Water-Data Report 2011

09471000 SAN PEDRO RIVER AT CHARLESTON, AZ

San Pedro-Willcox Basin
Upper San Pedro Subbasin

LOCATION.--Lat 31°37′33″, long 110°10′26″ referenced to North American Datum of 1927, in NE ¼ NE ¼ sec.11, T.21 S., R.21 E., Cochise County, AZ, Hydrologic Unit 15050202, in Spanish land grant of San Juan de las Boquillas y Nogales, at downstream side of pier near center of highway bridge, 0.3 mi south of Charleston, 1.5 mi upstream from Charleston dam-site, and 9 mi upstream from Babocomari River.

DRAINAGE AREA.--1,234 mi^2, of which 696 mi^2 is in Mexico.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Jan. and Feb. 1904 (gage heights only); Mar. 1904 to Aug. 1906; Nov. 1910 to Dec. 1911 (gage heights only); Sept. 1912 to current year. Monthly discharge only Oct. 1926 to May 1928 and Dec. 1933 to Apr. 1935, published in WSP 1313. Published as "near Lewis Springs" 1910-11, and as "near Fairbank" 1911-26.

REVISED RECORDS.--WSP 1119: 1939(M). WSP 1213: 1914, 1916(M), 1918(M), 1919, 1920(M), 1922-23(M), WDR AZ-90-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,954.01 ft above sea level. Prior to Dec. 1, 1942, nonrecording gage or water-stage recorder at various sites within 6.5 mi downstream at different datums.

REMARKS.--Records good except for discharges higher than 350 ft^3/s, which are fair and estimated daily discharges, which are poor. Diversions above station, mostly by pumping from ground water, for irrigation of 3,200 acres in 1978, excluding an unknown amount in Mexico. Record shows flow available at Charleston dam-site.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 98,000 ft^3/s, Sept. 28, 1926, gage height, 21.9 ft, site and datum then in use, by slope-area measurement of peak flow; minimum daily discharge since 1928, no flow July 6-17, 2005.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 847 ft^3/s, Aug. 17, 2011 at 1915, gage height, 5.04 ft; minimum daily discharge, 0.82 ft^3/s, June 27, 2011.

09471000 SAN PEDRO RIVER AT CHARLESTON, AZ—Continued

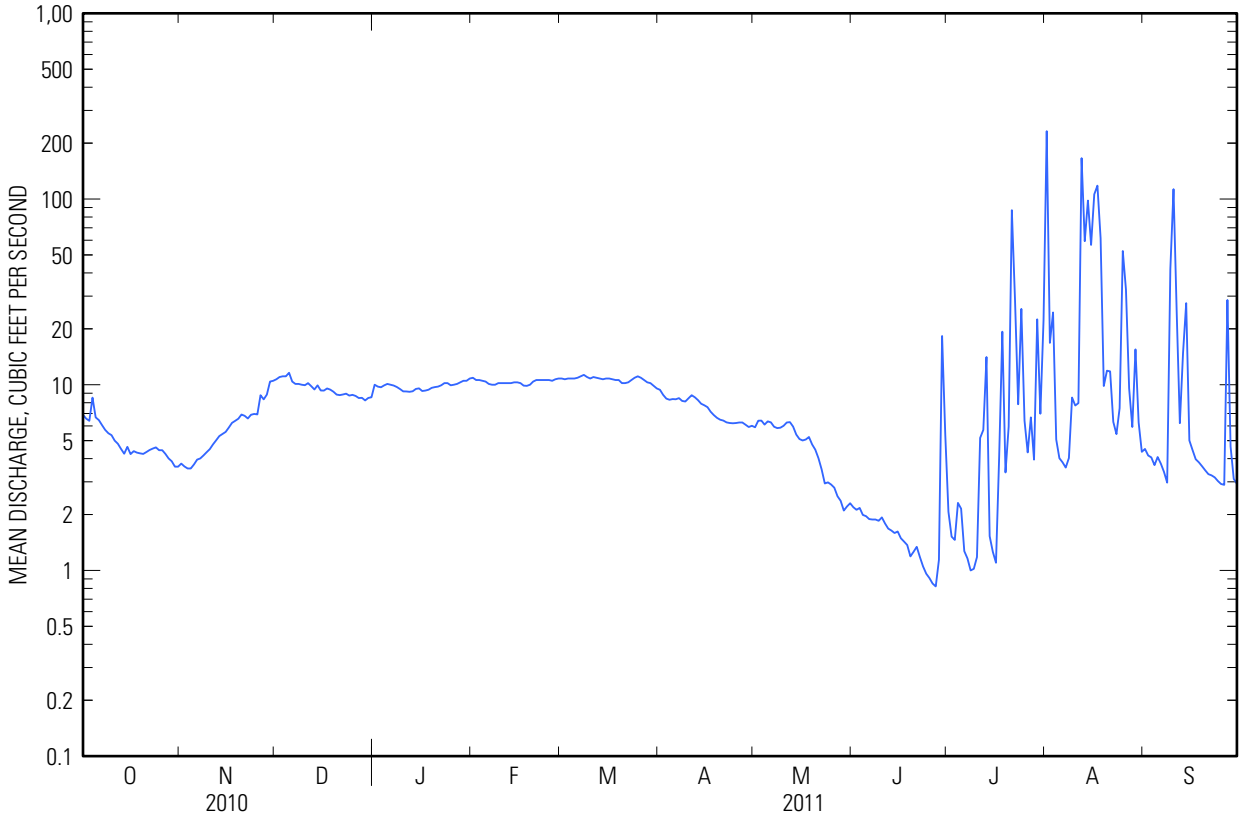
DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6.88	3.76	10.7	10.0	10.9	10.8	9.39	5.90	2.19	2.07	232	4.51
2	6.57	3.63	11.0	9.77	10.6	10.7	8.82	6.40	2.12	1.52	16.8	4.16
3	6.39	3.54	11.1	9.69	10.6	10.8	8.42	6.41	2.17	1.46	24.5	4.06
4	8.52	3.54	11.1	9.92	10.5	10.8	8.30	6.10	1.99	2.31	5.07	3.69
5	6.67	3.72	11.6	10.1	10.4	10.8	8.37	6.35	1.96	2.15	4.02	4.08
6	6.45	3.95	10.4	10.0	10.1	10.9	8.35	6.27	1.89	1.27	3.82	3.76
7	6.06	4.01	10.1	9.90	10.0	11.1	8.47	5.94	1.88	1.16	3.58	3.39
8	5.71	4.16	10.1	9.72	10.0	11.3	8.18	5.84	1.88	1.00	4.03	2.97
9	5.48	4.33	10.0	9.48	10.2	11.0	8.12	5.87	1.85	1.02	8.53	42.0
10	5.35	4.50	9.94	9.21	10.2	10.8	8.45	6.01	1.93	1.18	7.73	113
11	5.00	4.77	10.2	9.20	10.2	11.0	8.78	6.26	1.79	5.17	7.96	24.7
12	4.81	5.02	9.82	9.16	10.2	10.9	8.56	6.29	1.68	5.71	166	6.21
13	4.51	5.29	9.43	9.22	10.2	10.8	8.26	5.95	1.64	14.1	59.3	14.8
14	4.25	5.43	9.92	9.49	10.3	10.7	7.90	5.39	1.59	1.53	98.1	27.5
15	4.63	5.57	9.31	9.56	10.3	10.8	7.75	5.10	1.62	1.26	56.6	5.01
16	4.23	5.88	9.30	9.25	10.2	10.8	7.57	5.01	1.49	1.10	106	4.45
17	4.39	6.23	9.55	9.30	9.89	10.7	7.15	5.07	1.43	4.09	118	3.97
18	4.31	6.39	9.41	9.40	9.86	10.6	6.86	5.23	1.37	19.3	61.5	3.82
19	4.27	6.56	9.17	9.62	10.0	10.6	6.63	4.77	1.19	3.37	9.84	3.64
20	4.24	6.91	8.85	9.71	10.4	10.2	6.48	4.47	1.26	5.95	11.9	3.46
21	4.34	6.80	8.79	9.77	10.6	10.2	6.41	4.02	1.34	87.1	11.8	3.30
22	4.45	6.58	8.86	9.93	10.6	10.3	6.27	3.50	1.18	28.6	6.31	3.25
23	4.53	6.89	8.95	10.2	10.6	10.6	6.22	2.94	1.05	7.85	5.42	3.17
24	4.60	6.96	8.74	10.2	10.6	10.9	6.20	2.98	0.96	25.6	7.48	3.03
25	4.44	6.92	8.82	9.93	10.6	11.1	6.22	2.90	0.91	6.40	52.5	2.92
26	4.44	8.78	8.70	10.0	10.5	10.9	6.26	2.79	0.85	4.32	32.5	2.89
27	4.24	8.34	8.48	10.1	10.7	10.6	6.26	2.51	0.82	6.67	9.56	28.6
28	4.01	8.85	8.50	10.3	10.8	10.3	6.09	2.37	1.14	3.95	5.92	4.65
29	3.87	10.4	8.23	10.5	---	10.2	5.92	2.10	18.3	22.5	15.5	3.11
30	3.62	10.5	8.49	10.5	---	9.87	6.01	2.21	5.39	6.98	6.26	2.93
31	3.62	---	8.56	10.8	---	9.55	---	2.30	---	22.3	4.35	---
Total	154.88	178.21	296.12	303.93	290.05	330.62	222.67	145.25	66.86	298.99	1,162.88	341.03
Mean	5.00	5.94	9.55	9.80	10.4	10.7	7.42	4.69	2.23	9.64	37.5	11.4
Max	8.52	10.5	11.6	10.8	10.9	11.3	9.39	6.41	18.3	87.1	232	113
Min	3.62	3.54	8.23	9.16	9.86	9.55	5.92	2.10	0.82	1.00	3.58	2.89
Med	4.51	5.72	9.41	9.77	10.3	10.8	7.66	5.10	1.63	4.09	9.84	3.89
Ac-ft	307	353	587	603	575	656	442	288	133	593	2,310	676
Cfsm	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.03	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	38.9	17.3	42.9	37.2	26.4	22.9	12.8	7.95	10.9	131	204	77.1
Max	1,087	132	1,230	507	217	160	66.5	37.2	167	876	968	1,887
(WY)	(1978)	(2001)	(1915)	(1979)	(1915)	(1915)	(1905)	(1917)	(1925)	(1921)	(1954)	(1926)
Min	1.68	2.77	5.15	5.81	7.18	8.04	3.03	2.42	0.65	0.55	1.77	2.28
(WY)	(2010)	(2010)	(2003)	(1999)	(1923)	(1999)	(1913)	(1918)	(2006)	(1997)	(2009)	(2009)

09471000 SAN PEDRO RIVER AT CHARLESTON, AZ—Continued

SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1904 - 2011	
Annual total	9,772.48		3,791.49			
Annual mean	26.8		10.4		52.4	
Highest annual mean					206	1915
Lowest annual mean					8.35	2009
Highest daily mean	2,090	Aug 25	232	Aug 1	28,800	Sep 27, 1926
Lowest daily mean	0.22	Aug 15	0.82	Jun 27	0.00	Jul 9, 2005
Annual seven-day minimum	0.45	Aug 9	0.99	Jun 22	0.00	Jul 9, 2005
Annual runoff (ac-ft)	19,380		7,520		37,970	
Annual runoff (cfsm)	0.022		0.008		0.042	
10 percent exceeds	27.6		11.0		64.0	
50 percent exceeds	8.30		6.92		12.0	
90 percent exceeds	1.10		2.09		3.30