

**08219500 SOUTH FORK RIO GRANDE AT SOUTH FORK, CO**

LOCATION.--Lat 37°39'25", long 106°38'55", in SW¼NE¼ sec.3, T.39 N., R.3 E., Rio Grande County, Hydrologic Unit 13010001, on left bank near U.S. Highway 160, 0.1 mi downstream from Church Creek, 0.9 mi southwest of village of South Fork, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--216 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1910 to September 1922, May 1936 to September 1995, and October 1998 to current year. Monthly discharge only for some periods, published in WSP 1312. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08219500](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08219500)

REVISED RECORDS.--WSP 898: 1911(M). WSP 1312: 1912, 1944(M). WSP 1632: 1956-58(P).

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 8,221.79 ft above NGVD of 1929. Aug. 9, 1910 to Mar. 28, 1915, nonrecording gage, and Mar. 29, 1915 to Sept. 30, 1922, water-stage recorder, at bridges 1 mi downstream at different datums.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, transmountain diversions from Colorado River Basin through Treasure Pass ditch (see elsewhere in this report), diversions for irrigation, and return flows from irrigated areas. Flow slightly regulated by Beaver Creek Reservoir on Beaver Creek, capacity, 4,760 acre-ft, and several other storage reservoirs.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, exceeds all other observed floods at this location since at least 1873. Flood of June 29, 1927, reached a stage about 1 ft lower than that of Oct. 5, 1911, from information by local residents.

**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	61	40	e26	e21	e26	e27	58	278	739	73	47	56
2	74	34	e23	e19	e26	e27	73	270	648	72	63	48
3	120	29	e25	e21	e22	e28	65	277	598	66	46	42
4	88	32	e21	e23	e20	e30	60	278	545	61	39	43
5	78	27	e20	e23	e17	e29	58	233	496	58	34	50
6	71	27	e19	e22	e15	e29	55	204	427	56	28	62
7	68	30	e19	e19	e13	e32	52	183	386	56	30	61
8	64	33	e20	e19	e15	e33	e46	174	355	57	33	53
9	61	33	e19	e21	e17	e35	55	154	343	55	37	97
10	56	e26	e18	e22	e18	e36	71	143	317	51	37	325
11	52	e23	e19	e22	e21	e38	93	145	296	47	40	192
12	52	e22	e21	e18	e25	e38	106	203	271	47	40	139
13	54	e27	e21	e19	e29	e39	109	281	251	47	43	121
14	46	e28	e20	e21	e29	e39	143	317	220	44	36	106
15	42	e25	e23	e23	e27	e40	177	428	206	42	35	88
16	40	e21	e23	e21	e27	e39	144	443	215	44	34	67
17	38	e27	e23	e20	e30	e37	142	590	197	50	32	62
18	38	e29	e18	e19	e28	e35	133	703	194	48	35	55
19	36	e28	e16	e20	e26	e37	118	685	199	47	39	51
20	36	e30	e16	e20	e27	e37	97	669	196	52	36	48
21	35	e30	e18	e21	e29	37	101	686	174	50	33	47
22	34	e28	e16	e21	e28	38	107	759	158	47	37	45
23	37	e30	e18	e23	e28	43	102	779	145	55	50	43
24	39	e30	e16	e24	e30	51	96	759	123	56	54	42
25	36	e28	e15	e23	e30	55	114	706	107	49	e63	40
26	38	e23	e14	e21	e29	55	151	650	93	46	78	38
27	43	e23	e17	e23	e28	52	197	699	87	48	76	49
28	39	e24	e18	e22	e29	48	256	765	82	51	72	59
29	45	e27	e20	e21	---	e39	295	826	77	57	78	44
30	41	e26	e19	e23	---	45	315	819	74	56	71	44
31	48	---	e19	e24	---	47	---	819	---	49	68	---
TOTAL	1,610	840	600	659	689	1,195	3,589	14,925	8,219	1,637	1,444	2,217
MEAN	51.9	28.0	19.4	21.3	24.6	38.5	120	481	274	52.8	46.6	73.9
MAX	120	40	26	24	30	55	315	826	739	73	78	325
MIN	34	21	14	18	13	27	46	143	74	42	28	38
AC-FT	3,190	1,670	1,190	1,310	1,370	2,370	7,120	29,600	16,300	3,250	2,860	4,400

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2003, BY WATER YEAR (WY)**

MEAN	90.4	57.4	43.4	37.3	40.2	63.0	215	687	817	252	111	86.2
MAX	569	152	106	88.6	78.3	131	479	1,282	1,746	794	264	358
(WY)	(1912)	(1987)	(1912)	(1986)	(1986)	(1989)	(1962)	(1984)	(1979)	(1957)	(1957)	(1970)
MIN	32.1	23.9	18.0	13.6	18.2	21.5	85.2	136	51.0	28.8	22.7	23.6
(WY)	(1956)	(1961)	(1977)	(1977)	(1955)	(1955)	(1955)	(2002)	(2002)	(2002)	(2002)	(1956)

**SUMMARY STATISTICS**

**FOR 2002 CALENDAR YEAR**

**FOR 2003 WATER YEAR**

**WATER YEARS 1910 - 2003**

ANNUAL TOTAL	18,153	37,624	
ANNUAL MEAN	49.7	103	209
HIGHEST ANNUAL MEAN			359
LOWEST ANNUAL MEAN			48.9
HIGHEST DAILY MEAN	194	Apr 15	2,980
LOWEST DAILY MEAN	13	Aug 15	10
ANNUAL SEVEN-DAY MINIMUM	14	Aug 13	11
MAXIMUM PEAK FLOW		916	8,000
MAXIMUM PEAK STAGE		4.13	99.70
ANNUAL RUNOFF (AC-FT)	36,010	74,630	151,600
10 PERCENT EXCEEDS	126	273	605
50 PERCENT EXCEEDS	31	43	70
90 PERCENT EXCEEDS	19	20	32

e Estimated.

a Present site and datum, from rating curve extended above 1,500 ft<sup>3</sup>/s.

b From floodmarks.

## 08220000 RIO GRANDE NEAR DEL NORTE, CO

LOCATION.--Lat 37°41'22", long 106°27'38", in NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub> (revised) sec.29, T.40 N., R.5 E., Rio Grande County, Hydrologic Unit 13010001, on right bank 20 ft downstream from county highway bridge, 5.0 mi upstream from Pinos Creek, and 6.0 mi west of Del Norte.

DRAINAGE AREA.--1,320 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--June 1889 to current year. Monthly discharge only for some periods, published in WSP 1312. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08220000](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08220000)

REVISED RECORDS.--WSP 763: Drainage area. WSP 1312: 1889, 1901, 1913-14 (monthly discharge and runoff).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 7,980.25 ft above NGVD of 1929. Prior to May 16, 1908, nonrecording gage at site 4 mi downstream at different datum. May 16, 1908 to Nov. 8, 1910, nonrecording gages on bridge at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, transmountain diversions from Colorado River basin (see elsewhere in this report), diversions for irrigation and municipal use, ground-water withdrawals, return flows from irrigated areas, and flows from sewage-treatment plants. Flow regulated by Beaver Creek Reservoir since 1910, Santa Maria Reservoir since 1912, Rio Grande Reservoir since 1912, and Continental Reservoir since 1925, combined capacity, 126,100 acre-ft, and by several smaller reservoirs.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage of Oct. 5, 1911, is the greatest since at least 1873, from information obtained from local residents in 1959.

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	216	166	e114	e110	e130	e110	178	799	3,080	368	289	345
2	263	176	e110	e100	e130	e120	221	748	2,920	345	257	295
3	321	159	e110	e110	e120	e130	233	742	2,790	313	224	258
4	314	149	e105	e110	e110	e140	210	755	2,590	287	204	267
5	293	145	101	e110	e100	e130	202	696	2,420	263	195	267
6	257	120	e95	e100	e100	e130	185	663	2,220	241	178	272
7	249	110	e90	e100	e90	134	169	630	2,020	222	175	279
8	249	128	e95	e100	e90	138	152	571	1,790	217	181	259
9	250	145	e95	e110	e100	146	166	516	1,720	211	193	274
10	229	145	e95	e110	e100	151	198	473	1,630	252	195	822
11	226	110	e100	e100	e110	159	259	435	1,260	286	199	849
12	222	88	e100	e100	e110	173	305	465	1,110	299	206	824
13	216	109	e100	e100	e130	184	330	686	1,030	302	223	741
14	198	146	e100	e110	e130	192	396	958	925	304	205	687
15	190	135	e100	e110	e120	199	531	1,270	855	271	190	617
16	192	90	e110	e110	e120	205	510	1,350	845	215	191	564
17	187	116	e110	e100	e130	185	502	1,840	795	205	202	517
18	189	131	e100	e100	e120	153	468	2,090	743	205	207	482
19	195	124	e100	e110	e110	143	388	2,360	735	185	207	470
20	192	124	e90	e110	e110	148	318	2,570	754	201	195	430
21	187	138	e100	e120	e120	201	308	2,550	762	218	172	392
22	185	129	e95	e120	e120	194	351	2,970	717	216	171	368
23	187	130	e100	e120	e110	187	358	3,430	638	211	185	340
24	195	129	e95	e130	e120	195	344	3,480	571	235	218	311
25	196	138	e90	e130	e130	190	384	3,250	518	220	228	294
26	199	117	e90	e120	e130	186	458	3,150	473	211	283	277
27	218	e92	e90	e130	e130	176	567	3,270	437	227	321	279
28	185	e92	e95	e130	e130	157	691	3,120	397	241	323	287
29	165	e108	e100	e120	---	132	897	3,260	376	251	401	251
30	154	e114	e100	e120	---	142	910	3,180	371	301	401	238
31	154	---	e100	e130	---	163	---	3,190	---	305	386	---
TOTAL	6,673	3,803	3,075	3,480	3,250	4,993	11,189	55,467	37,492	7,828	7,205	12,556
MEAN	215	127	99.2	112	116	161	373	1,789	1,250	253	232	419
MAX	321	176	114	130	130	205	910	3,480	3,080	368	401	849
MIN	154	88	90	100	90	110	152	435	371	185	171	238
AC-FT	13,240	7,540	6,100	6,900	6,450	9,900	22,190	110,000	74,370	15,530	14,290	24,900

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1890 - 2003, BY WATER YEAR (WY)

MEAN	483	284	205	188	195	271	762	2,505	3,109	1,410	783	512
MAX	2,451	804	420	340	300	646	1,999	4,449	6,240	3,451	1,800	2,001
(WY)	(1912)	(1917)	(1926)	(1912)	(1928)	(1910)	(1895)	(1922)	(1921)	(1957)	(1999)	(1927)
MIN	134	114	99.2	89.8	111	153	317	505	222	142	117	135
(WY)	(1957)	(1957)	(2003)	(1977)	(1977)	(1965)	(1951)	(2002)	(2002)	(2002)	(2002)	(1956)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1890 - 2003

ANNUAL TOTAL	77,719	157,011	
ANNUAL MEAN	213	430	897
HIGHEST ANNUAL MEAN			1,482
LOWEST ANNUAL MEAN			227
HIGHEST DAILY MEAN	671	May 20	3,480
LOWEST DAILY MEAN	88	Aug 16	88
ANNUAL SEVEN-DAY MINIMUM	92	Aug 14	94
MAXIMUM PEAK FLOW			3,780
MAXIMUM PEAK STAGE			3.77
ANNUAL RUNOFF (AC-FT)	154,200	311,400	650,000
10 PERCENT EXCEEDS	449	847	2,460
50 PERCENT EXCEEDS	160	198	359
90 PERCENT EXCEEDS	100	100	165

e Estimated.

a From rating curve extended above 12,900 ft<sup>3</sup>/s.

CLOSED BASIN IN SAN LUIS VALLEY, CO

08224500 KERBER CREEK ABOVE LITTLE KERBER CREEK NEAR VILLA GROVE, CO

LOCATION.--Lat 38°13'13", long 106°05'21", in SW¼SE¼ sec.21, T.46 N., R.8 E., Saguache County, Hydrologic Unit 13010003, on left bank 3.0 mi upstream from Little Kerber Creek, and 7 mi west of Villa Grove.

DRAINAGE AREA.--45.4 mi<sup>2</sup> (revised).

PERIOD OF RECORD.--November 1911 to June 1912 and June 1923 to September 1926 (published as Kerber Creek near Villa Grove). May 1936 to September 1982, October 1998 to current year. Published as "at Ashley Ranch" May 1936 to September 1982 and October 1998 to September 2001. Monthly discharge only for some periods, published in WSP 1312. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08224500](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08224500)

REVISED RECORDS.--WSP 1312: 1943. WSP 1512: 1943.

GAGE.--Water-stage recorder with satellite telemetry and concrete control. Elevation of gage is 8,640 ft above NGVD of 1929, from topographic map. Prior to June 1, 1923, nonrecording gage at site 2.5 mi downstream at different datum. June 1, 1923 to Sept. 16, 1926, and May 2, 1936 to June 24, 2002, at several sites 1.5 mi upstream, at different datums.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by several small diversions for irrigation, and return flow from irrigated areas.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1872, that of May 14, 1941, from information by local residents.

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	2.3	1.8	e1.5	e0.01	e1.5	e1.5	e6.0	16	53	8.0	4.4	3.5
2	2.4	2.0	e1.5	0.01	e1.6	e1.4	e5.8	15	e45	7.0	3.9	2.6
3	2.6	1.3	e1.6	0.01	e1.4	e1.5	e5.6	14	e38	6.7	3.1	3.1
4	2.3	1.7	e1.2	0.01	e1.3	e1.7	e5.4	14	e35	6.3	2.8	3.7
5	2.2	1.4	e1.1	e0.00	e1.3	e1.8	e5.4	14	32	6.1	2.4	3.7
6	2.0	1.4	e0.70	e0.00	e1.2	e1.8	e5.4	14	30	5.8	2.3	6.4
7	2.0	1.5	e0.60	e0.00	e1.0	e1.9	e5.0	13	26	5.7	2.3	6.4
8	2.0	1.8	e0.60	e0.00	e1.0	e2.0	5.1	13	24	5.1	2.7	5.7
9	2.0	2.3	e0.64	e0.00	e1.1	e2.1	e7.0	13	23	4.6	3.1	6.3
10	1.8	1.8	e0.54	e0.00	e1.1	e2.3	9.0	13	23	4.5	2.8	12
11	1.8	2.2	e0.58	e0.00	e1.2	e2.7	9.3	13	22	4.2	2.5	7.7
12	1.7	1.7	e0.60	e0.00	e1.2	e3.1	10	15	21	3.9	2.6	6.5
13	1.7	2.3	e0.64	e0.00	e1.8	e3.5	12	18	20	3.6	2.8	5.8
14	1.8	2.6	e0.64	e0.00	e1.7	e4.0	13	21	18	3.5	2.1	5.4
15	1.7	2.2	e0.62	e0.00	e1.5	e4.2	11	27	17	3.4	1.9	5.2
16	1.6	1.7	e0.62	e0.00	e1.4	e4.6	12	28	18	5.9	1.8	4.7
17	1.7	2.2	e0.58	e0.00	e1.5	e4.4	11	35	16	6.1	1.9	4.5
18	1.7	2.2	e0.54	e0.00	e1.7	e4.3	9.7	42	17	4.1	2.2	4.1
19	1.7	1.9	e0.54	e0.00	e1.4	4.0	8.3	43	18	3.2	2.6	4.1
20	1.8	2.1	e0.50	e0.05	e1.3	3.9	8.4	42	15	3.4	1.9	3.9
21	1.7	2.3	e0.39	e0.06	e1.4	3.7	8.8	37	13	3.8	1.6	3.5
22	1.7	e2.2	e0.39	e0.07	e1.6	3.3	9.6	38	12	3.1	1.9	3.4
23	2.2	e2.1	e0.39	e0.20	e1.3	3.9	8.3	42	11	3.4	1.8	3.3
24	2.3	2.3	e0.39	e0.40	e1.2	e4.2	7.8	44	11	3.8	2.2	3.1
25	2.1	e1.7	e0.39	e1.3	e1.5	4.6	11	46	10	2.7	3.8	3.0
26	2.0	1.5	0.39	e1.2	e1.5	e4.4	13	43	9.5	3.3	2.8	2.9
27	2.3	e1.3	0.24	e1.0	e1.5	e4.6	14	44	8.9	4.9	2.6	2.9
28	2.2	e1.4	0.10	e1.0	e1.7	4.5	15	45	8.3	4.5	4.3	2.9
29	2.0	e1.5	0.02	e1.0	---	4.5	16	46	8.2	6.1	8.0	2.8
30	1.7	e1.4	0.01	e1.2	---	4.4	16	53	7.8	6.8	5.3	2.8
31	2.0	---	0.01	e1.8	---	4.9	---	51	---	4.9	4.8	---
TOTAL	61.0	55.8	18.56	9.32	38.9	103.7	283.9	912	610.7	148.4	91.2	135.9
MEAN	1.97	1.86	0.60	0.30	1.39	3.35	9.46	29.4	20.4	4.79	2.94	4.53
MAX	2.6	2.6	1.6	1.8	1.8	4.9	16	53	53	8.0	8.0	12
MIN	1.6	1.3	0.01	0.00	1.0	1.4	5.0	13	7.8	2.7	1.6	2.6
AC-FT	121	111	37	18	77	206	563	1,810	1,210	294	181	270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2003, BY WATER YEAR (WY)

	4.83	4.19	2.96	2.65	3.03	5.00	14.7	45.4	38.2	11.9	7.81	5.04
MEAN	4.83	4.19	2.96	2.65	3.03	5.00	14.7	45.4	38.2	11.9	7.81	5.04
MAX	16.1	10.0	6.50	6.00	6.00	12.0	44.4	130	102	61.9	42.3	25.6
(WY)	(1939)	(1958)	(1966)	(1966)	(1958)	(1924)	(1924)	(1942)	(1941)	(1957)	(1957)	(1957)
MIN	1.97	1.82	0.60	0.000	0.86	1.50	5.79	5.28	2.63	0.73	0.40	1.08
(WY)	(2003)	(1956)	(2003)	(1977)	(1972)	(1964)	(2002)	(2002)	(2002)	(2002)	(2002)	(1956)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

(a) WATER YEARS 1923 - 2003

ANNUAL TOTAL	817.82	2,469.38		
ANNUAL MEAN	2.24	6.77	12.1	
HIGHEST ANNUAL MEAN			25.4	1924
LOWEST ANNUAL MEAN			2.49	2002
HIGHEST DAILY MEAN	7.4	Apr 15	53	May 30
LOWEST DAILY MEAN	0.01	Aug 16	e0.00	Jan 5
ANNUAL SEVEN-DAY MINIMUM	0.02	Aug 14	e0.00	Jan 5
MAXIMUM PEAK FLOW			56	May 30
MAXIMUM PEAK STAGE			1.36	May 30
ANNUAL RUNOFF (AC-FT)	1,620	4,900	8,780	
10 PERCENT EXCEEDS	5.2	17	31	
50 PERCENT EXCEEDS	1.7	2.8	4.5	
90 PERCENT EXCEEDS	0.36	0.52	2.2	

e Estimated.

a Water years 1983, and 1994 to 1998 data were published by the Colorado Division of Water Resources. Station was not operated during water years 1984 to 1993.

b Also occurred Dec 31, 1976 to Jan 31, 1977, and Jan 5-19, 2003 (no flow estimated).

c Also occurred Jan 5-19, 2003 (no flow estimated).

d From rating curve extended above 140 ft<sup>3</sup>/s.

f Maximum gage-height, 5.04 ft, May 11, 1947, site and datum then in use, backwater from beaver dam.

## CLOSED BASIN IN SAN LUIS VALLEY, CO

## 08227000 SAGUACHE CREEK NEAR SAGUACHE, CO

LOCATION.--Lat 38°09'48", long 106°17'24", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.10, T.45 N., R.6 E., Saguache County, Hydrologic Unit 13010004, on left bank 0.2 mi downstream from Middle Creek and 10 mi northwest of Saguache.

DRAINAGE AREA.--595 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1910 to September 1912, June 1914 to September 1982, October 1990 to current year. Monthly discharge only for some periods, published in WSP 1312. October 1982 to September 1990, in reports of State Engineer. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08227000](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08227000)

REVISED RECORDS.--WSP 1242: 1948-49. WSP 1312: 1912, 1934(M), 1942(M), 1948-49(M). WSP 1923: 1951.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is about 8,030 ft above NGVD of 1929, from topographic map. Prior to Apr. 9, 1934, at sites 0.8 mi downstream at different datums. Apr. 10, 1934 to Nov. 20, 1966, at present site at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions from Colorado River basin through Tarbell Ditch (see elsewhere in this report), diversions for irrigation, and return flows from irrigated areas.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

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	25	27	e21	e16	e21	e19	26	55	123	28	26	42
2	23	27	e22	e15	e22	e19	23	49	118	29	26	36
3	26	23	e22	e16	e20	e19	21	45	104	28	26	31
4	33	20	e21	e16	e18	e20	19	45	95	26	30	33
5	27	22	e21	e16	e18	e22	19	46	86	24	27	33
6	27	19	e17	e15	e18	e24	20	42	81	26	25	37
7	27	20	e16	e14	e16	e22	24	40	74	26	25	36
8	25	21	e15	e14	e18	e23	24	39	68	26	24	38
9	24	33	e16	e14	e18	e24	25	39	65	23	25	37
10	24	26	e14	e15	e18	e25	31	36	65	21	24	62
11	24	19	e15	e14	e20	e26	43	37	67	20	28	59
12	23	19	e17	e14	e19	e27	50	39	65	19	29	45
13	23	22	e19	e13	e21	e26	51	48	64	19	27	39
14	22	28	e18	e14	e20	e25	53	55	63	19	22	40
15	22	29	e18	e14	e20	e26	60	66	55	20	20	40
16	22	21	e16	e16	e19	e27	50	80	54	22	19	36
17	22	27	e18	e18	e19	e26	40	77	55	27	21	34
18	22	28	e16	e16	e20	e26	46	84	53	23	26	33
19	22	31	e16	e18	e19	e27	42	93	56	21	32	32
20	23	33	e14	e18	e18	e25	39	92	62	23	24	31
21	23	27	e15	e19	e19	e27	36	86	58	26	21	30
22	23	21	e14	e19	e20	e26	43	82	47	25	21	30
23	23	22	e15	e21	e19	e29	43	105	41	24	23	29
24	25	24	e14	e22	e17	31	38	115	36	24	27	27
25	26	23	e13	e23	e19	32	37	113	35	24	34	27
26	25	22	e14	e22	e19	31	50	109	34	23	34	27
27	27	19	e14	e21	e19	31	62	111	34	29	42	27
28	28	e21	e14	e21	e20	23	63	129	31	31	42	26
29	27	e22	e15	e21	---	22	60	137	29	34	54	25
30	22	e21	e16	e21	---	22	60	143	30	29	58	24
31	23	---	e15	e22	---	28	---	128	---	28	52	---
TOTAL	758	717	511	538	534	780	1,198	2,365	1,848	767	914	1,046
MEAN	24.5	23.9	16.5	17.4	19.1	25.2	39.9	76.3	61.6	24.7	29.5	34.9
MAX	33	33	22	23	22	32	63	143	123	34	58	62
MIN	22	19	13	13	16	19	19	36	29	19	19	24
AC-FT	1,500	1,420	1,010	1,070	1,060	1,550	2,380	4,690	3,670	1,520	1,810	2,070

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2003, BY WATER YEAR (WY)

	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	44.1	35.5	25.8	23.4	26.5	38.4	68.0	155	171	92.3	72.4	50.7																																																																																		
MAX	108	60.1	40.0	40.3	41.4	70.0	257	437	474	299	198	194																																																																																		
(WY)	(1912)	(1930)	(1928)	(1986)	(1986)	(1924)	(1924)	(1957)	(1957)	(1929)	(1929)	(1929)																																																																																		
MIN	20.6	16.4	13.9	12.2	13.4	21.5	34.2	27.8	15.3	12.7	13.3	15.0																																																																																		
(WY)	(1979)	(1978)	(1978)	(1978)	(1966)	(1964)	(1978)	(2002)	(2002)	(2002)	(2002)	(1956)																																																																																		

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## (a) WATER YEARS 1910 - 2003

ANNUAL TOTAL	8,241.7	11,976	
ANNUAL MEAN	22.6	32.8	66.9
HIGHEST ANNUAL MEAN			122
LOWEST ANNUAL MEAN			24.7
HIGHEST DAILY MEAN	56	Apr 4	143
LOWEST DAILY MEAN	8.1	Aug 17	e13
ANNUAL SEVEN-DAY MINIMUM	9.3	Aug 13	e14
MAXIMUM PEAK FLOW			164
MAXIMUM PEAK STAGE			e2.37
ANNUAL RUNOFF (AC-FT)	16,350	23,750	48,440
10 PERCENT EXCEEDS	33	60	145
50 PERCENT EXCEEDS	22	25	40
90 PERCENT EXCEEDS	12	16	21

e Estimated.

a Including water year 1983-1990 data published by State Engineer.

b From rating curve extended above 1,090 ft<sup>3</sup>/s.

c Maximum gage height, 2.40 ft, Mar 3, backwater from ice.

CLOSED BASIN IN SAN LUIS VALLEY, CO

08227000 SAGUACHE CREEK NEAR SAGUACHE, CO--Continued

(National Water-Quality Assessment Program station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1967 to September 1968, April 1993 to August 1995, April 2001 to current year. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08227000](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08227000)

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

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat fltr inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat fltr incrm. titr., field, mg/L (00453)	Carbonate, wat fltr incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)
OCT 08...	1240	23	10.4	8.3	140	10.0	62	75	0.0	1.36	4.3	0.26	<0.04
NOV 14...	1310	47	10.4	7.3	141	0.5	62	76	0.0	1.27	6.3	0.64	<0.04
DEC 19...	1250	12	11.2	7.2	150	0.0	77	93	0.0	0.92	4.6	0.17	<0.04
JAN 27...	1310	23	11.3	7.4	127	0.0	61	74	0.0	0.77	4.6	0.21	<0.04
MAR 03...	1320	36	10.8	7.5	136	0.0	52	64	0.0	1.16	5.3	0.51	0.04
APR 25...	1140	39	9.1	8.1	142	10.5	56	68	0.0	1.80	6.5	0.36	<0.04
JUN 19...	1250	57	7.1	8.0	107	19.0	45	54	0.0	0.77	3.0	0.53	<0.04
AUG 19...	1210	33	7.7	8.0	121	18.0	62	76	0.0	1.03	3.3	0.36	<0.04

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

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
OCT 08...	<0.06	<0.008	0.06	0.111	16	0.99
NOV 14...	<0.06	<0.008	0.05	0.19	82	10
DEC 19...	<0.06	<0.008	0.05	0.079	7	0.22
JAN 27...	E.06	<0.008	0.04	0.081	12	0.75
MAR 03...	E.06	<0.008	0.06	0.18	128	12
APR 25...	<0.06	<0.008	0.06	0.133	23	2.4
JUN 19...	<0.06	<0.008	0.07	0.141	23	3.5
AUG 19...	<0.06	<0.008	0.08	0.168	39	3.4

< -- Actual value is known to be less than the value shown.  
E -- Estimated laboratory analysis value.

CLOSED BASIN IN SAN LUIS VALLEY

08231000 LA GARITA CREEK NEAR LA GARITA, CO

LOCATION.--Lat 37°48'48", long 106°19'05", in NW¼SE¼ sec.9, T.41 N., R.6 E., Saguache County, Hydrologic Unit 13010004, on right bank 4.5 mi downstream from Little La Garita Creek and 4.5 mi southwest of La Garita.

DRAINAGE AREA.--61 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--April 1919 to September 1981. October 1998 to current year. No winter records prior to water year 1948 except water years 1926, 1941, and 1945-46. Monthly discharge only for some periods, published in WSP 1312. October 1981 to September 1998, in reports of State Engineer. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08231000](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08231000)

REVISED RECORDS.--WSP 1312: 1946(M).

GAGE.--Water-stage recorder with satellite telemetry and concrete weir. Elevation of gage is 8,030 ft above NGVD of 1929, from topographic map. Apr. 1, 1919 to June 23, 1927, nonrecording gages, and June 24, 1927 to Nov. 13, 1935, water-stage recorder, at sites within 0.2 mi downstream at different datums. Nov. 14, 1935 to Nov. 16, 1966, at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation and return flows from irrigated areas.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

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	2.8	3.5	e2.8	e1.5	e1.9	e1.9	6.0	8.5	9.2	2.9	2.7	3.5
2	3.1	3.5	e2.9	e1.3	e2.0	e1.8	7.7	6.9	9.5	2.8	2.4	2.6
3	4.4	3.2	e2.9	e1.4	e1.6	e1.9	6.6	6.9	7.7	2.6	2.3	2.6
4	3.8	2.6	e2.4	e1.4	e1.4	e2.2	5.4	7.6	7.2	2.4	2.1	3.6
5	3.8	e2.7	e2.2	e1.4	e1.3	e2.5	5.0	6.9	7.1	2.2	2.0	3.8
6	3.5	e2.5	e1.9	e1.4	e1.2	e3.0	4.5	6.1	7.1	2.1	1.7	3.8
7	3.2	e2.7	e1.8	e1.2	e0.98	e2.8	4.4	5.9	6.8	2.2	1.7	3.6
8	3.0	3.3	e1.7	e1.2	e1.1	e3.0	e3.6	6.0	6.5	2.2	1.8	3.2
9	2.8	4.0	e1.8	e1.2	e1.3	e3.3	4.8	5.6	6.1	1.9	2.5	3.5
10	2.7	3.3	e1.6	e1.4	e1.3	e3.6	7.9	5.4	6.2	1.5	2.0	10
11	2.6	e2.6	e1.7	e1.4	e1.6	e4.0	8.0	5.1	6.2	1.4	2.1	7.8
12	2.6	e3.0	e1.8	e1.4	e1.6	e4.6	6.7	5.9	5.3	1.5	2.6	5.1
13	2.6	e3.3	e1.9	e1.2	e1.9	e4.4	7.7	7.6	5.3	1.5	2.1	4.1
14	2.6	e3.5	e1.8	e1.3	e1.8	e4.4	16	7.7	5.4	1.5	1.8	3.5
15	2.7	e3.3	e1.7	e1.3	e1.7	e4.7	23	10	4.7	1.5	1.4	3.2
16	2.6	e3.0	e1.6	e1.4	e1.6	e5.4	8.6	11	4.6	1.7	1.6	2.9
17	2.6	e3.0	e1.7	e1.5	e1.7	e5.2	15	11	5.0	1.7	3.0	2.8
18	2.6	e3.1	e1.4	e1.3	e1.9	e5.2	12	13	5.3	1.5	3.9	2.7
19	2.7	e3.0	e1.4	e1.5	e1.7	e5.4	7.9	13	7.5	1.3	2.9	2.8
20	2.7	e3.1	e1.1	e1.5	e1.5	e5.0	5.3	11	7.3	1.9	2.1	2.8
21	2.7	e3.2	e1.2	e1.5	e1.7	e5.4	6.8	12	5.1	2.4	1.7	2.8
22	2.7	e3.0	e1.1	e1.5	e1.9	e5.0	7.3	11	4.0	2.3	1.8	2.8
23	2.8	e2.9	e1.3	e1.7	e1.7	e5.4	7.4	12	3.5	1.9	2.3	2.6
24	3.5	e2.9	e1.2	e1.8	e1.6	5.9	4.8	11	3.2	2.4	2.9	2.6
25	3.1	e3.0	e1.0	e2.2	e1.8	5.8	12	10	3.0	1.7	3.6	2.6
26	3.1	e2.7	e1.1	e2.1	e1.8	5.4	18	9.6	3.1	2.3	4.0	2.5
27	3.1	e2.4	e1.2	e1.9	e1.8	4.9	18	9.1	3.0	2.7	4.1	2.4
28	3.3	e2.6	e1.2	e1.9	e2.0	4.1	16	8.9	2.9	3.2	5.0	2.3
29	3.1	e2.8	e1.3	e1.9	---	e3.4	15	8.8	2.8	2.9	7.3	2.5
30	2.5	e2.6	e1.4	e1.9	---	e3.6	13	8.5	2.9	3.1	4.7	2.4
31	2.9	---	e1.3	e2.1	---	4.3	---	8.5	---	2.4	4.4	---
TOTAL	92.2	90.3	51.4	47.7	45.38	127.5	284.4	270.5	163.5	65.6	86.5	103.4
MEAN	2.97	3.01	1.66	1.54	1.62	4.11	9.48	8.73	5.45	2.12	2.79	3.45
MAX	4.4	4.0	2.9	2.2	2.0	5.9	23	13	9.5	3.2	7.3	10
MIN	2.5	2.4	1.0	1.2	0.98	1.8	3.6	5.1	2.8	1.3	1.4	2.3
AC-FT	183	179	102	95	90	253	564	537	324	130	172	205

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 2003, BY WATER YEAR (WY)

	6.93	5.19	3.88	3.32	4.00	5.75	16.9	46.0	30.4	14.5	15.3	8.60
MEAN	6.93	5.19	3.88	3.32	4.00	5.75	16.9	46.0	30.4	14.5	15.3	8.60
MAX	42.6	18.5	8.72	6.60	8.00	9.94	126	211	126	65.3	70.2	52.4
(WY)	(1924)	(1970)	(1970)	(1966)	(1962)	(1972)	(1924)	(1924)	(1921)	(1921)	(1929)	(1923)
MIN	1.46	1.80	0.70	0.50	0.50	1.50	6.08	4.26	2.17	1.81	1.65	0.85
(WY)	(1957)	(1941)	(1964)	(1964)	(1964)	(1964)	(1978)	(2002)	(2002)	(2002)	(2002)	(1956)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

(a) WATER YEARS 1919 - 2003

ANNUAL TOTAL	1,168.81	1,428.38	
ANNUAL MEAN	3.20	3.91	
HIGHEST ANNUAL MEAN			12.3
LOWEST ANNUAL MEAN			30.8
HIGHEST DAILY MEAN	17	Apr 2	3.73
LOWEST DAILY MEAN	0.63	Aug 16	398
ANNUAL SEVEN-DAY MINIMUM	0.77	Aug 13	May 16, 1941
MAXIMUM PEAK FLOW			b0.20
MAXIMUM PEAK STAGE			Sep 28, 1956
ANNUAL RUNOFF (AC-FT)	2,320	2,830	0.43
10 PERCENT EXCEEDS	5.0	7.7	Sep 27, 1956
50 PERCENT EXCEEDS	2.9	2.8	c530
90 PERCENT EXCEEDS	1.4	1.4	Apr 15
			Apr 15
			d4.00
			Jul 9, 1957
			8,930
			26
			5.5
			2.5

e Estimated.  
a Water years 1919-1981 and 1999 to current year.  
b Also occurred Sep 29, 1956.  
c From rating curve extended above 140 ft<sup>3</sup>/s.  
d Present datum; maximum gage height, 5.11 ft, May 16, 1941, datum then in use.

CLOSED BASIN IN SAN LUIS VALLEY, CO

372833105455800 CLOSED BASIN PROJECT CANAL NEAR ALAMOSA, CO

LOCATION.--Lat 37°28'33", long 105°45'58", in SW¼SW¼ sec.3, T.37 N., R.11 E., Alamosa County, Hydrologic Unit 13010002, on right bank of Closed Basin Project Canal, 400 ft north of State Highway 160, and 5.5 mi east of Alamosa.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--October 1998 to current year. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=372833105455800](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=372833105455800)

GAGE.--Water-stage recorders with satellite telemetry and 12 ft Parshall flume. Elevation of gage is 7531.15 ft (levels by U.S. Bureau of Reclamation).

REMARKS.--Records good except for estimated daily discharges, which are fair. The Closed Basin Project Canal delivers water from the Closed Basin in the San Luis Valley to the Rio Grande just downstream from Alamosa. Shallow (unconfined) aquifer water is pumped into the canal by a system of pumps.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

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	26	13	12	21	30	34	30	24	26	24	21	30
2	25	11	13	26	30	34	29	21	25	22	20	22
3	22	11	14	32	31	34	30	19	27	21	20	10
4	23	10	14	30	30	33	32	19	28	20	20	6.8
5	20	9.9	14	26	30	34	31	20	27	20	20	5.7
6	19	10	14	22	e30	33	31	20	28	20	19	8.3
7	14	10	12	21	30	32	32	19	28	20	20	9.1
8	12	10	13	24	30	32	31	19	29	19	19	8.7
9	11	10	16	25	e30	32	31	17	28	19	20	8.3
10	10	9.8	14	26	e30	32	31	18	28	16	20	7.2
11	11	9.0	11	26	31	32	32	18	27	15	20	6.4
12	11	7.8	8.3	26	31	33	32	17	27	16	20	5.4
13	12	7.3	5.1	27	31	33	29	16	27	17	19	5.0
14	12	7.9	6.1	28	32	34	28	15	27	18	21	5.0
15	12	9.1	6.4	29	33	34	28	15	27	19	28	5.1
16	12	12	6.4	e30	33	33	29	17	26	20	29	5.5
17	13	12	6.4	30	33	34	28	17	26	21	31	5.6
18	13	12	6.8	29	33	35	29	17	25	21	31	6.4
19	13	12	6.9	29	34	36	31	20	25	20	31	13
20	14	12	8.0	28	34	35	30	21	25	21	31	15
21	13	12	8.7	26	34	35	28	23	24	21	32	18
22	13	13	9.9	26	33	35	30	27	24	21	32	16
23	12	12	9.5	26	33	33	30	28	23	20	30	15
24	12	13	9.1	27	32	32	31	27	23	20	25	14
25	16	14	7.9	27	32	32	30	27	25	20	22	15
26	15	14	7.8	27	33	31	27	27	26	20	23	16
27	15	14	9.5	28	33	32	27	27	26	20	26	18
28	14	14	13	29	33	32	26	28	25	20	28	18
29	13	14	13	31	---	31	26	26	24	20	28	19
30	16	12	13	30	---	31	26	26	25	21	28	20
31	14	---	14	30	---	31	---	25	---	20	29	---
TOTAL	458	337.8	322.8	842	889	1,024	885	660	781	612	763	357.5
MEAN	14.8	11.3	10.4	27.2	31.8	33.0	29.5	21.3	26.0	19.7	24.6	11.9
MAX	26	14	16	32	34	36	32	28	29	24	32	30
MIN	10	7.3	5.1	21	30	31	26	15	23	15	19	5.0
AC-FT	908	670	640	1,670	1,760	2,030	1,760	1,310	1,550	1,210	1,510	709

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	2000	1999	1999	1999	1999	2003	1999	1999	1999	1999	1999	1999
MEAN	22.6	22.5	26.1	32.8	32.9	30.6	29.2	26.3	25.2	22.6	20.9	20.9
MAX	35.0	31.6	35.7	42.4	38.1	33.0	34.7	34.3	32.9	35.1	28.1	33.0
(WY)	(2000)	(1999)	(1999)	(1999)	(1999)	(2003)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)
MIN	11.2	11.3	10.4	27.2	27.7	27.6	24.3	21.3	17.7	15.5	13.0	11.9
(WY)	(2001)	(2003)	(2003)	(2003)	(2002)	(2002)	(2001)	(2003)	(2002)	(2002)	(2000)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1999 - 2003

ANNUAL TOTAL	7,421.6	7,932.1	
ANNUAL MEAN	20.3	21.7	26.0
HIGHEST ANNUAL MEAN			33.8
LOWEST ANNUAL MEAN			21.7
HIGHEST DAILY MEAN	32	Sep 27	e63
LOWEST DAILY MEAN	5.1	Dec 13	5.0
ANNUAL SEVEN-DAY MINIMUM	6.3	Dec 13	5.4
MAXIMUM PEAK FLOW			101
MAXIMUM PEAK STAGE			b1.70
ANNUAL RUNOFF (AC-FT)	14,720	15,730	18,840
10 PERCENT EXCEEDS	29	32	35
50 PERCENT EXCEEDS	20	22	27
90 PERCENT EXCEEDS	12	9.9	14

e Estimated.

a Maximum gage height, 1.09 ft, Jan 16, backwater from ice.

b Maximum gage height, 1.92 ft, Jan 29, 2002, backwater from ice.

## 08242500 UTE CREEK NEAR FORT GARLAND, CO

LOCATION.--Lat 37°26'50", long 105°25'33" (revised), Costilla County, Hydrologic Unit 13010002, in Sangre de Cristo Grant, on left bank 2,300 ft upstream from Newton ditch, 1.4 mi north of Fort Garland, and 5.7 mi upstream from mouth.

DRAINAGE AREA.--32 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--March to October 1916, May 1923 to September 1981, October 1998 to current year. Monthly discharge only for some periods, published in WSP 1312. October 1981 to September 1998, in reports of State Engineer. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08242500](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08242500)

GAGE.--Water-stage recorder with satellite telemetry. Concrete control since Sept. 1973. Elevation of gage is 8,045 ft above NGVD of 1929, from topographic map. Mar. 18 to Oct. 9, 1916, nonrecording gage and Cipolletti weir at different datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation and return flows from irrigated areas.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Outstanding floods occurred in 1886 and in October 1911. The flood in 1886 probably exceeded the flood in October 1911 which has probably not yet been exceeded, from information by local residents.

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	6.4	2.3	e3.5	e2.3	e2.1	e2.7	6.8	31	135	35	20	10
2	8.1	2.5	e3.2	e2.2	e2.1	e2.7	8.7	29	109	34	18	9.8
3	6.5	2.2	e3.1	e2.3	e1.8	e3.0	9.1	26	107	31	17	10
4	4.3	2.2	e2.9	e2.5	e1.8	e3.0	7.7	25	93	29	14	10
5	3.7	e2.3	e2.8	e2.4	e1.6	e2.9	7.3	23	84	26	13	11
6	4.8	e2.5	e2.6	e2.3	e1.5	e2.9	6.9	22	67	24	12	20
7	4.3	e3.0	e2.5	e2.1	e1.5	e3.2	6.4	21	60	21	11	21
8	3.8	4.3	e2.7	e2.1	e1.6	e3.4	5.4	21	56	18	12	20
9	3.4	4.5	e2.5	e2.2	e1.8	e3.4	6.4	20	58	17	13	25
10	3.1	e3.5	e2.5	e2.3	e2.0	e3.5	8.8	20	59	16	23	108
11	3.0	e3.2	e2.6	e2.2	e2.2	e3.5	12	20	56	14	16	50
12	2.6	e2.9	e2.7	e2.1	e2.3	e3.5	11	22	53	14	18	37
13	2.5	e3.2	e2.8	e2.2	e2.4	e3.8	11	27	46	13	14	32
14	2.4	e3.4	e2.8	e2.3	e2.4	e4.4	15	24	44	12	12	28
15	2.3	e3.1	e3.0	e2.3	e2.2	e4.7	18	36	46	13	11	24
16	2.2	e3.2	e3.2	e2.1	e2.2	e4.7	16	38	47	13	9.7	21
17	2.1	e3.4	e3.0	e2.1	e2.4	e4.6	18	57	43	14	9.5	19
18	2.1	e3.4	e2.7	e2.2	e2.3	e4.5	19	64	56	14	8.9	17
19	2.0	e3.4	e2.4	e2.3	e2.1	4.4	18	60	98	14	8.8	17
20	2.0	e3.4	e2.5	e2.1	e2.1	5.1	16	67	124	18	7.6	15
21	1.9	e3.4	e2.6	e2.2	e2.4	5.3	16	61	84	14	7.2	14
22	1.9	e3.4	e2.4	e2.2	e2.4	4.7	17	60	64	12	7.4	14
23	2.0	e3.5	e2.4	e2.3	e2.4	5.7	17	76	58	11	7.9	11
24	2.1	3.4	e2.3	e2.2	e2.7	6.7	15	80	52	12	7.2	7.5
25	2.2	3.2	e2.2	e2.1	e2.7	5.4	17	99	48	10	7.0	7.3
26	2.1	e2.9	e2.2	e2.1	e2.7	5.0	22	128	44	12	7.6	7.2
27	2.5	e2.7	e2.2	e2.2	e2.7	5.2	28	113	41	12	8.3	7.3
28	2.3	e2.8	e2.2	e2.2	e2.7	e3.8	28	114	39	30	9.5	7.1
29	2.4	e3.0	e2.6	e1.9	---	e3.5	30	134	38	37	11	7.0
30	2.0	e3.2	e2.3	e2.1	---	3.7	31	179	39	34	9.8	6.8
31	2.2	---	e2.3	e2.1	---	5.1	---	171	---	25	12	---
TOTAL	95.2	93.4	81.7	68.2	61.1	128.0	448.5	1,868	1,948	599	363.4	594.0
MEAN	3.07	3.11	2.64	2.20	2.18	4.13	14.9	60.3	64.9	19.3	11.7	19.8
MAX	8.1	4.5	3.5	2.5	2.7	6.7	31	179	135	37	23	108
MIN	1.9	2.2	2.2	1.9	1.5	2.7	5.4	20	38	10	7.0	6.8
AC-FT	189	185	162	135	121	254	890	3,710	3,860	1,190	721	1,180

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 2003, BY WATER YEAR (WY)

MEAN	9.85	7.62	5.09	4.55	4.96	7.22	21.5	53.7	55.3	29.0	20.0	12.7
MAX	34.8	25.3	10.5	9.50	10.0	12.6	66.9	220	150	97.0	65.5	45.7
(WY)	(1924)	(1924)	(1971)	(1962)	(1962)	(1960)	(1932)	(1941)	(1941)	(1941)	(1936)	(1929)
MIN	0.91	0.78	0.50	1.60	2.00	3.16	4.69	4.80	1.29	0.30	0.000	0.070
(WY)	(1957)	(1952)	(1957)	(1957)	(1956)	(1957)	(1955)	(2002)	(2002)	(2002)	(2002)	(1956)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## (a) WATER YEARS 1923 - 2003

ANNUAL TOTAL	1,207.44	6,348.5	
ANNUAL MEAN	3.31	17.4	19.3
HIGHEST ANNUAL MEAN			50.2 1941
LOWEST ANNUAL MEAN			3.88 2002
HIGHEST DAILY MEAN	8.6 Sep 29	179 May 30	630 May 15, 1941
LOWEST DAILY MEAN	0.00 Jun 21	e1.5 Feb 6	b0.00 Jul 28, 1956
ANNUAL SEVEN-DAY MINIMUM	0.00 Jul 17	e1.7 Feb 3	0.00 Sep 6, 1956
MAXIMUM PEAK FLOW		212 May 30	c630 May 15, 1941
MAXIMUM PEAK STAGE		3.11 May 30	
ANNUAL RUNOFF (AC-FT)	2,390	12,590	14,000
10 PERCENT EXCEEDS	6.7	49	52
50 PERCENT EXCEEDS	3.4	6.5	8.1
90 PERCENT EXCEEDS	0.00	2.2	3.6

e Estimated.

a Water years 1923-81 and 1999 to current year.

b Also occurred Jul 29-31 and Sep 5-29, 1956, and many days in 2002.

c Maximum daily discharge.



**08245000 CONEJOS RIVER BELOW PLATORO RESERVOIR, CO**

LOCATION.--Lat 37°21'18", long 106°32'37", Conejos County, Hydrologic Unit 13010005, Rio Grande National Forest, on left bank 1,100 ft downstream from valvehouse for Platoro Reservoir and 0.7 mi northwest of Platoro.

DRAINAGE AREA.--40 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--May 1952 to current year. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08245000](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08245000)

GAGE.--Water-stage recorder with satellite telemetry, and concrete control. Datum of gage is 9,866.60 ft above NGVD of 1929, (levels by U.S. Bureau of Reclamation).

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow completely regulated by Platoro Reservoir (station 08244500) 0.2 mi upstream since Nov. 7, 1951.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, is the greatest since at least 1854, from information obtained from local residents in 1959.

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	17	e7.2	e7.2	e7.2	e6.8	e6.4	31	95	593	138	59	23
2	17	e7.2	e7.2	e7.2	e6.7	e6.3	31	92	501	138	63	17
3	26	e7.2	e7.2	e7.2	e6.7	e6.3	27	99	426	150	53	26
4	31	e7.2	e7.2	e7.2	e6.7	e6.3	26	98	475	141	55	42
5	31	e7.2	e7.2	e7.1	e6.7	e6.3	25	87	449	131	64	44
6	20	e7.2	e7.2	e7.1	e6.7	e6.3	17	64	295	130	54	42
7	15	e7.2	e7.2	e7.1	e6.7	e6.3	13	42	241	127	52	42
8	15	e7.2	e7.2	e7.1	e6.7	e6.3	13	42	251	124	56	42
9	17	e7.2	e7.2	e7.1	e6.6	e6.2	15	50	277	122	56	36
10	19	e7.2	e7.2	e7.1	e6.6	e6.2	24	39	291	108	53	120
11	15	e7.2	e7.2	e7.1	e6.6	e6.2	25	33	291	112	55	336
12	13	e7.2	e7.2	e7.0	e6.6	e6.2	29	45	264	121	55	323
13	13	e7.2	e7.2	e7.0	e6.6	e6.2	37	85	221	98	62	201
14	13	e7.2	e7.2	e7.0	e6.6	e6.2	40	132	164	87	62	164
15	13	e7.2	e7.2	e7.0	e6.6	e6.2	55	149	144	110	48	164
16	8.6	e7.2	e7.2	e7.0	e6.5	e6.1	67	187	200	113	38	112
17	6.0	e7.2	e7.2	e7.0	e6.5	e6.1	63	208	249	104	21	52
18	6.1	e7.2	e7.2	e7.0	e6.5	e6.1	46	311	208	93	14	78
19	7.0	e7.2	e7.2	e6.9	e6.5	e6.1	25	330	179	61	14	106
20	7.4	e7.2	e7.2	e6.9	e6.5	e6.1	18	281	186	38	14	67
21	7.4	e7.2	e7.2	e6.9	e6.5	e6.1	26	314	191	38	14	29
22	7.7	e7.2	e7.2	e6.9	e6.5	e6.1	37	385	132	58	15	22
23	8.4	e7.2	e7.2	e6.9	e6.4	e6.0	49	500	83	87	19	36
24	e16	e7.2	e7.2	e6.9	e6.4	e6.0	44	548	111	91	21	35
25	e11	e7.2	e7.2	e6.9	e6.4	e6.0	28	482	151	72	21	25
26	e5.4	e7.2	e7.2	e6.8	e6.4	e14	27	433	136	53	19	18
27	e5.4	e7.2	e7.2	e6.8	e6.4	25	61	426	97	48	17	18
28	e5.4	e7.2	e7.2	e6.8	e6.4	24	123	506	111	53	15	37
29	e5.4	e7.2	e7.2	e6.8	---	23	135	582	129	83	23	47
30	e6.4	e7.2	e7.2	e6.8	---	23	110	526	136	119	29	39
31	e7.2	---	e7.2	e6.8	---	24	---	509	---	78	28	---
TOTAL	395.8	216.0	223.2	216.6	183.8	287.6	1,267	7,680	7,182	3,026	1,169	2,343
MEAN	12.8	7.20	7.20	6.99	6.56	9.28	42.2	248	239	97.6	37.7	78.1
MAX	31	7.2	7.2	7.2	6.8	25	135	582	593	150	64	336
MIN	5.4	7.2	7.2	6.8	6.4	6.0	13	33	83	38	14	17
AC-FT	785	428	443	430	365	570	2,510	15,230	14,250	6,000	2,320	4,650

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2003, BY WATER YEAR (WY)

MEAN	40.5	58.4	10.6	10.9	11.6	10.3	52.5	238	329	211	89.7	46.7
MAX	158	406	50.0	50.0	102	27.5	252	492	609	610	429	164
(WY)	(1958)	(1966)	(1986)	(1986)	(1983)	(1986)	(1995)	(1974)	(1982)	(1952)	(1952)	(1982)
MIN	1.92	2.00	2.00	3.20	3.00	3.00	3.00	16.9	87.0	18.6	3.90	3.34
(WY)	(1957)	(1957)	(1957)	(1991)	(1957)	(1957)	(1957)	(1958)	(1977)	(2002)	(2002)	(1956)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1952 - 2003

ANNUAL TOTAL	11,821.00	24,190.0	
ANNUAL MEAN	32.4	66.3	91.6
HIGHEST ANNUAL MEAN			137
LOWEST ANNUAL MEAN			34.8
HIGHEST DAILY MEAN	231	May 19	1,150
LOWEST DAILY MEAN	0.60	Aug 17	a0.00
ANNUAL SEVEN-DAY MINIMUM	0.97	Aug 16	0.16
MAXIMUM PEAK FLOW			1,160
MAXIMUM PEAK STAGE			b4.02
ANNUAL RUNOFF (AC-FT)	23,450	47,980	66,350
10 PERCENT EXCEEDS	125	186	301
50 PERCENT EXCEEDS	7.6	17	17
90 PERCENT EXCEEDS	4.0	6.4	6.2

e Estimated.

a Also occurred Oct 17-20, 1955.

b Maximum gage height, 4.29 ft, Jun 15, 1958.

## 08246500 CONEJOS RIVER NEAR MOGOTE, CO

LOCATION.--Lat 37°03'14", long 106°11'13", in SE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec.34, T.33 N., R.7 E., Conejos County, Hydrologic Unit 13010005, on left bank 75 ft downstream from bridge on State Highway 174, 0.4 mi downstream from Fox Creek, 5.3 mi west of Mogote, and 10 mi west of Antonito.

DRAINAGE AREA.--282 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1903 to October 1905, October 1911 to current year. Monthly discharge only for some periods, published in WSP 1312. Records for March 1900 at site 5.5 mi upstream and May 1905 to September 1911 (some missing periods most years) at site 3.2 mi upstream not equivalent to present site due to inflow. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08246500](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08246500)

REVISED RECORDS.--WSP 898: 1911(M). WSP 1312: 1903-5 (monthly discharge and runoff).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 8,269.39 ft (revised) above NGVD of 1929, Colorado State Highway datum.

Apr. 17, 1903 to Oct. 31, 1905, nonrecording gage 400 ft downstream at different datum. Oct. 5, 1911 to early 1915, nonrecording gage, and from early 1915 to Oct. 1, 1988, water-stage recorder at site 100 ft upstream at datum 2.15 ft higher (revised).

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation and return flows from irrigated areas. Some regulation by Platoro Reservoir (station 08244500) about 59 mi upstream since Nov. 7, 1951.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage of Oct. 5, 1911, is the greatest since at least 1854, from information obtained from local residents in 1959.

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	50	38	e29	e29	e33	e29	91	308	1,250	237	145	88
2	59	40	e27	e30	e31	e28	104	299	1,310	230	138	71
3	67	38	e28	e32	e30	e29	90	305	1,160	224	134	69
4	72	38	e27	e33	e29	e34	80	301	1,120	230	108	95
5	74	35	e23	e34	e28	e33	76	273	1,090	210	106	114
6	70	32	e23	e34	e25	e32	72	244	898	206	108	158
7	61	35	e22	e33	e24	e38	63	224	677	201	99	151
8	53	37	e23	e32	e25	e40	52	199	643	189	112	138
9	52	46	e23	e34	e26	e43	62	191	658	184	115	142
10	51	48	e23	e33	e26	e43	76	198	685	174	116	828
11	51	41	e23	e32	e28	53	95	185	663	157	102	704
12	48	36	e23	e32	e32	59	113	206	609	171	108	663
13	44	37	e23	e32	e36	73	120	275	537	169	101	488
14	43	42	e24	e34	e39	87	153	353	465	136	101	362
15	43	42	e24	e33	e40	84	184	477	396	132	92	323
16	42	30	e24	e32	e37	78	173	469	393	164	84	294
17	41	36	e25	e33	e39	63	184	604	453	151	72	220
18	37	36	e24	e32	e41	56	174	752	447	143	58	161
19	36	36	e24	e33	e36	51	151	890	440	129	48	199
20	35	40	e23	e34	e34	46	116	847	469	109	44	202
21	35	42	e24	e35	e34	51	116	862	407	98	44	143
22	34	42	e24	e34	e32	45	140	1,020	364	88	46	110
23	37	41	e26	e34	e31	54	154	1,230	293	108	59	96
24	41	39	e25	e35	e33	61	149	1,340	252	140	70	104
25	44	40	e25	e34	e33	68	161	1,280	278	128	71	97
26	49	33	e25	e31	e31	68	183	1,090	284	108	67	85
27	44	28	e27	e33	e30	75	225	1,210	246	105	63	76
28	45	e30	e28	e33	e30	66	297	1,340	221	150	70	72
29	45	e32	e29	e31	---	58	370	1,500	232	193	105	86
30	39	e30	e30	e32	---	64	352	1,380	236	222	96	93
31	39	---	e30	e33	---	77	---	1,360	---	205	108	---
TOTAL	1,481	1,120	778	1,016	893	1,686	4,376	21,212	17,176	5,091	2,790	6,432
MEAN	47.8	37.3	25.1	32.8	31.9	54.4	146	684	573	164	90.0	214
MAX	74	48	30	35	41	87	370	1,500	1,310	237	145	828
MIN	34	28	22	29	24	28	52	185	221	88	44	69
AC-FT	2,940	2,220	1,540	2,020	1,770	3,340	8,680	42,070	34,070	10,100	5,530	12,760

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2003, BY WATER YEAR (WY)

MEAN	116	93.3	51.1	47.5	51.3	79.4	312	1,086	1,265	469	205	131
MAX	515	467	116	116	159	153	800	2,053	3,163	1,502	626	484
(WY)	(1905)	(1966)	(1987)	(1986)	(1983)	(1989)	(1936)	(1937)	(1920)	(1957)	(1952)	(1927)
MIN	34.7	29.9	25.1	22.7	30.0	41.0	138	282	118	37.1	17.1	26.8
(WY)	(1957)	(1931)	(2003)	(1918)	(1904)	(1904)	(1970)	(2002)	(1934)	(2002)	(2002)	(1956)

## SUMMARY STATISTICS

## FOR 2002 CALENDAR YEAR

## FOR 2003 WATER YEAR

## WATER YEARS 1903 - 2003

ANNUAL TOTAL	27,891	64,051	
ANNUAL MEAN	76.4	175	324
HIGHEST ANNUAL MEAN			592
LOWEST ANNUAL MEAN			80.6
HIGHEST DAILY MEAN	409	May 16	4,490
LOWEST DAILY MEAN	10	Aug 19	a10
ANNUAL SEVEN-DAY MINIMUM	12	Aug 14	12
MAXIMUM PEAK FLOW		1,640	b9,000
MAXIMUM PEAK STAGE		4.80	c8.50
ANNUAL RUNOFF (AC-FT)	55,320	127,000	234,700
10 PERCENT EXCEEDS	220	458	1,010
50 PERCENT EXCEEDS	38	68	95
90 PERCENT EXCEEDS	23	29	41

e Estimated.

a Also occurred Aug 19, 2002.

b Present site and datum, from rating curve extended above 3,100 ft<sup>3</sup>/s.

c From floodmarks.

**08247500 SAN ANTONIO RIVER AT ORTIZ, CO**

LOCATION.--Lat 36°59'35", long 106°02'17", in NE¼SE¼ sec.24, T.32 N., R.8 E., Rio Arriba County, New Mexico, Hydrologic Unit 13010005, on left bank 800 ft upstream (south) from Colorado-New Mexico State line, 0.4 mi southeast of Ortiz, and 0.4 mi upstream from Los Pinos River.

DRAINAGE AREA.--110 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--October 1919 to October 1920, October 1924 to September 1940 (seasonal records only), October 1940 to current year. Monthly discharge only for some periods, published in WSP 1312. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08247500](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08247500)

REVISED RECORDS.--WSP 1732: 1951. WSP 1923: 1927 (monthly discharge and runoff).

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 7,970 ft above NGVD of 1929, from topographic map. Prior to Apr. 7, 1926, nonrecording gage at various locations near present site, at different datums. Apr. 7, 1926 to June 24, 1954, water-stage recorder on right bank at site 200 ft downstream at present datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation and return flows from irrigated areas. Statistical summary computed for 1940 to current year, subsequent to conversion of station to year-round records.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, is the greatest since at least 1854, from information obtained from local residents in 1959.

**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	3.2	3.9	e2.8	e1.2	e4.0	e3.8	24	141	10	0.00	0.00	3.3
2	2.8	3.5	e2.6	e1.2	e3.8	e3.8	46	129	12	0.00	0.00	2.3
3	3.4	3.5	e2.6	e1.7	e3.4	e4.0	39	133	8.6	0.00	0.00	1.8
4	4.1	3.6	e2.2	e2.2	e3.2	e8.0	27	107	6.6	0.00	0.00	1.7
5	3.2	3.6	e1.4	e2.2	e2.9	e8.0	22	89	5.6	0.00	0.00	2.2
6	3.1	3.2	e1.2	e2.2	e2.8	e1.0	19	74	4.3	0.00	0.00	2.2
7	2.7	3.1	e0.90	e2.0	e2.8	e1.4	16	73	3.9	0.00	0.00	5.3
8	2.3	3.2	e1.1	e2.0	e3.0	e1.6	9.3	68	3.6	0.00	0.00	7.5
9	2.1	3.4	e1.1	e2.2	e3.2	e1.7	16	57	2.9	0.00	0.00	4.1
10	2.1	8.6	e1.1	e2.2	e3.3	e1.8	29	59	2.6	0.00	0.00	5.9
11	2.0	6.9	e1.1	e2.0	e3.7	21	55	53	2.1	0.00	0.00	2.2
12	1.9	5.4	e1.0	e1.8	e4.7	32	67	56	2.1	0.00	0.00	1.2
13	1.7	3.9	e1.1	e2.0	e8.0	76	63	57	2.0	0.00	0.00	7.6
14	1.8	5.1	e1.2	e2.2	e3.0	84	85	55	1.6	0.00	0.00	5.5
15	2.0	5.6	e1.3	e2.2	e2.0	81	114	53	1.4	0.00	0.00	4.3
16	1.9	3.6	e1.3	e1.8	e1.2	56	62	52	1.4	0.00	0.00	3.4
17	1.9	3.2	e1.2	e1.8	e1.4	31	66	44	1.6	0.00	0.00	2.8
18	1.8	2.6	e0.90	e1.8	e1.3	19	77	41	2.3	0.00	0.00	2.4
19	1.8	3.0	e0.80	e2.3	e9.6	15	64	38	2.0	0.00	0.00	2.1
20	2.0	3.0	e0.90	e2.5	e8.0	10	47	34	3.0	0.00	0.00	1.9
21	2.1	3.3	e0.90	e2.7	e7.8	16	61	31	3.7	0.00	0.00	1.8
22	2.1	3.2	e0.90	e2.7	e5.4	10	100	27	2.3	0.00	0.00	1.7
23	2.2	3.7	e0.90	e3.0	e4.3	14	99	24	1.4	0.00	0.00	1.6
24	2.4	4.2	e0.80	e3.0	e4.8	22	67	23	1.0	0.00	0.00	1.5
25	3.3	3.7	e0.80	e2.7	e4.9	30	85	22	0.72	0.00	0.00	1.5
26	3.4	3.3	e0.80	e2.7	e4.6	30	134	29	0.55	0.00	5.0	1.4
27	3.7	e3.2	e0.90	e3.2	e4.2	39	186	20	0.40	0.00	1.5	1.3
28	4.8	e2.8	e1.1	e3.2	e4.1	19	215	16	0.32	0.00	7.4	1.3
29	4.8	e3.1	e1.3	e3.0	---	15	223	14	0.16	0.00	7.3	1.2
30	4.2	e3.0	e1.2	e3.2	---	11	204	13	0.07	0.00	7.8	1.2
31	3.6	---	e1.3	e3.7	---	14	---	11	---	0.00	4.3	---
TOTAL	84.4	115.4	38.70	72.6	195.5	747.6	2,321.3	1,643	90.22	0.00	46.80	167.9
MEAN	2.72	3.85	1.25	2.34	6.98	24.1	77.4	53.0	3.01	0.000	1.51	5.60
MAX	4.8	8.6	2.8	3.7	30	84	223	141	12	0.00	15	59
MIN	1.7	2.6	0.80	1.2	2.8	3.8	9.3	11	0.07	0.00	0.00	1.2
AC-FT	167	229	77	144	388	1,480	4,600	3,260	179	0.00	93	333

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

	2.97	3.92	2.69	2.31	3.73	17.5	99.3	143	16.4	1.94	2.83	1.33
MEAN	2.97	3.92	2.69	2.31	3.73	17.5	99.3	143	16.4	1.94	2.83	1.33
MAX	12.0	13.8	8.12	6.00	13.0	70.6	302	508	108	12.0	17.7	5.60
(WY)	(1987)	(1987)	(1967)	(1965)	(1962)	(1997)	(1962)	(1941)	(1957)	(1957)	(1957)	(2003)
MIN	0.000	1.04	0.48	0.000	0.25	2.50	8.15	0.91	0.000	0.000	0.000	0.000
(WY)	(1952)	(1956)	(1977)	(1977)	(1990)	(1948)	(2002)	(2002)	(2002)	(1940)	(1951)	(1951)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1940 - 2003

ANNUAL TOTAL	895.46		5,523.42			
ANNUAL MEAN	2.45		15.1		25.1	
HIGHEST ANNUAL MEAN					61.8 1952	
LOWEST ANNUAL MEAN					2.36 2002	
HIGHEST DAILY MEAN	18	Apr 1	223	Apr 29	1,050	May 13, 1941
LOWEST DAILY MEAN	0.00	May 30	0.00	Jul 1	a0.00	Jun 24, 1940
ANNUAL SEVEN-DAY MINIMUM	0.00	May 30	0.00	Jul 1	b0.00	Jun 24, 1940
MAXIMUM PEAK FLOW			305	Apr 29	c1,380	May 13, 1941
MAXIMUM PEAK STAGE			3.27	Apr 29	e4.75	May 13, 1941
ANNUAL RUNOFF (AC-FT)	1,780		10,960		18,160	
10 PERCENT EXCEEDS	5.8		55		62	
50 PERCENT EXCEEDS	2.0		3.1		3.0	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated.

a Also occurred Jun 25 to Aug 7, and Aug 19-23, 1940, and on many days during many years.

b Also occurred for periods during many years.

c From rating curve extended above 1,100 ft<sup>3</sup>/s. Maximum discharge and gage height for period of record, 1,750 ft<sup>3</sup>/s, Apr 15, 1937, gage height, 5.38 ft, from rating curve extended above 1,100 ft<sup>3</sup>/s.

## 08248000 LOS PINOS RIVER NEAR ORTIZ, CO

LOCATION.--Lat 36°58'56", long 106°04'23", on line between sec.26, and sec.27, T.32 N., R.8 E., Rio Arriba County, New Mexico, Hydrologic Unit 13010005, on left bank 0.9 mi upstream (south) from Colorado-New Mexico State line, 2.1 mi southwest of Ortiz, and 2.9 mi upstream from mouth.

DRAINAGE AREA.--167 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1915 to December 1920, October 1924 to current year. Monthly discharge only for some periods, published in WSP 1312. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08248000](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08248000)

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 8,040 ft above NGVD of 1929, from topographic map. Prior to Apr. 15, 1955, at site 350 ft upstream at datum 2.52 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation and return flows from irrigated areas.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, is the greatest since at least 1854, from information obtained from local residents in 1959.

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	14	15	e14	e9.0	e14	e13	38	349	328	24	17	13
2	15	14	e12	e8.6	e13	e14	54	348	317	22	18	11
3	18	14	e12	e10	e12	e19	53	343	296	20	16	11
4	16	14	e12	e11	e11	e19	46	300	265	19	14	13
5	15	12	e8.0	e11	e10	e20	41	250	236	18	12	16
6	15	11	e8.0	e11	e9.4	e19	39	252	206	18	11	24
7	13	12	e7.0	e11	e9.2	e18	34	256	177	17	12	35
8	13	13	e8.0	e11	e9.0	e17	31	233	155	15	13	23
9	12	18	e8.0	e11	e9.8	e16	37	210	141	14	12	23
10	11	17	e8.0	e11	e9.8	e16	62	250	131	13	12	293
11	10	15	e8.0	e10	e12	e18	79	252	120	14	11	133
12	10	16	e8.0	e9.5	e22	e23	96	321	109	13	12	74
13	9.9	24	e8.0	e10	e33	e27	113	377	99	14	11	52
14	9.4	22	e8.4	e11	e60	e31	147	419	91	13	9.7	41
15	8.8	18	e9.0	e11	e30	e34	187	482	85	12	8.5	36
16	8.8	e16	e9.0	e9.0	e16	e36	130	430	79	13	8.1	32
17	8.6	e18	e9.0	e9.5	e17	e33	146	506	78	13	7.3	28
18	8.5	e18	e8.0	e9.5	e16	e29	149	531	73	10	7.1	26
19	8.8	e17	e7.0	e11	e14	e27	132	483	86	9.2	7.1	23
20	9.0	e18	e7.0	e11	e13	e24	110	449	104	11	6.7	22
21	8.7	18	e7.4	e11	e13	e26	131	434	73	16	7.3	21
22	8.7	17	e7.0	e11	e11	e25	167	459	59	14	8.7	20
23	9.1	16	e7.8	e12	e10	e28	168	467	50	13	11	20
24	9.5	17	e7.2	e12	e14	e31	135	437	45	13	13	19
25	10	e16	e7.2	e11	e16	e33	174	441	40	12	18	19
26	11	e13	e7.0	e11	e14	e38	253	428	37	12	18	17
27	13	e11	e7.8	e13	e14	e42	330	439	34	13	15	18
28	13	e13	e8.8	e13	e13	e35	391	440	32	18	14	17
29	14	e14	e10	e12	---	e29	414	438	29	25	25	17
30	13	e14	e9.0	e12	---	e28	400	384	26	21	18	17
31	16	---	e9.4	e13	---	e29	392	392	---	17	15	---
TOTAL	359.8	471	267.0	337.1	445.2	797	4,287	11,800	3,601	476.2	388.5	1,114
MEAN	11.6	15.7	8.61	10.9	15.9	25.7	143	381	120	15.4	12.5	37.1
MAX	18	24	14	13	60	42	414	531	328	25	25	293
MIN	8.5	11	7.0	8.6	9.0	13	31	210	26	9.2	6.7	11
AC-FT	714	934	530	669	883	1,580	8,500	23,410	7,140	945	771	2,210

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2003, BY WATER YEAR (WY)

	27.0	21.8	16.1	14.5	17.0	34.2	221	603	323	71.5	34.8	24.6
MEAN	27.0	21.8	16.1	14.5	17.0	34.2	221	603	323	71.5	34.8	24.6
MAX	109	70.1	34.4	26.0	30.0	84.7	610	1,341	1,022	258	112	101
(WY)	(1987)	(1987)	(1987)	(1987)	(1962)	(1971)	(1936)	(1952)	(1957)	(1957)	(1929)	(1927)
MIN	10.1	11.1	5.00	5.00	7.50	13.9	65.9	33.8	8.22	5.17	3.75	7.53
(WY)	(1957)	(1957)	(1918)	(1918)	(1964)	(1977)	(1968)	(2002)	(2002)	(2002)	(2002)	(1956)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1915 - 2003

ANNUAL TOTAL	6,561.1	24,343.8	
ANNUAL MEAN	18.0	66.7	118
HIGHEST ANNUAL MEAN			230
LOWEST ANNUAL MEAN			18.0
HIGHEST DAILY MEAN	130	531	2,410
LOWEST DAILY MEAN	1.7	6.7	1.7
ANNUAL SEVEN-DAY MINIMUM	2.3	7.2	2.3
MAXIMUM PEAK FLOW		655	a3,160
MAXIMUM PEAK STAGE		4.56	b5.77
ANNUAL RUNOFF (AC-FT)	13,010	48,290	85,310
10 PERCENT EXCEEDS	48	252	373
50 PERCENT EXCEEDS	11	16	25
90 PERCENT EXCEEDS	3.9	8.8	12

e Estimated.

a Site and datum then in use, from rating curve extended above 1,600 ft<sup>3</sup>/s.

b Maximum gage height, 6.19 ft, May 22, 1993, present site and datum.

08249000 CONEJOS RIVER NEAR LASAUSES, CO

LOCATION.--Lat 37°18'01", long 105°44'47", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.2, and SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.10 (two channels), T.35 N., R.11 E., Conejos County, Hydrologic Unit 13010005, on left bank of main channel 125 ft downstream from bridge on State Highway 158 and on left bank of secondary channel 230 ft upstream from bridge on State Highway 158, 1.0 mi upstream from mouth, 2.1 mi north of Lasausas, and 13 mi southeast of Alamosa.

DRAINAGE AREA.--887 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1921 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1, 1966, published as "at mouth, near La Sauses" or "near La Sauses." For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08249000](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08249000)

REVISED RECORDS.--WSP 1312: 1932 (monthly discharge and runoff), 1934(M).

GAGE.--Two water-stage recorders with satellite telemetry. Datum of gage on main (north) channel is 7,495.02 ft above NGVD of 1929, and on secondary (south) channel is 7,496.89 ft above NGVD of 1929 (levels by U.S. Bureau of Reclamation). Main channel: April 11 to September 30, 1937, at datum 1.00 ft higher. See WSP 1312 and 1732 for history of changes prior to Apr. 11, 1937. South channel: May 4, 1936, to Oct. 13, 1965, at site 280 ft downstream at datum 1.00 ft lower. See WSP 1312 and 1732 for history of changes prior to May 4, 1936.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by diversions for irrigation, ground-water withdrawals, and return flows from irrigated areas. Flows regulated to some extent by Platoro Reservoir (station 08244500) about 83 mi upstream since Nov. 7, 1951.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, is the greatest since at least 1854, from information obtained from local residents in 1959.

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	0.00	0.00	14	e18	e31	10	9.5	3.9	9.2	0.48	0.00	0.00
2	0.00	0.00	e13	e16	e37	9.5	18	4.6	8.9	0.47	0.00	0.00
3	0.00	0.00	15	e19	e37	9.5	18	4.4	7.9	0.41	0.00	0.00
4	0.00	0.00	15	e20	e32	8.6	16	3.9	7.0	0.37	0.00	0.00
5	0.00	0.00	19	e20	e32	8.6	9.7	3.9	17	0.33	0.00	0.00
6	0.00	0.00	12	e21	32	9.2	9.6	3.8	23	0.30	0.00	0.00
7	0.00	0.00	12	e21	e30	8.9	8.7	3.5	6.8	0.30	0.00	0.00
8	0.00	0.00	e12	e22	e30	7.8	1.2	3.0	6.8	0.30	0.00	0.00
9	0.00	0.00	e13	e23	e27	5.8	0.56	2.7	6.5	0.30	0.00	0.00
10	0.00	0.00	e13	e26	e26	2.5	0.52	2.8	6.3	0.24	0.00	0.00
11	0.00	0.00	e14	e26	23	0.80	0.53	2.8	6.3	0.02	0.00	0.09
12	0.00	0.00	e14	e27	20	1.4	0.52	3.0	7.1	0.00	0.00	e38
13	0.00	0.00	e14	e26	19	2.5	0.52	3.4	6.4	0.00	0.00	e1.0
14	0.00	0.00	e16	e27	e17	5.8	0.39	3.8	6.6	0.00	0.00	e0.05
15	0.00	0.00	e16	e29	18	9.2	0.46	4.6	6.5	0.00	0.00	0.00
16	0.00	0.00	e16	e27	26	10	1.1	15	3.3	0.00	0.00	0.00
17	0.00	0.00	e17	e28	e26	11	1.2	8.0	2.9	0.00	0.00	0.00
18	0.00	0.00	e16	e27	24	15	1.7	4.8	2.5	0.00	0.00	0.00
19	0.00	0.00	e16	e27	22	15	2.3	3.8	2.4	0.00	0.00	0.00
20	0.00	0.00	e16	e27	14	13	2.5	3.3	2.2	0.00	0.00	0.00
21	0.00	0.00	e16	e27	9.7	10	2.5	3.3	1.8	0.00	0.00	0.00
22	0.00	0.00	e16	e28	9.5	9.7	2.1	9.1	1.4	0.00	0.00	0.00
23	0.00	0.00	e16	e28	10	8.9	1.9	83	1.2	0.00	0.00	0.00
24	0.00	2.7	e16	e28	11	8.7	2.3	59	1.1	0.00	0.00	0.00
25	0.00	e8.8	e17	e29	11	5.7	2.5	26	0.96	0.00	0.00	0.00
26	0.00	e11	e17	e29	12	5.0	2.0	8.6	0.96	0.00	0.00	0.00
27	0.00	e12	e17	e30	12	3.5	2.1	6.3	0.93	0.00	0.00	0.00
28	0.00	e13	e17	e31	12	3.1	3.5	5.8	0.86	0.00	0.00	0.00
29	0.00	e13	e17	e34	---	5.8	4.7	31	0.72	0.00	0.00	0.00
30	0.00	13	e18	e30	---	6.9	4.5	82	0.63	0.00	0.00	0.00
31	0.00	---	e18	e29	---	6.1	---	9.0	---	0.00	0.00	---
TOTAL	0.00	73.50	478	800	610.2	237.50	131.10	412.1	156.16	3.52	0.00	39.14
MEAN	0.000	2.45	15.4	25.8	21.8	7.66	4.37	13.3	5.21	0.11	0.000	1.30
MAX	0.00	13	19	34	37	15	18	83	23	0.48	0.00	38
MIN	0.00	0.00	12	16	9.5	0.80	0.39	2.7	0.63	0.00	0.00	0.00
AC-FT	0.00	146	948	1,590	1,210	471	260	817	310	7.0	0.00	78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2003, BY WATER YEAR (WY)

MEAN	46.5	80.1	58.0	60.9	77.4	102	239	692	545	140	49.1	37.8
MAX	307	424	140	146	186	261	1,177	2,642	1,850	1,132	413	425
(WY)	(1942)	(1976)	(1986)	(1986)	(1983)	(1989)	(1924)	(1924)	(1935)	(1957)	(1952)	(1927)
MIN	0.000	2.45	15.4	24.0	21.8	7.66	1.47	0.26	0.000	0.000	0.000	0.000
(WY)	(2003)	(2003)	(2003)	(1964)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)	(1934)	(1976)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1921 - 2003

ANNUAL TOTAL	4,286.56	2,941.22		
ANNUAL MEAN	11.7	8.06		
HIGHEST ANNUAL MEAN			177	
LOWEST ANNUAL MEAN			451	1941
HIGHEST DAILY MEAN	78	Mar 8	83	May 23
LOWEST DAILY MEAN	0.00	May 29	0.00	Oct 1
ANNUAL SEVEN-DAY MINIMUM	0.00	May 29	0.00	Oct 1
MAXIMUM PEAK FLOW			Not determined	
ANNUAL RUNOFF (AC-FT)	8,500	5,830	c3,890	128,300
10 PERCENT EXCEEDS	41	26	495	
50 PERCENT EXCEEDS	0.11	2.7	55	
90 PERCENT EXCEEDS	0.00	0.00	1.0	

e Estimated.  
a Also occurred Jun 28 to Jul 1, Jul 3, and Jul 21 to Sep 8, and many days during many years.  
b Also occurred during many years.  
c Gage height not determined.

## 08250000 CULEBRA CREEK AT SAN LUIS, CO

LOCATION.--Lat 37°11'01", long 105°25'31", Costilla County, Hydrologic Unit 13010002, on left bank at bridge 1 mi south of San Luis, and 1 mi upstream from the Rito Seco.

DRAINAGE AREA.--220 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1927 to September 1982. October 1998 to current year. Monthly discharge only for some periods, published in WSP 1312. Records for January 1910 to December 1911, published as Culebra River at San Luis in WSP 288 and 308, have been found to be unreliable and should not be used. October 1982 to September 1998, in reports of State Engineer. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08250000](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08250000)

REVISED RECORDS.--WSP 1312: 1940. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Non-standard Parshall flume since May 23, 1931. Elevation of gage is 8,000 ft above NGVD of 1929, from topographic map. Prior to May 23, 1931, at different datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by storage reservoir, diversions for irrigation, ground-water withdrawals, and return flows from irrigated areas. Flow regulated to large extent by Sanchez Reservoir on Ventero Creek, capacity 103,000 acre-ft.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

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	12	12	11	9.6	12	12	11	9.3	116	74	25	28
2	16	12	11	9.3	11	12	12	22	97	73	20	36
3	12	12	11	9.8	11	12	11	43	77	72	20	57
4	12	13	11	9.9	9.8	12	11	41	67	73	27	57
5	11	13	12	10	10	11	10	38	81	72	47	54
6	11	13	11	11	10	11	10	34	105	71	47	53
7	11	13	10	11	10	12	11	34	101	69	47	55
8	11	12	11	11	12	12	10	34	64	67	52	46
9	11	13	10	11	8.9	12	10	36	63	67	57	41
10	11	14	10	12	9.8	12	10	43	62	77	17	64
11	11	13	10	11	10	12	11	42	61	97	23	34
12	11	13	9.9	12	11	12	11	42	61	96	39	35
13	11	13	10	11	13	11	9.8	46	61	99	43	39
14	11	16	10	12	13	11	11	46	61	110	52	35
15	11	16	9.7	11	12	11	12	48	66	110	52	30
16	11	12	10	12	11	11	11	51	71	110	53	27
17	11	12	10	11	11	11	11	53	73	110	52	25
18	11	12	10	10	12	12	11	55	68	98	53	23
19	12	11	8.7	11	12	12	14	64	54	75	56	26
20	11	11	8.7	11	11	13	19	71	57	78	53	25
21	11	12	8.8	11	11	14	16	75	51	68	52	25
22	11	12	8.7	12	11	14	14	72	46	88	60	26
23	13	11	9.2	12	13	14	14	75	41	59	68	28
24	12	12	9.3	12	12	12	12	79	40	83	30	28
25	12	11	9.0	12	11	12	10	89	41	78	38	29
26	12	11	8.8	12	12	11	9.8	72	35	81	62	23
27	15	11	8.7	12	11	12	10	57	37	86	71	21
28	13	11	8.8	12	12	12	11	59	47	56	64	21
29	12	11	9.2	12	---	12	11	64	50	47	52	21
30	12	11	9.3	11	---	11	9.8	76	53	38	52	21
31	13	---	9.3	12	---	11	---	97	---	31	35	---
TOTAL	365	369	304.1	346.6	313.5	369	344.4	1,667.3	1,907	2,413	1,419	1,033
MEAN	11.8	12.3	9.81	11.2	11.2	11.9	11.5	53.8	63.6	77.8	45.8	34.4
MAX	16	16	12	12	13	14	19	97	116	110	71	64
MIN	11	11	8.7	9.3	8.9	11	9.8	9.3	35	31	17	21
AC-FT	724	732	603	687	622	732	683	3,310	3,780	4,790	2,810	2,050

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 2003, BY WATER YEAR (WY)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
MEAN	22.2	21.4	18.5	18.1	18.6	19.4	18.6	53.6	133	108	80.5	32.5
MAX	36.7	51.4	39.1	32.2	32.6	36.2	48.3	137	303	231	184	69.2
(WY)	(1942)	(1958)	(1958)	(1942)	(1942)	(1942)	(1942)	(1930)	(1942)	(1942)	(1949)	(1945)
MIN	6.00	6.63	6.64	7.03	6.70	7.42	7.79	11.7	40.1	30.4	27.3	9.49
(WY)	(1951)	(1951)	(1952)	(1951)	(1951)	(1951)	(1951)	(1955)	(1963)	(1977)	(1976)	(1972)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

(a) WATER YEARS 1927 - 2003

ANNUAL TOTAL	12,978.1	10,850.9	
ANNUAL MEAN	35.6	29.7	
HIGHEST ANNUAL MEAN			45.4
LOWEST ANNUAL MEAN			92.7 1942
HIGHEST DAILY MEAN	138 Jun 14	116 Jun 1	18.2 1951
LOWEST DAILY MEAN	8.7 Dec 19	8.7 Dec 19	4.6 Oct 31, 1950
ANNUAL SEVEN-DAY MINIMUM	8.9 Dec 19	8.9 Dec 19	5.0 Oct 22, 1950
MAXIMUM PEAK FLOW		244 Jul 22	b654 Jul 1, 1947
MAXIMUM PEAK STAGE		2.47 Jul 22	5.09 Jul 1, 1947
ANNUAL RUNOFF (AC-FT)	25,740	21,520	32,880
10 PERCENT EXCEEDS	81	71	115
50 PERCENT EXCEEDS	20	12	25
90 PERCENT EXCEEDS	11	10	11

a Water years 1927-1982 and 1999 to current year.

b From rating curve extended above 300 ft<sup>3</sup>/s.

**08251500 RIO GRANDE NEAR LOBATOS, CO**

LOCATION.--Lat 37°04'43", long 105°45'23", in NE 1/4 NW 1/4 sec.27, T.33 N., R.11 E., Conejos County, Hydrologic Unit 13010002, on right bank at highway bridge, 5.7 mi north of Colorado-New Mexico State line, 8 mi downstream from Culebra Creek, 11 mi east of Lobatos, and 14 mi east of Antonito.

DRAINAGE AREA.--7,700 mi<sup>2</sup>, approximately, includes 2,940 mi<sup>2</sup> in closed basin in northern part of San Luis Valley, CO.

**WATER-DISCHARGE RECORDS**

PERIOD OF RECORD.--July 1899 to current year. Monthly discharge only for some periods, published in WSP 1312. Published as "at Cenicero" 1899-1901, and as "near Cenicero" 1902-4. Statistical summary computed for 1931 to current year. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08251500](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08251500)

REVISED RECORDS.-- WSP 210: Drainage area. WSP 1312: 1919 (monthly discharge and runoff). WDR CO-78-1: 1976.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 7,427.63 ft above NGVD of 1929. Prior to Nov. 8, 1910, nonrecording gages at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, transmountain diversions, diversions for irrigation and municipal use, ground-water withdrawals, return flows from irrigated areas, and flows from sewage-treatment plants.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage of June 18, 1903, is greatest since at least 1828.

**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	23	23	e135	e105	e220	195	85	71	224	93	14	13
2	24	24	e140	e115	e210	187	85	79	244	90	12	12
3	20	30	e135	e125	e210	181	86	93	182	79	12	29
4	15	71	e155	e135	e190	181	85	76	151	80	16	31
5	13	130	e155	e145	e175	185	71	56	135	82	15	20
6	18	142	e155	e140	e140	206	64	58	139	72	15	16
7	19	137	e150	e140	e120	177	58	60	151	64	14	14
8	19	103	e120	e140	e180	183	52	66	157	58	15	14
9	19	91	e105	e145	e175	182	44	60	223	57	15	16
10	14	62	e110	e150	e175	183	44	59	279	53	15	28
11	15	47	e100	e160	e190	183	44	58	265	47	15	22
12	15	41	e110	e160	e205	185	39	61	218	42	15	21
13	15	42	e115	e165	e215	193	36	67	196	37	15	21
14	16	42	e120	e160	e240	187	35	73	184	38	14	25
15	16	37	e130	e160	e240	205	36	83	209	47	10	19
16	16	30	e140	e160	205	218	41	122	232	40	14	16
17	17	38	e115	e155	213	227	42	112	206	36	17	15
18	18	53	e130	e160	213	230	66	146	181	33	25	13
19	18	49	e115	e160	218	205	65	160	173	30	15	12
20	18	48	e110	e160	207	165	51	164	154	28	8.4	11
21	20	47	e105	e160	201	142	47	172	160	27	6.4	10
22	21	48	e140	e165	e185	117	46	158	160	28	5.8	10
23	23	43	e125	e170	e180	107	48	134	146	27	15	9.8
24	25	48	e100	e175	e180	109	52	210	128	27	9.3	11
25	24	122	e115	e175	e185	96	65	210	113	27	7.9	12
26	23	e125	e105	e185	e204	70	71	195	102	24	7.7	10
27	26	e135	e105	e185	209	71	69	146	103	21	8.4	10
28	26	e145	e100	e195	195	60	78	121	108	20	11	11
29	26	e125	e100	e200	---	80	83	143	97	20	14	11
30	28	e135	e100	e190	---	80	81	218	94	46	14	11
31	27	---	e105	e205	---	80	---	186	---	21	14	---
TOTAL	617	2,213	3,745	4,945	5,480	4,870	1,769	3,617	5,114	1,394	404.9	473.8
MEAN	19.9	73.8	121	160	196	157	59.0	117	170	45.0	13.1	15.8
MAX	28	145	155	205	240	230	86	218	279	93	25	31
MIN	13	23	100	105	120	60	35	56	94	20	5.8	9.8
AC-FT	1,220	4,390	7,430	9,810	10,870	9,660	3,510	7,170	10,140	2,760	803	940

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2003, BY WATER YEAR (WY)**

MEAN	184	309	282	263	314	413	505	1,082	1,199	427	167	133
MAX	1,401	1,199	763	521	595	884	2,326	4,958	4,470	2,754	1,281	938
(WY)	(1942)	(1942)	(1942)	(1986)	(1986)	(1987)	(1985)	(1987)	(1941)	(1995)	(1999)	(1999)
MIN	12.9	59.6	61.7	75.7	102	66.0	32.3	31.2	19.8	1.28	3.21	1.91
(WY)	(1957)	(1955)	(1964)	(1957)	(1957)	(1957)	(1935)	(2002)	(1977)	(1951)	(1956)	(1956)

**SUMMARY STATISTICS**

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1931 - 2003
ANNUAL TOTAL	35,800.9	34,642.7	
ANNUAL MEAN	98.1	94.9	a440
HIGHEST ANNUAL MEAN			1,264
LOWEST ANNUAL MEAN			70.9
HIGHEST DAILY MEAN	391	279	b9,110
LOWEST DAILY MEAN	4.3	5.8	c0.00
ANNUAL SEVEN-DAY MINIMUM	4.9	8.6	d0.00
MAXIMUM PEAK FLOW		302	d11,600
MAXIMUM PEAK STAGE		f1.56	g8.76
ANNUAL RUNOFF (AC-FT)	71,010	68,710	318,700
10 PERCENT EXCEEDS	275	195	951
50 PERCENT EXCEEDS	37	81	240
90 PERCENT EXCEEDS	8.4	14	38

e Estimated.

a Average discharge for 31 years (water years 1900-30), 846 ft<sup>3</sup>/s; 612,900 acre-ft/yr, includes period of extensive development for irrigation.

b Maximum daily discharge for period of record, 13,100 ft<sup>3</sup>/s, Jun 8, 1905.

c No flow at times in 1950-51, 1956.

d Maximum discharge for period of record, 13,200 ft<sup>3</sup>/s, Jun 8, 1905, gage height, 9.1 ft, from rating curve extended above 8,000 ft<sup>3</sup>/s.

f Maximum gage height, 2.19 ft, Feb 1, backwater from ice.

g Maximum gage height for period of record, 10.0 ft, Jun 18, 1903.

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1969 to current year. September 1969 to September 1993 under the National Stream-Quality Accounting Network (NASQAN). April 1993 to September 1996 under the Rio Grande National Water-Quality Assessment Program. For a complete listing of historical data available for this site, see [http://waterdata.usgs.gov/co/nwis/inventory/?site\\_no=08251500](http://waterdata.usgs.gov/co/nwis/inventory/?site_no=08251500)

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1975 to September 1981.

WATER TEMPERATURE: October 1975 to September 1981.

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

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	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, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)
OCT 08...	1115	20	9.3	8.8	476	12.0	87	22.9	7.26	8.24	68.5	18.1	0.84
MAR 26...	1030	67	9.1	7.9	319	8.0	90	27.6	5.23	4.08	30.9	8.57	0.45
MAY 27...	1215	142	8.7	8.4	247	19.0	74	22.1	4.49	4.54	21.6	4.87	0.4
JUN 11...	1030	266	7.7	8.2	182	16.0	58	17.2	3.55	3.34	16.0	3.55	0.3
JUL 17...	1030	36	8.0	8.7	299	19.5	94	27.5	6.12	4.85	29.6	7.30	0.5
AUG 20...	0930	8.1	8.0	9.0	411	16.0	68	16.8	6.26	6.19	59.6	17.1	0.8

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

Date	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	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 as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)
OCT 08...	21.3	54.8	308	0.34	0.52	<0.04	<0.06	<0.008	<0.02	0.010	0.047	2	E.17
MAR 26...	27.8	34.1	214	0.18	0.37	<0.04	<0.06	<0.008	0.02	0.025	0.067	--	--
MAY 27...	23.1	20.5	152	0.40	0.70	<0.04	<0.06	<0.008	0.03	0.047	0.151	2	<0.30
JUN 11...	19.3	15.2	124	0.30	0.73	<0.04	<0.06	<0.008	0.03	0.039	0.174	2	<0.30
JUL 17...	20.7	23.4	196	E.25	E.54	<0.04	<0.06	<0.008	E.01	E.018	E.081	E1	<0.30
AUG 20...	5.55	52.6	245	0.34	0.51	<0.04	<0.06	<0.008	<0.02	0.010	0.045	--	--

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

Date	Arsenic, water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Cadmium, water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Cobalt, water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)
OCT 08...	6	51	<0.06	E.03	<0.8	0.46	1.2	E8	E.05	14.7	6.9	1.22	<3
MAR 26...	--	--	--	--	--	--	--	18	--	102	--	--	--
MAY 27...	3	34	<0.06	<0.04	<0.8	0.25	1.0	54	0.29	69.5	3.0	1.51	<3
JUN 11...	E2	25	<0.06	E.02	<0.8	0.17	1.0	37	0.18	23.9	1.6	0.82	<3
JUL 17...	4	34	<0.06	<0.04	<0.8	0.26	0.8	9	<0.08	34.7	4.5	1.23	<3
AUG 20...	--	--	--	--	--	--	--	9	--	12.1	--	--	--



08251500 RIO GRANDE NEAR LOBATOS, CO—Continued

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

Date	Silver, water, fltrd, ug/L (01075)	Zinc, water, fltrd, ug/L (01090)	Uranium natural water, fltrd, ug/L (22703)
OCT 08...	<0.20	2	2.78
MAR 26...	--	--	--
MAY 27...	<0.20	2	0.89
JUN 11...	<0.20	1	0.40
JUL 17...	<0.20	M	1.19
AUG 20...	--	--	--

< -- Actual value is known to be less than the value shown.

E -- Estimated laboratory analysis value.

M -- Presence of material verified but not quantified.