

REDBANK CREEK BASIN

03032500 REDBANK CREEK AT ST. CHARLES, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 40°59'40", long 79°23'40", Armstrong County, Hydrologic Unit 05010006, on left bank 400 ft downstream from highway bridge on SR 1005 at St. Charles, 0.3 mi downstream from Leatherwood Creek, and 3 mi west of New Bethlehem.

DRAINAGE AREA.--528 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Annual maximums, water years 1910-18. October 1918 to current year. Monthly discharge only for some periods, published in WSP 1305. Figures of daily discharge for November 1920 to June 1921, published in WSP 523, are unreliable and should not be used.

REVISED RECORDS.--WSP 743: Drainage area. WSP 1385: 1919, 1936-39. WDR PA-72-1: 1923 (M), 1926 (M), 1928 (M), 1936, 1937 (M), 1938 (M), 1943, 1945 (P), 1952 (M), 1953 (M), 1955 (M), 1956 (P), 1958 (M), 1959 (M), 1964, 1966 (M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 973.14 ft above National Geodetic Vertical Datum of 1929. Prior to July 10, 1940, nonrecording gage at site 500 ft upstream at datum 3.10 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Nov. 19	2300	15,200	12.77	May 21	1415	13,700	12.25
Dec. 11	1315	7,900	9.76	May 22	1445	12,200	11.67
Jan. 5	0730	16,300	13.15	Aug. 21	1530	12,200	11.69
Mar. 3	0200	8,850	10.22	Sept. 9	1530	10,600	11.02
Mar. 6	1145	11,400	11.35	Sept. 18	0430	*35,800	*18.52
Apr. 14	0230	9,670	10.60				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	686	631	1270	1480	e395	1340	1590	1240	976	419	1140	516
2	617	628	1120	2270	e371	4550	2190	1180	964	377	885	457
3	572	603	983	3880	e376	6920	1770	1150	1020	348	704	409
4	639	570	862	6480	e366	6490	1730	1000	793	341	692	373
5	1040	565	834	12800	e376	6850	1420	868	669	710	1230	344
6	834	712	850	7710	e646	9930	1180	798	654	679	935	314
7	670	716	728	4430	e2050	6950	1070	752	624	466	676	291
8	598	625	646	2960	e1570	4700	997	719	531	416	585	570
9	545	565	717	2190	e1210	3360	941	649	472	382	518	7640
10	499	525	783	1490	e984	2440	861	654	465	350	465	5280
11	464	544	5880	1230	e842	1910	776	647	899	310	436	3150
12	432	723	4480	1210	e710	1670	746	619	1150	382	428	1800
13	408	999	3000	1340	e642	1460	2920	570	822	790	424	1260
14	415	998	2110	1170	e589	1230	7100	517	1340	1040	426	1000
15	1740	874	1730	e608	e536	1230	4370	496	2390	732	397	849
16	1650	829	1420	e501	e494	1200	2720	479	1480	633	352	754
17	1060	812	1530	e490	e442	1130	2160	450	1280	559	318	6460
18	851	770	1490	e456	e431	1040	1790	697	3870	501	292	24700
19	743	4920	1250	e451	e426	1040	1510	1640	2540	503	348	10400
20	666	9160	1110	e445	e420	1620	1290	2040	1550	513	753	4370
21	607	5490	989	e451	e847	5490	1170	7210	1160	551	7710	2530
22	576	3190	912	e434	e1560	3740	1060	9800	1050	443	4140	1720
23	540	2190	1280	e411	e1180	2610	1760	6540	946	530	2020	1280
24	495	1740	3530	e411	e1020	2030	1770	3850	722	880	1210	1030
25	458	1650	3710	e406	e895	1980	1340	2330	637	687	917	877
26	440	1320	2720	e417	929	2190	4580	1650	586	1510	741	762
27	721	1120	2010	e395	886	2250	3680	1560	527	3070	663	679
28	1120	1300	1610	e376	864	2070	2660	1350	488	3440	722	618
29	898	2030	1370	e386	999	1800	1900	1170	512	2810	825	582
30	752	1550	1760	e419	---	1640	1480	886	478	1680	655	538
31	667	---	1960	e410	---	1440	---	809	---	1150	571	---
TOTAL	22403	48349	54644	58107	23056	94300	60531	54320	31595	27202	32178	81553
MEAN	723	1612	1763	1874	795	3042	2018	1752	1053	877	1038	2718
MAX	1740	9160	5880	12800	2050	9930	7100	9800	3870	3440	7710	24700
MIN	408	525	646	376	366	1040	746	450	465	310	292	291
CFSM	1.37	3.05	3.34	3.55	1.51	5.76	3.82	3.32	1.99	1.66	1.97	5.15
IN.	1.58	3.41	3.85	4.09	1.62	6.64	4.26	3.83	2.23	1.92	2.27	5.75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2004, BY WATER YEAR (WY)

MEAN	378	751	1079	1133	1203	1813	1505	1076	692	428	297	324
MAX	1385	2806	3151	4616	2707	5016	3337	2603	3887	2238	1498	2718
(WY)	1927	1922	1928	1937	1990	1936	1940	1919	1972	1996	1956	2004
MIN	40.3	50.9	75.9	96.8	179	358	367	180	123	61.1	33.5	29.2
(WY)	1931	1931	1961	1931	1934	1969	1925	1926	1936	1966	1930	1939

e Estimated.

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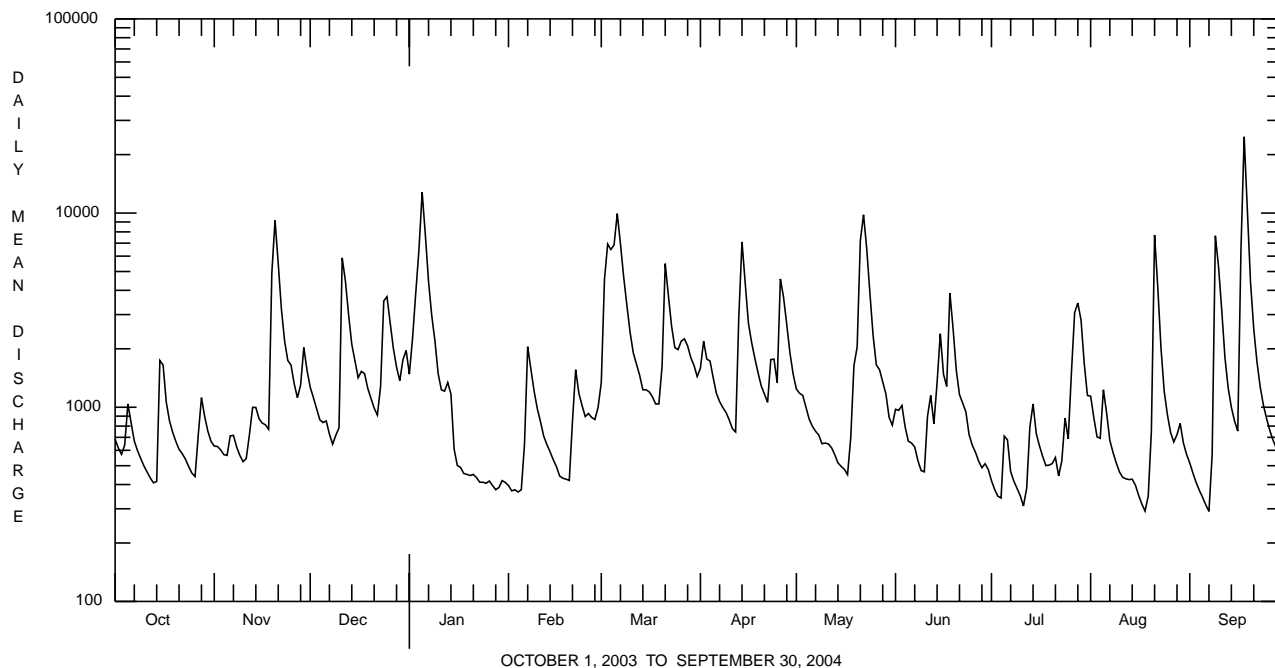
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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1919 - 2004	
ANNUAL TOTAL	432021		588238			
ANNUAL MEAN	1184		1607		888	
HIGHEST ANNUAL MEAN					1607	2004
LOWEST ANNUAL MEAN					430	1934
HIGHEST DAILY MEAN	11600	Jul 28	24700	Sep 18	28100	Jul 19 1996
LOWEST DAILY MEAN	175	Jul 18	291	Sep 7	20	Sep 28 1922
ANNUAL SEVEN-DAY MINIMUM	220	Jun 30	365	Aug 13	24	Aug 30 1939
MAXIMUM PEAK FLOW			a35800	Sep 18	a66300	Jul 19 1996
MAXIMUM PEAK STAGE			18.52	Sep 18	b23.90	Jul 19 1996
INSTANTANEOUS LOW FLOW			275	Sep 8	c19	Oct 1 1918
ANNUAL RUNOFF (CFSM)	2.24		3.04		1.68	
ANNUAL RUNOFF (INCHES)	30.44		41.44		22.84	
10 PERCENT EXCEEDS	2550		3690		2120	
50 PERCENT EXCEEDS	751		898		470	
90 PERCENT EXCEEDS	324		423		84	

a From rating curve extended above 35,000 ft³/s on basis of slope-area measurement of peak flow.

b From floodmarks.

c Minimum observed.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Other data for the Water-Quality Network can be found on pages 240-288.

COOPERATION.--Samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unfltrd lab, µS/cm 25 degC (90095)	Specif. conductance, wat unfltrd lab, µS/cm 25 degC (00095)	Temperature, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium, water, unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)
OCT 2003	16...	1028	9813	1700	11.1	6.9	6.8	223	215	10.0	80	20.3	7.2
DEC	23...	1410	9813	1290	14.0	6.7	7.0	288	316	3.0	120	29.1	10.9
FEB 2004	26...	1150	9813	963	14.0	6.4	6.8	327	313	.2	120	27.9	10.9
APR	22...	0835	9813	1070	9.3	7.4	7.0	295	298	15.0	120	28.5	10.8
JUN	24...	0950	9813	712	8.9	7.3	6.9	273	269	20.0	100	25.2	9.3
AUG	24...	1215	9813	1180	--	6.8	6.8	206	202	18.5	74	18.2	6.9

Date	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 105degC, wat fltrd, mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia, water, unfltrd, mg/L as N (00610)	Nitrate, water, unfltrd, mg/L as N (00620)	Nitrite, water, unfltrd, mg/L as N (00615)	Ortho-phosphate, water, unfltrd, mg/L as P (70507)	Phosphorus, water, unfltrd, mg/L (00665)	Total nitrogen, water, unfltrd, mg/L (00600)	Organic carbon, water, unfltrd, mg/L (00680)	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)	
OCT 2003	21	59.9	222	12	<.020	.45	<.040	.04	.043	.96	4.8	740	<10	
DEC	18	96.4	216	2	<.020	.72	<.040	.01	.011	.90	1.1	370	<10	
FEB 2004	18	85.0	188	14	.040	.79	<.040	.01	.015	1.0	1.1	330	<10	
APR	16	96.5	238	<2	<.020	.44	<.040	<.01	.019	.63	1.3	<200	<10	
JUN	26	80.0	222	<2	.040	.52	<.040	<.01	.021	.47	1.8	230	<10	
AUG	24...	23	55.0	188	<2	<.020	.56	<.040	.01	.021	.67	2.4	<200	<10

Date	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
OCT 2003	1630	1.2	380	<50	<10
DEC	790	<1.0	600	<50	20
FEB 2004	910	<1.0	440	<50	20
APR	500	<1.0	280	<50	10
JUN	660	<1.0	180	<50	50
AUG	730	<1.0	180	<50	<10

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/20/03
Benthic Macroinvertebrate	Count
Nemertea (PROBOSCIS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<i>Prostoma</i>	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
<i>Ferrissia</i>	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	2
Arthropoda	
Crustacea	
Copepoda	1
Amphipoda (SCUDS)	
Crangonyctidae	
<i>Crangonyx</i>	2
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
<i>Caecidotea</i>	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<i>Acentrella</i>	2
Ephemerellidae	
<i>Dannella</i>	4
Heptageniidae	
<i>Heptagenia</i>	1
<i>Stenonema</i>	27
Isonychiidae	
<i>Isonychia</i>	19
Plecoptera (STONEFLIES)	
Perlidae	
<i>Acroneuria</i>	3
Taeniopterygidae	
<i>Taeniopteryx</i>	2
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<i>Cheumatopsyche</i>	6
<i>Hydropsyche</i>	15
Limnephilidae	1
Philopotamidae	
<i>Chimarra</i>	5
Polycentropodidae	
<i>Neureclipsis</i>	1

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/20/03
Benthic Macroinvertebrate	Count
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<i>Optioservus</i>	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	6
Tipulidae (CRANE FLIES)	
<i>Antocha</i>	3
Total Organisms	104
Total Taxa	21