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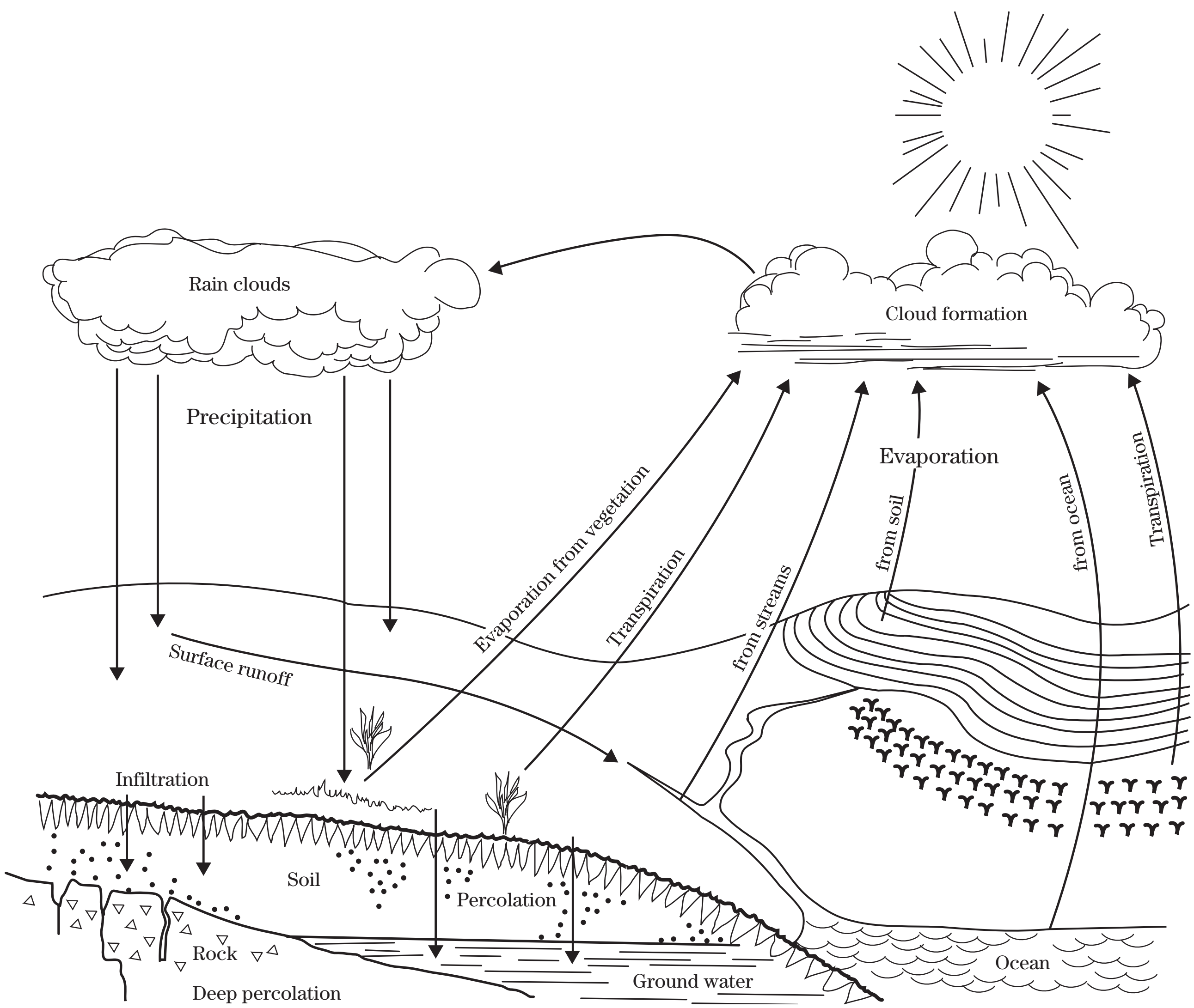
National Engineering Handbook

Chapter 10 Estimation of Direct Runoff from Storm Rainfall



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Chapter 10 Estimation of Direct Runoff from Storm Rainfall

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Chapter 10 Estimation of Direct Runoff from Storm Rainfall

630.1000 Introduction

The Natural Resources Conservation Service (NRCS) method of estimating direct runoff from storm rainfall is described in this chapter. The rainfall-runoff relationship is developed, parameters in the relationship are described, and applications of the method are illustrated by examples.

The NRCS method of estimating direct runoff from storm rainfall was the end product of a major field investigation and the work of numerous early investigators (Mockus 1949, Sherman 1942, Andrews 1954, and Ogrosky 1956). A major catalyst for getting this procedure to the field was the passage of the Watershed Protection and Flood Prevention Act (Public Law 83-566) in August 1954. As a result, studies associated with small watershed planning requiring solutions of hydrologic problems were expected to produce a quantum jump in hydrologic computations within NRCS (Rallison 1980, Rallison and Miller 1982). Most NRCS work is with small, ungaged, agricultural watersheds, so the method was developed for rainfall and watershed data that are available or easily obtainable.

The method is a direct descendent of the hydrologic heritage developed in the United States in the first half of the 20th century. In the early 1900's investigators commonly plotted total runoff versus total rainfall to describe river hydrology. Mead (1919) showed several of these plots, which were reasonably useful on an annual basis. However, for shorter periods, such as seasons or months, the scatter became excessive. More than just rainfall depth alone was involved in determining the amount of runoff. Sherman (1942) attempted to include additional information by plotting runoff versus rainfall with separate curves for each month and a tabular adjustment for antecedent rainfall. This was an attempt to deal with event situations; however, the scatter of the data was still significant. Kohler and Linsley (1951) expanded upon the approach of Sherman with the multiple correlation diagram. This incorporated such items as antecedent precipitation, week of the year, and storm duration along with the basic rainfall and runoff values. Coaxial correlation diagrams must be generated for each basin, so this approach cannot be used in an ungaged situation.

Mockus' goal was to develop a procedure for use on small, ungaged agricultural watersheds. No evidence indicates that he had the coaxial graphical correlation diagrams in mind when he started the work that led to curve numbers. It does seem appropriate, however, to consider the procedures to be related with curve number tables taking the place of some graphs used for coaxial correlation work. Rallison (1980) and Rallison and Miller (1982), in describing the origin and evolution of the runoff equation, point to this heritage.

The principal application of the method is in estimating quantities of runoff in flood hydrographs or in relation to flood peak rates (National Engineering Handbook 630 (NEH-630), chapter 16). An understanding of runoff types is necessary to apply the method properly in different climatic regions. Four types are distinguished: channel, surface, lateral subsurface flow, and baseflow.

Channel runoff occurs when rain falls on a flowing stream. It appears in the hydrograph at the start of the storm and continues throughout the storm, varying with the rainfall intensity. This type of runoff is generally a negligible quantity in flood hydrographs and is ignored except in special studies.

Surface runoff or overland flow occurs when the rainfall rate is greater than the infiltration rate. The runoff equation was developed for this condition. The runoff flows on the surface of the watershed and through channels to the point of reference. This type of runoff appears in the hydrograph after the initial demands of interception, infiltration, and surface storage have been satisfied. It varies during the storm and ends during or soon after the storm. The volume of surface runoff flowing down dry channels of watersheds in arid, semiarid, or subhumid climates may be reduced by transmission losses (NEH, part 630, chapter 19), which could be large enough to eliminate the runoff.

Subsurface flow occurs when infiltrated rainfall meets a subsurface horizon of lower hydraulic conductivity, travels laterally above the interface, and reappears as a seep or spring. This type runoff is often called quick return flow because it contributes to the hydrograph during or soon after the storm.

Baseflow occurs when there is a fairly steady flow from natural storage. The flow comes from an aquifer that is replenished by infiltrated rainfall or surface runoff. Changes in this type of runoff seldom appear soon enough after a storm to have an influence on the hydrograph for that storm, but an increase in baseflow from a previous storm increases the streamflow rate. Baseflow must be considered in the design of the principal spillway of a floodwater-retarding structure (NEH, part 630, chapter 21). The runoff equation does not include baseflow.

All types of runoff do not regularly appear on all watersheds. Climate is one indicator of the probability of the types of runoff that will occur in a given watershed. In arid regions the flow on smaller watersheds is nearly always surface runoff. Subsurface flow is more likely in humid regions. A long succession of storms, however, may produce subsurface flow or changes in baseflow even in arid climates, although the probability of this occurring is less in arid than in humid climates.

In flood hydrology baseflow is generally dealt with separately, and all other types are combined into *direct runoff*, which consists of channel runoff, surface runoff, and subsurface flow in unknown proportions. The curve number method estimates this combined direct runoff.

630.1001 Rainfall-runoff relationship

The NRCS runoff equation was developed to estimate total storm runoff from total storm rainfall. That is, the relationship excludes time as a variable. Rainfall intensity is ignored. An early version of the relationship was described by Mockus (1949). The material that follows evolved from that 1949 report.

(a) Development

The curve number runoff equation is:

$$Q = \frac{\left(P - I_a\right)^2}{\left(P - I_a\right) + S} \qquad P > I_a$$

$$Q = 0 \qquad P \le I_a \qquad [10\text{–}1]$$

where:
Q = depth of runoff, in inches
P = depth of rainfall, in inches
I_a = initial abstraction, in inches
S = maximum potential retention, in inches

The derivation that follows is from Mockus. It should be viewed as an effort to get a curve of the proper shape. This derivation is not physically based, but it does satisfy conservation of mass.

A curve drawn through a plot of total storm runoff versus total storm rainfall for many storms on a watershed is concave upward and shows that no runoff occurs for small storms. The trend as storm size increases is for the curve to become asymptotic to a line parallel to a line of equality. The goal of Mockus was to determine an equation for a curve that describes that pattern. First he considered the condition in which no initial abstraction occurs; i.e., $I_a = 0$. Mockus found that an appropriate curve resulted from using the relationship among rainfall, runoff, and retention (the rain not converted into runoff) given by

$$\frac{F}{S} = \frac{Q}{P} \qquad [10\text{–}2]$$

where:
F = actual retention after runoff begins, in inches
S = potential maximum retention after runoff begins ($S \geq F$), in inches
Q = actual runoff, in inches
P = actual rainfall ($P \geq Q$), in inches

To satisfy the conservation of mass:

$$F = P - Q \qquad [10–3]$$

Substituting the equation 10–3 definition of F into equation 10–2 yields

$$\frac{P - Q}{S} = \frac{Q}{P} \qquad [10–4]$$

and solving for Q produces

$$Q = \frac{P^2}{P + S} \qquad [10–5]$$

This is the rainfall-runoff relationship in which the initial abstraction I_a is zero.

When the initial abstraction is not zero, the amount of rainfall available for runoff is $(P - I_a)$ instead of P. Substituting $(P - I_a)$ for P in equation 10–2 results in

$$\frac{F}{S} = \frac{Q}{P - I_a} \qquad [10–6]$$

where:
$F \leq S$
$Q \leq (P - I_a)$

The total retention for a storm consists of both I_a and F, so the conservation of mass equation can be expressed

$$F = \left(P - I_a\right) - Q \qquad [10–7]$$

Substituting equation 10–7 for F in equation 10–6 results in

$$\frac{\left(P - I_a\right) - Q}{S} = \frac{Q}{\left(P - I_a\right)} \qquad [10–8]$$

Solving for the total storm runoff, Q, results in the runoff equation

$$Q = \frac{\left(P - I_a\right)^2}{\left(P - I_a\right) + S} \qquad [10–9]$$

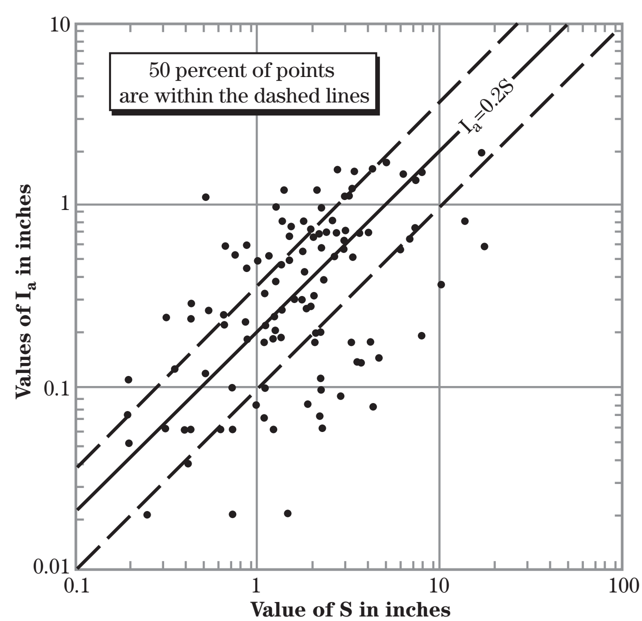
This is the rainfall-runoff relationship with the initial abstraction explicitly taken into account.

The initial abstraction consists mainly of interception, infiltration during early parts of the storm, and surface depression storage. It can be determined from observed rainfall-runoff events for small watersheds, where lag is minimal, as the rainfall that occurs before runoff begins. Interception and surface depression storage may be estimated from cover and surface conditions, but infiltration during the early part of the storm is highly variable and dependent on such factors as rainfall intensity, soil crusting, and soil moisture. Establishing a relationship for estimating I_a is not easy. Thus, I_a was assumed to be a function of the maximum potential retention, S. An empirical relationship between I_a and S was expressed as

$$I_a = 0.2S \qquad [10–10]$$

Figure 10–1 illustrates the variability for this relationship. The points plotted in the figure are derived from experimental watershed data.

Figure 10–1 Relationship between I_a and S



The rainfall-runoff relationship is obtained by substituting equation 10–10 for initial abstraction into equation 10–9

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S} \qquad P > I_a \qquad [10\text{–}11]$$

Equation 10–11, using $I_a = 0.2S$, was used to determine the curve numbers in NEH, part 630, chapter 9. Thus, if a relationship different from $I_a = 0.2S$ is used, a new set of curve numbers must be developed.

(b) Use of S and CN

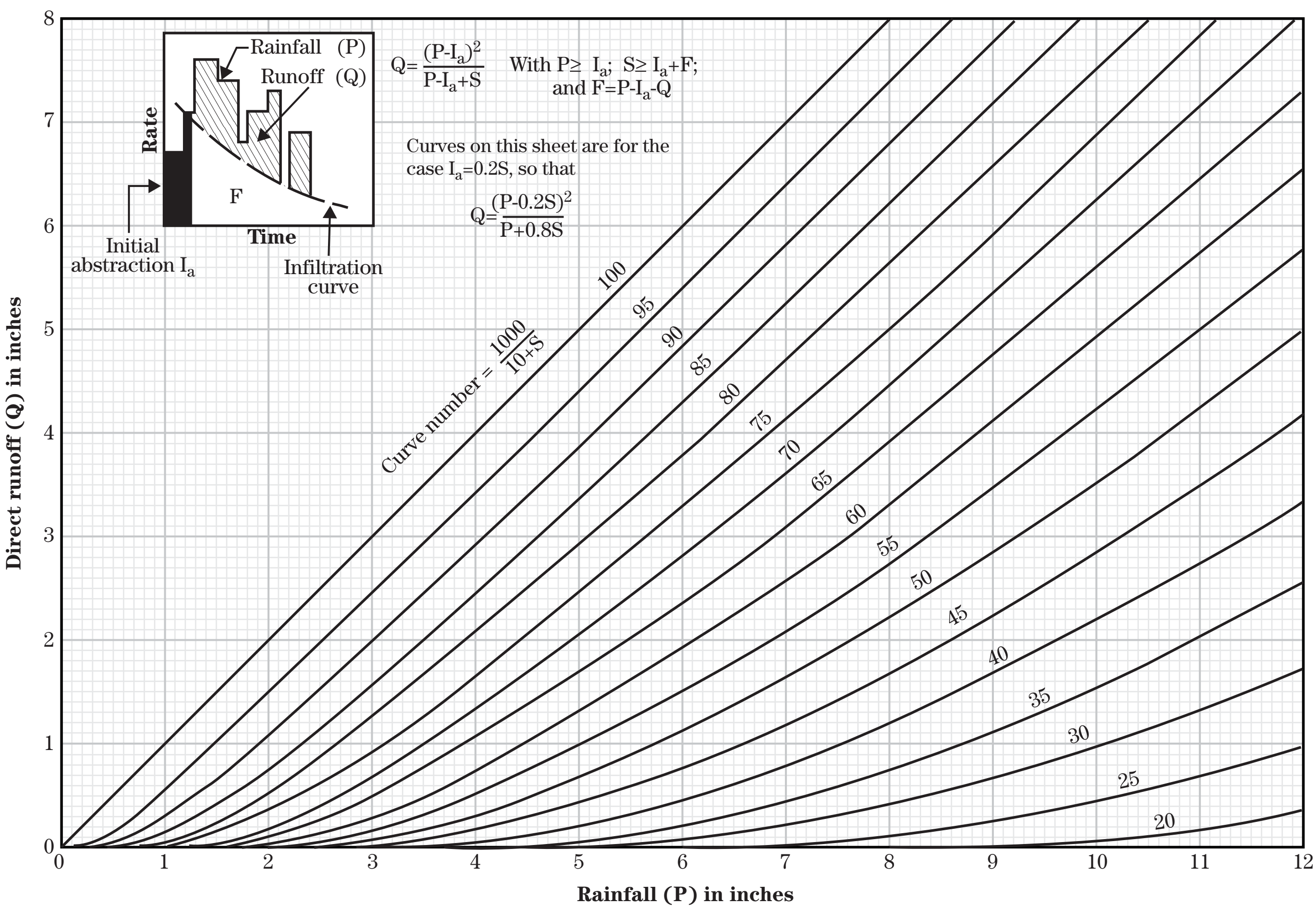
Figure 10–2 shows the solution of the runoff equation (eq. 10–11). The parameter CN (curve number) is a transformation of S.

$$CN = \frac{1000}{10 + S} \qquad [10\text{–}12]$$

for potential maximum retention (S) in inches. If S is in millimeters:

$$CN = \frac{1000}{10 + \frac{S}{25.4}} \qquad [10\text{–}13]$$

Figure 10–2 ES–1001 graphical solution of the equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$



Note: Appendix A gives the tabular solution to this equation for P and Q up to 40 inches. In most cases use of this appendix gives a more exact solution than reading from the figure.

Figure 10–2 and appendix 10A are convenient ways to estimate runoff from rainfall directly without having to calculate S. S is generally needed for other applications, such as the analysis of runoff data or the development of supplementary runoff relationships.

(c) Retention parameters

Several retention parameters were used in the derivation of the runoff relationship, equation 10–11. The initial abstraction, I_a, can be considered the boundary between the storm size that produces runoff and the storm size that produces no runoff. The potential maximum retention, S, is dependent upon the soil-cover complex and, in principle, should not vary from storm to storm. It is in excess of the initial abstraction so that the maximum possible loss is given by $I_a + S$. This can be demonstrated noting that the loss is given by the difference between the rainfall and runoff (P – Q). Substituting equation 10–9 for Q results in

$$\text{Loss} = P - Q = P - \frac{(P - I_a)^2}{(P - I_a) + S} \qquad [10\text{–}14]$$

After multiplying both terms on the right hand side by:

$$1 = \frac{(P - I_a) + S}{(P - I_a) + S}$$

with some manipulation this becomes:

$$\text{Loss} = \frac{(S + I_a) - \frac{I_a^2}{P}}{1 - \frac{I_a}{P} + \frac{S}{P}} \qquad [10\text{–}15]$$

As P becomes large, where large is defined as P being much greater than the maximum potential retention (S), the terms with P in the denominator approach zero, with the result

$$\text{Loss} = S + I_a \qquad [10\text{–}16]$$

The parameter F is the actual retention for a storm and is more than the initial abstraction. That is, the total actual retention is given by the sum of the initial abstraction and the actual retention (I_a + F).

The preceding material, which shows that the S does not include I_a, has little significance in the normal application of the runoff equation. It is significant if an attempt is made to demonstrate a physical basis for the potential maximum retention. It is tempting to assume that S stands for storage, so that one can determine pore space and initial soil moisture to determine S in the same sense that Holtan and Lopez (1971) determined S in their infiltration relation. One of the difficulties in using this approach for an ungaged watershed is establishing an appropriate hydrologically active depth, a problem shared with the application of Holtan's equation. Chen (1976) and Hjelmfelt (1980a) showed that the Holtan and Lopez (1971) equation and the curve number runoff equation are identical for the special case of constant rainfall intensity and for zero asymptotic infiltration rate.

(d) Curve number variability

Rainfall-runoff data do not fit the curve number runoff concept precisely. This is exhibited in the data used in NEH, part 630, chapter 5, examples 5–4 and 5–5, and is expressed by the bounding curves in figure 5–6. The curve numbers for the enveloping curves were empirically related to the curve numbers of NEH, part 630, chapter 9, table 9–1. The results of the empirical relation are shown in columns 1, 2, and 3 of table 10–1, which also gives values of S, given $I_a = 0.2$ S for the curve number in column 1.

The variability in the CN results from rainfall intensity and duration, total rainfall, soil moisture conditions, cover density, stage of growth, and temperature. These causes of variability are collectively called the *Antecedent Runoff Condition* (ARC). ARC is divided into three classses: II for average conditions, I for dry conditions, and III for wetter conditions. Past attempts to explain the scatter quantitatively have focused on the antecedent soil moisture, usually as indicated by 5-day antecedent precipitation. This was used in early editions of National Engineering Handbook Section 4 (now Part 630, Hydrology).

A graph of the maximum potential retention versus the 5-day antecedent precipitation for Watershed 2 at Treynor, Iowa, is shown in figure 10–3. Data plotted are from the same events used in NEH, part 630,

Table 10–1 Curve numbers (CN) and constants for the case $I_a = 0.2S$

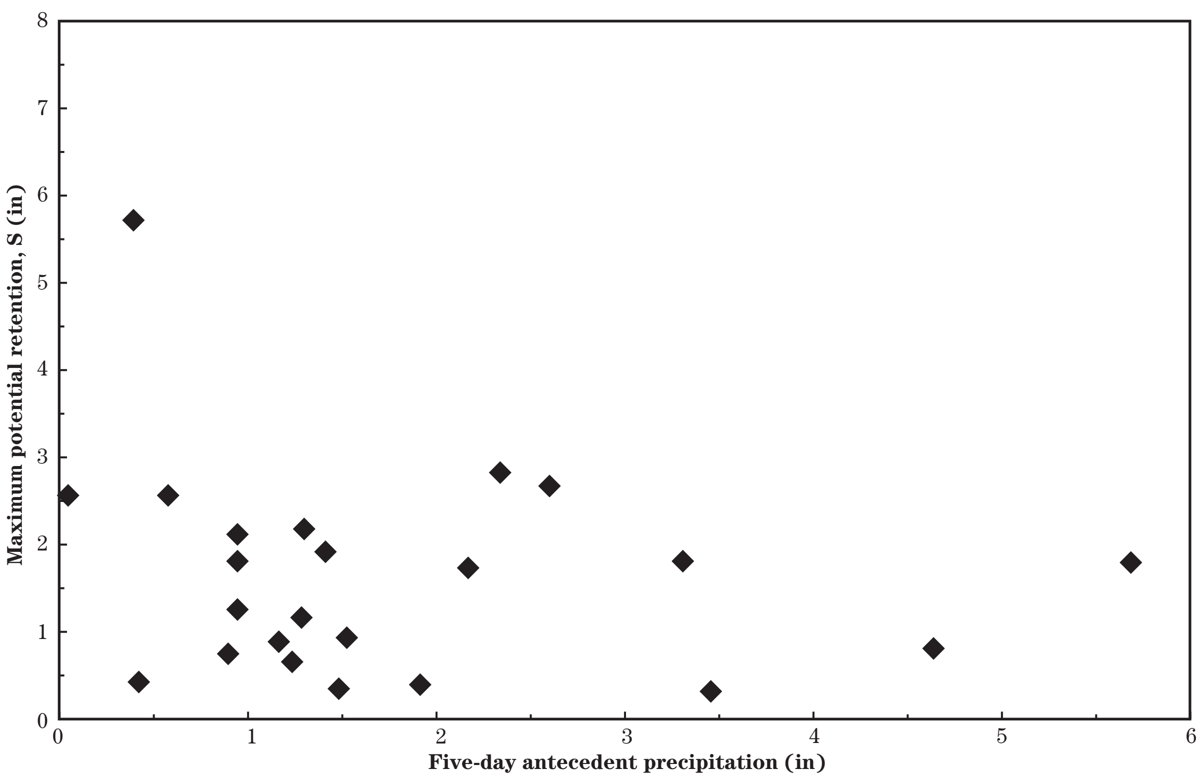
1	2	3	4	5	1	2	3	4	5
CN for ARC II	- - CN for ARC - - I	III	S values* (in)	Curve* starts where P = (in)	CN for ARC II	- - CN for ARC - - I	III	S values* (in)	Curve* starts where P = (in)
100	100	100	0	0	60	40	78	6.67	1.33
99	97	100	.101	.02	59	39	77	6.95	1.39
98	94	99	.204	.04	58	38	76	7.24	1.45
97	91	99	.309	.06	57	37	75	7.54	1.51
96	89	99	.417	.08	56	36	75	7.86	1.57
95	87	98	.526	.11	55	35	74	8.18	1.64
94	85	98	.638	.13	54	34	73	8.52	1.70
93	83	98	.753	.15	53	33	72	8.87	1.77
92	81	97	.870	.17	52	32	71	9.23	1.85
91	80	97	.989	.20	51	31	70	9.61	1.92
90	78	96	1.11	.22	50	31	70	10.0	2.00
89	76	96	1.24	.25	49	30	69	10.4	2.08
88	75	95	1.36	.27	48	29	68	10.8	2.16
87	73	95	1.49	.30	47	28	67	11.3	2.26
86	72	94	1.63	.33	46	27	66	11.7	2.34
85	70	94	1.76	.35	45	26	65	12.2	2.44
84	68	93	1.90	.38	44	25	64	12.7	2.54
83	67	93	2.05	.41	43	25	63	13.2	2.64
82	66	92	2.20	.44	42	24	62	13.8	2.76
81	64	92	2.34	.47	41	23	61	14.4	2.88
80	63	91	2.50	.50	40	22	60	15.0	3.00
79	62	91	2.66	.53	39	21	59	15.6	3.12
78	60	90	2.82	.56	38	21	58	16.3	3.26
77	59	89	2.99	.60	37	20	57	17.0	3.40
76	58	89	3.16	.63	36	19	56	17.8	3.56
75	57	88	3.33	.67	35	18	55	18.6	3.72
74	55	88	3.51	.70	34	18	54	19.4	3.88
73	54	87	3.70	.74	33	17	53	20.3	4.06
72	53	86	3.89	.78	32	16	52	21.2	4.24
71	52	86	4.08	.82	31	16	51	22.2	4.44
70	51	85	4.28	.86	30	15	50	23.3	4.66
69	50	84	4.49	.90	25	12	43	30.0	6.00
68	48	84	4.70	.94	20	9	37	40.0	8.00
67	47	83	4.92	.98	15	6	30	56.7	11.34
66	46	82	5.15	1.03	10	4	22	90.0	18.00
65	45	82	5.38	1.08	5	2	13	190.0	38.00
64	44	81	5.62	1.12	0	0	0	infinity	infinity
63	43	80	5.87	1.17					
62	42	79	6.13	1.23					
61	41	78	6.39	1.28					

* For CN in column 1.

chapter 5. Figure 10–3 illustrates that no apparent relationship between antecedent precipitation and S exists for this watershed. These results are typical for watersheds where surface runoff is prevalent. Similar studies have been presented by Cronshey (1983); Hjelmfelt, et al (1982); Hjelmfelt (1987, 1991); and Van Mullem (1992), all of which lead to the same conclusion: No apparent relationship between antecedent precipitation and curve number exists.

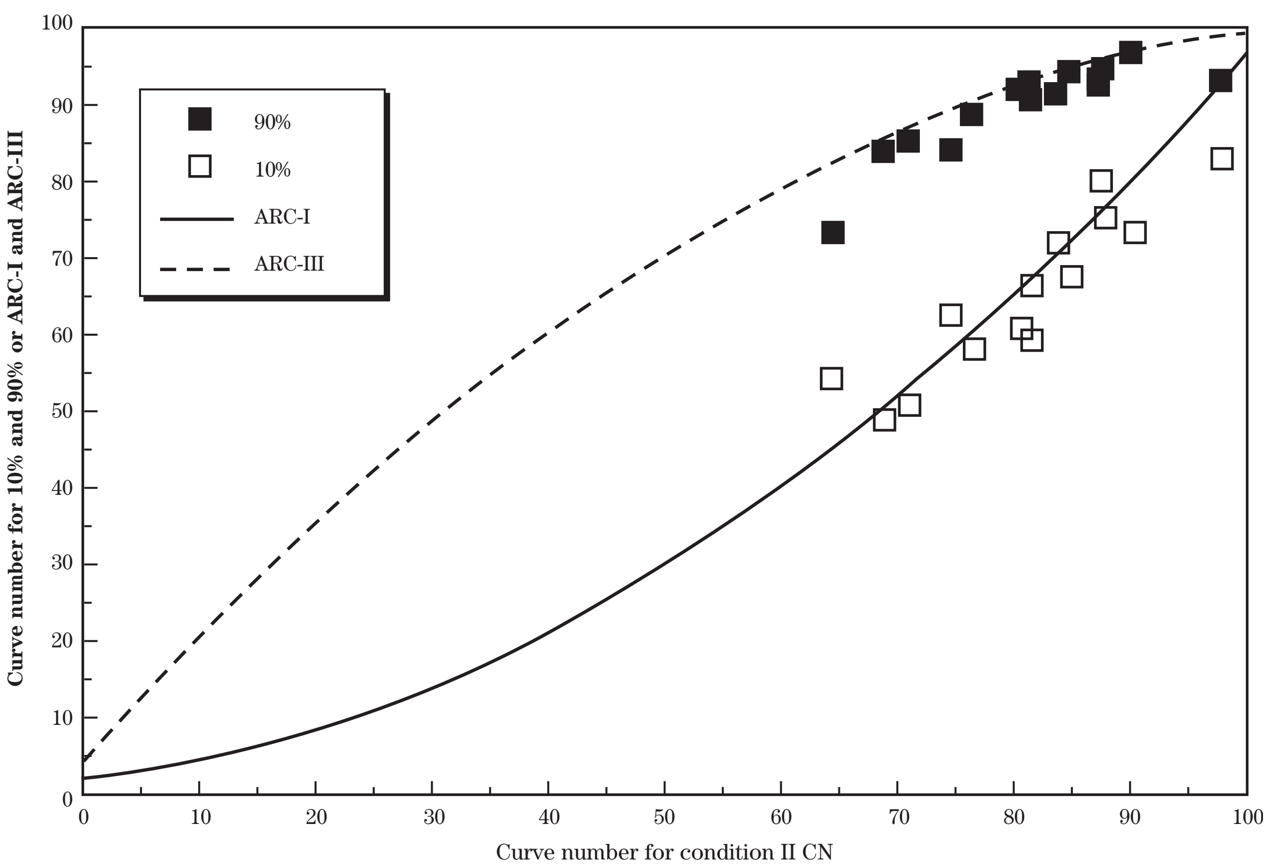
An alternate approach is to state that the CN is a random variable and treat it as such (Hjelmfelt, et al. 1982; Hjelmfelt 1991). The lognormal probability distribution for S is computed in NEH, part 630, chapter 5, example 5–5. The mean of the logarithms corresponds to the median of the untransformed values (Yuan 1933), so the mean of the logarithms corresponds to the antecedent runoff condition II curve number. A normal or lognormal distribution is often described in terms of a mean and standard deviation.

Figure 10–3 Influence of 5-day antecedent precipitation on S in Watershed 2, Treynor, Iowa (adapted from Hjelmfelt 1991)



The distribution can also be described in terms of a mean and values at particular probabilities. For example, the curve numbers associated with 10 and 90 percent can be used to express extreme values of the curve number distribution. One definition for ARC conditions I and III is based on enveloping curves. Values determined from fitted probability distributions are compared to values from table 10–1 in figure 10–4 (Hjelmfelt 1991). The agreement is reasonably good, although there is an expected amount of scatter. The lowest 50 percent curve number is for a forested watershed at Coweeta, North Carolina, which is also the data set that deviates most from the relationship between ARC II and ARC I and ARC III.

Figure 10–4 Comparison of 10 and 90 percent extremes with ARC I and ARC III values from table 10–1 (adapted from Hjelmfelt 1991)



630.1002 Applications

(a) Single storms

Example 10–1 is a typical routine application of the estimation method used when there is no question regarding the accuracy of rainfall, land use and treatment, and soil group determinations.

In example 10–2 the information for the watershed of example 10–1 is used to estimate the direct runoff for ARC I and ARC III and compare with the estimate for ARC II.

Example 10–1 Routine application of estimation method for a single storm

Given: During a storm event an average depth of 4.3 inches of rain fell over a watershed with a land use of pasture in good condition and soils from hydrologic soil group C.

Determine: Estimate the direct runoff.

Solution:

Step 1. Determine the CN. In table 9–1 at "Pasture, good" and under hydrologic soils group C read CN = 74. This corresponds to S = 3.51 inches according to table 10–1 or equation 10–12.

Step 2. Estimate the runoff. Enter appendix A or figure 10–2 with the rainfall of 4.3 inches and interpolate (with fig. 10–2) to get CN = 74 to find Q = 1.82 inches. Alternatively, the rainfall amount and the value for S can be substituted into equation 10–11 to determine Q = 1.82 inches.

Example 10–2 Direct runoff

Given: Information on watershed in example 10–1

Determine: Direct runoff for ARC I and ARC III and compare with estimate for ARC II

Solution:

Step 1. Determine the CN for ARC II. This is done in step 1 of example 10–1. The CN is 74.

Step 2. Determine CN for other ARC's. Enter table 10–1 at CN = 74 in column 1. In columns 2 and 3, read CN = 55 for ARC I and CN = 88 for ARC III.

Step 3. Estimate the runoffs. Enter appendix A or figure 10–2 with the rainfall of 4.3 inches (from example 10–1) and at CN = 55, 74, and 88 read Q = 0.65, 1.82, and 3.01 inches, respectively. The comparison in terms of ARC II runoff is as follows:

ARC	CN	Inches	- - - Direct runoff, Q - - -	
			As % of rainfall	As % of Q for ARC II
I	55	0.65	15.1	35.7
II	74	1.82	42.3	100
III	88	3.01	70.0	165

Note that the runoff in inches or percentage is not simply proportional to the CN so that the procedure does not allow for such shortcuts.

(b) Alternate methods of estimation for multiple complexes

The direct runoff for watersheds having more than one hydrologic soil-cover complex can be estimated in either of two ways. Example 10–3 illustrates how runoff is estimated for each complex and weighted to get the watershed average. Example 10–4 illustrates the method where CN is weighted to get a watershed CN, and the runoff is estimated using that CN.

If the CNs for the various hydrologic soil-cover complexes are similar or close in value, both methods of weighting give close results for runoff (Q). Therefore, no reason exists for choosing one method over the other. Each method has advantages and disadvantages. The method of weighted Q always gives the correct result (in terms of the given data), but it requires more work than the weighted-CN method especially when a watershed has many complexes. The method of weighted CN is easier to use with many complexes or with a series of storms. However, where differences in CN for a watershed are large, this method either under- or over-estimates Q, depending on the size of the storm. This is demonstrated in example 10–5.

Both WinTR–55 (USDA NRCS 2003) and WinTR–20 (USDA NRCS 2004 draft) use the weighted CN method.

Example 10–3 Estimation of direct runoff for watershed using runoff estimates for each complex

Given: A watershed of 630 acres has 400 acres in row crop, contoured, good rotation and 230 acres in rotation meadow, contoured, good rotation. All soils are in the Hydrologic Soil Group B.

Determine: Find the direct runoff for a rain of 5.1 inches where the watershed is in ARC II.

Solution:

Step 1. Determine the CN. Table 9–1 in NEH-630, chapter 9, shows that the CN is 75 for the row crop and 69 for the meadow.

Step 2. Estimate runoff for each complex. Enter appendix A or figure 10–2 with the rain of 5.1 inches and at CN's of 75 and 69 read Q's of 2.53 and 2.03 inches, respectively.

Step 3. Compute the weighted runoff:

Cover	Area (acres)	Q (inches)	(acres x Q)
Row crop, etc.	400	2.53	1,012
Meadow, etc.	230	2.03	467
Totals	630		1,479

The weighted Q is $\frac{1{,}479}{630} = 2.35$ in

Example 10–4 Estimation of direct runoff for watershed using a weighted CN

Given: Watershed and rain data of example 10–3.

Determine: Use the watershed and rain data of example 10–3 and make the runoff estimate using a weighted CN.

Solution:

Step 1. Determine the CN. Table 9–1 in NEH-630, chapter 9, shows that the CN is 75 for the row crop and 69 for the meadow.

Step 2. Compute the weighted CN:

Cover	Area (acres)	CN	Acres × CN
Row crop, etc.	400	75	30,000
Meadow, etc.	230	69	15,870
Totals	630		45,870

The weighted CN is $\frac{45,870}{630} = 72.8$. Use 73.

Step 3. Estimate the runoff. Enter appendix A or figure 10–2 with the rain of 5.1 inches and at CN = 73. Read Q = 2.36 inches. (Note: Q is 2.34 inches if the unrounded CN 72.8 is used.)

Example 10–5 Comparison of runoff estimation methods

Given: A watershed has 25.7 acres in woods in good condition on A soils and 379.6 acres of orchards and 440 acres of contoured row crops, both in good condition and on B soils. An additional 56 acres is bare on B soils.

Determine: Runoff estimates using both the weighted CN and the weighted Q methods for storm rainfalls of 1, 2, 4, 6, 8, and 10 inches.

Solution: ***Step 1.*** Determine the CNs for the individual land uses and calculate the area's weighted CN. Use table 9–1 to determine the CNs for the various land uses and soils and then calculate the weighted curve number.

Cover	Area (acres)	CN	Acres × CN
Woods	25.7	30	771.0
Orchard	379.6	58	22,016.8
Row crop	440.0	75	33,000.0
Bare soil	56.0	86	4,816.0
Totals	901.3		60,603.8

$$\text{Weighted CN} = \frac{60{,}603.8}{901.3}$$

$$\text{Weighted CN} = 67.2 \text{ use } 67$$

Step 2. Determine the storm runoffs for the rainfall amounts specified from figure 10–2 or appendix 10A for the weighted curve number 67.

Storm rainfall:	1 inch	2 inches	4 inches	6 inches	8 inches	10 inches
Q (weighted CN)	0.0	0.17	1.15	2.53	4.12	5.83

Step 3. Determine the runoff values for the individual land uses and calculate the area's weighted Q for each storm rainfall. Values for CN = 30 were calculated using the runoff equation 10–11 with S = 23.3 as given in table 10–1.

Cover	Area acres	CN	Q 1" rain	Q × area 1" rain
Woods	25.7	30	0.0	0.0
Orchard	379.6	58	0.0	0.0
Row crop	440.0	75	0.03	13.2
Bare soil	56.0	86	0.2	11.2
Totals	901.3			24.4

Example 10–5 Comparison of runoff estimation methods—Continued

$$\text{Weighted Q} = \frac{\text{Total Q} \times \text{area}}{\text{total area}}$$

$$\text{Weighted Q} = \frac{24.4}{901.3}$$

$$\text{Weighted Q} = 0.027 \text{ inch for 1-inch rain}$$

Cover	Area acres	CN	Q 2" rain	Q × area 2" rain
Woods	25.7	30	0.0	0.0
Orchard	379.6	58	0.4	15.18
Row crop	440.0	75	0.38	167.2
Bare soil	56.0	86	0.85	47.6
Totals	901.3			229.98

$$\text{Weighted Q} = \frac{\text{Total Q} \times \text{area}}{\text{total area}}$$

$$\text{Weighted Q} = \frac{229.98}{901.3}$$

$$\text{Weighted Q} = 0.255 \text{ inch for 2-inch rain}$$

Cover	Area acres	CN	Q 4" rain	Q × area 4" rain
Woods	25.7	30	0.0	0.0
Orchard	379.6	58	0.67	254.33
Row crop	440.0	75	1.67	734.8
Bare soil	56.0	86	2.54	142.24
Totals	901.3			1,131.37

$$\text{Weighted Q} = \frac{\text{Total Q} \times \text{area}}{\text{total area}}$$

$$\text{Weighted Q} = \frac{1{,}131.37}{901.3}$$

$$\text{Weighted Q} = 1.255 \text{ inch for 4-inch rain}$$

Example 10–5 Comparison of runoff estimation methods—Continued

Cover	Area acres	CN	Q 6" rain	Q × area 6" rain
Woods	25.7	30	0.07	1.80
Orchard	379.6	58	1.76	668.10
Row crop	440.0	75	3.28	1,443.2
Bare soil	56.0	86	4.41	246.96
Totals	901.3			2,360.06

$$\text{Weighted Q} = \frac{\text{Total Q} \times \text{area}}{\text{total area}}$$

$$\text{Weighted Q} = \frac{2{,}360.06}{901.3}$$

$$\text{Weighted Q} = 2.62 \text{ inch for 6-inch rain}$$

Cover	Area acres	CN	Q 8" rain	Q × area 8" rain
Woods	25.7	30	0.42	10.79
Orchard	379.6	58	3.11	1,180.56
Row crop	440.0	75	5.04	2,217.6
Bare soil	56.0	86	6.33	354.48
Totals	901.3			3,763.43

$$\text{Weighted Q} = \frac{\text{Total Q} \times \text{area}}{\text{total area}}$$

$$\text{Weighted Q} = \frac{3{,}763.43}{901.3}$$

$$\text{Weighted Q} = 4.18 \text{ inch for 8-inch rain}$$

Cover	Area acres	CN	Q 10" rain	Q × area 10" rain
Woods	25.7	30	1.00	25.70
Orchard	379.6	58	4.63	1,757.55
Row crop	440.0	75	6.88	3,027.20
Bare soil	56.0	86	8.28	463.68
Totals	901.3			5,274.13

Example 10–5 Comparison of runoff estimation methods—Continued

$$\text{Weighted Q} = \frac{\text{Total Q} \times \text{area}}{\text{total area}}$$

$$\text{Weighted Q} = \frac{5{,}274.13}{901.3}$$

$$\text{Weighted Q} = 5.85 \text{ inch for 10-inch rain}$$

Step 4. Compare the storm runoffs for the rainfall amounts obtained by both methods.

Storm rainfall:	1 inch	2 inches	4 inches	6 inches	8 inches	10 inches
Q (weighted CN)	0.0	0.17	1.15	2.53	4.12	5.83
Q (weighted Q)	0.03	0.26	1.26	2.62	4.18	5.85

As pointed out in the text, although the weighted-Q method gives the correct result in terms of the given data, it takes more work to develop. The differences between the two methods are greatest in watersheds that have widely differing curve number values and lower rainfall amounts.

(c) Runoff during a storm

An infiltration approach should be used to determine the variation of runoff during a storm. The curve number runoff equation is not an infiltration equation (Smith 1976, Chen 1982, and Hjelmfelt 1980a). The runoff equation can, however, be used as a surrogate (example 10–6). This approach is quite similar to an approach suggested by Linsley, Kohler, and Paulhus (1982) for use with coaxial correlation diagrams.

(d) Applications to watersheds

The runoff estimation method is not restricted to use for small watersheds. It applies equally well to other large areas if the geographical variations of storm rainfall and soil-cover complex are taken into account. This is best accomplished by working with subareas or hydrologic units (NEH, part 630, chapter 6) of the basin. After runoff is estimated for each unit, the average runoff at any river location may be determined by the area-runoff weighting method of example 10–3. For normal applications the runoff hydrographs are developed separately for hydrologic units and then routed and combined. Computer programs, such as WinTR–55 and WinTR–20 (USDA 2003), are useful for such applications.

Example 10–6 Using the runoff equation to determine variation of runoff during a storm

Given: A watershed has a CN of 80 and condition ARC II before a storm of 20 hours duration.

Determine: Estimate the pattern of hourly runoff for the watershed using rainfall amounts recorded at a rain gage.

Solution: ***Step 1.*** Tabulate the accumulated rainfalls at the corresponding accumulated times (table 10–2).

Step 2. Estimate the accumulated runoff at each corresponding accumulated time. Use the CN and the rainfalls of column 2 in table 10–2 to estimate the runoffs using equation 10–11, appendix A, or figure 10–2. The runoffs are given in column 3 of the table.

Step 3. Compute the increments of runoff. The increments are the differences given in column 4.

Table 10–2 Incremental runoffs for a storm of long duration, watershed CN = 80

Time	Accumulated rainfall (inches)	Accumulated runoff (inches)	ΔQ (inches)
1:00 a.m.	0	0	
			0
2:00	.15	0	
			0
3:00	.30	0	
			0
4:00	.62	0	
			.08
5:0	1.01	.08	
			.10
6:00	1.27	.18	
			.04
7:00	1.36	.22	
			0
8:00	1.36	.22	
			.01
9:00	1.38	.23	
			0
10:00	1.38	.23	
			.09
11:00	1.55	.32	
			.16
12:00 noon	1.87	.48	
			.24
1:00 p.m.	2.25	.72	
			.25
2:00	2.61	.97	
			.03
3:00	2.66	1.00	
			.02
4:00	2.68	1.02	
			.40
5:00	3.22	1.42	
			.76
6:00	4.17	2.18	
			.56
7:00	4.82	2.74	
			.09
8:00	4.93	2.83	
			.06
9:00	5.00	2.89	

(e) Indexes for multiple regression analyses

The parameter CN is not a desirable index of watershed characteristics in a multiple regression analysis (NEH, part 630, chapter 18) because the variation in the CN is generally insufficient to provide a statistically significant result. The parameter S is the preferred index. It is used without change if it is an independent variable in a regression equation of the form:

$$Y = a + bX_1 + cX_2 + \ldots \qquad [10\text{–}17]$$

where:
Y = dependent variable
a, b, c, etc. = constants
subscripted X's = independent variables

If, however, the form is

$$Y = aX_1^b X_2^c \qquad [10\text{–}18]$$

it is necessary to use (S + l) instead of S to avoid the possibility of division or multiplication by zero.

630.1003 Accuracy

Major sources of error in the runoff-estimation method include the determinations of rainfall and CN. Chapter 4 provides graphs for estimating the errors in rainfall. No comparable means exists for estimating the errors in CN of ungaged watersheds; only comparisons of estimated and actual runoffs indicate how well estimates of CN are being made. Comparisons for gaged watersheds, though not directly applicable to ungaged watersheds, are useful as guides to judgment in estimating CN and as sources of methodology for reducing estimation errors.

Comparisons of actual and computed runoff are only valid if the role of the runoff equation is carefully defined. When the equation was developed, the most common use was to determine a design discharge (25-year, 100-year, probable maximum flood) based on a synthetic rainstorm. The object was to take a rainstorm that was in some sense representative of the frequency selected for the design flood and transform that into the runoff volume for that same frequency. Thus, the runoff equation can be tested for its ability to transform a rainfall frequency distribution into a runoff frequency distribution. This approach was used by Schaake, et al. (1967) to test the validity of the rational formula. Hjelmfelt (1980b, 1991) applied this approach to test the runoff equation for several watersheds.

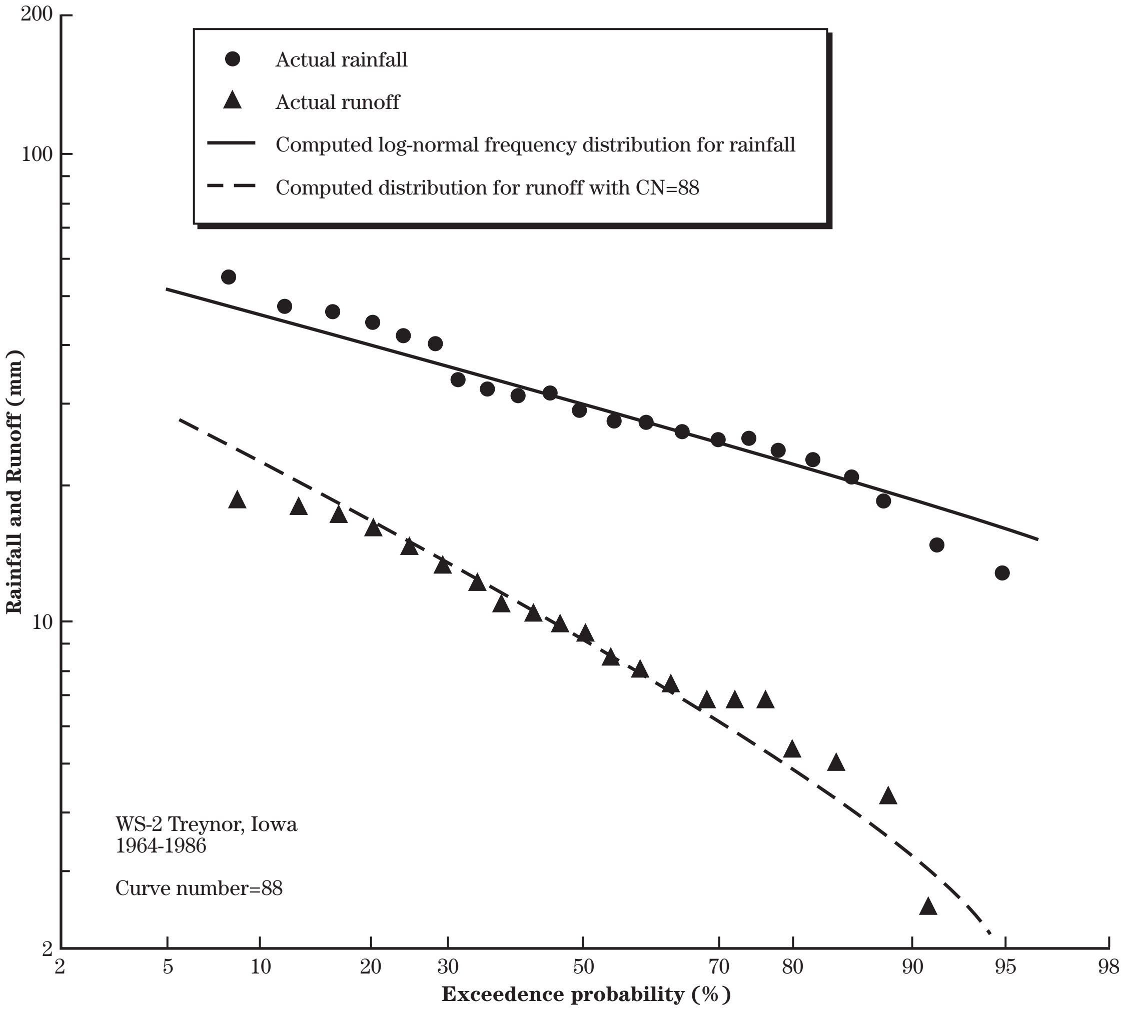
Use of the runoff equation as a frequency transformer is shown in figure 10–5. The rainfall and runoff observations for an 80-acre watershed located near Treynor, Iowa, were used. This experimental watershed, known as WS-2, is operated by the USDA Agricultural Research Service. It is cropped to corn using conventional tillage. Only the events that produced the annual maximum discharge were used as in the example 5–4 in NEH, part 630, chapter 5.

The rainfall values were plotted on figure 10–5 using the Weibull plotting position formula. A lognormal distribution was fit to these data and plotted as the straight line. The runoff data were treated separately from the rainfall data, and the Weibull formula was used to determine plotting positions. To test the runoff equation, the fitted lognormal distribution of rainfall events was converted to a runoff distribution using the runoff equation with a curve number of 88. The correspondence of the computed runoff curve with the plotted runoff points, as shown in figure 10–5, is quite good.

Hjelmfelt (1991) showed that the runoff equation served reasonably well as a frequency transformer for the watersheds tested in the Central and Southeastern United States. However, for the one watershed tested in the semiarid Southwest, the agreement was poor. Hjelmfelt (1987) also applied this approach to an urban watershed, Boneyard Creek, Champaign-Urbana, Illinois, with good results. The runoff equation generally did reasonably well where the runoff was a substantial fraction of the rainfall, but poorly in cases where the runoff was a small fraction of the rainfall; i.e., the CNs are low or rainfall values are small. Curve numbers were originally developed from annual flood flows from experimental watersheds, and their application to low flows or small flood peak flows is not recommended. (See Hawkins, et al. 1985, for a precise measure of small.) Thus, within limits, the runoff equation performs appropriately as a transformation vehicle between rainfall and runoff frequency distributions.

In the years following the development of the runoff equation, it has been adopted for use in applications that were not envisioned by the originator. Some of these applications are as an infiltration method for individual storm runoff events and as a loss function for continuous simulation. Such applications are not within the intended usage of curve number procedures.

Figure 10–5 Comparisons of computed with actual runoff on a frequency basis



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Appendix 10A Rainfall-Runoff Tables for Selected Runoff Curve Numbers

Introduction

The Natural Resources Conservation Service's National Engineering Handbook, Part 630, Hydrology, chapter 10, publishes figure 10–2 for estimating direct runoff from rainfall for selected runoff curve numbers. Many users find it more convenient to work with the following tables in this appendix, which were published in 1960 and revised in 1976 under the direction of F.P. Erichsen, hydrologist, as Technical Release 16. This appendix was developed using MS Excel spreadsheets. The tables show runoff amounts from rainfall quantities up to 40 inches and for runoff curve numbers 50 to 98, inclusive.

Runoff for inches of rainfall—Curve no. 50 .... 10A–3
Runoff for inches of rainfall—Curve no. 51 .... 10A–4
Runoff for inches of rainfall—Curve no. 52 .... 10A–5
Runoff for inches of rainfall—Curve no. 53 .... 10A–6
Runoff for inches of rainfall—Curve no. 54 .... 10A–7
Runoff for inches of rainfall—Curve no. 55 .... 10A–8
Runoff for inches of rainfall—Curve no. 56 .... 10A–9
Runoff for inches of rainfall—Curve no. 57 .... 10A–10
Runoff for inches of rainfall—Curve no. 58 .... 10A–11
Runoff for inches of rainfall—Curve no. 59 .... 10A–12
Runoff for inches of rainfall—Curve no. 60 .... 10A–13
Runoff for inches of rainfall—Curve no. 61 .... 10A–14
Runoff for inches of rainfall—Curve no. 62 .... 10A–15
Runoff for inches of rainfall—Curve no. 63 .... 10A–16
Runoff for inches of rainfall—Curve no. 64 .... 10A–17
Runoff for inches of rainfall—Curve no. 65 .... 10A–18
Runoff for inches of rainfall—Curve no. 66 .... 10A–19
Runoff for inches of rainfall—Curve no. 67 .... 10A–20
Runoff for inches of rainfall—Curve no. 68 .... 10A–21
Runoff for inches of rainfall—Curve no. 69 .... 10A–22
Runoff for inches of rainfall—Curve no. 70 .... 10A–23
Runoff for inches of rainfall—Curve no. 71 .... 10A–24
Runoff for inches of rainfall—Curve no. 72 .... 10A–25
Runoff for inches of rainfall—Curve no. 73 .... 10A–26
Runoff for inches of rainfall—Curve no. 74 .... 10A–27
Runoff for inches of rainfall—Curve no. 75 .... 10A–28
Runoff for inches of rainfall—Curve no. 76 .... 10A–29
Runoff for inches of rainfall—Curve no. 77 .... 10A–30
Runoff for inches of rainfall—Curve no. 78 .... 10A–31
Runoff for inches of rainfall—Curve no. 79 .... 10A–32
Runoff for inches of rainfall—Curve no. 80 .... 10A–33
Runoff for inches of rainfall—Curve no. 81 .... 10A–34
Runoff for inches of rainfall—Curve no. 82 .... 10A–35

Runoff for inches of rainfall—Curve no. 83 .... 10A–36
Runoff for inches of rainfall—Curve no. 84 .... 10A–37
Runoff for inches of rainfall—Curve no. 85 .... 10A–38
Runoff for inches of rainfall—Curve no. 86 .... 10A–39
Runoff for inches of rainfall—Curve no. 87 .... 10A–40
Runoff for inches of rainfall—Curve no. 88 .... 10A–41
Runoff for inches of rainfall—Curve no. 89 .... 10A–42
Runoff for inches of rainfall—Curve no. 90 .... 10A–43
Runoff for inches of rainfall—Curve no. 91 .... 10A–44
Runoff for inches of rainfall—Curve no. 92 .... 10A–45
Runoff for inches of rainfall—Curve no. 93 .... 10A–46
Runoff for inches of rainfall—Curve no. 94 .... 10A–47
Runoff for inches of rainfall—Curve no. 95 .... 10A–48
Runoff for inches of rainfall—Curve no. 96 .... 10A–49
Runoff for inches of rainfall—Curve no. 97 .... 10A–50
Runoff for inches of rainfall—Curve no. 98 .... 10A–51

Runoff for inches of rainfall—Curve no. 50

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1										
2	0.00	0.00	0.00	0.01	0.02	0.02	0.03	0.05	0.06	0.07
3	0.09	0.11	0.13	0.15	0.17	0.20	0.22	0.25	0.27	0.30
4	0.33	0.36	0.40	0.43	0.46	0.50	0.54	0.57	0.61	0.65
5	0.69	0.73	0.78	0.82	0.86	0.91	0.95	1.00	1.05	1.09
6	1.14	1.19	1.24	1.29	1.34	1.40	1.45	1.50	1.56	1.61
7	1.67	1.72	1.78	1.84	1.89	1.95	2.01	2.07	2.13	2.19
8	2.25	2.31	2.37	2.43	2.50	2.56	2.62	2.69	2.75	2.82
9	2.88	2.95	3.01	3.08	3.15	3.21	3.28	3.35	3.42	3.49
10	3.56	3.62	3.69	3.76	3.83	3.91	3.98	4.05	4.12	4.19
11	4.26	4.34	4.41	4.48	4.55	4.63	4.70	4.78	4.85	4.93
12	5.00	5.08	5.15	5.23	5.30	5.38	5.45	5.53	5.61	5.68
13	5.76	5.84	5.92	5.99	6.07	6.15	6.23	6.31	6.39	6.47
14	6.55	6.62	6.70	6.78	6.86	6.94	7.02	7.11	7.19	7.27
15	7.35	7.43	7.51	7.59	7.67	7.76	7.84	7.92	8.00	8.08
16	8.17	8.25	8.33	8.42	8.50	8.58	8.67	8.75	8.83	8.92
17	9.00	9.08	9.17	9.25	9.34	9.42	9.51	9.59	9.68	9.76
18	9.85	9.93	10.02	10.10	10.19	10.27	10.36	10.45	10.53	10.62
19	10.70	10.79	10.88	10.96	11.05	11.14	11.22	11.31	11.40	11.48
20	11.57	11.66	11.75	11.83	11.92	12.01	12.10	12.18	12.27	12.36
21	12.45	12.54	12.62	12.71	12.80	12.89	12.98	13.07	13.16	13.24
22	13.33	13.42	13.51	13.60	13.69	13.78	13.87	13.96	14.05	14.14
23	14.23	14.32	14.41	14.49	14.58	14.67	14.76	14.85	14.94	15.03
24	15.13	15.22	15.31	15.40	15.49	15.58	15.67	15.76	15.85	15.94
25	16.03	16.12	16.21	16.30	16.39	16.49	16.58	16.67	16.76	16.85
26	16.94	17.03	17.12	17.22	17.31	17.40	17.49	17.58	17.67	17.77
27	17.86	17.95	18.04	18.13	18.22	18.32	18.41	18.50	18.59	18.69
28	18.78	18.87	18.96	19.05	19.15	19.24	19.33	19.42	19.52	19.61
29	19.70	19.80	19.89	19.98	20.07	20.17	20.26	20.35	20.45	20.54
30	20.63	20.72	20.82	20.91	21.00	21.10	21.19	21.28	21.38	21.47
31	21.56	21.66	21.75	21.84	21.94	22.03	22.13	22.22	22.31	22.41
32	22.50	22.59	22.69	22.78	22.88	22.97	23.06	23.16	23.25	23.34
33	23.44	23.53	23.63	23.72	23.82	23.91	24.00	24.10	24.19	24.29
34	24.38	24.48	24.57	24.66	24.76	24.85	24.95	25.04	25.14	25.23
35	25.33	25.42	25.51	25.61	25.70	25.80	25.89	25.99	26.08	26.18
36	26.27	26.37	26.46	26.56	26.65	26.75	26.84	26.94	27.03	27.13
37	27.22	27.32	27.41	27.51	27.60	27.70	27.79	27.89	27.98	28.08
38	28.17	28.27	28.36	28.46	28.56	28.65	28.75	28.84	28.94	29.03
39	29.13	29.22	29.32	29.41	29.51	29.61	29.70	29.80	29.89	29.99
40	30.08	30.18	30.27	30.37	30.47	30.56	30.66	30.75	30.85	30.94

Example: 4.50 inches rainfall = 0.50 inches runoff

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
51

Runoff for inches of rainfall—Curve no. 51

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1										
2	0.00	0.00	0.01	0.01	0.02	0.03	0.04	0.06	0.07	0.09
3	0.11	0.13	0.15	0.17	0.20	0.22	0.25	0.28	0.31	0.34
4	0.37	0.40	0.44	0.47	0.51	0.55	0.58	0.62	0.66	0.70
5	0.75	0.79	0.83	0.88	0.92	0.97	1.02	1.07	1.11	1.16
6	1.21	1.27	1.32	1.37	1.42	1.48	1.53	1.59	1.64	1.70
7	1.76	1.81	1.87	1.93	1.99	2.05	2.11	2.17	2.23	2.29
8	2.35	2.42	2.48	2.54	2.61	2.67	2.74	2.80	2.87	2.94
9	3.00	3.07	3.14	3.20	3.27	3.34	3.41	3.48	3.55	3.62
10	3.69	3.76	3.83	3.90	3.97	4.05	4.12	4.19	4.26	4.34
11	4.41	4.48	4.56	4.63	4.71	4.78	4.86	4.93	5.01	5.08
12	5.16	5.24	5.31	5.39	5.47	5.54	5.62	5.70	5.78	5.85
13	5.93	6.01	6.09	6.17	6.25	6.33	6.41	6.49	6.57	6.65
14	6.73	6.81	6.89	6.97	7.05	7.13	7.21	7.29	7.37	7.46
15	7.54	7.62	7.70	7.79	7.87	7.95	8.03	8.12	8.20	8.28
16	8.37	8.45	8.53	8.62	8.70	8.79	8.87	8.95	9.04	9.12
17	9.21	9.29	9.38	9.46	9.55	9.63	9.72	9.81	9.89	9.98
18	10.06	10.15	10.24	10.32	10.41	10.49	10.58	10.67	10.75	10.84
19	10.93	11.02	11.10	11.19	11.28	11.36	11.45	11.54	11.63	11.72
20	11.80	11.89	11.98	12.07	12.16	12.24	12.33	12.42	12.51	12.60
21	12.69	12.78	12.86	12.95	13.04	13.13	13.22	13.31	13.40	13.49
22	13.58	13.67	13.76	13.85	13.94	14.03	14.12	14.21	14.30	14.39
23	14.48	14.57	14.66	14.75	14.84	14.93	15.02	15.11	15.20	15.29
24	15.38	15.47	15.56	15.66	15.75	15.84	15.93	16.02	16.11	16.20
25	16.29	16.38	16.48	16.57	16.66	16.75	16.84	16.93	17.03	17.12
26	17.21	17.30	17.39	17.49	17.58	17.67	17.76	17.85	17.95	18.04
27	18.13	18.22	18.32	18.41	18.50	18.59	18.69	18.78	18.87	18.96
28	19.06	19.15	19.24	19.33	19.43	19.52	19.61	19.71	19.80	19.89
29	19.99	20.08	20.17	20.26	20.36	20.45	20.54	20.64	20.73	20.82
30	20.92	21.01	21.11	21.20	21.29	21.39	21.48	21.57	21.67	21.76
31	21.86	21.95	22.04	22.14	22.23	22.32	22.42	22.51	22.61	22.70
32	22.79	22.89	22.98	23.08	23.17	23.27	23.36	23.45	23.55	23.64
33	23.74	23.83	23.93	24.02	24.12	24.21	24.30	24.40	24.49	24.59
34	24.68	24.78	24.87	24.97	25.06	25.16	25.25	25.35	25.44	25.54
35	25.63	25.73	25.82	25.92	26.01	26.11	26.20	26.30	26.39	26.49
36	26.58	26.68	26.77	26.87	26.96	27.06	27.15	27.25	27.34	27.44
37	27.53	27.63	27.73	27.82	27.92	28.01	28.11	28.20	28.30	28.39
38	28.49	28.58	28.68	28.78	28.87	28.97	29.06	29.16	29.25	29.35
39	29.45	29.54	29.64	29.73	29.83	29.93	30.02	30.12	30.21	30.31
40	30.40	30.50	30.60	30.69	30.79	30.88	30.98	31.08	31.17	31.27

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

(210-VI-NEH, July 2004)

Curve

52

Runoff for inches of rainfall—Curve no. 52

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1										
2	0.00	0.01	0.01	0.02	0.03	0.04	0.06	0.07	0.09	0.11
3	0.13	0.15	0.17	0.20	0.22	0.25	0.28	0.31	0.34	0.37
4	0.41	0.44	0.48	0.52	0.55	0.59	0.63	0.67	0.72	0.76
5	0.80	0.85	0.89	0.94	0.99	1.04	1.09	1.14	1.19	1.24
6	1.29	1.34	1.40	1.45	1.50	1.56	1.62	1.67	1.73	1.79
7	1.85	1.91	1.97	2.03	2.09	2.15	2.21	2.27	2.33	2.40
8	2.46	2.53	2.59	2.66	2.72	2.79	2.85	2.92	2.99	3.06
9	3.12	3.19	3.26	3.33	3.40	3.47	3.54	3.61	3.68	3.75
10	3.82	3.90	3.97	4.04	4.11	4.19	4.26	4.33	4.41	4.48
11	4.56	4.63	4.71	4.78	4.86	4.94	5.01	5.09	5.16	5.24
12	5.32	5.40	5.47	5.55	5.63	5.71	5.79	5.87	5.94	6.02
13	6.10	6.18	6.26	6.34	6.42	6.50	6.58	6.66	6.75	6.83
14	6.91	6.99	7.07	7.15	7.23	7.32	7.40	7.48	7.56	7.65
15	7.73	7.81	7.90	7.98	8.06	8.15	8.23	8.31	8.40	8.48
16	8.57	8.65	8.74	8.82	8.91	8.99	9.08	9.16	9.25	9.33
17	9.42	9.50	9.59	9.68	9.76	9.85	9.93	10.02	10.11	10.19
18	10.28	10.37	10.45	10.54	10.63	10.72	10.80	10.89	10.98	11.07
19	11.15	11.24	11.33	11.42	11.50	11.59	11.68	11.77	11.86	11.95
20	12.04	12.12	12.21	12.30	12.39	12.48	12.57	12.66	12.75	12.84
21	12.93	13.01	13.10	13.19	13.28	13.37	13.46	13.55	13.64	13.73
22	13.82	13.91	14.00	14.09	14.18	14.27	14.37	14.46	14.55	14.64
23	14.73	14.82	14.91	15.00	15.09	15.18	15.27	15.36	15.46	15.55
24	15.64	15.73	15.82	15.91	16.00	16.10	16.19	16.28	16.37	16.46
25	16.55	16.65	16.74	16.83	16.92	17.01	17.11	17.20	17.29	17.38
26	17.48	17.57	17.66	17.75	17.85	17.94	18.03	18.12	18.22	18.31
27	18.40	18.49	18.59	18.68	18.77	18.87	18.96	19.05	19.15	19.24
28	19.33	19.42	19.52	19.61	19.70	19.80	19.89	19.98	20.08	20.17
29	20.27	20.36	20.45	20.55	20.64	20.73	20.83	20.92	21.02	21.11
30	21.20	21.30	21.39	21.48	21.58	21.67	21.77	21.86	21.96	22.05
31	22.14	22.24	22.33	22.43	22.52	22.61	22.71	22.80	22.90	22.99
32	23.09	23.18	23.28	23.37	23.47	23.56	23.65	23.75	23.84	23.94
33	24.03	24.13	24.22	24.32	24.41	24.51	24.60	24.70	24.79	24.89
34	24.98	25.08	25.17	25.27	25.36	25.46	25.55	25.65	25.74	25.84
35	25.93	26.03	26.12	26.22	26.32	26.41	26.51	26.60	26.70	26.79
36	26.89	26.98	27.08	27.17	27.27	27.37	27.46	27.56	27.65	27.75
37	27.84	27.94	28.03	28.13	28.23	28.32	28.42	28.51	28.61	28.71
38	28.80	28.90	28.99	29.09	29.18	29.28	29.38	29.47	29.57	29.66
39	29.76	29.86	29.95	30.05	30.14	30.24	30.34	30.43	30.53	30.63
40	30.72	30.82	30.91	31.01	31.11	31.20	31.30	31.40	31.49	31.59

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

53

Runoff for inches of rainfall—Curve no. 53

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1										
2	0.01	0.01	0.02	0.03	0.04	0.05	0.07	0.09	0.11	0.13
3	0.15	0.17	0.20	0.22	0.25	0.28	0.31	0.34	0.38	0.41
4	0.45	0.48	0.52	0.56	0.60	0.64	0.68	0.73	0.77	0.81
5	0.86	0.91	0.95	1.00	1.05	1.10	1.15	1.20	1.26	1.31
6	1.36	1.42	1.47	1.53	1.59	1.64	1.70	1.76	1.82	1.88
7	1.94	2.00	2.06	2.12	2.18	2.25	2.31	2.37	2.44	2.50
8	2.57	2.63	2.70	2.77	2.83	2.90	2.97	3.04	3.11	3.17
9	3.24	3.31	3.38	3.45	3.53	3.60	3.67	3.74	3.81	3.89
10	3.96	4.03	4.10	4.18	4.25	4.33	4.40	4.48	4.55	4.63
11	4.70	4.78	4.86	4.93	5.01	5.09	5.16	5.24	5.32	5.40
12	5.48	5.55	5.63	5.71	5.79	5.87	5.95	6.03	6.11	6.19
13	6.27	6.35	6.43	6.51	6.59	6.68	6.76	6.84	6.92	7.00
14	7.09	7.17	7.25	7.33	7.42	7.50	7.58	7.67	7.75	7.83
15	7.92	8.00	8.08	8.17	8.25	8.34	8.42	8.51	8.59	8.68
16	8.76	8.85	8.93	9.02	9.10	9.19	9.28	9.36	9.45	9.53
17	9.62	9.71	9.79	9.88	9.97	10.05	10.14	10.23	10.32	10.40
18	10.49	10.58	10.67	10.75	10.84	10.93	11.02	11.11	11.19	11.28
19	11.37	11.46	11.55	11.64	11.73	11.81	11.90	11.99	12.08	12.17
20	12.26	12.35	12.44	12.53	12.62	12.71	12.80	12.89	12.98	13.07
21	13.16	13.25	13.34	13.43	13.52	13.61	13.70	13.79	13.88	13.97
22	14.06	14.15	14.24	14.33	14.42	14.51	14.61	14.70	14.79	14.88
23	14.97	15.06	15.15	15.24	15.34	15.43	15.52	15.61	15.70	15.79
24	15.89	15.98	16.07	16.16	16.25	16.35	16.44	16.53	16.62	16.71
25	16.81	16.90	16.99	17.08	17.18	17.27	17.36	17.45	17.55	17.64
26	17.73	17.83	17.92	18.01	18.10	18.20	18.29	18.38	18.48	18.57
27	18.66	18.76	18.85	18.94	19.04	19.13	19.22	19.32	19.41	19.50
28	19.60	19.69	19.79	19.88	19.97	20.07	20.16	20.25	20.35	20.44
29	20.54	20.63	20.72	20.82	20.91	21.01	21.10	21.19	21.29	21.38
30	21.48	21.57	21.67	21.76	21.85	21.95	22.04	22.14	22.23	22.33
31	22.42	22.52	22.61	22.71	22.80	22.89	22.99	23.08	23.18	23.27
32	23.37	23.46	23.56	23.65	23.75	23.84	23.94	24.03	24.13	24.22
33	24.32	24.41	24.51	24.60	24.70	24.79	24.89	24.98	25.08	25.18
34	25.27	25.37	25.46	25.56	25.65	25.75	25.84	25.94	26.03	26.13
35	26.22	26.32	26.42	26.51	26.61	26.70	26.80	26.89	26.99	27.09
36	27.18	27.28	27.37	27.47	27.56	27.66	27.76	27.85	27.95	28.04
37	28.14	28.24	28.33	28.43	28.52	28.62	28.72	28.81	28.91	29.00
38	29.10	29.20	29.29	29.39	29.49	29.58	29.68	29.77	29.87	29.97
39	30.06	30.16	30.26	30.35	30.45	30.54	30.64	30.74	30.83	30.93
40	31.03	31.12	31.22	31.32	31.41	31.51	31.61	31.70	31.80	31.90

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 54

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1										
2	0.01	0.02	0.03	0.04	0.05	0.07	0.09	0.10	0.12	0.15
3	0.17	0.20	0.22	0.25	0.28	0.31	0.35	0.38	0.41	0.45
4	0.49	0.53	0.57	0.61	0.65	0.69	0.73	0.78	0.83	0.87
5	0.92	0.97	1.02	1.07	1.12	1.17	1.22	1.28	1.33	1.38
6	1.44	1.50	1.55	1.61	1.67	1.73	1.79	1.85	1.91	1.97
7	2.03	2.09	2.16	2.22	2.28	2.35	2.41	2.48	2.54	2.61
8	2.68	2.74	2.81	2.88	2.95	3.02	3.08	3.15	3.22	3.29
9	3.37	3.44	3.51	3.58	3.65	3.73	3.80	3.87	3.94	4.02
10	4.09	4.17	4.24	4.32	4.39	4.47	4.54	4.62	4.70	4.77
11	4.85	4.93	5.01	5.08	5.16	5.24	5.32	5.40	5.48	5.55
12	5.63	5.71	5.79	5.87	5.95	6.03	6.11	6.20	6.28	6.36
13	6.44	6.52	6.60	6.68	6.77	6.85	6.93	7.01	7.10	7.18
14	7.26	7.35	7.43	7.51	7.60	7.68	7.77	7.85	7.93	8.02
15	8.10	8.19	8.27	8.36	8.44	8.53	8.61	8.70	8.79	8.87
16	8.96	9.04	9.13	9.22	9.30	9.39	9.48	9.56	9.65	9.74
17	9.82	9.91	10.00	10.09	10.17	10.26	10.35	10.44	10.52	10.61
18	10.70	10.79	10.88	10.97	11.05	11.14	11.23	11.32	11.41	11.50
19	11.59	11.68	11.77	11.86	11.94	12.03	12.12	12.21	12.30	12.39
20	12.48	12.57	12.66	12.75	12.84	12.93	13.02	13.11	13.20	13.30
21	13.39	13.48	13.57	13.66	13.75	13.84	13.93	14.02	14.11	14.20
22	14.30	14.39	14.48	14.57	14.66	14.75	14.84	14.94	15.03	15.12
23	15.21	15.30	15.39	15.49	15.58	15.67	15.76	15.85	15.95	16.04
24	16.13	16.22	16.32	16.41	16.50	16.59	16.69	16.78	16.87	16.96
25	17.06	17.15	17.24	17.34	17.43	17.52	17.62	17.71	17.80	17.89
26	17.99	18.08	18.17	18.27	18.36	18.45	18.55	18.64	18.74	18.83
27	18.92	19.02	19.11	19.20	19.30	19.39	19.49	19.58	19.67	19.77
28	19.86	19.96	20.05	20.14	20.24	20.33	20.43	20.52	20.61	20.71
29	20.80	20.90	20.99	21.09	21.18	21.27	21.37	21.46	21.56	21.65
30	21.75	21.84	21.94	22.03	22.13	22.22	22.32	22.41	22.51	22.60
31	22.70	22.79	22.89	22.98	23.08	23.17	23.27	23.36	23.46	23.55
32	23.65	23.74	23.84	23.93	24.03	24.12	24.22	24.31	24.41	24.50
33	24.60	24.69	24.79	24.89	24.98	25.08	25.17	25.27	25.36	25.46
34	25.55	25.65	25.75	25.84	25.94	26.03	26.13	26.22	26.32	26.42
35	26.51	26.61	26.70	26.80	26.90	26.99	27.09	27.18	27.28	27.38
36	27.47	27.57	27.66	27.76	27.86	27.95	28.05	28.14	28.24	28.34
37	28.43	28.53	28.63	28.72	28.82	28.91	29.01	29.11	29.20	29.30
38	29.40	29.49	29.59	29.68	29.78	29.88	29.97	30.07	30.17	30.26
39	30.36	30.46	30.55	30.65	30.75	30.84	30.94	31.04	31.13	31.23
40	31.33	31.42	31.52	31.62	31.71	31.81	31.91	32.00	32.10	32.20

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
55

Runoff for inches of rainfall—Curve no. 55

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
2	0.02	0.02	0.04	0.05	0.07	0.08	0.10	0.12	0.15	0.17
3	0.19	0.22	0.25	0.28	0.31	0.35	0.38	0.42	0.45	0.49
4	0.53	0.57	0.61	0.65	0.70	0.74	0.79	0.83	0.88	0.93
5	0.98	1.03	1.08	1.13	1.19	1.24	1.29	1.35	1.40	1.46
6	1.52	1.58	1.63	1.69	1.75	1.81	1.87	1.94	2.00	2.06
7	2.12	2.19	2.25	2.32	2.38	2.45	2.51	2.58	2.65	2.72
8	2.78	2.85	2.92	2.99	3.06	3.13	3.20	3.27	3.34	3.42
9	3.49	3.56	3.63	3.71	3.78	3.85	3.93	4.00	4.08	4.15
10	4.23	4.30	4.38	4.46	4.53	4.61	4.69	4.76	4.84	4.92
11	5.00	5.08	5.15	5.23	5.31	5.39	5.47	5.55	5.63	5.71
12	5.79	5.87	5.95	6.03	6.12	6.20	6.28	6.36	6.44	6.53
13	6.61	6.69	6.77	6.86	6.94	7.02	7.11	7.19	7.27	7.36
14	7.44	7.53	7.61	7.69	7.78	7.86	7.95	8.03	8.12	8.20
15	8.29	8.38	8.46	8.55	8.63	8.72	8.81	8.89	8.98	9.07
16	9.15	9.24	9.33	9.41	9.50	9.59	9.68	9.76	9.85	9.94
17	10.03	10.11	10.20	10.29	10.38	10.47	10.56	10.64	10.73	10.82
18	10.91	11.00	11.09	11.18	11.27	11.36	11.45	11.53	11.62	11.71
19	11.80	11.89	11.98	12.07	12.16	12.25	12.34	12.43	12.52	12.61
20	12.70	12.80	12.89	12.98	13.07	13.16	13.25	13.34	13.43	13.52
21	13.61	13.70	13.80	13.89	13.98	14.07	14.16	14.25	14.34	14.44
22	14.53	14.62	14.71	14.80	14.90	14.99	15.08	15.17	15.26	15.36
23	15.45	15.54	15.63	15.73	15.82	15.91	16.00	16.10	16.19	16.28
24	16.37	16.47	16.56	16.65	16.75	16.84	16.93	17.03	17.12	17.21
25	17.31	17.40	17.49	17.59	17.68	17.77	17.87	17.96	18.05	18.15
26	18.24	18.33	18.43	18.52	18.62	18.71	18.80	18.90	18.99	19.08
27	19.18	19.27	19.37	19.46	19.56	19.65	19.74	19.84	19.93	20.03
28	20.12	20.22	20.31	20.40	20.50	20.59	20.69	20.78	20.88	20.97
29	21.07	21.16	21.26	21.35	21.45	21.54	21.64	21.73	21.83	21.92
30	22.02	22.11	22.21	22.30	22.40	22.49	22.59	22.68	22.78	22.87
31	22.97	23.06	23.16	23.25	23.35	23.44	23.54	23.63	23.73	23.82
32	23.92	24.02	24.11	24.21	24.30	24.40	24.49	24.59	24.68	24.78
33	24.88	24.97	25.07	25.16	25.26	25.35	25.45	25.55	25.64	25.74
34	25.83	25.93	26.03	26.12	26.22	26.31	26.41	26.51	26.60	26.70
35	26.79	26.89	26.99	27.08	27.18	27.28	27.37	27.47	27.56	27.66
36	27.76	27.85	27.95	28.05	28.14	28.24	28.33	28.43	28.53	28.62
37	28.72	28.82	28.91	29.01	29.11	29.20	29.30	29.40	29.49	29.59
38	29.69	29.78	29.88	29.98	30.07	30.17	30.27	30.36	30.46	30.56
39	30.65	30.75	30.85	30.94	31.04	31.14	31.23	31.33	31.43	31.52
40	31.62	31.72	31.82	31.91	32.01	32.11	32.20	32.30	32.40	32.49

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve 56

Runoff for inches of rainfall—Curve no. 56

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
2	0.02	0.03	0.05	0.06	0.08	0.10	0.12	0.14	0.17	0.19
3	0.22	0.25	0.28	0.31	0.34	0.38	0.42	0.45	0.49	0.53
4	0.57	0.62	0.66	0.70	0.75	0.79	0.84	0.89	0.94	0.99
5	1.04	1.09	1.15	1.20	1.25	1.31	1.36	1.42	1.48	1.54
6	1.60	1.66	1.72	1.78	1.84	1.90	1.96	2.02	2.09	2.15
7	2.22	2.28	2.35	2.41	2.48	2.55	2.62	2.68	2.75	2.82
8	2.89	2.96	3.03	3.10	3.17	3.25	3.32	3.39	3.46	3.54
9	3.61	3.68	3.76	3.83	3.91	3.98	4.06	4.13	4.21	4.28
10	4.36	4.44	4.51	4.59	4.67	4.75	4.83	4.90	4.98	5.06
11	5.14	5.22	5.30	5.38	5.46	5.54	5.62	5.70	5.78	5.86
12	5.95	6.03	6.11	6.19	6.27	6.36	6.44	6.52	6.60	6.69
13	6.77	6.85	6.94	7.02	7.11	7.19	7.27	7.36	7.44	7.53
14	7.61	7.70	7.78	7.87	7.95	8.04	8.13	8.21	8.30	8.38
15	8.47	8.56	8.64	8.73	8.82	8.90	8.99	9.08	9.16	9.25
16	9.34	9.43	9.52	9.60	9.69	9.78	9.87	9.96	10.04	10.13
17	10.22	10.31	10.40	10.49	10.58	10.67	10.75	10.84	10.93	11.02
18	11.11	11.20	11.29	11.38	11.47	11.56	11.65	11.74	11.83	11.92
19	12.01	12.10	12.19	12.28	12.37	12.46	12.55	12.65	12.74	12.83
20	12.92	13.01	13.10	13.19	13.28	13.37	13.47	13.56	13.65	13.74
21	13.83	13.92	14.02	14.11	14.20	14.29	14.38	14.48	14.57	14.66
22	14.75	14.84	14.94	15.03	15.12	15.21	15.31	15.40	15.49	15.58
23	15.68	15.77	15.86	15.96	16.05	16.14	16.24	16.33	16.42	16.51
24	16.61	16.70	16.79	16.89	16.98	17.07	17.17	17.26	17.36	17.45
25	17.54	17.64	17.73	17.82	17.92	18.01	18.11	18.20	18.29	18.39
26	18.48	18.58	18.67	18.76	18.86	18.95	19.05	19.14	19.24	19.33
27	19.42	19.52	19.61	19.71	19.80	19.90	19.99	20.09	20.18	20.28
28	20.37	20.46	20.56	20.65	20.75	20.84	20.94	21.03	21.13	21.22
29	21.32	21.41	21.51	21.60	21.70	21.79	21.89	21.98	22.08	22.18
30	22.27	22.37	22.46	22.56	22.65	22.75	22.84	22.94	23.03	23.13
31	23.22	23.32	23.42	23.51	23.61	23.70	23.80	23.89	23.99	24.09
32	24.18	24.28	24.37	24.47	24.56	24.66	24.76	24.85	24.95	25.04
33	25.14	25.24	25.33	25.43	25.52	25.62	25.72	25.81	25.91	26.01
34	26.10	26.20	26.29	26.39	26.49	26.58	26.68	26.78	26.87	26.97
35	27.06	27.16	27.26	27.35	27.45	27.55	27.64	27.74	27.84	27.93
36	28.03	28.13	28.22	28.32	28.42	28.51	28.61	28.71	28.80	28.90
37	29.00	29.09	29.19	29.29	29.38	29.48	29.58	29.67	29.77	29.87
38	29.96	30.06	30.16	30.25	30.35	30.45	30.54	30.64	30.74	30.84
39	30.93	31.03	31.13	31.22	31.32	31.42	31.51	31.61	31.71	31.81
40	31.90	32.00	32.10	32.19	32.29	32.39	32.49	32.58	32.68	32.78

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
57

Runoff for inches of rainfall—Curve no. 57

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
2	0.03	0.04	0.06	0.08	0.09	0.12	0.14	0.16	0.19	0.22
3	0.25	0.28	0.31	0.34	0.38	0.42	0.45	0.49	0.53	0.58
4	0.62	0.66	0.71	0.75	0.80	0.85	0.90	0.95	1.00	1.05
5	1.11	1.16	1.21	1.27	1.33	1.38	1.44	1.50	1.56	1.62
6	1.68	1.74	1.80	1.86	1.93	1.99	2.05	2.12	2.18	2.25
7	2.31	2.38	2.45	2.52	2.58	2.65	2.72	2.79	2.86	2.93
8	3.00	3.07	3.15	3.22	3.29	3.36	3.44	3.51	3.59	3.66
9	3.73	3.81	3.88	3.96	4.04	4.11	4.19	4.27	4.34	4.42
10	4.50	4.58	4.65	4.73	4.81	4.89	4.97	5.05	5.13	5.21
11	5.29	5.37	5.45	5.53	5.61	5.69	5.78	5.86	5.94	6.02
12	6.10	6.19	6.27	6.35	6.44	6.52	6.60	6.69	6.77	6.85
13	6.94	7.02	7.11	7.19	7.28	7.36	7.45	7.53	7.62	7.70
14	7.79	7.88	7.96	8.05	8.13	8.22	8.31	8.39	8.48	8.57
15	8.66	8.74	8.83	8.92	9.00	9.09	9.18	9.27	9.36	9.44
16	9.53	9.62	9.71	9.80	9.89	9.98	10.06	10.15	10.24	10.33
17	10.42	10.51	10.60	10.69	10.78	10.87	10.96	11.05	11.14	11.23
18	11.32	11.41	11.50	11.59	11.68	11.77	11.86	11.95	12.04	12.13
19	12.22	12.31	12.41	12.50	12.59	12.68	12.77	12.86	12.95	13.04
20	13.14	13.23	13.32	13.41	13.50	13.59	13.69	13.78	13.87	13.96
21	14.06	14.15	14.24	14.33	14.42	14.52	14.61	14.70	14.79	14.89
22	14.98	15.07	15.17	15.26	15.35	15.44	15.54	15.63	15.72	15.82
23	15.91	16.00	16.10	16.19	16.28	16.38	16.47	16.56	16.66	16.75
24	16.85	16.94	17.03	17.13	17.22	17.31	17.41	17.50	17.60	17.69
25	17.78	17.88	17.97	18.07	18.16	18.25	18.35	18.44	18.54	18.63
26	18.73	18.82	18.92	19.01	19.10	19.20	19.29	19.39	19.48	19.58
27	19.67	19.77	19.86	19.96	20.05	20.15	20.24	20.34	20.43	20.53
28	20.62	20.72	20.81	20.91	21.00	21.10	21.19	21.29	21.38	21.48
29	21.57	21.67	21.77	21.86	21.96	22.05	22.15	22.24	22.34	22.43
30	22.53	22.63	22.72	22.82	22.91	23.01	23.10	23.20	23.30	23.39
31	23.49	23.58	23.68	23.77	23.87	23.97	24.06	24.16	24.25	24.35
32	24.45	24.54	24.64	24.74	24.83	24.93	25.02	25.12	25.22	25.31
33	25.41	25.50	25.60	25.70	25.79	25.89	25.99	26.08	26.18	26.28
34	26.37	26.47	26.57	26.66	26.76	26.85	26.95	27.05	27.14	27.24
35	27.34	27.43	27.53	27.63	27.72	27.82	27.92	28.01	28.11	28.21
36	28.30	28.40	28.50	28.59	28.69	28.79	28.89	28.98	29.08	29.18
37	29.27	29.37	29.47	29.56	29.66	29.76	29.85	29.95	30.05	30.15
38	30.24	30.34	30.44	30.53	30.63	30.73	30.83	30.92	31.02	31.12
39	31.21	31.31	31.41	31.51	31.60	31.70	31.80	31.90	31.99	32.09
40	32.19	32.28	32.38	32.48	32.58	32.67	32.77	32.87	32.97	33.06

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 58

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03
2	0.04	0.05	0.07	0.09	0.11	0.13	0.16	0.18	0.21	0.24
3	0.27	0.31	0.34	0.38	0.41	0.45	0.49	0.53	0.58	0.62
4	0.67	0.71	0.76	0.81	0.86	0.91	0.96	1.01	1.06	1.11
5	1.17	1.22	1.28	1.34	1.40	1.45	1.51	1.57	1.63	1.70
6	1.76	1.82	1.88	1.95	2.01	2.08	2.14	2.21	2.27	2.34
7	2.41	2.48	2.55	2.62	2.69	2.76	2.83	2.90	2.97	3.04
8	3.11	3.19	3.26	3.33	3.41	3.48	3.55	3.63	3.70	3.78
9	3.86	3.93	4.01	4.09	4.16	4.24	4.32	4.40	4.47	4.55
10	4.63	4.71	4.79	4.87	4.95	5.03	5.11	5.19	5.27	5.35
11	5.43	5.52	5.60	5.68	5.76	5.84	5.93	6.01	6.09	6.17
12	6.26	6.34	6.43	6.51	6.59	6.68	6.76	6.85	6.93	7.02
13	7.10	7.19	7.27	7.36	7.44	7.53	7.62	7.70	7.79	7.87
14	7.96	8.05	8.13	8.22	8.31	8.40	8.48	8.57	8.66	8.75
15	8.83	8.92	9.01	9.10	9.19	9.27	9.36	9.45	9.54	9.63
16	9.72	9.81	9.90	9.98	10.07	10.16	10.25	10.34	10.43	10.52
17	10.61	10.70	10.79	10.88	10.97	11.06	11.15	11.24	11.33	11.42
18	11.52	11.61	11.70	11.79	11.88	11.97	12.06	12.15	12.24	12.33
19	12.43	12.52	12.61	12.70	12.79	12.88	12.98	13.07	13.16	13.25
20	13.34	13.44	13.53	13.62	13.71	13.81	13.90	13.99	14.08	14.18
21	14.27	14.36	14.45	14.55	14.64	14.73	14.83	14.92	15.01	15.10
22	15.20	15.29	15.38	15.48	15.57	15.66	15.76	15.85	15.95	16.04
23	16.13	16.23	16.32	16.41	16.51	16.60	16.70	16.79	16.88	16.98
24	17.07	17.17	17.26	17.35	17.45	17.54	17.64	17.73	17.83	17.92
25	18.01	18.11	18.20	18.30	18.39	18.49	18.58	18.68	18.77	18.87
26	18.96	19.06	19.15	19.25	19.34	19.44	19.53	19.63	19.72	19.82
27	19.91	20.01	20.10	20.20	20.29	20.39	20.48	20.58	20.67	20.77
28	20.86	20.96	21.05	21.15	21.25	21.34	21.44	21.53	21.63	21.72
29	21.82	21.91	22.01	22.11	22.20	22.30	22.39	22.49	22.58	22.68
30	22.78	22.87	22.97	23.06	23.16	23.26	23.35	23.45	23.54	23.64
31	23.74	23.83	23.93	24.03	24.12	24.22	24.31	24.41	24.51	24.60
32	24.70	24.80	24.89	24.99	25.08	25.18	25.28	25.37	25.47	25.57
33	25.66	25.76	25.86	25.95	26.05	26.15	26.24	26.34	26.44	26.53
34	26.63	26.73	26.82	26.92	27.02	27.11	27.21	27.31	27.40	27.50
35	27.60	27.69	27.79	27.89	27.98	28.08	28.18	28.28	28.37	28.47
36	28.57	28.66	28.76	28.86	28.95	29.05	29.15	29.25	29.34	29.44
37	29.54	29.63	29.73	29.83	29.93	30.02	30.12	30.22	30.31	30.41
38	30.51	30.61	30.70	30.80	30.90	31.00	31.09	31.19	31.29	31.38
39	31.48	31.58	31.68	31.77	31.87	31.97	32.07	32.16	32.26	32.36
40	32.46	32.55	32.65	32.75	32.85	32.94	33.04	33.14	33.24	33.33

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

59

Runoff for inches of rainfall—Curve no. 59

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03
2	0.05	0.07	0.08	0.11	0.13	0.15	0.18	0.21	0.24	0.27
3	0.30	0.34	0.37	0.41	0.45	0.49	0.53	0.58	0.62	0.67
4	0.71	0.76	0.81	0.86	0.91	0.96	1.01	1.07	1.12	1.18
5	1.23	1.29	1.35	1.41	1.47	1.53	1.59	1.65	1.71	1.77
6	1.84	1.90	1.97	2.03	2.10	2.17	2.23	2.30	2.37	2.44
7	2.51	2.58	2.65	2.72	2.79	2.86	2.93	3.00	3.08	3.15
8	3.22	3.30	3.37	3.45	3.52	3.60	3.67	3.75	3.82	3.90
9	3.98	4.05	4.13	4.21	4.29	4.37	4.45	4.53	4.60	4.68
10	4.76	4.84	4.92	5.01	5.09	5.17	5.25	5.33	5.41	5.49
11	5.58	5.66	5.74	5.82	5.91	5.99	6.07	6.16	6.24	6.33
12	6.41	6.50	6.58	6.66	6.75	6.83	6.92	7.01	7.09	7.18
13	7.26	7.35	7.43	7.52	7.61	7.69	7.78	7.87	7.95	8.04
14	8.13	8.22	8.30	8.39	8.48	8.57	8.66	8.74	8.83	8.92
15	9.01	9.10	9.19	9.28	9.36	9.45	9.54	9.63	9.72	9.81
16	9.90	9.99	10.08	10.17	10.26	10.35	10.44	10.53	10.62	10.71
17	10.80	10.89	10.98	11.07	11.16	11.25	11.35	11.44	11.53	11.62
18	11.71	11.80	11.89	11.98	12.08	12.17	12.26	12.35	12.44	12.53
19	12.63	12.72	12.81	12.90	13.00	13.09	13.18	13.27	13.36	13.46
20	13.55	13.64	13.74	13.83	13.92	14.01	14.11	14.20	14.29	14.39
21	14.48	14.57	14.67	14.76	14.85	14.95	15.04	15.13	15.23	15.32
22	15.41	15.51	15.60	15.69	15.79	15.88	15.98	16.07	16.16	16.26
23	16.35	16.45	16.54	16.63	16.73	16.82	16.92	17.01	17.11	17.20
24	17.29	17.39	17.48	17.58	17.67	17.77	17.86	17.96	18.05	18.15
25	18.24	18.34	18.43	18.53	18.62	18.72	18.81	18.91	19.00	19.10
26	19.19	19.29	19.38	19.48	19.57	19.67	19.76	19.86	19.95	20.05
27	20.14	20.24	20.33	20.43	20.53	20.62	20.72	20.81	20.91	21.00
28	21.10	21.20	21.29	21.39	21.48	21.58	21.67	21.77	21.87	21.96
29	22.06	22.15	22.25	22.35	22.44	22.54	22.63	22.73	22.83	22.92
30	23.02	23.11	23.21	23.31	23.40	23.50	23.60	23.69	23.79	23.88
31	23.98	24.08	24.17	24.27	24.37	24.46	24.56	24.66	24.75	24.85
32	24.95	25.04	25.14	25.24	25.33	25.43	25.53	25.62	25.72	25.82
33	25.91	26.01	26.11	26.20	26.30	26.40	26.49	26.59	26.69	26.78
34	26.88	26.98	27.07	27.17	27.27	27.37	27.46	27.56	27.66	27.75
35	27.85	27.95	28.05	28.14	28.24	28.34	28.43	28.53	28.63	28.73
36	28.82	28.92	29.02	29.11	29.21	29.31	29.41	29.50	29.60	29.70
37	29.79	29.89	29.99	30.09	30.18	30.28	30.38	30.48	30.57	30.67
38	30.77	30.87	30.96	31.06	31.16	31.26	31.35	31.45	31.55	31.65
39	31.74	31.84	31.94	32.04	32.13	32.23	32.33	32.43	32.52	32.62
40	32.72	32.82	32.92	33.01	33.11	33.21	33.31	33.40	33.50	33.60

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

60

Runoff for inches of rainfall—Curve no. 60

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.04
2	0.06	0.08	0.10	0.12	0.15	0.17	0.20	0.23	0.26	0.30
3	0.33	0.37	0.41	0.45	0.49	0.53	0.57	0.62	0.67	0.71
4	0.76	0.81	0.86	0.91	0.97	1.02	1.07	1.13	1.19	1.24
5	1.30	1.36	1.42	1.48	1.54	1.60	1.66	1.73	1.79	1.86
6	1.92	1.99	2.05	2.12	2.19	2.25	2.32	2.39	2.46	2.53
7	2.60	2.67	2.74	2.82	2.89	2.96	3.04	3.11	3.18	3.26
8	3.33	3.41	3.48	3.56	3.63	3.71	3.79	3.87	3.94	4.02
9	4.10	4.18	4.26	4.34	4.42	4.49	4.57	4.65	4.74	4.82
10	4.90	4.98	5.06	5.14	5.22	5.31	5.39	5.47	5.55	5.64
11	5.72	5.80	5.89	5.97	6.05	6.14	6.22	6.31	6.39	6.48
12	6.56	6.65	6.73	6.82	6.90	6.99	7.08	7.16	7.25	7.34
13	7.42	7.51	7.60	7.68	7.77	7.86	7.95	8.03	8.12	8.21
14	8.30	8.38	8.47	8.56	8.65	8.74	8.83	8.92	9.01	9.09
15	9.18	9.27	9.36	9.45	9.54	9.63	9.72	9.81	9.90	9.99
16	10.08	10.17	10.26	10.35	10.44	10.53	10.62	10.71	10.81	10.90
17	10.99	11.08	11.17	11.26	11.35	11.44	11.54	11.63	11.72	11.81
18	11.90	11.99	12.09	12.18	12.27	12.36	12.45	12.55	12.64	12.73
19	12.82	12.92	13.01	13.10	13.19	13.29	13.38	13.47	13.57	13.66
20	13.75	13.85	13.94	14.03	14.12	14.22	14.31	14.40	14.50	14.59
21	14.69	14.78	14.87	14.97	15.06	15.15	15.25	15.34	15.44	15.53
22	15.62	15.72	15.81	15.91	16.00	16.09	16.19	16.28	16.38	16.47
23	16.57	16.66	16.76	16.85	16.94	17.04	17.13	17.23	17.32	17.42
24	17.51	17.61	17.70	17.80	17.89	17.99	18.08	18.18	18.27	18.37
25	18.46	18.56	18.65	18.75	18.84	18.94	19.03	19.13	19.22	19.32
26	19.42	19.51	19.61	19.70	19.80	19.89	19.99	20.08	20.18	20.28
27	20.37	20.47	20.56	20.66	20.76	20.85	20.95	21.04	21.14	21.23
28	21.33	21.43	21.52	21.62	21.71	21.81	21.91	22.00	22.10	22.20
29	22.29	22.39	22.48	22.58	22.68	22.77	22.87	22.97	23.06	23.16
30	23.26	23.35	23.45	23.54	23.64	23.74	23.83	23.93	24.03	24.12
31	24.22	24.32	24.41	24.51	24.61	24.70	24.80	24.90	24.99	25.09
32	25.19	25.28	25.38	25.48	25.57	25.67	25.77	25.87	25.96	26.06
33	26.16	26.25	26.35	26.45	26.54	26.64	26.74	26.84	26.93	27.03
34	27.13	27.22	27.32	27.42	27.52	27.61	27.71	27.81	27.90	28.00
35	28.10	28.20	28.29	28.39	28.49	28.59	28.68	28.78	28.88	28.97
36	29.07	29.17	29.27	29.36	29.46	29.56	29.66	29.75	29.85	29.95
37	30.05	30.14	30.24	30.34	30.44	30.53	30.63	30.73	30.83	30.92
38	31.02	31.12	31.22	31.32	31.41	31.51	31.61	31.71	31.80	31.90
39	32.00	32.10	32.19	32.29	32.39	32.49	32.59	32.68	32.78	32.88
40	32.98	33.08	33.17	33.27	33.37	33.47	33.56	33.66	33.76	33.86

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
61

Runoff for inches of rainfall—Curve no. 61

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.04	0.06
2	0.07	0.09	0.12	0.14	0.17	0.20	0.23	0.26	0.29	0.33
3	0.37	0.40	0.44	0.49	0.53	0.57	0.62	0.67	0.71	0.76
4	0.81	0.86	0.92	0.97	1.02	1.08	1.14	1.19	1.25	1.31
5	1.37	1.43	1.49	1.55	1.62	1.68	1.74	1.81	1.87	1.94
6	2.01	2.07	2.14	2.21	2.28	2.35	2.42	2.49	2.56	2.63
7	2.70	2.78	2.85	2.92	3.00	3.07	3.14	3.22	3.29	3.37
8	3.45	3.52	3.60	3.68	3.75	3.83	3.91	3.99	4.07	4.15
9	4.23	4.31	4.38	4.47	4.55	4.63	4.71	4.79	4.87	4.95
10	5.03	5.12	5.20	5.28	5.36	5.45	5.53	5.61	5.70	5.78
11	5.87	5.95	6.04	6.12	6.20	6.29	6.38	6.46	6.55	6.63
12	6.72	6.80	6.89	6.98	7.06	7.15	7.24	7.32	7.41	7.50
13	7.59	7.67	7.76	7.85	7.94	8.03	8.11	8.20	8.29	8.38
14	8.47	8.56	8.65	8.74	8.82	8.91	9.00	9.09	9.18	9.27
15	9.36	9.45	9.54	9.63	9.72	9.81	9.90	9.99	10.08	10.18
16	10.27	10.36	10.45	10.54	10.63	10.72	10.81	10.90	11.00	11.09
17	11.18	11.27	11.36	11.45	11.55	11.64	11.73	11.82	11.91	12.01
18	12.10	12.19	12.28	12.38	12.47	12.56	12.65	12.75	12.84	12.93
19	13.03	13.12	13.21	13.30	13.40	13.49	13.58	13.68	13.77	13.86
20	13.96	14.05	14.15	14.24	14.33	14.43	14.52	14.61	14.71	14.80
21	14.90	14.99	15.08	15.18	15.27	15.37	15.46	15.55	15.65	15.74
22	15.84	15.93	16.03	16.12	16.22	16.31	16.41	16.50	16.59	16.69
23	16.78	16.88	16.97	17.07	17.16	17.26	17.35	17.45	17.54	17.64
24	17.73	17.83	17.93	18.02	18.12	18.21	18.31	18.40	18.50	18.59
25	18.69	18.78	18.88	18.97	19.07	19.17	19.26	19.36	19.45	19.55
26	19.64	19.74	19.84	19.93	20.03	20.12	20.22	20.32	20.41	20.51
27	20.60	20.70	20.80	20.89	20.99	21.08	21.18	21.28	21.37	21.47
28	21.57	21.66	21.76	21.85	21.95	22.05	22.14	22.24	22.34	22.43
29	22.53	22.63	22.72	22.82	22.92	23.01	23.11	23.20	23.30	23.40
30	23.49	23.59	23.69	23.79	23.88	23.98	24.08	24.17	24.27	24.37
31	24.46	24.56	24.66	24.75	24.85	24.95	25.04	25.14	25.24	25.34
32	25.43	25.53	25.63	25.72	25.82	25.92	26.01	26.11	26.21	26.31
33	26.40	26.50	26.60	26.70	26.79	26.89	26.99	27.08	27.18	27.28
34	27.38	27.47	27.57	27.67	27.77	27.86	27.96	28.06	28.16	28.25
35	28.35	28.45	28.54	28.64	28.74	28.84	28.93	29.03	29.13	29.23
36	29.33	29.42	29.52	29.62	29.72	29.81	29.91	30.01	30.11	30.20
37	30.30	30.40	30.50	30.59	30.69	30.79	30.89	30.99	31.08	31.18
38	31.28	31.38	31.47	31.57	31.67	31.77	31.87	31.96	32.06	32.16
39	32.26	32.36	32.45	32.55	32.65	32.75	32.85	32.94	33.04	33.14
40	33.24	33.34	33.43	33.53	33.63	33.73	33.83	33.92	34.02	34.12

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

(210-VI-NEH, July 2004)

Runoff for inches of rainfall—Curve no. 62

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.05	0.07
2	0.09	0.11	0.13	0.16	0.19	0.22	0.25	0.29	0.32	0.36
3	0.40	0.44	0.48	0.52	0.57	0.62	0.66	0.71	0.76	0.81
4	0.86	0.92	0.97	1.03	1.08	1.14	1.20	1.26	1.32	1.38
5	1.44	1.50	1.56	1.63	1.69	1.76	1.82	1.89	1.95	2.02
6	2.09	2.16	2.23	2.30	2.37	2.44	2.51	2.58	2.65	2.73
7	2.80	2.87	2.95	3.02	3.10	3.17	3.25	3.33	3.40	3.48
8	3.56	3.63	3.71	3.79	3.87	3.95	4.03	4.11	4.19	4.27
9	4.35	4.43	4.51	4.59	4.67	4.75	4.83	4.92	5.00	5.08
10	5.17	5.25	5.33	5.42	5.50	5.58	5.67	5.75	5.84	5.92
11	6.01	6.09	6.18	6.26	6.35	6.43	6.52	6.61	6.69	6.78
12	6.87	6.95	7.04	7.13	7.22	7.30	7.39	7.48	7.57	7.65
13	7.74	7.83	7.92	8.01	8.10	8.19	8.27	8.36	8.45	8.54
14	8.63	8.72	8.81	8.90	8.99	9.08	9.17	9.26	9.35	9.44
15	9.53	9.62	9.71	9.80	9.89	9.99	10.08	10.17	10.26	10.35
16	10.44	10.53	10.62	10.72	10.81	10.90	10.99	11.08	11.18	11.27
17	11.36	11.45	11.54	11.64	11.73	11.82	11.91	12.01	12.10	12.19
18	12.28	12.38	12.47	12.56	12.66	12.75	12.84	12.94	13.03	13.12
19	13.22	13.31	13.40	13.50	13.59	13.68	13.78	13.87	13.97	14.06
20	14.15	14.25	14.34	14.43	14.53	14.62	14.72	14.81	14.91	15.00
21	15.09	15.19	15.28	15.38	15.47	15.57	15.66	15.76	15.85	15.95
22	16.04	16.14	16.23	16.33	16.42	16.52	16.61	16.71	16.80	16.90
23	16.99	17.09	17.18	17.28	17.37	17.47	17.56	17.66	17.75	17.85
24	17.94	18.04	18.14	18.23	18.33	18.42	18.52	18.61	18.71	18.80
25	18.90	19.00	19.09	19.19	19.28	19.38	19.48	19.57	19.67	19.76
26	19.86	19.96	20.05	20.15	20.24	20.34	20.44	20.53	20.63	20.73
27	20.82	20.92	21.01	21.11	21.21	21.30	21.40	21.50	21.59	21.69
28	21.79	21.88	21.98	22.08	22.17	22.27	22.37	22.46	22.56	22.66
29	22.75	22.85	22.95	23.04	23.14	23.24	23.33	23.43	23.53	23.62
30	23.72	23.82	23.91	24.01	24.11	24.21	24.30	24.40	24.50	24.59
31	24.69	24.79	24.88	24.98	25.08	25.18	25.27	25.37	25.47	25.57
32	25.66	25.76	25.86	25.95	26.05	26.15	26.25	26.34	26.44	26.54
33	26.64	26.73	26.83	26.93	27.03	27.12	27.22	27.32	27.41	27.51
34	27.61	27.71	27.80	27.90	28.00	28.10	28.20	28.29	28.39	28.49
35	28.59	28.68	28.78	28.88	28.98	29.07	29.17	29.27	29.37	29.46
36	29.56	29.66	29.76	29.86	29.95	30.05	30.15	30.25	30.35	30.44
37	30.54	30.64	30.74	30.83	30.93	31.03	31.13	31.23	31.32	31.42
38	31.52	31.62	31.72	31.81	31.91	32.01	32.11	32.21	32.30	32.40
39	32.50	32.60	32.70	32.79	32.89	32.99	33.09	33.19	33.28	33.38
40	33.48	33.58	33.68	33.78	33.87	33.97	34.07	34.17	34.27	34.36

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

63

Runoff for inches of rainfall—Curve no. 63

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.04	0.06	0.08
2	0.10	0.13	0.15	0.18	0.21	0.24	0.28	0.31	0.35	0.39
3	0.43	0.48	0.52	0.57	0.61	0.66	0.71	0.76	0.81	0.86
4	0.92	0.97	1.03	1.09	1.14	1.20	1.26	1.32	1.38	1.45
5	1.51	1.57	1.64	1.70	1.77	1.84	1.90	1.97	2.04	2.11
6	2.18	2.25	2.32	2.39	2.46	2.53	2.61	2.68	2.75	2.83
7	2.90	2.98	3.05	3.13	3.20	3.28	3.36	3.44	3.51	3.59
8	3.67	3.75	3.83	3.91	3.99	4.07	4.15	4.23	4.31	4.39
9	4.47	4.55	4.64	4.72	4.80	4.88	4.97	5.05	5.13	5.22
10	5.30	5.38	5.47	5.55	5.64	5.72	5.81	5.89	5.98	6.07
11	6.15	6.24	6.32	6.41	6.50	6.58	6.67	6.76	6.84	6.93
12	7.02	7.11	7.20	7.28	7.37	7.46	7.55	7.64	7.73	7.81
13	7.90	7.99	8.08	8.17	8.26	8.35	8.44	8.53	8.62	8.71
14	8.80	8.89	8.98	9.07	9.16	9.25	9.34	9.43	9.52	9.61
15	9.71	9.80	9.89	9.98	10.07	10.16	10.25	10.35	10.44	10.53
16	10.62	10.71	10.80	10.90	10.99	11.08	11.17	11.27	11.36	11.45
17	11.54	11.64	11.73	11.82	11.92	12.01	12.10	12.19	12.29	12.38
18	12.47	12.57	12.66	12.75	12.85	12.94	13.04	13.13	13.22	13.32
19	13.41	13.50	13.60	13.69	13.79	13.88	13.97	14.07	14.16	14.26
20	14.35	14.45	14.54	14.63	14.73	14.82	14.92	15.01	15.11	15.20
21	15.30	15.39	15.49	15.58	15.68	15.77	15.87	15.96	16.06	16.15
22	16.25	16.34	16.44	16.53	16.63	16.72	16.82	16.91	17.01	17.10
23	17.20	17.30	17.39	17.49	17.58	17.68	17.77	17.87	17.97	18.06
24	18.16	18.25	18.35	18.44	18.54	18.64	18.73	18.83	18.92	19.02
25	19.12	19.21	19.31	19.40	19.50	19.60	19.69	19.79	19.89	19.98
26	20.08	20.17	20.27	20.37	20.46	20.56	20.66	20.75	20.85	20.95
27	21.04	21.14	21.24	21.33	21.43	21.53	21.62	21.72	21.82	21.91
28	22.01	22.11	22.20	22.30	22.40	22.49	22.59	22.69	22.78	22.88
29	22.98	23.08	23.17	23.27	23.37	23.46	23.56	23.66	23.75	23.85
30	23.95	24.05	24.14	24.24	24.34	24.44	24.53	24.63	24.73	24.82
31	24.92	25.02	25.12	25.21	25.31	25.41	25.51	25.60	25.70	25.80
32	25.89	25.99	26.09	26.19	26.28	26.38	26.48	26.58	26.67	26.77
33	26.87	26.97	27.07	27.16	27.26	27.36	27.46	27.55	27.65	27.75
34	27.85	27.94	28.04	28.14	28.24	28.34	28.43	28.53	28.63	28.73
35	28.82	28.92	29.02	29.12	29.22	29.31	29.41	29.51	29.61	29.70
36	29.80	29.90	30.00	30.10	30.19	30.29	30.39	30.49	30.59	30.68
37	30.78	30.88	30.98	31.08	31.17	31.27	31.37	31.47	31.57	31.66
38	31.76	31.86	31.96	32.06	32.16	32.25	32.35	32.45	32.55	32.65
39	32.74	32.84	32.94	33.04	33.14	33.24	33.33	33.43	33.53	33.63
40	33.73	33.83	33.92	34.02	34.12	34.22	34.32	34.42	34.51	34.61

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

64

Runoff for inches of rainfall—Curve no. 64

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.01	0.01	0.02	0.04	0.05	0.07	0.09
2	0.12	0.14	0.17	0.20	0.24	0.27	0.31	0.35	0.39	0.43
3	0.47	0.51	0.56	0.61	0.66	0.71	0.76	0.81	0.86	0.92
4	0.97	1.03	1.09	1.15	1.21	1.27	1.33	1.39	1.45	1.52
5	1.58	1.65	1.71	1.78	1.85	1.92	1.98	2.05	2.12	2.19
6	2.27	2.34	2.41	2.48	2.55	2.63	2.70	2.78	2.85	2.93
7	3.00	3.08	3.16	3.23	3.31	3.39	3.47	3.55	3.62	3.70
8	3.78	3.86	3.94	4.02	4.11	4.19	4.27	4.35	4.43	4.51
9	4.60	4.68	4.76	4.85	4.93	5.01	5.10	5.18	5.27	5.35
10	5.43	5.52	5.61	5.69	5.78	5.86	5.95	6.03	6.12	6.21
11	6.29	6.38	6.47	6.56	6.64	6.73	6.82	6.91	6.99	7.08
12	7.17	7.26	7.35	7.44	7.53	7.61	7.70	7.79	7.88	7.97
13	8.06	8.15	8.24	8.33	8.42	8.51	8.60	8.69	8.78	8.87
14	8.96	9.05	9.15	9.24	9.33	9.42	9.51	9.60	9.69	9.78
15	9.88	9.97	10.06	10.15	10.24	10.34	10.43	10.52	10.61	10.70
16	10.80	10.89	10.98	11.07	11.17	11.26	11.35	11.45	11.54	11.63
17	11.73	11.82	11.91	12.01	12.10	12.19	12.29	12.38	12.47	12.57
18	12.66	12.75	12.85	12.94	13.04	13.13	13.22	13.32	13.41	13.51
19	13.60	13.69	13.79	13.88	13.98	14.07	14.17	14.26	14.36	14.45
20	14.55	14.64	14.73	14.83	14.92	15.02	15.11	15.21	15.30	15.40
21	15.49	15.59	15.69	15.78	15.88	15.97	16.07	16.16	16.26	16.35
22	16.45	16.54	16.64	16.73	16.83	16.93	17.02	17.12	17.21	17.31
23	17.40	17.50	17.60	17.69	17.79	17.88	17.98	18.08	18.17	18.27
24	18.36	18.46	18.56	18.65	18.75	18.85	18.94	19.04	19.13	19.23
25	19.33	19.42	19.52	19.62	19.71	19.81	19.91	20.00	20.10	20.20
26	20.29	20.39	20.48	20.58	20.68	20.77	20.87	20.97	21.07	21.16
27	21.26	21.36	21.45	21.55	21.65	21.74	21.84	21.94	22.03	22.13
28	22.23	22.32	22.42	22.52	22.62	22.71	22.81	22.91	23.00	23.10
29	23.20	23.30	23.39	23.49	23.59	23.69	23.78	23.88	23.98	24.07
30	24.17	24.27	24.37	24.46	24.56	24.66	24.76	24.85	24.95	25.05
31	25.15	25.24	25.34	25.44	25.54	25.63	25.73	25.83	25.93	26.02
32	26.12	26.22	26.32	26.41	26.51	26.61	26.71	26.81	26.90	27.00
33	27.10	27.20	27.29	27.39	27.49	27.59	27.69	27.78	27.88	27.98
34	28.08	28.17	28.27	28.37	28.47	28.57	28.66	28.76	28.86	28.96
35	29.06	29.15	29.25	29.35	29.45	29.55	29.64	29.74	29.84	29.94
36	30.04	30.13	30.23	30.33	30.43	30.53	30.62	30.72	30.82	30.92
37	31.02	31.12	31.21	31.31	31.41	31.51	31.61	31.70	31.80	31.90
38	32.00	32.10	32.20	32.29	32.39	32.49	32.59	32.69	32.79	32.88
39	32.98	33.08	33.18	33.28	33.38	33.47	33.57	33.67	33.77	33.87
40	33.97	34.06	34.16	34.26	34.36	34.46	34.56	34.65	34.75	34.85

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

65

Runoff for inches of rainfall—Curve no. 65

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.00	0.01	0.02	0.03	0.05	0.06	0.09	0.11
2	0.14	0.16	0.19	0.23	0.26	0.30	0.34	0.38	0.42	0.46
3	0.51	0.55	0.60	0.65	0.70	0.75	0.81	0.86	0.92	0.97
4	1.03	1.09	1.15	1.21	1.27	1.33	1.39	1.46	1.52	1.59
5	1.65	1.72	1.79	1.86	1.93	2.00	2.07	2.14	2.21	2.28
6	2.35	2.43	2.50	2.57	2.65	2.72	2.80	2.87	2.95	3.03
7	3.10	3.18	3.26	3.34	3.42	3.50	3.58	3.66	3.74	3.82
8	3.90	3.98	4.06	4.14	4.22	4.30	4.39	4.47	4.55	4.64
9	4.72	4.80	4.89	4.97	5.06	5.14	5.23	5.31	5.40	5.48
10	5.57	5.65	5.74	5.83	5.91	6.00	6.09	6.17	6.26	6.35
11	6.44	6.52	6.61	6.70	6.79	6.88	6.96	7.05	7.14	7.23
12	7.32	7.41	7.50	7.59	7.68	7.77	7.86	7.95	8.04	8.13
13	8.22	8.31	8.40	8.49	8.58	8.67	8.76	8.85	8.94	9.03
14	9.13	9.22	9.31	9.40	9.49	9.58	9.68	9.77	9.86	9.95
15	10.04	10.14	10.23	10.32	10.41	10.51	10.60	10.69	10.78	10.88
16	10.97	11.06	11.16	11.25	11.34	11.44	11.53	11.62	11.72	11.81
17	11.90	12.00	12.09	12.18	12.28	12.37	12.47	12.56	12.65	12.75
18	12.84	12.94	13.03	13.12	13.22	13.31	13.41	13.50	13.60	13.69
19	13.79	13.88	13.98	14.07	14.17	14.26	14.35	14.45	14.54	14.64
20	14.73	14.83	14.93	15.02	15.12	15.21	15.31	15.40	15.50	15.59
21	15.69	15.78	15.88	15.97	16.07	16.17	16.26	16.36	16.45	16.55
22	16.64	16.74	16.84	16.93	17.03	17.12	17.22	17.32	17.41	17.51
23	17.60	17.70	17.80	17.89	17.99	18.09	18.18	18.28	18.37	18.47
24	18.57	18.66	18.76	18.86	18.95	19.05	19.15	19.24	19.34	19.44
25	19.53	19.63	19.73	19.82	19.92	20.02	20.11	20.21	20.31	20.40
26	20.50	20.60	20.69	20.79	20.89	20.98	21.08	21.18	21.27	21.37
27	21.47	21.57	21.66	21.76	21.86	21.95	22.05	22.15	22.25	22.34
28	22.44	22.54	22.63	22.73	22.83	22.93	23.02	23.12	23.22	23.32
29	23.41	23.51	23.61	23.71	23.80	23.90	24.00	24.10	24.19	24.29
30	24.39	24.49	24.58	24.68	24.78	24.88	24.97	25.07	25.17	25.27
31	25.36	25.46	25.56	25.66	25.75	25.85	25.95	26.05	26.15	26.24
32	26.34	26.44	26.54	26.63	26.73	26.83	26.93	27.03	27.12	27.22
33	27.32	27.42	27.52	27.61	27.71	27.81	27.91	28.01	28.10	28.20
34	28.30	28.40	28.50	28.59	28.69	28.79	28.89	28.99	29.08	29.18
35	29.28	29.38	29.48	29.57	29.67	29.77	29.87	29.97	30.07	30.16
36	30.26	30.36	30.46	30.56	30.66	30.75	30.85	30.95	31.05	31.15
37	31.24	31.34	31.44	31.54	31.64	31.74	31.83	31.93	32.03	32.13
38	32.23	32.33	32.42	32.52	32.62	32.72	32.82	32.92	33.02	33.11
39	33.21	33.31	33.41	33.51	33.61	33.70	33.80	33.90	34.00	34.10
40	34.20	34.30	34.39	34.49	34.59	34.69	34.79	34.89	34.99	35.08

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
66

Runoff for inches of rainfall—Curve no. 66

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.01	0.01	0.02	0.04	0.06	0.08	0.10	0.13
2	0.15	0.18	0.22	0.25	0.29	0.33	0.37	0.41	0.45	0.50
3	0.55	0.59	0.64	0.69	0.75	0.80	0.86	0.91	0.97	1.03
4	1.09	1.15	1.21	1.27	1.33	1.40	1.46	1.53	1.59	1.66
5	1.73	1.80	1.87	1.94	2.01	2.08	2.15	2.22	2.29	2.37
6	2.44	2.52	2.59	2.67	2.74	2.82	2.89	2.97	3.05	3.13
7	3.21	3.28	3.36	3.44	3.52	3.60	3.68	3.76	3.85	3.93
8	4.01	4.09	4.17	4.26	4.34	4.42	4.51	4.59	4.67	4.76
9	4.84	4.93	5.01	5.10	5.18	5.27	5.35	5.44	5.53	5.61
10	5.70	5.79	5.87	5.96	6.05	6.13	6.22	6.31	6.40	6.49
11	6.57	6.66	6.75	6.84	6.93	7.02	7.11	7.20	7.29	7.38
12	7.47	7.56	7.65	7.74	7.83	7.92	8.01	8.10	8.19	8.28
13	8.37	8.46	8.55	8.64	8.73	8.83	8.92	9.01	9.10	9.19
14	9.28	9.38	9.47	9.56	9.65	9.74	9.84	9.93	10.02	10.11
15	10.21	10.30	10.39	10.49	10.58	10.67	10.76	10.86	10.95	11.04
16	11.14	11.23	11.33	11.42	11.51	11.61	11.70	11.79	11.89	11.98
17	12.08	12.17	12.26	12.36	12.45	12.55	12.64	12.74	12.83	12.92
18	13.02	13.11	13.21	13.30	13.40	13.49	13.59	13.68	13.78	13.87
19	13.97	14.06	14.16	14.25	14.35	14.44	14.54	14.63	14.73	14.82
20	14.92	15.02	15.11	15.21	15.30	15.40	15.49	15.59	15.68	15.78
21	15.88	15.97	16.07	16.16	16.26	16.36	16.45	16.55	16.64	16.74
22	16.84	16.93	17.03	17.12	17.22	17.32	17.41	17.51	17.61	17.70
23	17.80	17.89	17.99	18.09	18.18	18.28	18.38	18.47	18.57	18.67
24	18.76	18.86	18.96	19.05	19.15	19.25	19.34	19.44	19.54	19.63
25	19.73	19.83	19.92	20.02	20.12	20.22	20.31	20.41	20.51	20.60
26	20.70	20.80	20.89	20.99	21.09	21.19	21.28	21.38	21.48	21.58
27	21.67	21.77	21.87	21.96	22.06	22.16	22.26	22.35	22.45	22.55
28	22.65	22.74	22.84	22.94	23.04	23.13	23.23	23.33	23.43	23.52
29	23.62	23.72	23.82	23.91	24.01	24.11	24.21	24.30	24.40	24.50
30	24.60	24.70	24.79	24.89	24.99	25.09	25.18	25.28	25.38	25.48
31	25.58	25.67	25.77	25.87	25.97	26.06	26.16	26.26	26.36	26.46
32	26.55	26.65	26.75	26.85	26.95	27.04	27.14	27.24	27.34	27.44
33	27.53	27.63	27.73	27.83	27.93	28.03	28.12	28.22	28.32	28.42
34	28.52	28.61	28.71	28.81	28.91	29.01	29.10	29.20	29.30	29.40
35	29.50	29.60	29.69	29.79	29.89	29.99	30.09	30.19	30.28	30.38
36	30.48	30.58	30.68	30.78	30.87	30.97	31.07	31.17	31.27	31.37
37	31.47	31.56	31.66	31.76	31.86	31.96	32.06	32.15	32.25	32.35
38	32.45	32.55	32.65	32.75	32.84	32.94	33.04	33.14	33.24	33.34
39	33.44	33.53	33.63	33.73	33.83	33.93	34.03	34.13	34.22	34.32
40	34.42	34.52	34.62	34.72	34.82	34.91	35.01	35.11	35.21	35.31

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
67

Runoff for inches of rainfall—Curve no. 67

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.00	0.01	0.02	0.03	0.05	0.07	0.09	0.12	0.14
2	0.17	0.21	0.24	0.28	0.32	0.36	0.40	0.44	0.49	0.54
3	0.59	0.64	0.69	0.74	0.80	0.85	0.91	0.97	1.03	1.09
4	1.15	1.21	1.27	1.34	1.40	1.47	1.53	1.60	1.67	1.74
5	1.80	1.87	1.95	2.02	2.09	2.16	2.23	2.31	2.38	2.46
6	2.53	2.61	2.68	2.76	2.84	2.92	2.99	3.07	3.15	3.23
7	3.31	3.39	3.47	3.55	3.63	3.71	3.79	3.88	3.96	4.04
8	4.12	4.21	4.29	4.37	4.46	4.54	4.63	4.71	4.80	4.88
9	4.97	5.05	5.14	5.22	5.31	5.40	5.48	5.57	5.66	5.75
10	5.83	5.92	6.01	6.10	6.18	6.27	6.36	6.45	6.54	6.63
11	6.72	6.81	6.90	6.98	7.07	7.16	7.25	7.34	7.43	7.52
12	7.61	7.71	7.80	7.89	7.98	8.07	8.16	8.25	8.34	8.43
13	8.53	8.62	8.71	8.80	8.89	8.98	9.08	9.17	9.26	9.35
14	9.45	9.54	9.63	9.72	9.82	9.91	10.00	10.09	10.19	10.28
15	10.37	10.47	10.56	10.65	10.75	10.84	10.94	11.03	11.12	11.22
16	11.31	11.40	11.50	11.59	11.69	11.78	11.87	11.97	12.06	12.16
17	12.25	12.35	12.44	12.54	12.63	12.73	12.82	12.91	13.01	13.10
18	13.20	13.29	13.39	13.48	13.58	13.67	13.77	13.87	13.96	14.06
19	14.15	14.25	14.34	14.44	14.53	14.63	14.72	14.82	14.92	15.01
20	15.11	15.20	15.30	15.39	15.49	15.59	15.68	15.78	15.87	15.97
21	16.07	16.16	16.26	16.36	16.45	16.55	16.64	16.74	16.84	16.93
22	17.03	17.13	17.22	17.32	17.42	17.51	17.61	17.70	17.80	17.90
23	17.99	18.09	18.19	18.28	18.38	18.48	18.58	18.67	18.77	18.87
24	18.96	19.06	19.16	19.25	19.35	19.45	19.54	19.64	19.74	19.84
25	19.93	20.03	20.13	20.22	20.32	20.42	20.52	20.61	20.71	20.81
26	20.90	21.00	21.10	21.20	21.29	21.39	21.49	21.59	21.68	21.78
27	21.88	21.98	22.07	22.17	22.27	22.37	22.46	22.56	22.66	22.76
28	22.85	22.95	23.05	23.15	23.24	23.34	23.44	23.54	23.64	23.73
29	23.83	23.93	24.03	24.12	24.22	24.32	24.42	24.52	24.61	24.71
30	24.81	24.91	25.01	25.10	25.20	25.30	25.40	25.49	25.59	25.69
31	25.79	25.89	25.98	26.08	26.18	26.28	26.38	26.48	26.57	26.67
32	26.77	26.87	26.97	27.06	27.16	27.26	27.36	27.46	27.55	27.65
33	27.75	27.85	27.95	28.05	28.14	28.24	28.34	28.44	28.54	28.64
34	28.73	28.83	28.93	29.03	29.13	29.23	29.32	29.42	29.52	29.62
35	29.72	29.82	29.91	30.01	30.11	30.21	30.31	30.41	30.51	30.60
36	30.70	30.80	30.90	31.00	31.10	31.19	31.29	31.39	31.49	31.59
37	31.69	31.79	31.88	31.98	32.08	32.18	32.28	32.38	32.48	32.57
38	32.67	32.77	32.87	32.97	33.07	33.17	33.27	33.36	33.46	33.56
39	33.66	33.76	33.86	33.96	34.05	34.15	34.25	34.35	34.45	34.55
40	34.65	34.75	34.84	34.94	35.04	35.14	35.24	35.34	35.44	35.54

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

68

Runoff for inches of rainfall—Curve no. 68

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.01	0.01	0.03	0.04	0.06	0.08	0.11	0.13	0.16
2	0.20	0.23	0.27	0.31	0.35	0.39	0.43	0.48	0.53	0.58
3	0.63	0.68	0.73	0.79	0.85	0.90	0.96	1.02	1.08	1.14
4	1.21	1.27	1.34	1.40	1.47	1.53	1.60	1.67	1.74	1.81
5	1.88	1.95	2.03	2.10	2.17	2.25	2.32	2.40	2.47	2.55
6	2.62	2.70	2.78	2.86	2.93	3.01	3.09	3.17	3.25	3.33
7	3.41	3.49	3.58	3.66	3.74	3.82	3.90	3.99	4.07	4.15
8	4.24	4.32	4.41	4.49	4.58	4.66	4.75	4.83	4.92	5.00
9	5.09	5.18	5.26	5.35	5.44	5.53	5.61	5.70	5.79	5.88
10	5.97	6.05	6.14	6.23	6.32	6.41	6.50	6.59	6.68	6.77
11	6.86	6.95	7.04	7.13	7.22	7.31	7.40	7.49	7.58	7.67
12	7.76	7.85	7.94	8.04	8.13	8.22	8.31	8.40	8.49	8.59
13	8.68	8.77	8.86	8.95	9.05	9.14	9.23	9.33	9.42	9.51
14	9.60	9.70	9.79	9.88	9.98	10.07	10.16	10.26	10.35	10.44
15	10.54	10.63	10.73	10.82	10.91	11.01	11.10	11.20	11.29	11.38
16	11.48	11.57	11.67	11.76	11.86	11.95	12.04	12.14	12.23	12.33
17	12.42	12.52	12.61	12.71	12.80	12.90	12.99	13.09	13.18	13.28
18	13.38	13.47	13.57	13.66	13.76	13.85	13.95	14.04	14.14	14.23
19	14.33	14.43	14.52	14.62	14.71	14.81	14.91	15.00	15.10	15.19
20	15.29	15.39	15.48	15.58	15.67	15.77	15.87	15.96	16.06	16.16
21	16.25	16.35	16.45	16.54	16.64	16.73	16.83	16.93	17.02	17.12
22	17.22	17.31	17.41	17.51	17.60	17.70	17.80	17.89	17.99	18.09
23	18.19	18.28	18.38	18.48	18.57	18.67	18.77	18.86	18.96	19.06
24	19.16	19.25	19.35	19.45	19.54	19.64	19.74	19.84	19.93	20.03
25	20.13	20.23	20.32	20.42	20.52	20.61	20.71	20.81	20.91	21.00
26	21.10	21.20	21.30	21.39	21.49	21.59	21.69	21.79	21.88	21.98
27	22.08	22.18	22.27	22.37	22.47	22.57	22.66	22.76	22.86	22.96
28	23.06	23.15	23.25	23.35	23.45	23.54	23.64	23.74	23.84	23.94
29	24.03	24.13	24.23	24.33	24.43	24.52	24.62	24.72	24.82	24.92
30	25.01	25.11	25.21	25.31	25.41	25.50	25.60	25.70	25.80	25.90
31	26.00	26.09	26.19	26.29	26.39	26.49	26.58	26.68	26.78	26.88
32	26.98	27.08	27.17	27.27	27.37	27.47	27.57	27.67	27.76	27.86
33	27.96	28.06	28.16	28.26	28.35	28.45	28.55	28.65	28.75	28.85
34	28.95	29.04	29.14	29.24	29.34	29.44	29.54	29.63	29.73	29.83
35	29.93	30.03	30.13	30.23	30.32	30.42	30.52	30.62	30.72	30.82
36	30.92	31.01	31.11	31.21	31.31	31.41	31.51	31.61	31.70	31.80
37	31.90	32.00	32.10	32.20	32.30	32.40	32.49	32.59	32.69	32.79
38	32.89	32.99	33.09	33.19	33.28	33.38	33.48	33.58	33.68	33.78
39	33.88	33.98	34.07	34.17	34.27	34.37	34.47	34.57	34.67	34.77
40	34.86	34.96	35.06	35.16	35.26	35.36	35.46	35.56	35.66	35.75

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
69

Runoff for inches of rainfall—Curve no. 69

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.01	0.02	0.03	0.05	0.07	0.09	0.12	0.15	0.18
2	0.22	0.25	0.29	0.33	0.38	0.42	0.47	0.52	0.57	0.62
3	0.67	0.72	0.78	0.84	0.90	0.95	1.02	1.08	1.14	1.20
4	1.27	1.33	1.40	1.47	1.53	1.60	1.67	1.74	1.81	1.89
5	1.96	2.03	2.11	2.18	2.25	2.33	2.41	2.48	2.56	2.64
6	2.71	2.79	2.87	2.95	3.03	3.11	3.19	3.27	3.35	3.43
7	3.52	3.60	3.68	3.76	3.85	3.93	4.01	4.10	4.18	4.27
8	4.35	4.44	4.52	4.61	4.69	4.78	4.87	4.95	5.04	5.13
9	5.21	5.30	5.39	5.48	5.56	5.65	5.74	5.83	5.92	6.01
10	6.10	6.18	6.27	6.36	6.45	6.54	6.63	6.72	6.81	6.90
11	6.99	7.08	7.17	7.27	7.36	7.45	7.54	7.63	7.72	7.81
12	7.90	8.00	8.09	8.18	8.27	8.36	8.46	8.55	8.64	8.73
13	8.83	8.92	9.01	9.11	9.20	9.29	9.38	9.48	9.57	9.66
14	9.76	9.85	9.95	10.04	10.13	10.23	10.32	10.41	10.51	10.60
15	10.70	10.79	10.88	10.98	11.07	11.17	11.26	11.36	11.45	11.55
16	11.64	11.74	11.83	11.93	12.02	12.12	12.21	12.31	12.40	12.50
17	12.59	12.69	12.78	12.88	12.97	13.07	13.16	13.26	13.35	13.45
18	13.55	13.64	13.74	13.83	13.93	14.02	14.12	14.22	14.31	14.41
19	14.50	14.60	14.70	14.79	14.89	14.99	15.08	15.18	15.27	15.37
20	15.47	15.56	15.66	15.76	15.85	15.95	16.05	16.14	16.24	16.34
21	16.43	16.53	16.63	16.72	16.82	16.92	17.01	17.11	17.21	17.30
22	17.40	17.50	17.59	17.69	17.79	17.88	17.98	18.08	18.18	18.27
23	18.37	18.47	18.56	18.66	18.76	18.86	18.95	19.05	19.15	19.25
24	19.34	19.44	19.54	19.63	19.73	19.83	19.93	20.02	20.12	20.22
25	20.32	20.41	20.51	20.61	20.71	20.80	20.90	21.00	21.10	21.20
26	21.29	21.39	21.49	21.59	21.68	21.78	21.88	21.98	22.08	22.17
27	22.27	22.37	22.47	22.56	22.66	22.76	22.86	22.96	23.05	23.15
28	23.25	23.35	23.45	23.54	23.64	23.74	23.84	23.94	24.03	24.13
29	24.23	24.33	24.43	24.52	24.62	24.72	24.82	24.92	25.02	25.11
30	25.21	25.31	25.41	25.51	25.61	25.70	25.80	25.90	26.00	26.10
31	26.19	26.29	26.39	26.49	26.59	26.69	26.78	26.88	26.98	27.08
32	27.18	27.28	27.38	27.47	27.57	27.67	27.77	27.87	27.97	28.06
33	28.16	28.26	28.36	28.46	28.56	28.66	28.75	28.85	28.95	29.05
34	29.15	29.25	29.35	29.44	29.54	29.64	29.74	29.84	29.94	30.04
35	30.13	30.23	30.33	30.43	30.53	30.63	30.73	30.83	30.92	31.02
36	31.12	31.22	31.32	31.42	31.52	31.61	31.71	31.81	31.91	32.01
37	32.11	32.21	32.31	32.41	32.50	32.60	32.70	32.80	32.90	33.00
38	33.10	33.20	33.29	33.39	33.49	33.59	33.69	33.79	33.89	33.99
39	34.09	34.18	34.28	34.38	34.48	34.58	34.68	34.78	34.88	34.98
40	35.07	35.17	35.27	35.37	35.47	35.57	35.67	35.77	35.87	35.97

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

(210-VI-NEH, July 2004)

Runoff for inches of rainfall—Curve no. 70

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0										
1	0.00	0.01	0.03	0.04	0.06	0.08	0.11	0.14	0.17	0.20
2	0.24	0.28	0.32	0.36	0.41	0.46	0.50	0.56	0.61	0.66
3	0.72	0.77	0.83	0.89	0.95	1.01	1.07	1.14	1.20	1.27
4	1.33	1.40	1.47	1.54	1.61	1.68	1.75	1.82	1.89	1.96
5	2.04	2.11	2.19	2.26	2.34	2.42	2.49	2.57	2.65	2.73
6	2.81	2.89	2.97	3.05	3.13	3.21	3.29	3.37	3.46	3.54
7	3.62	3.70	3.79	3.87	3.96	4.04	4.13	4.21	4.30	4.38
8	4.47	4.55	4.64	4.73	4.81	4.90	4.99	5.07	5.16	5.25
9	5.34	5.43	5.52	5.60	5.69	5.78	5.87	5.96	6.05	6.14
10	6.23	6.32	6.41	6.50	6.59	6.68	6.77	6.86	6.95	7.04
11	7.13	7.23	7.32	7.41	7.50	7.59	7.68	7.78	7.87	7.96
12	8.05	8.14	8.24	8.33	8.42	8.51	8.61	8.70	8.79	8.89
13	8.98	9.07	9.17	9.26	9.35	9.45	9.54	9.63	9.73	9.82
14	9.92	10.01	10.10	10.20	10.29	10.39	10.48	10.57	10.67	10.76
15	10.86	10.95	11.05	11.14	11.24	11.33	11.43	11.52	11.62	11.71
16	11.81	11.90	12.00	12.09	12.19	12.28	12.38	12.47	12.57	12.67
17	12.76	12.86	12.95	13.05	13.14	13.24	13.34	13.43	13.53	13.62
18	13.72	13.82	13.91	14.01	14.10	14.20	14.30	14.39	14.49	14.58
19	14.68	14.78	14.87	14.97	15.07	15.16	15.26	15.36	15.45	15.55
20	15.65	15.74	15.84	15.94	16.03	16.13	16.23	16.32	16.42	16.52
21	16.61	16.71	16.81	16.90	17.00	17.10	17.20	17.29	17.39	17.49
22	17.58	17.68	17.78	17.88	17.97	18.07	18.17	18.27	18.36	18.46
23	18.56	18.65	18.75	18.85	18.95	19.04	19.14	19.24	19.34	19.43
24	19.53	19.63	19.73	19.82	19.92	20.02	20.12	20.22	20.31	20.41
25	20.51	20.61	20.70	20.80	20.90	21.00	21.10	21.19	21.29	21.39
26	21.49	21.58	21.68	21.78	21.88	21.98	22.07	22.17	22.27	22.37
27	22.47	22.56	22.66	22.76	22.86	22.96	23.05	23.15	23.25	23.35
28	23.45	23.55	23.64	23.74	23.84	23.94	24.04	24.13	24.23	24.33
29	24.43	24.53	24.63	24.72	24.82	24.92	25.02	25.12	25.22	25.31
30	25.41	25.51	25.61	25.71	25.81	25.90	26.00	26.10	26.20	26.30
31	26.40	26.49	26.59	26.69	26.79	26.89	26.99	27.09	27.18	27.28
32	27.38	27.48	27.58	27.68	27.78	27.87	27.97	28.07	28.17	28.27
33	28.37	28.47	28.56	28.66	28.76	28.86	28.96	29.06	29.16	29.25
34	29.35	29.45	29.55	29.65	29.75	29.85	29.95	30.04	30.14	30.24
35	30.34	30.44	30.54	30.64	30.74	30.83	30.93	31.03	31.13	31.23
36	31.33	31.43	31.53	31.63	31.72	31.82	31.92	32.02	32.12	32.22
37	32.32	32.42	32.51	32.61	32.71	32.81	32.91	33.01	33.11	33.21
38	33.31	33.41	33.50	33.60	33.70	33.80	33.90	34.00	34.10	34.20
39	34.30	34.39	34.49	34.59	34.69	34.79	34.89	34.99	35.09	35.19
40	35.29	35.38	35.48	35.58	35.68	35.78	35.88	35.98	36.08	36.18

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
71

Runoff for inches of rainfall—Curve no. 71

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0								0.00	0.00	0.00
1	0.01	0.02	0.03	0.05	0.07	0.10	0.13	0.16	0.19	0.23
2	0.27	0.31	0.35	0.40	0.44	0.49	0.54	0.60	0.65	0.70
3	0.76	0.82	0.88	0.94	1.00	1.07	1.13	1.19	1.26	1.33
4	1.40	1.46	1.53	1.60	1.68	1.75	1.82	1.89	1.97	2.04
5	2.12	2.19	2.27	2.35	2.43	2.50	2.58	2.66	2.74	2.82
6	2.90	2.98	3.06	3.14	3.23	3.31	3.39	3.47	3.56	3.64
7	3.73	3.81	3.89	3.98	4.06	4.15	4.24	4.32	4.41	4.50
8	4.58	4.67	4.76	4.84	4.93	5.02	5.11	5.20	5.28	5.37
9	5.46	5.55	5.64	5.73	5.82	5.91	6.00	6.09	6.18	6.27
10	6.36	6.45	6.54	6.63	6.72	6.81	6.90	7.00	7.09	7.18
11	7.27	7.36	7.45	7.55	7.64	7.73	7.82	7.92	8.01	8.10
12	8.19	8.29	8.38	8.47	8.57	8.66	8.75	8.85	8.94	9.03
13	9.13	9.22	9.32	9.41	9.50	9.60	9.69	9.79	9.88	9.97
14	10.07	10.16	10.26	10.35	10.45	10.54	10.64	10.73	10.83	10.92
15	11.02	11.11	11.21	11.30	11.40	11.49	11.59	11.68	11.78	11.87
16	11.97	12.06	12.16	12.25	12.35	12.45	12.54	12.64	12.73	12.83
17	12.93	13.02	13.12	13.21	13.31	13.41	13.50	13.60	13.69	13.79
18	13.89	13.98	14.08	14.18	14.27	14.37	14.47	14.56	14.66	14.76
19	14.85	14.95	15.05	15.14	15.24	15.34	15.43	15.53	15.63	15.72
20	15.82	15.92	16.01	16.11	16.21	16.30	16.40	16.50	16.60	16.69
21	16.79	16.89	16.98	17.08	17.18	17.28	17.37	17.47	17.57	17.67
22	17.76	17.86	17.96	18.06	18.15	18.25	18.35	18.45	18.54	18.64
23	18.74	18.84	18.93	19.03	19.13	19.23	19.32	19.42	19.52	19.62
24	19.71	19.81	19.91	20.01	20.11	20.20	20.30	20.40	20.50	20.60
25	20.69	20.79	20.89	20.99	21.08	21.18	21.28	21.38	21.48	21.57
26	21.67	21.77	21.87	21.97	22.07	22.16	22.26	22.36	22.46	22.56
27	22.65	22.75	22.85	22.95	23.05	23.15	23.24	23.34	23.44	23.54
28	23.64	23.73	23.83	23.93	24.03	24.13	24.23	24.32	24.42	24.52
29	24.62	24.72	24.82	24.92	25.01	25.11	25.21	25.31	25.41	25.51
30	25.60	25.70	25.80	25.90	26.00	26.10	26.20	26.29	26.39	26.49
31	26.59	26.69	26.79	26.89	26.98	27.08	27.18	27.28	27.38	27.48
32	27.58	27.67	27.77	27.87	27.97	28.07	28.17	28.27	28.37	28.46
33	28.56	28.66	28.76	28.86	28.96	29.06	29.16	29.25	29.35	29.45
34	29.55	29.65	29.75	29.85	29.95	30.04	30.14	30.24	30.34	30.44
35	30.54	30.64	30.74	30.84	30.93	31.03	31.13	31.23	31.33	31.43
36	31.53	31.63	31.73	31.82	31.92	32.02	32.12	32.22	32.32	32.42
37	32.52	32.62	32.72	32.81	32.91	33.01	33.11	33.21	33.31	33.41
38	33.51	33.61	33.71	33.80	33.90	34.00	34.10	34.20	34.30	34.40
39	34.50	34.60	34.70	34.80	34.89	34.99	35.09	35.19	35.29	35.39
40	35.49	35.59	35.69	35.79	35.89	35.98	36.08	36.18	36.28	36.38

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 72

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0									0.00	0.00
1	0.01	0.02	0.04	0.06	0.09	0.11	0.14	0.18	0.21	0.25
2	0.29	0.34	0.38	0.43	0.48	0.53	0.58	0.64	0.69	0.75
3	0.81	0.87	0.93	0.99	1.06	1.12	1.19	1.25	1.32	1.39
4	1.46	1.53	1.60	1.67	1.75	1.82	1.89	1.97	2.04	2.12
5	2.20	2.27	2.35	2.43	2.51	2.59	2.67	2.75	2.83	2.91
6	2.99	3.07	3.16	3.24	3.32	3.41	3.49	3.57	3.66	3.74
7	3.83	3.91	4.00	4.09	4.17	4.26	4.34	4.43	4.52	4.61
8	4.69	4.78	4.87	4.96	5.05	5.14	5.22	5.31	5.40	5.49
9	5.58	5.67	5.76	5.85	5.94	6.03	6.12	6.21	6.30	6.39
10	6.49	6.58	6.67	6.76	6.85	6.94	7.04	7.13	7.22	7.31
11	7.40	7.50	7.59	7.68	7.77	7.87	7.96	8.05	8.15	8.24
12	8.33	8.43	8.52	8.61	8.71	8.80	8.90	8.99	9.08	9.18
13	9.27	9.37	9.46	9.55	9.65	9.74	9.84	9.93	10.03	10.12
14	10.22	10.31	10.41	10.50	10.60	10.69	10.79	10.88	10.98	11.07
15	11.17	11.26	11.36	11.45	11.55	11.65	11.74	11.84	11.93	12.03
16	12.12	12.22	12.32	12.41	12.51	12.60	12.70	12.80	12.89	12.99
17	13.08	13.18	13.28	13.37	13.47	13.57	13.66	13.76	13.86	13.95
18	14.05	14.15	14.24	14.34	14.44	14.53	14.63	14.73	14.82	14.92
19	15.02	15.11	15.21	15.31	15.40	15.50	15.60	15.70	15.79	15.89
20	15.99	16.08	16.18	16.28	16.38	16.47	16.57	16.67	16.76	16.86
21	16.96	17.06	17.15	17.25	17.35	17.45	17.54	17.64	17.74	17.84
22	17.93	18.03	18.13	18.23	18.33	18.42	18.52	18.62	18.72	18.81
23	18.91	19.01	19.11	19.20	19.30	19.40	19.50	19.60	19.69	19.79
24	19.89	19.99	20.09	20.18	20.28	20.38	20.48	20.58	20.67	20.77
25	20.87	20.97	21.07	21.16	21.26	21.36	21.46	21.56	21.66	21.75
26	21.85	21.95	22.05	22.15	22.24	22.34	22.44	22.54	22.64	22.74
27	22.83	22.93	23.03	23.13	23.23	23.33	23.42	23.52	23.62	23.72
28	23.82	23.92	24.02	24.11	24.21	24.31	24.41	24.51	24.61	24.70
29	24.80	24.90	25.00	25.10	25.20	25.30	25.39	25.49	25.59	25.69
30	25.79	25.89	25.99	26.08	26.18	26.28	26.38	26.48	26.58	26.68
31	26.78	26.87	26.97	27.07	27.17	27.27	27.37	27.47	27.57	27.66
32	27.76	27.86	27.96	28.06	28.16	28.26	28.36	28.45	28.55	28.65
33	28.75	28.85	28.95	29.05	29.15	29.25	29.34	29.44	29.54	29.64
34	29.74	29.84	29.94	30.04	30.14	30.23	30.33	30.43	30.53	30.63
35	30.73	30.83	30.93	31.03	31.12	31.22	31.32	31.42	31.52	31.62
36	31.72	31.82	31.92	32.02	32.11	32.21	32.31	32.41	32.51	32.61
37	32.71	32.81	32.91	33.01	33.11	33.20	33.30	33.40	33.50	33.60
38	33.70	33.80	33.90	34.00	34.10	34.20	34.29	34.39	34.49	34.59
39	34.69	34.79	34.89	34.99	35.09	35.19	35.29	35.39	35.48	35.58
40	35.68	35.78	35.88	35.98	36.08	36.18	36.28	36.38	36.48	36.58

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

73

Runoff for inches of rainfall—Curve no. 73

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
1	0.02	0.03	0.05	0.07	0.10	0.13	0.16	0.20	0.24	0.28
2	0.32	0.37	0.41	0.46	0.51	0.57	0.62	0.68	0.74	0.80
3	0.86	0.92	0.98	1.05	1.11	1.18	1.25	1.32	1.39	1.46
4	1.53	1.60	1.67	1.75	1.82	1.90	1.97	2.05	2.12	2.20
5	2.28	2.36	2.44	2.52	2.60	2.68	2.76	2.84	2.92	3.01
6	3.09	3.17	3.25	3.34	3.42	3.51	3.59	3.68	3.76	3.85
7	3.93	4.02	4.11	4.19	4.28	4.37	4.46	4.54	4.63	4.72
8	4.81	4.90	4.99	5.08	5.17	5.25	5.34	5.43	5.52	5.61
9	5.70	5.80	5.89	5.98	6.07	6.16	6.25	6.34	6.43	6.52
10	6.62	6.71	6.80	6.89	6.98	7.08	7.17	7.26	7.35	7.45
11	7.54	7.63	7.73	7.82	7.91	8.01	8.10	8.19	8.29	8.38
12	8.48	8.57	8.66	8.76	8.85	8.95	9.04	9.13	9.23	9.32
13	9.42	9.51	9.61	9.70	9.80	9.89	9.99	10.08	10.18	10.27
14	10.37	10.46	10.56	10.65	10.75	10.84	10.94	11.04	11.13	11.23
15	11.32	11.42	11.51	11.61	11.71	11.80	11.90	11.99	12.09	12.19
16	12.28	12.38	12.47	12.57	12.67	12.76	12.86	12.96	13.05	13.15
17	13.25	13.34	13.44	13.54	13.63	13.73	13.83	13.92	14.02	14.12
18	14.21	14.31	14.41	14.50	14.60	14.70	14.79	14.89	14.99	15.09
19	15.18	15.28	15.38	15.48	15.57	15.67	15.77	15.86	15.96	16.06
20	16.16	16.25	16.35	16.45	16.55	16.64	16.74	16.84	16.94	17.03
21	17.13	17.23	17.33	17.42	17.52	17.62	17.72	17.82	17.91	18.01
22	18.11	18.21	18.30	18.40	18.50	18.60	18.70	18.79	18.89	18.99
23	19.09	19.19	19.28	19.38	19.48	19.58	19.68	19.77	19.87	19.97
24	20.07	20.17	20.26	20.36	20.46	20.56	20.66	20.75	20.85	20.95
25	21.05	21.15	21.25	21.34	21.44	21.54	21.64	21.74	21.84	21.93
26	22.03	22.13	22.23	22.33	22.43	22.52	22.62	22.72	22.82	22.92
27	23.02	23.12	23.21	23.31	23.41	23.51	23.61	23.71	23.81	23.90
28	24.00	24.10	24.20	24.30	24.40	24.50	24.59	24.69	24.79	24.89
29	24.99	25.09	25.19	25.28	25.38	25.48	25.58	25.68	25.78	25.88
30	25.98	26.07	26.17	26.27	26.37	26.47	26.57	26.67	26.77	26.86
31	26.96	27.06	27.16	27.26	27.36	27.46	27.56	27.65	27.75	27.85
32	27.95	28.05	28.15	28.25	28.35	28.45	28.54	28.64	28.74	28.84
33	28.94	29.04	29.14	29.24	29.34	29.44	29.53	29.63	29.73	29.83
34	29.93	30.03	30.13	30.23	30.33	30.43	30.52	30.62	30.72	30.82
35	30.92	31.02	31.12	31.22	31.32	31.42	31.52	31.61	31.71	31.81
36	31.91	32.01	32.11	32.21	32.31	32.41	32.51	32.61	32.70	32.80
37	32.90	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80
38	33.89	33.99	34.09	34.19	34.29	34.39	34.49	34.59	34.69	34.79
39	34.89	34.99	35.08	35.18	35.28	35.38	35.48	35.58	35.68	35.78
40	35.88	35.98	36.08	36.18	36.28	36.38	36.47	36.57	36.67	36.77

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

(210-VI-NEH, July 2004)

Curve
74

Runoff for inches of rainfall—Curve no. 74

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
1	0.02	0.04	0.06	0.09	0.12	0.15	0.18	0.22	0.26	0.30
2	0.35	0.40	0.45	0.50	0.55	0.61	0.67	0.72	0.78	0.85
3	0.91	0.97	1.04	1.11	1.17	1.24	1.31	1.38	1.45	1.52
4	1.60	1.67	1.75	1.82	1.90	1.97	2.05	2.13	2.21	2.29
5	2.37	2.45	2.53	2.61	2.69	2.77	2.85	2.94	3.02	3.10
6	3.19	3.27	3.36	3.44	3.53	3.61	3.70	3.78	3.87	3.96
7	4.04	4.13	4.22	4.31	4.39	4.48	4.57	4.66	4.75	4.84
8	4.93	5.02	5.11	5.20	5.29	5.38	5.47	5.56	5.65	5.74
9	5.83	5.92	6.01	6.11	6.20	6.29	6.38	6.47	6.57	6.66
10	6.75	6.84	6.94	7.03	7.12	7.21	7.31	7.40	7.49	7.59
11	7.68	7.77	7.87	7.96	8.06	8.15	8.24	8.34	8.43	8.53
12	8.62	8.71	8.81	8.90	9.00	9.09	9.19	9.28	9.38	9.47
13	9.57	9.66	9.76	9.85	9.95	10.04	10.14	10.23	10.33	10.43
14	10.52	10.62	10.71	10.81	10.90	11.00	11.10	11.19	11.29	11.38
15	11.48	11.58	11.67	11.77	11.86	11.96	12.06	12.15	12.25	12.35
16	12.44	12.54	12.64	12.73	12.83	12.93	13.02	13.12	13.22	13.31
17	13.41	13.51	13.60	13.70	13.80	13.89	13.99	14.09	14.19	14.28
18	14.38	14.48	14.57	14.67	14.77	14.87	14.96	15.06	15.16	15.26
19	15.35	15.45	15.55	15.65	15.74	15.84	15.94	16.04	16.13	16.23
20	16.33	16.43	16.52	16.62	16.72	16.82	16.91	17.01	17.11	17.21
21	17.31	17.40	17.50	17.60	17.70	17.79	17.89	17.99	18.09	18.19
22	18.28	18.38	18.48	18.58	18.68	18.77	18.87	18.97	19.07	19.17
23	19.27	19.36	19.46	19.56	19.66	19.76	19.85	19.95	20.05	20.15
24	20.25	20.35	20.44	20.54	20.64	20.74	20.84	20.94	21.03	21.13
25	21.23	21.33	21.43	21.53	21.62	21.72	21.82	21.92	22.02	22.12
26	22.22	22.31	22.41	22.51	22.61	22.71	22.81	22.91	23.00	23.10
27	23.20	23.30	23.40	23.50	23.60	23.69	23.79	23.89	23.99	24.09
28	24.19	24.29	24.39	24.48	24.58	24.68	24.78	24.88	24.98	25.08
29	25.18	25.27	25.37	25.47	25.57	25.67	25.77	25.87	25.97	26.06
30	26.16	26.26	26.36	26.46	26.56	26.66	26.76	26.86	26.95	27.05
31	27.15	27.25	27.35	27.45	27.55	27.65	27.75	27.85	27.94	28.04
32	28.14	28.24	28.34	28.44	28.54	28.64	28.74	28.83	28.93	29.03
33	29.13	29.23	29.33	29.43	29.53	29.63	29.73	29.83	29.92	30.02
34	30.12	30.22	30.32	30.42	30.52	30.62	30.72	30.82	30.92	31.01
35	31.11	31.21	31.31	31.41	31.51	31.61	31.71	31.81	31.91	32.01
36	32.11	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	33.00
37	33.10	33.20	33.30	33.40	33.49	33.59	33.69	33.79	33.89	33.99
38	34.09	34.19	34.29	34.39	34.49	34.59	34.69	34.78	34.88	34.98
39	35.08	35.18	35.28	35.38	35.48	35.58	35.68	35.78	35.88	35.98
40	36.08	36.18	36.27	36.37	36.47	36.57	36.67	36.77	36.87	36.97

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

75

Runoff for inches of rainfall—Curve no. 75

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
1	0.03	0.05	0.07	0.10	0.13	0.17	0.20	0.24	0.29	0.33
2	0.38	0.43	0.48	0.54	0.59	0.65	0.71	0.77	0.83	0.90
3	0.96	1.03	1.10	1.16	1.23	1.30	1.37	1.45	1.52	1.59
4	1.67	1.74	1.82	1.90	1.97	2.05	2.13	2.21	2.29	2.37
5	2.45	2.53	2.61	2.70	2.78	2.86	2.95	3.03	3.11	3.20
6	3.28	3.37	3.46	3.54	3.63	3.71	3.80	3.89	3.98	4.06
7	4.15	4.24	4.33	4.42	4.51	4.59	4.68	4.77	4.86	4.95
8	5.04	5.13	5.22	5.32	5.41	5.50	5.59	5.68	5.77	5.86
9	5.95	6.05	6.14	6.23	6.32	6.42	6.51	6.60	6.69	6.79
10	6.88	6.97	7.07	7.16	7.25	7.35	7.44	7.53	7.63	7.72
11	7.82	7.91	8.00	8.10	8.19	8.29	8.38	8.48	8.57	8.67
12	8.76	8.86	8.95	9.05	9.14	9.24	9.33	9.43	9.52	9.62
13	9.71	9.81	9.90	10.00	10.09	10.19	10.29	10.38	10.48	10.57
14	10.67	10.77	10.86	10.96	11.05	11.15	11.25	11.34	11.44	11.54
15	11.63	11.73	11.82	11.92	12.02	12.11	12.21	12.31	12.40	12.50
16	12.60	12.69	12.79	12.89	12.99	13.08	13.18	13.28	13.37	13.47
17	13.57	13.67	13.76	13.86	13.96	14.05	14.15	14.25	14.35	14.44
18	14.54	14.64	14.74	14.83	14.93	15.03	15.13	15.22	15.32	15.42
19	15.52	15.61	15.71	15.81	15.91	16.00	16.10	16.20	16.30	16.40
20	16.49	16.59	16.69	16.79	16.88	16.98	17.08	17.18	17.28	17.37
21	17.47	17.57	17.67	17.77	17.86	17.96	18.06	18.16	18.26	18.36
22	18.45	18.55	18.65	18.75	18.85	18.94	19.04	19.14	19.24	19.34
23	19.44	19.53	19.63	19.73	19.83	19.93	20.03	20.12	20.22	20.32
24	20.42	20.52	20.62	20.72	20.81	20.91	21.01	21.11	21.21	21.31
25	21.40	21.50	21.60	21.70	21.80	21.90	22.00	22.09	22.19	22.29
26	22.39	22.49	22.59	22.69	22.79	22.88	22.98	23.08	23.18	23.28
27	23.38	23.48	23.58	23.67	23.77	23.87	23.97	24.07	24.17	24.27
28	24.37	24.46	24.56	24.66	24.76	24.86	24.96	25.06	25.16	25.26
29	25.35	25.45	25.55	25.65	25.75	25.85	25.95	26.05	26.15	26.24
30	26.34	26.44	26.54	26.64	26.74	26.84	26.94	27.04	27.14	27.23
31	27.33	27.43	27.53	27.63	27.73	27.83	27.93	28.03	28.13	28.22
32	28.32	28.42	28.52	28.62	28.72	28.82	28.92	29.02	29.12	29.22
33	29.31	29.41	29.51	29.61	29.71	29.81	29.91	30.01	30.11	30.21
34	30.31	30.41	30.50	30.60	30.70	30.80	30.90	31.00	31.10	31.20
35	31.30	31.40	31.50	31.60	31.70	31.79	31.89	31.99	32.09	32.19
36	32.29	32.39	32.49	32.59	32.69	32.79	32.89	32.99	33.08	33.18
37	33.28	33.38	33.48	33.58	33.68	33.78	33.88	33.98	34.08	34.18
38	34.28	34.38	34.48	34.57	34.67	34.77	34.87	34.97	35.07	35.17
39	35.27	35.37	35.47	35.57	35.67	35.77	35.87	35.97	36.07	36.16
40	36.26	36.36	36.46	36.56	36.66	36.76	36.86	36.96	37.06	37.16

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
76

Runoff for inches of rainfall—Curve no. 76

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
1	0.04	0.06	0.09	0.12	0.15	0.19	0.23	0.27	0.32	0.36
2	0.41	0.47	0.52	0.58	0.63	0.69	0.76	0.82	0.88	0.95
3	1.01	1.08	1.15	1.22	1.29	1.36	1.44	1.51	1.59	1.66
4	1.74	1.81	1.89	1.97	2.05	2.13	2.21	2.29	2.37	2.45
5	2.53	2.62	2.70	2.78	2.87	2.95	3.04	3.12	3.21	3.29
6	3.38	3.47	3.55	3.64	3.73	3.81	3.90	3.99	4.08	4.17
7	4.26	4.35	4.43	4.52	4.61	4.70	4.79	4.88	4.97	5.07
8	5.16	5.25	5.34	5.43	5.52	5.61	5.71	5.80	5.89	5.98
9	6.07	6.17	6.26	6.35	6.45	6.54	6.63	6.72	6.82	6.91
10	7.01	7.10	7.19	7.29	7.38	7.47	7.57	7.66	7.76	7.85
11	7.95	8.04	8.14	8.23	8.32	8.42	8.51	8.61	8.70	8.80
12	8.90	8.99	9.09	9.18	9.28	9.37	9.47	9.56	9.66	9.76
13	9.85	9.95	10.04	10.14	10.23	10.33	10.43	10.52	10.62	10.72
14	10.81	10.91	11.00	11.10	11.20	11.29	11.39	11.49	11.58	11.68
15	11.78	11.87	11.97	12.07	12.16	12.26	12.36	12.46	12.55	12.65
16	12.75	12.84	12.94	13.04	13.14	13.23	13.33	13.43	13.52	13.62
17	13.72	13.82	13.91	14.01	14.11	14.21	14.30	14.40	14.50	14.60
18	14.69	14.79	14.89	14.99	15.09	15.18	15.28	15.38	15.48	15.57
19	15.67	15.77	15.87	15.97	16.06	16.16	16.26	16.36	16.46	16.55
20	16.65	16.75	16.85	16.95	17.04	17.14	17.24	17.34	17.44	17.53
21	17.63	17.73	17.83	17.93	18.03	18.12	18.22	18.32	18.42	18.52
22	18.62	18.71	18.81	18.91	19.01	19.11	19.21	19.30	19.40	19.50
23	19.60	19.70	19.80	19.89	19.99	20.09	20.19	20.29	20.39	20.49
24	20.58	20.68	20.78	20.88	20.98	21.08	21.18	21.27	21.37	21.47
25	21.57	21.67	21.77	21.87	21.97	22.06	22.16	22.26	22.36	22.46
26	22.56	22.66	22.76	22.85	22.95	23.05	23.15	23.25	23.35	23.45
27	23.55	23.65	23.74	23.84	23.94	24.04	24.14	24.24	24.34	24.44
28	24.54	24.63	24.73	24.83	24.93	25.03	25.13	25.23	25.33	25.43
29	25.52	25.62	25.72	25.82	25.92	26.02	26.12	26.22	26.32	26.42
30	26.51	26.61	26.71	26.81	26.91	27.01	27.11	27.21	27.31	27.41
31	27.51	27.60	27.70	27.80	27.90	28.00	28.10	28.20	28.30	28.40
32	28.50	28.60	28.70	28.79	28.89	28.99	29.09	29.19	29.29	29.39
33	29.49	29.59	29.69	29.79	29.89	29.99	30.08	30.18	30.28	30.38
34	30.48	30.58	30.68	30.78	30.88	30.98	31.08	31.18	31.28	31.37
35	31.47	31.57	31.67	31.77	31.87	31.97	32.07	32.17	32.27	32.37
36	32.47	32.57	32.67	32.77	32.86	32.96	33.06	33.16	33.26	33.36
37	33.46	33.56	33.66	33.76	33.86	33.96	34.06	34.16	34.26	34.35
38	34.45	34.55	34.65	34.75	34.85	34.95	35.05	35.15	35.25	35.35
39	35.45	35.55	35.65	35.75	35.85	35.95	36.05	36.14	36.24	36.34
40	36.44	36.54	36.64	36.74	36.84	36.94	37.04	37.14	37.24	37.34

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
77

Runoff for inches of rainfall—Curve no. 77

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
1	0.05	0.07	0.10	0.13	0.17	0.21	0.25	0.30	0.34	0.39
2	0.45	0.50	0.56	0.62	0.68	0.74	0.80	0.87	0.93	1.00
3	1.07	1.14	1.21	1.28	1.36	1.43	1.50	1.58	1.66	1.73
4	1.81	1.89	1.97	2.05	2.13	2.21	2.29	2.37	2.46	2.54
5	2.62	2.71	2.79	2.87	2.96	3.04	3.13	3.22	3.30	3.39
6	3.48	3.56	3.65	3.74	3.83	3.92	4.01	4.10	4.18	4.27
7	4.36	4.45	4.54	4.63	4.73	4.82	4.91	5.00	5.09	5.18
8	5.27	5.36	5.46	5.55	5.64	5.73	5.83	5.92	6.01	6.10
9	6.20	6.29	6.38	6.48	6.57	6.66	6.76	6.85	6.95	7.04
10	7.13	7.23	7.32	7.42	7.51	7.61	7.70	7.79	7.89	7.98
11	8.08	8.17	8.27	8.36	8.46	8.56	8.65	8.75	8.84	8.94
12	9.03	9.13	9.22	9.32	9.42	9.51	9.61	9.70	9.80	9.90
13	9.99	10.09	10.19	10.28	10.38	10.47	10.57	10.67	10.76	10.86
14	10.96	11.05	11.15	11.25	11.34	11.44	11.54	11.64	11.73	11.83
15	11.93	12.02	12.12	12.22	12.31	12.41	12.51	12.61	12.70	12.80
16	12.90	13.00	13.09	13.19	13.29	13.39	13.48	13.58	13.68	13.78
17	13.87	13.97	14.07	14.17	14.26	14.36	14.46	14.56	14.65	14.75
18	14.85	14.95	15.05	15.14	15.24	15.34	15.44	15.54	15.63	15.73
19	15.83	15.93	16.03	16.12	16.22	16.32	16.42	16.52	16.61	16.71
20	16.81	16.91	17.01	17.11	17.20	17.30	17.40	17.50	17.60	17.70
21	17.79	17.89	17.99	18.09	18.19	18.29	18.38	18.48	18.58	18.68
22	18.78	18.88	18.98	19.07	19.17	19.27	19.37	19.47	19.57	19.67
23	19.76	19.86	19.96	20.06	20.16	20.26	20.36	20.45	20.55	20.65
24	20.75	20.85	20.95	21.05	21.15	21.24	21.34	21.44	21.54	21.64
25	21.74	21.84	21.94	22.03	22.13	22.23	22.33	22.43	22.53	22.63
26	22.73	22.83	22.92	23.02	23.12	23.22	23.32	23.42	23.52	23.62
27	23.72	23.82	23.91	24.01	24.11	24.21	24.31	24.41	24.51	24.61
28	24.71	24.81	24.90	25.00	25.10	25.20	25.30	25.40	25.50	25.60
29	25.70	25.80	25.89	25.99	26.09	26.19	26.29	26.39	26.49	26.59
30	26.69	26.79	26.89	26.99	27.08	27.18	27.28	27.38	27.48	27.58
31	27.68	27.78	27.88	27.98	28.08	28.18	28.28	28.37	28.47	28.57
32	28.67	28.77	28.87	28.97	29.07	29.17	29.27	29.37	29.47	29.57
33	29.66	29.76	29.86	29.96	30.06	30.16	30.26	30.36	30.46	30.56
34	30.66	30.76	30.86	30.96	31.05	31.15	31.25	31.35	31.45	31.55
35	31.65	31.75	31.85	31.95	32.05	32.15	32.25	32.35	32.45	32.55
36	32.64	32.74	32.84	32.94	33.04	33.14	33.24	33.34	33.44	33.54
37	33.64	33.74	33.84	33.94	34.04	34.14	34.24	34.33	34.43	34.53
38	34.63	34.73	34.83	34.93	35.03	35.13	35.23	35.33	35.43	35.53
39	35.63	35.73	35.83	35.93	36.03	36.13	36.22	36.32	36.42	36.52
40	36.62	36.72	36.82	36.92	37.02	37.12	37.22	37.32	37.42	37.52

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
78

Runoff for inches of rainfall—Curve no. 78

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.04
1	0.06	0.09	0.12	0.15	0.19	0.23	0.28	0.33	0.38	0.43
2	0.48	0.54	0.60	0.66	0.72	0.79	0.85	0.92	0.99	1.06
3	1.13	1.20	1.27	1.35	1.42	1.50	1.57	1.65	1.73	1.81
4	1.89	1.97	2.05	2.13	2.21	2.29	2.38	2.46	2.54	2.63
5	2.71	2.80	2.88	2.97	3.05	3.14	3.23	3.32	3.40	3.49
6	3.58	3.67	3.76	3.85	3.93	4.02	4.11	4.20	4.29	4.38
7	4.48	4.57	4.66	4.75	4.84	4.93	5.02	5.11	5.21	5.30
8	5.39	5.48	5.58	5.67	5.76	5.86	5.95	6.04	6.14	6.23
9	6.32	6.42	6.51	6.60	6.70	6.79	6.89	6.98	7.08	7.17
10	7.26	7.36	7.45	7.55	7.64	7.74	7.83	7.93	8.03	8.12
11	8.22	8.31	8.41	8.50	8.60	8.69	8.79	8.89	8.98	9.08
12	9.17	9.27	9.37	9.46	9.56	9.65	9.75	9.85	9.94	10.04
13	10.14	10.23	10.33	10.43	10.52	10.62	10.72	10.81	10.91	11.01
14	11.11	11.20	11.30	11.40	11.49	11.59	11.69	11.79	11.88	11.98
15	12.08	12.17	12.27	12.37	12.47	12.56	12.66	12.76	12.86	12.95
16	13.05	13.15	13.25	13.34	13.44	13.54	13.64	13.74	13.83	13.93
17	14.03	14.13	14.22	14.32	14.42	14.52	14.62	14.71	14.81	14.91
18	15.01	15.11	15.20	15.30	15.40	15.50	15.60	15.70	15.79	15.89
19	15.99	16.09	16.19	16.28	16.38	16.48	16.58	16.68	16.78	16.87
20	16.97	17.07	17.17	17.27	17.37	17.47	17.56	17.66	17.76	17.86
21	17.96	18.06	18.16	18.25	18.35	18.45	18.55	18.65	18.75	18.85
22	18.94	19.04	19.14	19.24	19.34	19.44	19.54	19.63	19.73	19.83
23	19.93	20.03	20.13	20.23	20.33	20.42	20.52	20.62	20.72	20.82
24	20.92	21.02	21.12	21.22	21.31	21.41	21.51	21.61	21.71	21.81
25	21.91	22.01	22.11	22.20	22.30	22.40	22.50	22.60	22.70	22.80
26	22.90	23.00	23.10	23.19	23.29	23.39	23.49	23.59	23.69	23.79
27	23.89	23.99	24.09	24.19	24.28	24.38	24.48	24.58	24.68	24.78
28	24.88	24.98	25.08	25.18	25.28	25.37	25.47	25.57	25.67	25.77
29	25.87	25.97	26.07	26.17	26.27	26.37	26.47	26.56	26.66	26.76
30	26.86	26.96	27.06	27.16	27.26	27.36	27.46	27.56	27.66	27.76
31	27.86	27.95	28.05	28.15	28.25	28.35	28.45	28.55	28.65	28.75
32	28.85	28.95	29.05	29.15	29.25	29.34	29.44	29.54	29.64	29.74
33	29.84	29.94	30.04	30.14	30.24	30.34	30.44	30.54	30.64	30.74
34	30.84	30.93	31.03	31.13	31.23	31.33	31.43	31.53	31.63	31.73
35	31.83	31.93	32.03	32.13	32.23	32.33	32.43	32.53	32.62	32.72
36	32.82	32.92	33.02	33.12	33.22	33.32	33.42	33.52	33.62	33.72
37	33.82	33.92	34.02	34.12	34.22	34.32	34.42	34.52	34.61	34.71
38	34.81	34.91	35.01	35.11	35.21	35.31	35.41	35.51	35.61	35.71
39	35.81	35.91	36.01	36.11	36.21	36.31	36.41	36.51	36.61	36.70
40	36.80	36.90	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

79

Runoff for inches of rainfall—Curve no. 79

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.04
1	0.07	0.10	0.13	0.17	0.21	0.26	0.31	0.36	0.41	0.46
2	0.52	0.58	0.64	0.71	0.77	0.84	0.90	0.97	1.04	1.12
3	1.19	1.26	1.34	1.41	1.49	1.57	1.64	1.72	1.80	1.88
4	1.96	2.04	2.13	2.21	2.29	2.38	2.46	2.54	2.63	2.71
5	2.80	2.89	2.97	3.06	3.15	3.24	3.32	3.41	3.50	3.59
6	3.68	3.77	3.86	3.95	4.04	4.13	4.22	4.31	4.40	4.49
7	4.58	4.67	4.77	4.86	4.95	5.04	5.14	5.23	5.32	5.41
8	5.51	5.60	5.69	5.79	5.88	5.97	6.07	6.16	6.26	6.35
9	6.44	6.54	6.63	6.73	6.82	6.92	7.01	7.11	7.20	7.30
10	7.39	7.49	7.58	7.68	7.77	7.87	7.96	8.06	8.16	8.25
11	8.35	8.44	8.54	8.63	8.73	8.83	8.92	9.02	9.12	9.21
12	9.31	9.41	9.50	9.60	9.70	9.79	9.89	9.99	10.08	10.18
13	10.28	10.37	10.47	10.57	10.66	10.76	10.86	10.96	11.05	11.15
14	11.25	11.34	11.44	11.54	11.64	11.73	11.83	11.93	12.03	12.12
15	12.22	12.32	12.42	12.51	12.61	12.71	12.81	12.90	13.00	13.10
16	13.20	13.30	13.39	13.49	13.59	13.69	13.79	13.88	13.98	14.08
17	14.18	14.28	14.37	14.47	14.57	14.67	14.77	14.86	14.96	15.06
18	15.16	15.26	15.36	15.45	15.55	15.65	15.75	15.85	15.95	16.04
19	16.14	16.24	16.34	16.44	16.54	16.64	16.73	16.83	16.93	17.03
20	17.13	17.23	17.32	17.42	17.52	17.62	17.72	17.82	17.92	18.02
21	18.11	18.21	18.31	18.41	18.51	18.61	18.71	18.80	18.90	19.00
22	19.10	19.20	19.30	19.40	19.50	19.60	19.69	19.79	19.89	19.99
23	20.09	20.19	20.29	20.39	20.49	20.58	20.68	20.78	20.88	20.98
24	21.08	21.18	21.28	21.38	21.47	21.57	21.67	21.77	21.87	21.97
25	22.07	22.17	22.27	22.37	22.47	22.56	22.66	22.76	22.86	22.96
26	23.06	23.16	23.26	23.36	23.46	23.56	23.65	23.75	23.85	23.95
27	24.05	24.15	24.25	24.35	24.45	24.55	24.65	24.75	24.84	24.94
28	25.04	25.14	25.24	25.34	25.44	25.54	25.64	25.74	25.84	25.94
29	26.04	26.13	26.23	26.33	26.43	26.53	26.63	26.73	26.83	26.93
30	27.03	27.13	27.23	27.33	27.43	27.52	27.62	27.72	27.82	27.92
31	28.02	28.12	28.22	28.32	28.42	28.52	28.62	28.72	28.82	28.92
32	29.02	29.11	29.21	29.31	29.41	29.51	29.61	29.71	29.81	29.91
33	30.01	30.11	30.21	30.31	30.41	30.51	30.61	30.71	30.80	30.90
34	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90
35	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.79	32.89
36	32.99	33.09	33.19	33.29	33.39	33.49	33.59	33.69	33.79	33.89
37	33.99	34.09	34.19	34.29	34.39	34.49	34.59	34.69	34.79	34.88
38	34.98	35.08	35.18	35.28	35.38	35.48	35.58	35.68	35.78	35.88
39	35.98	36.08	36.18	36.28	36.38	36.48	36.58	36.68	36.78	36.88
40	36.98	37.08	37.18	37.27	37.37	37.47	37.57	37.67	37.77	37.87

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 80

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.06
1	0.08	0.12	0.15	0.19	0.24	0.29	0.34	0.39	0.44	0.50
2	0.56	0.62	0.69	0.75	0.82	0.89	0.96	1.03	1.10	1.18
3	1.25	1.33	1.40	1.48	1.56	1.64	1.72	1.80	1.88	1.96
4	2.04	2.12	2.21	2.29	2.38	2.46	2.55	2.63	2.72	2.81
5	2.89	2.98	3.07	3.16	3.24	3.33	3.42	3.51	3.60	3.69
6	3.78	3.87	3.96	4.05	4.14	4.24	4.33	4.42	4.51	4.60
7	4.69	4.79	4.88	4.97	5.06	5.16	5.25	5.34	5.44	5.53
8	5.63	5.72	5.81	5.91	6.00	6.10	6.19	6.28	6.38	6.47
9	6.57	6.66	6.76	6.85	6.95	7.04	7.14	7.23	7.33	7.43
10	7.52	7.62	7.71	7.81	7.90	8.00	8.10	8.19	8.29	8.38
11	8.48	8.58	8.67	8.77	8.87	8.96	9.06	9.16	9.25	9.35
12	9.45	9.54	9.64	9.74	9.83	9.93	10.03	10.13	10.22	10.32
13	10.42	10.51	10.61	10.71	10.81	10.90	11.00	11.10	11.20	11.29
14	11.39	11.49	11.59	11.68	11.78	11.88	11.98	12.07	12.17	12.27
15	12.37	12.47	12.56	12.66	12.76	12.86	12.96	13.05	13.15	13.25
16	13.35	13.45	13.54	13.64	13.74	13.84	13.94	14.03	14.13	14.23
17	14.33	14.43	14.53	14.62	14.72	14.82	14.92	15.02	15.12	15.21
18	15.31	15.41	15.51	15.61	15.71	15.80	15.90	16.00	16.10	16.20
19	16.30	16.40	16.49	16.59	16.69	16.79	16.89	16.99	17.09	17.19
20	17.28	17.38	17.48	17.58	17.68	17.78	17.88	17.98	18.07	18.17
21	18.27	18.37	18.47	18.57	18.67	18.77	18.86	18.96	19.06	19.16
22	19.26	19.36	19.46	19.56	19.66	19.76	19.85	19.95	20.05	20.15
23	20.25	20.35	20.45	20.55	20.65	20.75	20.84	20.94	21.04	21.14
24	21.24	21.34	21.44	21.54	21.64	21.74	21.83	21.93	22.03	22.13
25	22.23	22.33	22.43	22.53	22.63	22.73	22.83	22.93	23.02	23.12
26	23.22	23.32	23.42	23.52	23.62	23.72	23.82	23.92	24.02	24.12
27	24.22	24.31	24.41	24.51	24.61	24.71	24.81	24.91	25.01	25.11
28	25.21	25.31	25.41	25.51	25.61	25.70	25.80	25.90	26.00	26.10
29	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	27.00	27.10
30	27.20	27.29	27.39	27.49	27.59	27.69	27.79	27.89	27.99	28.09
31	28.19	28.29	28.39	28.49	28.59	28.69	28.79	28.89	28.98	29.08
32	29.18	29.28	29.38	29.48	29.58	29.68	29.78	29.88	29.98	30.08
33	30.18	30.28	30.38	30.48	30.58	30.68	30.78	30.88	30.97	31.07
34	31.17	31.27	31.37	31.47	31.57	31.67	31.77	31.87	31.97	32.07
35	32.17	32.27	32.37	32.47	32.57	32.67	32.77	32.87	32.97	33.06
36	33.16	33.26	33.36	33.46	33.56	33.66	33.76	33.86	33.96	34.06
37	34.16	34.26	34.36	34.46	34.56	34.66	34.76	34.86	34.96	35.06
38	35.16	35.26	35.36	35.46	35.55	35.65	35.75	35.85	35.95	36.05
39	36.15	36.25	36.35	36.45	36.55	36.65	36.75	36.85	36.95	37.05
40	37.15	37.25	37.35	37.45	37.55	37.65	37.75	37.85	37.95	38.05

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
81

Runoff for inches of rainfall—Curve no. 81

Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
	Tenths									
0	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.04	0.07
1	0.10	0.13	0.17	0.22	0.27	0.32	0.37	0.42	0.48	0.54
2	0.61	0.67	0.74	0.80	0.87	0.94	1.02	1.09	1.16	1.24
3	1.32	1.39	1.47	1.55	1.63	1.71	1.79	1.87	1.96	2.04
4	2.12	2.21	2.29	2.38	2.47	2.55	2.64	2.73	2.81	2.90
5	2.99	3.08	3.17	3.26	3.34	3.43	3.52	3.62	3.71	3.80
6	3.89	3.98	4.07	4.16	4.25	4.35	4.44	4.53	4.62	4.72
7	4.81	4.90	5.00	5.09	5.18	5.28	5.37	5.46	5.56	5.65
8	5.75	5.84	5.94	6.03	6.13	6.22	6.31	6.41	6.51	6.60
9	6.70	6.79	6.89	6.98	7.08	7.17	7.27	7.37	7.46	7.56
10	7.65	7.75	7.85	7.94	8.04	8.13	8.23	8.33	8.42	8.52
11	8.62	8.71	8.81	8.91	9.00	9.10	9.20	9.30	9.39	9.49
12	9.59	9.68	9.78	9.88	9.98	10.07	10.17	10.27	10.37	10.46
13	10.56	10.66	10.76	10.85	10.95	11.05	11.15	11.24	11.34	11.44
14	11.54	11.63	11.73	11.83	11.93	12.03	12.12	12.22	12.32	12.42
15	12.52	12.61	12.71	12.81	12.91	13.01	13.11	13.20	13.30	13.40
16	13.50	13.60	13.69	13.79	13.89	13.99	14.09	14.19	14.29	14.38
17	14.48	14.58	14.68	14.78	14.88	14.97	15.07	15.17	15.27	15.37
18	15.47	15.57	15.66	15.76	15.86	15.96	16.06	16.16	16.26	16.36
19	16.45	16.55	16.65	16.75	16.85	16.95	17.05	17.15	17.24	17.34
20	17.44	17.54	17.64	17.74	17.84	17.94	18.04	18.13	18.23	18.33
21	18.43	18.53	18.63	18.73	18.83	18.93	19.03	19.12	19.22	19.32
22	19.42	19.52	19.62	19.72	19.82	19.92	20.02	20.11	20.21	20.31
23	20.41	20.51	20.61	20.71	20.81	20.91	21.01	21.11	21.21	21.30
24	21.40	21.50	21.60	21.70	21.80	21.90	22.00	22.10	22.20	22.30
25	22.40	22.50	22.59	22.69	22.79	22.89	22.99	23.09	23.19	23.29
26	23.39	23.49	23.59	23.69	23.79	23.88	23.98	24.08	24.18	24.28
27	24.38	24.48	24.58	24.68	24.78	24.88	24.98	25.08	25.18	25.28
28	25.38	25.47	25.57	25.67	25.77	25.87	25.97	26.07	26.17	26.27
29	26.37	26.47	26.57	26.67	26.77	26.87	26.97	27.07	27.16	27.26
30	27.36	27.46	27.56	27.66	27.76	27.86	27.96	28.06	28.16	28.26
31	28.36	28.46	28.56	28.66	28.76	28.86	28.96	29.06	29.15	29.25
32	29.35	29.45	29.55	29.65	29.75	29.85	29.95	30.05	30.15	30.25
33	30.35	30.45	30.55	30.65	30.75	30.85	30.95	31.05	31.15	31.25
34	31.34	31.44	31.54	31.64	31.74	31.84	31.94	32.04	32.14	32.24
35	32.34	32.44	32.54	32.64	32.74	32.84	32.94	33.04	33.14	33.24
36	33.34	33.44	33.54	33.64	33.74	33.83	33.93	34.03	34.13	34.23
37	34.33	34.43	34.53	34.63	34.73	34.83	34.93	35.03	35.13	35.23
38	35.33	35.43	35.53	35.63	35.73	35.83	35.93	36.03	36.13	36.23
39	36.33	36.43	36.53	36.62	36.72	36.82	36.92	37.02	37.12	37.22
40	37.32	37.42	37.52	37.62	37.72	37.82	37.92	38.02	38.12	38.22

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 82

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.05	0.08
1	0.11	0.15	0.20	0.24	0.29	0.34	0.40	0.46	0.52	0.58
2	0.65	0.71	0.78	0.85	0.92	1.00	1.07	1.15	1.22	1.30
3	1.38	1.46	1.54	1.62	1.70	1.78	1.86	1.95	2.03	2.12
4	2.20	2.29	2.37	2.46	2.55	2.63	2.72	2.81	2.90	2.99
5	3.08	3.17	3.26	3.35	3.44	3.53	3.62	3.71	3.80	3.89
6	3.98	4.08	4.17	4.26	4.35	4.45	4.54	4.63	4.73	4.82
7	4.91	5.01	5.10	5.19	5.29	5.38	5.48	5.57	5.67	5.76
8	5.86	5.95	6.05	6.14	6.24	6.33	6.43	6.52	6.62	6.71
9	6.81	6.91	7.00	7.10	7.19	7.29	7.39	7.48	7.58	7.68
10	7.77	7.87	7.96	8.06	8.16	8.25	8.35	8.45	8.55	8.64
11	8.74	8.84	8.93	9.03	9.13	9.23	9.32	9.42	9.52	9.61
12	9.71	9.81	9.91	10.00	10.10	10.20	10.30	10.39	10.49	10.59
13	10.69	10.79	10.88	10.98	11.08	11.18	11.28	11.37	11.47	11.57
14	11.67	11.77	11.86	11.96	12.06	12.16	12.26	12.35	12.45	12.55
15	12.65	12.75	12.85	12.94	13.04	13.14	13.24	13.34	13.44	13.53
16	13.63	13.73	13.83	13.93	14.03	14.13	14.22	14.32	14.42	14.52
17	14.62	14.72	14.82	14.91	15.01	15.11	15.21	15.31	15.41	15.51
18	15.60	15.70	15.80	15.90	16.00	16.10	16.20	16.30	16.40	16.49
19	16.59	16.69	16.79	16.89	16.99	17.09	17.19	17.29	17.38	17.48
20	17.58	17.68	17.78	17.88	17.98	18.08	18.18	18.28	18.37	18.47
21	18.57	18.67	18.77	18.87	18.97	19.07	19.17	19.27	19.37	19.46
22	19.56	19.66	19.76	19.86	19.96	20.06	20.16	20.26	20.36	20.46
23	20.56	20.65	20.75	20.85	20.95	21.05	21.15	21.25	21.35	21.45
24	21.55	21.65	21.75	21.85	21.95	22.04	22.14	22.24	22.34	22.44
25	22.54	22.64	22.74	22.84	22.94	23.04	23.14	23.24	23.34	23.43
26	23.53	23.63	23.73	23.83	23.93	24.03	24.13	24.23	24.33	24.43
27	24.53	24.63	24.73	24.83	24.93	25.03	25.12	25.22	25.32	25.42
28	25.52	25.62	25.72	25.82	25.92	26.02	26.12	26.22	26.32	26.42
29	26.52	26.62	26.72	26.82	26.92	27.01	27.11	27.21	27.31	27.41
30	27.51	27.61	27.71	27.81	27.91	28.01	28.11	28.21	28.31	28.41
31	28.51	28.61	28.71	28.81	28.91	29.01	29.11	29.20	29.30	29.40
32	29.50	29.60	29.70	29.80	29.90	30.00	30.10	30.20	30.30	30.40
33	30.50	30.60	30.70	30.80	30.90	31.00	31.10	31.20	31.30	31.40
34	31.50	31.59	31.69	31.79	31.89	31.99	32.09	32.19	32.29	32.39
35	32.49	32.59	32.69	32.79	32.89	32.99	33.09	33.19	33.29	33.39
36	33.49	33.59	33.69	33.79	33.89	33.99	34.09	34.19	34.29	34.39
37	34.48	34.58	34.68	34.78	34.88	34.98	35.08	35.18	35.28	35.38
38	35.48	35.58	35.68	35.78	35.88	35.98	36.08	36.18	36.28	36.38
39	36.48	36.58	36.68	36.78	36.88	36.98	37.08	37.18	37.28	37.38
40	37.48	37.58	37.68	37.78	37.87	37.97	38.07	38.17	38.27	38.37

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

83

Runoff for inches of rainfall—Curve no. 83

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06	0.09
1	0.13	0.17	0.22	0.27	0.32	0.38	0.44	0.50	0.56	0.63
2	0.69	0.76	0.83	0.91	0.98	1.06	1.13	1.21	1.29	1.37
3	1.45	1.53	1.61	1.69	1.77	1.86	1.94	2.03	2.11	2.20
4	2.29	2.37	2.46	2.55	2.64	2.72	2.81	2.90	2.99	3.08
5	3.17	3.26	3.35	3.45	3.54	3.63	3.72	3.81	3.90	4.00
6	4.09	4.18	4.28	4.37	4.46	4.56	4.65	4.74	4.84	4.93
7	5.03	5.12	5.22	5.31	5.40	5.50	5.59	5.69	5.79	5.88
8	5.98	6.07	6.17	6.26	6.36	6.45	6.55	6.65	6.74	6.84
9	6.93	7.03	7.13	7.22	7.32	7.42	7.51	7.61	7.71	7.80
10	7.90	8.00	8.09	8.19	8.29	8.39	8.48	8.58	8.68	8.78
11	8.87	8.97	9.07	9.16	9.26	9.36	9.46	9.56	9.65	9.75
12	9.85	9.95	10.04	10.14	10.24	10.34	10.44	10.53	10.63	10.73
13	10.83	10.93	11.02	11.12	11.22	11.32	11.42	11.51	11.61	11.71
14	11.81	11.91	12.01	12.10	12.20	12.30	12.40	12.50	12.60	12.69
15	12.79	12.89	12.99	13.09	13.19	13.29	13.38	13.48	13.58	13.68
16	13.78	13.88	13.98	14.07	14.17	14.27	14.37	14.47	14.57	14.67
17	14.77	14.86	14.96	15.06	15.16	15.26	15.36	15.46	15.56	15.66
18	15.75	15.85	15.95	16.05	16.15	16.25	16.35	16.45	16.55	16.64
19	16.74	16.84	16.94	17.04	17.14	17.24	17.34	17.44	17.54	17.64
20	17.73	17.83	17.93	18.03	18.13	18.23	18.33	18.43	18.53	18.63
21	18.73	18.82	18.92	19.02	19.12	19.22	19.32	19.42	19.52	19.62
22	19.72	19.82	19.92	20.02	20.11	20.21	20.31	20.41	20.51	20.61
23	20.71	20.81	20.91	21.01	21.11	21.21	21.31	21.41	21.51	21.60
24	21.70	21.80	21.90	22.00	22.10	22.20	22.30	22.40	22.50	22.60
25	22.70	22.80	22.90	23.00	23.10	23.19	23.29	23.39	23.49	23.59
26	23.69	23.79	23.89	23.99	24.09	24.19	24.29	24.39	24.49	24.59
27	24.69	24.79	24.89	24.99	25.08	25.18	25.28	25.38	25.48	25.58
28	25.68	25.78	25.88	25.98	26.08	26.18	26.28	26.38	26.48	26.58
29	26.68	26.78	26.88	26.98	27.08	27.17	27.27	27.37	27.47	27.57
30	27.67	27.77	27.87	27.97	28.07	28.17	28.27	28.37	28.47	28.57
31	28.67	28.77	28.87	28.97	29.07	29.17	29.27	29.37	29.47	29.57
32	29.66	29.76	29.86	29.96	30.06	30.16	30.26	30.36	30.46	30.56
33	30.66	30.76	30.86	30.96	31.06	31.16	31.26	31.36	31.46	31.56
34	31.66	31.76	31.86	31.96	32.06	32.16	32.26	32.36	32.46	32.56
35	32.65	32.75	32.85	32.95	33.05	33.15	33.25	33.35	33.45	33.55
36	33.65	33.75	33.85	33.95	34.05	34.15	34.25	34.35	34.45	34.55
37	34.65	34.75	34.85	34.95	35.05	35.15	35.25	35.35	35.45	35.55
38	35.65	35.75	35.85	35.95	36.04	36.14	36.24	36.34	36.44	36.54
39	36.64	36.74	36.84	36.94	37.04	37.14	37.24	37.34	37.44	37.54
40	37.64	37.74	37.84	37.94	38.04	38.14	38.24	38.34	38.44	38.54

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 84

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.05	0.08	0.11
1	0.15	0.20	0.25	0.30	0.36	0.42	0.48	0.54	0.61	0.68
2	0.75	0.82	0.89	0.97	1.04	1.12	1.20	1.28	1.36	1.44
3	1.52	1.60	1.68	1.77	1.85	1.94	2.03	2.11	2.20	2.29
4	2.37	2.46	2.55	2.64	2.73	2.82	2.91	3.00	3.09	3.18
5	3.27	3.37	3.46	3.55	3.64	3.73	3.83	3.92	4.01	4.11
6	4.20	4.29	4.39	4.48	4.58	4.67	4.76	4.86	4.95	5.05
7	5.14	5.24	5.33	5.43	5.52	5.62	5.72	5.81	5.91	6.00
8	6.10	6.20	6.29	6.39	6.48	6.58	6.68	6.77	6.87	6.97
9	7.06	7.16	7.26	7.35	7.45	7.55	7.64	7.74	7.84	7.94
10	8.03	8.13	8.23	8.33	8.42	8.52	8.62	8.72	8.81	8.91
11	9.01	9.11	9.20	9.30	9.40	9.50	9.60	9.69	9.79	9.89
12	9.99	10.09	10.18	10.28	10.38	10.48	10.58	10.67	10.77	10.87
13	10.97	11.07	11.17	11.26	11.36	11.46	11.56	11.66	11.76	11.85
14	11.95	12.05	12.15	12.25	12.35	12.45	12.54	12.64	12.74	12.84
15	12.94	13.04	13.14	13.23	13.33	13.43	13.53	13.63	13.73	13.83
16	13.93	14.02	14.12	14.22	14.32	14.42	14.52	14.62	14.72	14.82
17	14.91	15.01	15.11	15.21	15.31	15.41	15.51	15.61	15.71	15.81
18	15.90	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80
19	16.90	17.00	17.09	17.19	17.29	17.39	17.49	17.59	17.69	17.79
20	17.89	17.99	18.09	18.19	18.28	18.38	18.48	18.58	18.68	18.78
21	18.88	18.98	19.08	19.18	19.28	19.38	19.48	19.58	19.67	19.77
22	19.87	19.97	20.07	20.17	20.27	20.37	20.47	20.57	20.67	20.77
23	20.87	20.97	21.07	21.17	21.26	21.36	21.46	21.56	21.66	21.76
24	21.86	21.96	22.06	22.16	22.26	22.36	22.46	22.56	22.66	22.76
25	22.86	22.96	23.06	23.15	23.25	23.35	23.45	23.55	23.65	23.75
26	23.85	23.95	24.05	24.15	24.25	24.35	24.45	24.55	24.65	24.75
27	24.85	24.95	25.05	25.15	25.24	25.34	25.44	25.54	25.64	25.74
28	25.84	25.94	26.04	26.14	26.24	26.34	26.44	26.54	26.64	26.74
29	26.84	26.94	27.04	27.14	27.24	27.34	27.44	27.54	27.64	27.73
30	27.83	27.93	28.03	28.13	28.23	28.33	28.43	28.53	28.63	28.73
31	28.83	28.93	29.03	29.13	29.23	29.33	29.43	29.53	29.63	29.73
32	29.83	29.93	30.03	30.13	30.23	30.33	30.43	30.53	30.63	30.72
33	30.82	30.92	31.02	31.12	31.22	31.32	31.42	31.52	31.62	31.72
34	31.82	31.92	32.02	32.12	32.22	32.32	32.42	32.52	32.62	32.72
35	32.82	32.92	33.02	33.12	33.22	33.32	33.42	33.52	33.62	33.72
36	33.82	33.92	34.02	34.12	34.22	34.31	34.41	34.51	34.61	34.71
37	34.81	34.91	35.01	35.11	35.21	35.31	35.41	35.51	35.61	35.71
38	35.81	35.91	36.01	36.11	36.21	36.31	36.41	36.51	36.61	36.71
39	36.81	36.91	37.01	37.11	37.21	37.31	37.41	37.51	37.61	37.71
40	37.81	37.91	38.01	38.11	38.21	38.31	38.41	38.51	38.61	38.71

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve

85

Runoff for inches of rainfall—Curve no. 85

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.06	0.09	0.13
1	0.17	0.22	0.28	0.33	0.39	0.45	0.52	0.58	0.65	0.72
2	0.80	0.87	0.95	1.02	1.10	1.18	1.26	1.34	1.42	1.51
3	1.59	1.68	1.76	1.85	1.93	2.02	2.11	2.19	2.28	2.37
4	2.46	2.55	2.64	2.73	2.82	2.91	3.00	3.10	3.19	3.28
5	3.37	3.46	3.56	3.65	3.74	3.84	3.93	4.02	4.12	4.21
6	4.31	4.40	4.50	4.59	4.68	4.78	4.87	4.97	5.07	5.16
7	5.26	5.35	5.45	5.54	5.64	5.74	5.83	5.93	6.02	6.12
8	6.22	6.31	6.41	6.51	6.60	6.70	6.80	6.89	6.99	7.09
9	7.19	7.28	7.38	7.48	7.57	7.67	7.77	7.87	7.96	8.06
10	8.16	8.26	8.35	8.45	8.55	8.65	8.75	8.84	8.94	9.04
11	9.14	9.24	9.33	9.43	9.53	9.63	9.73	9.82	9.92	10.02
12	10.12	10.22	10.32	10.41	10.51	10.61	10.71	10.81	10.91	11.00
13	11.10	11.20	11.30	11.40	11.50	11.60	11.69	11.79	11.89	11.99
14	12.09	12.19	12.29	12.39	12.48	12.58	12.68	12.78	12.88	12.98
15	13.08	13.18	13.27	13.37	13.47	13.57	13.67	13.77	13.87	13.97
16	14.07	14.16	14.26	14.36	14.46	14.56	14.66	14.76	14.86	14.96
17	15.06	15.16	15.25	15.35	15.45	15.55	15.65	15.75	15.85	15.95
18	16.05	16.15	16.25	16.35	16.44	16.54	16.64	16.74	16.84	16.94
19	17.04	17.14	17.24	17.34	17.44	17.54	17.64	17.73	17.83	17.93
20	18.03	18.13	18.23	18.33	18.43	18.53	18.63	18.73	18.83	18.93
21	19.03	19.13	19.23	19.32	19.42	19.52	19.62	19.72	19.82	19.92
22	20.02	20.12	20.22	20.32	20.42	20.52	20.62	20.72	20.82	20.92
23	21.01	21.11	21.21	21.31	21.41	21.51	21.61	21.71	21.81	21.91
24	22.01	22.11	22.21	22.31	22.41	22.51	22.61	22.71	22.81	22.91
25	23.01	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90
26	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90
27	25.00	25.10	25.20	25.30	25.40	25.50	25.59	25.69	25.79	25.89
28	25.99	26.09	26.19	26.29	26.39	26.49	26.59	26.69	26.79	26.89
29	26.99	27.09	27.19	27.29	27.39	27.49	27.59	27.69	27.79	27.89
30	27.99	28.09	28.19	28.29	28.39	28.49	28.58	28.68	28.78	28.88
31	28.98	29.08	29.18	29.28	29.38	29.48	29.58	29.68	29.78	29.88
32	29.98	30.08	30.18	30.28	30.38	30.48	30.58	30.68	30.78	30.88
33	30.98	31.08	31.18	31.28	31.38	31.48	31.58	31.68	31.78	31.88
34	31.98	32.08	32.17	32.27	32.37	32.47	32.57	32.67	32.77	32.87
35	32.97	33.07	33.17	33.27	33.37	33.47	33.57	33.67	33.77	33.87
36	33.97	34.07	34.17	34.27	34.37	34.47	34.57	34.67	34.77	34.87
37	34.97	35.07	35.17	35.27	35.37	35.47	35.57	35.67	35.77	35.87
38	35.97	36.07	36.17	36.27	36.37	36.47	36.57	36.67	36.77	36.86
39	36.96	37.06	37.16	37.26	37.36	37.46	37.56	37.66	37.76	37.86
40	37.96	38.06	38.16	38.26	38.36	38.46	38.56	38.66	38.76	38.86

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

(210-VI-NEH, July 2004)

Runoff for inches of rainfall—Curve no. 86

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.07	0.11	0.15
1	0.20	0.25	0.31	0.36	0.43	0.49	0.56	0.63	0.70	0.77
2	0.85	0.92	1.00	1.08	1.16	1.24	1.32	1.41	1.49	1.58
3	1.66	1.75	1.83	1.92	2.01	2.10	2.19	2.27	2.36	2.45
4	2.54	2.64	2.73	2.82	2.91	3.00	3.09	3.19	3.28	3.37
5	3.47	3.56	3.65	3.75	3.84	3.93	4.03	4.12	4.22	4.31
6	4.41	4.50	4.60	4.69	4.79	4.88	4.98	5.08	5.17	5.27
7	5.36	5.46	5.56	5.65	5.75	5.85	5.94	6.04	6.14	6.23
8	6.33	6.43	6.52	6.62	6.72	6.82	6.91	7.01	7.11	7.20
9	7.30	7.40	7.50	7.59	7.69	7.79	7.89	7.99	8.08	8.18
10	8.28	8.38	8.47	8.57	8.67	8.77	8.87	8.97	9.06	9.16
11	9.26	9.36	9.46	9.55	9.65	9.75	9.85	9.95	10.05	10.15
12	10.24	10.34	10.44	10.54	10.64	10.74	10.84	10.93	11.03	11.13
13	11.23	11.33	11.43	11.53	11.62	11.72	11.82	11.92	12.02	12.12
14	12.22	12.32	12.42	12.51	12.61	12.71	12.81	12.91	13.01	13.11
15	13.21	13.31	13.40	13.50	13.60	13.70	13.80	13.90	14.00	14.10
16	14.20	14.30	14.40	14.49	14.59	14.69	14.79	14.89	14.99	15.09
17	15.19	15.29	15.39	15.49	15.59	15.69	15.78	15.88	15.98	16.08
18	16.18	16.28	16.38	16.48	16.58	16.68	16.78	16.88	16.98	17.08
19	17.17	17.27	17.37	17.47	17.57	17.67	17.77	17.87	17.97	18.07
20	18.17	18.27	18.37	18.47	18.57	18.67	18.77	18.86	18.96	19.06
21	19.16	19.26	19.36	19.46	19.56	19.66	19.76	19.86	19.96	20.06
22	20.16	20.26	20.36	20.46	20.56	20.66	20.76	20.85	20.95	21.05
23	21.15	21.25	21.35	21.45	21.55	21.65	21.75	21.85	21.95	22.05
24	22.15	22.25	22.35	22.45	22.55	22.65	22.75	22.85	22.95	23.05
25	23.15	23.24	23.34	23.44	23.54	23.64	23.74	23.84	23.94	24.04
26	24.14	24.24	24.34	24.44	24.54	24.64	24.74	24.84	24.94	25.04
27	25.14	25.24	25.34	25.44	25.54	25.64	25.74	25.84	25.94	26.03
28	26.13	26.23	26.33	26.43	26.53	26.63	26.73	26.83	26.93	27.03
29	27.13	27.23	27.33	27.43	27.53	27.63	27.73	27.83	27.93	28.03
30	28.13	28.23	28.33	28.43	28.53	28.63	28.73	28.83	28.93	29.03
31	29.13	29.23	29.33	29.43	29.53	29.62	29.72	29.82	29.92	30.02
32	30.12	30.22	30.32	30.42	30.52	30.62	30.72	30.82	30.92	31.02
33	31.12	31.22	31.32	31.42	31.52	31.62	31.72	31.82	31.92	32.02
34	32.12	32.22	32.32	32.42	32.52	32.62	32.72	32.82	32.92	33.02
35	33.12	33.22	33.32	33.42	33.52	33.62	33.72	33.82	33.92	34.02
36	34.12	34.22	34.31	34.41	34.51	34.61	34.71	34.81	34.91	35.01
37	35.11	35.21	35.31	35.41	35.51	35.61	35.71	35.81	35.91	36.01
38	36.11	36.21	36.31	36.41	36.51	36.61	36.71	36.81	36.91	37.01
39	37.11	37.21	37.31	37.41	37.51	37.61	37.71	37.81	37.91	38.01
40	38.11	38.21	38.31	38.41	38.51	38.61	38.71	38.81	38.91	39.01

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
87

Runoff for inches of rainfall—Curve no. 87

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.01	0.02	0.05	0.09	0.13	0.17
1	0.22	0.28	0.34	0.40	0.47	0.54	0.61	0.68	0.75	0.83
2	0.91	0.99	1.07	1.15	1.23	1.31	1.40	1.48	1.57	1.65
3	1.74	1.83	1.92	2.01	2.10	2.19	2.28	2.37	2.46	2.55
4	2.64	2.73	2.82	2.92	3.01	3.10	3.20	3.29	3.38	3.48
5	3.57	3.66	3.76	3.85	3.95	4.04	4.14	4.23	4.33	4.43
6	4.52	4.62	4.71	4.81	4.90	5.00	5.10	5.19	5.29	5.39
7	5.48	5.58	5.68	5.77	5.87	5.97	6.06	6.16	6.26	6.36
8	6.45	6.55	6.65	6.75	6.84	6.94	7.04	7.14	7.23	7.33
9	7.43	7.53	7.63	7.72	7.82	7.92	8.02	8.12	8.21	8.31
10	8.41	8.51	8.61	8.71	8.80	8.90	9.00	9.10	9.20	9.30
11	9.39	9.49	9.59	9.69	9.79	9.89	9.99	10.08	10.18	10.28
12	10.38	10.48	10.58	10.68	10.78	10.87	10.97	11.07	11.17	11.27
13	11.37	11.47	11.57	11.67	11.76	11.86	11.96	12.06	12.16	12.26
14	12.36	12.46	12.56	12.66	12.75	12.85	12.95	13.05	13.15	13.25
15	13.35	13.45	13.55	13.65	13.75	13.85	13.94	14.04	14.14	14.24
16	14.34	14.44	14.54	14.64	14.74	14.84	14.94	15.04	15.14	15.23
17	15.33	15.43	15.53	15.63	15.73	15.83	15.93	16.03	16.13	16.23
18	16.33	16.43	16.53	16.63	16.73	16.82	16.92	17.02	17.12	17.22
19	17.32	17.42	17.52	17.62	17.72	17.82	17.92	18.02	18.12	18.22
20	18.32	18.42	18.52	18.62	18.71	18.81	18.91	19.01	19.11	19.21
21	19.31	19.41	19.51	19.61	19.71	19.81	19.91	20.01	20.11	20.21
22	20.31	20.41	20.51	20.61	20.71	20.81	20.91	21.00	21.10	21.20
23	21.30	21.40	21.50	21.60	21.70	21.80	21.90	22.00	22.10	22.20
24	22.30	22.40	22.50	22.60	22.70	22.80	22.90	23.00	23.10	23.20
25	23.30	23.40	23.50	23.60	23.70	23.80	23.89	23.99	24.09	24.19
26	24.29	24.39	24.49	24.59	24.69	24.79	24.89	24.99	25.09	25.19
27	25.29	25.39	25.49	25.59	25.69	25.79	25.89	25.99	26.09	26.19
28	26.29	26.39	26.49	26.59	26.69	26.79	26.89	26.99	27.09	27.19
29	27.29	27.39	27.49	27.58	27.68	27.78	27.88	27.98	28.08	28.18
30	28.28	28.38	28.48	28.58	28.68	28.78	28.88	28.98	29.08	29.18
31	29.28	29.38	29.48	29.58	29.68	29.78	29.88	29.98	30.08	30.18
32	30.28	30.38	30.48	30.58	30.68	30.78	30.88	30.98	31.08	31.18
33	31.28	31.38	31.48	31.58	31.68	31.78	31.88	31.98	32.08	32.18
34	32.28	32.37	32.47	32.57	32.67	32.77	32.87	32.97	33.07	33.17
35	33.27	33.37	33.47	33.57	33.67	33.77	33.87	33.97	34.07	34.17
36	34.27	34.37	34.47	34.57	34.67	34.77	34.87	34.97	35.07	35.17
37	35.27	35.37	35.47	35.57	35.67	35.77	35.87	35.97	36.07	36.17
38	36.27	36.37	36.47	36.57	36.67	36.77	36.87	36.97	37.07	37.17
39	37.27	37.37	37.47	37.57	37.67	37.77	37.87	37.97	38.07	38.17
40	38.27	38.37	38.47	38.57	38.67	38.77	38.87	38.96	39.06	39.16

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
88

Runoff for inches of rainfall—Curve no. 88

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.01	0.03	0.06	0.10	0.15	0.20
1	0.25	0.31	0.38	0.44	0.51	0.58	0.66	0.73	0.81	0.89
2	0.97	1.05	1.13	1.21	1.30	1.38	1.47	1.56	1.64	1.73
3	1.82	1.91	2.00	2.09	2.18	2.27	2.36	2.45	2.55	2.64
4	2.73	2.82	2.92	3.01	3.11	3.20	3.29	3.39	3.48	3.58
5	3.67	3.77	3.86	3.96	4.05	4.15	4.24	4.34	4.44	4.53
6	4.63	4.73	4.82	4.92	5.02	5.11	5.21	5.31	5.40	5.50
7	5.60	5.69	5.79	5.89	5.99	6.08	6.18	6.28	6.38	6.47
8	6.57	6.67	6.77	6.87	6.96	7.06	7.16	7.26	7.36	7.45
9	7.55	7.65	7.75	7.85	7.94	8.04	8.14	8.24	8.34	8.44
10	8.53	8.63	8.73	8.83	8.93	9.03	9.13	9.22	9.32	9.42
11	9.52	9.62	9.72	9.82	9.92	10.01	10.11	10.21	10.31	10.41
12	10.51	10.61	10.71	10.81	10.91	11.00	11.10	11.20	11.30	11.40
13	11.50	11.60	11.70	11.80	11.90	11.99	12.09	12.19	12.29	12.39
14	12.49	12.59	12.69	12.79	12.89	12.99	13.09	13.19	13.28	13.38
15	13.48	13.58	13.68	13.78	13.88	13.98	14.08	14.18	14.28	14.38
16	14.48	14.58	14.67	14.77	14.87	14.97	15.07	15.17	15.27	15.37
17	15.47	15.57	15.67	15.77	15.87	15.97	16.07	16.17	16.27	16.37
18	16.46	16.56	16.66	16.76	16.86	16.96	17.06	17.16	17.26	17.36
19	17.46	17.56	17.66	17.76	17.86	17.96	18.06	18.16	18.26	18.36
20	18.46	18.56	18.65	18.75	18.85	18.95	19.05	19.15	19.25	19.35
21	19.45	19.55	19.65	19.75	19.85	19.95	20.05	20.15	20.25	20.35
22	20.45	20.55	20.65	20.75	20.85	20.95	21.05	21.15	21.25	21.35
23	21.44	21.54	21.64	21.74	21.84	21.94	22.04	22.14	22.24	22.34
24	22.44	22.54	22.64	22.74	22.84	22.94	23.04	23.14	23.24	23.34
25	23.44	23.54	23.64	23.74	23.84	23.94	24.04	24.14	24.24	24.34
26	24.44	24.54	24.64	24.74	24.84	24.94	25.03	25.13	25.23	25.33
27	25.43	25.53	25.63	25.73	25.83	25.93	26.03	26.13	26.23	26.33
28	26.43	26.53	26.63	26.73	26.83	26.93	27.03	27.13	27.23	27.33
29	27.43	27.53	27.63	27.73	27.83	27.93	28.03	28.13	28.23	28.33
30	28.43	28.53	28.63	28.73	28.83	28.93	29.03	29.13	29.23	29.33
31	29.43	29.53	29.63	29.73	29.82	29.92	30.02	30.12	30.22	30.32
32	30.42	30.52	30.62	30.72	30.82	30.92	31.02	31.12	31.22	31.32
33	31.42	31.52	31.62	31.72	31.82	31.92	32.02	32.12	32.22	32.32
34	32.42	32.52	32.62	32.72	32.82	32.92	33.02	33.12	33.22	33.32
35	33.42	33.52	33.62	33.72	33.82	33.92	34.02	34.12	34.22	34.32
36	34.42	34.52	34.62	34.72	34.82	34.92	35.02	35.12	35.22	35.32
37	35.42	35.52	35.62	35.72	35.82	35.92	36.02	36.12	36.22	36.32
38	36.42	36.52	36.62	36.71	36.81	36.91	37.01	37.11	37.21	37.31
39	37.41	37.51	37.61	37.71	37.81	37.91	38.01	38.11	38.21	38.31
40	38.41	38.51	38.61	38.71	38.81	38.91	39.01	39.11	39.21	39.31

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
89

Runoff for inches of rainfall—Curve no. 89

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.00	0.02	0.04	0.08	0.12	0.17	0.22
1	0.28	0.35	0.41	0.48	0.55	0.63	0.71	0.78	0.86	0.94
2	1.03	1.11	1.19	1.28	1.37	1.45	1.54	1.63	1.72	1.81
3	1.90	1.99	2.08	2.17	2.26	2.35	2.45	2.54	2.63	2.73
4	2.82	2.91	3.01	3.10	3.20	3.29	3.39	3.48	3.58	3.67
5	3.77	3.86	3.96	4.06	4.15	4.25	4.35	4.44	4.54	4.64
6	4.73	4.83	4.93	5.02	5.12	5.22	5.31	5.41	5.51	5.61
7	5.70	5.80	5.90	6.00	6.10	6.19	6.29	6.39	6.49	6.58
8	6.68	6.78	6.88	6.98	7.08	7.17	7.27	7.37	7.47	7.57
9	7.67	7.76	7.86	7.96	8.06	8.16	8.26	8.36	8.45	8.55
10	8.65	8.75	8.85	8.95	9.05	9.15	9.24	9.34	9.44	9.54
11	9.64	9.74	9.84	9.94	10.04	10.14	10.23	10.33	10.43	10.53
12	10.63	10.73	10.83	10.93	11.03	11.13	11.23	11.32	11.42	11.52
13	11.62	11.72	11.82	11.92	12.02	12.12	12.22	12.32	12.42	12.52
14	12.61	12.71	12.81	12.91	13.01	13.11	13.21	13.31	13.41	13.51
15	13.61	13.71	13.81	13.91	14.01	14.11	14.20	14.30	14.40	14.50
16	14.60	14.70	14.80	14.90	15.00	15.10	15.20	15.30	15.40	15.50
17	15.60	15.70	15.80	15.90	16.00	16.10	16.19	16.29	16.39	16.49
18	16.59	16.69	16.79	16.89	16.99	17.09	17.19	17.29	17.39	17.49
19	17.59	17.69	17.79	17.89	17.99	18.09	18.19	18.29	18.39	18.49
20	18.59	18.68	18.78	18.88	18.98	19.08	19.18	19.28	19.38	19.48
21	19.58	19.68	19.78	19.88	19.98	20.08	20.18	20.28	20.38	20.48
22	20.58	20.68	20.78	20.88	20.98	21.08	21.18	21.28	21.38	21.48
23	21.58	21.68	21.78	21.88	21.98	22.07	22.17	22.27	22.37	22.47
24	22.57	22.67	22.77	22.87	22.97	23.07	23.17	23.27	23.37	23.47
25	23.57	23.67	23.77	23.87	23.97	24.07	24.17	24.27	24.37	24.47
26	24.57	24.67	24.77	24.87	24.97	25.07	25.17	25.27	25.37	25.47
27	25.57	25.67	25.77	25.87	25.97	26.07	26.17	26.27	26.37	26.47
28	26.57	26.66	26.76	26.86	26.96	27.06	27.16	27.26	27.36	27.46
29	27.56	27.66	27.76	27.86	27.96	28.06	28.16	28.26	28.36	28.46
30	28.56	28.66	28.76	28.86	28.96	29.06	29.16	29.26	29.36	29.46
31	29.56	29.66	29.76	29.86	29.96	30.06	30.16	30.26	30.36	30.46
32	30.56	30.66	30.76	30.86	30.96	31.06	31.16	31.26	31.36	31.46
33	31.56	31.66	31.76	31.86	31.96	32.06	32.16	32.26	32.36	32.46
34	32.56	32.66	32.76	32.86	32.96	33.06	33.16	33.26	33.35	33.45
35	33.55	33.65	33.75	33.85	33.95	34.05	34.15	34.25	34.35	34.45
36	34.55	34.65	34.75	34.85	34.95	35.05	35.15	35.25	35.35	35.45
37	35.55	35.65	35.75	35.85	35.95	36.05	36.15	36.25	36.35	36.45
38	36.55	36.65	36.75	36.85	36.95	37.05	37.15	37.25	37.35	37.45
39	37.55	37.65	37.75	37.85	37.95	38.05	38.15	38.25	38.35	38.45
40	38.55	38.65	38.75	38.85	38.95	39.05	39.15	39.25	39.35	39.45

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 90

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.01	0.02	0.06	0.10	0.14	0.20	0.26
1	0.32	0.39	0.46	0.53	0.61	0.68	0.76	0.84	0.93	1.01
2	1.09	1.18	1.27	1.35	1.44	1.53	1.62	1.71	1.80	1.89
3	1.98	2.08	2.17	2.26	2.36	2.45	2.54	2.64	2.73	2.83
4	2.92	3.02	3.11	3.21	3.30	3.40	3.49	3.59	3.68	3.78
5	3.88	3.97	4.07	4.17	4.26	4.36	4.46	4.56	4.65	4.75
6	4.85	4.94	5.04	5.14	5.24	5.33	5.43	5.53	5.63	5.73
7	5.82	5.92	6.02	6.12	6.22	6.31	6.41	6.51	6.61	6.71
8	6.81	6.91	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.69
9	7.79	7.89	7.99	8.09	8.19	8.29	8.39	8.48	8.58	8.68
10	8.78	8.88	8.98	9.08	9.18	9.28	9.38	9.47	9.57	9.67
11	9.77	9.87	9.97	10.07	10.17	10.27	10.37	10.47	10.57	10.66
12	10.76	10.86	10.96	11.06	11.16	11.26	11.36	11.46	11.56	11.66
13	11.76	11.86	11.96	12.05	12.15	12.25	12.35	12.45	12.55	12.65
14	12.75	12.85	12.95	13.05	13.15	13.25	13.35	13.45	13.55	13.65
15	13.75	13.85	13.94	14.04	14.14	14.24	14.34	14.44	14.54	14.64
16	14.74	14.84	14.94	15.04	15.14	15.24	15.34	15.44	15.54	15.64
17	15.74	15.84	15.94	16.04	16.14	16.24	16.33	16.43	16.53	16.63
18	16.73	16.83	16.93	17.03	17.13	17.23	17.33	17.43	17.53	17.63
19	17.73	17.83	17.93	18.03	18.13	18.23	18.33	18.43	18.53	18.63
20	18.73	18.83	18.93	19.03	19.13	19.23	19.33	19.43	19.52	19.62
21	19.72	19.82	19.92	20.02	20.12	20.22	20.32	20.42	20.52	20.62
22	20.72	20.82	20.92	21.02	21.12	21.22	21.32	21.42	21.52	21.62
23	21.72	21.82	21.92	22.02	22.12	22.22	22.32	22.42	22.52	22.62
24	22.72	22.82	22.92	23.02	23.12	23.22	23.32	23.42	23.52	23.62
25	23.72	23.82	23.92	24.02	24.11	24.21	24.31	24.41	24.51	24.61
26	24.71	24.81	24.91	25.01	25.11	25.21	25.31	25.41	25.51	25.61
27	25.71	25.81	25.91	26.01	26.11	26.21	26.31	26.41	26.51	26.61
28	26.71	26.81	26.91	27.01	27.11	27.21	27.31	27.41	27.51	27.61
29	27.71	27.81	27.91	28.01	28.11	28.21	28.31	28.41	28.51	28.61
30	28.71	28.81	28.91	29.01	29.11	29.21	29.31	29.41	29.51	29.61
31	29.71	29.81	29.91	30.01	30.11	30.21	30.31	30.41	30.51	30.61
32	30.71	30.81	30.91	31.01	31.11	31.20	31.30	31.40	31.50	31.60
33	31.70	31.80	31.90	32.00	32.10	32.20	32.30	32.40	32.50	32.60
34	32.70	32.80	32.90	33.00	33.10	33.20	33.30	33.40	33.50	33.60
35	33.70	33.80	33.90	34.00	34.10	34.20	34.30	34.40	34.50	34.60
36	34.70	34.80	34.90	35.00	35.10	35.20	35.30	35.40	35.50	35.60
37	35.70	35.80	35.90	36.00	36.10	36.20	36.30	36.40	36.50	36.60
38	36.70	36.80	36.90	37.00	37.10	37.20	37.30	37.40	37.50	37.60
39	37.70	37.80	37.90	38.00	38.10	38.20	38.30	38.40	38.50	38.60
40	38.70	38.80	38.90	39.00	39.10	39.20	39.30	39.40	39.50	39.60

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
91

Runoff for inches of rainfall—Curve no. 91

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.01	0.03	0.07	0.12	0.17	0.23	0.29
1	0.36	0.43	0.50	0.58	0.66	0.74	0.82	0.91	0.99	1.08
2	1.16	1.25	1.34	1.43	1.52	1.61	1.70	1.79	1.89	1.98
3	2.07	2.16	2.26	2.35	2.45	2.54	2.64	2.73	2.83	2.92
4	3.02	3.11	3.21	3.31	3.40	3.50	3.59	3.69	3.79	3.89
5	3.98	4.08	4.18	4.27	4.37	4.47	4.57	4.66	4.76	4.86
6	4.96	5.06	5.15	5.25	5.35	5.45	5.55	5.64	5.74	5.84
7	5.94	6.04	6.14	6.23	6.33	6.43	6.53	6.63	6.73	6.83
8	6.92	7.02	7.12	7.22	7.32	7.42	7.52	7.62	7.72	7.81
9	7.91	8.01	8.11	8.21	8.31	8.41	8.51	8.61	8.71	8.80
10	8.90	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80
11	9.90	10.00	10.09	10.19	10.29	10.39	10.49	10.59	10.69	10.79
12	10.89	10.99	11.09	11.19	11.29	11.39	11.49	11.59	11.69	11.78
13	11.88	11.98	12.08	12.18	12.28	12.38	12.48	12.58	12.68	12.78
14	12.88	12.98	13.08	13.18	13.28	13.38	13.48	13.58	13.68	13.78
15	13.88	13.97	14.07	14.17	14.27	14.37	14.47	14.57	14.67	14.77
16	14.87	14.97	15.07	15.17	15.27	15.37	15.47	15.57	15.67	15.77
17	15.87	15.97	16.07	16.17	16.27	16.37	16.47	16.57	16.67	16.77
18	16.87	16.96	17.06	17.16	17.26	17.36	17.46	17.56	17.66	17.76
19	17.86	17.96	18.06	18.16	18.26	18.36	18.46	18.56	18.66	18.76
20	18.86	18.96	19.06	19.16	19.26	19.36	19.46	19.56	19.66	19.76
21	19.86	19.96	20.06	20.16	20.26	20.36	20.46	20.56	20.66	20.76
22	20.86	20.96	21.06	21.16	21.26	21.36	21.46	21.55	21.65	21.75
23	21.85	21.95	22.05	22.15	22.25	22.35	22.45	22.55	22.65	22.75
24	22.85	22.95	23.05	23.15	23.25	23.35	23.45	23.55	23.65	23.75
25	23.85	23.95	24.05	24.15	24.25	24.35	24.45	24.55	24.65	24.75
26	24.85	24.95	25.05	25.15	25.25	25.35	25.45	25.55	25.65	25.75
27	25.85	25.95	26.05	26.15	26.25	26.35	26.45	26.55	26.65	26.75
28	26.85	26.95	27.05	27.15	27.25	27.35	27.45	27.55	27.65	27.75
29	27.85	27.95	28.05	28.15	28.25	28.35	28.45	28.55	28.65	28.75
30	28.84	28.94	29.04	29.14	29.24	29.34	29.44	29.54	29.64	29.74
31	29.84	29.94	30.04	30.14	30.24	30.34	30.44	30.54	30.64	30.74
32	30.84	30.94	31.04	31.14	31.24	31.34	31.44	31.54	31.64	31.74
33	31.84	31.94	32.04	32.14	32.24	32.34	32.44	32.54	32.64	32.74
34	32.84	32.94	33.04	33.14	33.24	33.34	33.44	33.54	33.64	33.74
35	33.84	33.94	34.04	34.14	34.24	34.34	34.44	34.54	34.64	34.74
36	34.84	34.94	35.04	35.14	35.24	35.34	35.44	35.54	35.64	35.74
37	35.84	35.94	36.04	36.14	36.24	36.34	36.44	36.54	36.64	36.74
38	36.84	36.94	37.04	37.14	37.24	37.34	37.44	37.54	37.64	37.74
39	37.84	37.94	38.04	38.14	38.24	38.34	38.44	38.54	38.64	38.74
40	38.84	38.94	39.04	39.14	39.24	39.34	39.44	39.54	39.64	39.74

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 92

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.02	0.05	0.09	0.14	0.20	0.26	0.33
1	0.40	0.48	0.56	0.64	0.72	0.80	0.89	0.97	1.06	1.15
2	1.24	1.33	1.42	1.51	1.60	1.69	1.79	1.88	1.97	2.07
3	2.16	2.26	2.35	2.45	2.54	2.64	2.73	2.83	2.92	3.02
4	3.12	3.21	3.31	3.41	3.50	3.60	3.70	3.80	3.89	3.99
5	4.09	4.19	4.28	4.38	4.48	4.58	4.68	4.77	4.87	4.97
6	5.07	5.17	5.27	5.36	5.46	5.56	5.66	5.76	5.86	5.96
7	6.05	6.15	6.25	6.35	6.45	6.55	6.65	6.75	6.85	6.94
8	7.04	7.14	7.24	7.34	7.44	7.54	7.64	7.74	7.84	7.93
9	8.03	8.13	8.23	8.33	8.43	8.53	8.63	8.73	8.83	8.93
10	9.03	9.13	9.23	9.32	9.42	9.52	9.62	9.72	9.82	9.92
11	10.02	10.12	10.22	10.32	10.42	10.52	10.62	10.72	10.82	10.92
12	11.02	11.12	11.21	11.31	11.41	11.51	11.61	11.71	11.81	11.91
13	12.01	12.11	12.21	12.31	12.41	12.51	12.61	12.71	12.81	12.91
14	13.01	13.11	13.21	13.31	13.41	13.51	13.61	13.71	13.80	13.90
15	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90
16	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90
17	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90
18	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.79	17.89
19	17.99	18.09	18.19	18.29	18.39	18.49	18.59	18.69	18.79	18.89
20	18.99	19.09	19.19	19.29	19.39	19.49	19.59	19.69	19.79	19.89
21	19.99	20.09	20.19	20.29	20.39	20.49	20.59	20.69	20.79	20.89
22	20.99	21.09	21.19	21.29	21.39	21.49	21.59	21.69	21.79	21.89
23	21.99	22.09	22.19	22.29	22.39	22.49	22.59	22.69	22.79	22.89
24	22.99	23.09	23.19	23.29	23.39	23.49	23.59	23.69	23.79	23.89
25	23.99	24.09	24.19	24.29	24.39	24.48	24.58	24.68	24.78	24.88
26	24.98	25.08	25.18	25.28	25.38	25.48	25.58	25.68	25.78	25.88
27	25.98	26.08	26.18	26.28	26.38	26.48	26.58	26.68	26.78	26.88
28	26.98	27.08	27.18	27.28	27.38	27.48	27.58	27.68	27.78	27.88
29	27.98	28.08	28.18	28.28	28.38	28.48	28.58	28.68	28.78	28.88
30	28.98	29.08	29.18	29.28	29.38	29.48	29.58	29.68	29.78	29.88
31	29.98	30.08	30.18	30.28	30.38	30.48	30.58	30.68	30.78	30.88
32	30.98	31.08	31.18	31.28	31.38	31.48	31.58	31.68	31.78	31.88
33	31.98	32.08	32.18	32.28	32.38	32.48	32.58	32.68	32.78	32.88
34	32.98	33.08	33.18	33.28	33.38	33.48	33.58	33.68	33.78	33.88
35	33.98	34.08	34.18	34.28	34.38	34.48	34.58	34.68	34.78	34.88
36	34.98	35.08	35.18	35.28	35.38	35.48	35.58	35.68	35.78	35.88
37	35.98	36.08	36.18	36.28	36.38	36.48	36.58	36.68	36.78	36.88
38	36.98	37.08	37.18	37.28	37.38	37.48	37.58	37.68	37.78	37.88
39	37.98	38.08	38.17	38.27	38.37	38.47	38.57	38.67	38.77	38.87
40	38.97	39.07	39.17	39.27	39.37	39.47	39.57	39.67	39.77	39.87

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
93

Runoff for inches of rainfall—Curve no. 93

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.00	0.02	0.06	0.11	0.17	0.23	0.30	0.37
1	0.45	0.53	0.61	0.69	0.78	0.87	0.95	1.04	1.13	1.22
2	1.31	1.41	1.50	1.59	1.69	1.78	1.87	1.97	2.06	2.16
3	2.25	2.35	2.45	2.54	2.64	2.73	2.83	2.93	3.03	3.12
4	3.22	3.32	3.41	3.51	3.61	3.71	3.81	3.90	4.00	4.10
5	4.20	4.30	4.39	4.49	4.59	4.69	4.79	4.89	4.98	5.08
6	5.18	5.28	5.38	5.48	5.58	5.68	5.78	5.87	5.97	6.07
7	6.17	6.27	6.37	6.47	6.57	6.67	6.77	6.86	6.96	7.06
8	7.16	7.26	7.36	7.46	7.56	7.66	7.76	7.86	7.96	8.06
9	8.16	8.25	8.35	8.45	8.55	8.65	8.75	8.85	8.95	9.05
10	9.15	9.25	9.35	9.45	9.55	9.65	9.75	9.85	9.95	10.05
11	10.15	10.24	10.34	10.44	10.54	10.64	10.74	10.84	10.94	11.04
12	11.14	11.24	11.34	11.44	11.54	11.64	11.74	11.84	11.94	12.04
13	12.14	12.24	12.34	12.44	12.54	12.64	12.74	12.84	12.94	13.04
14	13.14	13.23	13.33	13.43	13.53	13.63	13.73	13.83	13.93	14.03
15	14.13	14.23	14.33	14.43	14.53	14.63	14.73	14.83	14.93	15.03
16	15.13	15.23	15.33	15.43	15.53	15.63	15.73	15.83	15.93	16.03
17	16.13	16.23	16.33	16.43	16.53	16.63	16.73	16.83	16.93	17.03
18	17.13	17.23	17.33	17.43	17.53	17.63	17.73	17.83	17.93	18.03
19	18.13	18.23	18.33	18.42	18.52	18.62	18.72	18.82	18.92	19.02
20	19.12	19.22	19.32	19.42	19.52	19.62	19.72	19.82	19.92	20.02
21	20.12	20.22	20.32	20.42	20.52	20.62	20.72	20.82	20.92	21.02
22	21.12	21.22	21.32	21.42	21.52	21.62	21.72	21.82	21.92	22.02
23	22.12	22.22	22.32	22.42	22.52	22.62	22.72	22.82	22.92	23.02
24	23.12	23.22	23.32	23.42	23.52	23.62	23.72	23.82	23.92	24.02
25	24.12	24.22	24.32	24.42	24.52	24.62	24.72	24.82	24.92	25.02
26	25.12	25.22	25.32	25.42	25.52	25.62	25.72	25.82	25.92	26.02
27	26.12	26.22	26.32	26.42	26.52	26.62	26.72	26.82	26.92	27.02
28	27.12	27.22	27.32	27.42	27.52	27.62	27.72	27.82	27.92	28.02
29	28.12	28.22	28.32	28.42	28.52	28.62	28.72	28.82	28.92	29.01
30	29.11	29.21	29.31	29.41	29.51	29.61	29.71	29.81	29.91	30.01
31	30.11	30.21	30.31	30.41	30.51	30.61	30.71	30.81	30.91	31.01
32	31.11	31.21	31.31	31.41	31.51	31.61	31.71	31.81	31.91	32.01
33	32.11	32.21	32.31	32.41	32.51	32.61	32.71	32.81	32.91	33.01
34	33.11	33.21	33.31	33.41	33.51	33.61	33.71	33.81	33.91	34.01
35	34.11	34.21	34.31	34.41	34.51	34.61	34.71	34.81	34.91	35.01
36	35.11	35.21	35.31	35.41	35.51	35.61	35.71	35.81	35.91	36.01
37	36.11	36.21	36.31	36.41	36.51	36.61	36.71	36.81	36.91	37.01
38	37.11	37.21	37.31	37.41	37.51	37.61	37.71	37.81	37.91	38.01
39	38.11	38.21	38.31	38.41	38.51	38.61	38.71	38.81	38.91	39.01
40	39.11	39.21	39.31	39.41	39.51	39.61	39.71	39.81	39.91	40.01

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

(210-VI-NEH, July 2004)

Runoff for inches of rainfall—Curve no. 94

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.01	0.04	0.08	0.14	0.20	0.27	0.35	0.42
1	0.50	0.59	0.67	0.76	0.85	0.94	1.03	1.12	1.21	1.30
2	1.40	1.49	1.58	1.68	1.77	1.87	1.97	2.06	2.16	2.25
3	2.35	2.45	2.54	2.64	2.74	2.84	2.93	3.03	3.13	3.23
4	3.32	3.42	3.52	3.62	3.72	3.82	3.91	4.01	4.11	4.21
5	4.31	4.41	4.51	4.60	4.70	4.80	4.90	5.00	5.10	5.20
6	5.30	5.40	5.50	5.59	5.69	5.79	5.89	5.99	6.09	6.19
7	6.29	6.39	6.49	6.59	6.69	6.79	6.88	6.98	7.08	7.18
8	7.28	7.38	7.48	7.58	7.68	7.78	7.88	7.98	8.08	8.18
9	8.28	8.38	8.48	8.58	8.68	8.78	8.87	8.97	9.07	9.17
10	9.27	9.37	9.47	9.57	9.67	9.77	9.87	9.97	10.07	10.17
11	10.27	10.37	10.47	10.57	10.67	10.77	10.87	10.97	11.07	11.17
12	11.27	11.37	11.47	11.57	11.67	11.77	11.87	11.97	12.06	12.16
13	12.26	12.36	12.46	12.56	12.66	12.76	12.86	12.96	13.06	13.16
14	13.26	13.36	13.46	13.56	13.66	13.76	13.86	13.96	14.06	14.16
15	14.26	14.36	14.46	14.56	14.66	14.76	14.86	14.96	15.06	15.16
16	15.26	15.36	15.46	15.56	15.66	15.76	15.86	15.96	16.06	16.16
17	16.26	16.36	16.46	16.56	16.66	16.76	16.86	16.96	17.06	17.16
18	17.26	17.36	17.46	17.56	17.66	17.76	17.86	17.96	18.06	18.16
19	18.26	18.36	18.46	18.55	18.65	18.75	18.85	18.95	19.05	19.15
20	19.25	19.35	19.45	19.55	19.65	19.75	19.85	19.95	20.05	20.15
21	20.25	20.35	20.45	20.55	20.65	20.75	20.85	20.95	21.05	21.15
22	21.25	21.35	21.45	21.55	21.65	21.75	21.85	21.95	22.05	22.15
23	22.25	22.35	22.45	22.55	22.65	22.75	22.85	22.95	23.05	23.15
24	23.25	23.35	23.45	23.55	23.65	23.75	23.85	23.95	24.05	24.15
25	24.25	24.35	24.45	24.55	24.65	24.75	24.85	24.95	25.05	25.15
26	25.25	25.35	25.45	25.55	25.65	25.75	25.85	25.95	26.05	26.15
27	26.25	26.35	26.45	26.55	26.65	26.75	26.85	26.95	27.05	27.15
28	27.25	27.35	27.45	27.55	27.65	27.75	27.85	27.95	28.05	28.15
29	28.25	28.35	28.45	28.55	28.65	28.75	28.85	28.95	29.05	29.15
30	29.25	29.35	29.45	29.55	29.65	29.75	29.85	29.95	30.05	30.15
31	30.25	30.35	30.45	30.55	30.65	30.75	30.85	30.95	31.05	31.15
32	31.25	31.35	31.45	31.55	31.65	31.75	31.85	31.95	32.05	32.15
33	32.25	32.35	32.45	32.55	32.65	32.75	32.85	32.95	33.05	33.15
34	33.25	33.35	33.45	33.55	33.65	33.75	33.85	33.95	34.05	34.15
35	34.25	34.35	34.45	34.55	34.65	34.75	34.85	34.95	35.05	35.15
36	35.25	35.35	35.45	35.55	35.65	35.75	35.85	35.95	36.05	36.15
37	36.25	36.35	36.45	36.55	36.65	36.75	36.85	36.95	37.05	37.14
38	37.24	37.34	37.44	37.54	37.64	37.74	37.84	37.94	38.04	38.14
39	38.24	38.34	38.44	38.54	38.64	38.74	38.84	38.94	39.04	39.14
40	39.24	39.34	39.44	39.54	39.64	39.74	39.84	39.94	40.04	40.14

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
95

Runoff for inches of rainfall—Curve no. 95

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.01	0.05	0.11	0.17	0.24	0.32	0.40	0.48
1	0.56	0.65	0.74	0.83	0.92	1.01	1.11	1.20	1.29	1.39
2	1.48	1.58	1.67	1.77	1.87	1.96	2.06	2.16	2.25	2.35
3	2.45	2.55	2.65	2.74	2.84	2.94	3.04	3.14	3.23	3.33
4	3.43	3.53	3.63	3.73	3.83	3.93	4.02	4.12	4.22	4.32
5	4.42	4.52	4.62	4.72	4.82	4.92	5.01	5.11	5.21	5.31
6	5.41	5.51	5.61	5.71	5.81	5.91	6.01	6.11	6.21	6.31
7	6.41	6.51	6.61	6.70	6.80	6.90	7.00	7.10	7.20	7.30
8	7.40	7.50	7.60	7.70	7.80	7.90	8.00	8.10	8.20	8.30
9	8.40	8.50	8.60	8.70	8.80	8.90	9.00	9.10	9.20	9.30
10	9.40	9.50	9.59	9.69	9.79	9.89	9.99	10.09	10.19	10.29
11	10.39	10.49	10.59	10.69	10.79	10.89	10.99	11.09	11.19	11.29
12	11.39	11.49	11.59	11.69	11.79	11.89	11.99	12.09	12.19	12.29
13	12.39	12.49	12.59	12.69	12.79	12.89	12.99	13.09	13.19	13.29
14	13.39	13.49	13.59	13.69	13.79	13.89	13.99	14.09	14.19	14.29
15	14.39	14.49	14.59	14.69	14.79	14.89	14.99	15.09	15.19	15.29
16	15.39	15.49	15.59	15.69	15.79	15.89	15.99	16.08	16.18	16.28
17	16.38	16.48	16.58	16.68	16.78	16.88	16.98	17.08	17.18	17.28
18	17.38	17.48	17.58	17.68	17.78	17.88	17.98	18.08	18.18	18.28
19	18.38	18.48	18.58	18.68	18.78	18.88	18.98	19.08	19.18	19.28
20	19.38	19.48	19.58	19.68	19.78	19.88	19.98	20.08	20.18	20.28
21	20.38	20.48	20.58	20.68	20.78	20.88	20.98	21.08	21.18	21.28
22	21.38	21.48	21.58	21.68	21.78	21.88	21.98	22.08	22.18	22.28
23	22.38	22.48	22.58	22.68	22.78	22.88	22.98	23.08	23.18	23.28
24	23.38	23.48	23.58	23.68	23.78	23.88	23.98	24.08	24.18	24.28
25	24.38	24.48	24.58	24.68	24.78	24.88	24.98	25.08	25.18	25.28
26	25.38	25.48	25.58	25.68	25.78	25.88	25.98	26.08	26.18	26.28
27	26.38	26.48	26.58	26.68	26.78	26.88	26.98	27.08	27.18	27.28
28	27.38	27.48	27.58	27.68	27.78	27.88	27.98	28.08	28.18	28.28
29	28.38	28.48	28.58	28.68	28.78	28.88	28.98	29.08	29.18	29.28
30	29.38	29.48	29.58	29.68	29.78	29.88	29.98	30.08	30.18	30.28
31	30.38	30.48	30.58	30.68	30.78	30.88	30.98	31.08	31.18	31.28
32	31.38	31.48	31.58	31.68	31.78	31.88	31.98	32.08	32.18	32.28
33	32.38	32.48	32.58	32.68	32.78	32.88	32.98	33.08	33.18	33.28
34	33.38	33.48	33.58	33.68	33.78	33.88	33.98	34.08	34.18	34.28
35	34.38	34.48	34.58	34.68	34.78	34.88	34.98	35.08	35.18	35.28
36	35.38	35.48	35.58	35.68	35.78	35.88	35.98	36.08	36.18	36.28
37	36.38	36.48	36.58	36.68	36.78	36.88	36.98	37.08	37.18	37.28
38	37.38	37.48	37.58	37.68	37.78	37.88	37.98	38.08	38.18	38.28
39	38.38	38.48	38.58	38.68	38.78	38.88	38.98	39.08	39.18	39.28
40	39.38	39.48	39.58	39.68	39.78	39.88	39.98	40.08	40.18	40.28

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 96

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.03	0.07	0.14	0.21	0.29	0.37	0.45	0.54
1	0.63	0.72	0.81	0.91	1.00	1.09	1.19	1.29	1.38	1.48
2	1.57	1.67	1.77	1.87	1.96	2.06	2.16	2.26	2.36	2.45
3	2.55	2.65	2.75	2.85	2.95	3.04	3.14	3.24	3.34	3.44
4	3.54	3.64	3.74	3.84	3.94	4.04	4.13	4.23	4.33	4.43
5	4.53	4.63	4.73	4.83	4.93	5.03	5.13	5.23	5.33	5.43
6	5.53	5.63	5.73	5.83	5.93	6.03	6.12	6.22	6.32	6.42
7	6.52	6.62	6.72	6.82	6.92	7.02	7.12	7.22	7.32	7.42
8	7.52	7.62	7.72	7.82	7.92	8.02	8.12	8.22	8.32	8.42
9	8.52	8.62	8.72	8.82	8.92	9.02	9.12	9.22	9.32	9.42
10	9.52	9.62	9.72	9.82	9.92	10.02	10.12	10.22	10.32	10.42
11	10.51	10.61	10.71	10.81	10.91	11.01	11.11	11.21	11.31	11.41
12	11.51	11.61	11.71	11.81	11.91	12.01	12.11	12.21	12.31	12.41
13	12.51	12.61	12.71	12.81	12.91	13.01	13.11	13.21	13.31	13.41
14	13.51	13.61	13.71	13.81	13.91	14.01	14.11	14.21	14.31	14.41
15	14.51	14.61	14.71	14.81	14.91	15.01	15.11	15.21	15.31	15.41
16	15.51	15.61	15.71	15.81	15.91	16.01	16.11	16.21	16.31	16.41
17	16.51	16.61	16.71	16.81	16.91	17.01	17.11	17.21	17.31	17.41
18	17.51	17.61	17.71	17.81	17.91	18.01	18.11	18.21	18.31	18.41
19	18.51	18.61	18.71	18.81	18.91	19.01	19.11	19.21	19.31	19.41
20	19.51	19.61	19.71	19.81	19.91	20.01	20.11	20.21	20.31	20.41
21	20.51	20.61	20.71	20.81	20.91	21.01	21.11	21.21	21.31	21.41
22	21.51	21.61	21.71	21.81	21.91	22.01	22.11	22.21	22.31	22.41
23	22.51	22.61	22.71	22.81	22.91	23.01	23.11	23.21	23.31	23.41
24	23.51	23.61	23.71	23.81	23.91	24.01	24.11	24.21	24.31	24.41
25	24.51	24.61	24.71	24.81	24.91	25.01	25.11	25.21	25.31	25.41
26	25.51	25.61	25.71	25.81	25.91	26.01	26.11	26.21	26.31	26.41
27	26.51	26.61	26.71	26.81	26.91	27.01	27.11	27.21	27.31	27.41
28	27.51	27.61	27.71	27.81	27.91	28.01	28.11	28.21	28.31	28.41
29	28.51	28.61	28.71	28.81	28.91	29.01	29.11	29.21	29.31	29.41
30	29.51	29.61	29.71	29.81	29.91	30.01	30.11	30.21	30.31	30.41
31	30.51	30.61	30.71	30.81	30.91	31.01	31.11	31.21	31.31	31.40
32	31.50	31.60	31.70	31.80	31.90	32.00	32.10	32.20	32.30	32.40
33	32.50	32.60	32.70	32.80	32.90	33.00	33.10	33.20	33.30	33.40
34	33.50	33.60	33.70	33.80	33.90	34.00	34.10	34.20	34.30	34.40
35	34.50	34.60	34.70	34.80	34.90	35.00	35.10	35.20	35.30	35.40
36	35.50	35.60	35.70	35.80	35.90	36.00	36.10	36.20	36.30	36.40
37	36.50	36.60	36.70	36.80	36.90	37.00	37.10	37.20	37.30	37.40
38	37.50	37.60	37.70	37.80	37.90	38.00	38.10	38.20	38.30	38.40
39	38.50	38.60	38.70	38.80	38.90	39.00	39.10	39.20	39.30	39.40
40	39.50	39.60	39.70	39.80	39.90	40.00	40.10	40.20	40.30	40.40

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Curve
97

Runoff for inches of rainfall—Curve no. 97

Inches	Tenths 0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.00	0.04	0.10	0.18	0.26	0.34	0.43	0.52	0.61
1	0.71	0.80	0.90	0.99	1.09	1.18	1.28	1.38	1.48	1.57
2	1.67	1.77	1.87	1.97	2.07	2.16	2.26	2.36	2.46	2.56
3	2.66	2.76	2.86	2.96	3.06	3.15	3.25	3.35	3.45	3.55
4	3.65	3.75	3.85	3.95	4.05	4.15	4.25	4.35	4.45	4.55
5	4.65	4.75	4.85	4.95	5.05	5.15	5.25	5.35	5.44	5.54
6	5.64	5.74	5.84	5.94	6.04	6.14	6.24	6.34	6.44	6.54
7	6.64	6.74	6.84	6.94	7.04	7.14	7.24	7.34	7.44	7.54
8	7.64	7.74	7.84	7.94	8.04	8.14	8.24	8.34	8.44	8.54
9	8.64	8.74	8.84	8.94	9.04	9.14	9.24	9.34	9.44	9.54
10	9.64	9.74	9.84	9.94	10.04	10.14	10.24	10.34	10.44	10.54
11	10.64	10.74	10.84	10.94	11.04	11.14	11.24	11.34	11.44	11.54
12	11.64	11.74	11.84	11.94	12.04	12.14	12.24	12.34	12.44	12.54
13	12.64	12.74	12.84	12.94	13.04	13.14	13.24	13.34	13.44	13.54
14	13.64	13.74	13.84	13.94	14.04	14.14	14.24	14.34	14.44	14.54
15	14.64	14.74	14.84	14.94	15.04	15.14	15.24	15.34	15.44	15.54
16	15.64	15.74	15.84	15.93	16.03	16.13	16.23	16.33	16.43	16.53
17	16.63	16.73	16.83	16.93	17.03	17.13	17.23	17.33	17.43	17.53
18	17.63	17.73	17.83	17.93	18.03	18.13	18.23	18.33	18.43	18.53
19	18.63	18.73	18.83	18.93	19.03	19.13	19.23	19.33	19.43	19.53
20	19.63	19.73	19.83	19.93	20.03	20.13	20.23	20.33	20.43	20.53
21	20.63	20.73	20.83	20.93	21.03	21.13	21.23	21.33	21.43	21.53
22	21.63	21.73	21.83	21.93	22.03	22.13	22.23	22.33	22.43	22.53
23	22.63	22.73	22.83	22.93	23.03	23.13	23.23	23.33	23.43	23.53
24	23.63	23.73	23.83	23.93	24.03	24.13	24.23	24.33	24.43	24.53
25	24.63	24.73	24.83	24.93	25.03	25.13	25.23	25.33	25.43	25.53
26	25.63	25.73	25.83	25.93	26.03	26.13	26.23	26.33	26.43	26.53
27	26.63	26.73	26.83	26.93	27.03	27.13	27.23	27.33	27.43	27.53
28	27.63	27.73	27.83	27.93	28.03	28.13	28.23	28.33	28.43	28.53
29	28.63	28.73	28.83	28.93	29.03	29.13	29.23	29.33	29.43	29.53
30	29.63	29.73	29.83	29.93	30.03	30.13	30.23	30.33	30.43	30.53
31	30.63	30.73	30.83	30.93	31.03	31.13	31.23	31.33	31.43	31.53
32	31.63	31.73	31.83	31.93	32.03	32.13	32.23	32.33	32.43	32.53
33	32.63	32.73	32.83	32.93	33.03	33.13	33.23	33.33	33.43	33.53
34	33.63	33.73	33.83	33.93	34.03	34.13	34.23	34.33	34.43	34.53
35	34.63	34.73	34.83	34.93	35.03	35.13	35.23	35.33	35.43	35.53
36	35.63	35.73	35.83	35.93	36.03	36.13	36.23	36.33	36.43	36.53
37	36.63	36.73	36.83	36.93	37.03	37.13	37.23	37.33	37.43	37.53
38	37.63	37.73	37.83	37.93	38.03	38.13	38.23	38.33	38.43	38.53
39	38.63	38.73	38.83	38.93	39.03	39.13	39.23	39.33	39.43	39.53
40	39.63	39.73	39.83	39.93	40.03	40.13	40.23	40.33	40.43	40.53

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$

Runoff for inches of rainfall—Curve no. 98

	Tenths									
Inches	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.00	0.01	0.07	0.15	0.23	0.32	0.41	0.50	0.60	0.69
1	0.79	0.89	0.99	1.08	1.18	1.28	1.38	1.48	1.58	1.68
2	1.77	1.87	1.97	2.07	2.17	2.27	2.37	2.47	2.57	2.67
3	2.77	2.87	2.97	3.07	3.17	3.27	3.37	3.47	3.57	3.67
4	3.77	3.86	3.96	4.06	4.16	4.26	4.36	4.46	4.56	4.66
5	4.76	4.86	4.96	5.06	5.16	5.26	5.36	5.46	5.56	5.66
6	5.76	5.86	5.96	6.06	6.16	6.26	6.36	6.46	6.56	6.66
7	6.76	6.86	6.96	7.06	7.16	7.26	7.36	7.46	7.56	7.66
8	7.76	7.86	7.96	8.06	8.16	8.26	8.36	8.46	8.56	8.66
9	8.76	8.86	8.96	9.06	9.16	9.26	9.36	9.46	9.56	9.66
10	9.76	9.86	9.96	10.06	10.16	10.26	10.36	10.46	10.56	10.66
11	10.76	10.86	10.96	11.06	11.16	11.26	11.36	11.46	11.56	11.66
12	11.76	11.86	11.96	12.06	12.16	12.26	12.36	12.46	12.56	12.66
13	12.76	12.86	12.96	13.06	13.16	13.26	13.36	13.46	13.56	13.66
14	13.76	13.86	13.96	14.06	14.16	14.26	14.36	14.46	14.56	14.66
15	14.76	14.86	14.96	15.06	15.16	15.26	15.36	15.46	15.56	15.66
16	15.76	15.86	15.96	16.06	16.16	16.26	16.36	16.46	16.56	16.66
17	16.76	16.86	16.96	17.06	17.16	17.26	17.36	17.46	17.56	17.66
18	17.76	17.86	17.96	18.06	18.16	18.26	18.36	18.46	18.56	18.66
19	18.76	18.86	18.96	19.06	19.16	19.26	19.36	19.46	19.56	19.66
20	19.76	19.86	19.96	20.06	20.16	20.26	20.36	20.46	20.56	20.66
21	20.76	20.86	20.96	21.06	21.16	21.26	21.36	21.46	21.56	21.66
22	21.76	21.86	21.96	22.06	22.16	22.26	22.36	22.46	22.56	22.66
23	22.76	22.86	22.96	23.06	23.16	23.26	23.36	23.46	23.56	23.66
24	23.76	23.86	23.96	24.06	24.16	24.26	24.36	24.46	24.56	24.66
25	24.76	24.86	24.96	25.06	25.16	25.26	25.36	25.46	25.56	25.66
26	25.76	25.86	25.96	26.06	26.16	26.26	26.36	26.46	26.56	26.66
27	26.76	26.86	26.96	27.06	27.16	27.26	27.36	27.46	27.56	27.66
28	27.76	27.86	27.96	28.06	28.16	28.26	28.36	28.46	28.56	28.66
29	28.76	28.86	28.96	29.06	29.16	29.26	29.36	29.46	29.56	29.66
30	29.76	29.86	29.96	30.06	30.16	30.26	30.36	30.46	30.56	30.66
31	30.76	30.86	30.96	31.06	31.16	31.26	31.36	31.46	31.56	31.66
32	31.76	31.86	31.96	32.06	32.16	32.26	32.36	32.46	32.56	32.66
33	32.76	32.86	32.96	33.06	33.16	33.26	33.36	33.46	33.56	33.66
34	33.76	33.86	33.96	34.06	34.16	34.26	34.36	34.46	34.56	34.66
35	34.76	34.86	34.96	35.06	35.16	35.26	35.36	35.46	35.56	35.66
36	35.76	35.86	35.96	36.06	36.16	36.26	36.36	36.46	36.56	36.66
37	36.76	36.86	36.96	37.06	37.16	37.26	37.36	37.46	37.56	37.66
38	37.76	37.86	37.96	38.06	38.16	38.26	38.36	38.46	38.56	38.66
39	38.76	38.86	38.96	39.06	39.16	39.26	39.36	39.46	39.56	39.66
40	39.76	39.86	39.96	40.06	40.16	40.26	40.36	40.46	40.56	40.66

Note: Runoff value determined by equation $Q = \frac{(P - 0.2S)^2}{P + 0.8S}$