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Water-Data Report 2007

**01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ**

PASSAIC RIVER BASIN

LOCATION.--Lat 41°01'06", long 74°24'04" referenced to North American Datum of 1983, West Milford Township, Passaic County, NJ, Hydrologic Unit 02030103, on left bank 15 ft downstream from culvert at crossover between northbound and southbound lanes on State Route 23, 1,000 ft downstream from abandoned Macopin Intake Dam, 0.6 mi downstream from Macopin River, and 2.8 mi northwest of Butler.

DRAINAGE AREA.--63.7 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--January 1898 to March 1990, September 1992 to current year. Monthly discharge only for some periods, published in WSP 1302. Records for January 1892 to December 1897, published in WSP 541, have been found to be unreliable therefore should not be used.

GAGE.--Water-stage recorder. Datum of gage is 549.17 ft above NGVD of 1929. Prior to May 22, 1970, at site just upstream from Macopin Intake Dam, at datum 36.35 ft higher. May 22, 1970 to March 5, 1990, at site just upstream from Macopin Intake Dam, at datum 20.83 ft higher.

COOPERATION.--Gage-height record collected in cooperation with the Department of Public Affairs, Division of Water Supply, city of Newark. Prior to May 22, 1970, discharge figures provided by city of Newark.

REMARKS.--Records fair, except for estimated daily discharges and daily discharges below 1.0 ft<sup>3</sup>/s, which are poor. Flow regulated by Canistear (see 01382100), Oak Ridge (see 01382200), Clinton (see 01382300), and Charlotteburg (see 01382380) Reservoirs, and Echo Lake (see 01382400). Water diverted at Charlotteburg Reservoir for municipal supply of city of Newark (see 01382370). Several measurements of water temperature were made during the year. Satellite gage-height telemetry at station.

**01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**  
**DAILY MEAN VALUES**  
[*e*, estimated]

<b>Day</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>
<b>1</b>	5.0	190	130	94	7.4	5.9	109	109	2.0	3.1	2.6	5.7
<b>2</b>	5.5	188	183	167	6.6	53	110	108	1.9	2.8	1.4	4.3
<b>3</b>	5.0	168	144	116	e6.7	91	103	99	1.8	2.2	0.81	2.9
<b>4</b>	4.6	124	118	85	e7.0	166	127	78	6.8	1.3	3.0	1.6
<b>5</b>	7.8	95	e84	76	e7.0	111	190	61	8.2	2.3	2.1	1.3
<b>6</b>	7.3	82	e81	83	e7.0	e59	144	61	6.8	1.8	0.81	0.75
<b>7</b>	6.8	72	e84	75	e7.0	e29	106	35	5.2	1.6	0.48	0.39
<b>8</b>	5.8	287	e85	188	e6.0	e21	81	39	4.1	1.0	13	0.30
<b>9</b>	5.2	711	e43	237	e6.0	14	69	41	3.6	0.61	11	0.25
<b>10</b>	4.9	525	e30	179	e6.0	11	57	48	3.4	0.51	15	0.89
<b>11</b>	5.5	334	37	123	e5.0	11	43	37	2.7	0.56	14	1.2
<b>12</b>	19	255	37	98	e5.0	23	91	26	2.5	1.3	9.7	1.9
<b>13</b>	58	205	45	103	e4.3	35	161	21	2.3	1.0	7.2	1.4
<b>14</b>	50	210	55	117	9.6	47	128	12	1.8	0.42	5.6	0.41
<b>15</b>	25	195	48	124	42	97	590	7.0	1.5	0.32	e3.9	0.51
<b>16</b>	13	207	45	128	19	177	1,920	8.0	1.3	0.31	2.4	1.5
<b>17</b>	12	509	e29	101	7.2	213	1,580	8.4	1.3	0.26	1.8	0.50
<b>18</b>	114	469	22	52	5.8	134	990	21	1.1	2.6	2.8	0.26
<b>19</b>	124	323	25	53	5.9	97	608	36	0.99	1.9	2.0	0.23
<b>20</b>	117	242	15	66	5.2	83	434	48	1.6	3.1	0.51	0.22
<b>21</b>	136	183	9.8	50	5.4	83	325	50	2.2	3.2	2.8	0.20
<b>22</b>	95	156	8.7	23	5.8	90	249	22	2.4	1.9	5.0	0.41
<b>23</b>	78	226	75	24	7.1	211	196	9.7	2.9	5.1	4.8	0.53
<b>24</b>	59	334	119	23	6.9	325	163	6.3	2.3	9.4	4.4	0.51
<b>25</b>	45	284	79	23	5.7	371	137	5.9	1.4	7.1	4.1	0.25
<b>26</b>	34	219	86	17	5.9	346	138	5.3	0.86	5.7	4.2	0.19
<b>27</b>	18	179	85	12	6.2	297	234	4.8	1.2	4.7	4.2	0.17
<b>28</b>	366	160	54	11	6.2	270	250	3.9	3.5	4.5	3.2	0.16
<b>29</b>	675	137	41	11	---	208	181	3.5	4.6	4.4	2.0	0.28
<b>30</b>	414	122	36	10	---	153	144	3.2	3.6	3.9	1.3	0.55
<b>31</b>	252	---	35	9.0	---	126	---	2.5	---	3.5	6.0	---
<b>Total</b>	2,767.4	7,391	1,968.5	2,478.0	224.9	3,957.9	9,658	1,020.5	85.85	82.39	142.11	29.76
<b>Mean</b>	89.3	246	63.5	79.9	8.03	128	322	32.9	2.86	2.66	4.58	0.99
<b>Max</b>	675	711	183	237	42	371	1,920	109	8.2	9.4	15	5.7
<b>Min</b>	4.6	72	8.7	9.0	4.3	5.9	43	2.5	0.86	0.26	0.48	0.16

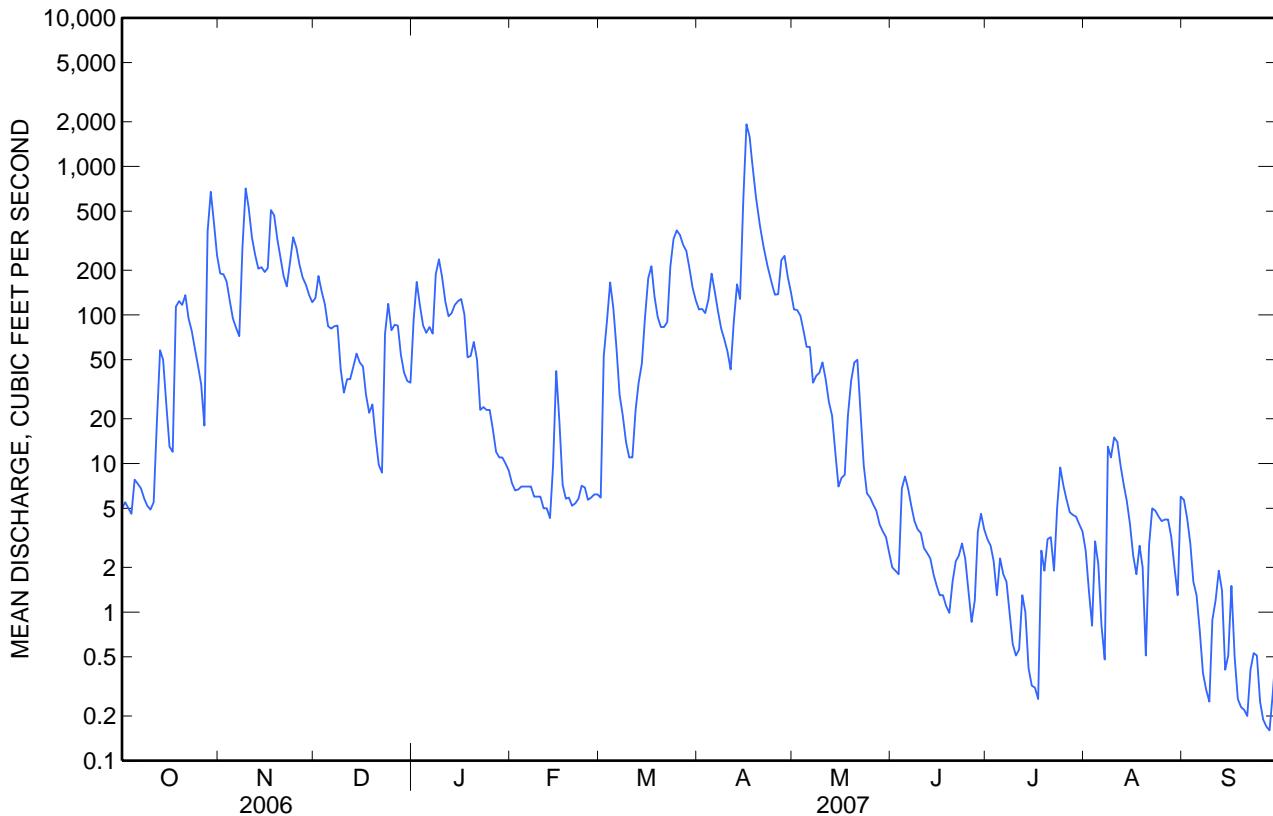
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2007, BY WATER YEAR (WY)**

	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>
<b>Mean</b>	19.5	36.7	46.7	46.5	50.8	102	132	65.1	35.0	18.3	14.7	19.6
<b>Max</b>	288	309	357	319	270	572	506	263	360	238	228	211
(WY)	(1956)	(1928)	(1997)	(2006)	(1939)	(1936)	(1983)	(1989)	(1972)	(1938)	(1955)	(1960)
<b>Min</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1929)	(1929)	(1929)	(1931)	(1930)	(1965)	(1950)	(1954)	(1944)	(1923)	(1923)	(1929)

**01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ—Continued****SUMMARY STATISTICS**

	<b>Calendar Year 2006</b>	<b>Water Year 2007</b>		<b>Water Years 1923 - 2007</b>	
<b>Annual total</b>	35,784.48	29,806.31			
<b>Annual mean</b>	98.0	81.7		48.7	
<b>Highest annual mean</b>				109	1952
<b>Lowest annual mean</b>				0.12	1954
<b>Highest daily mean</b>	1,180	Jan 19	1,920	Apr 16	3,170 Apr 6, 1984
<b>Lowest daily mean</b>	0.28	Aug 24	0.16	Sep 28	0.00 Oct 1, 1922
<b>Annual seven-day minimum</b>	0.45	Aug 19	0.30	Sep 23	0.00 Oct 18, 1922
<b>Maximum peak flow</b>			2,010	Apr 16	<sup>a</sup> 6,100 Oct 10, 1903
<b>Maximum peak stage</b>			6.38	Apr 16	<sup>a</sup> 17.40 Oct 10, 1903
<b>Instantaneous low flow</b>			0.14	Sep 27-29	
<b>10 percent exceeds</b>	277		209		147
<b>50 percent exceeds</b>	37		14		5.6
<b>90 percent exceeds</b>	3.7		1.1		0.00

<sup>a</sup> Since 1898, site and datum then in use.



**01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ—Continued****WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1924, 1962-69, 1973-79, 1991 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). Cooperative Network Site Descriptor: Watershed Integrator, NJ Department of Environmental Protection Watershed Management Area 3.

COOPERATION.--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	Turbdty		UV white light, det ang 90+/-30 dis- charge,	UV absorb- ance, 254 nm, wat flt corctd	UV absorb- ance, 280 nm, wat flt	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, μS/cm	Temper- ature, wat unf μS/cm	Temper- ature, air, deg C	Temper- ature, water, deg C	Hard- ness, water, mg/L as CaCO <sub>3</sub>
		cfs (00061)	NTRU (63676)												
Nov 02...	1030	193	2.0	.161	.121	747	10.9	100	7.5	141	9.5	10.5	34		
Feb 01...	1000	7.5	.8	.142	.109	748	14.3	101	7.5	228	-1.0	.3	51		
Jun 06...	1000	6.8	1.2	.172	.128	743	8.8	93	7.5	181	15.5	17.8	43		
Sep 04...	1000	1.5	.7	.124	.092	747	8.3	90	8.0	233	21.5	18.7	58		

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

Part 2 of 3

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

Date	ANC, wat unf						Residue water, filtrd, sum of consti- tuents			Residue on evap. at 180degC			Ammonia + org-N, water, filtrd, mg/L as N (00623)
	Calcium water, filtrd, mg/L (00915)	Magnes- ium, water, filtrd, mg/L (00925)	Potas- sium, water, filtrd, mg/L (00935)	Sodium, water, filtrd, mg/L (00930)	Chlor- ide, lab, mg/L as CaCO <sub>3</sub> (90410)	Fluor- ide, water, filtrd, mg/L (00940)	Silica, water, filtrd, mg/L (00955)	Sulfate water, filtrd, mg/L (00945)	wat flt mg/L (70301)	wat flt mg/L (70300)	total non- filter- able, mg/L (00530)		
Nov 02...	8.42	3.19	.65	12.3	26	21.5	E.07	5.0	6.67	73	94	3	.22
Feb 01...	12.6	4.79	.89	21.6	34	37.8	E.07	7.8	10.0	118	134	4	.44
Jun 06...	11.0	3.80	.84	17.4	28	30.5	E.06	4.4	7.46	93	117	2	1.4
Sep 04...	14.7	5.21	.95	20.4	41	37.8	E.07	5.2	8.21	118	139	<1	.75

## 01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ—Continued

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

Part 3 of 3

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

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water mg/L (00631)	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)			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 water, fltrd, mg/L (00681)	Boron, fltrd, μg/L (01020)
Nov 02...	.019	.06	.04	.28	.32	E.002	E.004	.018	.4	<.1	.4	4.4	8.5		
Feb 01...	.031	.48	<.02	.92	--	E.002	.017	.016	<.1	<.1	<.1	3.2	10		
Jun 06...	.011	.16	.04	1.6	1.6	E.005	.013	.022	.3	<.1	.3	4.6	12		
Sep 04...	.026	.22	<.02	.97	--	E.004	.012	.015	.2	<.1	.2	3.4	14		