

KETTLE RIVER BASIN

12404500 KETTLE RIVER NEAR LAURIER, WA
(International gaging station)

LOCATION.--Lat 48°59'04", long 118°12'55", in SW¹/₄NW¹/₄ sec.11, T.40 N., R.36 E., Ferry County, Hydrologic Unit 17020002, on right bank 1,000 ft downstream from Deep Creek, 1.1 mi south of international boundary, 1.1 mi southeast of Laurier, and at mile 29.71.

DRAINAGE AREA.--3,800 mi², approximately.

PERIOD OF RECORD.--September 1929 to current year.

REVISED RECORDS.--WSP 737: 1930-31. WSP 862: 1937. WSP 882: 1938.

GAGE.--Water-stage recorder. Datum of gage is 1,425.5 above NGVD of 1929. Prior to Jan. 3, 1930, nonrecording gage at same site and datum.

REMARKS.--Records excellent, except for estimated daily discharges, which are good. Diversions for irrigation of about 720 acres in the United States (for 1946 from United States reports), and 2,090 acres in Canada from the Canada Year Book for 1940. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--This station is maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--76 years (water years 1930-2005), 2,924 ft³/s, 2,119,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s, May 29, 1948, gage height, 17.25 ft; minimum daily discharge, 70 ft³/s, Jan. 11-31, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May or June 1894 reached a stage of about 22 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 18,100 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Apr 27 | 2330 | 18,200 | 11.97 | May 17 | 0300 | *22,500 | *13.45 |

Minimum discharge, 238 ft³/s, Sept. 30, gage height, 2.66 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|--------|--------|
| 1 | 1,380 | 1,040 | 1,530 | 1,450 | 2,720 | 1,600 | 3,050 | 10,300 | 9,790 | 4,960 | 933 | 306 |
| 2 | 1,300 | 1,050 | 1,540 | 1,270 | 2,710 | 1,610 | 3,080 | 9,630 | 8,770 | 4,530 | 878 | 306 |
| 3 | 1,240 | 1,060 | 1,500 | e900 | 2,640 | 1,580 | 3,110 | 9,450 | 8,290 | 4,190 | 834 | 306 |
| 4 | 1,170 | 1,070 | 1,500 | e720 | 2,620 | 1,570 | 3,180 | 9,760 | 7,900 | 3,970 | 808 | 297 |
| 5 | 1,120 | 1,030 | 1,530 | e500 | 2,610 | 1,580 | 3,240 | 11,000 | 7,300 | 3,690 | 769 | 286 |
| 6 | 1,060 | 1,010 | 1,510 | e620 | 2,490 | 1,620 | 3,220 | 12,500 | 6,940 | 3,400 | 725 | 277 |
| 7 | 1,010 | 1,110 | 1,440 | e750 | 2,360 | 1,700 | 3,300 | 13,700 | 6,650 | 3,190 | 685 | 273 |
| 8 | 964 | 1,320 | 1,390 | e900 | 2,190 | 1,870 | 3,900 | 13,800 | 6,660 | 3,120 | 649 | 266 |
| 9 | 958 | 1,520 | 1,420 | e1,100 | 2,030 | 2,130 | 4,920 | 13,800 | 7,870 | 2,960 | 615 | 262 |
| 10 | 1,030 | 1,580 | 1,450 | e1,200 | 2,070 | 2,400 | 5,010 | 13,700 | 7,230 | 3,000 | 583 | 254 |
| 11 | 1,190 | 1,570 | 1,420 | e1,150 | 2,050 | 2,740 | 5,000 | 13,300 | 6,750 | 3,060 | 553 | 258 |
| 12 | 1,200 | 1,550 | e1,350 | e1,170 | 2,030 | 3,120 | 5,310 | 12,800 | 7,140 | 2,790 | 527 | 263 |
| 13 | 1,120 | 1,530 | e1,000 | e1,200 | 2,140 | 3,480 | 5,230 | 13,000 | 7,000 | 2,620 | 502 | 274 |
| 14 | 1,050 | 1,490 | 1,310 | e1,160 | 2,040 | 3,610 | 5,050 | 14,300 | 6,350 | 2,420 | 483 | 286 |
| 15 | 1,000 | 1,500 | 1,590 | e540 | 1,870 | 3,580 | 4,880 | 15,400 | 6,040 | 2,270 | 469 | 302 |
| 16 | 973 | 1,470 | 1,730 | e650 | 1,760 | 3,600 | 4,790 | 18,900 | 5,620 | 2,170 | 453 | 316 |
| 17 | 985 | 1,430 | 1,690 | e880 | 1,630 | 3,570 | 5,330 | 21,400 | 5,320 | 2,080 | 438 | 310 |
| 18 | 1,120 | 1,400 | 1,630 | e1,220 | 1,570 | 3,420 | 5,670 | 17,100 | 7,110 | 2,010 | 429 | 298 |
| 19 | 1,260 | 1,370 | 1,580 | e1,270 | 1,600 | 3,300 | 5,570 | 14,800 | 8,620 | 1,890 | 419 | 284 |
| 20 | 1,320 | 1,370 | 1,560 | e1,410 | 1,630 | 3,230 | 5,660 | 14,500 | 8,140 | 1,760 | 406 | 276 |
| 21 | 1,290 | 1,290 | 1,540 | e1,700 | 1,640 | 3,210 | 6,150 | 12,700 | 7,100 | 1,640 | 394 | 265 |
| 22 | 1,270 | 1,280 | e1,250 | 1,980 | 1,660 | 3,330 | 7,450 | 11,500 | 6,540 | 1,570 | 379 | 259 |
| 23 | 1,270 | 1,300 | e1,100 | 2,180 | 1,590 | 3,190 | 9,790 | 10,300 | 6,210 | 1,590 | 364 | 255 |
| 24 | 1,250 | 1,340 | e970 | 2,320 | 1,610 | 3,100 | 12,100 | 9,410 | 5,650 | 1,560 | 351 | 251 |
| 25 | 1,200 | 1,360 | 1,120 | 2,380 | 1,610 | 3,010 | 13,900 | 8,620 | 5,310 | 1,480 | 341 | 246 |
| 26 | 1,160 | 1,560 | 1,240 | 2,480 | 1,600 | 2,930 | 15,300 | 8,300 | 5,530 | 1,360 | 335 | 249 |
| 27 | 1,120 | 1,790 | 1,390 | 2,580 | 1,600 | 2,920 | 17,100 | 8,420 | 5,060 | 1,280 | 329 | 248 |
| 28 | 1,090 | 1,740 | 1,420 | 2,620 | 1,590 | 3,000 | 16,900 | 8,920 | 5,290 | 1,200 | 321 | 243 |
| 29 | 1,050 | 1,640 | e1,280 | 2,820 | --- | 3,170 | 14,000 | 9,810 | 5,900 | 1,130 | 314 | 242 |
| 30 | 1,040 | 1,570 | e1,170 | 2,830 | --- | 3,160 | 11,800 | 10,300 | 5,570 | 1,060 | 310 | 241 |
| 31 | 1,050 | --- | 1,370 | 2,820 | --- | 3,090 | --- | 10,200 | --- | 997 | 307 | --- |
| TOTAL | 35,240 | 41,340 | 43,520 | 46,770 | 55,660 | 85,420 | 212,990 | 381,620 | 203,650 | 74,947 | 15,903 | 8,199 |
| MEAN | 1,137 | 1,378 | 1,404 | 1,509 | 1,988 | 2,755 | 7,100 | 12,310 | 6,788 | 2,418 | 513 | 273 |
| MAX | 1,380 | 1,790 | 1,730 | 2,830 | 2,720 | 3,610 | 17,100 | 21,400 | 9,790 | 4,960 | 933 | 316 |
| MIN | 958 | 1,010 | 970 | 500 | 1,570 | 1,570 | 3,050 | 8,300 | 5,060 | 997 | 307 | 241 |
| AC-FT | 69,900 | 82,000 | 86,320 | 92,770 | 110,400 | 169,400 | 422,500 | 756,900 | 403,900 | 148,700 | 31,540 | 16,260 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2005, BY WATER YEAR (WY)

| | | | | | | | | | | | | |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| MEAN | 673 | 753 | 612 | 526 | 576 | 1,101 | 5,250 | 12,110 | 9,190 | 2,782 | 819 | 624 |
| MAX | 3,815 | 2,600 | 2,652 | 1,509 | 1,988 | 4,247 | 12,170 | 18,620 | 17,650 | 6,928 | 3,140 | 3,773 |
| (WY) | (1942) | (1942) | (1942) | (2005) | (2005) | (1983) | (1934) | (1997) | (1974) | (1982) | (1976) | (1941) |
| MIN | 176 | 202 | 154 | 76.5 | 97.9 | 212 | 1,478 | 4,246 | 2,888 | 759 | 216 | 145 |
| (WY) | (1988) | (1930) | (1930) | (1930) | (1930) | (1930) | (1937) | (1930) | (1987) | (1934) | (2003) | (2003) |

12404500 KETTLE RIVER NEAR LAURIER, WA—Continued

| SUMMARY STATISTICS | FOR 2004 CALENDAR YEAR | | FOR 2005 WATER YEAR | | WATER YEARS 1929 - 2005 | |
|--------------------------|------------------------|-------|---------------------|--------|-------------------------|--------------|
| ANNUAL TOTAL | 1,050,667 | | 1,205,259 | | | |
| ANNUAL MEAN | 2,871 | | 3,302 | | 2,924 | |
| HIGHEST ANNUAL MEAN | | | | | 4,725 | |
| LOWEST ANNUAL MEAN | | | | | 1,251 | |
| HIGHEST DAILY MEAN | 13,200 | May 5 | 21,400 | May 17 | 34,200 | May 29, 1948 |
| LOWEST DAILY MEAN | 130 | Jan 5 | 241 | Sep 30 | 70 | Jan 11, 1930 |
| ANNUAL SEVEN-DAY MINIMUM | 147 | Jan 1 | 246 | Sep 24 | 70 | Jan 11, 1930 |
| ANNUAL RUNOFF (AC-FT) | 2,084,000 | | 2,391,000 | | 2,119,000 | |
| 10 PERCENT EXCEEDS | 9,220 | | 9,120 | | 9,600 | |
| 50 PERCENT EXCEEDS | 1,270 | | 1,590 | | 803 | |
| 90 PERCENT EXCEEDS | 310 | | 339 | | 290 | |

e Estimated