# 08079600 Double Mountain Fork Brazos River at Justiceburg, TX

Brazos Headwaters Basin
Double Mountain Fork Brazos Subbasin

LOCATION.--Lat 33°02′18″, long 101°11′50″ referenced to North American Datum of 1927, Garza County, TX, Hydrologic Unit 12050004, on right bank at downstream side of bridge on U.S. Highway 84 at Justiceburg, 250 ft downstream from Panhandle and Santa Fe Railroad, and at mile 143.4 measured from confluence with Salt Fork Brazos River at mile 923.2 on the Brazos River.

DRAINAGE AREA.--1,466 $mi^2$ of which 1,222 $mi^2$ probably is noncontributing.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--November 1961 to current year. Prior to October 1963, published as "Sand Creek or South Fork Double Mountain Fork Brazos River at Justiceburg".

REVISED RECORDS.--WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,222.47 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversions. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1895, 25.8 ft in 1914 and 22.2 ft in September l955, from information by local resident. Flood in July 1961 reached a stage of 18.2 ft, from floodmark.

**08079600 Double Mountain Fork Brazos River at Justiceburg, TX—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**
**DAILY MEAN VALUES**
[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.03 | 3.1 | 1.4 | 7.1 | 4.2 | 0.00 | 38 | 47 | 31 | 21 | 120 | 0.00 |
| 2 | 0.02 | 2.7 | 1.9 | 5.5 | 6.6 | 0.00 | 18 | 87 | 28 | 19 | 14 | 0.00 |
| 3 | 0.02 | 2.5 | 1.5 | 5.0 | 7.7 | 0.00 | 9.4 | 175 | 79 | 16 | 61 | 0.00 |
| 4 | 0.02 | 2.2 | 1.3 | 5.0 | 6.7 | 0.00 | 4.3 | 34 | 33 | 16 | 125 | 0.00 |
| 5 | 0.01 | 2.6 | 1.3 | 4.4 | 5.2 | 0.00 | 2.9 | 13 | 25 | 12 | 6.0 | 0.00 |
| 6 | 0.01 | 2.8 | 1.3 | 3.4 | 4.3 | 0.00 | 2.7 | 12 | 18 | 7.5 | 0.48 | 0.00 |
| 7 | 0.01 | 2.3 | 1.3 | 2.8 | 3.8 | 0.00 | 3.8 | 9.2 | 13 | 5.4 | 0.04 | 0.00 |
| 8 | 0.01 | 1.9 | 1.3 | 1.9 | 3.4 | 0.00 | 4.8 | 830 | 6.8 | 3.3 | 0.00 | 189 |
| 9 | 231 | 1.8 | 1.3 | 1.7 | 3.5 | 0.00 | 5.2 | 915 | 13 | 3.3 | 0.00 | 34 |
| 10 | 659 | 1.5 | 1.3 | 1.7 | 3.8 | 0.00 | 16 | 502 | 369 | e54 | 0.00 | 11 |
| 11 | 77 | 1.1 | 1.4 | 1.6 | 4.0 | 8.0 | 6.5 | 96 | e137 | e21 | 0.00 | 3.2 |
| 12 | 3.0 | 0.98 | 1.5 | 1.9 | 4.9 | 35 | 1.9 | 44 | e218 | 10 | 0.00 | 1.1 |
| 13 | 0.67 | 0.98 | 1.4 | 1.8 | 3.6 | 9.8 | 1.1 | 22 | e221 | 59 | 0.00 | 0.52 |
| 14 | 0.41 | 0.98 | 1.5 | 2.4 | 2.5 | 5.1 | 0.70 | 14 | e113 | e20 | 0.00 | 0.34 |
| 15 | 5,990 | 1.1 | 1.5 | 2.5 | 2.6 | 2.6 | 0.51 | 11 | e111 | e1.6 | 0.00 | 0.24 |
| 16 | 3,970 | 0.98 | 1.5 | 2.4 | 2.6 | 0.67 | 0.34 | e11 | e248 | 0.34 | 0.00 | 0.13 |
| 17 | 92 | 0.98 | 1.5 | 2.1 | 2.3 | 0.28 | 20 | e11 | 96 | 0.06 | 28 | 0.08 |
| 18 | 11 | 0.98 | 1.5 | 2.1 | 1.9 | 0.14 | 107 | e44 | 55 | 0.03 | 1,760 | 0.07 |
| 19 | 6.0 | 1.0 | 1.8 | 3.7 | 1.5 | 0.03 | 4.8 | 72 | 38 | 0.07 | 175 | 0.07 |
| 20 | 5.3 | 1.1 | 128 | 140 | 1.2 | 0.01 | 0.93 | 6.4 | 376 | 0.35 | 0.35 | 0.07 |
| 21 | 6.0 | 1.1 | 21 | 89 | 0.97 | 0.00 | 0.36 | 2.9 | 88 | e0.80 | 0.00 | 0.06 |
| 22 | 6.9 | 1.1 | 8.2 | 22 | 0.96 | 0.00 | 0.19 | 3.3 | 60 | 1.3 | 0.00 | 0.07 |
| 23 | 9.1 | 1.1 | 5.3 | 13 | 0.60 | 0.00 | 0.63 | 3.7 | 42 | 2.9 | 0.00 | 2.5 |
| 24 | 12 | 1.1 | 4.0 | 10 | 0.01 | 0.27 | 0.69 | 4.3 | 28 | e117 | 0.00 | 0.16 |
| 25 | 11 | 1.1 | 4.0 | 8.8 | 0.00 | 0.39 | 0.16 | 189 | 27 | e55 | 0.05 | 0.07 |
| 26 | 8.8 | 1.1 | 3.1 | 7.7 | 0.00 | 83 | 0.05 | 52 | 24 | e9.5 | 0.00 | 0.11 |
| 27 | 5.7 | 1.1 | 2.5 | 10 | 0.00 | 27 | 0.05 | e49 | e228 | 3.7 | 0.00 | 111 |
| 28 | 4.7 | 1.1 | 2.1 | 9.8 | 0.00 | 7.0 | 0.03 | e43 | 120 | 2.0 | 0.00 | 68 |
| 29 | 3.9 | 1.1 | 66 | 6.7 | --- | 522 | 8.8 | 870 | 67 | 17 | 0.00 | 10 |
| 30 | 3.1 | 1.3 | 90 | 5.1 | --- | 231 | 306 | 143 | 34 | 32 | 0.00 | 4.7 |
| 31 | 3.4 | --- | 13 | 4.2 | --- | 132 | --- | 41 | --- | 29 | 0.00 | --- |
| Total | 11,120.11 | 44.78 | 374.7 | 385.3 | 78.84 | 1,064.29 | 565.84 | 4,356.8 | 2,946.8 | 540.15 | 2,289.92 | 436.49 |
| Mean | 359 | 1.49 | 12.1 | 12.4 | 2.82 | 34.3 | 18.9 | 141 | 98.2 | 17.4 | 73.9 | 14.5 |
| Max | 5,990 | 3.1 | 128 | 140 | 7.7 | 522 | 306 | 915 | 376 | 117 | 1,760 | 189 |
| Min | 0.01 | 0.98 | 1.3 | 1.6 | 0.00 | 0.00 | 0.03 | 2.9 | 6.8 | 0.03 | 0.00 | 0.00 |
| Ac-ft | 22,060 | 89 | 743 | 764 | 156 | 2,110 | 1,120 | 8,640 | 5,840 | 1,070 | 4,540 | 866 |
| Cfsm | 1.47 | 0.01 | 0.05 | 0.05 | 0.01 | 0.14 | 0.08 | 0.58 | 0.40 | 0.07 | 0.30 | 0.06 |
| In. | 1.70 | 0.01 | 0.06 | 0.06 | 0.01 | 0.16 | 0.09 | 0.66 | 0.45 | 0.08 | 0.35 | 0.07 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2007, BY WATER YEAR (WY)**

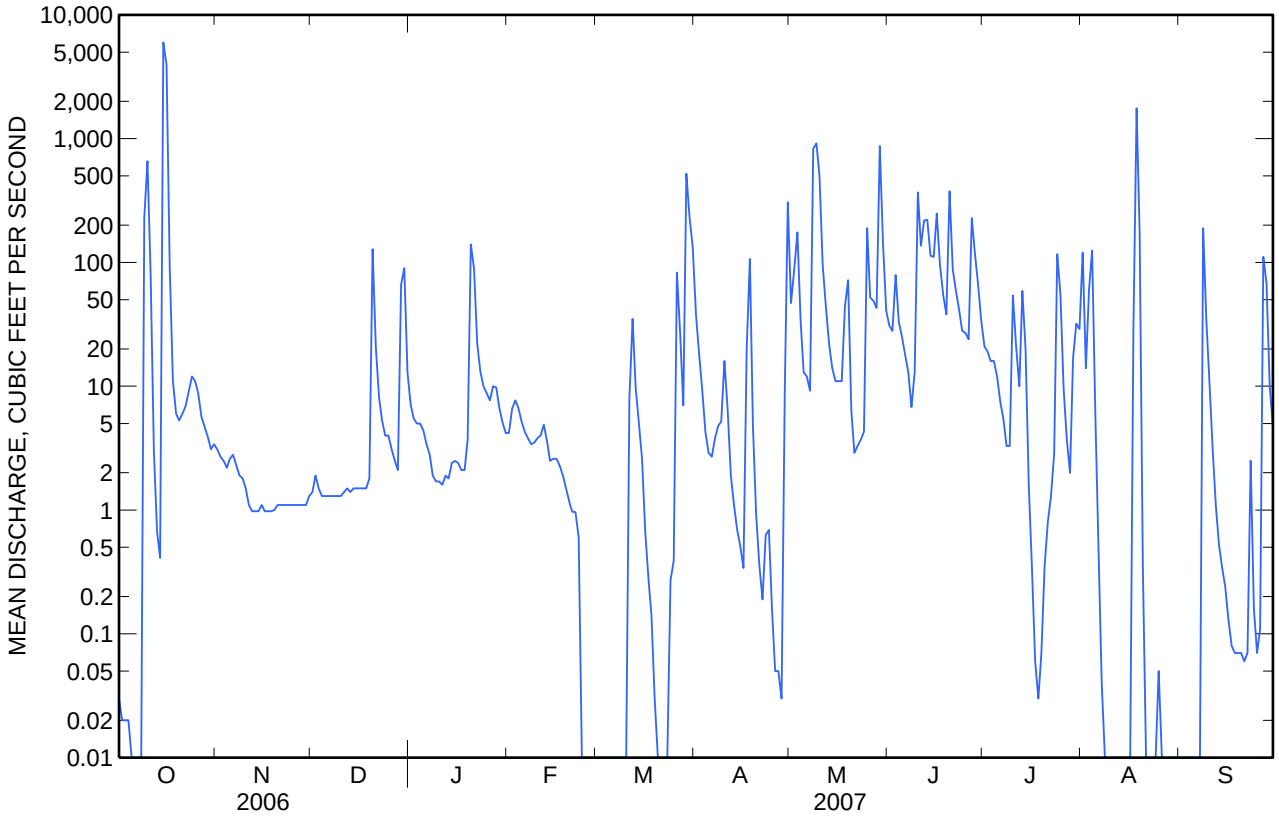
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 46.8 | 13.8 | 4.72 | 2.62 | 4.96 | 10.8 | 13.7 | 52.5 | 75.1 | 28.6 | 41.2 | 48.3 |
| Max | 359 | 301 | 87.7 | 30.9 | 56.1 | 81.6 | 140 | 357 | 510 | 249 | 408 | 321 |
| (WY) | (2007) | (2005) | (1992) | (1992) | (1992) | (1970) | (1997) | (1969) | (1967) | (1979) | (1972) | (1962) |
| Min | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.05 | 0.00 | 0.00 | 0.00 |
| (WY) | (1965) | (1978) | (1974) | (1974) | (1965) | (1971) | (1964) | (1989) | (1994) | (1964) | (1987) | (1968) |

**08079600 Double Mountain Fork Brazos River at Justiceburg, TX—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2006 | | Water Year 2007 | | Water Years 1962 - 2007 | |
|---|---|---|---|---|---|---|
| **Annual total** | 17,587.95 | | 24,204.02 | | | |
| **Annual mean** | 48.2 | | 66.3 | | 28.3 | |
| **Highest annual mean** | | | | | 75.6 | 2005 |
| **Lowest annual mean** | | | | | 1.65 | 1983 |
| **Highest daily mean** | 5,990 | Oct 15 | 5,990 | Oct 15 | 10,000 | Jun 12, 1999 |
| **Lowest daily mean** | 0.00 | Jan 1 | 0.00 | Feb 25 | 0.00 | Feb 17, 1962 |
| **Annual seven-day minimum** | 0.00 | Jan 1 | 0.00 | Feb 25 | 0.00 | Mar 3, 1962 |
| **Maximum peak flow** | | | 16,900 | Oct 15 | 49,600 | May 6, 1969 |
| **Maximum peak stage** | | | [a]14.59 | Oct 15 | [p]19.80 | May 6, 1969 |
| **Annual runoff (ac-ft)** | 34,890 | | 48,010 | | 20,500 | |
| **Annual runoff (cfsm)** | 0.197 | | 0.272 | | 0.116 | |
| **Annual runoff (inches)** | 2.68 | | 3.69 | | 1.58 | |
| **10 percent exceeds** | 11 | | 96 | | 12 | |
| **50 percent exceeds** | 0.02 | | 3.1 | | 0.01 | |
| **90 percent exceeds** | 0.00 | | 0.00 | | 0.00 | |

[p] Observed.
[a] From floodmark.



## WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: December 1964 to September 1965, October 1975 to current year.
SEDIMENT DATA: June 1977 to June 1982.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 2006 (local observer).
WATER TEMPERATURE: October 1975 to September 2006(local observer).

REMARKS.--Records fair. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. The computation of the selected constituent loads might include estimated discharge or specific conductance data. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas Water Science Center upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 31,400 microsiemens/cm, Dec. 6, 1994; minimum daily, 370 microsiemens/cm, Oct. 20, 1983.
WATER TEMPERATURE: Maximum daily, 38.0°C, May 17, 2001; minimum daily, 0.0°C, on many days during winter months.

### WATER-QUALITY DATA
### WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 1 of 2

[Remark codes: E, estimated. Value qualifier codes: d, diluted sample: method hi range exceeded.]

| Date | Time | Gage height, feet (00065) | Instantaneous discharge, cfs (00061) | Barometric pressure, mm Hg (00025) | Dissolved oxygen, mg/L (00300) | Dissolved oxygen, percent of saturation (00301) | pH, water, unfltrd field, std units (00400) | Specific conductance, wat unf µS/cm 25 degC (00095) | Temperature, water, deg C (00010) | Hardness, water, mg/L as CaCO3 (00900) | Noncarb hardness, wat flt field, mg/L as CaCO3 (00904) | Calcium water, fltrd, mg/L (00915) | Magnesium, water, fltrd, mg/L (00925) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Oct** | | | | | | | | | | | | | |
| **15...** | 1130 | 11.22 | 6,620 | 695 | 8.6 | 102 | -- | 321 | 18.9 | 11 | -- | 3.33 | .714 |
| **15...** | 1430 | 9.42 | 3,290 | 695 | 7.5 | 90 | -- | 305 | 19.6 | 15 | -- | 4.34 | .978 |
| **15...** | 1600 | 8.82 | 3,160 | 695 | 7.2 | 87 | -- | 309 | 20.1 | 19 | -- | 5.55 | 1.21 |
| **16...** | 0830 | 9.33 | 3,450 | 682 | 7.8 | 92 | -- | 269 | 17.8 | 22 | -- | 6.52 | 1.32 |
| **Apr** | | | | | | | | | | | | | |
| **04...** | 1745 | 5.10 | 2.8 | 707 | -- | -- | 8.4 | 6,320 | 20.9 | 520 | 320 | 114d | 56.9d |

**08079600 Double Mountain Fork Brazos River at Justiceburg, TX—Continued**

**WATER-QUALITY DATA**
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**
Part 2 of 2
[Remark codes: E, estimated. Value qualifier codes: d, diluted sample: method hi range exceeded.]

| Date | Potassium, water, fltrd, mg/L (00935) | Sodium adsorption ratio (00931) | Sodium fraction of cations percent (00932) | Sodium, water, fltrd, mg/L (00930) | Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086) | Bicarbonate, wat flt incrm. titr., field, mg/L (00453) | Carbonate, wat flt incrm. titr., field, mg/L (00452) | Chloride, water, fltrd, mg/L (00940) | Fluoride, water, fltrd, mg/L (00950) | Silica, water, fltrd, mg/L (00955) | Sulfate water, fltrd, mg/L (00945) | Residue water, fltrd, sum of constituents mg/L (70301) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Oct** | | | | | | | | | | | | |
| **15...** | 1.59 | 8.1 | 91 | 62.7 | 80 | 96 | 1 | 30.2 | .59 | 7.1 | 22.4 | 177 |
| **15...** | 1.79 | 6.6 | 88 | 58.2 | 80 | 95 | 2 | 29.7 | .55 | 7.9 | 19.4 | 171 |
| **15...** | 2.00 | 5.6 | 85 | 55.4 | 82 | 98 | 1 | 31.2 | .49 | 8.4 | 18.9 | 173 |
| **16...** | 2.13 | 4.4 | 81 | 47.2 | 79 | E94 | E1 | 23.6 | .41 | 8.8 | 15.8 | 153 |
| **Apr** | | | | | | | | | | | | |
| **04...** | 10.6d | 21 | 82 | 1,110d | 205 | 244 | 3 | 1,710d | 1.76 | 12.6 | 432d | 3,570 |