

Water-Data Report 2010

05489500 Des Moines River at Ottumwa, IA

Des Moines Basin
Lower Des Moines Subbasin

LOCATION.--Lat 41°00'39", long 92°24'40" referenced to North American Datum of 1927, in SE ¼ SE ¼ NE ¼ sec.25, T.72 N., R.14 W., Wapello County, IA, Hydrologic Unit 07100009, on right bank 15 ft downstream from Colorado and Eastern Railroad bridge in Ottumwa, 0.5 mi downstream from Ottumwa power plant, 6.5 mi upstream from Village Creek, 9.5 mi downstream from South Avery Creek, and 91.9 mi upstream from mouth.

DRAINAGE AREA.--13,374 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March 1917 to current year. October 1930 to March 1935, published as "at Eldon". Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 525: 1917-20. WSP 1308: 1917-23 (M), 1925-27 (M), 1931. WSP 1438: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 622.00 ft above National Geodetic Vertical Datum of 1929. Prior to October 1, 1930, nonrecording gage 1,700 ft upstream at Market Street bridge at datum 0.83 ft higher; October 1, 1930, to March 31, 1935, nonrecording gage 15 mi downstream in Eldon at different datum; April 1, 1935, to October 25, 1963, water-stage recorder 1,100 ft downstream at Vine Street bridge at datum 0.77 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Prior to December 12, 1958, and since November 30, 1960, diurnal fluctuations at low and medium stages are caused by power plant, 0.5 mi upstream. Flow regulated by Lake Red Rock (station 05488100), 48.2 mi upstream, since March 12, 1969. U.S. Army Corps of Engineers rain gage and U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Since at least 1850, no flood outside the period of record exceeded the June 7, 1947, stage of 20.20 ft, at site and datum then in use. Flood of May 31, 1903, reached a stage of 19.40 ft at Vine Street bridge and datum, or 19.34 ft at Market Street bridge, from information by U.S. Army Corps of Engineers and U.S. National Weather Service, discharge about 140,000 ft³/s.

EXTREMES FOR PERIOD PRIOR TO REGULATION.--Maximum discharge, 135,000 ft³/s, June 7, 1947, gage height, 20.20 ft, at site and datum then in use.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,960	12,400	9,020	6,150	e7,130	e4,070	31,800	27,900	24,200	52,200	47,500	39,500
2	1,780	18,100	7,840	5,530	e6,990	e4,380	31,900	26,000	25,400	52,300	46,800	38,100
3	1,610	20,700	7,640	4,510	e6,880	4,290	32,000	26,000	16,200	52,100	47,600	34,900
4	1,830	20,800	7,550	4,410	e6,540	3,970	32,000	25,600	21,900	52,100	51,700	33,400
5	2,270	20,800	6,670	e4,560	e6,140	3,850	32,000	25,700	22,200	66,600	51,200	31,700
6	2,540	20,700	5,550	e4,770	e5,940	4,100	32,200	25,600	22,200	67,000	48,500	28,400
7	2,770	20,600	5,390	e4,610	e5,860	5,280	32,500	23,900	24,700	64,200	47,100	20,800
8	2,990	20,400	5,360	e4,710	e5,600	10,400	33,100	21,100	22,800	56,800	46,500	11,900
9	2,230	20,300	7,590	e4,750	e5,310	22,700	32,900	21,700	20,200	56,500	61,400	6,640
10	1,700	20,100	8,930	e4,500	e4,910	27,800	32,600	21,400	21,800	54,200	73,400	7,120
11	1,230	19,800	6,910	e4,220	e4,520	30,400	32,400	25,700	22,900	52,000	82,400	17,100
12	1,180	18,000	5,660	e4,320	e4,250	27,000	32,400	20,900	32,100	51,200	75,900	22,000
13	1,160	15,400	3,920	e4,070	e4,530	31,800	32,500	23,600	38,100	51,200	66,300	19,900
14	1,160	12,700	3,480	3,850	e4,780	32,400	32,500	21,800	28,300	50,000	56,600	17,300
15	1,180	10,200	3,130	3,570	e4,840	28,100	32,500	19,600	27,400	49,300	54,100	16,900
16	1,210	10,600	3,850	3,500	e4,920	32,000	33,100	23,000	29,000	48,600	52,000	15,300
17	1,200	16,200	3,860	3,490	e4,860	31,300	33,100	25,600	23,300	47,900	50,700	13,400
18	1,180	14,100	4,790	3,460	e4,620	30,700	33,100	25,900	24,400	50,700	50,400	12,400
19	1,190	10,800	5,310	3,750	e4,460	30,600	33,000	25,400	31,900	58,800	49,700	12,500
20	1,190	9,370	5,490	e4,350	e4,300	30,800	32,900	25,300	29,900	62,500	51,100	13,700
21	1,050	6,510	5,450	e4,490	e4,260	31,200	32,800	25,500	30,600	58,200	50,100	14,000
22	3,700	7,060	5,350	e5,280	e4,370	31,700	32,700	25,500	37,600	60,300	49,000	20,300
23	13,900	6,060	4,940	e7,830	e4,250	31,800	33,000	25,200	43,800	54,600	47,400	22,900
24	11,400	5,190	5,960	e13,200	e4,080	30,900	31,100	24,900	44,300	59,200	46,100	28,600
25	14,200	4,420	17,400	e17,100	e3,930	34,100	41,700	25,100	43,700	63,600	44,900	24,500
26	20,000	13,300	19,700	e19,500	e3,680	32,700	35,900	23,200	44,500	56,100	43,200	23,900
27	20,800	12,600	14,000	e18,900	e3,650	31,700	28,400	24,500	44,800	50,500	41,700	23,000
28	20,500	9,470	10,400	e14,000	e3,860	31,900	33,300	19,400	46,300	48,900	40,500	24,600
29	23,400	9,140	8,340	e8,820	---	31,800	34,200	20,500	46,400	48,100	39,300	27,600
30	30,300	9,840	7,870	e6,810	---	31,800	31,500	24,100	49,000	47,900	38,400	25,700
31	16,100	---	6,380	e6,990	---	31,800	---	24,000	---	48,200	38,100	---
Total	208,910	415,660	223,730	210,000	139,460	747,340	985,100	743,600	939,900	1,691,800	1,589,600	648,060
Mean	6,739	13,860	7,217	6,774	4,981	24,110	32,840	23,990	31,330	54,570	51,280	21,600
Max	30,300	20,800	19,700	19,500	7,130	34,100	41,700	27,900	49,000	67,000	82,400	39,500
Min	1,050	4,420	3,130	3,460	3,650	3,850	28,400	19,400	16,200	47,900	38,100	6,640
Ac-ft	414,400	824,500	443,800	416,500	276,600	1,482,000	1,954,000	1,475,000	1,864,000	3,356,000	3,153,000	1,285,000
Cfs/m	0.50	1.04	0.54	0.51	0.37	1.80	2.46	1.79	2.34	4.08	3.83	1.62
In.	0.58	1.16	0.62	0.58	0.39	2.08	2.74	2.07	2.61	4.71	4.42	1.80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	4,062	4,906	4,171	2,938	4,660	10,420	13,110	13,970	15,710	15,560	8,839	4,937
Max	18,390	19,250	13,980	12,380	16,470	24,110	32,840	29,770	57,080	85,570	51,280	34,790
(WY)	(1974)	(1987)	(1993)	(1973)	(1973)	(2010)	(2010)	(1993)	(2008)	(1993)	(2010)	(1993)
Min	307	327	381	290	328	891	962	519	282	238	610	366
(WY)	(2001)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1977)	(1988)	(1976)

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SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1970 - 2010 ^a	
Annual total	3,865,270		8,543,160			
Annual mean	10,590		23,410		8,625	
Highest annual mean					26,350	1993
Lowest annual mean					1,120	1977
Highest daily mean	31,000	Apr 30	82,400	Aug 11	110,000	Jul 12, 1993
Lowest daily mean	1,050	Oct 21	1,050	Oct 21	^b 26	Oct 25, 1990
Annual seven-day minimum	1,170	Oct 15	1,170	Oct 15	182	Jul 7, 1977
Maximum peak flow			85,100	Aug 11	112,000	Jul 12, 1993
Maximum peak stage			20.04	Aug 11	22.15	Jul 12, 1993
Annual runoff (ac-ft)	7,667,000		16,950,000		6,248,000	
Annual runoff (cfsm)	0.792		1.75		0.645	
Annual runoff (inches)	10.75		23.76		8.76	
10 percent exceeds	20,800		50,200		21,300	
50 percent exceeds	8,320		21,800		4,470	
90 percent exceeds	2,050		3,900		699	

^a Post regulation.

^b Gates at dam in Ottumwa closed.

