Water-Data Report 2010

01096840 ASSABET RIVER, 200 FT DOWNSTREAM FROM ROUTE 85 AT HUDSON, MA

MERRIMACK RIVER BASIN
CONCORD RIVER SUBBASIN; ASSABET RIVER SUBBASIN

LOCATION.--Lat 42°23′24″, long 71°34′11″ referenced to North American Datum of 1983, Middlesex County, MA, Hydrologic Unit 01070005, on left bank, 200 ft downstream from Rt 85 in Hudson.

DRAINAGE AREA.--64.2 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge, May 2008 to current year. Intermittent water-quality samples, October 2008 to current year.

GAGE.--Water-stage recorder with telephone telemeter. Elevation of gage is 195 ft above National Geodetic Vertical Datum of 1929, from topographic map.

COOPERATION.--Massachusetts Department of Environmental Protection, Office of Watershed Management.

REMARKS.--Records fair except those for estimated daily discharge, which are poor. Flow affected by regulation from wastewater treatment plants and impoundments.

Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2010: U.S. Geological Survey Water-Data Report WDR-US-2010, site 01096840, accessed at http://wdr.water.usgs.gov/wy2010/pdfs/01096840.2010.pdf

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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	64	111	130	155	163	750	1,470	94	45	23	16	17
2	51	99	125	151	148	594	1,260	92	49	22	16	16
3	58	85	196	147	139	507	1,040	93	46	22	17	22
4	98	78	313	143	132	433	784	89	42	22	16	20
5	115	73	261	134	123	365	606	80	55	20	17	18
6	85	71	200	127	117	315	485	73	94	20	18	17
7	73	65	175	120	107	284	423	68	139	19	17	17
8	81	62	154	115	102	265	378	109	139	17	16	18
9	73	65	156	109	98	249	347	184	78	16	15	19
10	73	64	256	95	98	226	349	123	71	17	14	18
11	70	62	292	95	101	212	306	86	74	22	15	17
12	62	59	219	94	99	200	243	76	68	21	14	17
13	57	56	172	89	93	202	205	76	81	18	14	19
14	59	165	258	87	91	942	183	71	90	20	14	20
15	54	437	330	88	88	1,660	172	73	75	21	15	19
16	50	441	311	90	90	1,620	160	67	62	21	16	18
17	52	303	253	93	92	1,340	181	60	55	25	17	21
18	60	198	179	129	93	1,110	195	57	50	21	17	25
19	96	158	159	146	e97	881	175	127	45	19	15	26
20	104	158	142	136	98	643	157	146	41	20	14	20
21	82	211	149	127	103	503	146	105	40	21	17	18
22	75	197	144	114	99	430	137	82	35	24	17	17
23	71	152	133	103	100	598	127	71	36	25	27	17
24	69	135	127	94	223	877	118	65	36	28	31	18
25	115	132	123	191	656	748	112	61	45	27	53	16
26	146	127	120	604	1,410	585	110	56	34	23	48	13
27	113	134	195	594	1,260	486	111	72	28	20	30	16
28	102	161	368	442	1,000	417	110	79	26	20	24	23
29	159	153	326	312	---	435	105	58	26	18	21	28
30	176	131	195	235	---	1,130	100	50	24	18	19	23
31	135	---	184	196	---	1,680	---	45	---	17	18	---
Total	2,678	4,343	6,345	5,355	7,020	20,687	10,295	2,588	1,729	647	618	573
Mean	86.4	145	205	173	251	667	343	83.5	57.6	20.9	19.9	19.1
Max	176	441	368	604	1,410	1,680	1,470	184	139	28	53	28
Min	50	56	120	87	88	200	100	45	24	16	14	13
Cfsm	1.35	2.25	3.19	2.69	3.91	10.4	5.35	1.30	0.90	0.33	0.31	0.30
In.	1.55	2.52	3.68	3.10	4.07	11.99	5.97	1.50	1.00	0.37	0.36	0.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2008 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	85.3	128	295	173	202	442	268	93.7	68.2	151	87.4	87.2
Max	86.4	145	385	173	251	667	343	104	82.7	335	148	178
(WY)	(2010)	(2010)	(2009)	(2010)	(2010)	(2010)	(2010)	(2009)	(2009)	(2009)	(2009)	(2008)
Min	84.2	110	205	172	153	216	193	83.5	57.6	20.9	19.9	19.1
(WY)	(2009)	(2009)	(2010)	(2009)	(2009)	(2009)	(2009)	(2010)	(2010)	(2010)	(2010)	(2010)

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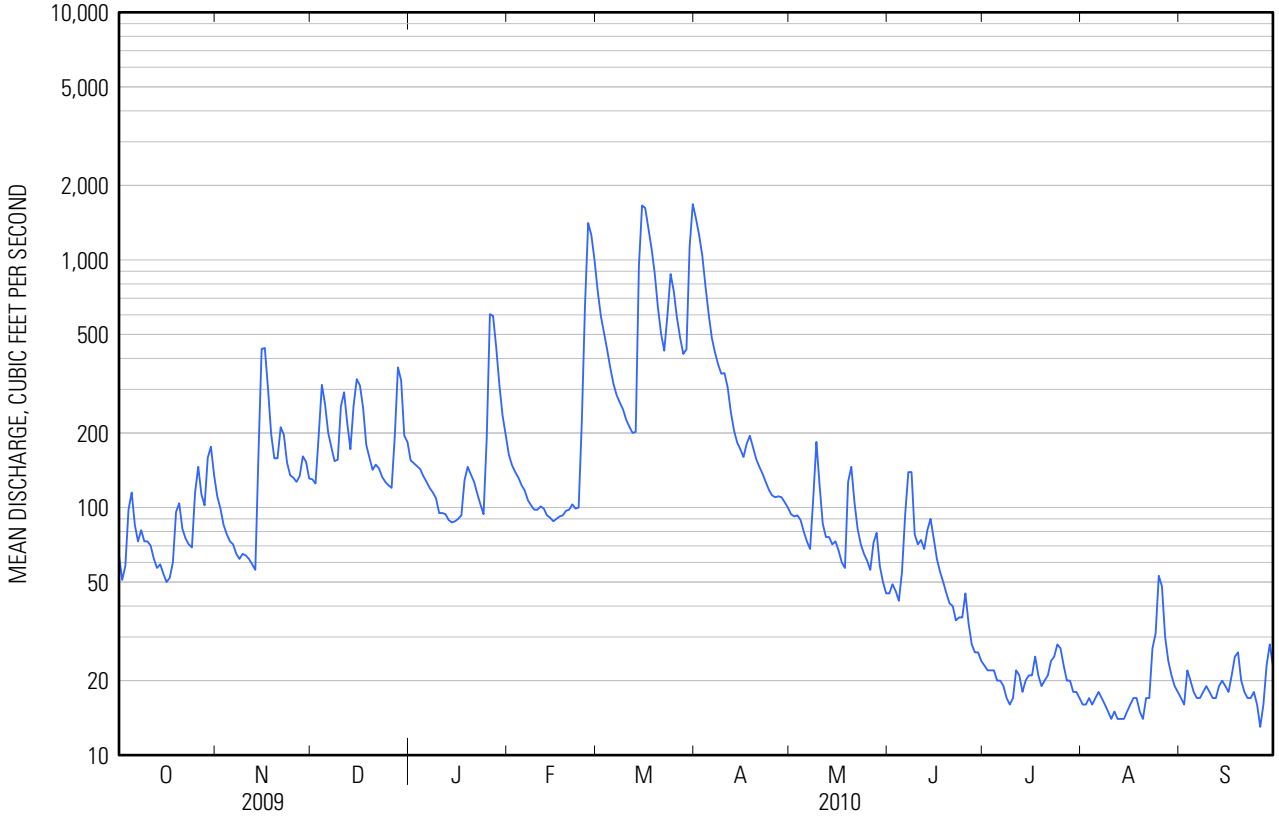
SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 2008 - 2010	
Annual total	58,076		62,878			
Annual mean	159		172		172	
Highest annual mean					172	2010
Lowest annual mean					171	2009
Highest daily mean	825	Jul 25	1,680	Mar 31	1,680	Mar 31, 2010
Lowest daily mean	36	Sep 26	13	Sep 26	13	Sep 26, 2010
Annual seven-day minimum	41	Jun 5	14	Aug 9	14	Aug 9, 2010
Maximum peak flow			1,800	Mar 15	1,800	Mar 15, 2010
Maximum peak stage			11.48	Mar 15	11.48	Mar 15, 2010
Instantaneous low flow			12	Sep 26	12	Sep 26, 2010
Annual runoff (cfsm)	2.48		2.68		2.68	
Annual runoff (inches)	33.65		36.43		36.37	
10 percent exceeds	297		426		362	
50 percent exceeds	130		93		111	
90 percent exceeds	56		18		22	



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Intermittent water-quality samples, October 2008 to current year.

INSTRUMENTATION.--Automatic, flow-based sampler, 100 ml samples.

REMARKS.--Records for intermittent water-quality data are not rated. Data are based on 100 ml samples composited over a 1-week period. The sample date indicates the start date of the 1-week period.

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
Part 1 of 4
[P, phosphorus; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; E, estimated]

Sample date-time	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)	Number of sampling points, count (00063)	Sample purpose (71999)	Sampler type (84164)	Sampling method (82398)	Purpose, site visit (50280)
10-06-2009 1015	--	17	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
10-13-2009 1140	--	23	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
10-20-2009 1010	--	35	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
10-27-2009 1120	--	33	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
11-03-2009 1000	--	32	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
11-10-2009 0930	--	64	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
11-10-2009 0935	--	1	Routine	Weighted-bottle	Weighted bottle	Other surface-water
11-17-2009 1400	--	34	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
11-17-2009 1405	--	1	Routine	Weighted-bottle	Weighted bottle	Other surface-water
11-24-2009 0930	--	32	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
11-24-2009 0940	--	1	Routine	Weighted-bottle	Weighted bottle	Other surface-water
12-01-2009 0820	--	38	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
12-08-2009 1010	--	19	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
12-15-2009 1010	--	31	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
12-22-2009 1110	--	43	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
12-22-2009 1120	--	1	Routine	Weighted-bottle	Weighted bottle	Other surface-water
01-05-2010 1040	--	6	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
01-05-2010 1050	--	1	Routine	Weighted-bottle	Weighted bottle	Other surface-water
01-12-2010 1100	--	21	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
01-12-2010 1110	543	1	Routine	Weighted-bottle	Weighted bottle	Other surface-water
01-19-2010 0955	--	27	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
01-26-2010 0935	--	18	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
02-02-2010 1145	477	1	Routine	Weighted-bottle	Weighted bottle	Other surface-water
02-09-2010 1400	--	30	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
02-09-2010 1410	--	1	Routine	Sampler point auto	Point sample	Other surface-water
02-16-2010 1015	--	33	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
02-23-2010 1025	--	64	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
03-02-2010 1230	--	39	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
03-09-2010 1105	--	59	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
03-16-2010 1155	--	55	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
03-23-2010 1045	--	42	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
03-23-2010 1055	--	1	Routine	Sampler point auto	Point sample	Other surface-water
03-30-2010 0900	--	64	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
04-06-2010 1210	--	37	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
04-06-2010 1220	--	1	Routine	Sampler point auto	Point sample	Other surface-water
04-13-2010 0950	--	23	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
04-20-2010 1105	--	40	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
04-27-2010 1105	--	32	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
05-04-2010 1020	--	39	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
05-11-2010 1225	--	37	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW

01096840 ASSABET RIVER, 200 FT DOWNSTREAM FROM ROUTE 85 AT HUDSON, MA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
Part 2 of 4
[P, phosphorus; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; E, estimated]

Sample date-time	Type of quality assurance data associated with sample (99111)	Type of replicate (99105)	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)
10-06-2009 1015	No assoc QA data	--	0.016	0.070
10-13-2009 1140	No assoc QA data	--	.010	.059
10-20-2009 1010	No assoc QA data	--	.016	.070
10-27-2009 1120	No assoc QA data	--	.012	.077
11-03-2009 1000	No assoc QA data	--	.015	.096
11-10-2009 0930	No assoc QA data	--	.018	.142
11-10-2009 0935	No assoc QA data	--	.084	--
11-17-2009 1400	No assoc QA data	--	--	.082
11-17-2009 1405	No assoc QA data	--	.046	--
11-24-2009 0930	No assoc QA data	--	.017	.064
11-24-2009 0940	No assoc QA data	--	.044	--
12-01-2009 0820	No assoc QA data	--	.019	.083
12-08-2009 1010	No assoc QA data	--	.015	.066
12-15-2009 1010	No assoc QA data	--	--	.063
12-22-2009 1110	No assoc QA data	--	.008	.047
12-22-2009 1120	No assoc QA data	--	.017	--
01-05-2010 1040	No assoc QA data	--	.013	.089
01-05-2010 1050	No assoc QA data	--	.019	.048
01-12-2010 1100	No assoc QA data	--	.019	.082
01-12-2010 1110	No assoc QA data	--	.022	.069
01-19-2010 0955	No assoc QA data	--	.020	.086
01-26-2010 0935	No assoc QA data	--	.015	.072
02-02-2010 1145	No assoc QA data	--	.020	.058
02-09-2010 1400	No assoc QA data	--	.020	.094
02-09-2010 1410	No assoc QA data	--	.030	.113
02-16-2010 1015	No assoc QA data	--	.011	.068
02-23-2010 1025	No assoc QA data	--	.012	.086
03-02-2010 1230	No assoc QA data	--	.010	.045
03-09-2010 1105	No assoc QA data	--	.009	.054
03-16-2010 1155	No assoc QA data	--	.009	.038
03-23-2010 1045	No assoc QA data	--	.010	.036
03-23-2010 1055	No assoc QA data	--	.013	.039
03-30-2010 0900	No assoc QA data	--	.011	.044
04-06-2010 1210	No assoc QA data	--	.012	.043
04-06-2010 1220	No assoc QA data	--	.009	.041
04-13-2010 0950	No assoc QA data	--	.009	.052
04-20-2010 1105	No assoc QA data	--	.013	.085
04-27-2010 1105	No assoc QA data	--	E .008	.055
05-04-2010 1020	No assoc QA data	--	.015	.091
05-11-2010 1225	No assoc QA data	--	.013	.076

01096840 ASSABET RIVER, 200 FT DOWNSTREAM FROM ROUTE 85 AT HUDSON, MA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
Part 3 of 4
[P, phosphorus; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; E, estimated]

Sample date-time	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)	Number of sampling points, count (00063)	Sample purpose (71999)	Sampler type (84164)	Sampling method (82398)	Purpose, site visit (50280)
05-18-2010 1125	--	30	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
05-25-2010 1030	--	39	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
06-01-2010 1050	--	25	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
06-08-2010 1055	--	28	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
06-15-2010 1140	--	28	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
06-22-2010 1005	--	--	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
06-29-2010 1005	--	--	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
07-06-2010 1200	--	32	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
07-13-2010 1005	--	32	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
07-20-2010 1015	--	55	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
07-27-2010 1115	--	32	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
08-03-2010 1145	--	36	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
08-10-2010 1445	--	35	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
08-17-2010 1005	--	45	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
08-24-2010 1015	--	37	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
08-31-2010 1110	--	31	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
09-07-2010 1100	--	--	--	--	--	--
09-14-2010 1120	--	--	--	--	--	--
09-21-2010 0940	--	24	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW
09-28-2010 1015	--	29	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW

01096840 ASSABET RIVER, 200 FT DOWNSTREAM FROM ROUTE 85 AT HUDSON, MA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 4 of 4

[P, phosphorus; mg/L, milligrams per liter; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; E, estimated]

Sample date-time	Type of quality assurance data associated with sample (99111)	Type of replicate (99105)	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)
05-18-2010 1125	No assoc QA data	--	0.016	0.093
05-25-2010 1030	No assoc QA data	--	.017	.113
06-01-2010 1050	No assoc QA data	--	.024	.124
06-08-2010 1055	No assoc QA data	--	--	.110
06-15-2010 1140	No assoc QA data	--	.022	.111
06-22-2010 1005	No assoc QA data	--	.018	.105
06-29-2010 1005	No assoc QA data	--	--	.123
07-06-2010 1200	No assoc QA data	--	.013	.120
07-13-2010 1005	Replicate sample	Split	.015	.121
07-20-2010 1015	No assoc QA data	--	--	.149
07-27-2010 1115	No assoc QA data	--	.025	.191
08-03-2010 1145	No assoc QA data	--	.024	.162
08-10-2010 1445	No assoc QA data	--	.014	.125
08-17-2010 1005	No assoc QA data	--	.016	.100
08-24-2010 1015	No assoc QA data	--	.026	.098
08-31-2010 1110	No assoc QA data	--	.019	.146
09-07-2010 1100	--	--	.026	.369
09-14-2010 1120	--	--	.024	.150
09-21-2010 0940	No assoc QA data	--	.021	.249
09-28-2010 1015	No assoc QA data	--	.040	.169