

Water-Data Report 2010

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 National Geodetic Vertical Datum of 1929. Satellite telemetry at streamgage.

REMARKS.--Records fair except those for estimated daily discharges which are poor. The City of Chapel Hill diverted an average of 12.0 ft³/s for water supply upstream of station, and an average of 10.3 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, 12.58 ft, from floodmark.

02097517 MORGAN CREEK NEAR CHAPEL HILL, NC—Continued

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	13	28	30	32	39	39	38	12	28	9.7	15	13
2	12	21	216	29	50	38	33	12	20	9.5	13	13
3	11	16	504	26	142	45	31	12	17	8.5	12	14
4	11	16	98	23	130	39	30	10	15	8.3	11	12
5	9.8	17	82	21	e420	35	31	10	14	7.7	21	12
6	10	18	65	20	e680	32	29	10	13	8.1	21	12
7	11	17	49	19	159	31	27	10	15	8.2	12	14
8	11	16	44	20	96	31	26	9.3	13	12	11	14
9	12	17	337	19	85	31	27	9.3	12	11	11	15
10	14	e17	141	18	87	31	24	10	13	9.7	11	14
11	13	e315	67	18	64	32	23	9.5	12	9.1	12	13
12	14	162	45	19	60	39	23	10	12	15	13	14
13	16	271	70	21	61	107	20	10	20	20	11	15
14	16	75	77	21	54	74	16	9.7	15	27	10	14
15	17	44	52	22	53	56	15	8.8	12	15	11	14
16	15	36	41	21	52	45	15	12	12	12	11	14
17	12	30	33	e140	47	41	13	67	12	11	9.6	15
18	11	28	34	e75	44	38	13	75	10	13	12	14
19	13	31	218	e52	41	36	14	31	10	13	17	14
20	12	27	112	47	39	34	14	19	10	11	13	15
21	12	22	64	51	38	33	15	16	10	10	11	15
22	12	22	47	89	52	33	15	34	9.8	9.3	11	13
23	13	117	39	58	51	33	14	101	12	13	13	11
24	20	101	33	45	48	32	14	98	12	11	13	13
25	18	51	218	820	49	32	21	46	9.8	11	14	13
26	16	38	274	169	44	33	15	30	8.8	11	14	17
27	17	34	87	78	40	31	13	23	9.1	e17	13	52
28	28	30	53	54	39	28	12	18	9.3	23	11	70
29	17	27	41	44	---	102	12	18	9.8	14	12	46
30	15	28	34	50	---	67	12	16	10	13	13	241
31	16	---	36	42	---	46	---	15	---	12	12	---
Total	437.8	1,672	3,241	2,163	2,764	1,324	605	771.6	385.6	383.1	394.6	766
Mean	14.1	55.7	105	69.8	98.7	42.7	20.2	24.9	12.9	12.4	12.7	25.5
Max	28	315	504	820	680	107	38	101	28	27	21	241
Min	9.8	16	30	18	38	28	12	8.8	8.8	7.7	9.6	11
Cfsm	0.34	1.36	2.55	1.70	2.41	1.04	0.49	0.61	0.31	0.30	0.31	0.62
In.	0.40	1.52	2.94	1.96	2.51	1.20	0.55	0.70	0.35	0.35	0.36	0.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	23.6	35.0	39.1	59.9	68.7	87.0	55.0	30.3	23.6	20.9	21.6	32.8
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	14.2	18.0	16.8	11.7	11.1	7.70	8.97	8.77
(WY)	(1999)	(2008)	(1989)	(2004)	(2009)	(1988)	(2006)	(2006)	(1986)	(2009)	(2007)	(1983)

02097517 MORGAN CREEK NEAR CHAPEL HILL, NC—Continued

SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1983 - 2010	
Annual total	13,027.2		14,907.7			
Annual mean	35.7		40.8		40.7	
Highest annual mean					80.2	2003
Lowest annual mean					18.7	2006
Highest daily mean	504	Dec 3	820	Jan 25	2,600	Sep 6, 1996
Lowest daily mean	5.5	Jun 28	7.7	Jul 5	0.60	Nov 26, 1982
Annual seven-day minimum	6.0	Jun 28	8.6	Jul 1	2.1	Nov 22, 1982
Maximum peak flow			2,110	Feb 6	^a 4,210	Sep 6, 1996
Maximum peak stage			^a 12.58	Feb 6	^a 16.18	Sep 6, 1996
Instantaneous low flow			4.2	Sep 2	Not Determined	
Annual runoff (cfsm)	0.871		0.996		0.993	
Annual runoff (inches)	11.82		13.53		13.49	
10 percent exceeds	73		75		74	
50 percent exceeds	16		18		19	
90 percent exceeds	7.7		10		12	

^a See Remarks.

