

## LEHIGH RIVER BASIN

## 01453000 LEHIGH RIVER AT BETHLEHEM, PA

**LOCATION.**--Lat 40°36'55", long 75°22'45", Lehigh County, Hydrologic Unit 02040106, on left bank 110 ft upstream from bridge on New Street at Bethlehem, and 1,800 ft upstream from Monocacy Creek. Records include flow of Monocacy Creek.

**DRAINAGE AREA.**--1,279 mi<sup>2</sup> (includes that of Monocacy Creek). At site used prior to Oct. 1, 1928, 1,229 mi<sup>2</sup>.

**PERIOD OF RECORD.**--October 1902 to January 1905, May 1909 to current year. Monthly discharge only for some periods, published in WSP 1302. Published as "at South Bethlehem" prior to October 1913.

**REVISED RECORDS.**--WSP 261: 1903-5. WSP 321: 1910-11. WSP 1051: Drainage area. WSP 1141: 1929-34(M). WSP 1302: 1914(M), 1916(M), 1918, 1921, 1927-28. WSP 1432: 1903, 1919(M), 1920-21, 1929, 1933.

**GAGE.**--Water-stage recorder and crest-stage gage. Datum of gage is 210.94 ft above National Geodetic Vertical Datum of 1929. Prior to October 1928, nonrecording gage at New Street bridge 120 ft downstream at same datum. Oct. 1, 1928, to Sept. 30, 1962, water-stage recorder at site 4,250 ft downstream at datum 2.49 ft lower. Oct. 1, 1963, to Dec. 14, 1975, water-stage recorder at site 40 ft downstream at same datum.

**REMARKS.**--No estimated daily discharges. Records fair. Flow regulated by Wild Creek Reservoir (station 01449700) since January 1941, Penn Forest Reservoir (station 01449400) since October 1958, Francis E. Walter Reservoir (station 01447780) since February 1961, and Beltzville Lake (station 01449790) since February 1971. Several measurements of water temperature were made during the year. Satellite and landline telemetry at station.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Flood of Feb. 28, 1902 reached a stage of 24.9 ft, from floodmark, present site and datum, discharge, about 88,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1140	643	1270	860	1930	912	2660	4670	2570	1610	737	808
2	1050	604	1450	873	1840	905	2250	5350	2300	1440	761	937
3	976	599	1400	895	1380	1660	2020	5230	2170	1280	809	702
4	912	591	1290	943	1340	1730	1850	4210	1890	1190	985	612
5	858	587	1120	958	1270	1470	1710	3800	1740	1150	986	576
6	973	593	1030	925	1310	1350	1910	3510	2060	1050	929	526
7	1140	616	1020	916	1340	1320	1970	2840	4260	945	736	507
8	784	605	1010	955	1200	1230	1920	2620	3850	932	702	563
9	740	603	1270	944	1150	1200	1730	2800	2900	907	695	583
10	732	593	1240	948	1110	1460	1780	2890	2680	857	716	584
11	731	564	1100	1010	1290	1540	1890	2510	3350	826	928	630
12	741	555	1040	1110	1340	1540	1680	2420	3400	798	932	630
13	733	550	1020	1070	1210	1760	1600	3220	2420	778	817	636
14	725	583	1090	1020	1130	1780	1780	5460	2450	867	685	623
15	1010	639	1210	983	1100	1600	4590	6060	2520	872	752	730
16	1080	662	1150	981	1130	1510	4930	4770	2420	847	751	1250
17	994	677	1110	953	1120	1470	4070	3310	2460	798	742	1140
18	970	655	1470	910	1080	1640	3100	5410	2460	785	910	767
19	847	651	1720	864	1050	1950	2900	5300	2630	831	911	671
20	805	630	1710	805	1050	2330	2680	6450	2280	957	835	646
21	851	594	1680	871	1110	3380	2330	5170	1940	1090	539	766
22	729	589	1440	843	1100	2970	2250	3730	1860	1070	511	992
23	719	593	1330	836	1040	2640	2340	3450	1890	1010	488	668
24	704	579	1420	986	998	2440	2150	2960	1850	962	582	662
25	699	732	1370	1370	975	2280	1950	2570	1550	888	671	622
26	681	1120	1290	1400	962	2040	1980	2400	1390	818	597	586
27	686	1010	1140	1330	978	3450	2090	2310	1800	850	530	1250
28	665	950	1030	1310	953	3050	3000	2230	2600	1060	506	1780
29	653	938	1020	1280	---	2670	5230	6220	1910	1070	758	1290
30	650	928	921	1290	---	2590	5560	8230	1680	914	631	954
31	648	---	877	1530	---	2530	---	3640	---	757	579	---
TOTAL	25626	20233	38238	31969	33486	60397	77900	125740	71280	30209	22711	23691
MEAN	827	674	1233	1031	1196	1948	2597	4056	2376	974	733	790
MAX	1140	1120	1720	1530	1930	3450	5560	8230	4260	1610	986	1780
MIN	648	550	877	805	953	905	1600	2230	1390	757	488	507
CFSM	0.65	0.53	0.96	0.81	0.94	1.52	2.03	3.17	1.86	0.76	0.57	0.62
IN.	0.75	0.59	1.11	0.93	0.97	1.76	2.27	3.66	2.07	0.88	0.66	0.69

LEHIGH RIVER BASIN

01453000 LEHIGH RIVER AT BETHLEHEM, PA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2002, BY WATER YEAR (WY) (SINCE REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1566	2286	2869	2662	2764	3835	3896	3063	2077	1601	1313	1355
MAX (WY)	5778	5294	9067	7898	5820	7708	10180	7041	7272	6362	6192	6907
MIN (WY)	1956	1952	1997	1979	1951	1977	1993	1989	1972	1945	1955	1987
MIN (WY)	406	474	514	286	1132	1632	1428	1053	681	366	405	334
(WY)	1964	1965	1981	1981	1980	1981	1985	1941	1965	1965	1964	1964

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1941 - 2002

ANNUAL TOTAL	656580	561480	
ANNUAL MEAN	1799	1538	2438
HIGHEST ANNUAL MEAN			3973
LOWEST ANNUAL MEAN			1165
HIGHEST DAILY MEAN	6720	Mar 31	8230
LOWEST DAILY MEAN	550	Nov 13	488
ANNUAL SEVEN-DAY MINIMUM	579	Nov 8	555
MAXIMUM PEAK FLOW			9170
MAXIMUM PEAK STAGE			5.31
ANNUAL RUNOFF (CFSM)	1.41		1.20
ANNUAL RUNOFF (INCHES)	19.10		16.33
10 PERCENT EXCEEDS	3680	2920	4820
50 PERCENT EXCEEDS	1380	1090	1760
90 PERCENT EXCEEDS	684	630	685

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903-1904, 1909-1940, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1532	1827	2184	2346	2430	4134	3815	2280	1753	1530	1239	1214
MAX (WY)	4808	5660	5287	5287	5913	11920	7547	3681	4255	5182	4599	6407
MIN (WY)	1903	1927	1939	1915	1915	1936	1940	1924	1928	1935	1933	1933
MIN (WY)	308	370	470	677	668	1887	1499	1020	832	572	428	374
(WY)	1911	1910	1931	1925	1934	1911	1915	1926	1921	1912	1910	1932

SUMMARY STATISTICS WATER YEARS 1903 - 1904 1909 - 1940

ANNUAL MEAN	2189
HIGHEST ANNUAL MEAN	3600
LOWEST ANNUAL MEAN	1262
HIGHEST DAILY MEAN	47900
LOWEST DAILY MEAN	160
ANNUAL SEVEN-DAY MINIMUM	260
MAXIMUM PEAK FLOW	64800
MAXIMUM PEAK STAGE	18.70
INSTANTANEOUS LOW FLOW	160
ANNUAL RUNOFF (CFSM)	1.71
ANNUAL RUNOFF (INCHES)	23.25
10 PERCENT EXCEEDS	4420
50 PERCENT EXCEEDS	1500
90 PERCENT EXCEEDS	548

- a From rating curve extended above 58,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height, 20.02 ft at present site and datum.
- b From floodmark, present site and datum.

