

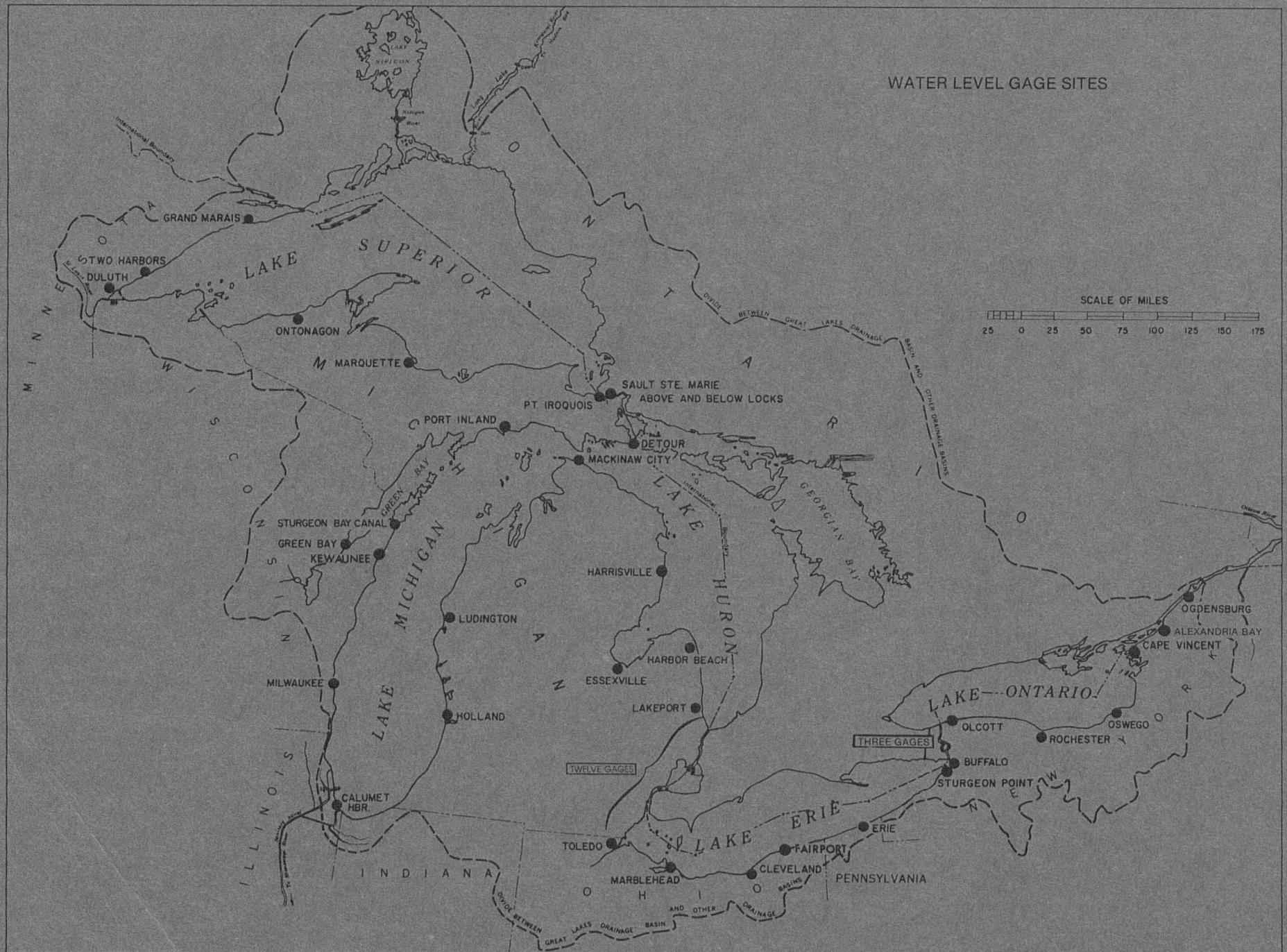


# Great Lakes Water Levels, 1988

U.S. DEPARTMENT OF COMMERCE, National Oceanic and Atmospheric Administration, National Ocean Service



# WATER LEVEL GAGE SITES

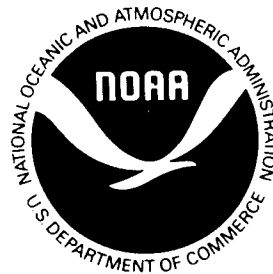


## **ERRATA**

### **GREAT LAKES WATER LEVELS, 1988**

p. 184 Replace page with attached page (metric data)

p. 185 Replace page with attached page (metric data)



# **GREAT LAKES WATER LEVELS**

**1988**

**Daily and Monthly Average Water Surface Elevations**



## INTRODUCTION

The Office of Oceanography and Marine Assessments (OMA), within the National Oceanic and Atmospheric Administration (NOAA), is responsible for collecting water level data for the entire Great Lakes basin watershed (295,000 square miles), and for maintaining the International Great Lakes Datum of 1955 (IGLD 1955). In meeting these responsibilities, close coordination is maintained with other Federal Agencies and Canadian counterparts. Exchanges of water level data with Canada are made under treaties that require regulation of operations and support of cooperative power generation. These exchanges are coordinated under the International Joint Commission (IJC), a group of six commissioners appointed by the President of the United States and the Prime Minister of Canada. Parties involved in meeting the international agreements include: several boards of control, IJC committees of two Federal agencies, eight states and two Canadian provinces.

Beginning in 1970 (under authority of Presidential Reorganization Plan No. 4 (now part of U.S. Code 33 Title 883)), OMA's predecessor organization began a program of monitoring and collecting water levels, and maintaining a vertical control reference system for the Great Lakes and their connecting channels. The program, required by Congress and by international treaties, has a mission of providing a hydraulic vertical reference datum by which the governments of Canada and the United States manage water resources in the Great Lakes basin. International management of water resources in the Great Lakes basin is vital to ensuring the safety of the Lake's many users. The Great Lakes Program takes into account fluctuations of the Lakes' water levels and the outflows of rivers relative to: regulation, lake level forecasting, shipping, international cooperative treaties and agreements, riparian interests, hydroelectric power generation, construction, dredging, litigation, and other water resources management and development activities.

Presently, the Great Lakes Program is divided into office and field functions to address: basic water level measurements, vertical datums, earth movement (for the International Great Lakes Datum), basin precipitation, abstracts of diversions, vertical control support for hydrographic surveys, construction and maintenance activities, and needs of user communities. Since 1973, OMA has provided real-time data for emergency water planning situations by using water-level gages with electronic telemetry units. Presently, 28 water level measurement units are operating in the field; OMA plans to operate 50 field units by 1991 through the use of improved, state-of-the-art electronic telemetry systems.

This report, published annually, contains water level gage records for the Great Lakes in units of both feet and meters. The following information is presented in tabular form for the calendar year:

1. Daily and monthly average water levels for each gage in the network;
2. The highest and lowest daily average water level for each month;
3. A frequency distribution of daily average water levels that shows the number of times each month recorded levels were at or above specific elevations; and
4. Monthly average water level stages for each lake, from 1900 to the present.

OMA gages record water levels, in either analog or digital form, on strip charts retained by OMA. Recorded hourly values are used to compute daily averages; monthly values are derived from daily averages. Data are recorded in units of feet that are converted later to metric units. The metric data are less precise than the English unit data (0.01 meter vs. 0.01 foot). Reconverting the metric data to English units will often disagree with the original data (recorded in feet) by a small amount.

Locations of gages for recording water levels are shown on the inside cover page. An index on subsequent pages lists gage identification numbers, their locations, and their geographic coordinates.

A separate publication, printed every five years, shows only monthly and annual averages, and highest and lowest monthly averages for the period of record (latest issue: Great Lakes Water Levels, 1860-1985). A hydrograph, that depicts data for master control gages for each lake, is available for a minimal fee by writing: National Ocean Service, Office of Oceanography and Marine Assessment, N/OMA12, Rockville, Maryland, 20852.

**DATUM OF REFERENCE:** All tabulated elevations are referred to the International Great Lakes Datum (1955). A complete explanation of the datum can be obtained at no charge by writing the address above.

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| Station Number and Location      |                                          | Latitude |    |    | Longitude |    |    | Page |        |  |
|----------------------------------|------------------------------------------|----------|----|----|-----------|----|----|------|--------|--|
|                                  |                                          | North    |    |    | West      |    |    | Feet | Meters |  |
| ST. LAWRENCE RIVER               |                                          |          |    |    |           |    |    |      |        |  |
| 1030                             | Ogdensburg, New York                     | 44       | 42 | 10 | 75        | 29 | 40 | 1    | 111    |  |
| 1062                             | Alexandria Bay C.G., New York            | 44       | 19 | 56 | 75        | 56 | 06 | 3    | 113    |  |
| LAKE ONTARIO (CHART DATUM 242.8) |                                          |          |    |    |           |    |    |      |        |  |
| 2000                             | Cape Vincent, New York                   | 44       | 07 | 45 | 76        | 20 | 15 | 5    | 115    |  |
| 2030                             | OSWEGO, New York                         | 43       | 27 | 51 | 76        | 30 | 42 | 7    | 117    |  |
| 2058                             | Rochester, New York                      | 43       | 16 | 10 | 77        | 37 | 34 | 9    | 119    |  |
| 2076                             | Olcott, New York                         | 43       | 20 | 17 | 78        | 43 | 39 | 11   | 121    |  |
| NIAGARA RIVER                    |                                          |          |    |    |           |    |    |      |        |  |
| 3007                             | Ashland Avenue, Niagara Falls, New York  | 43       | 06 | 00 | 79        | 03 | 35 | 13   | 123    |  |
| 3009                             | American Falls, Niagara Falls, New York  | 43       | 04 | 54 | 79        | 03 | 42 | 15   | 125    |  |
| 3012                             | Niagara Intake, Niagara Falls, New York  | 43       | 04 | 40 | 79        | 00 | 55 | 17   | 127    |  |
| LAKE ERIE (CHART DATUM 568.6)    |                                          |          |    |    |           |    |    |      |        |  |
| 3020                             | Buffalo, New York                        | 42       | 52 | 39 | 78        | 53 | 27 | 19   | 129    |  |
| 3028                             | Sturgeon Point, New York                 | 42       | 41 | 27 | 79        | 02 | 52 | 21   | 131    |  |
| 3038                             | Erie, Pennsylvania                       | 42       | 09 | 15 | 80        | 04 | 32 | 23   | 133    |  |
| 3053                             | Fairport, Ohio                           | 41       | 45 | 00 | 81        | 17 | 00 | 25   | 135    |  |
| 3063                             | CLEVELAND, Ohio                          | 41       | 32 | 27 | 81        | 38 | 08 | 27   | 137    |  |
| 3079                             | Marblehead, Ohio                         | 41       | 32 | 40 | 82        | 43 | 53 | 29   | 139    |  |
| 3085                             | Toledo, Ohio                             | 41       | 41 | 36 | 83        | 28 | 20 | 31   | 141    |  |
| 3087                             | Monroe, Michigan                         | 41       | 53 | 54 | 83        | 21 | 42 | 33   | 143    |  |
| 3090                             | Fermi Power Plant, Stony Point, Michigan | 41       | 57 | 35 | 83        | 15 | 30 | 35   | 145    |  |

NOTE: Locations shown in **CAPITAL** letters are master gages.

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| Station Number and Location        |                                          | Latitude |    |    | Longitude |    |    | Page |        |
|------------------------------------|------------------------------------------|----------|----|----|-----------|----|----|------|--------|
|                                    |                                          | North    |    |    | West      |    |    | Feet | Meters |
| DETROIT RIVER                      |                                          |          |    |    |           |    |    |      |        |
| 4020                               | Gibraltar, Michigan                      | 42       | 05 | 30 | 83        | 11 | 10 | 37   | 147    |
| 4030                               | Wyandotte, Michigan                      | 42       | 12 | 12 | 83        | 08 | 50 | 39   | 149    |
| 4036                               | Fort Wayne, Detroit, Michigan            | 42       | 17 | 53 | 83        | 05 | 34 | 41   | 151    |
| 4049                               | Windmill Point, Detroit, Michigan        | 42       | 21 | 26 | 82        | 55 | 45 | 43   | 153    |
| LAKE ST. CLAIR (CHART DATUM 571.7) |                                          |          |    |    |           |    |    |      |        |
| 4052                               | ST. CLAIR SHORES, Michigan               | 42       | 28 | 24 | 82        | 52 | 45 | 45   | 155    |
| ST. CLAIR RIVER                    |                                          |          |    |    |           |    |    |      |        |
| 4070                               | Algonac, Michigan                        | 42       | 37 | 15 | 82        | 31 | 37 | 47   | 157    |
| 4080                               | St. Clair S.P., St. Clair, Michigan      | 42       | 48 | 45 | 82        | 29 | 09 | 49   | 159    |
| 4084                               | Marysville, Michigan                     | 42       | 54 | 22 | 82        | 27 | 58 | 51   | 161    |
| 4087                               | Dry Dock, Port Huron, Michigan           | 42       | 56 | 43 | 82        | 26 | 37 | 53   | 163    |
| 4090                               | Mouth of the Black River, Port Huron, MI | 42       | 58 | 25 | 82        | 25 | 16 | 55   | 165    |
| 4096                               | Dunn Paper Company, Port Huron, Michigan | 43       | 00 | 12 | 82        | 25 | 20 | 57   | 167    |
| 4098                               | Fort Gratiot, Port Huron, Michigan       | 43       | 00 | 23 | 82        | 25 | 21 | 59   | 169    |
| LAKE HURON (CHART DATUM 576.8)     |                                          |          |    |    |           |    |    |      |        |
| 5002                               | Lakeport, Michigan                       | 43       | 08 | 30 | 82        | 29 | 35 | 61   | 171    |
| 5014                               | HARBOR BEACH, Michigan                   | 43       | 50 | 45 | 82        | 38 | 38 | 63   | 173    |
| 5035                               | Essexville, Michigan                     | 43       | 38 | 29 | 83        | 50 | 48 | 65   | 175    |
| 5059                               | Harrisville, Michigan                    | 44       | 39 | 34 | 83        | 17 | 11 | 67   | 177    |
| 5080                               | Mackinaw City, Michigan                  | 45       | 46 | 40 | 84        | 43 | 10 | 69   | 179    |
| 5099                               | DeTour Village, Michigan                 | 45       | 59 | 30 | 83        | 53 | 48 | 71   | 181    |

NOTE: Locations shown in **CAPITAL** letters are master gages.



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| Station Number and Location                           |                                             | Latitude |    |    | Longitude |    |    | Page |        |
|-------------------------------------------------------|---------------------------------------------|----------|----|----|-----------|----|----|------|--------|
|                                                       |                                             | North    |    |    | West      |    |    | Feet | Meters |
| ST. MARY'S RIVER                                      |                                             |          |    |    |           |    |    |      |        |
| 6060                                                  | U.S. Slip below locks, Sault Ste. Marie, MI | 46       | 30 | 03 | 84        | 20 | 24 | 73   | 183    |
| 6070                                                  | S.W. Pier above locks, Sault Ste. Marie, MI | 46       | 30 | 05 | 84        | 22 | 21 | 75   | 185    |
| LAKE MICHIGAN (CHART DATUM 576.8)                     |                                             |          |    |    |           |    |    |      |        |
| 7023                                                  | Ludington, Michigan                         | 43       | 56 | 48 | 86        | 26 | 30 | 77   | 187    |
| 7031                                                  | Holland, Michigan                           | 42       | 46 | 05 | 86        | 12 | 06 | 79   | 189    |
| 7044                                                  | Calumet Harbor, S. Chicago, Illinois        | 41       | 43 | 48 | 87        | 32 | 18 | 81   | 191    |
| 7057                                                  | Milwaukee, Wisconsin                        | 43       | 00 | 05 | 87        | 53 | 13 | 83   | 193    |
| 7068                                                  | Kewaunee, Wisconsin                         | 44       | 27 | 48 | 87        | 30 | 00 | 85   | 195    |
| 7072                                                  | Sturgeon Bay Canal, Wisconsin               | 44       | 47 | 40 | 87        | 18 | 48 | 87   | 197    |
| 7079                                                  | Green Bay, Wisconsin                        | 44       | 32 | 27 | 88        | 00 | 30 | 89   | 199    |
| 7096                                                  | Port Inland, Michigan                       | 45       | 58 | 10 | 85        | 52 | 20 | 91   | 201    |
| LAKE SUPERIOR (CHART DATUM 600.0)                     |                                             |          |    |    |           |    |    |      |        |
| 9004                                                  | POINT IROQUOIS, Michigan                    | 46       | 29 | 06 | 84        | 37 | 52 | 93   | 203    |
| 9018                                                  | Marquette C.G., Michigan                    | 46       | 32 | 42 | 87        | 22 | 42 | 95   | 205    |
| 9044                                                  | Ontonagon, Michigan                         | 46       | 52 | 40 | 89        | 19 | 15 | 97   | 207    |
| 9064                                                  | Duluth, Minnesota                           | 46       | 46 | 32 | 92        | 05 | 34 | 99   | 209    |
| 9070                                                  | Two Harbors, Minnesota                      | 47       | 01 | 03 | 91        | 40 | 30 | 101  | 211    |
| 9090                                                  | Grand Marais, Minnesota                     | 47       | 44 | 53 | 90        | 20 | 30 | 103  | 213    |
| Lake Ontario Stages at OSWEGO, New York               |                                             |          |    |    |           |    |    | 104  | 214    |
| Lake Erie Stages at CLEVELAND, Ohio                   |                                             |          |    |    |           |    |    | 105  | 215    |
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NOTE: Locations shown in **CAPITAL** letters are master gages.

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 1030: Ogdensburg, New York on St. Lawrence River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 244.54 Jun  
 Daily mean elevation: 244.74 27 May  
 Instant/hourly Elevation: 245.04 1800/10 Nov

LOWEST  
 Monthly mean elevation: 243.02 Dec  
 Daily mean elevation: 242.63 22 Dec  
 Instant/hourly Elevation: 242.40 2400/22 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 243.63 | 5 Jan  |
| 243.41 | 13 Feb |
| 243.67 | 27 Mar |
| 244.28 | 18 Apr |
| 244.74 | 27 May |
| 244.69 | 12 Jun |
| 244.53 | 3 Jul  |
| 244.43 | 15 Aug |
| 244.01 | 5 Sep  |
| 243.79 | 28 Oct |
| 243.92 | 17 Nov |
| 243.69 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 243.08 | 14 Jan |
| 242.85 | 11 Feb |
| 242.87 | 12 Mar |
| 243.52 | 2 Apr  |
| 244.02 | 2 May  |
| 244.40 | 2 Jun  |
| 244.19 | 21 Jul |
| 243.77 | 23 Aug |
| 243.31 | 29 Sep |
| 242.79 | 22 Oct |
| 243.01 | 20 Nov |
| 242.63 | 22 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 244.60         |     |     |     |     | 7   | 7   |     |     |     |     |     |     | 244.60         | 14                         |
| 244.40         |     |     |     |     | 10  | 22  | 6   | 2   |     |     |     |     | 244.40         | 54                         |
| 244.20         |     |     |     | 3   | 9   | 1   | 24  | 16  |     |     |     |     | 244.20         | 107                        |
| 244.00         |     |     |     | 9   | 5   |     | 1   | 5   | 1   |     |     |     | 244.00         | 128                        |
| 243.80         |     |     |     | 5   |     |     |     | 7   | 13  |     | 1   |     | 243.80         | 154                        |
| 243.60         | 2   |     | 2   | 9   |     |     |     | 1   | 10  | 6   | 2   | 1   | 243.60         | 187                        |
| 243.40         | 4   | 1   | 2   | 4   |     |     |     |     | 5   | 7   | 5   | 1   | 243.40         | 216                        |
| 243.20         | 13  | 9   | 11  |     |     |     |     |     | 1   | 13  | 14  | 6   | 243.20         | 283                        |
| 243.00         | 12  | 17  | 12  |     |     |     |     |     |     | 4   | 8   | 7   | 243.00         | 343                        |
| 242.80         |     | 2   | 4   |     |     |     |     |     |     |     |     | 12  | 242.80         | 361                        |
| 242.60         |     |     |     |     |     |     |     |     |     | 1   |     | 4   | 242.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 1030: Ogdensburg, New York on St. Lawrence River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 243.61  | 243.28  | 243.02  | 243.52  | 244.11  | 244.49  | 244.44  | 244.35  | 244.00  | 243.55  | 243.25  | 243.29  |
| 2    | 243.49  | 243.13  | 243.01  | 243.52  | 244.02  | 244.40  | 244.48  | 244.29  | 243.97  | 243.56  | 243.26  | 243.53  |
| 3    | 243.24  | 243.05  | 242.99  | 243.55  | 244.08  | 244.41  | 244.53  | 244.31  | 243.91  | 243.35  | 243.37  | 243.69  |
| 4    | 243.42  | 243.11  | 242.98  | 243.78  | 244.28  | 244.57  | 244.39  | 244.37  | 243.86  | 243.20  | 243.24  | 243.19  |
| 5    | 243.63  | 243.14  | 243.03  | 243.78  | 244.26  | 244.68  | 244.36  | 244.33  | 244.01  | 243.37  | 243.06  | 243.04  |
| 6    | 243.30  | 243.40  | 243.06  | 243.55  | 244.31  | 244.56  | 244.39  | 244.43  | 243.95  | 243.34  | 243.29  | 243.30  |
| 7    | 243.18  | 243.38  | 243.09  | 243.72  | 244.11  | 244.56  | 244.39  | 244.35  | 244.00  | 243.38  | 243.33  | 243.21  |
| 8    | 243.15  | 243.26  | 242.92  | 243.70  | 244.27  | 244.50  | 244.38  | 244.33  | 243.93  | 243.29  | 243.38  | 242.98  |
| 9    | 243.26  | 243.03  | 243.15  | 243.73  | 244.34  | 244.41  | 244.40  | 244.34  | 243.97  | 243.29  | 243.42  | 243.03  |
| 10   | 243.20  | 243.11  | 243.21  | 243.79  | 244.43  | 244.53  | 244.37  | 244.36  | 243.99  | 243.58  | 243.76  | 242.71  |
| 11   | 243.33  | 242.85  | 243.15  | 243.68  | 244.42  | 244.68  | 244.42  | 244.26  | 243.77  | 243.77  | 243.45  | 242.73  |
| 12   | 243.25  | 243.09  | 242.87  | 243.70  | 244.44  | 244.69  | 244.31  | 244.24  | 243.73  | 243.61  | 243.22  | 242.83  |
| 13   | 243.43  | 243.41  | 243.10  | 243.75  | 244.69  | 244.60  | 244.24  | 244.30  | 243.89  | 243.51  | 243.59  | 243.00  |
| 14   | 243.08  | 243.23  | 243.25  | 243.89  | 244.47  | 244.56  | 244.34  | 244.35  | 243.88  | 243.78  | 243.59  | 242.85  |
| 15   | 243.25  | 243.28  | 243.31  | 244.03  | 244.40  | 244.56  | 244.24  | 244.43  | 243.65  | 243.44  | 243.26  | 243.22  |
| 16   | 243.23  | 243.25  | 243.33  | 244.03  | 244.40  | 244.53  | 244.36  | 244.30  | 243.58  | 243.28  | 243.34  | 242.84  |
| 17   | 243.19  | 243.19  | 243.35  | 244.12  | 244.28  | 244.41  | 244.33  | 244.32  | 243.70  | 243.37  | 243.92  | 242.86  |
| 18   | 243.19  | 243.15  | 243.37  | 244.28  | 244.09  | 244.50  | 244.42  | 244.04  | 243.76  | 243.60  | 243.62  | 242.78  |
| 19   | 243.16  | 243.05  | 243.32  | 244.23  | 244.24  | 244.50  | 244.33  | 244.08  | 243.56  | 243.20  | 243.10  | 242.83  |
| 20   | 243.13  | 243.23  | 243.27  | 244.04  | 244.44  | 244.64  | 244.24  | 244.04  | 243.77  | 243.24  | 243.01  | 243.04  |
| 21   | 243.46  | 243.21  | 243.16  | 244.01  | 244.53  | 244.50  | 244.19  | 243.90  | 243.81  | 243.18  | 243.27  | 243.12  |
| 22   | 243.20  | 243.20  | 243.13  | 244.00  | 244.58  | 244.58  | 244.27  | 243.88  | 243.66  | 242.79  | 243.20  | 242.63  |
| 23   | 243.24  | 243.12  | 243.13  | 243.84  | 244.63  | 244.47  | 244.23  | 243.77  | 243.87  | 243.19  | 243.18  | 242.91  |
| 24   | 243.26  | 243.06  | 243.24  | 244.25  | 244.55  | 244.44  | 244.27  | 243.96  | 243.75  | 243.40  | 243.18  | 242.85  |
| 25   | 243.29  | 243.09  | 243.14  | 244.16  | 244.50  | 244.60  | 244.31  | 244.10  | 243.67  | 243.79  | 243.16  | 243.27  |
| 26   | 243.13  | 243.02  | 243.32  | 244.14  | 244.73  | 244.62  | 244.31  | 244.23  | 243.54  | 243.47  | 243.11  | 242.96  |
| 27   | 243.20  | 242.91  | 243.67  | 243.94  | 244.74  | 244.53  | 244.33  | 243.92  | 243.66  | 243.40  | 243.27  | 242.87  |
| 28   | 243.28  | 243.01  | 243.59  | 244.05  | 244.67  | 244.61  | 244.30  | 244.06  | 243.42  | 243.79  | 243.38  | 243.21  |
| 29   | 243.20  | 243.12  | 243.36  | 243.99  | 244.54  | 244.61  | 244.34  | 243.95  | 243.31  | 243.74  | 243.26  | 242.86  |
| 30   | 243.30  |         | 243.65  | 244.07  | 244.61  | 244.50  | 244.46  | 243.98  | 243.55  | 243.40  | 243.42  | 243.02  |
| 31   | 243.26  |         | 243.56  |         | 244.61  |         | 244.32  | 243.94  |         | 243.32  |         | 243.03  |
| MEAN | 243.28  | 243.15  | 243.22  | 243.89  | 244.41  | 244.54  | 244.34  | 244.18  | 243.77  | 243.43  | 243.33  | 243.02  |
| MAX. | 244.40  | 243.90  | 244.10  | 244.61  | 245.01  | 244.92  | 244.66  | 244.68  | 244.46  | 244.59  | 245.04  | 244.07  |
|      | 1100/13 | 0100/21 | 1800/30 | 1400/18 | 1200/13 | 0400/26 | 0900/16 | 1400/15 | 0400/05 | 1400/28 | 1800/10 | 1000/03 |
| MIN. | 242.73  | 242.71  | 242.70  | 243.40  | 243.87  | 243.95  | 244.07  | 243.65  | 243.23  | 242.40  | 242.66  | 242.40  |
|      | 0500/20 | 2200/11 | 1600/12 | 0500/03 | 1700/02 | 2300/01 | 2100/20 | 1500/23 | 0700/29 | 1600/22 | 1900/20 | 2400/22 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 243.71

ANNUAL SUMMARY OF LEVELS, 1988  
Station 1062: Alexandria Bay C.G., New York on St. Lawrence River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 244.92 Jun  
Daily mean elevation: 245.06 26 May  
Instant/hourly Elevation: 245.29 1500/5 Jun

LOWEST  
Monthly mean elevation: 243.44 Dec  
Daily mean elevation: 243.07 22 Dec  
Instant/hourly Elevation: 242.91 0300/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 244.03 | 5 Jan  |
| 244.01 | 13 Feb |
| 244.05 | 30 Mar |
| 244.62 | 24 Apr |
| 245.06 | 26 May |
| 245.03 | 5 Jun  |
| 244.87 | 2 Jul  |
| 244.79 | 15 Aug |
| 244.40 | 5 Sep  |
| 244.08 | 28 Oct |
| 244.13 | 17 Nov |
| 243.93 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 243.54 | 14 Jan |
| 243.50 | 11 Feb |
| 243.48 | 12 Mar |
| 243.97 | 2 Apr  |
| 244.46 | 2 May  |
| 244.83 | 24 Jun |
| 244.63 | 13 Jul |
| 244.22 | 23 Aug |
| 243.77 | 29 Sep |
| 243.41 | 22 Oct |
| 243.48 | 5 Nov  |
| 243.07 | 22 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 245.00         |     |     |     |     | 5   | 1   |     |     |     |     |     |     | 245.00         | 6                          |
| 244.80         |     |     |     |     | 8   | 29  | 3   |     |     |     |     |     | 244.80         | 46                         |
| 244.60         |     |     |     | 1   | 13  |     | 28  | 17  |     |     |     |     | 244.60         | 105                        |
| 244.40         |     |     |     | 12  | 5   |     |     | 7   |     |     |     |     | 244.40         | 129                        |
| 244.20         |     |     |     | 9   |     |     |     | 7   | 13  |     |     |     | 244.20         | 158                        |
| 244.00         | 1   | 1   | 2   | 6   |     |     |     |     | 12  | 4   | 1   |     | 244.00         | 185                        |
| 243.80         | 4   | 12  | 5   | 2   |     |     |     |     | 4   | 9   | 4   | 2   | 243.80         | 227                        |
| 243.60         | 22  | 15  | 23  |     |     |     |     |     | 1   | 16  | 20  | 4   | 243.60         | 328                        |
| 243.40         | 4   | 1   | 1   |     |     |     |     |     |     | 2   | 5   | 9   | 243.40         | 350                        |
| 243.20         |     |     |     |     |     |     |     |     |     |     |     | 15  | 243.20         | 365                        |
| 243.00         |     |     |     |     |     |     |     |     |     |     |     | 1   | 243.00         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 1062: Alexandria Bay C.G., New York on St. Lawrence River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 243.99  | 243.74  | 243.74  | 243.97  | 244.52  | 244.92  | 244.86  | 244.72  | 244.38  | 243.91  | 243.65  | 243.69  |
| 2    | 243.90  | 243.61  | 243.75  | 243.97  | 244.46  | 244.88  | 244.87  | 244.70  | 244.35  | 243.92  | 243.68  | 243.88  |
| 3    | 243.71  | 243.64  | 243.71  | 244.01  | 244.51  | 244.88  | 244.85  | 244.69  | 244.32  | 243.78  | 243.69  | 243.93  |
| 4    | 243.90  | 243.69  | 243.72  | 244.17  | 244.61  | 244.96  | 244.77  | 244.73  | 244.32  | 243.71  | 243.62  | 243.58  |
| 5    | 244.03  | 243.74  | 243.74  | 244.18  | 244.59  | 245.03  | 244.75  | 244.70  | 244.40  | 243.85  | 243.48  | 243.49  |
| 6    | 243.71  | 243.96  | 243.74  | 244.05  | 244.65  | 244.98  | 244.76  | 244.79  | 244.32  | 243.78  | 243.67  | 243.69  |
| 7    | 243.59  | 243.91  | 243.77  | 244.21  | 244.53  | 244.96  | 244.76  | 244.73  | 244.36  | 243.80  | 243.70  | 243.63  |
| 8    | 243.62  | 243.80  | 243.61  | 244.19  | 244.61  | 244.93  | 244.75  | 244.70  | 244.30  | 243.76  | 243.72  | 243.47  |
| 9    | 243.70  | 243.72  | 243.74  | 244.21  | 244.66  | 244.86  | 244.75  | 244.72  | 244.34  | 243.73  | 243.75  | 243.52  |
| 10   | 243.64  | 243.76  | 243.77  | 244.25  | 244.75  | 244.93  | 244.73  | 244.72  | 244.34  | 243.98  | 243.98  | 243.26  |
| 11   | 243.74  | 243.50  | 243.71  | 244.19  | 244.75  | 245.00  | 244.75  | 244.64  | 244.19  | 244.05  | 243.78  | 243.28  |
| 12   | 243.70  | 243.75  | 243.48  | 244.22  | 244.74  | 244.98  | 244.70  | 244.62  | 244.15  | 243.93  | 243.61  | 243.34  |
| 13   | 243.78  | 244.01  | 243.69  | 244.24  | 244.91  | 244.93  | 244.63  | 244.65  | 244.29  | 243.87  | 243.93  | 243.46  |
| 14   | 243.54  | 243.79  | 243.75  | 244.33  | 244.80  | 244.91  | 244.72  | 244.67  | 244.26  | 244.02  | 243.88  | 243.34  |
| 15   | 243.70  | 243.88  | 243.80  | 244.40  | 244.75  | 244.90  | 244.65  | 244.79  | 244.08  | 243.78  | 243.63  | 243.63  |
| 16   | 243.67  | 243.86  | 243.83  | 244.43  | 244.76  | 244.92  | 244.72  | 244.71  | 244.02  | 243.70  | 243.76  | 243.30  |
| 17   | 243.62  | 243.82  | 243.81  | 244.44  | 244.73  | 244.84  | 244.75  | 244.72  | 244.15  | 243.74  | 244.13  | 243.35  |
| 18   | 243.64  | 243.79  | 243.78  | 244.58  | 244.61  | 244.86  | 244.78  | 244.49  | 244.14  | 243.89  | 243.86  | 243.25  |
| 19   | 243.58  | 243.73  | 243.77  | 244.52  | 244.71  | 244.85  | 244.75  | 244.51  | 244.00  | 243.63  | 243.55  | 243.31  |
| 20   | 243.60  | 243.94  | 243.78  | 244.42  | 244.86  | 244.92  | 244.68  | 244.47  | 244.15  | 243.64  | 243.55  | 243.43  |
| 21   | 243.81  | 243.88  | 243.67  | 244.44  | 244.90  | 244.86  | 244.66  | 244.35  | 244.17  | 243.58  | 243.71  | 243.45  |
| 22   | 243.64  | 243.90  | 243.64  | 244.43  | 244.92  | 244.92  | 244.69  | 244.32  | 244.06  | 243.41  | 243.64  | 243.07  |
| 23   | 243.69  | 243.87  | 243.65  | 244.30  | 244.97  | 244.90  | 244.66  | 244.22  | 244.25  | 243.63  | 243.64  | 243.35  |
| 24   | 243.72  | 243.83  | 243.71  | 244.62  | 244.94  | 244.83  | 244.69  | 244.45  | 244.12  | 243.82  | 243.61  | 243.25  |
| 25   | 243.69  | 243.85  | 243.67  | 244.54  | 244.93  | 244.96  | 244.71  | 244.49  | 244.06  | 244.08  | 243.59  | 243.56  |
| 26   | 243.63  | 243.78  | 243.77  | 244.50  | 245.06  | 244.98  | 244.71  | 244.56  | 243.97  | 243.80  | 243.58  | 243.30  |
| 27   | 243.70  | 243.69  | 244.05  | 244.37  | 245.04  | 244.92  | 244.72  | 244.32  | 244.03  | 243.76  | 243.68  | 243.28  |
| 28   | 243.78  | 243.76  | 243.99  | 244.47  | 245.02  | 244.93  | 244.69  | 244.44  | 243.86  | 244.08  | 243.77  | 243.52  |
| 29   | 243.72  | 243.86  | 243.82  | 244.48  | 244.96  | 244.96  | 244.72  | 244.36  | 243.77  | 243.95  | 243.67  | 243.26  |
| 30   | 243.79  |         | 244.05  | 244.51  | 245.01  | 244.88  | 244.78  | 244.38  | 243.92  | 243.74  | 243.79  | 243.38  |
| 31   | 243.74  |         | 243.97  |         | 245.03  |         | 244.72  | 244.36  |         | 243.67  |         | 243.37  |
| MEAN | 243.72  | 243.80  | 243.76  | 244.32  | 244.78  | 244.92  | 244.73  | 244.57  | 244.17  | 243.81  | 243.71  | 243.44  |
| MAX. | 244.60  | 244.48  | 244.36  | 244.80  | 245.14  | 245.29  | 244.95  | 245.04  | 244.69  | 244.68  | 244.79  | 244.16  |
|      | 1100/13 | 2400/20 | 1600/30 | 0900/24 | 1300/26 | 1500/05 | 0400/01 | 1200/15 | 0400/05 | 1300/28 | 1700/10 | 1200/02 |
| MIN. | 243.24  | 243.36  | 243.39  | 243.89  | 244.37  | 244.46  | 244.52  | 243.79  | 243.66  | 243.21  | 243.29  | 242.91  |
|      | 0300/20 | 2100/11 | 1500/12 | 0300/03 | 2100/02 | 2100/05 | 0200/15 | 1500/23 | 0600/29 | 1500/22 | 1700/05 | 0300/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 244.14

ANNUAL SUMMARY OF LEVELS, 1988  
Station 2000: Cape Vincent, New York on Lake Ontario

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 245.26 Jun  
Daily mean elevation: 245.37 5 Jun  
Instant/hourly Elevation: 245.61 2000/25 Jun

LOWEST  
Monthly mean elevation: 243.73 Dec  
Daily mean elevation: 243.38 22 Dec  
Instant/hourly Elevation: 243.24 1000/27 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 244.17 | 1 Jan  |
| 244.26 | 20 Feb |
| 244.25 | 30 Mar |
| 244.87 | 24 Apr |
| 245.37 | 31 May |
| 245.37 | 5 Jun  |
| 245.20 | 2 Jul  |
| 245.07 | 6 Aug  |
| 244.67 | 5 Sep  |
| 244.31 | 28 Oct |
| 244.27 | 17 Nov |
| 244.14 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 243.75 | 14 Jan |
| 243.79 | 11 Feb |
| 243.82 | 12 Mar |
| 244.19 | 1 Apr  |
| 244.81 | 2 May  |
| 245.19 | 19 Jun |
| 244.99 | 23 Jul |
| 244.57 | 23 Aug |
| 244.14 | 29 Sep |
| 243.82 | 22 Oct |
| 243.83 | 5 Nov  |
| 243.38 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec            |                            |
| 245.20                                                  |     |     |     |     | 11  | 27  |     |     |     |     |     |                | 245.20 38                  |
| 245.00                                                  |     |     |     |     | 9   | 3   | 29  | 11  |     |     |     |                | 245.00 90                  |
| 244.80                                                  |     |     |     | 3   | 11  |     | 2   | 8   |     |     |     |                | 244.80 114                 |
| 244.60                                                  |     |     |     | 14  |     |     |     | 11  | 8   |     |     |                | 244.60 147                 |
| 244.40                                                  |     |     |     | 9   |     |     |     | 1   | 12  |     |     |                | 244.40 169                 |
| 244.20                                                  |     | 2   | 2   | 3   |     |     |     |     | 8   | 4   | 2   |                | 244.20 190                 |
| 244.00                                                  | 4   | 21  | 19  | 1   |     |     |     |     | 2   | 20  | 10  | 2              | 244.00 269                 |
| 243.80                                                  | 24  | 5   | 10  |     |     |     |     |     |     | 7   | 18  | 7              | 243.80 340                 |
| 243.60                                                  | 3   | 1   |     |     |     |     |     |     |     |     |     | 13             | 243.60 357                 |
| 243.40                                                  |     |     |     |     |     |     |     |     |     |     |     | 8              | 243.40 365                 |
| 243.20                                                  |     |     |     |     |     |     |     |     |     |     |     | 1              | 243.20 366                 |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 2000: Cape Vincent, New York on Lake Ontario

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 244.17  | 243.92  | 244.05  | 244.19  | 244.82  | 245.30  | 245.20  | 245.04  | 244.66  | 244.20  | 243.95  | 243.96  |
| 2    | 244.04  | 243.84  | 244.10  | 244.24  | 244.81  | 245.28  | 245.20  | 245.02  | 244.63  | 244.20  | 243.99  | 244.14  |
| 3    | 243.96  | 243.82  | 244.03  | 244.33  | 244.86  | 245.27  | 245.17  | 245.03  | 244.60  | 244.10  | 243.92  | 244.07  |
| 4    | 244.14  | 243.90  | 244.06  | 244.47  | 244.86  | 245.32  | 245.12  | 245.02  | 244.66  | 244.07  | 243.92  | 243.90  |
| 5    | 244.14  | 243.96  | 244.05  | 244.46  | 244.86  | 245.37  | 245.11  | 245.00  | 244.67  | 244.19  | 243.83  | 243.83  |
| 6    | 243.88  | 244.18  | 244.05  | 244.40  | 244.90  | 245.31  | 245.12  | 245.07  | 244.60  | 244.12  | 243.97  | 243.95  |
| 7    | 243.76  | 244.18  | 244.07  | 244.54  | 244.89  | 245.30  | 245.12  | 245.02  | 244.65  | 244.12  | 243.99  | 243.87  |
| 8    | 243.83  | 244.02  | 243.94  | 244.54  | 244.89  | 245.27  | 245.12  | 244.99  | 244.61  | 244.10  | 244.00  | 243.78  |
| 9    | 243.88  | 244.04  | 244.05  | 244.57  | 244.91  | 245.23  | 245.11  | 245.01  | 244.62  | 244.07  | 244.01  | 243.83  |
| 10   | 243.82  | 244.01  | 244.04  | 244.59  | 244.99  | 245.27  | 245.09  | 245.02  | 244.61  | 244.28  | 244.22  | 243.66  |
| 11   | 243.90  | 243.79  | 243.97  | 244.57  | 245.02  | 245.31  | 245.09  | 244.94  | 244.52  | 244.26  | 244.05  | 243.64  |
| 12   | 243.89  | 244.09  | 243.82  | 244.58  | 244.99  | 245.28  | 245.06  | 244.93  | 244.49  | 244.19  | 243.92  | 243.69  |
| 13   | 243.95  | 244.26  | 244.00  | 244.59  | 245.11  | 245.24  | 245.01  | 244.94  | 244.59  | 244.14  | 244.19  | 243.75  |
| 14   | 243.75  | 244.03  | 244.02  | 244.68  | 245.07  | 245.23  | 245.07  | 244.95  | 244.54  | 244.19  | 244.10  | 243.65  |
| 15   | 243.90  | 244.15  | 244.06  | 244.68  | 245.06  | 245.23  | 245.03  | 245.04  | 244.42  | 244.03  | 243.92  | 243.89  |
| 16   | 243.84  | 244.11  | 244.08  | 244.73  | 245.06  | 245.24  | 245.06  | 245.03  | 244.37  | 244.00  | 244.07  | 243.60  |
| 17   | 243.81  | 244.10  | 244.05  | 244.70  | 245.07  | 245.21  | 245.12  | 245.03  | 244.49  | 244.01  | 244.27  | 243.65  |
| 18   | 243.86  | 244.06  | 244.04  | 244.81  | 245.01  | 245.21  | 245.14  | 244.83  | 244.43  | 244.15  | 244.04  | 243.56  |
| 19   | 243.76  | 244.03  | 244.00  | 244.75  | 245.07  | 245.19  | 245.09  | 244.83  | 244.34  | 243.94  | 243.90  | 243.60  |
| 20   | 243.85  | 244.26  | 244.01  | 244.70  | 245.18  | 245.23  | 245.02  | 244.78  | 244.47  | 243.95  | 243.94  | 243.64  |
| 21   | 243.93  | 244.20  | 243.97  | 244.75  | 245.21  | 245.20  | 245.01  | 244.69  | 244.45  | 243.89  | 244.04  | 243.64  |
| 22   | 243.84  | 244.19  | 243.92  | 244.72  | 245.22* | 245.24  | 245.01  | 244.64  | 244.36  | 243.82  | 243.97  | 243.38  |
| 23   | 243.89  | 244.18  | 243.95  | 244.66  | 245.27* | 245.25  | 244.99  | 244.57  | 244.54  | 243.93  | 243.98  | 243.71  |
| 24   | 243.95  | 244.16  | 243.94  | 244.87  | 245.25  | 245.20  | 245.02  | 244.80  | 244.39  | 244.11  | 243.95  | 243.60  |
| 25   | 243.84  | 244.17  | 243.93  | 244.79  | 245.28  | 245.29  | 245.01  | 244.76  | 244.37  | 244.22  | 243.92  | 243.78  |
| 26   | 243.86  | 244.09  | 244.03  | 244.76  | 245.32  | 245.29  | 245.02  | 244.76  | 244.29  | 244.05  | 243.92  | 243.56  |
| 27   | 243.88  | 244.03  | 244.24  | 244.71  | 245.31  | 245.26  | 245.03  | 244.61  | 244.34  | 244.04  | 244.02  | 243.59  |
| 28   | 243.97  | 244.09  | 244.15  | 244.78  | 245.32  | 245.24  | 245.00  | 244.70  | 244.19  | 244.31  | 244.06  | 243.77  |
| 29   | 243.94  | 244.18  | 244.06  | 244.80  | 245.31  | 245.27  | 245.05  | 244.65  | 244.14  | 244.12  | 243.97  | 243.58  |
| 30   | 243.99  |         | 244.25  | 244.85  | 245.35  | 245.22  | 245.07  | 244.67  | 244.23  | 244.01  | 244.08  | 243.67  |
| 31   | 243.94  |         | 244.17  |         | 245.37  |         | 245.04  | 244.65  |         | 243.98  |         | 243.59  |
| MEAN | 243.91  | 244.07  | 244.04  | 244.63  | 245.09  | 245.26  | 245.07  | 244.87  | 244.48  | 244.09  | 244.00  | 243.73  |
| MAX. | 244.89  | 245.12  | 244.49  | 245.10  | 245.42  | 245.61  | 245.27  | 245.30  | 244.92  | 244.85  | 245.09  | 244.36  |
|      | 0800/13 | 2100/20 | 1200/30 | 1000/18 | 2100/30 | 2000/25 | 0700/16 | 1100/17 | 0300/05 | 1100/28 | 1500/10 | 1100/23 |
| MIN. | 243.50  | 243.69  | 243.69  | 244.01  | 244.72  | 245.01  | 244.82  | 244.50  | 244.04  | 243.63  | 243.63  | 243.24  |
|      | 2400/19 | 1800/11 | 1600/12 | 1500/01 | 1300/01 | 0300/22 | 0500/17 | 0800/23 | 0500/29 | 1400/22 | 0600/10 | 1000/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 244.44

ANNUAL SUMMARY OF LEVELS, 1988  
Station 2030: Oswego, New York on Lake Ontario

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 245.30 Jun  
Daily mean elevation: 245.40 5 Jun  
Instant/hourly Elevation: 246.04 1200/22 Jun

LOWEST  
Monthly mean elevation: 243.79 Dec  
Daily mean elevation: 243.48 27 Dec  
Instant/hourly Elevation: 242.80 0600/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 244.38 | 5 Jan  |
| 244.50 | 13 Feb |
| 244.36 | 31 Mar |
| 244.94 | 30 Apr |
| 245.40 | 25 May |
| 245.40 | 5 Jun  |
| 245.28 | 1 Jul  |
| 245.15 | 15 Aug |
| 244.75 | 5 Sep  |
| 244.36 | 11 Oct |
| 244.24 | 2 Nov  |
| 244.15 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 243.82 | 12 Jan |
| 244.03 | 11 Feb |
| 243.97 | 23 Mar |
| 244.36 | 2 Apr  |
| 244.91 | 1 May  |
| 245.18 | 19 Jun |
| 245.02 | 13 Jul |
| 244.52 | 23 Aug |
| 244.18 | 30 Sep |
| 243.86 | 21 Oct |
| 243.86 | 5 Nov  |
| 243.48 | 27 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     |                |                            |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
| 245.20                                                  |     |     |     |     | 12  | 29  | 2   |     |     |     |     |     | 245.20         | 43                         |
| 245.00                                                  |     |     |     |     | 10  | 1   | 29  | 11  |     |     |     |     | 245.00         | 94                         |
| 244.80                                                  |     |     |     | 8   | 9   |     |     | 9   |     |     |     |     | 244.80         | 120                        |
| 244.60                                                  |     |     |     | 16  |     |     |     | 9   | 7   |     |     |     | 244.60         | 152                        |
| 244.40                                                  |     |     |     | 3   |     |     |     | 2   | 14  |     |     |     | 244.40         | 173                        |
| 244.20                                                  | 2   | 12  | 13  | 3   |     |     |     |     | 7   | 6   | 2   |     | 244.20         | 218                        |
| 244.00                                                  | 11  | 15  | 17  |     |     |     |     |     | 2   | 18  | 16  | 5   | 244.00         | 302                        |
| 243.80                                                  | 18  |     | 1   |     |     |     |     |     |     | 7   | 12  | 8   | 243.80         | 348                        |
| 243.60                                                  |     |     |     |     |     |     |     |     |     |     |     | 13  | 243.60         | 361                        |
| 243.40                                                  |     |     |     |     |     |     |     |     |     |     |     | 5   | 243.40         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 2030: Oswego, New York on Lake Ontario

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 244.26  | 244.10  | 244.24  | 244.37  | 244.91  | 245.39  | 245.28  | 245.13  | 244.68  | 244.15  | 243.91  | 244.05  |
| 2    | 244.12  | 244.13  | 244.18  | 244.36  | 244.93  | 245.36  | 245.23  | 245.07  | 244.66  | 244.22  | 244.24  | 244.15  |
| 3    | 243.97  | 244.07  | 244.21  | 244.38  | 244.93  | 245.35  | 245.17  | 245.05  | 244.63  | 244.18  | 244.05  | 244.09  |
| 4    | 244.18  | 244.22  | 244.23  | 244.52  | 244.92  | 245.34  | 245.14  | 245.04  | 244.58  | 244.13  | 243.87  | 244.10  |
| 5    | 244.38  | 244.18  | 244.21  | 244.55  | 244.93  | 245.40  | 245.12  | 245.00  | 244.75  | 244.22  | 243.86  | 243.89  |
| 6    | 244.15  | 244.32  | 244.14  | 244.50  | 244.97  | 245.35  | 245.10  | 245.02  | 244.73  | 244.22  | 243.97  | 243.89  |
| 7    | 243.96  | 244.15  | 244.17  | 244.62  | 245.02  | 245.35  | 245.09  | 245.08  | 244.70  | 244.18  | 244.02  | 243.97  |
| 8    | 243.92  | 244.19  | 244.08  | 244.72  | 244.95  | 245.34  | 245.07  | 245.08  | 244.56  | 244.20  | 244.02  | 243.92  |
| 9    | 244.05  | 244.15  | 244.12  | 244.71  | 244.93  | 245.34  | 245.05  | 244.99  | 244.56  | 244.16  | 244.05  | 243.95  |
| 10   | 243.96  | 244.22  | 244.24  | 244.67  | 245.00  | 245.33  | 245.05  | 245.01  | 244.60  | 244.14  | 244.01  | 243.89  |
| 11   | 243.90  | 244.03  | 244.18  | 244.71  | 245.07  | 245.31  | 245.04  | 244.99  | 244.59  | 244.36  | 244.17  | 243.87  |
| 12   | 243.82  | 244.18  | 244.05  | 244.69  | 245.02  | 245.27  | 245.07  | 244.98  | 244.49  | 244.33  | 243.97  | 243.74  |
| 13   | 244.16  | 244.50  | 244.16  | 244.67  | 245.06  | 245.26  | 245.02  | 244.93  | 244.61  | 244.28  | 243.99  | 243.67  |
| 14   | 243.97  | 244.16  | 244.18  | 244.68  | 245.09  | 245.26  | 245.05  | 244.92  | 244.58  | 244.14  | 244.09  | 243.66  |
| 15   | 243.87  | 244.16  | 244.24  | 244.75  | 245.07  | 245.24  | 245.05  | 245.15  | 244.49  | 244.05  | 244.02  | 244.06  |
| 16   | 243.83  | 244.27  | 244.26  | 244.81  | 245.10  | 245.27  | 245.04  | 245.14  | 244.41  | 244.00  | 243.94  | 243.73  |
| 17   | 243.88  | 244.20  | 244.20  | 244.72  | 245.17  | 245.28  | 245.15  | 245.06  | 244.38  | 243.98  | 244.18  | 243.70  |
| 18   | 243.96  | 244.19  | 244.13  | 244.81  | 245.16  | 245.24  | 245.15  | 244.97  | 244.43  | 244.06  | 244.15  | 243.70  |
| 19   | 243.94  | 244.11  | 244.16  | 244.78  | 245.16  | 245.18  | 245.14  | 244.90  | 244.36  | 244.07  | 243.95  | 243.58  |
| 20   | 243.85  | 244.30  | 244.27  | 244.75  | 245.22  | 245.22  | 245.13  | 244.83  | 244.39  | 244.02  | 244.05  | 243.58  |
| 21   | 244.10  | 244.41  | 244.16  | 244.82  | 245.25  | 245.21  | 245.09  | 244.77  | 244.51  | 243.86  | 244.22  | 243.76  |
| 22   | 244.02  | 244.11  | 244.07  | 244.80  | 245.27  | 245.31  | 245.04  | 244.64  | 244.43  | 244.08  | 244.07  | 243.59  |
| 23   | 243.99  | 244.28  | 243.97  | 244.71  | 245.27  | 245.33  | 245.05  | 244.52  | 244.52  | 243.98  | 244.06  | 243.48  |
| 24   | 243.98  | 244.30  | 244.09  | 244.89  | 245.33  | 245.26  | 245.07  | 244.56  | 244.45  | 243.97  | 244.03  | 243.62  |
| 25   | 244.05  | 244.31  | 244.05  | 244.83  | 245.40  | 245.25  | 245.08  | 244.64  | 244.38  | 244.05  | 244.00  | 243.82  |
| 26   | 244.10  | 244.22  | 244.15  | 244.80  | 245.33  | 245.32  | 245.06  | 244.72  | 244.38  | 244.07  | 243.97  | 243.71  |
| 27   | 244.08  | 244.23  | 244.34  | 244.80  | 245.34  | 245.28  | 245.08  | 244.65  | 244.31  | 244.00  | 243.96  | 243.48  |
| 28   | 244.12  | 244.21  | 244.34  | 244.85  | 245.35  | 245.28  | 245.08  | 244.71  | 244.32  | 244.14  | 244.10  | 243.78  |
| 29   | 243.98  | 244.30  | 244.25  | 244.93  | 245.35  | 245.27  | 245.07  | 244.74  | 244.18  | 244.14  | 244.07  | 243.72  |
| 30   | 243.99  |         | 244.32  | 244.94  | 245.35  | 245.32  | 245.11  | 244.73  | 244.18  | 244.09  | 243.98  | 243.64  |
| 31   | 244.00  |         | 244.36  |         | 245.38  |         | 245.14  | 244.71  |         | 243.96  |         | 243.72  |
| MEAN | 244.02  | 244.21  | 244.19  | 244.70  | 245.14  | 245.30  | 245.10  | 244.89  | 244.49  | 244.11  | 244.03  | 243.79  |
| MAX. | 244.83  | 244.76  | 244.58  | 245.21  | 245.48  | 246.04  | 245.58  | 245.33  | 244.84  | 244.48  | 244.78  | 244.40  |
|      | 0800/13 | 2100/20 | 1300/30 | 1800/23 | 0500/25 | 1200/22 | 0900/17 | 1300/17 | 0900/05 | 0800/11 | 2100/20 | 1900/04 |
| MIN. | 243.49  | 243.86  | 243.79  | 244.23  | 244.61  | 244.84  | 244.70  | 244.42  | 244.07  | 243.72  | 243.51  | 242.80  |
|      | 0400/20 | 0300/12 | 2300/22 | 1500/01 | 0100/16 | 1800/25 | 0500/17 | 1600/29 | 0900/29 | 0500/18 | 0600/10 | 0600/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 244.50

ANNUAL SUMMARY OF LEVELS, 1988  
Station 2058: Rochester, New York on Lake Ontario

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 245.33 Jun  
Daily mean elevation: 245.44 1 Jun  
Instant/hourly Elevation: 245.81 0500/17 Jul

LOWEST  
Monthly mean elevation: 243.80 Dec  
Daily mean elevation: 243.59 23 Dec  
Instant/hourly Elevation: 243.24 0800/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 244.15 | 26 Jan |
| 244.32 | 27 Feb |
| 244.41 | 31 Mar |
| 244.96 | 30 Apr |
| 245.42 | 28 May |
| 245.44 | 1 Jun  |
| 245.29 | 1 Jul  |
| 245.18 | 1 Aug  |
| 244.73 | 6 Sep  |
| 244.31 | 6 Oct  |
| 244.17 | 21 Nov |
| 244.05 | 4 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 243.92 | 16 Jan |
| 244.13 | 1 Feb  |
| 244.10 | 23 Mar |
| 244.43 | 2 Apr  |
| 244.96 | 1 May  |
| 245.25 | 25 Jun |
| 245.05 | 14 Jul |
| 244.65 | 23 Aug |
| 244.23 | 30 Sep |
| 243.99 | 21 Oct |
| 243.99 | 4 Nov  |
| 243.59 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec            |                            |
| 245.40                                                  |     |     |     |     | 5   | 4   |     |     |     |     |     |                | 245.40 9                   |
| 245.20                                                  |     |     |     |     | 9   | 26  | 4   |     |     |     |     |                | 245.20 48                  |
| 245.00                                                  |     |     |     |     | 12  |     | 27  | 13  |     |     |     |                | 245.00 100                 |
| 244.80                                                  |     |     |     | 11  | 5   |     |     | 7   |     |     |     |                | 244.80 123                 |
| 244.60                                                  |     |     |     | 15  |     |     |     | 11  | 8   |     |     |                | 244.60 157                 |
| 244.40                                                  |     |     | 1   | 4   |     |     |     |     | 17  |     |     |                | 244.40 179                 |
| 244.20                                                  |     | 20  | 16  |     |     |     |     |     | 5   | 12  |     |                | 244.20 232                 |
| 244.00                                                  | 19  | 9   | 14  |     |     |     |     |     |     | 17  | 28  | 4              | 244.00 323                 |
| 243.80                                                  | 12  |     |     |     |     |     |     |     |     | 2   | 2   | 7              | 243.80 346                 |
| 243.60                                                  |     |     |     |     |     |     |     |     |     |     |     | 19             | 243.60 365                 |
| 243.40                                                  |     |     |     |     |     |     |     |     |     |     |     | 1              | 243.40 366                 |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 2058: Rochester, New York on Lake Ontario

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 244.09  | 244.13  | 244.28  | 244.44  | 244.96  | 245.44  | 245.29  | 245.18  | 244.70  | 244.22  | 243.99  | 244.04  |
| 2    | 244.07  | 244.22  | 244.26  | 244.43  | 244.97  | 245.41  | 245.24  | 245.09  | 244.71  | 244.27  | 244.08  | 244.01  |
| 3    | 244.04  | 244.17  | 244.28  | 244.49  | 244.98  | 245.41  | 245.22  | 245.06  | 244.68  | 244.29  | 244.05  | 244.03  |
| 4    | 244.07  | 244.25  | 244.24  | 244.55  | 244.99  | 245.39  | 245.20  | 245.03  | 244.67  | 244.28  | 243.99  | 244.05  |
| 5    | 244.02  | 244.21  | 244.23  | 244.61  | 245.00  | 245.39  | 245.16  | 245.04  | 244.73  | 244.30  | 244.01  | 243.98  |
| 6    | 244.12  | 244.16  | 244.19  | 244.64  | 245.04  | 245.40  | 245.13  | 245.05  | 244.73  | 244.31  | 244.01  | 243.93  |
| 7    | 244.06  | 244.16  | 244.18  | 244.67  | 245.03  | 245.42  | 245.13  | 245.14  | 244.68  | 244.26  | 244.04  | 243.96  |
| 8    | 243.99  | 244.22  | 244.20  | 244.73  | 245.05  | 245.39  | 245.11  | 245.09  | 244.64  | 244.27  | 244.06  | 243.98  |
| 9    | 243.99  | 244.20  | 244.17  | 244.75  | 245.04  | 245.39  | 245.10  | 245.01  | 244.57  | 244.24  | 244.08  | 243.90  |
| 10   | 244.00  | 244.19  | 244.25  | 244.75  | 245.06  | 245.36  | 245.10  | 245.01  | 244.60  | 244.15  | 244.02  | 243.96  |
| 11   | 243.94  | 244.18  | 244.21  | 244.75  | 245.10  | 245.33  | 245.12  | 245.02  | 244.60  | 244.27  | 244.15  | 243.94  |
| 12   | 243.93  | 244.17  | 244.17  | 244.76  | 245.12  | 245.31  | 245.15  | 244.99  | 244.56  | 244.28  | 244.11  | 243.79  |
| 13   | 244.00  | 244.26  | 244.16  | 244.75  | 245.10  | 245.32  | 245.08  | 244.95  | 244.56  | 244.24  | 244.06  | 243.73  |
| 14   | 244.03  | 244.21  | 244.19  | 244.75  | 245.16  | 245.31  | 245.05  | 244.94  | 244.59  | 244.13  | 244.09  | 243.76  |
| 15   | 243.92  | 244.18  | 244.18  | 244.80  | 245.17  | 245.32  | 245.14  | 245.10  | 244.55  | 244.12  | 244.12  | 243.79  |
| 16   | 243.92  | 244.27  | 244.23  | 244.80  | 245.19  | 245.32  | 245.10  | 245.06  | 244.45  | 244.10  | 244.06  | 243.78  |
| 17   | 243.96  | 244.25  | 244.22  | 244.78  | 245.20  | 245.32  | 245.28  | 244.99  | 244.42  | 244.06  | 244.09  | 243.73  |
| 18   | 243.98  | 244.25  | 244.19  | 244.81  | 245.21  | 245.29  | 245.20  | 244.94  | 244.44  | 244.09  | 244.10  | 243.75  |
| 19   | 244.00  | 244.25  | 244.21  | 244.80  | 245.22  | 245.26  | 245.19  | 244.84  | 244.44  | 244.14  | 244.09  | 243.66  |
| 20   | 243.96  | 244.25  | 244.24  | 244.79  | 245.28  | 245.26  | 245.17  | 244.82  | 244.41  | 244.10  | 244.11  | 243.66  |
| 21   | 244.07  | 244.32  | 244.21  | 244.84  | 245.30  | 245.29  | 245.14  | 244.80  | 244.50  | 243.99  | 244.17  | 243.70  |
| 22   | 244.10  | 244.22  | 244.14  | 244.83  | 245.30  | 245.31  | 245.12  | 244.75  | 244.48  | 244.12  | 244.12  | 243.71  |
| 23   | 244.06  | 244.31  | 244.10  | 244.84  | 245.32  | 245.37  | 245.11  | 244.65  | 244.46  | 244.08  | 244.10  | 243.59  |
| 24   | 244.04  | 244.30  | 244.15  | 244.81  | 245.36  | 245.31  | 245.11  | 244.66  | 244.47  | 244.02  | 244.08  | 243.66  |
| 25   | 244.10  | 244.30  | 244.15  | 244.85  | 245.42  | 245.25  | 245.11  | 244.67  | 244.42  | 244.00  | 244.05  | 243.67  |
| 26   | 244.15  | 244.31  | 244.19  | 244.87  | 245.42  | 245.32  | 245.15  | 244.69  | 244.38  | 244.07  | 244.07  | 243.69  |
| 27   | 244.12  | 244.32  | 244.31  | 244.86  | 245.40  | 245.30  | 245.16  | 244.79  | 244.33  | 244.08  | 244.06  | 243.64  |
| 28   | 244.09  | 244.26  | 244.35  | 244.88  | 245.42  | 245.27  | 245.15  | 244.80  | 244.36  | 244.08  | 244.06  | 243.69  |
| 29   | 244.07  | 244.26  | 244.37  | 244.95  | 245.40  | 245.27  | 245.12  | 244.77  | 244.29  | 244.09  | 244.08  | 243.71  |
| 30   | 244.07  |         | 244.35  | 244.96  | 245.41  | 245.31  | 245.13  | 244.75  | 244.23  | 244.10  | 244.02  | 243.68  |
| 31   | 244.09  |         | 244.41  |         | 245.41  |         | 245.20  | 244.76  |         | 244.02  |         | 243.68  |
| MEAN | 244.03  | 244.23  | 244.23  | 244.75  | 245.19  | 245.33  | 245.15  | 244.92  | 244.52  | 244.15  | 244.07  | 243.80  |
| MAX. | 244.26  | 244.52  | 244.53  | 245.28  | 245.51  | 245.74  | 245.81  | 245.44  | 244.82  | 244.48  | 244.62  | 244.22  |
|      | 0300/14 | 0600/02 | 1300/29 | 1500/23 | 2200/27 | 0900/07 | 0500/17 | 1400/01 | 1200/05 | 2100/02 | 1900/20 | 2100/03 |
| MIN. | 243.60  | 243.91  | 243.91  | 244.32  | 244.85  | 244.67  | 244.68  | 244.41  | 244.10  | 243.85  | 243.67  | 243.24  |
|      | 0600/13 | 1800/01 | 1600/25 | 1800/03 | 1800/01 | 0500/22 | 1900/16 | 1100/29 | 2400/22 | 0100/18 | 1000/10 | 0800/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 244.53

ANNUAL SUMMARY OF LEVELS, 1988  
Station 2076: Olcott, New York on Lake Ontario

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 245.36 Jun  
Daily mean elevation: 245.47 28 May  
Instant/hourly Elevation: 245.60 2400/7 Jun

LOWEST  
Monthly mean elevation: 243.82 Dec  
Daily mean elevation: 243.57 25 Dec  
Instant/hourly Elevation: 243.36 0200/28 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 244.20 | 29 Jan |
| 244.38 | 27 Feb |
| 244.47 | 29 Mar |
| 244.98 | 30 Apr |
| 245.47 | 28 May |
| 245.44 | 2 Jun  |
| 245.26 | 1 Jul  |
| 245.12 | 1 Aug  |
| 244.77 | 3 Sep  |
| 244.38 | 3 Oct  |
| 244.20 | 26 Nov |
| 244.05 | 1 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 243.85 | 5 Jan  |
| 244.13 | 13 Feb |
| 244.17 | 16 Mar |
| 244.47 | 1 Apr  |
| 245.02 | 2 May  |
| 245.26 | 29 Jun |
| 245.09 | 16 Jul |
| 244.59 | 24 Aug |
| 244.25 | 30 Sep |
| 244.02 | 28 Oct |
| 243.98 | 2 Nov  |
| 243.57 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 245.40                                                  |     |     |     |     | 8   | 5   |     |     |     |     |     |     | 245.40         | 13                         |
| 245.20                                                  |     |     |     |     | 10  | 25  | 7   |     |     |     |     |     | 245.20         | 55                         |
| 245.00                                                  |     |     |     |     | 13  |     | 24  | 7   |     |     |     |     | 245.00         | 99                         |
| 244.80                                                  |     |     |     |     |     |     |     | 14  |     |     |     |     | 244.80         | 127                        |
| 244.60                                                  |     |     |     |     |     |     |     | 9   | 9   |     |     |     | 244.60         | 157                        |
| 244.40                                                  |     |     |     |     |     |     |     | 1   | 17  |     |     |     | 244.40         | 182                        |
| 244.20                                                  |     |     |     |     |     |     |     |     | 4   | 13  |     |     | 244.20         | 246                        |
| 244.00                                                  | 24  | 25  | 22  |     |     |     |     |     |     |     | 29  | 2   | 244.00         | 329                        |
| 243.80                                                  | 7   | 4   | 6   |     |     |     |     |     |     |     | 1   | 13  | 243.80         | 350                        |
| 243.60                                                  |     |     |     |     |     |     |     |     |     |     |     | 15  | 243.60         | 365                        |
| 243.40                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 243.40         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 2076: Olcott, New York on Lake Ontario

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 244.00  | 244.16  | 244.30  | 244.47  | 245.03  | 245.43  | 245.26  | 245.12  | 244.77  | 244.29* | 244.08  | 244.05  |
| 2    | 244.07  | 244.25  | 244.30  | 244.53  | 245.02  | 245.44  | 245.24  | 245.10  | 244.77  | 244.32* | 243.98  | 243.91  |
| 3    | 244.12  | 244.27  | 244.31  | 244.56  | 245.03  | 245.42  | 245.23  | 245.07  | 244.77  | 244.38  | 244.03  | 243.94  |
| 4    | 243.98  | 244.23  | 244.24  | 244.59  | 245.04  | 245.40  | 245.22  | 245.05  | 244.74  | 244.36  | 244.11  | 243.97  |
| 5    | 243.85  | 244.24  | 244.24  | 244.67  | 245.08  | 245.37  | 245.20  | 245.07  | 244.74  | 244.31  | 244.14  | 244.03  |
| 6    | 244.08  | 244.16  | 244.22  | 244.78  | 245.07  | 245.40  | 245.18  | 245.07  | 244.73  | 244.35  | 244.11  | 243.96  |
| 7    | 244.11  | 244.20  | 244.19  | 244.73  | 245.09  | 245.40  | 245.17  | 245.04  | 244.69  | 244.36  | 244.09  | 243.95  |
| 8    | 244.06  | 244.24  | 244.28  | 244.75  | 245.12  | 245.42  | 245.15  | 245.00  | 244.68  | 244.34  | 244.08  | 243.97  |
| 9    | 243.98  | 244.22  | 244.24  | 244.76  | 245.15  | 245.41  | 245.15  | 244.99  | 244.63  | 244.31  | 244.09  | 243.93  |
| 10   | 244.02  | 244.23  | 244.21  | 244.79  | 245.16  | 245.37  | 245.15  | 244.96  | 244.59  | 244.23  | 244.06* | 243.99  |
| 11   | 244.00  | 244.36  | 244.24  | 244.79  | 245.14  | 245.36  | 245.18  | 244.93  | 244.57  | 244.25  | 244.09* | 243.94  |
| 12   | 244.01  | 244.23  | 244.33  | 244.80  | 245.19  | 245.36  | 245.15  | 244.88  | 244.57  | 244.23  | 244.19  | 243.89  |
| 13   | 243.93  | 244.13  | 244.19  | 244.83  | 245.19  | 245.38  | 245.13  | 244.90  | 244.54  | 244.17  | 244.11  | 243.84  |
| 14   | 244.02  | 244.28  | 244.22  | 244.82  | 245.21  | 245.36  | 245.12  | 244.91  | 244.53  | 244.14  | 244.10  | 243.86  |
| 15   | 243.99  | 244.26  | 244.19  | 244.83  | 245.24  | 245.37  | 245.10  | 244.91  | 244.50  | 244.21  | 244.20  | 243.68  |
| 16   | 244.01  | 244.25  | 244.17  | 244.78  | 245.24  | 245.34  | 245.09  | 244.89  | 244.51  | 244.19  | 244.19  | 243.83  |
| 17   | 244.04  | 244.26  | 244.20  | 244.83  | 245.25  | 245.34  | 245.22  | 244.88  | 244.44  | 244.16  | 244.02  | 243.77  |
| 18   | 244.02  | 244.28  | 244.21  | 244.78  | 245.26  | 245.34  | 245.23  | 244.83  | 244.49  | 244.13  | 244.09  | 243.77  |
| 19   | 244.12  | 244.38  | 244.22  | 244.80  | 245.31  | 245.34  | 245.18  | 244.77  | 244.52  | 244.17  | 244.19  | 243.79  |
| 20   | 244.15  | 244.23  | 244.18  | 244.84  | 245.33  | 245.31  | 245.19  | 244.75  | 244.46  | 244.14  | 244.14  | 243.71  |
| 21   | 244.07  | 244.26  | 244.21  | 244.83  | 245.37  | 245.32  | 245.16  | 244.71  | 244.47  | 244.16  | 244.11  | 243.68  |
| 22   | 244.15  | 244.27  | 244.23  | 244.84  | 245.39  | 245.34  | 245.14  | 244.67  | 244.47  | 244.15  | 244.16  | 243.77  |
| 23   | 244.14  | 244.28  | 244.22  | 244.98  | 245.39  | 245.36  | 245.15  | 244.62  | 244.44  | 244.13  | 244.14  | 243.74  |
| 24   | 244.11  | 244.29  | 244.23  | 244.78  | 245.41  | 245.34  | 245.16  | 244.59  | 244.45  | 244.09  | 244.15  | 243.70  |
| 25   | 244.16  | 244.30  | 244.24  | 244.85  | 245.42  | 245.30  | 245.20  | 244.83  | 244.41  | 244.08  | 244.16  | 243.57  |
| 26   | 244.13  | 244.38  | 244.32  | 244.90  | 245.44  | 245.32  | 245.22  | 244.83  | 244.41  | 244.12  | 244.20  | 243.68  |
| 27   | 244.13  | 244.38  | 244.25  | 244.93  | 245.47  | 245.29  | 245.18  | 244.84  | 244.38  | 244.16  | 244.18  | 243.74  |
| 28   | 244.08  | 244.31  | 244.37  | 244.91  | 245.47  | 245.29  | 245.17  | 244.78  | 244.39  | 244.02  | 244.05  | 243.63  |
| 29   | 244.20  | 244.26  | 244.47  | 244.94  | 245.46  | 245.26  | 245.13  | 244.79  | 244.35  | 244.05  | 244.08  | 243.71  |
| 30   | 244.16  |         | 244.44  | 244.98  | 245.44  | 245.27  | 245.15  | 244.78  | 244.25  | 244.07  | 244.05  | 243.72  |
| 31   | 244.17  |         | 244.46  |         | 245.42  |         | 245.14  | 244.79  |         | 244.08  |         | 243.71  |
| MEAN | 244.07  | 244.26  | 244.26  | 244.79  | 245.25  | 245.36  | 245.17  | 244.88  | 244.54  | 244.20  | 244.11  | 243.82  |
| MAX. | 244.34  | 244.57  | 244.59  | 245.13  | 245.56  | 245.60  | 245.44  | 245.29  | 244.85  | 244.44  | 244.42  | 244.17  |
|      | 1900/29 | 1900/26 | 0700/29 | 1700/23 | 2200/28 | 2400/07 | 1600/17 | 1200/01 | 0900/04 | 1400/07 | 1500/12 | 2100/04 |
| MIN. | 243.59  | 243.90  | 244.05  | 244.40  | 244.94  | 245.05  | 244.84  | 244.47  | 244.19  | 243.81  | 243.60  | 243.36  |
|      | 0900/13 | 2200/20 | 1800/25 | 0700/02 | 0800/01 | 1500/25 | 0600/16 | 0500/24 | 0300/30 | 1100/28 | 1400/10 | 0200/28 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 244.56

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3007: Ashland Avenue, Niagara Falls, New York on Niagara River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 322.31 Apr  
Daily mean elevation: 325.99 24 Apr  
Instant/hourly Elevation: 330.47 1500/15 Apr

LOWEST  
Monthly mean elevation: 315.88 Dec  
Daily mean elevation: 314.37 31 Jan  
Instant/hourly Elevation: 313.44 2400/14 Apr

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 323.97 | 5 Jan  |
| 321.96 | 13 Feb |
| 320.28 | 27 Mar |
| 325.99 | 24 Apr |
| 323.01 | 10 May |
| 322.41 | 5 Jun  |
| 321.95 | 26 Jul |
| 322.38 | 15 Aug |
| 321.96 | 5 Sep  |
| 322.76 | 25 Oct |
| 321.11 | 17 Nov |
| 320.07 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 314.37 | 31 Jan |
| 315.97 | 2 Feb  |
| 315.53 | 12 Mar |
| 321.20 | 14 Apr |
| 321.72 | 30 May |
| 321.46 | 29 Jun |
| 321.42 | 5 Jul  |
| 321.31 | 26 Aug |
| 320.28 | 13 Sep |
| 320.50 | 21 Oct |
| 315.06 | 22 Nov |
| 314.78 | 31 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 325.50                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 325.50         | 1                          |
| 325.00                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 325.00         | 1                          |
| 324.50                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 324.50         | 1                          |
| 324.00                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 324.00         | 2                          |
| 323.50                                                  | 1   |     |     | 1   |     |     |     |     |     |     |     |     | 323.50         | 4                          |
| 323.00                                                  |     |     |     | 2   | 1   |     |     |     |     |     |     |     | 323.00         | 7                          |
| 322.50                                                  |     |     |     | 3   |     |     |     |     |     | 1   |     |     | 322.50         | 11                         |
| 322.00                                                  |     |     |     | 8   | 11  | 3   |     | 3   |     | 1   |     |     | 322.00         | 37                         |
| 321.50                                                  | 1   | 1   |     | 10  | 19  | 25  | 19  | 27  | 10  | 2   |     |     | 321.50         | 151                        |
| 321.00                                                  | 1   | 2   |     | 4   |     | 2   | 12  | 1   | 5   | 3   | 1   |     | 321.00         | 182                        |
| 320.50                                                  |     |     |     |     |     |     |     |     | 13  | 22  |     |     | 320.50         | 217                        |
| 320.00                                                  | 3   |     | 1   |     |     |     |     |     | 2   | 2   |     | 1   | 320.00         | 226                        |
| 319.50                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 319.50         | 227                        |
| 319.00                                                  | 1   | 1   | 2   |     |     |     |     |     |     |     |     | 1   | 319.00         | 232                        |
| 318.50                                                  | 4   | 4   | 2   |     |     |     |     |     |     |     | 1   |     | 318.50         | 243                        |
| 318.00                                                  | 3   | 5   | 2   |     |     |     |     |     |     |     |     |     | 318.00         | 253                        |
| 317.50                                                  | 3   | 5   | 3   |     |     |     |     |     |     |     | 4   |     | 317.50         | 268                        |
| 317.00                                                  | 4   | 5   | 8   |     |     |     |     |     |     |     | 1   |     | 317.00         | 286                        |
| 316.50                                                  | 2   | 2   | 10  |     |     |     |     |     |     |     | 1   | 3   | 316.50         | 304                        |
| 316.00                                                  | 4   | 2   | 2   |     |     |     |     |     |     |     | 5   | 3   | 316.00         | 320                        |
| 315.50                                                  | 1   | 1   | 1   |     |     |     |     |     |     |     | 3   | 6   | 315.50         | 332                        |
| 315.00                                                  | 1   |     |     |     |     |     |     |     |     |     | 14  | 15  | 315.00         | 362                        |
| 314.50                                                  | 1   |     |     |     |     |     |     |     |     |     |     | 2   | 314.50         | 365                        |
| 314.00                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 314.00         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3007: Ashland Avenue, Niagara Falls, New York on Niagara River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 321.42  | 316.38  | 317.40  | 321.76  | 322.02  | 322.32  | 321.49  | 321.80  | 321.63  | 321.01  | 315.17  | 315.16  |
| 2    | 320.23  | 315.97  | 317.02  | 321.81  | 321.93  | 321.80  | 321.47  | 321.81  | 321.68  | 320.95  | 315.49  | 319.43  |
| 3    | 318.23  | 316.41  | 316.55  | 321.64  | 321.89  | 321.81  | 321.59  | 321.90  | 321.70  | 320.81  | 315.35  | 320.07  |
| 4    | 321.58  | 317.79  | 316.69  | 322.29  | 321.88  | 321.87  | 321.58  | 321.87  | 321.82  | 320.76  | 315.35  | 315.70  |
| 5    | 323.97  | 318.38  | 316.80  | 322.43  | 321.84  | 322.41  | 321.42  | 321.92  | 321.96  | 320.89  | 316.02  | 316.98  |
| 6    | 317.67  | 321.05  | 316.95  | 321.71  | 322.13  | 322.00  | 321.45  | 321.96  | 321.70  | 320.79  | 317.74  | 316.47  |
| 7    | 314.79  | 317.20  | 317.82  | 321.75  | 322.05  | 321.87  | 321.46  | 321.83  | 321.71  | 320.66  | 315.86  | 315.26  |
| 8    | 316.02  | 318.56  | 316.10  | 321.68  | 321.97  | 321.68  | 321.45  | 321.77  | 321.61  | 320.66  | 315.69  | 314.97  |
| 9    | 318.71  | 318.38  | 317.17  | 321.78  | 322.19  | 321.75  | 321.45  | 321.82  | 321.61  | 320.65  | 315.44  | 315.84  |
| 10   | 318.73  | 318.52  | 316.73  | 321.38  | 323.01  | 321.96  | 321.47  | 321.93  | 321.63  | 321.63  | 318.51  | 315.27  |
| 11   | 320.01  | 317.44  | 316.90  | 321.43  | 322.10  | 321.98  | 321.47  | 321.83  | 321.48  | 321.12  | 316.40  | 315.46  |
| 12   | 318.20  | 319.19  | 315.53  | 321.35  | 321.87  | 321.98  | 321.52  | 321.71  | 321.47  | 320.88  | 315.33  | 315.42  |
| 13   | 320.47  | 321.96  | 318.83  | 321.55  | 322.10  | 321.86  | 321.52  | 321.73  | 320.28* | 320.72  | 317.67  | 316.18  |
| 14   | 317.48  | 317.88  | 319.07  | 321.20  | 322.05  | 321.91  | 321.52  | 321.86  | 321.34  | 320.86  | 316.56  | 315.67  |
| 15   | 316.78  | 318.09  | 318.03  | 322.35  | 321.88  | 321.81  | 321.46  | 322.38  | 321.49  | 320.93  | 315.26  | 316.79  |
| 16   | 316.34  | 317.53  | 317.98  | 322.58  | 322.36  | 321.81  | 321.43  | 321.87  | 320.36  | 320.75  | 316.36  | 315.26  |
| 17   | 315.84  | 317.17  | 317.60  | 321.94  | 321.94  | 321.70  | 321.46  | 322.02  | 320.80  | 320.86  | 321.11  | 315.13  |
| 18   | 316.45  | 317.51  | 317.44  | 322.09  | 321.91  | 321.71  | 321.54  | 321.67  | 320.91  | 320.77  | 316.11  | 315.70  |
| 19   | 316.50  | 317.23  | 316.63  | 322.58  | 321.87  | 321.80  | 321.64  | 321.61  | 320.69  | 320.89  | 315.19  | 315.38  |
| 20   | 316.72  | 318.31  | 317.35  | 323.26  | 322.11  | 322.07  | 321.73  | 321.66  | 320.93  | 320.50  | 315.26  | 315.50  |
| 21   | 318.29  | 321.47  | 317.13  | 324.15  | 322.01  | 321.63  | 321.59  | 321.73  | 321.11  | 320.50  | 316.12  | 315.28  |
| 22   | 317.17  | 319.81  | 316.30  | 323.40  | 321.97  | 321.63  | 321.67  | 321.68  | 320.76  | 320.74  | 315.06  | 315.09  |
| 23   | 317.73  | 318.35  | 316.95  | 322.28  | 321.96  | 321.61  | 321.76  | 321.57  | 320.86  | 320.84  | 315.19  | 315.85  |
| 24   | 317.94  | 318.97  | 316.74  | 325.99  | 321.84  | 321.53  | 321.95  | 322.27  | 320.74  | 322.42  | 315.24  | 315.17  |
| 25   | 317.47  | 318.83  | 316.78  | 323.76  | 321.90  | 321.68  | 321.84  | 321.85  | 320.57  | 322.76  | 315.39  | 316.61  |
| 26   | 318.82  | 317.60  | 318.19  | 322.85  | 321.93  | 321.73  | 321.95  | 321.31  | 320.98  | 321.25  | 315.14  | 315.49  |
| 27   | 318.57  | 317.02  | 320.28  | 322.09  | 322.37  | 321.64  | 321.88  | 321.82  | 320.70  | 320.83  | 315.68  | 315.10  |
| 28   | 319.21  | 316.99  | 318.94  | 322.22  | 321.77  | 321.57  | 321.77  | 321.66  | 320.74  | 321.67  | 317.87  | 316.38  |
| 29   | 317.11  | 316.90  | 317.42  | 322.01  | 321.76  | 321.46  | 321.83  | 321.64  | 320.75  | 320.73  | 317.59  | 315.76  |
| 30   | 315.15  |         | 319.23  | 321.93  | 321.72  | 321.50  | 321.87  | 321.58  | 320.99  | 320.72  | 317.01  | 315.13  |
| 31   | 314.37  |         | 317.36  |         | 321.88  |         | 321.74  | 321.59  |         | 320.60  |         | 314.78  |
| MEAN | 318.00  | 318.17  | 317.42  | 322.31  | 322.01  | 321.80  | 321.61  | 321.80  | 321.17  | 320.97  | 316.21  | 315.88  |
| MAX. | 329.29  | 325.63  | 323.00  | 330.47  | 327.29  | 326.65  | 326.18  | 327.27  | 326.17  | 328.26  | 324.47  | 322.54  |
|      | 1200/05 | 0800/21 | 1500/30 | 1500/15 | 1900/27 | 2100/05 | 2100/23 | 1500/17 | 1900/26 | 1400/28 | 1600/10 | 1700/02 |
| MIN. | 314.06  | 314.29  | 314.25  | 313.44  | 314.55  | 314.30  | 314.16  | 314.33  | 314.23  | 314.14  | 314.27  | 314.16  |
|      | 0500/07 | 0600/01 | 0600/08 | 2400/14 | 2400/29 | 0100/29 | 0100/05 | 2400/29 | 2200/16 | 2400/17 | 0600/30 | 0300/04 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 319.78

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3009: American Falls, Niagara Falls, New York on Niagara River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 558.66 Dec  
Daily mean elevation: 559.30 5 Jan  
Instant/hourly Elevation: 559.73 1900/1 Jan

LOWEST  
Monthly mean elevation: 558.25 Apr  
Daily mean elevation: 557.56 14 Apr  
Instant/hourly Elevation: 556.68 2100/13 Apr

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 559.30 | 5 Jan  |
| 559.13 | 13 Feb |
| 558.76 | 27 Mar |
| 558.75 | 24 Apr |
| 558.71 | 20 May |
| 558.75 | 13 Jun |
| 558.76 | 26 Jul |
| 558.81 | 6 Aug  |
| 558.69 | 30 Sep |
| 558.90 | 24 Oct |
| 558.90 | 10 Nov |
| 558.92 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 557.64 | 7 Jan  |
| 558.09 | 4 Feb  |
| 558.06 | 1 Mar  |
| 557.56 | 14 Apr |
| 558.39 | 27 May |
| 558.37 | 30 Jun |
| 558.40 | 1 Jul  |
| 558.42 | 31 Aug |
| 558.29 | 16 Sep |
| 558.47 | 20 Oct |
| 558.56 | 20 Nov |
| 558.53 | 4 Dec  |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 559.20                                                  | 2   |     |     |     |     |     |     |     |     |     |     |     | 559.20         | 2                          |
| 559.00                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 559.00         | 3                          |
| 558.80                                                  | 2   | 1   |     |     |     |     |     | 1   |     | 3   | 3   | 2   | 558.80         | 15                         |
| 558.60                                                  | 4   | 5   | 2   | 2   | 15  | 9   | 10  | 12  | 4   | 14  | 16  | 20  | 558.60         | 128                        |
| 558.40                                                  | 7   | 6   | 17  | 12  | 15  | 17  | 20  | 18  | 24  | 14  | 11  | 9   | 558.40         | 298                        |
| 558.20                                                  | 8   | 11  | 9   | 3   | 1   | 4   | 1   |     | 2   |     |     |     | 558.20         | 337                        |
| 558.00                                                  | 5   | 5   | 3   | 3   |     |     |     |     |     |     |     |     | 558.00         | 353                        |
| 557.80                                                  | 2   |     |     | 7   |     |     |     |     |     |     |     |     | 557.80         | 362                        |
| 557.60                                                  | 1   |     |     | 2   |     |     |     |     |     |     |     |     | 557.60         | 365                        |
| 557.40                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 557.40         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3009: American Falls, Niagara Falls, New York on Niagara River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 559.26  | 558.27  | 558.06  | 558.36  | 558.62  | 558.62  | 558.40  | 558.66  | 558.50  | 558.78  | 558.59  | 558.60  |
| 2    | 558.85  | 558.24  | 558.24  | 558.49  | 558.60  | 558.46  | 558.51  | 558.67  | 558.49  | 558.60  | 558.65  | 558.92  |
| 3    | 558.33  | 558.23  | 558.36  | 558.47  | 558.58  | 558.56  | 558.61  | 558.68  | 558.49  | 558.60  | 558.62  | 558.68  |
| 4    | 558.68  | 558.09  | 558.37  | 558.60  | 558.56  | 558.60  | 558.52  | 558.69  | 558.42  | 558.58  | 558.62  | 558.53  |
| 5    | 559.30  | 558.31  | 558.38  | 558.48  | 558.62  | 558.68  | 558.42  | 558.68  | 558.50  | 558.69  | 558.64  | 558.69  |
| 6    | 558.43  | 558.95  | 558.37  | 558.40  | 558.64  | 558.60  | 558.47  | 558.81  | 558.50  | 558.63  | 558.66  | 558.63  |
| 7    | 557.64  | 558.13  | 558.39  | 558.42  | 558.63  | 558.54  | 558.52  | 558.69  | 558.48  | 558.62  | 558.70  | 558.61  |
| 8    | 557.93  | 558.29  | 558.38  | 558.52  | 558.63  | 558.48  | 558.47  | 558.65  | 558.45  | 558.60  | 558.66  | 558.56  |
| 9    | 558.78  | 558.49  | 558.41  | 558.56  | 558.65  | 558.38  | 558.57  | 558.65  | 558.48  | 558.62  | 558.64  | 558.68  |
| 10   | 558.68  | 558.46  | 558.43  | 557.92  | 558.68  | 558.66  | 558.55  | 558.66  | 558.49  | 558.81  | 558.90  | 558.62  |
| 11   | 558.94  | 558.14  | 558.47  | 557.86  | 558.59  | 558.66  | 558.53  | 558.58  | 558.42  | 558.72  | 558.71  | 558.65  |
| 12   | 558.45  | 558.46  | 558.44  | 557.94  | 558.56  | 558.72  | 558.54  | 558.54  | 558.38  | 558.57  | 558.61  | 558.65  |
| 13   | 558.68  | 559.13  | 558.57  | 557.93  | 558.63  | 558.75  | 558.54  | 558.57  | 558.49  | 558.53  | 558.87  | 558.78  |
| 14   | 558.06  | 558.50  | 558.60  | 557.56  | 558.58  | 558.72  | 558.57  | 558.63  | 558.55  | 558.68  | 558.72  | 558.69  |
| 15   | 557.86  | 558.30  | 558.54  | 557.92  | 558.61  | 558.60  | 558.47  | 558.80  | 558.43  | 558.69  | 558.61  | 558.73  |
| 16   | 558.04  | 558.30  | 558.47  | 558.00  | 558.65  | 558.69  | 558.48  | 558.53  | 558.29  | 558.69  | 558.60  | 558.62  |
| 17   | 558.07  | 558.21  | 558.44  | 558.09  | 558.63  | 558.59  | 558.62  | 558.50  | 558.52  | 558.50  | 558.81  | 558.59  |
| 18   | 558.41  | 558.14  | 558.46  | 557.71  | 558.57  | 558.58  | 558.54  | 558.52  | 558.55  | 558.77  | 558.56  | 558.71  |
| 19   | 558.33  | 558.14  | 558.43  | 557.62  | 558.56  | 558.66  | 558.65  | 558.45  | 558.46  | 558.62  | 558.60  | 558.64  |
| 20   | 558.17  | 558.68  | 558.45  | 558.10  | 558.71  | 558.55  | 558.57  | 558.56  | 558.58  | 558.47  | 558.56  | 558.67  |
| 21   | 558.40  | 558.78  | 558.31  | 558.25  | 558.65  | 558.49  | 558.48  | 558.51  | 558.57  | 558.51  | 558.60  | 558.62  |
| 22   | 558.20  | 558.68  | 558.36  | 557.95  | 558.69  | 558.50  | 558.58  | 558.55  | 558.52  | 558.58  | 558.58  | 558.58  |
| 23   | 558.36  | 558.55  | 558.46  | 558.16  | 558.62  | 558.41  | 558.63  | 558.47  | 558.55  | 558.63  | 558.60  | 558.75  |
| 24   | 558.41  | 558.77  | 558.46  | 558.75  | 558.56  | 558.43  | 558.68  | 558.57  | 558.45  | 558.90  | 558.61  | 558.60  |
| 25   | 558.22  | 558.74  | 558.42  | 558.59  | 558.56  | 558.56  | 558.69  | 558.62  | 558.54  | 558.82  | 558.64  | 558.88  |
| 26   | 558.53  | 558.50  | 558.62  | 558.56  | 558.57  | 558.44  | 558.76  | 558.55  | 558.62  | 558.64  | 558.59  | 558.66  |
| 27   | 558.54  | 558.25  | 558.76  | 558.59  | 558.39  | 558.40  | 558.72  | 558.49  | 558.63  | 558.56  | 558.61  | 558.59  |
| 28   | 558.57  | 558.22  | 558.41  | 558.57  | 558.58  | 558.44  | 558.60  | 558.55  | 558.44  | 558.50  | 558.77  | 558.74  |
| 29   | 558.27  | 558.23  | 558.20  | 558.52  | 558.51  | 558.38  | 558.67  | 558.42  | 558.63  | 558.53  | 558.59  | 558.71  |
| 30   | 558.33  |         | 558.58  | 558.61  | 558.53  | 558.37  | 558.72  | 558.45  | 558.69  | 558.61  | 558.58  | 558.59  |
| 31   | 558.38  |         | 558.13  |         | 558.54  |         | 558.59  | 558.42  |         | 558.50  |         | 558.54  |
| MEAN | 558.42  | 558.42  | 558.42  | 558.25  | 558.60  | 558.55  | 558.57  | 558.58  | 558.50  | 558.63  | 558.65  | 558.66  |
| MAX. | 559.73  | 559.44  | 559.13  | 559.14  | 559.16  | 559.27  | 559.29  | 559.47  | 559.19  | 559.42  | 559.62  | 559.31  |
|      | 1900/01 | 0700/13 | 1600/30 | 0700/28 | 0800/20 | 1100/13 | 0700/30 | 0700/15 | 0700/27 | 0700/15 | 1700/10 | 1600/02 |
| MIN. | 557.44  | 557.72  | 557.92  | 556.68  | 557.58  | 557.41  | 557.46  | 557.41  | 557.33  | 557.44  | 558.30  | 558.33  |
|      | 1200/07 | 1500/07 | 1000/01 | 2100/13 | 2100/27 | 2100/24 | 2100/01 | 2100/29 | 2100/09 | 1900/17 | 0100/30 | 0300/04 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 558.52

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3012: Niagara Intake, Niagara Falls, New York on Niagara River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 561.50 Jul  
Daily mean elevation: 562.41 5 Jan  
Instant/hourly Elevation: 563.56 1100/15 Apr

LOWEST  
Monthly mean elevation: 561.05 Mar  
Daily mean elevation: 560.50 7 Jan  
Instant/hourly Elevation: 558.93 2200/14 Apr

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 562.41 | 5 Jan  |
| 562.14 | 13 Feb |
| 561.58 | 27 Mar |
| 562.22 | 24 Apr |
| 561.54 | 20 May |
| 561.60 | 19 Jun |
| 561.93 | 3 Jul  |
| 561.78 | 1 Aug  |
| 561.43 | 30 Sep |
| 561.74 | 24 Oct |
| 561.58 | 10 Nov |
| 561.64 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 560.50 | 7 Jan  |
| 560.71 | 19 Feb |
| 560.64 | 1 Mar  |
| 561.16 | 1 Apr  |
| 561.24 | 27 May |
| 561.15 | 9 Jun  |
| 561.34 | 5 Jul  |
| 561.25 | 31 Aug |
| 561.00 | 16 Sep |
| 561.12 | 20 Oct |
| 561.03 | 20 Nov |
| 561.01 | 31 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 562.40         | 1   |     |     |     |     |     |     |     |     |     |     |     | 562.40         | 1                          |
| 562.20         | 1   |     |     | 1   |     |     |     |     |     |     |     |     | 562.20         | 3                          |
| 562.00         | 1   | 2   |     | 1   |     |     |     |     |     |     |     |     | 562.00         | 7                          |
| 561.80         | 1   | 1   |     | 1   |     |     | 1   |     |     |     |     |     | 561.80         | 11                         |
| 561.60         | 2   | 1   |     | 3   |     |     | 3   | 5   |     | 3   |     | 1   | 561.60         | 29                         |
| 561.40         | 2   | 3   | 1   | 8   | 17  | 19  | 20  | 17  | 2   | 8   | 3   | 1   | 561.40         | 130                        |
| 561.20         | 4   | 5   | 5   | 15  | 14  | 10  | 5   | 9   | 23  | 15  | 6   | 11  | 561.20         | 252                        |
| 561.00         | 4   | 3   | 14  | 1   |     | 1   |     |     | 4   | 4   | 21  | 18  | 561.00         | 322                        |
| 560.80         | 11  | 6   | 9   |     |     |     |     |     | 1   |     |     |     | 560.80         | 349                        |
| 560.60         | 3   | 8   | 2   |     |     |     |     |     |     |     |     |     | 560.60         | 362                        |
| 560.40         | 1   |     |     |     |     |     |     |     |     |     |     |     | 560.40         | 363                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3012: Niagara Intake, Niagara Falls, New York on Niagara River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 562.21  | 560.83  | 560.64  | 561.16  | 561.48  | 561.45  | 561.62* | 561.78* | 561.32  | 561.51  | 561.12  | 561.11  |
| 2    | 561.61  | 560.82  | 560.86  | 561.32  | 561.47  | 561.23  | /       | 561.54* | 561.32  | 561.58* | 561.22  | 561.64  |
| 3    | 560.90  | 560.94  | 560.94  | 561.29  | 561.43  | 561.36  | 561.93* | 561.55  | 561.34  | /       | 561.16  | 561.36  |
| 4    | 561.56  | 560.76  | 560.93  | 561.45  | 561.40  | 561.44  | 561.46* | 561.58  | 561.25  | 561.28  | 561.16  | 561.06  |
| 5    | 562.41  | 561.09  | 561.00  | 561.27  | 561.47  | 561.55  | 561.34  | 561.56  | 561.35  | 561.43  | 561.19  | 561.27* |
| 6    | 561.39  | 562.14  | 560.97  | 561.22  | 561.48  | 561.43  | 561.38  | 561.70  | 561.35  | 561.47* | 561.24  | 561.20  |
| 7    | 560.50  | 561.12  | 561.01  | 561.26  | 561.46  | 561.34  | 561.44  | 561.59  | 561.32  | 561.33  | 561.23  | 561.12  |
| 8    | 560.88  | 561.22  | 560.95  | 561.33  | 561.45  | 561.27  | 561.39  | 561.52  | 561.26  | 561.30  | 561.17  | 561.05  |
| 9    | 561.94  | 561.39  | 561.01  | 561.37  | 561.48  | 561.15  | 561.51  | 561.53  | 561.32  | 561.32  | 561.14  | 561.22  |
| 10   | 561.73  | 561.26  | 561.02  | 561.44  | 561.53  | 561.49  | 561.48  | 561.55  | 561.32  | 561.61  | 561.58  | 561.13  |
| 11   | 562.19* | 560.76  | 561.04  | 561.36  | 561.37  | 561.48  | 561.45  | 561.45  | 561.22  | 561.51  | 561.26  | 561.19  |
| 12   | 561.10* | 561.32  | 560.98  | 561.32  | 561.31  | 561.55  | 561.44  | 561.41  | 561.17  | 561.32  | 561.09  | 561.19  |
| 13   | 561.60  | 562.14  | 561.27  | 561.57  | 561.39  | 561.58  | 561.45  | 561.44  | 561.33  | 561.24  | 561.49  | 561.37  |
| 14   | 560.87  | 561.26  | 561.24  | 561.28  | 561.31  | 561.54  | 561.50  | 561.54  | 561.40  | 561.43  | 561.29  | 561.25  |
| 15   | 560.83  | 560.96  | 561.23  | 562.15  | 561.30  | 561.46  | 561.36  | 561.74  | 561.19  | 561.41  | 561.10  | 561.40  |
| 16   | 560.98  | 560.92  | 561.14  | 561.57  | 561.44  | 561.51  | 561.42  | 561.63* | 561.00  | 561.38  | 561.15  | 561.17  |
| 17   | 560.63  | 560.80  | 561.11  | 561.89  | 561.44  | 561.48  | 561.72* | 561.68* | 561.34  | 561.17  | 561.52  | 561.13  |
| 18   | 561.04  | 560.71  | 561.06  | 561.61  | 561.35  | 561.48  | /       | 561.40* | 561.34  | 561.51  | 561.05  | 561.28  |
| 19   | 560.89  | 560.71  | 561.03  | 561.42  | 561.34  | 561.60  | 561.41* | 561.30  | 561.23  | 561.31  | 561.08  | 561.17  |
| 20   | 560.73  | 561.51  | 561.07  | 561.69  | 561.54  | 561.48  | 561.46  | 561.43  | 561.41  | 561.12  | 561.03  | 561.24  |
| 21   | 561.06  | 561.95  | 560.91  | 561.61  | 561.47  | 561.41  | 561.36  | 561.37  | 561.36  | 561.18  | 561.11  | 561.15  |
| 22   | 560.82  | 561.75  | 560.92  | 561.44  | 561.53  | 561.44  | 561.46  | 561.40  | 561.23  | 561.27  | 561.04  | 561.06  |
| 23   | 560.97  | 561.17  | 561.08  | 561.25  | 561.44  | 561.36  | 561.53  | 561.30  | 561.29  | 561.34  | 561.08  | 561.35  |
| 24   | 561.09  | 561.58  | 561.05  | 562.22  | 561.37  | 561.35  | 561.60  | 561.44  | 561.15  | 561.74  | 561.09  | 561.11  |
| 25   | 560.75  | 561.51* | 561.03  | 561.58  | 561.42  | 561.56  | 561.59  | 561.53  | 561.24  | 561.64  | 561.14  | 561.51  |
| 26   | 561.29  | 561.00* | 561.28  | 561.39  | 561.43  | 561.38  | 561.65  | 561.41  | 561.34  | 561.39  | 561.08  | 561.18  |
| 27   | 561.27  | 560.76  | 561.58  | 561.38  | 561.24  | 561.47* | 561.60  | 561.33  | 561.35  | 561.26  | 561.14  | 561.09  |
| 28   | 561.32  | 560.77  | 561.08  | 561.37  | 561.40  | 561.28* | 561.47  | 561.43  | 561.12  | 561.30  | 561.38  | 561.32  |
| 29   | 560.96  | 560.80  | 560.78  | 561.30  | 561.31  | 561.33  | 561.56  | 561.38* | 561.32  | 561.27  | 561.17  | 561.25  |
| 30   | 560.89  |         | 561.37  | 561.41  | 561.36  | 561.33  | 561.59  | 561.32* | 561.43  | 561.31  | 561.17  | 561.09  |
| 31   | 560.92  |         | 561.04  |         | 561.36  |         | 561.41  | 561.25  |         | 561.16  |         | 561.01  |
| MEAN | 561.20  | 561.17  | 561.05  | 561.46  | 561.41  | 561.43  | 561.50  | 561.49  | 561.29  | 561.37  | 561.19  | 561.22  |
| MAX. | 562.88  | 562.51  | 562.24  | 563.56  | 562.24  | 562.37  | 562.39  | 562.69  | 562.24  | 562.44  | 562.56  | 562.18  |
|      | 1800/01 | 0600/06 | 1400/30 | 1100/15 | 0700/20 | 1000/13 | 0700/24 | 0700/15 | 0700/20 | 0900/18 | 1500/10 | 1600/02 |
| MIN. | 560.24  | 560.46  | 560.44  | 558.93  | 560.23  | 560.19  | 560.38  | 560.35  | 560.15  | 560.31  | 560.82  | 560.80  |
|      | 1300/07 | 2400/28 | 0500/29 | 2200/14 | 2100/12 | 2100/24 | 2100/13 | 2100/09 | 1900/24 | 1900/23 | 2000/21 | 0400/04 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 561.32

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 3020: Buffalo Harbor, Buffalo, New York on Lake Erie

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 571.67 Apr  
 Daily mean elevation: 573.17 4 Jan  
 Instant/hourly Elevation: 575.86 1300/10 Nov

LOWEST  
 Monthly mean elevation: 570.61 Nov  
 Daily mean elevation: 569.72 22 Dec  
 Instant/hourly Elevation: 569.12 2400/28 Sep

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 573.17 | 4 Jan  |
| 572.43 | 6 Feb  |
| 572.00 | 13 Mar |
| 572.25 | 24 Apr |
| 571.77 | 13 May |
| 571.98 | 5 Jun  |
| 571.59 | 14 Jul |
| 571.67 | 25 Aug |
| 571.34 | 20 Sep |
| 571.97 | 24 Oct |
| 572.27 | 17 Nov |
| 572.08 | 2 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 570.79 | 19 Jan |
| 570.69 | 11 Feb |
| 570.96 | 22 Mar |
| 571.16 | 2 Apr  |
| 571.27 | 18 May |
| 571.24 | 24 Jun |
| 571.10 | 23 Jul |
| 570.66 | 22 Aug |
| 569.80 | 28 Sep |
| 570.19 | 31 Oct |
| 569.96 | 15 Nov |
| 569.72 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.  | No. of days |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-------------|
| Elev.                                                   | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | (ft.)  | above elev. |
| 573.00                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 573.00 | 1           |
| 572.80                                                  | 2   |     |     |     |     |     |     |     |     |     |     |     | 572.80 | 3           |
| 572.60                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 572.60 | 3           |
| 572.40                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 572.40 | 4           |
| 572.20                                                  | 1   |     |     | 1   |     |     |     |     |     |     | 1   |     | 572.20 | 7           |
| 572.00                                                  | 1   | 1   |     | 1   |     |     |     |     |     |     |     | 1   | 572.00 | 11          |
| 571.80                                                  | 2   | 4   | 2   | 6   |     | 1   |     |     |     | 1   |     |     | 571.80 | 27          |
| 571.60                                                  | 4   |     | 1   | 9   | 12  | 7   |     | 2   |     | 2   |     |     | 571.60 | 64          |
| 571.40                                                  | 8   | 5   | 6   | 9   | 16  | 12  |     | 2   |     | 1   |     |     | 571.40 | 126         |
| 571.20                                                  | 6   | 9   | 14  | 3   | 3   | 10  | 20  | 12  | 1   |     | 4   | 1   | 571.20 | 209         |
| 571.00                                                  | 5   | 7   | 6   | 1   |     |     | 8   | 5   | 1   | 2   | 2   | 2   | 571.00 | 248         |
| 570.80                                                  |     | 1   | 2   |     |     |     |     | 7   | 11  | 1   | 3   | 5   | 570.80 | 278         |
| 570.60                                                  | 1   | 1   |     |     |     |     |     | 3   | 6   | 4   | 2   | 6   | 570.60 | 301         |
| 570.40                                                  |     |     |     |     |     |     |     |     | 6   | 10  | 4   | 6   | 570.40 | 327         |
| 570.20                                                  |     |     |     |     |     |     |     |     | 3   | 9   | 9   | 8   | 570.20 | 356         |
| 570.00                                                  |     |     |     |     |     |     |     |     | 1   | 1   | 4   | 1   | 570.00 | 363         |
| 569.80                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 569.80 | 364         |
| 569.60                                                  |     |     |     |     |     |     |     |     | 1   |     |     | 1   | 569.60 | 366         |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 3020: Buffalo Harbor, Buffalo, New York on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 573.00  | 571.13  | 571.05  | 571.32  | 571.69  | 571.65  | 571.29  | 571.32  | 570.77  | 570.56  | 570.46  | 570.66  |
| 2    | 572.23  | 571.04  | 571.33  | 571.16  | 571.57  | 571.30  | 571.33  | 571.27  | 570.86  | 570.55  | 570.51  | 572.08  |
| 3    | 571.58  | 570.96  | 571.03  | 571.35  | 571.43  | 571.31  | 571.23  | 571.20  | 570.76  | 570.37  | 570.14  | 571.29  |
| 4    | 573.17  | 571.21  | 571.10  | 571.72  | 571.40  | 571.67  | 571.17  | 571.23  | 571.04  | 570.56  | 570.12  | 570.96  |
| 5    | 572.98  | 571.86  | 571.23  | 571.38  | 571.50  | 571.98  | 571.17  | 571.37  | 570.99  | 570.72  | 570.37  | 570.74  |
| 6    | 571.99  | 572.43  | 571.25  | 571.48  | 571.62  | 571.63  | 571.19  | 571.58  | 570.95  | 570.44  | 571.01  | 570.88  |
| 7    | 571.19  | 571.84  | 571.34  | 571.50  | 571.55  | 571.45  | 571.22  | 571.34  | 570.83  | 570.40  | 570.72  | 570.56  |
| 8    | 571.38  | 571.38  | 571.10  | 571.56  | 571.51  | 571.33  | 571.24  | 571.21  | 570.77  | 570.31  | 570.54  | 570.32  |
| 9    | 571.66  | 571.36  | 571.38  | 571.61  | 571.70  | 571.28  | 571.32  | 571.25  | 570.98  | 570.45  | 570.21  | 570.74  |
| 10   | 571.45  | 571.18  | 571.28  | 571.60  | 571.73  | 571.49  | 571.30  | 571.16  | 570.85  | 571.62  | 571.25  | 570.48  |
| 11   | 571.65  | 570.69  | 571.14  | 571.50  | 571.72  | 571.61  | 571.55  | 571.14  | 570.60  | 571.14  | 570.62  | 570.21  |
| 12   | 571.46  | 571.88  | 570.96  | 571.51  | 571.56  | 571.62  | 571.38  | 571.19  | 570.65  | 570.63  | 570.03  | 570.22  |
| 13   | 571.91  | 572.03  | 572.00  | 571.60  | 571.77  | 571.51  | 571.19  | 571.23  | 570.92  | 570.46  | 571.22  | 570.65  |
| 14   | 571.02  | 571.16  | 571.54  | 571.75  | 571.50  | 571.53  | 571.59  | 571.52  | 570.86  | 570.78  | 570.85  | 570.51  |
| 15   | 571.42  | 571.48  | 571.45  | 571.79  | 571.59  | 571.51  | 571.25  | 571.62  | 570.38  | 570.50  | 569.96  | 571.00  |
| 16   | 571.30  | 571.28  | 571.54  | 571.86  | 571.54  | 571.43  | 571.22  | 571.22  | 570.29  | 570.35  | 571.06  | 570.49  |
| 17   | 571.12  | 571.19  | 571.38  | 571.90  | 571.57  | 571.43  | 571.39  | 571.27  | 570.83  | 570.23  | 572.27  | 570.39  |
| 18   | 571.44  | 571.11  | 571.43  | 571.84  | 571.27  | 571.36  | 571.26  | 570.81  | 570.68  | 570.98  | 570.37  | 570.81  |
| 19   | 570.79  | 571.02  | 571.46  | 571.87  | 571.33  | 571.41  | 571.40  | 570.74  | 570.54  | 570.29  | 570.05  | 570.38  |
| 20   | 571.34  | 571.94  | 571.35  | 572.08  | 571.58  | 571.55  | 571.16  | 570.91  | 571.34  | 570.23  | 570.32  | 570.58  |
| 21   | 571.65  | 571.54  | 571.26  | 571.78  | 571.59  | 571.37  | 571.14  | 570.81  | 570.88  | 570.29  | 570.56  | 570.40  |
| 22   | 571.33  | 571.47  | 570.96  | 571.60  | 571.57  | 571.64  | 571.20  | 570.66  | 570.56  | 570.42  | 570.23  | 569.72  |
| 23   | 571.41  | 571.60  | 571.35  | 571.62  | 571.60  | 571.31  | 571.10  | 570.96  | 570.95  | 570.58  | 570.26  | 570.65  |
| 24   | 571.70  | 571.58  | 571.17  | 572.25  | 571.59  | 571.24  | 571.35  | 571.30  | 570.40  | 571.97  | 570.24  | 570.24  |
| 25   | 571.05  | 571.37  | 571.36  | 571.80  | 571.64  | 571.68  | 571.37  | 571.67  | 570.50  | 571.47  | 570.35  | 571.06  |
| 26   | 572.02  | 571.26  | 571.51  | 571.66  | 571.66  | 571.43  | 571.32  | 571.30  | 570.43  | 571.01  | 570.25  | 570.32  |
| 27   | 571.57  | 571.22  | 571.91  | 571.57  | 571.68  | 571.44  | 571.32  | 570.77  | 570.70  | 570.41  | 570.90  | 570.10  |
| 28   | 571.51  | 571.24  | 571.30  | 571.83  | 571.63  | 571.52  | 571.28  | 571.07  | 569.80  | 571.77  | 571.37  | 571.07  |
| 29   | 571.12  | 571.40  | 571.26  | 571.92  | 571.56  | 571.39  | 571.38  | 570.81  | 570.14  | 570.70  | 570.85  | 570.89  |
| 30   | 571.33  |         | 571.67  | 571.72  | 571.64  | 571.29  | 571.47  | 570.87  | 570.48  | 570.35  | 571.32  | 570.65  |
| 31   | 571.31  |         | 571.21  |         | 571.67  |         | 571.34  | 570.83  |         | 570.19  |         | 570.48  |
| MEAN | 571.62  | 571.41  | 571.33  | 571.67  | 571.58  | 571.48  | 571.29  | 571.15  | 570.69  | 570.67  | 570.61  | 570.63  |
| MAX. | 575.08  | 574.00  | 574.84  | 574.09  | 572.63  | 572.41  | 573.45  | 572.83  | 572.99  | 573.77  | 575.86  | 573.49  |
|      | 0700/13 | 1900/20 | 1100/30 | 1300/27 | 2000/09 | 1100/05 | 1900/30 | 1900/05 | 1400/20 | 1200/28 | 1300/10 | 1400/02 |
| MIN. | 569.99  | 570.32  | 570.26  | 570.34  | 570.63  | 570.71  | 570.58  | 569.92  | 569.12  | 569.52  | 569.13  | 569.15  |
|      | 2000/19 | 0400/11 | 1800/30 | 0800/27 | 0500/16 | 0600/03 | 2000/10 | 1700/23 | 2400/28 | 1500/18 | 1400/05 | 2000/22 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.18

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3028: Sturgeon Point, New York on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.71 Apr  
Daily mean elevation: 573.01 4 Jan  
Instant/hourly Elevation: 574.88 1800/4 Jan

LOWEST  
Monthly mean elevation: 570.57 Nov  
Daily mean elevation: 569.80 22 Dec  
Instant/hourly Elevation: 569.17 2400/28 Sep

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 573.01 | 4 Jan  |
| 572.36 | 6 Feb  |
| 571.97 | 13 Mar |
| 572.13 | 24 Apr |
| 571.72 | 13 May |
| 571.88 | 5 Jun  |
| 571.50 | 11 Jul |
| 571.57 | 25 Aug |
| 571.24 | 20 Sep |
| 571.72 | 24 Oct |
| 571.94 | 17 Nov |
| 571.77 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 570.84 | 19 Jan |
| 570.74 | 11 Feb |
| 570.99 | 22 Mar |
| 571.27 | 2 Apr  |
| 571.35 | 18 May |
| 571.26 | 24 Jun |
| 571.08 | 23 Jul |
| 570.65 | 22 Aug |
| 569.87 | 28 Sep |
| 570.18 | 31 Oct |
| 569.99 | 15 Nov |
| 569.80 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 573.00                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 573.00         | 1                          |
| 572.80                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 572.80         | 2                          |
| 572.60                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 572.60         | 3                          |
| 572.40                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 572.40         | 3                          |
| 572.20                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 572.20         | 4                          |
| 572.00                                                  | 1   | 1   |     | 2   |     |     |     |     |     |     |     |     | 572.00         | 8                          |
| 571.80                                                  | 3   | 4   | 2   | 7   |     | 1   |     |     |     |     | 1   |     | 571.80         | 26                         |
| 571.60                                                  | 4   | 1   | 1   | 13  | 14  | 3   |     |     |     | 1   |     | 1   | 571.60         | 64                         |
| 571.40                                                  | 9   | 5   | 7   | 7   | 15  | 16  | 2   | 3   |     | 2   |     |     | 571.40         | 130                        |
| 571.20                                                  | 6   | 9   | 13  | 1   | 2   | 10  | 18  | 7   | 1   | 1   | 1   |     | 571.20         | 199                        |
| 571.00                                                  | 4   | 7   | 6   |     |     |     | 11  | 11  |     | 1   | 4   | 2   | 571.00         | 245                        |
| 570.80                                                  | 1   |     | 2   |     |     |     |     | 6   | 10  | 2   | 2   | 4   | 570.80         | 272                        |
| 570.60                                                  |     | 1   |     |     |     |     |     | 4   | 8   | 4   | 4   | 5   | 570.60         | 298                        |
| 570.40                                                  |     |     |     |     |     |     |     |     | 7   | 10  | 5   | 9   | 570.40         | 329                        |
| 570.20                                                  |     |     |     |     |     |     |     |     | 2   | 8   | 8   | 7   | 570.20         | 354                        |
| 570.00                                                  |     |     |     |     |     |     |     |     | 1   | 2   | 4   | 2   | 570.00         | 363                        |
| 569.80                                                  |     |     |     |     |     |     |     |     | 1   |     | 1   |     | 569.80         | 365                        |
| 569.60                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 569.60         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3028: Sturgeon Point, New York on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 572.76  | 571.18  | 571.08  | 571.42  | 571.69  | 571.66  | 571.30  | 571.24  | 570.75  | 570.54  | 570.45  | 570.67  |
| 2    | 572.12  | 571.08  | 571.35  | 571.27  | 571.60  | 571.34  | 571.29  | 571.21  | 570.82  | 570.54  | 570.50  | 571.77  |
| 3    | 571.54  | 571.02  | 571.06  | 571.44  | 571.46  | 571.36  | 571.22  | 571.16  | 570.73  | 570.41  | 570.14  | 571.08  |
| 4    | 573.01  | 571.26  | 571.14  | 571.79  | 571.44  | 571.64  | 571.17  | 571.18  | 570.98  | 570.55  | 570.10  | 570.90  |
| 5    | 572.83  | 571.90  | 571.25  | 571.50  | 571.53  | 571.88  | 571.17  | 571.29  | 570.97  | 570.69  | 570.41  | 570.69  |
| 6    | 571.94  | 572.36  | 571.26  | 571.54  | 571.62  | 571.63  | 571.19  | 571.41  | 570.93  | 570.44  | 570.87  | 570.76  |
| 7    | 571.24  | 571.84  | 571.36  | 571.63  | 571.57  | 571.46  | 571.22  | 571.28  | 570.79  | 570.38  | 570.68  | 570.53  |
| 8    | 571.44  | 571.38  | 571.12  | 571.68  | 571.53  | 571.34  | 571.23  | 571.15  | 570.74  | 570.33  | 570.50  | 570.33  |
| 9    | 571.69  | 571.39  | 571.40  | 571.70  | 571.62  | 571.32  | 571.31  | 571.20  | 570.91  | 570.46  | 570.22  | 570.72  |
| 10   | 571.49  | 571.20  | 571.29  | 571.64  | 571.72  | 571.49  | 571.26  | 571.10  | 570.81  | 571.47  | 571.07  | 570.49  |
| 11   | 571.65  | 570.74  | 571.15  | 571.56  | 571.69  | 571.58  | 571.50  | 571.08  | 570.58  | 571.09  | 570.62  | 570.26  |
| 12   | 571.49  | 571.90  | 571.00  | 571.55  | 571.59  | 571.59  | 571.34  | 571.11  | 570.62  | 570.64  | 570.05  | 570.19  |
| 13   | 571.90  | 572.02  | 571.97  | 571.64  | 571.72  | 571.50  | 571.13  | 571.16  | 570.89  | 570.48  | 571.05  | 570.59  |
| 14   | 571.09  | 571.16  | 571.57  | 571.79  | 571.49  | 571.51  | 571.47  | 571.40  | 570.81  | 570.69  | 570.77  | 570.45  |
| 15   | 571.47  | 571.53  | 571.47  | 571.83  | 571.60  | 571.50  | 571.18  | 571.51  | 570.38  | 570.44  | 569.99  | 570.90  |
| 16   | 571.34  | 571.29  | 571.55  | 571.90  | 571.57  | 571.42  | 571.15  | 571.14  | 570.29  | 570.37  | 571.01  | 570.48  |
| 17   | 571.18  | 571.21  | 571.41  | 571.93  | 571.62  | 571.42  | 571.27  | 571.22  | 570.76  | 570.18  | 571.94  | 570.38  |
| 18   | 571.48  | 571.14  | 571.45  | 571.86  | 571.35  | 571.35  | 571.20  | 570.81  | 570.65  | 570.81  | 570.33  | 570.73  |
| 19   | 570.84  | 571.07  | 571.48  | 571.91  | 571.38  | 571.41  | 571.31  | 570.74  | 570.52  | 570.32  | 570.08  | 570.34  |
| 20   | 571.39  | 571.94  | 571.35  | 572.09  | 571.60  | 571.50  | 571.12  | 570.86  | 571.24  | 570.24  | 570.37  | 570.49  |
| 21   | 571.63  | 571.54  | 571.28  | 571.77  | 571.60  | 571.36  | 571.11  | 570.79  | 570.85  | 570.30  | 570.55  | 570.37  |
| 22   | 571.36  | 571.49  | 570.99  | 571.61  | 571.56  | 571.60  | 571.14  | 570.65  | 570.56  | 570.47  | 570.27  | 569.80  |
| 23   | 571.42  | 571.62  | 571.40  | 571.62  | 571.60  | 571.33  | 571.08  | 570.96  | 570.87  | 570.57  | 570.26  | 570.58  |
| 24   | 571.73  | 571.59  | 571.19  | 572.13  | 571.64  | 571.26  | 571.28  | 571.26  | 570.41  | 571.72  | 570.28  | 570.26  |
| 25   | 571.07  | 571.38  | 571.37  | 571.78  | 571.68  | 571.58  | 571.32  | 571.57  | 570.50  | 571.25  | 570.35  | 571.01  |
| 26   | 571.98  | 571.29  | 571.49  | 571.66  | 571.65  | 571.43  | 571.26  | 571.19  | 570.43  | 570.91  | 570.25  | 570.29  |
| 27   | 571.59  | 571.25  | 571.91  | 571.58  | 571.68  | 571.41  | 571.26  | 570.75  | 570.65  | 570.39  | 570.85  | 570.11  |
| 28   | 571.52  | 571.27  | 571.32  | 571.83  | 571.62  | 571.48  | 571.24  | 571.02  | 569.87  | 571.56  | 571.27  | 570.99  |
| 29   | 571.17  | 571.41  | 571.36  | 571.92  | 571.57  | 571.37  | 571.30  | 570.82  | 570.17  | 570.63  | 570.80  | 570.81  |
| 30   | 571.35  |         | 571.73  | 571.72  | 571.62  | 571.30  | 571.38  | 570.85  | 570.45  | 570.36  | 571.16  | 570.59  |
| 31   | 571.32  |         | 571.32  |         | 571.64  |         | 571.30  | 570.81  |         | 570.18  |         | 570.45  |
| MEAN | 571.61  | 571.43  | 571.36  | 571.71  | 571.59  | 571.47  | 571.25  | 571.09  | 570.66  | 570.63  | 570.57  | 570.58  |
| MAX. | 574.88  | 573.85  | 574.50  | 573.69  | 572.37  | 572.19  | 572.77  | 572.38  | 572.58  | 572.88  | 574.84  | 573.06  |
|      | 1800/04 | 1900/20 | 1100/30 | 1300/27 | 2300/15 | 1000/05 | 0200/11 | 0500/15 | 1400/20 | 0700/18 | 1300/10 | 1400/02 |
| MIN. | 570.11  | 570.39  | 570.43  | 570.52  | 570.92  | 570.81  | 570.51  | 570.18  | 569.17  | 569.88  | 569.29  | 569.33  |
|      | 2000/19 | 0400/11 | 0800/12 | 0800/27 | 0500/16 | 0600/03 | 0700/17 | 1700/23 | 2400/28 | 1600/21 | 1400/05 | 1900/22 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.16

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3038: Erie, Pennsylvania on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.77 Apr  
Daily mean elevation: 572.51 4 Jan  
Instant/hourly Elevation: 573.69 1700/4 Jan

LOWEST  
Monthly mean elevation: 570.50 Dec  
Daily mean elevation: 570.04 22 Dec  
Instant/hourly Elevation: 569.47 2000/10 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 572.51 | 4 Jan  |
| 571.83 | 6 Feb  |
| 571.83 | 13 Mar |
| 572.02 | 24 Apr |
| 571.82 | 25 May |
| 571.77 | 5 Jun  |
| 571.44 | 11 Jul |
| 571.40 | 15 Aug |
| 571.04 | 20 Sep |
| 571.17 | 24 Oct |
| 571.20 | 17 Nov |
| 571.09 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 571.05 | 19 Jan |
| 571.03 | 11 Feb |
| 571.15 | 22 Mar |
| 571.41 | 2 Apr  |
| 571.58 | 18 May |
| 571.40 | 24 Jun |
| 571.20 | 16 Jul |
| 570.82 | 27 Aug |
| 570.21 | 28 Sep |
| 570.19 | 17 Oct |
| 570.15 | 12 Nov |
| 570.04 | 22 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 572.40         | 1   |     |     |     |     |     |     |     |     |     |     |     | 572.40         | 1                          |
| 572.20         | 2   |     |     |     |     |     |     |     |     |     |     |     | 572.20         | 3                          |
| 572.00         |     |     |     | 1   |     |     |     |     |     |     |     |     | 572.00         | 4                          |
| 571.80         | 1   | 4   | 2   | 11  | 1   |     |     |     |     |     |     |     | 571.80         | 23                         |
| 571.60         | 3   | 3   | 2   | 14  | 28  | 6   |     |     |     |     |     |     | 571.60         | 79                         |
| 571.40         | 9   | 9   | 14  | 4   | 2   | 23  | 3   |     |     |     |     |     | 571.40         | 143                        |
| 571.20         | 13  | 12  | 12  |     |     | 1   | 27  | 16  |     |     |     |     | 571.20         | 224                        |
| 571.00         | 2   | 1   | 1   |     |     |     | 1   | 8   | 2   | 3   | 1   | 1   | 571.00         | 244                        |
| 570.80         |     |     |     |     |     |     |     | 7   | 8   | 2   | 2   |     | 570.80         | 263                        |
| 570.60         |     |     |     |     |     |     |     |     | 11  | 5   | 7   | 9   | 570.60         | 295                        |
| 570.40         |     |     |     |     |     |     |     |     | 7   | 13  | 9   | 10  | 570.40         | 334                        |
| 570.20         |     |     |     |     |     |     |     |     | 2   | 7   | 8   | 9   | 570.20         | 360                        |
| 570.00         |     |     |     |     |     |     |     |     |     | 1   | 3   | 2   | 570.00         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3038: Erie, Pennsylvania on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 572.25  | 571.26  | 571.22  | 571.53  | 571.78  | 571.70  | 571.42  | 571.29  | 570.85  | 570.60  | 570.41  | 570.66  |
| 2    | 571.87  | 571.27  | 571.42  | 571.41  | 571.73  | 571.51  | 571.35  | 571.31  | 570.88  | 570.57  | 570.52  | 571.09  |
| 3    | 571.52  | 571.24  | 571.24  | 571.54  | 571.63  | 571.56  | 571.32  | 571.28  | 570.80  | 570.55  | 570.22  | 570.74  |
| 4    | 572.51  | 571.46  | 571.27  | 571.72  | 571.62  | 571.71  | 571.28  | 571.28  | 570.99  | 570.65  | 570.16  | 570.75  |
| 5    | 572.40  | 571.81  | 571.34  | 571.60  | 571.69  | 571.77  | 571.30  | 571.30  | 571.04  | 570.75  | 570.35  | 570.62  |
| 6    | 571.77  | 571.83  | 571.35  | 571.63  | 571.74  | 571.70  | 571.30  | 571.36  | 570.98  | 570.55  | 570.64  | 570.54  |
| 7    | 571.35  | 571.60  | 571.40  | 571.76  | 571.71  | 571.62  | 571.31  | 571.30  | 570.84  | 570.46  | 570.57  | 570.47  |
| 8    | 571.47  | 571.42  | 571.27  | 571.79  | 571.66  | 571.48  | 571.32  | 571.24  | 570.77  | 570.44  | 570.50  | 570.41  |
| 9    | 571.60  | 571.42  | 571.42  | 571.81  | 571.66  | 571.50  | 571.35  | 571.26  | 570.84  | 570.52  | 570.29  | 570.65  |
| 10   | 571.47  | 571.32  | 571.38  | 571.75  | 571.73  | 571.60  | 571.32  | 571.22  | 570.80  | 571.08  | 570.67  | 570.53  |
| 11   | 571.47  | 571.03  | 571.27  | 571.72  | 571.75  | 571.61  | 571.44  | 571.22  | 570.66  | 570.95  | 570.57  | 570.44  |
| 12   | 571.38  | 571.67  | 571.23  | 571.70  | 571.69  | 571.59  | 571.38  | 571.23  | 570.71  | 570.68  | 570.15  | 570.25  |
| 13   | 571.75  | 571.82  | 571.83  | 571.76  | 571.74  | 571.55  | 571.25  | 571.23  | 570.88  | 570.51  | 570.67  | 570.49  |
| 14   | 571.25  | 571.22  | 571.67  | 571.81  | 571.61  | 571.56  | 571.42  | 571.32  | 570.79  | 570.49  | 570.59  | 570.34  |
| 15   | 571.35  | 571.50  | 571.57  | 571.87  | 571.62  | 571.55  | 571.26  | 571.40  | 570.54  | 570.36  | 570.19  | 570.72  |
| 16   | 571.29  | 571.36  | 571.59  | 571.90  | 571.71  | 571.51  | 571.20  | 571.16  | 570.47  | 570.37  | 570.70  | 570.45  |
| 17   | 571.25  | 571.29  | 571.47  | 571.89  | 571.74  | 571.53  | 571.34  | 571.20  | 570.77  | 570.19  | 571.20  | 570.40  |
| 18   | 571.41  | 571.25  | 571.51  | 571.88  | 571.58  | 571.46  | 571.32  | 571.03  | 570.71  | 570.68  | 570.38  | 570.56  |
| 19   | 571.05  | 571.21  | 571.60  | 571.90  | 571.60  | 571.50  | 571.40  | 570.97  | 570.61  | 570.41  | 570.21  | 570.26  |
| 20   | 571.38  | 571.81  | 571.46  | 571.98  | 571.74  | 571.54  | 571.27  | 571.05  | 571.04  | 570.37  | 570.49  | 570.32  |
| 21   | 571.54  | 571.56  | 571.39  | 571.79  | 571.72  | 571.46  | 571.30  | 571.01  | 570.81  | 570.37  | 570.64  | 570.36  |
| 22   | 571.37  | 571.42  | 571.15  | 571.71  | 571.70  | 571.58  | 571.29  | 570.89  | 570.58  | 570.58  | 570.44  | 570.04  |
| 23   | 571.38  | 571.65  | 571.42  | 571.71  | 571.72  | 571.46  | 571.28  | 571.08  | 570.77  | 570.55  | 570.39  | 570.38  |
| 24   | 571.52  | 571.65  | 571.35  | 572.02  | 571.72  | 571.40  | 571.35  | 571.20  | 570.53  | 571.17  | 570.40  | 570.31  |
| 25   | 571.21  | 571.45  | 571.45  | 571.82  | 571.82  | 571.54  | 571.37  | 571.34  | 570.60  | 570.87  | 570.44  | 570.78  |
| 26   | 571.77  | 571.40  | 571.57  | 571.72  | 571.73  | 571.49  | 571.32  | 571.08  | 570.58  | 570.76  | 570.35  | 570.33  |
| 27   | 571.51  | 571.37  | 571.81  | 571.74  | 571.71  | 571.50  | 571.32  | 570.82  | 570.66  | 570.37  | 570.73  | 570.20  |
| 28   | 571.38  | 571.36  | 571.46  | 571.87  | 571.70  | 571.50  | 571.33  | 570.99  | 570.21  | 571.07  | 570.99  | 570.79  |
| 29   | 571.20  | 571.45  | 571.50  | 571.98  | 571.67  | 571.42  | 571.34  | 570.96  | 570.40  | 570.58  | 570.62  | 570.64  |
| 30   | 571.28  |         | 571.63  | 571.80  | 571.69  | 571.42  | 571.36  | 570.95  | 570.55  | 570.38  | 570.83  | 570.48  |
| 31   | 571.26  |         | 571.47  |         | 571.70  |         | 571.32  | 570.94  |         | 570.26  |         | 570.43  |
| MEAN | 571.52  | 571.45  | 571.44  | 571.77  | 571.70  | 571.54  | 571.33  | 571.16  | 570.72  | 570.59  | 570.51  | 570.50  |
| MAX. | 573.69  | 572.88  | 572.78  | 572.76  | 572.41  | 571.97  | 571.97  | 571.96  | 571.67  | 571.74  | 572.49  | 571.67  |
| MIN. | 1700/04 | 1800/20 | 1300/30 | 1400/27 | 0100/16 | 1400/03 | 0100/11 | 0700/15 | 1500/20 | 1500/24 | 1400/10 | 1300/02 |
|      | 570.59  | 570.86  | 570.66  | 570.99  | 571.18  | 571.12  | 570.74  | 570.52  | 569.68  | 569.92  | 569.47  | 569.58  |
|      | 2000/19 | 0400/11 | 1900/30 | 0700/27 | 2100/16 | 0600/03 | 2300/30 | 1600/23 | 2200/28 | 2100/17 | 2000/10 | 0500/23 |

\* Indicates Less than 90% of the Hourly Data Available.

/ Indicates No Data.

ANNUAL MEAN: 571.19

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3053: Fairport Harbor, Ohio on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.83 Apr  
Daily mean elevation: 571.95 7 Apr  
Instant/hourly Elevation: 572.56 0900/27 Apr

LOWEST  
Monthly mean elevation: 570.34 Dec  
Daily mean elevation: 570.13 20 Dec  
Instant/hourly Elevation: 569.45 1400/10 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 571.55 | 1 Jan  |
| 571.56 | 5 Feb  |
| 571.69 | 29 Mar |
| 571.95 | 7 Apr  |
| 571.88 | 18 May |
| 571.76 | 7 Jun  |
| 571.47 | 1 Jul  |
| 571.37 | 1 Aug  |
| 571.12 | 5 Sep  |
| 570.72 | 5 Oct  |
| 570.59 | 21 Nov |
| 570.57 | 1 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 571.26 | 31 Jan |
| 571.27 | 22 Feb |
| 571.38 | 7 Mar  |
| 571.63 | 1 Apr  |
| 571.71 | 15 May |
| 571.46 | 25 Jun |
| 571.31 | 16 Jul |
| 570.93 | 27 Aug |
| 570.61 | 30 Sep |
| 570.20 | 17 Oct |
| 570.16 | 6 Nov  |
| 570.13 | 20 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.  | No. of days |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | (ft.)  | above elev. |
| 571.80                                                  |     |     |     | 23  | 17  |     |     |     |     |     |     |     | 571.80 | 40          |
| 571.60                                                  |     |     | 3   | 7   | 14  | 15  |     |     |     |     |     |     | 571.60 | 79          |
| 571.40                                                  | 13  | 16  | 24  |     |     | 15  | 8   |     |     |     |     |     | 571.40 | 155         |
| 571.20                                                  | 18  | 13  | 4   |     |     |     | 23  | 17  |     |     |     |     | 571.20 | 230         |
| 571.00                                                  |     |     |     |     |     |     |     | 9   | 2   |     |     |     | 571.00 | 241         |
| 570.80                                                  |     |     |     |     |     |     |     | 5   | 7   |     |     |     | 570.80 | 253         |
| 570.60                                                  |     |     |     |     |     |     |     |     | 21  |     |     |     | 570.60 | 281         |
| 570.40                                                  |     |     |     |     |     |     |     |     |     | 13  | 12  | 7   | 570.40 | 313         |
| 570.20                                                  |     |     |     |     |     |     |     |     |     | 10  | 16  | 20  | 570.20 | 359         |
| 570.00                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 4   | 570.00 | 366         |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3053: Fairport Harbor, Ohio on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 571.55  | 571.42  | 571.44  | 571.63  | 571.83  | 571.75  | 571.47  | 571.37  | 570.95  | 570.60  | 570.32  | 570.57  |
| 2    | 571.50  | 571.48  | 571.41  | 571.68  | 571.86  | 571.76  | 571.37  | 571.36  | 570.91  | 570.66  | 570.43  | 570.29  |
| 3    | 571.50  | 571.50  | 571.45  | 571.65  | 571.84  | 571.76  | 571.39  | 571.36  | 570.92  | 570.67  | 570.29  | 570.32  |
| 4    | 571.53  | 571.56  | 571.46  | 571.67  | 571.82  | 571.70  | 571.39  | 571.35  | 571.01  | 570.66  | 570.29  | 570.44  |
| 5    | 571.54  | 571.56  | 571.40  | 571.78  | 571.82  | 571.67  | 571.39  | 571.25  | 571.12  | 570.72  | 570.34  | 570.38  |
| 6    | 571.50  | 571.40  | 571.40  | 571.77  | 571.81  | 571.73  | 571.39  | 571.25  | 570.96  | 570.62  | 570.16  | 570.27  |
| 7    | 571.49  | 571.36  | 571.38  | 571.95  | 571.82  | 571.76  | 571.38  | 571.35  | 570.90  | 570.56  | 570.34  | 570.37  |
| 8    | 571.50  | 571.44  | 571.42  | 571.88  | 571.81  | 571.73  | 571.39  | 571.32  | 570.82  | 570.53  | 570.40  | 570.43  |
| 9    | 571.45  | 571.42  | 571.40  | 571.86  | 571.79  | 571.75  | 571.35  | 571.30  | 570.77  | 570.58  | 570.36  | 570.42  |
| 10   | 571.43  | 571.40  | 571.44  | 571.87  | 571.79  | 571.66  | 571.39  | 571.29  | 570.80  | 570.47  | 570.31  | 570.46  |
| 11   | 571.26  | 571.50  | 571.43  | 571.88  | 571.80  | 571.60  | 571.35  | 571.29  | 570.79  | 570.62  | 570.46  | 570.51  |
| 12   | 571.31  | 571.40  | 571.52  | 571.88  | 571.79  | 571.60  | 571.39  | 571.29  | 570.79  | 570.55  | 570.35  | 570.29  |
| 13   | 571.44  | 571.28  | 571.44  | 571.84  | 571.75  | 571.63  | 571.39  | 571.25  | 570.84  | 570.46  | 570.27  | 570.27  |
| 14   | 571.42  | 571.28  | 571.56  | 571.87  | 571.75  | 571.59  | 571.31  | 571.20  | 570.79  | 570.26  | 570.35  | 570.28  |
| 15   | 571.28  | 571.29  | 571.55  | 571.92  | 571.71  | 571.61  | 571.34  | 571.29  | 570.77  | 570.29  | 570.50  | 570.31  |
| 16   | 571.29  | 571.36  | 571.51  | 571.89  | 571.82  | 571.62  | 571.31  | 571.25  | 570.75  | 570.27  | 570.37  | 570.31  |
| 17   | 571.34  | 571.34  | 571.48  | 571.82  | 571.84  | 571.62  | 571.37  | 571.17  | 570.67  | 570.20  | 570.18  | 570.38  |
| 18   | 571.34  | 571.35  | 571.46  | 571.91  | 571.88  | 571.56  | 571.45  | 571.29  | 570.72  | 570.50  | 570.40  | 570.19  |
| 19   | 571.38  | 571.39  | 571.52  | 571.87  | 571.84  | 571.55  | 571.44  | 571.25  | 570.70  | 570.57  | 570.39  | 570.20  |
| 20   | 571.41  | 571.43  | 571.56  | 571.77  | 571.79  | 571.53  | 571.43  | 571.15  | 570.69  | 570.49  | 570.56  | 570.13  |
| 21   | 571.39  | 571.40  | 571.49  | 571.85  | 571.81  | 571.56  | 571.41  | 571.14  | 570.70  | 570.47  | 570.59  | 570.33  |
| 22   | 571.39  | 571.27  | 571.49  | 571.81  | 571.83  | 571.53  | 571.40  | 571.09  | 570.61  | 570.65  | 570.55  | 570.31  |
| 23   | 571.33  | 571.45  | 571.43  | 571.94  | 571.83  | 571.61  | 571.42  | 571.07  | 570.65  | 570.41  | 570.54  | 570.18  |
| 24   | 571.31  | 571.52  | 571.52  | 571.82  | 571.87  | 571.57  | 571.39  | 571.07  | 570.74  | 570.27  | 570.51  | 570.34  |
| 25   | 571.37  | 571.51  | 571.48  | 571.85  | 571.87  | 571.46  | 571.39  | 570.99  | 570.70  | 570.40  | 570.49  | 570.33  |
| 26   | 571.33  | 571.43  | 571.58  | 571.81  | 571.77  | 571.58  | 571.42  | 570.98  | 570.69  | 570.47  | 570.45  | 570.32  |
| 27   | 571.36  | 571.53  | 571.56  | 571.90  | 571.74  | 571.48  | 571.38  | 570.93  | 570.62  | 570.35  | 570.46  | 570.40  |
| 28   | 571.31  | 571.44  | 571.64  | 571.90  | 571.76  | 571.51  | 571.39  | 570.97  | 570.71  | 570.37  | 570.53  | 570.46  |
| 29   | 571.31  | 571.43  | 571.69  | 571.90  | 571.77  | 571.48  | 571.36  | 571.07  | 570.69  | 570.39  | 570.38  | 570.39  |
| 30   | 571.30  |         | 571.57  | 571.84  | 571.75  | 571.51  | 571.38  | 571.03  | 570.61  | 570.37  | 570.35  | 570.37  |
| 31   | 571.26  |         | 571.64  |         | 571.74  |         | 571.41  | 570.99  |         | 570.33  |         | 570.40  |
| MEAN | 571.39  | 571.42  | 571.49  | 571.83  | 571.80  | 571.62  | 571.39  | 571.19  | 570.78  | 570.48  | 570.40  | 570.34  |
| MAX. | 571.95  | 571.86  | 572.17  | 572.56  | 572.25  | 572.22  | 571.98  | 571.72  | 571.41  | 571.10  | 571.19  | 571.27  |
| MIN. | 0400/13 | 0800/05 | 0800/30 | 0900/27 | 1200/16 | 0600/02 | 0700/11 | 0300/15 | 0300/20 | 0700/18 | 2000/20 | 2200/03 |
|      | 1900/24 | 1500/15 | 1400/30 | 1600/03 | 2400/15 | 1900/25 | 0300/11 | 0400/06 | 0600/23 | 0100/18 | 1400/10 | 1900/18 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.18

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3063: Cleveland, Ohio on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.79 Apr  
Daily mean elevation: 571.93 23 Apr  
Instant/hourly Elevation: 572.77 1000/23 Apr

LOWEST  
Monthly mean elevation: 570.21 Dec  
Daily mean elevation: 569.77 6 Nov  
Instant/hourly Elevation: 569.10 1400/10 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 571.46 | 19 Jan |
| 571.57 | 11 Feb |
| 571.66 | 31 Mar |
| 571.93 | 23 Apr |
| 571.87 | 18 May |
| 571.83 | 2 Jun  |
| 571.45 | 1 Jul  |
| 571.33 | 3 Aug  |
| 571.11 | 5 Sep  |
| 570.68 | 5 Oct  |
| 570.59 | 20 Nov |
| 570.46 | 11 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 571.08 | 24 Jan |
| 570.99 | 22 Feb |
| 571.27 | 13 Mar |
| 571.55 | 4 Apr  |
| 571.65 | 15 May |
| 571.41 | 25 Jun |
| 571.22 | 14 Jul |
| 570.81 | 25 Aug |
| 570.50 | 27 Sep |
| 569.81 | 24 Oct |
| 569.77 | 6 Nov  |
| 569.94 | 2 Dec  |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 571.80         |     |     |     | 15  | 7   | 1   |     |     |     |     |     |     | 571.80         | 23                         |
| 571.60         |     |     | 3   | 13  | 24  | 9   |     |     |     |     |     |     | 571.60         | 72                         |
| 571.40         | 3   | 7   | 18  | 2   |     | 20  | 2   |     |     |     |     |     | 571.40         | 124                        |
| 571.20         | 19  | 16  | 10  |     |     |     | 29  | 14  |     |     |     |     | 571.20         | 212                        |
| 571.00         | 9   | 5   |     |     |     |     |     | 10  | 1   |     |     |     | 571.00         | 237                        |
| 570.80         |     | 1   |     |     |     |     |     | 7   | 6   |     |     |     | 570.80         | 251                        |
| 570.60         |     |     |     |     |     |     |     |     | 17  | 3   |     |     | 570.60         | 271                        |
| 570.40         |     |     |     |     |     |     |     |     | 6   | 11  | 8   | 2   | 570.40         | 298                        |
| 570.20         |     |     |     |     |     |     |     |     |     | 9   | 13  | 18  | 570.20         | 338                        |
| 570.00         |     |     |     |     |     |     |     |     |     | 7   | 6   | 8   | 570.00         | 359                        |
| 569.80         |     |     |     |     |     |     |     |     |     | 1   | 2   | 3   | 569.80         | 365                        |
| 569.60         |     |     |     |     |     |     |     |     |     |     | 1   |     | 569.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3063: Cleveland, Ohio on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 571.34  | 571.41  | 571.45  | 571.60  | 571.78  | 571.71  | 571.45  | 571.27  | 570.88  | 570.48  | 570.22  | 570.44  |
| 2    | 571.31  | 571.50  | 571.32  | 571.67  | 571.82  | 571.83  | 571.35  | 571.28  | 570.82  | 570.59  | 570.39  | 569.94  |
| 3    | 571.38  | 571.48  | 571.49  | 571.62  | 571.83  | 571.76  | 571.36  | 571.33  | 570.87  | 570.62  | 570.22  | 570.13  |
| 4    | 571.21  | 571.57  | 571.47  | 571.55  | 571.82  | 571.65  | 571.37  | 571.30  | 570.93  | 570.55  | 570.23  | 570.27  |
| 5    | 571.25  | 571.40  | 571.35  | 571.70  | 571.80  | 571.62  | 571.36  | 571.26  | 571.11  | 570.68  | 570.19  | 570.22  |
| 6    | 571.35  | 571.15  | 571.32  | 571.73  | 571.77  | 571.72  | 571.35  | 571.22  | 570.90  | 570.57  | 569.77  | 570.06  |
| 7    | 571.44  | 571.08  | 571.30  | 571.91  | 571.77  | 571.76  | 571.33  | 571.30  | 570.83  | 570.54  | 570.19  | 570.26  |
| 8    | 571.40  | 571.37  | 571.38  | 571.88  | 571.76  | 571.77  | 571.34  | 571.28  | 570.73  | 570.49  | 570.31  | 570.38  |
| 9    | 571.30  | 571.33  | 571.32  | 571.83  | 571.69  | 571.78  | 571.30  | 571.21  | 570.65  | 570.50  | 570.34  | 570.25  |
| 10   | 571.34  | 571.38  | 571.40  | 571.83  | 571.75  | 571.65  | 571.36  | 571.27  | 570.73  | 570.10  | 570.15  | 570.35  |
| 11   | 571.09  | 571.57  | 571.41  | 571.87  | 571.75  | 571.58  | 571.27  | 571.25  | 570.76  | 570.47  | 570.35  | 570.46  |
| 12   | 571.17  | 571.28  | 571.50  | 571.87  | 571.72  | 571.55  | 571.33  | 571.22  | 570.72  | 570.54  | 570.29  | 570.22  |
| 13   | 571.34  | 571.03  | 571.27  | 571.79  | 571.68  | 571.58  | 571.35  | 571.18  | 570.76  | 570.38  | 569.98  | 570.12  |
| 14   | 571.42  | 571.15  | 571.48  | 571.81  | 571.76  | 571.55  | 571.22  | 571.07  | 570.73  | 570.08  | 570.18  | 570.11  |
| 15   | 571.12  | 571.12  | 571.52  | 571.88  | 571.65  | 571.55  | 571.31  | 571.15  | 570.76  | 570.14  | 570.50  | 570.26  |
| 16   | 571.18  | 571.29  | 571.45  | 571.83  | 571.76  | 571.59  | 571.31  | 571.20  | 570.73  | 570.14  | 570.14  | 570.18  |
| 17   | 571.29  | 571.26  | 571.42  | 571.72  | 571.80  | 571.57  | 571.40  | 571.15  | 570.55  | 570.12  | 569.84  | 570.30  |
| 18   | 571.26  | 571.31  | 571.37  | 571.88  | 571.87  | 571.54  | 571.40  | 571.26  | 570.63  | 570.36  | 570.31  | 569.99  |
| 19   | 571.46  | 571.35  | 571.44  | 571.81  | 571.82  | 571.50  | 571.38  | 571.22  | 570.60  | 570.52  | 570.35  | 570.06  |
| 20   | 571.33  | 571.22  | 571.55  | 571.66  | 571.76  | 571.46  | 571.41  | 571.12  | 570.51  | 570.47  | 570.59  | 569.99  |
| 21   | 571.32  | 571.24  | 571.47  | 571.82  | 571.76  | 571.53  | 571.38  | 571.10  | 570.63  | 570.38  | 570.53  | 570.25  |
| 22   | 571.31  | 570.99  | 571.53  | 571.80  | 571.79  | 571.45  | 571.36  | 571.08  | 570.55  | 570.63  | 570.51  | 570.31  |
| 23   | 571.20  | 571.33  | 571.33  | 571.93  | 571.76  | 571.57  | 571.39  | 570.99  | 570.61  | 570.25  | 570.52  | 570.02  |
| 24   | 571.08  | 571.35  | 571.53  | 571.77  | 571.85  | 571.56  | 571.35  | 571.00  | 570.74  | 569.81  | 570.47  | 570.24  |
| 25   | 571.38  | 571.45  | 571.44  | 571.78  | 571.85  | 571.41  | 571.31  | 570.81  | 570.66  | 570.19  | 570.41  | 570.15  |
| 26   | 571.09  | 571.34  | 571.55  | 571.77  | 571.74  | 571.57  | 571.33  | 570.87  | 570.65  | 570.29  | 570.41  | 570.26  |
| 27   | 571.23  | 571.55  | 571.50  | 571.80  | 571.70  | 571.45  | 571.34  | 570.90  | 570.50  | 570.24  | 570.29  | 570.31  |
| 28   | 571.21  | 571.38  | 571.62  | 571.85  | 571.71  | 571.48  | 571.32  | 570.90  | 570.78  | 570.04  | 570.26  | 570.30  |
| 29   | 571.23  | 571.36  | 571.65  | 571.84  | 571.72  | 571.47  | 571.30  | 571.05  | 570.69  | 570.31  | 570.21  | 570.22  |
| 30   | 571.16  |         | 571.51  | 571.79  | 571.70  | 571.50  | 571.29  | 571.01  | 570.54  | 570.31  | 570.08  | 570.25  |
| 31   | 571.16  |         | 571.66  |         | 571.69  |         | 571.35  | 570.94  |         | 570.25  |         | 570.31  |
| MEAN | 571.27  | 571.32  | 571.45  | 571.79  | 571.76  | 571.59  | 571.34  | 571.14  | 570.72  | 570.36  | 570.27  | 570.21  |
| MAX. | 572.00  | 571.80  | 572.14  | 572.77  | 572.26  | 572.23  | 572.57  | 572.00  | 571.45  | 571.28  | 571.77  | 571.27  |
|      | 0400/13 | 2300/03 | 0700/20 | 1000/23 | 0100/25 | 0600/02 | 2200/10 | 1800/11 | 0600/05 | 0900/02 | 1900/20 | 0100/04 |
| MIN. | 570.38  | 570.68  | 570.63  | 571.22  | 571.15  | 571.23  | 570.89  | 570.46  | 569.97  | 569.26  | 569.10  | 569.49  |
|      | 0800/26 | 1000/22 | 1300/30 | 1600/27 | 1600/15 | 1500/22 | 1900/17 | 1500/25 | 1500/20 | 1500/10 | 1400/10 | 1500/02 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.10

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3079: Marblehead, Ohio on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.80 May  
Daily mean elevation: 572.11 2 Jun  
Instant/hourly Elevation: 572.83 0300/2 Jun

LOWEST  
Monthly mean elevation: 570.04 Dec  
Daily mean elevation: 568.95 24 Oct  
Instant/hourly Elevation: 567.90 2400/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 571.74 | 19 Jan |
| 571.77 | 11 Feb |
| 571.76 | 28 Mar |
| 572.03 | 7 Apr  |
| 572.00 | 3 May  |
| 572.11 | 2 Jun  |
| 571.59 | 20 Jul |
| 571.36 | 19 Aug |
| 571.16 | 28 Sep |
| 570.61 | 3 Oct  |
| 570.67 | 15 Nov |
| 570.56 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 570.19 | 4 Jan  |
| 570.49 | 13 Feb |
| 570.80 | 13 Mar |
| 571.44 | 4 Apr  |
| 571.65 | 13 May |
| 571.34 | 25 Jun |
| 571.11 | 14 Jul |
| 570.50 | 25 Aug |
| 569.99 | 20 Sep |
| 568.95 | 24 Oct |
| 569.08 | 17 Nov |
| 569.05 | 2 Dec  |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 572.00         |     |     |     | 1   |     | 2   |     |     |     |     |     |     | 572.00         | 3                          |
| 571.80         |     |     |     | 11  | 10  | 2   |     |     |     |     |     |     | 571.80         | 26                         |
| 571.60         | 1   | 2   | 7   | 13  | 12  | 11  |     |     |     |     |     |     | 571.60         | 72                         |
| 571.40         | 3   | 6   | 10  | 4   |     | 12  | 9   |     |     |     |     |     | 571.40         | 116                        |
| 571.20         | 7   | 9   | 12  |     |     | 3   | 20  | 13  |     |     |     |     | 571.20         | 180                        |
| 571.00         | 14  | 2   | 1   |     |     |     | 2   | 8   | 2   |     |     |     | 571.00         | 209                        |
| 570.80         | 2   | 5   |     |     |     |     |     | 7   | 8   |     |     |     | 570.80         | 231                        |
| 570.60         | 2   | 4   | 1   |     |     |     |     | 2   | 12  | 1   | 1   |     | 570.60         | 254                        |
| 570.40         |     | 1   |     |     |     |     |     | 1   | 7   | 8   | 9   | 1   | 570.40         | 281                        |
| 570.20         | 1   |     |     |     |     |     |     |     |     | 9   | 4   | 7   | 570.20         | 302                        |
| 570.00         | 1   |     |     |     |     |     |     |     |     | 7   | 6   | 10  | 570.00         | 326                        |
| 569.80         |     |     |     |     |     |     |     |     | 1   | 2   | 3   | 9   | 569.80         | 341                        |
| 569.60         |     |     |     |     |     |     |     |     |     | 1   | 5   | 3   | 569.60         | 350                        |
| 569.40         |     |     |     |     |     |     |     |     |     | 1   |     |     | 569.40         | 351                        |
| 569.20         |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 569.20         | 353                        |
| 569.00         |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 569.00         | 355                        |
| 568.80         |     |     |     |     |     |     |     |     |     | 1   |     |     | 568.80         | 356                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3079: Marblehead, Ohio on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 570.68  | 571.42  | 571.64  | 571.68  | 571.80  | 571.76  | 571.44  | 571.30  | 570.94  | 570.43  | 570.02  | 570.11* |
| 2    | 571.08  | 571.61  | 571.29  | /       | 571.88  | 572.11  | 571.40  | 571.28  | 570.80  | 570.56  | 570.14  | 569.05* |
| 3    | 571.34  | 571.57  | 571.72  | 571.62  | 572.00  | 571.90  | 571.41  | 571.35  | 570.90  | 570.61  | 570.29  | 569.78  |
| 4    | 570.19  | 571.50  | 571.61  | 571.44  | 571.96  | 571.68  | 571.45  | 571.31  | 570.76  | 570.38  | 570.33  | 569.95  |
| 5    | 570.38  | 570.82  | 571.38  | 571.73  | 571.87  | 571.55  | 571.42  | 571.18  | 570.97  | 570.42  | 569.94  | 570.02  |
| 6    | 571.08  | 570.61  | 571.31  | 571.74  | 571.85  | 571.68  | 571.40  | 571.16  | 570.85  | 570.51  | 569.36  | 569.89  |
| 7    | 571.54  | 570.80  | 571.26  | 572.03  | 571.86  | 571.77  | 571.38  | 571.34  | 570.80  | 570.50  | 569.88  | 570.16  |
| 8    | 571.38  | 571.32  | 571.44  | 571.93  | 571.87  | 572.04  | 571.36  | 571.31  | 570.74  | 570.46  | 570.12  | 570.33  |
| 9    | 571.20  | 571.27  | 571.23  | 571.85  | 571.69  | 572.00  | 571.31  | 571.18  | 570.56  | 570.40  | 570.42  | 569.96  |
| 10   | 571.33  | 571.46  | 571.44  | 571.88  | 571.75  | 571.74  | 571.30  | 571.31  | 570.70  | 569.59  | 569.79  | 570.20  |
| 11   | 571.06  | 571.77  | 571.51  | 571.97  | 571.81  | 571.58  | 571.23  | 571.26  | 570.89  | 570.12  | 570.20  | 570.33  |
| 12   | 571.09  | 570.89  | 571.55  | 571.97  | 571.74  | 571.55  | 571.33  | 571.23  | 570.74  | 570.27  | 570.50  | 570.37  |
| 13   | 570.88  | 570.49  | 570.80  | 571.84  | 571.65  | 571.59  | 571.40  | 571.20  | 570.64  | 570.28  | 569.75  | 569.85  |
| 14   | 571.45  | 571.27  | 571.19  | 571.75  | 571.88  | 571.56  | 571.11  | 570.92  | 570.73  | 569.97  | 570.05  | 570.04  |
| 15   | 571.12  | 570.87  | 571.40  | 571.79  | 571.69  | 571.54  | 571.35  | 570.96  | 571.01  | 570.10  | 570.67  | 569.96  |
| 16   | 571.20  | 571.19  | 571.30  | 571.73  | /       | 571.70  | 571.33  | 571.19  | 570.92  | 570.06  | 569.68  | 569.97  |
| 17   | 571.34  | 571.25  | 571.40  | 571.59  | /       | 571.65  | 571.38  | 571.10  | 570.52  | 570.20  | 569.08  | 570.06  |
| 18   | 571.20  | 571.35  | 571.32  | 571.79  | /       | 571.64  | 571.46  | 571.36  | 570.62  | 570.05  | 570.36  | 569.75  |
| 19   | 571.74  | 571.42  | 571.27  | 571.75  | /       | 571.51  | 571.40  | 571.36  | 570.68  | 570.46  | 570.52  | 570.03  |
| 20   | 571.25  | 570.61  | 571.53  | 571.48  | /       | 571.44  | 571.59  | 571.20  | 569.99  | 570.54  | 570.51  | 569.81  |
| 21   | 571.19  | 570.97  | 571.56  | 571.82  | /       | 571.59  | 571.45  | 571.21  | 570.49  | 570.40  | 570.33  | 570.16  |
| 22   | 571.31  | 570.75  | 571.76  | 571.94  | /       | 571.40  | 571.43  | 571.24  | 570.57  | 570.39  | 570.51  | 570.56  |
| 23   | 571.12  | 571.01  | 571.35  | 571.90  | /       | 571.72  | 571.52  | 570.95  | 570.47  | 570.14  | 570.57  | 569.82  |
| 24   | 570.86  | 570.95  | 571.57  | 571.58  | /       | 571.64  | 571.37  | 570.77  | 570.88  | 568.95  | 570.51  | 570.24  |
| 25   | 571.43  | 571.28  | 571.46  | 571.79  | 571.88  | 571.34  | 571.31  | 570.50  | 570.70  | 569.63  | 570.46  | 569.75  |
| 26   | 570.65  | 571.22  | 571.42  | 571.86  | 571.79  | 571.66  | 571.35  | 570.76  | 570.70  | 569.94  | 570.52  | 570.25  |
| 27   | 571.10  | 571.54  | 571.27  | 571.61  | 571.72  | 571.51  | 571.36  | 570.93  | 570.45  | 570.26  | 569.97  | 570.39  |
| 28   | 571.18  | 571.40  | 571.76  | 571.70  | 571.71  | 571.37  | 571.28  | 570.88  | 571.16  | 569.36  | 569.61  | 569.87  |
| 29   | 571.36  | 571.29  | 571.74  | 571.67  | 571.76  | 571.55  | 571.29  | 571.05  | 570.85  | 570.13  | 570.10  | 570.02  |
| 30   | 571.15  |         | 571.45  | 571.81  | 571.73  | 571.56  | 571.13  | 571.00  | 570.56  | 570.29  | 569.68  | 570.14  |
| 31   | 571.16  |         | 571.73  |         | 571.71  |         | 571.39  | 570.94  |         | 570.27  |         | 570.28  |
| MEAN | 571.13  | 571.17  | 571.44  | 571.77  | 571.80  | 571.64  | 571.37  | 571.12  | 570.72  | 570.18  | 570.13  | 570.04  |
| MAX. | 572.27  | 572.03  | 572.58  | 572.56  | 572.22  | 572.83  | 571.84  | 571.87  | 571.53  | 571.01  | 571.18  | 571.11  |
| MIN. | 2100/19 | 0800/11 | 1000/31 | 0700/27 | 1800/13 | 0300/02 | 2200/16 | 1100/18 | 2400/28 | 1900/02 | 2000/10 | 2300/03 |
|      | 569.04  | 569.61  | 570.25  | 570.37  | 571.15  | 571.14  | 570.65  | 570.08  | 569.51  | 568.17  | 567.90  | 568.60  |
|      | 1800/04 | 2100/20 | 1900/13 | 1700/27 | 2200/15 | 0900/26 | 0600/11 | 1600/24 | 1500/20 | 1800/24 | 2400/16 | 1400/02 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.04

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3085: Toledo, Ohio on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.87 May  
Daily mean elevation: 572.47 2 Jun  
Instant/hourly Elevation: 573.98 0200/2 Jun

LOWEST  
Monthly mean elevation: 569.93 Dec  
Daily mean elevation: 568.09 24 Oct  
Instant/hourly Elevation: 566.44 2000/4 Jan

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 572.13 | 19 Jan |
| 571.84 | 11 Feb |
| 572.13 | 22 Mar |
| 572.25 | 22 Apr |
| 572.26 | 3 May  |
| 572.47 | 2 Jun  |
| 571.74 | 20 Jul |
| 571.51 | 19 Aug |
| 571.64 | 28 Sep |
| 570.66 | 20 Oct |
| 570.88 | 15 Nov |
| 570.90 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 569.05 | 4 Jan  |
| 570.28 | 20 Feb |
| 570.29 | 13 Mar |
| 571.17 | 20 Apr |
| 571.44 | 9 May  |
| 571.16 | 25 Jun |
| 570.97 | 14 Jul |
| 570.12 | 25 Aug |
| 569.39 | 20 Sep |
| 568.09 | 24 Oct |
| 568.35 | 17 Nov |
| 568.87 | 2 Dec  |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 572.40                                                  |     |     |     |     |     | 1   |     |     |     |     |     |     | 572.40         | 1                          |
| 572.20                                                  |     |     |     | 2   | 1   | 1   |     |     |     |     |     |     | 572.20         | 5                          |
| 572.00                                                  | 1   |     | 2   | 5   | 5   | 2   |     |     |     |     |     |     | 572.00         | 20                         |
| 571.80                                                  |     | 1   | 4   | 8   | 13  | 2   |     |     |     |     |     |     | 571.80         | 48                         |
| 571.60                                                  | 1   | 2   | 4   | 3   | 11  | 13  | 1   |     | 1   |     |     |     | 571.60         | 84                         |
| 571.40                                                  | 5   | 6   | 6   | 9   | 1   | 7   | 11  | 3   |     |     |     |     | 571.40         | 132                        |
| 571.20                                                  | 10  | 8   | 7   | 2   |     | 3   | 15  | 10  | 1   |     |     |     | 571.20         | 188                        |
| 571.00                                                  | 7   | 1   | 6   | 1   |     | 1   | 3   | 6   | 5   |     |     |     | 571.00         | 218                        |
| 570.80                                                  | 1   | 3   | 1   |     |     |     | 1   | 7   | 4   |     | 2   | 1   | 570.80         | 238                        |
| 570.60                                                  | 2   | 4   |     |     |     |     |     | 3   | 11  | 1   | 3   |     | 570.60         | 262                        |
| 570.40                                                  |     | 2   |     |     |     |     |     | 1   | 4   | 7   | 8   | 1   | 570.40         | 285                        |
| 570.20                                                  | 1   | 2   | 1   |     |     |     |     |     | 3   | 7   |     | 5   | 570.20         | 304                        |
| 570.00                                                  |     |     |     |     |     |     |     | 1   |     | 7   | 5   | 7   | 570.00         | 324                        |
| 569.80                                                  | 2   |     |     |     |     |     |     |     |     | 2   | 2   | 5   | 569.80         | 335                        |
| 569.60                                                  |     |     |     |     |     |     |     |     |     | 3   | 3   | 7   | 569.60         | 348                        |
| 569.40                                                  |     |     |     |     |     |     |     |     |     |     | 2   | 3   | 569.40         | 353                        |
| 569.20                                                  |     |     |     |     |     |     |     |     | 1   | .   | 1   | 1   | 569.20         | 356                        |
| 569.00                                                  | 1   |     |     |     |     |     |     |     |     | 1   | 1   |     | 569.00         | 359                        |
| 568.80                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 1   | 568.80         | 363                        |
| 568.60                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 568.60         | 364                        |
| 568.40                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 568.40         | 364                        |
| 568.20                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 568.20         | 365                        |
| 568.00                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 568.00         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3085: Toledo, Ohio on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 569.90  | 571.56  | 571.88  | 571.77  | 571.86  | 571.74  | 571.44  | 571.25  | 571.04  | 570.36  | 569.86  | 569.86  |
| 2    | 570.96  | 571.73  | 571.28  | 572.01  | 571.97  | 572.47  | 571.47  | 571.25  | 570.78  | 570.50  | 569.95  | 568.87  |
| 3    | 571.37  | 571.73  | 572.01  | 571.71  | 572.26  | 572.12  | 571.44  | 571.36  | 570.94  | 570.56  | 570.47  | 569.45  |
| 4    | 569.05  | 571.49  | 571.77  | 571.46  | 572.13  | 571.68  | 571.56  | 571.27  | 570.62  | 570.16  | 570.43  | 569.67  |
| 5    | 569.81  | 570.43  | 571.43  | 571.83  | 571.88  | 571.48  | 571.47  | 571.08  | 570.82  | 570.16  | 569.72  | 569.90  |
| 6    | 571.03  | 570.37  | 571.28  | 571.89  | 571.90  | 571.62  | 571.40  | 571.01  | 570.78  | 570.47  | 568.86  | 569.77  |
| 7    | 571.61  | 570.80  | 571.30  | 572.03  | 571.93  | 571.78  | 571.38  | 571.35  | 570.86  | 570.50  | 569.64  | 570.12  |
| 8    | 571.43  | 571.36  | 571.58  | 572.02  | 571.88  | 572.34  | 571.35  | 571.25  | 570.77  | 570.41  | 570.02  | 570.28  |
| 9    | 571.27  | 571.32  | 571.15  | 571.90  | 571.44  | 572.14  | 571.27  | 571.07  | 570.53  | 570.36  | 570.60  | 569.68  |
| 10   | 571.40  | 571.50  | 571.55  | 571.99  | 571.68  | 571.78  | 571.19  | 571.36  | 570.68  | 568.82  | 569.50  | 570.04  |
| 11   | 571.21  | 571.84  | 571.69  | 572.21  | 571.84  | 571.55  | 571.14  | 571.21  | 571.07  | 569.66  | 570.13  | 570.19  |
| 12   | 571.24  | 570.92  | 571.57  | 572.12  | 571.78  | 571.52  | 571.30  | 571.20  | 570.78  | 570.04  | 570.83  | 570.37  |
| 13   | 570.63  | 570.58  | 570.29  | 571.94  | 571.68  | 571.61  | 571.49  | 571.11  | 570.51  | 570.22  | 569.52  | 569.72  |
| 14   | 571.55  | 571.39  | 570.93  | 571.56  | 572.13  | 571.56  | 570.97  | 570.71  | 570.70  | 569.91  | 570.02  | 570.01  |
| 15   | 571.20  | 570.92  | 571.29  | 571.58  | 571.69  | 571.47  | 571.39  | 570.75  | 571.36  | 570.08  | 570.88  | 569.66  |
| 16   | 571.28  | 571.25  | 571.17  | 571.59  | 571.79  | 571.86  | 571.31  | 571.18  | 571.15  | 570.06  | 569.08  | 569.81  |
| 17   | 571.41  | 571.31  | 571.40  | 571.29  | 571.93  | 571.72  | 571.29  | 570.98  | 570.46  | 570.34  | 568.35  | 569.93  |
| 18   | 571.24  | 571.41  | 571.17  | 571.55  | 572.15  | 571.76  | 571.47  | 571.46  | 570.61  | 569.80  | 570.45  | 569.68  |
| 19   | 572.13  | 571.49  | 571.02  | 571.56  | 572.08  | 571.47  | 571.42  | 571.51  | 570.80  | 570.46  | 570.75  | 570.12  |
| 20   | 571.14  | 570.28  | 571.41  | 571.17  | 571.87  | 571.38  | 571.74  | 571.23  | 569.39  | 570.66  | 570.48  | 569.73  |
| 21   | 571.08  | 570.94  | 571.68  | 571.81  | 571.84  | 571.68  | 571.43  | 571.30  | 570.36  | 570.45  | 570.16  | 570.14  |
| 22   | 571.33  | 570.73  | 572.13  | 572.25  | 571.95  | 571.22  | 571.46  | 571.41  | 570.65  | 570.12  | 570.58  | 570.90  |
| 23   | 571.10  | 570.77  | 571.30  | 571.63  | 571.96  | 571.87  | 571.59  | 570.91  | 570.33  | 570.13  | 570.66  | 569.49  |
| 24   | 570.66  | 570.70  | 571.71  | 571.35  | 572.20  | 571.73  | 571.36  | 570.45  | 571.02  | 568.09  | 570.60  | 570.23  |
| 25   | 571.47  | 571.27  | 571.53  | 571.83  | 571.86  | 571.16  | 571.28  | 570.12  | 570.75  | 569.05  | 570.54  | 569.35  |
| 26   | 570.37  | 571.17  | 571.18  | 572.02  | 571.74  | 571.67  | 571.33  | 570.64  | 570.83  | 569.65  | 570.67  | 570.35  |
| 27   | 571.20  | 571.53  | 571.02  | 571.45  | 571.69  | 571.53  | 571.34  | 570.93  | 570.38  | 570.38  | 569.61  | 570.52  |
| 28   | 571.22  | 571.40  | 571.99  | 571.45  | 571.72  | 571.25  | 571.22  | 570.82  | 571.64  | 568.64  | 568.99  | 569.44  |
| 29   | 571.44  | 571.31  | 571.82  | 571.56  | 571.78  | 571.70  | 571.24  | 570.92  | 571.05  | 569.95  | 570.10  | 569.92  |
| 30   | 571.24  |         | 571.36  | 571.87  | 571.75  | 571.65  | 571.04  | 570.97  | 570.59  | 570.30  | 569.38  | 570.15  |
| 31   | 571.18  |         | 571.88  |         | 571.71  |         | 571.40  | 570.95  |         | 570.32  |         | 570.34  |
| MEAN | 571.07  | 571.16  | 571.44  | 571.75  | 571.87  | 571.68  | 571.36  | 571.06  | 570.74  | 570.02  | 570.03  | 569.93  |
| MAX. | 573.22  | 572.18  | 573.68  | 573.17  | 573.21  | 573.98  | 572.39  | 572.63  | 572.60  | 571.45  | 572.01  | 571.67  |
|      | 2200/19 | 0300/11 | 2100/30 | 0400/23 | 2100/24 | 0200/02 | 1100/11 | 1400/18 | 2300/28 | 1600/18 | 2200/10 | 1900/22 |
| MIN. | 566.44  | 568.66  | 569.39  | 569.45  | 570.73  | 570.73  | 570.16  | 569.38  | 568.22  | 566.58  | 566.52  | 567.11  |
|      | 2000/04 | 2000/20 | 1700/13 | 1500/27 | 1400/16 | 1400/25 | 0800/11 | 1900/25 | 1300/20 | 1700/24 | 2200/16 | 1300/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.01

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3087: Monroe, Michigan on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.84 May  
Daily mean elevation: 572.29 2 Jun  
Instant/hourly Elevation: 573.56 2000/30 Mar

LOWEST  
Monthly mean elevation: 570.06 Nov  
Daily mean elevation: 568.53 24 Oct  
Instant/hourly Elevation: 567.02 0100/17 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 571.99 | 19 Jan |
| 571.79 | 11 Feb |
| 572.09 | 22 Mar |
| 572.04 | 13 Apr |
| 572.14 | 3 May  |
| 572.29 | 2 Jun  |
| 571.73 | 20 Jul |
| 571.53 | 19 Aug |
| 571.33 | 28 Sep |
| 570.63 | 20 Oct |
| 570.87 | 15 Nov |
|        | Dec    |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 569.37 | 4 Jan  |
| 570.53 | 6 Feb  |
| 570.50 | 13 Mar |
| 571.42 | 18 Apr |
| 571.46 | 13 May |
| 571.30 | 28 Jun |
| 571.08 | 14 Jul |
| 570.27 | 25 Aug |
| 569.64 | 20 Sep |
| 568.53 | 24 Oct |
| 568.74 | 17 Nov |
|        | Dec    |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 572.20                                                  |     |     |     |     |     | 1   |     |     |     |     |     |     | 572.20         | 1                          |
| 572.00                                                  |     |     |     |     |     | 1   |     |     |     |     |     |     | 572.00         | 6                          |
| 571.80                                                  | 1   |     | 4   | 2   | 6   | 3   |     |     |     |     |     |     | 571.80         | 22                         |
| 571.60                                                  |     | 2   | 6   | 4   | 6   | 13  | 1   |     |     |     |     |     | 571.60         | 54                         |
| 571.40                                                  | 8   | 5   | 7   | 4   | 1   | 9   | 16  | 4   |     |     |     |     | 571.40         | 108                        |
| 571.20                                                  | 12  | 6   | 8   |     |     | 3   | 11  | 9   | 2   |     |     |     | 571.20         | 159                        |
| 571.00                                                  | 4   | 2   | 4   |     |     |     | 3   | 4   | 3   |     |     |     | 571.00         | 179                        |
| 570.80                                                  | 1   | 3   |     |     |     |     |     | 8   | 5   |     | 2   |     | 570.80         | 198                        |
| 570.60                                                  | 1   |     |     |     |     |     |     | 1   | 7   | 1   | 1   |     | 570.60         | 209                        |
| 570.40                                                  | 1   | 3   | 1   |     |     |     |     | 1   | 3   | 10  | 4   |     | 570.40         | 232                        |
| 570.20                                                  | 1   |     |     |     |     |     |     | 1   | 2   | 5   | 1   |     | 570.20         | 242                        |
| 570.00                                                  |     |     |     |     |     |     |     |     |     | 7   | 3   |     | 570.00         | 252                        |
| 569.80                                                  | 1   |     |     |     |     |     |     |     |     | 1   | 4   |     | 569.80         | 258                        |
| 569.60                                                  |     |     |     |     |     |     |     |     | 1   | 3   | 3   |     | 569.60         | 265                        |
| 569.40                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 569.40         | 266                        |
| 569.20                                                  | 1   |     |     |     |     |     |     |     |     |     | 1   |     | 569.20         | 269                        |
| 569.00                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 569.00         | 270                        |
| 568.80                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 568.80         | 271                        |
| 568.60                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 568.60         | 272                        |
| 568.40                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 568.40         | 273                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3087: Monroe, Michigan on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 570.23  | 571.45  | 571.81  | 571.74  | /       | 571.70  | 571.41  | 571.30  | 571.14* | 570.48  | 569.92  | /       |
| 2    | 571.04  | 571.55  | 571.34  | 571.98  | /       | 572.29  | 571.50  | 571.32  | 570.88  | 570.47  | 569.93  | /       |
| 3    | 571.44  | 571.65  | 571.76  | 571.77  | 572.14* | 571.96  | 571.46  | 571.45  | 570.99  | 570.53  | 570.49  | /       |
| 4    | 569.37  | 571.40  | 571.60  | 571.55  | 572.04  | 571.69  | 571.56  | 571.37  | 570.82* | 570.19  | 570.49  | /       |
| 5    | 569.99  | 570.56  | 571.46  | 571.82* | 571.88* | 571.52  | 571.49  | 571.20  | /       | 570.12  | 569.92  | /       |
| 6    | 571.13  | 570.53  | 571.37  | /       | /       | 571.66  | 571.46  | 571.20* | /       | 570.45  | 569.32  | /       |
| 7    | 571.60  | 571.03  | 571.35  | /       | /       | 571.78  | 571.42  | /       | /       | 570.48  | 569.74  | /       |
| 8    | 571.39  | 571.34  | 571.62  | /       | /       | 572.10  | 571.39  | /       | /       | 570.44  | 570.05  | /       |
| 9    | 571.26  | 571.30  | 571.21  | /       | /       | 571.91  | 571.33  | /       | /       | 570.39  | 570.59  | /       |
| 10   | 571.46  | 571.47  | 571.49  | /       | /       | 571.75  | 571.27  | 571.48* | /       | 569.05  | 569.71  | /       |
| 11   | 571.41  | 571.79  | 571.69  | /       | 571.90* | 571.58  | 571.19  | 571.29  | /       | 569.61  | 570.11  | /       |
| 12   | 571.26  | 570.91  | 571.70  | /       | 571.86  | 571.57  | 571.33  | 571.28  | 570.79* | 570.02  | 570.87  | /       |
| 13   | 570.66  | 570.54* | 570.50  | 572.04* | 571.46* | 571.66  | 571.56  | 571.21  | 570.51  | 570.19  | 569.72  | /       |
| 14   | 571.54  | /       | 571.02  | 571.63  | /       | 571.63  | 571.08  | 570.92  | 570.69  | 570.03  | 570.06  | /       |
| 15   | 571.24  | /       | 571.27  | 571.58  | /       | 571.55  | 571.42  | 570.93  | 571.24  | 570.17  | 570.87  | /       |
| 16   | 571.35  | /       | 571.16  | 571.70  | /       | 571.78  | 571.40  | 571.20  | 571.17  | 570.21  | 569.47  | /       |
| 17   | 571.44  | /       | 571.43  | 571.48  | /       | 571.72  | 571.44  | 571.07  | 570.55  | 570.51  | 568.74  | /       |
| 18   | 571.25  | /       | 571.23  | 571.42* | /       | 571.80  | 571.53  | 571.42  | 570.65  | 569.74  | 570.43  | /       |
| 19   | 571.99  | /       | 571.08  | /       | /       | 571.59  | 571.46  | 571.53  | 570.94  | 570.45  | 570.72  | /       |
| 20   | 571.26  | /       | 571.37  | /       | /       | 571.45  | 571.73  | 571.21  | 569.64  | 570.63  | 570.28  | /       |
| 21   | 571.06  | /       | 571.62  | /       | /       | 571.67  | 571.43  | 571.26  | 570.36  | 570.46  | 569.93* | /       |
| 22   | 571.38  | 571.01* | 572.09  | /       | /       | 571.34  | 571.47  | 571.39  | 570.74  | 570.09  | /       | /       |
| 23   | 571.22  | 570.84  | 571.45  | /       | 571.84* | 571.82  | 571.60  | 570.97  | 570.33  | 570.27  | /       | /       |
| 24   | 570.82  | 570.83  | 571.70  | /       | 571.99  | 571.78  | 571.37  | 570.55  | 570.92  | 568.53  | /       | /       |
| 25   | 571.53  | 571.31  | 571.59  | /       | 571.77  | 571.31  | 571.34  | 570.27  | 570.73  | 569.27  | /       | /       |
| 26   | 570.51  | 571.35  | 571.30  | /       | 571.80  | 571.60  | 571.37  | 570.67  | 570.78  | 569.74  | /       | /       |
| 27   | 571.20  | 571.44  | 571.09  | /       | 571.76  | 571.53  | 571.38  | 570.99  | 570.47  | 570.48  | /       | /       |
| 28   | 571.22  | 571.48  | 571.97  | /       | 571.76  | 571.30  | 571.30  | 570.86  | 571.33  | 568.83  | /       | /       |
| 29   | 571.43  | 571.31  | 571.85  | /       | 571.81  | 571.62  | 571.33  | 570.92  | 571.02  | 569.98  | /       | /       |
| 30   | 571.29  |         | 571.46  | /       | 571.78  | 571.56  | 571.18  | 570.99  | 570.62  | 570.29  | /       | /       |
| 31   | 571.31  |         | 571.81  |         | 571.74  |         | 571.46  | 570.99* |         | 570.37  |         | /       |
| MEAN | 571.14  | 571.19  | 571.46  | 571.70  | 571.84  | 571.67  | 571.41  | 571.12  | 570.75  | 570.08  | 570.06  | /       |
| MAX. | 573.01  | 572.09  | 573.56  | 572.33  | 572.46  | 573.38  | 572.22  | 572.48  | 572.17  | 571.33  | 572.02  |         |
| MIN. | 2100/19 | 0300/11 | 2000/30 | 0700/02 | 2100/24 | 0300/02 | 1000/11 | 1300/18 | 2300/28 | 2400/17 | 2200/10 | STATION |
|      | 567.07  | 569.70  | 569.76  | 570.58  | 571.16  | 570.82  | 570.45  | 569.57  | 568.91  | 567.35  | 567.02  | CLOSED  |
|      | 1800/04 | 1800/05 | 1900/13 | 2400/17 | 1000/13 | 0900/26 | 0700/11 | 0400/15 | 1300/20 | 1600/24 | 0100/17 |         |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.13

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3090: Fermi Power Plant, Stony Point, Michigan on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.81 May  
Daily mean elevation: 572.20 2 Jun  
Instant/hourly Elevation: 573.35 2000/30 Mar

LOWEST  
Monthly mean elevation: 570.07 Oct  
Daily mean elevation: 568.63 24 Oct  
Instant/hourly Elevation: 567.31 0200/17 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 571.90 | 19 Jan |
| 571.74 | 11 Feb |
| 571.97 | 22 Mar |
| 572.03 | 22 Apr |
| 572.06 | 3 May  |
| 572.20 | 2 Jun  |
| 571.60 | 20 Jul |
| 571.38 | 19 Aug |
| 571.23 | 28 Sep |
| 570.57 | 20 Oct |
| 570.82 | 12 Nov |
|        | Dec    |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 569.46 | 4 Jan  |
| 570.45 | 20 Feb |
| 570.54 | 13 Mar |
| 571.36 | 24 Apr |
| 571.69 | 31 May |
| 571.23 | 28 Jun |
| 571.03 | 14 Jul |
| 570.27 | 25 Aug |
| 569.68 | 20 Sep |
| 568.63 | 24 Oct |
| 568.81 | 17 Nov |
|        | Dec    |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 572.00         |     |     |     | 1   | 1   | 2   |     |     |     |     |     |     | 572.00         | 4                          |
| 571.80         | 1   |     | 2   | 11  | 10  | 1   |     |     |     |     |     |     | 571.80         | 29                         |
| 571.60         |     | 1   | 6   | 8   | 20  | 12  |     |     |     |     |     |     | 571.60         | 76                         |
| 571.40         | 3   | 5   | 8   | 8   |     | 12  | 6   |     |     |     |     |     | 571.40         | 118                        |
| 571.20         | 13  | 12  | 8   | 2   |     | 3   | 21  | 10  | 1   |     |     |     | 571.20         | 188                        |
| 571.00         | 7   | 3   | 5   |     |     |     | 4   | 8   | 2   |     |     |     | 571.00         | 217                        |
| 570.80         | 2   | 4   | 1   |     |     |     |     | 8   | 9   |     | 2   |     | 570.80         | 243                        |
| 570.60         | 1   | 1   |     |     |     |     |     | 3   | 9   |     | 2   |     | 570.60         | 259                        |
| 570.40         | 1   | 3   | 1   |     |     |     |     | 1   | 6   | 8   | 7   |     | 570.40         | 286                        |
| 570.20         | 1   |     |     |     |     |     |     | 1   | 2   | 8   | 3   |     | 570.20         | 301                        |
| 570.00         |     |     |     |     |     |     |     |     |     | 6   | 4   |     | 570.00         | 311                        |
| 569.80         | 1   |     |     |     |     |     |     |     |     | 3   | 4   |     | 569.80         | 319                        |
| 569.60         |     |     |     |     |     |     |     |     | 1   | 2   | 5   |     | 569.60         | 327                        |
| 569.40         | 1   |     |     |     |     |     |     |     |     |     | 1   |     | 569.40         | 329                        |
| 569.20         |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 569.20         | 331                        |
| 569.00         |     |     |     |     |     |     |     |     |     |     | 1   |     | 569.00         | 332                        |
| 568.80         |     |     |     |     |     |     |     |     |     |     |     | 1   | 568.80         | 334                        |
| 568.60         |     |     |     |     |     |     |     |     |     |     |     | 1   | 568.60         | 335                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3090: Fermi Power Plant, Stony Point, Michigan on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----|
| 1    | 570.25  | 571.38  | 571.72  | 571.66  | 571.80  | 571.65  | 571.32  | 571.31  | 570.99  | 570.46  | 569.92  | /   |
| 2    | 571.08  | 571.46  | 571.29  | 571.88  | 571.89  | 572.20  | 571.41  | 571.25  | 570.83  | 570.42  | 569.88  | /   |
| 3    | 571.35  | 571.57  | 571.62  | 571.74  | 572.06  | 571.83  | 571.37  | 571.33  | 570.95  | 570.45  | 570.44  | /   |
| 4    | 569.46  | 571.34  | 571.51  | 571.52  | 571.94  | 571.64  | 571.45  | 571.27  | 570.62  | 570.18  | 570.41  | /   |
| 5    | 569.96  | 570.63  | 571.39  | 571.81  | 571.78  | 571.48  | 571.40  | 571.14  | 570.64  | 570.09  | 569.94  | /   |
| 6    | 570.96  | 570.60  | 571.33  | 571.81  | 571.78  | 571.61  | 571.35  | 570.97  | 570.70  | 570.39  | 569.45  | /   |
| 7    | 571.54  | 571.01  | 571.28  | 571.67  | 571.84  | 571.69  | 571.33  | 571.30  | 570.84  | 570.44  | 569.75  | /   |
| 8    | 571.37  | 571.29  | 571.56  | 571.81  | 571.89  | 572.04  | 571.30  | 571.27  | 570.82  | 570.42  | 570.02  | /   |
| 9    | 571.22  | 571.28  | 571.17  | 571.81  | 571.75  | 571.79  | 571.24  | 571.13  | 570.56  | 570.38  | 570.53  | /   |
| 10   | 571.34  | 571.41  | 571.42  | 571.87  | 571.71  | 571.73  | 571.20  | 571.28  | 570.65  | 569.17  | 569.72  | /   |
| 11   | 571.17  | 571.74  | 571.60  | 571.95  | 571.78  | 571.54  | 571.17  | 571.18  | 570.96  | 569.64  | 570.08  | /   |
| 12   | 571.23  | 570.91  | 571.68  | 571.94  | 571.86  | 571.52  | 571.25  | 571.18  | 570.80  | 569.93  | 570.82  | /   |
| 13   | 570.71  | 570.59  | 570.54  | 571.89  | 571.74  | 571.61  | 571.47  | 571.15  | 570.47  | 570.18  | 569.75  | /   |
| 14   | 571.50  | 571.34  | 570.99  | 571.60  | 571.96  | 571.58  | 571.03  | 570.85  | 570.64  | 570.04  | 570.06  | /   |
| 15   | 571.20  | 570.99  | 571.23  | 571.60  | 571.74  | 571.54  | 571.32  | 570.73  | 571.11  | 570.14  | 570.81  | /   |
| 16   | 571.31  | 571.23  | 571.13  | 571.60  | 571.77  | 571.68  | 571.28  | 571.14  | 571.09  | 570.21  | 569.70  | /   |
| 17   | 571.38  | 571.26  | 571.38  | 571.61  | 571.75  | 571.71  | 571.27  | 570.98  | 570.52  | 570.40  | 568.81  | /   |
| 18   | 571.22  | 571.34  | 571.20  | 571.50  | 571.97  | 571.72  | 571.45  | 571.28  | 570.58  | 569.83  | 570.38  | /   |
| 19   | 571.90  | 571.41  | 571.08  | 571.54  | 571.90  | 571.57  | 571.33  | 571.38  | 570.91  | 570.40  | 570.66  | /   |
| 20   | 571.26  | 570.45  | 571.33  | 571.39  | 571.79  | 571.48  | 571.60  | 571.11  | 569.68  | 570.57  | 570.24  | /   |
| 21   | 571.02  | 571.04  | 571.55  | 571.80  | 571.80  | 571.58  | 571.33  | 571.16  | 570.33  | 570.45  | 570.09  | /   |
| 22   | 571.32  | 571.09  | 571.97  | 572.03  | 571.86  | 571.40  | 571.38  | 571.28  | 570.69  | 570.06  | 570.51  | /   |
| 23   | 571.20  | 570.85  | 571.44  | 571.78  | 571.80  | 571.68  | 571.48  | 570.91  | 570.28  | 570.27  | 570.59  | /   |
| 24   | 570.85  | 570.83  | 571.62  | 571.36  | 571.86  | 571.76  | 571.32  | 570.54  | 570.84  | 568.63  | 570.58  | /   |
| 25   | 571.51  | 571.25  | 571.57  | 571.78  | 571.69  | 571.29  | 571.28  | 570.27  | 570.67  | 569.31  | 570.54  | /   |
| 26   | 570.55  | 571.33  | 571.31  | 571.92  | 571.78  | 571.47  | 571.31  | 570.66  | 570.74  | 569.75  | 570.72  | /   |
| 27   | 571.17  | 571.35  | 571.05  | 571.73  | 571.71  | 571.44  | 571.31  | 570.94  | 570.43  | 570.47  | 569.90  | /   |
| 28   | 571.17  | 571.43  | 571.88  | 571.41  | 571.72  | 571.23  | 571.21  | 570.79  | 571.23  | 568.91  | 569.28  | /   |
| 29   | 571.38  | 571.27  | 571.79  | 571.51  | 571.77  | 571.53  | 571.26  | 570.83  | 570.91  | 569.95  | 570.26  | /   |
| 30   | 571.24  |         | 571.48  | 571.81  | 571.72  | 571.45  | 571.08  | 570.91  | 570.57  | 570.24  | 569.61  | /   |
| 31   | 571.27  |         | 571.73  |         | 571.69  |         | 571.34  | 570.93  |         | 570.33  |         | /   |
| MEAN | 571.10  | 571.16  | 571.41  | 571.71  | 571.81  | 571.61  | 571.32  | 571.05  | 570.70  | 570.07  | 570.12  | /   |
| MAX. | 572.80  | 572.00  | 573.35  | 572.99  | 572.41  | 573.24  | 572.02  | 572.37  | 572.04  | 571.26  | 571.85  |     |
| MIN. | 1600/13 | 0300/11 | 2000/30 | 0700/27 | 0800/16 | 0200/02 | 1100/11 | 1300/18 | 2200/28 | 1700/18 | 2200/10 |     |
|      | 567.44  | 568.91  | 569.70  | 570.24  | 570.95  | 570.75  | 570.38  | 569.56  | 568.71  | 567.60  | 567.31  |     |
|      | 2000/04 | 2100/20 | 1800/13 | 0400/24 | 1400/16 | 0900/26 | 0700/11 | 0300/15 | 1200/20 | 1600/24 | 0200/17 |     |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.10

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4020: Gibraltar, Michigan on Detroit River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 571.98 May  
Daily mean elevation: 572.31 2 Jun  
Instant/hourly Elevation: 573.58 0200/2 Jun

LOWEST  
Monthly mean elevation: 570.29 Dec  
Daily mean elevation: 569.40 24 Oct  
Instant/hourly Elevation: 568.36 2200/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 572.08 | 19 Jan |
| 571.98 | 11 Feb |
| 572.12 | 22 Mar |
| 572.17 | 22 Apr |
| 572.22 | 3 May  |
| 572.31 | 2 Jun  |
| 571.87 | 20 Jul |
| 571.71 | 19 Aug |
| 571.46 | 28 Sep |
| 570.87 | 20 Oct |
| 571.18 | 12 Nov |
| 570.95 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 570.22 | 4 Jan  |
| 570.88 | 20 Feb |
| 570.84 | 13 Mar |
| 571.52 | 24 Apr |
| 571.83 | 25 May |
| 571.50 | 28 Jun |
| 571.37 | 14 Jul |
| 570.76 | 25 Aug |
| 570.31 | 20 Sep |
| 569.40 | 24 Oct |
| 569.41 | 17 Nov |
| 569.70 | 2 Dec  |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 572.20         |     |     |     |     | 1   | 1   |     |     |     |     |     |     | 572.20         | 2                          |
| 572.00         | 1   |     | 2   | 7   | 10  | 1   |     |     |     |     |     |     | 572.00         | 23                         |
| 571.80         | 5   | 1   | 4   | 12  | 20  | 12  | 1   |     |     |     |     |     | 571.80         | 78                         |
| 571.60         | 8   | 9   | 8   | 7   |     | 13  | 20  | 9   |     |     |     |     | 571.60         | 152                        |
| 571.40         | 10  | 10  | 9   | 4   |     | 3   | 9   | 9   | 3   |     |     |     | 571.40         | 209                        |
| 571.20         |     | 5   | 6   |     |     |     | 1   | 8   | 8   |     |     |     | 571.20         | 237                        |
| 571.00         | 3   | 2   | 1   |     |     |     |     | 3   | 10  |     | 2   |     | 571.00         | 258                        |
| 570.80         | 1   | 2   | 1   |     |     |     |     | 1   | 6   | 4   | 5   | 2   | 570.80         | 280                        |
| 570.60         | 2   |     |     |     |     |     |     | 1   | 2   | 11  | 6   | 1   | 570.60         | 303                        |
| 570.40         |     |     |     |     |     |     |     |     |     | 6   | 2   | 8   | 570.40         | 319                        |
| 570.20         | 1   |     |     |     |     |     |     |     | 1   | 4   | 9   | 11  | 570.20         | 345                        |
| 570.00         |     |     |     |     |     |     |     |     |     | 2   | 4   | 4   | 570.00         | 355                        |
| 569.80         |     |     |     |     |     |     |     |     |     | 2   |     | 4   | 569.80         | 361                        |
| 569.60         |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 569.60         | 363                        |
| 569.40         |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 569.40         | 365                        |
| 569.20         |     |     |     |     |     |     |     |     |     | 1   |     |     | 569.20         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4020: Gibraltar, Michigan on Detroit River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 570.62  | 571.52  | 571.87  | 571.81  | 571.98  | 571.80  | 571.56  | 571.64  | 571.36  | 570.86  | 570.30  | 570.21  |
| 2    | 571.41  | 571.53  | 571.48  | 572.02  | 572.05  | 572.31  | 571.69  | 571.60  | 571.26  | 570.79  | 570.21  | 569.70  |
| 3    | 571.71  | 571.70  | 571.69  | 571.92  | 572.22  | 571.96  | 571.65  | 571.68  | 571.37  | 570.79  | 570.76  | 569.89  |
| 4    | 570.22  | 571.47  | 571.60  | 571.72  | 572.08  | 571.83  | 571.73  | 571.64  | 571.10  | 570.58  | 570.73  | 570.01  |
| 5    | 570.79  | 570.93  | 571.58  | 571.97  | 571.93  | 571.67  | 571.68  | 571.55  | 571.01  | 570.43  | 570.39  | 570.28  |
| 6    | 571.54  | 571.05  | 571.54  | 571.95  | 571.93  | 571.79  | 571.64  | 571.40  | 571.10  | 570.73  | 570.16  | 570.29  |
| 7    | 571.94  | 571.47  | 571.46  | 571.69  | 572.02  | 571.88  | 571.61  | 571.65  | 571.26  | 570.78  | 570.14  | 570.36  |
| 8    | 571.85  | 571.65  | 571.72  | 571.91  | 572.06  | 572.10  | 571.59  | 571.63  | 571.27  | 570.78  | 570.34  | 570.44  |
| 9    | 571.91  | 571.62  | 571.35  | 571.94  | 572.00  | 571.90  | 571.53  | 571.52  | 571.01  | 570.75  | 570.84  | 570.04  |
| 10   | 571.92  | 571.70  | 571.59  | 572.01  | 571.86  | 571.86  | 571.50  | 571.65  | 571.05  | 569.81  | 570.19  | 570.25  |
| 11   | 571.75  | 571.98  | 571.78  | 572.05  | 571.95  | 571.73  | 571.52  | 571.58  | 571.32  | 570.09  | 570.39  | 570.31  |
| 12   | 571.75  | 571.33  | 571.88  | 572.05  | 572.05  | 571.73  | 571.54  | 571.55  | 571.20  | 570.31  | 571.18  | 570.75  |
| 13   | 571.16  | 571.05  | 570.84  | 572.05  | 571.92  | 571.81  | 571.77  | 571.54  | 570.86  | 570.54  | 570.26  | 570.18  |
| 14   | 571.81  | 571.64  | 571.18  | 571.74  | 572.15  | 571.79  | 571.37  | 571.31  | 571.00  | 570.49  | 570.42  | 570.47  |
| 15   | 571.64  | 571.35  | 571.37  | 571.71  | 571.95  | 571.73  | 571.63  | 571.17  | 571.44  | 570.55  | 571.09  | 569.84  |
| 16   | 571.69  | 571.56  | 571.30  | 571.75  | 572.10  | 571.83  | 571.61  | 571.54  | 571.45  | 570.64  | 570.32  | 570.22  |
| 17   | 571.66  | 571.57  | 571.56  | 571.84  | 571.87  | 571.84  | 571.65  | 571.38  | 570.94  | 570.81  | 569.41  | 570.21  |
| 18   | 571.46  | 571.62  | 571.40  | 571.58  | 572.11  | 571.95  | 571.75  | 571.63  | 571.00  | 570.25  | 570.64  | 570.19  |
| 19   | 572.08  | 571.67  | 571.27  | 571.69  | 572.05  | 571.79  | 571.65  | 571.71  | 571.35  | 570.73  | 570.93  | 570.52  |
| 20   | 571.52  | 570.88  | 571.44  | 571.58  | 571.97  | 571.64  | 571.87  | 571.46  | 570.31  | 570.87  | 570.46  | 570.41  |
| 21   | 571.19  | 571.39  | 571.68  | 571.93  | 571.98  | 571.81  | 571.64  | 571.51  | 570.72  | 570.80  | 570.34  | 570.33  |
| 22   | 571.53  | 571.44  | 572.12  | 572.17  | 572.04  | 571.54  | 571.69  | 571.62  | 571.12  | 570.39  | 570.72  | 570.95  |
| 23   | 571.45  | 571.22  | 571.66  | 571.95  | 571.96  | 571.87  | 571.79  | 571.34  | 570.73  | 570.77  | 570.81  | 570.29  |
| 24   | 571.17  | 571.23  | 571.78  | 571.52  | 571.94  | 571.91  | 571.63  | 570.97  | 571.19  | 569.40  | 570.82  | 570.43  |
| 25   | 571.69  | 571.54  | 571.78  | 571.96  | 571.83  | 571.54  | 571.62  | 570.76  | 571.03  | 569.81  | 570.78  | 569.81  |
| 26   | 570.87  | 571.64  | 571.50  | 572.08  | 571.95  | 571.68  | 571.62  | 571.06  | 571.10  | 570.15  | 570.98  | 570.52  |
| 27   | 571.43  | 571.52  | 571.24  | 572.00  | 571.93  | 571.68  | 571.64  | 571.33  | 570.87  | 570.85  | 570.31  | 570.81  |
| 28   | 571.48  | 571.64  | 572.04  | 571.56  | 571.89  | 571.50  | 571.55  | 571.18  | 571.46  | 569.49  | 569.67  | 569.84  |
| 29   | 571.69  | 571.43  | 571.95  | 571.65  | 571.94  | 571.76  | 571.59  | 571.21  | 571.24  | 570.29  | 570.63  | 570.29  |
| 30   | 571.53  |         | 571.65  | 571.97  | 571.89  | 571.68  | 571.44  | 571.28  | 570.93  | 570.54  | 570.03  | 570.54  |
| 31   | 571.53  |         | 571.87  |         | 571.86  |         | 571.66  | 571.31  |         | 570.67  |         | 570.53  |
| MEAN | 571.48  | 571.46  | 571.59  | 571.86  | 571.98  | 571.80  | 571.63  | 571.43  | 571.10  | 570.48  | 570.48  | 570.29  |
| MAX. | 572.96  | 572.20  | 573.58  | 573.24  | 572.95  | 573.58  | 572.46  | 572.50  | 572.18  | 571.68  | 571.93  | 571.60  |
|      | 2300/19 | 1000/11 | 2000/30 | 0700/27 | 0800/16 | 0200/02 | 1100/17 | 1400/18 | 2200/28 | 1400/23 | 2200/10 | 1900/22 |
| MIN. | 568.49  | 569.61  | 570.06  | 570.39  | 571.17  | 571.00  | 570.68  | 570.14  | 569.64  | 568.57  | 568.36  | 568.87  |
|      | 2000/04 | 2100/20 | 1800/13 | 0400/24 | 1100/13 | 0900/26 | 0700/17 | 0400/15 | 1900/20 | 1800/24 | 2200/16 | 1400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 571.30

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4030: Wyandotte, Michigan on Detroit River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 573.19 May  
Daily mean elevation: 573.71 9 Jan  
Instant/hourly Elevation: 574.03 1700/13 Jan

LOWEST  
Monthly mean elevation: 571.80 Dec  
Daily mean elevation: 571.17 17 Nov  
Instant/hourly Elevation: 570.62 0200/17 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 573.71 | 9 Jan  |
| 573.17 | 11 Feb |
| 573.14 | 22 Mar |
| 573.29 | 22 Apr |
| 573.31 | 3 May  |
| 573.44 | 2 Jun  |
| 573.06 | 20 Jul |
| 572.94 | 19 Aug |
| 572.60 | 28 Sep |
| 572.21 | 2 Oct  |
| 572.33 | 12 Nov |
| 572.20 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 572.27 | 1 Jan  |
| 572.55 | 6 Feb  |
| 572.42 | 13 Mar |
| 572.87 | 20 Apr |
| 573.07 | 10 May |
| 572.81 | 25 Jun |
| 572.70 | 14 Jul |
| 572.20 | 25 Aug |
| 571.77 | 20 Sep |
| 571.20 | 28 Oct |
| 571.17 | 17 Nov |
| 571.41 | 2 Dec  |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 573.60         | 4   |     |     |     |     |     |     |     |     |     |     |     | 573.60         | 4                          |
| 573.40         | 3   |     |     |     |     | 1   |     |     |     |     |     |     | 573.40         | 8                          |
| 573.20         | 3   |     |     | 7   | 12  | 3   |     |     |     |     |     |     | 573.20         | 33                         |
| 573.00         | 5   | 12  | 5   | 14  | 19  | 15  | 3   |     |     |     |     |     | 573.00         | 106                        |
| 572.80         | 6   | 12  | 11  | 9   |     | 11  | 22  | 12  |     |     |     |     | 572.80         | 189                        |
| 572.60         | 7   | 3   | 13  |     |     |     | 6   | 9   |     |     |     |     | 572.60         | 227                        |
| 572.40         | 1   | 2   | 2   |     |     |     |     | 7   | 16  |     |     |     | 572.40         | 255                        |
| 572.20         | 2   |     |     |     |     |     |     | 2   | 11  | 1   | 5   |     | 572.20         | 276                        |
| 572.00         |     |     |     |     |     |     |     | 1   | 2   | 12  | 7   | 3   | 572.00         | 301                        |
| 571.80         |     |     |     |     |     |     |     |     |     | 11  | 6   | 13  | 571.80         | 331                        |
| 571.60         |     |     |     |     |     |     |     |     | 1   | 3   | 9   | 10  | 571.60         | 354                        |
| 571.40         |     |     |     |     |     |     |     |     |     | 2   | 2   | 5   | 571.40         | 363                        |
| 571.20         |     |     |     |     |     |     |     |     |     | 1   |     |     | 571.20         | 364                        |
| 571.00         |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 571.00         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4030: Wyandotte, Michigan on Detroit River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 572.27  | 572.82  | 572.93  | 573.06  | 573.19  | 573.09  | 572.90  | 572.83  | 572.56  | 572.15  | 571.77  | 571.79  |
| 2    | 572.72  | 572.81  | 572.74  | 573.14  | 573.22  | 573.44  | 572.95  | 572.84  | 572.49  | 572.21  | 571.75  | 571.41  |
| 3    | 573.00  | 572.99  | 572.85  | 573.09  | 573.31  | 573.23  | 572.95  | 572.86  | 572.55  | 572.19  | 572.02  | 571.54  |
| 4    | 572.36  | 572.89  | 572.82  | 572.95  | 573.26  | 573.12  | 572.97  | 572.84  | 572.44  | 572.05  | 572.01  | 571.69  |
| 5    | 572.64  | 572.59  | 572.77  | 573.13  | 573.18  | 572.99  | 572.94  | 572.78  | 572.42  | 571.93  | 571.84  | 571.80  |
| 6    | 573.15  | 572.55  | 572.73  | 573.15  | 573.17  | 573.06  | 572.91  | 572.69  | 572.45  | 572.12  | 571.52  | 571.74  |
| 7    | 573.65  | 572.92  | 572.72  | 573.15  | 573.21  | 573.11  | 572.90  | 572.88  | 572.51  | 572.14  | 571.66  | 571.88  |
| 8    | 573.68  | 572.94  | 572.88  | 573.22  | 573.20  | 573.30  | 572.89  | 572.83  | 572.50  | 572.13  | 571.77  | 571.92  |
| 9    | 573.71  | 573.01  | 572.66  | 573.20  | 573.09  | 573.21  | 572.83  | 572.78  | 572.34  | 572.13  | 572.05  | 571.68  |
| 10   | 573.69  | 573.04  | 572.86  | 573.22  | 573.07  | 573.12  | 572.77  | 572.90  | 572.36  | 571.50  | 571.71  | 571.82  |
| 11   | 573.54  | 573.17  | 572.96  | 573.25  | 573.17  | 573.00  | 572.80  | 572.81  | 572.52  | 571.72  | 571.93  | 571.85  |
| 12   | 573.52  | 572.84  | 573.04  | 573.26  | 573.20  | 573.00  | 572.85  | 572.81  | 572.42  | 571.82  | 572.33  | 572.02  |
| 13   | 573.36  | 572.71  | 572.42  | 573.22  | 573.10  | 573.04  | 572.95  | 572.79  | 572.25  | 571.96  | 571.78  | 571.71  |
| 14   | 573.55  | 573.01  | 572.61  | 573.05  | 573.27  | 573.02  | 572.70  | 572.60  | 572.31  | 571.89  | 571.93  | 571.90  |
| 15   | 573.31  | 572.89  | 572.71  | 573.03  | 573.12  | 572.98  | 572.85  | 572.58  | 572.60  | 571.94  | 572.32  | 571.54  |
| 16   | 573.20  | 573.02  | 572.67  | 573.00  | 573.17  | 573.11  | 572.84  | 572.74  | 572.60  | 571.95  | 571.72  | 571.74  |
| 17   | 573.17  | 573.06  | 572.82  | 572.97  | 573.18  | 573.09  | 572.98  | 572.67  | 572.24  | 572.02  | 571.17  | 571.81  |
| 18   | 573.06  | 573.08  | 572.71  | 572.98  | 573.30  | 573.11  | 573.01  | 572.89  | 572.30  | 571.84  | 572.00  | 571.77  |
| 19   | 573.24  | 573.12  | 572.66  | 572.99  | 573.27  | 573.00  | 572.96  | 572.94  | 572.46  | 572.08  | 572.20  | 571.95  |
| 20   | 572.88  | 572.80  | 572.76  | 572.87  | 573.22  | 572.93  | 573.06  | 572.76  | 571.77  | 572.18  | 572.04  | 571.80  |
| 21   | 572.66  | 573.02  | 572.90  | 573.13  | 573.22  | 573.04  | 572.94  | 572.80  | 572.09  | 572.14  | 571.94  | 571.83  |
| 22   | 572.83  | 573.03  | 573.14  | 573.29  | 573.26  | 572.86  | 572.97  | 572.81  | 572.31  | 571.90  | 572.17  | 572.20  |
| 23   | 572.76  | 572.97  | 572.80  | 573.15  | 573.21  | 573.11  | 573.01  | 572.66  | 572.18  | 572.08  | 572.22  | 571.65  |
| 24   | 572.62  | 572.83  | 572.91  | 572.88  | 573.26  | 573.09  | 572.91  | 572.36  | 572.43  | 571.22  | 572.21  | 571.90  |
| 25   | 572.87  | 573.02  | 572.90  | 573.14  | 573.16  | 572.81  | 572.85  | 572.20  | 572.34  | 571.42  | 572.17  | 571.50  |
| 26   | 572.51  | 573.05  | 572.73  | 573.23  | 573.16  | 573.01  | 572.90  | 572.38  | 572.36  | 571.64  | 572.24  | 571.91  |
| 27   | 572.78  | 572.98  | 572.57  | 573.16  | 573.13  | 573.00  | 572.89  | 572.54  | 572.22  | 572.00  | 571.72  | 572.09  |
| 28   | 572.93  | 572.88  | 573.13  | 572.97  | 573.13  | 572.87  | 572.80  | 572.48  | 572.60  | 571.20  | 571.46  | 571.58  |
| 29   | 573.08  | 572.73  | 573.09  | 572.98  | 573.16  | 573.03  | 572.80  | 572.51  | 572.48  | 571.71  | 571.95  | 571.82  |
| 30   | 572.89  |         | 572.89  | 573.18  | 573.13  | 573.00  | 572.73  | 572.55  | 572.24  | 571.91  | 571.62  | 571.93  |
| 31   | 572.76  |         | 573.09  |         | 573.11  |         | 572.89  | 572.54  |         | 571.96  |         | 571.98  |
| MEAN | 573.04  | 572.92  | 572.82  | 573.10  | 573.19  | 573.06  | 572.89  | 572.70  | 572.38  | 571.91  | 571.91  | 571.80  |
| MAX. | 574.03  | 573.28  | 573.99  | 573.95  | 573.51  | 573.98  | 573.35  | 573.36  | 573.01  | 572.58  | 572.63  | 572.51  |
| MIN. | 1700/13 | 0300/11 | 2100/30 | 0800/27 | 2000/24 | 0200/02 | 2400/16 | 1400/18 | 2300/28 | 1600/23 | 2300/10 | 2000/22 |
|      | 571.74  | 572.14  | 572.06  | 572.39  | 572.74  | 572.50  | 572.42  | 571.85  | 571.46  | 570.78  | 570.62  | 570.76  |
|      | 2100/04 | 1800/05 | 0900/30 | 0100/24 | 1100/13 | 1500/25 | 1200/10 | 1800/25 | 1900/20 | 1700/24 | 0200/17 | 1400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 572.64

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4036: Fort Wayne, Detroit, Michigan on Detroit River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 573.60 May  
Daily mean elevation: 574.30 10 Jan  
Instant/hourly Elevation: 574.35 1700/13 Jan

LOWEST  
Monthly mean elevation: 572.28 Dec  
Daily mean elevation: 571.74 28 Oct  
Instant/hourly Elevation: 571.23 2100/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 574.30 | 10 Jan |
| 573.67 | 11 Feb |
| 573.53 | 28 Mar |
| 573.69 | 22 Apr |
| 573.69 | 18 May |
| 573.81 | 2 Jun  |
| 573.46 | 20 Jul |
| 573.34 | 19 Aug |
| 573.00 | 16 Sep |
| 572.68 | 2 Oct  |
| 572.74 | 15 Nov |
| 572.61 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 572.83 | 1 Jan  |
| 573.08 | 6 Feb  |
| 572.95 | 13 Mar |
| 573.33 | 20 Apr |
| 573.49 | 10 May |
| 573.23 | 25 Jun |
| 573.16 | 14 Jul |
| 572.68 | 25 Aug |
| 572.27 | 20 Sep |
| 571.74 | 28 Oct |
| 571.75 | 17 Nov |
| 571.95 | 2 Dec  |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 574.20         | 4   |     |     |     |     |     |     |     |     |     |     |     | 574.20         | 4                          |
| 574.00         | 3   |     |     |     |     |     |     |     |     |     |     |     | 574.00         | 7                          |
| 573.80         | 2   |     |     |     |     | 1   |     |     |     |     |     |     | 573.80         | 10                         |
| 573.60         | 3   | 1   |     | 9   | 13  | 3   |     |     |     |     |     |     | 573.60         | 39                         |
| 573.40         | 4   | 19  | 5   | 18  | 18  | 21  | 4   |     |     |     |     |     | 573.40         | 128                        |
| 573.20         | 9   | 6   | 12  | 3   |     | 5   | 25  | 14  |     |     |     |     | 573.20         | 202                        |
| 573.00         | 5   | 3   | 13  |     |     |     | 2   | 9   |     |     |     |     | 573.00         | 234                        |
| 572.80         | 1   |     | 1   |     |     |     |     | 7   | 18  |     |     |     | 572.80         | 261                        |
| 572.60         |     |     |     |     |     |     |     | 1   | 10  | 3   | 8   | 1   | 572.60         | 284                        |
| 572.40         |     |     |     |     |     |     |     |     | 1   | 15  | 8   | 4   | 572.40         | 312                        |
| 572.20         |     |     |     |     |     |     |     |     | 1   | 7   | 6   | 19  | 572.20         | 345                        |
| 572.00         |     |     |     |     |     |     |     |     |     | 3   | 5   | 6   | 572.00         | 359                        |
| 571.80         |     |     |     |     |     |     |     |     |     | 1   | 2   | 1   | 571.80         | 363                        |
| 571.60         |     |     |     |     |     |     |     |     |     | 2   | 1   |     | 571.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 4036: Fort Wayne, Detroit, Michigan on Detroit River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 572.83  | 573.26  | 573.34  | 573.49  | 573.61  | 573.51  | 573.34  | 573.23  | 572.97  | 572.60  | 572.24  | 572.29  |
| 2    | 573.20  | 573.26  | 573.18  | 573.54  | 573.63  | 573.81  | 573.37  | 573.26  | 572.92  | 572.68  | 572.23  | 571.95  |
| 3    | 573.45  | 573.43  | 573.27  | 573.52  | 573.69  | 573.64  | 573.39  | 573.26  | 572.95  | 572.66  | 572.45  | 572.05  |
| 4    | 573.01  | 573.38  | 573.25  | 573.38  | 573.66  | 573.54  | 573.40  | 573.24  | 572.90  | 572.54  | 572.44  | 572.21  |
| 5    | 573.21  | 573.15  | 573.19  | 573.55  | 573.59  | 573.43  | 573.37  | 573.19  | 572.89  | 572.43  | 572.33  | 572.27  |
| 6    | 573.66  | 573.08  | 573.16  | 573.58  | 573.59  | 573.48  | 573.35  | 573.13  | 572.89  | 572.60  | 571.98  | 572.21  |
| 7    | 574.21  | 573.44  | 573.17  | 573.63  | 573.61  | 573.51  | 573.34  | 573.28  | 572.95  | 572.60  | 572.15  | 572.34  |
| 8    | 574.25  | 573.60  | 573.29  | 573.65  | 573.60  | 573.69  | 573.32  | 573.24  | 572.93  | 572.59  | 572.24  | 572.39  |
| 9    | 574.22  | 573.60  | 573.12  | 573.65  | 573.50  | 573.63  | 573.27  | 573.19  | 572.81  | 572.60  | 572.47  | 572.18  |
| 10   | 574.30  | 573.57  | 573.30  | 573.66  | 573.49  | 573.53  | 573.21  | 573.31  | 572.81  | 572.05  | 572.19  | 572.30  |
| 11   | 574.20  | 573.67  | 573.39  | 573.69  | 573.58  | 573.42  | 573.23  | 573.22  | 572.93  | 572.25  | 572.43  | 572.32  |
| 12   | 574.12  | 573.50  | 573.46  | 573.67  | 573.58  | 573.42  | 573.29  | 573.23  | 572.85  | 572.33  | 572.72  | 572.44  |
| 13   | 573.90  | 573.42  | 572.95  | 573.63  | 573.51  | 573.46  | 573.34  | 573.22  | 572.72  | 572.44  | 572.28  | 572.21  |
| 14   | 574.03  | 573.59  | 573.10  | 573.48  | 573.67  | 573.43  | 573.16  | 573.05  | 572.76  | 572.37  | 572.42  | 572.36  |
| 15   | 573.84  | 573.41  | 573.17  | 573.49  | 573.56  | 573.40  | 573.27  | 573.04  | 572.98  | 572.41  | 572.74  | 572.06  |
| 16   | 573.67  | 573.50  | 573.14  | 573.45  | 573.60  | 573.52  | 573.27  | 573.16  | 573.00  | 572.39  | 572.20  | 572.25  |
| 17   | 573.58  | 573.50  | 573.26  | 573.42  | 573.60  | 573.51  | 573.44  | 573.10  | 572.70  | 572.44  | 571.75  | 572.33  |
| 18   | 573.50  | 573.54  | 573.17  | 573.46  | 573.69  | 573.50  | 573.44  | 573.32  | 572.75  | 572.34  | 572.44  | 572.32  |
| 19   | 573.65  | 573.54  | 573.13  | 573.44  | 573.66  | 573.41  | 573.39  | 573.34  | 572.85  | 572.54  | 572.64  | 572.45  |
| 20   | 573.37  | 573.32  | 573.20  | 573.33  | 573.64  | 573.36  | 573.46  | 573.19  | 572.27  | 572.61  | 572.52  | 572.29  |
| 21   | 573.15  | 573.49  | 573.33  | 573.56  | 573.63  | 573.45  | 573.38  | 573.22  | 572.56  | 572.58  | 572.44  | 572.32  |
| 22   | 573.31  | 573.48  | 573.52  | 573.69  | 573.65  | 573.29  | 573.39  | 573.21  | 572.72  | 572.40  | 572.65  | 572.61  |
| 23   | 573.25  | 573.43  | 573.22  | 573.58  | 573.62  | 573.50  | 573.42  | 573.10  | 572.66  | 572.52  | 572.66  | 572.12  |
| 24   | 573.13  | 573.33  | 573.32  | 573.36  | 573.68  | 573.48  | 573.34  | 572.83  | 572.84  | 571.79  | 572.65  | 572.36  |
| 25   | 573.29  | 573.49  | 573.31  | 573.58  | 573.57  | 573.23  | 573.29  | 572.68  | 572.80  | 571.95  | 572.61  | 572.02  |
| 26   | 573.05  | 573.51  | 573.18  | 573.63  | 573.57  | 573.45  | 573.32  | 572.83  | 572.80  | 572.13  | 572.67  | 572.36  |
| 27   | 573.26  | 573.42  | 573.04  | 573.56  | 573.54  | 573.42  | 573.31  | 572.95  | 572.68  | 572.41  | 572.20  | 572.52  |
| 28   | 573.37  | 573.33  | 573.53  | 573.43  | 573.54  | 573.31  | 573.22  | 572.91  | 572.98  | 571.74  | 572.00  | 572.11  |
| 29   | 573.48  | 573.19  | 573.50  | 573.42  | 573.56  | 573.44  | 573.23  | 572.95  | 572.89  | 572.19  | 572.38  | 572.31  |
| 30   | 573.32  |         | 573.32  | 573.60  | 573.54  | 573.43  | 573.17  | 572.97  | 572.68  | 572.36  | 572.11  | 572.39  |
| 31   | 573.21  |         | 573.52  |         | 573.53  |         | 573.30  | 572.96  |         | 572.41  |         | 572.43  |
| MEAN | 573.55  | 573.43  | 573.26  | 573.54  | 573.60  | 573.47  | 573.32  | 573.12  | 572.81  | 572.39  | 572.37  | 572.28  |
| MAX. | 574.35  | 573.75  | 574.13  | 574.20  | 573.93  | 574.32  | 573.71  | 573.62  | 573.29  | 572.90  | 572.96  | 572.94  |
|      | 1700/13 | 0300/09 | 2100/30 | 0600/27 | 2000/24 | 0300/02 | 2400/16 | 1500/18 | 2200/28 | 1500/23 | 2300/10 | 2000/22 |
| MIN. | 572.58  | 572.82  | 572.55  | 572.83  | 573.23  | 572.97  | 572.93  | 572.36  | 572.01  | 571.37  | 571.23  | 571.40  |
|      | 2200/04 | 1900/05 | 0900/30 | 1800/23 | 1100/13 | 1500/25 | 1200/10 | 1900/25 | 1400/20 | 1200/28 | 2100/16 | 1400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 573.10

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4049: Windmill Point, Detroit, Michigan on Detroit River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 574.41 May  
 Daily mean elevation: 574.94 10 Jan  
 Instant/hourly Elevation: 574.96 1200/10 Jan

LOWEST  
 Monthly mean elevation: 573.20 Dec  
 Daily mean elevation: 572.72 28 Oct  
 Instant/hourly Elevation: 572.35 1200/23 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 574.94 | 10 Jan |
| 574.33 | 4 Feb  |
| 574.36 | 31 Mar |
| 574.60 | 7 Apr  |
| 574.55 | 24 May |
| 574.52 | 2 Jun  |
| 574.26 | 17 Jul |
| 574.13 | 18 Aug |
| 573.79 | 5 Sep  |
| 573.54 | 2 Oct  |
| 573.55 | 23 Nov |
| 573.40 | 22 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 573.90 | 1 Jan  |
| 574.07 | 29 Feb |
| 573.95 | 13 Mar |
| 574.22 | 20 Apr |
| 574.24 | 9 May  |
| 574.08 | 25 Jun |
| 573.99 | 30 Jul |
| 573.58 | 25 Aug |
| 573.19 | 20 Sep |
| 572.72 | 28 Oct |
| 572.77 | 6 Nov  |
| 572.96 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 574.80                                                  | 4   |     |     |     |     |     |     |     |     |     |     |     | 574.80         | 4                          |
| 574.60                                                  | 4   |     |     |     |     |     |     |     |     |     |     |     | 574.60         | 8                          |
| 574.40                                                  | 2   |     |     | 10  | 18  | 4   |     |     |     |     |     |     | 574.40         | 42                         |
| 574.20                                                  | 7   | 11  | 6   | 20  | 13  | 21  | 6   |     |     |     |     |     | 574.20         | 126                        |
| 574.00                                                  | 13  | 18  | 20  |     |     | 5   | 23  | 14  |     |     |     |     | 574.00         | 219                        |
| 573.80                                                  | 1   |     | 5   |     |     |     | 2   | 9   |     |     |     |     | 573.80         | 236                        |
| 573.60                                                  |     |     |     |     |     |     |     | 7   | 20  |     |     |     | 573.60         | 263                        |
| 573.40                                                  |     |     |     |     |     |     |     | 1   | 9   | 7   | 10  |     | 573.40         | 290                        |
| 573.20                                                  |     |     |     |     |     |     |     |     |     | 13  | 6   | 17  | 573.20         | 326                        |
| 573.00                                                  |     |     |     |     |     |     |     |     | 1   | 8   | 12  | 12  | 573.00         | 359                        |
| 572.80                                                  |     |     |     |     |     |     |     |     |     | 2   | 1   | 2   | 572.80         | 364                        |
| 572.60                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 572.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4049: Windmill Point, Detroit, Michigan on Detroit River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 573.90  | 574.15  | 574.10  | 574.33  | 574.42  | 574.38  | 574.18  | 574.00  | 573.76  | 573.39  | 573.13  | 573.23  |
| 2    | 574.07  | 574.17  | 574.05  | 574.34  | 574.42  | 574.52  | 574.16  | 574.06  | 573.71  | 573.54  | 573.15  | 572.96  |
| 3    | 574.23  | 574.27  | 574.11  | 574.30  | 574.47  | 574.48  | 574.17  | 574.05  | 573.74  | 573.53  | 573.22  | 573.08  |
| 4    | 574.06  | 574.33  | 574.11  | 574.24  | 574.48  | 574.37  | 574.16  | 574.04  | 573.75  | 573.41  | 573.23  | 573.18  |
| 5    | 574.21  | 574.18  | 574.04  | 574.35  | 574.44  | 574.29  | 574.16  | 573.99  | 573.79  | 573.36  | 573.13  | 573.21  |
| 6    | 574.48  | 574.09  | 574.00  | 574.39  | 574.43  | 574.31  | 574.14  | 573.98  | 573.77  | 573.46  | 572.77  | 573.13  |
| 7    | 574.77  | 574.10  | 574.06  | 574.60  | 574.42  | 574.36  | 574.14  | 574.08  | 573.77  | 573.44  | 573.04  | 573.28  |
| 8    | 574.88  | 574.18  | 574.11  | 574.55  | 574.39  | 574.47  | 574.12  | 574.02  | 573.71  | 573.40  | 573.09  | 573.29  |
| 9    | 574.90  | 574.19  | 574.04  | 574.50  | 574.24  | 574.46  | 574.10  | 574.02  | 573.66  | 573.41  | 573.24  | 573.18  |
| 10   | 574.94  | 574.15  | 574.17  | 574.48  | 574.32  | 574.32  | 574.01  | 574.11  | 573.66  | 573.04  | 573.07  | 573.26  |
| 11   | 574.86  | 574.19  | 574.22  | 574.53  | 574.40  | 574.24  | 574.05  | 574.04  | 573.73  | 573.20  | 573.34  | 573.26  |
| 12   | 574.79  | 574.18  | 574.24  | 574.49  | 574.36  | 574.25  | 574.12  | 574.05  | 573.61  | 573.25  | 573.45  | 573.20  |
| 13   | 574.68  | 574.15  | 573.95  | 574.45  | 574.32  | 574.24  | 574.10  | 574.02  | 573.60  | 573.29  | 573.18  | 573.14  |
| 14   | 574.75  | 574.19  | 574.05  | 574.37  | 574.44  | 574.23  | 574.00  | 573.88  | 573.62  | 573.21  | 573.32  | 573.20  |
| 15   | 574.51  | 574.12  | 574.07  | 574.37  | 574.35  | 574.23  | 574.07  | 573.94  | 573.74  | 573.26  | 573.54  | 573.11  |
| 16   | 574.31  | 574.17  | 574.07  | 574.33  | 574.42  | 574.33  | 574.06  | 573.97  | 573.74  | 573.17  | 573.01  | 573.17  |
| 17   | 574.24  | 574.20  | 574.12  | 574.23  | 574.49  | 574.28  | 574.26  | 573.97  | 573.53  | 573.16  | 572.85  | 573.31  |
| 18   | 574.29  | 574.26  | 574.05  | 574.39  | 574.50  | 574.25  | 574.25  | 574.13  | 573.56  | 573.25  | 573.33  | 573.28  |
| 19   | 574.36  | 574.28  | 574.04  | 574.34  | 574.48  | 574.19  | 574.23  | 574.11  | 573.55  | 573.39  | 573.45  | 573.32  |
| 20   | 574.21  | 574.26  | 574.10  | 574.22  | 574.46  | 574.20  | 574.24  | 574.03  | 573.19  | 573.42  | 573.44  | 573.17  |
| 21   | 574.14  | 574.29  | 574.18  | 574.39  | 574.45  | 574.22  | 574.22  | 574.05  | 573.42  | 573.38  | 573.41  | 573.25  |
| 22   | 574.17  | 574.18  | 574.23  | 574.48  | 574.46  | 574.14  | 574.21  | 573.99  | 573.50  | 573.30  | 573.53  | 573.40  |
| 23   | 574.14  | 574.24  | 574.00  | 574.39  | 574.47  | 574.29  | 574.20  | 573.91  | 573.54  | 573.29  | 573.55  | 572.96  |
| 24   | 574.05  | 574.23  | 574.11  | 574.30  | 574.55  | 574.25  | 574.16  | 573.72  | 573.64  | 572.81  | 573.50  | 573.23  |
| 25   | 574.16  | 574.27  | 574.07  | 574.39  | 574.45  | 574.08  | 574.09  | 573.58  | 573.62  | 572.92  | 573.45  | 573.02  |
| 26   | 574.09  | 574.25  | 574.00  | 574.42  | 574.37  | 574.27  | 574.13  | 573.68  | 573.63  | 573.04  | 573.45  | 573.25  |
| 27   | 574.16  | 574.26  | 573.96  | 574.34  | 574.35  | 574.24  | 574.12  | 573.74  | 573.52  | 573.12  | 573.07  | 573.29  |
| 28   | 574.16  | 574.13  | 574.30  | 574.36  | 574.37  | 574.17  | 574.05  | 573.77  | 573.75  | 572.72  | 573.04  | 573.11  |
| 29   | 574.17  | 574.07  | 574.28  | 574.34  | 574.38  | 574.25  | 574.04  | 573.79  | 573.64  | 573.07  | 573.20  | 573.23  |
| 30   | 574.08  |         | 574.15  | 574.42  | 574.36  | 574.25  | 573.99  | 573.79  | 573.50  | 573.21  | 573.07  | 573.23  |
| 31   | 574.05  |         | 574.36  |         | 574.35  |         | 574.10  | 573.77  |         | 573.20  |         | 573.36  |
| MEAN | 574.35  | 574.20  | 574.11  | 574.39  | 574.41  | 574.29  | 574.13  | 573.94  | 573.63  | 573.25  | 573.24  | 573.20  |
| MAX. | 574.96  | 574.37  | 574.47  | 574.81  | 574.85  | 574.68  | 574.33  | 574.26  | 573.90  | 573.73  | 573.65  | 573.59  |
|      | 1200/10 | 1500/27 | 2000/28 | 0500/27 | 1900/24 | 0700/02 | 1800/23 | 0400/19 | 2200/28 | 0600/02 | 1300/20 | 2300/03 |
| MIN. | 573.76  | 573.98  | 573.39  | 573.76  | 574.05  | 573.81  | 573.78  | 573.40  | 572.81  | 572.41  | 572.35  | 572.35  |
|      | 1300/24 | 2400/28 | 0700/30 | 1600/23 | 1600/09 | 1400/25 | 0300/04 | 1700/25 | 0800/20 | 1100/28 | 2100/16 | 1200/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 573.93

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4052: St. Clair Shores, Michigan on Lake St. Clair

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 574.59 May  
 Daily mean elevation: 575.12 10 Jan  
 Instant/hourly Elevation: 575.13 1700/10 Jan

LOWEST  
 Monthly mean elevation: 573.45 Dec  
 Daily mean elevation: 573.09 28 Oct  
 Instant/hourly Elevation: 572.74 0900/10 Nov

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 575.12 | 10 Jan |
| 574.59 | 4 Feb  |
| 574.54 | 31 Mar |
| 574.68 | 8 Apr  |
| 574.66 | 19 May |
| 574.63 | 2 Jun  |
| 574.44 | 18 Jul |
| 574.30 | 10 Aug |
| 574.00 | 7 Sep  |
| 573.73 | 3 Oct  |
| 573.75 | 15 Nov |
| 573.60 | 22 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 574.24 | 1 Jan  |
| 574.29 | 7 Feb  |
| 574.19 | 27 Mar |
| 574.45 | 4 Apr  |
| 574.52 | 31 May |
| 574.31 | 25 Jun |
| 574.22 | 30 Jul |
| 573.86 | 25 Aug |
| 573.54 | 20 Sep |
| 573.09 | 28 Oct |
| 573.24 | 17 Nov |
| 573.27 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev. | No. of days |             |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------------|-------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec   | (ft.)       | above elev. |
| 575.00                                                  | 4   |     |     |     |     |     |     |     |     |     |     |       | 575.00      | 4           |
| 574.80                                                  | 4   |     |     |     |     |     |     |     |     |     |     |       | 574.80      | 8           |
| 574.60                                                  | 2   |     |     | 9   | 13  | 2   |     |     |     |     |     |       | 574.60      | 34          |
| 574.40                                                  | 14  | 17  | 6   | 21  | 18  | 23  | 3   |     |     |     |     |       | 574.40      | 136         |
| 574.20                                                  | 7   | 12  | 24  |     |     | 5   | 28  | 16  |     |     |     |       | 574.20      | 228         |
| 574.00                                                  |     |     | 1   |     |     |     |     | 7   |     |     |     |       | 574.00      | 236         |
| 573.80                                                  |     |     |     |     |     |     |     | 8   | 21  |     |     |       | 573.80      | 265         |
| 573.60                                                  |     |     |     |     |     |     |     | 8   | 8   | 10  | 8   |       | 573.60      | 291         |
| 573.40                                                  |     |     |     |     |     |     |     | 1   | 1   | 15  | 13  | 23    | 573.40      | 343         |
| 573.20                                                  |     |     |     |     |     |     |     |     |     | 5   | 9   | 8     | 573.20      | 365         |
| 573.00                                                  |     |     |     |     |     |     |     |     |     | 1   |     |       | 573.00      | 366         |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4052: St. Clair Shores, Michigan on Lake St. Clair

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 574.24  | 574.33  | 574.40  | 574.51  | 574.60  | 574.54  | 574.35  | 574.23  | 573.98  | 573.68  | 573.37  | 573.44  |
| 2    | 574.38  | 574.43  | 574.34  | 574.52  | 574.61  | 574.63  | 574.37  | 574.23  | 573.95  | 573.72  | 573.34  | 573.33  |
| 3    | 574.49  | 574.53  | 574.39  | 574.50  | 574.62  | 574.62  | 574.37  | 574.24  | 573.97  | 573.73  | 573.46  | 573.33  |
| 4    | 574.40  | 574.59  | 574.38  | 574.45  | 574.64  | 574.55  | 574.37  | 574.24  | 573.95  | 573.66  | 573.46  | 573.41  |
| 5    | 574.52  | 574.50  | 574.31  | 574.54  | 574.61  | 574.49  | 574.36  | 574.22  | 573.93  | 573.55  | 573.43  | 573.46  |
| 6    | 574.68  | 574.37  | 574.28  | 574.55  | 574.60  | 574.50  | 574.34  | 574.19  | 573.97  | 573.66  | 573.24  | 573.41  |
| 7    | 574.91  | 574.29  | 574.27  | 574.62  | 574.59  | 574.52  | 574.32  | 574.25  | 574.00  | 573.66  | 573.30  | 573.49  |
| 8    | 575.04  | 574.34  | 574.30  | 574.68  | 574.57  | 574.57  | 574.29  | 574.24  | 573.96  | 573.67  | 573.34  | 573.46  |
| 9    | 575.08  | 574.38  | 574.24  | 574.67  | 574.52  | 574.56  | 574.28  | 574.22  | 573.89  | 573.66  | 573.48  | 573.39  |
| 10   | 575.12  | 574.35  | 574.34  | 574.66  | 574.52  | 574.48  | 574.22  | 574.30  | 573.87  | 573.38  | 573.35  | 573.44  |
| 11   | 575.07  | 574.37  | 574.41  | 574.66  | 574.57  | 574.44  | 574.24  | 574.24  | 573.92  | 573.42  | 573.54  | 573.40  |
| 12   | 574.99  | 574.41  | 574.46  | 574.65  | 574.57  | 574.44  | 574.29  | 574.25  | 573.87  | 573.46  | 573.71  | 573.48  |
| 13   | 574.91  | 574.40  | 574.23  | 574.65  | 574.52  | 574.44  | 574.30  | 574.24  | 573.79  | 573.53  | 573.50  | 573.43  |
| 14   | 574.94  | 574.39  | 574.26  | 574.55  | 574.62  | 574.43  | 574.22  | 574.14  | 573.83  | 573.51  | 573.57  | 573.45  |
| 15   | 574.74  | 574.36  | 574.25  | 574.57  | 574.57  | 574.42  | 574.25  | 574.15  | 573.91  | 573.53  | 573.75  | 573.28  |
| 16   | 574.50  | 574.40  | 574.27  | 574.52  | 574.59  | 574.48  | 574.26  | 574.18  | 573.95  | 573.47  | 573.44  | 573.46  |
| 17   | 574.41  | 574.42  | 574.31  | 574.49  | 574.62  | 574.46  | 574.43  | 574.17  | 573.78  | 573.50  | 573.24  | 573.55  |
| 18   | 574.49  | 574.48  | 574.26  | 574.56  | 574.64  | 574.45  | 574.44  | 574.29  | 573.80  | 573.47  | 573.54  | 573.56  |
| 19   | 574.55  | 574.52  | 574.25  | 574.53  | 574.66  | 574.41  | 574.42  | 574.29  | 573.82  | 573.60  | 573.66  | 573.57  |
| 20   | 574.53  | 574.55  | 574.23  | 574.47  | 574.64  | 574.40  | 574.40  | 574.22  | 573.54  | 573.64  | 573.56  | 573.48  |
| 21   | 574.42  | 574.54  | 574.34  | 574.58  | 574.63  | 574.41  | 574.39  | 574.22  | 573.64  | 573.62  | 573.60  | 573.46  |
| 22   | 574.45  | 574.45  | 574.42  | 574.64  | 574.62  | 574.34  | 574.39  | 574.18  | 573.73  | 573.52  | 573.73  | 573.60  |
| 23   | 574.44  | 574.48  | 574.25  | 574.60  | 574.63  | 574.44  | 574.37  | 574.14  | 573.75  | 573.58  | 573.74  | 573.30  |
| 24   | 574.39  | 574.50  | 574.28  | 574.50  | 574.64  | 574.44  | 574.35  | 573.96  | 573.82  | 573.25  | 573.72  | 573.44  |
| 25   | 574.41  | 574.49  | 574.28  | 574.58  | 574.59  | 574.31  | 574.30  | 573.86  | 573.82  | 573.23  | 573.67  | 573.27  |
| 26   | 574.44  | 574.48  | 574.23  | 574.60  | 574.57  | 574.42  | 574.31  | 573.91  | 573.84  | 573.30  | 573.68  | 573.45  |
| 27   | 574.44  | 574.47  | 574.19  | 574.61  | 574.56  | 574.42  | 574.31  | 573.98  | 573.76  | 573.42  | 573.42  | 573.55  |
| 28   | 574.40  | 574.41  | 574.48  | 574.54  | 574.57  | 574.37  | 574.25  | 573.97  | 573.89  | 573.09  | 573.32  | 573.36  |
| 29   | 574.41  | 574.35  | 574.47  | 574.50  | 574.56  | 574.41  | 574.24  | 573.98  | 573.83  | 573.30  | 573.48  | 573.49  |
| 30   | 574.33  |         | 574.38  | 574.59  | 574.54  | 574.39  | 574.22  | 573.99  | 573.74  | 573.42  | 573.36  | 573.54  |
| 31   | 574.30  |         | 574.54  |         | 574.52  |         | 574.26  | 573.99  |         | 573.45  |         | 573.57  |
| MEAN | 574.59  | 574.43  | 574.32  | 574.57  | 574.59  | 574.46  | 574.32  | 574.15  | 573.85  | 573.51  | 573.50  | 573.45  |
| MAX. | 575.13  | 574.63  | 574.73  | 574.97  | 574.74  | 574.81  | 574.56  | 574.47  | 574.05  | 573.86  | 573.83  | 573.73  |
|      | 1700/10 | 1700/04 | 2000/28 | 0500/27 | 1900/16 | 2400/01 | 2000/18 | 1600/17 | 0700/16 | 1000/02 | 1400/12 | 0300/27 |
| MIN. | 574.15  | 574.21  | 573.80  | 574.23  | 574.31  | 574.11  | 574.01  | 573.71  | 573.35  | 572.86  | 572.74  | 572.94  |
|      | 2000/01 | 0200/01 | 0800/30 | 1700/23 | 1500/09 | 1500/25 | 1000/10 | 1700/25 | 0800/20 | 1100/28 | 0900/10 | 1200/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 574.14

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4070: Algonac, Michigan on St. Clair River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 575.23 Feb  
Daily mean elevation: 575.69 6 Feb  
Instant/hourly Elevation: 575.89 1600/6 Feb

LOWEST  
Monthly mean elevation: 574.22 Nov  
Daily mean elevation: 574.00 7 Nov  
Instant/hourly Elevation: 573.90 0400/7 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
|        | Jan    |
| 575.69 | 6 Feb  |
| 575.04 | 4 Mar  |
| 575.26 | 16 Apr |
| 575.13 | 9 May  |
| 575.07 | 5 Jun  |
| 574.97 | 18 Jul |
| 574.87 | 14 Aug |
| 574.61 | 7 Sep  |
| 574.41 | 24 Oct |
| 574.48 | 16 Nov |
|        | Dec    |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
|        | Jan    |
| 574.93 | 2 Feb  |
| 574.71 | 24 Mar |
| 574.93 | 3 Apr  |
| 575.02 | 8 May  |
| 574.88 | 30 Jun |
| 574.82 | 31 Jul |
| 574.59 | 29 Aug |
| 574.30 | 27 Sep |
| 574.07 | 30 Oct |
| 574.00 | 7 Nov  |
|        | Dec    |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 575.60         |     | 1   |     |     |     |     |     |     |     |     |     |     | 575.60         | 1                          |
| 575.40         |     |     |     |     |     |     |     |     |     |     |     |     | 575.40         | 1                          |
| 575.20         |     | 17  |     | 3   |     |     |     |     |     |     |     |     | 575.20         | 21                         |
| 575.00         |     | 8   | 2   | 20  | 31  | 7   |     |     |     |     |     |     | 575.00         | 89                         |
| 574.80         |     | 2   | 21  | 7   |     | 23  | 27  | 14  |     |     |     |     | 574.80         | 183                        |
| 574.60         |     |     | 8   |     |     |     |     | 14  | 3   |     |     |     | 574.60         | 208                        |
| 574.40         |     |     |     |     |     |     |     | 3   | 17  | 1   | 3   |     | 574.40         | 232                        |
| 574.20         |     |     |     |     |     |     |     |     | 10  | 18  | 15  |     | 574.20         | 275                        |
| 574.00         |     |     |     |     |     |     |     |     |     | 12  | 10  |     | 574.00         | 297                        |
| 573.80         |     |     |     |     |     |     |     |     |     |     | 1   |     | 573.80         | 298                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4070: Algonac, Michigan on St. Clair River

| Day  | Jan | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec |
|------|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----|
| 1    | /   | /       | 574.95  | 574.93  | 575.07  | 575.02  | 574.88  | 574.85  | 574.57  | 574.29  | 574.08  | /   |
| 2    | /   | 574.93* | 574.87  | 574.93  | 575.06  | 575.05  | 574.91  | 574.80  | 574.59  | 574.25  | 574.04  | /   |
| 3    | /   | 574.98  | 574.86  | 574.93  | 575.07  | 575.02  | 574.89  | 574.80  | 574.56  | 574.32* | 574.01  | /   |
| 4    | /   | 575.12  | 575.04  | 575.00  | 575.06  | 575.07  | 574.89  | 574.81  | 574.60  | 574.33  | 574.02  | /   |
| 5    | /   | 575.38  | 575.01  | 574.95  | 575.07  | 575.07  | 574.88  | 574.86  | 574.61  | 574.30  | 574.18  | /   |
| 6    | /   | 575.69  | 574.84  | 574.98  | 575.05  | 575.04  | 574.86  | 574.83  | 574.61  | 574.28  | 574.40  | /   |
| 7    | /   | 575.24  | 574.79  | 574.97  | 575.05  | 575.03  | 574.86  | 574.81  | 574.61  | 574.29  | 574.00  | /   |
| 8    | /   | 575.39  | 574.76  | 575.04  | 575.02  | 574.98  | 574.85  | 574.84  | 574.59  | 574.26  | 574.04  | /   |
| 9    | /   | 575.22  | 574.82  | 575.07  | 575.13  | 574.93  | 574.83  | 574.82  | 574.54  | 574.22  | 574.08  | /   |
| 10   | /   | 575.21  | 574.83  | 575.06  | 575.10  | 574.98  | 574.86  | 574.83  | 574.50  | 574.37  | 574.29  | /   |
| 11   | /   | 575.21  | 574.86  | 575.03  | 575.06  | 575.00  | 574.86  | 574.85  | 574.46  | 574.27  | 574.22  | /   |
| 12   | /   | 575.25  | 574.90  | 575.05  | 575.07  | 574.98  | 574.84  | 574.83  | 574.44  | 574.22  | 574.31* | /   |
| 13   | /   | 575.31  | 574.96  | 575.08  | 575.11  | 574.97  | 574.84  | 574.82  | 574.47  | 574.19  | /       | /   |
| 14   | /   | 575.12  | 574.83  | 575.19* | 575.08  | 574.97  | 574.85  | 574.87  | 574.47  | 574.25  | 574.25* | /   |
| 15   | /   | 575.20  | 574.82  | 575.26  | 575.09  | 574.98  | 574.82  | 574.83  | 574.44  | 574.14  | 574.23  | /   |
| 16   | /   | 575.21  | 574.82  | 575.26  | 575.07  | 574.90  | 574.84  | 574.80  | 574.42  | 574.17  | 574.48  | /   |
| 17   | /   | 575.25  | 574.82  | 575.23  | 575.06  | 574.93  | 574.95  | 574.81  | 574.41  | 574.22  | 574.44  | /   |
| 18   | /   | 575.22  | 574.83  | 575.19  | 575.07  | 574.95  | 574.97  | 574.79  | 574.39  | 574.22  | 574.18  | /   |
| 19   | /   | 575.15  | 574.82  | 575.18  | 575.11  | 574.97  | 574.93  | 574.79  | 574.43  | 574.20  | 574.16  | /   |
| 20   | /   | 575.21  | 574.77  | 575.20  | 575.11  | 574.95  | 574.92  | 574.78  | 574.53  | 574.18  | 574.19  | /   |
| 21   | /   | 575.24  | 574.76  | 575.08  | 575.09  | 574.93  | 574.93  | 574.72  | 574.34  | 574.23  | 574.29  | /   |
| 22   | /   | 575.26  | 574.75  | 575.06  | 575.09  | 574.95  | 574.92* | 574.70  | 574.37  | 574.19  | 574.28  | /   |
| 23   | /   | 575.30  | 574.76  | 575.17  | 575.07  | 574.90  | /       | 574.68  | 574.43  | 574.29  | 574.29  | /   |
| 24   | /   | 575.15  | 574.71  | 575.11  | 575.03  | 574.93  | /       | 574.69  | 574.40  | 574.41  | 574.29  | /   |
| 25   | /   | 575.13  | 574.76  | 575.08  | 575.07  | 575.00  | /       | 574.72  | 574.36  | 574.18  | 574.21  | /   |
| 26   | /   | 575.20  | 574.85  | 575.07  | 575.10  | 574.93  | /       | 574.64  | 574.34  | 574.12  | 574.23  | /   |
| 27   | /   | 575.26  | 574.91  | 575.20  | 575.10  | 574.93  | 574.86* | 574.63  | 574.30  | 574.12  | 574.46  | /   |
| 28   | /   | 575.36  | 574.90  | 575.05  | 575.05  | 574.94  | 574.82* | 574.61  | 574.31  | 574.21  | 574.31  | /   |
| 29   | /   | 575.17  | 574.85  | 575.08  | 575.05  | 574.89  | 574.82  | 574.59  | 574.39  | 574.09  | 574.24  | /   |
| 30   | /   |         | 575.00  | 575.07  | 575.04  | 574.88  | 574.87  | 574.60  | 574.32  | 574.07  | 574.30  | /   |
| 31   | /   |         | 574.93  |         | 575.04  |         | 574.82  | 574.60  |         | 574.12  |         | /   |
| MEAN | /   | 575.23  | 574.85  | 575.08  | 575.07  | 574.97  | 574.87  | 574.76  | 574.46  | 574.23  | 574.22  | /   |
| MAX. |     | 575.89  | 575.56  | 575.45  | 575.45  | 575.20  | 575.05  | 575.07  | 574.83  | 574.85  | 574.87  |     |
| MIN. |     | 1600/06 | 0800/30 | 1700/23 | 2000/15 | 1600/25 | 0400/16 | 0100/15 | 0500/20 | 2200/17 | 1600/16 |     |
|      |     | 574.89  | 574.62  | 574.84  | 574.85  | 574.68  | 574.66  | 574.53  | 574.14  | 574.01  | 573.90  |     |
|      |     | 1600/02 | 0500/09 | 1800/03 | 0700/07 | 0300/29 | 0500/16 | 1000/05 | 2000/29 | 2400/29 | 0400/07 |     |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 574.77

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4080: St. Clair S.P., St. Clair, Michigan on St. Clair River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 576.72 Feb  
 Daily mean elevation: 577.56 10 Feb  
 Instant/hourly Elevation: 577.72 1000/12 Feb

LOWEST  
 Monthly mean elevation: 575.56 Nov  
 Daily mean elevation: 575.27 23 Dec  
 Instant/hourly Elevation: 574.70 0500/23 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 577.10 | 15 Jan |
| 577.56 | 10 Feb |
| 576.36 | 30 Mar |
| 576.63 | 18 Apr |
| 576.57 | 17 May |
| 576.51 | 7 Jun  |
| 576.37 | 1 Jul  |
| 576.35 | 15 Aug |
| 576.19 | 5 Sep  |
| 575.89 | 11 Oct |
| 575.78 | 21 Nov |
| 575.87 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 576.14 | 31 Jan |
| 576.33 | 3 Feb  |
| 575.97 | 23 Mar |
| 576.22 | 3 Apr  |
| 576.35 | 8 May  |
| 576.30 | 19 Jun |
| 576.17 | 15 Jul |
| 575.98 | 31 Aug |
| 575.60 | 29 Sep |
| 575.42 | 16 Oct |
| 575.31 | 4 Nov  |
| 575.27 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 577.40                                                  |     | 4   |     |     |     |     |     |     |     |     |     |     | 577.40         | 4                          |
| 577.20                                                  |     | 2   |     |     |     |     |     |     |     |     |     |     | 577.20         | 6                          |
| 577.00                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 577.00         | 7                          |
| 576.80                                                  | 2   | 3   |     |     |     |     |     |     |     |     |     |     | 576.80         | 12                         |
| 576.60                                                  | 10  | 3   |     | 2   |     |     |     |     |     |     |     |     | 576.60         | 27                         |
| 576.40                                                  | 8   | 11  |     | 22  | 28  | 13  |     |     |     |     |     |     | 576.40         | 109                        |
| 576.20                                                  | 8   | 6   | 16  | 6   | 3   | 17  | 29  | 13  |     |     |     |     | 576.20         | 207                        |
| 576.00                                                  | 2   |     | 12  |     |     |     | 2   | 17  | 4   |     |     |     | 576.00         | 244                        |
| 575.80                                                  |     |     | 3   |     |     |     |     | 1   | 17  | 4   |     | 1   | 575.80         | 270                        |
| 575.60                                                  |     |     |     |     |     |     |     |     | 8   | 18  | 11  | 14  | 575.60         | 321                        |
| 575.40                                                  |     |     |     |     |     |     |     |     | 1   | 9   | 16  | 11  | 575.40         | 358                        |
| 575.20                                                  |     |     |     |     |     |     |     |     |     |     | 3   | 5   | 575.20         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4080: St. Clair S.P., St. Clair, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 576.56  | 576.34  | 576.21  | 576.28  | 576.48  | 576.47  | 576.37  | 576.19  | 575.94  | 575.75  | 575.45  | 575.69  |
| 2    | 576.48  | 576.42  | 576.14  | 576.28  | 576.47  | 576.47  | 576.35  | 576.18  | 575.97  | 575.85  | 575.55  | 575.70  |
| 3    | 576.31  | 576.33  | 576.28  | 576.22  | 576.46  | 576.51  | 576.32  | 576.18  | 575.93  | 575.80  | 575.38  | 575.87  |
| 4    | 576.54  | 576.58  | 576.22  | 576.34  | 576.48  | 576.49  | 576.30  | 576.19  | 576.03  | 575.77  | 575.31  | 575.74  |
| 5    | 576.68  | 576.62  | 576.24  | 576.30  | 576.51  | 576.50  | 576.28  | 576.19  | 576.19  | 575.89  | 575.40  | 575.65  |
| 6    | 576.72  | 576.98  | 576.12  | 576.39  | 576.49  | 576.49  | 576.27  | 576.28  | 576.09  | 575.80  | 575.41  | 575.57  |
| 7    | 576.62  | 576.75  | 576.16  | 576.62  | 576.46  | 576.51  | 576.26  | 576.27  | 576.01  | 575.74  | 575.41  | 575.70  |
| 8    | 576.77  | 577.36  | 576.00  | 576.51  | 576.35  | 576.44  | 576.27  | 576.21  | 575.92  | 575.65  | 575.49  | 575.61  |
| 9    | 576.80  | 577.37  | 576.15  | 576.48  | 576.43  | 576.42  | 576.26  | 576.23  | 575.92  | 575.61  | 575.47  | 575.67  |
| 10   | 576.70  | 577.56  | 576.24  | 576.46  | 576.49  | 576.41  | 576.22  | 576.26  | 575.94  | 575.77  | 575.63  | 575.60  |
| 11   | 576.71  | 577.45  | 576.21  | 576.48  | 576.52  | 576.42  | 576.28  | 576.23  | 575.87  | 575.89  | 575.70  | 575.62  |
| 12   | 576.55  | 577.43  | 576.07  | 576.48  | 576.40  | 576.42  | 576.28  | 576.23  | 575.76  | 575.82  | 575.50  | 575.42  |
| 13   | 576.91  | 577.45  | 576.16  | 576.48  | 576.56  | 576.37  | 576.19  | 576.19  | 575.97  | 575.69  | 575.52  | 575.56  |
| 14   | 576.80  | 576.86  | 576.23  | 576.52  | 576.50  | 576.36  | 576.28  | 576.24  | 575.98  | 575.63  | 575.72  | 575.41  |
| 15   | 577.10  | 576.84  | 576.23  | 576.55  | 576.38  | 576.40  | 576.17  | 576.35  | 575.88  | 575.53  | 575.54  | 575.68  |
| 16   | 576.85  | 576.64  | 576.28  | 576.50  | 576.55  | 576.39  | 576.28  | 576.24  | 575.76  | 575.42  | 575.50  | 575.63  |
| 17   | 576.79  | 576.54  | 576.21  | 576.53  | 576.57  | 576.35  | 576.36  | 576.27  | 575.76  | 575.55  | 575.74  | 575.60  |
| 18   | 576.53  | 576.43  | 576.21  | 576.63  | 576.52  | 576.33  | 576.34  | 576.28  | 575.79  | 575.74  | 575.73  | 575.54  |
| 19   | 576.38  | 576.38  | 576.25  | 576.57  | 576.54  | 576.30  | 576.33  | 576.21  | 575.71  | 575.69  | 575.50  | 575.39  |
| 20   | 576.15  | 576.51  | 576.24  | 576.55  | 576.50  | 576.37  | 576.34  | 576.19  | 575.83  | 575.60  | 575.66  | 575.36  |
| 21   | 576.42  | 576.45  | 576.19  | 576.50  | 576.51  | 576.31  | 576.33  | 576.19  | 575.89  | 575.62  | 575.78  | 575.63  |
| 22   | 576.31  | 576.35  | 576.03  | 576.47  | 576.51  | 576.35  | 576.34  | 576.09  | 575.73  | 575.68  | 575.66  | 575.34  |
| 23   | 576.28  | 576.59  | 575.97  | 576.47  | 576.50  | 576.37  | 576.31  | 576.02  | 575.88  | 575.62  | 575.64  | 575.27  |
| 24   | 576.28  | 576.43  | 576.04  | 576.54  | 576.56  | 576.32  | 576.28  | 576.07  | 575.88  | 575.62  | 575.55  | 575.47  |
| 25   | 576.33  | 576.39  | 575.98  | 576.48  | 576.56  | 576.36  | 576.27  | 576.13  | 575.84  | 575.64  | 575.48  | 575.58  |
| 26   | 576.42  | 576.39  | 576.16  | 576.47  | 576.49  | 576.48  | 576.26  | 576.15  | 575.86  | 575.60  | 575.52  | 575.60  |
| 27   | 576.39  | 576.54  | 576.34  | 576.53  | 576.46  | 576.37  | 576.26  | 576.04  | 575.80  | 575.43  | 575.60  | 575.32  |
| 28   | 576.70  | 576.45  | 576.20  | 576.49  | 576.46  | 576.39  | 576.21  | 576.07  | 575.83  | 575.53  | 575.72  | 575.65  |
| 29   | 576.45  | 576.54  | 576.06  | 576.60  | 576.43  | 576.34  | 576.21  | 576.07  | 575.60  | 575.70  | 575.58  | 575.67  |
| 30   | 576.36  |         | 576.36  | 576.51  | 576.46  | 576.38  | 576.28  | 576.04  | 575.67  | 575.59  | 575.63  | 575.53  |
| 31   | 576.14  |         | 576.30  |         | 576.47  |         | 576.26  | 575.98  |         | 575.45  |         | 575.61  |
| MEAN | 576.55  | 576.72  | 576.18  | 576.47  | 576.49  | 576.40  | 576.28  | 576.18  | 575.87  | 575.67  | 575.56  | 575.57  |
| MAX. | 577.58  | 577.72  | 576.66  | 576.92  | 577.02  | 576.84  | 576.63  | 576.81  | 576.70  | 576.22  | 575.96  | 576.43  |
| MIN. | 0700/13 | 1000/12 | 0900/30 | 0100/18 | 0700/13 | 1700/25 | 1700/30 | 1500/16 | 0100/05 | 0500/18 | 0300/28 | 2100/03 |
|      | 575.87  | 575.74  | 575.68  | 576.02  | 576.01  | 576.00  | 575.72  | 575.75  | 575.32  | 574.91  | 574.97  | 574.70  |
|      | 1500/20 | 0900/22 | 0300/02 | 0700/03 | 0700/15 | 1200/22 | 1800/15 | 2200/16 | 0800/27 | 0900/28 | 0700/10 | 0500/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 576.16

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4084: Marysville, Michigan on St. Clair River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 577.33 Feb  
Daily mean elevation: 577.95 13 Feb  
Instant/hourly Elevation: 578.34 0700/13 Jan

LOWEST  
Monthly mean elevation: 576.73 Sep  
Daily mean elevation: 576.42 12 Sep  
Instant/hourly Elevation: 576.16 0900/22 Feb

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 577.58 | 13 Jan |
| 577.95 | 13 Feb |
| 577.10 | 27 Mar |
| 577.47 | 7 Apr  |
| 577.43 | 24 May |
| 577.30 | 26 Jun |
| 577.15 | 1 Jul  |
| 577.14 | 15 Aug |
| 577.06 | 5 Sep  |
|        | Oct    |
|        | Nov    |
|        | Dec    |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 576.75 | 20 Jan |
| 576.92 | 22 Feb |
| 576.61 | 23 Mar |
| 576.91 | 3 Apr  |
| 577.11 | 8 May  |
| 577.06 | 24 Jun |
| 576.93 | 13 Jul |
| 576.71 | 23 Aug |
| 576.42 | 12 Sep |
|        | Oct    |
|        | Nov    |
|        | Dec    |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.  | No. of days |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | (ft.)  | above elev. |
| 577.80                                                  |     | 5   |     |     |     |     |     |     |     |     |     |     | 577.80 | 5           |
| 577.60                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 577.60 | 6           |
| 577.40                                                  | 5   | 1   |     | 3   | 1   |     |     |     |     |     |     |     | 577.40 | 16          |
| 577.20                                                  | 12  | 10  |     | 20  | 26  | 10  |     |     |     |     |     |     | 577.20 | 94          |
| 577.00                                                  | 7   | 11  | 7   | 5   | 4   | 20  | 26  | 6   | 1   |     |     |     | 577.00 | 181         |
| 576.80                                                  | 6   | 1   | 17  | 2   |     |     | 5   | 21  | 2   |     |     |     | 576.80 | 235         |
| 576.60                                                  | 1   |     | 7   |     |     |     |     | 4   | 8   |     |     |     | 576.60 | 255         |
| 576.40                                                  |     |     |     |     |     |     |     |     | 1   |     |     |     | 576.40 | 256         |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4084: Marysville, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct            | Nov | Dec |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------------|-----|-----|
| 1    | 577.29  | 577.15  | 576.89  | 577.02  | 577.29  | 577.30  | 577.15  | 576.90  | 576.71  | /              | /   | /   |
| 2    | 577.21  | 577.23  | 576.83  | 577.00  | 577.26  | 577.25  | 577.11  | 576.92  | 576.72  | /              | /   | /   |
| 3    | 577.00  | 577.07  | 577.05  | 576.91  | 577.24  | 577.29  | 577.07  | 576.90  | 576.69  | /              | /   | /   |
| 4    | 577.26  | 577.35  | 576.88  | 577.08  | 577.28  | 577.25  | 577.05  | 576.92  | 576.83  | /              | /   | /   |
| 5    | 577.47  | 577.26  | 576.92  | 577.02  | 577.30  | 577.28  | 577.02  | 576.89  | 577.06  | /              | /   | /   |
| 6    | 577.48  | 577.52  | 576.80  | 577.14  | 577.31  | 577.27  | 577.02  | 577.01  | 576.90  | /              | /   | /   |
| 7    | 577.28  | 577.24  | 576.91  | 577.47  | 577.25  | 577.27  | 577.02  | 577.01  | 576.78  | /              | /   | /   |
| 8    | 577.38  | 577.81  | 576.70  | 577.30  | 577.11  | 577.23  | 577.03  | 576.92  | 576.62  | /              | /   | /   |
| 9    | 577.43  | 577.76  | 576.89  | 577.23  | 577.16  | 577.25  | 577.03  | 576.95  | 576.66  | /              | /   | /   |
| 10   | 577.30  | 577.95  | 577.00  | 577.20  | 577.27  | 577.19  | 576.96  | 577.04  | 576.73  | /              | /   | /   |
| 11   | 577.29  | 577.86  | 576.93  | 577.26  | 577.32  | 577.19  | 577.07  | 576.92  | 576.62  | /              | /   | /   |
| 12   | 577.05  | 577.88  | 576.74  | 577.24  | 577.15  | 577.18  | 577.08  | 576.96  | 576.42* | /              | /   | /   |
| 13   | 577.58  | 577.95  | 576.82  | 577.23  | 577.33  | 577.14  | 576.93  | 576.90  | /       | /              | /   | /   |
| 14   | 577.38  | 577.33  | 576.96  | 577.30  | 577.29  | 577.12  | 577.07  | 576.94  | /       | /              | /   | /   |
| 15   | 577.48  | 577.37  | 576.98  | 577.33  | 577.17  | 577.18  | 576.97  | 577.14  | /       | /              | /   | /   |
| 16   | 577.26  | 577.22  | 577.05  | 577.28  | 577.39  | 577.18  | 577.05  | 576.99  | /       | /              | /   | /   |
| 17   | 577.36  | 577.17  | 576.96  | 577.27  | 577.39  | 577.12  | 577.13  | 577.04  | /       | /              | /   | /   |
| 18   | 577.21  | 577.09  | 576.93  | 577.45  | 577.34  | 577.09  | 577.09  | 577.07  | /       | /              | /   | /   |
| 19   | 577.08  | 577.05  | 577.01  | 577.37  | 577.34  | 577.07  | 577.11  | 576.94  | /       | /              | /   | /   |
| 20   | 576.75  | 577.18  | 577.06  | 577.27  | 577.29  | 577.15  | 577.10  | 576.94  | /       | /              | /   | /   |
| 21   | 577.18  | 577.10  | 576.99  | 577.27  | 577.32  | 577.08  | 577.12  | 576.94  | /       | /              | /   | /   |
| 22   | 577.04  | 576.92  | 576.72  | 577.24  | 577.30  | 577.15  | 577.13  | 576.81  | /       | /              | /   | /   |
| 23   | 576.98  | 577.28  | 576.61  | 577.22  | 577.29  | 577.19  | 577.08  | 576.71  | /       | /              | /   | /   |
| 24   | 576.96  | 577.12  | 576.81  | 577.35  | 577.43  | 577.06  | 577.04  | 576.78  | /       | /              | /   | /   |
| 25   | 577.06  | 577.08  | 576.64  | 577.24  | 577.40  | 577.14  | 577.02  | 576.86  | /       | /              | /   | /   |
| 26   | 577.15  | 577.03  | 576.85  | 577.25  | 577.28  | 577.30  | 577.02  | 576.92  | /       | /              | /   | /   |
| 27   | 577.09  | 577.23  | 577.10  | 577.25  | 577.24  | 577.17  | 577.03  | 576.79  | /       | /              | /   | /   |
| 28   | 577.35  | 577.04  | 576.92  | 577.28  | 577.27  | 577.18  | 576.97  | 576.88  | /       | /              | /   | /   |
| 29   | 576.99  | 577.26  | 576.71  | 577.41  | 577.23  | 577.14  | 576.97  | 576.88  | /       | /              | /   | /   |
| 30   | 576.98  |         | 577.07  | 577.31  | 577.26  | 577.19  | 577.03  | 576.87  | /       | /              | /   | /   |
| 31   | 576.85  |         | 577.04  |         | 577.28  |         | 577.02  | 576.77  | /       | /              | /   | /   |
| MEAN | 577.20  | 577.33  | 576.90  | 577.24  | 577.28  | 577.19  | 577.05  | 576.92  | 576.73  | /              | /   | /   |
| MAX. | 578.34  | 578.26  | 577.48  | 577.79  | 577.79  | 577.59  | 577.33  | 577.97  | 577.56  | STATION CLOSED |     |     |
|      | 0700/13 | 0900/13 | 0900/30 | 0100/18 | 2000/24 | 0900/22 | 1700/30 | 1400/10 | 0200/05 |                |     |     |
| MIN. | 576.44  | 576.16  | 576.22  | 576.77  | 576.87  | 576.71  | 576.46  | 576.34  | 576.31  |                |     |     |
|      | 1500/20 | 0900/22 | 0300/02 | 1700/03 | 0800/15 | 0800/25 | 1700/15 | 1000/01 | 1800/12 |                |     |     |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 577.09

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4087: Dry Dock, Port Huron, Michigan on St. Clair River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 577.71 May  
Daily mean elevation: 578.26 13 Feb  
Instant/hourly Elevation: 578.85 0700/13 Jan

LOWEST  
Monthly mean elevation: 576.74 Nov  
Daily mean elevation: 576.16 23 Dec  
Instant/hourly Elevation: 575.61 0500/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.00 | 13 Jan |
| 578.26 | 13 Feb |
| 577.54 | 27 Mar |
| 577.99 | 7 Apr  |
| 577.90 | 24 May |
| 577.78 | 26 Jun |
| 577.61 | 1 Jul  |
| 577.62 | 15 Aug |
| 577.48 | 5 Sep  |
| 577.28 | 11 Oct |
| 577.10 | 21 Nov |
| 577.23 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 577.10 | 20 Jan |
| 577.26 | 22 Feb |
| 576.98 | 23 Mar |
| 577.32 | 3 Apr  |
| 577.51 | 8 May  |
| 577.46 | 24 Jun |
| 577.38 | 13 Jul |
| 577.13 | 31 Aug |
| 576.72 | 29 Sep |
| 576.46 | 16 Oct |
| 576.27 | 6 Nov  |
| 576.16 | 23 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 578.20         |     | 1   |     |     |     |     |     |     |     |     |     |     | 578.20         | 1                          |
| 578.00         |     | 4   |     |     |     |     |     |     |     |     |     |     | 578.00         | 5                          |
| 577.80         | 3   | 3   |     | 4   | 4   |     |     |     |     |     |     |     | 577.80         | 19                         |
| 577.60         | 15  | 9   |     | 20  | 23  | 19  | 1   | 1   |     |     |     |     | 577.60         | 107                        |
| 577.40         | 6   | 10  | 11  | 5   | 4   | 11  | 27  | 10  | 1   |     |     |     | 577.40         | 192                        |
| 577.20         | 6   | 2   | 13  | 1   |     |     | 3   | 18  | 4   | 2   |     |     | 577.20         | 242                        |
| 577.00         | 1   |     | 6   |     |     |     |     | 2   | 15  | 5   | 3   | 1   | 577.00         | 278                        |
| 576.80         |     |     | 1   |     |     |     |     |     | 8   | 12  | 8   | 4   | 576.80         | 321                        |
| 576.60         |     |     |     |     |     |     |     |     | 2   | 8   | 13  | 5   | 576.60         | 349                        |
| 576.40         |     |     |     |     |     |     |     |     |     | 4   | 4   | 5   | 576.40         | 362                        |
| 576.20         |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 576.20         | 365                        |
| 576.00         |     |     |     |     |     |     |     |     |     |     |     | 1   | 576.00         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4087: Dry Dock, Port Huron, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 577.72  | 577.63  | 577.33  | 577.43  | 577.74  | 577.73  | 577.61  | 577.33  | 577.11  | 576.89  | 576.63  | 577.03  |
| 2    | 577.64  | 577.74  | 577.26  | 577.42  | 577.71  | 577.72  | 577.58  | 577.36  | 577.11  | 577.14  | 576.85  | 576.94  |
| 3    | 577.41  | 577.53  | 577.51  | 577.32  | 577.67  | 577.76  | 577.53  | 577.35  | 577.06  | 577.04  | 576.56  | 577.23  |
| 4    | 577.70  | 577.84  | 577.28  | 577.51  | 577.71  | 577.70  | 577.49  | 577.34  | 577.24  | 576.96  | 576.50  | 577.05  |
| 5    | 577.93  | 577.66  | 577.31  | 577.44  | 577.75  | 577.73  | 577.49  | 577.35  | 577.48  | 577.21  | 576.48  | 576.90  |
| 6    | 577.93  | 577.87  | 577.20  | 577.59  | 577.77  | 577.73  | 577.45  | 577.49  | 577.32  | 577.08  | 576.27  | 576.78  |
| 7    | 577.67  | 577.53  | 577.36  | 577.99  | 577.70  | 577.69  | 577.47  | 577.47  | 577.18  | 576.94  | 576.64  | 577.04  |
| 8    | 577.75  | 578.08  | 577.11  | 577.78  | 577.51  | 577.68  | 577.46  | 577.37  | 577.02  | 576.83  | 576.78  | 576.87  |
| 9    | 577.80  | 577.99  | 577.35  | 577.69  | 577.52  | 577.73  | 577.48  | 577.40  | 577.08  | 576.76  | 576.71  | 576.98  |
| 10   | 577.64  | 578.20  | 577.45  | 577.66  | 577.68  | 577.64  | 577.42  | 577.46  | 577.18  | 576.91  | 576.84  | 576.93  |
| 11   | 577.64  | 578.12  | 577.36  | 577.73  | 577.76  | 577.63  | 577.54  | 577.36  | 577.04  | 577.28  | 577.01  | 576.96  |
| 12   | 577.35  | 578.16  | 577.14  | 577.69  | 577.55  | 577.63  | 577.55  | 577.41  | 576.85  | 577.13  | 576.62  | 576.51  |
| 13   | 578.00  | 578.26  | 577.24  | 577.66  | 577.76  | 577.56  | 577.38  | 577.35  | 577.24  | 576.89  | 576.56  | 576.77  |
| 14   | 577.72  | 577.62  | 577.43  | 577.72  | 577.70  | 577.55  | 577.54  | 577.41  | 577.23  | 576.79  | 576.98  | 576.57  |
| 15   | 577.70  | 577.72  | 577.46  | 577.80  | 577.58  | 577.64  | 577.41  | 577.62  | 577.09  | 576.65  | 576.73  | 577.06  |
| 16   | 577.51  | 577.58  | 577.52  | 577.74  | 577.86  | 577.64  | 577.45  | 577.42  | 576.86  | 576.46  | 576.32  | 576.88  |
| 17   | 577.69  | 577.57  | 577.40  | 577.70  | 577.86  | 577.57  | 577.58  | 577.55  | 576.89  | 576.64  | 576.91  | 576.85  |
| 18   | 577.62  | 577.48  | 577.37  | 577.93  | 577.79  | 577.51  | 577.53  | 577.50  | 576.98  | 576.99  | 577.08  | 576.73  |
| 19   | 577.51  | 577.46  | 577.48  | 577.82  | 577.78  | 577.50  | 577.56  | 577.42  | 576.78  | 576.93  | 576.69  | 576.55  |
| 20   | 577.10  | 577.61  | 577.51  | 577.69  | 577.72  | 577.58  | 577.54  | 577.41  | 576.84  | 576.77  | 577.00  | 576.46  |
| 21   | 577.64  | 577.50  | 577.44  | 577.73  | 577.73  | 577.52  | 577.56  | 577.40  | 577.18  | 576.75  | 577.10  | 576.96  |
| 22   | 577.47  | 577.26  | 577.16  | 577.67  | 577.72  | 577.60  | 577.56  | 577.26  | 576.90  | 576.90  | 576.88  | 576.56  |
| 23   | 577.40  | 577.69  | 576.98  | 577.66  | 577.72  | 577.65  | 577.51  | 577.15  | 577.13  | 576.68  | 576.83  | 576.16  |
| 24   | 577.36  | 577.55  | 577.25  | 577.80  | 577.90  | 577.46  | 577.47  | 577.25  | 577.08  | 576.58  | 576.68  | 576.72  |
| 25   | 577.51  | 577.51  | 577.04  | 577.68  | 577.84  | 577.59  | 577.45  | 577.30  | 577.05  | 576.84  | 576.62  | 576.86  |
| 26   | 577.61  | 577.41  | 577.25  | 577.69  | 577.69  | 577.78  | 577.45  | 577.39  | 577.04  | 576.83  | 576.68  | 576.93  |
| 27   | 577.52  | 577.66  | 577.54  | 577.66  | 577.66  | 577.63  | 577.45  | 577.22  | 576.98  | 576.52  | 576.65  | 576.35  |
| 28   | 577.74  | 577.40  | 577.35  | 577.75  | 577.68  | 577.63  | 577.39  | 577.29  | 577.05  | 576.68  | 576.95  | 576.92  |
| 29   | 577.32  | 577.71  | 577.11  | 577.90  | 577.62  | 577.60  | 577.40  | 577.29  | 576.72  | 577.04  | 576.75  | 576.94  |
| 30   | 577.34  |         | 577.48  | 577.77  | 577.67  | 577.65  | 577.45  | 577.26  | 576.82  | 576.84  | 576.78  | 576.66  |
| 31   | 577.25  |         | 577.47  |         | 577.70  |         | 577.46  | 577.13  |         | 576.58  |         | 576.87  |
| MEAN | 577.59  | 577.70  | 577.33  | 577.69  | 577.71  | 577.63  | 577.49  | 577.36  | 577.05  | 576.86  | 576.74  | 576.81  |
| MAX. | 578.85  | 578.57  | 577.88  | 578.28  | 578.34  | 578.10  | 577.85  | 578.00  | 578.07  | 577.70  | 577.33  | 577.96  |
| MIN. | 0700/13 | 0900/13 | 0100/20 | 0100/18 | 2000/24 | 2000/07 | 1600/16 | 1300/17 | 0100/05 | 0500/18 | 1100/21 | 2200/03 |
|      | 576.71  | 576.34  | 576.61  | 577.15  | 577.06  | 577.05  | 576.79  | 576.73  | 576.46  | 575.91  | 575.87  | 575.61  |
|      | 0800/20 | 0900/22 | 0800/23 | 1300/01 | 0800/13 | 0600/22 | 1700/15 | 1200/16 | 0800/20 | 0200/28 | 0200/06 | 0500/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 577.33

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4090: Mouth of Black River, Port Huron, Michigan on St. Clair River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 578.09 Apr  
 Daily mean elevation: 578.55 13 Feb  
 Instant/hourly Elevation: 579.39 0700/13 Jan

LOWEST  
 Monthly mean elevation: 577.12 Nov  
 Daily mean elevation: 576.58 6 Nov  
 Instant/hourly Elevation: 576.29 0200/6 Nov

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.40 | 13 Jan |
| 578.55 | 13 Feb |
| 577.99 | 27 Mar |
| 578.49 | 7 Apr  |
| 578.30 | 24 May |
| 578.25 | 26 Jun |
| 578.05 | 1 Jul  |
| 578.09 | 15 Aug |
| 577.91 | 5 Sep  |
| 577.73 | 11 Oct |
| 577.52 | 21 Nov |
| 577.72 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 577.46 | 20 Jan |
| 577.60 | 22 Feb |
| 577.36 | 23 Mar |
| 577.69 | 3 Apr  |
| 577.84 | 9 May  |
| 577.89 | 24 Jun |
| 577.78 | 13 Jul |
| 577.53 | 31 Aug |
| 577.11 | 29 Sep |
| 576.82 | 16 Oct |
| 576.58 | 6 Nov  |
| 576.63 | 23 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 578.40         |     | 2   |     | 1   |     |     |     |     |     |     |     |     | 578.40         | 3                          |
| 578.20         | 3   | 5   |     | 4   | 4   | 2   |     |     |     |     |     |     | 578.20         | 21                         |
| 578.00         | 9   | 8   |     | 20  | 23  | 21  | 2   | 1   |     |     |     |     | 578.00         | 105                        |
| 577.80         | 10  | 11  | 11  | 2   | 4   | 7   | 28  | 14  | 1   |     |     |     | 577.80         | 193                        |
| 577.60         | 7   | 2   | 12  | 3   |     |     | 1   | 14  | 4   | 2   |     | 1   | 577.60         | 239                        |
| 577.40         | 2   | 1   | 7   |     |     |     |     | 2   | 14  | 5   | 4   | 6   | 577.40         | 280                        |
| 577.20         |     |     | 1   |     |     |     |     |     | 9   | 12  | 7   | 12  | 577.20         | 321                        |
| 577.00         |     |     |     |     |     |     |     |     | 2   | 8   | 10  | 5   | 577.00         | 346                        |
| 576.80         |     |     |     |     |     |     |     |     |     | 4   | 7   | 5   | 576.80         | 362                        |
| 576.60         |     |     |     |     |     |     |     |     |     |     | 1   | 2   | 576.60         | 365                        |
| 576.40         |     |     |     |     |     |     |     |     |     |     | 1   |     | 576.40         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4090: Mouth of Black River, Port Huron, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.10  | 578.08  | 577.70  | 577.75  | 578.08  | 578.11  | 578.05  | 577.72  | 577.51  | 577.30  | 577.05  | 577.47  |
| 2    | 578.04  | 578.18  | 577.64  | 577.79  | 578.08  | 578.12  | 577.98  | 577.81  | 577.51  | 577.59  | 577.27  | 577.34  |
| 3    | 577.79  | 577.92  | 577.92  | 577.69  | 578.06  | 578.21  | 577.95  | 577.79  | 577.44  | 577.49  | 576.94  | 577.72  |
| 4    | 578.08  | 578.23  | 577.65  | 577.88  | 578.10  | 578.13  | 577.91  | 577.77  | 577.65  | 577.40  | 576.89  | 577.50  |
| 5    | 578.34  | 578.01  | 577.66  | 577.83  | 578.14  | 578.17  | 577.90  | 577.78  | 577.91  | 577.66  | 576.84  | 577.33  |
| 6    | 578.34  | 578.18  | 577.57  | 578.05  | 578.16  | 578.16  | 577.87  | 577.96  | 577.75  | 577.52  | 576.58  | 577.19  |
| 7    | 578.04  | 577.83  | 577.77  | 578.49  | 578.08  | 578.17  | 577.90  | 577.92  | 577.58  | 577.36  | 577.03  | 577.50  |
| 8    | 578.09  | 578.33  | 577.49  | 578.20  | 577.87  | 578.11  | 577.91  | 577.80  | 577.40  | 577.23  | 577.16  | 577.31  |
| 9    | 578.15  | 578.21  | 577.76  | 578.09  | 577.84  | 578.16  | 577.91  | 577.84  | 577.47  | 577.16  | 577.08  | 577.43  |
| 10   | 577.97  | 578.45  | 577.89  | 578.05  | 578.05  | 578.04  | 577.84  | 577.89  | 577.60  | 577.31  | 577.23  | 577.38  |
| 11   | 577.98  | 578.37  | 577.79  | 578.14  | 578.11  | 578.04  | 577.96  | 577.80  | 577.45  | 577.73  | 577.42  | 577.41  |
| 12   | 577.65  | 578.40  | 577.43  | 578.10  | 577.89  | 578.01  | 577.99  | 577.85  | 577.24  | 577.58  | 577.00  | 576.89  |
| 13   | 578.40  | 578.55  | 577.58  | 578.07  | 578.10  | 577.95  | 577.78  | 577.77  | 577.68  | 577.30  | 576.91  | 577.16  |
| 14   | 578.04  | 577.88  | 577.84  | 578.16  | 578.04  | 577.94  | 577.95  | 577.85  | 577.67  | 577.18  | 577.36  | 576.95  |
| 15   | 577.93  | 578.03  | 577.86  | 578.20  | 577.89  | 578.01  | 577.83  | 578.09  | 577.49  | 577.04  | 577.13  | 577.51  |
| 16   | 577.79  | 577.90  | 577.94  | 578.12  | 578.22  | 578.09  | 577.85  | 577.86  | 577.26  | 576.82  | 576.64  | 577.27  |
| 17   | 578.00  | 577.93  | 577.80  | 578.13  | 578.26  | 578.03  | 578.01  | 577.98  | 577.27  | 577.03  | 577.28  | 577.26  |
| 18   | 578.00  | 577.83  | 577.78  | 578.39  | 578.19  | 577.94  | 577.95  | 577.92  | 577.38  | 577.39  | 577.52  | 577.08  |
| 19   | 577.87  | 577.82  | 577.90  | 578.26  | 578.17  | 577.91  | 577.99  | 577.82  | 577.16  | 577.34  | 577.08  | 576.92  |
| 20   | 577.46  | 578.00  | 577.94  | 578.10  | 578.09  | 578.03  | 577.96  | 577.82  | 577.22  | 577.15  | 577.44  | 576.82  |
| 21   | 578.05  | 577.85  | 577.84  | 578.13  | 578.08  | 577.93  | 577.99  | 577.83  | 577.59  | 577.15  | 577.52  | 577.40  |
| 22   | 577.86  | 577.60  | 577.53  | 578.09  | 578.08  | 578.00  | 578.00  | 577.66  | 577.30  | 577.30  | 577.28  | 576.96  |
| 23   | 577.76  | 578.08  | 577.36  | 578.02  | 578.10  | 578.13  | 577.94  | 577.55  | 577.54  | 577.05  | 577.23  | 576.63  |
| 24   | 577.71  | 577.93  | 577.66  | 578.21  | 578.30  | 577.89  | 577.89  | 577.63  | 577.49  | 576.92  | 577.06  | 577.11  |
| 25   | 577.89  | 577.91  | 577.44  | 578.06  | 578.23  | 578.04  | 577.87  | 577.69  | 577.46  | 577.23  | 576.98  | 577.27  |
| 26   | 577.98  | 577.77  | 577.66  | 578.09  | 578.07  | 578.25  | 577.86  | 577.82  | 577.45  | 577.24  | 577.05  | 577.35  |
| 27   | 577.88  | 578.06  | 577.99  | 578.04  | 578.03  | 578.04  | 577.87  | 577.62  | 577.38  | 576.95  | 577.00  | 576.72  |
| 28   | 578.09  | 577.72  | 577.80  | 578.15  | 578.08  | 578.08  | 577.81  | 577.70  | 577.49  | 577.10  | 577.36  | 577.32  |
| 29   | 577.60  | 578.10  | 577.53  | 578.31  | 578.04  | 578.05  | 577.83  | 577.71  | 577.11  | 577.52  | 577.15  | 577.34  |
| 30   | 577.66  |         | 577.96  | 578.13  | 578.07  | 578.11  | 577.85  | 577.66  | 577.24  | 577.30  | 577.16  | 577.02  |
| 31   | 577.62  |         | 577.93  |         | 578.07  |         | 577.88  | 577.53  |         | 576.98  |         | 577.28  |
| MEAN | 577.94  | 578.04  | 577.73  | 578.09  | 578.08  | 578.06  | 577.91  | 577.79  | 577.46  | 577.27  | 577.12  | 577.22  |
| MAX. | 579.39  | 578.89  | 578.27  | 578.73  | 578.66  | 578.59  | 578.34  | 578.57  | 578.49  | 578.12  | 577.78  | 578.49  |
|      | 0700/13 | 0900/13 | 0100/20 | 0100/18 | 2100/24 | 0600/26 | 0300/17 | 1300/17 | 0100/05 | 0500/18 | 1100/21 | 2200/03 |
| MIN. | 577.02  | 576.52  | 576.97  | 577.55  | 577.28  | 576.89  | 577.23  | 577.05  | 576.72  | 576.31  | 576.29  | 576.32  |
|      | 0800/20 | 0900/22 | 0800/23 | 1700/03 | 0800/13 | 1000/22 | 1700/15 | 1000/01 | 0800/20 | 0200/28 | 0200/06 | 1000/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 577.73

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4096: Dunn Paper Co., Port Huron, Michigan on St. Clair River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 578.50 May  
 Daily mean elevation: 578.90 7 Apr  
 Instant/hourly Elevation: 579.61 0700/13 Jan

LOWEST  
 Monthly mean elevation: 577.52 Nov  
 Daily mean elevation: 576.84 6 Nov  
 Instant/hourly Elevation: 576.23 0500/23 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.72 | 6 Jan  |
| 578.78 | 13 Feb |
| 578.33 | 27 Mar |
| 578.90 | 7 Apr  |
| 578.75 | 24 May |
| 578.64 | 26 Jun |
| 578.35 | 22 Jul |
| 578.32 | 17 Aug |
| 578.33 | 5 Sep  |
| 578.16 | 11 Oct |
| 577.96 | 18 Nov |
| 578.13 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 577.74 | 20 Jan |
| 577.87 | 22 Feb |
| 577.66 | 23 Mar |
| 578.03 | 3 Apr  |
| 578.19 | 9 May  |
| 578.26 | 19 Jun |
| 578.21 | 6 Jul  |
| 577.90 | 31 Aug |
| 577.46 | 29 Sep |
| 577.17 | 16 Oct |
| 576.84 | 6 Nov  |
| 576.88 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 578.80                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 578.80         | 1                          |
| 578.60                                                  | 3   | 4   |     | 4   | 6   | 1   |     |     |     |     |     |     | 578.60         | 19                         |
| 578.40                                                  | 5   | 7   |     | 19  | 20  | 19  |     |     |     |     |     |     | 578.40         | 89                         |
| 578.20                                                  | 13  | 9   | 11  | 4   | 4   | 10  | 17  | 4   | 1   |     |     |     | 578.20         | 162                        |
| 578.00                                                  | 4   | 7   | 9   | 2   | 1   |     |     | 8   | 4   | 2   |     | 1   | 578.00         | 200                        |
| 577.80                                                  | 5   | 2   | 8   |     |     |     |     | 4   | 14  | 4   | 4   | 7   | 577.80         | 248                        |
| 577.60                                                  | 1   |     | 3   |     |     |     |     |     | 6   | 11  | 6   | 11  | 577.60         | 286                        |
| 577.40                                                  |     |     |     |     |     |     |     |     | 5   | 5   | 9   | 4   | 577.40         | 309                        |
| 577.20                                                  |     |     |     |     |     |     |     |     |     | 3   | 5   | 5   | 577.20         | 322                        |
| 577.00                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   | 2   | 577.00         | 326                        |
| 576.80                                                  |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 576.80         | 329                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4096: Dunn Paper Co., Port Huron, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.47  | 578.46  | 578.02  | 578.21  | 578.57  | 578.56  | /       | /       | 577.85  | 577.68  | /       | 577.90  |
| 2    | 578.39  | 578.55  | 577.96  | 578.18  | 578.56  | 578.53  | 578.35* | /       | 577.89  | 577.98  | /       | 577.71  |
| 3    | 578.14  | 578.28  | 578.30  | 578.03  | 578.42  | 578.57  | 578.30  | /       | 577.83  | 577.88  | /       | 578.13  |
| 4    | 578.44  | 578.62  | 577.98  | 578.23  | 578.46  | 578.50  | 578.27  | /       | 578.00  | 577.79  | 577.29* | 577.92  |
| 5    | 578.72  | 578.33  | 578.01  | 578.23  | 578.52  | 578.55  | 578.23  | /       | 578.33  | 578.06  | 577.19  | 577.74  |
| 6    | 578.72  | 578.41  | 577.92  | 578.32  | 578.53  | 578.56  | 578.21  | /       | 578.13  | 577.91  | 576.84  | 577.56  |
| 7    | 578.37  | 578.01  | 578.14  | 578.90  | 578.45  | 578.55  | 578.23  | /       | 577.97  | 577.76  | 577.45  | 577.93  |
| 8    | 578.41  | 578.55  | 577.83  | 578.60  | 578.22  | 578.49  | 578.26  | /       | 577.76  | 577.61  | 577.59  | 577.72  |
| 9    | 578.47  | 578.41  | 578.08  | 578.47  | 578.19  | 578.54  | 578.24* | /       | 577.84  | 577.57  | 577.50  | 577.83  |
| 10   | 578.28  | 578.66  | 578.23  | 578.44  | 578.39  | 578.45  | /       | /       | 577.99  | 577.72  | 577.63  | 577.80  |
| 11   | 578.23  | 578.56  | 578.12  | 578.54  | 578.54  | 578.45  | /       | /       | 577.84  | 578.16  | 577.87  | 577.84  |
| 12   | 577.87  | 578.62  | 577.78  | 578.48  | 578.29  | 578.44  | /       | /       | 577.58  | 577.99  | 577.38  | 577.25  |
| 13   | 578.68  | 578.78  | 577.91  | 578.44  | 578.50  | 578.37  | /       | /       | 578.04  | 577.71  | 577.27  | 577.55  |
| 14   | 578.32  | 578.10  | 578.21  | 578.53  | 578.48  | 578.36  | /       | /       | 578.06  | 577.58  | 577.79  | 577.31  |
| 15   | 578.13  | 578.29  | 578.24  | 578.60  | 578.28  | 578.42  | /       | /       | 577.88  | 577.44  | 577.53  | 577.92  |
| 16   | 577.97  | 578.18  | 578.31  | 578.53  | 578.65  | 578.48  | 578.24* | 578.24* | 577.61  | 577.17  | 576.94  | 577.67  |
| 17   | 578.28  | 578.22  | 578.17  | 578.44  | 578.70  | 578.38  | 578.33  | 578.32  | 577.63  | 577.40  | 577.66  | 577.67  |
| 18   | 578.34  | 578.15  | 578.14  | 578.79  | 578.64  | 578.31  | 578.30  | 578.31  | 577.76  | 577.80  | 577.96  | 577.46  |
| 19   | 578.26  | 578.16  | 578.27  | 578.65  | 578.61  | 578.26  | 578.34  | 578.20  | 577.54  | 577.74  | 577.47  | 577.28  |
| 20   | 577.74  | 578.32  | 578.33  | 578.45  | 578.53  | 578.39  | 578.31  | 578.20  | 577.52  | 577.54  | 577.84  | 577.18  |
| 21   | 578.42  | 578.14  | 578.24  | 578.53  | 578.52  | 578.32  | 578.34  | 578.21  | 578.01  | 577.52  | 577.94  | 577.82  |
| 22   | 578.21  | 577.87  | 577.89  | 578.51  | 578.53  | 578.33  | 578.35  | 578.03  | 577.62  | 577.70  | 577.70  | 577.35  |
| 23   | 578.12  | 578.39  | 577.66  | 578.42  | 578.54  | 578.51  | 578.28  | 577.91  | 577.90  | 577.40  | 577.62  | 576.88  |
| 24   | 578.06  | 578.26  | 578.01  | 578.60  | 578.75  | 578.29  | 578.23* | 577.99  | 577.90  | 577.22  | 577.44  | 577.56  |
| 25   | 578.28  | 578.23  | 577.73  | 578.49  | 578.68  | 578.37  | /       | 578.07  | 577.84  | 577.62  | 577.39  | 577.68  |
| 26   | 578.36  | 578.05  | 577.99  | 578.48  | 578.48  | 578.64  | /       | 578.18  | 577.84  | 577.70* | 577.47  | 577.79  |
| 27   | 578.22  | 578.40  | 578.33  | 578.42  | 578.45  | 578.46  | /       | 578.00  | 577.72  | /       | 577.34  | 577.06  |
| 28   | 578.40  | 578.00  | 578.11  | 578.58  | 578.48  | 578.46  | /       | 578.08  | 577.88  | /       | 577.76  | 577.74  |
| 29   | 577.89  | 578.44  | 577.81  | 578.77  | 578.43  | 578.42  | /       | 578.10  | 577.46  | /       | 577.54  | 577.76  |
| 30   | 577.97  |         | 578.23  | 578.61  | 578.48  | 578.52* | /       | 578.05  | 577.58  | /       | 577.57  | 577.37  |
| 31   | 577.96  |         | 578.25  |         | 578.51  |         | /       | 577.90  |         | /       |         | 577.70  |
| MEAN | 578.26  | 578.33  | 578.07  | 578.48  | 578.50  | 578.45  | 578.28  | 578.11  | 577.83  | 577.68  | 577.52  | 577.62  |
| MAX. | 579.61  | 579.14  | 578.76  | 579.17  | 579.18  | 579.04  | 578.70  | 579.05  | 578.99  | 578.63  | 578.24  | 579.00  |
| MIN. | 0700/13 | 0900/13 | 0100/20 | 1000/07 | 2100/24 | 2100/01 | 0400/17 | 1400/17 | 0200/05 | 0500/18 | 1100/21 | 1900/03 |
|      | 577.28  | 576.76  | 577.22  | 577.80  | 577.80  | 577.15  | 577.90  | 577.54  | 576.73  | 576.85  | 576.27  | 576.23  |
|      | 0800/20 | 0900/22 | 0800/23 | 0700/03 | 0300/13 | 1100/22 | 0900/16 | 1700/16 | 2200/22 | 0600/24 | 0200/06 | 0500/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.09

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4098: Fort Gratiot, Port Huron, Michigan on St. Clair River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 578.93 May  
 Daily mean elevation: 579.40 7 Apr  
 Instant/hourly Elevation: 580.40 0700/13 Jan

LOWEST  
 Monthly mean elevation: 577.86 Nov  
 Daily mean elevation: 577.06 6 Nov  
 Instant/hourly Elevation: 576.40 0200/6 Nov

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.15 | 5 Jan  |
| 579.05 | 13 Feb |
| 578.74 | 20 Mar |
| 579.40 | 7 Apr  |
| 579.24 | 24 May |
| 579.08 | 26 Jun |
| 578.86 | 1 Jul  |
| 578.88 | 15 Aug |
| 578.74 | 5 Sep  |
| 578.61 | 11 Oct |
| 578.37 | 18 Nov |
| 578.58 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.03 | 20 Jan |
| 578.14 | 22 Feb |
| 577.97 | 23 Mar |
| 578.38 | 3 Apr  |
| 578.60 | 9 May  |
| 578.62 | 19 Jun |
| 578.52 | 13 Jul |
| 578.29 | 31 Aug |
| 577.81 | 29 Sep |
| 577.47 | 16 Oct |
| 577.06 | 6 Nov  |
| 577.17 | 23 Dec |

| Elev.<br>(ft.) | ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
|                | Jan                                                     | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.20         |                                                         |     |     | 2   | 1   |     |     |     |     |     |     |     | 579.20         | 3                          |
| 579.00         | 3                                                       | 3   |     | 5   | 6   | 4   |     |     |     |     |     |     | 579.00         | 24                         |
| 578.80         | 3                                                       | 4   |     | 15  | 20  | 16  | 1   | 1   |     |     |     |     | 578.80         | 84                         |
| 578.60         | 9                                                       | 11  | 9   | 4   | 3   | 10  | 21  | 9   | 1   | 1   |     |     | 578.60         | 162                        |
| 578.40         | 9                                                       | 6   | 8   | 3   | 1   |     | 9   | 17  | 5   | 2   |     |     | 578.40         | 223                        |
| 578.20         | 3                                                       | 4   | 9   | 1   |     |     |     | 4   | 10  | 4   | 4   | 8   | 578.20         | 270                        |
| 578.00         | 4                                                       | 1   | 4   |     |     |     |     |     | 7   | 10  | 4   | 10  | 578.00         | 310                        |
| 577.80         |                                                         |     | 1   |     |     |     |     |     | 7   | 6   | 9   | 4   | 577.80         | 337                        |
| 577.60         |                                                         |     |     |     |     |     |     |     |     | 5   | 9   | 4   | 577.60         | 355                        |
| 577.40         |                                                         |     |     |     |     |     |     |     |     | 3   | 2   | 3   | 577.40         | 363                        |
| 577.20         |                                                         |     |     |     |     |     |     |     |     |     |     |     | 577.20         | 363                        |
| 577.00         |                                                         |     |     |     |     |     |     |     |     |     | 2   | 1   | 577.00         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4098: Fort Gratiot, Port Huron, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.85  | 578.93  | 578.38  | 578.60  | 578.96  | 579.01  | 578.86  | 578.43  | 578.25  | 578.00  | 577.80  | 578.32  |
| 2    | 578.76  | 579.03  | 578.32  | 578.55  | 578.93  | 578.94  | 578.76  | 578.49  | 578.25  | 578.37  | 578.13  | 578.06  |
| 3    | 578.48  | 578.68  | 578.70  | 578.38  | 578.88  | 579.02  | 578.72  | 578.48  | 578.18  | 578.25  | 577.71  | 578.58  |
| 4    | 578.81  | 579.05  | 578.32  | 578.61  | 578.94  | 578.89  | 578.67  | 578.46  | 578.45  | 578.13  | 577.62  | 578.32  |
| 5    | 579.15  | 578.65  | 578.32  | 578.57  | 579.00  | 578.95  | 578.65  | 578.44  | 578.74  | 578.48  | 577.49  | 578.11  |
| 6    | 579.13  | 578.69  | 578.23  | 578.74  | 579.02  | 578.94  | 578.60  | 578.70  | 578.53  | 578.31  | 577.06  | 577.90  |
| 7    | 578.72  | 578.25  | 578.50  | 579.40  | 578.92  | 578.95  | 578.64  | 578.67  | 578.32  | 578.12  | 577.80  | 578.35  |
| 8    | 578.73  | 578.80  | 578.14  | 579.05  | 578.64  | 578.92  | 578.64  | 578.50  | 578.10  | 577.96  | 577.97  | 578.13  |
| 9    | 578.80  | 578.62  | 578.43  | 578.89  | 578.60  | 579.01  | 578.65  | 578.57  | 578.19  | 577.90  | 577.86  | 578.24  |
| 10   | 578.58  | 578.87  | 578.60  | 578.84  | 578.87  | 578.87  | 578.57  | 578.64  | 578.37  | 578.03  | 577.98  | 578.21  |
| 11   | 578.55  | 578.79  | 578.48  | 578.96  | 578.99  | 578.84  | 578.74  | 578.51  | 578.19  | 578.61  | 578.27  | 578.29  |
| 12   | 578.13  | 578.85  | 578.08  | 578.89  | 578.72  | 578.82  | 578.78  | 578.58  | 577.92  | 578.41  | 577.73  | 577.57  |
| 13   | 579.11  | 579.05  | 578.23  | 578.82  | 579.00  | 578.74  | 578.52  | 578.48  | 578.47  | 578.09  | 577.56  | 577.92  |
| 14   | 578.61  | 578.32  | 578.59  | 578.92  | 578.91  | 578.73  | 578.72  | 578.55  | 578.45  | 577.91  | 578.16  | 577.63  |
| 15   | 578.28  | 578.58  | 578.63  | 579.01  | 578.72  | 578.81  | 578.59  | 578.88  | 578.25  | 577.77  | 577.89  | 578.40  |
| 16   | 578.17  | 578.47  | 578.72  | 578.93  | 579.14  | 578.92  | 578.60  | 578.61  | 577.95  | 577.47  | 577.16  | 578.05  |
| 17   | 578.58  | 578.55  | 578.55  | 578.85  | 579.17  | 578.78  | 578.77  | 578.77  | 577.95  | 577.72  | 578.00  | 578.06  |
| 18   | 578.70  | 578.48  | 578.51  | 579.21  | 579.07  | 578.69  | 578.68  | 578.74  | 578.11  | 578.16  | 578.37  | 577.82  |
| 19   | 578.60  | 578.51  | 578.67  | 579.07  | 579.03  | 578.62  | 578.76  | 578.63  | 577.84  | 578.14  | 577.82  | 577.62  |
| 20   | 578.03  | 578.69  | 578.74  | 578.81  | 578.93  | 578.78  | 578.72  | 578.62  | 577.85  | 577.92  | 578.26  | 577.47  |
| 21   | 578.84  | 578.45  | 578.64  | 578.94  | 578.94  | 578.68  | 578.75  | 578.63  | 578.41  | 577.89  | 578.36  | 578.24  |
| 22   | 578.59  | 578.14  | 578.24  | 578.90  | 578.92  | 578.74  | 578.77  | 578.42  | 578.03  | 578.11  | 578.07  | 577.68  |
| 23   | 578.46  | 578.76  | 577.97  | 578.78  | 578.95  | 578.93  | 578.68  | 578.29  | 578.30  | 577.76  | 577.99  | 577.17  |
| 24   | 578.41  | 578.62  | 578.39  | 579.02  | 579.24  | 578.64  | 578.63  | 578.39  | 578.29  | 577.54  | 577.79  | 577.92  |
| 25   | 578.68  | 578.61  | 578.05  | 578.85  | 579.13  | 578.78  | 578.59  | 578.47  | 578.22  | 578.02  | 577.71  | 578.06  |
| 26   | 578.78  | 578.39  | 578.32  | 578.89  | 578.91  | 579.08  | 578.62  | 578.60  | 578.21  | 578.04  | 577.80  | 578.19  |
| 27   | 578.60  | 578.80  | 578.72  | 578.77  | 578.84  | 578.83  | 578.62  | 578.38  | 578.10  | 577.56  | 577.63  | 577.41  |
| 28   | 578.75  | 578.29  | 578.47  | 579.00  | 578.90  | 578.84  | 578.54  | 578.49  | 578.27  | 577.77  | 578.13  | 578.14  |
| 29   | 578.15  | 578.87  | 578.13  | 579.20  | 578.82  | 578.81  | 578.55  | 578.51  | 577.81  | 578.37  | 577.88  | 578.14  |
| 30   | 578.27  |         | 578.62  | 578.99  | 578.88  | 578.93  | 578.56  | 578.45  | 577.95  | 578.11  | 577.90  | 577.71  |
| 31   | 578.30  |         | 578.63  |         | 578.89  |         | 578.62  | 578.29  |         | 577.67  |         | 578.09  |
| MEAN | 578.60  | 578.65  | 578.43  | 578.88  | 578.93  | 578.85  | 578.66  | 578.54  | 578.20  | 578.02  | 577.86  | 577.99  |
| MAX. | 580.40  | 579.64  | 579.15  | 579.73  | 579.77  | 579.52  | 579.31  | 579.65  | 579.52  | 579.07  | 578.72  | 579.53  |
|      | 0700/13 | 1500/20 | 0100/20 | 0100/18 | 1900/24 | 1900/07 | 2400/15 | 1300/17 | 2400/04 | 0500/18 | 1500/20 | 1900/03 |
| MIN. | 577.50  | 576.81  | 577.46  | 578.13  | 578.07  | 577.26  | 577.62  | 577.64  | 577.19  | 576.55  | 576.40  | 576.43  |
|      | 0800/20 | 0900/22 | 0500/23 | 1100/06 | 0200/13 | 1000/22 | 0500/16 | 1000/01 | 0800/20 | 0200/28 | 0200/06 | 0400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.47

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5002: Lakeport, Michigan on Lake Huron

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.06 May  
Daily mean elevation: 579.43 7 Apr  
Instant/hourly Elevation: 580.01 0700/13 Jan

LOWEST  
Monthly mean elevation: 578.02 Nov  
Daily mean elevation: 577.22 6 Nov  
Instant/hourly Elevation: 576.50 0400/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.29 | 5 Jan  |
| 579.21 | 13 Feb |
| 578.87 | 3 Mar  |
| 579.43 | 7 Apr  |
| 579.32 | 24 May |
| 579.20 | 26 Jun |
| 578.99 | 1 Jul  |
| 578.98 | 15 Aug |
| 578.80 | 5 Sep  |
| 578.68 | 11 Oct |
| 578.53 | 18 Nov |
| 578.74 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.17 | 20 Jan |
| 578.35 | 7 Feb  |
| 578.11 | 23 Mar |
| 578.47 | 3 Apr  |
| 578.78 | 9 May  |
| 578.77 | 24 Jun |
| 578.64 | 13 Jul |
| 578.43 | 31 Aug |
| 577.98 | 29 Sep |
| 577.67 | 16 Oct |
| 577.22 | 6 Nov  |
| 577.28 | 23 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 579.40         |     |     |     | 1   |     |     |     |     |     |     |     |     | 579.40         | 1                          |
| 579.20         | 2   | 1   |     | 2   | 3   |     |     |     |     |     |     |     | 579.20         | 9                          |
| 579.00         | 2   | 4   |     | 14  | 22  | 14  |     |     |     |     |     |     | 579.00         | 65                         |
| 578.80         | 10  | 8   | 5   | 8   | 4   | 14  | 13  | 3   |     |     |     |     | 578.80         | 130                        |
| 578.60         | 9   | 10  | 11  | 4   | 2   | 2   | 18  | 17  | 3   | 1   |     | 1   | 578.60         | 208                        |
| 578.40         | 3   | 4   | 8   | 1   |     |     |     | 11  | 9   | 5   | 2   | 5   | 578.40         | 256                        |
| 578.20         | 4   | 2   | 5   |     |     |     |     |     | 10  | 9   | 6   | 11  | 578.20         | 303                        |
| 578.00         | 1   |     | 2   |     |     |     |     |     | 7   | 9   | 8   | 5   | 578.00         | 335                        |
| 577.80         |     |     |     |     |     |     |     |     | 1   | 4   | 8   | 4   | 577.80         | 352                        |
| 577.60         |     |     |     |     |     |     |     |     |     | 3   | 4   | 3   | 577.60         | 362                        |
| 577.40         |     |     |     |     |     |     |     |     |     |     |     | 1   | 577.40         | 363                        |
| 577.20         |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 577.20         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5002: Lakeport, Michigan on Lake Huron

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 579.01  | 579.04  | 578.55  | 578.71  | 579.12  | 579.11  | 578.99  | 578.56  | 578.39  | 578.19  | 577.95  | 578.47  |
| 2    | 578.93  | 579.10  | 578.51  | 578.68  | 579.07  | 579.08  | 578.90  | 578.62  | 578.40  | 578.51  | 578.21  | 578.25  |
| 3    | 578.65  | 578.84  | 578.87  | 578.47  | 579.01  | 579.15  | 578.86  | 578.57  | 578.33  | 578.39  | 577.87  | 578.74  |
| 4    | 578.94  | 579.12  | 578.64  | 578.68  | 579.07  | 579.04  | 578.82  | 578.58  | 578.56  | 578.29  | 577.80  | 578.50  |
| 5    | 579.29  | 578.79  | 578.59  | 578.71  | 579.14  | 579.10  | 578.77  | 578.52  | 578.80  | 578.58  | 577.65  | 578.29  |
| 6    | 579.24  | 578.80  | 578.45  | 578.91  | 579.14  | 579.10  | 578.75  | 578.75  | 578.67  | 578.44  | 577.22  | 578.09  |
| 7    | 578.84  | 578.35  | 578.68  | 579.43  | 579.01  | 579.11  | 578.77  | 578.76  | 578.47  | 578.28  | 577.97  | 578.50  |
| 8    | 578.84  | 578.84  | 578.33  | 579.12  | 578.80  | 579.07  | 578.77  | 578.63  | 578.26  | 578.12  | 578.10  | 578.27  |
| 9    | 578.90  | 578.70  | 578.54  | 579.00  | 578.78  | 579.14  | 578.78  | 578.67  | 578.36  | 578.06  | 578.07  | 578.38  |
| 10   | 578.68  | 578.93  | 578.73  | 578.97  | 579.02  | 579.01  | 578.67  | 578.74  | 578.51  | 578.23  | 578.15  | 578.35  |
| 11   | 578.64  | 578.92  | 578.62  | 579.09  | 579.15  | 578.99  | 578.83  | 578.64  | 578.32  | 578.68  | 578.40  | 578.43  |
| 12   | 578.26  | 579.00  | 578.31  | 579.03  | 578.86  | 578.96  | 578.87  | 578.68  | 578.10  | 578.51  | 577.89  | 577.76  |
| 13   | 579.12  | 579.21  | 578.34  | 578.96  | 579.12  | 578.91  | 578.64  | 578.62  | 578.60  | 578.23  | 577.72  | 578.08  |
| 14   | 578.70  | 578.49  | 578.72  | 579.08  | 579.06  | 578.86  | 578.83  | 578.61  | 578.61  | 578.08  | 578.32  | 577.81  |
| 15   | 578.40  | 578.71  | 578.76  | 579.17  | 578.86  | 578.97  | 578.68  | 578.98  | 578.41  | 578.01  | 578.04  | 578.46  |
| 16   | 578.29  | 578.63  | 578.85  | 579.09  | 579.19  | 579.05  | 578.80  | 578.74  | 578.16  | 577.67  | 577.37  | 578.23  |
| 17   | 578.71  | 578.71  | 578.69  | 579.00  | 579.24  | 578.93  | 578.89  | 578.86  | 578.17  | 577.91  | 578.18  | 578.20  |
| 18   | 578.82  | 578.66  | 578.66  | 579.34  | 579.19  | 578.86  | 578.78  | 578.85  | 578.24  | 578.30  | 578.53  | 577.99  |
| 19   | 578.78  | 578.68  | 578.81  | 579.20  | 579.14  | 578.77  | 578.85  | 578.77  | 578.01  | 578.26  | 578.00  | 577.78  |
| 20   | 578.17  | 578.85  | 578.86  | 578.95  | 579.06  | 578.91  | 578.83  | 578.76  | 578.06  | 578.07  | 578.37  | 577.68  |
| 21   | 578.94  | 578.57  | 578.77  | 579.08  | 579.07  | 578.82  | 578.86  | 578.75  | 578.57  | 578.03  | 578.48  | 578.36  |
| 22   | 578.72  | 578.37  | 578.38  | 579.04  | 579.05  | 578.92  | 578.87  | 578.58  | 578.14  | 578.26  | 578.22  | 577.83  |
| 23   | 578.62  | 578.88  | 578.11  | 578.93  | 579.09  | 579.04  | 578.81  | 578.45  | 578.45  | 577.93  | 578.14  | 577.28  |
| 24   | 578.59  | 578.76  | 578.50  | 579.14  | 579.32  | 578.77  | 578.76  | 578.52  | 578.43  | 577.70  | 577.92  | 578.10  |
| 25   | 578.84  | 578.74  | 578.19  | 579.01  | 579.24  | 578.91  | 578.72  | 578.58  | 578.39  | 578.17  | 577.86  | 578.20  |
| 26   | 578.88  | 578.50  | 578.47  | 579.04  | 579.03  | 579.20  | 578.74  | 578.78  | 578.40  | 578.19  | 577.91  | 578.34  |
| 27   | 578.75  | 578.86  | 578.86  | 578.92  | 578.96  | 578.98  | 578.75  | 578.53  | 578.24  | 577.79  | 577.78  | 577.58  |
| 28   | 578.87  | 578.47  | 578.58  | 579.13  | 579.05  | 578.97  | 578.65  | 578.64  | 578.42  | 577.92  | 578.26  | 578.27  |
| 29   | 578.32  | 579.01  | 578.23  | 579.32  | 578.97  | 578.94  | 578.67  | 578.64  | 577.98  | 578.51  | 578.09  | 578.27  |
| 30   | 578.46  |         | 578.74  | 579.15  | 579.02  | 579.05  | 578.71  | 578.58  | 578.09  | 578.24  | 578.07  | 577.87  |
| 31   | 578.48  |         | 578.76  |         | 579.04  |         | 578.74  | 578.43  |         | 577.83  |         | 578.22  |
| MEAN | 578.73  | 578.78  | 578.58  | 579.01  | 579.06  | 578.99  | 578.79  | 578.66  | 578.35  | 578.17  | 578.02  | 578.15  |
| MAX. | 580.01  | 579.61  | 579.18  | 579.70  | 579.84  | 579.65  | 579.35  | 579.63  | 579.44  | 579.94  | 578.79  | 579.73  |
|      | 0700/13 | 0900/13 | 0100/20 | 0100/07 | 1900/24 | 0600/26 | 1700/16 | 1200/17 | 2400/04 | 1300/15 | 0300/18 | 1900/03 |
| MIN. | 577.60  | 577.70  | 577.71  | 578.11  | 578.29  | 577.91  | 578.00  | 577.70  | 577.45  | 576.80  | 576.73  | 576.50  |
|      | 0800/20 | 2200/21 | 0700/23 | 0600/03 | 0700/15 | 1000/22 | 1700/15 | 1000/01 | 2400/19 | 0800/28 | 0200/06 | 0400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.61

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5014: Harbor Beach, Michigan on Lake Huron

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.03 May  
Daily mean elevation: 579.31 5 Jan  
Instant/hourly Elevation: 579.70 1700/9 May

LOWEST  
Monthly mean elevation: 578.04 Nov  
Daily mean elevation: 577.43 23 Dec  
Instant/hourly Elevation: 577.07 1000/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.31 | 5 Jan  |
| 579.09 | 13 Feb |
| 578.83 | 27 Mar |
| 579.28 | 18 Apr |
| 579.16 | 16 May |
| 579.09 | 1 Jun  |
| 578.88 | 1 Jul  |
| 578.99 | 15 Aug |
| 578.62 | 5 Sep  |
| 578.56 | 11 Oct |
| 578.49 | 18 Nov |
| 578.57 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.27 | 20 Jan |
| 578.47 | 7 Feb  |
| 578.16 | 23 Mar |
| 578.51 | 3 Apr  |
| 578.81 | 8 May  |
| 578.76 | 24 Jun |
| 578.62 | 28 Jul |
| 578.38 | 23 Aug |
| 577.94 | 29 Sep |
| 577.78 | 16 Oct |
| 577.44 | 6 Nov  |
| 577.43 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.20                                                  | 2   |     |     | 2   |     |     |     |     |     |     |     |     | 579.20         | 4                          |
| 579.00                                                  | 2   | 1   |     | 11  | 23  | 8   |     |     |     |     |     |     | 579.00         | 49                         |
| 578.80                                                  | 10  | 11  | 1   | 12  | 8   | 20  | 5   | 1   |     |     |     |     | 578.80         | 117                        |
| 578.60                                                  | 10  | 13  | 13  | 3   |     | 2   | 26  | 16  | 1   |     |     |     | 578.60         | 201                        |
| 578.40                                                  | 6   | 4   | 10  | 2   |     |     |     | 12  | 8   | 2   | 1   | 2   | 578.40         | 248                        |
| 578.20                                                  | 1   |     | 6   |     |     |     |     | 2   | 12  | 9   | 6   | 14  | 578.20         | 298                        |
| 578.00                                                  |     |     | 1   |     |     |     |     |     | 8   | 12  | 10  | 7   | 578.00         | 336                        |
| 577.80                                                  |     |     |     |     |     |     |     |     | 1   | 7   | 9   | 5   | 577.80         | 358                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 2   | 577.60         | 363                        |
| 577.40                                                  |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 577.40         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5014: Harbor Beach, Michigan on Lake Huron

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 579.11  | 578.94  | 578.57  | 578.63  | 579.05  | 579.09  | 578.88  | 578.57  | 578.38  | 578.17  | 577.93  | 578.39  |
| 2    | 579.09  | 578.91  | 578.49  | 578.60  | 579.02  | 578.98  | 578.85  | 578.58  | 578.41  | 578.29  | 578.05  | 578.32  |
| 3    | 578.81  | 578.76  | 578.75  | 578.51  | 578.96  | 579.05  | 578.81  | 578.57  | 578.35  | 578.27  | 577.86  | 578.57  |
| 4    | 578.97  | 578.93  | 578.56  | 578.71  | 579.02  | 579.01  | 578.76  | 578.62  | 578.45  | 578.20  | 577.77  | 578.45  |
| 5    | 579.31  | 578.77  | 578.59  | 578.72  | 579.06  | 579.08  | 578.72  | 578.56  | 578.62  | 578.39  | 577.74  | 578.26  |
| 6    | 579.21  | 578.84  | 578.49  | 578.87  | 579.06  | 579.08  | 578.72  | 578.79  | 578.58  | 578.33  | 577.44  | 578.15  |
| 7    | 578.81  | 578.47  | 578.62  | 579.17  | 578.97  | 579.02  | 578.74  | 578.77  | 578.45  | 578.21  | 577.95  | 578.38  |
| 8    | 578.81  | 578.84  | 578.37  | 578.95  | 578.81  | 578.92  | 578.76  | 578.64  | 578.30  | 578.10  | 578.08  | 578.23  |
| 9    | 578.85  | 578.69  | 578.52  | 578.88  | 578.89  | 579.02  | 578.74  | 578.67  | 578.34  | 578.02  | 578.08  | 578.33  |
| 10   | 578.74  | 578.86  | 578.68  | 578.89  | 579.03  | 578.98  | 578.72  | 578.72  | 578.48  | 578.25  | 578.16  | 578.26  |
| 11   | 578.74  | 578.81  | 578.59  | 579.00  | 579.11  | 578.98  | 578.84  | 578.60  | 578.33  | 578.56  | 578.34  | 578.26  |
| 12   | 578.54  | 578.87  | 578.34  | 578.95  | 578.93  | 578.97  | 578.80  | 578.65  | 578.13  | 578.32  | 578.00  | 577.90  |
| 13   | 578.96  | 579.09  | 578.34  | 578.92  | 579.13  | 578.91  | 578.64  | 578.60  | 578.49  | 578.14  | 577.84  | 578.10  |
| 14   | 578.74  | 578.62  | 578.67  | 579.01  | 579.03  | 578.88  | 578.77  | 578.63  | 578.50  | 578.12  | 578.29  | 577.91  |
| 15   | 578.52  | 578.68  | 578.71  | 579.14  | 578.92  | 578.97  | 578.66  | 578.99  | 578.33  | 577.95  | 578.11  | 578.31  |
| 16   | 578.47  | 578.68  | 578.78  | 579.05  | 579.16  | 578.97  | 578.75  | 578.78  | 578.12  | 577.78  | 577.56  | 578.25  |
| 17   | 578.73  | 578.70  | 578.66  | 578.99  | 579.10  | 578.85  | 578.79  | 578.76  | 578.08  | 577.99  | 578.31  | 578.11  |
| 18   | 578.82  | 578.66  | 578.64  | 579.28  | 579.08  | 578.83  | 578.75  | 578.66* | 578.22  | 578.25  | 578.49  | 578.03  |
| 19   | 578.76  | 578.65  | 578.76  | 579.19  | 579.05  | 578.78  | 578.78  | 578.62  | 578.05  | 578.16  | 578.07  | 577.87  |
| 20   | 578.27  | 578.81  | 578.76  | 578.94  | 579.02  | 578.92  | 578.79  | 578.62  | 578.06  | 578.01  | 578.21  | 577.80  |
| 21   | 578.84  | 578.68  | 578.70  | 579.05  | 579.05  | 578.83  | 578.76  | 578.63  | 578.48  | 578.01  | 578.38  | 578.30  |
| 22   | 578.75  | 578.59  | 578.40  | 578.95  | 579.02  | 578.90  | 578.81  | 578.50  | 578.17  | 578.10  | 578.15  | 577.94  |
| 23   | 578.66  | 578.84  | 578.16  | 578.91  | 579.02  | 578.98  | 578.73  | 578.38  | 578.34  | 577.99  | 578.08  | 577.43  |
| 24   | 578.64  | 578.77  | 578.50  | 579.09  | 579.14  | 578.76  | 578.71  | 578.47  | 578.35  | 577.85  | 577.96  | 578.07  |
| 25   | 578.84  | 578.72  | 578.25  | 579.01  | 579.11  | 578.88  | 578.72  | 578.62  | 578.27  | 578.21  | 577.90  | 578.22  |
| 26   | 578.78  | 578.59  | 578.52  | 579.01  | 579.05  | 579.08  | 578.72  | 578.78  | 578.30  | 578.20  | 577.97  | 578.30  |
| 27   | 578.76  | 578.71  | 578.83  | 578.95  | 579.00  | 578.92  | 578.72  | 578.54  | 578.19  | 577.95  | 577.92  | 577.66  |
| 28   | 578.85  | 578.52  | 578.55  | 579.05  | 579.04  | 578.92  | 578.62  | 578.56  | 578.29  | 577.98  | 578.26  | 578.20  |
| 29   | 578.42  | 578.89  | 578.27  | 579.23  | 578.97  | 578.89  | 578.68  | 578.56  | 577.94  | 578.45  | 578.20  | 578.28  |
| 30   | 578.55  |         | 578.69  | 579.10  | 579.02  | 578.94  | 578.73  | 578.52  | 578.05  | 578.18  | 577.98  |         |
| 31   | 578.60  |         | 578.70  |         | 579.03  |         | 578.71  | 578.39  |         | 577.90  |         | 578.18  |
| MEAN | 578.77  | 578.75  | 578.56  | 578.96  | 579.03  | 578.95  | 578.75  | 578.62  | 578.30  | 578.14  | 578.04  | 578.14  |
| MAX. | 579.45  | 579.30  | 579.03  | 579.45  | 579.70  | 579.42  | 579.10  | 579.14  | 578.89  | 578.75  | 578.72  | 579.03  |
|      | 0300/06 | 0800/13 | 2200/30 | 1400/18 | 1700/09 | 2400/01 | 2300/16 | 1300/15 | 2100/04 | 2100/10 | 2000/17 | 1800/03 |
| MIN. | 577.98  | 578.09  | 577.90  | 578.33  | 578.59  | 578.34  | 577.95  | 578.23  | 577.57  | 577.46  | 577.18  | 577.07  |
|      | 1400/20 | 1000/07 | 0600/23 | 0400/03 | 0100/13 | 0700/25 | 1600/15 | 2000/23 | 0100/20 | 0100/28 | 0200/06 | 1000/23 |

\* Indicates Less than 90% of the Hourly Data Available.

/ Indicates No Data.

ANNUAL MEAN: 578.58

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5035: Essexville, Michigan on Lake Huron (Saginaw Bay)

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.10 May  
Daily mean elevation: 579.63 24 May  
Instant/hourly Elevation: 580.89 1500/16 May

LOWEST  
Monthly mean elevation: 577.88 Nov  
Daily mean elevation: 576.38 16 Nov  
Instant/hourly Elevation: 574.88 2200/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.08 | 6 Jan  |
| 578.99 | 1 Feb  |
| 578.85 | 21 Mar |
| 579.54 | 7 Apr  |
| 579.63 | 24 May |
| 579.47 | 9 Jun  |
| 578.99 | 1 Jul  |
| 579.29 | 18 Aug |
| 578.90 | 5 Sep  |
| 578.66 | 5 Oct  |
| 578.49 | 18 Nov |
| 578.40 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.13 | 20 Jan |
| 578.29 | 7 Feb  |
| 578.10 | 23 Mar |
| 578.55 | 3 Apr  |
| 578.69 | 15 May |
| 578.63 | 19 Jun |
| 578.40 | 15 Jul |
| 578.28 | 25 Aug |
| 577.36 | 20 Sep |
| 576.91 | 28 Oct |
| 576.38 | 16 Nov |
| 576.90 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.60                                                  |     |     |     |     | 1   |     |     |     |     |     |     |     | 579.60         | 1                          |
| 579.40                                                  |     |     |     | 1   | 2   | 1   |     |     |     |     |     |     | 579.40         | 5                          |
| 579.20                                                  |     |     |     | 5   | 5   | 6   |     | 1   |     |     |     |     | 579.20         | 22                         |
| 579.00                                                  | 1   |     |     | 14  | 14  | 7   |     |     |     |     |     |     | 579.00         | 58                         |
| 578.80                                                  | 6   | 7   | 4   | 5   | 4   | 11  | 15  | 4   | 2   |     |     |     | 578.80         | 116                        |
| 578.60                                                  | 10  | 18  | 14  | 4   | 5   | 5   | 11  | 7   | 1   | .1  |     |     | 578.60         | 192                        |
| 578.40                                                  | 10  | 3   | 8   | 1   |     |     | 4   | 14  | 5   | 2   |     |     | 578.40         | 241                        |
| 578.20                                                  | 3   | 1   | 3   |     |     |     | 1   | 5   | 12  | 8   | 3   | 10  | 578.20         | 287                        |
| 578.00                                                  | 1   |     | 2   |     |     |     |     |     | 8   | 6   | 10  | 7   | 578.00         | 321                        |
| 577.80                                                  |     |     |     |     |     |     |     |     | 1   | 9   | 8   | 6   | 577.80         | 345                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 2   | 1   | 4   | 577.60         | 352                        |
| 577.40                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 3   | 577.40         | 358                        |
| 577.20                                                  |     |     |     |     |     |     |     |     | 1   | 1   | 2   |     | 577.20         | 362                        |
| 577.00                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 577.00         | 362                        |
| 576.80                                                  |     |     |     |     |     |     |     |     |     | 1   |     | 1   | 576.80         | 364                        |
| 576.60                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 576.60         | 365                        |
| 576.40                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 576.40         | 365                        |
| 576.20                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 576.20         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5035: Essexville, Michigan on Lake Huron (Saginaw Bay)

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.44  | 578.99  | 578.67  | 578.86  | 579.10  | 579.38  | 578.99  | 578.51  | 578.30  | 578.19  | 577.86  | 578.36  |
| 2    | 578.29  | 578.96  | 578.49  | 578.80  | 579.13  | 579.27  | 578.88  | 578.54  | 578.38  | 578.45  | 578.15  | 577.62  |
| 3    | 578.33  | 578.79  | 578.78  | 578.55  | 579.08  | 579.29  | 578.88  | 578.54  | 578.25  | 578.35  | 577.88  | 578.40  |
| 4    | 578.52  | 578.90  | 578.55  | 578.65  | 579.15  | 579.05  | 578.84  | 578.67  | 578.64  | 578.21  | 577.83  | 578.21  |
| 5    | 578.89  | 578.68  | 578.55  | 578.83  | 579.12  | 579.03  | 578.77  | 578.40  | 578.90  | 578.66  | 577.59  | 578.08  |
| 6    | 579.08  | 578.68  | 578.42  | 579.01  | 579.27  | 579.08  | 578.74  | 578.66  | 578.52  | 578.34  | 576.70  | 577.68  |
| 7    | 578.75  | 578.29  | 578.65  | 579.54  | 579.11  | 579.34  | 578.72  | 578.71  | 578.36  | 578.13  | 577.85  | 578.38  |
| 8    | 578.76  | 578.79  | 578.47  | 579.25  | 578.73  | 579.22  | 578.73  | 578.53  | 578.02  | 578.22  | 578.04  | 578.09  |
| 9    | 578.78  | 578.64  | 578.46  | 579.03  | 578.69  | 579.47  | 578.78  | 578.55  | 578.22  | 578.05  | 578.09  | 578.20  |
| 10   | 578.57  | 578.86  | 578.71  | 578.97  | 578.88  | 579.00  | 578.53  | 578.73  | 578.41  | 577.84  | 578.06  | 578.23  |
| 11   | 578.57  | 578.93  | 578.83  | 579.16  | 579.24  | 578.91  | 578.83  | 578.55  | 578.39  | 578.45  | 578.30  | 578.34  |
| 12   | 578.42  | 578.73  | 578.61  | 579.11  | 578.79  | 578.88  | 578.94  | 578.65  | 578.03  | 578.35  | 577.97  | 577.43  |
| 13   | 578.80  | 578.92  | 578.27  | 578.94  | 579.04  | 578.86  | 578.54  | 578.63  | 578.50  | 577.95  | 577.55  | 577.82  |
| 14   | 578.65  | 578.73  | 578.74  | 579.09  | 579.13  | 578.78  | 578.89  | 578.34  | 578.51  | 577.83  | 578.20  | 577.83  |
| 15   | 578.36  | 578.72  | 578.70  | 579.09  | 578.69  | 578.94  | 578.40  | 578.86  | 578.53  | 577.91  | 578.26  | 578.24  |
| 16   | 578.41  | 578.71  | 578.77  | 579.09  | 579.55  | 579.19  | 578.85  | 578.58  | 578.20  | 577.62  | 576.38  | 578.02  |
| 17   | 578.76  | 578.68  | 578.63  | 578.69  | 579.58  | 578.93  | 578.83  | 578.89  | 578.02  | 578.06  | 577.24  | 578.02  |
| 18   | 578.79  | 578.64  | 578.49  | 579.33  | 579.34  | 578.86  | 578.96  | 579.29  | 578.25  | 578.17  | 578.49  | 577.87  |
| 19   | 578.94  | 578.68  | 578.70  | 579.05  | 579.31  | 578.63  | 578.94  | 578.90  | 578.00  | 578.24  | 578.11  | 577.89  |
| 20   | 578.13  | 578.65  | 578.83  | 578.69  | 579.11  | 578.91  | 578.83  | 578.75  | 577.36  | 577.95  | 578.35  | 577.50  |
| 21   | 578.85  | 578.50  | 578.85  | 579.12  | 579.10  | 578.85  | 578.85  | 578.82  | 578.40  | 577.90  | 578.41  | 578.30  |
| 22   | 578.68  | 578.42  | 578.49  | 579.22  | 579.12  | 578.78  | 578.94  | 578.59  | 578.06  | 578.22  | 578.08  | 578.00  |
| 23   | 578.56  | 578.73  | 578.10  | 579.09  | 579.19  | 579.18  | 578.83  | 578.40  | 578.25  | 577.93  | 578.02  | 576.90  |
| 24   | 578.67  | 578.66  | 578.66  | 579.13  | 579.63  | 578.76  | 578.72  | 578.49  | 578.34  | 577.27  | 577.99  | 578.06  |
| 25   | 578.92  | 578.67  | 578.17  | 578.95  | 579.28  | 578.76  | 578.74  | 578.28  | 578.25  | 577.86  | 577.91  | 577.80  |
| 26   | 578.92  | 578.65  | 578.23  | 579.15  | 578.80  | 579.25  | 578.76  | 578.58  | 578.36  | 577.90  | 578.09  | 578.24  |
| 27   | 578.64  | 578.76  | 578.63  | 579.18  | 578.85  | 578.99  | 578.71  | 578.31  | 578.10  | 577.63  | 577.33  | 577.44  |
| 28   | 578.84  | 578.46  | 578.68  | 579.27  | 579.03  | 579.02  | 578.55  | 578.47  | 578.87  | 576.91  | 577.92  | 577.92  |
| 29   | 578.49  | 578.84  | 578.29  | 579.28  | 578.97  | 578.97  | 578.56  | 578.59  | 578.07  | 578.26  | 578.01  | 578.15  |
| 30   | 578.55  |         | 578.80  | 579.16  | 578.96  | 579.18  | 578.63  | 578.54  | 578.03  | 578.13  | 577.79  | 577.65  |
| 31   | 578.56  |         | 578.83  |         | 579.04  |         | 578.72  | 578.42  |         | 577.56  |         | 578.22  |
| MEAN | 578.64  | 578.71  | 578.58  | 579.04  | 579.10  | 579.03  | 578.77  | 578.61  | 578.28  | 578.02  | 577.88  | 577.96  |
| MAX. | 579.49  | 579.20  | 579.34  | 579.98  | 580.89  | 580.57  | 579.44  | 579.57  | 580.21  | 578.89  | 578.81  | 579.57  |
|      | 0400/26 | 0100/12 | 0500/30 | 2200/17 | 1500/16 | 1800/01 | 1900/16 | 0500/18 | 0100/05 | 0100/02 | 0400/10 | 2200/03 |
| MIN. | 577.05  | 577.76  | 577.43  | 577.95  | 577.93  | 577.82  | 577.28  | 577.64  | 576.60  | 576.17  | 574.88  | 575.85  |
|      | 1300/20 | 2400/21 | 1500/23 | 1800/20 | 0400/13 | 0600/25 | 1800/15 | 0100/28 | 0800/20 | 0500/28 | 2200/16 | 1200/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.55

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5059: Harrisville, Michigan on Lake Huron

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 578.94 May  
Daily mean elevation: 579.08 18 Apr  
Instant/hourly Elevation: 579.36 1900/13 May

LOWEST  
Monthly mean elevation: 577.98 Nov  
Daily mean elevation: 577.49 6 Nov  
Instant/hourly Elevation: 577.14 0800/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.07 | 5 Jan  |
| 578.79 | 13 Feb |
| 578.66 | 27 Mar |
| 579.08 | 18 Apr |
| 579.07 | 13 May |
| 578.94 | 26 Jun |
| 578.93 | 20 Jul |
| 578.79 | 15 Aug |
| 578.43 | 6 Sep  |
| 578.23 | 11 Oct |
| 578.34 | 18 Nov |
| 578.32 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.30 | 20 Jan |
| 578.52 | 28 Feb |
| 578.21 | 23 Mar |
| 578.49 | 1 Apr  |
| 578.79 | 8 May  |
| 578.74 | 17 Jun |
| 578.56 | 28 Jul |
| 578.33 | 23 Aug |
| 577.89 | 29 Sep |
| 577.79 | 24 Oct |
| 577.49 | 6 Nov  |
| 577.58 | 23 Dec |

| Elev.<br>(ft.) | ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
|                | Jan                                                     | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.00         | 2                                                       |     |     | 4   | 4   |     |     |     |     |     |     |     | 579.00         | 10                         |
| 578.80         | 4                                                       |     |     | 17  | 26  | 19  | 4   |     |     |     |     |     | 578.80         | 80                         |
| 578.60         | 16                                                      | 17  | 2   | 5   | 1   | 11  | 23  | 5   |     |     |     |     | 578.60         | 160                        |
| 578.40         | 8                                                       | 12  | 20  | 4   |     |     | 4   | 24  | 1   |     |     |     | 578.40         | 233                        |
| 578.20         | 1                                                       |     | 9   |     |     |     |     | 2   | 15  | 2   | 3   | 5   | 578.20         | 270                        |
| 578.00         |                                                         |     |     |     |     |     |     |     | 13  | 15  | 9   | 12  | 578.00         | 319                        |
| 577.80         |                                                         |     |     |     |     |     |     |     | 1   | 13  | 14  | 11  | 577.80         | 358                        |
| 577.60         |                                                         |     |     |     |     |     |     |     |     | 1   | 3   | 2   | 577.60         | 364                        |
| 577.40         |                                                         |     |     |     |     |     |     |     |     |     | 1   | 1   | 577.40         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5059: Harrisville, Michigan on Lake Huron

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.96  | 578.73  | 578.52  | 578.49  | 578.94  | 578.94  | 578.76  | 578.54  | 578.34  | 578.10  | 577.85  | 578.22  |
| 2    | 579.00  | 578.72  | 578.38  | 578.54  | 578.92  | 578.81  | 578.76  | 578.50  | 578.34  | 578.15  | 577.81  | 578.32  |
| 3    | 578.83  | 578.65  | 578.58  | 578.52  | 578.86  | 578.91  | 578.69  | 578.51  | 578.24  | 578.14  | 577.83  | 578.31  |
| 4    | 578.83  | 578.70  | 578.48  | 578.71  | 578.91  | 578.92  | 578.65  | 578.51  | 578.32  | 578.11  | 577.73  | 578.21  |
| 5    | 579.07  | 578.63  | 578.53  | 578.65  | 578.96  | 578.94  | 578.63  | 578.53  | 578.37  | 578.12  | 577.79  | 578.20  |
| 6    | 579.01  | 578.69  | 578.46  | 578.57  | 578.95  | 578.94  | 578.64  | 578.66  | 578.43  | 578.16  | 577.49  | 578.15  |
| 7    | 578.72  | 578.58  | 578.53  | 578.91  | 578.84  | 578.86  | 578.65  | 578.60  | 578.38  | 578.09  | 577.87  | 578.21  |
| 8    | 578.73  | 578.72  | 578.36  | 578.81  | 578.79  | 578.78  | 578.68  | 578.59  | 578.28  | 577.99  | 577.97  | 578.07  |
| 9    | 578.75  | 578.56  | 578.43  | 578.77  | 578.90  | 578.89  | 578.65  | 578.60  | 578.28  | 577.93  | 578.00  | 578.19  |
| 10   | 578.69  | 578.69  | 578.56  | 578.79  | 578.95  | 578.90  | 578.64  | 578.59  | 578.34  | 578.05  | 577.97  | 578.06  |
| 11   | 578.78  | 578.69  | 578.52  | 578.87  | 579.00  | 578.93  | 578.69  | 578.56  | 578.23  | 578.23  | 578.17  | 578.05  |
| 12   | 578.58  | 578.59  | 578.37  | 578.85  | 578.90  | 578.91  | 578.68  | 578.57  | 578.07  | 578.07  | 578.03  | 577.90  |
| 13   | 578.67  | 578.79  | 578.25  | 578.86  | 579.07  | 578.86  | 578.62  | 578.53  | 578.32  | 578.03  | 577.85  | 578.02  |
| 14   | 578.62  | 578.65  | 578.50  | 578.90  | 578.96  | 578.84  | 578.70  | 578.62  | 578.32  | 578.08  | 578.18  | 577.92  |
| 15   | 578.53  | 578.57  | 578.55  | 579.02  | 578.88  | 578.90  | 578.65  | 578.79  | 578.21  | 577.90  | 578.09  | 577.98  |
| 16   | 578.59  | 578.60  | 578.60  | 578.94  | 579.04  | 578.86  | 578.72  | 578.70  | 578.10  | 577.85* | 577.71  | 578.13  |
| 17   | 578.68  | 578.63  | 578.56  | 578.96  | 578.94  | 578.74  | 578.68  | 578.72  | 578.06  | 578.00* | 578.23  | 577.94  |
| 18   | 578.64  | 578.60  | 578.51  | 579.08  | 578.95  | 578.75  | 578.82  | 578.58  | 578.16  | 577.96  | 578.34  | 577.94  |
| 19   | 578.67  | 578.56  | 578.60  | 579.07  | 578.93  | 578.76  | 578.93  | 578.52  | 578.07  | 578.02  | 577.96  | 577.86  |
| 20   | 578.30  | 578.57  | 578.53  | 578.92  | 578.92  | 578.84  | 578.93  | 578.51  | 578.11  | 577.95  | 578.00  | 577.84  |
| 21   | 578.65  | 578.62  | 578.56  | 578.92  | 578.95  | 578.77  | 578.88  | 578.51  | 578.29  | 577.94  | 578.21  | 578.13  |
| 22   | 578.69  | 578.60  | 578.37  | 578.87  | 578.89  | 578.78  | 578.77  | 578.41  | 578.13  | 577.94  | 578.06  | 577.91  |
| 23   | 578.63  | 578.68  | 578.21  | 578.75  | 578.91  | 578.85  | 578.64  | 578.33  | 578.19  | 577.94  | 578.03  | 577.58  |
| 24   | 578.60  | 578.64  | 578.38  | 578.96  | 579.00  | 578.76  | 578.62  | 578.41  | 578.25  | 577.79  | 577.96  | 577.99  |
| 25   | 578.76  | 578.61  | 578.29  | 578.94  | 579.02  | 578.78  | 578.60  | 578.49  | 578.19  | 578.04  | 577.92  | 578.04  |
| 26   | 578.56  | 578.58  | 578.50  | 578.93  | 579.01  | 578.94  | 578.60  | 578.58  | 578.17  | 578.04  | 577.97  | 578.13  |
| 27   | 578.67  | 578.55  | 578.66  | 578.87  | 578.95  | 578.80  | 578.62  | 578.45  | 578.13  | 577.95  | 577.94  | 577.73  |
| 28   | 578.70  | 578.52  | 578.50  | 578.93  | 578.95  | 578.82  | 578.56  | 578.47  | 578.17  | 577.84  | 578.14  | 577.99  |
| 29   | 578.48  | 578.65  | 578.29  | 579.06  | 578.88  | 578.76  | 578.61  | 578.45  | 577.89  | 578.22  | 578.15  | 578.05  |
| 30   | 578.56  |         | 578.63  | 579.00  | 578.94  | 578.78  | 578.59  | 578.41  | 578.02  | 578.02  | 578.04  | 577.79  |
| 31   | 578.60  |         | 578.60  |         | 578.94  |         | 578.63  | 578.36  |         | 577.91  |         | 577.93  |
| MEAN | 578.70  | 578.63  | 578.48  | 578.85  | 578.94  | 578.84  | 578.69  | 578.54  | 578.21  | 578.02  | 577.98  | 578.03  |
| MAX. | 579.23  | 578.96  | 578.95  | 579.24  | 579.36  | 579.14  | 579.17  | 579.05  | 578.59  | 578.37  | 578.51  | 578.60  |
|      | 0600/06 | 1100/01 | 2100/30 | 2100/17 | 1900/13 | 1500/06 | 1900/16 | 1600/16 | 2200/04 | 1400/11 | 0600/18 | 2300/02 |
| MIN. | 577.90  | 578.36  | 577.97  | 578.27  | 578.53  | 578.44  | 578.22  | 578.25  | 577.74  | 577.28  | 577.37  | 577.14  |
|      | 1000/20 | 2100/21 | 2100/12 | 1600/06 | 0500/15 | 0200/22 | 1500/15 | 2200/23 | 0700/23 | 0600/28 | 0200/06 | 0800/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.49

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 5080: Mackinaw City, Michigan on Straits of Mackinac

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 578.96 May  
 Daily mean elevation: 579.09 15 May  
 Instant/hourly Elevation: 579.66 1800/2 Jan

LOWEST  
 Monthly mean elevation: 578.03 Oct  
 Daily mean elevation: 577.77 2 Nov  
 Instant/hourly Elevation: 577.33 0500/15 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.08 | 2 Jan  |
| 578.81 | 21 Feb |
| 578.69 | 25 Mar |
| 578.99 | 25 Apr |
| 579.09 | 15 May |
| 578.97 | 19 Jun |
| 578.78 | 13 Jul |
| 578.75 | 14 Aug |
| 578.50 | 1 Sep  |
| 578.21 | 3 Oct  |
| 578.61 | 16 Nov |
| 578.37 | 12 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.42 | 13 Jan |
| 578.38 | 29 Feb |
| 578.37 | 20 Mar |
| 578.50 | 1 Apr  |
| 578.89 | 6 May  |
| 578.71 | 29 Jun |
| 578.58 | 30 Jul |
| 578.33 | 30 Aug |
| 578.09 | 14 Sep |
| 577.84 | 12 Oct |
| 577.77 | 2 Nov  |
| 577.81 | 15 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.00                                                  | 2   |     |     |     | 6   |     |     |     |     |     |     |     | 579.00         | 8                          |
| 578.80                                                  | 10  | 1   |     | 17  | 25  | 25  |     |     |     |     |     |     | 578.80         | 86                         |
| 578.60                                                  | 12  | 13  | 4   | 10  |     | 5   | 30  | 14  |     |     | 1   |     | 578.60         | 175                        |
| 578.40                                                  | 7   | 13  | 24  | 3   |     |     | 1   | 14  | 2   |     |     |     | 578.40         | 239                        |
| 578.20                                                  |     | 2   | 3   |     |     |     |     | 3   | 13  | 1   | 5   | 4   | 578.20         | 270                        |
| 578.00                                                  |     |     |     |     |     |     |     |     | 15  | 19  | 18  | 15  | 578.00         | 337                        |
| 577.80                                                  |     |     |     |     |     |     |     |     |     | 11  | 5   | 12  | 577.80         | 365                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 577.60         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 5080: Mackinaw City, Michigan on Straits of Mackinac

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.96  | 578.52  | 578.65  | 578.50  | 578.92  | 578.92  | 578.72  | 578.64  | 578.50  | 578.14  | 577.86  | 578.10  |
| 2    | 579.08  | 578.56  | 578.39  | 578.54  | 578.94  | 578.86  | 578.73  | 578.67  | 578.38  | 578.11  | 577.77  | 578.32  |
| 3    | 579.04  | 578.64  | 578.45  | 578.67  | 578.92  | 578.88  | 578.74  | 578.64  | 578.29  | 578.21  | 577.90  | 577.99  |
| 4    | 578.83  | 578.52  | 578.45  | 578.72  | 578.90  | 578.90  | 578.73  | 578.65  | 578.28  | 578.15  | 577.86  | 578.07  |
| 5    | 578.82  | 578.65  | 578.57  | 578.71  | 578.92  | 578.88  | 578.70  | 578.73  | 578.23  | 578.06  | 578.10  | 578.17  |
| 6    | 578.78  | 578.62  | 578.60  | 578.58  | 578.89  | 578.93  | 578.72  | 578.70  | 578.30  | 578.09  | 578.05  | 578.22  |
| 7    | 578.82  | 578.71  | 578.44  | 578.73  | 578.92  | 578.86  | 578.74  | 578.60  | 578.40  | 578.17  | 578.01  | 577.97  |
| 8    | 578.76  | 578.66  | 578.65  | 578.73  | 579.06  | 578.81  | 578.75  | 578.66  | 578.49  | 578.04  | 578.01  | 578.04  |
| 9    | 578.65  | 578.55  | 578.44  | 578.79  | 579.05  | 578.86  | 578.68  | 578.60  | 578.36  | 578.08  | 578.05  | 578.06  |
| 10   | 578.92  | 578.54  | 578.48  | 578.77  | 578.95  | 578.90  | 578.73  | 578.61  | 578.21  | 578.03  | 577.92  | 577.98  |
| 11   | 578.83  | 578.47  | 578.45  | 578.78  | 578.99  | 578.93  | 578.69  | 578.64  | 578.17  | 577.87  | 578.07  | 577.93  |
| 12   | 578.80  | 578.44  | 578.47  | 578.81  | 579.04  | 578.92  | 578.67  | 578.66  | 578.24  | 577.84  | 578.21  | 578.37  |
| 13   | 578.42  | 578.51  | 578.38  | 578.89  | 578.92  | 578.92  | 578.78  | 578.69  | 578.20  | 578.05  | 578.19  | 578.02  |
| 14   | 578.74  | 578.76  | 578.44  | 578.80  | 579.00  | 578.96  | 578.69  | 578.75  | 578.09  | 578.05  | 578.08  | 577.98  |
| 15   | 578.84  | 578.47  | 578.44  | 578.90  | 579.09  | 578.89  | 578.69  | 578.55  | 578.10  | 577.97  | 578.20  | 577.81  |
| 16   | 578.92  | 578.75  | 578.45  | 578.91  | 578.95  | 578.81  | 578.64  | 578.63  | 578.17  | 578.14  | 578.61  | 578.08  |
| 17   | 578.62  | 578.62  | 578.52  | 578.95  | 578.92  | 578.82  | 578.68  | 578.61  | 578.18  | 577.99  | 578.33  | 577.87  |
| 18   | 578.59  | 578.74  | 578.42  | 578.82  | 578.92  | 578.88  | 578.66  | 578.49  | 578.12  | 577.86  | 578.04  | 578.05  |
| 19   | 578.57  | 578.70  | 578.43  | 578.89  | 578.94  | 578.97  | 578.65  | 578.47  | 578.31  | 577.95  | 578.19  | 578.03  |
| 20   | 578.62  | 578.39  | 578.37  | 578.93  | 578.95  | 578.81  | 578.65  | 578.48  | 578.31  | 578.01  | 578.00  | 578.12  |
| 21   | 578.56  | 578.81  | 578.44  | 578.89  | 578.98  | 578.82  | 578.62  | 578.44  | 578.12  | 578.00  | 578.05  | 577.86  |
| 22   | 578.82  | 578.78  | 578.55  | 578.80  | 578.94  | 578.85  | 578.62  | 578.50  | 578.23  | 577.91  | 578.14  | 578.10  |
| 23   | 578.71  | 578.50  | 578.48  | 578.85  | 578.90  | 578.83  | 578.63  | 578.50  | 578.18  | 578.02  | 578.16  | 578.26  |
| 24   | 578.60  | 578.56  | 578.42  | 578.91  | 578.90  | 578.90  | 578.65  | 578.49  | 578.19  | 578.04  | 578.14  | 578.03  |
| 25   | 578.58  | 578.56  | 578.69  | 578.99  | 578.95  | 578.86  | 578.64  | 578.57  | 578.18  | 578.01  | 578.15  | 577.90  |
| 26   | 578.53  | 578.68  | 578.62  | 578.89  | 579.07  | 578.79  | 578.63  | 578.41  | 578.22  | 578.01  | 578.22  | 577.91  |
| 27   | 578.68  | 578.48  | 578.41  | 578.86  | 579.02  | 578.79  | 578.65  | 578.54  | 578.11  | 578.18  | 578.35  | 578.17  |
| 28   | 578.62  | 578.66  | 578.50  | 578.94  | 578.96  | 578.80  | 578.69  | 578.42  | 578.10  | 578.00  | 578.11  | 577.99  |
| 29   | 578.82  | 578.38  | 578.58  | 578.92  | 578.98  | 578.71  | 578.72  | 578.34  | 578.14  | 577.88  | 578.23  | 578.02  |
| 30   | 578.78  |         | 578.54  | 578.92  | 578.97  | 578.73  | 578.58  | 578.33  | 578.18  | 577.88  | 578.06  | 578.03  |
| 31   | 578.74  |         | 578.53  |         | 578.96  |         | 578.62  | 578.40  |         | 578.12  |         | 577.89  |
| MEAN | 578.74  | 578.59  | 578.49  | 578.81  | 578.96  | 578.86  | 578.68  | 578.56  | 578.23  | 578.03  | 578.10  | 578.04  |
| MAX. | 579.66  | 579.51  | 578.94  | 579.22  | 579.55  | 579.22  | 579.18  | 579.00  | 579.00  | 578.75  | 579.50  | 578.76  |
|      | 1800/02 | 0500/22 | 2400/25 | 1800/25 | 0500/15 | 1200/22 | 1900/15 | 0400/06 | 2400/19 | 2400/27 | 1300/16 | 0300/23 |
| MIN. | 577.99  | 577.98  | 578.13  | 578.15  | 578.64  | 578.51  | 578.23  | 578.15  | 577.85  | 577.47  | 577.63  | 577.33  |
|      | 0500/13 | 1200/20 | 1900/02 | 1200/06 | 1300/13 | 0200/29 | 1500/16 | 0300/26 | 0600/23 | 0300/18 | 0800/02 | 0500/15 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.51

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5099: DeTour Village, Michigan on Lake Huron

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 578.86 May  
Daily mean elevation: 579.11 2 Jan  
Instant/hourly Elevation: 579.40 1900/2 Jan

LOWEST  
Monthly mean elevation: 577.96 Oct  
Daily mean elevation: 577.64 2 Nov  
Instant/hourly Elevation: 577.18 0200/15 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.11 | 2 Jan  |
| 578.80 | 22 Feb |
| 578.57 | 1 Mar  |
| 578.93 | 25 Apr |
| 579.01 | 26 May |
| 578.88 | 11 Jun |
| 578.64 | 8 Jul  |
| 578.60 | 14 Aug |
| 578.39 | 8 Sep  |
| 578.16 | 27 Oct |
| 578.30 | 18 Nov |
| 578.25 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.28 | 13 Jan |
| 578.26 | 12 Feb |
| 578.06 | 13 Mar |
| 578.38 | 1 Apr  |
| 578.77 | 24 May |
| 578.58 | 29 Jun |
| 578.48 | 30 Jul |
| 578.26 | 30 Aug |
| 577.96 | 29 Sep |
| 577.72 | 18 Oct |
| 577.64 | 2 Nov  |
| 577.65 | 15 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.00                                                  | 2   |     |     |     | 1   |     |     |     |     |     |     |     | 579.00         | 3                          |
| 578.80                                                  | 6   |     |     | 9   | 26  | 9   |     |     |     |     |     |     | 578.80         | 53                         |
| 578.60                                                  | 14  | 9   |     | 17  | 4   | 20  | 6   |     |     |     |     |     | 578.60         | 123                        |
| 578.40                                                  | 5   | 14  | 16  | 3   |     | 1   | 25  | 21  |     |     |     |     | 578.40         | 208                        |
| 578.20                                                  | 4   | 6   | 14  | 1   |     |     |     | 10  | 8   |     | 4   | 2   | 578.20         | 257                        |
| 578.00                                                  |     |     | 1   |     |     |     |     |     | 20  | 11  | 14  | 14  | 578.00         | 317                        |
| 577.80                                                  |     |     |     |     |     |     |     |     | 2   | 15  | 9   | 14  | 577.80         | 357                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 5   | 3   | 1   | 577.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5099: DeTour Village, Michigan on Lake Huron

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.93  | 578.48  | 578.57  | 578.38  | 578.85  | 578.85  | 578.58  | 578.54  | 578.37  | 578.13  | 577.82  | 578.06  |
| 2    | 579.11  | 578.48  | 578.25  | 578.46  | 578.85  | 578.72  | 578.64  | 578.50  | 578.39  | 578.06  | 577.64  | 578.25  |
| 3    | 579.03  | 578.54  | 578.43  | 578.49  | 578.81  | 578.78  | 578.61  | 578.53  | 578.24  | 578.13  | 577.91  | 578.05  |
| 4    | 578.70  | 578.44  | 578.35  | 578.65  | 578.80  | 578.84  | 578.59  | 578.50  | 578.10  | 578.06  | 577.74  | 578.04  |
| 5    | 578.93  | 578.55  | 578.52  | 578.66  | 578.86  | 578.82  | 578.57  | 578.56  | 578.05  | 577.80  | 577.85  | 578.17  |
| 6    | 578.93  | 578.60  | 578.53  | 578.42  | 578.82  | 578.88  | 578.58  | 578.59  | 578.23  | 578.03  | 577.84  | 578.18  |
| 7    | 578.80  | 578.70  | 578.42  | 578.66  | 578.81  | 578.78  | 578.62  | 578.54  | 578.35  | 578.09  | 577.84  | 578.01  |
| 8    | 578.73  | 578.66  | 578.53  | 578.66  | 578.89  | 578.65  | 578.64  | 578.52  | 578.39  | 577.98  | 577.92  | 577.97  |
| 9    | 578.65  | 578.46  | 578.33  | 578.67  | 578.92  | 578.73  | 578.58  | 578.52  | 578.25  | 577.92  | 578.09  | 578.09  |
| 10   | 578.82  | 578.51  | 578.45  | 578.68  | 578.84  | 578.80  | 578.60  | 578.53  | 578.22  | 577.96  | 577.79  | 577.97  |
| 11   | 578.93  | 578.38  | 578.38  | 578.72  | 578.96  | 578.88  | 578.60  | 578.52  | 578.14  | 577.84  | 578.08  | 577.89  |
| 12   | 578.74  | 578.26  | 578.22  | 578.72  | 578.88  | 578.86  | 578.56  | 578.57  | 578.10  | 577.79  | 578.22  | 578.23  |
| 13   | 578.28  | 578.46  | 578.06  | 578.81  | 578.80  | 578.83  | 578.62  | 578.57  | 578.13  | 577.91  | 577.94  | 578.10  |
| 14   | 578.68  | 578.79  | 578.32  | 578.69  | 578.95  | 578.84  | 578.59  | 578.60  | 578.08  | 578.07  | 578.09  | 578.00  |
| 15   | 578.80  | 578.32  | 578.35  | 578.90  | 578.91  | 578.80  | 578.60  | 578.57  | 578.06  | 577.90  | 578.20  | 577.65  |
| 16   | 578.84  | 578.63  | 578.40  | 578.84  | 578.87  | 578.74  | 578.55  | 578.55  | 578.06  | 578.03  | 578.13  | 578.13  |
| 17   | 578.64  | 578.54  | 578.47  | 578.86  | 578.81  | 578.67  | 578.56  | 578.48  | 578.06  | 577.96  | 578.23  | 577.83  |
| 18   | 578.47  | 578.67  | 578.35  | 578.71  | 578.83  | 578.75  | 578.57  | 578.38  | 578.10  | 577.72  | 578.30  | 578.01  |
| 19   | 578.59  | 578.61  | 578.45  | 578.90  | 578.84  | 578.84  | 578.52  | 578.39  | 578.19  | 577.93  | 578.09  | 578.00  |
| 20   | 578.35  | 578.31  | 578.28  | 578.83  | 578.84  | 578.74  | 578.58  | 578.40  | 578.18  | 577.93  | 577.87  | 577.95  |
| 21   | 578.38  | 578.72  | 578.41  | 578.79  | 578.91  | 578.75  | 578.50  | 578.37  | 578.14  | 577.95  | 578.04  | 577.95  |
| 22   | 578.72  | 578.80  | 578.46  | 578.76  | 578.84  | 578.72  | 578.53  | 578.40  | 578.18  | 577.83  | 578.08  | 578.14  |
| 23   | 578.69  | 578.51  | 578.26  | 578.61  | 578.80  | 578.74  | 578.51  | 578.40  | 578.03  | 578.00  | 578.11  | 577.90  |
| 24   | 578.48  | 578.57  | 578.36  | 578.75  | 578.77  | 578.76  | 578.53  | 578.41  | 578.20  | 577.79  | 578.08  | 577.99  |
| 25   | 578.54  | 578.51  | 578.45  | 578.93  | 578.86  | 578.68  | 578.54  | 578.48  | 578.07  | 577.95  | 578.01  | 577.84  |
| 26   | 578.33  | 578.64  | 578.52  | 578.79  | 579.01  | 578.72  | 578.48  | 578.44  | 578.17  | 577.98  | 578.12  | 578.12  |
| 27   | 578.64  | 578.36  | 578.41  | 578.68  | 578.94  | 578.68  | 578.55  | 578.45  | 577.99  | 578.16  | 578.13  | 578.06  |
| 28   | 578.58  | 578.60  | 578.52  | 578.74  | 578.87  | 578.71  | 578.53  | 578.35  | 578.02  | 577.74  | 578.12  | 577.91  |
| 29   | 578.74  | 578.36  | 578.30  | 578.85  | 578.85  | 578.58  | 578.61  | 578.29  | 577.96  | 578.02  | 578.22  | 578.11  |
| 30   | 578.66  |         | 578.40  | 578.87  | 578.88  | 578.61  | 578.48  | 578.26  | 578.08  | 577.94  | 577.97  | 577.99  |
| 31   | 578.66  |         | 578.54  |         | 578.90  |         | 578.50  | 578.31  |         | 578.05  |         | 577.89  |
| MEAN | 578.69  | 578.53  | 578.40  | 578.72  | 578.86  | 578.76  | 578.57  | 578.47  | 578.15  | 577.96  | 578.02  | 578.02  |
| MAX. | 579.40  | 579.24  | 578.80  | 579.10  | 579.14  | 578.99  | 578.78  | 578.75  | 578.62  | 578.47  | 578.55  | 578.65  |
|      | 1900/02 | 0600/22 | 2400/30 | 0600/17 | 2100/15 | 1300/22 | 1500/15 | 1800/12 | 0100/20 | 1900/27 | 2000/12 | 0300/23 |
| MIN. | 577.92  | 577.91  | 577.90  | 578.16  | 578.40  | 578.38  | 578.30  | 578.17  | 577.73  | 577.36  | 577.49  | 577.18  |
|      | 0700/13 | 1600/20 | 1100/13 | 1200/06 | 0700/13 | 1300/25 | 2300/30 | 0100/30 | 0600/23 | 0400/18 | 0700/02 | 0200/15 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.43

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 6060: US Slip below locks, Sault St Marie, Michigan on St Marys River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 579.92 Jan  
 Daily mean elevation: 580.43 15 Jan  
 Instant/hourly Elevation: 580.64 0900/15 Jan

LOWEST  
 Monthly mean elevation: 578.82 Nov  
 Daily mean elevation: 578.22 2 Nov  
 Instant/hourly Elevation: 577.80 0200/11 Oct

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 580.43 | 15 Jan |
| 580.12 | 7 Feb  |
| 579.85 | 28 Mar |
| 579.95 | 5 Apr  |
| 579.85 | 9 May  |
| 579.71 | 14 Jun |
| 579.41 | 27 Jul |
| 579.50 | 5 Aug  |
| 579.56 | 8 Sep  |
| 579.32 | 27 Oct |
| 579.40 | 16 Nov |
| 579.51 | 23 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.56 | 1 Jan  |
| 579.25 | 20 Feb |
| 579.28 | 13 Mar |
| 578.98 | 18 Apr |
| 579.25 | 22 May |
| 578.88 | 29 Jun |
| 578.84 | 17 Jul |
| 578.68 | 20 Aug |
| 578.34 | 5 Sep  |
| 578.43 | 11 Oct |
| 578.22 | 2 Nov  |
| 578.82 | 15 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 580.40         | 1   |     |     |     |     |     |     |     |     |     |     |     | 580.40         | 1                          |
| 580.20         | 1   |     |     |     |     |     |     |     |     |     |     |     | 580.20         | 2                          |
| 580.00         | 4   | 2   |     |     |     |     |     |     |     |     |     |     | 580.00         | 8                          |
| 579.80         | 18  | 11  | 5   | 2   | 2   |     |     |     |     |     |     |     | 579.80         | 46                         |
| 579.60         | 5   | 5   | 18  | 7   | 18  | 6   |     |     |     |     |     |     | 579.60         | 105                        |
| 579.40         | 2   | 8   | 7   | 7   | 8   | 13  | 1   | 2   | 3   |     |     | 6   | 579.40         | 162                        |
| 579.20         |     | 3   | 1   | 12  | 3   | 7   | 12  | 9   | 7   | 2   | 3   | 12  | 579.20         | 233                        |
| 579.00         |     |     |     | 1   |     | 1   | 13  | 13  | 9   | 4   | 7   | 10  | 579.00         | 291                        |
| 578.80         |     |     |     | 1   |     | 3   | 5   | 4   | 7   | 13  | 5   | 3   | 578.80         | 332                        |
| 578.60         |     |     |     |     |     |     |     | 3   | 2   | 7   | 5   |     | 578.60         | 349                        |
| 578.40         |     |     |     |     |     |     |     |     | 1   | 5   | 8   |     | 578.40         | 363                        |
| 578.20         |     |     |     |     |     |     |     |     | 1   |     | 2   |     | 578.20         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 6060: US Slip below locks, Sault St Marie, Michigan on St Marys River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 579.56  | 579.85  | 579.79  | 579.71  | 579.47  | 579.50  | 578.85  | 579.18  | 579.26  | 578.89  | 578.56  | 578.86  |
| 2    | 579.78  | 579.88  | 579.70  | 579.64  | 579.65  | 579.39  | 579.02  | 579.25  | 579.45  | 578.88  | 578.22  | 579.09  |
| 3    | 579.84  | 579.95  | 579.76  | 579.64  | 579.61  | 579.44  | 579.18  | 579.15  | 579.21  | 579.11  | 578.62  | 579.12  |
| 4    | 579.57  | 579.88  | 579.75  | 579.83  | 579.67  | 579.55  | 579.31  | 579.46  | 578.78  | 579.13  | 578.53  | 579.09  |
| 5    | 579.93  | 580.01  | 579.45  | 579.95  | 579.62  | 579.56  | 579.38  | 579.50  | 578.34  | 578.66  | 578.69  | 579.32  |
| 6    | 580.19  | 579.95  | 579.53  | 579.71  | 579.62  | 579.60  | 579.31  | 579.24  | 579.06  | 578.93  | 578.90  | 579.31  |
| 7    | 580.00  | 580.12  | 579.44  | 579.61  | 579.72  | 579.69  | 579.34  | 579.07  | 579.36  | 579.21  | 578.44  | 579.06  |
| 8    | 579.99  | 579.91  | 579.60  | 579.43  | 579.77  | 579.51  | 579.39  | 579.26  | 579.56  | 578.96  | 578.46  | 579.18  |
| 9    | 579.86  | 579.68  | 579.54  | 579.34  | 579.85  | 579.44  | 579.03  | 579.31  | 579.34  | 578.55  | 578.70  | 579.25  |
| 10   | 579.91  | 579.72  | 579.80  | 579.24  | 579.57  | 579.57  | 578.98  | 579.39  | 579.00  | 578.45  | 578.37  | 579.12  |
| 11   | 580.18  | 579.78  | 579.72  | 579.27  | 579.74  | 579.64  | 579.00  | 579.34  | 579.18  | 578.43  | 578.56  | 579.07  |
| 12   | 580.06  | 579.58  | 579.47  | 579.52  | 579.74  | 579.67  | 579.07  | 579.25  | 579.14  | 578.70  | 579.20  | 579.50  |
| 13   | 579.79  | 579.57  | 579.28  | 579.50  | 579.38  | 579.70  | 579.40  | 579.11  | 579.00  | 578.91  | 578.62  | 579.46  |
| 14   | 579.99  | 579.42  | 579.62  | 579.35  | 579.79  | 579.71  | 579.09  | 579.04  | 578.95  | 578.98  | 578.58  | 579.37  |
| 15   | 580.43  | 579.28  | 579.67  | 579.61  | 579.72  | 579.48  | 579.31  | 578.92  | 579.11  | 578.67  | 579.13  | 578.82  |
| 16   | 580.25  | 579.55  | 579.74  | 579.24  | 579.68  | 579.57  | 578.88  | 579.13  | 579.29  | 578.93  | 579.40  | 579.34  |
| 17   | 579.85  | 579.45  | 579.83  | 579.40  | 579.62  | 579.60  | 578.84  | 579.05  | 579.17  | 578.87  | 578.90  | 579.23  |
| 18   | 579.91  | 579.47  | 579.69  | 578.98  | 579.69  | 579.64  | 579.14  | 578.93  | 579.12  | 578.55  | 578.87  | 579.29  |
| 19   | 579.94  | 579.58  | 579.67  | 579.45  | 579.64  | 579.57  | 579.13  | 578.79  | 579.39  | 579.11  | 578.94  | 579.33  |
| 20   | 579.97  | 579.25  | 579.51  | 579.51  | 579.44  | 579.38  | 579.21  | 578.68  | 579.41  | 578.90  | 578.45  | 579.26  |
| 21   | 579.76  | 579.58  | 579.65  | 579.33  | 579.37  | 579.36  | 579.08  | 578.75  | 579.09  | 579.13  | 578.45  | 579.15  |
| 22   | 580.05  | 579.91  | 579.83  | 579.41  | 579.25  | 579.26  | 579.24  | 579.15  | 579.27  | 578.86  | 578.76  | 579.48  |
| 23   | 579.87  | 579.90  | 579.75  | 579.28  | 579.45  | 579.34  | 579.16  | 579.38  | 578.67  | 578.82  | 578.95  | 579.51  |
| 24   | 579.64  | 579.97  | 579.75  | 579.16  | 579.43  | 579.54  | 579.09  | 579.11  | 578.91  | 578.77  | 579.14  | 579.28  |
| 25   | 579.65  | 579.81  | 579.66  | 579.65  | 579.52  | 579.00  | 579.12  | 579.03  | 578.56  | 578.61  | 579.10  | 579.09  |
| 26   | 579.89  | 579.85  | 579.64  | 579.39  | 579.81  | 579.05  | 579.29  | 579.03  | 578.87  | 578.85  | 579.15  | 579.36  |
| 27   | 579.85  | 579.36  | 579.68  | 579.57  | 579.77  | 579.29  | 579.41  | 579.24  | 578.84  | 579.32  | 579.16  | 579.46  |
| 28   | 579.82  | 579.67  | 579.85  | 579.35  | 579.65  | 579.30  | 579.25  | 578.94  | 579.01  | 578.80  | 579.27  | 579.18  |
| 29   | 579.93  | 579.65  | 579.81  | 579.29  | 579.61  | 578.88  | 579.27  | 579.05  | 579.09  | 578.59  | 579.36  | 579.42  |
| 30   | 579.98  |         | 579.61  | 579.29  | 579.51  | 578.94  | 579.03  | 578.84  | 578.95  | 578.69  | 579.16  | 579.24  |
| 31   | 579.94  |         | 579.84  |         | 579.53  |         | 579.19  | 579.08  |         | 578.92  |         | 579.00  |
| MEAN | 579.92  | 579.71  | 579.67  | 579.46  | 579.61  | 579.44  | 579.16  | 579.12  | 579.08  | 578.84  | 578.82  | 579.23  |
| MAX. | 580.64  | 580.29  | 580.12  | 580.11  | 580.23  | 580.09  | 579.84  | 579.84  | 579.87  | 580.01  | 579.82  | 579.93  |
|      | 0900/15 | 1500/07 | 1400/31 | 1300/20 | 0200/13 | 1200/14 | 1400/13 | 1600/05 | 1800/22 | 2200/27 | 1900/12 | 0200/23 |
| MIN. | 579.29  | 578.97  | 579.10  | 578.53  | 578.62  | 578.29  | 578.59  | 578.52  | 578.10  | 577.80  | 577.94  | 578.49  |
|      | 0100/01 | 2000/20 | 0600/07 | 0600/18 | 1300/13 | 1600/25 | 0900/17 | 0300/21 | 1800/05 | 0200/11 | 0600/02 | 0900/15 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 579.34

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 6070: SW Pier above locks, Sault St Marie, Michigan on St Marys River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 600.58 Dec  
 Daily mean elevation: 601.33 17 Nov  
 Instant/hourly Elevation: 602.36 1000/3 Dec

LOWEST  
 Monthly mean elevation: 599.39 Mar  
 Daily mean elevation: 598.71 28 Mar  
 Instant/hourly Elevation: 596.55 1248/15 Jul

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.64 | 4 Jan  |
| 600.05 | 20 Feb |
| 599.74 | 2 Mar  |
| 600.01 | 14 Apr |
| 600.33 | 13 May |
| 600.25 | 29 Jun |
| 600.14 | 11 Jul |
| 600.81 | 25 Aug |
| 600.86 | 23 Sep |
| 601.24 | 28 Oct |
| 601.33 | 17 Nov |
| 601.15 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 599.51 | 29 Jan |
| 599.46 | 16 Feb |
| 598.71 | 28 Mar |
| 599.26 | 2 Apr  |
| 599.38 | 8 May  |
| 599.68 | 24 Jun |
| 599.75 | 15 Jul |
| 599.86 | 2 Aug  |
| 599.88 | 19 Sep |
| 599.99 | 27 Oct |
| 599.94 | 15 Nov |
| 599.60 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.  | No. of days |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-------------|
| Elev.                                                   | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | (ft.)  | above elev. |
| 601.20                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 601.20 | 2           |
| 601.00                                                  |     |     |     |     |     |     |     |     |     | 1   |     | 2   | 601.00 | 5           |
| 600.80                                                  |     |     |     |     |     |     |     | 1   | 1   | 2   | 5   | 4   | 600.80 | 18          |
| 600.60                                                  | 1   |     |     |     |     |     |     | 3   | 9   | 1   | 6   | 8   | 600.60 | 46          |
| 600.40                                                  | 2   |     |     |     |     |     |     | 10  | 5   | 11  | 7   | 11  | 600.40 | 92          |
| 600.20                                                  | 1   |     |     |     | 1   | 1   |     | 3   | 12  | 11  | 7   | 4   | 600.20 | 132         |
| 600.00                                                  | 3   | 2   |     | 1   | 1   | 6   | 9   | 10  | 1   | 3   | 3   | 1   | 600.00 | 172         |
| 599.80                                                  | 14  | 6   |     | 7   | 10  | 14  | 18  | 4   | 2   | 1   | 1   |     | 599.80 | 249         |
| 599.60                                                  | 8   | 13  | 5   | 11  | 15  | 9   | 4   |     |     |     |     |     | 599.60 | 314         |
| 599.40                                                  | 2   | 8   | 14  | 8   | 3   |     |     |     |     |     |     | 1   | 599.40 | 350         |
| 599.20                                                  |     |     | 5   | 3   | 1   |     |     |     |     |     |     |     | 599.20 | 359         |
| 599.00                                                  |     |     | 4   |     |     |     |     |     |     |     |     |     | 599.00 | 363         |
| 598.80                                                  |     |     | 2   |     |     |     |     |     |     |     |     |     | 598.80 | 365         |
| 598.60                                                  |     |     | 1   |     |     |     |     |     |     |     |     |     | 598.60 | 366         |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 6070: SW Pier above locks, Sault St Marie, Michigan on St Marys River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 600.60  | 600.03  | 599.14  | 599.30  | 599.72  | 599.88  | 600.13  | 599.98  | 600.31  | 600.52  | 600.51  | 600.80  |
| 2    | 600.23  | 599.74  | 599.74  | 599.26  | 599.63  | 599.89  | 599.98  | 599.86  | 600.36  | 600.58  | 600.33  | 600.75  |
| 3    | 600.15  | 599.76  | 599.47  | 599.39  | 599.62  | 599.94  | 599.94  | 599.93  | 600.51  | 600.31  | 600.13  | 601.15  |
| 4    | 600.64  | 599.78  | 599.57  | 599.54  | 599.64  | 599.89  | 599.85  | 599.99  | 600.65  | 600.50  | 600.22  | 600.92  |
| 5    | 600.49  | 599.94  | 599.50  | 599.48  | 599.75  | 599.94  | 599.83  | 600.01  | 600.76  | 600.50  | 600.39  | 600.59  |
| 6    | 599.78  | 599.83  | 599.55  | 599.88  | 599.72  | 599.87  | 599.82  | 600.32  | 600.65  | 600.38  | 600.50  | 600.82  |
| 7    | 599.65  | 599.99  | 599.47  | 599.65  | 599.42  | 599.83  | 599.84  | 600.10  | 600.33  | 600.20  | 600.63  | 600.77  |
| 8    | 600.00  | 599.74  | 599.21  | 599.56  | 599.38  | 599.92  | 599.94  | 600.15  | 600.29  | 600.26  | 600.62  | 600.84  |
| 9    | 600.08  | 599.89  | 599.73  | 599.53  | 599.56  | 600.06  | 599.97  | 600.17  | 600.50  | 600.28  | 600.39  | 600.64  |
| 10   | 599.86  | 599.72  | 599.42  | 599.80  | 599.91  | 599.87  | 599.98  | 600.03  | 600.67  | 601.07  | 600.85  | 600.70  |
| 11   | 599.84  | 599.66  | 599.36  | 599.78  | 599.62  | 599.80  | 600.14  | 600.02  | 600.23  | 600.84  | 600.55  | 600.43  |
| 12   | 599.84  | 599.86  | 599.17  | 599.63  | 599.66  | 599.80  | 600.04  | 600.04  | 600.45  | 600.49  | 600.07  | 600.27  |
| 13   | 600.00  | 599.75  | 599.66  | 599.71  | 600.33  | 599.79  | 599.79  | 600.06  | 600.50  | 600.29  | 600.68  | 600.53  |
| 14   | 599.64  | 599.61  | 599.55  | 600.01  | 599.60  | 599.76  | 600.06  | 600.59  | 600.69  | 600.35  | 600.83  | 600.60  |
| 15   | 599.67  | 599.79  | 599.61  | 599.85  | 599.76  | 599.94  | 599.75  | 600.46  | 600.34  | 600.19  | 599.94  | 600.81  |
| 16   | 599.56  | 599.46  | 599.56  | 599.71  | 599.99  | 599.92  | 599.97  | 600.23  | 599.99  | 600.19  | 600.32  | 600.51  |
| 17   | 599.86  | 599.73  | 599.41  | 599.91  | 599.87  | 599.79  | 600.02  | 600.49  | 600.30  | 600.47  | 601.33  | 600.65  |
| 18   | 599.87  | 599.59  | 599.63  | 599.77  | 599.77  | 599.75  | 599.99  | 600.43  | 600.22  | 600.64  | 600.69  | 600.23  |
| 19   | 599.68  | 599.57  | 599.59  | 599.50  | 599.78  | 599.76  | 600.01  | 600.46  | 599.88  | 600.36  | 600.36  | 600.25  |
| 20   | 600.02  | 600.05  | 599.55  | 599.56  | 599.85  | 599.96  | 600.02  | 600.49  | 600.63  | 600.26  | 600.93  | 600.64  |
| 21   | 599.90  | 599.57  | 599.32  | 599.42  | 599.94  | 599.78  | 600.01  | 600.42  | 600.64  | 600.32  | 600.77  | 600.60  |
| 22   | 599.73  | 599.78  | 598.97  | 599.52  | 599.98  | 599.99  | 599.93  | 600.18  | 600.24  | 600.42  | 600.55  | 599.60  |
| 23   | 599.99  | 599.83  | 599.33  | 599.64  | 599.93  | 599.98  | 599.89  | 600.13  | 600.86  | 600.24  | 600.43  | 600.43  |
| 24   | 599.97  | 599.74  | 599.00  | 599.77  | 600.01  | 599.68  | 599.87  | 600.47  | 600.51  | 600.51  | 600.17  | 600.59  |
| 25   | 599.85  | 599.66  | 599.13  | 599.64  | 599.82  | 600.17  | 600.05  | 600.81  | 600.69  | 600.60  | 600.43  | 601.01  |
| 26   | 599.84  | 599.49  | 599.50  | 599.83  | 599.76  | 600.20  | 599.95  | 600.76  | 600.22  | 600.57  | 600.34  | 600.33  |
| 27   | 599.98  | 599.59  | 599.54  | 599.75  | 599.77  | 600.02  | 599.80  | 600.48  | 600.65  | 599.99  | 600.76  | 600.20  |
| 28   | 599.69  | 599.57  | 598.71  | 599.86  | 599.76  | 600.07  | 599.78  | 600.68  | 600.29  | 601.24  | 600.85  | 600.75  |
| 29   | 599.51  | 599.57  | 599.16  | 599.88  | 599.72  | 600.25  | 599.90  | 600.63  | 600.14  | 601.00  | 600.56  | 600.51  |
| 30   | 599.75  |         | 599.41  | 599.82  | 599.82  | 600.16  | 599.97  | 600.55  | 600.34  | 600.48  | 601.00  | 600.50  |
| 31   | 599.95  |         | 599.26  |         | 599.89  |         | 599.81  | 600.30  |         | 600.23  |         | 600.43  |
| MEAN | 599.92  | 599.73  | 599.39  | 599.66  | 599.77  | 599.92  | 599.94  | 600.30  | 600.43  | 600.46  | 600.54  | 600.58  |
| MAX. | 601.22  | 600.97  | 600.15  | 600.76  | 601.89  | 601.87  | 601.84  | 601.85  | 601.57  | 602.26  | 601.94  | 602.36  |
|      | 2000/04 | 0100/23 | 1300/02 | 2200/17 | 0400/13 | 1000/25 | 1424/15 | 1400/16 | 1400/01 | 1300/28 | 1600/10 | 1000/03 |
| MIN. | 598.84  | 598.90  | 598.05  | 598.80  | 598.67  | 598.46  | 596.55  | 598.44  | 599.35  | 599.20  | 599.08  | 598.65  |
|      | 1000/16 | 0100/28 | 1500/28 | 0200/17 | 0100/08 | 0900/19 | 1248/15 | 1600/16 | 1400/19 | 2000/27 | 1900/15 | 0200/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 600.05

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7023: Ludington, Michigan on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.29 May  
Daily mean elevation: 579.49 20 Jan  
Instant/hourly Elevation: 579.92 0800/23 Apr

LOWEST  
Monthly mean elevation: 578.24 Dec  
Daily mean elevation: 577.77 29 Oct  
Instant/hourly Elevation: 577.54 1400/26 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.49 | 20 Jan |
| 579.05 | 3 Feb  |
| 579.29 | 12 Mar |
| 579.45 | 27 Apr |
| 579.43 | 8 May  |
| 579.40 | 2 Jun  |
| 579.04 | 16 Jul |
| 579.06 | 18 Aug |
| 578.77 | 4 Sep  |
| 578.55 | 24 Oct |
| 578.98 | 16 Nov |
| 578.60 | 23 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.45 | 5 Jan  |
| 578.72 | 13 Feb |
| 578.61 | 27 Mar |
| 578.90 | 18 Apr |
| 579.18 | 25 May |
| 578.92 | 26 Jun |
| 578.78 | 29 Jul |
| 578.41 | 26 Aug |
| 578.29 | 21 Sep |
| 577.77 | 29 Oct |
| 578.14 | 18 Nov |
| 577.90 | 26 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.40                                                  | 1   |     |     | 2   | 3   |     |     |     |     |     |     |     | 579.40         | 6                          |
| 579.20                                                  | 1   |     | 2   | 3   | 24  | 6   |     |     |     |     |     |     | 579.20         | 42                         |
| 579.00                                                  | 9   | 3   | 3   | 23  | 4   | 21  | 4   | 1   |     |     | 1   |     | 579.00         | 110                        |
| 578.80                                                  | 17  | 18  | 15  | 2   |     | 3   | 26  | 20  |     |     | 3   |     | 578.80         | 212                        |
| 578.60                                                  | 2   | 8   | 11  |     |     |     | 1   | 5   | 6   |     |     |     | 578.60         | 248                        |
| 578.40                                                  | 1   |     |     |     |     |     |     | 5   | 20  | 8   | 15  | 3   | 578.40         | 300                        |
| 578.20                                                  |     |     |     |     |     |     |     |     | 4   | 14  | 8   | 14  | 578.20         | 340                        |
| 578.00                                                  |     |     |     |     |     |     |     |     |     | 8   | 3   | 13  | 578.00         | 364                        |
| 577.80                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 577.80         | 365                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 577.60         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7023: Ludington, Michigan on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.92  | 578.93  | 578.90  | 579.03  | 579.26  | 579.24  | 578.98  | 578.91  | 578.58  | 578.42  | 578.21  | 578.39  |
| 2    | 578.82  | 578.99  | 578.92  | 579.12  | 579.29  | 579.40  | 578.95  | 578.93  | 578.58  | 578.44  | 578.18  | 578.13  |
| 3    | 579.00  | 579.05  | 578.77  | 579.18  | 579.33  | 579.26  | 578.99  | 578.90  | 578.68  | 578.42  | 578.17  | 578.11  |
| 4    | 578.88  | 578.97  | 578.81  | 579.03  | 579.28  | 579.16  | 579.01  | 578.94  | 578.77  | 578.48  | 578.34  | 578.17  |
| 5    | 578.45  | 579.03  | 578.75  | 579.14  | 579.22  | 579.12  | 579.02  | 578.91  | 578.64  | 578.52  | 578.59  | 578.37  |
| 6    | 578.65  | 578.80  | 578.77  | 579.11  | 579.25  | 579.15  | 578.99  | 578.78  | 578.44  | 578.37  | 578.79  | 578.31  |
| 7    | 578.96  | 578.92  | 578.71  | 579.01  | 579.30  | 579.25  | 578.92  | 578.83  | 578.43  | 578.38  | 578.47  | 578.19  |
| 8    | 578.93  | 578.81  | 579.01  | 579.14  | 579.43  | 579.29  | 578.91  | 578.86  | 578.42  | 578.49  | 578.30  | 578.30  |
| 9    | 578.84  | 578.97  | 578.85  | 579.22  | 579.42  | 579.18  | 578.96  | 578.98  | 578.46  | 578.50  | 578.23  | 578.12  |
| 10   | 578.89  | 578.88  | 578.77  | 579.17  | 579.26  | 579.12  | 578.97  | 578.90  | 578.34  | 578.30  | 578.47  | 578.31  |
| 11   | 578.74  | 578.99  | 578.88  | 579.09  | 579.26  | 579.10  | 578.97  | 578.92  | 578.52  | 578.08  | 578.24  | 578.37  |
| 12   | 579.13  | 578.96  | 579.29  | 579.16  | 579.41  | 579.10  | 578.93  | 578.89  | 578.56  | 578.19  | 578.57  | 578.37  |
| 13   | 578.87  | 578.72  | 579.24  | 579.17  | 579.20  | 579.15  | 578.95  | 578.88  | 578.39  | 578.20  | 578.54  | 578.23  |
| 14   | 578.96  | 578.89  | 578.93  | 579.14  | 579.28  | 579.15  | 578.95  | 578.82  | 578.34  | 578.13  | 578.25  | 578.40  |
| 15   | 578.91  | 579.02  | 578.82  | 579.02  | 579.40  | 579.08  | 579.03  | 578.55  | 578.42  | 578.33  | 578.44  | 578.18  |
| 16   | 578.86  | 578.94  | 578.75  | 579.11  | 579.18  | 579.16  | 579.04  | 578.88  | 578.50  | 578.37  | 578.98  | 578.11  |
| 17   | 578.94  | 578.90  | 578.84  | 579.13  | 579.32  | 579.24  | 578.86  | 578.88  | 578.45  | 578.25  | 578.26  | 578.25  |
| 18   | 578.99  | 578.87  | 578.83  | 578.90  | 579.33  | 579.16  | 578.94  | 579.06  | 578.47  | 578.32  | 578.14  | 578.27  |
| 19   | 578.95  | 578.94  | 578.70  | 578.96  | 579.30  | 579.13  | 578.90  | 578.85  | 578.62  | 578.31  | 578.60  | 578.34  |
| 20   | 579.49  | 578.83  | 578.77  | 579.18  | 579.34  | 579.08  | 578.90  | 578.82  | 578.68  | 578.30  | 578.46  | 578.41  |
| 21   | 579.04  | 578.80  | 578.74  | 579.16  | 579.28  | 579.18  | 578.93  | 578.81  | 578.29  | 578.33  | 578.27  | 578.04  |
| 22   | 579.05  | 578.78  | 578.84  | 579.17  | 579.29  | 579.14  | 578.88  | 578.79  | 578.58  | 578.28  | 578.44  | 578.35  |
| 23   | 578.98  | 578.78  | 579.07  | 579.45  | 579.32  | 579.07  | 578.91  | 578.90  | 578.48  | 578.40  | 578.43  | 578.60  |
| 24   | 579.07  | 578.76  | 578.89  | 579.15  | 579.19  | 579.20  | 578.87  | 578.84  | 578.41  | 578.55  | 578.55  | 578.15  |
| 25   | 579.10  | 578.77  | 578.99  | 579.20  | 579.18  | 579.11  | 578.90  | 578.64  | 578.48  | 578.20  | 578.58  | 578.03  |
| 26   | 579.24  | 578.86  | 578.79  | 579.16  | 579.21  | 578.92  | 578.88  | 578.41  | 578.44  | 578.12  | 578.64  | 577.90  |
| 27   | 579.01  | 578.87  | 578.61  | 579.45  | 579.28  | 579.01  | 578.83  | 578.65  | 578.54  | 578.27  | 578.66  | 578.53  |
| 28   | 578.90  | 578.88  | 578.84  | 579.28  | 579.30  | 578.94  | 578.89  | 578.58  | 578.51  | 578.24  | 578.49  | 578.08  |
| 29   | 579.01  | 578.74  | 579.18  | 579.16  | 579.30  | 579.03  | 578.78  | 578.57  | 578.62  | 577.77  | 578.46  | 578.02  |
| 30   | 579.08  |         | 578.95  | 579.25  | 579.25  | 578.97  | 578.82  | 578.59  | 578.50  | 578.05  | 578.52  | 578.30  |
| 31   | 579.04  |         | 578.88  |         | 579.21  |         | 578.83  | 578.66  |         | 578.15  |         | 578.13  |
| MEAN | 578.96  | 578.88  | 578.87  | 579.15  | 579.29  | 579.14  | 578.93  | 578.80  | 578.50  | 578.30  | 578.44  | 578.24  |
| MAX. | 579.85  | 579.27  | 579.71  | 579.92  | 579.80  | 579.65  | 579.44  | 579.50  | 579.14  | 578.83  | 579.48  | 579.06  |
|      | 0500/20 | 0800/15 | 0400/13 | 0800/23 | 1300/15 | 1700/02 | 1800/16 | 2000/18 | 0700/20 | 2300/27 | 0900/16 | 2300/22 |
| MIN. | 578.36  | 578.53  | 578.47  | 578.77  | 578.80  | 578.70  | 578.53  | 578.23  | 578.03  | 577.67  | 577.92  | 577.54  |
|      | 1500/05 | 0700/22 | 1800/30 | 1600/18 | 1800/13 | 0100/23 | 2200/16 | 1000/15 | 1800/21 | 1200/29 | 0500/18 | 1400/26 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.79

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7031: Holland, Michigan on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.15 May  
Daily mean elevation: 579.52 27 Apr  
Instant/hourly Elevation: 579.92 2000/27 Apr

LOWEST  
Monthly mean elevation: 578.11 Dec  
Daily mean elevation: 577.65 29 Oct  
Instant/hourly Elevation: 577.54 1000/29 Oct

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.41 | 20 Jan |
| 579.11 | 15 Feb |
| 579.27 | 13 Mar |
| 579.52 | 27 Apr |
| 579.34 | 23 May |
| 579.25 | 8 Jun  |
| 578.91 | 16 Jul |
| 578.85 | 18 Aug |
| 578.77 | 4 Sep  |
| 578.52 | 24 Oct |
| 578.75 | 6 Nov  |
| 578.31 | 23 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.50 | 16 Jan |
| 578.55 | 22 Feb |
| 578.48 | 27 Mar |
| 578.82 | 19 Apr |
| 579.00 | 26 May |
| 578.85 | 19 Jun |
| 578.66 | 29 Jul |
| 578.28 | 26 Aug |
| 578.21 | 8 Sep  |
| 577.65 | 29 Oct |
| 577.96 | 18 Nov |
| 577.79 | 26 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec            |                            |
| 579.40                                                  | 1   |     |     | 2   |     |     |     |     |     |     |     |                | 579.40 3                   |
| 579.20                                                  | 1   |     | 1   | 2   | 9   | 2   |     |     |     |     |     |                | 579.20 18                  |
| 579.00                                                  | 4   | 2   | 2   | 18  | 21  | 9   |     |     |     |     |     |                | 579.00 74                  |
| 578.80                                                  | 7   | 11  | 4   | 8   | 1   | 19  | 21  | 1   |     |     |     |                | 578.80 146                 |
| 578.60                                                  | 14  | 13  | 21  |     |     |     | 10  | 19  | 1   |     | 1   |                | 578.60 225                 |
| 578.40                                                  | 4   | 3   | 3   |     |     |     |     | 10  | 6   | 4   | 6   |                | 578.40 261                 |
| 578.20                                                  |     |     |     |     |     |     |     | 1   | 23  | 10  | 12  | 8              | 578.20 315                 |
| 578.00                                                  |     |     |     |     |     |     |     |     |     | 12  | 9   | 15             | 578.00 351                 |
| 577.80                                                  |     |     |     |     |     |     |     |     |     | 3   | 2   | 7              | 577.80 363                 |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 2   |     | 1              | 577.60 366                 |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7031: Holland, Michigan on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.80  | 578.94  | 578.66  | 578.95  | 579.22  | 579.13  | 578.88  | 578.74  | 578.37  | 578.24  | 578.19  | 578.29  |
| 2    | 578.58  | 578.89  | 578.86  | 578.91  | 579.17  | 579.24  | 578.86  | 578.72  | 578.34  | 578.35  | 578.07  | 577.99  |
| 3    | 578.74  | 578.93  | 578.66  | 579.03  | 579.15  | 579.10  | 578.86  | 578.68  | 578.56  | 578.25  | 577.97  | 578.13  |
| 4    | 578.87  | 578.97  | 578.68  | 578.88  | 579.12  | 579.01  | 578.90  | 578.70  | 578.77  | 578.44  | 578.24  | 578.03  |
| 5    | 578.50  | 578.93  | 578.53  | 579.01  | 579.07  | 578.96  | 578.91  | 578.73  | 578.55  | 578.46  | 578.47  | 578.16  |
| 6    | 578.61  | 578.83  | 578.55  | 579.34  | 579.09  | 578.98  | 578.88  | 578.58  | 578.30  | 578.25  | 578.75  | 578.13  |
| 7    | 578.78  | 578.81  | 578.63  | 578.95  | 579.13  | 579.08  | 578.81  | 578.63  | 578.24  | 578.24  | 578.38  | 578.20  |
| 8    | 578.78  | 578.67  | 578.68  | 579.08  | 579.12  | 579.25  | 578.78  | 578.72  | 578.21  | 578.40  | 578.24  | 578.22  |
| 9    | 578.77  | 578.90  | 578.73  | 579.11  | 579.12  | 579.08  | 578.82  | 578.75  | 578.27  | 578.44  | 578.09  | 578.14  |
| 10   | 578.61  | 578.79  | 578.63  | 579.18  | 579.14  | 578.97  | 578.85  | 578.70  | 578.25  | 578.27  | 578.46  | 578.30  |
| 11   | 578.53  | 578.98  | 578.76  | 579.11  | 579.01  | 578.89  | 578.86  | 578.71  | 578.39  | 578.13  | 578.08  | 578.25  |
| 12   | 578.77  | 578.93  | 579.12  | 579.14  | 579.10  | 578.90  | 578.88  | 578.68  | 578.45  | 578.20  | 578.19  | 577.97  |
| 13   | 579.01  | 578.65  | 579.27  | 579.10  | 579.01  | 578.92  | 578.77  | 578.66  | 578.24  | 578.09  | 578.41  | 578.11  |
| 14   | 578.63  | 578.69  | 578.95  | 579.13  | 579.06  | 578.91  | 578.81  | 578.62  | 578.23  | 577.94  | 578.09  | 578.27  |
| 15   | 578.63  | 579.11  | 578.83  | 578.94  | 579.14  | 578.93  | 578.79  | 578.49  | 578.28  | 578.13  | 578.23  | 578.18  |
| 16   | 578.50  | 578.71  | 578.71  | 579.00  | 579.24  | 579.02  | 578.91  | 578.63  | 578.30  | 578.13  | 578.41  | 577.96  |
| 17   | 578.76  | 578.80  | 578.68  | 579.01  | 579.28  | 579.08  | 578.84  | 578.74  | 578.31  | 578.18  | 578.06  | 578.31  |
| 18   | 578.87  | 578.65  | 578.69  | 578.84  | 579.23  | 578.98  | 578.88  | 578.85  | 578.28  | 578.20  | 577.96  | 578.11  |
| 19   | 578.85  | 578.72  | 578.67  | 578.82  | 579.25  | 578.85  | 578.88  | 578.73  | 578.35  | 578.23  | 578.39  | 578.14  |
| 20   | 579.41  | 579.03  | 578.68  | 579.12  | 579.25  | 578.92  | 578.81  | 578.65  | 578.49  | 578.12  | 578.46  | 578.14  |
| 21   | 579.05  | 578.55  | 578.63  | 579.03  | 579.20  | 578.99  | 578.88  | 578.62  | 578.22  | 578.23  | 578.18  | 577.93  |
| 22   | 578.81  | 578.55  | 578.65  | 579.12  | 579.31  | 579.03  | 578.81  | 578.53  | 578.34  | 578.18  | 578.26  | 578.00  |
| 23   | 578.91  | 578.70  | 578.85  | 579.43  | 579.34  | 579.01  | 578.83  | 578.66  | 578.34  | 578.24  | 578.17  | 578.31  |
| 24   | 579.06  | 578.67  | 578.72  | 579.08  | 579.30  | 578.99  | 578.77  | 578.55  | 578.27  | 578.52  | 578.28  | 578.11  |
| 25   | 579.02  | 578.69  | 578.76  | 579.03  | 579.10  | 578.97  | 578.80  | 578.41  | 578.28  | 578.15  | 578.35  | 577.91  |
| 26   | 579.24  | 578.69  | 578.66  | 579.18  | 579.00  | 578.86  | 578.83  | 578.28  | 578.25  | 578.02  | 578.37  | 577.79  |
| 27   | 578.88  | 578.85  | 578.48  | 579.52  | 579.08  | 578.86  | 578.70  | 578.42  | 578.43  | 577.91  | 578.35  | 578.21  |
| 28   | 578.80  | 578.60  | 578.62  | 579.29  | 579.14  | 578.88  | 578.76  | 578.46  | 578.34  | 578.08  | 578.39  | 578.04  |
| 29   | 578.76  | 578.68  | 579.02  | 579.13  | 579.17  | 578.98  | 578.66  | 578.47  | 578.46  | 577.65  | 578.21  | 577.93  |
| 30   | 578.75  |         | 578.72  | 579.18  | 579.12  | 578.90  | 578.76  | 578.45  | 578.26  | 577.86  | 578.49  | 578.11  |
| 31   | 578.83  |         | 578.78  |         | 579.13  |         | 578.72  | 578.47  |         | 577.79  |         | 578.12  |
| MEAN | 578.81  | 578.79  | 578.74  | 579.09  | 579.15  | 578.99  | 578.82  | 578.61  | 578.35  | 578.17  | 578.27  | 578.11  |
| MAX. | 579.66  | 579.71  | 579.67  | 579.92  | 579.45  | 579.46  | 579.29  | 579.03  | 579.08  | 578.76  | 579.08  | 578.75  |
|      | 1300/20 | 1100/20 | 0200/13 | 2000/27 | 1500/16 | 1200/08 | 1700/16 | 1700/18 | 2100/04 | 0300/24 | 1800/06 | 1900/14 |
| MIN. | 578.24  | 578.13  | 578.33  | 578.68  | 578.72  | 578.68  | 578.47  | 578.15  | 578.04  | 577.54  | 577.76  | 577.58  |
|      | 0300/11 | 0400/22 | 1400/27 | 1900/18 | 1800/13 | 2300/19 | 1800/15 | 1800/26 | 2200/13 | 1000/29 | 0100/18 | 0900/26 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.66

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 7044: Calumet Harbor, Illinois on Lake Michigan

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 579.27 May  
 Daily mean elevation: 579.85 6 Apr  
 Instant/hourly Elevation: 580.68 1300/6 Apr

LOWEST  
 Monthly mean elevation: 578.05 Dec  
 Daily mean elevation: 577.63 27 Oct  
 Instant/hourly Elevation: 576.91 1900/12 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.35 | 26 Jan |
| 579.43 | 11 Feb |
| 579.20 | 13 Mar |
| 579.85 | 6 Apr  |
| 579.68 | 24 May |
| 579.70 | 8 Jun  |
| 579.13 | 1 Jul  |
| 579.09 | 18 Aug |
| 579.05 | 4 Sep  |
| 578.83 | 5 Oct  |
| 578.78 | 20 Nov |
| 578.44 | 11 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.14 | 16 Jan |
| 578.20 | 22 Feb |
| 578.49 | 6 Mar  |
| 578.86 | 4 Apr  |
| 578.93 | 9 May  |
| 578.85 | 19 Jun |
| 578.62 | 29 Jul |
| 578.41 | 31 Aug |
| 578.15 | 8 Sep  |
| 577.63 | 27 Oct |
| 577.66 | 16 Nov |
| 577.69 | 12 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec            |                            |
| 579.80                                                  |     |     |     | 1   |     |     |     |     |     |     |     |                | 579.80 1                   |
| 579.60                                                  |     |     |     |     | 1   | 1   |     |     |     |     |     |                | 579.60 3                   |
| 579.40                                                  |     | 1   |     | 3   | 4   | 2   |     |     |     |     |     |                | 579.40 13                  |
| 579.20                                                  | 3   | 2   |     | 6   | 17  | 6   |     |     |     |     |     |                | 579.20 47                  |
| 579.00                                                  | 2   | 7   | 5   | 16  | 7   | 15  | 8   | 1   | 1   |     |     |                | 579.00 109                 |
| 578.80                                                  | 7   | 2   | 10  | 4   | 2   | 6   | 16  | 3   | 1   | 1   |     |                | 578.80 161                 |
| 578.60                                                  | 6   | 11  | 15  |     |     |     | 7   | 15  | 2   | 1   | 1   |                | 578.60 219                 |
| 578.40                                                  | 7   | 3   | 1   |     |     |     |     | 12  | 7   | 8   | 3   | 2              | 578.40 262                 |
| 578.20                                                  | 5   | 2   |     |     |     |     |     |     | 16  | 7   | 14  | 6              | 578.20 312                 |
| 578.00                                                  | 1   | 1   |     |     |     |     |     |     | 3   | 9   | 8   | 8              | 578.00 342                 |
| 577.80                                                  |     |     |     |     |     |     |     |     |     |     | 2   | 11             | 577.80 355                 |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 5   | 2   | 2              | 577.60 364                 |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7044: Calumet Harbor, Illinois on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.53  | 579.21  | 578.74  | 579.17  | 579.29  | 579.13  | 579.13  | 578.72  | 578.32  | 578.25  | 578.32  | 578.32  |
| 2    | 578.26  | 579.28  | 578.97  | 579.04  | 579.31  | 579.48  | 578.98  | 578.70  | 578.34  | 578.56  | 578.25  | 577.72  |
| 3    | 578.49  | 579.13  | 579.08  | 579.03  | 579.38  | 579.35  | 578.99  | 578.66  | 578.59  | 578.45  | 577.99  | 578.28  |
| 4    | 578.51  | 579.12  | 578.94  | 578.86  | 579.31  | 579.16  | 579.01  | 578.69  | 579.05  | 578.74  | 578.29  | 578.04  |
| 5    | 578.32  | 578.81  | 578.62  | 578.99  | 579.25  | 579.01  | 579.01  | 578.71  | 578.90  | 578.83  | 578.39  | 578.06  |
| 6    | 578.59  | 578.68  | 578.49  | 579.85  | 579.22  | 579.08  | 578.98  | 578.54  | 578.47  | 578.46  | 578.53  | 577.90  |
| 7    | 578.86  | 578.38  | 578.74  | 579.10  | 579.33  | 579.19  | 578.91  | 578.66  | 578.23  | 578.32  | 578.36  | 578.30  |
| 8    | 578.78  | 578.68  | 578.61  | 579.18  | 579.11  | 579.70  | 578.85  | 578.66  | 578.15  | 578.51  | 578.21  | 578.36  |
| 9    | 578.82  | 578.99  | 578.71  | 579.16  | 578.93  | 579.49  | 578.87  | 578.73  | 578.34  | 578.50  | 578.16  | 578.10  |
| 10   | 578.51  | 579.11  | 578.74  | 579.40  | 579.24  | 579.21  | 578.87  | 578.72  | 578.34  | 578.20  | 578.46  | 578.44  |
| 11   | 578.25  | 579.43  | 578.89  | 579.45  | 579.16  | 578.95  | 578.86  | 578.74  | 578.44  | 578.46  | 578.19  | 578.44  |
| 12   | 578.21  | 579.16  | 579.02  | 579.29  | 579.17  | 578.98  | 578.98  | 578.68  | 578.46  | 578.49  | 578.07  | 577.69  |
| 13   | 579.11  | 578.67  | 579.20  | 579.14  | 579.24  | 579.02  | 578.78  | 578.58  | 578.32  | 578.10  | 578.21  | 578.00  |
| 14   | 578.55  | 578.59  | 579.04  | 579.17  | 579.22  | 578.99  | 578.79  | 578.48  | 578.35  | 577.73  | 578.18  | 578.20  |
| 15   | 578.26  | 579.16  | 578.96  | 579.03  | 579.22  | 579.02  | 578.79  | 578.49  | 578.50  | 578.02  | 578.34  | 578.40  |
| 16   | 578.14  | 578.68  | 578.82  | 579.01  | 579.44  | 579.15  | 578.94  | 578.59  | 578.38  | 578.09  | 577.66  | 577.83* |
| 17   | 578.78  | 578.80  | 578.73  | 578.89  | 579.46  | 579.23  | 578.98  | 578.66  | 578.26  | 578.22  | 577.67  | /       |
| 18   | 578.94  | 578.76  | 578.73  | 579.01  | 579.38  | 579.08  | 578.98  | 579.09  | 578.29  | 578.30  | 578.03  | /       |
| 19   | 579.21  | 578.78  | 578.81  | 578.88  | 579.36  | 578.85  | 578.98  | 578.87  | 578.20  | 578.33  | 578.39  | 577.82  |
| 20   | 579.20  | 579.18  | 578.94  | 579.09  | 579.33  | 578.92  | 579.01  | 578.84  | 578.16  | 578.16  | 578.78  | 577.82  |
| 21   | 579.21  | 578.38  | 578.90  | 579.07  | 579.33  | 579.03  | 579.03  | 578.84  | 578.25  | 578.24  | 578.34  | 578.04  |
| 22   | 578.72  | 578.20  | 578.73  | 579.31  | 579.43  | 579.11  | 579.05  | 578.61  | 578.37  | 578.37  | 578.29  | 578.04  |
| 23   | 578.76  | 578.68  | 578.80  | 579.47  | 579.51  | 579.32  | 579.02  | 578.70  | 578.46  | 578.11  | 578.04  | 577.98  |
| 24   | 578.89  | 578.66  | 578.83  | 579.19  | 579.68  | 579.04  | 578.95  | 578.61  | 578.35  | 578.44  | 578.19  | 578.12  |
| 25   | 579.00  | 578.72  | 578.66  | 579.04  | 579.28  | 578.92  | 578.94  | 578.45  | 578.33  | 578.11  | 578.34  | 577.91  |
| 26   | 579.35  | 578.53  | 578.63  | 579.29  | 578.96  | 579.20  | 579.04  | 578.44  | 578.27  | 578.03  | 578.49  | 577.88  |
| 27   | 578.86  | 579.10  | 578.61  | 579.49  | 579.06  | 579.11  | 578.82  | 578.43  | 578.45  | 577.63  | 577.94  | 578.05  |
| 28   | 578.91  | 578.56  | 578.78  | 579.36  | 579.19  | 579.06  | 578.78  | 578.57  | 578.67  | 577.72  | 578.25  | 577.85  |
| 29   | 578.69  | 578.80  | 579.04  | 579.16  | 579.24  | 579.21  | 578.62  | 578.58  | 578.61  | 577.79  | 578.10  | 577.88  |
| 30   | 578.49  |         | 578.70  | 579.21  | 579.13  | 579.25  | 578.75  | 578.55  | 578.29  | 578.02  | 578.40  | 577.90  |
| 31   | 578.74  |         | 579.00  |         | 579.13  |         | 578.74  | 578.41  |         | 577.68  |         | 578.21  |
| MEAN | 578.71  | 578.84  | 578.82  | 579.18  | 579.27  | 579.14  | 578.92  | 578.65  | 578.40  | 578.22  | 578.23  | 578.05  |
| MAX. | 580.18  | 580.21  | 579.63  | 580.68  | 580.30  | 580.17  | 579.71  | 579.72  | 579.95  | 579.36  | 579.28  | 579.26  |
|      | 0100/13 | 0800/20 | 2400/19 | 1300/06 | 1500/24 | 2100/08 | 0200/17 | 1800/18 | 1900/04 | 2000/04 | 1100/20 | 1900/14 |
| MIN. | 577.24  | 577.20  | 578.14  | 578.44  | 578.46  | 578.21  | 577.70  | 577.96  | 577.34  | 577.19  | 577.22  | 576.91  |
|      | 0100/11 | 0400/22 | 1400/06 | 0600/17 | 1500/09 | 0800/22 | 1900/15 | 0800/15 | 2400/19 | 2000/27 | 2300/16 | 1900/12 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.70

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7057: Milwaukee, Wisconsin on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.27 May  
Daily mean elevation: 579.52 27 Apr  
Instant/hourly Elevation: 580.19 2400/5 Apr

LOWEST  
Monthly mean elevation: 578.14 Dec  
Daily mean elevation: 577.74 29 Oct  
Instant/hourly Elevation: 577.53 0700/29 Oct

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.36 | 20 Jan |
| 579.20 | 11 Feb |
| 579.22 | 12 Mar |
| 579.52 | 27 Apr |
| 579.42 | 23 May |
| 579.45 | 8 Jun  |
| 579.06 | 1 Jul  |
| 578.96 | 18 Aug |
| 578.78 | 4 Sep  |
| 578.63 | 5 Oct  |
| 578.57 | 26 Nov |
| 578.37 | 11 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.27 | 5 Jan  |
| 578.53 | 22 Feb |
| 578.59 | 27 Mar |
| 578.92 | 18 Apr |
| 579.09 | 26 May |
| 578.94 | 26 Jun |
| 578.72 | 29 Jul |
| 578.41 | 26 Aug |
| 578.18 | 21 Sep |
| 577.74 | 29 Oct |
| 577.79 | 17 Nov |
| 577.89 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.40                                                  |     |     |     | 2   | 1   | 1   |     |     |     |     |     |     | 579.40         | 4                          |
| 579.20                                                  | 2   |     | 1   | 7   | 22  | 4   |     |     |     |     |     |     | 579.20         | 40                         |
| 579.00                                                  | 4   | 6   | 2   | 17  | 8   | 21  | 6   |     |     |     |     |     | 579.00         | 104                        |
| 578.80                                                  | 11  | 9   | 16  | 4   |     | 4   | 22  | 3   |     |     |     |     | 578.80         | 173                        |
| 578.60                                                  | 9   | 12  | 11  |     |     |     | 3   | 18  | 3   | 1   |     |     | 578.60         | 230                        |
| 578.40                                                  | 4   | 2   | 1   |     |     |     |     | 10  | 14  | 6   | 9   |     | 578.40         | 276                        |
| 578.20                                                  | 1   |     |     |     |     |     |     |     | 12  | 14  | 13  | 9   | 578.20         | 325                        |
| 578.00                                                  |     |     |     |     |     |     |     |     | 1   | 5   | 7   | 16  | 578.00         | 354                        |
| 577.80                                                  |     |     |     |     |     |     |     |     |     | 4   |     | 6   | 577.80         | 364                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 577.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7057: Milwaukee, Wisconsin on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.63  | 579.03  | 578.87  | 579.04  | 579.26  | 579.19  | 579.06  | 578.80  | 578.40  | 578.33  | 578.16  | 578.26  |
| 2    | 578.55  | 579.08  | 578.92  | 579.11  | 579.27  | 579.35  | 579.00  | 578.78  | 578.41  | 578.49  | 578.17  | 577.95  |
| 3    | 578.71  | 579.05  | 578.85  | 579.10  | 579.34  | 579.24  | 579.01  | 578.74  | 578.59  | 578.43  | 578.14  | 578.15  |
| 4    | 578.55  | 579.01  | 578.82  | 578.96  | 579.28  | 579.18  | 579.04  | 578.76  | 578.78  | 578.47  | 578.34  | 578.02  |
| 5    | 578.27  | 578.79  | 578.69  | 579.18  | 579.19  | 579.08  | 579.03  | 578.71  | 578.71  | 578.63  | 578.45  | 578.16  |
| 6    | 578.59  | 578.70  | 578.66  | 579.33  | 579.24  | 579.12  | 578.98  | 578.57  | 578.49  | 578.44  | 578.53  | 578.14  |
| 7    | 578.85  | 578.66  | 578.76  | 579.01  | 579.38  | 579.21  | 578.91  | 578.71  | 578.44  | 578.39  | 578.38  | 578.20  |
| 8    | 578.79  | 578.78  | 578.89  | 579.18  | 579.38  | 579.45  | 578.88  | 578.72  | 578.41  | 578.54  | 578.24  | 578.25  |
| 9    | 578.76  | 578.86  | 578.75  | 579.24  | 579.22  | 579.27  | 578.90  | 578.75  | 578.34  | 578.49  | 578.29  | 578.13  |
| 10   | 578.63  | 578.97  | 578.72  | 579.23  | 579.24  | 579.14  | 578.90  | 578.75  | 578.30  | 578.22  | 578.39  | 578.27  |
| 11   | 578.54  | 579.20  | 578.99  | 579.18  | 579.18  | 579.06  | 578.89  | 578.76  | 578.49  | 578.19  | 578.17  | 578.37  |
| 12   | 578.77  | 578.93  | 579.22  | 579.20  | 579.24  | 579.07  | 578.94  | 578.72  | 578.48  | 578.34  | 578.41  | 578.02  |
| 13   | 578.87  | 578.69  | 579.17  | 579.19  | 579.16  | 579.10  | 578.88  | 578.71  | 578.26  | 578.20  | 578.35  | 578.08  |
| 14   | 578.73  | 578.84  | 578.95  | 579.18  | 579.29  | 579.04  | 578.83  | 578.56  | 578.33  | 578.05  | 578.15  | 578.30  |
| 15   | 578.66  | 579.07  | 578.86  | 578.99  | 579.30  | 579.03  | 578.97  | 578.47  | 578.48  | 578.26  | 578.50  | 578.20  |
| 16   | 578.61  | 578.86  | 578.79  | 579.08  | 579.28  | 579.12  | 578.93  | 578.62  | 578.50  | 578.22  | 578.15  | 578.00  |
| 17   | 578.85  | 578.81  | 578.75  | 579.05  | 579.34  | 579.20  | 578.88  | 578.71  | 578.44  | 578.27  | 577.79  | 578.20  |
| 18   | 578.93  | 578.78  | 578.72  | 578.92  | 579.29  | 579.13  | 578.95  | 578.96  | 578.38  | 578.23  | 578.14  | 578.13  |
| 19   | 579.16  | 578.85  | 578.72  | 578.94  | 579.29  | 578.97  | 578.93  | 578.84  | 578.46  | 578.28  | 578.51  | 578.21  |
| 20   | 579.36  | 578.92  | 578.81  | 579.16  | 579.32  | 579.00  | 578.94  | 578.77  | 578.27  | 578.24  | 578.46  | 578.12  |
| 21   | 579.12  | 578.59  | 578.83  | 579.09  | 579.30  | 579.07  | 579.01  | 578.81  | 578.18  | 578.26  | 578.25  | 577.97  |
| 22   | 578.85  | 578.53  | 578.90  | 579.23  | 579.37  | 579.13  | 578.98  | 578.79  | 578.50  | 578.29  | 578.36  | 578.29  |
| 23   | 578.95  | 578.63  | 578.95  | 579.43  | 579.42  | 579.05  | 579.01  | 578.80  | 578.34  | 578.26  | 578.33  | 578.27  |
| 24   | 579.04  | 578.61  | 578.92  | 579.15  | 579.33  | 579.12  | 578.96  | 578.61  | 578.33  | 578.36  | 578.44  | 578.10  |
| 25   | 579.15  | 578.68  | 578.83  | 579.17  | 579.20  | 578.96  | 578.94  | 578.50  | 578.37  | 578.05  | 578.48  | 577.89  |
| 26   | 579.23  | 578.75  | 578.66  | 579.28  | 579.09  | 578.94  | 578.97  | 578.41  | 578.40  | 578.08  | 578.57  | 578.02  |
| 27   | 578.87  | 578.92  | 578.59  | 579.52  | 579.18  | 579.01  | 578.86  | 578.58  | 578.46  | 578.00  | 578.27  | 578.24  |
| 28   | 578.93  | 578.70  | 578.89  | 579.29  | 579.26  | 579.05  | 578.86  | 578.55  | 578.60  | 577.82  | 578.33  | 577.94  |
| 29   | 578.95  | 578.77  | 579.10  | 579.16  | 579.26  | 579.12  | 578.72  | 578.58  | 578.62  | 577.74  | 578.32  | 577.97  |
| 30   | 578.87  |         | 578.72  | 579.22  | 579.17  | 579.11  | 578.78  | 578.57  | 578.36  | 578.00  | 578.39  | 578.15  |
| 31   | 578.89  |         | 578.89  |         | 579.17  |         | 578.76  | 578.55  |         | 577.88  |         | 578.20  |
| MEAN | 578.83  | 578.83  | 578.84  | 579.16  | 579.27  | 579.12  | 578.93  | 578.68  | 578.44  | 578.24  | 578.32  | 578.14  |
| MAX. | 579.81  | 579.34  | 579.64  | 580.19  | 579.66  | 579.62  | 579.60  | 579.40  | 579.14  | 578.82  | 578.94  | 578.88  |
|      | 2300/19 | 1800/01 | 0200/13 | 2400/05 | 0800/08 | 1600/08 | 1200/15 | 1900/18 | 2100/04 | 0200/05 | 0100/10 | 0300/23 |
| MIN. | 578.16  | 578.09  | 578.28  | 578.43  | 578.72  | 578.60  | 578.40  | 578.16  | 577.97  | 577.53  | 577.64  | 577.55  |
|      | 1000/05 | 0300/22 | 1400/26 | 2000/22 | 2000/13 | 0100/23 | 2000/16 | 1000/15 | 0400/21 | 0700/29 | 1500/17 | 2000/28 |

\* Indicates Less than 90% of the Hourly Data Available.

/ Indicates No Data.

ANNUAL MEAN: 578.73

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7068: Kewaunee, Wisconsin on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.22 May  
Daily mean elevation: 579.44 23 Apr  
Instant/hourly Elevation: 579.97 0200/23 Apr

LOWEST  
Monthly mean elevation: 578.14 Dec  
Daily mean elevation: 577.48 17 Nov  
Instant/hourly Elevation: 576.85 0400/17 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.36 | 20 Jan |
| 578.97 | 3 Feb  |
| 579.37 | 12 Mar |
| 579.44 | 23 Apr |
| 579.35 | 8 May  |
| 579.24 | 2 Jun  |
| 578.96 | 6 Jul  |
| 578.90 | 18 Aug |
| 578.66 | 5 Sep  |
| 578.52 | 5 Oct  |
| 578.56 | 27 Nov |
| 578.46 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.21 | 5 Jan  |
| 578.57 | 23 Feb |
| 578.53 | 27 Mar |
| 578.84 | 18 Apr |
| 579.05 | 13 May |
| 578.85 | 26 Jun |
| 578.67 | 30 Jul |
| 578.40 | 15 Aug |
| 578.10 | 21 Sep |
| 577.62 | 29 Oct |
| 577.48 | 17 Nov |
| 577.87 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.40                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 579.40         | 1                          |
| 579.20                                                  | 1   |     | 1   | 2   | 17  | 2   |     |     |     |     |     |     | 579.20         | 24                         |
| 579.00                                                  | 4   |     | 2   | 21  | 14  | 19  |     |     |     |     |     |     | 579.00         | 84                         |
| 578.80                                                  | 12  | 13  | 10  | 6   |     | 9   | 27  | 4   |     |     |     |     | 578.80         | 165                        |
| 578.60                                                  | 11  | 14  | 14  |     |     |     | 4   | 15  | 1   |     |     |     | 578.60         | 224                        |
| 578.40                                                  | 2   | 2   | 1   |     |     |     |     | 11  | 13  | 4   |     |     | 578.40         | 267                        |
| 578.20                                                  | 1   |     |     |     |     |     |     | 1   | 14  | 9   | 10  | 9   | 578.20         | 311                        |
| 578.00                                                  |     |     |     |     |     |     |     |     | 2   | 12  | 10  | 15  | 578.00         | 350                        |
| 577.80                                                  |     |     |     |     |     |     |     |     |     | 2   | 1   | 5   | 577.80         | 358                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 2   |     |     | 577.60         | 360                        |
| 577.40                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 577.40         | 361                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 706B: Kewaunee, Wisconsin on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.63  | 578.76  | 578.89  | 578.95  | 579.17  | 579.16  | 578.96  | 578.73  | 578.42  | 578.33  | 577.98  | 578.26  |
| 2    | 578.61  | 578.94  | 578.79  | 579.01  | 579.21  | 579.24  | 578.92  | 578.77  | 578.40  | 578.39  | 578.10  | 578.12  |
| 3    | 578.80  | 578.97  | 578.72  | 579.13  | 579.27  | 579.16  | 578.96  | 578.73  | 578.51  | 578.41  | 578.12  | 577.95  |
| 4    | 578.54  | 578.85  | 578.76  | 578.98  | 579.21  | 579.12  | 578.95  | 578.74  | 578.54  | 578.35  | 578.30  | 577.91  |
| 5    | 578.21  | 578.78  | 578.67  | 579.06  | 579.15  | 579.06  | 578.95  | 578.69  | 578.66  | 578.52  | 578.37  | 578.19  |
| 6    | 578.53  | 578.67  | 578.69  | 579.06  | 579.17  | 579.09  | 578.96  | 578.54  | 578.49  | 578.38  | 578.55  | 578.23  |
| 7    | 578.84  | 578.68  | 578.67  | 578.94  | 579.29  | 579.17  | 578.89  | 578.67  | 578.44  | 578.35  | 578.35  | 578.11  |
| 8    | 578.75  | 578.73  | 578.93  | 579.08  | 579.35  | 579.22  | 578.83  | 578.68  | 578.32  | 578.46  | 578.21  | 578.22  |
| 9    | 578.68  | 578.82  | 578.72  | 579.17  | 579.33  | 579.13  | 578.81  | 578.67  | 578.25  | 578.45  | 578.15  | 578.09  |
| 10   | 578.76* | 578.84  | 578.68  | 579.06  | 579.17  | 579.12  | 578.87  | 578.73  | 578.20  | 578.15  | 578.29  | 578.16  |
| 11   | 578.69* | 578.96  | 578.84  | 579.03  | 579.19  | 579.06  | 578.81  | 578.76  | 578.43  | 578.03  | 578.15  | 578.29  |
| 12   | 578.90  | 578.85  | 579.37  | 579.10  | 579.31  | 579.04  | 578.86  | 578.70  | 578.52* | 578.20  | 578.43  | 578.27  |
| 13   | 578.74  | 578.66  | 579.10  | 579.14  | 579.05  | 579.07  | 578.93  | 578.74  | 578.21* | 578.18  | 578.20  | 578.07  |
| 14   | 578.91  | 578.85  | 578.82  | 579.06  | 579.26  | 579.05  | 578.79  | 578.56  | 578.22  | 578.02  | 578.05  | 578.24  |
| 15   | 578.77  | 578.94  | 578.76  | 578.93  | 579.30  | 578.96  | 578.89  | 578.40  | 578.37  | 578.22  | 578.41  | 578.12  |
| 16   | 578.78  | 578.94  | 578.72  | 579.08  | 579.16  | 579.01  | 578.86  | 578.61  | 578.50  | 578.19  | 578.07  | 578.04  |
| 17   | 578.76  | 578.81  | 578.74  | 579.02  | 579.26  | 579.10  | 578.88  | 578.59  | 578.41  | 578.08  | 577.48  | 578.14  |
| 18   | 578.88  | 578.83  | /       | 578.84  | 579.25  | 579.08  | 578.85  | 578.90  | 578.34  | 578.17  | 578.05  | 578.22  |
| 19   | 578.96  | 578.85  | /       | 578.94  | 579.26  | 578.98  | 578.89  | 578.86  | 578.56  | 578.19  | 578.54  | 578.27  |
| 20   | 579.36  | 578.72  | /       | 579.13  | 579.24  | 578.92  | 578.86  | 578.80  | 578.30  | 578.22  | 578.06  | 578.26  |
| 21   | 579.01  | 578.73  | 578.74* | 579.08  | 579.24  | 579.05  | 578.88  | 578.82  | 578.10  | 578.15  | 578.12  | 577.94  |
| 22   | 578.90  | 578.62  | 578.93  | 579.14  | 579.23  | 579.12  | 578.86  | 578.82  | 578.41  | 578.18  | 578.39  | 578.46  |
| 23   | 578.87  | 578.57  | 578.94  | 579.44  | 579.21  | 579.02  | 578.90  | 578.77  | 578.31  | 578.27  | 578.38  | 578.45  |
| 24   | 578.95  | 578.60  | 578.83  | 579.15  | 579.16  | 579.18  | 578.86  | 578.60  | 578.29  | 578.30  | 578.45  | 578.11  |
| 25   | 579.09  | 578.64  | 578.97  | 579.16  | 579.16  | 578.94  | 578.83  | 578.45  | 578.34  | 578.04* | 578.46  | 577.87  |
| 26   | 579.09  | 578.79  | 578.64  | 579.14  | 579.18  | 578.85  | 578.86  | 578.43  | 578.40  | /       | 578.54  | 578.07  |
| 27   | 578.83  | 578.80  | 578.53  | 579.40  | 579.20  | 578.96  | 578.84  | 578.51  | 578.36  | /       | 578.56  | 578.08* |
| 28   | 578.83  | 578.77  | 578.92  | 579.24  | 579.19  | 578.97  | 578.81  | 578.44  | 578.53  | 577.66* | 578.34  | 577.89* |
| 29   | 579.01  | 578.66  | 579.06  | 579.11  | 579.24  | 578.95  | 578.68  | 578.46  | 578.60  | 577.62  | 578.38  | 578.03  |
| 30   | 578.95  |         | 578.69  | 579.17  | 579.16  | 578.94  | 578.67  | 578.53  | 578.38  | 577.95  | 578.37  | 578.20  |
| 31   | 578.89  |         | 578.81  |         | 579.14  |         | 578.70  | 578.59  |         | 577.97  |         | 578.09* |
| MEAN | 578.82  | 578.78  | 578.82  | 579.09  | 579.22  | 579.06  | 578.86  | 578.65  | 578.39  | 578.19  | 578.26  | 578.14  |
| MAX. | 579.79  | 579.20  | 579.75  | 579.97  | 579.72  | 579.78  | 579.66  | 579.32  | 578.87  | 578.69  | 579.12  | 578.97  |
|      | 0800/20 | 1500/03 | 1700/12 | 0200/23 | 0600/15 | 1600/22 | 1000/15 | 0900/18 | 1400/19 | 1400/05 | 0400/16 | 2200/22 |
| MIN. | 578.11  | 578.39  | 578.32  | 578.10  | 578.76  | 578.55  | 578.12  | 578.07  | 577.90  | 577.40  | 576.85  | 577.64  |
|      | 0800/05 | 1100/22 | 1800/27 | 2000/22 | 0300/13 | 1400/22 | 1300/15 | 1400/15 | 1800/23 | 0500/29 | 0400/17 | 0400/26 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.69

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 7072: Sturgeon Bay Canal, Wisconsin on Lake Michigan

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 579.16 May  
 Daily mean elevation: 579.37 23 Apr  
 Instant/hourly Elevation: 579.75 0700/23 Apr

LOWEST  
 Monthly mean elevation: 578.06 Dec  
 Daily mean elevation: 577.58 29 Oct  
 Instant/hourly Elevation: 577.41 0300/29 Oct

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.36 | 20 Jan |
| 578.90 | 11 Feb |
| 579.30 | 12 Mar |
| 579.37 | 23 Apr |
| 579.27 | 8 May  |
| 579.20 | 2 Jun  |
| 578.92 | 4 Jul  |
| 578.90 | 18 Aug |
| 578.64 | 5 Sep  |
| 578.46 | 5 Oct  |
| 578.56 | 6 Nov  |
| 578.38 | 22 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.16 | 5 Jan  |
| 578.51 | 23 Feb |
| 578.47 | 27 Mar |
| 578.79 | 18 Apr |
| 578.96 | 13 May |
| 578.82 | 26 Jun |
| 578.63 | 30 Jul |
| 578.38 | 26 Aug |
| 578.16 | 21 Sep |
| 577.58 | 29 Oct |
| 577.68 | 17 Nov |
| 577.79 | 25 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 579.20         | 1   |     | 1   | 2   | 10  |     |     |     |     |     |     |     | 579.20         | 14                         |
| 579.00         | 2   |     | 1   | 16  | 20  | 16  |     |     |     |     |     |     | 579.00         | 69                         |
| 578.80         | 11  | 7   | 9   | 11  | 1   | 14  | 23  | 2   |     |     |     |     | 578.80         | 147                        |
| 578.60         | 11  | 15  | 18  | 1   |     |     | 8   | 17  | 1   |     |     |     | 578.60         | 218                        |
| 578.40         | 5   | 7   | 2   |     |     |     |     | 9   | 7   | 3   | 5   |     | 578.40         | 256                        |
| 578.20         |     |     |     |     |     |     |     | 3   | 20  | 8   | 14  | 3   | 578.20         | 304                        |
| 578.00         | 1   |     |     |     |     |     |     |     | 2   | 12  | 8   | 17  | 578.00         | 344                        |
| 577.80         |     |     |     |     |     |     |     |     |     | 6   | 2   | 10  | 577.80         | 362                        |
| 577.60         |     |     |     |     |     |     |     |     |     | 1   | 1   | 1   | 577.60         | 365                        |
| 577.40         |     |     |     |     |     |     |     |     |     | 1   |     |     | 577.40         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 7072: Sturgeon Bay Canal, Wisconsin on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.58  | 578.72  | 578.87  | 578.86  | 579.10  | 579.13  | 578.88  | 578.69  | 578.39  | 578.28  | 577.96  | 578.17  |
| 2    | 578.54  | 578.84  | 578.69  | 578.83  | 579.15  | 579.20  | 578.89  | 578.75  | 578.39  | 578.34  | 578.07  | 577.94  |
| 3    | 578.66  | 578.83  | 578.65  | 579.03  | 579.22  | 579.08  | 578.90  | 578.70  | 578.50  | 578.35  | 578.08  | 577.88  |
| 4    | 578.46  | 578.79  | 578.70  | 578.88  | 579.16  | 579.08  | 578.92  | 578.74  | 578.53  | 578.26  | 578.26  | 578.01  |
| 5    | 578.16  | 578.70  | 578.63  | 578.96  | 579.09  | 579.04  | 578.91  | 578.74  | 578.64  | 578.46  | 578.30  | 578.14  |
| 6    | 578.50  | 578.57  | 578.65  | 579.05  | 579.12  | 579.04  | 578.87  | 578.56  | 578.40  | 578.32  | 578.56  | 578.08  |
| 7    | 578.83  | 578.65  | 578.62  | 578.88  | 579.22  | 579.11  | 578.84  | 578.68  | 578.34  | 578.31  | 578.31  | 578.01  |
| 8    | 578.72  | 578.64  | 578.86  | 579.04  | 579.27  | 579.19  | 578.85  | 578.64  | 578.28  | 578.42  | 578.13  | 578.13  |
| 9    | 578.64  | 578.79  | 578.66  | 579.10  | 579.25  | 579.10  | 578.81  | 578.77  | 578.26  | 578.43  | 578.12  | 577.98  |
| 10   | 578.68  | 578.77  | 578.66  | 579.00  | 579.12  | 579.03  | 578.82  | 578.74  | 578.18  | 578.07  | 578.22  | 578.12  |
| 11   | 578.57  | 578.90  | 578.88  | 578.96  | 579.12  | 578.97  | 578.82  | 578.73  | 578.40  | 577.98  | 578.07  | 578.20  |
| 12   | 578.93  | 578.77  | 579.30  | 579.05  | 579.22  | 579.01  | 578.85  | 578.69  | 578.40  | 578.16  | 578.33  | 578.09  |
| 13   | 578.62  | 578.59  | 579.00  | 579.12  | 578.96  | 579.07  | 578.86  | 578.72  | 578.21  | 578.11  | 578.32  | 577.96  |
| 14   | 578.86  | 578.77  | 578.75  | 579.01  | 579.18  | 579.04  | 578.77  | 578.50  | 578.21  | 577.97  | 578.01  | 578.14  |
| 15   | 578.75  | 578.85  | 578.65  | 578.90  | 579.21  | 578.95  | 578.87  | 578.40  | 578.36  | 578.19  | 578.37  | 578.00  |
| 16   | 578.80  | 578.85  | 578.63  | 579.04  | 579.09  | 578.99  | 578.76  | 578.58  | 578.44  | 578.19  | 578.39  | 577.90  |
| 17   | 578.70  | 578.81  | 578.69  | 578.96  | 579.22  | 579.04  | 578.73  | 578.63  | 578.39  | 578.08  | 577.68  | 578.07  |
| 18   | 578.83  | 578.80  | 578.61  | 578.79  | 579.17  | 579.02  | 578.85  | 578.90  | 578.39  | 578.16  | 577.92  | 578.07  |
| 19   | 578.92  | 578.82  | 578.54  | 578.91  | 579.21  | 578.97  | 578.82  | 578.81  | 578.49  | 578.16  | 578.45  | 578.20  |
| 20   | 579.36  | 578.57  | 578.61  | 579.08  | 579.23  | 578.86  | 578.80  | 578.75  | 578.30  | 578.16  | 578.27  | 578.17  |
| 21   | 578.93  | 578.71  | 578.69  | 579.00  | 579.18  | 578.98  | 578.84  | 578.74  | 578.16  | 578.13  | 578.18  | 577.84  |
| 22   | 578.83  | 578.58  | 578.88  | 579.09  | 579.20  | 578.98  | 578.83  | 578.77  | 578.41  | 578.16  | 578.32  | 578.38  |
| 23   | 578.79  | 578.51  | 578.93  | 579.37  | 579.16  | 578.97  | 578.86  | 578.75  | 578.27  | 578.24  | 578.27  | 578.35  |
| 24   | 578.94  | 578.55  | 578.84  | 579.12  | 579.10  | 579.05  | 578.86  | 578.60  | 578.31  | 578.28  | 578.38  | 578.01  |
| 25   | 579.00  | 578.62  | 578.93  | 579.12  | 579.10  | 578.86  | 578.81  | 578.45  | 578.27  | 577.99  | 578.43  | 577.79  |
| 26   | 579.04  | 578.76  | 578.63  | 579.05  | 579.11  | 578.82  | 578.83  | 578.38  | 578.38  | 577.96  | 578.52  | 577.95  |
| 27   | 578.80  | 578.75  | 578.47  | 579.32  | 579.15  | 578.96  | 578.79  | 578.48  | 578.33  | 578.08  | 578.41  | 578.28  |
| 28   | 578.79  | 578.73  | 578.88  | 579.16  | 579.16  | 578.90  | 578.81  | 578.39  | 578.51  | 577.75  | 578.18  | 577.90  |
| 29   | 579.02  | 578.57  | 579.02  | 579.05  | 579.21  | 578.95  | 578.68  | 578.45  | 578.55  | 577.58  | 578.30  | 577.95  |
| 30   | 578.94  |         | 578.66  | 579.08  | 579.12  | 578.88  | 578.63  | 578.52  | 578.37  | 577.91  | 578.28  | 578.08  |
| 31   | 578.87  |         | 578.74  |         | 579.13  |         | 578.68  | 578.58  |         | 577.87  |         | 578.11  |
| MEAN | 578.78  | 578.72  | 578.75  | 579.03  | 579.16  | 579.01  | 578.82  | 578.64  | 578.37  | 578.14  | 578.24  | 578.06  |
| MAX. | 579.70  | 579.07  | 579.57  | 579.75  | 579.57  | 579.31  | 579.41  | 579.27  | 578.73  | 578.57  | 578.94  | 578.75  |
|      | 0600/20 | 0700/16 | 1800/12 | 0700/23 | 0600/15 | 1300/24 | 1100/15 | 2400/18 | 1600/05 | 1600/05 | 1000/16 | 1000/23 |
| MIN. | 578.11  | 578.15  | 578.33  | 578.58  | 578.64  | 578.68  | 578.16  | 578.17  | 578.08  | 577.41  | 577.54  | 577.53  |
|      | 2400/05 | 1600/07 | 0100/20 | 2100/22 | 1700/13 | 0600/26 | 1500/15 | 2300/25 | 0500/21 | 0300/29 | 1600/17 | 2300/25 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.64

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7079: Green Bay, Wisconsin on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.17 May  
Daily mean elevation: 579.88 27 Apr  
Instant/hourly Elevation: 581.03 0400/27 Apr

LOWEST  
Monthly mean elevation: 577.91 Dec  
Daily mean elevation: 577.02 16 Nov  
Instant/hourly Elevation: 575.58 2100/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.34 | 20 Jan |
| 578.89 | 16 Feb |
| 579.67 | 12 Mar |
| 579.88 | 27 Apr |
| 579.53 | 24 May |
| 579.74 | 8 Jun  |
| 578.96 | 18 Jul |
| 579.32 | 18 Aug |
| 579.09 | 4 Sep  |
| 578.58 | 5 Oct  |
| 578.85 | 6 Nov  |
| 578.35 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 577.93 | 5 Jan  |
| 578.39 | 20 Feb |
| 578.44 | 27 Mar |
| 578.79 | 19 Apr |
| 578.88 | 26 May |
| 578.72 | 19 Jun |
| 578.52 | 29 Jul |
| 578.13 | 25 Aug |
| 578.05 | 7 Sep  |
| 577.03 | 28 Oct |
| 577.02 | 16 Nov |
| 577.41 | 12 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 579.80                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 579.80         | 1                          |
| 579.60                                                  |     |     | 1   |     |     | 1   |     |     |     |     |     |     | 579.60         | 3                          |
| 579.40                                                  |     |     |     | 1   | 2   |     |     |     |     |     |     |     | 579.40         | 6                          |
| 579.20                                                  | 1   |     |     | 2   | 9   | 5   |     | 1   |     |     |     |     | 579.20         | 24                         |
| 579.00                                                  | 2   |     | 1   | 14  | 18  | 9   |     |     | 1   |     |     |     | 579.00         | 69                         |
| 578.80                                                  | 10  | 2   | 9   | 11  | 2   | 14  | 16  | 3   | 1   |     | 1   |     | 578.80         | 138                        |
| 578.60                                                  | 8   | 19  | 12  | 1   |     | 1   | 13  | 12  | 3   |     | 1   |     | 578.60         | 208                        |
| 578.40                                                  | 5   | 7   | 8   |     |     |     | 2   | 9   | 3   | 4   | 3   |     | 578.40         | 249                        |
| 578.20                                                  | 4   | 1   |     |     |     |     |     | 5   | 13  | 5   | 8   | 3   | 578.20         | 288                        |
| 578.00                                                  |     |     |     |     |     |     |     | 1   | 9   | 10  | 12  | 6   | 578.00         | 326                        |
| 577.80                                                  | 1   |     |     |     |     |     |     |     |     | 4   | 3   | 16  | 577.80         | 350                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 5   |     | 3   | 577.60         | 358                        |
| 577.40                                                  |     |     |     |     |     |     |     |     |     | 2   |     | 3   | 577.40         | 363                        |
| 577.20                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 577.20         | 363                        |
| 577.00                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   |     | 577.00         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7079: Green Bay, Wisconsin on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.30  | 578.67  | 578.87  | 578.97  | 579.14  | 579.25  | 578.88  | 578.68  | 578.15  | 578.22  | 578.09  | 577.94  |
| 2    | 578.23  | 578.78  | 578.63  | 578.98  | 579.18  | 579.35  | 578.82  | 578.62  | 578.36  | 578.51  | 578.04  | 577.44  |
| 3    | 578.36  | 578.82  | 578.62  | 579.09  | 579.22  | 579.13  | 578.86  | 578.67  | 578.73  | 578.18  | 578.04  | 577.90  |
| 4    | 578.26  | 578.69  | 578.67  | 578.86  | 579.16  | 579.05  | 578.86  | 578.66  | 579.09  | 578.49  | 578.49  | 577.69  |
| 5    | 577.93  | 578.65  | 578.61  | 579.06  | 579.05  | 578.94  | 578.90  | 578.56  | 578.71  | 578.58  | 578.47  | 577.83  |
| 6    | 578.42  | 578.51  | 578.57  | 579.18  | 579.19  | 578.94  | 578.85  | 578.43  | 578.28  | 578.26  | 578.85  | 577.88  |
| 7    | 578.76  | 578.70  | 578.63  | 578.89  | 579.21  | 579.23  | 578.76  | 578.56  | 578.05  | 578.11  | 578.21  | 577.96  |
| 8    | 578.68  | 578.55  | 578.97  | 579.08  | 579.19  | 579.74  | 578.78  | 578.70  | 578.10  | 578.44  | 577.99  | 577.94  |
| 9    | 578.58  | 578.68  | 578.62  | 579.12  | 579.12  | 579.33  | 578.86  | 578.77  | 578.11  | 578.39  | 578.05  | 577.86  |
| 10   | 578.59  | 578.70  | 578.64  | 579.07  | 579.18  | 578.94  | 578.78  | 578.68  | 578.19  | 578.02  | 578.23  | 578.07  |
| 11   | 578.56  | 578.75  | 578.90  | 578.96  | 579.05  | 578.89  | 578.91  | 578.69  | 578.41  | 578.00  | 577.91  | 578.14  |
| 12   | 578.98  | 578.65  | 579.67  | 579.01  | 579.21  | 578.93  | 578.86  | 578.67  | 578.47  | 578.15  | 578.35  | 577.41  |
| 13   | 578.58  | 578.48  | 578.93  | 579.14  | 579.04  | 578.96  | 578.70  | 578.59  | 578.12  | 577.77  | 578.04  | 577.86  |
| 14   | 578.81  | 578.78  | 578.66  | 579.06  | 579.03  | 578.86  | 578.79  | 578.30  | 578.23  | 577.82  | 577.97  | 578.21  |
| 15   | 578.73  | 578.74  | 578.57  | 578.81  | 579.06  | 578.91  | 578.74  | 578.35  | 578.40  | 578.10  | 578.47  | 577.95  |
| 16   | 578.80  | 578.89  | 578.59  | 578.93  | 579.41  | 579.06  | 578.84  | 578.56  | 578.37  | 577.99  | 577.02  | 577.70  |
| 17   | 578.74  | 578.72  | 578.66  | 578.83  | 579.30  | 579.13  | 578.75  | 578.83  | 578.32  | 578.26  | 577.14  | 577.96  |
| 18   | 578.81  | 578.76  | 578.56  | 578.82  | 579.23  | 578.86  | 578.96  | 579.32  | 578.37  | 578.00  | 578.02  | 577.93  |
| 19   | 579.02  | 578.80  | 578.51  | 578.79  | 579.23  | 578.72  | 578.80  | 578.96  | 578.17  | 578.19  | 578.40  | 578.28  |
| 20   | 579.34  | 578.39  | 578.57  | 579.08  | 579.22  | 578.88  | 578.84  | 578.76  | 578.06  | 578.01  | 578.32  | 578.01  |
| 21   | 578.88  | 578.77  | 578.66  | 579.00  | 579.19  | 579.01  | 578.84  | 578.81  | 578.12  | 578.11  | 578.05  | 577.89  |
| 22   | 578.71  | 578.55  | 578.91  | 579.25  | 579.32  | 579.16  | 578.87  | 578.70  | 578.39  | 578.09  | 578.15  | 578.35  |
| 23   | 578.81  | 578.51  | 578.92  | 579.60  | 579.37  | 579.04  | 578.86  | 578.78  | 578.21  | 578.29  | 578.16  | 578.02  |
| 24   | 578.88  | 578.47  | 578.85  | 579.04  | 579.53  | 578.91  | 578.76  | 578.48  | 578.21  | 578.06  | 578.31  | 577.85  |
| 25   | 578.95  | 578.56  | 578.77  | 579.00  | 579.00  | 578.93  | 578.95  | 578.13  | 578.24  | 577.71  | 578.39  | 577.54  |
| 26   | 578.92  | 578.80  | 578.54  | 579.17  | 578.88  | 578.94  | 578.78  | 578.31  | 578.35  | 577.74  | 578.67  | 578.00  |
| 27   | 578.73  | 578.68  | 578.44  | 579.88  | 579.04  | 578.89  | 578.68  | 578.31  | 578.66  | 577.63  | 578.11  | 577.95  |
| 28   | 578.72  | 578.65  | 578.94  | 579.27  | 579.17  | 579.11  | 578.68  | 578.29  | 578.81  | 577.03  | 578.14  | 577.63  |
| 29   | 579.07  | 578.64  | 579.05  | 579.02  | 579.19  | 579.22  | 578.52  | 578.42  | 578.59  | 577.50  | 578.19  | 577.85  |
| 30   | 578.95  |         | 578.69  | 579.07  | 579.08  | 579.13  | 578.77  | 578.50  | 578.30  | 577.72  | 578.27  | 578.08  |
| 31   | 578.91  |         | 578.85  |         | 579.07  |         | 578.56  | 578.47  |         | 577.52  |         | 578.07  |
| MEAN | 578.71  | 578.67  | 578.74  | 579.07  | 579.17  | 579.05  | 578.80  | 578.60  | 578.35  | 578.03  | 578.15  | 577.91  |
| MAX. | 580.11  | 579.76  | 580.21  | 581.03  | 580.41  | 580.47  | 580.61  | 579.82  | 580.12  | 579.97  | 579.61  | 579.16  |
|      | 1000/20 | 1800/20 | 2200/12 | 0400/27 | 0600/16 | 2200/01 | 1200/15 | 1500/17 | 1900/27 | 1700/04 | 0700/06 | 1500/19 |
| MIN. | 577.15  | 577.30  | 577.74  | 578.15  | 577.73  | 578.12  | 576.97  | 577.41  | 577.24  | 576.48  | 575.58  | 576.65  |
|      | 0100/05 | 2300/20 | 1300/02 | 0200/17 | 1300/15 | 2000/19 | 1500/15 | 1200/25 | 1300/13 | 1300/28 | 2100/16 | 1400/12 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.60

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7096: Port Inland, Michigan on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 579.00 May  
Daily mean elevation: 579.23 15 May  
Instant/hourly Elevation: 580.13 1300/16 Nov

LOWEST  
Monthly mean elevation: 578.04 Oct  
Daily mean elevation: 577.49 29 Oct  
Instant/hourly Elevation: 577.28 1500/3 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 579.03 | 20 Jan |
| 578.89 | 21 Feb |
| 578.97 | 25 Mar |
| 579.04 | 25 Apr |
| 579.23 | 15 May |
| 579.07 | 24 Jun |
| 578.82 | 15 Jul |
| 578.80 | 13 Aug |
| 578.63 | 19 Sep |
| 578.31 | 8 Oct  |
| 579.17 | 16 Nov |
| 578.72 | 23 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 578.21 | 5 Jan  |
| 578.35 | 29 Feb |
| 578.26 | 27 Mar |
| 578.54 | 18 Apr |
| 578.77 | 13 May |
| 578.67 | 26 Jun |
| 578.56 | 30 Jul |
| 578.21 | 26 Aug |
| 578.01 | 14 Sep |
| 577.49 | 29 Oct |
| 577.83 | 18 Nov |
| 577.71 | 21 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     |  | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |  | Elev.<br>(ft.) |                            |
| 579.20                                                  |     |     |     |     | 1   |     |     |     |     |     |     |     |  | 579.20         | 1                          |
| 579.00                                                  | 2   |     |     | 4   | 13  | 2   |     |     |     |     | 1   |     |  | 579.00         | 23                         |
| 578.80                                                  | 9   | 3   | 5   | 17  | 15  | 21  | 3   |     |     |     |     |     |  | 578.80         | 96                         |
| 578.60                                                  | 14  | 14  | 9   | 8   | 2   | 7   | 27  | 18  | 1   |     |     | 1   |  | 578.60         | 197                        |
| 578.40                                                  | 5   | 10  | 15  | 1   |     |     | 1   | 7   | 9   |     | 3   | 2   |  | 578.40         | 250                        |
| 578.20                                                  | 1   | 2   | 2   |     |     |     |     | 6   | 14  | 6   | 9   | 3   |  | 578.20         | 293                        |
| 578.00                                                  |     |     |     |     |     |     |     |     | 6   | 12  | 10  | 9   |  | 578.00         | 330                        |
| 577.80                                                  |     |     |     |     |     |     |     |     |     | 10  | 7   | 12  |  | 577.80         | 359                        |
| 577.60                                                  |     |     |     |     |     |     |     |     |     | 1   |     | 4   |  | 577.60         | 364                        |
| 577.40                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     |  | 577.40         | 365                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7096: Port Inland, Michigan on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 578.69  | 578.51  | 578.75  | 578.63  | 579.00  | 578.96  | 578.71  | 578.67  | 578.60  | 578.18  | 577.83  | 578.12  |
| 2    | 578.74  | 578.66  | 578.55  | 578.66  | 578.96  | 579.01  | 578.74  | 578.72  | 578.43  | 578.13  | 577.90  | 578.21  |
| 3    | 578.91  | 578.75  | 578.47  | 578.89  | 579.03  | 578.95  | 578.80  | 578.66  | 578.48  | 578.28  | 577.99  | 577.79  |
| 4    | 578.57  | 578.58  | 578.61  | 578.70  | 578.97  | 578.94  | 578.81  | 578.71  | 578.24  | 578.08  | 578.06  | 577.98  |
| 5    | 578.21  | 578.82  | 578.66  | 578.84  | 578.92  | 578.89  | 578.80  | 578.78  | 578.27  | 578.15  | 578.14  | 578.17  |
| 6    | 578.46  | 578.61  | 578.69  | 578.76  | 578.92  | 578.96  | 578.77  | 578.48  | 578.23  | 578.12  | 578.38  | 578.19  |
| 7    | 578.85  | 578.76  | 578.45  | 578.71  | 579.02  | 578.96  | 578.77  | 578.63  | 578.40  | 578.26  | 578.10  | 577.90  |
| 8    | 578.67  | 578.60  | 578.85  | 578.87  | 579.17  | 578.91  | 578.75  | 578.65  | 578.53  | 578.31  | 578.05  | 578.04  |
| 9    | 578.57  | 578.68  | 578.56  | 578.96  | 579.16  | 578.84  | 578.75  | 578.64  | 578.39  | 578.29  | 578.05  | 577.91  |
| 10   | 578.89  | 578.54  | 578.52  | 578.85  | 578.88  | 578.89  | 578.75  | 578.65  | 578.14  | 577.89  | 578.07  | 577.97  |
| 11   | 578.61  | 578.58  | 578.54  | 578.82  | 578.97  | 578.91  | 578.65  | 578.73  | 578.36  | 577.68  | 578.03  | 578.03  |
| 12   | 578.87  | 578.60  | 578.93  | 578.91  | 579.16  | 578.94  | 578.67  | 578.67  | 578.42  | 577.87  | 578.33  | 578.58  |
| 13   | 578.49  | 578.51  | 578.71  | 578.92  | 578.77  | 578.98  | 578.81  | 578.80  | 578.17  | 578.08  | 578.42  | 577.95  |
| 14   | 578.88  | 578.77  | 578.51  | 578.76  | 579.08  | 579.00  | 578.62  | 578.64  | 578.01  | 577.96  | 577.93  | 578.10  |
| 15   | 578.83  | 578.61  | 578.49  | 578.79  | 579.23  | 578.86  | 578.82  | 578.37  | 578.22  | 578.14  | 578.28  | 577.87  |
| 16   | 579.03  | 578.86  | 578.47  | 579.00  | 578.93  | 578.80  | 578.65  | 578.66  | 578.41  | 578.29  | 579.17  | 577.93  |
| 17   | 578.63  | 578.66  | 578.60  | 578.89  | 578.98  | 578.90  | 578.70  | 578.65  | 578.35  | 577.95* | 577.95  | 577.91  |
| 18   | 578.71  | 578.80  | 578.49  | 578.54  | 578.97  | 578.95  | 578.68  | 578.70  | 578.26  | /       | 577.83  | 578.12  |
| 19   | 578.64  | 578.78  | 578.39  | 578.80  | 579.01  | 578.99  | 578.68  | 578.58  | 578.63  | 577.99  | 578.44  | 578.20  |
| 20   | 579.03  | 578.40  | 578.46  | 578.99  | 579.02  | 578.79  | 578.66  | 578.54  | 578.42  | 578.11  | 578.06  | 578.30  |
| 21   | 578.64  | 578.89  | 578.48  | 578.91  | 579.01  | 578.88  | 578.68  | 578.54  | 578.04  | 578.09  | 578.03  | 577.71  |
| 22   | 578.82  | 578.79  | 578.66  | 578.86  | 578.95  | 578.97* | 578.65  | 578.66  | 578.41  | 577.95  | 578.26  | 578.34  |
| 23   | 578.70  | 578.50  | 578.82  | 579.04  | 578.92  | 578.84* | 578.71  | 578.76  | 578.19  | 578.08  | 578.30  | 578.72  |
| 24   | 578.77  | 578.56  | 578.57  | 578.95  | 578.79  | 579.07  | 578.73  | 578.55  | 578.25  | 578.12  | 578.35  | 577.98  |
| 25   | 578.58  | 578.61  | 578.97  | 579.04  | 578.93  | 578.79  | 578.64  | 578.33  | 578.21  | 577.87  | 578.36  | 577.75  |
| 26   | 578.76  | 578.70  | 578.62  | 578.89  | 579.03  | 578.67  | 578.64  | 578.21  | 578.37  | 577.88  | 578.33  | 577.79  |
| 27   | 578.70  | 578.60  | 578.26  | 578.99  | 579.08  | 578.83  | 578.68  | 578.54  | 578.17  | 578.26  | 578.53  | 578.52  |
| 28   | 578.65  | 578.76  | 578.72  | 579.01  | 579.03  | 578.75  | 578.80  | 578.38  | 578.24  | 577.86  | 577.99  | 577.85  |
| 29   | 579.00  | 578.35  | 578.91  | 578.89  | 579.09  | 578.70  | 578.68  | 578.39  | 578.44  | 577.49  | 578.26  | 577.88  |
| 30   | 578.86  |         | 578.61  | 579.01  | 578.99  | 578.69  | 578.56  | 578.39  | 578.24  | 577.84  | 578.16  | 578.10  |
| 31   | 578.80  |         | 578.59  |         | 578.98  |         | 578.66  | 578.57  |         | 578.13  |         | 577.90  |
| MEAN | 578.73  | 578.65  | 578.61  | 578.86  | 579.00  | 578.89  | 578.71  | 578.59  | 578.32  | 578.04  | 578.19  | 578.06  |
| MAX. | 579.83  | 579.55  | 579.28  | 579.32  | 579.77  | 579.38  | 579.36  | 579.11  | 579.19  | 578.73  | 580.13  | 579.48  |
|      | 0700/20 | 0400/22 | 1600/28 | 1700/25 | 2300/12 | 0200/25 | 1700/15 | 2300/13 | 0200/20 | 2100/27 | 1300/16 | 0900/23 |
| MIN. | 577.85  | 577.76  | 578.09  | 578.34  | 578.41  | 578.35  | 578.24  | 577.99  | 577.79  | 577.31  | 577.42  | 577.28  |
|      | 0400/13 | 1100/20 | 0900/27 | 1600/18 | 0600/13 | 2200/21 | 1700/16 | 0400/26 | 2100/04 | 0400/29 | 2100/17 | 1500/03 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 578.55

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 9004: Pt. Iroquois, Brimley, Michigan on Lake Superior (Whitefish Bay

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 600.77 Dec  
 Daily mean elevation: 601.21 3 Dec  
 Instant/hourly Elevation: 601.78 0900/3 Dec

LOWEST  
 Monthly mean elevation: 599.69 Mar  
 Daily mean elevation: 599.21 28 Mar  
 Instant/hourly Elevation: 598.73 0200/25 Mar

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.71 | 5 Jan  |
| 600.24 | 7 Feb  |
| 599.98 | 2 Mar  |
| 600.22 | 18 Apr |
| 600.30 | 13 May |
| 600.24 | 29 Jun |
| 600.15 | 30 Jul |
| 600.86 | 25 Aug |
| 600.87 | 23 Sep |
| 601.17 | 28 Oct |
| 601.18 | 17 Nov |
| 601.21 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 599.76 | 29 Jan |
| 599.69 | 16 Feb |
| 599.21 | 28 Mar |
| 599.59 | 2 Apr  |
| 599.61 | 7 May  |
| 599.85 | 18 Jun |
| 599.92 | 6 Jul  |
| 600.04 | 2 Aug  |
| 600.18 | 19 Sep |
| 600.23 | 27 Oct |
| 600.25 | 15 Nov |
| 600.03 | 22 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 601.20         |     |     |     |     |     |     |     |     |     |     |     | 1   | 601.20         | 1                          |
| 601.00         |     |     |     |     |     |     |     |     |     | 2   | 4   | 2   | 601.00         | 9                          |
| 600.80         |     |     |     |     |     |     |     | 1   | 3   | 2   | 5   | 11  | 600.80         | 31                         |
| 600.60         | 2   |     |     |     |     |     |     | 6   | 11  | 10  | 12  | 11  | 600.60         | 83                         |
| 600.40         | 1   |     |     |     |     |     |     | 9   | 14  | 14  | 6   | 5   | 600.40         | 132                        |
| 600.20         | 8   | 2   |     | 1   | 1   | 1   |     | 7   | 1   | 3   | 3   |     | 600.20         | 159                        |
| 600.00         | 14  | 10  |     | 2   | 5   | 16  | 20  | 8   | 1   |     |     | 1   | 600.00         | 236                        |
| 599.80         | 5   | 10  | 11  | 17  | 16  | 13  | 11  |     |     |     |     |     | 599.80         | 319                        |
| 599.60         | 1   | 7   | 11  | 9   | 9   |     |     |     |     |     |     |     | 599.60         | 356                        |
| 599.40         |     |     | 6   | 1   |     |     |     |     |     |     |     |     | 599.40         | 363                        |
| 599.20         |     |     | 3   |     |     |     |     |     |     |     |     |     | 599.20         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9004: Pt. Iroquois, Brimley, Michigan on Lake Superior (Whitefish Bay

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 600.56  | 600.23  | 599.44  | 599.69  | 599.80  | 599.99  | 600.11  | 600.10  | 600.50  | 600.63  | 600.68  | 600.93  |
| 2    | 600.30  | 599.98  | 599.98  | 599.59  | 599.79  | 600.00  | 600.05  | 600.04  | 600.59  | 600.73  | 600.45  | 600.86  |
| 3    | 600.28  | 600.04  | 599.74  | 599.63  | 599.78  | 600.03  | 600.00  | 600.10  | 600.67  | 600.52  | 600.31  | 601.21  |
| 4    | 600.64  | 600.04  | 599.84  | 599.74  | 599.80  | 599.99  | 599.95  | 600.15  | 600.82  | 600.74  | 600.43  | 601.01  |
| 5    | 600.71  | 600.20  | 599.69  | 599.70  | 599.87  | 600.02  | 599.95  | 600.18  | 600.82  | 600.68  | 600.63  | 600.78  |
| 6    | 600.38  | 600.07  | 599.76  | 599.98  | 599.85  | 600.01  | 599.92  | 600.38  | 600.77  | 600.56  | 600.71  | 600.94  |
| 7    | 600.18  | 600.24  | 599.66  | 599.79  | 599.61  | 600.02  | 599.95  | 600.19  | 600.51  | 600.43  | 600.73  | 600.95  |
| 8    | 600.34  | 599.97  | 599.47  | 599.68  | 599.62  | 600.08  | 600.04  | 600.31  | 600.49  | 600.46  | 600.71  | 600.98  |
| 9    | 600.36  | 600.10  | 599.91  | 599.67  | 599.75  | 600.14  | 600.00  | 600.32  | 600.65  | 600.44  | 600.55  | 600.87  |
| 10   | 600.16  | 599.95  | 599.70  | 599.87  | 600.04  | 600.00  | 600.03  | 600.19  | 600.75  | 601.03  | 600.92  | 600.93  |
| 11   | 600.17  | 599.92  | 599.60  | 599.84  | 599.80  | 599.96  | 600.14  | 600.19  | 600.44  | 600.95  | 600.64  | 600.70  |
| 12   | 600.23  | 600.08  | 599.44  | 599.77  | 599.82  | 599.93  | 600.07  | 600.21  | 600.60  | 600.70  | 600.31  | 600.54  |
| 13   | 600.33  | 599.95  | 599.88  | 599.85  | 600.30  | 599.92  | 599.93  | 600.21  | 600.67  | 600.48  | 600.73  | 600.76  |
| 14   | 600.01  | 599.75  | 599.81  | 600.08  | 599.78  | 599.89  | 600.10  | 600.55  | 600.78  | 600.49  | 600.83  | 600.84  |
| 15   | 600.08  | 599.97  | 599.86  | 600.00  | 599.91  | 600.05  | 599.98  | 600.54  | 600.52  | 600.33  | 600.25  | 600.96  |
| 16   | 599.91  | 599.69  | 599.82  | 599.82  | 600.13  | 600.03  | 600.10  | 600.43  | 600.26  | 600.36  | 600.46  | 600.71  |
| 17   | 600.09  | 599.91  | 599.70  | 600.12  | 599.99  | 599.94  | 600.07  | 600.61  | 600.48  | 600.61  | 601.18  | 600.86  |
| 18   | 600.11  | 599.77  | 599.88  | 600.22  | 599.90  | 599.85  | 600.10  | 600.57  | 600.44  | 600.70  | 600.83  | 600.52  |
| 19   | 599.94  | 599.79  | 599.84  | 599.98  | 599.91  | 599.91  | 600.09  | 600.54  | 600.18  | 600.56  | 600.57  | 600.49  |
| 20   | 600.25  | 600.20  | 599.78  | 599.94  | 599.92  | 600.04  | 600.08  | 600.56  | 600.75  | 600.44  | 601.04  | 600.77  |
| 21   | 600.11  | 599.78  | 599.59  | 599.88  | 599.98  | 599.89  | 600.12  | 600.51  | 600.77  | 600.54  | 600.86  | 600.77  |
| 22   | 600.00  | 600.05  | 599.34  | 599.82  | 600.03  | 600.11  | 600.07  | 600.34  | 600.49  | 600.60  | 600.71  | 600.03  |
| 23   | 600.17  | 600.10  | 599.66  | 599.90  | 600.02  | 600.05  | 600.01  | 600.36  | 600.87  | 600.44  | 600.61  | 600.62  |
| 24   | 600.15  | 600.02  | 599.39  | 599.89  | 600.12  | 599.86  | 600.01  | 600.59  | 600.64  | 600.71  | 600.43  | 600.78  |
| 25   | 600.06  | 599.90  | 599.44  | 599.80  | 599.94  | 600.20  | 600.13  | 600.86  | 600.75  | 600.71  | 600.66  | 601.05  |
| 26   | 600.10  | 599.75  | 599.82  | 599.94  | 599.91  | 600.18  | 600.09  | 600.80  | 600.43  | 600.66  | 600.62  | 600.56  |
| 27   | 600.18  | 599.76  | 599.87  | 599.91  | 599.91  | 600.09  | 599.98  | 600.62  | 600.78  | 600.23  | 600.91  | 600.48  |
| 28   | 599.92  | 599.81  | 599.21  | 599.95  | 599.92  | 600.15  | 599.93  | 600.77  | 600.52  | 601.17  | 601.04  | 600.93  |
| 29   | 599.76  | 599.81  | 599.64  | 599.92  | 599.89  | 600.24  | 600.02  | 600.77  | 600.41  | 600.93  | 600.77  | 600.68  |
| 30   | 599.95  |         | 599.80  | 599.86  | 599.96  | 600.18  | 600.15  | 600.65  | 600.51  | 600.59  | 601.11  | 600.67  |
| 31   | 600.15  |         | 599.72  |         | 599.99  |         | 599.98  | 600.47  |         | 600.42  |         | 600.61  |
| MEAN | 600.18  | 599.96  | 599.69  | 599.86  | 599.90  | 600.02  | 600.04  | 600.42  | 600.60  | 600.61  | 600.69  | 600.77  |
| MAX. | 601.07  | 600.97  | 600.36  | 600.55  | 601.16  | 601.02  | 600.80  | 601.10  | 601.23  | 601.65  | 601.50  | 601.78  |
|      | 1900/04 | 2400/22 | 1200/02 | 2300/17 | 0700/13 | 0900/25 | 1400/15 | 2200/25 | 2100/20 | 0800/28 | 1700/17 | 0900/03 |
| MIN. | 599.38  | 599.31  | 598.73  | 599.41  | 599.27  | 599.17  | 598.88  | 599.60  | 599.95  | 599.77  | 599.87  | 599.34  |
|      | 0900/16 | 0300/26 | 0200/25 | 2400/02 | 2400/08 | 0800/19 | 1200/15 | 0100/03 | 1400/19 | 1900/27 | 1800/15 | 0700/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 600.23

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 9018: Marquette Coast Guard, Marquette, Michigan on Lake Superior

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 600.85 Nov  
 Daily mean elevation: 601.12 27 Nov  
 Instant/hourly Elevation: 601.53 1300/27 Dec

LOWEST  
 Monthly mean elevation: 599.85 Mar  
 Daily mean elevation: 599.67 22 Mar  
 Instant/hourly Elevation: 599.17 1000/15 Jul

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.48 | 12 Jan |
| 600.26 | 20 Feb |
| 600.08 | 13 Mar |
| 600.04 | 18 Apr |
| 600.16 | 16 May |
| 600.19 | 26 Jun |
| 600.20 | 31 Jul |
| 600.81 | 25 Aug |
| 600.92 | 4 Sep  |
| 600.97 | 4 Oct  |
| 601.12 | 27 Nov |
| 601.03 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.03 | 29 Jan |
| 599.88 | 28 Feb |
| 599.67 | 22 Mar |
| 599.82 | 2 Apr  |
| 599.89 | 8 May  |
| 600.07 | 24 Jun |
| 600.09 | 13 Jul |
| 600.17 | 2 Aug  |
| 600.57 | 16 Sep |
| 600.53 | 14 Oct |
| 600.55 | 3 Nov  |
| 600.60 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 601.00                                                  |     |     |     |     |     |     |     |     |     |     | 5   | 2   | 601.00         | 7                          |
| 600.80                                                  |     |     |     |     |     |     |     | 1   | 2   | 4   | 12  | 17  | 600.80         | 43                         |
| 600.60                                                  |     |     |     |     |     |     |     | 13  | 26  | 20  | 12  | 11  | 600.60         | 125                        |
| 600.40                                                  | 4   |     |     |     |     |     |     | 5   | 2   | 7   | 1   | 1   | 600.40         | 145                        |
| 600.20                                                  | 15  | 1   |     |     |     |     |     | 10  |     |     |     |     | 600.20         | 171                        |
| 600.00                                                  | 12  | 14  | 2   | 4   | 21  | 30  | 31  | 2   |     |     |     |     | 600.00         | 287                        |
| 599.80                                                  |     | 14  | 21  | 26  | 10  |     |     |     |     |     |     |     | 599.80         | 358                        |
| 599.60                                                  |     |     | 8   |     |     |     |     |     |     |     |     |     | 599.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9018: Marquette Coast Guard, Marquette, Michigan on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 600.38  | 600.20  | 599.75  | 599.82  | 599.92  | 600.13  | 600.14  | 600.20  | 600.65  | 600.69  | 600.80  | 600.97  |
| 2    | 600.27  | 600.12  | 599.95  | 599.82  | 599.94  | 600.13  | 600.13  | 600.17  | 600.69  | 600.77  | 600.62  | 600.92  |
| 3    | 600.28  | 600.07  | 599.89  | 599.83  | 599.94  | 600.12  | 600.13  | 600.24  | 600.77  | 600.70  | 600.55  | 601.03  |
| 4    | 600.35  | 600.18  | 599.82  | 599.83  | 599.93  | 600.09  | 600.12  | 600.31  | 600.92  | 600.97  | 600.69  | 600.96  |
| 5    | 600.44  | 600.15  | 599.80  | 599.89  | 599.94  | 600.11  | 600.10  | 600.30  | 600.82  | 600.81  | 600.95  | 600.87  |
| 6    | 600.37  | 600.13  | 599.81  | 599.94  | 599.92  | 600.12  | 600.12  | 600.39  | 600.71  | 600.67  | 601.07  | 600.90  |
| 7    | 600.21  | 600.10  | 599.81  | 599.88  | 599.89  | 600.15  | 600.11  | 600.37  | 600.68  | 600.65  | 600.83  | 600.99  |
| 8    | 600.26  | 600.07  | 599.81  | 599.84  | 599.89  | 600.16  | 600.13  | 600.39  | 600.67  | 600.69  | 600.73  | 600.91  |
| 9    | 600.31  | 600.13  | 599.90  | 599.89  | 599.99  | 600.15  | 600.10  | 600.36  | 600.66  | 600.62  | 600.71  | 600.90  |
| 10   | 600.18  | 600.10  | 599.85  | 599.92  | 600.02  | 600.10  | 600.14  | 600.30  | 600.70  | 600.86  | 600.88  | 600.96  |
| 11   | 600.20  | 600.09  | 599.87  | 599.93  | 600.00  | 600.09  | 600.16  | 600.31  | 600.68  | 600.90  | 600.74  | 600.89  |
| 12   | 600.48  | 600.14  | 599.91  | 599.92  | 600.04  | 600.07  | 600.13  | 600.37  | 600.67  | 600.72  | 600.68  | 600.67  |
| 13   | 600.45  | 600.03  | 600.08  | 599.99  | 600.11  | 600.10  | 600.09  | 600.43  | 600.68  | 600.54  | 600.71  | 600.81  |
| 14   | 600.19  | 599.97  | 600.04  | 600.03  | 600.02  | 600.09  | 600.13  | 600.50  | 600.68  | 600.53  | 600.78  | 601.02  |
| 15   | 600.16  | 600.14  | 599.96  | 600.03  | 600.07  | 600.10  | 600.17  | 600.57  | 600.65  | 600.56  | 600.73  | 600.91  |
| 16   | 600.13  | 599.95  | 599.90  | 599.94  | 600.16  | 600.12  | 600.11  | 600.67  | 600.57  | 600.56  | 600.75  | 600.75  |
| 17   | 600.20  | 599.97  | 599.83  | 600.04  | 600.09  | 600.10  | 600.16  | 600.64  | 600.60  | 600.66  | 600.90  | 600.87  |
| 18   | 600.22  | 599.94  | 599.88  | 600.04  | 600.06  | 600.07  | 600.15  | 600.67  | 600.61  | 600.70  | 600.92  | 600.69  |
| 19   | 600.16  | 599.98  | 599.92  | 599.99  | 600.06  | 600.09  | 600.14  | 600.62  | 600.61  | 600.63  | 600.88  | 600.74  |
| 20   | 600.47  | 600.26  | 599.86  | 599.99  | 600.06  | 600.12  | 600.15  | 600.63  | 600.76  | 600.58  | 601.02  | 600.82  |
| 21   | 600.27  | 599.91  | 599.76  | 599.96  | 600.07  | 600.07  | 600.16  | 600.64  | 600.80  | 600.66  | 600.94  | 600.84  |
| 22   | 600.13  | 599.96  | 599.67  | 599.97  | 600.10  | 600.14  | 600.15  | 600.58  | 600.73  | 600.66  | 600.86  | 600.60  |
| 23   | 600.24  | 599.99  | 599.76  | 599.98  | 600.08  | 600.13  | 600.13  | 600.60  | 600.71  | 600.63  | 600.85  | 600.67  |
| 24   | 600.23  | 600.00  | 599.74  | 599.93  | 600.07  | 600.07  | 600.12  | 600.66  | 600.73  | 600.72  | 600.80  | 600.78  |
| 25   | 600.29  | 599.94  | 599.77  | 599.95  | 600.07  | 600.13  | 600.17  | 600.81  | 600.76  | 600.69  | 600.85  | 600.83  |
| 26   | 600.23  | 599.93  | 599.86  | 599.96  | 600.09  | 600.19  | 600.15  | 600.79  | 600.73  | 600.63  | 600.95  | 600.77  |
| 27   | 600.15  | 599.89  | 599.89  | 600.00  | 600.09  | 600.13  | 600.12  | 600.70  | 600.78  | 600.55  | 601.12  | 600.67  |
| 28   | 600.11  | 599.88  | 599.77  | 599.95  | 600.13  | 600.16  | 600.10  | 600.74  | 600.72  | 600.71  | 601.11  | 600.83  |
| 29   | 600.03  | 599.96  | 599.82  | 599.94  | 600.10  | 600.16  | 600.11  | 600.77  | 600.66  | 600.76  | 600.93  | 600.75  |
| 30   | 600.15  |         | 599.82  | 599.92  | 600.11  | 600.17  | 600.20  | 600.74  | 600.64  | 600.64  | 601.01  | 600.74  |
| 31   | 600.22  |         | 599.84  |         | 600.12  |         | 600.20  | 600.69  |         | 600.56  |         | 600.75  |
| MEAN | 600.25  | 600.04  | 599.85  | 599.94  | 600.03  | 600.12  | 600.14  | 600.52  | 600.70  | 600.68  | 600.85  | 600.83  |
| MAX. | 600.99  | 600.56  | 600.32  | 600.31  | 600.50  | 600.79  | 601.06  | 601.15  | 601.10  | 601.19  | 601.38  | 601.53  |
|      | 2200/12 | 1100/20 | 1000/13 | 1200/17 | 0900/13 | 1000/25 | 1400/15 | 1300/16 | 1000/04 | 2400/10 | 2200/27 | 1300/27 |
| MIN. | 599.75  | 599.49  | 599.43  | 599.59  | 599.50  | 599.46  | 599.17  | 599.58  | 600.34  | 600.29  | 600.37  | 600.00  |
|      | 0900/16 | 0200/22 | 1600/24 | 2200/05 | 1300/08 | 2200/24 | 1000/15 | 0400/02 | 1800/01 | 1300/27 | 0100/03 | 0800/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 600.33

ANNUAL SUMMARY OF LEVELS, 1988  
Station 9044: Ontonagon, Michigan on Lake Superior

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 600.93 Dec  
Daily mean elevation: 601.16 16 Nov  
Instant/hourly Elevation: 601.30 0700/16 Nov

LOWEST  
Monthly mean elevation: 599.94 Mar  
Daily mean elevation: 599.84 20 Mar  
Instant/hourly Elevation: 599.21 0800/15 Jul

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.44 | 2 Jan  |
| 600.19 | 2 Feb  |
| 600.16 | 12 Mar |
| 600.16 | 8 Apr  |
| 600.25 | 28 May |
| 600.31 | 2 Jun  |
| 600.33 | 31 Jul |
| 600.87 | 31 Aug |
| 600.92 | 26 Sep |
| 600.84 | 3 Oct  |
| 601.16 | 16 Nov |
| 601.06 | 9 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.17 | 26 Jan |
| 599.95 | 23 Feb |
| 599.84 | 20 Mar |
| 599.97 | 6 Apr  |
| 600.01 | 13 May |
| 600.13 | 10 Jun |
| 600.17 | 15 Jul |
| 600.29 | 1 Aug  |
| 600.72 | 6 Sep  |
| 600.64 | 28 Oct |
| 600.65 | 2 Nov  |
| 600.82 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 601.00                                                  |     |     |     |     |     |     |     |     |     |     | 13  | 5   | 601.00         | 18                         |
| 600.80                                                  |     |     |     |     |     |     |     | 6   | 18  | 3   | 9   | 26  | 600.80         | 80                         |
| 600.60                                                  |     |     |     |     |     |     |     | 11  | 12  | 28  | 8   |     | 600.60         | 139                        |
| 600.40                                                  | 6   |     |     |     |     |     |     | 9   |     |     |     |     | 600.40         | 154                        |
| 600.20                                                  | 22  |     |     |     | 4   | 15  | 30  | 5   |     |     |     |     | 600.20         | 230                        |
| 600.00                                                  | 3   | 19  | 6   | 19  | 27  | 15  | 1   |     |     |     |     |     | 600.00         | 320                        |
| 599.80                                                  |     | 10  | 25  | 11  |     |     |     |     |     |     |     |     | 599.80         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9044: Ontonagon, Michigan on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 600.42  | 600.16  | 600.03  | 599.98  | 600.07  | 600.28  | 600.21  | 600.29  | 600.85  | 600.75  | 600.65  | 600.98  |
| 2    | 600.44  | 600.19  | 599.92  | 600.03  | 600.07  | 600.31  | 600.24  | 600.30  | 600.89  | 600.74  | 600.65  | 600.96  |
| 3    | 600.43  | 600.16  | 599.92  | 600.06  | 600.06  | 600.22  | 600.26  | 600.34  | 600.87  | 600.84  | 600.67  | 600.98  |
| 4    | 600.42  | 600.16  | 599.84  | 600.05  | 600.04  | 600.24  | 600.28  | 600.36  | 600.79  | 600.82  | 600.74  | 600.97  |
| 5    | 600.41  | 600.14  | 599.85  | 600.01  | 600.02  | 600.22  | 600.29  | 600.39  | 600.73  | 600.78  | 600.84  | 601.01  |
| 6    | 600.43  | 600.15  | 599.87  | 599.97  | 600.07  | 600.18  | 600.23  | 600.45  | 600.72  | 600.77  | 600.84  | 600.99  |
| 7    | 600.33  | 600.13  | 599.96  | 600.11  | 600.11  | 600.28  | 600.25  | 600.52  | 600.82  | 600.79  | 600.79  | 601.02  |
| 8    | 600.38  | 600.12  | 600.07  | 600.16  | 600.10  | 600.18  | 600.23  | 600.44  | 600.81  | 600.83  | 600.78  | 601.00  |
| 9    | 600.33  | 600.11  | 599.97  | 600.09  | 600.12  | 600.13  | 600.23  | 600.42  | 600.74  | 600.80  | 600.87  | 601.06  |
| 10   | 600.21  | 600.09  | 600.03  | 600.00  | 600.02  | 600.13  | 600.24  | 600.46  | 600.76  | 600.73  | 600.80  | 601.02  |
| 11   | 600.33  | 600.10  | 600.10  | 600.00  | 600.11  | 600.17  | 600.22  | 600.47  | 600.86  | 600.69  | 600.81  | 600.99  |
| 12   | 600.34  | 600.04  | 600.16  | 600.04  | 600.13  | 600.22  | 600.24  | 600.48  | 600.76  | 600.64  | 600.94  | 600.91  |
| 13   | 600.27  | 600.03  | 599.91  | 600.00  | 600.01  | 600.26  | 600.22  | 600.55  | 600.75  | 600.67  | 600.81  | 600.96  |
| 14   | 600.28  | 600.12  | 599.90  | 599.98  | 600.20  | 600.23  | 600.22  | 600.58  | 600.75  | 600.70  | 600.80  | 600.95  |
| 15   | 600.32  | 600.07  | 599.87  | 599.99  | 600.16  | 600.14  | 600.17  | 600.65  | 600.79  | 600.74  | 601.01  | 600.83  |
| 16   | 600.29  | 600.08  | 599.86  | 600.05  | 600.11  | 600.20  | 600.24  | 600.68  | 600.85  | 600.69  | 601.16  | 600.90  |
| 17   | 600.24  | 600.02  | 599.87  | 600.03  | 600.13  | 600.24  | 600.22  | 600.72  | 600.76  | 600.72  | 601.09  | 600.91  |
| 18   | 600.31  | 600.05  | 599.84  | 599.98  | 600.20  | 600.25  | 600.25  | 600.68  | 600.81  | 600.70  | 601.10  | 600.91  |
| 19   | 600.35  | 600.08  | 599.86  | 599.99  | 600.19  | 600.16  | 600.25  | 600.67  | 600.90  | 600.68  | 601.11  | 600.97  |
| 20   | 600.33  | 599.98  | 599.84  | 600.01  | 600.18  | 600.17  | 600.30  | 600.67  | 600.82  | 600.72  | 601.01  | 600.93  |
| 21   | 600.24  | 599.98  | 599.91  | 599.99  | 600.19  | 600.23  | 600.29  | 600.74  | 600.84  | 600.73  | 600.99  | 600.87  |
| 22   | 600.25  | 600.00  | 599.99  | 600.04  | 600.14  | 600.16  | 600.28  | 600.78  | 600.87  | 600.69  | 601.00  | 601.03  |
| 23   | 600.27  | 599.95  | 599.90  | 599.99  | 600.13  | 600.22  | 600.28  | 600.80  | 600.78  | 600.78  | 601.05  | 600.84  |
| 24   | 600.27  | 599.98  | 599.99  | 600.01  | 600.12  | 600.26  | 600.28  | 600.78  | 600.86  | 600.78  | 601.11  | 600.87  |
| 25   | 600.29  | 599.96  | 599.97  | 600.03  | 600.13  | 600.20  | 600.24  | 600.75  | 600.83  | 600.77  | 600.99  | 600.82  |
| 26   | 600.17  | 600.00  | 599.94  | 600.03  | 600.16  | 600.19  | 600.28  | 600.82  | 600.92  | 600.73  | 601.13  | 600.94  |
| 27   | 600.18  | 599.97  | 599.92  | 600.02  | 600.20  | 600.19  | 600.31  | 600.87  | 600.85  | 600.79  | 601.11  | 600.89  |
| 28   | 600.24  | 599.97  | 600.10  | 600.02  | 600.25  | 600.23  | 600.28  | 600.85  | 600.86  | 600.64  | 601.02  | 600.86  |
| 29   | 600.23  | 599.96  | 599.97  | 600.04  | 600.24  | 600.18  | 600.26  | 600.85  | 600.81  | 600.69  | 601.06  | 600.87  |
| 30   | 600.25  |         | 599.92  | 600.04  | 600.22  | 600.19  | 600.29  | 600.86  | 600.75  | 600.66  | 601.01  | 600.87  |
| 31   | 600.20  |         | 599.95  |         | 600.24  |         | 600.33  | 600.87  |         | 600.71  |         | 600.87  |
| MEAN | 600.30  | 600.06  | 599.94  | 600.02  | 600.13  | 600.21  | 600.26  | 600.62  | 600.81  | 600.73  | 600.93  | 600.93  |
| MAX. | 600.60  | 600.27  | 600.25  | 600.31  | 600.45  | 600.63  | 600.79  | 600.98  | 601.12  | 601.25  | 601.30  | 601.22  |
|      | 0100/01 | 1800/02 | 0300/25 | 2100/08 | 0100/09 | 2400/21 | 2000/15 | 0800/17 | 1400/26 | 0100/04 | 0700/16 | 1900/22 |
| MIN. | 599.96  | 599.81  | 599.74  | 599.60  | 599.62  | 599.64  | 599.21  | 600.09  | 600.63  | 600.47  | 600.49  | 600.68  |
|      | 1600/12 | 0900/23 | 1500/23 | 1300/06 | 0100/13 | 0400/19 | 0800/15 | 0200/03 | 0900/10 | 2400/30 | 0600/02 | 1500/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 600.41

ANNUAL SUMMARY OF LEVELS, 1988  
Station 9064: Duluth, Minnesota on Lake Superior

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 600.99 Nov  
Daily mean elevation: 601.52 26 Nov  
Instant/hourly Elevation: 602.00 1600/26 Nov

LOWEST  
Monthly mean elevation: 600.05 Feb  
Daily mean elevation: 599.73 22 Feb  
Instant/hourly Elevation: 599.01 0700/23 Feb

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.62 | 12 Jan |
| 600.26 | 2 Feb  |
| 600.86 | 11 Mar |
| 600.62 | 8 Apr  |
| 600.42 | 28 May |
| 600.54 | 28 Jun |
| 600.58 | 15 Jul |
| 601.11 | 22 Aug |
| 601.21 | 28 Sep |
| 600.91 | 8 Oct  |
| 601.52 | 26 Nov |
| 601.38 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.05 | 10 Jan |
| 599.73 | 22 Feb |
| 599.80 | 26 Mar |
| 599.93 | 18 Apr |
| 600.14 | 10 May |
| 600.17 | 25 Jun |
| 600.24 | 10 Jul |
| 600.41 | 5 Aug  |
| 600.62 | 9 Sep  |
| 600.26 | 28 Oct |
| 600.68 | 17 Nov |
| 600.66 | 25 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 601.40         |     |     |     |     |     |     |     |     |     |     | 1   |     | 601.40         | 1                          |
| 601.20         |     |     |     |     |     |     |     |     | 1   |     | 3   | 2   | 601.20         | 7                          |
| 601.00         |     |     |     |     |     |     |     | 5   | 4   |     | 9   | 4   | 601.00         | 29                         |
| 600.80         |     |     | 1   |     |     |     |     | 7   | 18  | 12  | 11  | 18  | 600.80         | 96                         |
| 600.60         | 1   |     | 1   | 1   |     |     |     | 9   | 7   | 14  | 6   | 7   | 600.60         | 142                        |
| 600.40         | 9   |     | 1   |     | 2   | 7   | 11  | 10  |     | 4   |     |     | 600.40         | 186                        |
| 600.20         | 15  | 1   | 3   | 2   | 24  | 22  | 20  |     |     | 1   |     |     | 600.20         | 274                        |
| 600.00         | 6   | 19  | 5   | 22  | 5   | 1   |     |     |     |     |     |     | 600.00         | 332                        |
| 599.80         |     | 7   | 19  | 5   |     |     |     |     |     |     |     |     | 599.80         | 363                        |
| 599.60         |     | 2   | 1   |     |     |     |     |     |     |     |     |     | 599.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9064: Duluth, Minnesota on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 600.22  | 600.11  | 600.14  | 600.06  | 600.25  | 600.44  | 600.36  | 600.53  | 600.95  | 600.81  | 600.72  | 600.91  |
| 2    | 600.43  | 600.26  | 599.92  | 600.13  | 600.26  | 600.44  | 600.37  | 600.58  | 600.93  | 600.82  | 600.84  | 600.84  |
| 3    | 600.23  | 600.12  | 599.98  | 600.04  | 600.21  | 600.35  | 600.40  | 600.56  | 600.90  | 600.70  | 600.84  | 600.90  |
| 4    | 600.10  | 600.16  | 599.85  | 600.10  | 600.17  | 600.36  | 600.44  | 600.58  | 600.87  | 600.82  | 600.95  | 600.89  |
| 5    | 600.17  | 599.85  | 599.88  | 600.00  | 600.17  | 600.30  | 600.46  | 600.41  | 600.82  | 600.84  | 600.80  | 600.91  |
| 6    | 600.32  | 600.09  | 599.89  | 599.96  | 600.32  | 600.27  | 600.43  | 600.57  | 600.82  | 600.85  | 600.82  | 600.84  |
| 7    | 600.23  | 599.96  | 600.28  | 600.20  | 600.41  | 600.44  | 600.40  | 600.65  | 600.97  | 600.84  | 600.90  | 600.91  |
| 8    | 600.27  | 600.18  | 600.17  | 600.62  | 600.34  | 600.44  | 600.34  | 600.56  | 600.82  | 600.91  | 600.81  | 600.86  |
| 9    | 600.19  | 600.07  | 599.95  | 600.20  | 600.25  | 600.30  | 600.38  | 600.56  | 600.62  | 600.81  | 601.00  | 600.91  |
| 10   | 600.05  | 600.13  | 600.14  | 600.09  | 600.14  | 600.28  | 600.24  | 600.61  | 600.79  | 600.59  | 600.75  | 600.83  |
| 11   | 600.52  | 600.17  | 600.86  | 600.13  | 600.29  | 600.27  | 600.29  | 600.54  | 601.10  | 600.68  | 600.87  | 600.93  |
| 12   | 600.62  | 600.05  | 600.75  | 600.16  | 600.18  | 600.33  | 600.41  | 600.62  | 600.73  | 600.73  | 601.09  | 600.68  |
| 13   | 600.28  | 600.14  | 599.93  | 600.02  | 600.16  | 600.36  | 600.36  | 600.72  | 600.67  | 600.79  | 600.80  | 600.92  |
| 14   | 600.36  | 600.18  | 599.95  | 600.01  | 600.40  | 600.29  | 600.40  | 600.51  | 600.76  | 600.81  | 600.85  | 601.02  |
| 15   | 600.48  | 600.18  | 599.93  | 599.99  | 600.27  | 600.21  | 600.58  | 600.75  | 600.91  | 600.86  | 601.39  | 600.66  |
| 16   | 600.36  | 600.11  | 599.96  | 600.15  | 600.25  | 600.34  | 600.40  | 600.82  | 601.03  | 600.63  | 600.74  | 600.83  |
| 17   | 600.36  | 600.10  | 599.96  | 599.94  | 600.35  | 600.38  | 600.41  | 601.08  | 600.84  | 600.76  | 600.68  | 600.83  |
| 18   | 600.50  | 600.13  | 599.81  | 599.93  | 600.40  | 600.36  | 600.38  | 601.10  | 601.00  | 600.74  | 601.21  | 600.91  |
| 19   | 600.54  | 600.08  | 599.93  | 600.06  | 600.36  | 600.26  | 600.38  | 600.95  | 601.12  | 600.73  | 601.12  | 601.13  |
| 20   | 600.34  | 599.94  | 599.95  | 600.05  | 600.32  | 600.30  | 600.37  | 600.94  | 600.74  | 600.85  | 600.92  | 600.96  |
| 21   | 600.32  | 599.96  | 600.13  | 600.11  | 600.32  | 600.38  | 600.35  | 601.09  | 600.96  | 600.67  | 601.05  | 601.01  |
| 22   | 600.23  | 599.73  | 600.26  | 600.23  | 600.26  | 600.22  | 600.41  | 601.11  | 600.91  | 600.88  | 601.13  | 601.38  |
| 23   | 600.42  | 599.77  | 599.97  | 600.13  | 600.29  | 600.47  | 600.42  | 600.91  | 600.72  | 600.79  | 601.20  | 600.66  |
| 24   | 600.43  | 599.86  | 600.39  | 600.23  | 600.28  | 600.47  | 600.36  | 600.77  | 600.93  | 600.56  | 601.33  | 600.73  |
| 25   | 600.43  | 599.94  | 599.91  | 600.07  | 600.32  | 600.17  | 600.33  | 600.67  | 600.85  | 600.55  | 601.03  | 600.66  |
| 26   | 600.20  | 600.01  | 599.80  | 600.16  | 600.34  | 600.31  | 600.43  | 600.88  | 601.08  | 600.64  | 601.52  | 601.21  |
| 27   | 600.22  | 600.06  | 600.15  | 600.11  | 600.38  | 600.35  | 600.45  | 600.79  | 600.91  | 600.75  | 601.10  | 600.70  |
| 28   | 600.39  | 599.91  | 600.49  | 600.12  | 600.42  | 600.54  | 600.40  | 600.76  | 601.21  | 600.26  | 601.05  | 600.68  |
| 29   | 600.38  | 600.18  | 599.92  | 600.16  | 600.39  | 600.38  | 600.38  | 600.85  | 600.98  | 600.57  | 601.11  | 600.88  |
| 30   | 600.58  |         | 599.95  | 600.19  | 600.38  | 600.38  | 600.37  | 600.97  | 600.84  | 600.70  | 600.99  | 600.85  |
| 31   | 600.18  |         | 600.00  |         | 600.37  |         | 600.53  | 601.05  |         | 600.72  |         | 601.01  |
| MEAN | 600.33  | 600.05  | 600.07  | 600.11  | 600.30  | 600.35  | 600.39  | 600.76  | 600.89  | 600.73  | 600.99  | 600.89  |
| MAX. | 601.18  | 600.63  | 601.59  | 600.85  | 600.87  | 600.91  | 601.10  | 601.57  | 601.40  | 601.36  | 602.00  | 601.73  |
|      | 0900/12 | 0500/16 | 0300/12 | 1600/08 | 1400/14 | 2200/23 | 0600/15 | 0600/17 | 1400/11 | 0500/27 | 1600/26 | 0600/14 |
| MIN. | 599.70  | 599.01  | 599.53  | 599.43  | 599.40  | 599.51  | 599.66  | 600.11  | 600.36  | 599.90  | 600.24  | 600.02  |
|      | 2100/31 | 0700/23 | 2100/01 | 1000/06 | 0100/13 | 0900/25 | 2400/15 | 1000/14 | 0900/23 | 2300/27 | 0100/17 | 1400/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 600.49

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 9070: Two Harbors, Minnesota on Lake Superior

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 600.30 Jul  
 Daily mean elevation: 600.48 11 Mar  
 Instant/hourly Elevation: 600.98 0300/12 Mar

LOWEST  
 Monthly mean elevation: 599.97 Mar  
 Daily mean elevation: 599.70 22 Feb  
 Instant/hourly Elevation: 599.08 0700/23 Feb

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.48 | 12 Jan |
| 600.20 | 2 Feb  |
| 600.48 | 11 Mar |
| 600.39 | 8 Apr  |
| 600.33 | 28 May |
| 600.33 | 28 Jun |
| 600.35 | 5 Jul  |
|        | Aug    |
|        | Sep    |
|        | Oct    |
|        | Nov    |
|        | Dec    |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.05 | 10 Jan |
| 599.70 | 22 Feb |
| 599.74 | 26 Mar |
| 599.89 | 6 Apr  |
| 600.06 | 10 May |
| 600.14 | 25 Jun |
| 600.25 | 1 Jul  |
|        | Aug    |
|        | Sep    |
|        | Oct    |
|        | Nov    |
|        | Dec    |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 600.40                                                  | 5   |     | 2   |     |     |     |     |     |     |     |     |     | 600.40         | 7                          |
| 600.20                                                  | 16  |     | 2   | 1   | 15  | 21  | 6   |     |     |     |     |     | 600.20         | 68                         |
| 600.00                                                  | 10  | 17  | 6   | 18  | 16  | 9   |     |     |     |     |     |     | 600.00         | 144                        |
| 599.80                                                  |     | 10  | 18  | 11  |     |     |     |     |     |     |     |     | 599.80         | 183                        |
| 599.60                                                  |     | 2   | 3   |     |     |     |     |     |     |     |     |     | 599.60         | 188                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9070: Two Harbors, Minnesota on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug            | Sep | Oct | Nov | Dec |
|------|---------|---------|---------|---------|---------|---------|---------|----------------|-----|-----|-----|-----|
| 1    | 600.20  | 600.04  | 600.06  | 599.97  | 600.17  | 600.33  | 600.25  | /              | /   | /   | /   | /   |
| 2    | 600.39  | 600.20  | 599.83  | 600.02  | 600.16  | 600.32  | 600.27  | /              | /   | /   | /   | /   |
| 3    | 600.22  | 600.06  | 599.91  | 599.97  | 600.13  | 600.24  | 600.30  | /              | /   | /   | /   | /   |
| 4    | 600.08  | 600.10  | 599.80  | 600.00  | 600.09  | 600.25  | 600.32  | /              | /   | /   | /   | /   |
| 5    | 600.13  | 599.84  | 599.82  | 599.93  | 600.10  | 600.21  | 600.35  | /              | /   | /   | /   | /   |
| 6    | 600.27  | 600.03  | 599.83  | 599.89  | 600.17  | 600.17  | 600.32* | /              | /   | /   | /   | /   |
| 7    | 600.20  | 599.91  | 600.12  | 600.08  | 600.27  | 600.31  | /       | /              | /   | /   | /   | /   |
| 8    | 600.21  | 600.10  | 600.04  | 600.39  | 600.26  | 600.26  | /       | /              | /   | /   | /   | /   |
| 9    | 600.17  | 600.02  | 599.88  | 600.10  | 600.18  | 600.19  | /       | /              | /   | /   | /   | /   |
| 10   | 600.05  | 600.07  | 600.03  | 600.03  | 600.06  | 600.20  | /       | /              | /   | /   | /   | /   |
| 11   | 600.41  | 600.11  | 600.48  | 600.05  | 600.20  | 600.20  | /       | /              | /   | /   | /   | /   |
| 12   | 600.48  | 599.99  | 600.45  | 600.08  | 600.10  | 600.24  | /       | /              | /   | /   | /   | /   |
| 13   | 600.22  | 600.07  | 599.84  | 599.98  | 600.07  | 600.27  | /       | /              | /   | /   | /   | /   |
| 14   | 600.31  | 600.12  | 599.85  | 599.95  | 600.30  | 600.23  | /       | /              | /   | /   | /   | /   |
| 15   | 600.39  | 600.10  | 599.85  | 599.93  | 600.20  | 600.15  | /       | /              | /   | /   | /   | /   |
| 16   | 600.31  | 600.04  | 599.90  | 600.10  | 600.17  | 600.22  | /       | /              | /   | /   | /   | /   |
| 17   | 600.30  | 600.04  | 599.91  | 599.91  | 600.24  | 600.28  | /       | /              | /   | /   | /   | /   |
| 18   | 600.42  | 600.07  | 599.76  | 599.90  | 600.31  | 600.27  | /       | /              | /   | /   | /   | /   |
| 19   | 600.44  | 600.02  | 599.84  | 600.01  | 600.28  | 600.21  | /       | /              | /   | /   | /   | /   |
| 20   | 600.25  | 599.87  | 599.87  | 599.99  | 600.25  | 600.19  | /       | /              | /   | /   | /   | /   |
| 21   | 600.27  | 599.93  | 600.03  | 600.03  | 600.23  | 600.30  | /       | /              | /   | /   | /   | /   |
| 22   | 600.18  | 599.70  | 600.13  | 600.13  | 600.19  | 600.16  | /       | /              | /   | /   | /   | /   |
| 23   | 600.34  | 599.73  | 599.89  | 600.05  | 600.20  | 600.30  | /       | /              | /   | /   | /   | /   |
| 24   | 600.35  | 599.81  | 600.23  | 600.12  | 600.19  | 600.32  | /       | /              | /   | /   | /   | /   |
| 25   | 600.31  | 599.91  | 599.89  | 600.04  | 600.23  | 600.14  | /       | /              | /   | /   | /   | /   |
| 26   | 600.15  | 599.95  | 599.74  | 600.07  | 600.26  | 600.20  | /       | /              | /   | /   | /   | /   |
| 27   | 600.16  | 599.99  | 599.99  | 600.03  | 600.31  | 600.25  | /       | /              | /   | /   | /   | /   |
| 28   | 600.32  | 599.86  | 600.30  | 600.05  | 600.33  | 600.33  | /       | /              | /   | /   | /   | /   |
| 29   | 600.28  | 600.05  | 599.88  | 600.07  | 600.30  | 600.21  | /       | /              | /   | /   | /   | /   |
| 30   | 600.42  |         | 599.89  | 600.09  | 600.29  | 600.24  | /       | /              | /   | /   | /   | /   |
| 31   | 600.12  |         | 599.92  |         | 600.27  |         | /       | /              | /   | /   | /   | /   |
| MEAN | 600.27  | 599.99  | 599.97  | 600.03  | 600.21  | 600.24  | 600.30  | /              | /   | /   | /   | /   |
| MAX. | 600.93  | 600.52  | 600.98  | 600.52  | 600.64  | 600.69  | 600.56  | STATION CLOSED |     |     |     |     |
|      | 0900/12 | 0400/16 | 0300/12 | 1700/08 | 1300/12 | 2200/23 | 0800/06 |                |     |     |     |     |
| MIN. | 599.65  | 599.08  | 599.49  | 599.53  | 599.44  | 599.60  | 600.13  |                |     |     |     |     |
|      | 2100/31 | 0700/23 | 2000/01 | 1000/06 | 0100/13 | 0200/22 | 1200/05 |                |     |     |     |     |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 600.14

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 9090: Grand Marais, Minnesota on Lake Superior

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 600.80 Nov  
 Daily mean elevation: 601.05 26 Nov  
 Instant/hourly Elevation: 601.39 0400/20 Dec

LOWEST  
 Monthly mean elevation: 599.82 Mar  
 Daily mean elevation: 599.70 22 Feb  
 Instant/hourly Elevation: 599.37 1500/23 Feb

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.37 | 2 Jan  |
| 600.09 | 2 Feb  |
| 600.05 | 12 Mar |
| 600.06 | 8 Apr  |
| 600.15 | 28 May |
| 600.13 | 21 Jun |
| 600.16 | 23 Jul |
| 600.81 | 22 Aug |
| 600.83 | 28 Sep |
| 600.72 | 8 Oct  |
| 601.05 | 26 Nov |
| 601.03 | 22 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.01 | 31 Jan |
| 599.70 | 22 Feb |
| 599.71 | 18 Mar |
| 599.77 | 6 Apr  |
| 599.90 | 13 May |
| 600.01 | 25 Jun |
| 600.05 | 11 Jul |
| 600.11 | 1 Aug  |
| 600.54 | 13 Sep |
| 600.33 | 28 Oct |
| 600.52 | 1 Nov  |
| 600.60 | 28 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(ft.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(ft.) | No. of days<br>above elev. |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| 601.00         |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 601.00         | 3                          |
| 600.80         |     |     |     |     |     |     |     | 1   | 2   |     | 14  | 6   | 600.80         | 26                         |
| 600.60         |     |     |     |     |     |     |     | 13  | 22  | 14  | 11  | 22  | 600.60         | 108                        |
| 600.40         |     |     |     |     |     |     |     | 5   | 6   | 16  | 3   | 2   | 600.40         | 140                        |
| 600.20         | 12  |     |     |     |     |     |     | 9   |     | 1   |     |     | 600.20         | 162                        |
| 600.00         | 19  | 2   | 3   | 2   | 21  | 30  | 31  | 3   |     |     |     |     | 600.00         | 273                        |
| 599.80         |     | 23  | 9   | 25  | 10  |     |     |     |     |     |     |     | 599.80         | 340                        |
| 599.60         |     | 4   | 19  | 3   |     |     |     |     |     |     |     |     | 599.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9090: Grand Marais, Minnesota on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 600.21  | 599.96  | 599.91  | 599.80  | 599.97  | 600.12  | 600.11  | 600.11  | 600.75  | 600.66  | 600.52  | 600.86  |
| 2    | 600.37  | 600.09  | 599.72  | 599.83  | 599.98  | 600.11  | 600.13  | 600.18  | 600.72  | 600.64  | 600.60  | 600.86  |
| 3    | 600.23  | 599.98  | 599.79  | 599.82  | 599.97  | 600.08  | 600.15  | 600.24  | 600.67  | 600.64  | 600.60  | 600.77  |
| 4    | 600.14  | 600.00  | 599.73  | 599.85  | 599.96  | 600.10  | 600.15  | 600.29  | 600.66  | 600.65  | 600.62  | 600.78  |
| 5    | 600.15  | 599.90  | 599.76  | 599.80  | 599.94  | 600.10  | 600.14  | 600.24  | 600.65  | 600.66  | 600.63  | 600.89  |
| 6    | 600.22  | 599.97  | 599.75  | 599.77  | 599.97  | 600.08  | 600.13  | 600.16* | 600.66  | 600.70  | 600.66  | 600.78  |
| 7    | 600.22  | 599.90  | 599.87  | 599.92  | 600.02  | 600.12  | 600.07  | 600.32* | 600.76  | 600.72  | 600.68  | 600.78  |
| 8    | 600.14  | 600.01  | 599.88  | 600.06  | 599.97  | 600.04  | 600.05  | 600.23  | 600.73  | 600.72  | 600.70  | 600.74  |
| 9    | 600.14  | 599.92  | 599.78  | 599.97  | 600.02  | 600.04  | 600.12  | 600.27  | 600.59  | 600.69  | 600.78  | 600.77  |
| 10   | 600.09  | 599.96  | 599.87  | 599.89  | 599.95  | 600.08  | 600.08  | 600.31  | 600.58  | 600.49  | 600.64  | 600.72  |
| 11   | 600.22  | 599.98  | 600.02  | 599.94  | 600.01  | 600.09  | 600.05  | 600.29  | 600.72  | 600.50  | 600.73  | 600.79  |
| 12   | 600.29  | 599.88  | 600.05  | 599.96  | 599.93  | 600.11  | 600.09  | 600.30  | 600.59  | 600.55  | 600.85  | 600.76  |
| 13   | 600.14  | 599.97  | 599.73  | 599.89  | 599.90  | 600.09  | 600.10  | 600.45  | 600.54  | 600.59  | 600.72  | 600.79  |
| 14   | 600.21  | 600.00  | 599.76  | 599.86  | 600.08  | 600.06  | 600.07  | 600.42  | 600.57  | 600.61  | 600.68  | 600.77  |
| 15   | 600.23  | 599.95  | 599.75  | 599.86  | 600.04  | 600.04  | 600.13  | 600.48  | 600.62  | 600.64  | 600.93  | 600.63  |
| 16   | 600.23  | 599.96  | 599.77  | 600.01  | 600.01  | 600.08  | 600.15  | 600.54  | 600.69  | 600.56  | 600.88  | 600.73  |
| 17   | 600.19  | 599.92  | 599.81  | 599.90  | 600.05  | 600.11  | 600.15  | 600.70  | 600.62  | 600.57  | 600.68  | 600.69  |
| 18   | 600.23  | 599.96  | 599.71  | 599.83  | 600.11  | 600.08  | 600.16  | 600.69  | 600.69  | 600.56  | 600.93  | 600.73  |
| 19   | 600.27  | 599.95  | 599.73  | 599.91  | 600.09  | 600.07  | 600.12  | 600.66  | 600.82  | 600.58  | 600.96  | 600.84  |
| 20   | 600.10  | 599.78  | 599.72  | 599.88  | 600.10  | 600.08  | 600.14  | 600.66  | 600.66  | 600.64  | 600.81  | 600.74  |
| 21   | 600.16  | 599.83  | 599.85  | 599.90  | 600.07  | 600.13  | 600.12  | 600.70  | 600.72  | 600.54  | 600.88  | 600.81  |
| 22   | 600.14  | 599.70  | 599.92  | 599.93  | 600.04  | 600.05  | 600.15  | 600.81  | 600.73  | 600.60  | 600.93  | 601.03  |
| 23   | 600.13  | 599.74  | 599.75  | 599.89  | 600.05  | 600.10  | 600.16  | 600.76  | 600.60  | 600.64  | 600.94  | 600.65  |
| 24   | 600.19  | 599.78  | 599.91  | 599.95  | 600.01  | 600.12  | 600.13  | 600.62  | 600.73  | 600.51  | 601.03  | 600.65  |
| 25   | 600.14  | 599.81  | 599.90  | 599.93  | 600.06  | 600.01  | 600.08  | 600.54  | 600.62  | 600.49  | 600.91  | 600.60  |
| 26   | 600.07  | 599.85  | 599.72  | 599.92  | 600.07  | 600.08  | 600.14  | 600.66  | 600.79  | 600.50  | 601.05  | 600.85  |
| 27   | 600.06  | 599.87  | 599.80  | 599.90  | 600.11  | 600.09  | 600.13  | 600.64  | 600.70  | 600.66  | 600.92  | 600.65  |
| 28   | 600.19  | 599.81  | 600.03  | 599.91  | 600.15  | 600.09  | 600.14  | 600.62  | 600.83  | 600.33  | 600.92  | 600.60  |
| 29   | 600.16  | 599.87  | 599.80  | 599.92  | 600.14  | 600.08  | 600.07  | 600.64  | 600.78  | 600.48  | 600.95  | 600.73  |
| 30   | 600.19  |         | 599.78  | 599.93  | 600.14  | 600.09  | 600.13  | 600.67  | 600.73  | 600.56  | 600.86  | 600.67  |
| 31   | 600.01  |         | 599.77  |         | 600.13  |         | 600.15  | 600.72  |         | 600.59  |         | 600.76  |
| MEAN | 600.18  | 599.91  | 599.82  | 599.90  | 600.03  | 600.08  | 600.12  | 600.48  | 600.68  | 600.59  | 600.80  | 600.76  |
| MAX. | 600.75  | 600.34  | 600.51  | 600.23  | 600.35  | 600.43  | 600.41  | 601.11  | 601.07  | 600.97  | 601.39  | 601.39  |
|      | 0900/16 | 1500/02 | 1000/12 | 0400/17 | 2300/08 | 1300/24 | 1200/15 | 0600/17 | 1300/26 | 0500/27 | 0400/16 | 0400/20 |
| MIN. | 599.71  | 599.37  | 599.51  | 599.56  | 599.43  | 599.77  | 599.72  | 599.89  | 600.36  | 600.04  | 600.36  | 600.07  |
|      | 2100/31 | 1500/23 | 0200/02 | 1000/06 | 0100/13 | 1000/15 | 2200/29 | 2200/01 | 0800/23 | 0800/28 | 1900/05 | 1800/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 600.28

# Water Level Stages for Lake Ontario at Oswego

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Feet above  
IGLD (1955)  
~~~~~  
Chart Datum 242.80

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1946   | 1952   | 1952   | 1973   | 1952   | 1952   | 1947   | 1947   | 1947   | 1945   | 1945   | 1945   |
| HIGH | 246.10 | 246.46 | 246.77 | 247.69 | 247.95 | 248.06 | 247.74 | 247.45 | 246.91 | 246.33 | 246.18 | 246.19 |
| MEAN | 244.08 | 244.16 | 244.43 | 245.10 | 245.50 | 245.62 | 245.52 | 245.17 | 244.74 | 244.35 | 244.10 | 244.03 |
|      | 1935   | 1936   | 1935   | 1935   | 1935   | 1935   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   |
| LOW  | 241.67 | 241.59 | 242.08 | 242.38 | 242.67 | 242.91 | 242.75 | 242.26 | 241.94 | 241.72 | 241.45 | 241.48 |

1900 thru 1988 mean 244.73

# Water Level Stages for Lake Erie at Cleveland

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Feet above  
IGLD (1955)  
~~~~~  
Chart Datum 568.60

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1987   | 1986   | 1986   | 1985   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   |
| HIGH | 573.05 | 572.85 | 573.11 | 573.46 | 573.43 | 573.70 | 573.66 | 573.37 | 572.96 | 573.31 | 573.01 | 573.11 |
| MEAN | 569.99 | 569.97 | 570.23 | 570.78 | 571.06 | 571.19 | 571.14 | 570.95 | 570.65 | 570.33 | 570.07 | 570.01 |
|      | 1935   | 1936   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   |
| LOW  | 567.62 | 567.49 | 567.65 | 568.20 | 568.43 | 568.46 | 568.46 | 568.36 | 568.23 | 567.95 | 567.60 | 567.53 |

1900 thru 1988 mean 570.52

# Water Level Stages for Lake St. Clair at St. Clair Shores

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Feet above  
IGLD (1955)  
~~~~~  
Chart Datum 571.70

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   |
| HIGH | 576.13 | 576.17 | 576.17 | 576.21 | 576.25 | 576.51 | 576.56 | 576.45 | 576.31 | 576.69 | 576.20 | 576.14 |
| MEAN | 572.83 | 572.57 | 572.99 | 573.53 | 573.82 | 573.98 | 574.05 | 573.93 | 573.72 | 573.44 | 573.16 | 573.17 |
|      | 1936   | 1926   | 1934   | 1901   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1925   |
| LOW  | 569.86 | 569.88 | 570.41 | 571.09 | 571.64 | 571.74 | 571.88 | 571.60 | 571.36 | 571.13 | 570.83 | 571.05 |

1900 thru 1988 mean 573.43

# Water Level Stages for Lake Huron-Michigan at Harbor Beach

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Feet above  
IGLD (1955)  
~~~~~  
Chart Datum 576.80

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1987   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   |
| HIGH | 580.65 | 580.36 | 580.40 | 580.75 | 580.89 | 581.07 | 581.27 | 581.34 | 581.26 | 581.62 | 581.29 | 580.87 |
| MEAN | 577.92 | 577.88 | 577.93 | 578.19 | 578.50 | 578.72 | 578.85 | 578.80 | 578.64 | 578.43 | 578.22 | 578.06 |
|      | 1965   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   |
| LOW  | 575.39 | 575.44 | 575.35 | 575.36 | 575.79 | 575.90 | 575.96 | 575.97 | 575.94 | 575.77 | 575.57 | 575.40 |

1900 thru 1988 mean 578.35

# Water Level Stages for Lake Superior at Marquette

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Feet above  
IGLD (1955)  
~~~~~  
Chart Datum 600.00

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1985   | 1985   | 1985   | 1985   |
| HIGH | 601.64 | 601.38 | 601.31 | 601.49 | 601.72 | 601.77 | 601.91 | 602.04 | 602.06 | 602.24 | 602.24 | 601.99 |
| MEAN | 600.39 | 600.18 | 600.05 | 600.09 | 600.43 | 600.71 | 600.92 | 601.03 | 601.06 | 601.00 | 600.86 | 600.64 |
|      | 1926   | 1926   | 1926   | 1926   | 1926   | 1926   | 1926   | 1926   | 1926   | 1925   | 1925   | 1925   |
| LOW  | 598.58 | 598.37 | 598.32 | 598.23 | 598.30 | 598.63 | 598.99 | 599.15 | 599.46 | 599.49 | 599.17 | 598.94 |

1900 thru 1988 mean 600.61



W A T E R                      L E V E L S

I N

M E T E R S

ANNUAL SUMMARY OF LEVELS, 1988  
Station 1030: Ogdensburg, New York on St. Lawrence River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 74.54 Jun  
Daily mean elevation: 74.60 27 May  
Instant/hourly elevation: 74.69 1800/10 Nov

LOWEST  
Monthly mean elevation: 74.07 Dec  
Daily mean elevation: 73.95 22 Dec  
Instant/hourly elevation: 73.88 2400/22 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.26 | 5 Jan  |
| 74.19 | 13 Feb |
| 74.27 | 27 Mar |
| 74.46 | 18 Apr |
| 74.60 | 27 May |
| 74.58 | 12 Jun |
| 74.53 | 3 Jul  |
| 74.50 | 15 Aug |
| 74.37 | 10 Sep |
| 74.31 | 28 Oct |
| 74.35 | 17 Nov |
| 74.28 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.09 | 14 Jan |
| 74.02 | 11 Feb |
| 74.03 | 12 Mar |
| 74.22 | 2 Apr  |
| 74.38 | 2 May  |
| 74.49 | 2 Jun  |
| 74.43 | 21 Jul |
| 74.30 | 23 Aug |
| 74.16 | 29 Sep |
| 74.00 | 22 Oct |
| 74.07 | 20 Nov |
| 73.95 | 22 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 74.55         |     |     |     |     | 7   | 7   |     |     |     |     |     |     | 74.55         | 14                         |
| 74.50         |     |     |     |     | 8   | 19  | 4   |     |     |     |     |     | 74.50         | 45                         |
| 74.45         |     |     |     | 1   | 8   | 4   | 20  | 15  |     |     |     |     | 74.45         | 93                         |
| 74.40         |     |     |     | 5   | 3   |     | 7   | 3   |     |     |     |     | 74.40         | 111                        |
| 74.35         |     |     |     | 8   | 5   |     |     | 8   | 7   |     |     |     | 74.35         | 139                        |
| 74.30         |     |     |     | 4   |     |     |     | 4   | 7   | 2   | 1   |     | 74.30         | 157                        |
| 74.25         | 1   |     | 2   | 8   |     |     |     | 1   | 10  | 3   | 2   | 1   | 74.25         | 185                        |
| 74.20         | 3   |     | 2   | 4   |     |     |     |     | 4   | 7   | 2   | 1   | 74.20         | 208                        |
| 74.15         | 5   | 3   | 7   |     |     |     |     |     | 2   | 10  | 8   | 1   | 74.15         | 244                        |
| 74.10         | 21  | 12  | 10  |     |     |     |     |     |     | 8   | 13  | 6   | 74.10         | 314                        |
| 74.05         | 1   | 12  | 8   |     |     |     |     |     |     |     | 4   | 8   | 74.05         | 347                        |
| 74.00         |     | 2   | 2   |     |     |     |     |     |     |     |     | 10  | 74.00         | 361                        |
| 73.95         |     |     |     |     |     |     |     |     |     | 1   |     | 3   | 73.95         | 365                        |
| 73.90         |     |     |     |     |     |     |     |     |     |     |     | 1   | 73.90         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 1030: Ogdensburg, New York on St. Lawrence River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 74.25   | 74.15   | 74.07   | 74.22   | 74.40   | 74.52   | 74.51   | 74.48   | 74.37   | 74.23   | 74.14   | 74.15   |
| 2    | 74.22   | 74.11   | 74.07   | 74.22   | 74.38   | 74.49   | 74.52   | 74.46   | 74.36   | 74.24   | 74.15   | 74.23   |
| 3    | 74.14   | 74.08   | 74.06   | 74.23   | 74.40   | 74.50   | 74.53   | 74.47   | 74.34   | 74.17   | 74.18   | 74.28   |
| 4    | 74.19   | 74.10   | 74.06   | 74.30   | 74.46   | 74.54   | 74.49   | 74.48   | 74.33   | 74.13   | 74.14   | 74.12   |
| 5    | 74.26   | 74.11   | 74.08   | 74.30   | 74.45   | 74.58   | 74.48   | 74.47   | 74.37   | 74.18   | 74.08   | 74.08   |
| 6    | 74.16   | 74.19   | 74.08   | 74.23   | 74.47   | 74.54   | 74.49   | 74.50   | 74.36   | 74.17   | 74.15   | 74.16   |
| 7    | 74.12   | 74.18   | 74.09   | 74.29   | 74.40   | 74.54   | 74.49   | 74.48   | 74.37   | 74.18   | 74.17   | 74.13   |
| 8    | 74.11   | 74.15   | 74.04   | 74.28   | 74.45   | 74.52   | 74.49   | 74.47   | 74.35   | 74.15   | 74.18   | 74.06   |
| 9    | 74.15   | 74.08   | 74.11   | 74.29   | 74.47   | 74.50   | 74.49   | 74.47   | 74.36   | 74.15   | 74.19   | 74.08   |
| 10   | 74.13   | 74.10   | 74.13   | 74.31   | 74.50   | 74.53   | 74.48   | 74.48   | 74.37   | 74.24   | 74.30   | 73.98   |
| 11   | 74.17   | 74.02   | 74.11   | 74.27   | 74.50   | 74.58   | 74.50   | 74.45   | 74.30   | 74.30   | 74.20   | 73.98   |
| 12   | 74.14   | 74.09   | 74.03   | 74.28   | 74.51   | 74.58   | 74.47   | 74.44   | 74.29   | 74.25   | 74.13   | 74.01   |
| 13   | 74.20   | 74.19   | 74.10   | 74.30   | 74.58   | 74.55   | 74.44   | 74.46   | 74.34   | 74.22   | 74.25   | 74.07   |
| 14   | 74.09   | 74.14   | 74.14   | 74.34   | 74.51   | 74.54   | 74.47   | 74.48   | 74.33   | 74.30   | 74.25   | 74.02   |
| 15   | 74.14   | 74.15   | 74.16   | 74.38   | 74.49   | 74.54   | 74.44   | 74.50   | 74.26   | 74.20   | 74.15   | 74.13   |
| 16   | 74.14   | 74.14   | 74.17   | 74.38   | 74.49   | 74.53   | 74.48   | 74.46   | 74.24   | 74.15   | 74.17   | 74.02   |
| 17   | 74.12   | 74.12   | 74.17   | 74.41   | 74.46   | 74.50   | 74.47   | 74.47   | 74.28   | 74.18   | 74.35   | 74.02   |
| 18   | 74.12   | 74.11   | 74.18   | 74.46   | 74.40   | 74.52   | 74.50   | 74.38   | 74.30   | 74.25   | 74.26   | 74.00   |
| 19   | 74.12   | 74.08   | 74.16   | 74.44   | 74.44   | 74.52   | 74.47   | 74.40   | 74.24   | 74.13   | 74.10   | 74.01   |
| 20   | 74.11   | 74.14   | 74.15   | 74.38   | 74.51   | 74.57   | 74.44   | 74.38   | 74.30   | 74.14   | 74.07   | 74.08   |
| 21   | 74.21   | 74.13   | 74.12   | 74.37   | 74.53   | 74.52   | 74.43   | 74.34   | 74.31   | 74.12   | 74.15   | 74.10   |
| 22   | 74.13   | 74.13   | 74.11   | 74.37   | 74.55   | 74.55   | 74.45   | 74.33   | 74.27   | 74.00   | 74.13   | 73.95   |
| 23   | 74.14   | 74.10   | 74.11   | 74.32   | 74.56   | 74.51   | 74.44   | 74.30   | 74.33   | 74.12   | 74.12   | 74.04   |
| 24   | 74.15   | 74.08   | 74.14   | 74.45   | 74.54   | 74.51   | 74.45   | 74.36   | 74.30   | 74.19   | 74.12   | 74.02   |
| 25   | 74.15   | 74.09   | 74.11   | 74.42   | 74.52   | 74.55   | 74.47   | 74.40   | 74.27   | 74.31   | 74.12   | 74.15   |
| 26   | 74.11   | 74.07   | 74.16   | 74.41   | 74.59   | 74.56   | 74.47   | 74.44   | 74.23   | 74.21   | 74.10   | 74.05   |
| 27   | 74.13   | 74.04   | 74.27   | 74.35   | 74.60   | 74.53   | 74.47   | 74.35   | 74.27   | 74.19   | 74.15   | 74.03   |
| 28   | 74.15   | 74.07   | 74.25   | 74.39   | 74.58   | 74.56   | 74.46   | 74.39   | 74.19   | 74.31   | 74.18   | 74.13   |
| 29   | 74.13   | 74.10   | 74.18   | 74.37   | 74.54   | 74.56   | 74.47   | 74.36   | 74.16   | 74.29   | 74.15   | 74.02   |
| 30   | 74.16   |         | 74.26   | 74.39   | 74.56   | 74.52   | 74.51   | 74.37   | 74.23   | 74.19   | 74.19   | 74.07   |
| 31   | 74.15   |         | 74.24   |         | 74.56   |         | 74.47   | 74.35   |         | 74.16   |         | 74.08   |
| MEAN | 74.15   | 74.11   | 74.13   | 74.34   | 74.50   | 74.54   | 74.48   | 74.42   | 74.30   | 74.20   | 74.17   | 74.07   |
| MAX. | 74.49   | 74.34   | 74.40   | 74.56   | 74.68   | 74.65   | 74.57   | 74.58   | 74.51   | 74.55   | 74.69   | 74.39   |
| MIN. | 1100/13 | 0100/21 | 1800/30 | 1400/18 | 1200/13 | 0400/26 | 0900/16 | 1400/15 | 0400/05 | 1400/28 | 1800/10 | 1000/03 |
|      | 73.98   | 73.98   | 73.97   | 74.19   | 74.33   | 74.36   | 74.39   | 74.26   | 74.14   | 73.88   | 73.96   | 73.88   |
|      | 0500/20 | 2200/11 | 1600/12 | 0500/03 | 1700/02 | 2300/01 | 2100/20 | 1500/23 | 0700/29 | 1600/22 | 1900/20 | 2400/22 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 74.28

ANNUAL SUMMARY OF LEVELS, 1988  
Station 1062: Alexandria Bay C.G., New York on St. Lawrence River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 74.65 Jun  
Daily mean elevation: 74.69 5 Jun  
Instant/hourly elevation: 74.76 1500/5 Jun

LOWEST  
Monthly mean elevation: 74.20 Dec  
Daily mean elevation: 74.09 22 Dec  
Instant/hourly elevation: 74.04 0300/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.38 | 5 Jan  |
| 74.37 | 13 Feb |
| 74.39 | 30 Mar |
| 74.56 | 24 Apr |
| 74.69 | 31 May |
| 74.69 | 5 Jun  |
| 74.64 | 2 Jul  |
| 74.61 | 15 Aug |
| 74.49 | 5 Sep  |
| 74.40 | 28 Oct |
| 74.41 | 17 Nov |
| 74.35 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.23 | 14 Jan |
| 74.22 | 11 Feb |
| 74.21 | 12 Mar |
| 74.36 | 2 Apr  |
| 74.51 | 2 May  |
| 74.62 | 24 Jun |
| 74.56 | 13 Jul |
| 74.44 | 23 Aug |
| 74.30 | 29 Sep |
| 74.19 | 22 Oct |
| 74.21 | 5 Nov  |
| 74.09 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 74.65                                                   |     |     |     |     | 8   | 9   |     |     |     |     |     |     | 74.65         | 17                         |
| 74.60                                                   |     |     |     |     | 6   | 21  | 6   | 2   |     |     |     |     | 74.60         | 52                         |
| 74.55                                                   |     |     |     | 1   | 12  |     | 25  | 15  |     |     |     |     | 74.55         | 105                        |
| 74.50                                                   |     |     |     | 9   | 5   |     |     | 7   |     |     |     |     | 74.50         | 126                        |
| 74.45                                                   |     |     |     | 7   |     |     |     | 6   | 11  |     |     |     | 74.45         | 150                        |
| 74.40                                                   |     |     |     | 9   |     |     |     | 1   | 9   |     | 1   |     | 74.40         | 170                        |
| 74.35                                                   | 2   | 2   | 4   | 4   |     |     |     |     | 7   | 6   | 1   |     | 74.35         | 196                        |
| 74.30                                                   | 4   | 14  | 4   |     |     |     |     |     | 2   | 9   | 4   | 2   | 74.30         | 235                        |
| 74.25                                                   | 21  | 11  | 21  |     |     |     |     |     | 1   | 14  | 17  | 4   | 74.25         | 324                        |
| 74.20                                                   | 4   | 2   | 2   |     |     |     |     |     |     | 1   | 7   | 7   | 74.20         | 347                        |
| 74.15                                                   |     |     |     |     |     |     |     |     |     | 1   |     | 11  | 74.15         | 359                        |
| 74.10                                                   |     |     |     |     |     |     |     |     |     |     |     | 6   | 74.10         | 365                        |
| 74.05                                                   |     |     |     |     |     |     |     |     |     |     |     | 1   | 74.05         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 1062: Alexandria Bay C.G., New York on St. Lawrence River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 74.37   | 74.29   | 74.29   | 74.36   | 74.53   | 74.65   | 74.63   | 74.59   | 74.49   | 74.34   | 74.26   | 74.28   |
| 2    | 74.34   | 74.25   | 74.30   | 74.36   | 74.51   | 74.64   | 74.64   | 74.58   | 74.48   | 74.35   | 74.27   | 74.33   |
| 3    | 74.28   | 74.26   | 74.28   | 74.37   | 74.53   | 74.64   | 74.63   | 74.58   | 74.47   | 74.30   | 74.28   | 74.35   |
| 4    | 74.34   | 74.28   | 74.29   | 74.42   | 74.56   | 74.66   | 74.61   | 74.59   | 74.47   | 74.28   | 74.26   | 74.24   |
| 5    | 74.38   | 74.29   | 74.29   | 74.43   | 74.55   | 74.69   | 74.60   | 74.58   | 74.49   | 74.33   | 74.21   | 74.22   |
| 6    | 74.28   | 74.36   | 74.29   | 74.39   | 74.57   | 74.67   | 74.60   | 74.61   | 74.47   | 74.30   | 74.27   | 74.28   |
| 7    | 74.25   | 74.34   | 74.30   | 74.44   | 74.53   | 74.66   | 74.60   | 74.59   | 74.48   | 74.31   | 74.28   | 74.26   |
| 8    | 74.26   | 74.31   | 74.25   | 74.43   | 74.56   | 74.65   | 74.60   | 74.58   | 74.46   | 74.30   | 74.29   | 74.21   |
| 9    | 74.28   | 74.29   | 74.29   | 74.44   | 74.57   | 74.63   | 74.60   | 74.59   | 74.47   | 74.29   | 74.30   | 74.22   |
| 10   | 74.26   | 74.30   | 74.30   | 74.45   | 74.60   | 74.65   | 74.59   | 74.59   | 74.47   | 74.37   | 74.37   | 74.15   |
| 11   | 74.29   | 74.22   | 74.28   | 74.43   | 74.60   | 74.68   | 74.60   | 74.57   | 74.43   | 74.39   | 74.30   | 74.15   |
| 12   | 74.28   | 74.30   | 74.21   | 74.44   | 74.60   | 74.67   | 74.58   | 74.56   | 74.42   | 74.35   | 74.25   | 74.17   |
| 13   | 74.30   | 74.37   | 74.28   | 74.44   | 74.65   | 74.65   | 74.56   | 74.57   | 74.46   | 74.33   | 74.35   | 74.21   |
| 14   | 74.23   | 74.31   | 74.30   | 74.47   | 74.62   | 74.65   | 74.59   | 74.58   | 74.45   | 74.38   | 74.33   | 74.17   |
| 15   | 74.28   | 74.33   | 74.31   | 74.49   | 74.60   | 74.65   | 74.57   | 74.61   | 74.40   | 74.30   | 74.26   | 74.26   |
| 16   | 74.27   | 74.33   | 74.32   | 74.50   | 74.60   | 74.65   | 74.59   | 74.59   | 74.38   | 74.28   | 74.30   | 74.16   |
| 17   | 74.26   | 74.32   | 74.31   | 74.51   | 74.59   | 74.63   | 74.60   | 74.59   | 74.42   | 74.29   | 74.41   | 74.17   |
| 18   | 74.26   | 74.31   | 74.30   | 74.55   | 74.56   | 74.63   | 74.61   | 74.52   | 74.41   | 74.34   | 74.33   | 74.14   |
| 19   | 74.24   | 74.29   | 74.30   | 74.53   | 74.59   | 74.63   | 74.60   | 74.53   | 74.37   | 74.26   | 74.23   | 74.16   |
| 20   | 74.25   | 74.35   | 74.30   | 74.50   | 74.63   | 74.65   | 74.58   | 74.51   | 74.42   | 74.26   | 74.23   | 74.20   |
| 21   | 74.31   | 74.33   | 74.27   | 74.51   | 74.65   | 74.63   | 74.57   | 74.48   | 74.42   | 74.24   | 74.28   | 74.20   |
| 22   | 74.26   | 74.34   | 74.26   | 74.50   | 74.65   | 74.65   | 74.58   | 74.47   | 74.39   | 74.19   | 74.26   | 74.09   |
| 23   | 74.28   | 74.33   | 74.26   | 74.46   | 74.67   | 74.65   | 74.57   | 74.44   | 74.45   | 74.26   | 74.26   | 74.17   |
| 24   | 74.29   | 74.32   | 74.28   | 74.56   | 74.66   | 74.62   | 74.58   | 74.51   | 74.41   | 74.32   | 74.25   | 74.14   |
| 25   | 74.28   | 74.33   | 74.27   | 74.54   | 74.65   | 74.66   | 74.59   | 74.52   | 74.39   | 74.40   | 74.25   | 74.24   |
| 26   | 74.26   | 74.30   | 74.30   | 74.52   | 74.69   | 74.67   | 74.59   | 74.54   | 74.36   | 74.31   | 74.24   | 74.16   |
| 27   | 74.28   | 74.28   | 74.39   | 74.48   | 74.69   | 74.65   | 74.59   | 74.47   | 74.38   | 74.30   | 74.27   | 74.15   |
| 28   | 74.30   | 74.30   | 74.37   | 74.51   | 74.68   | 74.65   | 74.58   | 74.51   | 74.33   | 74.40   | 74.30   | 74.22   |
| 29   | 74.29   | 74.33   | 74.32   | 74.52   | 74.66   | 74.66   | 74.59   | 74.48   | 74.30   | 74.36   | 74.27   | 74.15   |
| 30   | 74.31   |         | 74.39   | 74.53   | 74.68   | 74.64   | 74.61   | 74.49   | 74.35   | 74.29   | 74.31   | 74.18   |
| 31   | 74.29   |         | 74.36   |         | 74.69   |         | 74.59   | 74.48   |         | 74.27   |         | 74.18   |
| MEAN | 74.29   | 74.31   | 74.30   | 74.47   | 74.61   | 74.65   | 74.59   | 74.55   | 74.42   | 74.31   | 74.28   | 74.20   |
| MAX. | 74.55   | 74.52   | 74.48   | 74.62   | 74.72   | 74.76   | 74.66   | 74.69   | 74.58   | 74.58   | 74.61   | 74.42   |
|      | 1100/13 | 2400/20 | 1600/30 | 0900/24 | 1300/26 | 1500/05 | 0400/01 | 1200/15 | 0400/05 | 1300/28 | 1700/10 | 1200/02 |
| MIN. | 74.14   | 74.18   | 74.19   | 74.34   | 74.48   | 74.51   | 74.53   | 74.31   | 74.27   | 74.13   | 74.15   | 74.04   |
|      | 0300/20 | 2100/11 | 1500/12 | 0300/03 | 2100/02 | 2100/05 | 0200/15 | 1500/23 | 0600/29 | 1500/22 | 1700/05 | 0300/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 74.42

ANNUAL SUMMARY OF LEVELS, 1988  
Station 2000: Cape Vincent, New York on Lake Ontario

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 74.76 Jun  
Daily mean elevation: 74.79 5 Jun  
Instant/hourly elevation: 74.86 2000/25 Jun

LOWEST  
Monthly mean elevation: 74.29 Dec  
Daily mean elevation: 74.18 22 Dec  
Instant/hourly elevation: 74.14 1000/27 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.42 | 1 Jan  |
| 74.45 | 20 Feb |
| 74.45 | 30 Mar |
| 74.64 | 24 Apr |
| 74.79 | 31 May |
| 74.79 | 5 Jun  |
| 74.74 | 2 Jul  |
| 74.70 | 6 Aug  |
| 74.58 | 5 Sep  |
| 74.47 | 28 Oct |
| 74.45 | 17 Nov |
| 74.41 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.30 | 19 Jan |
| 74.31 | 11 Feb |
| 74.32 | 12 Mar |
| 74.43 | 1 Apr  |
| 74.62 | 2 May  |
| 74.73 | 19 Jun |
| 74.67 | 23 Jul |
| 74.54 | 23 Aug |
| 74.41 | 29 Sep |
| 74.32 | 22 Oct |
| 74.32 | 5 Nov  |
| 74.18 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 74.75                                                   |     |     |     |     | 8   | 15  |     |     |     |     |     |     | 74.75         | 23                         |
| 74.70                                                   |     |     |     |     | 5   | 15  | 11  |     |     |     |     |     | 74.70         | 54                         |
| 74.65                                                   |     |     |     |     | 9   |     | 20  | 16  |     |     |     |     | 74.65         | 99                         |
| 74.60                                                   |     |     |     | 6   | 9   |     |     | 5   |     |     |     |     | 74.60         | 119                        |
| 74.55                                                   |     |     |     | 11  |     |     |     | 9   | 8   |     |     |     | 74.55         | 147                        |
| 74.50                                                   |     |     |     | 9   |     |     |     | 1   | 10  |     |     |     | 74.50         | 167                        |
| 74.45                                                   |     |     |     | 2   |     |     |     |     | 9   | 2   |     |     | 74.45         | 180                        |
| 74.40                                                   | 3   | 11  | 4   | 2   |     |     |     |     | 3   | 12  | 3   | 1   | 74.40         | 219                        |
| 74.35                                                   | 6   | 13  | 22  |     |     |     |     |     |     | 13  | 18  | 3   | 74.35         | 294                        |
| 74.30                                                   | 19  | 5   | 5   |     |     |     |     |     |     | 4   | 9   | 5   | 74.30         | 341                        |
| 74.25                                                   | 3   |     |     |     |     |     |     |     |     |     |     |     | 74.25         | 357                        |
| 74.20                                                   |     |     |     |     |     |     |     |     |     |     |     | 13  | 74.20         | 365                        |
| 74.15                                                   |     |     |     |     |     |     |     |     |     |     |     | 8   | 74.15         | 366                        |
|                                                         |     |     |     |     |     |     |     |     |     |     |     | 1   |               |                            |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 2000: Cape Vincent, New York on Lake Ontario

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 74.42   | 74.35   | 74.39   | 74.43   | 74.62   | 74.77   | 74.74   | 74.69   | 74.57   | 74.43   | 74.36   | 74.36   |
| 2    | 74.38   | 74.32   | 74.40   | 74.44   | 74.62   | 74.76   | 74.74   | 74.68   | 74.56   | 74.43   | 74.37   | 74.41   |
| 3    | 74.36   | 74.32   | 74.38   | 74.47   | 74.63   | 74.76   | 74.73   | 74.69   | 74.55   | 74.40   | 74.35   | 74.39   |
| 4    | 74.41   | 74.34   | 74.39   | 74.51   | 74.63   | 74.77   | 74.71   | 74.68   | 74.57   | 74.39   | 74.35   | 74.34   |
| 5    | 74.41   | 74.36   | 74.39   | 74.51   | 74.63   | 74.79   | 74.71   | 74.68   | 74.58   | 74.43   | 74.32   | 74.32   |
| 6    | 74.33   | 74.43   | 74.39   | 74.49   | 74.65   | 74.77   | 74.71   | 74.70   | 74.55   | 74.41   | 74.36   | 74.36   |
| 7    | 74.30   | 74.43   | 74.39   | 74.54   | 74.64   | 74.77   | 74.71   | 74.68   | 74.57   | 74.41   | 74.37   | 74.33   |
| 8    | 74.32   | 74.38   | 74.35   | 74.54   | 74.64   | 74.76   | 74.71   | 74.67   | 74.56   | 74.40   | 74.37   | 74.30   |
| 9    | 74.33   | 74.38   | 74.39   | 74.54   | 74.65   | 74.75   | 74.71   | 74.68   | 74.56   | 74.39   | 74.37   | 74.32   |
| 10   | 74.32   | 74.37   | 74.38   | 74.55   | 74.67   | 74.76   | 74.70   | 74.68   | 74.56   | 74.46   | 74.44   | 74.27   |
| 11   | 74.34   | 74.31   | 74.36   | 74.54   | 74.68   | 74.77   | 74.70   | 74.66   | 74.53   | 74.45   | 74.39   | 74.26   |
| 12   | 74.34   | 74.40   | 74.32   | 74.55   | 74.67   | 74.76   | 74.69   | 74.65   | 74.52   | 74.43   | 74.35   | 74.28   |
| 13   | 74.36   | 74.45   | 74.37   | 74.55   | 74.71   | 74.75   | 74.68   | 74.66   | 74.55   | 74.41   | 74.43   | 74.30   |
| 14   | 74.30   | 74.38   | 74.38   | 74.58   | 74.70   | 74.75   | 74.70   | 74.66   | 74.54   | 74.43   | 74.40   | 74.26   |
| 15   | 74.34   | 74.42   | 74.39   | 74.58   | 74.69   | 74.75   | 74.69   | 74.69   | 74.50   | 74.38   | 74.35   | 74.34   |
| 16   | 74.32   | 74.40   | 74.40   | 74.59   | 74.69   | 74.75   | 74.69   | 74.69   | 74.48   | 74.37   | 74.39   | 74.25   |
| 17   | 74.31   | 74.40   | 74.39   | 74.58   | 74.70   | 74.74   | 74.71   | 74.69   | 74.52   | 74.37   | 74.45   | 74.26   |
| 18   | 74.33   | 74.39   | 74.38   | 74.62   | 74.68   | 74.74   | 74.72   | 74.62   | 74.50   | 74.42   | 74.38   | 74.24   |
| 19   | 74.30   | 74.38   | 74.37   | 74.60   | 74.70   | 74.73   | 74.70   | 74.62   | 74.47   | 74.35   | 74.34   | 74.25   |
| 20   | 74.33   | 74.45   | 74.37   | 74.58   | 74.73   | 74.75   | 74.68   | 74.61   | 74.51   | 74.36   | 74.35   | 74.26   |
| 21   | 74.35   | 74.43   | 74.36   | 74.60   | 74.74   | 74.74   | 74.68   | 74.58   | 74.51   | 74.34   | 74.38   | 74.26   |
| 22   | 74.32   | 74.43   | 74.35   | 74.59   | 74.74*  | 74.75   | 74.68   | 74.57   | 74.48   | 74.32   | 74.36   | 74.18   |
| 23   | 74.34   | 74.43   | 74.36   | 74.57   | 74.76*  | 74.75   | 74.67   | 74.54   | 74.54   | 74.35   | 74.37   | 74.28   |
| 24   | 74.36   | 74.42   | 74.35   | 74.64   | 74.75   | 74.74   | 74.68   | 74.62   | 74.49   | 74.40   | 74.36   | 74.25   |
| 25   | 74.32   | 74.42   | 74.35   | 74.61   | 74.76   | 74.76   | 74.68   | 74.60   | 74.48   | 74.44   | 74.35   | 74.30   |
| 26   | 74.33   | 74.40   | 74.38   | 74.60   | 74.77   | 74.76   | 74.68   | 74.60   | 74.46   | 74.39   | 74.35   | 74.24   |
| 27   | 74.33   | 74.38   | 74.44   | 74.59   | 74.77   | 74.76   | 74.69   | 74.56   | 74.47   | 74.38   | 74.38   | 74.25   |
| 28   | 74.36   | 74.40   | 74.42   | 74.61   | 74.77   | 74.75   | 74.68   | 74.58   | 74.43   | 74.47   | 74.39   | 74.30   |
| 29   | 74.35   | 74.43   | 74.39   | 74.62   | 74.77   | 74.76   | 74.69   | 74.57   | 74.41   | 74.41   | 74.36   | 74.24   |
| 30   | 74.37   |         | 74.45   | 74.63   | 74.78   | 74.74   | 74.70   | 74.58   | 74.44   | 74.37   | 74.40   | 74.27   |
| 31   | 74.35   |         | 74.42   |         | 74.79   |         | 74.69   | 74.57   |         | 74.37   |         | 74.25   |
| MEAN | 74.34   | 74.39   | 74.38   | 74.56   | 74.70   | 74.76   | 74.70   | 74.64   | 74.52   | 74.40   | 74.37   | 74.29   |
| MAX. | 74.64   | 74.71   | 74.52   | 74.71   | 74.80   | 74.86   | 74.76   | 74.77   | 74.65   | 74.63   | 74.70   | 74.48   |
|      | 0800/13 | 2100/20 | 1200/30 | 1000/18 | 2100/30 | 2000/25 | 0700/16 | 1100/17 | 0300/05 | 1100/28 | 1500/10 | 1100/23 |
| MIN. | 74.22   | 74.28   | 74.28   | 74.37   | 74.59   | 74.68   | 74.62   | 74.52   | 74.38   | 74.26   | 74.26   | 74.14   |
|      | 2400/19 | 1800/11 | 1600/12 | 1500/01 | 1300/01 | 0300/22 | 0500/17 | 0800/23 | 0500/29 | 1400/22 | 0600/10 | 1000/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 74.50

ANNUAL SUMMARY OF LEVELS, 1988  
Station 2030: Oswego, New York on Lake Ontario

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 74.77 Jun  
Daily mean elevation: 74.80 5 Jun  
Instant/hourly elevation: 74.99 1200/22 Jun

LOWEST  
Monthly mean elevation: 74.31 Dec  
Daily mean elevation: 74.21 27 Dec  
Instant/hourly elevation: 74.01 0600/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.49 | 5 Jan  |
| 74.52 | 13 Feb |
| 74.48 | 31 Mar |
| 74.66 | 30 Apr |
| 74.80 | 25 May |
| 74.80 | 5 Jun  |
| 74.76 | 1 Jul  |
| 74.72 | 16 Aug |
| 74.60 | 5 Sep  |
| 74.48 | 11 Oct |
| 74.44 | 21 Nov |
| 74.42 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.32 | 16 Jan |
| 74.38 | 11 Feb |
| 74.36 | 23 Mar |
| 74.48 | 2 Apr  |
| 74.65 | 9 May  |
| 74.73 | 19 Jun |
| 74.68 | 13 Jul |
| 74.53 | 23 Aug |
| 74.43 | 30 Sep |
| 74.33 | 21 Oct |
| 74.33 | 5 Nov  |
| 74.21 | 27 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 74.75                                                   |     |     |     |     | 10  | 24  | 1   |     |     |     |     |     | 74.75         | 35                         |
| 74.70                                                   |     |     |     |     | 6   | 6   | 11  | 3   |     |     |     |     | 74.70         | 61                         |
| 74.65                                                   |     |     |     | 1   | 9   |     | 19  | 13  |     |     |     |     | 74.65         | 103                        |
| 74.60                                                   |     |     |     | 11  | 6   |     |     | 5   |     |     |     |     | 74.60         | 125                        |
| 74.55                                                   |     |     |     | 12  |     |     |     | 8   | 7   |     |     |     | 74.55         | 152                        |
| 74.50                                                   |     | 1   |     | 3   |     |     |     | 2   | 11  |     |     |     | 74.50         | 169                        |
| 74.45                                                   | 1   | 7   | 4   | 3   |     |     |     |     | 10  | 3   |     |     | 74.45         | 197                        |
| 74.40                                                   | 6   | 16  | 21  |     |     |     |     |     | 2   | 13  | 5   | 1   | 74.40         | 261                        |
| 74.35                                                   | 16  | 5   | 6   |     |     |     |     |     |     | 14  | 21  | 6   | 74.35         | 329                        |
| 74.30                                                   | 8   |     |     |     |     |     |     |     |     | 1   | 4   | 6   | 74.30         | 348                        |
| 74.25                                                   |     |     |     |     |     |     |     |     |     |     |     | 13  | 74.25         | 361                        |
| 74.20                                                   |     |     |     |     |     |     |     |     |     |     |     | 5   | 74.20         | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 2030: Oswego, New York on Lake Ontario

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 74.45   | 74.40   | 74.44   | 74.48   | 74.65   | 74.79   | 74.76   | 74.72   | 74.58   | 74.42   | 74.34   | 74.39   |
| 2    | 74.41   | 74.41   | 74.43   | 74.48   | 74.65   | 74.79   | 74.75   | 74.70   | 74.57   | 74.44   | 74.44   | 74.42   |
| 3    | 74.36   | 74.39   | 74.44   | 74.49   | 74.65   | 74.78   | 74.73   | 74.69   | 74.56   | 74.43   | 74.39   | 74.40   |
| 4    | 74.43   | 74.44   | 74.44   | 74.53   | 74.65   | 74.78   | 74.72   | 74.69   | 74.55   | 74.41   | 74.33   | 74.40   |
| 5    | 74.49   | 74.43   | 74.44   | 74.54   | 74.65   | 74.80   | 74.71   | 74.68   | 74.60   | 74.44   | 74.33   | 74.34   |
| 6    | 74.42   | 74.47   | 74.41   | 74.52   | 74.67   | 74.78   | 74.71   | 74.68   | 74.59   | 74.44   | 74.36   | 74.34   |
| 7    | 74.36   | 74.42   | 74.42   | 74.56   | 74.68   | 74.78   | 74.70   | 74.70   | 74.58   | 74.43   | 74.38   | 74.36   |
| 8    | 74.35   | 74.43   | 74.40   | 74.59   | 74.66   | 74.78   | 74.70   | 74.70   | 74.54   | 74.43   | 74.38   | 74.35   |
| 9    | 74.39   | 74.42   | 74.41   | 74.59   | 74.65   | 74.78   | 74.69   | 74.67   | 74.54   | 74.42   | 74.39   | 74.36   |
| 10   | 74.36   | 74.44   | 74.44   | 74.58   | 74.68   | 74.78   | 74.69   | 74.68   | 74.55   | 74.41   | 74.37   | 74.34   |
| 11   | 74.34   | 74.38   | 74.43   | 74.59   | 74.70   | 74.77   | 74.69   | 74.67   | 74.55   | 74.48   | 74.42   | 74.33   |
| 12   | 74.32   | 74.43   | 74.39   | 74.58   | 74.68   | 74.76   | 74.70   | 74.67   | 74.52   | 74.47   | 74.36   | 74.29   |
| 13   | 74.42   | 74.52   | 74.42   | 74.58   | 74.69   | 74.76   | 74.68   | 74.65   | 74.56   | 74.46   | 74.37   | 74.27   |
| 14   | 74.36   | 74.42   | 74.43   | 74.58   | 74.70   | 74.76   | 74.69   | 74.65   | 74.55   | 74.41   | 74.40   | 74.27   |
| 15   | 74.33   | 74.42   | 74.44   | 74.60   | 74.70   | 74.75   | 74.69   | 74.72   | 74.52   | 74.39   | 74.38   | 74.39   |
| 16   | 74.32   | 74.45   | 74.45   | 74.62   | 74.71   | 74.76   | 74.69   | 74.72   | 74.50   | 74.37   | 74.35   | 74.29   |
| 17   | 74.33   | 74.43   | 74.43   | 74.59   | 74.73   | 74.76   | 74.72   | 74.69   | 74.49   | 74.37   | 74.43   | 74.28   |
| 18   | 74.36   | 74.43   | 74.41   | 74.62   | 74.72   | 74.75   | 74.72   | 74.67   | 74.50   | 74.39   | 74.42   | 74.28   |
| 19   | 74.35   | 74.40   | 74.42   | 74.61   | 74.72   | 74.73   | 74.72   | 74.65   | 74.48   | 74.39   | 74.36   | 74.24   |
| 20   | 74.33   | 74.46   | 74.45   | 74.60   | 74.74   | 74.74   | 74.72   | 74.62   | 74.49   | 74.38   | 74.39   | 74.24   |
| 21   | 74.40   | 74.50   | 74.42   | 74.62   | 74.75   | 74.74   | 74.70   | 74.61   | 74.53   | 74.33   | 74.44   | 74.30   |
| 22   | 74.38   | 74.40   | 74.39   | 74.62   | 74.76   | 74.77   | 74.69   | 74.57   | 74.50   | 74.40   | 74.39   | 74.25   |
| 23   | 74.37   | 74.46   | 74.36   | 74.59   | 74.76   | 74.78   | 74.69   | 74.53   | 74.53   | 74.37   | 74.39   | 74.21   |
| 24   | 74.37   | 74.46   | 74.40   | 74.64   | 74.78   | 74.76   | 74.70   | 74.54   | 74.51   | 74.36   | 74.38   | 74.26   |
| 25   | 74.39   | 74.47   | 74.39   | 74.62   | 74.80   | 74.75   | 74.70   | 74.57   | 74.49   | 74.39   | 74.37   | 74.32   |
| 26   | 74.40   | 74.44   | 74.42   | 74.62   | 74.78   | 74.77   | 74.69   | 74.59   | 74.49   | 74.39   | 74.36   | 74.28   |
| 27   | 74.40   | 74.44   | 74.47   | 74.62   | 74.78   | 74.76   | 74.70   | 74.57   | 74.47   | 74.37   | 74.36   | 74.21   |
| 28   | 74.41   | 74.44   | 74.47   | 74.63   | 74.78   | 74.76   | 74.70   | 74.59   | 74.47   | 74.41   | 74.40   | 74.30   |
| 29   | 74.37   | 74.46   | 74.45   | 74.65   | 74.78   | 74.76   | 74.70   | 74.60   | 74.43   | 74.41   | 74.39   | 74.29   |
| 30   | 74.37   |         | 74.47   | 74.66   | 74.78   | 74.77   | 74.71   | 74.59   | 74.43   | 74.40   | 74.37   | 74.26   |
| 31   | 74.37   |         | 74.48   |         | 74.79   |         | 74.72   | 74.59   |         | 74.36   |         | 74.29   |
| MEAN | 74.38   | 74.44   | 74.43   | 74.59   | 74.72   | 74.77   | 74.71   | 74.64   | 74.52   | 74.41   | 74.38   | 74.31   |
| MAX. | 74.62   | 74.60   | 74.55   | 74.74   | 74.82   | 74.99   | 74.85   | 74.78   | 74.63   | 74.52   | 74.61   | 74.49   |
|      | 0800/13 | 2100/20 | 1300/30 | 1800/23 | 0500/25 | 1200/22 | 0900/17 | 1300/17 | 0900/05 | 0800/11 | 2100/20 | 1900/04 |
| MIN. | 74.22   | 74.33   | 74.31   | 74.44   | 74.56   | 74.63   | 74.58   | 74.50   | 74.39   | 74.29   | 74.22   | 74.01   |
|      | 0400/20 | 0300/12 | 2300/22 | 1500/01 | 0100/16 | 1800/25 | 0500/17 | 1600/29 | 0900/29 | 0500/18 | 0600/10 | 0600/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 74.52

ANNUAL SUMMARY OF LEVELS, 1988  
Station 2058: Rochester, New York on Lake Ontario

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 74.78 Jun  
Daily mean elevation: 74.81 1 Jun  
Instant/hourly elevation: 74.92 0500/17 Jul

LOWEST  
Monthly mean elevation: 74.31 Dec  
Daily mean elevation: 74.25 23 Dec  
Instant/hourly elevation: 74.14 0800/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.42 | 26 Jan |
| 74.47 | 27 Feb |
| 74.50 | 31 Mar |
| 74.66 | 30 Apr |
| 74.80 | 31 May |
| 74.81 | 1 Jun  |
| 74.76 | 17 Jul |
| 74.73 | 1 Aug  |
| 74.59 | 6 Sep  |
| 74.47 | 6 Oct  |
| 74.42 | 21 Nov |
| 74.39 | 4 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.35 | 16 Jan |
| 74.41 | 1 Feb  |
| 74.40 | 23 Mar |
| 74.50 | 2 Apr  |
| 74.66 | 1 May  |
| 74.75 | 25 Jun |
| 74.69 | 14 Jul |
| 74.57 | 24 Aug |
| 74.44 | 30 Sep |
| 74.37 | 25 Oct |
| 74.37 | 6 Nov  |
| 74.25 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec           |                            |
| 74.80                                                   |     |     |     |     |     | 1   |     |     |     |     |     |               | 74.80 1                    |
| 74.75                                                   |     |     |     |     | 12  | 28  | 2   |     |     |     |     |               | 74.75 43                   |
| 74.70                                                   |     |     |     |     | 9   | 1   | 27  | 3   |     |     |     |               | 74.70 83                   |
| 74.65                                                   |     |     |     | 2   | 10  |     | 2   | 15  |     |     |     |               | 74.65 112                  |
| 74.60                                                   |     |     |     | 14  |     |     |     | 6   |     |     |     |               | 74.60 132                  |
| 74.55                                                   |     |     |     | 10  |     |     |     | 7   | 8   |     |     |               | 74.55 157                  |
| 74.50                                                   |     |     |     | 3   |     |     |     |     | 14  |     |     |               | 74.50 174                  |
| 74.45                                                   |     | 6   | 7   | 1   |     |     |     |     | 7   | 5   |     |               | 74.45 200                  |
| 74.40                                                   | 3   | 23  | 23  |     |     |     |     |     | 1   | 12  | 4   |               | 74.40 266                  |
| 74.35                                                   | 24  |     | 1   |     |     |     |     |     |     | 14  | 26  | 8             | 74.35 339                  |
| 74.30                                                   | 4   |     |     |     |     |     |     |     |     |     |     | 5             | 74.30 348                  |
| 74.25                                                   |     |     |     |     |     |     |     |     |     |     |     | 17            | 74.25 365                  |
| 74.20                                                   |     |     |     |     |     |     |     |     |     |     |     | 1             | 74.20 366                  |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 2058: Rochester, New York on Lake Ontario

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 74.40   | 74.41   | 74.46   | 74.51   | 74.66   | 74.81   | 74.76   | 74.73   | 74.58   | 74.44   | 74.37   | 74.38   |
| 2    | 74.39   | 74.44   | 74.45   | 74.50   | 74.67   | 74.80   | 74.75   | 74.70   | 74.59   | 74.45   | 74.40   | 74.37   |
| 3    | 74.38   | 74.42   | 74.46   | 74.52   | 74.67   | 74.80   | 74.74   | 74.69   | 74.58   | 74.46   | 74.39   | 74.38   |
| 4    | 74.39   | 74.45   | 74.44   | 74.54   | 74.67   | 74.79   | 74.74   | 74.69   | 74.58   | 74.46   | 74.37   | 74.39   |
| 5    | 74.38   | 74.44   | 74.44   | 74.56   | 74.68   | 74.79   | 74.72   | 74.69   | 74.59   | 74.46   | 74.37   | 74.37   |
| 6    | 74.41   | 74.42   | 74.43   | 74.57   | 74.69   | 74.80   | 74.72   | 74.69   | 74.59   | 74.47   | 74.37   | 74.35   |
| 7    | 74.39   | 74.42   | 74.43   | 74.58   | 74.69   | 74.80   | 74.72   | 74.72   | 74.58   | 74.45   | 74.38   | 74.36   |
| 8    | 74.37   | 74.44   | 74.43   | 74.59   | 74.69   | 74.79   | 74.71   | 74.70   | 74.57   | 74.45   | 74.39   | 74.37   |
| 9    | 74.37   | 74.43   | 74.42   | 74.60   | 74.69   | 74.79   | 74.71   | 74.68   | 74.54   | 74.44   | 74.40   | 74.34   |
| 10   | 74.37   | 74.43   | 74.45   | 74.60   | 74.69   | 74.79   | 74.71   | 74.68   | 74.55   | 74.42   | 74.38   | 74.36   |
| 11   | 74.35   | 74.43   | 74.44   | 74.60   | 74.71   | 74.78   | 74.71   | 74.68   | 74.55   | 74.45   | 74.42   | 74.35   |
| 12   | 74.35   | 74.42   | 74.42   | 74.60   | 74.71   | 74.77   | 74.72   | 74.67   | 74.54   | 74.46   | 74.40   | 74.31   |
| 13   | 74.37   | 74.45   | 74.42   | 74.60   | 74.71   | 74.77   | 74.70   | 74.66   | 74.54   | 74.44   | 74.39   | 74.29   |
| 14   | 74.38   | 74.44   | 74.43   | 74.60   | 74.72   | 74.77   | 74.69   | 74.66   | 74.55   | 74.41   | 74.40   | 74.30   |
| 15   | 74.35   | 74.43   | 74.43   | 74.62   | 74.73   | 74.77   | 74.72   | 74.71   | 74.54   | 74.41   | 74.41   | 74.31   |
| 16   | 74.35   | 74.45   | 74.44   | 74.62   | 74.73   | 74.77   | 74.71   | 74.69   | 74.51   | 74.40   | 74.39   | 74.30   |
| 17   | 74.36   | 74.45   | 74.44   | 74.61   | 74.74   | 74.77   | 74.76   | 74.67   | 74.50   | 74.39   | 74.40   | 74.29   |
| 18   | 74.37   | 74.45   | 74.43   | 74.62   | 74.74   | 74.76   | 74.74   | 74.66   | 74.51   | 74.40   | 74.40   | 74.30   |
| 19   | 74.37   | 74.45   | 74.44   | 74.62   | 74.74   | 74.76   | 74.73   | 74.63   | 74.51   | 74.41   | 74.40   | 74.27   |
| 20   | 74.36   | 74.45   | 74.44   | 74.61   | 74.76   | 74.76   | 74.73   | 74.62   | 74.50   | 74.40   | 74.40   | 74.27   |
| 21   | 74.39   | 74.47   | 74.44   | 74.63   | 74.77   | 74.76   | 74.72   | 74.62   | 74.52   | 74.37   | 74.42   | 74.28   |
| 22   | 74.40   | 74.44   | 74.41   | 74.62   | 74.77   | 74.77   | 74.71   | 74.60   | 74.52   | 74.41   | 74.41   | 74.28   |
| 23   | 74.39   | 74.47   | 74.40   | 74.63   | 74.77   | 74.79   | 74.71   | 74.57   | 74.51   | 74.40   | 74.40   | 74.25   |
| 24   | 74.38   | 74.46   | 74.42   | 74.62   | 74.79   | 74.77   | 74.71   | 74.57   | 74.51   | 74.38   | 74.40   | 74.27   |
| 25   | 74.40   | 74.46   | 74.42   | 74.63   | 74.80   | 74.75   | 74.71   | 74.58   | 74.50   | 74.37   | 74.39   | 74.27   |
| 26   | 74.42   | 74.47   | 74.43   | 74.64   | 74.80   | 74.77   | 74.72   | 74.58   | 74.49   | 74.39   | 74.39   | 74.28   |
| 27   | 74.41   | 74.47   | 74.47   | 74.63   | 74.80   | 74.77   | 74.72   | 74.61   | 74.47   | 74.40   | 74.39   | 74.26   |
| 28   | 74.40   | 74.45   | 74.48   | 74.64   | 74.80   | 74.76   | 74.72   | 74.62   | 74.48   | 74.40   | 74.39   | 74.28   |
| 29   | 74.39   | 74.45   | 74.48   | 74.66   | 74.80   | 74.76   | 74.71   | 74.61   | 74.46   | 74.40   | 74.40   | 74.28   |
| 30   | 74.39   |         | 74.48   | 74.66   | 74.80   | 74.77   | 74.72   | 74.60   | 74.44   | 74.40   | 74.38   | 74.27   |
| 31   | 74.40   |         | 74.50   |         | 74.80   |         | 74.74   | 74.60   |         | 74.38   |         | 74.27   |
| MEAN | 74.38   | 74.44   | 74.44   | 74.60   | 74.74   | 74.78   | 74.72   | 74.65   | 74.53   | 74.42   | 74.39   | 74.31   |
| MAX. | 74.45   | 74.53   | 74.53   | 74.76   | 74.83   | 74.90   | 74.92   | 74.81   | 74.62   | 74.52   | 74.56   | 74.44   |
|      | 0300/14 | 0600/02 | 1300/29 | 1500/23 | 2200/27 | 0900/07 | 0500/17 | 1400/01 | 1200/05 | 2100/02 | 1900/20 | 2100/03 |
| MIN. | 74.25   | 74.34   | 74.34   | 74.47   | 74.63   | 74.58   | 74.58   | 74.50   | 74.40   | 74.33   | 74.27   | 74.14   |
|      | 0600/13 | 1800/01 | 1600/25 | 1800/03 | 1800/01 | 0500/22 | 1900/16 | 1100/29 | 2400/22 | 0100/18 | 1000/10 | 0800/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 74.53

ANNUAL SUMMARY OF LEVELS, 1988  
Station 2076: Olcott, New York on Lake Ontario

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 74.78 Jun  
Daily mean elevation: 74.82 29 May  
Instant/hourly elevation: 74.86 2400/7 Jun

LOWEST  
Monthly mean elevation: 74.32 Dec  
Daily mean elevation: 74.24 25 Dec  
Instant/hourly elevation: 74.18 0200/28 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.43 | 29 Jan |
| 74.49 | 27 Feb |
| 74.51 | 31 Mar |
| 74.67 | 30 Apr |
| 74.82 | 29 May |
| 74.81 | 2 Jun  |
| 74.76 | 1 Jul  |
| 74.71 | 2 Aug  |
| 74.61 | 3 Sep  |
| 74.49 | 3 Oct  |
| 74.43 | 27 Nov |
| 74.39 | 1 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 74.33 | 5 Jan  |
| 74.41 | 13 Feb |
| 74.42 | 16 Mar |
| 74.51 | 1 Apr  |
| 74.68 | 2 May  |
| 74.76 | 30 Jun |
| 74.70 | 16 Jul |
| 74.55 | 24 Aug |
| 74.45 | 30 Sep |
| 74.38 | 28 Oct |
| 74.37 | 2 Nov  |
| 74.24 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
| 74.80                                                   |     |     |     |     | 5   | 2   |     |     |     |     |     |     | 74.80         | 7                          |
| 74.75                                                   |     |     |     |     | 9   | 28  | 1   |     |     |     |     |     | 74.75         | 45                         |
| 74.70                                                   |     |     |     |     | 10  |     | 29  | 2   |     |     |     |     | 74.70         | 86                         |
| 74.65                                                   |     |     |     | 3   | 7   |     | 1   | 8   |     |     |     |     | 74.65         | 105                        |
| 74.60                                                   |     |     |     | 19  |     |     |     | 16  | 3   |     |     |     | 74.60         | 143                        |
| 74.55                                                   |     |     |     | 4   |     |     |     | 4   | 6   |     |     |     | 74.55         | 157                        |
| 74.50                                                   |     |     | 3   | 4   |     |     |     | 1   | 15  |     |     |     | 74.50         | 180                        |
| 74.45                                                   |     | 10  | 7   |     |     |     |     |     | 5   | 9   |     |     | 74.45         | 211                        |
| 74.40                                                   | 11  | 19  | 21  |     |     |     |     |     | 1   | 16  | 12  |     | 74.40         | 291                        |
| 74.35                                                   | 18  |     |     |     |     |     |     |     |     | 6   | 18  | 7   | 74.35         | 340                        |
| 74.30                                                   | 2   |     |     |     |     |     |     |     |     |     |     | 9   | 74.30         | 351                        |
| 74.25                                                   |     |     |     |     |     |     |     |     |     |     |     | 14  | 74.25         | 365                        |
| 74.20                                                   |     |     |     |     |     |     |     |     |     |     |     | 1   | 74.20         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 2076: Olcott, New York on Lake Ontario

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 74.37   | 74.42   | 74.46   | 74.51   | 74.69   | 74.81   | 74.76   | 74.71   | 74.61   | 74.46*  | 74.40   | 74.39   |
| 2    | 74.39   | 74.45   | 74.46   | 74.53   | 74.68   | 74.81   | 74.75   | 74.71   | 74.61   | 74.47*  | 74.37   | 74.34   |
| 3    | 74.41   | 74.45   | 74.47   | 74.54   | 74.69   | 74.80   | 74.75   | 74.70   | 74.61   | 74.49   | 74.38   | 74.35   |
| 4    | 74.37   | 74.44   | 74.44   | 74.55   | 74.69   | 74.80   | 74.74   | 74.69   | 74.60   | 74.48   | 74.40   | 74.36   |
| 5    | 74.33   | 74.44   | 74.44   | 74.58   | 74.70   | 74.79   | 74.74   | 74.70   | 74.60   | 74.47   | 74.41   | 74.38   |
| 6    | 74.40   | 74.42   | 74.44   | 74.61   | 74.70   | 74.80   | 74.73   | 74.70   | 74.59   | 74.48   | 74.40   | 74.36   |
| 7    | 74.40   | 74.43   | 74.43   | 74.59   | 74.70   | 74.80   | 74.73   | 74.69   | 74.58   | 74.48   | 74.40   | 74.36   |
| 8    | 74.39   | 74.44   | 74.46   | 74.60   | 74.71   | 74.80   | 74.72   | 74.68   | 74.58   | 74.47   | 74.40   | 74.36   |
| 9    | 74.37   | 74.44   | 74.44   | 74.60   | 74.72   | 74.80   | 74.72   | 74.67   | 74.56   | 74.47   | 74.40   | 74.35   |
| 10   | 74.38   | 74.44   | 74.44   | 74.61   | 74.72   | 74.79   | 74.72   | 74.66   | 74.55   | 74.44   | 74.39*  | 74.37   |
| 11   | 74.37   | 74.48   | 74.44   | 74.61   | 74.72   | 74.79   | 74.73   | 74.65   | 74.54   | 74.45   | 74.40*  | 74.35   |
| 12   | 74.37   | 74.44   | 74.47   | 74.62   | 74.73   | 74.79   | 74.72   | 74.64   | 74.54   | 74.44   | 74.43   | 74.34   |
| 13   | 74.35   | 74.41   | 74.43   | 74.62   | 74.73   | 74.79   | 74.72   | 74.65   | 74.54   | 74.42   | 74.40   | 74.32   |
| 14   | 74.38   | 74.46   | 74.44   | 74.62   | 74.74   | 74.79   | 74.71   | 74.65   | 74.53   | 74.41   | 74.40   | 74.33   |
| 15   | 74.37   | 74.45   | 74.43   | 74.62   | 74.75   | 74.79   | 74.71   | 74.65   | 74.52   | 74.44   | 74.43   | 74.27   |
| 16   | 74.37   | 74.45   | 74.42   | 74.61   | 74.75   | 74.78   | 74.70   | 74.64   | 74.53   | 74.43   | 74.43   | 74.32   |
| 17   | 74.38   | 74.45   | 74.43   | 74.62   | 74.75   | 74.78   | 74.74   | 74.64   | 74.51   | 74.42   | 74.38   | 74.30   |
| 18   | 74.38   | 74.46   | 74.44   | 74.61   | 74.76   | 74.78   | 74.75   | 74.62   | 74.52   | 74.41   | 74.40   | 74.30   |
| 19   | 74.41   | 74.49   | 74.44   | 74.62   | 74.77   | 74.78   | 74.73   | 74.61   | 74.53   | 74.42   | 74.43   | 74.31   |
| 20   | 74.42   | 74.44   | 74.43   | 74.63   | 74.78   | 74.77   | 74.73   | 74.60   | 74.51   | 74.41   | 74.41   | 74.28   |
| 21   | 74.39   | 74.45   | 74.44   | 74.62   | 74.79   | 74.77   | 74.72   | 74.59   | 74.51   | 74.42   | 74.40   | 74.27   |
| 22   | 74.42   | 74.45   | 74.44   | 74.63   | 74.79   | 74.78   | 74.72   | 74.58   | 74.51   | 74.42   | 74.42   | 74.30   |
| 23   | 74.41   | 74.46   | 74.44   | 74.67   | 74.79   | 74.79   | 74.72   | 74.56   | 74.51   | 74.41   | 74.41   | 74.29   |
| 24   | 74.40   | 74.46   | 74.44   | 74.61   | 74.80   | 74.78   | 74.72   | 74.55   | 74.51   | 74.40   | 74.42   | 74.28   |
| 25   | 74.42   | 74.46   | 74.44   | 74.63   | 74.80   | 74.77   | 74.74   | 74.62   | 74.50   | 74.40   | 74.42   | 74.24   |
| 26   | 74.41   | 74.49   | 74.47   | 74.65   | 74.81   | 74.77   | 74.74   | 74.62   | 74.50   | 74.41   | 74.43   | 74.27   |
| 27   | 74.41   | 74.49   | 74.45   | 74.65   | 74.82   | 74.76   | 74.73   | 74.63   | 74.49   | 74.42   | 74.43   | 74.29   |
| 28   | 74.40   | 74.47   | 74.48   | 74.65   | 74.82   | 74.76   | 74.73   | 74.61   | 74.49   | 74.38   | 74.39   | 74.26   |
| 29   | 74.43   | 74.45   | 74.51   | 74.66   | 74.82   | 74.76   | 74.72   | 74.61   | 74.48   | 74.39   | 74.40   | 74.28   |
| 30   | 74.42   |         | 74.51   | 74.67   | 74.81   | 74.76   | 74.72   | 74.61   | 74.45   | 74.39   | 74.39   | 74.29   |
| 31   | 74.42   |         | 74.51   |         | 74.80   |         | 74.72   | 74.61   |         | 74.40   |         | 74.28   |
| MEAN | 74.39   | 74.45   | 74.45   | 74.61   | 74.75   | 74.78   | 74.73   | 74.64   | 74.54   | 74.43   | 74.41   | 74.32   |
| MAX. | 74.47   | 74.54   | 74.55   | 74.72   | 74.85   | 74.86   | 74.81   | 74.76   | 74.63   | 74.51   | 74.50   | 74.42   |
| MIN. | 1900/29 | 1900/26 | 0700/29 | 1700/23 | 2200/28 | 2400/07 | 1600/17 | 1200/01 | 0900/04 | 1400/07 | 1500/12 | 2100/04 |
|      | 74.25   | 74.34   | 74.39   | 74.49   | 74.66   | 74.69   | 74.63   | 74.51   | 74.43   | 74.31   | 74.25   | 74.18   |
|      | 0900/13 | 2200/20 | 1800/25 | 0700/02 | 0800/01 | 1500/25 | 0600/16 | 0500/24 | 0300/30 | 1100/28 | 1400/10 | 0200/28 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 74.54

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3007: Ashland Avenue, Niagara Falls, New York on Niagara River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 98.24 Apr  
Daily mean elevation: 99.36 24 Apr  
Instant/hourly elevation: 100.73 1500/15 Apr

LOWEST  
Monthly mean elevation: 96.28 Dec  
Daily mean elevation: 95.82 31 Jan  
Instant/hourly elevation: 95.54 2400/14 Apr

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 98.75 | 5 Jan  |
| 98.13 | 13 Feb |
| 97.62 | 27 Mar |
| 99.36 | 24 Apr |
| 98.45 | 10 May |
| 98.27 | 5 Jun  |
| 98.13 | 26 Jul |
| 98.26 | 15 Aug |
| 98.13 | 5 Sep  |
| 98.38 | 25 Oct |
| 97.87 | 17 Nov |
| 97.56 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev. | Date   |
|-------|--------|
| 95.82 | 31 Jan |
| 96.31 | 2 Feb  |
| 96.17 | 12 Mar |
| 97.90 | 14 Apr |
| 98.06 | 30 May |
| 97.98 | 29 Jun |
| 97.97 | 16 Jul |
| 97.94 | 26 Aug |
| 97.62 | 13 Sep |
| 97.69 | 21 Oct |
| 96.03 | 22 Nov |
| 95.94 | 31 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 99.30                                                   |     |     |     | 1   |     |     |     |     |     |     |     |     | 99.30         | 1                          |
| 99.15                                                   |     |     |     |     |     |     |     |     |     |     |     |     | 99.15         | 1                          |
| 99.00                                                   |     |     |     |     |     |     |     |     |     |     |     |     | 99.00         | 1                          |
| 98.85                                                   |     |     |     |     |     |     |     |     |     |     |     |     | 98.85         | 1                          |
| 98.70                                                   | 1   |     |     | 1   |     |     |     |     |     |     |     |     | 98.70         | 3                          |
| 98.55                                                   |     |     |     | 2   |     |     |     |     |     |     |     |     | 98.55         | 5                          |
| 98.40                                                   |     |     |     | 1   | 1   |     |     |     |     |     |     |     | 98.40         | 7                          |
| 98.25                                                   |     |     |     | 4   | 2   | 1   |     | 1   |     | 2   |     |     | 98.25         | 17                         |
| 98.10                                                   |     | 1   |     | 9   | 23  | 9   | 4   | 8   | 1   |     |     |     | 98.10         | 72                         |
| 97.95                                                   | 2   | 1   |     | 10  | 5   | 20  | 27  | 21  | 12  | 2   |     |     | 97.95         | 172                        |
| 97.80                                                   |     | 1   |     | 2   |     |     |     | 1   | 6   | 7   | 1   |     | 97.80         | 190                        |
| 97.65                                                   | 1   |     |     |     |     |     |     |     | 9   | 20  |     |     | 97.65         | 220                        |
| 97.50                                                   | 2   |     | 1   |     |     |     |     |     | 2   |     |     | 1   | 97.50         | 226                        |
| 97.35                                                   |     | 1   |     |     |     |     |     |     |     |     |     | 1   | 97.35         | 228                        |
| 97.20                                                   | 1   | 2   | 3   |     |     |     |     |     |     |     |     |     | 97.20         | 234                        |
| 97.05                                                   | 4   | 3   | 1   |     |     |     |     |     |     |     | 1   |     | 97.05         | 243                        |
| 96.90                                                   | 4   | 5   | 3   |     |     |     |     |     |     |     |     |     | 96.90         | 255                        |
| 96.75                                                   | 4   | 6   | 3   |     |     |     |     |     |     |     | 4   |     | 96.75         | 272                        |
| 96.60                                                   | 2   | 5   | 9   |     |     |     |     |     |     |     | 1   | 1   | 96.60         | 290                        |
| 96.45                                                   | 3   | 1   | 8   |     |     |     |     |     |     |     | 1   | 3   | 96.45         | 306                        |
| 96.30                                                   | 3   | 3   | 2   |     |     |     |     |     |     |     | 5   | 2   | 96.30         | 321                        |
| 96.15                                                   | 1   |     | 1   |     |     |     |     |     |     |     | 4   | 8   | 96.15         | 335                        |
| 96.00                                                   | 1   |     |     |     |     |     |     |     |     |     | 13  | 13  | 96.00         | 362                        |
| 95.85                                                   | 1   |     |     |     |     |     |     |     |     |     |     | 2   | 95.85         | 365                        |
| 95.70                                                   | 1   |     |     |     |     |     |     |     |     |     |     |     | 95.70         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3007: Ashland Avenue, Niagara Falls, New York on Niagara River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 97.97   | 96.43   | 96.74   | 98.07   | 98.15   | 98.24   | 97.99   | 98.08   | 98.03   | 97.84   | 96.06   | 96.06   |
| 2    | 97.61   | 96.31   | 96.63   | 98.09   | 98.12   | 98.08   | 97.98   | 98.09   | 98.05   | 97.83   | 96.16   | 97.36   |
| 3    | 97.00   | 96.44   | 96.48   | 98.04   | 98.11   | 98.09   | 98.02   | 98.12   | 98.05   | 97.78   | 96.12   | 97.56   |
| 4    | 98.02   | 96.86   | 96.53   | 98.23   | 98.11   | 98.11   | 98.02   | 98.11   | 98.09   | 97.77   | 96.12   | 96.23   |
| 5    | 98.75   | 97.04   | 96.56   | 98.28   | 98.10   | 98.27   | 97.97   | 98.12   | 98.13   | 97.81   | 96.32   | 96.62   |
| 6    | 96.83   | 97.86   | 96.61   | 98.06   | 98.19   | 98.15   | 97.98   | 98.13   | 98.05   | 97.78   | 96.85   | 96.46   |
| 7    | 95.95   | 96.68   | 96.87   | 98.07   | 98.16   | 98.11   | 97.98   | 98.09   | 98.06   | 97.74   | 96.27   | 96.09   |
| 8    | 96.32   | 97.10   | 96.35   | 98.05   | 98.14   | 98.05   | 97.98   | 98.08   | 98.03   | 97.74   | 96.22   | 96.00   |
| 9    | 97.14   | 97.04   | 96.67   | 98.08   | 98.20   | 98.07   | 97.98   | 98.09   | 98.03   | 97.73   | 96.15   | 96.27   |
| 10   | 97.15   | 97.08   | 96.54   | 97.96   | 98.45   | 98.13   | 97.98   | 98.12   | 98.03   | 98.03   | 97.08   | 96.09   |
| 11   | 97.54   | 96.76   | 96.59   | 97.97   | 98.18   | 98.14   | 97.98   | 98.09   | 97.99   | 97.88   | 96.44   | 96.15   |
| 12   | 96.99   | 97.29   | 96.17   | 97.95   | 98.11   | 98.14   | 98.00   | 98.06   | 97.98   | 97.80   | 96.11   | 96.14   |
| 13   | 97.68   | 98.13   | 97.18   | 98.01   | 98.18   | 98.10   | 98.00   | 98.06   | 97.62*  | 97.76   | 96.83   | 96.37   |
| 14   | 96.77   | 96.89   | 97.25   | 97.90   | 98.16   | 98.12   | 98.00   | 98.10   | 97.94   | 97.80   | 96.49   | 96.22   |
| 15   | 96.55   | 96.95   | 96.94   | 98.25   | 98.11   | 98.09   | 97.98   | 98.26   | 97.99   | 97.82   | 96.09   | 96.56   |
| 16   | 96.42   | 96.78   | 96.92   | 98.32   | 98.26   | 98.09   | 97.97   | 98.11   | 97.65   | 97.76   | 96.43   | 96.09   |
| 17   | 96.27   | 96.67   | 96.80   | 98.13   | 98.13   | 98.05   | 97.98   | 98.15   | 97.78   | 97.80   | 97.87   | 96.05   |
| 18   | 96.45   | 96.78   | 96.76   | 98.17   | 98.12   | 98.06   | 98.01   | 98.05   | 97.81   | 97.77   | 96.35   | 96.23   |
| 19   | 96.47   | 96.69   | 96.51   | 98.32   | 98.11   | 98.08   | 98.04   | 98.03   | 97.75   | 97.81   | 96.07   | 96.13   |
| 20   | 96.54   | 97.02   | 96.73   | 98.53   | 98.18   | 98.17   | 98.06   | 98.04   | 97.82   | 97.69   | 96.09   | 96.16   |
| 21   | 97.01   | 97.98   | 96.66   | 98.80   | 98.15   | 98.03   | 98.02   | 98.06   | 97.87   | 97.69   | 96.35   | 96.10   |
| 22   | 96.67   | 97.48   | 96.41   | 98.57   | 98.14   | 98.03   | 98.05   | 98.05   | 97.77   | 97.76   | 96.03   | 96.04   |
| 23   | 96.84   | 97.03   | 96.61   | 98.23   | 98.13   | 98.03   | 98.07   | 98.01   | 97.80   | 97.79   | 96.07   | 96.27   |
| 24   | 96.91   | 97.22   | 96.54   | 99.36   | 98.10   | 98.00   | 98.13   | 98.23   | 97.76   | 98.27   | 96.09   | 96.06   |
| 25   | 96.76   | 97.18   | 96.55   | 98.68   | 98.12   | 98.05   | 98.10   | 98.10   | 97.71   | 98.38   | 96.13   | 96.50   |
| 26   | 97.18   | 96.80   | 96.98   | 98.40   | 98.12   | 98.06   | 98.13   | 97.94   | 97.83   | 97.92   | 96.05   | 96.16   |
| 27   | 97.10   | 96.63   | 97.62   | 98.17   | 98.26   | 98.04   | 98.11   | 98.09   | 97.75   | 97.79   | 96.22   | 96.04   |
| 28   | 97.30   | 96.62   | 97.21   | 98.21   | 98.08   | 98.01   | 98.08   | 98.04   | 97.76   | 98.05   | 96.89   | 96.43   |
| 29   | 96.66   | 96.59   | 96.75   | 98.15   | 98.07   | 97.98   | 98.09   | 98.04   | 97.76   | 97.76   | 96.80   | 96.24   |
| 30   | 96.06   |         | 97.30   | 98.12   | 98.06   | 97.99   | 98.11   | 98.02   | 97.84   | 97.76   | 96.62   | 96.05   |
| 31   | 95.82   |         | 96.73   |         | 98.11   |         | 98.07   | 98.02   |         | 97.72   |         | 95.94   |
| MEAN | 96.93   | 96.98   | 96.75   | 98.24   | 98.15   | 98.09   | 98.03   | 98.08   | 97.89   | 97.83   | 96.38   | 96.28   |
| MAX. | 100.37  | 99.25   | 98.45   | 100.73  | 99.76   | 99.56   | 99.42   | 99.75   | 99.42   | 100.05  | 98.90   | 98.31   |
|      | 1200/05 | 0800/21 | 1500/30 | 1500/15 | 1900/27 | 2100/05 | 2100/23 | 1500/17 | 1900/26 | 1400/28 | 1600/10 | 1700/02 |
| MIN. | 95.73   | 95.80   | 95.78   | 95.54   | 95.87   | 95.80   | 95.76   | 95.81   | 95.78   | 95.75   | 95.79   | 95.76   |
|      | 0500/07 | 0600/01 | 0600/08 | 2400/14 | 2400/29 | 0100/29 | 0100/05 | 2400/29 | 2200/16 | 2400/17 | 0600/30 | 0300/04 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 97.47

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 3009: American Falls, Niagara Falls, New York on Niagara River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 170.28 Dec  
 Daily mean elevation: 170.47 5 Jan  
 Instant/hourly elevation: 170.61 1900/1 Jan

LOWEST  
 Monthly mean elevation: 170.15 Apr  
 Daily mean elevation: 169.94 14 Apr  
 Instant/hourly elevation: 169.68 2100/13 Apr

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 170.47 | 5 Jan  |
| 170.42 | 13 Feb |
| 170.31 | 27 Mar |
| 170.31 | 24 Apr |
| 170.29 | 22 May |
| 170.31 | 13 Jun |
| 170.31 | 26 Jul |
| 170.33 | 6 Aug  |
| 170.29 | 30 Sep |
| 170.35 | 24 Oct |
| 170.35 | 10 Nov |
| 170.36 | 2 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 169.97 | 7 Jan  |
| 170.11 | 4 Feb  |
| 170.10 | 1 Mar  |
| 169.94 | 14 Apr |
| 170.20 | 27 May |
| 170.19 | 30 Jun |
| 170.20 | 1 Jul  |
| 170.21 | 31 Aug |
| 170.17 | 16 Sep |
| 170.22 | 20 Oct |
| 170.25 | 20 Nov |
| 170.24 | 31 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 170.45                                                  | 2   |     |     |     |     |     |     |     |     |     |     |     | 170.45        | 2                          |
| 170.40                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 170.40        | 3                          |
| 170.35                                                  | 1   | 1   |     |     |     |     |     |     |     |     |     |     | 170.35        | 6                          |
| 170.30                                                  | 2   | 2   | 1   | 1   |     | 1   | 1   | 2   |     | 5   | 4   | 1   | 170.30        | 28                         |
| 170.25                                                  | 3   | 3   | 3   | 4   | 20  | 13  | 12  | 12  | 5   | 17  | 24  | 3   | 170.25        | 168                        |
| 170.20                                                  | 5   | 6   | 13  | 9   | 10  | 11  | 17  | 17  | 23  | 9   | 2   | 3   | 170.20        | 293                        |
| 170.15                                                  | 9   | 5   | 10  | 2   | 1   | 5   | 1   |     | 2   |     |     |     | 170.15        | 328                        |
| 170.10                                                  | 3   | 11  | 3   | 4   |     |     |     |     |     |     |     |     | 170.10        | 349                        |
| 170.05                                                  | 4   |     | 1   | 4   |     |     |     |     |     |     |     |     | 170.05        | 358                        |
| 170.00                                                  | 1   |     |     | 3   |     |     |     |     |     |     |     |     | 170.00        | 362                        |
| 169.95                                                  | 1   |     |     | 2   |     |     |     |     |     |     |     |     | 169.95        | 365                        |
| 169.90                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 169.90        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3009: American Falls, Niagara Falls, New York on Niagara River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 170.46  | 170.16  | 170.10  | 170.19  | 170.27  | 170.27  | 170.20  | 170.28  | 170.23  | 170.32  | 170.26  | 170.26  |
| 2    | 170.34  | 170.15  | 170.15  | 170.23  | 170.26  | 170.22  | 170.23  | 170.28  | 170.23  | 170.26  | 170.28  | 170.36  |
| 3    | 170.18  | 170.15  | 170.19  | 170.22  | 170.26  | 170.25  | 170.26  | 170.29  | 170.23  | 170.26  | 170.27  | 170.29  |
| 4    | 170.29  | 170.11  | 170.19  | 170.26  | 170.25  | 170.26  | 170.24  | 170.29  | 170.21  | 170.26  | 170.27  | 170.24  |
| 5    | 170.47  | 170.17  | 170.19  | 170.22  | 170.27  | 170.29  | 170.21  | 170.29  | 170.23  | 170.29  | 170.27  | 170.29  |
| 6    | 170.21  | 170.37  | 170.19  | 170.20  | 170.27  | 170.26  | 170.22  | 170.33  | 170.23  | 170.27  | 170.28  | 170.27  |
| 7    | 169.97  | 170.12  | 170.20  | 170.21  | 170.27  | 170.24  | 170.24  | 170.29  | 170.22  | 170.27  | 170.29  | 170.26  |
| 8    | 170.06  | 170.17  | 170.19  | 170.24  | 170.27  | 170.22  | 170.22  | 170.28  | 170.22  | 170.26  | 170.28  | 170.25  |
| 9    | 170.32  | 170.23  | 170.20  | 170.25  | 170.28  | 170.19  | 170.25  | 170.28  | 170.22  | 170.27  | 170.27  | 170.29  |
| 10   | 170.29  | 170.22  | 170.21  | 170.05  | 170.29  | 170.28  | 170.25  | 170.28  | 170.23  | 170.33  | 170.35  | 170.27  |
| 11   | 170.36  | 170.12  | 170.22  | 170.04  | 170.26  | 170.28  | 170.24  | 170.26  | 170.21  | 170.30  | 170.29  | 170.28  |
| 12   | 170.22  | 170.22  | 170.21  | 170.06  | 170.25  | 170.30  | 170.24  | 170.24  | 170.19  | 170.25  | 170.26  | 170.28  |
| 13   | 170.29  | 170.42  | 170.25  | 170.06  | 170.27  | 170.31  | 170.24  | 170.25  | 170.23  | 170.24  | 170.34  | 170.32  |
| 14   | 170.10  | 170.23  | 170.26  | 169.94  | 170.26  | 170.30  | 170.25  | 170.27  | 170.25  | 170.29  | 170.30  | 170.29  |
| 15   | 170.04  | 170.17  | 170.24  | 170.05  | 170.26  | 170.26  | 170.22  | 170.32  | 170.21  | 170.29  | 170.26  | 170.30  |
| 16   | 170.09  | 170.17  | 170.22  | 170.08  | 170.28  | 170.29  | 170.22  | 170.24  | 170.17  | 170.29  | 170.26  | 170.27  |
| 17   | 170.10  | 170.14  | 170.21  | 170.11  | 170.27  | 170.26  | 170.27  | 170.23  | 170.24  | 170.23  | 170.33  | 170.26  |
| 18   | 170.20  | 170.12  | 170.22  | 169.99  | 170.25  | 170.26  | 170.24  | 170.24  | 170.25  | 170.31  | 170.25  | 170.29  |
| 19   | 170.18  | 170.12  | 170.21  | 169.96  | 170.25  | 170.28  | 170.28  | 170.22  | 170.22  | 170.27  | 170.26  | 170.27  |
| 20   | 170.13  | 170.29  | 170.22  | 170.11  | 170.29  | 170.25  | 170.25  | 170.25  | 170.26  | 170.22  | 170.25  | 170.28  |
| 21   | 170.20  | 170.32  | 170.17  | 170.15  | 170.28  | 170.23  | 170.22  | 170.23  | 170.25  | 170.23  | 170.26  | 170.27  |
| 22   | 170.14  | 170.29  | 170.19  | 170.06  | 170.29  | 170.23  | 170.26  | 170.25  | 170.24  | 170.26  | 170.26  | 170.26  |
| 23   | 170.19  | 170.25  | 170.22  | 170.13  | 170.27  | 170.20  | 170.27  | 170.22  | 170.25  | 170.27  | 170.26  | 170.31  |
| 24   | 170.20  | 170.31  | 170.22  | 170.31  | 170.25  | 170.21  | 170.29  | 170.25  | 170.22  | 170.35  | 170.26  | 170.26  |
| 25   | 170.15  | 170.30  | 170.21  | 170.26  | 170.25  | 170.25  | 170.29  | 170.27  | 170.24  | 170.33  | 170.27  | 170.35  |
| 26   | 170.24  | 170.23  | 170.27  | 170.25  | 170.25  | 170.21  | 170.31  | 170.25  | 170.27  | 170.27  | 170.26  | 170.28  |
| 27   | 170.24  | 170.15  | 170.31  | 170.26  | 170.20  | 170.20  | 170.30  | 170.23  | 170.27  | 170.25  | 170.26  | 170.26  |
| 28   | 170.25  | 170.15  | 170.20  | 170.25  | 170.26  | 170.21  | 170.26  | 170.25  | 170.21  | 170.23  | 170.31  | 170.30  |
| 29   | 170.16  | 170.15  | 170.14  | 170.24  | 170.23  | 170.19  | 170.28  | 170.21  | 170.27  | 170.24  | 170.26  | 170.29  |
| 30   | 170.18  |         | 170.26  | 170.26  | 170.24  | 170.19  | 170.30  | 170.22  | 170.29  | 170.26  | 170.26  | 170.26  |
| 31   | 170.19  |         | 170.12  |         | 170.24  |         | 170.26  | 170.21  |         | 170.23  |         | 170.24  |
| MEAN | 170.21  | 170.21  | 170.21  | 170.15  | 170.26  | 170.25  | 170.25  | 170.26  | 170.23  | 170.27  | 170.28  | 170.28  |
| MAX. | 170.61  | 170.52  | 170.42  | 170.43  | 170.43  | 170.47  | 170.47  | 170.53  | 170.44  | 170.51  | 170.57  | 170.48  |
| MIN. | 1900/01 | 0700/13 | 1600/30 | 0700/28 | 0800/20 | 1100/13 | 0700/30 | 0700/15 | 0700/27 | 0700/15 | 1700/10 | 1600/02 |
|      | 169.91  | 169.99  | 170.05  | 169.68  | 169.95  | 169.90  | 169.91  | 169.90  | 169.87  | 169.91  | 170.17  | 170.18  |
|      | 1200/07 | 1500/07 | 1000/01 | 2100/13 | 2100/27 | 2100/24 | 2100/01 | 2100/29 | 2100/09 | 1900/17 | 0100/30 | 0300/04 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 170.24

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3012: Niagara Intake, Niagara Falls, New York on Niagara River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 171.15 Jul  
Daily mean elevation: 171.42 5 Jan  
Instant/hourly elevation: 171.77 1100/15 Apr

LOWEST  
Monthly mean elevation: 171.01 Mar  
Daily mean elevation: 170.84 7 Jan  
Instant/hourly elevation: 170.36 2200/14 Apr

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 171.42 | 5 Jan  |
| 171.34 | 13 Feb |
| 171.17 | 27 Mar |
| 171.36 | 24 Apr |
| 171.16 | 20 May |
| 171.18 | 19 Jun |
| 171.28 | 3 Jul  |
| 171.23 | 1 Aug  |
| 171.12 | 30 Sep |
| 171.22 | 24 Oct |
| 171.17 | 10 Nov |
| 171.19 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 170.84 | 7 Jan  |
| 170.90 | 19 Feb |
| 170.88 | 1 Mar  |
| 171.04 | 1 Apr  |
| 171.07 | 27 May |
| 171.04 | 9 Jun  |
| 171.10 | 21 Jul |
| 171.07 | 31 Aug |
| 170.99 | 16 Sep |
| 171.03 | 20 Oct |
| 171.00 | 22 Nov |
| 171.00 | 31 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     |  | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |  | Elev.<br>(m.) |                            |
| 171.40                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     |  | 171.40        | 1                          |
| 171.35                                                  | 2   |     |     | 1   |     |     |     |     |     |     |     |     |  | 171.35        | 4                          |
| 171.30                                                  |     | 2   |     | 1   |     |     |     |     |     |     |     |     |  | 171.30        | 7                          |
| 171.25                                                  | 1   | 1   |     | 1   |     |     | 1   |     |     |     |     |     |  | 171.25        | 11                         |
| 171.20                                                  | 1   | 1   |     |     |     |     | 1   | 3   |     | 1   |     |     |  | 171.20        | 18                         |
| 171.15                                                  | 3   | 1   | 1   | 6   | 1   | 6   | 7   | 9   |     |     | 1   | 1   |  | 171.15        | 57                         |
| 171.10                                                  | 1   | 3   | 1   | 9   | 21  | 14  | 17  | 14  | 3   | 9   | 3   | 3   |  | 171.10        | 155                        |
| 171.05                                                  | 3   | 4   | 4   | 11  | 9   | 9   | 3   | 5   | 22  | 13  | 5   | 9   |  | 171.05        | 252                        |
| 171.00                                                  | 3   | 3   | 7   | 1   |     | 1   |     |     | 4   | 4   | 19  | 17  |  | 171.00        | 311                        |
| 170.95                                                  | 9   | 4   | 15  |     |     |     |     |     | 1   |     | 2   | 1   |  | 170.95        | 343                        |
| 170.90                                                  | 5   | 8   | 2   |     |     |     |     |     |     |     |     |     |  | 170.90        | 358                        |
| 170.85                                                  | 1   | 2   | 1   |     |     |     |     |     |     |     |     |     |  | 170.85        | 362                        |
| 170.80                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     |  | 170.80        | 363                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3012: Niagara Intake, Niagara Falls, New York on Niagara River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 171.36  | 170.94  | 170.88  | 171.04  | 171.14  | 171.13  | 171.18* | 171.23* | 171.09  | 171.15  | 171.03  | 171.03  |
| 2    | 171.18  | 170.94  | 170.95  | 171.09  | 171.14  | 171.06  | /       | 171.16* | 171.09  | 171.17* | 171.06  | 171.19  |
| 3    | 170.96  | 170.97  | 170.97  | 171.08  | 171.12  | 171.10  | 171.28* | 171.16  | 171.10  | /       | 171.04  | 171.10  |
| 4    | 171.16  | 170.92  | 170.97  | 171.13  | 171.11  | 171.13  | 171.13* | 171.17  | 171.07  | 171.08  | 171.04  | 171.01  |
| 5    | 171.42  | 171.02  | 170.99  | 171.08  | 171.14  | 171.16  | 171.10  | 171.16  | 171.10  | 171.12  | 171.05  | 171.08* |
| 6    | 171.11  | 171.34  | 170.98  | 171.06  | 171.14  | 171.12  | 171.11  | 171.21  | 171.10  | 171.14* | 171.07  | 171.05  |
| 7    | 170.84  | 171.03  | 171.00  | 171.07  | 171.13  | 171.10  | 171.13  | 171.17  | 171.09  | 171.09  | 171.06  | 171.03  |
| 8    | 170.96  | 171.06  | 170.98  | 171.09  | 171.13  | 171.08  | 171.11  | 171.15  | 171.07  | 171.08  | 171.04  | 171.01  |
| 9    | 171.28  | 171.11  | 171.00  | 171.11  | 171.14  | 171.04  | 171.15  | 171.15  | 171.09  | 171.09  | 171.04  | 171.06  |
| 10   | 171.22  | 171.07  | 171.00  | 171.13  | 171.15  | 171.14  | 171.14  | 171.16  | 171.09  | 171.18  | 171.17  | 171.03  |
| 11   | 171.36* | 170.92  | 171.00  | 171.10  | 171.11  | 171.14  | 171.13  | 171.13  | 171.06  | 171.15  | 171.07  | 171.05  |
| 12   | 171.02* | 171.09  | 170.99  | 171.09  | 171.09  | 171.16  | 171.13  | 171.12  | 171.04  | 171.09  | 171.02  | 171.05  |
| 13   | 171.18  | 171.34  | 171.08  | 171.17  | 171.11  | 171.17  | 171.13  | 171.13  | 171.09  | 171.07  | 171.14  | 171.11  |
| 14   | 170.95  | 171.07  | 171.07  | 171.08  | 171.09  | 171.16  | 171.15  | 171.16  | 171.11  | 171.12  | 171.08  | 171.07  |
| 15   | 170.94  | 170.98  | 171.06  | 171.34  | 171.08  | 171.13  | 171.10  | 171.22  | 171.05  | 171.12  | 171.02  | 171.11  |
| 16   | 170.99  | 170.97  | 171.04  | 171.17  | 171.13  | 171.15  | 171.12  | 171.18* | 170.99  | 171.11  | 171.04  | 171.04  |
| 17   | 170.88  | 170.93  | 171.03  | 171.26  | 171.13  | 171.14  | 171.21* | 171.20* | 171.10  | 171.04  | 171.15  | 171.03  |
| 18   | 171.00  | 170.90  | 171.01  | 171.18  | 171.10  | 171.14  | /       | 171.11* | 171.10  | 171.15  | 171.01  | 171.08  |
| 19   | 170.96  | 170.90  | 171.00  | 171.12  | 171.10  | 171.18  | 171.12* | 171.08  | 171.06  | 171.09  | 171.02  | 171.04  |
| 20   | 170.91  | 171.15  | 171.01  | 171.20  | 171.16  | 171.14  | 171.13  | 171.12  | 171.12  | 171.03  | 171.00  | 171.07  |
| 21   | 171.01  | 171.28  | 170.97  | 171.18  | 171.14  | 171.12  | 171.10  | 171.11  | 171.10  | 171.05  | 171.03  | 171.04  |
| 22   | 170.94  | 171.22  | 170.97  | 171.13  | 171.15  | 171.13  | 171.13  | 171.11  | 171.06  | 171.08  | 171.00  | 171.01  |
| 23   | 170.98  | 171.04  | 171.02  | 171.07  | 171.13  | 171.10  | 171.15  | 171.08  | 171.08  | 171.10  | 171.02  | 171.10  |
| 24   | 171.02  | 171.17  | 171.01  | 171.36  | 171.11  | 171.10  | 171.18  | 171.13  | 171.04  | 171.22  | 171.02  | 171.03  |
| 25   | 170.92  | 171.15* | 171.00  | 171.17  | 171.12  | 171.16  | 171.17  | 171.15  | 171.07  | 171.19  | 171.04  | 171.15  |
| 26   | 171.08  | 170.99* | 171.08  | 171.11  | 171.12  | 171.11  | 171.19  | 171.12  | 171.10  | 171.11  | 171.02  | 171.05  |
| 27   | 171.08  | 170.92  | 171.17  | 171.11  | 171.07  | 171.14* | 171.18  | 171.09  | 171.10  | 171.07  | 171.04  | 171.02  |
| 28   | 171.09  | 170.92  | 171.02  | 171.11  | 171.11  | 171.08* | 171.14  | 171.12  | 171.03  | 171.08  | 171.11  | 171.09  |
| 29   | 170.98  | 170.93  | 170.93  | 171.08  | 171.09  | 171.09  | 171.16  | 171.11* | 171.09  | 171.08  | 171.04  | 171.07  |
| 30   | 170.96  |         | 171.11  | 171.12  | 171.10  | 171.09  | 171.17  | 171.09* | 171.12  | 171.09  | 171.04  | 171.02  |
| 31   | 170.97  |         | 171.00  |         | 171.10  |         | 171.12  | 171.07  |         | 171.04  |         | 171.00  |
| MEAN | 171.06  | 171.04  | 171.01  | 171.13  | 171.12  | 171.12  | 171.15  | 171.14  | 171.08  | 171.11  | 171.05  | 171.06  |
| MAX. | 171.57  | 171.45  | 171.37  | 171.77  | 171.37  | 171.41  | 171.42  | 171.51  | 171.37  | 171.43  | 171.47  | 171.35  |
|      | 1800/01 | 0600/06 | 1400/30 | 1100/15 | 0700/20 | 1000/13 | 0700/24 | 0700/15 | 0700/20 | 0900/18 | 1500/10 | 1600/02 |
| MIN. | 170.76  | 170.83  | 170.82  | 170.36  | 170.76  | 170.75  | 170.80  | 170.79  | 170.73  | 170.78  | 170.94  | 170.93  |
|      | 1300/07 | 2400/28 | 0500/29 | 2200/14 | 2100/12 | 2100/24 | 2100/13 | 2100/09 | 1900/24 | 1900/23 | 2000/21 | 0400/04 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 171.09

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3020: Buffalo Harbor, Buffalo, New York on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.24 Apr  
Daily mean elevation: 174.70 4 Jan  
Instant/hourly elevation: 175.52 1300/10 Nov

LOWEST  
Monthly mean elevation: 173.92 Nov  
Daily mean elevation: 173.65 22 Dec  
Instant/hourly elevation: 173.47 2400/28 Sep

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.70 | 4 Jan  |
| 174.48 | 6 Feb  |
| 174.35 | 13 Mar |
| 174.42 | 24 Apr |
| 174.28 | 13 May |
| 174.34 | 5 Jun  |
| 174.22 | 14 Jul |
| 174.25 | 25 Aug |
| 174.14 | 20 Sep |
| 174.34 | 24 Oct |
| 174.43 | 17 Nov |
| 174.37 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 173.98 | 19 Jan |
| 173.95 | 11 Feb |
| 174.03 | 22 Mar |
| 174.09 | 2 Apr  |
| 174.12 | 18 May |
| 174.11 | 24 Jun |
| 174.07 | 23 Jul |
| 173.94 | 22 Aug |
| 173.68 | 28 Sep |
| 173.79 | 31 Oct |
| 173.72 | 15 Nov |
| 173.65 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.  | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | (m.)   |                            |
| 174.65                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 174.65 | 1                          |
| 174.60                                                  | 2   |     |     |     |     |     |     |     |     |     |     |     | 174.60 | 3                          |
| 174.55                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 174.55 | 3                          |
| 174.50                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 174.50 | 3                          |
| 174.45                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 174.45 | 4                          |
| 174.40                                                  | 1   |     |     | 1   |     |     |     |     |     |     | 1   |     | 174.40 | 7                          |
| 174.35                                                  |     |     |     | 1   |     |     |     |     |     |     |     | 1   | 174.35 | 9                          |
| 174.30                                                  | 3   | 3   | 2   | 3   |     | 1   |     |     |     | 1   |     |     | 174.30 | 22                         |
| 174.25                                                  |     | 2   |     | 9   | 3   |     |     |     |     | 1   |     |     | 174.25 | 37                         |
| 174.20                                                  | 6   | 3   | 3   | 8   | 21  | 8   | 2   | 3   |     | 1   |     |     | 174.20 | 92                         |
| 174.15                                                  | 7   | 4   | 6   | 5   | 5   | 12  | 5   | 1   |     | 1   |     |     | 174.15 | 138                        |
| 174.10                                                  | 5   | 6   | 11  | 2   | 2   | 9   | 16  | 11  | 1   |     | 4   | 1   | 174.10 | 206                        |
| 174.05                                                  | 4   | 6   | 6   | 1   |     |     | 8   | 6   |     | 1   | 1   | 2   | 174.05 | 241                        |
| 174.00                                                  | 1   | 3   | 3   |     |     |     |     | 2   | 6   | 2   | 2   | 3   | 174.00 | 263                        |
| 173.95                                                  | 1   |     |     |     |     |     |     | 7   | 9   | 2   | 3   | 4   | 173.95 | 289                        |
| 173.90                                                  |     | 1   |     |     |     |     |     | 1   | 5   | 5   | 2   | 6   | 173.90 | 309                        |
| 173.85                                                  |     |     |     |     |     |     |     |     | 5   | 8   | 3   | 5   | 173.85 | 330                        |
| 173.80                                                  |     |     |     |     |     |     |     |     | 2   | 8   | 8   | 5   | 173.80 | 353                        |
| 173.75                                                  |     |     |     |     |     |     |     |     | 1   | 1   | 3   | 3   | 173.75 | 361                        |
| 173.70                                                  |     |     |     |     |     |     |     |     |     |     | 3   |     | 173.70 | 364                        |
| 173.65                                                  |     |     |     |     |     |     |     |     | 1   |     |     |     | 173.65 | 365                        |
| 173.60                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 173.60 | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3020: Buffalo Harbor, Buffalo, New York on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 174.65  | 174.08  | 174.06  | 174.14  | 174.25  | 174.24  | 174.13  | 174.14  | 173.97  | 173.91  | 173.88  | 173.94  |
| 2    | 174.42  | 174.05  | 174.14  | 174.09  | 174.21  | 174.13  | 174.14  | 174.12  | 174.00  | 173.90  | 173.89  | 174.37  |
| 3    | 174.22  | 174.03  | 174.05  | 174.15  | 174.17  | 174.14  | 174.11  | 174.10  | 173.97  | 173.85  | 173.78  | 174.13  |
| 4    | 174.70  | 174.10  | 174.07  | 174.26  | 174.16  | 174.25  | 174.09  | 174.11  | 174.05  | 173.91  | 173.77  | 174.03  |
| 5    | 174.64  | 174.30  | 174.11  | 174.16  | 174.19  | 174.34  | 174.09  | 174.15  | 174.04  | 173.96  | 173.85  | 173.96  |
| 6    | 174.34  | 174.48  | 174.12  | 174.19  | 174.23  | 174.23  | 174.10  | 174.22  | 174.03  | 173.87  | 174.04  | 174.00  |
| 7    | 174.10  | 174.30  | 174.14  | 174.19  | 174.21  | 174.18  | 174.11  | 174.14  | 173.99  | 173.86  | 173.96  | 173.91  |
| 8    | 174.16  | 174.16  | 174.07  | 174.21  | 174.20  | 174.14  | 174.11  | 174.10  | 173.97  | 173.83  | 173.90  | 173.83  |
| 9    | 174.24  | 174.15  | 174.16  | 174.23  | 174.25  | 174.13  | 174.14  | 174.12  | 174.03  | 173.87  | 173.80  | 173.96  |
| 10   | 174.18  | 174.10  | 174.13  | 174.22  | 174.26  | 174.19  | 174.13  | 174.09  | 174.00  | 174.23  | 174.12  | 173.88  |
| 11   | 174.24  | 173.95  | 174.08  | 174.19  | 174.26  | 174.23  | 174.21  | 174.08  | 173.92  | 174.08  | 173.92  | 173.80  |
| 12   | 174.18  | 174.31  | 174.03  | 174.20  | 174.21  | 174.23  | 174.16  | 174.10  | 173.93  | 173.93  | 173.75  | 173.80  |
| 13   | 174.32  | 174.35  | 174.35  | 174.22  | 174.28  | 174.20  | 174.10  | 174.11  | 174.02  | 173.88  | 174.11  | 173.93  |
| 14   | 174.05  | 174.09  | 174.21  | 174.27  | 174.19  | 174.20  | 174.22  | 174.20  | 174.00  | 173.97  | 174.00  | 173.89  |
| 15   | 174.17  | 174.19  | 174.18  | 174.28  | 174.22  | 174.20  | 174.12  | 174.23  | 173.85  | 173.89  | 173.72  | 174.04  |
| 16   | 174.13  | 174.13  | 174.21  | 174.30  | 174.21  | 174.17  | 174.11  | 174.11  | 173.82  | 173.84  | 174.06  | 173.89  |
| 17   | 174.08  | 174.10  | 174.16  | 174.32  | 174.21  | 174.17  | 174.16  | 174.12  | 173.99  | 173.81  | 174.43  | 173.85  |
| 18   | 174.17  | 174.07  | 174.17  | 174.30  | 174.12  | 174.15  | 174.12  | 173.98  | 173.94  | 174.03  | 173.85  | 173.98  |
| 19   | 173.98  | 174.05  | 174.18  | 174.31  | 174.14  | 174.17  | 174.16  | 173.96  | 173.90  | 173.82  | 173.75  | 173.85  |
| 20   | 174.14  | 174.33  | 174.15  | 174.37  | 174.22  | 174.21  | 174.09  | 174.01  | 174.14  | 173.81  | 173.83  | 173.91  |
| 21   | 174.24  | 174.21  | 174.12  | 174.28  | 174.22  | 174.15  | 174.08  | 173.98  | 174.00  | 173.82  | 173.91  | 173.86  |
| 22   | 174.14  | 174.18  | 174.03  | 174.22  | 174.21  | 174.24  | 174.10  | 173.94  | 173.91  | 173.86  | 173.81  | 173.65  |
| 23   | 174.17  | 174.22  | 174.15  | 174.23  | 174.22  | 174.14  | 174.07  | 174.03  | 174.03  | 173.91  | 173.82  | 173.93  |
| 24   | 174.25  | 174.22  | 174.09  | 174.42  | 174.22  | 174.11  | 174.15  | 174.13  | 173.86  | 174.34  | 173.81  | 173.81  |
| 25   | 174.06  | 174.15  | 174.15  | 174.28  | 174.24  | 174.25  | 174.15  | 174.25  | 173.89  | 174.18  | 173.84  | 174.06  |
| 26   | 174.35  | 174.12  | 174.20  | 174.24  | 174.24  | 174.17  | 174.14  | 174.13  | 173.87  | 174.04  | 173.81  | 173.83  |
| 27   | 174.21  | 174.11  | 174.32  | 174.21  | 174.25  | 174.17  | 174.14  | 173.97  | 173.95  | 173.86  | 174.01  | 173.77  |
| 28   | 174.20  | 174.11  | 174.13  | 174.29  | 174.23  | 174.20  | 174.13  | 174.06  | 173.68  | 174.28  | 174.15  | 174.06  |
| 29   | 174.08  | 174.16  | 174.12  | 174.32  | 174.21  | 174.16  | 174.16  | 173.98  | 173.78  | 173.95  | 174.00  | 174.01  |
| 30   | 174.14  |         | 174.25  | 174.26  | 174.24  | 174.13  | 174.18  | 174.00  | 173.88  | 173.84  | 174.14  | 173.93  |
| 31   | 174.14  |         | 174.10  |         | 174.25  |         | 174.14  | 173.99  |         | 173.79  |         | 173.88  |
| MEAN | 174.23  | 174.17  | 174.14  | 174.24  | 174.22  | 174.19  | 174.13  | 174.09  | 173.95  | 173.94  | 173.92  | 173.93  |
| MAX. | 175.28  | 174.96  | 175.21  | 174.98  | 174.54  | 174.47  | 174.79  | 174.60  | 174.65  | 174.89  | 175.52  | 174.80  |
|      | 0700/13 | 1900/20 | 1100/30 | 1300/27 | 2000/09 | 1100/05 | 1900/30 | 1900/05 | 1400/20 | 1200/28 | 1300/10 | 1400/02 |
| MIN. | 173.73  | 173.83  | 173.82  | 173.84  | 173.93  | 173.95  | 173.91  | 173.71  | 173.47  | 173.59  | 173.47  | 173.48  |
|      | 2000/19 | 0400/11 | 1800/30 | 0800/27 | 0500/16 | 0600/03 | 2000/10 | 1700/23 | 2400/28 | 1500/18 | 1400/05 | 2000/22 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.10

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3028: Sturgeon Point, New York on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.26 Apr  
Daily mean elevation: 174.65 4 Jan  
Instant/hourly elevation: 175.22 1800/4 Jan

LOWEST  
Monthly mean elevation: 173.91 Dec  
Daily mean elevation: 173.68 22 Dec  
Instant/hourly elevation: 173.48 2400/28 Sep

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.65 | 4 Jan  |
| 174.46 | 6 Feb  |
| 174.34 | 13 Mar |
| 174.39 | 24 Apr |
| 174.26 | 13 May |
| 174.31 | 5 Jun  |
| 174.19 | 11 Jul |
| 174.21 | 25 Aug |
| 174.11 | 20 Sep |
| 174.26 | 24 Oct |
| 174.33 | 17 Nov |
| 174.28 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 173.99 | 19 Jan |
| 173.96 | 11 Feb |
| 174.04 | 22 Mar |
| 174.12 | 2 Apr  |
| 174.15 | 18 May |
| 174.12 | 24 Jun |
| 174.07 | 23 Jul |
| 173.93 | 22 Aug |
| 173.70 | 28 Sep |
| 173.79 | 31 Oct |
| 173.73 | 15 Nov |
| 173.68 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 174.60                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 174.60        | 1                          |
| 174.55                                                  | 2   |     |     |     |     |     |     |     |     |     |     |     | 174.55        | 3                          |
| 174.50                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 174.50        | 3                          |
| 174.45                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 174.45        | 4                          |
| 174.40                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 174.40        | 4                          |
| 174.35                                                  | 1   |     |     | 2   |     |     |     |     |     |     |     |     | 174.35        | 7                          |
| 174.30                                                  | 3   | 4   | 2   | 4   |     | 1   |     |     |     |     | 1   |     | 174.30        | 22                         |
| 174.25                                                  | 1   | 1   | 1   | 8   | 2   |     |     |     |     | 1   |     | 1   | 174.25        | 37                         |
| 174.20                                                  | 5   | 3   | 2   | 12  | 22  | 7   |     |     |     | 1   |     |     | 174.20        | 90                         |
| 174.15                                                  | 8   | 6   | 7   | 3   | 6   | 12  | 3   | 3   |     | 1   |     |     | 174.15        | 139                        |
| 174.10                                                  | 5   | 5   | 11  | 1   | 1   | 10  | 17  | 5   | 1   | 1   | 1   |     | 174.10        | 197                        |
| 174.05                                                  | 4   | 7   | 6   |     |     |     | 11  | 11  |     | 1   | 3   | 1   | 174.05        | 241                        |
| 174.00                                                  |     | 1   | 2   |     |     |     |     | 2   | 5   | 1   | 1   | 4   | 174.00        | 257                        |
| 173.95                                                  | 1   | 1   |     |     |     |     |     | 8   | 10  | 1   | 4   | 4   | 173.95        | 286                        |
| 173.90                                                  |     |     |     |     |     |     |     | 1   | 5   | 5   | 2   | 5   | 173.90        | 304                        |
| 173.85                                                  |     |     |     |     |     |     |     |     | 5   | 9   | 5   | 6   | 173.85        | 329                        |
| 173.80                                                  |     |     |     |     |     |     |     |     | 2   | 8   | 7   | 7   | 173.80        | 353                        |
| 173.75                                                  |     |     |     |     |     |     |     |     | 1   | 2   | 4   | 2   | 173.75        | 362                        |
| 173.70                                                  |     |     |     |     |     |     |     |     |     |     | 2   |     | 173.70        | 364                        |
| 173.65                                                  |     |     |     |     |     |     |     |     | 1   |     |     | 1   | 173.65        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3028: Sturgeon Point, New York on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 174.58  | 174.10  | 174.07  | 174.17  | 174.25  | 174.24  | 174.13  | 174.11  | 173.96  | 173.90  | 173.87  | 173.94  |
| 2    | 174.38  | 174.07  | 174.15  | 174.12  | 174.22  | 174.14  | 174.13  | 174.10  | 173.99  | 173.90  | 173.89  | 174.28  |
| 3    | 174.21  | 174.05  | 174.06  | 174.17  | 174.18  | 174.15  | 174.11  | 174.09  | 173.96  | 173.86  | 173.78  | 174.07  |
| 4    | 174.65  | 174.12  | 174.08  | 174.28  | 174.17  | 174.24  | 174.09  | 174.10  | 174.03  | 173.90  | 173.77  | 174.01  |
| 5    | 174.60  | 174.32  | 174.12  | 174.19  | 174.20  | 174.31  | 174.09  | 174.13  | 174.03  | 173.95  | 173.86  | 173.95  |
| 6    | 174.33  | 174.46  | 174.12  | 174.21  | 174.23  | 174.23  | 174.10  | 174.17  | 174.02  | 173.87  | 174.00  | 173.97  |
| 7    | 174.11  | 174.30  | 174.15  | 174.23  | 174.21  | 174.18  | 174.11  | 174.13  | 173.98  | 173.85  | 173.94  | 173.90  |
| 8    | 174.17  | 174.16  | 174.08  | 174.25  | 174.20  | 174.14  | 174.11  | 174.09  | 173.96  | 173.84  | 173.89  | 173.84  |
| 9    | 174.25  | 174.16  | 174.16  | 174.25  | 174.23  | 174.14  | 174.14  | 174.10  | 174.01  | 173.88  | 173.80  | 173.96  |
| 10   | 174.19  | 174.10  | 174.13  | 174.24  | 174.26  | 174.19  | 174.12  | 174.07  | 173.98  | 174.18  | 174.06  | 173.89  |
| 11   | 174.24  | 173.96  | 174.09  | 174.21  | 174.25  | 174.22  | 174.19  | 174.07  | 173.91  | 174.07  | 173.92  | 173.82  |
| 12   | 174.19  | 174.32  | 174.04  | 174.21  | 174.22  | 174.22  | 174.14  | 174.07  | 173.92  | 173.93  | 173.75  | 173.79  |
| 13   | 174.32  | 174.35  | 174.34  | 174.24  | 174.26  | 174.19  | 174.08  | 174.09  | 174.01  | 173.88  | 174.06  | 173.92  |
| 14   | 174.07  | 174.09  | 174.21  | 174.28  | 174.19  | 174.20  | 174.18  | 174.16  | 173.98  | 173.95  | 173.97  | 173.87  |
| 15   | 174.18  | 174.20  | 174.18  | 174.29  | 174.22  | 174.19  | 174.10  | 174.20  | 173.85  | 173.87  | 173.73  | 174.01  |
| 16   | 174.14  | 174.13  | 174.21  | 174.32  | 174.21  | 174.17  | 174.09  | 174.08  | 173.82  | 173.85  | 174.04  | 173.88  |
| 17   | 174.10  | 174.10  | 174.17  | 174.32  | 174.23  | 174.17  | 174.12  | 174.11  | 173.97  | 173.79  | 174.33  | 173.85  |
| 18   | 174.19  | 174.08  | 174.18  | 174.30  | 174.15  | 174.15  | 174.10  | 173.98  | 173.93  | 173.98  | 173.84  | 173.96  |
| 19   | 173.99  | 174.06  | 174.19  | 174.32  | 174.16  | 174.17  | 174.14  | 173.96  | 173.89  | 173.83  | 173.76  | 173.84  |
| 20   | 174.16  | 174.33  | 174.15  | 174.37  | 174.22  | 174.19  | 174.08  | 174.00  | 174.11  | 173.81  | 173.85  | 173.89  |
| 21   | 174.23  | 174.21  | 174.13  | 174.28  | 174.22  | 174.15  | 174.07  | 173.98  | 174.00  | 173.83  | 173.90  | 173.85  |
| 22   | 174.15  | 174.19  | 174.04  | 174.23  | 174.21  | 174.22  | 174.08  | 173.93  | 173.91  | 173.88  | 173.82  | 173.68  |
| 23   | 174.17  | 174.23  | 174.16  | 174.23  | 174.22  | 174.14  | 174.07  | 174.03  | 174.00  | 173.91  | 173.82  | 173.91  |
| 24   | 174.26  | 174.22  | 174.10  | 174.39  | 174.24  | 174.12  | 174.13  | 174.12  | 173.86  | 174.26  | 173.82  | 173.82  |
| 25   | 174.06  | 174.16  | 174.15  | 174.28  | 174.25  | 174.22  | 174.14  | 174.21  | 173.89  | 174.12  | 173.84  | 174.04  |
| 26   | 174.34  | 174.13  | 174.19  | 174.24  | 174.24  | 174.17  | 174.12  | 174.10  | 173.87  | 174.01  | 173.81  | 173.82  |
| 27   | 174.22  | 174.12  | 174.32  | 174.22  | 174.25  | 174.17  | 174.12  | 173.96  | 173.93  | 173.85  | 174.00  | 173.77  |
| 28   | 174.20  | 174.12  | 174.14  | 174.29  | 174.23  | 174.19  | 174.11  | 174.05  | 173.70  | 174.21  | 174.12  | 174.04  |
| 29   | 174.09  | 174.17  | 174.15  | 174.32  | 174.21  | 174.15  | 174.13  | 173.99  | 173.79  | 173.93  | 173.98  | 173.98  |
| 30   | 174.15  |         | 174.26  | 174.26  | 174.23  | 174.13  | 174.16  | 174.00  | 173.87  | 173.85  | 174.09  | 173.92  |
| 31   | 174.14  |         | 174.14  |         | 174.24  |         | 174.13  | 173.98  |         | 173.79  |         | 173.87  |
| MEAN | 174.23  | 174.17  | 174.15  | 174.26  | 174.22  | 174.18  | 174.12  | 174.07  | 173.94  | 173.93  | 173.91  | 173.91  |
| MAX. | 175.22  | 174.91  | 175.11  | 174.86  | 174.46  | 174.40  | 174.58  | 174.46  | 174.52  | 174.61  | 175.21  | 174.67  |
|      | 1800/04 | 1900/20 | 1100/30 | 1300/27 | 2300/15 | 1000/05 | 0200/11 | 0500/15 | 1400/20 | 0700/18 | 1300/10 | 1400/02 |
| MIN. | 173.77  | 173.85  | 173.87  | 173.89  | 174.02  | 173.98  | 173.89  | 173.79  | 173.48  | 173.70  | 173.52  | 173.53  |
|      | 2000/19 | 0400/11 | 0800/12 | 0800/27 | 0500/16 | 0600/03 | 0700/17 | 1700/23 | 2400/28 | 1600/21 | 1400/05 | 1900/22 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.09

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3038: Erie, Pennsylvania on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.28 Apr  
Daily mean elevation: 174.50 4 Jan  
Instant/hourly elevation: 174.86 1700/4 Jan

LOWEST  
Monthly mean elevation: 173.89 Dec  
Daily mean elevation: 173.75 22 Dec  
Instant/hourly elevation: 173.57 2000/10 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.50 | 4 Jan  |
| 174.29 | 20 Feb |
| 174.29 | 27 Mar |
| 174.35 | 24 Apr |
| 174.29 | 25 May |
| 174.28 | 5 Jun  |
| 174.17 | 14 Jul |
| 174.16 | 15 Aug |
| 174.05 | 20 Sep |
| 174.09 | 24 Oct |
| 174.10 | 17 Nov |
| 174.07 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.06 | 19 Jan |
| 174.05 | 11 Feb |
| 174.09 | 22 Mar |
| 174.17 | 2 Apr  |
| 174.22 | 19 May |
| 174.16 | 24 Jun |
| 174.10 | 16 Jul |
| 173.99 | 27 Aug |
| 173.80 | 28 Sep |
| 173.79 | 17 Oct |
| 173.78 | 12 Nov |
| 173.75 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.         | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) |                            |
| 174.45                                                  | 2   |     |     |     |     |     |     |     |     |     |     |     | 174.45        | 2                          |
| 174.40                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 174.40        | 3                          |
| 174.35                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 174.35        | 3                          |
| 174.30                                                  | 1   |     |     | 9   |     |     |     |     |     |     |     |     | 174.30        | 13                         |
| 174.25                                                  | 3   | 4   | 2   | 15  | 16  | 2   |     |     |     |     |     |     | 174.25        | 55                         |
| 174.20                                                  | 2   | 5   | 6   | 4   | 15  | 13  |     |     |     |     |     |     | 174.20        | 100                        |
| 174.15                                                  | 11  | 8   | 13  | 2   |     | 15  | 5   | 1   |     |     |     |     | 174.15        | 155                        |
| 174.10                                                  | 8   | 10  | 9   |     |     |     | 25  | 15  |     |     |     |     | 174.10        | 222                        |
| 174.05                                                  | 3   | 1   | 1   |     |     |     | 1   | 6   |     |     |     |     | 174.05        | 239                        |
| 174.00                                                  |     | 1   |     |     |     |     |     | 8   |     | 3   | 1   | 1   | 174.00        | 254                        |
| 173.95                                                  |     |     |     |     |     |     |     | 1   | 12  | 3   | 2   | 5   | 173.95        | 277                        |
| 173.90                                                  |     |     |     |     |     |     |     |     | 8   | 7   | 9   | 5   | 173.90        | 306                        |
| 173.85                                                  |     |     |     |     |     |     |     |     | 5   | 9   | 7   | 10  | 173.85        | 337                        |
| 173.80                                                  |     |     |     |     |     |     |     |     |     | 7   | 5   | 8   | 173.80        | 357                        |
| 173.75                                                  |     |     |     |     |     |     |     |     | 1   | 1   | 5   | 1   | 173.75        | 365                        |
| 173.70                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 173.70        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3038: Erie, Pennsylvania on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 174.42  | 174.12  | 174.11  | 174.20  | 174.28  | 174.25  | 174.17  | 174.13  | 174.00  | 173.92  | 173.86  | 173.94  |
| 2    | 174.31  | 174.12  | 174.17  | 174.17  | 174.26  | 174.20  | 174.15  | 174.14  | 174.00  | 173.91  | 173.89  | 174.07  |
| 3    | 174.20  | 174.11  | 174.11  | 174.21  | 174.23  | 174.21  | 174.14  | 174.13  | 173.98  | 173.90  | 173.80  | 173.96  |
| 4    | 174.50  | 174.18  | 174.12  | 174.26  | 174.23  | 174.26  | 174.13  | 174.13  | 174.04  | 173.93  | 173.78  | 173.96  |
| 5    | 174.47  | 174.29  | 174.14  | 174.22  | 174.25  | 174.28  | 174.13  | 174.13  | 174.05  | 173.96  | 173.84  | 173.92  |
| 6    | 174.28  | 174.29  | 174.15  | 174.23  | 174.27  | 174.25  | 174.13  | 174.15  | 174.03  | 173.90  | 173.93  | 173.90  |
| 7    | 174.15  | 174.22  | 174.16  | 174.27  | 174.26  | 174.23  | 174.14  | 174.13  | 173.99  | 173.88  | 173.91  | 173.88  |
| 8    | 174.18  | 174.17  | 174.12  | 174.28  | 174.24  | 174.19  | 174.14  | 174.11  | 173.97  | 173.87  | 173.89  | 173.86  |
| 9    | 174.22  | 174.17  | 174.17  | 174.29  | 174.24  | 174.19  | 174.15  | 174.12  | 173.99  | 173.89  | 173.82  | 173.93  |
| 10   | 174.18  | 174.14  | 174.16  | 174.27  | 174.26  | 174.22  | 174.14  | 174.11  | 173.98  | 174.07  | 173.94  | 173.90  |
| 11   | 174.18  | 174.05  | 174.12  | 174.26  | 174.27  | 174.23  | 174.17  | 174.11  | 173.94  | 174.03  | 173.91  | 173.87  |
| 12   | 174.16  | 174.25  | 174.11  | 174.25  | 174.25  | 174.22  | 174.16  | 174.11  | 173.95  | 173.94  | 173.78  | 173.81  |
| 13   | 174.27  | 174.29  | 174.29  | 174.27  | 174.27  | 174.21  | 174.12  | 174.11  | 174.00  | 173.89  | 173.94  | 173.89  |
| 14   | 174.12  | 174.11  | 174.25  | 174.29  | 174.23  | 174.21  | 174.17  | 174.14  | 173.98  | 173.89  | 173.92  | 173.84  |
| 15   | 174.15  | 174.19  | 174.21  | 174.31  | 174.23  | 174.21  | 174.12  | 174.16  | 173.90  | 173.85  | 173.79  | 173.96  |
| 16   | 174.13  | 174.15  | 174.22  | 174.32  | 174.26  | 174.20  | 174.10  | 174.09  | 173.88  | 173.85  | 173.95  | 173.87  |
| 17   | 174.12  | 174.13  | 174.18  | 174.31  | 174.27  | 174.20  | 174.14  | 174.10  | 173.97  | 173.79  | 174.10  | 173.86  |
| 18   | 174.17  | 174.12  | 174.20  | 174.31  | 174.22  | 174.18  | 174.14  | 174.05  | 173.95  | 173.94  | 173.85  | 173.91  |
| 19   | 174.06  | 174.10  | 174.22  | 174.32  | 174.22  | 174.19  | 174.16  | 174.03  | 173.92  | 173.86  | 173.80  | 173.82  |
| 20   | 174.16  | 174.29  | 174.18  | 174.34  | 174.27  | 174.21  | 174.12  | 174.06  | 174.05  | 173.85  | 173.89  | 173.83  |
| 21   | 174.21  | 174.21  | 174.16  | 174.28  | 174.26  | 174.18  | 174.13  | 174.04  | 173.98  | 173.85  | 173.93  | 173.85  |
| 22   | 174.15  | 174.17  | 174.09  | 174.26  | 174.25  | 174.22  | 174.13  | 174.01  | 173.91  | 173.91  | 173.87  | 173.75  |
| 23   | 174.16  | 174.24  | 174.17  | 174.26  | 174.26  | 174.18  | 174.13  | 174.07  | 173.97  | 173.90  | 173.85  | 173.85  |
| 24   | 174.20  | 174.24  | 174.15  | 174.35  | 174.26  | 174.16  | 174.15  | 174.10  | 173.90  | 174.09  | 173.86  | 173.83  |
| 25   | 174.10  | 174.18  | 174.18  | 174.29  | 174.29  | 174.21  | 174.15  | 174.14  | 173.92  | 174.00  | 173.87  | 173.97  |
| 26   | 174.28  | 174.16  | 174.21  | 174.26  | 174.26  | 174.19  | 174.14  | 174.07  | 173.91  | 173.97  | 173.84  | 173.84  |
| 27   | 174.20  | 174.15  | 174.29  | 174.27  | 174.26  | 174.19  | 174.14  | 173.99  | 173.94  | 173.85  | 173.96  | 173.80  |
| 28   | 174.16  | 174.15  | 174.18  | 174.31  | 174.25  | 174.19  | 174.14  | 174.04  | 173.80  | 174.06  | 174.04  | 173.98  |
| 29   | 174.10  | 174.18  | 174.19  | 174.34  | 174.25  | 174.17  | 174.14  | 174.03  | 173.86  | 173.91  | 173.92  | 173.93  |
| 30   | 174.13  |         | 174.23  | 174.28  | 174.25  | 174.17  | 174.15  | 174.03  | 173.90  | 173.85  | 173.99  | 173.88  |
| 31   | 174.12  |         | 174.18  |         | 174.25  |         | 174.14  | 174.02  |         | 173.82  |         | 173.87  |
| MEAN | 174.20  | 174.18  | 174.17  | 174.28  | 174.25  | 174.21  | 174.14  | 174.09  | 173.96  | 173.91  | 173.89  | 173.89  |
| MAX. | 174.86  | 174.61  | 174.58  | 174.58  | 174.47  | 174.34  | 174.34  | 174.33  | 174.25  | 174.27  | 174.49  | 174.25  |
|      | 1700/04 | 1800/20 | 1300/30 | 1400/27 | 0100/16 | 1400/03 | 0100/11 | 0700/15 | 1500/20 | 1500/24 | 1400/10 | 1300/02 |
| MIN. | 173.92  | 174.00  | 173.94  | 174.04  | 174.10  | 174.08  | 173.96  | 173.89  | 173.64  | 173.71  | 173.57  | 173.61  |
|      | 2000/19 | 0400/11 | 1900/30 | 0700/27 | 2100/16 | 0600/03 | 2300/30 | 1600/23 | 2200/28 | 2100/17 | 2000/10 | 0500/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.10

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3053: Fairport Harbor, Ohio on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.30 Apr  
Daily mean elevation: 174.33 23 Apr  
Instant/hourly elevation: 174.52 0900/27 Apr

LOWEST  
Monthly mean elevation: 173.84 Dec  
Daily mean elevation: 173.78 20 Dec  
Instant/hourly elevation: 173.57 1400/10 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.21 | 5 Jan  |
| 174.21 | 5 Feb  |
| 174.25 | 29 Mar |
| 174.33 | 23 Apr |
| 174.31 | 25 May |
| 174.27 | 9 Jun  |
| 174.18 | 18 Jul |
| 174.15 | 7 Aug  |
| 174.08 | 5 Sep  |
| 173.96 | 5 Oct  |
| 173.92 | 21 Nov |
| 173.91 | 1 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.12 | 31 Jan |
| 174.12 | 22 Feb |
| 174.16 | 9 Mar  |
| 174.23 | 1 Apr  |
| 174.26 | 15 May |
| 174.18 | 25 Jun |
| 174.14 | 16 Jul |
| 174.02 | 27 Aug |
| 173.92 | 30 Sep |
| 173.80 | 17 Oct |
| 173.78 | 6 Nov  |
| 173.78 | 20 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 174.30                                                  |     |     |     | 14  | 3   |     |     |     |     |     |     |     | 174.30        | 17                         |
| 174.25                                                  |     |     |     | 12  | 28  | 7   |     |     |     |     |     |     | 174.25        | 64                         |
| 174.20                                                  | 2   | 2   | 9   | 4   |     | 16  |     |     |     |     |     |     | 174.20        | 97                         |
| 174.15                                                  | 14  | 19  | 22  |     |     | 7   | 23  |     |     |     |     |     | 174.15        | 182                        |
| 174.10                                                  | 15  | 8   |     |     |     |     | 8   | 17  |     |     |     |     | 174.10        | 230                        |
| 174.05                                                  |     |     |     |     |     |     |     | 8   | 1   |     |     |     | 174.05        | 239                        |
| 174.00                                                  |     |     |     |     |     |     |     | 6   | 6   |     |     |     | 174.00        | 251                        |
| 173.95                                                  |     |     |     |     |     |     |     |     | 11  | 1   |     |     | 173.95        | 263                        |
| 173.90                                                  |     |     |     |     |     |     |     |     | 12  | 10  | 2   | 1   | 173.90        | 288                        |
| 173.85                                                  |     |     |     |     |     |     |     |     |     | 10  | 12  | 8   | 173.85        | 318                        |
| 173.80                                                  |     |     |     |     |     |     |     |     |     | 9   | 14  | 18  | 173.80        | 359                        |
| 173.75                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 4   | 173.75        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3053: Fairport Harbor, Ohio on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 174.21  | 174.17  | 174.17  | 174.23  | 174.29  | 174.27  | 174.18  | 174.15  | 174.03  | 173.92  | 173.83  | 173.91  |
| 2    | 174.19  | 174.19  | 174.17  | 174.25  | 174.30  | 174.27  | 174.15  | 174.15  | 174.01  | 173.94  | 173.87  | 173.82  |
| 3    | 174.19  | 174.19  | 174.18  | 174.24  | 174.30  | 174.27  | 174.16  | 174.15  | 174.02  | 173.94  | 173.82  | 173.83  |
| 4    | 174.20  | 174.21  | 174.18  | 174.25  | 174.29  | 174.25  | 174.16  | 174.15  | 174.04  | 173.94  | 173.82  | 173.87  |
| 5    | 174.21  | 174.21  | 174.16  | 174.28  | 174.29  | 174.25  | 174.16  | 174.12  | 174.08  | 173.96  | 173.84  | 173.85  |
| 6    | 174.19  | 174.16  | 174.16  | 174.28  | 174.29  | 174.26  | 174.16  | 174.12  | 174.03  | 173.92  | 173.78  | 173.82  |
| 7    | 174.19  | 174.15  | 174.16  | 174.33  | 174.29  | 174.27  | 174.16  | 174.15  | 174.01  | 173.91  | 173.84  | 173.85  |
| 8    | 174.19  | 174.17  | 174.17  | 174.31  | 174.29  | 174.26  | 174.16  | 174.14  | 173.99  | 173.90  | 173.86  | 173.87  |
| 9    | 174.18  | 174.17  | 174.16  | 174.30  | 174.28  | 174.27  | 174.15  | 174.13  | 173.97  | 173.91  | 173.85  | 173.86  |
| 10   | 174.17  | 174.16  | 174.17  | 174.31  | 174.28  | 174.24  | 174.16  | 174.13  | 173.98  | 173.88  | 173.83  | 173.88  |
| 11   | 174.12  | 174.19  | 174.17  | 174.31  | 174.28  | 174.22  | 174.15  | 174.13  | 173.98  | 173.92  | 173.88  | 173.89  |
| 12   | 174.14  | 174.16  | 174.20  | 174.31  | 174.28  | 174.22  | 174.16  | 174.13  | 173.98  | 173.90  | 173.84  | 173.82  |
| 13   | 174.17  | 174.13  | 174.17  | 174.30  | 174.27  | 174.23  | 174.16  | 174.12  | 173.99  | 173.88  | 173.82  | 173.82  |
| 14   | 174.17  | 174.13  | 174.21  | 174.31  | 174.27  | 174.22  | 174.14  | 174.10  | 173.98  | 173.82  | 173.84  | 173.82  |
| 15   | 174.13  | 174.13  | 174.21  | 174.32  | 174.26  | 174.23  | 174.14  | 174.13  | 173.97  | 173.82  | 173.89  | 173.83  |
| 16   | 174.13  | 174.15  | 174.20  | 174.31  | 174.29  | 174.23  | 174.14  | 174.12  | 173.96  | 173.82  | 173.85  | 173.83  |
| 17   | 174.14  | 174.14  | 174.19  | 174.29  | 174.30  | 174.23  | 174.15  | 174.09  | 173.94  | 173.80  | 173.79  | 173.85  |
| 18   | 174.14  | 174.15  | 174.18  | 174.32  | 174.31  | 174.21  | 174.18  | 174.13  | 173.96  | 173.89  | 173.86  | 173.79  |
| 19   | 174.16  | 174.16  | 174.20  | 174.31  | 174.30  | 174.21  | 174.17  | 174.12  | 173.95  | 173.91  | 173.85  | 173.80  |
| 20   | 174.17  | 174.17  | 174.21  | 174.28  | 174.28  | 174.20  | 174.17  | 174.09  | 173.95  | 173.89  | 173.91  | 173.78  |
| 21   | 174.16  | 174.16  | 174.19  | 174.30  | 174.29  | 174.21  | 174.17  | 174.08  | 173.95  | 173.88  | 173.92  | 173.84  |
| 22   | 174.16  | 174.12  | 174.19  | 174.29  | 174.29  | 174.20  | 174.16  | 174.07  | 173.92  | 173.93  | 173.90  | 173.83  |
| 23   | 174.14  | 174.18  | 174.17  | 174.33  | 174.29  | 174.23  | 174.17  | 174.06  | 173.93  | 173.86  | 173.90  | 173.79  |
| 24   | 174.14  | 174.20  | 174.20  | 174.29  | 174.31  | 174.21  | 174.16  | 174.06  | 173.96  | 173.82  | 173.89  | 173.84  |
| 25   | 174.15  | 174.20  | 174.19  | 174.30  | 174.31  | 174.18  | 174.16  | 174.04  | 173.95  | 173.86  | 173.89  | 173.84  |
| 26   | 174.14  | 174.17  | 174.22  | 174.29  | 174.28  | 174.22  | 174.17  | 174.03  | 173.95  | 173.88  | 173.87  | 173.83  |
| 27   | 174.15  | 174.20  | 174.21  | 174.32  | 174.27  | 174.19  | 174.16  | 174.02  | 173.92  | 173.84  | 173.88  | 173.86  |
| 28   | 174.14  | 174.17  | 174.24  | 174.32  | 174.27  | 174.20  | 174.16  | 174.03  | 173.95  | 173.85  | 173.90  | 173.88  |
| 29   | 174.14  | 174.17  | 174.25  | 174.32  | 174.28  | 174.19  | 174.15  | 174.06  | 173.95  | 173.85  | 173.85  | 173.85  |
| 30   | 174.13  |         | 174.21  | 174.30  | 174.27  | 174.20  | 174.16  | 174.05  | 173.92  | 173.85  | 173.84  | 173.85  |
| 31   | 174.12  |         | 174.24  |         | 174.27  |         | 174.17  | 174.04  |         | 173.84  |         | 173.86  |
| MEAN | 174.16  | 174.17  | 174.19  | 174.30  | 174.29  | 174.23  | 174.16  | 174.10  | 173.97  | 173.88  | 173.86  | 173.84  |
| MAX. | 174.33  | 174.30  | 174.40  | 174.52  | 174.42  | 174.41  | 174.34  | 174.26  | 174.17  | 174.07  | 174.10  | 174.12  |
|      | 0400/13 | 0800/05 | 0800/30 | 0900/27 | 1200/16 | 0600/02 | 0700/11 | 0300/15 | 0300/20 | 0700/18 | 2000/20 | 2200/03 |
| MIN. | 174.02  | 174.04  | 174.03  | 174.14  | 174.07  | 174.12  | 174.01  | 173.96  | 173.77  | 173.69  | 173.57  | 173.68  |
|      | 1900/24 | 1500/15 | 1400/30 | 1600/03 | 2400/15 | 1900/25 | 0300/11 | 0400/06 | 0600/23 | 0100/18 | 1400/10 | 1900/18 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.10

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3063: Cleveland, Ohio on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.28 Apr  
Daily mean elevation: 174.32 23 Apr  
Instant/hourly elevation: 174.58 1000/23 Apr

LOWEST  
Monthly mean elevation: 173.80 Dec  
Daily mean elevation: 173.67 6 Nov  
Instant/hourly elevation: 173.46 1400/10 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.18 | 19 Jan |
| 174.21 | 27 Feb |
| 174.24 | 31 Mar |
| 174.32 | 23 Apr |
| 174.31 | 18 May |
| 174.29 | 2 Jun  |
| 174.18 | 1 Jul  |
| 174.14 | 3 Aug  |
| 174.07 | 5 Sep  |
| 173.94 | 5 Oct  |
| 173.92 | 20 Nov |
| 173.88 | 11 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.07 | 26 Jan |
| 174.04 | 22 Feb |
| 174.12 | 13 Mar |
| 174.21 | 4 Apr  |
| 174.24 | 15 May |
| 174.17 | 25 Jun |
| 174.11 | 14 Jul |
| 173.98 | 25 Aug |
| 173.89 | 27 Sep |
| 173.68 | 24 Oct |
| 173.67 | 6 Nov  |
| 173.72 | 2 Dec  |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 174.30                                                  |     |     |     | 7   | 1   |     |     |     |     |     |     |     | 174.30        | 8                          |
| 174.25                                                  |     |     |     | 17  | 24  | 7   |     |     |     |     |     |     | 174.25        | 56                         |
| 174.20                                                  |     | 3   | 5   | 6   | 6   | 14  |     |     |     |     |     |     | 174.20        | 90                         |
| 174.15                                                  | 6   | 7   | 18  |     |     | 9   | 7   |     |     |     |     |     | 174.15        | 137                        |
| 174.10                                                  | 14  | 13  | 8   |     |     |     | 24  | 13  |     |     |     |     | 174.10        | 209                        |
| 174.05                                                  | 11  | 4   |     |     |     |     |     | 10  | 1   |     |     |     | 174.05        | 235                        |
| 174.00                                                  |     | 2   |     |     |     |     |     | 6   | 2   |     |     |     | 174.00        | 245                        |
| 173.95                                                  |     |     |     |     |     |     |     | 2   | 14  |     |     |     | 173.95        | 261                        |
| 173.90                                                  |     |     |     |     |     |     |     |     | 8   | 5   | 1   |     | 173.90        | 275                        |
| 173.85                                                  |     |     |     |     |     |     |     |     | 9   | 7   | 2   |     | 173.85        | 298                        |
| 173.80                                                  |     |     |     |     |     |     |     |     | 5   | 9   | 10  | 15  | 173.80        | 332                        |
| 173.75                                                  |     |     |     |     |     |     |     |     |     | 6   | 9   | 8   | 173.75        | 355                        |
| 173.70                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   | 6   | 173.70        | 363                        |
| 173.65                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   |     | 173.65        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3063: Cleveland, Ohio on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 174.14  | 174.17  | 174.18  | 174.22  | 174.28  | 174.26  | 174.18  | 174.12  | 174.00  | 173.88  | 173.80  | 173.87  |
| 2    | 174.14  | 174.19  | 174.14  | 174.25  | 174.29  | 174.29  | 174.15  | 174.13  | 173.99  | 173.92  | 173.85  | 173.72  |
| 3    | 174.16  | 174.19  | 174.19  | 174.23  | 174.29  | 174.27  | 174.15  | 174.14  | 174.00  | 173.92  | 173.80  | 173.78  |
| 4    | 174.10  | 174.21  | 174.18  | 174.21  | 174.29  | 174.24  | 174.15  | 174.13  | 174.02  | 173.90  | 173.81  | 173.82  |
| 5    | 174.12  | 174.16  | 174.15  | 174.25  | 174.28  | 174.23  | 174.15  | 174.12  | 174.07  | 173.94  | 173.79  | 173.80  |
| 6    | 174.15  | 174.09  | 174.14  | 174.26  | 174.28  | 174.26  | 174.15  | 174.11  | 174.01  | 173.91  | 173.67  | 173.75  |
| 7    | 174.17  | 174.07  | 174.13  | 174.32  | 174.28  | 174.27  | 174.14  | 174.13  | 173.99  | 173.90  | 173.79  | 173.82  |
| 8    | 174.16  | 174.15  | 174.16  | 174.31  | 174.27  | 174.28  | 174.14  | 174.13  | 173.96  | 173.89  | 173.83  | 173.85  |
| 9    | 174.13  | 174.14  | 174.14  | 174.29  | 174.25  | 174.28  | 174.13  | 174.10  | 173.93  | 173.89  | 173.84  | 173.81  |
| 10   | 174.14  | 174.16  | 174.16  | 174.29  | 174.27  | 174.24  | 174.15  | 174.12  | 173.96  | 173.77  | 173.78  | 173.84  |
| 11   | 174.07  | 174.21  | 174.17  | 174.31  | 174.27  | 174.22  | 174.12  | 174.12  | 173.97  | 173.88  | 173.84  | 173.88  |
| 12   | 174.09  | 174.13  | 174.19  | 174.31  | 174.26  | 174.21  | 174.14  | 174.11  | 173.96  | 173.90  | 173.82  | 173.80  |
| 13   | 174.14  | 174.05  | 174.12  | 174.28  | 174.25  | 174.22  | 174.15  | 174.10  | 173.97  | 173.85  | 173.73  | 173.77  |
| 14   | 174.17  | 174.09  | 174.19  | 174.29  | 174.27  | 174.21  | 174.11  | 174.06  | 173.96  | 173.76  | 173.79  | 173.77  |
| 15   | 174.08  | 174.08  | 174.20  | 174.31  | 174.24  | 174.21  | 174.14  | 174.09  | 173.97  | 173.78  | 173.89  | 173.82  |
| 16   | 174.10  | 174.13  | 174.18  | 174.29  | 174.27  | 174.22  | 174.14  | 174.10  | 173.96  | 173.78  | 173.78  | 173.79  |
| 17   | 174.13  | 174.12  | 174.17  | 174.26  | 174.28  | 174.21  | 174.16  | 174.09  | 173.90  | 173.77  | 173.69  | 173.83  |
| 18   | 174.12  | 174.14  | 174.15  | 174.31  | 174.31  | 174.21  | 174.16  | 174.12  | 173.93  | 173.85  | 173.83  | 173.73  |
| 19   | 174.18  | 174.15  | 174.17  | 174.29  | 174.29  | 174.19  | 174.16  | 174.11  | 173.92  | 173.89  | 173.84  | 173.75  |
| 20   | 174.14  | 174.11  | 174.21  | 174.24  | 174.27  | 174.18  | 174.17  | 174.08  | 173.89  | 173.88  | 173.92  | 173.73  |
| 21   | 174.14  | 174.11  | 174.18  | 174.29  | 174.27  | 174.20  | 174.16  | 174.07  | 173.93  | 173.85  | 173.90  | 173.81  |
| 22   | 174.14  | 174.04  | 174.20  | 174.28  | 174.28  | 174.18  | 174.15  | 174.07  | 173.90  | 173.93  | 173.89  | 173.83  |
| 23   | 174.10  | 174.14  | 174.14  | 174.32  | 174.27  | 174.21  | 174.16  | 174.04  | 173.92  | 173.81  | 173.89  | 173.74  |
| 24   | 174.07  | 174.15  | 174.20  | 174.28  | 174.30  | 174.21  | 174.15  | 174.04  | 173.96  | 173.68  | 173.88  | 173.81  |
| 25   | 174.16  | 174.18  | 174.17  | 174.28  | 174.30  | 174.17  | 174.14  | 173.98  | 173.94  | 173.79  | 173.86  | 173.78  |
| 26   | 174.07  | 174.14  | 174.21  | 174.28  | 174.27  | 174.21  | 174.14  | 174.00  | 173.93  | 173.82  | 173.86  | 173.82  |
| 27   | 174.11  | 174.21  | 174.19  | 174.28  | 174.25  | 174.18  | 174.14  | 174.01  | 173.89  | 173.81  | 173.82  | 173.83  |
| 28   | 174.10  | 174.16  | 174.23  | 174.30  | 174.26  | 174.19  | 174.14  | 174.01  | 173.97  | 173.75  | 173.82  | 173.83  |
| 29   | 174.11  | 174.15  | 174.24  | 174.30  | 174.26  | 174.18  | 174.13  | 174.06  | 173.95  | 173.83  | 173.80  | 173.80  |
| 30   | 174.09  |         | 174.20  | 174.28  | 174.25  | 174.19  | 174.13  | 174.04  | 173.90  | 173.83  | 173.76  | 173.81  |
| 31   | 174.09  |         | 174.24  |         | 174.25  |         | 174.15  | 174.02  |         | 173.81  |         | 173.83  |
| MEAN | 174.12  | 174.14  | 174.18  | 174.28  | 174.27  | 174.22  | 174.15  | 174.08  | 173.96  | 173.84  | 173.82  | 173.80  |
| MAX. | 174.35  | 174.28  | 174.39  | 174.58  | 174.42  | 174.42  | 174.52  | 174.35  | 174.18  | 174.13  | 174.28  | 174.12  |
|      | 0400/13 | 2300/03 | 0700/20 | 1000/23 | 0100/25 | 0600/02 | 2200/10 | 1800/11 | 0600/05 | 0900/02 | 1900/20 | 0100/04 |
| MIN. | 173.85  | 173.94  | 173.93  | 174.11  | 174.09  | 174.11  | 174.01  | 173.88  | 173.73  | 173.51  | 173.46  | 173.58  |
|      | 0800/26 | 1000/22 | 1300/30 | 1600/27 | 1600/15 | 1500/22 | 1900/17 | 1500/25 | 1500/20 | 1500/10 | 1400/10 | 1500/02 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.07

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3079: Marblehead, Ohio on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.28 May  
Daily mean elevation: 174.38 2 Jun  
Instant/hourly elevation: 174.60 0300/2 Jun

LOWEST  
Monthly mean elevation: 173.75 Dec  
Daily mean elevation: 173.42 24 Oct  
Instant/hourly elevation: 173.10 2400/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.27 | 19 Jan |
| 174.28 | 11 Feb |
| 174.27 | 29 Mar |
| 174.35 | 7 Apr  |
| 174.35 | 3 May  |
| 174.38 | 2 Jun  |
| 174.22 | 20 Jul |
| 174.15 | 19 Aug |
| 174.09 | 28 Sep |
| 173.92 | 3 Oct  |
| 173.94 | 15 Nov |
| 173.91 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 173.79 | 4 Jan  |
| 173.89 | 13 Feb |
| 173.98 | 13 Mar |
| 174.17 | 4 Apr  |
| 174.24 | 13 May |
| 174.14 | 25 Jun |
| 174.07 | 14 Jul |
| 173.89 | 25 Aug |
| 173.73 | 20 Sep |
| 173.42 | 24 Oct |
| 173.46 | 17 Nov |
| 173.45 | 2 Dec  |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 174.35                                                  |     |     |     |     |     | 2   |     |     |     |     |     |     | 174.35        | 2                          |
| 174.30                                                  |     |     |     |     |     | 2   |     |     |     |     |     |     | 174.30        | 18                         |
| 174.25                                                  | 1   | 1   | 5   | 13  | 12  | 4   |     |     |     |     |     |     | 174.25        | 54                         |
| 174.20                                                  | 1   | 3   | 5   | 7   | 3   | 16  | 1   |     |     |     |     |     | 174.20        | 90                         |
| 174.15                                                  | 3   | 5   | 10  | 2   |     | 4   | 15  |     |     |     |     |     | 174.15        | 129                        |
| 174.10                                                  | 6   | 8   | 9   |     |     | 2   | 13  | 12  |     |     |     |     | 174.10        | 179                        |
| 174.05                                                  | 14  | 1   | 1   |     |     |     | 2   | 9   | 1   |     |     |     | 174.05        | 207                        |
| 174.00                                                  |     | 4   |     |     |     |     |     | 6   | 6   |     |     |     | 174.00        | 223                        |
| 173.95                                                  | 2   | 4   | 1   |     |     |     |     | 3   | 9   |     |     |     | 173.95        | 242                        |
| 173.90                                                  | 2   | 2   |     |     |     |     |     |     | 9   | 2   | 2   | 1   | 173.90        | 260                        |
| 173.85                                                  |     | 1   |     |     |     |     |     | 1   | 4   | 9   | 8   |     | 173.85        | 283                        |
| 173.80                                                  | 1   |     |     |     |     |     |     |     |     | 7   | 4   | 7   | 173.80        | 302                        |
| 173.75                                                  | 1   |     |     |     |     |     |     |     |     | 5   | 4   | 5   | 173.75        | 317                        |
| 173.70                                                  |     |     |     |     |     |     |     |     | 1   | 4   | 4   | 9   | 173.70        | 335                        |
| 173.65                                                  |     |     |     |     |     |     |     |     |     |     | 3   | 8   | 173.65        | 346                        |
| 173.60                                                  |     |     |     |     |     |     |     |     |     | 2   | 3   |     | 173.60        | 351                        |
| 173.55                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 173.55        | 351                        |
| 173.50                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 173.50        | 353                        |
| 173.45                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 173.45        | 354                        |
| 173.40                                                  |     |     |     |     |     |     |     |     |     | 1   |     | 1   | 173.40        | 356                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3079: Marblehead, Ohio on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 173.94  | 174.17  | 174.24  | 174.25  | 174.28  | 174.27  | 174.17  | 174.13  | 174.02  | 173.87  | 173.74  | 173.77* |
| 2    | 174.07  | 174.23  | 174.13  | /       | 174.31  | 174.38  | 174.16  | 174.13  | 173.98  | 173.91  | 173.78  | 173.45* |
| 3    | 174.14  | 174.21  | 174.26  | 174.23  | 174.35  | 174.32  | 174.17  | 174.15  | 174.01  | 173.92  | 173.82  | 173.67  |
| 4    | 173.79  | 174.19  | 174.23  | 174.17  | 174.33  | 174.25  | 174.18  | 174.14  | 173.97  | 173.85  | 173.84  | 173.72  |
| 5    | 173.85  | 173.99  | 174.16  | 174.26  | 174.31  | 174.21  | 174.17  | 174.10  | 174.03  | 173.86  | 173.72  | 173.74  |
| 6    | 174.07  | 173.92  | 174.14  | 174.27  | 174.30  | 174.25  | 174.16  | 174.09  | 174.00  | 173.89  | 173.54  | 173.70  |
| 7    | 174.21  | 173.98  | 174.12  | 174.35  | 174.30  | 174.28  | 174.16  | 174.14  | 173.98  | 173.89  | 173.70  | 173.78  |
| 8    | 174.16  | 174.14  | 174.17  | 174.32  | 174.31  | 174.36  | 174.15  | 174.14  | 173.96  | 173.88  | 173.77  | 173.84  |
| 9    | 174.10  | 174.12  | 174.11  | 174.30  | 174.25  | 174.35  | 174.14  | 174.10  | 173.91  | 173.86  | 173.86  | 173.72  |
| 10   | 174.14  | 174.18  | 174.17  | 174.31  | 174.27  | 174.27  | 174.13  | 174.14  | 173.95  | 173.61  | 173.67  | 173.80  |
| 11   | 174.06  | 174.28  | 174.20  | 174.34  | 174.29  | 174.22  | 174.11  | 174.12  | 174.01  | 173.77  | 173.80  | 173.84  |
| 12   | 174.07  | 174.01  | 174.21  | 174.34  | 174.27  | 174.21  | 174.14  | 174.11  | 173.96  | 173.82  | 173.89  | 173.85  |
| 13   | 174.00  | 173.89  | 173.98  | 174.30  | 174.24  | 174.22  | 174.16  | 174.10  | 173.93  | 173.82  | 173.66  | 173.69  |
| 14   | 174.18  | 174.12  | 174.10  | 174.27  | 174.31  | 174.21  | 174.07  | 174.02  | 173.96  | 173.73  | 173.75  | 173.75  |
| 15   | 174.08  | 174.00  | 174.16  | 174.28  | 174.25  | 174.21  | 174.15  | 174.03  | 174.04  | 173.77  | 173.94  | 173.72  |
| 16   | 174.10  | 174.10  | 174.13  | 174.26  | /       | 174.25  | 174.14  | 174.10  | 174.02  | 173.75  | 173.64  | 173.73  |
| 17   | 174.14  | 174.12  | 174.16  | 174.22  | /       | 174.24  | 174.16  | 174.07  | 173.89  | 173.80  | 173.46  | 173.75  |
| 18   | 174.10  | 174.15  | 174.14  | 174.28  | /       | 174.24  | 174.18  | 174.15  | 173.92  | 173.75  | 173.85  | 173.66  |
| 19   | 174.27  | 174.17  | 174.12  | 174.27  | /       | 174.20  | 174.16  | 174.15  | 173.94  | 173.88  | 173.89  | 173.75  |
| 20   | 174.12  | 173.92  | 174.20  | 174.19  | /       | 174.17  | 174.22  | 174.10  | 173.73  | 173.90  | 173.89  | 173.68  |
| 21   | 174.10  | 174.03  | 174.21  | 174.29  | /       | 174.22  | 174.18  | 174.10  | 173.89  | 173.86  | 173.84  | 173.78  |
| 22   | 174.14  | 173.96  | 174.27  | 174.33  | /       | 174.16  | 174.17  | 174.11  | 173.91  | 173.85  | 173.89  | 173.91  |
| 23   | 174.08  | 174.04  | 174.15  | 174.32  | /       | 174.26  | 174.20  | 174.03  | 173.88  | 173.78  | 173.91  | 173.68  |
| 24   | 174.00  | 174.03  | 174.21  | 174.22  | /       | 174.24  | 174.15  | 173.97  | 174.00  | 173.42  | 173.89  | 173.81  |
| 25   | 174.17  | 174.13  | 174.18  | 174.28  | 174.31  | 174.14  | 174.14  | 173.89  | 173.95  | 173.62  | 173.88  | 173.66  |
| 26   | 173.93  | 174.11  | 174.17  | 174.30  | 174.28  | 174.24  | 174.15  | 173.97  | 173.95  | 173.72  | 173.89  | 173.81  |
| 27   | 174.07  | 174.21  | 174.12  | 174.23  | 174.26  | 174.20  | 174.15  | 174.02  | 173.87  | 173.82  | 173.73  | 173.85  |
| 28   | 174.10  | 174.16  | 174.27  | 174.25  | 174.26  | 174.15  | 174.13  | 174.00  | 174.09  | 173.54  | 173.62  | 173.70  |
| 29   | 174.15  | 174.13  | 174.27  | 174.25  | 174.27  | 174.21  | 174.13  | 174.06  | 174.00  | 173.78  | 173.77  | 173.74  |
| 30   | 174.09  |         | 174.18  | 174.29  | 174.26  | 174.21  | 174.08  | 174.04  | 173.91  | 173.82  | 173.64  | 173.78  |
| 31   | 174.09  |         | 174.26  |         | 174.26  |         | 174.16  | 174.02  |         | 173.82  |         | 173.82  |
| MEAN | 174.08  | 174.09  | 174.17  | 174.27  | 174.28  | 174.24  | 174.15  | 174.08  | 173.96  | 173.79  | 173.78  | 173.75  |
| MAX. | 174.43  | 174.35  | 174.52  | 174.52  | 174.41  | 174.60  | 174.30  | 174.31  | 174.20  | 174.04  | 174.10  | 174.07  |
|      | 2100/19 | 0800/11 | 1000/31 | 0700/27 | 1800/13 | 0300/02 | 2200/16 | 1100/18 | 2400/28 | 1900/02 | 2000/10 | 2300/03 |
| MIN. | 173.44  | 173.62  | 173.81  | 173.85  | 174.09  | 174.08  | 173.93  | 173.76  | 173.59  | 173.18  | 173.10  | 173.31  |
|      | 1800/04 | 2100/20 | 1900/13 | 1700/27 | 2200/15 | 0900/26 | 0600/11 | 1600/24 | 1500/20 | 1800/24 | 2400/16 | 1400/02 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.05

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3085: Toledo, Ohio on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.31 May  
Daily mean elevation: 174.49 2 Jun  
Instant/hourly elevation: 174.95 0200/2 Jun

LOWEST  
Monthly mean elevation: 173.71 Dec  
Daily mean elevation: 173.15 24 Oct  
Instant/hourly elevation: 172.65 2000/4 Jan

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.39 | 19 Jan |
| 174.30 | 11 Feb |
| 174.39 | 22 Mar |
| 174.42 | 22 Apr |
| 174.42 | 3 May  |
| 174.49 | 2 Jun  |
| 174.27 | 20 Jul |
| 174.20 | 19 Aug |
| 174.24 | 28 Sep |
| 173.94 | 20 Oct |
| 174.00 | 15 Nov |
| 174.01 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 173.45 | 4 Jan  |
| 173.82 | 20 Feb |
| 173.82 | 13 Mar |
| 174.09 | 20 Apr |
| 174.17 | 9 May  |
| 174.09 | 25 Jun |
| 174.03 | 14 Jul |
| 173.77 | 25 Aug |
| 173.55 | 20 Sep |
| 173.15 | 24 Oct |
| 173.23 | 17 Nov |
| 173.39 | 2 Dec  |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 174.45                                                  |     |     |     |     |     | 1   |     |     |     |     |     |     | 174.45        | 1                          |
| 174.40                                                  |     |     |     | 2   | 2   | 1   |     |     |     |     |     |     | 174.40        | 6                          |
| 174.35                                                  | 1   |     | 1   | 1   | 4   | 2   |     |     |     |     |     |     | 174.35        | 15                         |
| 174.30                                                  |     |     | 4   | 9   | 9   | 1   |     |     |     |     |     |     | 174.30        | 38                         |
| 174.25                                                  |     | 3   | 3   | 5   | 11  | 7   | 1   |     |     |     |     |     | 174.25        | 68                         |
| 174.20                                                  | 2   | 1   | 5   | 7   | 4   | 9   | 2   |     | 1   |     |     |     | 174.20        | 99                         |
| 174.15                                                  | 5   | 7   | 4   | 3   | 1   | 6   | 13  | 3   |     |     |     |     | 174.15        | 141                        |
| 174.10                                                  | 8   | 6   | 6   | 2   |     | 2   | 11  | 9   | 1   |     |     |     | 174.10        | 186                        |
| 174.05                                                  | 7   | 1   | 4   | 1   |     | 1   | 2   | 6   | 3   |     |     |     | 174.05        | 211                        |
| 174.00                                                  | 2   | 3   | 3   |     |     |     | 2   | 7   | 3   |     |     |     | 174.00        | 232                        |
| 173.95                                                  |     | 3   |     |     |     |     |     | 2   | 9   |     | 3   |     | 173.95        | 249                        |
| 173.90                                                  | 2   | 2   |     |     |     |     |     | 2   | 6   | 2   | 5   |     | 173.90        | 268                        |
| 173.85                                                  |     | 1   |     |     |     |     |     | 1   | 3   | 6   | 5   | 1   | 173.85        | 285                        |
| 173.80                                                  | 1   | 2   | 1   |     |     |     |     |     | 3   | 6   |     | 5   | 173.80        | 303                        |
| 173.75                                                  |     |     |     |     |     |     |     | 1   |     | 6   | 3   | 5   | 173.75        | 318                        |
| 173.70                                                  | 1   |     |     |     |     |     |     |     |     | 4   | 3   | 5   | 173.70        | 331                        |
| 173.65                                                  | 1   |     |     |     |     |     |     |     |     | 1   | 1   | 3   | 173.65        | 337                        |
| 173.60                                                  |     |     |     |     |     |     |     |     |     | 2   | 3   | 6   | 173.60        | 348                        |
| 173.55                                                  |     |     |     |     |     |     |     |     |     |     | 2   | 3   | 173.55        | 353                        |
| 173.50                                                  |     |     |     |     |     |     |     |     | 1   |     | 1   | 1   | 173.50        | 356                        |
| 173.45                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 173.45        | 357                        |
| 173.40                                                  | 1   |     |     |     |     |     |     |     |     |     | 1   |     | 173.40        | 360                        |
| 173.35                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 173.35        | 363                        |
| 173.30                                                  |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 173.30        | 364                        |
| 173.25                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 173.25        | 364                        |
| 173.20                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 173.20        | 365                        |
| 173.15                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 173.15        | 365                        |
| 173.10                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 173.10        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3085: Toledo, Ohio on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 173.71  | 174.21  | 174.31  | 174.28  | 174.30  | 174.27  | 174.17  | 174.12  | 174.05  | 173.85  | 173.69  | 173.69  |
| 2    | 174.03  | 174.26  | 174.13  | 174.35  | 174.34  | 174.49  | 174.18  | 174.12  | 173.97  | 173.89  | 173.72  | 173.39  |
| 3    | 174.15  | 174.26  | 174.35  | 174.26  | 174.42  | 174.38  | 174.17  | 174.15  | 174.02  | 173.91  | 173.88  | 173.57  |
| 4    | 173.45  | 174.19  | 174.28  | 174.18  | 174.39  | 174.25  | 174.21  | 174.12  | 173.92  | 173.78  | 173.87  | 173.64  |
| 5    | 173.68  | 173.87  | 174.17  | 174.29  | 174.31  | 174.19  | 174.18  | 174.07  | 173.99  | 173.78  | 173.65  | 173.71  |
| 6    | 174.05  | 173.85  | 174.13  | 174.31  | 174.32  | 174.23  | 174.16  | 174.04  | 173.97  | 173.88  | 173.39  | 173.67  |
| 7    | 174.23  | 173.98  | 174.13  | 174.35  | 174.32  | 174.28  | 174.16  | 174.15  | 174.00  | 173.89  | 173.63  | 173.77  |
| 8    | 174.17  | 174.15  | 174.22  | 174.35  | 174.31  | 174.45  | 174.15  | 174.12  | 173.97  | 173.86  | 173.74  | 173.82  |
| 9    | 174.12  | 174.14  | 174.09  | 174.32  | 174.17  | 174.39  | 174.12  | 174.06  | 173.90  | 173.85  | 173.92  | 173.64  |
| 10   | 174.16  | 174.19  | 174.21  | 174.34  | 174.25  | 174.28  | 174.10  | 174.15  | 173.94  | 173.38  | 173.58  | 173.75  |
| 11   | 174.10  | 174.30  | 174.25  | 174.41  | 174.30  | 174.21  | 174.08  | 174.10  | 174.06  | 173.63  | 173.78  | 173.79  |
| 12   | 174.11  | 174.02  | 174.21  | 174.38  | 174.28  | 174.20  | 174.13  | 174.10  | 173.97  | 173.75  | 173.99  | 173.85  |
| 13   | 173.93  | 173.91  | 173.82  | 174.33  | 174.25  | 174.23  | 174.19  | 174.07  | 173.89  | 173.80  | 173.59  | 173.65  |
| 14   | 174.21  | 174.16  | 174.02  | 174.21  | 174.39  | 174.21  | 174.03  | 173.95  | 173.95  | 173.71  | 173.74  | 173.74  |
| 15   | 174.10  | 174.02  | 174.13  | 174.22  | 174.25  | 174.18  | 174.16  | 173.96  | 174.15  | 173.76  | 174.00  | 173.63  |
| 16   | 174.13  | 174.12  | 174.09  | 174.22  | 174.28  | 174.30  | 174.14  | 174.10  | 174.09  | 173.75  | 173.46  | 173.68  |
| 17   | 174.17  | 174.14  | 174.16  | 174.13  | 174.32  | 174.26  | 174.13  | 174.03  | 173.88  | 173.84  | 173.23  | 173.71  |
| 18   | 174.11  | 174.17  | 174.09  | 174.21  | 174.39  | 174.27  | 174.18  | 174.18  | 173.92  | 173.68  | 173.87  | 173.64  |
| 19   | 174.39  | 174.19  | 174.05  | 174.21  | 174.37  | 174.18  | 174.17  | 174.20  | 173.98  | 173.88  | 173.96  | 173.77  |
| 20   | 174.08  | 173.82  | 174.17  | 174.09  | 174.31  | 174.16  | 174.27  | 174.11  | 173.55  | 173.94  | 173.88  | 173.65  |
| 21   | 174.07  | 174.02  | 174.25  | 174.29  | 174.30  | 174.25  | 174.17  | 174.13  | 173.85  | 173.87  | 173.78  | 173.78  |
| 22   | 174.14  | 173.96  | 174.39  | 174.42  | 174.33  | 174.11  | 174.18  | 174.17  | 173.93  | 173.77  | 173.91  | 174.01  |
| 23   | 174.07  | 173.97  | 174.13  | 174.23  | 174.33  | 174.31  | 174.22  | 174.01  | 173.84  | 173.78  | 173.94  | 173.58  |
| 24   | 173.94  | 173.95  | 174.26  | 174.15  | 174.41  | 174.26  | 174.15  | 173.87  | 174.05  | 173.15  | 173.92  | 173.81  |
| 25   | 174.18  | 174.12  | 174.20  | 174.29  | 174.30  | 174.09  | 174.13  | 173.77  | 173.96  | 173.45  | 173.90  | 173.54  |
| 26   | 173.85  | 174.09  | 174.10  | 174.35  | 174.27  | 174.25  | 174.14  | 173.93  | 173.99  | 173.63  | 173.94  | 173.84  |
| 27   | 174.10  | 174.20  | 174.05  | 174.18  | 174.25  | 174.20  | 174.14  | 174.02  | 173.85  | 173.85  | 173.62  | 173.89  |
| 28   | 174.11  | 174.16  | 174.34  | 174.18  | 174.26  | 174.12  | 174.11  | 173.99  | 174.24  | 173.32  | 173.43  | 173.57  |
| 29   | 174.17  | 174.14  | 174.29  | 174.21  | 174.28  | 174.25  | 174.11  | 174.02  | 174.06  | 173.72  | 173.77  | 173.71  |
| 30   | 174.11  |         | 174.15  | 174.31  | 174.27  | 174.24  | 174.05  | 174.03  | 173.92  | 173.83  | 173.55  | 173.78  |
| 31   | 174.10  |         | 174.31  |         | 174.26  |         | 174.16  | 174.03  |         | 173.83  |         | 173.84  |
| MEAN | 174.06  | 174.09  | 174.18  | 174.27  | 174.31  | 174.25  | 174.15  | 174.06  | 173.96  | 173.74  | 173.74  | 173.71  |
| MAX. | 174.72  | 174.40  | 174.86  | 174.70  | 174.71  | 174.95  | 174.46  | 174.54  | 174.53  | 174.18  | 174.35  | 174.25  |
|      | 2200/19 | 0300/11 | 2100/30 | 0400/23 | 2100/24 | 0200/02 | 1100/11 | 1400/18 | 2300/28 | 1600/18 | 2200/10 | 1900/22 |
| MIN. | 172.65  | 173.33  | 173.55  | 173.57  | 173.96  | 173.96  | 173.78  | 173.55  | 173.19  | 172.69  | 172.68  | 172.86  |
|      | 2000/04 | 2000/20 | 1700/13 | 1500/27 | 1400/16 | 1400/25 | 0800/11 | 1900/25 | 1300/20 | 1700/24 | 2200/16 | 1300/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.04

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3087: Monroe, Michigan on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.30 May  
Daily mean elevation: 174.43 2 Jun  
Instant/hourly elevation: 174.82 2000/30 Mar

LOWEST  
Monthly mean elevation: 173.76 Nov  
Daily mean elevation: 173.29 24 Oct  
Instant/hourly elevation: 172.83 0100/17 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.34 | 19 Jan |
| 174.28 | 11 Feb |
| 174.37 | 22 Mar |
| 174.36 | 13 Apr |
| 174.39 | 3 May  |
| 174.43 | 2 Jun  |
| 174.26 | 20 Jul |
| 174.20 | 19 Aug |
| 174.14 | 28 Sep |
| 173.93 | 20 Oct |
| 174.00 | 15 Nov |
|        | Dec    |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 173.54 | 4 Jan  |
| 173.90 | 13 Feb |
| 173.89 | 13 Mar |
| 174.17 | 18 Apr |
| 174.18 | 13 May |
| 174.13 | 28 Jun |
| 174.07 | 14 Jul |
| 173.82 | 25 Aug |
| 173.63 | 20 Sep |
| 173.29 | 24 Oct |
| 173.35 | 17 Nov |
|        | Dec    |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 174.40                                                  |     |     |     |     |     | 1   |     |     |     |     |     |     | 174.40        | 1                          |
| 174.35                                                  |     |     |     |     |     | 1   |     |     |     |     |     |     | 174.35        | 6                          |
| 174.30                                                  | 1   |     | 1   | 1   | 3   | 2   |     |     |     |     |     |     | 174.30        | 14                         |
| 174.25                                                  |     | 1   | 4   | 3   | 9   | 7   | 1   |     |     |     |     |     | 174.25        | 39                         |
| 174.20                                                  | 2   | 2   | 7   | 4   |     | 13  | 3   |     |     |     |     |     | 174.20        | 70                         |
| 174.15                                                  | 8   | 5   | 5   | 2   | 1   | 3   | 16  | 5   |     |     |     |     | 174.15        | 115                        |
| 174.10                                                  | 10  | 5   | 7   |     |     | 3   | 8   | 6   | 2   |     |     |     | 174.10        | 156                        |
| 174.05                                                  | 3   |     | 4   |     |     |     | 3   | 6   | 2   |     |     |     | 174.05        | 174                        |
| 174.00                                                  | 1   | 3   | 1   |     |     |     |     | 7   | 4   |     |     |     | 174.00        | 190                        |
| 173.95                                                  | 1   | 2   |     |     |     |     |     | 1   | 6   |     | 3   |     | 173.95        | 203                        |
| 173.90                                                  | 1   | 1   |     |     |     |     |     | 1   | 3   | 1   | 1   |     | 173.90        | 211                        |
| 173.85                                                  | 1   | 2   | 1   |     |     |     |     | 1   | 3   | 10  | 3   |     | 173.85        | 232                        |
| 173.80                                                  | 1   |     |     |     |     |     |     | 1   | 2   | 4   | 1   |     | 173.80        | 241                        |
| 173.75                                                  |     |     |     |     |     |     |     |     |     | 6   | 1   |     | 173.75        | 248                        |
| 173.70                                                  | 1   |     |     |     |     |     |     |     |     | 3   | 6   |     | 173.70        | 258                        |
| 173.65                                                  |     |     |     |     |     |     |     |     |     | 2   | 1   |     | 173.65        | 261                        |
| 173.60                                                  |     |     |     |     |     |     |     |     | 1   | 1   | 2   |     | 173.60        | 265                        |
| 173.55                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 173.55        | 266                        |
| 173.50                                                  | 1   |     |     |     |     |     |     |     |     | 1   | 1   |     | 173.50        | 269                        |
| 173.45                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 173.45        | 269                        |
| 173.40                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 173.40        | 270                        |
| 173.35                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 173.35        | 271                        |
| 173.30                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 173.30        | 272                        |
| 173.25                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 173.25        | 273                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 3087: Monroe, Michigan on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec               |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------|
| 1    | 173.81  | 174.18  | 174.29  | 174.27  | /       | 174.25  | 174.17  | 174.13  | 174.08* | 173.88  | 173.71  | /                 |
| 2    | 174.05  | 174.21  | 174.14  | 174.34  | /       | 174.43  | 174.19  | 174.14  | 174.00  | 173.88  | 173.71  | /                 |
| 3    | 174.17  | 174.24  | 174.27  | 174.28  | 174.39* | 174.33  | 174.18  | 174.18  | 174.04  | 173.90  | 173.89  | /                 |
| 4    | 173.54  | 174.16  | 174.22  | 174.21  | 174.36  | 174.25  | 174.21  | 174.15  | 173.99* | 173.79  | 173.89  | /                 |
| 5    | 173.73  | 173.91  | 174.18  | 174.29* | 174.31* | 174.20  | 174.19  | 174.10  | /       | 173.77  | 173.71  | /                 |
| 6    | 174.08  | 173.90  | 174.15  | /       | /       | 174.24  | 174.18  | 174.10* | /       | 173.87  | 173.53  | /                 |
| 7    | 174.22  | 174.05  | 174.15  | /       | /       | 174.28  | 174.17  | /       | /       | 173.88  | 173.66  | /                 |
| 8    | 174.16  | 174.14  | 174.23  | /       | /       | 174.38  | 174.16  | /       | /       | 173.87  | 173.75  | /                 |
| 9    | 174.12  | 174.13  | 174.10  | /       | /       | 174.32  | 174.14  | /       | /       | 173.85  | 173.92  | /                 |
| 10   | 174.18  | 174.18  | 174.19  | /       | /       | 174.27  | 174.12  | 174.19* | /       | 173.45  | 173.65  | /                 |
| 11   | 174.17  | 174.28  | 174.25  | /       | 174.32* | 174.22  | 174.10  | 174.13  | /       | 173.62  | 173.77  | /                 |
| 12   | 174.12  | 174.01  | 174.25  | /       | 174.30  | 174.21  | 174.14  | 174.13  | 173.98* | 173.74  | 174.00  | /                 |
| 13   | 173.94  | 173.90* | 173.89  | 174.36* | 174.18* | 174.24  | 174.21  | 174.10  | 173.89  | 173.79  | 173.65  | /                 |
| 14   | 174.21  | /       | 174.05  | 174.23  | /       | 174.23  | 174.07  | 174.02  | 173.95  | 173.75  | 173.75  | /                 |
| 15   | 174.11  | /       | 174.12  | 174.22  | /       | 174.21  | 174.17  | 174.02  | 174.11  | 173.79  | 174.00  | /                 |
| 16   | 174.15  | /       | 174.09  | 174.25  | /       | 174.28  | 174.16  | 174.10  | 174.09  | 173.80  | 173.57  | /                 |
| 17   | 174.17  | /       | 174.17  | 174.19  | /       | 174.26  | 174.17  | 174.06  | 173.90  | 173.89  | 173.35  | /                 |
| 18   | 174.12  | /       | 174.11  | 174.17* | /       | 174.28  | 174.20  | 174.17  | 173.93  | 173.66  | 173.87  | /                 |
| 19   | 174.34  | /       | 174.07  | /       | /       | 174.22  | 174.18  | 174.20  | 174.02  | 173.87  | 173.96  | /                 |
| 20   | 174.12  | /       | 174.15  | /       | /       | 174.18  | 174.26  | 174.10  | 173.63  | 173.93  | 173.82  | /                 |
| 21   | 174.06  | /       | 174.23  | /       | /       | 174.25  | 174.17  | 174.12  | 173.85  | 173.88  | 173.71* | /                 |
| 22   | 174.16  | 174.04* | 174.37  | /       | /       | 174.14  | 174.18  | 174.16  | 173.96  | 173.76  | /       | /                 |
| 23   | 174.11  | 173.99  | 174.18  | /       | 174.30* | 174.29  | 174.22  | 174.03  | 173.84  | 173.82  | /       | /                 |
| 24   | 173.99  | 173.99  | 174.25  | /       | 174.34  | 174.28  | 174.15  | 173.90  | 174.02  | 173.29  | /       | /                 |
| 25   | 174.20  | 174.14  | 174.22  | /       | 174.28  | 174.14  | 174.14  | 173.82  | 173.96  | 173.51  | /       | /                 |
| 26   | 173.89  | 174.15  | 174.13  | /       | 174.28  | 174.22  | 174.15  | 173.94  | 173.97  | 173.66  | /       | /                 |
| 27   | 174.10  | 174.17  | 174.07  | /       | 174.27  | 174.20  | 174.16  | 174.04  | 173.88  | 173.88  | /       | /                 |
| 28   | 174.11  | 174.19  | 174.34  | /       | 174.27  | 174.13  | 174.13  | 174.00  | 174.14  | 173.38  | /       | /                 |
| 29   | 174.17  | 174.14  | 174.30  | /       | 174.29  | 174.23  | 174.14  | 174.02  | 174.05  | 173.73  | /       | /                 |
| 30   | 174.13  |         | 174.18  | /       | 174.28  | 174.21  | 174.10  | 174.04  | 173.92  | 173.82  | /       | /                 |
| 31   | 174.14  |         | 174.29  |         | 174.27  |         | 174.18  | 174.04* |         | 173.85  |         | /                 |
| MEAN | 174.08  | 174.10  | 174.18  | 174.26  | 174.30  | 174.25  | 174.16  | 174.08  | 173.97  | 173.76  | 173.76  | /                 |
| MAX. | 174.65  | 174.37  | 174.82  | 174.45  | 174.49  | 174.77  | 174.41  | 174.49  | 174.40  | 174.14  | 174.35  | STATION<br>CLOSED |
| MIN. | 2100/19 | 0300/11 | 2000/30 | 0700/02 | 2100/24 | 0300/02 | 1000/11 | 1300/18 | 2300/28 | 2400/17 | 2200/10 |                   |
|      | 172.84  | 173.64  | 173.66  | 173.91  | 174.09  | 173.99  | 173.87  | 173.60  | 173.40  | 172.93  | 172.83  |                   |
|      | 1800/04 | 1800/05 | 1900/13 | 2400/17 | 1000/13 | 0900/26 | 0700/11 | 0400/15 | 1300/20 | 1600/24 | 0100/17 |                   |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.08

ANNUAL SUMMARY OF LEVELS, 1988  
Station 3090: Fermi Power Plant, Stony Point, Michigan on Lake Erie

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.29 May  
Daily mean elevation: 174.41 2 Jun  
Instant/hourly elevation: 174.76 2000/30 Mar

LOWEST  
Monthly mean elevation: 173.76 Oct  
Daily mean elevation: 173.32 24 Oct  
Instant/hourly elevation: 172.92 0200/17 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.32 | 19 Jan |
| 174.27 | 11 Feb |
| 174.34 | 22 Mar |
| 174.35 | 22 Apr |
| 174.36 | 3 May  |
| 174.41 | 2 Jun  |
| 174.22 | 20 Jul |
| 174.16 | 19 Aug |
| 174.11 | 28 Sep |
| 173.91 | 20 Oct |
| 173.99 | 12 Nov |
|        | Dec    |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 173.57 | 4 Jan  |
| 173.87 | 20 Feb |
| 173.90 | 13 Mar |
| 174.15 | 24 Apr |
| 174.25 | 31 May |
| 174.11 | 28 Jun |
| 174.05 | 14 Jul |
| 173.82 | 25 Aug |
| 173.64 | 20 Sep |
| 173.32 | 24 Oct |
| 173.37 | 17 Nov |
|        | Dec    |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 174.40        |     |     |     |     |     | 1   |     |     |     |     |     |     | 174.40        | 1                          |
| 174.35        |     |     |     |     | 1   | 1   |     |     |     |     |     |     | 174.35        | 3                          |
| 174.30        | 1   |     | 2   | 7   | 6   |     |     |     |     |     |     |     | 174.30        | 19                         |
| 174.25        |     | 1   | 3   | 10  | 22  | 6   |     |     |     |     |     |     | 174.25        | 61                         |
| 174.20        | 1   | 1   | 7   | 7   | 2   | 12  | 1   |     |     |     |     |     | 174.20        | 92                         |
| 174.15        | 4   | 5   | 6   | 5   |     | 8   | 7   | 1   |     |     |     |     | 174.15        | 128                        |
| 174.10        | 11  | 11  | 6   | 1   |     | 2   | 18  | 9   | 1   |     |     |     | 174.10        | 187                        |
| 174.05        | 6   | 1   | 5   |     |     |     | 4   | 8   | 2   |     |     |     | 174.05        | 213                        |
| 174.00        | 2   | 4   | 1   |     |     |     | 1   | 6   | 5   |     |     |     | 174.00        | 232                        |
| 173.95        | 1   | 2   |     |     |     |     |     | 4   | 6   |     | 3   |     | 173.95        | 248                        |
| 173.90        | 1   | 3   |     |     |     |     |     | 1   | 10  | 1   | 3   |     | 173.90        | 267                        |
| 173.85        | 1   | 1   | 1   |     |     |     |     | 1   | 3   | 9   | 5   |     | 173.85        | 288                        |
| 173.80        | 1   |     |     |     |     |     |     | 1   | 2   | 5   | 3   |     | 173.80        | 300                        |
| 173.75        |     |     |     |     |     |     |     |     |     | 5   | 2   |     | 173.75        | 307                        |
| 173.70        | 1   |     |     |     |     |     |     |     |     | 4   | 5   |     | 173.70        | 317                        |
| 173.65        |     |     |     |     |     |     |     |     |     | 2   | 3   |     | 173.65        | 322                        |
| 173.60        |     |     |     |     |     |     |     |     | 1   | 1   | 3   |     | 173.60        | 327                        |
| 173.55        | 1   |     |     |     |     |     |     |     |     |     | 1   |     | 173.55        | 329                        |
| 173.50        |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 173.50        | 331                        |
| 173.45        |     |     |     |     |     |     |     |     |     | 1   |     |     | 173.45        | 332                        |
| 173.40        |     |     |     |     |     |     |     |     |     |     |     |     | 173.40        | 332                        |
| 173.35        |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 173.35        | 334                        |
| 173.30        |     |     |     |     |     |     |     |     |     | 1   |     |     | 173.30        | 335                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 3090: Fermi Power Plant, Stony Point, Michigan on Lake Erie

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----|
| 1    | 173.81  | 174.16  | 174.26  | 174.24  | 174.28  | 174.24  | 174.14  | 174.14  | 174.04  | 173.88  | 173.71  | /   |
| 2    | 174.07  | 174.18  | 174.13  | 174.31  | 174.31  | 174.41  | 174.17  | 174.12  | 173.99  | 173.86  | 173.70  | /   |
| 3    | 174.15  | 174.21  | 174.23  | 174.27  | 174.36  | 174.29  | 174.15  | 174.14  | 174.03  | 173.87  | 173.87  | /   |
| 4    | 173.57  | 174.14  | 174.20  | 174.20  | 174.33  | 174.24  | 174.18  | 174.12  | 173.92  | 173.79  | 173.86  | /   |
| 5    | 173.72  | 173.93  | 174.16  | 174.29  | 174.28  | 174.19  | 174.16  | 174.08  | 173.93  | 173.76  | 173.72  | /   |
| 6    | 174.03  | 173.92  | 174.14  | 174.29  | 174.28  | 174.23  | 174.15  | 174.03  | 173.95  | 173.85  | 173.57  | /   |
| 7    | 174.21  | 174.04  | 174.13  | 174.25  | 174.30  | 174.25  | 174.14  | 174.13  | 173.99  | 173.87  | 173.66  | /   |
| 8    | 174.15  | 174.13  | 174.21  | 174.29  | 174.31  | 174.36  | 174.13  | 174.12  | 173.99  | 173.86  | 173.74  | /   |
| 9    | 174.11  | 174.13  | 174.09  | 174.29  | 174.27  | 174.28  | 174.11  | 174.08  | 173.91  | 173.85  | 173.90  | /   |
| 10   | 174.14  | 174.17  | 174.17  | 174.31  | 174.26  | 174.26  | 174.10  | 174.13  | 173.93  | 173.48  | 173.65  | /   |
| 11   | 174.09  | 174.27  | 174.22  | 174.33  | 174.28  | 174.21  | 174.09  | 174.10  | 174.03  | 173.63  | 173.76  | /   |
| 12   | 174.11  | 174.01  | 174.25  | 174.33  | 174.30  | 174.20  | 174.12  | 174.10  | 173.98  | 173.71  | 173.99  | /   |
| 13   | 173.95  | 173.92  | 173.90  | 174.31  | 174.27  | 174.23  | 174.18  | 174.09  | 173.88  | 173.79  | 173.66  | /   |
| 14   | 174.19  | 174.14  | 174.04  | 174.22  | 174.33  | 174.22  | 174.05  | 174.00  | 173.93  | 173.75  | 173.75  | /   |
| 15   | 174.10  | 174.04  | 174.11  | 174.22  | 174.27  | 174.21  | 174.14  | 173.96  | 174.07  | 173.78  | 173.98  | /   |
| 16   | 174.14  | 174.11  | 174.08  | 174.22  | 174.28  | 174.25  | 174.13  | 174.08  | 174.07  | 173.80  | 173.64  | /   |
| 17   | 174.16  | 174.12  | 174.16  | 174.23  | 174.27  | 174.26  | 174.12  | 174.03  | 173.89  | 173.86  | 173.37  | /   |
| 18   | 174.11  | 174.14  | 174.10  | 174.19  | 174.34  | 174.26  | 174.18  | 174.13  | 173.91  | 173.68  | 173.85  | /   |
| 19   | 174.32  | 174.17  | 174.07  | 174.21  | 174.32  | 174.21  | 174.14  | 174.16  | 174.01  | 173.86  | 173.94  | /   |
| 20   | 174.12  | 173.87  | 174.14  | 174.16  | 174.28  | 174.19  | 174.22  | 174.07  | 173.64  | 173.91  | 173.81  | /   |
| 21   | 174.05  | 174.05  | 174.21  | 174.28  | 174.28  | 174.22  | 174.14  | 174.09  | 173.84  | 173.87  | 173.76  | /   |
| 22   | 174.14  | 174.07  | 174.34  | 174.35  | 174.30  | 174.16  | 174.16  | 174.13  | 173.95  | 173.75  | 173.89  | /   |
| 23   | 174.10  | 174.00  | 174.17  | 174.28  | 174.28  | 174.25  | 174.19  | 174.01  | 173.82  | 173.82  | 173.92  | /   |
| 24   | 174.00  | 173.99  | 174.23  | 174.15  | 174.30  | 174.27  | 174.14  | 173.90  | 173.99  | 173.32  | 173.91  | /   |
| 25   | 174.20  | 174.12  | 174.21  | 174.28  | 174.25  | 174.13  | 174.13  | 173.82  | 173.94  | 173.53  | 173.90  | /   |
| 26   | 173.90  | 174.14  | 174.14  | 174.32  | 174.28  | 174.18  | 174.14  | 173.94  | 173.96  | 173.66  | 173.96  | /   |
| 27   | 174.09  | 174.15  | 174.06  | 174.26  | 174.26  | 174.17  | 174.14  | 174.02  | 173.87  | 173.88  | 173.71  | /   |
| 28   | 174.09  | 174.17  | 174.31  | 174.17  | 174.26  | 174.11  | 174.10  | 173.98  | 174.11  | 173.40  | 173.52  | /   |
| 29   | 174.16  | 174.12  | 174.28  | 174.20  | 174.28  | 174.20  | 174.12  | 173.99  | 174.01  | 173.72  | 173.82  | /   |
| 30   | 174.11  |         | 174.19  | 174.29  | 174.26  | 174.18  | 174.07  | 174.01  | 173.91  | 173.81  | 173.62  | /   |
| 31   | 174.12  |         | 174.26  |         | 174.25  |         | 174.14  | 174.02  |         | 173.84  |         | /   |
| MEAN | 174.07  | 174.09  | 174.17  | 174.26  | 174.29  | 174.23  | 174.14  | 174.06  | 173.95  | 173.76  | 173.77  | /   |
| MAX. | 174.59  | 174.35  | 174.76  | 174.65  | 174.47  | 174.72  | 174.35  | 174.46  | 174.36  | 174.12  | 174.30  |     |
|      | 1600/13 | 0300/11 | 2000/30 | 0700/27 | 0800/16 | 0200/02 | 1100/11 | 1300/18 | 2200/28 | 1700/18 | 2200/10 |     |
| MIN. | 172.96  | 173.40  | 173.64  | 173.81  | 174.03  | 173.96  | 173.85  | 173.60  | 173.34  | 173.00  | 172.92  |     |
|      | 2000/04 | 2100/20 | 1800/13 | 0400/24 | 1400/16 | 0900/26 | 0700/11 | 0300/15 | 1200/20 | 1600/24 | 0200/17 |     |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.07

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4020: Gibraltar, Michigan on Detroit River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.34 May  
Daily mean elevation: 174.44 2 Jun  
Instant/hourly elevation: 174.83 0200/2 Jun

LOWEST  
Monthly mean elevation: 173.82 Dec  
Daily mean elevation: 173.55 24 Oct  
Instant/hourly elevation: 173.24 2200/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.37 | 19 Jan |
| 174.34 | 11 Feb |
| 174.38 | 22 Mar |
| 174.40 | 22 Apr |
| 174.41 | 3 May  |
| 174.44 | 2 Jun  |
| 174.31 | 20 Jul |
| 174.26 | 19 Aug |
| 174.18 | 28 Sep |
| 174.00 | 27 Oct |
| 174.10 | 12 Nov |
| 174.03 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 173.80 | 4 Jan  |
| 174.00 | 20 Feb |
| 173.99 | 13 Mar |
| 174.20 | 24 Apr |
| 174.29 | 25 May |
| 174.19 | 28 Jun |
| 174.15 | 14 Jul |
| 173.97 | 25 Aug |
| 173.83 | 20 Sep |
| 173.55 | 24 Oct |
| 173.56 | 17 Nov |
| 173.64 | 2 Dec  |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 174.40                                                  |     |     |     |     | 1   | 1   |     |     |     |     |     |     | 174.40        | 2                          |
| 174.35                                                  | 1   |     | 2   | 5   | 9   | 1   |     |     |     |     |     |     | 174.35        | 20                         |
| 174.30                                                  | 3   | 1   | 4   | 12  | 18  | 6   | 1   |     |     |     |     |     | 174.30        | 65                         |
| 174.25                                                  | 5   |     | 4   | 6   | 3   | 14  | 4   | 1   |     |     |     |     | 174.25        | 102                        |
| 174.20                                                  | 6   | 12  | 9   | 6   |     | 7   | 21  | 14  |     |     |     |     | 174.20        | 177                        |
| 174.15                                                  | 9   | 8   | 5   | 1   |     | 1   | 4   | 5   | 3   |     |     |     | 174.15        | 213                        |
| 174.10                                                  |     | 4   | 5   |     |     |     | 1   | 5   | 8   |     |     |     | 174.10        | 236                        |
| 174.05                                                  | 3   | 2   | 1   |     |     |     |     | 4   | 7   |     | 2   |     | 174.05        | 255                        |
| 174.00                                                  |     | 1   |     |     |     |     |     | 1   | 7   |     | 2   | 1   | 174.00        | 267                        |
| 173.95                                                  | 2   | 1   | 1   |     |     |     |     | 1   | 4   | 13  | 7   | 2   | 173.95        | 298                        |
| 173.90                                                  | 1   |     |     |     |     |     |     |     |     | 3   | 2   |     | 173.90        | 304                        |
| 173.85                                                  |     |     |     |     |     |     |     |     |     | 5   | 2   | 8   | 173.85        | 319                        |
| 173.80                                                  |     |     |     |     |     |     |     |     | 1   | 4   | 8   | 8   | 173.80        | 340                        |
| 173.75                                                  | 1   |     |     |     |     |     |     |     |     | 2   | 4   | 5   | 173.75        | 352                        |
| 173.70                                                  |     |     |     |     |     |     |     |     |     |     | 1   | 2   | 173.70        | 355                        |
| 173.65                                                  |     |     |     |     |     |     |     |     |     | 2   |     | 4   | 173.65        | 361                        |
| 173.60                                                  |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 173.60        | 363                        |
| 173.55                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 173.55        | 365                        |
| 173.50                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 173.50        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4020: Gibraltar, Michigan on Detroit River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 173.92  | 174.20  | 174.31  | 174.29  | 174.34  | 174.28  | 174.21  | 174.24  | 174.15  | 174.00  | 173.83  | 173.80  |
| 2    | 174.17  | 174.20  | 174.19  | 174.35  | 174.36  | 174.44  | 174.25  | 174.22  | 174.12  | 173.98  | 173.80  | 173.64  |
| 3    | 174.26  | 174.25  | 174.25  | 174.32  | 174.41  | 174.33  | 174.24  | 174.25  | 174.15  | 173.98  | 173.97  | 173.70  |
| 4    | 173.80  | 174.18  | 174.22  | 174.26  | 174.37  | 174.29  | 174.26  | 174.24  | 174.07  | 173.91  | 173.96  | 173.74  |
| 5    | 173.98  | 174.02  | 174.22  | 174.34  | 174.32  | 174.25  | 174.25  | 174.21  | 174.04  | 173.87  | 173.85  | 173.82  |
| 6    | 174.21  | 174.06  | 174.21  | 174.33  | 174.32  | 174.28  | 174.24  | 174.16  | 174.07  | 173.96  | 173.78  | 173.82  |
| 7    | 174.33  | 174.18  | 174.18  | 174.25  | 174.35  | 174.31  | 174.23  | 174.24  | 174.12  | 173.97  | 173.78  | 173.85  |
| 8    | 174.30  | 174.24  | 174.26  | 174.32  | 174.36  | 174.38  | 174.22  | 174.23  | 174.12  | 173.97  | 173.84  | 173.87  |
| 9    | 174.32  | 174.23  | 174.15  | 174.33  | 174.35  | 174.32  | 174.20  | 174.20  | 174.04  | 173.96  | 173.99  | 173.75  |
| 10   | 174.32  | 174.25  | 174.22  | 174.35  | 174.30  | 174.30  | 174.19  | 174.24  | 174.06  | 173.68  | 173.79  | 173.81  |
| 11   | 174.27  | 174.34  | 174.28  | 174.36  | 174.33  | 174.26  | 174.20  | 174.22  | 174.14  | 173.76  | 173.85  | 173.83  |
| 12   | 174.27  | 174.14  | 174.31  | 174.36  | 174.36  | 174.26  | 174.21  | 174.21  | 174.10  | 173.83  | 174.10  | 173.96  |
| 13   | 174.09  | 174.06  | 173.99  | 174.36  | 174.32  | 174.29  | 174.28  | 174.21  | 174.00  | 173.90  | 173.82  | 173.79  |
| 14   | 174.29  | 174.24  | 174.10  | 174.27  | 174.39  | 174.28  | 174.15  | 174.14  | 174.04  | 173.89  | 173.86  | 173.88  |
| 15   | 174.24  | 174.15  | 174.15  | 174.26  | 174.33  | 174.26  | 174.23  | 174.09  | 174.17  | 173.90  | 174.07  | 173.69  |
| 16   | 174.25  | 174.21  | 174.13  | 174.27  | 174.38  | 174.29  | 174.23  | 174.21  | 174.18  | 173.93  | 173.83  | 173.80  |
| 17   | 174.24  | 174.21  | 174.21  | 174.30  | 174.31  | 174.30  | 174.24  | 174.16  | 174.02  | 173.98  | 173.56  | 173.80  |
| 18   | 174.18  | 174.23  | 174.16  | 174.22  | 174.38  | 174.33  | 174.27  | 174.23  | 174.04  | 173.81  | 173.93  | 173.79  |
| 19   | 174.37  | 174.25  | 174.12  | 174.25  | 174.36  | 174.28  | 174.24  | 174.26  | 174.15  | 173.96  | 174.02  | 173.89  |
| 20   | 174.20  | 174.00  | 174.17  | 174.22  | 174.34  | 174.24  | 174.31  | 174.18  | 173.83  | 174.00  | 173.88  | 173.86  |
| 21   | 174.10  | 174.16  | 174.25  | 174.32  | 174.34  | 174.29  | 174.24  | 174.20  | 173.96  | 173.98  | 173.84  | 173.84  |
| 22   | 174.20  | 174.17  | 174.38  | 174.40  | 174.36  | 174.21  | 174.25  | 174.23  | 174.08  | 173.85  | 173.96  | 174.03  |
| 23   | 174.18  | 174.11  | 174.24  | 174.33  | 174.33  | 174.31  | 174.28  | 174.14  | 173.96  | 173.97  | 173.98  | 173.82  |
| 24   | 174.09  | 174.11  | 174.28  | 174.20  | 174.33  | 174.32  | 174.23  | 174.03  | 174.10  | 173.55  | 173.99  | 173.87  |
| 25   | 174.25  | 174.21  | 174.28  | 174.33  | 174.29  | 174.21  | 174.23  | 173.97  | 174.05  | 173.68  | 173.97  | 173.68  |
| 26   | 174.00  | 174.24  | 174.19  | 174.37  | 174.33  | 174.25  | 174.23  | 174.06  | 174.07  | 173.78  | 174.03  | 173.89  |
| 27   | 174.17  | 174.20  | 174.11  | 174.35  | 174.32  | 174.25  | 174.24  | 174.14  | 174.00  | 174.00  | 173.83  | 173.98  |
| 28   | 174.19  | 174.24  | 174.36  | 174.21  | 174.31  | 174.19  | 174.21  | 174.10  | 174.18  | 173.58  | 173.64  | 173.69  |
| 29   | 174.25  | 174.17  | 174.33  | 174.24  | 174.33  | 174.27  | 174.22  | 174.10  | 174.11  | 173.82  | 173.93  | 173.82  |
| 30   | 174.20  |         | 174.24  | 174.34  | 174.31  | 174.25  | 174.17  | 174.13  | 174.02  | 173.90  | 173.75  | 173.90  |
| 31   | 174.20  |         | 174.31  |         | 174.30  |         | 174.24  | 174.14  |         | 173.94  |         | 173.90  |
| MEAN | 174.19  | 174.18  | 174.22  | 174.30  | 174.34  | 174.28  | 174.23  | 174.17  | 174.07  | 173.88  | 173.88  | 173.82  |
| MAX. | 174.64  | 174.41  | 174.83  | 174.72  | 174.64  | 174.83  | 174.49  | 174.50  | 174.40  | 174.25  | 174.32  | 174.22  |
|      | 2300/19 | 1000/11 | 2000/30 | 0700/27 | 0800/16 | 0200/02 | 1100/17 | 1400/18 | 2200/28 | 1400/23 | 2200/10 | 1900/22 |
| MIN. | 173.28  | 173.62  | 173.75  | 173.85  | 174.09  | 174.04  | 173.94  | 173.78  | 173.63  | 173.30  | 173.24  | 173.39  |
|      | 2000/04 | 2100/20 | 1800/13 | 0400/24 | 1100/13 | 0900/26 | 0700/17 | 0400/15 | 1900/20 | 1800/24 | 2200/16 | 1400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.13

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4030: Wyandotte, Michigan on Detroit River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.71 May  
Daily mean elevation: 174.87 9 Jan  
Instant/hourly elevation: 174.96 1700/13 Jan

LOWEST  
Monthly mean elevation: 174.28 Dec  
Daily mean elevation: 174.09 17 Nov  
Instant/hourly elevation: 173.92 0200/17 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.87 | 9 Jan  |
| 174.70 | 11 Feb |
| 174.69 | 28 Mar |
| 174.74 | 22 Apr |
| 174.74 | 18 May |
| 174.78 | 2 Jun  |
| 174.67 | 20 Jul |
| 174.63 | 19 Aug |
| 174.53 | 28 Sep |
| 174.41 | 2 Oct  |
| 174.45 | 12 Nov |
| 174.41 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.43 | 1 Jan  |
| 174.51 | 6 Feb  |
| 174.47 | 13 Mar |
| 174.61 | 24 Apr |
| 174.67 | 10 May |
| 174.59 | 25 Jun |
| 174.56 | 14 Jul |
| 174.41 | 25 Aug |
| 174.28 | 20 Sep |
| 174.10 | 28 Oct |
| 174.09 | 17 Nov |
| 174.17 | 2 Dec  |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 174.85                                                  | 3   |     |     |     |     |     |     |     |     |     |     |     | 174.85        | 3                          |
| 174.80                                                  | 4   |     |     |     |     |     |     |     |     |     |     |     | 174.80        | 7                          |
| 174.75                                                  | 1   |     |     |     |     | 1   |     |     |     |     |     |     | 174.75        | 9                          |
| 174.70                                                  | 3   |     |     | 9   | 17  | 3   |     |     |     |     |     |     | 174.70        | 41                         |
| 174.65                                                  | 4   | 10  | 5   | 12  | 14  | 14  | 1   |     |     |     |     |     | 174.65        | 101                        |
| 174.60                                                  | 5   | 10  | 8   | 9   |     | 11  | 19  |     | 5   |     |     |     | 174.60        | 168                        |
| 174.55                                                  | 5   | 7   | 12  |     |     | 1   | 11  | 14  |     |     |     |     | 174.55        | 218                        |
| 174.50                                                  | 3   | 2   | 5   |     |     |     |     | 7   | 5   |     |     |     | 174.50        | 240                        |
| 174.45                                                  | 2   |     | 1   |     |     |     |     | 4   | 13  |     |     |     | 174.45        | 260                        |
| 174.40                                                  | 1   |     |     |     |     |     |     | 1   | 9   | 1   | 6   | 1   | 174.40        | 279                        |
| 174.35                                                  |     |     |     |     |     |     |     |     | 2   | 11  | 4   | 1   | 174.35        | 297                        |
| 174.30                                                  |     |     |     |     |     |     |     |     |     | 10  | 7   | 9   | 174.30        | 323                        |
| 174.25                                                  |     |     |     |     |     |     |     |     | 1   | 4   | 8   | 12  | 174.25        | 348                        |
| 174.20                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 6   | 174.20        | 357                        |
| 174.15                                                  |     |     |     |     |     |     |     |     |     | 2   | 2   | 2   | 174.15        | 363                        |
| 174.10                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 174.10        | 364                        |
| 174.05                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 174.05        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4030: Wyandotte, Michigan on Detroit River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 174.43  | 174.60  | 174.63  | 174.67  | 174.71  | 174.68  | 174.62  | 174.60  | 174.52  | 174.39  | 174.28  | 174.28  |
| 2    | 174.57  | 174.59  | 174.57  | 174.69  | 174.72  | 174.78  | 174.64  | 174.60  | 174.49  | 174.41  | 174.27  | 174.17  |
| 3    | 174.65  | 174.65  | 174.60  | 174.68  | 174.74  | 174.72  | 174.64  | 174.61  | 174.51  | 174.40  | 174.35  | 174.21  |
| 4    | 174.46  | 174.62  | 174.60  | 174.64  | 174.73  | 174.69  | 174.64  | 174.60  | 174.48  | 174.36  | 174.35  | 174.25  |
| 5    | 174.54  | 174.53  | 174.58  | 174.69  | 174.71  | 174.65  | 174.63  | 174.58  | 174.47  | 174.32  | 174.30  | 174.28  |
| 6    | 174.70  | 174.51  | 174.57  | 174.70  | 174.70  | 174.67  | 174.62  | 174.56  | 174.48  | 174.38  | 174.20  | 174.27  |
| 7    | 174.85  | 174.63  | 174.57  | 174.70  | 174.71  | 174.68  | 174.62  | 174.61  | 174.50  | 174.39  | 174.24  | 174.31  |
| 8    | 174.86  | 174.63  | 174.61  | 174.72  | 174.71  | 174.74  | 174.62  | 174.60  | 174.50  | 174.39  | 174.28  | 174.32  |
| 9    | 174.87  | 174.65  | 174.55  | 174.71  | 174.68  | 174.71  | 174.60  | 174.58  | 174.45  | 174.39  | 174.36  | 174.25  |
| 10   | 174.86  | 174.66  | 174.61  | 174.72  | 174.67  | 174.69  | 174.58  | 174.62  | 174.46  | 174.19  | 174.26  | 174.29  |
| 11   | 174.81  | 174.70  | 174.64  | 174.73  | 174.70  | 174.65  | 174.59  | 174.59  | 174.50  | 174.26  | 174.32  | 174.30  |
| 12   | 174.81  | 174.60  | 174.66  | 174.73  | 174.71  | 174.65  | 174.60  | 174.59  | 174.47  | 174.29  | 174.45  | 174.35  |
| 13   | 174.76  | 174.56  | 174.47  | 174.72  | 174.68  | 174.66  | 174.64  | 174.59  | 174.42  | 174.33  | 174.28  | 174.26  |
| 14   | 174.82  | 174.65  | 174.53  | 174.67  | 174.73  | 174.66  | 174.56  | 174.53  | 174.44  | 174.31  | 174.32  | 174.32  |
| 15   | 174.74  | 174.62  | 174.56  | 174.66  | 174.69  | 174.64  | 174.60  | 174.52  | 174.53  | 174.33  | 174.44  | 174.21  |
| 16   | 174.71  | 174.66  | 174.55  | 174.65  | 174.70  | 174.68  | 174.60  | 174.57  | 174.53  | 174.33  | 174.26  | 174.27. |
| 17   | 174.70  | 174.67  | 174.60  | 174.64  | 174.71  | 174.68  | 174.64  | 174.55  | 174.42  | 174.35  | 174.09  | 174.29  |
| 18   | 174.67  | 174.67  | 174.56  | 174.64  | 174.74  | 174.68  | 174.65  | 174.62  | 174.44  | 174.30  | 174.35  | 174.28  |
| 19   | 174.72  | 174.69  | 174.55  | 174.65  | 174.73  | 174.65  | 174.64  | 174.63  | 174.49  | 174.37  | 174.41  | 174.33  |
| 20   | 174.61  | 174.59  | 174.58  | 174.61  | 174.72  | 174.63  | 174.67  | 174.58  | 174.28  | 174.40  | 174.36  | 174.28  |
| 21   | 174.55  | 174.66  | 174.62  | 174.69  | 174.72  | 174.66  | 174.63  | 174.59  | 174.37  | 174.39  | 174.33  | 174.29  |
| 22   | 174.60  | 174.66  | 174.69  | 174.74  | 174.73  | 174.61  | 174.64  | 174.59  | 174.44  | 174.32  | 174.40  | 174.41  |
| 23   | 174.58  | 174.64  | 174.59  | 174.70  | 174.71  | 174.68  | 174.65  | 174.55  | 174.40  | 174.37  | 174.41  | 174.24  |
| 24   | 174.53  | 174.60  | 174.62  | 174.61  | 174.73  | 174.68  | 174.62  | 174.46  | 174.48  | 174.11  | 174.41  | 174.32  |
| 25   | 174.61  | 174.66  | 174.62  | 174.69  | 174.70  | 174.59  | 174.60  | 174.41  | 174.45  | 174.17  | 174.40  | 174.19  |
| 26   | 174.50  | 174.67  | 174.57  | 174.72  | 174.70  | 174.65  | 174.62  | 174.46  | 174.46  | 174.24  | 174.42  | 174.32  |
| 27   | 174.58  | 174.64  | 174.52  | 174.70  | 174.69  | 174.65  | 174.62  | 174.51  | 174.41  | 174.35  | 174.26  | 174.37  |
| 28   | 174.63  | 174.61  | 174.69  | 174.64  | 174.69  | 174.61  | 174.59  | 174.49  | 174.53  | 174.10  | 174.18  | 174.22  |
| 29   | 174.67  | 174.57  | 174.68  | 174.64  | 174.70  | 174.66  | 174.59  | 174.50  | 174.49  | 174.26  | 174.33  | 174.29  |
| 30   | 174.62  |         | 174.62  | 174.71  | 174.69  | 174.65  | 174.57  | 174.51  | 174.42  | 174.32  | 174.23  | 174.32  |
| 31   | 174.58  |         | 174.68  |         | 174.68  |         | 174.62  | 174.51  |         | 174.33  |         | 174.34  |
| MEAN | 174.66  | 174.63  | 174.60  | 174.68  | 174.71  | 174.67  | 174.62  | 174.56  | 174.46  | 174.32  | 174.32  | 174.28  |
| MAX. | 174.96  | 174.74  | 174.95  | 174.94  | 174.81  | 174.95  | 174.76  | 174.76  | 174.65  | 174.52  | 174.54  | 174.50  |
|      | 1700/13 | 0300/11 | 2100/30 | 0800/27 | 2000/24 | 0200/02 | 2400/16 | 1400/18 | 2300/28 | 1600/23 | 2300/10 | 2000/22 |
| MIN. | 174.27  | 174.39  | 174.36  | 174.46  | 174.57  | 174.50  | 174.47  | 174.30  | 174.18  | 173.97  | 173.92  | 173.97  |
|      | 2100/04 | 1800/05 | 0900/30 | 0100/24 | 1100/13 | 1500/25 | 1200/10 | 1800/25 | 1900/20 | 1700/24 | 0200/17 | 1400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.54

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4036: Fort Wayne, Detroit, Michigan on Detroit River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 174.83 May  
Daily mean elevation: 175.05 10 Jan  
Instant/hourly elevation: 175.06 1700/13 Jan

LOWEST  
Monthly mean elevation: 174.43 Dec  
Daily mean elevation: 174.27 17 Nov  
Instant/hourly elevation: 174.11 2100/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 175.05 | 10 Jan |
| 174.85 | 11 Feb |
| 174.81 | 31 Mar |
| 174.86 | 22 Apr |
| 174.86 | 24 May |
| 174.90 | 2 Jun  |
| 174.79 | 20 Jul |
| 174.75 | 19 Aug |
| 174.65 | 16 Sep |
| 174.55 | 3 Oct  |
| 174.57 | 15 Nov |
| 174.53 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.60 | 1 Jan  |
| 174.67 | 6 Feb  |
| 174.64 | 13 Mar |
| 174.75 | 20 Apr |
| 174.80 | 10 May |
| 174.72 | 25 Jun |
| 174.70 | 30 Jul |
| 174.55 | 25 Aug |
| 174.43 | 20 Sep |
| 174.27 | 28 Oct |
| 174.27 | 17 Nov |
| 174.33 | 2 Dec  |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 175.00                                                  | 5   |     |     |     |     |     |     |     |     |     |     |     | 175.00        | 5                          |
| 174.95                                                  | 2   |     |     |     |     |     |     |     |     |     |     |     | 174.95        | 7                          |
| 174.90                                                  | 2   |     |     |     |     |     |     |     |     |     |     |     | 174.90        | 9                          |
| 174.85                                                  |     |     |     | 2   | 3   | 2   |     |     |     |     |     |     | 174.85        | 16                         |
| 174.80                                                  | 4   | 8   | 3   | 16  | 26  | 8   |     |     |     |     |     |     | 174.80        | 81                         |
| 174.75                                                  | 5   | 13  | 3   | 11  | 2   | 17  | 12  |     |     |     |     |     | 174.75        | 144                        |
| 174.70                                                  | 8   | 6   | 15  | 1   |     | 3   | 17  | 17  |     |     |     |     | 174.70        | 211                        |
| 174.65                                                  | 3   | 2   | 9   |     |     |     | 2   | 6   |     |     |     |     | 174.65        | 233                        |
| 174.60                                                  | 1   |     |     |     |     |     |     | 5   | 13  |     |     |     | 174.60        | 253                        |
| 174.55                                                  | 1   |     | 1   |     |     |     |     | 2   | 12  |     | 2   |     | 174.55        | 270                        |
| 174.50                                                  |     |     |     |     |     |     |     | 1   | 4   | 11  | 6   | 1   | 174.50        | 293                        |
| 174.45                                                  |     |     |     |     |     |     |     |     |     | 11  | 9   | 9   | 174.45        | 322                        |
| 174.40                                                  |     |     |     |     |     |     |     |     | 1   | 3   | 7   | 14  | 174.40        | 347                        |
| 174.35                                                  |     |     |     |     |     |     |     |     |     | 3   | 3   | 5   | 174.35        | 358                        |
| 174.30                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 2   | 174.30        | 363                        |
| 174.25                                                  |     |     |     |     |     |     |     |     |     | 2   | 1   |     | 174.25        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 4036: Fort Wayne, Detroit, Michigan on Detroit River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 174.60  | 174.73  | 174.75  | 174.80  | 174.84  | 174.81  | 174.75  | 174.72  | 174.64  | 174.53  | 174.42  | 174.43  |
| 2    | 174.71  | 174.73  | 174.71  | 174.81  | 174.84  | 174.90  | 174.76  | 174.73  | 174.63  | 174.55  | 174.42  | 174.33  |
| 3    | 174.79  | 174.78  | 174.73  | 174.81  | 174.86  | 174.85  | 174.77  | 174.73  | 174.64  | 174.55  | 174.48  | 174.36  |
| 4    | 174.65  | 174.77  | 174.73  | 174.77  | 174.85  | 174.81  | 174.77  | 174.72  | 174.62  | 174.51  | 174.48  | 174.41  |
| 5    | 174.71  | 174.70  | 174.71  | 174.82  | 174.83  | 174.78  | 174.76  | 174.71  | 174.62  | 174.48  | 174.45  | 174.43  |
| 6    | 174.85  | 174.67  | 174.70  | 174.83  | 174.83  | 174.80  | 174.76  | 174.69  | 174.62  | 174.53  | 174.34  | 174.41  |
| 7    | 175.02  | 174.78  | 174.70  | 174.84  | 174.84  | 174.81  | 174.75  | 174.74  | 174.64  | 174.53  | 174.39  | 174.45  |
| 8    | 175.03  | 174.83  | 174.74  | 174.85  | 174.83  | 174.86  | 174.75  | 174.72  | 174.63  | 174.53  | 174.42  | 174.46  |
| 9    | 175.02  | 174.83  | 174.69  | 174.85  | 174.80  | 174.84  | 174.73  | 174.71  | 174.59  | 174.53  | 174.49  | 174.40  |
| 10   | 175.05  | 174.82  | 174.74  | 174.85  | 174.80  | 174.81  | 174.71  | 174.74  | 174.59  | 174.36  | 174.40  | 174.44  |
| 11   | 175.02  | 174.85  | 174.77  | 174.86  | 174.83  | 174.78  | 174.72  | 174.72  | 174.63  | 174.42  | 174.48  | 174.44  |
| 12   | 174.99  | 174.80  | 174.79  | 174.85  | 174.83  | 174.78  | 174.74  | 174.72  | 174.60  | 174.45  | 174.57  | 174.48  |
| 13   | 174.92  | 174.78  | 174.64  | 174.84  | 174.81  | 174.79  | 174.75  | 174.72  | 174.57  | 174.48  | 174.43  | 174.41  |
| 14   | 174.96  | 174.83  | 174.68  | 174.80  | 174.85  | 174.78  | 174.70  | 174.67  | 174.58  | 174.46  | 174.47  | 174.46  |
| 15   | 174.91  | 174.78  | 174.70  | 174.80  | 174.82  | 174.77  | 174.73  | 174.66  | 174.64  | 174.47  | 174.57  | 174.36  |
| 16   | 174.85  | 174.80  | 174.69  | 174.79  | 174.83  | 174.81  | 174.73  | 174.70  | 174.65  | 174.46  | 174.41  | 174.42  |
| 17   | 174.83  | 174.80  | 174.73  | 174.78  | 174.83  | 174.81  | 174.78  | 174.68  | 174.56  | 174.48  | 174.27  | 174.45  |
| 18   | 174.80  | 174.81  | 174.70  | 174.79  | 174.86  | 174.80  | 174.78  | 174.75  | 174.57  | 174.45  | 174.48  | 174.44  |
| 19   | 174.85  | 174.81  | 174.69  | 174.78  | 174.85  | 174.78  | 174.77  | 174.75  | 174.60  | 174.51  | 174.54  | 174.48  |
| 20   | 174.76  | 174.75  | 174.71  | 174.75  | 174.85  | 174.76  | 174.79  | 174.71  | 174.43  | 174.53  | 174.50  | 174.43  |
| 21   | 174.70  | 174.80  | 174.75  | 174.82  | 174.84  | 174.79  | 174.77  | 174.72  | 174.52  | 174.52  | 174.48  | 174.44  |
| 22   | 174.74  | 174.80  | 174.81  | 174.86  | 174.85  | 174.74  | 174.77  | 174.71  | 174.57  | 174.47  | 174.54  | 174.53  |
| 23   | 174.73  | 174.78  | 174.72  | 174.83  | 174.84  | 174.80  | 174.78  | 174.68  | 174.55  | 174.50  | 174.55  | 174.38  |
| 24   | 174.69  | 174.75  | 174.75  | 174.76  | 174.86  | 174.80  | 174.75  | 174.60  | 174.60  | 174.28  | 174.54  | 174.46  |
| 25   | 174.74  | 174.80  | 174.74  | 174.83  | 174.82  | 174.72  | 174.74  | 174.55  | 174.59  | 174.33  | 174.53  | 174.35  |
| 26   | 174.67  | 174.81  | 174.71  | 174.84  | 174.82  | 174.79  | 174.75  | 174.60  | 174.59  | 174.39  | 174.55  | 174.46  |
| 27   | 174.73  | 174.78  | 174.66  | 174.82  | 174.81  | 174.78  | 174.74  | 174.64  | 174.55  | 174.47  | 174.41  | 174.50  |
| 28   | 174.76  | 174.75  | 174.81  | 174.78  | 174.81  | 174.74  | 174.72  | 174.62  | 174.64  | 174.27  | 174.35  | 174.38  |
| 29   | 174.80  | 174.71  | 174.80  | 174.78  | 174.82  | 174.78  | 174.72  | 174.64  | 174.62  | 174.40  | 174.46  | 174.44  |
| 30   | 174.75  |         | 174.75  | 174.83  | 174.81  | 174.78  | 174.70  | 174.64  | 174.55  | 174.46  | 174.38  | 174.46  |
| 31   | 174.71  |         | 174.81  |         | 174.81  |         | 174.74  | 174.64  |         | 174.47  |         | 174.48  |
| MEAN | 174.82  | 174.78  | 174.73  | 174.81  | 174.83  | 174.80  | 174.75  | 174.69  | 174.59  | 174.46  | 174.46  | 174.43  |
| MAX. | 175.06  | 174.88  | 174.99  | 175.02  | 174.93  | 175.05  | 174.87  | 174.84  | 174.74  | 174.62  | 174.64  | 174.63  |
|      | 1700/13 | 0300/09 | 2100/30 | 0600/27 | 2000/24 | 0300/02 | 2400/16 | 1500/18 | 2200/28 | 1500/23 | 2300/10 | 2000/22 |
| MIN. | 174.52  | 174.60  | 174.51  | 174.60  | 174.72  | 174.64  | 174.63  | 174.46  | 174.35  | 174.15  | 174.11  | 174.16  |
|      | 2200/04 | 1900/05 | 0900/30 | 1800/23 | 1100/13 | 1500/25 | 1200/10 | 1900/25 | 1400/20 | 1200/28 | 2100/16 | 1400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.68

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4049: Windmill Point, Detroit, Michigan on Detroit River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 175.08 May  
 Daily mean elevation: 175.24 10 Jan  
 Instant/hourly elevation: 175.25 1200/10 Jan

LOWEST  
 Monthly mean elevation: 174.71 Dec  
 Daily mean elevation: 174.57 28 Oct  
 Instant/hourly elevation: 174.45 1200/23 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 175.24 | 10 Jan |
| 175.06 | 4 Feb  |
| 175.06 | 31 Mar |
| 175.14 | 7 Apr  |
| 175.12 | 24 May |
| 175.11 | 2 Jun  |
| 175.03 | 20 Jul |
| 174.99 | 19 Aug |
| 174.89 | 7 Sep  |
| 174.81 | 3 Oct  |
| 174.82 | 23 Nov |
| 174.77 | 22 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 174.92 | 1 Jan  |
| 174.98 | 29 Feb |
| 174.94 | 27 Mar |
| 175.02 | 20 Apr |
| 175.03 | 9 May  |
| 174.98 | 25 Jun |
| 174.95 | 30 Jul |
| 174.83 | 25 Aug |
| 174.71 | 20 Sep |
| 174.57 | 28 Oct |
| 174.58 | 6 Nov  |
| 174.64 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 175.20                                                  | 4   |     |     |     |     |     |     |     |     |     |     |     | 175.20        | 4                          |
| 175.15                                                  | 4   |     |     |     |     |     |     |     |     |     |     |     | 175.15        | 8                          |
| 175.10                                                  | 1   |     |     | 4   | 2   | 1   |     |     |     |     |     |     | 175.10        | 16                         |
| 175.05                                                  | 2   | 1   | 1   | 21  | 26  | 7   |     |     |     |     |     |     | 175.05        | 74                         |
| 175.00                                                  | 8   | 20  | 7   | 5   | 3   | 20  | 9   |     |     |     |     |     | 175.00        | 146                        |
| 174.95                                                  | 11  | 8   | 21  |     |     | 2   | 21  | 15  |     |     |     |     | 174.95        | 224                        |
| 174.90                                                  | 1   |     | 2   |     |     |     | 1   | 8   |     |     |     |     | 174.90        | 236                        |
| 174.85                                                  |     |     |     |     |     |     |     | 7   | 12  |     |     |     | 174.85        | 255                        |
| 174.80                                                  |     |     |     |     |     |     |     | 1   | 14  | 2   | 3   |     | 174.80        | 275                        |
| 174.75                                                  |     |     |     |     |     |     |     |     | 3   | 10  | 7   | 2   | 174.75        | 297                        |
| 174.70                                                  |     |     |     |     |     |     |     |     | 1   | 10  | 8   | 19  | 174.70        | 335                        |
| 174.65                                                  |     |     |     |     |     |     |     |     |     | 6   | 9   | 8   | 174.65        | 358                        |
| 174.60                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   | 2   | 174.60        | 362                        |
| 174.55                                                  |     |     |     |     |     |     |     |     |     | 2   | 2   |     | 174.55        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4049: Windmill Point, Detroit, Michigan on Detroit River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 174.92  | 175.00  | 174.99  | 175.06  | 175.08  | 175.07  | 175.01  | 174.96  | 174.88  | 174.77  | 174.69  | 174.72  |
| 2    | 174.98  | 175.01  | 174.97  | 175.06  | 175.08  | 175.11  | 175.00  | 174.97  | 174.87  | 174.81  | 174.70  | 174.64  |
| 3    | 175.03  | 175.04  | 174.99  | 175.05  | 175.10  | 175.10  | 175.01  | 174.97  | 174.88  | 174.81  | 174.72  | 174.67  |
| 4    | 174.97  | 175.06  | 174.99  | 175.03  | 175.10  | 175.07  | 175.00  | 174.97  | 174.88  | 174.78  | 174.72  | 174.71  |
| 5    | 175.02  | 175.01  | 174.97  | 175.06  | 175.09  | 175.04  | 175.00  | 174.95  | 174.89  | 174.76  | 174.69  | 174.71  |
| 6    | 175.10  | 174.98  | 174.96  | 175.07  | 175.09  | 175.05  | 175.00  | 174.95  | 174.89  | 174.79  | 174.58  | 174.69  |
| 7    | 175.19  | 174.99  | 174.97  | 175.14  | 175.08  | 175.06  | 175.00  | 174.98  | 174.89  | 174.78  | 174.66  | 174.74  |
| 8    | 175.22  | 175.01  | 174.99  | 175.12  | 175.07  | 175.10  | 174.99  | 174.96  | 174.87  | 174.77  | 174.68  | 174.74  |
| 9    | 175.23  | 175.01  | 174.97  | 175.11  | 175.03  | 175.10  | 174.99  | 174.96  | 174.85  | 174.78  | 174.72  | 174.71  |
| 10   | 175.24  | 175.00  | 175.01  | 175.10  | 175.05  | 175.05  | 174.96  | 174.99  | 174.85  | 174.66  | 174.67  | 174.73  |
| 11   | 175.22  | 175.01  | 175.02  | 175.12  | 175.08  | 175.03  | 174.97  | 174.97  | 174.87  | 174.71  | 174.75  | 174.73  |
| 12   | 175.20  | 175.01  | 175.03  | 175.10  | 175.06  | 175.03  | 174.99  | 174.97  | 174.84  | 174.73  | 174.79  | 174.71  |
| 13   | 175.16  | 175.00  | 174.94  | 175.09  | 175.05  | 175.03  | 174.99  | 174.96  | 174.83  | 174.74  | 174.71  | 174.69  |
| 14   | 175.18  | 175.01  | 174.97  | 175.07  | 175.09  | 175.03  | 174.96  | 174.92  | 174.84  | 174.71  | 174.75  | 174.71  |
| 15   | 175.11  | 174.99  | 174.98  | 175.07  | 175.06  | 175.03  | 174.98  | 174.94  | 174.88  | 174.73  | 174.81  | 174.68  |
| 16   | 175.05  | 175.01  | 174.98  | 175.06  | 175.08  | 175.06  | 174.97  | 174.95  | 174.88  | 174.70  | 174.65  | 174.70  |
| 17   | 175.03  | 175.02  | 174.99  | 175.03  | 175.10  | 175.04  | 175.03  | 174.95  | 174.81  | 174.70  | 174.60  | 174.74  |
| 18   | 175.04  | 175.03  | 174.97  | 175.07  | 175.11  | 175.03  | 175.03  | 174.99  | 174.82  | 174.73  | 174.75  | 174.74  |
| 19   | 175.06  | 175.04  | 174.97  | 175.06  | 175.10  | 175.01  | 175.03  | 174.99  | 174.82  | 174.77  | 174.79  | 174.75  |
| 20   | 175.02  | 175.03  | 174.99  | 175.02  | 175.10  | 175.02  | 175.03  | 174.96  | 174.71  | 174.78  | 174.78  | 174.70  |
| 21   | 175.00  | 175.04  | 175.01  | 175.07  | 175.09  | 175.02  | 175.02  | 174.97  | 174.78  | 174.77  | 174.78  | 174.73  |
| 22   | 175.01  | 175.01  | 175.03  | 175.10  | 175.10  | 175.00  | 175.02  | 174.95  | 174.80  | 174.74  | 174.81  | 174.77  |
| 23   | 175.00  | 175.03  | 174.96  | 175.07  | 175.10  | 175.04  | 175.02  | 174.93  | 174.81  | 174.74  | 174.82  | 174.64  |
| 24   | 174.97  | 175.03  | 174.99  | 175.05  | 175.12  | 175.03  | 175.00  | 174.87  | 174.85  | 174.59  | 174.80  | 174.72  |
| 25   | 175.00  | 175.04  | 174.98  | 175.07  | 175.09  | 174.98  | 174.98  | 174.83  | 174.84  | 174.63  | 174.79  | 174.66  |
| 26   | 174.98  | 175.03  | 174.96  | 175.08  | 175.07  | 175.04  | 174.99  | 174.86  | 174.84  | 174.66  | 174.79  | 174.73  |
| 27   | 175.00  | 175.03  | 174.94  | 175.06  | 175.06  | 175.03  | 174.99  | 174.88  | 174.81  | 174.69  | 174.67  | 174.74  |
| 28   | 175.00  | 174.99  | 175.05  | 175.06  | 175.07  | 175.01  | 174.97  | 174.89  | 174.88  | 174.57  | 174.66  | 174.68  |
| 29   | 175.01  | 174.98  | 175.04  | 175.06  | 175.07  | 175.03  | 174.97  | 174.89  | 174.85  | 174.67  | 174.71  | 174.72  |
| 30   | 174.98  |         | 175.00  | 175.08  | 175.06  | 175.03  | 174.95  | 174.89  | 174.80  | 174.71  | 174.67  | 174.72  |
| 31   | 174.97  |         | 175.06  |         | 175.06  |         | 174.99  | 174.89  |         | 174.71  |         | 174.76  |
| MEAN | 175.06  | 175.02  | 174.99  | 175.07  | 175.08  | 175.04  | 174.99  | 174.94  | 174.84  | 174.73  | 174.72  | 174.71  |
| MAX. | 175.25  | 175.07  | 175.10  | 175.20  | 175.21  | 175.16  | 175.06  | 175.03  | 174.92  | 174.87  | 174.85  | 174.83  |
|      | 1200/10 | 1500/27 | 2000/28 | 0500/27 | 1900/24 | 0700/02 | 1800/23 | 0400/19 | 2200/28 | 0600/02 | 1300/20 | 2300/03 |
| MIN. | 174.88  | 174.95  | 174.77  | 174.88  | 174.97  | 174.90  | 174.89  | 174.77  | 174.59  | 174.47  | 174.45  | 174.45  |
|      | 1300/24 | 2400/28 | 0700/30 | 1600/23 | 1600/09 | 1400/25 | 0300/04 | 1700/25 | 0800/20 | 1100/28 | 2100/16 | 1200/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 174.93

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4052: St. Clair Shores, Michigan on Lake St. Clair

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 175.14 May  
Daily mean elevation: 175.30 10 Jan  
Instant/hourly elevation: 175.30 1700/10 Jan

LOWEST  
Monthly mean elevation: 174.79 Dec  
Daily mean elevation: 174.68 28 Oct  
Instant/hourly elevation: 174.57 0900/10 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 175.30 | 10 Jan |
| 175.14 | 4 Feb  |
| 175.12 | 31 Mar |
| 175.16 | 11 Apr |
| 175.16 | 19 May |
| 175.15 | 2 Jun  |
| 175.09 | 18 Jul |
| 175.05 | 10 Aug |
| 174.96 | 7 Sep  |
| 174.87 | 3 Oct  |
| 174.88 | 23 Nov |
| 174.83 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 175.03 | 1 Jan  |
| 175.04 | 7 Feb  |
| 175.01 | 27 Mar |
| 175.09 | 4 Apr  |
| 175.11 | 31 May |
| 175.05 | 25 Jun |
| 175.02 | 30 Jul |
| 174.91 | 25 Aug |
| 174.81 | 20 Sep |
| 174.68 | 28 Oct |
| 174.72 | 17 Nov |
| 174.73 | 25 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 175.25        | 5   |     |     |     |     |     |     |     |     |     |     |     | 175.25        | 5                          |
| 175.20        | 3   |     |     |     |     |     |     |     |     |     |     |     | 175.20        | 8                          |
| 175.15        | 2   |     |     | 4   | 1   |     |     |     |     |     |     |     | 175.15        | 15                         |
| 175.10        | 4   | 7   | 1   | 23  | 30  | 8   |     |     |     |     |     |     | 175.10        | 88                         |
| 175.05        | 15  | 21  | 12  | 3   |     | 21  | 14  |     |     |     |     |     | 175.05        | 174                        |
| 175.00        | 2   | 1   | 18  |     |     | 1   | 17  | 20  |     |     |     |     | 175.00        | 233                        |
| 174.95        |     |     |     |     |     |     |     | 3   | 1   |     |     |     | 174.95        | 237                        |
| 174.90        |     |     |     |     |     |     |     | 8   | 15  |     |     |     | 174.90        | 260                        |
| 174.85        |     |     |     |     |     |     |     |     | 12  | 3   | 6   |     | 174.85        | 281                        |
| 174.80        |     |     |     |     |     |     |     |     | 2   | 14  | 7   | 7   | 174.80        | 311                        |
| 174.75        |     |     |     |     |     |     |     |     |     | 9   | 11  | 19  | 174.75        | 350                        |
| 174.70        |     |     |     |     |     |     |     |     |     | 4   | 6   | 5   | 174.70        | 365                        |
| 174.65        |     |     |     |     |     |     |     |     |     | 1   |     |     | 174.65        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4052: St. Clair Shores, Michigan on Lake St. Clair

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 175.03  | 175.06  | 175.08  | 175.11  | 175.14  | 175.12  | 175.06  | 175.03  | 174.95  | 174.86  | 174.76  | 174.78  |
| 2    | 175.07  | 175.09  | 175.06  | 175.11  | 175.14  | 175.15  | 175.07  | 175.03  | 174.94  | 174.87  | 174.75  | 174.75  |
| 3    | 175.10  | 175.12  | 175.07  | 175.11  | 175.14  | 175.14  | 175.07  | 175.03  | 174.95  | 174.87  | 174.79  | 174.75  |
| 4    | 175.08  | 175.14  | 175.07  | 175.09  | 175.15  | 175.12  | 175.07  | 175.03  | 174.94  | 174.85  | 174.79  | 174.78  |
| 5    | 175.11  | 175.11  | 175.05  | 175.12  | 175.14  | 175.10  | 175.06  | 175.02  | 174.93  | 174.82  | 174.78  | 174.79  |
| 6    | 175.16  | 175.07  | 175.04  | 175.12  | 175.14  | 175.11  | 175.06  | 175.01  | 174.95  | 174.85  | 174.72  | 174.78  |
| 7    | 175.23  | 175.04  | 175.04  | 175.14  | 175.14  | 175.11  | 175.05  | 175.03  | 174.96  | 174.85  | 174.74  | 174.80  |
| 8    | 175.27  | 175.06  | 175.05  | 175.16  | 175.13  | 175.13  | 175.04  | 175.03  | 174.94  | 174.85  | 174.75  | 174.79  |
| 9    | 175.28  | 175.07  | 175.03  | 175.16  | 175.11  | 175.13  | 175.04  | 175.02  | 174.92  | 174.85  | 174.80  | 174.77  |
| 10   | 175.30  | 175.06  | 175.06  | 175.16  | 175.11  | 175.10  | 175.02  | 175.05  | 174.92  | 174.77  | 174.76  | 174.78  |
| 11   | 175.28  | 175.07  | 175.08  | 175.16  | 175.13  | 175.09  | 175.03  | 175.03  | 174.93  | 174.78  | 174.81  | 174.77  |
| 12   | 175.26  | 175.08  | 175.10  | 175.15  | 175.13  | 175.09  | 175.04  | 175.03  | 174.92  | 174.79  | 174.87  | 174.80  |
| 13   | 175.23  | 175.08  | 175.03  | 175.15  | 175.11  | 175.09  | 175.05  | 175.03  | 174.89  | 174.81  | 174.80  | 174.78  |
| 14   | 175.24  | 175.07  | 175.03  | 175.12  | 175.14  | 175.09  | 175.02  | 175.00  | 174.90  | 174.81  | 174.82  | 174.79  |
| 15   | 175.18  | 175.06  | 175.03  | 175.13  | 175.13  | 175.08  | 175.03  | 175.00  | 174.93  | 174.81  | 174.88  | 174.74  |
| 16   | 175.11  | 175.08  | 175.04  | 175.11  | 175.14  | 175.10  | 175.03  | 175.01  | 174.94  | 174.79  | 174.78  | 174.79  |
| 17   | 175.08  | 175.08  | 175.05  | 175.10  | 175.14  | 175.10  | 175.09  | 175.01  | 174.89  | 174.80  | 174.72  | 174.82  |
| 18   | 175.10  | 175.10  | 175.03  | 175.13  | 175.15  | 175.09  | 175.09  | 175.04  | 174.89  | 174.79  | 174.81  | 174.82  |
| 19   | 175.12  | 175.11  | 175.03  | 175.12  | 175.16  | 175.08  | 175.08  | 175.04  | 174.90  | 174.83  | 174.85  | 174.82  |
| 20   | 175.12  | 175.12  | 175.03  | 175.10  | 175.15  | 175.08  | 175.08  | 175.02  | 174.81  | 174.85  | 174.82  | 174.80  |
| 21   | 175.08  | 175.12  | 175.06  | 175.13  | 175.15  | 175.08  | 175.07  | 175.02  | 174.85  | 174.84  | 174.83  | 174.79  |
| 22   | 175.09  | 175.09  | 175.08  | 175.15  | 175.14  | 175.06  | 175.07  | 175.01  | 174.87  | 174.81  | 174.87  | 174.83  |
| 23   | 175.09  | 175.10  | 175.03  | 175.14  | 175.15  | 175.09  | 175.07  | 175.00  | 174.88  | 174.83  | 174.88  | 174.74  |
| 24   | 175.07  | 175.11  | 175.04  | 175.11  | 175.15  | 175.09  | 175.06  | 174.94  | 174.90  | 174.73  | 174.87  | 174.78  |
| 25   | 175.08  | 175.10  | 175.04  | 175.13  | 175.14  | 175.05  | 175.05  | 174.91  | 174.90  | 174.72  | 174.85  | 174.73  |
| 26   | 175.09  | 175.10  | 175.03  | 175.14  | 175.13  | 175.08  | 175.05  | 174.93  | 174.91  | 174.74  | 174.86  | 174.79  |
| 27   | 175.09  | 175.10  | 175.01  | 175.14  | 175.13  | 175.08  | 175.05  | 174.95  | 174.88  | 174.78  | 174.78  | 174.82  |
| 28   | 175.08  | 175.08  | 175.10  | 175.12  | 175.13  | 175.07  | 175.03  | 174.95  | 174.92  | 174.68  | 174.75  | 174.76  |
| 29   | 175.08  | 175.06  | 175.10  | 175.11  | 175.13  | 175.08  | 175.03  | 174.95  | 174.90  | 174.74  | 174.80  | 174.80  |
| 30   | 175.06  |         | 175.07  | 175.14  | 175.12  | 175.07  | 175.02  | 174.95  | 174.88  | 174.78  | 174.76  | 174.81  |
| 31   | 175.05  |         | 175.12  |         | 175.11  |         | 175.03  | 174.95  |         | 174.79  |         | 174.82  |
| MEAN | 175.14  | 175.09  | 175.05  | 175.13  | 175.14  | 175.10  | 175.05  | 175.00  | 174.91  | 174.80  | 174.80  | 174.79  |
| MAX. | 175.30  | 175.15  | 175.18  | 175.25  | 175.18  | 175.20  | 175.13  | 175.10  | 174.97  | 174.91  | 174.90  | 174.87  |
| MIN. | 1700/10 | 1700/04 | 2000/28 | 0500/27 | 1900/16 | 2400/01 | 2000/18 | 1600/17 | 0700/16 | 1000/02 | 1400/12 | 0300/27 |
|      | 175.00  | 175.02  | 174.89  | 175.03  | 175.05  | 174.99  | 174.96  | 174.87  | 174.76  | 174.61  | 174.57  | 174.63  |
|      | 2000/01 | 0200/01 | 0800/30 | 1700/23 | 1500/09 | 1500/25 | 1000/10 | 1700/25 | 0800/20 | 1100/28 | 0900/10 | 1200/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 175.00

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4070: Algonac, Michigan on St. Clair River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 175.33 Feb  
Daily mean elevation: 175.47 6 Feb  
Instant/hourly elevation: 175.53 1600/6 Feb

LOWEST  
Monthly mean elevation: 175.02 Nov  
Daily mean elevation: 174.96 7 Nov  
Instant/hourly elevation: 174.92 0400/7 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
|        | Jan    |
| 175.47 | 6 Feb  |
| 175.27 | 4 Mar  |
| 175.34 | 16 Apr |
| 175.30 | 9 May  |
| 175.28 | 5 Jun  |
| 175.25 | 18 Jul |
| 175.22 | 14 Aug |
| 175.14 | 8 Sep  |
| 175.08 | 24 Oct |
| 175.10 | 27 Nov |
|        | Dec    |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
|        | Jan    |
| 175.24 | 2 Feb  |
| 175.17 | 24 Mar |
| 175.24 | 5 Apr  |
| 175.27 | 31 May |
| 175.22 | 30 Jun |
| 175.21 | 31 Jul |
| 175.14 | 31 Aug |
| 175.05 | 30 Sep |
| 174.98 | 30 Oct |
| 174.96 | 7 Nov  |
|        | Dec    |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.  | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | (m.)   |                            |
| 175.45                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 175.45 | 1                          |
| 175.40                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 175.40 | 1                          |
| 175.35                                                  |     | 3   |     |     |     |     |     |     |     |     |     |     | 175.35 | 4                          |
| 175.30                                                  |     | 19  |     | 9   |     |     |     |     |     |     |     |     | 175.30 | 32                         |
| 175.25                                                  |     | 3   | 3   | 15  | 31  | 9   |     |     |     |     |     |     | 175.25 | 93                         |
| 175.20                                                  |     | 2   | 20  | 6   |     | 21  | 27  | 11  |     |     |     |     | 175.20 | 180                        |
| 175.15                                                  |     |     | 8   |     |     |     |     | 14  |     |     |     |     | 175.15 | 202                        |
| 175.10                                                  |     |     |     |     |     |     |     | 6   | 11  |     |     |     | 175.10 | 219                        |
| 175.05                                                  |     |     |     |     |     |     |     |     | 16  | 3   | 4   |     | 175.05 | 242                        |
| 175.00                                                  |     |     |     |     |     |     |     |     | 3   | 22  | 17  |     | 175.00 | 284                        |
| 174.95                                                  |     |     |     |     |     |     |     |     |     | 6   | 8   |     | 174.95 | 298                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4070: Algonac, Michigan on St. Clair River

| Day  | Jan | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec |
|------|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----|
| 1    | /   | /       | 175.24  | 175.24  | 175.28  | 175.27  | 175.22  | 175.21  | 175.13  | 175.04  | 174.98  | /   |
| 2    | /   | 175.24* | 175.22  | 175.24  | 175.28  | 175.28  | 175.23  | 175.20  | 175.14  | 175.03  | 174.97  | /   |
| 3    | /   | 175.25  | 175.22  | 175.24  | 175.28  | 175.27  | 175.23  | 175.20  | 175.13  | 175.05* | 174.96  | /   |
| 4    | /   | 175.30  | 175.27  | 175.26  | 175.28  | 175.28  | 175.23  | 175.20  | 175.14  | 175.06  | 174.96  | /   |
| 5    | /   | 175.38  | 175.26  | 175.24  | 175.28  | 175.28  | 175.22  | 175.22  | 175.14  | 175.05  | 175.01  | /   |
| 6    | /   | 175.47  | 175.21  | 175.25  | 175.28  | 175.27  | 175.22  | 175.21  | 175.14  | 175.04  | 175.08  | /   |
| 7    | /   | 175.33  | 175.20  | 175.25  | 175.28  | 175.27  | 175.22  | 175.20  | 175.14  | 175.04  | 174.96  | /   |
| 8    | /   | 175.38  | 175.19  | 175.27  | 175.27  | 175.25  | 175.21  | 175.21  | 175.14  | 175.03  | 174.97  | /   |
| 9    | /   | 175.33  | 175.21  | 175.28  | 175.30  | 175.24  | 175.21  | 175.21  | 175.12  | 175.02  | 174.98  | /   |
| 10   | /   | 175.32  | 175.21  | 175.28  | 175.29  | 175.25  | 175.22  | 175.21  | 175.11  | 175.07  | 175.04  | /   |
| 11   | /   | 175.32  | 175.22  | 175.27  | 175.28  | 175.26  | 175.22  | 175.21  | 175.10  | 175.04  | 175.02  | /   |
| 12   | /   | 175.34  | 175.23  | 175.28  | 175.28  | 175.25  | 175.21  | 175.21  | 175.09  | 175.02  | 175.05* | /   |
| 13   | /   | 175.35  | 175.25  | 175.28  | 175.29  | 175.25  | 175.21  | 175.21  | 175.10  | 175.01  | /       | /   |
| 14   | /   | 175.30  | 175.21  | 175.32* | 175.28  | 175.25  | 175.21  | 175.22  | 175.10  | 175.03  | 175.03* | /   |
| 15   | /   | 175.32  | 175.21  | 175.34  | 175.29  | 175.25  | 175.21  | 175.21  | 175.09  | 175.00  | 175.03  | /   |
| 16   | /   | 175.32  | 175.21  | 175.34  | 175.28  | 175.23  | 175.21  | 175.20  | 175.08  | 175.01  | 175.10  | /   |
| 17   | /   | 175.34  | 175.21  | 175.33  | 175.28  | 175.24  | 175.24  | 175.20  | 175.08  | 175.02  | 175.09  | /   |
| 18   | /   | 175.33  | 175.21  | 175.32  | 175.28  | 175.24  | 175.25  | 175.20  | 175.07  | 175.02  | 175.01  | /   |
| 19   | /   | 175.31  | 175.21  | 175.31  | 175.29  | 175.25  | 175.24  | 175.20  | 175.09  | 175.02  | 175.00  | /   |
| 20   | /   | 175.32  | 175.19  | 175.32  | 175.29  | 175.24  | 175.24  | 175.19  | 175.12  | 175.01  | 175.01  | /   |
| 21   | /   | 175.33  | 175.19  | 175.28  | 175.29  | 175.24  | 175.24  | 175.17  | 175.06  | 175.03  | 175.04  | /   |
| 22   | /   | 175.34  | 175.18  | 175.28  | 175.29  | 175.24  | 175.24* | 175.17  | 175.07  | 175.01  | 175.04  | /   |
| 23   | /   | 175.35  | 175.19  | 175.31  | 175.28  | 175.23  | /       | 175.16  | 175.09  | 175.04  | 175.04  | /   |
| 24   | /   | 175.31  | 175.17  | 175.29  | 175.27  | 175.24  | /       | 175.17  | 175.08  | 175.08  | 175.04  | /   |
| 25   | /   | 175.30  | 175.19  | 175.28  | 175.28  | 175.26  | /       | 175.17  | 175.06  | 175.01  | 175.02  | /   |
| 26   | /   | 175.32  | 175.21  | 175.28  | 175.29  | 175.24  | /       | 175.15  | 175.06  | 174.99  | 175.03  | /   |
| 27   | /   | 175.34  | 175.23  | 175.32  | 175.29  | 175.24  | 175.22* | 175.15  | 175.05  | 174.99  | 175.10  | /   |
| 28   | /   | 175.37  | 175.23  | 175.28  | 175.28  | 175.24  | 175.21* | 175.14  | 175.05  | 175.02  | 175.05  | /   |
| 29   | /   | 175.31  | 175.21  | 175.28  | 175.28  | 175.23  | 175.21  | 175.14  | 175.07  | 174.98  | 175.03  | /   |
| 30   | /   |         | 175.26  | 175.28  | 175.27  | 175.22  | 175.22  | 175.14  | 175.05  | 174.98  | 175.05  | /   |
| 31   | /   |         | 175.24  |         | 175.27  |         | 175.21  | 175.14  |         | 174.99  |         | /   |
| MEAN | /   | 175.33  | 175.22  | 175.28  | 175.28  | 175.25  | 175.22  | 175.19  | 175.10  | 175.02  | 175.02  | /   |
| MAX. |     | 175.53  | 175.43  | 175.40  | 175.40  | 175.32  | 175.28  | 175.28  | 175.21  | 175.21  | 175.22  |     |
|      |     | 1600/06 | 0800/30 | 1700/23 | 2000/15 | 1600/25 | 0400/16 | 0100/15 | 0500/20 | 2200/17 | 1600/16 |     |
| MIN. |     | 175.23  | 175.14  | 175.21  | 175.21  | 175.16  | 175.16  | 175.12  | 175.00  | 174.96  | 174.92  |     |
|      |     | 1600/02 | 0500/09 | 1800/03 | 0700/07 | 0300/29 | 0500/16 | 1000/05 | 2000/29 | 2400/29 | 0400/07 |     |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 175.19

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4080: St. Clair S.P., St. Clair, Michigan on St. Clair River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 175.78 Feb  
Daily mean elevation: 176.04 10 Feb  
Instant/hourly elevation: 176.09 1000/12 Feb

LOWEST  
Monthly mean elevation: 175.43 Dec  
Daily mean elevation: 175.34 23 Dec  
Instant/hourly elevation: 175.17 0500/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 175.90 | 15 Jan |
| 176.04 | 10 Feb |
| 175.67 | 30 Mar |
| 175.76 | 18 Apr |
| 175.74 | 25 May |
| 175.72 | 7 Jun  |
| 175.68 | 1 Jul  |
| 175.67 | 15 Aug |
| 175.62 | 5 Sep  |
| 175.53 | 11 Oct |
| 175.50 | 21 Nov |
| 175.53 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 175.61 | 31 Jan |
| 175.67 | 22 Feb |
| 175.56 | 25 Mar |
| 175.63 | 3 Apr  |
| 175.67 | 8 May  |
| 175.66 | 24 Jun |
| 175.62 | 15 Jul |
| 175.56 | 31 Aug |
| 175.44 | 29 Sep |
| 175.39 | 27 Oct |
| 175.35 | 4 Nov  |
| 175.34 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.00                                                  |     | 3   |     |     |     |     |     |     |     |     |     |     | 176.00        | 3                          |
| 175.95                                                  |     | 3   |     |     |     |     |     |     |     |     |     |     | 175.95        | 6                          |
| 175.90                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 175.90        | 6                          |
| 175.85                                                  | 1   | 1   |     |     |     |     |     |     |     |     |     |     | 175.85        | 8                          |
| 175.80                                                  | 5   | 2   |     |     |     |     |     |     |     |     |     |     | 175.80        | 15                         |
| 175.75                                                  | 6   | 2   |     | 1   |     |     |     |     |     |     |     |     | 175.75        | 24                         |
| 175.70                                                  | 6   | 7   |     | 22  | 21  | 8   |     |     |     |     |     |     | 175.70        | 88                         |
| 175.65                                                  | 9   | 11  | 3   | 4   | 10  | 22  | 11  | 1   |     |     |     |     | 175.65        | 159                        |
| 175.60                                                  | 4   |     | 20  | 3   |     |     | 20  | 21  | 1   |     |     |     | 175.60        | 228                        |
| 175.55                                                  |     |     | 8   |     |     |     |     | 9   | 6   |     |     |     | 175.55        | 251                        |
| 175.50                                                  |     |     |     |     |     |     |     |     | 14  | 4   |     | 1   | 175.50        | 270                        |
| 175.45                                                  |     |     |     |     |     |     |     |     | 8   | 13  | 9   | 9   | 175.45        | 309                        |
| 175.40                                                  |     |     |     |     |     |     |     |     | 1   | 11  | 14  | 13  | 175.40        | 348                        |
| 175.35                                                  |     |     |     |     |     |     |     |     |     | 3   | 6   | 7   | 175.35        | 364                        |
| 175.30                                                  |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 175.30        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 4080: St. Clair S.P., St. Clair, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 175.74  | 175.67  | 175.63  | 175.65  | 175.71  | 175.71  | 175.68  | 175.62  | 175.55  | 175.49  | 175.40  | 175.47  |
| 2    | 175.71  | 175.69  | 175.61  | 175.65  | 175.71  | 175.71  | 175.67  | 175.62  | 175.56  | 175.52  | 175.43  | 175.47  |
| 3    | 175.66  | 175.67  | 175.65  | 175.63  | 175.70  | 175.72  | 175.66  | 175.62  | 175.54  | 175.50  | 175.38  | 175.53  |
| 4    | 175.73  | 175.74  | 175.63  | 175.67  | 175.71  | 175.71  | 175.66  | 175.62  | 175.57  | 175.49  | 175.35  | 175.49  |
| 5    | 175.77  | 175.75  | 175.64  | 175.66  | 175.72  | 175.72  | 175.65  | 175.62  | 175.62  | 175.53  | 175.38  | 175.46  |
| 6    | 175.78  | 175.86  | 175.60  | 175.68  | 175.71  | 175.71  | 175.65  | 175.65  | 175.59  | 175.50  | 175.38  | 175.43  |
| 7    | 175.75  | 175.79  | 175.61  | 175.75  | 175.70  | 175.72  | 175.64  | 175.65  | 175.57  | 175.49  | 175.38  | 175.47  |
| 8    | 175.80  | 175.98  | 175.56  | 175.72  | 175.67  | 175.70  | 175.65  | 175.63  | 175.54  | 175.46  | 175.41  | 175.45  |
| 9    | 175.81  | 175.98  | 175.61  | 175.71  | 175.70  | 175.69  | 175.64  | 175.63  | 175.54  | 175.45  | 175.40  | 175.46  |
| 10   | 175.78  | 176.04  | 175.64  | 175.70  | 175.71  | 175.69  | 175.63  | 175.64  | 175.55  | 175.49  | 175.45  | 175.44  |
| 11   | 175.78  | 176.01  | 175.63  | 175.71  | 175.72  | 175.69  | 175.65  | 175.63  | 175.53  | 175.53  | 175.47  | 175.45  |
| 12   | 175.73  | 176.00  | 175.59  | 175.71  | 175.69  | 175.69  | 175.65  | 175.63  | 175.49  | 175.51  | 175.41  | 175.39  |
| 13   | 175.84  | 176.01  | 175.61  | 175.71  | 175.74  | 175.68  | 175.62  | 175.62  | 175.56  | 175.47  | 175.42  | 175.43  |
| 14   | 175.81  | 175.83  | 175.63  | 175.72  | 175.72  | 175.67  | 175.65  | 175.64  | 175.56  | 175.45  | 175.48  | 175.38  |
| 15   | 175.90  | 175.82  | 175.63  | 175.73  | 175.68  | 175.69  | 175.62  | 175.67  | 175.53  | 175.42  | 175.42  | 175.47  |
| 16   | 175.82  | 175.76  | 175.65  | 175.72  | 175.73  | 175.68  | 175.65  | 175.64  | 175.49  | 175.39  | 175.41  | 175.45  |
| 17   | 175.81  | 175.73  | 175.63  | 175.73  | 175.74  | 175.67  | 175.67  | 175.65  | 175.49  | 175.39  | 175.41  | 175.45  |
| 18   | 175.73  | 175.70  | 175.63  | 175.76  | 175.72  | 175.67  | 175.67  | 175.65  | 175.50  | 175.49  | 175.48  | 175.42  |
| 19   | 175.68  | 175.68  | 175.64  | 175.74  | 175.73  | 175.66  | 175.67  | 175.63  | 175.48  | 175.47  | 175.41  | 175.38  |
| 20   | 175.61  | 175.72  | 175.64  | 175.73  | 175.72  | 175.68  | 175.67  | 175.62  | 175.51  | 175.44  | 175.46  | 175.37  |
| 21   | 175.69  | 175.70  | 175.62  | 175.72  | 175.72  | 175.66  | 175.67  | 175.62  | 175.53  | 175.45  | 175.50  | 175.45  |
| 22   | 175.66  | 175.67  | 175.57  | 175.71  | 175.72  | 175.67  | 175.67  | 175.59  | 175.48  | 175.47  | 175.46  | 175.36  |
| 23   | 175.65  | 175.74  | 175.56  | 175.71  | 175.72  | 175.68  | 175.66  | 175.57  | 175.53  | 175.45  | 175.46  | 175.34  |
| 24   | 175.65  | 175.70  | 175.58  | 175.73  | 175.74  | 175.66  | 175.65  | 175.59  | 175.53  | 175.45  | 175.43  | 175.40  |
| 25   | 175.67  | 175.68  | 175.56  | 175.71  | 175.74  | 175.67  | 175.65  | 175.60  | 175.52  | 175.46  | 175.41  | 175.44  |
| 26   | 175.69  | 175.68  | 175.61  | 175.71  | 175.71  | 175.71  | 175.64  | 175.61  | 175.52  | 175.44  | 175.42  | 175.44  |
| 27   | 175.68  | 175.73  | 175.67  | 175.73  | 175.70  | 175.68  | 175.64  | 175.58  | 175.50  | 175.39  | 175.44  | 175.36  |
| 28   | 175.78  | 175.70  | 175.63  | 175.71  | 175.70  | 175.68  | 175.63  | 175.59  | 175.51  | 175.42  | 175.48  | 175.46  |
| 29   | 175.70  | 175.73  | 175.58  | 175.75  | 175.70  | 175.67  | 175.63  | 175.59  | 175.44  | 175.47  | 175.44  | 175.46  |
| 30   | 175.67  |         | 175.67  | 175.72  | 175.70  | 175.68  | 175.65  | 175.58  | 175.46  | 175.44  | 175.45  | 175.42  |
| 31   | 175.61  |         | 175.66  |         | 175.71  |         | 175.64  | 175.56  |         | 175.40  |         | 175.45  |
| MEAN | 175.73  | 175.78  | 175.62  | 175.71  | 175.71  | 175.69  | 175.65  | 175.62  | 175.53  | 175.46  | 175.43  | 175.43  |
| MAX. | 176.05  | 176.09  | 175.77  | 175.85  | 175.88  | 175.82  | 175.76  | 175.81  | 175.78  | 175.63  | 175.55  | 175.70  |
| MIN. | 0700/13 | 1000/12 | 0900/30 | 0100/18 | 0700/13 | 1700/25 | 1700/30 | 1500/16 | 0100/05 | 0500/18 | 0300/28 | 2100/03 |
|      | 175.53  | 175.49  | 175.47  | 175.57  | 175.57  | 175.56  | 175.48  | 175.49  | 175.36  | 175.23  | 175.25  | 175.17  |
|      | 1500/20 | 0900/22 | 0300/02 | 0700/03 | 0700/15 | 1200/22 | 1800/15 | 2200/16 | 0800/27 | 0900/28 | 0700/10 | 0500/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 175.61

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4084: Marysville, Michigan on St. Clair River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 175.97 Feb  
Daily mean elevation: 176.16 13 Feb  
Instant/hourly elevation: 176.28 0700/13 Jan

LOWEST  
Monthly mean elevation: 175.79 Sep  
Daily mean elevation: 175.69 12 Sep  
Instant/hourly elevation: 175.61 0900/22 Feb

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.05 | 13 Jan |
| 176.16 | 13 Feb |
| 175.90 | 27 Mar |
| 176.01 | 18 Apr |
| 176.00 | 24 May |
| 175.96 | 26 Jun |
| 175.92 | 1 Jul  |
| 175.91 | 15 Aug |
| 175.89 | 5 Sep  |
|        | Oct    |
|        | Nov    |
|        | Dec    |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 175.79 | 20 Jan |
| 175.85 | 22 Feb |
| 175.75 | 23 Mar |
| 175.84 | 3 Apr  |
| 175.90 | 8 May  |
| 175.89 | 24 Jun |
| 175.85 | 13 Jul |
| 175.78 | 23 Aug |
| 175.69 | 12 Sep |
|        | Oct    |
|        | Nov    |
|        | Dec    |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
| 176.15                                                  |     | 2   |     |     |     |     |     |     |     |     |     |     | 176.15        | 2                          |
| 176.10                                                  |     | 3   |     |     |     |     |     |     |     |     |     |     | 176.10        | 5                          |
| 176.05                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 176.05        | 6                          |
| 176.00                                                  | 4   | 1   |     | 2   |     |     |     |     |     |     |     |     | 176.00        | 13                         |
| 175.95                                                  | 8   | 3   |     | 7   | 16  | 3   |     |     |     |     |     |     | 175.95        | 50                         |
| 175.90                                                  | 7   | 11  |     | 16  | 14  | 23  | 4   | 1   |     |     |     |     | 175.90        | 126                        |
| 175.85                                                  | 10  | 7   | 12  | 4   | 1   | 4   | 26  | 7   | 1   |     |     |     | 175.85        | 198                        |
| 175.80                                                  | 1   | 1   | 13  | 1   |     |     | 1   | 20  | 2   |     |     |     | 175.80        | 237                        |
| 175.75                                                  | 1   |     | 5   |     |     |     |     | 3   | 6   |     |     |     | 175.75        | 252                        |
| 175.70                                                  |     |     | 1   |     |     |     |     |     | 2   |     |     |     | 175.70        | 255                        |
| 175.65                                                  |     |     |     |     |     |     |     |     | 1   |     |     |     | 175.65        | 256                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4084: Marysville, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct            | Nov | Dec |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------------|-----|-----|
| 1    | 175.96  | 175.92  | 175.84  | 175.88  | 175.96  | 175.96  | 175.92  | 175.84  | 175.78  | /              | /   | /   |
| 2    | 175.93  | 175.94  | 175.82  | 175.87  | 175.95  | 175.95  | 175.90  | 175.85  | 175.78  | /              | /   | /   |
| 3    | 175.87  | 175.89  | 175.88  | 175.84  | 175.94  | 175.96  | 175.89  | 175.84  | 175.78  | /              | /   | /   |
| 4    | 175.95  | 175.98  | 175.83  | 175.89  | 175.95  | 175.95  | 175.88  | 175.85  | 175.82  | /              | /   | /   |
| 5    | 176.01  | 175.95  | 175.85  | 175.88  | 175.96  | 175.95  | 175.88  | 175.84  | 175.89  | /              | /   | /   |
| 6    | 176.02  | 176.03  | 175.81  | 175.91  | 175.96  | 175.95  | 175.88  | 175.87  | 175.84  | /              | /   | /   |
| 7    | 175.95  | 175.94  | 175.84  | 176.01  | 175.95  | 175.95  | 175.88  | 175.87  | 175.80  | /              | /   | /   |
| 8    | 175.99  | 176.12  | 175.78  | 175.96  | 175.90  | 175.94  | 175.88  | 175.85  | 175.75  | /              | /   | /   |
| 9    | 176.00  | 176.10  | 175.84  | 175.94  | 175.92  | 175.95  | 175.88  | 175.85  | 175.77  | /              | /   | /   |
| 10   | 175.96  | 176.16  | 175.87  | 175.93  | 175.95  | 175.93  | 175.86  | 175.88  | 175.79  | /              | /   | /   |
| 11   | 175.96  | 176.13  | 175.85  | 175.95  | 175.97  | 175.93  | 175.89  | 175.85  | 175.75  | /              | /   | /   |
| 12   | 175.88  | 176.14  | 175.79  | 175.94  | 175.92  | 175.92  | 175.89  | 175.86  | 175.69* | /              | /   | /   |
| 13   | 176.05  | 176.16  | 175.81  | 175.94  | 175.97  | 175.91  | 175.85  | 175.84  | /       | /              | /   | /   |
| 14   | 175.99  | 175.97  | 175.86  | 175.96  | 175.96  | 175.91  | 175.89  | 175.85  | /       | /              | /   | /   |
| 15   | 176.02  | 175.98  | 175.86  | 175.97  | 175.92  | 175.92  | 175.86  | 175.91  | /       | /              | /   | /   |
| 16   | 175.95  | 175.94  | 175.88  | 175.95  | 175.99  | 175.92  | 175.88  | 175.87  | /       | /              | /   | /   |
| 17   | 175.98  | 175.92  | 175.86  | 175.95  | 175.99  | 175.91  | 175.91  | 175.88  | /       | /              | /   | /   |
| 18   | 175.93  | 175.90  | 175.85  | 176.01  | 175.97  | 175.90  | 175.90  | 175.89  | /       | /              | /   | /   |
| 19   | 175.89  | 175.88  | 175.87  | 175.98  | 175.97  | 175.89  | 175.90  | 175.85  | /       | /              | /   | /   |
| 20   | 175.79  | 175.92  | 175.89  | 175.95  | 175.96  | 175.92  | 175.90  | 175.85  | /       | /              | /   | /   |
| 21   | 175.92  | 175.90  | 175.87  | 175.95  | 175.97  | 175.89  | 175.91  | 175.85  | /       | /              | /   | /   |
| 22   | 175.88  | 175.85  | 175.78  | 175.94  | 175.96  | 175.92  | 175.91  | 175.81  | /       | /              | /   | /   |
| 23   | 175.86  | 175.95  | 175.75  | 175.94  | 175.96  | 175.93  | 175.89  | 175.78  | /       | /              | /   | /   |
| 24   | 175.86  | 175.91  | 175.81  | 175.98  | 176.00  | 175.89  | 175.88  | 175.80  | /       | /              | /   | /   |
| 25   | 175.89  | 175.89  | 175.76  | 175.94  | 175.99  | 175.91  | 175.88  | 175.83  | /       | /              | /   | /   |
| 26   | 175.92  | 175.88  | 175.82  | 175.95  | 175.95  | 175.96  | 175.88  | 175.85  | /       | /              | /   | /   |
| 27   | 175.90  | 175.94  | 175.90  | 175.95  | 175.94  | 175.92  | 175.88  | 175.81  | /       | /              | /   | /   |
| 28   | 175.98  | 175.88  | 175.85  | 175.95  | 175.95  | 175.92  | 175.86  | 175.83  | /       | /              | /   | /   |
| 29   | 175.87  | 175.95  | 175.78  | 175.99  | 175.94  | 175.91  | 175.86  | 175.83  | /       | /              | /   | /   |
| 30   | 175.86  |         | 175.89  | 175.96  | 175.95  | 175.93  | 175.88  | 175.83  | /       | /              | /   | /   |
| 31   | 175.82  |         | 175.88  |         | 175.95  |         | 175.88  | 175.80  | /       | /              | /   | /   |
| MEAN | 175.93  | 175.97  | 175.84  | 175.94  | 175.96  | 175.93  | 175.88  | 175.85  | 175.79  | /              | /   | /   |
| MAX. | 176.28  | 176.25  | 176.02  | 176.11  | 176.11  | 176.05  | 175.97  | 176.17  | 176.04  | STATION CLOSED |     |     |
| MIN. | 0700/13 | 0900/13 | 0900/30 | 0100/18 | 2000/24 | 0900/22 | 1700/30 | 1400/10 | 0200/05 |                |     |     |
|      | 175.70  | 175.61  | 175.63  | 175.80  | 175.83  | 175.78  | 175.70  | 175.67  | 175.66  |                |     |     |
|      | 1500/20 | 0900/22 | 0300/02 | 1700/03 | 0800/15 | 0800/25 | 1700/15 | 1000/01 | 1800/12 |                |     |     |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 175.90

ANNUAL SUMMARY OF LEVELS, 1988  
Station 4087: Dry Dock, Port Huron, Michigan on St. Clair River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.09 May  
Daily mean elevation: 176.25 13 Feb  
Instant/hourly elevation: 176.43 0700/13 Jan

LOWEST  
Monthly mean elevation: 175.79 Nov  
Daily mean elevation: 175.61 23 Dec  
Instant/hourly elevation: 175.45 0500/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.17 | 13 Jan |
| 176.25 | 13 Feb |
| 176.03 | 27 Mar |
| 176.17 | 7 Apr  |
| 176.14 | 24 May |
| 176.11 | 26 Jun |
| 176.06 | 1 Jul  |
| 176.06 | 15 Aug |
| 176.02 | 5 Sep  |
| 175.95 | 11 Oct |
| 175.90 | 21 Nov |
| 175.94 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 175.90 | 20 Jan |
| 175.95 | 22 Feb |
| 175.86 | 23 Mar |
| 175.97 | 3 Apr  |
| 176.03 | 9 May  |
| 176.01 | 24 Jun |
| 175.99 | 29 Jul |
| 175.91 | 31 Aug |
| 175.78 | 29 Sep |
| 175.70 | 16 Oct |
| 175.65 | 6 Nov  |
| 175.61 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.20                                                  |     | 4   |     |     |     |     |     |     |     |     |     |     | 176.20        | 4                          |
| 176.15                                                  | 1   | 2   |     | 1   |     |     |     |     |     |     |     |     | 176.15        | 8                          |
| 176.10                                                  | 3   | 2   |     | 6   | 6   | 1   |     |     |     |     |     |     | 176.10        | 26                         |
| 176.05                                                  | 14  | 9   |     | 17  | 21  | 18  | 1   | 1   |     |     |     |     | 176.05        | 107                        |
| 176.00                                                  | 5   | 9   | 9   | 2   | 4   | 11  | 25  | 5   | 1   |     |     |     | 176.00        | 178                        |
| 175.95                                                  | 6   | 2   | 10  | 4   |     |     | 5   | 19  | 1   |     |     |     | 175.95        | 225                        |
| 175.90                                                  | 1   | 1   | 8   |     |     |     |     | 6   | 7   | 4   |     | 1   | 175.90        | 253                        |
| 175.85                                                  | 1   |     | 4   |     |     |     |     |     | 13  | 5   | 5   | 7   | 175.85        | 288                        |
| 175.80                                                  |     |     |     |     |     |     |     |     | 6   | 11  | 6   | 11  | 175.80        | 322                        |
| 175.75                                                  |     |     |     |     |     |     |     |     | 2   | 7   | 11  | 5   | 175.75        | 347                        |
| 175.70                                                  |     |     |     |     |     |     |     |     |     | 3   | 6   | 4   | 175.70        | 360                        |
| 175.65                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   | 2   | 175.65        | 364                        |
| 175.60                                                  |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 175.60        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4087: Dry Dock, Port Huron, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.09  | 176.06  | 175.97  | 176.00  | 176.10  | 176.09  | 176.06  | 175.97  | 175.90  | 175.84  | 175.76  | 175.88  |
| 2    | 176.06  | 176.10  | 175.95  | 176.00  | 176.09  | 176.09  | 176.05  | 175.98  | 175.90  | 175.91  | 175.82  | 175.85  |
| 3    | 175.99  | 176.03  | 176.03  | 175.97  | 176.07  | 176.10  | 176.03  | 175.98  | 175.89  | 175.88  | 175.74  | 175.94  |
| 4    | 176.08  | 176.13  | 175.95  | 176.03  | 176.09  | 176.08  | 176.02  | 175.97  | 175.94  | 175.86  | 175.72  | 175.88  |
| 5    | 176.15  | 176.07  | 175.96  | 176.00  | 176.10  | 176.09  | 176.02  | 175.98  | 176.02  | 175.93  | 175.71  | 175.84  |
| 6    | 176.15  | 176.13  | 175.93  | 176.05  | 176.10  | 176.09  | 176.01  | 176.02  | 175.97  | 175.89  | 175.65  | 175.80  |
| 7    | 176.07  | 176.03  | 175.98  | 176.17  | 176.08  | 176.08  | 176.01  | 176.01  | 175.92  | 175.85  | 175.76  | 175.88  |
| 8    | 176.10  | 176.20  | 175.90  | 176.11  | 176.03  | 176.08  | 176.01  | 175.98  | 175.88  | 175.82  | 175.80  | 175.83  |
| 9    | 176.11  | 176.17  | 175.98  | 176.08  | 176.03  | 176.09  | 176.02  | 175.99  | 175.89  | 175.80  | 175.78  | 175.86  |
| 10   | 176.06  | 176.24  | 176.01  | 176.07  | 176.08  | 176.06  | 176.00  | 176.01  | 175.92  | 175.84  | 175.82  | 175.85  |
| 11   | 176.06  | 176.21  | 175.98  | 176.09  | 176.10  | 176.06  | 176.03  | 175.98  | 175.88  | 175.95  | 175.87  | 175.86  |
| 12   | 175.98  | 176.22  | 175.91  | 176.08  | 176.04  | 176.06  | 176.04  | 175.99  | 175.82  | 175.91  | 175.75  | 175.72  |
| 13   | 176.17  | 176.25  | 175.94  | 176.07  | 176.10  | 176.04  | 175.99  | 175.98  | 175.94  | 175.84  | 175.74  | 175.80  |
| 14   | 176.09  | 176.06  | 176.00  | 176.09  | 176.08  | 176.04  | 176.03  | 175.99  | 175.94  | 175.81  | 175.86  | 175.74  |
| 15   | 176.08  | 176.09  | 176.01  | 176.11  | 176.05  | 176.06  | 175.99  | 176.06  | 175.90  | 175.76  | 175.79  | 175.89  |
| 16   | 176.03  | 176.05  | 176.03  | 176.10  | 176.13  | 176.06  | 176.01  | 176.00  | 175.83  | 175.70  | 175.66  | 175.83  |
| 17   | 176.08  | 176.04  | 175.99  | 176.08  | 176.13  | 176.04  | 176.05  | 176.04  | 175.84  | 175.76  | 175.84  | 175.82  |
| 18   | 176.06  | 176.02  | 175.98  | 176.15  | 176.11  | 176.03  | 176.03  | 176.02  | 175.86  | 175.87  | 175.89  | 175.79  |
| 19   | 176.03  | 176.01  | 176.02  | 176.12  | 176.11  | 176.02  | 176.04  | 176.00  | 175.80  | 175.85  | 175.78  | 175.73  |
| 20   | 175.90  | 176.06  | 176.03  | 176.08  | 176.09  | 176.05  | 176.03  | 175.99  | 175.82  | 175.80  | 175.87  | 175.70  |
| 21   | 176.06  | 176.02  | 176.00  | 176.09  | 176.09  | 176.03  | 176.04  | 175.99  | 175.92  | 175.79  | 175.90  | 175.86  |
| 22   | 176.01  | 175.95  | 175.92  | 176.07  | 176.09  | 176.05  | 176.04  | 175.95  | 175.84  | 175.84  | 175.83  | 175.74  |
| 23   | 175.99  | 176.08  | 175.86  | 176.07  | 176.09  | 176.07  | 176.03  | 175.92  | 175.91  | 175.77  | 175.82  | 175.61  |
| 24   | 175.98  | 176.04  | 175.95  | 176.11  | 176.14  | 176.01  | 176.01  | 175.95  | 175.89  | 175.74  | 175.77  | 175.78  |
| 25   | 176.03  | 176.03  | 175.88  | 176.08  | 176.13  | 176.05  | 176.01  | 175.96  | 175.88  | 175.82  | 175.75  | 175.83  |
| 26   | 176.06  | 175.99  | 175.95  | 176.08  | 176.08  | 176.11  | 176.01  | 175.99  | 175.88  | 175.82  | 175.77  | 175.85  |
| 27   | 176.03  | 176.07  | 176.03  | 176.07  | 176.07  | 176.06  | 176.01  | 175.94  | 175.86  | 175.72  | 175.76  | 175.67  |
| 28   | 176.10  | 175.99  | 175.98  | 176.10  | 176.08  | 176.06  | 175.99  | 175.96  | 175.88  | 175.77  | 175.85  | 175.85  |
| 29   | 175.97  | 176.09  | 175.90  | 176.14  | 176.06  | 176.05  | 175.99  | 175.96  | 175.78  | 175.88  | 175.79  | 175.85  |
| 30   | 175.97  |         | 176.02  | 176.10  | 176.07  | 176.07  | 176.01  | 175.95  | 175.81  | 175.82  | 175.80  | 175.77  |
| 31   | 175.95  |         | 176.01  |         | 176.08  |         | 176.01  | 175.91  |         | 175.74  |         | 175.83  |
| MEAN | 176.05  | 176.08  | 175.97  | 176.08  | 176.09  | 176.06  | 176.02  | 175.98  | 175.88  | 175.83  | 175.79  | 175.81  |
| MAX. | 176.43  | 176.35  | 176.14  | 176.26  | 176.28  | 176.20  | 176.13  | 176.17  | 176.20  | 176.08  | 175.97  | 176.16  |
| MIN. | 0700/13 | 0900/13 | 0100/20 | 0100/18 | 2000/24 | 2000/07 | 1600/16 | 1300/17 | 0100/05 | 0500/18 | 1100/21 | 2200/03 |
|      | 175.78  | 175.67  | 175.75  | 175.92  | 175.89  | 175.88  | 175.81  | 175.79  | 175.70  | 175.54  | 175.53  | 175.45  |
|      | 0800/20 | 0900/22 | 0800/23 | 1300/01 | 0800/13 | 0600/22 | 1700/15 | 1200/16 | 0800/20 | 0200/28 | 0200/06 | 0500/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 175.97

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4090: Mouth of Black River, Port Huron, Michigan on St. Clair River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 176.20 May  
 Daily mean elevation: 176.34 13 Feb  
 Instant/hourly elevation: 176.60 0700/13 Jan

LOWEST  
 Monthly mean elevation: 175.91 Nov  
 Daily mean elevation: 175.74 6 Nov  
 Instant/hourly elevation: 175.65 0200/6 Nov

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.30 | 13 Jan |
| 176.34 | 13 Feb |
| 176.17 | 27 Mar |
| 176.32 | 7 Apr  |
| 176.27 | 24 May |
| 176.25 | 26 Jun |
| 176.19 | 1 Jul  |
| 176.20 | 15 Aug |
| 176.15 | 5 Sep  |
| 176.09 | 11 Oct |
| 176.03 | 21 Nov |
| 176.09 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.01 | 20 Jan |
| 176.05 | 22 Feb |
| 175.98 | 23 Mar |
| 176.08 | 3 Apr  |
| 176.13 | 9 May  |
| 176.14 | 24 Jun |
| 176.11 | 13 Jul |
| 176.03 | 31 Aug |
| 175.90 | 29 Sep |
| 175.81 | 16 Oct |
| 175.74 | 6 Nov  |
| 175.76 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.30                                                  |     | 2   |     | 1   |     |     |     |     |     |     |     |     | 176.30        | 3                          |
| 176.25                                                  | 3   | 3   |     | 2   | 1   |     |     |     |     |     |     |     | 176.25        | 12                         |
| 176.20                                                  | 1   | 4   |     | 11  | 8   | 12  |     |     |     |     |     |     | 176.20        | 48                         |
| 176.15                                                  | 13  | 7   | 4   | 11  | 18  | 15  | 13  | 3   |     |     |     |     | 176.15        | 132                        |
| 176.10                                                  | 7   | 10  | 11  | 3   | 4   | 3   | 18  | 16  | 1   |     |     |     | 176.10        | 205                        |
| 176.05                                                  | 5   | 2   | 8   | 2   |     |     |     | 10  | 4   | 2   |     | 1   | 176.05        | 239                        |
| 176.00                                                  | 2   | 1   | 5   |     |     |     |     | 2   | 13  | 5   | 2   | 4   | 176.00        | 273                        |
| 175.95                                                  |     |     | 3   |     |     |     |     |     | 5   | 9   | 4   | 10  | 175.95        | 304                        |
| 175.90                                                  |     |     |     |     |     |     |     |     | 6   | 7   | 9   | 6   | 175.90        | 332                        |
| 175.85                                                  |     |     |     |     |     |     |     |     | 1   | 5   | 9   | 4   | 175.85        | 351                        |
| 175.80                                                  |     |     |     |     |     |     |     |     |     | 3   | 4   | 4   | 175.80        | 362                        |
| 175.75                                                  |     |     |     |     |     |     |     |     |     |     | 1   | 2   | 175.75        | 365                        |
| 175.70                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 175.70        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4090: Mouth of Black River, Port Huron, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.20  | 176.20  | 176.08  | 176.10  | 176.20  | 176.21  | 176.19  | 176.09  | 176.03  | 175.96  | 175.88  | 176.01  |
| 2    | 176.19  | 176.23  | 176.06  | 176.11  | 176.20  | 176.21  | 176.17  | 176.12  | 176.03  | 176.05  | 175.95  | 175.97  |
| 3    | 176.11  | 176.15  | 176.15  | 176.08  | 176.19  | 176.24  | 176.16  | 176.11  | 176.00  | 176.02  | 175.85  | 176.09  |
| 4    | 176.20  | 176.24  | 176.07  | 176.14  | 176.20  | 176.21  | 176.15  | 176.10  | 176.07  | 175.99  | 175.84  | 176.02  |
| 5    | 176.28  | 176.18  | 176.07  | 176.12  | 176.22  | 176.23  | 176.14  | 176.11  | 176.15  | 176.07  | 175.82  | 175.97  |
| 6    | 176.28  | 176.23  | 176.04  | 176.19  | 176.22  | 176.22  | 176.13  | 176.16  | 176.10  | 176.03  | 175.74  | 175.93  |
| 7    | 176.19  | 176.12  | 176.10  | 176.32  | 176.20  | 176.23  | 176.14  | 176.15  | 176.05  | 175.98  | 175.88  | 176.02  |
| 8    | 176.20  | 176.27  | 176.02  | 176.24  | 176.13  | 176.21  | 176.15  | 176.11  | 175.99  | 175.94  | 175.92  | 175.96  |
| 9    | 176.22  | 176.24  | 176.10  | 176.20  | 176.13  | 176.22  | 176.15  | 176.13  | 176.01  | 175.92  | 175.89  | 176.00  |
| 10   | 176.17  | 176.31  | 176.14  | 176.19  | 176.19  | 176.19  | 176.13  | 176.14  | 176.05  | 175.96  | 175.94  | 175.99  |
| 11   | 176.17  | 176.29  | 176.11  | 176.22  | 176.21  | 176.19  | 176.16  | 176.11  | 176.01  | 176.09  | 176.00  | 175.99  |
| 12   | 176.07  | 176.30  | 176.00  | 176.20  | 176.14  | 176.18  | 176.17  | 176.13  | 175.94  | 176.05  | 175.87  | 175.84  |
| 13   | 176.30  | 176.34  | 176.05  | 176.20  | 176.20  | 176.16  | 176.11  | 176.10  | 176.08  | 175.96  | 175.84  | 175.92  |
| 14   | 176.19  | 176.14  | 176.13  | 176.22  | 176.19  | 176.16  | 176.16  | 176.13  | 176.07  | 175.92  | 175.98  | 175.85  |
| 15   | 176.15  | 176.18  | 176.13  | 176.24  | 176.14  | 176.18  | 176.12  | 176.20  | 176.02  | 175.88  | 175.91  | 176.03  |
| 16   | 176.11  | 176.14  | 176.16  | 176.21  | 176.24  | 176.20  | 176.13  | 176.13  | 175.95  | 175.81  | 175.76  | 175.95  |
| 17   | 176.17  | 176.15  | 176.11  | 176.21  | 176.25  | 176.18  | 176.18  | 176.17  | 175.95  | 175.88  | 175.95  | 175.95  |
| 18   | 176.17  | 176.12  | 176.11  | 176.29  | 176.23  | 176.16  | 176.16  | 176.15  | 175.99  | 175.99  | 176.03  | 175.89  |
| 19   | 176.13  | 176.12  | 176.14  | 176.25  | 176.23  | 176.15  | 176.17  | 176.12  | 175.92  | 175.97  | 175.89  | 175.85  |
| 20   | 176.01  | 176.17  | 176.16  | 176.20  | 176.20  | 176.18  | 176.16  | 176.12  | 175.94  | 175.92  | 176.00  | 175.81  |
| 21   | 176.19  | 176.13  | 176.13  | 176.21  | 176.20  | 176.15  | 176.17  | 176.12  | 176.05  | 175.92  | 176.03  | 175.99  |
| 22   | 176.13  | 176.05  | 176.03  | 176.20  | 176.20  | 176.17  | 176.17  | 176.07  | 175.96  | 175.96  | 175.95  | 175.86  |
| 23   | 176.10  | 176.20  | 175.98  | 176.18  | 176.20  | 176.21  | 176.16  | 176.04  | 176.03  | 175.88  | 175.94  | 175.76  |
| 24   | 176.09  | 176.15  | 176.07  | 176.24  | 176.27  | 176.14  | 176.14  | 176.06  | 176.02  | 175.85  | 175.89  | 175.90  |
| 25   | 176.14  | 176.15  | 176.00  | 176.19  | 176.24  | 176.19  | 176.13  | 176.08  | 176.01  | 175.94  | 175.86  | 175.95  |
| 26   | 176.17  | 176.10  | 176.07  | 176.20  | 176.20  | 176.25  | 176.13  | 176.12  | 176.01  | 175.94  | 175.88  | 175.98  |
| 27   | 176.14  | 176.19  | 176.17  | 176.19  | 176.18  | 176.19  | 176.13  | 176.06  | 175.99  | 175.85  | 175.87  | 175.78  |
| 28   | 176.20  | 176.09  | 176.11  | 176.22  | 176.20  | 176.20  | 176.12  | 176.08  | 176.02  | 175.90  | 175.98  | 175.97  |
| 29   | 176.05  | 176.20  | 176.03  | 176.27  | 176.19  | 176.19  | 176.12  | 176.09  | 175.90  | 176.03  | 175.92  | 175.97  |
| 30   | 176.07  |         | 176.16  | 176.21  | 176.20  | 176.21  | 176.13  | 176.07  | 175.94  | 175.96  | 175.92  | 175.88  |
| 31   | 176.06  |         | 176.15  |         | 176.20  |         | 176.14  | 176.03  |         | 175.86  |         | 175.95  |
| MEAN | 176.16  | 176.19  | 176.09  | 176.20  | 176.20  | 176.19  | 176.15  | 176.11  | 176.01  | 175.95  | 175.91  | 175.94  |
| MAX. | 176.60  | 176.45  | 176.26  | 176.40  | 176.38  | 176.35  | 176.28  | 176.35  | 176.32  | 176.21  | 176.11  | 176.32  |
|      | 0700/13 | 0900/13 | 0100/20 | 0100/18 | 2100/24 | 0600/26 | 0300/17 | 1300/17 | 0100/05 | 0500/18 | 1100/21 | 2200/03 |
| MIN. | 175.88  | 175.72  | 175.86  | 176.04  | 175.95  | 175.84  | 175.94  | 175.88  | 175.78  | 175.66  | 175.65  | 175.66  |
|      | 0800/20 | 0900/22 | 0800/23 | 1700/03 | 0800/13 | 1000/22 | 1700/15 | 1000/01 | 0800/20 | 0200/28 | 0200/06 | 1000/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.09

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4096: Dunn Paper Co., Port Huron, Michigan on St. Clair River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 176.33 May  
 Daily mean elevation: 176.45 7 Apr  
 Instant/hourly elevation: 176.67 0700/13 Jan

LOWEST  
 Monthly mean elevation: 176.03 Nov  
 Daily mean elevation: 175.82 6 Nov  
 Instant/hourly elevation: 175.63 0500/23 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.39 | 6 Jan  |
| 176.41 | 13 Feb |
| 176.27 | 27 Mar |
| 176.45 | 7 Apr  |
| 176.40 | 24 May |
| 176.37 | 26 Jun |
| 176.28 | 22 Jul |
| 176.27 | 18 Aug |
| 176.27 | 5 Sep  |
| 176.22 | 11 Oct |
| 176.16 | 21 Nov |
| 176.21 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.10 | 20 Jan |
| 176.13 | 22 Feb |
| 176.07 | 23 Mar |
| 176.18 | 3 Apr  |
| 176.23 | 9 May  |
| 176.25 | 19 Jun |
| 176.24 | 24 Jul |
| 176.14 | 31 Aug |
| 176.01 | 29 Sep |
| 175.92 | 16 Oct |
| 175.82 | 6 Nov  |
| 175.83 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.40                                                  |     | 1   |     | 3   |     |     |     |     |     |     |     |     | 176.40        | 4                          |
| 176.35                                                  | 3   | 3   |     | 5   | 6   | 1   |     |     |     |     |     |     | 176.35        | 22                         |
| 176.30                                                  | 3   | 5   |     | 14  | 19  | 17  |     |     |     |     |     |     | 176.30        | 80                         |
| 176.25                                                  | 11  | 8   | 5   | 3   | 4   | 11  | 10  | 2   | 1   |     |     |     | 176.25        | 135                        |
| 176.20                                                  | 7   | 7   | 11  | 4   | 2   | 1   | 7   | 5   | 1   | 1   |     | 1   | 176.20        | 182                        |
| 176.15                                                  | 4   | 4   | 7   | 1   |     |     |     | 7   | 6   | 3   | 2   |     | 176.15        | 216                        |
| 176.10                                                  | 2   | 1   | 6   |     |     |     |     | 2   | 11  | 4   | 3   | 9   | 176.10        | 254                        |
| 176.05                                                  | 1   |     | 2   |     |     |     |     |     | 6   | 9   | 5   | 9   | 176.05        | 286                        |
| 176.00                                                  |     |     |     |     |     |     |     |     | 5   | 4   | 8   | 4   | 176.00        | 307                        |
| 175.95                                                  |     |     |     |     |     |     |     |     |     | 3   | 5   | 3   | 175.95        | 318                        |
| 175.90                                                  |     |     |     |     |     |     |     |     |     | 2   | 2   | 3   | 175.90        | 325                        |
| 175.85                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 175.85        | 326                        |
| 175.80                                                  |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 175.80        | 329                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 4096: Dunn Paper Co., Port Huron, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.32  | 176.31  | 176.18  | 176.24  | 176.35  | 176.35  | /       | /       | 176.13  | 176.08  | /       | 176.14  |
| 2    | 176.29  | 176.34  | 176.16  | 176.23  | 176.35  | 176.34  | 176.28* | /       | 176.14  | 176.17  | /       | 176.09  |
| 3    | 176.22  | 176.26  | 176.27  | 176.18  | 176.30  | 176.35  | 176.27  | /       | 176.12  | 176.14  | /       | 176.21  |
| 4    | 176.31  | 176.36  | 176.17  | 176.24  | 176.31  | 176.33  | 176.26  | /       | 176.17  | 176.11  | 175.96* | 176.15  |
| 5    | 176.39  | 176.27  | 176.18  | 176.24  | 176.33  | 176.34  | 176.24  | /       | 176.27  | 176.19  | 175.93  | 176.10  |
| 6    | 176.39  | 176.30  | 176.15  | 176.27  | 176.34  | 176.35  | 176.24  | /       | 176.21  | 176.15  | 175.82  | 176.04  |
| 7    | 176.29  | 176.18  | 176.22  | 176.45  | 176.31  | 176.34  | 176.24  | /       | 176.17  | 176.10  | 176.01  | 176.15  |
| 8    | 176.30  | 176.34  | 176.12  | 176.36  | 176.24  | 176.32  | 176.25  | /       | 176.10  | 176.06  | 176.05  | 176.09  |
| 9    | 176.32  | 176.30  | 176.20  | 176.32  | 176.23  | 176.34  | 176.25* | /       | 176.13  | 176.04  | 176.02  | 176.12  |
| 10   | 176.26  | 176.38  | 176.24  | 176.31  | 176.29  | 176.31  | /       | /       | 176.17  | 176.09  | 176.06  | 176.11  |
| 11   | 176.24  | 176.35  | 176.21  | 176.34  | 176.34  | 176.31  | /       | /       | 176.13  | 176.22  | 176.13  | 176.13  |
| 12   | 176.13  | 176.36  | 176.11  | 176.32  | 176.26  | 176.31  | /       | /       | 176.05  | 176.17  | 175.99  | 175.95  |
| 13   | 176.38  | 176.41  | 176.15  | 176.31  | 176.33  | 176.29  | /       | /       | 176.19  | 176.09  | 175.95  | 176.04  |
| 14   | 176.27  | 176.20  | 176.24  | 176.34  | 176.32  | 176.28  | /       | /       | 176.19  | 176.05  | 176.11  | 175.96  |
| 15   | 176.21  | 176.26  | 176.25  | 176.36  | 176.26  | 176.30  | /       | /       | 176.14  | 176.00  | 176.03  | 176.15  |
| 16   | 176.17  | 176.23  | 176.27  | 176.34  | 176.37  | 176.32  | 176.25* | 176.25* | 176.06  | 175.92  | 175.85  | 176.07  |
| 17   | 176.26  | 176.24  | 176.23  | 176.31  | 176.39  | 176.29  | 176.27  | 176.27  | 176.06  | 175.99  | 176.07  | 176.07  |
| 18   | 176.28  | 176.22  | 176.22  | 176.42  | 176.37  | 176.27  | 176.27  | 176.27  | 176.10  | 176.11  | 176.16  | 176.01  |
| 19   | 176.25  | 176.22  | 176.26  | 176.37  | 176.36  | 176.25  | 176.28  | 176.24  | 176.03  | 176.10  | 176.01  | 175.95  |
| 20   | 176.10  | 176.27  | 176.27  | 176.31  | 176.34  | 176.29  | 176.27  | 176.24  | 176.03  | 176.03  | 176.13  | 175.92  |
| 21   | 176.30  | 176.22  | 176.25  | 176.34  | 176.33  | 176.27  | 176.28  | 176.24  | 176.18  | 176.03  | 176.16  | 176.12  |
| 22   | 176.24  | 176.13  | 176.14  | 176.33  | 176.34  | 176.27  | 176.28  | 176.18  | 176.06  | 176.08  | 176.08  | 175.98  |
| 23   | 176.21  | 176.29  | 176.07  | 176.30  | 176.34  | 176.33  | 176.26  | 176.15  | 176.14  | 175.99  | 176.06  | 175.83  |
| 24   | 176.19  | 176.25  | 176.18  | 176.36  | 176.40  | 176.26  | 176.24* | 176.17  | 176.14  | 175.94  | 176.00  | 176.04  |
| 25   | 176.26  | 176.24  | 176.09  | 176.32  | 176.38  | 176.29  | /       | 176.20  | 176.13  | 176.06  | 175.99  | 176.08  |
| 26   | 176.28  | 176.19  | 176.17  | 176.32  | 176.32  | 176.37  | /       | 176.23  | 176.13  | 176.08* | 176.01  | 176.11  |
| 27   | 176.24  | 176.30  | 176.27  | 176.30  | 176.31  | 176.31  | /       | 176.17  | 176.09  | /       | 175.97  | 175.89  |
| 28   | 176.30  | 176.17  | 176.21  | 176.35  | 176.32  | 176.31  | /       | 176.20  | 176.14  | /       | 176.10  | 176.10  |
| 29   | 176.14  | 176.31  | 176.12  | 176.41  | 176.31  | 176.30  | /       | 176.20  | 176.01  | /       | 176.03  | 176.10  |
| 30   | 176.17  |         | 176.24  | 176.36  | 176.32  | 176.33* | /       | 176.19  | 176.05  | /       | 176.04  | 175.98  |
| 31   | 176.16  |         | 176.25  |         | 176.33  |         | /       | 176.14  |         | /       |         | 176.08  |
| MEAN | 176.25  | 176.27  | 176.20  | 176.32  | 176.33  | 176.31  | 176.26  | 176.21  | 176.12  | 176.08  | 176.03  | 176.06  |
| MAX. | 176.67  | 176.52  | 176.41  | 176.53  | 176.53  | 176.49  | 176.39  | 176.49  | 176.48  | 176.37  | 176.25  | 176.48  |
|      | 0700/13 | 0900/13 | 0100/20 | 1000/07 | 2100/24 | 2100/01 | 0400/17 | 1400/17 | 0200/05 | 0500/18 | 1100/21 | 1900/03 |
| MIN. | 175.95  | 175.80  | 175.94  | 176.11  | 176.11  | 175.92  | 176.14  | 176.03  | 175.79  | 175.82  | 175.65  | 175.63  |
|      | 0800/20 | 0900/22 | 0800/23 | 0700/03 | 0300/13 | 1100/22 | 0900/16 | 1700/16 | 2200/22 | 0600/24 | 0200/06 | 0500/23 |

\* Indicates Less than 90% of the Hourly Data Available.

/ Indicates No Data.

ANNUAL MEAN: 176.20

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 4098: Fort Gratiot, Port Huron, Michigan on St. Clair River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 176.46 May  
 Daily mean elevation: 176.60 7 Apr  
 Instant/hourly elevation: 176.91 0700/13 Jan

LOWEST  
 Monthly mean elevation: 176.13 Nov  
 Daily mean elevation: 175.89 6 Nov  
 Instant/hourly elevation: 175.69 0200/6 Nov

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.52 | 6 Jan  |
| 176.49 | 13 Feb |
| 176.40 | 20 Mar |
| 176.60 | 7 Apr  |
| 176.55 | 24 May |
| 176.50 | 26 Jun |
| 176.44 | 1 Jul  |
| 176.44 | 15 Aug |
| 176.40 | 5 Sep  |
| 176.36 | 11 Oct |
| 176.29 | 18 Nov |
| 176.35 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.18 | 20 Jan |
| 176.22 | 22 Feb |
| 176.17 | 23 Mar |
| 176.29 | 3 Apr  |
| 176.36 | 9 May  |
| 176.36 | 19 Jun |
| 176.33 | 13 Jul |
| 176.26 | 31 Aug |
| 176.12 | 29 Sep |
| 176.01 | 16 Oct |
| 175.89 | 6 Nov  |
| 175.92 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.55                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 176.55        | 1                          |
| 176.50                                                  | 3   |     |     | 2   | 4   |     |     |     |     |     |     |     | 176.50        | 10                         |
| 176.45                                                  |     | 4   |     | 9   | 12  | 10  |     |     |     |     |     |     | 176.45        | 45                         |
| 176.40                                                  | 6   | 7   |     | 12  | 11  | 13  | 6   | 2   |     |     |     |     | 176.40        | 102                        |
| 176.35                                                  | 8   | 7   | 10  | 3   | 4   | 7   | 18  | 9   | 1   | 1   |     |     | 176.35        | 170                        |
| 176.30                                                  | 6   | 6   | 7   | 2   |     |     | 7   | 15  | 4   | 1   |     | 1   | 176.30        | 219                        |
| 176.25                                                  | 4   | 3   | 6   | 1   |     |     |     | 5   | 6   | 4   | 3   | 5   | 176.25        | 256                        |
| 176.20                                                  | 3   | 2   | 5   |     |     |     |     |     | 9   | 7   | 4   | 8   | 176.20        | 294                        |
| 176.15                                                  | 1   |     | 3   |     |     |     |     |     | 6   | 6   | 5   | 5   | 176.15        | 320                        |
| 176.10                                                  |     |     |     |     |     |     |     |     | 4   | 4   | 9   | 4   | 176.10        | 341                        |
| 176.05                                                  |     |     |     |     |     |     |     |     |     | 5   | 5   | 4   | 176.05        | 355                        |
| 176.00                                                  |     |     |     |     |     |     |     |     |     | 3   | 2   | 2   | 176.00        | 362                        |
| 175.95                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 175.95        | 363                        |
| 175.90                                                  |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 175.90        | 365                        |
| 175.85                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 175.85        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 4098: Fort Gratiot, Port Huron, Michigan on St. Clair River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.43  | 176.46  | 176.29  | 176.36  | 176.47  | 176.48  | 176.44  | 176.31  | 176.25  | 176.17  | 176.11  | 176.27  |
| 2    | 176.41  | 176.49  | 176.27  | 176.34  | 176.46  | 176.46  | 176.41  | 176.32  | 176.25  | 176.29  | 176.21  | 176.19  |
| 3    | 176.32  | 176.38  | 176.39  | 176.29  | 176.44  | 176.49  | 176.39  | 176.32  | 176.23  | 176.25  | 176.09  | 176.35  |
| 4    | 176.42  | 176.49  | 176.27  | 176.36  | 176.46  | 176.45  | 176.38  | 176.31  | 176.31  | 176.21  | 176.06  | 176.27  |
| 5    | 176.52  | 176.37  | 176.27  | 176.35  | 176.48  | 176.46  | 176.37  | 176.31  | 176.40  | 176.32  | 176.02  | 176.21  |
| 6    | 176.52  | 176.38  | 176.24  | 176.40  | 176.49  | 176.46  | 176.36  | 176.39  | 176.34  | 176.27  | 175.89  | 176.14  |
| 7    | 176.39  | 176.25  | 176.33  | 176.60  | 176.45  | 176.46  | 176.37  | 176.38  | 176.27  | 176.21  | 176.11  | 176.28  |
| 8    | 176.40  | 176.42  | 176.22  | 176.49  | 176.37  | 176.45  | 176.37  | 176.33  | 176.20  | 176.16  | 176.17  | 176.21  |
| 9    | 176.42  | 176.36  | 176.31  | 176.45  | 176.36  | 176.48  | 176.37  | 176.35  | 176.23  | 176.14  | 176.13  | 176.25  |
| 10   | 176.35  | 176.44  | 176.36  | 176.43  | 176.44  | 176.44  | 176.35  | 176.37  | 176.29  | 176.18  | 176.17  | 176.24  |
| 11   | 176.34  | 176.42  | 176.32  | 176.47  | 176.48  | 176.43  | 176.40  | 176.33  | 176.23  | 176.36  | 176.26  | 176.26  |
| 12   | 176.21  | 176.43  | 176.20  | 176.45  | 176.39  | 176.42  | 176.41  | 176.35  | 176.15  | 176.30  | 176.09  | 176.04  |
| 13   | 176.51  | 176.49  | 176.24  | 176.42  | 176.48  | 176.40  | 176.33  | 176.32  | 176.32  | 176.20  | 176.04  | 176.15  |
| 14   | 176.36  | 176.27  | 176.35  | 176.45  | 176.45  | 176.40  | 176.39  | 176.34  | 176.31  | 176.15  | 176.22  | 176.06  |
| 15   | 176.26  | 176.35  | 176.37  | 176.48  | 176.39  | 176.42  | 176.35  | 176.44  | 176.25  | 176.10  | 176.14  | 176.30  |
| 16   | 176.23  | 176.32  | 176.39  | 176.46  | 176.52  | 176.45  | 176.36  | 176.36  | 176.16  | 176.01  | 175.92  | 176.19  |
| 17   | 176.35  | 176.34  | 176.34  | 176.43  | 176.53  | 176.41  | 176.41  | 176.41  | 176.16  | 176.09  | 176.17  | 176.19  |
| 18   | 176.39  | 176.32  | 176.33  | 176.54  | 176.50  | 176.38  | 176.38  | 176.40  | 176.21  | 176.22  | 176.29  | 176.12  |
| 19   | 176.36  | 176.33  | 176.38  | 176.50  | 176.49  | 176.36  | 176.41  | 176.37  | 176.13  | 176.22  | 176.12  | 176.06  |
| 20   | 176.18  | 176.38  | 176.40  | 176.42  | 176.46  | 176.41  | 176.39  | 176.36  | 176.13  | 176.15  | 176.25  | 176.01  |
| 21   | 176.43  | 176.31  | 176.37  | 176.46  | 176.46  | 176.38  | 176.40  | 176.37  | 176.30  | 176.14  | 176.28  | 176.25  |
| 22   | 176.35  | 176.22  | 176.25  | 176.45  | 176.45  | 176.40  | 176.41  | 176.30  | 176.18  | 176.21  | 176.20  | 176.08  |
| 23   | 176.31  | 176.41  | 176.17  | 176.41  | 176.46  | 176.46  | 176.38  | 176.26  | 176.27  | 176.10  | 176.17  | 175.92  |
| 24   | 176.30  | 176.36  | 176.29  | 176.49  | 176.55  | 176.37  | 176.37  | 176.29  | 176.26  | 176.03  | 176.11  | 176.15  |
| 25   | 176.38  | 176.36  | 176.19  | 176.43  | 176.52  | 176.41  | 176.35  | 176.32  | 176.24  | 176.18  | 176.09  | 176.19  |
| 26   | 176.41  | 176.29  | 176.27  | 176.45  | 176.45  | 176.50  | 176.36  | 176.36  | 176.24  | 176.19  | 176.11  | 176.23  |
| 27   | 176.36  | 176.42  | 176.39  | 176.41  | 176.43  | 176.43  | 176.36  | 176.29  | 176.20  | 176.04  | 176.06  | 175.99  |
| 28   | 176.40  | 176.26  | 176.32  | 176.48  | 176.45  | 176.43  | 176.34  | 176.32  | 176.26  | 176.10  | 176.21  | 176.22  |
| 29   | 176.22  | 176.44  | 176.21  | 176.54  | 176.42  | 176.42  | 176.34  | 176.33  | 176.12  | 176.29  | 176.14  | 176.22  |
| 30   | 176.26  |         | 176.36  | 176.48  | 176.44  | 176.46  | 176.35  | 176.31  | 176.16  | 176.21  | 176.14  | 176.09  |
| 31   | 176.27  |         | 176.37  |         | 176.45  |         | 176.36  | 176.26  |         | 176.07  |         | 176.20  |
| MEAN | 176.36  | 176.37  | 176.31  | 176.44  | 176.46  | 176.43  | 176.38  | 176.34  | 176.24  | 176.18  | 176.13  | 176.17  |
| MAX. | 176.91  | 176.67  | 176.52  | 176.70  | 176.71  | 176.64  | 176.57  | 176.68  | 176.64  | 176.50  | 176.39  | 176.64  |
|      | 0700/13 | 1500/20 | 0100/20 | 0100/18 | 1900/24 | 1900/07 | 2400/15 | 1300/17 | 2400/04 | 0500/18 | 1500/20 | 1900/03 |
| MIN. | 176.02  | 175.81  | 176.01  | 176.21  | 176.20  | 175.95  | 176.06  | 176.06  | 175.93  | 175.73  | 175.69  | 175.70  |
|      | 0800/20 | 0900/22 | 0500/23 | 1100/06 | 0200/13 | 1000/22 | 0500/16 | 1000/01 | 0800/20 | 0200/28 | 0200/06 | 0400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.32

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5002: Lakeport, Michigan on Lake Huron

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.50 May  
Daily mean elevation: 176.61 7 Apr  
Instant/hourly elevation: 176.79 0700/13 Jan

LOWEST  
Monthly mean elevation: 176.18 Nov  
Daily mean elevation: 175.94 6 Nov  
Instant/hourly elevation: 175.72 0400/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.57 | 5 Jan  |
| 176.54 | 13 Feb |
| 176.44 | 27 Mar |
| 176.61 | 7 Apr  |
| 176.58 | 24 May |
| 176.54 | 26 Jun |
| 176.48 | 1 Jul  |
| 176.47 | 15 Aug |
| 176.42 | 5 Sep  |
| 176.38 | 11 Oct |
| 176.34 | 18 Nov |
| 176.40 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.23 | 20 Jan |
| 176.28 | 7 Feb  |
| 176.21 | 23 Mar |
| 176.32 | 3 Apr  |
| 176.41 | 9 May  |
| 176.41 | 24 Jun |
| 176.37 | 28 Jul |
| 176.31 | 31 Aug |
| 176.17 | 29 Sep |
| 176.07 | 16 Oct |
| 175.94 | 6 Nov  |
| 175.95 | 23 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 176.60        |     |     |     | 1   |     |     |     |     |     |     |     |     | 176.60        | 1                          |
| 176.55        | 1   |     |     | 2   | 1   |     |     |     |     |     |     |     | 176.55        | 5                          |
| 176.50        | 2   | 3   |     | 8   | 11  | 7   |     |     |     |     |     |     | 176.50        | 36                         |
| 176.45        | 4   | 4   |     | 12  | 15  | 14  | 1   | 1   |     |     |     |     | 176.45        | 87                         |
| 176.40        | 8   | 9   | 8   | 2   | 4   | 9   | 19  | 6   | 1   |     |     |     | 176.40        | 153                        |
| 176.35        | 8   | 7   | 8   | 4   |     |     | 11  | 13  | 3   | 1   |     | 1   | 176.35        | 209                        |
| 176.30        | 3   | 4   | 8   | 1   |     |     |     | 11  | 6   | 5   | 2   | 5   | 176.30        | 254                        |
| 176.25        | 3   | 2   | 4   |     |     |     |     |     | 9   | 4   | 3   | 8   | 176.25        | 287                        |
| 176.20        | 2   |     | 3   |     |     |     |     |     | 6   | 9   | 6   | 5   | 176.20        | 318                        |
| 176.15        |     |     |     |     |     |     |     |     | 5   | 5   | 8   | 4   | 176.15        | 340                        |
| 176.10        |     |     |     |     |     |     |     |     |     | 5   | 7   | 4   | 176.10        | 356                        |
| 176.05        |     |     |     |     |     |     |     |     |     | 2   | 2   | 2   | 176.05        | 362                        |
| 176.00        |     |     |     |     |     |     |     |     |     |     |     | 1   | 176.00        | 363                        |
| 175.95        |     |     |     |     |     |     |     |     |     |     | 1   |     | 175.95        | 364                        |
| 175.90        |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 175.90        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5002: Lakeport, Michigan on Lake Huron

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.48  | 176.49  | 176.34  | 176.39  | 176.52  | 176.51  | 176.48  | 176.35  | 176.29  | 176.23  | 176.16  | 176.32  |
| 2    | 176.46  | 176.51  | 176.33  | 176.38  | 176.50  | 176.50  | 176.45  | 176.36  | 176.30  | 176.33  | 176.24  | 176.25  |
| 3    | 176.37  | 176.43  | 176.44  | 176.32  | 176.48  | 176.52  | 176.44  | 176.35  | 176.27  | 176.29  | 176.13  | 176.40  |
| 4    | 176.46  | 176.52  | 176.37  | 176.38  | 176.50  | 176.49  | 176.42  | 176.35  | 176.35  | 176.26  | 176.11  | 176.33  |
| 5    | 176.57  | 176.42  | 176.35  | 176.39  | 176.52  | 176.51  | 176.41  | 176.33  | 176.42  | 176.35  | 176.07  | 176.26  |
| 6    | 176.55  | 176.42  | 176.31  | 176.45  | 176.52  | 176.51  | 176.40  | 176.40  | 176.38  | 176.31  | 175.94  | 176.20  |
| 7    | 176.43  | 176.28  | 176.38  | 176.61  | 176.48  | 176.51  | 176.41  | 176.41  | 176.32  | 176.26  | 176.17  | 176.33  |
| 8    | 176.43  | 176.43  | 176.27  | 176.52  | 176.42  | 176.50  | 176.41  | 176.37  | 176.25  | 176.21  | 176.20  | 176.26  |
| 9    | 176.45  | 176.39  | 176.34  | 176.48  | 176.41  | 176.52  | 176.41  | 176.38  | 176.28  | 176.19  | 176.20  | 176.29  |
| 10   | 176.38  | 176.46  | 176.40  | 176.47  | 176.49  | 176.48  | 176.38  | 176.40  | 176.33  | 176.24  | 176.22  | 176.28  |
| 11   | 176.37  | 176.45  | 176.36  | 176.51  | 176.52  | 176.48  | 176.43  | 176.37  | 176.27  | 176.38  | 176.30  | 176.31  |
| 12   | 176.25  | 176.48  | 176.27  | 176.49  | 176.44  | 176.47  | 176.44  | 176.38  | 176.20  | 176.33  | 176.14  | 176.10  |
| 13   | 176.52  | 176.54  | 176.28  | 176.47  | 176.52  | 176.45  | 176.37  | 176.36  | 176.36  | 176.24  | 176.09  | 176.20  |
| 14   | 176.39  | 176.32  | 176.39  | 176.50  | 176.50  | 176.44  | 176.43  | 176.36  | 176.36  | 176.20  | 176.27  | 176.12  |
| 15   | 176.30  | 176.39  | 176.41  | 176.53  | 176.44  | 176.47  | 176.38  | 176.47  | 176.30  | 176.18  | 176.19  | 176.31  |
| 16   | 176.26  | 176.37  | 176.43  | 176.51  | 176.54  | 176.49  | 176.42  | 176.40  | 176.22  | 176.07  | 175.98  | 176.24  |
| 17   | 176.39  | 176.39  | 176.38  | 176.48  | 176.55  | 176.46  | 176.45  | 176.44  | 176.23  | 176.15  | 176.23  | 176.24  |
| 18   | 176.42  | 176.38  | 176.38  | 176.58  | 176.54  | 176.44  | 176.41  | 176.43  | 176.25  | 176.27  | 176.34  | 176.17  |
| 19   | 176.41  | 176.38  | 176.42  | 176.54  | 176.52  | 176.41  | 176.43  | 176.41  | 176.18  | 176.25  | 176.17  | 176.11  |
| 20   | 176.23  | 176.43  | 176.44  | 176.46  | 176.50  | 176.45  | 176.43  | 176.41  | 176.19  | 176.20  | 176.29  | 176.08  |
| 21   | 176.46  | 176.35  | 176.41  | 176.50  | 176.50  | 176.42  | 176.44  | 176.40  | 176.35  | 176.18  | 176.32  | 176.28  |
| 22   | 176.39  | 176.29  | 176.29  | 176.49  | 176.49  | 176.45  | 176.44  | 176.35  | 176.22  | 176.25  | 176.24  | 176.12  |
| 23   | 176.36  | 176.44  | 176.21  | 176.46  | 176.51  | 176.49  | 176.42  | 176.31  | 176.31  | 176.15  | 176.22  | 175.95  |
| 24   | 176.35  | 176.41  | 176.33  | 176.52  | 176.58  | 176.41  | 176.41  | 176.33  | 176.31  | 176.08  | 176.15  | 176.20  |
| 25   | 176.43  | 176.40  | 176.23  | 176.48  | 176.55  | 176.45  | 176.39  | 176.35  | 176.29  | 176.23  | 176.13  | 176.24  |
| 26   | 176.44  | 176.33  | 176.32  | 176.49  | 176.49  | 176.54  | 176.40  | 176.41  | 176.30  | 176.23  | 176.15  | 176.28  |
| 27   | 176.40  | 176.44  | 176.44  | 176.45  | 176.47  | 176.47  | 176.40  | 176.34  | 176.25  | 176.11  | 176.11  | 176.05  |
| 28   | 176.44  | 176.32  | 176.35  | 176.52  | 176.49  | 176.47  | 176.37  | 176.37  | 176.30  | 176.15  | 176.25  | 176.26  |
| 29   | 176.27  | 176.48  | 176.24  | 176.58  | 176.47  | 176.46  | 176.38  | 176.37  | 176.17  | 176.33  | 176.20  | 176.26  |
| 30   | 176.31  |         | 176.40  | 176.52  | 176.49  | 176.49  | 176.39  | 176.35  | 176.20  | 176.25  | 176.20  | 176.13  |
| 31   | 176.32  |         | 176.41  |         | 176.49  |         | 176.40  | 176.31  |         | 176.12  |         | 176.24  |
| MEAN | 176.40  | 176.41  | 176.35  | 176.48  | 176.50  | 176.48  | 176.41  | 176.37  | 176.28  | 176.23  | 176.18  | 176.22  |
| MAX. | 176.79  | 176.67  | 176.53  | 176.69  | 176.74  | 176.68  | 176.59  | 176.67  | 176.61  | 176.77  | 176.42  | 176.70  |
|      | 0700/13 | 0900/13 | 0100/20 | 0100/07 | 1900/24 | 0600/26 | 1700/16 | 1200/17 | 2400/04 | 1300/15 | 0300/18 | 1900/03 |
| MIN. | 176.05  | 176.08  | 176.09  | 176.21  | 176.26  | 176.15  | 176.17  | 176.08  | 176.01  | 175.81  | 175.79  | 175.72  |
|      | 0800/20 | 2200/21 | 0700/23 | 0600/03 | 0700/15 | 1000/22 | 1700/15 | 1000/01 | 2400/19 | 0800/28 | 0200/06 | 0400/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.36

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5014: Harbor Beach, Michigan on Lake Huron

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.49 May  
Daily mean elevation: 176.57 5 Jan  
Instant/hourly elevation: 176.69 1700/9 May

LOWEST  
Monthly mean elevation: 176.19 Nov  
Daily mean elevation: 176.00 23 Dec  
Instant/hourly elevation: 175.89 1000/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.57 | 5 Jan  |
| 176.51 | 13 Feb |
| 176.43 | 27 Mar |
| 176.56 | 18 Apr |
| 176.53 | 16 May |
| 176.51 | 1 Jun  |
| 176.44 | 1 Jul  |
| 176.48 | 15 Aug |
| 176.36 | 5 Sep  |
| 176.35 | 11 Oct |
| 176.32 | 18 Nov |
| 176.35 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.26 | 20 Jan |
| 176.32 | 7 Feb  |
| 176.22 | 23 Mar |
| 176.33 | 3 Apr  |
| 176.42 | 8 May  |
| 176.41 | 24 Jun |
| 176.36 | 28 Jul |
| 176.29 | 31 Aug |
| 176.16 | 29 Sep |
| 176.11 | 16 Oct |
| 176.00 | 6 Nov  |
| 176.00 | 23 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 176.55        | 1   |     |     | 1   |     |     |     |     |     |     |     |     | 176.55        | 2                          |
| 176.50        | 3   | 1   |     | 6   | 6   | 1   |     |     |     |     |     |     | 176.50        | 19                         |
| 176.45        | 2   | 2   |     | 13  | 22  | 15  |     | 1   |     |     |     |     | 176.45        | 74                         |
| 176.40        | 11  | 12  | 4   | 5   | 3   | 14  | 13  | 5   |     |     |     |     | 176.40        | 141                        |
| 176.35        | 8   | 10  | 10  | 4   |     |     | 18  | 13  | 1   |     |     |     | 176.35        | 205                        |
| 176.30        | 4   | 4   | 10  | 1   |     |     |     | 10  | 7   | 2   | 1   | 2   | 176.30        | 246                        |
| 176.25        | 2   |     | 5   |     |     |     |     | 2   | 12  | 5   | 4   | 8   | 176.25        | 284                        |
| 176.20        |     |     | 2   |     |     |     |     |     | 5   | 11  | 7   | 10  | 176.20        | 319                        |
| 176.15        |     |     |     |     |     |     |     |     | 5   | 10  | 9   | 5   | 176.15        | 348                        |
| 176.10        |     |     |     |     |     |     |     |     |     | 3   | 5   | 4   | 176.10        | 360                        |
| 176.05        |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 176.05        | 363                        |
| 176.00        |     |     |     |     |     |     |     |     |     |     | 1   |     | 176.00        | 364                        |
| 175.95        |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 175.95        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5014: Harbor Beach, Michigan on Lake Huron

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.51  | 176.46  | 176.35  | 176.37  | 176.49  | 176.51  | 176.44  | 176.35  | 176.29  | 176.23  | 176.15  | 176.29  |
| 2    | 176.51  | 176.45  | 176.32  | 176.36  | 176.49  | 176.47  | 176.43  | 176.35  | 176.30  | 176.26  | 176.19  | 176.27  |
| 3    | 176.42  | 176.41  | 176.40  | 176.33  | 176.47  | 176.49  | 176.42  | 176.35  | 176.28  | 176.26  | 176.13  | 176.35  |
| 4    | 176.47  | 176.46  | 176.35  | 176.39  | 176.49  | 176.48  | 176.41  | 176.36  | 176.31  | 176.24  | 176.10  | 176.31  |
| 5    | 176.57  | 176.41  | 176.35  | 176.39  | 176.50  | 176.50  | 176.39  | 176.35  | 176.36  | 176.29  | 176.10  | 176.25  |
| 6    | 176.54  | 176.43  | 176.32  | 176.44  | 176.50  | 176.50  | 176.39  | 176.42  | 176.35  | 176.27  | 176.00  | 176.22  |
| 7    | 176.42  | 176.32  | 176.36  | 176.53  | 176.47  | 176.49  | 176.40  | 176.41  | 176.31  | 176.24  | 176.16  | 176.29  |
| 8    | 176.42  | 176.43  | 176.29  | 176.46  | 176.42  | 176.45  | 176.41  | 176.37  | 176.27  | 176.20  | 176.20  | 176.24  |
| 9    | 176.43  | 176.38  | 176.33  | 176.44  | 176.45  | 176.49  | 176.40  | 176.38  | 176.28  | 176.18  | 176.20  | 176.27  |
| 10   | 176.40  | 176.44  | 176.38  | 176.45  | 176.49  | 176.47  | 176.39  | 176.39  | 176.32  | 176.25  | 176.22  | 176.25  |
| 11   | 176.40  | 176.42  | 176.35  | 176.48  | 176.51  | 176.47  | 176.43  | 176.36  | 176.27  | 176.35  | 176.28  | 176.25  |
| 12   | 176.34  | 176.44  | 176.28  | 176.46  | 176.46  | 176.47  | 176.42  | 176.37  | 176.21  | 176.27  | 176.17  | 176.14  |
| 13   | 176.47  | 176.51  | 176.28  | 176.45  | 176.52  | 176.45  | 176.37  | 176.36  | 176.32  | 176.22  | 176.13  | 176.20  |
| 14   | 176.40  | 176.36  | 176.38  | 176.48  | 176.49  | 176.44  | 176.41  | 176.37  | 176.33  | 176.21  | 176.26  | 176.15  |
| 15   | 176.33  | 176.38  | 176.39  | 176.52  | 176.45  | 176.47  | 176.38  | 176.48  | 176.27  | 176.16  | 176.21  | 176.27  |
| 16   | 176.32  | 176.38  | 176.41  | 176.49  | 176.53  | 176.47  | 176.40  | 176.41  | 176.21  | 176.11  | 176.04  | 176.25  |
| 17   | 176.40  | 176.39  | 176.38  | 176.48  | 176.51  | 176.43  | 176.42  | 176.41  | 176.20  | 176.17  | 176.27  | 176.21  |
| 18   | 176.42  | 176.38  | 176.37  | 176.56  | 176.50  | 176.43  | 176.40  | 176.38* | 176.24  | 176.25  | 176.32  | 176.18  |
| 19   | 176.41  | 176.37  | 176.41  | 176.54  | 176.49  | 176.41  | 176.41  | 176.36  | 176.19  | 176.22  | 176.20  | 176.13  |
| 20   | 176.26  | 176.42  | 176.41  | 176.46  | 176.49  | 176.45  | 176.42  | 176.36  | 176.19  | 176.18  | 176.24  | 176.11  |
| 21   | 176.43  | 176.38  | 176.39  | 176.49  | 176.49  | 176.43  | 176.41  | 176.37  | 176.32  | 176.18  | 176.29  | 176.27  |
| 22   | 176.40  | 176.35  | 176.30  | 176.46  | 176.49  | 176.45  | 176.42  | 176.33  | 176.23  | 176.20  | 176.22  | 176.16  |
| 23   | 176.38  | 176.43  | 176.22  | 176.45  | 176.49  | 176.47  | 176.40  | 176.29  | 176.28  | 176.17  | 176.20  | 176.00  |
| 24   | 176.37  | 176.41  | 176.33  | 176.51  | 176.52  | 176.41  | 176.39  | 176.32  | 176.28  | 176.13  | 176.16  | 176.20  |
| 25   | 176.43  | 176.39  | 176.25  | 176.48  | 176.51  | 176.44  | 176.39  | 176.36  | 176.26  | 176.24  | 176.14  | 176.24  |
| 26   | 176.41  | 176.35  | 176.33  | 176.48  | 176.49  | 176.50  | 176.39  | 176.41  | 176.27  | 176.24  | 176.17  | 176.27  |
| 27   | 176.41  | 176.39  | 176.43  | 176.46  | 176.48  | 176.45  | 176.39  | 176.34  | 176.23  | 176.16  | 176.15  | 176.07  |
| 28   | 176.43  | 176.33  | 176.34  | 176.49  | 176.49  | 176.45  | 176.36  | 176.35  | 176.26  | 176.17  | 176.25  | 176.24  |
| 29   | 176.30  | 176.45  | 176.26  | 176.55  | 176.47  | 176.45  | 176.38  | 176.35  | 176.16  | 176.31  | 176.24  | 176.26  |
| 30   | 176.34  |         | 176.38  | 176.51  | 176.49  | 176.46  | 176.40  | 176.33  | 176.19  | 176.23  | 176.21  | 176.17  |
| 31   | 176.36  |         | 176.39  |         | 176.49  |         | 176.39  | 176.29  |         | 176.14  |         | 176.23  |
| MEAN | 176.41  | 176.40  | 176.35  | 176.47  | 176.49  | 176.46  | 176.40  | 176.37  | 176.27  | 176.22  | 176.19  | 176.22  |
| MAX. | 176.62  | 176.57  | 176.49  | 176.62  | 176.69  | 176.61  | 176.51  | 176.52  | 176.45  | 176.40  | 176.39  | 176.49  |
|      | 0300/06 | 0800/13 | 2200/30 | 1400/18 | 1700/09 | 2400/01 | 2300/16 | 1300/15 | 2100/04 | 2100/10 | 2000/17 | 1800/03 |
| MIN. | 176.17  | 176.20  | 176.14  | 176.27  | 176.35  | 176.28  | 176.16  | 176.24  | 176.04  | 176.01  | 175.92  | 175.89  |
|      | 1400/20 | 1000/07 | 0600/23 | 0400/03 | 0100/13 | 0700/25 | 1600/15 | 2000/23 | 0100/20 | 0100/28 | 0200/06 | 1000/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.35

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5035: Essexville, Michigan on Lake Huron (Saginaw Bay)

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.51 May  
Daily mean elevation: 176.67 24 May  
Instant/hourly elevation: 177.06 1500/16 May

LOWEST  
Monthly mean elevation: 176.14 Nov  
Daily mean elevation: 175.68 16 Nov  
Instant/hourly elevation: 175.22 2200/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.50 | 6 Jan  |
| 176.48 | 1 Feb  |
| 176.43 | 31 Mar |
| 176.64 | 7 Apr  |
| 176.67 | 24 May |
| 176.62 | 9 Jun  |
| 176.48 | 1 Jul  |
| 176.57 | 18 Aug |
| 176.45 | 5 Sep  |
| 176.38 | 5 Oct  |
| 176.32 | 18 Nov |
| 176.30 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.21 | 20 Jan |
| 176.26 | 7 Feb  |
| 176.20 | 23 Mar |
| 176.34 | 3 Apr  |
| 176.38 | 15 May |
| 176.37 | 19 Jun |
| 176.30 | 15 Jul |
| 176.26 | 25 Aug |
| 175.98 | 20 Sep |
| 175.84 | 28 Oct |
| 175.68 | 16 Nov |
| 175.84 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.65                                                  |     |     |     |     | 2   |     |     |     |     |     |     |     | 176.65        | 2                          |
| 176.60                                                  |     |     |     | 1   | 1   | 1   |     |     |     |     |     |     | 176.60        | 5                          |
| 176.55                                                  |     |     |     | 4   | 4   | 5   |     | 1   |     |     |     |     | 176.55        | 19                         |
| 176.50                                                  |     |     |     | 12  | 11  | 4   |     |     |     |     |     |     | 176.50        | 46                         |
| 176.45                                                  | 2   | 3   |     | 6   | 6   | 9   | 5   |     |     |     |     |     | 176.45        | 77                         |
| 176.40                                                  | 10  | 7   | 7   | 3   | 4   | 10  | 13  | 4   | 2   |     |     |     | 176.40        | 137                        |
| 176.35                                                  | 5   | 15  | 11  | 3   | 3   | 1   | 8   | 7   | 1   | 1   |     |     | 176.35        | 192                        |
| 176.30                                                  | 8   | 2   | 7   | 1   |     |     | 4   | 13  | 4   | 2   | 1   |     | 176.30        | 234                        |
| 176.25                                                  | 5   | 2   | 3   |     |     |     | 1   | 6   | 8   | 3   | 3   | 5   | 176.25        | 270                        |
| 176.20                                                  | 1   |     | 2   |     |     |     |     |     | 6   | 9   | 4   | 7   | 176.20        | 299                        |
| 176.15                                                  |     |     | 1   |     |     |     |     |     | 8   | 4   | 9   | 6   | 176.15        | 327                        |
| 176.10                                                  |     |     |     |     |     |     |     |     |     | 7   | 7   | 6   | 176.10        | 347                        |
| 176.05                                                  |     |     |     |     |     |     |     |     |     | 2   |     | 3   | 176.05        | 352                        |
| 176.00                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 1   | 176.00        | 356                        |
| 175.95                                                  |     |     |     |     |     |     |     |     | 1   |     | 1   | 2   | 175.95        | 360                        |
| 175.90                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 175.90        | 362                        |
| 175.85                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 175.85        | 362                        |
| 175.80                                                  |     |     |     |     |     |     |     |     |     | 1   |     | 1   | 175.80        | 364                        |
| 175.75                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 175.75        | 365                        |
| 175.70                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 175.70        | 365                        |
| 175.65                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 175.65        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 5035: Essexville, Michigan on Lake Huron (Saginaw Bay)

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.31  | 176.48  | 176.38  | 176.44  | 176.51  | 176.60  | 176.48  | 176.33  | 176.27  | 176.23  | 176.13  | 176.28  |
| 2    | 176.26  | 176.47  | 176.32  | 176.42  | 176.52  | 176.56  | 176.44  | 176.34  | 176.29  | 176.31  | 176.22  | 176.06  |
| 3    | 176.27  | 176.42  | 176.41  | 176.34  | 176.50  | 176.57  | 176.44  | 176.34  | 176.25  | 176.28  | 176.14  | 176.30  |
| 4    | 176.33  | 176.45  | 176.34  | 176.37  | 176.52  | 176.49  | 176.43  | 176.38  | 176.37  | 176.24  | 176.12  | 176.24  |
| 5    | 176.45  | 176.38  | 176.34  | 176.43  | 176.52  | 176.49  | 176.41  | 176.30  | 176.45  | 176.38  | 176.05  | 176.20  |
| 6    | 176.50  | 176.38  | 176.30  | 176.48  | 176.56  | 176.50  | 176.40  | 176.38  | 176.33  | 176.28  | 175.78  | 176.08  |
| 7    | 176.40  | 176.26  | 176.37  | 176.64  | 176.51  | 176.58  | 176.39  | 176.39  | 176.28  | 176.21  | 176.13  | 176.29  |
| 8    | 176.41  | 176.42  | 176.32  | 176.56  | 176.40  | 176.55  | 176.40  | 176.34  | 176.18  | 176.24  | 176.19  | 176.20  |
| 9    | 176.41  | 176.37  | 176.31  | 176.49  | 176.38  | 176.62  | 176.41  | 176.34  | 176.24  | 176.19  | 176.20  | 176.24  |
| 10   | 176.35  | 176.44  | 176.39  | 176.47  | 176.44  | 176.48  | 176.34  | 176.40  | 176.30  | 176.13  | 176.19  | 176.24  |
| 11   | 176.35  | 176.46  | 176.43  | 176.53  | 176.55  | 176.45  | 176.43  | 176.34  | 176.29  | 176.31  | 176.27  | 176.28  |
| 12   | 176.30  | 176.40  | 176.36  | 176.51  | 176.42  | 176.44  | 176.46  | 176.37  | 176.18  | 176.28  | 176.17  | 176.00  |
| 13   | 176.42  | 176.45  | 176.26  | 176.46  | 176.49  | 176.44  | 176.34  | 176.37  | 176.33  | 176.16  | 176.04  | 176.12  |
| 14   | 176.37  | 176.40  | 176.40  | 176.51  | 176.52  | 176.41  | 176.45  | 176.28  | 176.33  | 176.12  | 176.24  | 176.12  |
| 15   | 176.28  | 176.39  | 176.39  | 176.51  | 176.38  | 176.46  | 176.30  | 176.44  | 176.34  | 176.15  | 176.25  | 176.25  |
| 16   | 176.30  | 176.39  | 176.41  | 176.51  | 176.65  | 176.54  | 176.43  | 176.35  | 176.24  | 176.06  | 175.68  | 176.18  |
| 17   | 176.41  | 176.38  | 176.37  | 176.38  | 176.66  | 176.46  | 176.43  | 176.45  | 176.18  | 176.19  | 175.94  | 176.18  |
| 18   | 176.42  | 176.37  | 176.32  | 176.58  | 176.58  | 176.44  | 176.47  | 176.57  | 176.25  | 176.23  | 176.32  | 176.13  |
| 19   | 176.46  | 176.38  | 176.39  | 176.49  | 176.57  | 176.37  | 176.46  | 176.45  | 176.17  | 176.25  | 176.21  | 176.14  |
| 20   | 176.21  | 176.37  | 176.43  | 176.38  | 176.51  | 176.45  | 176.43  | 176.40  | 175.98  | 176.16  | 176.28  | 176.02  |
| 21   | 176.43  | 176.33  | 176.43  | 176.52  | 176.51  | 176.43  | 176.43  | 176.42  | 176.30  | 176.14  | 176.30  | 176.27  |
| 22   | 176.38  | 176.30  | 176.32  | 176.55  | 176.52  | 176.41  | 176.46  | 176.35  | 176.19  | 176.24  | 176.20  | 176.17  |
| 23   | 176.35  | 176.40  | 176.20  | 176.51  | 176.54  | 176.53  | 176.43  | 176.30  | 176.25  | 176.15  | 176.18  | 175.84  |
| 24   | 176.38  | 176.38  | 176.38  | 176.52  | 176.67  | 176.41  | 176.39  | 176.32  | 176.28  | 175.95  | 176.17  | 176.19  |
| 25   | 176.45  | 176.38  | 176.23  | 176.46  | 176.56  | 176.41  | 176.40  | 176.26  | 176.25  | 176.13  | 176.15  | 176.11  |
| 26   | 176.45  | 176.37  | 176.24  | 176.52  | 176.42  | 176.56  | 176.41  | 176.35  | 176.28  | 176.14  | 176.20  | 176.25  |
| 27   | 176.37  | 176.41  | 176.37  | 176.53  | 176.43  | 176.48  | 176.39  | 176.27  | 176.20  | 176.06  | 175.97  | 176.00  |
| 28   | 176.43  | 176.31  | 176.38  | 176.56  | 176.49  | 176.49  | 176.34  | 176.32  | 176.44  | 175.84  | 176.15  | 176.15  |
| 29   | 176.32  | 176.43  | 176.26  | 176.56  | 176.47  | 176.47  | 176.35  | 176.35  | 176.20  | 176.25  | 176.18  | 176.22  |
| 30   | 176.34  |         | 176.42  | 176.53  | 176.47  | 176.53  | 176.37  | 176.34  | 176.18  | 176.21  | 176.11  | 176.07  |
| 31   | 176.35  |         | 176.43  |         | 176.49  |         | 176.39  | 176.30  |         | 176.04  |         | 176.24  |
| MEAN | 176.37  | 176.39  | 176.35  | 176.49  | 176.51  | 176.49  | 176.41  | 176.36  | 176.26  | 176.18  | 176.14  | 176.16  |
| MAX. | 176.63  | 176.54  | 176.58  | 176.78  | 177.06  | 176.96  | 176.61  | 176.65  | 176.85  | 176.45  | 176.42  | 176.65  |
| MIN. | 0400/26 | 0100/12 | 0500/30 | 2200/17 | 1500/16 | 1800/01 | 1900/16 | 0500/18 | 0100/05 | 0100/02 | 0400/10 | 2200/03 |
|      | 175.88  | 176.10  | 176.00  | 176.16  | 176.15  | 176.12  | 175.95  | 176.06  | 175.75  | 175.62  | 175.22  | 175.52  |
|      | 1300/20 | 2400/21 | 1500/23 | 1800/20 | 0400/13 | 0600/25 | 1800/15 | 0100/28 | 0800/20 | 0500/28 | 2200/16 | 1200/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.34

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5059: Harrisville, Michigan on Lake Huron

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.46 May  
Daily mean elevation: 176.50 13 May  
Instant/hourly elevation: 176.59 1900/13 May

LOWEST  
Monthly mean elevation: 176.17 Nov  
Daily mean elevation: 176.02 6 Nov  
Instant/hourly elevation: 175.91 0800/23 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.50 | 5 Jan  |
| 176.42 | 13 Feb |
| 176.38 | 27 Mar |
| 176.50 | 29 Apr |
| 176.50 | 13 May |
| 176.46 | 26 Jun |
| 176.46 | 20 Jul |
| 176.42 | 15 Aug |
| 176.31 | 6 Sep  |
| 176.24 | 29 Oct |
| 176.28 | 18 Nov |
| 176.27 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.27 | 20 Jan |
| 176.33 | 28 Feb |
| 176.24 | 23 Mar |
| 176.32 | 1 Apr  |
| 176.42 | 8 May  |
| 176.40 | 18 Jun |
| 176.35 | 30 Jul |
| 176.27 | 23 Aug |
| 176.14 | 29 Sep |
| 176.11 | 24 Oct |
| 176.02 | 6 Nov  |
| 176.05 | 23 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.45                                                  | 4   |     |     | 11  | 19  | 5   | 2   |     |     |     |     |     | 176.45        | 41                         |
| 176.40                                                  | 4   | 1   |     | 12  | 12  | 23  | 5   | 1   |     |     |     |     | 176.40        | 99                         |
| 176.35                                                  | 16  | 19  | 5   | 3   |     | 2   | 22  | 6   |     |     |     |     | 176.35        | 172                        |
| 176.30                                                  | 6   | 9   | 17  | 4   |     |     | 2   | 19  | 1   |     |     |     | 176.30        | 230                        |
| 176.25                                                  | 1   |     | 7   |     |     |     |     | 5   | 11  |     | 1   | 2   | 176.25        | 257                        |
| 176.20                                                  |     |     | 2   |     |     |     |     |     | 12  | 7   | 6   | 9   | 176.20        | 293                        |
| 176.15                                                  |     |     |     |     |     |     |     |     | 5   | 18  | 13  | 11  | 176.15        | 340                        |
| 176.10                                                  |     |     |     |     |     |     |     |     | 1   | 6   | 7   | 7   | 176.10        | 361                        |
| 176.05                                                  |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 176.05        | 364                        |
| 176.00                                                  |     |     |     |     |     |     |     |     |     |     | 1   | 1   | 176.00        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5059: Harrisville, Michigan on Lake Huron

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.47  | 176.40  | 176.33  | 176.32  | 176.46  | 176.46  | 176.41  | 176.34  | 176.28  | 176.20  | 176.13  | 176.24  |
| 2    | 176.48  | 176.39  | 176.29  | 176.34  | 176.45  | 176.42  | 176.41  | 176.33  | 176.28  | 176.22  | 176.12  | 176.27  |
| 3    | 176.43  | 176.37  | 176.35  | 176.33  | 176.44  | 176.45  | 176.38  | 176.33  | 176.25  | 176.22  | 176.12  | 176.27  |
| 4    | 176.43  | 176.39  | 176.32  | 176.39  | 176.45  | 176.45  | 176.37  | 176.33  | 176.27  | 176.21  | 176.09  | 176.24  |
| 5    | 176.50  | 176.37  | 176.34  | 176.37  | 176.47  | 176.46  | 176.37  | 176.34  | 176.29  | 176.21  | 176.11  | 176.24  |
| 6    | 176.48  | 176.38  | 176.31  | 176.35  | 176.46  | 176.46  | 176.37  | 176.38  | 176.31  | 176.22  | 176.02  | 176.22  |
| 7    | 176.39  | 176.35  | 176.34  | 176.45  | 176.43  | 176.44  | 176.37  | 176.36  | 176.29  | 176.20  | 176.13  | 176.24  |
| 8    | 176.40  | 176.39  | 176.28  | 176.42  | 176.42  | 176.41  | 176.38  | 176.35  | 176.26  | 176.17  | 176.17  | 176.20  |
| 9    | 176.40  | 176.35  | 176.31  | 176.41  | 176.45  | 176.45  | 176.37  | 176.36  | 176.26  | 176.15  | 176.17  | 176.23  |
| 10   | 176.38  | 176.38  | 176.35  | 176.42  | 176.46  | 176.45  | 176.37  | 176.35  | 176.28  | 176.19  | 176.17  | 176.19  |
| 11   | 176.41  | 176.38  | 176.33  | 176.44  | 176.48  | 176.46  | 176.38  | 176.35  | 176.24  | 176.24  | 176.23  | 176.19  |
| 12   | 176.35  | 176.35  | 176.29  | 176.43  | 176.45  | 176.45  | 176.38  | 176.35  | 176.20  | 176.20  | 176.18  | 176.14  |
| 13   | 176.38  | 176.42  | 176.25  | 176.44  | 176.50  | 176.44  | 176.36  | 176.34  | 176.27  | 176.18  | 176.13  | 176.18  |
| 14   | 176.36  | 176.37  | 176.33  | 176.45  | 176.47  | 176.43  | 176.39  | 176.36  | 176.27  | 176.20  | 176.23  | 176.15  |
| 15   | 176.34  | 176.35  | 176.34  | 176.49  | 176.44  | 176.45  | 176.37  | 176.42  | 176.24  | 176.14  | 176.20  | 176.17  |
| 16   | 176.35  | 176.36  | 176.36  | 176.46  | 176.49  | 176.44  | 176.39  | 176.39  | 176.20  | 176.13* | 176.09  | 176.21  |
| 17   | 176.38  | 176.37  | 176.35  | 176.47  | 176.46  | 176.40  | 176.38  | 176.39  | 176.19  | 176.17* | 176.24  | 176.16  |
| 18   | 176.37  | 176.36  | 176.33  | 176.50  | 176.46  | 176.40  | 176.42  | 176.35  | 176.22  | 176.16  | 176.28  | 176.16  |
| 19   | 176.38  | 176.35  | 176.36  | 176.50  | 176.46  | 176.41  | 176.46  | 176.33  | 176.20  | 176.18  | 176.16  | 176.13  |
| 20   | 176.27  | 176.35  | 176.34  | 176.45  | 176.45  | 176.43  | 176.46  | 176.33  | 176.21  | 176.16  | 176.17  | 176.13  |
| 21   | 176.37  | 176.36  | 176.35  | 176.45  | 176.46  | 176.41  | 176.44  | 176.33  | 176.26  | 176.16  | 176.24  | 176.21  |
| 22   | 176.38  | 176.36  | 176.29  | 176.44  | 176.45  | 176.41  | 176.41  | 176.30  | 176.21  | 176.16  | 176.19  | 176.15  |
| 23   | 176.37  | 176.38  | 176.24  | 176.40  | 176.45  | 176.43  | 176.37  | 176.27  | 176.23  | 176.16  | 176.18  | 176.05  |
| 24   | 176.36  | 176.37  | 176.29  | 176.47  | 176.48  | 176.41  | 176.36  | 176.30  | 176.25  | 176.11  | 176.16  | 176.17  |
| 25   | 176.41  | 176.36  | 176.26  | 176.46  | 176.49  | 176.41  | 176.36  | 176.32  | 176.23  | 176.19  | 176.15  | 176.19  |
| 26   | 176.35  | 176.35  | 176.33  | 176.46  | 176.48  | 176.46  | 176.36  | 176.35  | 176.23  | 176.19  | 176.17  | 176.21  |
| 27   | 176.38  | 176.34  | 176.38  | 176.44  | 176.46  | 176.42  | 176.36  | 176.31  | 176.21  | 176.16  | 176.16  | 176.09  |
| 28   | 176.39  | 176.33  | 176.33  | 176.46  | 176.46  | 176.42  | 176.35  | 176.32  | 176.23  | 176.13  | 176.22  | 176.17  |
| 29   | 176.32  | 176.37  | 176.26  | 176.50  | 176.44  | 176.41  | 176.36  | 176.31  | 176.14  | 176.24  | 176.22  | 176.19  |
| 30   | 176.35  |         | 176.37  | 176.48  | 176.46  | 176.41  | 176.35  | 176.30  | 176.18  | 176.18  | 176.19  | 176.11  |
| 31   | 176.36  |         | 176.36  |         | 176.46  |         | 176.37  | 176.28  |         | 176.15  |         | 176.15  |
| MEAN | 176.39  | 176.37  | 176.32  | 176.43  | 176.46  | 176.43  | 176.38  | 176.34  | 176.24  | 176.18  | 176.17  | 176.18  |
| MAX. | 176.55  | 176.47  | 176.46  | 176.55  | 176.59  | 176.52  | 176.53  | 176.49  | 176.35  | 176.29  | 176.33  | 176.36  |
|      | 0600/06 | 1100/01 | 2100/30 | 2100/17 | 1900/13 | 1500/06 | 1900/16 | 1600/16 | 2200/04 | 1400/11 | 0600/18 | 2300/02 |
| MIN. | 176.14  | 176.28  | 176.17  | 176.26  | 176.34  | 176.31  | 176.24  | 176.25  | 176.10  | 175.95  | 175.98  | 175.91  |
|      | 1000/20 | 2100/21 | 2100/12 | 1600/06 | 0500/15 | 0200/22 | 1500/15 | 2200/23 | 0700/23 | 0600/28 | 0200/06 | 0800/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.32

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

| LOWEST                    |        | DATE (1955) |
|---------------------------|--------|-------------|
| Monthly mean elevation:   | 176.18 | Oct         |
| Daily mean elevation:     | 176.10 | 2 Nov       |
| Instant/hourly elevation: | 175.97 | 0500/15 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.30 | 13 Jan |
| 176.29 | 29 Feb |
| 176.29 | 20 Mar |
| 176.33 | 1 Apr  |
| 176.45 | 24 May |
| 176.39 | 29 Jun |
| 176.35 | 30 Jul |
| 176.27 | 30 Aug |
| 176.20 | 28 Sep |
| 176.13 | 18 Oct |
| 176.10 | 2 Nov  |
| 176.12 | 15 Dec |

| FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS |     |     |     |     |     |     |     |     |     |     |     |     |               |                            |
|---------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                               | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
| 176.50                                      |     |     |     |     | 1   |     |     |     |     |     |     |     | 176.50        | 1                          |
| 176.45                                      | 3   |     |     | 4   | 19  | 4   |     |     |     |     |     |     | 176.45        | 31                         |
| 176.40                                      | 13  |     |     | 18  | 11  | 24  | 1   |     |     |     |     |     | 176.40        | 101                        |
| 176.35                                      | 9   | 11  | 5   | 5   |     | 2   | 29  | 16  |     |     | 1   |     | 176.35        | 179                        |
| 176.30                                      | 5   | 13  | 20  | 3   |     |     | 1   | 10  | 2   |     |     |     | 176.30        | 233                        |
| 176.25                                      | 1   | 2   | 6   |     |     |     |     | 5   | 8   |     | 2   | 2   | 176.25        | 259                        |
| 176.20                                      |     |     |     |     |     |     |     |     | 17  | 8   | 11  | 5   | 176.20        | 300                        |
| 176.15                                      |     |     |     |     |     |     |     |     | 3   | 17  | 11  | 17  | 176.15        | 348                        |
| 176.10                                      |     |     |     |     |     |     |     |     |     | 6   | 4   | 7   | 176.10        | 365                        |
| 176.05                                      |     |     |     |     |     |     |     |     |     |     | 1   |     | 176.05        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5080: Mackinaw City, Michigan on Straits of Mackinac

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.47  | 176.33  | 176.37  | 176.33  | 176.45  | 176.45  | 176.39  | 176.37  | 176.33  | 176.22  | 176.13  | 176.20  |
| 2    | 176.50  | 176.35  | 176.29  | 176.34  | 176.46  | 176.44  | 176.40  | 176.38  | 176.29  | 176.21  | 176.10  | 176.27  |
| 3    | 176.49  | 176.37  | 176.31  | 176.38  | 176.45  | 176.44  | 176.40  | 176.37  | 176.26  | 176.24  | 176.14  | 176.17  |
| 4    | 176.43  | 176.33  | 176.31  | 176.39  | 176.45  | 176.45  | 176.40  | 176.37  | 176.26  | 176.22  | 176.13  | 176.20  |
| 5    | 176.42  | 176.37  | 176.35  | 176.39  | 176.45  | 176.44  | 176.39  | 176.40  | 176.24  | 176.19  | 176.20  | 176.23  |
| 6    | 176.41  | 176.36  | 176.36  | 176.35  | 176.45  | 176.46  | 176.39  | 176.39  | 176.27  | 176.20  | 176.19  | 176.24  |
| 7    | 176.42  | 176.39  | 176.31  | 176.40  | 176.45  | 176.44  | 176.40  | 176.36  | 176.30  | 176.23  | 176.18  | 176.17  |
| 8    | 176.41  | 176.38  | 176.37  | 176.40  | 176.50  | 176.42  | 176.40  | 176.38  | 176.32  | 176.19  | 176.18  | 176.19  |
| 9    | 176.37  | 176.34  | 176.31  | 176.42  | 176.49  | 176.44  | 176.38  | 176.36  | 176.28  | 176.20  | 176.19  | 176.19  |
| 10   | 176.45  | 176.34  | 176.32  | 176.41  | 176.46  | 176.45  | 176.40  | 176.36  | 176.24  | 176.18  | 176.15  | 176.17  |
| 11   | 176.43  | 176.32  | 176.31  | 176.41  | 176.48  | 176.46  | 176.38  | 176.37  | 176.23  | 176.13  | 176.20  | 176.15  |
| 12   | 176.42  | 176.31  | 176.32  | 176.42  | 176.49  | 176.45  | 176.38  | 176.38  | 176.25  | 176.13  | 176.24  | 176.29  |
| 13   | 176.30  | 176.33  | 176.29  | 176.45  | 176.45  | 176.45  | 176.41  | 176.38  | 176.24  | 176.19  | 176.23  | 176.18  |
| 14   | 176.40  | 176.41  | 176.31  | 176.42  | 176.48  | 176.47  | 176.38  | 176.40  | 176.20  | 176.19  | 176.20  | 176.17  |
| 15   | 176.43  | 176.32  | 176.31  | 176.45  | 176.51  | 176.45  | 176.38  | 176.34  | 176.20  | 176.17  | 176.24  | 176.12  |
| 16   | 176.45  | 176.40  | 176.31  | 176.45  | 176.46  | 176.42  | 176.37  | 176.37  | 176.23  | 176.22  | 176.36  | 176.20  |
| 17   | 176.36  | 176.36  | 176.33  | 176.46  | 176.45  | 176.42  | 176.38  | 176.36  | 176.23  | 176.17  | 176.27  | 176.13  |
| 18   | 176.35  | 176.40  | 176.30  | 176.42  | 176.45  | 176.44  | 176.38  | 176.32  | 176.21  | 176.13  | 176.19  | 176.19  |
| 19   | 176.35  | 176.39  | 176.31  | 176.45  | 176.46  | 176.47  | 176.37  | 176.32  | 176.27  | 176.16  | 176.23  | 176.18  |
| 20   | 176.36  | 176.29  | 176.29  | 176.46  | 176.46  | 176.42  | 176.37  | 176.32  | 176.27  | 176.18  | 176.17  | 176.21  |
| 21   | 176.35  | 176.42  | 176.31  | 176.45  | 176.47  | 176.42  | 176.36  | 176.31  | 176.21  | 176.17  | 176.19  | 176.13  |
| 22   | 176.42  | 176.41  | 176.34  | 176.42  | 176.46  | 176.43  | 176.36  | 176.33  | 176.24  | 176.15  | 176.22  | 176.20  |
| 23   | 176.39  | 176.33  | 176.32  | 176.43  | 176.45  | 176.43  | 176.37  | 176.33  | 176.23  | 176.18  | 176.22  | 176.25  |
| 24   | 176.36  | 176.35  | 176.30  | 176.45  | 176.45  | 176.45  | 176.37  | 176.32  | 176.23  | 176.19  | 176.22  | 176.18  |
| 25   | 176.35  | 176.35  | 176.38  | 176.48  | 176.46  | 176.44  | 176.37  | 176.35  | 176.23  | 176.18  | 176.22  | 176.14  |
| 26   | 176.34  | 176.38  | 176.36  | 176.45  | 176.50  | 176.42  | 176.37  | 176.30  | 176.24  | 176.18  | 176.24  | 176.15  |
| 27   | 176.38  | 176.32  | 176.30  | 176.44  | 176.49  | 176.42  | 176.37  | 176.34  | 176.21  | 176.23  | 176.28  | 176.23  |
| 28   | 176.36  | 176.38  | 176.33  | 176.46  | 176.47  | 176.42  | 176.38  | 176.30  | 176.20  | 176.17  | 176.21  | 176.17  |
| 29   | 176.42  | 176.29  | 176.35  | 176.45  | 176.47  | 176.39  | 176.39  | 176.28  | 176.22  | 176.14  | 176.24  | 176.18  |
| 30   | 176.41  |         | 176.34  | 176.45  | 176.47  | 176.40  | 176.35  | 176.27  | 176.23  | 176.14  | 176.19  | 176.18  |
| 31   | 176.40  |         | 176.34  |         | 176.47  |         | 176.36  | 176.30  |         | 176.21  |         | 176.14  |
| MEAN | 176.40  | 176.36  | 176.32  | 176.42  | 176.47  | 176.44  | 176.38  | 176.35  | 176.25  | 176.18  | 176.20  | 176.19  |
| MAX. | 176.68  | 176.63  | 176.46  | 176.55  | 176.65  | 176.55  | 176.53  | 176.48  | 176.48  | 176.40  | 176.63  | 176.41  |
| MIN. | 1800/02 | 0500/22 | 2400/25 | 1800/25 | 0500/15 | 1200/22 | 1900/15 | 0400/06 | 2400/19 | 2400/27 | 1300/16 | 0300/23 |
|      | 176.17  | 176.17  | 176.21  | 176.22  | 176.37  | 176.33  | 176.24  | 176.22  | 176.13  | 176.01  | 176.06  | 175.97  |
|      | 0500/13 | 1200/20 | 1900/02 | 1200/06 | 1300/13 | 0200/29 | 1500/16 | 0300/26 | 0600/23 | 0300/18 | 0800/02 | 0500/15 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.33

ANNUAL SUMMARY OF LEVELS, 1988  
Station 5099: DeTour Village, Michigan on Lake Huron

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.44 May  
Daily mean elevation: 176.51 2 Jan  
Instant/hourly elevation: 176.60 1900/2 Jan

LOWEST  
Monthly mean elevation: 176.16 Oct  
Daily mean elevation: 176.06 2 Nov  
Instant/hourly elevation: 175.92 0200/15 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.51 | 2 Jan  |
| 176.42 | 22 Feb |
| 176.35 | 1 Mar  |
| 176.46 | 25 Apr |
| 176.48 | 26 May |
| 176.44 | 12 Jun |
| 176.37 | 8 Jul  |
| 176.36 | 14 Aug |
| 176.29 | 8 Sep  |
| 176.22 | 27 Oct |
| 176.27 | 18 Nov |
| 176.25 | 2 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.26 | 13 Jan |
| 176.25 | 12 Feb |
| 176.19 | 13 Mar |
| 176.29 | 1 Apr  |
| 176.41 | 24 May |
| 176.35 | 29 Jun |
| 176.32 | 30 Jul |
| 176.25 | 30 Aug |
| 176.16 | 29 Sep |
| 176.09 | 18 Oct |
| 176.06 | 2 Nov  |
| 176.07 | 15 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.50                                                  | 1   |     |     |     |     |     |     |     |     |     |     |     | 176.50        | 1                          |
| 176.45                                                  | 5   |     |     | 1   | 4   |     |     |     |     |     |     |     | 176.45        | 11                         |
| 176.40                                                  | 4   | 2   |     | 11  | 27  | 14  |     |     |     |     |     |     | 176.40        | 69                         |
| 176.35                                                  | 12  | 9   |     | 14  |     | 15  | 9   | 1   |     |     |     |     | 176.35        | 129                        |
| 176.30                                                  | 5   | 12  | 13  | 2   |     | 1   | 22  | 19  |     |     |     |     | 176.30        | 203                        |
| 176.25                                                  | 4   | 5   | 14  | 2   |     |     |     | 10  | 4   |     | 1   |     | 176.25        | 243                        |
| 176.20                                                  |     | 1   | 3   |     |     |     |     | 1   | 12  | 3   | 9   | 8   | 176.20        | 280                        |
| 176.15                                                  |     |     | 1   |     |     |     |     |     | 14  | 16  | 10  | 16  | 176.15        | 337                        |
| 176.10                                                  |     |     |     |     |     |     |     |     |     | 10  | 8   | 6   | 176.10        | 361                        |
| 176.05                                                  |     |     |     |     |     |     |     |     |     | 2   | 2   | 1   | 176.05        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 5099: DeTour Village, Michigan on Lake Huron

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.46  | 176.32  | 176.35  | 176.29  | 176.43  | 176.43  | 176.35  | 176.34  | 176.29  | 176.21  | 176.12  | 176.19  |
| 2    | 176.51  | 176.32  | 176.25  | 176.31  | 176.43  | 176.39  | 176.37  | 176.33  | 176.29  | 176.19  | 176.06  | 176.25  |
| 3    | 176.49  | 176.34  | 176.31  | 176.32  | 176.42  | 176.41  | 176.36  | 176.34  | 176.25  | 176.21  | 176.15  | 176.19  |
| 4    | 176.39  | 176.31  | 176.28  | 176.37  | 176.42  | 176.43  | 176.35  | 176.33  | 176.20  | 176.19  | 176.10  | 176.19  |
| 5    | 176.46  | 176.34  | 176.33  | 176.38  | 176.44  | 176.42  | 176.35  | 176.35  | 176.19  | 176.11  | 176.13  | 176.23  |
| 6    | 176.46  | 176.36  | 176.34  | 176.30  | 176.42  | 176.44  | 176.35  | 176.35  | 176.24  | 176.18  | 176.13  | 176.23  |
| 7    | 176.42  | 176.39  | 176.30  | 176.38  | 176.42  | 176.41  | 176.36  | 176.34  | 176.28  | 176.20  | 176.13  | 176.18  |
| 8    | 176.40  | 176.38  | 176.34  | 176.38  | 176.45  | 176.37  | 176.37  | 176.33  | 176.29  | 176.17  | 176.15  | 176.17  |
| 9    | 176.37  | 176.31  | 176.27  | 176.38  | 176.45  | 176.40  | 176.35  | 176.33  | 176.25  | 176.15  | 176.20  | 176.20  |
| 10   | 176.42  | 176.33  | 176.31  | 176.38  | 176.43  | 176.42  | 176.36  | 176.34  | 176.24  | 176.16  | 176.11  | 176.17  |
| 11   | 176.46  | 176.29  | 176.29  | 176.39  | 176.47  | 176.44  | 176.36  | 176.33  | 176.22  | 176.13  | 176.20  | 176.14  |
| 12   | 176.40  | 176.25  | 176.24  | 176.39  | 176.44  | 176.44  | 176.35  | 176.35  | 176.20  | 176.11  | 176.24  | 176.24  |
| 13   | 176.26  | 176.31  | 176.19  | 176.42  | 176.42  | 176.43  | 176.36  | 176.35  | 176.21  | 176.15  | 176.16  | 176.20  |
| 14   | 176.38  | 176.42  | 176.27  | 176.38  | 176.46  | 176.43  | 176.35  | 176.36  | 176.20  | 176.20  | 176.20  | 176.17  |
| 15   | 176.42  | 176.27  | 176.28  | 176.45  | 176.45  | 176.42  | 176.36  | 176.35  | 176.19  | 176.14  | 176.24  | 176.07  |
| 16   | 176.43  | 176.37  | 176.30  | 176.43  | 176.44  | 176.40  | 176.34  | 176.34  | 176.19  | 176.18  | 176.21  | 176.21  |
| 17   | 176.37  | 176.34  | 176.32  | 176.44  | 176.42  | 176.38  | 176.35  | 176.32  | 176.19  | 176.16  | 176.24  | 176.12  |
| 18   | 176.32  | 176.38  | 176.28  | 176.39  | 176.43  | 176.40  | 176.35  | 176.29  | 176.20  | 176.09  | 176.27  | 176.18  |
| 19   | 176.35  | 176.36  | 176.31  | 176.45  | 176.43  | 176.43  | 176.33  | 176.29  | 176.23  | 176.15  | 176.20  | 176.17  |
| 20   | 176.28  | 176.27  | 176.26  | 176.43  | 176.43  | 176.40  | 176.35  | 176.30  | 176.23  | 176.15  | 176.13  | 176.16  |
| 21   | 176.29  | 176.39  | 176.30  | 176.42  | 176.45  | 176.40  | 176.33  | 176.29  | 176.22  | 176.16  | 176.19  | 176.16  |
| 22   | 176.39  | 176.42  | 176.31  | 176.41  | 176.43  | 176.39  | 176.34  | 176.30  | 176.23  | 176.12  | 176.20  | 176.22  |
| 23   | 176.38  | 176.33  | 176.25  | 176.36  | 176.42  | 176.40  | 176.33  | 176.30  | 176.18  | 176.17  | 176.21  | 176.14  |
| 24   | 176.32  | 176.35  | 176.28  | 176.40  | 176.41  | 176.41  | 176.34  | 176.30  | 176.24  | 176.11  | 176.20  | 176.17  |
| 25   | 176.34  | 176.33  | 176.31  | 176.46  | 176.44  | 176.38  | 176.34  | 176.32  | 176.20  | 176.16  | 176.18  | 176.13  |
| 26   | 176.27  | 176.37  | 176.33  | 176.42  | 176.48  | 176.39  | 176.32  | 176.31  | 176.23  | 176.17  | 176.21  | 176.21  |
| 27   | 176.37  | 176.28  | 176.30  | 176.38  | 176.46  | 176.38  | 176.34  | 176.31  | 176.17  | 176.22  | 176.21  | 176.19  |
| 28   | 176.35  | 176.36  | 176.33  | 176.40  | 176.44  | 176.39  | 176.34  | 176.28  | 176.18  | 176.10  | 176.21  | 176.15  |
| 29   | 176.40  | 176.28  | 176.27  | 176.43  | 176.43  | 176.35  | 176.36  | 176.26  | 176.16  | 176.18  | 176.24  | 176.21  |
| 30   | 176.38  |         | 176.30  | 176.44  | 176.44  | 176.36  | 176.32  | 176.25  | 176.20  | 176.16  | 176.17  | 176.17  |
| 31   | 176.38  |         | 176.34  |         | 176.45  |         | 176.33  | 176.27  |         | 176.19  |         | 176.14  |
| MEAN | 176.38  | 176.34  | 176.29  | 176.39  | 176.44  | 176.40  | 176.35  | 176.32  | 176.22  | 176.16  | 176.18  | 176.18  |
| MAX. | 176.60  | 176.55  | 176.42  | 176.51  | 176.52  | 176.48  | 176.41  | 176.40  | 176.36  | 176.32  | 176.34  | 176.37  |
|      | 1900/02 | 0600/22 | 2400/30 | 0600/17 | 2100/15 | 1300/22 | 1500/15 | 1800/12 | 0100/20 | 1900/27 | 2000/12 | 0300/23 |
| MIN. | 176.15  | 176.15  | 176.14  | 176.22  | 176.30  | 176.29  | 176.27  | 176.23  | 176.09  | 175.98  | 176.02  | 175.92  |
|      | 0700/13 | 1600/20 | 1100/13 | 1200/06 | 0700/13 | 1300/25 | 2300/30 | 0100/30 | 0600/23 | 0400/18 | 0700/02 | 0200/15 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.30

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 6060: US Slip below locks, Sault St Marie, Michigan on St Marys River

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 176.76 Jan  
 Daily mean elevation: 176.92 15 Jan  
 Instant/hourly elevation: 176.98 0900/15 Jan

LOWEST  
 Monthly mean elevation: 176.42 Nov  
 Daily mean elevation: 176.24 2 Nov  
 Instant/hourly elevation: 176.11 0200/11 Oct

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.92 | 15 Jan |
| 176.82 | 7 Feb  |
| 176.74 | 31 Mar |
| 176.77 | 5 Apr  |
| 176.74 | 9 May  |
| 176.70 | 14 Jun |
| 176.60 | 27 Jul |
| 176.63 | 5 Aug  |
| 176.65 | 8 Sep  |
| 176.58 | 27 Oct |
| 176.60 | 16 Nov |
| 176.63 | 23 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.65 | 4 Jan  |
| 176.56 | 20 Feb |
| 176.56 | 13 Mar |
| 176.47 | 18 Apr |
| 176.56 | 22 May |
| 176.44 | 29 Jun |
| 176.43 | 17 Jul |
| 176.38 | 20 Aug |
| 176.28 | 5 Sep  |
| 176.31 | 11 Oct |
| 176.24 | 2 Nov  |
| 176.42 | 15 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 176.90        | 1   |     |     |     |     |     |     |     |     |     |     |     | 176.90        | 1                          |
| 176.85        | 1   |     |     |     |     |     |     |     |     |     |     |     | 176.85        | 2                          |
| 176.80        | 2   | 1   |     |     |     |     |     |     |     |     |     |     | 176.80        | 5                          |
| 176.75        | 13  | 6   |     | 1   |     |     |     |     |     |     |     |     | 176.75        | 25                         |
| 176.70        | 10  | 7   | 11  | 1   | 5   |     |     |     |     |     |     |     | 176.70        | 59                         |
| 176.65        | 2   | 7   | 13  | 7   | 15  | 8   |     |     |     |     |     |     | 176.65        | 111                        |
| 176.60        | 2   | 5   | 6   | 6   | 8   | 11  |     | 2   | 2   |     |     |     | 176.60        | 159                        |
| 176.55        |     | 3   | 1   | 11  | 3   | 7   | 11  | 7   | 7   | 1   | 3   | 6   | 176.55        | 223                        |
| 176.50        |     |     |     | 3   |     |     | 10  | 8   | 8   | 5   | 7   | 10  | 176.50        | 274                        |
| 176.45        |     |     |     | 1   |     | 3   | 7   | 9   | 6   | 4   | 2   | 3   | 176.45        | 309                        |
| 176.40        |     |     |     |     |     | 1   | 3   | 3   | 4   | 11  | 4   | 2   | 176.40        | 337                        |
| 176.35        |     |     |     |     |     |     |     | 2   | 1   | 5   | 4   |     | 176.35        | 349                        |
| 176.30        |     |     |     |     |     |     |     |     | 1   | 5   | 8   |     | 176.30        | 363                        |
| 176.25        |     |     |     |     |     |     |     |     | 1   |     | 1   |     | 176.25        | 365                        |
| 176.20        |     |     |     |     |     |     |     |     |     |     | 1   |     | 176.20        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 6060: US Slip below locks, Sault St Marie, Michigan on St Marys River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.65  | 176.74  | 176.72  | 176.70  | 176.62  | 176.63  | 176.43  | 176.53  | 176.56  | 176.45  | 176.35  | 176.44  |
| 2    | 176.72  | 176.75  | 176.69  | 176.67  | 176.68  | 176.60  | 176.49  | 176.56  | 176.62  | 176.44  | 176.24  | 176.51  |
| 3    | 176.74  | 176.77  | 176.71  | 176.67  | 176.67  | 176.61  | 176.53  | 176.52  | 176.54  | 176.51  | 176.36  | 176.52  |
| 4    | 176.65  | 176.75  | 176.71  | 176.73  | 176.68  | 176.65  | 176.57  | 176.62  | 176.41  | 176.52  | 176.34  | 176.51  |
| 5    | 176.76  | 176.79  | 176.62  | 176.77  | 176.67  | 176.65  | 176.60  | 176.63  | 176.28  | 176.38  | 176.38  | 176.58  |
| 6    | 176.84  | 176.77  | 176.64  | 176.70  | 176.67  | 176.66  | 176.57  | 176.55  | 176.50  | 176.46  | 176.45  | 176.57  |
| 7    | 176.78  | 176.82  | 176.61  | 176.67  | 176.70  | 176.69  | 176.58  | 176.50  | 176.59  | 176.54  | 176.31  | 176.50  |
| 8    | 176.78  | 176.76  | 176.66  | 176.61  | 176.71  | 176.63  | 176.60  | 176.56  | 176.65  | 176.47  | 176.31  | 176.53  |
| 9    | 176.74  | 176.69  | 176.64  | 176.58  | 176.74  | 176.61  | 176.49  | 176.57  | 176.58  | 176.34  | 176.39  | 176.56  |
| 10   | 176.76  | 176.70  | 176.72  | 176.55  | 176.65  | 176.65  | 176.47  | 176.60  | 176.48  | 176.31  | 176.29  | 176.52  |
| 11   | 176.84  | 176.72  | 176.70  | 176.56  | 176.70  | 176.67  | 176.48  | 176.58  | 176.53  | 176.31  | 176.35  | 176.50  |
| 12   | 176.80  | 176.66  | 176.62  | 176.64  | 176.70  | 176.68  | 176.50  | 176.56  | 176.52  | 176.39  | 176.54  | 176.63  |
| 13   | 176.72  | 176.65  | 176.56  | 176.63  | 176.60  | 176.69  | 176.60  | 176.51  | 176.48  | 176.45  | 176.36  | 176.62  |
| 14   | 176.78  | 176.61  | 176.67  | 176.59  | 176.72  | 176.70  | 176.51  | 176.49  | 176.46  | 176.47  | 176.35  | 176.59  |
| 15   | 176.92  | 176.56  | 176.68  | 176.67  | 176.70  | 176.63  | 176.57  | 176.45  | 176.51  | 176.38  | 176.52  | 176.42  |
| 16   | 176.86  | 176.65  | 176.70  | 176.55  | 176.69  | 176.65  | 176.44  | 176.52  | 176.57  | 176.46  | 176.60  | 176.58  |
| 17   | 176.74  | 176.62  | 176.73  | 176.60  | 176.67  | 176.66  | 176.43  | 176.49  | 176.53  | 176.44  | 176.45  | 176.55  |
| 18   | 176.76  | 176.62  | 176.69  | 176.47  | 176.69  | 176.67  | 176.52  | 176.46  | 176.52  | 176.34  | 176.44  | 176.57  |
| 19   | 176.77  | 176.66  | 176.68  | 176.62  | 176.67  | 176.65  | 176.52  | 176.42  | 176.60  | 176.51  | 176.46  | 176.58  |
| 20   | 176.77  | 176.56  | 176.63  | 176.63  | 176.61  | 176.60  | 176.54  | 176.38  | 176.60  | 176.45  | 176.31  | 176.56  |
| 21   | 176.71  | 176.66  | 176.68  | 176.58  | 176.59  | 176.59  | 176.50  | 176.40  | 176.51  | 176.52  | 176.31  | 176.52  |
| 22   | 176.80  | 176.76  | 176.73  | 176.60  | 176.56  | 176.56  | 176.55  | 176.52  | 176.56  | 176.44  | 176.41  | 176.63  |
| 23   | 176.74  | 176.75  | 176.71  | 176.56  | 176.62  | 176.58  | 176.53  | 176.60  | 176.38  | 176.42  | 176.46  | 176.63  |
| 24   | 176.67  | 176.77  | 176.71  | 176.53  | 176.61  | 176.64  | 176.51  | 176.51  | 176.45  | 176.41  | 176.52  | 176.56  |
| 25   | 176.68  | 176.73  | 176.68  | 176.68  | 176.64  | 176.48  | 176.52  | 176.49  | 176.35  | 176.36  | 176.51  | 176.51  |
| 26   | 176.75  | 176.74  | 176.67  | 176.60  | 176.73  | 176.49  | 176.57  | 176.49  | 176.44  | 176.43  | 176.52  | 176.59  |
| 27   | 176.74  | 176.59  | 176.69  | 176.65  | 176.71  | 176.57  | 176.60  | 176.55  | 176.43  | 176.58  | 176.53  | 176.62  |
| 28   | 176.73  | 176.68  | 176.74  | 176.59  | 176.68  | 176.57  | 176.56  | 176.46  | 176.48  | 176.42  | 176.56  | 176.53  |
| 29   | 176.76  | 176.68  | 176.73  | 176.57  | 176.67  | 176.44  | 176.56  | 176.49  | 176.51  | 176.35  | 176.59  | 176.61  |
| 30   | 176.78  |         | 176.67  | 176.57  | 176.63  | 176.46  | 176.49  | 176.43  | 176.46  | 176.38  | 176.53  | 176.55  |
| 31   | 176.77  |         | 176.74  |         | 176.64  |         | 176.54  | 176.50  |         | 176.45  |         | 176.48  |
| MEAN | 176.76  | 176.70  | 176.68  | 176.62  | 176.67  | 176.61  | 176.53  | 176.51  | 176.50  | 176.43  | 176.42  | 176.55  |
| MAX. | 176.98  | 176.87  | 176.82  | 176.82  | 176.85  | 176.81  | 176.74  | 176.74  | 176.74  | 176.79  | 176.73  | 176.76  |
|      | 0900/15 | 1500/07 | 1400/31 | 1300/20 | 0200/13 | 1200/14 | 1400/13 | 1600/05 | 1800/22 | 2200/27 | 1900/12 | 0200/23 |
| MIN. | 176.57  | 176.47  | 176.51  | 176.34  | 176.36  | 176.26  | 176.35  | 176.33  | 176.20  | 176.11  | 176.16  | 176.32  |
|      | 0100/01 | 2000/20 | 0600/07 | 0600/18 | 1300/13 | 1600/25 | 0900/17 | 0300/21 | 1800/05 | 0200/11 | 0600/02 | 0900/15 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.58

ANNUAL SUMMARY OF LEVELS, 1988  
Station 6070: SW Pier above locks, Sault St Marie, Michigan on St Marys River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 600.58 Dec  
Daily mean elevation: 601.33 17 Nov  
Instant/hourly Elevation: 602.36 1000/3 Dec

LOWEST  
Monthly mean elevation: 599.39 Mar  
Daily mean elevation: 598.71 28 Mar  
Instant/hourly Elevation: 596.55 1248/15 Jul

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 600.64 | 4 Jan  |
| 600.05 | 20 Feb |
| 599.74 | 2 Mar  |
| 600.01 | 14 Apr |
| 600.33 | 13 May |
| 600.25 | 29 Jun |
| 600.14 | 11 Jul |
| 600.81 | 25 Aug |
| 600.86 | 23 Sep |
| 601.24 | 28 Oct |
| 601.33 | 17 Nov |
| 601.15 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 599.51 | 29 Jan |
| 599.46 | 16 Feb |
| 598.71 | 28 Mar |
| 599.26 | 2 Apr  |
| 599.38 | 8 May  |
| 599.68 | 24 Jun |
| 599.75 | 15 Jul |
| 599.86 | 2 Aug  |
| 599.88 | 19 Sep |
| 599.99 | 27 Oct |
| 599.94 | 15 Nov |
| 599.60 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(ft.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------------------------|
| Elev.<br>(ft.)                                          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |                |                            |
| 601.20                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 601.20         | 2                          |
| 601.00                                                  |     |     |     |     |     |     |     |     |     | 1   |     | 2   | 601.00         | 5                          |
| 600.80                                                  |     |     |     |     |     |     |     | 1   | 1   | 2   | 5   | 4   | 600.80         | 18                         |
| 600.60                                                  | 1   |     |     |     |     |     |     | 3   | 9   | 1   | 6   | 8   | 600.60         | 46                         |
| 600.40                                                  | 2   |     |     |     |     |     |     | 10  | 5   | 11  | 7   | 11  | 600.40         | 92                         |
| 600.20                                                  | 1   |     |     |     | 1   | 1   |     | 3   | 12  | 11  | 7   | 4   | 600.20         | 132                        |
| 600.00                                                  | 3   | 2   |     | 1   | 1   | 6   | 9   | 10  | 1   | 3   | 3   | 1   | 600.00         | 172                        |
| 599.80                                                  | 14  | 6   |     | 7   | 10  | 14  | 18  | 4   | 2   | 1   | 1   |     | 599.80         | 249                        |
| 599.60                                                  | 8   | 13  | 5   | 11  | 15  | 9   | 4   |     |     |     |     |     | 599.60         | 314                        |
| 599.40                                                  | 2   | 8   | 14  | 8   | 3   |     |     |     |     |     |     |     | 599.40         | 350                        |
| 599.20                                                  |     |     | 5   | 3   | 1   |     |     |     |     |     |     | 1   | 599.20         | 359                        |
| 599.00                                                  |     |     | 4   |     |     |     |     |     |     |     |     |     | 599.00         | 363                        |
| 598.80                                                  |     |     | 2   |     |     |     |     |     |     |     |     |     | 598.80         | 365                        |
| 598.60                                                  |     |     | 1   |     |     |     |     |     |     |     |     |     | 598.60         | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 6070: SW Pier above locks, Sault St Marie, Michigan on St Marys River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 600.60  | 600.03  | 599.14  | 599.30  | 599.72  | 599.88  | 600.13  | 599.98  | 600.31  | 600.52  | 600.51  | 600.80  |
| 2    | 600.23  | 599.74  | 599.74  | 599.26  | 599.63  | 599.89  | 599.98  | 599.86  | 600.36  | 600.58  | 600.33  | 600.75  |
| 3    | 600.15  | 599.76  | 599.47  | 599.39  | 599.62  | 599.94  | 599.94  | 599.93  | 600.51  | 600.31  | 600.13  | 601.15  |
| 4    | 600.64  | 599.78  | 599.57  | 599.54  | 599.64  | 599.89  | 599.85  | 599.99  | 600.65  | 600.50  | 600.22  | 600.92  |
| 5    | 600.49  | 599.94  | 599.50  | 599.48  | 599.75  | 599.94  | 599.83  | 600.01  | 600.76  | 600.50  | 600.39  | 600.59  |
| 6    | 599.78  | 599.83  | 599.55  | 599.88  | 599.72  | 599.87  | 599.82  | 600.32  | 600.65  | 600.38  | 600.50  | 600.82  |
| 7    | 599.65  | 599.99  | 599.47  | 599.65  | 599.42  | 599.83  | 599.84  | 600.10  | 600.33  | 600.20  | 600.63  | 600.77  |
| 8    | 600.00  | 599.74  | 599.21  | 599.56  | 599.38  | 599.92  | 599.94  | 600.15  | 600.29  | 600.26  | 600.62  | 600.84  |
| 9    | 600.08  | 599.89  | 599.73  | 599.53  | 599.56  | 600.06  | 599.97  | 600.17  | 600.50  | 600.28  | 600.39  | 600.64  |
| 10   | 599.86  | 599.72  | 599.42  | 599.80  | 599.91  | 599.87  | 599.98  | 600.03  | 600.67  | 601.07  | 600.85  | 600.70  |
| 11   | 599.84  | 599.66  | 599.36  | 599.78  | 599.62  | 599.80  | 600.14  | 600.02  | 600.23  | 600.84  | 600.55  | 600.43  |
| 12   | 599.84  | 599.86  | 599.17  | 599.63  | 599.66  | 599.80  | 600.04  | 600.04  | 600.45  | 600.49  | 600.07  | 600.27  |
| 13   | 600.00  | 599.75  | 599.66  | 599.71  | 600.33  | 599.79  | 599.79  | 600.06  | 600.50  | 600.29  | 600.68  | 600.53  |
| 14   | 599.64  | 599.61  | 599.55  | 600.01  | 599.60  | 599.76  | 600.06  | 600.59  | 600.69  | 600.35  | 600.83  | 600.60  |
| 15   | 599.67  | 599.79  | 599.61  | 599.85  | 599.76  | 599.94  | 599.75  | 600.46  | 600.34  | 600.19  | 599.94  | 600.81  |
| 16   | 599.56  | 599.46  | 599.56  | 599.71  | 599.99  | 599.92  | 599.97  | 600.23  | 599.99  | 600.19  | 600.32  | 600.51  |
| 17   | 599.86  | 599.73  | 599.41  | 599.91  | 599.87  | 599.79  | 600.02  | 600.49  | 600.30  | 600.47  | 601.33  | 600.65  |
| 18   | 599.87  | 599.59  | 599.63  | 599.77  | 599.77  | 599.75  | 599.99  | 600.43  | 600.22  | 600.64  | 600.69  | 600.23  |
| 19   | 599.68  | 599.57  | 599.59  | 599.50  | 599.78  | 599.76  | 600.01  | 600.46  | 599.88  | 600.36  | 600.36  | 600.25  |
| 20   | 600.02  | 600.05  | 599.55  | 599.56  | 599.85  | 599.96  | 600.02  | 600.49  | 600.63  | 600.26  | 600.93  | 600.64  |
| 21   | 599.90  | 599.57  | 599.32  | 599.42  | 599.94  | 599.78  | 600.01  | 600.42  | 600.64  | 600.32  | 600.77  | 600.60  |
| 22   | 599.73  | 599.78  | 598.97  | 599.52  | 599.98  | 599.99  | 599.93  | 600.18  | 600.24  | 600.42  | 600.55  | 599.60  |
| 23   | 599.99  | 599.83  | 599.33  | 599.64  | 599.93  | 599.98  | 599.89  | 600.13  | 600.86  | 600.24  | 600.43  | 600.43  |
| 24   | 599.97  | 599.74  | 599.00  | 599.77  | 600.01  | 599.68  | 599.87  | 600.47  | 600.51  | 600.51  | 600.17  | 600.59  |
| 25   | 599.85  | 599.66  | 599.13  | 599.64  | 599.82  | 600.17  | 600.05  | 600.81  | 600.69  | 600.60  | 600.43  | 601.01  |
| 26   | 599.84  | 599.49  | 599.50  | 599.83  | 599.76  | 600.20  | 599.95  | 600.76  | 600.22  | 600.57  | 600.34  | 600.33  |
| 27   | 599.98  | 599.59  | 599.54  | 599.75  | 599.77  | 600.02  | 599.80  | 600.48  | 600.65  | 599.99  | 600.76  | 600.20  |
| 28   | 599.69  | 599.57  | 598.71  | 599.86  | 599.76  | 600.07  | 599.78  | 600.68  | 600.29  | 601.24  | 600.85  | 600.75  |
| 29   | 599.51  | 599.57  | 599.16  | 599.88  | 599.72  | 600.25  | 599.90  | 600.63  | 600.14  | 601.00  | 600.56  | 600.51  |
| 30   | 599.75  |         | 599.41  | 599.82  | 599.82  | 600.16  | 599.97  | 600.55  | 600.34  | 600.48  | 601.00  | 600.50  |
| 31   | 599.95  |         | 599.26  |         | 599.89  |         | 599.81  | 600.30  |         | 600.23  |         | 600.43  |
| MEAN | 599.92  | 599.73  | 599.39  | 599.66  | 599.77  | 599.92  | 599.94  | 600.30  | 600.43  | 600.46  | 600.54  | 600.58  |
| MAX. | 601.22  | 600.97  | 600.15  | 600.76  | 601.89  | 601.87  | 601.84  | 601.85  | 601.57  | 602.26  | 601.94  | 602.36  |
|      | 2000/04 | 0100/23 | 1300/02 | 2200/17 | 0400/13 | 1000/25 | 1424/15 | 1400/16 | 1400/01 | 1300/28 | 1600/10 | 1000/03 |
| MIN. | 598.84  | 598.90  | 598.05  | 598.80  | 598.67  | 598.46  | 596.55  | 598.44  | 599.35  | 599.20  | 599.08  | 598.65  |
|      | 1000/16 | 0100/28 | 1500/28 | 0200/17 | 0100/08 | 0900/19 | 1248/15 | 1600/16 | 1400/19 | 2000/27 | 1900/15 | 0200/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 600.05

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7023: Ludington, Michigan on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.57 May  
Daily mean elevation: 176.63 20 Jan  
Instant/hourly elevation: 176.76 0800/23 Apr

LOWEST  
Monthly mean elevation: 176.25 Dec  
Daily mean elevation: 176.10 29 Oct  
Instant/hourly elevation: 176.03 1400/26 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.63 | 20 Jan |
| 176.49 | 15 Feb |
| 176.57 | 12 Mar |
| 176.62 | 27 Apr |
| 176.61 | 9 May  |
| 176.60 | 2 Jun  |
| 176.49 | 16 Jul |
| 176.50 | 18 Aug |
| 176.41 | 4 Sep  |
| 176.34 | 24 Oct |
| 176.47 | 16 Nov |
| 176.36 | 23 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.31 | 5 Jan  |
| 176.39 | 13 Feb |
| 176.36 | 27 Mar |
| 176.45 | 18 Apr |
| 176.53 | 25 May |
| 176.45 | 26 Jun |
| 176.41 | 29 Jul |
| 176.30 | 26 Aug |
| 176.26 | 21 Sep |
| 176.10 | 29 Oct |
| 176.22 | 18 Nov |
| 176.14 | 26 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.60                                                  | 1   |     |     | 2   | 2   |     |     |     |     |     |     |     | 176.60        | 5                          |
| 176.55                                                  |     |     | 1   | 2   | 22  | 4   |     |     |     |     |     |     | 176.55        | 34                         |
| 176.50                                                  | 3   |     | 2   | 20  | 7   | 18  |     |     |     |     |     |     | 176.50        | 84                         |
| 176.45                                                  | 15  | 11  | 5   | 5   |     | 7   | 16  | 4   |     |     | 1   |     | 176.45        | 148                        |
| 176.40                                                  | 9   | 16  | 17  | 1   |     | 1   | 15  | 19  | 1   |     | 1   |     | 176.40        | 228                        |
| 176.35                                                  | 2   | 2   | 6   |     |     |     |     | 3   | 5   |     | 3   | 1   | 176.35        | 250                        |
| 176.30                                                  | 1   |     |     |     |     |     |     | 4   | 17  | 6   | 14  | 1   | 176.30        | 293                        |
| 176.25                                                  |     |     |     |     |     |     |     | 1   | 7   | 14  | 3   | 13  | 176.25        | 331                        |
| 176.20                                                  |     |     |     |     |     |     |     |     |     | 8   | 8   | 11  | 176.20        | 358                        |
| 176.15                                                  |     |     |     |     |     |     |     |     |     | 2   |     | 4   | 176.15        | 364                        |
| 176.10                                                  |     |     |     |     |     |     |     |     |     |     |     | 1   | 176.10        | 365                        |
| 176.05                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 176.05        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7023: Ludington, Michigan on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.45  | 176.46  | 176.45  | 176.49  | 176.56  | 176.55  | 176.47  | 176.45  | 176.35  | 176.30  | 176.24  | 176.29  |
| 2    | 176.42  | 176.48  | 176.45  | 176.52  | 176.57  | 176.60  | 176.46  | 176.46  | 176.35  | 176.31  | 176.23  | 176.21  |
| 3    | 176.48  | 176.49  | 176.41  | 176.53  | 176.58  | 176.56  | 176.48  | 176.45  | 176.38  | 176.30  | 176.23  | 176.21  |
| 4    | 176.44  | 176.47  | 176.42  | 176.49  | 176.56  | 176.53  | 176.48  | 176.46  | 176.41  | 176.32  | 176.28  | 176.23  |
| 5    | 176.31  | 176.49  | 176.40  | 176.52  | 176.55  | 176.52  | 176.49  | 176.45  | 176.37  | 176.33  | 176.35  | 176.29  |
| 6    | 176.37  | 176.42  | 176.41  | 176.51  | 176.56  | 176.52  | 176.48  | 176.41  | 176.31  | 176.29  | 176.42  | 176.27  |
| 7    | 176.47  | 176.45  | 176.39  | 176.48  | 176.57  | 176.56  | 176.45  | 176.43  | 176.31  | 176.29  | 176.32  | 176.23  |
| 8    | 176.46  | 176.42  | 176.48  | 176.52  | 176.61  | 176.57  | 176.45  | 176.44  | 176.30  | 176.32  | 176.27  | 176.27  |
| 9    | 176.43  | 176.47  | 176.43  | 176.55  | 176.61  | 176.53  | 176.47  | 176.47  | 176.31  | 176.33  | 176.24  | 176.21  |
| 10   | 176.45  | 176.44  | 176.41  | 176.53  | 176.56  | 176.52  | 176.47  | 176.45  | 176.28  | 176.27  | 176.32  | 176.27  |
| 11   | 176.40  | 176.48  | 176.44  | 176.51  | 176.56  | 176.51  | 176.47  | 176.45  | 176.33  | 176.20  | 176.25  | 176.29  |
| 12   | 176.52  | 176.47  | 176.57  | 176.53  | 176.60  | 176.51  | 176.46  | 176.45  | 176.35  | 176.23  | 176.35  | 176.29  |
| 13   | 176.44  | 176.39  | 176.55  | 176.53  | 176.54  | 176.52  | 176.46  | 176.44  | 176.29  | 176.24  | 176.34  | 176.24  |
| 14   | 176.47  | 176.45  | 176.46  | 176.52  | 176.56  | 176.52  | 176.46  | 176.42  | 176.28  | 176.21  | 176.25  | 176.30  |
| 15   | 176.45  | 176.49  | 176.42  | 176.49  | 176.60  | 176.50  | 176.49  | 176.34  | 176.30  | 176.27  | 176.31  | 176.23  |
| 16   | 176.44  | 176.46  | 176.40  | 176.51  | 176.53  | 176.53  | 176.49  | 176.44  | 176.33  | 176.29  | 176.47  | 176.21  |
| 17   | 176.46  | 176.45  | 176.43  | 176.52  | 176.58  | 176.55  | 176.44  | 176.44  | 176.31  | 176.25  | 176.25  | 176.25  |
| 18   | 176.48  | 176.44  | 176.43  | 176.45  | 176.58  | 176.53  | 176.46  | 176.50  | 176.32  | 176.27  | 176.22  | 176.26  |
| 19   | 176.46  | 176.46  | 176.39  | 176.47  | 176.57  | 176.52  | 176.45  | 176.43  | 176.36  | 176.27  | 176.36  | 176.28  |
| 20   | 176.63  | 176.43  | 176.41  | 176.53  | 176.58  | 176.50  | 176.45  | 176.42  | 176.38  | 176.27  | 176.31  | 176.30  |
| 21   | 176.49  | 176.42  | 176.40  | 176.53  | 176.56  | 176.53  | 176.46  | 176.42  | 176.26  | 176.27  | 176.26  | 176.19  |
| 22   | 176.49  | 176.41  | 176.43  | 176.53  | 176.57  | 176.52  | 176.44  | 176.42  | 176.35  | 176.26  | 176.31  | 176.28  |
| 23   | 176.47  | 176.41  | 176.50  | 176.62  | 176.58  | 176.50  | 176.45  | 176.45  | 176.32  | 176.30  | 176.31  | 176.36  |
| 24   | 176.50  | 176.41  | 176.45  | 176.52  | 176.54  | 176.54  | 176.44  | 176.43  | 176.30  | 176.34  | 176.34  | 176.22  |
| 25   | 176.51  | 176.41  | 176.48  | 176.54  | 176.53  | 176.51  | 176.45  | 176.37  | 176.32  | 176.24  | 176.35  | 176.18  |
| 26   | 176.55  | 176.44  | 176.42  | 176.53  | 176.54  | 176.45  | 176.44  | 176.30  | 176.31  | 176.21  | 176.37  | 176.14  |
| 27   | 176.48  | 176.44  | 176.36  | 176.62  | 176.56  | 176.48  | 176.43  | 176.37  | 176.34  | 176.26  | 176.38  | 176.34  |
| 28   | 176.45  | 176.44  | 176.43  | 176.56  | 176.57  | 176.46  | 176.45  | 176.35  | 176.33  | 176.25  | 176.32  | 176.20  |
| 29   | 176.48  | 176.40  | 176.53  | 176.53  | 176.57  | 176.49  | 176.41  | 176.35  | 176.36  | 176.10  | 176.31  | 176.18  |
| 30   | 176.50  |         | 176.46  | 176.56  | 176.56  | 176.47  | 176.42  | 176.35  | 176.33  | 176.19  | 176.33  | 176.27  |
| 31   | 176.49  |         | 176.44  |         | 176.54  |         | 176.43  | 176.38  |         | 176.22  |         | 176.21  |
| MEAN | 176.47  | 176.44  | 176.44  | 176.52  | 176.57  | 176.52  | 176.46  | 176.42  | 176.33  | 176.26  | 176.31  | 176.25  |
| MAX. | 176.74  | 176.56  | 176.70  | 176.76  | 176.72  | 176.68  | 176.61  | 176.63  | 176.52  | 176.43  | 176.63  | 176.50  |
|      | 0500/20 | 0800/15 | 0400/13 | 0800/23 | 1300/15 | 1700/02 | 1800/16 | 2000/18 | 0700/20 | 2300/27 | 0900/16 | 2300/22 |
| MIN. | 176.28  | 176.34  | 176.32  | 176.41  | 176.42  | 176.39  | 176.34  | 176.24  | 176.18  | 176.07  | 176.15  | 176.03  |
|      | 1500/05 | 0700/22 | 1800/30 | 1600/18 | 1800/13 | 0100/23 | 2200/16 | 1000/15 | 1800/21 | 1200/29 | 0500/18 | 1400/26 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.42

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7031: Holland, Michigan on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.53 May  
Daily mean elevation: 176.64 27 Apr  
Instant/hourly elevation: 176.76 2000/27 Apr

LOWEST  
Monthly mean elevation: 176.21 Dec  
Daily mean elevation: 176.07 29 Oct  
Instant/hourly elevation: 176.03 1000/29 Oct

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.60 | 20 Jan |
| 176.51 | 15 Feb |
| 176.56 | 13 Mar |
| 176.64 | 27 Apr |
| 176.58 | 23 May |
| 176.56 | 8 Jun  |
| 176.45 | 16 Jul |
| 176.43 | 18 Aug |
| 176.41 | 4 Sep  |
| 176.33 | 24 Oct |
| 176.40 | 6 Nov  |
| 176.27 | 23 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.33 | 16 Jan |
| 176.34 | 22 Feb |
| 176.32 | 27 Mar |
| 176.42 | 19 Apr |
| 176.48 | 26 May |
| 176.43 | 19 Jun |
| 176.38 | 29 Jul |
| 176.26 | 26 Aug |
| 176.24 | 21 Sep |
| 176.07 | 29 Oct |
| 176.16 | 18 Nov |
| 176.11 | 26 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 176.60        |     |     |     | 2   |     |     |     |     |     |     |     |     | 176.60        | 2                          |
| 176.55        | 1   |     | 1   | 2   | 6   | 1   |     |     |     |     |     |     | 176.55        | 13                         |
| 176.50        | 1   | 1   | 1   | 11  | 19  | 3   |     |     |     |     |     |     | 176.50        | 49                         |
| 176.45        | 4   | 7   | 2   | 11  | 6   | 16  |     |     |     |     |     |     | 176.45        | 95                         |
| 176.40        | 15  | 7   | 6   | 4   |     | 10  | 28  | 1   | 1   |     |     |     | 176.40        | 167                        |
| 176.35        | 6   | 12  | 18  |     |     |     | 3   | 19  |     |     | 1   |     | 176.35        | 226                        |
| 176.30        | 4   | 2   | 3   |     |     |     |     | 8   | 6   | 4   | 4   |     | 176.30        | 257                        |
| 176.25        |     |     |     |     |     |     |     | 3   | 15  | 3   | 9   | 5   | 176.25        | 292                        |
| 176.20        |     |     |     |     |     |     |     |     | 8   | 16  | 9   | 16  | 176.20        | 341                        |
| 176.15        |     |     |     |     |     |     |     |     |     | 4   | 7   | 6   | 176.15        | 358                        |
| 176.10        |     |     |     |     |     |     |     |     |     | 3   |     | 4   | 176.10        | 365                        |
| 176.05        |     |     |     |     |     |     |     |     |     | 1   |     |     | 176.05        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7031: Holland, Michigan on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.42  | 176.46  | 176.38  | 176.46  | 176.55  | 176.52  | 176.44  | 176.40  | 176.29  | 176.25  | 176.23  | 176.26  |
| 2    | 176.35  | 176.45  | 176.44  | 176.45  | 176.53  | 176.55  | 176.44  | 176.39  | 176.28  | 176.28  | 176.20  | 176.17  |
| 3    | 176.40  | 176.46  | 176.38  | 176.49  | 176.52  | 176.51  | 176.44  | 176.38  | 176.35  | 176.25  | 176.17  | 176.21  |
| 4    | 176.44  | 176.47  | 176.38  | 176.44  | 176.52  | 176.48  | 176.45  | 176.39  | 176.41  | 176.31  | 176.25  | 176.18  |
| 5    | 176.33  | 176.46  | 176.34  | 176.48  | 176.50  | 176.47  | 176.45  | 176.40  | 176.34  | 176.31  | 176.32  | 176.22  |
| 6    | 176.36  | 176.43  | 176.34  | 176.58  | 176.51  | 176.47  | 176.44  | 176.35  | 176.27  | 176.25  | 176.40  | 176.21  |
| 7    | 176.41  | 176.42  | 176.37  | 176.46  | 176.52  | 176.50  | 176.42  | 176.37  | 176.25  | 176.25  | 176.29  | 176.24  |
| 8    | 176.41  | 176.38  | 176.38  | 176.50  | 176.52  | 176.56  | 176.41  | 176.39  | 176.24  | 176.30  | 176.25  | 176.24  |
| 9    | 176.41  | 176.45  | 176.40  | 176.51  | 176.52  | 176.50  | 176.42  | 176.40  | 176.26  | 176.31  | 176.20  | 176.22  |
| 10   | 176.36  | 176.42  | 176.37  | 176.53  | 176.52  | 176.47  | 176.43  | 176.39  | 176.25  | 176.26  | 176.31  | 176.27  |
| 11   | 176.34  | 176.47  | 176.41  | 176.51  | 176.48  | 176.45  | 176.44  | 176.39  | 176.29  | 176.21  | 176.20  | 176.25  |
| 12   | 176.41  | 176.46  | 176.52  | 176.52  | 176.51  | 176.45  | 176.44  | 176.38  | 176.31  | 176.24  | 176.23  | 176.17  |
| 13   | 176.48  | 176.37  | 176.56  | 176.51  | 176.48  | 176.45  | 176.41  | 176.38  | 176.25  | 176.20  | 176.30  | 176.21  |
| 14   | 176.37  | 176.38  | 176.46  | 176.52  | 176.50  | 176.45  | 176.42  | 176.36  | 176.24  | 176.16  | 176.20  | 176.26  |
| 15   | 176.37  | 176.51  | 176.43  | 176.46  | 176.52  | 176.46  | 176.42  | 176.32  | 176.26  | 176.21  | 176.24  | 176.23  |
| 16   | 176.33  | 176.39  | 176.39  | 176.48  | 176.55  | 176.49  | 176.45  | 176.37  | 176.27  | 176.21  | 176.30  | 176.16  |
| 17   | 176.41  | 176.42  | 176.38  | 176.48  | 176.56  | 176.50  | 176.43  | 176.40  | 176.27  | 176.23  | 176.19  | 176.27  |
| 18   | 176.44  | 176.37  | 176.38  | 176.43  | 176.55  | 176.47  | 176.44  | 176.43  | 176.26  | 176.24  | 176.16  | 176.21  |
| 19   | 176.43  | 176.39  | 176.38  | 176.42  | 176.56  | 176.43  | 176.44  | 176.40  | 176.28  | 176.24  | 176.29  | 176.22  |
| 20   | 176.60  | 176.49  | 176.38  | 176.52  | 176.56  | 176.45  | 176.42  | 176.37  | 176.32  | 176.21  | 176.31  | 176.22  |
| 21   | 176.49  | 176.34  | 176.37  | 176.49  | 176.54  | 176.48  | 176.44  | 176.36  | 176.24  | 176.24  | 176.23  | 176.15  |
| 22   | 176.42  | 176.34  | 176.37  | 176.52  | 176.57  | 176.49  | 176.42  | 176.34  | 176.28  | 176.23  | 176.25  | 176.17  |
| 23   | 176.45  | 176.39  | 176.43  | 176.61  | 176.58  | 176.48  | 176.43  | 176.38  | 176.28  | 176.25  | 176.23  | 176.27  |
| 24   | 176.50  | 176.38  | 176.39  | 176.50  | 176.57  | 176.48  | 176.41  | 176.34  | 176.26  | 176.33  | 176.26  | 176.21  |
| 25   | 176.49  | 176.38  | 176.41  | 176.49  | 176.51  | 176.47  | 176.42  | 176.30  | 176.26  | 176.22  | 176.28  | 176.15  |
| 26   | 176.55  | 176.38  | 176.38  | 176.53  | 176.48  | 176.44  | 176.43  | 176.26  | 176.25  | 176.18  | 176.29  | 176.11  |
| 27   | 176.44  | 176.43  | 176.32  | 176.64  | 176.50  | 176.44  | 176.39  | 176.30  | 176.31  | 176.15  | 176.28  | 176.24  |
| 28   | 176.42  | 176.36  | 176.36  | 176.57  | 176.52  | 176.44  | 176.41  | 176.31  | 176.28  | 176.20  | 176.29  | 176.19  |
| 29   | 176.41  | 176.38  | 176.49  | 176.52  | 176.53  | 176.47  | 176.38  | 176.32  | 176.31  | 176.07  | 176.24  | 176.15  |
| 30   | 176.40  |         | 176.39  | 176.53  | 176.52  | 176.45  | 176.41  | 176.31  | 176.25  | 176.13  | 176.32  | 176.21  |
| 31   | 176.43  |         | 176.41  |         | 176.52  |         | 176.39  | 176.32  |         | 176.11  |         | 176.21  |
| MEAN | 176.42  | 176.41  | 176.40  | 176.50  | 176.53  | 176.48  | 176.43  | 176.36  | 176.28  | 176.23  | 176.26  | 176.21  |
| MAX. | 176.68  | 176.70  | 176.68  | 176.76  | 176.62  | 176.62  | 176.57  | 176.49  | 176.50  | 176.41  | 176.50  | 176.40  |
|      | 1300/20 | 1100/20 | 0200/13 | 2000/27 | 1500/16 | 1200/08 | 1700/16 | 1700/18 | 2100/04 | 0300/24 | 1800/06 | 1900/14 |
| MIN. | 176.25  | 176.21  | 176.27  | 176.38  | 176.39  | 176.38  | 176.32  | 176.22  | 176.19  | 176.03  | 176.10  | 176.05  |
|      | 0300/11 | 0400/22 | 1400/27 | 1900/18 | 1800/13 | 2300/19 | 1800/15 | 1800/26 | 2200/13 | 1000/29 | 0100/18 | 0900/26 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.38

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 7044: Calumet Harbor, Illinois on Lake Michigan

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 176.56 May  
 Daily mean elevation: 176.74 6 Apr  
 Instant/hourly elevation: 176.99 1300/6 Apr

LOWEST  
 Monthly mean elevation: 176.19 Dec  
 Daily mean elevation: 176.06 27 Oct  
 Instant/hourly elevation: 175.84 1900/12 Dec

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.59 | 26 Jan |
| 176.61 | 11 Feb |
| 176.54 | 13 Mar |
| 176.74 | 6 Apr  |
| 176.69 | 24 May |
| 176.69 | 8 Jun  |
| 176.52 | 1 Jul  |
| 176.51 | 18 Aug |
| 176.49 | 4 Sep  |
| 176.43 | 5 Oct  |
| 176.41 | 20 Nov |
| 176.31 | 11 Dec |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.22 | 16 Jan |
| 176.24 | 22 Feb |
| 176.32 | 6 Mar  |
| 176.44 | 19 Apr |
| 176.46 | 9 May  |
| 176.43 | 19 Jun |
| 176.36 | 29 Jul |
| 176.30 | 31 Aug |
| 176.22 | 20 Sep |
| 176.06 | 27 Oct |
| 176.07 | 17 Nov |
| 176.08 | 12 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 176.70        |     |     |     | 1   |     |     |     |     |     |     |     |     | 176.70        | 1                          |
| 176.65        |     |     |     |     | 1   | 1   |     |     |     |     |     |     | 176.65        | 3                          |
| 176.60        |     | 1   |     | 3   | 4   | 2   |     |     |     |     |     |     | 176.60        | 13                         |
| 176.55        | 1   | 1   |     | 5   | 11  | 3   |     |     |     |     |     |     | 176.55        | 34                         |
| 176.50        | 4   | 8   | 1   | 10  | 12  | 10  | 1   | 1   |     |     |     |     | 176.50        | 81                         |
| 176.45        | 2   | 1   | 9   | 8   | 3   | 11  | 17  |     | 1   |     |     |     | 176.45        | 133                        |
| 176.40        | 8   | 5   | 7   | 3   |     | 3   | 10  | 3   | 1   | 1   | 1   |     | 176.40        | 175                        |
| 176.35        | 3   | 7   | 13  |     |     |     | 3   | 15  | 2   | 1   |     |     | 176.35        | 219                        |
| 176.30        | 7   | 3   | 1   |     |     |     |     | 11  | 7   | 8   | 3   | 2   | 176.30        | 261                        |
| 176.25        | 1   | 2   |     |     |     |     |     | 1   | 13  | 4   | 10  | 5   | 176.25        | 297                        |
| 176.20        | 5   | 1   |     |     |     |     |     |     | 6   | 7   | 8   | 3   | 176.20        | 327                        |
| 176.15        |     |     |     |     |     |     |     |     |     | 5   | 6   | 8   | 176.15        | 346                        |
| 176.10        |     |     |     |     |     |     |     |     |     | 1   |     | 9   | 176.10        | 356                        |
| 176.05        |     |     |     |     |     |     |     |     |     | 4   | 2   | 2   | 176.05        | 364                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7044: Calumet Harbor, Illinois on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.34  | 176.54  | 176.40  | 176.53  | 176.57  | 176.52  | 176.52  | 176.39  | 176.27  | 176.25  | 176.27  | 176.27  |
| 2    | 176.25  | 176.56  | 176.47  | 176.49  | 176.57  | 176.63  | 176.47  | 176.39  | 176.28  | 176.35  | 176.25  | 176.09  |
| 3    | 176.32  | 176.52  | 176.50  | 176.49  | 176.60  | 176.59  | 176.48  | 176.38  | 176.35  | 176.31  | 176.17  | 176.26  |
| 4    | 176.33  | 176.52  | 176.46  | 176.44  | 176.57  | 176.53  | 176.48  | 176.38  | 176.49  | 176.40  | 176.26  | 176.19  |
| 5    | 176.27  | 176.42  | 176.36  | 176.48  | 176.56  | 176.48  | 176.48  | 176.39  | 176.45  | 176.43  | 176.29  | 176.19  |
| 6    | 176.35  | 176.38  | 176.32  | 176.74  | 176.55  | 176.50  | 176.47  | 176.34  | 176.32  | 176.31  | 176.34  | 176.14  |
| 7    | 176.44  | 176.29  | 176.40  | 176.51  | 176.58  | 176.54  | 176.45  | 176.38  | 176.24  | 176.27  | 176.28  | 176.27  |
| 8    | 176.41  | 176.38  | 176.36  | 176.53  | 176.51  | 176.69  | 176.43  | 176.38  | 176.22  | 176.33  | 176.24  | 176.28  |
| 9    | 176.42  | 176.48  | 176.39  | 176.53  | 176.46  | 176.63  | 176.44  | 176.40  | 176.28  | 176.33  | 176.22  | 176.20  |
| 10   | 176.33  | 176.51  | 176.40  | 176.60  | 176.55  | 176.54  | 176.44  | 176.39  | 176.28  | 176.24  | 176.31  | 176.31  |
| 11   | 176.25  | 176.61  | 176.45  | 176.62  | 176.53  | 176.46  | 176.44  | 176.40  | 176.31  | 176.31  | 176.23  | 176.31  |
| 12   | 176.24  | 176.53  | 176.49  | 176.57  | 176.53  | 176.47  | 176.47  | 176.38  | 176.31  | 176.32  | 176.20  | 176.08  |
| 13   | 176.51  | 176.38  | 176.54  | 176.52  | 176.55  | 176.49  | 176.41  | 176.35  | 176.27  | 176.20  | 176.24  | 176.17  |
| 14   | 176.34  | 176.35  | 176.49  | 176.53  | 176.55  | 176.48  | 176.42  | 176.32  | 176.28  | 176.09  | 176.23  | 176.24  |
| 15   | 176.25  | 176.53  | 176.47  | 176.49  | 176.55  | 176.49  | 176.42  | 176.32  | 176.33  | 176.18  | 176.28  | 176.30  |
| 16   | 176.22  | 176.38  | 176.42  | 176.48  | 176.61  | 176.52  | 176.46  | 176.35  | 176.29  | 176.20  | 176.07  | 176.12* |
| 17   | 176.41  | 176.42  | 176.40  | 176.45  | 176.62  | 176.55  | 176.47  | 176.38  | 176.25  | 176.24  | 176.07  | /       |
| 18   | 176.46  | 176.41  | 176.40  | 176.48  | 176.60  | 176.50  | 176.47  | 176.51  | 176.26  | 176.27  | 176.18  | /       |
| 19   | 176.54  | 176.41  | 176.42  | 176.44  | 176.59  | 176.43  | 176.47  | 176.44  | 176.24  | 176.27  | 176.29  | 176.12  |
| 20   | 176.54  | 176.53  | 176.46  | 176.51  | 176.58  | 176.45  | 176.48  | 176.43  | 176.22  | 176.22  | 176.41  | 176.12  |
| 21   | 176.54  | 176.29  | 176.45  | 176.50  | 176.58  | 176.49  | 176.49  | 176.43  | 176.25  | 176.25  | 176.28  | 176.19  |
| 22   | 176.39  | 176.24  | 176.40  | 176.57  | 176.61  | 176.51  | 176.49  | 176.36  | 176.29  | 176.29  | 176.26  | 176.19  |
| 23   | 176.41  | 176.38  | 176.42  | 176.62  | 176.63  | 176.58  | 176.49  | 176.39  | 176.31  | 176.21  | 176.19  | 176.17  |
| 24   | 176.45  | 176.38  | 176.43  | 176.54  | 176.69  | 176.49  | 176.46  | 176.36  | 176.28  | 176.31  | 176.23  | 176.21  |
| 25   | 176.48  | 176.39  | 176.38  | 176.49  | 176.56  | 176.45  | 176.46  | 176.31  | 176.27  | 176.21  | 176.28  | 176.15  |
| 26   | 176.59  | 176.34  | 176.37  | 176.57  | 176.47  | 176.54  | 176.49  | 176.31  | 176.26  | 176.18  | 176.32  | 176.14  |
| 27   | 176.44  | 176.51  | 176.36  | 176.63  | 176.50  | 176.51  | 176.42  | 176.31  | 176.31  | 176.06  | 176.16  | 176.19  |
| 28   | 176.45  | 176.35  | 176.41  | 176.59  | 176.54  | 176.50  | 176.41  | 176.35  | 176.38  | 176.09  | 176.25  | 176.13  |
| 29   | 176.38  | 176.42  | 176.49  | 176.53  | 176.55  | 176.54  | 176.36  | 176.35  | 176.36  | 176.11  | 176.20  | 176.14  |
| 30   | 176.32  |         | 176.39  | 176.54  | 176.52  | 176.56  | 176.40  | 176.34  | 176.26  | 176.18  | 176.30  | 176.14  |
| 31   | 176.40  |         | 176.48  |         | 176.52  |         | 176.40  | 176.30  |         | 176.08  |         | 176.24  |
| MEAN | 176.39  | 176.43  | 176.43  | 176.53  | 176.56  | 176.52  | 176.45  | 176.37  | 176.30  | 176.24  | 176.24  | 176.19  |
| MAX. | 176.84  | 176.85  | 176.67  | 176.99  | 176.88  | 176.84  | 176.70  | 176.70  | 176.77  | 176.59  | 176.56  | 176.56  |
| MIN. | 0100/13 | 0800/20 | 2400/19 | 1300/06 | 1500/24 | 2100/08 | 0200/17 | 1800/18 | 1900/04 | 2000/04 | 1100/20 | 1900/14 |
|      | 175.94  | 175.93  | 176.22  | 176.31  | 176.31  | 176.24  | 176.08  | 176.16  | 175.97  | 175.93  | 175.94  | 175.84  |
|      | 0100/11 | 0400/22 | 1400/06 | 0600/17 | 1500/09 | 0800/22 | 1900/15 | 0800/15 | 2400/19 | 2000/27 | 2300/16 | 1900/12 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.39

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7057: Milwaukee, Wisconsin on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.56 May  
Daily mean elevation: 176.64 27 Apr  
Instant/hourly elevation: 176.84 2400/5 Apr

LOWEST  
Monthly mean elevation: 176.22 Dec  
Daily mean elevation: 176.10 29 Oct  
Instant/hourly elevation: 176.03 0700/29 Oct

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.59 | 20 Jan |
| 176.54 | 11 Feb |
| 176.55 | 12 Mar |
| 176.64 | 27 Apr |
| 176.61 | 23 May |
| 176.62 | 8 Jun  |
| 176.50 | 1 Jul  |
| 176.47 | 18 Aug |
| 176.41 | 4 Sep  |
| 176.37 | 5 Oct  |
| 176.35 | 26 Nov |
| 176.29 | 11 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.26 | 5 Jan  |
| 176.34 | 22 Feb |
| 176.35 | 27 Mar |
| 176.45 | 18 Apr |
| 176.51 | 26 May |
| 176.46 | 26 Jun |
| 176.39 | 29 Jul |
| 176.30 | 26 Aug |
| 176.23 | 21 Sep |
| 176.10 | 29 Oct |
| 176.11 | 17 Nov |
| 176.14 | 25 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 176.60        |     |     |     | 2   | 1   | 1   |     |     |     |     |     |     | 176.60        | 4                          |
| 176.55        | 1   |     |     | 3   | 18  | 2   |     |     |     |     |     |     | 176.55        | 28                         |
| 176.50        | 4   | 1   | 3   | 17  | 12  | 14  |     |     |     |     |     |     | 176.50        | 79                         |
| 176.45        | 5   | 7   | 3   | 7   |     | 13  | 18  | 1   |     |     |     |     | 176.45        | 133                        |
| 176.40        | 10  | 11  | 15  | 1   |     |     | 12  | 9   | 1   |     |     |     | 176.40        | 192                        |
| 176.35        | 6   | 8   | 9   |     |     |     | 1   | 11  | 3   | 1   |     |     | 176.35        | 231                        |
| 176.30        | 4   | 2   | 1   |     |     |     |     | 9   | 11  | 6   | 8   |     | 176.30        | 272                        |
| 176.25        | 1   |     |     |     |     |     |     | 1   | 13  | 7   | 12  | 5   | 176.25        | 311                        |
| 176.20        |     |     |     |     |     |     |     |     | 2   | 9   | 9   | 15  | 176.20        | 346                        |
| 176.15        |     |     |     |     |     |     |     |     |     | 5   |     | 10  | 176.15        | 361                        |
| 176.10        |     |     |     |     |     |     |     |     |     | 2   | 1   | 1   | 176.10        | 365                        |
| 176.05        |     |     |     |     |     |     |     |     |     | 1   |     |     | 176.05        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7057: Milwaukee, Wisconsin on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.37  | 176.49  | 176.44  | 176.49  | 176.56  | 176.54  | 176.50  | 176.42  | 176.30  | 176.27  | 176.22  | 176.25  |
| 2    | 176.34  | 176.50  | 176.45  | 176.51  | 176.56  | 176.59  | 176.48  | 176.41  | 176.30  | 176.32  | 176.23  | 176.16  |
| 3    | 176.39  | 176.49  | 176.43  | 176.51  | 176.58  | 176.55  | 176.48  | 176.40  | 176.35  | 176.31  | 176.22  | 176.22  |
| 4    | 176.34  | 176.48  | 176.42  | 176.47  | 176.56  | 176.53  | 176.49  | 176.41  | 176.41  | 176.32  | 176.28  | 176.18  |
| 5    | 176.26  | 176.42  | 176.38  | 176.53  | 176.54  | 176.50  | 176.49  | 176.39  | 176.39  | 176.37  | 176.31  | 176.22  |
| 6    | 176.35  | 176.39  | 176.38  | 176.58  | 176.55  | 176.52  | 176.47  | 176.35  | 176.32  | 176.31  | 176.34  | 176.22  |
| 7    | 176.43  | 176.38  | 176.41  | 176.48  | 176.60  | 176.54  | 176.45  | 176.39  | 176.31  | 176.29  | 176.29  | 176.24  |
| 8    | 176.42  | 176.41  | 176.45  | 176.53  | 176.60  | 176.62  | 176.44  | 176.39  | 176.30  | 176.34  | 176.25  | 176.25  |
| 9    | 176.41  | 176.44  | 176.40  | 176.55  | 176.55  | 176.56  | 176.45  | 176.40  | 176.28  | 176.32  | 176.26  | 176.21  |
| 10   | 176.37  | 176.47  | 176.39  | 176.55  | 176.55  | 176.52  | 176.45  | 176.40  | 176.27  | 176.24  | 176.29  | 176.26  |
| 11   | 176.34  | 176.54  | 176.48  | 176.53  | 176.53  | 176.50  | 176.45  | 176.41  | 176.32  | 176.23  | 176.23  | 176.29  |
| 12   | 176.41  | 176.46  | 176.55  | 176.54  | 176.55  | 176.50  | 176.46  | 176.39  | 176.32  | 176.28  | 176.30  | 176.18  |
| 13   | 176.44  | 176.38  | 176.53  | 176.54  | 176.53  | 176.51  | 176.44  | 176.39  | 176.25  | 176.24  | 176.28  | 176.20  |
| 14   | 176.40  | 176.43  | 176.46  | 176.53  | 176.57  | 176.49  | 176.43  | 176.35  | 176.27  | 176.19  | 176.22  | 176.27  |
| 15   | 176.38  | 176.50  | 176.44  | 176.48  | 176.57  | 176.49  | 176.47  | 176.32  | 176.32  | 176.25  | 176.33  | 176.24  |
| 16   | 176.36  | 176.44  | 176.42  | 176.50  | 176.56  | 176.52  | 176.46  | 176.36  | 176.33  | 176.24  | 176.22  | 176.17  |
| 17   | 176.43  | 176.42  | 176.40  | 176.49  | 176.58  | 176.54  | 176.44  | 176.39  | 176.31  | 176.26  | 176.11  | 176.24  |
| 18   | 176.46  | 176.41  | 176.39  | 176.45  | 176.57  | 176.52  | 176.46  | 176.47  | 176.29  | 176.24  | 176.22  | 176.21  |
| 19   | 176.53  | 176.43  | 176.39  | 176.46  | 176.57  | 176.47  | 176.46  | 176.43  | 176.31  | 176.26  | 176.33  | 176.24  |
| 20   | 176.59  | 176.45  | 176.42  | 176.53  | 176.58  | 176.48  | 176.46  | 176.41  | 176.26  | 176.25  | 176.31  | 176.21  |
| 21   | 176.52  | 176.35  | 176.43  | 176.51  | 176.57  | 176.50  | 176.48  | 176.42  | 176.23  | 176.25  | 176.25  | 176.17  |
| 22   | 176.43  | 176.34  | 176.45  | 176.55  | 176.59  | 176.52  | 176.47  | 176.42  | 176.33  | 176.26  | 176.28  | 176.26  |
| 23   | 176.46  | 176.37  | 176.46  | 176.61  | 176.61  | 176.49  | 176.48  | 176.42  | 176.28  | 176.25  | 176.27  | 176.26  |
| 24   | 176.49  | 176.36  | 176.45  | 176.52  | 176.58  | 176.52  | 176.47  | 176.36  | 176.27  | 176.28  | 176.31  | 176.20  |
| 25   | 176.52  | 176.38  | 176.43  | 176.53  | 176.54  | 176.47  | 176.46  | 176.33  | 176.29  | 176.19  | 176.32  | 176.14  |
| 26   | 176.55  | 176.40  | 176.38  | 176.56  | 176.51  | 176.46  | 176.47  | 176.30  | 176.30  | 176.20  | 176.35  | 176.18  |
| 27   | 176.44  | 176.45  | 176.35  | 176.64  | 176.53  | 176.48  | 176.44  | 176.35  | 176.31  | 176.17  | 176.26  | 176.25  |
| 28   | 176.46  | 176.39  | 176.45  | 176.57  | 176.56  | 176.49  | 176.44  | 176.34  | 176.36  | 176.12  | 176.27  | 176.16  |
| 29   | 176.46  | 176.41  | 176.51  | 176.53  | 176.56  | 176.52  | 176.39  | 176.35  | 176.36  | 176.10  | 176.27  | 176.17  |
| 30   | 176.44  |         | 176.39  | 176.55  | 176.53  | 176.51  | 176.41  | 176.35  | 176.28  | 176.17  | 176.29  | 176.22  |
| 31   | 176.45  |         | 176.45  |         | 176.53  |         | 176.41  | 176.34  |         | 176.14  |         | 176.24  |
| MEAN | 176.43  | 176.43  | 176.43  | 176.53  | 176.56  | 176.52  | 176.46  | 176.38  | 176.31  | 176.25  | 176.27  | 176.22  |
| MAX. | 176.73  | 176.58  | 176.67  | 176.84  | 176.68  | 176.67  | 176.66  | 176.60  | 176.52  | 176.42  | 176.46  | 176.44  |
|      | 2300/19 | 1800/01 | 0200/13 | 2400/05 | 0800/08 | 1600/08 | 1200/15 | 1900/18 | 2100/04 | 0200/05 | 0100/10 | 0300/23 |
| MIN. | 176.22  | 176.20  | 176.26  | 176.31  | 176.39  | 176.36  | 176.30  | 176.22  | 176.17  | 176.03  | 176.06  | 176.04  |
|      | 1000/05 | 0300/22 | 1400/26 | 2000/22 | 2000/13 | 0100/23 | 2000/16 | 1000/15 | 0400/21 | 0700/29 | 1500/17 | 2000/28 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.40

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7068: Kewaunee, Wisconsin on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.54 May  
Daily mean elevation: 176.61 23 Apr  
Instant/hourly elevation: 176.77 0200/23 Apr

LOWEST  
Monthly mean elevation: 176.22 Dec  
Daily mean elevation: 176.02 17 Nov  
Instant/hourly elevation: 175.82 0400/17 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.59 | 20 Jan |
| 176.47 | 11 Feb |
| 176.59 | 12 Mar |
| 176.61 | 23 Apr |
| 176.59 | 8 May  |
| 176.55 | 8 Jun  |
| 176.47 | 6 Jul  |
| 176.45 | 18 Aug |
| 176.38 | 5 Sep  |
| 176.33 | 5 Oct  |
| 176.35 | 27 Nov |
| 176.31 | 23 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.24 | 5 Jan  |
| 176.35 | 23 Feb |
| 176.34 | 27 Mar |
| 176.43 | 18 Apr |
| 176.49 | 13 May |
| 176.43 | 26 Jun |
| 176.38 | 30 Jul |
| 176.30 | 15 Aug |
| 176.20 | 21 Sep |
| 176.06 | 29 Oct |
| 176.02 | 17 Nov |
| 176.13 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.60                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 176.60        | 1                          |
| 176.55                                                  | 1   |     | 1   | 1   | 10  |     |     |     |     |     |     |     | 176.55        | 14                         |
| 176.50                                                  | 2   |     | 1   | 12  | 20  | 12  |     |     |     |     |     |     | 176.50        | 61                         |
| 176.45                                                  | 5   | 5   | 5   | 15  | 1   | 16  | 6   |     |     |     |     |     | 176.45        | 114                        |
| 176.40                                                  | 14  | 13  | 9   | 1   |     | 2   | 22  | 8   |     |     |     |     | 176.40        | 183                        |
| 176.35                                                  | 6   | 10  | 11  |     |     |     | 3   | 12  | 2   |     |     |     | 176.35        | 227                        |
| 176.30                                                  | 2   | 1   | 1   |     |     |     |     | 10  | 9   | 3   | 7   |     | 176.30        | 262                        |
| 176.25                                                  |     |     |     |     |     |     |     | 1   | 14  | 8   | 10  | 2   | 176.25        | 298                        |
| 176.20                                                  | 1   |     |     |     |     |     |     |     | 4   | 10  | 6   | 14  | 176.20        | 333                        |
| 176.15                                                  |     |     |     |     |     |     |     |     | 1   | 6   | 6   | 9   | 176.15        | 355                        |
| 176.10                                                  |     |     |     |     |     |     |     |     |     |     |     | 3   | 176.10        | 358                        |
| 176.05                                                  |     |     |     |     |     |     |     |     |     | 2   |     |     | 176.05        | 360                        |
| 176.00                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 176.00        | 361                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7068: Kewaunee, Wisconsin on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.37  | 176.41  | 176.45  | 176.46  | 176.53  | 176.53  | 176.47  | 176.40  | 176.30  | 176.27  | 176.17  | 176.25  |
| 2    | 176.36  | 176.46  | 176.42  | 176.48  | 176.54  | 176.55  | 176.45  | 176.41  | 176.30  | 176.29  | 176.20  | 176.21  |
| 3    | 176.42  | 176.47  | 176.39  | 176.52  | 176.56  | 176.53  | 176.47  | 176.40  | 176.33  | 176.30  | 176.21  | 176.16  |
| 4    | 176.34  | 176.43  | 176.41  | 176.47  | 176.54  | 176.52  | 176.46  | 176.40  | 176.34  | 176.28  | 176.27  | 176.15  |
| 5    | 176.24  | 176.41  | 176.38  | 176.50  | 176.52  | 176.50  | 176.46  | 176.38  | 176.38  | 176.33  | 176.29  | 176.23  |
| 6    | 176.34  | 176.38  | 176.38  | 176.50  | 176.53  | 176.51  | 176.47  | 176.34  | 176.32  | 176.29  | 176.34  | 176.24  |
| 7    | 176.43  | 176.38  | 176.38  | 176.46  | 176.57  | 176.53  | 176.45  | 176.38  | 176.31  | 176.28  | 176.28  | 176.21  |
| 8    | 176.40  | 176.40  | 176.46  | 176.50  | 176.59  | 176.55  | 176.43  | 176.38  | 176.27  | 176.31  | 176.24  | 176.24  |
| 9    | 176.38  | 176.42  | 176.39  | 176.53  | 176.58  | 176.52  | 176.42  | 176.38  | 176.25  | 176.31  | 176.22  | 176.20  |
| 10   | 176.41* | 176.43  | 176.38  | 176.50  | 176.53  | 176.52  | 176.44  | 176.40  | 176.24  | 176.22  | 176.26  | 176.22  |
| 11   | 176.38* | 176.47  | 176.43  | 176.49  | 176.54  | 176.50  | 176.42  | 176.41  | 176.31  | 176.18  | 176.22  | 176.26  |
| 12   | 176.45  | 176.43  | 176.59  | 176.51  | 176.57  | 176.49  | 176.44  | 176.39  | 176.33* | 176.24  | 176.31  | 176.26  |
| 13   | 176.40  | 176.38  | 176.51  | 176.52  | 176.49  | 176.50  | 176.46  | 176.40  | 176.24* | 176.23  | 176.24  | 176.20  |
| 14   | 176.45  | 176.43  | 176.42  | 176.50  | 176.56  | 176.49  | 176.42  | 176.35  | 176.24  | 176.18  | 176.19  | 176.25  |
| 15   | 176.41  | 176.46  | 176.41  | 176.46  | 176.57  | 176.47  | 176.45  | 176.30  | 176.29  | 176.24  | 176.30  | 176.21  |
| 16   | 176.41  | 176.46  | 176.39  | 176.50  | 176.53  | 176.48  | 176.44  | 176.36  | 176.33  | 176.23  | 176.20  | 176.19  |
| 17   | 176.41  | 176.42  | 176.40  | 176.49  | 176.56  | 176.51  | 176.44  | 176.35  | 176.30  | 176.20  | 176.02  | 176.22  |
| 18   | 176.44  | 176.43  | /       | 176.43  | 176.56  | 176.50  | 176.43  | 176.45  | 176.28  | 176.23  | 176.19  | 176.24  |
| 19   | 176.47  | 176.43  | /       | 176.46  | 176.56  | 176.47  | 176.45  | 176.44  | 176.35  | 176.23  | 176.34  | 176.26  |
| 20   | 176.59  | 176.39  | /       | 176.52  | 176.55  | 176.45  | 176.44  | 176.42  | 176.27  | 176.24  | 176.19  | 176.25  |
| 21   | 176.48  | 176.40  | 176.40* | 176.50  | 176.55  | 176.49  | 176.44  | 176.42  | 176.20  | 176.22  | 176.21  | 176.16  |
| 22   | 176.45  | 176.36  | 176.46  | 176.52  | 176.55  | 176.52  | 176.44  | 176.42  | 176.30  | 176.23  | 176.29  | 176.31  |
| 23   | 176.44  | 176.35  | 176.46  | 176.61  | 176.54  | 176.49  | 176.45  | 176.41  | 176.27  | 176.26  | 176.29  | 176.31  |
| 24   | 176.46  | 176.36  | 176.43  | 176.52  | 176.53  | 176.53  | 176.44  | 176.36  | 176.26  | 176.27  | 176.31  | 176.21  |
| 25   | 176.51  | 176.37  | 176.47  | 176.53  | 176.53  | 176.46  | 176.43  | 176.31  | 176.28  | 176.19* | 176.31  | 176.13  |
| 26   | 176.51  | 176.42  | 176.37  | 176.52  | 176.53  | 176.43  | 176.44  | 176.31  | 176.30  | /       | 176.34  | 176.20  |
| 27   | 176.43  | 176.42  | 176.34  | 176.60  | 176.54  | 176.47  | 176.43  | 176.33  | 176.28  | /       | 176.35  | 176.20* |
| 28   | 176.43  | 176.41  | 176.45  | 176.55  | 176.54  | 176.47  | 176.42  | 176.31  | 176.34  | 176.07* | 176.28  | 176.14* |
| 29   | 176.48  | 176.38  | 176.50  | 176.51  | 176.55  | 176.46  | 176.38  | 176.31  | 176.36  | 176.06  | 176.29  | 176.18  |
| 30   | 176.46  |         | 176.38  | 176.53  | 176.53  | 176.46  | 176.38  | 176.34  | 176.29  | 176.16  | 176.29  | 176.24  |
| 31   | 176.45  |         | 176.42  |         | 176.52  |         | 176.39  | 176.35  |         | 176.17  |         | 176.20* |
| MEAN | 176.43  | 176.41  | 176.42  | 176.51  | 176.54  | 176.50  | 176.44  | 176.37  | 176.30  | 176.23  | 176.25  | 176.22  |
| MAX. | 176.72  | 176.54  | 176.71  | 176.77  | 176.70  | 176.72  | 176.68  | 176.58  | 176.44  | 176.38  | 176.52  | 176.47  |
|      | 0800/20 | 1500/03 | 1700/12 | 0200/23 | 0600/15 | 1600/22 | 1000/15 | 0900/18 | 1400/19 | 1400/05 | 0400/16 | 2200/22 |
| MIN. | 176.21  | 176.29  | 176.27  | 176.20  | 176.41  | 176.34  | 176.21  | 176.20  | 176.14  | 175.99  | 175.82  | 176.06  |
|      | 0800/05 | 1100/22 | 1800/27 | 2000/22 | 0300/13 | 1400/22 | 1300/15 | 1400/15 | 1800/23 | 0500/29 | 0400/17 | 0400/26 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.38

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7072: Sturgeon Bay Canal, Wisconsin on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.53 May  
Daily mean elevation: 176.59 23 Apr  
Instant/hourly elevation: 176.71 0700/23 Apr

LOWEST  
Monthly mean elevation: 176.19 Dec  
Daily mean elevation: 176.05 29 Oct  
Instant/hourly elevation: 175.99 0300/29 Oct

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.59 | 20 Jan |
| 176.45 | 11 Feb |
| 176.57 | 12 Mar |
| 176.59 | 23 Apr |
| 176.56 | 9 May  |
| 176.54 | 8 Jun  |
| 176.45 | 5 Jul  |
| 176.45 | 18 Aug |
| 176.37 | 5 Sep  |
| 176.31 | 9 Oct  |
| 176.35 | 6 Nov  |
| 176.29 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.22 | 5 Jan  |
| 176.33 | 23 Feb |
| 176.32 | 27 Mar |
| 176.42 | 18 Apr |
| 176.47 | 13 May |
| 176.42 | 26 Jun |
| 176.37 | 30 Jul |
| 176.29 | 28 Aug |
| 176.22 | 21 Sep |
| 176.05 | 29 Oct |
| 176.08 | 17 Nov |
| 176.11 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.55                                                  | 1   |     | 1   | 2   | 2   |     |     |     |     |     |     |     | 176.55        | 6                          |
| 176.50                                                  |     |     |     | 6   | 28  | 5   |     |     |     |     |     |     | 176.50        | 45                         |
| 176.45                                                  | 7   |     | 4   | 15  | 1   | 20  |     |     |     |     |     |     | 176.45        | 92                         |
| 176.40                                                  | 10  | 14  | 6   | 7   |     | 5   | 27  | 4   |     |     |     |     | 176.40        | 165                        |
| 176.35                                                  | 7   | 8   | 18  |     |     |     | 4   | 16  | 1   |     |     |     | 176.35        | 219                        |
| 176.30                                                  | 5   | 7   | 2   |     |     |     |     | 8   | 6   | 2   | 4   |     | 176.30        | 253                        |
| 176.25                                                  |     |     |     |     |     |     |     | 3   | 18  | 7   | 13  | 3   | 176.25        | 297                        |
| 176.20                                                  | 1   |     |     |     |     |     |     |     | 5   | 11  | 6   | 9   | 176.20        | 329                        |
| 176.15                                                  |     |     |     |     |     |     |     |     |     | 7   | 5   | 14  | 176.15        | 355                        |
| 176.10                                                  |     |     |     |     |     |     |     |     |     | 2   | 1   | 5   | 176.10        | 363                        |
| 176.05                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 176.05        | 365                        |
| 176.00                                                  |     |     |     |     |     |     |     |     |     | 1   |     |     | 176.00        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988  
Station 7072: Sturgeon Bay Canal, Wisconsin on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.35  | 176.39  | 176.44  | 176.44  | 176.51  | 176.52  | 176.44  | 176.38  | 176.29  | 176.26  | 176.16  | 176.23  |
| 2    | 176.34  | 176.43  | 176.38  | 176.43  | 176.52  | 176.54  | 176.45  | 176.40  | 176.29  | 176.28  | 176.20  | 176.16  |
| 3    | 176.38  | 176.43  | 176.37  | 176.49  | 176.55  | 176.50  | 176.45  | 176.39  | 176.33  | 176.28  | 176.20  | 176.14  |
| 4    | 176.31  | 176.42  | 176.39  | 176.44  | 176.53  | 176.50  | 176.45  | 176.40  | 176.34  | 176.25  | 176.25  | 176.18  |
| 5    | 176.22  | 176.39  | 176.37  | 176.47  | 176.51  | 176.49  | 176.45  | 176.40  | 176.37  | 176.31  | 176.27  | 176.22  |
| 6    | 176.33  | 176.35  | 176.37  | 176.49  | 176.52  | 176.49  | 176.44  | 176.35  | 176.30  | 176.27  | 176.35  | 176.20  |
| 7    | 176.43  | 176.37  | 176.36  | 176.44  | 176.55  | 176.51  | 176.43  | 176.38  | 176.28  | 176.27  | 176.27  | 176.18  |
| 8    | 176.39  | 176.37  | 176.44  | 176.49  | 176.56  | 176.54  | 176.43  | 176.37  | 176.26  | 176.30  | 176.21  | 176.21  |
| 9    | 176.37  | 176.42  | 176.38  | 176.51  | 176.56  | 176.51  | 176.42  | 176.41  | 176.25  | 176.31  | 176.21  | 176.17  |
| 10   | 176.38  | 176.41  | 176.38  | 176.48  | 176.52  | 176.49  | 176.42  | 176.40  | 176.23  | 176.20  | 176.24  | 176.21  |
| 11   | 176.35  | 176.45  | 176.44  | 176.47  | 176.52  | 176.47  | 176.42  | 176.40  | 176.30  | 176.17  | 176.20  | 176.24  |
| 12   | 176.46  | 176.41  | 176.57  | 176.49  | 176.55  | 176.48  | 176.43  | 176.38  | 176.30  | 176.22  | 176.27  | 176.20  |
| 13   | 176.36  | 176.35  | 176.48  | 176.52  | 176.47  | 176.50  | 176.44  | 176.39  | 176.24  | 176.21  | 176.27  | 176.16  |
| 14   | 176.44  | 176.41  | 176.40  | 176.48  | 176.53  | 176.49  | 176.41  | 176.33  | 176.24  | 176.17  | 176.18  | 176.22  |
| 15   | 176.40  | 176.43  | 176.37  | 176.45  | 176.54  | 176.46  | 176.44  | 176.30  | 176.28  | 176.23  | 176.29  | 176.17  |
| 16   | 176.42  | 176.43  | 176.37  | 176.49  | 176.51  | 176.48  | 176.41  | 176.35  | 176.31  | 176.23  | 176.29  | 176.14  |
| 17   | 176.39  | 176.42  | 176.38  | 176.47  | 176.55  | 176.49  | 176.40  | 176.37  | 176.29  | 176.20  | 176.08  | 176.20  |
| 18   | 176.43  | 176.42  | 176.36  | 176.42  | 176.53  | 176.49  | 176.43  | 176.45  | 176.29  | 176.22  | 176.15  | 176.20  |
| 19   | 176.45  | 176.42  | 176.34  | 176.45  | 176.54  | 176.47  | 176.42  | 176.42  | 176.32  | 176.22  | 176.31  | 176.24  |
| 20   | 176.59  | 176.35  | 176.36  | 176.50  | 176.55  | 176.44  | 176.42  | 176.40  | 176.27  | 176.22  | 176.26  | 176.23  |
| 21   | 176.46  | 176.39  | 176.38  | 176.48  | 176.53  | 176.47  | 176.43  | 176.40  | 176.22  | 176.21  | 176.23  | 176.13  |
| 22   | 176.43  | 176.35  | 176.44  | 176.51  | 176.54  | 176.47  | 176.43  | 176.41  | 176.30  | 176.22  | 176.27  | 176.29  |
| 23   | 176.42  | 176.33  | 176.46  | 176.59  | 176.53  | 176.47  | 176.44  | 176.40  | 176.26  | 176.25  | 176.26  | 176.28  |
| 24   | 176.46  | 176.34  | 176.43  | 176.52  | 176.51  | 176.49  | 176.44  | 176.36  | 176.27  | 176.26  | 176.29  | 176.18  |
| 25   | 176.48  | 176.36  | 176.46  | 176.52  | 176.51  | 176.44  | 176.42  | 176.31  | 176.26  | 176.17  | 176.31  | 176.11  |
| 26   | 176.49  | 176.41  | 176.37  | 176.49  | 176.51  | 176.42  | 176.43  | 176.29  | 176.29  | 176.16  | 176.33  | 176.16  |
| 27   | 176.42  | 176.40  | 176.32  | 176.58  | 176.52  | 176.47  | 176.42  | 176.32  | 176.27  | 176.20  | 176.30  | 176.26  |
| 28   | 176.42  | 176.40  | 176.44  | 176.53  | 176.53  | 176.45  | 176.42  | 176.29  | 176.33  | 176.10  | 176.23  | 176.14  |
| 29   | 176.49  | 176.35  | 176.49  | 176.49  | 176.54  | 176.46  | 176.38  | 176.31  | 176.34  | 176.05  | 176.27  | 176.16  |
| 30   | 176.46  |         | 176.38  | 176.50  | 176.52  | 176.44  | 176.37  | 176.33  | 176.29  | 176.15  | 176.26  | 176.20  |
| 31   | 176.44  |         | 176.40  |         | 176.52  |         | 176.38  | 176.35  |         | 176.13  |         | 176.21  |
| MEAN | 176.41  | 176.39  | 176.40  | 176.49  | 176.53  | 176.48  | 176.42  | 176.37  | 176.29  | 176.22  | 176.25  | 176.19  |
| MAX. | 176.69  | 176.50  | 176.65  | 176.71  | 176.65  | 176.57  | 176.60  | 176.56  | 176.40  | 176.35  | 176.46  | 176.40  |
|      | 0600/20 | 0700/16 | 1800/12 | 0700/23 | 0600/15 | 1300/24 | 1100/15 | 2400/18 | 1600/05 | 1600/05 | 1000/16 | 1000/23 |
| MIN. | 176.21  | 176.22  | 176.27  | 176.35  | 176.37  | 176.38  | 176.22  | 176.23  | 176.20  | 175.99  | 176.03  | 176.03  |
|      | 2400/05 | 1600/07 | 0100/20 | 2100/22 | 1700/13 | 0600/26 | 1500/15 | 2300/25 | 0500/21 | 0300/29 | 1600/17 | 2300/25 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.37

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7079: Green Bay, Wisconsin on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.53 May  
Daily mean elevation: 176.75 27 Apr  
Instant/hourly elevation: 177.10 0400/27 Apr

LOWEST  
Monthly mean elevation: 176.15 Dec  
Daily mean elevation: 175.88 16 Nov  
Instant/hourly elevation: 175.44 2100/16 Nov

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.58 | 20 Jan |
| 176.45 | 16 Feb |
| 176.68 | 12 Mar |
| 176.75 | 27 Apr |
| 176.64 | 24 May |
| 176.70 | 8 Jun  |
| 176.47 | 18 Jul |
| 176.58 | 18 Aug |
| 176.51 | 4 Sep  |
| 176.35 | 5 Oct  |
| 176.43 | 6 Nov  |
| 176.28 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.15 | 5 Jan  |
| 176.29 | 20 Feb |
| 176.31 | 27 Mar |
| 176.42 | 19 Apr |
| 176.44 | 26 May |
| 176.39 | 19 Jun |
| 176.33 | 29 Jul |
| 176.21 | 25 Aug |
| 176.19 | 20 Sep |
| 175.88 | 28 Oct |
| 175.88 | 16 Nov |
| 175.99 | 12 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.70                                                  |     |     |     | 1   |     |     |     |     |     |     |     |     | 176.70        | 1                          |
| 176.65                                                  |     |     | 1   | 1   |     | 1   |     |     |     |     |     |     | 176.65        | 4                          |
| 176.60                                                  |     |     |     |     | 1   |     |     |     |     |     |     |     | 176.60        | 5                          |
| 176.55                                                  | 1   |     |     | 2   | 4   | 3   |     | 1   |     |     |     |     | 176.55        | 16                         |
| 176.50                                                  |     |     |     | 5   | 16  | 7   |     |     | 1   |     |     |     | 176.50        | 45                         |
| 176.45                                                  | 5   |     | 4   | 15  | 9   | 11  | 2   | 1   |     |     |     |     | 176.45        | 92                         |
| 176.40                                                  | 9   | 8   | 7   | 6   | 1   | 7   | 22  | 5   | 1   |     | 1   |     | 176.40        | 159                        |
| 176.35                                                  | 6   | 13  | 11  |     |     | 1   | 5   | 9   | 3   |     | 1   |     | 176.35        | 208                        |
| 176.30                                                  | 4   | 7   | 8   |     |     |     | 2   | 8   | 2   | 4   | 3   |     | 176.30        | 246                        |
| 176.25                                                  | 3   | 1   |     |     |     |     |     | 6   | 10  | 2   | 6   | 2   | 176.25        | 276                        |
| 176.20                                                  | 2   |     |     |     |     |     |     | 1   | 10  | 8   | 7   | 2   | 176.20        | 306                        |
| 176.15                                                  |     |     |     |     |     |     |     |     | 3   | 8   | 9   | 12  | 176.15        | 338                        |
| 176.10                                                  | 1   |     |     |     |     |     |     |     |     | 1   | 1   | 9   | 176.10        | 350                        |
| 176.05                                                  |     |     |     |     |     |     |     |     |     | 5   |     | 3   | 176.05        | 358                        |
| 176.00                                                  |     |     |     |     |     |     |     |     |     | 2   |     | 1   | 176.00        | 361                        |
| 175.95                                                  |     |     |     |     |     |     |     |     |     |     |     | 2   | 175.95        | 363                        |
| 175.90                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 175.90        | 364                        |
| 175.85                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 175.85        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7079: Green Bay, Wisconsin on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.27  | 176.38  | 176.44  | 176.47  | 176.52  | 176.56  | 176.44  | 176.38  | 176.22  | 176.24  | 176.20  | 176.16  |
| 2    | 176.24  | 176.41  | 176.37  | 176.47  | 176.53  | 176.59  | 176.42  | 176.36  | 176.28  | 176.33  | 176.19  | 176.00  |
| 3    | 176.28  | 176.42  | 176.36  | 176.51  | 176.55  | 176.52  | 176.44  | 176.38  | 176.40  | 176.23  | 176.19  | 176.14  |
| 4    | 176.25  | 176.38  | 176.38  | 176.44  | 176.53  | 176.49  | 176.44  | 176.38  | 176.51  | 176.32  | 176.32  | 176.08  |
| 5    | 176.15  | 176.37  | 176.36  | 176.50  | 176.49  | 176.46  | 176.45  | 176.35  | 176.39  | 176.35  | 176.32  | 176.12  |
| 6    | 176.30  | 176.33  | 176.35  | 176.53  | 176.54  | 176.46  | 176.43  | 176.31  | 176.26  | 176.25  | 176.43  | 176.14  |
| 7    | 176.41  | 176.39  | 176.37  | 176.45  | 176.54  | 176.55  | 176.41  | 176.35  | 176.19  | 176.21  | 176.24  | 176.16  |
| 8    | 176.38  | 176.34  | 176.47  | 176.50  | 176.54  | 176.70  | 176.41  | 176.39  | 176.20  | 176.31  | 176.17  | 176.16  |
| 9    | 176.35  | 176.38  | 176.36  | 176.52  | 176.52  | 176.58  | 176.44  | 176.41  | 176.21  | 176.29  | 176.19  | 176.13  |
| 10   | 176.35  | 176.39  | 176.37  | 176.50  | 176.53  | 176.46  | 176.41  | 176.38  | 176.23  | 176.18  | 176.24  | 176.20  |
| 11   | 176.35  | 176.40  | 176.45  | 176.47  | 176.49  | 176.45  | 176.45  | 176.38  | 176.30  | 176.17  | 176.15  | 176.22  |
| 12   | 176.47  | 176.37  | 176.68  | 176.48  | 176.54  | 176.46  | 176.44  | 176.38  | 176.32  | 176.22  | 176.28  | 175.99  |
| 13   | 176.35  | 176.32  | 176.46  | 176.52  | 176.49  | 176.47  | 176.39  | 176.35  | 176.21  | 176.10  | 176.19  | 176.13  |
| 14   | 176.42  | 176.41  | 176.38  | 176.50  | 176.49  | 176.44  | 176.42  | 176.27  | 176.24  | 176.12  | 176.17  | 176.24  |
| 15   | 176.40  | 176.40  | 176.35  | 176.42  | 176.50  | 176.45  | 176.40  | 176.28  | 176.30  | 176.20  | 176.32  | 176.16  |
| 16   | 176.42  | 176.45  | 176.35  | 176.46  | 176.60  | 176.50  | 176.43  | 176.35  | 176.29  | 176.17  | 175.88  | 176.08  |
| 17   | 176.40  | 176.39  | 176.38  | 176.43  | 176.57  | 176.52  | 176.40  | 176.43  | 176.27  | 176.25  | 175.91  | 176.16  |
| 18   | 176.42  | 176.41  | 176.35  | 176.42  | 176.55  | 176.44  | 176.47  | 176.58  | 176.29  | 176.17  | 176.18  | 176.15  |
| 19   | 176.49  | 176.42  | 176.33  | 176.42  | 176.55  | 176.39  | 176.42  | 176.47  | 176.23  | 176.23  | 176.30  | 176.26  |
| 20   | 176.58  | 176.29  | 176.35  | 176.50  | 176.55  | 176.44  | 176.43  | 176.41  | 176.19  | 176.18  | 176.27  | 176.18  |
| 21   | 176.44  | 176.41  | 176.38  | 176.48  | 176.54  | 176.48  | 176.43  | 176.42  | 176.21  | 176.21  | 176.19  | 176.14  |
| 22   | 176.39  | 176.34  | 176.45  | 176.56  | 176.58  | 176.53  | 176.44  | 176.39  | 176.29  | 176.20  | 176.22  | 176.28  |
| 23   | 176.42  | 176.33  | 176.45  | 176.66  | 176.59  | 176.49  | 176.44  | 176.41  | 176.24  | 176.26  | 176.22  | 176.18  |
| 24   | 176.44  | 176.32  | 176.43  | 176.49  | 176.64  | 176.45  | 176.41  | 176.32  | 176.24  | 176.19  | 176.27  | 176.13  |
| 25   | 176.46  | 176.35  | 176.41  | 176.48  | 176.48  | 176.46  | 176.46  | 176.21  | 176.25  | 176.09  | 176.29  | 176.03  |
| 26   | 176.45  | 176.42  | 176.34  | 176.53  | 176.44  | 176.46  | 176.41  | 176.27  | 176.28  | 176.10  | 176.38  | 176.17  |
| 27   | 176.40  | 176.38  | 176.31  | 176.75  | 176.49  | 176.45  | 176.38  | 176.27  | 176.38  | 176.06  | 176.21  | 176.16  |
| 28   | 176.39  | 176.37  | 176.46  | 176.56  | 176.53  | 176.51  | 176.38  | 176.26  | 176.42  | 175.88  | 176.22  | 176.06  |
| 29   | 176.50  | 176.37  | 176.49  | 176.49  | 176.54  | 176.55  | 176.33  | 176.30  | 176.35  | 176.02  | 176.23  | 176.13  |
| 30   | 176.46  |         | 176.38  | 176.50  | 176.50  | 176.52  | 176.41  | 176.33  | 176.27  | 176.09  | 176.26  | 176.20  |
| 31   | 176.45  |         | 176.43  |         | 176.50  |         | 176.35  | 176.32  |         | 176.03  |         | 176.20  |
| MEAN | 176.39  | 176.38  | 176.40  | 176.50  | 176.53  | 176.49  | 176.42  | 176.36  | 176.28  | 176.18  | 176.22  | 176.15  |
| MAX. | 176.82  | 176.71  | 176.85  | 177.10  | 176.91  | 176.93  | 176.97  | 176.73  | 176.82  | 176.77  | 176.67  | 176.53  |
|      | 1000/20 | 1800/20 | 2200/12 | 0400/27 | 0600/16 | 2200/01 | 1200/15 | 1500/17 | 1900/27 | 1700/04 | 0700/06 | 1500/19 |
| MIN. | 175.92  | 175.96  | 176.10  | 176.22  | 176.09  | 176.21  | 175.86  | 175.99  | 175.94  | 175.71  | 175.44  | 175.76  |
|      | 0100/05 | 2300/20 | 1300/02 | 0200/17 | 1300/15 | 2000/19 | 1500/15 | 1200/25 | 1300/13 | 1300/28 | 2100/16 | 1400/12 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.36

ANNUAL SUMMARY OF LEVELS, 1988  
Station 7096: Port Inland, Michigan on Lake Michigan

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 176.48 May  
Daily mean elevation: 176.55 15 May  
Instant/hourly elevation: 176.82 1300/16 Nov

LOWEST  
Monthly mean elevation: 176.19 Dec  
Daily mean elevation: 176.02 29 Oct  
Instant/hourly elevation: 175.95 1500/3 Dec

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.49 | 20 Jan |
| 176.45 | 21 Feb |
| 176.47 | 25 Mar |
| 176.49 | 25 Apr |
| 176.55 | 15 May |
| 176.50 | 24 Jun |
| 176.42 | 28 Jul |
| 176.42 | 13 Aug |
| 176.37 | 19 Sep |
| 176.27 | 8 Oct  |
| 176.53 | 16 Nov |
| 176.39 | 23 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 176.24 | 5 Jan  |
| 176.28 | 29 Feb |
| 176.25 | 27 Mar |
| 176.34 | 18 Apr |
| 176.41 | 13 May |
| 176.38 | 30 Jun |
| 176.35 | 30 Jul |
| 176.24 | 26 Aug |
| 176.18 | 14 Sep |
| 176.02 | 29 Oct |
| 176.12 | 18 Nov |
| 176.09 | 21 Dec |

| Elev.<br>(m.) | ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
|               | Jan                                                     | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 176.50        |                                                         |     |     |     | 5   |     |     |     |     |     | 1   |     | 176.50        | 6                          |
| 176.45        | 3                                                       |     | 2   | 9   | 20  | 13  |     |     |     |     |     |     | 176.45        | 53                         |
| 176.40        | 11                                                      | 9   | 3   | 16  | 6   | 13  | 8   | 3   |     |     |     |     | 176.40        | 122                        |
| 176.35        | 11                                                      | 11  | 10  | 4   |     | 4   | 22  | 15  | 2   |     |     | 1   | 176.35        | 202                        |
| 176.30        | 5                                                       | 7   | 14  | 1   |     |     | 1   | 7   | 4   |     | 2   | 2   | 176.30        | 245                        |
| 176.25        |                                                         | 2   | 1   |     |     |     |     | 5   | 10  | 4   | 8   | 2   | 176.25        | 277                        |
| 176.20        | 1                                                       |     | 1   |     |     |     |     | 1   | 12  | 10  | 4   | 6   | 176.20        | 312                        |
| 176.15        |                                                         |     |     |     |     |     |     |     | 2   | 8   | 11  | 8   | 176.15        | 341                        |
| 176.10        |                                                         |     |     |     |     |     |     |     |     | 6   | 4   | 10  | 176.10        | 361                        |
| 176.05        |                                                         |     |     |     |     |     |     |     |     | 1   |     | 2   | 176.05        | 364                        |
| 176.00        |                                                         |     |     |     |     |     |     |     |     | 1   |     |     | 176.00        | 365                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 7096: Port Inland, Michigan on Lake Michigan

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 176.38  | 176.33  | 176.40  | 176.37  | 176.48  | 176.47  | 176.39  | 176.38  | 176.36  | 176.23  | 176.12  | 176.21  |
| 2    | 176.40  | 176.38  | 176.34  | 176.38  | 176.47  | 176.48  | 176.40  | 176.39  | 176.31  | 176.21  | 176.14  | 176.24  |
| 3    | 176.45  | 176.40  | 176.32  | 176.45  | 176.49  | 176.46  | 176.42  | 176.38  | 176.32  | 176.26  | 176.17  | 176.11  |
| 4    | 176.35  | 176.35  | 176.36  | 176.39  | 176.47  | 176.46  | 176.42  | 176.39  | 176.25  | 176.20  | 176.19  | 176.17  |
| 5    | 176.24  | 176.42  | 176.38  | 176.43  | 176.45  | 176.45  | 176.42  | 176.41  | 176.26  | 176.22  | 176.22  | 176.23  |
| 6    | 176.31  | 176.36  | 176.38  | 176.41  | 176.45  | 176.47  | 176.41  | 176.32  | 176.24  | 176.21  | 176.29  | 176.23  |
| 7    | 176.43  | 176.41  | 176.31  | 176.39  | 176.49  | 176.47  | 176.41  | 176.37  | 176.30  | 176.25  | 176.20  | 176.14  |
| 8    | 176.38  | 176.36  | 176.43  | 176.44  | 176.53  | 176.45  | 176.40  | 176.37  | 176.34  | 176.27  | 176.19  | 176.19  |
| 9    | 176.35  | 176.38  | 176.35  | 176.47  | 176.53  | 176.43  | 176.40  | 176.37  | 176.29  | 176.26  | 176.19  | 176.15  |
| 10   | 176.45  | 176.34  | 176.33  | 176.43  | 176.44  | 176.45  | 176.40  | 176.37  | 176.22  | 176.14  | 176.20  | 176.17  |
| 11   | 176.36  | 176.35  | 176.34  | 176.42  | 176.47  | 176.45  | 176.37  | 176.40  | 176.28  | 176.08  | 176.18  | 176.18  |
| 12   | 176.44  | 176.36  | 176.46  | 176.45  | 176.53  | 176.46  | 176.38  | 176.38  | 176.30  | 176.13  | 176.27  | 176.35  |
| 13   | 176.32  | 176.33  | 176.39  | 176.45  | 176.41  | 176.47  | 176.42  | 176.42  | 176.23  | 176.20  | 176.30  | 176.16  |
| 14   | 176.44  | 176.41  | 176.33  | 176.41  | 176.50  | 176.48  | 176.36  | 176.37  | 176.18  | 176.16  | 176.15  | 176.20  |
| 15   | 176.43  | 176.36  | 176.32  | 176.42  | 176.55  | 176.44  | 176.42  | 176.29  | 176.24  | 176.22  | 176.26  | 176.13  |
| 16   | 176.49  | 176.44  | 176.32  | 176.48  | 176.46  | 176.42  | 176.37  | 176.38  | 176.30  | 176.26  | 176.53  | 176.15  |
| 17   | 176.37  | 176.38  | 176.36  | 176.45  | 176.47  | 176.45  | 176.39  | 176.37  | 176.28  | 176.16* | 176.16  | 176.15  |
| 18   | 176.39  | 176.42  | 176.32  | 176.34  | 176.47  | 176.46  | 176.38  | 176.39  | 176.25  | /       | 176.12  | 176.21  |
| 19   | 176.37  | 176.41  | 176.29  | 176.42  | 176.48  | 176.48  | 176.38  | 176.35  | 176.37  | 176.17  | 176.31  | 176.24  |
| 20   | 176.49  | 176.30  | 176.31  | 176.48  | 176.49  | 176.42  | 176.38  | 176.34  | 176.30  | 176.21  | 176.19  | 176.27  |
| 21   | 176.37  | 176.45  | 176.32  | 176.45  | 176.48  | 176.44  | 176.38  | 176.34  | 176.19  | 176.20  | 176.18  | 176.09  |
| 22   | 176.42  | 176.42  | 176.38  | 176.44  | 176.46  | 176.47* | 176.37  | 176.38  | 176.30  | 176.16  | 176.25  | 176.28  |
| 23   | 176.39  | 176.33  | 176.42  | 176.49  | 176.45  | 176.43* | 176.39  | 176.41  | 176.23  | 176.20  | 176.27  | 176.39  |
| 24   | 176.41  | 176.35  | 176.35  | 176.46  | 176.42  | 176.50  | 176.40  | 176.34  | 176.25  | 176.21  | 176.28  | 176.17  |
| 25   | 176.35  | 176.36  | 176.47  | 176.49  | 176.46  | 176.42  | 176.37  | 176.27  | 176.24  | 176.13  | 176.28  | 176.10  |
| 26   | 176.41  | 176.39  | 176.36  | 176.45  | 176.49  | 176.38  | 176.37  | 176.24  | 176.29  | 176.14  | 176.27  | 176.11  |
| 27   | 176.39  | 176.36  | 176.25  | 176.48  | 176.50  | 176.43  | 176.38  | 176.34  | 176.23  | 176.25  | 176.34  | 176.33  |
| 28   | 176.37  | 176.41  | 176.39  | 176.48  | 176.49  | 176.40  | 176.42  | 176.29  | 176.25  | 176.13  | 176.17  | 176.13  |
| 29   | 176.48  | 176.28  | 176.45  | 176.45  | 176.51  | 176.39  | 176.38  | 176.29  | 176.31  | 176.02  | 176.25  | 176.14  |
| 30   | 176.44  |         | 176.36  | 176.48  | 176.48  | 176.38  | 176.35  | 176.29  | 176.25  | 176.13  | 176.22  | 176.20  |
| 31   | 176.42  |         | 176.35  |         | 176.47  |         | 176.38  | 176.35  |         | 176.21  |         | 176.14  |
| MEAN | 176.40  | 176.37  | 176.36  | 176.44  | 176.48  | 176.45  | 176.39  | 176.35  | 176.27  | 176.19  | 176.23  | 176.19  |
| MAX. | 176.73  | 176.65  | 176.56  | 176.58  | 176.71  | 176.60  | 176.59  | 176.51  | 176.54  | 176.40  | 176.82  | 176.63  |
|      | 0700/20 | 0400/22 | 1600/28 | 1700/25 | 2300/12 | 0200/25 | 1700/15 | 2300/13 | 0200/20 | 2100/27 | 1300/16 | 0900/23 |
| MIN. | 176.13  | 176.10  | 176.20  | 176.28  | 176.30  | 176.28  | 176.25  | 176.17  | 176.11  | 175.96  | 176.00  | 175.95  |
|      | 0400/13 | 1100/20 | 0900/27 | 1600/18 | 0600/13 | 2200/21 | 1700/16 | 0400/26 | 2100/04 | 0400/29 | 2100/17 | 1500/03 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 176.34

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 9004: Pt. Iroquois, Brimley, Michigan on Lake Superior (Whitefish Bay

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 183.11 Dec  
 Daily mean elevation: 183.25 3 Dec  
 Instant/hourly elevation: 183.42 0900/3 Dec

LOWEST  
 Monthly mean elevation: 182.78 Mar  
 Daily mean elevation: 182.64 28 Mar  
 Instant/hourly elevation: 182.49 0200/25 Mar

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 183.10 | 5 Jan  |
| 182.95 | 7 Feb  |
| 182.87 | 2 Mar  |
| 182.95 | 18 Apr |
| 182.97 | 13 May |
| 182.95 | 29 Jun |
| 182.93 | 30 Jul |
| 183.14 | 25 Aug |
| 183.15 | 23 Sep |
| 183.24 | 28 Oct |
| 183.24 | 17 Nov |
| 183.25 | 3 Dec  |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 182.81 | 29 Jan |
| 182.79 | 16 Feb |
| 182.64 | 28 Mar |
| 182.76 | 2 Apr  |
| 182.76 | 8 May  |
| 182.83 | 18 Jun |
| 182.86 | 28 Jul |
| 182.89 | 2 Aug  |
| 182.93 | 19 Sep |
| 182.95 | 27 Oct |
| 182.96 | 15 Nov |
| 182.89 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 183.20                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 1   | 183.20        | 4                          |
| 183.15                                                  |     |     |     |     |     |     |     |     |     | 3   | 4   | 9   | 183.15        | 20                         |
| 183.10                                                  |     |     |     |     |     |     |     | 4   | 10  | 1   | 4   | 9   | 183.10        | 48                         |
| 183.05                                                  | 2   |     |     |     |     |     |     | 4   | 6   | 11  | 11  | 6   | 183.05        | 88                         |
| 183.00                                                  | 1   |     |     |     |     |     |     | 8   | 11  | 12  | 6   | 5   | 183.00        | 131                        |
| 182.95                                                  | 7   |     |     |     | 1   |     |     | 5   | 2   | 2   | 3   |     | 182.95        | 151                        |
| 182.90                                                  | 12  | 6   |     | 2   | 2   | 8   | 10  | 9   | 1   | 1   |     |     | 182.90        | 202                        |
| 182.85                                                  | 7   | 12  | 1   | 8   | 10  | 17  | 21  | 1   |     |     |     | 1   | 182.85        | 280                        |
| 182.80                                                  | 2   | 8   | 13  | 13  | 15  | 5   |     |     |     |     |     |     | 182.80        | 336                        |
| 182.75                                                  |     | 3   | 10  | 7   | 3   |     |     |     |     |     |     |     | 182.75        | 359                        |
| 182.70                                                  |     |     | 4   |     |     |     |     |     |     |     |     |     | 182.70        | 363                        |
| 182.65                                                  |     |     | 2   |     |     |     |     |     |     |     |     |     | 182.65        | 365                        |
| 182.60                                                  |     |     | 1   |     |     |     |     |     |     |     |     |     | 182.60        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9004: Pt. Iroquois, Brimley, Michigan on Lake Superior (Whitefish Bay

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 183.05  | 182.95  | 182.71  | 182.79  | 182.82  | 182.88  | 182.91  | 182.91  | 183.03  | 183.07  | 183.09  | 183.16  |
| 2    | 182.97  | 182.87  | 182.87  | 182.76  | 182.82  | 182.88  | 182.90  | 182.89  | 183.06  | 183.10  | 183.02  | 183.14  |
| 3    | 182.97  | 182.89  | 182.80  | 182.77  | 182.81  | 182.89  | 182.88  | 182.91  | 183.08  | 183.04  | 182.97  | 183.25  |
| 4    | 183.08  | 182.89  | 182.83  | 182.80  | 182.82  | 182.88  | 182.86  | 182.93  | 183.13  | 183.11  | 183.01  | 183.19  |
| 5    | 183.10  | 182.94  | 182.79  | 182.79  | 182.84  | 182.89  | 182.86  | 182.93  | 183.13  | 183.09  | 183.07  | 183.12  |
| 6    | 183.00  | 182.90  | 182.81  | 182.87  | 182.83  | 182.88  | 182.86  | 183.00  | 183.11  | 183.05  | 183.10  | 183.17  |
| 7    | 182.93  | 182.95  | 182.78  | 182.82  | 182.76  | 182.89  | 182.86  | 182.94  | 183.04  | 183.01  | 183.10  | 183.17  |
| 8    | 182.98  | 182.87  | 182.72  | 182.78  | 182.76  | 182.90  | 182.89  | 182.97  | 183.03  | 183.02  | 183.10  | 183.18  |
| 9    | 182.99  | 182.91  | 182.85  | 182.78  | 182.80  | 182.92  | 182.88  | 182.98  | 183.08  | 183.01  | 183.05  | 183.15  |
| 10   | 182.93  | 182.86  | 182.79  | 182.84  | 182.89  | 182.88  | 182.89  | 182.94  | 183.11  | 183.19  | 183.16  | 183.16  |
| 11   | 182.93  | 182.86  | 182.76  | 182.83  | 182.82  | 182.87  | 182.92  | 182.94  | 183.01  | 183.17  | 183.08  | 183.09  |
| 12   | 182.95  | 182.90  | 182.71  | 182.81  | 182.83  | 182.86  | 182.90  | 182.94  | 183.06  | 183.09  | 182.97  | 183.04  |
| 13   | 182.98  | 182.86  | 182.84  | 182.83  | 182.97  | 182.86  | 182.86  | 182.94  | 183.08  | 183.03  | 183.10  | 183.11  |
| 14   | 182.88  | 182.80  | 182.82  | 182.90  | 182.81  | 182.85  | 182.91  | 183.05  | 183.12  | 183.03  | 183.13  | 183.14  |
| 15   | 182.90  | 182.87  | 182.84  | 182.88  | 182.85  | 182.90  | 182.87  | 183.04  | 183.04  | 182.98  | 182.96  | 183.17  |
| 16   | 182.85  | 182.79  | 182.83  | 182.83  | 182.92  | 182.89  | 182.91  | 183.01  | 182.96  | 182.99  | 183.02  | 183.10  |
| 17   | 182.91  | 182.85  | 182.79  | 182.92  | 182.88  | 182.86  | 182.90  | 183.07  | 183.03  | 183.07  | 183.24  | 183.14  |
| 18   | 182.91  | 182.81  | 182.84  | 182.95  | 182.85  | 182.83  | 182.91  | 183.05  | 183.01  | 183.09  | 183.13  | 183.04  |
| 19   | 182.86  | 182.82  | 182.83  | 182.87  | 182.85  | 182.85  | 182.91  | 183.04  | 182.93  | 183.05  | 183.05  | 183.03  |
| 20   | 182.96  | 182.94  | 182.81  | 182.86  | 182.86  | 182.89  | 182.90  | 183.05  | 183.11  | 183.01  | 183.20  | 183.11  |
| 21   | 182.91  | 182.81  | 182.76  | 182.84  | 182.87  | 182.85  | 182.92  | 183.04  | 183.11  | 183.04  | 183.14  | 183.11  |
| 22   | 182.88  | 182.90  | 182.68  | 182.83  | 182.89  | 182.91  | 182.90  | 182.98  | 183.03  | 183.06  | 183.10  | 182.89  |
| 23   | 182.93  | 182.91  | 182.78  | 182.85  | 182.89  | 182.90  | 182.88  | 182.99  | 183.15  | 183.01  | 183.07  | 183.07  |
| 24   | 182.93  | 182.89  | 182.69  | 182.85  | 182.92  | 182.84  | 182.88  | 183.06  | 183.08  | 183.10  | 183.01  | 183.12  |
| 25   | 182.90  | 182.85  | 182.71  | 182.82  | 182.86  | 182.94  | 182.92  | 183.14  | 183.11  | 183.10  | 183.08  | 183.20  |
| 26   | 182.91  | 182.80  | 182.83  | 182.86  | 182.85  | 182.93  | 182.91  | 183.12  | 183.01  | 183.08  | 183.07  | 183.05  |
| 27   | 182.93  | 182.81  | 182.84  | 182.85  | 182.85  | 182.91  | 182.87  | 183.07  | 183.12  | 182.95  | 183.16  | 183.03  |
| 28   | 182.86  | 182.82  | 182.64  | 182.86  | 182.86  | 182.93  | 182.86  | 183.11  | 183.04  | 183.24  | 183.20  | 183.16  |
| 29   | 182.81  | 182.82  | 182.77  | 182.86  | 182.85  | 182.95  | 182.89  | 183.11  | 183.00  | 183.16  | 183.11  | 183.09  |
| 30   | 182.86  |         | 182.82  | 182.84  | 182.87  | 182.93  | 182.93  | 183.08  | 183.04  | 183.06  | 183.22  | 183.08  |
| 31   | 182.93  |         | 182.79  |         | 182.88  |         | 182.87  | 183.02  |         | 183.01  |         | 183.07  |
| MEAN | 182.93  | 182.87  | 182.78  | 182.84  | 182.85  | 182.89  | 182.89  | 183.01  | 183.06  | 183.06  | 183.09  | 183.11  |
| MAX. | 183.21  | 183.18  | 182.99  | 183.05  | 183.23  | 183.19  | 183.12  | 183.22  | 183.25  | 183.38  | 183.34  | 183.42  |
|      | 1900/04 | 2400/22 | 1200/02 | 2300/17 | 0700/13 | 0900/25 | 1400/15 | 2200/25 | 2100/20 | 0800/28 | 1700/17 | 0900/03 |
| MIN. | 182.69  | 182.67  | 182.49  | 182.70  | 182.66  | 182.63  | 182.54  | 182.76  | 182.86  | 182.81  | 182.84  | 182.68  |
|      | 0900/16 | 0300/26 | 0200/25 | 2400/02 | 2400/08 | 0800/19 | 1200/15 | 0100/03 | 1400/19 | 1900/27 | 1800/15 | 0700/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 182.95

ANNUAL SUMMARY OF LEVELS, 1988

Station 9018: Marquette Coast Guard, Marquette, Michigan    on Lake Superior

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

|                                                                                                                                                                                     |                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p style="text-align: center;">HIGHEST</p> <p>Monthly mean elevation: 183.14 Nov</p> <p>Daily mean elevation: 183.22 28 Nov</p> <p>Instant/hourly elevation: 183.35 1300/27 Dec</p> | <p style="text-align: center;">LOWEST</p> <p>Monthly mean elevation: 182.83 Mar</p> <p>Daily mean elevation: 182.78 22 Mar</p> <p>Instant/hourly elevation: 182.63 1000/15 Jul</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 183.03 | 12 Jan |
| 182.96 | 20 Feb |
| 182.90 | 13 Mar |
| 182.89 | 18 Apr |
| 182.93 | 16 May |
| 182.94 | 26 Jun |
| 182.94 | 31 Jul |
| 183.13 | 25 Aug |
| 183.16 | 4 Sep  |
| 183.18 | 4 Oct  |
| 183.22 | 28 Nov |
| 183.19 | 14 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 182.89 | 29 Jan |
| 182.84 | 28 Feb |
| 182.78 | 22 Mar |
| 182.83 | 8 Apr  |
| 182.85 | 8 May  |
| 182.90 | 24 Jun |
| 182.91 | 29 Jul |
| 182.93 | 2 Aug  |
| 183.05 | 16 Sep |
| 183.04 | 14 Oct |
| 183.05 | 3 Nov  |
| 183.06 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 183.20                                                  |     |     |     |     |     |     |     |     |     |     | 3   |     | 183.20        | 3                          |
| 183.15                                                  |     |     |     |     |     |     |     |     | 1   | 1   | 7   | 9   | 183.15        | 21                         |
| 183.10                                                  |     |     |     |     |     |     |     | 5   | 6   | 5   | 12  | 17  | 183.10        | 66                         |
| 183.05                                                  |     |     |     |     |     |     |     | 11  | 22  | 19  | 7   | 5   | 183.05        | 130                        |
| 183.00                                                  | 4   |     |     |     |     |     |     | 3   | 1   | 6   | 1   |     | 183.00        | 145                        |
| 182.95                                                  | 9   | 1   |     |     |     |     |     | 9   |     |     |     |     | 182.95        | 164                        |
| 182.90                                                  | 17  | 11  |     |     | 10  | 26  | 31  | 3   |     |     |     |     | 182.90        | 262                        |
| 182.85                                                  | 1   | 14  | 5   | 22  | 19  | 4   |     |     |     |     |     |     | 182.85        | 327                        |
| 182.80                                                  |     | 3   | 23  | 8   | 2   |     |     |     |     |     |     |     | 182.80        | 363                        |
| 182.75                                                  |     |     | 3   |     |     |     |     |     |     |     |     |     | 182.75        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9018: Marquette Coast Guard, Marquette, Michigan on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 183.00  | 182.94  | 182.80  | 182.83  | 182.86  | 182.92  | 182.92  | 182.94  | 183.08  | 183.09  | 183.12  | 183.18  |
| 2    | 182.96  | 182.92  | 182.86  | 182.83  | 182.86  | 182.92  | 182.92  | 182.93  | 183.09  | 183.11  | 183.07  | 183.16  |
| 3    | 182.97  | 182.90  | 182.85  | 182.83  | 182.86  | 182.92  | 182.92  | 182.95  | 183.11  | 183.09  | 183.05  | 183.19  |
| 4    | 182.99  | 182.93  | 182.83  | 182.83  | 182.86  | 182.91  | 182.92  | 182.97  | 183.16  | 183.18  | 183.09  | 183.17  |
| 5    | 183.01  | 182.93  | 182.82  | 182.85  | 182.86  | 182.91  | 182.91  | 182.97  | 183.13  | 183.13  | 183.17  | 183.15  |
| 6    | 182.99  | 182.92  | 182.82  | 182.86  | 182.86  | 182.92  | 182.92  | 183.00  | 183.10  | 183.08  | 183.21  | 183.15  |
| 7    | 182.94  | 182.91  | 182.82  | 182.84  | 182.85  | 182.93  | 182.91  | 182.99  | 183.09  | 183.08  | 183.13  | 183.18  |
| 8    | 182.96  | 182.90  | 182.82  | 182.83  | 182.85  | 182.93  | 182.92  | 183.00  | 183.08  | 183.09  | 183.10  | 183.16  |
| 9    | 182.97  | 182.92  | 182.85  | 182.85  | 182.88  | 182.93  | 182.91  | 182.99  | 183.08  | 183.07  | 183.10  | 183.15  |
| 10   | 182.93  | 182.91  | 182.83  | 182.86  | 182.89  | 182.91  | 182.92  | 182.97  | 183.09  | 183.14  | 183.15  | 183.17  |
| 11   | 182.94  | 182.91  | 182.84  | 182.86  | 182.88  | 182.91  | 182.93  | 182.97  | 183.09  | 183.15  | 183.11  | 183.15  |
| 12   | 183.03  | 182.92  | 182.85  | 182.86  | 182.89  | 182.90  | 182.92  | 182.99  | 183.08  | 183.10  | 183.09  | 183.08  |
| 13   | 183.02  | 182.89  | 182.90  | 182.88  | 182.91  | 182.91  | 182.91  | 183.01  | 183.09  | 183.04  | 183.10  | 183.13  |
| 14   | 182.94  | 182.87  | 182.89  | 182.89  | 182.89  | 182.91  | 182.92  | 183.03  | 183.09  | 183.04  | 183.12  | 183.19  |
| 15   | 182.93  | 182.92  | 182.87  | 182.89  | 182.90  | 182.91  | 182.93  | 183.05  | 183.08  | 183.05  | 183.10  | 183.16  |
| 16   | 182.92  | 182.86  | 182.85  | 182.86  | 182.93  | 182.92  | 182.91  | 183.08  | 183.05  | 183.05  | 183.11  | 183.11  |
| 17   | 182.94  | 182.87  | 182.83  | 182.89  | 182.91  | 182.91  | 182.93  | 183.08  | 183.06  | 183.08  | 183.15  | 183.15  |
| 18   | 182.95  | 182.86  | 182.84  | 182.89  | 182.90  | 182.90  | 182.93  | 183.08  | 183.07  | 183.09  | 183.16  | 183.09  |
| 19   | 182.93  | 182.87  | 182.86  | 182.88  | 182.90  | 182.91  | 182.92  | 183.07  | 183.07  | 183.07  | 183.15  | 183.11  |
| 20   | 183.02  | 182.96  | 182.84  | 182.88  | 182.90  | 182.92  | 182.93  | 183.07  | 183.11  | 183.06  | 183.19  | 183.13  |
| 21   | 182.96  | 182.85  | 182.81  | 182.87  | 182.90  | 182.90  | 182.93  | 183.08  | 183.12  | 183.08  | 183.17  | 183.14  |
| 22   | 182.92  | 182.87  | 182.78  | 182.87  | 182.91  | 182.92  | 182.93  | 183.06  | 183.10  | 183.08  | 183.14  | 183.06  |
| 23   | 182.95  | 182.88  | 182.81  | 182.87  | 182.90  | 182.92  | 182.92  | 183.06  | 183.10  | 183.07  | 183.14  | 183.08  |
| 24   | 182.95  | 182.88  | 182.80  | 182.86  | 182.90  | 182.90  | 182.92  | 183.08  | 183.10  | 183.10  | 183.12  | 183.12  |
| 25   | 182.97  | 182.86  | 182.81  | 182.86  | 182.90  | 182.92  | 182.93  | 183.13  | 183.11  | 183.09  | 183.14  | 183.13  |
| 26   | 182.95  | 182.86  | 182.84  | 182.87  | 182.91  | 182.94  | 182.93  | 183.12  | 183.10  | 183.07  | 183.17  | 183.11  |
| 27   | 182.93  | 182.85  | 182.85  | 182.88  | 182.91  | 182.92  | 182.92  | 183.09  | 183.12  | 183.05  | 183.22  | 183.08  |
| 28   | 182.91  | 182.84  | 182.81  | 182.86  | 182.92  | 182.93  | 182.91  | 183.11  | 183.10  | 183.10  | 183.22  | 183.13  |
| 29   | 182.89  | 182.87  | 182.83  | 182.86  | 182.91  | 182.93  | 182.91  | 183.11  | 183.08  | 183.11  | 183.16  | 183.11  |
| 30   | 182.93  |         | 182.83  | 182.86  | 182.91  | 182.93  | 182.94  | 183.11  | 183.08  | 183.08  | 183.19  | 183.11  |
| 31   | 182.95  |         | 182.83  |         | 182.92  |         | 182.94  | 183.09  |         | 183.05  |         | 183.11  |
| MEAN | 182.96  | 182.89  | 182.83  | 182.86  | 182.89  | 182.92  | 182.92  | 183.04  | 183.09  | 183.09  | 183.14  | 183.13  |
| MAX. | 183.18  | 183.05  | 182.98  | 182.97  | 183.03  | 183.12  | 183.20  | 183.23  | 183.22  | 183.24  | 183.30  | 183.35  |
| MIN. | 2200/12 | 1100/20 | 1000/13 | 1200/17 | 0900/13 | 1000/25 | 1400/15 | 1300/16 | 1000/04 | 2400/10 | 2200/27 | 1300/27 |
|      | 182.80  | 182.72  | 182.71  | 182.76  | 182.73  | 182.72  | 182.63  | 182.75  | 182.98  | 182.97  | 182.99  | 182.88  |
|      | 0900/16 | 0200/22 | 1600/24 | 2200/05 | 1300/08 | 2200/24 | 1000/15 | 0400/02 | 1800/01 | 1300/27 | 0100/03 | 0800/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 182.98

ANNUAL SUMMARY OF LEVELS, 1988  
Station 9044: Ontonagon, Michigan on Lake Superior

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 183.17 Dec  
Daily mean elevation: 183.23 16 Nov  
Instant/hourly elevation: 183.28 0700/16 Nov

LOWEST  
Monthly mean elevation: 182.86 Mar  
Daily mean elevation: 182.83 20 Mar  
Instant/hourly elevation: 182.64 0800/15 Jul

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 183.01 | 6 Jan  |
| 182.94 | 2 Feb  |
| 182.93 | 12 Mar |
| 182.93 | 8 Apr  |
| 182.96 | 28 May |
| 182.97 | 7 Jun  |
| 182.98 | 31 Jul |
| 183.15 | 31 Aug |
| 183.16 | 26 Sep |
| 183.14 | 3 Oct  |
| 183.23 | 16 Nov |
| 183.20 | 9 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 182.93 | 27 Jan |
| 182.86 | 23 Feb |
| 182.83 | 20 Mar |
| 182.87 | 18 Apr |
| 182.88 | 13 May |
| 182.92 | 15 Jun |
| 182.93 | 15 Jul |
| 182.97 | 2 Aug  |
| 183.10 | 6 Sep  |
| 183.08 | 30 Oct |
| 183.08 | 3 Nov  |
| 183.13 | 25 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 183.20        |     |     |     |     |     |     |     |     |     |     | 7   |     | 183.20        | 7                          |
| 183.15        |     |     |     |     |     |     |     |     | 1   |     | 10  | 20  | 183.15        | 38                         |
| 183.10        |     |     |     |     |     |     |     | 11  | 27  | 14  | 10  | 11  | 183.10        | 111                        |
| 183.05        |     |     |     |     |     |     |     | 7   | 2   | 17  | 3   |     | 183.05        | 140                        |
| 183.00        | 5   |     |     |     |     |     |     | 8   |     |     |     |     | 183.00        | 153                        |
| 182.95        | 18  |     |     |     | 1   | 6   | 17  | 5   |     |     |     |     | 182.95        | 200                        |
| 182.90        | 8   | 12  | 3   | 3   | 22  | 24  | 14  |     |     |     |     |     | 182.90        | 286                        |
| 182.85        |     | 17  | 15  | 27  | 8   |     |     |     |     |     |     |     | 182.85        | 353                        |
| 182.80        |     |     | 13  |     |     |     |     |     |     |     |     |     | 182.80        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9044: Ontonagon, Michigan on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 183.01  | 182.93  | 182.89  | 182.87  | 182.90  | 182.97  | 182.94  | 182.97  | 183.14  | 183.11  | 183.08  | 183.18  |
| 2    | 183.01  | 182.94  | 182.86  | 182.89  | 182.90  | 182.97  | 182.95  | 182.97  | 183.15  | 183.11  | 183.08  | 183.17  |
| 3    | 183.01  | 182.93  | 182.86  | 182.90  | 182.90  | 182.95  | 182.96  | 182.98  | 183.15  | 183.14  | 183.08  | 183.18  |
| 4    | 183.01  | 182.93  | 182.83  | 182.90  | 182.89  | 182.95  | 182.97  | 182.99  | 183.12  | 183.13  | 183.11  | 183.18  |
| 5    | 183.00  | 182.92  | 182.83  | 182.88  | 182.89  | 182.95  | 182.97  | 183.00  | 183.10  | 183.12  | 183.14  | 183.19  |
| 6    | 183.01  | 182.93  | 182.84  | 182.87  | 182.90  | 182.93  | 182.95  | 183.02  | 183.10  | 183.11  | 183.14  | 183.18  |
| 7    | 182.98  | 182.92  | 182.87  | 182.91  | 182.91  | 182.97  | 182.96  | 183.04  | 183.13  | 183.12  | 183.12  | 183.19  |
| 8    | 183.00  | 182.92  | 182.90  | 182.93  | 182.91  | 182.93  | 182.95  | 183.01  | 183.13  | 183.13  | 183.12  | 183.18  |
| 9    | 182.98  | 182.91  | 182.87  | 182.91  | 182.92  | 182.92  | 182.95  | 183.01  | 183.11  | 183.12  | 183.15  | 183.20  |
| 10   | 182.94  | 182.91  | 182.89  | 182.88  | 182.89  | 182.92  | 182.95  | 183.02  | 183.11  | 183.10  | 183.12  | 183.19  |
| 11   | 182.98  | 182.91  | 182.91  | 182.88  | 182.91  | 182.93  | 182.95  | 183.02  | 183.14  | 183.09  | 183.13  | 183.18  |
| 12   | 182.98  | 182.89  | 182.93  | 182.89  | 182.92  | 182.95  | 182.95  | 183.03  | 183.11  | 183.08  | 183.17  | 183.16  |
| 13   | 182.96  | 182.89  | 182.85  | 182.88  | 182.88  | 182.96  | 182.95  | 183.05  | 183.11  | 183.08  | 183.13  | 183.17  |
| 14   | 182.97  | 182.92  | 182.85  | 182.87  | 182.94  | 182.95  | 182.95  | 183.06  | 183.11  | 183.09  | 183.12  | 183.17  |
| 15   | 182.98  | 182.90  | 182.84  | 182.88  | 182.93  | 182.92  | 182.93  | 183.08  | 183.12  | 183.11  | 183.19  | 183.13  |
| 16   | 182.97  | 182.90  | 182.84  | 182.90  | 182.91  | 182.94  | 182.95  | 183.09  | 183.14  | 183.09  | 183.23  | 183.15  |
| 17   | 182.95  | 182.89  | 182.84  | 182.89  | 182.92  | 182.95  | 182.95  | 183.10  | 183.11  | 183.10  | 183.21  | 183.16  |
| 18   | 182.97  | 182.90  | 182.83  | 182.87  | 182.94  | 182.96  | 182.96  | 183.09  | 183.13  | 183.09  | 183.22  | 183.16  |
| 19   | 182.99  | 182.90  | 182.84  | 182.88  | 182.94  | 182.93  | 182.96  | 183.08  | 183.15  | 183.09  | 183.22  | 183.18  |
| 20   | 182.98  | 182.87  | 182.83  | 182.88  | 182.93  | 182.93  | 182.97  | 183.08  | 183.13  | 183.10  | 183.19  | 183.16  |
| 21   | 182.95  | 182.87  | 182.85  | 182.88  | 182.94  | 182.95  | 182.97  | 183.11  | 183.14  | 183.10  | 183.18  | 183.15  |
| 22   | 182.96  | 182.88  | 182.88  | 182.89  | 182.92  | 182.93  | 182.97  | 183.12  | 183.15  | 183.09  | 183.18  | 183.19  |
| 23   | 182.96  | 182.86  | 182.85  | 182.88  | 182.92  | 182.95  | 182.97  | 183.12  | 183.12  | 183.12  | 183.20  | 183.14  |
| 24   | 182.96  | 182.87  | 182.88  | 182.88  | 182.92  | 182.96  | 182.97  | 183.12  | 183.14  | 183.12  | 183.22  | 183.15  |
| 25   | 182.97  | 182.87  | 182.87  | 182.89  | 182.92  | 182.94  | 182.95  | 183.11  | 183.13  | 183.11  | 183.18  | 183.13  |
| 26   | 182.93  | 182.88  | 182.86  | 182.89  | 182.93  | 182.94  | 182.97  | 183.13  | 183.16  | 183.10  | 183.22  | 183.17  |
| 27   | 182.93  | 182.87  | 182.86  | 182.89  | 182.94  | 182.94  | 182.97  | 183.15  | 183.14  | 183.12  | 183.22  | 183.15  |
| 28   | 182.95  | 182.87  | 182.91  | 182.89  | 182.96  | 182.95  | 182.97  | 183.14  | 183.14  | 183.08  | 183.19  | 183.14  |
| 29   | 182.95  | 182.87  | 182.87  | 182.89  | 182.95  | 182.93  | 182.96  | 183.14  | 183.13  | 183.09  | 183.20  | 183.15  |
| 30   | 182.96  |         | 182.86  | 182.89  | 182.95  | 182.94  | 182.97  | 183.14  | 183.11  | 183.08  | 183.19  | 183.15  |
| 31   | 182.94  |         | 182.86  |         | 182.95  |         | 182.98  | 183.15  |         | 183.10  |         | 183.15  |
| MEAN | 182.97  | 182.90  | 182.86  | 182.89  | 182.92  | 182.94  | 182.96  | 183.07  | 183.13  | 183.10  | 183.16  | 183.17  |
| MAX. | 183.06  | 182.96  | 182.96  | 182.97  | 183.02  | 183.07  | 183.12  | 183.18  | 183.22  | 183.26  | 183.28  | 183.25  |
|      | 0100/01 | 1800/02 | 0300/25 | 2100/08 | 0100/09 | 2400/21 | 2000/15 | 0800/17 | 1400/26 | 0100/04 | 0700/16 | 1900/22 |
| MIN. | 182.87  | 182.82  | 182.80  | 182.76  | 182.76  | 182.77  | 182.64  | 182.91  | 183.07  | 183.02  | 183.03  | 183.09  |
|      | 1600/12 | 0900/23 | 1500/23 | 1300/06 | 0100/13 | 0400/19 | 0800/15 | 0200/03 | 0900/10 | 2400/30 | 0600/02 | 1500/23 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 183.01

ANNUAL SUMMARY OF LEVELS, 1988  
Station 9064: Duluth, Minnesota on Lake Superior

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 183.18 Nov  
Daily mean elevation: 183.34 26 Nov  
Instant/hourly elevation: 183.49 1600/26 Nov

LOWEST  
Monthly mean elevation: 182.89 Feb  
Daily mean elevation: 182.80 22 Feb  
Instant/hourly elevation: 182.58 0700/23 Feb

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 183.07 | 12 Jan |
| 182.96 | 2 Feb  |
| 183.14 | 11 Mar |
| 183.07 | 8 Apr  |
| 183.01 | 28 May |
| 183.04 | 28 Jun |
| 183.06 | 15 Jul |
| 183.22 | 22 Aug |
| 183.25 | 28 Sep |
| 183.16 | 8 Oct  |
| 183.34 | 26 Nov |
| 183.30 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 182.90 | 10 Jan |
| 182.80 | 22 Feb |
| 182.82 | 26 Mar |
| 182.86 | 18 Apr |
| 182.92 | 10 May |
| 182.93 | 25 Jun |
| 182.95 | 10 Jul |
| 183.00 | 5 Aug  |
| 183.07 | 9 Sep  |
| 182.96 | 28 Oct |
| 183.09 | 17 Nov |
| 183.08 | 25 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 183.30                                                  |     |     |     |     |     |     |     |     |     |     | 1   |     | 183.30        | 1                          |
| 183.25                                                  |     |     |     |     |     |     |     |     |     |     | 2   | 1   | 183.25        | 4                          |
| 183.20                                                  |     |     |     |     |     |     |     | 4   | 4   |     | 7   | 2   | 183.20        | 21                         |
| 183.15                                                  |     |     |     |     |     |     |     | 5   | 11  | 1   | 7   | 11  | 183.15        | 56                         |
| 183.10                                                  |     |     | 2   |     |     |     |     | 7   | 11  | 16  | 11  | 10  | 183.10        | 113                        |
| 183.05                                                  | 2   |     |     | 1   |     |     | 1   | 7   | 4   | 10  | 2   | 7   | 183.05        | 147                        |
| 183.00                                                  | 8   |     | 1   |     | 1   | 7   | 7   | 7   |     | 3   |     |     | 183.00        | 181                        |
| 182.95                                                  | 10  | 1   | 3   |     | 24  | 20  | 22  | 1   |     | 1   |     |     | 182.95        | 263                        |
| 182.90                                                  | 10  | 14  | 5   | 17  | 6   | 3   | 1   |     |     |     |     |     | 182.90        | 319                        |
| 182.85                                                  | 1   | 9   | 14  | 12  |     |     |     |     |     |     |     |     | 182.85        | 355                        |
| 182.80                                                  |     | 4   | 6   |     |     |     |     |     |     |     |     |     | 182.80        | 365                        |
| 182.75                                                  |     | 1   |     |     |     |     |     |     |     |     |     |     | 182.75        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9064: Duluth, Minnesota on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 182.95  | 182.91  | 182.92  | 182.90  | 182.96  | 183.01  | 182.99  | 183.04  | 183.17  | 183.13  | 183.10  | 183.16  |
| 2    | 183.01  | 182.96  | 182.86  | 182.92  | 182.96  | 183.01  | 182.99  | 183.06  | 183.16  | 183.13  | 183.14  | 183.14  |
| 3    | 182.95  | 182.92  | 182.87  | 182.89  | 182.94  | 182.99  | 183.00  | 183.05  | 183.15  | 183.09  | 183.14  | 183.15  |
| 4    | 182.91  | 182.93  | 182.83  | 182.91  | 182.93  | 182.99  | 183.01  | 183.06  | 183.15  | 183.13  | 183.17  | 183.15  |
| 5    | 182.93  | 182.83  | 182.84  | 182.88  | 182.93  | 182.97  | 183.02  | 183.00  | 183.13  | 183.14  | 183.12  | 183.16  |
| 6    | 182.98  | 182.91  | 182.85  | 182.87  | 182.98  | 182.96  | 183.01  | 183.05  | 183.13  | 183.14  | 183.13  | 183.14  |
| 7    | 182.95  | 182.87  | 182.97  | 182.94  | 183.00  | 183.01  | 183.00  | 183.08  | 183.18  | 183.14  | 183.15  | 183.16  |
| 8    | 182.96  | 182.93  | 182.93  | 183.07  | 182.98  | 183.01  | 182.98  | 183.05  | 183.13  | 183.16  | 183.13  | 183.14  |
| 9    | 182.94  | 182.90  | 182.86  | 182.94  | 182.96  | 182.97  | 183.00  | 183.05  | 183.07  | 183.13  | 183.18  | 183.16  |
| 10   | 182.90  | 182.92  | 182.92  | 182.91  | 182.92  | 182.97  | 182.95  | 183.07  | 183.12  | 183.06  | 183.11  | 183.13  |
| 11   | 183.04  | 182.93  | 183.14  | 182.92  | 182.97  | 182.96  | 182.97  | 183.04  | 183.22  | 183.09  | 183.15  | 183.16  |
| 12   | 183.07  | 182.90  | 183.11  | 182.93  | 182.93  | 182.98  | 183.00  | 183.07  | 183.10  | 183.10  | 183.21  | 183.09  |
| 13   | 182.97  | 182.92  | 182.86  | 182.89  | 182.93  | 182.99  | 182.99  | 183.10  | 183.08  | 183.12  | 183.12  | 183.16  |
| 14   | 182.99  | 182.93  | 182.86  | 182.88  | 183.00  | 182.97  | 183.00  | 183.04  | 183.11  | 183.13  | 183.14  | 183.19  |
| 15   | 183.03  | 182.93  | 182.86  | 182.88  | 182.96  | 182.94  | 183.06  | 183.11  | 183.16  | 183.14  | 183.30  | 183.08  |
| 16   | 182.99  | 182.91  | 182.87  | 182.93  | 182.96  | 182.98  | 183.00  | 183.13  | 183.19  | 183.07  | 183.11  | 183.13  |
| 17   | 182.99  | 182.91  | 182.87  | 182.86  | 182.99  | 183.00  | 183.00  | 183.21  | 183.14  | 183.11  | 183.09  | 183.13  |
| 18   | 183.03  | 182.92  | 182.82  | 182.86  | 183.00  | 182.99  | 183.00  | 183.22  | 183.18  | 183.11  | 183.25  | 183.16  |
| 19   | 183.04  | 182.90  | 182.86  | 182.90  | 182.99  | 182.96  | 183.00  | 183.17  | 183.22  | 183.10  | 183.22  | 183.22  |
| 20   | 182.98  | 182.86  | 182.86  | 182.90  | 182.98  | 182.97  | 182.99  | 183.17  | 183.11  | 183.14  | 183.16  | 183.17  |
| 21   | 182.98  | 182.87  | 182.92  | 182.91  | 182.98  | 183.00  | 182.99  | 183.21  | 183.17  | 183.08  | 183.20  | 183.19  |
| 22   | 182.95  | 182.80  | 182.96  | 182.95  | 182.96  | 182.95  | 183.00  | 183.22  | 183.16  | 183.15  | 183.22  | 183.30  |
| 23   | 183.01  | 182.81  | 182.87  | 182.92  | 182.97  | 183.02  | 183.01  | 183.16  | 183.10  | 183.12  | 183.25  | 183.08  |
| 24   | 183.01  | 182.84  | 183.00  | 182.95  | 182.97  | 183.02  | 182.99  | 183.11  | 183.16  | 183.05  | 183.29  | 183.10  |
| 25   | 183.01  | 182.86  | 182.85  | 182.90  | 182.98  | 182.93  | 182.98  | 183.08  | 183.14  | 183.05  | 183.19  | 183.08  |
| 26   | 182.94  | 182.88  | 182.82  | 182.93  | 182.98  | 182.97  | 183.01  | 183.15  | 183.21  | 183.08  | 183.34  | 183.25  |
| 27   | 182.95  | 182.90  | 182.93  | 182.91  | 183.00  | 182.99  | 183.02  | 183.12  | 183.16  | 183.11  | 183.22  | 183.09  |
| 28   | 183.00  | 182.85  | 183.03  | 182.92  | 183.01  | 183.04  | 183.00  | 183.11  | 183.25  | 182.96  | 183.20  | 183.09  |
| 29   | 183.00  | 182.93  | 182.86  | 182.93  | 183.00  | 183.00  | 183.00  | 183.14  | 183.18  | 183.05  | 183.22  | 183.15  |
| 30   | 183.06  |         | 182.86  | 182.94  | 183.00  | 183.00  | 182.99  | 183.18  | 183.14  | 183.09  | 183.18  | 183.14  |
| 31   | 182.93  |         | 182.88  |         | 182.99  |         | 183.04  | 183.20  |         | 183.10  |         | 183.19  |
| MEAN | 182.98  | 182.89  | 182.90  | 182.91  | 182.97  | 182.98  | 183.00  | 183.11  | 183.15  | 183.10  | 183.18  | 183.15  |
| MAX. | 183.24  | 183.07  | 183.36  | 183.14  | 183.15  | 183.16  | 183.22  | 183.36  | 183.31  | 183.29  | 183.49  | 183.41  |
|      | 0900/12 | 0500/16 | 0300/12 | 1600/08 | 1400/14 | 2200/23 | 0600/15 | 0600/17 | 1400/11 | 0500/27 | 1600/26 | 0600/14 |
| MIN. | 182.79  | 182.58  | 182.74  | 182.71  | 182.70  | 182.73  | 182.78  | 182.91  | 182.99  | 182.85  | 182.95  | 182.89  |
|      | 2100/31 | 0700/23 | 2100/01 | 1000/06 | 0100/13 | 0900/25 | 2400/15 | 1000/14 | 0900/23 | 2300/27 | 0100/17 | 1400/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 183.03

ANNUAL SUMMARY OF LEVELS, 1988  
 Station 9070: Two Harbors, Minnesota on Lake Superior

INTERNATIONAL  
 GREAT LAKES  
 DATUM (1955)

HIGHEST  
 Monthly mean elevation: 182.97 Jul  
 Daily mean elevation: 183.03 11 Mar  
 Instant/hourly elevation: 183.18 0300/12 Mar

LOWEST  
 Monthly mean elevation: 182.87 Mar  
 Daily mean elevation: 182.79 22 Feb  
 Instant/hourly elevation: 182.60 0700/23 Feb

HIGHEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 183.03 | 12 Jan |
| 182.94 | 2 Feb  |
| 183.03 | 11 Mar |
| 183.00 | 8 Apr  |
| 182.98 | 28 May |
| 182.98 | 28 Jun |
| 182.99 | 5 Jul  |
|        | Aug    |
|        | Sep    |
|        | Oct    |
|        | Nov    |
|        | Dec    |

LOWEST DAILY MEAN  
 FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 182.90 | 10 Jan |
| 182.79 | 22 Feb |
| 182.80 | 26 Mar |
| 182.85 | 18 Apr |
| 182.90 | 13 May |
| 182.92 | 25 Jun |
| 182.96 | 2 Jul  |
|        | Aug    |
|        | Sep    |
|        | Oct    |
|        | Nov    |
|        | Dec    |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.  | No. of days |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-------------|
| Elev.                                                   | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | (m.)   | above elev. |
| 183.00                                                  | 4   |     | 2   |     |     |     |     |     |     |     |     |     | 183.00 | 6           |
| 182.95                                                  | 14  |     | 1   | 1   | 12  | 13  | 6   |     |     |     |     |     | 182.95 | 53          |
| 182.90                                                  | 11  | 6   | 3   | 5   | 17  | 17  |     |     |     |     |     |     | 182.90 | 112         |
| 182.85                                                  | 2   | 15  | 6   | 21  | 2   |     |     |     |     |     |     |     | 182.85 | 158         |
| 182.80                                                  |     | 6   | 18  | 3   |     |     |     |     |     |     |     |     | 182.80 | 185         |
| 182.75                                                  |     | 2   | 1   |     |     |     |     |     |     |     |     |     | 182.75 | 188         |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9070: Two Harbors, Minnesota on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug            | Sep | Oct | Nov | Dec |
|------|---------|---------|---------|---------|---------|---------|---------|----------------|-----|-----|-----|-----|
| 1    | 182.94  | 182.89  | 182.90  | 182.87  | 182.93  | 182.98  | 182.96  | /              | /   | /   | /   | /   |
| 2    | 183.00  | 182.94  | 182.83  | 182.89  | 182.93  | 182.98  | 182.96  | /              | /   | /   | /   | /   |
| 3    | 182.95  | 182.90  | 182.85  | 182.87  | 182.92  | 182.95  | 182.97  | /              | /   | /   | /   | /   |
| 4    | 182.90  | 182.91  | 182.82  | 182.88  | 182.91  | 182.96  | 182.98  | /              | /   | /   | /   | /   |
| 5    | 182.92  | 182.83  | 182.83  | 182.86  | 182.91  | 182.94  | 182.99  | /              | /   | /   | /   | /   |
| 6    | 182.96  | 182.89  | 182.83  | 182.85  | 182.93  | 182.93  | 182.98* | /              | /   | /   | /   | /   |
| 7    | 182.94  | 182.85  | 182.92  | 182.90  | 182.96  | 182.97  | /       | /              | /   | /   | /   | /   |
| 8    | 182.94  | 182.91  | 182.89  | 183.00  | 182.96  | 182.96  | /       | /              | /   | /   | /   | /   |
| 9    | 182.93  | 182.89  | 182.84  | 182.91  | 182.93  | 182.94  | /       | /              | /   | /   | /   | /   |
| 10   | 182.90  | 182.90  | 182.89  | 182.89  | 182.90  | 182.94  | /       | /              | /   | /   | /   | /   |
| 11   | 183.00  | 182.91  | 183.03  | 182.90  | 182.94  | 182.94  | /       | /              | /   | /   | /   | /   |
| 12   | 183.03  | 182.88  | 183.02  | 182.90  | 182.91  | 182.95  | /       | /              | /   | /   | /   | /   |
| 13   | 182.95  | 182.90  | 182.83  | 182.87  | 182.90  | 182.96  | /       | /              | /   | /   | /   | /   |
| 14   | 182.97  | 182.92  | 182.83  | 182.86  | 182.97  | 182.95  | /       | /              | /   | /   | /   | /   |
| 15   | 183.00  | 182.91  | 182.83  | 182.86  | 182.94  | 182.93  | /       | /              | /   | /   | /   | /   |
| 16   | 182.97  | 182.89  | 182.85  | 182.91  | 182.93  | 182.95  | /       | /              | /   | /   | /   | /   |
| 17   | 182.97  | 182.89  | 182.85  | 182.85  | 182.95  | 182.97  | /       | /              | /   | /   | /   | /   |
| 18   | 183.01  | 182.90  | 182.81  | 182.85  | 182.97  | 182.96  | /       | /              | /   | /   | /   | /   |
| 19   | 183.01  | 182.89  | 182.83  | 182.88  | 182.97  | 182.94  | /       | /              | /   | /   | /   | /   |
| 20   | 182.96  | 182.84  | 182.84  | 182.88  | 182.96  | 182.94  | /       | /              | /   | /   | /   | /   |
| 21   | 182.96  | 182.86  | 182.89  | 182.89  | 182.95  | 182.97  | /       | /              | /   | /   | /   | /   |
| 22   | 182.93  | 182.79  | 182.92  | 182.92  | 182.94  | 182.93  | /       | /              | /   | /   | /   | /   |
| 23   | 182.98  | 182.80  | 182.85  | 182.90  | 182.94  | 182.97  | /       | /              | /   | /   | /   | /   |
| 24   | 182.99  | 182.82  | 182.95  | 182.92  | 182.94  | 182.98  | /       | /              | /   | /   | /   | /   |
| 25   | 182.97  | 182.85  | 182.85  | 182.89  | 182.95  | 182.92  | /       | /              | /   | /   | /   | /   |
| 26   | 182.93  | 182.86  | 182.80  | 182.90  | 182.96  | 182.94  | /       | /              | /   | /   | /   | /   |
| 27   | 182.93  | 182.88  | 182.88  | 182.89  | 182.97  | 182.96  | /       | /              | /   | /   | /   | /   |
| 28   | 182.98  | 182.84  | 182.97  | 182.90  | 182.98  | 182.98  | /       | /              | /   | /   | /   | /   |
| 29   | 182.97  | 182.90  | 182.84  | 182.90  | 182.97  | 182.94  | /       | /              | /   | /   | /   | /   |
| 30   | 183.01  |         | 182.85  | 182.91  | 182.97  | 182.95  | /       | /              | /   | /   | /   | /   |
| 31   | 182.92  |         | 182.86  |         | 182.96  |         | /       | /              |     | /   |     | /   |
| MEAN | 182.96  | 182.88  | 182.87  | 182.89  | 182.94  | 182.95  | 182.97  | /              | /   | /   | /   | /   |
| MAX. | 183.16  | 183.04  | 183.18  | 183.04  | 183.08  | 183.09  | 183.05  | STATION CLOSED |     |     |     |     |
| MIN. | 182.77  | 182.60  | 182.72  | 182.74  | 182.71  | 182.76  | 182.92  |                |     |     |     |     |
|      | 0900/12 | 0400/16 | 0300/12 | 1700/08 | 1300/12 | 2200/23 | 0800/06 |                |     |     |     |     |
|      | 2100/31 | 0700/23 | 2000/01 | 1000/06 | 0100/13 | 0200/22 | 1200/05 |                |     |     |     |     |

\* Indicates Less than 90% of the Hourly Data Available.

/ Indicates No Data.

ANNUAL MEAN: 182.92

ANNUAL SUMMARY OF LEVELS, 1988  
Station 9090: Grand Marais, Minnesota on Lake Superior

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 183.12 Nov  
Daily mean elevation: 183.20 26 Nov  
Instant/hourly elevation: 183.30 0400/20 Dec

LOWEST  
Monthly mean elevation: 182.82 Mar  
Daily mean elevation: 182.79 26 Mar  
Instant/hourly elevation: 182.69 1500/23 Feb

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 182.99 | 2 Jan  |
| 182.91 | 2 Feb  |
| 182.90 | 12 Mar |
| 182.90 | 8 Apr  |
| 182.93 | 28 May |
| 182.92 | 24 Jun |
| 182.93 | 31 Jul |
| 183.13 | 22 Aug |
| 183.13 | 28 Sep |
| 183.10 | 8 Oct  |
| 183.20 | 26 Nov |
| 183.19 | 22 Dec |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 182.88 | 31 Jan |
| 182.79 | 22 Feb |
| 182.79 | 26 Mar |
| 182.81 | 6 Apr  |
| 182.85 | 13 May |
| 182.88 | 25 Jun |
| 182.90 | 29 Jul |
| 182.91 | 1 Aug  |
| 183.04 | 13 Sep |
| 182.98 | 28 Oct |
| 183.04 | 1 Nov  |
| 183.06 | 28 Dec |

~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~

| Elev.<br>(m.) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| 183.15        |     |     |     |     |     |     |     |     |     |     | 11  | 1   | 183.15        | 12                         |
| 183.10        |     |     |     |     |     |     |     | 2   | 6   |     | 6   | 18  | 183.10        | 44                         |
| 183.05        |     |     |     |     |     |     |     | 12  | 22  | 18  | 12  | 12  | 183.05        | 120                        |
| 183.00        |     |     |     |     |     |     |     | 5   | 2   | 12  | 1   |     | 183.00        | 140                        |
| 182.95        | 3   |     |     |     |     |     |     | 6   |     | 1   |     |     | 182.95        | 150                        |
| 182.90        | 25  | 1   |     |     | 8   | 15  | 24  | 6   |     |     |     |     | 182.90        | 229                        |
| 182.85        | 3   | 15  | 4   | 12  | 22  | 15  | 7   |     |     |     |     |     | 182.85        | 307                        |
| 182.80        |     | 11  | 17  | 18  | 1   |     |     |     |     |     |     |     | 182.80        | 354                        |
| 182.75        |     | 2   | 10  |     |     |     |     |     |     |     |     |     | 182.75        | 366                        |



INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 9090: Grand Marais, Minnesota on Lake Superior

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 182.94  | 182.87  | 182.85  | 182.82  | 182.87  | 182.92  | 182.91  | 182.91  | 183.11  | 183.08  | 183.04  | 183.14  |
| 2    | 182.99  | 182.91  | 182.79  | 182.83  | 182.87  | 182.91  | 182.92  | 182.93  | 183.10  | 183.08  | 183.06  | 183.14  |
| 3    | 182.95  | 182.87  | 182.82  | 182.83  | 182.87  | 182.90  | 182.93  | 182.95  | 183.08  | 183.08  | 183.06  | 183.11  |
| 4    | 182.92  | 182.88  | 182.80  | 182.83  | 182.87  | 182.91  | 182.93  | 182.97  | 183.08  | 183.08  | 183.07  | 183.12  |
| 5    | 182.93  | 182.85  | 182.81  | 182.82  | 182.86  | 182.91  | 182.92  | 182.95  | 183.08  | 183.08  | 183.07  | 183.15  |
| 6    | 182.95  | 182.87  | 182.80  | 182.81  | 182.87  | 182.90  | 182.92  | 182.93* | 183.08  | 183.09  | 183.08  | 183.12  |
| 7    | 182.95  | 182.85  | 182.84  | 182.86  | 182.89  | 182.92  | 182.90  | 182.98* | 183.11  | 183.10  | 183.09  | 183.12  |
| 8    | 182.92  | 182.88  | 182.84  | 182.90  | 182.87  | 182.89  | 182.90  | 182.95  | 183.10  | 183.10  | 183.09  | 183.11  |
| 9    | 182.92  | 182.86  | 182.81  | 182.87  | 182.89  | 182.89  | 182.92  | 182.96  | 183.06  | 183.09  | 183.12  | 183.11  |
| 10   | 182.91  | 182.87  | 182.84  | 182.85  | 182.86  | 182.90  | 182.90  | 182.97  | 183.06  | 183.03  | 183.08  | 183.10  |
| 11   | 182.95  | 182.87  | 182.89  | 182.86  | 182.88  | 182.91  | 182.90  | 182.97  | 183.10  | 183.03  | 183.10  | 183.12  |
| 12   | 182.97  | 182.84  | 182.90  | 182.87  | 182.86  | 182.91  | 182.91  | 182.97  | 183.06  | 183.05  | 183.14  | 183.11  |
| 13   | 182.92  | 182.87  | 182.80  | 182.85  | 182.85  | 182.91  | 182.91  | 183.02  | 183.04  | 183.06  | 183.10  | 183.12  |
| 14   | 182.94  | 182.88  | 182.81  | 182.84  | 182.90  | 182.90  | 182.90  | 183.01  | 183.05  | 183.07  | 183.09  | 183.11  |
| 15   | 182.95  | 182.86  | 182.80  | 182.84  | 182.89  | 182.89  | 182.92  | 183.03  | 183.07  | 183.08  | 183.16  | 183.07  |
| 16   | 182.95  | 182.87  | 182.81  | 182.88  | 182.88  | 182.90  | 182.93  | 183.04  | 183.09  | 183.05  | 183.15  | 183.10  |
| 17   | 182.94  | 182.86  | 182.82  | 182.85  | 182.90  | 182.91  | 182.93  | 183.09  | 183.07  | 183.05  | 183.09  | 183.09  |
| 18   | 182.95  | 182.87  | 182.79  | 182.83  | 182.91  | 182.90  | 182.93  | 183.09  | 183.09  | 183.05  | 183.16  | 183.10  |
| 19   | 182.96  | 182.86  | 182.80  | 182.85  | 182.91  | 182.90  | 182.92  | 183.08  | 183.13  | 183.06  | 183.17  | 183.14  |
| 20   | 182.91  | 182.81  | 182.79  | 182.84  | 182.91  | 182.90  | 182.92  | 183.08  | 183.08  | 183.08  | 183.13  | 183.11  |
| 21   | 182.93  | 182.84  | 182.83  | 182.85  | 182.90  | 182.92  | 182.92  | 183.09  | 183.10  | 183.04  | 183.15  | 183.13  |
| 22   | 182.92  | 182.79  | 182.86  | 182.86  | 182.89  | 182.90  | 182.93  | 183.13  | 183.10  | 183.06  | 183.16  | 183.19  |
| 23   | 182.92  | 182.80  | 182.80  | 182.85  | 182.90  | 182.91  | 182.93  | 183.11  | 183.06  | 183.08  | 183.17  | 183.08  |
| 24   | 182.94  | 182.81  | 182.85  | 182.86  | 182.88  | 182.92  | 182.92  | 183.07  | 183.10  | 183.04  | 183.19  | 183.08  |
| 25   | 182.92  | 182.82  | 182.85  | 182.86  | 182.90  | 182.88  | 182.90  | 183.04  | 183.07  | 183.03  | 183.16  | 183.06  |
| 26   | 182.90  | 182.83  | 182.79  | 182.86  | 182.90  | 182.90  | 182.92  | 183.08  | 183.12  | 183.03  | 183.20  | 183.14  |
| 27   | 182.90  | 182.84  | 182.82  | 182.85  | 182.91  | 182.91  | 182.92  | 183.08  | 183.09  | 183.08  | 183.16  | 183.08  |
| 28   | 182.94  | 182.82  | 182.89  | 182.85  | 182.93  | 182.91  | 182.92  | 183.07  | 183.13  | 182.98  | 183.16  | 183.06  |
| 29   | 182.93  | 182.84  | 182.82  | 182.86  | 182.92  | 182.90  | 182.90  | 183.08  | 183.12  | 183.03  | 183.17  | 183.10  |
| 30   | 182.94  |         | 182.81  | 182.86  | 182.92  | 182.91  | 182.92  | 183.08  | 183.10  | 183.05  | 183.14  | 183.08  |
| 31   | 182.88  |         | 182.81  |         | 182.92  |         | 182.93  | 183.10  |         | 183.06  |         | 183.11  |
| MEAN | 182.93  | 182.85  | 182.82  | 182.85  | 182.89  | 182.90  | 182.92  | 183.03  | 183.09  | 183.06  | 183.12  | 183.11  |
| MAX. | 183.11  | 182.98  | 183.04  | 182.95  | 182.99  | 183.01  | 183.00  | 183.22  | 183.21  | 183.18  | 183.30  | 183.30  |
| MIN. | 0900/16 | 1500/02 | 1000/12 | 0400/17 | 2300/08 | 1300/24 | 1200/15 | 0600/17 | 1300/26 | 0500/27 | 0400/16 | 0400/20 |
|      | 182.79  | 182.69  | 182.73  | 182.75  | 182.71  | 182.81  | 182.79  | 182.85  | 182.99  | 182.89  | 182.99  | 182.90  |
|      | 2100/31 | 1500/23 | 0200/02 | 1000/06 | 0100/13 | 1000/15 | 2200/29 | 2200/01 | 0800/23 | 0800/28 | 1900/05 | 1800/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 182.96

# Monthly Water Level Stages - Lake Ontario at Oswego

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Meters above  
IGLD (1955)  
~~~~~  
Chart Datum 74.0

|      | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov   | Dec   |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|      | 1946  | 1952  | 1952  | 1973  | 1952  | 1952  | 1947  | 1947  | 1947  | 1945  | 1945  | 1945  |
| HIGH | 75.01 | 75.12 | 75.22 | 75.50 | 75.58 | 75.61 | 75.51 | 75.42 | 75.26 | 75.08 | 75.04 | 75.04 |
| MEAN | 74.39 | 74.42 | 74.50 | 74.71 | 74.83 | 74.86 | 74.83 | 74.73 | 74.60 | 74.48 | 74.40 | 74.38 |
|      | 1935  | 1936  | 1935  | 1935  | 1935  | 1935  | 1934  | 1934  | 1934  | 1934  | 1934  | 1934  |
| LOW  | 73.66 | 73.64 | 73.79 | 73.88 | 73.97 | 74.04 | 73.99 | 73.84 | 73.74 | 73.68 | 73.59 | 73.60 |

1900 thru 1988 mean 74.60

# Monthly Water Level Stages - Lake Erie at Cleveland

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Meters above  
IGLD (1955)  
~~~~~  
Chart Datum 173.3

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1987   | 1986   | 1986   | 1985   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   |
| HIGH | 174.67 | 174.60 | 174.68 | 174.79 | 174.78 | 174.86 | 174.85 | 174.76 | 174.64 | 174.74 | 174.65 | 174.68 |
| MEAN | 173.73 | 173.73 | 173.81 | 173.97 | 174.06 | 174.10 | 174.08 | 174.02 | 173.93 | 173.84 | 173.76 | 173.74 |
|      | 1935   | 1936   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   |
| LOW  | 173.01 | 172.97 | 173.02 | 173.19 | 173.26 | 173.27 | 173.27 | 173.24 | 173.20 | 173.11 | 173.00 | 172.98 |

1900 thru 1988 mean 173.90

# Monthly Water Level Stages - Lake St. Clair at St. Clair Shores

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Meters above  
IGLD (1955)  
~~~~~  
Chart Datum 174.2

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   |
| HIGH | 175.60 | 175.62 | 175.62 | 175.63 | 175.64 | 175.72 | 175.74 | 175.70 | 175.66 | 175.78 | 175.63 | 175.61 |
| MEAN | 174.60 | 174.52 | 174.65 | 174.81 | 174.90 | 174.95 | 174.97 | 174.94 | 174.87 | 174.79 | 174.70 | 174.70 |
|      | 1936   | 1926   | 1934   | 1901   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1934   | 1925   |
| LOW  | 173.69 | 173.70 | 173.86 | 174.07 | 174.24 | 174.27 | 174.31 | 174.22 | 174.15 | 174.08 | 173.99 | 174.06 |

1900 thru 1988 mean 174.78

# Monthly Water Level Stages - Lake Huron-Michigan at Harbor Beach

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Meters above  
IGLD (1955)  
~~~~~  
Chart Datum 175.8

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1987   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   |
| HIGH | 176.98 | 176.89 | 176.91 | 177.01 | 177.06 | 177.11 | 177.17 | 177.19 | 177.17 | 177.23 | 177.18 | 177.05 |
| MEAN | 176.15 | 176.14 | 176.15 | 176.23 | 176.33 | 176.39 | 176.43 | 176.42 | 176.37 | 176.31 | 176.24 | 176.19 |
|      | 1965   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   | 1964   |
| LOW  | 175.38 | 175.39 | 175.37 | 175.37 | 175.50 | 175.53 | 175.55 | 175.56 | 175.55 | 175.49 | 175.43 | 175.38 |

1900 thru 1988 mean 176.28

# Monthly Water Level Stages - Lake Superior at Marquette

1900 thru Dec 1988

NOAA/NOS  
WSC-1 N/OMA12  
Great Lakes Water Levels  
Rockville, Maryland 20852

Levels in Meters above  
IGLD (1955)  
~~~~~  
Chart Datum 182.9

|      | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov    | Dec    |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1986   | 1985   | 1985   | 1985   | 1985   |
| HIGH | 183.38 | 183.30 | 183.28 | 183.33 | 183.40 | 183.42 | 183.46 | 183.50 | 183.51 | 183.56 | 183.56 | 183.49 |
| MEAN | 183.00 | 182.93 | 182.89 | 182.91 | 183.01 | 183.10 | 183.16 | 183.19 | 183.20 | 183.18 | 183.14 | 183.08 |
|      | 1926   | 1926   | 1926   | 1926   | 1926   | 1926   | 1926   | 1926   | 1926   | 1925   | 1925   | 1925   |
| LOW  | 182.45 | 182.38 | 182.37 | 182.34 | 182.36 | 182.46 | 182.57 | 182.62 | 182.72 | 182.72 | 182.63 | 182.56 |

1900 thru 1988 mean 183.07

ANNUAL SUMMARY OF LEVELS, 1988  
Station 6070: SW Pier above locks, Sault St Marie, Michigan on St Marys River

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

HIGHEST  
Monthly mean elevation: 183.06 Dec  
Daily mean elevation: 183.29 17 Nov  
Instant/hourly elevation: 183.60 1000/3 Dec

LOWEST  
Monthly mean elevation: 182.70 Mar  
Daily mean elevation: 182.49 28 Mar  
Instant/hourly elevation: 181.83 1248/15 Jul

HIGHEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 183.08 | 4 Jan  |
| 182.90 | 20 Feb |
| 182.80 | 9 Mar  |
| 182.88 | 14 Apr |
| 182.98 | 13 May |
| 182.96 | 29 Jun |
| 182.92 | 11 Jul |
| 183.13 | 25 Aug |
| 183.14 | 23 Sep |
| 183.26 | 28 Oct |
| 183.29 | 17 Nov |
| 183.23 | 3 Dec  |

LOWEST DAILY MEAN  
FOR EACH MONTH

| Elev.  | Date   |
|--------|--------|
| 182.73 | 29 Jan |
| 182.72 | 26 Feb |
| 182.49 | 28 Mar |
| 182.65 | 2 Apr  |
| 182.69 | 8 May  |
| 182.78 | 24 Jun |
| 182.80 | 15 Jul |
| 182.84 | 2 Aug  |
| 182.84 | 19 Sep |
| 182.88 | 27 Oct |
| 182.86 | 15 Nov |
| 182.76 | 22 Dec |

| ~~~~~ FREQUENCY DISTRIBUTION OF DAILY MEAN LEVELS ~~~~~ |     |     |     |     |     |     |     |     |     |     |     |     | Elev.<br>(m.) | No. of days<br>above elev. |
|---------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------------|----------------------------|
| Elev.<br>(m.)                                           | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |               |                            |
| 183.25                                                  |     |     |     |     |     |     |     |     |     | 1   | 1   |     | 183.25        | 2                          |
| 183.20                                                  |     |     |     |     |     |     |     |     |     | 1   |     | 1   | 183.20        | 4                          |
| 183.15                                                  |     |     |     |     |     |     |     |     |     | 1   | 2   | 2   | 183.15        | 9                          |
| 183.10                                                  |     |     |     |     |     |     |     | 2   | 2   | 1   | 5   | 7   | 183.10        | 26                         |
| 183.05                                                  | 2   |     |     |     |     |     |     | 3   | 8   | 3   | 4   | 8   | 183.05        | 54                         |
| 183.00                                                  | 1   |     |     |     |     |     |     | 9   | 5   | 9   | 7   | 7   | 183.00        | 92                         |
| 182.95                                                  |     |     |     |     | 1   | 1   |     | 2   | 8   | 9   | 6   | 3   | 182.95        | 122                        |
| 182.90                                                  | 2   |     |     |     |     | 3   | 2   | 6   | 5   | 5   | 3   | 2   | 182.90        | 150                        |
| 182.85                                                  | 8   | 4   |     | 1   | 5   | 11  | 17  | 8   | 1   | 1   | 2   |     | 182.85        | 208                        |
| 182.80                                                  | 9   | 8   |     | 11  | 12  | 13  | 11  | 1   | 1   |     |     |     | 182.80        | 274                        |
| 182.75                                                  | 7   | 11  | 6   | 7   | 10  | 2   | 1   |     |     |     |     | 1   | 182.75        | 319                        |
| 182.70                                                  | 2   | 6   | 10  | 7   | 1   |     |     |     |     |     |     |     | 182.70        | 345                        |
| 182.65                                                  |     |     | 6   | 3   | 2   |     |     |     |     |     |     |     | 182.65        | 356                        |
| 182.60                                                  |     |     | 6   | 1   |     |     |     |     |     |     |     |     | 182.60        | 363                        |
| 182.55                                                  |     |     | 2   |     |     |     |     |     |     |     |     |     | 182.55        | 365                        |
| 182.50                                                  |     |     |     |     |     |     |     |     |     |     |     |     | 182.50        | 365                        |
| 182.45                                                  |     |     | 1   |     |     |     |     |     |     |     |     |     | 182.45        | 366                        |

INTERNATIONAL  
GREAT LAKES  
DATUM (1955)

DAILY MEAN WATER LEVELS, MONTHLY MEANS AND EXTREMES, 1988

Station 6070: SW Pier above locks, Sault St Marie, Michigan on St Marys River

| Day  | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Nov     | Dec     |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1    | 183.06  | 182.89  | 182.62  | 182.67  | 182.79  | 182.84  | 182.92  | 182.87  | 182.97  | 183.04  | 183.04  | 183.12  |
| 2    | 182.95  | 182.80  | 182.80  | 182.65  | 182.77  | 182.85  | 182.87  | 182.84  | 182.99  | 183.06  | 182.98  | 183.11  |
| 3    | 182.93  | 182.81  | 182.72  | 182.69  | 182.76  | 182.86  | 182.86  | 182.86  | 183.04  | 182.97  | 182.92  | 183.23  |
| 4    | 183.08  | 182.81  | 182.75  | 182.74  | 182.77  | 182.85  | 182.83  | 182.88  | 183.08  | 183.03  | 182.95  | 183.16  |
| 5    | 183.03  | 182.86  | 182.73  | 182.72  | 182.80  | 182.86  | 182.83  | 182.88  | 183.11  | 183.03  | 183.00  | 183.06  |
| 6    | 182.81  | 182.83  | 182.74  | 182.84  | 182.79  | 182.84  | 182.83  | 182.98  | 183.08  | 183.00  | 183.03  | 183.13  |
| 7    | 182.77  | 182.88  | 182.72  | 182.77  | 182.70  | 182.83  | 182.83  | 182.91  | 182.98  | 182.94  | 183.07  | 183.11  |
| 8    | 182.88  | 182.80  | 182.64  | 182.75  | 182.69  | 182.86  | 182.86  | 182.93  | 182.97  | 182.96  | 183.07  | 183.14  |
| 9    | 182.90  | 182.85  | 182.80  | 182.74  | 182.75  | 182.90  | 182.87  | 182.93  | 183.03  | 182.97  | 183.00  | 183.08  |
| 10   | 182.84  | 182.79  | 182.70  | 182.82  | 182.85  | 182.84  | 182.87  | 182.89  | 183.08  | 183.21  | 183.14  | 183.09  |
| 11   | 182.83  | 182.78  | 182.68  | 182.81  | 182.76  | 182.82  | 182.92  | 182.89  | 182.95  | 183.14  | 183.05  | 183.01  |
| 12   | 182.83  | 182.84  | 182.63  | 182.77  | 182.78  | 182.82  | 182.89  | 182.89  | 183.02  | 183.03  | 182.90  | 182.96  |
| 13   | 182.88  | 182.80  | 182.78  | 182.79  | 182.98  | 182.82  | 182.82  | 182.90  | 183.03  | 182.97  | 183.09  | 183.04  |
| 14   | 182.77  | 182.76  | 182.74  | 182.88  | 182.76  | 182.81  | 182.90  | 183.06  | 183.09  | 182.99  | 183.13  | 183.06  |
| 15   | 182.78  | 182.82  | 182.76  | 182.83  | 182.81  | 182.86  | 182.80  | 183.02  | 182.98  | 182.94  | 182.86  | 183.13  |
| 16   | 182.75  | 182.72  | 182.75  | 182.79  | 182.88  | 182.86  | 182.87  | 182.95  | 182.88  | 182.94  | 182.98  | 183.04  |
| 17   | 182.84  | 182.80  | 182.70  | 182.85  | 182.84  | 182.82  | 182.89  | 183.03  | 182.97  | 183.02  | 183.29  | 183.08  |
| 18   | 182.84  | 182.76  | 182.77  | 182.81  | 182.81  | 182.80  | 182.88  | 183.01  | 182.95  | 183.08  | 183.09  | 182.95  |
| 19   | 182.78  | 182.75  | 182.76  | 182.73  | 182.81  | 182.81  | 182.88  | 183.02  | 182.84  | 182.99  | 182.99  | 182.96  |
| 20   | 182.89  | 182.90  | 182.74  | 182.75  | 182.83  | 182.87  | 182.89  | 183.03  | 183.07  | 182.96  | 183.16  | 183.08  |
| 21   | 182.85  | 182.75  | 182.67  | 182.70  | 182.86  | 182.81  | 182.88  | 183.01  | 183.08  | 182.98  | 183.11  | 183.06  |
| 22   | 182.80  | 182.81  | 182.57  | 182.73  | 182.87  | 182.88  | 182.86  | 182.93  | 182.95  | 183.01  | 183.05  | 182.76  |
| 23   | 182.88  | 182.83  | 182.68  | 182.77  | 182.86  | 182.87  | 182.85  | 182.92  | 183.14  | 182.95  | 183.01  | 183.01  |
| 24   | 182.87  | 182.80  | 182.58  | 182.81  | 182.88  | 182.78  | 182.84  | 183.02  | 183.04  | 183.04  | 182.93  | 183.06  |
| 25   | 182.83  | 182.78  | 182.61  | 182.77  | 182.83  | 182.93  | 182.90  | 183.13  | 183.09  | 183.06  | 183.01  | 183.19  |
| 26   | 182.83  | 182.72  | 182.73  | 182.83  | 182.81  | 182.94  | 182.86  | 183.11  | 182.95  | 183.05  | 182.98  | 182.98  |
| 27   | 182.87  | 182.76  | 182.74  | 182.80  | 182.81  | 182.89  | 182.82  | 183.03  | 183.08  | 182.88  | 183.11  | 182.94  |
| 28   | 182.79  | 182.75  | 182.49  | 182.84  | 182.81  | 182.90  | 182.81  | 183.09  | 182.97  | 183.26  | 183.14  | 183.11  |
| 29   | 182.73  | 182.75  | 182.62  | 182.84  | 182.79  | 182.96  | 182.85  | 183.07  | 182.92  | 183.18  | 183.05  | 183.04  |
| 30   | 182.80  |         | 182.70  | 182.83  | 182.83  | 182.93  | 182.87  | 183.05  | 182.98  | 183.03  | 183.18  | 183.03  |
| 31   | 182.86  |         | 182.65  |         | 182.85  |         | 182.82  | 182.97  |         | 182.95  |         | 183.01  |
| MEAN | 182.86  | 182.80  | 182.70  | 182.78  | 182.81  | 182.86  | 182.86  | 182.97  | 183.01  | 183.02  | 183.04  | 183.06  |
| MAX. | 183.25  | 183.18  | 182.93  | 183.11  | 183.46  | 183.45  | 183.44  | 183.44  | 183.36  | 183.57  | 183.47  | 183.60  |
|      | 2000/04 | 0100/23 | 1300/02 | 2200/17 | 0400/13 | 1000/25 | 1424/15 | 1400/16 | 1400/01 | 1300/28 | 1600/10 | 1000/03 |
| MIN. | 182.53  | 182.54  | 182.29  | 182.51  | 182.47  | 182.41  | 181.83  | 182.40  | 182.68  | 182.64  | 182.60  | 182.47  |
|      | 1000/16 | 0100/28 | 1500/28 | 0200/17 | 0100/08 | 0900/19 | 1248/15 | 1600/16 | 1400/19 | 2000/27 | 1900/15 | 0200/27 |

\* Indicates Less than 90% of the Hourly Data Available.  
/ Indicates No Data.

ANNUAL MEAN: 182.90