Water-Data Report 2008

08102500 Leon River near Belton, TX

Little Basin
Leon Subbasin

LOCATION.--Lat 31°04′12″, long 97°26′28″ referenced to North American Datum of 1927, Bell County, TX, Hydrologic Unit 12070201, on left bank 1,400 ft upstream from bridge on Farm Road 817, 2,000 ft upstream from concrete dam, 1.0 mi upstream from bridge on Interstate Highway 35 and U.S. Highway 81, 1.6 mi northeast of Belton, 3.2 mi downstream from Belton Dam, 5.2 mi upstream from Nolan Creek, and 13.1 mi upstream from mouth.

DRAINAGE AREA.--3,582 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Oct. 1923 to current year.

PERIOD OF RECORD, Water-Quality.--
CHEMICSAL DATA: Mar. 1961 to Aug. 1964, Jan. 1994 to Aug. 1998.
BIOCHEMICAL DATA: Mar. 1961 to Aug. 1964, Jan. 1994 to Aug. 1998.
WATER TEMPERATURE: Mar. 1957 to Oct. 1972.

REVISED RECORDS.--WSP 1442: 1925(M), 1935(M), 1936, 1938(M), 1941-42(M), 1944-45(M). WSP 1712: 1937(M). WDR TX-76-2: Drainage area. WRD TX-2008: Drainage area.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 476.68 ft above NGVD of 1929. Prior to May 21, 1931, nonrecording gage. Satellite telemeter at station.

REMARKS.--Records good except for those daily discharges below 10 ft^3/s, which are fair. No estimated daily discharges. Since Mar. 1954, at least 10% of contributing drainage area has been regulated. The city of Temple diverts water from the pool at gage and returns wastewater effluent to Little Elm Creek downstream from station. The Brazos River Authority returns wastewater effluent to the Leon River downstream from station for their Temple-Belton plant. No flow at times. Some records listed in the "Period of Record" for surface water and water quality may not be available electronically.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--30 years (water years 1924-53) prior to regulation by Belton Lake, 659 ft^3/s (477,400 acre-ft/yr).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Dec. 1913 reached a stage of 25 ft, and a flood in Sept. 1921 reached a stage of 21 ft, from information by local residents.

EXTREMES FOR PERIOD PRIOR TO REGULATION.--WATER YEARS, 1924-1953: Maximum discharge, 56,500 ft^3/s Apr. 22, 1945 (gage height, 24.41 ft). No flow at times.

08102500 Leon River near Belton, TX—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

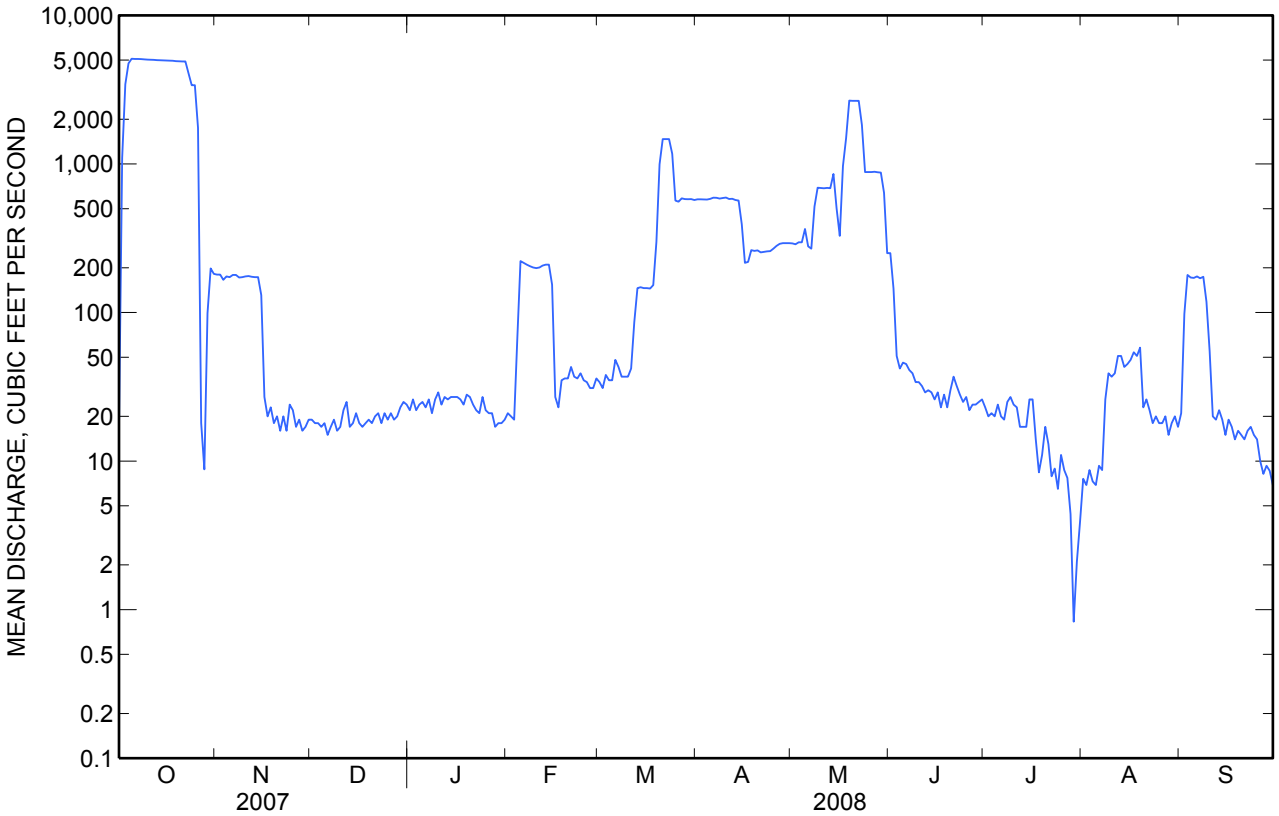
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	17	180	19	22	21	34	578	292	251	23	7.6	21
2	1,100	180	18	26	20	31	578	288	145	20	6.9	98
3	3,440	166	18	22	19	38	577	297	51	21	8.7	179
4	4,750	175	17	24	67	35	576	297	42	20	7.3	172
5	5,110	173	18	25	222	35	582	365	46	24	6.9	171
6	5,090	179	15	23	216	48	593	279	45	20	9.3	175
7	5,090	179	17	26	210	43	592	269	41	19	8.7	170
8	5,080	172	19	21	205	37	585	517	39	25	26	174
9	5,060	173	16	26	201	37	590	692	34	27	39	118
10	5,040	175	17	29	199	37	594	689	34	24	37	55
11	5,030	176	22	24	201	42	581	686	32	23	39	20
12	5,020	174	25	27	207	86	583	690	29	17	51	19
13	5,000	173	17	26	210	146	572	687	30	17	51	22
14	4,990	173	18	27	210	148	567	856	29	17	43	19
15	4,980	131	21	27	154	146	393	502	26	26	45	15
16	4,970	27	18	27	27	146	216	328	29	26	48	19
17	4,960	20	17	26	23	145	219	968	23	14	54	17
18	4,950	23	18	24	35	153	263	1,490	28	8.4	51	14
19	4,920	18	19	28	36	299	260	2,670	23	11	58	16
20	4,910	20	18	27	36	995	262	2,660	30	17	23	15
21	4,900	16	20	24	43	1,470	254	2,660	37	13	26	14
22	4,900	20	21	22	37	1,470	256	2,660	32	7.9	22	16
23	4,070	16	18	21	36	1,470	258	1,830	28	8.9	18	17
24	3,390	24	21	27	39	1,170	259	882	25	6.5	20	15
25	3,390	22	19	22	35	567	269	882	27	11	18	14
26	1,750	17	21	21	34	557	281	882	22	8.7	18	10
27	18	19	19	21	31	587	290	886	24	7.7	20	8.2
28	8.8	16	20	17	31	580	293	879	24	4.4	15	9.3
29	99	17	23	18	36	579	293	875	25	0.83	18	8.6
30	198	19	25	18	---	580	293	639	26	2.1	20	6.9
31	182	---	24	19	---	572	---	251	---	3.9	17	---
Total	112,412.8	2,873	598	737	2,841	12,283	12,507	28,848	1,277	474.33	832.4	1,628.0
Mean	3,626	95.8	19.3	23.8	98.0	396	417	931	42.6	15.3	26.9	54.3
Max	5,110	180	25	29	222	1,470	594	2,670	251	27	58	179
Min	8.8	16	15	17	19	31	216	251	22	0.83	6.9	6.9
Ac-ft	223,000	5,700	1,190	1,460	5,640	24,360	24,810	57,220	2,530	941	1,650	3,230

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2008[Z], BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	374	284	370	484	489	874	797	1,004	1,031	787	416	261
Max	3,918	3,058	4,619	5,066	2,902	6,621	5,170	4,560	6,002	6,287	5,830	4,689
(WY)	(1960)	(1960)	(2005)	(1992)	(1961)	(1997)	(1992)	(1990)	(1957)	(1957)	(2007)	(2007)
Min	2.79	1.07	0.67	2.51	2.19	2.56	1.70	0.87	0.05	0.26	1.86	0.25
(WY)	(1969)	(1955)	(1955)	(1955)	(1981)	(1955)	(1954)	(1954)	(1954)	(1954)	(1954)	(1954)

08102500 Leon River near Belton, TX—Continued

SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1954 - 2008[Z]	
Annual total	794,854.8		177,311.53			
Annual mean	2,178		484		598	
Highest annual mean					3,067	1992
Lowest annual mean					4.71	1955
Highest daily mean	6,100	Aug 10	5,110	Oct 5	10,200	Mar 6, 1992
Lowest daily mean	8.8	Oct 28	0.83	Jul 29	0.00	Oct 1, 1953
Annual seven-day minimum	12	Jan 5	4.8	Jul 27	0.00	Oct 1, 1953
Maximum peak flow			5,120	Oct 4	10,200	Mar 6, 1992
Maximum peak stage			7.82	Oct 4	9.74	Mar 6, 1992
Annual runoff (ac-ft)	1,577,000		351,700		433,500	
10 percent exceeds	5,640		976		2,180	
50 percent exceeds	638		34		44	
90 percent exceeds	17		16		5.2	

[Z] Period of regulated streamflow.