

**USGS Water-Year Summary**

[**11251000**](https://waterdata.usgs.gov/nwis/inventory/?site_no=11251000&agency_cd=USGS) **San Joaquin River**

**below Friant, CA**

**LOCATION** - Lat 36°59'04", long 119°43'24" referenced to North American Datum of 1927, in SW 1/4 SW 1/4 sec.07, T.11 S., R.21 E., Fresno County, CA, Hydrologic Unit 18040001, on left bank, 0.5 mi west of Friant, 1.5 mi downstream from Cottonwood Creek, and 2 mi downstream from Friant Dam at mile 268.1.

**DRAINAGE AREA** - 1,676 mi².

**SURFACE-WATER RECORDS**

**PERIOD OF RECORD** - October 1907 to current year. Published as "near Pollasky" October 1907 to December 1908, and as "near Friant" January 1909 to September 1938. Monthly discharge only for October 1907 to November 1908, published in WSP 1315-A.

**GAGE** - Water-stage recorder. Datum of gage is 294.00 ft above NGVD of 1929 (levels by U.S. Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, nonrecording gage at site 4.5 mi upstream at different datum. Nov. 10, 1913, to Sept. 30, 1938, water-stage recorder at site 2.5 mi upstream at different datum.

**REMARKS** - Records rated good. Flow regulated by Millerton Lake (station 11250100) beginning in 1941, and by nine powerplants and eight reservoirs with combined capacity of about 609,300 acre-ft. Diversion for irrigation to Madera and Friant-Kern Canals (stations 11249500 and 11250000) began in 1943 and 1949, respectively. See schematic diagram of lower San Joaquin River Basin available from the California Water Science Center.

**EXTREMES FOR PERIOD OF RECORD** - Maximum discharge, 77,200 ft³/s, Dec. 11, 1937, gage height, 23.8 ft, site and datum then in use; minimum daily, 54 ft³/s, Sept. 15, 1924. Maximum discharge since construction of Friant Dam in 1941, 60,300 ft³/s, Jan. 3, 1997, gage height, 22.97 ft (provided by U.S. Bureau of Reclamation); minimum daily, 11 ft³/s, Jan. 8, 1977.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **00060, Discharge, cubic feet per second,** | | | | | | | | | | | | | |
| **YEAR** | **Monthly mean in ft3/s   (Calculation Period: 1907-10-01 -> 2016-10-31)** | | | | | | | | | | | |
| **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** |
| **1907** |  |  |  |  |  |  |  |  |  | 550.6 | 446.2 | 687.7 |
| **1908** | 880.3 | 1,021 | 1,908 | 3,438 | 3,609 | 2,868 | 1,896 | 1,185 | 668.7 | 390.2 | 270.3 | 301.0 |
| **1909** | 4,507 | 3,291 | 2,164 | 5,908 | 10,460 | 13,880 | 5,029 | 1,272 | 621.3 | 406.6 | 833.1 | 3,589 |
| **1910** | 3,061 | 1,556 | 3,046 | 6,310 | 7,735 | 3,991 | 1,617 | 644.0 | 868.8 | 481.6 | 402.7 | 509.9 |
| **1911** | 3,890 | 3,724 | 5,466 | 7,143 | 9,287 | 15,870 | 9,635 | 1,877 | 764.0 | 526.8 | 470.6 | 379.2 |
| **1912** | 488.7 | 462.4 | 897.3 | 1,262 | 4,136 | 6,184 | 1,547 | 617.9 | 375.7 | 289.7 | 341.2 | 326.1 |
| **1913** | 360.2 | 462.4 | 622.2 | 1,611 | 4,009 | 2,859 | 1,659 | 1,121 | 682.9 | 208.4 | 374.4 | 466.2 |
| **1914** | 4,212 | 2,606 | 3,805 | 6,630 | 9,381 | 10,200 | 6,374 | 2,312 | 904.9 | 654.9 | 511.9 | 481.4 |
| **1915** | 621.6 | 1,621 | 2,022 | 4,129 | 6,186 | 9,839 | 4,655 | 1,143 | 744.9 | 433.8 | 392.6 | 617.1 |
| **1916** | 2,814 | 2,459 | 5,492 | 8,010 | 8,980 | 9,605 | 4,697 | 1,476 | 754.2 | 1,041 | 654.2 | 736.0 |
| **1917** | 772.1 | 2,333 | 1,746 | 3,795 | 6,066 | 9,733 | 3,612 | 1,184 | 606.3 | 412.6 | 368.0 | 319.1 |
| **1918** | 333.2 | 662.6 | 2,432 | 3,000 | 5,000 | 8,304 | 1,958 | 695.9 | 817.6 | 1,678 | 739.8 | 825.2 |
| **1919** | 625.2 | 1,243 | 1,530 | 3,517 | 7,181 | 2,579 | 1,001 | 494.0 | 387.2 | 363.9 | 313.2 | 488.8 |
| **1920** | 437.9 | 502.7 | 1,639 | 2,713 | 6,621 | 5,496 | 1,797 | 738.3 | 489.8 | 601.4 | 750.0 | 700.0 |
| **1921** | 1,100 | 1,400 | 2,645 | 3,183 | 5,259 | 6,844 | 2,520 | 838.5 | 583.4 | 426.8 | 387.2 | 1,031 |
| **1922** | 1,104 | 1,729 | 1,679 | 3,249 | 10,060 | 12,340 | 4,395 | 1,380 | 728.8 | 518.7 | 713.0 | 1,492 |
| **1923** | 1,132 | 1,264 | 1,560 | 3,347 | 7,317 | 4,824 | 3,268 | 1,184 | 855.6 | 785.4 | 553.8 | 450.4 |
| **1924** | 437.3 | 393.4 | 419.4 | 1,401 | 2,475 | 635.0 | 334.9 | 264.0 | 212.6 | 189.9 | 467.2 | 465.8 |
| **1925** | 441.2 | 1,401 | 1,540 | 3,297 | 5,924 | 4,727 | 2,460 | 1,067 | 623.9 | 637.3 | 654.2 | 664.1 |
| **1926** | 403.4 | 1,054 | 1,451 | 4,839 | 4,999 | 2,431 | 956.9 | 639.4 | 585.6 | 468.2 | 1,023 | 981.0 |
| **1927** | 1,075 | 2,652 | 2,325 | 4,225 | 7,286 | 7,550 | 2,801 | 1,155 | 791.5 | 859.7 | 1,317 | 1,031 |
| **1928** | 936.9 | 1,045 | 2,019 | 2,531 | 4,008 | 2,559 | 999.2 | 947.7 | 877.8 | 822.9 | 680.5 | 668.2 |
| **1929** | 493.4 | 509.3 | 935.6 | 1,626 | 3,101 | 2,153 | 1,548 | 1,256 | 715.5 | 484.9 | 418.2 | 514.5 |
| **1930** | 491.6 | 705.5 | 1,146 | 2,044 | 2,238 | 2,601 | 1,569 | 1,304 | 868.5 | 697.6 | 548.4 | 438.4 |
| **1931** | 547.9 | 539.0 | 672.0 | 1,553 | 1,742 | 931.4 | 859.8 | 629.0 | 156.4 | 163.6 | 196.2 | 1,055 |
| **1932** | 1,061 | 2,756 | 2,329 | 3,458 | 5,916 | 7,319 | 3,721 | 1,472 | 1,156 | 1,090 | 602.3 | 699.4 |
| **1933** | 930.1 | 996.6 | 1,431 | 2,311 | 2,677 | 4,342 | 1,583 | 1,324 | 1,144 | 585.1 | 485.4 | 1,099 |
| **1934** | 1,185 | 1,310 | 1,629 | 2,103 | 1,703 | 1,204 | 1,049 | 818.5 | 409.1 | 370.0 | 487.2 | 827.7 |
| **1935** | 1,237 | 1,542 | 1,714 | 5,056 | 6,108 | 6,676 | 2,579 | 1,613 | 1,261 | 1,122 | 1,018 | 795.2 |
| **1936** | 904.6 | 3,182 | 2,774 | 4,976 | 6,032 | 4,509 | 2,568 | 1,558 | 1,316 | 946.0 | 949.1 | 1,162 |
| **1937** | 1,155 | 4,391 | 3,201 | 4,577 | 8,366 | 7,003 | 2,667 | 1,451 | 1,217 | 1,061 | 892.1 | 3,206 |
| **1938** | 1,489 | 3,753 | 6,854 | 7,221 | 11,170 | 13,620 | 6,674 | 2,218 | 1,361 |  | 1,193 | 1,116 |
| **1939** | 1,115 | 1,242 | 1,709 | 2,917 | 2,245 | 1,582 | 1,366 | 1,223 | 854.9 | 814.2 | 647.8 | 502.9 |
| **1940** | 1,862 | 2,448 | 3,322 | 4,189 | 6,618 | 5,564 | 1,862 | 1,381 | 1,069 | 784.4 | 759.6 | 1,763 |
| **1941** | 1,970 | 3,563 | 3,456 | 3,846 | 9,107 | 9,438 | 5,164 | 1,793 | 1,298 | 967.9 | 816.6 | 1,819 |
| **1942** | 2,361 | 2,469 | 2,321 | 4,702 | 6,394 | 8,032 | 4,493 | 1,701 | 1,306 | 1,019 | 1,116 | 1,136 |
| **1943** | 2,706 | 2,573 | 4,538 | 5,083 | 6,211 | 4,652 | 2,484 | 1,585 | 1,166 | 961.2 | 823.0 | 700.2 |
| **1944** | 788.3 | 778.0 | 1,092 | 2,131 | 1,984 | 2,178 | 2,472 | 2,334 | 1,965 | 1,300 | 550.3 | 421.9 |
| **1945** | 953.7 | 2,762 | 2,277 | 4,264 | 5,166 | 4,628 | 3,678 | 2,807 | 1,995 | 1,663 | 1,442 | 1,455 |
| **1946** | 2,331 | 1,208 | 1,812 | 2,165 | 4,605 | 3,431 | 2,800 | 2,624 | 1,900 | 1,428 | 529.3 | 510.5 |
| **1947** | 793.7 | 857.8 | 1,499 | 2,480 | 2,113 | 2,282 | 2,585 | 2,386 | 1,630 | 998.8 | 409.6 | 296.5 |
| **1948** | 352.5 | 529.2 | 790.5 | 1,087 | 1,897 | 2,065 | 2,978 | 2,794 | 2,392 | 1,234 | 415.1 | 377.8 |
| **1949** | 204.6 | 688.9 | 897.8 | 2,471 | 2,019 | 2,928 | 2,736 | 2,099 | 1,612 | 1,024 | 381.9 | 439.2 |
| **1950** | 72.2 | 406.6 | 1,475 | 1,884 | 1,937 | 2,318 | 2,513 | 2,059 | 1,563 | 988.8 | 278.3 | 2,391 |
| **1951** | 2,477 | 2,951 | 1,417 | 2,000 | 1,713 | 2,169 | 2,026 | 1,451 | 352.1 | 590.5 | 417.1 | 174.9 |
| **1952** | 240.5 | 3,403 | 3,770 | 7,610 | 7,722 | 6,312 | 1,772 | 1,661 | 934.7 | 650.9 | 338.1 | 110.5 |
| **1953** | 143.5 | 632.4 | 910.5 | 844.8 | 404.6 | 397.2 | 213.5 | 339.4 | 863.0 | 741.7 | 302.6 | 235.6 |
| **1954** | 363.2 | 312.9 | 105.7 | 294.0 | 1,288 | 181.9 | 179.6 | 174.9 | 145.4 | 125.5 | 291.0 | 226.3 |
| **1955** | 72.8 | 56.9 | 62.9 | 119.8 | 117.0 | 164.8 | 186.1 | 193.9 | 157.6 | 110.5 | 75.1 | 1,562 |
| **1956** | 5,376 | 3,846 | 1,700 | 1,287 | 2,997 | 2,683 | 185.6 | 182.6 | 315.9 | 736.7 | 286.0 | 301.3 |
| **1957** | 132.9 | 58.1 | 58.9 | 122.6 | 112.2 | 188.6 | 178.0 | 156.2 | 127.4 | 92.0 | 75.8 | 82.9 |
| **1958** | 83.2 | 104.9 | 1,412 | 6,992 | 6,319 | 3,792 | 337.3 | 149.1 | 116.5 | 86.7 | 75.0 | 48.6 |
| **1959** | 49.7 | 56.7 | 62.7 | 125.6 | 124.9 | 163.1 | 193.4 | 193.2 | 134.5 | 111.7 | 103.5 | 55.0 |
| **1960** | 30.4 | 56.4 | 119.9 | 134.3 | 152.9 | 202.6 | 222.4 | 215.4 | 174.9 | 128.9 | 68.8 | 184.2 |
| **1961** | 147.8 | 61.6 | 114.5 | 151.1 | 160.8 | 164.2 | 180.9 | 164.9 | 117.8 | 93.3 | 79.2 | 61.8 |
| **1962** | 58.4 | 132.6 | 62.8 | 85.6 | 102.4 | 151.9 | 162.5 | 148.7 | 109.0 | 89.5 | 78.7 | 65.1 |
| **1963** | 59.7 | 49.8 | 72.5 | 55.4 | 83.5 | 439.5 | 145.8 | 142.3 | 91.7 | 74.6 | 58.6 | 50.7 |
| **1964** | 51.3 | 64.5 | 73.6 | 95.7 | 119.2 | 127.9 | 161.4 | 165.7 | 118.8 | 100.2 | 67.4 | 61.9 |
| **1965** | 48.3 | 47.3 | 60.7 | 54.6 | 93.9 | 119.6 | 155.4 | 141.5 | 94.3 | 68.3 | 53.8 | 47.6 |
| **1966** | 30.0 | 33.9 | 59.9 | 84.7 | 122.6 | 126.8 | 141.2 | 150.0 | 111.3 | 91.3 | 67.9 | 40.8 |
| **1967** | 157.9 | 1,070 | 51.5 | 4,029 | 8,128 | 5,961 | 1,233 | 128.4 | 112.3 | 68.9 | 51.4 | 35.5 |
| **1968** | 38.5 | 41.8 | 33.0 | 74.2 | 80.4 | 123.0 | 147.3 | 144.0 | 114.7 | 76.3 | 57.1 | 37.4 |
| **1969** | 1,283 | 7,100 | 7,705 | 4,402 | 7,594 | 7,724 | 844.8 | 99.6 | 67.2 | 47.2 | 40.2 | 48.0 |
| **1970** | 214.8 | 545.5 | 86.7 | 60.3 | 86.1 | 78.6 | 101.2 | 91.1 | 72.9 | 59.6 | 53.3 | 32.5 |
| **1971** | 37.0 | 47.4 | 44.0 | 43.2 | 43.9 | 108.3 | 117.8 | 116.5 | 98.3 | 72.3 | 37.3 | 35.7 |
| **1972** | 37.1 | 48.0 | 84.5 | 120.1 | 105.3 | 139.6 | 169.4 | 150.1 | 125.0 | 100.0 | 56.6 | 57.3 |
| **1973** | 45.8 | 1,065 | 370.5 | 1,997 | 147.1 | 619.3 | 141.1 | 130.9 | 99.0 | 78.4 | 50.2 | 36.1 |
| **1974** | 529.3 | 175.3 | 66.1 | 436.8 | 162.0 | 361.1 | 145.6 | 127.6 | 93.4 | 76.5 | 40.9 | 39.3 |
| **1975** | 38.6 | 47.5 | 49.6 | 59.7 | 107.2 | 118.4 | 124.4 | 108.5 | 79.1 | 87.6 | 69.1 | 52.4 |
| **1976** | 66.3 | 61.2 | 109.9 | 111.0 | 157.3 | 170.2 | 169.7 | 156.6 | 121.7 | 90.1 | 69.0 | 96.8 |
| **1977** | 67.9 | 91.9 | 107.3 | 151.0 | 114.7 | 176.9 | 193.6 | 194.9 | 150.5 | 124.7 | 109.2 | 83.9 |
| **1978** | 64.6 | 1,992 | 4,876 | 6,909 | 5,303 | 2,621 | 146.9 | 106.6 | 89.3 | 93.8 | 52.9 | 56.2 |
| **1979** | 289.6 | 314.7 | 146.5 | 124.1 | 209.6 | 143.8 | 131.6 | 114.7 | 105.4 | 99.4 | 85.1 | 67.6 |
| **1980** | 2,154 | 3,468 | 3,928 | 1,763 | 2,358 | 413.7 | 1,535 | 199.4 | 140.7 | 81.5 | 77.2 | 39.4 |
| **1981** | 55.1 | 51.6 | 47.4 | 94.7 | 114.5 | 145.6 | 179.4 | 141.5 | 120.4 | 94.6 | 84.3 | 57.5 |
| **1982** | 87.2 | 59.9 | 234.7 | 6,981 | 3,836 | 1,584 | 422.0 | 128.6 | 68.4 | 69.8 | 1,623 | 3,798 |
| **1983** | 3,684 | 5,182 | 7,193 | 7,701 | 6,064 | 8,811 | 5,141 | 1,384 | 2,133 | 1,249 | 1,276 | 2,239 |
| **1984** | 3,901 | 458.4 | 97.9 | 243.4 | 123.9 | 143.2 | 136.5 | 121.6 | 105.5 | 78.6 | 56.5 | 36.1 |
| **1985** | 35.3 | 39.3 | 44.6 | 103.7 | 121.3 | 140.1 | 149.6 | 134.0 | 120.2 | 102.5 | 80.2 | 59.5 |
| **1986** | 61.3 | 3,670 | 6,548 | 4,655 | 259.3 | 530.2 | 170.8 | 123.6 | 114.1 | 60.6 | 68.7 | 36.4 |
| **1987** | 32.3 | 47.0 | 35.8 | 130.4 | 127.1 | 136.3 | 158.6 | 145.2 | 128.9 | 113.7 | 69.1 | 62.2 |
| **1988** | 48.1 | 60.9 | 111.1 | 100.3 | 122.9 | 151.5 | 174.1 | 163.3 | 137.5 | 124.8 | 97.6 | 57.4 |
| **1989** | 32.1 | 78.0 | 91.9 | 110.5 | 126.1 | 154.6 | 187.1 | 191.0 | 140.8 | 118.9 | 103.5 | 97.7 |
| **1990** | 45.9 | 82.8 | 113.0 | 148.0 | 162.7 | 173.5 | 207.6 | 212.3 | 175.9 | 151.8 | 125.9 | 105.6 |
| **1991** | 96.7 | 128.4 | 90.7 | 117.3 | 160.5 | 183.6 | 210.7 | 197.7 | 160.7 | 153.4 | 117.4 | 102.6 |
| **1992** | 83.3 | 91.2 | 108.6 | 141.9 | 181.1 | 262.5 | 271.1 | 277.5 | 237.2 | 197.3 | 116.6 | 95.3 |
| **1993** | 111.5 | 85.7 | 455.6 | 1,159 | 863.6 | 1,067 | 683.1 | 263.5 | 236.2 | 156.7 | 119.7 | 91.7 |
| **1994** | 103.8 | 109.3 | 144.6 | 156.5 | 157.9 | 206.0 | 251.6 | 253.2 | 232.8 | 159.2 | 124.2 | 102.7 |
| **1995** | 91.9 | 448.5 | 4,203 | 6,074 | 7,637 | 2,651 | 5,322 | 464.3 | 181.0 | 157.0 | 131.7 | 82.3 |
| **1996** | 72.9 | 649.3 | 1,648 | 1,188 | 1,625 | 348.0 | 231.9 | 219.8 | 184.0 | 158.2 | 100.3 | 1,147 |
| **1997** | 9,144 | 6,514 | 1,286 | 207.8 | 262.6 | 284.7 | 275.0 | 315.9 | 271.8 | 226.7 | 178.9 | 153.5 |
| **1998** | 116.9 | 3,334 | 2,361 | 4,648 | 4,101 | 6,535 | 4,361 | 380.3 | 383.0 | 357.2 | 378.3 | 537.1 |
| **1999** | 242.0 | 487.5 | 85.7 | 96.6 | 146.7 | 333.6 | 560.4 | 277.7 | 207.0 | 132.5 | 87.5 | 84.0 |
| **2000** | 95.8 | 122.8 | 933.9 | 137.8 | 131.4 | 469.1 | 222.2 | 246.1 | 246.9 | 197.9 | 171.0 | 170.7 |
| **2001** | 143.7 | 99.7 | 92.4 | 118.9 | 149.7 | 266.5 | 215.5 | 244.4 | 316.7 | 188.4 | 119.7 | 111.0 |
| **2002** | 94.8 | 94.7 | 131.5 | 169.6 | 185.8 | 189.4 | 223.4 | 190.9 | 185.9 | 161.8 | 136.0 | 116.1 |
| **2003** | 106.3 | 102.2 | 106.5 | 141.8 | 166.4 | 323.6 | 238.7 | 203.0 | 209.7 | 177.5 | 120.3 | 105.2 |
| **2004** | 96.9 | 98.0 | 140.9 | 183.1 | 193.2 | 218.1 | 200.5 | 202.4 | 188.6 | 164.0 | 132.7 | 112.8 |
| **2005** | 116.3 | 136.9 | 286.9 | 1,536 | 5,052 | 3,143 | 622.5 | 240.2 | 241.8 | 177.4 | 147.1 | 103.7 |
| **2006** | 414.6 | 94.9 | 559.5 | 7,367 | 6,659 | 5,809 | 775.7 | 319.4 | 304.7 | 296.1 | 174.4 | 123.0 |
| **2007** | 123.2 | 74.7 | 136.8 | 205.9 | 254.6 | 281.4 | 284.7 | 276.6 | 269.3 | 158.6 | 147.2 | 102.2 |
| **2008** | 91.7 | 110.8 | 217.2 | 263.6 | 273.5 | 285.5 | 282.4 | 232.0 | 172.2 | 144.7 | 119.2 | 96.3 |
| **2009** | 95.6 | 77.8 | 122.8 | 145.4 | 179.3 | 190.8 | 203.5 | 198.1 | 172.3 | 368.9 | 395.4 | 97.8 |
| **2010** | 126.1 | 407.1 | 733.6 | 1,330 | 1,551 | 495.1 | 345.4 | 323.3 | 333.3 | 340.8 | 416.3 | 617.0 |
| **2011** | 2,674 | 233.6 | 2,357 | 6,698 | 3,209 | 3,912 | 2,194 | 318.0 | 326.2 | 447.7 | 143.1 | 100.2 |
| **2012** | 192.4 | 349.9 | 355.1 | 460.3 | 921.6 | 330.4 | 333.5 | 339.3 | 258.1 | 403.7 | 512.6 | 357.5 |
| **2013** | 355.8 | 375.9 | 433.3 | 879.7 | 390.5 | 374.4 | 344.5 | 323.1 | 327.8 | 402.5 | 427.1 | 394.1 |
| **2014** | 408.6 | 133.2 | 132.3 | 171.7 | 694.4 | 1,291 | 1,308 | 1,310 | 1,089 | 169.4 | 157.8 | 144.2 |
| **2015** | 147.2 | 136.1 | 165.9 | 195.4 | 227.4 | 273.4 | 877.2 | 1,169 | 194.5 | 205.4 | 168.2 | 166.8 |
| **2016** | 147.1 | 184.5 | 239.6 | 311.6 | 334.3 | 338.6 | 728.6 | 585.3 | 424.8 | 387.2 |  |  |
| **Mean of monthly Discharge** | 849 | 1,140 | 1,410 | 2,300 | 3,010 | 2,940 | 1,500 | 737 | 535 | 420 | 361 | 512 |