

RED RIVER OF THE NORTH BASIN--Continued

05075000 RED LAKE RIVER AT HIGH LANDING, NEAR GOODRIDGE, MN

LOCATION.--Lat 48°02'34", long 95°48'28", in NW¹/₄NW¹/₄ sec. 28, T.153 N., R.40 W., Pennington County, Hydrologic Unit 09020303, on left bank 50 ft upstream from County Highway 24 bridge at High Landing, 7 mi south of Goodridge and 33 mi upstream from Thief River.

DRAINAGE AREA.--2,300 mi² (approximately).

PERIOD OF RECORD.--September 1929 to current year. Prior to October 1930, published as "at Kratka".

GAGE.--Water-stage recorder. Datum of gage is 1,141.57 ft above sea level, adjustment of 1912 (levels by U.S. Army Corps of Engineers). See WSP 1308 or 1738 for history of changes prior to Oct. 1, 1949.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by outlet dam on Lower Red Lake.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 1090 | 1320 | e1680 | e920 | e990 | e1030 | 1530 | 1440 | 830 | 934 | 669 | 451 |
| 2 | 1030 | 1300 | e1640 | e920 | e990 | e1000 | 1530 | 1420 | 810 | 919 | 658 | 471 |
| 3 | 1050 | 1320 | e1500 | e920 | e990 | 996 | 1540 | 1420 | 791 | 905 | 654 | 499 |
| 4 | 1080 | 1360 | e1350 | e910 | e990 | 997 | 1550 | 1400 | 783 | 877 | 645 | 511 |
| 5 | 1100 | 1400 | e1200 | e910 | e990 | 998 | 1550 | 1350 | 780 | 877 | 631 | 513 |
| 6 | 1140 | 1420 | e1100 | e910 | e990 | 1010 | 1540 | 1150 | 767 | 879 | 660 | 534 |
| 7 | 1190 | 1450 | e1100 | e910 | e990 | 1020 | 1540 | 1020 | 766 | 1260 | 672 | 559 |
| 8 | 1230 | 1460 | e1150 | e910 | e990 | 1040 | 1550 | 993 | 763 | 2170 | 656 | 544 |
| 9 | 1240 | 1470 | e1170 | e910 | e990 | 1020 | 1530 | 978 | 776 | 1940 | 638 | 525 |
| 10 | 1250 | 1480 | e1160 | e920 | e990 | 1000 | 1520 | 963 | 692 | 1460 | 622 | 513 |
| 11 | 1260 | 1530 | e1150 | e920 | e990 | 1120 | 1520 | 962 | 533 | 1070 | 613 | 490 |
| 12 | 1270 | 1580 | e1130 | e930 | e990 | 1250 | 1500 | 995 | 496 | 874 | 628 | 474 |
| 13 | 1270 | 1620 | e1120 | e930 | e990 | 1270 | 1500 | 954 | 486 | 769 | 660 | 461 |
| 14 | 1280 | 1640 | e1110 | e940 | e990 | 1330 | 1500 | 927 | 514 | 712 | 657 | 451 |
| 15 | 1280 | 1650 | e1100 | e940 | e990 | 1450 | 1510 | 930 | 555 | 763 | 658 | 447 |
| 16 | 1280 | 1660 | e980 | e940 | e990 | 1480 | 1530 | 937 | 556 | 862 | 629 | 446 |
| 17 | 1280 | 1700 | e1020 | e950 | e990 | 1500 | 1530 | 937 | 544 | 936 | 608 | 441 |
| 18 | 1290 | 1740 | e1030 | e950 | e990 | 1500 | 1510 | 945 | 544 | 934 | 588 | 439 |
| 19 | 1290 | 1770 | e1030 | e950 | e990 | 1500 | 1500 | 951 | 539 | 921 | 569 | 437 |
| 20 | 1290 | 1780 | e1020 | e960 | e990 | 1500 | 1510 | 917 | 1040 | 898 | 565 | 439 |
| 21 | 1280 | 1790 | e1020 | e960 | e990 | 1500 | 1510 | 919 | 1250 | 867 | 574 | 484 |
| 22 | 1260 | 1790 | e1010 | e970 | e990 | 1500 | 1490 | 923 | 1200 | 840 | 575 | 563 |
| 23 | 1260 | 1800 | e1000 | e970 | e990 | 1510 | 1490 | 911 | 998 | 817 | 550 | 705 |
| 24 | 1250 | 1800 | e990 | e970 | e1030 | 1540 | 1490 | 896 | 828 | 796 | 528 | 775 |
| 25 | 1240 | 1800 | e980 | e980 | e1100 | 1580 | 1480 | 898 | 723 | 778 | 508 | 785 |
| 26 | 1220 | 1790 | e970 | e980 | e1160 | 1600 | 1470 | 914 | 666 | 764 | 492 | 771 |
| 27 | 1230 | 1770 | e960 | e980 | e1230 | 1590 | 1460 | 924 | 712 | 744 | 480 | 762 |
| 28 | 1260 | 1750 | e950 | e980 | e1200 | 1570 | 1450 | 927 | 852 | 726 | 474 | 757 |
| 29 | 1290 | e1710 | e940 | e980 | e1080 | 1560 | 1460 | 918 | 916 | 711 | 472 | 742 |
| 30 | 1310 | e1700 | e930 | e980 | --- | 1550 | 1450 | 922 | 942 | 697 | 461 | 723 |
| 31 | 1320 | --- | e920 | e980 | --- | 1540 | --- | 880 | --- | 681 | 451 | --- |
| TOTAL | 38110 | 48350 | 34410 | 29280 | 29570 | 41051 | 45240 | 31621 | 22652 | 29381 | 18245 | 16712 |
| MEAN | 1229 | 1612 | 1110 | 945 | 1020 | 1324 | 1508 | 1020 | 755 | 948 | 589 | 557 |
| MAX | 1320 | 1800 | 1680 | 980 | 1230 | 1600 | 1550 | 1440 | 1250 | 2170 | 672 | 785 |
| MIN | 1030 | 1300 | 920 | 910 | 990 | 996 | 1450 | 880 | 486 | 681 | 451 | 437 |
| AC--FT | 75590 | 95900 | 68250 | 58080 | 58650 | 81420 | 89730 | 62720 | 44930 | 58280 | 36190 | 33150 |
| CFSM | .53 | .70 | .48 | .41 | .44 | .58 | .66 | .44 | .33 | .41 | .26 | .24 |
| IN. | .62 | .78 | .56 | .47 | .48 | .66 | .73 | .51 | .37 | .48 | .30 | .27 |

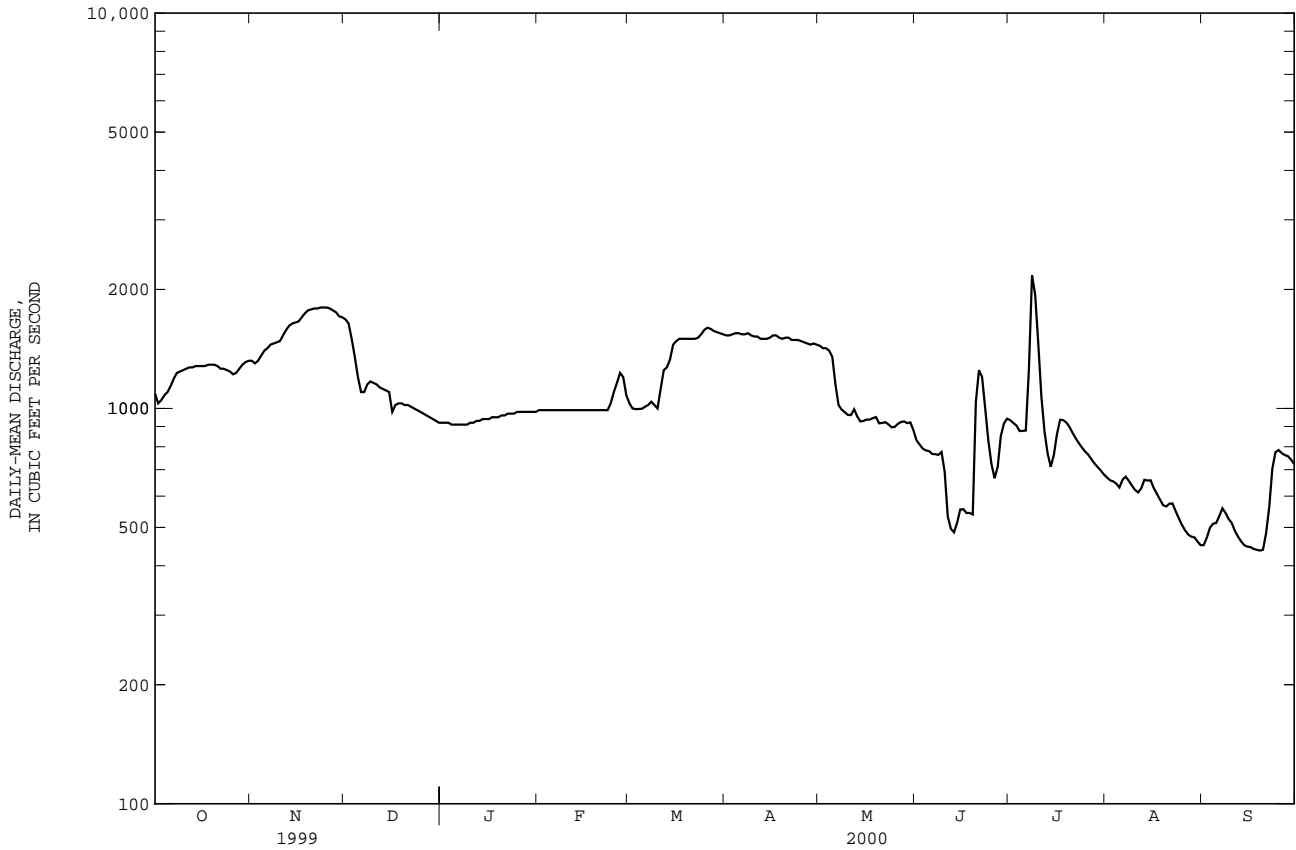
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2000, BY WATER YEAR (WY)

| | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 559 | 536 | 490 | 483 | 483 | 528 | 710 | 697 | 686 | 606 | 533 | 548 |
| MAX | 1955 | 1730 | 1539 | 1424 | 1366 | 1453 | 1980 | 3179 | 2161 | 2474 | 1478 | 1733 |
| (WY) | 1951 | 1951 | 1951 | 1951 | 1951 | 1951 | 1951 | 1950 | 1950 | 1975 | 1975 | 1950 |
| MIN | 2.11 | 1.61 | .000 | .000 | .000 | .000 | 24.7 | 5.58 | 1.04 | 5.92 | .026 | .000 |
| (WY) | 1934 | 1934 | 1934 | 1934 | 1934 | 1936 | 1933 | 1933 | 1936 | 1934 | 1934 | 1934 |

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| SUMMARY STATISTICS | FOR 1999 CALENDAR YEAR | | FOR 2000 WATER YEAR | | WATER YEARS 1930 - 2000 | |
|--------------------------|------------------------|--------|---------------------|--------|-------------------------|-------------|
| ANNUAL TOTAL | 419926 | | 384622 | | 572 | |
| ANNUAL MEAN | 1150 | | 1051 | | 1407 | |
| HIGHEST ANNUAL MEAN | | | | | 1951 | |
| LOWEST ANNUAL MEAN | | | | | 1934 | |
| HIGHEST DAILY MEAN | 2360 | Sep 5 | 2170 | Jul 8 | 4040 | Jul 7 1975 |
| LOWEST DAILY MEAN | 580 | Mar 27 | 437 | Sep 19 | .00 ^a | Oct 11 1931 |
| ANNUAL SEVEN-DAY MINIMUM | 654 | Mar 21 | 443 | Sep 14 | .00 | Nov 16 1933 |
| INSTANTANEOUS PEAK FLOW | | | 2210 | Jul 8 | 4060 ^b | Jul 7 1975 |
| INSTANTANEOUS PEAK STAGE | | | 10.66 | Jul 8 | 13.44 | Jul 3 1975 |
| ANNUAL RUNOFF (AC-FT) | 832900 | | 762900 | | 414200 | |
| ANNUAL RUNOFF (CFSM) | .50 | | .46 | | .25 | |
| ANNUAL RUNOFF (INCHES) | 6.79 | | 6.22 | | 3.38 | |
| 10 PERCENT EXCEEDS | 1630 | | 1540 | | 1200 | |
| 50 PERCENT EXCEEDS | 1160 | | 990 | | 500 | |
| 90 PERCENT EXCEEDS | 680 | | 554 | | 37 | |

^a Many days, several years.
^b Gage-height, 13.39 ft.
^e Estimated.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1979, 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

| DATE | TIME | DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061) | SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095) | PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400) | TEMPER- ATURE WATER (DEG C) (00010) | TUR- BID- ITY (NTU) (00076) | OXYGEN, DIS- SOLVED (MG/L) (00300) |
|--------------|------|---|--|--|---|---|--|
| SEP 27... | 1230 | 762 | 275 | 7.9 | 10.2 | 9.4 | 9.5 |