

**LAKE OF THE WOODS BASIN**

**05128000 NAMAKAN RIVER AT OUTLET OF LAC LA CROIX, ONTARIO  
(International Gaging Station)**

LOCATION.--Lat 48° 21'14", long 92° 13'01", at Campbell's Camp, on Lac La Croix Lake, used to determine discharge at outlet [Lat 48° 23'00", long 92° 10'40", 2.5 mi east of Campbell's Camp].

DRAINAGE AREA.--5,170 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1921 to January 1922, April 1922 to current year, in reports of Geological Survey. Monthly discharge only for some periods, published in WSP 1308. August 1921 to current year, in reports of Water Survey of Canada.

GAGE.--Water-stage recorder. Gage readings have been reduced to elevations, United States and Canada Boundary Survey datum. Prior to October 1933, nonrecording gages at various sites on Lac la Croix. October 1933 to Mar. 13, 1963, nonrecording gage at present site and datum.

REMARKS.--Records good. Satellite telemeter at station.

COOPERATION.--This station is one of the international stations maintained by Canada under agreement with the United States.

**DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997**

**DAILY MEAN VALUES**

| DAY  | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | APR  | MAY  | JUN  |
|------|------|------|------|------|------|------|------|------|------|
| JUL  | AUG  | SEP  |      |      |      |      |      |      |      |
| 1    | 3060 | 3080 | 6000 | 4480 | 3600 | 2750 | 2390 | 7660 | 9110 |
| 5190 | 3430 | 1690 |      |      |      |      |      |      |      |
| 2    | 3000 | 3200 | 6000 | 4410 | 3600 | 2750 | 2380 | 7870 | 9040 |
| 5230 | 3350 | 1630 |      |      |      |      |      |      |      |
| 3    | 2970 | 3290 | 6040 | 4380 | 3530 | 2750 | 2380 | 8050 | 8930 |
| 5080 | 3310 | 1600 |      |      |      |      |      |      |      |
| 4    | 2950 | 3370 | 6040 | 4340 | 3520 | 2750 | 2390 | 8230 | 8830 |
| 5050 | 3280 | 1570 |      |      |      |      |      |      |      |
| 5    | 2920 | 3430 | 6070 | 4310 | 3490 | 2740 | 2460 | 8300 | 8690 |
| 4980 | 3200 | 1570 |      |      |      |      |      |      |      |
| 6    | 2850 | 3520 | 6070 | 4310 | 3460 | 2700 | 2630 | 8470 | 8620 |
| 4910 | 3100 | 1560 |      |      |      |      |      |      |      |
| 7    | 2850 | 3570 | 6070 | 4270 | 3430 | 2700 | 2790 | 8650 | 8510 |
| 4870 | 3020 | 1550 |      |      |      |      |      |      |      |
| 8    | 2820 | 3710 | 6040 | 4240 | 3350 | 2680 | 2980 | 8720 | 8300 |
| 4840 | 2960 | 1510 |      |      |      |      |      |      |      |
| 9    | 2780 | 3780 | 6040 | 4200 | 3290 | 2660 | 3150 | 8900 | 8160 |
| 4800 | 2860 | 1470 |      |      |      |      |      |      |      |

|        |       |        |        |        |       |       |        |        |        |
|--------|-------|--------|--------|--------|-------|-------|--------|--------|--------|
| 10     | 2760  | 3850   | 6000   | 4130   | 3270  | 2640  | 3330   | 9040   | 7980   |
| 4730   | 2730  | 1440   |        |        |       |       |        |        |        |
| 11     | 2730  | 3950   | 5970   | 4100   | 3230  | 2620  | 3490   | 9070   | 7800   |
| 4700   | 2670  | 1420   |        |        |       |       |        |        |        |
| 12     | 2720  | 3990   | 5900   | 4060   | 3200  | 2600  | 3640   | 9150   | 7590   |
| 4660   | 2580  | 1400   |        |        |       |       |        |        |        |
| 13     | 2670  | 4060   | 5860   | 4030   | 3180  | 2590  | 3780   | 9290   | 7490   |
| 4630   | 2500  | 1380   |        |        |       |       |        |        |        |
| 14     | 2690  | 4170   | 5790   | 4060   | 3140  | 2580  | 3880   | 9360   | 7240   |
| 4590   | 2460  | 1340   |        |        |       |       |        |        |        |
| 15     | 2620  | 4270   | 5720   | 4270   | 3120  | 2560  | 4030   | 9360   | 7030   |
| 4590   | 2390  | 1320   |        |        |       |       |        |        |        |
| 16     | 2600  | 4410   | 5650   | 4270   | 3090  | 2550  | 4170   | 9430   | 6890   |
| 4590   | 2380  | 1350   |        |        |       |       |        |        |        |
| 17     | 2670  | 4660   | 5580   | 4200   | 3070  | 2530  | 4340   | 9430   | 6740   |
| 4590   | 2330  | 1350   |        |        |       |       |        |        |        |
| 18     | 2630  | 4800   | 5510   | 4170   | 3040  | 2530  | 4480   | 9460   | 6670   |
| 4550   | 2280  | 1350   |        |        |       |       |        |        |        |
| 19     | 2710  | 5010   | 5470   | 4100   | 3010  | 2500  | 4700   | 9500   | 6600   |
| 4520   | 2230  | 1320   |        |        |       |       |        |        |        |
| 20     | 2700  | 5160   | 5400   | 4030   | 2990  | 2490  | 4870   | 9500   | 6430   |
| 4450   | 2210  | 1270   |        |        |       |       |        |        |        |
| 21     | 2670  | 5300   | 5300   | 3990   | 2950  | 2480  | 5120   | 9500   | 6210   |
| 4410   | 2180  | 1240   |        |        |       |       |        |        |        |
| 22     | 2650  | 5440   | 5230   | 3920   | 2920  | 2500  | 5370   | 9500   | 6040   |
| 4310   | 2120  | 1230   |        |        |       |       |        |        |        |
| 23     | 2660  | 5540   | 5120   | 3880   | 2880  | 2500  | 5650   | 9500   | 5970   |
| 4240   | 2080  | 1200   |        |        |       |       |        |        |        |
| 24     | 2670  | 5650   | 5010   | 3850   | 2850  | 2440  | 5900   | 9530   | 5930   |
| 4170   | 2030  | 1170   |        |        |       |       |        |        |        |
| 25     | 2710  | 5720   | 4940   | 3810   | 2830  | 2450  | 6140   | 9530   | 5760   |
| 4130   | 2000  | 1160   |        |        |       |       |        |        |        |
| 26     | 2720  | 5760   | 4870   | e3740  | 2790  | 2450  | 6390   | 9500   | 5650   |
| 4030   | 1940  | 1150   |        |        |       |       |        |        |        |
| 27     | 2680  | 5830   | 4770   | e3710  | 2760  | 2440  | 6640   | 9430   | 5540   |
| 3880   | 1890  | 1150   |        |        |       |       |        |        |        |
| 28     | 2740  | 5860   | 4700   | e3670  | 2750  | 2420  | 6960   | 9390   | 5400   |
| 3810   | 1840  | 1140   |        |        |       |       |        |        |        |
| 29     | 2820  | 5830   | 4660   | e3640  | ---   | 2410  | 7170   | 9360   | 5300   |
| 3740   | 1810  | 1180   |        |        |       |       |        |        |        |
| 30     | 2800  | 5930   | 4590   | 3600   | ---   | 2400  | 7490   | 9250   | 5230   |
| 3640   | 1780  | 1190   |        |        |       |       |        |        |        |
| 31     | 2920  | ---    | 4520   | 3640   | ---   | 2400  | ---    | 9180   | ---    |
| 3530   | 1730  | ---    |        |        |       |       |        |        |        |
| TOTAL  | 85740 | 136140 | 170930 | 125810 | 88340 | 79560 | 131090 | 281110 | 213680 |
| 139440 | 76670 | 40900  |        |        |       |       |        |        |        |
| MEAN   | 2766  | 4538   | 5514   | 4058   | 3155  | 2566  | 4370   | 9068   | 7123   |
| 4498   | 2473  | 1363   |        |        |       |       |        |        |        |
| MAX    | 3060  | 5930   | 6070   | 4480   | 3600  | 2750  | 7490   | 9530   | 9110   |
| 5230   | 3430  | 1690   |        |        |       |       |        |        |        |

|        |        |        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| MIN    | 2600   | 3080   | 4520   | 3600   | 2750   | 2400   | 2380   | 7660   | 5230   |
| 3530   | 1730   | 1140   |        |        |        |        |        |        |        |
| AC-FT  | 170100 | 270000 | 339000 | 249500 | 175200 | 157800 | 260000 | 557600 | 423800 |
| 276600 | 152100 | 81130  |        |        |        |        |        |        |        |
| CFSM   | .53    | .88    | 1.07   | .78    | .61    | .50    | .85    | 1.75   | 1.38   |
| .87    | .48    | .26    |        |        |        |        |        |        |        |
| IN.    | .62    | .98    | 1.23   | .91    | .64    | .57    | .94    | 2.02   | 1.54   |
| 1.00   | .55    | .29    |        |        |        |        |        |        |        |

- e Estimated

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1997, BY WATER YEAR (WY)**

|       | JUN   | JUL   | OCT  | NOV  | DEC  | JAN  | FEB  | MAR   | APR   | MAY  |
|-------|-------|-------|------|------|------|------|------|-------|-------|------|
| MEAN  | 3091  | 2942  | AUG  | SEP  | 2208 | 1902 | 1687 | 2567  | 7720  | 8050 |
| 6145  | 4064  | 3175  |      |      |      |      |      |       |       |      |
| MAX   | 14200 | 10610 | 7189 | 4568 | 3432 | 2996 | 9071 | 16900 | 22120 |      |
| 15930 | 11200 | 13140 |      |      |      |      |      |       |       |      |
| (WY)  | 1978  | 1978  | 1972 | 1978 | 1966 | 1966 | 1945 | 1938  | 1950  |      |
| 1968  | 1944  | 1988  |      |      |      |      |      |       |       |      |
| MIN   | 835   | 624   | 567  | 547  | 540  | 535  | 614  | 899   | 1475  |      |
| 1263  | 1141  | 1223  |      |      |      |      |      |       |       |      |
| (WY)  | 1977  | 1977  | 1977 | 1977 | 1924 | 1924 | 1977 | 1977  | 1924  |      |
| 1924  | 1980  | 1933  |      |      |      |      |      |       |       |      |

*SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1921 - 1997*

|                          |  |         |         |        |  |         |            |  |          |
|--------------------------|--|---------|---------|--------|--|---------|------------|--|----------|
| ANNUAL TOTAL             |  | 2111340 |         |        |  | 1569410 |            |  |          |
| ANNUAL MEAN              |  | 5769    |         |        |  | 4300    |            |  | 3866     |
| HIGHEST ANNUAL MEAN      |  |         |         |        |  |         |            |  |          |
| 7270                     |  | 1950    |         |        |  |         |            |  |          |
| LOWEST ANNUAL MEAN       |  |         |         |        |  |         |            |  |          |
| 964                      |  | 1924    |         |        |  |         |            |  |          |
| HIGHEST DAILY MEAN       |  |         | 16600   | May 27 |  | 9530    | May 24, 25 |  | 28200a   |
| May 31 1950              |  |         |         |        |  |         |            |  |          |
| LOWEST DAILY MEAN        |  |         | 2260    | Apr 13 |  | 1140    | Sep 28     |  | 535      |
| Feb 4 1924               |  |         |         |        |  |         |            |  |          |
| ANNUAL SEVEN-DAY MIN     |  |         | 2270    | Apr 11 |  | 1160    | Sep 24     |  | 535      |
| Feb 4 1924               |  |         |         |        |  |         |            |  |          |
| INSTANTANEOUS PEAK FLOW  |  |         |         |        |  | 9570    | May 24     |  | 28200    |
| May 31 1950              |  |         |         |        |  |         |            |  |          |
| INSTANTANEOUS PEAK STAGE |  |         |         |        |  | 1187.10 | May 24     |  | 1193.30a |
| May 31 1950              |  |         |         |        |  |         |            |  |          |
| INSTANTANEOUS LOW FLOW   |  |         |         |        |  | 1040    | Sep 28     |  | 535b     |
| Feb 1 1924               |  |         |         |        |  |         |            |  |          |
| ANNUAL RUNOFF (AC-FT)    |  |         | 4188000 |        |  | 3113000 |            |  | 2801000  |
| ANNUAL RUNOFF (CFSM)     |  |         | 1.12    |        |  | .83     |            |  | .75      |
| ANNUAL RUNOFF (INCHES)   |  |         | 15.19   |        |  | 11.29   |            |  | 10.16    |
| 10 PERCENT EXCEEDS       |  |         | 11500   |        |  | 8190    |            |  | 8380     |
| 50 PERCENT EXCEEDS       |  |         | 4520    |        |  | 3810    |            |  | 2700     |
| 90 PERCENT EXCEEDS       |  |         | 2620    |        |  | 1980    |            |  | 1190     |

a Occurred May 31 to June 2, 1950.

b Many days in 1924.

