Water-Data Report 2008

02086849 ELLERBE CREEK NEAR GORMAN, NC

Neuse Basin
Upper Neuse Subbasin

LOCATION.--Lat 36°03′33″, long 78°49′58″ referenced to North American Datum of 1927, Durham County, NC, Hydrologic Unit 03020201, on right bank 60 ft upstream of bridge on Secondary Road 1636, 1.6 mi northwest of Gorman, and 3 mi upstream of mouth.

DRAINAGE AREA.--21.9 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1982 to April 1989, October 1991 to September 1995, January 2006 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 252.81 ft above North American Vertical Datum of 1988. Satellite telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. An average of 15.7 ft^3/s was diverted from Flat River for Durham municipal water supply, of which 12.7 ft^3/s was returned as treated effluent upstream of station. Maximum gage height for period of record and current water year affected by backwater from Falls Lake. Minimum discharge for period of record and current water year, due to regulation.

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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	12	13	12	30	107	16	118	23	57	25	16	19
2	12	12	13	22	37	16	51	20	40	18	12	16
3	12	13	14	18	23	15	37	18	17	15	11	16
4	13	12	12	16	19	74	102	17	14	46	11	15
5	22	12	12	14	16	426	361	16	13	194	11	16
6	23	13	12	14	15	45	110	16	13	358	11	e1,700
7	13	12	14	14	14	386	52	15	13	133	11	e350
8	12	12	12	13	14	193	34	14	13	34	11	e150
9	11	11	12	13	13	63	30	21	12	67	11	e60
10	12	11	14	13	11	42	27	15	12	48	43	e45
11	12	12	13	14	13	32	24	121	12	39	22	e35
12	12	13	13	13	17	26	25	53	11	20	16	e33
13	11	13	12	12	130	22	23	22	11	19	15	e25
14	12	13	12	12	40	20	19	17	11	29	17	e21
15	12	29	14	12	27	91	19	16	13	17	14	175
16	13	13	74	11	19	94	17	161	12	15	21	298
17	12	12	18	40	17	35	15	43	19	14	15	141
18	11	13	14	26	52	25	17	30	12	14	20	86
19	13	13	12	21	23	21	16	31	12	34	15	47
20	11	13	12	28	20	33	66	43	8.6	41	14	22
21	13	12	11	16	18	19	45	34	15	16	30	14
22	13	13	11	15	41	19	28	19	65	15	13	14
23	11	13	11	16	26	16	25	19	35	15	11	12
24	40	12	13	14	20	16	18	18	14	16	11	13
25	121	13	11	13	20	15	17	15	13	13	15	11
26	136	14	146	13	53	16	17	15	12	12	14	720
27	152	13	29	13	34	15	55	15	11	13	316	105
28	26	13	21	13	23	15	220	30	15	21	408	60
29	19	13	38	13	18	17	84	22	17	13	78	38
30	14	12	297	15	---	22	32	16	415	12	20	28
31	13	---	91	12	---	152	---	15	---	12	82	---
Total	819	393	1,000	509	880	1,997	1,704	930	937.6	1,338	1,315	4,285
Mean	26.4	13.1	32.3	16.4	30.3	64.4	56.8	30.0	31.3	43.2	42.4	143
Max	152	29	297	40	130	426	361	161	415	358	408	1,700
Min	11	11	11	11	11	15	15	14	8.6	12	11	11
Cfsm	1.21	0.60	1.47	0.75	1.39	2.94	2.59	1.37	1.43	1.97	1.94	6.52
In.	1.39	0.67	1.70	0.86	1.49	3.39	2.89	1.58	1.59	2.27	2.23	7.28

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

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	22.2	46.2	35.6	45.4	62.8	74.4	44.5	32.2	29.1	25.2	30.5	28.7
Max	40.6	196	84.0	90.9	141	147	81.2	84.5	91.7	53.3	79.5	143
(WY)	(1995)	(1986)	(1984)	(1987)	(1985)	(1993)	(1984)	(1983)	(1995)	(1995)	(1986)	(2008)
Min	11.4	13.1	14.9	16.4	27.0	16.7	11.8	15.8	10.2	13.5	14.3	9.93
(WY)	(1983)	(2008)	(1995)	(2008)	(1988)	(1988)	(1985)	(1987)	(1993)	(1983)	(1983)	(1986)

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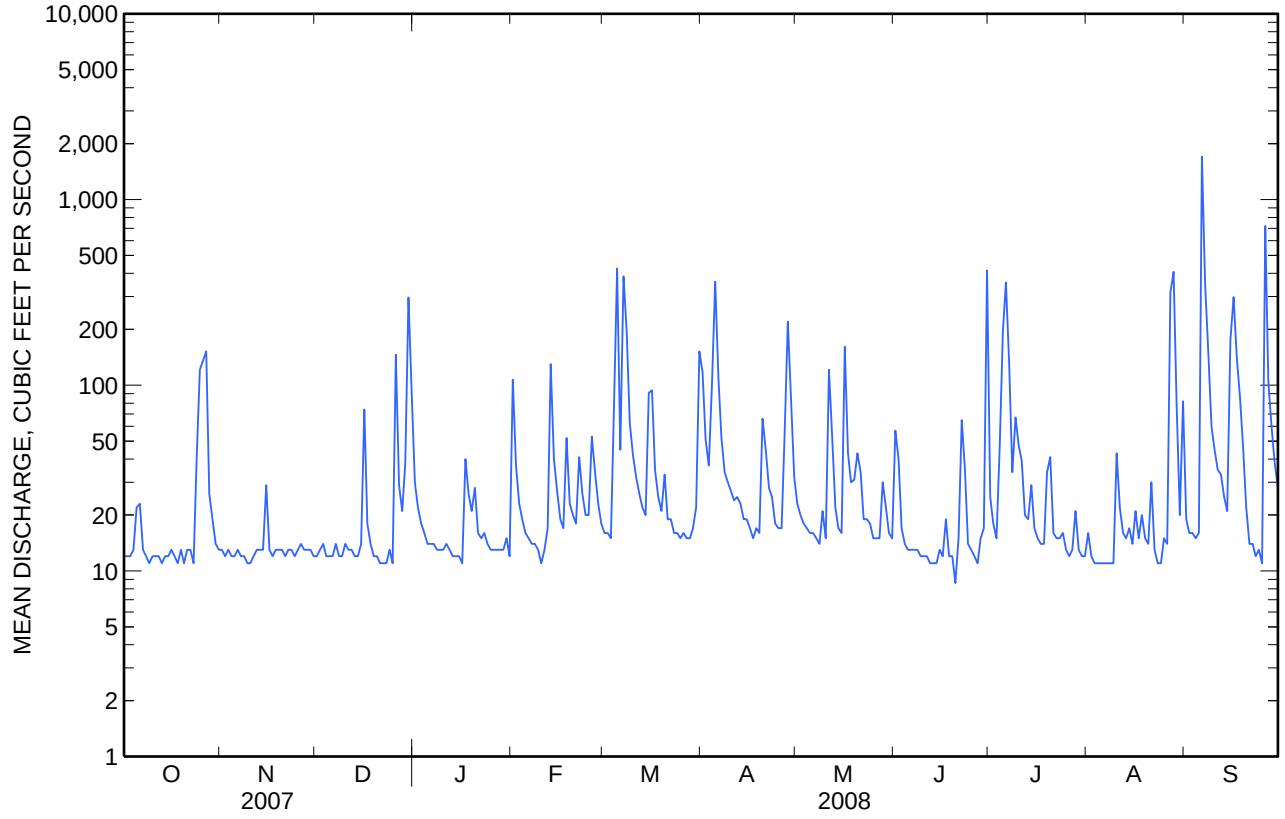
SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1983 - 2008[a]	
Annual total	10,908		16,107.6			
Annual mean	29.9		44.0		40.3	
Highest annual mean					60.6	1984
Lowest annual mean					20.2	1988
Highest daily mean	476	Apr 15	1,700	Sep 6	1,700	Sep 6, 2008
Lowest daily mean	11	Jul 4	8.6	Jun 20	1.5	Oct 1, 1995
Annual seven-day minimum	11	Jul 20	11	Aug 3	4.8	Jun 11, 1983
Maximum peak flow			NOT DETERMINED		NOT DETERMINED	
Maximum peak stage			[b]12.13	Sep 6	[b]12.13	Sep 6, 2008
Instantaneous low flow			[b]2.7	Feb 11	[b]1.0	Jan 4, 1995
Annual runoff (cfsm)	1.36		2.01		1.84	
Annual runoff (inches)	18.53		27.36		24.98	
10 percent exceeds	44		85		74	
50 percent exceeds	16		16		16	
90 percent exceeds	12		12		9.5	

[a]See Period of Record.

[b]See Remarks



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-87, 1989-95, 2006-08.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1982 to September 1985.
WATER TEMPERATURE: October 1982 to September 1985.

INSTRUMENTATION.--Water-quality monitor from October 1982 to September 1985.

REMARKS.--Station operated to define water quality as part of a regional surface-water quality assessment. Samples for October 1994 and April 1995 were collected by the North Carolina Department of Environment, Health, and Natural Resources. A GC/FID scan for trace organic compounds was performed on these samples by the U.S. Geological Survey Water Quality Lab. Results may be obtained from the North Carolina Water Science Center, Raleigh, NC.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 858 microsiemens, January 30, 1985; minimum recorded, 24 microsiemens, May 20, 1983.
WATER TEMPERATURE: Maximum recorded, 33.5°C, June 21, 1985; minimum recorded, 0.0°C, January 21, 22, 1985.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 1 of 4
[Remark codes: <, less than; E, estimated.]

Date	Time	Instantaneous discharge, cfs (00061)	Color, water, fltrd, Pt-Co units (00080)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)
Sep													
06...	1245	--	175	751	7.0	82	6.7	58	22.6	17	4.68	1.20	2.96
26...	1115	1,920	200	754	8.1	86	6.5	64	17.9	17	4.70	1.21	2.95

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 2 of 4
[Remark codes: <, less than; E, estimated.]

Date	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf infl pt titr., field, mg/L as CaCO3 (00419)	Bicarbonate, wat unf infl pt titr., field, mg/L (00450)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L as SiO2 (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)
Sep													
06...	3.38	12.4	15.2	2.84	<.12	4.49	4.64	61	1.1	.102	.325	.012	.077
26...	4.36	13.0	15.9	4.01	E.07	4.70	5.19	60	1.2	.220	.473	.015	.101

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 3 of 4
[Remark codes: <, less than; E, estimated.]

Date	Phos-phorus, water, unfltrd mg/L as P (00665)	Organic carbon, water, fltrd, mg/L (00681)	Organic carbon, water, unfltrd mg/L (00680)	Alum-inum, water, unfltrd recover-able, µg/L (01105)	Arsenic water, unfltrd µg/L (01002)	Cadmium water, unfltrd µg/L (01027)	Chrom-ium, water, unfltrd recover-able, µg/L (01034)	Cobalt water, unfltrd recover-able, µg/L (01037)	Copper, water, unfltrd recover-able, µg/L (01042)	Iron, water, unfltrd recover-able, µg/L (01045)	Lead, water, unfltrd recover-able, µg/L (01051)	Mangan-ese, water, unfltrd recover-able, µg/L (01055)	Mercury water, fltrd, µg/L (71890)
Sep													
06...	.22	10.7	16.6	2,220	2.2	.07	4.4	2.2	9.2	2,660	12.2	131	<.010
26...	.364	9.6	E17.2	2,780	2.0	.09	4.9	2.6	9.7	3,080	13.7	175	<.010

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 4 of 4
[Remark codes: <, less than; E, estimated.]

Date	Mercury water, unfltrd recover-able, µg/L (71900)	Molyb-denum, water, unfltrd recover-able, µg/L (01062)	Nickel, water, unfltrd recover-able, µg/L (01067)	Selen-ium, water, unfltrd µg/L (01147)	Silver, water, unfltrd recover-able, µg/L (01077)	Zinc, water, unfltrd recover-able, µg/L (01092)	Sus-pended sedi-ment concen-tration mg/L (80154)
Sep							
06...	.022	.2	4.0	.13	.10	52.8	288
26...	.032	.2	4.5	.14	.11	37.9	319