

Activity 3 - Solution

Determine the runoff curve numbers for the hydrologic soil cover complexes listed below. Refer to Appendix A (2-2b) of your Study Guide for applicable charts and tables.

Hydrologic Soil Group	Cover Description	CN
B	Row crops - straight row & crop residue, in good condition	75
B	Small grain - contoured, in poor condition	74
B	Meadow - in good condition	58
C	Woods - in fair condition	73

Activity 4 — Solution

Determine the runoff curve number for the hydrologic soil cover complexes listed below. Refer to Appendix A (2-2a) in your Study Guide for applicable charts and tables.

Hydrologic Soil Group	Cover Description	CN
A	Residential - 1 ac	51
B	Commercial	92
C	New graded area	91
B	Residential-1ac. 18% impervious	$(0.18)(98) +$ $(1 - 0.18)(61)$ $= 67.7$ $= 68$

Activity 5 - Alternate Solution 1

Determine the weighted average runoff curve number for the watershed described below. Refer to Appendix A of your Study Guide for applicable charts and tables.

Soil Name	Cover Description	Acres	Hydrologic Soils Group	CN	Product
Dover	Row Crops-SR & CR in good condition	500	B	75	37,500
Crofton	Small grain-contoured, in poor condition	300	B	74	22,200
Greenville	Meadow-in good condition	150	B	58	8,700
Odessa	Woodsn fair condition	50	D	79	3,950
		=====			=====
		1,000			72,350

$$\text{Weighted CN} = \frac{72.350}{1000} = 72.3 \text{ use } 72$$

Activity 5 - Alternate Solution 2

Determine the weighted average runoff curve number for the watershed described below. Refer to Appendix A of your Study Guide for applicable charts and tables.

Soil Name	Cover Description	Acres	% Area	Hydrologic Soils Group	CN	Product
Dover	Row Crops-SR & CR in good condition	500	0.50	B	75	37.5
Crofton	Small grain-contoured, in poor condition	300	0.30	B	74	22.2
Greenville	Meadow-in good condition	150	0.15	B	58	8.7
Odessa	Woods-in fair condition	50	0.05	D	79	3.9
		=====	=====			=====
		1,000	1.00			72.3
						Use 72

Activity 6 - Alternate Solution 1

Determine the weighted average runoff curve number for the watershed described below. Refer to Appendix A of your Study Guide for applicable charts and tables.

Soil Name	Cover Description	Acres	Hydrologic Soils Group	CN	Product
Dover	Row Crops-straight row and crop residue, in good condition	300	B	75	22,500
Newberg	Meadow-in good condition	200	B	58	11,600
Crofton	1 ac Residential	200	B	68	13,600
Odessa	Industrial	100	D	93	9,300
Dover	1/2 ac. Residential 27% impervious (0.27)(98)+(1 -0.27)(61)	100	B	71	7,100
Greenville	New graded	<u>100</u>	B	86	<u>8,600</u>
		1,000			72,700

$$\text{weighted CN} = \frac{72,700}{1,000} = 72.7 \text{ use } 73$$

Activity 6 - Alternate Solution 2

Determine the weighted average runoff curve number for the watershed described below. Refer to Appendix A of your Study Guide for applicable charts and tables.

Soil Name	Cover Description	Acres	% Area	Hydrologic Soils Group	CN	Product
Dover	Row Crops-SR & CR in good condition	300	0.30	B	75	22.5
New Castle	Meadow-in good condition	200	0.20	B	58	11.6
Crofton	1 ac Residential	200	0.20	B	68	13.6
Odessa	Industrial	100	0.10	D	93	9.3
Dover	1/2 ac. Residential 27% impervious (0.27) (98) + (1-0.27) (61)	100	0.10	B	71	7.1
Greenville	New graded	100	0.10	B	86	8.6
		=====	=====			====
		<u>1000</u>	1.00			<u>72.7</u>