

SWATARA CREEK BASIN

**01571820 SWATARA CREEK NEAR RAVINE, PA
(Swatara Creek Project)**

LOCATION.--Lat 40°34'50", long 76°24'18", Schuylkill County, Hydrologic Unit 02050305, on right bank 800 ft downstream of Adam's Run, 1,000 ft downstream from State Highway 125 bridge crossing Swatara Creek and 0.4 mi north of Ravine.

DRAINAGE AREA.--43.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 590 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for period Oct. 1 to Mar. 8, which are poor. Other data for this project presented in tables on pages 350-412.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Mar. 26	2230	*626	*2.61	No other peak greater than base discharge.			

**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	15	14	39	e19	57	32	122	107	59	28	13	15
2	13	13	28	e20	54	33	100	198	56	28	14	15
3	14	13	24	21	49	107	92	152	53	25	12	14
4	12	14	23	23	46	64	86	133	50	24	13	12
5	12	13	22	23	e41	53	81	121	53	24	14	12
6	13	13	21	e20	43	53	77	110	61	21	14	12
7	11	14	24	25	42	50	74	104	73	22	14	10
8	10	13	25	23	41	49	71	95	54	22	12	10
9	12	12	46	22	39	51	71	111	48	22	13	11
10	10	13	35	24	42	69	88	99	46	25	13	9.3
11	10	12	29	35	73	57	72	87	43	21	12	9.4
12	11	11	26	37	55	53	68	87	44	19	12	12
13	9.6	13	28	34	48	52	69	101	49	20	13	10
14	12	11	34	31	44	52	75	134	60	19	11	10
15	37	12	40	30	44	51	181	99	58	19	15	25
16	18	14	33	31	43	50	114	90	49	19	17	62
17	19	12	32	31	43	49	103	85	43	17	13	23
18	15	12	62	e30	39	76	96	294	40	17	12	17
19	13	14	49	e28	37	78	103	172	47	18	12	13
20	13	14	40	e29	38	132	101	140	44	18	12	13
21	12	12	36	27	38	137	92	126	37	18	11	13
22	12	14	33	28	37	109	92	112	35	18	11	13
23	13	11	31	30	37	98	86	102	33	20	13	51
24	12	13	33	66	34	92	80	94	33	23	15	22
25	12	86	30	76	34	86	80	86	32	18	14	15
26	12	68	28	56	35	152	76	83	31	16	11	18
27	11	33	27	49	35	261	72	77	44	17	12	141
28	11	25	26	49	34	155	132	73	53	17	12	128
29	12	23	26	47	---	133	135	69	35	15	16	50
30	12	31	24	49	---	120	109	65	31	14	15	37
31	11	---	21	51	---	111	---	63	---	13	13	---
TOTAL	409.6	573	975	1064	1202	2665	2798	3469	1394	617	404	802.7
MEAN	13.2	19.1	31.5	34.3	42.9	86.0	93.3	112	46.5	19.9	13.0	26.8
MAX	37	86	62	76	73	261	181	294	73	28	17	141
MIN	9.6	11	21	19	34	32	68	63	31	13	11	9.3
CFSM	0.31	0.44	0.73	0.79	0.99	1.99	2.15	2.58	1.07	0.46	0.30	0.62
IN.	0.35	0.49	0.84	0.91	1.03	2.29	2.40	2.98	1.20	0.53	0.35	0.69

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

MEAN	43.6	45.5	91.8	79.1	93.6	130	110	87.3	67.5	39.1	26.3	32.2
MAX	135	143	284	177	196	196	144	181	110	64.2	39.9	70.7
(WY)	1997	1997	1997	1998	1998	1998	1998	1998	1998	1996	1996	1999
MIN	13.2	16.5	11.4	34.3	42.9	86.0	75.4	47.0	18.4	13.5	13.0	15.7
(WY)	2002	1999	1999	2002	2002	2002	1999	1999	1999	1999	2002	1998

e Estimated.

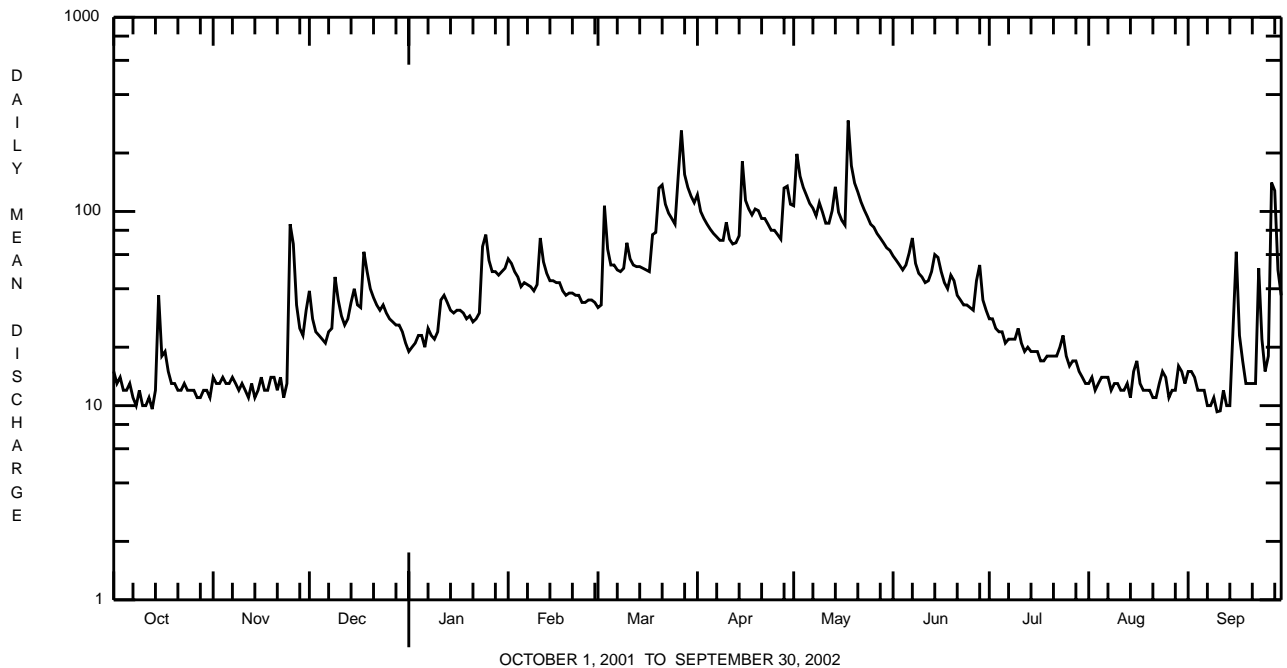
SWATARA CREEK BASIN

01571820 SWATARA CREEK NEAR RAVINE, PA--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	18899.6		16373.3			
ANNUAL MEAN	51.8		44.9		69.8	
HIGHEST ANNUAL MEAN					98.7	
LOWEST ANNUAL MEAN					44.9	
HIGHEST DAILY MEAN	342	Mar 30	294	May 18	1280	Dec 17 2000
LOWEST DAILY MEAN	9.6	Oct 13	9.3	Sep 10	9.3	Sep 10 2002
ANNUAL SEVEN-DAY MINIMUM	11	Oct 7	10	Sep 7	10	Dec 14 1998
MAXIMUM PEAK FLOW			626	Mar 26	b2030	Dec 17 2000
MAXIMUM PEAK STAGE			2.61	Mar 26	4.17	Dec 17 2000
INSTANTANEOUS LOW FLOW			9.2	Oct 14a	9.2	Oct 14 2001a
ANNUAL RUNOFF (CFSM)	1.20		1.04		1.61	
ANNUAL RUNOFF (INCHES)	16.24		14.07		21.90	
10 PERCENT EXCEEDS	122		101		139	
50 PERCENT EXCEEDS	37		31		47	
90 PERCENT EXCEEDS	13		12		14	

a Also Sept. 9-11, 2002.

b From rating curve extended above 638 ft³/s based on a straight line extension.



SWATARA CREEK BASIN

01571820 SWATARA CREEK NEAR RAVINE, PA--Continued
(Swatara Creek Project)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1996 to current year.

pH: April 1996 to current year.

WATER TEMPERATURE: April 1996 to current year.

INSTRUMENTATION.--Water-quality monitor (in situ system). Automatic pumping sampler for stormflow samples since July 1996.

REMARKS.--Specific conductance records rated fair except for period Sept. 12-25, which is poor. pH records rated fair. Water temperature records rated good. Interruptions in the record were due to malfunctions of the instrumentation. Some values for "dissolved" parameters exceed values for the corresponding "total" parameter. These results are within the limits of analytical precision and methods. Other data for this project presented in tables on pages 350-412. Figure 9 shows the location of sites sampled as part of the Swatara Creek Project. Abbreviations used: E, estimated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 538 microsiemens, Jan. 9, 1999; minimum, 27 microsiemens, June 11, 1997.

pH: Maximum, 8.2, July 30, 1999; minimum, 4.7, June 13, 1998.

WATER TEMPERATURE: Maximum, 26.5°C, July 5, 6, 1999, Aug. 1, 1999; minimum, 0.0°C, many days during winters.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 376, microsiemens, Oct. 1; minimum, 69, microsiemens, Sept. 28.

PH: Maximum, 7.9, July 20, 23, Sept. 14; minimum, 6.2, Mar. 29.

WATER TEMPERATURE: Maximum, 25.0°C, July 31, Aug. 1, 2, 15, 16; minimum, 0.0°C, Dec. 31, Jan. 1, 6, 7, Feb. 5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	DIS- CHARGE, CUBIC FEET PER SECOND (00061)	OXID- ATION RED- UCTION POTEN- TIAL (MV) (00090)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300) (00301)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND- ARD UNITS) (00403)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	
OCT										
01...	1000	1028	--	15	--	--	6.6	--	336	
NOV										
28...	0800	1028	930	26	320	11	91	6.7	6.8	252
DEC										
18...	0830	1028	930	65	--	--	6.6	6.5	199	
JAN										
24...	1245	1028	930	83	--	--	6.8	6.8	254	
24...	1400	1028	930	98	--	--	7.0	6.6	239	
24...	1700	1028	930	104	--	--	6.9	6.6	205	
24...	2000	1028	930	98	--	--	6.8	6.5	188	
24...	2200	1028	930	94	--	--	6.8	6.5	176	
25...	0200	1028	930	92	--	--	6.8	6.5	172	
25...	0600	1028	930	85	--	--	6.7	6.5	170	
25...	1000	1028	930	78	--	--	6.7	6.5	166	
29...	0900	1028	930	48	410	13	97	6.7	6.6	215
FEB										
10...	2100	1028	930	60	--	--	7.0	6.7	226	
11...	0000	1028	930	73	--	--	7.0	6.0	240	
11...	0400	1028	930	83	--	--	6.9	6.8	222	
11...	1200	1028	930	73	--	--	6.7	5.8	194	
12...	0200	1028	930	60	--	--	6.6	6.8	203	
MAR										
02...	0000	1028	930	32	--	--	6.7	6.8	221	
02...	0200	1028	930	32	--	--	6.7	6.8	225	
02...	0600	1028	930	31	--	--	6.7	6.7	227	
03...	2200	1028	930	83	--	--	6.6	6.7	157	
04...	0800	1028	930	66	--	--	6.6	6.6	167	
13...	0945	1028	930	52	350	13	100	6.8	6.0	196
APR										
14...	2300	1028	930	83	--	--	6.6	6.9	190	
15...	0200	1028	930	203	--	--	7.0	7.0	164	
15...	0400	1028	930	256	--	--	6.8	6.7	147	
15...	0600	1028	930	249	--	--	6.7	6.7	131	
15...	1600	1028	930	158	--	--	6.6	6.6	138	
23...	0845	1028	930	86	370	12	97	6.6	6.7	176
MAY										
02...	0700	1028	930	117	--	--	6.3	6.8	163	
02...	0800	1028	930	145	--	--	6.4	6.8	148	
02...	1000	1028	930	297	--	--	6.5	6.7	135	
02...	1200	1028	930	308	--	--	6.5	6.7	128	
02...	1800	1028	930	225	--	--	6.3	6.8	123	
29...	0930	1028	930	71	320	10	98	6.4	6.6	205
JUN										
19...	0900	1028	930	46	310	9.9	98	6.5	6.4	228
JUL										
31...	0900	1028	930	13	200	9.1	99	7.0	6.6	314
AUG										
19...	0800	1028	930	13	240	9.1	98	7.0	7.1	330

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WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	TEMPER- ATURE WATER (DEG C) (00010)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA) (00916)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG) (00927)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K) (00937)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA) (00929)	ACIDITY TOTAL HEATED (MG/L AS CAC03) (70508)
OCT 01...	10.8	--	--	--	--	--	--	--	--	--
NOV 28...	9.00	18	18	12	12	1.7	1.7	8.0	7.7	--
DEC 18...	7.20	13	13	8.0	7.7	1.3	1.6	7.4	7.2	<5.0
JAN 24...	3.80	18	17	11	11	1.4	2.4	17	17	--
24...	3.70	16	16	9.9	9.5	1.4	2.0	15	14	--
24...	3.80	14	14	7.6	7.5	1.3	1.9	16	16	--
24...	3.70	13	12	6.8	6.7	1.4	1.8	13	13	--
24...	3.90	12	12	6.5	6.3	1.4	1.6	13	13	--
25...	3.80	11	10	5.9	5.5	1.3	1.8	9.8	9.8	--
25...	3.40	11	11	5.9	5.8	1.3	1.3	9.0	8.8	--
25...	3.00	11	11	6.1	5.9	1.2	1.3	8.6	8.3	--
29...	3.70	14	13	10	9.4	1.2	1.2	8.1	8.0	--
FEB 10...	6.40	15	15	9.6	9.4	1.3	1.5	11	11	--
11...	6.60	13	12	8.4	8.1	1.2	1.2	9.4	9.4	--
11...	5.90	13	12	8.3	7.9	1.3	1.3	9.9	9.7	--
11...	4.70	13	12	7.5	7.0	1.3	1.3	11	10	--
12...	2.40	15	14	8.3	7.9	1.5	1.6	14	13	--
MAR 02...	2.90	14	14	9.8	9.6	1.2	1.5	9.0	9.0	--
02...	2.40	13	13	8.4	8.2	1.2	1.7	9.8	9.8	--
02...	1.80	12	12	7.0	7.0	1.3	2.1	11	11	--
03...	5.00	10	9.7	6.2	5.9	1.2	1.4	7.4	7.4	--
04...	2.50	11	11	6.9	6.8	1.2	1.2	7.3	7.3	--
13...	5.30	10	10	6.1	6.0	1.2	1.4	11	12	--
APR 14...	13.2	12	12	8.9	8.6	1.1	1.7	6.1	6.0	--
15...	12.9	11	11	6.2	6.5	1.2	2.4	6.5	6.5	--
15...	12.4	8.3	8.2	4.9	4.9	1.1	1.6	5.4	5.4	--
15...	11.9	9.3	9.6	5.3	5.5	1.2	2.2	6.1	6.1	--
15...	14.2	8.5	8.4	5.6	5.4	1.1	1.3	5.4	5.3	--
23...	8.00	11	11	8.9	8.6	1.0	1.0	5.6	5.5	--
MAY 02...	10.5	9.9	9.9	7.2	7.2	.96	1.7	5.4	5.3	--
02...	10.5	9.6	9.6	6.7	6.7	1.0	1.6	5.5	5.2	--
02...	10.5	8.9	9.5	5.3	5.9	1.3	3.2	5.6	5.2	--
02...	10.5	8.2	8.5	4.8	5.1	1.1	2.4	5.4	5.0	--
02...	12.0	8.4	8.4	5.1	5.3	1.1	2.1	4.7	4.7	--
29...	14.4	14	13	11	11	1.0	1.0	5.2	5.2	--
JUN 19...	14.1	16	15	12	12	1.1	1.2	6.0	5.8	--
JUL 31...	19.3	22	21	16	15	1.4	1.5	8.5	8.2	--
AUG 19...	19.7	22	22	18	17	1.4	1.5	8.6	8.4	--

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01571820 SWATARA CREEK NEAR RAVINE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ANC WATER UNFLTRD FET LAB (MG/L AS CACO3) (00417)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	ARSENIC DIS- SOLVED (µG/L AS AS) (01000)	ARSENIC TOTAL (µG/L AS AS) (01002)	BARIUM, DIS- SOLVED (µG/L AS BA) (01005)	BARIUM, TOTAL RECOV- ERABLE (µG/L AS BA) (01007)	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (µG/L AS CD) (01027)
OCT 01...	--	--	--	--	--	--	--	--	--	--
NOV 28...	10	88	20	240	<40	<40	22	23	<3.0	<3.0
DEC 18...	--	57	30	1800	<40	<40	20	31	<3.0	<3.0
JAN										
24...	7.1	72	<20	6500	<40	<40	21	59	<3.0	<3.0
24...	<5.0	67	<20	6000	<40	<40	22	55	<3.0	<3.0
24...	<5.0	51	40	4000	<40	<40	21	46	<3.0	<3.0
24...	5.5	47	50	3700	<40	<40	22	43	<3.0	<3.0
24...	5.5	45	30	2200	<40	<40	23	38	<3.0	<3.0
25...	5.1	41	60	2500	<40	<40	22	35	<3.0	<3.0
25...	<5.0	43	60	830	<40	<40	23	30	<3.0	<3.0
25...	<5.0	44	50	640	<40	<40	22	28	<3.0	<3.0
29...	6.1	69	20	170	<40	<40	21	25	<3.0	<3.0
FEB										
10...	5.5	67	80	2200	<40	<40	21	34	<3.0	<3.0
11...	<5.0	58	<20	260	<40	<40	24	28	<3.0	<3.0
11...	5.9	57	20	340	<40	<40	24	29	<3.0	<3.0
11...	<5.0	53	70	610	<40	<40	24	30	<3.0	<3.0
12...	6.3	58	290	2600	<40	<40	22	41	<3.0	<3.0
MAR										
02...	7.3	68	<20	1800	<40	<40	19	28	<3.0	<3.0
02...	6.2	59	<20	4200	<40	<40	18	35	<3.0	<3.0
02...	5.4	51	30	7200	<40	<40	17	53	<3.0	<3.0
03...	<5.0	44	30	800	<40	<40	22	26	<3.0	<3.0
04...	<5.0	49	40	400	<40	<40	22	23	<3.0	<3.0
13...	6.2	41	50	1700	<400	<40	23	34	<6.0	<3.0
APR										
14...	<5.0	60	90	4200	<40	<40	21	49	<3.0	<3.0
15...	5.7	43	550	7800	<40	<40	21	69	<3.0	<3.0
15...	<5.0	35	310	3700	<40	<40	22	44	<3.0	<3.0
15...	<5.0	38	510	6400	<40	<40	22	65	<3.0	<3.0
15...	<5.0	39	70	1000	<40	<40	23	32	<3.0	<3.0
23...	5.0	58	30	270	<40	<40	21	22	<3.0	<3.0
MAY										
02...	<5.0	48	30	4400	<40	<40	20	50	<3.0	<3.0
02...	<5.0	44	40	3800	<40	<40	19	45	<3.0	<3.0
02...	<5.0	38	120	12000	<40	<40	18	100	<3.0	<3.0
02...	<5.0	35	90	7700	<40	<40	20	74	<3.0	<3.0
02...	<5.0	36	70	5500	<40	<40	22	58	<3.0	<3.0
29...	5.3	75	<20	330	<40	<40	22	23	<3.0	<3.0
JUN										
19...	7.3	82	<20	570	<40	<40	21	22	<3.0	<3.0
JUL										
31...	11	110	20	140	<40	<40	19	19	<3.0	<3.0
AUG										
19...	7.6	120	<20	170	<40	<40	20	20	<3.0	<3.0

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01571820 SWATARA CREEK NEAR RAVINE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHROMIUM, TOTAL DIS-SOLVED (µG/L AS CR) (01030)	CHROMIUM, TOTAL RECOVERABLE (µG/L AS CR) (01034)	COBALT, DIS-SOLVED (µG/L AS CO) (01035)	COBALT, TOTAL RECOVERABLE (µG/L AS CO) (01037)	COPPER, DIS-SOLVED (µG/L AS CU) (01040)	COPPER, TOTAL RECOVERABLE (µG/L AS CU) (01042)	IRON, DIS-SOLVED (µG/L AS FE) (01046)	IRON, TOTAL RECOVERABLE (µG/L AS FE) (01045)	LEAD, DIS-SOLVED (µG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (µG/L AS PB) (01051)
OCT 01...	--	--	--	--	--	--	--	--	--	--
NOV 28...	<3.0	<3.0	10	11	<3.0	<3.0	150	420	<40	<40
DEC 18...	<3.0	<3.0	7.0	15	<3.0	<3.0	100	4400	<40	<40
JAN 24...	<3.0	6.0	9.0	23	<3.0	9.0	<10	17000	<40	<40
24...	<3.0	4.0	8.0	28	<3.0	11	<10	19000	<40	<40
24...	<3.0	4.0	7.0	20	<3.0	9.0	20	13000	<40	<40
24...	<3.0	<3.0	7.0	14	<3.0	6.0	20	8800	<40	<40
24...	<3.0	3.0	7.0	12	<3.0	<3.0	40	5700	<40	<40
25...	<3.0	<3.0	6.0	9.0	<3.0	<3.0	80	3700	<40	<40
25...	<3.0	<3.0	8.0	9.0	<3.0	<3.0	110	1900	<40	<40
25...	<3.0	<3.0	7.0	9.0	<3.0	<3.0	130	1500	<40	<40
29...	<3.0	<3.0	13	11	<3.0	<3.0	440	790	<40	<40
FEB 10...	<3.0	<3.0	11	15	<3.0	4.0	300	8500	<40	<40
11...	<3.0	<3.0	12	12	<3.0	<3.0	210	1200	<40	<40
11...	<3.0	<3.0	11	13	<3.0	<3.0	170	1400	<40	<40
11...	<3.0	<3.0	9.0	12	<3.0	<3.0	120	1800	<40	<40
12...	<3.0	<3.0	10	14	<3.0	4.0	1100	8400	<40	<40
MAR 02...	<3.0	<3.0	10	12	<3.0	<3.0	<10	5000	<40	<40
02...	<3.0	<3.0	8.0	15	<3.0	5.0	<10	17000	<40	<40
02...	<3.0	6.0	6.0	26	<3.0	9.0	40	25000	<40	<40
03...	<3.0	<3.0	7.0	9.0	<3.0	<3.0	120	1900	<40	<40
04...	<3.0	<3.0	9.0	9.0	<3.0	<3.0	310	1200	<40	<40
13...	<6.0	4.0	10	12	<6.0	7.0	290	5000	<80	<40
APR 14...	<3.0	<3.0	9.0	26	<3.0	4.0	310	12000	<40	<40
15...	<3.0	5.0	7.0	22	<3.0	11	1500	17000	<40	<40
15...	<3.0	<3.0	6.0	17	<3.0	3.0	510	7300	<40	<40
15...	<3.0	<3.0	5.0	21	<3.0	7.0	1000	13000	<40	<40
15...	<3.0	<3.0	7.0	9.0	<3.0	<3.0	190	2000	<40	<40
23...	<3.0	<3.0	11	12	<3.0	<3.0	430	1000	<40	<40
MAY 02...	<3.0	<3.0	8.0	24	<3.0	6.0	70	10000	<40	<40
02...	<3.0	<3.0	7.0	21	<3.0	4.0	60	9500	<40	<40
02...	<3.0	9.0	4.0	26	<3.0	14	150	23000	<40	<40
02...	<3.0	8.0	4.0	20	<3.0	8.0	100	14000	<40	<40
02...	<3.0	6.0	7.0	16	<3.0	<3.0	80	8800	<40	<40
29...	<3.0	9.0	15	16	<3.0	18	420	1400	<40	<40
JUN 19...	3.0	<3.0	13	14	<3.0	<3.0	280	1400	<40	<40
JUL 31...	<3.0	<3.0	5.0	6.0	<3.0	<3.0	120	590	<40	<40
AUG 19...	<3.0	<3.0	12	12	<3.0	<3.0	170	780	<40	<40

SWATARA CREEK BASIN

01571820 SWATARA CREEK NEAR RAVINE, PA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)	NICKEL, DIS- SOLVED (µG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (µG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (µG/L AS SE) (01145)	SELE- NIUM, TOTAL RECOV- ERABLE (µG/L AS SE) (01147)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)	ZINC, TOTAL RECOV- ERABLE (µG/L AS ZN) (01092)
OCT								
01...	--	--	--	--	--	--	--	--
NOV								
28...	650	660	26	27	<100	<100	55	52
DEC								
18...	490	740	15	20	<100	<100	38	55
JAN								
24...	550	980	18	29	<100	<100	28	130
24...	520	1200	17	31	<100	<100	39	140
24...	420	820	12	21	<100	<100	28	110
24...	440	670	12	17	<100	<100	31	91
24...	430	590	12	14	<100	<100	28	76
25...	370	450	10	15	<100	<100	29	50
25...	420	460	10	14	<100	<100	32	73
25...	410	450	12	13	<100	<100	31	64
29...	660	640	22	20	<100	<100	53	89
FEB								
10...	540	700	18	21	<100	<100	33	88
11...	590	590	18	19	<100	<100	46	86
11...	570	580	17	20	<100	<100	44	79
11...	520	570	18	18	<100	<100	42	83
12...	500	690	18	20	<100	<100	32	120
MAR								
02...	560	620	19	22	<100	<100	31	53
02...	460	670	17	22	<100	<100	25	73
02...	390	1100	15	29	<100	<100	22	110
03...	420	470	16	18	<100	<100	37	48
04...	470	480	18	19	<100	<100	40	48
13...	440	480	12	16	<200	<100	69	58
APR								
14...	460	1000	20	33	<100	<100	48	170
15...	370	870	14	30	<100	<100	21	150
15...	320	720	10	20	<100	<100	23	110
15...	340	820	11	24	<100	<100	20	130
15...	350	420	15	16	<100	<100	33	110
23...	550	550	20	21	<100	<100	55	51
MAY								
02...	360	870	16	30	<100	<100	38	140
02...	350	750	14	26	<100	<100	32	170
02...	290	1000	12	33	<100	<100	17	170
02...	280	790	13	27	<100	<100	18	150
02...	340	610	16	25	<100	<100	26	120
29...	640	640	29	53	<100	<100	59	66
JUN								
19...	580	590	34	25	<100	<100	74	55
JUL								
31...	300	310	13	13	<100	<100	29	29
AUG								
19...	510	520	24	23	<100	<100	54	53

SWATARA CREEK BASIN

01571820 SWATARA CREEK NEAR RAVINE, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	376	308	329	363	321	346	234	---	---	283	256	270
2	342	309	325	368	322	344	245	215	230	293	265	278
3	347	311	329	355	322	338	263	229	244	286	261	273
4	340	306	323	361	323	340	275	249	261	276	258	267
5	338	309	322	361	315	336	268	242	255	284	261	274
6	342	310	329	344	307	328	274	245	259	277	251	264
7	338	310	323	356	315	338	283	252	267	269	242	253
8	337	311	322	355	315	332	274	---	---	287	257	277
9	359	314	335	343	310	326	250	---	---	290	258	270
10	341	315	328	360	310	338	232	---	---	308	259	274
11	341	316	329	357	316	332	250	217	232	312	258	286
12	359	320	337	350	315	334	265	225	242	277	235	253
13	340	309	326	366	320	344	274	240	256	260	229	242
14	336	270	321	351	318	335	260	---	---	259	234	246
15	284	227	255	345	306	328	225	---	---	249	232	241
16	286	249	265	346	315	332	243	---	---	256	232	243
17	310	263	282	344	315	330	242	---	---	261	239	248
18	321	279	302	340	309	326	221	---	---	---	---	---
19	324	290	305	349	312	334	205	171	188	---	---	---
20	345	299	317	349	313	328	217	192	203	---	---	---
21	341	301	321	342	310	324	238	203	220	285	245	262
22	343	303	319	354	321	341	242	219	232	284	247	261
23	357	303	328	355	316	335	243	225	233	289	257	274
24	352	303	327	340	311	324	251	221	236	325	170	236
25	335	308	323	327	154	255	256	229	240	190	165	173
26	359	308	332	199	159	178	250	230	241	204	183	194
27	360	313	335	235	196	216	266	239	253	208	190	199
28	351	318	332	269	227	253	272	244	256	221	196	208
29	375	323	349	268	243	256	262	239	252	224	198	211
30	367	324	349	267	214	244	279	246	265	216	197	206
31	364	314	338	---	---	---	282	257	268	223	197	209
MONTH	376	227	321	368	154	314	283	171	242	325	165	246
	FEBRUARY			MARCH			APRIL			MAY		
1	222	191	207	249	221	238	174	155	163	173	150	155
2	211	187	197	236	217	229	172	159	167	169	114	139
3	220	193	209	218	147	167	164	150	155	153	128	139
4	254	200	215	182	158	170	169	156	162	164	145	152
5	234	210	218	192	179	186	176	166	171	165	152	158
6	240	214	226	206	185	197	185	170	174	170	155	160
7	236	210	223	202	185	192	192	175	184	168	154	161
8	233	211	221	215	179	193	197	180	188	166	151	159
9	237	214	227	220	190	213	205	184	192	164	147	154
10	272	214	229	206	176	186	199	172	180	167	143	154
11	240	189	203	205	181	190	200	175	186	173	155	165
12	214	193	205	208	193	202	210	186	199	171	155	162
13	212	195	204	208	190	200	206	184	199	163	144	155
14	224	201	211	215	193	204	196	182	189	166	146	154
15	224	201	214	215	195	206	189	127	141	182	159	169
16	216	199	207	208	194	200	161	141	152	188	172	180
17	226	197	212	222	199	211	169	151	161	186	175	181
18	224	206	215	266	173	211	179	162	169	181	105	128
19	226	207	215	184	168	174	176	149	166	147	129	139
20	237	208	225	211	172	188	182	155	169	164	144	151
21	235	207	219	173	156	161	184	172	178	168	151	161
22	232	208	216	174	161	167	184	170	177	174	161	166
23	241	222	229	176	167	172	194	168	179	184	166	175
24	239	220	229	184	169	174	199	180	189	186	172	180
25	243	227	233	193	167	181	201	178	189	195	173	185
26	245	222	235	195	117	177	203	175	187	203	183	192
27	236	217	225	145	114	130	207	186	196	202	183	192
28	245	216	229	157	141	149	196	131	160	205	188	199
29	---	---	---	162	148	154	161	130	143	211	195	202
30	---	---	---	176	150	165	165	148	157	224	197	208
31	---	---	---	179	166	173	---	---	---	228	211	220
MONTH	272	187	218	266	114	186	210	127	174	228	105	168

SWATARA CREEK BASIN

01571820 SWATARA CREEK NEAR RAVINE, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	227	212	220	268	250	258	330	305	317	324	260	295
2	237	218	227	280	249	266	346	325	334	303	278	292
3	242	221	233	279	261	272	342	321	330	327	288	304
4	240	219	232	289	269	278	343	316	329	345	279	312
5	243	223	233	298	276	285	344	316	332	344	312	325
6	238	179	221	296	277	286	340	301	322	336	308	322
7	210	166	186	302	275	289	343	311	327	331	306	319
8	230	198	216	304	284	296	349	319	331	326	303	313
9	236	219	229	303	272	290	343	316	327	342	311	326
10	255	224	237	299	265	281	346	322	334	337	311	321
11	256	235	246	303	286	293	340	318	327	326	308	316
12	259	238	248	306	287	296	329	307	318	369	309	349
13	250	215	231	320	294	305	338	312	325	361	321	341
14	247	187	216	320	293	304	335	310	326	338	308	323
15	214	182	198	315	292	300	333	230	311	339	209	294
16	230	205	217	317	302	310	323	250	300	238	147	185
17	245	220	232	317	298	308	325	300	313	235	192	212
18	246	229	237	318	296	307	327	304	313	249	232	240
19	247	190	231	348	305	327	343	316	331	261	237	248
20	241	176	219	346	314	331	355	329	344	270	251	261
21	257	231	244	344	316	329	341	316	329	282	268	275
22	262	246	255	346	323	334	344	323	335	286	267	275
23	263	245	254	338	258	321	333	282	309	267	212	238
24	278	251	262	325	291	307	322	285	306	285	250	269
25	278	254	266	332	310	321	326	303	315	288	257	274
26	270	251	260	328	296	309	327	302	312	290	238	275
27	272	186	249	325	302	312	361	305	325	244	114	178
28	221	173	194	314	280	299	361	314	340	189	69	136
29	252	212	233	314	286	297	330	273	296	233	181	204
30	262	244	255	328	309	318	314	275	293	238	218	229
31	---	---	---	327	305	315	320	297	307	---	---	---
MONTH	278	166	233	348	249	301	361	230	321	369	69	275
YEAR	376	69	250									

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	6.9	6.6	6.8	6.8	6.6	6.7	6.8	6.6	6.7	6.9	6.7	6.8
2	6.9	6.8	6.9	6.8	6.6	6.7	6.8	6.7	6.7	6.9	6.6	6.7
3	6.9	6.7	6.8	6.8	6.7	6.7	6.8	6.6	6.7	6.9	6.7	6.8
4	6.9	6.7	6.8	6.8	6.6	6.7	6.7	6.6	6.6	7.0	6.8	6.9
5	6.9	6.8	6.8	7.0	6.6	6.8	6.8	6.6	6.7	7.0	6.8	6.9
6	6.9	6.7	6.7	7.0	6.4	6.9	6.8	6.6	6.7	7.0	6.8	6.9
7	6.8	6.6	6.8	7.0	6.7	6.9	6.7	6.6	6.7	7.0	6.9	6.9
8	6.9	6.8	6.8	7.1	6.8	7.0	6.8	6.6	6.7	7.2	6.9	7.1
9	6.8	6.5	6.6	7.1	6.9	7.0	6.8	6.5	6.7	7.3	7.2	7.2
10	6.8	6.6	6.7	7.0	6.7	6.9	6.6	6.4	6.5	7.3	7.1	7.2
11	6.8	6.7	6.8	7.1	6.8	7.0	6.6	6.5	6.6	7.2	7.1	7.2
12	6.8	6.5	6.6	7.1	6.9	7.0	6.6	6.4	6.5	7.2	7.0	7.1
13	6.7	6.6	6.6	7.0	6.8	6.9	6.6	6.4	6.4	7.1	6.9	7.0
14	6.7	6.6	6.7	7.1	6.8	7.0	6.7	6.5	6.6	6.9	6.8	6.9
15	6.8	6.6	6.7	7.1	7.0	7.0	6.6	6.4	6.5	6.9	6.8	6.8
16	6.9	6.7	6.8	7.1	6.9	6.9	6.6	6.3	6.4	6.8	6.6	6.7
17	6.9	6.7	6.8	7.1	6.9	7.0	6.6	6.4	6.5	6.7	6.6	6.6
18	6.8	6.7	6.7	7.1	6.9	7.0	6.7	6.5	6.6	---	---	---
19	6.9	6.8	6.8	7.0	6.8	6.9	6.8	6.6	6.7	---	---	---
20	6.9	6.6	6.8	7.1	6.9	7.0	6.8	6.6	6.7	---	---	---
21	6.8	6.6	6.7	7.1	6.9	7.0	6.7	6.5	6.6	6.9	6.8	6.8
22	6.9	6.8	6.8	7.0	6.8	6.9	6.7	6.5	6.6	6.8	6.7	6.8
23	6.9	6.7	6.8	7.0	6.8	6.9	6.7	6.6	6.6	6.7	6.6	6.6
24	6.8	6.6	6.7	7.0	6.9	7.0	6.7	6.5	6.6	7.0	6.7	6.8
25	6.9	6.8	6.8	7.0	6.6	6.9	6.6	6.4	6.5	6.8	6.6	6.7
26	6.9	6.6	6.8	6.7	6.5	6.6	6.7	6.5	6.6	6.6	6.6	6.6
27	6.7	6.6	6.6	6.9	6.6	6.7	6.6	6.4	6.5	6.7	6.6	6.6
28	6.8	6.7	6.7	6.8	6.4	6.7	6.7	6.4	6.5	6.8	6.7	6.7
29	6.8	6.5	6.7	6.9	6.7	6.8	6.9	6.6	6.7	6.9	6.7	6.8
30	6.8	6.6	6.7	6.9	6.7	6.8	6.9	6.5	6.7	6.9	6.8	6.9
31	6.8	6.7	6.8	---	---	---	6.9	6.6	6.7	6.9	6.8	6.9
MAX	6.9	6.8	6.9	7.1	7.0	7.0	6.9	6.7	6.7	7.3	7.2	7.2
MIN	6.7	6.5	6.6	6.7	6.4	6.6	6.6	6.3	6.4	6.6	6.6	6.6

SWATARA CREEK BASIN

01571820 SWATARA CREEK NEAR RAVINE, PA--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	6.9	6.8	6.8	6.7	6.6	6.6	6.7	6.6	6.7	6.6	6.5	6.5
2	6.8	6.7	6.7	6.8	6.7	6.7	6.7	6.6	6.6	6.8	6.4	6.5
3	6.7	6.6	6.7	6.9	6.6	6.7	6.7	6.6	6.6	6.5	6.4	6.4
4	6.7	6.6	6.7	6.6	6.5	6.6	6.6	6.5	6.5	6.4	6.3	6.4
5	6.7	6.7	6.7	6.6	6.5	6.6	6.5	6.4	6.5	6.6	6.4	6.4
6	6.7	6.6	6.6	6.6	6.4	6.5	6.6	6.5	6.5	6.7	6.5	6.6
7	6.8	6.6	6.7	6.8	6.6	6.7	6.5	6.4	6.5	6.6	6.6	6.6
8	6.8	6.7	6.7	6.9	6.7	6.9	6.6	6.5	6.5	6.6	6.6	6.6
9	6.7	6.6	6.7	7.0	6.8	6.9	6.7	6.6	6.6	6.6	6.5	6.6
10	7.0	6.7	6.8	7.3	6.9	7.0	6.7	6.5	6.6	6.5	6.4	6.5
11	7.0	6.6	6.7	6.9	6.8	6.9	6.8	6.6	6.7	6.5	6.4	6.5
12	6.6	6.5	6.5	6.8	6.7	6.8	6.8	6.8	6.8	6.7	6.5	6.5
13	6.7	6.6	6.6	6.9	6.8	6.8	6.9	6.7	6.9	6.7	6.4	6.5
14	6.7	6.6	6.6	6.9	6.7	6.8	6.9	6.7	6.8	6.8	6.5	6.6
15	6.8	6.5	6.6	6.8	6.7	6.8	7.2	6.6	6.7	6.6	6.5	6.5
16	6.9	6.8	6.8	6.8	6.8	6.8	6.8	6.6	6.7	6.7	6.5	6.7
17	6.9	6.7	6.8	6.8	6.7	6.7	6.8	6.7	6.8	6.8	6.7	6.8
18	6.8	6.7	6.8	6.8	6.6	6.7	6.8	6.7	6.8	6.8	6.4	6.6
19	7.0	6.8	6.8	6.6	6.6	6.6	7.0	6.7	6.8	6.6	6.5	6.6
20	6.9	6.8	6.8	6.7	6.5	6.6	6.9	6.6	6.8	6.6	6.5	6.6
21	6.9	6.8	6.9	6.6	6.4	6.5	6.9	6.9	6.9	6.5	6.5	6.5
22	6.9	6.8	6.8	6.5	6.4	6.5	7.1	6.8	6.9	6.5	6.4	6.5
23	6.8	6.7	6.7	6.5	6.3	6.4	6.8	6.8	6.8	6.5	6.4	6.4
24	6.9	6.7	6.8	6.6	6.5	6.5	6.8	6.7	6.8	6.6	6.4	6.5
25	6.9	6.7	6.8	6.6	6.5	6.5	6.8	6.7	6.8	6.6	6.5	6.5
26	6.8	6.6	6.7	6.7	6.5	6.6	6.7	6.6	6.7	6.6	6.5	6.5
27	6.8	6.8	6.8	6.5	6.3	6.4	6.6	6.5	6.6	6.7	6.5	6.6
28	6.8	6.6	6.7	6.4	6.3	6.3	6.7	6.5	6.6	6.6	6.5	6.6
29	---	---	---	6.7	6.2	6.6	6.6	6.4	6.5	6.7	6.5	6.6
30	---	---	---	6.7	6.6	6.6	6.6	6.4	6.5	6.8	6.6	6.7
31	---	---	---	6.7	6.6	6.7	---	---	---	6.8	6.7	6.8
MAX	7.0	6.8	6.9	7.3	6.9	7.0	7.2	6.9	6.9	6.8	6.7	6.8
MIN	6.6	6.5	6.5	6.4	6.2	6.3	6.5	6.4	6.5	6.4	6.3	6.4
	JUNE			JULY			AUGUST			SEPTEMBER		
1	6.9	6.8	6.8	7.1	6.9	7.0	7.5	7.0	7.3	7.5	7.4	7.5
2	6.8	6.7	6.8	7.0	6.4	6.9	7.4	6.9	7.1	7.6	7.4	7.4
3	6.8	6.7	6.7	7.0	6.4	6.8	7.5	7.0	7.3	7.5	6.8	7.3
4	6.9	6.8	6.8	7.1	6.6	6.9	7.5	6.9	7.3	7.6	6.7	7.3
5	6.8	6.6	6.8	7.0	6.6	6.9	7.4	6.9	7.1	7.7	7.4	7.5
6	7.0	6.7	6.8	7.2	6.8	7.0	7.4	7.1	7.3	7.5	7.3	7.3
7	6.9	6.7	6.8	7.2	6.9	7.0	7.3	7.0	7.2	7.5	7.3	7.4
8	6.9	6.7	6.8	7.1	6.7	6.9	7.4	7.0	7.3	7.6	7.4	7.4
9	7.0	6.9	6.9	7.2	6.8	7.0	7.5	7.1	7.4	7.4	7.2	7.3
10	6.9	6.5	6.9	7.1	6.8	7.0	7.4	7.2	7.3	7.5	7.2	7.4
11	7.0	6.7	6.9	7.1	6.9	7.0	7.5	7.0	7.3	7.5	7.3	7.4
12	7.0	6.8	6.9	7.2	7.0	7.1	7.5	7.0	7.3	7.6	7.2	7.5
13	6.9	6.7	6.8	7.1	6.9	7.0	7.4	6.8	7.2	7.8	7.5	7.5
14	7.0	6.8	6.8	7.1	6.9	7.0	7.5	6.8	7.3	7.9	7.4	7.5
15	6.9	6.8	6.8	7.2	6.9	7.1	7.5	7.1	7.3	7.4	7.2	7.3
16	6.8	6.7	6.8	7.1	6.8	6.9	7.3	6.8	7.2	7.4	6.8	6.9
17	6.9	6.7	6.8	7.8	6.9	7.1	7.5	6.9	7.3	7.0	6.7	6.8
18	6.9	6.8	6.8	7.8	7.0	7.5	7.5	7.0	7.3	7.0	6.8	6.9
19	6.9	6.6	6.8	7.7	7.1	7.4	7.4	7.0	7.2	7.0	7.0	7.0
20	7.2	6.8	6.9	7.9	7.4	7.6	7.6	7.1	7.4	7.0	6.9	7.0
21	7.0	6.7	6.9	7.7	7.3	7.6	7.7	7.3	7.4	7.1	6.8	7.0
22	7.0	6.7	6.8	7.8	7.2	7.5	7.6	7.1	7.4	7.3	7.0	7.2
23	7.0	6.8	6.9	7.9	7.2	7.6	7.7	7.2	7.5	7.2	6.9	7.0
24	6.9	6.6	6.8	7.6	7.3	7.5	7.6	7.2	7.5	7.0	6.8	6.9
25	7.1	6.7	6.9	7.8	7.4	7.6	7.7	7.3	7.4	7.5	7.0	7.3
26	7.0	6.8	6.9	7.7	7.5	7.6	7.8	7.4	7.5	7.5	7.2	7.3
27	7.1	6.6	6.8	7.5	7.3	7.4	7.8	7.4	7.5	7.3	6.7	7.0
28	6.9	6.7	6.8	7.5	7.0	7.4	7.8	7.4	7.5	6.9	6.7	6.9
29	7.0	6.8	6.9	7.5	6.8	7.3	7.6	7.5	7.5	7.0	6.8	6.9
30	7.0	6.7	6.8	7.4	6.9	7.3	7.6	7.3	7.4	7.0	6.8	6.9
31	---	---	---	7.5	7.0	7.3	7.7	7.3	7.5	---	---	---
MAX	7.2	6.9	6.9	7.9	7.5	7.6	7.8	7.5	7.5	7.9	7.5	7.5
MIN	6.8	6.5	6.7	7.0	6.4	6.8	7.3	6.8	7.1	6.9	6.7	6.8
YEAR	MAX			MAXIMUM	7.9	MINIMUM	6.4					
	MIN			MAXIMUM	7.5	MINIMUM	6.2					
	MEDIAN			MAXIMUM	7.6	MINIMUM	6.3					

SWATARA CREEK BASIN

01571820 SWATARA CREEK NEAR RAVINE, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.5	10.5	11.5	10.0	6.0	8.5	12.0	9.0	11.0	1.0	0.0	0.5
2	14.5	10.5	12.5	13.0	8.5	10.5	9.0	7.0	8.0	2.0	0.5	1.0
3	15.5	12.0	14.0	13.5	10.0	12.0	7.0	5.0	6.0	1.5	0.5	0.5
4	16.0	12.0	14.0	11.0	8.0	9.5	7.5	5.0	6.5	1.5	0.5	1.0
5	16.0	12.0	14.0	9.5	6.0	7.5	10.0	7.5	8.5	2.0	1.0	1.5
6	14.5	11.5	13.5	8.5	5.5	6.5	10.0	7.5	9.0	2.0	0.0	1.0
7	11.5	8.5	10.0	10.5	6.0	8.0	10.5	8.0	9.5	1.5	0.0	1.0
8	10.0	7.0	8.5	10.0	6.5	8.5	8.0	5.5	6.5	2.5	0.5	1.5
9	9.5	5.5	7.5	9.5	6.5	8.5	7.0	5.0	6.0	2.5	0.5	1.5
10	11.0	6.5	9.0	8.5	5.5	7.0	5.5	3.5	4.5	4.0	2.0	3.0
11	13.0	8.5	10.5	8.5	5.0	7.0	7.0	5.0	6.0	4.0	3.0	3.5
12	14.0	10.5	12.5	6.5	3.0	5.0	6.0	3.5	5.0	4.0	2.5	3.0
13	16.0	12.0	14.0	6.5	3.0	4.5	8.0	6.0	7.0	3.5	2.5	3.0
14	15.0	13.5	14.5	6.5	2.5	4.5	9.5	8.0	8.5	3.5	1.5	2.5
15	15.0	11.5	13.5	9.0	5.5	7.0	9.0	5.5	7.0	4.0	3.0	3.5
16	12.5	9.0	11.0	10.5	6.5	8.5	5.5	4.0	5.0	4.0	2.5	3.5
17	11.0	8.5	10.0	8.5	6.0	7.5	7.0	5.5	6.0	4.5	3.0	3.5
18	10.5	7.0	8.5	7.5	5.0	6.0	7.5	6.0	7.0	---	---	---
19	10.0	6.0	8.5	7.5	5.0	6.5	7.0	6.0	6.5	---	---	---
20	12.5	8.5	10.5	7.5	5.0	6.5	6.0	4.5	5.5	---	---	---
21	13.0	8.5	10.5	5.5	3.0	4.0	5.0	4.0	4.5	2.0	0.5	1.5
22	13.5	10.5	12.0	5.5	2.5	4.0	4.0	3.0	3.5	4.0	2.0	2.5
23	13.5	11.0	12.5	6.0	3.0	4.5	5.0	2.5	3.5	4.5	2.0	3.0
24	16.5	12.5	14.5	8.5	4.5	6.5	5.5	4.0	4.5	4.0	3.5	4.0
25	15.0	11.5	13.5	11.5	8.5	10.5	4.0	2.0	3.0	4.0	2.5	3.5
26	11.5	8.0	9.5	10.5	9.0	9.5	2.5	1.0	1.5	4.5	1.5	3.0
27	9.0	7.0	8.0	9.0	8.0	8.5	1.5	0.5	1.0	4.5	1.5	3.0
28	9.0	5.5	7.5	11.0	9.0	10.0	2.0	0.5	1.5	5.5	2.5	4.0
29	8.5	4.5	7.0	10.5	10.0	10.0	2.5	1.0	1.5	6.5	3.5	5.5
30	10.0	7.0	8.5	12.5	10.0	11.0	1.5	0.5	0.5	8.0	6.0	7.0
31	8.5	6.5	7.5	---	---	---	1.0	0.0	0.5	7.0	5.5	6.0
MONTH	16.5	4.5	10.9	13.5	2.5	7.6	12.0	0.0	5.3	8.0	0.0	2.8
	FEBRUARY			MARCH			APRIL			MAY		
1	6.5	4.5	5.5	5.5	1.0	3.0	10.5	8.0	9.0	12.0	8.5	10.5
2	4.5	2.5	3.5	5.0	1.5	3.5	10.5	7.0	8.5	12.0	10.5	11.0
3	4.0	2.0	3.0	7.0	4.5	5.5	11.0	7.5	9.0	12.0	10.0	11.0
4	3.5	0.5	2.5	4.5	1.0	3.0	9.0	6.0	7.5	12.5	8.5	10.5
5	1.5	0.0	0.5	3.0	0.5	1.5	8.0	5.5	6.5	14.0	9.5	11.5
6	4.0	1.0	2.5	6.5	1.5	4.0	8.0	5.5	6.5	13.5	10.0	12.0
7	5.0	3.0	3.5	7.0	3.5	5.0	9.0	4.5	6.5	15.0	12.0	13.5
8	5.5	2.5	4.0	8.5	4.0	6.5	10.0	6.5	8.0	15.0	12.5	13.5
9	6.0	3.0	4.5	10.0	7.0	8.5	11.5	9.0	10.0	13.5	11.5	12.5
10	6.5	4.5	5.5	10.0	3.5	6.5	12.5	9.0	11.0	15.0	11.5	13.0
11	6.5	2.5	4.5	5.5	2.5	4.0	12.5	7.5	10.0	14.5	11.0	12.5
12	4.0	1.5	3.0	7.0	3.5	5.0	10.5	8.0	9.5	13.5	12.0	12.5
13	4.5	2.0	3.5	6.5	5.0	5.5	12.0	10.0	11.0	13.0	12.5	12.5
14	3.5	0.5	2.0	10.5	6.5	8.0	14.0	10.5	12.5	12.5	10.5	11.5
15	4.5	1.5	3.0	10.0	7.5	8.5	14.0	11.5	13.0	13.0	9.5	11.5
16	6.5	3.5	4.5	10.0	6.5	9.0	17.0	12.0	14.5	15.0	10.0	12.5
17	5.5	3.0	4.5	6.5	4.5	5.0	17.5	13.0	15.0	16.0	13.0	14.5
18	4.5	1.5	3.0	5.0	4.0	4.5	17.0	14.0	15.5	13.5	10.5	12.0
19	5.0	1.0	3.5	6.5	5.0	5.5	17.5	13.5	15.0	11.5	9.5	10.5
20	7.5	4.5	6.0	6.0	4.0	5.0	14.5	12.5	14.0	11.0	9.0	10.0
21	8.5	7.0	7.5	8.0	4.5	6.0	12.5	10.0	11.0	11.0	8.5	10.0
22	7.0	5.5	6.5	5.5	3.0	4.0	11.0	9.5	10.0	12.5	8.5	10.5
23	7.0	4.0	5.0	6.5	2.5	4.5	12.0	8.0	9.5	13.5	9.0	11.5
24	6.0	2.0	4.0	7.0	4.0	5.5	12.5	7.5	10.0	15.0	11.0	13.0
25	7.0	2.5	5.0	6.5	6.0	6.0	10.5	9.0	9.5	14.0	12.5	13.5
26	8.0	4.0	6.0	6.0	5.0	5.5	12.0	7.5	9.5	14.5	12.5	13.5
27	6.5	2.5	4.5	6.0	5.0	5.5	12.5	7.5	10.0	15.5	13.0	14.0
28	5.0	1.5	3.0	8.0	5.0	6.5	11.5	10.0	10.5	16.0	13.5	15.0
29	---	---	---	9.5	6.0	7.5	11.0	9.0	10.0	16.5	14.0	15.0
30	---	---	---	11.0	8.5	9.5	10.5	8.5	9.5	18.0	14.0	16.0
31	---	---	---	10.0	8.5	9.0	---	---	---	18.0	14.0	16.0
MONTH	8.5	0.0	4.1	11.0	0.5	5.7	17.5	4.5	10.4	18.0	8.5	12.5

