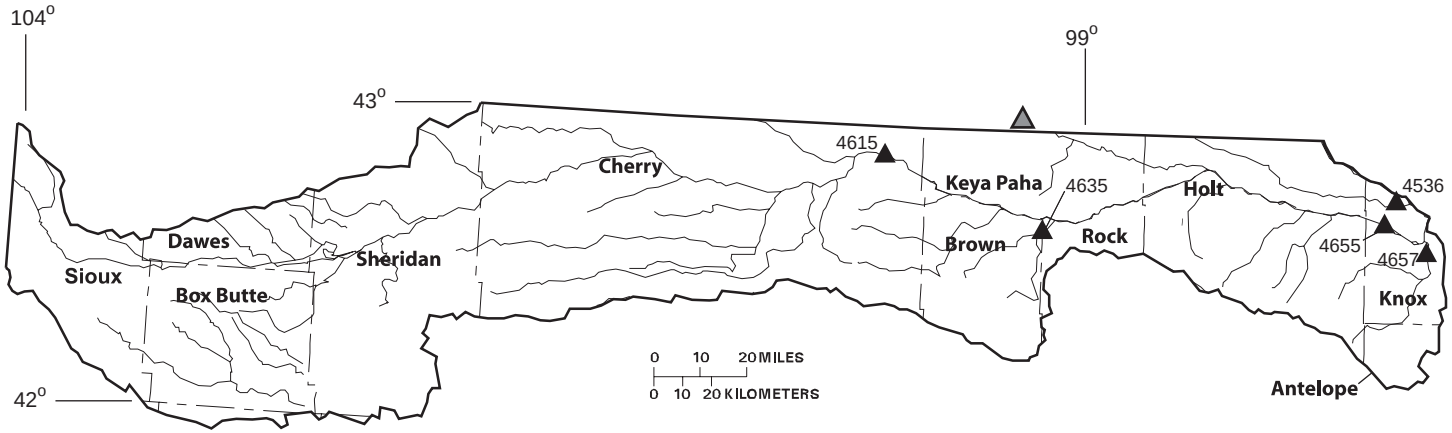
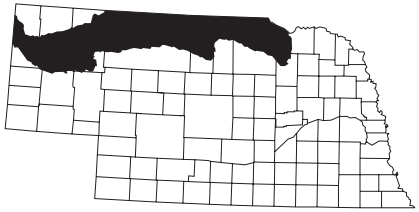




EXPLANATION

- Hydrologic boundary
- County line
- Streams
- ▲ Stream-flow gaging station
- ▲ Gaging station run by neighboring state

NOTE: To change abbreviated station number to complete station number, prefix with "06" and add zero's required to give eight digits.

*Station number	Station name	Page
	PONCA CREEK BASIN	
4536	Ponca Creek at Verdel	60
	NIOBRARA RIVER BASIN	
4615	Niobrara River near Sparks	62
4635	Long Pine Creek near Riverview	66
4645	Keya Paha River at Wewela, SD	70
4655	Niobrara River near Verdel	72
4657	Verdigre Creek near Verdigre	74

*NOTE: To change abbreviated station number to complete station number, prefix with “06” and add zero’s required to give eight digits.

06453600 PONCA CREEK AT VERDEL, NE

LOCATION.--Lat 42° 48'38", long 98° 10'32", in NE 1/4 NE 1/4 sec.30, T.33 N., R.7 W., Knox County, Hydrologic Unit 10150001, near right bank at right downstream end of bridge on State Highway 12, 0.6 mi east of Verdel and 3.8 mi upstream from mouth.

DRAINAGE AREA.--812 mi^2.

PERIOD OF RECORD.--October 1957 to current year.

REVISED RECORDS.--WSP 2117: Drainage area. WDR NE-96-1 (M).

GAGE.--Water-stage recorder and nonrecording gage read once daily. Datum of gage 1,232.9 ft above sea level (Nebraska Department of Roads reference marks). See WSP 1917 for history of changes prior to Nov. 15, 1962. Data collection platform at station.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Minor diversions for irrigation above station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.83	e9.2	e11	e11	e9.0	e13	26	49	19	15	0.96	0.74
2	1.2	e9.6	e10	e11	e9.0	e14	25	49	20	12	0.93	0.60
3	2.0	10	e11	e11	e9.8	e15	23	54	20	10	0.79	0.55
4	5.8	11	e10	e10	e9.2	e16	22	63	20	11	0.99	0.60
5	9.7	14	e9.4	e11	e8.6	e16	22	61	20	11	0.88	0.55
6	8.5	12	e8.6	e10	e9.4	e16	23	71	20	31	0.77	0.48
7	6.2	12	e8.8	e10	e9.4	e20	24	70	18	134	0.81	0.49
8	6.1	13	e9.2	e11	e8.0	e28	29	62	17	36	0.98	0.46
9	6.3	12	e9.2	e12	e8.2	e28	31	64	17	17	1.0	1.0
10	5.7	12	e9.0	e12	e8.2	e28	32	75	19	11	1.2	1.1
11	4.8	12	e9.2	e10	e8.4	e40	40	85	17	8.7	1.4	0.92
12	4.0	11	e9.4	e9.0	e8.4	e54	45	110	16	6.5	1.1	0.95
13	3.7	12	e9.4	e8.8	e8.8	67	41	111	15	5.4	0.48	0.68
14	3.6	11	e9.4	e9.4	e9.2	62	35	108	15	4.5	0.29	0.78
15	3.8	11	e9.6	e9.0	e10	91	31	84	14	3.9	0.51	0.52
16	4.0	11	e9.9	e8.8	e9.6	96	30	71	12	3.3	0.97	0.53
17	5.1	11	e11	e8.4	e9.4	96	35	63	11	2.9	0.73	0.77
18	5.0	11	e11	e7.6	e9.8	83	39	54	11	2.7	0.54	0.93
19	4.4	11	e10	e7.8	e11	72	38	47	10	2.6	0.64	0.70
20	4.2	11	e10	e8.2	e11	66	39	41	9.1	2.3	0.90	0.61
21	4.1	10	e11	e8.8	e12	59	37	36	12	1.9	0.75	0.59
22	4.4	9.7	e10	e8.4	e13	53	36	37	20	1.7	0.79	0.49
23	4.3	10	e9.6	e8.0	e12	47	35	35	27	1.4	0.72	0.53
24	5.2	9.4	e9.6	e7.0	e11	42	36	34	28	1.3	0.66	0.44
25	5.6	9.6	e9.2	e7.4	e11	38	37	31	31	1.1	0.80	0.47
26	5.8	10	e8.8	e8.4	e10	35	37	29	32	1.1	0.76	0.55
27	e6.2	e9.8	e9.2	e8.0	e11	34	41	27	73	1.3	0.63	0.51
28	e6.8	e9.6	e9.6	e8.0	e12	33	42	25	45	1.3	0.79	0.54
29	e7.4	e9.8	e11	e8.8	---	29	38	23	27	1.1	0.67	0.56
30	e8.0	10	e12	e8.8	---	27	45	21	19	1.1	0.69	0.55
31	e8.6	---	e13	e8.6	---	27	---	19	---	1.0	0.80	---
TOTAL	161.33	324.7	308.1	286.2	276.4	1,345	1,014	1,709	634.1	345.1	24.93	19.19
MEAN	5.20	10.8	9.94	9.23	9.87	43.4	33.8	55.1	21.1	11.1	0.80	0.64
MAX	9.7	14	13	12	13	96	45	111	73	134	1.4	1.1
MIN	0.83	9.2	8.6	7.0	8.0	13	22	19	9.1	1.0	0.29	0.44
AC-FT	320	644	611	568	548	2,670	2,010	3,390	1,260	685	49	38

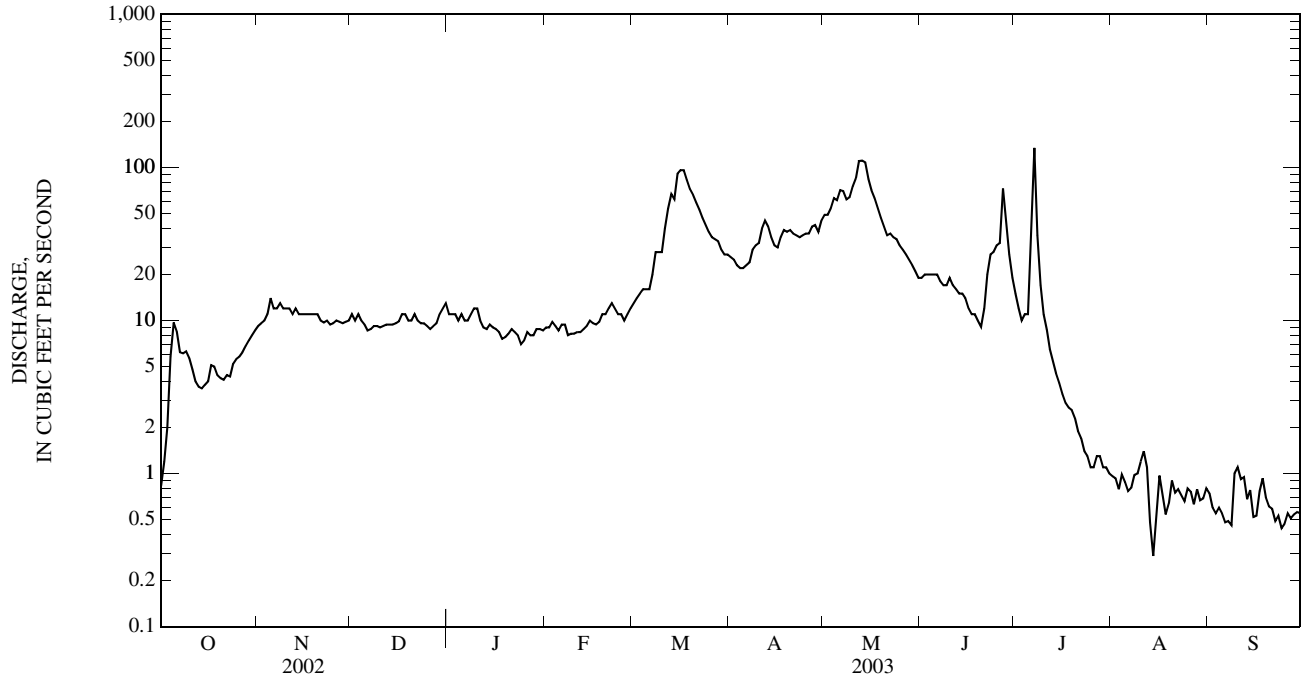
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2003, BY WATER YEAR (WY)

MEAN	26.7	30.6	21.8	18.6	53.6	233	209	187	145	91.8	39.8	30.0
MAX	229	181	105	94.0	239	1,333	818	1,405	1,237	742	327	251
(WY)	(1996)	(1999)	(1997)	(1997)	(1996)	(1960)	(1984)	(1995)	(1962)	(1993)	(1962)	(1996)
MIN	0.000	0.000	0.000	0.000	0.000	6.53	4.77	4.02	5.64	0.006	0.000	0.000
(WY)	(1959)	(1977)	(1971)	(1959)	(1969)	(1965)	(1981)	(1981)	(1976)	(1966)	(1968)	(1958)

06453600 PONCA CREEK AT VERDEL, NE—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1958 - 2003	
ANNUAL TOTAL	11,532.86		6,448.05			
ANNUAL MEAN	31.6		17.7		90.8	
HIGHEST ANNUAL MEAN					343	1962
LOWEST ANNUAL MEAN					3.75	1981
HIGHEST DAILY MEAN	379	Mar 31	134	Jul 7	14,800	Mar 28, 1960
LOWEST DAILY MEAN	0.00	Jul 20	0.29	Aug 14	*0.00	Oct 1, 1957
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 20	0.50	Sep 22	0.00	Oct 1, 1957
MAXIMUM PEAK FLOW			217	Jul 7	**15,700	Mar 27, 1960
MAXIMUM PEAK STAGE			6.26	Jul 7	***17.30	Mar 6, 1993
ANNUAL RUNOFF (AC-FT)	22,880		12,790		65,750	
10 PERCENT EXCEEDS	77		43		196	
50 PERCENT EXCEEDS	12		10		23	
90 PERCENT EXCEEDS	0.96		0.77		0.30	

e Estimated.
* No flow for many days in many years.
** Stage 15.10 ft, site and datum then in use.
*** From floodmark, ice jam.



06461500 NIOBRARA RIVER NEAR SPARKS, NE

LOCATION.--Lat 42° 54'10", long 100° 21'40", in SE 1/4 sec.22, T.34 N., R.26 W., Cherry County, Hydrologic Unit 10150004, on left bank 18 ft downstream from highway bridge, 2.2 mi downstream from Big Beaver Creek, 5.5 mi downstream from Minnechaduza Creek, 6.5 mi southwest of Sparks, and at mile 142.5.

DRAINAGE AREA .--7,150 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1209: 1947(M), 1948-50(P). WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder and peak-stage indicator gage. Datum of gage is 2,287.57 ft above sea level. Data collection platform at station.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by irrigation and power developments, storage in Box Butte Reservoir (station 06455000), and since May 1964 by storage in Merritt Reservoir (station 06459300). Additonal water-quality data available under Miscellaneous Surface-Water Quality Data.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	532	561	761	825	839	e820	938	970	711	927	490	487
2	525	598	758	869	856	e840	937	1,000	713	915	490	482
3	534	586	837	837	890	838	901	1,020	707	747	488	473
4	543	605	848	822	847	e840	891	1,140	718	637	504	472
5	538	613	e780	825	880	e820	889	1,090	725	666	491	470
6	536	615	e740	793	854	e800	912	1,040	738	676	478	464
7	537	610	758	799	876	834	928	986	732	637	474	463
8	526	613	774	801	809	876	899	1,020	734	654	469	458
9	527	622	774	826	828	885	933	1,040	717	605	483	453
10	537	614	816	876	836	842	958	978	716	592	482	478
11	536	621	818	e840	841	820	969	979	743	574	484	478
12	532	635	826	e800	836	861	1,000	946	757	565	477	481
13	523	610	844	e840	833	865	973	937	742	556	467	473
14	524	605	828	867	849	894	998	918	806	556	456	466
15	533	608	837	e900	860	921	1,020	892	761	549	458	467
16	545	601	854	e840	838	940	1,030	887	762	530	458	489
17	556	613	853	e780	849	945	1,000	872	741	524	451	470
18	564	602	855	e780	856	992	860	874	720	537	446	509
19	563	608	850	e820	857	1,100	914	893	737	560	469	516
20	564	629	841	880	862	1,100	900	877	747	532	473	498
21	558	603	861	e900	878	1,050	909	868	750	526	474	500
22	555	601	e840	e840	887	1,030	908	837	1,080	535	476	503
23	563	603	e820	e800	855	1,020	891	818	887	513	469	504
24	581	612	e780	e760	818	1,000	896	933	1,040	499	456	496
25	568	605	e780	e800	723	1,000	870	855	1,150	493	500	483
26	574	596	e800	e800	e760	957	869	842	999	496	470	480
27	572	635	e820	e800	e780	986	880	830	916	493	449	474
28	587	636	e860	851	e800	992	876	741	943	493	429	470
29	601	758	e900	868	---	966	866	772	933	495	422	468
30	661	796	904	869	---	953	899	745	910	517	427	473
31	601	---	841	844	---	949	---	727	---	500	442	---
TOTAL	17,196	18,614	25,458	25,752	23,497	28,736	27,714	28,327	24,335	18,099	14,502	14,398
MEAN	555	620	821	831	839	927	924	914	811	584	468	480
MAX	661	796	904	900	890	1,100	1,030	1,140	1,150	927	504	516
MIN	523	561	740	760	723	800	860	727	707	493	422	453
AC-FT	34,110	36,920	50,500	51,080	46,610	57,000	54,970	56,190	48,270	35,900	28,760	28,560

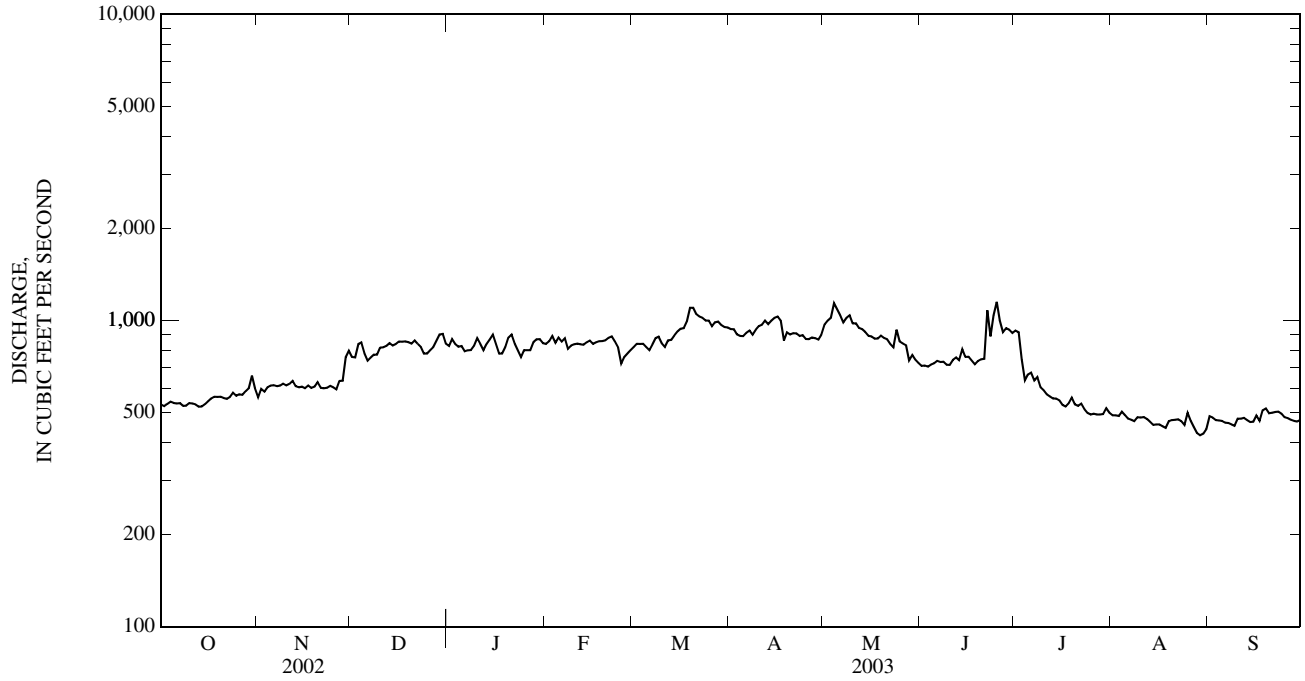
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

MEAN	665	754	766	777	886	971	909	900	817	630	588	606
MAX	879	1,092	950	1,208	1,403	1,464	1,214	1,385	1,470	1,122	858	993
(WY)	(1966)	(1999)	(1986)	(1984)	(1984)	(1949)	(1958)	(1995)	(1967)	(1962)	(1951)	(1951)
MIN	481	484	448	525	631	584	615	612	506	383	417	426
(WY)	(1977)	(1977)	(1969)	(1969)	(1975)	(1976)	(1967)	(1969)	(1985)	(1974)	(1980)	(1980)

06461500 NIOBRARA RIVER NEAR SPARKS, NE—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL TOTAL	255,793		266,628			
ANNUAL MEAN	701		730		772	
HIGHEST ANNUAL MEAN					911	1962
LOWEST ANNUAL MEAN					598	1976
HIGHEST DAILY MEAN	1,170	May 2	1,150	Jun 25	5,000	Feb 5, 1984
LOWEST DAILY MEAN	376	Aug 2	422	Aug 29	100	Jan 10, 1957
ANNUAL SEVEN-DAY MINIMUM	389	Jul 28	447	Aug 26	327	Dec 8, 1949
MAXIMUM PEAK FLOW			*1,310	Jun 25	**10,200	Mar 5, 1949
MAXIMUM PEAK STAGE			***3.45	Dec 28	***10.06	Feb 7, 1973
ANNUAL RUNOFF (AC-FT)	507,400		528,900		559,100	
10 PERCENT EXCEEDS	945		951		1,030	
50 PERCENT EXCEEDS	757		774		764	
90 PERCENT EXCEEDS	425		478		505	

e Estimated.
* Stage 3.33 ft.
** From rating curve extended above 3,800 ft^3/s, stage 6.73 ft.
***Backwater from ice.



06461500 NIOBRARA RIVER NEAR SPARKS, NE—Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to current year.

PERIOD OF DAILY RECORD.-
SPECIFIC CONDUCTANCE: October 1982 to September 1993.
WATER TEMPERATURES: October 1982 to September 1993.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 354 microsiemens Dec. 3, 1983; minimum daily, 153 microsiemens Nov. 22, 26, 1988.
WATER TEMPERATURES: Maximum daily, 35.0° C July 1, 1990; minimum daily, 0.0° C on several days during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
NOV													
13...	1400	601	8.7	228	16.0	7.0	94	31.0	4.11	5.48	0.4	9.11	16
FEB													
13...	1410	892	7.9	218	11.5	4.5	85	27.6	3.89	6.11	0.4	7.88	16

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L (71856)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L (00660)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)
NOV													
13...	E87	2.24	0.26	53.3	4.9	0.13	<0.04	--	0.033	0.010	0.392	0.13	0.13
FEB													
13...	E118	0.86	0.35	56.1	6.3	0.16	<0.04	0.51	--	E.005	0.187	0.06	0.07

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)	Manganese, water, fltrd, ug/L (01056)
NOV					
13...	0.12	--	24	E8	E2.2
FEB					
13...	0.15	0.67	17	16	2.6

Remark codes used in this table:
< -- Less than
E -- Estimated value

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06463500 LONG PINE CREEK NEAR RIVERVIEW, NE

LOCATION.--Lat 42° 41'21", long 99° 40'43", in SE 1/4 NE 1/4 sec.5, T.31 N., R.20 W., Brown County, Hydrologic Unit 10150004, on left bank 15 ft downstream from county road bridge, 1 mi downstream from Bone Creek, 5.5 mi southwest of Riverview, and at mile 6.2.

DRAINAGE AREA.--458 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1948 to January 1954, September 1954 to current year.

REVISED RECORDS.--WSP 1729: 1952(M). WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,983.34 ft above sea level, (levels by Bureau of Reclamation). Prior to Dec. 7, 1962, at site 100 ft upstream at present datum. Data collection platform at station.

REMARKS.--Records good. Flow includes return water from Ainsworth Irrigation District since 1965.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	159	159	160	166	161	159	198	159	197	203	180
2	141	161	162	158	168	159	157	210	169	178	180	181
3	149	163	159	159	164	163	156	212	161	177	185	184
4	162	163	159	161	162	161	155	287	167	205	209	181
5	151	163	153	158	161	159	154	419	175	207	201	185
6	148	161	163	157	160	164	156	348	172	215	177	180
7	148	161	163	160	154	163	162	251	181	210	194	169
8	151	162	160	159	166	159	160	213	187	221	192	167
9	153	164	158	154	163	155	168	444	183	215	203	171
10	155	160	159	148	162	156	174	513	179	203	284	173
11	156	158	159	147	162	159	172	343	180	176	238	166
12	153	159	159	153	162	159	162	268	174	191	204	183
13	151	159	158	155	164	159	158	224	164	199	198	181
14	153	157	160	151	169	164	157	198	164	199	194	187
15	152	159	161	155	165	163	157	185	164	194	182	184
16	156	158	163	149	164	162	161	180	164	182	175	173
17	159	158	163	150	167	162	160	174	239	198	184	174
18	158	159	163	159	168	168	164	171	228	183	181	180
19	157	158	160	160	167	173	165	171	189	191	175	176
20	157	159	157	161	168	178	164	168	176	196	189	165
21	157	159	158	157	167	173	162	173	180	188	193	164
22	156	157	155	150	164	167	159	194	333	178	188	165
23	157	159	155	160	154	162	168	202	268	182	200	165
24	159	158	152	157	157	158	187	211	270	188	203	161
25	158	156	155	156	155	156	204	209	292	190	203	161
26	158	157	156	152	158	157	198	201	253	183	198	163
27	163	158	158	159	162	171	179	195	230	215	189	158
28	165	161	160	163	163	165	167	177	222	230	178	153
29	169	164	161	160	---	157	165	179	214	213	181	153
30	173	159	162	161	---	159	182	173	208	207	186	151
31	163	---	158	163	---	160	---	158	---	205	187	---
TOTAL	4,826	4,789	4,928	4,852	4,562	5,032	4,992	7,249	6,045	6,116	6,054	5,134
MEAN	156	160	159	157	163	162	166	234	202	197	195	171
MAX	173	164	163	163	169	178	204	513	333	230	284	187
MIN	138	156	152	147	154	155	154	158	159	176	175	151
AC-FT	9,570	9,500	9,770	9,620	9,050	9,980	9,900	14,380	11,990	12,130	12,010	10,180

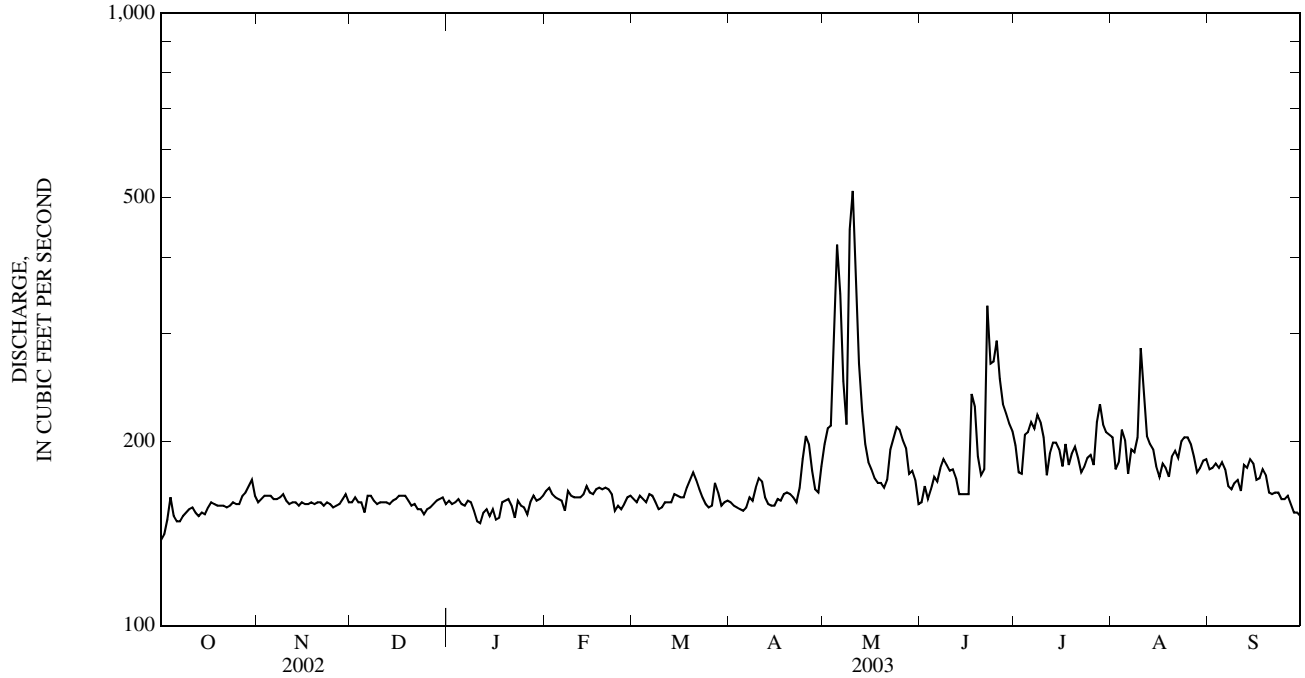
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2003, BY WATER YEAR (WY)

MEAN	142	143	141	138	148	168	173	185	174	165	163	158
MAX	254	238	191	180	256	257	369	495	396	368	256	263
(WY)	(1996)	(1999)	(1996)	(1995)	(1996)	(1987)	(1995)	(1995)	(1951)	(1962)	(1998)	(1986)
MIN	100	101	102	103	96.5	106	114	103	105	99.0	92.9	88.1
(WY)	(1949)	(1950)	(1969)	(1957)	(1951)	(1951)	(1950)	(1948)	(1948)	(1949)	(1948)	(1948)

06463500 LONG PINE CREEK NEAR RIVERVIEW, NE—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1948 - 2003	
ANNUAL TOTAL	59,873		64,579			
ANNUAL MEAN	164		177		159	
HIGHEST ANNUAL MEAN					231	1995
LOWEST ANNUAL MEAN					111	1949
HIGHEST DAILY MEAN	213	May 3	513	May 10	3,050	Jul 1, 1962
LOWEST DAILY MEAN	132	Sep 23	138	Oct 1	44	Jan 10, 1963
ANNUAL SEVEN-DAY MINIMUM	135	Sep 22	148	Oct 1	76	Jan 10, 1963
MAXIMUM PEAK FLOW			563	May 10	9,650	Jul 1, 1962
MAXIMUM PEAK STAGE			2.52	May 10	*15.68	Jul 1, 1962
ANNUAL RUNOFF (AC-FT)	118,800		128,100		115,100	
10 PERCENT EXCEEDS	181		207		203	
50 PERCENT EXCEEDS	161		164		150	
90 PERCENT EXCEEDS	152		155		112	

* Backwater from fallen bridge.



06463500 LONG PINE CREEK NEAR RIVERVIEW, NE—Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)
NOV													
14...	1040	159	8.3	200	9.0	8.5	80	25.8	3.69	5.32	0.4	7.58	16
FEB													
13...	0930	161	8.1	198	-1.0	4.0	77	24.8	3.60	5.47	0.3	6.94	15

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L (00660)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)
NOV													
14...	E113	2.05	0.37	53.7	6.7	0.14	<0.04	0.65	E.004	0.175	0.06	0.05	0.10
FEB													
13...	E98	1.50	0.25	60.9	4.8	0.10	E.02	2.30	E.007	0.435	0.14	0.12	0.17

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Total nitrogen, water, fltrd, mg/L (00602)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)	Manganese, water, fltrd, ug/L (01056)
NOV				
14...	0.79	20	<10	E2.0
FEB				
13...	2.4	14	E7	2.6

Remark codes used in this table:
< -- Less than
E -- Estimated value

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06464500 KEYA PAHA RIVER AT WEWELA, SD

LOCATION.--Lat 43° 01'44", long 99° 46'49", in NW$^1/_4$ SW$^1/_4$ SE$^1/_4$ sec.24, T.95 N., R.76 W., Tripp County, Hydrologic Unit 10150006, on right bank at downstream side of bridge on U.S. Highway 183, 1.0 mi north of Wewela, 4.5 mi upstream from Holt Creek, and 11.5 mi downstream from Lost Creek.

DRAINAGE AREA.--1,070 mi^2, approximately.

PERIOD OF RECORD.--November 1937 to September 1940, October 1947 to current year. Monthly discharge only for October 1947, published in WSP 1309.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,049.78 ft above NGVD of 1929. Prior to June 21, 1957, nonrecording gage at site 13 ft upstream at same datum. Prior to Aug. 23, 1984, recording gage on left bank 13 ft downstream from bridge at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	e50	e43	e48	e50	e52	68	99	50	92	14	11
2	26	e45	e40	e47	e52	e51	66	114	49	77	14	12
3	27	e53	e39	e46	e55	e50	64	118	50	65	13	11
4	31	50	e38	e47	e53	e51	e62	151	53	55	13	11
5	30	50	e38	e48	e52	e50	e60	210	51	50	16	10
6	30	50	e39	e48	e50	e49	e60	229	55	48	15	9.8
7	29	47	e39	e49	e49	e50	e66	206	55	46	13	9.5
8	28	47	e40	e49	e48	e52	75	189	51	43	13	8.3
9	28	47	e40	e48	e48	e51	83	276	49	43	13	7.8
10	28	45	e40	e46	e47	e49	100	302	48	42	17	8.3
11	28	43	e41	e43	e47	e52	111	284	47	40	18	7.9
12	27	44	e42	e44	e46	e55	102	240	e45	36	14	8.2
13	25	45	e43	e45	e46	e65	91	201	e42	34	13	9.0
14	26	45	e44	e46	e47	e80	80	167	e42	29	12	9.4
15	26	44	e45	e45	e48	e100	71	141	e41	26	12	10
16	28	44	e46	e44	e47	125	71	123	e42	23	12	12
17	30	45	e47	e45	e48	110	69	108	e41	22	11	13
18	29	44	e46	e46	e52	109	69	97	39	22	10	15
19	30	44	e45	e47	e58	113	73	90	38	23	11	16
20	30	43	e40	e48	e70	123	78	81	35	23	17	16
21	31	44	e38	e47	e85	135	80	75	34	23	15	17
22	32	44	e39	e46	e90	136	78	72	50	21	12	17
23	33	43	e42	e45	e76	127	75	70	69	19	11	16
24	35	e40	e44	e44	e63	113	87	77	118	18	9.4	16
25	36	e36	e45	e44	e54	103	103	76	220	16	9.3	16
26	37	e38	e44	e44	e53	89	105	71	226	16	9.4	17
27	39	e44	e45	e45	e52	84	96	67	194	16	9.0	18
28	40	e50	e46	e46	e52	78	87	62	168	16	8.2	18
29	41	e55	e47	e45	---	72	79	57	135	16	8.5	18
30	43	e48	e48	e46	---	73	81	55	111	17	8.6	18
31	38	---	e49	e47	---	72	---	51	---	16	9.9	---
TOTAL	965	1,367	1,322	1,428	1,538	2,519	2,390	4,159	2,248	1,033	381.3	386.2
MEAN	31.1	45.6	42.6	46.1	54.9	81.3	79.7	134	74.9	33.3	12.3	12.9
MAX	43	55	49	49	90	136	111	302	226	92	18	18
MIN	24	36	38	43	46	49	60	51	34	16	8.2	7.8
AC-FT	1,910	2,710	2,620	2,830	3,050	5,000	4,740	8,250	4,460	2,050	756	766

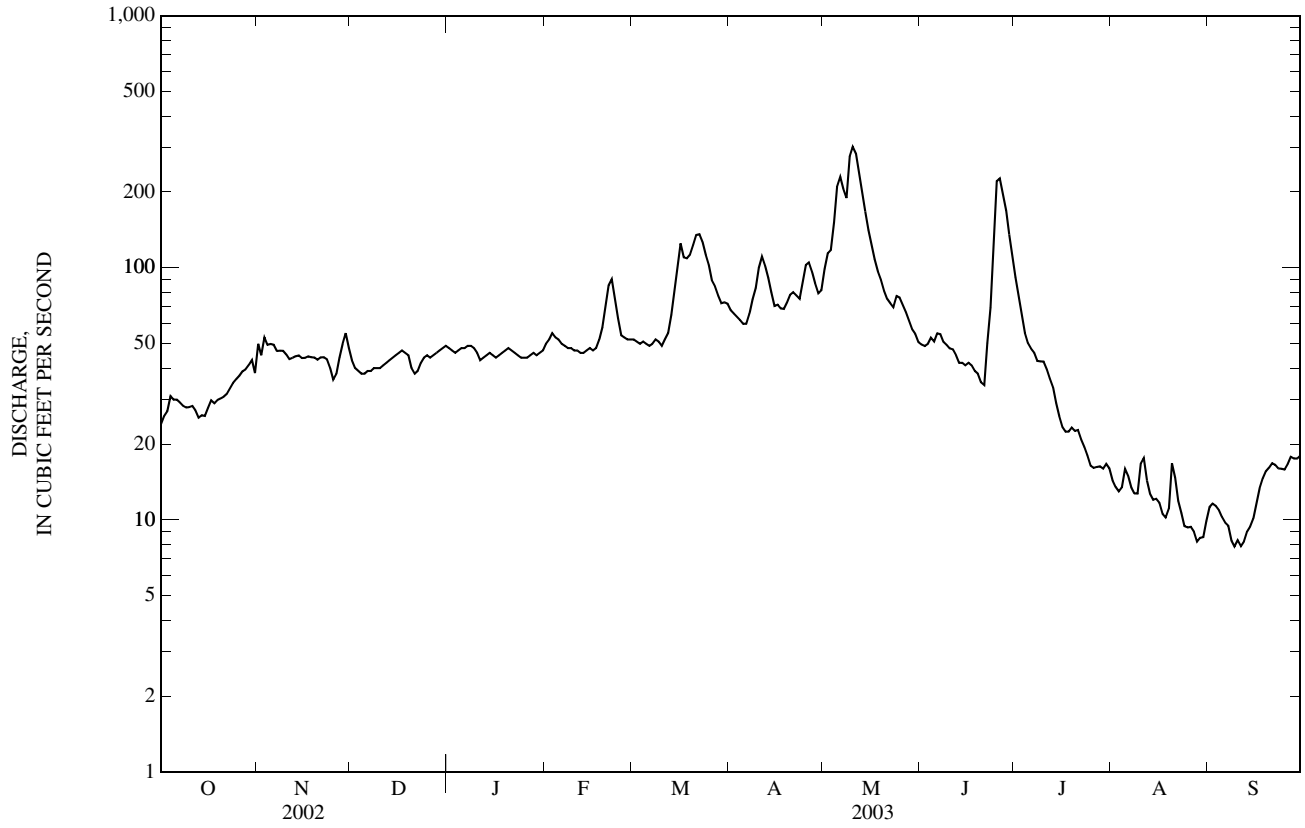
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1940, 1948 - 2003, BY WATER YEAR (WY)

MEAN	41.2	47.5	39.1	33.8	76.1	176	166	148	108	65.3	36.7	31.2
MAX	141	204	120	135	546	598	605	754	512	607	178	89.2
(WY)	(1996)	(1999)	(2002)	(1997)	(1997)	(1960)	(1952)	(1995)	(1962)	(1962)	(1998)	(1999)
MIN	8.49	12.0	8.74	1.61	5.08	33.5	31.3	27.4	12.2	3.55	0.80	3.71
(WY)	(1977)	(1977)	(1956)	(1949)	(1979)	(1975)	(1976)	(1981)	(1976)	(1940)	(1976)	(1976)

06464500 KEYA PAHA RIVER AT WEWELA, SD—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939-1940, 1948-2003	
ANNUAL TOTAL	22,977		19,736.5			
ANNUAL MEAN	63.0		54.1		[a]80.6	
HIGHEST ANNUAL MEAN					188	1997
LOWEST ANNUAL MEAN					19.5	1976
HIGHEST DAILY MEAN	500	Mar 31	302	May 10	4,930	Mar 30, 1952
LOWEST DAILY MEAN	11	Jul 31	7.8	Sep 9	[b]0.00	Jan 10, 1949
ANNUAL SEVEN-DAY MINIMUM	12	Jul 28	8.4	Sep 8	0.00	Jan 10, 1949
MAXIMUM PEAK FLOW			[c]331	May 9	[d]5,430	Mar 31, 1952
MAXIMUM PEAK STAGE			[f]3.43	Mar 14	[f]13.50	Mar 25, 1950
ANNUAL RUNOFF (AC-FT)	45,570		39,150		58,410	
10 PERCENT EXCEEDS	122		102		166	
50 PERCENT EXCEEDS	45		46		43	
90 PERCENT EXCEEDS	17		13		16	

a Median of annual mean discharges, 70 ft^3/s.
b Also Jan. 11 to Feb. 15, 1949, and Aug. 19 to Sept. 14, 1976.
c Gage height, 3.04 ft.
d Gage height, 13.08 ft.
e Estimated.
f Backwater from ice.



06465500 NIOBRARA RIVER NEAR VERDEL, NE

LOCATION.--Lat 42° 44'23", long 098° 13'26", in NW 1/4 NW 1/4 sec.23, T.32 N., R.8 W., Knox County, Hydrologic Unit 10150007, on right bank at downstream side of county road bridge, 6.6 mi south of Verdel, 7.5 mi upstream from Verdigre Creek, and at mile 14.8.

DRAINAGE AREA .--11,580 mi^2 .

PERIOD OF RECORD.--April 1938 to May 1940, June 1958 to current year.

REVISED RECORDS.--WDR NE-94-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,312.12 ft above sea level. Apr. 25, 1938, to June 16, 1939, nonrecording gage at site 2600 ft downstream; June 17, 1939, to June 13, 1940, nonrecording gage 2850 ft downstream; and June 14, 1940 to July 24, 1985, water-stage recorder at site 2600 ft downstream, all at datum 4.00 ft lower. Data collection platform at station.

REMARKS.--Records poor. Natural flow of stream affected by irrigation and power developments.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,090	1,450	1,390	3,220	e1,450	e1,250	1,950	3,260	1,850	1,670	1,020	887
2	1,100	1,290	1,990	2,800	e1,500	e1,300	1,960	3,010	1,970	1,610	1,030	879
3	1,200	1,290	1,550	2,020	e1,650	e1,250	1,690	2,720	1,900	1,610	1,050	853
4	2,000	1,330	1,710	2,160	e1,500	e1,250	1,470	3,210	1,710	1,830	1,050	824
5	1,660	1,350	1,050	2,490	e1,350	e1,300	1,190	3,730	1,680	1,960	1,090	809
6	1,410	1,390	908	2,400	e1,300	e1,150	1,120	2,970	1,510	2,420	1,040	781
7	1,370	1,410	1,480	1,870	e1,300	e1,200	1,440	1,910	1,410	1,740	1,100	753
8	1,350	1,390	1,900	1,490	e1,200	e1,350	1,560	1,770	1,310	1,560	1,040	736
9	1,480	1,370	1,770	1,520	e1,200	e1,300	1,590	2,900	1,160	1,400	1,070	757
10	1,400	1,360	1,600	1,220	e1,200	e1,200	1,580	3,040	1,130	1,270	1,170	843
11	1,280	1,220	1,700	886	e1,250	e1,250	1,490	2,990	1,140	1,170	1,410	914
12	1,230	1,460	1,740	798	e1,250	e1,400	1,610	2,220	1,320	1,070	1,490	949
13	1,190	1,690	1,900	e840	e1,300	e1,600	1,610	2,120	1,430	1,030	1,270	936
14	894	1,600	1,990	e960	e1,300	e1,550	1,380	2,510	1,590	1,010	1,130	944
15	1,130	1,510	1,980	e920	e1,500	e1,800	1,670	1,860	1,570	958	997	954
16	1,180	1,580	2,050	e900	e1,450	e2,050	1,760	1,750	1,560	881	918	908
17	1,120	1,500	2,050	e900	e1,250	2,200	1,810	1,510	1,840	865	865	913
18	1,090	1,460	2,020	921	e1,300	1,980	1,620	1,350	1,990	836	831	898
19	1,020	1,260	2,040	949	e1,400	1,990	1,740	1,520	1,760	873	839	935
20	1,190	1,450	1,740	e1,000	e1,400	1,810	1,520	1,600	1,500	914	845	936
21	1,370	1,410	1,850	e1,300	e1,500	1,800	1,500	1,500	1,490	934	859	956
22	1,400	1,450	1,990	e1,200	e1,500	1,940	1,310	1,610	2,090	966	850	934
23	1,040	1,470	1,820	e1,100	e1,350	2,230	1,440	1,400	3,000	946	856	935
24	1,230	1,450	1,480	e960	e1,250	2,650	1,360	1,450	2,330	941	857	933
25	1,060	1,440	1,610	e980	e1,200	2,590	1,680	1,650	2,920	935	878	858
26	1,030	1,480	1,790	e1,060	e1,040	2,640	1,580	1,670	2,520	910	900	829
27	1,370	1,590	2,160	e1,040	e1,100	2,970	1,840	1,520	2,240	922	898	696
28	1,900	1,430	2,490	e1,100	e1,200	2,440	2,050	1,510	1,990	1,010	906	695
29	1,900	1,390	2,530	e1,300	---	1,920	2,060	1,350	1,830	1,100	887	719
30	1,960	1,240	2,960	e1,250	---	1,700	2,820	1,390	1,800	1,070	839	803
31	1,670	---	3,020	e1,200	---	1,840	---	1,620	---	1,010	856	---
TOTAL	41,314	42,710	58,258	42,754	37,190	54,900	49,400	64,620	53,540	37,421	30,841	25,767
MEAN	1,333	1,424	1,879	1,379	1,328	1,771	1,647	2,085	1,785	1,207	995	859
MAX	2,000	1,690	3,020	3,220	1,650	2,970	2,820	3,730	3,000	2,420	1,490	956
MIN	894	1,220	908	798	1,040	1,150	1,120	1,350	1,130	836	831	695
AC-FT	81,950	84,720	115,600	84,800	73,770	108,900	97,980	128,200	106,200	74,220	61,170	51,110

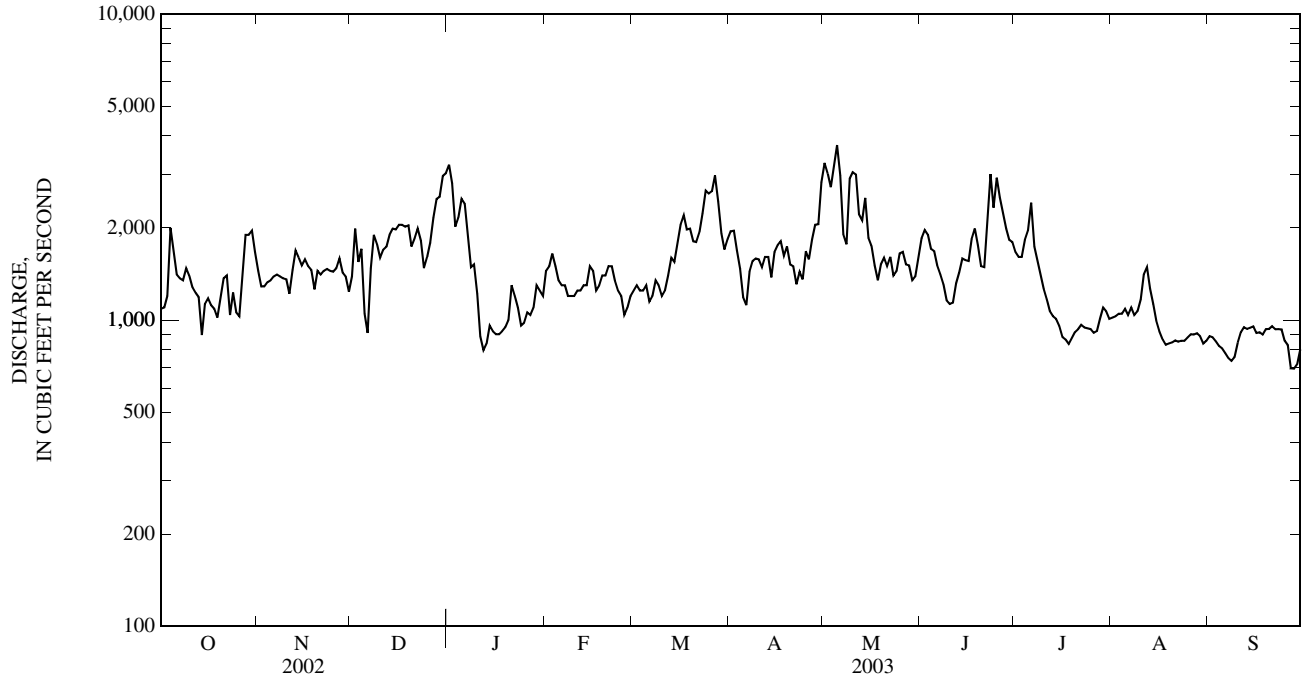
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

MEAN	1,433	1,534	1,411	1,453	1,910	2,570	2,350	2,209	1,870	1,402	1,129	1,249
MAX	2,480	2,762	2,118	2,148	3,557	4,425	4,693	5,290	4,442	5,370	2,049	2,094
(WY)	(1996)	(1999)	(1997)	(1999)	(1997)	(1960)	(1995)	(1995)	(1962)	(1962)	(1962)	(1986)
MIN	1,009	943	787	706	941	1,444	1,282	1,228	1,044	551	644	704
(WY)	(1977)	(1977)	(1969)	(1940)	(1939)	(1981)	(1939)	(1969)	(1976)	(1974)	(1971)	(1939)

06465500 NIOBRARA RIVER NEAR VERDEL, NE—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	597,193		538,715			
ANNUAL MEAN	1,636		1,476		1,717	
HIGHEST ANNUAL MEAN					2,461	1962
LOWEST ANNUAL MEAN					1,269	1976
HIGHEST DAILY MEAN	3,430	Apr 23	3,730	May 5	25,100	Mar 27, 1960
LOWEST DAILY MEAN	608	Jul 22	695	Sep 28	104	Nov 30, 1960
ANNUAL SEVEN-DAY MINIMUM	648	Jul 19	786	Sep 4	210	Nov 27, 1976
MAXIMUM PEAK FLOW			*4,340	May 5	39,000	Mar 27, 1960
MAXIMUM PEAK STAGE			**5.52	Jan 31	10.62	Mar 12, 1966
ANNUAL RUNOFF (AC-FT)	1,185,000		1,069,000		1,244,000	
10 PERCENT EXCEEDS	2,740		2,100		2,700	
50 PERCENT EXCEEDS	1,550		1,400		1,520	
90 PERCENT EXCEEDS	817		896		900	

e Estimated.
* Stage 3.58 ft.
** Backwater from ice.



06465700 VERDIGRE CREEK NEAR VERDIGRE, NE

LOCATION.--Lat 42° 39'16", long 98° 02'35", in NE 1/4 NE 1/4 sec.20, T.31 N., R.6 W., Knox County, Hydrologic Unit 10150007, on right bank, near downstream side of county bridge, 0.2 mile west of Highway 14, and 4.0 miles north of Verdigre.

DRAINAGE AREA .--470 mi^2 approximately.

PERIOD OF RECORD.--November 1957 to July 1958 (measurements only). May 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,290 ft above sea level, from topographic map. Data collection platform at station.

REMARKS.--Records good except for estimated daily discharges, which are poor.

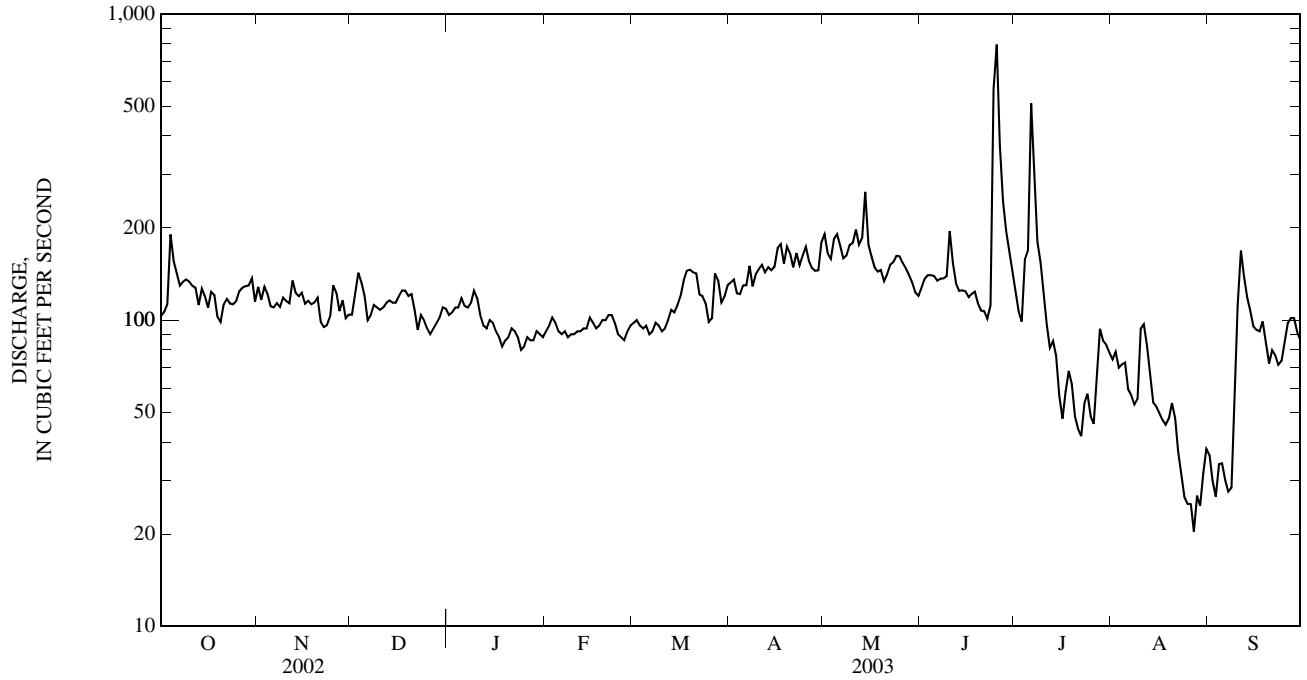
DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	128	104	e104	e92	e98	133	191	128	127	75	36
2	106	117	123	e106	e96	e100	136	165	137	107	79	30
3	113	129	143	e110	e102	e96	122	158	140	99	70	27
4	190	122	133	e110	e98	e94	122	185	140	158	72	34
5	156	111	e120	e118	e92	e96	130	191	139	169	73	34
6	142	110	e100	111	e90	e90	130	175	135	511	60	30
7	130	114	e104	e110	e92	e92	150	159	137	294	57	28
8	133	110	e112	e114	e88	e98	129	163	137	180	53	28
9	136	118	e110	e125	e90	e96	141	176	139	154	55	50
10	134	115	e108	e118	e90	e92	147	179	196	123	94	113
11	129	114	e110	e104	e92	e94	152	198	153	96	97	169
12	128	135	e114	96	e92	e100	143	176	132	81	83	139
13	112	123	e116	e94	e94	e108	149	186	125	85	66	119
14	127	120	e114	e100	e94	e106	146	263	125	76	54	108
15	120	123	e114	e98	e102	e112	149	177	124	57	52	95
16	110	113	e120	e92	e98	e120	172	162	119	48	50	93
17	124	116	e125	e88	e94	e135	177	149	122	58	47	92
18	121	113	e125	e82	e96	e145	153	144	124	68	46	99
19	103	114	e120	e86	e100	146	174	146	114	62	48	84
20	99	118	122	e88	e100	143	165	134	107	48	54	72
21	112	99	108	e94	e104	142	149	141	107	44	48	80
22	117	95	93	e92	e104	121	166	152	101	42	37	77
23	113	96	e104	e88	e98	120	151	155	112	53	31	71
24	113	103	e100	e80	e90	113	162	162	569	58	26	74
25	116	130	e94	e82	e88	99	174	162	795	49	25	85
26	124	123	e90	e88	e86	101	156	154	376	46	25	98
27	128	107	e94	e86	e92	142	148	147	245	69	20	102
28	129	116	e98	e86	e96	135	145	141	195	94	27	102
29	130	101	e102	e92	---	114	146	133	171	86	25	92
30	137	104	e110	e90	---	119	179	123	147	83	32	86
31	115	---	e109	e88	---	130	---	120	---	78	38	---
TOTAL	3,850	3,437	3,439	3,020	2,650	3,497	4,496	5,067	5,491	3,303	1,619	2,347
MEAN	124	115	111	97.4	94.6	113	150	163	183	107	52.2	78.2
MAX	190	135	143	125	104	146	179	263	795	511	97	169
MIN	99	95	90	80	86	90	122	120	101	42	20	27
AC-FT	7,640	6,820	6,820	5,990	5,260	6,940	8,920	10,050	10,890	6,550	3,210	4,660

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	124	115	111	97.4	94.6	113	150	157	144	80.2	85.0	86.8
MAX	124	115	111	97.4	94.6	113	150	163	183	107	118	95.4
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)
MIN	124	115	111	97.4	94.6	113	150	150	106	53.8	52.2	78.2
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2003)	(2003)

06465700 VERDIGRE CREEK NEAR VERDIGRE, NE—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	42,216			
ANNUAL MEAN	116		116	
HIGHEST ANNUAL MEAN			116	2003
LOWEST ANNUAL MEAN			116	2003
HIGHEST DAILY MEAN	795	Jun 25	795	Jun 25, 2003
LOWEST DAILY MEAN	20	Aug 27	20	Aug 27, 2003
ANNUAL SEVEN-DAY MINIMUM	26	Aug 23	26	Aug 23, 2003
MAXIMUM PEAK FLOW	*1,190	Jun 25	*1,190	Jun 25, 2003
MAXIMUM PEAK STAGE	**4.90	Feb 19	**4.90	Feb 19, 2003
ANNUAL RUNOFF (AC-FT)	83,740		83,790	
10 PERCENT EXCEEDS	162		162	
50 PERCENT EXCEEDS	110		110	
90 PERCENT EXCEEDS	56		56	

e Estimated.
* Stage 4.62 ft. From rating extended above 475 ft^3/s.
** Backwater from ice.