

Water-Data Report 2010

0208708905 FALLS LAKE AT NORTH CAROLINA HIGHWAY 98 NEAR BAYLEAF, NC

Neuse Basin
Upper Neuse Subbasin

LOCATION.--Lat 35°58'43", long 78°37'58" referenced to North American Datum of 1983, Wake County, NC, Hydrologic Unit 03020201, at bridge on North Carolina Highway 98, 2.0 mi north of Bayleaf.

DRAINAGE AREA.--704 mi².

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989-95, 2005 to current year.

REMARKS.--Station operated to define water quality as part of a regional surface-water quality assessment. A GC/FID scan for trace organic compounds was performed on samples collected in October 1994 and May 1995. Results may be obtained from the USGS Water Science Center, Raleigh, NC. Samples for nutrient, chlorophyll *a*, and pheophytin *a* analyses were collected through a sampling zone equal to double the secchi disk depth using the depth-integration sampling technique. Prior to October 1, 2005, samples for chlorophyll *a* were analyzed using a high-performance liquid chromatography method.

0208708905 FALLS LAKE AT NORTH CAROLINA HIGHWAY 98 NEAR BAYLEAF, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 1 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; m, meters; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Color, water, filtered, platinum cobalt units (00080)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, μS/cm at 25 °C (00095)	Temperature, water, °C (00010)
10-28-2009	1100	Surface water	Regular	--	--	--	--	--	--	--
10-28-2009	1105	Surface water	Regular	757	15	6.9	73	6.8	104	17.8
10-28-2009	1110	Surface water	Regular	757	--	6.5	69	6.8	105	17.7
10-28-2009	1115	Surface water	Regular	757	--	6.6	68	6.6	112	16.0
12-16-2009	1030	Surface water	Regular	--	--	--	--	--	--	--
12-16-2009	1035	Surface water	Regular	769	125	9.1	77	6.7	70	8.9
12-16-2009	1040	Surface water	Regular	769	--	9.0	76	6.7	70	8.8
12-16-2009	1045	Surface water	Regular	769	--	8.8	75	6.6	70	8.8
02-26-2010	0930	Surface water	Regular	--	--	--	--	--	--	--
02-26-2010	0935	Surface water	Regular	752	88	11.5	92	6.7	69	5.3
02-26-2010	0940	Surface water	Regular	752	--	11.4	91	6.7	69	5.3
02-26-2010	0945	Surface water	Regular	752	--	11.3	90	6.7	69	5.3
04-06-2010	1215	Surface water	Regular	--	--	--	--	--	--	--
04-06-2010	1220	Surface water	Regular	761	50	9.3	104	7.0	79	20.8
04-06-2010	1225	Surface water	Regular	761	--	6.5	62	6.5	78	13.6
04-06-2010	1230	Surface water	Regular	761	--	4.3	39	6.5	78	10.7
06-08-2010	1045	Surface water	Regular	--	--	--	--	--	--	--
06-08-2010	1050	Surface water	Regular	764	40	7.5	97	7.4	95	28.4
06-08-2010	1055	Surface water	Regular	764	--	1.2	15	6.7	99	24.7
06-08-2010	1100	Surface water	Regular	764	--	.2	2	7.0	112	18.8
08-11-2010	1100	Surface water	Regular	--	--	--	--	--	--	--
08-11-2010	1105	Surface water	Regular	756	15	8.3	114	8.2	93	31.7
08-11-2010	1110	Surface water	Regular	756	--	.1	1	6.9	113	28.1
08-11-2010	1115	Surface water	Regular	756	--	.2	2	6.7	150	19.5

0208708905 FALLS LAKE AT NORTH CAROLINA HIGHWAY 98 NEAR BAYLEAF, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 2 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; m, meters; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

Date	Trans- parency, water, in situ, Secchi disc, m (00078)	Depth to 1 percent of surface light, meters (85328)	Sampling depth, m (00098)	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)	Magne- sium, 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)
10-28-2009	1.20	--	2.4	--	--	--	--	--	--	--
10-28-2009	--	--	1.0	75	29.1	7.10	2.77	2.50	7.85	29.3
10-28-2009	--	--	5.0	--	--	--	--	--	--	--
10-28-2009	--	--	10.0	--	--	--	--	--	--	--
12-16-2009	.70	--	1.4	--	--	--	--	--	--	--
12-16-2009	--	--	1.0	60	20.0	4.82	1.93	2.47	4.41	15.5
12-16-2009	--	--	7.0	--	--	--	--	--	--	--
12-16-2009	--	--	13.0	--	--	--	--	--	--	--
02-26-2010	.60	--	1.2	--	--	--	--	--	--	--
02-26-2010	--	--	1.0	56	17.4	4.17	1.70	1.68	5.45	11.1
02-26-2010	--	--	6.0	--	--	--	--	--	--	--
02-26-2010	--	--	10.0	--	--	--	--	--	--	--
04-06-2010	1.20	--	2.4	--	--	--	--	--	--	--
04-06-2010	--	--	1.0	69	19.5	4.66	1.90	1.65	5.73	12.1
04-06-2010	--	--	6.0	--	--	--	--	--	--	--
04-06-2010	--	--	11.0	--	--	--	--	--	--	--
06-08-2010	1.10	2.2	2.2	--	--	--	--	--	--	--
06-08-2010	--	--	1.0	56	26.5	6.27	2.64	1.96	7.46	22.2
06-08-2010	--	--	6.0	--	--	--	--	--	--	--
06-08-2010	--	--	12.0	--	--	--	--	--	--	--
08-11-2010	1.40	--	2.8	--	--	--	--	--	--	--
08-11-2010	--	--	1.0	55	24.4	5.48	2.59	2.07	7.08	22.0
08-11-2010	--	--	5.0	--	--	--	--	--	--	--
08-11-2010	--	--	10.0	--	--	--	--	--	--	--

0208708905 FALLS LAKE AT NORTH CAROLINA HIGHWAY 98 NEAR BAYLEAF, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 3 of 6

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; m, meters; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; 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 (00625)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)
10-28-2009	--	--	--	--	--	.83	.299	.039	.005
10-28-2009	35.7	7.65	.09	7.34	5.55	--	--	--	--
10-28-2009	--	--	--	--	--	.82	.296	.035	.005
10-28-2009	--	--	--	--	--	.89	.279	.022	.004
12-16-2009	--	--	--	--	--	.68	.076	.173	.005
12-16-2009	18.9	5.04	E .06	8.71	6.46	--	--	--	--
12-16-2009	--	--	--	--	--	.69	.074	.188	.005
12-16-2009	--	--	--	--	--	.71	.072	.188	.005
02-26-2010	--	--	--	--	--	.52	.038	.275	.004
02-26-2010	13.6	8.20	< .08	8.21	6.01	--	--	--	--
02-26-2010	--	--	--	--	--	.55	.035	.276	.004
02-26-2010	--	--	--	--	--	.54	.036	.274	.004
04-06-2010	--	--	--	--	--	.51	.028	.151	.003
04-06-2010	14.8	8.64	E .05	6.64	6.41	--	--	--	--
04-06-2010	--	--	--	--	--	.47	.052	.161	.003
04-06-2010	--	--	--	--	--	.64	.191	.187	.005
06-08-2010	--	--	--	--	--	.61	E .018	< .016	E .002
06-08-2010	27.1	8.57	E .08	2.79	6.71	--	--	--	--
06-08-2010	--	--	--	--	--	.70	.249	E .016	.004
06-08-2010	--	--	--	--	--	1.2	.599	< .016	.002
08-11-2010	--	--	--	--	--	.48	E .015	< .016	< .002
08-11-2010	26.9	8.11	.09	3.56	5.61	--	--	--	--
08-11-2010	--	--	--	--	--	.55	.099	< .016	< .002
08-11-2010	--	--	--	--	--	2.3	1.74	< .016	.003

0208708905 FALLS LAKE AT NORTH CAROLINA HIGHWAY 98 NEAR BAYLEAF, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 4 of 6

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Date	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)	Chlorophyll a, phytoplankton, chromatographic method, μg/L (70953)	Pheophytin a, phytoplankton, μg/L (62360)	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)
10-28-2009	E .005	.026	11.0	8.4	--	--	--	--	--
10-28-2009	--	--	--	--	45	< .04	< .42	.13	< 1.4
10-28-2009	E .005	.028	--	--	--	--	--	--	--
10-28-2009	E .005	.046	--	--	--	--	--	--	--
12-16-2009	E .007	.059	E 4.5	5.7	--	--	--	--	--
12-16-2009	--	--	--	--	--	--	--	--	--
12-16-2009	E .008	.061	--	--	--	--	--	--	--
12-16-2009	E .008	.060	--	--	--	--	--	--	--
02-26-2010	.010	.050	6.0	E 4.2	--	--	--	--	--
02-26-2010	--	--	--	--	--	--	--	--	--
02-26-2010	.010	.051	--	--	--	--	--	--	--
02-26-2010	.010	.053	--	--	--	--	--	--	--
04-06-2010	E .006	.037	E 3.8	E 1.7	--	--	--	--	--
04-06-2010	--	--	--	--	199	E .03	E .39	.17	1.6
04-06-2010	E .005	.030	--	--	--	--	--	--	--
04-06-2010	E .008	.050	--	--	--	--	--	--	--
06-08-2010	E .004	.035	10.6	E 4.8	--	--	--	--	--
06-08-2010	--	--	--	--	--	--	--	--	--
06-08-2010	E .006	.032	--	--	--	--	--	--	--
06-08-2010	.018	.070	--	--	--	--	--	--	--
08-11-2010	E .005	.021	15.8	E 4.6	--	--	--	--	--
08-11-2010	--	--	--	--	--	--	--	--	--
08-11-2010	E .005	.028	--	--	--	--	--	--	--
08-11-2010	.031	.074	--	--	--	--	--	--	--

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010

Part 5 of 6

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Date	Iron, water, unfiltered, recover- able, μg/L (01045)	Lead, water, unfiltered, recover- able, μg/L (01051)	Manganes e, water, unfiltered, recover- able, μg/L (01055)	Mercury, water, unfiltered, recover- able, μg/L (71900)	Molybdenu m, water, unfiltered, recoverabl e, microgram s per liter (01062)	Nickel, water, unfiltered, recover- able, μg/L (01067)	Silver, water, unfiltered, recover- able, μg/L (01077)	Zinc, water, unfiltered, recover- able, μg/L (01092)	Arsenic, water, unfiltered, μg/L (01002)	Selenium, water, unfiltered, μg/L (01147)
10-28-2009	--	--	--	--	--	--	--	--	--	--
10-28-2009	175	.11	119	< .010	.5	.53	< .02	< 2.0	.50	.17
10-28-2009	182	--	121	--	--	--	--	--	--	--
10-28-2009	465	--	330	--	--	--	--	--	--	--
12-16-2009	--	--	--	--	--	--	--	--	--	--
12-16-2009	591	--	62.9	--	--	--	--	--	--	--
12-16-2009	593	--	61.4	--	--	--	--	--	--	--
12-16-2009	589	--	61.1	--	--	--	--	--	--	--
02-26-2010	--	--	--	--	--	--	--	--	--	--
02-26-2010	628	--	58.0	--	--	--	--	--	--	--
02-26-2010	637	--	58.0	--	--	--	--	--	--	--
02-26-2010	660	--	58.7	--	--	--	--	--	--	--
04-06-2010	--	--	--	--	--	--	--	--	--	--
04-06-2010	401	.32	23.6	< .010	.1	.71	< .02	E 1.9	.28	.11
04-06-2010	430	--	47.6	--	--	--	--	--	--	--
04-06-2010	813	--	321	--	--	--	--	--	--	--
06-08-2010	--	--	--	--	--	--	--	--	--	--
06-08-2010	304	--	80.3	--	--	--	--	--	--	--
06-08-2010	421	--	352	--	--	--	--	--	--	--
06-08-2010	2,310	--	1,560	--	--	--	--	--	--	--
08-11-2010	--	--	--	--	--	--	--	--	--	--
08-11-2010	44	--	30.7	--	--	--	--	--	--	--
08-11-2010	241	--	759	--	--	--	--	--	--	--
08-11-2010	8,590	--	2,150	--	--	--	--	--	--	--

0208708905 FALLS LAKE AT NORTH CAROLINA HIGHWAY 98 NEAR BAYLEAF, NC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER
2009 TO SEPTEMBER
2010

Part 6 of 6

[%, percent; ANC, acid
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Date	Organic carbon, water, unfiltered, mg/L (00680)
10-28-2009	--
10-28-2009	6.6
10-28-2009	--
10-28-2009	--
12-16-2009	--
12-16-2009	11.3
12-16-2009	--
12-16-2009	--
02-26-2010	--
02-26-2010	8.4
02-26-2010	--
02-26-2010	--
04-06-2010	--
04-06-2010	7.6
04-06-2010	--
04-06-2010	--
06-08-2010	--
06-08-2010	7.5
06-08-2010	--
06-08-2010	--
08-11-2010	--
08-11-2010	6.5
08-11-2010	--
08-11-2010	--