

Water-Data Report 2008

02097517 MORGAN CREEK NEAR CHAPEL HILL, NC

Cape Fear Basin
Haw Subbasin

LOCATION.--Lat 35°53'36", long 79°01'11" referenced to North American Datum of 1983, Orange County, NC, Hydrologic Unit 03030002, on left bank 2.5 mi southeast of Chapel Hill, and 3.8 mi downstream of U.S. Highway 501.

DRAINAGE AREA.--41 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 239.02 ft above NGVD of 1929. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges which are poor. The City of Chapel Hill diverted an average of 12.3 ft³/s for water supply upstream of station, and an average of 11.7 ft³/s was returned as treated effluent upstream of station. Considerable diurnal fluctuation and occasional slight regulation caused by small reservoir and treated effluent outfall upstream from station. Maximum discharge for period of record from rating curve extended above 1,700 ft³/s, by logarithmic plotting; maximum gage height, 16.18 ft, from floodmark. Maximum gage height for current water year, 14.05 ft, from floodmark.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	8.0	8.5	10	20	43	12	42	30	14	15	18	19
2	7.9	8.4	10	16	22	12	34	22	12	12	14	17
3	7.9	8.1	11	15	17	11	30	17	12	11	12	16
4	8.3	7.9	12	14	15	31	55	15	12	39	12	15
5	8.1	7.8	12	13	15	135	284	14	12	168	12	14
6	8.3	8.4	12	13	14	28	129	13	11	203	12	e1,380
7	8.1	8.6	9.6	13	13	277	77	12	11	40	13	167
8	8.4	8.6	12	13	13	342	51	13	11	24	12	53
9	8.2	8.1	12	13	12	82	39	22	12	25	9.9	33
10	8.1	8.1	12	13	12	45	32	26	12	26	11	264
11	8.5	8.0	11	14	13	32	27	40	11	20	11	127
12	7.8	8.2	11	13	16	26	26	43	11	18	11	47
13	7.9	8.7	10	13	70	21	24	25	10	17	12	31
14	8.6	8.7	11	13	26	18	21	20	11	19	14	24
15	8.0	13	12	14	20	32	20	17	11	17	18	21
16	8.2	12	29	14	18	50	17	80	11	15	20	107
17	8.7	10	12	21	17	33	16	46	10	14	14	81
18	8.2	9.8	11	18	26	25	14	41	9.7	14	13	34
19	8.9	8.5	10	16	19	22	13	47	9.4	18	13	23
20	8.3	7.9	9.8	16	17	25	30	32	9.3	23	14	18
21	7.1	8.0	9.2	14	16	17	25	27	13	15	18	16
22	7.6	7.7	8.8	15	20	14	22	20	12	13	13	15
23	7.7	8.0	8.8	15	16	14	20	16	14	13	13	13
24	21	9.1	8.6	14	14	13	16	13	14	14	12	13
25	32	9.8	8.0	14	15	13	14	12	11	13	12	13
26	85	11	53	13	26	13	13	13	12	12	14	30
27	88	11	17	13	20	12	14	14	11	12	282	21
28	11	11	12	13	16	11	60	20	9.9	38	143	19
29	9.8	11	19	12	14	12	90	17	16	16	48	17
30	9.1	11	134	13	---	13	44	14	53	16	29	16
31	9.0	---	53	13	---	51	---	14	---	23	24	---
Total	451.7	274.9	570.8	444	575	1,442	1,299	755	388.3	923	873.9	2,664
Mean	14.6	9.16	18.4	14.3	19.8	46.5	43.3	24.4	12.9	29.8	28.2	88.8
Max	88	13	134	21	70	342	284	80	53	203	282	1,380
Min	7.1	7.7	8.0	12	12	11	13	12	9.3	11	9.9	13
Cfsm	0.36	0.22	0.45	0.35	0.48	1.13	1.06	0.59	0.32	0.73	0.69	2.17
In.	0.41	0.25	0.52	0.40	0.52	1.31	1.18	0.69	0.35	0.84	0.79	2.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	24.2	34.7	36.3	60.5	69.6	88.5	57.0	31.0	23.9	21.7	22.3	33.9
Max	54.9	141	105	184	206	226	194	91.2	84.9	53.8	65.0	272
(WY)	(2003)	(1986)	(1984)	(1998)	(1998)	(1993)	(2003)	(1990)	(1992)	(2003)	(1985)	(1999)
Min	12.9	9.16	12.9	13.3	17.2	18.0	16.8	11.7	11.1	8.93	8.97	8.77
(WY)	(1999)	(2008)	(1989)	(2004)	(1991)	(1988)	(2006)	(2006)	(1986)	(1988)	(2007)	(1983)

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SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1983 - 2008	
Annual total	9,466.1		10,661.6			
Annual mean	25.9		29.1		41.2	
Highest annual mean					80.2	
Lowest annual mean					18.7	
Highest daily mean	486	Apr 16	1,380	Sep 6	2,600	Sep 6, 1996
Lowest daily mean	6.8	Sep 30	7.1	Oct 21	0.60	Nov 26, 1982
Annual seven-day minimum	7.3	Aug 6	8.1	Oct 17	2.1	Nov 22, 1982
Maximum peak flow			2,880	Sep 6	^a 4,210	Sep 6, 1996
Maximum peak stage			^a 14.05	Sep 6	^a 16.18	Sep 6, 1996
Instantaneous low flow			2.0	Oct 2	NOT DETERMINED	
Annual runoff (cfsm)	0.633		0.710		1.00	
Annual runoff (inches)	8.59		9.67		13.65	
10 percent exceeds	46		45		75	
50 percent exceeds	12		14		19	
90 percent exceeds	8.0		8.6		12	

^aSee Remarks.