



Water-Data Report 2010

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 mi².

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. Datum of gage is 252.81 ft above North American Vertical Datum of 1988. Satellite telemetry at streamgage.

REMARKS.--Records poor. Water was diverted from Flat River for Durham municipal water supply, and was returned as treated effluent upstream of station. Maximum gage height for period of record 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 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	15	145	31	29	e29	30	29	16	70	16	22	14
2	14	30	398	25	e25	26	28	16	33	15	15	14
3	14	21	743	23	367	45	27	17	28	14	15	13
4	13	17	e103	21	e90	29	24	17	23	14	14	13
5	14	17	e91	21	e97	23	24	17	20	14	42	12
6	14	15	e86	20	e793	22	23	17	19	19	52	13
7	14	15	e61	19	e158	22	23	20	23	16	16	13
8	14	15	e53	22	e39	22	22	17	18	16	14	13
9	13	15	669	20	e46	21	29	16	20	33	14	13
10	14	24	e133	19	e54	22	22	16	18	18	10	13
11	14	1,030	e73	20	e48	26	20	16	17	18	14	12
12	17	472	e56	18	e44	49	21	16	23	18	16	14
13	25	250	e72	16	e45	181	21	15	66	32	14	14
14	17	54	e94	15	e34	71	20	15	32	129	14	13
15	23	35	e67	18	e25	39	19	15	19	16	13	13
16	18	27	e54	19	e28	32	21	42	136	17	13	13
17	16	26	43	410	e27	29	19	671	61	49	13	13
18	16	32	35	121	e32	27	18	485	22	81	13	13
19	17	85	463	43	e25	25	19	59	18	39	45	13
20	16	49	e84	32	e30	24	18	43	17	20	112	13
21	17	29	e53	66	e23	26	51	24	17	22	18	13
22	15	24	e44	234	e32	25	26	101	16	16	16	14
23	16	382	e36	50	e29	21	18	336	42	15	148	15
24	39	89	29	36	e31	18	17	132	21	14	24	14
25	23	47	402	694	e30	19	33	49	17	14	29	13
26	17	36	239	e128	33	24	20	32	17	32	18	19
27	17	39	e48	e44	31	21	17	27	17	26	16	194
28	85	27	e39	e35	30	18	16	27	16	23	15	58
29	22	24	e38	e33	---	209	16	669	13	15	14	107
30	19	27	31	e32	---	44	14	45	15	31	14	646
31	20	---	38	e31	---	33	---	29	---	15	14	---
Total	608	3,098	4,406	2,314	2,275	1,223	675	3,017	874	817	807	1,355
Mean	19.6	103	142	74.6	81.2	39.5	22.5	97.3	29.1	26.4	26.0	45.2
Max	85	1,030	743	694	793	209	51	671	136	129	148	646
Min	13	15	29	15	23	18	14	15	13	14	10	12
Cfsm	0.90	4.72	6.49	3.41	3.71	1.80	1.03	4.44	1.33	1.20	1.19	2.06
In.	1.03	5.26	7.48	3.93	3.86	2.08	1.15	5.12	1.48	1.39	1.37	2.30

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

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	21.9	49.6	43.8	46.9	61.6	74.6	43.0	36.2	30.4	24.9	29.6	29.3
Max	40.6	196	142	90.9	141	147	81.2	97.3	91.7	53.3	79.5	143
(WY)	(1995)	(1986)	(2010)	(1987)	(1985)	(1993)	(1984)	(2010)	(1995)	(1995)	(1986)	(2008)
Min	11.4	13.1	14.9	16.4	24.1	16.7	11.8	15.8	10.2	13.5	14.3	9.93
(WY)	(1983)	(2008)	(1995)	(2008)	(2009)	(1988)	(1985)	(1987)	(1993)	(1983)	(1983)	(1986)

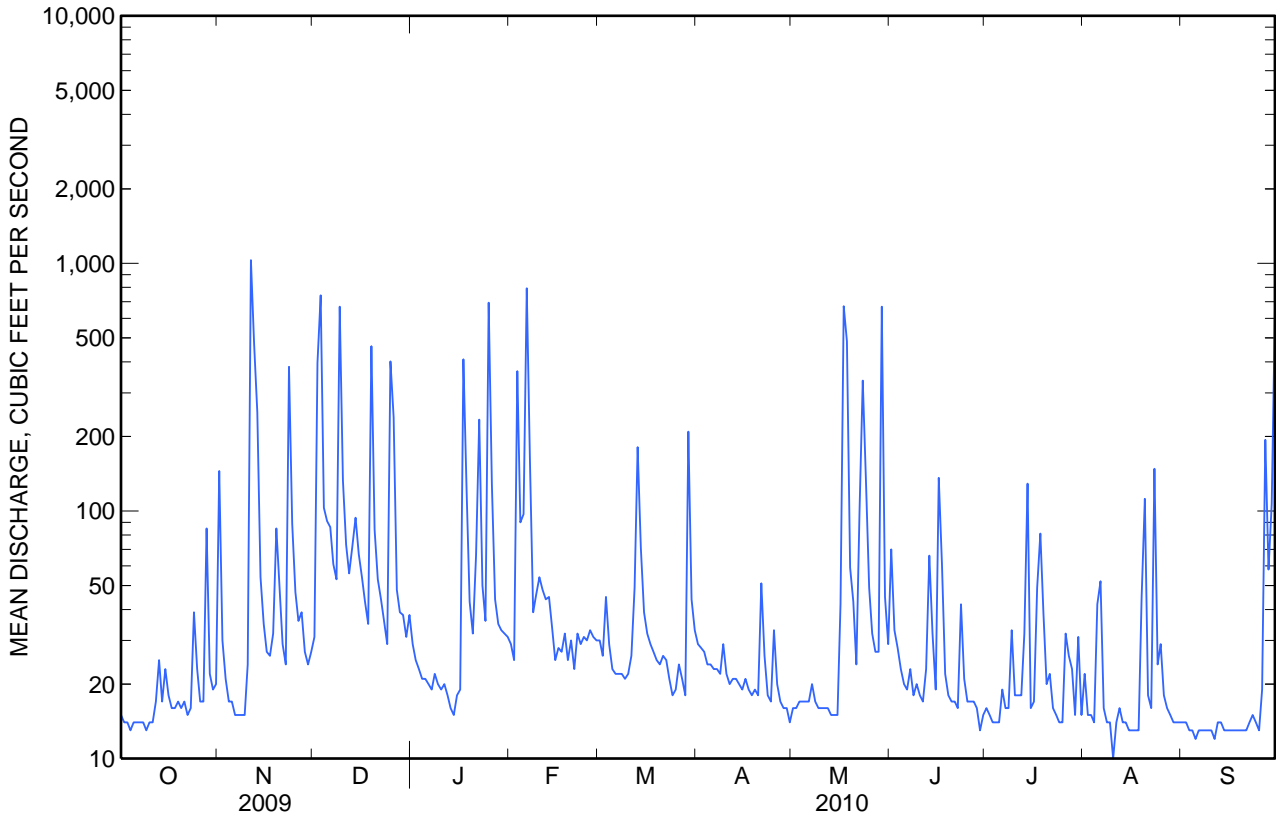
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SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1983 - 2010 ^a	
Annual total	18,824		21,469			
Annual mean	51.6		58.8		41.6	
Highest annual mean					60.6	1984
Lowest annual mean					20.2	1988
Highest daily mean	1,030	Nov 11	1,030	Nov 11	1,700	Sep 6, 2008
Lowest daily mean	11	Sep 5	10	Aug 10	1.5	Oct 1, 1995
Annual seven-day minimum	12	Sep 10	13	Sep 5	4.8	Jun 11, 1983
Maximum peak flow			2,360	Dec 3	Not Determined	
Maximum peak stage			11.20	Dec 3	^b 12.13	Sep 6, 2008
Instantaneous low flow			^b 2.1	Aug 10	^b 1.0	Jan 4, 1995
Annual runoff (cfsm)	2.35		2.69		1.90	
Annual runoff (inches)	31.98		36.47		25.79	
10 percent exceeds	85		99		75	
50 percent exceeds	21		23		17	
90 percent exceeds	14		14		9.9	

^a See Period of Record.

^b See Remarks



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-87, 1989-95, 2006-10.

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 2009 TO SEPTEMBER 2010

Part 1 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; E, estimated]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Color, water, filtered, platinum cobalt units (00080)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
11-11-2009	1100	Surface water	Regular	756	150	1,410	9.1	89	6.5
09-27-2010	0345	Surface water	Composite (time)	752	75	319	--	--	7.1

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 2 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; --, no data; E, estimated]

Date	Specific conductance, water, unfiltered, μS/cm at 25 °C (00095)	Temperature, water, °C (00010)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Hardness, water, mg/L as CaCO ₃ (00900)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (00419)
11-11-2009	75	13.7	--	21.3	6.09	1.49	3.02	5.63	19.5
09-27-2010	109	--	66	19.1	5.42	1.34	3.46	11.0	21

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 3 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; E, estimated]

Date	Bi carbonate, water, unfiltered, inflection-point, incremental titration method, field, mg/L (00450)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L as SiO ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, unfiltered, mg/L as N		Nitrate plus nitrite, water, filtered, mg/L as N	
						(00625)	(00608)	(00631)	(00613)
11-11-2009	23.8	4.78	E .06	5.04	6.72	1.4	.115	.388	.009
09-27-2010	26	8.41	.21	3.83	9.78	.97	E .014	.384	.009

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 4 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; E, estimated]

Date	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)	Aluminum, water, unfiltered, recoverable, µg/L (01105)	Cadmium, water, unfiltered, µg/L (01027)	Chromium, water, unfiltered, recoverable, µg/L (01034)	Cobalt, water, unfiltered, recoverable, micrograms per liter (01037)	Copper, water, unfiltered, recoverable, µg/L (01042)	Iron, water, unfiltered, recoverable, µg/L (01045)	Lead, water, unfiltered, recoverable, µg/L (01051)
09-27-2010	.081	.314	2,410	.13	4.8	2.8	10.5	2,820	12.3

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 5 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; --, no data; E, estimated]

Date	Manganese, water, unfiltered, recoverable, µg/L (01055)	Mercury, water, unfiltered, recoverable, µg/L (71900)	Molybdenum, water, unfiltered, recoverable, micrograms per liter (01062)	Nickel, water, unfiltered, recoverable, µg/L (01067)	Silver, water, unfiltered, recoverable, µg/L (01077)	Zinc, water, unfiltered, recoverable, µg/L (01092)	Arsenic, water, unfiltered, µg/L (01002)	Selenium, water, unfiltered, µg/L (01147)	Organic carbon, water, unfiltered, mg/L (00680)	Suspended sediment concentration, mg/L (80154)
09-27-2010	220	.022	.6	4.6	.08	48.4	1.4	.14	11.9	221