Water-Data Report 2012

08332010 RIO GRANDE FLOODWAY NEAR BERNARDO, NM

Rio Grande-Elephant Butte Basin
Rio Grande-Albuquerque Subbasin

LOCATION.--Lat 34°25′01″, long 106°48′00″ referenced to North American Datum of 1927, Socorro County, NM, Hydrologic Unit 13020203, in Belen or Sevilleta Grant, on downstream side of bridge on U.S. Highway 60, 2.0 mi east of Bernardo, 5.0 mi downstream from heading of conveyance channel, and at mile 1,487.2.

DRAINAGE AREA.--19230.00 mi^2, approximately, including 2,940 mi^2 in closed basin in San Luis Valley, CO.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1936 to January 1939, October 1941 to September 2004, October 2011 to current year. Monthly discharge only, October 1942 to June 1943, published in WSP 1312, and October 1960 to September 1964, published in WSP 1923 (daily records available in District files). Published as "Rio Grande near Bernardo" prior to October 1964. Prior to October 1952, flow of Bernardo interior drain was included only when it carried river overflow; the entire flow has been included from October 1952 to September 1964. Flow in the conveyance channel, formerly "San Francisco Riverside drain," has been included in records prior to October 1964.

GAGE.--Water-stage recorder with satellite telemetry. Gage datum not determined for the 2012 water year. Prior to September 30, 2003, gage datum was 4,722.55 ft above NGVD of 1929. Prior to May 7, 1996, gage at datum 3.00 ft higher.

REMARKS.--Discharge records good except for estimated daily discharges, which are poor. Since Nov. 1973, flow regulated by Cochiti Dam (station 08317300) 100 mi upstream. Floodway is 1 of 4 channels (stations 08331990 (discontinued), 08332030 (discontinued), 08332050 (discontinued)) carrying flow in valley cross section. Diversions for irrigation of about 740,000 acres upstream from station.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.0	258	881	774	687	570	1,120	611	164	1.7	1.6	0.30
2	1.9	475	852	624	687	474	1,180	571	136	0.96	0.51	0.20
3	2.0	475	830	608	686	501	1,340	505	129	0.99	0.43	0.16
4	2.7	492	836	609	689	497	2,080	462	131	0.38	0.41	0.14
5	14	501	863	631	691	511	1,260	342	126	0.59	0.45	0.14
6	41	518	873	673	710	466	745	246	141	92	0.44	0.12
7	45	546	853	670	715	412	931	220	181	19	0.49	33
8	84	533	766	678	711	459	1,040	198	180	96	0.48	1.3
9	114	574	664	672	692	476	1,020	191	170	126	0.50	0.86
10	221	641	630	668	692	470	803	251	160	44	0.49	1.4
11	187	868	614	661	697	450	821	269	163	15	0.52	0.85
12	156	659	702	646	686	485	695	241	160	11	0.54	0.72
13	105	541	754	617	704	463	660	250	163	26	0.54	14
14	64	534	767	614	705	378	690	427	161	27	0.61	4.7
15	69	817	853	597	704	376	719	335	140	22	0.59	1.5
16	53	994	813	578	721	403	797	241	117	6.0	0.54	2.3
17	122	1,030	632	580	731	499	716	204	102	3.8	0.55	1.1
18	91	873	847	588	706	610	511	177	88	2.3	0.58	0.88
19	45	862	913	589	704	602	478	162	79	1.8	14	0.97
20	14	889	974	585	694	741	443	166	54	1.3	7.1	0.97
21	10	925	1,020	586	694	741	408	167	52	1.2	17	0.89
22	7.3	956	953	579	692	719	326	150	67	1.0	22	0.90
23	8.6	959	984	588	692	729	282	119	37	0.91	10	0.89
24	5.9	961	973	618	720	707	216	111	41	0.88	18	0.98
25	5.7	945	935	659	679	690	203	94	58	0.77	15	0.97
26	4.7	896	847	642	659	659	220	81	42	0.66	7.2	1.0
27	3.9	892	836	651	662	687	233	130	23	0.66	8.1	1.1
28	7.7	894	842	647	633	636	219	149	23	0.59	4.6	1.1
29	12	888	769	651	607	789	337	180	11	0.55	0.94	3.4
30	80	884	722	665	---	945	620	183	4.5	0.57	0.55	1.5
31	188	---	855	690	---	1,040	---	156	---	6.1	0.37	---
Total	1,767.4	22,280	25,653	19,638	20,050	18,185	21,113	7,589	3,103.5	511.71	135.13	78.34
Mean	57.0	743	828	633	691	587	704	245	103	16.5	4.36	2.61
Max	221	1,030	1,020	774	731	1,040	2,080	611	181	126	22	33
Min	1.9	258	614	578	607	376	203	81	4.5	0.38	0.37	0.12
Ac-ft	3,510	44,190	50,880	38,950	39,770	36,070	41,880	15,050	6,160	1,010	268	155

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	344	901	937	866	984	1,020	1,501	2,630	2,262	1,051	494	372
Max	1,844	2,134	2,090	2,266	3,707	2,761	5,160	5,746	6,178	5,261	2,919	1,409
(WY)	(1998)	(1987)	(1987)	(1986)	(1986)	(1986)	(1985)	(1980)	(1979)	(1979)	(1986)	(1986)
Min	0.00	3.65	117	36.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(WY)	(1974)	(1974)	(1974)	(1974)	(1974)	(1974)	(1974)	(1974)	(1974)	(1974)	(1974)	(1974)

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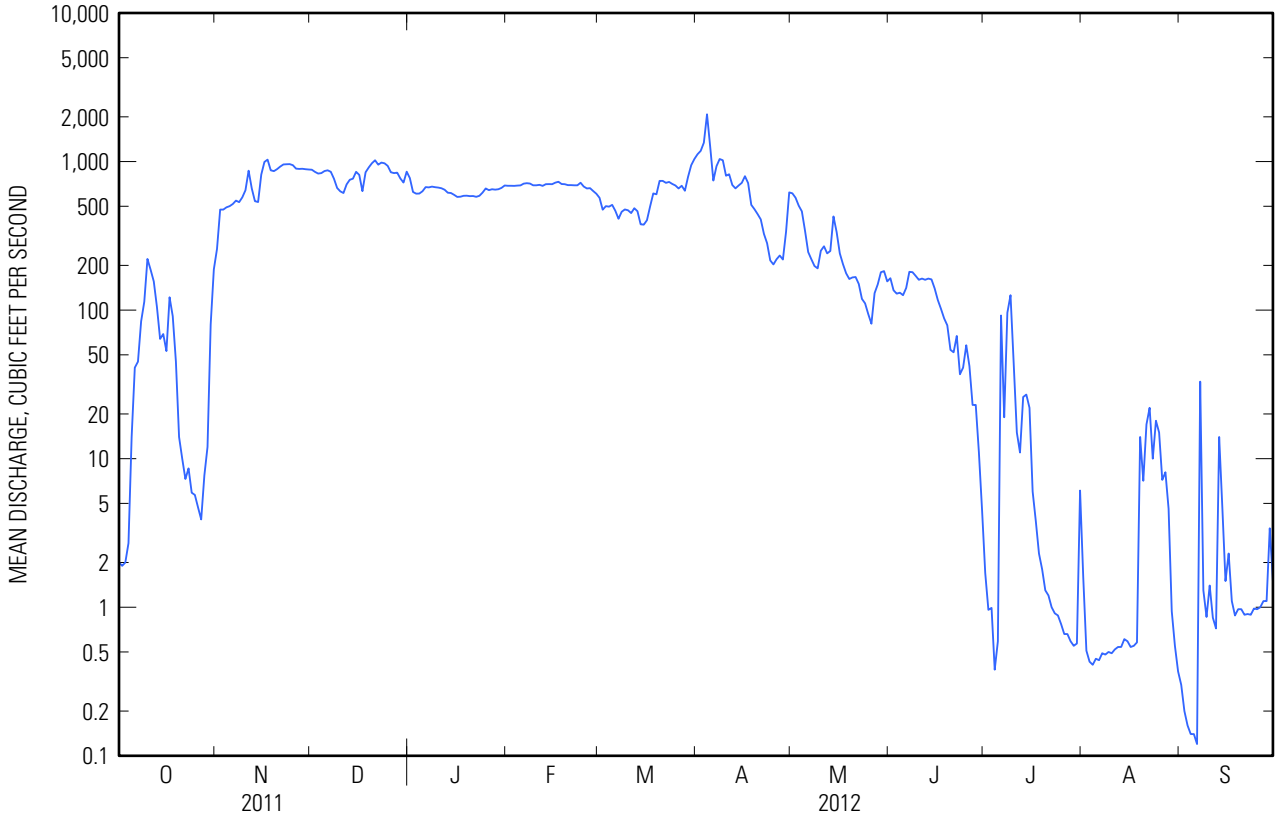
SUMMARY STATISTICS

	Water Year 2012		Water Years 1974 - 2012	
Annual total	140,104.08			
Annual mean	383		1,102	
Highest annual mean			2,356	1987
Lowest annual mean			13.4	1974
Highest daily mean	2,080	Apr 4	8,950	May 4, 1985
Lowest daily mean	0.12	Sep 6	0.00	Oct 1, 1973
Annual seven-day minimum	0.20	Aug 31	0.00	Oct 1, 1973
Maximum peak flow	2,550	Apr 4	21,000	Apr 25, 1942
Maximum peak stage	16.65	Apr 4	6.90	Apr 25, 1942
Instantaneous low flow	0.00	Sep 6	0.00	Oct 1, 1973
Annual runoff (ac-ft)	277,900		798,100	
10 percent exceeds	857		3,030	
50 percent exceeds	276		660	
90 percent exceeds	0.87		1.1	



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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1964 to September 2004, October 2011 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 21,400 mg/L, Aug. 11, 1979; minimum daily mean, no flow on many days most years.
SEDIMENT LOAD: Maximum daily, 356,000 tons, Aug. 11, 1967; minimum daily, 0 tons on many days most years.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,730 mg/L, Apr. 4; minimum daily mean, 5 mg/L, Sept. 28.
SEDIMENT LOAD: Maximum daily 15,500 tons, Apr. 4; minimum daily, 0.01 ton, Sept. 3-6.

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

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	122	0.64	292	206	774	1,840	327	685	285	529	204	314
2	115	0.59	461	597	731	1,680	294	497	286	531	201	256
3	107	0.58	492	631	690	1,550	269	441	287	532	200	271
4	100	0.74	494	656	713	1,610	264	433	288	535	200	269
5	97	3.9	475	642	748	1,750	289	493	288	538	200	276
6	111	12	481	672	783	1,850	327	595	289	554	200	252
7	118	15	504	743	757	1,750	324	585	289	559	200	223
8	157	36	562	808	694	1,440	320	587	287	550	200	248
9	178	61	630	978	631	1,130	317	575	284	530	200	257
10	255	154	698	1,210	568	967	313	565	285	534	200	254
11	244	124	734	1,720	544	902	310	553	286	538	200	243
12	202	85	669	1,200	576	1,090	306	534	278	515	200	262
13	152	45	604	883	609	1,240	298	496	282	536	200	250
14	129	22	645	931	642	1,330	286	474	281	535	200	204
15	134	25	722	1,600	667	1,540	274	442	280	531	222	229
16	108	15	799	2,140	598	1,320	263	410	281	546	344	373
17	142	47	820	2,290	523	893	251	394	279	552	478	650
18	134	34	733	1,730	562	1,290	240	380	267	508	612	1,010
19	119	15	697	1,620	616	1,520	240	382	257	488	746	1,210
20	110	4.1	751	1,800	671	1,760	252	397	249	466	875	1,750
21	105	2.9	806	2,010	620	1,720	263	416	254	476	887	1,770
22	104	2.1	861	2,220	458	1,180	275	430	256	477	846	1,650
23	103	2.4	910	2,360	473	1,260	287	455	255	477	806	1,590
24	102	1.6	878	2,280	472	1,240	298	498	260	506	766	1,460
25	102	1.6	818	2,090	415	1,050	307	545	254	466	726	1,350
26	101	1.3	771	1,870	361	826	300	520	242	431	686	1,220
27	100	1.1	769	1,850	337	762	291	511	229	410	645	1,200
28	99	2.1	772	1,860	318	723	283	495	215	367	665	1,150
29	100	3.4	775	1,860	299	622	283	497	208	342	810	1,730
30	134	33	778	1,860	286	560	284	509	---	---	959	2,460
31	236	120	---	---	328	758	284	530	---	---	1,110	3,120
Total	---	872.05	---	43,317	---	39,153	---	15,324	---	14,559	---	27,501

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SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

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	1,260	3,820	476	784	160	71	17	0.08	162	0.73	33	0.03
2	1,490	4,750	403	622	156	57	24	0.06	108	0.15	33	0.02
3	2,140	7,770	333	454	130	45	35	0.09	74	0.09	32	0.01
4	2,730	15,500	291	363	130	46	35	0.04	54	0.06	32	0.01
5	2,090	7,390	259	240	149	51	30	0.05	37	0.05	31	0.01
6	1,330	2,680	217	145	187	72	699	218	35	0.04	31	0.01
7	1,350	3,390	196	116	177	87	353	36	34	0.05	2,100	284
8	1,430	4,020	187	100	174	85	2,460	645	33	0.04	623	2.8
9	1,410	3,900	204	105	165	76	2,250	794	33	0.04	88	0.20
10	1,310	2,840	197	134	155	67	603	86	32	0.04	83	0.32
11	1,210	2,670	210	153	167	74	147	6.6	32	0.05	80	0.18
12	1,100	2,070	233	151	150	65	123	5.8	31	0.05	76	0.15
13	997	1,780	306	212	173	76	267	21	31	0.04	210	13
14	947	1,760	531	612	182	79	448	53	30	0.05	164	2.4
15	1,020	1,980	334	311	146	55	600	40	30	0.05	70	0.30
16	1,090	2,350	238	155	145	46	278	4.8	23	0.03	47	0.29
17	1,030	1,980	262	144	148	41	143	1.5	18	0.03	39	0.11
18	892	1,240	252	121	99	24	100	0.62	22	0.03	34	0.08
19	761	984	174	76	72	16	53	0.26	1,790	97	29	0.08
20	643	771	139	63	55	8.2	53	0.19	1,300	25	24	0.06
21	529	584	156	70	59	8.3	53	0.16	655	35	20	0.05
22	442	390	123	50	2,050	462	52	0.15	550	33	15	0.04
23	422	321	141	45	641	64	52	0.13	266	7.5	10	0.03
24	404	235	139	42	179	19	52	0.12	187	9.2	7	0.02
25	386	211	141	36	116	19	52	0.11	112	5.0	6	0.02
26	368	219	139	30	81	9.4	52	0.09	103	2.0	6	0.02
27	344	217	185	66	48	3.0	52	0.09	83	1.8	6	0.02
28	319	188	162	66	39	2.4	51	0.08	49	0.67	5	0.02
29	444	436	262	129	31	0.95	51	0.08	34	0.09	330	5.5
30	542	906	214	106	24	0.31	51	0.08	34	0.05	174	0.70
31	---	---	175	74	---	---	132	2.6	33	0.03	---	---
Total	---	77,352	---	5,775	---	1,729.56	---	1,916.78	---	217.96	---	310.48

	Total suspended sediment discharge (tons)
Year	228,027.83