Water-Data Report 2008

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD

Upper Chesapeake Basin
Choptank Subbasin

LOCATION.--Lat 38°59'49.9", long 75°47'08.9" referenced to North American Datum of 1983, Caroline County, MD, Hydrologic Unit 02060005, on left bank at highway bridge (removed), 0.1 mi upstream from Gravelly Branch, 2.0 mi northeast of Greensboro, and 60 mi upstream from mouth.

DRAINAGE AREA.--113 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1948 to current year.

REVISED RECORDS.--WSP 1622: 1948. WDR MD-DE-79-1: 1961(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3.51 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diversions for irrigation of about 500 acres upstream from station. U.S. Geological Survey gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1935 is believed to have been higher than that of Aug. 4, 1967, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 9	1200	1,290	7.25
May 13	0545	*2,390	*9.23

Minimum discharge, 1.7 ft^3/s, Aug. 14.

01491000 CHOPTANK RIVER NEAR GREENSBORO, 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	e8.2	19	16	90	85	133	93	123	128	24	11	5.7
2	7.9	17	17	74	255	126	94	115	144	23	10	5.2
3	8.0	16	29	60	283	117	87	104	107	21	9.4	4.8
4	8.1	16	30	53	176	112	113	93	133	20	8.6	4.8
5	10	17	26	51	148	141	140	84	415	21	e8.4	20
6	9.6	16	42	51	137	183	141	77	522	25	e8.0	15
7	9.2	18	28	52	127	170	155	71	299	30	7.9	19
8	7.5	17	26	51	116	386	151	73	203	48	9.2	16
9	7.1	16	29	49	106	1,130	137	162	163	36	5.4	13
10	10	16	27	48	99	682	125	376	136	59	3.2	12
11	10	16	27	55	88	381	118	422	110	65	5.2	12
12	8.1	20	26	68	80	276	117	918	92	42	5.2	12
13	8.0	16	25	65	157	231	180	2,000	79	32	2.6	16
14	8.7	16	27	64	357	202	246	921	74	27	2.4	21
15	9.1	16	26	63	287	190	172	526	68	25	3.0	18
16	9.0	18	50	60	191	182	133	351	63	23	5.7	13
17	9.4	16	70	58	158	174	123	306	67	21	6.1	12
18	10	16	67	91	151	159	118	271	64	19	6.4	11
19	9.9	19	48	125	150	155	111	228	59	17	5.9	10
20	10	22	41	106	137	168	104	231	51	15	5.0	10
21	10	19	38	80	125	161	101	290	43	14	3.2	9.7
22	8.3	19	33	69	123	148	98	290	40	13	5.4	9.5
23	8.4	18	32	70	142	142	89	221	36	27	11	7.4
24	15	16	36	69	152	131	84	182	33	35	11	7.8
25	30	15	35	65	151	121	79	158	31	25	6.6	13
26	29	16	34	62	150	115	76	145	29	21	5.1	17
27	48	18	36	61	160	112	139	130	27	18	4.7	17
28	45	18	37	61	164	110	132	120	27	17	5.3	16
29	34	17	53	60	144	105	145	110	26	16	8.1	14
30	27	16	74	60	---	94	137	95	25	14	8.4	14
31	23	---	94	58	---	89	---	99	---	13	6.5	---
Total	455.5	515	1,179	2,049	4,599	6,626	3,738	9,292	3,294	806	203.9	375.9
Mean	14.7	17.2	38.0	66.1	159	214	125	300	110	26.0	6.58	12.5
Max	48	22	94	125	357	1,130	246	2,000	522	65	11	21
Min	7.1	15	16	48	80	89	76	71	25	13	2.4	4.8
Cfsm	0.13	0.15	0.34	0.58	1.40	1.89	1.10	2.65	0.97	0.23	0.06	0.11
In.	0.15	0.17	0.39	0.67	1.51	2.18	1.23	3.06	1.08	0.27	0.07	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	55.5	96.0	155	196	222	266	210	136	108	62.5	77.4	56.6
Max	402	476	680	559	646	826	649	457	509	421	829	425
(WY)	(1972)	(1957)	(1997)	(1978)	(1979)	(1994)	(1983)	(1989)	(2003)	(1975)	(1967)	(1999)
Min	9.85	10.9	13.3	17.9	31.2	43.7	47.2	30.3	19.5	9.49	5.31	9.38
(WY)	(1966)	(1966)	(1966)	(1966)	(2002)	(1966)	(1966)	(1977)	(1986)	(1977)	(1966)	(1987)

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD—Continued

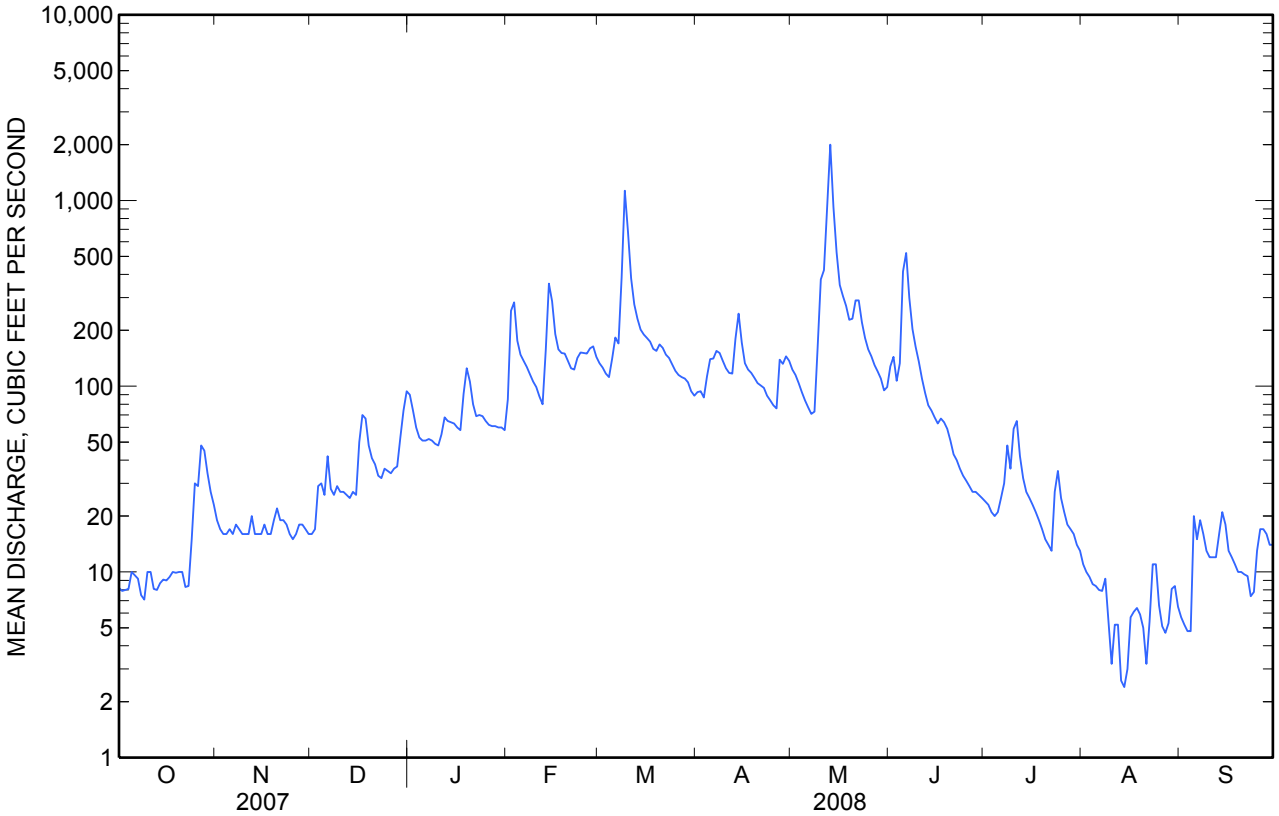
SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1948 - 2008	
Annual total	42,342.7		33,133.3			
Annual mean	116		90.5		136	
Highest annual mean					305	2003
Lowest annual mean					26.6	1966
Highest daily mean	4,170	Apr 16	2,000	May 13	6,160	Aug 4, 1967
Lowest daily mean	5.0	Aug 14	2.4	Aug 14	[e]0.35	Aug 19, 2002
Annual seven-day minimum	7.0	Aug 13	3.9	Aug 9	0.64	Aug 17, 2002
Maximum peak flow			2,390	May 13	[a]6,970	Aug 4, 1967
Maximum peak stage			9.23	May 13	14.47	Aug 4, 1967
Instantaneous low flow			1.7	Aug 14	0.26	Aug 19, 2002[b]
Annual runoff (cfsm)	1.03		0.801		1.20	
Annual runoff (inches)	13.94		10.91		16.32	
10 percent exceeds	228		177		287	
50 percent exceeds	39		46		75	
90 percent exceeds	9.2		8.3		16	

[e] Estimated.

[a] From rating curve extended above 3,600 ft³/s.

[b] Aug. 19, 20, 2002.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981, October 1984 to September 1991.
WATER TEMPERATURE: October 1974 to September 1991.
SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1991.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Part 1 of 4

[QC, quality control sample. Remark codes: <, less than; E, estimated; M, presence verified but not quantified; V, value affected by contamination.]

Date	Time	Sample medium and type	Instantaneous discharge, ft3/s (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specific conductance, wat unf µS/cm 25 degC (00095)
Oct									
02...	*0930*	*QC - Artificial, blank*	--	--	--	--	*6.9*	*5*	--
02...	1000	Surface water, regular	8.0	770	8.7	6.4	7.7	174	173
25...	1130	Surface water, regular	32	767	6.5	6.8	7.3	178	172
Nov									
15...	1030	Surface water, regular	16	748	8.4	6.8	7.6	192	186
Dec									
03...	1130	Surface water, regular	30	751	11.0	6.9	--	186	179
17...	1000	Surface water, regular	67	759	9.9	6.6	--	174	172
Jan									
04...	1145	Surface water, regular	46	778	12.6	6.7	7.4	179	183
Feb									
06...	1100	Surface water, regular	138	753	10.1	6.1	--	146	144
14...	1130	Surface water, regular	337	763	11.6	6.5	--	132	130
Mar									
05...	1030	Surface water, regular	142	752	8.9	6.7	7.3	146	144
09...	1300	Surface water, regular	1,290	766	8.1	6.6	--	88	87
Apr									
10...	1000	Surface water, regular	125	766	9.3	6.6	7.0	136	135
May									
12...	1115	Surface water, regular	727	743	8.1	6.4	--	99	101
13...	1010	Surface water, regular	2,240	761	7.9	6.1	--	84	83
Jun									
05...	0935	Surface water, regular	426	763	6.2	6.1	--	--	109
Jul									
08...	1000	Surface water, replicate	54	762	6.6	6.8	7.6	153	153
08...	*1005*	*QC - Surface water, replicate*	--	--	--	--	*7.6*	*154*	--
Aug									
06...	1015	Surface water, regular	11	758	5.8	6.9	--	--	168
Sep									
03...	1130	Surface water, regular	4.3	758	6.9	6.8	--	--	183
08...	0930	Surface water, regular	16	765	6.8	6.8	--	--	186

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 2 of 4
[QC, quality control sample. Remark codes: <, less than; E, estimated; M, presence verified but not quantified; V, value affected by contamination.]

Date	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L as SiO2 (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue fixed non-filterable, mg/L (00540)	Residue total non-filterable, mg/L (00530)
Oct													
02...	--	--	*<.04*	*<.020*	*<.02*	*<.12*	*.45*	*<.12*	*<.02*	*<.18*	*<10*	--	*<10*
02...	21.5	16.5	15.7	4.56	3.31	7.42	15.7	E.09	12.6	16.8	112	--	<10
25...	12.0	17.0	--	--	--	--	--	--	12.9	--	--	--	<10
Nov													
15...	10.0	11.0	--	--	--	--	--	--	16.1	--	--	--	<10
Dec													
03...	8.0	6.0	--	--	--	--	--	--	15.7	--	--	--	<10
17...	2.0	4.5	--	--	--	--	--	--	14.7	--	--	--	11
Jan													
04...	2.0	.5	14.2	4.19	3.86	8.43	15.9	E.10	17.1	29.4	119	--	<10
Feb													
06...	18.5	10.0	--	--	--	--	--	--	18.9	--	--	4	30
14...	3.5	4.0	--	--	--	--	--	--	--	--	--	--	--
Mar													
05...	13.0	12.0	--	--	--	--	--	--	16.1	--	--	--	<10
09...	5.0	10.0	--	--	--	--	--	--	9.2	--	--	--	48
Apr													
10...	15.5	12.0	10.1	3.29	2.12	8.17	13.8	E.06	15.7	19.0	95	--	<10
May													
12...	--	13.0	--	--	--	--	--	--	9.8	--	--	8	20
13...	--	11.5	--	--	--	--	--	--	7.2	--	--	11	23
Jun													
05...	20.0	20.5	--	--	--	--	--	--	10.6	--	--	22	42
Jul													
08...	28.0	25.0	12.5	3.80	2.90	7.90	14.6	E.08	15.4	19.2	116	--	<10
08...	--	--	*12.5*	*3.75*	*2.86*	*7.70*	*14.6*	*E.10*	*15.5*	*19.1*	*111*	--	*<10*
Aug													
06...	27.0	24.0	--	--	--	--	--	--	15.6	--	--	--	<10
Sep													
03...	26.0	20.5	--	--	--	--	--	--	11.9	--	--	--	<10
08...	23.5	21.0	--	--	--	--	--	--	12.9	--	--	--	<10

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 3 of 4
[QC, quality control sample. Remark codes: <, less than; E, estimated; M, presence verified but not quantified; V, value affected by contamination.]

Date	Residue volatile, suspended, mg/L (00535)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Total nitrogen, wat flt by analysis, mg/L (62854)	Total nitrogen, water, unfltrd mg/L (00600)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L as P (00666)	Phosphorus, water, unfltrd mg/L as P (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
Oct													
02...	*<10*	*<.020*	*<.04*	*E.001*	*<.04*	*E.04*	*--*	*E.003*	*<.006*	*E.006*	*E.1*	*M*	*<.1*
02...	<10	E.017	1.66	.004	.31	1.89	2.2	.017	.024	.055	2.9	<.04	2.9
25...	<10	.023	1.06	.006	.04	1.43	1.5	.022	.032	.062	.3	<.04	.3
Nov													
15...	<10	E.014	1.66	.004	.04	1.94	2.0	.011	.015	.033	.3	<.04	.3
Dec													
03...	<10	<.020	1.42	.005	.04	1.62	1.7	.012	.018	.044	.3	<.04	.3
17...	<10	.026	1.29	.008	.14	1.63	1.8	.015	.024	.095	1.2	<.04	1.1
Jan													
04...	<10	.026	1.74	.006	.07	2.17	2.2	.007	.010	.057	.6	<.04	.6
Feb													
06...	26	.020	1.58	.005	.05	1.90	2.0	.014	.020	.056	.6	<.04	.6
14...	--	.045	1.46	.006	.17	1.89	2.1	.020	.037	.115	1.7	<.04	1.7
Mar													
05...	<10	.020	1.59	.006	.05	1.90	2.0	.011	.017	.035	.4	<.04	.4
09...	<20	.073	.60	.008	.47	1.24	1.7	.015	.037	.218	4.4	M	4.3
Apr													
10...	<10	.027	1.25	.005	E.03	1.64	E1.7	.018	.028	.042	.3	<.04	.3
May													
12...	12	.209	.93	.019	.26	1.83	2.1	.045	.078	.183	2.5	<.04	2.5
13...	12	.137	.69	.014	.27	1.47	1.7	.050	.073	.194	2.1	M	2.0
Jun													
05...	20	.130	1.29	.026	.32	2.17	2.5	.033	.057	.210	2.7	M	2.7
Jul													
08...	<10	.036	1.27	.010	.07	1.64	1.7	.035	.044	.077	.6	M	.6
08...	*<10*	*.036*	*1.25*	*.010*	*E.04*	*1.60*	*E1.6*	*.035*	*.043*	*.079*	*.6*	*M*	*.5*
Aug													
06...	<10	.032	1.69	.006	E.03	2.09	E2.1	.055	.070	.076	.3	<.04	.3
Sep													
03...	<10	.025	2.14	.005	.04	2.35	2.4	.019	.029	.042	.3	<.04	.3
08...	<10	.022	1.43	.005	E.04	1.68	E1.7	.018	.028	.052	.2	<.04	.2

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 4 of 4
[QC, quality control sample. Remark codes: <, less than; E, estimated; M, presence verified but not quantified; V, value affected by contamination.]

Date	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, µg/L (01046)	Manganese, water, fltrd, µg/L (01056)	Suspnd. sediment, sieve diametr percent <62.5um (70331)	Suspended sediment concentration mg/L (80154)	Sampler type, code (84164)	Sampling method, code (82398)	Data base number	Medium code
Oct									
02...	*1.1*	*<8*	*<.4*	--	*<.5*	*3070*	*50*	*33*	*OAQ*
02...	V3.0	70	40.0	--	2	3070	50	01	WS
25...	4.9	--	--	57	6	3070	50	01	WS
Nov									
15...	3.3	--	--	--	2	3070	50	01	WS
Dec									
03...	3.7	--	--	--	4	3045	40	01	WS
17...	4.8	--	--	85	12	3045	40	01	WS
Jan									
04...	4.4	93	47.5	--	7	3045	40	01	WS
Feb									
06...	4.4	--	--	--	8	3045	40	01	WS
14...	5.3	--	--	91	21	3045	40	01	WS
Mar									
05...	4.7	--	--	--	3	3045	40	01	WS
09...	8.6	--	--	96	57	3051	40	01	WS
Apr									
10...	5.3	544	42.1	--	4	3045	40	01	WS
May									
12...	10.5	--	--	93	32	3070	70	01	WS
13...	12.1	--	--	91	21	3051	40	01	WS
Jun									
05...	9.1	--	--	--	28	3070	40	01	WS
Jul									
08...	5.2	446	52.3	--	4	3045	40	01	WS
08...	*5.6*	*542*	*53.8*	--	--	*3045*	*40*	*33*	*WSQ*
Aug									
06...	4.3	--	--	--	2	3070	40	01	WS
Sep									
03...	3.1	--	--	--	1	3070	50	01	WS
08...	4.4	--	--	--	1	3045	50	01	WS