Physical Characteristics of Stream Subbasins in the Hawk Creek-Yellow Medicine River Basin, Southwestern Minnesota and Eastern South Dakota

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Abstract

Data that describe the physical characteristics of stream subbasins upstream from selected sites on streams in the Hawk Creek-Yellow Medicine River Basin, located in southwestern Minnesota and eastern South Dakota are presented in this report. The physical characteristics are the drainage area of the subbasin, the percentage area of the subbasin covered only by lakes, the percentage area of the subbasin covered by both lakes and wetlands, the main-channel length, and the main-channel slope. Stream sites include outlets of subbasins of at least 5 square miles, outlets of sewage treatment plants, and locations of U.S. Geological Survey low-flow, high-flow, and continuous-record gaging stations.

Introduction

This is the 10th report in a series detailing subbasin characteristics of streams in Minnesota and adjacent states. The Hawk Creek-Yellow Medicine River Basin drains an area of 2,070 square miles and is represented by hydrologic accounting unit 07020004 (U.S. Geological Survey, 1974). The Hawk Creek-Yellow Medicine River Basin includes parts of Yellow Medicine, Lac qui Parle, Lincoln, Lyon, Chippewa, Kandiyohi, Renville, and Redwood Counties in southwestern Minnesota and Brookings County in eastern South Dakota.

Selected data for sites on streams at outlets of subbasins larger than about 5 square miles; at outfalls of sewage treatment plants; and at locations of U.S. Geological Survey (USGS) low-flow, high-flow, and continuous-record gaging stations located in the Hawk Creek-Yellow Medicine River Basin are presented in this report.

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Thomas E. Kujawa, a graduate student at Mankato State University, did much of the digitizing and assisted in the preparation of this report. The Water Resource Center at Mankato State University provided detailed watershed boundaries, which were used for parts of this report. These contributions were essential for the completion of this report.

Methods

U.S. Geological Survey 7-1/2 minute series topographic maps were used as source maps to obtain the areas for the subbasin boundaries, lakes, marshes, the main-channel length, and the contour elevation points used in this report. Paper copies of the maps were used. A geographic information system (GIS) was used to define the geographic location and extent of the subbasins, lakes, marshes, main-channels, and elevation points. Data digitized from paper copies were in error by no more than twice the horizontal accuracy of National Mapping Standards of 40 feet (Thompson, 1987, p. 104). All thematic (digitized) data were projected into an Albers Equal-Area projection for storage and analysis.

Subbasin boundaries were delineated on the basis of anthropogenic activities and topographic contours. Anthropogenic activities, such as the installation of storm sewers, the drainage of wetlands, and the diversion of streams, may alter the drainage area of a stream. Data from field inspections and recent drainage-ditch maps, therefore, were transferred to the topographic maps. The subbasin boundaries were digitized by the Minnesota State Planning Land

Management Information Center, Mankato State University, and the U.S. Geological Survey Minnesota using a GIS.

Lake and marsh data were digitized using a GIS. Lake and marsh boundaries were overlaid on the subbasin boundaries to associate each lake and marsh with a subbasin. The total area of lakes and marshes within each subbasin was calculated by the GIS. Total marsh area plus total lake area is defined as storage area. Lakes and marshes were digitized by the U.S. Geological Survey Minnesota.

Main channels were delineated for each subbasin on the 7-1/2 minute topographic maps starting at the outflow of the subbasin and continuing upstream. Whenever the main channel joined with another stream, the stream upstream of the junction that drained the largest area was selected as the main channel. The main channel, which represents the watercourse that drains the greatest area, is continuous and is defined as a single trace that passes through marshes, lakes, and midline of rivers and braided streams from the basin outlet to an endpoint in the basin, generally at the basin divide. The main channels were digitized by the Minnesota Department of Transportation, using a CAD system and transferred to the GIS. Stream extensions which represent a portion of the main channel from the end of the mapped stream (blue line on USGS 71/2 minute maps) to an endpoint within the basin, generally at the basin divide, were digitized by U.S. Geological Survey Minnesota using a GIS. The main-channel data were overlaid onto the subbasin data to associate each main channel with its subbasin.

Elevation points were digitized at the intersection of topographic contour lines and main channels. The elevation data were digitized using a GIS. The elevation data was overlaid onto the main channel data to associate each elevation data point with a main channel. Two points on the main channel, at 10 percent and at 85 percent of the main channel length from the basin outlet to the drainage divide, were located using the GIS. The elevations of these two points were interpolated from the digitized elevation data. Main-channel slope was calculated by dividing the difference in elevation between these points by the distance along the stream channel between these points.

Physical Characteristics of Hawk Creek-Yellow Medicine River Subbasins

Physical characteristics determined for each of the subbasins shown on plate 1 are presented in table 1. Subbasins are presented in order from headwaters to mouth. The rank of the subbasin stream is shown by indentation; whenever two subbasin streams joined, the stream draining the least cumulative area was assigned a lower rank and indented in the table.

The data for drainage area, and main-channel length, are reported using three significant figures or rounded to the nearest one-hundredth of a unit. The data for lake area and storage area are reported using two significant figures or rounded to the nearest one-tenth of a percent. The data for main-channel slope is reported to the nearest one-tenth of a foot.

The following is an explanation of terms used in table 1:

Subbasin number. A seven digit number based on the Minnesota Common Stream and Watershed Numbering System (Minnesota Department of Natural Resources, 1981). The first two digits are 25 and identify the Hawk Creek-Yellow Medicine River Basin. The following five digits are arbitrary and are used to identify each individual subbasin.

Stream name. The name of the stream or ditch shown on U.S. Geological Survey 7-1/2 minute topographic maps. The relative position of the subbasin above other subbasins, streams, gaging stations, and outfalls from sewage treatment plants also is given.

Outlet location. The U.S. Public Lands Survey System is used to describe the location where the stream exits the subbasin, down to quarter-quarter section. The description includes quarter-quarter section, section, township, and range.

Drainage area. That area, measured on a horizontal plane, enclosed by a topographic divide, within which direct surface runoff from precipitation normally flows by gravity into a watercourse above a specific point. This may include closed basins and other areas that do not contribute directly to surface runoff.

Lake area. The percentage of the drainage area covered by open water as shown on 7-1/2 minute topographic maps.

Storage area. The percentage of a drainage area covered by open water and marshes as shown on 7-1/2 minute topographic maps. Marsh areas are not shown on plate 1.

Main-channel length. The total length of the main channel from the basin outlet to a point within the basin (generally at the basin divide) representing the watercourse that drains the greatest area.

Main-channel slope. The average slope of the watercourse between the points at 10 and at 85 percent

of the distance along the main channel from the basin outlet to the drainage divide.

Stream extension. A representation of the main channel from the end of the mapped stream line (blue line on USGS 71/2 minute series maps) to an endpoint within the basin, generally at the basin divide. This is done by interpreting topographic relief so that the extension of the main channel represents the water course draining the greatest area.

References Cited

Minnesota Department of Natural Resources, 1981, The Common Stream And Watershed Numbering System: Minnesota Department of Natural Resources Stream Inventory and Data Retrieval Systems Report 7002, unpaged.

Thompson, M.M., 1987, Maps for America, 3d edition: U.S. Geological Survey, 265 p.

U.S. Geological Survey, 1974, Hydrologic unit map—1974 State of Minnesota: 1 plate, scale 1:500,000.

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin.

[All cities and towns are in Minnesota; --, not determined]

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Town-ship	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2200700	Minnesota River above dam at outlet of Lac qui Parle Reservoir(Corps of Engineers gage site). Note The Lac qui Parle River enters this subbasin 1.4 miles upstream from gage.	SE¼SW¼	13	118N	42W	4,060	3.8	6.7	4,060	3.8	6.7	149	2.3
2512501	Minnesota River above gaging station near Lac qui Parle: station number is 05301000	NW¼NE¼	24	118N	42W	.02	0	0	4,060	3.8	6.7	149	2.3
2512700	County Ditch No. 90 to Minnesota River above mouth	SW¼NW¼	09	117N	41W	6.80	.1	.8	6.80	.1	.8	8.08	11.4
2512500	Minnesota River above unnamed tributary (subbasin 2512800)	NW¼NW¼	15	117N	41W	14.3	.9	2.2	4,090	3.7	6.7	158	2.1
2506400	Judicial Ditch No. 23 to unnamed tributary (subbasin 2512800) above mouth	NW¼NE¼	21	117N	41W	15.4	0	.4	15.4	0	.4	12.1	4.0
2512801	Unnamed tributary above gaging station near Montevideo: station number is 05301200	SW¼SE¼	16	117N	41W	.40	0	5.8	.40	0	5.8	1.56	7.9
2512800	Unnamed tributary to Minnesota River above mouth	NW¼NW¼	15	117N	41W	6.96	0	.3	22.7	0	.5	14.1	8.4
2506500	Unnamed tributary to Minnesota River above mouth	NW¼SW¼	13	117N	41W	10.9	0	2.2	10.9	0	2.2	9.54	10.1
2512600	Minnesota River above Chippewa River	SW¼SW¼	18	117N	40W	7.08	.4	3.1	4,130	3.7	6.6	164	2.1
2607900	Chippewa River to Minnesota River above mouth	SW¼SW¼	18	117N	40W	2,080	0	0	2,080	5.0	11.5	175	2.9
2506302	Minnesota River above gaging station near Montevideo: station number is 05311000	NW¼NW¼	19	117N	40W	.01	0	0	6,210	4.1	8.2	164	2.1
2506301	Unnamed tributary above gaging station near Wegdahl: no station number assigned	NW¼SW¼	27	117N	40W	2.85	1.0	5.2	2.85	1.0	5.2	4.94	14.8

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2506300	Minnesota River above unnamed tributary (subbasin 2511900)	SW¼SW¼	35	117N	40W	10.2	1.4	5.2	6,220	4.1	8.2	171.	2.0
2511901	Unnamed tributary (County Ditch No. 36A) above gaging station near Wegdahl: no station number assigned	SE¼SW¼	27	117N	40W	8.45	.1	1.5	8.45	.1	1.5	6.49	18.0
2511900	Unnamed tributary to Minnesota River above mouth	SW¼SW¼	35	117N	40W	1.07	5.5	15.7	9.52	.7	3.1	8.00	19.3
2512400	Brafees Creek to Minnesota River above mouth	SW¼SW¼	35	117N	40W	7.40	0	1.7	7.4	0	1.7	6.70	16.9
2506700	Judicial Ditch No. 21 above South Branch Judicial Ditch No. 21	SW¼NW¼	26	116N	41W	19.3	1.2	3.6	19.3	1.2	3.6	13.3	2.6
2507000	South Branch Judicial Ditch No. 21 to Judicial Ditch No. 21 above mouth	SW¼NW¼	26	116N	41W	6.86	0	.4	6.86	0	.4	5.72	6.5
2506800	Judicial Ditch No. 21 above County Ditch No. 36	NW¼SE¼	29	116N	40W	6.73	0	0	32.8	.7	2.2	17.4	2.4
2507200	County Ditch No. 36 to County Ditch No. 21 above mouth	NW¼SE¼	29	116N	40W	6.23	0	0	6.23	0	0	3.96	8.6
2506600	Stony Run Creek (Judicial Ditch No. 21) to Minnesota River above mouth	SE¼SW¼	12	116N	40W	15.8	.4	1.6	54.9	.5	1.8	29.0	3.7
2506200	Minnesota River above Palmer Creek	SE¼SE¼	20	116N	39W	11.7	1.7	5.0	6310	4.1	8.2	179	2.0
2511801	Palmer Creek (County Ditch No. 68) above gaging station near Granite Falls: station number is 05311100	SW¼SW¼	16	116N	39W	33.7	0	1.9	33.7	0	1.9	17.1	2.8
2511800	Palmer Creek to Minnesota River above mouth	SE¼SE¼	20	116N	39W	.57	0	.6	34.3	0	1.8	18.4	4.2
2506103	Minnesota River above outfall from sewage treatment plant for Granite Falls	SW¼SW¼	34	116N	39W	6.23	.5	1.8	6,350	4.1	8.1	182	1.9
2506102	Unnamed tributary above gaging station near Granite Falls: no station number assigned	SE¼NE¼	34	116N	39W	.86	0	0	.86	0	0	1.96	38.3

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Town-ship	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2506101	Minnesota River above gaging station near Minnesota Falls: no station number assigned	$SW^1/_4SW^1/_4$	01	115N	39W	8.82	2.0	3.9	6,360	4.1	8.1	185	1.9
2507300	County Ditch No. 6A to County Ditch No. 39 above mouth	$SE^1/_4SW^1/_4$	05	115N	39W	9.99	0	.2	9.99	0	.2	8.60	3.3
2506900	County Ditch No. 39 to Minnesota River above mouth	$NW^1/_4NE^1/_4$	15	115N	39W	12.9	0	.5	22.9	0	.3	12.1	12.4
2506100	Minnesota River above Hazel Creek	$NE^1/_4SW^1/_4$	14	115N	39W	5.23	.8	5.3	6,380	4.0	8.1	189	1.9
2508901	Unnamed tributary above outfall from sewage treatment plant for Clarkfield	$SW^1/_4SW^1/_4$	16	115N	41W	6.59	2.0	3.5	6.59	2.0	3.5	3.65	7.5
2508900	County Ditch No. 9 above unnamed tributary (subbasin 2507100)	$NE^1/_4SW^1/_4$	18	115N	40W	37.0	0	1.7	43.6	.3	2.0	18.4	2.3
2507100	Unnamed tributary to County Ditch No. 9 above mouth	$NE^1/_4SW^1/_4$	18	115N	40W	8.02	0	.1	8.02	0	.1	5.12	6.5
2507400	Hazel Creek to Minnesota River above mouth	$NE^1/_4SW^1/_4$	14	115N	39W	26.0	0	.4	77.5	.2	1.3	35.5	3.7
2505400	Minnesota River above Hawk Creek	$NE^1/_4SE^1/_4$	28	115N	38W	10.6	.2	2.4	6,470	4.0	8.0	196	1.8
2514700	Lake Shaokatan outlet	$SW^1/_4NE^1/_4$	23	111N	46W	13.9	11.2	11.7	13.9	11.2	11.7	9.55	16.7
2514800	Yellow Medicine River above unnamed tributary (subbasin 2514600)	$NE^1/_4NE^1/_4$	04	111N	45W	11.2	0.4	1.3	25.1	6.4	7.1	18.6	13.0
2514600	Unnamed tributary to Yellow Medicine River above mouth	$NE^1/_4NE^1/_4$	04	111N	45W	5.90	6.2	7.2	5.90	6.2	7.2	6.32	14.7
2513209	Noncontrubuting area within subbasin 2513201					2.83	7.1	7.2	2.83	7.1	7.2	--	--
2513201	Yellow Medicine River above gaging station near Porter: no station number assigned	$SE^1/_4NE^1/_4$	14	113N	44W	36.8	1.4	2.9	70.6	3.8	4.9	40.7	16.1

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2513200	Yellow Medicine River above North Branch Yellow Medicine River	NE¼SE¼	12	113N	44W	0.45	0.0	0.0	71.1	3.8	4.9	42.4	16.5
2514900	County Ditch No. 8 above unnamed tributary (subbasin 2513102)	SE¼NE¼	03	111N	46W	12.7	.9	2.8	12.7	.9	2.8	6.98	9.4
2513102	North Branch Yellow Medicine River above gaging station near Ivahoe: station number is 05311200	NE¼NW¼	02	111N	46W	2.01	0	0	14.7	.8	2.4	7.58	8.5
2513101	Unnamed tributary above gaging station near Ivanhoe: station number is 05311250	SE¼NE¼	33	113N	45W	.33	0	0	.33	0	0	.86	84.6
2513100	North Branch Yellow Medicine River above unnamed tributary (subbasin 2512900)	SE¼SE¼	05	113N	44W	26.8	1.4	3.1	41.8	1.2	2.8	37.8	15.3
2512901	Unnamed tributary above gaging station near Porter: station number is 05311300	SE¼NE¼	16	113N	45W	3.72	0	.6	3.72	0	.6	3.20	29.9
2512900	Unnamed tributary to North Branch Yellow Medicine River above mouth	SE¼SE¼	05	113N	44W	4.75	0	.2	8.47	0	.4	12.9	31.4
2513002	Unnamed tributary above gaging station at Dillon-Syltie Impoundment inlet: station number is 443636096095402	NW¼NW¼	16	113N	44W	4.59	0	.7	4.59	0	.7	7.60	31.2
2513001	Dillon-Syltie Impoundment outlet at gaging station near Porter: station number is 443636096095404	SE¼NW¼	09	113N	44W	.25	24.8	24.8	4.84	1.3	1.9	8.92	27.9
2513000	Unnamed tributary to North Branch Yellow Medicine River above mouth	NE¼NE¼	03	113N	44W	2.36	0	1.2	7.21	.9	1.7	12.8	22.4
2511400	North Branch Yellow Medicine River to Yellow Medicine River above mouth	NE¼SE¼	12	113N	44W	10.4	0	.1	67.9	.8	2.0	45.6	16.3

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2513600	Unnamed tributary to unnamed tributary (subbasin 2513500) above mouth	NW¼SE¼	20	113N	43W	4.89	0.1	0.2	4.89	0.1	0.2	11.2	35.9
2513700	Unnamed tributary to unnamed tributary (subbasin 2513500) above mouth	SW¼NE¼	20	113N	43W	6.24	.1	.5	6.24	.1	.5	12.6	31.8
2513500	Unnamed tributary to unnamed tributary (subbasin 2513400) above mouth	NW¼NE¼	20	113N	43W	12.9	0	.4	24.0	.1	.4	16.9	27.6
2513400	Unnamed tributary to Yellow Medicine River above mouth	SE¼NE¼	09	113N	43W	10.8	.1	.2	34.8	.1	.3	19.9	25.1
2513300	Yellow Medicine River above unnamed tributary (subbasin 2511100)	SW¼NW¼	02	113N	43W	10.1	0	1.1	184.	1.8	2.7	52.3	16.3
2511100	Unnamed tributary to Yellow Medicine River above mouth	SW¼NW¼	02	113N	43W	5.95	.1	3.1	5.95	.1	3.1	6.48	7.6
2515001	Yellow Medicine River above gaging station near Minneota: station number is 05311350	SE¼NE¼	02	113N	43W	.22	0	0	190.	1.7	2.8	53.6	16.0
2511600	Mud Creek above unnamed tributary (subbasin 2511700)	NE¼SE¼	20	114N	44W	10.2	0	.2	10.2	0	.2	11.7	29.9
2511700	Unnamed tributary to Mud Creek above mouth	NE¼SE¼	20	114N	44W	8.93	.9	1.2	8.93	.9	1.2	13.8	33.3
2511500	Unnamed tributary to Mud Creek above mouth	SE¼SE¼	20	114N	44W	6.44	.1	.2	6.44	.1	.2	8.07	29.3
2511302	Outfall from sewage treatment plant for Porter	SE¼SW¼	28	114N	44W	.32	0	0	.32	0	0	1.05	20.8
2511301	Mud Creek above gaging station near Porter: no station number assigned	NE¼NE¼	21	114N	44W	5.84	.1	.9	31.7	.3	.6	15.3	21.6
2511300	Mud Creek above unnamed tributary (subbasin 2511200)	NW¼SW¼	29	114N	43W	8.27	.1	.2	40.0	.3	.5	24.3	10.8
2511200	Unnamed tributary to Mud Creek above mouth	NW¼SW¼	29	114N	43W	10.3	.1	3.8	10.3	.1	3.8	11.1	4.0

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2511001	Mud Creek above gaging station near Taunton: no station number assigned	NE¼SE¼	29	114N	43W	0.35	0.2	0.2	50.7	0.2	1.2	26.2	9.9
2511000	Mud Creek to Yellow Medicine River above mouth	SW¼NW¼	01	113N	43W	7.38	0	1.1	58.0	.2	1.2	31.5	7.7
2514500	Unnamed tributary to County Ditch No. 35C above mouth	NE¼SW¼	34	111N	45W	9.80	2.7	5.0	9.80	2.7	5.0	9.03	8.6
2514400	County Ditch No. 35C to South Branch Yellow Medicine River above mouth	SE¼SW¼	23	111N	45W	10.8	.3	1.1	20.6	1.4	3.0	13.0	8.9
2514000	South Branch Yellow Medicine River above Judicial Ditch No. 29	NE¼SW¼	10	111N	44W	16.7	0	.9	37.3	.8	2.1	27.4	8.0
2514300	Unnamed tributary to Judicial Ditch No. 29 above mouth	NE¼NW¼	33	111N	44W	12.4	4.2	5.5	12.4	4.2	5.5	7.08	13.7
2514200	Judicial Ditch No. 29 to South Branch Yellow Medicine River above mouth	NE¼SW¼	10	111N	44W	15.6	0	1.3	28.0	1.9	3.2	11.8	12.5
2514100	South Branch Yellow Medicine River above unnamed tributary (subbasin 2513800)	NE¼SW¼	35	113N	43W	25.0	.4	2.2	90.3	1.0	2.4	55.8	12.2
2513900	Unnamed tributary to unnamed tributary (subbasin 2513800) above mouth	NE¼SW¼	26	112N	44W	9.87	1.3	8.5	9.87	1.3	8.5	10.3	15.8
2513800	Unnamed tributary to South Branch Yellow Medicine River above mouth	NE¼SW¼	35	113N	43W	13.4	0	.7	23.3	.6	4.0	24.4	21.5
2515102	South Branch Yellow Medicine River above gaging station near Minneota: station number is 05311400	NE¼SE¼	26	113N	43W	1.24	0	.9	115	.9	2.7	57.6	12.3
2515101	South Branch Yellow Medicine River above outfall from sewage treatment plant for Minneota	SW¼NE¼	25	113N	43W	1.83	0	0	117	.9	2.7	59.8	12.1

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2515100	South Branch Yellow Medicine River to Yellow Medicine River above mouth	NW¼NE¼	07	113N	42W	7.79	0.0	0.3	124	0.9	2.5	66.9	11.4
2515000	Yellow Medicine River above Judicial Ditch No. 7	NW¼NW¼	14	113N	42W	10.4	0	.4	383	1.2	2.4	61.2	14.6
2515700	County Ditch No. 37 above Lateral A of County Ditch No. 37	NE¼SE¼	06	112N	42W	10.8	0	1.1	10.8	0	1.1	14.0	23.4
2515600	Lateral A of County Ditch No. 37 to County Ditch No. 37 above Judicial Ditch No. 7	NE¼SE¼	06	112N	42W	1.52	0	.4	1.52	0	.4	4.18	8.7
2515200	Judicial Ditch No. 7 to Yellow Medicine River above mouth	NW¼NW¼	14	113N	42W	12.7	.3	.4	25.1	.2	.7	22.5	15.2
2510601	Yellow Medicine River above gaging station near Normania: station number is 05311500	SE¼SE¼	29	114N	41W	14.1	.1	.4	422	1.1	2.2	70.2	12.8
2510600	Yellow Medicine River above Judicial Ditch No. 12	SW¼SW¼	28	114N	41W	.04	0	0	422	1.1	2.2	70.3	12.8
2510500	Judicial Ditch No. 12 to Yellow Medicine River above mouth	SW¼SW¼	28	114N	41W	6.27	0	.3	6.27	0	.3	5.49	6.1
2510200	Yellow Medicine River above unnamed tributary (subbasin 2510100)	NW¼NE¼	19	114N	40W	8.30	1.0	1.9	437	1.1	2.2	81.0	11.0
2510100	Unnamed tributary to Yellow Medicine River above mouth	NW¼NE¼	19	114N	40W	7.38	5.9	10.3	7.38	5.9	10.3	7.11	3.7
2508701	Yellow Medicine River above gaging station near Hanley Falls: no station number assigned	NW¼NE¼	18	114N	40W	.89	0	.4	445	1.1	2.3	82.8	10.6
2508700	Yellow Medicine River above Spring Creek	SW¼NE¼	04	114N	40W	4.88	0	.6	450	1.1	2.3	89.1	9.9
2509300	Unnamed tributary to Spring Creek above mouth	NW¼SW¼	21	115N	43W	17.8	0	.1	17.8	0	.1	11.8	5.5
2509200	Spring Creek above unnamed tributary (subbasin 2509300)	NW¼SW¼	21	115N	43W	7.35	.1	6.5	7.35	.1	6.5	9.06	1.8

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2509400	Unnamed tributary to Spring Creek above mouth	NW¼SW¼	27	115N	43W	5.93	0.0	3.0	5.93	0.0	3.0	7.39	7.5
2509500	Unnamed tributary to Spring Creek above mouth	SW¼SE¼	27	115N	43W	8.02	.1	1.6	8.02	.1	1.6	7.39	8.1
2509100	Spring Creek above unnamed tributary (subbasin 2509600)	NE¼NW¼	08	114N	42W	11.7	.2	7.2	50.8	.1	3.2	20.1	3.6
2510900	County Ditch No. 48 to unnamed tributary (subbasin 2509600) above mouth	NE¼NE¼	18	114N	42W	8.46	0	4.7	8.46	0	4.7	8.15	5.5
2509600	Unnamed tributary to Spring Creek above mouth	NE¼NW¼	08	114N	42W	7.02	0	3.4	15.5	0	4.1	10.1	6.6
2509700	Spring Creek above County Ditch No. 45	SW¼NE¼	02	114N	42W	10.1	0	1.8	76.3	.1	3.2	26.3	3.1
2510800	Judicial Ditch No. 20 to County Ditch No. 45 above mouth	SE¼SW¼	13	114N	42W	7.71	0	.1	7.71	0	.1	7.98	5.7
2510700	County Ditch No. 53 to County Ditch No. 45 above mouth	SE¼SW¼	13	114N	42W	6.23	.3	1.3	6.23	.3	1.3	5.70	5.4
2509900	County Ditch No. 45 to Spring Creek above mouth	SW¼NE¼	02	114N	42W	9.14	.2	1.3	23.1	.2	.9	11.7	4.8
2509800	Spring Creek above unnamed tributary (subbasin 2510000)	SW¼NE¼	04	114N	41W	6.65	.2	2.0	106	.1	2.6	32.8	2.6
2510000	Unnamed tributary to Spring Creek above mouth	SW¼NE¼	04	114N	41W	5.10	.2	1.9	5.10	.2	1.9	13.9	2.3
2508801	Spring Creek above gaging station near Clarkfield: station number is 05312000	NE¼SE¼	04	114N	41W	.29	0	0	111	.1	2.6	33.8	2.6
2508800	Spring Creek to Yellow Medicine River above mouth	SW¼NE¼	04	114N	40W	17.0	0	.4	128	.1	2.3	44.2	2.2
2515500	County Ditch No. 61 to unnamed tributary (subbasin 2515400) above mouth	NE¼SW¼	20	113N	40W	6.02	0	2.2	6.02	0	2.2	4.36	9.0

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank, Second Rank, Third Rank, Fourth Rank, Fifth Rank												
2515400	Unnamed tributary to Cottonwood Lake	NW¼NE¼	09	113N	40W	11.1	0.0	1.8	17.1	0.0	1.9	7.87	5.4
2515300	County Ditch No. 4 to County Ditch No. 55 above Judicial Ditch No. 2	SE¼NW¼	14	113N	41W	6.67	0	.3	6.67	0	.3	5.73	4.2
2510400	Judicial Ditch No. 2 to Lone Tree Lake	NW¼NE¼	06	113N	40W	7.34	0	1.1	14.0	0	.7	10.7	4.2
2510300	Unnamed tributary to Judicial Ditch No. 24 above Judicial Ditch No. 17	SE¼SE¼	29	114N	40W	8.59	8.2	10.7	39.7	1.8	3.4	11.7	3.8
2508600	Judicial Ditch No. 17 to Yellow Medicine River above mouth	SE¼NE¼	11	114N	40W	21.4	0	1.9	61.1	1.2	2.9	20.0	3.6
2507502	Yellow Medicine River above gaging station near Hanley Falls: no station number assigned	NE¼SE¼	11	114N	40W	4.47	0	.1	644.	.9	2.3	94.3	9.3
2507501	Yellow Medicine River above gaging station near Granite Falls: station number is 05313500	NW¼SW¼	35	115N	39W	19.8	0	0	664.	.9	2.3	106.	8.4
2507500	Yellow Medicine River to Minnesota River above mouth	SW¼NE¼	28	115N	38W	10.3	.1	.3	674.	.9	2.2	116.	7.9
2500203	Hawk Creek above gaging station near Willmar: station number is 05313560	NE¼SE¼	19	120N	34W	10.0	2.1	7.4	10.0	2.1	7.4	7.90	10.3
2500209	Non contrib area within subbasin 2500201					.72	30.5	32.8	.72	30.5	32.8	0	0
2500202	Unnamed tributary to Eagle Lake above gaging station near Willmar: station number is 05313570	SE¼NW¼	30	120N	34W	4.76	.6	5.3	4.76	.6	5.3	5.36	13.2
2500201	Hawk Creek at Eagle Lake outlet above gaging station near Willmar: station number is 05313521	SW¼SE¼	25	120N	35W	3.22	40.5	41.5	18.7	9.4	13.7	9.77	10.1
2500200	Hawk Creek at Foot Lake outlet	NE¼NW¼	16	119N	35W	14.1	18.9	22.0	32.8	13.5	17.2	15.5	6.5
2500701	Hawk Creek above gaging station near Willmar: no station number assigned	NE¼SE¼	18	119N	35W	4.89	.1	4.6	37.7	11.8	15.6	17.4	5.7

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location: Quarter-quarter section	Section	Township	Range	By subbasin: Drainage area (square miles)	By subbasin: Lake area (percent of subbasin area)	By subbasin: Storage area (percent of subbasin area)	Cumulative to mouth of basin: Drainage area (square miles)	Cumulative to mouth of basin: Lake area (percent of subbasin area)	Cumulative to mouth of basin: Storage area (percent of subbasin area)	Cumulative to mouth of basin: Main channel length (miles)	Cumulative to mouth of basin: Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2500702	Outfall from sewage treatment plant for Willmar	NE¼NE¼	29	119N	35W	1.85	0.0	0.3	1.85	0.0	0.3	2.03	13.1
2500700	Hawk Creek above unnamed tributary (subbasin 2500600)	SE¼NE¼	26	119N	36W	9.43	.1	1.9	49.0	9.1	12.4	21.1	5.2
2500600	Unnamed tributary to Hawk Creek above mouth	SE¼NE¼	26	119N	36W	8.44	.2	4.2	8.44	.2	4.2	5.28	3.7
2501001	Unnamed tributary above gaging station near Priam: no station number assigned	NW¼SW¼	36	119N	36W	4.77	0	.5	4.77	0	.5	4.20	5.1
2501000	Hawk Creek above unnamed tributary (subbasin 2500800)	SE¼SE¼	08	118N	36W	12.2	1.3	7.2	74.5	6.2	9.8	29.0	4.1
2500800	Unnamed tributary to Hawk Creek above mouth	SE¼SE¼	08	118N	36W	8.12	.8	5.4	8.12	.8	5.4	6.35	5.5
2500901	Hawk Creek above gaging station near Raymond: no station number assigned	NE¼NW¼	19	118N	36W	2.66		3.0	85.2	5.5	9.2	31.3	3.8
2501300	Unnamed tributary to Hawk Creek above mouth	NW¼NE¼	24	118N	37W	12.8	.1	7.2	12.8	.1	7.2	7.40	3.5
2500900	Hawk Creek above unnamed tributary (subbasin 2500400)	SE¼SE¼	05	118N	37W	13.3	0	4.6	111	4.2	8.4	37.2	3.6
2500100	Long Lake outlet	SE¼NW¼	22	120N	35W	11.6	33.2	37.0	11.6	33.2	37.0	7.27	5.5
2500300	Solomon Lake outlet	SE¼NW¼	25	120N	36W	14.7	15.5	20.9	26.4	23.3	28.0	12.4	4.0
2500500	Unnamed tributary to unnamed tributary (subbasin 2500400) above mouth	NE¼NE¼	08	119N	36W	7.01	4.8	13.3	33.4	19.4	24.9	18.9	3.6
2500400	Unnamed tributary to Hawk Creek above mouth	SE¼SE¼	05	118N	37W	29.4	.2	6.1	62.8	10.4	16.1	30.8	4.2
2512201	Hawk Creek above gaging station near Clara City: station number is 05313670	SE¼SW¼	31	118N	37W	16.0	0	.9	190	5.9	10.3	45.0	2.8
2512200	Hawk Creek above Judicial Ditch No. 2	NE¼NW¼	07	117N	37W	1.70	0	.1	192	5.9	10.2	46.3	2.8

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2501500	Unnamed tributary to Judicial Ditch No. 2 above mouth	$SE^1/_4SE^1/_4$	08	117N	37W	9.72	0.0	0.0	9.72	0.0	0.0	7.74	2.6
2501400	Judicial Ditch No. 2 to Hawk Creek above mouth	$NE^1/_4NW^1/_4$	07	117N	37W	15.0	0	.1	24.7	0	.1	13.0	3.0
2502502	Hawk Creek above outfall from sewage treatment plant for Clara City	$SW^1/_4NW^1/_4$	18	117N	37W	5.71	0	0	222	5.1	8.8	47.6	2.7
2502501	Hawk Creek above outfall from sewage treatment plant for Maynard	$SW^1/_4NW^1/_4$	32	117N	38W	15.3	.3	3.7	238	4.8	8.5	55.3	2.3
2502500	Hawk Creek above County Ditch No. 11	$SW^1/_4NW^1/_4$	32	117N	38W	.24	0	3.7	238	4.8	8.5	55.4	2.3
2502402	Chetomba Creek above gaging station near Maynard: station number is 05314000	$NW^1/_4NW^1/_4$	09	116N	38W	3.29	0	3.8	3.29	0	3.8	3.29	7.0
2512101	Unnamed tributary above gaging station near Gluek: no station number assigned	$SW^1/_4SW^1/_4$	07	117N	38W	25.8	0	.6	25.8	0	.6	12.1	2.4
2512100	Unnamed tributary to County Ditch No. 11 above mouth	$NE^1/_4NE^1/_4$	30	117N	38W	9.14	0	.3	34.9	0	.5	14.5	2.0
2512001	County Ditch No. 11 above gaging station near Gluek: no station number assigned	$SW^1/_4SE^1/_4$	11	117N	39W	18.7	.2	.9	18.7	.2	.9	15.5	2.9
2512000	County Ditch No. 11 above Hawk Creek	$SW^1/_4NW^1/_4$	32	117N	38W	4.24	0	.5	57.9	.1	.6	16.1	2.1
2512300	County Ditch No. 37 to Hawk Creek above mouth	$NW^1/_4SE^1/_4$	01	116N	39W	7.38	0	1.0	7.38	0	1.0	6.06	3.7
2502401	Hawk Creek above gaging station near Maynard: station number is 05314500	$SW^1/_4NW^1/_4$	07	116N	38W	8.41	0	1.5	315	3.6	6.6	58.9	2.5
2502400	Hawk Creek above Spring Creek	$NW^1/_4SW^1/_4$	16	116N	38W	3.74	0	1.6	318	3.6	6.6	61.7	2.5
2502100	County Ditch No. 8 above County Ditch No. 18	$NE^1/_4SE^1/_4$	12	117N	36W	18.9	0	.7	18.9	0	.7	12.2	2.7

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2502200	County Ditch No. 18 to County Ditch No. 8 above mouth	NE¼SE¼	12	117N	36W	9.45	0.1	0.5	9.45	0.1	0.5	8.76	3.5
2502001	County Ditch No. 16 above gaging station near Blomkest: station number is 05313800	SW¼SW¼	35	118N	35W	.83	0	0	.83	0	0	2.14	15.6
2502000	County Ditch No. 16 to County Ditch No. 8 above mouth	SE¼NE¼	12	117N	36W	6.39	0	.3	7.22	0	.2	9.05	3.4
2501100	Unnamed tributary to unnamed tributary (subbasin 2501200) above mouth	SW¼SE¼	24	118N	36W	8.64	.2	1.9	8.64	.2	1.9	9.26	2.2
2501200	Unnamed tributary to County Ditch No. 31 above mouth	NW¼SW¼	25	118N	36W	16.1	.1	1.5	24.8	.1	1.7	9.82	2.7
2501900	County Ditch No. 31 to Chetomba Creek above mouth	SE¼SE¼	02	117N	36W	7.80	4.2	7.0	33.0	1.1	2.9	12.8	2.7
2501801	Chetomba Creek above gaging station near Prinsburg: no station number assigned	SE¼SW¼	16	117N	36W	13.7	0	1.6	81.8	.5	1.7	19.2	2.6
2501800	Chetomba Creek above Judicial Ditch No. 16	SE¼NE¼	06	116N	36W	12.9	0	.3	94.6	.4	1.5	23.6	2.5
2502300	Judicial Ditch No. 16 to Chetomba Creek above mouth	SE¼NE¼	06	116N	36W	12.8	0	.3	12.8	0	.3	10.8	4.7
2502800	Chetomba Creek above Judicial Ditch No. 8	SW¼NE¼	24	116N	37W	12.5	.1	.3	120	.3	1.2	27.9	2.4
2501600	Judicial Ditch No. 8 to Chetomba Creek above mouth	SW¼NE¼	24	116N	36W	5.51	0	.1	5.51	0	.1	6.38	3.6
2502600	Judicial Ditch No. 1 to Chetomba Creek above mouth	SW¼NE¼	11	116N	38W	15.7	0	.5	15.7	0	.5	11.9	2.8
2502700	Chetomba Creek to Spring Creek above mouth	NE¼NE¼	16	116N	38W	12.4	.1	1.1	154	.3	1.1	38.9	2.4

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2503601	Spring Creek above gaging station near Maynard: station number is 05314520	SW¼NW¼	16	116N	38W	5.87	0.0	1.3	160	0.3	1.1	39.8	2.4
2503600	Spring Creek to Hawk Creek above mouth	NW¼SW¼	16	116N	38W	0	0	0	160	.3	1.1	39.8	2.4
2503502	Hawk Creek above gaging station near Granite Falls: station number is 05314530	SE¼SW¼	21	116N	38W	1.80	0	1.6	480	2.4	4.7	63.8	2.6
2503501	Hawk Creek above gaging station at Minnesota Falls: no station number assigned	SE¼SW¼	32	116N	38W	12.3	0	.4	492	2.4	4.6	67.1	2.6
2503500	Hawk Creek above County Ditch No. 36	NE¼NW¼	05	115N	38W	.06	0	0	492	2.4	4.6	67.5	2.6
2503400	County Ditch No. 36 to Hawk Creek above mouth	NE¼NW¼	05	115N	38W	5.74	.1	2.7	5.74	.1	2.7	5.26	10.1
2503701	Hawk Creek above gaging station at Minnesota Falls: no station number assigned	SW¼SE¼	16	115N	38W	6.58	0	.1	504	2.3	4.6	73.3	2.7
2503700	Hawk Creek to Minnesota River above mouth	NE¼SE¼	28	115N	38W	1.78	.1	.2	506	2.3	4.5	77.1	2.9
2503800	Unnamed tributary to Minnesota River above mouth	NW¼NE¼	34	115N	38W	14.6	.2	3.3	14.6	.2	3.3	13.7	9.7
2508200	Judicial Ditch No. 10 above West Branch Judicial Ditch No. 10	SW¼NW¼	05	113N	39W	18.8	1.5	2.3	18.8	1.5	2.3	10.2	4.0
2508501	Outfall from sewage treatment plant for Cottonwood	SW¼NE¼	11	113N	40W	2.80	7.6	11.4	2.80	7.6	11.4	3.01	4.2
2508500	West Branch Judicial Ditch No. 10 to Judicial Ditch No. 10 above mouth	SW¼NW¼	05	113N	39W	9.88	3.8	4.7	12.7	4.6	6.2	8.38	4.2
2508301	Judicial Ditch No. 10 above outfall from sewage treatment plant for Wood Lake	SW¼SE¼	27	114N	39W	4.07	0	0	35.5	2.4	3.4	13.4	3.7
2508100	County Ditch No. 31 to Judicial Ditch No. 10 above mouth	NE¼SE¼	26	114N	39W	14.0	1.2	2.3	14.0	1.2	2.3	7.18	5.6

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2508300	Judicial Ditch No. 10 to Wood Lake Creek above mouth	NE¼SW¼	11	114N	39W	6.42	0.0	0.0	56.0	1.8	2.7	18.6	2.9
2508400	Wood Lake Creek above Judicial Ditch No. 10	NE¼SW¼	11	114N	39W	8.91	9.7	12.4	8.91	9.7	12.4	8.10	1.4
2507609	Noncontributing area within subbasin 2507600					1.05	17.4	17.4	1.05	17.4	17.4	--	--
2507601	Wood Lake Creek above subbasin 2507600	NW¼SW¼	03	114N	38W	6.63	0	.2	72.6	2.9	3.9	24.9	2.7
2507600	Wood Lake Creek to Minnesota River above mouth	SW¼SW¼	35	115N	38W	1.40	.2	.5	74.0	2.8	3.8	27.0	4.8
2503901	County Ditch No. 116 above outfall from sewage treatment plant for Sacred Heart	SE¼NE¼	07	115N	37W	5.08	0	.6	5.08	0	.6	6.58	2.7
2503900	Unnamed tributary (County Ditch No. 104) to Minnesota River above mouth	SE¼NE¼	02	114N	38W	7.61	0	.7	12.7	0	.6	14.1	11.5
2507708	Noncontributing area within subbasin 2507700					.62	0	0	.62	0	0	--	--
2507700	Unnamed tributary to Minnesota River above mouth	SW¼SW¼	01	114N	38W	8.35	3.3	5.8	8.97	3.1	5.4	9.86	15.4
2505500	Minnesota River above unnamed tributary (subbasin 2504000)	NE¼NE¼	12	114N	38W	5.00	.8	1.9	7,770	3.6	7.2	202	1.9
2507800	Unnamed tributary to Minnesota River above mouth	NE¼NE¼	12	114N	38W	8.07	.5	1.1	8.07	.5	1.1	7.89	27.7
2504001	Unnamed tributary (County Ditch No. 119) above gaging station near Sacred Heart: no station number assigned	SE¼SE¼	01	114N	38W	15.0	0	.4	15.0	0	.4	13.3	10.0
2504000	Unnamed tributary to Minnesota River above mouth	SE¼SE¼	01	114N	38W	.02	0	0	15.0	0	.4	13.7	11.6
2504100	Unnamed tributary to Minnesota River above mouth	SW¼NW¼	08	114N	37W	7.59	.6	6.9	7.59	.6	6.9	9.10	21.4
2507902	Unnamed tributary above outfall from sewage treatment plant for Echo	NW¼NE¼	09	113N	38W	1.62	0	0	1.62	0	0	2.62	13.4

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2507901	Boiling Spring Creek (County Ditch No. 1B) above gaging station near Belview: station number is 05314600	SE¼NE¼	20	114N	37W	28.2	2.6	4.7	29.8	2.5	4.5	20.0	6.6
2507900	Boiling Spring Creek to Minnesota River above mouth	SE¼NE¼	21	114N	37W	5.83	1.0	6.4	35.6	2.2	4.8	22.1	9.8
2505600	Minnesota River above Echo Creek	SW¼SW¼	23	114N	37W	8.42	.9	2.2	7,840	3.6	7.2	209	1.9
2508001	Echo Creek above gaging station near Belview: station number is 05314650	NE¼SE¼	34	114N	37W	12.5	0	.4	12.5	0	.4	9.08	6.6
2508000	Echo Creek to Minnesota River above mouth	SW¼SW¼	23	114N	37W	2.24	.1	.1	14.7	0	.4	13.8	11.4
2505700	Minnesota River above Sacred Heart Creek	SW¼NE¼	24	114N	37W	6.66	0	2.7	7,860	3.6	7.1	210	1.9
2504202	Sacred Heart Creek above gaging station near Renville: no station number assigned	NW¼NW¼	01	114N	37W	20.2	0	1.2	20.2	0	1.2	10.5	3.4
2504301	County Ditch No. 45 above outfall from sewage treatment plant for Renville	NW¼NW¼	08	115N	36W	2.57	0	0	2.57	0	0	3.74	4.9
2504300	Unnamed tributary (County Ditch No. 45) to Sacred Heart Creek above mouth	SW¼SE¼	13	114N	37W	19.6	0	.2	22.1	0	.1	15.0	8.8
2504201	Sacred Heart Creek above gaging station near Delhi: station number is 05314700	NW¼NE¼	24	114N	37W	4.09	.1	1.7	46.4	0	.8	15.8	8.7
2504200	Sacred Heart Creek to Minnesota River above mouth	SW¼NE¼	24	114N	37W	.07	0	0	46.4	0	.8	16.2	9.6
2505801	Minnesota River above gaging station near Vicksburg: no station number assigned	SW¼NE¼	30	114N	36W	2.21	1.7	2.0	7,910	3.5	7.1	212	1.9
2504501	Timms Creek (County Ditch No. 35A) above gaging station near North Redwood: station number is 05314725	NW¼SE¼	33	114N	36W	23.7	0	.1	23.7	0	.1	16.1	7.1

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2504500	Timms Creek (County Ditch No. 35A) to Minnesota River above mouth	SW¼SW¼	33	114N	36W	0.29	0.5	0.5	24.0	0.0	0.1	16.7	7.8
2505800	Minnesota River above Rice Creek	SW¼NE¼	04	113N	36W	4.90	2.7	3.6	7,940	3.5	7.1	215	1.8
2516001	Unnamed stream extension above outfall from sewage treatment plant for Belview	NE¼NW¼	21	113N	37W	3.91	0	0	3.91	0	0	3.29	4.2
2516000	County Ditch No. 12 to Rice Creek above mouth	NW¼SE¼	07	113N	36W	12.9	0	.3	16.8	0	.2	11.2	5.3
2515900	Unnamed tributary to Rice Creek above mouth	NW¼SE¼	07	113N	36W	7.63	0	.4	7.63	0	.4	5.74	10.4
2515800	Rice Creek to Minnesota River above mouth	SW¼NE¼	04	113N	36W	5.45	.1	.1	29.9	0	.3	16.4	8.2
2505001	Middle Creek (County Ditch No. 92) above gaging station near Delhi: station number is 05314750	SE¼NE¼	03	113N	36W	13.7	0	.4	13.7	0	.4	7.45	25.7
2505000	Middle Creek to Minnesota River above mouth	NW¼SE¼	03	113N	36W	.06	0	0	13.8	0	.4	7.76	28.3
2505900	Minnesota River above Smith Creek	SE¼NE¼	13	113N	36W	11.9	.7	1.0	8,000	3.5	7.0	220	1.8
2505202	County Ditch No. 130 above gaging station near Bechyn: no station number assigned	SW¼SW¼	05	113N	35W	2.48	0	0	2.48	0	0	4.42	5.3
2505201	Smith Creek (County Ditch No. 125A) above gaging station near North Redwood: station number is 05314800	NE¼SE¼	12	113N	36W	11.4	.1	.1	13.8	.1	.1	10.9	14.6
2505200	Smith Creek to Minnesota River above mouth	SE¼NE¼	13	113N	36W	.13	.5	.9	14.0	.1	.1	11.7	18.5
2516100	Camp Pope Creek to Minnesota River above mouth	NW¼SW¼	18	113N	35W	6.25	.2	.9	6.25	.2	.9	4.89	48.6
2703500	Redwood River to Minnesota River above mouth	SE¼SW¼	20	113N	35W	705	0	0	705	1.4	2.5	132	6.7
2501701	County Ditch No. 55 above gaging station near Olivia: station number is 05316550	SW¼SW¼	14	116N	35W	8.75	1.0	6.8	8.75	1.0	6.8	6.90	4.3

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Town-ship	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2501700	West Fork Beaver Creek (County Ditch No. 31) above North Branch County Ditch No. 31	SE¼SW¼	17	116N	35W	6.86	0.1	7.0	15.6	0.6	6.9	9.72	4.3
2503000	North Branch County Ditch No. 31 to West Fork Beaver Creek (County Ditch No. 31) above mouth	SE¼SW¼	17	116N	35W	5.74	0	4.7	5.74	0	4.7	6.84	4.3
2503101	West Fork Beaver Creek (County Ditch No. 31) above gaging station near Danube: no station number assigned	SE¼NE¼	19	116N	35W	1.00	0	2.6	22.4	.4	6.1	10.3	4.2
2502900	County Ditch No. 17A to West Fork Beaver Creek above mouth	SW¼NW¼	25	116N	36W	13.0	0	.5	13.0	0	.5	5.59	2.6
2503100	West Fork Beaver Creek above County Ditch No. 59	NE¼NE¼	02	115N	36W	5.26	0	.2	40.6	.2	3.6	15.9	3.9
2503200	County Ditch No. 59 to West Fork Beaver Creek above mouth	NE¼NE¼	02	115N	36W	15.2	.1	.2	15.2	.1	.2	9.96	5.1
2504400	County Ditch No. 37 to West Fork Beaver Creek above mouth	NW¼SE¼	02	115N	36W	5.67	0	.1	5.67	0	.1	4.95	2.4
2504600	County Ditch No. 110 to West Fork Beaver Creek above mouth	NW¼NE¼	10	114N	35W	10.3	0	.5	10.3	0	.5	7.25	3.5
2504700	West Fork Beaver Creek to Beaver Creek above mouth	NE¼SE¼	23	114N	35W	24.8	0	.4	96.6	.1	1.7	32.8	3.0
2503300	North Branch County Ditch No. 63 to East Fork Beaver Creek (County Ditch No. 63) above mouth	SW¼SW¼	01	115N	34W	22.8	0	0	22.8	0	0	10.4	4.0
2504802	County Ditch No. 66 above outfall from sewage treatment plant for Bird Island	NW¼NW¼	23	115N	34W	4.50	0	0	4.50	0	0	4.69	3.5

Table 1.—Physical characteristics for the Hawk Creek-Yellow Medicine River Basin—Continued.

Basin number	Stream name and location	Outlet location				By subbasin			Cumulative to mouth of basin				
		Quarter-quarter section	Section	Township	Range	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Drainage area (square miles)	Lake area (percent of subbasin area)	Storage area (percent of subbasin area)	Main channel length (miles)	Main channel slope (foot per mile)
	First Rank / Second Rank / Third Rank / Fourth Rank / Fifth Rank												
2504801	East Fork Beaver Creek (County Ditch No. 63) above outfall from sewage treatment plant for Olivia	SW¼NW¼	13	115N	35W	30.0	0.0	0.0	57.3	0.0	0.0	18.6	2.8
2504800	East Fork Beaver Creek (County Ditch No. 63) above subbasin 2504900	SW¼NW¼	07	114N	34W	12.4	.1	.3	69.7	0	.1	24.9	2.9
2504900	East Fork Beaver Creek to Beaver Creek above mouth	NE¼SE¼	23	114N	35W	6.84	0	.9	76.6	0	.1	30.2	2.8
2505100	County Ditch No. 117 to Beaver Creek above mouth	NW¼SE¼	26	114N	35W	6.50	0	.3	6.50	0	.3	6.66	4.1
2505301	Beaver Creek above gaging station near Beaver Falls: station number is 05316570	NE¼NW¼	22	113N	35W	11.4	0	.4	191	.1	.9	43.5	3.6
2505300	Beaver Creek to Minnesota River above mouth	NE¼SW¼	27	113N	35W	6.83	0	.1	198	.1	.9	46.0	4.3
2506000	Minnesota River above Beaver Creek	NE¼SW¼	27	113N	35W	6.33	1.0	2.4	8,930	3.3	6.5	227	1.8