Water-Data Report 2013

08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM

Rio Grande-Elephant Butte Basin
Rio Grande-Albuquerque Subbasin

LOCATION.--Lat 34°15′23″, long 106°53′27″ referenced to North American Datum of 1983, Socorro County, NM, Hydrologic Unit 13020203, in Sevilleta Grant, on right bank 0.2 mi downstream from San Acacia Diversion Dam, 0.3 mi east of San Acacia, 2.0 mi downstream from Rio Salado, and at mile 1,472.6.

DRAINAGE AREA.--26,770 mi^2 of which 2,940 mi^2 probably is noncontributing, from the closed basin in San Luis Valley, Colorado.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1936 to September 1958 (prior to construction of conveyance channel), October 1958 to September 1964 (flow in conveyance channel included), October 1964 to current year. Prior to October 1964 published as 08355000 "Rio Grande at San Acacia" and records are not equivalent.

REVISED RECORDS.--WSP 1242: 1951. WSP 1732: 1958(M). WRD 1969: 1967.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 4,654.50 ft above NGVD of 1929. Prior to Mar. 19, 1953, at several sites 0.1 mi upstream at different datums. Mar. 19, 1953, to Aug. 19, 1965, at site 0.4 mi downstream at datum 3.60 ft higher. Aug. 19, 1965, to Aug. 15, 1967, at same site at datum 1.89 ft higher. Datum on Aug. 21, 1987, was lowered 2.00 ft; on April 26, 1996, 10.00 ft was added to gage datum. Floodway is bypassed by Socorro Main Canal North and since Oct. 1958 by conveyance channel.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Floodway is one of three channels (stations 08354500, 08354800) carrying flow in valley cross section. Tabulation of total discharge no longer computed because conveyance channel and Socorro Main Canal North stations have been discontinued. Diversions upstream from station for irrigation of about 760,000 acres; this includes Socorro Main Canal North, which bypasses station and irrigates about 8,600 acres. No flow at times.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--22 years (water years 1937-58), 1,192 ft^3/s, 863,000 acre-ft/yr, prior to construction of conveyance channel; does not include Socorro Main Canal North. 15 years (water years 1959-73), 911 ft^3/s, 660,000 acre-ft/yr, combined flow of floodway, conveyance channel and Socorro Main Canal North, prior to closure of Cochiti Dam. 30 years (water years 1974-2003), 1,354 ft^3/s, 980,970 acre-ft/yr, combined flow of floodway, conveyance channel, and Socorro Main Canal North, since closure of Cochiti Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft^3/s, Aug. 5, 1936, gage height, 10.75 ft, site and datum then in use; no flow at times.

Suggested citation: U.S. Geological Survey, 2014, Water-resources data for the United States, Water Year 2013: U.S. Geological Survey Water-Data Report WDR-US-2013, site 08354900, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/08354900.2013.pdf

08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	8.6	127	e793	e472	552	405	199	165	160	34	e404	16
2	9.0	81	e793	e418	558	375	171	164	154	40	e380	e22
3	8.7	90	e798	e390	557	318	149	166	156	46	e310	e11
4	8.9	116	e810	e384	561	e319	150	176	151	137	e247	e6.8
5	8.6	135	e814	e390	583	e332	153	179	143	e20	e326	e20
6	9.0	158	e810	e388	599	318	156	185	129	e16	e208	23
7	9.2	183	e814	e393	590	303	156	190	117	e9.0	373	23
8	9.2	200	e816	386	654	287	149	190	107	e19	197	22
9	9.1	222	e824	359	605	276	155	193	100	e25	173	23
10	8.9	240	e830	350	574	289	159	194	97	43	343	466
11	8.8	246	e832	413	567	282	163	193	96	78	302	860
12	9.6	248	e843	454	577	305	165	194	90	59	284	e167
13	9.7	254	e837	456	560	332	168	197	83	73	247	1,860
14	9.5	267	e819	451	555	344	170	205	74	103	198	2,780
15	53	269	e711	447	556	247	169	211	66	149	114	3,970
16	8.0	278	e721	459	550	243	169	195	64	201	71	8,250
17	8.3	292	e736	456	556	230	169	243	60	155	57	6,440
18	8.2	e308	e731	464	551	231	166	214	54	70	53	4,670
19	9.1	e343	e796	467	548	259	163	205	49	36	54	2,310
20	13	e375	e838	460	545	229	162	191	45	35	50	810
21	13	e396	e842	480	540	223	162	197	42	76	45	e1,420
22	16	e486	e824	e489	539	222	162	192	39	73	37	e968
23	19	e558	e818	e473	534	210	162	190	38	216	29	594
24	19	e618	e676	e477	539	206	154	190	35	380	27	756
25	19	e646	e672	e485	542	208	152	191	33	237	27	e1,370
26	19	e673	e669	e495	538	206	145	189	32	93	107	e1,230
27	19	e692	e672	e511	518	201	150	187	30	597	14	942
28	18	e730	e667	e528	504	216	161	176	29	777	15	654
29	19	e778	e656	e560	---	209	165	175	30	1,390	15	554
30	22	e783	e554	e558	---	195	165	176	32	692	16	532
31	54	---	e506	556	---	210	---	168	---	e466	16	---
Total	463.4	10,792	23,522	14,069	15,652	8,230	4,839	5,881	2,335	6,345.0	4,739	41,769.8
Mean	14.9	360	759	454	559	265	161	190	77.8	205	153	1,392
Max	54	783	843	560	654	405	199	243	160	1,390	404	8,250
Min	8.0	81	506	350	504	195	145	164	29	9.0	14	6.8
Ac-ft	919	21,410	46,660	27,910	31,050	16,320	9,600	11,660	4,630	12,590	9,400	82,850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	370	760	742	703	831	839	1,332	2,205	1,772	855	578	491
Max	1,892	2,645	2,209	2,626	3,849	3,106	5,761	6,085	5,453	4,312	3,462	2,095
(WY)	(1987)	(1987)	(1987)	(1986)	(1986)	(1986)	(1985)	(1985)	(1983)	(1987)	(1986)	(1982)
Min	4.94	1.60	0.13	0.28	0.17	5.03	15.8	12.6	6.01	6.99	4.18	2.37
(WY)	(1980)	(1977)	(1979)	(1977)	(1977)	(1981)	(1978)	(1977)	(1977)	(1974)	(2003)	(2004)

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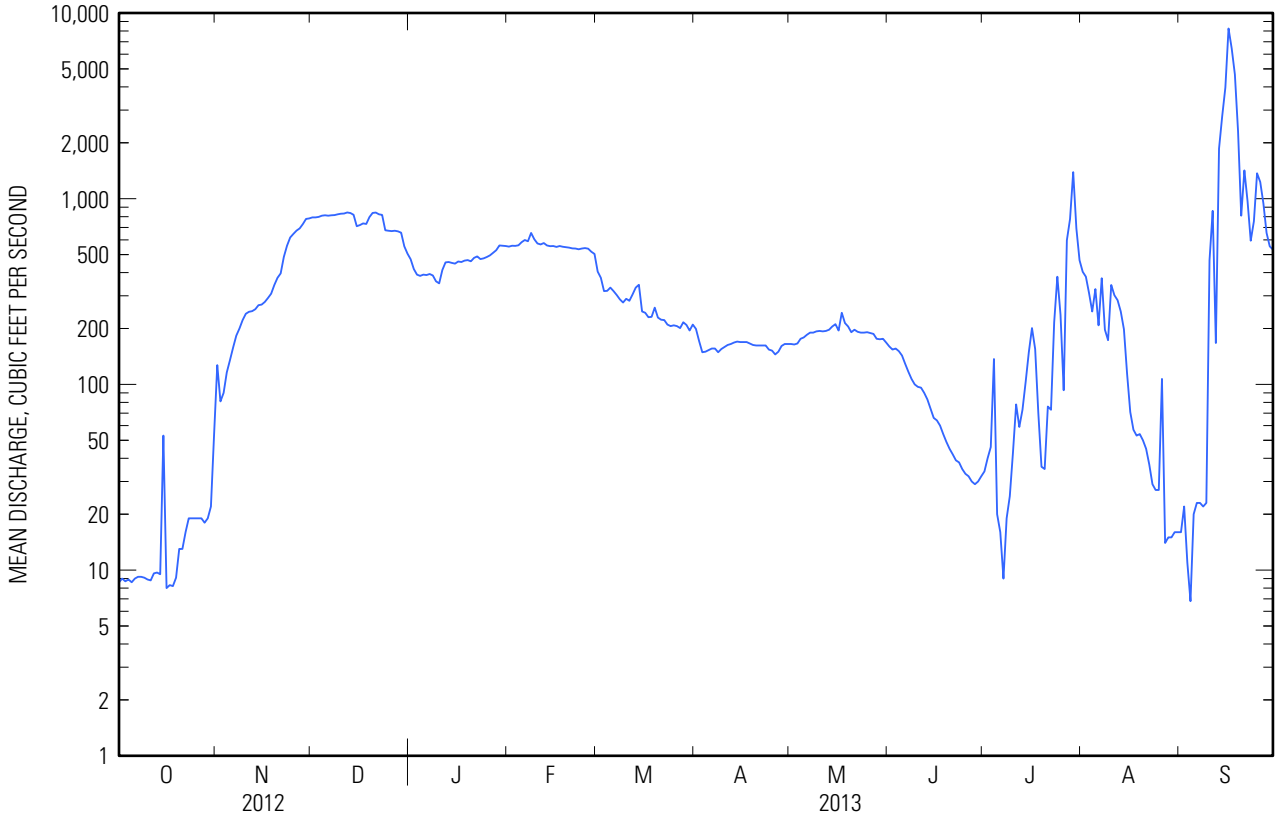
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1974 - 2013	
Annual total	143,654.2		138,637.2			
Annual mean	392		380		956	
Highest annual mean					2,523	1986
Lowest annual mean					23.6	1974
Highest daily mean	2,300	Apr 4	8,250	Sep 16	9,420	May 4, 1985
Lowest daily mean	1.8	Sep 12	6.8	Sep 4	0.00	Dec 28, 1976
Annual seven-day minimum	2.8	Aug 7	8.9	Oct 1	0.00	Nov 9, 1978
Maximum peak flow			9,020	Sep 16	27,400	Aug 5, 1936
Maximum peak stage			18.69	Sep 16	20.12	Aug 1, 2006
Instantaneous low flow			6.7	Oct 19	0.00	Dec 28, 1976
Annual runoff (ac-ft)	284,900		275,000		692,500	
10 percent exceeds	797		777		2,770	
50 percent exceeds	324		206		561	
90 percent exceeds	8.0		19		7.3	



08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1937-56, 1959 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: January 1959 to September 1985, October 1988 to September 1989, October 1996 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 141,000 mg/L, Aug. 10, 1959; minimum daily mean, no flow on many days.
SEDIMENT LOAD: Maximum daily, 733,000 tons, Sept. 16, 2013; minimum daily, 0 tons, many days.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 51,700 mg/L, July 16; minimum daily mean, 86 mg/L, Apr. 12.
SEDIMENT LOAD: Maximum daily 733,000 tons, Sept. 16; minimum daily, 3.2 tons, Oct. 11.

08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
[e, estimated]

Day	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)
	October		November		December		January		February		March	
1	167	3.8	3,220	1,110	e4,120	e8,820	262	e334	321	479	227	248
2	163	4.0	2,220	501	e4,060	e8,700	242	e273	278	419	226	229
3	160	3.8	1,620	393	e4,010	e8,640	231	e243	286	431	226	194
4	157	3.8	1,810	575	e3,950	e8,650	227	e235	288	436	237	e204
5	154	3.6	3,280	1,190	e3,900	e8,570	217	e229	315	496	237	e212
6	151	3.7	1,980	838	e3,840	e8,410	209	e219	332	536	369	318
7	148	3.7	2,220	1,100	e3,790	e8,330	206	e218	334	532	317	259
8	145	3.6	e3,760	e2,050	e3,730	e8,230	200	209	496	878	314	244
9	142	3.5	e4,170	e2,500	e3,680	e8,180	189	183	368	603	275	205
10	139	3.3	e4,150	e2,690	e3,620	e8,120	234	221	275	425	266	208
11	136	3.2	e4,120	e2,740	e3,570	e8,020	295	330	253	388	254	193
12	133	3.4	e4,100	e2,740	e3,510	e8,000	247	303	250	389	244	200
13	130	3.4	e4,070	e2,790	e3,460	e7,810	232	285	242	366	293	264
14	127	3.3	e4,040	e2,920	e3,360	e7,430	219	267	257	384	290	269
15	25,800	5,320	e4,020	e2,920	e3,170	e6,090	239	288	247	371	269	179
16	7,830	171	e3,990	e3,000	e2,980	e5,800	241	299	244	363	251	165
17	2,860	64	e3,970	e3,130	e2,790	e5,540	220	271	239	358	234	145
18	2,120	47	e3,940	e3,280	e2,600	e5,120	209	261	243	361	218	136
19	1,410	33	e3,950	e3,660	e2,400	e5,160	217	273	245	362	239	167
20	644	23	e3,980	e4,030	e2,210	e5,000	195	242	232	342	229	141
21	460	16	e4,020	e4,290	e2,020	e4,590	198	256	248	361	257	155
22	714	32	e4,050	e5,310	e1,830	e4,070	211	e279	241	351	257	154
23	423	22	e4,080	e6,150	e1,640	e3,620	225	e287	242	349	296	168
24	283	15	e4,110	e6,860	e1,450	e2,640	238	e307	241	352	247	137
25	242	12	e4,150	e7,230	e1,260	e2,280	249	e326	244	357	212	119
26	177	9.0	e4,180	e7,590	e1,060	e1,920	259	e346	254	368	198	110
27	171	8.7	e4,210	e7,870	e873	e1,580	270	e372	244	341	183	100
28	209	10	e4,250	e8,370	e602	e1,080	377	e537	230	312	169	99
29	286	15	e4,230	e8,880	378	e670	436	e659	---	---	159	90
30	387	23	e4,170	e8,820	308	e462	418	e629	---	---	154	81
31	664	240	---	---	273	e373	376	566	---	---	188	107
Total	---	6,110.8	---	115,527	---	171,905	---	9,747	---	11,710	---	5,500

08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
[e, estimated]

Day	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)	Mean concen-tration (mg/L)	Sediment discharge (tons/day)
	April		May		June		July		August		September	
1	192	103	126	56	120	52	132	12	e7,210	e7,880	e658	e29
2	182	84	127	56	110	46	137	15	e25,500	e26,100	e978	e58
3	171	69	131	59	102	43	151	19	e26,100	e21,800	e722	e22
4	161	66	130	62	112	46	29,400	14,800	e21,500	e14,300	e475	e8.7
5	151	63	162	79	105	40	12,400	e667	e30,000	e26,400	e775	e42
6	141	59	186	93	115	40	3,150	e137	e30,600	e17,300	e770	e48
7	131	55	365	187	104	33	602	e15	31,500	31,700	e697	e43
8	121	49	257	132	104	30	3,920	e201	27,800	14,800	e624	e38
9	111	46	220	115	103	28	10,400	e701	27,600	13,100	535	33
10	101	43	191	100	128	34	8,540	954	26,400	27,000	8,080	68,900
11	91	40	197	103	167	43	4,390	1,110	20,300	16,700	40,800	127,000
12	86	38	187	98	146	36	12,000	2,870	15,900	17,700	32,000	14,400
13	96	44	203	108	131	29	12,900	3,820	16,500	10,900	47,100	259,000
14	98	45	218	121	203	41	34,500	15,400	10,700	5,940	41,200	322,000
15	103	47	139	80	138	25	41,600	18,700	8,570	2,630	37,600	400,000
16	107	49	200	106	120	21	51,700	30,300	7,950	1,540	33,000	733,000
17	109	50	314	207	123	20	39,100	18,000	5,340	823	e23,100	e418,000
18	109	49	241	139	123	18	18,900	4,300	2,730	390	e23,600	e299,000
19	94	41	238	132	123	16	1,830	177	470	67	e17,500	e116,000
20	95	42	191	98	123	15	886	84	176	24	e11,400	e24,800
21	97	42	150	80	123	14	16,200	4,550	258	31	e14,300	e54,800
22	95	41	126	66	124	13	19,800	6,190	634	61	e11,000	e28,800
23	92	40	153	79	124	13	48,300	28,300	1,210	95	e7,470	e12,000
24	99	41	136	70	135	13	51,300	58,800	1,240	90	e9,880	e24,100
25	101	41	142	73	181	16	41,400	31,600	925	66	e28,600	e106,000
26	107	42	190	97	196	17	35,600	13,600	e3,330	e2,100	e25,900	e86,100
27	111	45	179	90	179	14	45,700	76,700	e944	e37	e19,500	e52,900
28	108	47	171	82	155	12	21,400	44,800	e826	e34	e8,700	e15,400
29	108	48	154	73	158	13	18,900	72,800	e769	e32	e5,050	e7,590
30	115	51	129	61	152	13	14,200	26,500	e716	e30	3,040	4,440
31	---	---	136	62	---	---	e11,900	e15,100	e663	e28	---	---
Total	---	1,520	---	2,964	---	794	---	491,222	---	259,698	---	3,174,551.7

	Total suspended sediment discharge (tons)
Year	4,251,249.5