

## 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 sea level, from topographic map.

**REMARKS.**--Records poor. Other data for this project presented in tables on pages 316-370. 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)
Dec. 17	0315	106	2.38	July 25	1830	*146	*2.58

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.67	1.2	2.9	3.3	2.8	3.8	8.4	3.4	1.7	2.9	1.8	1.5
2	.59	1.2	2.7	2.9	2.8	3.7	7.6	3.2	2.6	2.7	1.6	1.0
3	.58	1.3	2.6	2.7	2.8	3.6	7.0	3.0	3.7	2.4	1.5	1.0
4	.74	1.2	e2.5	2.6	2.7	3.6	6.5	2.9	2.4	2.5	5.6	2.3
5	1.6	1.2	2.6	2.6	2.9	3.6	5.8	2.7	2.1	2.7	6.4	1.8
6	1.3	1.1	2.5	2.5	2.9	3.4	7.7	2.5	2.0	2.4	2.7	1.3
7	1.2	1.1	2.4	2.4	2.8	3.3	6.7	2.4	1.9	2.0	2.3	1.2
8	1.2	1.0	2.4	2.3	2.7	3.2	6.1	2.3	1.7	2.0	2.0	1.1
9	1.2	1.1	2.3	2.2	2.7	3.2	6.0	2.3	1.6	2.1	1.8	1.0
10	1.3	2.4	e2.2	2.1	6.0	3.2	5.7	2.2	1.5	2.1	1.7	1.2
11	1.3	2.0	2.2	2.0	4.2	3.1	6.1	2.2	1.5	1.9	2.0	1.1
12	1.3	1.4	2.6	1.9	3.9	3.2	6.0	2.1	1.5	1.7	1.8	.99
13	1.3	1.3	e2.7	1.9	4.1	6.2	5.5	2.0	1.6	1.6	1.7	.95
14	1.3	1.3	e2.5	1.9	4.5	6.2	5.2	1.9	1.4	1.5	1.7	1.0
15	1.3	e1.2	3.0	1.9	6.4	6.1	5.1	1.9	1.3	1.4	1.5	.96
16	1.4	1.2	6.3	1.8	5.8	6.6	7.8	1.8	2.4	1.4	1.4	.90
17	1.7	1.1	64	1.8	6.3	7.8	7.0	1.8	3.9	1.3	1.6	.88
18	6.3	1.1	24	1.7	5.5	7.4	7.4	1.9	1.9	1.3	1.4	.85
19	2.6	1.1	15	2.3	5.3	6.6	7.1	1.8	1.7	1.2	1.3	.83
20	2.0	1.1	12	2.7	5.2	e6.0	6.7	1.7	3.2	1.2	1.7	1.0
21	1.8	1.1	9.4	2.3	5.0	e6.5	6.5	2.3	5.5	1.1	1.3	1.1
22	1.7	1.2	8.4	2.1	4.6	e7.0	6.0	3.7	6.9	1.1	1.2	.91
23	1.6	1.5	7.2	e1.9	4.4	e6.2	5.6	3.0	7.0	1.0	1.2	.86
24	1.8	1.4	6.4	e1.8	4.0	e7.3	5.2	2.3	5.3	1.0	1.2	5.3
25	1.6	1.2	5.5	1.8	4.3	e6.6	4.8	2.1	4.6	15	1.1	8.5
26	1.6	5.8	5.0	e1.7	4.9	e6.0	4.5	2.3	4.1	6.2	1.1	2.6
27	1.4	3.5	4.6	1.8	4.2	e5.3	4.2	2.2	3.7	2.8	1.1	2.1
28	1.4	2.8	4.3	1.8	4.0	4.7	3.9	2.3	3.4	2.3	1.0	1.9
29	1.3	2.8	4.0	e1.7	---	4.5	3.7	2.0	3.1	2.1	.97	1.7
30	1.3	3.0	3.7	2.7	---	15	3.5	1.9	2.8	2.0	.94	1.6
31	1.3	---	3.5	3.1	---	9.2	---	1.7	---	1.9	1.2	---
TOTAL	47.68	49.9	221.4	68.2	117.7	172.1	179.3	71.8	88.0	74.8	55.81	49.43
MEAN	1.54	1.66	7.14	2.20	4.20	5.55	5.98	2.32	2.93	2.41	1.80	1.65
MAX	6.3	5.8	64	3.3	6.4	15	8.4	3.7	7.0	15	6.4	8.5
MIN	.58	1.0	2.2	1.7	2.7	3.1	3.5	1.7	1.3	1.0	.94	.83

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

MEAN	3.16	3.15	5.95	5.52	5.70	7.35	5.81	4.08	3.67	1.97	1.17	1.75
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	.86	.71	2.20	3.61	5.55	3.95	2.05	.89	.10	.26	.42
(WY)	1999	1999	1999	2001	2000	2001	1999	1999	1999	1999	1999	1998

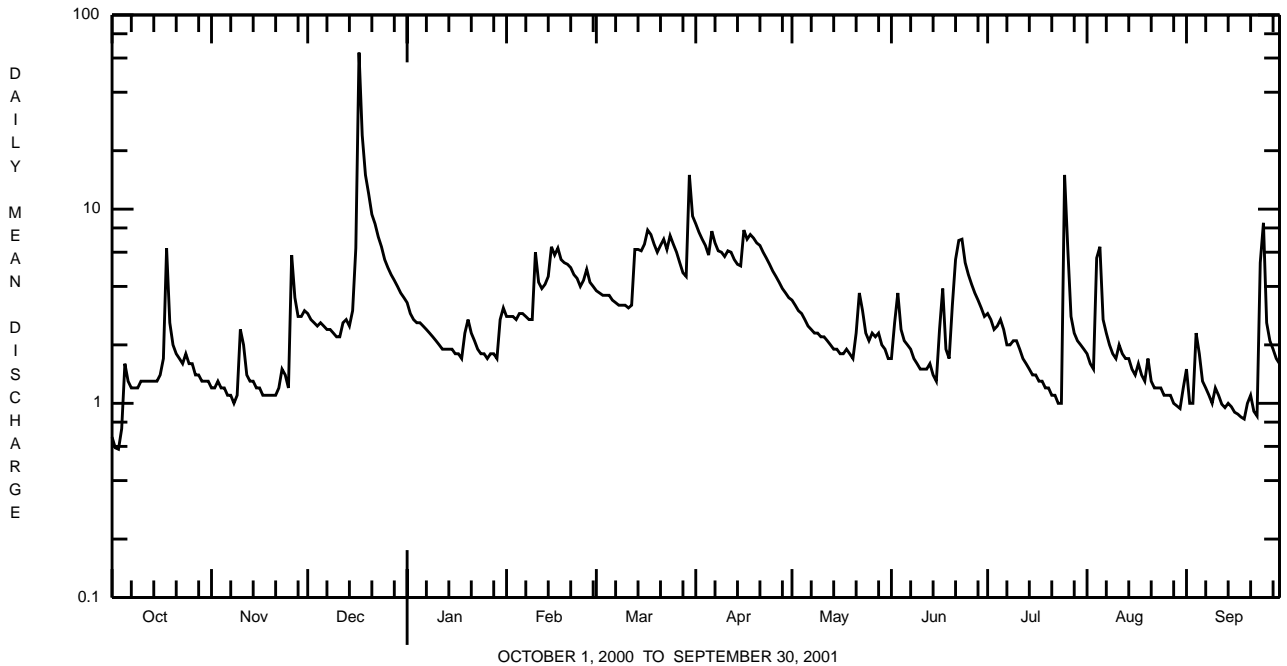
e Estimated.

SWATARA CREEK BASIN

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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1996 - 2001	
ANNUAL TOTAL	1360.14		1196.12			
ANNUAL MEAN	3.72		3.28		4.07	
HIGHEST ANNUAL MEAN					5.48	1997
LOWEST ANNUAL MEAN					2.61	1999
HIGHEST DAILY MEAN	64	Dec 17	64	Dec 17	64	Dec 17 2000
LOWEST DAILY MEAN	.38	Sep 10	.58	Oct 3	.00	Jul 27 1999 <sup>a</sup>
ANNUAL SEVEN-DAY MINIMUM	.41	Sep 5	.91	Sep 13	.00	Jul 29 1999
MAXIMUM PEAK FLOW			b146	Jul 25	b162	Jun 13 1998
MAXIMUM PEAK STAGE			2.58	Jul 25	2.65	Jun 13 1998
INSTANTANEOUS LOW FLOW			.54	Oct 2-4	.00	Jul 27 1999 <sup>a</sup>
10 PERCENT EXCEEDS	7.6		6.3		8.3	
50 PERCENT EXCEEDS	2.6		2.3		2.6	
90 PERCENT EXCEEDS	.67		1.1		.65	

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



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 Oct. 1 to Nov. 2, and July 30 to Aug. 14, which are poor. pH records rated 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 316-370. Figure 10 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, 313 microsiemens, Oct. 3; minimum, 61 microsiemens, Aug. 4.  
pH: Maximum, 8.2, Aug. 20; minimum, 4.2, Oct. 2.  
WATER TEMPERATURE: Maximum, 21.5°C, Aug. 8, 9; minimum 0.0°C, many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	OXID-ATION RED-UCTIION POTEN-TIAL (MV) (00090)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (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 02...	0930	9813	1028	.67	119	11.0	100	5.5	6.4	304
NOV 15...	1200	9813	1028	1.2	418	11.5	92	6.1	6.3	211
JAN 09...	1230	9813	1028	2.2	419	13.5	95	5.8	6.0	190
MAR 14...	1100	9813	1028	5.5	421	13.0	102	5.5	5.6	145
MAY 22...	1645	930	1028	3.1	457	--	--	6.7	7.2	157
JUL 17...	0800	930	1028	1.3	355	11.1	111	6.3	6.6	255
SEP 26...	1500	9813	1028	2.4	397	10	94	7.1	6.6	200

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 02...	11.0	23.3	21.8	16.9	16.2	1.05	1.2	8.1	7.9	2.0
NOV 15...	5.9	14.8	14.8	10.9	10.4	1.17	1.0	7.5	7.3	2.0
JAN 09...	1.2	10.6	10.8	7.04	7.35	--	--	7.4	7.5	6.4
MAR 14...	4.9	7.52	7.73	4.90	4.98	--	--	8.8	9.3	9.0
MAY 22...	13.0	11.0	12.0	5.10	5.20	.98	1.1	7.3	8.3	--
JUL 17...	15.6	17.0	16.0	10.0	10.0	1.10	1.1	10.0	9.8	--
SEP 26...	12.4	16.3	15.0	6.32	5.90	--	--	10.2	10	.00

## SWATARA CREEK BASIN

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	ANC WATER UNFLTRD FET LAB (MG/L AS CACO3) (00417)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	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)
OCT 02...	7	11.3	112	6	<200	<200	--	--	--	--
NOV 15...	7	10.8	71.1	6	<200	420	--	--	--	--
JAN 09...	4	11.3	55.4	10	<200	714	--	--	--	--
MAR 14...	3	15.2	36.7	14	260	794	--	--	--	--
MAY 22...	10	--	41.0	--	150	810	<40.0	<40	33.0	35.0
JUL 17...	7	--	77.0	--	<20	750	<40.0	<40	35.0	36.0
SEP 26...	10	15.5	55.2	18	<200	940	--	--	--	--

DATE	CADMIUM DIS- SOLVED (µG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (µG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (µG/L AS CR) (01034)	COBALT, DIS- SOLVED (µG/L AS CO) (01035)	COBALT, TOTAL RECOV- ERABLE (µG/L AS CO) (01037)	COPPER, DIS- SOLVED (µG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (µG/L AS CU) (01042)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (µG/L AS FE) (01045)
OCT 02...	--	--	--	--	--	--	--	--	140	150
NOV 15...	--	--	--	--	--	--	--	--	190	240
JAN 09...	--	--	--	--	--	--	--	--	550	1070
MAR 14...	--	--	--	--	--	--	--	--	640	850
MAY 22...	3.00	<3.00	4.0	<3	13.0	14	13.0	4.0	200	880
JUL 17...	<3.00	80.0	<3.0	<3	18.0	18	<3.0	8.0	20	610
SEP 26...	--	--	--	--	--	--	--	--	290	1080

DATE	LEAD, DIS- SOLVED (µG/L AS PB) (01049)	LEAD, TOTAL RECOV- ERABLE (µG/L AS PB) (01051)	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 02...	--	--	659	656	--	--	--	--	--	--
NOV 15...	--	--	517	490	--	--	--	--	--	--
JAN 09...	--	--	475	496	--	--	--	--	--	--
MAR 14...	--	--	403	404	--	--	--	--	--	--
MAY 22...	<40.0	<40	400	400	26.0	25	<100	<100	61	60
JUL 17...	<40.0	<40	490	490	33.0	36	<100	<100	55	92
SEP 26...	--	--	647	522	--	--	--	--	--	--

## SWATARA CREEK BASIN

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

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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	304	294	299	261	255	258	150	147	149	180	174	177
2	312	235	304	258	232	242	155	148	151	180	172	177
3	313	302	307	243	236	239	157	153	155	176	172	174
4	310	254	298	242	238	240	159	152	156	175	171	173
5	283	208	236	254	240	244	157	155	156	175	169	172
6	262	241	252	252	244	249	158	156	157	179	171	175
7	284	260	273	255	250	253	160	157	158	181	172	176
8	292	279	286	260	253	257	161	157	159	183	172	179
9	301	288	294	264	239	256	168	160	163	196	172	183
10	302	294	298	239	159	180	173	162	166	203	192	198
11	306	297	301	189	171	178	167	160	163	194	191	192
12	306	298	302	215	186	199	163	158	161	197	191	193
13	307	301	304	215	204	209	176	162	167	213	194	201
14	310	301	306	215	202	209	170	151	158	207	194	200
15	312	303	307	---	---	---	165	153	160	208	193	203
16	312	304	308	222	216	219	168	96	146	196	190	192
17	312	252	301	225	220	222	182	63	107	193	189	191
18	252	98	176	232	222	228	203	182	195	195	191	193
19	200	179	189	235	230	232	194	176	186	195	154	182
20	226	196	209	238	232	236	198	170	174	180	152	166
21	240	211	227	242	228	236	173	167	169	196	178	190
22	241	201	217	242	211	230	175	165	169	215	176	193
23	252	239	246	222	209	214	176	173	175	204	176	187
24	248	229	240	233	209	216	176	170	173	188	176	181
25	250	234	242	265	212	223	174	168	171	181	177	178
26	254	245	249	260	125	165	172	169	170	188	178	180
27	257	243	248	157	142	151	172	167	169	204	174	178
28	267	254	261	161	151	154	170	167	169	192	177	186
29	271	264	268	155	150	153	172	168	170	218	180	192
30	270	259	263	152	146	149	173	168	170	210	135	166
31	262	250	256	---	---	---	177	172	174	160	139	151
MONTH	313	98	267	265	125	215	203	63	163	218	135	183
	<b>FEBRUARY</b>			<b>MARCH</b>			<b>APRIL</b>			<b>MAY</b>		
1	167	159	164	162	155	160	146	137	142	172	166	168
2	170	160	164	158	155	156	151	146	148	172	167	170
3	175	164	169	160	152	156	154	150	152	173	168	170
4	176	161	168	157	151	154	156	149	153	174	170	172
5	165	159	161	165	152	157	161	156	158	175	171	173
6	170	165	168	165	156	161	159	120	142	179	174	175
7	170	162	166	160	155	158	151	134	145	179	173	176
8	171	163	166	160	155	158	151	149	150	177	173	175
9	165	158	163	164	158	161	154	148	151	179	174	177
10	158	119	140	168	162	165	155	148	152	180	176	178
11	163	153	159	169	162	166	155	141	149	181	176	179
12	158	153	156	182	160	169	148	142	145	184	179	181
13	160	151	156	160	131	139	155	147	151	187	181	184
14	156	146	152	151	138	144	158	153	155	190	184	186
15	148	134	140	147	140	144	158	153	157	187	183	185
16	149	137	145	151	140	147	153	121	133	190	185	188
17	149	136	142	144	135	140	143	137	140	193	189	191
18	154	148	151	150	136	144	142	136	139	192	188	190
19	155	149	153	154	147	152	147	138	143	193	187	190
20	156	151	154	---	---	---	150	146	148	197	191	194
21	157	151	154	---	---	---	154	149	152	231	166	198
22	160	152	157	---	---	---	157	152	155	166	147	156
23	162	158	160	---	---	---	160	154	158	178	157	165
24	165	160	162	---	---	---	160	157	158	194	177	186
25	186	150	161	---	---	---	162	159	160	200	193	197
26	158	146	152	---	---	---	165	160	162	201	176	190
27	157	149	154	---	---	---	164	161	163	188	178	185
28	161	155	159	171	168	169	167	162	164	187	177	183
29	---	---	---	171	156	168	168	165	166	192	186	190
30	---	---	---	156	93	112	170	166	168	195	188	190
31	---	---	---	137	120	130	---	---	---	199	194	197
MONTH	186	119	157	182	93	153	170	120	152	231	147	182

## SWATARA CREEK BASIN

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

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	202	187	200	232	190	224	255	244	250	236	203	222
2	190	161	171	228	217	221	262	253	259	256	236	247
3	179	128	151	232	227	228	263	258	261	261	255	258
4	177	159	168	233	216	227	263	61	217	261	141	229
5	202	177	181	222	206	213	141	67	113	217	197	207
6	189	185	186	227	211	218	163	141	152	232	216	226
7	197	189	192	237	227	231	191	163	176	240	232	238
8	202	197	199	239	231	235	216	190	203	249	238	243
9	204	200	202	231	215	223	234	213	224	248	245	246
10	206	201	204	237	202	226	248	231	239	249	174	234
11	211	206	208	233	211	223	248	209	227	243	230	238
12	213	202	211	257	233	239	234	226	230	246	242	245
13	206	198	202	246	242	244	242	234	238	249	245	247
14	213	206	210	248	245	247	246	236	241	248	223	238
15	217	213	216	253	247	250	249	242	247	245	241	243
16	219	110	206	254	252	253	251	247	249	246	244	245
17	175	110	147	256	253	254	252	234	243	249	246	247
18	194	175	187	258	247	255	254	242	250	250	247	249
19	217	194	205	260	255	258	259	250	252	250	247	248
20	228	164	211	261	259	260	251	224	235	257	218	241
21	189	158	175	271	258	260	258	237	243	227	214	219
22	194	131	159	265	260	262	247	241	245	237	227	233
23	157	139	147	267	262	264	251	247	250	241	237	238
24	184	157	170	270	264	267	250	247	248	242	115	225
25	202	184	191	---	---	---	255	250	253	237	166	191
26	212	200	204	---	---	---	262	254	256	204	194	199
27	220	208	212	---	---	---	260	258	259	220	204	209
28	223	213	217	---	---	---	262	259	260	220	213	217
29	226	217	220	---	---	---	266	262	264	225	219	222
30	231	217	225	---	---	---	270	266	268	229	225	227
31	---	---	---	246	240	244	271	221	262	---	---	---
MONTH	231	110	193	271	190	241	271	61	236	261	115	232
YEAR	313	61	198									

## PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	6.1	5.5	5.7	6.2	6.2	6.2	7.2	6.8	7.0	5.8	5.5	5.7
2	5.7	4.2	5.7	6.4	5.4	6.0	7.3	6.6	6.8	5.8	5.5	5.7
3	5.7	5.3	5.5	5.8	5.5	5.7	7.3	7.1	7.2	5.9	5.7	5.8
4	5.4	5.4	5.4	5.8	5.7	5.7	7.2	7.0	7.1	5.8	5.7	5.8
5	6.8	5.4	6.3	6.0	5.6	5.8	7.2	7.0	7.1	5.9	5.7	5.8
6	6.1	5.6	5.6	5.8	5.6	5.7	7.1	6.8	6.9	5.8	5.7	5.8
7	5.6	5.4	5.4	5.7	5.5	5.6	6.8	6.7	6.8	5.8	5.7	5.8
8	5.4	5.3	5.4	5.8	5.6	5.7	6.7	6.7	6.7	5.9	5.7	5.7
9	5.3	5.0	5.2	5.9	5.7	5.7	6.9	6.5	6.7	5.9	5.8	5.9
10	5.0	5.0	5.0	6.0	5.6	5.9	7.2	6.9	7.1	6.1	5.8	5.9
11	5.0	5.0	5.0	6.1	5.9	6.0	7.2	7.0	7.1	6.2	6.0	6.1
12	5.0	4.8	5.0	6.1	5.9	6.0	7.1	7.0	7.0	6.1	5.9	6.0
13	5.0	4.7	4.8	6.1	6.0	6.0	7.1	7.0	7.1	6.0	5.8	5.9
14	4.8	4.8	4.8	6.2	6.0	6.1	7.2	6.9	7.0	6.1	5.9	6.0
15	4.8	4.8	4.8	---	---	---	7.0	6.9	6.9	6.1	6.0	6.0
16	4.8	4.6	4.8	6.2	6.1	6.1	6.9	6.6	6.9	6.1	6.0	6.1
17	5.5	4.4	4.6	6.2	6.1	6.1	6.7	4.9	5.1	6.1	6.0	6.1
18	6.5	5.1	5.9	6.3	6.1	6.1	5.0	4.9	5.0	6.1	6.0	6.1
19	7.3	6.5	7.2	6.2	6.1	6.2	5.2	5.0	5.1	6.2	5.9	6.0
20	7.4	7.2	7.2	6.2	6.1	6.1	5.2	5.1	5.2	5.9	5.8	5.9
21	7.3	7.2	7.2	6.5	6.2	6.3	5.4	5.2	5.3	5.9	5.6	5.8
22	7.3	7.1	7.3	6.4	6.2	6.2	5.4	5.2	5.3	5.9	5.5	5.7
23	7.2	7.0	7.2	6.4	6.2	6.3	5.4	5.3	5.3	6.0	5.7	5.9
24	7.4	7.0	7.2	6.5	6.3	6.4	5.5	5.3	5.4	6.0	5.9	5.9
25	7.3	7.2	7.3	6.4	6.2	6.3	5.6	5.4	5.5	6.0	5.9	5.9
26	7.3	7.1	7.2	7.1	6.3	6.7	5.7	5.5	5.6	6.0	5.7	5.9
27	7.2	7.1	7.1	7.4	6.8	7.2	5.7	5.6	5.7	6.0	5.9	5.9
28	7.2	6.8	7.0	7.4	7.2	7.3	5.7	5.7	5.7	5.9	5.6	5.7
29	6.8	6.5	6.6	7.4	7.1	7.3	5.8	5.7	5.7	5.9	5.5	5.7
30	6.6	6.4	6.6	7.4	7.1	7.4	5.7	5.7	5.7	5.9	5.6	5.9
31	6.6	6.2	6.4	---	---	---	5.8	5.7	5.8	6.0	5.7	5.9
MAX	7.4	7.2	7.3	7.4	7.2	7.4	7.3	7.1	7.2	6.2	6.0	6.1
MIN	4.8	4.2	4.6	5.7	5.4	5.6	5.0	4.9	5.0	5.8	5.5	5.7

## SWATARA CREEK BASIN

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

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	<b>FEBRUARY</b>			<b>MARCH</b>			<b>APRIL</b>			<b>MAY</b>		
1	5.9	5.6	5.8	5.7	5.7	5.7	5.7	5.6	5.6	5.6	5.5	5.6
2	5.8	5.6	5.7	5.8	5.7	5.8	5.7	5.6	5.6	5.6	5.5	5.6
3	5.7	5.5	5.6	5.8	5.6	5.7	5.7	5.6	5.7	5.6	5.5	5.6
4	5.7	5.5	5.6	5.7	5.6	5.7	5.7	5.6	5.7	5.6	5.5	5.6
5	5.7	5.5	5.6	5.7	5.7	5.7	5.7	5.6	5.7	5.7	5.6	5.7
6	5.8	5.5	5.7	5.8	5.7	5.7	6.0	5.6	5.7	5.7	5.7	5.7
7	6.1	5.8	5.9	5.8	5.8	5.8	5.8	5.7	5.7	5.7	5.7	5.7
8	5.9	5.9	5.9	5.8	5.8	5.8	5.8	5.7	5.7	5.8	5.7	5.7
9	5.9	5.8	5.8	5.8	5.7	5.7	5.7	5.6	5.7	5.8	5.7	5.8
10	6.4	5.8	5.9	5.8	5.7	5.7	5.7	5.7	5.7	5.8	5.8	5.8
11	5.9	5.5	5.8	5.8	5.7	5.8	5.8	5.7	5.7	5.8	5.7	5.7
12	5.9	5.9	5.9	5.9	5.7	5.8	5.7	5.7	5.7	5.9	5.7	5.7
13	5.9	5.8	5.9	6.0	5.5	5.7	5.7	5.6	5.7	5.9	5.7	5.7
14	5.9	5.7	5.8	6.1	5.5	5.8	5.7	5.6	5.7	5.9	5.7	5.7
15	5.9	5.6	5.6	5.9	5.8	5.8	5.7	5.7	5.7	5.9	5.7	5.9
16	5.7	5.6	5.6	5.8	5.8	5.8	5.9	5.6	5.7	5.9	5.7	5.9
17	5.6	5.5	5.6	5.8	5.7	5.8	5.8	5.7	5.7	5.9	5.7	5.7
18	5.6	5.6	5.6	5.8	5.8	5.8	5.8	5.6	5.7	5.7	5.7	5.7
19	5.7	5.6	5.6	5.9	5.8	5.8	5.7	5.6	5.6	5.9	5.7	5.9
20	5.6	5.5	5.5	---	---	---	5.7	5.6	5.6	5.7	5.6	5.7
21	5.6	5.5	5.5	---	---	---	5.6	5.5	5.6	6.2	5.6	5.7
22	5.6	5.6	5.6	---	---	---	5.6	5.5	5.5	6.7	6.2	6.5
23	5.7	5.6	5.6	---	---	---	5.6	5.4	5.4	7.2	6.3	6.4
24	5.7	5.7	5.7	---	---	---	5.5	5.4	5.4	7.3	6.3	6.4
25	5.7	5.6	5.7	---	---	---	5.5	5.4	5.5	6.5	6.4	6.5
26	5.7	5.6	5.6	---	---	---	5.6	5.5	5.5	7.1	6.5	6.8
27	5.7	5.6	5.6	---	---	---	5.6	5.5	5.5	6.9	6.7	6.8
28	5.7	5.6	5.7	5.8	5.7	5.8	5.6	5.5	5.5	7.2	6.8	7.0
29	---	---	---	5.8	5.7	5.8	5.6	5.5	5.6	6.8	6.7	6.7
30	---	---	---	6.1	5.4	5.6	5.7	5.5	5.6	6.8	6.7	6.7
31	---	---	---	5.7	5.6	5.7	---	---	---	6.7	6.6	6.7
MAX	6.4	5.9	5.9	6.1	5.8	5.8	6.0	5.7	5.7	7.3	6.8	7.0
MIN	5.6	5.5	5.5	5.7	5.4	5.6	5.5	5.4	5.4	5.6	5.5	5.6
DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	<b>JUNE</b>			<b>JULY</b>			<b>AUGUST</b>			<b>SEPTEMBER</b>		
1	6.7	6.6	6.6	6.4	6.3	6.3	7.2	7.0	7.0	8.1	7.6	7.9
2	7.2	6.7	6.9	6.4	6.2	6.2	7.3	7.1	7.2	7.6	7.3	7.4
3	7.5	6.7	7.2	6.2	6.1	6.2	7.2	6.9	7.0	7.4	7.3	7.3
4	7.2	6.8	7.0	6.8	6.1	6.5	7.1	4.4	6.9	7.3	5.0	7.0
5	7.7	6.6	6.8	6.9	6.7	6.8	7.3	4.7	6.2	7.1	6.5	6.8
6	6.7	6.6	6.6	6.8	6.6	6.6	7.4	7.3	7.4	6.7	6.6	6.6
7	6.7	6.6	6.6	6.6	6.5	6.6	7.4	7.3	7.3	6.7	6.7	6.7
8	6.8	6.6	6.6	6.5	6.4	6.4	7.4	7.3	7.4	6.9	6.4	6.7
9	6.8	6.5	6.7	6.6	6.4	6.5	7.4	7.0	7.2	6.8	6.7	6.8
10	6.8	6.6	6.7	6.6	6.3	6.4	7.1	7.0	7.1	7.0	6.5	6.8
11	6.7	6.6	6.6	6.5	6.2	6.4	7.1	7.0	7.0	6.8	6.7	6.8
12	6.7	6.6	6.6	7.4	6.4	6.4	7.3	7.0	7.2	6.8	6.7	6.8
13	6.7	6.6	6.6	6.6	6.4	6.5	7.2	7.1	7.2	6.8	6.8	6.8
14	6.6	6.4	6.5	6.5	6.4	6.5	7.4	7.1	7.2	6.8	6.8	6.8
15	6.4	6.4	6.4	6.5	6.4	6.5	7.4	7.2	7.3	6.8	6.8	6.8
16	7.0	6.3	6.4	6.4	6.3	6.4	7.3	7.2	7.2	6.8	6.8	6.8
17	7.4	6.4	7.0	6.4	6.3	6.4	8.0	7.2	7.6	6.8	6.7	6.8
18	7.0	6.7	6.9	6.4	6.3	6.3	8.0	7.7	7.8	6.8	6.7	6.7
19	6.8	6.0	6.7	6.3	6.3	6.3	7.7	7.1	7.4	6.8	6.7	6.7
20	7.1	5.3	6.5	6.4	6.3	6.3	8.2	7.1	8.0	6.8	6.7	6.7
21	7.4	6.0	6.9	6.4	6.2	6.3	8.0	7.4	7.6	6.8	6.7	6.8
22	7.5	6.4	6.7	6.4	6.3	6.3	7.4	7.2	7.2	6.8	6.7	6.8
23	6.7	6.4	6.6	6.3	6.2	6.2	7.2	7.0	7.1	6.7	6.7	6.7
24	6.8	6.7	6.8	6.2	6.1	6.2	7.1	7.0	7.1	7.3	4.4	6.7
25	6.8	6.4	6.5	---	---	---	7.0	7.0	7.0	6.5	4.5	5.2
26	6.4	6.3	6.3	---	---	---	7.3	7.0	7.1	7.5	6.4	6.9
27	6.3	6.2	6.3	---	---	---	7.3	7.2	7.2	7.7	7.5	7.6
28	6.3	6.2	6.3	---	---	---	7.2	7.1	7.1	7.7	7.5	7.7
29	6.3	6.2	6.2	---	---	---	7.1	7.1	7.1	7.8	7.6	7.7
30	6.4	6.2	6.3	---	---	---	7.1	7.0	7.1	7.7	7.5	7.6
31	---	---	---	7.2	7.1	7.1	8.0	7.0	7.0	---	---	---
MAX	7.7	6.8	7.2	7.4	7.1	7.1	8.2	7.7	8.0	8.1	7.6	7.9
MIN	6.3	5.3	6.2	6.2	6.1	6.2	7.0	4.4	6.2	6.5	4.4	5.2

## SWATARA CREEK BASIN

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

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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	13.0	9.0	11.0	9.0	5.5	7.0	4.5	2.5	3.5	1.5	1.0	1.0
2	14.0	10.5	12.0	9.5	5.5	7.5	2.5	.5	2.0	1.5	.0	1.0
3	15.5	11.5	13.5	10.5	6.5	8.5	1.0	.0	.5	1.0	.0	.5
4	15.5	12.0	14.0	10.5	8.0	9.0	1.5	.0	.5	2.0	.5	1.0
5	14.0	12.5	13.0	8.5	6.0	7.5	2.5	1.0	1.5	1.0	.0	.5
6	14.5	12.5	13.5	8.0	4.5	6.0	1.0	.0	.5	2.5	1.0	1.5
7	12.5	9.5	11.5	8.0	4.5	6.5	1.0	.0	.5	2.5	1.0	1.5
8	9.5	7.5	8.5	10.5	7.0	9.0	1.5	.0	1.0	2.5	1.5	2.0
9	9.0	6.5	7.5	10.5	9.5	10.0	1.5	.0	1.0	2.0	.0	1.0
10	9.5	7.0	8.0	11.0	9.0	10.0	2.0	.0	1.0	2.0	.0	1.0
11	11.5	7.5	9.5	9.5	8.0	9.0	3.5	2.0	2.5	2.5	1.0	1.5
12	12.5	8.0	10.0	9.0	7.5	8.0	3.5	.5	2.5	2.5	.5	1.5
13	13.0	8.5	10.5	9.0	7.5	8.0	.5	.0	.5	2.0	.0	1.0
14	13.5	9.5	11.5	9.0	5.5	8.0	1.0	.0	.5	2.5	.0	1.5
15	14.5	10.5	12.0	---	---	---	2.0	1.0	1.5	3.0	2.0	2.5
16	14.0	12.0	13.0	6.0	3.5	5.0	2.5	1.0	2.0	3.0	2.0	2.5
17	13.0	11.5	12.0	6.5	4.5	5.5	6.0	2.0	5.0	3.0	2.0	2.5
18	12.5	11.0	12.0	6.0	4.0	4.5	5.0	4.0	4.5	2.5	2.0	2.0
19	12.0	9.0	11.0	5.0	2.5	3.5	4.5	4.0	4.0	3.0	2.0	2.5
20	11.5	7.5	9.5	3.5	1.0	2.5	4.0	2.5	3.0	2.5	.0	2.0
21	13.0	9.0	11.0	3.0	1.0	2.0	3.5	2.0	2.5	.5	.0	.0
22	12.0	8.0	10.0	2.0	.5	1.0	3.5	1.0	2.5	1.0	.0	.0
23	10.5	6.5	8.5	1.5	.0	.5	1.5	.5	1.0	.5	.0	.0
24	11.0	8.0	9.5	1.5	.0	1.0	2.5	.5	1.5	1.0	.0	.5
25	13.0	9.5	11.0	2.5	.0	1.5	1.5	.0	.5	2.0	.0	1.0
26	13.0	9.5	11.0	5.0	2.0	4.0	1.0	.0	.5	1.0	.0	.5
27	13.0	9.0	11.0	6.0	4.5	5.5	1.5	.0	1.0	2.0	.5	1.0
28	11.5	7.0	10.0	6.5	5.0	5.5	1.5	.0	1.0	2.0	.0	1.0
29	8.5	6.0	7.0	6.0	4.0	5.0	1.0	.0	.5	1.5	.0	.5
30	8.5	5.5	7.0	5.0	4.0	4.5	1.5	.5	1.0	1.5	1.0	1.0
31	9.0	5.5	7.0	---	---	---	1.5	1.0	1.0	3.0	1.5	2.5
MONTH	15.5	5.5	10.5	11.0	.0	5.7	6.0	.0	1.6	3.0	.0	1.2
	<b>FEBRUARY</b>			<b>MARCH</b>			<b>APRIL</b>			<b>MAY</b>		
1	4.0	2.5	3.0	3.5	1.0	2.5	6.0	4.5	5.5	15.5	8.5	11.5
2	4.0	1.0	3.0	4.5	2.5	3.5	6.5	4.5	5.5	16.0	10.0	13.0
3	1.5	.0	.5	5.5	3.5	4.5	7.5	4.0	5.5	17.0	11.0	14.0
4	2.5	.0	1.5	3.5	.5	2.5	8.5	4.5	6.5	17.5	12.0	14.5
5	2.5	.5	1.5	2.5	.0	1.5	9.0	4.0	6.5	14.5	10.5	13.0
6	3.5	2.0	3.0	2.0	.5	1.0	7.0	6.0	6.5	14.0	9.5	11.5
7	4.5	2.0	3.0	5.0	1.5	3.0	8.0	6.5	7.0	13.5	8.5	11.0
8	3.5	1.5	2.5	5.0	2.5	3.5	8.0	6.0	7.0	13.5	9.5	11.0
9	5.0	3.0	4.0	4.5	2.0	3.0	12.5	6.5	9.5	14.5	11.0	12.5
10	5.0	1.5	3.5	5.0	1.0	2.5	11.0	8.5	9.5	15.5	10.5	13.0
11	2.0	.5	1.0	5.0	1.0	2.5	9.0	8.0	8.5	16.0	11.0	13.5
12	2.0	.0	1.0	5.5	1.5	3.5	9.0	8.0	8.5	15.0	12.0	13.5
13	5.0	2.0	3.0	4.5	3.0	3.5	12.5	8.5	10.0	13.5	10.5	12.0
14	4.5	3.0	4.0	6.0	3.5	4.5	11.5	7.5	9.0	12.5	8.5	10.5
15	4.5	3.5	4.0	5.5	3.0	4.5	11.5	7.0	9.0	13.0	8.5	10.5
16	4.0	3.5	4.0	5.5	4.0	5.0	9.0	7.0	8.0	13.5	8.5	11.0
17	4.0	1.5	3.0	5.0	4.0	5.0	8.0	5.5	6.5	11.0	10.5	10.5
18	2.5	.5	1.5	6.0	3.5	4.5	8.0	5.0	6.0	11.5	10.5	11.0
19	3.5	.5	2.0	6.5	3.0	4.5	9.0	4.5	6.5	15.5	11.5	13.0
20	5.5	3.0	4.0	---	---	---	8.5	5.5	7.0	12.5	11.5	12.0
21	4.5	1.0	3.5	---	---	---	10.0	7.5	8.5	11.5	11.0	11.0
22	1.0	.0	.5	---	---	---	13.0	8.5	11.0	13.0	11.0	12.0
23	3.0	.5	1.5	---	---	---	15.5	10.0	12.5	15.0	11.5	13.0
24	3.0	.5	2.0	---	---	---	14.0	9.0	11.5	15.0	12.0	13.0
25	3.5	2.0	3.0	---	---	---	10.0	7.0	8.5	14.5	12.5	13.0
26	5.0	3.0	3.5	---	---	---	12.0	6.0	9.0	13.0	12.5	12.5
27	5.0	2.0	3.5	---	---	---	12.5	6.5	9.5	13.5	12.0	12.5
28	4.0	2.0	2.5	6.0	2.0	3.5	12.0	7.5	9.5	14.0	12.0	12.5
29	---	---	---	5.0	2.5	4.0	12.0	6.0	8.5	14.0	11.0	12.5
30	---	---	---	5.0	3.5	4.5	13.5	6.0	10.0	13.5	10.5	12.0
31	---	---	---	6.0	4.5	5.0	---	---	---	13.0	8.5	11.0
MONTH	5.5	.0	2.6	6.5	.0	3.6	15.5	4.0	8.2	17.5	8.5	12.2



