Water-Data Report 2008

01601500 WILLS CREEK NEAR CUMBERLAND, MD

Potomac Basin
North Branch Potomac Subbasin

LOCATION.--Lat 39°40'10.6", long 78°47'16.9" referenced to North American Datum of 1983, Allegany County, MD, Hydrologic Unit 02070002, on right bank at downstream side of railway bridge, 0.15 mi downstream from Braddock Run, 2.0 mi upstream from Cumberland, and mouth.

DRAINAGE AREA.--247 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1905 to July 1906 (published as "at Cumberland"). October 1929 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1432: 1906, 1930(M), 1933-34(M), 1936-37, 1945(M).

GAGE.--Water-stage recorder. Datum of gage is 640.89 ft above National Geodetic Vertical Datum of 1929. May 6, 1905, to July 14, 1906, nonrecording gage at highway bridge 700 ft upstream at different datum. Oct. 18, 1929, to Mar. 17, 1936, water-stage recorder, and Apr. 1, 1936, to Mar. 19, 1937, nonrecording gage at site 200 ft upstream at present datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Records include drainage from numerous active and abandoned coal mines. An undetermined amount of water is diverted into the basin from Georges Creek basin by Hoffman drainage tunnel. Miscellaneous measurements of discharge from the Hoffman drainage tunnel have been made in the water years 1944, 1964-65, 1967-82, and 1984 by the U.S. Geological Survey, and in the water years 1958 and 1959 by the Maryland Geological Survey. Slight diurnal fluctuation at low flow caused by quarry upstream. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 5	0615	*6,660	*8.73
Apr 21	0945	4,180	7.07
May 12	1130	3,990	6.93

Minimum discharge, 17 ft^3/s, Oct. 9-19.

01601500 WILLS CREEK NEAR CUMBERLAND, MD—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	27	47	104	396	324	e310	258	739	318	86	66	41
2	24	41	98	349	389	e325	247	615	219	73	114	36
3	22	38	323	264	358	322	224	866	194	65	66	33
4	21	35	337	214	473	731	252	1,240	313	78	53	32
5	20	34	278	e170	850	5,200	277	901	304	93	45	30
6	20	35	212	e215	1,970	2,360	246	742	220	92	48	30
7	19	36	172	e380	2,360	1,460	231	609	185	90	44	29
8	18	35	168	e210	1,490	1,310	228	531	166	84	42	28
9	19	33	428	e175	1,020	1,070	223	508	150	78	39	36
10	18	33	1,400	242	800	889	220	1,420	140	69	37	34
11	18	33	960	798	555	773	218	1,780	138	61	36	38
12	18	57	669	827	480	660	229	3,510	123	53	35	41
13	17	129	1,020	728	440	549	209	2,410	118	49	35	69
14	17	120	1,850	603	381	482	197	1,500	217	45	35	70
15	17	229	1,110	485	335	547	183	1,080	193	42	35	47
16	18	252	917	388	304	452	172	1,300	155	39	33	38
17	17	194	695	331	311	391	166	1,220	150	36	33	33
18	17	160	484	301	750	432	161	1,580	130	34	32	31
19	19	136	399	259	881	878	158	1,490	124	32	30	29
20	20	118	342	206	766	1,580	828	1,370	112	31	29	28
21	19	109	292	152	611	1,310	3,020	1,120	108	32	28	27
22	20	101	257	e160	542	1,000	2,230	946	119	44	27	26
23	20	92	401	e145	469	780	1,360	752	102	90	26	25
24	38	82	1,090	e120	399	618	968	595	89	104	26	25
25	94	72	850	e115	382	508	747	477	82	62	26	24
26	109	68	614	e110	392	439	748	396	76	46	25	26
27	152	102	478	e105	525	412	785	350	73	39	25	57
28	127	132	389	e100	418	407	1,110	292	77	36	149	112
29	85	120	518	145	e320	339	1,120	240	76	33	128	81
30	65	114	418	295	---	288	899	210	82	32	75	53
31	53	---	415	268	---	264	---	386	---	65	50	---
Total	1,168	2,787	17,688	9,256	19,295	27,086	17,914	31,175	4,553	1,813	1,472	1,209
Mean	37.7	92.9	571	299	665	874	597	1,006	152	58.5	47.5	40.3
Max	152	252	1,850	827	2,360	5,200	3,020	3,510	318	104	149	112
Min	17	33	98	100	304	264	158	210	73	31	25	24
Cfsm	0.15	0.38	2.31	1.21	2.69	3.54	2.42	4.07	0.61	0.24	0.19	0.16
In.	0.18	0.42	2.66	1.39	2.91	4.08	2.70	4.70	0.69	0.27	0.22	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 – 1906, 1930 -- 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	131	212	329	396	498	808	670	459	231	110	86.5	94.4
Max	1,130	1,520	1,113	1,481	1,255	2,410	1,910	1,109	967	641	674	1,083
(WY)	(1943)	(1986)	(1973)	(1996)	(1971)	(1936)	(1993)	(1989)	(1972)	(1989)	(1984)	(1996)
Min	11.9	15.5	18.4	54.2	65.8	182	184	101	51.1	24.3	16.6	12.1
(WY)	(1931)	(1931)	(1944)	(1940)	(1954)	(1990)	(1968)	(1934)	(1965)	(1965)	(1930)	(1932)

01601500 WILLS CREEK NEAR CUMBERLAND, MD—Continued

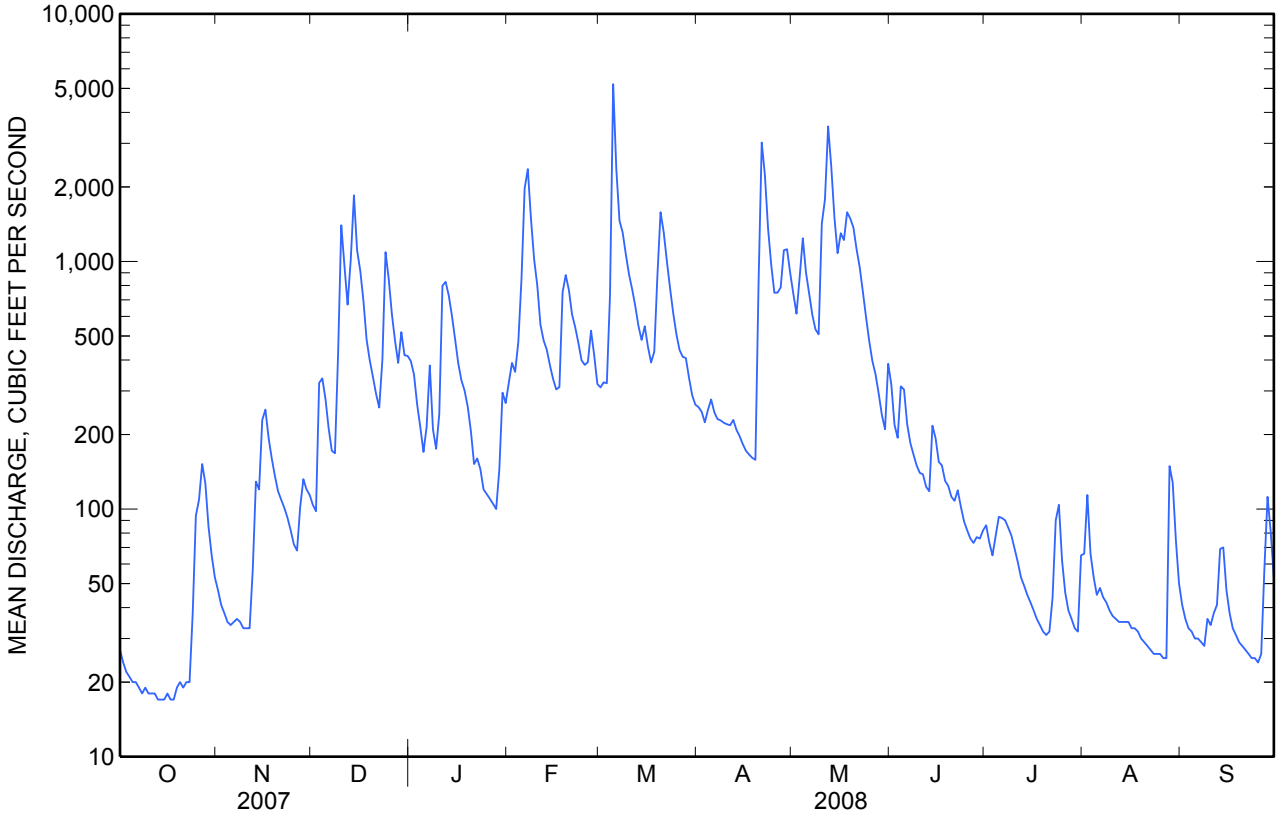
SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1930 - 2008	
Annual total	102,325		135,416			
Annual mean	280		370		335	
Highest annual mean					599	1996
Lowest annual mean					122	1954
Highest daily mean	3,490	Apr 15	5,200	Mar 5	19,200	Jan 19, 1996
Lowest daily mean	17	Oct 13[a]	17	Oct 13[a]	10	Oct 8, 1930[b]
Annual seven-day minimum	17	Oct 12	17	Oct 12	10	Oct 8, 1930
Maximum peak flow			6,660	Mar 5	[c]45,900	Jan 19, 1996
Maximum peak stage			8.73	Mar 5	[d]23.11	Jan 19, 1996
Instantaneous low flow			17	Oct 13[f]	9.0	Oct 14, 1930
Annual runoff (cfsm)	1.13		1.50		1.36	
Annual runoff (inches)	15.41		20.39		18.42	
10 percent exceeds	767		962		800	
50 percent exceeds	100		164		148	
90 percent exceeds	27		28		29	

[a] Oct. 13-15, 17, 18.

[b] Oct. 8-10, 1930.

[c] From rating curve extended above 11,000 ft³/s on basis of slope-area measurement at gage heights of 13.45 and 20.20 ft.

[d] From floodmarks at present site.

[f] Oct. 9-19.