

SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA
(Swatara Creek Project)

LOCATION.--Lat 40°39'34", long 76°20'50", Schuylkill County, Hydrologic Unit 02050305, on left bank 500 ft upstream from bridge on U.S. Highway 209, 0.5 mi north of Newtown.

DRAINAGE AREA.--2.58 mi².

PERIOD OF RECORD.--August 1995 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1996 to current year.

pH: October 1996 to current year.

WATER TEMPERATURE: October 1996 to current year.

INSTRUMENTATION.--Water-quality monitor (in situ system).

REMARKS.--Specific conductance records rated good except for period Mar. 3 to Apr. 17, which is fair. pH and water temperature records rated good. Interruptions in the record were due to malfunctions of the instrumentation. Fixed-time, base flow, and stormflow samples collected. Analytical data from samples are used to determine effectiveness of various limestone treatment systems used to aid in the remediation efforts of acid mine drainage. Data collected prior to construction dates of upstream treatment, Nov. 14, 1995, are considered untreated water. 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 350-392. Figure 9 shows the location of sites sampled as part of the Swatara Creek Project.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 414 microsiemens, Aug. 13, 1999; minimum, 42 microsiemens, Nov. 8, 1996.

pH: Maximum, 7.7, Mar. 21, 1997; minimum, 3.3, Jan. 1, 1997.

WATER TEMPERATURE: Maximum, 21.0°C, July 15-18, Aug. 16, 1997, Aug. 11, 1998, July 5, Aug. 1, 14, 1999; minimum, 0.0°C, many days during winters.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 304 microsiemens, Sept. 19; minimum, 71 microsiemens, July 15.

pH: Maximum, 6.9, June 13, 21; minimum, 4.4, Mar. 23.

WATER TEMPERATURE: Maximum, 20.5°C, June 26; minimum 0.0°C, many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND- ARD UNITS) (00403)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT											
18...	1400	80020	1028	3.2	97	10.7	6.1	6.5	141	11.0	8.49
20...	0930	9813	1028	3.3	--	--	5.8	--	141	9.4	--
DEC											
06...	1145	80020	1028	3.9	92	10.5	6.3	6.8	116	9.4	7.21
JAN											
19...	1115	9813	1028	3.0	104	14.8	5.8	--	140	.9	7.46
MAR											
03...	1045	9813	1028	6.9	96	13.6	5.3	--	140	5.3	6.49
APR											
17...	1130	9813	1028	6.2	99	12.3	5.3	5.0	139	8.9	6.59
JUN											
13...	1200	9813	1028	3.0	100	10.3	6.2	6.0	133	14.1	9.43
AUG											
02...	1315	9813	1028	1.8	98	9.0	5.7	5.8	158	19.5	10.1
SEP											
13...	1145	9813	1028	2.1	96	9.4	5.3	5.3	156	17.5	9.78

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	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 (MG/L AS CACO3) (00435)	ACIDITY TOTAL HEATED (MG/L AS CACO3) (70508)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ANC WATER UNFLTRD FET LAB MG/L AS CACO3 (00417)
OCT											
18...	--	5.48	--	--	--	6.1	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
06...	--	4.17	--	--	--	5.8	--	5.9	--	4	--
JAN											
19...	7.50	5.85	6.01	1.1	<1.0	5.4	5.2	--	7.4	--	3
MAR											
03...	6.52	6.05	6.13	<1.0	<1.0	5.9	5.9	--	12	--	2
APR											
17...	6.45	5.69	5.65	<1.0	<1.0	5.7	5.6	--	12	--	2
JUN											
13...	8.93	4.93	4.67	1.0	<1.0	7.7	7.3	--	2.8	--	5
AUG											
02...	9.87	7.30	7.30	<1.0	<1.0	5.6	5.6	--	14	--	4
SEP											
13...	9.64	5.83	5.85	2.1	2.4	5.8	5.6	--	9.4	--	3

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	OXID- RED- DUCTION POTEN- TIAL (MV) (00090)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106)	ALUM- INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)
OCT										
18...	9.2	43.3	395	--	57	--	100	--	407	--
20...	--	--	--	--	--	--	--	--	--	--
DEC										
06...	8.8	35.8	436	--	43	--	100	--	315	--
JAN										
19...	8.0	50.1	365	<2	329	922	280	650	392	410
MAR										
03...	7.8	53.1	449	16	684	1080	800	1060	461	468
APR										
17...	8.9	47.0	439	12	356	791	870	1410	473	471
JUN										
13...	11.3	40.3	423	12	<200	636	140	800	404	390
AUG										
02...	8.1	57.0	425	18	<200	482	130	420	391	393
SEP										
13...	44.2	42.7	445	42	299	1800	190	1740	458	466

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SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	159	127	146	161	160	161	116	110	113	146	142	144
2	160	152	157	161	93	148	120	113	117	146	140	143
3	158	151	156	131	97	117	123	118	120	143	139	141
4	154	115	137	139	131	136	126	121	123	143	109	133
5	136	116	128	141	139	140	128	124	126	136	111	125
6	142	135	138	141	140	141	129	110	119	141	133	138
7	146	140	143	142	141	142	129	118	124	141	136	139
8	147	142	145	143	142	142	133	127	130	143	138	140
9	147	141	144	142	141	141	135	130	132	142	137	140
10	146	95	112	142	141	141	135	123	129	141	78	117
11	119	108	114	144	141	142	133	123	129	111	89	103
12	124	118	120	145	144	145	135	131	133	114	109	112
13	123	117	121	144	143	143	136	123	133	118	112	114
14	123	114	118	144	143	144	123	76	105	127	117	123
15	127	121	124	---	---	---	104	88	99	130	124	128
16	130	125	127	---	---	---	111	101	105	133	126	129
17	133	127	129	---	---	---	119	106	113	147	130	140
18	148	129	136	149	145	147	127	116	122	149	138	144
19	---	---	---	150	145	147	132	125	128	144	138	142
20	---	---	---	149	142	146	132	110	124	142	137	140
21	146	142	144	145	138	142	126	111	120	152	139	145
22	146	146	146	151	142	147	131	124	128	155	146	150
23	149	146	147	152	144	148	134	128	131	150	145	147
24	152	149	150	152	140	146	136	131	133	149	145	146
25	154	152	153	140	113	124	138	133	136	149	141	145
26	154	154	154	127	77	115	138	133	135	149	143	146
27	157	154	156	102	77	92	138	133	136	157	147	152
28	159	157	158	106	101	104	140	135	139	160	153	156
29	159	157	158	108	105	106	143	137	140	159	153	155
30	160	158	159	112	105	109	143	139	141	159	148	154
31	160	159	160	---	---	---	145	140	142	150	144	148
MONTH	160	95	141	161	77	135	145	76	126	160	78	138
	FEBRUARY			MARCH			APRIL			MAY		
1	153	148	150	138	132	136	138	133	135	148	142	146
2	156	150	153	140	135	138	138	134	136	147	137	142
3	157	151	154	142	137	140	138	132	136	150	144	147
4	155	150	153	145	139	141	133	118	123	151	146	148
5	157	151	153	144	140	142	132	124	128	153	145	149
6	157	153	155	146	140	143	134	128	131	154	147	150
7	158	153	155	148	144	145	135	131	133	154	147	151
8	170	149	159	149	144	146	136	109	129	157	149	153
9	173	148	161	149	145	148	119	108	114	157	151	154
10	160	149	156	152	146	149	126	116	121	157	112	143
11	150	140	145	153	118	138	133	125	129	146	120	134
12	155	140	146	128	94	115	137	130	134	150	143	145
13	172	142	155	132	126	129	139	134	137	150	124	144
14	151	96	119	139	131	134	141	136	139	142	122	134
15	129	106	117	143	137	140	141	138	140	148	139	144
16	129	122	126	145	132	142	143	139	141	150	145	148
17	131	124	127	140	116	125	145	129	137	152	146	149
18	131	122	127	143	136	140	138	132	135	154	147	149
19	132	126	129	146	141	143	142	135	139	150	116	131
20	136	130	133	150	142	146	143	137	141	128	109	116
21	140	134	137	149	86	126	142	125	133	124	114	120
22	142	132	138	154	92	125	134	128	131	124	115	121
23	135	121	131	158	142	149	136	131	133	119	108	116
24	129	111	123	144	137	140	139	133	136	110	96	102
25	121	98	112	139	133	136	139	134	137	109	101	104
26	105	100	103	137	131	134	140	136	138	115	107	111
27	109	98	106	136	101	132	139	132	136	121	114	118
28	121	81	104	120	93	110	141	136	138	128	120	123
29	136	118	128	131	119	126	145	139	142	134	126	129
30	---	---	---	134	129	132	150	140	144	143	130	135
31	---	---	---	137	131	134	---	---	---	143	137	139
MONTH	173	81	136	158	86	136	150	108	134	157	96	135

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SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	153	112	139	147	136	140	236	85	201	293	113	183
2	152	113	137	153	139	146	207	110	155	246	187	223
3	154	145	149	156	147	150	223	107	195	260	245	252
4	155	150	152	155	142	147	228	160	202	267	256	262
5	155	131	147	165	148	153	241	223	232	274	263	269
6	141	86	105	168	158	162	244	223	235	281	272	276
7	136	107	121	173	162	166	249	217	236	286	275	280
8	149	119	137	176	167	171	260	244	251	287	280	282
9	158	127	146	263	169	176	265	252	258	288	280	284
10	164	152	156	263	176	184	271	260	265	292	279	286
11	165	138	159	191	180	185	274	265	270	291	282	287
12	155	133	141	196	189	191	276	259	271	291	128	279
13	170	132	143	198	191	194	277	255	266	227	103	161
14	141	124	133	204	111	187	279	270	273	268	226	254
15	158	119	136	173	71	129	282	270	276	281	261	273
16	157	114	137	189	98	144	284	273	278	290	278	285
17	160	147	152	233	188	213	287	277	281	296	286	292
18	160	149	155	252	231	241	289	277	282	301	293	297
19	167	151	156	257	245	251	286	278	282	304	138	262
20	170	133	159	266	253	258	290	280	285	258	170	217
21	171	92	155	271	197	257	294	284	287	277	256	268
22	136	92	113	258	180	226	293	282	289	288	271	279
23	149	133	140	268	253	258	295	260	281	294	282	287
24	155	145	148	269	258	265	288	259	277	294	284	290
25	156	83	146	274	264	267	290	280	283	296	244	287
26	128	90	100	274	264	269	293	282	286	275	202	226
27	118	101	111	274	260	267	293	285	289	266	217	243
28	130	117	122	273	264	268	293	285	289	281	263	273
29	131	121	127	274	266	269	296	287	291	298	276	284
30	140	125	131	274	103	193	297	283	290	297	281	292
31	---	---	---	228	107	178	296	286	291	---	---	---
MONTH	171	83	138	274	71	203	297	85	263	304	103	264
YEAR	304	71	163									

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	---	---	---	5.9	5.9	5.9	6.4	6.4	6.4	6.1	6.1	6.1
2	---	---	---	6.1	5.6	5.9	6.4	6.3	6.4	6.1	6.1	6.1
3	---	---	---	5.8	5.5	5.7	6.3	6.3	6.3	6.1	6.1	6.1
4	---	---	---	5.9	5.8	5.8	6.3	6.2	6.3	6.4	6.0	6.1
5	---	---	---	5.9	5.8	5.8	6.2	6.2	6.2	6.2	6.0	6.1
6	---	---	---	5.9	5.8	5.9	6.3	5.9	6.2	6.2	6.2	6.2
7	---	---	---	5.9	5.8	5.8	6.1	6.0	6.1	6.2	6.2	6.2
8	---	---	---	5.8	5.8	5.8	6.2	6.1	6.2	6.2	6.2	6.2
9	---	---	---	5.8	5.8	5.8	6.2	6.2	6.2	6.2	6.1	6.2
10	---	---	---	5.8	5.7	5.8	6.2	6.1	6.2	6.4	5.5	6.1
11	---	---	---	5.8	5.8	5.8	6.2	6.1	6.1	6.0	5.6	6.0
12	---	---	---	5.8	5.8	5.8	6.2	6.2	6.2	6.2	6.0	6.1
13	---	---	---	5.8	5.8	5.8	6.2	6.2	6.2	6.1	6.0	6.1
14	---	---	---	5.8	5.8	5.8	6.3	5.4	6.0	6.1	6.0	6.1
15	---	---	---	---	---	---	5.9	5.5	5.9	6.0	5.9	6.0
16	---	---	---	---	---	---	6.1	5.8	5.9	5.9	5.8	5.9
17	---	---	---	---	---	---	5.9	5.8	5.9	5.9	5.7	5.8
18	---	---	---	6.2	6.2	6.2	5.9	5.8	5.9	5.8	5.7	5.8
19	---	---	---	6.2	6.2	6.2	5.8	5.8	5.8	5.8	5.7	5.8
20	---	---	---	6.3	6.1	6.2	5.9	5.7	5.8	5.8	5.7	5.8
21	5.8	5.7	5.8	6.3	6.1	6.1	5.8	5.7	5.8	5.8	5.7	5.8
22	5.9	5.8	5.8	6.1	6.1	6.1	5.9	5.8	5.9	5.8	5.7	5.7
23	5.9	5.8	5.8	6.1	6.1	6.1	5.9	5.9	5.9	5.8	5.8	5.8
24	5.9	5.8	5.9	6.2	6.1	6.1	6.0	5.9	6.0	5.8	5.8	5.8
25	5.9	5.9	5.9	6.4	6.0	6.1	6.0	6.0	6.0	5.9	5.8	5.8
26	5.9	5.9	5.9	6.4	5.5	6.1	6.0	6.0	6.0	5.8	5.8	5.8
27	5.9	5.9	5.9	6.1	5.4	5.8	6.0	6.0	6.0	5.9	5.7	5.8
28	5.9	5.9	5.9	6.4	6.1	6.3	6.1	6.0	6.0	5.9	5.7	5.8
29	5.9	5.9	5.9	6.4	6.4	6.4	6.1	6.0	6.0	5.8	5.8	5.8
30	5.9	5.9	5.9	6.5	6.4	6.4	6.1	6.0	6.1	5.8	5.8	5.8
31	5.9	5.9	5.9	---	---	---	6.1	6.0	6.0	5.9	5.8	5.8
MAX	5.9	5.9	5.9	6.5	6.4	6.4	6.4	6.4	6.4	6.4	6.2	6.2
MIN	5.8	5.7	5.8	5.8	5.4	5.7	5.8	5.4	5.8	5.8	5.5	5.7

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0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.8	5.8	5.8	5.1	4.9	5.0	5.1	5.0	5.1	5.4	5.3	5.4
2	5.8	5.8	5.8	5.2	5.1	5.1	5.2	5.1	5.2	5.4	5.3	5.3
3	5.8	5.8	5.8	5.3	5.2	5.2	5.3	5.2	5.2	5.4	5.3	5.3
4	5.8	5.8	5.8	5.4	5.3	5.3	5.4	5.1	5.2	5.3	5.2	5.3
5	5.8	5.8	5.8	5.4	5.4	5.4	5.4	5.2	5.3	5.3	5.2	5.3
6	5.8	5.7	5.8	5.5	5.4	5.4	5.4	5.3	5.4	5.3	5.2	5.3
7	5.8	5.7	5.7	5.5	5.4	5.4	5.4	5.4	5.4	5.3	5.2	5.2
8	5.8	5.6	5.7	5.5	5.4	5.4	5.5	5.3	5.4	5.3	5.2	5.3
9	5.8	5.6	5.7	5.5	5.0	5.4	5.6	5.2	5.3	5.4	5.3	5.3
10	5.8	5.7	5.7	5.5	5.4	5.5	5.2	5.0	5.1	5.6	5.3	5.4
11	5.8	5.7	5.7	5.8	5.3	5.5	5.0	5.0	5.0	5.4	5.3	5.4
12	5.8	5.7	5.7	5.6	5.1	5.3	5.0	5.0	5.0	5.4	5.4	5.4
13	5.8	5.6	5.7	5.5	5.4	5.5	5.2	5.0	5.1	5.5	5.3	5.4
14	5.9	5.7	5.8	5.5	5.4	5.4	5.2	5.1	5.2	5.5	5.4	5.4
15	6.0	5.8	5.9	5.4	5.3	5.4	5.3	5.2	5.2	5.4	5.4	5.4
16	6.1	6.0	6.0	5.4	5.3	5.4	5.3	5.2	5.3	5.5	5.4	5.4
17	6.1	6.0	6.0	5.5	5.2	5.2	5.3	5.2	5.3	5.5	5.4	5.4
18	6.0	5.9	6.0	5.4	5.3	5.4	5.4	5.3	5.4	5.4	5.4	5.4
19	5.9	5.8	5.9	5.4	5.3	5.4	5.5	5.4	5.4	5.6	5.4	5.4
20	5.8	5.7	5.7	5.4	5.3	5.4	5.5	5.4	5.4	5.6	5.4	5.4
21	5.7	5.6	5.7	5.7	5.1	5.4	5.6	5.4	5.5	5.4	5.4	5.4
22	5.7	5.6	5.7	5.7	4.5	4.8	5.5	5.4	5.5	5.6	5.4	5.4
23	6.1	5.6	5.7	4.5	4.4	4.5	5.5	5.5	5.5	5.5	5.4	5.4
24	6.1	5.7	5.8	4.7	4.5	4.6	5.5	5.4	5.5	5.4	5.3	5.3
25	5.9	5.4	5.7	4.9	4.7	4.7	5.5	5.4	5.5	5.4	5.3	5.3
26	5.5	5.4	5.5	5.0	4.9	4.9	5.5	5.5	5.5	5.4	5.4	5.4
27	5.4	5.1	5.3	5.8	5.0	5.1	5.5	5.5	5.5	5.4	5.3	5.4
28	5.5	5.0	5.1	5.4	4.9	5.1	5.5	5.3	5.4	5.3	5.3	5.3
29	5.0	4.9	4.9	4.9	4.8	4.9	5.4	5.3	5.3	5.3	5.3	5.3
30	---	---	---	4.9	4.8	4.8	5.4	5.3	5.3	5.3	5.3	5.3
31	---	---	---	5.0	4.9	4.9	---	---	---	5.4	5.2	5.3
MAX	6.1	6.0	6.0	5.8	5.4	5.5	5.6	5.5	5.5	5.6	5.4	5.4
MIN	5.0	4.9	4.9	4.5	4.4	4.5	5.0	5.0	5.0	5.3	5.2	5.2

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	5.9	5.1	5.3	6.4	6.3	6.3	6.3	5.0	5.3	6.0	5.0	5.5
2	5.9	5.0	5.2	6.4	6.3	6.3	5.7	5.3	5.6	5.6	5.4	5.5
3	5.4	5.3	5.3	6.4	6.3	6.3	6.2	5.1	5.4	5.4	5.3	5.3
4	5.4	5.3	5.4	6.3	6.2	6.2	5.7	5.3	5.6	5.3	5.3	5.3
5	6.0	5.4	5.7	6.3	6.1	6.2	5.3	5.2	5.3	5.3	5.3	5.3
6	6.1	5.1	5.3	6.4	6.3	6.3	5.3	5.2	5.2	5.3	5.3	5.3
7	5.8	5.3	5.6	6.4	6.4	6.4	5.3	5.1	5.2	5.3	5.3	5.3
8	6.1	5.8	5.9	6.4	6.4	6.4	5.1	5.1	5.1	5.3	5.2	5.3
9	6.3	5.8	6.0	6.4	6.4	6.4	5.1	5.0	5.1	5.3	5.2	5.2
10	6.0	5.9	6.0	6.4	6.4	6.4	5.1	5.1	5.1	5.2	5.2	5.2
11	6.2	5.7	6.0	6.5	6.4	6.5	5.1	5.0	5.1	5.2	5.2	5.2
12	6.2	5.4	5.8	6.5	6.5	6.5	5.1	5.0	5.1	5.2	5.0	5.2
13	6.9	5.8	6.0	6.5	6.5	6.5	5.1	5.1	5.1	6.1	5.1	5.4
14	6.1	5.8	5.8	6.6	5.9	6.5	5.1	5.0	5.1	5.5	5.4	5.5
15	6.5	5.6	5.9	6.8	5.2	6.1	5.1	5.0	5.1	5.4	5.4	5.4
16	6.5	5.5	5.7	5.8	5.5	5.8	5.0	5.0	5.0	5.4	5.3	5.4
17	6.4	6.3	6.4	5.8	5.6	5.7	5.1	5.0	5.1	5.4	5.3	5.4
18	6.5	6.3	6.4	5.6	5.4	5.5	5.1	5.0	5.1	5.3	5.3	5.3
19	6.8	6.4	6.5	5.4	5.3	5.4	5.1	5.1	5.1	5.8	5.1	5.3
20	6.6	6.2	6.5	5.3	5.3	5.3	5.1	5.1	5.1	5.6	5.4	5.4
21	6.9	5.1	6.6	5.5	5.1	5.3	5.1	5.1	5.1	5.4	5.4	5.4
22	6.4	5.3	6.1	5.8	5.2	5.4	5.1	5.1	5.1	5.4	5.3	5.4
23	6.5	6.4	6.4	5.2	5.2	5.2	5.1	5.0	5.1	5.4	5.3	5.3
24	6.5	6.4	6.5	5.2	5.2	5.2	5.1	5.1	5.1	5.3	5.3	5.3
25	6.7	5.4	6.5	5.2	5.1	5.2	5.1	5.1	5.1	5.3	5.2	5.3
26	6.4	5.3	5.5	5.1	5.1	5.1	5.1	5.1	5.1	5.6	5.2	5.4
27	6.3	5.6	6.0	5.1	5.1	5.1	5.1	5.1	5.1	5.6	5.5	5.5
28	6.4	6.3	6.3	5.1	5.1	5.1	5.1	5.1	5.1	5.5	5.4	5.4
29	6.3	6.3	6.3	5.1	5.1	5.1	5.1	5.1	5.1	5.4	5.4	5.4
30	6.3	6.2	6.3	6.2	5.0	5.4	5.1	5.1	5.1	5.4	5.3	5.4
31	---	---	---	5.5	5.2	5.4	5.1	5.1	5.1	---	---	---
MAX	6.9	6.4	6.6	6.8	6.5	6.5	6.3	5.3	5.6	6.1	5.5	5.5
MIN	5.4	5.0	5.2	5.1	5.0	5.1	5.0	5.0	5.0	5.2	5.0	5.2

YEAR	MAX	MINIMUM	6.9	4.5
	MIN	MAXIMUM	6.5	4.4
	MEDIAN	MAXIMUM	6.6	4.5

SWATARA CREEK BASIN

0157155010 SWATARA CREEK, SITE C1, AT NEWTOWN, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.0	11.0	12.0	12.0	9.0	10.5	3.0	2.0	3.0	4.0	2.0	3.0
2	13.0	11.0	12.5	13.5	10.0	11.5	4.5	2.5	3.5	6.0	3.5	5.0
3	13.5	11.5	12.5	11.5	6.5	8.5	6.5	4.0	5.5	7.5	6.0	7.0
4	13.5	11.5	12.5	7.5	5.5	6.5	8.5	6.0	7.5	9.0	6.5	8.0
5	11.5	9.0	10.5	8.5	5.0	6.5	9.5	7.0	8.0	6.5	2.5	4.0
6	11.5	8.5	10.0	10.0	7.0	8.5	9.5	8.0	8.5	3.0	1.0	2.5
7	9.5	8.0	9.0	8.0	5.5	6.5	8.0	5.0	6.5	4.5	2.5	3.5
8	10.5	7.0	9.0	6.5	4.5	5.5	6.0	4.0	5.0	3.0	1.5	2.5
9	12.5	10.5	11.5	8.5	4.5	6.5	6.5	4.0	5.0	4.5	3.0	4.0
10	13.5	12.0	13.0	11.0	8.0	10.0	6.5	4.5	5.5	5.5	4.5	5.0
11	13.5	10.5	13.0	10.5	5.5	8.5	5.0	4.0	4.5	5.0	4.0	4.5
12	12.0	9.5	10.5	6.5	5.0	5.5	5.0	3.0	4.0	4.5	4.0	4.0
13	12.5	9.5	11.5	9.0	6.5	7.5	5.0	3.0	4.0	4.0	1.0	3.5
14	12.5	8.5	10.5	9.5	6.0	7.5	5.5	4.0	5.0	1.0	.0	.5
15	10.0	7.5	9.0	---	---	---	6.5	5.0	6.0	2.0	.5	1.0
16	11.5	8.5	10.0	---	---	---	7.0	5.0	6.0	4.0	1.0	2.5
17	12.0	10.0	11.0	---	---	---	5.5	4.5	5.0	1.0	.0	.0
18	12.0	8.5	10.5	5.0	2.0	3.5	6.0	5.0	5.5	.5	.0	.0
19	---	---	---	6.5	3.5	5.0	5.0	4.5	5.0	1.5	.0	1.0
20	---	---	---	8.0	5.0	6.5	6.0	5.0	5.5	1.5	.5	1.0
21	10.0	7.0	8.5	9.5	7.0	8.0	6.0	4.5	5.0	.5	.0	.5
22	9.5	6.5	8.5	10.5	7.5	9.0	4.5	3.0	4.0	.5	.0	.5
23	9.0	8.0	8.5	10.5	9.5	10.0	4.0	2.0	3.0	1.5	.5	1.0
24	9.0	7.0	8.0	12.0	10.0	11.0	2.5	1.0	2.0	2.5	1.0	1.5
25	9.0	7.0	8.0	11.0	8.5	9.5	2.0	.5	1.0	1.5	.0	.5
26	9.5	6.5	8.0	11.5	8.5	10.0	3.0	1.0	2.0	2.0	.5	1.0
27	8.5	6.5	7.5	10.5	8.5	9.5	3.0	2.0	2.5	.5	.0	.0
28	8.0	5.5	7.0	8.5	6.0	7.5	2.5	.5	1.5	.0	.0	.0
29	10.0	6.0	8.0	6.5	5.0	6.0	2.5	1.5	2.0	1.0	.0	.5
30	11.0	7.5	9.0	5.0	3.0	4.5	4.0	1.5	3.0	1.0	.0	.5
31	11.5	8.0	10.0	---	---	---	5.0	3.0	4.0	1.0	.0	.5
MONTH	13.5	5.5	10.0	13.5	2.0	7.8	9.5	.5	4.5	9.0	.0	2.2
	FEBRUARY			MARCH			APRIL			MAY		
1	1.5	.0	1.0	6.5	4.5	5.5	9.5	5.5	7.5	12.0	6.0	9.5
2	1.5	.0	.5	6.5	5.0	5.5	9.5	7.5	8.5	13.0	9.0	11.0
3	1.0	.0	.5	6.0	4.0	5.0	12.0	9.0	10.0	13.5	7.5	10.5
4	2.0	1.0	1.5	6.5	4.0	5.0	11.0	7.5	10.0	15.0	9.5	12.0
5	2.0	.5	1.0	7.5	4.5	6.0	8.0	6.0	7.0	16.0	11.5	13.5
6	2.5	.5	1.0	7.0	4.5	5.5	10.5	6.0	8.0	17.0	12.5	14.5
7	3.0	.5	1.5	8.5	4.5	6.5	9.5	7.0	8.5	18.5	13.0	15.5
8	1.5	.0	.5	11.0	6.5	8.5	12.0	7.5	9.0	18.0	13.5	15.5
9	1.5	.0	.5	10.5	7.0	8.5	7.5	4.5	6.5	18.5	14.0	16.0
10	3.5	.5	1.5	9.5	7.0	8.5	8.5	6.5	7.0	17.0	13.0	15.0
11	3.5	1.5	2.5	7.0	6.0	6.5	7.5	6.5	7.0	15.0	11.5	13.0
12	2.0	.0	1.0	6.0	4.0	5.5	9.0	6.0	7.5	15.0	12.5	13.5
13	1.0	.0	.5	6.5	3.5	5.0	8.5	5.5	7.0	15.5	12.5	14.0
14	1.5	1.0	1.0	7.5	4.0	5.5	9.5	6.0	7.5	14.5	11.5	13.0
15	2.5	1.0	1.5	8.5	5.0	6.5	10.5	7.5	9.0	13.0	9.5	11.0
16	4.0	1.0	2.5	9.0	6.5	7.5	14.0	9.5	11.0	12.5	8.0	10.5
17	2.5	.5	1.5	8.0	3.5	6.0	10.5	7.5	9.0	13.5	10.0	12.0
18	1.5	.0	1.0	5.5	2.5	4.0	8.0	7.0	7.5	15.0	11.5	13.5
19	3.0	1.5	2.0	6.0	3.5	5.0	11.0	7.5	9.0	13.5	11.0	13.0
20	3.5	1.5	2.5	7.0	5.0	6.0	11.5	9.0	10.5	11.0	9.5	10.5
21	3.5	1.0	2.0	6.0	4.5	5.5	10.0	8.5	9.0	11.5	10.0	11.0
22	4.5	1.0	2.5	8.0	5.0	6.5	9.5	8.0	8.5	11.5	11.0	11.0
23	5.5	2.5	3.5	9.0	7.0	8.0	9.0	7.0	8.0	12.5	11.0	11.5
24	5.5	3.0	4.0	9.5	7.0	8.5	12.0	7.0	9.0	15.0	12.0	13.0
25	6.5	3.5	5.0	9.5	7.5	8.5	11.5	8.0	9.5	14.0	12.0	12.5
26	5.0	4.5	4.5	9.5	7.0	8.5	10.5	8.0	9.0	13.5	11.0	12.0
27	6.0	5.0	5.5	9.0	6.0	7.5	8.5	7.5	8.0	12.0	11.0	11.5
28	6.0	5.0	5.5	9.0	7.5	8.0	11.0	8.0	9.0	12.0	10.5	11.5
29	6.5	4.5	5.5	7.5	6.5	7.5	12.5	6.5	9.5	12.0	10.5	11.5
30	---	---	---	8.5	6.0	7.0	12.5	8.0	10.0	13.0	9.5	11.0
31	---	---	---	9.0	5.5	7.0	---	---	---	12.5	9.5	11.0
MONTH	6.5	.0	2.2	11.0	2.5	6.6	14.0	4.5	8.6	18.5	6.0	12.4

