01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD

Lower Susquehanna Basin
Lower Susquehanna Subbasin

LOCATION.--Lat 39°39′26″, long 76°10′31″ referenced to North American Datum of 1927, Harford County, MD, Hydrologic Unit 02050306, 1.0 mi southwest of Conowingo, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--27,100 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated by Conowingo Reservoir beginning October 1928, usable capacity, 55,070,000,000 gal; dead storage, 45,290,000,000 gal. Records do not include a small infrequent diversion upstream from station to augment municipal supply of city of Baltimore. Records of diversion available from Baltimore City Department of Public Works. U.S. Geological Survey gage-height satellite data collection platform at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 461,000 ft^3/s, Jun 29, gage height, 27.31 ft; minimum discharge, 599 ft^3/s, Feb 26.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD—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	4,290	61,600	205,000	66,200	63,500	24,200	20,400	46,000	26,800	213,000	26,600	66,300
2	4,270	57,800	246,000	71,700	64,400	24,500	12,000	39,100	24,700	174,000	27,800	55,100
3	4,280	38,700	187,000	78,100	70,600	28,600	18,500	35,200	26,500	144,000	29,800	63,200
4	4,300	45,700	134,000	85,000	92,900	18,700	25,500	34,200	23,800	106,000	25,600	90,800
5	4,280	39,000	129,000	104,000	93,700	17,400	22,100	37,400	51,400	76,700	15,500	101,000
6	4,310	28,600	89,900	112,000	120,000	22,300	22,200	25,400	70,700	65,700	13,100	94,300
7	4,750	42,700	76,900	89,300	131,000	19,200	26,000	13,400	74,300	62,800	26,600	70,500
8	48,100	33,200	73,000	83,500	120,000	20,400	27,000	22,200	53,100	53,500	19,200	40,600
9	51,500	27,900	57,100	83,200	99,900	23,700	26,100	25,800	45,600	50,600	15,200	31,300
10	23,100	34,500	36,400	75,400	88,500	18,100	37,200	25,500	35,700	42,300	16,200	31,500
11	27,500	33,400	38,100	56,900	73,500	18,400	34,500	23,200	28,900	42,400	13,200	26,400
12	21,900	27,600	41,200	52,000	56,900	13,800	33,600	34,300	40,100	35,700	8,450	26,000
13	28,900	17,600	40,300	62,400	56,200	25,600	32,000	18,800	32,400	28,100	6,610	27,200
14	25,400	46,700	39,300	57,400	54,500	27,700	24,200	19,800	25,000	21,200	10,700	21,000
15	11,600	38,100	19,700	71,800	44,700	38,400	25,100	35,500	27,100	32,800	17,500	25,600
16	14,200	35,400	35,800	79,600	52,700	54,100	24,500	34,600	27,100	48,000	9,900	21,600
17	41,600	49,400	34,300	96,700	41,400	76,000	35,800	39,500	19,200	44,900	8,460	20,500
18	36,600	61,600	33,400	99,100	52,300	61,100	32,700	39,400	18,400	39,400	11,800	33,000
19	30,500	64,900	44,500	139,000	36,900	56,800	31,700	38,800	27,300	31,600	7,490	38,100
20	35,200	65,200	36,900	205,000	44,800	44,400	29,700	26,000	20,000	26,300	11,900	27,700
21	24,300	70,700	30,900	171,000	41,300	45,300	22,300	22,800	19,200	26,100	5,940	22,100
22	20,400	65,600	31,000	142,000	42,300	43,600	16,600	31,700	16,200	16,200	10,400	24,400
23	22,500	54,600	32,100	131,000	40,000	34,000	37,800	30,800	14,400	17,400	10,700	13,100
24	29,700	40,900	19,500	113,000	34,000	31,000	58,500	26,100	18,300	27,400	8,430	17,000
25	34,200	47,700	24,100	107,000	35,400	27,400	65,200	29,700	14,700	32,000	10,500	18,600
26	65,100	40,900	30,200	84,300	13,400	20,200	72,300	27,400	47,500	46,800	5,900	16,300
27	86,700	20,700	38,700	83,200	33,100	32,400	72,900	22,000	92,400	40,400	5,940	14,600
28	126,000	49,400	41,000	69,200	32,200	33,300	75,200	20,100	215,000	33,800	17,200	18,500
29	118,000	26,200	53,700	48,200	---	27,800	55,200	19,600	403,000	25,300	17,400	17,900
30	86,800	46,000	62,000	49,700	---	23,800	38,400	34,700	311,000	18,600	34,700	11,600
31	73,500	---	60,700	59,800	---	21,700	---	23,100	---	27,800	50,300	---
Total	1,113,780	1,312,300	2,021,700	2,826,700	1,730,100	973,900	1,055,200	902,100	1,849,800	1,650,800	499,020	1,085,800
Mean	35,930	43,740	65,220	91,180	61,790	31,420	35,170	29,100	61,660	53,250	16,100	36,190
Max	126,000	70,700	246,000	205,000	131,000	76,000	75,200	46,000	403,000	213,000	50,300	101,000
Min	4,270	17,600	19,500	48,200	13,400	13,800	12,000	13,400	14,400	16,200	5,900	11,600
Cfsm	1.33	1.61	2.41	3.36	2.28	1.16	1.30	1.07	2.28	1.97	0.59	1.34
In.	1.53	1.80	2.78	3.88	2.37	1.34	1.45	1.24	2.54	2.27	0.69	1.49

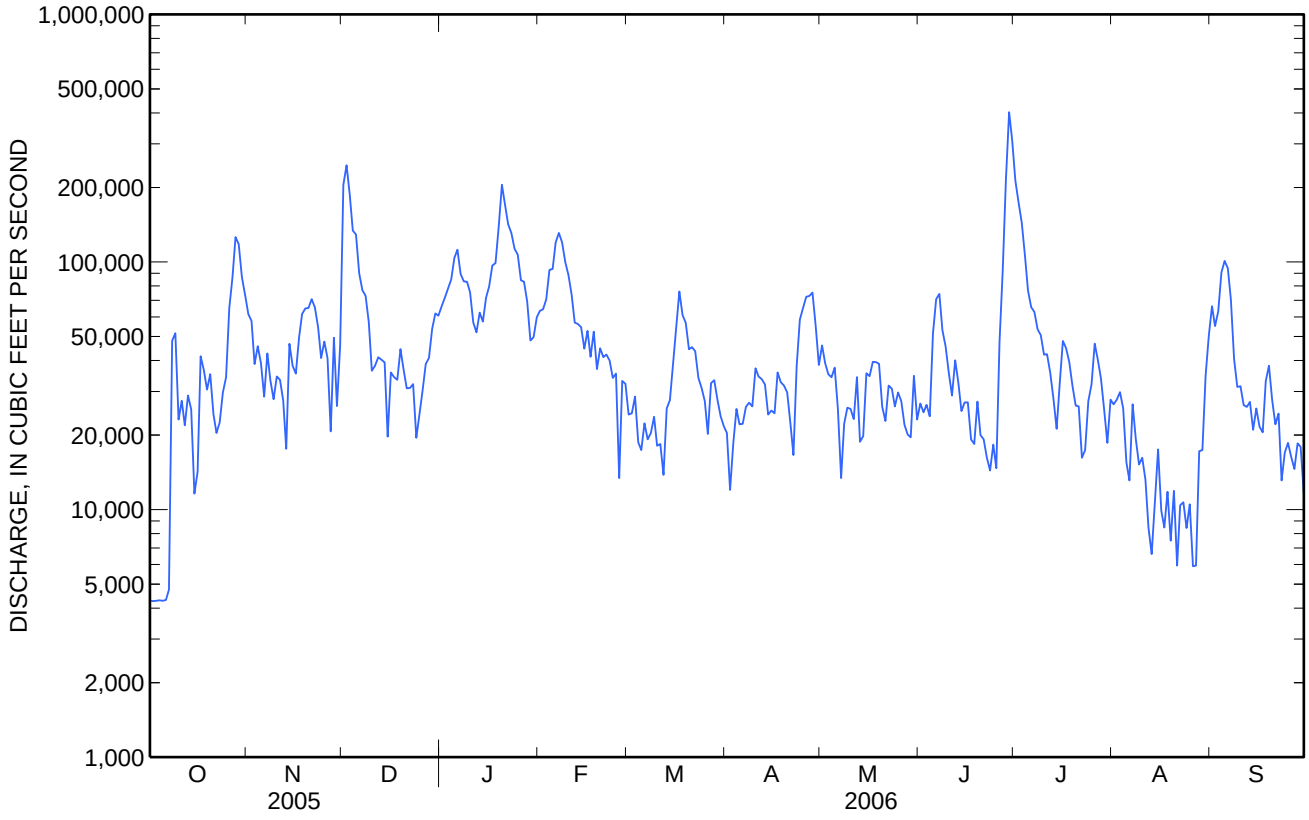
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	24,140	35,760	50,590	44,980	51,120	72,640	78,410	47,650	36,110	20,510	14,860	19,840
Max	81,800	75,060	113,700	122,500	115,800	147,800	250,100	108,200	208,000	59,050	52,830	129,800
(WY)	(1977)	(2004)	(1997)	(1996)	(1984)	(1994)	(1993)	(1989)	(1972)	(1972)	(2004)	(2004)
Min	5,557	5,465	6,733	7,164	13,050	28,320	33,850	18,810	7,691	5,338	4,803	3,476
(WY)	(1970)	(1999)	(1999)	(1981)	(1980)	(1969)	(1995)	(2001)	(1999)	(1999)	(2002)	(1995)

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1968 - 2006	
Annual total	16,718,950		17,021,200			
Annual mean	45,810		46,630		41,300	
Highest annual mean					66,560	2004
Lowest annual mean					22,850	1999
Highest daily mean	390,000	Apr 4	403,000	Jun 29	1,120,000	Jun 24, 1972
Lowest daily mean	3,200	Sep 28	4,270	Oct 2	269	Jul 13, 1969
Annual seven-day minimum	4,090	Sep 28	4,350	Oct 1	1,810	Sep 24, 1980
Maximum peak flow			461,000	Jun 29	1,130,000	Jun 24, 1972
Maximum peak stage			27.31	Jun 29	36.83	Jun 24, 1972
Instantaneous low flow			599	Feb 26	144	Mar 2, 1969
Annual runoff (cfsm)	1.69		1.72		1.52	
Annual runoff (inches)	22.95		23.36		20.71	
10 percent exceeds	95,800		89,500		86,000	
50 percent exceeds	30,500		34,200		28,000	
90 percent exceeds	5,560		15,400		5,840	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1979 to April 1981, July 1984 to September 1992.
WATER TEMPERATURE: June 1979 to April 1981, July 1984 to September 1992.
SUSPENDED-SEDIMENT DISCHARGE: October 1979 to April 1981, July 1984 to September 1992.

REMARKS.--During the period Oct. 1994 to Jan. 1995, monthly samples were collected and analyzed using ultraclean methodologies. Data on trace metals for this period are available from the University of Delaware. Data on organics for this period are available from George Mason University.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: (water years 1980, 1985-89, 1991-92): Maximum daily, 475 microsiemens/cm, Nov. 13-15, 1980 and Aug. 31, 1991; minimum daily, 100 microsiemens/cm, May 1, 1991.
WATER TEMPERATURE: (water years 1980, 1985-89, 1991-92): Maximum daily, 30.5°C, Aug. 18, 1988; minimum daily, 1.0°C, Feb. 5, 6, 9, 1980, Feb. 12, 1988.
SEDIMENT CONCENTRATION: Maximum daily mean, 207 mg/L, Mar. 17, 1986; minimum daily mean, 1 mg/L, June 27, 1987, May 27, 28, 30, Nov. 1-3, 10, 11, Dec. 22-24, 27, 30, 31, 1991.
SEDIMENT LOAD: Maximum daily, 197,000 tons, Mar. 16, 17, 1986; minimum daily, 4.4 tons, Feb. 10, 1985.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 1 of 4
[Remark codes: <, less than; E, estimated.]

Date	Time	Sample type	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)
Oct												
27...	1300	Environmental	80020	87,200	40	764	10.6	100	7.5	284	15.0	13.0
Nov												
09...	1215	Environmental	80020	19,600	40	759	11.5	107	7.8	222	19.5	12.2
Dec												
02...	0900	Environmental	80020	265,000	40	751	11.8	103	7.2	180	5.0	8.7
02...	0905	*Replicate*	80020	--	40	--	--	--	--	--	--	--
14...	1500	Environmental	80020	33,700	40	769	14.2	101	6.4	233	-4.0	1.8
Jan												
04...	1030	Environmental	80020	80,200	40	760	14.6	109	7.6	245	6.0	3.3
10...	1045	Environmental	80020	80,500	40	772	14.2	109	6.9	241	8.5	4.5
Feb												
06...	1215	Environmental	80020	113,000	40	756	14.6	121	6.8	230	4.0	7.0
Mar												
07...	*1315*	*Blank*	*80020*	--	--	--	--	--	--	--	--	--
07...	1445	Environmental	80020	4,870	40	763	13.8	116	7.8	265	8.0	8.0
Apr												
19...	0930	Environmental	80020	48,700	40	758	9.6	101	6.9	247	21.5	17.5
May												
02...	1000	Environmental	80020	66,900	40	760	11.7	121	7.8	192	23.0	17.0
Jun												
06...	1015	Environmental	80020	82,700	40	759	7.0	86	7.9	241	24.0	25.6
30...	0815	Environmental	80020	318,000	40	762	7.3	82	7.5	116	24.0	21.0
30...	*0820*	*Replicate*	*80020*	--	*40*	--	--	--	--	--	--	--
30...	*0825*	*Replicate*	*82105*	--	*40*	--	--	--	--	--	--	--
30...	*0826*	*Replicate*	*82105*	--	*40*	--	--	--	--	--	--	--
30...	*0827*	*Replicate*	*82105*	--	*40*	--	--	--	--	--	--	--
30...	*0828*	*Replicate*	*82105*	--	*40*	--	--	--	--	--	--	--
Jul												
03...	1015	Environmental	80020	142,000	40	766	6.7	79	7.4	130	30.5	23.6
13...	*0855*	*Blank*	*80020*	--	--	--	--	--	--	--	--	--
13...	0900	Environmental	80020	7,300	40	762	8.9	118	7.4	227	29.5	29.9
Aug												
08...	0945	Environmental	80020	6,510	40	765	7.2	97	7.9	250	31.5	31.0
Sep												
07...	0915	Environmental	80020	70,700	40	764	9.8	--	6.7	--	21.0	20.4

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 2 of 4
[Remark codes: <, less than; E, estimated.]

Date	Hardness, water, mg/L as CaCO3 (00900)	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 (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 at 105 deg. C, suspended, mg/L (00530)	Residue volatile, suspended, mg/L (00535)
Oct													
27...	--	--	--	--	--	--	--	4.9	--	--	--	17	<10
Nov													
09...	--	--	--	--	--	--	--	5.3	--	--	--	<10	<10
Dec													
02...	--	--	--	--	--	--	--	4.2	--	--	92	111	19
02...	--	--	--	--	--	--	--	4.0	--	--	93	116	24
14...	--	--	--	--	--	--	--	5.2	--	--	--	<10	<10
Jan													
04...	74	21.2	5.15	1.63	9.93	16.2	<.10	5.30	22.5	112	1	11	10
10...	64	18.0	4.61	1.37	9.18	15.3	E.06	5.17	21.9	107	1	12	11
Feb													
06...	--	--	--	--	--	--	--	5.3	--	--	--	12	<10
Mar													
07...	--	--	--	--	--	--	--	*<.2*	--	--	--	*<10*	*<10*
07...	--	--	--	--	--	--	--	3.1	--	--	--	<10	<10
Apr													
19...	87	24.2	6.32	1.46	11.4	18.9	E.08	.08	31.0	136	<10	10	10
May													
02...	--	--	--	--	--	--	--	2.3	--	--	--	<10	<10
Jun													
06...	--	--	--	--	--	--	--	2.0	--	--	--	<10	<10
30...	--	--	--	--	--	--	--	4.6	--	--	296	326	30
30...	--	--	--	--	--	--	--	*4.5*	--	--	*280*	*316*	*36*
30...	--	--	--	--	--	--	--	--	--	--	--	--	*23*
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jul													
03...	--	--	--	--	--	--	--	5.0	--	--	125	190	65
13...	--	*E.01*	*<.008*	*<.16*	*<.20*	*<.20*	*<.10*	*E.02*	*<.18*	*<10*	--	*<10*	*<10*
13...	81	23.1	5.65	1.74	8.80	13.2	E.06	5.22	25.1	137	10	22	12
Aug													
08...	--	--	--	--	--	--	--	1.6	--	--	--	11	<10
Sep													
07...	--	--	--	--	--	--	--	5.1	--	--	--	25	<10

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD—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)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Organic nitrogen, water, fltrd, mg/L (00607)	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 (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)
Oct													
27...	.06	1.30	1.32	.014	.19	.04	1.57	1.6	.032	<.004	.075	.8	<.1
Nov													
09...	E.04	1.15	1.16	.006	--	.03	1.42	1.5	.012	.025	.045	.4	<.1
Dec													
02...	E.02	1.41	1.42	.006	--	.45	1.74	2.2	.022	.037	.21	4.0	<.1
02...	E.03	1.43	1.44	.006	--	.40	1.87	2.3	.022	.035	.19	4.1	<.1
14...	E.03	1.28	1.28	.004	--	.03	1.47	1.5	.006	.015	.033	.3	<.1
Jan													
04...	.05	1.55	1.55	.006	.11	.06	1.71	1.8	.011	.018	.038	.4	<.1
10...	E.03	1.36	1.37	.004	--	.04	1.53	1.6	E.006	.012	.027	.3	<.1
Feb													
06...	.05	1.63	1.64	.007	.11	.09	1.80	1.9	.013	.017	.059	.8	<.1
Mar													
07...	*<.04*	--	*<.06*	*<.002*	--	*<.02*	*<.06*	--	*<.006*	*<.004*	*<.004*	*<.1*	*<.1*
07...	E.02	1.89	1.90	.010	--	.08	2.00	2.1	<.006	.009	.019	.3	<.1
Apr													
19...	E.02	.77	.78	.011	--	.15	.95	1.1	<.006	.005	.029	.7	<.1
May													
02...	<.04	.73	.74	.009	--	.17	.90	1.1	<.006	E.004	.032	1.0	<.1
Jun													
06...	.122	.69	.71	.022	.21	.15	1.05	1.2	.009	.009	.029	.8	<.1
30...	.070	.93	.93	.008	.34	.83	1.34	2.2	.015	.025	.34	9.3	<.1
30...	*.069*	*.93*	*.94*	*.007*	*.30*	*.87*	*1.30*	*2.2*	*.014*	*.025*	*.33*	*9.0*	*<.1*
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
Jul													
03...	.037	.71	.72	.007	.31	.30	1.07	1.4	.019	.026	.182	2.1	<.1
13...	*<.010*	--	*<.06*	*<.002*	--	*<.02*	*<.06*	--	*<.006*	*<.004*	*<.004*	*<.1*	*<.1*
13...	.030	1.19	1.21	.017	.17	.12	1.41	1.5	.010	.014	.051	.6	<.1
Aug													
08...	.098	.70	.72	.023	.23	.15	1.05	1.2	E.004	.007	.022	.8	<.1
Sep													
07...	.039	.92	.94	.013	.24	.13	1.22	1.3	.022	.027	.053	.8	<.1

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
Part 4 of 4
[Remark codes: <, less than; E, estimated.]

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Iron, water, fltrd, ug/L (01046)	Manganese, water, fltrd, ug/L (01056)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)	Sampler type, code (84164)	Data base number
Oct									
27...	.8	4.9	--	--	--	14	3,300	3060	01
Nov									
09...	.4	5.8	--	--	--	8	423	3060	01
Dec									
02...	4.0	7.0	--	--	98	115	82,300	3060	01
02...	4.1	6.8	--	--	97	138	--	3060	33
14...	.3	4.9	--	--	--	5	455	3060	01
Jan									
04...	.4	6.0	28	37.9	--	7	1,520	3060	01
10...	.3	2.1	19	45.3	--	7	1,520	3060	01
Feb									
06...	.8	2.1	--	--	--	20	6,100	3060	01
Mar									
07...	*<.1*	*.5*	--	--	--	--	--	--	*33*
07...	.2	--	--	--	--	2	26	3060	01
Apr									
19...	.7	2.7	25	7.5	--	6	789	3060	01
May									
02...	1.0	2.1	--	--	--	8	1,450	3060	01
Jun									
06...	.8	3.3	--	--	--	7	1,560	3060	01
30...	9.2	7.0	--	--	99	342	294,000	3060	01
30...	*9.0*	*5.5*	--	--	*99*	*347*	--	*3060*	*33*
30...	--	--	--	--	*99*	*327*	--	*3060*	*33*
30...	--	--	--	--	*100*	*274*	--	*3060*	*33*
30...	--	--	--	--	*99*	*382*	--	*3060*	*33*
30...	--	--	--	--	*98*	*383*	--	*3060*	*33*
Jul									
03...	2.0	6.2	--	--	99	163	62,500	3060	01
13...	*<.1*	*1.0*	*<6*	*<.6*	--	*<.5*	--	--	*33*
13...	.6	--	18	29.9	--	22	434	3060	01
Aug									
08...	.8	2.7	--	--	--	11	193	3060	01
Sep									
07...	.7	4.4	--	--	--	24	4,580	3060	01