



Water-Data Report 2006

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.

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.

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)
Jul 08	2115	*400	*3.49
No other peak greater than base discharge			

01411500 MAURICE RIVER AT NORMA, NJ—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	45	160	219	201	221	172	138	150	89	326	148	181
2	45	153	220	196	208	171	135	141	92	274	134	221
3	44	146	214	224	214	175	134	136	108	230	120	257
4	44	142	211	239	219	173	134	132	101	195	108	271
5	45	128	211	249	227	170	133	129	101	181	101	262
6	45	99	204	254	225	167	133	127	92	210	96	248
7	46	111	192	249	218	164	133	121	104	271	93	221
8	113	117	179	234	204	161	144	98	106	371	91	203
9	193	117	179	219	199	160	157	99	108	386	90	182
10	209	117	185	205	193	159	157	102	117	320	87	162
11	298	115	179	194	190	157	156	104	129	249	86	128
12	267	112	174	189	201	155	151	124	126	207	78	125
13	258	111	167	185	203	152	145	129	118	183	77	120
14	309	109	160	197	202	151	139	127	109	170	77	128
15	361	109	153	212	202	148	136	136	104	145	77	137
16	360	111	211	211	207	145	133	145	91	116	73	135
17	305	131	241	204	210	143	127	147	88	103	72	128
18	251	125	254	216	210	142	124	144	84	114	71	124
19	207	121	257	243	210	141	119	140	81	116	70	120
20	168	118	249	245	204	141	115	129	78	111	70	117
21	154	120	232	244	194	141	113	121	76	110	69	112
22	160	184	214	237	194	139	125	116	75	158	62	109
23	162	207	198	271	192	138	160	111	75	239	61	107
24	160	209	187	319	190	138	190	106	79	212	61	106
25	201	213	182	317	186	138	226	102	171	178	61	104
26	220	204	200	313	181	143	237	100	211	149	60	104
27	221	188	200	299	177	143	224	99	286	130	103	105
28	219	174	200	277	173	143	199	97	328	124	123	106
29	208	164	200	256	---	142	180	95	340	136	114	106
30	192	204	212	242	---	140	163	92	344	151	160	104
31	171	---	205	230	---	138	---	90	---	156	197	---
Total	5,681	4,319	6,289	7,371	5,654	4,690	4,560	3,689	4,011	6,021	2,890	4,533
Mean	183	144	203	238	202	151	152	119	134	194	93.2	151
Max	361	213	257	319	227	175	237	150	344	386	197	271
Min	44	99	153	185	173	138	113	90	75	103	60	104
Cfsm	1.64	1.29	1.81	2.12	1.80	1.35	1.36	1.06	1.19	1.73	0.83	1.35
In.	1.89	1.43	2.09	2.45	1.88	1.56	1.51	1.23	1.33	2.00	0.96	1.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2006, BY WATER YEAR (WY)

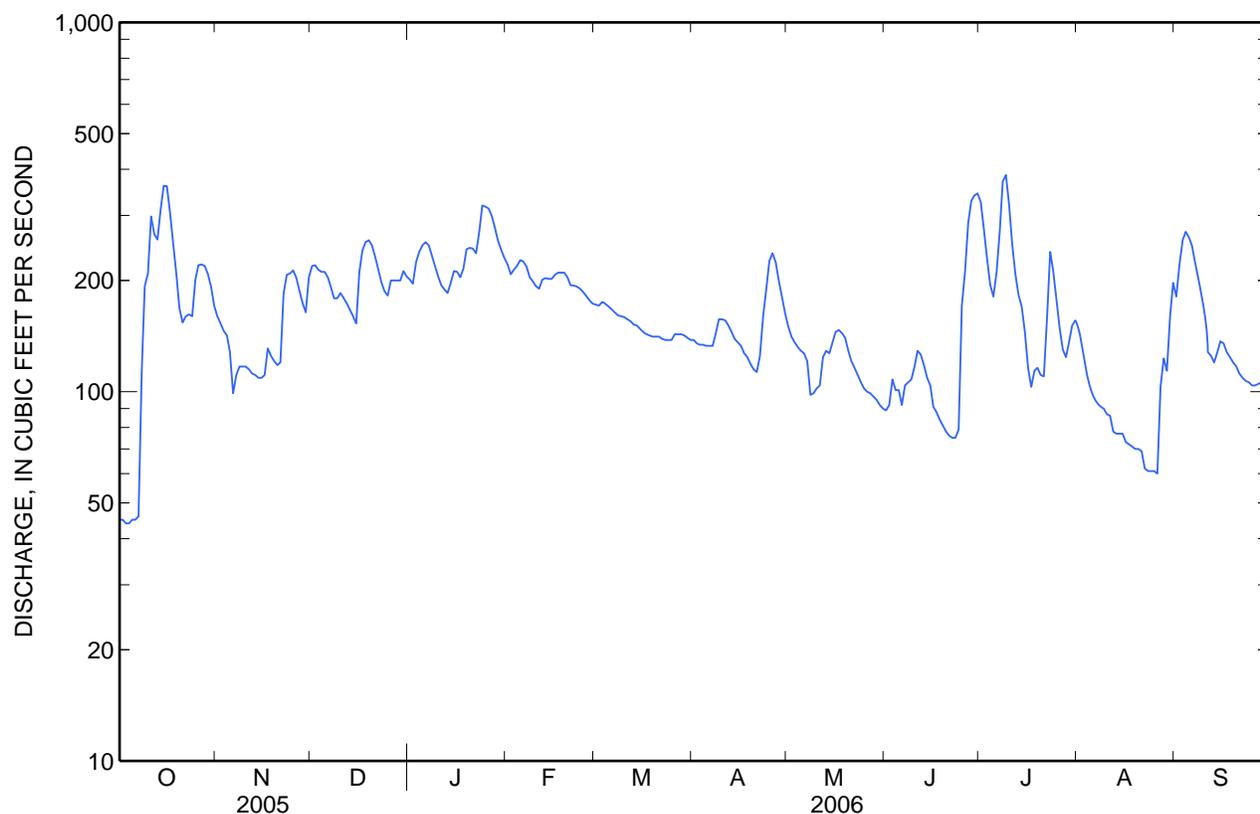
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	112	138	168	188	200	229	225	187	147	123	122	119
Max	266	330	385	380	418	427	437	387	331	333	327	591
(WY)	(1990)	(1973)	(1973)	(1936)	(1939)	(1979)	(1984)	(1958)	(2003)	(1975)	(1958)	(1940)
Min	48.6	46.7	57.1	64.7	69.4	89.9	90.9	79.5	57.7	35.6	32.1	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 2005		Water Year 2006		Water Years 1933 - 2006	
Annual total	60,502		59,708			
Annual mean	166		164		163	
Highest annual mean					253	1973
Lowest annual mean					67.4	1966
Highest daily mean	521	Apr 5	386	Jul 9	5,260	Sep 2, 1940
Lowest daily mean	41	Sep 11	44	Oct 3, 4	20	Aug 16, 2002
Annual seven-day minimum	43	Sep 9	45	Oct 1	20	Aug 16, 2002
Maximum peak flow			400	Jul 8	^a 7,360	Sep 2, 1940
Maximum peak stage			3.49	Jul 8	8.72	Sep 2, 1940
Instantaneous low flow			43	Oct 2 - 4	20	Aug 15, 2002
Annual runoff (cfsm)	1.48		1.46		1.46	
Annual runoff (inches)	20.10		19.83		19.78	
10 percent exceeds	250		246		279	
50 percent exceeds	173		153		143	
90 percent exceeds	57		91		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.

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). Bacteria samples were collected synoptically over a 30-day period during the summer.

COOPERATIVE NETWORK SITE DESCRIPTOR: Watershed Integrator, New Jersey Department of Environmental Protection (NJDEP) Watershed Management Area 17.

COOPERATION.--Physical measurements and samples for laboratory analyses were provided by personnel of the NJDEP. Bacteria samples were provided by the local county health department under the direction of the NJDEP through the County Environmental Health Act. Determinations of filtered ammonia, filtered orthophosphorus, BOD, total suspended residue, ammonia+organic nitrogen in bed sediment, phosphorous in bed sediment, fecal coliform, E. coli, and enterococcus bacteria were performed by the NJ Department of Health and Senior Services.

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Part 1 of 4

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

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	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 25 degC uS/cm (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)
Nov 15...	1000	109	1.2	.263	.208	769	8.4	78	6.5	121	14.6	12.4	24
Feb 09...	0900	200	2.4	.261	.201	765	10.7	80	7.0	115	-1.8	3.8	24
May 25...	1000	102	2.0	.309	.243	759	6.5	68	6.6	120	17.3	17.3	22
Aug 08...	0800	91	3.2	.509	.401	762	6.6	79	6.5	122	24.5	24.0	21

**WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006**

Part 2 of 4

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

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
Nov 15...	5.03	2.80	2.73	10.9	9	14.3	<.10	7.3	12.2	69	88	2	.30
Feb 09...	5.05	2.76	3.68	9.89	7	15.9	E.05	5.5	10.2	66	81	1	.51
May 25...	4.66	2.52	2.07	11.3	11	16.0	E.08	4.3	8.80	64	78	3	.54
Aug 08...	4.30	2.42	2.21	11.9	12	15.1	<.10	5.7	10.2	66	87	4	.62

01411500 MAURICE RIVER AT NORMA, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Part 3 of 4

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

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Particulate nitro- gen, susp, water, mg/L (49570)	Total nitro- gen, water, fltrd, mg/L (00602)	Total nitro- gen, water, unfltrd mg/L (00600)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, fltrd, mg/L (00666)	Phos- phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)
Nov 15...	.040	1.86	.06	2.2	2.2	E.004	.006	.011	.5	<.1	.5	6.8	<1.0
Feb 09...	.063	1.87	.05	2.4	2.4	<.010	.007	.009	.5	<.1	.5	5.3	<1.0
May 25...	.033	1.77	.04	2.3	2.4	.015	.013	.018	.5	<.1	.5	5.5	E1.9
Aug 08...	.039	1.53	.10	2.1	2.2	<.010	.011	.027	.9	<.1	.9	8.8	E1.4

**WATER-QUALITY
DATA**

**WATER YEAR
OCTOBER 2005 TO
SEPTEMBER 2006**

Part 4 of 4

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

Date	Boron, water, fltrd, ug/L (01020)
Nov 15...	38
Feb 09...	32
May 25...	37
Aug 08...	38

01411500 MAURICE RIVER AT NORMA, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Part 1 of 4

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

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos- phorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inor- ganic carbon, bed sedimnt total, g/kg (00686)	Arsenic bed sedimnt recover- able, ug/g (64847)	Cadmium bed sedimnt recover- able, ug/g (01028)	Chrom- ium, bed sedimnt recover- able, ug/g (01029)	Cobalt bed sedimnt recover- able, ug/g (01038)	Copper, bed sedimnt recover- able, ug/g (01043)	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover- able, ug/g (01052)
Aug 08...	0800	5.42	60	120	.6	<.2	1.8	.010	1.2	.270	<2	450	3.7

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Part 2 of 4

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

Date	Mangan- ese, bed sedimnt recover- able, ug/g (01053)	Mercury bed sedimnt recover- able, ug/g (71921)	Nickel, bed sedimnt recover- able, ug/g (01068)	Sele- nium, bed sedimnt recover- able, ug/g (64848)	Zinc, bed sedimnt recover- able, ug/g (01093)	1,2-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49403)	1,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49404)	1Methyl -9H- fluor- ene, bed sed <2 mm, ug/kg (49398)	1- Methyl- phenan- threne, bed sed <2 mm, ug/kg (49410)	1- Methyl- pyrene, bed sed <2 mm, ug/kg (49388)	236Tri- methyl- naphth- alene, bed sed <2 mm, ug/kg (49405)	2,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphth- alene bed sed <2 mm, wsv nat ug/kg (49948)
Aug 08...	7.6	.030	.240	<.1	<3.1	<50	<50	<50	<50	<50	<50	<50	<50

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Part 3 of 4

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

Date	2- Methyl- anthra- cene, bed sed <2 mm, ug/kg (49435)	4H-Cyc- lopenta- -[def]- phenan- threne, bs <2mm ug/kg (49411)	9H- Fluor- ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace- naphth- ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace- naphth- ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra- cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo- [a]- anthra- cene, bed sed <2 mm, ug/kg (49436)	Benzo- [a]- pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo- [b]- fluor- anthene bed sed <2 mm, ug/kg (49458)	Benzo- [ghi]- peryl- ene, bed sed <2 mm, ug/kg (49408)	Benzo- [k]- fluor- anthene bed sed <2 mm, ug/kg (49397)	Chry- sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo -[a,h]- anthra- cene, bed sed <2 mm, ug/kg (49461)
Aug 08...	<50	<50	<50	<50	E6	E8	E13	E27	E22	<50	E12	<50	<50

01411500 MAURICE RIVER AT NORMA, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Part 4 of 4

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

Date	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm wsv nat field, ug/kg (49400)	Naphthalene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm wsv nat field, ug/kg (49451)	Phenanthrene, bed sed <2 mm wsv nat field, ug/kg (49409)	Phenanthrene, bed sed <2 mm wsv nat field, ug/kg (49393)	Pyrene, bed sed <2 mm wsv nat field, ug/kg (49387)	Bed sediment, dry svd <.063mm percent (80164)
Aug 08...	E10	<50	<50	<50	<5.00	<50	E1	<50	E9	.1

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006

Date	Time	Instantaneous discharge, cfs (00061)	Temperature, water, deg C (00010)	Enterococci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, ECbroth water, MPN/100 mL (31615)
Aug 16...	1022	73	21.8	60	40	40
23...	1051	61	22.2	50	160	230
30...	1055	160	22.8	370	1,400	800
Sep 06...	1049	249	19.7	150	210	300
13...	1000	122	17.9	150	100	40