

Water-Data Report 2007

01411500 MAURICE RIVER AT NORMA, NJ

MAURICE RIVER BASIN

LOCATION.--Lat 39°29'44", long 75°04'37" referenced to North American Datum of 1983, Pittsgrove Township, Salem County, NJ, Hydrologic Unit 02040206, on right bank just upstream from bridge on Almond Road (County Route 540) at Norma, 0.8 mi downstream from Blackwater Branch, and 2.9 mi west of Vineland.

DRAINAGE AREA.--112 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--July 1932 to current year. Monthly discharge only for December 1933, published in WSP 1302.

REVISED RECORDS.--WSP 1382: 1933. WDR NJ-79-1: 1967(P). WDR NJ-82-2: Drainage area. WDR US-2007: 2000, 2003.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Dec 27, 1937. Datum of gage is 46.94 ft above NGVD of 1929.

REMARKS.--Records good. Occasional regulation by lakes and ponds above station. Several measurements of water temperature were made during the year. Satellite gage-height telemetry at station.

REVISIONS.--The maximum peak discharge for the 2000 water year and the peak discharges greater than base discharge of 380 ft³/s and maximum (*) discharge for the 2003 water year have been revised as shown in the following table. These values supersede the peak discharges previously published in the 2000 and 2003 annual water data reports.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 24, 2000	1015	611	4.20
Feb 25, 2003	1415	425	3.59
Mar 08, 2003	1230	415	3.55
Jun 21, 2003	1115	*448	*3.68

Daily discharges from Mar 23-26, 2000, Feb 25-27, 2003, Mar 7-9, 2003, and Jun 19-23, 2003 have been revised as shown in the following table. These values supersede the daily discharges published in the 2000 and 2003 annual water data reports.

Daily Mean Values	
Date	(ft ³ /s)
Mar 23, 2000	503
Mar 24, 2000	602
Mar 25, 2000	557
Mar 26, 2000	472
Feb 25, 2003	418
Feb 26, 2003	420
Feb 27, 2003	403
Mar 07, 2003	405
Mar 08, 2003	415
Mar 09, 2003	413
Jun 19, 2003	418
Jun 20, 2003	420
Jun 21, 2003	446
Jun 22, 2003	436
Jun 23, 2003	413

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov 14	0100	413	3.54
Jan 09	0400	420	3.57
Apr 17	2100	*1,640	*5.83
Apr 29	2015	387	3.45

01411500 MAURICE RIVER AT NORMA, NJ—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	106	191	215	221	192	214	194	367	156	111	88	72
2	104	181	207	269	250	248	194	340	150	126	81	68
3	104	170	217	287	225	281	194	315	150	124	74	65
4	101	157	207	297	195	302	210	293	189	107	71	62
5	99	146	199	304	184	307	240	277	209	111	69	60
6	116	136	197	295	166	297	248	264	207	113	71	59
7	124	142	200	275	166	275	259	253	187	118	71	59
8	133	183	197	354	163	252	254	245	168	113	69	58
9	134	236	188	418	163	233	240	242	156	104	69	57
10	128	283	175	419	160	220	226	239	147	98	78	57
11	123	290	146	409	160	213	214	233	143	94	75	58
12	129	296	157	383	159	206	226	217	139	95	72	60
13	126	378	164	345	155	200	245	233	137	96	69	58
14	121	410	169	307	195	197	252	236	137	90	67	57
15	116	402	172	280	199	195	337	228	135	87	65	58
16	109	395	170	264	228	227	721	220	111	84	62	57
17	122	384	167	248	221	306	1,520	241	117	83	61	55
18	166	361	165	236	210	329	1,490	248	119	81	60	55
19	171	337	163	231	199	339	975	240	116	83	61	54
20	186	301	160	226	192	331	606	228	120	91	76	54
21	191	261	156	219	208	312	483	218	119	84	111	53
22	184	251	156	214	198	289	437	206	115	79	121	52
23	177	262	196	214	195	273	409	195	110	77	122	53
24	168	268	208	209	189	270	386	187	106	77	111	52
25	155	264	212	206	190	260	366	181	112	75	101	50
26	143	260	236	203	206	249	365	177	114	74	90	49
27	136	252	240	200	211	240	338	172	111	73	87	49
28	173	242	233	200	214	232	352	180	107	71	82	49
29	191	230	225	197	---	224	378	188	107	77	78	49
30	191	221	216	197	---	215	384	174	112	96	74	48
31	194	---	204	194	---	209	---	164	---	103	73	---
Total	4,421	7,890	5,917	8,321	5,393	7,945	12,743	7,201	4,106	2,895	2,459	1,687
Mean	143	263	191	268	193	256	425	232	137	93.4	79.3	56.2
Max	194	410	240	419	250	339	1,520	367	209	126	122	72
Min	99	136	146	194	155	195	194	164	106	71	60	48
Cfsm	1.27	2.35	1.70	2.40	1.72	2.29	3.79	2.07	1.22	0.83	0.71	0.50
In.	1.47	2.62	1.97	2.76	1.79	2.64	4.23	2.39	1.36	0.96	0.82	0.56

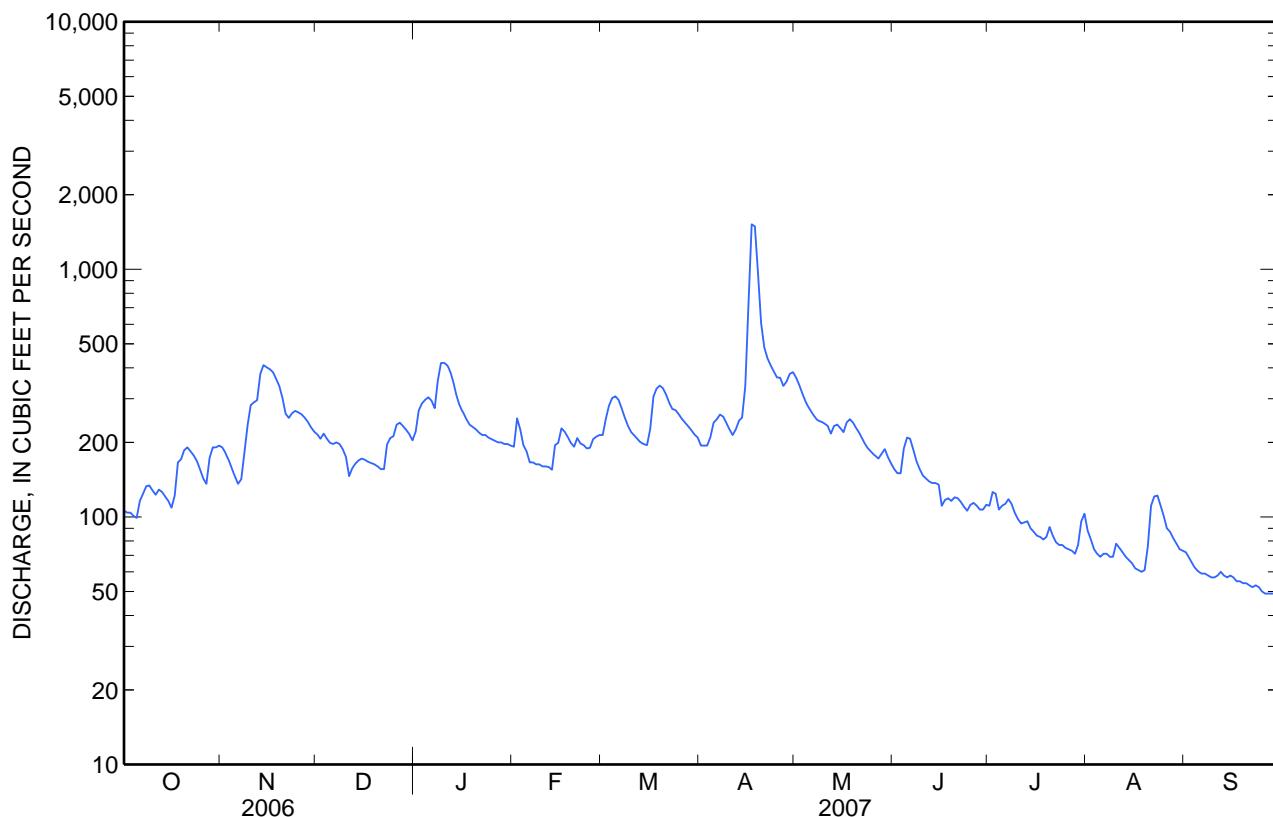
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	113	140	168	189	200	229	228	188	147	123	121	118
Max	266	330	385	380	418	427	437	387	325	333	327	591
(WY)	(1990)	(1973)	(1973)	(1936)	(1939)	(1979)	(1984)	(1958)	(2003)	(1975)	(1958)	(1940)
Min	48.6	46.7	57.1	64.7	69.4	89.9	90.9	79.5	57.7	35.6	32.1	40.6
(WY)	(1966)	(1966)	(1966)	(1966)	(2002)	(2002)	(1966)	(1977)	(1966)	(1966)	(2002)	(1965)

01411500 MAURICE RIVER AT NORMA, NJ—Continued**SUMMARY STATISTICS**

	Calendar Year 2006	Water Year 2007		Water Years 1933 - 2007	
Annual total	61,647		70,978		
Annual mean	169		194		163
Highest annual mean				253	1973
Lowest annual mean				67.4	1966
Highest daily mean	410	Nov 14	1,520	Apr 17	5,260 Sep 2, 1940
Lowest daily mean	60	Aug 26	48	Sep 30	20 Aug 16, 2002
Annual seven-day minimum	63	Aug 20	49	Sep 24	20 Aug 16, 2002
Maximum peak flow			1,640	Apr 17	^a 7,360 Sep 2, 1940
Maximum peak stage			5.83	Apr 17	8.72 Sep 2, 1940
Instantaneous low flow			48	Sep 29	20 Aug 15, 2002
Annual runoff (cfsm)	1.51		1.74		1.46
Annual runoff (inches)	20.48		23.57		19.83
10 percent exceeds	255		309		280
50 percent exceeds	156		188		143
90 percent exceeds	97		69		67

^a From rating curve extended above 3,000 ft³/s by logarithmic plotting, peak was highest since at least 1867, when Union Lake Dam was built in Millville.



01411500 MAURICE RIVER AT NORMA, NJ—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1953, 1962-63, 1965 to September 1997, December 1998 to current year.

PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: August and September 2007

DISSOLVED OXYGEN PERCENT OF SATURATION: August and September 2007

pH: November 1992 to April 1994, August and September 2007

SPECIFIC CONDUCTANCE: January 1980 to November 1986, November 1992 to September 1994, August and September 2007

WATER TEMPERATURE: January 1980 to November 1986, November 1992 to September 1994, August and September 2007

REMARKS.--Total nitrogen (00600) equals the sum of filtered ammonia-plus-organic nitrogen (00623), filtered nitrite-plus-nitrate nitrogen (00631), and total particulate nitrogen (49570). Cooperative Network Site Descriptor: Watershed Integrator and Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 17. The accuracy of continuous water-quality data is routinely verified through inspections for fouling and calibration drift. The New Jersey Water Science Center requires that either constant or prorated adjustments be made to the continuous water-quality record when the difference between a sensor's response and a known value exceeds the following criteria: Water Temperature, 0.2 degrees Celsius (+ or -); Specific Conductance, the greater of 5 microsiemens/cm (+ or -) or 5% of the measured value; Dissolved Oxygen, the greater of 0.3 mg/L (+ or -) or 5% of the measured value; pH, 0.3 units (+or-). If the difference between a sensor's response and a known value is within specified criteria, the data are considered to be reliable and are not adjusted. Data from the following period(s) were adjusted - Dissolved Oxygen, August 29 to September 04, 2007.

COOPERATION.--Instantaneous physical measurements and samples for laboratory analyses were provided by personnel of the NJ Department of Environmental Protection. Determinations of dissolved ammonia, dissolved orthophosphate, and suspended residue were performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory.

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 1 of 3

[Remark codes: <, less than; E, estimated.]

Date	Time	Turbidity white light, det ang 90+/-30 dis- charge, corrctd	UV absorb- ance, 254 nm, wat flt units	UV absorb- ance, 280 nm, wat flt units	Baro- metric pres- sure, mm Hg	Dis- solved oxygen, mg/L	Dis- solved oxygen, percent of sat- uration	pH, water, unfltrd field, std units	Specif- ic conduc- tance, wat unf 25 degC μS/cm	Temper- ature, air, deg C	Temper- ature, water, deg C	Hard- ness, water, mg/L as CaCO ₃
		(00061) cfs (63676)	/cm (50624)	/cm (61726)	(00025)	(000300)	(00301)	(00400)	(00095)	(00020)	(00010)	(00900)
Nov												
14...	1000	410	1.8	.996	.783	757	6.5	64	5.8	76	15.0	14.5
Feb												
27...	1000	210	1.4	.151	.115	761	9.8	75	6.6	134	3.5	3.8
May												
15...	1000	227	2.1	.528	.415	763	6.4	67	6.4	109	20.0	17.2
Aug												
28...	1000	84	1.7	.144	.112	767	7.1	84	6.6	115	24.0	22.5

01411500 MAURICE RIVER AT NORMA, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 2 of 3

[Remark codes: <, less than; E, estimated.]

Date	ANC, wat unf fixed						Chlor- ide, lab, mg/L as CaCO ₃	Fluor- ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti- tuents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total non- filter- able, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	end pt, mg/L as CaCO ₃	(90410)								
Nov 14...	3.36	1.77	2.44	6.54	6	10.3	E.06	6.3	6.05	42	83	3	.60	
Feb 27...	4.93	2.48	2.12	13.4	7	22.9	<.10	5.7	8.90	73	80	2	.26	
May 15...	5.24	2.73	2.51	9.46	10	14.9	E.06	3.1	7.49	57	80	2	.53	
Aug 28...	4.77	2.58	2.19	9.95	10	15.4	<.10	5.9	9.35	64	73	1	.65	

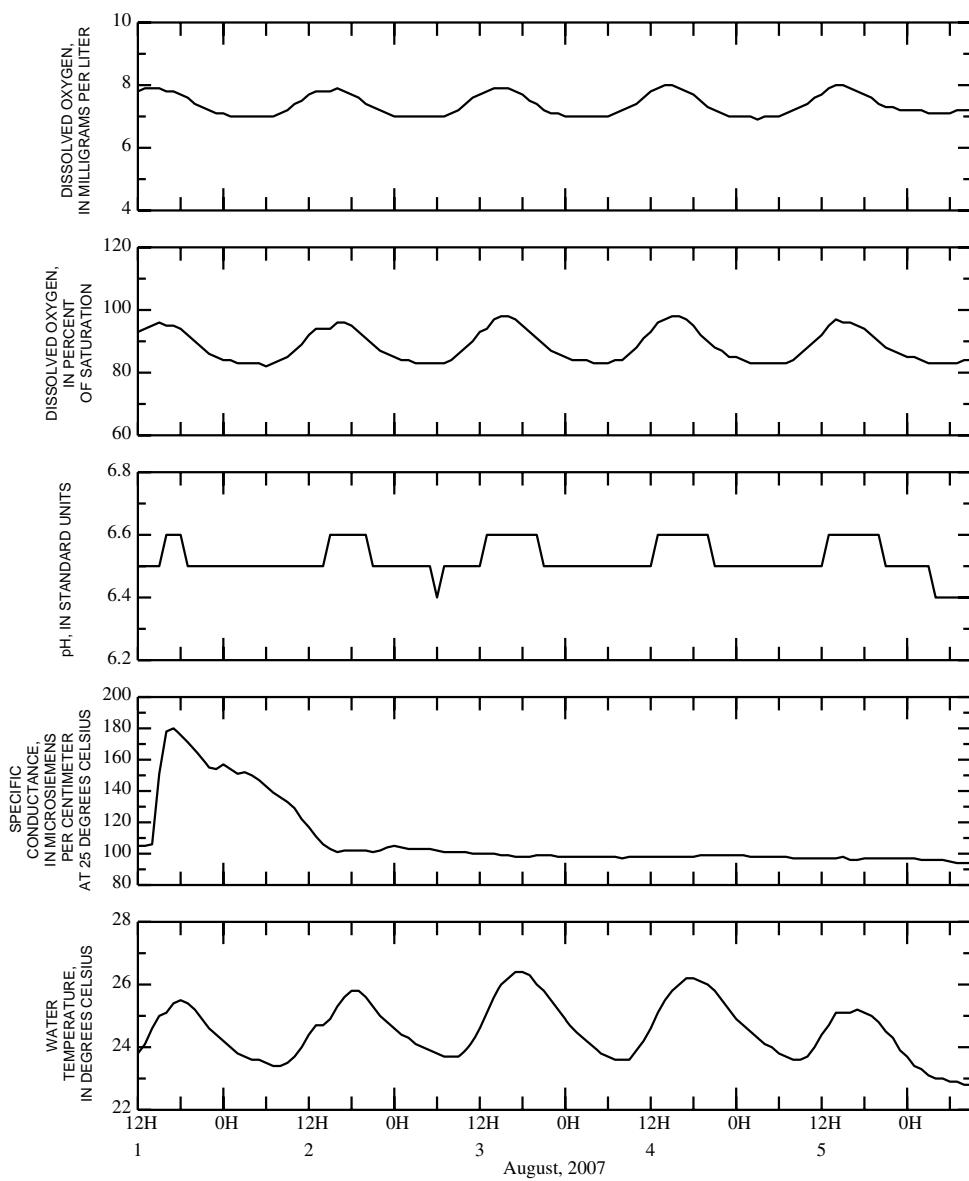
WATER-QUALITY DATA
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 3 of 3

[Remark codes: <, less than; E, estimated.]

Date	Ortho- phosphate, water, fltrd, mg/L as P (00600)						Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd, mg/L (00665)	Total carbon, suspd sedimnt total, mg/L (00694)	Inor- ganic carbon, suspd sedimnt total, mg/L (00688)	Organic carbon, suspd sedimnt total, mg/L (00689)	Organic water, fltrd, mg/L (00681)	Boron, water, fltrd, μg/L (01020)
	Nitrate + nitrite water, fltrd, mg/L as N (00608)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Total nitro- gen, water, fltrd, mg/L (00602)	Total nitro- gen, water, unfltrd mg/L (00600)	Ortho- phosphate, water, fltrd, mg/L as P (00671)								
Nov 14...	.033	.35	.05	.95	1.0	<.010	.013	.027	.5	<.1	.5	17.9	45
Feb 27...	.031	1.98	.04	2.2	2.3	E.006	E.007	.011	.5	<.1	.5	3.6	31
May 15...	.038	1.28	.07	1.8	1.9	<.010	.015	.022	.9	<.1	.9	9.2	33
Aug 28...	.032	1.67	.04	2.3	2.4	<.010	.010	.012	.5	<.1	.5	2.9	37

**WATERSHED RECONNAISSANCE STUDY
HOURLY WATER-QUALITY-MONITOR VALUES
AUGUST 01, 2007 TO AUGUST 06, 2007**



**WATERSHED RECONNAISSANCE STUDY
HOURLY WATER-QUALITY-MONITOR VALUES
AUGUST 29, 2007 TO SEPTEMBER 04, 2007**

