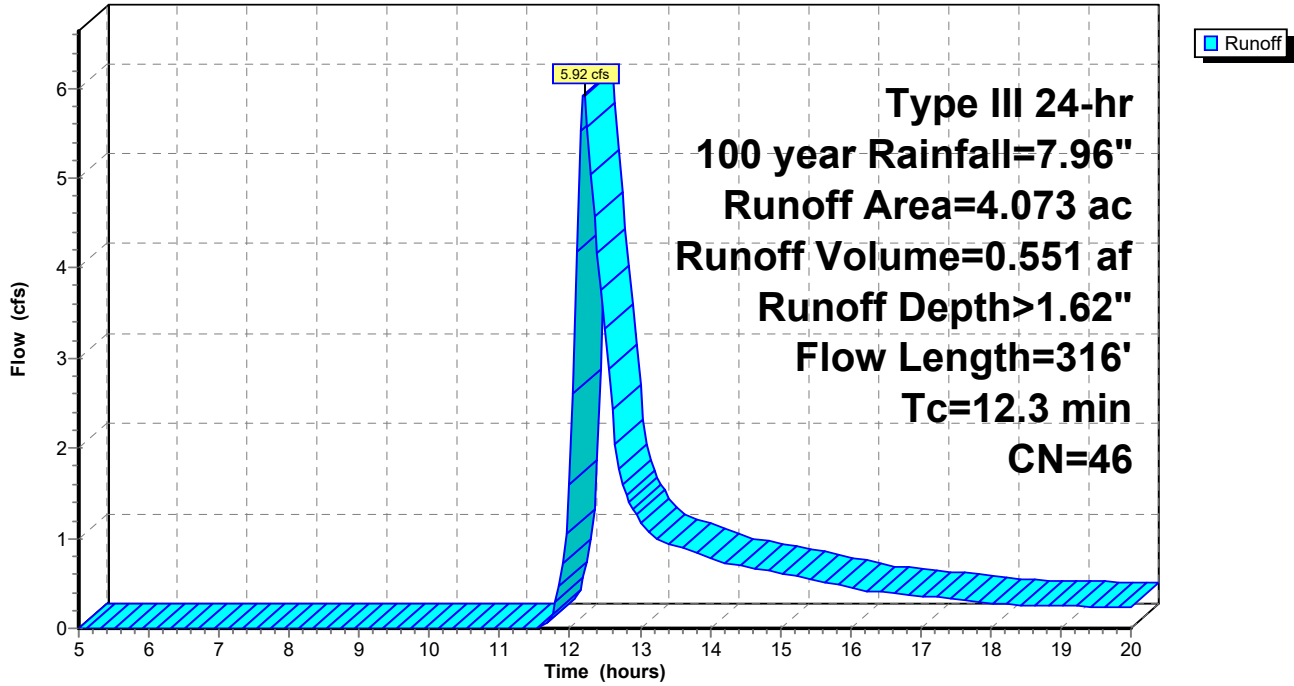
Type III 24-hr 100 year Rainfall=7.96"

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Subcatchment 59: Subcat 59

Hydrograph



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Summary for Subcatchment 60: Subcat 60

Runoff = 19.31 cfs @ 12.53 hrs, Volume= 2.516 af, Depth> 4.09"

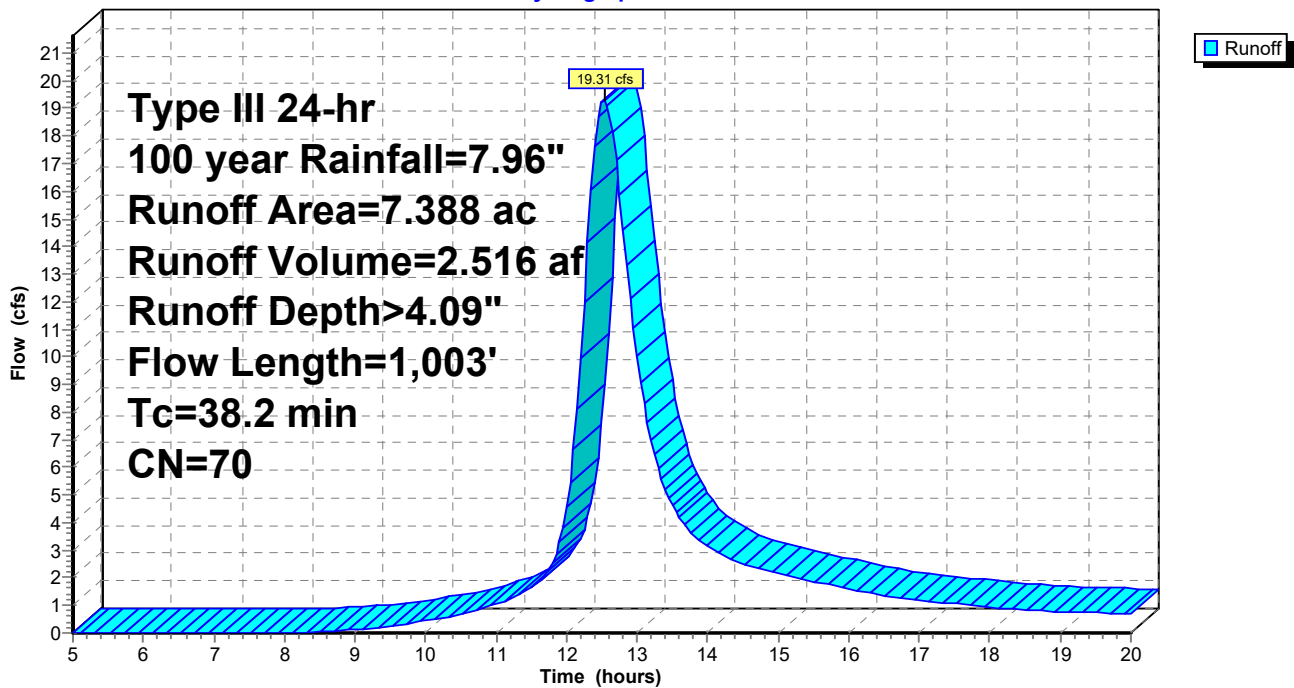
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 6.703	74	50-75% Grass cover, Fair, HSG B-C
0.511	30	Meadow, non-grazed, HSG A
0.105	58	Meadow, non-grazed, HSG B
0.069	36	Woods, Fair, HSG A
7.388	70	Weighted Average
7.388		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
29.7	855	0.0047	0.48		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.0	98	0.0510	1.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
38.2	1,003	Total			

Subcatchment 60: Subcat 60

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 62: Subcat 62

Runoff = 69.40 cfs @ 12.42 hrs, Volume= 8.043 af, Depth> 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
2.956	65	2 acre lots, 12% imp, HSG B
* 0.324	59	50-75% Grass cover, Fair, HSG A-B
* 17.404	74	50-75% Grass cover, Fair, HSG B-C
1.502	30	Meadow, non-grazed, HSG A
1.903	58	Meadow, non-grazed, HSG B
0.114	89	Paved roads w/open ditches, 50% imp, HSG B
24.203	69	Weighted Average
23.791		98.30% Pervious Area
0.412		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
15.7	757	0.0132	0.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.5	481	0.0312	1.24		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
29.7	1,288	Total			

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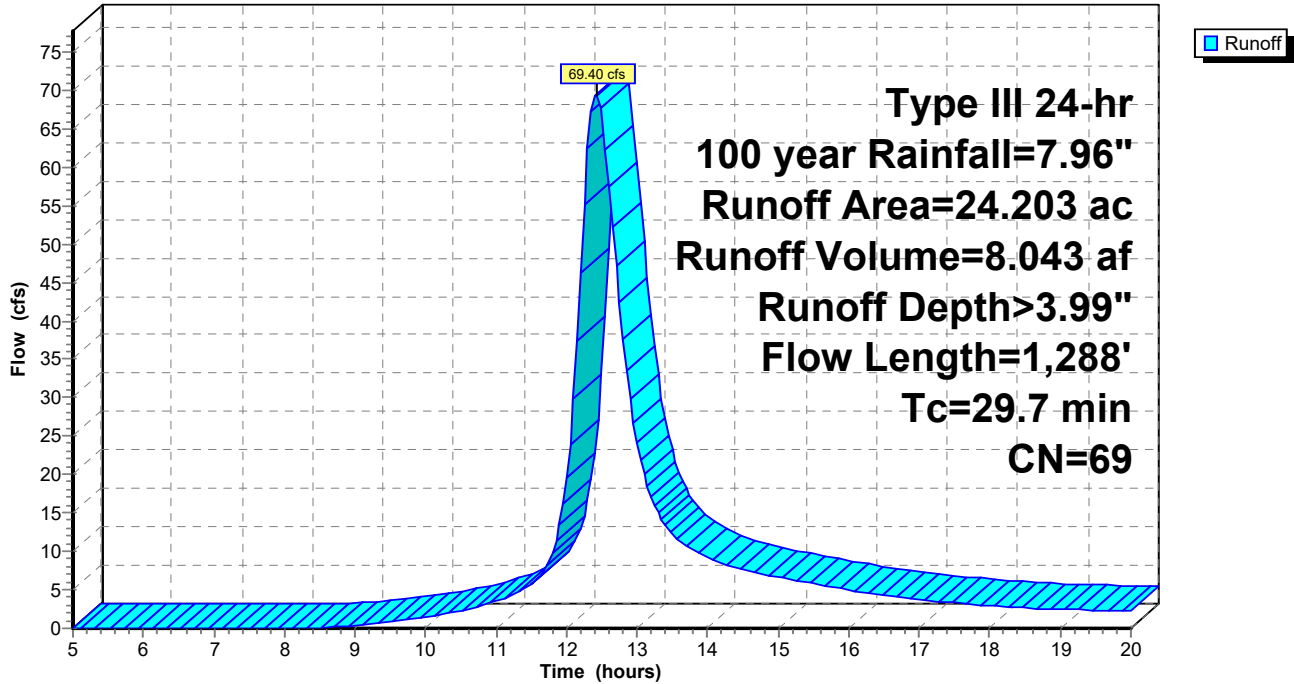
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Subcatchment 62: Subcat 62

Hydrograph



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Summary for Subcatchment 64: Subcat 64

Runoff = 5.40 cfs @ 12.22 hrs, Volume= 0.479 af, Depth> 3.25"

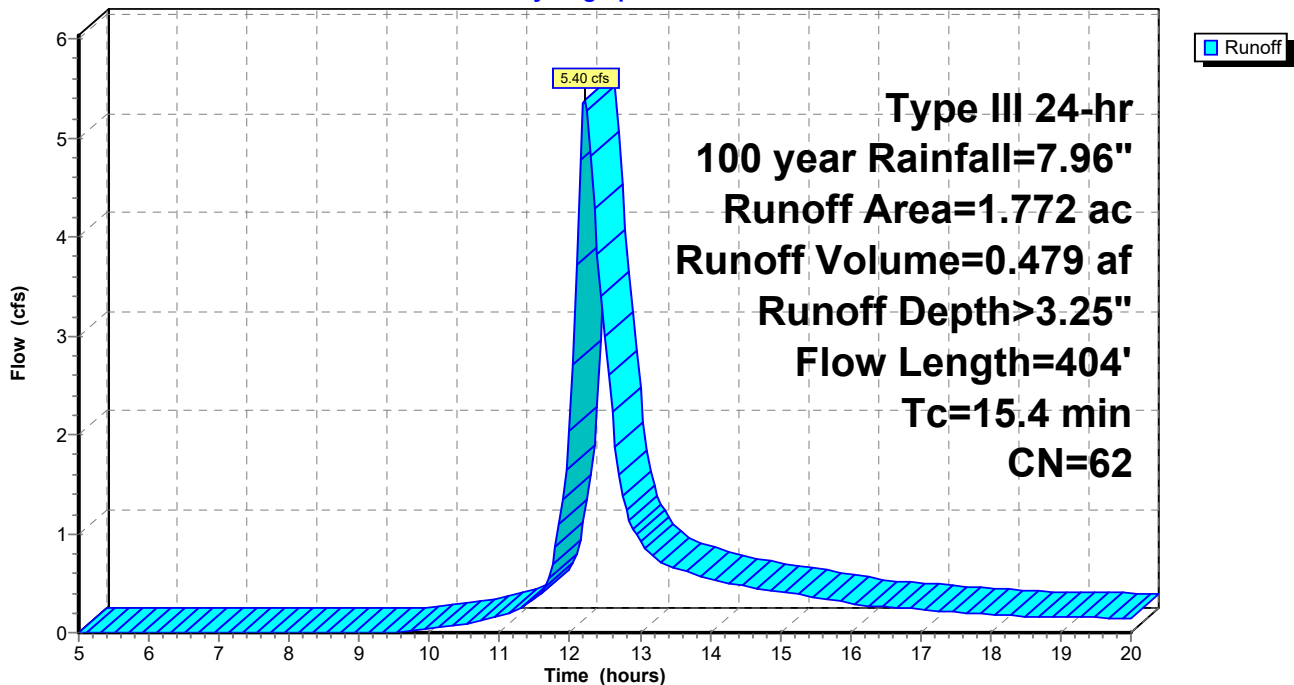
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
0.101	46	2 acre lots, 12% imp, HSG A
* 0.185	59	50-75% Grass cover, Fair, HSG A-B
* 1.123	74	50-75% Grass cover, Fair, HSG B-C
0.280	30	Meadow, non-grazed, HSG A
0.003	58	Meadow, non-grazed, HSG B
0.080	36	Woods, Fair, HSG A
1.772	62	Weighted Average
1.760		99.32% Pervious Area
0.012		0.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
7.9	354	0.0113	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
15.4	404	Total			

Subcatchment 64: Subcat 64

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 65: Subcat 65

Runoff = 10.42 cfs @ 12.35 hrs, Volume= 1.121 af, Depth> 3.77"

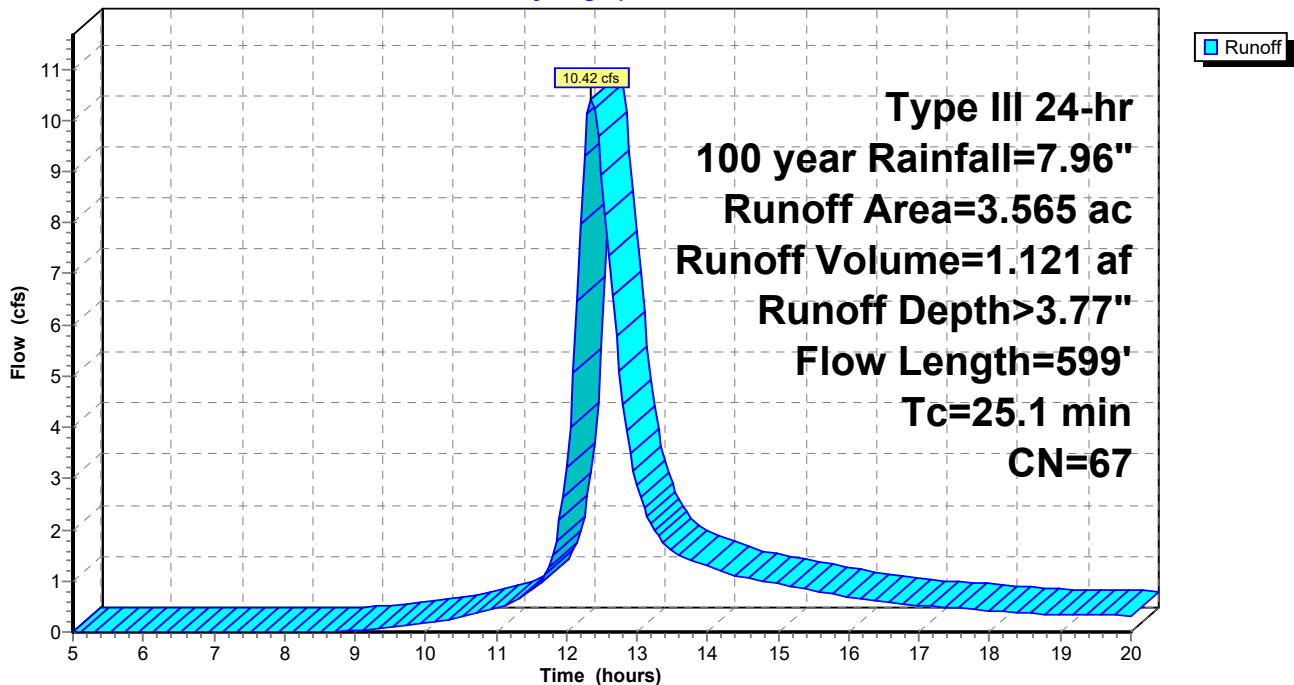
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.013	59	50-75% Grass cover, Fair, HSG A-B
* 2.513	74	50-75% Grass cover, Fair, HSG B-C
0.049	35	Brush, Fair, HSG A
0.267	56	Brush, Fair, HSG B
0.227	30	Meadow, non-grazed, HSG A
0.484	58	Meadow, non-grazed, HSG B
0.012	89	Paved roads w/open ditches, 50% imp, HSG B
3.565	67	Weighted Average
3.559		99.83% Pervious Area
0.006		0.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
17.6	549	0.0055	0.52		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
25.1	599	Total			

Subcatchment 65: Subcat 65

Hydrograph



Proposed Conditions - South Plantation

Type III 24-hr 100 year Rainfall=7.96"

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Summary for Subcatchment 66: Subcat 66

Runoff = 6.62 cfs @ 12.20 hrs, Volume= 0.570 af, Depth> 3.57"

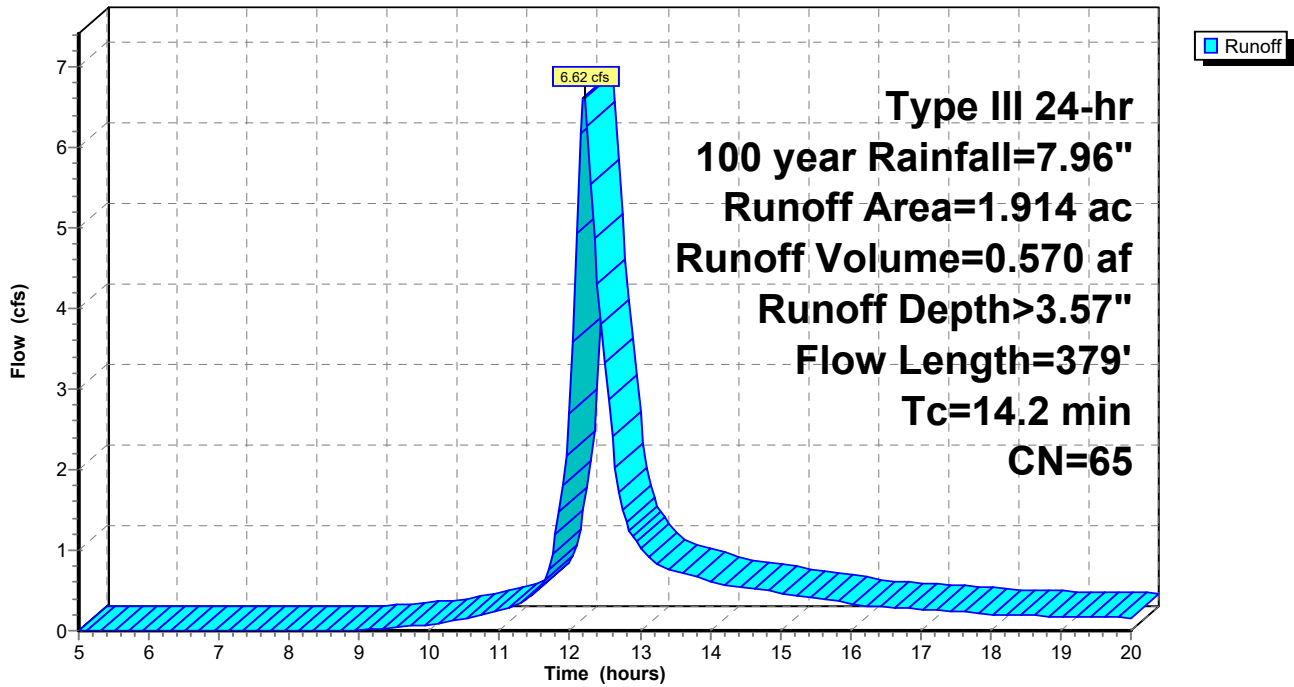
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.96"

Area (ac)	CN	Description
* 0.797	74	50-75% Grass cover, Fair, HSG B-C
0.199	56	Brush, Fair, HSG B
0.888	58	Meadow, non-grazed, HSG B
0.030	89	Paved roads w/open ditches, 50% imp, HSG B
1.914	65	Weighted Average
1.899		99.22% Pervious Area
0.015		0.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		Sheet Flow, Grass: Short n= 0.150 P2= 3.16"
6.7	329	0.0137	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.2	379	Total			

Subcatchment 66: Subcat 66

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 36P: Sediment Trap

Inflow Area = 8.684 ac, 1.43% Impervious, Inflow Depth > 4.09" for 100 year event
 Inflow = 24.17 cfs @ 12.47 hrs, Volume= 2.962 af
 Outflow = 19.73 cfs @ 12.68 hrs, Volume= 2.346 af, Atten= 18%, Lag= 12.4 min
 Primary = 19.73 cfs @ 12.68 hrs, Volume= 2.346 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.95' @ 12.68 hrs Surf.Area= 17,418 sf Storage= 39,688 cf

Plug-Flow detention time= 91.4 min calculated for 2.338 af (79% of inflow)
 Center-of-Mass det. time= 40.3 min (851.7 - 811.4)

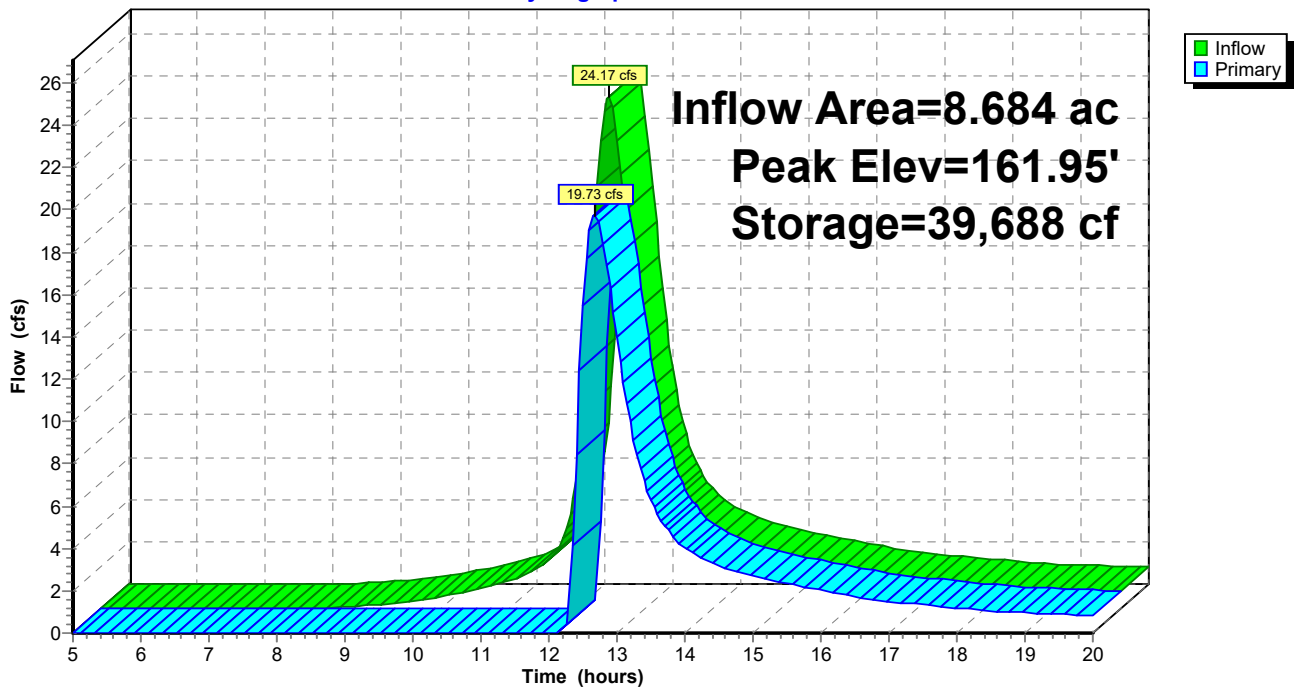
Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	40,645 cf	60.00'W x 70.00'L x 4.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	8.0' long x 8.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=19.67 cfs @ 12.68 hrs HW=161.94' (Free Discharge)
 ←1=Broad-Crested Rectangular Weir(Weir Controls 19.67 cfs @ 2.61 fps)

Pond 36P: Sediment Trap

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 37P: Farm Depression

Inflow Area = 1.143 ac, 2.97% Impervious, Inflow Depth > 3.46" for 100 year event
 Inflow = 3.57 cfs @ 12.24 hrs, Volume= 0.329 af
 Outflow = 3.35 cfs @ 12.32 hrs, Volume= 0.329 af, Atten= 6%, Lag= 4.7 min
 Discarded = 0.53 cfs @ 12.32 hrs, Volume= 0.235 af
 Primary = 2.82 cfs @ 12.32 hrs, Volume= 0.095 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 166.58' @ 12.32 hrs Surf.Area= 7,635 sf Storage= 2,607 cf

Plug-Flow detention time= 38.1 min calculated for 0.329 af (100% of inflow)
 Center-of-Mass det. time= 37.7 min (846.1 - 808.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	166.00'	7,138 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
166.00	2,016	0	0	2,016	
167.00	14,072	7,138	7,138	14,075	

Device	Routing	Invert	Outlet Devices									
#1	Primary	166.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	166.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=0.53 cfs @ 12.32 hrs HW=166.57' (Free Discharge)
 ↑2=Exfiltration (Controls 0.53 cfs)

Primary OutFlow Max=2.73 cfs @ 12.32 hrs HW=166.57' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 2.73 cfs @ 0.73 fps)

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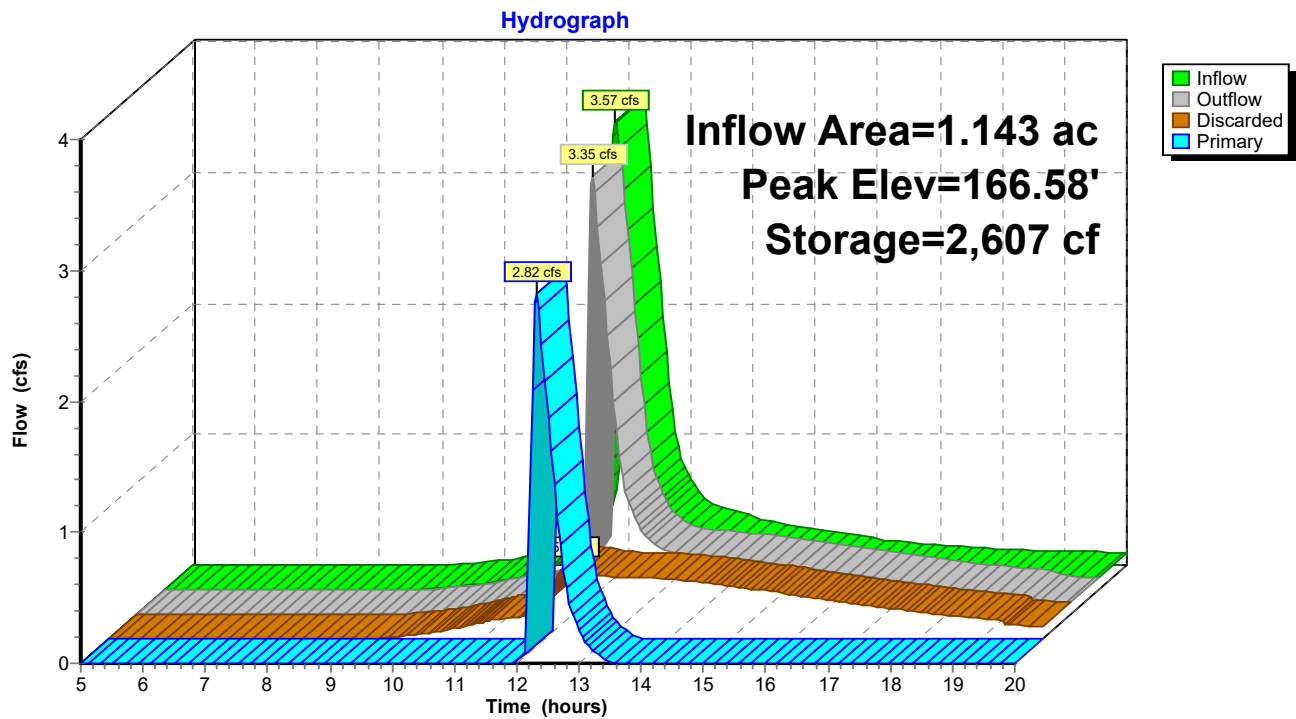
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Pond 37P: Farm Depression



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Summary for Pond 38P: Farm Depression

Inflow Area = 3.921 ac, 0.00% Impervious, Inflow Depth > 4.55" for 100 year event
 Inflow = 14.05 cfs @ 12.33 hrs, Volume= 1.488 af
 Outflow = 12.35 cfs @ 12.46 hrs, Volume= 1.423 af, Atten= 12%, Lag= 7.9 min
 Discarded = 1.88 cfs @ 12.46 hrs, Volume= 0.908 af
 Primary = 10.48 cfs @ 12.46 hrs, Volume= 0.515 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 164.68' @ 12.46 hrs Surf.Area= 26,929 sf Storage= 15,007 cf

Plug-Flow detention time= 65.1 min calculated for 1.423 af (96% of inflow)
 Center-of-Mass det. time= 49.4 min (846.1 - 796.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	163.00'	25,279 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
163.00	0	0	0	0	
164.00	9,379	3,126	3,126	9,381	
165.00	38,160	22,152	25,279	38,166	

Device	Routing	Invert	Outlet Devices									
#1	Primary	164.50'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	163.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.88 cfs @ 12.46 hrs HW=164.68' (Free Discharge)
 ↑2=Exfiltration (Controls 1.88 cfs)

Primary OutFlow Max=10.44 cfs @ 12.46 hrs HW=164.68' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 10.44 cfs @ 1.14 fps)

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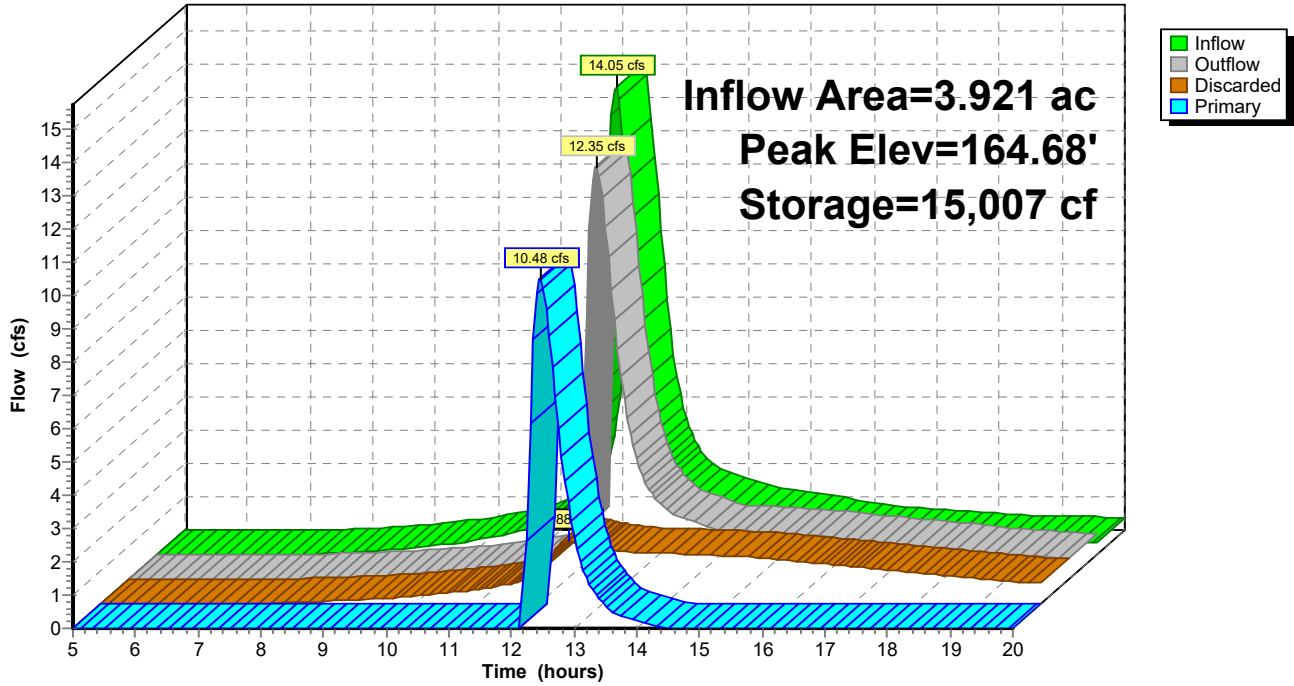
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Pond 38P: Farm Depression

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Summary for Pond 39P: Farm Depression

Inflow Area = 3.189 ac, 2.49% Impervious, Inflow Depth > 2.93" for 100 year event
 Inflow = 8.84 cfs @ 12.25 hrs, Volume= 0.779 af
 Outflow = 1.72 cfs @ 12.86 hrs, Volume= 0.754 af, Atten= 81%, Lag= 36.8 min
 Discarded = 1.72 cfs @ 12.86 hrs, Volume= 0.754 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 165.32' @ 12.86 hrs Surf.Area= 24,729 sf Storage= 15,824 cf

Plug-Flow detention time= 113.6 min calculated for 0.751 af (96% of inflow)
 Center-of-Mass det. time= 101.3 min (890.9 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	164.00'	38,968 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
164.00	2,834	0	0 2,834
166.00	44,400	38,968	38,968 44,411

Device	Routing	Invert	Outlet Devices
#1	Primary	165.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	164.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.72 cfs @ 12.86 hrs HW=165.32' (Free Discharge)
 ↑2=Exfiltration (Controls 1.72 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=164.00' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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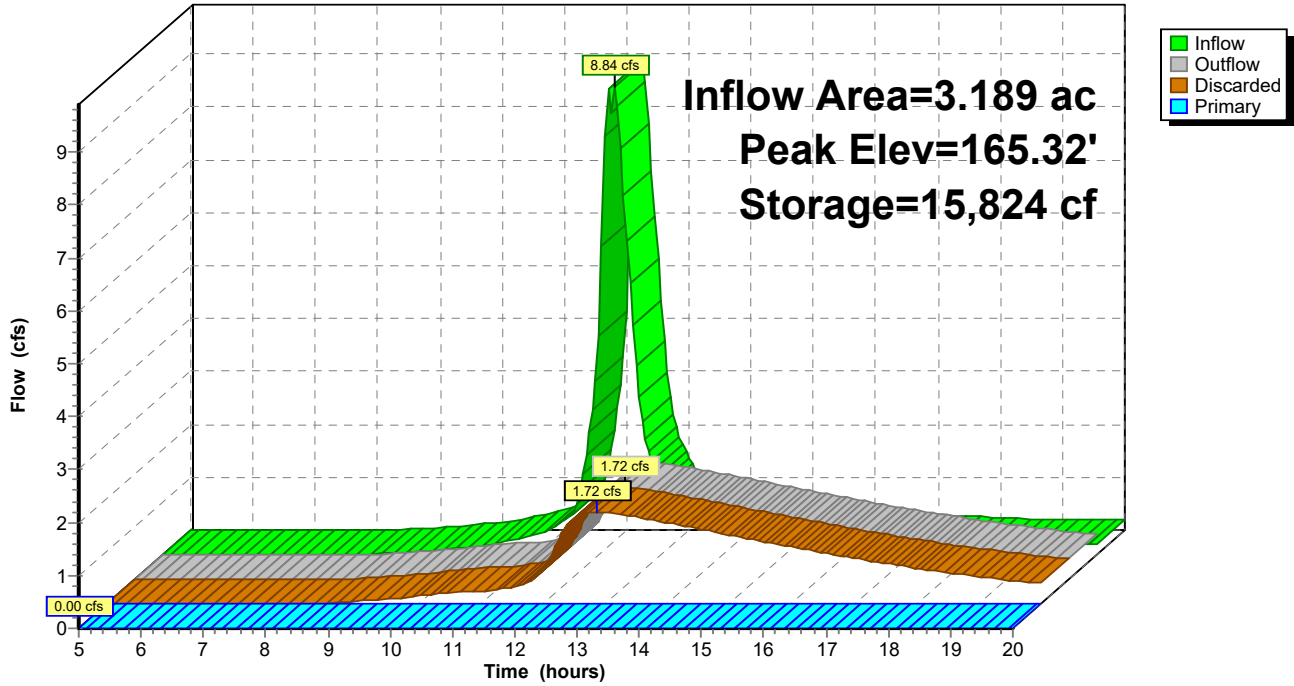
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Pond 39P: Farm Depression

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Summary for Pond 40P: (new Pond)

Inflow Area = 0.652 ac, 0.00% Impervious, Inflow Depth > 2.93" for 100 year event
 Inflow = 2.05 cfs @ 12.15 hrs, Volume= 0.159 af
 Outflow = 1.12 cfs @ 12.41 hrs, Volume= 0.112 af, Atten= 45%, Lag= 15.3 min
 Discarded = 0.10 cfs @ 12.41 hrs, Volume= 0.064 af
 Primary = 1.03 cfs @ 12.41 hrs, Volume= 0.048 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.61' @ 12.41 hrs Surf.Area= 1,341 sf Storage= 2,560 cf

Plug-Flow detention time= 135.8 min calculated for 0.111 af (70% of inflow)
 Center-of-Mass det. time= 67.6 min (879.1 - 811.5)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	3,119 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
158.00	210	0	0 210
160.00	748	903	903 768
162.00	1,512	2,216	3,119 1,567

Device	Routing	Invert	Outlet Devices
#1	Primary	161.50'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.10 cfs @ 12.41 hrs HW=161.61' (Free Discharge)
 ↑2=Exfiltration (Controls 0.10 cfs)

Primary OutFlow Max=1.00 cfs @ 12.41 hrs HW=161.61' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 1.00 cfs @ 0.78 fps)

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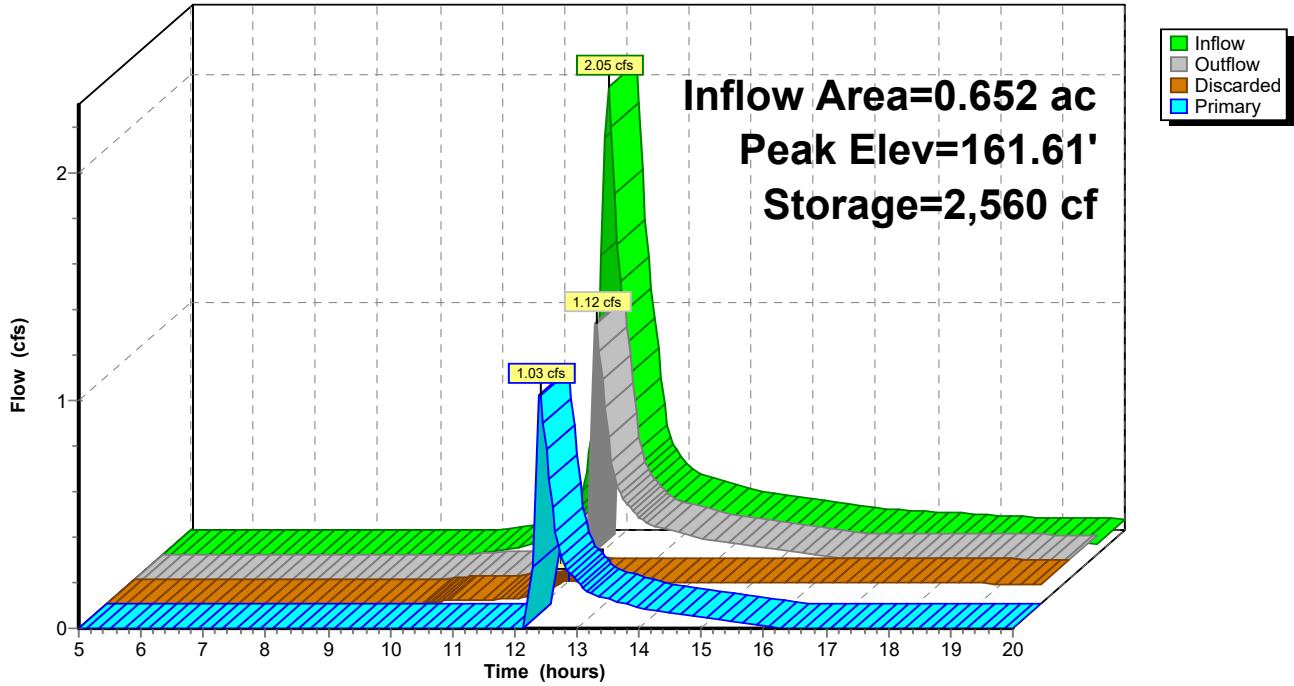
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Pond 40P: (new Pond)

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Summary for Pond 41P: Sediment Trap

[93] Warning: Storage range exceeded by 0.01'

[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=9)

Inflow Area = 0.888 ac, 0.00% Impervious, Inflow Depth > 2.94" for 100 year event
 Inflow = 2.91 cfs @ 12.13 hrs, Volume= 0.217 af
 Outflow = 0.24 cfs @ 14.35 hrs, Volume= 0.109 af, Atten= 92%, Lag= 133.1 min
 Discarded = 0.16 cfs @ 14.35 hrs, Volume= 0.106 af
 Primary = 0.08 cfs @ 14.35 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.01' @ 14.35 hrs Surf.Area= 2,207 sf Storage= 5,646 cf

Plug-Flow detention time= 226.2 min calculated for 0.109 af (50% of inflow)
 Center-of-Mass det. time= 140.1 min (950.3 - 810.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	156.00'	5,646 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
156.00	292	0	0	292	
158.00	893	1,130	1,130	916	
160.00	1,712	2,561	3,691	1,773	
161.00	2,207	1,954	5,646	2,292	

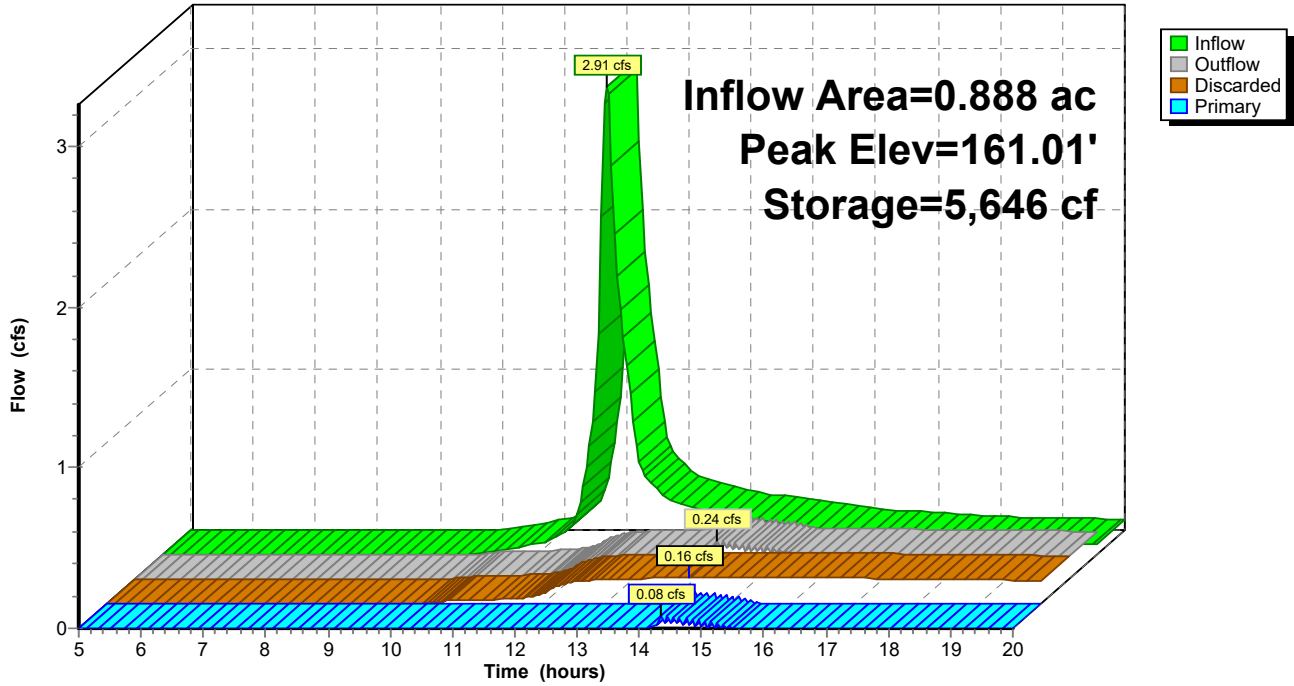
Device	Routing	Invert	Outlet Devices												
#1	Primary	161.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	156.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.16 cfs @ 14.35 hrs HW=161.01' (Free Discharge)
 ↑2=Exfiltration (Controls 0.16 cfs)

Primary OutFlow Max=0.04 cfs @ 14.35 hrs HW=161.01' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 0.04 cfs @ 0.27 fps)

Pond 41P: Sediment Trap

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 42P: Sediment Trap

Inflow Area = 1.849 ac, 0.00% Impervious, Inflow Depth > 2.93" for 100 year event
 Inflow = 5.34 cfs @ 12.19 hrs, Volume= 0.451 af
 Outflow = 2.85 cfs @ 12.47 hrs, Volume= 0.322 af, Atten= 47%, Lag= 17.0 min
 Discarded = 0.23 cfs @ 12.47 hrs, Volume= 0.154 af
 Primary = 2.62 cfs @ 12.47 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 161.31' @ 12.47 hrs Surf.Area= 3,186 sf Storage= 7,050 cf

Plug-Flow detention time= 120.7 min calculated for 0.321 af (71% of inflow)
 Center-of-Mass det. time= 54.3 min (867.9 - 813.6)

Volume	Invert	Avail.Storage	Storage Description
#1	158.00'	9,408 cf	20.00'W x 60.00'L x 4.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	6.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	158.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.23 cfs @ 12.47 hrs HW=161.31' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.23 cfs)

Primary OutFlow Max=2.56 cfs @ 12.47 hrs HW=161.31' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 2.56 cfs @ 1.37 fps)

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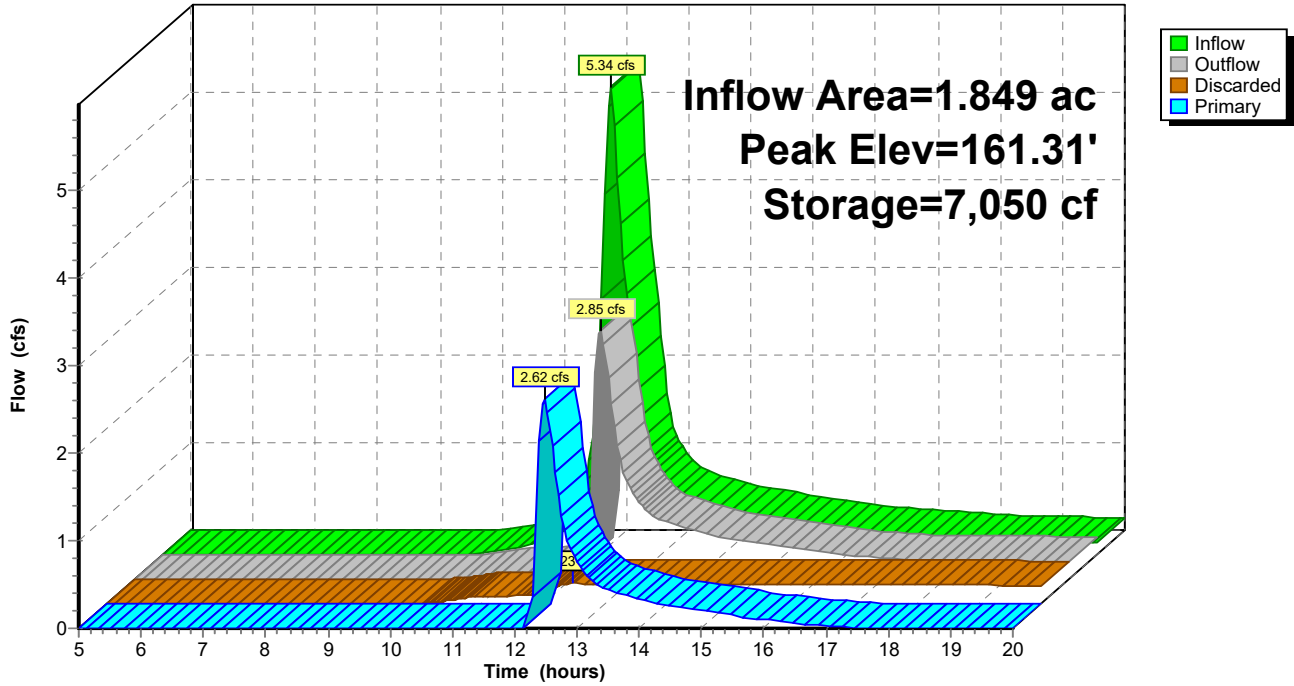
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Pond 42P: Sediment Trap

Hydrograph



Proposed Conditions - South Plantation

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Summary for Pond 43P: Sediment Trap

Inflow Area = 0.916 ac, 0.00% Impervious, Inflow Depth > 2.82" for 100 year event
 Inflow = 2.39 cfs @ 12.22 hrs, Volume= 0.215 af
 Outflow = 1.20 cfs @ 12.56 hrs, Volume= 0.149 af, Atten= 50%, Lag= 20.4 min
 Discarded = 0.13 cfs @ 12.56 hrs, Volume= 0.086 af
 Primary = 1.07 cfs @ 12.56 hrs, Volume= 0.064 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 162.18' @ 12.56 hrs Surf.Area= 1,795 sf Storage= 3,596 cf

Plug-Flow detention time= 136.5 min calculated for 0.149 af (69% of inflow)
 Center-of-Mass det. time= 66.8 min (884.1 - 817.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	159.00'	5,239 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
159.00	568	0	0	568	
160.00	893	724	724	907	
162.00	1,712	2,561	3,285	1,764	
163.00	2,206	1,954	5,239	2,282	

Device	Routing	Invert	Outlet Devices												
#1	Primary	162.00'	6.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	159.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.13 cfs @ 12.56 hrs HW=162.17' (Free Discharge)
 ↑2=Exfiltration (Controls 0.13 cfs)

Primary OutFlow Max=1.04 cfs @ 12.56 hrs HW=162.17' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 1.04 cfs @ 1.00 fps)

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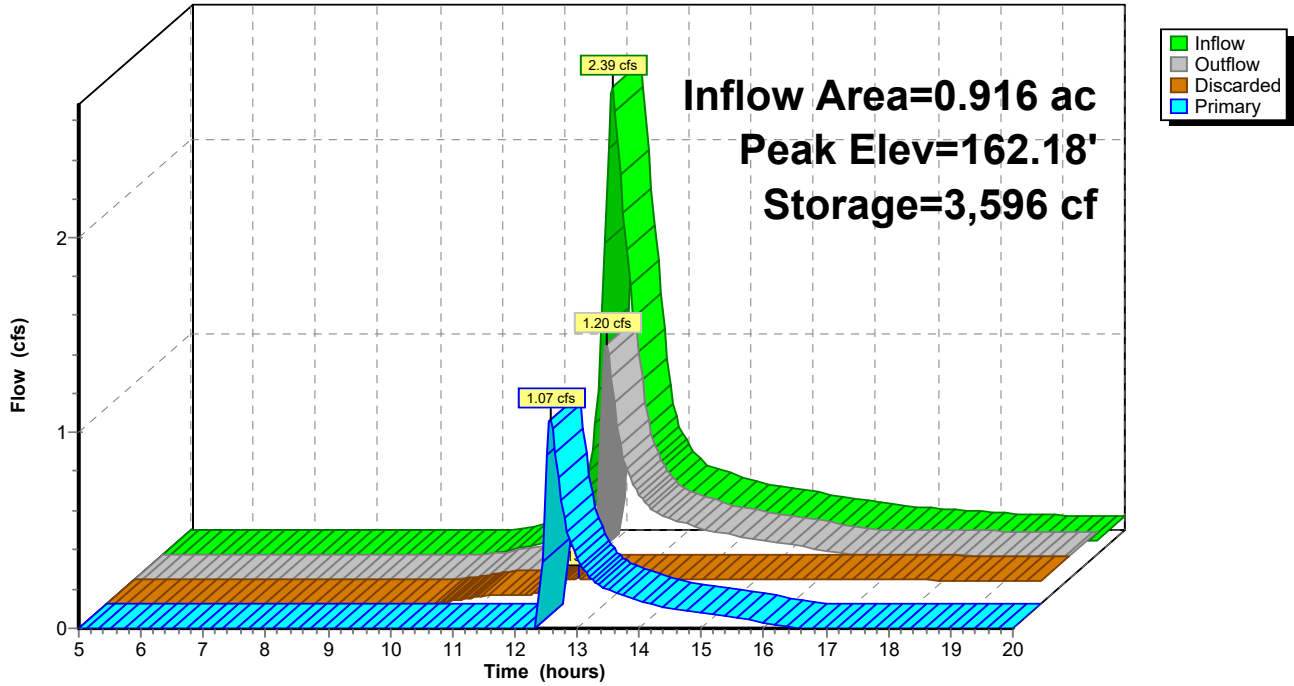
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Pond 43P: Sediment Trap

Hydrograph



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Summary for Pond 44P: Farm Depression

Inflow Area = 2.114 ac, 0.00% Impervious, Inflow Depth > 3.79" for 100 year event
 Inflow = 8.69 cfs @ 12.15 hrs, Volume= 0.669 af
 Outflow = 1.31 cfs @ 12.84 hrs, Volume= 0.624 af, Atten= 85%, Lag= 41.5 min
 Discarded = 1.31 cfs @ 12.84 hrs, Volume= 0.624 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 158.96' @ 12.84 hrs Surf.Area= 18,713 sf Storage= 12,995 cf

Plug-Flow detention time= 129.2 min calculated for 0.622 af (93% of inflow)
 Center-of-Mass det. time= 106.2 min (904.2 - 798.0)

Volume	Invert	Avail.Storage	Storage Description		
#1	157.00'	43,325 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
157.00	0	0	0	0	
158.00	5,632	1,877	1,877	5,634	
160.00	41,290	41,448	43,325	41,305	

Device	Routing	Invert	Outlet Devices									
#1	Primary	159.00'	50.0' long x 20.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63									
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area									
			Conductivity to Groundwater Elevation = 1.00'									

Discarded OutFlow Max=1.31 cfs @ 12.84 hrs HW=158.96' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.31 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=157.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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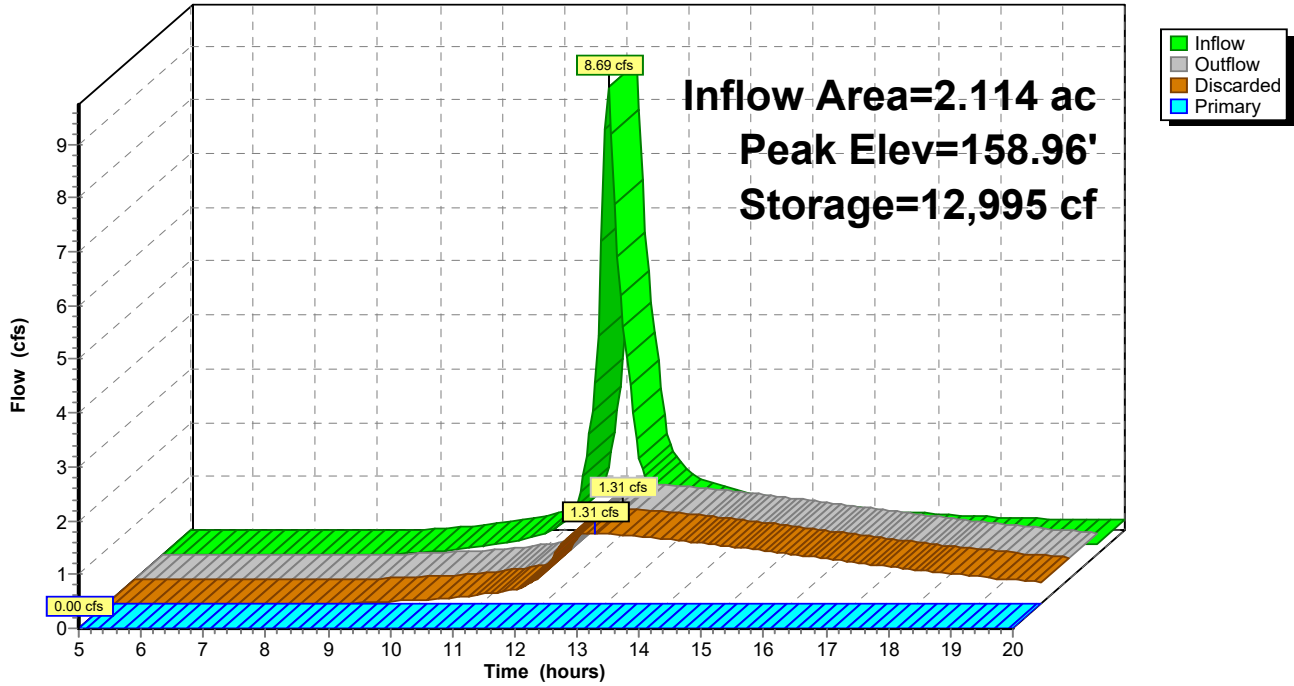
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Pond 44P: Farm Depression

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 45P: Farm Depression

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth > 3.91" for 100 year event
 Inflow = 11.24 cfs @ 12.10 hrs, Volume= 0.766 af
 Outflow = 1.10 cfs @ 13.07 hrs, Volume= 0.639 af, Atten= 90%, Lag= 58.2 min
 Discarded = 1.10 cfs @ 13.07 hrs, Volume= 0.639 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 155.48' @ 13.07 hrs Surf.Area= 15,767 sf Storage= 16,289 cf

Plug-Flow detention time= 173.4 min calculated for 0.637 af (83% of inflow)
 Center-of-Mass det. time= 126.8 min (920.1 - 793.4)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	180,186 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
153.00	0	0	0	0
154.00	5,028	1,676	1,676	5,030
156.00	21,015	24,215	25,891	21,035
158.00	37,382	57,617	83,508	37,446
160.00	60,198	96,678	180,186	60,315

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#2	Discarded	153.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.10 cfs @ 13.07 hrs HW=155.48' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.10 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=153.00' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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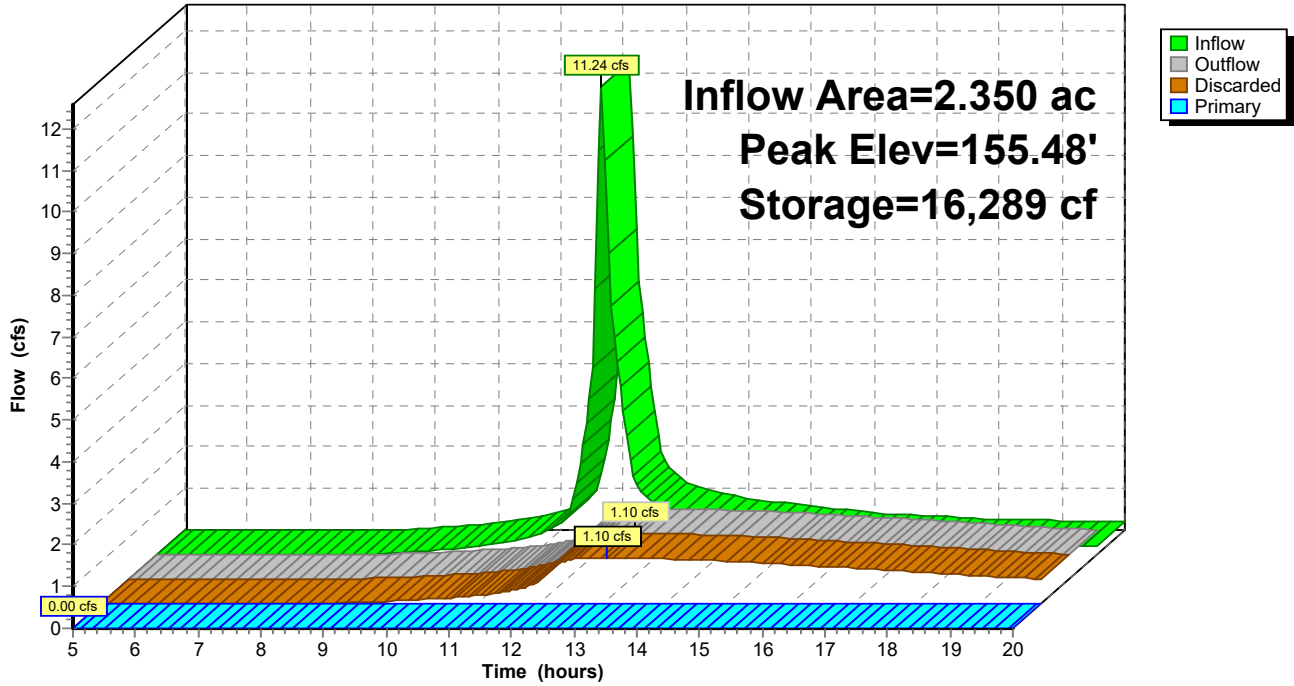
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Pond 45P: Farm Depression

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Summary for Pond 46P: Sediment Trap

Inflow Area = 5.413 ac, 0.00% Impervious, Inflow Depth > 2.33" for 100 year event
 Inflow = 13.11 cfs @ 12.16 hrs, Volume= 1.053 af
 Outflow = 12.10 cfs @ 12.22 hrs, Volume= 0.920 af, Atten= 8%, Lag= 3.3 min
 Discarded = 0.46 cfs @ 12.22 hrs, Volume= 0.290 af
 Primary = 11.64 cfs @ 12.22 hrs, Volume= 0.630 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 149.51' @ 12.22 hrs Surf.Area= 6,492 sf Storage= 9,123 cf

Plug-Flow detention time= 62.3 min calculated for 0.917 af (87% of inflow)
 Center-of-Mass det. time= 24.5 min (818.7 - 794.1)

Volume	Invert	Avail.Storage	Storage Description
#1	147.00'	12,608 cf	49.00'W x 28.00'L x 3.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Discarded	147.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	149.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=0.46 cfs @ 12.22 hrs HW=149.51' (Free Discharge)
 ↑1=Exfiltration (Controls 0.46 cfs)

Primary OutFlow Max=11.42 cfs @ 12.22 hrs HW=149.51' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 11.42 cfs @ 1.87 fps)

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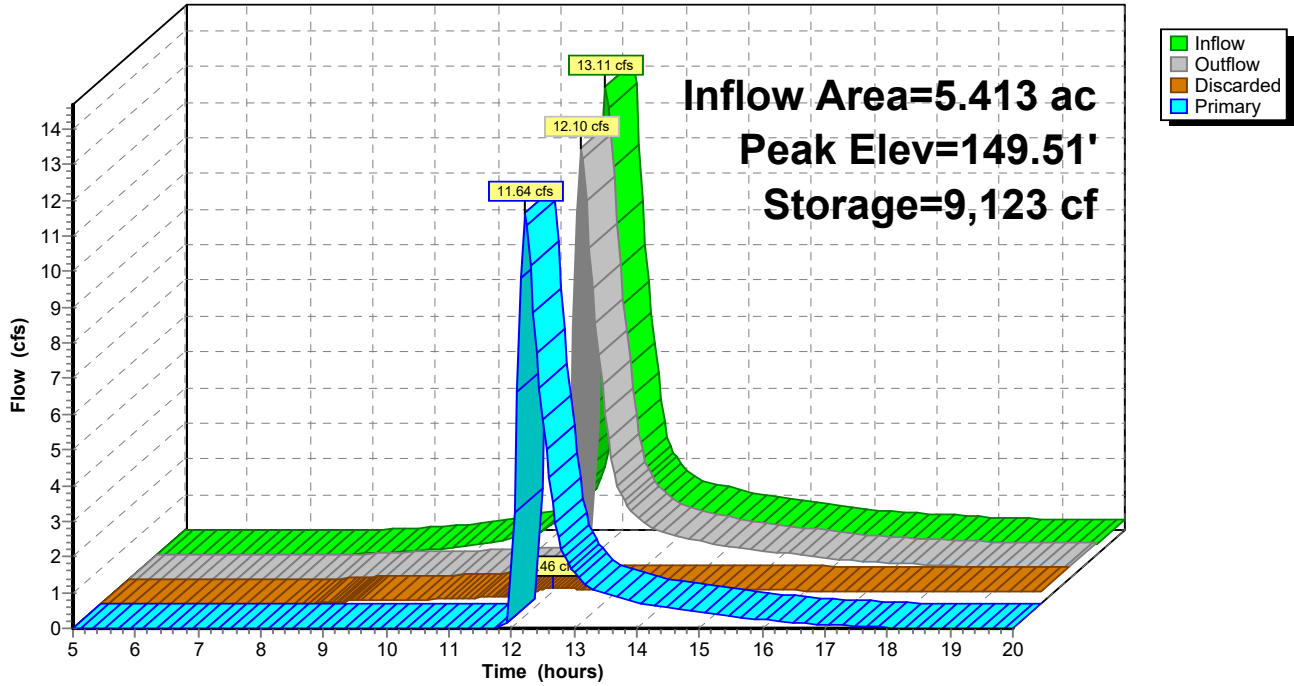
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Pond 46P: Sediment Trap

Hydrograph



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Summary for Pond 47P: Valley Berm

Inflow Area = 56.487 ac, 0.14% Impervious, Inflow Depth > 2.26" for 100 year event
 Inflow = 99.12 cfs @ 12.62 hrs, Volume= 10.621 af
 Outflow = 93.86 cfs @ 12.74 hrs, Volume= 9.849 af, Atten= 5%, Lag= 7.2 min
 Discarded = 1.88 cfs @ 12.74 hrs, Volume= 1.004 af
 Primary = 91.98 cfs @ 12.74 hrs, Volume= 8.845 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 122.94' @ 12.74 hrs Surf.Area= 26,429 sf Storage= 67,880 cf

Plug-Flow detention time= 33.5 min calculated for 9.816 af (92% of inflow)
 Center-of-Mass det. time= 14.3 min (834.7 - 820.4)

Volume	Invert	Avail.Storage	Storage Description
#1	118.00'	69,383 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
118.00	782	0	0	782
120.00	11,520	10,202	10,202	11,531
122.00	23,374	34,202	44,405	23,421
123.00	26,618	24,978	69,383	26,713

Device	Routing	Invert	Outlet Devices
#1	Primary	121.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	118.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.88 cfs @ 12.74 hrs HW=122.94' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.88 cfs)

Primary OutFlow Max=91.75 cfs @ 12.74 hrs HW=122.94' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 91.75 cfs @ 3.18 fps)

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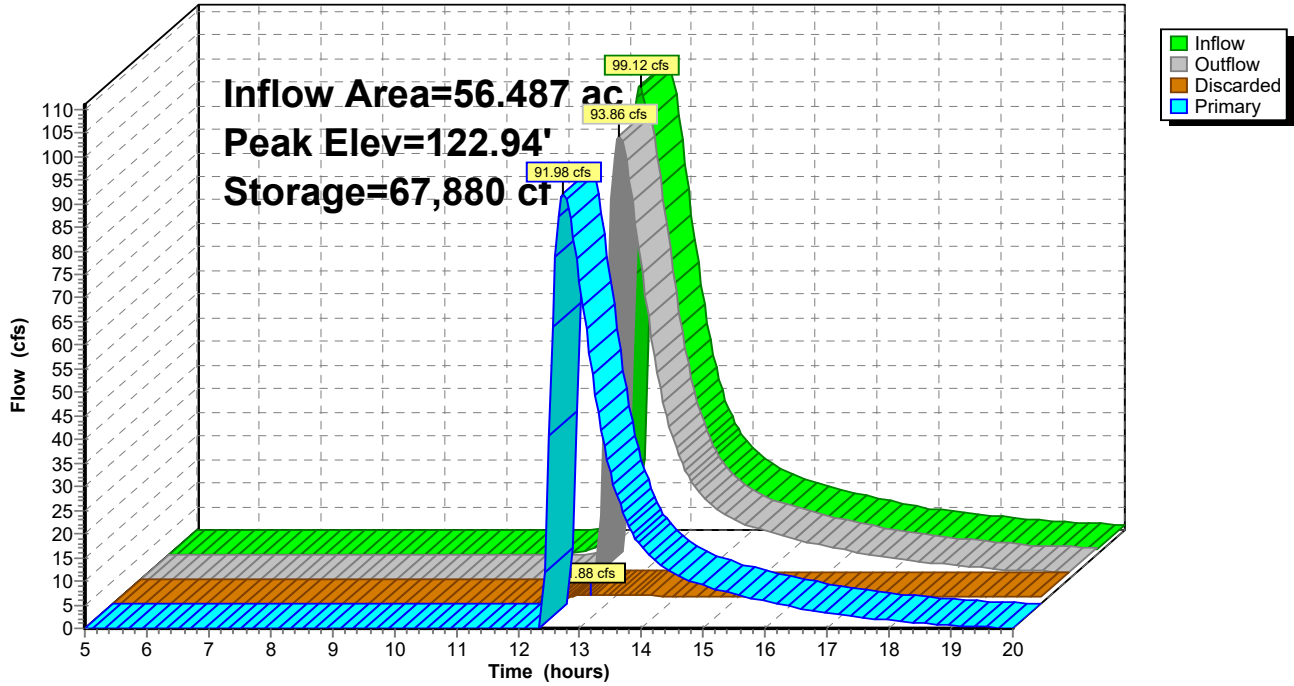
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Pond 47P: Valley Berm

Hydrograph



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Summary for Pond 48P: Valley Berm

Inflow Area = 52.719 ac, 0.15% Impervious, Inflow Depth > 2.53" for 100 year event
 Inflow = 98.61 cfs @ 12.57 hrs, Volume= 11.114 af
 Outflow = 97.31 cfs @ 12.63 hrs, Volume= 10.574 af, Atten= 1%, Lag= 3.2 min
 Discarded = 1.22 cfs @ 12.63 hrs, Volume= 0.647 af
 Primary = 96.09 cfs @ 12.63 hrs, Volume= 9.928 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 126.99' @ 12.63 hrs Surf.Area= 17,110 sf Storage= 44,374 cf

Plug-Flow detention time= 23.6 min calculated for 10.539 af (95% of inflow)
 Center-of-Mass det. time= 9.0 min (827.6 - 818.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	122.00'	44,628 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
122.00	365	0	0	365	
124.00	8,490	7,077	7,077	8,500	
126.00	13,817	22,092	29,169	13,878	
127.00	17,162	15,459	44,628	17,252	

Device	Routing	Invert	Outlet Devices												
#1	Primary	125.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	122.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.22 cfs @ 12.63 hrs HW=126.98' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.22 cfs)

Primary OutFlow Max=95.82 cfs @ 12.63 hrs HW=126.98' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 95.82 cfs @ 3.23 fps)

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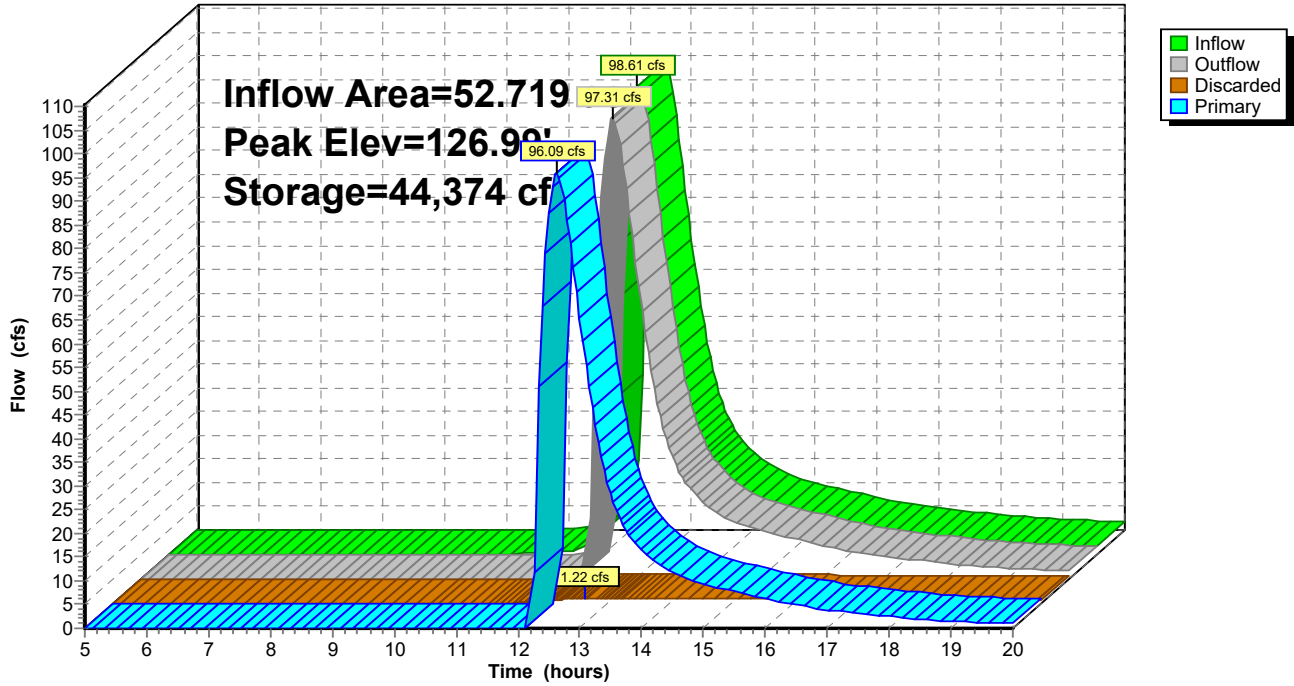
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Pond 48P: Valley Berm

Hydrograph



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Summary for Pond 49P: Valley Berm

Inflow Area = 47.376 ac, 0.17% Impervious, Inflow Depth > 2.74" for 100 year event
 Inflow = 95.31 cfs @ 12.55 hrs, Volume= 10.802 af
 Outflow = 94.25 cfs @ 12.60 hrs, Volume= 10.396 af, Atten= 1%, Lag= 3.0 min
 Discarded = 1.11 cfs @ 12.60 hrs, Volume= 0.539 af
 Primary = 93.14 cfs @ 12.60 hrs, Volume= 9.856 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 132.96' @ 12.60 hrs Surf.Area= 15,641 sf Storage= 35,415 cf

Plug-Flow detention time= 19.6 min calculated for 10.396 af (96% of inflow)
 Center-of-Mass det. time= 7.1 min (825.7 - 818.6)

Volume	Invert	Avail.Storage	Storage Description
#1	128.00'	36,103 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
128.00	1,167	0	0	1,167
130.00	5,025	5,742	5,742	5,043
132.00	11,977	16,507	22,249	12,024
133.00	15,820	13,854	36,103	15,890

Device	Routing	Invert	Outlet Devices
#1	Primary	131.50'	20.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	128.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.11 cfs @ 12.60 hrs HW=132.96' (Free Discharge)
 ↑2=Exfiltration (Controls 1.11 cfs)

Primary OutFlow Max=93.04 cfs @ 12.60 hrs HW=132.96' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 93.04 cfs @ 3.20 fps)

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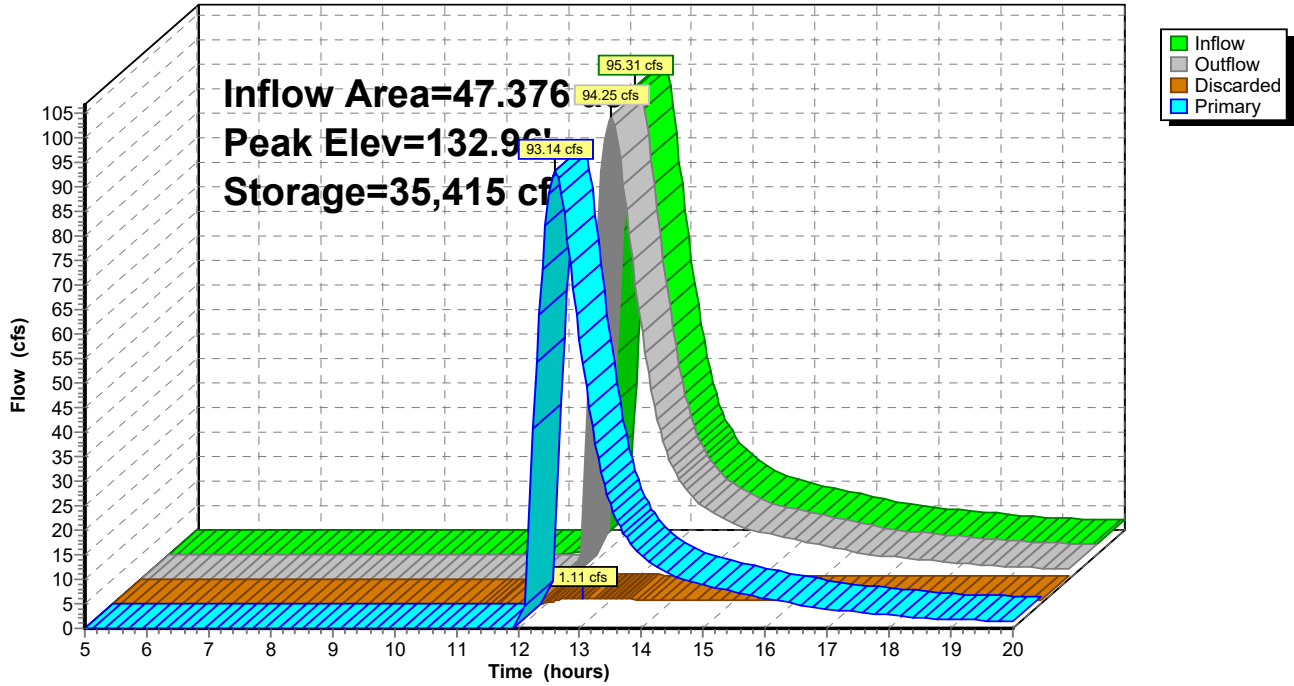
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Pond 49P: Valley Berm

Hydrograph



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Summary for Pond 50P: Valley Berm

Inflow Area = 44.163 ac, 0.18% Impervious, Inflow Depth > 3.13" for 100 year event
 Inflow = 98.05 cfs @ 12.50 hrs, Volume= 11.526 af
 Outflow = 93.09 cfs @ 12.56 hrs, Volume= 10.903 af, Atten= 5%, Lag= 3.5 min
 Discarded = 1.35 cfs @ 12.56 hrs, Volume= 0.746 af
 Primary = 91.74 cfs @ 12.56 hrs, Volume= 10.157 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 138.94' @ 12.56 hrs Surf.Area= 19,002 sf Storage= 48,601 cf

Plug-Flow detention time= 28.4 min calculated for 10.867 af (94% of inflow)
 Center-of-Mass det. time= 10.9 min (825.8 - 814.8)

Volume	Invert	Avail.Storage	Storage Description
#1	134.00'	49,733 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
134.00	2,742	0	0 2,742
136.00	7,845	10,150	10,150 7,869
138.00	15,022	22,482	32,632 15,085
139.00	19,268	17,101	49,733 19,357

Device	Routing	Invert	Outlet Devices
#1	Primary	137.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	134.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.35 cfs @ 12.56 hrs HW=138.94' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.35 cfs)

Primary OutFlow Max=91.59 cfs @ 12.56 hrs HW=138.94' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 91.59 cfs @ 3.18 fps)

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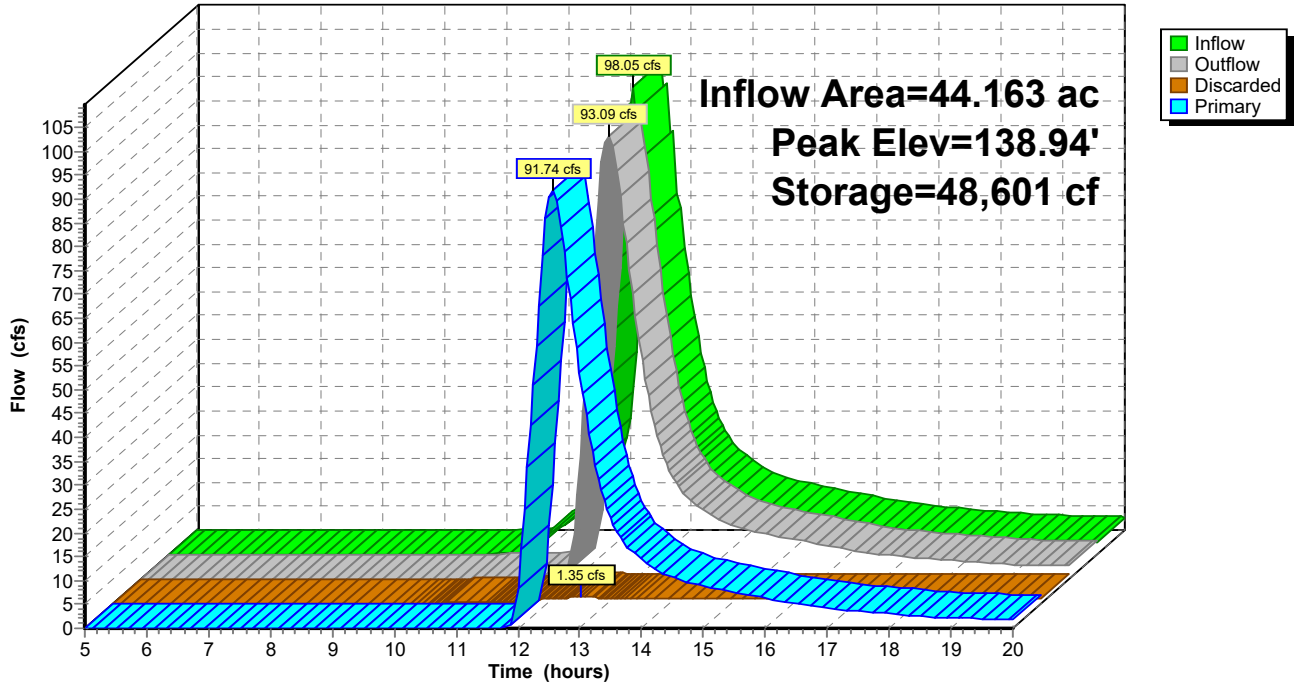
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Pond 50P: Valley Berm

Hydrograph



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Summary for Pond 51P: Valley Berm

[93] Warning: Storage range exceeded by 0.22'

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)

Inflow Area = 36.779 ac, 0.22% Impervious, Inflow Depth > 3.39" for 100 year event
 Inflow = 83.91 cfs @ 12.53 hrs, Volume= 10.401 af
 Outflow = 86.97 cfs @ 12.50 hrs, Volume= 10.084 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.70 cfs @ 12.50 hrs, Volume= 0.491 af
 Primary = 86.28 cfs @ 12.50 hrs, Volume= 9.593 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 146.22' @ 12.50 hrs Surf.Area= 9,810 sf Storage= 21,537 cf

Plug-Flow detention time= 19.2 min calculated for 10.084 af (97% of inflow)
 Center-of-Mass det. time= 8.2 min (818.7 - 810.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	142.00'	21,537 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	1,705	0	0	1,705
144.00	5,291	6,666	6,666	5,314
146.00	9,810	14,870	21,537	9,874

Device	Routing	Invert	Outlet Devices
#1	Primary	145.00'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.70 cfs @ 12.50 hrs HW=146.21' (Free Discharge)
 ↑2=Exfiltration (Controls 0.70 cfs)

Primary OutFlow Max=85.66 cfs @ 12.50 hrs HW=146.21' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 85.66 cfs @ 2.94 fps)

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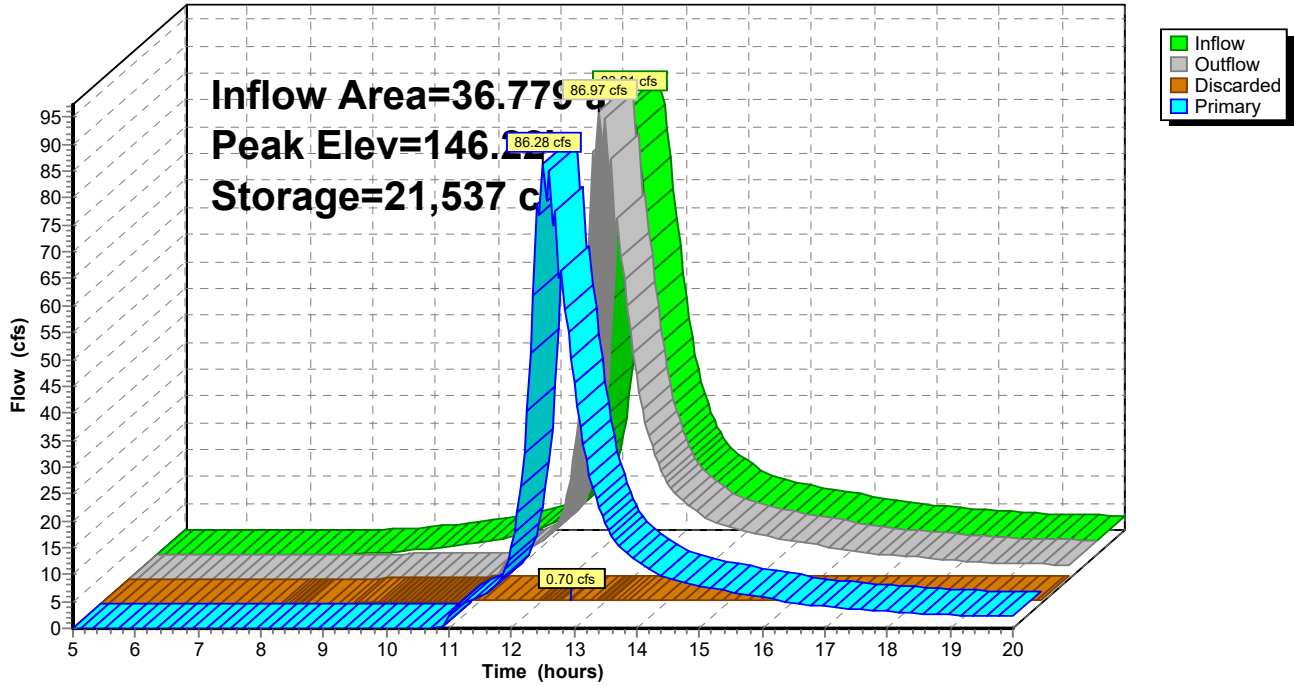
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Pond 51P: Valley Berm

Hydrograph



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Summary for Pond 53P: Valley Berm

Inflow Area = 59.427 ac, 0.93% Impervious, Inflow Depth > 2.58" for 100 year event
 Inflow = 113.52 cfs @ 12.58 hrs, Volume= 12.766 af
 Outflow = 111.48 cfs @ 12.64 hrs, Volume= 12.156 af, Atten= 2%, Lag= 3.6 min
 Discarded = 1.70 cfs @ 12.64 hrs, Volume= 0.851 af
 Primary = 109.78 cfs @ 12.64 hrs, Volume= 11.305 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 118.94' @ 12.64 hrs Surf.Area= 23,894 sf Storage= 54,613 cf

Plug-Flow detention time= 24.2 min calculated for 12.115 af (95% of inflow)
 Center-of-Mass det. time= 9.5 min (831.9 - 822.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	114.00'	56,099 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
114.00	1,033	0	0	1,033	
116.00	7,810	7,789	7,789	7,823	
118.00	19,551	26,479	34,268	19,592	
119.00	24,195	21,832	56,099	24,266	

Device	Routing	Invert	Outlet Devices												
#1	Primary	117.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	114.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=1.70 cfs @ 12.64 hrs HW=118.94' (Free Discharge)
 ↑2=Exfiltration (Controls 1.70 cfs)

Primary OutFlow Max=109.52 cfs @ 12.64 hrs HW=118.94' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 109.52 cfs @ 3.18 fps)

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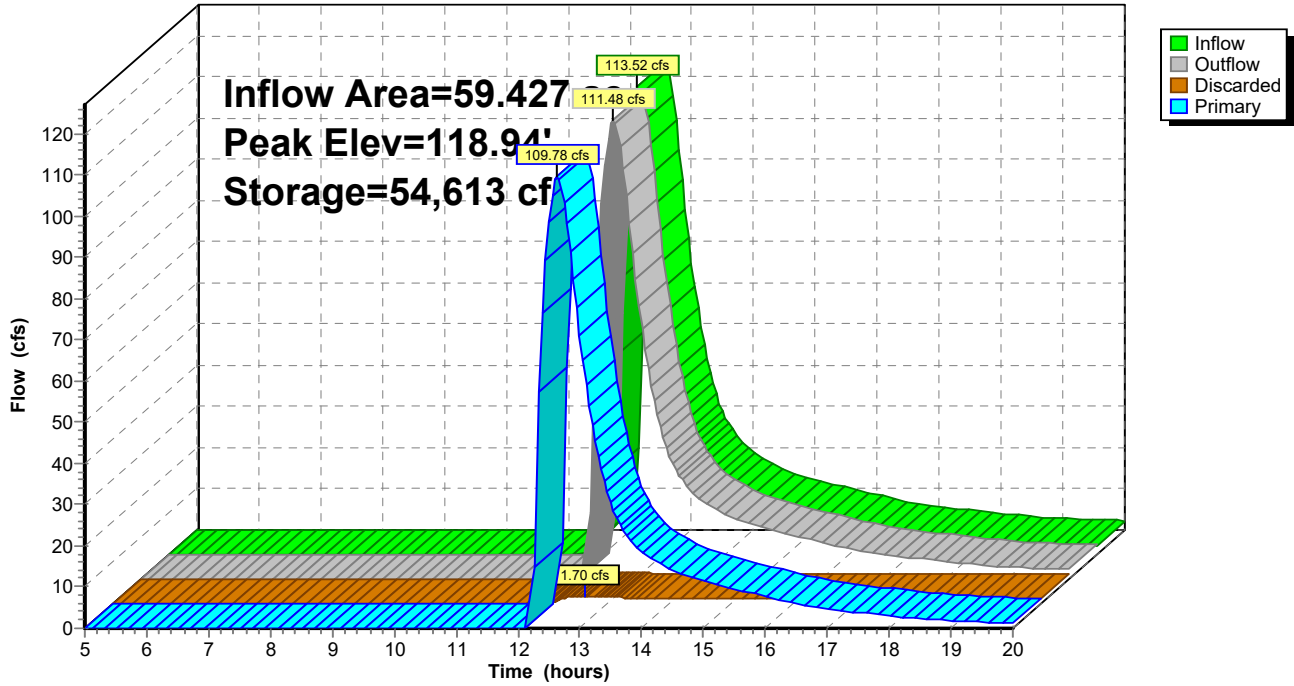
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Pond 53P: Valley Berm

Hydrograph



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Summary for Pond 54P: Valley Berm

Inflow Area = 71.593 ac, 0.78% Impervious, Inflow Depth > 2.23" for 100 year event
 Inflow = 117.12 cfs @ 12.62 hrs, Volume= 13.305 af
 Outflow = 112.27 cfs @ 12.72 hrs, Volume= 12.408 af, Atten= 4%, Lag= 6.0 min
 Discarded = 2.54 cfs @ 12.72 hrs, Volume= 1.271 af
 Primary = 109.74 cfs @ 12.72 hrs, Volume= 11.137 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 112.94' @ 12.72 hrs Surf.Area= 35,734 sf Storage= 82,701 cf

Plug-Flow detention time= 32.7 min calculated for 12.367 af (93% of inflow)
 Center-of-Mass det. time= 14.7 min (832.5 - 817.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	108.00'	84,939 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
108.00	584	0	0	584	
110.00	13,292	11,108	11,108	13,302	
112.00	29,008	41,291	52,399	29,050	
113.00	36,205	32,540	84,939	36,276	

Device	Routing	Invert	Outlet Devices												
#1	Primary	111.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	108.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=2.54 cfs @ 12.72 hrs HW=112.93' (Free Discharge)
 ↑**2=Exfiltration** (Controls 2.54 cfs)

Primary OutFlow Max=109.36 cfs @ 12.72 hrs HW=112.93' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 109.36 cfs @ 3.18 fps)

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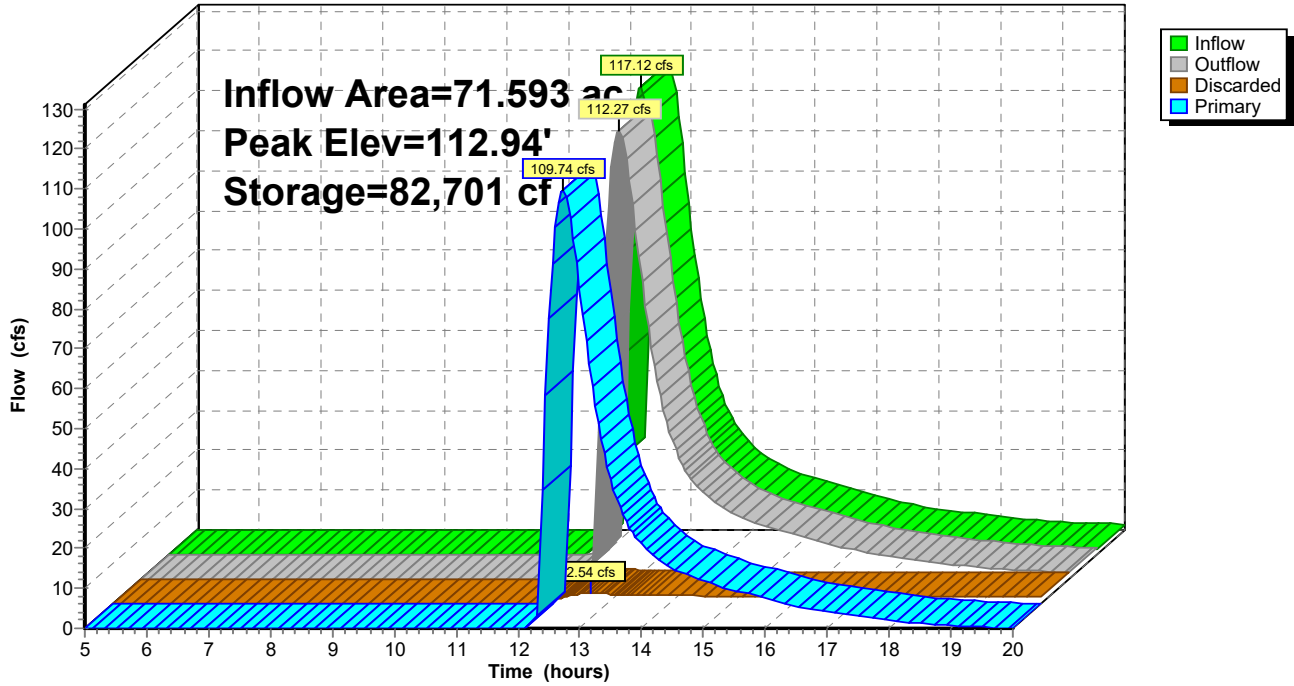
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Pond 54P: Valley Berm

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Summary for Pond 55P: Sediment Trap

Inflow Area = 2.682 ac, 0.00% Impervious, Inflow Depth > 4.22" for 100 year event
 Inflow = 9.07 cfs @ 12.32 hrs, Volume= 0.943 af
 Outflow = 8.39 cfs @ 12.42 hrs, Volume= 0.802 af, Atten= 8%, Lag= 5.8 min
 Discarded = 0.44 cfs @ 12.42 hrs, Volume= 0.265 af
 Primary = 7.95 cfs @ 12.42 hrs, Volume= 0.536 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 143.52' @ 12.42 hrs Surf.Area= 6,242 sf Storage= 9,492 cf

Plug-Flow detention time= 73.9 min calculated for 0.802 af (85% of inflow)
 Center-of-Mass det. time= 31.3 min (832.7 - 801.4)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	12,788 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
140.00	358	0	0 358
142.00	2,804	2,776	2,776 2,817
144.00	7,598	10,012	12,788 7,637

Device	Routing	Invert	Outlet Devices
#1	Primary	143.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Discarded	140.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.44 cfs @ 12.42 hrs HW=143.52' (Free Discharge)
 ↑2=Exfiltration (Controls 0.44 cfs)

Primary OutFlow Max=7.89 cfs @ 12.42 hrs HW=143.52' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 7.89 cfs @ 1.89 fps)

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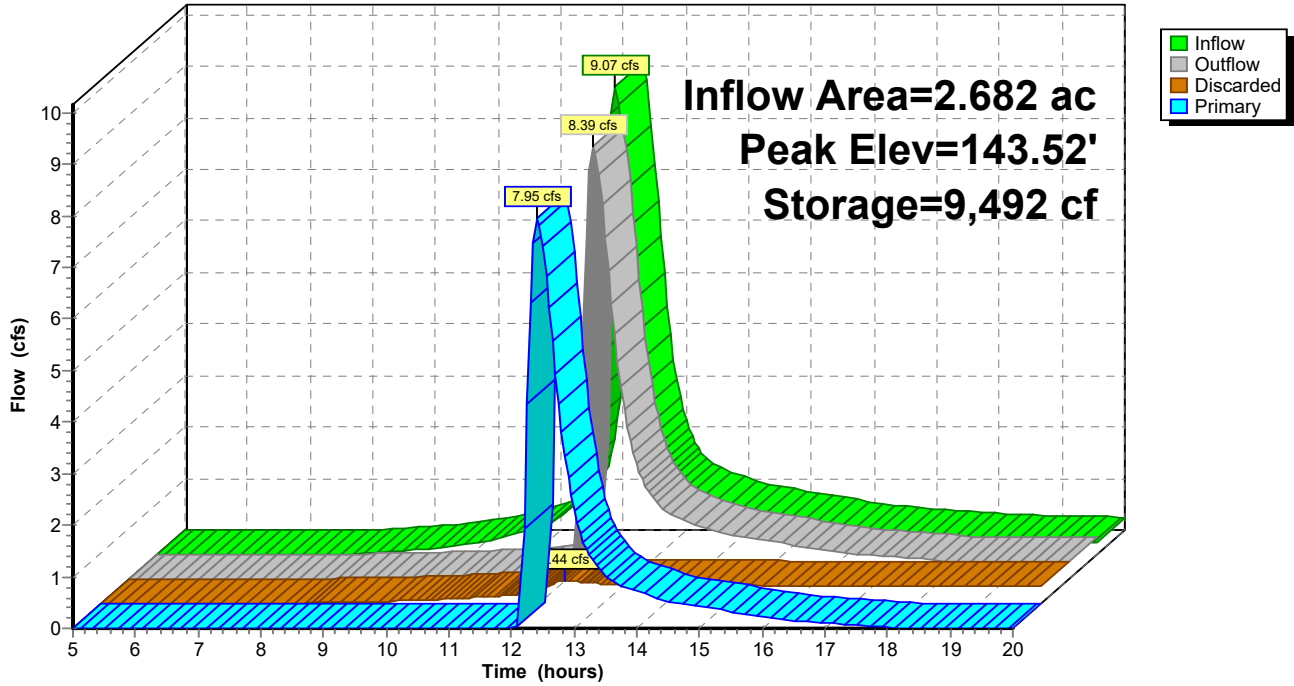
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Pond 55P: Sediment Trap

Hydrograph



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Summary for Pond 56P: Sediment Trap

Inflow Area = 7.231 ac, 0.00% Impervious, Inflow Depth > 4.48" for 100 year event
 Inflow = 46.43 cfs @ 12.00 hrs, Volume= 2.697 af
 Outflow = 29.75 cfs @ 12.08 hrs, Volume= 2.287 af, Atten= 36%, Lag= 4.4 min
 Discarded = 1.14 cfs @ 12.08 hrs, Volume= 0.770 af
 Primary = 28.61 cfs @ 12.08 hrs, Volume= 1.517 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.93' @ 12.08 hrs Surf.Area= 16,114 sf Storage= 32,100 cf

Plug-Flow detention time= 75.5 min calculated for 2.287 af (85% of inflow)
 Center-of-Mass det. time= 30.7 min (810.4 - 779.7)

Volume	Invert	Avail.Storage	Storage Description
#1	142.00'	33,293 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
142.00	6,492	0	0	6,492
143.00	9,332	7,869	7,869	9,349
144.00	12,637	10,943	18,812	12,675
145.00	16,407	14,481	33,293	16,469

Device	Routing	Invert	Outlet Devices
#1	Primary	144.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	142.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.14 cfs @ 12.08 hrs HW=144.92' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.14 cfs)

Primary OutFlow Max=28.17 cfs @ 12.08 hrs HW=144.92' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 28.17 cfs @ 2.56 fps)

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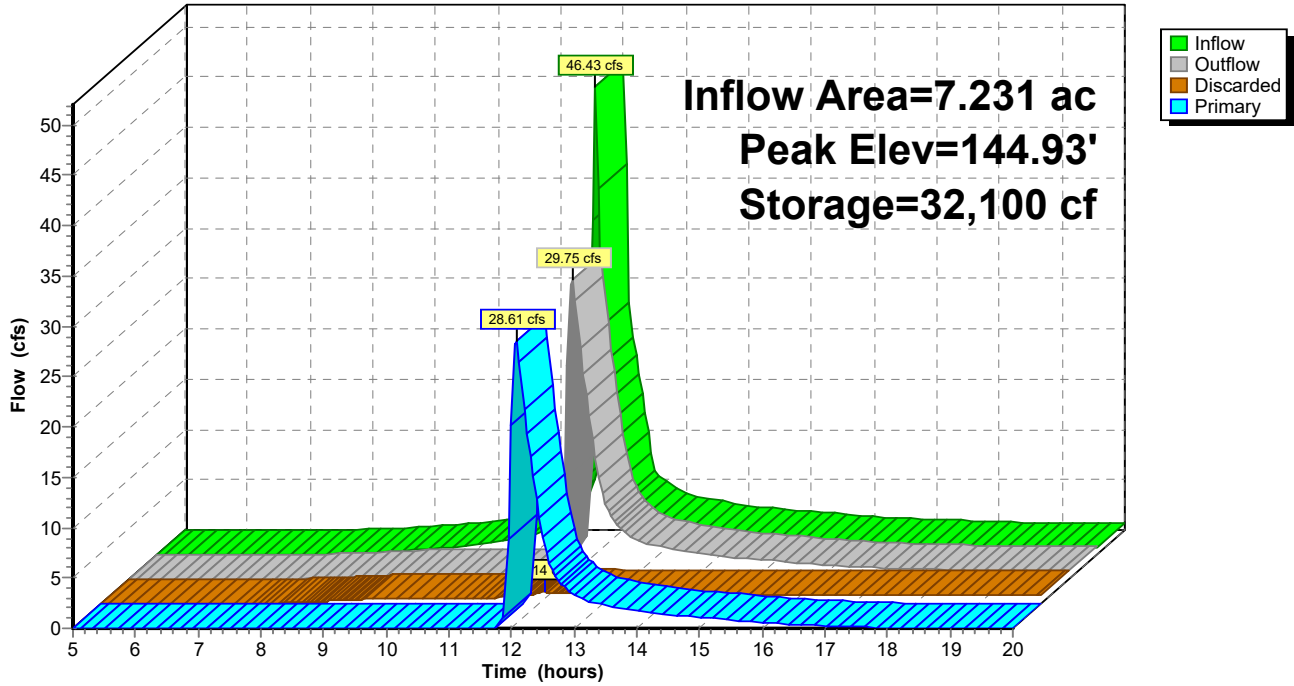
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Pond 56P: Sediment Trap

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Summary for Pond 57P: Valley Berm

Inflow Area = 5.691 ac, 0.00% Impervious, Inflow Depth > 3.89" for 100 year event
 Inflow = 19.73 cfs @ 12.25 hrs, Volume= 1.847 af
 Outflow = 19.22 cfs @ 12.29 hrs, Volume= 1.725 af, Atten= 3%, Lag= 2.5 min
 Discarded = 0.63 cfs @ 12.29 hrs, Volume= 0.336 af
 Primary = 18.58 cfs @ 12.29 hrs, Volume= 1.390 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 137.69' @ 12.29 hrs Surf.Area= 5,668 sf Storage= 8,522 cf

Plug-Flow detention time= 36.1 min calculated for 1.725 af (93% of inflow)
 Center-of-Mass det. time= 13.5 min (815.9 - 802.3)

Volume	Invert	Avail.Storage	Storage Description			
#1	134.00'	10,399 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
134.00	587	96.0	0	0	587	
136.00	1,920	175.0	2,379	2,379	2,312	
138.00	6,561	368.0	8,020	10,399	10,669	

Device	Routing	Invert	Outlet Devices												
#1	Primary	137.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66												
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32												
#2	Discarded	134.00'	3.000 in/hr Exfiltration over Wetted area												
			Conductivity to Groundwater Elevation = 1.00'												

Discarded OutFlow Max=0.63 cfs @ 12.29 hrs HW=137.69' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.63 cfs)

Primary OutFlow Max=18.49 cfs @ 12.29 hrs HW=137.69' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 18.49 cfs @ 2.23 fps)

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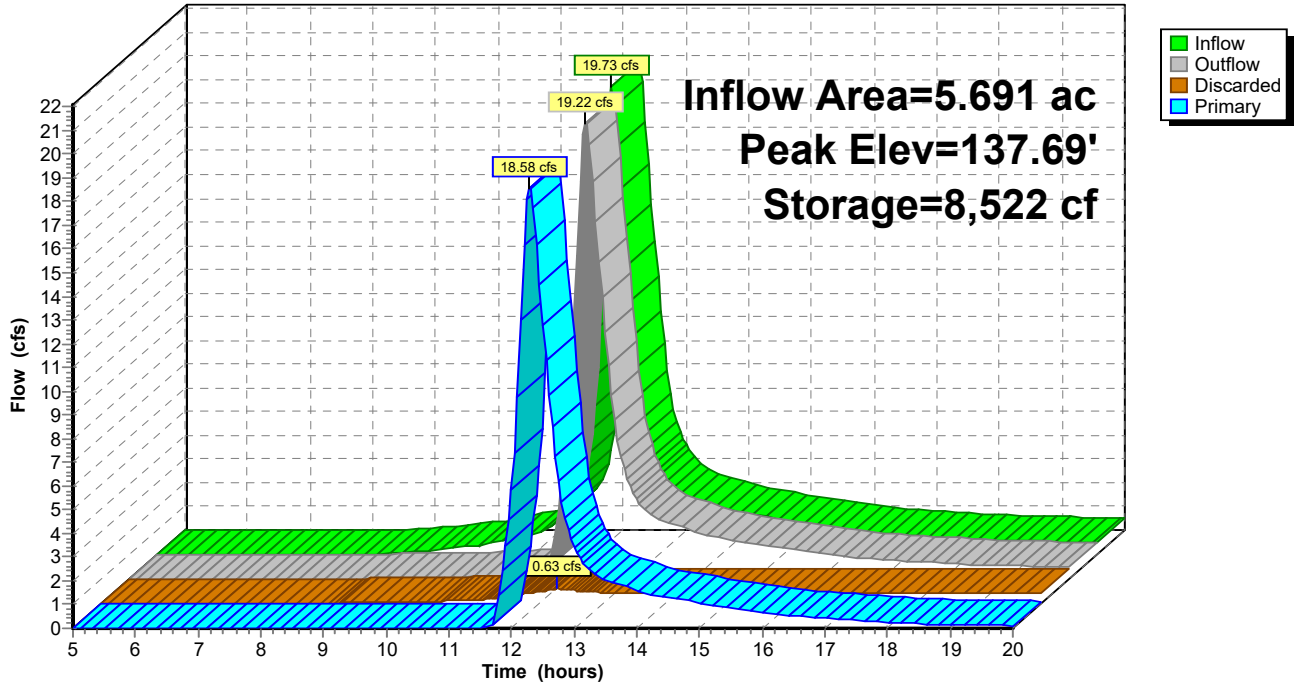
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Pond 57P: Valley Berm

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Summary for Pond 58P: Valley Berm

Inflow Area = 48.973 ac, 1.13% Impervious, Inflow Depth > 2.91" for 100 year event
 Inflow = 104.36 cfs @ 12.56 hrs, Volume= 11.868 af
 Outflow = 103.41 cfs @ 12.60 hrs, Volume= 11.517 af, Atten= 1%, Lag= 2.4 min
 Discarded = 1.06 cfs @ 12.60 hrs, Volume= 0.505 af
 Primary = 102.36 cfs @ 12.60 hrs, Volume= 11.012 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 126.87' @ 12.60 hrs Surf.Area= 14,894 sf Storage= 30,915 cf

Plug-Flow detention time= 15.7 min calculated for 11.479 af (97% of inflow)
 Center-of-Mass det. time= 5.8 min (830.6 - 824.8)

Volume	Invert	Avail.Storage	Storage Description
#1	122.00'	32,853 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
122.00	359	0	0	359
124.00	4,500	4,087	4,087	4,511
126.00	11,415	15,388	19,475	11,454
127.00	15,442	13,378	32,853	15,501

Device	Routing	Invert	Outlet Devices
#1	Primary	125.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	122.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.06 cfs @ 12.60 hrs HW=126.87' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.06 cfs)

Primary OutFlow Max=102.29 cfs @ 12.60 hrs HW=126.87' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 102.29 cfs @ 3.11 fps)

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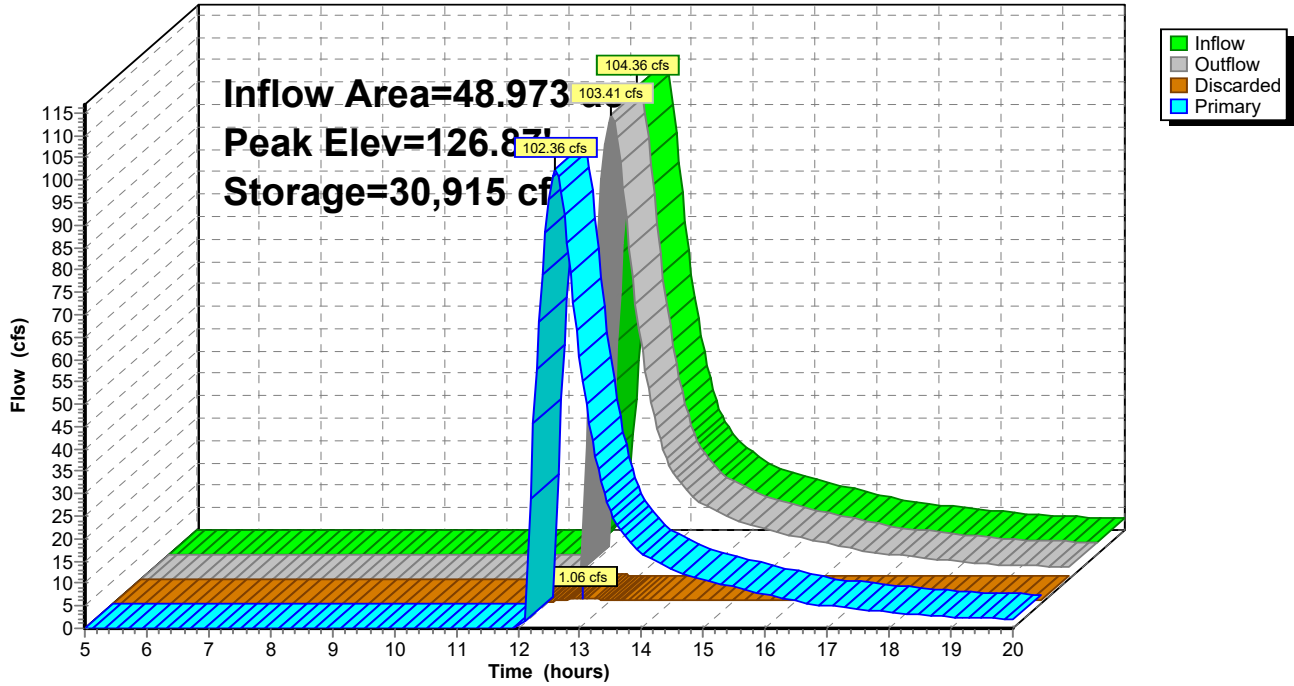
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Pond 58P: Valley Berm

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Summary for Pond 59P: Valley Berm

Inflow Area = 46.120 ac, 1.20% Impervious, Inflow Depth > 3.20" for 100 year event
 Inflow = 103.83 cfs @ 12.53 hrs, Volume= 12.294 af
 Outflow = 103.32 cfs @ 12.57 hrs, Volume= 11.979 af, Atten= 0%, Lag= 1.9 min
 Discarded = 0.83 cfs @ 12.57 hrs, Volume= 0.452 af
 Primary = 102.49 cfs @ 12.57 hrs, Volume= 11.527 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 134.87' @ 12.57 hrs Surf.Area= 11,663 sf Storage= 26,370 cf

Plug-Flow detention time= 14.1 min calculated for 11.939 af (97% of inflow)
 Center-of-Mass det. time= 5.4 min (828.5 - 823.1)

Volume	Invert	Avail.Storage	Storage Description
#1	130.00'	27,865 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
130.00	297	0	0	297
132.00	4,143	3,700	3,700	4,154
134.00	9,624	13,388	17,087	9,665
135.00	11,974	10,778	27,865	12,044

Device	Routing	Invert	Outlet Devices
#1	Discarded	130.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'
#2	Primary	133.50'	24.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=0.83 cfs @ 12.57 hrs HW=134.87' (Free Discharge)
 ↑1=Exfiltration (Controls 0.83 cfs)

Primary OutFlow Max=102.13 cfs @ 12.57 hrs HW=134.87' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 102.13 cfs @ 3.11 fps)

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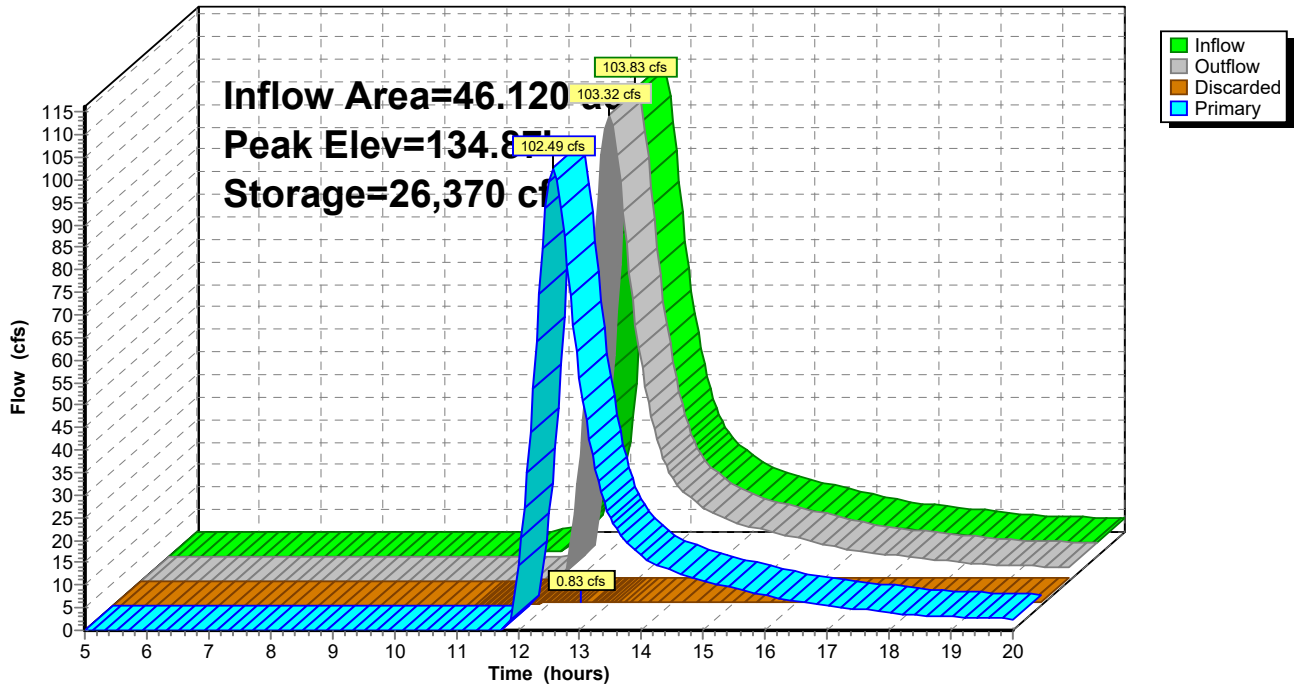
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Pond 59P: Valley Berm

Hydrograph



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Summary for Pond 60P: Valley Berm

Inflow Area = 7.388 ac, 0.00% Impervious, Inflow Depth > 4.09" for 100 year event
 Inflow = 19.31 cfs @ 12.53 hrs, Volume= 2.516 af
 Outflow = 19.30 cfs @ 12.54 hrs, Volume= 2.457 af, Atten= 0%, Lag= 0.7 min
 Discarded = 0.18 cfs @ 12.54 hrs, Volume= 0.128 af
 Primary = 19.12 cfs @ 12.54 hrs, Volume= 2.329 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 142.01' @ 12.54 hrs Surf.Area= 2,576 sf Storage= 3,634 cf

Plug-Flow detention time= 14.3 min calculated for 2.448 af (97% of inflow)
 Center-of-Mass det. time= 6.0 min (821.0 - 815.0)

Volume	Invert	Avail.Storage	Storage Description
#1	138.00'	6,691 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
138.00	0	0	0 0
140.00	736	491	491 742
142.00	2,566	3,118	3,608 2,593
143.00	3,630	3,083	6,691 3,675

Device	Routing	Invert	Outlet Devices
#1	Primary	141.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	138.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.18 cfs @ 12.54 hrs HW=142.01' (Free Discharge)
 ↑**2=Exfiltration** (Controls 0.18 cfs)

Primary OutFlow Max=19.08 cfs @ 12.54 hrs HW=142.01' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 19.08 cfs @ 1.87 fps)

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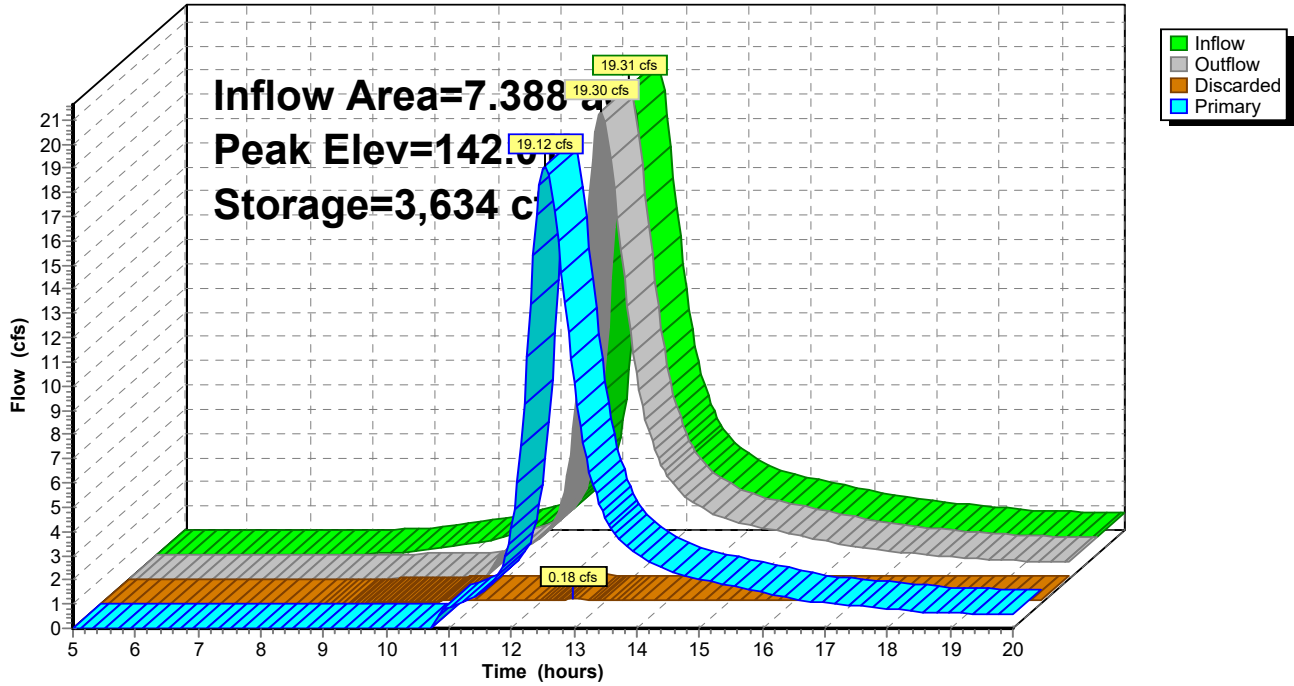
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Pond 60P: Valley Berm

Hydrograph



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Summary for Pond 62P: Valley Berm

Inflow Area = 32.887 ac, 1.63% Impervious, Inflow Depth > 3.79" for 100 year event
 Inflow = 81.95 cfs @ 12.49 hrs, Volume= 10.389 af
 Outflow = 80.61 cfs @ 12.54 hrs, Volume= 10.005 af, Atten= 2%, Lag= 3.2 min
 Discarded = 1.13 cfs @ 12.54 hrs, Volume= 0.708 af
 Primary = 79.47 cfs @ 12.54 hrs, Volume= 9.297 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 144.81' @ 12.54 hrs Surf.Area= 16,005 sf Storage= 33,242 cf

Plug-Flow detention time= 23.0 min calculated for 9.972 af (96% of inflow)
 Center-of-Mass det. time= 10.2 min (829.6 - 819.4)

Volume	Invert	Avail.Storage	Storage Description
#1	140.00'	36,392 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
140.00	0	0	0	0
142.00	5,126	3,417	3,417	5,132
144.00	13,477	17,943	21,360	13,510
145.00	16,642	15,032	36,392	16,704

Device	Routing	Invert	Outlet Devices
#1	Primary	143.50'	20.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	140.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=1.13 cfs @ 12.54 hrs HW=144.81' (Free Discharge)
 ↑**2=Exfiltration** (Controls 1.13 cfs)

Primary OutFlow Max=79.30 cfs @ 12.54 hrs HW=144.81' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 79.30 cfs @ 3.04 fps)

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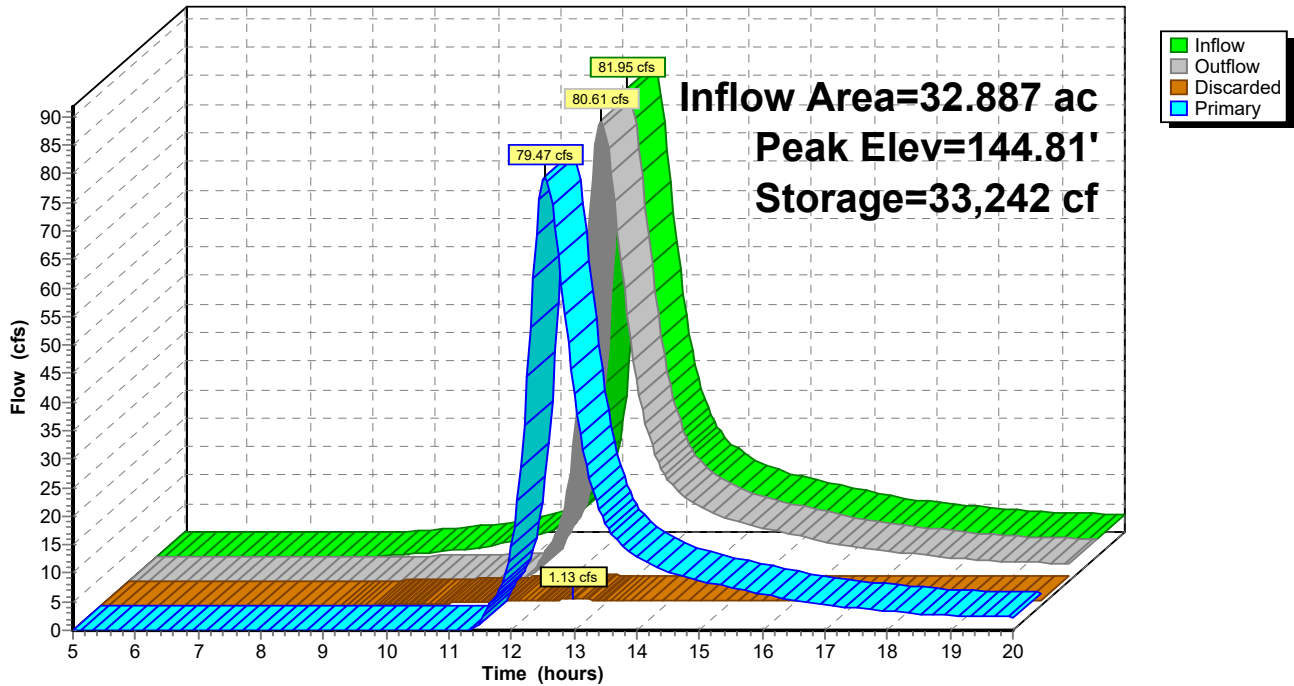
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Pond 62P: Valley Berm

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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 64P: Sediment Trap

Inflow Area = 1.772 ac, 0.68% Impervious, Inflow Depth > 3.25" for 100 year event
 Inflow = 5.40 cfs @ 12.22 hrs, Volume= 0.479 af
 Outflow = 2.67 cfs @ 12.55 hrs, Volume= 0.378 af, Atten= 51%, Lag= 19.8 min
 Discarded = 0.42 cfs @ 12.55 hrs, Volume= 0.261 af
 Primary = 2.25 cfs @ 12.55 hrs, Volume= 0.117 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.18' @ 12.55 hrs Surf.Area= 5,947 sf Storage= 7,738 cf

Plug-Flow detention time= 130.5 min calculated for 0.377 af (79% of inflow)
 Center-of-Mass det. time= 76.1 min (886.5 - 810.4)

Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	13,521 cf	40.00'W x 40.00'L x 3.00'H Prismatic Z=8.5

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	12.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	157.00'	3.000 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1.00'

Discarded OutFlow Max=0.42 cfs @ 12.55 hrs HW=159.18' (Free Discharge)
 ↑2=Exfiltration (Controls 0.42 cfs)

Primary OutFlow Max=2.24 cfs @ 12.55 hrs HW=159.18' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 2.24 cfs @ 1.02 fps)

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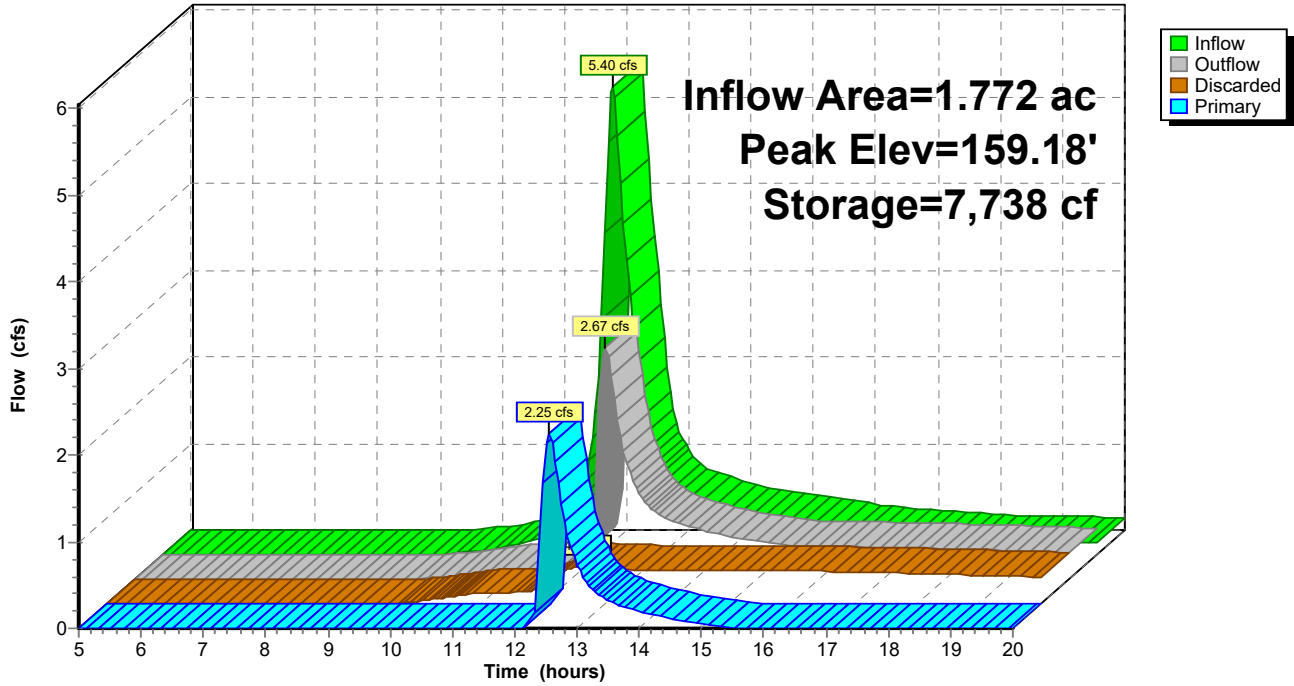
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Pond 64P: Sediment Trap

Hydrograph



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Type III 24-hr 100 year Rainfall=7.96"

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Summary for Pond 65P: Sediment Trap

Inflow Area = 3.565 ac, 0.17% Impervious, Inflow Depth > 3.77" for 100 year event
 Inflow = 10.42 cfs @ 12.35 hrs, Volume= 1.121 af
 Outflow = 9.58 cfs @ 12.47 hrs, Volume= 0.861 af, Atten= 8%, Lag= 6.7 min
 Primary = 9.58 cfs @ 12.47 hrs, Volume= 0.861 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 159.58' @ 12.47 hrs Surf.Area= 5,223 sf Storage= 13,945 cf

Plug-Flow detention time= 92.4 min calculated for 0.858 af (77% of inflow)
 Center-of-Mass det. time= 36.7 min (846.4 - 809.7)

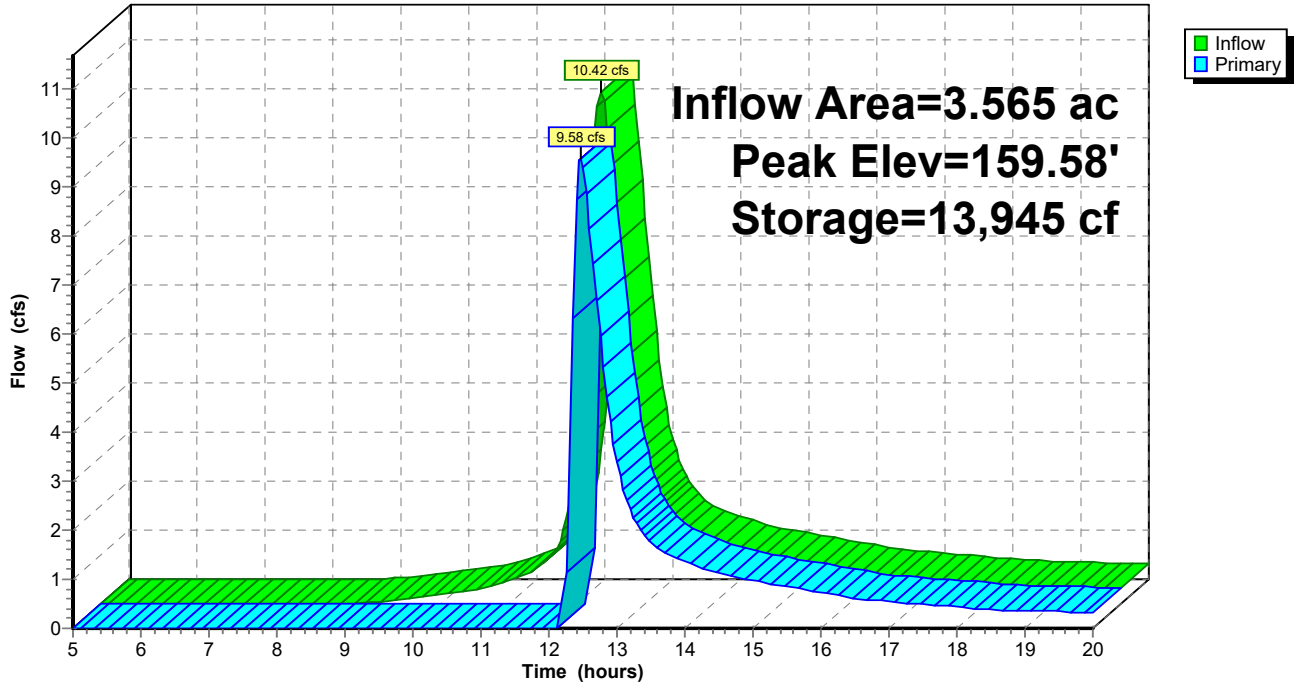
Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	16,187 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
156.00	2,660	0	0
158.00	3,990	6,650	6,650
160.00	5,547	9,537	16,187

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=9.47 cfs @ 12.47 hrs HW=159.58' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 9.47 cfs @ 2.04 fps)

Pond 65P: Sediment Trap

Hydrograph



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Summary for Pond 66P: Sediment Trap

Inflow Area = 1.914 ac, 0.78% Impervious, Inflow Depth > 3.57" for 100 year event
 Inflow = 6.62 cfs @ 12.20 hrs, Volume= 0.570 af
 Outflow = 5.95 cfs @ 12.28 hrs, Volume= 0.438 af, Atten= 10%, Lag= 4.6 min
 Primary = 5.95 cfs @ 12.28 hrs, Volume= 0.438 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 157.44' @ 12.28 hrs Surf.Area= 2,899 sf Storage= 6,834 cf

Plug-Flow detention time= 91.9 min calculated for 0.438 af (77% of inflow)
 Center-of-Mass det. time= 34.3 min (838.8 - 804.5)

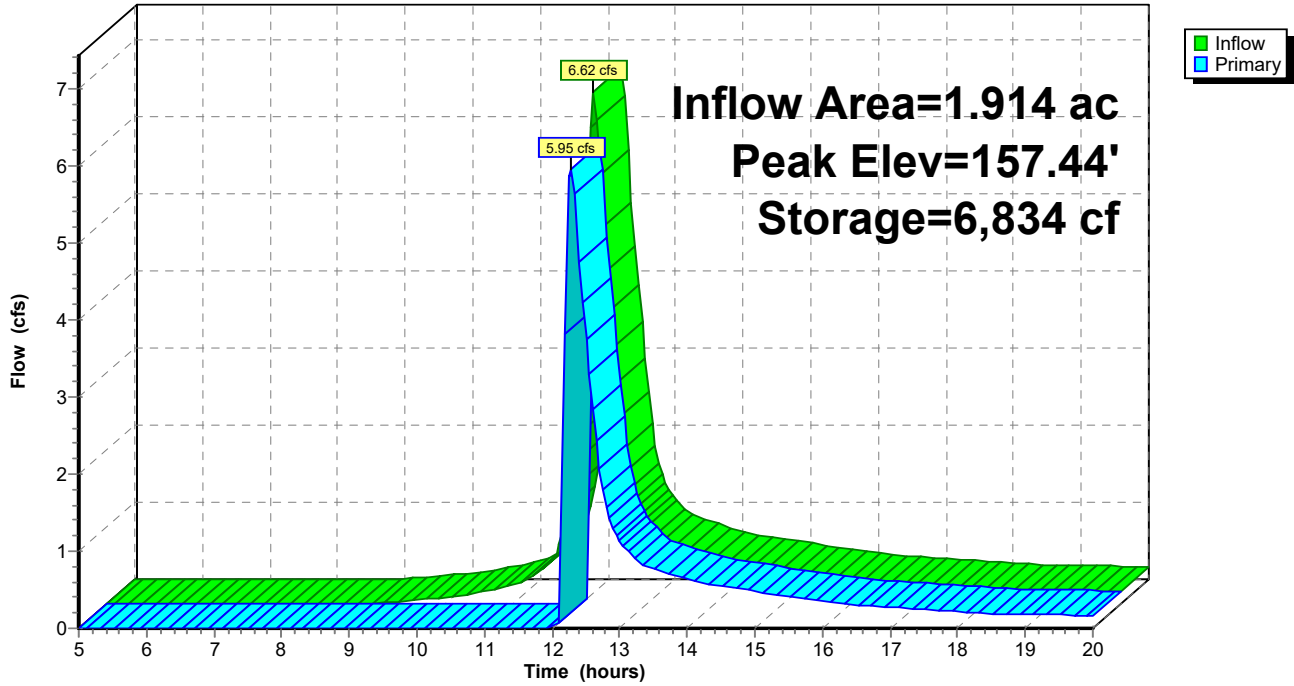
Volume	Invert	Avail.Storage	Storage Description
#1	154.00'	8,547 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
154.00	1,170	0	0
156.00	2,080	3,250	3,250
158.00	3,217	5,297	8,547

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	8.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=5.87 cfs @ 12.28 hrs HW=157.44' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 5.87 cfs @ 1.68 fps)

Pond 66P: Sediment Trap

Hydrograph



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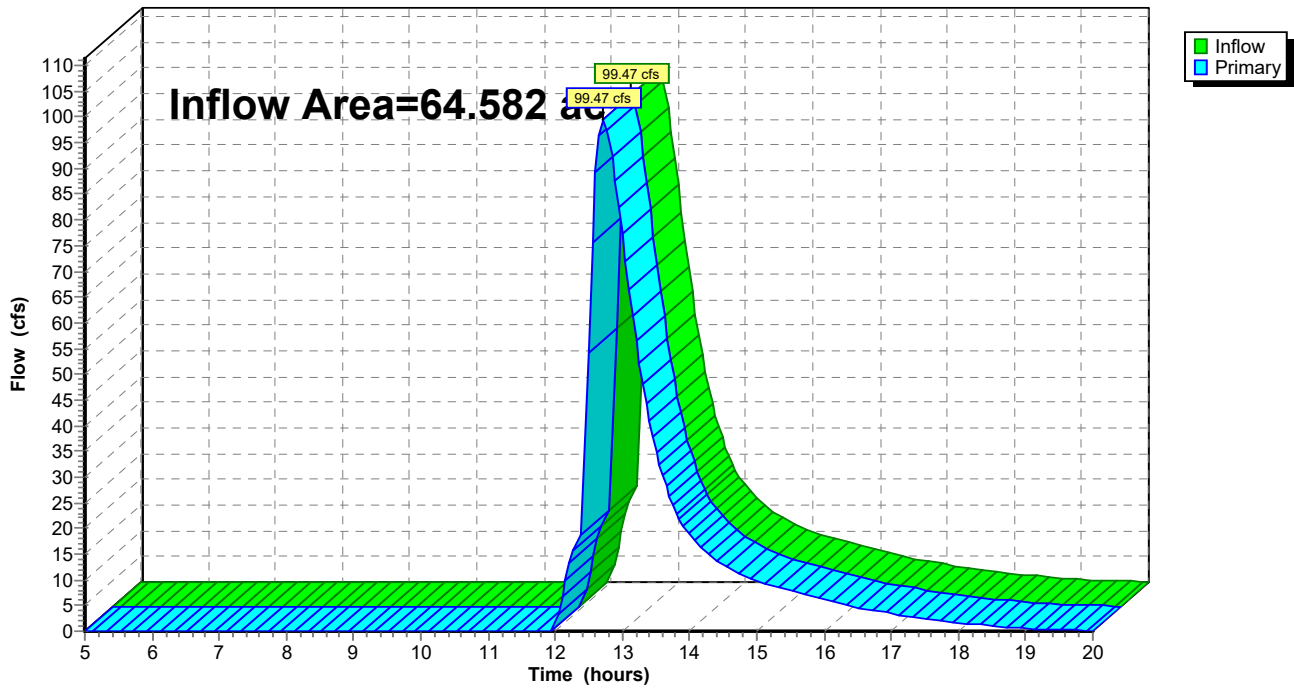
Summary for Link DP47: (new Link)

Inflow Area = 64.582 ac, 0.12% Impervious, Inflow Depth > 1.86" for 100 year event
Inflow = 99.47 cfs @ 12.72 hrs, Volume= 10.011 af
Primary = 99.47 cfs @ 12.72 hrs, Volume= 10.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP47: (new Link)

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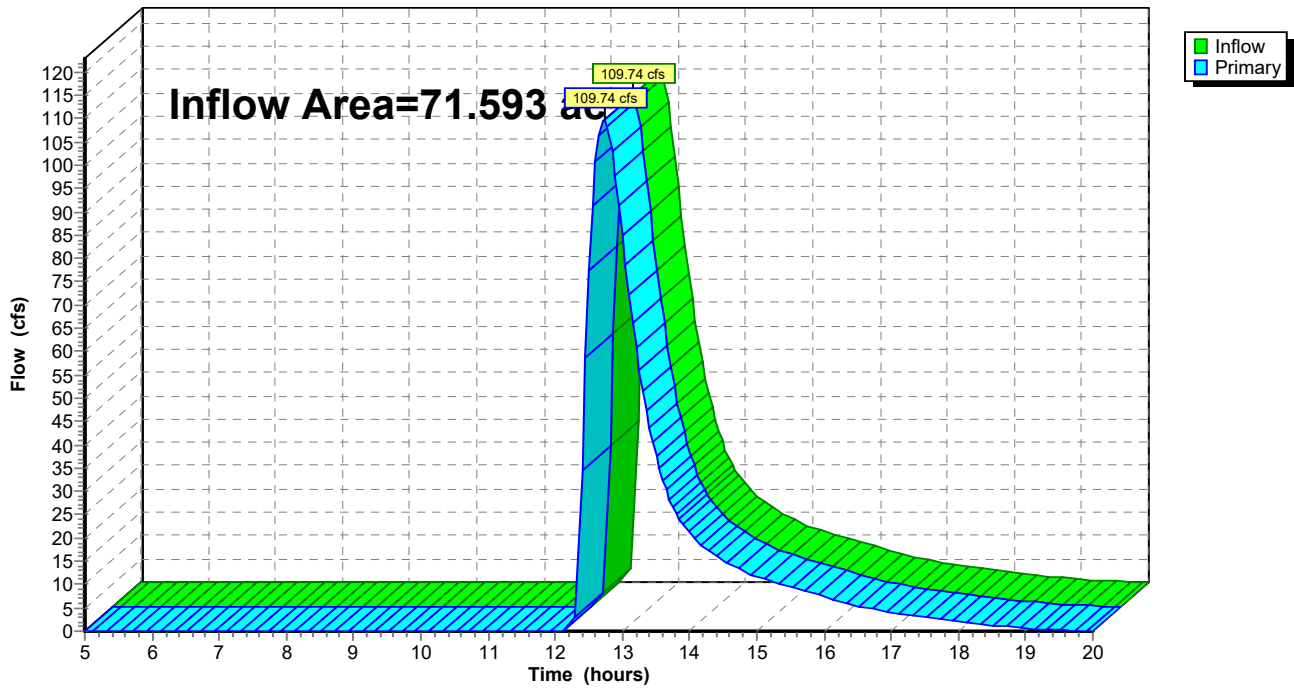
Summary for Link DP54: (new Link)

Inflow Area = 71.593 ac, 0.78% Impervious, Inflow Depth > 1.87" for 100 year event
Inflow = 109.74 cfs @ 12.72 hrs, Volume= 11.137 af
Primary = 109.74 cfs @ 12.72 hrs, Volume= 11.137 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP54: (new Link)

Hydrograph





Appendix F Site Plans