

Topo Sheet Key

DR M R r d

1947 Source Sheets



RIVERSIDE
1947
15-minute, 50000

1943 Source Sheets

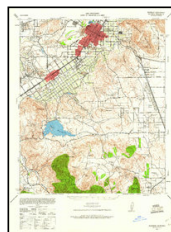


PERRIS
1943
15-minute, 62500

1942 Source Sheets



Perris
1942
15-minute, 62500
Aerial Photo Revised 1939

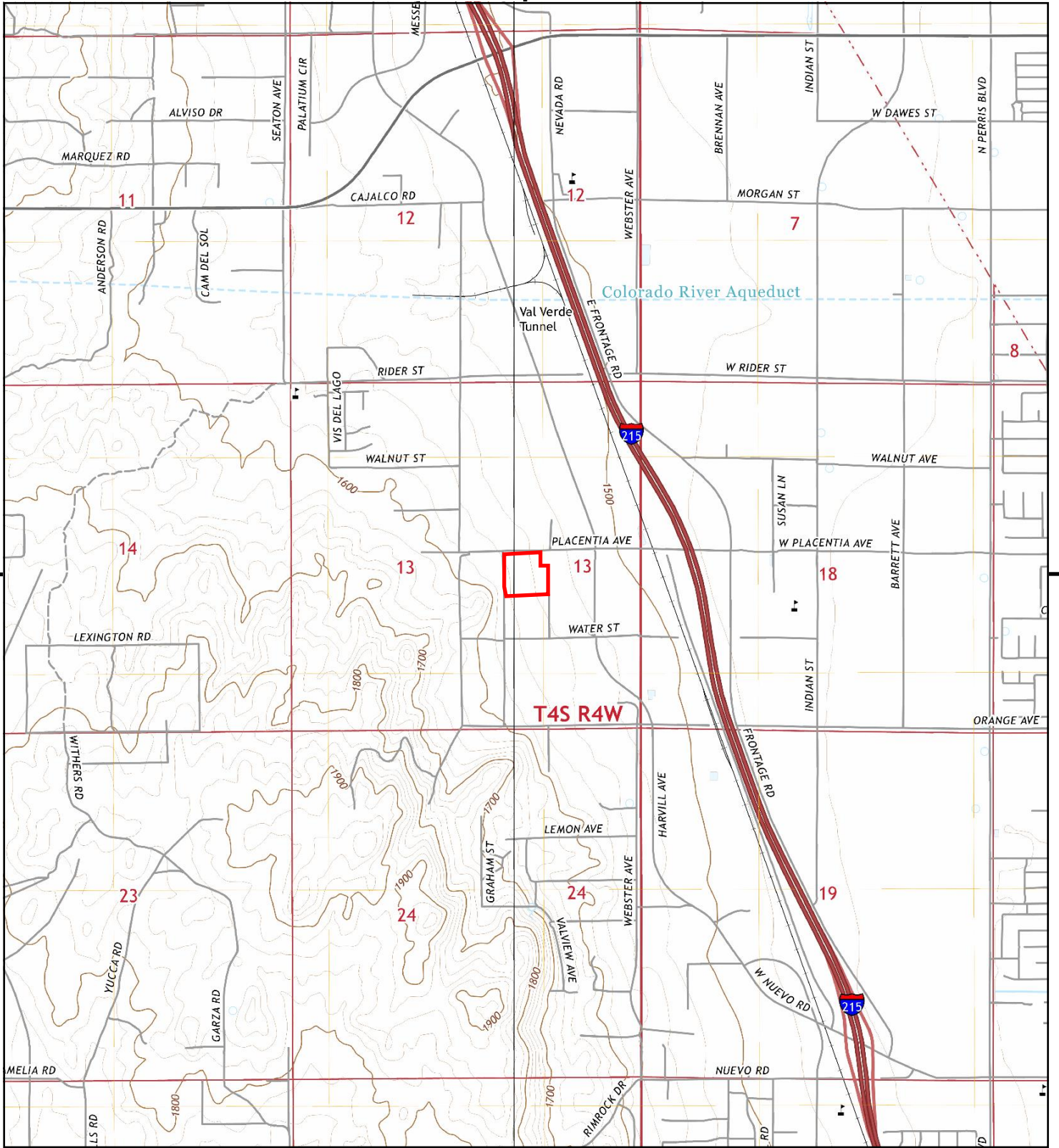


Riverside
1942
15-minute, 62500
Aerial Photo Revised 1939

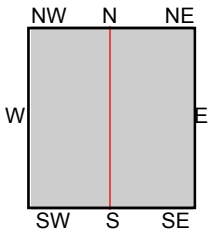
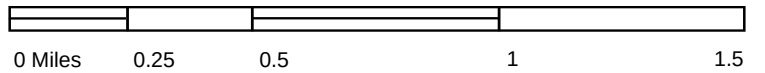
1901 Source Sheets



Riverside
1901
15-minute, 62500



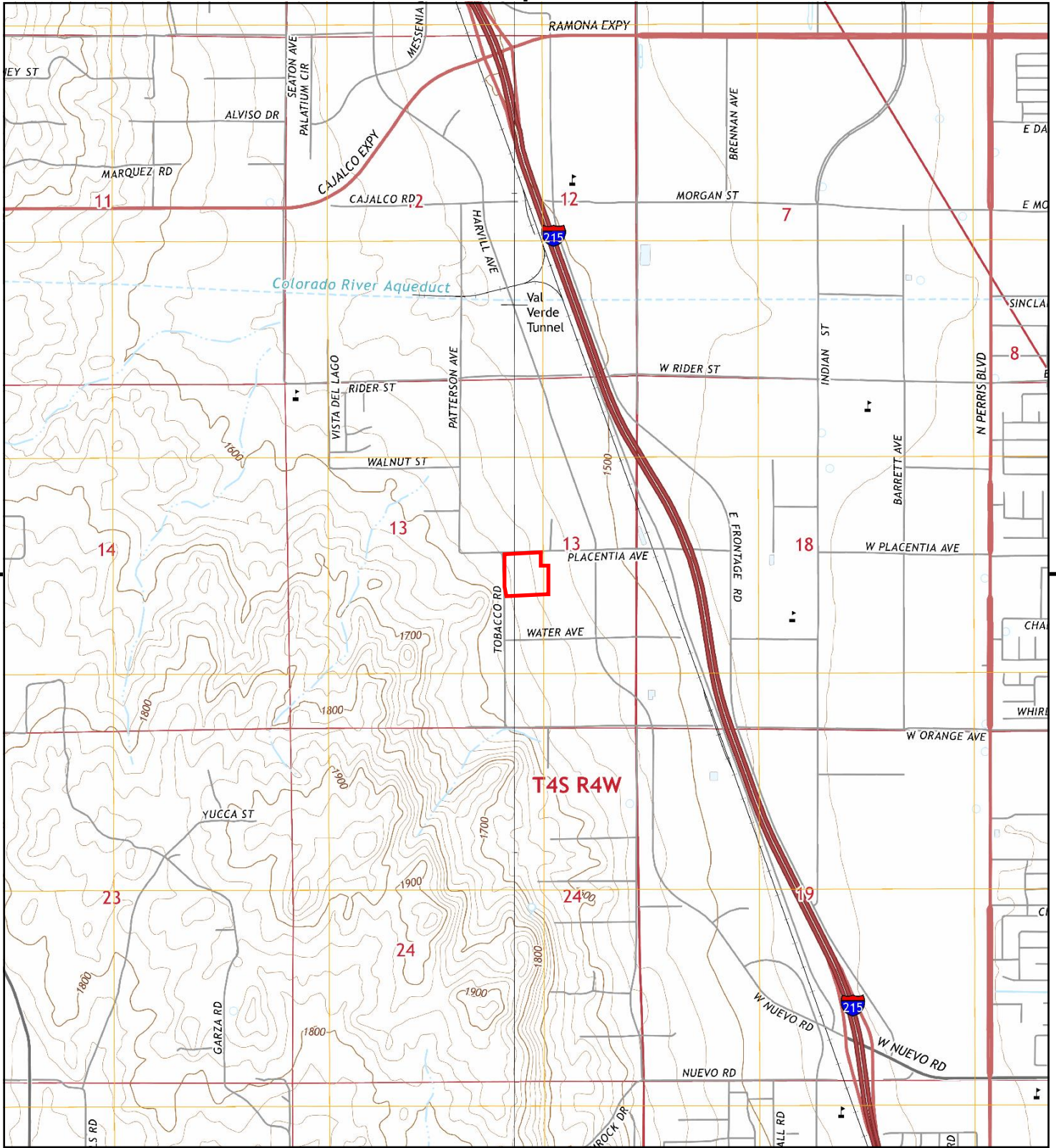
Legend symbols for various features: roads, water, and other topographic elements.



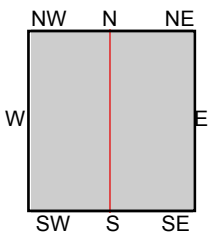
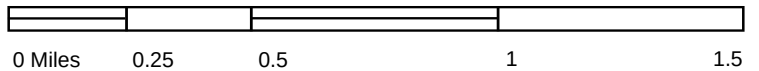
TP, Perris, 2018, 7.5-minute
W, Steele Peak, 2018, 7.5-minute

Legend symbols for specific locations:
 Thrifty 9.48 Acres Perris CA
 23641 Placentia Avenue
 Perris, CA 92570
 Waterstone Environmental Inc





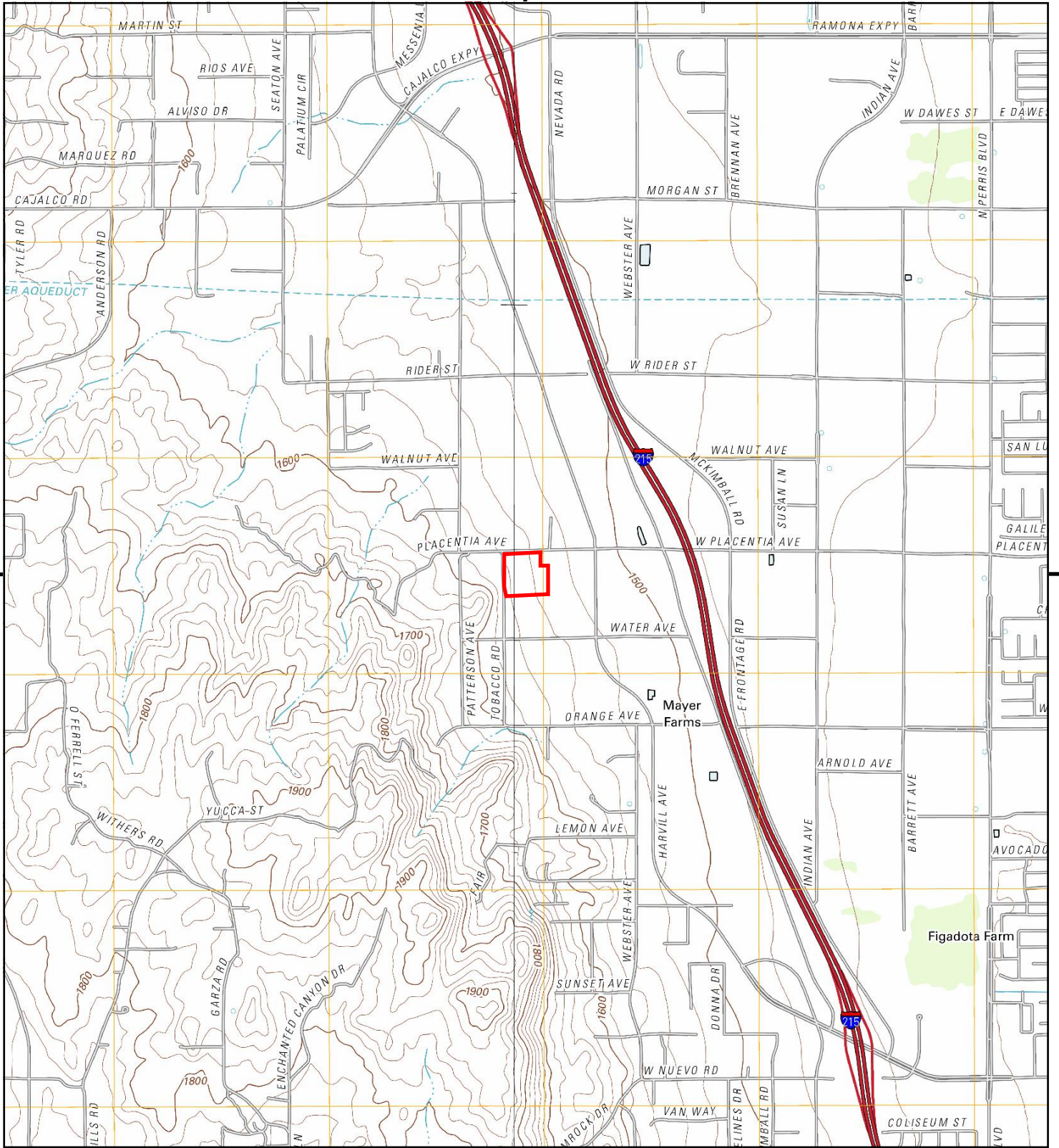
Legend symbols for various map features.



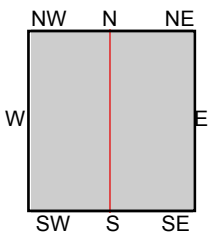
TP, Perris, 2015, 7.5-minute
W, Steele Peak, 2015, 7.5-minute

- Thrifty 9.48 Acres Perris CA
- 23641 Placentia Avenue
- Perris, CA 92570
- Waterstone Environmental Inc





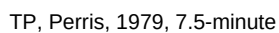
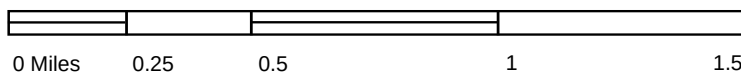
Legend symbols for various features and land use.



TP, Perris, 2012, 7.5-minute
W, Steele Peak, 2012, 7.5-minute

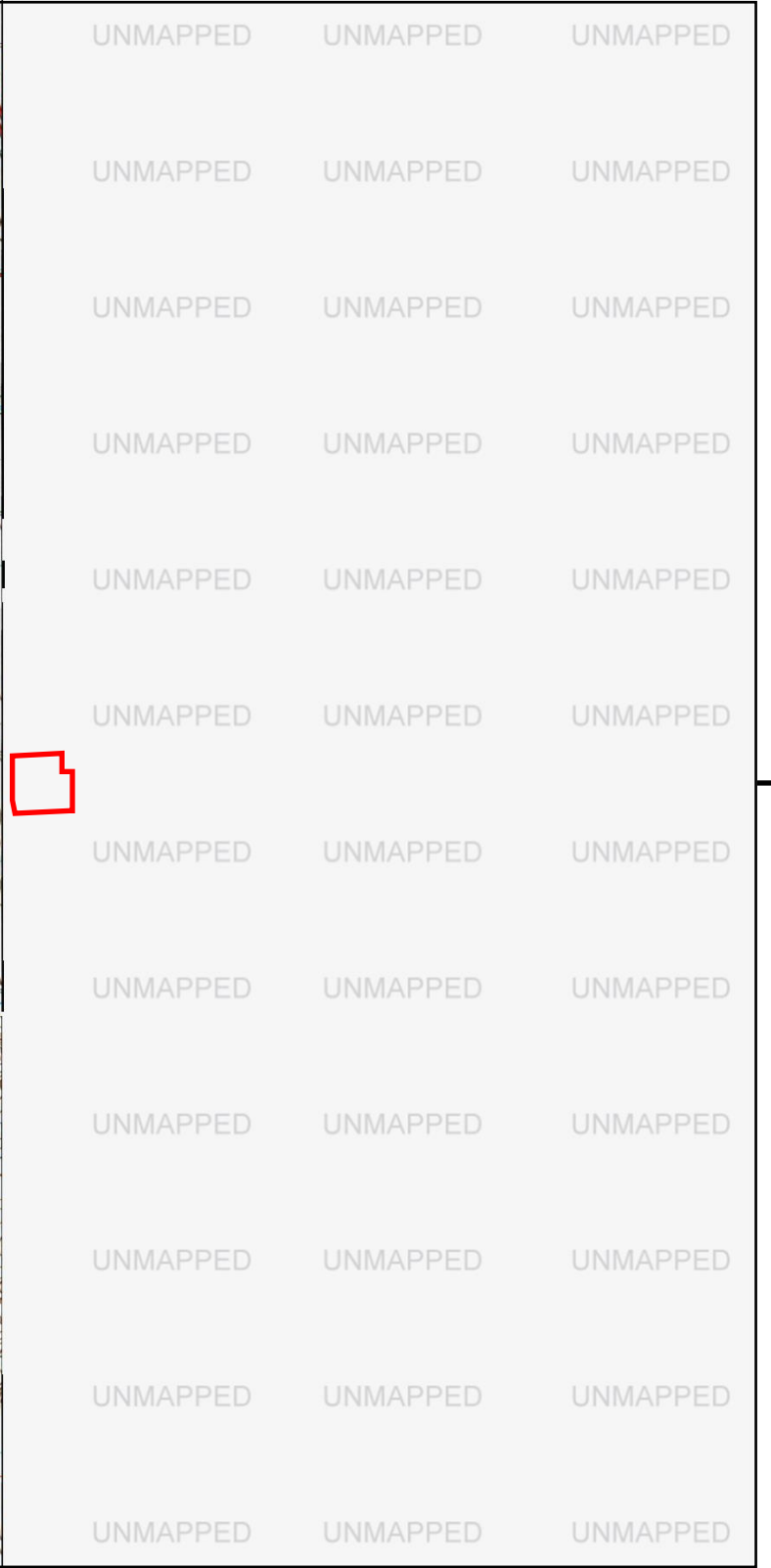
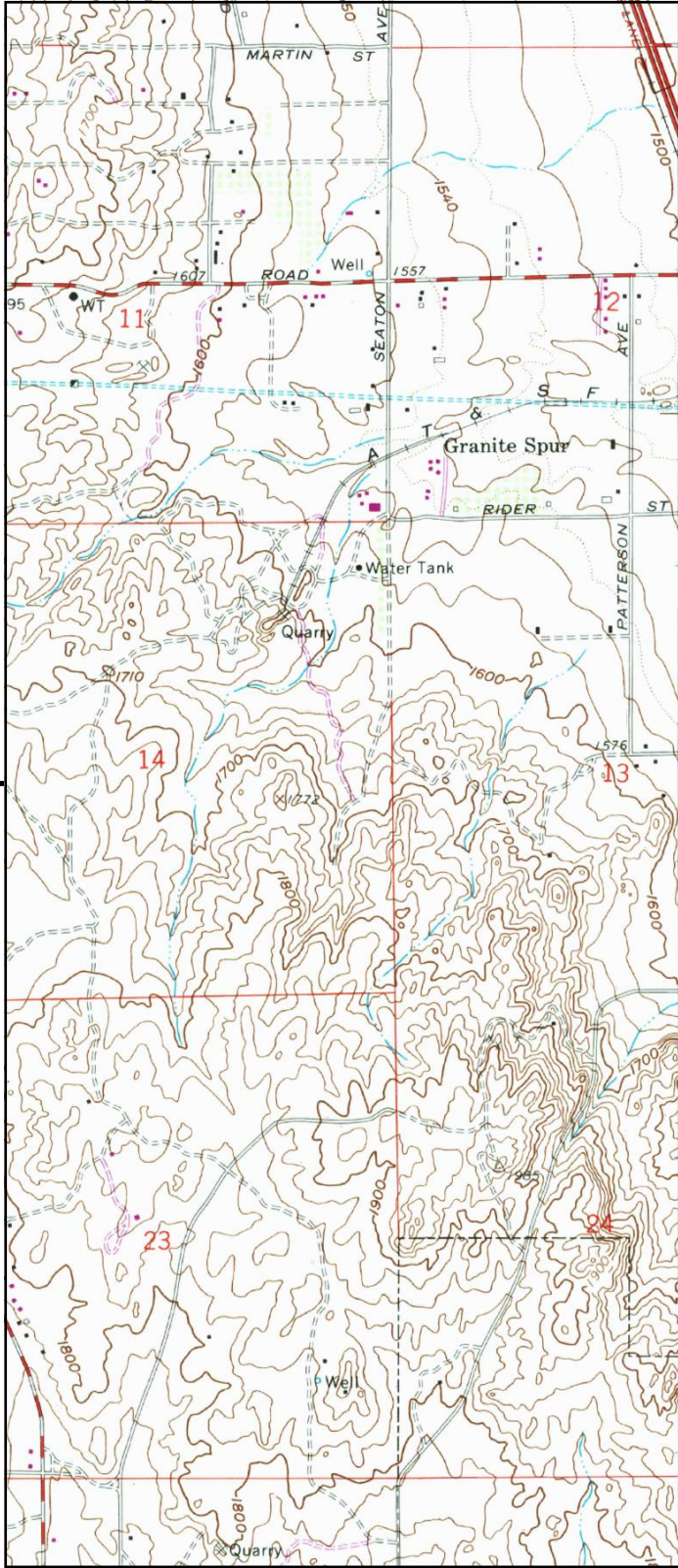
- Thrifty 9.48 Acres Perris CA
- 23641 Placentia Avenue
Perris, CA 92570
- Waterstone Environmental Inc



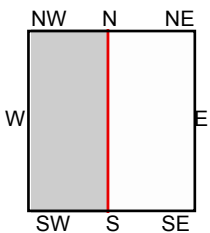
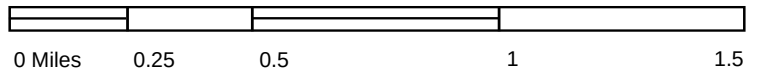


- ☐☐☐☐☐ M ☐ Thrifty 9.48 Acres Perris CA
☐☐ DDR ☐☐☐☐ 23641 Placentia Avenue
 Perris, CA 92570
☐☐☐☐☐ Waterstone Environmental Inc





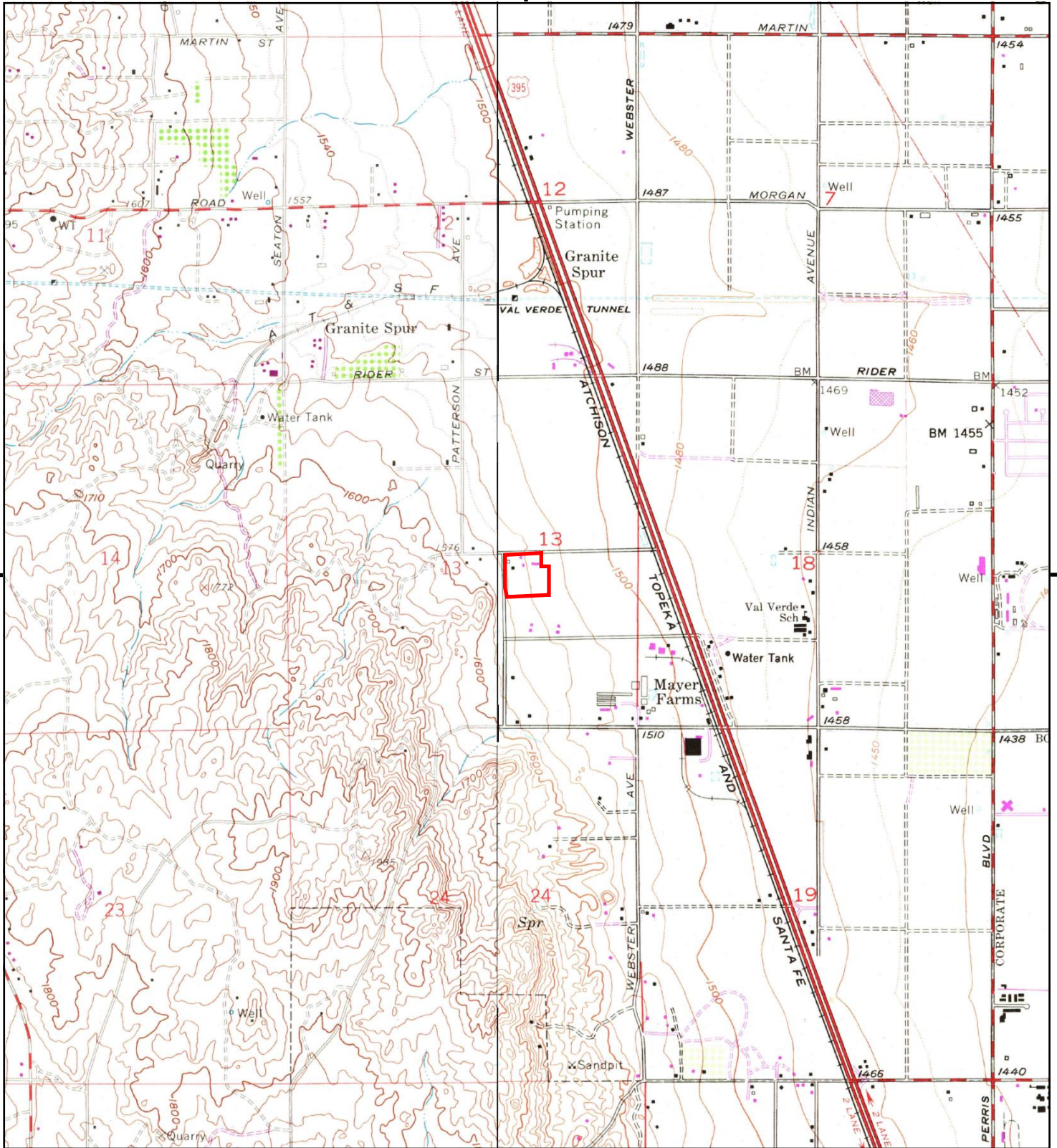
Legend symbols for various map features.



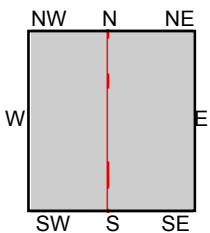
W, Steele Peak, 1978, 7.5-minute

Legend symbols for property and company information.





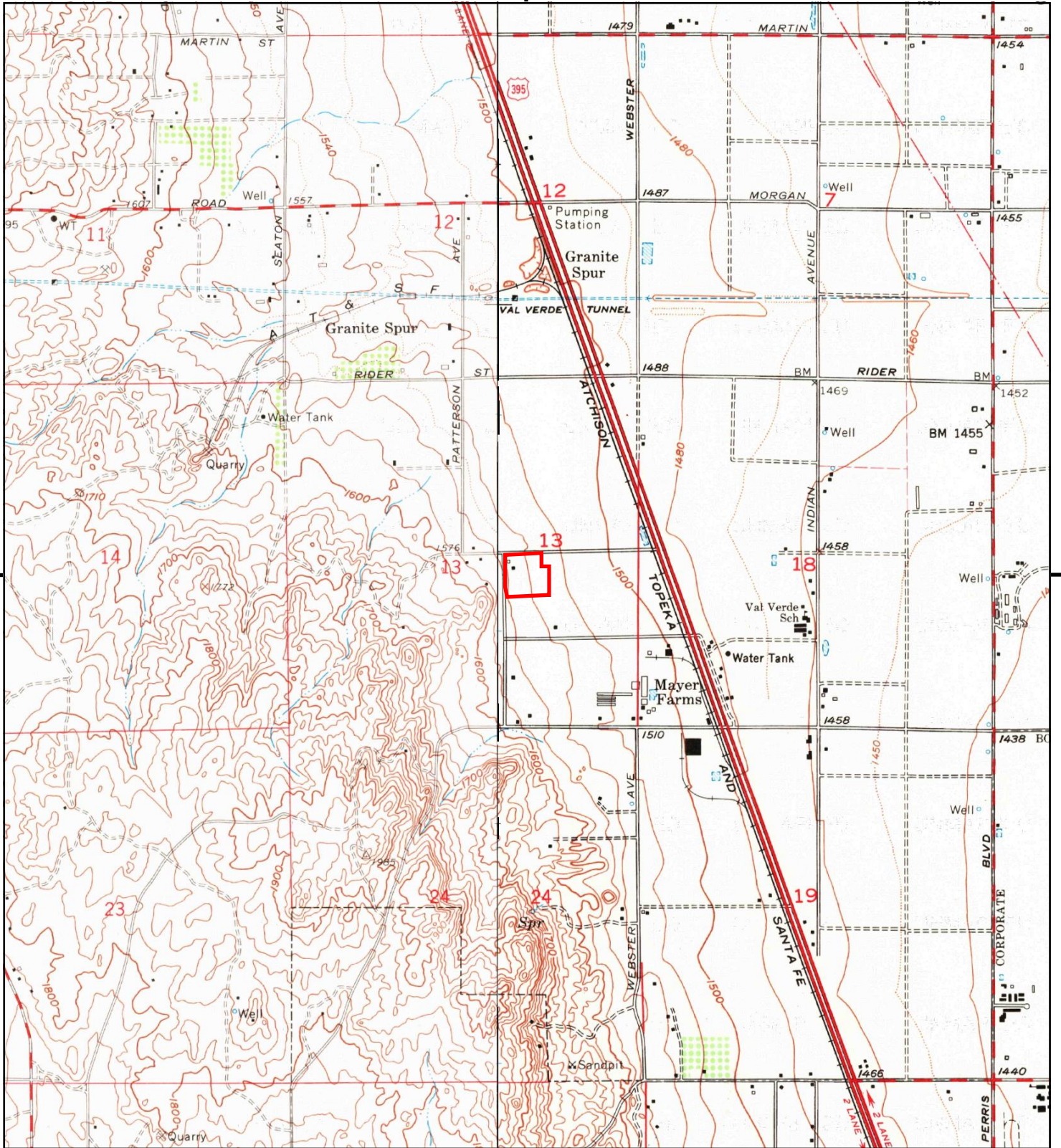
Legend symbols for various map features.



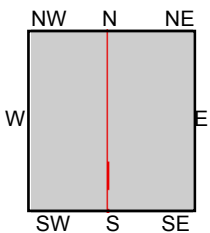
TP, Perris, 1973, 7.5-minute
W, Steele Peak, 1973, 7.5-minute

Legend symbols for various map features.





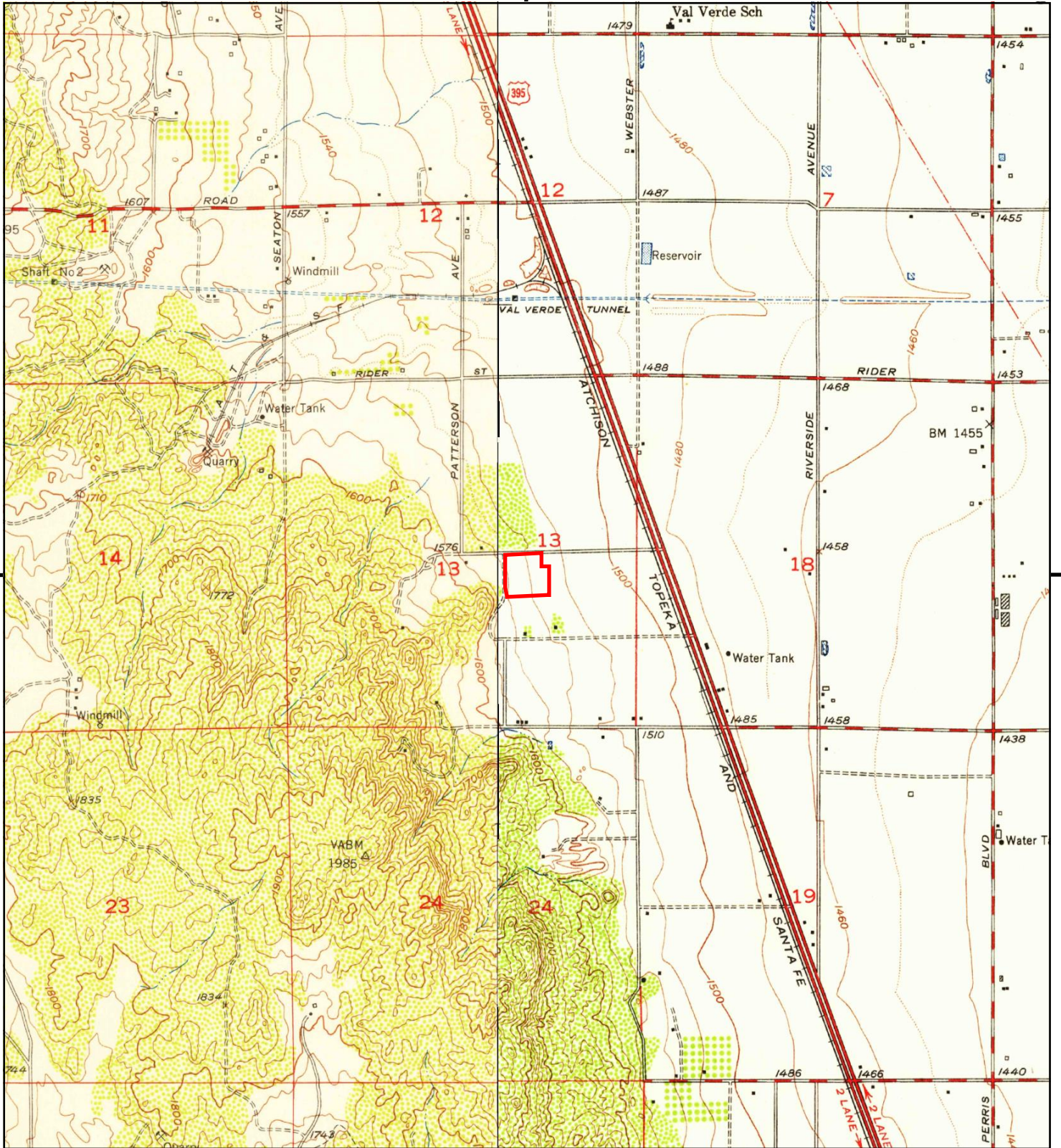
Legend symbols for various map features.



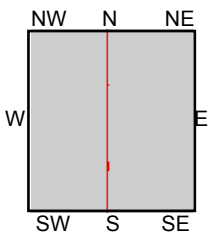
TP, Perris, 1967, 7.5-minute
W, Steele Peak, 1967, 7.5-minute

- Thrifty 9.48 Acres Perris CA
- 23641 Placentia Avenue
Perris, CA 92570
- Waterstone Environmental Inc





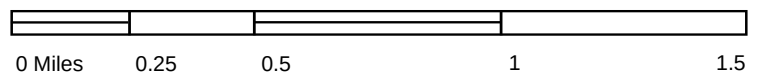
Legend symbols for various features and land use.

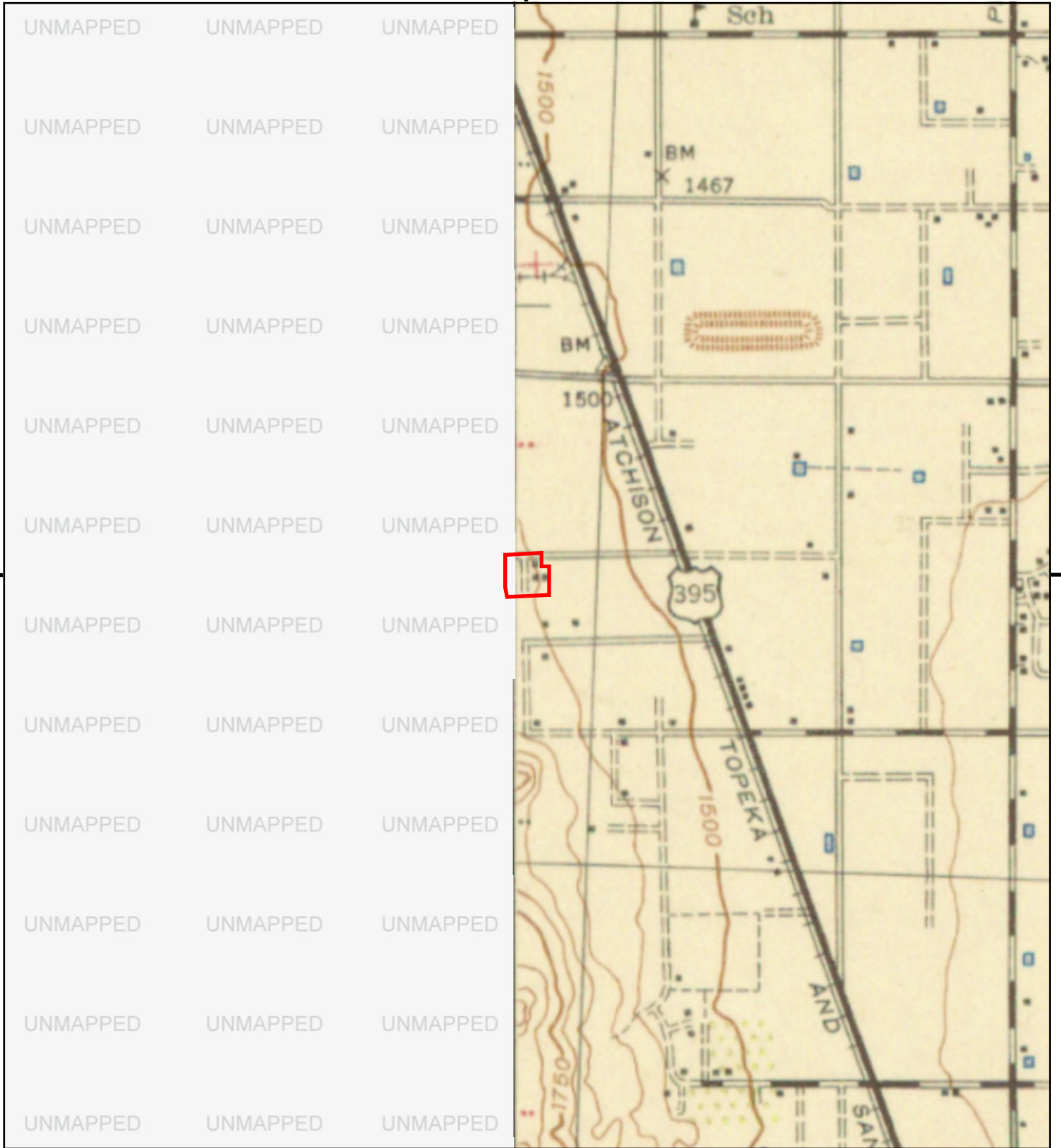


TP, Perris, 1953, 7.5-minute
W, Steele Peak, 1953, 7.5-minute

- Thrifty 9.48 Acres Perris CA
- 23641 Placentia Avenue
Perris, CA 92570
- Waterstone Environmental Inc







UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED

0 Miles 0.25 0.5 1 1.5

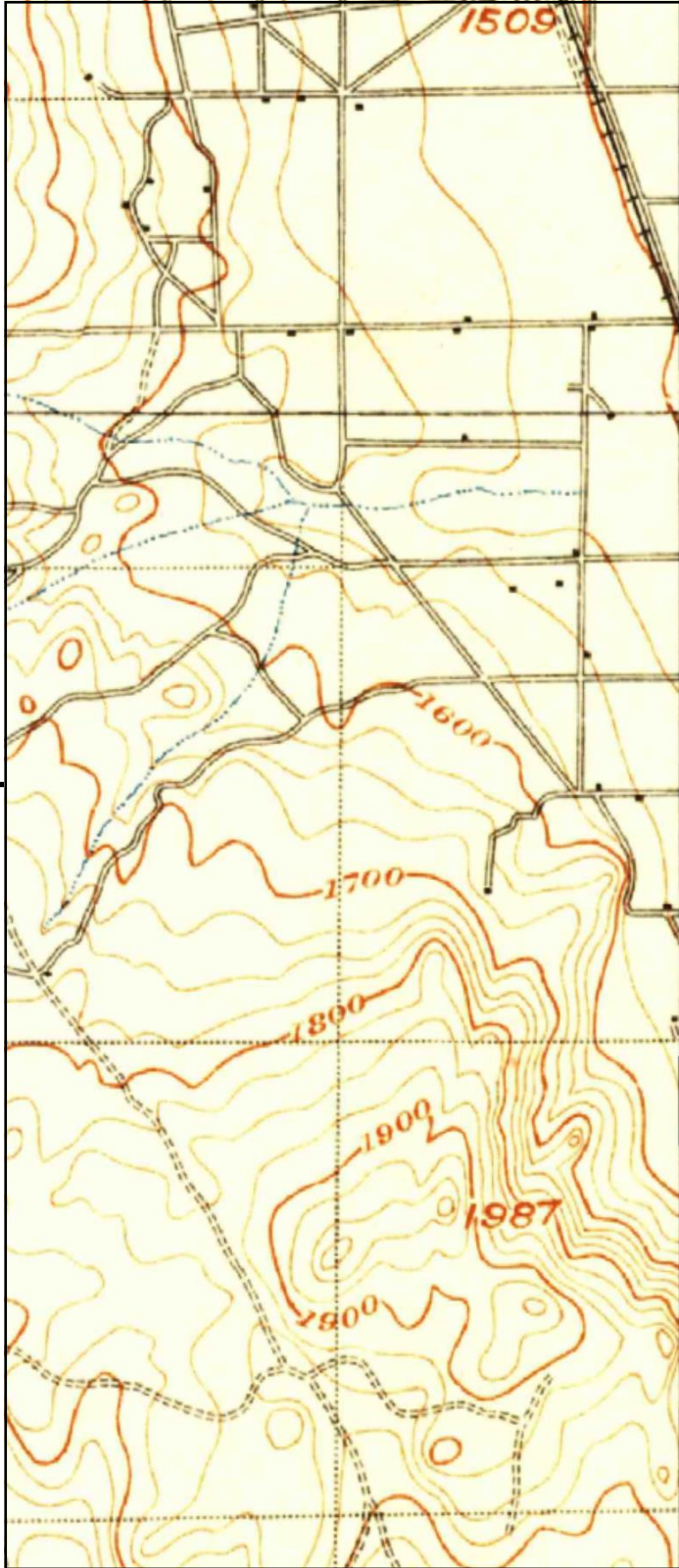
NW N NE
W E
SW S SE

TP, PERRIS, 1943, 15-minute

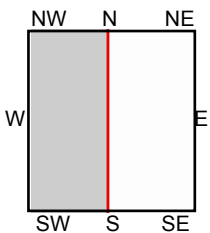
Thrifty 9.48 Acres Perris CA
23641 Placentia Avenue
Perris, CA 92570
Waterstone Environmental Inc







Legend symbols for various map features including roads, trails, and water bodies.



NW, Riverside, 1901, 15-minute

Legend symbols for various map features including roads, trails, and water bodies.



Appendix F

City Directory

Thrifty 9.48 Acres Perris CA

23641 Placentia Avenue
Perris, CA 92570

Inquiry Number: 7056923.5
July 19, 2022

The EDR-City Directory Image Report

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.



RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

<u>Year</u>	<u>Target Street</u>	<u>Cross Street</u>	<u>Source</u>
2017	☒	☐	EDR Digital Archive
2014	☒	☐	EDR Digital Archive
2010	☒	☐	EDR Digital Archive
2005	☒	☐	EDR Digital Archive
2000	☒	☐	EDR Digital Archive
1995	☒	☐	EDR Digital Archive
1992	☒	☐	EDR Digital Archive
1990	☒	☐	Haines Criss-Cross Directory
1985	☒	☐	Haines Criss-Cross Directory
1980	☒	☐	Haines Criss-Cross Directory
1976	☒	☐	Haines Criss-Cross Directory
1971	☐	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

23641 Placentia Avenue
Perris, CA 92570

<u>Year</u>	<u>CD Image</u>	<u>Source</u>

PLACENTIA AVE

2017	pg A1	EDR Digital Archive	
2014	pg A2	EDR Digital Archive	
2010	pg A3	EDR Digital Archive	
2005	pg A4	EDR Digital Archive	
2000	pg A5	EDR Digital Archive	
1995	pg A6	EDR Digital Archive	
1992	pg A7	EDR Digital Archive	
1990	pg A8	Haines Criss-Cross Directory	
1985	pg A9	Haines Criss-Cross Directory	
1980	pg A10	Haines Criss-Cross Directory	
1976	pg A11	Haines Criss-Cross Directory	
1971	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

PLACENTIA AVE**2017**

23251 TUTTLE, JUDY L
23430 RUBIO, ISABEL
23491 ROMERO, FLORINE M
23511 BARRIENTOS, GARCIA
23551 BRAMLETTE, ANITA A
23641 PRICE, JEREMY R

PLACENTIA AVE**2014**

23251 TUTTLE, JUDY L
23430 BUENROSTRO, JAVIER
23491 OCCUPANT UNKNOWN,
23511 GOMEZ, CARLOS
23551 BRAMLETTE, ANITA A
23641 RASMUSSEN, ELMER
23745 RODRIGUEZ, JOSEF

PLACENTIA AVE 2010

23430 RUBIO, ISABEL
23491 ROMERO, FLORINE M
23511 OCCUPANT UNKNOWN,
23551 BRAMLETTE, ANITA A
23641 RASMUSSEN, AMY
23745 OCCUPANT UNKNOWN,
23815 OCCUPANT UNKNOWN,

PLACENTIA AVE**2005**

23251 STCLAIR, JOHN P
23430 ZERMENO, LILIANA
23491 ROMERO, FLORINE M
23511 BARRIENTOS, JUAN G
23551 BRAMLETT, SIMS
23641 COOPER, THURMAN
23745 A 1 MOBILE TIRE & AXLE CO
OCCUPANT UNKNOWN,

PLACENTIA AVE**2000**

23430 MONTIEL, JESUS
23491 ROMERO, FLORINE M
23511 BARRIENTOS, JUAN G
23551 SIMS, ANITA A
23641 SEABRA, TORI
23745 OCCUPANT UNKNOWN,

PLACENTIA AVE

1995

23641 MYERS, SEAN

23745 A 1 MOBILE TIRE & AXLE CO

PLACENTIA AVE**1992**

23511 BARRIENTOS, JUAN G
23815 KARNES, DANA

PLACENTIA AVE

1990

PLACENTIA 92370

PERRIS

421	REGAN Michael	943-4730	+0
431	POPE Russell J	00	+0
441	DAVIS Angela	943-2706	+0
471	ANGLE Edgar	943-6958	9
	HOLLAND Arville	943-6958	9
491	HIGGINBOTHAM Mark	00	
521	ROSE Bruce C	00	+0
531	MORGAN Tilford 2D	657-6859	7
551	★D&H DGNSTC IMAGING	943-7500	+0
791	TOZZER Patricia	657-9040	
	TOZZER Tom	657-9040	
23430	SKILES Jos	657-2878	1
23511	TOCCHI John	943-6604	+0
	TOCCHI L	943-6604	+0
23551	COURTNEY James R	00	4
23641	SCARAMELLA Victor	657-6361	
23745	ADAMS Stanley	657-8496	+0
	CUMMINGS Joan D	00	+0
23815	XXXX	00	
26301	MORFIN Jorge	00	5
26735	ESPARZA Crestino	00	6
26901	SHIRELL Ron	943-8407	9
26910	ENGLAND Donald C	00	4
NO #	★ROCKWIN CORPORATION	943-9119	+0
★	2 BUS	22 RES	10 NEW

PLACENTIA AVE 1985

PLACENTIA 92370 PERRIS

791	TOZZER TOM	657-9040	2
23251	STCLAIR JOHN P ATTY	657-6587	6
	STCLAIR JOHN PAUL	657-6587	
23430	SKILES JOS	657-2878	1
23551	XXXX	00	
23641	SCARAMELLA VICTOR	-657-6361	
23745	XXXX	00	
26301	GLASS WM	657-8554	+5
26901	XXXX	00	
26910	XXXX	00	
★	0 BUS	10 RES	1 NEW

PLACENTIA AVE 1980

PLACENTIA 92370 PERRIS

23251	STCLAIR JOHN PAUL	657-6587	6
23551	BIAS ARTHUR E	657-8846	+0
23561	CAMPBELL MILDRED	657-4586	
23641	SCARAMELLA VICTOR	657-6361	
23815	PARROTT CLIFFORD A	657-4124	7
26901	ABBS GARRY	657-2469	+0
26910	XXXX	00	
★	0 BUS	7 RES	2 NEW

PLACENTIA AVE 1976

PLACENTIA 92370 PERRIS

23251	STCLAIR JOHN PAUL	657-6587+6
23561	CAMPBELL MILDRED	657-4586
23641	SCARAMELLA VICTOR	657-6361
26901	HAMNER L L	657-2703
26910	UNDERWOOD FORD P	657-3497
*	0 BUS 5 RES	1 NEW

Appendix G
EDR Building Permit Report

Thrifty 9.48 Acres Perris CA

23641 Placentia Avenue
Perris, CA 92570

Inquiry Number: 7056923.8
July 19, 2022

EDR Building Permit Report

Target Property and Adjoining Properties

TABLE OF CONTENTS

SECTION

About This Report

Executive Summary

Findings

Glossary

Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2020 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EDR BUILDING PERMIT REPORT

About This Report

The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

ASTM and EPA Requirements

ASTM E 1527-13 lists building department records as a "standard historical source," as detailed in § 8.3.4.7: "Building Department Records - The term building department records means those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property." ASTM also states that "Uses in the area surrounding the property shall be identified in the report, but this task is required only to the extent that this information is revealed in the course of researching the property itself."

EPA's Standards and Practices for All Appropriate Inquiries (AAI) states: "§312.24: Reviews of historical sources of information. (a) Historical documents and records must be reviewed for the purposes of achieving the objectives and performance factors of §312.20(e) and (f). Historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

For more information about the EDR Building Permit Report, please contact your EDR Account Executive at (800) 352-0050.



EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

A search of building department records was conducted by Environmental Data Resources, Inc (EDR) on behalf of Waterstone Environmental Inc on Jul 19, 2022.

TARGET PROPERTY

23641 Placentia Avenue
Perris, CA 92570

SEARCH METHODS

EDR searches available lists for both the Target Property and Surrounding Properties.

RESEARCH SUMMARY

Building permits identified: **YES**

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Riverside County

<u>Year</u>	<u>Source</u>	<u>TP</u>	<u>Adjoining</u>
2022	Riverside County, Building and Safety		
2021	Riverside County, Building and Safety		X
2020	Riverside County, Building and Safety		
2019	Riverside County, Building and Safety		
2018	Riverside County, Building and Safety		
2017	Riverside County, Building and Safety	X	
2016	Riverside County, Building and Safety		X
2015	Riverside County, Building and Safety		
2014	Riverside County, Building and Safety		X
2013	Riverside County, Building and Safety		
2012	Riverside County, Building and Safety		
2011	Riverside County, Building and Safety		X
2010	Riverside County, Building and Safety		X
2009	Riverside County, Building and Safety		
2008	Riverside County, Building and Safety		
2007	Riverside County, Building and Safety		
2006	Riverside County, Building and Safety		X
2005	Riverside County, Building and Safety		
2004	Riverside County, Building and Safety		X
2003	Riverside County, Building and Safety		X
2002	Riverside County, Building and Safety		
2001	Riverside County, Building and Safety		X
2000	Riverside County, Building and Safety		
1999	Riverside County, Building and Safety		X
1998	Riverside County, Building and Safety		
1997	Riverside County, Building and Safety		
1996	Riverside County, Building and Safety		
1995	Riverside County, Building and Safety		

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

<u>Year</u>	<u>Source</u>	<u>TP</u>	<u>Adjoining</u>
1994	Riverside County, Building and Safety		
1993	Riverside County, Building and Safety		
1992	Riverside County, Building and Safety		
1991	Riverside County, Building and Safety		
1990	Riverside County, Building and Safety		
1989	Riverside County, Building and Safety		
1988	Riverside County, Building and Safety		X
1987	Riverside County, Building and Safety		X
1986	Riverside County, Building and Safety		
1985	Riverside County, Building and Safety		
1984	Riverside County, Building and Safety		
1983	Riverside County, Building and Safety		
1982	Riverside County, Building and Safety		
1981	Riverside County, Building and Safety		
1980	Riverside County, Building and Safety		
1979	Riverside County, Building and Safety		X
1978	Riverside County, Building and Safety		
1977	Riverside County, Building and Safety		
1976	Riverside County, Building and Safety		
1975	Riverside County, Building and Safety		
1974	Riverside County, Building and Safety		
1973	Riverside County, Building and Safety		
1972	Riverside County, Building and Safety		
1971	Riverside County, Building and Safety		
1970	Riverside County, Building and Safety		
1969	Riverside County, Building and Safety		
1968	Riverside County, Building and Safety		
1967	Riverside County, Building and Safety		
1966	Riverside County, Building and Safety		
1965	Riverside County, Building and Safety		
1964	Riverside County, Building and Safety		
1963	Riverside County, Building and Safety		

Name: JurisdictionName

Years: Years

Source: Source

Phone: Phone

BUILDING DEPARTMENT RECORDS SEARCHED

Name: Riverside County
Years: 1963-2022
Source: Riverside County, Building and Safety, PERRIS, CA
Phone: (951) 955-6742

Name: Perris
Years: 1964-2022
Source: City of Perris, Development Services, PERRIS, CA
Phone: (951) 443-1029

TARGET PROPERTY FINDINGS

TARGET PROPERTY DETAIL

**23641 Placentia Avenue
Perris, CA 92570**

23641 PLACENTIA AVE

Date: **1/24/2017**
Permit Type:
Description: **DEMO UTILITIES TO MH/4 SHEDS**

Permit Description: **Demolition (BDE) - DEMO - Demolition Permit**
Work Class:
Proposed Use:
Permit Number: **BDE170006**
Status: **Final**
Valuation: **\$0.00**
Contractor Company:
Contractor Name: **Tafoya & Associates**

ADJOINING PROPERTY FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

PLACENTIA AVE

23511 PLACENTIA AVE

Date: **11/10/1987**
Permit Type: **ARES**
Description: **GAR CONV TO HABITABLE SPA/ADD GFI**

Permit Description:

Work Class:

Proposed Use:

Permit Number: 174483

Status: FINALED

Valuation: \$0.00

Contractor Company:

Contractor Name:

Date: **11/4/1987**
Permit Type: ********
Description: **CODE COMP FOR CONV GAR TO BDROOM**

Permit Description: **HISTORICAL PERMIT**

Work Class:

Proposed Use:

Permit Number: 174048

Status: FINALED

Valuation: \$0.00

Contractor Company:

Contractor Name:

ADJOINING PROPERTY FINDINGS

23745 PLACENTIA AVE

Date: **6/15/2010**
Permit Type: **REPR**
Description: **MH INSTALLATION/924SF**

Permit Description: **REPLACEMENT MANUFACTURED RES**
Work Class:
Proposed Use:
Permit Number: **BMR100194**
Status: **FINAL**
Valuation: **\$84,416.64**
Contractor Company:
Contractor Name:

Date: **3/30/2010**
Permit Type: **SPR**
Description: **MH SITE PREP/REPLCMT 14X66 SINGLE WIDE**

Permit Description: **SITE PREPARATION RESIDENTIAL**
Work Class:
Proposed Use:
Permit Number: **BMR100123**
Status: **FINAL**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

Date: **7/31/1979**
Permit Type:
Description: **AWNING TO MOBILE HOME**

Permit Description:
Work Class:
Proposed Use:
Permit Number: **BZ372837**
Status: **CANCELED**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

ADJOINING PROPERTY FINDINGS

SHARON ANN LN

20395 SHARON ANN LN

Date: **5/11/2021**
Permit Type:
Description: **Demo existing Dwelling (BZ353584) and utilities w/ septic.**

Permit Description: **Demolition (BDE) - DEMO - Demolition Permit**
Work Class:
Proposed Use:
Permit Number: **BDE2100013**
Status: **Issued**
Valuation: **\$0.00**
Contractor Company:
Contractor Name: **Three D Service**

Date: **1/12/2006**
Permit Type: **ROOF**
Description: **TEAR OFF COMP SHINGLE INSTALL #30 YEAR COMP**

Permit Description: **RE-ROOF PERMIT**
Work Class:
Proposed Use:
Permit Number: **BXX064030**
Status: **EXPIRED**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

ADJOINING PROPERTY FINDINGS

20421 SHARON ANN LN

Date: **5/11/2021**
Permit Type:
Description: **Demo dwelling (BZ353585), utilities and septic.**

Permit Description: **Demolition (BDE) - DEMO - Demolition Permit**
Work Class:
Proposed Use:
Permit Number: BDE2100017
Status: Issued
Valuation: \$0.00
Contractor Company:
Contractor Name: Three D Service

Date: **3/8/2011**
Permit Type:
Description: **REQUEST FOR RECORDS**

Permit Description:
Work Class:
Proposed Use:
Permit Number: BHR110148
Status: PAID
Valuation: \$0.00
Contractor Company:
Contractor Name:

ADJOINING PROPERTY FINDINGS

20463 SHARON ANN LN

Date: 5/11/2021
Permit Type:
Description: Demo dwelling (BZ353588), pool (203771), utilities and septic.

Permit Description: Demolition (BDE) - DEMO - Demolition Permit
Work Class:
Proposed Use:
Permit Number: BDE2100016
Status: Issued
Valuation: \$0.00
Contractor Company:
Contractor Name: Three D Service

Date: 11/30/2016
Permit Type:
Description: REPLACE 5TON A/C COIL 90K BTU FURNACE AND 11 DUCTS

Permit Description: Mechanical (BME) - RMEC - Residential Mechanical
Work Class:
Proposed Use:
Permit Number: BME160758
Status: Final
Valuation: \$0.00
Contractor Company:
Contractor Name: Ken Starr Inc

ADJOINING PROPERTY FINDINGS

Date: **12/16/2014**
Permit Type: **BEL**
Description: **ROOF MOUNT PV SOLAR ON SFR**

Permit Description: **Electrical Permit**
Work Class:
Proposed Use: **ROOF MOUNT SOLAR**
Permit Number: **BEL142809**
Status: **FINAL**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

Date: **8/30/2010**
Permit Type: **RPLU**
Description: **WATER HEATER CHANGEOUT**

Permit Description: **PLUMBING PERMIT RESIDENTIAL**
Work Class:
Proposed Use:
Permit Number: **BPL100295**
Status: **EXPIRED**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

Date: **7/19/2004**
Permit Type: **ELEC**
Description: **200 AMP PANEL UPGRADE TO STICK BUILT**

Permit Description: **ELECTRICAL WORK ONLY**
Work Class:
Proposed Use:
Permit Number: **BEL041014**
Status: **FINAL**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

ADJOINING PROPERTY FINDINGS

Date: **10/8/2003**
Permit Type: **ROOF**
Description: **REMOVE SHAKE ROOF INSTALL OSB/COMP SHINGLE**

Permit Description: **RE-ROOF PERMIT**
Work Class:
Proposed Use:
Permit Number: **BXX041713**
Status: **FINAL**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

Date: **7/27/1988**
Permit Type: **NCOM**
Description: **POOL & GUNITE**

Permit Description: **NEW COMMERCIAL**
Work Class:
Proposed Use:
Permit Number: **203771**
Status: **FINALED**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

20491 SHARON ANN LN

Date: **5/11/2021**
Permit Type:
Description: **Demo Dwelling (BZ35587) and associated utilities w/ septic.**

Permit Description: **Demolition (BDE) - DEMO - Demolition Permit**
Work Class:
Proposed Use:
Permit Number: **BDE2100014**
Status: **Issued**
Valuation: **\$0.00**
Contractor Company:
Contractor Name: **Three D Service**

ADJOINING PROPERTY FINDINGS

Date: **12/23/1999**
Permit Type: **PLUM**
Description: **EXPANSION OF SEEPAGE PIT**

Permit Description: **PLUMBING WORK ONLY**
Work Class:
Proposed Use:
Permit Number: **BPL990634**
Status: **FINAL**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

TOBACCO RD

20601 TOBACCO RD

Date: **5/26/2006**
Permit Type: **ELEC**
Description: **METER RESET / EDISON DISCONNECTED**

Permit Description: **ELECTRICAL WORK ONLY**
Work Class:
Proposed Use:
Permit Number: **BEL060709**
Status: **FINAL**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

ADJOINING PROPERTY FINDINGS

Date: **8/29/2003**
Permit Type: **ELEC**
Description: **RENEW BEL011301 TO RE-RELEASE SERVICE UPGRADE 100**

Permit Description: **ELECTRICAL WORK ONLY**
Work Class:
Proposed Use:
Permit Number: **BEL031042**
Status: **VOID**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

Date: **12/26/2001**
Permit Type: **ELEC**
Description: **ELECTRICAL SERVICE UPGRADE (100 AMP)**

Permit Description: **ELECTRICAL WORK ONLY**
Work Class:
Proposed Use:
Permit Number: **BEL011301**
Status: **FINAL**
Valuation: **\$0.00**
Contractor Company:
Contractor Name:

GLOSSARY

General Building Department concepts

- **ICC:** The International Code Council. The governing body for the building/development codes used by all jurisdictions who've adopted the ICC guidelines. MOST of the US has done this. Canada, Mexico, and other countries use ICC codes books and guides as well. There are a few states who have added guidelines to the ICC codes to better fit their needs. For example, California has added seismic retrofit requirements for most commercial structures.
- **Building Department (Permitting Authority, Building Codes, Inspections Department, Building and Inspections):** This is the department in a jurisdiction where an owner or contractor goes to obtain permits and inspections for building, tearing down, remodeling, adding to, re-roofing, moving or otherwise making changes to any structure, Residential or Commercial.
- **Jurisdiction:** This is the geographic area representing the properties over which a Permitting Authority has responsibility.
- **GC:** General Contractor. Usually the primary contractor hired for any Residential or Commercial construction work.
- **Sub:** Subordinate contracting companies or subcontractors. Usually a "trades" contractor working for the GC. These contractors generally have an area of expertise in which they are licensed like Plumbing, Electrical, Heating and Air systems, Gas Systems, Pools etc. (called "trades").
- **Journeymen:** Sub contractors who have their own personal licenses in one or more trades and work for different contracting companies, wherever they are needed or there is work.
- **HVAC (Mechanical, Heating & Air companies):** HVAC = Heating, Ventilation, and Air Conditioning.
- **ELEC (Electrical, TempPole, TPole, TPower, Temporary Power, Panel, AMP Change, Power Release):** Electrical permits can be pulled for many reasons. The most common reason is to increase the AMPs of power in an electrical power panel. This requires a permit in almost every jurisdiction. Other common reason for Electrical permits is to insert a temporary power pole at a new construction site. Construction requires electricity, and in a new development, power has yet to be run to the lot. The temporary power pole is usually the very first permit pulled for new development. The power is released to the home owner when construction is complete and this sometimes takes the form of a Power Release permit or inspection.
- **"Pull" a permit:** To obtain and pay for a building permit.
- **CBO:** Chief Building Official
- **Planning Department:** The department in the development process where the building /structural plans are reviewed for their completeness and compliance with building codes
- **Zoning Department:** The department in the development process where the site plans are reviewed for their compliance with the regulations associated with the zoning district in which they are situated.
- **Zoning District:** A pre-determined geographic boundary within a jurisdiction where certain types of structures are permitted / prohibited. Examples are Residential structure, Commercial/Retail structures, Industrial/Manufacturing structures etc. Each zoning district has regulations associated with it like the sizes of the lots, the density of the structures on the lots, the number of parking spaces required for certain types of structures on the lots etc.
- **PIN (TMS, GIS ID, Parcel#):** Property Identification Number and Tax Map System number.
- **State Card (Business license):** A license card issued to a contractor to conduct business.
- **Building Inspector (Inspector):** The inspector is a building department employee that inspects building construction for compliance to codes.
- **C.O.:** Certificate of Occupancy. This is the end of the construction process and designates that the owners now have permission to occupy a structure after its building is complete. Sometimes also referred to as a Certificate of Compliance.

GLOSSARY

Permit Content Definitions

- Permit Number: The alphanumeric designation assigned to a permit for tracking within the building department system. Sometimes the permit number gives clues to its role, e.g. a "PL" prefix may designate a plumbing permit.
- Description: A field on the permit form that allows the building department to give a brief description of the work being done. More often than not, this is the most important field for EP's to find clues to the prior use (s) of the property.
- Permit Type: Generally a brief designation of the type of job being done. For example BLDG-RES, BLDG-COM, ELEC, MECH etc.

Sample Building Permit Data

Date: Nov 09, 2000

Permit Type: Bldg -

New Permit Number: 101000000405

Status: Valuation: \$1,000,000.00

Contractor Company: OWNER-BUILDER

Contractor Name:

Description: New one store retail (SAV-ON) with drive-thru pharmacy. Certificate of Occupancy.

Appendix H
EDR Environmental Lien and AUL Search and Tax
Map Report

Thrifty 9.48 Acres Perris CA

23641 Placentia Avenue
Perris, CA 92570

Inquiry Number: 7056923.7
July 20, 2022

EDR Environmental Lien and AUL Search

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.

Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2017 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

23641 Placentia Avenue
Thrifty 9.48 Acres Perris CA
Perris, CA 92570

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

RESEARCH SOURCE

Source 1:

Riverside Recorder
Riverside, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	Grant Deed
Title is vested in:	Thrifty Oil Company
Title received from:	Jacqueline E DePinto trustee
Deed Dated	1/31/2006
Deed Recorded:	9/5/2006
Book:	NA
Page:	NA
Volume:	NA
Instrument	2006-0654318
Docket	NA
Land Record Comments:	see exhibit
Miscellaneous Comments:	NA

Legal Description: see exhibit

Legal Current Owner: Thrifty Oil Company

Parcel # / Property Identifier: 317-260-017

Comments: see exhibit

Deed Exhibit 1

RECORDING REQUESTED BY:

Stewart Title Guaranty.

WHEN RECORDED MAIL TO:

Thirfty Oil Company
13116 Imperial Highway
Santa Fe Springs, CA. 90670

ORDER NO. 514303587
ESCROW NO. 25137356RJ
APN. 317-260-017-5

DOC # 2006-0654318

09/05/2006 08:00A Fee: 10.00

Page 1 of 2 Doc T Tax Paid

Recorded in Official Records

County of Riverside

Larry W. Ward

Assessor, County Clerk & Recorder



S	R	U	PAGE	SIZE	DA	MISC	LONG	RFD	COPY
1			2						
M	A	L	465	426	PCOR	NCOR	SMF	NCHG	EXAM
									010

TRA 098-111

GRANT DEED

THE UNDERSIGNED GRANTOR(S) DECLARE(S):

DOCUMENTARY TRANSFER TAX is: \$990.00

CITY TAX \$0.00

- ☐ Monument Preservation Fee is:
- ☒ computed on full value of property conveyed, or
- ☐ computed on full value less value of liens or encumbrances remaining at time of sale.
- ☒ Unincorporated area: ☐ City of _____, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
Jacqueline E. Di Pinto, as Trustee of Trust "C" of The Di Pinto Family Trust, dated June 10, 1992

hereby GRANT(S) to

Thifty Oil Company, a California Corporation

the following described real property in the Unincorporated Area, County of Riverside, State of California:

SEE EXHIBIT A ATTACHED HERETO AND MADE A PART HEREOF.

DATE: January 31, 2006

STATE OF CALIFORNIA

COUNTY OF Orange

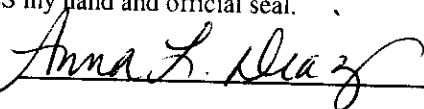

Jacqueline E. Di Pinto, Trustee

On 3-14-2006 before me, Anna L. Diaz
Notary Public (here insert name and title of the officer),
personally appeared Jacqueline E. Di Pinto

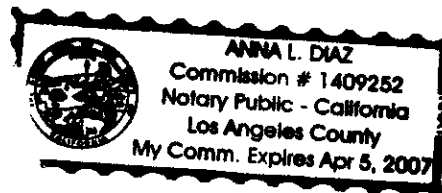
personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s), whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature



(Seal)



MAIL TAX STATEMENTS AS DIRECTED ABOVE

EXHIBIT "A"

LEGAL DESCRIPTION

The land referred to herein is situated in the State of California, County of Riverside, described as follows:

LOT 3 OF OAKES AND SAWYERS SUBDIVISION AS PER MAP RECORDED IN BOOK 1, PAGE 5 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT THE NORTH 230.00 FEET OF THE EAST 100.00 FEET, SAID 230.00 FEET BEING MEASURED ON THE CENTER LINE OF PLACENTIA STREET;

ALSO EXCEPT THAT PORTION DESCRIBED IN DEED TO THE COUNTY OF RIVERSIDE, RECORDED FEBRUARY 5, 1962 AS INSTRUMENT NO. 11202 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 3;

THENCE NORTH 00° 30' 04" WEST ALONG THE WEST LINE OF SAID LOT, A DISTANCE OF 150.00 FEET;

THENCE SOUTH 11° 50' 30" EAST, A DISTANCE OF 152.54 FEET TO THE SOUTH LINE OF SAID LOT.

THENCE SOUTH 88° 39' 22" WEST, ALONG SAID SOUTH LINE, A DISTANCE OF 30.00 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ANY MOBILE HOME LOCATED OR PLACED THEREON.

APN: 317-260-017

End of Legal Description

Thrifty 9.48 Acres Perris CA

23641 Placentia Avenue
Perris, CA 92570

Inquiry Number: 7056923.6
July 19, 2022

The EDR Property Tax Map Report

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

Thank you for your business.

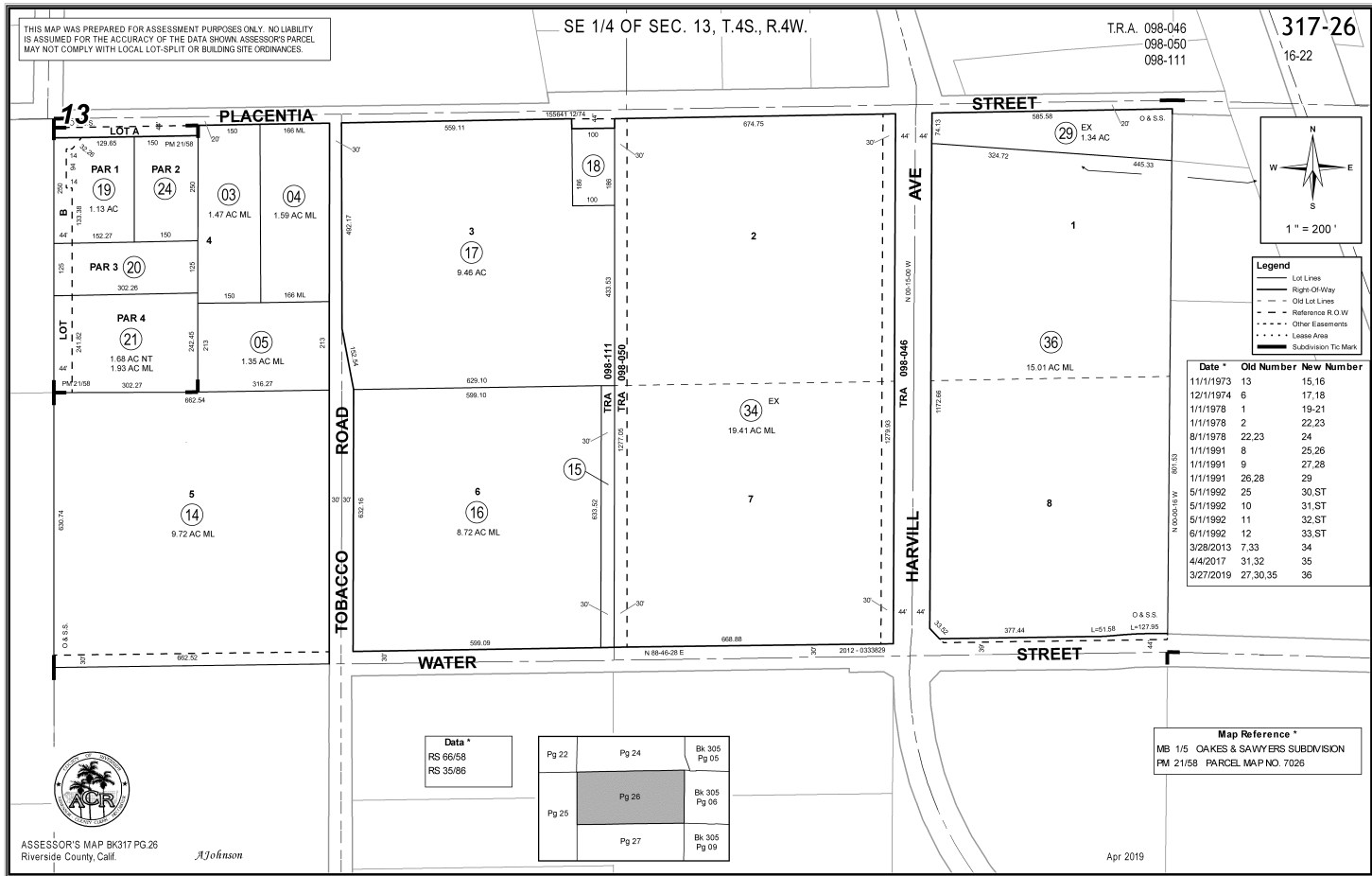
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2022 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.



Appendix I
Subject Property Photographs and Environmental
Records Request

Appendix I - Subject Property Photographs



View South from Placentia Avenue

Appendix I - Subject Property Photographs



View Southeast from Placentia Avenue

Appendix I - Subject Property Photographs



View East Along Placentia Avenue of Neighboring Property Across Tobacco Road

Appendix I - Subject Property Photographs



View East Along Placentia Avenue of Neighboring Property in the Distance

Appendix I - Subject Property Photographs



View South on Placentia Avenue of Possible Residential Well Location



County of Riverside
DEPARTMENT OF ENVIRONMENTAL HEALTH

www.rivcoeh.org

REQUEST FOR RECORDS

To help expedite your request, mark the program for which you are requesting records (Call 951-358-5172 if you are uncertain):

- ☒ Hazardous Materials / Underground Storage Tanks
☒ Land Use / Water Resources / Body Art / Medical Waste / Solid Waste
☐ Food facility / Public Pools and Water Features / Retail Tobacco

- Requests will be responded to within ten (10) business days per California Government Code, sections 6253 and 6256.
- Pursuant to California Government Code section 6254 (f), records of pending investigations and informants' names, addresses, and telephone numbers will not be released.
- **This form is for acquisition of any existing records. Any consultation in reference to these records may be subject to a consultation fee (pursuant to Riverside County Ordinance 640).**
- For access to electronic records available online, visit the public information section at www.rivcoeh.org for more details.

NAME OF REQUESTING PARTY: Heather Fields	DATE OF REQUEST: 7/29/22	
BUSINESS NAME (IF ANY): Waterstone Environmental	TELEPHONE NUMBER: () (714) 414-1122	
RETURN LEGAL MAILING ADDRESS: 2936 E. Coronado Street	EMAIL ADDRESS: hfields@waterstone-env.com	
CITY: Anaheim	STATE: CA	ZIP: 92806

The following information is required. **List each street address separately.**

INFORMATION REQUESTED: Any available records for the property	PERIOD OF TIME TO BE RESEARCHED (If applicable)	
	FROM:	TO:
SITE STREET ADDRESS (1): 23641 Placentia Avenue	CITY: Perris, CA 92570	
SITE STREET ADDRESS (2):	CITY:	
SITE STREET ADDRESS (3):	CITY:	
SITE STREET ADDRESS (4):	CITY:	
SITE STREET ADDRESS (5):	CITY:	
SITE STREET ADDRESS (6):	CITY:	
APN (For Land Use and Water Resources ONLY): 317260017		

Email this completed form to:

Land Use/Water Resources (WEST): landuse@rivco.org

Hazardous Materials: DEHRecordsMgmt@rivco.org

Land Use/Water Resources (DESERT): landusedesert@rivco.org

All other programs: dehwebmaster@rivco.org

To mail this form, go to <http://rivcoeh.org/Contactus> for the address of the DEH office closest to the requested location(s).

Duplication costs for records researched and duplicated must be paid upon receipt of records.

FOR OFFICE USE ONLY		
COST OF REPRODUCTION: \$ _____	EACH ADDITIONAL PAGE: \$ _____	TOTAL: \$ _____
REVIEWED BY _____	TITLE _____	
RECORDS RECEIVED BY _____	DATE _____	

* IF RECORD REQUEST IS MADE USING ALTERNATE METHOD AND NOT THIS FORM, ATTACH A COPY OF REQUEST TO THIS FORM.

For our office locations call us at (888) 722-4234 or visit our website at www.rivcoeh.org

Heather Fields

From: Records <records@RIVCO.ORG>
Sent: Monday, August 1, 2022 8:17 AM
To: Heather Fields
Subject: RE: Building and Safety Records Request

Hello Heather,

We have completed our research of your requested address/APN and have found the following records:

PERMIT#	DESCRIPTION
BZ162815	DEMOLISH BUILDING
BZ163744	CATTLE PENS
BZ170438	TRAILER HOOKUP
BZ174014	DETACHED GARAGE
BZ175927	SEWER SYSTEM
BZ196844	TRAILER HOOKUP
BZ199385	PLAN CHECK
BZ200645	MEAT PROCESSING BUILDING

If you would like to purchase copies of these records, we can either call you and have you pay with one of our cashiers over the phone or you can pay online. I'll include the instructions below.

The total will be \$26.50. If you choose to pay online, please be sure to reply and let us know that you've created an account through our plus online website so that we can send you your invoice#.

Once you've paid, we will send you the permit records by email.

How to open an account through Plus Online for invoice payment:

Go to www.rctlma.org

Click on the Plus Online icon

Click on the icon below to get started



Then click on "Login or Register"

If you are new to Plus Online, you may create an account by choosing "Register"

You will enter your email first. Be sure to verify your email by opening your email account, locating the registration email and choosing "confirm" at the end of your email.

Next, the system will try and match your email with any existing contact information. If it is correct, you may click "continue". If there is no match, click "Register".

Lastly, fill out your contact information making sure to complete all fields.

Once you have completed your account, call us so that we can invoice your account.

For more detailed instructions, click on this link: https://rctlma.org/Portals/8/How_To_Register.pdf?ver=2019-02-20-133121-273



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

Meredith Williams, Ph.D.
Director
5796 Corporate Avenue
Cypress, California 90630



Gavin Newsom
Governor

August 1, 2022

Heather Fields
WATERSTONE ENVIRONMENTAL
hfields@waterstone-env.com

PR4-072922-04
23641 PLACENTIA AVE, PERRIS, CA

Dear Requestor:

We have received your Public Records Act Request from the Department of Toxic Substances Control (DTSC). After a thorough review of our files, no site records were found pertaining to the sites/facilities referenced above.

A large number of our records are available on EnviroStor, an online database that provides non-confidential, public access to DTSC's Data Management System. It tracks our cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known or suspected contamination issues. EnviroStor is available 24/7, 365 days a year. The data reflects the latest updates as they are entered in the system. Access it from your computer or smartphone, the local library – anywhere Internet access is available. Just go to www.envirostor.dtsc.ca.gov. You'll find a step-by-step tour of EnviroStor under the "How to Use EnviroStor" menu on the website.

If you have any questions or would like further information regarding your request, please contact me at 714-4845337 or via email at CypressFileRoom@dtsc.ca.gov.

Sincerely,

Julie Chandler

Julie Chandler
Regional Records Coordinator

The following record(s) are available online:

PERMIT#	DESCRIPTION
BDE170006	DEMO UTILITIES TO MOBILE HOME/ 4 SHEDS

To view/print from web site:

Go to www.rctima.org

Click on "ONLINE SERVICES"

Scroll down

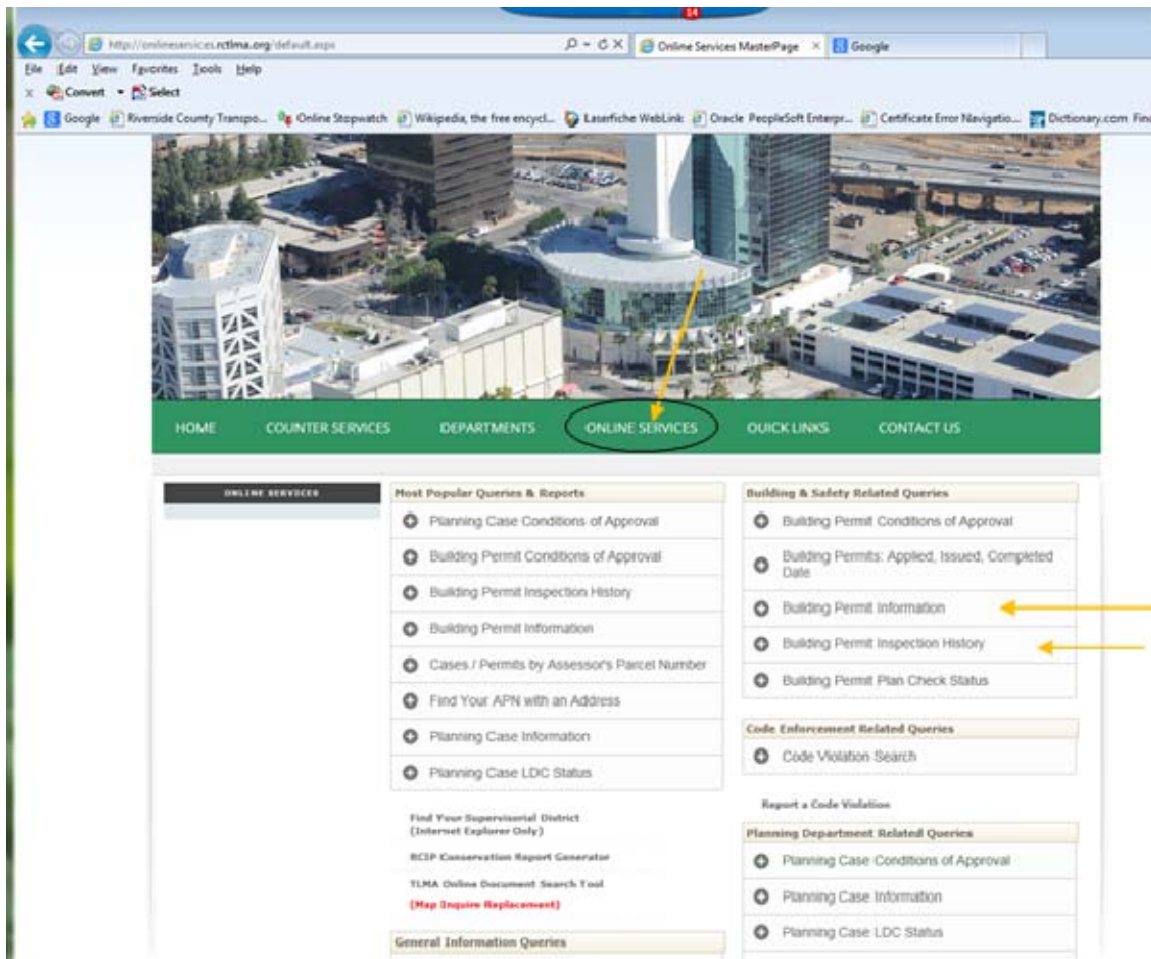
Click on "Building Permit Information" (right-hand side of page)

Enter permit number to view and / or print.

Click "Submit"

Print page

Repeat steps on "Building Permit Inspection history to see individual inspections.



If you have any questions contact us at (951) 955-2017 or with a reply email.

Thank you,

J hqh#

County of Riverside

Transportation and Land Management Agency

Records And Information Management

(951) 955-2017

records@rivco.org



How are we doing? Click the Link and tell us

This email contains information which is confidential and is intended only for use of the recipient(s) named above. If you are not an intended recipient, you are hereby notified that any copying, distribution, disclosure, reliance upon or other use of the contents of this email is strictly prohibited. If you have received this email in error, please notify the sender and destroy your copy of this email. Thank you.

From: hfields@waterstone-env.com <hfields@waterstone-env.com>

Sent: Friday, July 29, 2022 9:53 AM

To: Records <records@RIVCO.ORG>

Cc: hfields@waterstone-env.com

Subject: Building and Safety Records Request

Requestor's Name:

Heather Fields

Company:

Waterstone Environmental

Requestor's Phone No (format example 951-000-0000):

714-414-1122

Current Mailing Address:

2936 E. Coronado Street

City:

Anaheim

State:

California

Zip:

92806

E-Mail:

hfields@waterstone-env.com

ADDRESS TO BE RESEARCHED:

23641 Placentia Avenue, Perris, CA 92570

ASSESSOR'S PARCEL NUMBER (APN) (format example 123-456-789): 317-260-17

Year Built:

REQUESTING ALL PERMITS:

Yes

If not please specify type of permit(s) below:

Additional Comments:

Confidentiality Disclaimer

This email is confidential and intended solely for the use of the individual(s) to whom it is addressed. The information contained in this message may be privileged and confidential and protected from disclosure.

If you are not the author's intended recipient, be advised that you have received this email in error and that any use, dissemination, forwarding, printing, or copying of this email is strictly prohibited. If you have received this email in error please delete all copies, both electronic and printed, and contact the author immediately.

[County of Riverside California](#)



RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

January 14, 2025

Krista Mason, Project Planner
County of Riverside, Planning Department
4080 Lemon Street,
Riverside, CA 92501

CHAIR

Steve Manos
Lake Elsinore

VICE CHAIR

vacant

COMMISSIONERS

John Lyon
Riverside

Steven Stewart
Palm Springs

Richard Stewart
Moreno Valley

Michael Geller
Riverside

Vernon Poole
Murrieta

STAFF

Director
Paul Rull

Simon A. Housman
Barbara Santos
Jackie Vega

County Administrative Center
4080 Lemon St., 14th Floor.
Riverside, CA 92501
(951) 955-5132

www.rcaluc.org

RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW

File No.: ZAP1629MA24
Related File No.: CZ2300030 (Change of Zone), PP230048 (Plot Plan)
Compatibility Zone: Zone C2
APNs: 317-260-017, 317-260-018

Dear Ms. Mason:

On January 9, 2025, the Riverside County Airport Land Use Commission (ALUC) found County of Riverside Case Nos. CZ2300030 (Change of Zone), PP230048 (Plot Plan), a proposal to construct a 185,912 square foot manufacturing building with office space on 9.89 acres, located on southerly of Placentia Street, easterly of Patterson Avenue, and westerly of Tobacco Road and also proposing to construct 151,440 square foot photovoltaic (PV) panel structures located on the rooftop of the proposed industrial building and eight Carport sunshades totaling 22,060 square feet located on the parking lot, and change the sites zoning from Rural Residential (R-R) to Industrial Park (IP), **CONSISTENT** with the 2014 March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, subject to the following conditions:

CONDITIONS:

1. Any outdoor lighting installed shall be hooded or shielded so as to prevent either the spillage of lumens or reflection into the sky. Outdoor lighting shall be downward facing.
2. The following uses/activities are not included in the proposed project and shall be prohibited at this site.
 - (a) Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight or circling climb following takeoff or toward an aircraft engaged in a straight or circling final approach toward a landing at an airport, other than a DoD or FAA-approved navigational signal light or visual approach slope indicator.
 - (b) Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport to the extent as to result in a potential for temporary after-image greater than the low ("green") level.
 - (c) Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area. (Such uses include landscaping utilizing water features, aquaculture, production of cereal grains, sunflower, and row crops, composting operations, wastewater management facilities, artificial marshes, trash transfer

stations that are open on one or more sides, recycling centers containing putrescible wastes, construction and demolition debris facilities, fly ash disposal, and incinerators.)

- (d) Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.
 - (e) Highly noise-sensitive outdoor nonresidential uses. Examples of noise-sensitive outdoor nonresidential uses that are prohibited include, but are not limited to, major spectator-oriented sports stadiums, amphitheaters, concert halls and drive-in theaters.
 - (f) Hazards to Flight.
3. The attached notice shall be provided to all prospective purchasers of the property and tenants of the building, and shall be recorded as a deed notice.
 4. Any proposed stormwater basins or facilities shall be designed and maintained to provide for a maximum 48-hour detention period following the design storm, and remain totally dry between rainfalls. Vegetation in and around the stormwater basins that would provide food or cover for birds would be incompatible with airport operations and shall not be utilized in project landscaping. Trees shall be spaced so as to prevent large expanses of contiguous canopy, when mature. Landscaping in and around the stormwater basin(s) shall not include trees or shrubs that produce seeds, fruits, or berries.
 5. Landscaping in the stormwater basin, if not rip-rap, should be in accordance with the guidance provided in ALUC "LANDSCAPING NEAR AIRPORTS" brochure, and the "AIRPORTS, WILDLIFE AND STORMWATER MANAGEMENT" brochure available at RCALUC.ORG which list acceptable plants from Riverside County Landscaping Guide or other alternative landscaping as may be recommended by a qualified wildlife hazard biologist.

A notice sign, in a form similar to that attached hereto, shall be permanently affixed to the stormwater basin with the following language: "There is an airport nearby. This stormwater basin is designed to hold stormwater for only 48 hours and not attract birds. Proper maintenance is necessary to avoid bird strikes". The sign will also include the name, telephone number or other contact information of the person or entity responsible to monitor the stormwater basin

6. March Air Reserve Base must be notified of any land use having an electromagnetic radiation component to assess whether a potential conflict with Air Base radio communications could result. Sources of electromagnetic radiation include radio wave transmission in conjunction with remote equipment inclusive of irrigation controllers, access gates, etc.
7. All solar arrays installed on the project site shall consist of smooth glass photovoltaic solar panels without anti-reflective coating, a fixed tilt of 10 degrees and orientation of 180 degrees. Solar panels shall be limited to a total of 151,440 square feet of solar panels on the proposed building rooftop and the eight Carport sunshades totaling 22,060 square feet, and the locations and coordinates shall be as specified in the glare study. Any deviation from these specifications (other than reduction in square footage of panels), including change in orientation, shall require a new solar glare analysis to ensure that the amended project does not result in any glare impacting the air traffic

control tower or creation of any “yellow” or “red” level glare in the flight paths, and shall require a new hearing by the Airport Land Use Commission.

8. In the event that any glint, glare, or flash affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an event, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such glint, glare, or flash. An “event” includes any situation that results in an accident, incident, “near-miss,” or specific safety complaint regarding an in-flight experience to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the incidence. Suggested measures may include, but are not limited to, changing the orientation and/or tilt of the source, covering the source at the time of day when events of glare occur, or wholly removing the source to diminish or eliminate the source of the glint, glare, or flash. For each such event made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator’s satisfaction.
9. In the event that any electrical interference affecting the safety of air navigation occurs as a result of project operation, upon notification to the airport operator of an event, the airport operator shall notify the project operator in writing. Within 30 days of written notice, the project operator shall be required to promptly take all measures necessary to eliminate such interference. An “event” includes any situation that results in an accident, incident, “near-miss,” report by airport personnel, or specific safety complaint to the airport operator or to federal, state, or county authorities responsible for the safety of air navigation. The project operator shall work with the airport operator to prevent recurrence of the event. For each such event made known to the project operator, the necessary remediation shall only be considered to have been fulfilled when the airport operator states in writing that the situation has been remediated to the airport operator’s satisfaction.
10. The project has been evaluated to construct a 185,912 square foot manufacturing building with office space on 9.89 acres, 151,440 square foot photovoltaic (PV) panel structures located on the rooftop of the proposed industrial building and eight Carport sunshades totaling 22,060 square feet located on the parking lot, and also proposes to change the sites zoning from Rural Residential (R-R) to Industrial Park (IP). Any increase in building area, change in use to any higher intensity use, change in building location, or modification of the tentative parcel map lot lines and areas will require an amended review to evaluate consistency with the ALUCP compatibility criteria, at the discretion of the ALUC Director.

Supporting documentation was provided to the Airport Land Use Commission and is available online at www.rcaluc.org, click Agendas 1-9-25 Agenda, Bookmark Agenda Item No. 3.2.

If you have any questions, please contact me at (951) 955-6893.

Sincerely,
RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

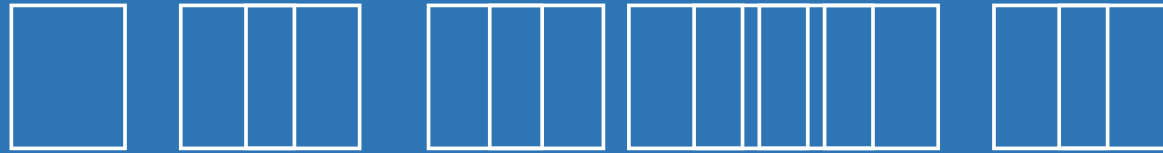


Paul Rull, ALUC Director

Attachments: Notice of Airport in Vicinity

cc: Thrifty Oil Company (applicant/property owner)
Nick Johnson (representative)
Gary Gosliga, March Inland Port Airport Authority
Major David Shaw, Base Civil Engineer, March Air Reserve Base
ALUC Case File

X:\AIRPORT CASE FILES\March\ZAP1629MA24\ZAP1629MA24.LTR.doc



THERE IS AN AIRPORT NEARBY.

**THIS STORM WATER BASIN IS DESIGNED TO HOLD
STORM WATER FOR ONLY 48 HOURS AND
NOT TO ATTRACT BIRDS**

**PROPER MAINTENANCE IS NECESSARY TO AVOID
BIRD STRIKES**



IF THIS BASIN IS OVERGROWN, PLEASE CONTACT:

Name: _____

Phone: _____

NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances [can vary from person to person. You may wish to consider what airport annoyances], if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you. Business & Professions Code Section 11010 (b) (13)(A)

PRELIMINARY ON-SITE HYDROLOGY STUDY
FOR
The Orden Company – Perris North Development

**Southeast corner of Placentia Avenue and Tobacco Road
PPT230048**

IN THE

COUNTY OF RIVERSIDE, CALIFORNIA

**Original Report Date: December 4, 2023
Revision Dates: March 27, 2024; November 1, 2024**



**Armstrong & Brooks Consulting Engineers
1350 East Chase Drive
Corona, CA 92881**

PREPARED BY:

William D. Brooks

**Bill Brooks
R.C.E. 53114
EXPIRES 6/30/25**

JN 123.2177

TABLE OF CONTENTS

	<u>Page</u>
Introduction	3
Design Criteria.....	5
Design Methodology.....	6
Narrative.....	7
Existing Condition Calculations: Unit Hydrograph Runs.....	Appendix “A”
Existing Condition Map: Unit Hydrograph Exhibit.....	Appendix “B”
Proposed Conditions Calculations	Appendix “C”
Proposed Developed Unrouted Hydrographs.....	Appendix “C-1”
Routed Hydrographs.....	Appendix “C-2”
Stage-Storage-Discharge Calculations.....	Appendix “C-3”
Stage-Storage-Discharge Calculations.....	Appendix “C-3”
Tobacco Road & Placentia Avenue: Half-Street Hydrology/Hydraulics.....	Appendix “C-4”
Proposed Conditions Map: Routed Hydrograph Exhibit	Appendix “D”
CMP Detention Facility Plans.....	Appendix “E”
Hydraulic Calculations for Connection to Lateral H-10.1.....	Appendix “G”
MDP Line H-10.1 Reference Plans (DWG 4-1173).....	Appendix “H-1”
MDP Line H-10 Plans (PPT-220002).....	Appendix “H-2”
Percolation Report (Southerly Neighboring Property).....	Appendix “I”

INTRODUCTION

The purpose of this on-site hydrology study is to ensure that the proposed drainage system effectively mitigates increased runoff caused by the proposed development. Onsite runoff generated by the proposed development will be routed through an underground CMP detention/infiltration facility to meet both RCFC/WCD requirements for pre/post development peak flow attenuation and WQMP requirements for stormwater treatment. Additionally, the project's grading shall be designed to meet Riverside County Flood Control & Water Conservation District (R.C.F.C. & W.C.D.) criteria, guidelines and the Master Drainage Plan (M.D.P.) for Perris Valley.

Thrifty Oil currently owns project parcels APN 317-260-017 and APN 317-260-018. This project entails grading of the existing site for the development of an industrial facility at the southeast corner of Placentia Avenue and Tobacco Road. A hydrologic analysis of pre and post development conditions was conducted to determine pre/post project peak flow rates occurring during the specified return storm frequencies and durations. A routing analysis was run for the proposed CMP detention system to ensure peak outlet discharges were equal to or below pre-development flows.

Despite the very low flow rates leaving the proposed detention facility during the 100-year event, a hydraulic analysis was nonetheless performed to ensure that Line H-10.1 (Placentia Avenue) is adequately designed to accept the development's routed/attenuated flows. Calculations support the conclusion that Line H-10.1 has sufficient capacity to accept **routed** post-development Q_{100} flows from the site.

DESIGN CRITERIA

This Drainage Study was based on the following Design Criteria identified by Riverside County Flood Control:

1. The storms to be studied include the 1-hour, 3-hour, 6-hour, and 24-hour, duration events for the 2-year, 5-year, and 10-year return frequencies via synthetic unit hydrograph analyses. The underground detention chamber must ensure none of these storm events have a higher **routed** peak discharge in the post-developed condition than in the pre-developed condition.
2. The underground detention facility will be capable of passing the 100-year return frequency storm (1,3,6, and 24-hour durations) without damage to the facility.
3. To determine the loss rate for the 2-year and 5-year events, an AMC I condition will be used. For the 10-year event and 100-year event, an AMC II condition will be used. This applies for both pre-development and post-development analyses.
4. The underground detention facility will drain in 72 hours or less.

DESIGN METHODOLOGY

1. **SYNTHETIC UNIT HYDROGRAPH** – Synthetic Unit Hydrographs were used to determine the peak discharge for the study area. Civil Design Software by Bonadiman and Associates was used to model the RCFC & WCD synthetic unit hydrographs for the project site. The following design data was used within our model:
 - A. Rainfall (Rational) – Plate D4.1 of Riverside County Hydrology Manual was used to provide duration vs. intensity data for Perris.
 - B. Antecedent Moisture Content (AMC) – AMC I was used for the 2 and 5-year frequency storm. AMC II was used for the 10 and 100-year frequency storms based on Riverside County Hydrology Manual's recommendations for use with the selected frequency storms (Pg. C-4).
 - C. Infiltration – Soil Type "A" underlies the site area based on a review of the hydrologic soils group map for Perris.
2. **FLOOD HYDROGRAPH ROUTING** – Flood hydrographs routing was used to model depth vs storage and depth vs outflow for the underground chambers. Civil Design Software by Bonadiman and Associates was used to model these relationships.
3. **WSPGW** – Water Surface Pressure Gradient Package (WSPGW program) software by Bonadiman and Associates was used for hydraulic calculations.

NARRATIVE

Hydrology-Existing Conditions

Watershed "A"

Watershed "A" is comprised of the 8.7 acres tributary to the easterly neighboring property (APN:317-260-034). The existing area consists of sparsely spread weeds and grasses. The existing site ranges in elevation from approximately 1557 feet at the southwesterly corner to approximately 1530 feet at the easterly property line. The site generally sheet flows easterly. Storm water runoff continues to sheet flow and is conveyed via street flow toward the Perris Valley Channel.

Watershed "A" generates the following peak flows under existing, undeveloped conditions:

	EXIST. UNDEVELOPED UNIT HYDROGRAPH PEAK FLOW (CFS)			
	2 YR STORM	5 YR STORM	10 YR STORM	100 YR STORM
1 HR DURATION	5.8	9.8	12.9	23.2
3 HR DURATION	1.3	3.5	5.2	10.9
6 HR DURATION	0.9	2.8	4.4	9.6
24 HR DURATION	0.2	0.3	0.4	2.1

Hydrology-Proposed Conditions

PPT230048 entails grading the site to accommodate an industrial warehouse development. The grading will emulate the existing west to east drainage pattern while providing an underground infiltration/detention facility along the eastern parking area of the site to treat and attenuate the overwhelming majority of on-site flows. An infiltration trench and drywell are also proposed to treat runoff from two additional small onsite watersheds per WQMP requirements.

The remaining 0.4 acres from the proposed site will consist of landscaped slopes near the eastern property line that will continue to drain easterly offsite as in existing pre-development conditions. This area is a self-treating area and does not need to be conveyed to any BMP for treatment.

On-site flows will be conveyed/routed to the underground facility via proposed on-site storm drains. Overflow runoff produced by the studied storm events will be discharged via a proposed 24" RCP lateral into Lateral H-10.1 in Placentia Avenue in order to discharge routed overflow stormwater runoff from the site. The flood hydrograph routing analyses for the required storm events demonstrate that flows being discharged from the underground facility will be less than pre-developed flows for the required study storm events.

Watershed "A"

Watershed "A" is defined by the 0.77-acre area tributary to the infiltration trench. Runoff will be conveyed to this facility via an overland vegetated swale. The post-developed peak flows have been tabulated below.

WATERSHED A	DEVELOPED NON-ROUTED UNIT HYDROGRAPH PEAK DISCHARGE (CFS)			
	2 YR STORM	5 YR STORM	10 YR STORM	100 YR STORM
1 HR DURATION	0.6	1.0	1.2	2.2
3 HR DURATION	0.2	0.4	0.5	1.0
6 HR DURATION	0.2	0.3	0.5	0.9
24 HR DURATION	0.1	0.1	0.1	0.2

Watershed "B"

Watershed "B" is defined by the 7.2-acre area tributary to the underground CMP detention/infiltration facility. Runoff will be discharged into to this facility via two inlet manifolds on each side of the chamber system. Pipes leading from area drains and catch basins around the site will convey site runoff to these inlet manifolds. The post-developed **non-routed** peak flows have been tabulated below.

WATERSHED B	DEVELOPED NON-ROUTED UNIT HYDROGRAPH PEAK DISCHARGE (CFS)			
	2 YR STORM	5 YR STORM	10 YR STORM	100 YR STORM
1 HR DURATION	8.4	11.8	14.5	23.3
3 HR DURATION	4.8	6.5	7.9	12.5
6 HR DURATION	4.5	6.1	7.5	12.0
24 HR DURATION	1.7	2.4	3.0	4.9

Watershed "C"

Watershed "C" is defined by the 0.33-acre area tributary to the Maxwell Drywell. Runoff will be conveyed to this facility via a catch basin and 6" PVC storm drain in the parking lot directly adjacent to the Drywell. The post-developed peak flows have been tabulated below.

WATERSHED C	DEVELOPED NON-ROUTED UNIT HYDROGRAPH PEAK DISCHARGE (CFS)			
	2 YR STORM	5 YR STORM	10 YR STORM	100 YR STORM
1 HR DURATION	0.5	0.7	0.9	1.4
3 HR DURATION	0.2	0.3	0.4	0.6
6 HR DURATION	0.2	0.3	0.4	0.6
24 HR DURATION	0.1	0.1	0.1	0.2

Underground Chamber Flood Hydrograph Routing: WATERSHED "B"

Flood Hydrograph Routing was used to determine the peak discharge of the underground detention facility. One 18" PVC outlet structure with sized perforations at specific elevations will ensure peak flow attenuation. This 18" PVC outlet structure will connect to the 24" RCP lateral using a 18" x 24" reducer.

The calculated peak discharge values leaving the facility are less than those calculated for the existing site using synthetic unit hydrograph analyses for the required study storm events. The 100-year storm event can pass through the facility without damage.

	ROUTED DETENTION FACILITY PEAK OUTFLOW (CFS)			
	2 YR STORM	5 YR STORM	10 YR STORM	100 YR STORM
1 HR DURATION	0.0	0.1	0.1	0.2
3 HR DURATION	0.1	0.2	0.2	0.3
6 HR DURATION	0.2	0.3	0.3	0.4
24 HR DURATION	0.2	0.3	0.4	3.6

Routing Analyses for Watershed "A" (Infiltration Trench) and Watershed "C", (in order to determine the peak Q100 flow leaving these BMP facilities) did not need to be performed due to the minute scale of these watersheds and the conservative approach employed through hydrograph summation. Since very minor flows are

being generated by Watersheds “A” and “C,” routing analyses in order to determine routed/attenuated flows are not warranted for these facilities. Thus, the **non-routed** hydrographs from Watersheds “A” and “C” have simply been added to the **routed** hydrograph of Watershed “B” to determine an conservative estimate for peak discharge for the site.

To elaborate, the critical 100-year storm for this study is the 24-hour 100-year storm as it produces the highest outflow flow rate leaving the underground detention facility. For the routed hydrograph of Watershed “B”, the peak 3.6 CFS outflow from the underground facility occurs at time 15:00. The non-routed flow rates for Watershed “A” and “C” at time 15:00 are 0.17 CFS and 0.16 CFS, respectively.

Therefore, summing these three discharge rates at time 15:00 produces a peak site outflow of 3.93 CFS which is proposed to be discharged to the existing 36” RCP Lateral H10.1 in Placentia Avenue through a 24” RCP lateral connection from the development.

Drawdown Requirements

The site’s lowest measured infiltration rate (see Appendix “I”) is 4.7 inches per hour. With a factor of safety of 3 per Riverside County guidelines, the design factored infiltration rate is 1.57 inches per hour. With a maximum facility water surface level of 60 inches, the underground detention facility, even without its proposed outlet, would drain in a maximum duration of 38 hours. With a maximum effective design depth of water of 2-feet (24 inches), the infiltration trench will drain in a maximum duration of 16 hours. With a maximum facility water depth of 8-feet (96 inches), the proposed drywell will drain in a maximum duration of 61 hours. These facilities will be constructed on native soil ensuring that these infiltration rates will remain applicable.

Perris Valley MDP Line H10.1 Hydraulic Analysis

In order to ensure that Line H-10.1 had sufficient capacity to accept the attenuated 100-year flows from the project, a hydraulic analysis of Line H-10.1 (36-inch RCP storm drain) was performed and is included in

The original design hydraulic conditions of Line H-10.1 were modeled using WSPGW and confirmed the hydraulic data as shown in the original Perris Valley MDP Lines H-10.1 and H-11 drainage report. The input water surface elevation (HGL) of the system outlet was set at 1495.5 (STA 1+06.38 per **Line H.10** plans). The input water surface elevation of the system headworks was set at (STA 26+94.48 per **Line H.10.1** plans – DWG 4-1173). To verify that there will continue to exist adequate freeboard for downstream manholes and catch basins, the hydraulic grade line (HGL) of original design conditions and under proposed connection conditions was modeled.

As previously stated, the total peak Q_{100} for the developed site was calculated to be 3.93 CFS. A point of connection into Line H-10.1 (STA 20+21.44) was then modeled to create a proposed condition for Line H-10.1. The largest increase in HGL was calculated to be a mere **0.4-feet** at STA 12+74.07 per the WSPGW output file

(from to 1501.34 to 1501.73). The HGL along Line H-10.1 remains below the top of the 36-inch RCP mainline in addition to being well below the rim manhole elevations.

The HGL under proposed conditions at the proposed **single** point of connection to the existing storm drain line in Placentia Avenue is 1525.27 (STA 20+21.44). The outlet inverts of the onsite BMPs have been set **higher** than the HGL of the public storm drain. This ensures that stormwater within the public storm drain **will not** flow back into the onsite BMPs creating a backwater condition. Within the onsite BMPs, the invert elevation of the infiltration trench overflow storm drain has been set at 1528.00, the invert elevation of the detention facility outlet structure has been set at 1531.50, and the invert elevation of the drywell overflow storm drain has been set at 1533.00. Thus, these onsite BMP invert elevations have been set sufficiently above the calculated HGL at the development's **single** point of connection to the public storm drain.

Thus, there is adequate freeboard between the proposed drainage facilities and calculated water surface level/HGL in Line H-10.1. Consequently, the additional 3.93 CFS from the subject development has minimal impacts on existing drainage infrastructure can be adequately accepted and conveyed by Line H-10.1 based on these hydraulic calculations and conclusions.

Half-Street Flows Along Frontage

The Rational Method was used to calculate peak flows for the half-street of Tobacco Road and Placentia Avenue adjacent to PPT230048. The 10-year and 100-year events were considered in this analysis. These hydrologic calculations can be found in Appendix C-4.

The 10-year and 100-year peak flow for Tobacco Road tributary to the proposed catch basin on Tobacco Road was calculated to be 1.37 CFS and 2.00 CFS, respectively. These half-street flows will be intercepted by this catch basin and conveyed to Lateral H10.1 in Placentia Avenue. The design of this catch basin and lateral will be per separate storm drain plans.

The 10-year and 100-year peak flow for Placentia Avenue was calculated to be 1.37 CFS and 1.99 CFS, respectively. These half-street flows will continue to flow easterly towards the intersection of Placentia Avenue and Harvill Avenue where flows will be intercepted by an existing catch basin at this intersection.

Under both the 10-year and 100-year events for the subject streets, flows are kept well below the top of curb elevation. Hydraulic calculations can be found in Appendix C-4.

Conclusion

The narrative and supporting calculations in this report support the conclusion that the proposed site design and on-site detention facility mitigate the impacts of increased flows caused by development. In addition, hydraulic capacity of existing Lateral H-10.1 to accept routed/attenuated post-project flows has also been supported by relevant calculations and analysis.

Appendix “A” - Existing Conditions Calculations:
Unit Hydrograph Runs

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh12.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
2 YR - 1 HR STORM AMC I

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	8.70	0.50	4.35

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	8.70	1.30	11.31

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.500 (In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.500 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	47.4	0.597	0.000	0.597	1.000	0.597
Sum (F) =						

0.597

Area averaged mean soil loss (F) (In/Hr) = 0.597
Minimum soil loss rate ((In/Hr)) = 0.299
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Slope of intensity-duration curve for a 1 hour storm = 0.5000

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Flood volume = Effective rainfall 0.14 (In)
times area 8.7 (Ac.) / [(In) / (Ft.)] = 0.1 (Ac.Ft)
Total soil loss = 0.36 (In)
Total soil loss = 0.263 (Ac.Ft)
Total rainfall = 0.50 (In)
Flood volume = 4317.2 Cubic Feet
Total soil loss = 11472.1 Cubic Feet

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0							
0+ 5	0.0008	0.12	Q				
0+10	0.0022	0.21	Q				
0+15	0.0039	0.24	QV				
0+20	0.0057	0.26	QV				
0+25	0.0076	0.28	Q V				
0+30	0.0098	0.32	Q V				

0+35	0.0123	0.36	Q	V							
0+40	0.0152	0.42	Q		V						
0+45	0.0211	0.86		Q		V					
0+50	0.0611	5.81						QV			
0+55	0.0903	4.23						Q		V	
1+ 0	0.0969	0.97		Q							V
1+ 5	0.0989	0.29	Q								V
1+10	0.0991	0.02	Q								V
1+15	0.0991	0.00	Q								V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh32.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
2 YR - 3 HR STORM AMC I

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	0.80	7.80

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	2.00	19.50

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.800 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 0.800 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.800 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	47.4	0.597	0.000	0.597	1.000	0.597
Sum (F) =						

0.597

Area averaged mean soil loss (F) (In/Hr) = 0.597
Minimum soil loss rate ((In/Hr)) = 0.299
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.125	(0.597)	0.112	0.012
2.	0.17	1.30	0.125	(0.597)	0.112	0.012
3.	0.25	1.10	0.106	(0.597)	0.095	0.011
4.	0.33	1.50	0.144	(0.597)	0.130	0.014
5.	0.42	1.50	0.144	(0.597)	0.130	0.014
6.	0.50	1.80	0.173	(0.597)	0.156	0.017
7.	0.58	1.50	0.144	(0.597)	0.130	0.014
8.	0.67	1.80	0.173	(0.597)	0.156	0.017
9.	0.75	1.80	0.173	(0.597)	0.156	0.017
10.	0.83	1.50	0.144	(0.597)	0.130	0.014
11.	0.92	1.60	0.154	(0.597)	0.138	0.015
12.	1.00	1.80	0.173	(0.597)	0.156	0.017
13.	1.08	2.20	0.211	(0.597)	0.190	0.021
14.	1.17	2.20	0.211	(0.597)	0.190	0.021
15.	1.25	2.20	0.211	(0.597)	0.190	0.021
16.	1.33	2.00	0.192	(0.597)	0.173	0.019
17.	1.42	2.60	0.250	(0.597)	0.225	0.025
18.	1.50	2.70	0.259	(0.597)	0.233	0.026
19.	1.58	2.40	0.230	(0.597)	0.207	0.023
20.	1.67	2.70	0.259	(0.597)	0.233	0.026
21.	1.75	3.30	0.317	(0.597)	0.285	0.032
22.	1.83	3.10	0.298	(0.597)	0.268	0.030
23.	1.92	2.90	0.278	(0.597)	0.251	0.028
24.	2.00	3.00	0.288	(0.597)	0.259	0.029
25.	2.08	3.10	0.298	(0.597)	0.268	0.030
26.	2.17	4.20	0.403	(0.597)	0.363	0.040
27.	2.25	5.00	0.480	(0.597)	0.432	0.048
28.	2.33	3.50	0.336	(0.597)	0.302	0.034
29.	2.42	6.80	0.653	(0.597)	0.587	0.065
30.	2.50	7.30	0.701	0.597	(0.631)	0.103
31.	2.58	8.20	0.787	0.597	(0.708)	0.190
32.	2.67	5.90	0.566	(0.597)	0.510	0.057
33.	2.75	2.00	0.192	(0.597)	0.173	0.019
34.	2.83	1.80	0.173	(0.597)	0.156	0.017
35.	2.92	1.80	0.173	(0.597)	0.156	0.017
36.	3.00	0.60	0.058	(0.597)	0.052	0.006

(Loss Rate Not Used)

Sum = 100.0

Sum = 1.1

Flood volume = Effective rainfall 0.09(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 0.71(In)

Total soil loss = 0.513(Ac.Ft)

Total rainfall = 0.80(In)
 Flood volume = 2905.9 Cubic Feet
 Total soil loss = 22358.0 Cubic Feet

Peak flow rate of this hydrograph = 1.272(CFS)

+++++
 3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0004	0.06	Q			
0+10	0.0011	0.10	Q			
0+15	0.0018	0.10	QV			
0+20	0.0025	0.11	QV			
0+25	0.0034	0.12	Q V			
0+30	0.0043	0.14	Q V			
0+35	0.0053	0.14	Q V			
0+40	0.0063	0.14	Q V			
0+45	0.0073	0.15	Q V			
0+50	0.0082	0.14	Q V			
0+55	0.0092	0.13	Q V			
1+ 0	0.0101	0.14	Q V			
1+ 5	0.0113	0.17	Q V			
1+10	0.0126	0.18	Q V			
1+15	0.0138	0.18	Q V			
1+20	0.0150	0.18	Q V			
1+25	0.0164	0.20	Q V			
1+30	0.0179	0.22	Q V			
1+35	0.0194	0.21	Q V			
1+40	0.0209	0.22	Q V			
1+45	0.0226	0.25	Q V			
1+50	0.0244	0.26	Q V			
1+55	0.0262	0.25	Q V			
2+ 0	0.0279	0.25	Q V			
2+ 5	0.0297	0.26	Q V			
2+10	0.0318	0.31	Q V			
2+15	0.0344	0.38	Q V			
2+20	0.0368	0.35	Q V			
2+25	0.0399	0.45	Q V			
2+30	0.0449	0.73	Q V			
2+35	0.0537	1.27	Q V			
2+40	0.0604	0.98	Q V			
2+45	0.0633	0.41	Q V			
2+50	0.0647	0.21	Q V			
2+55	0.0658	0.16	Q V			
3+ 0	0.0664	0.10	Q V			
3+ 5	0.0667	0.03	Q V			
3+10	0.0667	0.01	Q V			

3+15 0.0667 0.00 Q | | | V|

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh62.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
2 YR - 6 HR STORM AMC I

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	1.10	10.73

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	2.75	26.81

STORM EVENT (YEAR) = 2.00
 Area Averaged 2-Year Rainfall = 1.100 (In)
 Area Averaged 100-Year Rainfall = 2.750 (In)

Point rain (area averaged) = 1.100 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 1.100 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	47.4	0.597	0.000	0.597	1.000	0.597
Sum (F) =						

0.597

Area averaged mean soil loss (F) (In/Hr) = 0.597
 Minimum soil loss rate ((In/Hr)) = 0.299
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.900

-

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

-

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593
			4.605
			3.443
			0.580
			0.140

-

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max Low	Effective (In/Hr)	
1.	0.08	0.50	0.066	(0.597)	0.059	0.007
2.	0.17	0.60	0.079	(0.597)	0.071	0.008
3.	0.25	0.60	0.079	(0.597)	0.071	0.008
4.	0.33	0.60	0.079	(0.597)	0.071	0.008
5.	0.42	0.60	0.079	(0.597)	0.071	0.008
6.	0.50	0.70	0.092	(0.597)	0.083	0.009
7.	0.58	0.70	0.092	(0.597)	0.083	0.009
8.	0.67	0.70	0.092	(0.597)	0.083	0.009
9.	0.75	0.70	0.092	(0.597)	0.083	0.009
10.	0.83	0.70	0.092	(0.597)	0.083	0.009
11.	0.92	0.70	0.092	(0.597)	0.083	0.009
12.	1.00	0.80	0.106	(0.597)	0.095	0.011
13.	1.08	0.80	0.106	(0.597)	0.095	0.011
14.	1.17	0.80	0.106	(0.597)	0.095	0.011
15.	1.25	0.80	0.106	(0.597)	0.095	0.011
16.	1.33	0.80	0.106	(0.597)	0.095	0.011
17.	1.42	0.80	0.106	(0.597)	0.095	0.011
18.	1.50	0.80	0.106	(0.597)	0.095	0.011
19.	1.58	0.80	0.106	(0.597)	0.095	0.011
20.	1.67	0.80	0.106	(0.597)	0.095	0.011
21.	1.75	0.80	0.106	(0.597)	0.095	0.011
22.	1.83	0.80	0.106	(0.597)	0.095	0.011
23.	1.92	0.80	0.106	(0.597)	0.095	0.011
24.	2.00	0.90	0.119	(0.597)	0.107	0.012
25.	2.08	0.80	0.106	(0.597)	0.095	0.011
26.	2.17	0.90	0.119	(0.597)	0.107	0.012
27.	2.25	0.90	0.119	(0.597)	0.107	0.012
28.	2.33	0.90	0.119	(0.597)	0.107	0.012
29.	2.42	0.90	0.119	(0.597)	0.107	0.012
30.	2.50	0.90	0.119	(0.597)	0.107	0.012
31.	2.58	0.90	0.119	(0.597)	0.107	0.012
32.	2.67	0.90	0.119	(0.597)	0.107	0.012
33.	2.75	1.00	0.132	(0.597)	0.119	0.013
34.	2.83	1.00	0.132	(0.597)	0.119	0.013
35.	2.92	1.00	0.132	(0.597)	0.119	0.013
36.	3.00	1.00	0.132	(0.597)	0.119	0.013
37.	3.08	1.00	0.132	(0.597)	0.119	0.013
38.	3.17	1.10	0.145	(0.597)	0.131	0.015
39.	3.25	1.10	0.145	(0.597)	0.131	0.015
40.	3.33	1.10	0.145	(0.597)	0.131	0.015
41.	3.42	1.20	0.158	(0.597)	0.143	0.016
42.	3.50	1.30	0.172	(0.597)	0.154	0.017

43.	3.58	1.40	0.185	(0.597)	0.166	0.018
44.	3.67	1.40	0.185	(0.597)	0.166	0.018
45.	3.75	1.50	0.198	(0.597)	0.178	0.020
46.	3.83	1.50	0.198	(0.597)	0.178	0.020
47.	3.92	1.60	0.211	(0.597)	0.190	0.021
48.	4.00	1.60	0.211	(0.597)	0.190	0.021
49.	4.08	1.70	0.224	(0.597)	0.202	0.022
50.	4.17	1.80	0.238	(0.597)	0.214	0.024
51.	4.25	1.90	0.251	(0.597)	0.226	0.025
52.	4.33	2.00	0.264	(0.597)	0.238	0.026
53.	4.42	2.10	0.277	(0.597)	0.249	0.028
54.	4.50	2.10	0.277	(0.597)	0.249	0.028
55.	4.58	2.20	0.290	(0.597)	0.261	0.029
56.	4.67	2.30	0.304	(0.597)	0.273	0.030
57.	4.75	2.40	0.317	(0.597)	0.285	0.032
58.	4.83	2.40	0.317	(0.597)	0.285	0.032
59.	4.92	2.50	0.330	(0.597)	0.297	0.033
60.	5.00	2.60	0.343	(0.597)	0.309	0.034
61.	5.08	3.10	0.409	(0.597)	0.368	0.041
62.	5.17	3.60	0.475	(0.597)	0.428	0.048
63.	5.25	3.90	0.515	(0.597)	0.463	0.051
64.	5.33	4.20	0.554	(0.597)	0.499	0.055
65.	5.42	4.70	0.620	(0.597)	0.558	0.062
66.	5.50	5.60	0.739	0.597 (0.665)		0.142
67.	5.58	1.90	0.251	(0.597)	0.226	0.025
68.	5.67	0.90	0.119	(0.597)	0.107	0.012
69.	5.75	0.60	0.079	(0.597)	0.071	0.008
70.	5.83	0.50	0.066	(0.597)	0.059	0.007
71.	5.92	0.30	0.040	(0.597)	0.036	0.004
72.	6.00	0.20	0.026	(0.597)	0.024	0.003

(Loss Rate Not Used)

Sum = 100.0

Sum = 1.4

Flood volume = Effective rainfall 0.12(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 0.98(In)

Total soil loss = 0.714(Ac.Ft)

Total rainfall = 1.10(In)

Flood volume = 3652.2 Cubic Feet

Total soil loss = 31085.9 Cubic Feet

Peak flow rate of this hydrograph = 0.906(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0002	0.03	Q			
0+10	0.0006	0.06	Q			

0+15	0.0011	0.07	Q				
0+20	0.0016	0.07	Q				
0+25	0.0020	0.07	Q				
0+30	0.0026	0.08	QV				
0+35	0.0031	0.08	QV				
0+40	0.0037	0.08	QV				
0+45	0.0042	0.08	Q V				
0+50	0.0048	0.08	Q V				
0+55	0.0053	0.08	Q V				
1+ 0	0.0059	0.09	Q V				
1+ 5	0.0066	0.09	Q V				
1+10	0.0072	0.09	Q V				
1+15	0.0078	0.09	Q V				
1+20	0.0085	0.09	Q V				
1+25	0.0091	0.09	Q V				
1+30	0.0098	0.09	Q V				
1+35	0.0104	0.09	Q V				
1+40	0.0110	0.09	Q V				
1+45	0.0117	0.09	Q V				
1+50	0.0123	0.09	Q V				
1+55	0.0130	0.09	Q V				
2+ 0	0.0136	0.10	Q V				
2+ 5	0.0143	0.10	Q V				
2+10	0.0150	0.10	Q V				
2+15	0.0157	0.10	Q V				
2+20	0.0164	0.10	Q V				
2+25	0.0171	0.10	Q V				
2+30	0.0179	0.10	Q V				
2+35	0.0186	0.10	Q V				
2+40	0.0193	0.10	Q V				
2+45	0.0200	0.11	Q V				
2+50	0.0208	0.11	Q V				
2+55	0.0216	0.12	Q V				
3+ 0	0.0224	0.12	Q V				
3+ 5	0.0232	0.12	Q V				
3+10	0.0241	0.12	Q V				
3+15	0.0249	0.13	Q V				
3+20	0.0258	0.13	Q V				
3+25	0.0267	0.13	Q V				
3+30	0.0277	0.14	Q V				
3+35	0.0288	0.16	Q V				
3+40	0.0299	0.16	Q V				
3+45	0.0311	0.17	Q V				
3+50	0.0323	0.17	Q V				
3+55	0.0335	0.18	Q V				
4+ 0	0.0348	0.18	Q V				
4+ 5	0.0361	0.19	Q V				
4+10	0.0375	0.20	Q V				
4+15	0.0389	0.21	Q V				
4+20	0.0405	0.22	Q V				
4+25	0.0421	0.24	Q V				
4+30	0.0438	0.24	Q V				
4+35	0.0455	0.25	Q V				
4+40	0.0473	0.26	Q V				

4+45	0.0492	0.27	Q			V		
4+50	0.0511	0.28	Q			V		
4+55	0.0530	0.28	Q			V		
5+ 0	0.0550	0.29	Q			V		
5+ 5	0.0573	0.33	Q			V		
5+10	0.0600	0.38	Q			V		
5+15	0.0629	0.43	Q			V		
5+20	0.0661	0.47	Q			V		
5+25	0.0697	0.51	Q			V	V	
5+30	0.0759	0.91	Q			V	V	
5+35	0.0804	0.65	Q			V	V	
5+40	0.0820	0.23	Q			V	V	
5+45	0.0827	0.11	Q			V	V	
5+50	0.0832	0.07	Q			V	V	
5+55	0.0835	0.05	Q			V	V	
6+ 0	0.0837	0.03	Q			V	V	
6+ 5	0.0838	0.01	Q			V	V	
6+10	0.0838	0.00	Q			V	V	
6+15	0.0838	0.00	Q			V	V	

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh242.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
2 YR - 24 HR STORM AMC I

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	1.90	18.52

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	5.50	53.63

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.900 (In)
Area Averaged 100-Year Rainfall = 5.500 (In)

Point rain (area averaged) = 1.900 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.900 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	47.4	0.597	0.000	0.597	1.000	0.597
Sum (F) =						

0.597

Area averaged mean soil loss (F) (In/Hr) = 0.597
Minimum soil loss rate ((In/Hr)) = 0.299
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.07	0.015	(1.059)	0.014	0.002
2.	0.17	0.07	0.015	(1.055)	0.014	0.002
3.	0.25	0.07	0.015	(1.051)	0.014	0.002
4.	0.33	0.10	0.023	(1.047)	0.021	0.002
5.	0.42	0.10	0.023	(1.043)	0.021	0.002
6.	0.50	0.10	0.023	(1.039)	0.021	0.002
7.	0.58	0.10	0.023	(1.035)	0.021	0.002
8.	0.67	0.10	0.023	(1.031)	0.021	0.002
9.	0.75	0.10	0.023	(1.027)	0.021	0.002
10.	0.83	0.13	0.030	(1.023)	0.027	0.003
11.	0.92	0.13	0.030	(1.019)	0.027	0.003
12.	1.00	0.13	0.030	(1.015)	0.027	0.003
13.	1.08	0.10	0.023	(1.011)	0.021	0.002
14.	1.17	0.10	0.023	(1.007)	0.021	0.002
15.	1.25	0.10	0.023	(1.003)	0.021	0.002
16.	1.33	0.10	0.023	(0.999)	0.021	0.002
17.	1.42	0.10	0.023	(0.995)	0.021	0.002
18.	1.50	0.10	0.023	(0.991)	0.021	0.002
19.	1.58	0.10	0.023	(0.987)	0.021	0.002
20.	1.67	0.10	0.023	(0.983)	0.021	0.002
21.	1.75	0.10	0.023	(0.979)	0.021	0.002
22.	1.83	0.13	0.030	(0.975)	0.027	0.003
23.	1.92	0.13	0.030	(0.971)	0.027	0.003
24.	2.00	0.13	0.030	(0.967)	0.027	0.003
25.	2.08	0.13	0.030	(0.963)	0.027	0.003
26.	2.17	0.13	0.030	(0.959)	0.027	0.003
27.	2.25	0.13	0.030	(0.955)	0.027	0.003
28.	2.33	0.13	0.030	(0.951)	0.027	0.003
29.	2.42	0.13	0.030	(0.947)	0.027	0.003
30.	2.50	0.13	0.030	(0.944)	0.027	0.003
31.	2.58	0.17	0.038	(0.940)	0.034	0.004
32.	2.67	0.17	0.038	(0.936)	0.034	0.004
33.	2.75	0.17	0.038	(0.932)	0.034	0.004
34.	2.83	0.17	0.038	(0.928)	0.034	0.004
35.	2.92	0.17	0.038	(0.924)	0.034	0.004
36.	3.00	0.17	0.038	(0.921)	0.034	0.004
37.	3.08	0.17	0.038	(0.917)	0.034	0.004
38.	3.17	0.17	0.038	(0.913)	0.034	0.004
39.	3.25	0.17	0.038	(0.909)	0.034	0.004
40.	3.33	0.17	0.038	(0.905)	0.034	0.004
41.	3.42	0.17	0.038	(0.902)	0.034	0.004
42.	3.50	0.17	0.038	(0.898)	0.034	0.004

43.	3.58	0.17	0.038	(0.894)	0.034	0.004
44.	3.67	0.17	0.038	(0.890)	0.034	0.004
45.	3.75	0.17	0.038	(0.887)	0.034	0.004
46.	3.83	0.20	0.046	(0.883)	0.041	0.005
47.	3.92	0.20	0.046	(0.879)	0.041	0.005
48.	4.00	0.20	0.046	(0.875)	0.041	0.005
49.	4.08	0.20	0.046	(0.872)	0.041	0.005
50.	4.17	0.20	0.046	(0.868)	0.041	0.005
51.	4.25	0.20	0.046	(0.864)	0.041	0.005
52.	4.33	0.23	0.053	(0.861)	0.048	0.005
53.	4.42	0.23	0.053	(0.857)	0.048	0.005
54.	4.50	0.23	0.053	(0.853)	0.048	0.005
55.	4.58	0.23	0.053	(0.850)	0.048	0.005
56.	4.67	0.23	0.053	(0.846)	0.048	0.005
57.	4.75	0.23	0.053	(0.842)	0.048	0.005
58.	4.83	0.27	0.061	(0.839)	0.055	0.006
59.	4.92	0.27	0.061	(0.835)	0.055	0.006
60.	5.00	0.27	0.061	(0.831)	0.055	0.006
61.	5.08	0.20	0.046	(0.828)	0.041	0.005
62.	5.17	0.20	0.046	(0.824)	0.041	0.005
63.	5.25	0.20	0.046	(0.821)	0.041	0.005
64.	5.33	0.23	0.053	(0.817)	0.048	0.005
65.	5.42	0.23	0.053	(0.813)	0.048	0.005
66.	5.50	0.23	0.053	(0.810)	0.048	0.005
67.	5.58	0.27	0.061	(0.806)	0.055	0.006
68.	5.67	0.27	0.061	(0.803)	0.055	0.006
69.	5.75	0.27	0.061	(0.799)	0.055	0.006
70.	5.83	0.27	0.061	(0.796)	0.055	0.006
71.	5.92	0.27	0.061	(0.792)	0.055	0.006
72.	6.00	0.27	0.061	(0.789)	0.055	0.006
73.	6.08	0.30	0.068	(0.785)	0.062	0.007
74.	6.17	0.30	0.068	(0.782)	0.062	0.007
75.	6.25	0.30	0.068	(0.778)	0.062	0.007
76.	6.33	0.30	0.068	(0.775)	0.062	0.007
77.	6.42	0.30	0.068	(0.771)	0.062	0.007
78.	6.50	0.30	0.068	(0.768)	0.062	0.007
79.	6.58	0.33	0.076	(0.764)	0.068	0.008
80.	6.67	0.33	0.076	(0.761)	0.068	0.008
81.	6.75	0.33	0.076	(0.757)	0.068	0.008
82.	6.83	0.33	0.076	(0.754)	0.068	0.008
83.	6.92	0.33	0.076	(0.751)	0.068	0.008
84.	7.00	0.33	0.076	(0.747)	0.068	0.008
85.	7.08	0.33	0.076	(0.744)	0.068	0.008
86.	7.17	0.33	0.076	(0.740)	0.068	0.008
87.	7.25	0.33	0.076	(0.737)	0.068	0.008
88.	7.33	0.37	0.084	(0.734)	0.075	0.008
89.	7.42	0.37	0.084	(0.730)	0.075	0.008
90.	7.50	0.37	0.084	(0.727)	0.075	0.008
91.	7.58	0.40	0.091	(0.724)	0.082	0.009
92.	7.67	0.40	0.091	(0.720)	0.082	0.009
93.	7.75	0.40	0.091	(0.717)	0.082	0.009
94.	7.83	0.43	0.099	(0.714)	0.089	0.010
95.	7.92	0.43	0.099	(0.710)	0.089	0.010
96.	8.00	0.43	0.099	(0.707)	0.089	0.010

97.	8.08	0.50	0.114	(0.704)	0.103	0.011
98.	8.17	0.50	0.114	(0.701)	0.103	0.011
99.	8.25	0.50	0.114	(0.697)	0.103	0.011
100.	8.33	0.50	0.114	(0.694)	0.103	0.011
101.	8.42	0.50	0.114	(0.691)	0.103	0.011
102.	8.50	0.50	0.114	(0.688)	0.103	0.011
103.	8.58	0.53	0.122	(0.684)	0.109	0.012
104.	8.67	0.53	0.122	(0.681)	0.109	0.012
105.	8.75	0.53	0.122	(0.678)	0.109	0.012
106.	8.83	0.57	0.129	(0.675)	0.116	0.013
107.	8.92	0.57	0.129	(0.671)	0.116	0.013
108.	9.00	0.57	0.129	(0.668)	0.116	0.013
109.	9.08	0.63	0.144	(0.665)	0.130	0.014
110.	9.17	0.63	0.144	(0.662)	0.130	0.014
111.	9.25	0.63	0.144	(0.659)	0.130	0.014
112.	9.33	0.67	0.152	(0.656)	0.137	0.015
113.	9.42	0.67	0.152	(0.653)	0.137	0.015
114.	9.50	0.67	0.152	(0.649)	0.137	0.015
115.	9.58	0.70	0.160	(0.646)	0.144	0.016
116.	9.67	0.70	0.160	(0.643)	0.144	0.016
117.	9.75	0.70	0.160	(0.640)	0.144	0.016
118.	9.83	0.73	0.167	(0.637)	0.150	0.017
119.	9.92	0.73	0.167	(0.634)	0.150	0.017
120.	10.00	0.73	0.167	(0.631)	0.150	0.017
121.	10.08	0.50	0.114	(0.628)	0.103	0.011
122.	10.17	0.50	0.114	(0.625)	0.103	0.011
123.	10.25	0.50	0.114	(0.622)	0.103	0.011
124.	10.33	0.50	0.114	(0.619)	0.103	0.011
125.	10.42	0.50	0.114	(0.616)	0.103	0.011
126.	10.50	0.50	0.114	(0.613)	0.103	0.011
127.	10.58	0.67	0.152	(0.610)	0.137	0.015
128.	10.67	0.67	0.152	(0.607)	0.137	0.015
129.	10.75	0.67	0.152	(0.604)	0.137	0.015
130.	10.83	0.67	0.152	(0.601)	0.137	0.015
131.	10.92	0.67	0.152	(0.598)	0.137	0.015
132.	11.00	0.67	0.152	(0.595)	0.137	0.015
133.	11.08	0.63	0.144	(0.592)	0.130	0.014
134.	11.17	0.63	0.144	(0.589)	0.130	0.014
135.	11.25	0.63	0.144	(0.586)	0.130	0.014
136.	11.33	0.63	0.144	(0.583)	0.130	0.014
137.	11.42	0.63	0.144	(0.580)	0.130	0.014
138.	11.50	0.63	0.144	(0.578)	0.130	0.014
139.	11.58	0.57	0.129	(0.575)	0.116	0.013
140.	11.67	0.57	0.129	(0.572)	0.116	0.013
141.	11.75	0.57	0.129	(0.569)	0.116	0.013
142.	11.83	0.60	0.137	(0.566)	0.123	0.014
143.	11.92	0.60	0.137	(0.563)	0.123	0.014
144.	12.00	0.60	0.137	(0.561)	0.123	0.014
145.	12.08	0.83	0.190	(0.558)	0.171	0.019
146.	12.17	0.83	0.190	(0.555)	0.171	0.019
147.	12.25	0.83	0.190	(0.552)	0.171	0.019
148.	12.33	0.87	0.198	(0.549)	0.178	0.020
149.	12.42	0.87	0.198	(0.547)	0.178	0.020
150.	12.50	0.87	0.198	(0.544)	0.178	0.020

151.	12.58	0.93	0.213	(0.541)	0.192	0.021
152.	12.67	0.93	0.213	(0.538)	0.192	0.021
153.	12.75	0.93	0.213	(0.536)	0.192	0.021
154.	12.83	0.97	0.220	(0.533)	0.198	0.022
155.	12.92	0.97	0.220	(0.530)	0.198	0.022
156.	13.00	0.97	0.220	(0.528)	0.198	0.022
157.	13.08	1.13	0.258	(0.525)	0.233	0.026
158.	13.17	1.13	0.258	(0.522)	0.233	0.026
159.	13.25	1.13	0.258	(0.520)	0.233	0.026
160.	13.33	1.13	0.258	(0.517)	0.233	0.026
161.	13.42	1.13	0.258	(0.514)	0.233	0.026
162.	13.50	1.13	0.258	(0.512)	0.233	0.026
163.	13.58	0.77	0.175	(0.509)	0.157	0.017
164.	13.67	0.77	0.175	(0.507)	0.157	0.017
165.	13.75	0.77	0.175	(0.504)	0.157	0.017
166.	13.83	0.77	0.175	(0.501)	0.157	0.017
167.	13.92	0.77	0.175	(0.499)	0.157	0.017
168.	14.00	0.77	0.175	(0.496)	0.157	0.017
169.	14.08	0.90	0.205	(0.494)	0.185	0.021
170.	14.17	0.90	0.205	(0.491)	0.185	0.021
171.	14.25	0.90	0.205	(0.489)	0.185	0.021
172.	14.33	0.87	0.198	(0.486)	0.178	0.020
173.	14.42	0.87	0.198	(0.484)	0.178	0.020
174.	14.50	0.87	0.198	(0.481)	0.178	0.020
175.	14.58	0.87	0.198	(0.479)	0.178	0.020
176.	14.67	0.87	0.198	(0.476)	0.178	0.020
177.	14.75	0.87	0.198	(0.474)	0.178	0.020
178.	14.83	0.83	0.190	(0.471)	0.171	0.019
179.	14.92	0.83	0.190	(0.469)	0.171	0.019
180.	15.00	0.83	0.190	(0.467)	0.171	0.019
181.	15.08	0.80	0.182	(0.464)	0.164	0.018
182.	15.17	0.80	0.182	(0.462)	0.164	0.018
183.	15.25	0.80	0.182	(0.460)	0.164	0.018
184.	15.33	0.77	0.175	(0.457)	0.157	0.017
185.	15.42	0.77	0.175	(0.455)	0.157	0.017
186.	15.50	0.77	0.175	(0.452)	0.157	0.017
187.	15.58	0.63	0.144	(0.450)	0.130	0.014
188.	15.67	0.63	0.144	(0.448)	0.130	0.014
189.	15.75	0.63	0.144	(0.446)	0.130	0.014
190.	15.83	0.63	0.144	(0.443)	0.130	0.014
191.	15.92	0.63	0.144	(0.441)	0.130	0.014
192.	16.00	0.63	0.144	(0.439)	0.130	0.014
193.	16.08	0.13	0.030	(0.437)	0.027	0.003
194.	16.17	0.13	0.030	(0.434)	0.027	0.003
195.	16.25	0.13	0.030	(0.432)	0.027	0.003
196.	16.33	0.13	0.030	(0.430)	0.027	0.003
197.	16.42	0.13	0.030	(0.428)	0.027	0.003
198.	16.50	0.13	0.030	(0.425)	0.027	0.003
199.	16.58	0.10	0.023	(0.423)	0.021	0.002
200.	16.67	0.10	0.023	(0.421)	0.021	0.002
201.	16.75	0.10	0.023	(0.419)	0.021	0.002
202.	16.83	0.10	0.023	(0.417)	0.021	0.002
203.	16.92	0.10	0.023	(0.415)	0.021	0.002
204.	17.00	0.10	0.023	(0.413)	0.021	0.002

205.	17.08	0.17	0.038	(0.411)	0.034	0.004
206.	17.17	0.17	0.038	(0.409)	0.034	0.004
207.	17.25	0.17	0.038	(0.407)	0.034	0.004
208.	17.33	0.17	0.038	(0.404)	0.034	0.004
209.	17.42	0.17	0.038	(0.402)	0.034	0.004
210.	17.50	0.17	0.038	(0.400)	0.034	0.004
211.	17.58	0.17	0.038	(0.398)	0.034	0.004
212.	17.67	0.17	0.038	(0.396)	0.034	0.004
213.	17.75	0.17	0.038	(0.394)	0.034	0.004
214.	17.83	0.13	0.030	(0.392)	0.027	0.003
215.	17.92	0.13	0.030	(0.391)	0.027	0.003
216.	18.00	0.13	0.030	(0.389)	0.027	0.003
217.	18.08	0.13	0.030	(0.387)	0.027	0.003
218.	18.17	0.13	0.030	(0.385)	0.027	0.003
219.	18.25	0.13	0.030	(0.383)	0.027	0.003
220.	18.33	0.13	0.030	(0.381)	0.027	0.003
221.	18.42	0.13	0.030	(0.379)	0.027	0.003
222.	18.50	0.13	0.030	(0.377)	0.027	0.003
223.	18.58	0.10	0.023	(0.376)	0.021	0.002
224.	18.67	0.10	0.023	(0.374)	0.021	0.002
225.	18.75	0.10	0.023	(0.372)	0.021	0.002
226.	18.83	0.07	0.015	(0.370)	0.014	0.002
227.	18.92	0.07	0.015	(0.368)	0.014	0.002
228.	19.00	0.07	0.015	(0.367)	0.014	0.002
229.	19.08	0.10	0.023	(0.365)	0.021	0.002
230.	19.17	0.10	0.023	(0.363)	0.021	0.002
231.	19.25	0.10	0.023	(0.361)	0.021	0.002
232.	19.33	0.13	0.030	(0.360)	0.027	0.003
233.	19.42	0.13	0.030	(0.358)	0.027	0.003
234.	19.50	0.13	0.030	(0.356)	0.027	0.003
235.	19.58	0.10	0.023	(0.355)	0.021	0.002
236.	19.67	0.10	0.023	(0.353)	0.021	0.002
237.	19.75	0.10	0.023	(0.352)	0.021	0.002
238.	19.83	0.07	0.015	(0.350)	0.014	0.002
239.	19.92	0.07	0.015	(0.348)	0.014	0.002
240.	20.00	0.07	0.015	(0.347)	0.014	0.002
241.	20.08	0.10	0.023	(0.345)	0.021	0.002
242.	20.17	0.10	0.023	(0.344)	0.021	0.002
243.	20.25	0.10	0.023	(0.342)	0.021	0.002
244.	20.33	0.10	0.023	(0.341)	0.021	0.002
245.	20.42	0.10	0.023	(0.339)	0.021	0.002
246.	20.50	0.10	0.023	(0.338)	0.021	0.002
247.	20.58	0.10	0.023	(0.337)	0.021	0.002
248.	20.67	0.10	0.023	(0.335)	0.021	0.002
249.	20.75	0.10	0.023	(0.334)	0.021	0.002
250.	20.83	0.07	0.015	(0.332)	0.014	0.002
251.	20.92	0.07	0.015	(0.331)	0.014	0.002
252.	21.00	0.07	0.015	(0.330)	0.014	0.002
253.	21.08	0.10	0.023	(0.328)	0.021	0.002
254.	21.17	0.10	0.023	(0.327)	0.021	0.002
255.	21.25	0.10	0.023	(0.326)	0.021	0.002
256.	21.33	0.07	0.015	(0.325)	0.014	0.002
257.	21.42	0.07	0.015	(0.323)	0.014	0.002
258.	21.50	0.07	0.015	(0.322)	0.014	0.002

259.	21.58	0.10	0.023	(0.321)	0.021	0.002
260.	21.67	0.10	0.023	(0.320)	0.021	0.002
261.	21.75	0.10	0.023	(0.319)	0.021	0.002
262.	21.83	0.07	0.015	(0.318)	0.014	0.002
263.	21.92	0.07	0.015	(0.317)	0.014	0.002
264.	22.00	0.07	0.015	(0.315)	0.014	0.002
265.	22.08	0.10	0.023	(0.314)	0.021	0.002
266.	22.17	0.10	0.023	(0.313)	0.021	0.002
267.	22.25	0.10	0.023	(0.312)	0.021	0.002
268.	22.33	0.07	0.015	(0.311)	0.014	0.002
269.	22.42	0.07	0.015	(0.310)	0.014	0.002
270.	22.50	0.07	0.015	(0.310)	0.014	0.002
271.	22.58	0.07	0.015	(0.309)	0.014	0.002
272.	22.67	0.07	0.015	(0.308)	0.014	0.002
273.	22.75	0.07	0.015	(0.307)	0.014	0.002
274.	22.83	0.07	0.015	(0.306)	0.014	0.002
275.	22.92	0.07	0.015	(0.305)	0.014	0.002
276.	23.00	0.07	0.015	(0.305)	0.014	0.002
277.	23.08	0.07	0.015	(0.304)	0.014	0.002
278.	23.17	0.07	0.015	(0.303)	0.014	0.002
279.	23.25	0.07	0.015	(0.303)	0.014	0.002
280.	23.33	0.07	0.015	(0.302)	0.014	0.002
281.	23.42	0.07	0.015	(0.301)	0.014	0.002
282.	23.50	0.07	0.015	(0.301)	0.014	0.002
283.	23.58	0.07	0.015	(0.300)	0.014	0.002
284.	23.67	0.07	0.015	(0.300)	0.014	0.002
285.	23.75	0.07	0.015	(0.300)	0.014	0.002
286.	23.83	0.07	0.015	(0.299)	0.014	0.002
287.	23.92	0.07	0.015	(0.299)	0.014	0.002
288.	24.00	0.07	0.015	(0.299)	0.014	0.002

(Loss Rate Not Used)

Sum = 100.0

Sum = 2.3

Flood volume = Effective rainfall 0.19(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 1.71(In)

Total soil loss = 1.240(Ac.Ft)

Total rainfall = 1.90(In)

Flood volume = 6000.3 Cubic Feet

Total soil loss = 54002.6 Cubic Feet

Peak flow rate of this hydrograph = 0.227(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						

0+ 5	0.0000	0.01	Q				
0+10	0.0001	0.01	Q				

0+15	0.0002	0.01	Q				
0+20	0.0003	0.02	Q				
0+25	0.0005	0.02	Q				
0+30	0.0006	0.02	Q				
0+35	0.0007	0.02	Q				
0+40	0.0009	0.02	Q				
0+45	0.0010	0.02	Q				
0+50	0.0012	0.02	Q				
0+55	0.0014	0.03	Q				
1+ 0	0.0015	0.03	Q				
1+ 5	0.0017	0.02	Q				
1+10	0.0018	0.02	Q				
1+15	0.0020	0.02	Q				
1+20	0.0021	0.02	Q				
1+25	0.0023	0.02	Q				
1+30	0.0024	0.02	Q				
1+35	0.0025	0.02	Q				
1+40	0.0027	0.02	Q				
1+45	0.0028	0.02	Q				
1+50	0.0030	0.02	Q				
1+55	0.0032	0.03	Q				
2+ 0	0.0033	0.03	Q				
2+ 5	0.0035	0.03	QV				
2+10	0.0037	0.03	QV				
2+15	0.0039	0.03	QV				
2+20	0.0041	0.03	QV				
2+25	0.0043	0.03	QV				
2+30	0.0044	0.03	QV				
2+35	0.0046	0.03	QV				
2+40	0.0049	0.03	QV				
2+45	0.0051	0.03	QV				
2+50	0.0053	0.03	QV				
2+55	0.0056	0.03	QV				
3+ 0	0.0058	0.03	QV				
3+ 5	0.0060	0.03	QV				
3+10	0.0063	0.03	QV				
3+15	0.0065	0.03	QV				
3+20	0.0067	0.03	QV				
3+25	0.0069	0.03	Q V				
3+30	0.0072	0.03	Q V				
3+35	0.0074	0.03	Q V				
3+40	0.0076	0.03	Q V				
3+45	0.0079	0.03	Q V				
3+50	0.0081	0.04	Q V				
3+55	0.0084	0.04	Q V				
4+ 0	0.0087	0.04	Q V				
4+ 5	0.0089	0.04	Q V				
4+10	0.0092	0.04	Q V				
4+15	0.0095	0.04	Q V				
4+20	0.0098	0.04	Q V				
4+25	0.0101	0.05	Q V				
4+30	0.0104	0.05	Q V				
4+35	0.0107	0.05	Q V				
4+40	0.0111	0.05	Q V				

4+45	0.0114	0.05	Q	V				
4+50	0.0117	0.05	Q	V				
4+55	0.0121	0.05	Q	V				
5+ 0	0.0125	0.05	Q	V				
5+ 5	0.0128	0.05	Q	V				
5+10	0.0131	0.04	Q	V				
5+15	0.0133	0.04	Q	V				
5+20	0.0136	0.04	Q	V				
5+25	0.0140	0.05	Q	V				
5+30	0.0143	0.05	Q	V				
5+35	0.0146	0.05	Q	V				
5+40	0.0150	0.05	Q	V				
5+45	0.0154	0.05	Q	V				
5+50	0.0157	0.05	Q	V				
5+55	0.0161	0.05	Q	V				
6+ 0	0.0165	0.05	Q	V				
6+ 5	0.0168	0.06	Q	V				
6+10	0.0173	0.06	Q	V				
6+15	0.0177	0.06	Q	V				
6+20	0.0181	0.06	Q	V				
6+25	0.0185	0.06	Q	V				
6+30	0.0189	0.06	Q	V				
6+35	0.0193	0.06	Q	V				
6+40	0.0198	0.07	Q	V				
6+45	0.0203	0.07	Q	V				
6+50	0.0207	0.07	Q	V				
6+55	0.0212	0.07	Q	V				
7+ 0	0.0216	0.07	Q	V				
7+ 5	0.0221	0.07	Q	V				
7+10	0.0226	0.07	Q	V				
7+15	0.0230	0.07	Q	V				
7+20	0.0235	0.07	Q	V				
7+25	0.0240	0.07	Q	V				
7+30	0.0245	0.07	Q	V				
7+35	0.0250	0.08	Q	V				
7+40	0.0256	0.08	Q	V				
7+45	0.0261	0.08	Q	V				
7+50	0.0267	0.08	Q	V				
7+55	0.0273	0.09	Q	V				
8+ 0	0.0279	0.09	Q	V				
8+ 5	0.0285	0.09	Q	V				
8+10	0.0292	0.10	Q	V				
8+15	0.0299	0.10	Q	V				
8+20	0.0306	0.10	Q	V				
8+25	0.0313	0.10	Q	V				
8+30	0.0320	0.10	Q	V				
8+35	0.0327	0.10	Q	V				
8+40	0.0334	0.11	Q	V				
8+45	0.0342	0.11	Q	V				
8+50	0.0349	0.11	Q	V				
8+55	0.0357	0.11	Q	V				
9+ 0	0.0365	0.11	Q	V				
9+ 5	0.0373	0.12	Q	V				
9+10	0.0382	0.13	Q	V				

9+15	0.0390	0.13	Q	V			
9+20	0.0399	0.13	Q	V			
9+25	0.0408	0.13	Q	V			
9+30	0.0418	0.13	Q	V			
9+35	0.0427	0.14	Q	V			
9+40	0.0437	0.14	Q	V			
9+45	0.0446	0.14	Q	V			
9+50	0.0456	0.14	Q	V			
9+55	0.0466	0.15	Q	V			
10+ 0	0.0476	0.15	Q	V			
10+ 5	0.0485	0.12	Q	V			
10+10	0.0492	0.10	Q	V			
10+15	0.0499	0.10	Q	V			
10+20	0.0506	0.10	Q	V			
10+25	0.0513	0.10	Q	V			
10+30	0.0519	0.10	Q	V			
10+35	0.0528	0.12	Q	V			
10+40	0.0537	0.13	Q	V			
10+45	0.0546	0.13	Q	V			
10+50	0.0555	0.13	Q	V			
10+55	0.0564	0.13	Q	V			
11+ 0	0.0573	0.13	Q	V			
11+ 5	0.0582	0.13	Q	V			
11+10	0.0591	0.13	Q	V			
11+15	0.0600	0.13	Q	V			
11+20	0.0608	0.13	Q	V			
11+25	0.0617	0.13	Q	V			
11+30	0.0626	0.13	Q	V			
11+35	0.0634	0.12	Q	V			
11+40	0.0642	0.11	Q	V			
11+45	0.0650	0.11	Q	V			
11+50	0.0658	0.12	Q	V			
11+55	0.0666	0.12	Q	V			
12+ 0	0.0674	0.12	Q	V			
12+ 5	0.0684	0.14	Q	V			
12+10	0.0696	0.16	Q	V			
12+15	0.0707	0.17	Q	V			
12+20	0.0719	0.17	Q	V			
12+25	0.0731	0.17	Q	V			
12+30	0.0743	0.17	Q	V			
12+35	0.0755	0.18	Q	V			
12+40	0.0768	0.19	Q	V			
12+45	0.0781	0.19	Q	V			
12+50	0.0794	0.19	Q	V			
12+55	0.0807	0.19	Q	V			
13+ 0	0.0820	0.19	Q	V			
13+ 5	0.0835	0.21	Q	V			
13+10	0.0850	0.22	Q	V			
13+15	0.0866	0.23	Q	V			
13+20	0.0881	0.23	Q	V			
13+25	0.0897	0.23	Q	V			
13+30	0.0913	0.23	Q	V			
13+35	0.0926	0.19	Q	V			
13+40	0.0937	0.16	Q	V			

13+45	0.0947	0.15	Q			V		
13+50	0.0958	0.15	Q			V		
13+55	0.0968	0.15	Q			V		
14+ 0	0.0979	0.15	Q			V		
14+ 5	0.0990	0.17	Q			V		
14+10	0.1003	0.18	Q			V		
14+15	0.1015	0.18	Q			V		
14+20	0.1027	0.18	Q			V		
14+25	0.1039	0.17	Q			V		
14+30	0.1051	0.17	Q			V		
14+35	0.1063	0.17	Q			V		
14+40	0.1075	0.17	Q			V		
14+45	0.1087	0.17	Q			V		
14+50	0.1099	0.17	Q			V		
14+55	0.1110	0.17	Q			V		
15+ 0	0.1122	0.17	Q			V		
15+ 5	0.1133	0.16	Q			V		
15+10	0.1144	0.16	Q			V		
15+15	0.1155	0.16	Q			V		
15+20	0.1166	0.16	Q			V		
15+25	0.1176	0.15	Q			V		
15+30	0.1187	0.15	Q			V		
15+35	0.1196	0.14	Q			V		
15+40	0.1205	0.13	Q			V		
15+45	0.1214	0.13	Q			V		
15+50	0.1223	0.13	Q			V		
15+55	0.1232	0.13	Q			V		
16+ 0	0.1240	0.13	Q			V		
16+ 5	0.1245	0.07	Q			V		
16+10	0.1248	0.03	Q			V		
16+15	0.1250	0.03	Q			V		
16+20	0.1252	0.03	Q			V		
16+25	0.1253	0.03	Q			V		
16+30	0.1255	0.03	Q			V		
16+35	0.1257	0.02	Q			V		
16+40	0.1258	0.02	Q			V		
16+45	0.1260	0.02	Q			V		
16+50	0.1261	0.02	Q			V		
16+55	0.1262	0.02	Q			V		
17+ 0	0.1264	0.02	Q			V		
17+ 5	0.1266	0.03	Q			V		
17+10	0.1268	0.03	Q			V		
17+15	0.1270	0.03	Q			V		
17+20	0.1272	0.03	Q			V		
17+25	0.1275	0.03	Q			V		
17+30	0.1277	0.03	Q			V		
17+35	0.1279	0.03	Q			V		
17+40	0.1282	0.03	Q			V		
17+45	0.1284	0.03	Q			V		
17+50	0.1286	0.03	Q			V		
17+55	0.1288	0.03	Q			V		
18+ 0	0.1290	0.03	Q			V		
18+ 5	0.1291	0.03	Q			V		
18+10	0.1293	0.03	Q			V		

18+15	0.1295	0.03	Q				V	
18+20	0.1297	0.03	Q				V	
18+25	0.1299	0.03	Q				V	
18+30	0.1301	0.03	Q				V	
18+35	0.1302	0.02	Q				V	
18+40	0.1304	0.02	Q				V	
18+45	0.1305	0.02	Q				V	
18+50	0.1306	0.02	Q				V	
18+55	0.1307	0.01	Q				V	
19+ 0	0.1308	0.01	Q				V	
19+ 5	0.1309	0.02	Q				V	
19+10	0.1311	0.02	Q				V	
19+15	0.1312	0.02	Q				V	
19+20	0.1314	0.02	Q				V	
19+25	0.1315	0.03	Q				V	
19+30	0.1317	0.03	Q				V	
19+35	0.1319	0.02	Q				V	
19+40	0.1320	0.02	Q				V	
19+45	0.1322	0.02	Q				V	
19+50	0.1323	0.02	Q				V	
19+55	0.1324	0.01	Q				V	
20+ 0	0.1325	0.01	Q				V	
20+ 5	0.1326	0.02	Q				V	
20+10	0.1327	0.02	Q				V	
20+15	0.1328	0.02	Q				V	
20+20	0.1330	0.02	Q				V	
20+25	0.1331	0.02	Q				V	
20+30	0.1333	0.02	Q				V	
20+35	0.1334	0.02	Q				V	
20+40	0.1335	0.02	Q				V	
20+45	0.1337	0.02	Q				V	
20+50	0.1338	0.02	Q				V	
20+55	0.1339	0.01	Q				V	
21+ 0	0.1340	0.01	Q				V	
21+ 5	0.1341	0.02	Q				V	
21+10	0.1342	0.02	Q				V	
21+15	0.1344	0.02	Q				V	
21+20	0.1345	0.02	Q				V	
21+25	0.1346	0.01	Q				V	
21+30	0.1347	0.01	Q				V	
21+35	0.1348	0.02	Q				V	
21+40	0.1349	0.02	Q				V	
21+45	0.1351	0.02	Q				V	
21+50	0.1352	0.02	Q				V	
21+55	0.1353	0.01	Q				V	
22+ 0	0.1354	0.01	Q				V	
22+ 5	0.1355	0.02	Q				V	
22+10	0.1356	0.02	Q				V	
22+15	0.1357	0.02	Q				V	
22+20	0.1359	0.02	Q				V	
22+25	0.1359	0.01	Q				V	
22+30	0.1360	0.01	Q				V	
22+35	0.1361	0.01	Q				V	
22+40	0.1362	0.01	Q				V	

22+45	0.1363	0.01	Q				V
22+50	0.1364	0.01	Q				V
22+55	0.1365	0.01	Q				V
23+ 0	0.1366	0.01	Q				V
23+ 5	0.1367	0.01	Q				V
23+10	0.1368	0.01	Q				V
23+15	0.1369	0.01	Q				V
23+20	0.1370	0.01	Q				V
23+25	0.1371	0.01	Q				V
23+30	0.1371	0.01	Q				V
23+35	0.1372	0.01	Q				V
23+40	0.1373	0.01	Q				V
23+45	0.1374	0.01	Q				V
23+50	0.1375	0.01	Q				V
23+55	0.1376	0.01	Q				V
24+ 0	0.1377	0.01	Q				V
24+ 5	0.1377	0.01	Q				V
24+10	0.1377	0.00	Q				V
24+15	0.1377	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh15.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
5 YR - 1 HR STORM AMC I

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	8.70	0.50	4.35

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	8.70	1.30	11.31

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.687 (In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.687 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	47.4	0.597	0.000	0.597	1.000	0.597
Sum (F) =						

0.597

Area averaged mean soil loss (F) (In/Hr) = 0.597
Minimum soil loss rate ((In/Hr)) = 0.299
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Slope of intensity-duration curve for a 1 hour storm = 0.5000

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271

Hydrograph in 5 Minute intervals ((CFS))

0+35	0.0170	0.50	Q	V				
0+40	0.0222	0.76		Q	V			
0+45	0.0384	2.35			Q			
0+50	0.1060	9.82					V	Q
0+55	0.1523	6.73					Q	V
1+ 0	0.1626	1.49		Q				V
1+ 5	0.1655	0.43	Q					V
1+10	0.1657	0.03	Q					V
1+15	0.1658	0.01	Q					V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh35.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
5 YR - 3 HR STORM AMC I

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	0.80	7.80

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	2.00	19.50

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.800 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.081 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.081 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	47.4	0.597	0.000	0.597	1.000	0.597
Sum (F) =						

0.597

Area averaged mean soil loss (F) (In/Hr) = 0.597
Minimum soil loss rate ((In/Hr)) = 0.299
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

-

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

-

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593
			4.605
			3.443
			0.580
			0.140

-

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.169	(0.597)	0.152	0.017
2.	0.17	1.30	0.169	(0.597)	0.152	0.017
3.	0.25	1.10	0.143	(0.597)	0.128	0.014
4.	0.33	1.50	0.195	(0.597)	0.175	0.019
5.	0.42	1.50	0.195	(0.597)	0.175	0.019
6.	0.50	1.80	0.234	(0.597)	0.210	0.023
7.	0.58	1.50	0.195	(0.597)	0.175	0.019
8.	0.67	1.80	0.234	(0.597)	0.210	0.023
9.	0.75	1.80	0.234	(0.597)	0.210	0.023
10.	0.83	1.50	0.195	(0.597)	0.175	0.019
11.	0.92	1.60	0.208	(0.597)	0.187	0.021
12.	1.00	1.80	0.234	(0.597)	0.210	0.023
13.	1.08	2.20	0.285	(0.597)	0.257	0.029
14.	1.17	2.20	0.285	(0.597)	0.257	0.029
15.	1.25	2.20	0.285	(0.597)	0.257	0.029
16.	1.33	2.00	0.259	(0.597)	0.234	0.026
17.	1.42	2.60	0.337	(0.597)	0.304	0.034
18.	1.50	2.70	0.350	(0.597)	0.315	0.035
19.	1.58	2.40	0.311	(0.597)	0.280	0.031
20.	1.67	2.70	0.350	(0.597)	0.315	0.035
21.	1.75	3.30	0.428	(0.597)	0.385	0.043
22.	1.83	3.10	0.402	(0.597)	0.362	0.040
23.	1.92	2.90	0.376	(0.597)	0.339	0.038
24.	2.00	3.00	0.389	(0.597)	0.350	0.039
25.	2.08	3.10	0.402	(0.597)	0.362	0.040
26.	2.17	4.20	0.545	(0.597)	0.490	0.054
27.	2.25	5.00	0.649	(0.597)	0.584	0.065
28.	2.33	3.50	0.454	(0.597)	0.409	0.045
29.	2.42	6.80	0.882	0.597	(0.794)	0.285
30.	2.50	7.30	0.947	0.597	(0.852)	0.350
31.	2.58	8.20	1.064	0.597	(0.957)	0.466
32.	2.67	5.90	0.765	0.597	(0.689)	0.168
33.	2.75	2.00	0.259	(0.597)	0.234	0.026
34.	2.83	1.80	0.234	(0.597)	0.210	0.023
35.	2.92	1.80	0.234	(0.597)	0.210	0.023
36.	3.00	0.60	0.078	(0.597)	0.070	0.008

(Loss Rate Not Used)

Sum = 100.0

Sum = 2.2

Flood volume = Effective rainfall 0.18(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 0.90(In)

Total soil loss = 0.651(Ac.Ft)

Total rainfall = 1.08(In)
 Flood volume = 5789.0 Cubic Feet
 Total soil loss = 28350.9 Cubic Feet

Peak flow rate of this hydrograph = 3.524(CFS)

+++++
 3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0005	0.08	Q			
0+10	0.0015	0.14	Q			
0+15	0.0024	0.13	Q			
0+20	0.0034	0.15	QV			
0+25	0.0046	0.17	QV			
0+30	0.0059	0.19	QV			
0+35	0.0071	0.18	Q V			
0+40	0.0085	0.19	Q V			
0+45	0.0099	0.20	Q V			
0+50	0.0111	0.19	Q V			
0+55	0.0124	0.18	Q V			
1+ 0	0.0137	0.19	Q V			
1+ 5	0.0153	0.23	Q V			
1+10	0.0170	0.25	Q V			
1+15	0.0187	0.25	Q V			
1+20	0.0203	0.24	Q V			
1+25	0.0222	0.27	Q V			
1+30	0.0242	0.30	Q V			
1+35	0.0262	0.29	Q V			
1+40	0.0282	0.29	Q V			
1+45	0.0305	0.34	Q V			
1+50	0.0330	0.36	Q V			
1+55	0.0354	0.34	Q V			
2+ 0	0.0377	0.34	Q V			
2+ 5	0.0401	0.35	Q V			
2+10	0.0430	0.42	Q V			
2+15	0.0465	0.52	Q V			
2+20	0.0497	0.47	Q V			
2+25	0.0602	1.51	Q V			
2+30	0.0782	2.63	Q V			
2+35	0.1025	3.52	Q V			
2+40	0.1206	2.62	Q V			
2+45	0.1276	1.02	Q V			
2+50	0.1301	0.36	Q V			
2+55	0.1316	0.23	Q V			
3+ 0	0.1325	0.13	Q V			
3+ 5	0.1328	0.04	Q V			
3+10	0.1329	0.01	Q V			

3+15 0.1329 0.00 Q | | | v

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh65.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
5 YR - 6 HR STORM AMC I

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	1.10	10.73

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	2.75	26.81

STORM EVENT (YEAR) = 5.00
 Area Averaged 2-Year Rainfall = 1.100 (In)
 Area Averaged 100-Year Rainfall = 2.750 (In)

Point rain (area averaged) = 1.486 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 1.486 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	47.4	0.597	0.000	0.597	1.000	0.597
Sum (F) =						

0.597

Area averaged mean soil loss (F) (In/Hr) = 0.597
 Minimum soil loss rate ((In/Hr)) = 0.299
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.900

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593
			4.605
			3.443
			0.580
			0.140

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.50	0.089	(0.597)	0.080	0.009
2.	0.17	0.60	0.107	(0.597)	0.096	0.011
3.	0.25	0.60	0.107	(0.597)	0.096	0.011
4.	0.33	0.60	0.107	(0.597)	0.096	0.011
5.	0.42	0.60	0.107	(0.597)	0.096	0.011
6.	0.50	0.70	0.125	(0.597)	0.112	0.012
7.	0.58	0.70	0.125	(0.597)	0.112	0.012
8.	0.67	0.70	0.125	(0.597)	0.112	0.012
9.	0.75	0.70	0.125	(0.597)	0.112	0.012
10.	0.83	0.70	0.125	(0.597)	0.112	0.012
11.	0.92	0.70	0.125	(0.597)	0.112	0.012
12.	1.00	0.80	0.143	(0.597)	0.128	0.014
13.	1.08	0.80	0.143	(0.597)	0.128	0.014
14.	1.17	0.80	0.143	(0.597)	0.128	0.014
15.	1.25	0.80	0.143	(0.597)	0.128	0.014
16.	1.33	0.80	0.143	(0.597)	0.128	0.014
17.	1.42	0.80	0.143	(0.597)	0.128	0.014
18.	1.50	0.80	0.143	(0.597)	0.128	0.014
19.	1.58	0.80	0.143	(0.597)	0.128	0.014
20.	1.67	0.80	0.143	(0.597)	0.128	0.014
21.	1.75	0.80	0.143	(0.597)	0.128	0.014
22.	1.83	0.80	0.143	(0.597)	0.128	0.014
23.	1.92	0.80	0.143	(0.597)	0.128	0.014
24.	2.00	0.90	0.161	(0.597)	0.144	0.016
25.	2.08	0.80	0.143	(0.597)	0.128	0.014
26.	2.17	0.90	0.161	(0.597)	0.144	0.016
27.	2.25	0.90	0.161	(0.597)	0.144	0.016
28.	2.33	0.90	0.161	(0.597)	0.144	0.016
29.	2.42	0.90	0.161	(0.597)	0.144	0.016
30.	2.50	0.90	0.161	(0.597)	0.144	0.016
31.	2.58	0.90	0.161	(0.597)	0.144	0.016
32.	2.67	0.90	0.161	(0.597)	0.144	0.016
33.	2.75	1.00	0.178	(0.597)	0.161	0.018
34.	2.83	1.00	0.178	(0.597)	0.161	0.018
35.	2.92	1.00	0.178	(0.597)	0.161	0.018
36.	3.00	1.00	0.178	(0.597)	0.161	0.018
37.	3.08	1.00	0.178	(0.597)	0.161	0.018
38.	3.17	1.10	0.196	(0.597)	0.177	0.020
39.	3.25	1.10	0.196	(0.597)	0.177	0.020
40.	3.33	1.10	0.196	(0.597)	0.177	0.020
41.	3.42	1.20	0.214	(0.597)	0.193	0.021
42.	3.50	1.30	0.232	(0.597)	0.209	0.023

43.	3.58	1.40	0.250	(0.597)	0.225	0.025
44.	3.67	1.40	0.250	(0.597)	0.225	0.025
45.	3.75	1.50	0.268	(0.597)	0.241	0.027
46.	3.83	1.50	0.268	(0.597)	0.241	0.027
47.	3.92	1.60	0.285	(0.597)	0.257	0.029
48.	4.00	1.60	0.285	(0.597)	0.257	0.029
49.	4.08	1.70	0.303	(0.597)	0.273	0.030
50.	4.17	1.80	0.321	(0.597)	0.289	0.032
51.	4.25	1.90	0.339	(0.597)	0.305	0.034
52.	4.33	2.00	0.357	(0.597)	0.321	0.036
53.	4.42	2.10	0.375	(0.597)	0.337	0.037
54.	4.50	2.10	0.375	(0.597)	0.337	0.037
55.	4.58	2.20	0.392	(0.597)	0.353	0.039
56.	4.67	2.30	0.410	(0.597)	0.369	0.041
57.	4.75	2.40	0.428	(0.597)	0.385	0.043
58.	4.83	2.40	0.428	(0.597)	0.385	0.043
59.	4.92	2.50	0.446	(0.597)	0.401	0.045
60.	5.00	2.60	0.464	(0.597)	0.417	0.046
61.	5.08	3.10	0.553	(0.597)	0.498	0.055
62.	5.17	3.60	0.642	(0.597)	0.578	0.064
63.	5.25	3.90	0.696	0.597	(0.626)	0.098
64.	5.33	4.20	0.749	0.597	(0.674)	0.152
65.	5.42	4.70	0.838	0.597	(0.755)	0.241
66.	5.50	5.60	0.999	0.597	(0.899)	0.401
67.	5.58	1.90	0.339	(0.597)	0.305	0.034
68.	5.67	0.90	0.161	(0.597)	0.144	0.016
69.	5.75	0.60	0.107	(0.597)	0.096	0.011
70.	5.83	0.50	0.089	(0.597)	0.080	0.009
71.	5.92	0.30	0.054	(0.597)	0.048	0.005
72.	6.00	0.20	0.036	(0.597)	0.032	0.004

(Loss Rate Not Used)

Sum = 100.0

Sum = 2.3

Flood volume = Effective rainfall 0.20(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 1.29(In)

Total soil loss = 0.936(Ac.Ft)

Total rainfall = 1.49(In)

Flood volume = 6178.3 Cubic Feet

Total soil loss = 40764.5 Cubic Feet

Peak flow rate of this hydrograph = 2.781(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0003	0.04	Q				
0+10	0.0008	0.08	Q				

0+15	0.0015	0.09	Q							
0+20	0.0021	0.09	Q							
0+25	0.0028	0.09	Q							
0+30	0.0035	0.10	Q							
0+35	0.0042	0.11	QV							
0+40	0.0050	0.11	QV							
0+45	0.0057	0.11	QV							
0+50	0.0065	0.11	QV							
0+55	0.0072	0.11	Q V							
1+ 0	0.0080	0.12	Q V							
1+ 5	0.0089	0.12	Q V							
1+10	0.0097	0.12	Q V							
1+15	0.0106	0.13	Q V							
1+20	0.0115	0.13	Q V							
1+25	0.0123	0.13	Q V							
1+30	0.0132	0.13	Q V							
1+35	0.0141	0.13	Q V							
1+40	0.0149	0.13	Q V							
1+45	0.0158	0.13	Q V							
1+50	0.0166	0.13	Q V							
1+55	0.0175	0.13	Q V							
2+ 0	0.0184	0.13	Q V							
2+ 5	0.0193	0.13	Q V							
2+10	0.0203	0.13	Q V							
2+15	0.0212	0.14	Q V							
2+20	0.0222	0.14	Q V							
2+25	0.0232	0.14	Q V							
2+30	0.0241	0.14	Q V							
2+35	0.0251	0.14	Q V							
2+40	0.0261	0.14	Q V							
2+45	0.0271	0.15	Q V							
2+50	0.0282	0.16	Q V							
2+55	0.0292	0.16	Q V							
3+ 0	0.0303	0.16	Q V							
3+ 5	0.0314	0.16	Q V							
3+10	0.0325	0.16	Q V							
3+15	0.0337	0.17	Q V							
3+20	0.0349	0.17	Q V							
3+25	0.0361	0.18	Q V							
3+30	0.0375	0.19	Q V							
3+35	0.0389	0.21	Q V							
3+40	0.0404	0.22	Q V							
3+45	0.0420	0.23	Q V							
3+50	0.0436	0.23	Q V							
3+55	0.0453	0.24	Q V							
4+ 0	0.0470	0.25	Q V							
4+ 5	0.0487	0.26	Q V							
4+10	0.0506	0.27	Q V							
4+15	0.0526	0.29	Q V							
4+20	0.0547	0.30	Q V							
4+25	0.0569	0.32	Q V							
4+30	0.0592	0.33	Q V							
4+35	0.0615	0.34	Q V							
4+40	0.0639	0.35	Q V							

4+45	0.0664	0.37	Q		V			
4+50	0.0690	0.37	Q		V			
4+55	0.0716	0.38	Q		V			
5+ 0	0.0744	0.40	Q		V			
5+ 5	0.0775	0.45	Q		V			
5+10	0.0810	0.52	Q		V			
5+15	0.0859	0.71	Q		V			
5+20	0.0934	1.08	Q		V			
5+25	0.1051	1.70	Q		V			
5+30	0.1242	2.78	Q				V	
5+35	0.1359	1.70	Q				V	
5+40	0.1391	0.46	Q				V	
5+45	0.1403	0.18	Q				V	
5+50	0.1410	0.09	Q				V	
5+55	0.1414	0.06	Q				V	
6+ 0	0.1417	0.04	Q				V	
6+ 5	0.1418	0.02	Q				V	
6+10	0.1418	0.00	Q				V	
6+15	0.1418	0.00	Q				V	

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh245.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
5 YR - 24 HR STORM AMC I

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	1.90	18.52

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	5.50	53.63

STORM EVENT (YEAR) = 5.00
 Area Averaged 2-Year Rainfall = 1.900 (In)
 Area Averaged 100-Year Rainfall = 5.500 (In)

Point rain (area averaged) = 2.743 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.743 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	47.4	0.597	0.000	0.597	1.000	0.597
Sum (F) =						

0.597

Area averaged mean soil loss (F) (In/Hr) = 0.597
 Minimum soil loss rate ((In/Hr)) = 0.299
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.900

-

U n i t H y d r o g r a p h VALLEY S-Curve

 Unit Hydrograph Data

-

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593
			4.605
			3.443
			0.580
			0.140

-

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.07	0.022	(1.059)	0.020	0.002
2.	0.17	0.07	0.022	(1.055)	0.020	0.002
3.	0.25	0.07	0.022	(1.051)	0.020	0.002
4.	0.33	0.10	0.033	(1.047)	0.030	0.003
5.	0.42	0.10	0.033	(1.043)	0.030	0.003
6.	0.50	0.10	0.033	(1.039)	0.030	0.003
7.	0.58	0.10	0.033	(1.035)	0.030	0.003
8.	0.67	0.10	0.033	(1.031)	0.030	0.003
9.	0.75	0.10	0.033	(1.027)	0.030	0.003
10.	0.83	0.13	0.044	(1.023)	0.040	0.004
11.	0.92	0.13	0.044	(1.019)	0.040	0.004
12.	1.00	0.13	0.044	(1.015)	0.040	0.004
13.	1.08	0.10	0.033	(1.011)	0.030	0.003
14.	1.17	0.10	0.033	(1.007)	0.030	0.003
15.	1.25	0.10	0.033	(1.003)	0.030	0.003
16.	1.33	0.10	0.033	(0.999)	0.030	0.003
17.	1.42	0.10	0.033	(0.995)	0.030	0.003
18.	1.50	0.10	0.033	(0.991)	0.030	0.003
19.	1.58	0.10	0.033	(0.987)	0.030	0.003
20.	1.67	0.10	0.033	(0.983)	0.030	0.003
21.	1.75	0.10	0.033	(0.979)	0.030	0.003
22.	1.83	0.13	0.044	(0.975)	0.040	0.004
23.	1.92	0.13	0.044	(0.971)	0.040	0.004
24.	2.00	0.13	0.044	(0.967)	0.040	0.004
25.	2.08	0.13	0.044	(0.963)	0.040	0.004
26.	2.17	0.13	0.044	(0.959)	0.040	0.004
27.	2.25	0.13	0.044	(0.955)	0.040	0.004
28.	2.33	0.13	0.044	(0.951)	0.040	0.004
29.	2.42	0.13	0.044	(0.947)	0.040	0.004
30.	2.50	0.13	0.044	(0.944)	0.040	0.004
31.	2.58	0.17	0.055	(0.940)	0.049	0.005
32.	2.67	0.17	0.055	(0.936)	0.049	0.005
33.	2.75	0.17	0.055	(0.932)	0.049	0.005
34.	2.83	0.17	0.055	(0.928)	0.049	0.005
35.	2.92	0.17	0.055	(0.924)	0.049	0.005
36.	3.00	0.17	0.055	(0.921)	0.049	0.005
37.	3.08	0.17	0.055	(0.917)	0.049	0.005
38.	3.17	0.17	0.055	(0.913)	0.049	0.005
39.	3.25	0.17	0.055	(0.909)	0.049	0.005
40.	3.33	0.17	0.055	(0.905)	0.049	0.005
41.	3.42	0.17	0.055	(0.902)	0.049	0.005
42.	3.50	0.17	0.055	(0.898)	0.049	0.005

43.	3.58	0.17	0.055	(0.894)	0.049	0.005
44.	3.67	0.17	0.055	(0.890)	0.049	0.005
45.	3.75	0.17	0.055	(0.887)	0.049	0.005
46.	3.83	0.20	0.066	(0.883)	0.059	0.007
47.	3.92	0.20	0.066	(0.879)	0.059	0.007
48.	4.00	0.20	0.066	(0.875)	0.059	0.007
49.	4.08	0.20	0.066	(0.872)	0.059	0.007
50.	4.17	0.20	0.066	(0.868)	0.059	0.007
51.	4.25	0.20	0.066	(0.864)	0.059	0.007
52.	4.33	0.23	0.077	(0.861)	0.069	0.008
53.	4.42	0.23	0.077	(0.857)	0.069	0.008
54.	4.50	0.23	0.077	(0.853)	0.069	0.008
55.	4.58	0.23	0.077	(0.850)	0.069	0.008
56.	4.67	0.23	0.077	(0.846)	0.069	0.008
57.	4.75	0.23	0.077	(0.842)	0.069	0.008
58.	4.83	0.27	0.088	(0.839)	0.079	0.009
59.	4.92	0.27	0.088	(0.835)	0.079	0.009
60.	5.00	0.27	0.088	(0.831)	0.079	0.009
61.	5.08	0.20	0.066	(0.828)	0.059	0.007
62.	5.17	0.20	0.066	(0.824)	0.059	0.007
63.	5.25	0.20	0.066	(0.821)	0.059	0.007
64.	5.33	0.23	0.077	(0.817)	0.069	0.008
65.	5.42	0.23	0.077	(0.813)	0.069	0.008
66.	5.50	0.23	0.077	(0.810)	0.069	0.008
67.	5.58	0.27	0.088	(0.806)	0.079	0.009
68.	5.67	0.27	0.088	(0.803)	0.079	0.009
69.	5.75	0.27	0.088	(0.799)	0.079	0.009
70.	5.83	0.27	0.088	(0.796)	0.079	0.009
71.	5.92	0.27	0.088	(0.792)	0.079	0.009
72.	6.00	0.27	0.088	(0.789)	0.079	0.009
73.	6.08	0.30	0.099	(0.785)	0.089	0.010
74.	6.17	0.30	0.099	(0.782)	0.089	0.010
75.	6.25	0.30	0.099	(0.778)	0.089	0.010
76.	6.33	0.30	0.099	(0.775)	0.089	0.010
77.	6.42	0.30	0.099	(0.771)	0.089	0.010
78.	6.50	0.30	0.099	(0.768)	0.089	0.010
79.	6.58	0.33	0.110	(0.764)	0.099	0.011
80.	6.67	0.33	0.110	(0.761)	0.099	0.011
81.	6.75	0.33	0.110	(0.757)	0.099	0.011
82.	6.83	0.33	0.110	(0.754)	0.099	0.011
83.	6.92	0.33	0.110	(0.751)	0.099	0.011
84.	7.00	0.33	0.110	(0.747)	0.099	0.011
85.	7.08	0.33	0.110	(0.744)	0.099	0.011
86.	7.17	0.33	0.110	(0.740)	0.099	0.011
87.	7.25	0.33	0.110	(0.737)	0.099	0.011
88.	7.33	0.37	0.121	(0.734)	0.109	0.012
89.	7.42	0.37	0.121	(0.730)	0.109	0.012
90.	7.50	0.37	0.121	(0.727)	0.109	0.012
91.	7.58	0.40	0.132	(0.724)	0.119	0.013
92.	7.67	0.40	0.132	(0.720)	0.119	0.013
93.	7.75	0.40	0.132	(0.717)	0.119	0.013
94.	7.83	0.43	0.143	(0.714)	0.128	0.014
95.	7.92	0.43	0.143	(0.710)	0.128	0.014
96.	8.00	0.43	0.143	(0.707)	0.128	0.014

97.	8.08	0.50	0.165	(0.704)	0.148	0.016
98.	8.17	0.50	0.165	(0.701)	0.148	0.016
99.	8.25	0.50	0.165	(0.697)	0.148	0.016
100.	8.33	0.50	0.165	(0.694)	0.148	0.016
101.	8.42	0.50	0.165	(0.691)	0.148	0.016
102.	8.50	0.50	0.165	(0.688)	0.148	0.016
103.	8.58	0.53	0.176	(0.684)	0.158	0.018
104.	8.67	0.53	0.176	(0.681)	0.158	0.018
105.	8.75	0.53	0.176	(0.678)	0.158	0.018
106.	8.83	0.57	0.187	(0.675)	0.168	0.019
107.	8.92	0.57	0.187	(0.671)	0.168	0.019
108.	9.00	0.57	0.187	(0.668)	0.168	0.019
109.	9.08	0.63	0.208	(0.665)	0.188	0.021
110.	9.17	0.63	0.208	(0.662)	0.188	0.021
111.	9.25	0.63	0.208	(0.659)	0.188	0.021
112.	9.33	0.67	0.219	(0.656)	0.198	0.022
113.	9.42	0.67	0.219	(0.653)	0.198	0.022
114.	9.50	0.67	0.219	(0.649)	0.198	0.022
115.	9.58	0.70	0.230	(0.646)	0.207	0.023
116.	9.67	0.70	0.230	(0.643)	0.207	0.023
117.	9.75	0.70	0.230	(0.640)	0.207	0.023
118.	9.83	0.73	0.241	(0.637)	0.217	0.024
119.	9.92	0.73	0.241	(0.634)	0.217	0.024
120.	10.00	0.73	0.241	(0.631)	0.217	0.024
121.	10.08	0.50	0.165	(0.628)	0.148	0.016
122.	10.17	0.50	0.165	(0.625)	0.148	0.016
123.	10.25	0.50	0.165	(0.622)	0.148	0.016
124.	10.33	0.50	0.165	(0.619)	0.148	0.016
125.	10.42	0.50	0.165	(0.616)	0.148	0.016
126.	10.50	0.50	0.165	(0.613)	0.148	0.016
127.	10.58	0.67	0.219	(0.610)	0.198	0.022
128.	10.67	0.67	0.219	(0.607)	0.198	0.022
129.	10.75	0.67	0.219	(0.604)	0.198	0.022
130.	10.83	0.67	0.219	(0.601)	0.198	0.022
131.	10.92	0.67	0.219	(0.598)	0.198	0.022
132.	11.00	0.67	0.219	(0.595)	0.198	0.022
133.	11.08	0.63	0.208	(0.592)	0.188	0.021
134.	11.17	0.63	0.208	(0.589)	0.188	0.021
135.	11.25	0.63	0.208	(0.586)	0.188	0.021
136.	11.33	0.63	0.208	(0.583)	0.188	0.021
137.	11.42	0.63	0.208	(0.580)	0.188	0.021
138.	11.50	0.63	0.208	(0.578)	0.188	0.021
139.	11.58	0.57	0.187	(0.575)	0.168	0.019
140.	11.67	0.57	0.187	(0.572)	0.168	0.019
141.	11.75	0.57	0.187	(0.569)	0.168	0.019
142.	11.83	0.60	0.198	(0.566)	0.178	0.020
143.	11.92	0.60	0.198	(0.563)	0.178	0.020
144.	12.00	0.60	0.198	(0.561)	0.178	0.020
145.	12.08	0.83	0.274	(0.558)	0.247	0.027
146.	12.17	0.83	0.274	(0.555)	0.247	0.027
147.	12.25	0.83	0.274	(0.552)	0.247	0.027
148.	12.33	0.87	0.285	(0.549)	0.257	0.029
149.	12.42	0.87	0.285	(0.547)	0.257	0.029
150.	12.50	0.87	0.285	(0.544)	0.257	0.029

151.	12.58	0.93	0.307	(0.541)	0.277	0.031
152.	12.67	0.93	0.307	(0.538)	0.277	0.031
153.	12.75	0.93	0.307	(0.536)	0.277	0.031
154.	12.83	0.97	0.318	(0.533)	0.286	0.032
155.	12.92	0.97	0.318	(0.530)	0.286	0.032
156.	13.00	0.97	0.318	(0.528)	0.286	0.032
157.	13.08	1.13	0.373	(0.525)	0.336	0.037
158.	13.17	1.13	0.373	(0.522)	0.336	0.037
159.	13.25	1.13	0.373	(0.520)	0.336	0.037
160.	13.33	1.13	0.373	(0.517)	0.336	0.037
161.	13.42	1.13	0.373	(0.514)	0.336	0.037
162.	13.50	1.13	0.373	(0.512)	0.336	0.037
163.	13.58	0.77	0.252	(0.509)	0.227	0.025
164.	13.67	0.77	0.252	(0.507)	0.227	0.025
165.	13.75	0.77	0.252	(0.504)	0.227	0.025
166.	13.83	0.77	0.252	(0.501)	0.227	0.025
167.	13.92	0.77	0.252	(0.499)	0.227	0.025
168.	14.00	0.77	0.252	(0.496)	0.227	0.025
169.	14.08	0.90	0.296	(0.494)	0.267	0.030
170.	14.17	0.90	0.296	(0.491)	0.267	0.030
171.	14.25	0.90	0.296	(0.489)	0.267	0.030
172.	14.33	0.87	0.285	(0.486)	0.257	0.029
173.	14.42	0.87	0.285	(0.484)	0.257	0.029
174.	14.50	0.87	0.285	(0.481)	0.257	0.029
175.	14.58	0.87	0.285	(0.479)	0.257	0.029
176.	14.67	0.87	0.285	(0.476)	0.257	0.029
177.	14.75	0.87	0.285	(0.474)	0.257	0.029
178.	14.83	0.83	0.274	(0.471)	0.247	0.027
179.	14.92	0.83	0.274	(0.469)	0.247	0.027
180.	15.00	0.83	0.274	(0.467)	0.247	0.027
181.	15.08	0.80	0.263	(0.464)	0.237	0.026
182.	15.17	0.80	0.263	(0.462)	0.237	0.026
183.	15.25	0.80	0.263	(0.460)	0.237	0.026
184.	15.33	0.77	0.252	(0.457)	0.227	0.025
185.	15.42	0.77	0.252	(0.455)	0.227	0.025
186.	15.50	0.77	0.252	(0.452)	0.227	0.025
187.	15.58	0.63	0.208	(0.450)	0.188	0.021
188.	15.67	0.63	0.208	(0.448)	0.188	0.021
189.	15.75	0.63	0.208	(0.446)	0.188	0.021
190.	15.83	0.63	0.208	(0.443)	0.188	0.021
191.	15.92	0.63	0.208	(0.441)	0.188	0.021
192.	16.00	0.63	0.208	(0.439)	0.188	0.021
193.	16.08	0.13	0.044	(0.437)	0.040	0.004
194.	16.17	0.13	0.044	(0.434)	0.040	0.004
195.	16.25	0.13	0.044	(0.432)	0.040	0.004
196.	16.33	0.13	0.044	(0.430)	0.040	0.004
197.	16.42	0.13	0.044	(0.428)	0.040	0.004
198.	16.50	0.13	0.044	(0.425)	0.040	0.004
199.	16.58	0.10	0.033	(0.423)	0.030	0.003
200.	16.67	0.10	0.033	(0.421)	0.030	0.003
201.	16.75	0.10	0.033	(0.419)	0.030	0.003
202.	16.83	0.10	0.033	(0.417)	0.030	0.003
203.	16.92	0.10	0.033	(0.415)	0.030	0.003
204.	17.00	0.10	0.033	(0.413)	0.030	0.003

205.	17.08	0.17	0.055	(0.411)	0.049	0.005
206.	17.17	0.17	0.055	(0.409)	0.049	0.005
207.	17.25	0.17	0.055	(0.407)	0.049	0.005
208.	17.33	0.17	0.055	(0.404)	0.049	0.005
209.	17.42	0.17	0.055	(0.402)	0.049	0.005
210.	17.50	0.17	0.055	(0.400)	0.049	0.005
211.	17.58	0.17	0.055	(0.398)	0.049	0.005
212.	17.67	0.17	0.055	(0.396)	0.049	0.005
213.	17.75	0.17	0.055	(0.394)	0.049	0.005
214.	17.83	0.13	0.044	(0.392)	0.040	0.004
215.	17.92	0.13	0.044	(0.391)	0.040	0.004
216.	18.00	0.13	0.044	(0.389)	0.040	0.004
217.	18.08	0.13	0.044	(0.387)	0.040	0.004
218.	18.17	0.13	0.044	(0.385)	0.040	0.004
219.	18.25	0.13	0.044	(0.383)	0.040	0.004
220.	18.33	0.13	0.044	(0.381)	0.040	0.004
221.	18.42	0.13	0.044	(0.379)	0.040	0.004
222.	18.50	0.13	0.044	(0.377)	0.040	0.004
223.	18.58	0.10	0.033	(0.376)	0.030	0.003
224.	18.67	0.10	0.033	(0.374)	0.030	0.003
225.	18.75	0.10	0.033	(0.372)	0.030	0.003
226.	18.83	0.07	0.022	(0.370)	0.020	0.002
227.	18.92	0.07	0.022	(0.368)	0.020	0.002
228.	19.00	0.07	0.022	(0.367)	0.020	0.002
229.	19.08	0.10	0.033	(0.365)	0.030	0.003
230.	19.17	0.10	0.033	(0.363)	0.030	0.003
231.	19.25	0.10	0.033	(0.361)	0.030	0.003
232.	19.33	0.13	0.044	(0.360)	0.040	0.004
233.	19.42	0.13	0.044	(0.358)	0.040	0.004
234.	19.50	0.13	0.044	(0.356)	0.040	0.004
235.	19.58	0.10	0.033	(0.355)	0.030	0.003
236.	19.67	0.10	0.033	(0.353)	0.030	0.003
237.	19.75	0.10	0.033	(0.352)	0.030	0.003
238.	19.83	0.07	0.022	(0.350)	0.020	0.002
239.	19.92	0.07	0.022	(0.348)	0.020	0.002
240.	20.00	0.07	0.022	(0.347)	0.020	0.002
241.	20.08	0.10	0.033	(0.345)	0.030	0.003
242.	20.17	0.10	0.033	(0.344)	0.030	0.003
243.	20.25	0.10	0.033	(0.342)	0.030	0.003
244.	20.33	0.10	0.033	(0.341)	0.030	0.003
245.	20.42	0.10	0.033	(0.339)	0.030	0.003
246.	20.50	0.10	0.033	(0.338)	0.030	0.003
247.	20.58	0.10	0.033	(0.337)	0.030	0.003
248.	20.67	0.10	0.033	(0.335)	0.030	0.003
249.	20.75	0.10	0.033	(0.334)	0.030	0.003
250.	20.83	0.07	0.022	(0.332)	0.020	0.002
251.	20.92	0.07	0.022	(0.331)	0.020	0.002
252.	21.00	0.07	0.022	(0.330)	0.020	0.002
253.	21.08	0.10	0.033	(0.328)	0.030	0.003
254.	21.17	0.10	0.033	(0.327)	0.030	0.003
255.	21.25	0.10	0.033	(0.326)	0.030	0.003
256.	21.33	0.07	0.022	(0.325)	0.020	0.002
257.	21.42	0.07	0.022	(0.323)	0.020	0.002
258.	21.50	0.07	0.022	(0.322)	0.020	0.002

259.	21.58	0.10	0.033	(0.321)	0.030	0.003
260.	21.67	0.10	0.033	(0.320)	0.030	0.003
261.	21.75	0.10	0.033	(0.319)	0.030	0.003
262.	21.83	0.07	0.022	(0.318)	0.020	0.002
263.	21.92	0.07	0.022	(0.317)	0.020	0.002
264.	22.00	0.07	0.022	(0.315)	0.020	0.002
265.	22.08	0.10	0.033	(0.314)	0.030	0.003
266.	22.17	0.10	0.033	(0.313)	0.030	0.003
267.	22.25	0.10	0.033	(0.312)	0.030	0.003
268.	22.33	0.07	0.022	(0.311)	0.020	0.002
269.	22.42	0.07	0.022	(0.310)	0.020	0.002
270.	22.50	0.07	0.022	(0.310)	0.020	0.002
271.	22.58	0.07	0.022	(0.309)	0.020	0.002
272.	22.67	0.07	0.022	(0.308)	0.020	0.002
273.	22.75	0.07	0.022	(0.307)	0.020	0.002
274.	22.83	0.07	0.022	(0.306)	0.020	0.002
275.	22.92	0.07	0.022	(0.305)	0.020	0.002
276.	23.00	0.07	0.022	(0.305)	0.020	0.002
277.	23.08	0.07	0.022	(0.304)	0.020	0.002
278.	23.17	0.07	0.022	(0.303)	0.020	0.002
279.	23.25	0.07	0.022	(0.303)	0.020	0.002
280.	23.33	0.07	0.022	(0.302)	0.020	0.002
281.	23.42	0.07	0.022	(0.301)	0.020	0.002
282.	23.50	0.07	0.022	(0.301)	0.020	0.002
283.	23.58	0.07	0.022	(0.300)	0.020	0.002
284.	23.67	0.07	0.022	(0.300)	0.020	0.002
285.	23.75	0.07	0.022	(0.300)	0.020	0.002
286.	23.83	0.07	0.022	(0.299)	0.020	0.002
287.	23.92	0.07	0.022	(0.299)	0.020	0.002
288.	24.00	0.07	0.022	(0.299)	0.020	0.002

(Loss Rate Not Used)

Sum = 100.0

Sum = 3.3

Flood volume = Effective rainfall 0.27(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)

Total soil loss = 2.47(In)

Total soil loss = 1.790(Ac.Ft)

Total rainfall = 2.74(In)

Flood volume = 8663.2 Cubic Feet

Total soil loss = 77968.6 Cubic Feet

Peak flow rate of this hydrograph = 0.327(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0001	0.01	Q			
0+10	0.0002	0.02	Q			

0+15	0.0003	0.02	Q				
0+20	0.0005	0.02	Q				
0+25	0.0007	0.03	Q				
0+30	0.0009	0.03	Q				
0+35	0.0011	0.03	Q				
0+40	0.0013	0.03	Q				
0+45	0.0015	0.03	Q				
0+50	0.0017	0.03	Q				
0+55	0.0020	0.04	Q				
1+ 0	0.0022	0.04	Q				
1+ 5	0.0025	0.03	Q				
1+10	0.0027	0.03	Q				
1+15	0.0029	0.03	Q				
1+20	0.0031	0.03	Q				
1+25	0.0033	0.03	Q				
1+30	0.0035	0.03	Q				
1+35	0.0037	0.03	Q				
1+40	0.0039	0.03	Q				
1+45	0.0041	0.03	Q				
1+50	0.0043	0.03	Q				
1+55	0.0046	0.04	Q				
2+ 0	0.0048	0.04	Q				
2+ 5	0.0051	0.04	QV				
2+10	0.0054	0.04	QV				
2+15	0.0056	0.04	QV				
2+20	0.0059	0.04	QV				
2+25	0.0061	0.04	QV				
2+30	0.0064	0.04	QV				
2+35	0.0067	0.04	QV				
2+40	0.0070	0.05	QV				
2+45	0.0074	0.05	QV				
2+50	0.0077	0.05	QV				
2+55	0.0080	0.05	QV				
3+ 0	0.0084	0.05	QV				
3+ 5	0.0087	0.05	QV				
3+10	0.0090	0.05	QV				
3+15	0.0094	0.05	QV				
3+20	0.0097	0.05	QV				
3+25	0.0100	0.05	Q V				
3+30	0.0104	0.05	Q V				
3+35	0.0107	0.05	Q V				
3+40	0.0110	0.05	Q V				
3+45	0.0113	0.05	Q V				
3+50	0.0117	0.05	Q V				
3+55	0.0121	0.06	Q V				
4+ 0	0.0125	0.06	Q V				
4+ 5	0.0129	0.06	Q V				
4+10	0.0133	0.06	Q V				
4+15	0.0137	0.06	Q V				
4+20	0.0141	0.06	Q V				
4+25	0.0146	0.07	Q V				
4+30	0.0150	0.07	Q V				
4+35	0.0155	0.07	Q V				
4+40	0.0160	0.07	Q V				

4+45	0.0164	0.07	Q	V				
4+50	0.0169	0.07	Q	V				
4+55	0.0175	0.08	Q	V				
5+ 0	0.0180	0.08	Q	V				
5+ 5	0.0185	0.07	Q	V				
5+10	0.0189	0.06	Q	V				
5+15	0.0193	0.06	Q	V				
5+20	0.0197	0.06	Q	V				
5+25	0.0202	0.07	Q	V				
5+30	0.0206	0.07	Q	V				
5+35	0.0211	0.07	Q	V				
5+40	0.0216	0.08	Q	V				
5+45	0.0222	0.08	Q	V				
5+50	0.0227	0.08	Q	V				
5+55	0.0232	0.08	Q	V				
6+ 0	0.0238	0.08	Q	V				
6+ 5	0.0243	0.08	Q	V				
6+10	0.0249	0.09	Q	V				
6+15	0.0255	0.09	Q	V				
6+20	0.0261	0.09	Q	V				
6+25	0.0267	0.09	Q	V				
6+30	0.0273	0.09	Q	V				
6+35	0.0279	0.09	Q	V				
6+40	0.0286	0.10	Q	V				
6+45	0.0293	0.10	Q	V				
6+50	0.0299	0.10	Q	V				
6+55	0.0306	0.10	Q	V				
7+ 0	0.0312	0.10	Q	V				
7+ 5	0.0319	0.10	Q	V				
7+10	0.0326	0.10	Q	V				
7+15	0.0332	0.10	Q	V				
7+20	0.0339	0.10	Q	V				
7+25	0.0347	0.11	Q	V				
7+30	0.0354	0.11	Q	V				
7+35	0.0361	0.11	Q	V				
7+40	0.0369	0.11	Q	V				
7+45	0.0377	0.12	Q	V				
7+50	0.0386	0.12	Q	V				
7+55	0.0394	0.12	Q	V				
8+ 0	0.0403	0.12	Q	V				
8+ 5	0.0412	0.14	Q	V				
8+10	0.0422	0.14	Q	V				
8+15	0.0432	0.14	Q	V				
8+20	0.0442	0.14	Q	V				
8+25	0.0452	0.14	Q	V				
8+30	0.0462	0.14	Q	V				
8+35	0.0472	0.15	Q	V				
8+40	0.0483	0.15	Q	V				
8+45	0.0493	0.15	Q	V				
8+50	0.0504	0.16	Q	V				
8+55	0.0515	0.16	Q	V				
9+ 0	0.0527	0.16	Q	V				
9+ 5	0.0539	0.17	Q	V				
9+10	0.0551	0.18	Q	V				

9+15	0.0564	0.18	Q	V			
9+20	0.0577	0.19	Q	V			
9+25	0.0590	0.19	Q	V			
9+30	0.0603	0.19	Q	V			
9+35	0.0617	0.20	Q	V			
9+40	0.0630	0.20	Q	V			
9+45	0.0644	0.20	Q	V			
9+50	0.0659	0.21	Q	V			
9+55	0.0673	0.21	Q	V			
10+ 0	0.0688	0.21	Q	V			
10+ 5	0.0700	0.18	Q	V			
10+10	0.0710	0.15	Q	V			
10+15	0.0720	0.15	Q	V			
10+20	0.0730	0.14	Q	V			
10+25	0.0740	0.14	Q	V			
10+30	0.0750	0.14	Q	V			
10+35	0.0762	0.17	Q	V			
10+40	0.0775	0.19	Q	V			
10+45	0.0788	0.19	Q	V			
10+50	0.0801	0.19	Q	V			
10+55	0.0814	0.19	Q	V			
11+ 0	0.0828	0.19	Q	V			
11+ 5	0.0841	0.19	Q	V			
11+10	0.0853	0.18	Q	V			
11+15	0.0866	0.18	Q	V			
11+20	0.0878	0.18	Q	V			
11+25	0.0891	0.18	Q	V			
11+30	0.0904	0.18	Q	V			
11+35	0.0916	0.17	Q	V			
11+40	0.0927	0.17	Q	V			
11+45	0.0938	0.16	Q	V			
11+50	0.0950	0.17	Q	V			
11+55	0.0962	0.17	Q	V			
12+ 0	0.0974	0.17	Q	V			
12+ 5	0.0988	0.21	Q	V			
12+10	0.1004	0.24	Q	V			
12+15	0.1021	0.24	Q	V			
12+20	0.1038	0.25	Q	V			
12+25	0.1055	0.25	Q	V			
12+30	0.1072	0.25	Q	V			
12+35	0.1090	0.26	Q	V			
12+40	0.1108	0.27	Q	V			
12+45	0.1127	0.27	Q	V			
12+50	0.1146	0.27	Q	V			
12+55	0.1165	0.28	Q	V			
13+ 0	0.1184	0.28	Q	V			
13+ 5	0.1205	0.30	Q	V			
13+10	0.1227	0.32	Q	V			
13+15	0.1250	0.33	Q	V			
13+20	0.1273	0.33	Q	V			
13+25	0.1295	0.33	Q	V			
13+30	0.1318	0.33	Q	V			
13+35	0.1336	0.27	Q	V			
13+40	0.1352	0.23	Q			V	

13+45	0.1368	0.22	Q			V		
13+50	0.1383	0.22	Q			V		
13+55	0.1398	0.22	Q			V		
14+ 0	0.1413	0.22	Q			V		
14+ 5	0.1430	0.24	Q			V		
14+10	0.1448	0.26	IQ			V		
14+15	0.1465	0.26	IQ			V		
14+20	0.1483	0.25	IQ			V		
14+25	0.1500	0.25	IQ			V		
14+30	0.1518	0.25	IQ			V		
14+35	0.1535	0.25	IQ			V		
14+40	0.1552	0.25	IQ			V		
14+45	0.1569	0.25	IQ			V		
14+50	0.1586	0.25	Q			V		
14+55	0.1603	0.24	Q			V		
15+ 0	0.1619	0.24	Q			V		
15+ 5	0.1636	0.24	Q			V		
15+10	0.1652	0.23	Q			V		
15+15	0.1667	0.23	Q			V		
15+20	0.1683	0.23	Q			V		
15+25	0.1698	0.22	Q			V		
15+30	0.1714	0.22	Q			V		
15+35	0.1727	0.20	Q			V		
15+40	0.1740	0.19	Q			V		
15+45	0.1753	0.18	Q			V		
15+50	0.1765	0.18	Q			V		
15+55	0.1778	0.18	Q			V		
16+ 0	0.1791	0.18	Q			V		
16+ 5	0.1798	0.11	Q			V		
16+10	0.1801	0.05	Q			V		
16+15	0.1804	0.04	Q			V		
16+20	0.1807	0.04	Q			V		
16+25	0.1810	0.04	Q			V		
16+30	0.1812	0.04	Q			V		
16+35	0.1815	0.03	Q			V		
16+40	0.1817	0.03	Q			V		
16+45	0.1819	0.03	Q			V		
16+50	0.1821	0.03	Q			V		
16+55	0.1823	0.03	Q			V		
17+ 0	0.1825	0.03	Q			V		
17+ 5	0.1827	0.04	Q			V		
17+10	0.1830	0.05	Q			V		
17+15	0.1834	0.05	Q			V		
17+20	0.1837	0.05	Q			V		
17+25	0.1840	0.05	Q			V		
17+30	0.1844	0.05	Q			V		
17+35	0.1847	0.05	Q			V		
17+40	0.1850	0.05	Q			V		
17+45	0.1854	0.05	Q			V		
17+50	0.1857	0.04	Q			V		
17+55	0.1859	0.04	Q			V		
18+ 0	0.1862	0.04	Q			V		
18+ 5	0.1865	0.04	Q			V		
18+10	0.1867	0.04	Q			V		

18+15	0.1870	0.04	Q				V	
18+20	0.1873	0.04	Q				V	
18+25	0.1875	0.04	Q				V	
18+30	0.1878	0.04	Q				V	
18+35	0.1880	0.03	Q				V	
18+40	0.1882	0.03	Q				V	
18+45	0.1884	0.03	Q				V	
18+50	0.1886	0.02	Q				V	
18+55	0.1887	0.02	Q				V	
19+ 0	0.1889	0.02	Q				V	
19+ 5	0.1890	0.02	Q				V	
19+10	0.1892	0.03	Q				V	
19+15	0.1894	0.03	Q				V	
19+20	0.1897	0.03	Q				V	
19+25	0.1899	0.04	Q				V	
19+30	0.1902	0.04	Q				V	
19+35	0.1904	0.03	Q				V	
19+40	0.1906	0.03	Q				V	
19+45	0.1908	0.03	Q				V	
19+50	0.1910	0.02	Q				V	
19+55	0.1911	0.02	Q				V	
20+ 0	0.1912	0.02	Q				V	
20+ 5	0.1914	0.02	Q				V	
20+10	0.1916	0.03	Q				V	
20+15	0.1918	0.03	Q				V	
20+20	0.1920	0.03	Q				V	
20+25	0.1922	0.03	Q				V	
20+30	0.1924	0.03	Q				V	
20+35	0.1926	0.03	Q				V	
20+40	0.1928	0.03	Q				V	
20+45	0.1930	0.03	Q				V	
20+50	0.1932	0.02	Q				V	
20+55	0.1933	0.02	Q				V	
21+ 0	0.1934	0.02	Q				V	
21+ 5	0.1936	0.02	Q				V	
21+10	0.1938	0.03	Q				V	
21+15	0.1940	0.03	Q				V	
21+20	0.1942	0.02	Q				V	
21+25	0.1943	0.02	Q				V	
21+30	0.1944	0.02	Q				V	
21+35	0.1946	0.02	Q				V	
21+40	0.1948	0.03	Q				V	
21+45	0.1950	0.03	Q				V	
21+50	0.1952	0.02	Q				V	
21+55	0.1953	0.02	Q				V	
22+ 0	0.1954	0.02	Q				V	
22+ 5	0.1956	0.02	Q				V	
22+10	0.1958	0.03	Q				V	
22+15	0.1960	0.03	Q				V	
22+20	0.1961	0.02	Q				V	
22+25	0.1963	0.02	Q				V	
22+30	0.1964	0.02	Q				V	
22+35	0.1965	0.02	Q				V	
22+40	0.1967	0.02	Q				V	

22+45	0.1968	0.02	Q				V
22+50	0.1969	0.02	Q				V
22+55	0.1971	0.02	Q				V
23+ 0	0.1972	0.02	Q				V
23+ 5	0.1973	0.02	Q				V
23+10	0.1975	0.02	Q				V
23+15	0.1976	0.02	Q				V
23+20	0.1977	0.02	Q				V
23+25	0.1979	0.02	Q				V
23+30	0.1980	0.02	Q				V
23+35	0.1981	0.02	Q				V
23+40	0.1983	0.02	Q				V
23+45	0.1984	0.02	Q				V
23+50	0.1985	0.02	Q				V
23+55	0.1987	0.02	Q				V
24+ 0	0.1988	0.02	Q				V
24+ 5	0.1989	0.01	Q				V
24+10	0.1989	0.00	Q				V
24+15	0.1989	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh110.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
10 YR -1 HR STORM AMC II

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	8.70	0.50	4.35

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	8.70	1.30	11.31

STORM EVENT (YEAR) = 10.00

Area Averaged 2-Year Rainfall = 0.500 (In)

Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.829 (In)

Areal adjustment factor = 99.99 %

Adjusted average point rain = 0.829 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	67.0	0.394	0.000	0.394	1.000	0.394
Sum (F) =						

0.394

Area averaged mean soil loss (F) (In/Hr) = 0.597

Minimum soil loss rate ((In/Hr)) = 0.299

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.900

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)

1	0.083	262.846	52.517	4.605

Sum =

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1. 0.08	4.20	0.418	(0.597)	0.376	0.042
2. 0.17	4.30	0.428	(0.597)	0.385	0.043
3. 0.25	5.00	0.497	(0.597)	0.448	0.050
4. 0.33	5.00	0.497	(0.597)	0.448	0.050
5. 0.42	5.80	0.577	(0.597)	0.519	0.058
6. 0.50	6.50	0.647	(0.597)	0.582	0.065
7. 0.58	7.40	0.736	0.597	(0.663)	0.139
8. 0.67	8.60	0.856	0.597	(0.770)	0.258
9. 0.75	12.30	1.224	0.597	(1.101)	0.626
10. 0.83	29.10	2.895	0.597	(2.606)	2.298
11. 0.92	6.80	0.677	0.597	(0.609)	0.079
12. 1.00	5.00	0.497	(0.597)	0.448	0.050

0+ 5	0.0013	0.19	Q				
0+10	0.0037	0.34	Q				
0+15	0.0064	0.40	QV				
0+20	0.0094	0.43	QV				
0+25	0.0127	0.47	Q V				

0+30	0.0163	0.53	QV				
0+35	0.0225	0.90	Q V				
0+40	0.0343	1.71	Q V				
0+45	0.0609	3.86	Q V				
0+50	0.1499	12.91			QV		
0+55	0.2096	8.68			Q		V
1+ 0	0.2229	1.92	Q				V
1+ 5	0.2266	0.54	Q				V
1+10	0.2269	0.04	Q				V
1+15	0.2269	0.01	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh310.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
10 YR - 3 HR STORM AMC II

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	0.80	7.80

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	2.00	19.50

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.800 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.294 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.294 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	67.0	0.394	0.000	0.394	1.000	0.394
Sum (F) =						

0.394

Area averaged mean soil loss (F) (In/Hr) = 0.597
Minimum soil loss rate ((In/Hr)) = 0.299
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	262.846	4.605
2	0.167	525.692	3.443
3	0.250	788.537	0.580
4	0.333	1051.383	0.140

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.202	(0.597)	0.182	0.020
2.	0.17	1.30	0.202	(0.597)	0.182	0.020
3.	0.25	1.10	0.171	(0.597)	0.154	0.017
4.	0.33	1.50	0.233	(0.597)	0.210	0.023
5.	0.42	1.50	0.233	(0.597)	0.210	0.023
6.	0.50	1.80	0.279	(0.597)	0.251	0.028
7.	0.58	1.50	0.233	(0.597)	0.210	0.023
8.	0.67	1.80	0.279	(0.597)	0.251	0.028
9.	0.75	1.80	0.279	(0.597)	0.251	0.028
10.	0.83	1.50	0.233	(0.597)	0.210	0.023
11.	0.92	1.60	0.248	(0.597)	0.224	0.025
12.	1.00	1.80	0.279	(0.597)	0.251	0.028
13.	1.08	2.20	0.342	(0.597)	0.307	0.034
14.	1.17	2.20	0.342	(0.597)	0.307	0.034
15.	1.25	2.20	0.342	(0.597)	0.307	0.034
16.	1.33	2.00	0.310	(0.597)	0.279	0.031
17.	1.42	2.60	0.404	(0.597)	0.363	0.040
18.	1.50	2.70	0.419	(0.597)	0.377	0.042
19.	1.58	2.40	0.373	(0.597)	0.335	0.037
20.	1.67	2.70	0.419	(0.597)	0.377	0.042
21.	1.75	3.30	0.512	(0.597)	0.461	0.051
22.	1.83	3.10	0.481	(0.597)	0.433	0.048
23.	1.92	2.90	0.450	(0.597)	0.405	0.045
24.	2.00	3.00	0.466	(0.597)	0.419	0.047
25.	2.08	3.10	0.481	(0.597)	0.433	0.048
26.	2.17	4.20	0.652	(0.597)	0.587	0.065
27.	2.25	5.00	0.776	0.597	(0.699)	0.179
28.	2.33	3.50	0.543	(0.597)	0.489	0.054
29.	2.42	6.80	1.056	0.597	(0.950)	0.458
30.	2.50	7.30	1.133	0.597	(1.020)	0.536
31.	2.58	8.20	1.273	0.597	(1.146)	0.675
32.	2.67	5.90	0.916	0.597	(0.824)	0.318
33.	2.75	2.00	0.310	(0.597)	0.279	0.031
34.	2.83	1.80	0.279	(0.597)	0.251	0.028
35.	2.92	1.80	0.279	(0.597)	0.251	0.028
36.	3.00	0.60	0.093	(0.597)	0.084	0.009

(Loss Rate Not Used)

Sum = 100.0

Sum = 3.2

Flood volume = Effective rainfall 0.27(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)

Total soil loss = 1.03(In)

Total soil loss = 0.744(Ac.Ft)

Total rainfall = 1.29(In)
 Flood volume = 8430.7 Cubic Feet
 Total soil loss = 32423.8 Cubic Feet

Peak flow rate of this hydrograph = 5.231(CFS)

+++++
 3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0006	0.09	Q			
0+10	0.0018	0.16	Q			
0+15	0.0029	0.16	Q			
0+20	0.0041	0.18	Q			
0+25	0.0055	0.20	QV			
0+30	0.0070	0.22	QV			
0+35	0.0085	0.22	QV			
0+40	0.0101	0.23	Q V			
0+45	0.0118	0.24	Q V			
0+50	0.0133	0.22	Q V			
0+55	0.0148	0.21	Q V			
1+ 0	0.0164	0.23	Q V			
1+ 5	0.0183	0.27	Q V			
1+10	0.0203	0.29	Q V			
1+15	0.0224	0.30	Q V			
1+20	0.0243	0.29	Q V			
1+25	0.0265	0.32	Q V			
1+30	0.0290	0.35	Q V			
1+35	0.0313	0.34	Q V			
1+40	0.0337	0.35	Q V			
1+45	0.0366	0.41	Q V			
1+50	0.0395	0.43	Q V			
1+55	0.0423	0.41	Q V			
2+ 0	0.0451	0.40	Q V			
2+ 5	0.0480	0.42	Q V			
2+10	0.0514	0.50	Q V			
2+15	0.0589	1.08	Q V			
2+20	0.0651	0.91	Q V			
2+25	0.0817	2.41	Q V			
2+30	0.1100	4.10	Q V			
2+35	0.1460	5.23	Q V			
2+40	0.1747	4.17	Q V			
2+45	0.1865	1.71	Q V			
2+50	0.1900	0.51	Q V			
2+55	0.1920	0.29	Q V			
3+ 0	0.1931	0.16	Q V			
3+ 5	0.1935	0.05	Q V			
3+10	0.1935	0.01	Q V			

3+15 0.1935 0.00 Q | | | V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh610.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
10 YR - 6 HR STORM AMC II

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	1.10	10.73

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	2.75	26.81

STORM EVENT (YEAR) = 10.00
 Area Averaged 2-Year Rainfall = 1.100 (In)
 Area Averaged 100-Year Rainfall = 2.750 (In)

Point rain (area averaged) = 1.779 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 1.779 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	67.0	0.394	0.000	0.394	1.000	0.394
Sum (F) =						

0.394

Area averaged mean soil loss (F) (In/Hr) = 0.597
 Minimum soil loss rate ((In/Hr)) = 0.299
 (for 24 hour storm duration)
 Note: User entry of the f value
 Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	4.605
2	0.167	525.692	3.443
3	0.250	788.537	0.580
4	0.333	1051.383	0.140

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.50	0.107	(0.597)	0.096	0.011
2.	0.17	0.60	0.128	(0.597)	0.115	0.013
3.	0.25	0.60	0.128	(0.597)	0.115	0.013
4.	0.33	0.60	0.128	(0.597)	0.115	0.013
5.	0.42	0.60	0.128	(0.597)	0.115	0.013
6.	0.50	0.70	0.149	(0.597)	0.134	0.015
7.	0.58	0.70	0.149	(0.597)	0.134	0.015
8.	0.67	0.70	0.149	(0.597)	0.134	0.015
9.	0.75	0.70	0.149	(0.597)	0.134	0.015
10.	0.83	0.70	0.149	(0.597)	0.134	0.015
11.	0.92	0.70	0.149	(0.597)	0.134	0.015
12.	1.00	0.80	0.171	(0.597)	0.154	0.017
13.	1.08	0.80	0.171	(0.597)	0.154	0.017
14.	1.17	0.80	0.171	(0.597)	0.154	0.017
15.	1.25	0.80	0.171	(0.597)	0.154	0.017
16.	1.33	0.80	0.171	(0.597)	0.154	0.017
17.	1.42	0.80	0.171	(0.597)	0.154	0.017
18.	1.50	0.80	0.171	(0.597)	0.154	0.017
19.	1.58	0.80	0.171	(0.597)	0.154	0.017
20.	1.67	0.80	0.171	(0.597)	0.154	0.017
21.	1.75	0.80	0.171	(0.597)	0.154	0.017
22.	1.83	0.80	0.171	(0.597)	0.154	0.017
23.	1.92	0.80	0.171	(0.597)	0.154	0.017
24.	2.00	0.90	0.192	(0.597)	0.173	0.019
25.	2.08	0.80	0.171	(0.597)	0.154	0.017
26.	2.17	0.90	0.192	(0.597)	0.173	0.019
27.	2.25	0.90	0.192	(0.597)	0.173	0.019
28.	2.33	0.90	0.192	(0.597)	0.173	0.019
29.	2.42	0.90	0.192	(0.597)	0.173	0.019
30.	2.50	0.90	0.192	(0.597)	0.173	0.019
31.	2.58	0.90	0.192	(0.597)	0.173	0.019
32.	2.67	0.90	0.192	(0.597)	0.173	0.019
33.	2.75	1.00	0.213	(0.597)	0.192	0.021
34.	2.83	1.00	0.213	(0.597)	0.192	0.021
35.	2.92	1.00	0.213	(0.597)	0.192	0.021
36.	3.00	1.00	0.213	(0.597)	0.192	0.021
37.	3.08	1.00	0.213	(0.597)	0.192	0.021
38.	3.17	1.10	0.235	(0.597)	0.211	0.023
39.	3.25	1.10	0.235	(0.597)	0.211	0.023
40.	3.33	1.10	0.235	(0.597)	0.211	0.023
41.	3.42	1.20	0.256	(0.597)	0.231	0.026
42.	3.50	1.30	0.277	(0.597)	0.250	0.028

43.	3.58	1.40	0.299	(0.597)	0.269	0.030
44.	3.67	1.40	0.299	(0.597)	0.269	0.030
45.	3.75	1.50	0.320	(0.597)	0.288	0.032
46.	3.83	1.50	0.320	(0.597)	0.288	0.032
47.	3.92	1.60	0.342	(0.597)	0.307	0.034
48.	4.00	1.60	0.342	(0.597)	0.307	0.034
49.	4.08	1.70	0.363	(0.597)	0.327	0.036
50.	4.17	1.80	0.384	(0.597)	0.346	0.038
51.	4.25	1.90	0.406	(0.597)	0.365	0.041
52.	4.33	2.00	0.427	(0.597)	0.384	0.043
53.	4.42	2.10	0.448	(0.597)	0.403	0.045
54.	4.50	2.10	0.448	(0.597)	0.403	0.045
55.	4.58	2.20	0.470	(0.597)	0.423	0.047
56.	4.67	2.30	0.491	(0.597)	0.442	0.049
57.	4.75	2.40	0.512	(0.597)	0.461	0.051
58.	4.83	2.40	0.512	(0.597)	0.461	0.051
59.	4.92	2.50	0.534	(0.597)	0.480	0.053
60.	5.00	2.60	0.555	(0.597)	0.499	0.055
61.	5.08	3.10	0.662	(0.597)	0.596	0.066
62.	5.17	3.60	0.768	0.597	(0.692)	0.171
63.	5.25	3.90	0.832	0.597	(0.749)	0.235
64.	5.33	4.20	0.897	0.597	(0.807)	0.299
65.	5.42	4.70	1.003	0.597	(0.903)	0.406
66.	5.50	5.60	1.195	0.597	(1.076)	0.598
67.	5.58	1.90	0.406	(0.597)	0.365	0.041
68.	5.67	0.90	0.192	(0.597)	0.173	0.019
69.	5.75	0.60	0.128	(0.597)	0.115	0.013
70.	5.83	0.50	0.107	(0.597)	0.096	0.011
71.	5.92	0.30	0.064	(0.597)	0.058	0.006
72.	6.00	0.20	0.043	(0.597)	0.038	0.004

(Loss Rate Not Used)

Sum = 100.0

Sum = 3.4

Flood volume = Effective rainfall 0.28(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)

Total soil loss = 1.50(In)

Total soil loss = 1.086(Ac.Ft)

Total rainfall = 1.78(In)

Flood volume = 8878.2 Cubic Feet

Total soil loss = 47297.2 Cubic Feet

Peak flow rate of this hydrograph = 4.359(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0003	0.05	Q				
0+10	0.0010	0.10	Q				

0+15	0.0018	0.11	Q				
0+20	0.0025	0.11	Q				
0+25	0.0033	0.11	Q				
0+30	0.0041	0.12	Q				
0+35	0.0050	0.13	Q				
0+40	0.0059	0.13	QV				
0+45	0.0068	0.13	QV				
0+50	0.0077	0.13	QV				
0+55	0.0086	0.13	QV				
1+ 0	0.0096	0.14	QV				
1+ 5	0.0106	0.15	Q V				
1+10	0.0117	0.15	Q V				
1+15	0.0127	0.15	Q V				
1+20	0.0137	0.15	Q V				
1+25	0.0148	0.15	Q V				
1+30	0.0158	0.15	Q V				
1+35	0.0168	0.15	Q V				
1+40	0.0179	0.15	Q V				
1+45	0.0189	0.15	Q V				
1+50	0.0199	0.15	Q V				
1+55	0.0209	0.15	Q V				
2+ 0	0.0220	0.16	Q V				
2+ 5	0.0231	0.16	Q V				
2+10	0.0242	0.16	Q V				
2+15	0.0254	0.17	Q V				
2+20	0.0265	0.17	Q V				
2+25	0.0277	0.17	Q V				
2+30	0.0289	0.17	Q V				
2+35	0.0300	0.17	Q V				
2+40	0.0312	0.17	Q V				
2+45	0.0324	0.18	Q V				
2+50	0.0337	0.19	Q V				
2+55	0.0350	0.19	Q V				
3+ 0	0.0363	0.19	Q V				
3+ 5	0.0376	0.19	Q V				
3+10	0.0389	0.20	Q V				
3+15	0.0403	0.20	Q V				
3+20	0.0417	0.21	Q V				
3+25	0.0432	0.22	Q V				
3+30	0.0448	0.23	Q V				
3+35	0.0466	0.25	Q V				
3+40	0.0484	0.26	Q V				
3+45	0.0502	0.27	Q V				
3+50	0.0522	0.28	Q V				
3+55	0.0542	0.29	Q V				
4+ 0	0.0562	0.30	Q V				
4+ 5	0.0583	0.31	Q V				
4+10	0.0606	0.33	Q V				
4+15	0.0630	0.35	Q V				
4+20	0.0655	0.36	Q V				
4+25	0.0681	0.38	Q V				
4+30	0.0708	0.39	Q V				
4+35	0.0736	0.40	Q V				
4+40	0.0765	0.42	Q V				

4+45	0.0795	0.44	Q		V			
4+50	0.0826	0.45	Q		V			
4+55	0.0857	0.46	Q		V			
5+ 0	0.0890	0.48	Q		V			
5+ 5	0.0927	0.53	Q		V			
5+10	0.1000	1.06	Q		V			
5+15	0.1118	1.72	Q		V			
5+20	0.1276	2.30	Q		V			
5+25	0.1487	3.06	Q		V			
5+30	0.1787	4.36	Q		V			
5+35	0.1961	2.52	Q		V			
5+40	0.2004	0.63	Q		V			
5+45	0.2020	0.23	Q		V			
5+50	0.2028	0.11	Q		V			
5+55	0.2033	0.08	Q		V			
6+ 0	0.2037	0.05	Q		V			
6+ 5	0.2038	0.02	Q		V			
6+10	0.2038	0.00	Q		V			
6+15	0.2038	0.00	Q		V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh2410.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
10 YR - 24 HR STORM AMC II

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	1.90	18.52

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	5.50	53.63

STORM EVENT (YEAR) = 10.00

Area Averaged 2-Year Rainfall = 1.900 (In)

Area Averaged 100-Year Rainfall = 5.500 (In)

Point rain (area averaged) = 3.381 (In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 3.381 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	67.0	0.394	0.000	0.394	1.000	0.394
Sum (F) =						

0.394

Area averaged mean soil loss (F) (In/Hr) = 0.597

Minimum soil loss rate ((In/Hr)) = 0.299

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.07	0.027	(1.059)	0.024	0.003
2.	0.17	0.07	0.027	(1.055)	0.024	0.003
3.	0.25	0.07	0.027	(1.051)	0.024	0.003
4.	0.33	0.10	0.041	(1.047)	0.037	0.004
5.	0.42	0.10	0.041	(1.043)	0.037	0.004
6.	0.50	0.10	0.041	(1.039)	0.037	0.004
7.	0.58	0.10	0.041	(1.035)	0.037	0.004
8.	0.67	0.10	0.041	(1.031)	0.037	0.004
9.	0.75	0.10	0.041	(1.027)	0.037	0.004
10.	0.83	0.13	0.054	(1.023)	0.049	0.005
11.	0.92	0.13	0.054	(1.019)	0.049	0.005
12.	1.00	0.13	0.054	(1.015)	0.049	0.005
13.	1.08	0.10	0.041	(1.011)	0.037	0.004
14.	1.17	0.10	0.041	(1.007)	0.037	0.004
15.	1.25	0.10	0.041	(1.003)	0.037	0.004
16.	1.33	0.10	0.041	(0.999)	0.037	0.004
17.	1.42	0.10	0.041	(0.995)	0.037	0.004
18.	1.50	0.10	0.041	(0.991)	0.037	0.004
19.	1.58	0.10	0.041	(0.987)	0.037	0.004
20.	1.67	0.10	0.041	(0.983)	0.037	0.004
21.	1.75	0.10	0.041	(0.979)	0.037	0.004
22.	1.83	0.13	0.054	(0.975)	0.049	0.005
23.	1.92	0.13	0.054	(0.971)	0.049	0.005
24.	2.00	0.13	0.054	(0.967)	0.049	0.005
25.	2.08	0.13	0.054	(0.963)	0.049	0.005
26.	2.17	0.13	0.054	(0.959)	0.049	0.005
27.	2.25	0.13	0.054	(0.955)	0.049	0.005
28.	2.33	0.13	0.054	(0.951)	0.049	0.005
29.	2.42	0.13	0.054	(0.947)	0.049	0.005
30.	2.50	0.13	0.054	(0.944)	0.049	0.005
31.	2.58	0.17	0.068	(0.940)	0.061	0.007
32.	2.67	0.17	0.068	(0.936)	0.061	0.007
33.	2.75	0.17	0.068	(0.932)	0.061	0.007
34.	2.83	0.17	0.068	(0.928)	0.061	0.007
35.	2.92	0.17	0.068	(0.924)	0.061	0.007
36.	3.00	0.17	0.068	(0.921)	0.061	0.007
37.	3.08	0.17	0.068	(0.917)	0.061	0.007
38.	3.17	0.17	0.068	(0.913)	0.061	0.007
39.	3.25	0.17	0.068	(0.909)	0.061	0.007
40.	3.33	0.17	0.068	(0.905)	0.061	0.007
41.	3.42	0.17	0.068	(0.902)	0.061	0.007
42.	3.50	0.17	0.068	(0.898)	0.061	0.007

43.	3.58	0.17	0.068	(0.894)	0.061	0.007
44.	3.67	0.17	0.068	(0.890)	0.061	0.007
45.	3.75	0.17	0.068	(0.887)	0.061	0.007
46.	3.83	0.20	0.081	(0.883)	0.073	0.008
47.	3.92	0.20	0.081	(0.879)	0.073	0.008
48.	4.00	0.20	0.081	(0.875)	0.073	0.008
49.	4.08	0.20	0.081	(0.872)	0.073	0.008
50.	4.17	0.20	0.081	(0.868)	0.073	0.008
51.	4.25	0.20	0.081	(0.864)	0.073	0.008
52.	4.33	0.23	0.095	(0.861)	0.085	0.009
53.	4.42	0.23	0.095	(0.857)	0.085	0.009
54.	4.50	0.23	0.095	(0.853)	0.085	0.009
55.	4.58	0.23	0.095	(0.850)	0.085	0.009
56.	4.67	0.23	0.095	(0.846)	0.085	0.009
57.	4.75	0.23	0.095	(0.842)	0.085	0.009
58.	4.83	0.27	0.108	(0.839)	0.097	0.011
59.	4.92	0.27	0.108	(0.835)	0.097	0.011
60.	5.00	0.27	0.108	(0.831)	0.097	0.011
61.	5.08	0.20	0.081	(0.828)	0.073	0.008
62.	5.17	0.20	0.081	(0.824)	0.073	0.008
63.	5.25	0.20	0.081	(0.821)	0.073	0.008
64.	5.33	0.23	0.095	(0.817)	0.085	0.009
65.	5.42	0.23	0.095	(0.813)	0.085	0.009
66.	5.50	0.23	0.095	(0.810)	0.085	0.009
67.	5.58	0.27	0.108	(0.806)	0.097	0.011
68.	5.67	0.27	0.108	(0.803)	0.097	0.011
69.	5.75	0.27	0.108	(0.799)	0.097	0.011
70.	5.83	0.27	0.108	(0.796)	0.097	0.011
71.	5.92	0.27	0.108	(0.792)	0.097	0.011
72.	6.00	0.27	0.108	(0.789)	0.097	0.011
73.	6.08	0.30	0.122	(0.785)	0.110	0.012
74.	6.17	0.30	0.122	(0.782)	0.110	0.012
75.	6.25	0.30	0.122	(0.778)	0.110	0.012
76.	6.33	0.30	0.122	(0.775)	0.110	0.012
77.	6.42	0.30	0.122	(0.771)	0.110	0.012
78.	6.50	0.30	0.122	(0.768)	0.110	0.012
79.	6.58	0.33	0.135	(0.764)	0.122	0.014
80.	6.67	0.33	0.135	(0.761)	0.122	0.014
81.	6.75	0.33	0.135	(0.757)	0.122	0.014
82.	6.83	0.33	0.135	(0.754)	0.122	0.014
83.	6.92	0.33	0.135	(0.751)	0.122	0.014
84.	7.00	0.33	0.135	(0.747)	0.122	0.014
85.	7.08	0.33	0.135	(0.744)	0.122	0.014
86.	7.17	0.33	0.135	(0.740)	0.122	0.014
87.	7.25	0.33	0.135	(0.737)	0.122	0.014
88.	7.33	0.37	0.149	(0.734)	0.134	0.015
89.	7.42	0.37	0.149	(0.730)	0.134	0.015
90.	7.50	0.37	0.149	(0.727)	0.134	0.015
91.	7.58	0.40	0.162	(0.724)	0.146	0.016
92.	7.67	0.40	0.162	(0.720)	0.146	0.016
93.	7.75	0.40	0.162	(0.717)	0.146	0.016
94.	7.83	0.43	0.176	(0.714)	0.158	0.018
95.	7.92	0.43	0.176	(0.710)	0.158	0.018
96.	8.00	0.43	0.176	(0.707)	0.158	0.018

97.	8.08	0.50	0.203	(0.704)	0.183	0.020
98.	8.17	0.50	0.203	(0.701)	0.183	0.020
99.	8.25	0.50	0.203	(0.697)	0.183	0.020
100.	8.33	0.50	0.203	(0.694)	0.183	0.020
101.	8.42	0.50	0.203	(0.691)	0.183	0.020
102.	8.50	0.50	0.203	(0.688)	0.183	0.020
103.	8.58	0.53	0.216	(0.684)	0.195	0.022
104.	8.67	0.53	0.216	(0.681)	0.195	0.022
105.	8.75	0.53	0.216	(0.678)	0.195	0.022
106.	8.83	0.57	0.230	(0.675)	0.207	0.023
107.	8.92	0.57	0.230	(0.671)	0.207	0.023
108.	9.00	0.57	0.230	(0.668)	0.207	0.023
109.	9.08	0.63	0.257	(0.665)	0.231	0.026
110.	9.17	0.63	0.257	(0.662)	0.231	0.026
111.	9.25	0.63	0.257	(0.659)	0.231	0.026
112.	9.33	0.67	0.270	(0.656)	0.243	0.027
113.	9.42	0.67	0.270	(0.653)	0.243	0.027
114.	9.50	0.67	0.270	(0.649)	0.243	0.027
115.	9.58	0.70	0.284	(0.646)	0.256	0.028
116.	9.67	0.70	0.284	(0.643)	0.256	0.028
117.	9.75	0.70	0.284	(0.640)	0.256	0.028
118.	9.83	0.73	0.298	(0.637)	0.268	0.030
119.	9.92	0.73	0.298	(0.634)	0.268	0.030
120.	10.00	0.73	0.298	(0.631)	0.268	0.030
121.	10.08	0.50	0.203	(0.628)	0.183	0.020
122.	10.17	0.50	0.203	(0.625)	0.183	0.020
123.	10.25	0.50	0.203	(0.622)	0.183	0.020
124.	10.33	0.50	0.203	(0.619)	0.183	0.020
125.	10.42	0.50	0.203	(0.616)	0.183	0.020
126.	10.50	0.50	0.203	(0.613)	0.183	0.020
127.	10.58	0.67	0.270	(0.610)	0.243	0.027
128.	10.67	0.67	0.270	(0.607)	0.243	0.027
129.	10.75	0.67	0.270	(0.604)	0.243	0.027
130.	10.83	0.67	0.270	(0.601)	0.243	0.027
131.	10.92	0.67	0.270	(0.598)	0.243	0.027
132.	11.00	0.67	0.270	(0.595)	0.243	0.027
133.	11.08	0.63	0.257	(0.592)	0.231	0.026
134.	11.17	0.63	0.257	(0.589)	0.231	0.026
135.	11.25	0.63	0.257	(0.586)	0.231	0.026
136.	11.33	0.63	0.257	(0.583)	0.231	0.026
137.	11.42	0.63	0.257	(0.580)	0.231	0.026
138.	11.50	0.63	0.257	(0.578)	0.231	0.026
139.	11.58	0.57	0.230	(0.575)	0.207	0.023
140.	11.67	0.57	0.230	(0.572)	0.207	0.023
141.	11.75	0.57	0.230	(0.569)	0.207	0.023
142.	11.83	0.60	0.243	(0.566)	0.219	0.024
143.	11.92	0.60	0.243	(0.563)	0.219	0.024
144.	12.00	0.60	0.243	(0.561)	0.219	0.024
145.	12.08	0.83	0.338	(0.558)	0.304	0.034
146.	12.17	0.83	0.338	(0.555)	0.304	0.034
147.	12.25	0.83	0.338	(0.552)	0.304	0.034
148.	12.33	0.87	0.352	(0.549)	0.316	0.035
149.	12.42	0.87	0.352	(0.547)	0.316	0.035
150.	12.50	0.87	0.352	(0.544)	0.316	0.035

151.	12.58	0.93	0.379	(0.541)	0.341	0.038
152.	12.67	0.93	0.379	(0.538)	0.341	0.038
153.	12.75	0.93	0.379	(0.536)	0.341	0.038
154.	12.83	0.97	0.392	(0.533)	0.353	0.039
155.	12.92	0.97	0.392	(0.530)	0.353	0.039
156.	13.00	0.97	0.392	(0.528)	0.353	0.039
157.	13.08	1.13	0.460	(0.525)	0.414	0.046
158.	13.17	1.13	0.460	(0.522)	0.414	0.046
159.	13.25	1.13	0.460	(0.520)	0.414	0.046
160.	13.33	1.13	0.460	(0.517)	0.414	0.046
161.	13.42	1.13	0.460	(0.514)	0.414	0.046
162.	13.50	1.13	0.460	(0.512)	0.414	0.046
163.	13.58	0.77	0.311	(0.509)	0.280	0.031
164.	13.67	0.77	0.311	(0.507)	0.280	0.031
165.	13.75	0.77	0.311	(0.504)	0.280	0.031
166.	13.83	0.77	0.311	(0.501)	0.280	0.031
167.	13.92	0.77	0.311	(0.499)	0.280	0.031
168.	14.00	0.77	0.311	(0.496)	0.280	0.031
169.	14.08	0.90	0.365	(0.494)	0.329	0.037
170.	14.17	0.90	0.365	(0.491)	0.329	0.037
171.	14.25	0.90	0.365	(0.489)	0.329	0.037
172.	14.33	0.87	0.352	(0.486)	0.316	0.035
173.	14.42	0.87	0.352	(0.484)	0.316	0.035
174.	14.50	0.87	0.352	(0.481)	0.316	0.035
175.	14.58	0.87	0.352	(0.479)	0.316	0.035
176.	14.67	0.87	0.352	(0.476)	0.316	0.035
177.	14.75	0.87	0.352	(0.474)	0.316	0.035
178.	14.83	0.83	0.338	(0.471)	0.304	0.034
179.	14.92	0.83	0.338	(0.469)	0.304	0.034
180.	15.00	0.83	0.338	(0.467)	0.304	0.034
181.	15.08	0.80	0.325	(0.464)	0.292	0.032
182.	15.17	0.80	0.325	(0.462)	0.292	0.032
183.	15.25	0.80	0.325	(0.460)	0.292	0.032
184.	15.33	0.77	0.311	(0.457)	0.280	0.031
185.	15.42	0.77	0.311	(0.455)	0.280	0.031
186.	15.50	0.77	0.311	(0.452)	0.280	0.031
187.	15.58	0.63	0.257	(0.450)	0.231	0.026
188.	15.67	0.63	0.257	(0.448)	0.231	0.026
189.	15.75	0.63	0.257	(0.446)	0.231	0.026
190.	15.83	0.63	0.257	(0.443)	0.231	0.026
191.	15.92	0.63	0.257	(0.441)	0.231	0.026
192.	16.00	0.63	0.257	(0.439)	0.231	0.026
193.	16.08	0.13	0.054	(0.437)	0.049	0.005
194.	16.17	0.13	0.054	(0.434)	0.049	0.005
195.	16.25	0.13	0.054	(0.432)	0.049	0.005
196.	16.33	0.13	0.054	(0.430)	0.049	0.005
197.	16.42	0.13	0.054	(0.428)	0.049	0.005
198.	16.50	0.13	0.054	(0.425)	0.049	0.005
199.	16.58	0.10	0.041	(0.423)	0.037	0.004
200.	16.67	0.10	0.041	(0.421)	0.037	0.004
201.	16.75	0.10	0.041	(0.419)	0.037	0.004
202.	16.83	0.10	0.041	(0.417)	0.037	0.004
203.	16.92	0.10	0.041	(0.415)	0.037	0.004
204.	17.00	0.10	0.041	(0.413)	0.037	0.004

205.	17.08	0.17	0.068	(0.411)	0.061	0.007
206.	17.17	0.17	0.068	(0.409)	0.061	0.007
207.	17.25	0.17	0.068	(0.407)	0.061	0.007
208.	17.33	0.17	0.068	(0.404)	0.061	0.007
209.	17.42	0.17	0.068	(0.402)	0.061	0.007
210.	17.50	0.17	0.068	(0.400)	0.061	0.007
211.	17.58	0.17	0.068	(0.398)	0.061	0.007
212.	17.67	0.17	0.068	(0.396)	0.061	0.007
213.	17.75	0.17	0.068	(0.394)	0.061	0.007
214.	17.83	0.13	0.054	(0.392)	0.049	0.005
215.	17.92	0.13	0.054	(0.391)	0.049	0.005
216.	18.00	0.13	0.054	(0.389)	0.049	0.005
217.	18.08	0.13	0.054	(0.387)	0.049	0.005
218.	18.17	0.13	0.054	(0.385)	0.049	0.005
219.	18.25	0.13	0.054	(0.383)	0.049	0.005
220.	18.33	0.13	0.054	(0.381)	0.049	0.005
221.	18.42	0.13	0.054	(0.379)	0.049	0.005
222.	18.50	0.13	0.054	(0.377)	0.049	0.005
223.	18.58	0.10	0.041	(0.376)	0.037	0.004
224.	18.67	0.10	0.041	(0.374)	0.037	0.004
225.	18.75	0.10	0.041	(0.372)	0.037	0.004
226.	18.83	0.07	0.027	(0.370)	0.024	0.003
227.	18.92	0.07	0.027	(0.368)	0.024	0.003
228.	19.00	0.07	0.027	(0.367)	0.024	0.003
229.	19.08	0.10	0.041	(0.365)	0.037	0.004
230.	19.17	0.10	0.041	(0.363)	0.037	0.004
231.	19.25	0.10	0.041	(0.361)	0.037	0.004
232.	19.33	0.13	0.054	(0.360)	0.049	0.005
233.	19.42	0.13	0.054	(0.358)	0.049	0.005
234.	19.50	0.13	0.054	(0.356)	0.049	0.005
235.	19.58	0.10	0.041	(0.355)	0.037	0.004
236.	19.67	0.10	0.041	(0.353)	0.037	0.004
237.	19.75	0.10	0.041	(0.352)	0.037	0.004
238.	19.83	0.07	0.027	(0.350)	0.024	0.003
239.	19.92	0.07	0.027	(0.348)	0.024	0.003
240.	20.00	0.07	0.027	(0.347)	0.024	0.003
241.	20.08	0.10	0.041	(0.345)	0.037	0.004
242.	20.17	0.10	0.041	(0.344)	0.037	0.004
243.	20.25	0.10	0.041	(0.342)	0.037	0.004
244.	20.33	0.10	0.041	(0.341)	0.037	0.004
245.	20.42	0.10	0.041	(0.339)	0.037	0.004
246.	20.50	0.10	0.041	(0.338)	0.037	0.004
247.	20.58	0.10	0.041	(0.337)	0.037	0.004
248.	20.67	0.10	0.041	(0.335)	0.037	0.004
249.	20.75	0.10	0.041	(0.334)	0.037	0.004
250.	20.83	0.07	0.027	(0.332)	0.024	0.003
251.	20.92	0.07	0.027	(0.331)	0.024	0.003
252.	21.00	0.07	0.027	(0.330)	0.024	0.003
253.	21.08	0.10	0.041	(0.328)	0.037	0.004
254.	21.17	0.10	0.041	(0.327)	0.037	0.004
255.	21.25	0.10	0.041	(0.326)	0.037	0.004
256.	21.33	0.07	0.027	(0.325)	0.024	0.003
257.	21.42	0.07	0.027	(0.323)	0.024	0.003
258.	21.50	0.07	0.027	(0.322)	0.024	0.003

259.	21.58	0.10	0.041	(0.321)	0.037	0.004
260.	21.67	0.10	0.041	(0.320)	0.037	0.004
261.	21.75	0.10	0.041	(0.319)	0.037	0.004
262.	21.83	0.07	0.027	(0.318)	0.024	0.003
263.	21.92	0.07	0.027	(0.317)	0.024	0.003
264.	22.00	0.07	0.027	(0.315)	0.024	0.003
265.	22.08	0.10	0.041	(0.314)	0.037	0.004
266.	22.17	0.10	0.041	(0.313)	0.037	0.004
267.	22.25	0.10	0.041	(0.312)	0.037	0.004
268.	22.33	0.07	0.027	(0.311)	0.024	0.003
269.	22.42	0.07	0.027	(0.310)	0.024	0.003
270.	22.50	0.07	0.027	(0.310)	0.024	0.003
271.	22.58	0.07	0.027	(0.309)	0.024	0.003
272.	22.67	0.07	0.027	(0.308)	0.024	0.003
273.	22.75	0.07	0.027	(0.307)	0.024	0.003
274.	22.83	0.07	0.027	(0.306)	0.024	0.003
275.	22.92	0.07	0.027	(0.305)	0.024	0.003
276.	23.00	0.07	0.027	(0.305)	0.024	0.003
277.	23.08	0.07	0.027	(0.304)	0.024	0.003
278.	23.17	0.07	0.027	(0.303)	0.024	0.003
279.	23.25	0.07	0.027	(0.303)	0.024	0.003
280.	23.33	0.07	0.027	(0.302)	0.024	0.003
281.	23.42	0.07	0.027	(0.301)	0.024	0.003
282.	23.50	0.07	0.027	(0.301)	0.024	0.003
283.	23.58	0.07	0.027	(0.300)	0.024	0.003
284.	23.67	0.07	0.027	(0.300)	0.024	0.003
285.	23.75	0.07	0.027	(0.300)	0.024	0.003
286.	23.83	0.07	0.027	(0.299)	0.024	0.003
287.	23.92	0.07	0.027	(0.299)	0.024	0.003
288.	24.00	0.07	0.027	(0.299)	0.024	0.003

(Loss Rate Not Used)

Sum = 100.0

Sum = 4.1

Flood volume = Effective rainfall 0.34(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)

Total soil loss = 3.04(In)

Total soil loss = 2.206(Ac.Ft)

Total rainfall = 3.38(In)

Flood volume = 10677.6 Cubic Feet

Total soil loss = 96098.2 Cubic Feet

Peak flow rate of this hydrograph = 0.403(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0001	0.01	Q			
0+10	0.0002	0.02	Q			

0+15	0.0004	0.02	Q				
0+20	0.0006	0.03	Q				
0+25	0.0008	0.03	Q				
0+30	0.0011	0.04	Q				
0+35	0.0013	0.04	Q				
0+40	0.0016	0.04	Q				
0+45	0.0018	0.04	Q				
0+50	0.0021	0.04	Q				
0+55	0.0024	0.05	Q				
1+ 0	0.0028	0.05	Q				
1+ 5	0.0030	0.04	Q				
1+10	0.0033	0.04	Q				
1+15	0.0035	0.04	Q				
1+20	0.0038	0.04	Q				
1+25	0.0040	0.04	Q				
1+30	0.0043	0.04	Q				
1+35	0.0045	0.04	Q				
1+40	0.0048	0.04	Q				
1+45	0.0050	0.04	Q				
1+50	0.0053	0.04	Q				
1+55	0.0056	0.05	Q				
2+ 0	0.0059	0.05	Q				
2+ 5	0.0063	0.05	QV				
2+10	0.0066	0.05	QV				
2+15	0.0069	0.05	QV				
2+20	0.0072	0.05	QV				
2+25	0.0076	0.05	QV				
2+30	0.0079	0.05	QV				
2+35	0.0083	0.05	QV				
2+40	0.0087	0.06	QV				
2+45	0.0091	0.06	QV				
2+50	0.0095	0.06	QV				
2+55	0.0099	0.06	QV				
3+ 0	0.0103	0.06	QV				
3+ 5	0.0107	0.06	QV				
3+10	0.0111	0.06	QV				
3+15	0.0115	0.06	QV				
3+20	0.0119	0.06	QV				
3+25	0.0123	0.06	Q V				
3+30	0.0128	0.06	Q V				
3+35	0.0132	0.06	Q V				
3+40	0.0136	0.06	Q V				
3+45	0.0140	0.06	Q V				
3+50	0.0144	0.07	Q V				
3+55	0.0149	0.07	Q V				
4+ 0	0.0154	0.07	Q V				
4+ 5	0.0159	0.07	Q V				
4+10	0.0164	0.07	Q V				
4+15	0.0169	0.07	Q V				
4+20	0.0174	0.08	Q V				
4+25	0.0180	0.08	Q V				
4+30	0.0185	0.08	Q V				
4+35	0.0191	0.08	Q V				
4+40	0.0197	0.08	Q V				

4+45	0.0203	0.08	Q	V				
4+50	0.0209	0.09	Q	V				
4+55	0.0215	0.09	Q	V				
5+ 0	0.0222	0.09	Q	V				
5+ 5	0.0227	0.08	Q	V				
5+10	0.0232	0.07	Q	V				
5+15	0.0237	0.07	Q	V				
5+20	0.0243	0.08	Q	V				
5+25	0.0248	0.08	Q	V				
5+30	0.0254	0.08	Q	V				
5+35	0.0260	0.09	Q	V				
5+40	0.0267	0.09	Q	V				
5+45	0.0273	0.09	Q	V				
5+50	0.0280	0.09	Q	V				
5+55	0.0286	0.09	Q	V				
6+ 0	0.0293	0.09	Q	V				
6+ 5	0.0300	0.10	Q	V				
6+10	0.0307	0.11	Q	V				
6+15	0.0314	0.11	Q	V				
6+20	0.0322	0.11	Q	V				
6+25	0.0329	0.11	Q	V				
6+30	0.0337	0.11	Q	V				
6+35	0.0344	0.11	Q	V				
6+40	0.0352	0.12	Q	V				
6+45	0.0361	0.12	Q	V				
6+50	0.0369	0.12	Q	V				
6+55	0.0377	0.12	Q	V				
7+ 0	0.0385	0.12	Q	V				
7+ 5	0.0393	0.12	Q	V				
7+10	0.0401	0.12	Q	V				
7+15	0.0410	0.12	Q	V				
7+20	0.0418	0.12	Q	V				
7+25	0.0427	0.13	Q	V				
7+30	0.0436	0.13	Q	V				
7+35	0.0445	0.14	Q	V				
7+40	0.0455	0.14	Q	V				
7+45	0.0465	0.14	Q	V				
7+50	0.0475	0.15	Q	V				
7+55	0.0486	0.15	Q	V				
8+ 0	0.0496	0.15	Q	V				
8+ 5	0.0508	0.17	Q	V				
8+10	0.0520	0.18	Q	V				
8+15	0.0532	0.18	Q	V				
8+20	0.0545	0.18	Q	V				
8+25	0.0557	0.18	Q	V				
8+30	0.0569	0.18	Q	V				
8+35	0.0582	0.18	Q	V				
8+40	0.0595	0.19	Q	V				
8+45	0.0608	0.19	Q	V				
8+50	0.0621	0.20	Q	V				
8+55	0.0635	0.20	Q	V				
9+ 0	0.0649	0.20	Q	V				
9+ 5	0.0664	0.21	Q	V				
9+10	0.0679	0.22	Q	V				

9+15	0.0695	0.23	Q	V			
9+20	0.0711	0.23	Q	V			
9+25	0.0727	0.24	Q	V			
9+30	0.0743	0.24	Q	V			
9+35	0.0760	0.24	Q	V			
9+40	0.0777	0.25	Q	V			
9+45	0.0794	0.25	Q	V			
9+50	0.0812	0.26	Q	V			
9+55	0.0830	0.26	Q	V			
10+ 0	0.0848	0.26	Q	V			
10+ 5	0.0863	0.22	Q	V			
10+10	0.0875	0.18	Q	V			
10+15	0.0888	0.18	Q	V			
10+20	0.0900	0.18	Q	V			
10+25	0.0912	0.18	Q	V			
10+30	0.0924	0.18	Q	V			
10+35	0.0939	0.21	Q	V			
10+40	0.0955	0.23	Q	V			
10+45	0.0971	0.24	Q	V			
10+50	0.0987	0.24	Q	V			
10+55	0.1004	0.24	Q	V			
11+ 0	0.1020	0.24	Q	V			
11+ 5	0.1036	0.23	Q	V			
11+10	0.1052	0.23	Q	V			
11+15	0.1067	0.23	Q	V			
11+20	0.1083	0.23	Q	V			
11+25	0.1098	0.23	Q	V			
11+30	0.1114	0.23	Q	V			
11+35	0.1128	0.21	Q	V			
11+40	0.1142	0.20	Q	V			
11+45	0.1156	0.20	Q	V			
11+50	0.1171	0.21	Q	V			
11+55	0.1185	0.21	Q	V			
12+ 0	0.1200	0.21	Q	V			
12+ 5	0.1218	0.26	Q	V			
12+10	0.1238	0.29	Q	V			
12+15	0.1258	0.30	Q	V			
12+20	0.1279	0.30	Q	V			
12+25	0.1300	0.31	Q	V			
12+30	0.1321	0.31	Q	V			
12+35	0.1343	0.32	Q	V			
12+40	0.1366	0.33	Q	V			
12+45	0.1389	0.33	Q	V			
12+50	0.1412	0.34	Q	V			
12+55	0.1436	0.34	Q	V			
13+ 0	0.1460	0.34	Q	V			
13+ 5	0.1485	0.38	Q	V			
13+10	0.1513	0.40	Q	V			
13+15	0.1541	0.40	Q	V			
13+20	0.1568	0.40	Q	V			
13+25	0.1596	0.40	Q	V			
13+30	0.1624	0.40	Q	V			
13+35	0.1647	0.33	Q	V			
13+40	0.1667	0.28	Q	V			

13+45	0.1685	0.27	Q			V		
13+50	0.1704	0.27	Q			V		
13+55	0.1723	0.27	Q			V		
14+ 0	0.1742	0.27	Q			V		
14+ 5	0.1762	0.30	Q			V		
14+10	0.1784	0.32	Q			V		
14+15	0.1806	0.32	Q			V		
14+20	0.1828	0.31	Q			V		
14+25	0.1849	0.31	Q			V		
14+30	0.1870	0.31	Q			V		
14+35	0.1892	0.31	Q			V		
14+40	0.1913	0.31	Q			V		
14+45	0.1934	0.31	Q			V		
14+50	0.1955	0.30	Q			V		
14+55	0.1975	0.30	Q			V		
15+ 0	0.1996	0.30	Q			V		
15+ 5	0.2016	0.29	Q			V		
15+10	0.2036	0.29	Q			V		
15+15	0.2055	0.28	Q			V		
15+20	0.2074	0.28	Q			V		
15+25	0.2093	0.27	Q			V		
15+30	0.2112	0.27	Q			V		
15+35	0.2129	0.25	Q			V		
15+40	0.2145	0.23	Q			V		
15+45	0.2160	0.23	Q			V		
15+50	0.2176	0.23	Q			V		
15+55	0.2191	0.23	Q			V		
16+ 0	0.2207	0.23	Q			V		
16+ 5	0.2216	0.13	Q			V		
16+10	0.2220	0.06	Q			V		
16+15	0.2224	0.05	Q			V		
16+20	0.2227	0.05	Q			V		
16+25	0.2230	0.05	Q			V		
16+30	0.2234	0.05	Q			V		
16+35	0.2236	0.04	Q			V		
16+40	0.2239	0.04	Q			V		
16+45	0.2241	0.04	Q			V		
16+50	0.2244	0.04	Q			V		
16+55	0.2246	0.04	Q			V		
17+ 0	0.2249	0.04	Q			V		
17+ 5	0.2252	0.05	Q			V		
17+10	0.2256	0.06	Q			V		
17+15	0.2260	0.06	Q			V		
17+20	0.2264	0.06	Q			V		
17+25	0.2268	0.06	Q			V		
17+30	0.2272	0.06	Q			V		
17+35	0.2276	0.06	Q			V		
17+40	0.2281	0.06	Q			V		
17+45	0.2285	0.06	Q			V		
17+50	0.2288	0.05	Q			V		
17+55	0.2292	0.05	Q			V		
18+ 0	0.2295	0.05	Q			V		
18+ 5	0.2298	0.05	Q			V		
18+10	0.2301	0.05	Q			V		

18+15	0.2305	0.05	Q				V	
18+20	0.2308	0.05	Q				V	
18+25	0.2311	0.05	Q				V	
18+30	0.2315	0.05	Q				V	
18+35	0.2317	0.04	Q				V	
18+40	0.2320	0.04	Q				V	
18+45	0.2322	0.04	Q				V	
18+50	0.2324	0.03	Q				V	
18+55	0.2326	0.02	Q				V	
19+ 0	0.2328	0.02	Q				V	
19+ 5	0.2330	0.03	Q				V	
19+10	0.2332	0.03	Q				V	
19+15	0.2335	0.04	Q				V	
19+20	0.2338	0.04	Q				V	
19+25	0.2341	0.05	Q				V	
19+30	0.2344	0.05	Q				V	
19+35	0.2347	0.04	Q				V	
19+40	0.2349	0.04	Q				V	
19+45	0.2352	0.04	Q				V	
19+50	0.2354	0.03	Q				V	
19+55	0.2356	0.02	Q				V	
20+ 0	0.2357	0.02	Q				V	
20+ 5	0.2359	0.03	Q				V	
20+10	0.2362	0.03	Q				V	
20+15	0.2364	0.04	Q				V	
20+20	0.2366	0.04	Q				V	
20+25	0.2369	0.04	Q				V	
20+30	0.2371	0.04	Q				V	
20+35	0.2374	0.04	Q				V	
20+40	0.2376	0.04	Q				V	
20+45	0.2379	0.04	Q				V	
20+50	0.2381	0.03	Q				V	
20+55	0.2382	0.02	Q				V	
21+ 0	0.2384	0.02	Q				V	
21+ 5	0.2386	0.03	Q				V	
21+10	0.2389	0.03	Q				V	
21+15	0.2391	0.04	Q				V	
21+20	0.2393	0.03	Q				V	
21+25	0.2395	0.02	Q				V	
21+30	0.2396	0.02	Q				V	
21+35	0.2398	0.03	Q				V	
21+40	0.2401	0.03	Q				V	
21+45	0.2403	0.04	Q				V	
21+50	0.2405	0.03	Q				V	
21+55	0.2407	0.02	Q				V	
22+ 0	0.2409	0.02	Q				V	
22+ 5	0.2411	0.03	Q				V	
22+10	0.2413	0.03	Q				V	
22+15	0.2416	0.04	Q				V	
22+20	0.2418	0.03	Q				V	
22+25	0.2419	0.02	Q				V	
22+30	0.2421	0.02	Q				V	
22+35	0.2423	0.02	Q				V	
22+40	0.2424	0.02	Q				V	

22+45	0.2426	0.02	Q				V
22+50	0.2427	0.02	Q				V
22+55	0.2429	0.02	Q				V
23+ 0	0.2431	0.02	Q				V
23+ 5	0.2432	0.02	Q				V
23+10	0.2434	0.02	Q				V
23+15	0.2436	0.02	Q				V
23+20	0.2437	0.02	Q				V
23+25	0.2439	0.02	Q				V
23+30	0.2440	0.02	Q				V
23+35	0.2442	0.02	Q				V
23+40	0.2444	0.02	Q				V
23+45	0.2445	0.02	Q				V
23+50	0.2447	0.02	Q				V
23+55	0.2449	0.02	Q				V
24+ 0	0.2450	0.02	Q				V
24+ 5	0.2451	0.01	Q				V
24+10	0.2451	0.00	Q				V
24+15	0.2451	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh1100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
100 YR - 1 HR AMC II

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
8.70	0.50		4.35

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
8.70	1.30		11.31

STORM EVENT (YEAR) = 100.00

Area Averaged 2-Year Rainfall = 0.500 (In)

Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 1.300 (In)

Areal adjustment factor = 99.99 %

Adjusted average point rain = 1.300 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	67.0	0.394	0.000	0.394	1.000	0.394
Sum (F) =						

0.394

Area averaged mean soil loss (F) (In/Hr) = 0.597

Minimum soil loss rate ((In/Hr)) = 0.299

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.900

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)

1	0.083	262.846	52.517	4.605

2	0.167	525.692	39.271	3.443
3	0.250	788.537	6.619	0.580
4	0.333	1051.383	1.593	0.140
				Sum =
100.000	Sum=	8.768		

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1. 0.08	4.20	0.655	(0.597)	0.590	0.066
2. 0.17	4.30	0.671	0.597	(0.604)	0.073
3. 0.25	5.00	0.780	0.597	(0.702)	0.182
4. 0.33	5.00	0.780	0.597	(0.702)	0.182
5. 0.42	5.80	0.905	0.597	(0.814)	0.307
6. 0.50	6.50	1.014	0.597	(0.913)	0.416
7. 0.58	7.40	1.154	0.597	(1.039)	0.557
8. 0.67	8.60	1.341	0.597	(1.207)	0.744
9. 0.75	12.30	1.919	0.597	(1.727)	1.321
10. 0.83	29.10	4.539	0.597	(4.085)	3.942
11. 0.92	6.80	1.061	0.597	(0.955)	0.463
12. 1.00	5.00	0.780	0.597	(0.702)	0.182

(Loss Rate Not Used)
Sum = 100.0 Sum = 8.4

Flood volume = Effective rainfall 0.70(In)
times area 8.7(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 0.60(In)
Total soil loss = 0.433(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 22203.7 Cubic Feet
Total soil loss = 18848.4 Cubic Feet

Peak flow rate of this hydrograph = 23.221(CFS)

+++++
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5

0+ 5	0.0021	0.30	Q			
0+10	0.0060	0.56	Q			
0+15	0.0137	1.13	Q			
0+20	0.0242	1.52	VQ			
0+25	0.0391	2.16	QV			

0+30	0.0605	3.11		Q				
0+35	0.0895	4.20		Q V				
0+40	0.1282	5.63		Q V				
0+45	0.1904	9.03		Q V				
0+50	0.3504	23.22				V Q		
0+55	0.4646	16.58				Q	V	
1+ 0	0.4984	4.91		Q				V
1+ 5	0.5084	1.45	Q					V
1+10	0.5096	0.17	Q					V
1+15	0.5097	0.03	Q					V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh3100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
100 YR - 3 HR AMC II

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	0.80	7.80

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	2.00	19.50

STORM EVENT (YEAR) = 100.00
 Area Averaged 2-Year Rainfall = 0.800 (In)
 Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 2.000 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.000 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	67.0	0.394	0.000	0.394	1.000	0.394
Sum (F) =						

0.394

Area averaged mean soil loss (F) (In/Hr) = 0.597
 Minimum soil loss rate ((In/Hr)) = 0.299
 (for 24 hour storm duration)
 Note: User entry of the f value
 Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.312	(0.597)	0.281	0.031
2.	0.17	1.30	0.312	(0.597)	0.281	0.031
3.	0.25	1.10	0.264	(0.597)	0.238	0.026
4.	0.33	1.50	0.360	(0.597)	0.324	0.036
5.	0.42	1.50	0.360	(0.597)	0.324	0.036
6.	0.50	1.80	0.432	(0.597)	0.389	0.043
7.	0.58	1.50	0.360	(0.597)	0.324	0.036
8.	0.67	1.80	0.432	(0.597)	0.389	0.043
9.	0.75	1.80	0.432	(0.597)	0.389	0.043
10.	0.83	1.50	0.360	(0.597)	0.324	0.036
11.	0.92	1.60	0.384	(0.597)	0.346	0.038
12.	1.00	1.80	0.432	(0.597)	0.389	0.043
13.	1.08	2.20	0.528	(0.597)	0.475	0.053
14.	1.17	2.20	0.528	(0.597)	0.475	0.053
15.	1.25	2.20	0.528	(0.597)	0.475	0.053
16.	1.33	2.00	0.480	(0.597)	0.432	0.048
17.	1.42	2.60	0.624	(0.597)	0.562	0.062
18.	1.50	2.70	0.648	(0.597)	0.583	0.065
19.	1.58	2.40	0.576	(0.597)	0.518	0.058
20.	1.67	2.70	0.648	(0.597)	0.583	0.065
21.	1.75	3.30	0.792	0.597	(0.713)	0.194
22.	1.83	3.10	0.744	0.597	(0.670)	0.146
23.	1.92	2.90	0.696	0.597	(0.626)	0.098
24.	2.00	3.00	0.720	0.597	(0.648)	0.122
25.	2.08	3.10	0.744	0.597	(0.670)	0.146
26.	2.17	4.20	1.008	0.597	(0.907)	0.410
27.	2.25	5.00	1.200	0.597	(1.080)	0.602
28.	2.33	3.50	0.840	0.597	(0.756)	0.242
29.	2.42	6.80	1.632	0.597	(1.469)	1.034
30.	2.50	7.30	1.752	0.597	(1.577)	1.154
31.	2.58	8.20	1.968	0.597	(1.771)	1.370
32.	2.67	5.90	1.416	0.597	(1.274)	0.818
33.	2.75	2.00	0.480	(0.597)	0.432	0.048
34.	2.83	1.80	0.432	(0.597)	0.389	0.043
35.	2.92	1.80	0.432	(0.597)	0.389	0.043
36.	3.00	0.60	0.144	(0.597)	0.130	0.014

(Loss Rate Not Used)

Sum = 100.0

Sum = 7.4

Flood volume = Effective rainfall 0.62(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)

Total soil loss = 1.38(In)

Total soil loss = 1.003(Ac.Ft)

Total rainfall = 2.00(In)
 Flood volume = 19449.9 Cubic Feet
 Total soil loss = 43709.7 Cubic Feet

Peak flow rate of this hydrograph = 10.925(CFS)

+++++
 3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0
20.0						
0+ 5	0.0010	0.14	Q			
0+10	0.0027	0.25	Q			
0+15	0.0044	0.25	Q			
0+20	0.0063	0.28	Q			
0+25	0.0085	0.31	Q			
0+30	0.0109	0.35	Q			
0+35	0.0132	0.34	QV			
0+40	0.0156	0.35	QV			
0+45	0.0182	0.37	QV			
0+50	0.0206	0.34	QV			
0+55	0.0229	0.33	Q V			
1+ 0	0.0254	0.36	Q V			
1+ 5	0.0282	0.42	Q V			
1+10	0.0314	0.46	Q V			
1+15	0.0346	0.46	Q V			
1+20	0.0376	0.44	Q V			
1+25	0.0410	0.49	Q V			
1+30	0.0448	0.55	Q V			
1+35	0.0484	0.53	Q V			
1+40	0.0522	0.54	Q V			
1+45	0.0602	1.16	Q V			
1+50	0.0697	1.39	Q V			
1+55	0.0772	1.08	Q V			
2+ 0	0.0842	1.02	Q V			
2+ 5	0.0923	1.17	Q V			
2+10	0.1094	2.48	Q V			
2+15	0.1389	4.29	Q V			
2+20	0.1627	3.45	Q V			
2+25	0.2041	6.01	Q V			
2+30	0.2668	9.11	Q V			
2+35	0.3420	10.93	Q V			
2+40	0.4061	9.31	Q V			
2+45	0.4337	4.00	Q V			
2+50	0.4408	1.03	Q V			
2+55	0.4441	0.49	Q V			
3+ 0	0.4458	0.25	Q V			
3+ 5	0.4464	0.08	Q V			
3+10	0.4465	0.01	Q V			

3+15 0.4465 0.00 Q | | | V|

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh6100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
100 YR - 6 HR STORM AMC II

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]	
	9.75	1.10	10.73

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]	
	9.75	2.75	26.81

STORM EVENT (YEAR) = 100.00

Area Averaged 2-Year Rainfall = 1.100(In)

Area Averaged 100-Year Rainfall = 2.750(In)

Point rain (area averaged) = 2.750(In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 2.750(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70(Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	67.0	0.394	0.000	0.394	1.000	0.394
Sum (F) =						

0.394

Area averaged mean soil loss (F) (In/Hr) = 0.597

Minimum soil loss rate ((In/Hr)) = 0.299

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	262.846	4.605
2	0.167	525.692	3.443
3	0.250	788.537	0.580
4	0.333	1051.383	0.140

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.50	0.165	(0.597)	0.148	0.016
2.	0.17	0.60	0.198	(0.597)	0.178	0.020
3.	0.25	0.60	0.198	(0.597)	0.178	0.020
4.	0.33	0.60	0.198	(0.597)	0.178	0.020
5.	0.42	0.60	0.198	(0.597)	0.178	0.020
6.	0.50	0.70	0.231	(0.597)	0.208	0.023
7.	0.58	0.70	0.231	(0.597)	0.208	0.023
8.	0.67	0.70	0.231	(0.597)	0.208	0.023
9.	0.75	0.70	0.231	(0.597)	0.208	0.023
10.	0.83	0.70	0.231	(0.597)	0.208	0.023
11.	0.92	0.70	0.231	(0.597)	0.208	0.023
12.	1.00	0.80	0.264	(0.597)	0.238	0.026
13.	1.08	0.80	0.264	(0.597)	0.238	0.026
14.	1.17	0.80	0.264	(0.597)	0.238	0.026
15.	1.25	0.80	0.264	(0.597)	0.238	0.026
16.	1.33	0.80	0.264	(0.597)	0.238	0.026
17.	1.42	0.80	0.264	(0.597)	0.238	0.026
18.	1.50	0.80	0.264	(0.597)	0.238	0.026
19.	1.58	0.80	0.264	(0.597)	0.238	0.026
20.	1.67	0.80	0.264	(0.597)	0.238	0.026
21.	1.75	0.80	0.264	(0.597)	0.238	0.026
22.	1.83	0.80	0.264	(0.597)	0.238	0.026
23.	1.92	0.80	0.264	(0.597)	0.238	0.026
24.	2.00	0.90	0.297	(0.597)	0.267	0.030
25.	2.08	0.80	0.264	(0.597)	0.238	0.026
26.	2.17	0.90	0.297	(0.597)	0.267	0.030
27.	2.25	0.90	0.297	(0.597)	0.267	0.030
28.	2.33	0.90	0.297	(0.597)	0.267	0.030
29.	2.42	0.90	0.297	(0.597)	0.267	0.030
30.	2.50	0.90	0.297	(0.597)	0.267	0.030
31.	2.58	0.90	0.297	(0.597)	0.267	0.030
32.	2.67	0.90	0.297	(0.597)	0.267	0.030
33.	2.75	1.00	0.330	(0.597)	0.297	0.033
34.	2.83	1.00	0.330	(0.597)	0.297	0.033
35.	2.92	1.00	0.330	(0.597)	0.297	0.033
36.	3.00	1.00	0.330	(0.597)	0.297	0.033
37.	3.08	1.00	0.330	(0.597)	0.297	0.033
38.	3.17	1.10	0.363	(0.597)	0.327	0.036
39.	3.25	1.10	0.363	(0.597)	0.327	0.036
40.	3.33	1.10	0.363	(0.597)	0.327	0.036
41.	3.42	1.20	0.396	(0.597)	0.356	0.040
42.	3.50	1.30	0.429	(0.597)	0.386	0.043

43.	3.58	1.40	0.462	(0.597)	0.416	0.046
44.	3.67	1.40	0.462	(0.597)	0.416	0.046
45.	3.75	1.50	0.495	(0.597)	0.445	0.049
46.	3.83	1.50	0.495	(0.597)	0.445	0.049
47.	3.92	1.60	0.528	(0.597)	0.475	0.053
48.	4.00	1.60	0.528	(0.597)	0.475	0.053
49.	4.08	1.70	0.561	(0.597)	0.505	0.056
50.	4.17	1.80	0.594	(0.597)	0.535	0.059
51.	4.25	1.90	0.627	(0.597)	0.564	0.063
52.	4.33	2.00	0.660	(0.597)	0.594	0.066
53.	4.42	2.10	0.693	0.597 (0.624)		0.095
54.	4.50	2.10	0.693	0.597 (0.624)		0.095
55.	4.58	2.20	0.726	0.597 (0.653)		0.128
56.	4.67	2.30	0.759	0.597 (0.683)		0.161
57.	4.75	2.40	0.792	0.597 (0.713)		0.194
58.	4.83	2.40	0.792	0.597 (0.713)		0.194
59.	4.92	2.50	0.825	0.597 (0.742)		0.227
60.	5.00	2.60	0.858	0.597 (0.772)		0.260
61.	5.08	3.10	1.023	0.597 (0.921)		0.425
62.	5.17	3.60	1.188	0.597 (1.069)		0.590
63.	5.25	3.90	1.287	0.597 (1.158)		0.689
64.	5.33	4.20	1.386	0.597 (1.247)		0.788
65.	5.42	4.70	1.551	0.597 (1.396)		0.953
66.	5.50	5.60	1.848	0.597 (1.663)		1.250
67.	5.58	1.90	0.627	(0.597)	0.564	0.063
68.	5.67	0.90	0.297	(0.597)	0.267	0.030
69.	5.75	0.60	0.198	(0.597)	0.178	0.020
70.	5.83	0.50	0.165	(0.597)	0.148	0.016
71.	5.92	0.30	0.099	(0.597)	0.089	0.010
72.	6.00	0.20	0.066	(0.597)	0.059	0.007

(Loss Rate Not Used)

Sum = 100.0

Sum = 7.9

Flood volume = Effective rainfall 0.66(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)

Total soil loss = 2.09(In)

Total soil loss = 1.516(Ac.Ft)

Total rainfall = 2.75(In)

Flood volume = 20826.9 Cubic Feet

Total soil loss = 66018.3 Cubic Feet

Peak flow rate of this hydrograph = 9.600(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0005	0.08	Q			
0+10	0.0015	0.15	Q			

0+15	0.0027	0.17	Q				
0+20	0.0039	0.17	Q				
0+25	0.0051	0.17	Q				
0+30	0.0064	0.19	Q				
0+35	0.0078	0.20	Q				
0+40	0.0092	0.20	Q				
0+45	0.0106	0.20	Q				
0+50	0.0120	0.20	QV				
0+55	0.0134	0.20	QV				
1+ 0	0.0149	0.22	QV				
1+ 5	0.0164	0.23	QV				
1+10	0.0180	0.23	QV				
1+15	0.0196	0.23	QV				
1+20	0.0212	0.23	QV				
1+25	0.0228	0.23	QV				
1+30	0.0244	0.23	Q V				
1+35	0.0260	0.23	Q V				
1+40	0.0276	0.23	Q V				
1+45	0.0292	0.23	Q V				
1+50	0.0308	0.23	Q V				
1+55	0.0324	0.23	Q V				
2+ 0	0.0341	0.25	Q V				
2+ 5	0.0358	0.24	Q V				
2+10	0.0375	0.25	Q V				
2+15	0.0392	0.26	Q V				
2+20	0.0410	0.26	Q V				
2+25	0.0428	0.26	Q V				
2+30	0.0446	0.26	Q V				
2+35	0.0464	0.26	Q V				
2+40	0.0482	0.26	Q V				
2+45	0.0501	0.28	Q V				
2+50	0.0521	0.29	Q V				
2+55	0.0541	0.29	Q V				
3+ 0	0.0561	0.29	Q V				
3+ 5	0.0581	0.29	Q V				
3+10	0.0602	0.30	Q V				
3+15	0.0623	0.32	Q V				
3+20	0.0645	0.32	Q V				
3+25	0.0668	0.33	Q V				
3+30	0.0693	0.36	Q V				
3+35	0.0720	0.39	Q V				
3+40	0.0748	0.40	Q V				
3+45	0.0777	0.42	Q V				
3+50	0.0806	0.43	Q V				
3+55	0.0837	0.45	Q V				
4+ 0	0.0869	0.46	Q V				
4+ 5	0.0902	0.48	Q V				
4+10	0.0937	0.50	Q V				
4+15	0.0973	0.53	Q V				
4+20	0.1012	0.56	Q V				
4+25	0.1061	0.71	Q V				
4+30	0.1117	0.82	Q V				
4+35	0.1185	0.99	Q V				
4+40	0.1272	1.26	Q V				

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177euh24100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
EXIST UNDEVELOPED CONDITION
UNIT HYDROGRAPH
100 YR - 24 HR STORM AMC II

Drainage Area = 8.70(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 8.70(Ac.) =
0.014 Sq. Mi.
Length along longest watercourse = 639.00(Ft.)
Length along longest watercourse measured to centroid =
283.00(Ft.)
Length along longest watercourse = 0.121 Mi.
Length along longest watercourse measured to centroid = 0.054
Mi.
Difference in elevation = 26.80(Ft.)
Slope along watercourse = 221.4460 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.032 Hr.
Lag time = 1.90 Min.
25% of lag time = 0.48 Min.
40% of lag time = 0.76 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	1.90	18.52

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	9.75	5.50	53.63

STORM EVENT (YEAR) = 100.00

Area Averaged 2-Year Rainfall = 1.900 (In)

Area Averaged 100-Year Rainfall = 5.500 (In)

Point rain (area averaged) = 5.500 (In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 5.500 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
8.700	67.00	0.000
Total Area Entered = 8.70 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
67.0	67.0	0.394	0.000	0.394	1.000	0.394
Sum (F) =						

0.394

Area averaged mean soil loss (F) (In/Hr) = 0.597

Minimum soil loss rate ((In/Hr)) = 0.299

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.900

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	262.846	52.517
2	0.167	525.692	39.271
3	0.250	788.537	6.619
4	0.333	1051.383	1.593
			4.605
			3.443
			0.580
			0.140

100.000 Sum= 8.768

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.07	0.044	(1.059)	0.040	0.004
2.	0.17	0.07	0.044	(1.055)	0.040	0.004
3.	0.25	0.07	0.044	(1.051)	0.040	0.004
4.	0.33	0.10	0.066	(1.047)	0.059	0.007
5.	0.42	0.10	0.066	(1.043)	0.059	0.007
6.	0.50	0.10	0.066	(1.039)	0.059	0.007
7.	0.58	0.10	0.066	(1.035)	0.059	0.007
8.	0.67	0.10	0.066	(1.031)	0.059	0.007
9.	0.75	0.10	0.066	(1.027)	0.059	0.007
10.	0.83	0.13	0.088	(1.023)	0.079	0.009
11.	0.92	0.13	0.088	(1.019)	0.079	0.009
12.	1.00	0.13	0.088	(1.015)	0.079	0.009
13.	1.08	0.10	0.066	(1.011)	0.059	0.007
14.	1.17	0.10	0.066	(1.007)	0.059	0.007
15.	1.25	0.10	0.066	(1.003)	0.059	0.007
16.	1.33	0.10	0.066	(0.999)	0.059	0.007
17.	1.42	0.10	0.066	(0.995)	0.059	0.007
18.	1.50	0.10	0.066	(0.991)	0.059	0.007
19.	1.58	0.10	0.066	(0.987)	0.059	0.007
20.	1.67	0.10	0.066	(0.983)	0.059	0.007
21.	1.75	0.10	0.066	(0.979)	0.059	0.007
22.	1.83	0.13	0.088	(0.975)	0.079	0.009
23.	1.92	0.13	0.088	(0.971)	0.079	0.009
24.	2.00	0.13	0.088	(0.967)	0.079	0.009
25.	2.08	0.13	0.088	(0.963)	0.079	0.009
26.	2.17	0.13	0.088	(0.959)	0.079	0.009
27.	2.25	0.13	0.088	(0.955)	0.079	0.009
28.	2.33	0.13	0.088	(0.951)	0.079	0.009
29.	2.42	0.13	0.088	(0.947)	0.079	0.009
30.	2.50	0.13	0.088	(0.944)	0.079	0.009
31.	2.58	0.17	0.110	(0.940)	0.099	0.011
32.	2.67	0.17	0.110	(0.936)	0.099	0.011
33.	2.75	0.17	0.110	(0.932)	0.099	0.011
34.	2.83	0.17	0.110	(0.928)	0.099	0.011
35.	2.92	0.17	0.110	(0.924)	0.099	0.011
36.	3.00	0.17	0.110	(0.921)	0.099	0.011
37.	3.08	0.17	0.110	(0.917)	0.099	0.011
38.	3.17	0.17	0.110	(0.913)	0.099	0.011
39.	3.25	0.17	0.110	(0.909)	0.099	0.011
40.	3.33	0.17	0.110	(0.905)	0.099	0.011
41.	3.42	0.17	0.110	(0.902)	0.099	0.011
42.	3.50	0.17	0.110	(0.898)	0.099	0.011

43.	3.58	0.17	0.110	(0.894)	0.099	0.011
44.	3.67	0.17	0.110	(0.890)	0.099	0.011
45.	3.75	0.17	0.110	(0.887)	0.099	0.011
46.	3.83	0.20	0.132	(0.883)	0.119	0.013
47.	3.92	0.20	0.132	(0.879)	0.119	0.013
48.	4.00	0.20	0.132	(0.875)	0.119	0.013
49.	4.08	0.20	0.132	(0.872)	0.119	0.013
50.	4.17	0.20	0.132	(0.868)	0.119	0.013
51.	4.25	0.20	0.132	(0.864)	0.119	0.013
52.	4.33	0.23	0.154	(0.861)	0.139	0.015
53.	4.42	0.23	0.154	(0.857)	0.139	0.015
54.	4.50	0.23	0.154	(0.853)	0.139	0.015
55.	4.58	0.23	0.154	(0.850)	0.139	0.015
56.	4.67	0.23	0.154	(0.846)	0.139	0.015
57.	4.75	0.23	0.154	(0.842)	0.139	0.015
58.	4.83	0.27	0.176	(0.839)	0.158	0.018
59.	4.92	0.27	0.176	(0.835)	0.158	0.018
60.	5.00	0.27	0.176	(0.831)	0.158	0.018
61.	5.08	0.20	0.132	(0.828)	0.119	0.013
62.	5.17	0.20	0.132	(0.824)	0.119	0.013
63.	5.25	0.20	0.132	(0.821)	0.119	0.013
64.	5.33	0.23	0.154	(0.817)	0.139	0.015
65.	5.42	0.23	0.154	(0.813)	0.139	0.015
66.	5.50	0.23	0.154	(0.810)	0.139	0.015
67.	5.58	0.27	0.176	(0.806)	0.158	0.018
68.	5.67	0.27	0.176	(0.803)	0.158	0.018
69.	5.75	0.27	0.176	(0.799)	0.158	0.018
70.	5.83	0.27	0.176	(0.796)	0.158	0.018
71.	5.92	0.27	0.176	(0.792)	0.158	0.018
72.	6.00	0.27	0.176	(0.789)	0.158	0.018
73.	6.08	0.30	0.198	(0.785)	0.178	0.020
74.	6.17	0.30	0.198	(0.782)	0.178	0.020
75.	6.25	0.30	0.198	(0.778)	0.178	0.020
76.	6.33	0.30	0.198	(0.775)	0.178	0.020
77.	6.42	0.30	0.198	(0.771)	0.178	0.020
78.	6.50	0.30	0.198	(0.768)	0.178	0.020
79.	6.58	0.33	0.220	(0.764)	0.198	0.022
80.	6.67	0.33	0.220	(0.761)	0.198	0.022
81.	6.75	0.33	0.220	(0.757)	0.198	0.022
82.	6.83	0.33	0.220	(0.754)	0.198	0.022
83.	6.92	0.33	0.220	(0.751)	0.198	0.022
84.	7.00	0.33	0.220	(0.747)	0.198	0.022
85.	7.08	0.33	0.220	(0.744)	0.198	0.022
86.	7.17	0.33	0.220	(0.740)	0.198	0.022
87.	7.25	0.33	0.220	(0.737)	0.198	0.022
88.	7.33	0.37	0.242	(0.734)	0.218	0.024
89.	7.42	0.37	0.242	(0.730)	0.218	0.024
90.	7.50	0.37	0.242	(0.727)	0.218	0.024
91.	7.58	0.40	0.264	(0.724)	0.238	0.026
92.	7.67	0.40	0.264	(0.720)	0.238	0.026
93.	7.75	0.40	0.264	(0.717)	0.238	0.026
94.	7.83	0.43	0.286	(0.714)	0.257	0.029
95.	7.92	0.43	0.286	(0.710)	0.257	0.029
96.	8.00	0.43	0.286	(0.707)	0.257	0.029

97.	8.08	0.50	0.330	(0.704)	0.297	0.033
98.	8.17	0.50	0.330	(0.701)	0.297	0.033
99.	8.25	0.50	0.330	(0.697)	0.297	0.033
100.	8.33	0.50	0.330	(0.694)	0.297	0.033
101.	8.42	0.50	0.330	(0.691)	0.297	0.033
102.	8.50	0.50	0.330	(0.688)	0.297	0.033
103.	8.58	0.53	0.352	(0.684)	0.317	0.035
104.	8.67	0.53	0.352	(0.681)	0.317	0.035
105.	8.75	0.53	0.352	(0.678)	0.317	0.035
106.	8.83	0.57	0.374	(0.675)	0.337	0.037
107.	8.92	0.57	0.374	(0.671)	0.337	0.037
108.	9.00	0.57	0.374	(0.668)	0.337	0.037
109.	9.08	0.63	0.418	(0.665)	0.376	0.042
110.	9.17	0.63	0.418	(0.662)	0.376	0.042
111.	9.25	0.63	0.418	(0.659)	0.376	0.042
112.	9.33	0.67	0.440	(0.656)	0.396	0.044
113.	9.42	0.67	0.440	(0.653)	0.396	0.044
114.	9.50	0.67	0.440	(0.649)	0.396	0.044
115.	9.58	0.70	0.462	(0.646)	0.416	0.046
116.	9.67	0.70	0.462	(0.643)	0.416	0.046
117.	9.75	0.70	0.462	(0.640)	0.416	0.046
118.	9.83	0.73	0.484	(0.637)	0.436	0.048
119.	9.92	0.73	0.484	(0.634)	0.436	0.048
120.	10.00	0.73	0.484	(0.631)	0.436	0.048
121.	10.08	0.50	0.330	(0.628)	0.297	0.033
122.	10.17	0.50	0.330	(0.625)	0.297	0.033
123.	10.25	0.50	0.330	(0.622)	0.297	0.033
124.	10.33	0.50	0.330	(0.619)	0.297	0.033
125.	10.42	0.50	0.330	(0.616)	0.297	0.033
126.	10.50	0.50	0.330	(0.613)	0.297	0.033
127.	10.58	0.67	0.440	(0.610)	0.396	0.044
128.	10.67	0.67	0.440	(0.607)	0.396	0.044
129.	10.75	0.67	0.440	(0.604)	0.396	0.044
130.	10.83	0.67	0.440	(0.601)	0.396	0.044
131.	10.92	0.67	0.440	(0.598)	0.396	0.044
132.	11.00	0.67	0.440	(0.595)	0.396	0.044
133.	11.08	0.63	0.418	(0.592)	0.376	0.042
134.	11.17	0.63	0.418	(0.589)	0.376	0.042
135.	11.25	0.63	0.418	(0.586)	0.376	0.042
136.	11.33	0.63	0.418	(0.583)	0.376	0.042
137.	11.42	0.63	0.418	(0.580)	0.376	0.042
138.	11.50	0.63	0.418	(0.578)	0.376	0.042
139.	11.58	0.57	0.374	(0.575)	0.337	0.037
140.	11.67	0.57	0.374	(0.572)	0.337	0.037
141.	11.75	0.57	0.374	(0.569)	0.337	0.037
142.	11.83	0.60	0.396	(0.566)	0.356	0.040
143.	11.92	0.60	0.396	(0.563)	0.356	0.040
144.	12.00	0.60	0.396	(0.561)	0.356	0.040
145.	12.08	0.83	0.550	(0.558)	0.495	0.055
146.	12.17	0.83	0.550	(0.555)	0.495	0.055
147.	12.25	0.83	0.550	(0.552)	0.495	0.055
148.	12.33	0.87	0.572	(0.549)	0.515	0.057
149.	12.42	0.87	0.572	(0.547)	0.515	0.057
150.	12.50	0.87	0.572	(0.544)	0.515	0.057

151.	12.58	0.93	0.616	0.541	(0.554)	0.075
152.	12.67	0.93	0.616	0.538	(0.554)	0.078
153.	12.75	0.93	0.616	0.536	(0.554)	0.080
154.	12.83	0.97	0.638	0.533	(0.574)	0.105
155.	12.92	0.97	0.638	0.530	(0.574)	0.108
156.	13.00	0.97	0.638	0.528	(0.574)	0.110
157.	13.08	1.13	0.748	0.525	(0.673)	0.223
158.	13.17	1.13	0.748	0.522	(0.673)	0.226
159.	13.25	1.13	0.748	0.520	(0.673)	0.228
160.	13.33	1.13	0.748	0.517	(0.673)	0.231
161.	13.42	1.13	0.748	0.514	(0.673)	0.234
162.	13.50	1.13	0.748	0.512	(0.673)	0.236
163.	13.58	0.77	0.506	(0.509)	0.455	0.051
164.	13.67	0.77	0.506	(0.507)	0.455	0.051
165.	13.75	0.77	0.506	(0.504)	0.455	0.051
166.	13.83	0.77	0.506	(0.501)	0.455	0.051
167.	13.92	0.77	0.506	(0.499)	0.455	0.051
168.	14.00	0.77	0.506	(0.496)	0.455	0.051
169.	14.08	0.90	0.594	0.494	(0.535)	0.100
170.	14.17	0.90	0.594	0.491	(0.535)	0.103
171.	14.25	0.90	0.594	0.489	(0.535)	0.105
172.	14.33	0.87	0.572	0.486	(0.515)	0.086
173.	14.42	0.87	0.572	0.484	(0.515)	0.088
174.	14.50	0.87	0.572	0.481	(0.515)	0.091
175.	14.58	0.87	0.572	0.479	(0.515)	0.093
176.	14.67	0.87	0.572	0.476	(0.515)	0.096
177.	14.75	0.87	0.572	0.474	(0.515)	0.098
178.	14.83	0.83	0.550	0.471	(0.495)	0.079
179.	14.92	0.83	0.550	0.469	(0.495)	0.081
180.	15.00	0.83	0.550	0.467	(0.495)	0.083
181.	15.08	0.80	0.528	0.464	(0.475)	0.064
182.	15.17	0.80	0.528	0.462	(0.475)	0.066
183.	15.25	0.80	0.528	0.460	(0.475)	0.068
184.	15.33	0.77	0.506	(0.457)	0.455	0.051
185.	15.42	0.77	0.506	0.455	(0.455)	0.051
186.	15.50	0.77	0.506	0.452	(0.455)	0.054
187.	15.58	0.63	0.418	(0.450)	0.376	0.042
188.	15.67	0.63	0.418	(0.448)	0.376	0.042
189.	15.75	0.63	0.418	(0.446)	0.376	0.042
190.	15.83	0.63	0.418	(0.443)	0.376	0.042
191.	15.92	0.63	0.418	(0.441)	0.376	0.042
192.	16.00	0.63	0.418	(0.439)	0.376	0.042
193.	16.08	0.13	0.088	(0.437)	0.079	0.009
194.	16.17	0.13	0.088	(0.434)	0.079	0.009
195.	16.25	0.13	0.088	(0.432)	0.079	0.009
196.	16.33	0.13	0.088	(0.430)	0.079	0.009
197.	16.42	0.13	0.088	(0.428)	0.079	0.009
198.	16.50	0.13	0.088	(0.425)	0.079	0.009
199.	16.58	0.10	0.066	(0.423)	0.059	0.007
200.	16.67	0.10	0.066	(0.421)	0.059	0.007
201.	16.75	0.10	0.066	(0.419)	0.059	0.007
202.	16.83	0.10	0.066	(0.417)	0.059	0.007
203.	16.92	0.10	0.066	(0.415)	0.059	0.007
204.	17.00	0.10	0.066	(0.413)	0.059	0.007

205.	17.08	0.17	0.110	(0.411)	0.099	0.011
206.	17.17	0.17	0.110	(0.409)	0.099	0.011
207.	17.25	0.17	0.110	(0.407)	0.099	0.011
208.	17.33	0.17	0.110	(0.404)	0.099	0.011
209.	17.42	0.17	0.110	(0.402)	0.099	0.011
210.	17.50	0.17	0.110	(0.400)	0.099	0.011
211.	17.58	0.17	0.110	(0.398)	0.099	0.011
212.	17.67	0.17	0.110	(0.396)	0.099	0.011
213.	17.75	0.17	0.110	(0.394)	0.099	0.011
214.	17.83	0.13	0.088	(0.392)	0.079	0.009
215.	17.92	0.13	0.088	(0.391)	0.079	0.009
216.	18.00	0.13	0.088	(0.389)	0.079	0.009
217.	18.08	0.13	0.088	(0.387)	0.079	0.009
218.	18.17	0.13	0.088	(0.385)	0.079	0.009
219.	18.25	0.13	0.088	(0.383)	0.079	0.009
220.	18.33	0.13	0.088	(0.381)	0.079	0.009
221.	18.42	0.13	0.088	(0.379)	0.079	0.009
222.	18.50	0.13	0.088	(0.377)	0.079	0.009
223.	18.58	0.10	0.066	(0.376)	0.059	0.007
224.	18.67	0.10	0.066	(0.374)	0.059	0.007
225.	18.75	0.10	0.066	(0.372)	0.059	0.007
226.	18.83	0.07	0.044	(0.370)	0.040	0.004
227.	18.92	0.07	0.044	(0.368)	0.040	0.004
228.	19.00	0.07	0.044	(0.367)	0.040	0.004
229.	19.08	0.10	0.066	(0.365)	0.059	0.007
230.	19.17	0.10	0.066	(0.363)	0.059	0.007
231.	19.25	0.10	0.066	(0.361)	0.059	0.007
232.	19.33	0.13	0.088	(0.360)	0.079	0.009
233.	19.42	0.13	0.088	(0.358)	0.079	0.009
234.	19.50	0.13	0.088	(0.356)	0.079	0.009
235.	19.58	0.10	0.066	(0.355)	0.059	0.007
236.	19.67	0.10	0.066	(0.353)	0.059	0.007
237.	19.75	0.10	0.066	(0.352)	0.059	0.007
238.	19.83	0.07	0.044	(0.350)	0.040	0.004
239.	19.92	0.07	0.044	(0.348)	0.040	0.004
240.	20.00	0.07	0.044	(0.347)	0.040	0.004
241.	20.08	0.10	0.066	(0.345)	0.059	0.007
242.	20.17	0.10	0.066	(0.344)	0.059	0.007
243.	20.25	0.10	0.066	(0.342)	0.059	0.007
244.	20.33	0.10	0.066	(0.341)	0.059	0.007
245.	20.42	0.10	0.066	(0.339)	0.059	0.007
246.	20.50	0.10	0.066	(0.338)	0.059	0.007
247.	20.58	0.10	0.066	(0.337)	0.059	0.007
248.	20.67	0.10	0.066	(0.335)	0.059	0.007
249.	20.75	0.10	0.066	(0.334)	0.059	0.007
250.	20.83	0.07	0.044	(0.332)	0.040	0.004
251.	20.92	0.07	0.044	(0.331)	0.040	0.004
252.	21.00	0.07	0.044	(0.330)	0.040	0.004
253.	21.08	0.10	0.066	(0.328)	0.059	0.007
254.	21.17	0.10	0.066	(0.327)	0.059	0.007
255.	21.25	0.10	0.066	(0.326)	0.059	0.007
256.	21.33	0.07	0.044	(0.325)	0.040	0.004
257.	21.42	0.07	0.044	(0.323)	0.040	0.004
258.	21.50	0.07	0.044	(0.322)	0.040	0.004

259.	21.58	0.10	0.066	(0.321)	0.059	0.007
260.	21.67	0.10	0.066	(0.320)	0.059	0.007
261.	21.75	0.10	0.066	(0.319)	0.059	0.007
262.	21.83	0.07	0.044	(0.318)	0.040	0.004
263.	21.92	0.07	0.044	(0.317)	0.040	0.004
264.	22.00	0.07	0.044	(0.315)	0.040	0.004
265.	22.08	0.10	0.066	(0.314)	0.059	0.007
266.	22.17	0.10	0.066	(0.313)	0.059	0.007
267.	22.25	0.10	0.066	(0.312)	0.059	0.007
268.	22.33	0.07	0.044	(0.311)	0.040	0.004
269.	22.42	0.07	0.044	(0.310)	0.040	0.004
270.	22.50	0.07	0.044	(0.310)	0.040	0.004
271.	22.58	0.07	0.044	(0.309)	0.040	0.004
272.	22.67	0.07	0.044	(0.308)	0.040	0.004
273.	22.75	0.07	0.044	(0.307)	0.040	0.004
274.	22.83	0.07	0.044	(0.306)	0.040	0.004
275.	22.92	0.07	0.044	(0.305)	0.040	0.004
276.	23.00	0.07	0.044	(0.305)	0.040	0.004
277.	23.08	0.07	0.044	(0.304)	0.040	0.004
278.	23.17	0.07	0.044	(0.303)	0.040	0.004
279.	23.25	0.07	0.044	(0.303)	0.040	0.004
280.	23.33	0.07	0.044	(0.302)	0.040	0.004
281.	23.42	0.07	0.044	(0.301)	0.040	0.004
282.	23.50	0.07	0.044	(0.301)	0.040	0.004
283.	23.58	0.07	0.044	(0.300)	0.040	0.004
284.	23.67	0.07	0.044	(0.300)	0.040	0.004
285.	23.75	0.07	0.044	(0.300)	0.040	0.004
286.	23.83	0.07	0.044	(0.299)	0.040	0.004
287.	23.92	0.07	0.044	(0.299)	0.040	0.004
288.	24.00	0.07	0.044	(0.299)	0.040	0.004

(Loss Rate Not Used)

Sum = 100.0

Sum = 8.2

Flood volume = Effective rainfall 0.68(In)

times area 8.7(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)

Total soil loss = 4.82(In)

Total soil loss = 3.494(Ac.Ft)

Total rainfall = 5.50(In)

Flood volume = 21497.0 Cubic Feet

Total soil loss = 152195.6 Cubic Feet

Peak flow rate of this hydrograph = 2.059(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						

0+ 5	0.0001	0.02	Q				
0+10	0.0004	0.04	Q				

0+15	0.0006	0.04	Q				
0+20	0.0010	0.05	Q				
0+25	0.0014	0.06	Q				
0+30	0.0018	0.06	Q				
0+35	0.0022	0.06	Q				
0+40	0.0026	0.06	Q				
0+45	0.0030	0.06	Q				
0+50	0.0034	0.07	Q				
0+55	0.0040	0.08	Q				
1+ 0	0.0045	0.08	Q				
1+ 5	0.0049	0.07	Q				
1+10	0.0054	0.06	Q				
1+15	0.0058	0.06	Q				
1+20	0.0062	0.06	Q				
1+25	0.0066	0.06	Q				
1+30	0.0069	0.06	Q				
1+35	0.0073	0.06	Q				
1+40	0.0077	0.06	Q				
1+45	0.0081	0.06	Q				
1+50	0.0086	0.07	Q				
1+55	0.0091	0.08	Q				
2+ 0	0.0097	0.08	Q				
2+ 5	0.0102	0.08	Q				
2+10	0.0107	0.08	Q				
2+15	0.0113	0.08	Q				
2+20	0.0118	0.08	Q				
2+25	0.0123	0.08	Q				
2+30	0.0129	0.08	QV				
2+35	0.0135	0.09	QV				
2+40	0.0141	0.09	QV				
2+45	0.0148	0.10	QV				
2+50	0.0154	0.10	QV				
2+55	0.0161	0.10	QV				
3+ 0	0.0168	0.10	QV				
3+ 5	0.0174	0.10	QV				
3+10	0.0181	0.10	QV				
3+15	0.0188	0.10	QV				
3+20	0.0194	0.10	QV				
3+25	0.0201	0.10	QV				
3+30	0.0208	0.10	QV				
3+35	0.0214	0.10	QV				
3+40	0.0221	0.10	QV				
3+45	0.0227	0.10	QV				
3+50	0.0235	0.11	QV				
3+55	0.0243	0.11	QV				
4+ 0	0.0251	0.12	Q V				
4+ 5	0.0259	0.12	Q V				
4+10	0.0267	0.12	Q V				
4+15	0.0275	0.12	Q V				
4+20	0.0283	0.13	Q V				
4+25	0.0292	0.13	Q V				
4+30	0.0302	0.13	Q V				
4+35	0.0311	0.14	Q V				
4+40	0.0320	0.14	Q V				

4+45	0.0330	0.14	Q	V				
4+50	0.0340	0.15	Q	V				
4+55	0.0350	0.15	Q	V				
5+ 0	0.0361	0.15	Q	V				
5+ 5	0.0370	0.13	Q	V				
5+10	0.0378	0.12	Q	V				
5+15	0.0386	0.12	Q	V				
5+20	0.0395	0.13	Q	V				
5+25	0.0404	0.13	Q	V				
5+30	0.0413	0.13	Q	V				
5+35	0.0423	0.15	Q	V				
5+40	0.0434	0.15	Q	V				
5+45	0.0444	0.15	Q	V				
5+50	0.0455	0.15	Q	V				
5+55	0.0466	0.15	Q	V				
6+ 0	0.0476	0.15	Q	V				
6+ 5	0.0488	0.16	Q	V				
6+10	0.0500	0.17	Q	V				
6+15	0.0512	0.17	Q	V				
6+20	0.0523	0.17	Q	V				
6+25	0.0535	0.17	Q	V				
6+30	0.0547	0.17	Q	V				
6+35	0.0560	0.18	Q	V				
6+40	0.0573	0.19	Q	V				
6+45	0.0587	0.19	Q	V				
6+50	0.0600	0.19	Q	V				
6+55	0.0613	0.19	Q	V				
7+ 0	0.0626	0.19	Q	V				
7+ 5	0.0640	0.19	Q	V				
7+10	0.0653	0.19	Q	V				
7+15	0.0666	0.19	Q	V				
7+20	0.0680	0.20	Q	V				
7+25	0.0695	0.21	Q	V				
7+30	0.0709	0.21	Q	V				
7+35	0.0725	0.22	Q	V				
7+40	0.0741	0.23	Q	V				
7+45	0.0756	0.23	Q	V				
7+50	0.0773	0.24	Q	V				
7+55	0.0790	0.25	Q	V				
8+ 0	0.0808	0.25	Q	V				
8+ 5	0.0826	0.27	Q	V				
8+10	0.0846	0.29	Q	V				
8+15	0.0866	0.29	Q	V				
8+20	0.0886	0.29	Q	V				
8+25	0.0906	0.29	Q	V				
8+30	0.0926	0.29	Q	V				
8+35	0.0946	0.30	Q	V				
8+40	0.0967	0.31	Q	V				
8+45	0.0989	0.31	Q	V				
8+50	0.1011	0.32	Q	V				
8+55	0.1033	0.33	Q	V				
9+ 0	0.1056	0.33	Q	V				
9+ 5	0.1080	0.35	Q	V				
9+10	0.1105	0.36	Q	V				

9+15	0.1130	0.37	Q		V				
9+20	0.1156	0.38	Q		V				
9+25	0.1182	0.38	Q		V				
9+30	0.1209	0.39	Q		V				
9+35	0.1236	0.40	Q		V				
9+40	0.1264	0.40	Q		V				
9+45	0.1292	0.40	Q		V				
9+50	0.1320	0.42	Q		V				
9+55	0.1350	0.42	Q		V				
10+ 0	0.1379	0.42	Q		V				
10+ 5	0.1403	0.35	Q		V				
10+10	0.1424	0.30	Q		V				
10+15	0.1444	0.29	Q		V				
10+20	0.1464	0.29	Q		V				
10+25	0.1484	0.29	Q		V				
10+30	0.1504	0.29	Q		V				
10+35	0.1527	0.34	Q		V				
10+40	0.1553	0.38	Q		V				
10+45	0.1580	0.38	Q		V				
10+50	0.1606	0.39	Q		V				
10+55	0.1633	0.39	Q		V				
11+ 0	0.1659	0.39	Q		V				
11+ 5	0.1685	0.38	Q		V				
11+10	0.1711	0.37	Q		V				
11+15	0.1736	0.37	Q		V				
11+20	0.1761	0.37	Q		V				
11+25	0.1787	0.37	Q		V				
11+30	0.1812	0.37	Q		V				
11+35	0.1836	0.35	Q		V				
11+40	0.1858	0.33	Q		V				
11+45	0.1881	0.33	Q		V				
11+50	0.1904	0.34	Q		V				
11+55	0.1928	0.35	Q		V				
12+ 0	0.1952	0.35	Q		V				
12+ 5	0.1981	0.42	Q		V				
12+10	0.2013	0.47	Q		V				
12+15	0.2046	0.48	Q		V				
12+20	0.2080	0.49	Q		V				
12+25	0.2115	0.50	Q		V				
12+30	0.2149	0.50	Q		V				
12+35	0.2190	0.58	Q		V				
12+40	0.2235	0.66	Q		V				
12+45	0.2282	0.69	Q		V				
12+50	0.2338	0.82	Q		V				
12+55	0.2401	0.92	Q		V				
13+ 0	0.2467	0.95	Q		V				
13+ 5	0.2569	1.49	Q		V				
13+10	0.2699	1.89	Q		V				
13+15	0.2835	1.97	Q		V				
13+20	0.2974	2.01	Q		V				
13+25	0.3114	2.04	Q		V				
13+30	0.3256	2.06	Q		V				
13+35	0.3340	1.21	Q		V				
13+40	0.3379	0.58	Q		V				

13+45	0.3412	0.47	Q			V		
13+50	0.3442	0.44	Q			V		
13+55	0.3473	0.44	Q			V		
14+ 0	0.3503	0.44	Q			V		
14+ 5	0.3550	0.67	Q			V		
14+10	0.3609	0.86	Q			V		
14+15	0.3671	0.90	Q			V		
14+20	0.3728	0.83	Q			V		
14+25	0.3782	0.78	Q			V		
14+30	0.3836	0.79	Q			V		
14+35	0.3891	0.81	Q			V		
14+40	0.3948	0.83	Q			V		
14+45	0.4007	0.85	Q			V		
14+50	0.4060	0.77	Q			V		
14+55	0.4109	0.71	Q			V		
15+ 0	0.4158	0.72	Q			V		
15+ 5	0.4202	0.64	Q			V		
15+10	0.4243	0.58	Q			V		
15+15	0.4283	0.59	Q			V		
15+20	0.4319	0.52	Q			V		
15+25	0.4351	0.46	Q			V		
15+30	0.4382	0.46	Q			V		
15+35	0.4411	0.41	Q			V		
15+40	0.4437	0.37	Q			V		
15+45	0.4462	0.37	Q			V		
15+50	0.4487	0.37	Q			V		
15+55	0.4513	0.37	Q			V		
16+ 0	0.4538	0.37	Q			V		
16+ 5	0.4553	0.21	Q			V		
16+10	0.4559	0.10	Q			V		
16+15	0.4565	0.08	Q			V		
16+20	0.4570	0.08	Q			V		
16+25	0.4576	0.08	Q			V		
16+30	0.4581	0.08	Q			V		
16+35	0.4586	0.07	Q			V		
16+40	0.4590	0.06	Q			V		
16+45	0.4594	0.06	Q			V		
16+50	0.4598	0.06	Q			V		
16+55	0.4602	0.06	Q			V		
17+ 0	0.4606	0.06	Q			V		
17+ 5	0.4611	0.08	Q			V		
17+10	0.4618	0.09	Q			V		
17+15	0.4624	0.10	Q			V		
17+20	0.4631	0.10	Q			V		
17+25	0.4637	0.10	Q			V		
17+30	0.4644	0.10	Q			V		
17+35	0.4651	0.10	Q			V		
17+40	0.4657	0.10	Q			V		
17+45	0.4664	0.10	Q			V		
17+50	0.4670	0.09	Q			V		
17+55	0.4675	0.08	Q			V		
18+ 0	0.4681	0.08	Q			V		
18+ 5	0.4686	0.08	Q			V		
18+10	0.4691	0.08	Q			V		

18+15	0.4697	0.08	Q				V	
18+20	0.4702	0.08	Q				V	
18+25	0.4707	0.08	Q				V	
18+30	0.4713	0.08	Q				V	
18+35	0.4717	0.07	Q				V	
18+40	0.4721	0.06	Q				V	
18+45	0.4725	0.06	Q				V	
18+50	0.4729	0.05	Q				V	
18+55	0.4731	0.04	Q				V	
19+ 0	0.4734	0.04	Q				V	
19+ 5	0.4737	0.05	Q				V	
19+10	0.4741	0.06	Q				V	
19+15	0.4745	0.06	Q				V	
19+20	0.4750	0.07	Q				V	
19+25	0.4755	0.08	Q				V	
19+30	0.4761	0.08	Q				V	
19+35	0.4765	0.07	Q				V	
19+40	0.4769	0.06	Q				V	
19+45	0.4773	0.06	Q				V	
19+50	0.4777	0.05	Q				V	
19+55	0.4779	0.04	Q				V	
20+ 0	0.4782	0.04	Q				V	
20+ 5	0.4785	0.05	Q				V	
20+10	0.4789	0.06	Q				V	
20+15	0.4793	0.06	Q				V	
20+20	0.4797	0.06	Q				V	
20+25	0.4801	0.06	Q				V	
20+30	0.4805	0.06	Q				V	
20+35	0.4809	0.06	Q				V	
20+40	0.4813	0.06	Q				V	
20+45	0.4817	0.06	Q				V	
20+50	0.4820	0.05	Q				V	
20+55	0.4823	0.04	Q				V	
21+ 0	0.4826	0.04	Q				V	
21+ 5	0.4829	0.05	Q				V	
21+10	0.4833	0.06	Q				V	
21+15	0.4837	0.06	Q				V	
21+20	0.4840	0.05	Q				V	
21+25	0.4843	0.04	Q				V	
21+30	0.4846	0.04	Q				V	
21+35	0.4849	0.05	Q				V	
21+40	0.4853	0.06	Q				V	
21+45	0.4857	0.06	Q				V	
21+50	0.4860	0.05	Q				V	
21+55	0.4863	0.04	Q				V	
22+ 0	0.4866	0.04	Q				V	
22+ 5	0.4869	0.05	Q				V	
22+10	0.4873	0.06	Q				V	
22+15	0.4877	0.06	Q				V	
22+20	0.4880	0.05	Q				V	
22+25	0.4883	0.04	Q				V	
22+30	0.4886	0.04	Q				V	
22+35	0.4888	0.04	Q				V	
22+40	0.4891	0.04	Q				V	

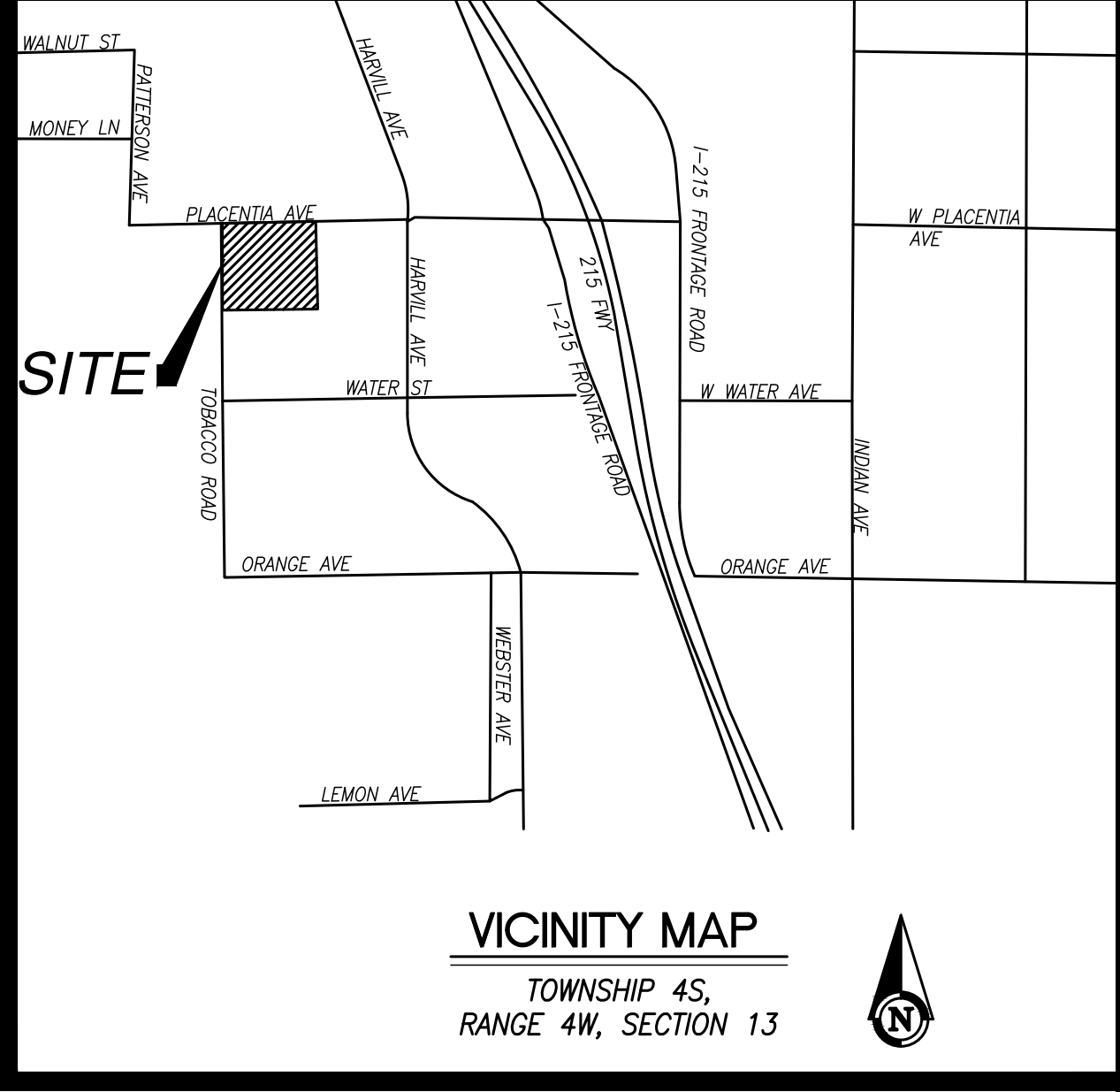
22+45	0.4894	0.04	Q				V
22+50	0.4896	0.04	Q				V
22+55	0.4899	0.04	Q				V
23+ 0	0.4902	0.04	Q				V
23+ 5	0.4904	0.04	Q				V
23+10	0.4907	0.04	Q				V
23+15	0.4910	0.04	Q				V
23+20	0.4912	0.04	Q				V
23+25	0.4915	0.04	Q				V
23+30	0.4918	0.04	Q				V
23+35	0.4920	0.04	Q				V
23+40	0.4923	0.04	Q				V
23+45	0.4926	0.04	Q				V
23+50	0.4928	0.04	Q				V
23+55	0.4931	0.04	Q				V
24+ 0	0.4934	0.04	Q				V
24+ 5	0.4935	0.02	Q				V
24+10	0.4935	0.00	Q				V
24+15	0.4935	0.00	Q				V

Appendix “B” - Existing Conditions Map:
Unit Hydrograph Exhibit

EXISTING HYDROLOGIC CONDITIONS - PERRIS NORTH DEVELOPMENT

APN: 317-240-001
OWNER: CHANDLERS SUB REVISED

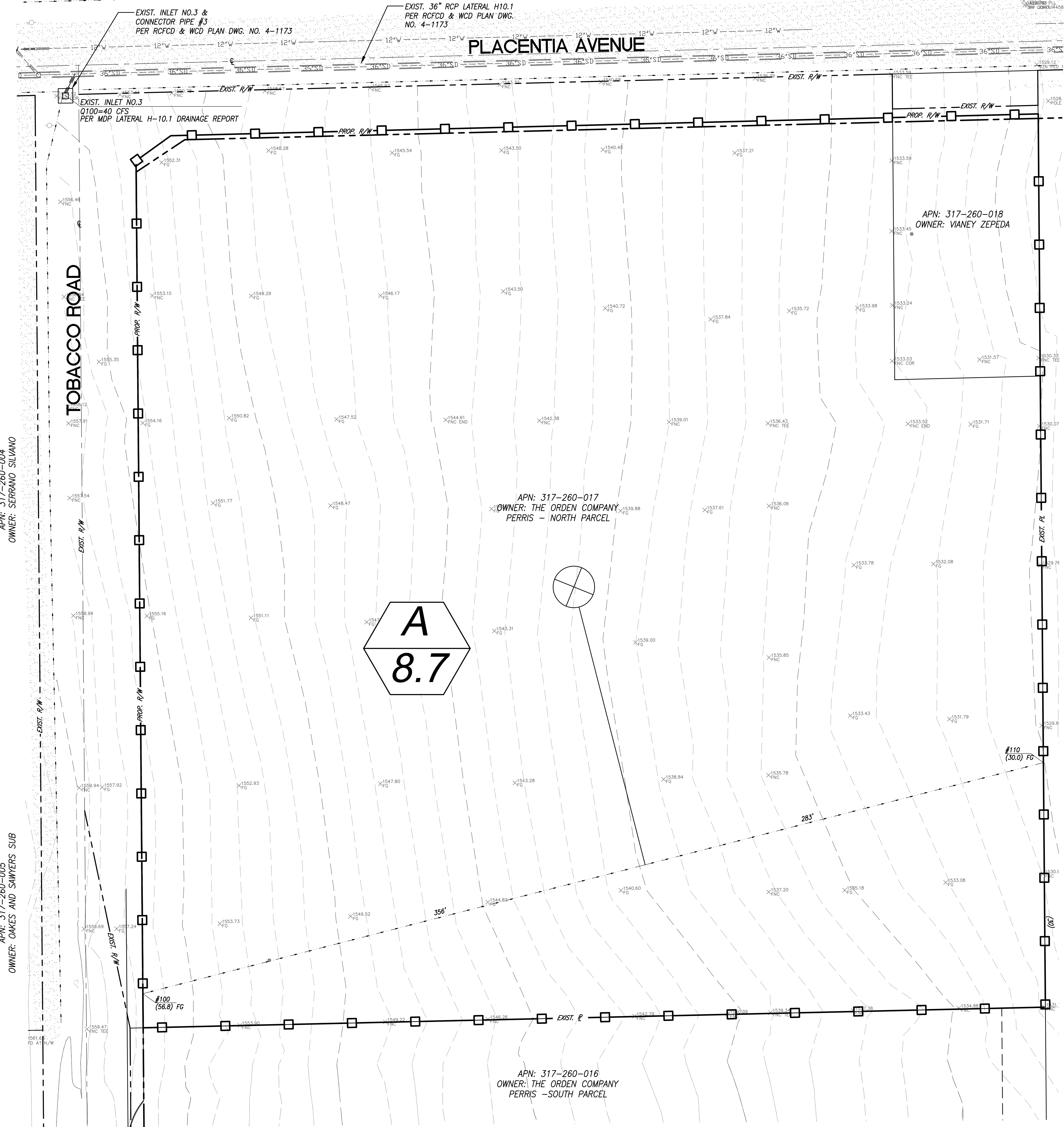
APN: 317-240-021
OWNER: CHANDLERS SUB REVISED



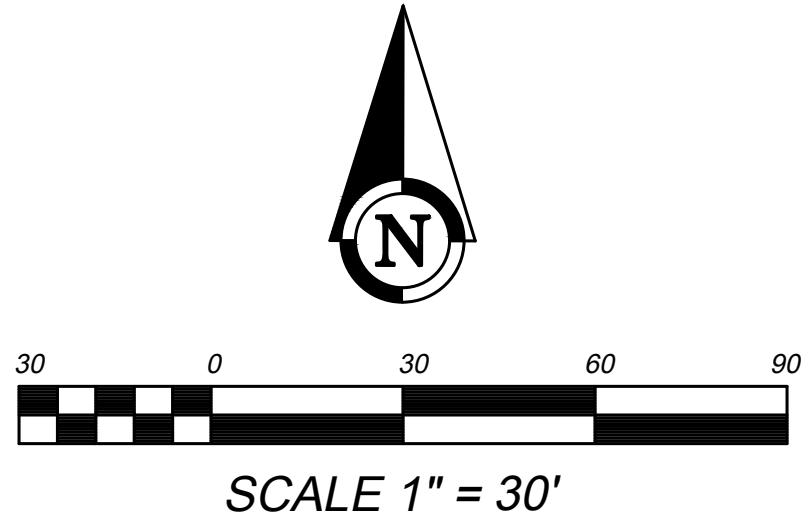
VICINITY MAP
TOWNSHIP 4S,
RANGE 4W, SECTION 13

LEGEND

- U/G ELECTRICAL CONDUITS
- U/G WATER
- EXISTING GROUND CONTOUR
- CENTERLINE
- R/W LINE
- TRIBUTARY AREA BOUNDARY
- SUBAREA
- ACREAGE
- FLOWLINE
- NODE ELEVATION
- CENTROID



	EXIST. UNDEVELOPED UNIT HYDROGRAPH PEAK FLOW (CFS)			
	2 YR STORM	5 YR STORM	10 YR STORM	100 YR STORM
1 HR DURATION	5.8	9.8	12.9	23.2
3 HR DURATION	1.3	3.5	5.2	10.9
6 HR DURATION	0.9	2.8	4.4	9.6
24 HR DURATION	0.2	0.3	0.4	2.1



EXISTING PRE-DEVELOPMENT
UNIT HYDROGRAPH EXHIBIT
FOR
THE ORDEN COMPANY
COUNTY OF RIVERSIDE

PREPARED BY:

Armstrong & Brooks Consulting Engineers, Inc.
Civil Engineering - Water Resources - Surveying
1350 E. Chase Drive, Corona, CA 92881
Mail: P.O. Box 78088, Corona, CA 92887
Ph: (951) 372-8400, Fax (951) 372-8430

Appendix “C”- Proposed Conditions Calculations

Appendix “C-1” – Proposed Developed Unrouted Hydrographs

**WATERSHED A:
TRIBUTARY TO
INFILTRATION TRENCH**

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH12.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.77	0.50	0.39

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.77	1.30	1.00

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.500 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.500 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.346	0.599	1.000	0.599

Sum (F) =

0.599

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.623

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1. 0.08	4.20	0.252	(0.599)	0.157	0.095
2. 0.17	4.30	0.258	(0.599)	0.161	0.097
3. 0.25	5.00	0.300	(0.599)	0.187	0.113
4. 0.33	5.00	0.300	(0.599)	0.187	0.113
5. 0.42	5.80	0.348	(0.599)	0.217	0.131
6. 0.50	6.50	0.390	(0.599)	0.243	0.147
7. 0.58	7.40	0.444	(0.599)	0.277	0.167
8. 0.67	8.60	0.516	(0.599)	0.321	0.195
9. 0.75	12.30	0.738	(0.599)	0.460	0.278
10. 0.83	29.10	1.746	0.599	(1.088)	1.147
11. 0.92	6.80	0.408	(0.599)	0.254	0.154
12. 1.00	5.00	0.300	(0.599)	0.187	0.113

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.8

Flood volume = Effective rainfall 0.23(In)
times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.27(In)
Total soil loss = 0.017(Ac.Ft)
Total rainfall = 0.50(In)
Flood volume = 640.6 Cubic Feet
Total soil loss = 756.9 Cubic Feet

Peak flow rate of this hydrograph = 0.612(CFS)

+++++
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m) Volume Ac.Ft Q(CFS) 0 2.5 5.0 7.5
10.0

0+ 5	0.0003	0.04	Q				
0+10	0.0008	0.07	Q V				
0+15	0.0014	0.08	Q V				
0+20	0.0020	0.09	Q V				
0+25	0.0026	0.10	Q V				
0+30	0.0034	0.11	Q V				
0+35	0.0042	0.12	Q V				
0+40	0.0052	0.14	Q V				
0+45	0.0065	0.19	Q V				
0+50	0.0107	0.61	Q			V	

0+55	0.0135	0.40	IQ				V	
1+ 0	0.0144	0.14	Q					V
1+ 5	0.0147	0.04	Q					V
1+10	0.0147	0.00	Q					V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH32.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	0.85	0.65

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.00	1.54

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 0.850 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.850 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.346	0.599	1.000	0.599

Sum (F) =

0.599

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.623

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.133	(0.599)	0.083	0.050
2.	0.17	1.30	0.133	(0.599)	0.083	0.050
3.	0.25	1.10	0.112	(0.599)	0.070	0.042
4.	0.33	1.50	0.153	(0.599)	0.095	0.058
5.	0.42	1.50	0.153	(0.599)	0.095	0.058
6.	0.50	1.80	0.184	(0.599)	0.114	0.069
7.	0.58	1.50	0.153	(0.599)	0.095	0.058
8.	0.67	1.80	0.184	(0.599)	0.114	0.069
9.	0.75	1.80	0.184	(0.599)	0.114	0.069
10.	0.83	1.50	0.153	(0.599)	0.095	0.058
11.	0.92	1.60	0.163	(0.599)	0.102	0.062
12.	1.00	1.80	0.184	(0.599)	0.114	0.069
13.	1.08	2.20	0.224	(0.599)	0.140	0.085
14.	1.17	2.20	0.224	(0.599)	0.140	0.085
15.	1.25	2.20	0.224	(0.599)	0.140	0.085
16.	1.33	2.00	0.204	(0.599)	0.127	0.077
17.	1.42	2.60	0.265	(0.599)	0.165	0.100
18.	1.50	2.70	0.275	(0.599)	0.172	0.104
19.	1.58	2.40	0.245	(0.599)	0.153	0.092
20.	1.67	2.70	0.275	(0.599)	0.172	0.104
21.	1.75	3.30	0.337	(0.599)	0.210	0.127
22.	1.83	3.10	0.316	(0.599)	0.197	0.119
23.	1.92	2.90	0.296	(0.599)	0.184	0.112
24.	2.00	3.00	0.306	(0.599)	0.191	0.115
25.	2.08	3.10	0.316	(0.599)	0.197	0.119
26.	2.17	4.20	0.428	(0.599)	0.267	0.162
27.	2.25	5.00	0.510	(0.599)	0.318	0.192
28.	2.33	3.50	0.357	(0.599)	0.222	0.135
29.	2.42	6.80	0.694	(0.599)	0.432	0.261
30.	2.50	7.30	0.745	(0.599)	0.464	0.281
31.	2.58	8.20	0.836	(0.599)	0.521	0.315
32.	2.67	5.90	0.602	(0.599)	0.375	0.227
33.	2.75	2.00	0.204	(0.599)	0.127	0.077
34.	2.83	1.80	0.184	(0.599)	0.114	0.069
35.	2.92	1.80	0.184	(0.599)	0.114	0.069
36.	3.00	0.60	0.061	(0.599)	0.038	0.023

(Loss Rate Not Used)

Sum = 100.0

Sum = 3.8

Flood volume = Effective rainfall 0.32(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.53(In)

Total soil loss = 0.034(Ac.Ft)

Total rainfall = 0.85(In)

Flood volume = 895.7 Cubic Feet

Total soil loss = 1480.1 Cubic Feet

Peak flow rate of this hydrograph = 0.233(CFS)

 ++++++
 3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0							
0+ 5	0.0002		0.02	Q			
0+10	0.0004		0.04	Q			
0+15	0.0007		0.04	QV			
0+20	0.0009		0.04	QV			
0+25	0.0012		0.04	Q V			
0+30	0.0016		0.05	Q V			
0+35	0.0019		0.05	Q V			
0+40	0.0023		0.05	Q V			
0+45	0.0026		0.05	Q V			
0+50	0.0030		0.05	Q V			
0+55	0.0033		0.05	Q V			
1+ 0	0.0036		0.05	Q V			
1+ 5	0.0041		0.06	Q V			
1+10	0.0045		0.07	Q V			
1+15	0.0050		0.07	Q V			
1+20	0.0054		0.06	Q V			
1+25	0.0059		0.07	Q V			
1+30	0.0064		0.08	Q V			
1+35	0.0069		0.08	Q V			
1+40	0.0075		0.08	Q V			
1+45	0.0081		0.09	Q V			
1+50	0.0087		0.09	Q V			
1+55	0.0093		0.09	Q V			
2+ 0	0.0100		0.09	Q V			
2+ 5	0.0106		0.09	Q V			
2+10	0.0114		0.11	Q V			
2+15	0.0123		0.14	Q V			
2+20	0.0131		0.12	Q V			
2+25	0.0143		0.17	Q V			
2+30	0.0157		0.21	Q V			
2+35	0.0173		0.23	Q V			
2+40	0.0187		0.20	Q V			
2+45	0.0195		0.11	Q V			
2+50	0.0199		0.06	Q V			
2+55	0.0203		0.05	Q V			
3+ 0	0.0205		0.03	Q V			
3+ 5	0.0206		0.01	Q V			
3+10	0.0206		0.00	Q V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH62.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	1.20	0.92

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.90	2.23

STORM EVENT (YEAR) = 2.00
 Area Averaged 2-Year Rainfall = 1.200 (In)
 Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 1.200 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 1.200 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.346	0.599	1.000	0.599

Sum (F) =

0.599

Area averaged mean soil loss (F) (In/Hr) = 0.599
 Minimum soil loss rate ((In/Hr)) = 0.300
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.623

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.50	0.072	(0.599)	0.045	0.027
2.	0.17	0.60	0.086	(0.599)	0.054	0.033
3.	0.25	0.60	0.086	(0.599)	0.054	0.033
4.	0.33	0.60	0.086	(0.599)	0.054	0.033
5.	0.42	0.60	0.086	(0.599)	0.054	0.033
6.	0.50	0.70	0.101	(0.599)	0.063	0.038
7.	0.58	0.70	0.101	(0.599)	0.063	0.038
8.	0.67	0.70	0.101	(0.599)	0.063	0.038
9.	0.75	0.70	0.101	(0.599)	0.063	0.038
10.	0.83	0.70	0.101	(0.599)	0.063	0.038
11.	0.92	0.70	0.101	(0.599)	0.063	0.038
12.	1.00	0.80	0.115	(0.599)	0.072	0.043
13.	1.08	0.80	0.115	(0.599)	0.072	0.043
14.	1.17	0.80	0.115	(0.599)	0.072	0.043
15.	1.25	0.80	0.115	(0.599)	0.072	0.043
16.	1.33	0.80	0.115	(0.599)	0.072	0.043
17.	1.42	0.80	0.115	(0.599)	0.072	0.043
18.	1.50	0.80	0.115	(0.599)	0.072	0.043
19.	1.58	0.80	0.115	(0.599)	0.072	0.043
20.	1.67	0.80	0.115	(0.599)	0.072	0.043
21.	1.75	0.80	0.115	(0.599)	0.072	0.043
22.	1.83	0.80	0.115	(0.599)	0.072	0.043
23.	1.92	0.80	0.115	(0.599)	0.072	0.043
24.	2.00	0.90	0.130	(0.599)	0.081	0.049
25.	2.08	0.80	0.115	(0.599)	0.072	0.043
26.	2.17	0.90	0.130	(0.599)	0.081	0.049
27.	2.25	0.90	0.130	(0.599)	0.081	0.049
28.	2.33	0.90	0.130	(0.599)	0.081	0.049
29.	2.42	0.90	0.130	(0.599)	0.081	0.049
30.	2.50	0.90	0.130	(0.599)	0.081	0.049
31.	2.58	0.90	0.130	(0.599)	0.081	0.049
32.	2.67	0.90	0.130	(0.599)	0.081	0.049
33.	2.75	1.00	0.144	(0.599)	0.090	0.054
34.	2.83	1.00	0.144	(0.599)	0.090	0.054
35.	2.92	1.00	0.144	(0.599)	0.090	0.054
36.	3.00	1.00	0.144	(0.599)	0.090	0.054
37.	3.08	1.00	0.144	(0.599)	0.090	0.054
38.	3.17	1.10	0.158	(0.599)	0.099	0.060
39.	3.25	1.10	0.158	(0.599)	0.099	0.060
40.	3.33	1.10	0.158	(0.599)	0.099	0.060
41.	3.42	1.20	0.173	(0.599)	0.108	0.065
42.	3.50	1.30	0.187	(0.599)	0.117	0.071
43.	3.58	1.40	0.202	(0.599)	0.126	0.076
44.	3.67	1.40	0.202	(0.599)	0.126	0.076
45.	3.75	1.50	0.216	(0.599)	0.135	0.081
46.	3.83	1.50	0.216	(0.599)	0.135	0.081
47.	3.92	1.60	0.230	(0.599)	0.144	0.087

48.	4.00	1.60	0.230	(0.599)	0.144	0.087
49.	4.08	1.70	0.245	(0.599)	0.153	0.092
50.	4.17	1.80	0.259	(0.599)	0.161	0.098
51.	4.25	1.90	0.274	(0.599)	0.170	0.103
52.	4.33	2.00	0.288	(0.599)	0.179	0.109
53.	4.42	2.10	0.302	(0.599)	0.188	0.114
54.	4.50	2.10	0.302	(0.599)	0.188	0.114
55.	4.58	2.20	0.317	(0.599)	0.197	0.119
56.	4.67	2.30	0.331	(0.599)	0.206	0.125
57.	4.75	2.40	0.346	(0.599)	0.215	0.130
58.	4.83	2.40	0.346	(0.599)	0.215	0.130
59.	4.92	2.50	0.360	(0.599)	0.224	0.136
60.	5.00	2.60	0.374	(0.599)	0.233	0.141
61.	5.08	3.10	0.446	(0.599)	0.278	0.168
62.	5.17	3.60	0.518	(0.599)	0.323	0.195
63.	5.25	3.90	0.562	(0.599)	0.350	0.212
64.	5.33	4.20	0.605	(0.599)	0.377	0.228
65.	5.42	4.70	0.677	(0.599)	0.422	0.255
66.	5.50	5.60	0.806	(0.599)	0.502	0.304
67.	5.58	1.90	0.274	(0.599)	0.170	0.103
68.	5.67	0.90	0.130	(0.599)	0.081	0.049
69.	5.75	0.60	0.086	(0.599)	0.054	0.033
70.	5.83	0.50	0.072	(0.599)	0.045	0.027
71.	5.92	0.30	0.043	(0.599)	0.027	0.016
72.	6.00	0.20	0.029	(0.599)	0.018	0.011

(Loss Rate Not Used)

Sum = 100.0

Sum = 5.4

Flood volume = Effective rainfall 0.45(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.75(In)

Total soil loss = 0.048(Ac.Ft)

Total rainfall = 1.20(In)

Flood volume = 1264.5 Cubic Feet

Total soil loss = 2089.6 Cubic Feet

Peak flow rate of this hydrograph = 0.219(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0001	0.01	Q				
0+10	0.0002	0.02	Q				
0+15	0.0004	0.03	Q				
0+20	0.0006	0.03	Q				
0+25	0.0008	0.03	QV				
0+30	0.0010	0.03	QV				
0+35	0.0012	0.03	QV				

0+40	0.0014	0.03	QV				
0+45	0.0016	0.03	Q V				
0+50	0.0018	0.03	Q V				
0+55	0.0020	0.03	Q V				
1+ 0	0.0022	0.03	Q V				
1+ 5	0.0024	0.03	Q V				
1+10	0.0027	0.03	Q V				
1+15	0.0029	0.03	Q V				
1+20	0.0031	0.03	Q V				
1+25	0.0033	0.03	Q V				
1+30	0.0036	0.03	Q V				
1+35	0.0038	0.03	Q V				
1+40	0.0040	0.03	Q V				
1+45	0.0043	0.03	Q V				
1+50	0.0045	0.03	Q V				
1+55	0.0047	0.03	Q V				
2+ 0	0.0050	0.04	Q V				
2+ 5	0.0052	0.04	Q V				
2+10	0.0055	0.04	Q V				
2+15	0.0057	0.04	Q V				
2+20	0.0060	0.04	Q V				
2+25	0.0063	0.04	Q V				
2+30	0.0065	0.04	Q V				
2+35	0.0068	0.04	Q V				
2+40	0.0071	0.04	Q V				
2+45	0.0073	0.04	Q V				
2+50	0.0076	0.04	Q V				
2+55	0.0079	0.04	Q V				
3+ 0	0.0082	0.04	Q V				
3+ 5	0.0085	0.04	Q V				
3+10	0.0088	0.04	Q V				
3+15	0.0091	0.05	Q V				
3+20	0.0094	0.05	Q V				
3+25	0.0098	0.05	Q V				
3+30	0.0101	0.05	Q V				
3+35	0.0105	0.06	Q V				
3+40	0.0109	0.06	Q V				
3+45	0.0114	0.06	Q V				
3+50	0.0118	0.06	Q V				
3+55	0.0122	0.07	Q V				
4+ 0	0.0127	0.07	Q V				
4+ 5	0.0132	0.07	Q V				
4+10	0.0137	0.07	Q V				
4+15	0.0142	0.08	Q V				
4+20	0.0148	0.08	Q V				
4+25	0.0154	0.09	Q V				
4+30	0.0160	0.09	Q V				
4+35	0.0166	0.09	Q V				
4+40	0.0173	0.10	Q V				
4+45	0.0180	0.10	Q V				
4+50	0.0187	0.10	Q V				
4+55	0.0194	0.10	Q V				
5+ 0	0.0201	0.11	Q V				
5+ 5	0.0210	0.12	Q V				

5+10	0.0219	0.14	Q			V	
5+15	0.0230	0.16	Q			V	
5+20	0.0242	0.17	Q			V	
5+25	0.0255	0.19	Q			V	
5+30	0.0270	0.22	Q			V	
5+35	0.0280	0.14	Q			V	
5+40	0.0284	0.06	Q			V	
5+45	0.0287	0.03	Q			V	
5+50	0.0288	0.02	Q			V	
5+55	0.0289	0.02	Q			V	
6+ 0	0.0290	0.01	Q			V	
6+ 5	0.0290	0.00	Q			V	
6+10	0.0290	0.00	Q			V	

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH242.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.00	1.54

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	5.90	4.54

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000 (In)
Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 2.000 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.346	0.599	1.000	0.599

Sum (F) =

0.599

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.623

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max Low	Effective (In/Hr)	
1.	0.08	0.07	0.016	(1.062)	0.010	0.006
2.	0.17	0.07	0.016	(1.058)	0.010	0.006
3.	0.25	0.07	0.016	(1.054)	0.010	0.006
4.	0.33	0.10	0.024	(1.050)	0.015	0.009
5.	0.42	0.10	0.024	(1.046)	0.015	0.009
6.	0.50	0.10	0.024	(1.042)	0.015	0.009
7.	0.58	0.10	0.024	(1.038)	0.015	0.009
8.	0.67	0.10	0.024	(1.034)	0.015	0.009
9.	0.75	0.10	0.024	(1.030)	0.015	0.009
10.	0.83	0.13	0.032	(1.026)	0.020	0.012
11.	0.92	0.13	0.032	(1.022)	0.020	0.012
12.	1.00	0.13	0.032	(1.018)	0.020	0.012
13.	1.08	0.10	0.024	(1.014)	0.015	0.009
14.	1.17	0.10	0.024	(1.010)	0.015	0.009
15.	1.25	0.10	0.024	(1.006)	0.015	0.009
16.	1.33	0.10	0.024	(1.002)	0.015	0.009
17.	1.42	0.10	0.024	(0.998)	0.015	0.009
18.	1.50	0.10	0.024	(0.994)	0.015	0.009
19.	1.58	0.10	0.024	(0.990)	0.015	0.009
20.	1.67	0.10	0.024	(0.986)	0.015	0.009
21.	1.75	0.10	0.024	(0.982)	0.015	0.009
22.	1.83	0.13	0.032	(0.978)	0.020	0.012
23.	1.92	0.13	0.032	(0.974)	0.020	0.012
24.	2.00	0.13	0.032	(0.970)	0.020	0.012
25.	2.08	0.13	0.032	(0.966)	0.020	0.012
26.	2.17	0.13	0.032	(0.962)	0.020	0.012
27.	2.25	0.13	0.032	(0.958)	0.020	0.012
28.	2.33	0.13	0.032	(0.954)	0.020	0.012
29.	2.42	0.13	0.032	(0.950)	0.020	0.012
30.	2.50	0.13	0.032	(0.947)	0.020	0.012
31.	2.58	0.17	0.040	(0.943)	0.025	0.015
32.	2.67	0.17	0.040	(0.939)	0.025	0.015
33.	2.75	0.17	0.040	(0.935)	0.025	0.015
34.	2.83	0.17	0.040	(0.931)	0.025	0.015
35.	2.92	0.17	0.040	(0.927)	0.025	0.015
36.	3.00	0.17	0.040	(0.923)	0.025	0.015
37.	3.08	0.17	0.040	(0.920)	0.025	0.015
38.	3.17	0.17	0.040	(0.916)	0.025	0.015
39.	3.25	0.17	0.040	(0.912)	0.025	0.015
40.	3.33	0.17	0.040	(0.908)	0.025	0.015
41.	3.42	0.17	0.040	(0.904)	0.025	0.015
42.	3.50	0.17	0.040	(0.901)	0.025	0.015
43.	3.58	0.17	0.040	(0.897)	0.025	0.015
44.	3.67	0.17	0.040	(0.893)	0.025	0.015
45.	3.75	0.17	0.040	(0.889)	0.025	0.015
46.	3.83	0.20	0.048	(0.886)	0.030	0.018
47.	3.92	0.20	0.048	(0.882)	0.030	0.018

48.	4.00	0.20	0.048	(0.878)	0.030	0.018
49.	4.08	0.20	0.048	(0.874)	0.030	0.018
50.	4.17	0.20	0.048	(0.871)	0.030	0.018
51.	4.25	0.20	0.048	(0.867)	0.030	0.018
52.	4.33	0.23	0.056	(0.863)	0.035	0.021
53.	4.42	0.23	0.056	(0.860)	0.035	0.021
54.	4.50	0.23	0.056	(0.856)	0.035	0.021
55.	4.58	0.23	0.056	(0.852)	0.035	0.021
56.	4.67	0.23	0.056	(0.849)	0.035	0.021
57.	4.75	0.23	0.056	(0.845)	0.035	0.021
58.	4.83	0.27	0.064	(0.841)	0.040	0.024
59.	4.92	0.27	0.064	(0.838)	0.040	0.024
60.	5.00	0.27	0.064	(0.834)	0.040	0.024
61.	5.08	0.20	0.048	(0.830)	0.030	0.018
62.	5.17	0.20	0.048	(0.827)	0.030	0.018
63.	5.25	0.20	0.048	(0.823)	0.030	0.018
64.	5.33	0.23	0.056	(0.820)	0.035	0.021
65.	5.42	0.23	0.056	(0.816)	0.035	0.021
66.	5.50	0.23	0.056	(0.812)	0.035	0.021
67.	5.58	0.27	0.064	(0.809)	0.040	0.024
68.	5.67	0.27	0.064	(0.805)	0.040	0.024
69.	5.75	0.27	0.064	(0.802)	0.040	0.024
70.	5.83	0.27	0.064	(0.798)	0.040	0.024
71.	5.92	0.27	0.064	(0.795)	0.040	0.024
72.	6.00	0.27	0.064	(0.791)	0.040	0.024
73.	6.08	0.30	0.072	(0.788)	0.045	0.027
74.	6.17	0.30	0.072	(0.784)	0.045	0.027
75.	6.25	0.30	0.072	(0.781)	0.045	0.027
76.	6.33	0.30	0.072	(0.777)	0.045	0.027
77.	6.42	0.30	0.072	(0.774)	0.045	0.027
78.	6.50	0.30	0.072	(0.770)	0.045	0.027
79.	6.58	0.33	0.080	(0.767)	0.050	0.030
80.	6.67	0.33	0.080	(0.763)	0.050	0.030
81.	6.75	0.33	0.080	(0.760)	0.050	0.030
82.	6.83	0.33	0.080	(0.756)	0.050	0.030
83.	6.92	0.33	0.080	(0.753)	0.050	0.030
84.	7.00	0.33	0.080	(0.750)	0.050	0.030
85.	7.08	0.33	0.080	(0.746)	0.050	0.030
86.	7.17	0.33	0.080	(0.743)	0.050	0.030
87.	7.25	0.33	0.080	(0.739)	0.050	0.030
88.	7.33	0.37	0.088	(0.736)	0.055	0.033
89.	7.42	0.37	0.088	(0.733)	0.055	0.033
90.	7.50	0.37	0.088	(0.729)	0.055	0.033
91.	7.58	0.40	0.096	(0.726)	0.060	0.036
92.	7.67	0.40	0.096	(0.723)	0.060	0.036
93.	7.75	0.40	0.096	(0.719)	0.060	0.036
94.	7.83	0.43	0.104	(0.716)	0.065	0.039
95.	7.92	0.43	0.104	(0.713)	0.065	0.039
96.	8.00	0.43	0.104	(0.709)	0.065	0.039
97.	8.08	0.50	0.120	(0.706)	0.075	0.045
98.	8.17	0.50	0.120	(0.703)	0.075	0.045
99.	8.25	0.50	0.120	(0.699)	0.075	0.045
100.	8.33	0.50	0.120	(0.696)	0.075	0.045
101.	8.42	0.50	0.120	(0.693)	0.075	0.045

102.	8.50	0.50	0.120	(0.690)	0.075	0.045
103.	8.58	0.53	0.128	(0.686)	0.080	0.048
104.	8.67	0.53	0.128	(0.683)	0.080	0.048
105.	8.75	0.53	0.128	(0.680)	0.080	0.048
106.	8.83	0.57	0.136	(0.677)	0.085	0.051
107.	8.92	0.57	0.136	(0.674)	0.085	0.051
108.	9.00	0.57	0.136	(0.670)	0.085	0.051
109.	9.08	0.63	0.152	(0.667)	0.095	0.057
110.	9.17	0.63	0.152	(0.664)	0.095	0.057
111.	9.25	0.63	0.152	(0.661)	0.095	0.057
112.	9.33	0.67	0.160	(0.658)	0.100	0.060
113.	9.42	0.67	0.160	(0.655)	0.100	0.060
114.	9.50	0.67	0.160	(0.651)	0.100	0.060
115.	9.58	0.70	0.168	(0.648)	0.105	0.063
116.	9.67	0.70	0.168	(0.645)	0.105	0.063
117.	9.75	0.70	0.168	(0.642)	0.105	0.063
118.	9.83	0.73	0.176	(0.639)	0.110	0.066
119.	9.92	0.73	0.176	(0.636)	0.110	0.066
120.	10.00	0.73	0.176	(0.633)	0.110	0.066
121.	10.08	0.50	0.120	(0.630)	0.075	0.045
122.	10.17	0.50	0.120	(0.627)	0.075	0.045
123.	10.25	0.50	0.120	(0.624)	0.075	0.045
124.	10.33	0.50	0.120	(0.621)	0.075	0.045
125.	10.42	0.50	0.120	(0.618)	0.075	0.045
126.	10.50	0.50	0.120	(0.615)	0.075	0.045
127.	10.58	0.67	0.160	(0.612)	0.100	0.060
128.	10.67	0.67	0.160	(0.609)	0.100	0.060
129.	10.75	0.67	0.160	(0.606)	0.100	0.060
130.	10.83	0.67	0.160	(0.603)	0.100	0.060
131.	10.92	0.67	0.160	(0.600)	0.100	0.060
132.	11.00	0.67	0.160	(0.597)	0.100	0.060
133.	11.08	0.63	0.152	(0.594)	0.095	0.057
134.	11.17	0.63	0.152	(0.591)	0.095	0.057
135.	11.25	0.63	0.152	(0.588)	0.095	0.057
136.	11.33	0.63	0.152	(0.585)	0.095	0.057
137.	11.42	0.63	0.152	(0.582)	0.095	0.057
138.	11.50	0.63	0.152	(0.579)	0.095	0.057
139.	11.58	0.57	0.136	(0.577)	0.085	0.051
140.	11.67	0.57	0.136	(0.574)	0.085	0.051
141.	11.75	0.57	0.136	(0.571)	0.085	0.051
142.	11.83	0.60	0.144	(0.568)	0.090	0.054
143.	11.92	0.60	0.144	(0.565)	0.090	0.054
144.	12.00	0.60	0.144	(0.562)	0.090	0.054
145.	12.08	0.83	0.200	(0.559)	0.125	0.075
146.	12.17	0.83	0.200	(0.557)	0.125	0.075
147.	12.25	0.83	0.200	(0.554)	0.125	0.075
148.	12.33	0.87	0.208	(0.551)	0.130	0.078
149.	12.42	0.87	0.208	(0.548)	0.130	0.078
150.	12.50	0.87	0.208	(0.546)	0.130	0.078
151.	12.58	0.93	0.224	(0.543)	0.140	0.084
152.	12.67	0.93	0.224	(0.540)	0.140	0.084
153.	12.75	0.93	0.224	(0.537)	0.140	0.084
154.	12.83	0.97	0.232	(0.535)	0.145	0.087
155.	12.92	0.97	0.232	(0.532)	0.145	0.087

156.	13.00	0.97	0.232	(0.529)	0.145	0.087
157.	13.08	1.13	0.272	(0.527)	0.169	0.103
158.	13.17	1.13	0.272	(0.524)	0.169	0.103
159.	13.25	1.13	0.272	(0.521)	0.169	0.103
160.	13.33	1.13	0.272	(0.519)	0.169	0.103
161.	13.42	1.13	0.272	(0.516)	0.169	0.103
162.	13.50	1.13	0.272	(0.513)	0.169	0.103
163.	13.58	0.77	0.184	(0.511)	0.115	0.069
164.	13.67	0.77	0.184	(0.508)	0.115	0.069
165.	13.75	0.77	0.184	(0.506)	0.115	0.069
166.	13.83	0.77	0.184	(0.503)	0.115	0.069
167.	13.92	0.77	0.184	(0.500)	0.115	0.069
168.	14.00	0.77	0.184	(0.498)	0.115	0.069
169.	14.08	0.90	0.216	(0.495)	0.135	0.081
170.	14.17	0.90	0.216	(0.493)	0.135	0.081
171.	14.25	0.90	0.216	(0.490)	0.135	0.081
172.	14.33	0.87	0.208	(0.488)	0.130	0.078
173.	14.42	0.87	0.208	(0.485)	0.130	0.078
174.	14.50	0.87	0.208	(0.483)	0.130	0.078
175.	14.58	0.87	0.208	(0.480)	0.130	0.078
176.	14.67	0.87	0.208	(0.478)	0.130	0.078
177.	14.75	0.87	0.208	(0.475)	0.130	0.078
178.	14.83	0.83	0.200	(0.473)	0.125	0.075
179.	14.92	0.83	0.200	(0.471)	0.125	0.075
180.	15.00	0.83	0.200	(0.468)	0.125	0.075
181.	15.08	0.80	0.192	(0.466)	0.120	0.072
182.	15.17	0.80	0.192	(0.463)	0.120	0.072
183.	15.25	0.80	0.192	(0.461)	0.120	0.072
184.	15.33	0.77	0.184	(0.459)	0.115	0.069
185.	15.42	0.77	0.184	(0.456)	0.115	0.069
186.	15.50	0.77	0.184	(0.454)	0.115	0.069
187.	15.58	0.63	0.152	(0.452)	0.095	0.057
188.	15.67	0.63	0.152	(0.449)	0.095	0.057
189.	15.75	0.63	0.152	(0.447)	0.095	0.057
190.	15.83	0.63	0.152	(0.445)	0.095	0.057
191.	15.92	0.63	0.152	(0.442)	0.095	0.057
192.	16.00	0.63	0.152	(0.440)	0.095	0.057
193.	16.08	0.13	0.032	(0.438)	0.020	0.012
194.	16.17	0.13	0.032	(0.436)	0.020	0.012
195.	16.25	0.13	0.032	(0.433)	0.020	0.012
196.	16.33	0.13	0.032	(0.431)	0.020	0.012
197.	16.42	0.13	0.032	(0.429)	0.020	0.012
198.	16.50	0.13	0.032	(0.427)	0.020	0.012
199.	16.58	0.10	0.024	(0.425)	0.015	0.009
200.	16.67	0.10	0.024	(0.423)	0.015	0.009
201.	16.75	0.10	0.024	(0.420)	0.015	0.009
202.	16.83	0.10	0.024	(0.418)	0.015	0.009
203.	16.92	0.10	0.024	(0.416)	0.015	0.009
204.	17.00	0.10	0.024	(0.414)	0.015	0.009
205.	17.08	0.17	0.040	(0.412)	0.025	0.015
206.	17.17	0.17	0.040	(0.410)	0.025	0.015
207.	17.25	0.17	0.040	(0.408)	0.025	0.015
208.	17.33	0.17	0.040	(0.406)	0.025	0.015
209.	17.42	0.17	0.040	(0.404)	0.025	0.015

210.	17.50	0.17	0.040	(0.402)	0.025	0.015
211.	17.58	0.17	0.040	(0.400)	0.025	0.015
212.	17.67	0.17	0.040	(0.398)	0.025	0.015
213.	17.75	0.17	0.040	(0.396)	0.025	0.015
214.	17.83	0.13	0.032	(0.394)	0.020	0.012
215.	17.92	0.13	0.032	(0.392)	0.020	0.012
216.	18.00	0.13	0.032	(0.390)	0.020	0.012
217.	18.08	0.13	0.032	(0.388)	0.020	0.012
218.	18.17	0.13	0.032	(0.386)	0.020	0.012
219.	18.25	0.13	0.032	(0.384)	0.020	0.012
220.	18.33	0.13	0.032	(0.382)	0.020	0.012
221.	18.42	0.13	0.032	(0.380)	0.020	0.012
222.	18.50	0.13	0.032	(0.379)	0.020	0.012
223.	18.58	0.10	0.024	(0.377)	0.015	0.009
224.	18.67	0.10	0.024	(0.375)	0.015	0.009
225.	18.75	0.10	0.024	(0.373)	0.015	0.009
226.	18.83	0.07	0.016	(0.371)	0.010	0.006
227.	18.92	0.07	0.016	(0.370)	0.010	0.006
228.	19.00	0.07	0.016	(0.368)	0.010	0.006
229.	19.08	0.10	0.024	(0.366)	0.015	0.009
230.	19.17	0.10	0.024	(0.364)	0.015	0.009
231.	19.25	0.10	0.024	(0.363)	0.015	0.009
232.	19.33	0.13	0.032	(0.361)	0.020	0.012
233.	19.42	0.13	0.032	(0.359)	0.020	0.012
234.	19.50	0.13	0.032	(0.358)	0.020	0.012
235.	19.58	0.10	0.024	(0.356)	0.015	0.009
236.	19.67	0.10	0.024	(0.354)	0.015	0.009
237.	19.75	0.10	0.024	(0.353)	0.015	0.009
238.	19.83	0.07	0.016	(0.351)	0.010	0.006
239.	19.92	0.07	0.016	(0.350)	0.010	0.006
240.	20.00	0.07	0.016	(0.348)	0.010	0.006
241.	20.08	0.10	0.024	(0.346)	0.015	0.009
242.	20.17	0.10	0.024	(0.345)	0.015	0.009
243.	20.25	0.10	0.024	(0.343)	0.015	0.009
244.	20.33	0.10	0.024	(0.342)	0.015	0.009
245.	20.42	0.10	0.024	(0.341)	0.015	0.009
246.	20.50	0.10	0.024	(0.339)	0.015	0.009
247.	20.58	0.10	0.024	(0.338)	0.015	0.009
248.	20.67	0.10	0.024	(0.336)	0.015	0.009
249.	20.75	0.10	0.024	(0.335)	0.015	0.009
250.	20.83	0.07	0.016	(0.333)	0.010	0.006
251.	20.92	0.07	0.016	(0.332)	0.010	0.006
252.	21.00	0.07	0.016	(0.331)	0.010	0.006
253.	21.08	0.10	0.024	(0.329)	0.015	0.009
254.	21.17	0.10	0.024	(0.328)	0.015	0.009
255.	21.25	0.10	0.024	(0.327)	0.015	0.009
256.	21.33	0.07	0.016	(0.326)	0.010	0.006
257.	21.42	0.07	0.016	(0.324)	0.010	0.006
258.	21.50	0.07	0.016	(0.323)	0.010	0.006
259.	21.58	0.10	0.024	(0.322)	0.015	0.009
260.	21.67	0.10	0.024	(0.321)	0.015	0.009
261.	21.75	0.10	0.024	(0.320)	0.015	0.009
262.	21.83	0.07	0.016	(0.319)	0.010	0.006
263.	21.92	0.07	0.016	(0.318)	0.010	0.006

264.	22.00	0.07	0.016	(0.316)	0.010	0.006
265.	22.08	0.10	0.024	(0.315)	0.015	0.009
266.	22.17	0.10	0.024	(0.314)	0.015	0.009
267.	22.25	0.10	0.024	(0.313)	0.015	0.009
268.	22.33	0.07	0.016	(0.312)	0.010	0.006
269.	22.42	0.07	0.016	(0.311)	0.010	0.006
270.	22.50	0.07	0.016	(0.311)	0.010	0.006
271.	22.58	0.07	0.016	(0.310)	0.010	0.006
272.	22.67	0.07	0.016	(0.309)	0.010	0.006
273.	22.75	0.07	0.016	(0.308)	0.010	0.006
274.	22.83	0.07	0.016	(0.307)	0.010	0.006
275.	22.92	0.07	0.016	(0.306)	0.010	0.006
276.	23.00	0.07	0.016	(0.306)	0.010	0.006
277.	23.08	0.07	0.016	(0.305)	0.010	0.006
278.	23.17	0.07	0.016	(0.304)	0.010	0.006
279.	23.25	0.07	0.016	(0.304)	0.010	0.006
280.	23.33	0.07	0.016	(0.303)	0.010	0.006
281.	23.42	0.07	0.016	(0.302)	0.010	0.006
282.	23.50	0.07	0.016	(0.302)	0.010	0.006
283.	23.58	0.07	0.016	(0.301)	0.010	0.006
284.	23.67	0.07	0.016	(0.301)	0.010	0.006
285.	23.75	0.07	0.016	(0.301)	0.010	0.006
286.	23.83	0.07	0.016	(0.300)	0.010	0.006
287.	23.92	0.07	0.016	(0.300)	0.010	0.006
288.	24.00	0.07	0.016	(0.300)	0.010	0.006

(Loss Rate Not Used)

Sum = 100.0

Sum = 9.0

Flood volume = Effective rainfall 0.75(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 1.25(In)

Total soil loss = 0.080(Ac.Ft)

Total rainfall = 2.00(In)

Flood volume = 2107.5 Cubic Feet

Total soil loss = 3482.7 Cubic Feet

Peak flow rate of this hydrograph = 0.080(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						

0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0001	0.00	Q				
0+20	0.0001	0.01	Q				
0+25	0.0002	0.01	Q				
0+30	0.0002	0.01	Q				
0+35	0.0003	0.01	Q				

0+40	0.0003	0.01	Q				
0+45	0.0004	0.01	Q				
0+50	0.0004	0.01	Q				
0+55	0.0005	0.01	Q				
1+ 0	0.0006	0.01	Q				
1+ 5	0.0006	0.01	Q				
1+10	0.0007	0.01	Q				
1+15	0.0007	0.01	Q				
1+20	0.0008	0.01	Q				
1+25	0.0008	0.01	Q				
1+30	0.0008	0.01	Q				
1+35	0.0009	0.01	Q				
1+40	0.0009	0.01	Q				
1+45	0.0010	0.01	Q				
1+50	0.0011	0.01	Q				
1+55	0.0011	0.01	Q				
2+ 0	0.0012	0.01	Q				
2+ 5	0.0012	0.01	QV				
2+10	0.0013	0.01	QV				
2+15	0.0014	0.01	QV				
2+20	0.0014	0.01	QV				
2+25	0.0015	0.01	QV				
2+30	0.0016	0.01	QV				
2+35	0.0016	0.01	QV				
2+40	0.0017	0.01	QV				
2+45	0.0018	0.01	QV				
2+50	0.0019	0.01	QV				
2+55	0.0020	0.01	QV				
3+ 0	0.0020	0.01	QV				
3+ 5	0.0021	0.01	QV				
3+10	0.0022	0.01	QV				
3+15	0.0023	0.01	QV				
3+20	0.0024	0.01	QV				
3+25	0.0024	0.01	Q V				
3+30	0.0025	0.01	Q V				
3+35	0.0026	0.01	Q V				
3+40	0.0027	0.01	Q V				
3+45	0.0028	0.01	Q V				
3+50	0.0029	0.01	Q V				
3+55	0.0030	0.01	Q V				
4+ 0	0.0031	0.01	Q V				
4+ 5	0.0031	0.01	Q V				
4+10	0.0032	0.01	Q V				
4+15	0.0033	0.01	Q V				
4+20	0.0034	0.02	Q V				
4+25	0.0036	0.02	Q V				
4+30	0.0037	0.02	Q V				
4+35	0.0038	0.02	Q V				
4+40	0.0039	0.02	Q V				
4+45	0.0040	0.02	Q V				
4+50	0.0041	0.02	Q V				
4+55	0.0043	0.02	Q V				
5+ 0	0.0044	0.02	Q V				
5+ 5	0.0045	0.02	Q V				

5+10	0.0046	0.01	Q	V				
5+15	0.0047	0.01	Q	V				
5+20	0.0048	0.02	Q	V				
5+25	0.0049	0.02	Q	V				
5+30	0.0050	0.02	Q	V				
5+35	0.0052	0.02	Q	V				
5+40	0.0053	0.02	Q	V				
5+45	0.0054	0.02	Q	V				
5+50	0.0055	0.02	Q	V				
5+55	0.0057	0.02	Q	V				
6+ 0	0.0058	0.02	Q	V				
6+ 5	0.0059	0.02	Q	V				
6+10	0.0061	0.02	Q	V				
6+15	0.0062	0.02	Q	V				
6+20	0.0064	0.02	Q	V				
6+25	0.0065	0.02	Q	V				
6+30	0.0067	0.02	Q	V				
6+35	0.0068	0.02	Q	V				
6+40	0.0070	0.02	Q	V				
6+45	0.0071	0.02	Q	V				
6+50	0.0073	0.02	Q	V				
6+55	0.0075	0.02	Q	V				
7+ 0	0.0076	0.02	Q	V				
7+ 5	0.0078	0.02	Q	V				
7+10	0.0079	0.02	Q	V				
7+15	0.0081	0.02	Q	V				
7+20	0.0083	0.02	Q	V				
7+25	0.0084	0.03	Q	V				
7+30	0.0086	0.03	Q	V				
7+35	0.0088	0.03	Q	V				
7+40	0.0090	0.03	Q	V				
7+45	0.0092	0.03	Q	V				
7+50	0.0094	0.03	Q	V				
7+55	0.0096	0.03	Q	V				
8+ 0	0.0098	0.03	Q	V				
8+ 5	0.0101	0.03	Q	V				
8+10	0.0103	0.03	Q	V				
8+15	0.0105	0.04	Q	V				
8+20	0.0108	0.04	Q	V				
8+25	0.0110	0.04	Q	V				
8+30	0.0113	0.04	Q	V				
8+35	0.0115	0.04	Q	V				
8+40	0.0118	0.04	Q	V				
8+45	0.0120	0.04	Q	V				
8+50	0.0123	0.04	Q	V				
8+55	0.0126	0.04	Q	V				
9+ 0	0.0128	0.04	Q	V				
9+ 5	0.0131	0.04	Q	V				
9+10	0.0134	0.04	Q	V				
9+15	0.0137	0.04	Q	V				
9+20	0.0141	0.05	Q	V				
9+25	0.0144	0.05	Q	V				
9+30	0.0147	0.05	Q	V				
9+35	0.0150	0.05	Q	V				

9+40	0.0154	0.05	Q		V					
9+45	0.0157	0.05	Q		V					
9+50	0.0161	0.05	Q		V					
9+55	0.0164	0.05	Q		V					
10+ 0	0.0168	0.05	Q		V					
10+ 5	0.0171	0.04	Q		V					
10+10	0.0173	0.04	Q		V					
10+15	0.0175	0.04	Q		V					
10+20	0.0178	0.04	Q		V					
10+25	0.0180	0.04	Q		V					
10+30	0.0183	0.04	Q		V					
10+35	0.0186	0.04	Q		V					
10+40	0.0189	0.05	Q		V					
10+45	0.0192	0.05	Q		V					
10+50	0.0195	0.05	Q		V					
10+55	0.0198	0.05	Q		V					
11+ 0	0.0202	0.05	Q		V					
11+ 5	0.0205	0.05	Q		V					
11+10	0.0208	0.04	Q		V					
11+15	0.0211	0.04	Q		V					
11+20	0.0214	0.04	Q		V					
11+25	0.0217	0.04	Q		V					
11+30	0.0220	0.04	Q		V					
11+35	0.0223	0.04	Q		V					
11+40	0.0226	0.04	Q		V					
11+45	0.0229	0.04	Q		V					
11+50	0.0231	0.04	Q		V					
11+55	0.0234	0.04	Q		V					
12+ 0	0.0237	0.04	Q		V					
12+ 5	0.0241	0.05	Q		V					
12+10	0.0245	0.06	Q		V					
12+15	0.0249	0.06	Q		V					
12+20	0.0253	0.06	Q		V					
12+25	0.0257	0.06	Q		V					
12+30	0.0261	0.06	Q		V					
12+35	0.0266	0.06	Q		V					
12+40	0.0270	0.07	Q		V					
12+45	0.0275	0.07	Q		V					
12+50	0.0279	0.07	Q		V					
12+55	0.0284	0.07	Q		V					
13+ 0	0.0289	0.07	Q		V					
13+ 5	0.0294	0.07	Q		V					
13+10	0.0299	0.08	Q		V					
13+15	0.0305	0.08	Q		V					
13+20	0.0310	0.08	Q		V					
13+25	0.0316	0.08	Q		V					
13+30	0.0321	0.08	Q		V					
13+35	0.0326	0.06	Q		V					
13+40	0.0329	0.06	Q		V					
13+45	0.0333	0.05	Q		V					
13+50	0.0337	0.05	Q		V					
13+55	0.0341	0.05	Q		V					
14+ 0	0.0344	0.05	Q		V					
14+ 5	0.0348	0.06	Q		V					

14+10	0.0353	0.06	Q			V	
14+15	0.0357	0.06	Q			V	
14+20	0.0361	0.06	Q			V	
14+25	0.0365	0.06	Q			V	
14+30	0.0370	0.06	Q			V	
14+35	0.0374	0.06	Q			V	
14+40	0.0378	0.06	Q			V	
14+45	0.0382	0.06	Q			V	
14+50	0.0386	0.06	Q			V	
14+55	0.0390	0.06	Q			V	
15+ 0	0.0394	0.06	Q			V	
15+ 5	0.0398	0.06	Q			V	
15+10	0.0402	0.06	Q			V	
15+15	0.0406	0.06	Q			V	
15+20	0.0410	0.05	Q			V	
15+25	0.0414	0.05	Q			V	
15+30	0.0417	0.05	Q			V	
15+35	0.0421	0.05	Q			V	
15+40	0.0424	0.04	Q			V	
15+45	0.0427	0.04	Q			V	
15+50	0.0430	0.04	Q			V	
15+55	0.0433	0.04	Q			V	
16+ 0	0.0436	0.04	Q			V	
16+ 5	0.0438	0.02	Q			V	
16+10	0.0438	0.01	Q			V	
16+15	0.0439	0.01	Q			V	
16+20	0.0440	0.01	Q			V	
16+25	0.0440	0.01	Q			V	
16+30	0.0441	0.01	Q			V	
16+35	0.0441	0.01	Q			V	
16+40	0.0442	0.01	Q			V	
16+45	0.0442	0.01	Q			V	
16+50	0.0443	0.01	Q			V	
16+55	0.0443	0.01	Q			V	
17+ 0	0.0444	0.01	Q			V	
17+ 5	0.0445	0.01	Q			V	
17+10	0.0445	0.01	Q			V	
17+15	0.0446	0.01	Q			V	
17+20	0.0447	0.01	Q			V	
17+25	0.0448	0.01	Q			V	
17+30	0.0449	0.01	Q			V	
17+35	0.0449	0.01	Q			V	
17+40	0.0450	0.01	Q			V	
17+45	0.0451	0.01	Q			V	
17+50	0.0452	0.01	Q			V	
17+55	0.0452	0.01	Q			V	
18+ 0	0.0453	0.01	Q			V	
18+ 5	0.0454	0.01	Q			V	
18+10	0.0454	0.01	Q			V	
18+15	0.0455	0.01	Q			V	
18+20	0.0456	0.01	Q			V	
18+25	0.0456	0.01	Q			V	
18+30	0.0457	0.01	Q			V	
18+35	0.0457	0.01	Q			V	

18+40	0.0458	0.01	Q				V	
18+45	0.0458	0.01	Q				V	
18+50	0.0459	0.01	Q				V	
18+55	0.0459	0.00	Q				V	
19+ 0	0.0459	0.00	Q				V	
19+ 5	0.0460	0.01	Q				V	
19+10	0.0460	0.01	Q				V	
19+15	0.0461	0.01	Q				V	
19+20	0.0461	0.01	Q				V	
19+25	0.0462	0.01	Q				V	
19+30	0.0463	0.01	Q				V	
19+35	0.0463	0.01	Q				V	
19+40	0.0464	0.01	Q				V	
19+45	0.0464	0.01	Q				V	
19+50	0.0465	0.01	Q				V	
19+55	0.0465	0.00	Q				V	
20+ 0	0.0465	0.00	Q				V	
20+ 5	0.0466	0.01	Q				V	
20+10	0.0466	0.01	Q				V	
20+15	0.0467	0.01	Q				V	
20+20	0.0467	0.01	Q				V	
20+25	0.0468	0.01	Q				V	
20+30	0.0468	0.01	Q				V	
20+35	0.0469	0.01	Q				V	
20+40	0.0469	0.01	Q				V	
20+45	0.0470	0.01	Q				V	
20+50	0.0470	0.01	Q				V	
20+55	0.0470	0.00	Q				V	
21+ 0	0.0471	0.00	Q				V	
21+ 5	0.0471	0.01	Q				V	
21+10	0.0471	0.01	Q				V	
21+15	0.0472	0.01	Q				V	
21+20	0.0472	0.01	Q				V	
21+25	0.0473	0.00	Q				V	
21+30	0.0473	0.00	Q				V	
21+35	0.0473	0.01	Q				V	
21+40	0.0474	0.01	Q				V	
21+45	0.0474	0.01	Q				V	
21+50	0.0475	0.01	Q				V	
21+55	0.0475	0.00	Q				V	
22+ 0	0.0475	0.00	Q				V	
22+ 5	0.0476	0.01	Q				V	
22+10	0.0476	0.01	Q				V	
22+15	0.0477	0.01	Q				V	
22+20	0.0477	0.01	Q				V	
22+25	0.0478	0.00	Q				V	
22+30	0.0478	0.00	Q				V	
22+35	0.0478	0.00	Q				V	
22+40	0.0479	0.00	Q				V	
22+45	0.0479	0.00	Q				V	
22+50	0.0479	0.00	Q				V	
22+55	0.0479	0.00	Q				V	
23+ 0	0.0480	0.00	Q				V	
23+ 5	0.0480	0.00	Q				V	

23+10	0.0480	0.00	Q				V
23+15	0.0481	0.00	Q				V
23+20	0.0481	0.00	Q				V
23+25	0.0481	0.00	Q				V
23+30	0.0482	0.00	Q				V
23+35	0.0482	0.00	Q				V
23+40	0.0482	0.00	Q				V
23+45	0.0483	0.00	Q				V
23+50	0.0483	0.00	Q				V
23+55	0.0483	0.00	Q				V
24+ 0	0.0484	0.00	Q				V
24+ 5	0.0484	0.00	Q				V
24+10	0.0484	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH15.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	0.50	0.39

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	1.30	1.00

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.687 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.687 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.346	0.599	1.000	0.599

Sum (F) =

0.599

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.623

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1. 0.08	4.20	0.346	(0.599)	0.216	0.131
2. 0.17	4.30	0.355	(0.599)	0.221	0.134
3. 0.25	5.00	0.412	(0.599)	0.257	0.155
4. 0.33	5.00	0.412	(0.599)	0.257	0.155
5. 0.42	5.80	0.478	(0.599)	0.298	0.180
6. 0.50	6.50	0.536	(0.599)	0.334	0.202
7. 0.58	7.40	0.610	(0.599)	0.380	0.230
8. 0.67	8.60	0.709	(0.599)	0.442	0.267
9. 0.75	12.30	1.015	0.599	(0.632)	0.415
10. 0.83	29.10	2.400	0.599	(1.495)	1.801
11. 0.92	6.80	0.561	(0.599)	0.349	0.211
12. 1.00	5.00	0.412	(0.599)	0.257	0.155

(Loss Rate Not Used)

Sum = 100.0 Sum = 4.0

Flood volume = Effective rainfall 0.34(In)
times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.35(In)
Total soil loss = 0.023(Ac.Ft)
Total rainfall = 0.69(In)
Flood volume = 940.7 Cubic Feet
Total soil loss = 980.6 Cubic Feet

Peak flow rate of this hydrograph = 0.954(CFS)

+++++
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0004	0.06	Q			
0+10	0.0011	0.10	Q V			
0+15	0.0019	0.11	Q V			
0+20	0.0027	0.12	Q V			
0+25	0.0036	0.13	Q V			
0+30	0.0046	0.15	Q V			
0+35	0.0058	0.17	Q V			
0+40	0.0071	0.19	Q V			
0+45	0.0090	0.27	Q	V		
0+50	0.0156	0.95	Q		V	

0+55	0.0198	0.61	Q				V	
1+ 0	0.0212	0.20	Q					V
1+ 5	0.0216	0.05	Q					V
1+10	0.0216	0.01	Q					V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH35.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	0.85	0.65

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.00	1.54

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.119 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.119 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.346	0.599	1.000	0.599

Sum (F) =

0.599

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.623

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.175	(0.599)	0.109	0.066
2.	0.17	1.30	0.175	(0.599)	0.109	0.066
3.	0.25	1.10	0.148	(0.599)	0.092	0.056
4.	0.33	1.50	0.201	(0.599)	0.126	0.076
5.	0.42	1.50	0.201	(0.599)	0.126	0.076
6.	0.50	1.80	0.242	(0.599)	0.151	0.091
7.	0.58	1.50	0.201	(0.599)	0.126	0.076
8.	0.67	1.80	0.242	(0.599)	0.151	0.091
9.	0.75	1.80	0.242	(0.599)	0.151	0.091
10.	0.83	1.50	0.201	(0.599)	0.126	0.076
11.	0.92	1.60	0.215	(0.599)	0.134	0.081
12.	1.00	1.80	0.242	(0.599)	0.151	0.091
13.	1.08	2.20	0.296	(0.599)	0.184	0.111
14.	1.17	2.20	0.296	(0.599)	0.184	0.111
15.	1.25	2.20	0.296	(0.599)	0.184	0.111
16.	1.33	2.00	0.269	(0.599)	0.167	0.101
17.	1.42	2.60	0.349	(0.599)	0.218	0.132
18.	1.50	2.70	0.363	(0.599)	0.226	0.137
19.	1.58	2.40	0.322	(0.599)	0.201	0.122
20.	1.67	2.70	0.363	(0.599)	0.226	0.137
21.	1.75	3.30	0.443	(0.599)	0.276	0.167
22.	1.83	3.10	0.416	(0.599)	0.259	0.157
23.	1.92	2.90	0.390	(0.599)	0.243	0.147
24.	2.00	3.00	0.403	(0.599)	0.251	0.152
25.	2.08	3.10	0.416	(0.599)	0.259	0.157
26.	2.17	4.20	0.564	(0.599)	0.351	0.213
27.	2.25	5.00	0.672	(0.599)	0.418	0.253
28.	2.33	3.50	0.470	(0.599)	0.293	0.177
29.	2.42	6.80	0.913	(0.599)	0.569	0.344
30.	2.50	7.30	0.981	0.599	(0.611)	0.381
31.	2.58	8.20	1.101	0.599	(0.686)	0.502
32.	2.67	5.90	0.793	(0.599)	0.494	0.299
33.	2.75	2.00	0.269	(0.599)	0.167	0.101
34.	2.83	1.80	0.242	(0.599)	0.151	0.091
35.	2.92	1.80	0.242	(0.599)	0.151	0.091
36.	3.00	0.60	0.081	(0.599)	0.050	0.030

(Loss Rate Not Used)

Sum = 100.0

Sum = 5.2

Flood volume = Effective rainfall 0.43(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.69(In)

Total soil loss = 0.044(Ac.Ft)

Total rainfall = 1.12(In)

Flood volume = 1202.4 Cubic Feet

Total soil loss = 1926.3 Cubic Feet

Peak flow rate of this hydrograph = 0.350(CFS)

 ++++++
 3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0002	0.03	Q			
0+10	0.0005	0.05	Q			
0+15	0.0009	0.05	QV			
0+20	0.0012	0.05	QV			
0+25	0.0016	0.06	Q V			
0+30	0.0021	0.07	Q V			
0+35	0.0025	0.06	Q V			
0+40	0.0030	0.07	Q V			
0+45	0.0035	0.07	Q V			
0+50	0.0039	0.06	Q V			
0+55	0.0043	0.06	Q V			
1+ 0	0.0048	0.07	Q V			
1+ 5	0.0053	0.08	Q V			
1+10	0.0059	0.09	Q V			
1+15	0.0065	0.09	Q V			
1+20	0.0071	0.08	Q V			
1+25	0.0077	0.09	Q V			
1+30	0.0084	0.10	Q V			
1+35	0.0091	0.10	Q V			
1+40	0.0098	0.10	Q V			
1+45	0.0106	0.12	Q V			
1+50	0.0115	0.12	Q V			
1+55	0.0123	0.12	Q V			
2+ 0	0.0131	0.12	Q V			
2+ 5	0.0139	0.12	Q V			
2+10	0.0150	0.15	Q V			
2+15	0.0162	0.18	Q V			
2+20	0.0173	0.16	Q V			
2+25	0.0188	0.22	Q V			
2+30	0.0207	0.28	Q V			
2+35	0.0231	0.35	Q V			
2+40	0.0251	0.29	Q V			
2+45	0.0262	0.15	Q V			
2+50	0.0267	0.08	Q V			
2+55	0.0272	0.07	Q V			
3+ 0	0.0275	0.04	Q V			
3+ 5	0.0276	0.01	Q V			
3+10	0.0276	0.00	Q V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH65.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.77	1.20	0.92

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.77	2.90	2.23

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.200 (In)
Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 1.598 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.598 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.346	0.599	1.000	0.599

Sum (F) =

0.599

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.623

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.50	0.096	(0.599)	0.060	0.036
2.	0.17	0.60	0.115	(0.599)	0.072	0.043
3.	0.25	0.60	0.115	(0.599)	0.072	0.043
4.	0.33	0.60	0.115	(0.599)	0.072	0.043
5.	0.42	0.60	0.115	(0.599)	0.072	0.043
6.	0.50	0.70	0.134	(0.599)	0.084	0.051
7.	0.58	0.70	0.134	(0.599)	0.084	0.051
8.	0.67	0.70	0.134	(0.599)	0.084	0.051
9.	0.75	0.70	0.134	(0.599)	0.084	0.051
10.	0.83	0.70	0.134	(0.599)	0.084	0.051
11.	0.92	0.70	0.134	(0.599)	0.084	0.051
12.	1.00	0.80	0.153	(0.599)	0.096	0.058
13.	1.08	0.80	0.153	(0.599)	0.096	0.058
14.	1.17	0.80	0.153	(0.599)	0.096	0.058
15.	1.25	0.80	0.153	(0.599)	0.096	0.058
16.	1.33	0.80	0.153	(0.599)	0.096	0.058
17.	1.42	0.80	0.153	(0.599)	0.096	0.058
18.	1.50	0.80	0.153	(0.599)	0.096	0.058
19.	1.58	0.80	0.153	(0.599)	0.096	0.058
20.	1.67	0.80	0.153	(0.599)	0.096	0.058
21.	1.75	0.80	0.153	(0.599)	0.096	0.058
22.	1.83	0.80	0.153	(0.599)	0.096	0.058
23.	1.92	0.80	0.153	(0.599)	0.096	0.058
24.	2.00	0.90	0.173	(0.599)	0.108	0.065
25.	2.08	0.80	0.153	(0.599)	0.096	0.058
26.	2.17	0.90	0.173	(0.599)	0.108	0.065
27.	2.25	0.90	0.173	(0.599)	0.108	0.065
28.	2.33	0.90	0.173	(0.599)	0.108	0.065
29.	2.42	0.90	0.173	(0.599)	0.108	0.065
30.	2.50	0.90	0.173	(0.599)	0.108	0.065
31.	2.58	0.90	0.173	(0.599)	0.108	0.065
32.	2.67	0.90	0.173	(0.599)	0.108	0.065
33.	2.75	1.00	0.192	(0.599)	0.119	0.072
34.	2.83	1.00	0.192	(0.599)	0.119	0.072
35.	2.92	1.00	0.192	(0.599)	0.119	0.072
36.	3.00	1.00	0.192	(0.599)	0.119	0.072
37.	3.08	1.00	0.192	(0.599)	0.119	0.072
38.	3.17	1.10	0.211	(0.599)	0.131	0.080
39.	3.25	1.10	0.211	(0.599)	0.131	0.080
40.	3.33	1.10	0.211	(0.599)	0.131	0.080
41.	3.42	1.20	0.230	(0.599)	0.143	0.087
42.	3.50	1.30	0.249	(0.599)	0.155	0.094
43.	3.58	1.40	0.268	(0.599)	0.167	0.101
44.	3.67	1.40	0.268	(0.599)	0.167	0.101
45.	3.75	1.50	0.288	(0.599)	0.179	0.108
46.	3.83	1.50	0.288	(0.599)	0.179	0.108
47.	3.92	1.60	0.307	(0.599)	0.191	0.116

48.	4.00	1.60	0.307	(0.599)	0.191	0.116
49.	4.08	1.70	0.326	(0.599)	0.203	0.123
50.	4.17	1.80	0.345	(0.599)	0.215	0.130
51.	4.25	1.90	0.364	(0.599)	0.227	0.137
52.	4.33	2.00	0.384	(0.599)	0.239	0.145
53.	4.42	2.10	0.403	(0.599)	0.251	0.152
54.	4.50	2.10	0.403	(0.599)	0.251	0.152
55.	4.58	2.20	0.422	(0.599)	0.263	0.159
56.	4.67	2.30	0.441	(0.599)	0.275	0.166
57.	4.75	2.40	0.460	(0.599)	0.287	0.174
58.	4.83	2.40	0.460	(0.599)	0.287	0.174
59.	4.92	2.50	0.479	(0.599)	0.299	0.181
60.	5.00	2.60	0.499	(0.599)	0.311	0.188
61.	5.08	3.10	0.595	(0.599)	0.370	0.224
62.	5.17	3.60	0.690	(0.599)	0.430	0.260
63.	5.25	3.90	0.748	(0.599)	0.466	0.282
64.	5.33	4.20	0.805	(0.599)	0.502	0.304
65.	5.42	4.70	0.901	(0.599)	0.562	0.340
66.	5.50	5.60	1.074	0.599 (0.669)		0.475
67.	5.58	1.90	0.364	(0.599)	0.227	0.137
68.	5.67	0.90	0.173	(0.599)	0.108	0.065
69.	5.75	0.60	0.115	(0.599)	0.072	0.043
70.	5.83	0.50	0.096	(0.599)	0.060	0.036
71.	5.92	0.30	0.058	(0.599)	0.036	0.022
72.	6.00	0.20	0.038	(0.599)	0.024	0.014

(Loss Rate Not Used)

Sum = 100.0

Sum = 7.3

Flood volume = Effective rainfall 0.61(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.99(In)

Total soil loss = 0.064(Ac.Ft)

Total rainfall = 1.60(In)

Flood volume = 1700.3 Cubic Feet

Total soil loss = 2766.7 Cubic Feet

Peak flow rate of this hydrograph = 0.324(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0001	0.02	Q				
0+10	0.0003	0.03	Q				
0+15	0.0006	0.03	Q				
0+20	0.0008	0.03	Q				
0+25	0.0010	0.03	QV				
0+30	0.0013	0.04	QV				
0+35	0.0015	0.04	QV				

0+40	0.0018	0.04	QV				
0+45	0.0021	0.04	Q V				
0+50	0.0024	0.04	Q V				
0+55	0.0026	0.04	Q V				
1+ 0	0.0029	0.04	Q V				
1+ 5	0.0032	0.04	Q V				
1+10	0.0035	0.04	Q V				
1+15	0.0038	0.04	Q V				
1+20	0.0041	0.04	Q V				
1+25	0.0045	0.04	Q V				
1+30	0.0048	0.04	Q V				
1+35	0.0051	0.04	Q V				
1+40	0.0054	0.04	Q V				
1+45	0.0057	0.04	Q V				
1+50	0.0060	0.04	Q V				
1+55	0.0063	0.04	Q V				
2+ 0	0.0066	0.05	Q V				
2+ 5	0.0070	0.05	Q V				
2+10	0.0073	0.05	Q V				
2+15	0.0077	0.05	Q V				
2+20	0.0080	0.05	Q V				
2+25	0.0083	0.05	Q V				
2+30	0.0087	0.05	Q V				
2+35	0.0090	0.05	Q V				
2+40	0.0094	0.05	Q V				
2+45	0.0098	0.05	Q V				
2+50	0.0101	0.06	Q V				
2+55	0.0105	0.06	Q V				
3+ 0	0.0109	0.06	Q V				
3+ 5	0.0113	0.06	Q V				
3+10	0.0117	0.06	Q V				
3+15	0.0121	0.06	Q V				
3+20	0.0126	0.06	Q V				
3+25	0.0130	0.07	Q V				
3+30	0.0135	0.07	Q V				
3+35	0.0140	0.08	Q V				
3+40	0.0146	0.08	Q V				
3+45	0.0151	0.08	Q V				
3+50	0.0157	0.08	Q V				
3+55	0.0163	0.09	Q V				
4+ 0	0.0169	0.09	Q V				
4+ 5	0.0176	0.09	Q V				
4+10	0.0182	0.10	Q V				
4+15	0.0190	0.10	Q V				
4+20	0.0197	0.11	Q V				
4+25	0.0205	0.12	Q V				
4+30	0.0213	0.12	Q V				
4+35	0.0222	0.12	Q V				
4+40	0.0230	0.13	Q V				
4+45	0.0239	0.13	Q V				
4+50	0.0249	0.13	Q V				
4+55	0.0258	0.14	Q V				
5+ 0	0.0268	0.14	Q V				
5+ 5	0.0279	0.16	Q V				

5+10	0.0292	0.19	Q			V	
5+15	0.0307	0.21	Q			V	
5+20	0.0322	0.23	Q			V	
5+25	0.0340	0.25	Q			V	
5+30	0.0362	0.32	Q				V
5+35	0.0376	0.21	Q				V
5+40	0.0382	0.09	Q				V
5+45	0.0385	0.04	Q				V
5+50	0.0388	0.03	Q				V
5+55	0.0389	0.02	Q				V
6+ 0	0.0390	0.01	Q				V
6+ 5	0.0390	0.00	Q				V
6+10	0.0390	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH245.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.00	1.54

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	5.90	4.54

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.000 (In)
Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 2.913 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.913 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.346	0.599	1.000	0.599

Sum (F) =

0.599

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.623

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.07	0.023	(1.062)	0.015	0.009
2.	0.17	0.07	0.023	(1.058)	0.015	0.009
3.	0.25	0.07	0.023	(1.054)	0.015	0.009
4.	0.33	0.10	0.035	(1.050)	0.022	0.013
5.	0.42	0.10	0.035	(1.046)	0.022	0.013
6.	0.50	0.10	0.035	(1.042)	0.022	0.013
7.	0.58	0.10	0.035	(1.038)	0.022	0.013
8.	0.67	0.10	0.035	(1.034)	0.022	0.013
9.	0.75	0.10	0.035	(1.030)	0.022	0.013
10.	0.83	0.13	0.047	(1.026)	0.029	0.018
11.	0.92	0.13	0.047	(1.022)	0.029	0.018
12.	1.00	0.13	0.047	(1.018)	0.029	0.018
13.	1.08	0.10	0.035	(1.014)	0.022	0.013
14.	1.17	0.10	0.035	(1.010)	0.022	0.013
15.	1.25	0.10	0.035	(1.006)	0.022	0.013
16.	1.33	0.10	0.035	(1.002)	0.022	0.013
17.	1.42	0.10	0.035	(0.998)	0.022	0.013
18.	1.50	0.10	0.035	(0.994)	0.022	0.013
19.	1.58	0.10	0.035	(0.990)	0.022	0.013
20.	1.67	0.10	0.035	(0.986)	0.022	0.013
21.	1.75	0.10	0.035	(0.982)	0.022	0.013
22.	1.83	0.13	0.047	(0.978)	0.029	0.018
23.	1.92	0.13	0.047	(0.974)	0.029	0.018
24.	2.00	0.13	0.047	(0.970)	0.029	0.018
25.	2.08	0.13	0.047	(0.966)	0.029	0.018
26.	2.17	0.13	0.047	(0.962)	0.029	0.018
27.	2.25	0.13	0.047	(0.958)	0.029	0.018
28.	2.33	0.13	0.047	(0.954)	0.029	0.018
29.	2.42	0.13	0.047	(0.950)	0.029	0.018
30.	2.50	0.13	0.047	(0.947)	0.029	0.018
31.	2.58	0.17	0.058	(0.943)	0.036	0.022
32.	2.67	0.17	0.058	(0.939)	0.036	0.022
33.	2.75	0.17	0.058	(0.935)	0.036	0.022
34.	2.83	0.17	0.058	(0.931)	0.036	0.022
35.	2.92	0.17	0.058	(0.927)	0.036	0.022
36.	3.00	0.17	0.058	(0.923)	0.036	0.022
37.	3.08	0.17	0.058	(0.920)	0.036	0.022
38.	3.17	0.17	0.058	(0.916)	0.036	0.022
39.	3.25	0.17	0.058	(0.912)	0.036	0.022
40.	3.33	0.17	0.058	(0.908)	0.036	0.022
41.	3.42	0.17	0.058	(0.904)	0.036	0.022
42.	3.50	0.17	0.058	(0.901)	0.036	0.022
43.	3.58	0.17	0.058	(0.897)	0.036	0.022
44.	3.67	0.17	0.058	(0.893)	0.036	0.022
45.	3.75	0.17	0.058	(0.889)	0.036	0.022
46.	3.83	0.20	0.070	(0.886)	0.044	0.026
47.	3.92	0.20	0.070	(0.882)	0.044	0.026

48.	4.00	0.20	0.070	(0.878)	0.044	0.026
49.	4.08	0.20	0.070	(0.874)	0.044	0.026
50.	4.17	0.20	0.070	(0.871)	0.044	0.026
51.	4.25	0.20	0.070	(0.867)	0.044	0.026
52.	4.33	0.23	0.082	(0.863)	0.051	0.031
53.	4.42	0.23	0.082	(0.860)	0.051	0.031
54.	4.50	0.23	0.082	(0.856)	0.051	0.031
55.	4.58	0.23	0.082	(0.852)	0.051	0.031
56.	4.67	0.23	0.082	(0.849)	0.051	0.031
57.	4.75	0.23	0.082	(0.845)	0.051	0.031
58.	4.83	0.27	0.093	(0.841)	0.058	0.035
59.	4.92	0.27	0.093	(0.838)	0.058	0.035
60.	5.00	0.27	0.093	(0.834)	0.058	0.035
61.	5.08	0.20	0.070	(0.830)	0.044	0.026
62.	5.17	0.20	0.070	(0.827)	0.044	0.026
63.	5.25	0.20	0.070	(0.823)	0.044	0.026
64.	5.33	0.23	0.082	(0.820)	0.051	0.031
65.	5.42	0.23	0.082	(0.816)	0.051	0.031
66.	5.50	0.23	0.082	(0.812)	0.051	0.031
67.	5.58	0.27	0.093	(0.809)	0.058	0.035
68.	5.67	0.27	0.093	(0.805)	0.058	0.035
69.	5.75	0.27	0.093	(0.802)	0.058	0.035
70.	5.83	0.27	0.093	(0.798)	0.058	0.035
71.	5.92	0.27	0.093	(0.795)	0.058	0.035
72.	6.00	0.27	0.093	(0.791)	0.058	0.035
73.	6.08	0.30	0.105	(0.788)	0.065	0.040
74.	6.17	0.30	0.105	(0.784)	0.065	0.040
75.	6.25	0.30	0.105	(0.781)	0.065	0.040
76.	6.33	0.30	0.105	(0.777)	0.065	0.040
77.	6.42	0.30	0.105	(0.774)	0.065	0.040
78.	6.50	0.30	0.105	(0.770)	0.065	0.040
79.	6.58	0.33	0.117	(0.767)	0.073	0.044
80.	6.67	0.33	0.117	(0.763)	0.073	0.044
81.	6.75	0.33	0.117	(0.760)	0.073	0.044
82.	6.83	0.33	0.117	(0.756)	0.073	0.044
83.	6.92	0.33	0.117	(0.753)	0.073	0.044
84.	7.00	0.33	0.117	(0.750)	0.073	0.044
85.	7.08	0.33	0.117	(0.746)	0.073	0.044
86.	7.17	0.33	0.117	(0.743)	0.073	0.044
87.	7.25	0.33	0.117	(0.739)	0.073	0.044
88.	7.33	0.37	0.128	(0.736)	0.080	0.048
89.	7.42	0.37	0.128	(0.733)	0.080	0.048
90.	7.50	0.37	0.128	(0.729)	0.080	0.048
91.	7.58	0.40	0.140	(0.726)	0.087	0.053
92.	7.67	0.40	0.140	(0.723)	0.087	0.053
93.	7.75	0.40	0.140	(0.719)	0.087	0.053
94.	7.83	0.43	0.152	(0.716)	0.094	0.057
95.	7.92	0.43	0.152	(0.713)	0.094	0.057
96.	8.00	0.43	0.152	(0.709)	0.094	0.057
97.	8.08	0.50	0.175	(0.706)	0.109	0.066
98.	8.17	0.50	0.175	(0.703)	0.109	0.066
99.	8.25	0.50	0.175	(0.699)	0.109	0.066
100.	8.33	0.50	0.175	(0.696)	0.109	0.066
101.	8.42	0.50	0.175	(0.693)	0.109	0.066

102.	8.50	0.50	0.175	(0.690)	0.109	0.066
103.	8.58	0.53	0.186	(0.686)	0.116	0.070
104.	8.67	0.53	0.186	(0.683)	0.116	0.070
105.	8.75	0.53	0.186	(0.680)	0.116	0.070
106.	8.83	0.57	0.198	(0.677)	0.123	0.075
107.	8.92	0.57	0.198	(0.674)	0.123	0.075
108.	9.00	0.57	0.198	(0.670)	0.123	0.075
109.	9.08	0.63	0.221	(0.667)	0.138	0.083
110.	9.17	0.63	0.221	(0.664)	0.138	0.083
111.	9.25	0.63	0.221	(0.661)	0.138	0.083
112.	9.33	0.67	0.233	(0.658)	0.145	0.088
113.	9.42	0.67	0.233	(0.655)	0.145	0.088
114.	9.50	0.67	0.233	(0.651)	0.145	0.088
115.	9.58	0.70	0.245	(0.648)	0.152	0.092
116.	9.67	0.70	0.245	(0.645)	0.152	0.092
117.	9.75	0.70	0.245	(0.642)	0.152	0.092
118.	9.83	0.73	0.256	(0.639)	0.160	0.097
119.	9.92	0.73	0.256	(0.636)	0.160	0.097
120.	10.00	0.73	0.256	(0.633)	0.160	0.097
121.	10.08	0.50	0.175	(0.630)	0.109	0.066
122.	10.17	0.50	0.175	(0.627)	0.109	0.066
123.	10.25	0.50	0.175	(0.624)	0.109	0.066
124.	10.33	0.50	0.175	(0.621)	0.109	0.066
125.	10.42	0.50	0.175	(0.618)	0.109	0.066
126.	10.50	0.50	0.175	(0.615)	0.109	0.066
127.	10.58	0.67	0.233	(0.612)	0.145	0.088
128.	10.67	0.67	0.233	(0.609)	0.145	0.088
129.	10.75	0.67	0.233	(0.606)	0.145	0.088
130.	10.83	0.67	0.233	(0.603)	0.145	0.088
131.	10.92	0.67	0.233	(0.600)	0.145	0.088
132.	11.00	0.67	0.233	(0.597)	0.145	0.088
133.	11.08	0.63	0.221	(0.594)	0.138	0.083
134.	11.17	0.63	0.221	(0.591)	0.138	0.083
135.	11.25	0.63	0.221	(0.588)	0.138	0.083
136.	11.33	0.63	0.221	(0.585)	0.138	0.083
137.	11.42	0.63	0.221	(0.582)	0.138	0.083
138.	11.50	0.63	0.221	(0.579)	0.138	0.083
139.	11.58	0.57	0.198	(0.577)	0.123	0.075
140.	11.67	0.57	0.198	(0.574)	0.123	0.075
141.	11.75	0.57	0.198	(0.571)	0.123	0.075
142.	11.83	0.60	0.210	(0.568)	0.131	0.079
143.	11.92	0.60	0.210	(0.565)	0.131	0.079
144.	12.00	0.60	0.210	(0.562)	0.131	0.079
145.	12.08	0.83	0.291	(0.559)	0.182	0.110
146.	12.17	0.83	0.291	(0.557)	0.182	0.110
147.	12.25	0.83	0.291	(0.554)	0.182	0.110
148.	12.33	0.87	0.303	(0.551)	0.189	0.114
149.	12.42	0.87	0.303	(0.548)	0.189	0.114
150.	12.50	0.87	0.303	(0.546)	0.189	0.114
151.	12.58	0.93	0.326	(0.543)	0.203	0.123
152.	12.67	0.93	0.326	(0.540)	0.203	0.123
153.	12.75	0.93	0.326	(0.537)	0.203	0.123
154.	12.83	0.97	0.338	(0.535)	0.211	0.127
155.	12.92	0.97	0.338	(0.532)	0.211	0.127

156.	13.00	0.97	0.338	(0.529)	0.211	0.127
157.	13.08	1.13	0.396	(0.527)	0.247	0.149
158.	13.17	1.13	0.396	(0.524)	0.247	0.149
159.	13.25	1.13	0.396	(0.521)	0.247	0.149
160.	13.33	1.13	0.396	(0.519)	0.247	0.149
161.	13.42	1.13	0.396	(0.516)	0.247	0.149
162.	13.50	1.13	0.396	(0.513)	0.247	0.149
163.	13.58	0.77	0.268	(0.511)	0.167	0.101
164.	13.67	0.77	0.268	(0.508)	0.167	0.101
165.	13.75	0.77	0.268	(0.506)	0.167	0.101
166.	13.83	0.77	0.268	(0.503)	0.167	0.101
167.	13.92	0.77	0.268	(0.500)	0.167	0.101
168.	14.00	0.77	0.268	(0.498)	0.167	0.101
169.	14.08	0.90	0.315	(0.495)	0.196	0.119
170.	14.17	0.90	0.315	(0.493)	0.196	0.119
171.	14.25	0.90	0.315	(0.490)	0.196	0.119
172.	14.33	0.87	0.303	(0.488)	0.189	0.114
173.	14.42	0.87	0.303	(0.485)	0.189	0.114
174.	14.50	0.87	0.303	(0.483)	0.189	0.114
175.	14.58	0.87	0.303	(0.480)	0.189	0.114
176.	14.67	0.87	0.303	(0.478)	0.189	0.114
177.	14.75	0.87	0.303	(0.475)	0.189	0.114
178.	14.83	0.83	0.291	(0.473)	0.182	0.110
179.	14.92	0.83	0.291	(0.471)	0.182	0.110
180.	15.00	0.83	0.291	(0.468)	0.182	0.110
181.	15.08	0.80	0.280	(0.466)	0.174	0.105
182.	15.17	0.80	0.280	(0.463)	0.174	0.105
183.	15.25	0.80	0.280	(0.461)	0.174	0.105
184.	15.33	0.77	0.268	(0.459)	0.167	0.101
185.	15.42	0.77	0.268	(0.456)	0.167	0.101
186.	15.50	0.77	0.268	(0.454)	0.167	0.101
187.	15.58	0.63	0.221	(0.452)	0.138	0.083
188.	15.67	0.63	0.221	(0.449)	0.138	0.083
189.	15.75	0.63	0.221	(0.447)	0.138	0.083
190.	15.83	0.63	0.221	(0.445)	0.138	0.083
191.	15.92	0.63	0.221	(0.442)	0.138	0.083
192.	16.00	0.63	0.221	(0.440)	0.138	0.083
193.	16.08	0.13	0.047	(0.438)	0.029	0.018
194.	16.17	0.13	0.047	(0.436)	0.029	0.018
195.	16.25	0.13	0.047	(0.433)	0.029	0.018
196.	16.33	0.13	0.047	(0.431)	0.029	0.018
197.	16.42	0.13	0.047	(0.429)	0.029	0.018
198.	16.50	0.13	0.047	(0.427)	0.029	0.018
199.	16.58	0.10	0.035	(0.425)	0.022	0.013
200.	16.67	0.10	0.035	(0.423)	0.022	0.013
201.	16.75	0.10	0.035	(0.420)	0.022	0.013
202.	16.83	0.10	0.035	(0.418)	0.022	0.013
203.	16.92	0.10	0.035	(0.416)	0.022	0.013
204.	17.00	0.10	0.035	(0.414)	0.022	0.013
205.	17.08	0.17	0.058	(0.412)	0.036	0.022
206.	17.17	0.17	0.058	(0.410)	0.036	0.022
207.	17.25	0.17	0.058	(0.408)	0.036	0.022
208.	17.33	0.17	0.058	(0.406)	0.036	0.022
209.	17.42	0.17	0.058	(0.404)	0.036	0.022

210.	17.50	0.17	0.058	(0.402)	0.036	0.022
211.	17.58	0.17	0.058	(0.400)	0.036	0.022
212.	17.67	0.17	0.058	(0.398)	0.036	0.022
213.	17.75	0.17	0.058	(0.396)	0.036	0.022
214.	17.83	0.13	0.047	(0.394)	0.029	0.018
215.	17.92	0.13	0.047	(0.392)	0.029	0.018
216.	18.00	0.13	0.047	(0.390)	0.029	0.018
217.	18.08	0.13	0.047	(0.388)	0.029	0.018
218.	18.17	0.13	0.047	(0.386)	0.029	0.018
219.	18.25	0.13	0.047	(0.384)	0.029	0.018
220.	18.33	0.13	0.047	(0.382)	0.029	0.018
221.	18.42	0.13	0.047	(0.380)	0.029	0.018
222.	18.50	0.13	0.047	(0.379)	0.029	0.018
223.	18.58	0.10	0.035	(0.377)	0.022	0.013
224.	18.67	0.10	0.035	(0.375)	0.022	0.013
225.	18.75	0.10	0.035	(0.373)	0.022	0.013
226.	18.83	0.07	0.023	(0.371)	0.015	0.009
227.	18.92	0.07	0.023	(0.370)	0.015	0.009
228.	19.00	0.07	0.023	(0.368)	0.015	0.009
229.	19.08	0.10	0.035	(0.366)	0.022	0.013
230.	19.17	0.10	0.035	(0.364)	0.022	0.013
231.	19.25	0.10	0.035	(0.363)	0.022	0.013
232.	19.33	0.13	0.047	(0.361)	0.029	0.018
233.	19.42	0.13	0.047	(0.359)	0.029	0.018
234.	19.50	0.13	0.047	(0.358)	0.029	0.018
235.	19.58	0.10	0.035	(0.356)	0.022	0.013
236.	19.67	0.10	0.035	(0.354)	0.022	0.013
237.	19.75	0.10	0.035	(0.353)	0.022	0.013
238.	19.83	0.07	0.023	(0.351)	0.015	0.009
239.	19.92	0.07	0.023	(0.350)	0.015	0.009
240.	20.00	0.07	0.023	(0.348)	0.015	0.009
241.	20.08	0.10	0.035	(0.346)	0.022	0.013
242.	20.17	0.10	0.035	(0.345)	0.022	0.013
243.	20.25	0.10	0.035	(0.343)	0.022	0.013
244.	20.33	0.10	0.035	(0.342)	0.022	0.013
245.	20.42	0.10	0.035	(0.341)	0.022	0.013
246.	20.50	0.10	0.035	(0.339)	0.022	0.013
247.	20.58	0.10	0.035	(0.338)	0.022	0.013
248.	20.67	0.10	0.035	(0.336)	0.022	0.013
249.	20.75	0.10	0.035	(0.335)	0.022	0.013
250.	20.83	0.07	0.023	(0.333)	0.015	0.009
251.	20.92	0.07	0.023	(0.332)	0.015	0.009
252.	21.00	0.07	0.023	(0.331)	0.015	0.009
253.	21.08	0.10	0.035	(0.329)	0.022	0.013
254.	21.17	0.10	0.035	(0.328)	0.022	0.013
255.	21.25	0.10	0.035	(0.327)	0.022	0.013
256.	21.33	0.07	0.023	(0.326)	0.015	0.009
257.	21.42	0.07	0.023	(0.324)	0.015	0.009
258.	21.50	0.07	0.023	(0.323)	0.015	0.009
259.	21.58	0.10	0.035	(0.322)	0.022	0.013
260.	21.67	0.10	0.035	(0.321)	0.022	0.013
261.	21.75	0.10	0.035	(0.320)	0.022	0.013
262.	21.83	0.07	0.023	(0.319)	0.015	0.009
263.	21.92	0.07	0.023	(0.318)	0.015	0.009

264.	22.00	0.07	0.023	(0.316)	0.015	0.009
265.	22.08	0.10	0.035	(0.315)	0.022	0.013
266.	22.17	0.10	0.035	(0.314)	0.022	0.013
267.	22.25	0.10	0.035	(0.313)	0.022	0.013
268.	22.33	0.07	0.023	(0.312)	0.015	0.009
269.	22.42	0.07	0.023	(0.311)	0.015	0.009
270.	22.50	0.07	0.023	(0.311)	0.015	0.009
271.	22.58	0.07	0.023	(0.310)	0.015	0.009
272.	22.67	0.07	0.023	(0.309)	0.015	0.009
273.	22.75	0.07	0.023	(0.308)	0.015	0.009
274.	22.83	0.07	0.023	(0.307)	0.015	0.009
275.	22.92	0.07	0.023	(0.306)	0.015	0.009
276.	23.00	0.07	0.023	(0.306)	0.015	0.009
277.	23.08	0.07	0.023	(0.305)	0.015	0.009
278.	23.17	0.07	0.023	(0.304)	0.015	0.009
279.	23.25	0.07	0.023	(0.304)	0.015	0.009
280.	23.33	0.07	0.023	(0.303)	0.015	0.009
281.	23.42	0.07	0.023	(0.302)	0.015	0.009
282.	23.50	0.07	0.023	(0.302)	0.015	0.009
283.	23.58	0.07	0.023	(0.301)	0.015	0.009
284.	23.67	0.07	0.023	(0.301)	0.015	0.009
285.	23.75	0.07	0.023	(0.301)	0.015	0.009
286.	23.83	0.07	0.023	(0.300)	0.015	0.009
287.	23.92	0.07	0.023	(0.300)	0.015	0.009
288.	24.00	0.07	0.023	(0.300)	0.015	0.009

(Loss Rate Not Used)

Sum = 100.0

Sum = 13.2

Flood volume = Effective rainfall 1.10(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 1.82(In)

Total soil loss = 0.116(Ac.Ft)

Total rainfall = 2.91(In)

Flood volume = 3070.1 Cubic Feet

Total soil loss = 5073.4 Cubic Feet

Peak flow rate of this hydrograph = 0.116(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						

0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.01	Q				
0+25	0.0002	0.01	Q				
0+30	0.0003	0.01	Q				
0+35	0.0004	0.01	Q				

0+40	0.0005	0.01	Q				
0+45	0.0005	0.01	Q				
0+50	0.0006	0.01	Q				
0+55	0.0007	0.01	Q				
1+ 0	0.0008	0.01	Q				
1+ 5	0.0009	0.01	Q				
1+10	0.0010	0.01	Q				
1+15	0.0010	0.01	Q				
1+20	0.0011	0.01	Q				
1+25	0.0012	0.01	Q				
1+30	0.0012	0.01	Q				
1+35	0.0013	0.01	Q				
1+40	0.0014	0.01	Q				
1+45	0.0014	0.01	Q				
1+50	0.0015	0.01	Q				
1+55	0.0016	0.01	Q				
2+ 0	0.0017	0.01	Q				
2+ 5	0.0018	0.01	QV				
2+10	0.0019	0.01	QV				
2+15	0.0020	0.01	QV				
2+20	0.0021	0.01	QV				
2+25	0.0022	0.01	QV				
2+30	0.0023	0.01	QV				
2+35	0.0024	0.02	QV				
2+40	0.0025	0.02	QV				
2+45	0.0026	0.02	QV				
2+50	0.0027	0.02	QV				
2+55	0.0029	0.02	QV				
3+ 0	0.0030	0.02	QV				
3+ 5	0.0031	0.02	QV				
3+10	0.0032	0.02	QV				
3+15	0.0033	0.02	QV				
3+20	0.0034	0.02	QV				
3+25	0.0036	0.02	Q V				
3+30	0.0037	0.02	Q V				
3+35	0.0038	0.02	Q V				
3+40	0.0039	0.02	Q V				
3+45	0.0040	0.02	Q V				
3+50	0.0042	0.02	Q V				
3+55	0.0043	0.02	Q V				
4+ 0	0.0044	0.02	Q V				
4+ 5	0.0046	0.02	Q V				
4+10	0.0047	0.02	Q V				
4+15	0.0049	0.02	Q V				
4+20	0.0050	0.02	Q V				
4+25	0.0052	0.02	Q V				
4+30	0.0054	0.02	Q V				
4+35	0.0055	0.02	Q V				
4+40	0.0057	0.02	Q V				
4+45	0.0058	0.02	Q V				
4+50	0.0060	0.03	Q V				
4+55	0.0062	0.03	Q V				
5+ 0	0.0064	0.03	Q V				
5+ 5	0.0066	0.02	Q V				

5+10	0.0067	0.02	Q	V					
5+15	0.0068	0.02	Q	V					
5+20	0.0070	0.02	Q	V					
5+25	0.0072	0.02	Q	V					
5+30	0.0073	0.02	Q	V					
5+35	0.0075	0.03	Q	V					
5+40	0.0077	0.03	Q	V					
5+45	0.0079	0.03	Q	V					
5+50	0.0081	0.03	Q	V					
5+55	0.0083	0.03	Q	V					
6+ 0	0.0084	0.03	Q	V					
6+ 5	0.0086	0.03	Q	V					
6+10	0.0089	0.03	Q	V					
6+15	0.0091	0.03	Q	V					
6+20	0.0093	0.03	Q	V					
6+25	0.0095	0.03	Q	V					
6+30	0.0097	0.03	Q	V					
6+35	0.0099	0.03	Q	V					
6+40	0.0102	0.03	Q	V					
6+45	0.0104	0.03	Q	V					
6+50	0.0106	0.03	Q	V					
6+55	0.0109	0.03	Q	V					
7+ 0	0.0111	0.03	Q	V					
7+ 5	0.0113	0.03	Q	V					
7+10	0.0116	0.03	Q	V					
7+15	0.0118	0.03	Q	V					
7+20	0.0121	0.04	Q	V					
7+25	0.0123	0.04	Q	V					
7+30	0.0126	0.04	Q	V					
7+35	0.0128	0.04	Q	V					
7+40	0.0131	0.04	Q	V					
7+45	0.0134	0.04	Q	V					
7+50	0.0137	0.04	Q	V					
7+55	0.0140	0.04	Q	V					
8+ 0	0.0143	0.04	Q	V					
8+ 5	0.0146	0.05	Q	V					
8+10	0.0150	0.05	Q	V					
8+15	0.0153	0.05	Q	V					
8+20	0.0157	0.05	Q	V					
8+25	0.0160	0.05	Q	V					
8+30	0.0164	0.05	Q	V					
8+35	0.0168	0.05	Q	V					
8+40	0.0171	0.05	Q	V					
8+45	0.0175	0.05	Q	V					
8+50	0.0179	0.06	Q	V					
8+55	0.0183	0.06	Q	V					
9+ 0	0.0187	0.06	Q	V					
9+ 5	0.0191	0.06	Q	V					
9+10	0.0196	0.06	Q	V					
9+15	0.0200	0.06	Q	V					
9+20	0.0205	0.07	Q	V					
9+25	0.0210	0.07	Q	V					
9+30	0.0214	0.07	Q	V					
9+35	0.0219	0.07	Q	V					

9+40	0.0224	0.07	Q		V					
9+45	0.0229	0.07	Q		V					
9+50	0.0234	0.07	Q		V					
9+55	0.0239	0.07	Q		V					
10+ 0	0.0244	0.08	Q		V					
10+ 5	0.0249	0.06	Q		V					
10+10	0.0252	0.05	Q		V					
10+15	0.0256	0.05	Q		V					
10+20	0.0259	0.05	Q		V					
10+25	0.0263	0.05	Q		V					
10+30	0.0266	0.05	Q		V					
10+35	0.0270	0.06	Q		V					
10+40	0.0275	0.07	Q		V					
10+45	0.0280	0.07	Q		V					
10+50	0.0284	0.07	Q		V					
10+55	0.0289	0.07	Q		V					
11+ 0	0.0294	0.07	Q		V					
11+ 5	0.0298	0.07	Q		V					
11+10	0.0303	0.06	Q		V					
11+15	0.0307	0.06	Q		V					
11+20	0.0312	0.06	Q		V					
11+25	0.0316	0.06	Q		V					
11+30	0.0321	0.06	Q		V					
11+35	0.0325	0.06	Q		V					
11+40	0.0329	0.06	Q		V					
11+45	0.0333	0.06	Q		V					
11+50	0.0337	0.06	Q		V					
11+55	0.0341	0.06	Q		V					
12+ 0	0.0346	0.06	Q		V					
12+ 5	0.0351	0.08	Q		V					
12+10	0.0357	0.08	Q		V					
12+15	0.0362	0.09	Q		V					
12+20	0.0368	0.09	Q		V					
12+25	0.0374	0.09	Q		V					
12+30	0.0381	0.09	Q		V					
12+35	0.0387	0.09	Q		V					
12+40	0.0394	0.10	Q		V					
12+45	0.0400	0.10	Q		V					
12+50	0.0407	0.10	Q		V					
12+55	0.0414	0.10	Q		V					
13+ 0	0.0420	0.10	Q		V					
13+ 5	0.0428	0.11	Q		V					
13+10	0.0436	0.12	Q		V					
13+15	0.0444	0.12	Q		V					
13+20	0.0452	0.12	Q		V					
13+25	0.0460	0.12	Q		V					
13+30	0.0468	0.12	Q		V					
13+35	0.0474	0.09	Q		V					
13+40	0.0480	0.08	Q		V					
13+45	0.0485	0.08	Q		V					
13+50	0.0491	0.08	Q		V					
13+55	0.0496	0.08	Q		V					
14+ 0	0.0501	0.08	Q		V					
14+ 5	0.0507	0.09	Q		V					

14+10	0.0514	0.09	Q			V	
14+15	0.0520	0.09	Q			V	
14+20	0.0526	0.09	Q			V	
14+25	0.0532	0.09	Q			V	
14+30	0.0538	0.09	Q			V	
14+35	0.0545	0.09	Q			V	
14+40	0.0551	0.09	Q			V	
14+45	0.0557	0.09	Q			V	
14+50	0.0563	0.09	Q			V	
14+55	0.0569	0.09	Q			V	
15+ 0	0.0575	0.09	Q			V	
15+ 5	0.0580	0.08	Q			V	
15+10	0.0586	0.08	Q			V	
15+15	0.0592	0.08	Q			V	
15+20	0.0597	0.08	Q			V	
15+25	0.0602	0.08	Q			V	
15+30	0.0608	0.08	Q			V	
15+35	0.0613	0.07	Q			V	
15+40	0.0617	0.07	Q			V	
15+45	0.0622	0.06	Q			V	
15+50	0.0626	0.06	Q			V	
15+55	0.0631	0.06	Q			V	
16+ 0	0.0635	0.06	Q			V	
16+ 5	0.0637	0.03	Q			V	
16+10	0.0639	0.02	Q			V	
16+15	0.0640	0.01	Q			V	
16+20	0.0640	0.01	Q			V	
16+25	0.0641	0.01	Q			V	
16+30	0.0642	0.01	Q			V	
16+35	0.0643	0.01	Q			V	
16+40	0.0644	0.01	Q			V	
16+45	0.0645	0.01	Q			V	
16+50	0.0645	0.01	Q			V	
16+55	0.0646	0.01	Q			V	
17+ 0	0.0647	0.01	Q			V	
17+ 5	0.0648	0.01	Q			V	
17+10	0.0649	0.02	Q			V	
17+15	0.0650	0.02	Q			V	
17+20	0.0651	0.02	Q			V	
17+25	0.0652	0.02	Q			V	
17+30	0.0654	0.02	Q			V	
17+35	0.0655	0.02	Q			V	
17+40	0.0656	0.02	Q			V	
17+45	0.0657	0.02	Q			V	
17+50	0.0658	0.02	Q			V	
17+55	0.0659	0.01	Q			V	
18+ 0	0.0660	0.01	Q			V	
18+ 5	0.0661	0.01	Q			V	
18+10	0.0662	0.01	Q			V	
18+15	0.0663	0.01	Q			V	
18+20	0.0664	0.01	Q			V	
18+25	0.0665	0.01	Q			V	
18+30	0.0666	0.01	Q			V	
18+35	0.0666	0.01	Q			V	

18+40	0.0667	0.01	Q				V	
18+45	0.0668	0.01	Q				V	
18+50	0.0668	0.01	Q				V	
18+55	0.0669	0.01	Q				V	
19+ 0	0.0669	0.01	Q				V	
19+ 5	0.0670	0.01	Q				V	
19+10	0.0671	0.01	Q				V	
19+15	0.0671	0.01	Q				V	
19+20	0.0672	0.01	Q				V	
19+25	0.0673	0.01	Q				V	
19+30	0.0674	0.01	Q				V	
19+35	0.0675	0.01	Q				V	
19+40	0.0676	0.01	Q				V	
19+45	0.0676	0.01	Q				V	
19+50	0.0677	0.01	Q				V	
19+55	0.0677	0.01	Q				V	
20+ 0	0.0678	0.01	Q				V	
20+ 5	0.0678	0.01	Q				V	
20+10	0.0679	0.01	Q				V	
20+15	0.0680	0.01	Q				V	
20+20	0.0681	0.01	Q				V	
20+25	0.0681	0.01	Q				V	
20+30	0.0682	0.01	Q				V	
20+35	0.0683	0.01	Q				V	
20+40	0.0683	0.01	Q				V	
20+45	0.0684	0.01	Q				V	
20+50	0.0685	0.01	Q				V	
20+55	0.0685	0.01	Q				V	
21+ 0	0.0686	0.01	Q				V	
21+ 5	0.0686	0.01	Q				V	
21+10	0.0687	0.01	Q				V	
21+15	0.0688	0.01	Q				V	
21+20	0.0688	0.01	Q				V	
21+25	0.0689	0.01	Q				V	
21+30	0.0689	0.01	Q				V	
21+35	0.0690	0.01	Q				V	
21+40	0.0690	0.01	Q				V	
21+45	0.0691	0.01	Q				V	
21+50	0.0692	0.01	Q				V	
21+55	0.0692	0.01	Q				V	
22+ 0	0.0693	0.01	Q				V	
22+ 5	0.0693	0.01	Q				V	
22+10	0.0694	0.01	Q				V	
22+15	0.0695	0.01	Q				V	
22+20	0.0695	0.01	Q				V	
22+25	0.0696	0.01	Q				V	
22+30	0.0696	0.01	Q				V	
22+35	0.0697	0.01	Q				V	
22+40	0.0697	0.01	Q				V	
22+45	0.0698	0.01	Q				V	
22+50	0.0698	0.01	Q				V	
22+55	0.0698	0.01	Q				V	
23+ 0	0.0699	0.01	Q				V	
23+ 5	0.0699	0.01	Q				V	

23+10	0.0700	0.01	Q				V
23+15	0.0700	0.01	Q				V
23+20	0.0701	0.01	Q				V
23+25	0.0701	0.01	Q				V
23+30	0.0702	0.01	Q				V
23+35	0.0702	0.01	Q				V
23+40	0.0703	0.01	Q				V
23+45	0.0703	0.01	Q				V
23+50	0.0704	0.01	Q				V
23+55	0.0704	0.01	Q				V
24+ 0	0.0705	0.01	Q				V
24+ 5	0.0705	0.00	Q				V
24+10	0.0705	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH110.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.77	0.50	0.39

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.77	1.30	1.00

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.829 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.829 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.346	0.511	1.000	0.511

Sum (F) =

0.511

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.623

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In./Hr)	Loss rate(In./Hr)		Effective (In./Hr)
				Max	Low	
1.	0.08	4.20	0.418	(0.599)	0.260	0.158
2.	0.17	4.30	0.428	(0.599)	0.267	0.161
3.	0.25	5.00	0.497	(0.599)	0.310	0.188
4.	0.33	5.00	0.497	(0.599)	0.310	0.188
5.	0.42	5.80	0.577	(0.599)	0.360	0.218
6.	0.50	6.50	0.647	(0.599)	0.403	0.244
7.	0.58	7.40	0.736	(0.599)	0.459	0.278
8.	0.67	8.60	0.856	(0.599)	0.533	0.323
9.	0.75	12.30	1.224	0.599	(0.762)	0.624
10.	0.83	29.10	2.895	0.599	(1.804)	2.296
11.	0.92	6.80	0.677	(0.599)	0.421	0.255
12.	1.00	5.00	0.497	(0.599)	0.310	0.188

Flood volume = Effective rainfall	0.43(In)	
times area	0.8(Ac.)/[(In)/(Ft.)]	= 0.0(Ac.Ft)
Total soil loss =	0.40(In)	
Total soil loss =	0.026(Ac.Ft)	
Total rainfall =	0.83(In)	
Flood volume =	1192.2 Cubic Feet	
Total soil loss =	1125.3 Cubic Feet	

[illegible]

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0							

0+ 5	0.0005	0.07	Q			
0+10	0.0013	0.12	QV			
0+15	0.0023	0.14	Q V			
0+20	0.0033	0.14	Q V			
0+25	0.0043	0.16	Q V			
0+30	0.0056	0.18	Q V			
0+35	0.0070	0.20	Q V			
0+40	0.0086	0.23	Q V			

0+45	0.0113	0.39	Q		V			
0+50	0.0198	1.24	Q				V	
0+55	0.0252	0.78	Q					V
1+ 0	0.0269	0.25	Q					V
1+ 5	0.0273	0.06	Q					V
1+10	0.0274	0.01	Q					V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH310.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	0.85	0.65

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.00	1.54

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.323 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.323 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.346	0.511	1.000	0.511

Sum (F) =

0.511

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.623

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056
			Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.206	(0.599)	0.129	0.078
2.	0.17	1.30	0.206	(0.599)	0.129	0.078
3.	0.25	1.10	0.175	(0.599)	0.109	0.066
4.	0.33	1.50	0.238	(0.599)	0.148	0.090
5.	0.42	1.50	0.238	(0.599)	0.148	0.090
6.	0.50	1.80	0.286	(0.599)	0.178	0.108
7.	0.58	1.50	0.238	(0.599)	0.148	0.090
8.	0.67	1.80	0.286	(0.599)	0.178	0.108
9.	0.75	1.80	0.286	(0.599)	0.178	0.108
10.	0.83	1.50	0.238	(0.599)	0.148	0.090
11.	0.92	1.60	0.254	(0.599)	0.158	0.096
12.	1.00	1.80	0.286	(0.599)	0.178	0.108
13.	1.08	2.20	0.349	(0.599)	0.218	0.132
14.	1.17	2.20	0.349	(0.599)	0.218	0.132
15.	1.25	2.20	0.349	(0.599)	0.218	0.132
16.	1.33	2.00	0.318	(0.599)	0.198	0.120
17.	1.42	2.60	0.413	(0.599)	0.257	0.156
18.	1.50	2.70	0.429	(0.599)	0.267	0.162
19.	1.58	2.40	0.381	(0.599)	0.237	0.144
20.	1.67	2.70	0.429	(0.599)	0.267	0.162
21.	1.75	3.30	0.524	(0.599)	0.326	0.198
22.	1.83	3.10	0.492	(0.599)	0.307	0.186
23.	1.92	2.90	0.460	(0.599)	0.287	0.174
24.	2.00	3.00	0.476	(0.599)	0.297	0.180
25.	2.08	3.10	0.492	(0.599)	0.307	0.186
26.	2.17	4.20	0.667	(0.599)	0.415	0.251
27.	2.25	5.00	0.794	(0.599)	0.495	0.299
28.	2.33	3.50	0.556	(0.599)	0.346	0.210
29.	2.42	6.80	1.080	0.599	(0.673)	0.480
30.	2.50	7.30	1.159	0.599	(0.722)	0.560
31.	2.58	8.20	1.302	0.599	(0.811)	0.703
32.	2.67	5.90	0.937	(0.599)	0.584	0.353
33.	2.75	2.00	0.318	(0.599)	0.198	0.120
34.	2.83	1.80	0.286	(0.599)	0.178	0.108
35.	2.92	1.80	0.286	(0.599)	0.178	0.108
36.	3.00	0.60	0.095	(0.599)	0.059	0.036

(Loss Rate Not Used)

Sum = 100.0 Sum = 6.4

Flood volume = Effective rainfall 0.53(In)
times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.79(In)
Total soil loss = 0.051(Ac.Ft)
Total rainfall = 1.32(In)
Flood volume = 1489.2 Cubic Feet
Total soil loss = 2209.0 Cubic Feet

Peak flow rate of this hydrograph = 0.497(CFS)

+++++

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0002	0.04	Q			
0+10	0.0006	0.06	Q			
0+15	0.0010	0.05	QV			
0+20	0.0015	0.06	QV			
0+25	0.0019	0.07	Q V			
0+30	0.0025	0.08	Q V			
0+35	0.0030	0.07	Q V			
0+40	0.0035	0.08	Q V			
0+45	0.0041	0.08	Q V			
0+50	0.0046	0.08	Q V			
0+55	0.0051	0.07	Q V			
1+ 0	0.0057	0.08	Q V			
1+ 5	0.0063	0.09	Q V			
1+10	0.0070	0.10	Q V			
1+15	0.0077	0.10	Q V			
1+20	0.0084	0.10	Q V			
1+25	0.0091	0.11	Q V			
1+30	0.0100	0.12	Q V			
1+35	0.0108	0.12	Q V			
1+40	0.0116	0.12	Q V			
1+45	0.0126	0.14	Q V			
1+50	0.0136	0.15	Q V			
1+55	0.0146	0.14	Q V			
2+ 0	0.0155	0.14	Q V			
2+ 5	0.0165	0.14	Q V			
2+10	0.0177	0.17	Q V			
2+15	0.0192	0.21	Q V			
2+20	0.0205	0.19	Q V			
2+25	0.0225	0.29	Q V			
2+30	0.0252	0.40	Q V			
2+35	0.0286	0.50	Q V			
2+40	0.0312	0.38	Q V			
2+45	0.0325	0.18	Q V			
2+50	0.0332	0.10	Q V			
2+55	0.0337	0.08	Q V			
3+ 0	0.0341	0.05	Q V			
3+ 5	0.0342	0.01	Q V			
3+10	0.0342	0.00	Q V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH610.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	1.20	0.92

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.90	2.23

STORM EVENT (YEAR) = 10.00
 Area Averaged 2-Year Rainfall = 1.200 (In)
 Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 1.899 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 1.899 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.346	0.511	1.000	0.511

Sum (F) =

0.511

Area averaged mean soil loss (F) (In/Hr) = 0.599
 Minimum soil loss rate ((In/Hr)) = 0.300
 (for 24 hour storm duration)
 Note: User entry of the f value
 Soil low loss rate (decimal) = 0.623

Unit Hydrograph
 VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056
			Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.50	0.114	(0.599)	0.071	0.043
2.	0.17	0.60	0.137	(0.599)	0.085	0.052
3.	0.25	0.60	0.137	(0.599)	0.085	0.052
4.	0.33	0.60	0.137	(0.599)	0.085	0.052
5.	0.42	0.60	0.137	(0.599)	0.085	0.052
6.	0.50	0.70	0.160	(0.599)	0.099	0.060
7.	0.58	0.70	0.160	(0.599)	0.099	0.060
8.	0.67	0.70	0.160	(0.599)	0.099	0.060
9.	0.75	0.70	0.160	(0.599)	0.099	0.060
10.	0.83	0.70	0.160	(0.599)	0.099	0.060
11.	0.92	0.70	0.160	(0.599)	0.099	0.060
12.	1.00	0.80	0.182	(0.599)	0.114	0.069
13.	1.08	0.80	0.182	(0.599)	0.114	0.069
14.	1.17	0.80	0.182	(0.599)	0.114	0.069
15.	1.25	0.80	0.182	(0.599)	0.114	0.069
16.	1.33	0.80	0.182	(0.599)	0.114	0.069
17.	1.42	0.80	0.182	(0.599)	0.114	0.069
18.	1.50	0.80	0.182	(0.599)	0.114	0.069
19.	1.58	0.80	0.182	(0.599)	0.114	0.069
20.	1.67	0.80	0.182	(0.599)	0.114	0.069
21.	1.75	0.80	0.182	(0.599)	0.114	0.069
22.	1.83	0.80	0.182	(0.599)	0.114	0.069
23.	1.92	0.80	0.182	(0.599)	0.114	0.069
24.	2.00	0.90	0.205	(0.599)	0.128	0.077
25.	2.08	0.80	0.182	(0.599)	0.114	0.069
26.	2.17	0.90	0.205	(0.599)	0.128	0.077
27.	2.25	0.90	0.205	(0.599)	0.128	0.077
28.	2.33	0.90	0.205	(0.599)	0.128	0.077
29.	2.42	0.90	0.205	(0.599)	0.128	0.077
30.	2.50	0.90	0.205	(0.599)	0.128	0.077
31.	2.58	0.90	0.205	(0.599)	0.128	0.077
32.	2.67	0.90	0.205	(0.599)	0.128	0.077
33.	2.75	1.00	0.228	(0.599)	0.142	0.086
34.	2.83	1.00	0.228	(0.599)	0.142	0.086
35.	2.92	1.00	0.228	(0.599)	0.142	0.086
36.	3.00	1.00	0.228	(0.599)	0.142	0.086
37.	3.08	1.00	0.228	(0.599)	0.142	0.086
38.	3.17	1.10	0.251	(0.599)	0.156	0.095
39.	3.25	1.10	0.251	(0.599)	0.156	0.095
40.	3.33	1.10	0.251	(0.599)	0.156	0.095
41.	3.42	1.20	0.274	(0.599)	0.170	0.103
42.	3.50	1.30	0.296	(0.599)	0.185	0.112
43.	3.58	1.40	0.319	(0.599)	0.199	0.120
44.	3.67	1.40	0.319	(0.599)	0.199	0.120
45.	3.75	1.50	0.342	(0.599)	0.213	0.129
46.	3.83	1.50	0.342	(0.599)	0.213	0.129

47.	3.92	1.60	0.365	(0.599)	0.227	0.137
48.	4.00	1.60	0.365	(0.599)	0.227	0.137
49.	4.08	1.70	0.387	(0.599)	0.241	0.146
50.	4.17	1.80	0.410	(0.599)	0.256	0.155
51.	4.25	1.90	0.433	(0.599)	0.270	0.163
52.	4.33	2.00	0.456	(0.599)	0.284	0.172
53.	4.42	2.10	0.479	(0.599)	0.298	0.180
54.	4.50	2.10	0.479	(0.599)	0.298	0.180
55.	4.58	2.20	0.501	(0.599)	0.312	0.189
56.	4.67	2.30	0.524	(0.599)	0.327	0.198
57.	4.75	2.40	0.547	(0.599)	0.341	0.206
58.	4.83	2.40	0.547	(0.599)	0.341	0.206
59.	4.92	2.50	0.570	(0.599)	0.355	0.215
60.	5.00	2.60	0.593	(0.599)	0.369	0.223
61.	5.08	3.10	0.707	(0.599)	0.440	0.266
62.	5.17	3.60	0.821	(0.599)	0.511	0.309
63.	5.25	3.90	0.889	(0.599)	0.554	0.335
64.	5.33	4.20	0.957	(0.599)	0.596	0.361
65.	5.42	4.70	1.071	0.599 (0.667)		0.472
66.	5.50	5.60	1.276	0.599 (0.795)		0.677
67.	5.58	1.90	0.433	(0.599)	0.270	0.163
68.	5.67	0.90	0.205	(0.599)	0.128	0.077
69.	5.75	0.60	0.137	(0.599)	0.085	0.052
70.	5.83	0.50	0.114	(0.599)	0.071	0.043
71.	5.92	0.30	0.068	(0.599)	0.043	0.026
72.	6.00	0.20	0.046	(0.599)	0.028	0.017

(Loss Rate Not Used)

Sum = 100.0

Sum = 8.9

Flood volume = Effective rainfall 0.74(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 1.16(In)

Total soil loss = 0.075(Ac.Ft)

Total rainfall = 1.90(In)

Flood volume = 2062.9 Cubic Feet

Total soil loss = 3246.0 Cubic Feet

Peak flow rate of this hydrograph = 0.456(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0001	0.02	Q				
0+10	0.0004	0.04	Q				
0+15	0.0007	0.04	Q				
0+20	0.0009	0.04	Q				
0+25	0.0012	0.04	QV				
0+30	0.0015	0.04	QV				

0+35	0.0018	0.05	QV				
0+40	0.0021	0.05	QV				
0+45	0.0025	0.05	Q V				
0+50	0.0028	0.05	Q V				
0+55	0.0031	0.05	Q V				
1+ 0	0.0035	0.05	Q V				
1+ 5	0.0038	0.05	Q V				
1+10	0.0042	0.05	Q V				
1+15	0.0046	0.05	Q V				
1+20	0.0049	0.05	Q V				
1+25	0.0053	0.05	Q V				
1+30	0.0057	0.05	Q V				
1+35	0.0060	0.05	Q V				
1+40	0.0064	0.05	Q V				
1+45	0.0068	0.05	Q V				
1+50	0.0071	0.05	Q V				
1+55	0.0075	0.05	Q V				
2+ 0	0.0079	0.06	Q V				
2+ 5	0.0083	0.06	Q V				
2+10	0.0087	0.06	Q V				
2+15	0.0091	0.06	Q V				
2+20	0.0095	0.06	Q V				
2+25	0.0099	0.06	Q V				
2+30	0.0103	0.06	Q V				
2+35	0.0107	0.06	Q V				
2+40	0.0112	0.06	Q V				
2+45	0.0116	0.06	Q V				
2+50	0.0121	0.07	Q V				
2+55	0.0125	0.07	Q V				
3+ 0	0.0130	0.07	Q V				
3+ 5	0.0134	0.07	Q V				
3+10	0.0139	0.07	Q V				
3+15	0.0144	0.07	Q V				
3+20	0.0149	0.07	Q V				
3+25	0.0155	0.08	Q V				
3+30	0.0160	0.08	Q V				
3+35	0.0167	0.09	Q V				
3+40	0.0173	0.09	Q V				
3+45	0.0180	0.10	Q V				
3+50	0.0187	0.10	Q V				
3+55	0.0194	0.10	Q V				
4+ 0	0.0201	0.11	Q V				
4+ 5	0.0209	0.11	Q V				
4+10	0.0217	0.12	Q V				
4+15	0.0225	0.12	Q V				
4+20	0.0234	0.13	Q V				
4+25	0.0244	0.14	Q V				
4+30	0.0253	0.14	Q V				
4+35	0.0263	0.14	Q V				
4+40	0.0274	0.15	Q V				
4+45	0.0284	0.16	Q V				
4+50	0.0295	0.16	Q V				
4+55	0.0307	0.16	Q V				
5+ 0	0.0318	0.17	Q V				

5+ 5	0.0332	0.19	Q			V		
5+10	0.0347	0.22	Q			V		
5+15	0.0364	0.25	IQ			V		
5+20	0.0383	0.27	IQ				V	
5+25	0.0406	0.33	IQ				V	
5+30	0.0437	0.46	IQ				V	
5+35	0.0457	0.28	IQ				V	
5+40	0.0464	0.11	Q				V	
5+45	0.0468	0.05	Q				V	
5+50	0.0470	0.04	Q				V	
5+55	0.0472	0.03	Q				V	
6+ 0	0.0473	0.02	Q				V	
6+ 5	0.0474	0.01	Q				V	
6+10	0.0474	0.00	Q				V	

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH2410.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.00	1.54

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	5.90	4.54

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.000 (In)
Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 3.604 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.604 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.346	0.511	1.000	0.511

Sum (F) =

0.511

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.623

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056
			Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.07	0.029	(1.062)	0.018	0.011
2.	0.17	0.07	0.029	(1.058)	0.018	0.011
3.	0.25	0.07	0.029	(1.054)	0.018	0.011
4.	0.33	0.10	0.043	(1.050)	0.027	0.016
5.	0.42	0.10	0.043	(1.046)	0.027	0.016
6.	0.50	0.10	0.043	(1.042)	0.027	0.016
7.	0.58	0.10	0.043	(1.038)	0.027	0.016
8.	0.67	0.10	0.043	(1.034)	0.027	0.016
9.	0.75	0.10	0.043	(1.030)	0.027	0.016
10.	0.83	0.13	0.058	(1.026)	0.036	0.022
11.	0.92	0.13	0.058	(1.022)	0.036	0.022
12.	1.00	0.13	0.058	(1.018)	0.036	0.022
13.	1.08	0.10	0.043	(1.014)	0.027	0.016
14.	1.17	0.10	0.043	(1.010)	0.027	0.016
15.	1.25	0.10	0.043	(1.006)	0.027	0.016
16.	1.33	0.10	0.043	(1.002)	0.027	0.016
17.	1.42	0.10	0.043	(0.998)	0.027	0.016
18.	1.50	0.10	0.043	(0.994)	0.027	0.016
19.	1.58	0.10	0.043	(0.990)	0.027	0.016
20.	1.67	0.10	0.043	(0.986)	0.027	0.016
21.	1.75	0.10	0.043	(0.982)	0.027	0.016
22.	1.83	0.13	0.058	(0.978)	0.036	0.022
23.	1.92	0.13	0.058	(0.974)	0.036	0.022
24.	2.00	0.13	0.058	(0.970)	0.036	0.022
25.	2.08	0.13	0.058	(0.966)	0.036	0.022
26.	2.17	0.13	0.058	(0.962)	0.036	0.022
27.	2.25	0.13	0.058	(0.958)	0.036	0.022
28.	2.33	0.13	0.058	(0.954)	0.036	0.022
29.	2.42	0.13	0.058	(0.950)	0.036	0.022
30.	2.50	0.13	0.058	(0.947)	0.036	0.022
31.	2.58	0.17	0.072	(0.943)	0.045	0.027
32.	2.67	0.17	0.072	(0.939)	0.045	0.027
33.	2.75	0.17	0.072	(0.935)	0.045	0.027
34.	2.83	0.17	0.072	(0.931)	0.045	0.027
35.	2.92	0.17	0.072	(0.927)	0.045	0.027
36.	3.00	0.17	0.072	(0.923)	0.045	0.027
37.	3.08	0.17	0.072	(0.920)	0.045	0.027
38.	3.17	0.17	0.072	(0.916)	0.045	0.027
39.	3.25	0.17	0.072	(0.912)	0.045	0.027
40.	3.33	0.17	0.072	(0.908)	0.045	0.027
41.	3.42	0.17	0.072	(0.904)	0.045	0.027
42.	3.50	0.17	0.072	(0.901)	0.045	0.027
43.	3.58	0.17	0.072	(0.897)	0.045	0.027
44.	3.67	0.17	0.072	(0.893)	0.045	0.027
45.	3.75	0.17	0.072	(0.889)	0.045	0.027
46.	3.83	0.20	0.087	(0.886)	0.054	0.033

47.	3.92	0.20	0.087	(0.882)	0.054	0.033
48.	4.00	0.20	0.087	(0.878)	0.054	0.033
49.	4.08	0.20	0.087	(0.874)	0.054	0.033
50.	4.17	0.20	0.087	(0.871)	0.054	0.033
51.	4.25	0.20	0.087	(0.867)	0.054	0.033
52.	4.33	0.23	0.101	(0.863)	0.063	0.038
53.	4.42	0.23	0.101	(0.860)	0.063	0.038
54.	4.50	0.23	0.101	(0.856)	0.063	0.038
55.	4.58	0.23	0.101	(0.852)	0.063	0.038
56.	4.67	0.23	0.101	(0.849)	0.063	0.038
57.	4.75	0.23	0.101	(0.845)	0.063	0.038
58.	4.83	0.27	0.115	(0.841)	0.072	0.043
59.	4.92	0.27	0.115	(0.838)	0.072	0.043
60.	5.00	0.27	0.115	(0.834)	0.072	0.043
61.	5.08	0.20	0.087	(0.830)	0.054	0.033
62.	5.17	0.20	0.087	(0.827)	0.054	0.033
63.	5.25	0.20	0.087	(0.823)	0.054	0.033
64.	5.33	0.23	0.101	(0.820)	0.063	0.038
65.	5.42	0.23	0.101	(0.816)	0.063	0.038
66.	5.50	0.23	0.101	(0.812)	0.063	0.038
67.	5.58	0.27	0.115	(0.809)	0.072	0.043
68.	5.67	0.27	0.115	(0.805)	0.072	0.043
69.	5.75	0.27	0.115	(0.802)	0.072	0.043
70.	5.83	0.27	0.115	(0.798)	0.072	0.043
71.	5.92	0.27	0.115	(0.795)	0.072	0.043
72.	6.00	0.27	0.115	(0.791)	0.072	0.043
73.	6.08	0.30	0.130	(0.788)	0.081	0.049
74.	6.17	0.30	0.130	(0.784)	0.081	0.049
75.	6.25	0.30	0.130	(0.781)	0.081	0.049
76.	6.33	0.30	0.130	(0.777)	0.081	0.049
77.	6.42	0.30	0.130	(0.774)	0.081	0.049
78.	6.50	0.30	0.130	(0.770)	0.081	0.049
79.	6.58	0.33	0.144	(0.767)	0.090	0.054
80.	6.67	0.33	0.144	(0.763)	0.090	0.054
81.	6.75	0.33	0.144	(0.760)	0.090	0.054
82.	6.83	0.33	0.144	(0.756)	0.090	0.054
83.	6.92	0.33	0.144	(0.753)	0.090	0.054
84.	7.00	0.33	0.144	(0.750)	0.090	0.054
85.	7.08	0.33	0.144	(0.746)	0.090	0.054
86.	7.17	0.33	0.144	(0.743)	0.090	0.054
87.	7.25	0.33	0.144	(0.739)	0.090	0.054
88.	7.33	0.37	0.159	(0.736)	0.099	0.060
89.	7.42	0.37	0.159	(0.733)	0.099	0.060
90.	7.50	0.37	0.159	(0.729)	0.099	0.060
91.	7.58	0.40	0.173	(0.726)	0.108	0.065
92.	7.67	0.40	0.173	(0.723)	0.108	0.065
93.	7.75	0.40	0.173	(0.719)	0.108	0.065
94.	7.83	0.43	0.187	(0.716)	0.117	0.071
95.	7.92	0.43	0.187	(0.713)	0.117	0.071
96.	8.00	0.43	0.187	(0.709)	0.117	0.071
97.	8.08	0.50	0.216	(0.706)	0.135	0.082
98.	8.17	0.50	0.216	(0.703)	0.135	0.082
99.	8.25	0.50	0.216	(0.699)	0.135	0.082
100.	8.33	0.50	0.216	(0.696)	0.135	0.082

101.	8.42	0.50	0.216	(0.693)	0.135	0.082
102.	8.50	0.50	0.216	(0.690)	0.135	0.082
103.	8.58	0.53	0.231	(0.686)	0.144	0.087
104.	8.67	0.53	0.231	(0.683)	0.144	0.087
105.	8.75	0.53	0.231	(0.680)	0.144	0.087
106.	8.83	0.57	0.245	(0.677)	0.153	0.092
107.	8.92	0.57	0.245	(0.674)	0.153	0.092
108.	9.00	0.57	0.245	(0.670)	0.153	0.092
109.	9.08	0.63	0.274	(0.667)	0.171	0.103
110.	9.17	0.63	0.274	(0.664)	0.171	0.103
111.	9.25	0.63	0.274	(0.661)	0.171	0.103
112.	9.33	0.67	0.288	(0.658)	0.180	0.109
113.	9.42	0.67	0.288	(0.655)	0.180	0.109
114.	9.50	0.67	0.288	(0.651)	0.180	0.109
115.	9.58	0.70	0.303	(0.648)	0.189	0.114
116.	9.67	0.70	0.303	(0.645)	0.189	0.114
117.	9.75	0.70	0.303	(0.642)	0.189	0.114
118.	9.83	0.73	0.317	(0.639)	0.198	0.120
119.	9.92	0.73	0.317	(0.636)	0.198	0.120
120.	10.00	0.73	0.317	(0.633)	0.198	0.120
121.	10.08	0.50	0.216	(0.630)	0.135	0.082
122.	10.17	0.50	0.216	(0.627)	0.135	0.082
123.	10.25	0.50	0.216	(0.624)	0.135	0.082
124.	10.33	0.50	0.216	(0.621)	0.135	0.082
125.	10.42	0.50	0.216	(0.618)	0.135	0.082
126.	10.50	0.50	0.216	(0.615)	0.135	0.082
127.	10.58	0.67	0.288	(0.612)	0.180	0.109
128.	10.67	0.67	0.288	(0.609)	0.180	0.109
129.	10.75	0.67	0.288	(0.606)	0.180	0.109
130.	10.83	0.67	0.288	(0.603)	0.180	0.109
131.	10.92	0.67	0.288	(0.600)	0.180	0.109
132.	11.00	0.67	0.288	(0.597)	0.180	0.109
133.	11.08	0.63	0.274	(0.594)	0.171	0.103
134.	11.17	0.63	0.274	(0.591)	0.171	0.103
135.	11.25	0.63	0.274	(0.588)	0.171	0.103
136.	11.33	0.63	0.274	(0.585)	0.171	0.103
137.	11.42	0.63	0.274	(0.582)	0.171	0.103
138.	11.50	0.63	0.274	(0.579)	0.171	0.103
139.	11.58	0.57	0.245	(0.577)	0.153	0.092
140.	11.67	0.57	0.245	(0.574)	0.153	0.092
141.	11.75	0.57	0.245	(0.571)	0.153	0.092
142.	11.83	0.60	0.260	(0.568)	0.162	0.098
143.	11.92	0.60	0.260	(0.565)	0.162	0.098
144.	12.00	0.60	0.260	(0.562)	0.162	0.098
145.	12.08	0.83	0.360	(0.559)	0.225	0.136
146.	12.17	0.83	0.360	(0.557)	0.225	0.136
147.	12.25	0.83	0.360	(0.554)	0.225	0.136
148.	12.33	0.87	0.375	(0.551)	0.234	0.141
149.	12.42	0.87	0.375	(0.548)	0.234	0.141
150.	12.50	0.87	0.375	(0.546)	0.234	0.141
151.	12.58	0.93	0.404	(0.543)	0.252	0.152
152.	12.67	0.93	0.404	(0.540)	0.252	0.152
153.	12.75	0.93	0.404	(0.537)	0.252	0.152
154.	12.83	0.97	0.418	(0.535)	0.260	0.158

155.	12.92	0.97	0.418	(0.532)	0.260	0.158
156.	13.00	0.97	0.418	(0.529)	0.260	0.158
157.	13.08	1.13	0.490	(0.527)	0.305	0.185
158.	13.17	1.13	0.490	(0.524)	0.305	0.185
159.	13.25	1.13	0.490	(0.521)	0.305	0.185
160.	13.33	1.13	0.490	(0.519)	0.305	0.185
161.	13.42	1.13	0.490	(0.516)	0.305	0.185
162.	13.50	1.13	0.490	(0.513)	0.305	0.185
163.	13.58	0.77	0.332	(0.511)	0.207	0.125
164.	13.67	0.77	0.332	(0.508)	0.207	0.125
165.	13.75	0.77	0.332	(0.506)	0.207	0.125
166.	13.83	0.77	0.332	(0.503)	0.207	0.125
167.	13.92	0.77	0.332	(0.500)	0.207	0.125
168.	14.00	0.77	0.332	(0.498)	0.207	0.125
169.	14.08	0.90	0.389	(0.495)	0.243	0.147
170.	14.17	0.90	0.389	(0.493)	0.243	0.147
171.	14.25	0.90	0.389	(0.490)	0.243	0.147
172.	14.33	0.87	0.375	(0.488)	0.234	0.141
173.	14.42	0.87	0.375	(0.485)	0.234	0.141
174.	14.50	0.87	0.375	(0.483)	0.234	0.141
175.	14.58	0.87	0.375	(0.480)	0.234	0.141
176.	14.67	0.87	0.375	(0.478)	0.234	0.141
177.	14.75	0.87	0.375	(0.475)	0.234	0.141
178.	14.83	0.83	0.360	(0.473)	0.225	0.136
179.	14.92	0.83	0.360	(0.471)	0.225	0.136
180.	15.00	0.83	0.360	(0.468)	0.225	0.136
181.	15.08	0.80	0.346	(0.466)	0.216	0.130
182.	15.17	0.80	0.346	(0.463)	0.216	0.130
183.	15.25	0.80	0.346	(0.461)	0.216	0.130
184.	15.33	0.77	0.332	(0.459)	0.207	0.125
185.	15.42	0.77	0.332	(0.456)	0.207	0.125
186.	15.50	0.77	0.332	(0.454)	0.207	0.125
187.	15.58	0.63	0.274	(0.452)	0.171	0.103
188.	15.67	0.63	0.274	(0.449)	0.171	0.103
189.	15.75	0.63	0.274	(0.447)	0.171	0.103
190.	15.83	0.63	0.274	(0.445)	0.171	0.103
191.	15.92	0.63	0.274	(0.442)	0.171	0.103
192.	16.00	0.63	0.274	(0.440)	0.171	0.103
193.	16.08	0.13	0.058	(0.438)	0.036	0.022
194.	16.17	0.13	0.058	(0.436)	0.036	0.022
195.	16.25	0.13	0.058	(0.433)	0.036	0.022
196.	16.33	0.13	0.058	(0.431)	0.036	0.022
197.	16.42	0.13	0.058	(0.429)	0.036	0.022
198.	16.50	0.13	0.058	(0.427)	0.036	0.022
199.	16.58	0.10	0.043	(0.425)	0.027	0.016
200.	16.67	0.10	0.043	(0.423)	0.027	0.016
201.	16.75	0.10	0.043	(0.420)	0.027	0.016
202.	16.83	0.10	0.043	(0.418)	0.027	0.016
203.	16.92	0.10	0.043	(0.416)	0.027	0.016
204.	17.00	0.10	0.043	(0.414)	0.027	0.016
205.	17.08	0.17	0.072	(0.412)	0.045	0.027
206.	17.17	0.17	0.072	(0.410)	0.045	0.027
207.	17.25	0.17	0.072	(0.408)	0.045	0.027
208.	17.33	0.17	0.072	(0.406)	0.045	0.027

209.	17.42	0.17	0.072	(0.404)	0.045	0.027
210.	17.50	0.17	0.072	(0.402)	0.045	0.027
211.	17.58	0.17	0.072	(0.400)	0.045	0.027
212.	17.67	0.17	0.072	(0.398)	0.045	0.027
213.	17.75	0.17	0.072	(0.396)	0.045	0.027
214.	17.83	0.13	0.058	(0.394)	0.036	0.022
215.	17.92	0.13	0.058	(0.392)	0.036	0.022
216.	18.00	0.13	0.058	(0.390)	0.036	0.022
217.	18.08	0.13	0.058	(0.388)	0.036	0.022
218.	18.17	0.13	0.058	(0.386)	0.036	0.022
219.	18.25	0.13	0.058	(0.384)	0.036	0.022
220.	18.33	0.13	0.058	(0.382)	0.036	0.022
221.	18.42	0.13	0.058	(0.380)	0.036	0.022
222.	18.50	0.13	0.058	(0.379)	0.036	0.022
223.	18.58	0.10	0.043	(0.377)	0.027	0.016
224.	18.67	0.10	0.043	(0.375)	0.027	0.016
225.	18.75	0.10	0.043	(0.373)	0.027	0.016
226.	18.83	0.07	0.029	(0.371)	0.018	0.011
227.	18.92	0.07	0.029	(0.370)	0.018	0.011
228.	19.00	0.07	0.029	(0.368)	0.018	0.011
229.	19.08	0.10	0.043	(0.366)	0.027	0.016
230.	19.17	0.10	0.043	(0.364)	0.027	0.016
231.	19.25	0.10	0.043	(0.363)	0.027	0.016
232.	19.33	0.13	0.058	(0.361)	0.036	0.022
233.	19.42	0.13	0.058	(0.359)	0.036	0.022
234.	19.50	0.13	0.058	(0.358)	0.036	0.022
235.	19.58	0.10	0.043	(0.356)	0.027	0.016
236.	19.67	0.10	0.043	(0.354)	0.027	0.016
237.	19.75	0.10	0.043	(0.353)	0.027	0.016
238.	19.83	0.07	0.029	(0.351)	0.018	0.011
239.	19.92	0.07	0.029	(0.350)	0.018	0.011
240.	20.00	0.07	0.029	(0.348)	0.018	0.011
241.	20.08	0.10	0.043	(0.346)	0.027	0.016
242.	20.17	0.10	0.043	(0.345)	0.027	0.016
243.	20.25	0.10	0.043	(0.343)	0.027	0.016
244.	20.33	0.10	0.043	(0.342)	0.027	0.016
245.	20.42	0.10	0.043	(0.341)	0.027	0.016
246.	20.50	0.10	0.043	(0.339)	0.027	0.016
247.	20.58	0.10	0.043	(0.338)	0.027	0.016
248.	20.67	0.10	0.043	(0.336)	0.027	0.016
249.	20.75	0.10	0.043	(0.335)	0.027	0.016
250.	20.83	0.07	0.029	(0.333)	0.018	0.011
251.	20.92	0.07	0.029	(0.332)	0.018	0.011
252.	21.00	0.07	0.029	(0.331)	0.018	0.011
253.	21.08	0.10	0.043	(0.329)	0.027	0.016
254.	21.17	0.10	0.043	(0.328)	0.027	0.016
255.	21.25	0.10	0.043	(0.327)	0.027	0.016
256.	21.33	0.07	0.029	(0.326)	0.018	0.011
257.	21.42	0.07	0.029	(0.324)	0.018	0.011
258.	21.50	0.07	0.029	(0.323)	0.018	0.011
259.	21.58	0.10	0.043	(0.322)	0.027	0.016
260.	21.67	0.10	0.043	(0.321)	0.027	0.016
261.	21.75	0.10	0.043	(0.320)	0.027	0.016
262.	21.83	0.07	0.029	(0.319)	0.018	0.011

263.	21.92	0.07	0.029	(0.318)	0.018	0.011
264.	22.00	0.07	0.029	(0.316)	0.018	0.011
265.	22.08	0.10	0.043	(0.315)	0.027	0.016
266.	22.17	0.10	0.043	(0.314)	0.027	0.016
267.	22.25	0.10	0.043	(0.313)	0.027	0.016
268.	22.33	0.07	0.029	(0.312)	0.018	0.011
269.	22.42	0.07	0.029	(0.311)	0.018	0.011
270.	22.50	0.07	0.029	(0.311)	0.018	0.011
271.	22.58	0.07	0.029	(0.310)	0.018	0.011
272.	22.67	0.07	0.029	(0.309)	0.018	0.011
273.	22.75	0.07	0.029	(0.308)	0.018	0.011
274.	22.83	0.07	0.029	(0.307)	0.018	0.011
275.	22.92	0.07	0.029	(0.306)	0.018	0.011
276.	23.00	0.07	0.029	(0.306)	0.018	0.011
277.	23.08	0.07	0.029	(0.305)	0.018	0.011
278.	23.17	0.07	0.029	(0.304)	0.018	0.011
279.	23.25	0.07	0.029	(0.304)	0.018	0.011
280.	23.33	0.07	0.029	(0.303)	0.018	0.011
281.	23.42	0.07	0.029	(0.302)	0.018	0.011
282.	23.50	0.07	0.029	(0.302)	0.018	0.011
283.	23.58	0.07	0.029	(0.301)	0.018	0.011
284.	23.67	0.07	0.029	(0.301)	0.018	0.011
285.	23.75	0.07	0.029	(0.301)	0.018	0.011
286.	23.83	0.07	0.029	(0.300)	0.018	0.011
287.	23.92	0.07	0.029	(0.300)	0.018	0.011
288.	24.00	0.07	0.029	(0.300)	0.018	0.011

(Loss Rate Not Used)

Sum = 100.0

Sum = 16.3

Flood volume = Effective rainfall 1.36(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 2.25(In)

Total soil loss = 0.144(Ac.Ft)

Total rainfall = 3.60(In)

Flood volume = 3798.2 Cubic Feet

Total soil loss = 6276.7 Cubic Feet

Peak flow rate of this hydrograph = 0.143(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.01	Q				
0+25	0.0003	0.01	Q				
0+30	0.0004	0.01	Q				

0+35	0.0005	0.01	Q				
0+40	0.0006	0.01	Q				
0+45	0.0007	0.01	Q				
0+50	0.0008	0.02	Q				
0+55	0.0009	0.02	Q				
1+ 0	0.0010	0.02	Q				
1+ 5	0.0011	0.01	Q				
1+10	0.0012	0.01	Q				
1+15	0.0013	0.01	Q				
1+20	0.0014	0.01	Q				
1+25	0.0014	0.01	Q				
1+30	0.0015	0.01	Q				
1+35	0.0016	0.01	Q				
1+40	0.0017	0.01	Q				
1+45	0.0018	0.01	Q				
1+50	0.0019	0.02	Q				
1+55	0.0020	0.02	Q				
2+ 0	0.0021	0.02	Q				
2+ 5	0.0022	0.02	QV				
2+10	0.0024	0.02	QV				
2+15	0.0025	0.02	QV				
2+20	0.0026	0.02	QV				
2+25	0.0027	0.02	QV				
2+30	0.0028	0.02	QV				
2+35	0.0030	0.02	QV				
2+40	0.0031	0.02	QV				
2+45	0.0032	0.02	QV				
2+50	0.0034	0.02	QV				
2+55	0.0035	0.02	QV				
3+ 0	0.0037	0.02	QV				
3+ 5	0.0038	0.02	QV				
3+10	0.0040	0.02	QV				
3+15	0.0041	0.02	QV				
3+20	0.0043	0.02	QV				
3+25	0.0044	0.02	Q V				
3+30	0.0046	0.02	Q V				
3+35	0.0047	0.02	Q V				
3+40	0.0048	0.02	Q V				
3+45	0.0050	0.02	Q V				
3+50	0.0052	0.02	Q V				
3+55	0.0053	0.03	Q V				
4+ 0	0.0055	0.03	Q V				
4+ 5	0.0057	0.03	Q V				
4+10	0.0058	0.03	Q V				
4+15	0.0060	0.03	Q V				
4+20	0.0062	0.03	Q V				
4+25	0.0064	0.03	Q V				
4+30	0.0066	0.03	Q V				
4+35	0.0068	0.03	Q V				
4+40	0.0070	0.03	Q V				
4+45	0.0072	0.03	Q V				
4+50	0.0075	0.03	Q V				
4+55	0.0077	0.03	Q V				
5+ 0	0.0079	0.03	Q V				

5+ 5	0.0081	0.03	Q	V					
5+10	0.0083	0.03	Q	V					
5+15	0.0085	0.03	Q	V					
5+20	0.0087	0.03	Q	V					
5+25	0.0089	0.03	Q	V					
5+30	0.0091	0.03	Q	V					
5+35	0.0093	0.03	Q	V					
5+40	0.0095	0.03	Q	V					
5+45	0.0097	0.03	Q	V					
5+50	0.0100	0.03	Q	V					
5+55	0.0102	0.03	Q	V					
6+ 0	0.0104	0.03	Q	V					
6+ 5	0.0107	0.04	Q	V					
6+10	0.0110	0.04	Q	V					
6+15	0.0112	0.04	Q	V					
6+20	0.0115	0.04	Q	V					
6+25	0.0117	0.04	Q	V					
6+30	0.0120	0.04	Q	V					
6+35	0.0123	0.04	Q	V					
6+40	0.0126	0.04	Q	V					
6+45	0.0129	0.04	Q	V					
6+50	0.0131	0.04	Q	V					
6+55	0.0134	0.04	Q	V					
7+ 0	0.0137	0.04	Q	V					
7+ 5	0.0140	0.04	Q	V					
7+10	0.0143	0.04	Q	V					
7+15	0.0146	0.04	Q	V					
7+20	0.0149	0.04	Q	V					
7+25	0.0152	0.05	Q	V					
7+30	0.0155	0.05	Q	V					
7+35	0.0159	0.05	Q	V					
7+40	0.0162	0.05	Q	V					
7+45	0.0166	0.05	Q	V					
7+50	0.0169	0.05	Q	V					
7+55	0.0173	0.05	Q	V					
8+ 0	0.0177	0.05	Q	V					
8+ 5	0.0181	0.06	Q	V					
8+10	0.0185	0.06	Q	V					
8+15	0.0190	0.06	Q	V					
8+20	0.0194	0.06	Q	V					
8+25	0.0199	0.06	Q	V					
8+30	0.0203	0.06	Q	V					
8+35	0.0207	0.07	Q	V					
8+40	0.0212	0.07	Q	V					
8+45	0.0217	0.07	Q	V					
8+50	0.0222	0.07	Q	V					
8+55	0.0226	0.07	Q	V					
9+ 0	0.0231	0.07	Q	V					
9+ 5	0.0237	0.08	Q	V					
9+10	0.0242	0.08	Q	V					
9+15	0.0248	0.08	Q	V					
9+20	0.0253	0.08	Q	V					
9+25	0.0259	0.08	Q	V					
9+30	0.0265	0.08	Q	V					

9+35	0.0271	0.09	Q		V					
9+40	0.0277	0.09	Q		V					
9+45	0.0283	0.09	Q		V					
9+50	0.0289	0.09	Q		V					
9+55	0.0296	0.09	Q		V					
10+ 0	0.0302	0.09	Q		V					
10+ 5	0.0307	0.08	Q		V					
10+10	0.0312	0.06	Q		V					
10+15	0.0316	0.06	Q		V					
10+20	0.0321	0.06	Q		V					
10+25	0.0325	0.06	Q		V					
10+30	0.0329	0.06	Q		V					
10+35	0.0335	0.08	Q		V					
10+40	0.0340	0.08	Q		V					
10+45	0.0346	0.08	Q		V					
10+50	0.0352	0.08	Q		V					
10+55	0.0358	0.08	Q		V					
11+ 0	0.0364	0.08	Q		V					
11+ 5	0.0369	0.08	Q		V					
11+10	0.0375	0.08	Q		V					
11+15	0.0380	0.08	Q		V					
11+20	0.0386	0.08	Q		V					
11+25	0.0391	0.08	Q		V					
11+30	0.0397	0.08	Q		V					
11+35	0.0402	0.08	Q		V					
11+40	0.0407	0.07	Q		V					
11+45	0.0412	0.07	Q		V					
11+50	0.0417	0.07	Q		V					
11+55	0.0422	0.08	Q		V					
12+ 0	0.0427	0.08	Q		V					
12+ 5	0.0434	0.09	Q		V					
12+10	0.0441	0.10	Q		V					
12+15	0.0448	0.11	Q		V					
12+20	0.0456	0.11	Q		V					
12+25	0.0463	0.11	Q		V					
12+30	0.0471	0.11	Q		V					
12+35	0.0479	0.11	Q		V					
12+40	0.0487	0.12	Q		V					
12+45	0.0495	0.12	Q		V					
12+50	0.0503	0.12	Q		V					
12+55	0.0512	0.12	Q		V					
13+ 0	0.0520	0.12	Q		V					
13+ 5	0.0529	0.13	Q		V					
13+10	0.0539	0.14	Q		V					
13+15	0.0549	0.14	Q		V					
13+20	0.0559	0.14	Q		V					
13+25	0.0569	0.14	Q		V					
13+30	0.0579	0.14	Q		V					
13+35	0.0587	0.12	Q		V					
13+40	0.0594	0.10	Q		V					
13+45	0.0600	0.10	Q		V					
13+50	0.0607	0.10	Q		V					
13+55	0.0614	0.10	Q		V					
14+ 0	0.0620	0.10	Q		V					

14+ 5	0.0628	0.11	Q			V		
14+10	0.0636	0.11	Q			V		
14+15	0.0643	0.11	Q			V		
14+20	0.0651	0.11	Q			V		
14+25	0.0659	0.11	Q			V		
14+30	0.0666	0.11	Q			V		
14+35	0.0674	0.11	Q			V		
14+40	0.0681	0.11	Q			V		
14+45	0.0689	0.11	Q			V		
14+50	0.0696	0.11	Q			V		
14+55	0.0704	0.11	Q			V		
15+ 0	0.0711	0.11	Q			V		
15+ 5	0.0718	0.10	Q			V		
15+10	0.0725	0.10	Q			V		
15+15	0.0732	0.10	Q			V		
15+20	0.0739	0.10	Q			V		
15+25	0.0745	0.10	Q			V		
15+30	0.0752	0.10	Q			V		
15+35	0.0758	0.09	Q			V		
15+40	0.0764	0.08	Q			V		
15+45	0.0769	0.08	Q			V		
15+50	0.0775	0.08	Q			V		
15+55	0.0780	0.08	Q			V		
16+ 0	0.0786	0.08	Q			V		
16+ 5	0.0789	0.04	Q			V		
16+10	0.0790	0.02	Q			V		
16+15	0.0791	0.02	Q			V		
16+20	0.0792	0.02	Q			V		
16+25	0.0794	0.02	Q			V		
16+30	0.0795	0.02	Q			V		
16+35	0.0796	0.01	Q			V		
16+40	0.0797	0.01	Q			V		
16+45	0.0797	0.01	Q			V		
16+50	0.0798	0.01	Q			V		
16+55	0.0799	0.01	Q			V		
17+ 0	0.0800	0.01	Q			V		
17+ 5	0.0801	0.02	Q			V		
17+10	0.0803	0.02	Q			V		
17+15	0.0804	0.02	Q			V		
17+20	0.0806	0.02	Q			V		
17+25	0.0807	0.02	Q			V		
17+30	0.0809	0.02	Q			V		
17+35	0.0810	0.02	Q			V		
17+40	0.0811	0.02	Q			V		
17+45	0.0813	0.02	Q			V		
17+50	0.0814	0.02	Q			V		
17+55	0.0815	0.02	Q			V		
18+ 0	0.0816	0.02	Q			V		
18+ 5	0.0818	0.02	Q			V		
18+10	0.0819	0.02	Q			V		
18+15	0.0820	0.02	Q			V		
18+20	0.0821	0.02	Q			V		
18+25	0.0822	0.02	Q			V		
18+30	0.0823	0.02	Q			V		

18+35	0.0824	0.01	Q				V	
18+40	0.0825	0.01	Q				V	
18+45	0.0826	0.01	Q				V	
18+50	0.0827	0.01	Q				V	
18+55	0.0828	0.01	Q				V	
19+ 0	0.0828	0.01	Q				V	
19+ 5	0.0829	0.01	Q				V	
19+10	0.0830	0.01	Q				V	
19+15	0.0831	0.01	Q				V	
19+20	0.0832	0.02	Q				V	
19+25	0.0833	0.02	Q				V	
19+30	0.0834	0.02	Q				V	
19+35	0.0835	0.01	Q				V	
19+40	0.0836	0.01	Q				V	
19+45	0.0837	0.01	Q				V	
19+50	0.0837	0.01	Q				V	
19+55	0.0838	0.01	Q				V	
20+ 0	0.0839	0.01	Q				V	
20+ 5	0.0839	0.01	Q				V	
20+10	0.0840	0.01	Q				V	
20+15	0.0841	0.01	Q				V	
20+20	0.0842	0.01	Q				V	
20+25	0.0843	0.01	Q				V	
20+30	0.0844	0.01	Q				V	
20+35	0.0845	0.01	Q				V	
20+40	0.0845	0.01	Q				V	
20+45	0.0846	0.01	Q				V	
20+50	0.0847	0.01	Q				V	
20+55	0.0848	0.01	Q				V	
21+ 0	0.0848	0.01	Q				V	
21+ 5	0.0849	0.01	Q				V	
21+10	0.0850	0.01	Q				V	
21+15	0.0851	0.01	Q				V	
21+20	0.0851	0.01	Q				V	
21+25	0.0852	0.01	Q				V	
21+30	0.0853	0.01	Q				V	
21+35	0.0853	0.01	Q				V	
21+40	0.0854	0.01	Q				V	
21+45	0.0855	0.01	Q				V	
21+50	0.0856	0.01	Q				V	
21+55	0.0856	0.01	Q				V	
22+ 0	0.0857	0.01	Q				V	
22+ 5	0.0858	0.01	Q				V	
22+10	0.0858	0.01	Q				V	
22+15	0.0859	0.01	Q				V	
22+20	0.0860	0.01	Q				V	
22+25	0.0861	0.01	Q				V	
22+30	0.0861	0.01	Q				V	
22+35	0.0862	0.01	Q				V	
22+40	0.0862	0.01	Q				V	
22+45	0.0863	0.01	Q				V	
22+50	0.0864	0.01	Q				V	
22+55	0.0864	0.01	Q				V	
23+ 0	0.0865	0.01	Q				V	

23+ 5	0.0865	0.01	Q				V
23+10	0.0866	0.01	Q				V
23+15	0.0866	0.01	Q				V
23+20	0.0867	0.01	Q				V
23+25	0.0868	0.01	Q				V
23+30	0.0868	0.01	Q				V
23+35	0.0869	0.01	Q				V
23+40	0.0869	0.01	Q				V
23+45	0.0870	0.01	Q				V
23+50	0.0871	0.01	Q				V
23+55	0.0871	0.01	Q				V
24+ 0	0.0872	0.01	Q				V
24+ 5	0.0872	0.00	Q				V
24+10	0.0872	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH1100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	0.50	0.39

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	1.30	1.00

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 1.300 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.346	0.511	1.000	0.511

Sum (F) =

0.511

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.623

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

Unit	Time	Pattern (Percent)	Storm Rain (In./Hr)	Loss rate(In./Hr)		Effective (In./Hr)
	(Hr.)			Max	Low	
1.	0.08	4.20	0.655	(0.599)	0.408	0.247
2.	0.17	4.30	0.671	(0.599)	0.418	0.253
3.	0.25	5.00	0.780	(0.599)	0.486	0.294
4.	0.33	5.00	0.780	(0.599)	0.486	0.294
5.	0.42	5.80	0.905	(0.599)	0.564	0.341
6.	0.50	6.50	1.014	0.599	(0.632)	0.415
7.	0.58	7.40	1.154	0.599	(0.719)	0.555
8.	0.67	8.60	1.342	0.599	(0.836)	0.742
9.	0.75	12.30	1.919	0.599	(1.195)	1.319
10.	0.83	29.10	4.540	0.599	(2.828)	3.940
11.	0.92	6.80	1.061	0.599	(0.661)	0.461
12.	1.00	5.00	0.780	(0.599)	0.486	0.294

Sum = 9.2

$$\text{times area} \quad 0.8 (\text{Ac.}) / [(\text{In}) / (\text{Ft.})] = \quad 0.0 (\text{Ac. Ft})$$

Total soil loss = 0.034 (Ac.Ft)

Flood volume = 2132.7 Cubic Feet

Total soil loss = 1500.9 Cubic Feet

Peak flow rate of this hydrograph = 2.206 (CFS)

[illegible]

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0							

0+ 5	0.0008	0.11	Q				
0+10	0.0021	0.18	QV				
0+15	0.0035	0.22	Q V				
0+20	0.0051	0.23	Q V				
0+25	0.0068	0.25	Q V				
0+30	0.0089	0.30	Q V				
0+35	0.0115	0.38	Q V				
0+40	0.0150	0.51	Q V				

0+45	0.0208	0.83		Q		V			
0+50	0.0360	2.21			Q			V	
0+55	0.0453	1.36		Q					V
1+ 0	0.0482	0.42		Q					V
1+ 5	0.0489	0.10	Q						V
1+10	0.0490	0.01	Q						V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH3100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.77	0.85	0.65

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.77	2.00	1.54

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 2.000 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.346	0.511	1.000	0.511

Sum (F) =

0.511

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.623

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056
			Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.312	(0.599)	0.194	0.118
2.	0.17	1.30	0.312	(0.599)	0.194	0.118
3.	0.25	1.10	0.264	(0.599)	0.164	0.100
4.	0.33	1.50	0.360	(0.599)	0.224	0.136
5.	0.42	1.50	0.360	(0.599)	0.224	0.136
6.	0.50	1.80	0.432	(0.599)	0.269	0.163
7.	0.58	1.50	0.360	(0.599)	0.224	0.136
8.	0.67	1.80	0.432	(0.599)	0.269	0.163
9.	0.75	1.80	0.432	(0.599)	0.269	0.163
10.	0.83	1.50	0.360	(0.599)	0.224	0.136
11.	0.92	1.60	0.384	(0.599)	0.239	0.145
12.	1.00	1.80	0.432	(0.599)	0.269	0.163
13.	1.08	2.20	0.528	(0.599)	0.329	0.199
14.	1.17	2.20	0.528	(0.599)	0.329	0.199
15.	1.25	2.20	0.528	(0.599)	0.329	0.199
16.	1.33	2.00	0.480	(0.599)	0.299	0.181
17.	1.42	2.60	0.624	(0.599)	0.389	0.235
18.	1.50	2.70	0.648	(0.599)	0.404	0.244
19.	1.58	2.40	0.576	(0.599)	0.359	0.217
20.	1.67	2.70	0.648	(0.599)	0.404	0.244
21.	1.75	3.30	0.792	(0.599)	0.493	0.299
22.	1.83	3.10	0.744	(0.599)	0.464	0.280
23.	1.92	2.90	0.696	(0.599)	0.434	0.262
24.	2.00	3.00	0.720	(0.599)	0.449	0.271
25.	2.08	3.10	0.744	(0.599)	0.464	0.280
26.	2.17	4.20	1.008	0.599	(0.628)	0.409
27.	2.25	5.00	1.200	0.599	(0.748)	0.601
28.	2.33	3.50	0.840	(0.599)	0.523	0.317
29.	2.42	6.80	1.632	0.599	(1.017)	1.033
30.	2.50	7.30	1.752	0.599	(1.091)	1.153
31.	2.58	8.20	1.968	0.599	(1.226)	1.369
32.	2.67	5.90	1.416	0.599	(0.882)	0.817
33.	2.75	2.00	0.480	(0.599)	0.299	0.181
34.	2.83	1.80	0.432	(0.599)	0.269	0.163
35.	2.92	1.80	0.432	(0.599)	0.269	0.163
36.	3.00	0.60	0.144	(0.599)	0.090	0.054

(Loss Rate Not Used)

Sum = 100.0

Sum = 11.0

Flood volume = Effective rainfall 0.92(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 1.08(In)

Total soil loss = 0.069(Ac.Ft)

Total rainfall = 2.00(In)

Flood volume = 2572.4 Cubic Feet

Total soil loss = 3017.8 Cubic Feet

Peak flow rate of this hydrograph = 0.989(CFS)

+++++

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0							
0+ 5	0.0004		0.05	Q			
0+10	0.0010		0.09	Q			
0+15	0.0015		0.08	QV			
0+20	0.0022		0.09	QV			
0+25	0.0029		0.10	QV			
0+30	0.0037		0.12	Q V			
0+35	0.0045		0.11	Q V			
0+40	0.0053		0.12	Q V			
0+45	0.0062		0.13	Q V			
0+50	0.0070		0.11	Q V			
0+55	0.0077		0.11	Q V			
1+ 0	0.0086		0.12	Q V			
1+ 5	0.0095		0.14	Q V			
1+10	0.0106		0.15	Q V			
1+15	0.0117		0.15	Q V			
1+20	0.0127		0.15	Q V			
1+25	0.0138		0.17	Q V			
1+30	0.0151		0.18	Q V			
1+35	0.0163		0.18	Q V			
1+40	0.0176		0.18	Q V			
1+45	0.0190		0.21	Q V			
1+50	0.0205		0.22	Q V			
1+55	0.0220		0.21	Q V			
2+ 0	0.0234		0.21	Q V			
2+ 5	0.0249		0.21	Q V			
2+10	0.0268		0.28	Q V			
2+15	0.0296		0.40	Q V			
2+20	0.0318		0.33	Q V			
2+25	0.0359		0.59	Q V			
2+30	0.0416		0.83	Q V			
2+35	0.0484		0.99	Q V			
2+40	0.0539		0.80	Q V			
2+45	0.0564		0.36	Q V			
2+50	0.0575		0.16	Q V			
2+55	0.0584		0.13	Q V			
3+ 0	0.0589		0.08	Q V			
3+ 5	0.0590		0.02	Q V			
3+10	0.0591		0.00	Q V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH6100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	1.20	0.92

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.90	2.23

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.200 (In)
Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 2.900 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.900 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.346	0.511	1.000	0.511

Sum (F) =

0.511

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.623

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056
			Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.50	0.174	(0.599)	0.108	0.066
2.	0.17	0.60	0.209	(0.599)	0.130	0.079
3.	0.25	0.60	0.209	(0.599)	0.130	0.079
4.	0.33	0.60	0.209	(0.599)	0.130	0.079
5.	0.42	0.60	0.209	(0.599)	0.130	0.079
6.	0.50	0.70	0.244	(0.599)	0.152	0.092
7.	0.58	0.70	0.244	(0.599)	0.152	0.092
8.	0.67	0.70	0.244	(0.599)	0.152	0.092
9.	0.75	0.70	0.244	(0.599)	0.152	0.092
10.	0.83	0.70	0.244	(0.599)	0.152	0.092
11.	0.92	0.70	0.244	(0.599)	0.152	0.092
12.	1.00	0.80	0.278	(0.599)	0.173	0.105
13.	1.08	0.80	0.278	(0.599)	0.173	0.105
14.	1.17	0.80	0.278	(0.599)	0.173	0.105
15.	1.25	0.80	0.278	(0.599)	0.173	0.105
16.	1.33	0.80	0.278	(0.599)	0.173	0.105
17.	1.42	0.80	0.278	(0.599)	0.173	0.105
18.	1.50	0.80	0.278	(0.599)	0.173	0.105
19.	1.58	0.80	0.278	(0.599)	0.173	0.105
20.	1.67	0.80	0.278	(0.599)	0.173	0.105
21.	1.75	0.80	0.278	(0.599)	0.173	0.105
22.	1.83	0.80	0.278	(0.599)	0.173	0.105
23.	1.92	0.80	0.278	(0.599)	0.173	0.105
24.	2.00	0.90	0.313	(0.599)	0.195	0.118
25.	2.08	0.80	0.278	(0.599)	0.173	0.105
26.	2.17	0.90	0.313	(0.599)	0.195	0.118
27.	2.25	0.90	0.313	(0.599)	0.195	0.118
28.	2.33	0.90	0.313	(0.599)	0.195	0.118
29.	2.42	0.90	0.313	(0.599)	0.195	0.118
30.	2.50	0.90	0.313	(0.599)	0.195	0.118
31.	2.58	0.90	0.313	(0.599)	0.195	0.118
32.	2.67	0.90	0.313	(0.599)	0.195	0.118
33.	2.75	1.00	0.348	(0.599)	0.217	0.131
34.	2.83	1.00	0.348	(0.599)	0.217	0.131
35.	2.92	1.00	0.348	(0.599)	0.217	0.131
36.	3.00	1.00	0.348	(0.599)	0.217	0.131
37.	3.08	1.00	0.348	(0.599)	0.217	0.131
38.	3.17	1.10	0.383	(0.599)	0.238	0.144
39.	3.25	1.10	0.383	(0.599)	0.238	0.144
40.	3.33	1.10	0.383	(0.599)	0.238	0.144
41.	3.42	1.20	0.418	(0.599)	0.260	0.157
42.	3.50	1.30	0.452	(0.599)	0.282	0.171
43.	3.58	1.40	0.487	(0.599)	0.304	0.184
44.	3.67	1.40	0.487	(0.599)	0.304	0.184
45.	3.75	1.50	0.522	(0.599)	0.325	0.197
46.	3.83	1.50	0.522	(0.599)	0.325	0.197

47.	3.92	1.60	0.557	(0.599)	0.347	0.210
48.	4.00	1.60	0.557	(0.599)	0.347	0.210
49.	4.08	1.70	0.592	(0.599)	0.369	0.223
50.	4.17	1.80	0.626	(0.599)	0.390	0.236
51.	4.25	1.90	0.661	(0.599)	0.412	0.249
52.	4.33	2.00	0.696	(0.599)	0.434	0.262
53.	4.42	2.10	0.731	(0.599)	0.455	0.276
54.	4.50	2.10	0.731	(0.599)	0.455	0.276
55.	4.58	2.20	0.766	(0.599)	0.477	0.289
56.	4.67	2.30	0.800	(0.599)	0.499	0.302
57.	4.75	2.40	0.835	(0.599)	0.520	0.315
58.	4.83	2.40	0.835	(0.599)	0.520	0.315
59.	4.92	2.50	0.870	(0.599)	0.542	0.328
60.	5.00	2.60	0.905	(0.599)	0.564	0.341
61.	5.08	3.10	1.079	0.599	(0.672)	0.479
62.	5.17	3.60	1.253	0.599	(0.780)	0.653
63.	5.25	3.90	1.357	0.599	(0.846)	0.758
64.	5.33	4.20	1.462	0.599	(0.911)	0.862
65.	5.42	4.70	1.636	0.599	(1.019)	1.036
66.	5.50	5.60	1.949	0.599	(1.214)	1.349
67.	5.58	1.90	0.661	(0.599)	0.412	0.249
68.	5.67	0.90	0.313	(0.599)	0.195	0.118
69.	5.75	0.60	0.209	(0.599)	0.130	0.079
70.	5.83	0.50	0.174	(0.599)	0.108	0.066
71.	5.92	0.30	0.104	(0.599)	0.065	0.039
72.	6.00	0.20	0.070	(0.599)	0.043	0.026

(Loss Rate Not Used)

Sum = 100.0

Sum = 15.0

Flood volume = Effective rainfall 1.25(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 1.65(In)

Total soil loss = 0.106(Ac.Ft)

Total rainfall = 2.90(In)

Flood volume = 3485.8 Cubic Feet

Total soil loss = 4620.0 Cubic Feet

Peak flow rate of this hydrograph = 0.942(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0002	0.03	Q				
0+10	0.0006	0.05	Q				
0+15	0.0010	0.06	Q				
0+20	0.0014	0.06	Q				
0+25	0.0018	0.06	Q				
0+30	0.0023	0.07	QV				

0+35	0.0028	0.07	QV				
0+40	0.0033	0.07	QV				
0+45	0.0038	0.07	QV				
0+50	0.0043	0.07	Q V				
0+55	0.0048	0.07	Q V				
1+ 0	0.0053	0.08	Q V				
1+ 5	0.0058	0.08	Q V				
1+10	0.0064	0.08	Q V				
1+15	0.0070	0.08	Q V				
1+20	0.0075	0.08	Q V				
1+25	0.0081	0.08	Q V				
1+30	0.0087	0.08	Q V				
1+35	0.0092	0.08	Q V				
1+40	0.0098	0.08	Q V				
1+45	0.0103	0.08	Q V				
1+50	0.0109	0.08	Q V				
1+55	0.0115	0.08	Q V				
2+ 0	0.0121	0.09	Q V				
2+ 5	0.0126	0.09	Q V				
2+10	0.0133	0.09	Q V				
2+15	0.0139	0.09	Q V				
2+20	0.0145	0.09	Q V				
2+25	0.0151	0.09	Q V				
2+30	0.0158	0.09	Q V				
2+35	0.0164	0.09	Q V				
2+40	0.0170	0.09	Q V				
2+45	0.0177	0.10	Q V				
2+50	0.0184	0.10	Q V				
2+55	0.0191	0.10	Q V				
3+ 0	0.0198	0.10	Q V				
3+ 5	0.0205	0.10	Q V				
3+10	0.0213	0.11	Q V				
3+15	0.0220	0.11	Q V				
3+20	0.0228	0.11	Q V				
3+25	0.0236	0.12	Q V				
3+30	0.0245	0.13	Q V				
3+35	0.0254	0.14	Q V				
3+40	0.0264	0.14	Q V				
3+45	0.0274	0.15	Q V				
3+50	0.0285	0.15	Q V				
3+55	0.0296	0.16	Q V				
4+ 0	0.0307	0.16	Q V				
4+ 5	0.0319	0.17	Q V				
4+10	0.0331	0.18	Q V				
4+15	0.0344	0.19	Q V				
4+20	0.0358	0.20	Q V				
4+25	0.0372	0.21	Q V				
4+30	0.0387	0.21	Q V				
4+35	0.0402	0.22	Q V				
4+40	0.0418	0.23	Q V				
4+45	0.0434	0.24	Q V				
4+50	0.0451	0.24	Q V				
4+55	0.0468	0.25	Q V				
5+ 0	0.0486	0.26	Q V				

5+ 5	0.0509	0.33	Q			V		
5+10	0.0540	0.45	Q			V		
5+15	0.0577	0.55	Q			V		
5+20	0.0621	0.63	Q				V	
5+25	0.0672	0.75	Q				V	
5+30	0.0737	0.94	Q					V
5+35	0.0774	0.53	Q					V
5+40	0.0786	0.18	Q					V
5+45	0.0791	0.08	Q					V
5+50	0.0795	0.06	Q					V
5+55	0.0798	0.04	Q					V
6+ 0	0.0800	0.03	Q					V
6+ 5	0.0800	0.01	Q					V
6+10	0.0800	0.00	Q					V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPTRENCH24100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.77(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.77(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 581.00(Ft.)
Length along longest watercourse measured to centroid =
282.00(Ft.)
Length along longest watercourse = 0.110 Mi.
Length along longest watercourse measured to centroid = 0.053
Mi.
Difference in elevation = 19.20(Ft.)
Slope along watercourse = 174.4854 Ft./Mi.
Average Manning's 'N' = 0.020
Lag time = 0.026 Hr.
Lag time = 1.53 Min.
25% of lag time = 0.38 Min.
40% of lag time = 0.61 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	2.00	1.54

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.77	5.90	4.54

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.000 (In)
Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 5.900 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.900 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.770	32.00	0.346

Total Area Entered = 0.77 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.346	0.511	1.000	0.511

Sum (F) =

0.511

Area averaged mean soil loss (F) (In/Hr) = 0.599
Minimum soil loss rate ((In/Hr)) = 0.300
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.623

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	326.011	59.201
2	0.167	652.021	35.743
3	0.250	978.032	5.056

Sum =

100.000 Sum= 0.776

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.07	0.047	(1.062)	0.029	0.018
2.	0.17	0.07	0.047	(1.058)	0.029	0.018
3.	0.25	0.07	0.047	(1.054)	0.029	0.018
4.	0.33	0.10	0.071	(1.050)	0.044	0.027
5.	0.42	0.10	0.071	(1.046)	0.044	0.027
6.	0.50	0.10	0.071	(1.042)	0.044	0.027
7.	0.58	0.10	0.071	(1.038)	0.044	0.027
8.	0.67	0.10	0.071	(1.034)	0.044	0.027
9.	0.75	0.10	0.071	(1.030)	0.044	0.027
10.	0.83	0.13	0.094	(1.026)	0.059	0.036
11.	0.92	0.13	0.094	(1.022)	0.059	0.036
12.	1.00	0.13	0.094	(1.018)	0.059	0.036
13.	1.08	0.10	0.071	(1.014)	0.044	0.027
14.	1.17	0.10	0.071	(1.010)	0.044	0.027
15.	1.25	0.10	0.071	(1.006)	0.044	0.027
16.	1.33	0.10	0.071	(1.002)	0.044	0.027
17.	1.42	0.10	0.071	(0.998)	0.044	0.027
18.	1.50	0.10	0.071	(0.994)	0.044	0.027
19.	1.58	0.10	0.071	(0.990)	0.044	0.027
20.	1.67	0.10	0.071	(0.986)	0.044	0.027
21.	1.75	0.10	0.071	(0.982)	0.044	0.027
22.	1.83	0.13	0.094	(0.978)	0.059	0.036
23.	1.92	0.13	0.094	(0.974)	0.059	0.036
24.	2.00	0.13	0.094	(0.970)	0.059	0.036
25.	2.08	0.13	0.094	(0.966)	0.059	0.036
26.	2.17	0.13	0.094	(0.962)	0.059	0.036
27.	2.25	0.13	0.094	(0.958)	0.059	0.036
28.	2.33	0.13	0.094	(0.954)	0.059	0.036
29.	2.42	0.13	0.094	(0.950)	0.059	0.036
30.	2.50	0.13	0.094	(0.947)	0.059	0.036
31.	2.58	0.17	0.118	(0.943)	0.074	0.044
32.	2.67	0.17	0.118	(0.939)	0.074	0.044
33.	2.75	0.17	0.118	(0.935)	0.074	0.044
34.	2.83	0.17	0.118	(0.931)	0.074	0.044
35.	2.92	0.17	0.118	(0.927)	0.074	0.044
36.	3.00	0.17	0.118	(0.923)	0.074	0.044
37.	3.08	0.17	0.118	(0.920)	0.074	0.044
38.	3.17	0.17	0.118	(0.916)	0.074	0.044
39.	3.25	0.17	0.118	(0.912)	0.074	0.044
40.	3.33	0.17	0.118	(0.908)	0.074	0.044
41.	3.42	0.17	0.118	(0.904)	0.074	0.044
42.	3.50	0.17	0.118	(0.901)	0.074	0.044
43.	3.58	0.17	0.118	(0.897)	0.074	0.044
44.	3.67	0.17	0.118	(0.893)	0.074	0.044
45.	3.75	0.17	0.118	(0.889)	0.074	0.044
46.	3.83	0.20	0.142	(0.886)	0.088	0.053

47.	3.92	0.20	0.142	(0.882)	0.088	0.053
48.	4.00	0.20	0.142	(0.878)	0.088	0.053
49.	4.08	0.20	0.142	(0.874)	0.088	0.053
50.	4.17	0.20	0.142	(0.871)	0.088	0.053
51.	4.25	0.20	0.142	(0.867)	0.088	0.053
52.	4.33	0.23	0.165	(0.863)	0.103	0.062
53.	4.42	0.23	0.165	(0.860)	0.103	0.062
54.	4.50	0.23	0.165	(0.856)	0.103	0.062
55.	4.58	0.23	0.165	(0.852)	0.103	0.062
56.	4.67	0.23	0.165	(0.849)	0.103	0.062
57.	4.75	0.23	0.165	(0.845)	0.103	0.062
58.	4.83	0.27	0.189	(0.841)	0.118	0.071
59.	4.92	0.27	0.189	(0.838)	0.118	0.071
60.	5.00	0.27	0.189	(0.834)	0.118	0.071
61.	5.08	0.20	0.142	(0.830)	0.088	0.053
62.	5.17	0.20	0.142	(0.827)	0.088	0.053
63.	5.25	0.20	0.142	(0.823)	0.088	0.053
64.	5.33	0.23	0.165	(0.820)	0.103	0.062
65.	5.42	0.23	0.165	(0.816)	0.103	0.062
66.	5.50	0.23	0.165	(0.812)	0.103	0.062
67.	5.58	0.27	0.189	(0.809)	0.118	0.071
68.	5.67	0.27	0.189	(0.805)	0.118	0.071
69.	5.75	0.27	0.189	(0.802)	0.118	0.071
70.	5.83	0.27	0.189	(0.798)	0.118	0.071
71.	5.92	0.27	0.189	(0.795)	0.118	0.071
72.	6.00	0.27	0.189	(0.791)	0.118	0.071
73.	6.08	0.30	0.212	(0.788)	0.132	0.080
74.	6.17	0.30	0.212	(0.784)	0.132	0.080
75.	6.25	0.30	0.212	(0.781)	0.132	0.080
76.	6.33	0.30	0.212	(0.777)	0.132	0.080
77.	6.42	0.30	0.212	(0.774)	0.132	0.080
78.	6.50	0.30	0.212	(0.770)	0.132	0.080
79.	6.58	0.33	0.236	(0.767)	0.147	0.089
80.	6.67	0.33	0.236	(0.763)	0.147	0.089
81.	6.75	0.33	0.236	(0.760)	0.147	0.089
82.	6.83	0.33	0.236	(0.756)	0.147	0.089
83.	6.92	0.33	0.236	(0.753)	0.147	0.089
84.	7.00	0.33	0.236	(0.750)	0.147	0.089
85.	7.08	0.33	0.236	(0.746)	0.147	0.089
86.	7.17	0.33	0.236	(0.743)	0.147	0.089
87.	7.25	0.33	0.236	(0.739)	0.147	0.089
88.	7.33	0.37	0.260	(0.736)	0.162	0.098
89.	7.42	0.37	0.260	(0.733)	0.162	0.098
90.	7.50	0.37	0.260	(0.729)	0.162	0.098
91.	7.58	0.40	0.283	(0.726)	0.176	0.107
92.	7.67	0.40	0.283	(0.723)	0.176	0.107
93.	7.75	0.40	0.283	(0.719)	0.176	0.107
94.	7.83	0.43	0.307	(0.716)	0.191	0.116
95.	7.92	0.43	0.307	(0.713)	0.191	0.116
96.	8.00	0.43	0.307	(0.709)	0.191	0.116
97.	8.08	0.50	0.354	(0.706)	0.221	0.133
98.	8.17	0.50	0.354	(0.703)	0.221	0.133
99.	8.25	0.50	0.354	(0.699)	0.221	0.133
100.	8.33	0.50	0.354	(0.696)	0.221	0.133

101.	8.42	0.50	0.354	(0.693)	0.221	0.133
102.	8.50	0.50	0.354	(0.690)	0.221	0.133
103.	8.58	0.53	0.378	(0.686)	0.235	0.142
104.	8.67	0.53	0.378	(0.683)	0.235	0.142
105.	8.75	0.53	0.378	(0.680)	0.235	0.142
106.	8.83	0.57	0.401	(0.677)	0.250	0.151
107.	8.92	0.57	0.401	(0.674)	0.250	0.151
108.	9.00	0.57	0.401	(0.670)	0.250	0.151
109.	9.08	0.63	0.448	(0.667)	0.279	0.169
110.	9.17	0.63	0.448	(0.664)	0.279	0.169
111.	9.25	0.63	0.448	(0.661)	0.279	0.169
112.	9.33	0.67	0.472	(0.658)	0.294	0.178
113.	9.42	0.67	0.472	(0.655)	0.294	0.178
114.	9.50	0.67	0.472	(0.651)	0.294	0.178
115.	9.58	0.70	0.496	(0.648)	0.309	0.187
116.	9.67	0.70	0.496	(0.645)	0.309	0.187
117.	9.75	0.70	0.496	(0.642)	0.309	0.187
118.	9.83	0.73	0.519	(0.639)	0.323	0.196
119.	9.92	0.73	0.519	(0.636)	0.323	0.196
120.	10.00	0.73	0.519	(0.633)	0.323	0.196
121.	10.08	0.50	0.354	(0.630)	0.221	0.133
122.	10.17	0.50	0.354	(0.627)	0.221	0.133
123.	10.25	0.50	0.354	(0.624)	0.221	0.133
124.	10.33	0.50	0.354	(0.621)	0.221	0.133
125.	10.42	0.50	0.354	(0.618)	0.221	0.133
126.	10.50	0.50	0.354	(0.615)	0.221	0.133
127.	10.58	0.67	0.472	(0.612)	0.294	0.178
128.	10.67	0.67	0.472	(0.609)	0.294	0.178
129.	10.75	0.67	0.472	(0.606)	0.294	0.178
130.	10.83	0.67	0.472	(0.603)	0.294	0.178
131.	10.92	0.67	0.472	(0.600)	0.294	0.178
132.	11.00	0.67	0.472	(0.597)	0.294	0.178
133.	11.08	0.63	0.448	(0.594)	0.279	0.169
134.	11.17	0.63	0.448	(0.591)	0.279	0.169
135.	11.25	0.63	0.448	(0.588)	0.279	0.169
136.	11.33	0.63	0.448	(0.585)	0.279	0.169
137.	11.42	0.63	0.448	(0.582)	0.279	0.169
138.	11.50	0.63	0.448	(0.579)	0.279	0.169
139.	11.58	0.57	0.401	(0.577)	0.250	0.151
140.	11.67	0.57	0.401	(0.574)	0.250	0.151
141.	11.75	0.57	0.401	(0.571)	0.250	0.151
142.	11.83	0.60	0.425	(0.568)	0.265	0.160
143.	11.92	0.60	0.425	(0.565)	0.265	0.160
144.	12.00	0.60	0.425	(0.562)	0.265	0.160
145.	12.08	0.83	0.590	(0.559)	0.368	0.222
146.	12.17	0.83	0.590	(0.557)	0.368	0.222
147.	12.25	0.83	0.590	(0.554)	0.368	0.222
148.	12.33	0.87	0.614	(0.551)	0.382	0.231
149.	12.42	0.87	0.614	(0.548)	0.382	0.231
150.	12.50	0.87	0.614	(0.546)	0.382	0.231
151.	12.58	0.93	0.661	(0.543)	0.412	0.249
152.	12.67	0.93	0.661	(0.540)	0.412	0.249
153.	12.75	0.93	0.661	(0.537)	0.412	0.249
154.	12.83	0.97	0.684	(0.535)	0.426	0.258

155.	12.92	0.97	0.684	(0.532)	0.426	0.258
156.	13.00	0.97	0.684	(0.529)	0.426	0.258
157.	13.08	1.13	0.802	(0.527)	0.500	0.303
158.	13.17	1.13	0.802	(0.524)	0.500	0.303
159.	13.25	1.13	0.802	(0.521)	0.500	0.303
160.	13.33	1.13	0.802	(0.519)	0.500	0.303
161.	13.42	1.13	0.802	(0.516)	0.500	0.303
162.	13.50	1.13	0.802	(0.513)	0.500	0.303
163.	13.58	0.77	0.543	(0.511)	0.338	0.205
164.	13.67	0.77	0.543	(0.508)	0.338	0.205
165.	13.75	0.77	0.543	(0.506)	0.338	0.205
166.	13.83	0.77	0.543	(0.503)	0.338	0.205
167.	13.92	0.77	0.543	(0.500)	0.338	0.205
168.	14.00	0.77	0.543	(0.498)	0.338	0.205
169.	14.08	0.90	0.637	(0.495)	0.397	0.240
170.	14.17	0.90	0.637	(0.493)	0.397	0.240
171.	14.25	0.90	0.637	(0.490)	0.397	0.240
172.	14.33	0.87	0.614	(0.488)	0.382	0.231
173.	14.42	0.87	0.614	(0.485)	0.382	0.231
174.	14.50	0.87	0.614	(0.483)	0.382	0.231
175.	14.58	0.87	0.614	(0.480)	0.382	0.231
176.	14.67	0.87	0.614	(0.478)	0.382	0.231
177.	14.75	0.87	0.614	(0.475)	0.382	0.231
178.	14.83	0.83	0.590	(0.473)	0.368	0.222
179.	14.92	0.83	0.590	(0.471)	0.368	0.222
180.	15.00	0.83	0.590	(0.468)	0.368	0.222
181.	15.08	0.80	0.566	(0.466)	0.353	0.214
182.	15.17	0.80	0.566	(0.463)	0.353	0.214
183.	15.25	0.80	0.566	(0.461)	0.353	0.214
184.	15.33	0.77	0.543	(0.459)	0.338	0.205
185.	15.42	0.77	0.543	(0.456)	0.338	0.205
186.	15.50	0.77	0.543	(0.454)	0.338	0.205
187.	15.58	0.63	0.448	(0.452)	0.279	0.169
188.	15.67	0.63	0.448	(0.449)	0.279	0.169
189.	15.75	0.63	0.448	(0.447)	0.279	0.169
190.	15.83	0.63	0.448	(0.445)	0.279	0.169
191.	15.92	0.63	0.448	(0.442)	0.279	0.169
192.	16.00	0.63	0.448	(0.440)	0.279	0.169
193.	16.08	0.13	0.094	(0.438)	0.059	0.036
194.	16.17	0.13	0.094	(0.436)	0.059	0.036
195.	16.25	0.13	0.094	(0.433)	0.059	0.036
196.	16.33	0.13	0.094	(0.431)	0.059	0.036
197.	16.42	0.13	0.094	(0.429)	0.059	0.036
198.	16.50	0.13	0.094	(0.427)	0.059	0.036
199.	16.58	0.10	0.071	(0.425)	0.044	0.027
200.	16.67	0.10	0.071	(0.423)	0.044	0.027
201.	16.75	0.10	0.071	(0.420)	0.044	0.027
202.	16.83	0.10	0.071	(0.418)	0.044	0.027
203.	16.92	0.10	0.071	(0.416)	0.044	0.027
204.	17.00	0.10	0.071	(0.414)	0.044	0.027
205.	17.08	0.17	0.118	(0.412)	0.074	0.044
206.	17.17	0.17	0.118	(0.410)	0.074	0.044
207.	17.25	0.17	0.118	(0.408)	0.074	0.044
208.	17.33	0.17	0.118	(0.406)	0.074	0.044

209.	17.42	0.17	0.118	(0.404)	0.074	0.044
210.	17.50	0.17	0.118	(0.402)	0.074	0.044
211.	17.58	0.17	0.118	(0.400)	0.074	0.044
212.	17.67	0.17	0.118	(0.398)	0.074	0.044
213.	17.75	0.17	0.118	(0.396)	0.074	0.044
214.	17.83	0.13	0.094	(0.394)	0.059	0.036
215.	17.92	0.13	0.094	(0.392)	0.059	0.036
216.	18.00	0.13	0.094	(0.390)	0.059	0.036
217.	18.08	0.13	0.094	(0.388)	0.059	0.036
218.	18.17	0.13	0.094	(0.386)	0.059	0.036
219.	18.25	0.13	0.094	(0.384)	0.059	0.036
220.	18.33	0.13	0.094	(0.382)	0.059	0.036
221.	18.42	0.13	0.094	(0.380)	0.059	0.036
222.	18.50	0.13	0.094	(0.379)	0.059	0.036
223.	18.58	0.10	0.071	(0.377)	0.044	0.027
224.	18.67	0.10	0.071	(0.375)	0.044	0.027
225.	18.75	0.10	0.071	(0.373)	0.044	0.027
226.	18.83	0.07	0.047	(0.371)	0.029	0.018
227.	18.92	0.07	0.047	(0.370)	0.029	0.018
228.	19.00	0.07	0.047	(0.368)	0.029	0.018
229.	19.08	0.10	0.071	(0.366)	0.044	0.027
230.	19.17	0.10	0.071	(0.364)	0.044	0.027
231.	19.25	0.10	0.071	(0.363)	0.044	0.027
232.	19.33	0.13	0.094	(0.361)	0.059	0.036
233.	19.42	0.13	0.094	(0.359)	0.059	0.036
234.	19.50	0.13	0.094	(0.358)	0.059	0.036
235.	19.58	0.10	0.071	(0.356)	0.044	0.027
236.	19.67	0.10	0.071	(0.354)	0.044	0.027
237.	19.75	0.10	0.071	(0.353)	0.044	0.027
238.	19.83	0.07	0.047	(0.351)	0.029	0.018
239.	19.92	0.07	0.047	(0.350)	0.029	0.018
240.	20.00	0.07	0.047	(0.348)	0.029	0.018
241.	20.08	0.10	0.071	(0.346)	0.044	0.027
242.	20.17	0.10	0.071	(0.345)	0.044	0.027
243.	20.25	0.10	0.071	(0.343)	0.044	0.027
244.	20.33	0.10	0.071	(0.342)	0.044	0.027
245.	20.42	0.10	0.071	(0.341)	0.044	0.027
246.	20.50	0.10	0.071	(0.339)	0.044	0.027
247.	20.58	0.10	0.071	(0.338)	0.044	0.027
248.	20.67	0.10	0.071	(0.336)	0.044	0.027
249.	20.75	0.10	0.071	(0.335)	0.044	0.027
250.	20.83	0.07	0.047	(0.333)	0.029	0.018
251.	20.92	0.07	0.047	(0.332)	0.029	0.018
252.	21.00	0.07	0.047	(0.331)	0.029	0.018
253.	21.08	0.10	0.071	(0.329)	0.044	0.027
254.	21.17	0.10	0.071	(0.328)	0.044	0.027
255.	21.25	0.10	0.071	(0.327)	0.044	0.027
256.	21.33	0.07	0.047	(0.326)	0.029	0.018
257.	21.42	0.07	0.047	(0.324)	0.029	0.018
258.	21.50	0.07	0.047	(0.323)	0.029	0.018
259.	21.58	0.10	0.071	(0.322)	0.044	0.027
260.	21.67	0.10	0.071	(0.321)	0.044	0.027
261.	21.75	0.10	0.071	(0.320)	0.044	0.027
262.	21.83	0.07	0.047	(0.319)	0.029	0.018

263.	21.92	0.07	0.047	(0.318)	0.029	0.018
264.	22.00	0.07	0.047	(0.316)	0.029	0.018
265.	22.08	0.10	0.071	(0.315)	0.044	0.027
266.	22.17	0.10	0.071	(0.314)	0.044	0.027
267.	22.25	0.10	0.071	(0.313)	0.044	0.027
268.	22.33	0.07	0.047	(0.312)	0.029	0.018
269.	22.42	0.07	0.047	(0.311)	0.029	0.018
270.	22.50	0.07	0.047	(0.311)	0.029	0.018
271.	22.58	0.07	0.047	(0.310)	0.029	0.018
272.	22.67	0.07	0.047	(0.309)	0.029	0.018
273.	22.75	0.07	0.047	(0.308)	0.029	0.018
274.	22.83	0.07	0.047	(0.307)	0.029	0.018
275.	22.92	0.07	0.047	(0.306)	0.029	0.018
276.	23.00	0.07	0.047	(0.306)	0.029	0.018
277.	23.08	0.07	0.047	(0.305)	0.029	0.018
278.	23.17	0.07	0.047	(0.304)	0.029	0.018
279.	23.25	0.07	0.047	(0.304)	0.029	0.018
280.	23.33	0.07	0.047	(0.303)	0.029	0.018
281.	23.42	0.07	0.047	(0.302)	0.029	0.018
282.	23.50	0.07	0.047	(0.302)	0.029	0.018
283.	23.58	0.07	0.047	(0.301)	0.029	0.018
284.	23.67	0.07	0.047	(0.301)	0.029	0.018
285.	23.75	0.07	0.047	(0.301)	0.029	0.018
286.	23.83	0.07	0.047	(0.300)	0.029	0.018
287.	23.92	0.07	0.047	(0.300)	0.029	0.018
288.	24.00	0.07	0.047	(0.300)	0.029	0.018

(Loss Rate Not Used)

Sum = 100.0

Sum = 26.7

Flood volume = Effective rainfall 2.22(In)

times area 0.8(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 3.68(In)

Total soil loss = 0.236(Ac.Ft)

Total rainfall = 5.90(In)

Flood volume = 6217.1 Cubic Feet

Total soil loss = 10273.9 Cubic Feet

Peak flow rate of this hydrograph = 0.235(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						

0+ 5	0.0001	0.01	Q				
0+10	0.0001	0.01	Q				
0+15	0.0002	0.01	Q				
0+20	0.0004	0.02	Q				
0+25	0.0005	0.02	Q				
0+30	0.0006	0.02	Q				

0+35	0.0008	0.02	Q				
0+40	0.0009	0.02	Q				
0+45	0.0011	0.02	Q				
0+50	0.0012	0.02	Q				
0+55	0.0014	0.03	Q				
1+ 0	0.0016	0.03	Q				
1+ 5	0.0018	0.02	Q				
1+10	0.0019	0.02	Q				
1+15	0.0021	0.02	Q				
1+20	0.0022	0.02	Q				
1+25	0.0024	0.02	Q				
1+30	0.0025	0.02	Q				
1+35	0.0026	0.02	Q				
1+40	0.0028	0.02	Q				
1+45	0.0029	0.02	Q				
1+50	0.0031	0.02	Q				
1+55	0.0033	0.03	Q				
2+ 0	0.0035	0.03	Q				
2+ 5	0.0037	0.03	QV				
2+10	0.0039	0.03	QV				
2+15	0.0041	0.03	QV				
2+20	0.0042	0.03	QV				
2+25	0.0044	0.03	QV				
2+30	0.0046	0.03	QV				
2+35	0.0048	0.03	QV				
2+40	0.0051	0.03	QV				
2+45	0.0053	0.03	QV				
2+50	0.0056	0.03	QV				
2+55	0.0058	0.03	QV				
3+ 0	0.0060	0.03	QV				
3+ 5	0.0063	0.03	QV				
3+10	0.0065	0.03	QV				
3+15	0.0067	0.03	QV				
3+20	0.0070	0.03	QV				
3+25	0.0072	0.03	Q V				
3+30	0.0075	0.03	Q V				
3+35	0.0077	0.03	Q V				
3+40	0.0079	0.03	Q V				
3+45	0.0082	0.03	Q V				
3+50	0.0084	0.04	Q V				
3+55	0.0087	0.04	Q V				
4+ 0	0.0090	0.04	Q V				
4+ 5	0.0093	0.04	Q V				
4+10	0.0096	0.04	Q V				
4+15	0.0099	0.04	Q V				
4+20	0.0102	0.05	Q V				
4+25	0.0105	0.05	Q V				
4+30	0.0108	0.05	Q V				
4+35	0.0112	0.05	Q V				
4+40	0.0115	0.05	Q V				
4+45	0.0118	0.05	Q V				
4+50	0.0122	0.05	Q V				
4+55	0.0126	0.05	Q V				
5+ 0	0.0130	0.06	Q V				

5+ 5	0.0133	0.05	Q	V				
5+10	0.0136	0.04	Q	V				
5+15	0.0139	0.04	Q	V				
5+20	0.0142	0.05	Q	V				
5+25	0.0145	0.05	Q	V				
5+30	0.0148	0.05	Q	V				
5+35	0.0152	0.05	Q	V				
5+40	0.0156	0.05	Q	V				
5+45	0.0160	0.06	Q	V				
5+50	0.0163	0.06	Q	V				
5+55	0.0167	0.06	Q	V				
6+ 0	0.0171	0.06	Q	V				
6+ 5	0.0175	0.06	Q	V				
6+10	0.0179	0.06	Q	V				
6+15	0.0184	0.06	Q	V				
6+20	0.0188	0.06	Q	V				
6+25	0.0192	0.06	Q	V				
6+30	0.0196	0.06	Q	V				
6+35	0.0201	0.07	Q	V				
6+40	0.0206	0.07	Q	V				
6+45	0.0210	0.07	Q	V				
6+50	0.0215	0.07	Q	V				
6+55	0.0220	0.07	Q	V				
7+ 0	0.0225	0.07	Q	V				
7+ 5	0.0230	0.07	Q	V				
7+10	0.0234	0.07	Q	V				
7+15	0.0239	0.07	Q	V				
7+20	0.0244	0.07	Q	V				
7+25	0.0249	0.08	Q	V				
7+30	0.0255	0.08	Q	V				
7+35	0.0260	0.08	Q	V				
7+40	0.0266	0.08	Q	V				
7+45	0.0271	0.08	Q	V				
7+50	0.0277	0.09	Q	V				
7+55	0.0284	0.09	Q	V				
8+ 0	0.0290	0.09	Q	V				
8+ 5	0.0296	0.10	Q	V				
8+10	0.0304	0.10	Q	V				
8+15	0.0311	0.10	Q	V				
8+20	0.0318	0.10	Q	V				
8+25	0.0325	0.10	Q	V				
8+30	0.0332	0.10	Q	V				
8+35	0.0340	0.11	Q	V				
8+40	0.0347	0.11	Q	V				
8+45	0.0355	0.11	Q	V				
8+50	0.0363	0.11	Q	V				
8+55	0.0371	0.12	Q	V				
9+ 0	0.0379	0.12	Q	V				
9+ 5	0.0387	0.13	Q	V				
9+10	0.0396	0.13	Q	V				
9+15	0.0405	0.13	Q	V				
9+20	0.0415	0.14	Q	V				
9+25	0.0424	0.14	Q	V				
9+30	0.0434	0.14	Q	V				

9+35	0.0444	0.14	Q		V					
9+40	0.0454	0.14	Q		V					
9+45	0.0464	0.15	Q		V					
9+50	0.0474	0.15	Q		V					
9+55	0.0484	0.15	Q		V					
10+ 0	0.0495	0.15	Q		V					
10+ 5	0.0503	0.12	Q		V					
10+10	0.0511	0.11	Q		V					
10+15	0.0518	0.10	Q		V					
10+20	0.0525	0.10	Q		V					
10+25	0.0532	0.10	Q		V					
10+30	0.0539	0.10	Q		V					
10+35	0.0548	0.12	Q		V					
10+40	0.0557	0.14	Q		V					
10+45	0.0567	0.14	Q		V					
10+50	0.0576	0.14	Q		V					
10+55	0.0586	0.14	Q		V					
11+ 0	0.0595	0.14	Q		V					
11+ 5	0.0604	0.13	Q		V					
11+10	0.0613	0.13	Q		V					
11+15	0.0622	0.13	Q		V					
11+20	0.0631	0.13	Q		V					
11+25	0.0640	0.13	Q		V					
11+30	0.0650	0.13	Q		V					
11+35	0.0658	0.12	Q		V					
11+40	0.0666	0.12	Q		V					
11+45	0.0674	0.12	Q		V					
11+50	0.0683	0.12	Q		V					
11+55	0.0691	0.12	Q		V					
12+ 0	0.0700	0.12	Q		V					
12+ 5	0.0710	0.15	Q		V					
12+10	0.0722	0.17	Q		V					
12+15	0.0734	0.17	Q		V					
12+20	0.0746	0.18	Q		V					
12+25	0.0758	0.18	Q		V					
12+30	0.0771	0.18	Q		V					
12+35	0.0784	0.19	Q		V					
12+40	0.0797	0.19	Q		V					
12+45	0.0810	0.19	Q		V					
12+50	0.0824	0.20	Q		V					
12+55	0.0838	0.20	Q		V					
13+ 0	0.0851	0.20	Q		V					
13+ 5	0.0867	0.22	Q		V					
13+10	0.0883	0.23	Q		V					
13+15	0.0899	0.23	Q		V					
13+20	0.0915	0.23	Q		V					
13+25	0.0931	0.23	Q		V					
13+30	0.0947	0.23	Q		V					
13+35	0.0960	0.19	Q		V					
13+40	0.0972	0.16	Q		V					
13+45	0.0983	0.16	Q		V					
13+50	0.0994	0.16	Q		V					
13+55	0.1005	0.16	Q		V					
14+ 0	0.1015	0.16	Q		V					

14+ 5	0.1028	0.18	Q			V		
14+10	0.1040	0.19	Q			V		
14+15	0.1053	0.19	Q			V		
14+20	0.1066	0.18	Q			V		
14+25	0.1078	0.18	Q			V		
14+30	0.1090	0.18	Q			V		
14+35	0.1103	0.18	Q			V		
14+40	0.1115	0.18	Q			V		
14+45	0.1128	0.18	Q			V		
14+50	0.1140	0.18	Q			V		
14+55	0.1152	0.17	Q			V		
15+ 0	0.1163	0.17	Q			V		
15+ 5	0.1175	0.17	Q			V		
15+10	0.1187	0.17	Q			V		
15+15	0.1198	0.17	Q			V		
15+20	0.1209	0.16	Q			V		
15+25	0.1220	0.16	Q			V		
15+30	0.1231	0.16	Q			V		
15+35	0.1241	0.14	Q			V		
15+40	0.1250	0.13	Q			V		
15+45	0.1259	0.13	Q			V		
15+50	0.1268	0.13	Q			V		
15+55	0.1277	0.13	Q			V		
16+ 0	0.1286	0.13	Q			V		
16+ 5	0.1291	0.07	Q			V		
16+10	0.1293	0.03	Q			V		
16+15	0.1295	0.03	Q			V		
16+20	0.1297	0.03	Q			V		
16+25	0.1299	0.03	Q			V		
16+30	0.1301	0.03	Q			V		
16+35	0.1302	0.02	Q			V		
16+40	0.1304	0.02	Q			V		
16+45	0.1305	0.02	Q			V		
16+50	0.1307	0.02	Q			V		
16+55	0.1308	0.02	Q			V		
17+ 0	0.1310	0.02	Q			V		
17+ 5	0.1312	0.03	Q			V		
17+10	0.1314	0.03	Q			V		
17+15	0.1316	0.03	Q			V		
17+20	0.1319	0.03	Q			V		
17+25	0.1321	0.03	Q			V		
17+30	0.1323	0.03	Q			V		
17+35	0.1326	0.03	Q			V		
17+40	0.1328	0.03	Q			V		
17+45	0.1331	0.03	Q			V		
17+50	0.1333	0.03	Q			V		
17+55	0.1335	0.03	Q			V		
18+ 0	0.1336	0.03	Q			V		
18+ 5	0.1338	0.03	Q			V		
18+10	0.1340	0.03	Q			V		
18+15	0.1342	0.03	Q			V		
18+20	0.1344	0.03	Q			V		
18+25	0.1346	0.03	Q			V		
18+30	0.1348	0.03	Q			V		

18+35	0.1350	0.02	Q				V	
18+40	0.1351	0.02	Q				V	
18+45	0.1352	0.02	Q				V	
18+50	0.1354	0.02	Q				V	
18+55	0.1355	0.01	Q				V	
19+ 0	0.1355	0.01	Q				V	
19+ 5	0.1357	0.02	Q				V	
19+10	0.1358	0.02	Q				V	
19+15	0.1360	0.02	Q				V	
19+20	0.1361	0.02	Q				V	
19+25	0.1363	0.03	Q				V	
19+30	0.1365	0.03	Q				V	
19+35	0.1367	0.02	Q				V	
19+40	0.1368	0.02	Q				V	
19+45	0.1370	0.02	Q				V	
19+50	0.1371	0.02	Q				V	
19+55	0.1372	0.01	Q				V	
20+ 0	0.1373	0.01	Q				V	
20+ 5	0.1374	0.02	Q				V	
20+10	0.1375	0.02	Q				V	
20+15	0.1377	0.02	Q				V	
20+20	0.1378	0.02	Q				V	
20+25	0.1380	0.02	Q				V	
20+30	0.1381	0.02	Q				V	
20+35	0.1382	0.02	Q				V	
20+40	0.1384	0.02	Q				V	
20+45	0.1385	0.02	Q				V	
20+50	0.1386	0.02	Q				V	
20+55	0.1387	0.01	Q				V	
21+ 0	0.1388	0.01	Q				V	
21+ 5	0.1390	0.02	Q				V	
21+10	0.1391	0.02	Q				V	
21+15	0.1392	0.02	Q				V	
21+20	0.1393	0.02	Q				V	
21+25	0.1394	0.01	Q				V	
21+30	0.1395	0.01	Q				V	
21+35	0.1397	0.02	Q				V	
21+40	0.1398	0.02	Q				V	
21+45	0.1399	0.02	Q				V	
21+50	0.1401	0.02	Q				V	
21+55	0.1402	0.01	Q				V	
22+ 0	0.1403	0.01	Q				V	
22+ 5	0.1404	0.02	Q				V	
22+10	0.1405	0.02	Q				V	
22+15	0.1407	0.02	Q				V	
22+20	0.1408	0.02	Q				V	
22+25	0.1409	0.01	Q				V	
22+30	0.1410	0.01	Q				V	
22+35	0.1411	0.01	Q				V	
22+40	0.1412	0.01	Q				V	
22+45	0.1413	0.01	Q				V	
22+50	0.1413	0.01	Q				V	
22+55	0.1414	0.01	Q				V	
23+ 0	0.1415	0.01	Q				V	

23+ 5	0.1416	0.01	Q				V
23+10	0.1417	0.01	Q				V
23+15	0.1418	0.01	Q				V
23+20	0.1419	0.01	Q				V
23+25	0.1420	0.01	Q				V
23+30	0.1421	0.01	Q				V
23+35	0.1422	0.01	Q				V
23+40	0.1423	0.01	Q				V
23+45	0.1424	0.01	Q				V
23+50	0.1425	0.01	Q				V
23+55	0.1426	0.01	Q				V
24+ 0	0.1427	0.01	Q				V
24+ 5	0.1427	0.01	Q				V
24+10	0.1427	0.00	Q				V

WATERSHED B:
TRIBUTARY TO
UNDERGROUND
DETENTION/INFILTRATION
FACILITY

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP12.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
2 YEAR STORM AMC I

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	0.50	3.60

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	1.30	9.36

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.500 (In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.500 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920

Total Area Entered = 7.20 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.920	0.150	1.000	0.150
Sum (F) =						

0.150

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.164

Slope of intensity-duration curve for a 1 hour storm = 0.5000

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	56.537
2	0.167	597.229	37.205

	3	0.250	895.844	6.258	0.454
					Sum =
100.000	Sum=	7.256			

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1. 0.08	4.20	0.252	(0.150)	0.041	0.211
2. 0.17	4.30	0.258	(0.150)	0.042	0.216
3. 0.25	5.00	0.300	(0.150)	0.049	0.251
4. 0.33	5.00	0.300	(0.150)	0.049	0.251
5. 0.42	5.80	0.348	(0.150)	0.057	0.291
6. 0.50	6.50	0.390	(0.150)	0.064	0.326
7. 0.58	7.40	0.444	(0.150)	0.073	0.371
8. 0.67	8.60	0.516	(0.150)	0.085	0.431
9. 0.75	12.30	0.738	(0.150)	0.121	0.617
10. 0.83	29.10	1.746	0.150	(0.286)	1.596
11. 0.92	6.80	0.408	(0.150)	0.067	0.341
12. 1.00	5.00	0.300	(0.150)	0.049	0.251

(Loss Rate Not Used)
Sum = 100.0 Sum = 5.2

Flood volume = Effective rainfall 0.43(In)
times area 7.2(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)

Total soil loss = 0.07(In)
Total soil loss = 0.042(Ac.Ft)
Total rainfall = 0.50(In)
Flood volume = 11221.7 Cubic Feet
Total soil loss = 1845.5 Cubic Feet

Peak flow rate of this hydrograph = 8.414(CFS)

+++++

1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0060	0.86	V	Q			
0+10	0.0160	1.45		V	Q		
0+15	0.0277	1.71			V	Q	
0+20	0.0402	1.80				V	Q
0+25	0.0538	1.99					V
0+30	0.0692	2.24					Q
0+35	0.0867	2.54					Q

0+40	0.1068	2.92			Q	V					
0+45	0.1335	3.87				Q	V				
0+50	0.1914	8.41						V		Q	
0+55	0.2327	5.99						Q			V
1+ 0	0.2511	2.68			Q						V
1+ 5	0.2568	0.83		Q							V
1+10	0.2576	0.11	Q								V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP32.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
2 YEAR STORM AMC I

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.
Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	0.85	6.12

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.00	14.40

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 0.850 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.850 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.920	0.150	1.000	0.150
Sum (F) =						

0.150

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.164

-

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	56.537
2	0.167	597.229	37.205
3	0.250	895.844	6.258
Sum =			4.102
Sum =			2.700
Sum =			0.454

100.000 Sum= 7.256

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.133	(0.150)	0.022	0.111
2.	0.17	1.30	0.133	(0.150)	0.022	0.111
3.	0.25	1.10	0.112	(0.150)	0.018	0.094
4.	0.33	1.50	0.153	(0.150)	0.025	0.128
5.	0.42	1.50	0.153	(0.150)	0.025	0.128
6.	0.50	1.80	0.184	(0.150)	0.030	0.153
7.	0.58	1.50	0.153	(0.150)	0.025	0.128
8.	0.67	1.80	0.184	(0.150)	0.030	0.153
9.	0.75	1.80	0.184	(0.150)	0.030	0.153
10.	0.83	1.50	0.153	(0.150)	0.025	0.128
11.	0.92	1.60	0.163	(0.150)	0.027	0.136
12.	1.00	1.80	0.184	(0.150)	0.030	0.153
13.	1.08	2.20	0.224	(0.150)	0.037	0.188
14.	1.17	2.20	0.224	(0.150)	0.037	0.188
15.	1.25	2.20	0.224	(0.150)	0.037	0.188
16.	1.33	2.00	0.204	(0.150)	0.033	0.171
17.	1.42	2.60	0.265	(0.150)	0.043	0.222
18.	1.50	2.70	0.275	(0.150)	0.045	0.230
19.	1.58	2.40	0.245	(0.150)	0.040	0.205
20.	1.67	2.70	0.275	(0.150)	0.045	0.230
21.	1.75	3.30	0.337	(0.150)	0.055	0.281
22.	1.83	3.10	0.316	(0.150)	0.052	0.264
23.	1.92	2.90	0.296	(0.150)	0.049	0.247
24.	2.00	3.00	0.306	(0.150)	0.050	0.256
25.	2.08	3.10	0.316	(0.150)	0.052	0.264
26.	2.17	4.20	0.428	(0.150)	0.070	0.358
27.	2.25	5.00	0.510	(0.150)	0.084	0.426
28.	2.33	3.50	0.357	(0.150)	0.059	0.298
29.	2.42	6.80	0.694	(0.150)	0.114	0.580
30.	2.50	7.30	0.745	(0.150)	0.122	0.622
31.	2.58	8.20	0.836	(0.150)	0.137	0.699
32.	2.67	5.90	0.602	(0.150)	0.099	0.503
33.	2.75	2.00	0.204	(0.150)	0.033	0.171
34.	2.83	1.80	0.184	(0.150)	0.030	0.153
35.	2.92	1.80	0.184	(0.150)	0.030	0.153
36.	3.00	0.60	0.061	(0.150)	0.010	0.051

(Loss Rate Not Used)

Sum = 100.0

Sum = 8.5

Flood volume = Effective rainfall 0.71(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)

Total soil loss = 0.14(In)

Total soil loss = 0.084(Ac.Ft)

Total rainfall = 0.85(In)

Flood volume = 18571.7 Cubic Feet

Total soil loss = 3643.2 Cubic Feet

Peak flow rate of this hydrograph = 4.815(CFS)

+++++

3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0031	0.45	VQ			
0+10	0.0083	0.75	V Q			
0+15	0.0134	0.73	VQ			
0+20	0.0191	0.83	V Q			
0+25	0.0254	0.91	VQ			
0+30	0.0325	1.03	VQ			
0+35	0.0394	1.00	Q			
0+40	0.0466	1.05	Q			
0+45	0.0542	1.10	QV			
0+50	0.0611	1.01	QV			
0+55	0.0678	0.98	Q V			
1+ 0	0.0751	1.06	Q V			
1+ 5	0.0837	1.25	Q V			
1+10	0.0930	1.35	Q V			
1+15	0.1023	1.36	Q V			
1+20	0.1112	1.29	Q V			
1+25	0.1213	1.46	Q V			
1+30	0.1324	1.62	Q V			
1+35	0.1432	1.56	Q V			
1+40	0.1542	1.60	Q V			
1+45	0.1671	1.87	Q V			
1+50	0.1805	1.95	Q V			
1+55	0.1933	1.86	Q V			
2+ 0	0.2060	1.84	Q V			
2+ 5	0.2190	1.89	Q V			
2+10	0.2348	2.30	Q V			
2+15	0.2544	2.84	Q V			
2+20	0.2719	2.54	Q V			
2+25	0.2951	3.38	Q V			
2+30	0.3245	4.26	Q V			
2+35	0.3576	4.81	Q V			
2+40	0.3868	4.24	Q V			
2+45	0.4032	2.38	Q V			
2+50	0.4122	1.32	Q V			
2+55	0.4200	1.12	Q V			
3+ 0	0.4248	0.69	Q V			
3+ 5	0.4262	0.21	Q V			
3+10	0.4263	0.02	Q V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP62.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
2 YEAR STORM AMC I

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.
Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	1.20	8.64

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.90	20.88

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.200 (In)
Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 1.200 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.200 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.920	0.150	1.000	0.150
Sum (F) =						

0.150

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	56.537
2	0.167	597.229	37.205
3	0.250	895.844	6.258
			Sum =

100.000 Sum= 7.256

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.50	0.072	(0.150)	0.012	0.060
2.	0.17	0.60	0.086	(0.150)	0.014	0.072
3.	0.25	0.60	0.086	(0.150)	0.014	0.072
4.	0.33	0.60	0.086	(0.150)	0.014	0.072
5.	0.42	0.60	0.086	(0.150)	0.014	0.072
6.	0.50	0.70	0.101	(0.150)	0.017	0.084
7.	0.58	0.70	0.101	(0.150)	0.017	0.084
8.	0.67	0.70	0.101	(0.150)	0.017	0.084
9.	0.75	0.70	0.101	(0.150)	0.017	0.084
10.	0.83	0.70	0.101	(0.150)	0.017	0.084
11.	0.92	0.70	0.101	(0.150)	0.017	0.084
12.	1.00	0.80	0.115	(0.150)	0.019	0.096
13.	1.08	0.80	0.115	(0.150)	0.019	0.096
14.	1.17	0.80	0.115	(0.150)	0.019	0.096
15.	1.25	0.80	0.115	(0.150)	0.019	0.096
16.	1.33	0.80	0.115	(0.150)	0.019	0.096
17.	1.42	0.80	0.115	(0.150)	0.019	0.096
18.	1.50	0.80	0.115	(0.150)	0.019	0.096
19.	1.58	0.80	0.115	(0.150)	0.019	0.096
20.	1.67	0.80	0.115	(0.150)	0.019	0.096
21.	1.75	0.80	0.115	(0.150)	0.019	0.096
22.	1.83	0.80	0.115	(0.150)	0.019	0.096
23.	1.92	0.80	0.115	(0.150)	0.019	0.096
24.	2.00	0.90	0.130	(0.150)	0.021	0.108
25.	2.08	0.80	0.115	(0.150)	0.019	0.096
26.	2.17	0.90	0.130	(0.150)	0.021	0.108
27.	2.25	0.90	0.130	(0.150)	0.021	0.108
28.	2.33	0.90	0.130	(0.150)	0.021	0.108
29.	2.42	0.90	0.130	(0.150)	0.021	0.108
30.	2.50	0.90	0.130	(0.150)	0.021	0.108
31.	2.58	0.90	0.130	(0.150)	0.021	0.108
32.	2.67	0.90	0.130	(0.150)	0.021	0.108
33.	2.75	1.00	0.144	(0.150)	0.024	0.120
34.	2.83	1.00	0.144	(0.150)	0.024	0.120
35.	2.92	1.00	0.144	(0.150)	0.024	0.120
36.	3.00	1.00	0.144	(0.150)	0.024	0.120
37.	3.08	1.00	0.144	(0.150)	0.024	0.120
38.	3.17	1.10	0.158	(0.150)	0.026	0.132
39.	3.25	1.10	0.158	(0.150)	0.026	0.132
40.	3.33	1.10	0.158	(0.150)	0.026	0.132
41.	3.42	1.20	0.173	(0.150)	0.028	0.144
42.	3.50	1.30	0.187	(0.150)	0.031	0.156
43.	3.58	1.40	0.202	(0.150)	0.033	0.169
44.	3.67	1.40	0.202	(0.150)	0.033	0.169

45.	3.75	1.50	0.216	(0.150)	0.035	0.181
46.	3.83	1.50	0.216	(0.150)	0.035	0.181
47.	3.92	1.60	0.230	(0.150)	0.038	0.193
48.	4.00	1.60	0.230	(0.150)	0.038	0.193
49.	4.08	1.70	0.245	(0.150)	0.040	0.205
50.	4.17	1.80	0.259	(0.150)	0.043	0.217
51.	4.25	1.90	0.274	(0.150)	0.045	0.229
52.	4.33	2.00	0.288	(0.150)	0.047	0.241
53.	4.42	2.10	0.302	(0.150)	0.050	0.253
54.	4.50	2.10	0.302	(0.150)	0.050	0.253
55.	4.58	2.20	0.317	(0.150)	0.052	0.265
56.	4.67	2.30	0.331	(0.150)	0.054	0.277
57.	4.75	2.40	0.346	(0.150)	0.057	0.289
58.	4.83	2.40	0.346	(0.150)	0.057	0.289
59.	4.92	2.50	0.360	(0.150)	0.059	0.301
60.	5.00	2.60	0.374	(0.150)	0.061	0.313
61.	5.08	3.10	0.446	(0.150)	0.073	0.373
62.	5.17	3.60	0.518	(0.150)	0.085	0.433
63.	5.25	3.90	0.562	(0.150)	0.092	0.469
64.	5.33	4.20	0.605	(0.150)	0.099	0.506
65.	5.42	4.70	0.677	(0.150)	0.111	0.566
66.	5.50	5.60	0.806	(0.150)	0.132	0.674
67.	5.58	1.90	0.274	(0.150)	0.045	0.229
68.	5.67	0.90	0.130	(0.150)	0.021	0.108
69.	5.75	0.60	0.086	(0.150)	0.014	0.072
70.	5.83	0.50	0.072	(0.150)	0.012	0.060
71.	5.92	0.30	0.043	(0.150)	0.007	0.036
72.	6.00	0.20	0.029	(0.150)	0.005	0.024

(Loss Rate Not Used)

Sum = 100.0

Sum = 12.0

Flood volume = Effective rainfall 1.00(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 0.6(Ac.Ft)

Total soil loss = 0.20(In)

Total soil loss = 0.118(Ac.Ft)

Total rainfall = 1.20(In)

Flood volume = 26219.0 Cubic Feet

Total soil loss = 5143.4 Cubic Feet

Peak flow rate of this hydrograph = 4.525(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0017	0.25	Q				
0+10	0.0049	0.46	VQ				
0+15	0.0084	0.52	V Q				
0+20	0.0120	0.52	V Q				

0+25	0.0157	0.52	VQ				
0+30	0.0196	0.57	VQ				
0+35	0.0238	0.61	VQ				
0+40	0.0280	0.61	VQ				
0+45	0.0322	0.61	Q				
0+50	0.0364	0.61	Q				
0+55	0.0406	0.61	Q				
1+ 0	0.0452	0.66	QV				
1+ 5	0.0500	0.69	QV				
1+10	0.0548	0.70	QV				
1+15	0.0596	0.70	QV				
1+20	0.0644	0.70	Q V				
1+25	0.0692	0.70	Q V				
1+30	0.0740	0.70	Q V				
1+35	0.0789	0.70	Q V				
1+40	0.0837	0.70	Q V				
1+45	0.0885	0.70	Q V				
1+50	0.0933	0.70	Q V				
1+55	0.0981	0.70	Q V				
2+ 0	0.1033	0.75	Q V				
2+ 5	0.1083	0.73	Q V				
2+10	0.1135	0.75	Q V				
2+15	0.1189	0.78	Q V				
2+20	0.1243	0.79	Q V				
2+25	0.1297	0.79	Q V				
2+30	0.1351	0.79	Q V				
2+35	0.1406	0.79	Q V				
2+40	0.1460	0.79	Q V				
2+45	0.1517	0.84	Q V				
2+50	0.1577	0.87	Q V				
2+55	0.1637	0.87	Q V				
3+ 0	0.1698	0.87	Q V				
3+ 5	0.1758	0.87	Q V				
3+10	0.1821	0.92	Q V				
3+15	0.1887	0.96	Q V				
3+20	0.1953	0.96	Q V				
3+25	0.2023	1.01	Q V				
3+30	0.2098	1.09	Q V				
3+35	0.2180	1.18	Q V				
3+40	0.2263	1.22	Q V				
3+45	0.2351	1.27	Q V				
3+50	0.2441	1.31	Q V				
3+55	0.2535	1.36	Q V				
4+ 0	0.2631	1.39	Q V				
4+ 5	0.2730	1.45	Q V				
4+10	0.2836	1.53	Q V				
4+15	0.2947	1.62	Q V				
4+20	0.3064	1.70	Q V				
4+25	0.3188	1.79	Q V				
4+30	0.3314	1.83	Q V				
4+35	0.3444	1.88	Q V				
4+40	0.3579	1.97	Q V				
4+45	0.3721	2.05	Q V				
4+50	0.3865	2.09	Q V				

4+55	0.4012	2.15		Q			V			
5+ 0	0.4166	2.23		Q			V			
5+ 5	0.4339	2.51			Q		V			
5+10	0.4541	2.93			Q		V			
5+15	0.4766	3.27				Q	V			
5+20	0.5010	3.54				Q		V		
5+25	0.5278	3.90				Q		V		
5+30	0.5590	4.52							V	
5+35	0.5798	3.02			Q				V	
5+40	0.5892	1.37		Q					V	
5+45	0.5940	0.69		Q					V	
5+50	0.5974	0.49		Q					V	
5+55	0.5997	0.34		Q					V	
6+ 0	0.6013	0.22	Q						V	
6+ 5	0.6018	0.08	Q						V	
6+10	0.6019	0.01	Q						V	

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP242.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
2 YEAR STORM AMC I

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.00	14.40

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	5.90	42.48

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000 (In)
Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 2.000 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.920	0.150	1.000	0.150
Sum (F) =						

0.150

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454
			Sum =

100.000 Sum= 7.256

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max Low	Effective (In/Hr)	
1.	0.08	0.07	0.016	(0.265)	0.003	0.013
2.	0.17	0.07	0.016	(0.264)	0.003	0.013
3.	0.25	0.07	0.016	(0.263)	0.003	0.013
4.	0.33	0.10	0.024	(0.262)	0.004	0.020
5.	0.42	0.10	0.024	(0.261)	0.004	0.020
6.	0.50	0.10	0.024	(0.260)	0.004	0.020
7.	0.58	0.10	0.024	(0.259)	0.004	0.020
8.	0.67	0.10	0.024	(0.258)	0.004	0.020
9.	0.75	0.10	0.024	(0.257)	0.004	0.020
10.	0.83	0.13	0.032	(0.256)	0.005	0.027
11.	0.92	0.13	0.032	(0.255)	0.005	0.027
12.	1.00	0.13	0.032	(0.254)	0.005	0.027
13.	1.08	0.10	0.024	(0.253)	0.004	0.020
14.	1.17	0.10	0.024	(0.252)	0.004	0.020
15.	1.25	0.10	0.024	(0.251)	0.004	0.020
16.	1.33	0.10	0.024	(0.250)	0.004	0.020
17.	1.42	0.10	0.024	(0.249)	0.004	0.020
18.	1.50	0.10	0.024	(0.248)	0.004	0.020
19.	1.58	0.10	0.024	(0.247)	0.004	0.020
20.	1.67	0.10	0.024	(0.246)	0.004	0.020
21.	1.75	0.10	0.024	(0.245)	0.004	0.020
22.	1.83	0.13	0.032	(0.244)	0.005	0.027
23.	1.92	0.13	0.032	(0.243)	0.005	0.027
24.	2.00	0.13	0.032	(0.242)	0.005	0.027
25.	2.08	0.13	0.032	(0.241)	0.005	0.027
26.	2.17	0.13	0.032	(0.240)	0.005	0.027
27.	2.25	0.13	0.032	(0.239)	0.005	0.027
28.	2.33	0.13	0.032	(0.238)	0.005	0.027
29.	2.42	0.13	0.032	(0.237)	0.005	0.027
30.	2.50	0.13	0.032	(0.236)	0.005	0.027
31.	2.58	0.17	0.040	(0.235)	0.007	0.033
32.	2.67	0.17	0.040	(0.235)	0.007	0.033
33.	2.75	0.17	0.040	(0.234)	0.007	0.033
34.	2.83	0.17	0.040	(0.233)	0.007	0.033
35.	2.92	0.17	0.040	(0.232)	0.007	0.033
36.	3.00	0.17	0.040	(0.231)	0.007	0.033
37.	3.08	0.17	0.040	(0.230)	0.007	0.033
38.	3.17	0.17	0.040	(0.229)	0.007	0.033
39.	3.25	0.17	0.040	(0.228)	0.007	0.033
40.	3.33	0.17	0.040	(0.227)	0.007	0.033
41.	3.42	0.17	0.040	(0.226)	0.007	0.033
42.	3.50	0.17	0.040	(0.225)	0.007	0.033
43.	3.58	0.17	0.040	(0.224)	0.007	0.033
44.	3.67	0.17	0.040	(0.223)	0.007	0.033

45.	3.75	0.17	0.040	(0.222)	0.007	0.033
46.	3.83	0.20	0.048	(0.221)	0.008	0.040
47.	3.92	0.20	0.048	(0.220)	0.008	0.040
48.	4.00	0.20	0.048	(0.219)	0.008	0.040
49.	4.08	0.20	0.048	(0.218)	0.008	0.040
50.	4.17	0.20	0.048	(0.217)	0.008	0.040
51.	4.25	0.20	0.048	(0.217)	0.008	0.040
52.	4.33	0.23	0.056	(0.216)	0.009	0.047
53.	4.42	0.23	0.056	(0.215)	0.009	0.047
54.	4.50	0.23	0.056	(0.214)	0.009	0.047
55.	4.58	0.23	0.056	(0.213)	0.009	0.047
56.	4.67	0.23	0.056	(0.212)	0.009	0.047
57.	4.75	0.23	0.056	(0.211)	0.009	0.047
58.	4.83	0.27	0.064	(0.210)	0.010	0.054
59.	4.92	0.27	0.064	(0.209)	0.010	0.054
60.	5.00	0.27	0.064	(0.208)	0.010	0.054
61.	5.08	0.20	0.048	(0.207)	0.008	0.040
62.	5.17	0.20	0.048	(0.207)	0.008	0.040
63.	5.25	0.20	0.048	(0.206)	0.008	0.040
64.	5.33	0.23	0.056	(0.205)	0.009	0.047
65.	5.42	0.23	0.056	(0.204)	0.009	0.047
66.	5.50	0.23	0.056	(0.203)	0.009	0.047
67.	5.58	0.27	0.064	(0.202)	0.010	0.054
68.	5.67	0.27	0.064	(0.201)	0.010	0.054
69.	5.75	0.27	0.064	(0.200)	0.010	0.054
70.	5.83	0.27	0.064	(0.199)	0.010	0.054
71.	5.92	0.27	0.064	(0.198)	0.010	0.054
72.	6.00	0.27	0.064	(0.198)	0.010	0.054
73.	6.08	0.30	0.072	(0.197)	0.012	0.060
74.	6.17	0.30	0.072	(0.196)	0.012	0.060
75.	6.25	0.30	0.072	(0.195)	0.012	0.060
76.	6.33	0.30	0.072	(0.194)	0.012	0.060
77.	6.42	0.30	0.072	(0.193)	0.012	0.060
78.	6.50	0.30	0.072	(0.192)	0.012	0.060
79.	6.58	0.33	0.080	(0.192)	0.013	0.067
80.	6.67	0.33	0.080	(0.191)	0.013	0.067
81.	6.75	0.33	0.080	(0.190)	0.013	0.067
82.	6.83	0.33	0.080	(0.189)	0.013	0.067
83.	6.92	0.33	0.080	(0.188)	0.013	0.067
84.	7.00	0.33	0.080	(0.187)	0.013	0.067
85.	7.08	0.33	0.080	(0.186)	0.013	0.067
86.	7.17	0.33	0.080	(0.186)	0.013	0.067
87.	7.25	0.33	0.080	(0.185)	0.013	0.067
88.	7.33	0.37	0.088	(0.184)	0.014	0.074
89.	7.42	0.37	0.088	(0.183)	0.014	0.074
90.	7.50	0.37	0.088	(0.182)	0.014	0.074
91.	7.58	0.40	0.096	(0.181)	0.016	0.080
92.	7.67	0.40	0.096	(0.180)	0.016	0.080
93.	7.75	0.40	0.096	(0.180)	0.016	0.080
94.	7.83	0.43	0.104	(0.179)	0.017	0.087
95.	7.92	0.43	0.104	(0.178)	0.017	0.087
96.	8.00	0.43	0.104	(0.177)	0.017	0.087
97.	8.08	0.50	0.120	(0.176)	0.020	0.100
98.	8.17	0.50	0.120	(0.176)	0.020	0.100

99.	8.25	0.50	0.120	(0.175)	0.020	0.100
100.	8.33	0.50	0.120	(0.174)	0.020	0.100
101.	8.42	0.50	0.120	(0.173)	0.020	0.100
102.	8.50	0.50	0.120	(0.172)	0.020	0.100
103.	8.58	0.53	0.128	(0.171)	0.021	0.107
104.	8.67	0.53	0.128	(0.171)	0.021	0.107
105.	8.75	0.53	0.128	(0.170)	0.021	0.107
106.	8.83	0.57	0.136	(0.169)	0.022	0.114
107.	8.92	0.57	0.136	(0.168)	0.022	0.114
108.	9.00	0.57	0.136	(0.167)	0.022	0.114
109.	9.08	0.63	0.152	(0.167)	0.025	0.127
110.	9.17	0.63	0.152	(0.166)	0.025	0.127
111.	9.25	0.63	0.152	(0.165)	0.025	0.127
112.	9.33	0.67	0.160	(0.164)	0.026	0.134
113.	9.42	0.67	0.160	(0.164)	0.026	0.134
114.	9.50	0.67	0.160	(0.163)	0.026	0.134
115.	9.58	0.70	0.168	(0.162)	0.028	0.140
116.	9.67	0.70	0.168	(0.161)	0.028	0.140
117.	9.75	0.70	0.168	(0.160)	0.028	0.140
118.	9.83	0.73	0.176	(0.160)	0.029	0.147
119.	9.92	0.73	0.176	(0.159)	0.029	0.147
120.	10.00	0.73	0.176	(0.158)	0.029	0.147
121.	10.08	0.50	0.120	(0.157)	0.020	0.100
122.	10.17	0.50	0.120	(0.157)	0.020	0.100
123.	10.25	0.50	0.120	(0.156)	0.020	0.100
124.	10.33	0.50	0.120	(0.155)	0.020	0.100
125.	10.42	0.50	0.120	(0.154)	0.020	0.100
126.	10.50	0.50	0.120	(0.154)	0.020	0.100
127.	10.58	0.67	0.160	(0.153)	0.026	0.134
128.	10.67	0.67	0.160	(0.152)	0.026	0.134
129.	10.75	0.67	0.160	(0.151)	0.026	0.134
130.	10.83	0.67	0.160	(0.151)	0.026	0.134
131.	10.92	0.67	0.160	(0.150)	0.026	0.134
132.	11.00	0.67	0.160	(0.149)	0.026	0.134
133.	11.08	0.63	0.152	(0.148)	0.025	0.127
134.	11.17	0.63	0.152	(0.148)	0.025	0.127
135.	11.25	0.63	0.152	(0.147)	0.025	0.127
136.	11.33	0.63	0.152	(0.146)	0.025	0.127
137.	11.42	0.63	0.152	(0.145)	0.025	0.127
138.	11.50	0.63	0.152	(0.145)	0.025	0.127
139.	11.58	0.57	0.136	(0.144)	0.022	0.114
140.	11.67	0.57	0.136	(0.143)	0.022	0.114
141.	11.75	0.57	0.136	(0.143)	0.022	0.114
142.	11.83	0.60	0.144	(0.142)	0.024	0.120
143.	11.92	0.60	0.144	(0.141)	0.024	0.120
144.	12.00	0.60	0.144	(0.140)	0.024	0.120
145.	12.08	0.83	0.200	(0.140)	0.033	0.167
146.	12.17	0.83	0.200	(0.139)	0.033	0.167
147.	12.25	0.83	0.200	(0.138)	0.033	0.167
148.	12.33	0.87	0.208	(0.138)	0.034	0.174
149.	12.42	0.87	0.208	(0.137)	0.034	0.174
150.	12.50	0.87	0.208	(0.136)	0.034	0.174
151.	12.58	0.93	0.224	(0.136)	0.037	0.187
152.	12.67	0.93	0.224	(0.135)	0.037	0.187

153.	12.75	0.93	0.224	(0.134)	0.037	0.187
154.	12.83	0.97	0.232	(0.134)	0.038	0.194
155.	12.92	0.97	0.232	(0.133)	0.038	0.194
156.	13.00	0.97	0.232	(0.132)	0.038	0.194
157.	13.08	1.13	0.272	(0.132)	0.045	0.227
158.	13.17	1.13	0.272	(0.131)	0.045	0.227
159.	13.25	1.13	0.272	(0.130)	0.045	0.227
160.	13.33	1.13	0.272	(0.130)	0.045	0.227
161.	13.42	1.13	0.272	(0.129)	0.045	0.227
162.	13.50	1.13	0.272	(0.128)	0.045	0.227
163.	13.58	0.77	0.184	(0.128)	0.030	0.154
164.	13.67	0.77	0.184	(0.127)	0.030	0.154
165.	13.75	0.77	0.184	(0.126)	0.030	0.154
166.	13.83	0.77	0.184	(0.126)	0.030	0.154
167.	13.92	0.77	0.184	(0.125)	0.030	0.154
168.	14.00	0.77	0.184	(0.124)	0.030	0.154
169.	14.08	0.90	0.216	(0.124)	0.035	0.181
170.	14.17	0.90	0.216	(0.123)	0.035	0.181
171.	14.25	0.90	0.216	(0.122)	0.035	0.181
172.	14.33	0.87	0.208	(0.122)	0.034	0.174
173.	14.42	0.87	0.208	(0.121)	0.034	0.174
174.	14.50	0.87	0.208	(0.121)	0.034	0.174
175.	14.58	0.87	0.208	(0.120)	0.034	0.174
176.	14.67	0.87	0.208	(0.119)	0.034	0.174
177.	14.75	0.87	0.208	(0.119)	0.034	0.174
178.	14.83	0.83	0.200	(0.118)	0.033	0.167
179.	14.92	0.83	0.200	(0.118)	0.033	0.167
180.	15.00	0.83	0.200	(0.117)	0.033	0.167
181.	15.08	0.80	0.192	(0.116)	0.031	0.161
182.	15.17	0.80	0.192	(0.116)	0.031	0.161
183.	15.25	0.80	0.192	(0.115)	0.031	0.161
184.	15.33	0.77	0.184	(0.115)	0.030	0.154
185.	15.42	0.77	0.184	(0.114)	0.030	0.154
186.	15.50	0.77	0.184	(0.113)	0.030	0.154
187.	15.58	0.63	0.152	(0.113)	0.025	0.127
188.	15.67	0.63	0.152	(0.112)	0.025	0.127
189.	15.75	0.63	0.152	(0.112)	0.025	0.127
190.	15.83	0.63	0.152	(0.111)	0.025	0.127
191.	15.92	0.63	0.152	(0.111)	0.025	0.127
192.	16.00	0.63	0.152	(0.110)	0.025	0.127
193.	16.08	0.13	0.032	(0.109)	0.005	0.027
194.	16.17	0.13	0.032	(0.109)	0.005	0.027
195.	16.25	0.13	0.032	(0.108)	0.005	0.027
196.	16.33	0.13	0.032	(0.108)	0.005	0.027
197.	16.42	0.13	0.032	(0.107)	0.005	0.027
198.	16.50	0.13	0.032	(0.107)	0.005	0.027
199.	16.58	0.10	0.024	(0.106)	0.004	0.020
200.	16.67	0.10	0.024	(0.106)	0.004	0.020
201.	16.75	0.10	0.024	(0.105)	0.004	0.020
202.	16.83	0.10	0.024	(0.104)	0.004	0.020
203.	16.92	0.10	0.024	(0.104)	0.004	0.020
204.	17.00	0.10	0.024	(0.103)	0.004	0.020
205.	17.08	0.17	0.040	(0.103)	0.007	0.033
206.	17.17	0.17	0.040	(0.102)	0.007	0.033

207.	17.25	0.17	0.040	(0.102)	0.007	0.033
208.	17.33	0.17	0.040	(0.101)	0.007	0.033
209.	17.42	0.17	0.040	(0.101)	0.007	0.033
210.	17.50	0.17	0.040	(0.100)	0.007	0.033
211.	17.58	0.17	0.040	(0.100)	0.007	0.033
212.	17.67	0.17	0.040	(0.099)	0.007	0.033
213.	17.75	0.17	0.040	(0.099)	0.007	0.033
214.	17.83	0.13	0.032	(0.098)	0.005	0.027
215.	17.92	0.13	0.032	(0.098)	0.005	0.027
216.	18.00	0.13	0.032	(0.097)	0.005	0.027
217.	18.08	0.13	0.032	(0.097)	0.005	0.027
218.	18.17	0.13	0.032	(0.096)	0.005	0.027
219.	18.25	0.13	0.032	(0.096)	0.005	0.027
220.	18.33	0.13	0.032	(0.095)	0.005	0.027
221.	18.42	0.13	0.032	(0.095)	0.005	0.027
222.	18.50	0.13	0.032	(0.095)	0.005	0.027
223.	18.58	0.10	0.024	(0.094)	0.004	0.020
224.	18.67	0.10	0.024	(0.094)	0.004	0.020
225.	18.75	0.10	0.024	(0.093)	0.004	0.020
226.	18.83	0.07	0.016	(0.093)	0.003	0.013
227.	18.92	0.07	0.016	(0.092)	0.003	0.013
228.	19.00	0.07	0.016	(0.092)	0.003	0.013
229.	19.08	0.10	0.024	(0.091)	0.004	0.020
230.	19.17	0.10	0.024	(0.091)	0.004	0.020
231.	19.25	0.10	0.024	(0.091)	0.004	0.020
232.	19.33	0.13	0.032	(0.090)	0.005	0.027
233.	19.42	0.13	0.032	(0.090)	0.005	0.027
234.	19.50	0.13	0.032	(0.089)	0.005	0.027
235.	19.58	0.10	0.024	(0.089)	0.004	0.020
236.	19.67	0.10	0.024	(0.089)	0.004	0.020
237.	19.75	0.10	0.024	(0.088)	0.004	0.020
238.	19.83	0.07	0.016	(0.088)	0.003	0.013
239.	19.92	0.07	0.016	(0.087)	0.003	0.013
240.	20.00	0.07	0.016	(0.087)	0.003	0.013
241.	20.08	0.10	0.024	(0.087)	0.004	0.020
242.	20.17	0.10	0.024	(0.086)	0.004	0.020
243.	20.25	0.10	0.024	(0.086)	0.004	0.020
244.	20.33	0.10	0.024	(0.085)	0.004	0.020
245.	20.42	0.10	0.024	(0.085)	0.004	0.020
246.	20.50	0.10	0.024	(0.085)	0.004	0.020
247.	20.58	0.10	0.024	(0.084)	0.004	0.020
248.	20.67	0.10	0.024	(0.084)	0.004	0.020
249.	20.75	0.10	0.024	(0.084)	0.004	0.020
250.	20.83	0.07	0.016	(0.083)	0.003	0.013
251.	20.92	0.07	0.016	(0.083)	0.003	0.013
252.	21.00	0.07	0.016	(0.083)	0.003	0.013
253.	21.08	0.10	0.024	(0.082)	0.004	0.020
254.	21.17	0.10	0.024	(0.082)	0.004	0.020
255.	21.25	0.10	0.024	(0.082)	0.004	0.020
256.	21.33	0.07	0.016	(0.081)	0.003	0.013
257.	21.42	0.07	0.016	(0.081)	0.003	0.013
258.	21.50	0.07	0.016	(0.081)	0.003	0.013
259.	21.58	0.10	0.024	(0.080)	0.004	0.020
260.	21.67	0.10	0.024	(0.080)	0.004	0.020

261.	21.75	0.10	0.024	(0.080)	0.004	0.020
262.	21.83	0.07	0.016	(0.080)	0.003	0.013
263.	21.92	0.07	0.016	(0.079)	0.003	0.013
264.	22.00	0.07	0.016	(0.079)	0.003	0.013
265.	22.08	0.10	0.024	(0.079)	0.004	0.020
266.	22.17	0.10	0.024	(0.079)	0.004	0.020
267.	22.25	0.10	0.024	(0.078)	0.004	0.020
268.	22.33	0.07	0.016	(0.078)	0.003	0.013
269.	22.42	0.07	0.016	(0.078)	0.003	0.013
270.	22.50	0.07	0.016	(0.078)	0.003	0.013
271.	22.58	0.07	0.016	(0.077)	0.003	0.013
272.	22.67	0.07	0.016	(0.077)	0.003	0.013
273.	22.75	0.07	0.016	(0.077)	0.003	0.013
274.	22.83	0.07	0.016	(0.077)	0.003	0.013
275.	22.92	0.07	0.016	(0.077)	0.003	0.013
276.	23.00	0.07	0.016	(0.076)	0.003	0.013
277.	23.08	0.07	0.016	(0.076)	0.003	0.013
278.	23.17	0.07	0.016	(0.076)	0.003	0.013
279.	23.25	0.07	0.016	(0.076)	0.003	0.013
280.	23.33	0.07	0.016	(0.076)	0.003	0.013
281.	23.42	0.07	0.016	(0.076)	0.003	0.013
282.	23.50	0.07	0.016	(0.075)	0.003	0.013
283.	23.58	0.07	0.016	(0.075)	0.003	0.013
284.	23.67	0.07	0.016	(0.075)	0.003	0.013
285.	23.75	0.07	0.016	(0.075)	0.003	0.013
286.	23.83	0.07	0.016	(0.075)	0.003	0.013
287.	23.92	0.07	0.016	(0.075)	0.003	0.013
288.	24.00	0.07	0.016	(0.075)	0.003	0.013

(Loss Rate Not Used)

Sum = 100.0

Sum = 20.1

Flood volume = Effective rainfall 1.67(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 1.0(Ac.Ft)

Total soil loss = 0.33(In)

Total soil loss = 0.197(Ac.Ft)

Total rainfall = 2.00(In)

Flood volume = 43698.8 Cubic Feet

Total soil loss = 8572.5 Cubic Feet

Peak flow rate of this hydrograph = 1.651(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						

0+ 5	0.0004	0.05	Q				
0+10	0.0010	0.09	Q				
0+15	0.0017	0.10	Q				
0+20	0.0025	0.12	Q				

0+25	0.0035	0.14	Q				
0+30	0.0045	0.15	Q				
0+35	0.0055	0.15	Q				
0+40	0.0065	0.15	Q				
0+45	0.0075	0.15	Q				
0+50	0.0087	0.17	Q				
0+55	0.0100	0.19	Q				
1+ 0	0.0114	0.19	Q				
1+ 5	0.0125	0.17	Q				
1+10	0.0135	0.15	Q				
1+15	0.0145	0.15	Q				
1+20	0.0156	0.15	Q				
1+25	0.0166	0.15	Q				
1+30	0.0176	0.15	Q				
1+35	0.0186	0.15	Q				
1+40	0.0196	0.15	Q				
1+45	0.0206	0.15	Q				
1+50	0.0218	0.17	Q				
1+55	0.0231	0.19	Q				
2+ 0	0.0244	0.19	Q				
2+ 5	0.0258	0.19	QV				
2+10	0.0271	0.19	QV				
2+15	0.0284	0.19	QV				
2+20	0.0298	0.19	QV				
2+25	0.0311	0.19	QV				
2+30	0.0324	0.19	QV				
2+35	0.0340	0.22	QV				
2+40	0.0356	0.24	QV				
2+45	0.0373	0.24	QV				
2+50	0.0390	0.24	QV				
2+55	0.0406	0.24	QV				
3+ 0	0.0423	0.24	QV				
3+ 5	0.0440	0.24	QV				
3+10	0.0456	0.24	QV				
3+15	0.0473	0.24	QV				
3+20	0.0490	0.24	QV				
3+25	0.0507	0.24	Q V				
3+30	0.0523	0.24	Q V				
3+35	0.0540	0.24	Q V				
3+40	0.0557	0.24	Q V				
3+45	0.0574	0.24	Q V				
3+50	0.0592	0.27	QV				
3+55	0.0612	0.29	QV				
4+ 0	0.0632	0.29	QV				
4+ 5	0.0652	0.29	QV				
4+10	0.0672	0.29	QV				
4+15	0.0692	0.29	QV				
4+20	0.0714	0.32	QV				
4+25	0.0737	0.34	QV				
4+30	0.0761	0.34	Q V				
4+35	0.0784	0.34	Q V				
4+40	0.0808	0.34	Q V				
4+45	0.0831	0.34	Q V				
4+50	0.0856	0.37	Q V				

4+55	0.0883	0.39	Q V				
5+ 0	0.0910	0.39	Q V				
5+ 5	0.0933	0.33	Q V				
5+10	0.0953	0.30	Q V				
5+15	0.0973	0.29	Q V				
5+20	0.0995	0.32	Q V				
5+25	0.1018	0.34	Q V				
5+30	0.1042	0.34	Q V				
5+35	0.1067	0.37	Q V				
5+40	0.1094	0.39	Q V				
5+45	0.1120	0.39	Q V				
5+50	0.1147	0.39	Q V				
5+55	0.1174	0.39	Q V				
6+ 0	0.1201	0.39	Q V				
6+ 5	0.1229	0.42	Q V				
6+10	0.1259	0.43	Q V				
6+15	0.1289	0.44	Q V				
6+20	0.1319	0.44	Q V				
6+25	0.1349	0.44	Q V				
6+30	0.1379	0.44	Q V				
6+35	0.1411	0.46	Q V				
6+40	0.1445	0.48	Q V				
6+45	0.1478	0.49	Q V				
6+50	0.1512	0.49	Q V				
6+55	0.1545	0.49	Q V				
7+ 0	0.1578	0.49	Q V				
7+ 5	0.1612	0.49	Q V				
7+10	0.1645	0.49	Q V				
7+15	0.1679	0.49	Q V				
7+20	0.1714	0.51	Q V				
7+25	0.1751	0.53	Q V				
7+30	0.1787	0.53	Q V				
7+35	0.1826	0.56	Q V				
7+40	0.1866	0.58	Q V				
7+45	0.1906	0.58	Q V				
7+50	0.1948	0.61	Q V				
7+55	0.1991	0.63	Q V				
8+ 0	0.2035	0.63	Q V				
8+ 5	0.2082	0.69	Q V				
8+10	0.2132	0.72	Q V				
8+15	0.2182	0.73	Q V				
8+20	0.2232	0.73	Q V				
8+25	0.2282	0.73	Q V				
8+30	0.2333	0.73	Q V				
8+35	0.2385	0.76	Q V				
8+40	0.2438	0.77	Q V				
8+45	0.2491	0.78	Q V				
8+50	0.2547	0.80	Q V				
8+55	0.2603	0.82	Q V				
9+ 0	0.2660	0.83	Q V				
9+ 5	0.2721	0.88	Q V				
9+10	0.2784	0.92	Q V				
9+15	0.2848	0.92	Q V				
9+20	0.2913	0.95	Q V				

9+25	0.2980	0.97	Q	V			
9+30	0.3047	0.97	Q	V			
9+35	0.3115	1.00	Q	V			
9+40	0.3185	1.02	Q	V			
9+45	0.3256	1.02	Q	V			
9+50	0.3328	1.05	Q	V			
9+55	0.3401	1.07	Q	V			
10+ 0	0.3475	1.07	Q	V			
10+ 5	0.3535	0.88	Q	V			
10+10	0.3587	0.75	Q	V			
10+15	0.3637	0.73	Q	V			
10+20	0.3687	0.73	Q	V			
10+25	0.3737	0.73	Q	V			
10+30	0.3787	0.73	Q	V			
10+35	0.3847	0.87	Q	V			
10+40	0.3913	0.96	Q	V			
10+45	0.3979	0.97	Q	V			
10+50	0.4046	0.97	Q	V			
10+55	0.4113	0.97	Q	V			
11+ 0	0.4180	0.97	Q	V			
11+ 5	0.4245	0.94	Q	V			
11+10	0.4309	0.93	Q	V			
11+15	0.4372	0.92	Q	V			
11+20	0.4436	0.92	Q	V			
11+25	0.4499	0.92	Q	V			
11+30	0.4563	0.92	Q	V			
11+35	0.4623	0.87	Q	V			
11+40	0.4680	0.83	Q	V			
11+45	0.4737	0.83	Q	V			
11+50	0.4796	0.85	Q	V			
11+55	0.4856	0.87	Q	V			
12+ 0	0.4916	0.87	Q	V			
12+ 5	0.4989	1.07	Q	V			
12+10	0.5071	1.19	Q	V			
12+15	0.5155	1.21	Q	V			
12+20	0.5240	1.24	Q	V			
12+25	0.5327	1.26	Q	V			
12+30	0.5414	1.26	Q	V			
12+35	0.5505	1.32	Q	V			
12+40	0.5598	1.35	Q	V			
12+45	0.5692	1.36	Q	V			
12+50	0.5787	1.39	Q	V			
12+55	0.5884	1.41	Q	V			
13+ 0	0.5981	1.41	Q	V			
13+ 5	0.6087	1.55	Q	V			
13+10	0.6200	1.64	Q	V			
13+15	0.6314	1.65	Q	V			
13+20	0.6427	1.65	Q	V			
13+25	0.6541	1.65	Q	V			
13+30	0.6655	1.65	Q	V			
13+35	0.6748	1.35	Q	V			
13+40	0.6827	1.15	Q	V			
13+45	0.6904	1.12	Q	V			
13+50	0.6981	1.12	Q	V			

13+55	0.7058	1.12		Q			V		
14+ 0	0.7135	1.12		Q			V		
14+ 5	0.7219	1.23		Q			V		
14+10	0.7308	1.30		Q			V		
14+15	0.7399	1.31		Q			V		
14+20	0.7487	1.28		Q			V		
14+25	0.7574	1.27		Q			V		
14+30	0.7661	1.26		Q			V		
14+35	0.7748	1.26		Q			V		
14+40	0.7835	1.26		Q			V		
14+45	0.7922	1.26		Q			V		
14+50	0.8007	1.23		Q			V		
14+55	0.8091	1.22		Q			V		
15+ 0	0.8175	1.21		Q			V		
15+ 5	0.8256	1.19		Q			V		
15+10	0.8337	1.17		Q			V		
15+15	0.8417	1.17		Q			V		
15+20	0.8495	1.14		Q			V		
15+25	0.8572	1.12		Q			V		
15+30	0.8649	1.12		Q			V		
15+35	0.8719	1.01		Q			V		
15+40	0.8783	0.93		Q			V		
15+45	0.8847	0.92		Q			V		
15+50	0.8910	0.92		Q			V		
15+55	0.8974	0.92		Q			V		
16+ 0	0.9037	0.92		Q			V		
16+ 5	0.9072	0.51		Q			V		
16+10	0.9089	0.24	Q				V		
16+15	0.9102	0.19	Q				V		
16+20	0.9116	0.19	Q				V		
16+25	0.9129	0.19	Q				V		
16+30	0.9142	0.19	Q				V		
16+35	0.9154	0.17	Q				V		
16+40	0.9164	0.15	Q				V		
16+45	0.9174	0.15	Q				V		
16+50	0.9184	0.15	Q				V		
16+55	0.9194	0.15	Q				V		
17+ 0	0.9204	0.15	Q				V		
17+ 5	0.9218	0.20	Q				V		
17+10	0.9234	0.24	Q				V		
17+15	0.9251	0.24	Q				V		
17+20	0.9268	0.24	Q				V		
17+25	0.9285	0.24	Q				V		
17+30	0.9301	0.24	Q				V		
17+35	0.9318	0.24	Q				V		
17+40	0.9335	0.24	Q				V		
17+45	0.9351	0.24	Q				V		
17+50	0.9366	0.22	Q				V		
17+55	0.9380	0.20	Q				V		
18+ 0	0.9393	0.19	Q				V		
18+ 5	0.9407	0.19	Q				V		
18+10	0.9420	0.19	Q				V		
18+15	0.9433	0.19	Q				V		
18+20	0.9447	0.19	Q				V		

18+25	0.9460	0.19	Q				V	
18+30	0.9473	0.19	Q				V	
18+35	0.9485	0.17	Q				V	
18+40	0.9495	0.15	Q				V	
18+45	0.9505	0.15	Q				V	
18+50	0.9513	0.12	Q				V	
18+55	0.9520	0.10	Q				V	
19+ 0	0.9527	0.10	Q				V	
19+ 5	0.9536	0.12	Q				V	
19+10	0.9545	0.14	Q				V	
19+15	0.9555	0.15	Q				V	
19+20	0.9567	0.17	Q				V	
19+25	0.9580	0.19	Q				V	
19+30	0.9594	0.19	Q				V	
19+35	0.9605	0.17	Q				V	
19+40	0.9616	0.15	Q				V	
19+45	0.9626	0.15	Q				V	
19+50	0.9634	0.12	Q				V	
19+55	0.9641	0.10	Q				V	
20+ 0	0.9647	0.10	Q				V	
20+ 5	0.9656	0.12	Q				V	
20+10	0.9666	0.14	Q				V	
20+15	0.9676	0.15	Q				V	
20+20	0.9686	0.15	Q				V	
20+25	0.9696	0.15	Q				V	
20+30	0.9706	0.15	Q				V	
20+35	0.9716	0.15	Q				V	
20+40	0.9726	0.15	Q				V	
20+45	0.9736	0.15	Q				V	
20+50	0.9744	0.12	Q				V	
20+55	0.9751	0.10	Q				V	
21+ 0	0.9758	0.10	Q				V	
21+ 5	0.9766	0.12	Q				V	
21+10	0.9776	0.14	Q				V	
21+15	0.9786	0.15	Q				V	
21+20	0.9794	0.12	Q				V	
21+25	0.9801	0.10	Q				V	
21+30	0.9808	0.10	Q				V	
21+35	0.9816	0.12	Q				V	
21+40	0.9826	0.14	Q				V	
21+45	0.9836	0.15	Q				V	
21+50	0.9844	0.12	Q				V	
21+55	0.9851	0.10	Q				V	
22+ 0	0.9858	0.10	Q				V	
22+ 5	0.9867	0.12	Q				V	
22+10	0.9876	0.14	Q				V	
22+15	0.9886	0.15	Q				V	
22+20	0.9895	0.12	Q				V	
22+25	0.9901	0.10	Q				V	
22+30	0.9908	0.10	Q				V	
22+35	0.9915	0.10	Q				V	
22+40	0.9922	0.10	Q				V	
22+45	0.9928	0.10	Q				V	
22+50	0.9935	0.10	Q				V	

22+55	0.9942	0.10	Q				V
23+ 0	0.9948	0.10	Q				V
23+ 5	0.9955	0.10	Q				V
23+10	0.9962	0.10	Q				V
23+15	0.9968	0.10	Q				V
23+20	0.9975	0.10	Q				V
23+25	0.9982	0.10	Q				V
23+30	0.9988	0.10	Q				V
23+35	0.9995	0.10	Q				V
23+40	1.0002	0.10	Q				V
23+45	1.0008	0.10	Q				V
23+50	1.0015	0.10	Q				V
23+55	1.0022	0.10	Q				V
24+ 0	1.0029	0.10	Q				V
24+ 5	1.0031	0.04	Q				V
24+10	1.0032	0.01	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP15.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
5 YEAR STORM AMC I

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.
Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	0.50	3.60

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	1.30	9.36

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.687 (In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.687 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920

Total Area Entered = 7.20 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.920	0.150	1.000	0.150
Sum (F) =						

0.150

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.164

Slope of intensity-duration curve for a 1 hour storm = 0.5000

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	56.537
2	0.167	597.229	37.205

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	5.0	10.0	15.0
20.0							
0+ 5	0.0082	1.19	V Q				
0+10	0.0220	2.00	VQ				
0+15	0.0381	2.35	Q				
0+20	0.0552	2.48	Q V				
0+25	0.0740	2.73	Q V				
0+30	0.0952	3.08	Q V				
0+35	0.1192	3.49	O	V			

0+40	0.1469	4.02		Q		V			
0+45	0.1839	5.38			Q		V		
0+50	0.2655	11.84						Q	V
0+55	0.3233	8.40				Q			V
1+ 0	0.3488	3.70		Q					V
1+ 5	0.3567	1.14		Q					V
1+10	0.3578	0.16	Q						V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP35.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
5 YEAR STORM AMC I

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.
Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	0.85	6.12

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.00	14.40

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.119 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.119 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.920	0.150	1.000	0.150
Sum (F) =						

0.150

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	56.537
2	0.167	597.229	37.205
3	0.250	895.844	6.258
			Sum =

100.000 Sum= 7.256

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.175	(0.150)	0.029	0.146
2.	0.17	1.30	0.175	(0.150)	0.029	0.146
3.	0.25	1.10	0.148	(0.150)	0.024	0.124
4.	0.33	1.50	0.201	(0.150)	0.033	0.168
5.	0.42	1.50	0.201	(0.150)	0.033	0.168
6.	0.50	1.80	0.242	(0.150)	0.040	0.202
7.	0.58	1.50	0.201	(0.150)	0.033	0.168
8.	0.67	1.80	0.242	(0.150)	0.040	0.202
9.	0.75	1.80	0.242	(0.150)	0.040	0.202
10.	0.83	1.50	0.201	(0.150)	0.033	0.168
11.	0.92	1.60	0.215	(0.150)	0.035	0.180
12.	1.00	1.80	0.242	(0.150)	0.040	0.202
13.	1.08	2.20	0.296	(0.150)	0.048	0.247
14.	1.17	2.20	0.296	(0.150)	0.048	0.247
15.	1.25	2.20	0.296	(0.150)	0.048	0.247
16.	1.33	2.00	0.269	(0.150)	0.044	0.225
17.	1.42	2.60	0.349	(0.150)	0.057	0.292
18.	1.50	2.70	0.363	(0.150)	0.059	0.303
19.	1.58	2.40	0.322	(0.150)	0.053	0.269
20.	1.67	2.70	0.363	(0.150)	0.059	0.303
21.	1.75	3.30	0.443	(0.150)	0.073	0.371
22.	1.83	3.10	0.416	(0.150)	0.068	0.348
23.	1.92	2.90	0.390	(0.150)	0.064	0.326
24.	2.00	3.00	0.403	(0.150)	0.066	0.337
25.	2.08	3.10	0.416	(0.150)	0.068	0.348
26.	2.17	4.20	0.564	(0.150)	0.093	0.472
27.	2.25	5.00	0.672	(0.150)	0.110	0.561
28.	2.33	3.50	0.470	(0.150)	0.077	0.393
29.	2.42	6.80	0.913	0.150	(0.150)	0.764
30.	2.50	7.30	0.981	0.150	(0.161)	0.831
31.	2.58	8.20	1.101	0.150	(0.181)	0.952
32.	2.67	5.90	0.792	(0.150)	0.130	0.663
33.	2.75	2.00	0.269	(0.150)	0.044	0.225
34.	2.83	1.80	0.242	(0.150)	0.040	0.202
35.	2.92	1.80	0.242	(0.150)	0.040	0.202
36.	3.00	0.60	0.081	(0.150)	0.013	0.067

(Loss Rate Not Used)

Sum = 100.0

Sum = 11.3

Flood volume = Effective rainfall 0.94(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 0.6(Ac.Ft)

Total soil loss = 0.18(In)

Total soil loss = 0.108(Ac.Ft)

Total rainfall = 1.12(In)

Flood volume = 24548.6 Cubic Feet

Total soil loss = 4706.1 Cubic Feet

Peak flow rate of this hydrograph = 6.497(CFS)

+++++

3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0041	0.60	V Q			
0+10	0.0110	0.99	V Q			
0+15	0.0176	0.97	V Q			
0+20	0.0251	1.09	V Q			
0+25	0.0334	1.20	V Q			
0+30	0.0428	1.36	V Q			
0+35	0.0519	1.31	V Q			
0+40	0.0613	1.38	VQ			
0+45	0.0713	1.45	Q			
0+50	0.0805	1.33	Q			
0+55	0.0893	1.28	QV			
1+ 0	0.0989	1.39	Q V			
1+ 5	0.1102	1.64	QV			
1+10	0.1224	1.77	QV			
1+15	0.1348	1.79	Q V			
1+20	0.1465	1.70	Q V			
1+25	0.1597	1.92	Q V			
1+30	0.1744	2.14	Q V			
1+35	0.1886	2.06	Q V			
1+40	0.2031	2.11	Q V			
1+45	0.2201	2.46	Q V			
1+50	0.2378	2.57	Q V			
1+55	0.2546	2.45	Q V			
2+ 0	0.2713	2.42	Q V			
2+ 5	0.2884	2.49	Q V			
2+10	0.3093	3.03	Q	V		
2+15	0.3350	3.74	Q	V		
2+20	0.3580	3.34	Q	V		
2+25	0.3887	4.45	Q	V		
2+30	0.4276	5.65	Q	V		
2+35	0.4723	6.50	Q	V		
2+40	0.5114	5.67	Q	V		
2+45	0.5330	3.14	Q	V		
2+50	0.5450	1.74	Q	V		
2+55	0.5552	1.48	Q	V		
3+ 0	0.5615	0.91	Q	V		
3+ 5	0.5633	0.27	Q	V		
3+10	0.5636	0.03	Q	V		

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP65.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
5 YEAR STORM AMC I

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.
Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	1.20	8.64

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.90	20.88

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.200 (In)
Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 1.598 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.598 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.920	0.150	1.000	0.150
Sum (F) =						

0.150

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454
			Sum =

100.000 Sum= 7.256

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1. 0.08	0.50	0.096	(0.150)	0.016	0.080
2. 0.17	0.60	0.115	(0.150)	0.019	0.096
3. 0.25	0.60	0.115	(0.150)	0.019	0.096
4. 0.33	0.60	0.115	(0.150)	0.019	0.096
5. 0.42	0.60	0.115	(0.150)	0.019	0.096
6. 0.50	0.70	0.134	(0.150)	0.022	0.112
7. 0.58	0.70	0.134	(0.150)	0.022	0.112
8. 0.67	0.70	0.134	(0.150)	0.022	0.112
9. 0.75	0.70	0.134	(0.150)	0.022	0.112
10. 0.83	0.70	0.134	(0.150)	0.022	0.112
11. 0.92	0.70	0.134	(0.150)	0.022	0.112
12. 1.00	0.80	0.153	(0.150)	0.025	0.128
13. 1.08	0.80	0.153	(0.150)	0.025	0.128
14. 1.17	0.80	0.153	(0.150)	0.025	0.128
15. 1.25	0.80	0.153	(0.150)	0.025	0.128
16. 1.33	0.80	0.153	(0.150)	0.025	0.128
17. 1.42	0.80	0.153	(0.150)	0.025	0.128
18. 1.50	0.80	0.153	(0.150)	0.025	0.128
19. 1.58	0.80	0.153	(0.150)	0.025	0.128
20. 1.67	0.80	0.153	(0.150)	0.025	0.128
21. 1.75	0.80	0.153	(0.150)	0.025	0.128
22. 1.83	0.80	0.153	(0.150)	0.025	0.128
23. 1.92	0.80	0.153	(0.150)	0.025	0.128
24. 2.00	0.90	0.173	(0.150)	0.028	0.144
25. 2.08	0.80	0.153	(0.150)	0.025	0.128
26. 2.17	0.90	0.173	(0.150)	0.028	0.144
27. 2.25	0.90	0.173	(0.150)	0.028	0.144
28. 2.33	0.90	0.173	(0.150)	0.028	0.144
29. 2.42	0.90	0.173	(0.150)	0.028	0.144
30. 2.50	0.90	0.173	(0.150)	0.028	0.144
31. 2.58	0.90	0.173	(0.150)	0.028	0.144
32. 2.67	0.90	0.173	(0.150)	0.028	0.144
33. 2.75	1.00	0.192	(0.150)	0.031	0.160
34. 2.83	1.00	0.192	(0.150)	0.031	0.160
35. 2.92	1.00	0.192	(0.150)	0.031	0.160
36. 3.00	1.00	0.192	(0.150)	0.031	0.160
37. 3.08	1.00	0.192	(0.150)	0.031	0.160
38. 3.17	1.10	0.211	(0.150)	0.035	0.176
39. 3.25	1.10	0.211	(0.150)	0.035	0.176
40. 3.33	1.10	0.211	(0.150)	0.035	0.176
41. 3.42	1.20	0.230	(0.150)	0.038	0.192
42. 3.50	1.30	0.249	(0.150)	0.041	0.208
43. 3.58	1.40	0.268	(0.150)	0.044	0.224
44. 3.67	1.40	0.268	(0.150)	0.044	0.224

45.	3.75	1.50	0.288	(0.150)	0.047	0.240
46.	3.83	1.50	0.288	(0.150)	0.047	0.240
47.	3.92	1.60	0.307	(0.150)	0.050	0.257
48.	4.00	1.60	0.307	(0.150)	0.050	0.257
49.	4.08	1.70	0.326	(0.150)	0.053	0.273
50.	4.17	1.80	0.345	(0.150)	0.057	0.289
51.	4.25	1.90	0.364	(0.150)	0.060	0.305
52.	4.33	2.00	0.384	(0.150)	0.063	0.321
53.	4.42	2.10	0.403	(0.150)	0.066	0.337
54.	4.50	2.10	0.403	(0.150)	0.066	0.337
55.	4.58	2.20	0.422	(0.150)	0.069	0.353
56.	4.67	2.30	0.441	(0.150)	0.072	0.369
57.	4.75	2.40	0.460	(0.150)	0.075	0.385
58.	4.83	2.40	0.460	(0.150)	0.075	0.385
59.	4.92	2.50	0.479	(0.150)	0.079	0.401
60.	5.00	2.60	0.499	(0.150)	0.082	0.417
61.	5.08	3.10	0.595	(0.150)	0.097	0.497
62.	5.17	3.60	0.690	(0.150)	0.113	0.577
63.	5.25	3.90	0.748	(0.150)	0.123	0.625
64.	5.33	4.20	0.805	(0.150)	0.132	0.673
65.	5.42	4.70	0.901	(0.150)	0.148	0.754
66.	5.50	5.60	1.074	0.150 (0.176)		0.924
67.	5.58	1.90	0.364	(0.150)	0.060	0.305
68.	5.67	0.90	0.173	(0.150)	0.028	0.144
69.	5.75	0.60	0.115	(0.150)	0.019	0.096
70.	5.83	0.50	0.096	(0.150)	0.016	0.080
71.	5.92	0.30	0.058	(0.150)	0.009	0.048
72.	6.00	0.20	0.038	(0.150)	0.006	0.032

(Loss Rate Not Used)

Sum = 100.0

Sum = 16.1

Flood volume = Effective rainfall 1.34(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 0.8(Ac.Ft)

Total soil loss = 0.26(In)

Total soil loss = 0.156(Ac.Ft)

Total rainfall = 1.60(In)

Flood volume = 34976.5 Cubic Feet

Total soil loss = 6792.6 Cubic Feet

Peak flow rate of this hydrograph = 6.135(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

10.0

0+ 5	0.0023	0.33	VQ				
0+10	0.0065	0.61	V Q				
0+15	0.0112	0.69	V Q				
0+20	0.0160	0.70	V Q				

0+25	0.0209	0.70	VQ				
0+30	0.0261	0.76	V Q				
0+35	0.0317	0.81	V Q				
0+40	0.0373	0.81	V Q				
0+45	0.0429	0.81	VQ				
0+50	0.0485	0.81	VQ				
0+55	0.0541	0.81	VQ				
1+ 0	0.0602	0.88	VQ				
1+ 5	0.0666	0.92	Q				
1+10	0.0730	0.93	Q				
1+15	0.0794	0.93	Q				
1+20	0.0858	0.93	QV				
1+25	0.0922	0.93	QV				
1+30	0.0986	0.93	QV				
1+35	0.1050	0.93	Q V				
1+40	0.1114	0.93	Q V				
1+45	0.1179	0.93	Q V				
1+50	0.1243	0.93	Q V				
1+55	0.1307	0.93	Q V				
2+ 0	0.1375	1.00	Q V				
2+ 5	0.1443	0.97	Q V				
2+10	0.1512	1.00	Q V				
2+15	0.1583	1.04	Q V				
2+20	0.1656	1.05	Q V				
2+25	0.1728	1.05	Q V				
2+30	0.1800	1.05	Q V				
2+35	0.1872	1.05	Q V				
2+40	0.1944	1.05	Q V				
2+45	0.2021	1.11	Q V				
2+50	0.2100	1.16	Q V				
2+55	0.2181	1.16	Q V				
3+ 0	0.2261	1.16	Q V				
3+ 5	0.2341	1.16	Q V				
3+10	0.2426	1.23	Q V				
3+15	0.2513	1.27	Q V				
3+20	0.2602	1.28	Q V				
3+25	0.2694	1.35	Q V				
3+30	0.2794	1.46	Q V				
3+35	0.2903	1.57	Q V				
3+40	0.3014	1.62	Q V				
3+45	0.3131	1.70	Q V				
3+50	0.3251	1.74	Q V				
3+55	0.3376	1.81	Q V				
4+ 0	0.3503	1.86	Q V				
4+ 5	0.3636	1.93	Q V				
4+10	0.3777	2.04	Q V				
4+15	0.3925	2.15	Q V				
4+20	0.4081	2.27	Q V				
4+25	0.4246	2.39	Q V				
4+30	0.4413	2.44	Q V				
4+35	0.4586	2.51	Q V				
4+40	0.4767	2.62	Q V				
4+45	0.4955	2.74	Q V				
4+50	0.5147	2.79	Q V				

4+55	0.5344	2.86			Q		V			
5+ 0	0.5548	2.97			Q		V			
5+ 5	0.5779	3.35			Q		V			
5+10	0.6048	3.90			Q		V			
5+15	0.6347	4.35			Q		V			
5+20	0.6672	4.72			Q		V			
5+25	0.7030	5.20			Q		V			
5+30	0.7452	6.13			Q		V			
5+35	0.7734	4.09			Q		V			
5+40	0.7860	1.83		Q			V			
5+45	0.7924	0.92		Q			V			
5+50	0.7969	0.65		Q			V			
5+55	0.8000	0.46		Q			V			
6+ 0	0.8021	0.30		Q			V			
6+ 5	0.8028	0.11		Q			V			
6+10	0.8029	0.01		Q			V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP245.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
5 YEAR STORM AMC I

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.
Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.00	14.40

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	5.90	42.48

STORM EVENT (YEAR) = 5.00
 Area Averaged 2-Year Rainfall = 2.000 (In)
 Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 2.913 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.913 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.920	0.150	1.000	0.150
Sum (F) =						

0.150

Area averaged mean soil loss (F) (In/Hr) = 0.150
 Minimum soil loss rate ((In/Hr)) = 0.075
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.164

-

U n i t H y d r o g r a p h VALLEY S-Curve

 Unit Hydrograph Data

-

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454
Sum =			

100.000 Sum= 7.256

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1. 0.08	0.07	0.023	(0.265)	0.004	0.019
2. 0.17	0.07	0.023	(0.264)	0.004	0.019
3. 0.25	0.07	0.023	(0.263)	0.004	0.019
4. 0.33	0.10	0.035	(0.262)	0.006	0.029
5. 0.42	0.10	0.035	(0.261)	0.006	0.029
6. 0.50	0.10	0.035	(0.260)	0.006	0.029
7. 0.58	0.10	0.035	(0.259)	0.006	0.029
8. 0.67	0.10	0.035	(0.258)	0.006	0.029
9. 0.75	0.10	0.035	(0.257)	0.006	0.029
10. 0.83	0.13	0.047	(0.256)	0.008	0.039
11. 0.92	0.13	0.047	(0.255)	0.008	0.039
12. 1.00	0.13	0.047	(0.254)	0.008	0.039
13. 1.08	0.10	0.035	(0.253)	0.006	0.029
14. 1.17	0.10	0.035	(0.252)	0.006	0.029
15. 1.25	0.10	0.035	(0.251)	0.006	0.029
16. 1.33	0.10	0.035	(0.250)	0.006	0.029
17. 1.42	0.10	0.035	(0.249)	0.006	0.029
18. 1.50	0.10	0.035	(0.248)	0.006	0.029
19. 1.58	0.10	0.035	(0.247)	0.006	0.029
20. 1.67	0.10	0.035	(0.246)	0.006	0.029
21. 1.75	0.10	0.035	(0.245)	0.006	0.029
22. 1.83	0.13	0.047	(0.244)	0.008	0.039
23. 1.92	0.13	0.047	(0.243)	0.008	0.039
24. 2.00	0.13	0.047	(0.242)	0.008	0.039
25. 2.08	0.13	0.047	(0.241)	0.008	0.039
26. 2.17	0.13	0.047	(0.240)	0.008	0.039
27. 2.25	0.13	0.047	(0.239)	0.008	0.039
28. 2.33	0.13	0.047	(0.238)	0.008	0.039
29. 2.42	0.13	0.047	(0.237)	0.008	0.039
30. 2.50	0.13	0.047	(0.236)	0.008	0.039
31. 2.58	0.17	0.058	(0.235)	0.010	0.049
32. 2.67	0.17	0.058	(0.235)	0.010	0.049
33. 2.75	0.17	0.058	(0.234)	0.010	0.049
34. 2.83	0.17	0.058	(0.233)	0.010	0.049
35. 2.92	0.17	0.058	(0.232)	0.010	0.049
36. 3.00	0.17	0.058	(0.231)	0.010	0.049
37. 3.08	0.17	0.058	(0.230)	0.010	0.049
38. 3.17	0.17	0.058	(0.229)	0.010	0.049
39. 3.25	0.17	0.058	(0.228)	0.010	0.049
40. 3.33	0.17	0.058	(0.227)	0.010	0.049
41. 3.42	0.17	0.058	(0.226)	0.010	0.049
42. 3.50	0.17	0.058	(0.225)	0.010	0.049
43. 3.58	0.17	0.058	(0.224)	0.010	0.049
44. 3.67	0.17	0.058	(0.223)	0.010	0.049

45.	3.75	0.17	0.058	(0.222)	0.010	0.049
46.	3.83	0.20	0.070	(0.221)	0.011	0.058
47.	3.92	0.20	0.070	(0.220)	0.011	0.058
48.	4.00	0.20	0.070	(0.219)	0.011	0.058
49.	4.08	0.20	0.070	(0.218)	0.011	0.058
50.	4.17	0.20	0.070	(0.217)	0.011	0.058
51.	4.25	0.20	0.070	(0.217)	0.011	0.058
52.	4.33	0.23	0.082	(0.216)	0.013	0.068
53.	4.42	0.23	0.082	(0.215)	0.013	0.068
54.	4.50	0.23	0.082	(0.214)	0.013	0.068
55.	4.58	0.23	0.082	(0.213)	0.013	0.068
56.	4.67	0.23	0.082	(0.212)	0.013	0.068
57.	4.75	0.23	0.082	(0.211)	0.013	0.068
58.	4.83	0.27	0.093	(0.210)	0.015	0.078
59.	4.92	0.27	0.093	(0.209)	0.015	0.078
60.	5.00	0.27	0.093	(0.208)	0.015	0.078
61.	5.08	0.20	0.070	(0.207)	0.011	0.058
62.	5.17	0.20	0.070	(0.207)	0.011	0.058
63.	5.25	0.20	0.070	(0.206)	0.011	0.058
64.	5.33	0.23	0.082	(0.205)	0.013	0.068
65.	5.42	0.23	0.082	(0.204)	0.013	0.068
66.	5.50	0.23	0.082	(0.203)	0.013	0.068
67.	5.58	0.27	0.093	(0.202)	0.015	0.078
68.	5.67	0.27	0.093	(0.201)	0.015	0.078
69.	5.75	0.27	0.093	(0.200)	0.015	0.078
70.	5.83	0.27	0.093	(0.199)	0.015	0.078
71.	5.92	0.27	0.093	(0.198)	0.015	0.078
72.	6.00	0.27	0.093	(0.198)	0.015	0.078
73.	6.08	0.30	0.105	(0.197)	0.017	0.088
74.	6.17	0.30	0.105	(0.196)	0.017	0.088
75.	6.25	0.30	0.105	(0.195)	0.017	0.088
76.	6.33	0.30	0.105	(0.194)	0.017	0.088
77.	6.42	0.30	0.105	(0.193)	0.017	0.088
78.	6.50	0.30	0.105	(0.192)	0.017	0.088
79.	6.58	0.33	0.117	(0.192)	0.019	0.097
80.	6.67	0.33	0.117	(0.191)	0.019	0.097
81.	6.75	0.33	0.117	(0.190)	0.019	0.097
82.	6.83	0.33	0.117	(0.189)	0.019	0.097
83.	6.92	0.33	0.117	(0.188)	0.019	0.097
84.	7.00	0.33	0.117	(0.187)	0.019	0.097
85.	7.08	0.33	0.117	(0.186)	0.019	0.097
86.	7.17	0.33	0.117	(0.186)	0.019	0.097
87.	7.25	0.33	0.117	(0.185)	0.019	0.097
88.	7.33	0.37	0.128	(0.184)	0.021	0.107
89.	7.42	0.37	0.128	(0.183)	0.021	0.107
90.	7.50	0.37	0.128	(0.182)	0.021	0.107
91.	7.58	0.40	0.140	(0.181)	0.023	0.117
92.	7.67	0.40	0.140	(0.180)	0.023	0.117
93.	7.75	0.40	0.140	(0.180)	0.023	0.117
94.	7.83	0.43	0.151	(0.179)	0.025	0.127
95.	7.92	0.43	0.151	(0.178)	0.025	0.127
96.	8.00	0.43	0.151	(0.177)	0.025	0.127
97.	8.08	0.50	0.175	(0.176)	0.029	0.146
98.	8.17	0.50	0.175	(0.176)	0.029	0.146

99.	8.25	0.50	0.175	(0.175)	0.029	0.146
100.	8.33	0.50	0.175	(0.174)	0.029	0.146
101.	8.42	0.50	0.175	(0.173)	0.029	0.146
102.	8.50	0.50	0.175	(0.172)	0.029	0.146
103.	8.58	0.53	0.186	(0.171)	0.031	0.156
104.	8.67	0.53	0.186	(0.171)	0.031	0.156
105.	8.75	0.53	0.186	(0.170)	0.031	0.156
106.	8.83	0.57	0.198	(0.169)	0.032	0.166
107.	8.92	0.57	0.198	(0.168)	0.032	0.166
108.	9.00	0.57	0.198	(0.167)	0.032	0.166
109.	9.08	0.63	0.221	(0.167)	0.036	0.185
110.	9.17	0.63	0.221	(0.166)	0.036	0.185
111.	9.25	0.63	0.221	(0.165)	0.036	0.185
112.	9.33	0.67	0.233	(0.164)	0.038	0.195
113.	9.42	0.67	0.233	(0.164)	0.038	0.195
114.	9.50	0.67	0.233	(0.163)	0.038	0.195
115.	9.58	0.70	0.245	(0.162)	0.040	0.205
116.	9.67	0.70	0.245	(0.161)	0.040	0.205
117.	9.75	0.70	0.245	(0.160)	0.040	0.205
118.	9.83	0.73	0.256	(0.160)	0.042	0.214
119.	9.92	0.73	0.256	(0.159)	0.042	0.214
120.	10.00	0.73	0.256	(0.158)	0.042	0.214
121.	10.08	0.50	0.175	(0.157)	0.029	0.146
122.	10.17	0.50	0.175	(0.157)	0.029	0.146
123.	10.25	0.50	0.175	(0.156)	0.029	0.146
124.	10.33	0.50	0.175	(0.155)	0.029	0.146
125.	10.42	0.50	0.175	(0.154)	0.029	0.146
126.	10.50	0.50	0.175	(0.154)	0.029	0.146
127.	10.58	0.67	0.233	(0.153)	0.038	0.195
128.	10.67	0.67	0.233	(0.152)	0.038	0.195
129.	10.75	0.67	0.233	(0.151)	0.038	0.195
130.	10.83	0.67	0.233	(0.151)	0.038	0.195
131.	10.92	0.67	0.233	(0.150)	0.038	0.195
132.	11.00	0.67	0.233	(0.149)	0.038	0.195
133.	11.08	0.63	0.221	(0.148)	0.036	0.185
134.	11.17	0.63	0.221	(0.148)	0.036	0.185
135.	11.25	0.63	0.221	(0.147)	0.036	0.185
136.	11.33	0.63	0.221	(0.146)	0.036	0.185
137.	11.42	0.63	0.221	(0.145)	0.036	0.185
138.	11.50	0.63	0.221	(0.145)	0.036	0.185
139.	11.58	0.57	0.198	(0.144)	0.032	0.166
140.	11.67	0.57	0.198	(0.143)	0.032	0.166
141.	11.75	0.57	0.198	(0.143)	0.032	0.166
142.	11.83	0.60	0.210	(0.142)	0.034	0.175
143.	11.92	0.60	0.210	(0.141)	0.034	0.175
144.	12.00	0.60	0.210	(0.140)	0.034	0.175
145.	12.08	0.83	0.291	(0.140)	0.048	0.244
146.	12.17	0.83	0.291	(0.139)	0.048	0.244
147.	12.25	0.83	0.291	(0.138)	0.048	0.244
148.	12.33	0.87	0.303	(0.138)	0.050	0.253
149.	12.42	0.87	0.303	(0.137)	0.050	0.253
150.	12.50	0.87	0.303	(0.136)	0.050	0.253
151.	12.58	0.93	0.326	(0.136)	0.054	0.273
152.	12.67	0.93	0.326	(0.135)	0.054	0.273

153.	12.75	0.93	0.326	(0.134)	0.054	0.273
154.	12.83	0.97	0.338	(0.134)	0.055	0.283
155.	12.92	0.97	0.338	(0.133)	0.055	0.283
156.	13.00	0.97	0.338	(0.132)	0.055	0.283
157.	13.08	1.13	0.396	(0.132)	0.065	0.331
158.	13.17	1.13	0.396	(0.131)	0.065	0.331
159.	13.25	1.13	0.396	(0.130)	0.065	0.331
160.	13.33	1.13	0.396	(0.130)	0.065	0.331
161.	13.42	1.13	0.396	(0.129)	0.065	0.331
162.	13.50	1.13	0.396	(0.128)	0.065	0.331
163.	13.58	0.77	0.268	(0.128)	0.044	0.224
164.	13.67	0.77	0.268	(0.127)	0.044	0.224
165.	13.75	0.77	0.268	(0.126)	0.044	0.224
166.	13.83	0.77	0.268	(0.126)	0.044	0.224
167.	13.92	0.77	0.268	(0.125)	0.044	0.224
168.	14.00	0.77	0.268	(0.124)	0.044	0.224
169.	14.08	0.90	0.315	(0.124)	0.052	0.263
170.	14.17	0.90	0.315	(0.123)	0.052	0.263
171.	14.25	0.90	0.315	(0.122)	0.052	0.263
172.	14.33	0.87	0.303	(0.122)	0.050	0.253
173.	14.42	0.87	0.303	(0.121)	0.050	0.253
174.	14.50	0.87	0.303	(0.121)	0.050	0.253
175.	14.58	0.87	0.303	(0.120)	0.050	0.253
176.	14.67	0.87	0.303	(0.119)	0.050	0.253
177.	14.75	0.87	0.303	(0.119)	0.050	0.253
178.	14.83	0.83	0.291	(0.118)	0.048	0.244
179.	14.92	0.83	0.291	(0.118)	0.048	0.244
180.	15.00	0.83	0.291	(0.117)	0.048	0.244
181.	15.08	0.80	0.280	(0.116)	0.046	0.234
182.	15.17	0.80	0.280	(0.116)	0.046	0.234
183.	15.25	0.80	0.280	(0.115)	0.046	0.234
184.	15.33	0.77	0.268	(0.115)	0.044	0.224
185.	15.42	0.77	0.268	(0.114)	0.044	0.224
186.	15.50	0.77	0.268	(0.113)	0.044	0.224
187.	15.58	0.63	0.221	(0.113)	0.036	0.185
188.	15.67	0.63	0.221	(0.112)	0.036	0.185
189.	15.75	0.63	0.221	(0.112)	0.036	0.185
190.	15.83	0.63	0.221	(0.111)	0.036	0.185
191.	15.92	0.63	0.221	(0.111)	0.036	0.185
192.	16.00	0.63	0.221	(0.110)	0.036	0.185
193.	16.08	0.13	0.047	(0.109)	0.008	0.039
194.	16.17	0.13	0.047	(0.109)	0.008	0.039
195.	16.25	0.13	0.047	(0.108)	0.008	0.039
196.	16.33	0.13	0.047	(0.108)	0.008	0.039
197.	16.42	0.13	0.047	(0.107)	0.008	0.039
198.	16.50	0.13	0.047	(0.107)	0.008	0.039
199.	16.58	0.10	0.035	(0.106)	0.006	0.029
200.	16.67	0.10	0.035	(0.106)	0.006	0.029
201.	16.75	0.10	0.035	(0.105)	0.006	0.029
202.	16.83	0.10	0.035	(0.104)	0.006	0.029
203.	16.92	0.10	0.035	(0.104)	0.006	0.029
204.	17.00	0.10	0.035	(0.103)	0.006	0.029
205.	17.08	0.17	0.058	(0.103)	0.010	0.049
206.	17.17	0.17	0.058	(0.102)	0.010	0.049

207.	17.25	0.17	0.058	(0.102)	0.010	0.049
208.	17.33	0.17	0.058	(0.101)	0.010	0.049
209.	17.42	0.17	0.058	(0.101)	0.010	0.049
210.	17.50	0.17	0.058	(0.100)	0.010	0.049
211.	17.58	0.17	0.058	(0.100)	0.010	0.049
212.	17.67	0.17	0.058	(0.099)	0.010	0.049
213.	17.75	0.17	0.058	(0.099)	0.010	0.049
214.	17.83	0.13	0.047	(0.098)	0.008	0.039
215.	17.92	0.13	0.047	(0.098)	0.008	0.039
216.	18.00	0.13	0.047	(0.097)	0.008	0.039
217.	18.08	0.13	0.047	(0.097)	0.008	0.039
218.	18.17	0.13	0.047	(0.096)	0.008	0.039
219.	18.25	0.13	0.047	(0.096)	0.008	0.039
220.	18.33	0.13	0.047	(0.095)	0.008	0.039
221.	18.42	0.13	0.047	(0.095)	0.008	0.039
222.	18.50	0.13	0.047	(0.095)	0.008	0.039
223.	18.58	0.10	0.035	(0.094)	0.006	0.029
224.	18.67	0.10	0.035	(0.094)	0.006	0.029
225.	18.75	0.10	0.035	(0.093)	0.006	0.029
226.	18.83	0.07	0.023	(0.093)	0.004	0.019
227.	18.92	0.07	0.023	(0.092)	0.004	0.019
228.	19.00	0.07	0.023	(0.092)	0.004	0.019
229.	19.08	0.10	0.035	(0.091)	0.006	0.029
230.	19.17	0.10	0.035	(0.091)	0.006	0.029
231.	19.25	0.10	0.035	(0.091)	0.006	0.029
232.	19.33	0.13	0.047	(0.090)	0.008	0.039
233.	19.42	0.13	0.047	(0.090)	0.008	0.039
234.	19.50	0.13	0.047	(0.089)	0.008	0.039
235.	19.58	0.10	0.035	(0.089)	0.006	0.029
236.	19.67	0.10	0.035	(0.089)	0.006	0.029
237.	19.75	0.10	0.035	(0.088)	0.006	0.029
238.	19.83	0.07	0.023	(0.088)	0.004	0.019
239.	19.92	0.07	0.023	(0.087)	0.004	0.019
240.	20.00	0.07	0.023	(0.087)	0.004	0.019
241.	20.08	0.10	0.035	(0.087)	0.006	0.029
242.	20.17	0.10	0.035	(0.086)	0.006	0.029
243.	20.25	0.10	0.035	(0.086)	0.006	0.029
244.	20.33	0.10	0.035	(0.085)	0.006	0.029
245.	20.42	0.10	0.035	(0.085)	0.006	0.029
246.	20.50	0.10	0.035	(0.085)	0.006	0.029
247.	20.58	0.10	0.035	(0.084)	0.006	0.029
248.	20.67	0.10	0.035	(0.084)	0.006	0.029
249.	20.75	0.10	0.035	(0.084)	0.006	0.029
250.	20.83	0.07	0.023	(0.083)	0.004	0.019
251.	20.92	0.07	0.023	(0.083)	0.004	0.019
252.	21.00	0.07	0.023	(0.083)	0.004	0.019
253.	21.08	0.10	0.035	(0.082)	0.006	0.029
254.	21.17	0.10	0.035	(0.082)	0.006	0.029
255.	21.25	0.10	0.035	(0.082)	0.006	0.029
256.	21.33	0.07	0.023	(0.081)	0.004	0.019
257.	21.42	0.07	0.023	(0.081)	0.004	0.019
258.	21.50	0.07	0.023	(0.081)	0.004	0.019
259.	21.58	0.10	0.035	(0.080)	0.006	0.029
260.	21.67	0.10	0.035	(0.080)	0.006	0.029

261.	21.75	0.10	0.035	(0.080)	0.006	0.029
262.	21.83	0.07	0.023	(0.080)	0.004	0.019
263.	21.92	0.07	0.023	(0.079)	0.004	0.019
264.	22.00	0.07	0.023	(0.079)	0.004	0.019
265.	22.08	0.10	0.035	(0.079)	0.006	0.029
266.	22.17	0.10	0.035	(0.079)	0.006	0.029
267.	22.25	0.10	0.035	(0.078)	0.006	0.029
268.	22.33	0.07	0.023	(0.078)	0.004	0.019
269.	22.42	0.07	0.023	(0.078)	0.004	0.019
270.	22.50	0.07	0.023	(0.078)	0.004	0.019
271.	22.58	0.07	0.023	(0.077)	0.004	0.019
272.	22.67	0.07	0.023	(0.077)	0.004	0.019
273.	22.75	0.07	0.023	(0.077)	0.004	0.019
274.	22.83	0.07	0.023	(0.077)	0.004	0.019
275.	22.92	0.07	0.023	(0.077)	0.004	0.019
276.	23.00	0.07	0.023	(0.076)	0.004	0.019
277.	23.08	0.07	0.023	(0.076)	0.004	0.019
278.	23.17	0.07	0.023	(0.076)	0.004	0.019
279.	23.25	0.07	0.023	(0.076)	0.004	0.019
280.	23.33	0.07	0.023	(0.076)	0.004	0.019
281.	23.42	0.07	0.023	(0.076)	0.004	0.019
282.	23.50	0.07	0.023	(0.075)	0.004	0.019
283.	23.58	0.07	0.023	(0.075)	0.004	0.019
284.	23.67	0.07	0.023	(0.075)	0.004	0.019
285.	23.75	0.07	0.023	(0.075)	0.004	0.019
286.	23.83	0.07	0.023	(0.075)	0.004	0.019
287.	23.92	0.07	0.023	(0.075)	0.004	0.019
288.	24.00	0.07	0.023	(0.075)	0.004	0.019

(Loss Rate Not Used)

Sum = 100.0

Sum = 29.2

Flood volume = Effective rainfall 2.44(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 1.5(Ac.Ft)

Total soil loss = 0.48(In)

Total soil loss = 0.287(Ac.Ft)

Total rainfall = 2.91(In)

Flood volume = 63657.6 Cubic Feet

Total soil loss = 12487.9 Cubic Feet

Peak flow rate of this hydrograph = 2.405(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5

0+ 5	0.0006	0.08	Q			
0+10	0.0015	0.13	Q			
0+15	0.0024	0.14	Q			
0+20	0.0037	0.18	Q			

0+25	0.0051	0.21	Q				
0+30	0.0066	0.21	Q				
0+35	0.0080	0.21	Q				
0+40	0.0095	0.21	Q				
0+45	0.0110	0.21	Q				
0+50	0.0127	0.25	VQ				
0+55	0.0146	0.28	VQ				
1+ 0	0.0166	0.28	VQ				
1+ 5	0.0182	0.24	Q				
1+10	0.0197	0.22	Q				
1+15	0.0212	0.21	Q				
1+20	0.0227	0.21	Q				
1+25	0.0241	0.21	Q				
1+30	0.0256	0.21	Q				
1+35	0.0270	0.21	Q				
1+40	0.0285	0.21	Q				
1+45	0.0300	0.21	Q				
1+50	0.0317	0.25	VQ				
1+55	0.0336	0.28	VQ				
2+ 0	0.0356	0.28	VQ				
2+ 5	0.0375	0.28	IQ				
2+10	0.0395	0.28	IQ				
2+15	0.0414	0.28	IQ				
2+20	0.0434	0.28	IQ				
2+25	0.0453	0.28	IQ				
2+30	0.0473	0.28	IQ				
2+35	0.0495	0.32	IQ				
2+40	0.0519	0.35	IQ				
2+45	0.0543	0.35	IQ				
2+50	0.0568	0.35	IQ				
2+55	0.0592	0.35	IQ				
3+ 0	0.0616	0.35	IQ				
3+ 5	0.0641	0.35	IQ				
3+10	0.0665	0.35	IQ				
3+15	0.0689	0.35	IQ				
3+20	0.0714	0.35	IQ				
3+25	0.0738	0.35	IQV				
3+30	0.0762	0.35	IQV				
3+35	0.0787	0.35	IQV				
3+40	0.0811	0.35	IQV				
3+45	0.0835	0.35	IQV				
3+50	0.0863	0.39	IQV				
3+55	0.0892	0.42	IQV				
4+ 0	0.0921	0.42	IQV				
4+ 5	0.0950	0.42	IQV				
4+10	0.0979	0.42	IQV				
4+15	0.1008	0.42	IQV				
4+20	0.1040	0.46	IQV				
4+25	0.1074	0.49	IQV				
4+30	0.1108	0.50	IQ V				
4+35	0.1142	0.50	IQ V				
4+40	0.1177	0.50	IQ V				
4+45	0.1211	0.50	IQ V				
4+50	0.1247	0.54	IQV				

4+55	0.1286	0.56	QV				
5+ 0	0.1325	0.57	QV				
5+ 5	0.1359	0.49	Q V				
5+10	0.1388	0.43	Q V				
5+15	0.1418	0.42	Q V				
5+20	0.1450	0.46	Q V				
5+25	0.1483	0.49	Q V				
5+30	0.1517	0.50	Q V				
5+35	0.1554	0.54	Q V				
5+40	0.1593	0.56	Q V				
5+45	0.1632	0.57	Q V				
5+50	0.1671	0.57	Q V				
5+55	0.1710	0.57	Q V				
6+ 0	0.1749	0.57	Q V				
6+ 5	0.1791	0.61	Q V				
6+10	0.1834	0.63	Q V				
6+15	0.1878	0.64	Q V				
6+20	0.1922	0.64	Q V				
6+25	0.1966	0.64	Q V				
6+30	0.2010	0.64	Q V				
6+35	0.2056	0.68	Q V				
6+40	0.2105	0.70	Q V				
6+45	0.2153	0.71	Q V				
6+50	0.2202	0.71	Q V				
6+55	0.2251	0.71	Q V				
7+ 0	0.2299	0.71	Q V				
7+ 5	0.2348	0.71	Q V				
7+10	0.2397	0.71	Q V				
7+15	0.2446	0.71	Q V				
7+20	0.2497	0.75	Q V				
7+25	0.2550	0.77	Q V				
7+30	0.2604	0.78	Q V				
7+35	0.2660	0.82	Q V				
7+40	0.2718	0.84	Q V				
7+45	0.2777	0.85	Q V				
7+50	0.2838	0.89	Q V				
7+55	0.2901	0.92	Q V				
8+ 0	0.2964	0.92	Q V				
8+ 5	0.3033	1.00	Q V				
8+10	0.3106	1.05	Q V				
8+15	0.3179	1.06	Q V				
8+20	0.3252	1.06	Q V				
8+25	0.3325	1.06	Q V				
8+30	0.3398	1.06	Q V				
8+35	0.3474	1.10	Q V				
8+40	0.3551	1.13	Q V				
8+45	0.3629	1.13	Q V				
8+50	0.3710	1.17	Q V				
8+55	0.3793	1.20	Q V				
9+ 0	0.3875	1.20	Q V				
9+ 5	0.3964	1.28	Q V				
9+10	0.4056	1.34	Q V				
9+15	0.4148	1.34	Q V				
9+20	0.4243	1.38	Q V				

9+25	0.4341	1.41		Q		V					
9+30	0.4438	1.41		Q		V					
9+35	0.4538	1.45		Q		V					
9+40	0.4640	1.48		Q		V					
9+45	0.4742	1.49		Q		V					
9+50	0.4848	1.53		Q		V					
9+55	0.4954	1.55		Q		V					
10+ 0	0.5062	1.56		Q		V					
10+ 5	0.5149	1.28		Q		V					
10+10	0.5225	1.09		Q		V					
10+15	0.5298	1.06		Q		V					
10+20	0.5371	1.06		Q		V					
10+25	0.5444	1.06		Q		V					
10+30	0.5517	1.06		Q		V					
10+35	0.5604	1.26		Q		V					
10+40	0.5700	1.39		Q		V					
10+45	0.5797	1.41		Q		V					
10+50	0.5894	1.41		Q		V					
10+55	0.5992	1.41		Q		V					
11+ 0	0.6089	1.41		Q		V					
11+ 5	0.6184	1.37		Q		V					
11+10	0.6277	1.35		Q		V					
11+15	0.6369	1.34		Q		V					
11+20	0.6462	1.34		Q		V					
11+25	0.6555	1.34		Q		V					
11+30	0.6647	1.34		Q		V					
11+35	0.6734	1.26		Q		V					
11+40	0.6818	1.21		Q		V					
11+45	0.6900	1.20		Q		V					
11+50	0.6986	1.24		Q		V					
11+55	0.7073	1.27		Q		V					
12+ 0	0.7161	1.27		Q		V					
12+ 5	0.7268	1.55		Q		V					
12+10	0.7388	1.74		Q		V					
12+15	0.7509	1.77		Q		V					
12+20	0.7634	1.81		Q		V					
12+25	0.7760	1.83		Q		V					
12+30	0.7887	1.84		Q		V					
12+35	0.8019	1.92		Q		V					
12+40	0.8155	1.97		Q		V					
12+45	0.8291	1.98		Q		V					
12+50	0.8430	2.02		Q		V					
12+55	0.8571	2.05		Q		V					
13+ 0	0.8713	2.05		Q		V					
13+ 5	0.8868	2.25		Q		V					
13+10	0.9032	2.38		Q		V					
13+15	0.9197	2.40		Q		V					
13+20	0.9363	2.40		Q		V					
13+25	0.9529	2.40		Q		V					
13+30	0.9694	2.40		Q		V					
13+35	0.9830	1.96		Q		V					
13+40	0.9945	1.68		Q		V					
13+45	1.0057	1.63		Q		V					
13+50	1.0169	1.63		Q		V					

13+55	1.0281	1.63		Q			V		
14+ 0	1.0393	1.63		Q			V		
14+ 5	1.0516	1.79		Q			V		
14+10	1.0647	1.89		Q			V		
14+15	1.0778	1.91		Q			V		
14+20	1.0907	1.87		Q			V		
14+25	1.1034	1.84		Q			V		
14+30	1.1160	1.84		Q			V		
14+35	1.1287	1.84		Q			V		
14+40	1.1414	1.84		Q			V		
14+45	1.1540	1.84		Q			V		
14+50	1.1664	1.80		Q			V		
14+55	1.1786	1.77		Q			V		
15+ 0	1.1908	1.77		Q			V		
15+ 5	1.2027	1.73		Q			V		
15+10	1.2144	1.70		Q			V		
15+15	1.2261	1.70		Q			V		
15+20	1.2375	1.66		Q			V		
15+25	1.2488	1.63		Q			V		
15+30	1.2600	1.63		Q			V		
15+35	1.2701	1.47		Q			V		
15+40	1.2795	1.36		Q			V		
15+45	1.2887	1.34		Q			V		
15+50	1.2980	1.34		Q			V		
15+55	1.3072	1.34		Q			V		
16+ 0	1.3165	1.34		Q			V		
16+ 5	1.3216	0.74		Q			V		
16+10	1.3240	0.35		Q			V		
16+15	1.3260	0.28		Q			V		
16+20	1.3279	0.28		Q			V		
16+25	1.3299	0.28		Q			V		
16+30	1.3318	0.28		Q			V		
16+35	1.3335	0.24		Q			V		
16+40	1.3350	0.22		Q			V		
16+45	1.3364	0.21		Q			V		
16+50	1.3379	0.21		Q			V		
16+55	1.3394	0.21		Q			V		
17+ 0	1.3408	0.21		Q			V		
17+ 5	1.3428	0.29		Q			V		
17+10	1.3452	0.34		Q			V		
17+15	1.3476	0.35		Q			V		
17+20	1.3501	0.35		Q			V		
17+25	1.3525	0.35		Q			V		
17+30	1.3549	0.35		Q			V		
17+35	1.3574	0.35		Q			V		
17+40	1.3598	0.35		Q			V		
17+45	1.3623	0.35		Q			V		
17+50	1.3644	0.31		Q			V		
17+55	1.3664	0.29		Q			V		
18+ 0	1.3683	0.28		Q			V		
18+ 5	1.3703	0.28		Q			V		
18+10	1.3722	0.28		Q			V		
18+15	1.3742	0.28		Q			V		
18+20	1.3761	0.28		Q			V		

18+25	1.3781	0.28	IQ				V	
18+30	1.3800	0.28	IQ				V	
18+35	1.3817	0.24	Q				V	
18+40	1.3832	0.22	Q				V	
18+45	1.3847	0.21	Q				V	
18+50	1.3858	0.17	Q				V	
18+55	1.3869	0.15	Q				V	
19+ 0	1.3878	0.14	Q				V	
19+ 5	1.3891	0.18	Q				V	
19+10	1.3905	0.21	Q				V	
19+15	1.3920	0.21	Q				V	
19+20	1.3937	0.25	IQ				V	
19+25	1.3956	0.28	IQ				V	
19+30	1.3976	0.28	IQ				V	
19+35	1.3992	0.24	Q				V	
19+40	1.4007	0.22	Q				V	
19+45	1.4022	0.21	Q				V	
19+50	1.4034	0.17	Q				V	
19+55	1.4044	0.15	Q				V	
20+ 0	1.4054	0.14	Q				V	
20+ 5	1.4066	0.18	Q				V	
20+10	1.4080	0.21	Q				V	
20+15	1.4095	0.21	Q				V	
20+20	1.4110	0.21	Q				V	
20+25	1.4124	0.21	Q				V	
20+30	1.4139	0.21	Q				V	
20+35	1.4153	0.21	Q				V	
20+40	1.4168	0.21	Q				V	
20+45	1.4183	0.21	Q				V	
20+50	1.4195	0.17	Q				V	
20+55	1.4205	0.15	Q				V	
21+ 0	1.4214	0.14	Q				V	
21+ 5	1.4227	0.18	Q				V	
21+10	1.4241	0.21	Q				V	
21+15	1.4256	0.21	Q				V	
21+20	1.4268	0.17	Q				V	
21+25	1.4278	0.15	Q				V	
21+30	1.4287	0.14	Q				V	
21+35	1.4300	0.18	Q				V	
21+40	1.4314	0.21	Q				V	
21+45	1.4329	0.21	Q				V	
21+50	1.4341	0.17	Q				V	
21+55	1.4351	0.15	Q				V	
22+ 0	1.4361	0.14	Q				V	
22+ 5	1.4373	0.18	Q				V	
22+10	1.4387	0.21	Q				V	
22+15	1.4402	0.21	Q				V	
22+20	1.4414	0.17	Q				V	
22+25	1.4424	0.15	Q				V	
22+30	1.4434	0.14	Q				V	
22+35	1.4443	0.14	Q				V	
22+40	1.4453	0.14	Q				V	
22+45	1.4463	0.14	Q				V	
22+50	1.4473	0.14	Q				V	

22+55	1.4482	0.14	Q				V
23+ 0	1.4492	0.14	Q				V
23+ 5	1.4502	0.14	Q				V
23+10	1.4512	0.14	Q				V
23+15	1.4521	0.14	Q				V
23+20	1.4531	0.14	Q				V
23+25	1.4541	0.14	Q				V
23+30	1.4550	0.14	Q				V
23+35	1.4560	0.14	Q				V
23+40	1.4570	0.14	Q				V
23+45	1.4580	0.14	Q				V
23+50	1.4589	0.14	Q				V
23+55	1.4599	0.14	Q				V
24+ 0	1.4609	0.14	Q				V
24+ 5	1.4613	0.06	Q				V
24+10	1.4614	0.01	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP110.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
10 YEAR STORM AMC II

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
7.20	0.50		3.60

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
7.20	1.30		9.36

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.829 (In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.829 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920

Total Area Entered = 7.20 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.920	0.128	1.000	0.128
Sum (F) =						

0.128

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.164

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	56.537
			4.102

	2	0.167	597.229	37.205	2.700
	3	0.250	895.844	6.258	0.454
					Sum =
100.000	Sum=	7.256			

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1. 0.08	4.20	0.418	(0.150)	0.069	0.349
2. 0.17	4.30	0.428	(0.150)	0.070	0.358
3. 0.25	5.00	0.497	(0.150)	0.082	0.416
4. 0.33	5.00	0.497	(0.150)	0.082	0.416
5. 0.42	5.80	0.577	(0.150)	0.095	0.482
6. 0.50	6.50	0.647	(0.150)	0.106	0.541
7. 0.58	7.40	0.736	(0.150)	0.121	0.615
8. 0.67	8.60	0.856	(0.150)	0.140	0.715
9. 0.75	12.30	1.224	0.150	(0.201)	1.074
10. 0.83	29.10	2.895	0.150	(0.475)	2.745
11. 0.92	6.80	0.677	(0.150)	0.111	0.566
12. 1.00	5.00	0.497	(0.150)	0.082	0.416

(Loss Rate Not Used)
Sum = 100.0 Sum = 8.7

Flood volume = Effective rainfall 0.72(In)
times area 7.2(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)
Total soil loss = 0.10(In)
Total soil loss = 0.063(Ac.Ft)
Total rainfall = 0.83(In)
Flood volume = 18934.1 Cubic Feet
Total soil loss = 2734.6 Cubic Feet

Peak flow rate of this hydrograph = 14.495(CFS)

+++++
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0
20.0						
0+ 5	0.0099	1.43	V Q			
0+10	0.0265	2.41	V Q			
0+15	0.0460	2.83	VQ			
0+20	0.0666	2.99	QV			
0+25	0.0893	3.29	Q V			
0+30	0.1148	3.71	Q V			

0+35	0.1438	4.21		Q		V					
0+40	0.1772	4.84		Q		V					
0+45	0.2227	6.62				Q		V			
0+50	0.3226	14.49						QV			
0+55	0.3930	10.22						Q		V	
1+ 0	0.4239	4.48		Q						V	
1+ 5	0.4334	1.38		Q						V	
1+10	0.4347	0.19	Q							V	

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP310.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
10 YEAR STORM AMC II

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	0.85	6.12

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.00	14.40

STORM EVENT (YEAR) = 10.00

Area Averaged 2-Year Rainfall = 0.850 (In)

Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.323 (In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 1.323 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.920	0.128	1.000	0.128
Sum (F) =						

0.128

Area averaged mean soil loss (F) (In/Hr) = 0.150

Minimum soil loss rate ((In/Hr)) = 0.075

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454

100.000 Sum= 7.256

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.206	(0.150)	0.034	0.173
2.	0.17	1.30	0.206	(0.150)	0.034	0.173
3.	0.25	1.10	0.175	(0.150)	0.029	0.146
4.	0.33	1.50	0.238	(0.150)	0.039	0.199
5.	0.42	1.50	0.238	(0.150)	0.039	0.199
6.	0.50	1.80	0.286	(0.150)	0.047	0.239
7.	0.58	1.50	0.238	(0.150)	0.039	0.199
8.	0.67	1.80	0.286	(0.150)	0.047	0.239
9.	0.75	1.80	0.286	(0.150)	0.047	0.239
10.	0.83	1.50	0.238	(0.150)	0.039	0.199
11.	0.92	1.60	0.254	(0.150)	0.042	0.212
12.	1.00	1.80	0.286	(0.150)	0.047	0.239
13.	1.08	2.20	0.349	(0.150)	0.057	0.292
14.	1.17	2.20	0.349	(0.150)	0.057	0.292
15.	1.25	2.20	0.349	(0.150)	0.057	0.292
16.	1.33	2.00	0.318	(0.150)	0.052	0.265
17.	1.42	2.60	0.413	(0.150)	0.068	0.345
18.	1.50	2.70	0.429	(0.150)	0.070	0.358
19.	1.58	2.40	0.381	(0.150)	0.062	0.319
20.	1.67	2.70	0.429	(0.150)	0.070	0.358
21.	1.75	3.30	0.524	(0.150)	0.086	0.438
22.	1.83	3.10	0.492	(0.150)	0.081	0.411
23.	1.92	2.90	0.460	(0.150)	0.076	0.385
24.	2.00	3.00	0.476	(0.150)	0.078	0.398
25.	2.08	3.10	0.492	(0.150)	0.081	0.411
26.	2.17	4.20	0.667	(0.150)	0.109	0.557
27.	2.25	5.00	0.794	(0.150)	0.130	0.664
28.	2.33	3.50	0.556	(0.150)	0.091	0.465
29.	2.42	6.80	1.080	0.150	(0.177)	0.930
30.	2.50	7.30	1.159	0.150	(0.190)	1.009
31.	2.58	8.20	1.302	0.150	(0.214)	1.152
32.	2.67	5.90	0.937	0.150	(0.154)	0.787
33.	2.75	2.00	0.318	(0.150)	0.052	0.265
34.	2.83	1.80	0.286	(0.150)	0.047	0.239
35.	2.92	1.80	0.286	(0.150)	0.047	0.239
36.	3.00	0.60	0.095	(0.150)	0.016	0.080

(Loss Rate Not Used)

Sum = 100.0

Sum = 13.4

Flood volume = Effective rainfall 1.12(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)

Total soil loss = 0.21(In)

Total soil loss = 0.123(Ac.Ft)

Total rainfall = 1.32(In)
 Flood volume = 29203.8 Cubic Feet
 Total soil loss = 5376.1 Cubic Feet

Peak flow rate of this hydrograph = 7.878(CFS)

3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0049	0.71	V Q			
0+10	0.0130	1.17	V Q			
0+15	0.0208	1.14	V Q			
0+20	0.0297	1.29	V Q			
0+25	0.0395	1.42	V Q			
0+30	0.0506	1.61	V Q			
0+35	0.0613	1.55	V Q			
0+40	0.0725	1.63	V Q			
0+45	0.0843	1.72	VQ			
0+50	0.0951	1.57	VQ			
0+55	0.1056	1.52	Q			
1+ 0	0.1169	1.64	Q			
1+ 5	0.1303	1.94	Q			
1+10	0.1447	2.10	Q			
1+15	0.1593	2.12	QV			
1+20	0.1732	2.01	Q V			
1+25	0.1888	2.27	Q V			
1+30	0.2062	2.52	Q V			
1+35	0.2229	2.43	Q V			
1+40	0.2401	2.49	Q V			
1+45	0.2601	2.91	Q V			
1+50	0.2810	3.03	Q V			
1+55	0.3009	2.89	Q V			
2+ 0	0.3206	2.86	Q	V		
2+ 5	0.3409	2.94	Q	V		
2+10	0.3655	3.58	Q	V		
2+15	0.3960	4.42	Q	V		
2+20	0.4232	3.95	Q	V		
2+25	0.4602	5.37	Q	V		
2+30	0.5075	6.87	Q	V		
2+35	0.5617	7.88	Q	V		
2+40	0.6086	6.80	Q	V		
2+45	0.6343	3.74	Q	V		
2+50	0.6485	2.06	Q	V		
2+55	0.6605	1.75	Q	V		
3+ 0	0.6679	1.08	Q	V		
3+ 5	0.6702	0.32	Q	V		
3+10	0.6704	0.04	Q	V		

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP610.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
10 YEAR STORM AMC II

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	1.20	8.64

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.90	20.88

STORM EVENT (YEAR) = 10.00

Area Averaged 2-Year Rainfall = 1.200 (In)

Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 1.899 (In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 1.899 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.920	0.128	1.000	0.128
Sum (F) =						

0.128

Area averaged mean soil loss (F) (In/Hr) = 0.150

Minimum soil loss rate ((In/Hr)) = 0.075

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454

100.000 Sum= 7.256

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.50	0.114	(0.150)	0.019	0.095
2.	0.17	0.60	0.137	(0.150)	0.022	0.114
3.	0.25	0.60	0.137	(0.150)	0.022	0.114
4.	0.33	0.60	0.137	(0.150)	0.022	0.114
5.	0.42	0.60	0.137	(0.150)	0.022	0.114
6.	0.50	0.70	0.160	(0.150)	0.026	0.133
7.	0.58	0.70	0.160	(0.150)	0.026	0.133
8.	0.67	0.70	0.160	(0.150)	0.026	0.133
9.	0.75	0.70	0.160	(0.150)	0.026	0.133
10.	0.83	0.70	0.160	(0.150)	0.026	0.133
11.	0.92	0.70	0.160	(0.150)	0.026	0.133
12.	1.00	0.80	0.182	(0.150)	0.030	0.152
13.	1.08	0.80	0.182	(0.150)	0.030	0.152
14.	1.17	0.80	0.182	(0.150)	0.030	0.152
15.	1.25	0.80	0.182	(0.150)	0.030	0.152
16.	1.33	0.80	0.182	(0.150)	0.030	0.152
17.	1.42	0.80	0.182	(0.150)	0.030	0.152
18.	1.50	0.80	0.182	(0.150)	0.030	0.152
19.	1.58	0.80	0.182	(0.150)	0.030	0.152
20.	1.67	0.80	0.182	(0.150)	0.030	0.152
21.	1.75	0.80	0.182	(0.150)	0.030	0.152
22.	1.83	0.80	0.182	(0.150)	0.030	0.152
23.	1.92	0.80	0.182	(0.150)	0.030	0.152
24.	2.00	0.90	0.205	(0.150)	0.034	0.171
25.	2.08	0.80	0.182	(0.150)	0.030	0.152
26.	2.17	0.90	0.205	(0.150)	0.034	0.171
27.	2.25	0.90	0.205	(0.150)	0.034	0.171
28.	2.33	0.90	0.205	(0.150)	0.034	0.171
29.	2.42	0.90	0.205	(0.150)	0.034	0.171
30.	2.50	0.90	0.205	(0.150)	0.034	0.171
31.	2.58	0.90	0.205	(0.150)	0.034	0.171
32.	2.67	0.90	0.205	(0.150)	0.034	0.171
33.	2.75	1.00	0.228	(0.150)	0.037	0.191
34.	2.83	1.00	0.228	(0.150)	0.037	0.191
35.	2.92	1.00	0.228	(0.150)	0.037	0.191
36.	3.00	1.00	0.228	(0.150)	0.037	0.191
37.	3.08	1.00	0.228	(0.150)	0.037	0.191
38.	3.17	1.10	0.251	(0.150)	0.041	0.210
39.	3.25	1.10	0.251	(0.150)	0.041	0.210
40.	3.33	1.10	0.251	(0.150)	0.041	0.210
41.	3.42	1.20	0.274	(0.150)	0.045	0.229
42.	3.50	1.30	0.296	(0.150)	0.049	0.248

43.	3.58	1.40	0.319	(0.150)	0.052	0.267
44.	3.67	1.40	0.319	(0.150)	0.052	0.267
45.	3.75	1.50	0.342	(0.150)	0.056	0.286
46.	3.83	1.50	0.342	(0.150)	0.056	0.286
47.	3.92	1.60	0.365	(0.150)	0.060	0.305
48.	4.00	1.60	0.365	(0.150)	0.060	0.305
49.	4.08	1.70	0.387	(0.150)	0.064	0.324
50.	4.17	1.80	0.410	(0.150)	0.067	0.343
51.	4.25	1.90	0.433	(0.150)	0.071	0.362
52.	4.33	2.00	0.456	(0.150)	0.075	0.381
53.	4.42	2.10	0.479	(0.150)	0.078	0.400
54.	4.50	2.10	0.479	(0.150)	0.078	0.400
55.	4.58	2.20	0.501	(0.150)	0.082	0.419
56.	4.67	2.30	0.524	(0.150)	0.086	0.438
57.	4.75	2.40	0.547	(0.150)	0.090	0.457
58.	4.83	2.40	0.547	(0.150)	0.090	0.457
59.	4.92	2.50	0.570	(0.150)	0.093	0.476
60.	5.00	2.60	0.593	(0.150)	0.097	0.495
61.	5.08	3.10	0.707	(0.150)	0.116	0.591
62.	5.17	3.60	0.821	(0.150)	0.135	0.686
63.	5.25	3.90	0.889	(0.150)	0.146	0.743
64.	5.33	4.20	0.957	0.150 (0.157)		0.808
65.	5.42	4.70	1.071	0.150 (0.176)		0.922
66.	5.50	5.60	1.276	0.150 (0.209)		1.127
67.	5.58	1.90	0.433	(0.150)	0.071	0.362
68.	5.67	0.90	0.205	(0.150)	0.034	0.171
69.	5.75	0.60	0.137	(0.150)	0.022	0.114
70.	5.83	0.50	0.114	(0.150)	0.019	0.095
71.	5.92	0.30	0.068	(0.150)	0.011	0.057
72.	6.00	0.20	0.046	(0.150)	0.007	0.038

(Loss Rate Not Used)

Sum = 100.0

Sum = 19.1

Flood volume = Effective rainfall 1.60(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 1.0(Ac.Ft)

Total soil loss = 0.30(In)

Total soil loss = 0.182(Ac.Ft)

Total rainfall = 1.90(In)

Flood volume = 41702.4 Cubic Feet

Total soil loss = 7938.9 Cubic Feet

Peak flow rate of this hydrograph = 7.480(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0027	0.39	VQ			
0+10	0.0077	0.73	V Q			

0+15	0.0134	0.82	V Q				
0+20	0.0191	0.83	V Q				
0+25	0.0248	0.83	V Q				
0+30	0.0310	0.91	V Q				
0+35	0.0377	0.96	V Q				
0+40	0.0443	0.97	V Q				
0+45	0.0510	0.97	VQ				
0+50	0.0577	0.97	VQ				
0+55	0.0643	0.97	VQ				
1+ 0	0.0715	1.05	V Q				
1+ 5	0.0791	1.10	VQ				
1+10	0.0867	1.11	VQ				
1+15	0.0943	1.11	VQ				
1+20	0.1020	1.11	Q				
1+25	0.1096	1.11	Q				
1+30	0.1172	1.11	Q				
1+35	0.1248	1.11	QV				
1+40	0.1324	1.11	QV				
1+45	0.1401	1.11	QV				
1+50	0.1477	1.11	Q V				
1+55	0.1553	1.11	Q V				
2+ 0	0.1635	1.18	Q V				
2+ 5	0.1714	1.16	Q V				
2+10	0.1797	1.19	Q V				
2+15	0.1882	1.24	Q V				
2+20	0.1968	1.25	Q V				
2+25	0.2053	1.25	Q V				
2+30	0.2139	1.25	Q V				
2+35	0.2225	1.25	Q V				
2+40	0.2311	1.25	Q V				
2+45	0.2402	1.32	Q V				
2+50	0.2496	1.37	Q V				
2+55	0.2592	1.38	Q V				
3+ 0	0.2687	1.38	Q V				
3+ 5	0.2782	1.38	Q V				
3+10	0.2883	1.46	Q V				
3+15	0.2987	1.51	Q V				
3+20	0.3092	1.52	Q V				
3+25	0.3202	1.60	Q V				
3+30	0.3321	1.73	Q V				
3+35	0.3450	1.87	Q V				
3+40	0.3583	1.93	Q V				
3+45	0.3721	2.01	Q V				
3+50	0.3864	2.07	Q V				
3+55	0.4012	2.15	Q V				
4+ 0	0.4164	2.20	Q V				
4+ 5	0.4322	2.29	Q V				
4+10	0.4488	2.42	Q V				
4+15	0.4665	2.56	Q V				
4+20	0.4850	2.70	Q V				
4+25	0.5046	2.84	Q V				
4+30	0.5245	2.90	Q V				
4+35	0.5451	2.98	Q V				
4+40	0.5665	3.11	Q V				

4+45	0.5889	3.25				Q		V			
4+50	0.6117	3.31				Q		V			
4+55	0.6351	3.40				Q		V			
5+ 0	0.6594	3.53				Q		V			
5+ 5	0.6868	3.98				Q		V			
5+10	0.7187	4.64					Q		V		
5+15	0.7544	5.17					Q		V		
5+20	0.7932	5.63						Q		V	
5+25	0.8366	6.30						Q		V	
5+30	0.8881	7.48							Q		V
5+35	0.9221	4.95					Q				V
5+40	0.9373	2.19			Q						V
5+45	0.9448	1.10		Q							V
5+50	0.9502	0.78		Q							V
5+55	0.9539	0.54		Q							V
6+ 0	0.9563	0.35		Q							V
6+ 5	0.9572	0.13		Q							V
6+10	0.9574	0.02		Q							V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP2410.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
10 YEAR STORM AMC II

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
7.20		2.00	14.40

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
7.20		5.90	42.48

STORM EVENT (YEAR) = 10.00

Area Averaged 2-Year Rainfall = 2.000 (In)

Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 3.604 (In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 3.604 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.920	0.128	1.000	0.128
Sum (F) =						

0.128

Area averaged mean soil loss (F) (In/Hr) = 0.150

Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454

100.000 Sum= 7.256

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.07	0.029	(0.265)	0.005	0.024
2.	0.17	0.07	0.029	(0.264)	0.005	0.024
3.	0.25	0.07	0.029	(0.263)	0.005	0.024
4.	0.33	0.10	0.043	(0.262)	0.007	0.036
5.	0.42	0.10	0.043	(0.261)	0.007	0.036
6.	0.50	0.10	0.043	(0.260)	0.007	0.036
7.	0.58	0.10	0.043	(0.259)	0.007	0.036
8.	0.67	0.10	0.043	(0.258)	0.007	0.036
9.	0.75	0.10	0.043	(0.257)	0.007	0.036
10.	0.83	0.13	0.058	(0.256)	0.009	0.048
11.	0.92	0.13	0.058	(0.255)	0.009	0.048
12.	1.00	0.13	0.058	(0.254)	0.009	0.048
13.	1.08	0.10	0.043	(0.253)	0.007	0.036
14.	1.17	0.10	0.043	(0.252)	0.007	0.036
15.	1.25	0.10	0.043	(0.251)	0.007	0.036
16.	1.33	0.10	0.043	(0.250)	0.007	0.036
17.	1.42	0.10	0.043	(0.249)	0.007	0.036
18.	1.50	0.10	0.043	(0.248)	0.007	0.036
19.	1.58	0.10	0.043	(0.247)	0.007	0.036
20.	1.67	0.10	0.043	(0.246)	0.007	0.036
21.	1.75	0.10	0.043	(0.245)	0.007	0.036
22.	1.83	0.13	0.058	(0.244)	0.009	0.048
23.	1.92	0.13	0.058	(0.243)	0.009	0.048
24.	2.00	0.13	0.058	(0.242)	0.009	0.048
25.	2.08	0.13	0.058	(0.241)	0.009	0.048
26.	2.17	0.13	0.058	(0.240)	0.009	0.048
27.	2.25	0.13	0.058	(0.239)	0.009	0.048
28.	2.33	0.13	0.058	(0.238)	0.009	0.048
29.	2.42	0.13	0.058	(0.237)	0.009	0.048
30.	2.50	0.13	0.058	(0.236)	0.009	0.048
31.	2.58	0.17	0.072	(0.235)	0.012	0.060
32.	2.67	0.17	0.072	(0.235)	0.012	0.060
33.	2.75	0.17	0.072	(0.234)	0.012	0.060
34.	2.83	0.17	0.072	(0.233)	0.012	0.060
35.	2.92	0.17	0.072	(0.232)	0.012	0.060
36.	3.00	0.17	0.072	(0.231)	0.012	0.060
37.	3.08	0.17	0.072	(0.230)	0.012	0.060
38.	3.17	0.17	0.072	(0.229)	0.012	0.060
39.	3.25	0.17	0.072	(0.228)	0.012	0.060
40.	3.33	0.17	0.072	(0.227)	0.012	0.060
41.	3.42	0.17	0.072	(0.226)	0.012	0.060
42.	3.50	0.17	0.072	(0.225)	0.012	0.060

43.	3.58	0.17	0.072	(0.224)	0.012	0.060
44.	3.67	0.17	0.072	(0.223)	0.012	0.060
45.	3.75	0.17	0.072	(0.222)	0.012	0.060
46.	3.83	0.20	0.087	(0.221)	0.014	0.072
47.	3.92	0.20	0.087	(0.220)	0.014	0.072
48.	4.00	0.20	0.087	(0.219)	0.014	0.072
49.	4.08	0.20	0.087	(0.218)	0.014	0.072
50.	4.17	0.20	0.087	(0.217)	0.014	0.072
51.	4.25	0.20	0.087	(0.217)	0.014	0.072
52.	4.33	0.23	0.101	(0.216)	0.017	0.084
53.	4.42	0.23	0.101	(0.215)	0.017	0.084
54.	4.50	0.23	0.101	(0.214)	0.017	0.084
55.	4.58	0.23	0.101	(0.213)	0.017	0.084
56.	4.67	0.23	0.101	(0.212)	0.017	0.084
57.	4.75	0.23	0.101	(0.211)	0.017	0.084
58.	4.83	0.27	0.115	(0.210)	0.019	0.096
59.	4.92	0.27	0.115	(0.209)	0.019	0.096
60.	5.00	0.27	0.115	(0.208)	0.019	0.096
61.	5.08	0.20	0.087	(0.207)	0.014	0.072
62.	5.17	0.20	0.087	(0.207)	0.014	0.072
63.	5.25	0.20	0.087	(0.206)	0.014	0.072
64.	5.33	0.23	0.101	(0.205)	0.017	0.084
65.	5.42	0.23	0.101	(0.204)	0.017	0.084
66.	5.50	0.23	0.101	(0.203)	0.017	0.084
67.	5.58	0.27	0.115	(0.202)	0.019	0.096
68.	5.67	0.27	0.115	(0.201)	0.019	0.096
69.	5.75	0.27	0.115	(0.200)	0.019	0.096
70.	5.83	0.27	0.115	(0.199)	0.019	0.096
71.	5.92	0.27	0.115	(0.198)	0.019	0.096
72.	6.00	0.27	0.115	(0.198)	0.019	0.096
73.	6.08	0.30	0.130	(0.197)	0.021	0.108
74.	6.17	0.30	0.130	(0.196)	0.021	0.108
75.	6.25	0.30	0.130	(0.195)	0.021	0.108
76.	6.33	0.30	0.130	(0.194)	0.021	0.108
77.	6.42	0.30	0.130	(0.193)	0.021	0.108
78.	6.50	0.30	0.130	(0.192)	0.021	0.108
79.	6.58	0.33	0.144	(0.192)	0.024	0.121
80.	6.67	0.33	0.144	(0.191)	0.024	0.121
81.	6.75	0.33	0.144	(0.190)	0.024	0.121
82.	6.83	0.33	0.144	(0.189)	0.024	0.121
83.	6.92	0.33	0.144	(0.188)	0.024	0.121
84.	7.00	0.33	0.144	(0.187)	0.024	0.121
85.	7.08	0.33	0.144	(0.186)	0.024	0.121
86.	7.17	0.33	0.144	(0.186)	0.024	0.121
87.	7.25	0.33	0.144	(0.185)	0.024	0.121
88.	7.33	0.37	0.159	(0.184)	0.026	0.133
89.	7.42	0.37	0.159	(0.183)	0.026	0.133
90.	7.50	0.37	0.159	(0.182)	0.026	0.133
91.	7.58	0.40	0.173	(0.181)	0.028	0.145
92.	7.67	0.40	0.173	(0.180)	0.028	0.145
93.	7.75	0.40	0.173	(0.180)	0.028	0.145
94.	7.83	0.43	0.187	(0.179)	0.031	0.157
95.	7.92	0.43	0.187	(0.178)	0.031	0.157
96.	8.00	0.43	0.187	(0.177)	0.031	0.157

97.	8.08	0.50	0.216	(0.176)	0.035	0.181
98.	8.17	0.50	0.216	(0.176)	0.035	0.181
99.	8.25	0.50	0.216	(0.175)	0.035	0.181
100.	8.33	0.50	0.216	(0.174)	0.035	0.181
101.	8.42	0.50	0.216	(0.173)	0.035	0.181
102.	8.50	0.50	0.216	(0.172)	0.035	0.181
103.	8.58	0.53	0.231	(0.171)	0.038	0.193
104.	8.67	0.53	0.231	(0.171)	0.038	0.193
105.	8.75	0.53	0.231	(0.170)	0.038	0.193
106.	8.83	0.57	0.245	(0.169)	0.040	0.205
107.	8.92	0.57	0.245	(0.168)	0.040	0.205
108.	9.00	0.57	0.245	(0.167)	0.040	0.205
109.	9.08	0.63	0.274	(0.167)	0.045	0.229
110.	9.17	0.63	0.274	(0.166)	0.045	0.229
111.	9.25	0.63	0.274	(0.165)	0.045	0.229
112.	9.33	0.67	0.288	(0.164)	0.047	0.241
113.	9.42	0.67	0.288	(0.164)	0.047	0.241
114.	9.50	0.67	0.288	(0.163)	0.047	0.241
115.	9.58	0.70	0.303	(0.162)	0.050	0.253
116.	9.67	0.70	0.303	(0.161)	0.050	0.253
117.	9.75	0.70	0.303	(0.160)	0.050	0.253
118.	9.83	0.73	0.317	(0.160)	0.052	0.265
119.	9.92	0.73	0.317	(0.159)	0.052	0.265
120.	10.00	0.73	0.317	(0.158)	0.052	0.265
121.	10.08	0.50	0.216	(0.157)	0.035	0.181
122.	10.17	0.50	0.216	(0.157)	0.035	0.181
123.	10.25	0.50	0.216	(0.156)	0.035	0.181
124.	10.33	0.50	0.216	(0.155)	0.035	0.181
125.	10.42	0.50	0.216	(0.154)	0.035	0.181
126.	10.50	0.50	0.216	(0.154)	0.035	0.181
127.	10.58	0.67	0.288	(0.153)	0.047	0.241
128.	10.67	0.67	0.288	(0.152)	0.047	0.241
129.	10.75	0.67	0.288	(0.151)	0.047	0.241
130.	10.83	0.67	0.288	(0.151)	0.047	0.241
131.	10.92	0.67	0.288	(0.150)	0.047	0.241
132.	11.00	0.67	0.288	(0.149)	0.047	0.241
133.	11.08	0.63	0.274	(0.148)	0.045	0.229
134.	11.17	0.63	0.274	(0.148)	0.045	0.229
135.	11.25	0.63	0.274	(0.147)	0.045	0.229
136.	11.33	0.63	0.274	(0.146)	0.045	0.229
137.	11.42	0.63	0.274	(0.145)	0.045	0.229
138.	11.50	0.63	0.274	(0.145)	0.045	0.229
139.	11.58	0.57	0.245	(0.144)	0.040	0.205
140.	11.67	0.57	0.245	(0.143)	0.040	0.205
141.	11.75	0.57	0.245	(0.143)	0.040	0.205
142.	11.83	0.60	0.260	(0.142)	0.043	0.217
143.	11.92	0.60	0.260	(0.141)	0.043	0.217
144.	12.00	0.60	0.260	(0.140)	0.043	0.217
145.	12.08	0.83	0.360	(0.140)	0.059	0.301
146.	12.17	0.83	0.360	(0.139)	0.059	0.301
147.	12.25	0.83	0.360	(0.138)	0.059	0.301
148.	12.33	0.87	0.375	(0.138)	0.061	0.313
149.	12.42	0.87	0.375	(0.137)	0.061	0.313
150.	12.50	0.87	0.375	(0.136)	0.061	0.313

151.	12.58	0.93	0.404	(0.136)	0.066	0.337
152.	12.67	0.93	0.404	(0.135)	0.066	0.337
153.	12.75	0.93	0.404	(0.134)	0.066	0.337
154.	12.83	0.97	0.418	(0.134)	0.069	0.350
155.	12.92	0.97	0.418	(0.133)	0.069	0.350
156.	13.00	0.97	0.418	(0.132)	0.069	0.350
157.	13.08	1.13	0.490	(0.132)	0.080	0.410
158.	13.17	1.13	0.490	(0.131)	0.080	0.410
159.	13.25	1.13	0.490	(0.130)	0.080	0.410
160.	13.33	1.13	0.490	(0.130)	0.080	0.410
161.	13.42	1.13	0.490	(0.129)	0.080	0.410
162.	13.50	1.13	0.490	(0.128)	0.080	0.410
163.	13.58	0.77	0.332	(0.128)	0.054	0.277
164.	13.67	0.77	0.332	(0.127)	0.054	0.277
165.	13.75	0.77	0.332	(0.126)	0.054	0.277
166.	13.83	0.77	0.332	(0.126)	0.054	0.277
167.	13.92	0.77	0.332	(0.125)	0.054	0.277
168.	14.00	0.77	0.332	(0.124)	0.054	0.277
169.	14.08	0.90	0.389	(0.124)	0.064	0.325
170.	14.17	0.90	0.389	(0.123)	0.064	0.325
171.	14.25	0.90	0.389	(0.122)	0.064	0.325
172.	14.33	0.87	0.375	(0.122)	0.061	0.313
173.	14.42	0.87	0.375	(0.121)	0.061	0.313
174.	14.50	0.87	0.375	(0.121)	0.061	0.313
175.	14.58	0.87	0.375	(0.120)	0.061	0.313
176.	14.67	0.87	0.375	(0.119)	0.061	0.313
177.	14.75	0.87	0.375	(0.119)	0.061	0.313
178.	14.83	0.83	0.360	(0.118)	0.059	0.301
179.	14.92	0.83	0.360	(0.118)	0.059	0.301
180.	15.00	0.83	0.360	(0.117)	0.059	0.301
181.	15.08	0.80	0.346	(0.116)	0.057	0.289
182.	15.17	0.80	0.346	(0.116)	0.057	0.289
183.	15.25	0.80	0.346	(0.115)	0.057	0.289
184.	15.33	0.77	0.332	(0.115)	0.054	0.277
185.	15.42	0.77	0.332	(0.114)	0.054	0.277
186.	15.50	0.77	0.332	(0.113)	0.054	0.277
187.	15.58	0.63	0.274	(0.113)	0.045	0.229
188.	15.67	0.63	0.274	(0.112)	0.045	0.229
189.	15.75	0.63	0.274	(0.112)	0.045	0.229
190.	15.83	0.63	0.274	(0.111)	0.045	0.229
191.	15.92	0.63	0.274	(0.111)	0.045	0.229
192.	16.00	0.63	0.274	(0.110)	0.045	0.229
193.	16.08	0.13	0.058	(0.109)	0.009	0.048
194.	16.17	0.13	0.058	(0.109)	0.009	0.048
195.	16.25	0.13	0.058	(0.108)	0.009	0.048
196.	16.33	0.13	0.058	(0.108)	0.009	0.048
197.	16.42	0.13	0.058	(0.107)	0.009	0.048
198.	16.50	0.13	0.058	(0.107)	0.009	0.048
199.	16.58	0.10	0.043	(0.106)	0.007	0.036
200.	16.67	0.10	0.043	(0.106)	0.007	0.036
201.	16.75	0.10	0.043	(0.105)	0.007	0.036
202.	16.83	0.10	0.043	(0.104)	0.007	0.036
203.	16.92	0.10	0.043	(0.104)	0.007	0.036
204.	17.00	0.10	0.043	(0.103)	0.007	0.036

205.	17.08	0.17	0.072	(0.103)	0.012	0.060
206.	17.17	0.17	0.072	(0.102)	0.012	0.060
207.	17.25	0.17	0.072	(0.102)	0.012	0.060
208.	17.33	0.17	0.072	(0.101)	0.012	0.060
209.	17.42	0.17	0.072	(0.101)	0.012	0.060
210.	17.50	0.17	0.072	(0.100)	0.012	0.060
211.	17.58	0.17	0.072	(0.100)	0.012	0.060
212.	17.67	0.17	0.072	(0.099)	0.012	0.060
213.	17.75	0.17	0.072	(0.099)	0.012	0.060
214.	17.83	0.13	0.058	(0.098)	0.009	0.048
215.	17.92	0.13	0.058	(0.098)	0.009	0.048
216.	18.00	0.13	0.058	(0.097)	0.009	0.048
217.	18.08	0.13	0.058	(0.097)	0.009	0.048
218.	18.17	0.13	0.058	(0.096)	0.009	0.048
219.	18.25	0.13	0.058	(0.096)	0.009	0.048
220.	18.33	0.13	0.058	(0.095)	0.009	0.048
221.	18.42	0.13	0.058	(0.095)	0.009	0.048
222.	18.50	0.13	0.058	(0.095)	0.009	0.048
223.	18.58	0.10	0.043	(0.094)	0.007	0.036
224.	18.67	0.10	0.043	(0.094)	0.007	0.036
225.	18.75	0.10	0.043	(0.093)	0.007	0.036
226.	18.83	0.07	0.029	(0.093)	0.005	0.024
227.	18.92	0.07	0.029	(0.092)	0.005	0.024
228.	19.00	0.07	0.029	(0.092)	0.005	0.024
229.	19.08	0.10	0.043	(0.091)	0.007	0.036
230.	19.17	0.10	0.043	(0.091)	0.007	0.036
231.	19.25	0.10	0.043	(0.091)	0.007	0.036
232.	19.33	0.13	0.058	(0.090)	0.009	0.048
233.	19.42	0.13	0.058	(0.090)	0.009	0.048
234.	19.50	0.13	0.058	(0.089)	0.009	0.048
235.	19.58	0.10	0.043	(0.089)	0.007	0.036
236.	19.67	0.10	0.043	(0.089)	0.007	0.036
237.	19.75	0.10	0.043	(0.088)	0.007	0.036
238.	19.83	0.07	0.029	(0.088)	0.005	0.024
239.	19.92	0.07	0.029	(0.087)	0.005	0.024
240.	20.00	0.07	0.029	(0.087)	0.005	0.024
241.	20.08	0.10	0.043	(0.087)	0.007	0.036
242.	20.17	0.10	0.043	(0.086)	0.007	0.036
243.	20.25	0.10	0.043	(0.086)	0.007	0.036
244.	20.33	0.10	0.043	(0.085)	0.007	0.036
245.	20.42	0.10	0.043	(0.085)	0.007	0.036
246.	20.50	0.10	0.043	(0.085)	0.007	0.036
247.	20.58	0.10	0.043	(0.084)	0.007	0.036
248.	20.67	0.10	0.043	(0.084)	0.007	0.036
249.	20.75	0.10	0.043	(0.084)	0.007	0.036
250.	20.83	0.07	0.029	(0.083)	0.005	0.024
251.	20.92	0.07	0.029	(0.083)	0.005	0.024
252.	21.00	0.07	0.029	(0.083)	0.005	0.024
253.	21.08	0.10	0.043	(0.082)	0.007	0.036
254.	21.17	0.10	0.043	(0.082)	0.007	0.036
255.	21.25	0.10	0.043	(0.082)	0.007	0.036
256.	21.33	0.07	0.029	(0.081)	0.005	0.024
257.	21.42	0.07	0.029	(0.081)	0.005	0.024
258.	21.50	0.07	0.029	(0.081)	0.005	0.024

259.	21.58	0.10	0.043	(0.080)	0.007	0.036
260.	21.67	0.10	0.043	(0.080)	0.007	0.036
261.	21.75	0.10	0.043	(0.080)	0.007	0.036
262.	21.83	0.07	0.029	(0.080)	0.005	0.024
263.	21.92	0.07	0.029	(0.079)	0.005	0.024
264.	22.00	0.07	0.029	(0.079)	0.005	0.024
265.	22.08	0.10	0.043	(0.079)	0.007	0.036
266.	22.17	0.10	0.043	(0.079)	0.007	0.036
267.	22.25	0.10	0.043	(0.078)	0.007	0.036
268.	22.33	0.07	0.029	(0.078)	0.005	0.024
269.	22.42	0.07	0.029	(0.078)	0.005	0.024
270.	22.50	0.07	0.029	(0.078)	0.005	0.024
271.	22.58	0.07	0.029	(0.077)	0.005	0.024
272.	22.67	0.07	0.029	(0.077)	0.005	0.024
273.	22.75	0.07	0.029	(0.077)	0.005	0.024
274.	22.83	0.07	0.029	(0.077)	0.005	0.024
275.	22.92	0.07	0.029	(0.077)	0.005	0.024
276.	23.00	0.07	0.029	(0.076)	0.005	0.024
277.	23.08	0.07	0.029	(0.076)	0.005	0.024
278.	23.17	0.07	0.029	(0.076)	0.005	0.024
279.	23.25	0.07	0.029	(0.076)	0.005	0.024
280.	23.33	0.07	0.029	(0.076)	0.005	0.024
281.	23.42	0.07	0.029	(0.076)	0.005	0.024
282.	23.50	0.07	0.029	(0.075)	0.005	0.024
283.	23.58	0.07	0.029	(0.075)	0.005	0.024
284.	23.67	0.07	0.029	(0.075)	0.005	0.024
285.	23.75	0.07	0.029	(0.075)	0.005	0.024
286.	23.83	0.07	0.029	(0.075)	0.005	0.024
287.	23.92	0.07	0.029	(0.075)	0.005	0.024
288.	24.00	0.07	0.029	(0.075)	0.005	0.024

(Loss Rate Not Used)

Sum = 100.0

Sum = 36.2

Flood volume = Effective rainfall 3.01(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 1.8(Ac.Ft)

Total soil loss = 0.59(In)

Total soil loss = 0.355(Ac.Ft)

Total rainfall = 3.60(In)

Flood volume = 78755.9 Cubic Feet

Total soil loss = 15449.7 Cubic Feet

Peak flow rate of this hydrograph = 2.975(CFS)

+++++

24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						

0+ 5	0.0007	0.10	Q				
0+10	0.0018	0.16	Q				

0+15	0.0030	0.18	Q				
0+20	0.0046	0.22	Q				
0+25	0.0063	0.26	VQ				
0+30	0.0081	0.26	VQ				
0+35	0.0099	0.26	VQ				
0+40	0.0118	0.26	VQ				
0+45	0.0136	0.26	VQ				
0+50	0.0157	0.31	VQ				
0+55	0.0181	0.34	VQ				
1+ 0	0.0205	0.35	VQ				
1+ 5	0.0226	0.30	VQ				
1+10	0.0244	0.27	VQ				
1+15	0.0262	0.26	VQ				
1+20	0.0280	0.26	VQ				
1+25	0.0298	0.26	VQ				
1+30	0.0316	0.26	VQ				
1+35	0.0335	0.26	VQ				
1+40	0.0353	0.26	VQ				
1+45	0.0371	0.26	VQ				
1+50	0.0392	0.31	VQ				
1+55	0.0416	0.34	VQ				
2+ 0	0.0440	0.35	VQ				
2+ 5	0.0464	0.35	IQ				
2+10	0.0488	0.35	IQ				
2+15	0.0512	0.35	IQ				
2+20	0.0536	0.35	IQ				
2+25	0.0561	0.35	IQ				
2+30	0.0585	0.35	IQ				
2+35	0.0612	0.40	IQ				
2+40	0.0642	0.43	IQ				
2+45	0.0672	0.44	IQ				
2+50	0.0702	0.44	IQ				
2+55	0.0732	0.44	IQ				
3+ 0	0.0762	0.44	IQ				
3+ 5	0.0793	0.44	IQ				
3+10	0.0823	0.44	IQ				
3+15	0.0853	0.44	IQ				
3+20	0.0883	0.44	IQ				
3+25	0.0913	0.44	IQV				
3+30	0.0943	0.44	IQV				
3+35	0.0973	0.44	IQV				
3+40	0.1004	0.44	IQV				
3+45	0.1034	0.44	IQV				
3+50	0.1067	0.49	IQV				
3+55	0.1103	0.52	Q				
4+ 0	0.1139	0.53	Q				
4+ 5	0.1175	0.53	Q				
4+10	0.1211	0.53	Q				
4+15	0.1248	0.53	Q				
4+20	0.1287	0.57	Q				
4+25	0.1329	0.61	Q				
4+30	0.1371	0.61	QV				
4+35	0.1413	0.61	QV				
4+40	0.1456	0.61	QV				

4+45	0.1498	0.61	QV				
4+50	0.1543	0.66	QV				
4+55	0.1591	0.69	QV				
5+ 0	0.1639	0.70	QV				
5+ 5	0.1681	0.60	QV				
5+10	0.1718	0.54	QV				
5+15	0.1754	0.53	QV				
5+20	0.1793	0.57	QV				
5+25	0.1835	0.61	Q V				
5+30	0.1877	0.61	Q V				
5+35	0.1923	0.66	Q V				
5+40	0.1971	0.69	Q V				
5+45	0.2019	0.70	Q V				
5+50	0.2067	0.70	Q V				
5+55	0.2115	0.70	Q V				
6+ 0	0.2164	0.70	Q V				
6+ 5	0.2215	0.75	Q V				
6+10	0.2269	0.78	Q V				
6+15	0.2323	0.79	Q V				
6+20	0.2378	0.79	Q V				
6+25	0.2432	0.79	Q V				
6+30	0.2486	0.79	Q V				
6+35	0.2544	0.84	Q V				
6+40	0.2604	0.87	Q V				
6+45	0.2664	0.88	Q V				
6+50	0.2724	0.88	Q V				
6+55	0.2784	0.88	Q V				
7+ 0	0.2845	0.88	Q V				
7+ 5	0.2905	0.88	Q V				
7+10	0.2965	0.88	Q V				
7+15	0.3026	0.88	Q V				
7+20	0.3089	0.92	Q V				
7+25	0.3155	0.96	Q V				
7+30	0.3221	0.96	Q V				
7+35	0.3291	1.01	Q V				
7+40	0.3363	1.04	Q V				
7+45	0.3435	1.05	Q V				
7+50	0.3511	1.10	Q V				
7+55	0.3589	1.13	Q V				
8+ 0	0.3667	1.14	Q V				
8+ 5	0.3753	1.24	Q V				
8+10	0.3842	1.30	Q V				
8+15	0.3933	1.31	Q V				
8+20	0.4023	1.31	Q V				
8+25	0.4113	1.31	Q V				
8+30	0.4204	1.31	Q V				
8+35	0.4298	1.36	Q V				
8+40	0.4394	1.39	Q V				
8+45	0.4490	1.40	Q V				
8+50	0.4590	1.45	Q V				
8+55	0.4692	1.48	Q V				
9+ 0	0.4794	1.49	Q V				
9+ 5	0.4904	1.59	Q V				
9+10	0.5017	1.65	Q V				

9+15	0.5132	1.66		Q	V				
9+20	0.5250	1.71		Q	V				
9+25	0.5370	1.74		Q	V				
9+30	0.5491	1.75		Q	V				
9+35	0.5615	1.80		Q	V				
9+40	0.5741	1.83		Q	V				
9+45	0.5867	1.84		Q	V				
9+50	0.5997	1.89		Q	V				
9+55	0.6129	1.92		Q	V				
10+ 0	0.6262	1.93		Q	V				
10+ 5	0.6371	1.58		Q	V				
10+10	0.6464	1.35		Q	V				
10+15	0.6554	1.31		Q	V				
10+20	0.6645	1.31		Q	V				
10+25	0.6735	1.31		Q	V				
10+30	0.6825	1.31		Q	V				
10+35	0.6933	1.56		Q	V				
10+40	0.7051	1.72		Q	V				
10+45	0.7172	1.75		Q	V				
10+50	0.7293	1.75		Q	V				
10+55	0.7413	1.75		Q	V				
11+ 0	0.7534	1.75		Q	V				
11+ 5	0.7651	1.70		Q	V				
11+10	0.7766	1.67		Q	V				
11+15	0.7880	1.66		Q	V				
11+20	0.7995	1.66		Q	V				
11+25	0.8109	1.66		Q	V				
11+30	0.8224	1.66		Q	V				
11+35	0.8331	1.56		Q	V				
11+40	0.8435	1.50		Q	V				
11+45	0.8537	1.49		Q	V				
11+50	0.8643	1.54		Q	V				
11+55	0.8751	1.57		Q	V				
12+ 0	0.8859	1.58		Q	V				
12+ 5	0.8992	1.92		Q	V				
12+10	0.9140	2.15		Q	V				
12+15	0.9290	2.19		Q	V				
12+20	0.9445	2.24		Q	V				
12+25	0.9601	2.27		Q	V				
12+30	0.9758	2.28		Q	V				
12+35	0.9921	2.37		Q	V				
12+40	1.0089	2.44		Q	V				
12+45	1.0258	2.45		Q	V				
12+50	1.0430	2.50		Q	V				
12+55	1.0604	2.53		Q	V				
13+ 0	1.0779	2.54		Q	V				
13+ 5	1.0971	2.79		Q	V				
13+10	1.1174	2.95		Q	V				
13+15	1.1379	2.98		Q	V				
13+20	1.1584	2.98		Q	V				
13+25	1.1789	2.98		Q	V				
13+30	1.1994	2.98		Q	V				
13+35	1.2161	2.43		Q	V				
13+40	1.2304	2.07		Q	V				

13+45	1.2442	2.01		Q			V		
13+50	1.2581	2.01		Q			V		
13+55	1.2720	2.01		Q			V		
14+ 0	1.2858	2.01		Q			V		
14+ 5	1.3010	2.21		Q			V		
14+10	1.3172	2.34		Q			V		
14+15	1.3334	2.36		Q			V		
14+20	1.3494	2.31		Q			V		
14+25	1.3651	2.28		Q			V		
14+30	1.3807	2.28		Q			V		
14+35	1.3964	2.28		Q			V		
14+40	1.4121	2.28		Q			V		
14+45	1.4278	2.28		Q			V		
14+50	1.4431	2.23		Q			V		
14+55	1.4582	2.19		Q			V		
15+ 0	1.4733	2.19		Q			V		
15+ 5	1.4880	2.14		Q			V		
15+10	1.5025	2.11		Q			V		
15+15	1.5169	2.10		Q			V		
15+20	1.5311	2.05		Q			V		
15+25	1.5450	2.02		Q			V		
15+30	1.5588	2.01		Q			V		
15+35	1.5713	1.81		Q			V		
15+40	1.5829	1.68		Q			V		
15+45	1.5944	1.66		Q			V		
15+50	1.6058	1.66		Q			V		
15+55	1.6173	1.66		Q			V		
16+ 0	1.6287	1.66		Q			V		
16+ 5	1.6351	0.92		Q			V		
16+10	1.6380	0.43		Q			V		
16+15	1.6405	0.35		Q			V		
16+20	1.6429	0.35		Q			V		
16+25	1.6453	0.35		Q			V		
16+30	1.6477	0.35		Q			V		
16+35	1.6498	0.30		Q			V		
16+40	1.6516	0.27		Q			V		
16+45	1.6534	0.26		Q			V		
16+50	1.6552	0.26		Q			V		
16+55	1.6570	0.26		Q			V		
17+ 0	1.6588	0.26		Q			V		
17+ 5	1.6613	0.36		Q			V		
17+10	1.6643	0.43		Q			V		
17+15	1.6673	0.44		Q			V		
17+20	1.6703	0.44		Q			V		
17+25	1.6733	0.44		Q			V		
17+30	1.6763	0.44		Q			V		
17+35	1.6793	0.44		Q			V		
17+40	1.6823	0.44		Q			V		
17+45	1.6854	0.44		Q			V		
17+50	1.6880	0.39		Q			V		
17+55	1.6905	0.36		Q			V		
18+ 0	1.6929	0.35		Q			V		
18+ 5	1.6953	0.35		Q			V		
18+10	1.6977	0.35		Q			V		

18+15	1.7001	0.35	IQ				V	
18+20	1.7025	0.35	IQ				V	
18+25	1.7049	0.35	IQ				V	
18+30	1.7073	0.35	IQ				V	
18+35	1.7094	0.30	IQ				V	
18+40	1.7113	0.27	IQ				V	
18+45	1.7131	0.26	IQ				V	
18+50	1.7145	0.21	Q				V	
18+55	1.7158	0.18	Q				V	
19+ 0	1.7170	0.18	Q				V	
19+ 5	1.7185	0.22	Q				V	
19+10	1.7203	0.26	IQ				V	
19+15	1.7221	0.26	IQ				V	
19+20	1.7243	0.31	IQ				V	
19+25	1.7266	0.34	IQ				V	
19+30	1.7290	0.35	IQ				V	
19+35	1.7311	0.30	IQ				V	
19+40	1.7330	0.27	IQ				V	
19+45	1.7348	0.26	IQ				V	
19+50	1.7362	0.21	Q				V	
19+55	1.7375	0.18	Q				V	
20+ 0	1.7387	0.18	Q				V	
20+ 5	1.7402	0.22	Q				V	
20+10	1.7420	0.26	IQ				V	
20+15	1.7438	0.26	IQ				V	
20+20	1.7456	0.26	IQ				V	
20+25	1.7474	0.26	IQ				V	
20+30	1.7492	0.26	IQ				V	
20+35	1.7510	0.26	IQ				V	
20+40	1.7528	0.26	IQ				V	
20+45	1.7547	0.26	IQ				V	
20+50	1.7561	0.21	Q				V	
20+55	1.7574	0.18	Q				V	
21+ 0	1.7586	0.18	Q				V	
21+ 5	1.7601	0.22	Q				V	
21+10	1.7619	0.26	IQ				V	
21+15	1.7637	0.26	IQ				V	
21+20	1.7652	0.21	Q				V	
21+25	1.7664	0.18	Q				V	
21+30	1.7676	0.18	Q				V	
21+35	1.7692	0.22	Q				V	
21+40	1.7709	0.26	IQ				V	
21+45	1.7727	0.26	IQ				V	
21+50	1.7742	0.21	Q				V	
21+55	1.7754	0.18	Q				V	
22+ 0	1.7767	0.18	Q				V	
22+ 5	1.7782	0.22	Q				V	
22+10	1.7800	0.26	IQ				V	
22+15	1.7818	0.26	IQ				V	
22+20	1.7832	0.21	Q				V	
22+25	1.7845	0.18	Q				V	
22+30	1.7857	0.18	Q				V	
22+35	1.7869	0.18	Q				V	
22+40	1.7881	0.18	Q				V	

22+45	1.7893	0.18	Q				V
22+50	1.7905	0.18	Q				V
22+55	1.7917	0.18	Q				V
23+ 0	1.7929	0.18	Q				V
23+ 5	1.7941	0.18	Q				V
23+10	1.7953	0.18	Q				V
23+15	1.7965	0.18	Q				V
23+20	1.7977	0.18	Q				V
23+25	1.7990	0.18	Q				V
23+30	1.8002	0.18	Q				V
23+35	1.8014	0.18	Q				V
23+40	1.8026	0.18	Q				V
23+45	1.8038	0.18	Q				V
23+50	1.8050	0.18	Q				V
23+55	1.8062	0.18	Q				V
24+ 0	1.8074	0.18	Q				V
24+ 5	1.8079	0.08	Q				V
24+10	1.8080	0.01	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP1100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
100 YEAR STORM AMC II

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	0.50	3.60

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	1.30	9.36

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 1.300 (In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.300 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920

Total Area Entered = 7.20 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.920	0.128	1.000	0.128
Sum (F) =						

0.128

Area averaged mean soil loss (F) (In/Hr) = 0.150
Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.164

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	298.615	56.537	4.102

	2	0.167	597.229	37.205	2.700
	3	0.250	895.844	6.258	0.454
					Sum =
100.000	Sum=	7.256			

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1. 0.08	4.20	0.655	(0.150)	0.107	0.548
2. 0.17	4.30	0.671	(0.150)	0.110	0.561
3. 0.25	5.00	0.780	(0.150)	0.128	0.652
4. 0.33	5.00	0.780	(0.150)	0.128	0.652
5. 0.42	5.80	0.905	(0.150)	0.148	0.756
6. 0.50	6.50	1.014	0.150	(0.166)	0.864
7. 0.58	7.40	1.154	0.150	(0.189)	1.005
8. 0.67	8.60	1.342	0.150	(0.220)	1.192
9. 0.75	12.30	1.919	0.150	(0.315)	1.769
10. 0.83	29.10	4.539	0.150	(0.744)	4.390
11. 0.92	6.80	1.061	0.150	(0.174)	0.911
12. 1.00	5.00	0.780	(0.150)	0.128	0.652

(Loss Rate Not Used)

Sum = 100.0 Sum = 14.0

Flood volume = Effective rainfall 1.16(In)
times area 7.2(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)

Total soil loss = 0.14(In)
Total soil loss = 0.082(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 30385.6 Cubic Feet
Total soil loss = 3588.9 Cubic Feet

Peak flow rate of this hydrograph = 23.337(CFS)

+++++

1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5

30.0

0+ 5	0.0155	2.25	V Q			
0+10	0.0415	3.78	V Q			
0+15	0.0721	4.44	VQ			
0+20	0.1044	4.69	VQ			
0+25	0.1400	5.16	Q V			
0+30	0.1805	5.89	Q V			

0+35	0.2274	6.80			Q	V					
0+40	0.2824	8.00			Q		V				
0+45	0.3578	10.94				Q		V			
0+50	0.5185	23.34							V Q		
0+55	0.6314	16.40						Q		V	
1+ 0	0.6805	7.13			Q						V
1+ 5	0.6955	2.18		Q							V
1+10	0.6976	0.30	Q								V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP3100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
100 YEAR STORM AMC II

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	0.85	6.12

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.00	14.40

STORM EVENT (YEAR) = 100.00

Area Averaged 2-Year Rainfall = 0.850 (In)

Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 2.000 (In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 2.000 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.920	0.128	1.000	0.128
Sum (F) =						

0.128

Area averaged mean soil loss (F) (In/Hr) = 0.150

Minimum soil loss rate ((In/Hr)) = 0.075

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454

100.000 Sum= 7.256

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.312	(0.150)	0.051	0.261
2.	0.17	1.30	0.312	(0.150)	0.051	0.261
3.	0.25	1.10	0.264	(0.150)	0.043	0.221
4.	0.33	1.50	0.360	(0.150)	0.059	0.301
5.	0.42	1.50	0.360	(0.150)	0.059	0.301
6.	0.50	1.80	0.432	(0.150)	0.071	0.361
7.	0.58	1.50	0.360	(0.150)	0.059	0.301
8.	0.67	1.80	0.432	(0.150)	0.071	0.361
9.	0.75	1.80	0.432	(0.150)	0.071	0.361
10.	0.83	1.50	0.360	(0.150)	0.059	0.301
11.	0.92	1.60	0.384	(0.150)	0.063	0.321
12.	1.00	1.80	0.432	(0.150)	0.071	0.361
13.	1.08	2.20	0.528	(0.150)	0.087	0.441
14.	1.17	2.20	0.528	(0.150)	0.087	0.441
15.	1.25	2.20	0.528	(0.150)	0.087	0.441
16.	1.33	2.00	0.480	(0.150)	0.079	0.401
17.	1.42	2.60	0.624	(0.150)	0.102	0.522
18.	1.50	2.70	0.648	(0.150)	0.106	0.542
19.	1.58	2.40	0.576	(0.150)	0.094	0.482
20.	1.67	2.70	0.648	(0.150)	0.106	0.542
21.	1.75	3.30	0.792	(0.150)	0.130	0.662
22.	1.83	3.10	0.744	(0.150)	0.122	0.622
23.	1.92	2.90	0.696	(0.150)	0.114	0.582
24.	2.00	3.00	0.720	(0.150)	0.118	0.602
25.	2.08	3.10	0.744	(0.150)	0.122	0.622
26.	2.17	4.20	1.008	0.150	(0.165)	0.858
27.	2.25	5.00	1.200	0.150	(0.197)	1.050
28.	2.33	3.50	0.840	(0.150)	0.138	0.702
29.	2.42	6.80	1.632	0.150	(0.268)	1.482
30.	2.50	7.30	1.752	0.150	(0.287)	1.602
31.	2.58	8.20	1.968	0.150	(0.323)	1.818
32.	2.67	5.90	1.416	0.150	(0.232)	1.266
33.	2.75	2.00	0.480	(0.150)	0.079	0.401
34.	2.83	1.80	0.432	(0.150)	0.071	0.361
35.	2.92	1.80	0.432	(0.150)	0.071	0.361
36.	3.00	0.60	0.144	(0.150)	0.024	0.120

(Loss Rate Not Used)

Sum = 100.0

Sum = 20.6

Flood volume = Effective rainfall 1.72(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 1.0(Ac.Ft)

Total soil loss = 0.28(In)

Total soil loss = 0.168(Ac.Ft)

Total rainfall = 2.00(In)
 Flood volume = 44947.7 Cubic Feet
 Total soil loss = 7322.7 Cubic Feet

Peak flow rate of this hydrograph = 12.464(CFS)

3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0
20.0						
0+ 5	0.0074	1.07	V Q			
0+10	0.0196	1.78	V Q			
0+15	0.0315	1.73	V Q			
0+20	0.0449	1.95	V Q			
0+25	0.0597	2.15	V Q			
0+30	0.0765	2.43	V Q			
0+35	0.0926	2.35	VQ			
0+40	0.1096	2.46	Q			
0+45	0.1275	2.59	VQ			
0+50	0.1438	2.37	QV			
0+55	0.1596	2.29	Q V			
1+ 0	0.1767	2.49	Q V			
1+ 5	0.1969	2.93	Q V			
1+10	0.2188	3.17	Q V			
1+15	0.2408	3.20	Q V			
1+20	0.2618	3.04	Q V			
1+25	0.2853	3.43	Q V			
1+30	0.3116	3.81	Q V			
1+35	0.3369	3.68	Q V			
1+40	0.3629	3.77	Q V			
1+45	0.3932	4.40	Q V			
1+50	0.4248	4.59	Q V			
1+55	0.4549	4.37	Q V			
2+ 0	0.4847	4.32	Q V			
2+ 5	0.5153	4.44	Q V			
2+10	0.5530	5.48	Q		V	
2+15	0.6006	6.91	Q		V	
2+20	0.6427	6.11	Q		V	
2+25	0.7009	8.46	Q		V	
2+30	0.7760	10.90	Q		V	
2+35	0.8618	12.46	Q		V	
2+40	0.9365	10.84	Q		V	
2+45	0.9770	5.89	Q		V	
2+50	0.9987	3.14	Q		V	
2+55	1.0169	2.64	Q		V	
3+ 0	1.0281	1.63	Q		V	
3+ 5	1.0315	0.49	Q		V	
3+10	1.0319	0.05	Q		V	

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP6100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
100 YEAR STORM AMC II

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
7.20	1.20		8.64

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
7.20	2.90		20.88

STORM EVENT (YEAR) = 100.00

Area Averaged 2-Year Rainfall = 1.200 (In)

Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 2.900 (In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 2.900 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.920	0.128	1.000	0.128
Sum (F) =						

0.128

Area averaged mean soil loss (F) (In/Hr) = 0.150

Minimum soil loss rate ((In/Hr)) = 0.075

(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454

100.000 Sum= 7.256

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.50	0.174	(0.150)	0.029	0.145
2.	0.17	0.60	0.209	(0.150)	0.034	0.175
3.	0.25	0.60	0.209	(0.150)	0.034	0.175
4.	0.33	0.60	0.209	(0.150)	0.034	0.175
5.	0.42	0.60	0.209	(0.150)	0.034	0.175
6.	0.50	0.70	0.244	(0.150)	0.040	0.204
7.	0.58	0.70	0.244	(0.150)	0.040	0.204
8.	0.67	0.70	0.244	(0.150)	0.040	0.204
9.	0.75	0.70	0.244	(0.150)	0.040	0.204
10.	0.83	0.70	0.244	(0.150)	0.040	0.204
11.	0.92	0.70	0.244	(0.150)	0.040	0.204
12.	1.00	0.80	0.278	(0.150)	0.046	0.233
13.	1.08	0.80	0.278	(0.150)	0.046	0.233
14.	1.17	0.80	0.278	(0.150)	0.046	0.233
15.	1.25	0.80	0.278	(0.150)	0.046	0.233
16.	1.33	0.80	0.278	(0.150)	0.046	0.233
17.	1.42	0.80	0.278	(0.150)	0.046	0.233
18.	1.50	0.80	0.278	(0.150)	0.046	0.233
19.	1.58	0.80	0.278	(0.150)	0.046	0.233
20.	1.67	0.80	0.278	(0.150)	0.046	0.233
21.	1.75	0.80	0.278	(0.150)	0.046	0.233
22.	1.83	0.80	0.278	(0.150)	0.046	0.233
23.	1.92	0.80	0.278	(0.150)	0.046	0.233
24.	2.00	0.90	0.313	(0.150)	0.051	0.262
25.	2.08	0.80	0.278	(0.150)	0.046	0.233
26.	2.17	0.90	0.313	(0.150)	0.051	0.262
27.	2.25	0.90	0.313	(0.150)	0.051	0.262
28.	2.33	0.90	0.313	(0.150)	0.051	0.262
29.	2.42	0.90	0.313	(0.150)	0.051	0.262
30.	2.50	0.90	0.313	(0.150)	0.051	0.262
31.	2.58	0.90	0.313	(0.150)	0.051	0.262
32.	2.67	0.90	0.313	(0.150)	0.051	0.262
33.	2.75	1.00	0.348	(0.150)	0.057	0.291
34.	2.83	1.00	0.348	(0.150)	0.057	0.291
35.	2.92	1.00	0.348	(0.150)	0.057	0.291
36.	3.00	1.00	0.348	(0.150)	0.057	0.291
37.	3.08	1.00	0.348	(0.150)	0.057	0.291
38.	3.17	1.10	0.383	(0.150)	0.063	0.320
39.	3.25	1.10	0.383	(0.150)	0.063	0.320
40.	3.33	1.10	0.383	(0.150)	0.063	0.320
41.	3.42	1.20	0.418	(0.150)	0.068	0.349
42.	3.50	1.30	0.452	(0.150)	0.074	0.378

43.	3.58	1.40	0.487	(0.150)	0.080	0.407
44.	3.67	1.40	0.487	(0.150)	0.080	0.407
45.	3.75	1.50	0.522	(0.150)	0.086	0.436
46.	3.83	1.50	0.522	(0.150)	0.086	0.436
47.	3.92	1.60	0.557	(0.150)	0.091	0.465
48.	4.00	1.60	0.557	(0.150)	0.091	0.465
49.	4.08	1.70	0.592	(0.150)	0.097	0.495
50.	4.17	1.80	0.626	(0.150)	0.103	0.524
51.	4.25	1.90	0.661	(0.150)	0.108	0.553
52.	4.33	2.00	0.696	(0.150)	0.114	0.582
53.	4.42	2.10	0.731	(0.150)	0.120	0.611
54.	4.50	2.10	0.731	(0.150)	0.120	0.611
55.	4.58	2.20	0.766	(0.150)	0.126	0.640
56.	4.67	2.30	0.800	(0.150)	0.131	0.669
57.	4.75	2.40	0.835	(0.150)	0.137	0.698
58.	4.83	2.40	0.835	(0.150)	0.137	0.698
59.	4.92	2.50	0.870	(0.150)	0.143	0.727
60.	5.00	2.60	0.905	(0.150)	0.148	0.756
61.	5.08	3.10	1.079	0.150	(0.177)	0.929
62.	5.17	3.60	1.253	0.150	(0.205)	1.103
63.	5.25	3.90	1.357	0.150	(0.223)	1.207
64.	5.33	4.20	1.462	0.150	(0.240)	1.312
65.	5.42	4.70	1.636	0.150	(0.268)	1.486
66.	5.50	5.60	1.949	0.150	(0.320)	1.799
67.	5.58	1.90	0.661	(0.150)	0.108	0.553
68.	5.67	0.90	0.313	(0.150)	0.051	0.262
69.	5.75	0.60	0.209	(0.150)	0.034	0.175
70.	5.83	0.50	0.174	(0.150)	0.029	0.145
71.	5.92	0.30	0.104	(0.150)	0.017	0.087
72.	6.00	0.20	0.070	(0.150)	0.011	0.058

(Loss Rate Not Used)

Sum = 100.0

Sum = 29.6

Flood volume = Effective rainfall 2.47(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 1.5(Ac.Ft)

Total soil loss = 0.43(In)

Total soil loss = 0.259(Ac.Ft)

Total rainfall = 2.90(In)

Flood volume = 64526.1 Cubic Feet

Total soil loss = 11266.4 Cubic Feet

Peak flow rate of this hydrograph = 11.994(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0
20.0						

0+ 5	0.0041	0.60	VQ				
0+10	0.0118	1.11	V Q				

0+15	0.0204	1.25	V Q				
0+20	0.0291	1.27	V Q				
0+25	0.0378	1.27	VQ				
0+30	0.0474	1.39	VQ				
0+35	0.0575	1.47	VQ				
0+40	0.0677	1.48	VQ				
0+45	0.0778	1.48	Q				
0+50	0.0880	1.48	Q				
0+55	0.0982	1.48	Q				
1+ 0	0.1092	1.60	VQ				
1+ 5	0.1208	1.68	Q				
1+10	0.1324	1.69	Q				
1+15	0.1440	1.69	Q				
1+20	0.1557	1.69	QV				
1+25	0.1673	1.69	QV				
1+30	0.1789	1.69	QV				
1+35	0.1906	1.69	Q V				
1+40	0.2022	1.69	Q V				
1+45	0.2139	1.69	Q V				
1+50	0.2255	1.69	Q V				
1+55	0.2371	1.69	Q V				
2+ 0	0.2496	1.81	Q V				
2+ 5	0.2618	1.77	Q V				
2+10	0.2743	1.82	Q V				
2+15	0.2873	1.89	Q V				
2+20	0.3004	1.90	Q V				
2+25	0.3135	1.90	Q V				
2+30	0.3266	1.90	Q V				
2+35	0.3397	1.90	Q V				
2+40	0.3528	1.90	Q V				
2+45	0.3667	2.02	Q V				
2+50	0.3811	2.10	Q V				
2+55	0.3957	2.11	Q V				
3+ 0	0.4102	2.11	Q V				
3+ 5	0.4248	2.11	Q V				
3+10	0.4402	2.23	Q V				
3+15	0.4561	2.31	Q V				
3+20	0.4721	2.32	Q V				
3+25	0.4889	2.44	Q V				
3+30	0.5071	2.64	Q V				
3+35	0.5267	2.85	Q V				
3+40	0.5470	2.94	Q V				
3+45	0.5682	3.08	Q V				
3+50	0.5899	3.15	Q V				
3+55	0.6125	3.29	Q V				
4+ 0	0.6357	3.37	Q V				
4+ 5	0.6598	3.50	Q V				
4+10	0.6853	3.70	Q V				
4+15	0.7122	3.91	Q V				
4+20	0.7406	4.12	Q V				
4+25	0.7704	4.33	Q V				
4+30	0.8008	4.42	Q V				
4+35	0.8322	4.55	Q V				
4+40	0.8649	4.75	Q V				

4+45	0.8991	4.96			Q			V			
4+50	0.9340	5.06			Q			V			
4+55	0.9697	5.19			Q			V			
5+ 0	1.0068	5.39			Q			V			
5+ 5	1.0494	6.19				Q			V		
5+10	1.1002	7.38				Q			V		
5+15	1.1578	8.36					Q		V		
5+20	1.2208	9.15					Q		V		
5+25	1.2910	10.19					Q			V	
5+30	1.3736	11.99						Q			V
5+35	1.4273	7.80				Q					V
5+40	1.4506	3.39			Q						V
5+45	1.4622	1.67		Q							V
5+50	1.4703	1.19		Q							V
5+55	1.4761	0.83		Q							V
6+ 0	1.4798	0.54		Q							V
6+ 5	1.4811	0.20		Q							V
6+10	1.4813	0.03		Q							V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 11/30/23 File: 2177UHP24100.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-
2177 PERRIS NORTH DEVELOPMENT
PROP. DEVELOPED CONDITIONS
100 YEAR STORM AMC II

Drainage Area = 7.20(Ac.) = 0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.20(Ac.) =
0.011 Sq. Mi.
Length along longest watercourse = 977.00(Ft.)
Length along longest watercourse measured to centroid =
365.00(Ft.)
Length along longest watercourse = 0.185 Mi.
Length along longest watercourse measured to centroid = 0.069
Mi.

Difference in elevation = 21.20(Ft.)
Slope along watercourse = 114.5711 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.67 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.67 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	2.00	14.40

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	7.20	5.90	42.48

STORM EVENT (YEAR) = 100.00

Area Averaged 2-Year Rainfall = 2.000 (In)

Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 5.900 (In)

Areal adjustment factor = 100.00 %

Adjusted average point rain = 5.900 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
7.200	32.00	0.920
Total Area Entered = 7.20 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.920	0.128	1.000	0.128
Sum (F) =						

0.128

Area averaged mean soil loss (F) (In/Hr) = 0.150

Minimum soil loss rate ((In/Hr)) = 0.075
(for 24 hour storm duration)

Note: User entry of the f value

Soil low loss rate (decimal) = 0.164

U n i t H y d r o g r a p h
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	298.615	4.102
2	0.167	597.229	2.700
3	0.250	895.844	0.454

100.000 Sum= 7.256

Sum =

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	0.07	0.047	(0.265)	0.008	0.039
2.	0.17	0.07	0.047	(0.264)	0.008	0.039
3.	0.25	0.07	0.047	(0.263)	0.008	0.039
4.	0.33	0.10	0.071	(0.262)	0.012	0.059
5.	0.42	0.10	0.071	(0.261)	0.012	0.059
6.	0.50	0.10	0.071	(0.260)	0.012	0.059
7.	0.58	0.10	0.071	(0.259)	0.012	0.059
8.	0.67	0.10	0.071	(0.258)	0.012	0.059
9.	0.75	0.10	0.071	(0.257)	0.012	0.059
10.	0.83	0.13	0.094	(0.256)	0.015	0.079
11.	0.92	0.13	0.094	(0.255)	0.015	0.079
12.	1.00	0.13	0.094	(0.254)	0.015	0.079
13.	1.08	0.10	0.071	(0.253)	0.012	0.059
14.	1.17	0.10	0.071	(0.252)	0.012	0.059
15.	1.25	0.10	0.071	(0.251)	0.012	0.059
16.	1.33	0.10	0.071	(0.250)	0.012	0.059
17.	1.42	0.10	0.071	(0.249)	0.012	0.059
18.	1.50	0.10	0.071	(0.248)	0.012	0.059
19.	1.58	0.10	0.071	(0.247)	0.012	0.059
20.	1.67	0.10	0.071	(0.246)	0.012	0.059
21.	1.75	0.10	0.071	(0.245)	0.012	0.059
22.	1.83	0.13	0.094	(0.244)	0.015	0.079
23.	1.92	0.13	0.094	(0.243)	0.015	0.079
24.	2.00	0.13	0.094	(0.242)	0.015	0.079
25.	2.08	0.13	0.094	(0.241)	0.015	0.079
26.	2.17	0.13	0.094	(0.240)	0.015	0.079
27.	2.25	0.13	0.094	(0.239)	0.015	0.079
28.	2.33	0.13	0.094	(0.238)	0.015	0.079
29.	2.42	0.13	0.094	(0.237)	0.015	0.079
30.	2.50	0.13	0.094	(0.236)	0.015	0.079
31.	2.58	0.17	0.118	(0.235)	0.019	0.099
32.	2.67	0.17	0.118	(0.235)	0.019	0.099
33.	2.75	0.17	0.118	(0.234)	0.019	0.099
34.	2.83	0.17	0.118	(0.233)	0.019	0.099
35.	2.92	0.17	0.118	(0.232)	0.019	0.099
36.	3.00	0.17	0.118	(0.231)	0.019	0.099
37.	3.08	0.17	0.118	(0.230)	0.019	0.099
38.	3.17	0.17	0.118	(0.229)	0.019	0.099
39.	3.25	0.17	0.118	(0.228)	0.019	0.099
40.	3.33	0.17	0.118	(0.227)	0.019	0.099
41.	3.42	0.17	0.118	(0.226)	0.019	0.099
42.	3.50	0.17	0.118	(0.225)	0.019	0.099

43.	3.58	0.17	0.118	(0.224)	0.019	0.099
44.	3.67	0.17	0.118	(0.223)	0.019	0.099
45.	3.75	0.17	0.118	(0.222)	0.019	0.099
46.	3.83	0.20	0.142	(0.221)	0.023	0.118
47.	3.92	0.20	0.142	(0.220)	0.023	0.118
48.	4.00	0.20	0.142	(0.219)	0.023	0.118
49.	4.08	0.20	0.142	(0.218)	0.023	0.118
50.	4.17	0.20	0.142	(0.217)	0.023	0.118
51.	4.25	0.20	0.142	(0.217)	0.023	0.118
52.	4.33	0.23	0.165	(0.216)	0.027	0.138
53.	4.42	0.23	0.165	(0.215)	0.027	0.138
54.	4.50	0.23	0.165	(0.214)	0.027	0.138
55.	4.58	0.23	0.165	(0.213)	0.027	0.138
56.	4.67	0.23	0.165	(0.212)	0.027	0.138
57.	4.75	0.23	0.165	(0.211)	0.027	0.138
58.	4.83	0.27	0.189	(0.210)	0.031	0.158
59.	4.92	0.27	0.189	(0.209)	0.031	0.158
60.	5.00	0.27	0.189	(0.208)	0.031	0.158
61.	5.08	0.20	0.142	(0.207)	0.023	0.118
62.	5.17	0.20	0.142	(0.207)	0.023	0.118
63.	5.25	0.20	0.142	(0.206)	0.023	0.118
64.	5.33	0.23	0.165	(0.205)	0.027	0.138
65.	5.42	0.23	0.165	(0.204)	0.027	0.138
66.	5.50	0.23	0.165	(0.203)	0.027	0.138
67.	5.58	0.27	0.189	(0.202)	0.031	0.158
68.	5.67	0.27	0.189	(0.201)	0.031	0.158
69.	5.75	0.27	0.189	(0.200)	0.031	0.158
70.	5.83	0.27	0.189	(0.199)	0.031	0.158
71.	5.92	0.27	0.189	(0.198)	0.031	0.158
72.	6.00	0.27	0.189	(0.198)	0.031	0.158
73.	6.08	0.30	0.212	(0.197)	0.035	0.178
74.	6.17	0.30	0.212	(0.196)	0.035	0.178
75.	6.25	0.30	0.212	(0.195)	0.035	0.178
76.	6.33	0.30	0.212	(0.194)	0.035	0.178
77.	6.42	0.30	0.212	(0.193)	0.035	0.178
78.	6.50	0.30	0.212	(0.192)	0.035	0.178
79.	6.58	0.33	0.236	(0.192)	0.039	0.197
80.	6.67	0.33	0.236	(0.191)	0.039	0.197
81.	6.75	0.33	0.236	(0.190)	0.039	0.197
82.	6.83	0.33	0.236	(0.189)	0.039	0.197
83.	6.92	0.33	0.236	(0.188)	0.039	0.197
84.	7.00	0.33	0.236	(0.187)	0.039	0.197
85.	7.08	0.33	0.236	(0.186)	0.039	0.197
86.	7.17	0.33	0.236	(0.186)	0.039	0.197
87.	7.25	0.33	0.236	(0.185)	0.039	0.197
88.	7.33	0.37	0.260	(0.184)	0.043	0.217
89.	7.42	0.37	0.260	(0.183)	0.043	0.217
90.	7.50	0.37	0.260	(0.182)	0.043	0.217
91.	7.58	0.40	0.283	(0.181)	0.046	0.237
92.	7.67	0.40	0.283	(0.180)	0.046	0.237
93.	7.75	0.40	0.283	(0.180)	0.046	0.237
94.	7.83	0.43	0.307	(0.179)	0.050	0.256
95.	7.92	0.43	0.307	(0.178)	0.050	0.256
96.	8.00	0.43	0.307	(0.177)	0.050	0.256

97.	8.08	0.50	0.354	(0.176)	0.058	0.296
98.	8.17	0.50	0.354	(0.176)	0.058	0.296
99.	8.25	0.50	0.354	(0.175)	0.058	0.296
100.	8.33	0.50	0.354	(0.174)	0.058	0.296
101.	8.42	0.50	0.354	(0.173)	0.058	0.296
102.	8.50	0.50	0.354	(0.172)	0.058	0.296
103.	8.58	0.53	0.378	(0.171)	0.062	0.316
104.	8.67	0.53	0.378	(0.171)	0.062	0.316
105.	8.75	0.53	0.378	(0.170)	0.062	0.316
106.	8.83	0.57	0.401	(0.169)	0.066	0.335
107.	8.92	0.57	0.401	(0.168)	0.066	0.335
108.	9.00	0.57	0.401	(0.167)	0.066	0.335
109.	9.08	0.63	0.448	(0.167)	0.074	0.375
110.	9.17	0.63	0.448	(0.166)	0.074	0.375
111.	9.25	0.63	0.448	(0.165)	0.074	0.375
112.	9.33	0.67	0.472	(0.164)	0.077	0.395
113.	9.42	0.67	0.472	(0.164)	0.077	0.395
114.	9.50	0.67	0.472	(0.163)	0.077	0.395
115.	9.58	0.70	0.496	(0.162)	0.081	0.414
116.	9.67	0.70	0.496	(0.161)	0.081	0.414
117.	9.75	0.70	0.496	(0.160)	0.081	0.414
118.	9.83	0.73	0.519	(0.160)	0.085	0.434
119.	9.92	0.73	0.519	(0.159)	0.085	0.434
120.	10.00	0.73	0.519	(0.158)	0.085	0.434
121.	10.08	0.50	0.354	(0.157)	0.058	0.296
122.	10.17	0.50	0.354	(0.157)	0.058	0.296
123.	10.25	0.50	0.354	(0.156)	0.058	0.296
124.	10.33	0.50	0.354	(0.155)	0.058	0.296
125.	10.42	0.50	0.354	(0.154)	0.058	0.296
126.	10.50	0.50	0.354	(0.154)	0.058	0.296
127.	10.58	0.67	0.472	(0.153)	0.077	0.395
128.	10.67	0.67	0.472	(0.152)	0.077	0.395
129.	10.75	0.67	0.472	(0.151)	0.077	0.395
130.	10.83	0.67	0.472	(0.151)	0.077	0.395
131.	10.92	0.67	0.472	(0.150)	0.077	0.395
132.	11.00	0.67	0.472	(0.149)	0.077	0.395
133.	11.08	0.63	0.448	(0.148)	0.074	0.375
134.	11.17	0.63	0.448	(0.148)	0.074	0.375
135.	11.25	0.63	0.448	(0.147)	0.074	0.375
136.	11.33	0.63	0.448	(0.146)	0.074	0.375
137.	11.42	0.63	0.448	(0.145)	0.074	0.375
138.	11.50	0.63	0.448	(0.145)	0.074	0.375
139.	11.58	0.57	0.401	(0.144)	0.066	0.335
140.	11.67	0.57	0.401	(0.143)	0.066	0.335
141.	11.75	0.57	0.401	(0.143)	0.066	0.335
142.	11.83	0.60	0.425	(0.142)	0.070	0.355
143.	11.92	0.60	0.425	(0.141)	0.070	0.355
144.	12.00	0.60	0.425	(0.140)	0.070	0.355
145.	12.08	0.83	0.590	(0.140)	0.097	0.493
146.	12.17	0.83	0.590	(0.139)	0.097	0.493
147.	12.25	0.83	0.590	(0.138)	0.097	0.493
148.	12.33	0.87	0.614	(0.138)	0.101	0.513
149.	12.42	0.87	0.614	(0.137)	0.101	0.513
150.	12.50	0.87	0.614	(0.136)	0.101	0.513

151.	12.58	0.93	0.661	(0.136)	0.108	0.552
152.	12.67	0.93	0.661	(0.135)	0.108	0.552
153.	12.75	0.93	0.661	(0.134)	0.108	0.552
154.	12.83	0.97	0.684	(0.134)	0.112	0.572
155.	12.92	0.97	0.684	(0.133)	0.112	0.572
156.	13.00	0.97	0.684	(0.132)	0.112	0.572
157.	13.08	1.13	0.802	0.132 (0.132)		0.671
158.	13.17	1.13	0.802	0.131 (0.132)		0.672
159.	13.25	1.13	0.802	0.130 (0.132)		0.672
160.	13.33	1.13	0.802	0.130 (0.132)		0.673
161.	13.42	1.13	0.802	0.129 (0.132)		0.674
162.	13.50	1.13	0.802	0.128 (0.132)		0.674
163.	13.58	0.77	0.543	(0.128)	0.089	0.454
164.	13.67	0.77	0.543	(0.127)	0.089	0.454
165.	13.75	0.77	0.543	(0.126)	0.089	0.454
166.	13.83	0.77	0.543	(0.126)	0.089	0.454
167.	13.92	0.77	0.543	(0.125)	0.089	0.454
168.	14.00	0.77	0.543	(0.124)	0.089	0.454
169.	14.08	0.90	0.637	(0.124)	0.104	0.533
170.	14.17	0.90	0.637	(0.123)	0.104	0.533
171.	14.25	0.90	0.637	(0.122)	0.104	0.533
172.	14.33	0.87	0.614	(0.122)	0.101	0.513
173.	14.42	0.87	0.614	(0.121)	0.101	0.513
174.	14.50	0.87	0.614	(0.121)	0.101	0.513
175.	14.58	0.87	0.614	(0.120)	0.101	0.513
176.	14.67	0.87	0.614	(0.119)	0.101	0.513
177.	14.75	0.87	0.614	(0.119)	0.101	0.513
178.	14.83	0.83	0.590	(0.118)	0.097	0.493
179.	14.92	0.83	0.590	(0.118)	0.097	0.493
180.	15.00	0.83	0.590	(0.117)	0.097	0.493
181.	15.08	0.80	0.566	(0.116)	0.093	0.474
182.	15.17	0.80	0.566	(0.116)	0.093	0.474
183.	15.25	0.80	0.566	(0.115)	0.093	0.474
184.	15.33	0.77	0.543	(0.115)	0.089	0.454
185.	15.42	0.77	0.543	(0.114)	0.089	0.454
186.	15.50	0.77	0.543	(0.113)	0.089	0.454
187.	15.58	0.63	0.448	(0.113)	0.074	0.375
188.	15.67	0.63	0.448	(0.112)	0.074	0.375
189.	15.75	0.63	0.448	(0.112)	0.074	0.375
190.	15.83	0.63	0.448	(0.111)	0.074	0.375
191.	15.92	0.63	0.448	(0.111)	0.074	0.375
192.	16.00	0.63	0.448	(0.110)	0.074	0.375
193.	16.08	0.13	0.094	(0.109)	0.015	0.079
194.	16.17	0.13	0.094	(0.109)	0.015	0.079
195.	16.25	0.13	0.094	(0.108)	0.015	0.079
196.	16.33	0.13	0.094	(0.108)	0.015	0.079
197.	16.42	0.13	0.094	(0.107)	0.015	0.079
198.	16.50	0.13	0.094	(0.107)	0.015	0.079
199.	16.58	0.10	0.071	(0.106)	0.012	0.059
200.	16.67	0.10	0.071	(0.106)	0.012	0.059
201.	16.75	0.10	0.071	(0.105)	0.012	0.059
202.	16.83	0.10	0.071	(0.104)	0.012	0.059
203.	16.92	0.10	0.071	(0.104)	0.012	0.059
204.	17.00	0.10	0.071	(0.103)	0.012	0.059

205.	17.08	0.17	0.118	(0.103)	0.019	0.099
206.	17.17	0.17	0.118	(0.102)	0.019	0.099
207.	17.25	0.17	0.118	(0.102)	0.019	0.099
208.	17.33	0.17	0.118	(0.101)	0.019	0.099
209.	17.42	0.17	0.118	(0.101)	0.019	0.099
210.	17.50	0.17	0.118	(0.100)	0.019	0.099
211.	17.58	0.17	0.118	(0.100)	0.019	0.099
212.	17.67	0.17	0.118	(0.099)	0.019	0.099
213.	17.75	0.17	0.118	(0.099)	0.019	0.099
214.	17.83	0.13	0.094	(0.098)	0.015	0.079
215.	17.92	0.13	0.094	(0.098)	0.015	0.079
216.	18.00	0.13	0.094	(0.097)	0.015	0.079
217.	18.08	0.13	0.094	(0.097)	0.015	0.079
218.	18.17	0.13	0.094	(0.096)	0.015	0.079
219.	18.25	0.13	0.094	(0.096)	0.015	0.079
220.	18.33	0.13	0.094	(0.095)	0.015	0.079
221.	18.42	0.13	0.094	(0.095)	0.015	0.079
222.	18.50	0.13	0.094	(0.095)	0.015	0.079
223.	18.58	0.10	0.071	(0.094)	0.012	0.059
224.	18.67	0.10	0.071	(0.094)	0.012	0.059
225.	18.75	0.10	0.071	(0.093)	0.012	0.059
226.	18.83	0.07	0.047	(0.093)	0.008	0.039
227.	18.92	0.07	0.047	(0.092)	0.008	0.039
228.	19.00	0.07	0.047	(0.092)	0.008	0.039
229.	19.08	0.10	0.071	(0.091)	0.012	0.059
230.	19.17	0.10	0.071	(0.091)	0.012	0.059
231.	19.25	0.10	0.071	(0.091)	0.012	0.059
232.	19.33	0.13	0.094	(0.090)	0.015	0.079
233.	19.42	0.13	0.094	(0.090)	0.015	0.079
234.	19.50	0.13	0.094	(0.089)	0.015	0.079
235.	19.58	0.10	0.071	(0.089)	0.012	0.059
236.	19.67	0.10	0.071	(0.089)	0.012	0.059
237.	19.75	0.10	0.071	(0.088)	0.012	0.059
238.	19.83	0.07	0.047	(0.088)	0.008	0.039
239.	19.92	0.07	0.047	(0.087)	0.008	0.039
240.	20.00	0.07	0.047	(0.087)	0.008	0.039
241.	20.08	0.10	0.071	(0.087)	0.012	0.059
242.	20.17	0.10	0.071	(0.086)	0.012	0.059
243.	20.25	0.10	0.071	(0.086)	0.012	0.059
244.	20.33	0.10	0.071	(0.085)	0.012	0.059
245.	20.42	0.10	0.071	(0.085)	0.012	0.059
246.	20.50	0.10	0.071	(0.085)	0.012	0.059
247.	20.58	0.10	0.071	(0.084)	0.012	0.059
248.	20.67	0.10	0.071	(0.084)	0.012	0.059
249.	20.75	0.10	0.071	(0.084)	0.012	0.059
250.	20.83	0.07	0.047	(0.083)	0.008	0.039
251.	20.92	0.07	0.047	(0.083)	0.008	0.039
252.	21.00	0.07	0.047	(0.083)	0.008	0.039
253.	21.08	0.10	0.071	(0.082)	0.012	0.059
254.	21.17	0.10	0.071	(0.082)	0.012	0.059
255.	21.25	0.10	0.071	(0.082)	0.012	0.059
256.	21.33	0.07	0.047	(0.081)	0.008	0.039
257.	21.42	0.07	0.047	(0.081)	0.008	0.039
258.	21.50	0.07	0.047	(0.081)	0.008	0.039

259.	21.58	0.10	0.071	(0.080)	0.012	0.059
260.	21.67	0.10	0.071	(0.080)	0.012	0.059
261.	21.75	0.10	0.071	(0.080)	0.012	0.059
262.	21.83	0.07	0.047	(0.080)	0.008	0.039
263.	21.92	0.07	0.047	(0.079)	0.008	0.039
264.	22.00	0.07	0.047	(0.079)	0.008	0.039
265.	22.08	0.10	0.071	(0.079)	0.012	0.059
266.	22.17	0.10	0.071	(0.079)	0.012	0.059
267.	22.25	0.10	0.071	(0.078)	0.012	0.059
268.	22.33	0.07	0.047	(0.078)	0.008	0.039
269.	22.42	0.07	0.047	(0.078)	0.008	0.039
270.	22.50	0.07	0.047	(0.078)	0.008	0.039
271.	22.58	0.07	0.047	(0.077)	0.008	0.039
272.	22.67	0.07	0.047	(0.077)	0.008	0.039
273.	22.75	0.07	0.047	(0.077)	0.008	0.039
274.	22.83	0.07	0.047	(0.077)	0.008	0.039
275.	22.92	0.07	0.047	(0.077)	0.008	0.039
276.	23.00	0.07	0.047	(0.076)	0.008	0.039
277.	23.08	0.07	0.047	(0.076)	0.008	0.039
278.	23.17	0.07	0.047	(0.076)	0.008	0.039
279.	23.25	0.07	0.047	(0.076)	0.008	0.039
280.	23.33	0.07	0.047	(0.076)	0.008	0.039
281.	23.42	0.07	0.047	(0.076)	0.008	0.039
282.	23.50	0.07	0.047	(0.075)	0.008	0.039
283.	23.58	0.07	0.047	(0.075)	0.008	0.039
284.	23.67	0.07	0.047	(0.075)	0.008	0.039
285.	23.75	0.07	0.047	(0.075)	0.008	0.039
286.	23.83	0.07	0.047	(0.075)	0.008	0.039
287.	23.92	0.07	0.047	(0.075)	0.008	0.039
288.	24.00	0.07	0.047	(0.075)	0.008	0.039

(Loss Rate Not Used)

Sum = 100.0

Sum = 59.2

Flood volume = Effective rainfall 4.93(In)

times area 7.2(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)

Total soil loss = 0.97(In)

Total soil loss = 0.580(Ac.Ft)

Total rainfall = 5.90(In)

Flood volume = 128933.8 Cubic Feet

Total soil loss = 25266.4 Cubic Feet

Peak flow rate of this hydrograph = 4.892(CFS)

+++++
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m) Volume Ac.Ft Q(CFS) 0 2.5 5.0 7.5
10.0

0+ 5 0.0011 0.16 Q | | | |
0+10 0.0030 0.27 VQ | | | |

0+15	0.0049	0.29	VQ				
0+20	0.0075	0.37	VQ				
0+25	0.0104	0.42	VQ				
0+30	0.0133	0.43	VQ				
0+35	0.0163	0.43	VQ				
0+40	0.0192	0.43	VQ				
0+45	0.0222	0.43	VQ				
0+50	0.0257	0.51	V Q				
0+55	0.0296	0.56	V Q				
1+ 0	0.0336	0.57	V Q				
1+ 5	0.0369	0.49	VQ				
1+10	0.0400	0.44	VQ				
1+15	0.0429	0.43	VQ				
1+20	0.0459	0.43	VQ				
1+25	0.0488	0.43	VQ				
1+30	0.0518	0.43	VQ				
1+35	0.0548	0.43	VQ				
1+40	0.0577	0.43	VQ				
1+45	0.0607	0.43	VQ				
1+50	0.0642	0.51	V Q				
1+55	0.0681	0.56	V Q				
2+ 0	0.0720	0.57	V Q				
2+ 5	0.0760	0.57	VQ				
2+10	0.0799	0.57	VQ				
2+15	0.0839	0.57	VQ				
2+20	0.0878	0.57	VQ				
2+25	0.0918	0.57	VQ				
2+30	0.0957	0.57	VQ				
2+35	0.1002	0.65	VQ				
2+40	0.1051	0.71	VQ				
2+45	0.1100	0.72	VQ				
2+50	0.1149	0.72	VQ				
2+55	0.1199	0.72	VQ				
3+ 0	0.1248	0.72	VQ				
3+ 5	0.1297	0.72	VQ				
3+10	0.1347	0.72	VQ				
3+15	0.1396	0.72	VQ				
3+20	0.1445	0.72	VQ				
3+25	0.1495	0.72	Q				
3+30	0.1544	0.72	Q				
3+35	0.1593	0.72	Q				
3+40	0.1643	0.72	Q				
3+45	0.1692	0.72	Q				
3+50	0.1747	0.80	VQ				
3+55	0.1805	0.85	VQ				
4+ 0	0.1865	0.86	VQ				
4+ 5	0.1924	0.86	VQ				
4+10	0.1983	0.86	VQ				
4+15	0.2042	0.86	VQ				
4+20	0.2107	0.94	VQ				
4+25	0.2175	0.99	VQ				
4+30	0.2244	1.00	VQ				
4+35	0.2313	1.00	VQ				
4+40	0.2383	1.00	VQ				

4+45	0.2452	1.00	VQ				
4+50	0.2526	1.08	VQ				
4+55	0.2604	1.14	VQ				
5+ 0	0.2683	1.15	VQ				
5+ 5	0.2751	0.98	Q				
5+10	0.2812	0.88	Q				
5+15	0.2871	0.86	Q				
5+20	0.2936	0.94	Q				
5+25	0.3004	0.99	QV				
5+30	0.3073	1.00	Q				
5+35	0.3148	1.08	Q				
5+40	0.3226	1.14	Q				
5+45	0.3305	1.15	Q				
5+50	0.3384	1.15	Q				
5+55	0.3463	1.15	Q				
6+ 0	0.3542	1.15	Q				
6+ 5	0.3626	1.23	Q				
6+10	0.3714	1.28	Q				
6+15	0.3803	1.29	Q				
6+20	0.3892	1.29	Q				
6+25	0.3981	1.29	Q				
6+30	0.4069	1.29	Q				
6+35	0.4164	1.37	Q				
6+40	0.4262	1.42	Q				
6+45	0.4360	1.43	Q				
6+50	0.4459	1.43	QV				
6+55	0.4558	1.43	QV				
7+ 0	0.4656	1.43	QV				
7+ 5	0.4755	1.43	QV				
7+10	0.4854	1.43	QV				
7+15	0.4952	1.43	QV				
7+20	0.5057	1.51	Q				
7+25	0.5164	1.57	Q				
7+30	0.5273	1.58	QV				
7+35	0.5387	1.66	QV				
7+40	0.5505	1.71	QV				
7+45	0.5623	1.72	QV				
7+50	0.5747	1.80	Q				
7+55	0.5875	1.85	Q				
8+ 0	0.6003	1.86	QV				
8+ 5	0.6142	2.02	Q				
8+10	0.6289	2.13	Q				
8+15	0.6437	2.15	Q				
8+20	0.6585	2.15	Q				
8+25	0.6733	2.15	QV				
8+30	0.6881	2.15	QV				
8+35	0.7035	2.23	QV				
8+40	0.7192	2.28	Q				
8+45	0.7350	2.29	Q				
8+50	0.7513	2.37	QV				
8+55	0.7680	2.43	QV				
9+ 0	0.7848	2.43	QV				
9+ 5	0.8027	2.60	Q				
9+10	0.8213	2.70	QV				

9+15	0.8400	2.72		QV			
9+20	0.8593	2.80		Q			
9+25	0.8790	2.86		Q			
9+30	0.8987	2.86		QV			
9+35	0.9190	2.95		QV			
9+40	0.9397	3.00		QV			
9+45	0.9604	3.01		Q			
9+50	0.9817	3.09		QV			
9+55	1.0033	3.14		QV			
10+ 0	1.0250	3.15		QV			
10+ 5	1.0428	2.58		Q	V		
10+10	1.0580	2.21		Q	V		
10+15	1.0728	2.15		Q	V		
10+20	1.0876	2.15		Q	V		
10+25	1.1024	2.15		Q	V		
10+30	1.1172	2.15		Q	V		
10+35	1.1348	2.55		Q	V		
10+40	1.1542	2.82		Q	V		
10+45	1.1739	2.86		Q	V		
10+50	1.1937	2.86		Q	V		
10+55	1.2134	2.86		Q	V		
11+ 0	1.2331	2.86		Q	V		
11+ 5	1.2523	2.78		Q	V		
11+10	1.2711	2.73		Q	V		
11+15	1.2899	2.72		Q	V		
11+20	1.3086	2.72		Q	V		
11+25	1.3273	2.72		Q	V		
11+30	1.3461	2.72		Q	V		
11+35	1.3637	2.56		Q	V		
11+40	1.3806	2.45		Q	V		
11+45	1.3974	2.43		Q	V		
11+50	1.4147	2.52		Q	V		
11+55	1.4324	2.57		Q	V		
12+ 0	1.4502	2.58		Q	V		
12+ 5	1.4718	3.15		Q	V		
12+10	1.4960	3.52			Q	V	
12+15	1.5207	3.58			Q	V	
12+20	1.5459	3.66			Q	V	
12+25	1.5715	3.72			Q	V	
12+30	1.5972	3.72			Q	V	
12+35	1.6239	3.89			Q	V	
12+40	1.6514	3.99			Q	V	
12+45	1.6790	4.01			Q	V	
12+50	1.7072	4.09			Q	V	
12+55	1.7358	4.14			Q	V	
13+ 0	1.7644	4.15			Q	V	
13+ 5	1.7958	4.56			Q	V	
13+10	1.8290	4.83			Q	V	
13+15	1.8626	4.88			Q	V	
13+20	1.8962	4.88			Q	V	
13+25	1.9299	4.89			Q	V	
13+30	1.9636	4.89			Q	V	
13+35	1.9911	3.99			Q		V
13+40	2.0144	3.39			Q		V

13+45	2.0371	3.29				Q		V			
13+50	2.0598	3.29				Q		V			
13+55	2.0825	3.29				Q		V			
14+ 0	2.1052	3.29				Q		V			
14+ 5	2.1301	3.62				Q		V			
14+10	2.1565	3.83				Q		V			
14+15	2.1831	3.87				Q		V			
14+20	2.2092	3.79				Q		V			
14+25	2.2349	3.73				Q		V			
14+30	2.2606	3.72				Q		V			
14+35	2.2862	3.72				Q		V			
14+40	2.3119	3.72				Q		V			
14+45	2.3375	3.72				Q		V			
14+50	2.3626	3.64				Q		V			
14+55	2.3873	3.59				Q		V			
15+ 0	2.4120	3.58				Q		V			
15+ 5	2.4361	3.50				Q		V			
15+10	2.4598	3.45				Q		V			
15+15	2.4835	3.44				Q		V			
15+20	2.5066	3.36				Q		V			
15+25	2.5294	3.30				Q		V			
15+30	2.5521	3.29				Q		V			
15+35	2.5725	2.97			Q			V			
15+40	2.5915	2.76			Q			V			
15+45	2.6103	2.72			Q			V			
15+50	2.6290	2.72			Q			V			
15+55	2.6477	2.72			Q			V			
16+ 0	2.6665	2.72			Q			V			
16+ 5	2.6769	1.51		Q				V			
16+10	2.6817	0.71		Q				V			
16+15	2.6857	0.57		Q				V			
16+20	2.6896	0.57		Q				V			
16+25	2.6936	0.57		Q				V			
16+30	2.6975	0.57		Q				V			
16+35	2.7009	0.49		Q				V			
16+40	2.7039	0.44		Q				V			
16+45	2.7069	0.43		Q				V			
16+50	2.7099	0.43		Q				V			
16+55	2.7128	0.43		Q				V			
17+ 0	2.7158	0.43		Q				V			
17+ 5	2.7198	0.59		Q				V			
17+10	2.7247	0.70		Q				V			
17+15	2.7296	0.72		Q				V			
17+20	2.7345	0.72		Q				V			
17+25	2.7395	0.72		Q				V			
17+30	2.7444	0.72		Q				V			
17+35	2.7493	0.72		Q				V			
17+40	2.7542	0.72		Q				V			
17+45	2.7592	0.72		Q				V			
17+50	2.7636	0.64		Q				V			
17+55	2.7676	0.58		Q				V			
18+ 0	2.7715	0.57		Q				V			
18+ 5	2.7755	0.57		Q				V			
18+10	2.7794	0.57		Q				V			

18+15	2.7833	0.57	Q				V	
18+20	2.7873	0.57	Q				V	
18+25	2.7912	0.57	Q				V	
18+30	2.7952	0.57	Q				V	
18+35	2.7986	0.49	Q				V	
18+40	2.8016	0.44	Q				V	
18+45	2.8046	0.43	Q				V	
18+50	2.8070	0.35	Q				V	
18+55	2.8090	0.30	Q				V	
19+ 0	2.8110	0.29	Q				V	
19+ 5	2.8135	0.37	Q				V	
19+10	2.8164	0.42	Q				V	
19+15	2.8193	0.43	Q				V	
19+20	2.8229	0.51	Q				V	
19+25	2.8268	0.56	Q				V	
19+30	2.8307	0.57	Q				V	
19+35	2.8341	0.49	Q				V	
19+40	2.8371	0.44	Q				V	
19+45	2.8401	0.43	Q				V	
19+50	2.8425	0.35	Q				V	
19+55	2.8445	0.30	Q				V	
20+ 0	2.8465	0.29	Q				V	
20+ 5	2.8490	0.37	Q				V	
20+10	2.8519	0.42	Q				V	
20+15	2.8549	0.43	Q				V	
20+20	2.8578	0.43	Q				V	
20+25	2.8608	0.43	Q				V	
20+30	2.8637	0.43	Q				V	
20+35	2.8667	0.43	Q				V	
20+40	2.8697	0.43	Q				V	
20+45	2.8726	0.43	Q				V	
20+50	2.8750	0.35	Q				V	
20+55	2.8771	0.30	Q				V	
21+ 0	2.8790	0.29	Q				V	
21+ 5	2.8816	0.37	Q				V	
21+10	2.8845	0.42	Q				V	
21+15	2.8874	0.43	Q				V	
21+20	2.8898	0.35	Q				V	
21+25	2.8919	0.30	Q				V	
21+30	2.8938	0.29	Q				V	
21+35	2.8964	0.37	Q				V	
21+40	2.8993	0.42	Q				V	
21+45	2.9022	0.43	Q				V	
21+50	2.9046	0.35	Q				V	
21+55	2.9066	0.30	Q				V	
22+ 0	2.9086	0.29	Q				V	
22+ 5	2.9112	0.37	Q				V	
22+10	2.9141	0.42	Q				V	
22+15	2.9170	0.43	Q				V	
22+20	2.9194	0.35	Q				V	
22+25	2.9214	0.30	Q				V	
22+30	2.9234	0.29	Q				V	
22+35	2.9254	0.29	Q				V	
22+40	2.9274	0.29	Q				V	

22+45	2.9293	0.29	Q				V
22+50	2.9313	0.29	Q				V
22+55	2.9333	0.29	Q				V
23+ 0	2.9353	0.29	Q				V
23+ 5	2.9372	0.29	Q				V
23+10	2.9392	0.29	Q				V
23+15	2.9412	0.29	Q				V
23+20	2.9431	0.29	Q				V
23+25	2.9451	0.29	Q				V
23+30	2.9471	0.29	Q				V
23+35	2.9491	0.29	Q				V
23+40	2.9510	0.29	Q				V
23+45	2.9530	0.29	Q				V
23+50	2.9550	0.29	Q				V
23+55	2.9570	0.29	Q				V
24+ 0	2.9589	0.29	Q				V
24+ 5	2.9598	0.12	Q				V
24+10	2.9599	0.02	Q				V

WATERSHED C:
TRIBUTARY TO
DRYWELL

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL12.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	0.50	0.17

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	1.30	0.43

STORM EVENT (YEAR) = 2.00
 Area Averaged 2-Year Rainfall = 0.500 (In)
 Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.500 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 0.500 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.867	0.191	1.000	0.191

Sum (F) =

0.191

Area averaged mean soil loss (F) (In/Hr) = 0.191
 Minimum soil loss rate ((In/Hr)) = 0.096
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.206

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)

1	0.083	1068.017	100.000	0.333

Sum =

100.000 Sum= 0.333

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1. 0.08	4.20	0.252	(0.191)	0.052	0.200
2. 0.17	4.30	0.258	(0.191)	0.053	0.205
3. 0.25	5.00	0.300	(0.191)	0.062	0.238
4. 0.33	5.00	0.300	(0.191)	0.062	0.238
5. 0.42	5.80	0.348	(0.191)	0.072	0.276
6. 0.50	6.50	0.390	(0.191)	0.080	0.310
7. 0.58	7.40	0.444	(0.191)	0.091	0.353
8. 0.67	8.60	0.516	(0.191)	0.106	0.410
9. 0.75	12.30	0.738	(0.191)	0.152	0.586
10. 0.83	29.10	1.746	0.191	(0.360)	1.555
11. 0.92	6.80	0.408	(0.191)	0.084	0.324
12. 1.00	5.00	0.300	(0.191)	0.062	0.238

(Loss Rate Not Used)

Sum = 100.0 Sum = 4.9

Flood volume = Effective rainfall 0.41(In)

times area 0.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.09(In)

Total soil loss = 0.002(Ac.Ft)

Total rainfall = 0.50(In)

Flood volume = 492.4 Cubic Feet

Total soil loss = 106.6 Cubic Feet

Peak flow rate of this hydrograph = 0.517(CFS)

+++++
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0005	0.07	QV			
0+10	0.0009	0.07	Q V			
0+15	0.0015	0.08	Q V			
0+20	0.0020	0.08	Q V			
0+25	0.0027	0.09	Q V			
0+30	0.0034	0.10	Q V			
0+35	0.0042	0.12	Q V			
0+40	0.0051	0.14	Q V			
0+45	0.0065	0.19	Q V			
0+50	0.0100	0.52	Q			V
0+55	0.0108	0.11	Q			V
1+ 0	0.0113	0.08	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL32.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.33	0.85	0.28

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.33	2.00	0.66

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 0.850 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.850 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.867	0.191	1.000	0.191

Sum (F) =

0.191

Area averaged mean soil loss (F) (In/Hr) = 0.191
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.206

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	1068.017	100.000
			0.333
100.000	Sum=	0.333	

The following loss rate calculations reflect use of the minimum calculated loss

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.133	(0.191)	0.027	0.105
2.	0.17	1.30	0.133	(0.191)	0.027	0.105
3.	0.25	1.10	0.112	(0.191)	0.023	0.089
4.	0.33	1.50	0.153	(0.191)	0.032	0.121
5.	0.42	1.50	0.153	(0.191)	0.032	0.121
6.	0.50	1.80	0.184	(0.191)	0.038	0.146
7.	0.58	1.50	0.153	(0.191)	0.032	0.121
8.	0.67	1.80	0.184	(0.191)	0.038	0.146
9.	0.75	1.80	0.184	(0.191)	0.038	0.146
10.	0.83	1.50	0.153	(0.191)	0.032	0.121
11.	0.92	1.60	0.163	(0.191)	0.034	0.130
12.	1.00	1.80	0.184	(0.191)	0.038	0.146
13.	1.08	2.20	0.224	(0.191)	0.046	0.178
14.	1.17	2.20	0.224	(0.191)	0.046	0.178
15.	1.25	2.20	0.224	(0.191)	0.046	0.178
16.	1.33	2.00	0.204	(0.191)	0.042	0.162
17.	1.42	2.60	0.265	(0.191)	0.055	0.211
18.	1.50	2.70	0.275	(0.191)	0.057	0.219
19.	1.58	2.40	0.245	(0.191)	0.050	0.194
20.	1.67	2.70	0.275	(0.191)	0.057	0.219
21.	1.75	3.30	0.337	(0.191)	0.069	0.267
22.	1.83	3.10	0.316	(0.191)	0.065	0.251
23.	1.92	2.90	0.296	(0.191)	0.061	0.235
24.	2.00	3.00	0.306	(0.191)	0.063	0.243
25.	2.08	3.10	0.316	(0.191)	0.065	0.251
26.	2.17	4.20	0.428	(0.191)	0.088	0.340
27.	2.25	5.00	0.510	(0.191)	0.105	0.405
28.	2.33	3.50	0.357	(0.191)	0.074	0.283
29.	2.42	6.80	0.694	(0.191)	0.143	0.551
30.	2.50	7.30	0.745	(0.191)	0.153	0.591
31.	2.58	8.20	0.836	(0.191)	0.172	0.664
32.	2.67	5.90	0.602	(0.191)	0.124	0.478
33.	2.75	2.00	0.204	(0.191)	0.042	0.162
34.	2.83	1.80	0.184	(0.191)	0.038	0.146
35.	2.92	1.80	0.184	(0.191)	0.038	0.146
36.	3.00	0.60	0.061	(0.191)	0.013	0.049

(Loss Rate Not Used)

Sum = 100.0 Sum = 8.1

Flood volume = Effective rainfall 0.67(In)
times area 0.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.18(In)
Total soil loss = 0.005(Ac.Ft)
Total rainfall = 0.85(In)
Flood volume = 808.5 Cubic Feet
Total soil loss = 209.8 Cubic Feet

Peak flow rate of this hydrograph = 0.221(CFS)

+++++

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0							
0+ 5	0.0002		0.04	Q			
0+10	0.0005		0.04	QV			
0+15	0.0007		0.03	QV			
0+20	0.0010		0.04	Q V			
0+25	0.0012		0.04	Q V			
0+30	0.0016		0.05	Q V			
0+35	0.0019		0.04	Q V			
0+40	0.0022		0.05	Q V			
0+45	0.0025		0.05	Q V			
0+50	0.0028		0.04	Q V			
0+55	0.0031		0.04	Q V			
1+ 0	0.0034		0.05	Q V			
1+ 5	0.0038		0.06	Q V			
1+10	0.0043		0.06	Q V			
1+15	0.0047		0.06	Q V			
1+20	0.0050		0.05	Q V			
1+25	0.0055		0.07	Q V			
1+30	0.0060		0.07	Q V			
1+35	0.0065		0.06	Q V			
1+40	0.0070		0.07	Q V			
1+45	0.0076		0.09	Q V			
1+50	0.0081		0.08	Q V			
1+55	0.0087		0.08	Q V			
2+ 0	0.0092		0.08	Q V			
2+ 5	0.0098		0.08	Q V			
2+10	0.0106		0.11	Q V			
2+15	0.0115		0.13	Q V			
2+20	0.0122		0.09	Q V			
2+25	0.0134		0.18	Q V			
2+30	0.0148		0.20	Q V			
2+35	0.0163		0.22	Q V			
2+40	0.0174		0.16	Q V			
2+45	0.0178		0.05	Q V			
2+50	0.0181		0.05	Q V			
2+55	0.0184		0.05	Q V			
3+ 0	0.0186		0.02	Q V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL62.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.33	1.20	0.40

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.33	2.90	0.96

STORM EVENT (YEAR) = 2.00
 Area Averaged 2-Year Rainfall = 1.200 (In)
 Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 1.200 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 1.200 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.867	0.191	1.000	0.191

Sum (F) =

0.191

Area averaged mean soil loss (F) (In/Hr) = 0.191
 Minimum soil loss rate ((In/Hr)) = 0.096
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.206

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	1068.017	100.000
			0.333
100.000	Sum=	0.333	

The following loss rate calculations reflect use of the minimum calculated loss

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.50	0.072	(0.191)	0.015	0.057
2.	0.17	0.60	0.086	(0.191)	0.018	0.069
3.	0.25	0.60	0.086	(0.191)	0.018	0.069
4.	0.33	0.60	0.086	(0.191)	0.018	0.069
5.	0.42	0.60	0.086	(0.191)	0.018	0.069
6.	0.50	0.70	0.101	(0.191)	0.021	0.080
7.	0.58	0.70	0.101	(0.191)	0.021	0.080
8.	0.67	0.70	0.101	(0.191)	0.021	0.080
9.	0.75	0.70	0.101	(0.191)	0.021	0.080
10.	0.83	0.70	0.101	(0.191)	0.021	0.080
11.	0.92	0.70	0.101	(0.191)	0.021	0.080
12.	1.00	0.80	0.115	(0.191)	0.024	0.091
13.	1.08	0.80	0.115	(0.191)	0.024	0.091
14.	1.17	0.80	0.115	(0.191)	0.024	0.091
15.	1.25	0.80	0.115	(0.191)	0.024	0.091
16.	1.33	0.80	0.115	(0.191)	0.024	0.091
17.	1.42	0.80	0.115	(0.191)	0.024	0.091
18.	1.50	0.80	0.115	(0.191)	0.024	0.091
19.	1.58	0.80	0.115	(0.191)	0.024	0.091
20.	1.67	0.80	0.115	(0.191)	0.024	0.091
21.	1.75	0.80	0.115	(0.191)	0.024	0.091
22.	1.83	0.80	0.115	(0.191)	0.024	0.091
23.	1.92	0.80	0.115	(0.191)	0.024	0.091
24.	2.00	0.90	0.130	(0.191)	0.027	0.103
25.	2.08	0.80	0.115	(0.191)	0.024	0.091
26.	2.17	0.90	0.130	(0.191)	0.027	0.103
27.	2.25	0.90	0.130	(0.191)	0.027	0.103
28.	2.33	0.90	0.130	(0.191)	0.027	0.103
29.	2.42	0.90	0.130	(0.191)	0.027	0.103
30.	2.50	0.90	0.130	(0.191)	0.027	0.103
31.	2.58	0.90	0.130	(0.191)	0.027	0.103
32.	2.67	0.90	0.130	(0.191)	0.027	0.103
33.	2.75	1.00	0.144	(0.191)	0.030	0.114
34.	2.83	1.00	0.144	(0.191)	0.030	0.114
35.	2.92	1.00	0.144	(0.191)	0.030	0.114
36.	3.00	1.00	0.144	(0.191)	0.030	0.114
37.	3.08	1.00	0.144	(0.191)	0.030	0.114
38.	3.17	1.10	0.158	(0.191)	0.033	0.126
39.	3.25	1.10	0.158	(0.191)	0.033	0.126
40.	3.33	1.10	0.158	(0.191)	0.033	0.126
41.	3.42	1.20	0.173	(0.191)	0.036	0.137
42.	3.50	1.30	0.187	(0.191)	0.039	0.149
43.	3.58	1.40	0.202	(0.191)	0.042	0.160
44.	3.67	1.40	0.202	(0.191)	0.042	0.160
45.	3.75	1.50	0.216	(0.191)	0.044	0.172
46.	3.83	1.50	0.216	(0.191)	0.044	0.172
47.	3.92	1.60	0.230	(0.191)	0.047	0.183
48.	4.00	1.60	0.230	(0.191)	0.047	0.183
49.	4.08	1.70	0.245	(0.191)	0.050	0.194

50.	4.17	1.80	0.259	(0.191)	0.053	0.206
51.	4.25	1.90	0.274	(0.191)	0.056	0.217
52.	4.33	2.00	0.288	(0.191)	0.059	0.229
53.	4.42	2.10	0.302	(0.191)	0.062	0.240
54.	4.50	2.10	0.302	(0.191)	0.062	0.240
55.	4.58	2.20	0.317	(0.191)	0.065	0.252
56.	4.67	2.30	0.331	(0.191)	0.068	0.263
57.	4.75	2.40	0.346	(0.191)	0.071	0.274
58.	4.83	2.40	0.346	(0.191)	0.071	0.274
59.	4.92	2.50	0.360	(0.191)	0.074	0.286
60.	5.00	2.60	0.374	(0.191)	0.077	0.297
61.	5.08	3.10	0.446	(0.191)	0.092	0.354
62.	5.17	3.60	0.518	(0.191)	0.107	0.412
63.	5.25	3.90	0.562	(0.191)	0.116	0.446
64.	5.33	4.20	0.605	(0.191)	0.125	0.480
65.	5.42	4.70	0.677	(0.191)	0.139	0.537
66.	5.50	5.60	0.806	(0.191)	0.166	0.640
67.	5.58	1.90	0.274	(0.191)	0.056	0.217
68.	5.67	0.90	0.130	(0.191)	0.027	0.103
69.	5.75	0.60	0.086	(0.191)	0.018	0.069
70.	5.83	0.50	0.072	(0.191)	0.015	0.057
71.	5.92	0.30	0.043	(0.191)	0.009	0.034
72.	6.00	0.20	0.029	(0.191)	0.006	0.023

(Loss Rate Not Used)

Sum = 100.0

Sum = 11.4

Flood volume = Effective rainfall 0.95(In)

times area 0.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.25(In)

Total soil loss = 0.007(Ac.Ft)

Total rainfall = 1.20(In)

Flood volume = 1141.4 Cubic Feet

Total soil loss = 296.1 Cubic Feet

Peak flow rate of this hydrograph = 0.213(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m) Volume Ac.Ft Q(CFS) 0 2.5 5.0 7.5
10.0

0+ 5	0.0001	0.02	Q				
0+10	0.0003	0.02	Q				
0+15	0.0004	0.02	Q				
0+20	0.0006	0.02	Q				
0+25	0.0008	0.02	QV				
0+30	0.0009	0.03	QV				
0+35	0.0011	0.03	QV				
0+40	0.0013	0.03	QV				
0+45	0.0015	0.03	Q V				

0+50	0.0017	0.03	Q	V							
0+55	0.0019	0.03	Q	V							
1+ 0	0.0021	0.03	Q	V							
1+ 5	0.0023	0.03	Q	V							
1+10	0.0025	0.03	Q	V							
1+15	0.0027	0.03	Q	V							
1+20	0.0029	0.03	Q	V							
1+25	0.0031	0.03	Q	V							
1+30	0.0033	0.03	Q	V							
1+35	0.0035	0.03	Q	V							
1+40	0.0037	0.03	Q	V							
1+45	0.0040	0.03	Q	V							
1+50	0.0042	0.03	Q	V							
1+55	0.0044	0.03	Q	V							
2+ 0	0.0046	0.03	Q	V							
2+ 5	0.0048	0.03	Q	V							
2+10	0.0051	0.03	Q	V							
2+15	0.0053	0.03	Q	V							
2+20	0.0055	0.03	Q	V							
2+25	0.0058	0.03	Q	V							
2+30	0.0060	0.03	Q	V							
2+35	0.0062	0.03	Q	V							
2+40	0.0065	0.03	Q	V							
2+45	0.0067	0.04	Q	V							
2+50	0.0070	0.04	Q	V							
2+55	0.0073	0.04	Q	V							
3+ 0	0.0075	0.04	Q	V							
3+ 5	0.0078	0.04	Q	V							
3+10	0.0081	0.04	Q	V							
3+15	0.0084	0.04	Q	V							
3+20	0.0086	0.04	Q	V							
3+25	0.0090	0.05	Q	V							
3+30	0.0093	0.05	Q	V							
3+35	0.0097	0.05	Q	V							
3+40	0.0100	0.05	Q	V							
3+45	0.0104	0.06	Q	V							
3+50	0.0108	0.06	Q	V							
3+55	0.0112	0.06	Q	V							
4+ 0	0.0117	0.06	Q	V							
4+ 5	0.0121	0.06	Q	V							
4+10	0.0126	0.07	Q	V							
4+15	0.0131	0.07	Q	V							
4+20	0.0136	0.08	Q	V							
4+25	0.0141	0.08	Q	V							
4+30	0.0147	0.08	Q	V							
4+35	0.0153	0.08	Q	V							
4+40	0.0159	0.09	Q	V							
4+45	0.0165	0.09	Q	V							
4+50	0.0171	0.09	Q	V							
4+55	0.0178	0.10	Q	V							
5+ 0	0.0185	0.10	Q	V							
5+ 5	0.0193	0.12	Q	V							
5+10	0.0202	0.14	Q	V							
5+15	0.0212	0.15	Q	V							

5+20	0.0224	0.16	Q				V	
5+25	0.0236	0.18	Q				V	
5+30	0.0250	0.21	Q					V
5+35	0.0255	0.07	Q					V
5+40	0.0258	0.03	Q					V
5+45	0.0259	0.02	Q					V
5+50	0.0261	0.02	Q					V
5+55	0.0261	0.01	Q					V
6+ 0	0.0262	0.01	Q					V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL242.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.33	2.00	0.66

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting [1*2]	
	0.33	5.90	1.95

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000 (In)
Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 2.000 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.867	0.191	1.000	0.191

Sum (F) =

0.191

Area averaged mean soil loss (F) (In/Hr) = 0.191
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.206

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	1068.017	100.000
			0.333
100.000	Sum=	0.333	

The following loss rate calculations reflect use of the minimum calculated loss

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.07	0.016	(0.339)	0.003	0.013
2.	0.17	0.07	0.016	(0.338)	0.003	0.013
3.	0.25	0.07	0.016	(0.336)	0.003	0.013
4.	0.33	0.10	0.024	(0.335)	0.005	0.019
5.	0.42	0.10	0.024	(0.334)	0.005	0.019
6.	0.50	0.10	0.024	(0.332)	0.005	0.019
7.	0.58	0.10	0.024	(0.331)	0.005	0.019
8.	0.67	0.10	0.024	(0.330)	0.005	0.019
9.	0.75	0.10	0.024	(0.329)	0.005	0.019
10.	0.83	0.13	0.032	(0.327)	0.007	0.025
11.	0.92	0.13	0.032	(0.326)	0.007	0.025
12.	1.00	0.13	0.032	(0.325)	0.007	0.025
13.	1.08	0.10	0.024	(0.323)	0.005	0.019
14.	1.17	0.10	0.024	(0.322)	0.005	0.019
15.	1.25	0.10	0.024	(0.321)	0.005	0.019
16.	1.33	0.10	0.024	(0.320)	0.005	0.019
17.	1.42	0.10	0.024	(0.318)	0.005	0.019
18.	1.50	0.10	0.024	(0.317)	0.005	0.019
19.	1.58	0.10	0.024	(0.316)	0.005	0.019
20.	1.67	0.10	0.024	(0.315)	0.005	0.019
21.	1.75	0.10	0.024	(0.313)	0.005	0.019
22.	1.83	0.13	0.032	(0.312)	0.007	0.025
23.	1.92	0.13	0.032	(0.311)	0.007	0.025
24.	2.00	0.13	0.032	(0.309)	0.007	0.025
25.	2.08	0.13	0.032	(0.308)	0.007	0.025
26.	2.17	0.13	0.032	(0.307)	0.007	0.025
27.	2.25	0.13	0.032	(0.306)	0.007	0.025
28.	2.33	0.13	0.032	(0.304)	0.007	0.025
29.	2.42	0.13	0.032	(0.303)	0.007	0.025
30.	2.50	0.13	0.032	(0.302)	0.007	0.025
31.	2.58	0.17	0.040	(0.301)	0.008	0.032
32.	2.67	0.17	0.040	(0.300)	0.008	0.032
33.	2.75	0.17	0.040	(0.298)	0.008	0.032
34.	2.83	0.17	0.040	(0.297)	0.008	0.032
35.	2.92	0.17	0.040	(0.296)	0.008	0.032
36.	3.00	0.17	0.040	(0.295)	0.008	0.032
37.	3.08	0.17	0.040	(0.293)	0.008	0.032
38.	3.17	0.17	0.040	(0.292)	0.008	0.032
39.	3.25	0.17	0.040	(0.291)	0.008	0.032
40.	3.33	0.17	0.040	(0.290)	0.008	0.032
41.	3.42	0.17	0.040	(0.289)	0.008	0.032
42.	3.50	0.17	0.040	(0.287)	0.008	0.032
43.	3.58	0.17	0.040	(0.286)	0.008	0.032
44.	3.67	0.17	0.040	(0.285)	0.008	0.032
45.	3.75	0.17	0.040	(0.284)	0.008	0.032
46.	3.83	0.20	0.048	(0.283)	0.010	0.038
47.	3.92	0.20	0.048	(0.281)	0.010	0.038
48.	4.00	0.20	0.048	(0.280)	0.010	0.038
49.	4.08	0.20	0.048	(0.279)	0.010	0.038

50.	4.17	0.20	0.048	(0.278)	0.010	0.038
51.	4.25	0.20	0.048	(0.277)	0.010	0.038
52.	4.33	0.23	0.056	(0.275)	0.012	0.044
53.	4.42	0.23	0.056	(0.274)	0.012	0.044
54.	4.50	0.23	0.056	(0.273)	0.012	0.044
55.	4.58	0.23	0.056	(0.272)	0.012	0.044
56.	4.67	0.23	0.056	(0.271)	0.012	0.044
57.	4.75	0.23	0.056	(0.270)	0.012	0.044
58.	4.83	0.27	0.064	(0.268)	0.013	0.051
59.	4.92	0.27	0.064	(0.267)	0.013	0.051
60.	5.00	0.27	0.064	(0.266)	0.013	0.051
61.	5.08	0.20	0.048	(0.265)	0.010	0.038
62.	5.17	0.20	0.048	(0.264)	0.010	0.038
63.	5.25	0.20	0.048	(0.263)	0.010	0.038
64.	5.33	0.23	0.056	(0.261)	0.012	0.044
65.	5.42	0.23	0.056	(0.260)	0.012	0.044
66.	5.50	0.23	0.056	(0.259)	0.012	0.044
67.	5.58	0.27	0.064	(0.258)	0.013	0.051
68.	5.67	0.27	0.064	(0.257)	0.013	0.051
69.	5.75	0.27	0.064	(0.256)	0.013	0.051
70.	5.83	0.27	0.064	(0.255)	0.013	0.051
71.	5.92	0.27	0.064	(0.254)	0.013	0.051
72.	6.00	0.27	0.064	(0.252)	0.013	0.051
73.	6.08	0.30	0.072	(0.251)	0.015	0.057
74.	6.17	0.30	0.072	(0.250)	0.015	0.057
75.	6.25	0.30	0.072	(0.249)	0.015	0.057
76.	6.33	0.30	0.072	(0.248)	0.015	0.057
77.	6.42	0.30	0.072	(0.247)	0.015	0.057
78.	6.50	0.30	0.072	(0.246)	0.015	0.057
79.	6.58	0.33	0.080	(0.245)	0.016	0.064
80.	6.67	0.33	0.080	(0.244)	0.016	0.064
81.	6.75	0.33	0.080	(0.242)	0.016	0.064
82.	6.83	0.33	0.080	(0.241)	0.016	0.064
83.	6.92	0.33	0.080	(0.240)	0.016	0.064
84.	7.00	0.33	0.080	(0.239)	0.016	0.064
85.	7.08	0.33	0.080	(0.238)	0.016	0.064
86.	7.17	0.33	0.080	(0.237)	0.016	0.064
87.	7.25	0.33	0.080	(0.236)	0.016	0.064
88.	7.33	0.37	0.088	(0.235)	0.018	0.070
89.	7.42	0.37	0.088	(0.234)	0.018	0.070
90.	7.50	0.37	0.088	(0.233)	0.018	0.070
91.	7.58	0.40	0.096	(0.232)	0.020	0.076
92.	7.67	0.40	0.096	(0.231)	0.020	0.076
93.	7.75	0.40	0.096	(0.229)	0.020	0.076
94.	7.83	0.43	0.104	(0.228)	0.021	0.083
95.	7.92	0.43	0.104	(0.227)	0.021	0.083
96.	8.00	0.43	0.104	(0.226)	0.021	0.083
97.	8.08	0.50	0.120	(0.225)	0.025	0.095
98.	8.17	0.50	0.120	(0.224)	0.025	0.095
99.	8.25	0.50	0.120	(0.223)	0.025	0.095
100.	8.33	0.50	0.120	(0.222)	0.025	0.095
101.	8.42	0.50	0.120	(0.221)	0.025	0.095
102.	8.50	0.50	0.120	(0.220)	0.025	0.095
103.	8.58	0.53	0.128	(0.219)	0.026	0.102

104.	8.67	0.53	0.128	(0.218)	0.026	0.102
105.	8.75	0.53	0.128	(0.217)	0.026	0.102
106.	8.83	0.57	0.136	(0.216)	0.028	0.108
107.	8.92	0.57	0.136	(0.215)	0.028	0.108
108.	9.00	0.57	0.136	(0.214)	0.028	0.108
109.	9.08	0.63	0.152	(0.213)	0.031	0.121
110.	9.17	0.63	0.152	(0.212)	0.031	0.121
111.	9.25	0.63	0.152	(0.211)	0.031	0.121
112.	9.33	0.67	0.160	(0.210)	0.033	0.127
113.	9.42	0.67	0.160	(0.209)	0.033	0.127
114.	9.50	0.67	0.160	(0.208)	0.033	0.127
115.	9.58	0.70	0.168	(0.207)	0.035	0.133
116.	9.67	0.70	0.168	(0.206)	0.035	0.133
117.	9.75	0.70	0.168	(0.205)	0.035	0.133
118.	9.83	0.73	0.176	(0.204)	0.036	0.140
119.	9.92	0.73	0.176	(0.203)	0.036	0.140
120.	10.00	0.73	0.176	(0.202)	0.036	0.140
121.	10.08	0.50	0.120	(0.201)	0.025	0.095
122.	10.17	0.50	0.120	(0.200)	0.025	0.095
123.	10.25	0.50	0.120	(0.199)	0.025	0.095
124.	10.33	0.50	0.120	(0.198)	0.025	0.095
125.	10.42	0.50	0.120	(0.197)	0.025	0.095
126.	10.50	0.50	0.120	(0.196)	0.025	0.095
127.	10.58	0.67	0.160	(0.195)	0.033	0.127
128.	10.67	0.67	0.160	(0.194)	0.033	0.127
129.	10.75	0.67	0.160	(0.193)	0.033	0.127
130.	10.83	0.67	0.160	(0.192)	0.033	0.127
131.	10.92	0.67	0.160	(0.191)	0.033	0.127
132.	11.00	0.67	0.160	(0.190)	0.033	0.127
133.	11.08	0.63	0.152	(0.189)	0.031	0.121
134.	11.17	0.63	0.152	(0.189)	0.031	0.121
135.	11.25	0.63	0.152	(0.188)	0.031	0.121
136.	11.33	0.63	0.152	(0.187)	0.031	0.121
137.	11.42	0.63	0.152	(0.186)	0.031	0.121
138.	11.50	0.63	0.152	(0.185)	0.031	0.121
139.	11.58	0.57	0.136	(0.184)	0.028	0.108
140.	11.67	0.57	0.136	(0.183)	0.028	0.108
141.	11.75	0.57	0.136	(0.182)	0.028	0.108
142.	11.83	0.60	0.144	(0.181)	0.030	0.114
143.	11.92	0.60	0.144	(0.180)	0.030	0.114
144.	12.00	0.60	0.144	(0.179)	0.030	0.114
145.	12.08	0.83	0.200	(0.179)	0.041	0.159
146.	12.17	0.83	0.200	(0.178)	0.041	0.159
147.	12.25	0.83	0.200	(0.177)	0.041	0.159
148.	12.33	0.87	0.208	(0.176)	0.043	0.165
149.	12.42	0.87	0.208	(0.175)	0.043	0.165
150.	12.50	0.87	0.208	(0.174)	0.043	0.165
151.	12.58	0.93	0.224	(0.173)	0.046	0.178
152.	12.67	0.93	0.224	(0.172)	0.046	0.178
153.	12.75	0.93	0.224	(0.171)	0.046	0.178
154.	12.83	0.97	0.232	(0.171)	0.048	0.184
155.	12.92	0.97	0.232	(0.170)	0.048	0.184
156.	13.00	0.97	0.232	(0.169)	0.048	0.184
157.	13.08	1.13	0.272	(0.168)	0.056	0.216

158.	13.17	1.13	0.272	(0.167)	0.056	0.216
159.	13.25	1.13	0.272	(0.166)	0.056	0.216
160.	13.33	1.13	0.272	(0.165)	0.056	0.216
161.	13.42	1.13	0.272	(0.165)	0.056	0.216
162.	13.50	1.13	0.272	(0.164)	0.056	0.216
163.	13.58	0.77	0.184	(0.163)	0.038	0.146
164.	13.67	0.77	0.184	(0.162)	0.038	0.146
165.	13.75	0.77	0.184	(0.161)	0.038	0.146
166.	13.83	0.77	0.184	(0.160)	0.038	0.146
167.	13.92	0.77	0.184	(0.160)	0.038	0.146
168.	14.00	0.77	0.184	(0.159)	0.038	0.146
169.	14.08	0.90	0.216	(0.158)	0.044	0.172
170.	14.17	0.90	0.216	(0.157)	0.044	0.172
171.	14.25	0.90	0.216	(0.156)	0.044	0.172
172.	14.33	0.87	0.208	(0.156)	0.043	0.165
173.	14.42	0.87	0.208	(0.155)	0.043	0.165
174.	14.50	0.87	0.208	(0.154)	0.043	0.165
175.	14.58	0.87	0.208	(0.153)	0.043	0.165
176.	14.67	0.87	0.208	(0.152)	0.043	0.165
177.	14.75	0.87	0.208	(0.152)	0.043	0.165
178.	14.83	0.83	0.200	(0.151)	0.041	0.159
179.	14.92	0.83	0.200	(0.150)	0.041	0.159
180.	15.00	0.83	0.200	(0.149)	0.041	0.159
181.	15.08	0.80	0.192	(0.149)	0.040	0.152
182.	15.17	0.80	0.192	(0.148)	0.040	0.152
183.	15.25	0.80	0.192	(0.147)	0.040	0.152
184.	15.33	0.77	0.184	(0.146)	0.038	0.146
185.	15.42	0.77	0.184	(0.146)	0.038	0.146
186.	15.50	0.77	0.184	(0.145)	0.038	0.146
187.	15.58	0.63	0.152	(0.144)	0.031	0.121
188.	15.67	0.63	0.152	(0.143)	0.031	0.121
189.	15.75	0.63	0.152	(0.143)	0.031	0.121
190.	15.83	0.63	0.152	(0.142)	0.031	0.121
191.	15.92	0.63	0.152	(0.141)	0.031	0.121
192.	16.00	0.63	0.152	(0.140)	0.031	0.121
193.	16.08	0.13	0.032	(0.140)	0.007	0.025
194.	16.17	0.13	0.032	(0.139)	0.007	0.025
195.	16.25	0.13	0.032	(0.138)	0.007	0.025
196.	16.33	0.13	0.032	(0.138)	0.007	0.025
197.	16.42	0.13	0.032	(0.137)	0.007	0.025
198.	16.50	0.13	0.032	(0.136)	0.007	0.025
199.	16.58	0.10	0.024	(0.135)	0.005	0.019
200.	16.67	0.10	0.024	(0.135)	0.005	0.019
201.	16.75	0.10	0.024	(0.134)	0.005	0.019
202.	16.83	0.10	0.024	(0.133)	0.005	0.019
203.	16.92	0.10	0.024	(0.133)	0.005	0.019
204.	17.00	0.10	0.024	(0.132)	0.005	0.019
205.	17.08	0.17	0.040	(0.131)	0.008	0.032
206.	17.17	0.17	0.040	(0.131)	0.008	0.032
207.	17.25	0.17	0.040	(0.130)	0.008	0.032
208.	17.33	0.17	0.040	(0.129)	0.008	0.032
209.	17.42	0.17	0.040	(0.129)	0.008	0.032
210.	17.50	0.17	0.040	(0.128)	0.008	0.032
211.	17.58	0.17	0.040	(0.128)	0.008	0.032

212.	17.67	0.17	0.040	(0.127)	0.008	0.032
213.	17.75	0.17	0.040	(0.126)	0.008	0.032
214.	17.83	0.13	0.032	(0.126)	0.007	0.025
215.	17.92	0.13	0.032	(0.125)	0.007	0.025
216.	18.00	0.13	0.032	(0.124)	0.007	0.025
217.	18.08	0.13	0.032	(0.124)	0.007	0.025
218.	18.17	0.13	0.032	(0.123)	0.007	0.025
219.	18.25	0.13	0.032	(0.123)	0.007	0.025
220.	18.33	0.13	0.032	(0.122)	0.007	0.025
221.	18.42	0.13	0.032	(0.121)	0.007	0.025
222.	18.50	0.13	0.032	(0.121)	0.007	0.025
223.	18.58	0.10	0.024	(0.120)	0.005	0.019
224.	18.67	0.10	0.024	(0.120)	0.005	0.019
225.	18.75	0.10	0.024	(0.119)	0.005	0.019
226.	18.83	0.07	0.016	(0.118)	0.003	0.013
227.	18.92	0.07	0.016	(0.118)	0.003	0.013
228.	19.00	0.07	0.016	(0.117)	0.003	0.013
229.	19.08	0.10	0.024	(0.117)	0.005	0.019
230.	19.17	0.10	0.024	(0.116)	0.005	0.019
231.	19.25	0.10	0.024	(0.116)	0.005	0.019
232.	19.33	0.13	0.032	(0.115)	0.007	0.025
233.	19.42	0.13	0.032	(0.115)	0.007	0.025
234.	19.50	0.13	0.032	(0.114)	0.007	0.025
235.	19.58	0.10	0.024	(0.114)	0.005	0.019
236.	19.67	0.10	0.024	(0.113)	0.005	0.019
237.	19.75	0.10	0.024	(0.113)	0.005	0.019
238.	19.83	0.07	0.016	(0.112)	0.003	0.013
239.	19.92	0.07	0.016	(0.112)	0.003	0.013
240.	20.00	0.07	0.016	(0.111)	0.003	0.013
241.	20.08	0.10	0.024	(0.111)	0.005	0.019
242.	20.17	0.10	0.024	(0.110)	0.005	0.019
243.	20.25	0.10	0.024	(0.110)	0.005	0.019
244.	20.33	0.10	0.024	(0.109)	0.005	0.019
245.	20.42	0.10	0.024	(0.109)	0.005	0.019
246.	20.50	0.10	0.024	(0.108)	0.005	0.019
247.	20.58	0.10	0.024	(0.108)	0.005	0.019
248.	20.67	0.10	0.024	(0.107)	0.005	0.019
249.	20.75	0.10	0.024	(0.107)	0.005	0.019
250.	20.83	0.07	0.016	(0.106)	0.003	0.013
251.	20.92	0.07	0.016	(0.106)	0.003	0.013
252.	21.00	0.07	0.016	(0.106)	0.003	0.013
253.	21.08	0.10	0.024	(0.105)	0.005	0.019
254.	21.17	0.10	0.024	(0.105)	0.005	0.019
255.	21.25	0.10	0.024	(0.104)	0.005	0.019
256.	21.33	0.07	0.016	(0.104)	0.003	0.013
257.	21.42	0.07	0.016	(0.104)	0.003	0.013
258.	21.50	0.07	0.016	(0.103)	0.003	0.013
259.	21.58	0.10	0.024	(0.103)	0.005	0.019
260.	21.67	0.10	0.024	(0.102)	0.005	0.019
261.	21.75	0.10	0.024	(0.102)	0.005	0.019
262.	21.83	0.07	0.016	(0.102)	0.003	0.013
263.	21.92	0.07	0.016	(0.101)	0.003	0.013
264.	22.00	0.07	0.016	(0.101)	0.003	0.013
265.	22.08	0.10	0.024	(0.101)	0.005	0.019

266.	22.17	0.10	0.024	(0.100)	0.005	0.019
267.	22.25	0.10	0.024	(0.100)	0.005	0.019
268.	22.33	0.07	0.016	(0.100)	0.003	0.013
269.	22.42	0.07	0.016	(0.099)	0.003	0.013
270.	22.50	0.07	0.016	(0.099)	0.003	0.013
271.	22.58	0.07	0.016	(0.099)	0.003	0.013
272.	22.67	0.07	0.016	(0.099)	0.003	0.013
273.	22.75	0.07	0.016	(0.098)	0.003	0.013
274.	22.83	0.07	0.016	(0.098)	0.003	0.013
275.	22.92	0.07	0.016	(0.098)	0.003	0.013
276.	23.00	0.07	0.016	(0.097)	0.003	0.013
277.	23.08	0.07	0.016	(0.097)	0.003	0.013
278.	23.17	0.07	0.016	(0.097)	0.003	0.013
279.	23.25	0.07	0.016	(0.097)	0.003	0.013
280.	23.33	0.07	0.016	(0.097)	0.003	0.013
281.	23.42	0.07	0.016	(0.096)	0.003	0.013
282.	23.50	0.07	0.016	(0.096)	0.003	0.013
283.	23.58	0.07	0.016	(0.096)	0.003	0.013
284.	23.67	0.07	0.016	(0.096)	0.003	0.013
285.	23.75	0.07	0.016	(0.096)	0.003	0.013
286.	23.83	0.07	0.016	(0.096)	0.003	0.013
287.	23.92	0.07	0.016	(0.096)	0.003	0.013
288.	24.00	0.07	0.016	(0.096)	0.003	0.013

(Loss Rate Not Used)

Sum = 100.0

Sum = 19.1

Flood volume = Effective rainfall 1.59(In)

times area 0.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.41(In)

Total soil loss = 0.011(Ac.Ft)

Total rainfall = 2.00(In)

Flood volume = 1902.3 Cubic Feet

Total soil loss = 493.5 Cubic Feet

Peak flow rate of this hydrograph = 0.072(CFS)

+++++
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m) Volume Ac.Ft Q(CFS) 0 2.5 5.0 7.5
10.0

0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.00	Q				
0+15	0.0001	0.00	Q				
0+20	0.0001	0.01	Q				
0+25	0.0002	0.01	Q				
0+30	0.0002	0.01	Q				
0+35	0.0003	0.01	Q				
0+40	0.0003	0.01	Q				
0+45	0.0003	0.01	Q				

0+50	0.0004	0.01	Q				
0+55	0.0005	0.01	Q				
1+ 0	0.0005	0.01	Q				
1+ 5	0.0006	0.01	Q				
1+10	0.0006	0.01	Q				
1+15	0.0007	0.01	Q				
1+20	0.0007	0.01	Q				
1+25	0.0007	0.01	Q				
1+30	0.0008	0.01	Q				
1+35	0.0008	0.01	Q				
1+40	0.0009	0.01	Q				
1+45	0.0009	0.01	Q				
1+50	0.0010	0.01	Q				
1+55	0.0010	0.01	Q				
2+ 0	0.0011	0.01	Q				
2+ 5	0.0011	0.01	QV				
2+10	0.0012	0.01	QV				
2+15	0.0013	0.01	QV				
2+20	0.0013	0.01	QV				
2+25	0.0014	0.01	QV				
2+30	0.0014	0.01	QV				
2+35	0.0015	0.01	QV				
2+40	0.0016	0.01	QV				
2+45	0.0017	0.01	QV				
2+50	0.0017	0.01	QV				
2+55	0.0018	0.01	QV				
3+ 0	0.0019	0.01	QV				
3+ 5	0.0020	0.01	QV				
3+10	0.0020	0.01	QV				
3+15	0.0021	0.01	QV				
3+20	0.0022	0.01	QV				
3+25	0.0022	0.01	Q V				
3+30	0.0023	0.01	Q V				
3+35	0.0024	0.01	Q V				
3+40	0.0025	0.01	Q V				
3+45	0.0025	0.01	Q V				
3+50	0.0026	0.01	Q V				
3+55	0.0027	0.01	Q V				
4+ 0	0.0028	0.01	Q V				
4+ 5	0.0029	0.01	Q V				
4+10	0.0030	0.01	Q V				
4+15	0.0031	0.01	Q V				
4+20	0.0032	0.01	Q V				
4+25	0.0033	0.01	Q V				
4+30	0.0034	0.01	Q V				
4+35	0.0035	0.01	Q V				
4+40	0.0036	0.01	Q V				
4+45	0.0037	0.01	Q V				
4+50	0.0038	0.02	Q V				
4+55	0.0039	0.02	Q V				
5+ 0	0.0040	0.02	Q V				
5+ 5	0.0041	0.01	Q V				
5+10	0.0042	0.01	Q V				
5+15	0.0043	0.01	Q V				

5+20	0.0044	0.01	Q	V					
5+25	0.0045	0.01	Q	V					
5+30	0.0046	0.01	Q	V					
5+35	0.0047	0.02	Q	V					
5+40	0.0048	0.02	Q	V					
5+45	0.0049	0.02	Q	V					
5+50	0.0051	0.02	Q	V					
5+55	0.0052	0.02	Q	V					
6+ 0	0.0053	0.02	Q	V					
6+ 5	0.0054	0.02	Q	V					
6+10	0.0055	0.02	Q	V					
6+15	0.0057	0.02	Q	V					
6+20	0.0058	0.02	Q	V					
6+25	0.0059	0.02	Q	V					
6+30	0.0061	0.02	Q	V					
6+35	0.0062	0.02	Q	V					
6+40	0.0064	0.02	Q	V					
6+45	0.0065	0.02	Q	V					
6+50	0.0067	0.02	Q	V					
6+55	0.0068	0.02	Q	V					
7+ 0	0.0069	0.02	Q	V					
7+ 5	0.0071	0.02	Q	V					
7+10	0.0072	0.02	Q	V					
7+15	0.0074	0.02	Q	V					
7+20	0.0075	0.02	Q	V					
7+25	0.0077	0.02	Q	V					
7+30	0.0079	0.02	Q	V					
7+35	0.0080	0.03	Q	V					
7+40	0.0082	0.03	Q	V					
7+45	0.0084	0.03	Q	V					
7+50	0.0086	0.03	Q	V					
7+55	0.0088	0.03	Q	V					
8+ 0	0.0090	0.03	Q	V					
8+ 5	0.0092	0.03	Q	V					
8+10	0.0094	0.03	Q	V					
8+15	0.0096	0.03	Q	V					
8+20	0.0098	0.03	Q	V					
8+25	0.0100	0.03	Q	V					
8+30	0.0103	0.03	Q	V					
8+35	0.0105	0.03	Q	V					
8+40	0.0107	0.03	Q	V					
8+45	0.0110	0.03	Q	V					
8+50	0.0112	0.04	Q	V					
8+55	0.0115	0.04	Q	V					
9+ 0	0.0117	0.04	Q	V					
9+ 5	0.0120	0.04	Q	V					
9+10	0.0123	0.04	Q	V					
9+15	0.0125	0.04	Q	V					
9+20	0.0128	0.04	Q	V					
9+25	0.0131	0.04	Q	V					
9+30	0.0134	0.04	Q	V					
9+35	0.0137	0.04	Q	V					
9+40	0.0140	0.04	Q	V					
9+45	0.0143	0.04	Q	V					

9+50	0.0146	0.05	Q		V				
9+55	0.0150	0.05	Q		V				
10+ 0	0.0153	0.05	Q		V				
10+ 5	0.0155	0.03	Q		V				
10+10	0.0157	0.03	Q		V				
10+15	0.0159	0.03	Q		V				
10+20	0.0162	0.03	Q		V				
10+25	0.0164	0.03	Q		V				
10+30	0.0166	0.03	Q		V				
10+35	0.0169	0.04	Q		V				
10+40	0.0172	0.04	Q		V				
10+45	0.0175	0.04	Q		V				
10+50	0.0178	0.04	Q		V				
10+55	0.0181	0.04	Q		V				
11+ 0	0.0183	0.04	Q		V				
11+ 5	0.0186	0.04	Q		V				
11+10	0.0189	0.04	Q		V				
11+15	0.0192	0.04	Q		V				
11+20	0.0194	0.04	Q		V				
11+25	0.0197	0.04	Q		V				
11+30	0.0200	0.04	Q		V				
11+35	0.0202	0.04	Q		V				
11+40	0.0205	0.04	Q		V				
11+45	0.0207	0.04	Q		V				
11+50	0.0210	0.04	Q		V				
11+55	0.0213	0.04	Q		V				
12+ 0	0.0215	0.04	Q		V				
12+ 5	0.0219	0.05	Q		V				
12+10	0.0223	0.05	Q		V				
12+15	0.0226	0.05	Q		V				
12+20	0.0230	0.05	Q		V				
12+25	0.0234	0.05	Q		V				
12+30	0.0238	0.05	Q		V				
12+35	0.0242	0.06	Q		V				
12+40	0.0246	0.06	Q		V				
12+45	0.0250	0.06	Q		V				
12+50	0.0254	0.06	Q		V				
12+55	0.0258	0.06	Q		V				
13+ 0	0.0262	0.06	Q		V				
13+ 5	0.0267	0.07	Q		V				
13+10	0.0272	0.07	Q		V				
13+15	0.0277	0.07	Q		V				
13+20	0.0282	0.07	Q		V				
13+25	0.0287	0.07	Q		V				
13+30	0.0292	0.07	Q		V				
13+35	0.0296	0.05	Q		V				
13+40	0.0299	0.05	Q		V				
13+45	0.0302	0.05	Q		V				
13+50	0.0306	0.05	Q		V				
13+55	0.0309	0.05	Q		V				
14+ 0	0.0312	0.05	Q		V				
14+ 5	0.0316	0.06	Q		V				
14+10	0.0320	0.06	Q		V				
14+15	0.0324	0.06	Q		V				

14+20	0.0328	0.05	Q			V	
14+25	0.0332	0.05	Q			V	
14+30	0.0335	0.05	Q			V	
14+35	0.0339	0.05	Q			V	
14+40	0.0343	0.05	Q			V	
14+45	0.0347	0.05	Q			V	
14+50	0.0350	0.05	Q			V	
14+55	0.0354	0.05	Q			V	
15+ 0	0.0358	0.05	Q			V	
15+ 5	0.0361	0.05	Q			V	
15+10	0.0365	0.05	Q			V	
15+15	0.0368	0.05	Q			V	
15+20	0.0371	0.05	Q			V	
15+25	0.0375	0.05	Q			V	
15+30	0.0378	0.05	Q			V	
15+35	0.0381	0.04	Q			V	
15+40	0.0384	0.04	Q			V	
15+45	0.0386	0.04	Q			V	
15+50	0.0389	0.04	Q			V	
15+55	0.0392	0.04	Q			V	
16+ 0	0.0395	0.04	Q			V	
16+ 5	0.0395	0.01	Q			V	
16+10	0.0396	0.01	Q			V	
16+15	0.0397	0.01	Q			V	
16+20	0.0397	0.01	Q			V	
16+25	0.0398	0.01	Q			V	
16+30	0.0398	0.01	Q			V	
16+35	0.0399	0.01	Q			V	
16+40	0.0399	0.01	Q			V	
16+45	0.0400	0.01	Q			V	
16+50	0.0400	0.01	Q			V	
16+55	0.0400	0.01	Q			V	
17+ 0	0.0401	0.01	Q			V	
17+ 5	0.0402	0.01	Q			V	
17+10	0.0402	0.01	Q			V	
17+15	0.0403	0.01	Q			V	
17+20	0.0404	0.01	Q			V	
17+25	0.0405	0.01	Q			V	
17+30	0.0405	0.01	Q			V	
17+35	0.0406	0.01	Q			V	
17+40	0.0407	0.01	Q			V	
17+45	0.0407	0.01	Q			V	
17+50	0.0408	0.01	Q			V	
17+55	0.0409	0.01	Q			V	
18+ 0	0.0409	0.01	Q			V	
18+ 5	0.0410	0.01	Q			V	
18+10	0.0410	0.01	Q			V	
18+15	0.0411	0.01	Q			V	
18+20	0.0412	0.01	Q			V	
18+25	0.0412	0.01	Q			V	
18+30	0.0413	0.01	Q			V	
18+35	0.0413	0.01	Q			V	
18+40	0.0414	0.01	Q			V	
18+45	0.0414	0.01	Q			V	

18+50	0.0414	0.00	Q				V	
18+55	0.0415	0.00	Q				V	
19+ 0	0.0415	0.00	Q				V	
19+ 5	0.0415	0.01	Q				V	
19+10	0.0416	0.01	Q				V	
19+15	0.0416	0.01	Q				V	
19+20	0.0417	0.01	Q				V	
19+25	0.0417	0.01	Q				V	
19+30	0.0418	0.01	Q				V	
19+35	0.0418	0.01	Q				V	
19+40	0.0419	0.01	Q				V	
19+45	0.0419	0.01	Q				V	
19+50	0.0420	0.00	Q				V	
19+55	0.0420	0.00	Q				V	
20+ 0	0.0420	0.00	Q				V	
20+ 5	0.0421	0.01	Q				V	
20+10	0.0421	0.01	Q				V	
20+15	0.0421	0.01	Q				V	
20+20	0.0422	0.01	Q				V	
20+25	0.0422	0.01	Q				V	
20+30	0.0423	0.01	Q				V	
20+35	0.0423	0.01	Q				V	
20+40	0.0424	0.01	Q				V	
20+45	0.0424	0.01	Q				V	
20+50	0.0424	0.00	Q				V	
20+55	0.0425	0.00	Q				V	
21+ 0	0.0425	0.00	Q				V	
21+ 5	0.0425	0.01	Q				V	
21+10	0.0426	0.01	Q				V	
21+15	0.0426	0.01	Q				V	
21+20	0.0427	0.00	Q				V	
21+25	0.0427	0.00	Q				V	
21+30	0.0427	0.00	Q				V	
21+35	0.0428	0.01	Q				V	
21+40	0.0428	0.01	Q				V	
21+45	0.0428	0.01	Q				V	
21+50	0.0429	0.00	Q				V	
21+55	0.0429	0.00	Q				V	
22+ 0	0.0429	0.00	Q				V	
22+ 5	0.0430	0.01	Q				V	
22+10	0.0430	0.01	Q				V	
22+15	0.0431	0.01	Q				V	
22+20	0.0431	0.00	Q				V	
22+25	0.0431	0.00	Q				V	
22+30	0.0431	0.00	Q				V	
22+35	0.0432	0.00	Q				V	
22+40	0.0432	0.00	Q				V	
22+45	0.0432	0.00	Q				V	
22+50	0.0433	0.00	Q				V	
22+55	0.0433	0.00	Q				V	
23+ 0	0.0433	0.00	Q				V	
23+ 5	0.0433	0.00	Q				V	
23+10	0.0434	0.00	Q				V	
23+15	0.0434	0.00	Q				V	

23+20	0.0434	0.00	Q				V
23+25	0.0435	0.00	Q				V
23+30	0.0435	0.00	Q				V
23+35	0.0435	0.00	Q				V
23+40	0.0436	0.00	Q				V
23+45	0.0436	0.00	Q				V
23+50	0.0436	0.00	Q				V
23+55	0.0436	0.00	Q				V
24+ 0	0.0437	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL15.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	0.50	0.17

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	1.30	0.43

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.687 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.687 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.867	0.191	1.000	0.191

Sum (F) =

0.191

Area averaged mean soil loss (F) (In/Hr) = 0.191
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.206

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)

1	0.083	1068.017	100.000	0.333

Sum =

100.000 Sum= 0.333

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	4.20	0.346	(0.191)	0.071	0.275
2.	0.17	4.30	0.355	(0.191)	0.073	0.282
3.	0.25	5.00	0.412	(0.191)	0.085	0.327
4.	0.33	5.00	0.412	(0.191)	0.085	0.327
5.	0.42	5.80	0.478	(0.191)	0.099	0.380
6.	0.50	6.50	0.536	(0.191)	0.110	0.426
7.	0.58	7.40	0.610	(0.191)	0.126	0.485
8.	0.67	8.60	0.709	(0.191)	0.146	0.563
9.	0.75	12.30	1.015	0.191	(0.209)	0.823
10.	0.83	29.10	2.400	0.191	(0.494)	2.209
11.	0.92	6.80	0.561	(0.191)	0.116	0.445
12.	1.00	5.00	0.412	(0.191)	0.085	0.327

(Loss Rate Not Used)

Sum = 100.0 Sum = 6.9

Flood volume = Effective rainfall 0.57(In)

times area 0.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.11(In)

Total soil loss = 0.003(Ac.Ft)

Total rainfall = 0.69(In)

Flood volume = 685.8 Cubic Feet

Total soil loss = 137.6 Cubic Feet

Peak flow rate of this hydrograph = 0.735(CFS)

+++++
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m) Volume Ac.Ft Q(CFS) 0 2.5 5.0 7.5
10.0

0+ 5	0.0006	0.09	QV				
0+10	0.0013	0.09	Q V				
0+15	0.0020	0.11	Q V				
0+20	0.0028	0.11	Q V				
0+25	0.0036	0.13	Q V				
0+30	0.0046	0.14	Q V				
0+35	0.0057	0.16	Q V				
0+40	0.0070	0.19	Q V				
0+45	0.0089	0.27	Q		V		
0+50	0.0140	0.74	Q			V	
0+55	0.0150	0.15	Q				V
1+ 0	0.0157	0.11	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL35.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	0.85	0.28

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	2.00	0.66

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.119 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.119 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.867	0.191	1.000	0.191

Sum (F) =

0.191

Area averaged mean soil loss (F) (In/Hr) = 0.191
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.206

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	1068.017	100.000
			0.333
Sum=	0.333		

The following loss rate calculations reflect use of the minimum calculated loss

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	1.30	0.175	(0.191)	0.036	0.139
2.	0.17	1.30	0.175	(0.191)	0.036	0.139
3.	0.25	1.10	0.148	(0.191)	0.030	0.117
4.	0.33	1.50	0.201	(0.191)	0.042	0.160
5.	0.42	1.50	0.201	(0.191)	0.042	0.160
6.	0.50	1.80	0.242	(0.191)	0.050	0.192
7.	0.58	1.50	0.201	(0.191)	0.042	0.160
8.	0.67	1.80	0.242	(0.191)	0.050	0.192
9.	0.75	1.80	0.242	(0.191)	0.050	0.192
10.	0.83	1.50	0.201	(0.191)	0.042	0.160
11.	0.92	1.60	0.215	(0.191)	0.044	0.171
12.	1.00	1.80	0.242	(0.191)	0.050	0.192
13.	1.08	2.20	0.296	(0.191)	0.061	0.235
14.	1.17	2.20	0.296	(0.191)	0.061	0.235
15.	1.25	2.20	0.296	(0.191)	0.061	0.235
16.	1.33	2.00	0.269	(0.191)	0.055	0.213
17.	1.42	2.60	0.349	(0.191)	0.072	0.277
18.	1.50	2.70	0.363	(0.191)	0.075	0.288
19.	1.58	2.40	0.322	(0.191)	0.066	0.256
20.	1.67	2.70	0.363	(0.191)	0.075	0.288
21.	1.75	3.30	0.443	(0.191)	0.091	0.352
22.	1.83	3.10	0.416	(0.191)	0.086	0.331
23.	1.92	2.90	0.390	(0.191)	0.080	0.309
24.	2.00	3.00	0.403	(0.191)	0.083	0.320
25.	2.08	3.10	0.416	(0.191)	0.086	0.331
26.	2.17	4.20	0.564	(0.191)	0.116	0.448
27.	2.25	5.00	0.672	(0.191)	0.138	0.533
28.	2.33	3.50	0.470	(0.191)	0.097	0.373
29.	2.42	6.80	0.913	(0.191)	0.188	0.725
30.	2.50	7.30	0.981	0.191	(0.202)	0.789
31.	2.58	8.20	1.101	0.191	(0.227)	0.910
32.	2.67	5.90	0.793	(0.191)	0.163	0.629
33.	2.75	2.00	0.269	(0.191)	0.055	0.213
34.	2.83	1.80	0.242	(0.191)	0.050	0.192
35.	2.92	1.80	0.242	(0.191)	0.050	0.192
36.	3.00	0.60	0.081	(0.191)	0.017	0.064

(Loss Rate Not Used)

Sum = 100.0 Sum = 10.7

Flood volume = Effective rainfall 0.89(In)
times area 0.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.23(In)
Total soil loss = 0.006(Ac.Ft)
Total rainfall = 1.12(In)
Flood volume = 1069.3 Cubic Feet
Total soil loss = 271.6 Cubic Feet

Peak flow rate of this hydrograph = 0.303(CFS)

+++++

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0							
0+ 5	0.0003		0.05	Q			
0+10	0.0006		0.05	QV			
0+15	0.0009		0.04	QV			
0+20	0.0013		0.05	Q V			
0+25	0.0016		0.05	Q V			
0+30	0.0021		0.06	Q V			
0+35	0.0024		0.05	Q V			
0+40	0.0029		0.06	Q V			
0+45	0.0033		0.06	Q V			
0+50	0.0037		0.05	Q V			
0+55	0.0041		0.06	Q V			
1+ 0	0.0045		0.06	Q V			
1+ 5	0.0051		0.08	Q V			
1+10	0.0056		0.08	Q V			
1+15	0.0061		0.08	Q V			
1+20	0.0066		0.07	Q V			
1+25	0.0073		0.09	Q V			
1+30	0.0079		0.10	Q V			
1+35	0.0085		0.09	Q V			
1+40	0.0092		0.10	Q V			
1+45	0.0100		0.12	Q V			
1+50	0.0107		0.11	Q V			
1+55	0.0114		0.10	Q V			
2+ 0	0.0122		0.11	Q V			
2+ 5	0.0129		0.11	Q V			
2+10	0.0140		0.15	Q V			
2+15	0.0152		0.18	Q V			
2+20	0.0160		0.12	Q V			
2+25	0.0177		0.24	Q V			
2+30	0.0195		0.26	Q V			
2+35	0.0216		0.30	Q V			
2+40	0.0230		0.21	Q V			
2+45	0.0235		0.07	Q V			
2+50	0.0240		0.06	Q V			
2+55	0.0244		0.06	Q V			
3+ 0	0.0245		0.02	Q V			

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL65.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	1.20	0.40

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	2.90	0.96

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.200 (In)
Area Averaged 100-Year Rainfall = 2.900 (In)

Point rain (area averaged) = 1.598 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.598 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.867	0.191	1.000	0.191

Sum (F) =

0.191

Area averaged mean soil loss (F) (In/Hr) = 0.191
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.206

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	1068.017	100.000
			0.333
Sum=	0.333		

The following loss rate calculations reflect use of the minimum calculated loss

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.50	0.096	(0.191)	0.020	0.076
2.	0.17	0.60	0.115	(0.191)	0.024	0.091
3.	0.25	0.60	0.115	(0.191)	0.024	0.091
4.	0.33	0.60	0.115	(0.191)	0.024	0.091
5.	0.42	0.60	0.115	(0.191)	0.024	0.091
6.	0.50	0.70	0.134	(0.191)	0.028	0.107
7.	0.58	0.70	0.134	(0.191)	0.028	0.107
8.	0.67	0.70	0.134	(0.191)	0.028	0.107
9.	0.75	0.70	0.134	(0.191)	0.028	0.107
10.	0.83	0.70	0.134	(0.191)	0.028	0.107
11.	0.92	0.70	0.134	(0.191)	0.028	0.107
12.	1.00	0.80	0.153	(0.191)	0.032	0.122
13.	1.08	0.80	0.153	(0.191)	0.032	0.122
14.	1.17	0.80	0.153	(0.191)	0.032	0.122
15.	1.25	0.80	0.153	(0.191)	0.032	0.122
16.	1.33	0.80	0.153	(0.191)	0.032	0.122
17.	1.42	0.80	0.153	(0.191)	0.032	0.122
18.	1.50	0.80	0.153	(0.191)	0.032	0.122
19.	1.58	0.80	0.153	(0.191)	0.032	0.122
20.	1.67	0.80	0.153	(0.191)	0.032	0.122
21.	1.75	0.80	0.153	(0.191)	0.032	0.122
22.	1.83	0.80	0.153	(0.191)	0.032	0.122
23.	1.92	0.80	0.153	(0.191)	0.032	0.122
24.	2.00	0.90	0.173	(0.191)	0.036	0.137
25.	2.08	0.80	0.153	(0.191)	0.032	0.122
26.	2.17	0.90	0.173	(0.191)	0.036	0.137
27.	2.25	0.90	0.173	(0.191)	0.036	0.137
28.	2.33	0.90	0.173	(0.191)	0.036	0.137
29.	2.42	0.90	0.173	(0.191)	0.036	0.137
30.	2.50	0.90	0.173	(0.191)	0.036	0.137
31.	2.58	0.90	0.173	(0.191)	0.036	0.137
32.	2.67	0.90	0.173	(0.191)	0.036	0.137
33.	2.75	1.00	0.192	(0.191)	0.040	0.152
34.	2.83	1.00	0.192	(0.191)	0.040	0.152
35.	2.92	1.00	0.192	(0.191)	0.040	0.152
36.	3.00	1.00	0.192	(0.191)	0.040	0.152
37.	3.08	1.00	0.192	(0.191)	0.040	0.152
38.	3.17	1.10	0.211	(0.191)	0.043	0.168
39.	3.25	1.10	0.211	(0.191)	0.043	0.168
40.	3.33	1.10	0.211	(0.191)	0.043	0.168
41.	3.42	1.20	0.230	(0.191)	0.047	0.183
42.	3.50	1.30	0.249	(0.191)	0.051	0.198
43.	3.58	1.40	0.268	(0.191)	0.055	0.213
44.	3.67	1.40	0.268	(0.191)	0.055	0.213
45.	3.75	1.50	0.288	(0.191)	0.059	0.228
46.	3.83	1.50	0.288	(0.191)	0.059	0.228
47.	3.92	1.60	0.307	(0.191)	0.063	0.244
48.	4.00	1.60	0.307	(0.191)	0.063	0.244
49.	4.08	1.70	0.326	(0.191)	0.067	0.259

50.	4.17	1.80	0.345	(0.191)	0.071	0.274
51.	4.25	1.90	0.364	(0.191)	0.075	0.289
52.	4.33	2.00	0.384	(0.191)	0.079	0.305
53.	4.42	2.10	0.403	(0.191)	0.083	0.320
54.	4.50	2.10	0.403	(0.191)	0.083	0.320
55.	4.58	2.20	0.422	(0.191)	0.087	0.335
56.	4.67	2.30	0.441	(0.191)	0.091	0.350
57.	4.75	2.40	0.460	(0.191)	0.095	0.365
58.	4.83	2.40	0.460	(0.191)	0.095	0.365
59.	4.92	2.50	0.479	(0.191)	0.099	0.381
60.	5.00	2.60	0.499	(0.191)	0.103	0.396
61.	5.08	3.10	0.595	(0.191)	0.122	0.472
62.	5.17	3.60	0.690	(0.191)	0.142	0.548
63.	5.25	3.90	0.748	(0.191)	0.154	0.594
64.	5.33	4.20	0.805	(0.191)	0.166	0.640
65.	5.42	4.70	0.901	(0.191)	0.186	0.716
66.	5.50	5.60	1.074	0.191 (0.221)		0.883
67.	5.58	1.90	0.364	(0.191)	0.075	0.289
68.	5.67	0.90	0.173	(0.191)	0.036	0.137
69.	5.75	0.60	0.115	(0.191)	0.024	0.091
70.	5.83	0.50	0.096	(0.191)	0.020	0.076
71.	5.92	0.30	0.058	(0.191)	0.012	0.046
72.	6.00	0.20	0.038	(0.191)	0.008	0.030

(Loss Rate Not Used)

Sum = 100.0

Sum = 15.3

Flood volume = Effective rainfall 1.27(In)

times area 0.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.33(In)

Total soil loss = 0.009(Ac.Ft)

Total rainfall = 1.60(In)

Flood volume = 1523.1 Cubic Feet

Total soil loss = 391.4 Cubic Feet

Peak flow rate of this hydrograph = 0.294(CFS)

+++++

6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m) Volume Ac.Ft Q(CFS) 0 2.5 5.0 7.5
10.0

0+ 5	0.0002	0.03	Q				
0+10	0.0004	0.03	Q				
0+15	0.0006	0.03	Q				
0+20	0.0008	0.03	Q				
0+25	0.0010	0.03	QV				
0+30	0.0013	0.04	QV				
0+35	0.0015	0.04	QV				
0+40	0.0017	0.04	QV				
0+45	0.0020	0.04	Q V				

0+50	0.0022	0.04	Q	V				
0+55	0.0025	0.04	Q	V				
1+ 0	0.0028	0.04	Q	V				
1+ 5	0.0030	0.04	Q	V				
1+10	0.0033	0.04	Q	V				
1+15	0.0036	0.04	Q	V				
1+20	0.0039	0.04	Q	V				
1+25	0.0042	0.04	Q	V				
1+30	0.0044	0.04	Q	V				
1+35	0.0047	0.04	Q	V				
1+40	0.0050	0.04	Q	V				
1+45	0.0053	0.04	Q	V				
1+50	0.0055	0.04	Q	V				
1+55	0.0058	0.04	Q	V				
2+ 0	0.0061	0.05	Q	V				
2+ 5	0.0064	0.04	Q	V				
2+10	0.0067	0.05	Q	V				
2+15	0.0070	0.05	Q	V				
2+20	0.0074	0.05	Q	V				
2+25	0.0077	0.05	Q	V				
2+30	0.0080	0.05	Q	V				
2+35	0.0083	0.05	Q	V				
2+40	0.0086	0.05	Q	V				
2+45	0.0090	0.05	Q	V				
2+50	0.0093	0.05	Q	V				
2+55	0.0097	0.05	Q	V				
3+ 0	0.0100	0.05	Q	V				
3+ 5	0.0104	0.05	Q	V				
3+10	0.0107	0.06	Q	V				
3+15	0.0111	0.06	Q	V				
3+20	0.0115	0.06	Q	V				
3+25	0.0119	0.06	Q	V				
3+30	0.0124	0.07	Q	V				
3+35	0.0129	0.07	Q	V				
3+40	0.0134	0.07	Q	V				
3+45	0.0139	0.08	Q	V				
3+50	0.0144	0.08	Q	V				
3+55	0.0150	0.08	Q	V				
4+ 0	0.0155	0.08	Q	V				
4+ 5	0.0161	0.09	Q	V				
4+10	0.0168	0.09	Q	V				
4+15	0.0174	0.10	Q	V				
4+20	0.0181	0.10	Q	V				
4+25	0.0188	0.11	Q	V				
4+30	0.0196	0.11	Q	V				
4+35	0.0203	0.11	Q	V				
4+40	0.0211	0.12	Q	V				
4+45	0.0220	0.12	Q	V				
4+50	0.0228	0.12	Q	V				
4+55	0.0237	0.13	Q	V				
5+ 0	0.0246	0.13	Q	V				
5+ 5	0.0257	0.16	Q	V				
5+10	0.0269	0.18	Q	V				
5+15	0.0283	0.20	Q	V				

5+20	0.0298	0.21	Q				V	
5+25	0.0314	0.24	Q				V	
5+30	0.0334	0.29	IQ					V
5+35	0.0341	0.10	Q					V
5+40	0.0344	0.05	Q					V
5+45	0.0346	0.03	Q					V
5+50	0.0348	0.03	Q					V
5+55	0.0349	0.02	Q					V
6+ 0	0.0350	0.01	Q					V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL245.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	2.00	0.66

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	5.90	1.95

STORM EVENT (YEAR) = 5.00
 Area Averaged 2-Year Rainfall = 2.000 (In)
 Area Averaged 100-Year Rainfall = 5.900 (In)

Point rain (area averaged) = 2.913 (In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.913 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	16.2	0.870	0.867	0.191	1.000	0.191

Sum (F) =

0.191

Area averaged mean soil loss (F) (In/Hr) = 0.191
 Minimum soil loss rate ((In/Hr)) = 0.096
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.206

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	1068.017	100.000
			0.333
Sum=	0.333		

The following loss rate calculations reflect use of the minimum calculated loss

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1.	0.08	0.07	0.023	(0.339)	0.005	0.019
2.	0.17	0.07	0.023	(0.338)	0.005	0.019
3.	0.25	0.07	0.023	(0.336)	0.005	0.019
4.	0.33	0.10	0.035	(0.335)	0.007	0.028
5.	0.42	0.10	0.035	(0.334)	0.007	0.028
6.	0.50	0.10	0.035	(0.332)	0.007	0.028
7.	0.58	0.10	0.035	(0.331)	0.007	0.028
8.	0.67	0.10	0.035	(0.330)	0.007	0.028
9.	0.75	0.10	0.035	(0.329)	0.007	0.028
10.	0.83	0.13	0.047	(0.327)	0.010	0.037
11.	0.92	0.13	0.047	(0.326)	0.010	0.037
12.	1.00	0.13	0.047	(0.325)	0.010	0.037
13.	1.08	0.10	0.035	(0.323)	0.007	0.028
14.	1.17	0.10	0.035	(0.322)	0.007	0.028
15.	1.25	0.10	0.035	(0.321)	0.007	0.028
16.	1.33	0.10	0.035	(0.320)	0.007	0.028
17.	1.42	0.10	0.035	(0.318)	0.007	0.028
18.	1.50	0.10	0.035	(0.317)	0.007	0.028
19.	1.58	0.10	0.035	(0.316)	0.007	0.028
20.	1.67	0.10	0.035	(0.315)	0.007	0.028
21.	1.75	0.10	0.035	(0.313)	0.007	0.028
22.	1.83	0.13	0.047	(0.312)	0.010	0.037
23.	1.92	0.13	0.047	(0.311)	0.010	0.037
24.	2.00	0.13	0.047	(0.309)	0.010	0.037
25.	2.08	0.13	0.047	(0.308)	0.010	0.037
26.	2.17	0.13	0.047	(0.307)	0.010	0.037
27.	2.25	0.13	0.047	(0.306)	0.010	0.037
28.	2.33	0.13	0.047	(0.304)	0.010	0.037
29.	2.42	0.13	0.047	(0.303)	0.010	0.037
30.	2.50	0.13	0.047	(0.302)	0.010	0.037
31.	2.58	0.17	0.058	(0.301)	0.012	0.046
32.	2.67	0.17	0.058	(0.300)	0.012	0.046
33.	2.75	0.17	0.058	(0.298)	0.012	0.046
34.	2.83	0.17	0.058	(0.297)	0.012	0.046
35.	2.92	0.17	0.058	(0.296)	0.012	0.046
36.	3.00	0.17	0.058	(0.295)	0.012	0.046
37.	3.08	0.17	0.058	(0.293)	0.012	0.046
38.	3.17	0.17	0.058	(0.292)	0.012	0.046
39.	3.25	0.17	0.058	(0.291)	0.012	0.046
40.	3.33	0.17	0.058	(0.290)	0.012	0.046
41.	3.42	0.17	0.058	(0.289)	0.012	0.046
42.	3.50	0.17	0.058	(0.287)	0.012	0.046
43.	3.58	0.17	0.058	(0.286)	0.012	0.046
44.	3.67	0.17	0.058	(0.285)	0.012	0.046
45.	3.75	0.17	0.058	(0.284)	0.012	0.046
46.	3.83	0.20	0.070	(0.283)	0.014	0.056
47.	3.92	0.20	0.070	(0.281)	0.014	0.056
48.	4.00	0.20	0.070	(0.280)	0.014	0.056
49.	4.08	0.20	0.070	(0.279)	0.014	0.056

50.	4.17	0.20	0.070	(0.278)	0.014	0.056
51.	4.25	0.20	0.070	(0.277)	0.014	0.056
52.	4.33	0.23	0.082	(0.275)	0.017	0.065
53.	4.42	0.23	0.082	(0.274)	0.017	0.065
54.	4.50	0.23	0.082	(0.273)	0.017	0.065
55.	4.58	0.23	0.082	(0.272)	0.017	0.065
56.	4.67	0.23	0.082	(0.271)	0.017	0.065
57.	4.75	0.23	0.082	(0.270)	0.017	0.065
58.	4.83	0.27	0.093	(0.268)	0.019	0.074
59.	4.92	0.27	0.093	(0.267)	0.019	0.074
60.	5.00	0.27	0.093	(0.266)	0.019	0.074
61.	5.08	0.20	0.070	(0.265)	0.014	0.056
62.	5.17	0.20	0.070	(0.264)	0.014	0.056
63.	5.25	0.20	0.070	(0.263)	0.014	0.056
64.	5.33	0.23	0.082	(0.261)	0.017	0.065
65.	5.42	0.23	0.082	(0.260)	0.017	0.065
66.	5.50	0.23	0.082	(0.259)	0.017	0.065
67.	5.58	0.27	0.093	(0.258)	0.019	0.074
68.	5.67	0.27	0.093	(0.257)	0.019	0.074
69.	5.75	0.27	0.093	(0.256)	0.019	0.074
70.	5.83	0.27	0.093	(0.255)	0.019	0.074
71.	5.92	0.27	0.093	(0.254)	0.019	0.074
72.	6.00	0.27	0.093	(0.252)	0.019	0.074
73.	6.08	0.30	0.105	(0.251)	0.022	0.083
74.	6.17	0.30	0.105	(0.250)	0.022	0.083
75.	6.25	0.30	0.105	(0.249)	0.022	0.083
76.	6.33	0.30	0.105	(0.248)	0.022	0.083
77.	6.42	0.30	0.105	(0.247)	0.022	0.083
78.	6.50	0.30	0.105	(0.246)	0.022	0.083
79.	6.58	0.33	0.117	(0.245)	0.024	0.093
80.	6.67	0.33	0.117	(0.244)	0.024	0.093
81.	6.75	0.33	0.117	(0.242)	0.024	0.093
82.	6.83	0.33	0.117	(0.241)	0.024	0.093
83.	6.92	0.33	0.117	(0.240)	0.024	0.093
84.	7.00	0.33	0.117	(0.239)	0.024	0.093
85.	7.08	0.33	0.117	(0.238)	0.024	0.093
86.	7.17	0.33	0.117	(0.237)	0.024	0.093
87.	7.25	0.33	0.117	(0.236)	0.024	0.093
88.	7.33	0.37	0.128	(0.235)	0.026	0.102
89.	7.42	0.37	0.128	(0.234)	0.026	0.102
90.	7.50	0.37	0.128	(0.233)	0.026	0.102
91.	7.58	0.40	0.140	(0.232)	0.029	0.111
92.	7.67	0.40	0.140	(0.231)	0.029	0.111
93.	7.75	0.40	0.140	(0.229)	0.029	0.111
94.	7.83	0.43	0.152	(0.228)	0.031	0.120
95.	7.92	0.43	0.152	(0.227)	0.031	0.120
96.	8.00	0.43	0.152	(0.226)	0.031	0.120
97.	8.08	0.50	0.175	(0.225)	0.036	0.139
98.	8.17	0.50	0.175	(0.224)	0.036	0.139
99.	8.25	0.50	0.175	(0.223)	0.036	0.139
100.	8.33	0.50	0.175	(0.222)	0.036	0.139
101.	8.42	0.50	0.175	(0.221)	0.036	0.139
102.	8.50	0.50	0.175	(0.220)	0.036	0.139
103.	8.58	0.53	0.186	(0.219)	0.038	0.148

104.	8.67	0.53	0.186	(0.218)	0.038	0.148
105.	8.75	0.53	0.186	(0.217)	0.038	0.148
106.	8.83	0.57	0.198	(0.216)	0.041	0.157
107.	8.92	0.57	0.198	(0.215)	0.041	0.157
108.	9.00	0.57	0.198	(0.214)	0.041	0.157
109.	9.08	0.63	0.221	(0.213)	0.046	0.176
110.	9.17	0.63	0.221	(0.212)	0.046	0.176
111.	9.25	0.63	0.221	(0.211)	0.046	0.176
112.	9.33	0.67	0.233	(0.210)	0.048	0.185
113.	9.42	0.67	0.233	(0.209)	0.048	0.185
114.	9.50	0.67	0.233	(0.208)	0.048	0.185
115.	9.58	0.70	0.245	(0.207)	0.050	0.194
116.	9.67	0.70	0.245	(0.206)	0.050	0.194
117.	9.75	0.70	0.245	(0.205)	0.050	0.194
118.	9.83	0.73	0.256	(0.204)	0.053	0.204
119.	9.92	0.73	0.256	(0.203)	0.053	0.204
120.	10.00	0.73	0.256	(0.202)	0.053	0.204
121.	10.08	0.50	0.175	(0.201)	0.036	0.139
122.	10.17	0.50	0.175	(0.200)	0.036	0.139
123.	10.25	0.50	0.175	(0.199)	0.036	0.139
124.	10.33	0.50	0.175	(0.198)	0.036	0.139
125.	10.42	0.50	0.175	(0.197)	0.036	0.139
126.	10.50	0.50	0.175	(0.196)	0.036	0.139
127.	10.58	0.67	0.233	(0.195)	0.048	0.185
128.	10.67	0.67	0.233	(0.194)	0.048	0.185
129.	10.75	0.67	0.233	(0.193)	0.048	0.185
130.	10.83	0.67	0.233	(0.192)	0.048	0.185
131.	10.92	0.67	0.233	(0.191)	0.048	0.185
132.	11.00	0.67	0.233	(0.190)	0.048	0.185
133.	11.08	0.63	0.221	(0.189)	0.046	0.176
134.	11.17	0.63	0.221	(0.189)	0.046	0.176
135.	11.25	0.63	0.221	(0.188)	0.046	0.176
136.	11.33	0.63	0.221	(0.187)	0.046	0.176
137.	11.42	0.63	0.221	(0.186)	0.046	0.176
138.	11.50	0.63	0.221	(0.185)	0.046	0.176
139.	11.58	0.57	0.198	(0.184)	0.041	0.157
140.	11.67	0.57	0.198	(0.183)	0.041	0.157
141.	11.75	0.57	0.198	(0.182)	0.041	0.157
142.	11.83	0.60	0.210	(0.181)	0.043	0.167
143.	11.92	0.60	0.210	(0.180)	0.043	0.167
144.	12.00	0.60	0.210	(0.179)	0.043	0.167
145.	12.08	0.83	0.291	(0.179)	0.060	0.231
146.	12.17	0.83	0.291	(0.178)	0.060	0.231
147.	12.25	0.83	0.291	(0.177)	0.060	0.231
148.	12.33	0.87	0.303	(0.176)	0.062	0.241
149.	12.42	0.87	0.303	(0.175)	0.062	0.241
150.	12.50	0.87	0.303	(0.174)	0.062	0.241
151.	12.58	0.93	0.326	(0.173)	0.067	0.259
152.	12.67	0.93	0.326	(0.172)	0.067	0.259
153.	12.75	0.93	0.326	(0.171)	0.067	0.259
154.	12.83	0.97	0.338	(0.171)	0.070	0.268
155.	12.92	0.97	0.338	(0.170)	0.070	0.268
156.	13.00	0.97	0.338	(0.169)	0.070	0.268
157.	13.08	1.13	0.396	(0.168)	0.082	0.315

158.	13.17	1.13	0.396	(0.167)	0.082	0.315
159.	13.25	1.13	0.396	(0.166)	0.082	0.315
160.	13.33	1.13	0.396	(0.165)	0.082	0.315
161.	13.42	1.13	0.396	(0.165)	0.082	0.315
162.	13.50	1.13	0.396	(0.164)	0.082	0.315
163.	13.58	0.77	0.268	(0.163)	0.055	0.213
164.	13.67	0.77	0.268	(0.162)	0.055	0.213
165.	13.75	0.77	0.268	(0.161)	0.055	0.213
166.	13.83	0.77	0.268	(0.160)	0.055	0.213
167.	13.92	0.77	0.268	(0.160)	0.055	0.213
168.	14.00	0.77	0.268	(0.159)	0.055	0.213
169.	14.08	0.90	0.315	(0.158)	0.065	0.250
170.	14.17	0.90	0.315	(0.157)	0.065	0.250
171.	14.25	0.90	0.315	(0.156)	0.065	0.250
172.	14.33	0.87	0.303	(0.156)	0.062	0.241
173.	14.42	0.87	0.303	(0.155)	0.062	0.241
174.	14.50	0.87	0.303	(0.154)	0.062	0.241
175.	14.58	0.87	0.303	(0.153)	0.062	0.241
176.	14.67	0.87	0.303	(0.152)	0.062	0.241
177.	14.75	0.87	0.303	(0.152)	0.062	0.241
178.	14.83	0.83	0.291	(0.151)	0.060	0.231
179.	14.92	0.83	0.291	(0.150)	0.060	0.231
180.	15.00	0.83	0.291	(0.149)	0.060	0.231
181.	15.08	0.80	0.280	(0.149)	0.058	0.222
182.	15.17	0.80	0.280	(0.148)	0.058	0.222
183.	15.25	0.80	0.280	(0.147)	0.058	0.222
184.	15.33	0.77	0.268	(0.146)	0.055	0.213
185.	15.42	0.77	0.268	(0.146)	0.055	0.213
186.	15.50	0.77	0.268	(0.145)	0.055	0.213
187.	15.58	0.63	0.221	(0.144)	0.046	0.176
188.	15.67	0.63	0.221	(0.143)	0.046	0.176
189.	15.75	0.63	0.221	(0.143)	0.046	0.176
190.	15.83	0.63	0.221	(0.142)	0.046	0.176
191.	15.92	0.63	0.221	(0.141)	0.046	0.176
192.	16.00	0.63	0.221	(0.140)	0.046	0.176
193.	16.08	0.13	0.047	(0.140)	0.010	0.037
194.	16.17	0.13	0.047	(0.139)	0.010	0.037
195.	16.25	0.13	0.047	(0.138)	0.010	0.037
196.	16.33	0.13	0.047	(0.138)	0.010	0.037
197.	16.42	0.13	0.047	(0.137)	0.010	0.037
198.	16.50	0.13	0.047	(0.136)	0.010	0.037
199.	16.58	0.10	0.035	(0.135)	0.007	0.028
200.	16.67	0.10	0.035	(0.135)	0.007	0.028
201.	16.75	0.10	0.035	(0.134)	0.007	0.028
202.	16.83	0.10	0.035	(0.133)	0.007	0.028
203.	16.92	0.10	0.035	(0.133)	0.007	0.028
204.	17.00	0.10	0.035	(0.132)	0.007	0.028
205.	17.08	0.17	0.058	(0.131)	0.012	0.046
206.	17.17	0.17	0.058	(0.131)	0.012	0.046
207.	17.25	0.17	0.058	(0.130)	0.012	0.046
208.	17.33	0.17	0.058	(0.129)	0.012	0.046
209.	17.42	0.17	0.058	(0.129)	0.012	0.046
210.	17.50	0.17	0.058	(0.128)	0.012	0.046
211.	17.58	0.17	0.058	(0.128)	0.012	0.046

212.	17.67	0.17	0.058	(0.127)	0.012	0.046
213.	17.75	0.17	0.058	(0.126)	0.012	0.046
214.	17.83	0.13	0.047	(0.126)	0.010	0.037
215.	17.92	0.13	0.047	(0.125)	0.010	0.037
216.	18.00	0.13	0.047	(0.124)	0.010	0.037
217.	18.08	0.13	0.047	(0.124)	0.010	0.037
218.	18.17	0.13	0.047	(0.123)	0.010	0.037
219.	18.25	0.13	0.047	(0.123)	0.010	0.037
220.	18.33	0.13	0.047	(0.122)	0.010	0.037
221.	18.42	0.13	0.047	(0.121)	0.010	0.037
222.	18.50	0.13	0.047	(0.121)	0.010	0.037
223.	18.58	0.10	0.035	(0.120)	0.007	0.028
224.	18.67	0.10	0.035	(0.120)	0.007	0.028
225.	18.75	0.10	0.035	(0.119)	0.007	0.028
226.	18.83	0.07	0.023	(0.118)	0.005	0.019
227.	18.92	0.07	0.023	(0.118)	0.005	0.019
228.	19.00	0.07	0.023	(0.117)	0.005	0.019
229.	19.08	0.10	0.035	(0.117)	0.007	0.028
230.	19.17	0.10	0.035	(0.116)	0.007	0.028
231.	19.25	0.10	0.035	(0.116)	0.007	0.028
232.	19.33	0.13	0.047	(0.115)	0.010	0.037
233.	19.42	0.13	0.047	(0.115)	0.010	0.037
234.	19.50	0.13	0.047	(0.114)	0.010	0.037
235.	19.58	0.10	0.035	(0.114)	0.007	0.028
236.	19.67	0.10	0.035	(0.113)	0.007	0.028
237.	19.75	0.10	0.035	(0.113)	0.007	0.028
238.	19.83	0.07	0.023	(0.112)	0.005	0.019
239.	19.92	0.07	0.023	(0.112)	0.005	0.019
240.	20.00	0.07	0.023	(0.111)	0.005	0.019
241.	20.08	0.10	0.035	(0.111)	0.007	0.028
242.	20.17	0.10	0.035	(0.110)	0.007	0.028
243.	20.25	0.10	0.035	(0.110)	0.007	0.028
244.	20.33	0.10	0.035	(0.109)	0.007	0.028
245.	20.42	0.10	0.035	(0.109)	0.007	0.028
246.	20.50	0.10	0.035	(0.108)	0.007	0.028
247.	20.58	0.10	0.035	(0.108)	0.007	0.028
248.	20.67	0.10	0.035	(0.107)	0.007	0.028
249.	20.75	0.10	0.035	(0.107)	0.007	0.028
250.	20.83	0.07	0.023	(0.106)	0.005	0.019
251.	20.92	0.07	0.023	(0.106)	0.005	0.019
252.	21.00	0.07	0.023	(0.106)	0.005	0.019
253.	21.08	0.10	0.035	(0.105)	0.007	0.028
254.	21.17	0.10	0.035	(0.105)	0.007	0.028
255.	21.25	0.10	0.035	(0.104)	0.007	0.028
256.	21.33	0.07	0.023	(0.104)	0.005	0.019
257.	21.42	0.07	0.023	(0.104)	0.005	0.019
258.	21.50	0.07	0.023	(0.103)	0.005	0.019
259.	21.58	0.10	0.035	(0.103)	0.007	0.028
260.	21.67	0.10	0.035	(0.102)	0.007	0.028
261.	21.75	0.10	0.035	(0.102)	0.007	0.028
262.	21.83	0.07	0.023	(0.102)	0.005	0.019
263.	21.92	0.07	0.023	(0.101)	0.005	0.019
264.	22.00	0.07	0.023	(0.101)	0.005	0.019
265.	22.08	0.10	0.035	(0.101)	0.007	0.028

266.	22.17	0.10	0.035	(0.100)	0.007	0.028
267.	22.25	0.10	0.035	(0.100)	0.007	0.028
268.	22.33	0.07	0.023	(0.100)	0.005	0.019
269.	22.42	0.07	0.023	(0.099)	0.005	0.019
270.	22.50	0.07	0.023	(0.099)	0.005	0.019
271.	22.58	0.07	0.023	(0.099)	0.005	0.019
272.	22.67	0.07	0.023	(0.099)	0.005	0.019
273.	22.75	0.07	0.023	(0.098)	0.005	0.019
274.	22.83	0.07	0.023	(0.098)	0.005	0.019
275.	22.92	0.07	0.023	(0.098)	0.005	0.019
276.	23.00	0.07	0.023	(0.097)	0.005	0.019
277.	23.08	0.07	0.023	(0.097)	0.005	0.019
278.	23.17	0.07	0.023	(0.097)	0.005	0.019
279.	23.25	0.07	0.023	(0.097)	0.005	0.019
280.	23.33	0.07	0.023	(0.097)	0.005	0.019
281.	23.42	0.07	0.023	(0.096)	0.005	0.019
282.	23.50	0.07	0.023	(0.096)	0.005	0.019
283.	23.58	0.07	0.023	(0.096)	0.005	0.019
284.	23.67	0.07	0.023	(0.096)	0.005	0.019
285.	23.75	0.07	0.023	(0.096)	0.005	0.019
286.	23.83	0.07	0.023	(0.096)	0.005	0.019
287.	23.92	0.07	0.023	(0.096)	0.005	0.019
288.	24.00	0.07	0.023	(0.096)	0.005	0.019

(Loss Rate Not Used)

Sum = 100.0

Sum = 27.8

Flood volume = Effective rainfall 2.31(In)

times area 0.3(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 0.60(In)

Total soil loss = 0.017(Ac.Ft)

Total rainfall = 2.91(In)

Flood volume = 2771.1 Cubic Feet

Total soil loss = 719.0 Cubic Feet

Peak flow rate of this hydrograph = 0.105(CFS)

+++++
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m) Volume Ac.Ft Q(CFS) 0 2.5 5.0 7.5
10.0

0+ 5	0.0000	0.01	Q				
0+10	0.0001	0.01	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.01	Q				
0+25	0.0003	0.01	Q				
0+30	0.0003	0.01	Q				
0+35	0.0004	0.01	Q				
0+40	0.0004	0.01	Q				
0+45	0.0005	0.01	Q				

0+50	0.0006	0.01	Q				
0+55	0.0007	0.01	Q				
1+ 0	0.0008	0.01	Q				
1+ 5	0.0008	0.01	Q				
1+10	0.0009	0.01	Q				
1+15	0.0010	0.01	Q				
1+20	0.0010	0.01	Q				
1+25	0.0011	0.01	Q				
1+30	0.0011	0.01	Q				
1+35	0.0012	0.01	Q				
1+40	0.0013	0.01	Q				
1+45	0.0013	0.01	Q				
1+50	0.0014	0.01	Q				
1+55	0.0015	0.01	Q				
2+ 0	0.0016	0.01	Q				
2+ 5	0.0017	0.01	QV				
2+10	0.0018	0.01	QV				
2+15	0.0018	0.01	QV				
2+20	0.0019	0.01	QV				
2+25	0.0020	0.01	QV				
2+30	0.0021	0.01	QV				
2+35	0.0022	0.02	QV				
2+40	0.0023	0.02	QV				
2+45	0.0024	0.02	QV				
2+50	0.0025	0.02	QV				
2+55	0.0026	0.02	QV				
3+ 0	0.0027	0.02	QV				
3+ 5	0.0028	0.02	QV				
3+10	0.0029	0.02	QV				
3+15	0.0031	0.02	QV				
3+20	0.0032	0.02	QV				
3+25	0.0033	0.02	Q V				
3+30	0.0034	0.02	Q V				
3+35	0.0035	0.02	Q V				
3+40	0.0036	0.02	Q V				
3+45	0.0037	0.02	Q V				
3+50	0.0038	0.02	Q V				
3+55	0.0039	0.02	Q V				
4+ 0	0.0041	0.02	Q V				
4+ 5	0.0042	0.02	Q V				
4+10	0.0043	0.02	Q V				
4+15	0.0045	0.02	Q V				
4+20	0.0046	0.02	Q V				
4+25	0.0047	0.02	Q V				
4+30	0.0049	0.02	Q V				
4+35	0.0050	0.02	Q V				
4+40	0.0052	0.02	Q V				
4+45	0.0053	0.02	Q V				
4+50	0.0055	0.02	Q V				
4+55	0.0057	0.02	Q V				
5+ 0	0.0059	0.02	Q V				
5+ 5	0.0060	0.02	Q V				
5+10	0.0061	0.02	Q V				
5+15	0.0062	0.02	Q V				

5+20	0.0064	0.02	Q	V					
5+25	0.0065	0.02	Q	V					
5+30	0.0067	0.02	Q	V					
5+35	0.0068	0.02	Q	V					
5+40	0.0070	0.02	Q	V					
5+45	0.0072	0.02	Q	V					
5+50	0.0074	0.02	Q	V					
5+55	0.0075	0.02	Q	V					
6+ 0	0.0077	0.02	Q	V					
6+ 5	0.0079	0.03	Q	V					
6+10	0.0081	0.03	Q	V					
6+15	0.0083	0.03	Q	V					
6+20	0.0085	0.03	Q	V					
6+25	0.0087	0.03	Q	V					
6+30	0.0088	0.03	Q	V					
6+35	0.0091	0.03	Q	V					
6+40	0.0093	0.03	Q	V					
6+45	0.0095	0.03	Q	V					
6+50	0.0097	0.03	Q	V					
6+55	0.0099	0.03	Q	V					
7+ 0	0.0101	0.03	Q	V					
7+ 5	0.0103	0.03	Q	V					
7+10	0.0105	0.03	Q	V					
7+15	0.0108	0.03	Q	V					
7+20	0.0110	0.03	Q	V					
7+25	0.0112	0.03	Q	V					
7+30	0.0115	0.03	Q	V					
7+35	0.0117	0.04	Q	V					
7+40	0.0120	0.04	Q	V					
7+45	0.0122	0.04	Q	V					
7+50	0.0125	0.04	Q	V					
7+55	0.0128	0.04	Q	V					
8+ 0	0.0130	0.04	Q	V					
8+ 5	0.0134	0.05	Q	V					
8+10	0.0137	0.05	Q	V					
8+15	0.0140	0.05	Q	V					
8+20	0.0143	0.05	Q	V					
8+25	0.0146	0.05	Q	V					
8+30	0.0149	0.05	Q	V					
8+35	0.0153	0.05	Q	V					
8+40	0.0156	0.05	Q	V					
8+45	0.0160	0.05	Q	V					
8+50	0.0163	0.05	Q	V					
8+55	0.0167	0.05	Q	V					
9+ 0	0.0170	0.05	Q	V					
9+ 5	0.0175	0.06	Q	V					
9+10	0.0179	0.06	Q	V					
9+15	0.0183	0.06	Q	V					
9+20	0.0187	0.06	Q	V					
9+25	0.0191	0.06	Q	V					
9+30	0.0195	0.06	Q	V					
9+35	0.0200	0.06	Q	V					
9+40	0.0204	0.06	Q	V					
9+45	0.0209	0.06	Q	V					

9+50	0.0213	0.07	Q		V				
9+55	0.0218	0.07	Q		V				
10+ 0	0.0223	0.07	Q		V				
10+ 5	0.0226	0.05	Q		V				
10+10	0.0229	0.05	Q		V				
10+15	0.0232	0.05	Q		V				
10+20	0.0235	0.05	Q		V				
10+25	0.0239	0.05	Q		V				
10+30	0.0242	0.05	Q		V				
10+35	0.0246	0.06	Q		V				
10+40	0.0250	0.06	Q		V				
10+45	0.0254	0.06	Q		V				
10+50	0.0259	0.06	Q		V				
10+55	0.0263	0.06	Q		V				
11+ 0	0.0267	0.06	Q		V				
11+ 5	0.0271	0.06	Q		V				
11+10	0.0275	0.06	Q		V				
11+15	0.0279	0.06	Q		V				
11+20	0.0283	0.06	Q		V				
11+25	0.0287	0.06	Q		V				
11+30	0.0291	0.06	Q		V				
11+35	0.0295	0.05	Q		V				
11+40	0.0299	0.05	Q		V				
11+45	0.0302	0.05	Q		V				
11+50	0.0306	0.06	Q		V				
11+55	0.0310	0.06	Q		V				
12+ 0	0.0314	0.06	Q		V				
12+ 5	0.0319	0.08	Q		V				
12+10	0.0324	0.08	Q		V				
12+15	0.0330	0.08	Q		V				
12+20	0.0335	0.08	Q		V				
12+25	0.0341	0.08	Q		V				
12+30	0.0346	0.08	Q		V				
12+35	0.0352	0.09	Q		V				
12+40	0.0358	0.09	Q		V				
12+45	0.0364	0.09	Q		V				
12+50	0.0370	0.09	Q		V				
12+55	0.0376	0.09	Q		V				
13+ 0	0.0382	0.09	Q		V				
13+ 5	0.0390	0.10	Q		V				
13+10	0.0397	0.10	Q		V				
13+15	0.0404	0.10	Q		V				
13+20	0.0411	0.10	Q		V				
13+25	0.0418	0.10	Q		V				
13+30	0.0426	0.10	Q		V				
13+35	0.0430	0.07	Q		V				
13+40	0.0435	0.07	Q		V				
13+45	0.0440	0.07	Q		V				
13+50	0.0445	0.07	Q		V				
13+55	0.0450	0.07	Q		V				
14+ 0	0.0455	0.07	Q		V				
14+ 5	0.0461	0.08	Q		V				
14+10	0.0466	0.08	Q		V				
14+15	0.0472	0.08	Q		V				

14+20	0.0478	0.08	Q			V	
14+25	0.0483	0.08	Q			V	
14+30	0.0489	0.08	Q			V	
14+35	0.0494	0.08	Q			V	
14+40	0.0500	0.08	Q			V	
14+45	0.0505	0.08	Q			V	
14+50	0.0510	0.08	Q			V	
14+55	0.0516	0.08	Q			V	
15+ 0	0.0521	0.08	Q			V	
15+ 5	0.0526	0.07	Q			V	
15+10	0.0531	0.07	Q			V	
15+15	0.0536	0.07	Q			V	
15+20	0.0541	0.07	Q			V	
15+25	0.0546	0.07	Q			V	
15+30	0.0551	0.07	Q			V	
15+35	0.0555	0.06	Q			V	
15+40	0.0559	0.06	Q			V	
15+45	0.0563	0.06	Q			V	
15+50	0.0567	0.06	Q			V	
15+55	0.0571	0.06	Q			V	
16+ 0	0.0575	0.06	Q			V	
16+ 5	0.0576	0.01	Q			V	
16+10	0.0577	0.01	Q			V	
16+15	0.0578	0.01	Q			V	
16+20	0.0578	0.01	Q			V	
16+25	0.0579	0.01	Q			V	
16+30	0.0580	0.01	Q			V	
16+35	0.0581	0.01	Q			V	
16+40	0.0581	0.01	Q			V	
16+45	0.0582	0.01	Q			V	
16+50	0.0583	0.01	Q			V	
16+55	0.0583	0.01	Q			V	
17+ 0	0.0584	0.01	Q			V	
17+ 5	0.0585	0.02	Q			V	
17+10	0.0586	0.02	Q			V	
17+15	0.0587	0.02	Q			V	
17+20	0.0588	0.02	Q			V	
17+25	0.0589	0.02	Q			V	
17+30	0.0590	0.02	Q			V	
17+35	0.0591	0.02	Q			V	
17+40	0.0592	0.02	Q			V	
17+45	0.0594	0.02	Q			V	
17+50	0.0594	0.01	Q			V	
17+55	0.0595	0.01	Q			V	
18+ 0	0.0596	0.01	Q			V	
18+ 5	0.0597	0.01	Q			V	
18+10	0.0598	0.01	Q			V	
18+15	0.0599	0.01	Q			V	
18+20	0.0599	0.01	Q			V	
18+25	0.0600	0.01	Q			V	
18+30	0.0601	0.01	Q			V	
18+35	0.0602	0.01	Q			V	
18+40	0.0602	0.01	Q			V	
18+45	0.0603	0.01	Q			V	

18+50	0.0604	0.01	Q				V	
18+55	0.0604	0.01	Q				V	
19+ 0	0.0604	0.01	Q				V	
19+ 5	0.0605	0.01	Q				V	
19+10	0.0606	0.01	Q				V	
19+15	0.0606	0.01	Q				V	
19+20	0.0607	0.01	Q				V	
19+25	0.0608	0.01	Q				V	
19+30	0.0609	0.01	Q				V	
19+35	0.0609	0.01	Q				V	
19+40	0.0610	0.01	Q				V	
19+45	0.0611	0.01	Q				V	
19+50	0.0611	0.01	Q				V	
19+55	0.0612	0.01	Q				V	
20+ 0	0.0612	0.01	Q				V	
20+ 5	0.0613	0.01	Q				V	
20+10	0.0613	0.01	Q				V	
20+15	0.0614	0.01	Q				V	
20+20	0.0615	0.01	Q				V	
20+25	0.0615	0.01	Q				V	
20+30	0.0616	0.01	Q				V	
20+35	0.0616	0.01	Q				V	
20+40	0.0617	0.01	Q				V	
20+45	0.0618	0.01	Q				V	
20+50	0.0618	0.01	Q				V	
20+55	0.0619	0.01	Q				V	
21+ 0	0.0619	0.01	Q				V	
21+ 5	0.0620	0.01	Q				V	
21+10	0.0620	0.01	Q				V	
21+15	0.0621	0.01	Q				V	
21+20	0.0621	0.01	Q				V	
21+25	0.0622	0.01	Q				V	
21+30	0.0622	0.01	Q				V	
21+35	0.0623	0.01	Q				V	
21+40	0.0623	0.01	Q				V	
21+45	0.0624	0.01	Q				V	
21+50	0.0624	0.01	Q				V	
21+55	0.0625	0.01	Q				V	
22+ 0	0.0625	0.01	Q				V	
22+ 5	0.0626	0.01	Q				V	
22+10	0.0627	0.01	Q				V	
22+15	0.0627	0.01	Q				V	
22+20	0.0628	0.01	Q				V	
22+25	0.0628	0.01	Q				V	
22+30	0.0629	0.01	Q				V	
22+35	0.0629	0.01	Q				V	
22+40	0.0629	0.01	Q				V	
22+45	0.0630	0.01	Q				V	
22+50	0.0630	0.01	Q				V	
22+55	0.0631	0.01	Q				V	
23+ 0	0.0631	0.01	Q				V	
23+ 5	0.0631	0.01	Q				V	
23+10	0.0632	0.01	Q				V	
23+15	0.0632	0.01	Q				V	

23+20	0.0633	0.01	Q				V
23+25	0.0633	0.01	Q				V
23+30	0.0634	0.01	Q				V
23+35	0.0634	0.01	Q				V
23+40	0.0634	0.01	Q				V
23+45	0.0635	0.01	Q				V
23+50	0.0635	0.01	Q				V
23+55	0.0636	0.01	Q				V
24+ 0	0.0636	0.01	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL110.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	0.50	0.17

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	1.30	0.43

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.500 (In)
Area Averaged 100-Year Rainfall = 1.300 (In)

Point rain (area averaged) = 0.829 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.829 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867
Total Area Entered = 0.33 (Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.867	0.163	1.000	0.163
Sum (F) =						

0.163

Area averaged mean soil loss (F) (In/Hr) = 0.191
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.206

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)

1	0.083	1068.017	100.000	0.333

Sum =

100.000 Sum= 0.333

The following loss rate calculations reflect use of the minimum
calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain
value

Unit	Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1.	0.08	4.20	0.418	(0.191)	0.086	0.332
2.	0.17	4.30	0.428	(0.191)	0.088	0.340
3.	0.25	5.00	0.497	(0.191)	0.102	0.395
4.	0.33	5.00	0.497	(0.191)	0.102	0.395
5.	0.42	5.80	0.577	(0.191)	0.119	0.458
6.	0.50	6.50	0.647	(0.191)	0.133	0.513
7.	0.58	7.40	0.736	(0.191)	0.152	0.585
8.	0.67	8.60	0.856	(0.191)	0.176	0.679
9.	0.75	12.30	1.224	0.191	(0.252)	1.033
10.	0.83	29.10	2.895	0.191	(0.596)	2.704
11.	0.92	6.80	0.677	(0.191)	0.139	0.537
12.	1.00	5.00	0.497	(0.191)	0.102	0.395

(Loss Rate Not Used)

Sum = 100.0 Sum = 8.4

Flood volume = Effective rainfall 0.70(In)
times area 0.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.13(In)
Total soil loss = 0.004(Ac.Ft)
Total rainfall = 0.83(In)
Flood volume = 835.1 Cubic Feet
Total soil loss = 158.1 Cubic Feet

Peak flow rate of this hydrograph = 0.900(CFS)

+++++
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5
10.0						
0+ 5	0.0008	0.11	QV			
0+10	0.0015	0.11	Q V			
0+15	0.0024	0.13	Q V			
0+20	0.0033	0.13	Q V			
0+25	0.0044	0.15	Q	V		
0+30	0.0056	0.17	Q	V		
0+35	0.0069	0.19	Q	V		
0+40	0.0085	0.23	Q	V		
0+45	0.0108	0.34	Q		V	
0+50	0.0170	0.90	Q			V
0+55	0.0183	0.18	Q			V

1+ 0 0.0192 0.13 Q | | | v

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012, Version

8.2

Study date 03/27/24 File:

2177UHPDRYWELL310.out

++++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6313

-
English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

-

Drainage Area = 0.33(Ac.) = 0.001 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 0.33(Ac.) =
0.001 Sq. Mi.
Length along longest watercourse = 187.00(Ft.)
Length along longest watercourse measured to centroid =
109.00(Ft.)
Length along longest watercourse = 0.035 Mi.
Length along longest watercourse measured to centroid = 0.021
Mi.
Difference in elevation = 10.85(Ft.)
Slope along watercourse = 306.3529 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.008 Hr.
Lag time = 0.47 Min.
25% of lag time = 0.12 Min.
40% of lag time = 0.19 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	0.85	0.28

100 YEAR Area rainfall data:

Area (Ac.) [1]	Rainfall (In) [2]	Weighting[1*2]	
	0.33	2.00	0.66

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.850 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.323 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.323 (In)

Sub-Area Data:

Area (Ac.)	Runoff Index	Impervious %
0.330	32.00	0.867

Total Area Entered = 0.33 (Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
32.0	32.0	0.742	0.867	0.163	1.000	0.163

Sum (F) =

0.163

Area averaged mean soil loss (F) (In/Hr) = 0.191
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.206

U n i t H y d r o g r a p h VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	1068.017	100.000
			0.333

Sum =

100.000 Sum= 0.333