Water-Data Report 2011

01176000 QUABOAG RIVER AT WEST BRIMFIELD, MA

CONNECTICUT RIVER BASIN
CHICOPEE RIVER SUBBASIN

LOCATION.--Lat 42°10′56″, long 72°15′51″ referenced to North American Datum of 1927, Hampden County, MA, Hydrologic Unit 01080204, on right bank 10 ft upstream from abandoned highway bridge site at West Brimfield, 0.9 mi upstream from Blodgett Mill Brook, 3.5 mi northeast of Palmer, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--150 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge: August 1909 to July 1912 (twice-daily gage heights and corresponding discharges), August 1912 to current year. Water-quality records: Water years 1953, 1967, 1969-70, 1972-74.

REVISED RECORDS.--WSP 451: 1916. WSP 1301: 1918(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is 390 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 19, 1912, non-recording gage, and Aug. 19, 1912, to Oct. 31, 1955, water-stage recorder, at several sites 0.5 mi downstream at different datum.

COOPERATION.--Massachusetts Department of Conservation and Recreation, Office of Water Resource; and Massachusetts Department of Environmental Protection, Office of Watershed Management.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation at low flow caused by mill upstream prior to 1956; regulation much greater prior to 1938. High flow slightly affected by retarding reservoirs since 1965.

Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2011: U.S. Geological Survey Water-Data Report WDR-US-2011, site 01176000, accessed at http://wdr.water.usgs.gov/wy2011/pdfs/01176000.2011.pdf

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	103	66	147	e248	e151	e766	461	469	237	265	52	e948
2	124	63	239	218	e153	e502	454	427	318	239	51	914
3	112	63	255	214	e160	e435	432	394	320	217	49	796
4	99	79	247	216	e165	e466	446	378	316	197	49	685
5	89	130	239	e204	e161	e443	492	366	299	178	47	591
6	94	130	223	e205	e177	759	499	353	270	164	45	616
7	103	122	202	e192	e186	1,810	495	343	243	167	55	723
8	94	134	167	e162	e202	1,810	473	329	218	153	56	1,390
9	90	175	183	e140	e215	1,800	443	311	220	162	57	1,600
10	87	183	231	e128	e197	1,740	411	293	230	150	127	1,640
11	80	175	227	e126	e180	1,950	396	284	218	139	110	1,550
12	72	164	243	e149	e169	1,970	366	269	253	127	106	1,390
13	66	151	463	e151	e169	1,880	435	248	244	121	102	1,220
14	62	141	472	e173	e207	1,750	440	239	235	115	101	1,070
15	108	131	338	e159	e246	1,610	400	259	223	105	216	931
16	113	122	420	e138	e246	1,520	389	336	226	96	288	804
17	116	189	459	e164	e260	1,460	795	398	221	88	238	695
18	115	194	418	e153	e303	1,380	825	584	223	80	220	597
19	117	197	385	e172	e350	1,310	857	645	200	77	206	506
20	107	183	350	e196	e338	1,230	853	647	178	72	189	427
21	100	175	289	e187	e374	1,150	774	618	160	68	173	378
22	87	165	287	e188	e365	1,080	720	543	162	64	154	358
23	86	150	264	e184	e350	1,000	739	483	243	59	136	371
24	85	119	238	e182	e341	925	747	467	261	58	121	457
25	89	123	e237	e183	e407	843	704	459	277	59	112	454
26	102	127	e231	e173	e511	768	666	424	348	63	129	440
27	101	123	e199	e176	e585	696	622	390	362	61	e185	418
28	95	116	e194	e165	e610	622	589	354	348	57	e477	389
29	83	115	e269	e162	---	570	554	316	338	56	e1,280	406
30	75	111	e248	e167	---	525	505	285	297	57	e1,080	396
31	73	---	e272	e155	---	484	---	256	---	53	e973	---
Total	2,927	4,116	8,636	5,430	7,778	35,254	16,982	12,167	7,688	3,567	7,184	23,160
Mean	94.4	137	279	175	278	1,137	566	392	256	115	232	772
Max	124	197	472	248	610	1,970	857	647	362	265	1,280	1,640
Min	62	63	147	126	151	435	366	239	160	53	45	358
Cfsm	0.63	0.91	1.86	1.17	1.85	7.58	3.77	2.62	1.71	0.77	1.54	5.15
In.	0.73	1.02	2.14	1.35	1.93	8.74	4.21	3.02	1.91	0.88	1.78	5.74

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	135	197	266	285	291	498	552	317	192	106	106	110
Max	931	693	911	821	976	1,399	1,352	573	789	524	1,440	1,369
(WY)	(2006)	(1956)	(1997)	(1979)	(2008)	(1936)	(1940)	(1943)	(1984)	(1938)	(1955)	(1938)
Min	11.9	26.9	48.5	46.6	65.2	169	153	108	35.2	17.6	12.8	12.0
(WY)	(1958)	(1950)	(1931)	(1981)	(1977)	(1989)	(2006)	(1930)	(1999)	(1965)	(1957)	(1957)

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SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1912 - 2011	
Annual total	92,604		134,889			
Annual mean	254		370		254	
Highest annual mean					430	1938
Lowest annual mean					104	1965
Highest daily mean	1,620	Apr 1	1,970	Mar 12	7,800	Sep 21, 1938
Lowest daily mean	23	Sep 9	45	Aug 6	4.6	Oct 17, 1997
Annual seven-day minimum	25	Sep 4	49	Jul 31	6.3	Oct 13, 1997
Maximum peak flow			2,120	Mar 11	[a]12,800	Aug 19, 1955
Maximum peak stage			7.45	Mar 11	[b]15.36	Aug 19, 1955
Instantaneous low flow			45	Oct 1[c]	11	Oct 4, 2007
Annual runoff (cfsm)	1.69		2.46		1.70	
Annual runoff (inches)	22.97		33.45		23.03	
10 percent exceeds	703		799		568	
50 percent exceeds	137		237		172	
90 percent exceeds	39		87		41	

[a] From rating curve extended above 2,700 ft³/s on basis of slope-area measurement of peak flow.
[b] From flood marks, present site and datum.
[c] Also occured Aug. 5-7, 2011.