

## SWATARA CREEK BASIN

0157155014 SWATARA CREEK, SITE C3, AT NEWTOWN, PA  
(Swatara Creek Project)

**LOCATION.**--Lat 40°39'28", long 76°20'43", Schuylkill County, Hydrologic Unit 02050305, on left bank 500 ft downstream from bridge on U.S. Highway 209. Located on Swatara Coal Company property.

**DRAINAGE AREA.**--2.92 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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

**GAGE.**--Water-stage recorder. Elevation of gage is 900 ft above National Geodetic Vertical Datum of 1929, from topographic map.

**REMARKS.**--Records fair except those below 10 ft<sup>3</sup>/s, which are poor. Other data for this project presented in tables on pages 350-412. Diversion upstream from station by limestone treatment system used to aid in the remediation efforts of acid mine drainage.

**PEAK DISCHARGES FOR CURRENT YEAR.**--Peak discharges greater than a base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge ft <sup>3</sup> /s	Gage Height (ft)	Date	Time	Discharge ft <sup>3</sup> /s	Gage Height (ft)
Mar. 26	2145	54	2.01	Sept. 27	2115	*91	*2.29

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	1.5	1.1	3.3	e1.5	3.4	e1.8	7.7	5.0	2.8	1.2	0.52	0.38
2	1.5	1.0	2.6	e1.5	3.1	1.9	6.2	12	2.5	1.2	0.49	0.38
3	1.4	0.98	2.4	1.7	2.9	5.7	5.5	8.7	2.3	1.1	0.46	0.31
4	1.3	0.89	2.3	1.6	2.9	3.1	5.0	7.6	2.2	1.1	0.43	0.24
5	1.3	0.95	2.3	1.6	e2.6	e2.8	4.6	6.9	2.1	1.0	0.50	0.20
6	1.3	0.96	2.2	e1.4	2.8	2.8	4.3	6.2	2.5	0.97	0.58	0.15
7	1.3	0.93	2.2	1.7	2.7	2.8	4.1	5.6	2.9	0.91	0.47	0.15
8	1.3	0.93	2.3	1.5	2.6	2.6	3.8	5.0	2.1	0.89	0.44	0.11
9	1.3	0.90	3.3	1.5	2.5	2.8	3.8	5.8	1.9	0.99	0.40	0.07
10	1.3	0.88	2.6	1.7	2.9	4.2	5.0	5.1	1.7	1.1	0.31	0.05
11	1.3	0.89	2.3	2.6	4.4	3.1	3.7	4.4	1.6	0.88	0.29	0.04
12	1.3	0.92	2.2	2.1	3.1	3.0	3.5	4.5	6.4	0.83	0.27	0.04
13	1.3	0.87	2.3	1.9	2.9	3.0	3.5	5.8	3.2	0.79	0.23	0.04
14	1.6	0.86	2.9	1.7	e2.8	3.0	3.9	7.9	5.1	0.79	0.21	0.06
15	4.3	0.86	2.7	1.7	2.8	2.8	10	5.5	3.6	0.79	0.29	1.4
16	1.7	0.84	2.4	1.6	2.8	2.8	6.5	5.3	2.9	0.70	0.47	6.0
17	2.1	0.79	2.6	1.6	2.7	2.7	6.3	5.1	2.5	0.65	0.28	1.1
18	1.6	0.79	4.5	1.6	2.6	4.1	5.8	19	2.3	0.67	0.24	0.87
19	1.5	0.79	3.2	1.6	2.5	4.1	5.3	12	2.3	0.66	0.22	0.77
20	1.4	1.0	3.0	e1.5	2.4	7.5	5.0	9.8	2.1	0.65	0.20	0.71
21	1.4	0.90	2.9	1.5	2.4	8.9	4.6	8.6	1.9	0.62	0.13	0.67
22	1.3	0.80	2.7	1.5	2.3	7.7	4.5	7.2	1.7	0.61	0.10	e0.70
23	1.3	0.75	2.7	1.5	2.2	7.0	4.1	6.4	1.6	1.1	0.24	e3.1
24	1.2	1.0	2.8	3.0	2.1	6.4	3.8	5.6	1.5	0.94	0.33	e1.7
25	1.2	11	2.5	3.2	2.0	5.7	3.8	4.9	1.5	0.70	0.27	e1.0
26	1.2	4.3	2.4	2.5	2.1	13	3.6	4.5	1.4	0.66	0.21	1.0
27	1.2	2.6	e2.2	2.5	2.1	16	3.3	4.1	1.7	0.67	0.21	15
28	1.2	2.3	2.2	2.6	2.0	12	6.1	3.8	1.8	0.69	0.20	7.3
29	1.2	2.3	2.1	2.6	---	9.6	5.8	3.5	1.4	0.62	0.55	3.0
30	1.1	3.5	e2.0	2.7	---	8.3	5.0	3.2	1.3	0.58	0.38	2.4
31	1.1	---	e1.8	2.8	---	7.3	---	3.0	---	0.51	0.28	---
TOTAL	45.0	47.58	79.9	60.0	74.6	168.5	148.1	202.0	70.8	25.57	10.20	48.94
MEAN	1.45	1.59	2.58	1.94	2.66	5.44	4.94	6.52	2.36	0.82	0.33	1.63
MAX	4.3	11	4.5	3.2	4.4	16	10	19	6.4	1.2	0.58	15
MIN	1.1	0.75	1.8	1.4	2.0	1.8	3.3	3.0	1.3	0.51	0.10	0.04

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

MEAN	2.87	2.89	5.38	4.92	5.20	7.03	5.66	4.49	3.45	1.81	1.05	1.73
MAX	7.81	8.40	15.3	10.9	10.4	9.63	8.09	9.19	6.11	3.61	1.88	3.92
(WY)	1997	1997	1997	1998	1998	2000	1998	1998	1998	1996	1997	1999
MIN	1.10	0.86	0.71	1.94	2.66	5.44	3.95	2.05	0.89	0.10	0.26	0.42
(WY)	1999	1999	1999	2002	2002	2002	1999	1999	1999	1999	1999	1998

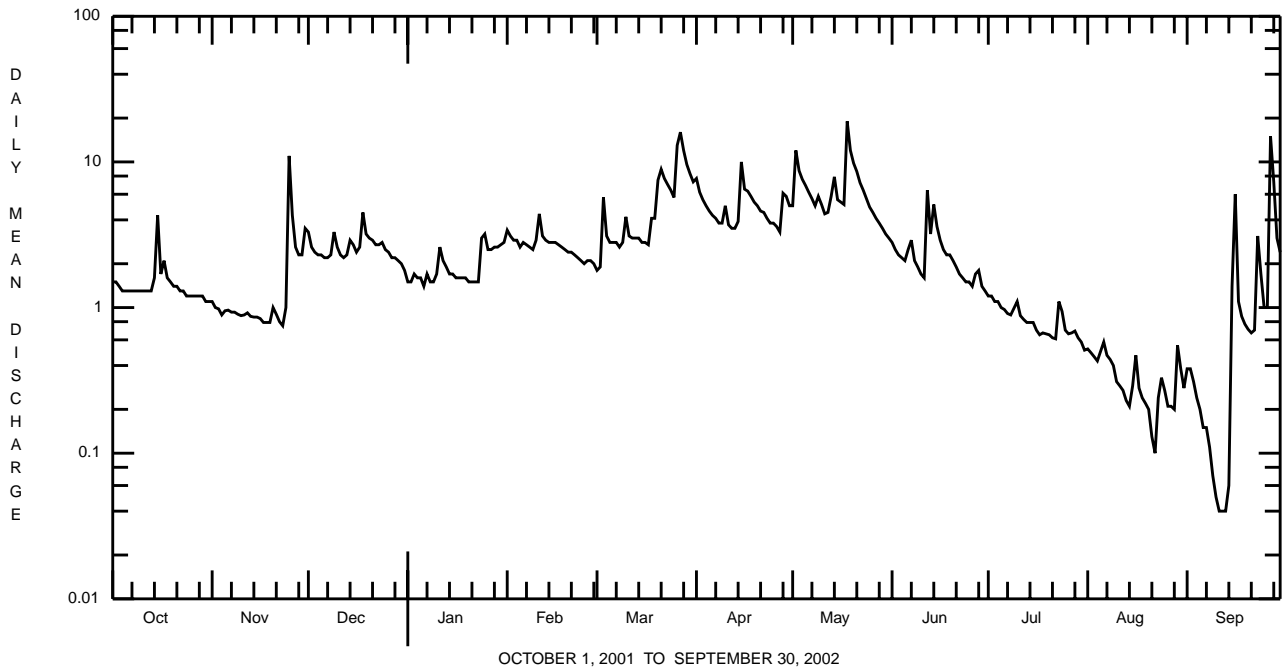
e Estimated.

SWATARA CREEK BASIN

0157155014 SWATARA CREEK, SITE C3, AT NEWTOWN, PA--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	1049.62		981.19			
ANNUAL MEAN	2.88		2.69		3.84	
HIGHEST ANNUAL MEAN					5.48	1997
LOWEST ANNUAL MEAN					2.61	1999
HIGHEST DAILY MEAN	15	Mar 30	19	May 18	a64	Dec 17 2000
LOWEST DAILY MEAN	0.75	Nov 23	0.04	Sep 11-13	0.00	Jul 27 1999b
ANNUAL SEVEN-DAY MINIMUM	0.83	Nov 13	0.06	Sep 8	0.00	Jul 29 1999
MAXIMUM PEAK FLOW			a91	Sep 27	a162	Jun 13 1998
MAXIMUM PEAK STAGE			2.29	Sep 27	2.65	Jun 13 1998
INSTANTANEOUS LOW FLOW			0.02	Sep 11	0.00	Jul 27 1999b
10 PERCENT EXCEEDS	6.1		5.8		8.1	
50 PERCENT EXCEEDS	2.2		2.1		2.5	
90 PERCENT EXCEEDS	1.0		0.44		0.59	

a From rating curve extended above 44 ft<sup>3</sup>/s.  
 b Several days.



SWATARA CREEK BASIN

0157155014 SWATARA CREEK, SITE C3, AT NEWTOWN, PA--Continued  
(Swatara Creek Project)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1996 to current year.  
pH: July 1996 to current year.  
WATER TEMPERATURE: July 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 periods Mar. 12 to Apr. 2, Apr. 11 to May 6, May 16-30, and Sept. 12-25, which are poor. pH records rated fair except for period June 7-28, which is poor. The pH probe is subject to fowling from precipitation of iron, adhesion of lime on electrodes, and occasional burial by sediment. 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 the Swatara Creek Project presented in tables on pages 350-412. Figure 9 shows the location of sites sampled as part of the Swatara Creek Project.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 438 microsiemens, Aug. 13, 1999; minimum, 51 microsiemens, July 24, 1997.  
pH: Maximum, 8.2, Aug. 20, 2001; minimum, 3.6, Oct. 21-23, 25, Dec. 3, 1996.  
WATER TEMPERATURE: Maximum, 23.5°C, July 5, 6, 1999; minimum, 0.0°C, many days during winters.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 325 microsiemens, Sept. 15; minimum, 67 microsiemens, Sept. 27.  
pH: Maximum, 7.6, June 19, 20; minimum, 4.8, May 2.  
WATER TEMPERATURE: Maximum, 23.0°C, Aug. 15; minimum 0.0°C, many days during winter.

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

Date	Time	AGENCY COLLECTING SAMPLE (CODE NUMBER)	AGENCY ANALYZING SAMPLE (CODE NUMBER)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	OXIDATION REDUCTION POTENTIAL (MV) (00090)	OXYGEN, DISSOLVED (PERCENT SATURATION) (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (MG/L) (00301)	PH WATER WHOLE FIELD (STANDARD) (00400)	PH WATER WHOLE LAB (STANDARD) (00403)	SPECIFIC CONDUCTANCE (µS/CM) (00095)
OCT 01...	1645	1028	--	1.5	--	--	--	7.4	--	230
NOV 29...	0815	1028	9813	2.1	420	11	96	6.5	5.9	148
JAN 30...	0915	1028	9813	2.8	370	12	97	7.4	6.8	167
MAR 26...	1015	1028	9813	5.1	440	12	95	6.1	5.2	179
MAY 28...	1200	1028	9813	3.8	420	10	100	5.4	5.1	164
JUL 30...	0945	1028	9813	.62	340	8.5	94	6.5	6.6	263

Date	TEMPERATURE (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	CALCIUM TOTAL RECOVERABLE (MG/L AS CA) (00916)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	MAGNESIUM, TOTAL RECOVERABLE (MG/L AS MG) (00927)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM, TOTAL RECOVERABLE (MG/L AS NA) (00929)	ACIDITY TOTAL HEATED (MG/L AS CAC03) (70508)	ANC WATER UNFLTRD FET LAB (MG/L AS CAC03) (00417)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 01...	12.2	--	--	--	--	--	--	--	--	--
NOV 29...	9.40	8.9	9.0	4.5	4.5	9.2	9.3	44	4.0	15
JAN 30...	6.60	11	15	5.1	5.6	7.1	7.9	.00	12	12
MAR 26...	4.70	9.8	10	7.3	7.4	7.4	7.6	39	3.0	10
MAY 28...	14.1	8.6	9.1	6.8	7.1	7.1	7.7	62	3.0	11
JUL 30...	19.9	20	20	12	13	9.6	9.9	.00	6.0	13

## SWATARA CREEK BASIN

0157155014 SWATARA CREEK, SITE C3, AT NEWTOWN, PA--Continued

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

Date	SULFATE	RESIDUE	ALUM-	ALUM-	IRON,	IRON,	MANGA-	MANGA-
	DIS- SOLVED (MG/L AS SO4) (00945)	TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	INUM, DIS- SOLVED (µG/L AS AL) (01106)	INUM, TOTAL RECOV- ERABLE (µG/L AS AL) (01105)	DIS- SOLVED (µG/L AS FE) (01046)	TOTAL RECOV- ERABLE (µG/L AS FE) (01045)	NESE, DIS- SOLVED (µG/L AS MN) (01056)	NESE, TOTAL RECOV- ERABLE (µG/L AS MN) (01055)
OCT 01...	--	--	--	--	--	--	--	--
NOV 29...	36	4.0	<200	300	120	290	370	380
JAN 30...	41	4.0	<200	800	110	780	380	420
MAR 26...	55	14	430	1100	580	920	590	600
MAY 28...	57	8.0	350	900	550	970	530	560
JUL 30...	91	4.0	<200	300	100	230	530	550

## SWATARA CREEK BASIN

## 0157155014 SWATARA CREEK, SITE C3, AT NEWTOWN, 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
	<b>OCTOBER</b>			<b>NOVEMBER</b>			<b>DECEMBER</b>			<b>JANUARY</b>		
1	233	228	230	229	228	228	133	114	125	202	188	194
2	235	231	234	232	228	230	140	133	137	197	189	193
3	239	234	237	234	232	233	142	140	142	197	193	194
4	243	237	240	236	232	234	149	141	143	195	192	193
5	245	242	244	240	234	236	166	142	148	194	191	193
6	244	238	242	238	236	237	156	153	154	194	187	192
7	245	241	242	238	236	237	156	152	154	189	182	185
8	245	243	244	239	237	238	159	144	156	195	188	192
9	247	243	245	240	237	239	144	131	134	194	190	192
10	244	241	243	244	239	240	149	135	144	193	185	190
11	254	241	243	244	239	241	157	149	153	189	152	172
12	244	242	243	245	240	241	168	156	159	179	166	174
13	245	241	243	245	240	243	159	156	158	185	178	181
14	246	150	239	245	239	242	161	132	149	195	185	189
15	171	101	137	243	238	240	145	133	139	191	188	190
16	194	171	185	246	238	241	147	145	146	191	188	189
17	184	128	167	246	240	242	147	130	144	192	189	191
18	196	181	190	249	242	243	133	112	121	194	190	192
19	220	196	202	252	242	245	143	131	139	199	191	194
20	209	205	207	247	230	236	146	143	145	197	188	191
21	215	209	212	237	231	233	149	145	147	191	187	189
22	218	214	216	240	234	237	154	149	152	190	187	188
23	221	217	219	240	236	238	158	154	155	190	186	189
24	223	219	221	245	204	235	159	152	155	187	138	165
25	228	221	224	210	100	140	164	159	162	174	152	167
26	230	226	228	151	109	129	171	164	168	177	169	173
27	230	228	229	151	141	145	174	171	173	176	164	172
28	229	227	228	153	145	147	181	173	174	171	162	167
29	229	225	228	149	140	146	178	175	176	169	163	166
30	228	226	227	141	110	130	192	178	185	170	158	164
31	229	227	228	---	---	---	197	189	193	163	155	159
MONTH	254	101	223	252	100	218	197	112	153	202	138	183
	<b>FEBRUARY</b>			<b>MARCH</b>			<b>APRIL</b>			<b>MAY</b>		
1	156	143	151	202	195	199	165	147	156	170	160	166
2	163	148	158	204	184	200	168	165	167	170	109	139
3	167	162	165	184	110	130	168	165	167	152	134	144
4	166	161	163	152	140	148	171	168	170	158	152	156
5	172	163	167	158	151	155	174	169	171	163	158	161
6	168	166	167	163	157	158	172	169	170	164	162	163
7	169	167	168	164	158	161	174	172	173	165	163	164
8	170	167	169	168	163	166	173	171	172	168	164	166
9	173	170	172	171	150	168	171	150	168	168	144	154
10	174	130	170	154	128	141	156	132	145	163	150	156
11	154	121	137	162	154	160	167	156	162	167	162	165
12	161	154	160	164	158	161	171	167	168	166	149	159
13	164	161	163	160	157	158	171	161	167	153	111	144
14	173	163	166	162	155	159	161	132	156	138	105	126
15	167	165	166	163	161	162	137	92	114	142	138	141
16	166	165	166	163	160	162	130	123	126	145	142	143
17	170	165	167	167	163	165	146	130	135	148	144	146
18	173	170	172	164	133	148	146	139	143	144	81	103
19	175	173	174	161	135	142	151	145	148	132	113	123
20	174	173	174	149	106	131	158	151	154	143	130	137
21	179	171	175	130	111	123	163	157	160	152	143	147
22	183	178	180	147	125	138	167	161	164	159	151	155
23	185	182	184	149	144	147	166	163	164	159	152	156
24	188	185	187	154	149	152	169	164	167	163	156	159
25	190	187	189	158	153	156	170	159	165	163	161	162
26	191	183	189	159	74	143	171	162	167	164	161	162
27	190	183	186	121	80	107	174	170	172	168	164	165
28	196	189	194	141	121	132	172	132	151	172	168	169
29	---	---	---	148	137	142	165	132	153	176	171	173
30	---	---	---	157	147	152	170	159	166	177	167	174
31	---	---	---	167	149	161	---	---	---	177	160	169
MONTH	196	121	171	204	74	152	174	92	159	177	81	153

## SWATARA CREEK BASIN

## 0157155014 SWATARA CREEK, SITE C3, AT NEWTOWN, 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
1	187	146	165	221	211	214	271	268	269	299	279	290
2	197	187	191	220	215	219	275	270	272	294	285	290
3	200	196	198	231	220	225	279	274	277	317	292	298
4	206	200	203	231	227	230	283	279	281	295	291	294
5	209	202	206	236	230	233	283	261	279	297	293	295
6	208	167	199	237	235	236	273	261	268	297	292	294
7	190	153	175	237	235	236	280	273	277	299	295	297
8	194	189	191	239	236	237	284	280	282	301	297	299
9	201	193	196	241	200	233	291	283	287	305	299	302
10	214	201	205	226	214	219	295	288	291	310	304	306
11	215	206	210	237	226	232	293	289	292	314	306	309
12	216	94	171	241	235	238	298	293	295	314	310	312
13	159	115	144	242	239	240	300	296	298	318	312	315
14	163	101	129	243	240	241	305	299	302	323	316	318
15	142	123	134	242	240	241	308	257	298	325	156	264
16	159	142	150	245	240	242	279	261	273	156	95	117
17	167	159	162	248	237	245	289	279	286	174	144	163
18	171	164	167	249	247	248	296	289	293	185	172	179
19	181	165	174	252	249	251	301	295	298	193	184	188
20	184	179	181	254	251	252	306	299	304	204	192	196
21	189	183	184	257	254	255	309	305	307	213	203	207
22	195	189	191	261	256	258	308	279	303	---	---	---
23	199	194	196	262	162	238	303	278	289	---	---	---
24	204	194	200	239	209	223	296	280	286	---	---	---
25	205	196	199	250	239	245	295	283	290	---	---	---
26	208	200	205	255	250	252	305	294	299	215	170	208
27	211	153	198	256	255	255	306	301	304	170	67	100
28	196	176	186	259	254	256	303	297	301	156	82	123
29	205	196	202	265	258	260	297	254	270	184	156	171
30	212	205	210	268	263	265	286	267	277	200	184	193
31	---	---	---	273	268	270	297	286	292	---	---	---
MONTH	216	94	184	273	162	242	309	254	288	325	67	243
YEAR	325	67	197									

## 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
1	7.5	7.4	7.5	6.5	6.5	6.5	5.6	5.4	5.5	6.4	6.2	6.3
2	7.4	7.3	7.3	6.5	6.5	6.5	5.7	5.6	5.7	6.3	6.2	6.2
3	7.3	7.2	7.2	6.5	6.5	6.5	5.8	5.7	5.7	6.4	6.3	6.3
4	7.2	7.1	7.2	6.6	6.5	6.5	6.1	5.7	5.8	6.4	6.1	6.3
5	7.1	6.9	7.1	6.6	6.5	6.5	6.6	5.9	6.0	6.1	6.0	6.1
6	6.9	6.7	6.8	6.6	6.5	6.6	6.5	6.3	6.5	6.3	6.0	6.0
7	6.8	6.7	6.7	6.6	6.5	6.5	6.6	6.4	6.5	6.3	6.1	6.1
8	6.7	6.6	6.7	6.6	6.5	6.5	6.8	6.4	6.4	6.1	6.1	6.1
9	6.6	6.6	6.6	6.6	6.5	6.5	6.8	6.4	6.7	6.1	6.0	6.1
10	6.6	6.4	6.5	6.6	6.5	6.5	6.6	6.4	6.5	6.6	6.1	6.1
11	6.7	6.4	6.5	6.6	6.5	6.6	6.4	6.4	6.4	7.3	6.6	6.9
12	6.5	6.4	6.5	6.6	6.5	6.5	6.6	6.4	6.4	7.3	6.7	6.8
13	6.4	6.4	6.4	6.5	6.5	6.5	6.4	6.1	6.4	6.8	6.6	6.6
14	6.5	6.2	6.3	6.5	6.5	6.5	6.7	6.3	6.5	6.9	6.5	6.6
15	6.7	6.4	6.6	6.5	6.5	6.5	6.5	6.1	6.2	7.0	6.8	6.9
16	6.8	6.4	6.7	6.6	6.5	6.5	6.3	6.1	6.2	6.9	6.8	6.9
17	6.6	6.4	6.4	6.6	6.5	6.6	6.6	6.2	6.3	6.8	6.8	6.8
18	6.5	6.4	6.5	6.6	6.5	6.5	6.6	6.2	6.4	6.8	6.6	6.7
19	6.9	6.5	6.5	6.6	6.5	6.6	6.6	6.5	6.5	6.6	6.6	6.6
20	6.6	6.5	6.6	6.6	6.4	6.4	6.7	6.1	6.3	6.8	6.5	6.6
21	6.7	6.5	6.6	6.5	6.4	6.5	6.3	6.1	6.1	6.5	6.5	6.5
22	6.8	6.6	6.6	6.5	6.5	6.5	6.4	6.1	6.3	6.5	6.4	6.5
23	6.8	6.6	6.6	6.5	6.5	6.5	6.2	6.1	6.1	6.4	6.3	6.4
24	6.9	6.7	6.8	6.5	6.4	6.5	6.2	6.2	6.2	6.9	6.4	6.6
25	6.9	6.5	6.6	6.8	5.0	6.5	6.2	6.1	6.1	7.4	6.4	7.0
26	6.6	6.5	6.5	5.8	5.2	5.6	6.6	6.1	6.1	7.2	6.8	6.9
27	6.5	6.5	6.5	6.0	5.8	5.9	6.6	6.4	6.5	7.4	7.1	7.2
28	6.5	6.5	6.5	6.1	6.0	6.0	6.6	6.3	6.5	7.4	7.3	7.3
29	6.5	6.5	6.5	6.1	5.9	5.9	6.5	6.4	6.4	7.4	7.2	7.3
30	6.5	6.5	6.5	5.9	5.4	5.9	6.6	6.2	6.4	7.4	7.3	7.4
31	6.5	6.5	6.5	---	---	---	6.5	6.2	6.3	7.5	7.3	7.4
MAX	7.5	7.4	7.5	6.8	6.5	6.6	6.8	6.5	6.7	7.5	7.3	7.4
MIN	6.4	6.2	6.3	5.8	5.0	5.6	5.6	5.4	5.5	6.1	6.0	6.0

SWATARA CREEK BASIN

0157155014 SWATARA CREEK, SITE C3, AT NEWTOWN, 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	7.4	7.0	7.3	6.8	6.5	6.7	5.4	5.3	5.4	5.2	5.1	5.1
2	7.2	7.0	7.1	6.9	6.6	6.7	5.9	5.4	5.5	5.6	4.8	5.1
3	7.3	7.1	7.1	7.0	6.3	6.5	6.3	5.8	6.1	5.6	5.2	5.4
4	7.1	6.8	7.1	6.6	6.5	6.5	6.3	6.2	6.3	5.4	5.3	5.4
5	7.2	6.6	7.1	6.7	6.5	6.6	6.7	6.2	6.6	5.4	5.2	5.2
6	7.1	6.9	7.0	7.2	6.6	6.7	6.7	6.6	6.6	5.4	5.2	5.4
7	7.2	6.9	7.1	7.2	7.0	7.1	6.6	6.5	6.5	5.5	5.4	5.4
8	7.1	6.8	6.8	7.0	6.9	7.0	6.5	6.2	6.4	6.1	5.4	5.6
9	6.8	6.7	6.7	7.0	6.9	7.0	6.2	6.1	6.2	5.8	5.6	5.7
10	6.9	6.6	6.7	6.9	6.3	6.4	6.1	5.9	6.0	6.0	5.7	5.8
11	7.2	6.5	6.9	6.6	6.5	6.6	---	---	---	5.9	5.5	5.7
12	7.1	6.4	6.5	6.7	6.4	6.6	---	---	---	5.5	5.5	5.5
13	6.5	6.4	6.5	6.9	6.7	6.8	---	---	---	5.7	5.5	5.5
14	6.9	6.4	6.6	7.1	6.8	7.0	---	---	---	5.6	5.3	5.4
15	6.7	6.5	6.5	7.2	7.0	7.1	---	---	---	5.4	5.4	5.4
16	6.6	6.4	6.5	7.2	7.1	7.2	---	---	---	5.5	5.4	5.4
17	6.5	6.4	6.5	7.2	7.1	7.1	---	---	---	5.4	5.4	5.4
18	6.4	6.2	6.4	7.1	6.8	7.0	---	---	---	5.9	5.1	5.2
19	6.3	6.1	6.2	7.3	6.8	6.8	---	---	---	5.3	5.2	5.3
20	6.2	6.1	6.2	7.3	6.4	7.2	---	---	---	5.3	5.2	5.2
21	7.2	6.2	6.2	6.5	6.1	6.3	---	---	---	5.3	5.3	5.3
22	7.2	7.0	7.1	6.2	6.1	6.2	---	---	---	5.3	5.3	5.3
23	7.1	6.8	7.0	6.1	6.0	6.1	5.9	5.8	5.8	5.3	5.3	5.3
24	6.9	6.7	6.8	6.0	6.0	6.0	5.9	5.7	5.8	5.3	5.2	5.3
25	6.9	6.7	6.8	6.0	6.0	6.0	5.8	5.6	5.7	5.3	5.2	5.2
26	6.9	6.7	6.8	6.1	5.0	6.0	5.7	5.6	5.6	5.3	5.3	5.3
27	6.9	6.7	6.8	5.3	5.0	5.3	5.7	5.6	5.6	5.3	5.3	5.3
28	6.8	6.6	6.7	5.3	5.3	5.3	5.6	5.3	5.5	5.4	5.3	5.4
29	---	---	---	5.3	5.3	5.3	5.3	5.2	5.2	5.5	5.4	5.4
30	---	---	---	5.3	5.3	5.3	5.3	5.2	5.3	5.5	5.3	5.4
31	---	---	---	5.4	5.3	5.4	---	---	---	5.4	5.4	5.4
MAX	7.4	7.1	7.3	7.3	7.1	7.2	6.7	6.6	6.6	6.1	5.7	5.8
MIN	6.2	6.1	6.2	5.3	5.0	5.3	5.3	5.2	5.2	5.2	4.8	5.1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	5.4	5.4	5.4	6.8	6.5	6.5	6.7	6.6	6.6	6.9	6.5	6.6
2	5.5	5.4	5.5	6.6	6.5	6.5	6.6	6.5	6.6	6.6	6.5	6.6
3	5.6	5.5	5.6	6.6	6.4	6.5	6.7	6.6	6.6	6.9	6.6	6.7
4	5.7	5.6	5.7	6.6	6.5	6.5	6.7	6.6	6.6	6.8	6.7	6.7
5	5.8	5.7	5.8	6.6	6.5	6.6	6.7	6.4	6.6	6.8	6.7	6.8
6	5.9	5.8	5.9	6.6	6.5	6.6	6.6	6.4	6.6	6.8	6.7	6.8
7	6.5	5.6	5.9	6.6	6.5	6.5	6.6	6.6	6.6	6.8	6.8	6.8
8	6.6	6.5	6.6	6.6	6.5	6.5	6.6	6.5	6.6	6.9	6.8	6.8
9	6.6	6.6	6.6	6.6	6.5	6.5	6.7	6.6	6.6	6.9	6.8	6.9
10	6.8	6.6	6.7	6.6	6.5	6.6	6.7	6.6	6.6	6.9	6.9	6.9
11	7.1	6.7	6.7	6.5	6.5	6.5	6.7	6.6	6.7	6.9	6.8	6.9
12	6.8	4.9	6.7	6.5	6.4	6.5	6.8	6.7	6.7	6.9	6.8	6.8
13	7.0	6.2	6.8	6.5	6.4	6.4	6.8	6.7	6.7	6.9	6.8	6.8
14	7.1	6.0	6.3	6.4	6.4	6.4	6.8	6.7	6.8	6.9	6.8	6.9
15	6.7	6.3	6.5	6.5	6.4	6.4	6.8	6.4	6.8	6.9	6.2	6.6
16	6.8	6.7	6.7	6.5	6.5	6.5	6.7	6.4	6.6	6.5	5.4	6.0
17	6.8	6.6	6.7	6.5	6.3	6.4	6.7	6.6	6.7	6.8	6.5	6.8
18	6.8	6.6	6.7	6.4	6.3	6.4	6.8	6.7	6.7	6.9	6.8	6.9
19	7.6	6.8	7.5	6.5	6.3	6.4	6.8	6.7	6.8	6.9	6.8	6.9
20	7.6	7.5	7.5	6.5	6.4	6.5	6.8	6.8	6.8	6.9	6.9	6.9
21	7.5	7.3	7.4	6.5	6.4	6.5	6.8	6.8	6.8	6.9	6.7	6.8
22	7.4	7.3	7.3	6.6	6.4	6.5	6.9	6.6	6.9	---	---	---
23	7.4	7.3	7.3	6.6	5.9	6.5	6.7	6.6	6.7	---	---	---
24	7.3	7.2	7.3	6.5	6.3	6.5	6.7	6.5	6.6	---	---	---
25	7.3	7.2	7.2	6.5	6.4	6.5	6.7	6.6	6.6	---	---	---
26	7.2	7.1	7.2	6.6	6.5	6.5	6.7	6.7	6.7	6.8	6.7	6.7
27	7.1	6.8	7.0	6.6	6.5	6.5	6.8	6.7	6.7	6.8	5.4	6.0
28	6.8	6.5	6.6	6.5	6.4	6.5	6.8	6.7	6.8	6.6	5.4	6.1
29	6.6	6.5	6.6	6.5	6.5	6.5	6.7	6.4	6.5	6.8	6.6	6.7
30	6.6	6.5	6.5	6.6	6.5	6.5	6.6	6.5	6.6	6.8	6.8	6.8
31	---	---	---	6.6	6.5	6.6	6.6	6.5	6.6	---	---	---
MAX	7.6	7.5	7.5	6.8	6.5	6.6	6.9	6.8	6.9	6.9	6.9	6.9
MIN	5.4	4.9	5.4	6.4	5.9	6.4	6.6	6.4	6.5	6.5	5.4	6.0

YEAR	MAX	MINIMUM	7.6	MINIMUM	5.2
	MIN	MAXIMUM	7.5	MINIMUM	4.8
	MEDIAN	MAXIMUM	7.5	MINIMUM	5.1

## SWATARA CREEK BASIN

## 0157155014 SWATARA CREEK, SITE C3, AT NEWTOWN, 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	12.5	10.0	11.0	10.0	6.0	8.0	11.5	8.0	10.0	0.0	0.0	0.0
2	14.0	10.0	12.0	12.0	8.5	10.5	8.5	6.0	7.5	0.5	0.0	0.0
3	15.0	11.5	13.5	12.5	9.0	11.0	7.0	5.0	6.0	0.0	0.0	0.0
4	15.5	12.0	14.0	10.5	7.5	9.0	8.0	5.0	6.5	0.5	0.0	0.5
5	15.0	12.0	13.5	8.5	6.0	7.5	10.0	7.5	9.0	1.0	0.5	0.5
6	14.0	11.0	13.0	8.0	5.5	6.5	10.0	8.0	9.0	1.5	0.0	0.5
7	11.0	8.5	9.5	9.5	6.0	7.5	10.0	7.0	9.0	1.0	0.0	0.5
8	9.0	6.5	8.0	9.5	6.0	8.0	7.0	4.5	5.5	1.0	0.0	0.5
9	9.0	5.0	7.0	9.0	6.0	7.5	6.0	4.0	5.5	1.5	0.0	1.0
10	10.5	7.0	8.5	8.0	5.0	6.5	5.0	3.0	4.0	3.0	1.5	2.0
11	12.0	8.0	10.0	7.5	4.5	6.5	7.0	4.5	5.5	2.5	2.0	2.5
12	13.0	10.0	11.5	6.0	3.0	4.5	6.0	3.5	4.5	3.5	2.0	2.5
13	15.0	11.5	13.5	6.0	2.5	4.5	8.0	6.0	7.0	3.0	1.5	2.5
14	14.5	13.0	14.0	6.5	3.0	5.0	9.0	8.0	8.5	3.0	1.0	2.0
15	14.0	10.5	12.5	9.0	5.5	7.0	9.0	4.5	6.5	3.5	2.5	3.0
16	12.0	8.5	10.5	9.5	6.5	8.0	5.0	3.0	4.5	3.0	2.0	2.5
17	10.0	8.0	9.5	8.0	5.5	7.0	6.5	5.0	5.5	3.5	1.5	2.5
18	9.5	6.0	8.0	7.5	5.0	6.0	7.0	5.5	6.5	2.0	0.0	1.5
19	10.0	6.0	8.0	7.0	5.0	6.0	6.5	5.5	6.0	0.5	0.0	0.0
20	12.0	8.0	10.0	7.0	4.0	6.0	5.5	4.0	5.0	0.5	0.0	0.5
21	12.0	8.0	10.0	5.0	3.0	4.0	4.5	3.0	4.0	1.5	0.0	1.0
22	13.0	10.0	11.5	5.5	2.5	4.0	3.5	2.5	3.0	3.0	1.0	2.0
23	13.0	10.5	12.0	6.0	3.0	4.5	5.0	2.5	3.5	3.5	1.0	2.5
24	15.5	12.0	13.5	9.0	5.0	6.5	5.0	2.5	4.0	3.5	2.5	3.0
25	14.5	11.0	13.0	11.0	9.0	10.0	2.5	1.5	2.0	3.5	2.0	3.0
26	11.0	7.5	9.0	9.5	8.0	9.0	1.5	0.0	1.0	4.0	1.5	2.5
27	8.5	7.0	7.5	9.0	7.0	8.0	1.0	0.0	0.5	4.5	1.5	3.0
28	8.0	5.5	7.0	10.0	8.5	9.5	2.0	0.0	1.0	5.5	2.5	4.0
29	8.0	4.0	6.5	9.5	9.5	9.5	2.0	0.0	1.0	7.0	3.5	5.0
30	9.0	6.5	7.5	12.0	9.5	11.0	0.5	0.0	0.0	7.5	6.0	7.0
31	8.0	6.5	7.0	---	---	---	0.0	0.0	0.0	6.0	5.0	5.0
MONTH	15.5	4.0	10.4	12.5	2.5	7.3	11.5	0.0	4.9	7.5	0.0	2.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	6.0	4.0	5.0	4.0	0.0	1.5	10.0	6.5	8.0	12.0	7.0	9.5
2	4.0	2.0	3.0	4.5	0.5	2.5	9.5	6.0	7.5	11.5	9.0	10.0
3	3.5	1.5	2.5	7.0	3.5	5.5	10.5	6.0	8.0	11.0	8.5	9.5
4	3.5	0.0	2.0	3.5	0.0	2.0	8.0	5.0	6.0	11.5	7.0	9.0
5	0.5	0.0	0.5	1.5	0.0	0.5	6.5	4.0	5.0	12.5	8.0	10.0
6	2.5	0.5	1.5	5.0	0.5	3.0	7.0	4.0	5.0	13.0	9.0	11.0
7	4.0	2.0	3.0	6.0	2.5	4.5	8.0	3.0	5.0	14.0	11.0	12.5
8	5.0	2.0	3.0	7.5	3.0	5.5	9.0	5.5	6.5	14.0	11.0	12.5
9	5.0	2.0	3.5	9.0	5.5	7.5	10.5	8.0	9.0	12.5	10.5	11.0
10	6.0	3.5	4.5	9.0	2.0	5.0	11.5	8.0	9.5	13.5	10.5	11.5
11	6.0	1.0	3.5	4.5	1.5	2.5	11.5	6.0	8.5	13.0	9.5	11.0
12	3.0	0.5	2.0	6.0	2.5	4.0	9.0	6.5	8.0	12.0	10.5	11.5
13	3.5	0.5	2.5	5.5	4.0	5.0	11.5	9.0	10.0	12.0	11.5	12.0
14	2.0	0.0	1.0	9.5	5.0	7.0	13.5	9.0	11.5	11.5	9.0	10.5
15	4.0	0.5	2.5	9.0	6.5	7.5	14.5	11.0	12.5	12.0	8.5	10.0
16	5.5	3.0	4.0	9.0	5.0	8.0	15.5	11.0	13.0	13.5	8.5	11.0
17	4.5	2.0	3.5	5.0	3.0	4.0	16.5	11.5	13.5	14.5	11.5	12.5
18	3.5	1.0	2.0	4.5	2.5	4.0	16.0	12.5	13.5	11.5	9.0	10.0
19	4.5	0.5	2.5	6.0	4.0	5.0	17.0	12.0	14.0	10.5	8.5	9.0
20	6.0	3.5	5.0	5.0	2.5	4.0	13.0	11.0	12.5	9.5	8.0	9.0
21	7.5	5.5	6.5	7.0	4.0	5.0	11.0	8.5	9.5	10.0	7.5	8.5
22	6.0	4.0	5.0	4.5	2.5	3.5	10.5	8.0	9.0	11.0	7.0	9.0
23	5.5	2.0	3.5	6.0	2.0	4.0	10.5	6.5	8.5	12.5	8.0	10.0
24	5.0	1.0	3.0	6.5	3.5	5.5	11.5	5.5	8.5	14.0	9.5	12.0
25	6.0	2.0	4.0	5.5	5.0	5.0	9.0	7.0	8.0	13.0	10.5	12.0
26	7.0	3.0	5.0	5.0	4.5	4.5	11.0	6.0	8.5	13.5	11.5	12.0
27	4.5	1.0	3.0	6.0	4.5	5.5	11.5	6.0	8.5	14.5	12.0	13.0
28	4.0	0.5	1.5	7.5	4.5	6.0	11.0	9.0	10.0	15.0	12.5	13.5
29	---	---	---	9.0	5.5	7.0	10.5	7.5	9.0	15.5	13.0	14.0
30	---	---	---	10.0	7.5	8.5	10.0	7.0	8.5	16.5	13.0	14.5
31	---	---	---	9.5	7.5	8.5	---	---	---	17.0	13.5	15.0
MONTH	7.5	0.0	3.2	10.0	0.0	4.9	17.0	3.0	9.2	17.0	7.0	11.2



