

## PUYALLUP RIVER BASIN

## 12092000 PUYALLUP RIVER NEAR ELECTRON, WA

LOCATION.--Lat 46°54'14", long 122°02'02", in SE 1/4 NW 1/4 sec.3, T.16 N., R.6 E., Pierce County, Hydrologic Unit 17110014, on right bank 1,000 ft upstream from Puget Sound Energy's flume headworks, 0.3 mi downstream from Mowich River, 9.8 mi southeast of Electron, and at mile 42.0.

DRAINAGE AREA.--92.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1908 to December 1933, October 1944 to September 1949, October 1957 to current year.

REVISED RECORDS.--WSP 1092: 1946(M). WSP 1346: 1913, 1916-17(M), 1918-23, drainage area. WSP 1566: 1945(M), 1947(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,632.7 ft above NGVD of 1929. Prior to Jan. 1, 1913, nonrecording gage, and Jan. 1, 1913, to Sept. 30, 1926, Oct. 1, 1944, to Sept. 30, 1949, and Oct. 1, 1957, to Nov. 22, 1959 (gage destroyed by flood), water-stage recorder, at sites near present gage at different datums. Aug. 19, 1960, to Dec. 23, 1980, at site 160 ft downstream at different datum. Dec. 24, 1980, to Dec. 24, 1987, at site 60 ft downstream at different datum. Dec. 24, 1987, to Feb. 8, 1996 (gage destroyed by flood), at site on left bank near present gage at same datum. Feb. 8 to June 5, 1996, no gage at site.

REMARKS.--No estimated daily discharges. Records fair except for flows above 3,000 ft<sup>3</sup>/s, which are poor. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemetry at station.

AVERAGE DISCHARGE.--75 years (water years 1909-33, 1945-49, 1958-2002), 528 ft<sup>3</sup>/s, 77.27 in/yr, 382,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft<sup>3</sup>/s Feb. 8, 1996, gage height, 10.94 ft, from floodmarks, result of slope-area measurement; minimum daily discharge, 75 ft<sup>3</sup>/s Oct. 19, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft<sup>3</sup>/s and maximum (\*):

| Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) | Date    | Time | Discharge (ft <sup>3</sup> /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|---------|------|--------------------------------|------------------|
| Nov. 14 | 1145 | 3,030                          | 5.96             | Jan. 07 | 2145 | *4,460                         | *6.89            |
| Dec. 13 | 2245 | 2,670                          | 5.67             | Apr. 14 | 0330 | 3,340                          | 6.19             |
| Dec. 17 | 0000 | 3,210                          | 6.10             | Jun. 29 | 0645 | 2,510                          | 5.50             |

Minimum discharge, 143 ft<sup>3</sup>/s Oct. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002  
DAILY MEAN VALUES

| DAY   | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 298   | 678   | 746   | 426   | 257   | 338   | 345   | 509   | 862   | 774   | 544   | 589   |
| 2     | 292   | 697   | 651   | 916   | 239   | 308   | 348   | 577   | 826   | 679   | 495   | 671   |
| 3     | 307   | 549   | 517   | 690   | 252   | 290   | 355   | 520   | 807   | 630   | 439   | 567   |
| 4     | 355   | 455   | 448   | 524   | 233   | 279   | 394   | 455   | 847   | 570   | 418   | 362   |
| 5     | 292   | 486   | 399   | 454   | 240   | 277   | 472   | 430   | 1130  | 532   | 352   | 286   |
| 6     | 279   | 376   | 460   | 795   | 269   | 266   | 528   | 392   | 1020  | 591   | 322   | 244   |
| 7     | 195   | 320   | 399   | 3070  | 309   | 243   | 576   | 352   | 786   | 784   | 297   | 220   |
| 8     | 245   | 281   | 405   | 2780  | 288   | 231   | 514   | 329   | 646   | 940   | 323   | 195   |
| 9     | 169   | 252   | 384   | 1450  | 255   | 224   | 553   | 308   | 555   | 827   | 448   | 253   |
| 10    | 370   | 235   | 359   | 954   | 267   | 238   | 721   | 285   | 595   | 963   | 598   | 367   |
| 11    | 427   | 228   | 330   | 775   | 265   | 624   | 751   | 281   | 709   | 1090  | 554   | 447   |
| 12    | 561   | 342   | 317   | 794   | 243   | 638   | 845   | 349   | 877   | 1030  | 592   | 464   |
| 13    | 600   | 527   | 1290  | 676   | 232   | 469   | 1220  | 503   | 1040  | 1200  | 737   | 412   |
| 14    | 1090  | 2390  | 1520  | 587   | 220   | 415   | 2400  | 527   | 1180  | 998   | 772   | 475   |
| 15    | 604   | 1780  | 884   | 510   | 217   | 371   | 1290  | 494   | 1150  | 772   | 689   | 448   |
| 16    | 423   | 1150  | 1690  | 460   | 222   | 332   | 891   | 466   | 1020  | 756   | 607   | 442   |
| 17    | 309   | 784   | 1940  | 417   | 225   | 295   | 679   | 509   | 841   | 762   | 562   | 332   |
| 18    | 239   | 599   | 1100  | 393   | 242   | 269   | 560   | 536   | 808   | 737   | 484   | 293   |
| 19    | 333   | 1040  | 794   | 394   | 324   | 340   | 495   | 548   | 693   | 717   | 460   | 414   |
| 20    | 277   | 1060  | 635   | 415   | 297   | 428   | 458   | 673   | 645   | 632   | 445   | 378   |
| 21    | 312   | 885   | 523   | 379   | 600   | 380   | 428   | 779   | 786   | 655   | 435   | 290   |
| 22    | 521   | 1160  | 448   | 334   | 856   | 382   | 415   | 783   | 903   | 791   | 499   | 308   |
| 23    | 626   | 1200  | 388   | 316   | 873   | 392   | 379   | 714   | 881   | 861   | 535   | 342   |
| 24    | 422   | 808   | 339   | 429   | 794   | 439   | 353   | 642   | 789   | 872   | 535   | 344   |
| 25    | 505   | 642   | 303   | 575   | 602   | 484   | 350   | 676   | 856   | 848   | 514   | 328   |
| 26    | 498   | 528   | 275   | 427   | 496   | 452   | 355   | 797   | 1050  | 852   | 565   | 276   |
| 27    | 472   | 453   | 272   | 358   | 425   | 416   | 381   | 993   | 1090  | 736   | 597   | 219   |
| 28    | 373   | 620   | 359   | 311   | 383   | 402   | 344   | 1280  | 1250  | 780   | 671   | 210   |
| 29    | 308   | 731   | 305   | 285   | ---   | 376   | 349   | 1490  | 1880  | 1000  | 692   | 241   |
| 30    | 494   | 604   | 277   | 279   | ---   | 352   | 414   | 1170  | 1080  | 952   | 542   | 163   |
| 31    | 849   | ---   | 345   | 278   | ---   | 340   | ---   | 969   | ---   | 634   | 485   | ---   |
| TOTAL | 13045 | 21860 | 19102 | 21451 | 10125 | 11290 | 18163 | 19336 | 27602 | 24965 | 16208 | 10580 |
| MEAN  | 421   | 729   | 616   | 692   | 362   | 364   | 605   | 624   | 920   | 805   | 523   | 353   |
| MAX   | 1090  | 2390  | 1940  | 3070  | 873   | 638   | 2400  | 1490  | 1880  | 1200  | 772   | 671   |
| MIN   | 169   | 228   | 272   | 278   | 217   | 224   | 344   | 281   | 555   | 532   | 297   | 163   |
| AC-FT | 25870 | 43360 | 37890 | 42550 | 20080 | 22390 | 36030 | 38350 | 54750 | 49520 | 32150 | 20990 |
| CFSM  | 4.53  | 7.85  | 6.64  | 7.46  | 3.90  | 3.92  | 6.52  | 6.72  | 9.91  | 8.68  | 5.63  | 3.80  |
| IN.   | 5.23  | 8.76  | 7.66  | 8.60  | 4.06  | 4.53  | 7.28  | 7.75  | 11.06 | 10.01 | 6.50  | 4.24  |

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2002, BY WATER YEAR (WY)

|      | 1909 | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 | 1951 | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 395  | 568  | 594  | 534  | 448  | 368  | 429  | 620  | 764  | 674  | 542  | 404  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| MAX  | 1015 | 1468 | 2217 | 1071 | 1053 | 944  | 657  | 1019 | 1248 | 1256 | 746  | 727  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| (WY) | 1960 | 1933 | 1934 | 1918 | 1996 | 1972 | 1988 | 1929 | 1974 | 1917 | 1917 | 1927 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| MIN  | 185  | 134  | 174  | 193  | 154  | 146  | 200  | 380  | 406  | 407  | 338  | 257  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| (WY) | 1981 | 1930 | 1915 | 1979 | 1922 | 1922 | 1975 | 1909 | 1996 | 1996 | 1996 | 1996 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

## SUMMARY STATISTICS

|                          | FOR 2001 CALENDAR YEAR | FOR 2002 WATER YEAR | WATER YEARS 1909 - 2002 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 186696                 | 213727              |                         |
| ANNUAL MEAN              | 511                    | 586                 | 528                     |
| HIGHEST ANNUAL MEAN      |                        |                     | 664                     |
| LOWEST ANNUAL MEAN       |                        |                     | 378                     |
| HIGHEST DAILY MEAN       | 2390                   | 3070                | 10000                   |
| LOWEST DAILY MEAN        | 139                    | 163                 | 75                      |
| ANNUAL SEVEN-DAY MINIMUM | 150                    | 229                 | 104                     |
| ANNUAL RUNOFF (AC-FT)    | 370300                 | 423900              | 382300                  |
| ANNUAL RUNOFF (CFSM)     | 5.51                   | 6.31                | 5.69                    |
| ANNUAL RUNOFF (INCHES)   | 74.84                  | 85.68               | 77.27                   |
| 10 PERCENT EXCEEDS       | 845                    | 1010                | 896                     |
| 50 PERCENT EXCEEDS       | 476                    | 486                 | 440                     |
| 90 PERCENT EXCEEDS       | 198                    | 269                 | 222                     |