

Water-Data Report 2013

07312500 Wichita River at Wichita Falls, TX

Red-Lake Texoma Basin
Wichita Subbasin

LOCATION.--Lat 33°54'34", long 98°32'00" referenced to North American Datum of 1927, Wichita County, TX, Hydrologic Unit 11130206, near center of stream at downstream side of bridge on Beverly Drive (loop 11) in Wichita Falls, 4.0 mi upstream from Fort Worth and Denver Railway Co. bridge, 8.4 mi upstream from Holliday Creek, and 55.3 mi upstream from mouth.

DRAINAGE AREA.--3,140 mi², of which 2,086 mi² is probably noncontributing (above Lake Kemp Dam).

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Feb. 1901 to Jan. 1902 (monthly discharge only, published in WSP 1311), Oct. 1910 to Dec. 1911 (gauge heights only), Mar. 1938 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 924.26 ft above NGVD of 1929. Feb. 1901 to Jan. 1902 and Oct. 1, 1910, to Dec. 31, 1911, nonrecording gages at site 4.0 mi downstream at different datum. Mar. 30, 1938, to Dec. 1, 1959, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records good. Some records listed in the "Period of Record" for surface water and water quality may not be available electronically. Since installation of gage in Mar. 1938, at least 10% of contributing drainage area has been regulated. Since completion of Lake Kemp (station 07312000) in 1923, no outflow has passed over the spillway. Water is diverted from Lake Diversion (conservation pool storage 40,000 acre-ft) 41 mi upstream for the irrigation of 42,000 acres by the city of Wichita Falls and the Wichita County Water Improvement District No. 2 for mining, industrial, irrigation, and recreational uses. Since 2009, the city of Wichita Falls has discharged water through a pipeline from the Cypress Water Treatment Plant into the channel upstream from this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s June 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

07312500 Wichita River at Wichita Falls, TX—Continued

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	60	12	7.9	9.5	7.0	10	37	7.1	8.2	7.1	12	5.7
2	56	11	8.1	9.4	6.7	9.8	19	7.3	7.8	6.9	10	5.7
3	30	9.8	8.0	8.8	6.6	9.8	25	7.3	6.7	6.8	8.4	6.3
4	22	9.4	7.1	8.2	7.0	9.7	20	29	5.2	7.0	7.0	6.4
5	18	8.9	7.1	7.5	6.9	9.1	15	18	1.8	6.8	6.2	6.0
6	16	8.8	6.7	7.0	6.8	8.9	12	13	23	6.5	5.2	4.8
7	14	8.8	7.4	7.6	6.9	8.8	10	10	38	6.3	4.6	4.0
8	13	8.3	7.7	7.7	6.8	8.6	10	9.0	20	6.1	4.0	3.8
9	13	8.6	7.6	9.9	7.0	9.8	9.7	8.8	22	5.8	3.4	3.2
10	13	8.8	7.8	14	7.3	9.9	35	8.5	44	4.1	3.2	2.8
11	13	10	7.4	14	6.8	8.6	75	7.7	22	1.0	3.7	2.3
12	12	10	7.2	13	14	8.2	114	7.2	15	3.9	3.9	1.7
13	14	9.6	9.4	11	13	7.0	45	7.0	16	5.9	1.5	5.0
14	16	8.5	12	8.8	16	6.3	25	7.0	15	6.3	1.6	15
15	13	8.4	10	8.5	11	7.4	16	7.3	14	8.1	1.0	7.0
16	12	10	9.5	7.5	9.6	7.8	12	7.6	12	11	65	4.8
17	14	10	9.2	7.4	9.8	7.1	11	7.8	14	31	45	4.1
18	10	9.2	8.5	7.2	9.1	7.2	10	7.6	12	89	179	2.9
19	10	9.0	8.3	7.4	7.7	7.3	9.3	6.8	12	194	98	2.3
20	9.6	9.2	8.1	7.1	10	7.9	8.9	7.2	12	76	37	69
21	9.0	9.3	7.7	7.1	12	7.6	8.2	17	12	36	20	29
22	8.1	8.7	7.1	7.1	14	7.7	8.3	19	11	22	15	11
23	8.9	8.8	7.1	7.1	17	7.1	8.4	21	9.9	17	13	43
24	9.5	8.2	7.0	7.0	13	6.6	8.2	22	9.3	14	11	30
25	9.8	8.1	8.4	6.9	13	6.7	7.6	17	9.9	13	9.6	19
26	9.7	7.4	7.7	7.1	14	7.2	7.8	13	8.7	12	9.1	14
27	9.4	8.5	8.9	7.0	17	7.2	8.0	11	9.0	137	8.9	12
28	8.8	8.3	9.2	7.0	13	11	7.7	10	8.6	102	8.9	17
29	9.0	8.0	9.1	7.5	---	10	7.5	9.8	7.7	40	8.7	14
30	8.5	7.7	9.3	7.3	---	9.6	7.3	9.6	7.4	23	7.8	24
31	11	---	10	7.0	---	59	---	9.0	---	15	7.1	---
Total	480.3	271.3	256.5	259.6	289.0	308.9	597.9	349.6	414.2	920.6	618.8	375.8
Mean	15.5	9.04	8.27	8.37	10.3	9.96	19.9	11.3	13.8	29.7	20.0	12.5
Max	60	12	12	14	17	59	114	29	44	194	179	69
Min	8.1	7.4	6.7	6.9	6.6	6.3	7.3	6.8	1.8	1.0	1.0	1.7
Ac-ft	953	538	509	515	573	613	1,190	693	822	1,830	1,230	745

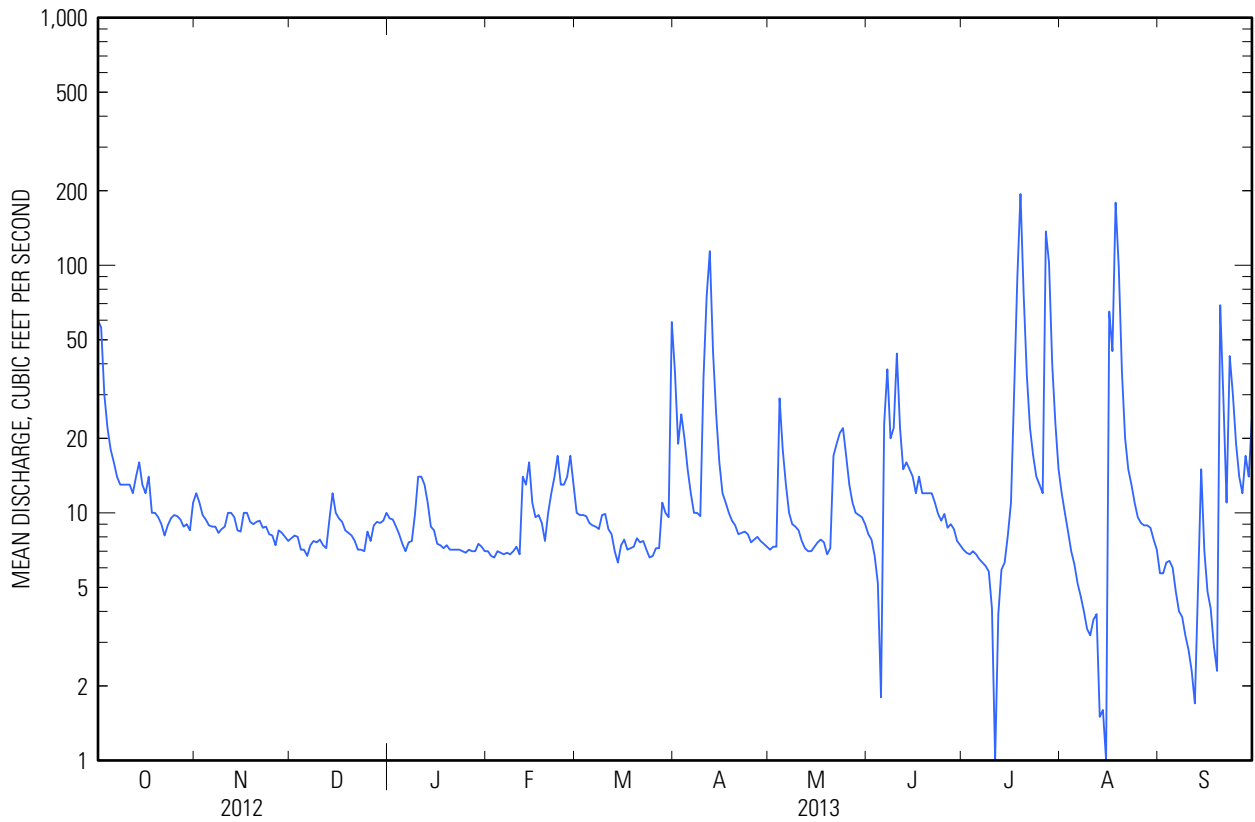
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	354	191	103	86.3	137	178	212	483	456	237	241	277
Max	4,017	1,784	1,091	859	1,252	1,412	1,450	4,105	4,475	1,659	2,791	2,619
(WY)	(1942)	(1973)	(1992)	(1992)	(1992)	(1993)	(1990)	(1941)	(1941)	(2007)	(1950)	(1950)
Min	15.5	9.04	8.27	8.37	10.3	9.96	19.9	11.3	12.4	6.28	10.8	11.5
(WY)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2012)	(2012)	(2012)	(2012)

07312500 Wichita River at Wichita Falls, TX—Continued

SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1938 - 2013	
Annual total	8,794.5		5,142.5			
Annual mean	24.0		14.1		244	
Highest annual mean					977 1941	
Lowest annual mean					14.1 2013	
Highest daily mean	898	Apr 4	194	Jul 19	17,300	Oct 3, 1941
Lowest daily mean	3.1	Aug 13	1.0	Jul 11	1.0	Jul 11, 2013
Annual seven-day minimum	3.7	Aug 7	2.6	Aug 9	2.6	Aug 9, 2013
Maximum peak flow			261	Jul 19	17,800	Oct 3, 1941
Maximum peak stage			4.09	Jul 19	24.40	Jun 30, 2007
Annual runoff (ac-ft)	17,440		10,200		176,500	
10 percent exceeds	31		22		447	
50 percent exceeds	13		8.9		73	
90 percent exceeds	6.4		6.3		28	



07312500 Wichita River at Wichita Falls, TX—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Apr. 1966 to July 1975, Oct. 1981 to Sept. 1989, June 1996 to Sept. 1997, Oct. 2005 to current year.

BIOCHEMICAL DATA: Nov. 1981 to Aug. 1989 and June 1996 to Sept. 1997, Oct. 2005 to current year.

SEDIMENT DATA: June 1942 to Oct. 1946, Apr. 1966 to July 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Oct. 1, 1981 to Sept. 1989, June 1996 to Sept. 2002, Oct. 2005 to current year.

TEMPERATURE: Oct. 1, 1981 to Sept. 1989, June 1996 to Sept. 2002, Oct. 2005 to current year.

INSTRUMENTATION.--Water-quality monitor Oct. 1981 to Sept. 1989, June 1996 to Sept. 2002, Oct. 2005 to current year.

REMARKS.--Temperature record good. Specific conductance record good. Interruptions or periods of missing record may be due to instrument failure, no flow conditions, or data corrections exceeding allowable criteria, which were deleted. Other than no flow conditions, minimum and maximum extremes may have occurred during period of missing record.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 21000 microsiemens/cm, July 9, 2013; minimum, 245 microsiemens/cm, Oct. 24, 1983.

WATER TEMPERATURE: Maximum, 36.7°C, July 13, 2013; minimum -0.2°C, Dec. 8, 9, 10, 2005, Jan. 28, 2009 and Dec. 26, 2012.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 21,000 microsiemens/cm, July 9; minimum, 290 microsiemens/cm, Sept. 20.

WATER TEMPERATURE: Maximum, 36.7°C, July 13; minimum, -0.2°C, Dec. 26.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 1 of 4

[% , percent; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
10-16-2012	1430	Surface water	Regular	729	26.0	10	12.5	149	8.3
01-16-2013	1344	<i>QC sample - Artificial</i>	<i>Blank</i>	--	--	--	--	--	--
01-16-2013	1345	Surface water	Regular	738	11.0	7.9	15.1	118	7.7
04-16-2013	1245	Surface water	Regular	735	19.8	12	5.7	68	7.6
06-05-2013	1410	Surface water	Regular	734	26.5	1.5	10.3	139	8.0
08-09-2013	1015	Surface water	Regular	733	31.0	3.9	7.0	99	8.2
09-03-2013	1100	Surface water	Regular	736	29.5	6.8	6.8	89	8.0

07312500 Wichita River at Wichita Falls, TX—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 2 of 4

[%, percent; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Specific conductance, water, unfiltered, μS/cm at 25°C (00095)	Temperature, water, °C (00010)	Type of blank sample (99102)	Dissolved solids, water, filtered, sum of constituents, mg/L (70301)	Hardness, water, mg/L as CaCO ₃ (00900)	Non-carbonate hardness, water, filtered, field, mg/L as CaCO ₃ (00904)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)
10-16-2012	1430	7,200	20.8	--	4,530	1,390	1,280	69	325	140
01-16-2013	1344	--	--	Field	--	< .10	--	< 15	< .022	< .011
01-16-2013	1345	10,100	2.3	--	6,690	2,640	2,490	< 15	652	246
04-16-2013	1245	4,330	21.8	--	2,640	815	682	116	198	77.7
06-05-2013	1410	8,630	27.5	--	5,250	1,580	1,440	62	382	152
08-09-2013	1015	13,800	28.8	--	8,950	2,890	2,820	67	689	283
09-03-2013	1100	9,130	26.2	--	5,370	1,780	1,720	92	433	171

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 3 of 4

[%, percent; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Alkalinity, water, filtered, inflection-point, incremental titration method, field, mg/L as CaCO ₃ (39086)	Bicarbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00453)	Carbonate, water, filtered, inflection-point, incremental titration method, field, mg/L (00452)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L as SiO ₂ (00955)
10-16-2012	1430	12.2	1,040	108	127	2	1,860	0.34	0.43
01-16-2013	1344	< .03	< .06	--	--	--	< .06	< .04	< .06
01-16-2013	1345	18.8	1,420	156	189	< 1	2,640	.36	2.54
04-16-2013	1245	7.93	626	134	162	< 1	1,050	.38	5.51
06-05-2013	1410	13.8	1,270	134	159	2	2,060	.69	5.56
08-09-2013	1015	32.8	2,340	70	83	1	3,190	.65	2.45
09-03-2013	1100	16.8	1,210	60	72	< 1	2,070	.52	2.63

07312500 Wichita River at Wichita Falls, TX—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Part 4 of 4

[%, percent; CaCO₃, calcium carbonate; N, nitrogen; P, phosphorus; SiO₂, silicon dioxide; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; μS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, filtered, mg/L as P (00666)
10-16-2012	1430	1,070	0.48	< .010	0.114	< .001	< .004	< .02
01-16-2013	1344	< .09	< .07	< .010	< .040	< .001	< .004	< .02
01-16-2013	1345	1,620	.91	.099	.439	.027	.007	.02
04-16-2013	1245	595	.92	.428	.242	.037	< .004	.02
06-05-2013	1410	1,290	.71	.024	< .040	< .001	.004	< .02
08-09-2013	1015	2,370	1.1	.172	< .040	< .001	< .004	< .02
09-03-2013	1100	1,420	.77	.027	< .040	.002	< .004	< .02

07312500 Wichita River at Wichita Falls, TX—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	6,770	3,640	5,280	10,300	7,850	9,450	11,000	10,600	10,800	8,100	7,930	8,020
2	7,290	3,690	4,520	9,480	9,100	9,270	10,800	10,400	10,500	8,170	8,040	8,100
3	3,690	1,910	2,500	10,300	9,480	9,770	10,500	10,100	10,400	8,180	8,090	8,140
4	3,950	1,980	3,000	10,800	10,300	10,700	10,100	8,620	8,970	8,300	7,990	8,130
5	4,510	3,950	4,150	11,100	10,800	11,000	10,900	8,970	10,200	10,000	8,230	8,880
6	5,210	4,500	4,830	11,400	11,100	11,200	11,000	10,500	10,700	10,100	8,180	9,030
7	5,950	5,210	5,600	11,500	11,300	11,400	10,900	10,600	10,800	10,100	9,600	9,810
8	5,950	3,980	4,800	11,700	11,100	11,500	10,900	10,500	10,700	9,950	8,090	8,970
9	4,170	3,970	4,040	11,100	8,770	9,450	10,800	9,940	10,200	9,940	8,010	9,100
10	6,580	4,170	4,960	11,100	8,940	10,600	10,900	10,600	10,800	9,030	8,220	8,500
11	7,470	6,530	7,180	11,300	9,540	10,900	10,800	10,500	10,700	9,080	8,790	8,920
12	8,170	5,840	6,660	11,300	10,900	11,100	10,600	10,100	10,400	9,190	8,770	8,940
13	8,150	3,990	6,540	11,200	10,800	11,000	10,600	9,940	10,300	9,540	9,180	9,380
14	7,660	6,290	7,080	11,200	10,500	10,800	10,700	7,560	9,680	9,730	9,320	9,470
15	6,940	6,170	6,470	11,000	10,600	10,800	10,200	9,120	9,580	10,400	9,730	10,100
16	7,620	6,940	7,360	10,800	8,310	9,360	10,300	10,100	10,200	10,300	8,760	9,810
17	8,160	7,530	7,770	8,490	8,200	8,300	10,400	10,100	10,300	10,100	8,760	9,670
18	8,450	7,000	7,630	10,700	8,490	10,100	10,200	10,000	10,100	10,100	9,790	10,000
19	8,610	7,040	7,570	10,900	10,700	10,800	10,200	9,940	10,100	9,860	9,580	9,700
20	8,740	8,410	8,600	11,200	10,700	11,000	10,400	9,620	10,000	10,100	9,560	9,800
21	9,440	8,640	9,260	11,100	10,700	10,900	10,400	10,200	10,300	10,000	9,520	9,810
22	9,720	7,450	9,360	10,800	10,600	10,700	10,600	10,100	10,300	9,980	9,500	9,750
23	9,470	7,680	8,880	11,300	10,800	11,100	10,200	9,860	10,000	10,200	8,340	9,440
24	7,680	6,720	6,970	10,800	9,080	9,570	10,500	10,000	10,200	9,850	8,450	9,550
25	9,260	6,780	7,740	11,400	9,610	11,100	10,600	10,000	10,300	10,000	9,590	9,930
26	9,980	9,260	9,750	11,300	10,500	10,900	10,300	7,740	9,680	10,100	9,560	9,890
27	10,500	9,940	10,300	10,600	8,600	9,390	9,870	7,940	9,380	10,100	9,930	10,000
28	10,400	10,200	10,300	8,840	8,630	8,730	8,200	7,830	8,020	10,200	9,910	10,100
29	10,700	9,360	10,400	10,700	8,630	9,680	9,820	7,980	8,830	10,200	9,070	9,980
30	9,360	8,260	8,910	10,800	10,300	10,600	9,420	8,200	8,380	9,880	9,210	9,670
31	8,260	7,670	7,860	---	---	---	8,250	7,190	7,940	10,200	9,210	9,910
Month	10,700	1,910	6,980	11,700	7,850	10,400	11,000	7,190	9,960	10,400	7,930	9,370

07312500 Wichita River at Wichita Falls, TX—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	10,400	10,100	10,200	8,310	7,710	8,110	5,220	1,620	2,390	10,700	10,200	10,500
2	10,300	10,100	10,200	8,570	8,080	8,300	7,860	5,220	7,190	10,800	9,800	10,600
3	10,300	9,860	10,100	8,860	8,570	8,710	6,800	3,340	4,330	10,800	10,100	10,700
4	10,400	9,720	10,100	8,770	7,160	8,140	4,090	3,460	3,760	10,900	7,760	9,590
5	10,400	10,200	10,300	9,130	6,720	8,350	5,650	3,960	4,550	10,100	3,870	5,090
6	10,300	10,200	10,300	9,150	8,840	8,960	7,110	5,650	6,550	4,680	4,190	4,360
7	10,300	9,830	10,100	10,100	9,150	9,610	7,730	7,110	7,480	5,320	4,680	5,020
8	10,200	9,890	10,100	10,600	10,100	10,400	7,510	7,030	7,290	6,610	5,320	5,870
9	10,400	10,200	10,200	10,800	9,820	10,400	7,500	7,200	7,360	6,840	5,220	6,270
10	10,500	10,200	10,400	10,300	9,550	9,940	7,260	3,020	4,690	8,080	5,620	6,720
11	10,500	9,540	10,000	10,000	9,540	9,760	5,130	2,670	3,760	8,540	8,080	8,410
12	9,600	2,810	7,190	11,000	9,800	10,500	2,960	2,200	2,330	9,300	8,400	8,950
13	8,820	7,380	7,890	11,200	10,800	11,000	2,900	2,350	2,620	9,630	9,100	9,370
14	8,200	5,520	6,820	11,200	8,100	10,000	3,350	2,900	3,140	9,540	8,310	8,700
15	7,980	7,020	7,690	8,100	7,300	7,500	3,760	3,350	3,550	10,700	8,650	9,720
16	10,700	7,760	9,460	11,800	7,400	10,200	4,950	3,760	4,170	12,700	10,400	11,700
17	10,700	9,980	10,300	12,000	11,700	11,900	5,410	4,710	5,020	13,100	12,000	12,700
18	10,500	10,000	10,300	12,000	11,400	11,800	6,140	5,400	5,760	13,800	13,000	13,500
19	10,500	9,280	10,200	12,100	11,300	11,600	6,140	5,480	5,820	14,100	13,400	13,800
20	9,280	6,470	8,160	12,600	12,100	12,400	7,610	5,780	6,870	14,700	14,000	14,200
21	9,000	7,250	8,160	12,600	12,300	12,400	7,820	7,170	7,510	14,100	5,720	11,300
22	8,620	7,860	8,190	12,600	11,600	12,100	7,820	7,290	7,550	10,300	6,560	7,820
23	8,740	7,040	7,730	12,200	11,700	11,900	8,640	7,320	8,040	7,570	6,100	6,720
24	8,500	7,420	8,160	12,200	10,600	11,400	9,100	8,610	8,840	9,520	6,950	8,490
25	8,770	8,130	8,380	10,700	10,400	10,500	9,660	9,040	9,270	9,800	8,690	9,250
26	9,110	6,040	8,110	10,900	10,200	10,500	9,640	8,600	9,220	8,690	8,260	8,450
27	6,990	5,980	6,480	10,300	8,810	9,640	9,900	8,760	9,520	8,500	8,220	8,320
28	7,710	6,990	7,430	11,300	8,740	9,860	10,100	9,580	9,820	9,500	8,410	8,900
29	---	---	---	10,500	9,790	10,100	10,000	9,260	9,670	9,760	9,160	9,570
30	---	---	---	10,800	10,400	10,600	10,300	9,250	9,540	10,500	9,200	9,630
31	---	---	---	10,800	2,050	8,670	---	---	---	11,100	10,300	10,800
Month	10,700	2,810	9,020	12,600	2,050	10,200	10,300	1,620	6,250	14,700	3,870	9,190

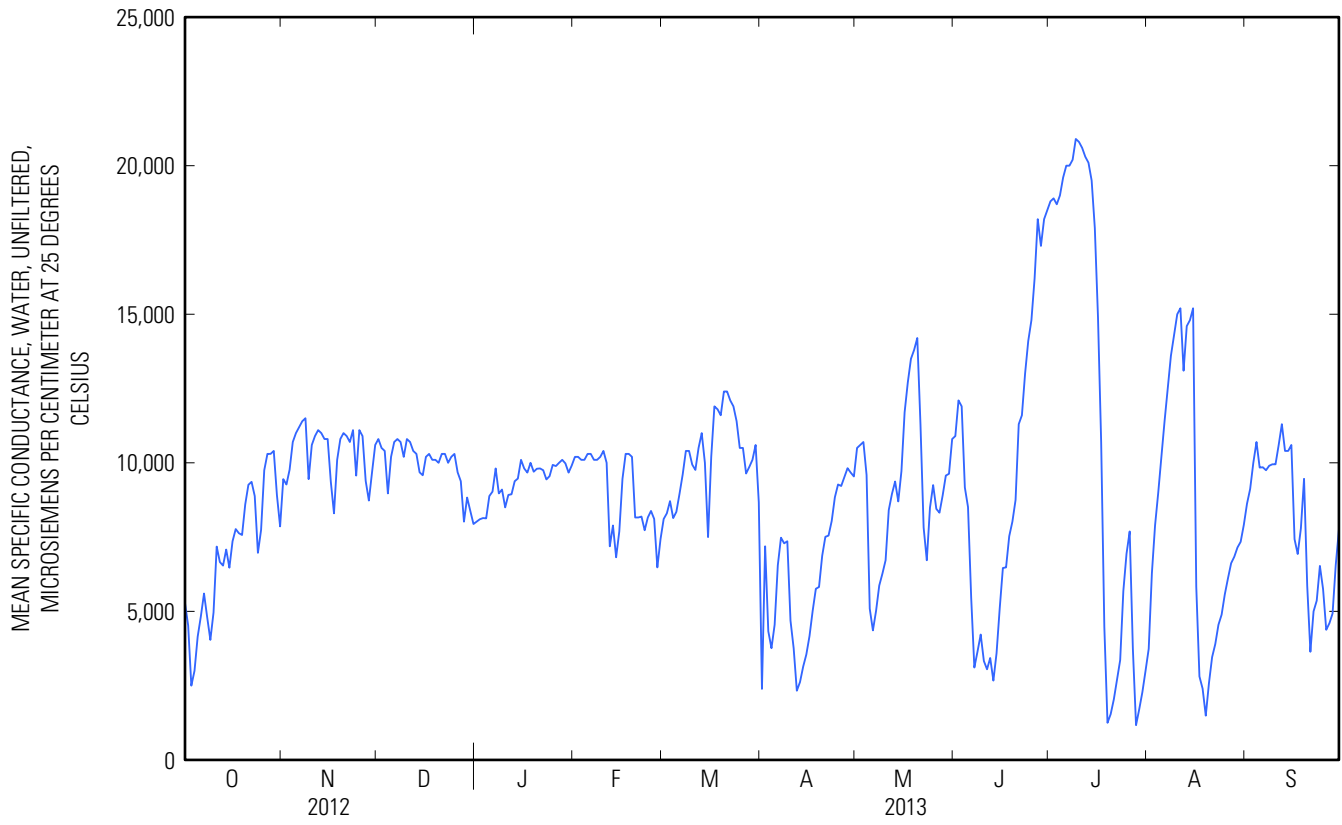
07312500 Wichita River at Wichita Falls, TX—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	11,700	11,100	10,900	18,900	18,500	18,800	4,200	3,050	3,740	8,890	8,360	8,620
2	12,700	11,600	12,100	19,000	18,700	18,900	7,310	4,140	6,280	9,410	8,890	9,120
3	12,800	10,200	11,900	18,800	18,500	18,700	8,180	7,310	7,890	10,600	9,410	10,000
4	10,200	8,540	9,170	19,400	18,600	19,000	9,870	8,180	8,990	11,100	10,100	10,700
5	8,560	8,310	8,510	19,900	19,400	19,600	10,800	9,820	10,200	10,100	9,640	9,840
6	8,520	2,220	5,460	20,300	19,700	20,000	11,900	10,800	11,400	10,000	9,590	9,850
7	3,990	1,460	3,110	20,200	19,900	20,000	12,900	11,900	12,500	9,900	9,580	9,750
8	4,650	2,870	3,650	20,700	19,900	20,200	14,100	12,900	13,600	10,100	9,780	9,900
9	5,340	2,960	4,220	21,000	20,700	20,900	14,600	14,000	14,300	10,000	9,790	9,950
10	4,330	2,440	3,330	20,900	20,800	20,800	15,400	14,600	15,000	10,300	9,760	9,950
11	3,380	2,780	3,050	20,800	20,400	20,600	15,700	10,700	15,200	10,900	10,200	10,600
12	3,510	3,220	3,430	20,600	20,100	20,300	14,300	10,400	13,100	11,500	10,900	11,300
13	3,220	2,400	2,670	20,300	19,900	20,100	14,900	14,300	14,600	11,600	6,950	10,400
14	4,820	2,400	3,590	20,200	17,400	19,500	15,200	14,600	14,800	12,000	8,160	10,400
15	6,150	4,140	5,100	18,200	17,700	17,900	15,400	14,800	15,200	11,700	8,720	10,600
16	6,920	6,150	6,460	18,000	9,780	14,900	14,800	1,150	5,830	8,720	6,670	7,430
17	6,930	5,960	6,480	14,000	3,380	10,700	3,420	1,720	2,810	7,310	6,650	6,930
18	7,910	6,490	7,530	5,840	2,640	4,480	5,200	1,210	2,400	8,480	7,310	7,790
19	8,360	7,710	8,020	2,640	958	1,250	2,020	1,190	1,490	10,500	8,480	9,460
20	10,100	8,260	8,750	2,120	1,100	1,540	3,090	2,020	2,580	11,100	290	5,860
21	11,600	10,100	11,300	2,440	1,710	2,040	3,720	3,090	3,460	4,420	2,180	3,640
22	12,000	11,400	11,600	3,010	2,440	2,700	4,190	3,580	3,900	5,510	4,420	5,000
23	13,800	12,000	13,000	4,540	3,010	3,360	4,760	4,190	4,550	8,190	3,540	5,360
24	14,600	13,700	14,100	6,300	4,540	5,690	5,260	4,560	4,890	7,310	5,550	6,530
25	15,200	14,500	14,800	7,620	6,300	6,940	5,980	4,650	5,570	7,300	4,500	5,750
26	17,700	15,200	16,200	7,900	7,390	7,690	6,490	5,860	6,110	4,500	4,250	4,380
27	18,500	17,700	18,200	8,480	703	3,740	6,770	6,490	6,620	5,040	4,210	4,600
28	18,100	16,900	17,300	1,650	709	1,170	7,090	6,650	6,840	5,680	3,750	4,930
29	18,700	17,500	18,200	1,950	1,370	1,700	7,480	6,760	7,150	8,320	3,970	6,560
30	18,600	18,300	18,500	2,640	1,950	2,280	7,480	7,210	7,340	8,420	4,790	7,750
31	---	---	---	3,270	2,470	3,000	8,420	7,270	7,910	---	---	---
Month	18,700	1,460	9,350	21,000	703	11,900	15,700	1,150	8,270	12,000	290	8,100

	Max	Min	Mean
Year	21,000	290	9,080

07312500 Wichita River at Wichita Falls, TX—Continued



07312500 Wichita River at Wichita Falls, TX—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	23.8	20.0	21.8	20.0	12.9	16.2	18.3	13.6	15.7	5.5	3.9	4.8
2	23.5	20.0	21.5	21.6	14.8	17.9	18.9	13.6	16.3	6.1	2.0	3.8
3	23.6	18.3	20.8	20.2	15.6	17.8	20.1	15.5	17.5	5.5	1.4	3.4
4	22.4	19.4	20.6	19.0	13.6	16.0	17.1	12.7	15.1	6.0	2.4	4.2
5	19.9	17.2	18.9	18.7	13.0	15.3	13.4	9.4	11.7	9.0	4.1	6.2
6	17.2	13.1	14.8	18.1	11.5	14.6	14.8	10.2	12.3	8.3	3.2	5.6
7	13.4	12.0	12.8	17.6	12.0	14.7	13.0	10.8	12.2	6.3	2.4	4.6
8	17.8	9.7	13.5	18.4	12.7	15.7	11.5	9.4	10.4	8.0	5.0	6.4
9	21.4	12.8	16.6	21.6	15.8	18.3	10.7	7.9	9.4	9.5	7.8	8.5
10	18.3	16.0	16.9	21.4	17.1	19.0	7.9	3.9	6.0	11.3	9.5	10.2
11	21.5	16.8	18.6	20.3	14.7	18.1	6.9	2.4	4.7	13.4	8.8	10.9
12	25.6	19.6	22.2	15.4	10.6	12.9	7.5	2.8	5.2	12.3	6.3	9.9
13	23.7	20.7	22.1	13.5	7.9	10.6	9.2	4.3	6.7	6.7	3.3	4.9
14	24.0	17.9	20.6	14.0	7.8	10.6	12.4	8.0	9.5	5.8	2.1	3.6
15	22.9	16.5	19.5	13.0	8.5	10.4	11.2	8.8	10.2	4.0	1.8	2.8
16	23.9	17.7	20.3	14.4	9.2	11.5	13.0	9.0	10.8	5.2	0.0	2.4
17	24.8	18.8	21.2	14.2	9.2	11.6	11.7	8.0	9.9	7.8	2.0	4.7
18	21.8	15.2	18.1	14.4	10.4	12.4	11.9	7.1	9.4	8.9	3.1	5.9
19	20.6	13.4	16.7	18.2	13.0	15.2	10.8	8.0	9.3	10.8	5.1	7.7
20	22.8	15.0	18.5	18.3	13.2	15.7	8.9	4.7	6.8	10.9	5.2	8.0
21	26.0	19.2	22.1	17.3	12.7	15.4	7.8	2.5	5.2	8.9	5.1	7.1
22	23.5	20.9	22.0	19.2	14.8	16.7	8.0	3.8	6.1	9.3	3.4	6.3
23	26.1	20.1	22.6	17.0	12.3	14.9	8.9	6.4	7.5	13.0	5.8	9.1
24	25.4	21.0	22.8	13.2	8.8	11.1	7.1	4.0	5.9	11.1	8.0	9.5
25	22.3	16.6	20.1	14.7	8.8	11.5	6.1	0.5	3.1	10.6	6.5	8.6
26	17.0	12.6	14.6	13.9	9.4	11.5	4.2	-0.2	1.2	10.6	6.0	8.5
27	15.4	9.3	12.1	11.4	7.3	9.5	2.9	0.0	1.5	15.5	10.0	12.4
28	15.1	8.6	11.6	12.4	6.8	9.5	5.2	2.1	3.2	17.4	13.5	15.3
29	16.0	9.3	12.4	14.0	8.9	11.5	5.6	0.4	2.8	17.1	12.8	15.9
30	17.9	10.6	13.8	16.2	11.5	13.8	4.4	1.9	3.2	12.8	9.1	11.0
31	19.0	12.4	15.4	---	---	---	6.1	3.9	4.9	11.8	6.0	8.9
Month	26.1	8.6	18.2	21.6	6.8	14.0	20.1	-0.2	8.2	17.4	0.0	7.5

07312500 Wichita River at Wichita Falls, TX—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	10.4	5.2	8.0	13.8	7.3	10	22.0	16.7	19.4	29.3	20.7	24.3
2	12.0	6.3	9.0	14.3	6.5	10.0	20.7	13.4	16.8	23.2	12.7	16.3
3	12.3	6.3	9.4	17.2	8.6	12.3	13.4	11.0	11.9	21.1	9.8	14.9
4	15.8	10.2	12.6	20.1	11.6	15.0	11.6	10.0	10.8	21.1	13.7	17.1
5	14.7	10.0	12.5	16.6	10.0	13.1	17.4	9.3	12.9	22.6	14.7	17.9
6	17.9	13.0	15.1	13.8	7.3	10.5	22.3	14.2	17.6	25.4	16.0	20.2
7	17.3	13.9	15.6	17.2	8.3	12.3	25.7	18.2	21.3	27.9	18.5	22.7
8	14.2	9.5	12.1	15.5	12.5	14.0	25.6	20.1	22.7	28.1	19.4	23.5
9	11.7	9.7	10.5	18.0	14.9	16.1	25.9	19.8	22.2	24.2	21.1	22.3
10	14.5	9.4	11.8	15.9	11.1	13.3	20.5	9.7	12.7	25.8	18.8	22.1
11	13.2	8.4	11.0	16.1	7.0	11.3	15.3	9.2	11.9	26.6	18.3	22.4
12	11.6	8.2	9.5	16.5	9.1	12.8	15.7	11.7	13.7	26.8	18.4	22.3
13	13.1	6.3	9.2	18.5	9.9	14.1	19.0	14.6	16.6	28.4	18.7	23.3
14	13.7	7.1	10.1	21.0	12.0	16.2	23.6	15.9	19.3	29.4	20.1	24.5
15	11.7	7.9	10	22.8	14.1	18.2	26.3	19.0	22.3	27.5	22.1	24.5
16	12.7	5.4	8.6	24.4	15.8	19.7	25.6	21.4	23.0	30.0	21.2	25.3
17	15.0	7.0	10.5	20.3	14.4	17.4	25.8	20.2	22.4	33.3	23.4	27.7
18	16.1	10.3	12.5	20.3	13.6	16.8	22.9	15.6	18.8	32.7	25.6	28.7
19	14.2	8.4	11.2	17.0	12.4	14.7	21.6	11.4	16.2	32.3	23.9	27.8
20	11.5	7.6	9.4	19.3	11.3	15.2	22.7	13.0	17.4	30.5	24.7	27.3
21	11.7	6.4	8.7	19.1	12.8	15.9	22.2	13.8	17.8	26.6	19.1	22.7
22	11.9	5.8	8.4	17.8	12.8	14.0	26.3	15.6	20.5	29.8	19.8	24.0
23	11.9	5.7	8.5	12.8	11.2	11.9	21.8	12.6	16.6	29.5	22.9	25.5
24	14.9	6.8	10.4	15.6	7.8	11.6	20.3	9.1	14.3	29.7	24.1	26.4
25	11.9	7.5	10.4	15.3	7.2	11.2	19.9	11.6	15.7	28.1	23.5	25.5
26	13.0	5.7	8.8	16.1	7.0	11.3	21.8	15.3	17.9	31.7	23.2	26.7
27	13.1	7.6	9.9	18.6	9.0	13.5	25.8	17.1	20.9	32.2	24.4	27.7
28	13.9	6.6	9.8	22.2	12.6	17.0	28.2	17.7	22.6	27.5	23.9	25.3
29	---	---	---	21.7	16.4	18.8	29.2	20.1	24.2	27.5	22.8	24.8
30	---	---	---	25.2	16.5	20.4	29.3	19.8	24.2	30.8	23.0	26.5
31	---	---	---	22.6	18.6	20.8	---	---	---	33.8	24.5	28.7
Month	17.9	5.2	10.5	25.2	6.5	14.5	29.3	9.1	18.2	33.8	9.8	23.8

07312500 Wichita River at Wichita Falls, TX—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	30.9	25.5	28.2	30.2	24.8	27.6	35.8	28.6	31.6	33.8	27.5	30.5
2	31.1	22.8	26.8	30.3	22.9	26.5	35.7	28.2	31.5	34.2	27.3	30.3
3	30.4	22.8	26.2	30.9	22.8	26.9	35.8	27.1	31.0	32.7	25.8	29.2
4	33.1	23.2	27.4	31.4	23.8	27.1	36.0	27.0	30.9	32.8	24.4	28.5
5	30.6	25.0	27.0	32.5	23.8	27.7	35.8	27.3	31.2	33.5	26.1	29.5
6	25.8	22.9	24.0	31.6	25.0	28.1	35.6	27.4	31.3	33.5	26.6	29.9
7	28.0	21.0	24.3	33.7	25.3	29.1	36.0	27.1	31.3	32.3	27.3	29.7
8	30.4	22.3	25.9	34.8	26.7	30.3	35.4	28.0	31.2	33.1	26.5	29.4
9	31.9	21.9	26.7	34.6	27.3	30.7	35.5	27.5	31.1	32.1	26.2	28.9
10	32.6	26.1	28.9	35.0	27.9	31.0	33.8	27.4	30.4	32.0	25.9	28.4
11	34.2	26.0	29.6	35.4	27.8	31.1	34.5	26.7	30.3	32.2	25.7	28.5
12	34.8	25.7	29.8	36.1	27.9	31.6	35.3	27.5	30.9	31.9	26.1	28.7
13	36.0	26.8	30.7	36.7	28.1	31.8	33.7	27.9	30.4	30.6	26.1	27.5
14	33.4	27.6	30.3	31.1	23.4	26.0	33.2	27.0	29.7	30.1	25.4	27.4
15	32.3	26.7	29.1	24.3	22.3	23.2	32.2	26.7	29.1	32.3	24.7	28.0
16	34.8	26.3	30.2	26.2	22.8	24.3	27.8	21.0	25.3	31.6	25.9	28.5
17	32.8	26.2	29.5	27.6	23.8	25.7	29.4	24.5	26.9	30.4	26.2	28.1
18	33.1	26.2	29.4	31.2	24.8	27.5	28.3	26.1	27.3	32.1	26.5	28.6
19	29.8	26.0	27.6	29.2	26.2	27.7	29.6	25.7	27.5	28.1	25.8	26.9
20	33.4	24.2	28.4	31.1	27.1	28.9	31.6	25.6	28.3	26.1	22.3	23.9
21	33.8	25.8	29.5	33.0	26.9	29.7	32.5	25.9	28.8	27.5	20.2	23.3
22	33.5	25.4	29.2	34.5	27.6	30.6	33.0	26.7	29.5	28.4	19.7	23.6
23	33.3	25.4	29.1	35.5	28.3	31.3	33.2	27.0	29.7	26.0	21.4	23.3
24	32.9	25.3	29.1	34.9	27.0	30.7	33.0	27.1	29.7	28.6	21.9	24.4
25	34.6	25.6	29.8	31.1	27.4	28.9	34.2	27.0	30.1	28.8	21.0	24.4
26	35.4	26.5	30.8	33.1	26.6	29.5	33.7	26.9	30.0	29.6	22.2	25.4
27	36.4	27.6	31.9	29.9	25.8	28.2	29.6	26.4	28.1	29.3	22.3	25.5
28	35.4	27.8	31.4	30.9	26.6	28.5	32.7	25.4	28.7	26.7	21.5	24.1
29	33.8	27.3	30.4	31.4	26.9	28.8	34.2	26.3	30.0	26.4	18.6	22.0
30	33.5	26.8	29.7	34.2	27.2	30.2	34.4	27.0	30.5	26.8	18.5	22.2
31	---	---	---	35.5	28.5	31.5	34.8	27.1	30.7	---	---	---
Month	36.4	21.0	28.7	36.7	22.3	28.7	36.0	21.0	29.8	34.2	18.5	27.0

	Max	Min	Mean
Year	36.7	-0.2	19.1

07312500 Wichita River at Wichita Falls, TX—Continued

