01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY

Upper Delaware Basin
East Branch Delaware Subbasin

LOCATION.--Lat 42°01'28.5", long 75°07'09.4" referenced to North American Datum of 1983, Delaware County, NY, Hydrologic Unit 02040102, on right bank 800 ft downstream from Baxter Brook, and 1,100 ft downstream from Harvard Road bridge at Harvard. Water-quality sampling site at discharge station.

DRAINAGE AREA.--458 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1934 to June 1967, November 1977 to current year.

REVISED RECORDS.--WDR NY-82-1: Drainage area. WDR NY-84-1: 1978-81(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,007.41 ft above NGVD of 1929. Prior to Aug. 12, 1958, water-stage recorder 1,100 ft upstream at datum 0.65 ft higher, and from Aug. 12, 1958, to June 30, 1967, water-stage recorder at site 200 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Subsequent to September 1954, entire flow from 371 mi^2 of drainage area controlled by Pepacton Reservoir (see 01416900). Part of flow diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River Basin, as directed by the Delaware River Master. Satellite and telephone gage-height and temperature telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to construction of Pepacton Reservoir, 31,400 ft^3/s, Sept. 22, 1938, gage height, 16.93 ft, site and datum then in use, from rating curve extended above 20,000 ft^3/s on basis of slope-area measurement at gage height 15.58 ft, datum then in use; maximum discharge since construction of Pepacton Reservoir, 22,100 ft^3/s, June 28, 2006, gage height, 16.61 ft; minimum discharge, 7.2 ft^3/s, Oct. 13, 1954, gage height, 1.63 ft, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,240 ft^3/s, Apr. 17, gage height, 9.84 ft; minimum discharge, 84 ft^3/s, Feb. 14, gage height, 2.22 ft.

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	353	1,140	1,380	374	795	222	2,790	1,300	200	629	193	180
2	323	1,160	2,180	367	795	265	2,300	1,190	200	619	178	178
3	299	1,060	2,000	350	788	331	1,810	922	227	275	201	176
4	283	1,000	1,740	346	772	299	1,600	681	188	261	222	175
5	285	966	1,510	374	733	281	1,620	501	192	209	182	176
6	253	939	1,190	1,060	585	264	1,450	344	185	297	180	187
7	235	918	992	1,040	754	e260	1,260	249	203	216	180	188
8	223	983	924	1,240	718	e250	1,070	210	207	209	245	204
9	210	1,060	895	1,480	551	e245	953	199	212	208	231	222
10	203	1,010	875	1,360	408	e250	913	214	206	205	352	206
11	206	1,000	860	1,190	287	289	888	232	205	209	263	351
12	210	981	848	1,100	240	283	921	211	202	227	231	334
13	201	992	851	1,100	237	308	927	204	201	423	231	240
14	203	1,060	843	1,080	169	472	896	198	199	413	218	207
15	198	1,140	830	1,290	e235	1,580	1,130	194	198	206	183	312
16	203	1,510	820	1,510	e260	1,410	4,110	227	198	177	186	268
17	215	4,350	812	1,490	e350	958	7,100	226	206	172	233	241
18	239	3,690	808	1,720	e325	672	6,460	207	205	182	204	222
19	201	2,980	802	1,800	e240	591	5,440	207	208	182	192	196
20	678	2,480	796	1,580	238	e870	4,960	213	377	210	188	197
21	930	1,980	793	1,310	243	e920	4,410	200	177	341	194	190
22	749	1,680	755	1,110	234	e970	3,610	202	189	182	193	195
23	613	1,700	717	969	227	1,330	3,000	199	340	190	187	191
24	510	1,710	532	908	226	1,430	2,620	196	187	206	209	197
25	446	1,540	364	878	224	1,920	2,270	204	178	185	201	193
26	397	1,390	359	831	225	1,850	1,990	202	174	179	212	196
27	362	1,280	362	841	223	2,200	1,570	203	182	202	188	202
28	1,070	1,080	357	843	222	2,780	1,550	210	196	226	180	307
29	1,530	589	353	820	---	3,830	1,530	200	280	185	177	243
30	1,470	668	347	805	---	3,630	1,430	196	555	224	176	222
31	1,270	---	336	804	---	3,130	---	194	---	219	181	---
Total	14,568	44,036	27,231	31,970	11,304	34,090	72,578	10,135	6,677	7,868	6,391	6,596
Mean	470	1,468	878	1,031	404	1,100	2,419	327	223	254	206	220
Max	1,530	4,350	2,180	1,800	795	3,830	7,100	1,300	555	629	352	351
Min	198	589	336	346	169	222	888	194	174	172	176	175

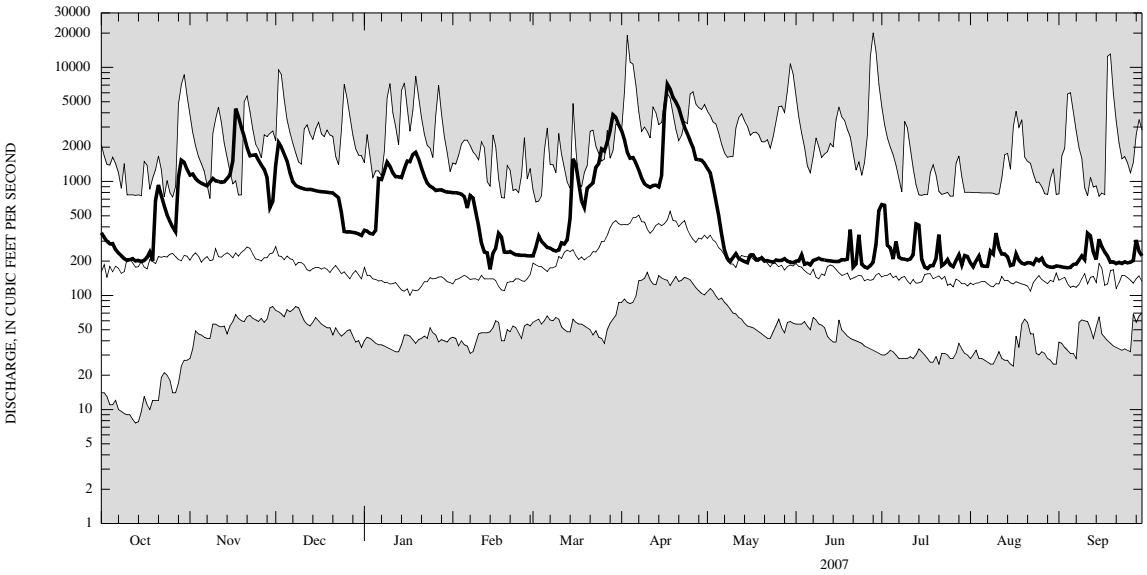
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	314	386	359	320	243	375	819	498	360	247	269	330
Max	1,506	1,735	2,327	1,558	1,154	1,100	2,477	1,670	2,615	767	971	1,729
(WY)	(2004)	(2004)	(1997)	(1978)	(2006)	(2007)	(1993)	(1984)	(2006)	(1962)	(2004)	(2004)
Min	13.7	73.1	74.5	68.6	70.7	111	180	79.0	47.7	37.5	43.6	76.5
(WY)	(1955)	(1999)	(1961)	(1963)	(1963)	(1981)	(1985)	(1955)	(1964)	(1966)	(1965)	(1965)

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1955 - 2007	
Annual total	311,082		273,444			
Annual mean	852		749		374	
Highest annual mean					882	2004
Lowest annual mean					175	1999
Highest daily mean	20,100	Jun 28	7,100	Apr 17	20,100	Jun 28, 2006
Lowest daily mean	133	Apr 3	169	Feb 14	7.6	Oct 13, 1954
Annual seven-day minimum	142	Mar 28	177	Aug 30	8.6	Oct 8, 1954
10 percent exceeds	1,670		1,590		761	
50 percent exceeds	362		325		185	
90 percent exceeds	167		189		80	



CURRENT WATER YEAR DAILY MEAN DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.
SHADED AREAS SHOW HIGHEST AND LOWEST DAILY MEAN FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 1978 to current year.

INSTRUMENTATION.--Water-temperature satellite telemeter provides 15-minute-interval readings. Prior to June 1994, water-temperature recorder provided one-hour interval readings.

REMARKS.--Water temperature is affected by release of water from upstream reservoir. Interruption of record was due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum (water years 1978, 1981-82, 1984-2007), 28.0°C, June 30, 1981; minimum (water years 1979-87, 1989-2007), 0.0°C on many days during winter periods, except 1989, 1998.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 20.0°C, June 9, 26, July 9, 10, Aug. 2, 12, 25, but may have been higher during period of instrument malfunction; minimum, 0.0°C on many days during winter period.

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
1	12.0	10.5	11.5	8.5	7.5	8.0	10.5	9.5	10.0	5.5	4.5	5.0
2	12.5	11.0	11.5	8.0	6.5	7.0	9.5	7.0	8.0	5.5	3.5	5.0
3	13.0	11.0	12.0	6.5	5.5	6.0	7.5	6.5	7.0	4.0	3.0	3.5
4	13.5	12.0	13.0	6.0	4.5	5.5	7.0	5.5	6.5	4.5	3.0	3.5
5	13.5	12.0	12.5	6.5	5.0	5.5	6.5	5.5	6.0	6.5	4.0	5.0
6	12.0	10.5	11.5	7.0	5.0	6.0	6.0	5.0	5.5	8.5	6.5	8.0
7	12.0	9.5	10.5	7.0	5.5	6.5	6.5	5.0	6.0	7.5	5.5	6.5
8	12.5	9.5	11.0	7.5	7.0	7.0	5.0	3.5	4.0	6.0	5.0	5.5
9	13.0	10.5	12.0	8.5	7.5	8.0	5.5	4.0	5.0	5.0	4.5	4.5
10	13.0	11.0	12.0	7.5	7.0	7.5	6.0	5.0	5.5	4.5	3.0	4.0
11	12.5	11.5	12.0	8.0	6.0	7.0	7.0	5.5	6.0	4.5	3.0	3.5
12	12.5	11.0	12.0	8.0	7.0	7.5	7.5	6.5	7.0	5.5	4.0	4.5
13	11.0	9.0	9.5	8.0	7.0	7.5	7.5	7.0	7.0	6.0	5.5	5.5
14	9.0	7.5	8.5	9.0	8.0	8.5	7.5	6.5	7.0	6.0	5.5	5.5
15	8.5	7.0	7.5	8.5	8.0	8.5	7.0	6.5	7.0	5.5	5.0	5.5
16	9.0	6.5	8.0	11.5	8.0	9.5	7.0	6.0	6.5	5.5	3.0	4.5
17	9.0	8.0	8.5	11.0	9.5	10.0	7.5	5.5	6.0	3.0	2.0	2.5
18	10.5	9.0	9.5	9.5	9.0	9.0	7.5	6.5	7.0	4.0	2.5	3.5
19	12.0	10.5	11.0	9.0	8.5	9.0	6.5	5.5	6.0	4.5	3.5	4.0
20	12.0	9.0	10.5	8.5	7.5	8.0	6.0	5.0	5.5	3.5	3.0	3.0
21	9.5	8.5	9.0	8.0	7.0	7.5	6.0	5.0	5.5	3.5	2.5	3.0
22	9.0	8.0	8.5	7.5	7.0	7.0	6.0	5.0	5.5	3.5	3.0	3.5
23	9.0	7.0	8.0	7.5	6.5	7.0	7.5	6.0	6.5	4.0	3.0	3.5
24	7.0	7.0	7.0	8.0	6.5	7.0	6.5	5.0	6.0	4.0	3.5	4.0
25	8.0	7.0	7.0	7.5	6.5	7.0	5.0	4.0	4.5	3.5	2.0	3.0
26	7.5	6.5	7.0	7.5	6.5	7.0	5.5	4.0	5.0	2.0	1.0	1.5
27	7.5	5.5	6.5	8.0	7.0	7.5	5.0	4.0	4.5	3.0	2.0	2.5
28	8.5	7.0	8.0	8.0	7.0	7.5	4.5	3.5	4.0	4.0	3.0	3.5
29	8.0	6.0	7.0	9.0	8.0	8.5	5.5	4.0	4.5	3.5	2.0	2.5
30	7.5	5.5	6.5	10.5	9.0	9.5	4.5	4.0	4.0	3.0	1.5	2.5
31	8.0	6.0	7.0	---	---	---	4.5	3.5	4.0	3.0	2.0	2.5
Month	13.5	5.5	9.5	11.5	4.5	7.6	10.5	3.5	5.9	8.5	1.0	4.0

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	3.5	2.0	2.5	3.5	2.0	2.5	3.5	2.5	3.0	8.0	5.5	7.0
2	4.0	3.0	3.5	3.0	2.0	2.5	6.0	3.0	4.0	10.0	6.5	8.0
3	3.5	2.0	2.5	3.0	1.5	2.0	7.0	3.5	5.0	11.0	6.0	8.5
4	2.0	0.5	1.5	2.5	1.0	1.5	4.5	3.5	3.5	11.5	6.5	9.0
5	1.0	0.0	0.5	2.0	0.0	1.0	4.0	2.5	3.5	12.0	7.5	10.0
6	1.5	0.0	0.5	0.5	0.0	0.5	3.0	2.0	2.5	13.0	8.5	10.5
7	2.0	0.5	1.0	0.5	0.0	0.5	4.0	1.5	2.5	14.5	9.0	11.5
8	1.5	0.5	1.0	1.0	0.0	0.5	3.5	1.5	2.5	16.0	10.0	13.0
9	1.5	0.5	1.0	1.5	0.0	0.5	3.5	2.0	2.5	17.0	11.5	14.0
10	1.5	0.5	1.0	1.5	0.0	0.5	5.5	2.0	3.5	17.5	12.5	15.0
11	1.5	0.0	0.5	3.5	1.5	2.5	6.0	2.0	4.0	17.0	13.0	15.0
12	1.5	0.5	1.0	4.5	1.5	3.0	5.0	3.0	3.5	17.5	12.5	14.5
13	1.5	0.5	1.0	4.5	2.5	3.5	3.5	3.0	3.5	16.0	11.0	13.5
14	0.5	0.0	0.0	4.0	2.5	3.0	5.0	2.5	4.0	15.5	9.5	12.5
15	1.0	0.0	0.5	2.5	1.0	1.5	4.5	3.0	3.5	17.0	11.0	14.0
16	0.5	0.0	0.0	1.5	0.0	1.0	3.0	2.0	2.5	15.0	12.5	14.0
17	0.0	0.0	0.0	1.5	0.0	1.0	4.0	3.0	3.5	13.0	11.0	12.0
18	0.0	0.0	0.0	3.0	0.5	1.5	4.5	3.5	4.0	11.5	10.0	11.0
19	0.5	0.0	0.5	2.0	1.0	1.5	6.0	4.0	5.0	10.5	9.0	9.5
20	0.5	0.0	0.0	4.5	1.0	2.5	7.0	4.0	5.0	13.0	9.0	11.0
21	0.5	0.0	0.0	4.5	0.5	2.5	7.0	4.0	5.5	15.0	10.0	12.0
22	0.5	0.0	0.5	5.5	2.0	4.0	7.5	4.5	6.0	16.0	10.0	13.0
23	1.5	0.5	1.0	4.0	2.5	3.5	8.0	5.0	6.5	16.5	11.0	14.0
24	1.5	0.0	0.5	4.0	2.0	3.0	8.5	5.5	6.5	18.0	12.0	15.0
25	2.0	0.0	1.0	4.5	2.5	3.5	5.5	5.0	5.5	18.5	13.5	16.0
26	2.5	1.0	2.0	5.0	2.5	4.0	8.0	5.0	6.5	17.5	14.0	15.5
27	3.0	2.0	2.5	5.5	3.5	4.5	7.0	6.0	6.5	17.5	13.0	15.0
28	4.5	2.0	3.0	6.0	3.0	4.5	7.0	6.0	6.5	18.5	14.0	16.0
29	---	---	---	4.5	2.0	3.0	8.0	6.0	6.5	18.5	13.0	16.0
30	---	---	---	4.5	2.0	3.0	10.0	5.5	7.5	18.5	13.0	16.0
31	---	---	---	5.0	2.5	3.5	---	---	---	19.0	14.0	16.5
Month	4.5	0.0	1.0	6.0	0.0	2.3	10.0	1.5	4.5	19.0	5.5	12.9

01417500 EAST BRANCH DELAWARE RIVER AT HARVARD, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	18.5	15.0	17.0	---	---	---	19.5	14.0	16.5	17.0	12.0	14.5
2	19.0	14.5	17.0	---	---	---	20.0	14.0	17.0	17.0	12.0	14.0
3	17.0	14.5	15.5	13.5	8.5	11.0	19.0	15.5	17.0	17.0	12.0	14.5
4	15.0	13.5	14.0	12.0	9.5	10.5	19.5	14.5	16.5	17.5	13.0	15.0
5	16.5	13.5	15.0	16.0	10.5	13.5	18.0	13.5	15.5	15.5	13.0	14.0
6	15.5	13.0	14.5	15.5	12.5	14.0	16.5	13.0	14.0	15.5	12.0	14.0
7	17.0	12.0	14.5	17.5	11.5	14.5	15.5	12.5	14.0	17.5	13.0	15.0
8	18.5	13.0	16.0	18.5	13.0	15.5	19.0	15.5	17.0	17.0	13.5	15.5
9	20.0	15.5	17.5	20.0	14.0	17.0	19.0	15.0	17.0	17.0	14.0	15.0
10	18.5	15.0	17.0	20.0	14.5	17.0	16.5	14.0	15.0	14.5	12.5	13.5
11	19.0	14.0	16.5	17.0	14.5	15.5	19.5	13.5	16.5	15.5	12.0	13.5
12	18.0	14.5	16.5	18.5	12.5	15.5	20.0	15.0	17.5	15.5	12.5	14.0
13	18.0	14.5	16.0	14.5	10.5	12.0	19.5	15.5	17.0	16.5	12.0	14.0
14	17.0	13.5	15.5	13.0	9.5	11.5	19.0	13.5	16.0	14.5	12.5	13.5
15	17.0	13.5	14.5	16.5	11.0	13.5	18.0	13.5	15.5	14.5	12.0	13.5
16	16.0	13.5	14.5	19.0	13.0	15.5	19.0	14.0	16.5	14.5	11.0	12.5
17	17.0	13.5	15.0	19.5	13.5	16.5	18.0	14.5	16.5	15.0	10.0	12.5
18	16.5	13.5	15.0	17.0	14.5	15.5	17.5	13.5	15.0	15.5	10.5	13.0
19	18.5	13.5	15.5	15.0	13.0	14.0	16.5	12.5	14.5	16.0	11.5	13.5
20	18.5	15.0	17.0	16.0	12.5	14.0	14.5	12.5	13.5	17.0	12.5	14.5
21	17.5	13.5	15.5	14.0	10.0	12.0	13.5	12.0	12.5	17.5	13.5	15.0
22	16.5	14.0	15.0	17.0	11.0	14.0	13.5	11.5	12.5	17.0	13.0	15.0
23	14.5	10.5	12.5	15.0	12.5	13.5	14.5	12.5	13.5	17.0	12.5	14.5
24	16.5	10.5	13.5	16.5	11.5	13.5	17.5	13.0	15.0	16.5	11.5	13.5
25	18.0	13.0	15.5	19.0	13.5	16.0	20.0	14.5	17.0	16.5	11.5	13.5
26	20.0	14.0	16.5	19.5	14.5	17.0	18.0	15.0	16.5	17.0	12.5	14.5
27	---	---	---	19.5	14.5	17.0	17.0	13.5	15.0	16.5	13.0	15.0
28	---	---	---	19.5	15.0	17.0	17.5	13.5	15.5	15.0	12.5	13.5
29	---	---	---	19.5	15.5	17.0	19.0	13.5	16.0	15.5	12.0	13.0
30	---	---	---	19.5	15.5	17.0	18.0	14.0	16.0	14.5	11.0	12.5
31	---	---	---	19.5	13.5	16.0	16.5	14.0	15.0	---	---	---
Month	---	---	---	---	---	---	20.0	11.5	15.6	17.5	10.0	14.0