

UNITED STATES HISTORICAL CLIMATOLOGY NETWORK (U.S. HCN)

MONTHLY TEMPERATURE AND PRECIPITATION DATA

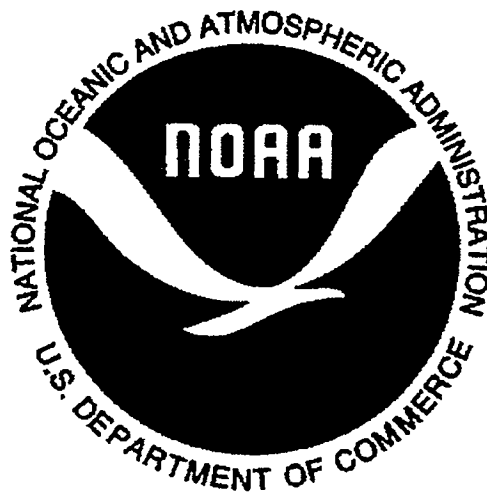
D. R. Easterling • T. R. Karl • E. H. Mason • P. Y. Hughes • D. P. Bowman

R. C. Daniels • T. A. Boden, editors

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*Carbon Dioxide Information Analysis Center
Oak Ridge National Laboratory*

Environmental Sciences Division
Publication No. 4500

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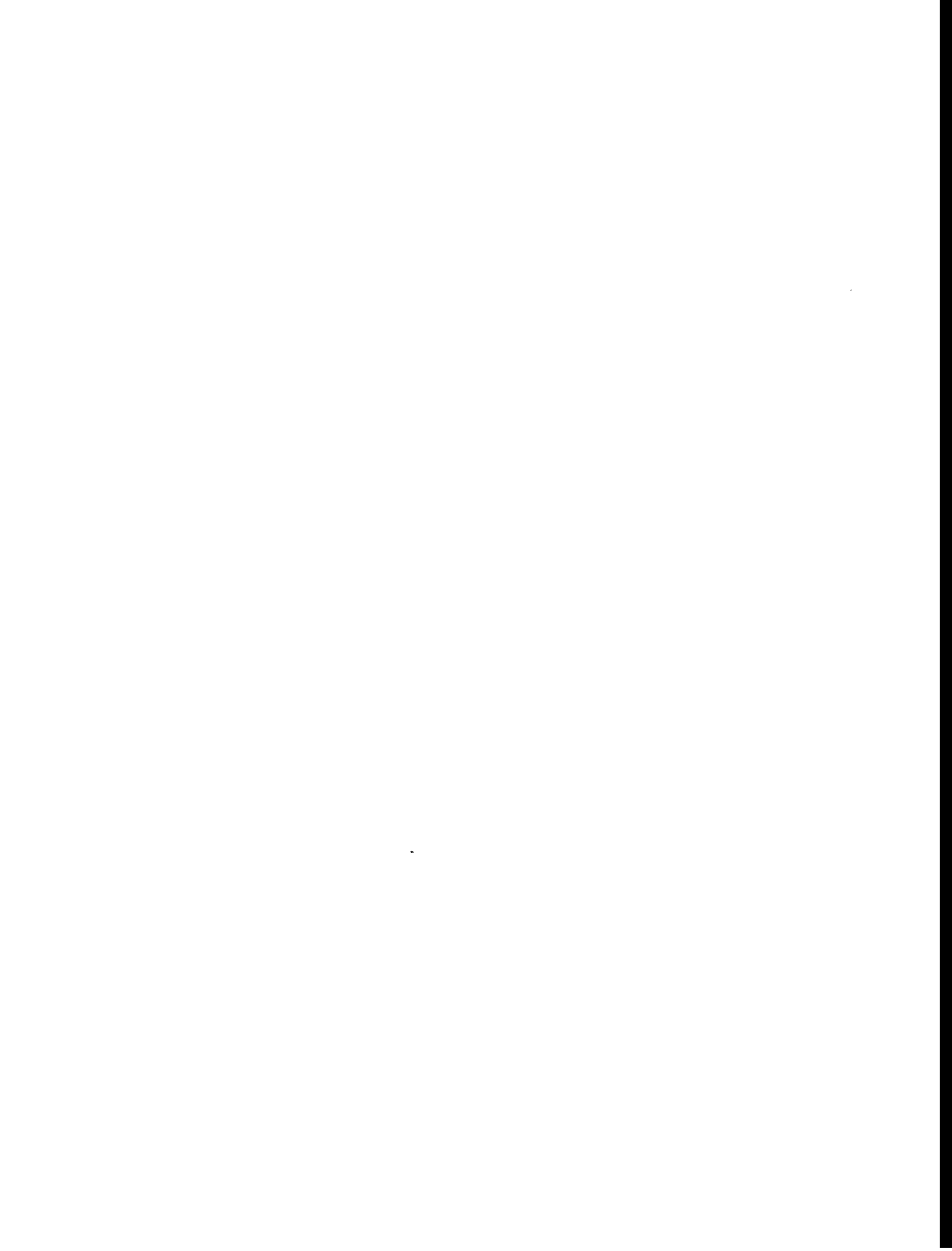
Abstract

EASTERLING, D. R., T. R. KARL, E. H. MASON, P. Y. HUGHES, and D. P. BOWMAN. 1996. United States Historical Climatology Network (U.S. HCN) Monthly Temperature and Precipitation Data. ORNL/CDIAC-87, NDP-019/R3. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee. 280 pp.

This document describes a database containing monthly temperature and precipitation data for 1221 stations in the contiguous United States. This network of stations, known as the United States Historical Climatology Network (U.S. HCN), and the resulting database were compiled by the National Climatic Data Center, Asheville, North Carolina. These data represent the best available data from the United States for analyzing long-term climate trends on a regional scale. The data for most stations extend through December 31, 1994, and a majority of the station records are serially complete for at least 80 years. Unlike many data sets that have been used in past climate studies, these data have been adjusted to remove biases introduced by station moves, instrument changes, time-of-observation differences, and urbanization effects.

These monthly data are available free of charge as a numeric data package (NDP) from the Carbon Dioxide Information Analysis Center. The NDP includes this document and 27 machine-readable data files consisting of supporting data files, a descriptive file, and computer access codes. This document describes how the stations in the U.S. HCN were selected and how the data were processed, defines limitations and restrictions of the data, describes the format and contents of the magnetic media, and provides reprints of literature that discuss the editing and adjustment techniques used in the U.S. HCN.

Part 1: Information About the Data Package



1. Name of the Numeric Data Package

United States Historical Climatology Network (U.S. HCN)
Monthly Temperature and Precipitation Data

2. Contributors

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3. Keywords

historical data; monthly precipitation; monthly temperature; climatic change

4. Background Information

In recent years, numerous studies have been conducted that focus on the problems of climate change and potential climatic impacts of increased concentrations of greenhouse gases. Many of these studies have examined long-term changes in temperature or precipitation (Visser and Molenaar 1995; Weber and Madden 1995; Vinnikov et al. 1990; Jones et al. 1986; Barnett 1985; Wigley et al. 1985) whereas others have addressed the specific question of climate variability (Basher and Zheng 1995; Robock and Mao 1995; Karl et al. 1993; Karl 1985; Vinning and Griffiths 1985; Karl et al. 1984). The value of such analyses is affected by the reliability and accuracy of the modern historical climate records used. Even studies evaluating the climatic effects of periodic events, such as volcanic eruptions or El Niño, are dependent on long-term climate records to illustrate the changes caused by the events. Unfortunately, many of the databases used in past studies are probably not free of bias and error or, and as a result, are not suitable for detailed long-term climatic studies.

In response to the need for an accurate, unbiased, modern historical climate record, the Global Change Research Program of the U.S. Department of Energy and the National Climatic Data Center (NCDC) of the National Oceanic and Atmospheric Administration established a network with 1219 stations in the contiguous United States for the specific purpose of compiling a data set suitable for detecting and monitoring climate change over the past two centuries. This network, known as the United States Historical Climatology Network (U.S. HCN), and the resulting data set were initially documented by Quinlan et al. (1987) and made available free of charge through the Carbon Dioxide Information Analysis Center (CDIAC). However, the data presented in Quinlan et al. (1987) extended only through 1984. In 1990, NCDC and CDIAC revised and updated the U.S. HCN data records through 1987 (Karl et al. 1990). In addition, NCDC generated temperature files in which the biases introduced by urbanization effects were removed using the techniques of Karl et al. (1988). In 1992 the U.S. HCN files archived by CDIAC were extended through 1990; however, the database documentation was not updated.

In this revision (Revision 3) the data set has been extended through the end of 1994 and several stations have been added (54) and deleted (52). Twenty-five of these changes involved

stations whose official station name and number changed but which did not actually move. Table 1 lists the station deletions, station identification code changes, and station additions; the unique station identification code is formed by combining the two-digit state number [state numbers range from 1 to 48 (e.g., 01 = Alabama, 02 = Arizona, . . . 48 = Wyoming)] and the four-digit station number (values range from 0008 to 9933). These revisions have resulted in a 1221 station network (Figure 1). These updated data are discussed and documented in this numeric data package (NDP).

Table 1. Listing of the unique station identification codes for stations deleted or added to the U.S. Historical Climatology Network at this revision

Station deleted	Station added	Station code change	Station deleted	Station added	Station code change
011694				226718	
	013160		227582	036253	✓
	018380		230224		
018385				232809	
040395			235175	235671	✓
	046175			237963	
047300	047304	✓		238223	
	054770		238444		
	057167		238712		
065893			238733	238466	✓
	067970		253710		
071330	073595	✓		253715	
084091			300023		
	087020			300448	
093516	090979	✓	306232	305113	✓
101956	101960	✓	308058	308910	✓
	103143			311458	
103942			313897		
	104845		316044		
105011				319476	
106681	102845	✓		326015	
144081	144087	✓	328366		
150155	121425	✓	347246	347254	✓
166117	163800	✓		350854	
173897	173944	✓	357354		
198181	193213	✓		411528	
	201439		412458		
201484			413415	413420	✓
	201486		419330	411000	✓
204127			441929	440993	✓
	211465		442155	446712	✓
215136			450564	450587	✓
218543	212645	✓	451650		
220792				451654	

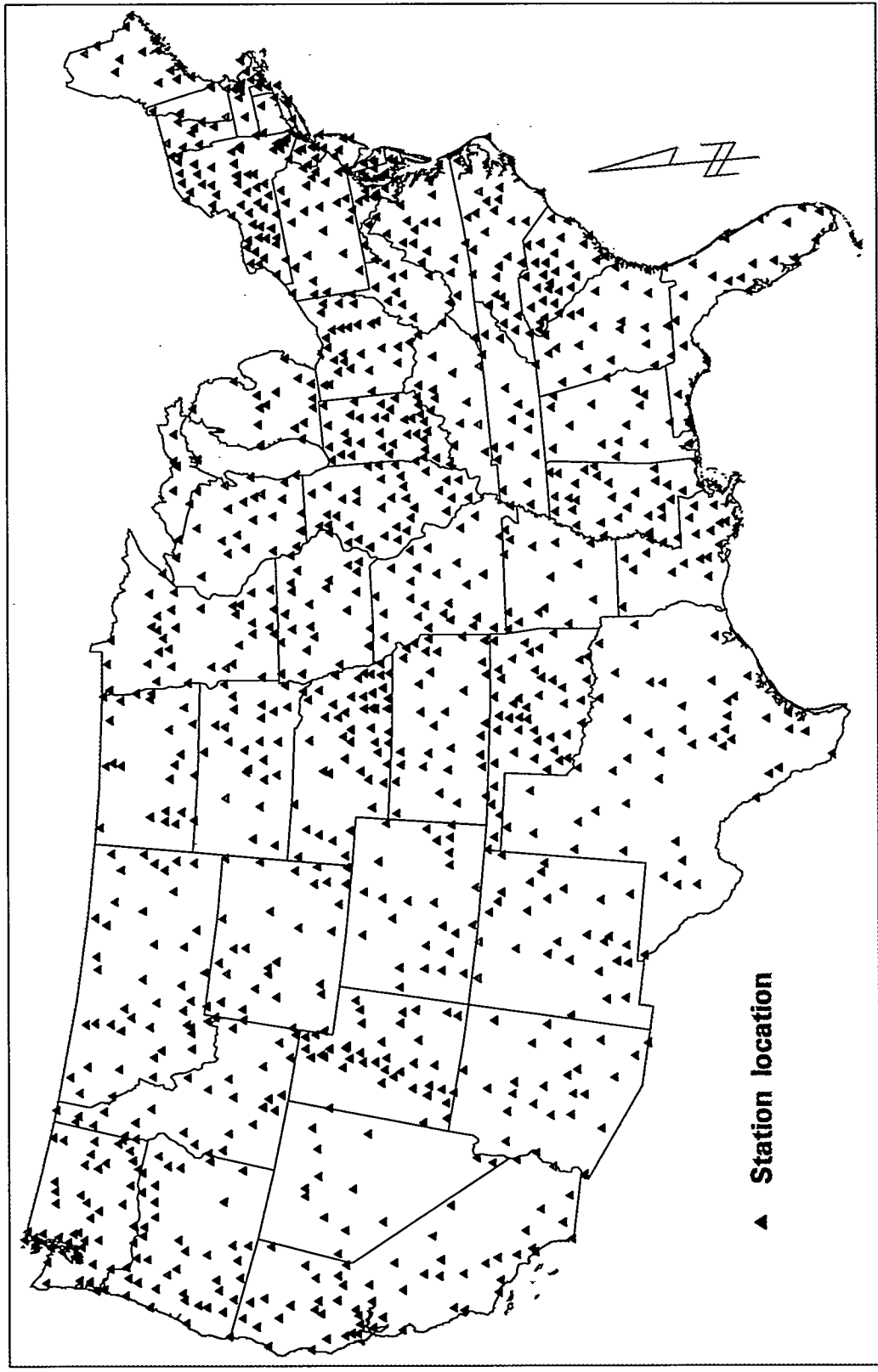
Table 1. (continued)

Station deleted	Station added	Station code change	Station deleted	Station added	Station code change
454549	455946 458928	✓	470239	470991 475474	✓
458931 460687	461330		478937 483170 487235	487845	✓
466991	467001			487240	

In addition to the station changes listed above, the individual data values within each of the U.S. HCN files may differ between this and previous versions of the database. The primary causes for these changes are as follows:

1. The "unadjusted" data in the old data set was not quite "unadjusted." In fact, what was labelled as "unadjusted" was "adjusted" for the time of observation (TOB). Therefore, this data set (Revision 3) has at most four lines of data per year as compared with three for the older versions of the data. This is the first time that the actual raw unadjusted data (the " " record) have been distributed. The old "unadjusted" data should match up better with the new TOB adjusted data (the "+" record). Future updates of this NDP should have few changes in the "raw unadjusted" data. NCDC does reserve the right to correct original values that were either keyed incorrectly or that have apparent errors in the original observation records. However, only a handful of these corrections should be needed in the future.
2. Changes may occur in the station history file; for example, a station may change its TOB schedule, and several years may have elapsed before this is noted on the station data form that gets sent to NCDC.
3. One of the **biggest changes from this data over the old data** is the elimination of several programming bugs in the adjustment routines that were found during the conversion of the programs from a UNISYS computer to the UNIX workstation environment. This accounts for most of the changes that are found in the adjusted data.
4. Finally, when a station moves 1, 2, or more of the station's 40 nearest neighbors may be different. In such a case, when the station history adjustment program is run a different set of highly correlated stations may be used when adjusting the data. Instances have occurred of a station move resulting in the stations data becoming unadjustable, whereas before the move was added to the station history file, the data was adjustable. Because the station history adjustment program moves back in time, all of a station's adjusted data would change, when compared to older versions, if a station moved in the interim.

Figure 1. Spatial distribution of the stations in the U.S. Historical Climatology Network.



5. Source and Scope of the Data

One of the objectives in establishing the U.S. HCN was to detect temporal changes in regional, rather than local, climate (Easterling et al. in press). Therefore, only those stations that were not believed to be affected to any substantial degree by artificial changes in local environments were included in the network. Some of the stations in the U.S. HCN are first-order weather stations, but the majority were selected from the ~5,000 U.S. cooperative weather stations. To be included in the U.S. HCN, a station had to be active (in 1987), have at least 80 years of mean monthly temperature and total monthly precipitation data, and have experienced few station changes (see Appendix A for a complete listing of the stations in the U.S. HCN). An additional criterion that was used in selecting the 1221 U.S. HCN stations, which sometimes took precedent over the preceding criteria, was prompted by the desire to have a uniform distribution of stations across the United States.

The 1221 station U.S. HCN database contains station histories, monthly mean temperature data (maximum, minimum, and mean), and total monthly precipitation data, all of which were compiled by NCDC after being extracted from digital and nondigital data sets. These data sets originated from a variety of sources, including climatological publications, universities, federal agencies, individuals, and data archives. All stations were quality controlled by NCDC with the use of outlier and areal edits, and each station in the network was corrected for TOB differences, instrument changes, instrument moves, station relocations, and urbanization effects (Karl et al. 1986; Karl and Williams 1987; Karl et al. 1988; Quayle et al. 1991). A unique feature of the data set is that, within most temperature and precipitation data files, both original and adjusted estimates are given, along with confidence factors for the final adjusted estimate. Another unique feature of the database is that only a small portion of the data are represented as missing. To make the U.S. HCN record as serially complete as possible, missing data have been estimated by using data from neighboring stations. As shown in Figure 2, the majority of the 1221 stations have data records that are serially complete since 1900; where serially complete is defined as having original or *estimated* data available for all months after the reported serially complete date.

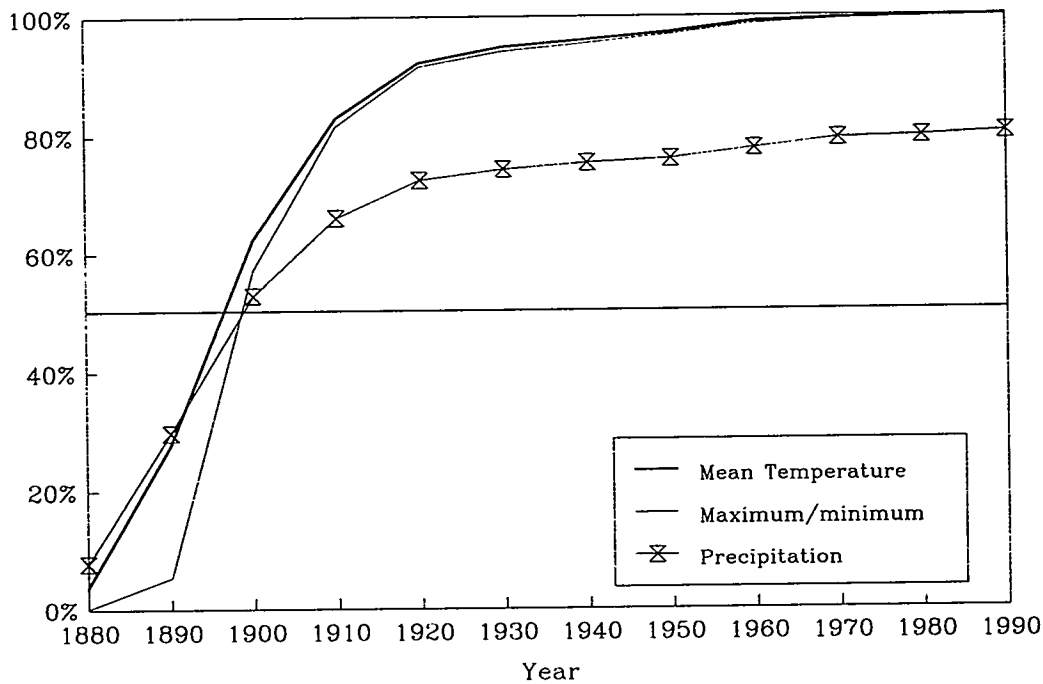


Figure 2. Percentage of stations with serially complete adjusted (or estimated) data starting on, or before, the beginning of each decade.

In the previous versions of this NDP (Quinlan et al 1987; Karl et al. 1990), corrections were not made for the Maximum/Minimum Temperature System (MMTS) introduced by the U.S. National Weather Service in 1983. By 1988 45% of the U.S. HCN stations had the MMTS. Obviously, the number of stations having MMTS is now a substantial fraction of the network. Concerns have arisen about the homogeneity of this temperature system in contrast with that of the earlier thermometric system [e.g., in a study by Baker and Ruschy (1989) the daily maximum and minimum temperatures from Cotton Region Shelters were 0.07°C colder than in the new MMTS measurements for two side-by-side systems at the University of Minnesota in St. Paul]. The new system is thermistor based with a "beehive-like" instrument shelter, in contrast with the older systems, which had liquid-in-glass thermometers mounted inside Cotton Region Shelters (Stevenson Screens). In this revision, the temperature data at stations with the MMTS have been adjusted for this potential bias by using the adjustment factors found in Quayle et al. (1991) (see Appendix C). The adjustment basically adds a constant to the minimum and maximum temperatures on the basis of the season of the year. The mean temperatures are then recalculated.

This NDP includes **original**, **adjusted**, and in some cases, **estimated** data. The original data are from information that have been archived at NCDC. These data have been manually corrected as needed when checks, such as annual total versus monthly sum and the average

temperature file [i.e., (monthly maximum + monthly minimum)/2] versus mean temperature file, have indicated suspect data.

The **adjusted** data, and corresponding confidence factors, are the product of four major computer programs. The station history data and a "network" of the best correlated nearby stations are used in all these routines. First, the original data are input into the TOB debiasing routine so that the data will be consistent with a midnight-to-midnight observation schedule. Secondly, the TOB debiased data are then input into the MMTS program which debiases the data obtained from stations with the MMTS. The debiased data are then entered into the station history adjustment program (SHAP), which debiases the data with respect to changes other than the MMTS conversion to produce the **adjusted** data. The fourth and final routine, FILNET, uses the SHAP data and fills in missing original data values when needed (i.e. calculates **estimated** data) based on a "network" of the best correlated nearby stations. FILNET also completes the data adjustment process for stations that moved too often for the SHAP program to estimate the adjustments needed to debias the data.

Within this document the reader will find a complete description of the database, a list of the stations in the U.S. HCN (Appendix A), lists providing quality assessments of the original and adjusted temperature and precipitation data files (Appendix B), and reprints of journal articles that provide details about the data adjustments and correction techniques used in compiling the database (Appendix C).

6. Applications of the Data

The U.S. HCN database represents the best long-term monthly temperature and precipitation data set available for the contiguous United States. It provides an accurate, serially complete, modern historical climate record that is suitable for detecting and monitoring long-term climatic changes on a regional scale and that may be used for studies attempting to determine the climatic impacts of increased concentrations of greenhouse gases. The U.S. HCN climate record may also be used by dendrochronologists and paleoclimatologists for calibrating tree ring growth, pollen, and marine plankton data or by those studying the climatic impacts of periodic events such as El Niño, Southern Oscillation, or volcanic eruptions. Persons studying long-term climatic changes on smaller scales may want to review the information given in the appendices in order to identify the stations most suitable for their research needs.

7. Limitations and Restrictions

Great care has been taken in selecting stations for the U.S. HCN, in correcting station inhomogeneities, and in estimating missing values. Because some stations offer more reliable estimates than others, the reader should check the U.S. HCN station inventory (Appendix A) and data quality assessments for each station (Appendix B) before using the data from any particular station. As a result of the selection criteria, many of the 1221 stations are from areas with low population densities. Many stations with long records were not included in the network because the stations were located in or near large urban areas believed to be influenced by artificial environments. Nonetheless, a few of these historic stations, such as Central Park, New York, and Charleston, South Carolina, were used in the U.S. HCN.

When possible, missing data have been estimated based on neighboring stations. If this were the case, then only estimated data and confidence factors are included in a given years data

records. In some instances, where original data was available but the adjustment algorithm was unable to derive the adjusted data, the unadjusted original data will appear in the adjusted data field and will be flagged as such. Therefore, the user should carefully check the flag codes and confidence factors **before** using the adjusted data. Failure to do so may lead to spurious results since there may be substantial differences between the estimated or adjusted data and the original data.

8. Quality Assurance of the U.S. HCN Database by CDIAC

An important part of the NDP preparation process at CDIAC is the quality assurance (QA) of data before distribution. To guarantee data of the highest possible quality, CDIAC conducts extensive QA reviews. Reviews involve the examination of the data for completeness, reasonableness, and accuracy. Although they have common objectives, these reviews are tailored to each data set, and often require extensive programming efforts. Although time-consuming, the QA process is an important component in the value-added concept of assuring accurate, usable data.

NCDC conducted quality control tests using outlier and areal edits, and also performed internal quality control checks, before sending the data to CDIAC. Although the data sent by NCDC was in excellent condition, CDIAC still conducted QA checks on the U.S. HCN data and found some minor discrepancies (all were corrected unless listed here). The following summarizes the QA checks performed on the data by CDIAC.

QA Checks

1. We checked each of the files for erroneous state codes (other than 1–48), station numbers (other than 0008–9933), missing value codes (other than –9999 or –99.99), data element codes (other than 1–4), data type codes (other than blank for original data; "+" for TOB adjusted data; "A" for the station moves, missing data, and MMTS–adjusted data; or "C" for confidence intervals for the "A" data row), and units (other than degrees Fahrenheit for temperature or inches for precipitation).
2. We determined the number of observations, missing values, and stations in each file. Station data having seemingly high numbers of missing values were printed and checked for reasonableness.
3. We compared the station numbers in the updated files with those in the files previously sent to CDIAC (see Table 1).
4. We recalculated the annual and seasonal means in each temperature and precipitation file to identify erroneous values, suspect values, and outliers (all values are within ± 0.1 of CDIAC's recalculated values).
5. We compared the temperature data files to check the minimum < mean < maximum temperature relationship for the blank, "+", and "A" data rows in the U.S. HCN data files. Similar tests were conducted on the temperature data that was adjusted for urbanization effects. Stations that failed these tests were checked to see if the data would meet the test criteria when the confidence intervals in the "C" row were considered. One case of the minimum temperature being greater than the mean was found in row "A" at station 026796

in 8/1904. Three cases of the mean greater than the maximum were found in row "A" (confidence interval considered) at station 363056 in 11/1986 and station 487845 in 1/1918 and 2/1918.

6. We compared the beginning year of record in the station history file with the beginning year of data in the U.S. HCN data files. Four stations (046074, 076410, 308383, and 308600) have mean temperature data before their history begins. Twelve stations (028815, 042910, 076410, 211465, 216565, 243984, 264950, 297610, 308383, 308600, 383747, and 451276) have precipitation data before their history begins. Similar comparisons were conducted on the files adjusted for urbanization heat island effects. Five stations (046074, 076410, 297610, 308383, and 308600) were found to have mean temperature data before their station history began.

9. How to Obtain the Package

The U.S. HCN data files are available free of charge in machine-readable form on 9-track magnetic tape, on Exabyte 8-mm tape, on QIC 0.25-in. tape cartridges, and through an anonymous file transfer protocol (FTP) site maintained by CDIAC. Because of the size and number of files, it is not possible to fill data requests for this NDP on floppy diskettes. Requests for magnetic media should include any specific instructions required by the user and/or the user's local computer system. Requests for this data package should be addressed to:

Carbon Dioxide Information Analysis Center
Oak Ridge National Laboratory
P.O. Box 2008
Oak Ridge, Tennessee 37831-6335
U.S.A.

Telephone: (423) 574-0390 or 574-3645
FAX: (423) 574-2232

BITNET: CDIAC@ORNLSTC
INTERNET: CDIAC@ORNL.GOV or cdp@ornl.gov

The data files may be acquired via the World Wide Web (<http://cdiac.esd.ornl.gov>) or the data may be downloaded from CDIAC's anonymous FTP server as follows:

- FTP to CDIAC.ESD.ORNL.GOV (128.219.24.36).
- Enter "anonymous" as the user id.
- Enter your electronic mail address as the password (e.g., RTV@ORNL.GOV).
- Change the directory by using "cd pub/ndp019r3".
- Set FTP to get ASCII files by using the FTP "ascii" command.
- Acquire the ASCII descriptive file by using the FTP "get ndp019r3.des" command.
- Acquire the ASCII FORTRAN input/output files by using the FTP "mget *.for" command.
- Acquire the ASCII SAS™ input/output files by using the FTP "mget *.sas" command.
- Acquire the ASCII data files by using the FTP "mget *.asc" command.
- Exit the system by using the FTP "quit" command.

Contact CDIAC by phone, fax, or electronic mail to order a free hard copy of this documentation.

A description of this NDP and a on-line data parser for the precipitation and temperature data (adjusted for heat island effects) is available at <http://cdiac.esd.ornl.gov/r3d/ushcn/ushcn.html> .

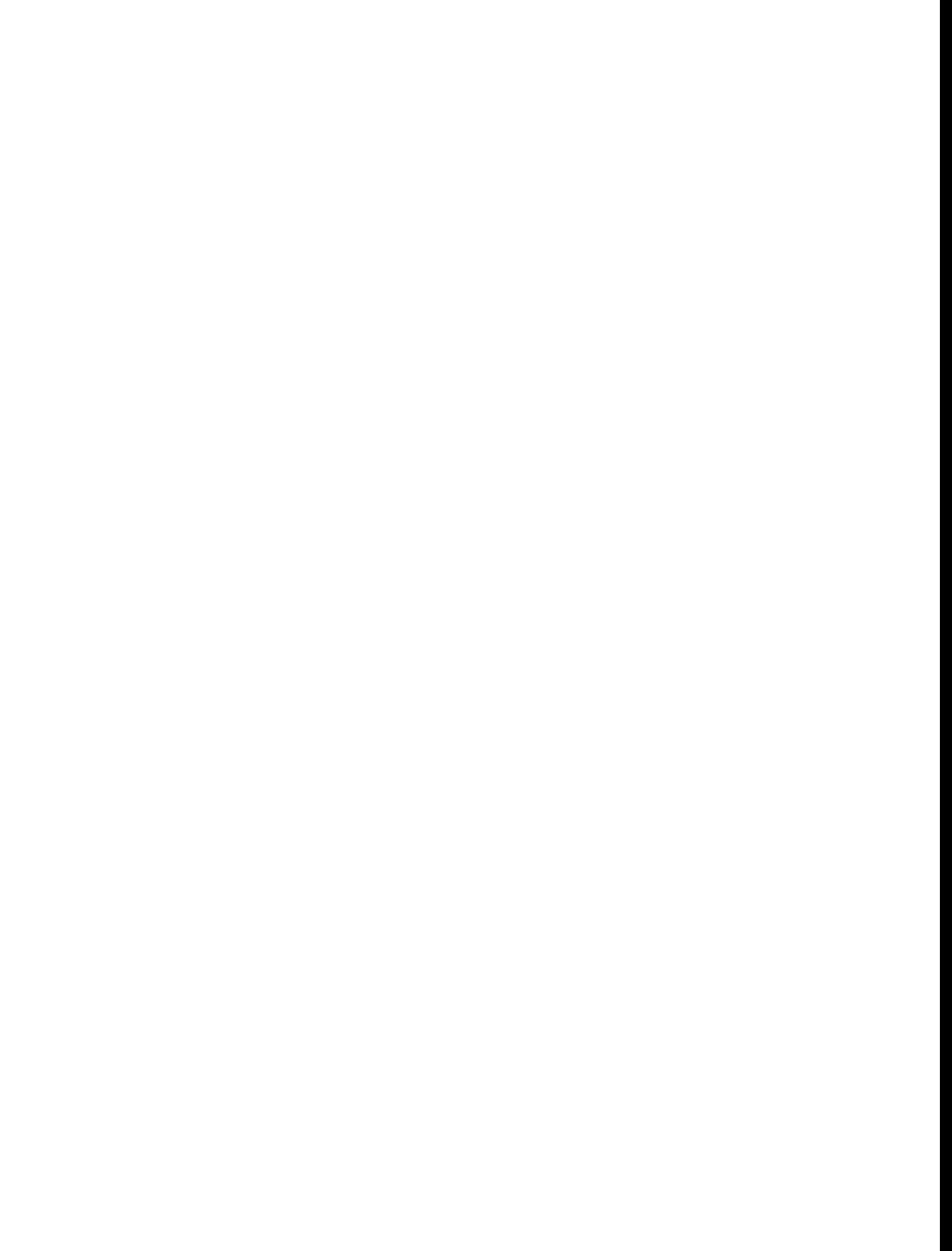
10. References

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Part 2: Information About the Magnetic Media



11. Contents of the Magnetic Media

The following table lists the 27 files included in this database and distributed by the Carbon Dioxide Information Analysis Center (CDIAC) along with this documentation. These files are available on 9-track tapes, 8-mm tape, 0.25-in. tape cartridge, and through the Internet via the World-Wide-Web at <http://cdiac.esd.ornl.gov> or anonymous FTP at [cdiac.esd.ornl.gov](ftp://cdiac.esd.ornl.gov).

Table 2. List and description of the digital files

File number	Name, type, and description	Logical records	Record length	File size (bytes)
1.	NDP019R3.DES General descriptive file that contains the information in Part 2 of the documentation	1,530	80	122,400
2.	INVENT94.FOR FORTRAN retrieval code to read and print the U.S. HCN station inventory file	40	80	3,360
3.	INVENT94.SAS SAS TM input/output code to read and print the U.S. HCN station inventory file	9	80	720
4.	INVENT94.ASC The U.S. HCN station inventory file	1,221	117	142,857
5.	SHF94.FOR FORTRAN retrieval code to read and print the U.S. HCN station history file	76	80	6,080
6.	SHF94.SAS SAS TM input/output code to read and print the U.S. HCN station history file	31	80	2,480
7.	SHF94.ASC The U.S. HCN station history file	20,473	237	4,852,101

Table 2. (continued)

File number	Name, type, and description	Logical records	Record length	File size (bytes)
8.	HCN94.FOR FORTRAN retrieval code to read and print any of the U.S. HCN precipitation and temperature data files	39	80	3,120
9.	HCN94.SAS SAS™ input/output code to read and print any of the U.S. HCN precipitation and temperature data files	19	80	1,520
10.	HCN94MAX.ASC The U.S. HCN maximum monthly temperature data file	468,486	132	61,840,152
11.	HCN94MEA.ASC The U.S. HCN mean monthly temperature data file [mean=(day ₁ +day ₂ +...+day _n)/n]	502,074	132	66,273,768
12.	HCN94AV2.ASC The U.S. HCN average monthly temperature data file, (monthly minimum + monthly maximum)/2	234,227	132	30,917,964
13.	HCN94MIN.ASC The U.S. HCN minimum monthly temperature data file	468,488	132	61,840,416
14.	HCN94PCP.ASC The U.S. HCN total monthly precipitation data file	507,776	132	67,026,432
15.	QA94MXMN.FOR FORTRAN retrieval code to read and print the data quality assessment file for the U.S. HCN maximum and minimum temperature files	56	80	4,640

Table 2. (continued)

File number	Name, type, and description	Logical records	Record length	File size (bytes)
16.	QA94MXMN.SAS SAS TM input/output code to read and print the data quality assessment file for the U.S. HCN maximum and minimum temperature files	15	80	1,200
17.	QA94MXMN.ASC The data quality assessment file for the U.S. HCN maximum and minimum temperature files	1221	223	272,283
18.	QA94MEAN.FOR FORTRAN retrieval code to read and print the data quality assessment files for the U.S. HCN precipitation file and mean temperature file	50	80	4,160
19.	QA94MEAN.SAS SAS TM input/output code to read and print the data quality assessment files for the U.S. HCN precipitation file and mean temperature file	12	80	960
20.	QA94MEAN.ASC The data quality assessment file for the U.S. HCN mean temperature file	1221	173	211,233
21.	QA94PCP.ASC The data quality assessment file for the U.S. HCN precipitation file	1221	173	211,233
22.	URBAN94.FOR FORTRAN retrieval code to read and print the temperature files that have been adjusted for urbanization effects	32	80	2,640

Table 2. (continued)

File number	Name, type, and description	Logical records	Record length	File size (bytes)
23.	URBAN94.SAS SAS™ input/output code to read and print the temperature files that have been adjusted for urbanization effects	9	80	720
24.	UR94MAX.ASC The maximum temperature file adjusted for urbanization effects	116,409	131	15,249,579
25.	UR94MEAN.ASC The mean temperature file adjusted for urbanization effects [mean=(day ₁ +day ₂ +...+day _n)/n]	121,523	131	15,919,513
26.	UR94AV2.ASC The average temperature file adjusted for urbanization effects, (monthly minimum + monthly maximum)/2	116,368	131	15,244,208
27.	UR94MIN.ASC The minimum temperature file adjusted for urbanization effects	116,408	131	15,249,448
Total Records		2,679,034	Total Size	355,405,187

1. SAS™ is a registered trademark of the SAS Institute, Inc., Cary, North Carolina 27511-8000.
2. All 9-track tapes will be fixed blocked on the basis of record length × 100 (i.e., record length 80 × 100 results in a block size of 8,000).

12. Descriptive File on the Magnetic Media

The following is a listing of the first file on the magnetic media distributed by CDIAC with this numeric data package (NDP-019/R3). This file is intended to provide details (i.e., variable descriptions, formats, units) about each file associated with this NDP.

Title of the Data Set

United States Historical Climatology Network (U.S. HCN) Monthly Temperature and Precipitation Data

Data Contributors

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Source and Scope of the Data

One of the objectives in establishing the U.S. HCN was to detect temporal changes in regional rather than local climate. Therefore, only stations not influenced to any substantial degree by artificial changes in their local environments were included in the network. Some of the stations in the U.S. HCN are first-order weather stations, but the majority were selected from the ~5,000 stations in the U.S. cooperative weather station network. To be included in the U.S. HCN a station had to be currently active (in 1987), have at least 80 years of mean monthly temperature and total monthly precipitation data, and have experienced relatively few station moves and equipment changes (see Appendix A for a complete listing of the stations in the U.S. HCN). An additional criterion used in selecting the 1221 U.S. HCN stations that sometimes compromised the preceding requirement, was the desire to have a uniform distribution of stations across the continental United States.

The U.S. HCN database contains station histories, monthly temperature data {mean, mean minimum, average [i.e., (monthly minimum + monthly maximum) / 2], and mean maximum}, and total monthly precipitation data that were compiled from digital and non-digital data sets archived at the National Climatic Data Center (NCDC). These data sets originated from a variety of sources, including climatological publications, universities, federal agencies, individuals, and data archives. All stations were quality controlled by NCDC through the use of outlier and areal edits. Each station record was then corrected for time-of-observation (TOB) differences, instrument changes, instrument moves, and station moves (Karl and Williams 1987). The effects of urbanization were then removed and four urban temperature files produced (Karl et al. 1988).

A unique feature of these data are that within most temperature and precipitation data files, both original (or estimated) and adjusted data are given along with confidence factors for each

adjusted data value. Another unique feature of the database is that in comparison with the long periods of record, only a small portion of the data are represented as missing. In order to make the U.S. HCN record as serially complete as possible, values for stations missing data have been estimated using data from neighboring stations. Since 1900, over 50% of the 1221 stations have data records that are serially complete (i.e., have original, or estimated, and adjusted data).

Data Format

This NDP provides 27 files: 6 FORTRAN input/output routines; 6 SASTM input/output routines; 1 station inventory file; 1 station history file; 4 U.S. HCN files containing monthly mean, mean minimum, average (i.e., [monthly minimum + monthly maximum] / 2), and mean maximum temperatures; 1 file containing total monthly precipitation data; 3 quality assessment files for the U.S. HCN temperature and precipitation data files; 4 temperature files (mean, mean minimum, average, and mean maximum) that have been adjusted for urban heat island effects; and this documentation file. The format and contents of each data file are described below.

Station Inventory File

The station inventory file (INVENT94.ASC) provides a list of the stations in the U.S. HCN at the time the data set was compiled. Appendix A of the documentation provides a complete listing of the station inventory file. The file contains 1221 lines of data and provides essential information about each station. Each record contains the state number; station number; latitude and longitude coordinates; station elevation; station name; two letter state code; beginning year of record in the station history file; ending year of record in the station history file; beginning year of record for the minimum, mean, average, maximum temperatures, and precipitation in the U.S. HCN files; and the beginning year of record for minimum, mean, average, and maximum temperatures in the urban files. This file has no missing values. The file may be read by the following FORTRAN format:

```
10  READ (5,100,END=999) STACOD, LAT, LONG, ELEV,  
   1  STANAME, STATE, BYRSHF, EYRSHF, HCNMN, HCAVG,  
   1  HCAV2, HCNMX, HCNPCP, URMN, URAVG, URAV2, URMX  
      GOTO 10  
C  
100  FORMAT(1I6,2F8.2,1I6,1X,1A30,1A2,11(1X,1I4))
```

Stated in tabular form, the format of the station history files is as follows

Table 3. Variable formats for INVENT94.ASC

Variable name	Variable type	Variable width	Column	
			start	end
STACOD	Integer	6	1	6
LAT	Real	8	7	14
LONG	Real	8	15	22
ELEV	Integer	6	23	28
STANAME	Character	30	30	59
STATE	Character	2	60	61
BYRSHF	Integer	4	63	66
EYRSHF	Integer	4	68	71
HCNMN	Integer	4	73	76
HCAVG	Integer	4	78	81
HCAV2	Integer	4	83	86
HCNMX	Integer	4	88	91
HCNPCP	Integer	4	93	96
URMN	Integer	4	98	101
URAVG	Integer	4	103	106
URAV2	Integer	4	108	111
URMX	Integer	4	113	116

where

- STACOD is the unique station code formed by combining the two-digit state number [state numbers range from 1 to 48 (e.g., 01 = Alabama, 02 = Arizona, . . . 48 = Wyoming)] and the four-digit station number (values range from 0008 to 9933);
- LAT is the station latitude in decimal degrees;
- LONG is the station longitude in decimal degrees;
- ELEV is the ground elevation at the station, expressed in whole feet above or below mean sea level (values range from -194 to 9065);
- STATION is the full name of the cooperative station as of 1994;
- STATE is a two-letter state abbreviation (e.g., AL = Alabama, AZ = Arizona, etc.);
- BYRSHF is the beginning year of record in the station history file;
- EYRSHF is the ending year of record in the station history file (9999 indicates the station is

still in operation);

- HCNMN is the beginning year of record for a station in the minimum temperature data file;
- HCNAVG is the beginning year of record for a station in the mean temperature data file;
- HCNAV2 is the beginning year of record for a station in which both the maximum and minimum temperature data are available;
- HCNMX is the beginning year of record for a station in the maximum temperature data file;
- HCNPCP is the beginning year of record for a station in the precipitation temperature data file;
- URMN is the beginning year of record for a station in the minimum temperature, urban heat island effect data file;
- URAVG is the beginning year of record for a station in the mean temperature, urban heat island effect data file;
- URAV2 is the beginning year of record for a station in which both the maximum and minimum urban heat island effect temperature data are available;
- URMX is the beginning year of record for a station in the maximum temperature, urban heat island effect data file.

Station History File

The station history file (SHF94.ASC) provides valuable information concerning each station in the U.S. HCN. This file documents station moves and instrument changes, lists station observers and observation times, and identifies suspect fields. When this file is used in conjunction with the station inventory file and quality assessment files the user may accurately assess the quality and suitability of each station's data for long-term climate analyses. The file may be read by the following FORTRAN format:

```

10  READ (5,100) STACOD, STATE, DIVISION, STANAME,
    1  COUNTY, XREF
20  READ (5,110,END=999) STACOD2
    BACKSPACE 5
    IF (STACOD .NE. STACOD2) GOTO 10
    READ (5,115) STACOD2, MOBEG, DAYBEG, YRBEG,
    1  MOEND, DAYEND, YREND, (SUSP(I),I=1,15), LATDEG, LATMIN,
    1  LONGDEG, LONGMIN, DISTANCE, DPLUNIT, DIRECT,
    1  ELEV, DISTPO, DPOUNIT, DIRECTPO, NAME, QUALIF,
    1  (INSTRU(I),I=1,36), PCPOT, TMPOT, PCPHT, TMPHT,
    1  (PUB(I),I=1,16), OBSNAME, NUMOBS
C
100  FORMAT(1I6,1X,1A2,1X,1I2,1X,1A30,1X,1A16,1X,1A25)
110  FORMAT(1I6)
115  FORMAT(1I6,2(2(1X,1I2),1X,1I4),1X,15A1,1X,1I3,1X,1I2,1X,
    1  1I4,1X,1I2,1X,1I3,1A1,1A3,1X,1I5,1X,1I4,1A1,
    1  1A3,1X,1A28,1X,1A10,1X,36A1,2(1X,2A2),1X,16A1,1X,
    1  1A46,1X,1I2)

```

Stated in tabular form, the format of the station history file is as follows.

Table 4. Variable formats for SHF94.ASC

Variable name	Variable type	Variable width	Column	
			start	end
<i>Station header record</i>				
STACOD	Integer	6	1	6
STATE	Character	2	8	9
DIVISION	Integer	2	11	12
STANAME	Character	30	14	43
COUNTY	Character	16	45	60
XREF	Character	25	62	86

Table 4. (continued)

Variable name	Variable type	Variable width	Column	
			start	end
<i>Station data record</i>				
STACOD2	Integer	6	1	6
MOBEG	Integer	2	8	9
DAYBEG	Integer	2	11	12
YRBEG	Integer	4	14	17
MOEND	Integer	2	19	20
DAYEND	Integer	2	22	23
YREND	Integer	4	25	28
SUSPLAT	Character	1	30	
SUSPLONG	Character	1	31	
SUSPLOC	Character	1	32	
SUSPELEV	Character	1	33	
SUSPPO	Character	1	34	
SUSPNAME	Character	1	35	
SUSPQUAL	Character	1	36	
SUSPINST	Character	1	37	
SUSPTIME	Character	1	38	
SUSPPTS	Character	1	39	
SUSPPUBS	Character	1	40	
SUSPBEG	Character	1	41	
SUSPEND	Character	1	42	
SUSPOBS	Character	1	43	
SUSPOTHR	Character	1	44	
LATDEG	Integer	3	46	48
LATMIN	Integer	2	50	51
LONGDEG	Integer	4	53	56
LONGMIN	Integer	2	58	59
DISTANCE	Integer	3	61	63
DPLUNIT	Character	1	64	
DIRECT	Character	3	65	67
ELEV	Integer	5	69	73
DISTPO	Integer	4	75	78
DPOUNIT	Character	1	79	
DIRECTPO	Character	3	80	82
NAME	Character	28	84	111
QUALIF	Character	10	113	122
AI	Character	1	124	
CRS	Character	1	125	
DT	Character	1	126	
EVA	Character	1	127	

Table 4. (continued)

Variable name	Variable type	Variable width	Column	
			start	end
FP	Character	1	128	
HYTHG	Character	1	129	
MN	Character	1	130	
MX	Character	1	131	
NRIG	Character	1	132	
NSRG	Character	1	133	
NSS	Character	1	134	
RRIG	Character	1	135	
RRNG	Character	1	136	
SDE	Character	1	137	
SG	Character	1	138	
SRG	Character	1	139	
SS	Character	1	140	
TG	Character	1	141	
DGT	Character	1	142	
TB	Character	1	143	
EVO	Character	1	144	
MMTS	Character	1	145	
TELSY	Character	1	146	
HYGRO	Character	1	147	
HY6	Character	1	148	
HY8	Character	1	149	
SFP	Character	1	150	
SRRNG	Character	1	151	
SSG	Character	1	152	
SSRG	Character	1	153	
STB	Character	1	154	
AMOS	Character	1	155	
AUTOB	Character	1	156	
PSY	Character	1	157	
PCPOT	Character	2	161	162
TMPOT	Character	2	163	164
PCPHT	Character	2	166	167
TMPHT	Character	2	168	169

Table 4. (continued)

Variable name	Variable type	Variable width	Column	
			start	end
BULLETW	Character	1	171	
COMBBUL	Character	1	172	
CLIMDATA	Character	1	173	
RIVSTAGE	Character	1	174	
HYDROBUL	Character	1	175	
PRECDATA	Character	1	176	
SNOWBULL	Character	1	177	
NOTPUB	Character	1	178	
CWB	Character	1	179	
MONTHREV	Character	1	180	
STATEPUB	Character	1	181	
LCD	Character	1	182	
BQ	Character	1	183	
SGPD	Character	1	184	
WWR	Character	1	185	
MYB	Character	1	186	
OBSNAME	Character	46	188	233
NUMOBS	Character	2	235	236

where

- STACOD is the unique station code formed by combining the two-digit state number [state numbers range from 1 to 48 (e.g., 01 = Alabama, 02 = Arizona, . . . 48 = Wyoming)] and the four-digit station number (values range from 0008 to 9933);
- STATE is the two-letter state abbreviation (e.g., AL = Alabama);
- DIVISION is the state U.S. climatological subdivision number [e.g., Vermont (STACOD = 43) has three climatological subdivisions (01 = Northeastern, 02 = Western, and 03 = Southeastern)];
- STANAME is the most current station name;
- COUNTY is the county in which the station is presently located;
- XREF is a station cross-reference, representing the cooperative station number of the station or the county name that the current station moved to or from;

STACOD2 is the current unique station code formed by combining the two-digit state number [state numbers range from 1 to 48 (e.g., 01 = Alabama, 02 = Arizona, . . . 48 = Wyoming)] and the four-digit station number (values range from 0008 to 9933);

MOBEG is the month the data record started (values range from 01 to 12, and missing values are represented by 99);

DAYBEG is the day the data record started (values range from 01 to 31, and missing values are represented by 99);

YRBEG is the year the data record started (values range from 1738 to 1994);

MOEND is the month the data record ended (values range from 01 to 12, and missing values are represented by 99);

DAYEND is the day the data record ended (values range from 01 to 31, and missing values are represented by 99);

YREND is the year the data record ended (values range from 1759 to 1994, and 9999 indicates that the station is still in operation at this location).

The next 15 variables represent suspect fields in the station history file. The values for these variables will be either 0 or 1. Values of 1 represent field(s) flagged as suspect by the pre-key editor. In the FORTRAN program this data is stored in an single-character, 15-element array named SUSP.

1. SUSPLAT	Latitude
2. SUSPLONG	Longitude
3. SUSPLOC	Distance from previous location
4. SUSPELEV	Elevation
5. SUSPPO	Distance from Post Office location
6. SUSPNAME	Station name
7. SUSPQUAL	Qualifier added to the station name
8. SUSPINST	Instruments
9. SUSPTIME	Observation time
10. SUSPHTS	Instrument heights
11. SUSPPUBS	Publications
12. SUSPBEG	Beginning date
13. SUSPEND	Ending date
14. SUSPOBS	Observer
15. SUSPOTHR	Other observers

LATDEG is the degree portion of the station latitude (North).

LATMIN is the minute portion of the station latitude (North).

LONGDEG is the degree portion of the station longitude (West) (Note: negative signs are missing).

LONGMIN is the minute portion of the station longitude (West).

DISTANCE is the distance in tenths of miles or city blocks from the previous station location (e.g., 015 = 1.5 miles); if DPLUNIT = "B" then this value represents 15 city blocks; unknown directions are represented by 999.

DPLUNIT is the units indicator for DISTANCE (i.e., blank = miles, B = city blocks).

DIRECT is the direction on a 16-point compass of a station move from the previous location. Location of the temperature instrument defines the official station location. Values may be blank, character, or numeric. Unknown direction is represented by 999. For example,

blank = first record of new station or distance and direction unknown;
 015 NW = station moved 1.5 (variable DISTANCE) miles (variable DPLUNIT) NW from previous location;
 000 000 = no change in station or instrument location;
 000 ESE = moved <0.1 mile east-southeast (ESE) from previous location;
 000 999 = moved <0.1 mile, direction unknown;
 900 ESE = temperature instrument moved, precipitation instrument did not move, or both instruments were moved to the same location;
 800 000 = precipitation instrument moved but the temperature instrument did not;
 and
 999 NW = distance unknown, direction NW.

ELEV is the ground elevation at the station, expressed in whole feet above or below mean sea level (values range from -194 to 9,843 feet).

DISTPO is the distance in tenths of miles or city blocks from the nearest Post Office (e.g. 015 = 1.5 miles); if DPOUNIT = "B" then this value represents 15 city blocks, unknown distances are represented by 9999.

DPOUNIT is the units indicator for DISTPO (i.e., blank = miles, B = city blocks).

DIRECTPO is the direction on a 16-point compass from the nearest Post Office. Values may be either blank, character, or numeric. Unknown directions are represented by 999.9. For example:

blank = distance and direction unknown;
 0015 NW = 1.5 (variable DISTPO) miles (variable DPOUNIT) NW of post office;
 0000 NW = <0.1 mile NW from post office;
 0000 999 = <0.1 mile from post office, direction unknown; and
 0000 000 = at the post office.

NAME is the full station name.

QUALIF is a qualifier or description that is added to the proper name of the station (e.g., Asheville 2N).

The next 36 variables represent the instrumentation of the station and the station's classification. If an instrument was used at a particular station or if a particular classification is appropriate for that station, the variable will have a value of 1; if it was not used, the variable will have a value of 0. In the FORTRAN program this data is stored in a single-character, 36-element array named INSTRU.

1. AI	Additional instrument (wind, pressure, etc.)
2. CRS	Cotton region shelter
3. DT	Dry bulb thermometer
4. EVA	Class "A" evaporation station
5. FP	Fisher-Porter gage
6. HYTHG	Hygrothermograph
7. MN	Minimum thermometer
8. MX	Maximum thermometer
9. NRIG	Nonrecording river gage
10. NSRG	Nonstandard rain gage
11. NSS	Nonstandard shelter
12. RRIG	Recording river gage
13. RRNG	Recording rain gage
14. SDE	Snow density gage
15. SG	Storage gage
16. SRG	Standard rain gage
17. SS	Standard shelter (official)
18. TG	Thermograph
19. DGT	Digital thermometer
20. TB	Tipping bucket gage
21. EVO	Other than class "A" evaporation station
22. MMTS	Maximum/minimum temperature system
23. TELS	Telemetry system
24. HYGRO	Hygrothermometer (type unknown)
25. HY6	Hygrothermometer, H06X series
26. HY8	Hygrothermometer, H08X series
27. SFP	Shielded Fischer-Porter gage
28. SRRNG	Shielded recording rain gage
29. SSG	Shielded storage gage
30. SSRG	Shielded standard rain gage
31. STB	Shielded tipping bucket gage
32. AMOS	Automated meteorological observing system
33. AUTOB	Automated observing station
34. PSY	Psychrometer (Alaska only)
35.	not assigned at present
36.	not assigned at present

PCPOT is the observation time (rounded to the whole hour) for precipitation.

TMPOT is the observation time (rounded to the whole hour) for temperature. Values for PCPOT and TMPOT may be either numeric, character, or alphanumeric. Possible values and their meaning include the following:

01 to 24 = nearest whole hour;
 99 = missing;
 SR = sunrise;
 SS = sunset;
 XXHR XX = number of hours observed per day;
 9XX9 XX = hours observed, unknown for both temperature and precipitation;
 TRID = tri-daily observations,
 Average Temperature = [7 AM + 2 PM + (2 x 9 PM)] / 4;
 RS = crop season=sunrise (SR) and other months = sunset (SS).

PCPHT is the height of the precipitation instrument aboveground, rounded to the nearest foot.

TMPHT is the height of the temperature instrument aboveground, rounded to the nearest foot. Values for PCPHT and TMPHT may be given in either numerals or characters. Numerical values range from 01 to 99. Potential values include the following:

01-97 = actual height;
 98 = \geq 98 feet;
 99 = missing; and
 RF = roof, height unknown.

The next 16 variables represent publications. If the data from a particular station appeared in a publication the variable will have a value of 1; if not, the variable will have a value of 0. In the FORTRAN programs, these data are stored in a single-character, 16-element array named PUB. The variables and their corresponding publications are as follows:

- | | |
|--------------|---|
| 1. BULLETW | <i>Bulletin W</i> |
| 2. COMBBUL | <i>Combined Bulletin</i> |
| 3. CLIMDATA | <i>Climatological Data</i> |
| 4. RIVSTAGE | <i>Daily River Stages</i> |
| 5. HYDROBUL | <i>Hydrologic Bulletin</i> |
| 6. PRECDATA | published as hourly precipitation data |
| 7. SNOWBULL | <i>Snow Bulletin</i> |
| 8. NOTPUB | not published |
| 9. CWB | Report to the chief of the U.S. Weather Bureau |
| 10. MONTHREV | <i>Monthly Weather Review</i> |
| 11. STATEPUB | published in state publications |
| 12. LCD | <i>Local Climatological Data</i> |
| 13. BQ | <i>Bulletin Q, 1870-1903.</i> |
| 14. SGPD | <i>Storage Gage Precipitation Data, Western United States</i> |
| 15. WWR | <i>Weekly Weather Review</i> |
| 16. MYB | <i>U.S. Meteorological Yearbook</i> |

OBSNAME is the observer's name (may include more than one name per record).

NUMOBS is the number of additional known observers during the time of record for a station (values range from 0 to 28).

Temperature and Precipitation Data Files

Monthly data have been extracted from digital and nondigital data sets archived at the NCDC. The data are sorted by element: one file each for monthly maximum temperature, mean temperature, average temperature [i.e., (monthly minimum + monthly maximum)/2], minimum temperature, and total precipitation. The total monthly precipitation and temperature data files are revisions of the files distributed with the last revision of this NDP. These updates extend the period of record from 1987 through 1994. Each record of these four files contain 1 year of monthly data for a given station. These monthly data sets come from various sources as defined by the source field in the station history file. At most, each file will contain four lines of data per year for each station. These lines include (1) original measured data; (2) time of observation corrections, (3) data adjusted for station moves, instrument changes, and other factors influencing the homogeneity of the station record; and (4) confidence estimates for these adjusted values. These files have not been adjusted for urbanization effects. If a station moved between 1987 and 1994, then the adjusted and estimated data for the station will differ from the revision 1 and 2 data files for the entire period of record. **The precipitation data have been completely revised due to the correction of logical errors in the precipitation adjustment programs.**

The average temperature file is new at this revision of the NDP and may contain two data records per year, per station. The "+" record is the TOB mean temperature data calculated from the TOB maximum temperature and TOB minimum temperature data. The "A" record is the FILNET (see p. 36) mean temperature data calculated from the "A" rows in the maximum and minimum temperature data files. The files may be read by the following FORTRAN format. All data are expressed in hundredths of degrees Fahrenheit, and missing values are represented by -9999.

```
10    READ (5,100,END=999) STACOD, YEAR, ELEM,  
      1    TYPE, (HCNDAT(I), FLAG(I), FLAG2(I), FLAG3(I),  
      1    FLAG4(I), I=1, 13)  
      GOTO 10  
C  
100   FORMAT(I6, 1X, I4, 1X, I1, A1, 13(I5, 4A1))
```

During a few years original data were not available and only estimated data and confidence factors are included. Stated in tabular form, the format of the data files are as follows.

Table 5. Variable formats for files HCN94MAX.ASC, HCN94MEA.ASC, HCN94AV2.ASC, HCN94MIN.ASC, and HCN94PCP.ASC

Variable name	Variable type	Variable width	Column	
			start	end
STACOD	Integer	6	1	6
YEAR	Integer	4	8	11
ELEM	Integer	1	13	
TYPE	Character	1	14	
JAN	Integer	5	15	19
JANFLAG1	Character	1	20	
JANFLAG2	Character	1	21	
JANFLAG3	Character	1	22	
JANFLAG4	Character	1	23	
FEB	Integer	5	24	28
FEBFLAG1	Character	1	29	
FEBFLAG2	Character	1	30	
FEBFLAG3	Character	1	31	
FEBFLAG4	Character	1	32	
MAR	Integer	5	33	37
MARFLAG1	Character	1	38	
MARFLAG2	Character	1	39	
MARFLAG3	Character	1	40	
MARFLAG4	Character	1	41	
APR	Integer	5	42	46
APRFLAG1	Character	1	47	
APRFLAG2	Character	1	48	
APRFLAG3	Character	1	49	
APRFLAG4	Character	1	50	
MAY	Integer	5	51	55
MAYFLAG1	Character	1	56	
MAYFLAG2	Character	1	57	
MAYFLAG3	Character	1	58	
MAYFLAG4	Character	1	59	
JUN	Integer	5	60	64
JUNFLAG1	Character	1	65	
JUNFLAG2	Character	1	66	
JUNFLAG3	Character	1	67	
JUNFLAG4	Character	1	68	
JUL	Integer	5	69	73
JULFLAG1	Character	1	74	
JULFLAG2	Character	1	75	
JULFLAG3	Character	1	76	
JULFLAG4	Character	1	77	

Table 5. (continued)

Variable name	Variable type	Variable width	Column	
			start	end
AUG	Integer	5	78	82
AUGFLAG1	Character	1	83	
AUGFLAG2	Character	1	84	
AUGFLAG3	Character	1	85	
AUGFLAG4	Character	1	86	
SEP	Integer	5	87	91
SEPFLAG1	Character	1	92	
SEPFLAG2	Character	1	93	
SEPFLAG3	Character	1	94	
SEPFLAG4	Character	1	95	
OCT	Integer	5	96	100
OCTFLAG1	Character	1	101	
OCTFLAG2	Character	1	102	
OCTFLAG3	Character	1	103	
OCTFLAG4	Character	1	104	
NOV	Integer	5	105	109
NOVFLAG1	Character	1	110	
NOVFLAG2	Character	1	111	
NOVFLAG3	Character	1	112	
NOVFLAG4	Character	1	113	
DEC	Integer	5	114	118
DECFLAG1	Character	1	119	
DECFLAG2	Character	1	120	
DECFLAG3	Character	1	121	
DECFLAG4	Character	1	122	
ANN	Integer	5	123	127
ANNFLAG1	Character	1	128	
ANNFLAG2	Character	1	129	
ANNFLAG3	Character	1	130	
ANNFLAG4	Character	1	131	

where

STACOD is the unique six digit station code consisting of a two-digit state number [values range from 01 to 48 (i.e., 01 = Alabama, 02 = Arizona, . . . 48 = Wyoming)] and the cooperative station network number (values range from 0008 to 9933);

YEAR is the year of record;

ELEM is the data element to identify the data file (1 = monthly maximum temperatures, 2 = monthly minimum temperatures, 3 = monthly mean temperatures or monthly average temperatures, and 4 = total monthly precipitation);

TYPE is the data type code (blank = original data; + = time of observation adjustments; A = station moves, MMTS corrections, missing data adjustments; and C = confidence factor).

Original data are the manuscript or "sources" data that have been archived at NCDC. These data have been manually corrected as needed when checks, such as the annual total vs monthly sum and the average temperature file [i.e., (monthly maximum + monthly minimum)/2] versus mean temperature file, have indicated suspect data. These data are as "clean" as possible with respect to the source (see FLAG2). Adjusted data, along with the confidence factors, are a product of four major computer programs. The station history data and a network of the best correlated nearby stations are used in all these routines. First, the original data are input into a time-of-observation (TOB) debiasing routine so that the data will be consistent with a midnight-to-midnight observation schedule, (Karl et al. 1986). Secondly, the TOB corrected data are input into the MMTS program which debiases the data taken from the new Maximum/Minimum Temperature System (MMTS) (Quayle et al. 1991). Thirdly, the data is then entered into the station history adjustment program (SHAP) which debiases the data with respect to instrument changes (other than the MMTS conversion) that may affect the temperature and precipitation data (Karl et al. 1987). The final routine, FILNET, uses the SHAP data and fills in missing original data (i.e., estimates data values based on highly correlated neighboring stations) and then calculates the adjusted data for periods where station changes occurred too often for the SHAP program to make the corrections needed to debias the data.

In the FORTRAN code, the monthly and annual data variables are stored in a 13—element integer array named HCNDAT.

JAN—DEC are the monthly mean temperature or total monthly precipitation estimates. Original and adjusted or estimated temperature data are expressed in units of hundredths of degrees Fahrenheit but are only measured to the nearest tenth of a degree. Precipitation is in hundredths of inches. For adjusted data, one-half the maximum plus one-half the minimum do not necessarily exactly equal the mean. The mean temperature is adjusted independently of the adjustments of the maximum and minimum values (Karl et al. 1986). A —9999 value indicates that data were not available or adjustments were not made for a given data variable.

Confidence factors for temperature are in units of hundredths of degrees Fahrenheit. For precipitation, a dimensionless multiplication factor in hundredths is provided for calculation of confidence intervals. A —9999 indicates that no confidence factors were calculated.

Temperature confidence intervals are calculated by subtracting the temperature confidence factor from the adjusted value to obtain the lower end of the confidence interval (16%, —1 standard deviation). The upper end of the confidence interval (84%, +1 standard deviation) is obtained by adding the confidence factor to the adjusted data. For the precipitation confidence intervals, the lower end of the confidence interval (16%) is obtained by dividing the adjusted value by its confidence factor, and the upper end of the confidence interval (84%) is obtained by multiplying the adjusted value by its confidence factor.

ANN is the annual mean of the monthly temperature or total annual precipitation estimates. Original and adjusted temperature data are expressed in units of hundredths of degrees Fahrenheit or hundredths of inches (all 12 months must have data for this variable to be calculated).

In the FORTRAN code the following variables are stored in four, 4-element, single-character arrays named FLAG, FLAG2, FLAG3, and FLAG4 (in the SAS code the data variables are named FLAG1, FLAG2, FLAG3, and FLAG4).

Flag Codes for the Blank Row, the Original Data

(JAN-DEC)FLAG1

is the code for the number of daily values not available in computing the monthly value (flag values are Blank = 0, A = 1, B = 2, C = 3, . . . I = 9; "." = data is estimated). If the source code flag (FLAG2 -see below) equals 0 or 1, then FLAG1 = I indicates that 1 to 9 days of data are missing.

(JAN-DEC)FLAG2

is the data source code. The codes and their meaning are as follows:

- 0 = NCDC Tape Deck 3200, Summary-of-the-Day Element Digital File;
- 1 = NCDC Tape Deck 3220, Summary-of-the-Month Element Digital File;
- 2 = Means Book—Smithsonian Institute, C. A. Schott (1876, 1881, up to 1931);
- 3 = Manuscript —Original National Climatic Data Records;
- 4 = CD—*Climatological Data*, published monthly by NCDC;
- 5 = Climate Record Book—for a description, see *History of Climatological Record Books*, U.S. Department of Commerce, Weather Bureau, U.S.G.P.O., 1960;
- 6 = Bulletin W—*Summary of the Climatological Data for the United States by Section* by F. H. Bigelow, U.S. Weather Bureau, 1912; and *Summary of the Climatological Data for the United States*, (Bulletin W - 2nd ed.);
- 7 = LCD—*Local Climatological Data*, published monthly by NCDC;
- 8 = State climatologists—various sources;
- B = Professor Raymond Bradley—see *Climatic Fluctuations of the Western United States During the Period of Instrumental Records* by Bradley, Barry, and Kiladis, Contribution No. 42, Department of Geography and Geology, University of Massachusetts, 1982;
- D = Dr. Henry Diaz—A compilation of data from Bulletin W, LCD and NCDC Tape Deck 3220 (1983);
- G = Professor John Griffith —primarily from *Climatological Data*; and
- Blank = computed value from two of three temperature elements.

(JAN-DEC)FLAG3

is a precipitation indicator for trace precipitation (T = Trace). This flag is not used in the temperature files and is blank.

(JAN–DEC)FLAG4

is a code for outliers. The codes and their meaning are as follows:

- S = data are outliers, but NCDC did not have enough confidence to invalidate the observation [the data in question are between 3.5 and 5.0 standard deviations from their mean offset with respect to its nearest neighbors (Karl et al. 1986)]; and
- X = data are outliers and are represented as missing (>5.0 standard deviations from their mean offset with respect to the station's nearest neighbors);
- Blank = data are not outliers.

ANNFLAG1

is an indicator that daily values were not available when the annual value was computed. The codes and their meaning are as follows:

- Blank = indicates that data were not missing; and
- I = indicates that 1 to 9 days of data are missing in at least 1 month of the year.

ANNFLAG2

is the same source code used for the original data.

ANNFLAG3

is used as an indicator for trace precipitation (T = Trace).

ANNFLAG4

is not used.

Flag Codes for Row "+," the Time–Of–Observation Adjusted Data

(JAN–DEC)FLAG1

is the same as the code used for the original data in FLAG1.

In the average temperature file (HCN94AV2.ASC), a code of "." means that the maximum or minimum data had a code of "."; otherwise, the code is the code of the maximum/minimum data with the greatest number of missing days.

(JAN–DEC)FLAG2

is the same source code used for the original data.

In the average temperature file, this flag is not used and is blank.

(JAN–DEC)FLAG3

is a precipitation indicator for trace precipitation (T = Trace). For temperature data, this flag is an indicator of the quality of the available observation times for a given station. The temperature codes and their meanings are as follows:

- F = information concerning the observation times for the station during the year was suspect or "flaky" (the temperature data provided when this flag code appears should be used with caution); and

G = information concerning the observation times for the station during the year was "good," and the information was judged to be accurate;
Blank = observation times were not available for the station during that year.

In the average temperature file, this flag represents the worst code for the maximum and minimum data files: blank indicates that the maximum and/or minimum flags were blank; "F" indicates that the maximum and/or minimum flags were "F"; and "G" indicates that the maximum and minimum flags were "G".

(JAN-DEC)FLAG4

is the same code as used for FLAG4 in the original data.

In the average temperature file, this flag represents the worst code for the maximum and minimum data files: "S" indicates that the maximum and/or minimum flags were "S"; and "X" indicates that the maximum and/or minimum flags were "X"; and blank indicates that the minimum and maximum data were not outliers;

ANNFLAG1, ANNFLAG2, and ANNFLAG4 are not used. ANNFLAG3 is used as an indicator for trace precipitation (T = Trace).

Flag Codes for Row "A," the Adjusted Data

(JAN-DEC)FLAG1

is the same code as used for FLAG1 in the original data.

(JAN-DEC)FLAG2

is the same code as used for FLAG2 in the original data.

(JAN-DEC)FLAG3

is an indicator for the station move bias correction (added by the SHAP program). This flag is set to blank in the precipitation data file. The indicators and their meaning are

Blank = no temperature data adjusted –treated as a station move; and
O = temperature data adjusted.

(JAN-DEC)FLAG4

indicates outliers and missing data estimates. The codes and their meanings are as follows:

- Blank = original data do not have outliers;
- S = original data have outliers, but NCDC did not have enough confidence to invalidate the observation;
- M = no original data are available, but an estimate is provided that is consistent with the data adjusted by using the nearest neighboring stations; or, the data were in excess of 5.0 standard deviations from their mean offset with respect to the station's nearest neighbors; and
- E = original data are available, but data were estimated by using nearest neighbors

because (1) the data were between 3.5 and 5.0 standard deviations from their mean offset and 1 or more days in the month were missing; or (2) adjustments of original data were inappropriate (< 5 years between potential inhomogeneities), so nearest neighbors were used to estimate the data consistent with its 1994, or last known, location.

In the average temperature file, this flag represents the worst code for the maximum and minimum data files: "S" indicates that the maximum and/or minimum flags were "S"; "M" indicates that the maximum and/or minimum flags were "M"; and "E" indicates that the maximum and/or minimum flags were "E"; and blank indicates that the minimum and maximum data do not have outliers;

ANNFLAG1, ANNFLAG2, ANNFLAG3, and ANNFLAG4 are not used.

Flag Codes for Row "C," the Confidence Factors

(JAN-DEC)FLAG1
is not used.

(JAN-DEC)FLAG2
is a code representing the number of the move, counting back from 1994 (0, 1, 2, . . . 9, A = 10, B = 11, . . . P = 25).

(JAN-DEC)FLAG3
represents the significance level at which the initial adjustment was made. Possible flag codes and their meanings are as follows:

Value	Sigma	Confidence interval (%)
1	1.0	16 to 84
2	2.0	5 to 95
3	2.57	1 to 99
4	3.3	0.1 to 99.9 (never used at this revision)
5	3.75	0.01 to 99.99

These numeric flag values are used only in the temperature data files. Other possible values are as follows:

X = algorithm was unable to adjust the data;

U = algorithm was unable to adjust the entire series because of the low station density of the network, but an estimate for the missing data is given by using neighboring stations;

A = precipitation data was adjusted by using annual values; or

S = precipitation data was adjusted.

(JAN-DEC)FLAG4
is not used.

ANNFLAG1, ANNFLAG2, ANNFLAG3, and ANNFLAG4 are not used.

The preceding information is all that is needed to use the data on a first-look basis. The flags and the data may be interpreted as follows: (1) if the adjusted data and confidence factor are present (not equal to -9999), then the data have successfully passed through all the adjustments and fill-ins and may be considered NCDC's "best" estimate, or (2) if the original data and TOB data are present but the adjusted data and confidence factor are missing, the temperature data have passed through only the TOB program (i.e., station history adjustment and the fill-in procedures could not estimate the adjusted data).

Data Quality Assessment Files

Three data quality assessment files provided were generated by NCDC to allow the user to identify the stations of the highest quality. The information in these files, along with the information in the station history and data inventory files, enable the user to identify the stations with the longest, most complete records. Complete listings of the quality assessment files, by state, are provided in Appendix B of the documentation. An example is given in Appendix B to demonstrate how to interpret and use these files to select stations suitable for climatological analyses. **These files provide information for the HCN temperature and precipitation data files only, not the temperature files that have been adjusted for heat island effects.** The statistics in these files were generated for the data through 1994. Quality assessments of the minimum and maximum temperature data have been combined into one file. The minimum and maximum temperature quality assessment file may be read by using the following FORTRAN format:

```
10  READ (5,100,END=999) STATE, STANAME, STATENUM,
1    STANUM, STADIV, LAT, LONG, ELEV, BORDATE, R1,
1    PERORIG, R2, USCDATE, R3, ASCDATE, R4, PERASCD,
1    R5, PDBPOR, PDR1, APDMX, PDR2, APDMN, PDR3,
1    PDASCD, PDR4, APDASCMX, PDR5, APDASCMN, PDR6,
1    CONFMX, R6, CONFMN, R7, CONS40MX, R8, CONS40MN,
1    R9, CONSMX, R10, CONSMN, R11
    GOTO 10
C
100  FORMAT(1X,A2,1X,A28,1X,I2,1X,I4,1X,A2,1X,
1    A6,1X,A7,2X,I6,1X,A7,1X,I1,1X,
1    F5.1,2(1X,I1,1X,A7),1X,I1,1X,
1    F6.1,1X,I1,2X,I2,2X,I1,4X,I2,3X,
1    I1,3X,I3,3X,I1,1X,I3,1X,2(I1,3X,
1    I3,3X),I1,1X,F5.2,1X,
1    I1,1X,F5.2,1X,2(I1,3X,I2,3X),
1    I1,2(4X,I2,4X,I1))
```

The mean temperature and precipitation quality assessment files may be read with the following:

```

10  READ (5,100,END=999) STATE, STANAME, STATENUM,
1   STANUM, STADIV, LAT, LONG, ELEV, BPORDATE, R1,
1   PERORIG, R2, USCDATE, R3, ASCDATE, R4, PERASCD,
1   R5, PDBPOR, PDR1, APDBPOR, PDR2, PDASCD,
1   PDR3, APDSCD, PDR4, CONF, R6, CONS40,
1   R7, CONSF, R8
      GOTO 10

```

C

```

100  FORMAT(1X,A2,1X,A28,1X,I2,1X,I4,1X,A2,1X,
1     A6,1X,A7,2X,I6,1X,A7,1X,I1,1X,
1     F5.1,2(1X,I1,1X,A7),1X,I1,1X,
1     F6.1,1X,I1,2X,I2,2X,I1,4X,I2,3X,I1,3X,
1     I3,3X,I1,3X,I3,3X,I1,1X,F5.2,1X,I1,
1     2X,I2,2X,I1,2X,I2,2X,I1)

```

Table 6 shows the contents of the maximum and mean temperature file. Table 7 shows the contents of the mean temperature and total precipitation files. Note that the two files have identical formats through variable PDR1.

Table 6. Variable formats for files QA94MXMN.ASC

Variable name	Variable type	Variable width	Column	
			start	end
STATE	Character	2	2	3
STANAME	Character	28	5	32
STATENUM	Integer	2	34	35
STANUM	Integer	4	37	40
STADIV	Character	2	42	43
LAT	Character	6	45	50
LONG	Character	7	52	58
ELEV	Integer	6	61	66
BPORDATE	Character	7	68	74
R1	Integer	1	76	
PERORIG	Real	5	78	82
R2	Integer	1	84	
USCDATE	Character	7	86	92
R3	Integer	1	94	
ASCDATE	Character	7	96	102
R4	Integer	1	104	
PERASCD	Real	6	106	111

Table 6. (continued)

Variable name	Variable type	Variable width	Column	
			start	end
R5	Integer	1	113	
PDBPOR	Integer	2	116	117
PDR1	Integer	1	120	
APDMX	Integer	2	125	126
PDR2	Integer	1	130	
APDMN	Integer	3	134	136
PDR3	Integer	1	140	
PDASCD	Integer	3	142	144
PDR4	Integer	1	146	
APDASCMX	Integer	3	150	152
PDR5	Integer	1	156	
APDASCMN	Integer	3	160	162
PDR6	Integer	1	166	
CONFMX	Real	5	168	172
R6	Integer	1	174	
CONFMN	Real	5	176	180
R7	Integer	1	182	
CONS40MX	Integer	2	186	187
R8	Integer	1	191	
CONS40MN	Integer	2	195	196
R9	Integer	1	200	
CONSFMX	Integer	2	205	206
R10	Integer	1	211	
CONSFMN	Integer	2	216	217
R11	Integer	1	222	

where

STATE is the two-letter state abbreviation (e.g., AL = Alabama);

STANAME is the full name of the cooperative station;

STATENUM is the state code (e.g., 01 = Alabama, 02 = Arizona, . . . 48 = Wyoming);

STANUM is the cooperative station number (the unique station code, STACOD, used in the other data files is formed by combining the two-digit state number and the four-digit station number);

STADIV is the division number [the cooperative station number and division number are separated by a hyphen (e.g., 1084-07)];

LAT is the latitude, expressed in degrees and minutes (e.g., 31-04);

LONG is the longitude (West), expressed in degrees and minutes (e.g., 91-17);

ELEV is the station elevation, expressed in feet above or below mean sea level;

BPORDATE is the first month and year that data became available for a station (e.g., 12/1891);

R1 is a decile ranking to judge the length of the period of record (BPORDATE) for a particular station in relation to the rest of the network [values range from 0 to 9, with the lowest deciles given to the longest records (i.e., 0 implies the lower 10 percentile, 1 implies 10–20 percentile, and 9 implies 90–100 percentile)];

PERORIG is the percentage of original data available from the beginning period of record (BPORDATE) through 1994 for a given station (a useful indicator of the amount of missing and estimated data for a given station);

R2 is a decile ranking to compare the percentage of original data available for one station with the percentage of original data available for the other stations in the network [values range from 0 to 9, with the lowest deciles assigned to stations having the greatest percentage of original data available (i.e., 0 implies the 1–10 percentile, 1 implies the 10–20 percentile, and 9 implies the 90–100 percentile)];

USCDATE is the date the original data become serially complete, or the date from which there are no missing data in the record for a particular station (99/9999 indicates that the original data never became serially complete and no data exist for 12/1994);

R3 is a decile ranking to compare the length of the serially complete original data in relation to the rest of the network [values range from 0 to 9 with the lowest deciles assigned to the stations with the fewest estimated adjusted data (i.e., 0 implies the 1–10 percentile, 1 implies 10–20 percentile, and 9 implies 90–100 percentile)];

ASCDATE is the date at which the adjusted data become serially complete (99/9999 indicates that the adjusted data never became serially complete and no data exist for 12/1994);

R4 is a decile ranking to compare the length of the serially complete adjusted data record with other stations in the network [values range from 0 to 9 with the lowest deciles assigned to the stations with the fewest estimated data values (i.e., 0 implies the 1–10 percentile, 1 implies 10–20 percentile, and 9 implies 90–100 percentile)];

PERASCD is the percentage of adjusted data that were estimated since the adjusted serially complete date (ASCDATE); if ASCDATE = 99/9999, then PERASCD = -999.90;

- R5 is a decile ranking to judge the percentage of the estimated data since the adjusted serial complete date (ASCDATE) [values range from 0 to 9, with the lowest deciles assigned to the stations with the lowest percentages of estimated data (i.e., 0 implies the 1–10 percentile, 1 implies 10–20 percentile, and 9 implies 90–100 percentile)];
- PDBPOR is the number of potential discontinuities counted from BPORDATE (from the station history file);
- PDR1 is a decile ranking to judge the number of potential discontinuities in the record [values range from 0 to 9, with the lowest deciles assigned to the stations with the fewest discontinuities (i.e., 0 implies the 1–10 percentile, 1 implies 10–20 percentile, and 9 implies 90–100 percentile)];
- APDMX is the number of potential discontinuity adjustments since BPORDATE for the maximum temperature record;
- PDR2 is a decile ranking to judge the number of potential discontinuities adjusted for in the maximum temperature record since BPORDATE;
- APDMN is the number of potential discontinuity adjustments for since BPORDATE for the minimum temperature record;
- PDR3 is a decile ranking to judge the number of potential discontinuities adjusted for in the minimum temperature record since BPORDATE;
- PDASCD is the number of potential discontinuities counted from ASCDATE (from station history file), if ASCDATE = 99/9999, then PDASCD = -99.00;
- PDR4 is a decile ranking to judge the number of potential discontinuities since ASCDATE;
- APDASCMX is the number of potential discontinuity adjustments made since ASCDATE in the maximum temperature record, if ASCDATE = 99/9999, then APDASCMX = -99.00;
- PDR5 is a decile ranking to judge the number of potential discontinuity adjustments made since ASCDATE in the maximum temperature record;
- APDASCMN is the number of potential discontinuity adjustments made since ASCDATE in the minimum temperature record, if ASCDATE = 99/9999, then APDASCMN = -99.00;
- PDR6 is a decile ranking to judge the number of potential discontinuity adjustments made since ASCDATE in the minimum temperature record;

- CONFMX is the average confidence interval from ASCDATE for the maximum temperature record, if ASCDATE = 99/9999, then CONFMX = -9.99;
- R6 is a decile ranking to judge the average confidence interval from ASCDATE for the maximum temperature record;
- CONFMN is the average confidence interval from ASCDATE for the minimum temperature record, if ASCDATE = 99/9999, then CONFMN = -9.99;
- R7 is a decile ranking to judge the average confidence interval from ASCDATE for the minimum temperature record;
- CONS40MX is the consistency of the adjusted maximum temperature data for each station compared with the 20 most highly correlated of the station's 40 nearest neighbors over the past 40 years;
- R8 is a decile ranking to judge the consistency of the adjusted maximum temperature data for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors;
- CONS40MN is the consistency of the adjusted minimum temperature data for each station compared with the 20 most highly correlated of the station's 40 nearest neighbors over the past 40 years;
- R9 is a decile ranking to judge the consistency of the adjusted minimum temperature data for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors;
- CONSFMX is the consistency of the adjusted maximum temperature data for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors over the full period of record (since BPORDATE);
- R10 is a decile ranking to judge the consistency of the adjusted maximum temperature data since BPORDATE for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors;
- CONSFMN is the consistency of the adjusted minimum temperature data for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors over the full period of record (since BPORDATE);
- R11 is a decile ranking to judge the consistency of the adjusted minimum temperature data since BPORDATE for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors.

CONS40MX, CONS40MN, CONSFMX and CONSFMN were assessed by calculating the trend of the difference (or log ratio) series of a station with each of its 20 nearest neighbors. If the station is consistent with its neighbors, no overwhelming trend of sign between the 20 trend values should be found. The number of station pairs with positive trends, minus negative trends, is given.

A value above 12 has about a 1% chance of occurrence (if the station is consistent with its neighbors over time). A large value, 14 or more, may imply there is an undocumented move or local modifications of the local environment (i.e., heat island effects, growth of trees, etc.).

Table 7. Variable formats for files QA94MEAN.ASC and QA94PCP.ASC

Variable name	Variable type	Variable width	Column	
			start	end
STATE	Character	2	2	3
STANAME	Character	28	5	32
STATENUM	Integer	2	34	35
STANUM	Integer	4	37	40
STADIV	Character	2	42	43
LAT	Character	6	45	50
LONG	Character	7	52	58
ELEV	Integer	6	61	66
BPORDATE	Character	7	68	74
R1	Integer	1	76	
PERORIG	Real	5	78	82
R2	Integer	1	84	
USCDATE	Character	7	86	92
R3	Integer	1	94	
ASCDATE	Character	7	96	102
R4	Integer	1	104	
PERASCD	Real	6	106	111
R5	Integer	1	113	
PDBPOR	Integer	2	116	117
PDR1	Integer	1	120	
APDBPOR	Integer	2	125	126
PDR2	Integer	1	130	
PDASCD	Integer	3	134	136
PDR3	Integer	1	140	
APDSCD	Integer	3	144	146
PDR4	Integer	1	150	
CONF	Real	5	152	156
R6	Integer	1	158	
CONS40	Integer	2	161	162
R7	Integer	1	165	
CONSF	Integer	2	168	169
R8	Integer	1	172	

The descriptions for variables STATE through PDR1 are as defined following Table 6. The remaining variables are defined as follows:

- APDBPOR is the number of potential discontinuity adjustments made since BPORDATE;
- PDR2 is a decile ranking to judge the number of potential discontinuity adjustments made since BPORDATE;
- PDASCD is the number of potential discontinuities counted from ASCDATE (from station history file), if ASCDATE = 99/9999, then PDASCD = -99.00;
- PDR3 is a decile ranking to judge the number of potential discontinuities since ASCDATE;
- APDSCD is the number of potential discontinuity adjustments made since ASCDATE (from station history file), if ASCDATE = 99/9999, then APDSCD = -99.00;
- PDR4 is a decile ranking to judge the number of potential discontinuity adjustments made since ASCDATE;
- CONF is the average confidence interval since ASCDATE, if ASCDATE = 99/9999, then CONF = -9.99;
- R6 is a decile ranking to judge the average confidence interval since ASCDATE;
- CONS40 consistency of the adjusted data for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors over the past 40 years;
- R7 is a decile ranking to judge the consistency of the adjusted data for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors over the past 40 years;
- CONSF consistency of the adjusted data for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors over the full period of record;
- R8 is a decile ranking to judge the consistency of the adjusted data for each station with respect to the 20 most highly correlated of the station's 40 nearest neighbors over the full period of record.

CONS40 and CONSF are assessed by calculating the trend of the difference (or log ratio) series of the station of interest with each of its 20 nearest neighbors. If the station is consistent with its neighbors, no overwhelming number of trend in sign should be found. The number of station pairs with positive trends, minus negative trends, is given. A value above 12 has about a 1% chance of occurrence (if the stations are truly consistent with their neighbors over time). A large value, 14 or more, may imply there is an undocumented moves or modifications of the local environment have occurred.

Temperature Files Adjusted for Urbanization Effects

This document provides four additional temperature files {minimum, mean, average [i.e., (monthly maximum + monthly minimum)/2], and maximum} adjusted for the same biases mentioned in the other temperature files (i.e., station moves, instrument changes, time-of-observation biases, etc.) and also for urbanization effects. The urbanization biases have been removed by using the techniques of Karl et al. (1988). Each station has the same period of record as in the corresponding temperature files (that containing original data, adjusted data, estimated data, and confidence estimates). In these files "urban" only adjusted data are given. No original data or confidence factors are provided. All data are expressed in degrees Fahrenheit, and missing values are represented by -99.99.

All four files are formatted in the same manner and may be read by using the following FORTRAN format:

```

10  READ (5,100,END=999) STACOD, YEAR, (MONTH(I),
1   I=1,12),WIN, SPR, SUM, FAL, ANN
    GOTO 10
C
100  FORMAT(I6,1X,I4,17(1X,F6.2))

```

Stated in tabular form, the files are formatted as shown in Table 8.

Table 8. Variable formats for files UR94MAX.ASC, UR94MEAN.ASC, UR94AV2.ASC, and UR94MIN.ASC

Variable name	Variable type	Variable width	Column	
			start	end
STACOD	Integer	6	1	6
YEAR	Integer	4	8	11
JAN	Real	6	13	18
FEB	Real	6	20	25
MAR	Real	6	27	32
APR	Real	6	34	39
MAY	Real	6	41	46
JUN	Real	6	48	53
JUL	Real	6	55	60
AUG	Real	6	62	67
SEP	Real	6	69	74
OCT	Real	6	76	81
NOV	Real	6	83	88
DEC	Real	6	90	95

Table 8. (continued)

Variable name	Variable type	Variable width	Column	
			start	end
WIN	Real	6	97	102
SPR	Real	6	104	109
SUM	Real	6	111	116
FAL	Real	6	118	123
ANN	Real	6	125	130

where

STACOD is the unique station code formed by combining the two-digit state number [state numbers range from 1 to 48 (e.g., 01 = Alabama, 02 = Arizona, . . . 48 = Wyoming)] and the four-digit station number (values range from 0008 to 9933);

YEAR is the year of record;

JAN – DEC are the monthly adjusted temperature estimates expressed in degrees Fahrenheit (missing values are represented by –99.99; estimates have been adjusted for station moves, instrument changes, time-of-observation differences, MMTS, and urbanization effects); and

SPR, SUM, FAL, WIN, ANN are the seasonal temperature estimates calculated using the JAN–DEC data, values are expressed in degrees Fahrenheit (missing values are represented by –99.99.).

The seasons are defined as follows:

Winter (WIN) = December of the preceding year and January and February;
 Spring (SPR) = March, April, and May;
 Summer (SUM) = June, July, and August;
 Fall (FAL) = September, October, and November; and
 Annual (ANN) = January 1 to December 31.

References

- Karl, T. R., and C. N. Williams, Jr. 1987. An approach to adjusting climatological time series for discontinuous inhomogeneities. *Journal of Climate and Applied Meteorology* 26:1744–1763.
- Karl, T. R., C. N. Williams, Jr., P. J. Young, and W. M. Wendland. 1986. A model to estimate the time of observation bias associated with monthly mean maximum, minimum and mean temperatures for the United States. *Journal of Climate and Applied Meteorology* 25:145–160.
- Karl, T. R., H. F. Diaz, and G. Kukla. 1988. Urbanization: Its detection and effect in the United States climate record. *Journal of Climate* 1:1099–1123.
- Quayle, R. G., D. R. Easterling, P. Y. Hughes, and T. R. Karl. 1991. Effects of recent thermometer changes in the cooperative network. *Bulletin of the American Meteorological Society* 72:1718-1724.

13. Listings of the FORTRAN Data Retrieval Programs

The following is a listing of the FORTRAN data retrieval programs provided by CDIAC for reading and printing the 14 data files in this database. The following FORTRAN program (INVENT94.FOR) may be used to read and print the contents of the station inventory file (INVENT94.ASC).

```

C*****
C*  FORTRAN PROGRAM TO READ AND PRINT THE HISTORICAL      *
C*  CLIMATOLOGY NETWORK (HCN) STATION INVENTORY FILE.    *
C*****
      INTEGER STACOD, ELEV, BYRSHF, EYRSHF, HCNMN
      INTEGER HCAVG, HCAV2, HCNMX, HCNPCP, URMN
      INTEGER URAVG, URAV2, URMX
      REAL LAT, LONG
      CHARACTER*30 STANAME
      CHARACTER*2 STATE
C*****
C*  OPEN FILES FOR INPUT/OUTPUT                          *
C*****
      OPEN(UNIT=5,FILE='invent94.asc')
      OPEN(UNIT=6,FORM='PRINT')
C*****
C*  READ AND PRINT UNIQUE STATION CODE FOR EACH STATION, *
C*  STATION LOCATION, STATION ELEVATION, STATION NAME,  *
C*  STATION STATE, STATION HISTORY FILE (SHF) BEGINNING *
C*  YEAR OF RECORD, SH ENDING YEAR OF RECORD, AND THE  *
C*  BEGINNING YEAR OF RECORD IN EACH OF THE HCN AND    *
C*  URBAN DATA FILES.                                  *
C*****
      10  READ (5,100,END=999) STACOD, LAT, LONG, ELEV,
          1  STANAME, STATE, BYRSHF, EYRSHF, HCNMN, HCAVG,
          1  HCAV2, HCNMX, HCNPCP, URMN, URAVG, URAV2, URMX
          WRITE(6,105) STACOD, LAT, LONG, ELEV,
          1  STANAME, STATE, BYRSHF, EYRSHF, HCNMN, HCAVG,
          1  HCAV2, HCNMX, HCNPCP, URMN, URAVG, URAV2, URMX
          GOTO 10
C
      100  FORMAT(1I6,2F8.2,1I6,1X,1A30,1A2,11(1X,1I4))
      105  FORMAT(1X,1I6,2F8.2,1I6,1X,1A30,1A2,11(1X,1I4))
C*****
C*  CLOSE FILES AND EXIT GRACEFULLY                      *
C*****
      999  CLOSE(UNIT=5)
           CLOSE(UNIT=6)
           STOP
           END

```

The following FORTRAN program (SHF94.FOR) may be used to read and print the contents of the station history file (SHF94.ASC).

```

C*****
C*  FORTRAN PROGRAM TO READ AND PRINT THE HISTORICAL      *
C*  CLIMATOLOGY NETWORK (HCN) STATION HISTORY             *
C*  FILE (SHF94.ASC)                                     *
C*****
      INTEGER I, STACOD, DIVISION
      CHARACTER*2 STATE
      CHARACTER*30 STANAME
      CHARACTER*16 COUNTY
      CHARACTER*25 XREF

      INTEGER STACOD2, MOBEG, DAYBEG, YRBEG
      INTEGER MOEND, DAYEND, YREND
      CHARACTER SUSP(15)
      INTEGER LATDEG, LATMIN, LONGDEG, LONGMIN
      INTEGER DISTANCE, ELEV, DISTPO
      CHARACTER DPLUNIT, DPOUNIT
      CHARACTER*3 DIRECT, DIRECTPO
      CHARACTER*28 NAME
      CHARACTER*10 QUALIF
      CHARACTER INSTRU(36)
      CHARACTER*2 PCPOT, TMPOT, PCPHT, TMPHT
      CHARACTER PUB(16)
      CHARACTER*46 OBSNAME
      INTEGER NUMOBS
C*****
C*  OPEN FILES FOR INPUT/OUTPUT                          *
C*****
      OPEN(UNIT=5,FILE='shf94.asc')
      OPEN(UNIT=6,FORM='PRINT')
C*****
C*  READ AND PRINT THE STATION HISTORIES FOR EACH       *
C*  STATION. FIRST RECORD HAS STATION CODE, STATE      *
C*  ABBREVIATION, DIVISION NUMBER, AND STATION AND    *
C*  COUNTY NAME. FOLLOWING RECORDS CONTAIN OBSERVER,   *
C*  EQUIPMENT, AND PUBLICATION DATA FOR EACH STATION. *
C*****
      10  READ (5,100) STACOD, STATE, DIVISION, STANAME,
           1  COUNTY, XREF
           WRITE (6,105) STACOD, STATE, DIVISION, STANAME,
           1  COUNTY, XREF
      20  READ (5,110,END=999) STACOD2
           BACKSPACE 5
           IF (STACOD .NE. STACOD2) GOTO 10
           READ (5,115) STACOD2, MOBEG, DAYBEG, YRBEG,
           1  MOEND, DAYEND, YREND, (SUSP(I),I=1,15), LATDEG, LATMIN,
           1  LONGDEG, LONGMIN, DISTANCE, DPLUNIT, DIRECT,
           1  ELEV, DISTPO, DPOUNIT, DIRECTPO, NAME, QUALIF,
           1  (INSTRU(I),I=1,36), PCPOT, TMPOT, PCPHT, TMPHT,
           1  (PUB(I),I=1,16), OBSNAME, NUMOBS

```

```

        WRITE (6,120) STACOD2, MOBEG, DAYBEG, YRBEG,
1       MOEND, DAYEND, YREND, (SUSP(I),I=1,15), LATDEG, LATMIN,
1       LONGDEG, LONGMIN, DISTANCE, DPLUNIT, DIRECT,
1       ELEV, DISTPO, DPOUNIT, DIRECTPO, NAME, QUALIF,
1       (INSTRU(I),I=1,36), PCPOT, TMPOT, PCPHT, TMPHT,
1       (PUB(I),I=1,16), OBSNAME, NUMOBS
        GOTO 20
C
100     FORMAT(1I6,1X,1A2,1X,1I2,1X,1A30,1X,1A16,1X,1A25)
105     FORMAT(1X,1I6,1X,1A2,1X,1I2,1X,1A30,1X,1A16,1X,1A25)
110     FORMAT(1I6)
115     FORMAT(1I6,2(2(1X,1I2),1X,1I4),1X,15A1,1X,1I3,1X,1I2,1X,
1       1I4,1X,1I2,1X,1I3,1A1,1A3,1X,1I5,1X,1I4,1A1,
1       1A3,1X,1A28,1X,1A10,1X,36A1,2(1X,2A2),1X,16A1,1X,
1       1A46,1X,1I2)
120     FORMAT(1X,1I6,2(2(1X,1I2),1X,1I4),1X,15A1,1X,1I3,1X,1I2,1X,
1       1I4,1X,1I2,1X,1I3,1A1,1A3,1X,1I5,1X,1I4,1A1,
1       1A3,1X,1A28,1X,1A10,1X,36A1,2(1X,2A2),1X,16A1,1X,
1       1A46,1X,1I2)
C*****
C*           CLOSE FILES AND EXIT GRACEFULLY           *
C*****
999     CLOSE(UNIT=5)
        CLOSE(UNIT=6)
        STOP
        END

```

The following FORTRAN program (HCN94.FOR) may be used to read and print the contents of the U.S. HCN precipitation and maximum, mean, average, and minimum temperature files (HCN94PCP.ASC, HCN94MAX.ASC, HCN94MEA.ASC, HCN94AV2.ASC, and HCN94MIN.ASC). The only modification needed to read each file is to change the input file name.

```

C*****
C* FORTRAN RETRIEVAL CODE TO READ AND PRINT THE HCN           *
C* TEMPERATURE AND PRECIPITATION HCN DATA FILES THAT HAVE*
C* BEEN ADJUSTED FOR STATION MOVES, INSTRUMENT CHANGES,   *
C* AND OBSERVATION DIFFERENCES.                               *
C*****
        INTEGER STACOD, YEAR, ELEM, HCNDAT(13)
        CHARACTER TYPE
        CHARACTER FLAG(13), FLAG2(13), FLAG3(13),
1       FLAG4(13)
C*****
C* OPEN FILES FOR INPUT/OUTPUT                               *
C*****
        OPEN(UNIT=5, FILE='hcn94max.asc')
        OPEN(UNIT=6, FORM='PRINT')

```



```

C*****
C* READ AND PRINT STATE NUMBER, STATION NUMBER, YEAR, *
C* RECORD TYPE (1=MAX TEMP, 2=MIN TEMP, 3=MEAN TEMP, *
C* 4=PRECIPITATION), HCNDAT TYPE (" ", +, A, C), TWELVE *
C* MONTHLY AND ONE ANNUAL HCNDAT VALUE AND FOUR FLAGS *
C* FOR EACH HCNDAT VALUE. *
C*****
  10 READ (5,100,END=999) STACOD, YEAR, ELEM,
      1 TYPE, (HCNDAT(I), FLAG(I), FLAG2(I), FLAG3(I),
      1 FLAG4(I), I=1, 13)
      WRITE(6,105) STACOD, YEAR, ELEM,
      1 TYPE, (HCNDAT(I), FLAG(I), FLAG2(I), FLAG3(I),
      1 FLAG4(I), I=1, 13)
      GOTO 10
C
100 FORMAT(I6,1X,I4,1X,I1,A1,13(I5,4A1))
105 FORMAT(1X,I6,1X,I4,1X,I1,A1,13(I5,4A1))
C*****
C* CLOSE FILES AND EXIT GRACEFULLY *
C*****
  999 CLOSE(UNIT=5)
      CLOSE(UNIT=6)
      STOP
      END

```

The following FORTRAN program (QA94MXMN.FOR) may be used to read and print the contents of the quality assessment file (QA94MXMN.ASC) produced for the maximum and minimum temperature data files.

```

C*****
C* FORTRAN PROGRAM TO READ AND PRINT THE HISTORICAL *
C* CLIMATOLOGY NETWORK (HCN) QUALITY ASSESSMENT FILE *
C* FOR MAXIMUM AND MINIMUM TEMPERATURES. *
C*****
      INTEGER STATENUM, STANUM, ELEV, R1, R2,
      1 R3, R4, R5, PDBPOR, PDR1, APDMX,
      1 PDR2, APDMN, PDR3, PDASCD, PDR4, APDASCMX,
      1 PDR5, APDASCMN, PDR6, R6, R7,
      1 CONS40MX, R8, CONS40MN, R9, CONSFMX, R10,
      1 CONSFMN, R11
      REAL PERORIG, PERASCD, CONFMX, CONFMN
      CHARACTER*2 STATE, STADIV
      CHARACTER*28 STANAME
      CHARACTER*6 LAT, LONG
      CHARACTER*7 BPODATE, USCDATE, ASCDATE
C*****
C* OPEN FILES FOR INPUT/OUTPUT *
C*****
      OPEN(UNIT=5, FILE='qa94mxmn.asc')
      OPEN(UNIT=6, FORM='PRINT')

```

```

C*****
C*  READ AND PRINT THE QUALITY ASSESSMENT FILE FOR      *
C*  THE HCN MAXIMUM AND MINIMUM TEMPERATURE FILES      *
C*****
10  READ (5,100,END=999) STATE, STANAME, STATENUM,
1   STANUM, STADIV, LAT, LONG, ELEV, BPORDATE, R1,
1   PERORIG, R2, USCDATE, R3, ASCDATE, R4, PERASCD,
1   R5, PDBPOR, PDR1, APDMX, PDR2, APDMN, PDR3,
1   PDASCD, PDR4, APDASCMX, PDR5, APDASCMN, PDR6,
1   CONFMX, R6, CONFMN, R7, CONS40MX, R8, CONS40MN,
1   R9, CONSFMX, R10, CONSFMN, R11
   WRITE(6,100) STATE, STANAME, STATENUM,
1   STANUM, STADIV, LAT, LONG, ELEV, BPORDATE, R1,
1   PERORIG, R2, USCDATE, R3, ASCDATE, R4, PERASCD,
1   R5, PDBPOR, PDR1, APDMX, PDR2, APDMN, PDR3,
1   PDASCD, PDR4, APDASCMX, PDR5, APDASCMN, PDR6,
1   CONFMX, R6, CONFMN, R7, CONS40MX, R8, CONS40MN,
1   R9, CONSFMX, R10, CONSFMN, R11
   GOTO 10

C
100  FORMAT(1X,A2,1X,A28,1X,I2,1X,I4,1X,A2,1X,
1     A6,1X,A7,2X,I6,1X,A7,1X,I1,1X,
1     F5.1,2(1X,I1,1X,A7),1X,I1,1X,
1     F6.1,1X,I1,2X,I2,2X,I1,4X,I2,3X,
1     I1,3X,I3,3X,I1,1X,I3,1X,2(I1,3X,
1     I3,3X),I1,1X,F5.2,1X,
1     I1,1X,F5.2,1X,2(I1,3X,I2,3X),
1     I1,2(4X,I2,4X,I1))

C*****
C*  CLOSE FILES AND EXIT GRACEFULLY                      *
C*****
999  CLOSE(UNIT=5)
      CLOSE(UNIT=6)
      STOP
      END

```

The following FORTRAN program (QA94MEAN.FOR) may be used to read and print the contents of the quality assessment files (QA94MEAN.ASC and QA94PCP.ASC) produced for the mean temperature U.S. HCN data file and the total precipitation U.S. HCN data file. The only modification required to read the precipitation quality assessment file is to change the input file name.

```

C*****
C*  FORTRAN PROGRAM TO READ AND PRINT THE HISTORICAL      *
C*  CLIMATOLOGY NETWORK (HCN) QUALITY ASSESSMENT FILE    *
C*  FOR MEAN TEMPERATURES AND TOTAL PRECIPITATION.       *
C*****

      INTEGER STATENUM, STANUM, ELEV, R1,
1       R2, R3, R4, R5, PDBPOR, PDR1,
1       APDBPOR, PDR2, PDASCD, PDR3, APDSCD,
1       PDR4, R6, CONS40, R7, CONSF, R8
      REAL PERORIG, PERASCD, CONF
      CHARACTER*2 STATE, STADIV
      CHARACTER*28 STANAME
      CHARACTER*6 LAT, LONG
      CHARACTER*7 BPORDATE, USCDATE, ASCDATE
C*****
C*  OPEN FILES FOR INPUT/OUTPUT                          *
C*****
      OPEN(UNIT=5, FILE='qa94mean.asc')
      OPEN(UNIT=6, FORM='PRINT')
C*****
C*  READ AND PRINT THE QUALITY ASSESSMENT FILE FOR THE  *
C*  HCN MEAN TEMPERATURE AND TOTAL PRECIPITATION FILES *
C*****
10     READ (5,100,END=999) STATE, STANAME, STATENUM,
1       STANUM, STADIV, LAT, LONG, ELEV, BPORDATE, R1,
1       PERORIG, R2, USCDATE, R3, ASCDATE, R4, PERASCD,
1       R5, PDBPOR, PDR1, APDBPOR, PDR2, PDASCD,
1       PDR3, APDSCD, PDR4, CONF, R6, CONS40,
1       R7, CONSF, R8
      WRITE(6,100) STATE, STANAME, STATENUM,
1       STANUM, STADIV, LAT, LONG, ELEV, BPORDATE, R1,
1       PERORIG, R2, USCDATE, R3, ASCDATE, R4, PERASCD,
1       R5, PDBPOR, PDR1, APDBPOR, PDR2, PDASCD,
1       PDR3, APDSCD, PDR4, CONF, R6, CONS40,
1       R7, CONSF, R8
      GOTO 10
C
100    FORMAT(1X,A2,1X,A28,1X,I2,1X,I4,1X,A2,1X,
1          A6,1X,A7,2X,I6,1X,A7,1X,I1,1X,
1          F5.1,2(1X,I1,1X,A7),1X,I1,1X,
1          F6.1,1X,I1,2X,I2,2X,I1,4X,I2,3X,I1,3X,
1          I3,3X,I1,3X,I3,3X,I1,1X,F5.2,1X,I1,
1          2X,I2,2X,I1,2X,I2,2X,I1)

```

```

C*****
C*          CLOSE FILES AND EXIT GRACEFULLY          *
C*****
  999      CLOSE(UNIT=5)
           CLOSE(UNIT=6)
           STOP
           END

```

The following FORTRAN program (URBAN94.FOR) may be used to read and print the contents of the four temperature files that have been adjusted for urbanization effects (UR94MAX.ASC, UR94MEAN.ASC, UR94AV2.ASC, and UR94MIN.ASC). The only modification needed to read each file is to change the input file name.

```

C*****
C*  FORTRAN RETRIEVAL CODE TO READ AND PRINT THE THREE *
C*  TEMPERATURE FILES THAT HAVE BEEN ADJUSTED FOR    *
C*  URBANIZATION EFFECTS.                            *
C*****
      INTEGER STACOD, YEAR
      REAL MONTH(12), WIN, SPR, SUM, FAL, ANN
C*****
C*  OPEN FILES FOR INPUT/OUTPUT                        *
C*****
      OPEN(UNIT=5, FILE='ur94max.asc')
      OPEN(UNIT=6, FORM='PRINT')
C*****
C*  READ AND PRINT UNIQUE STATION CODE FOR EACH STATION, *
C*  YEAR OF RECORD, 12 MONTHLY AVERAGES, 4 SEASONAL   *
C*  AVERAGES, AND THE ANNUAL AVERAGE.                 *
C*****
  10      READ (5,100,END=999) STACOD, YEAR, (MONTH(I),
           1      I=1,12),WIN, SPR, SUM, FAL, ANN
           WRITE(6,105) STACOD, YEAR, (MONTH(I),
           1      I=1,12),WIN, SPR, SUM, FAL, ANN
           GOTO 10

C
  100     FORMAT(I6,1X,I4,17(1X,F6.2))
  105     FORMAT(1X,I6,1X,I4,17(1X,F6.2))
C*****
C*          CLOSE FILES AND EXIT GRACEFULLY          *
C*****
  999     CLOSE(UNIT=5)
           CLOSE(UNIT=6)
           STOP
           END

```

14. Listings of the SAS™ Input/Output Retrieval Programs

The following is a listing of the SAS™ data retrieval programs provided by CDIAC for reading and printing the files distributed with this database. The following SAS™ program (INVENT94.SAS) may be used to read and print the contents of the station inventory file (INVENT94.ASC).

```
OPTIONS PS=66 LS=78;
DATA INVENT;
INFILE 'invent94.asc';
INPUT STACOD 1-6 LAT 7-14 LONG 15-22 ELEV 23-28 STANAME $ 30-59
      STATE $ 60-61 BYRSHF 63-66 EYRSHF 68-71 HCNMN 73-76
      HCONAVG 78-81 HCONAV2 83-86 HCONMX 88-91 HCONPCP 93-96
      URMN 98-101 URAVG 103-106 URAV2 108-111 URMX 113-116;
PROC PRINT;
RUN;
```

The following SAS™ program (SHF94.SAS) may be used to read and print the contents of the station history file (SHF94.ASC).

```
OPTIONS PS=65 LS=75;
DATA HISTORY (DROP=X);
  RETAIN STACOD STATE DIVISION STANAME COUNTY XREF;
INFILE 'shf94.asc' MISSEVER LS=236;
INPUT @45 x $1. @;
IF x ne ' ' then do;
  INPUT STACOD 1-6 STATE $ 8-9 DIVISION 11-12 STANAME $ 14-43
        COUNTY $ 45-60 XREF $ 62-86;
END;
ELSE
INPUT STACOD2 1-6 MOBEG 8-9 DAYBEG 11-12 YRBEG 14-17
      MOEND 19-20 DAYEND 22-23 YREND 25-28 SUSPLAT 30
      SUSPLONG 31 SUSPLOC 32 SUSPELEV 33 SUSPPO 34 SUSPNAME 35
      SUSPQUAL 36 SUSPINST 37 SUSPTIME 38 SUSPHTS 39
      SUSPPUBS 40 SUSPBEG 41 SUSPEND 42 SUSPOBS 43 SUSPOTHR 44
      LATDEG 46-48 LATMIN 49-51 LONGDEG 53-56 LONGMIN 57-59
      DISTANCE 61-63 DPLUNIT $ 64 DIRECT $ 65-67 ELEV 69-73
      DISTPO 75-78 DPOUNIT $ 79 DIRECTPO $ 80-82 NAME $ 84-111
      QUALIF $ 113-122 AI 124 CRS 125 DT 126 EVA 127 FP 128
      HYTHG 129 MN 130 MX 131 NRI 132 NSRG 133 NSS 134
      RRIG 135 RRNG 136 SDE 137 SG 138 SRG 139 SS 140 TG 141
      DGT 142 TB 143 EVO 144 MMTS 145 TELS 146 HYGRO 147
      HY6 148 HY8 149 SFP 150 SRRNG 151 SSG 152 SSRG 153 STB 154
      AMOS 155 AUTOB 156 PSY 157 PCPOT $ 161-162 TMPOT $ 163-164
      PCPHT $ 166-167 TMPHT $ 168-169 BULLETW 171 COMBBUL 172
      CLIMDATA 173 RIVSTAGE 174 HYDROBUL 175 PRECDATA 176
      SNOWBUL 177 NOTPUB 178 CWB 179 MONTHREV 180 STATEPUB 181
      LCD 182 BQ 183 SGPD 184 WWR 185 MYB 186 OBSNAME $ 188-233
      NUMOBS 235-236;
PROC PRINT;
RUN;
```

The following SAS™ program (HCN94.SAS) may be used to read and print the contents of the U.S. HCN precipitation and maximum, mean, average, and minimum temperature files (HCN94PCP.ASC, HCN94MAX.ASC, HCN94MEA.ASC, HCN94AV2.ASC, and HCN94MIN.ASC). The only modification needed to read each file is to change the input file name.

```

OPTIONS LS=78 PS=66;
DATA TEMP;
INFILE 'hcn94max.asc';
INPUT STACOD 1-6 YEAR 8-11 ELEM 13 TYPE $ 14
JAN 15-19 JANFLAG1 $ 20 JANFLAG2 $ 21 JANFLAG3 $ 22 JANFLAG4 $ 23
FEB 24-28 FEBFLAG1 $ 29 FEBFLAG2 $ 30 FEBFLAG3 $ 31 FEBFLAG4 $ 32
MAR 33-37 MARFLAG1 $ 38 MARFLAG2 $ 39 MARFLAG3 $ 40 MARFLAG4 $ 41
APR 42-46 APRFLAG1 $ 47 APRFLAG2 $ 48 APRFLAG3 $ 49 APRFLAG4 $ 50
MAY 51-55 MAYFLAG1 $ 56 MAYFLAG2 $ 57 MAYFLAG3 $ 58 MAYFLAG4 $ 59
JUN 60-64 JUNFLAG1 $ 65 JUNFLAG2 $ 66 JUNFLAG3 $ 67 JUNFLAG4 $ 68
JUL 69-73 JULFLAG1 $ 74 JULFLAG2 $ 75 JULFLAG3 $ 76 JULFLAG4 $ 77
AUG 78-82 AUGFLAG1 $ 83 AUGFLAG2 $ 84 AUGFLAG3 $ 85 AUGFLAG4 $ 86
SEP 87-91 SEPFLAG1 $ 92 SEPFLAG2 $ 93 SEPFLAG3 $ 94 SEPFLAG4 $ 95
OCT 96-100 OCTFLAG1 $ 101 OCTFLAG2 $ 102 OCTFLAG3 $ 103 OCTFLAG4 $ 104
NOV 105-109 NOVFLAG1 $ 110 NOVFLAG2 $ 111 NOVFLAG3 $ 112 NOVFLAG4 $ 113
DEC 114-118 DECFLAG1 $ 119 DECFLAG2 $ 120 DECFLAG3 $ 121 DECFLAG4 $ 122
ANN 123-127 ANNFLAG1 $ 128 ANNFLAG2 $ 129 ANNFLAG3 $ 130 ANNFLAG4 $ 131;
PROC PRINT;
RUN;

```

The following SAS™ program (QA94MXMN.SAS) may be used to read and print the contents of the quality assessment file (QA94MXMN.ASC) produced for the maximum temperature and minimum temperature data files.

```

OPTIONS PS=55 LS=132;
DATA QA_FILE;
INFILE 'qa94mxmn.asc';
INPUT STATE $ 2-3 STANAME $ 5-32 STATENUM 34-35 STANUM 37-40
STADIV $ 42-43 LAT $ 45-50 LONG $ 52-58 ELEV 61-66
BPORDATE $ 68-74 R1 76 PERORIG 78-82 R2 84 USCDATE $ 86-92
R3 94 ASCDATE $ 96-102 R4 104 PERASCD 106-111 R5 113
PDBPOR 116-117 PDR1 120 APDMX 125-126 PDR2 130 APDMN 134-136
PDR3 140 PDASCD 142-144 PDR4 146 APDASCMX 150-152 PDR5 156
APDASCMN 160-162 PDR6 166 CONFMX 168-172 R6 174
CONFMN 176-180 R7 182 CONS40MX 186-187 R8 191
CONS40MN 195-196 R9 200 CONSFMX 205-206 R10 211
CONSFMN 216-217 R11 222;
PROC PRINT;
RUN;

```

The following SAS™ program (QA94MEAN.SAS) may be used to read and print the contents of the quality assessment files (QA94MEAN.ASC and QA94PCP.ASC) produced for the mean temperature U.S. HCN data file and the total precipitation U.S. HCN data file. The only modification required to read the precipitation quality assessment file is to change the input file name.

```
OPTIONS PS=55 LS=132;
DATA QA_FILE;
INFILE 'qa94mean.asc';
INPUT STATE $ 2-3 STANAME $ 5-32 STATENUM 34-35 STANUM 37-40
      STADIV $ 42-43 LAT $ 45-50 LONG $ 52-58 ELEV 61-66
      BPORDATE $ 68-74 R1 76 PERORIG 78-82 R2 84 USCDATE $ 86-92
      R3 94 ASCDATE $ 96-102 R4 104 PERASCD 106-111 R5 113
      PDBPOR 116-117 PDR1 120 APDBPOR 125-126 PDR2 130
      PDASCD 134-136 PDR3 140 APDSCD 144-146 PDR4 150 CONF 152-156
      R6 158 CONS40 161-162 R7 165 CONSF 168-169 R8 172;
PROC PRINT;
RUN;
```

The following SAS™ program (URBAN94.SAS) may be used to read and print the contents of the four temperature files that have been adjusted for urbanization effects (UR94MAX.ASC, UR94MEAN.ASC, UR94AV2.ASC, and UR94MIN.ASC). The only modification needed to read each file is to change the input file name.

```
OPTIONS LS=78 PS=66;
DATA URBAN;
INFILE 'ur94max.asc';
INPUT STACOD 1-6 YEAR 8-11 JAN 13-18 FEB 20-25 MAR 27-32 APR 34-39
      MAY 41-46 JUN 48-53 JUL 55-60 AUG 62-67 SEP 69-74 OCT 76-81
      NOV 83-88 DEC 90-95 WIN 97-102 SPR 104-109 SUM 111-116
      FAL 118-123 ANN 125-130;
PROC PRINT;
RUN;
```

15. Verification of Data Transport

The station inventory, station history, monthly U.S. HCN temperature and precipitation data, quality assessment data, and the temperature data files adjusted for urbanization effects may be read by using the FORTRAN or SAS™ input/output routines provided in Sect. 13 and 14. Users should verify that the files have been correctly transported to their systems; to do so, they should generate some or all of the statistics presented in Tables 9–22 and compare the first and last lines of each data file with those listed. These statistics were generated in SAS™ (with PROC MEANS) but can be duplicated in other statistical packages or languages. If the statistics generated by the user differ from those presented here, the files may have been corrupted in transport.

These statistics are presented only as a tool to ensure proper reading of the data files. They are not to be construed as either a summary of the climatic data or an indicator of trends in the climatic data.

Table 9. Characteristics of numeric variables in the U.S. Historical Climatology Network station inventory file (INVENT94.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	1221	259072.49	135603.61	11084.00	489905.00
LAT	1221	39.56	4.99	24.55	49.00
LONG	1221	-95.69	14.72	-124.37	-67.00
ELEV	1221	1680.09	1819.21	-194.00	9065.00
BYRSHF	1221	1887.86	20.40	1738.00	1939.00
EYRSHF	1221	9743.22	1408.70	1986.00	9999.00
HCNMN	1221	1898.72	9.55	1872.00	1941.00
HCNAVG	1221	1890.20	19.74	1801.00	1941.00
HCNAV2	1221	1899.91	9.59	1871.00	1940.00
HCNMX	1221	1898.71	9.61	1872.00	1941.00
HCNPCP	1221	1889.43	18.94	1800.00	1940.00
URMN	1221	1899.65	10.55	1873.00	1964.00
URAVG	1221	1895.43	14.31	1835.00	1964.00
URAV2	1221	1899.68	10.55	1873.00	1964.00
URMX	1221	1899.64	10.55	1873.00	1964.00

Table 10. Characteristics of numeric variables in the U.S. Historical Climatology Network station history file (SHF94.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	20473	258226.52	136828.03	11084.00	489905.00
DIVISION	20473	4.58	2.64	1.00	10.00
STACOD2	19252	258172.87	136908.63	11084.00	489905.00
MOBEG	19252	6.57	6.77	1.00	99.00
DAYBEG	19252	11.78	20.31	1.00	99.00
YRBEG	19252	1940.43	32.62	1738.00	1994.00
MOEND	19252	12.85	23.03	1.00	99.00
DAYEND	19252	30.31	24.85	1.00	99.00
YREND	19252	2438.24	1934.01	1759.00	9999.00
SUSPLAT	19252	0.03	0.17	0.00	1.00
SUSPLONG	19252	0.03	0.17	0.00	1.00
SUSPLOC	19252	0.00	0.04	0.00	1.00
SUSPELEV	19252	0.05	0.21	0.00	1.00
SUSPPO	19252	0.02	0.14	0.00	1.00
SUSPNAME	19252	0.00	0.01	0.00	1.00
SUSPQUAL	19252	0.00	0.00	0.00	0.00
SUSPINST	19252	0.00	0.07	0.00	1.00
SUSPTIME	19252	0.03	0.16	0.00	1.00
SUSPHTS	19252	0.00	0.04	0.00	1.00
SUSPPUBS	19252	0.00	0.02	0.00	1.00
SUSPBEG	19252	0.01	0.08	0.00	1.00
SUSPEND	19252	0.00	0.06	0.00	1.00
SUSPOBS	19252	0.00	0.02	0.00	1.00
SUSPOTHR	19252	0.00	0.00	0.00	0.00
LATDEG	19252	38.77	4.99	24.00	49.00
LATMIN	19252	29.42	17.08	0.00	59.00
LONGDEG	19252	96.11	14.21	66.00	124.00
LONGMIN	19252	30.57	17.40	0.00	59.00
DISTANCE	19252	318.22	457.77	0.00	999.00
ELEV	19252	1714.54	1841.41	-194.00	9843.00
DISTPO	19252	2200.14	4129.22	0.00	9999.00
AI	19252	0.17	0.37	0.00	1.00
CRS	19252	0.86	0.35	0.00	1.00
DT	19252	0.03	0.18	0.00	1.00
EVA	19252	0.04	0.18	0.00	1.00
FP	19252	0.06	0.24	0.00	1.00
HYTHG	19252	0.02	0.15	0.00	1.00
MN	19252	0.90	0.31	0.00	1.00

Table 10. (continued)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
MX	19252	0.90	0.31	0.00	1.00
NRIG	19252	0.06	0.24	0.00	1.00
NSRG	19252	0.01	0.09	0.00	1.00
NSS	19252	0.01	0.10	0.00	1.00
RRIG	19252	0.02	0.14	0.00	1.00
RRNG	19252	0.10	0.30	0.00	1.00
SDE	19252	0.01	0.09	0.00	1.00
SG	19252	0.00	0.04	0.00	1.00
SRG	19252	0.99	0.12	0.00	1.00
SS	19252	0.00	0.03	0.00	1.00
TG	19252	0.02	0.16	0.00	1.00
DGT	19252	0.00	0.04	0.00	1.00
TB	19252	0.02	0.14	0.00	1.00
EVO	19252	0.00	0.05	0.00	1.00
MMTS	19252	0.07	0.26	0.00	1.00
TELSY	19252	0.00	0.01	0.00	1.00
HYGRO	19252	0.00	0.02	0.00	1.00
HY6	19252	0.01	0.10	0.00	1.00
HY8	19252	0.00	0.06	0.00	1.00
SFP	19252	0.00	0.05	0.00	1.00
SRRNG	19252	0.01	0.10	0.00	1.00
SSG	19252	0.00	0.03	0.00	1.00
SSRG	19252	0.00	0.03	0.00	1.00
STB	19252	0.00	0.02	0.00	1.00
AMOS	19252	0.00	0.01	0.00	1.00
AUTOB	19252	0.00	0.00	0.00	0.00
PSY	19252	0.00	0.00	0.00	0.00
BULLETW	19252	0.26	0.44	0.00	1.00
COMBBUL	19252	0.00	0.04	0.00	1.00
CLIMDATA	19252	0.94	0.23	0.00	1.00
RIVSTAGE	19252	0.03	0.16	0.00	1.00
HYDROBUL	19252	0.03	0.16	0.00	1.00
PRECDATA	19252	0.13	0.33	0.00	1.00
SNOWBULL	19252	0.00	0.02	0.00	1.00
NOTPUB	19252	0.00	0.04	0.00	1.00
CWB	19252	0.01	0.07	0.00	1.00
MONTHREV	19252	0.03	0.18	0.00	1.00
STATEPUB	19252	0.01	0.10	0.00	1.00
LCD	19252	0.00	0.05	0.00	1.00
BQ	19252	0.00	0.04	0.00	1.00

Table 10. (continued)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
SGPD	19252	0.00	0.01	0.00	1.00
WWR	19252	0.00	0.01	0.00	1.00
MYB	19252	0.01	0.09	0.00	1.00
NUMOBS	19252	0.11	0.91	0.00	28.00

Table 11. Characteristics of numeric variables in the U.S. Historical Climatology Network monthly maximum temperature data file (HCN94MAX.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	468486	257717.97	135122.86	11084.00	489905.00
YEAR	468486	1945.85	28.62	1871.00	1994.00
ELEM	468486	1.00	0.00	1.00	1.00
JAN	468486	2637.62	3081.13	-9999.00	8424.00
FEB	468486	2941.07	3156.38	-9999.00	8742.00
MAR	468486	3589.19	3431.63	-9999.00	9440.00
APR	468486	4393.09	3765.64	-9999.00	10660.00
MAY	468486	5094.07	4100.71	-9999.00	10560.00
JUN	468486	5709.35	4415.75	-9999.00	11590.00
JUL	468486	6062.15	4621.61	-9999.00	12190.00
AUG	468486	5947.54	4568.77	-9999.00	11860.00
SEP	468486	5439.29	4286.94	-9999.00	11580.00
OCT	468486	4640.05	3889.54	-9999.00	10230.00
NOV	468486	3617.52	3412.67	-9999.00	8984.00
DEC	468486	2859.22	3075.96	-9999.00	8590.00
ANN	468486	1056.15	7752.73	-9999.00	9390.00

Table 12. Characteristics of numeric variables in the U.S. Historical Climatology Network monthly mean temperature data file (HCN94MEA.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	502074	257022.31	134551.85	11084.00	489905.00
YEAR	502074	1941.23	32.89	1795.00	1994.00
ELEM	502074	3.00	0.00	3.00	3.00
JAN	502074	1596.62	3288.91	-9999.00	7700.00
FEB	502074	1852.81	3338.20	-9999.00	7800.00
MAR	502074	2448.97	3547.90	-9999.00	7830.00
APR	502074	3186.05	3826.66	-9999.00	8350.00
MAY	502074	3872.44	4108.27	-9999.00	9100.00
JUN	502074	4468.93	4419.17	-9999.00	10040.00
JUL	502074	4789.16	4618.85	-9999.00	10730.00
AUG	502074	4675.16	4565.66	-9999.00	10660.00
SEP	502074	4186.61	4281.45	-9999.00	10110.00
OCT	502074	3412.74	3899.63	-9999.00	8364.00
NOV	502074	2521.54	3530.30	-9999.00	8060.00
DEC	502074	1838.16	3296.58	-9999.00	7880.00
ANN	502074	-11.88	7281.87	-9999.00	8100.00

Table 13. Characteristics of numeric variables in the U.S. Historical Climatology Network monthly average temperature data file (HCN94AV2.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	234227	257717.95	135124.23	11084.00	489905.00
YEAR	234227	1945.85	28.62	1871.00	1994
ELEM	234227	3.00	0.00	3.00	3.00
JAN	234227	2578.55	2683.46	-9999.00	7838.00
FEB	234227	2920.65	2656.14	-9999.00	7758.00
MAR	234227	3731.35	2697.67	-9999.00	7825.00
APR	234227	4706.18	2740.11	-9999.00	8341.00
MAY	234227	5606.68	2834.72	-9999.00	9070.00
JUN	234227	6417.41	2945.22	-9999.00	9992.00
JUL	234227	6863.50	3040.69	-9999.00	10667.00
AUG	234227	6707.56	3031.95	-9999.00	10600.00
SEP	234227	6030.01	2918.67	-9999.00	10039.00
OCT	234227	4985.34	2793.98	-9999.00	8429.00
NOV	234227	3807.07	2654.97	-9999.00	8060.00
DEC	234227	2892.19	2599.44	-9999.00	7808.00
ANN	234227	3789.59	4528.55	-9999.00	8022.00

Table 14. Characteristics of numeric variables in the U.S. Historical Climatology Network monthly minimum temperature data file (HCN94MIN.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	468488	257716.38	135124.15	11084.00	489905.00
YEAR	468488	1945.85	28.62	1871.00	1994.00
ELEM	468488	2.00	0.00	2.00	2.00
JAN	468488	1159.36	2440.71	-9999.00	7412.00
FEB	468488	1373.42	2442.83	-9999.00	7280.00
MAR	468488	1930.85	2599.08	-9999.00	7348.00
APR	468488	2598.61	2814.95	-9999.00	7650.00
MAY	468488	3245.89	3108.51	-9999.00	7874.00
JUN	468488	3842.16	3415.72	-9999.00	8880.00
JUL	468488	4159.11	3598.97	-9999.00	9650.00
AUG	468488	4040.37	3556.60	-9999.00	9540.00
SEP	468488	3540.43	3287.52	-9999.00	8651.00
OCT	468488	2772.01	2922.44	-9999.00	7991.00
NOV	468488	2023.89	2596.78	-9999.00	7650.00
DEC	468488	1424.42	2405.15	-9999.00	7392.00
ANN	468488	-530.89	6633.00	-9999.00	7486.00

Table 15. Characteristics of numeric variables in the U.S. Historical Climatology Network total monthly precipitation file (HCN94PCP.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	507776	256561.33	134877.65	11084.00	489905.00
YEAR	507776	1940.80	32.92	1799.00	1994.00
ELEM	507776	4.00	0.00	4.00	4.00
JAN	507776	-1211.66	3559.58	-9999.00	4902.00
FEB	507776	-1214.88	3543.68	-9999.00	4288.00
MAR	507776	-1187.23	3563.17	-9999.00	4303.00
APR	507776	-1160.94	3533.51	-9999.00	2489.00
MAY	507776	-1113.37	3523.33	-9999.00	3754.00
JUN	507776	-1124.53	3543.00	-9999.00	3173.00
JUL	507776	-1125.13	3532.19	-9999.00	3549.00
AUG	507776	-1139.35	3530.72	-9999.00	3799.00
SEP	507776	-1144.72	3515.59	-9999.00	3278.00
OCT	507776	-1174.72	3507.16	-9999.00	3210.00
NOV	507776	-1190.56	3535.30	-9999.00	3593.00
DEC	507776	-1176.50	3530.86	-9999.00	4815.00
ANN	507776	-1482.46	6594.92	-9999.00	16111.00

Table 16. Characteristics of numeric variables in the maximum/minimum temperature data quality assessment file (QA94MXMN.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STATENUM	1221	25.43	13.56	1.00	48.00
STANUM	1221	4748.17	2775.32	8.00	9933.00
ELEV	1221	1680.09	1819.21	-194.00	9065.00
R1	1221	4.56	2.84	0.00	9.00
PERORIG	1221	95.12	5.75	51.10	100.00
R2	1221	4.54	2.85	0.00	9.00
R3	1221	4.52	2.89	0.00	9.00
R4	1221	4.60	2.81	0.00	9.00
PERASCD	1221	10.33	30.29	-999.90	78.90
R5	1221	4.52	2.87	0.00	9.00
PDBPOR	1221	6.55	3.63	0.00	25.00
PDR1	1221	5.05	2.66	0.00	9.00
APDMX	1221	6.97	3.84	0.00	25.00
PDR2	1221	4.81	2.91	0.00	9.00
APDMN	1221	6.98	3.85	0.00	25.00
PDR3	1221	4.70	2.92	0.00	9.00
PDASCD	1221	6.01	4.54	-99.00	24.00
PDR4	1221	4.87	2.74	0.00	9.00
APDASCMX	1221	6.64	4.70	-99.00	24.00
PDR5	1221	5.01	2.95	0.00	9.00
APDASCMN	1221	6.64	4.70	-99.00	24.00
PDR6	1221	5.01	2.95	0.00	9.00
CONFMX	1221	0.41	0.35	-9.99	1.23
R6	1221	4.57	2.86	0.00	9.00
CONFMN	1221	0.43	0.36	-9.99	1.29
R7	1221	4.58	2.86	0.00	9.00
CONS40MX	1221	9.94	5.96	0.00	20.00
R8	1221	4.90	2.87	0.00	9.00
CONS40MN	1221	10.04	6.02	0.00	20.00
R9	1221	4.94	2.89	0.00	9.00
CONSFMX	1221	8.83	5.63	0.00	20.00
R10	1221	5.02	2.74	0.00	9.00
CONSFMN	1221	8.85	5.56	0.00	20.00
R11	1221	4.92	2.83	0.00	9.00

Table 17. Characteristics of numeric variables in the mean temperature data quality assessment file (QA94MEAN.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STATENUM	1221	25.43	13.56	1.00	48.00
STANUM	1221	4748.17	2775.32	8.00	9933.00
ELEV	1221	1680.09	1819.21	-194.00	9065.00
R1	1221	4.52	2.88	0.00	9.00
PERORIG	1221	92.89	8.04	42.60	100.00
R2	1221	4.54	2.85	0.00	9.00
R3	1221	4.52	2.89	0.00	9.00
R4	1221	4.59	2.85	0.00	9.00
PERASCD	1221	10.76	30.26	-999.90	78.90
R5	1221	4.52	2.87	0.00	9.00
PDBPOR	1221	6.87	3.71	0.00	25.00
PDR1	1221	4.86	2.94	0.00	9.00
APDBPOR	1221	7.19	4.14	0.00	25.00
PDR2	1221	4.77	2.86	0.00	9.00
PDASCD	1221	6.14	4.59	-99.00	24.00
PDR3	1221	4.87	2.71	0.00	9.00
APDSCD	1221	6.91	4.77	-99.00	24.00
PDR4	1221	4.66	2.84	0.00	9.00
CONF	1221	0.33	0.34	-9.99	1.06
R6	1221	4.63	2.91	0.00	9.00
CONS40	1221	10.02	6.02	0.00	20.00
R7	1221	4.94	2.90	0.00	9.00
CONSF	1221	8.81	5.66	0.00	20.00
R8	1221	5.00	2.76	0.00	9.00

Table 18. Characteristics of numeric variables in the total monthly precipitation data quality assessment file (QA94PCP.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STATENUM	1221	25.43	13.56	1.00	48.00
STANUM	1221	4748.17	2775.32	8.00	9933.00
ELEV	1221	1680.09	1819.21	-194.00	9065.00
R1	1221	4.52	2.87	0.00	9.00
PERORIG	1221	94.52	7.38	41.40	100.00
R2	1221	4.56	2.83	0.00	9.00
R3	1221	4.52	2.88	0.00	9.00
R4	1221	4.60	3.00	0.00	9.00
PERASCD	1221	-189.78	402.31	-999.90	100.00
R5	1221	4.65	3.01	0.00	9.00
PDBPOR	1221	6.56	3.61	0.00	25.00
PDR1	1221	4.97	2.78	0.00	9.00
APDBPOR	1221	7.20	4.02	0.00	27.00
PDR2	1221	4.78	2.82	0.00	9.00
PDSCD	1221	-17.25	40.60	-99.00	12.00
PDR3	1221	5.00	2.81	0.00	9.00
APDSCD	1221	-17.05	40.71	-99.00	15.00
PDR4	1221	5.07	2.79	0.00	9.00
CONF	1221	-1.13	4.40	-9.99	1.39
R6	1221	4.83	2.83	1.00	9.00
CONS40	1221	7.69	6.48	0.00	20.00
R7	1221	5.11	2.45	2.00	9.00
CONSF	1221	7.40	6.34	0.00	20.00
R8	1221	5.16	2.52	2.00	9.00

Table 19. Characteristics of numeric variables in the monthly maximum temperature data file that have been adjusted for urbanization effects (UR94MAX.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	116409	257848.11	135247.94	11084.00	489905.00
YEAR	116409	1946.25	28.37	1873.00	1994.00
JAN	116409	38.92	19.55	-99.99	84.21
FEB	116409	42.77	19.48	-99.99	87.40
MAY	116409	51.65	19.19	-99.99	93.76
APR	116409	62.40	18.65	-99.99	99.11
MAY	116409	71.92	18.51	-99.99	105.11
JUN	116409	80.44	18.36	-99.99	114.81
JUL	116409	85.29	18.81	-99.99	119.02
AUG	116409	83.77	18.61	-99.99	118.15
SEP	116409	76.71	18.55	-99.99	108.85
OCT	116409	66.03	17.96	-99.99	100.91
NOV	116409	52.23	17.94	-99.99	89.86
DEC	116409	41.70	18.34	-99.99	84.65
WIN	116409	39.56	23.77	-99.99	83.26
SPR	116409	61.66	19.73	-99.99	97.11
SUM	116409	82.88	19.82	-99.99	117.33
FAL	116409	64.65	19.27	-99.99	95.08
ANN	116409	59.87	27.83	-99.99	92.69

Table 20. Characteristics of numeric variables in the monthly mean temperature data file that have been adjusted for urbanization effects (UR94MEAN.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	121523	256903.84	135163.63	11084.00	489905.00
YEAR	121523	1943.71	30.39	1835.00	1994.00
JAN	121523	27.43	22.01	-99.99	76.77
FEB	121523	30.70	21.88	-99.99	76.74
MAR	121523	39.09	20.87	-99.99	78.19
APR	121523	49.03	20.54	-99.99	83.43
MAY	121523	58.52	19.53	-99.99	90.67
JUN	121523	66.80	19.97	-99.99	99.42
JUL	121523	71.39	20.49	-99.99	105.24
AUG	121523	69.83	20.42	-99.99	104.53
SEP	121523	62.99	19.58	-99.99	94.44
OCT	121523	52.44	18.74	-99.99	83.46
NOV	121523	40.22	19.19	-99.99	80.26
DEC	121523	30.63	20.77	-99.99	76.47
WIN	121523	28.17	25.01	-99.99	75.27
SPR	121523	48.32	21.96	-99.99	80.41
SUM	121523	68.84	22.15	-99.99	102.17
FAL	121523	51.27	21.20	-99.99	81.57
ANN	121523	46.20	30.33	-99.99	78.99

Table 21. Characteristics of numeric variables in the average monthly temperature data file that have been adjusted for urbanization effects (UR94AV2.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	116368	257869.95	135228.70	11084.00	489905.00
YEAR	116368	1946.27	28.36	1873.00	1994.00
JAN	116368	28.30	19.31	-99.99	78.16
FEB	116368	31.55	19.17	-99.99	77.28
MAR	116368	39.86	18.65	-99.99	77.99
APR	116368	49.67	18.27	-99.99	83.40
MAY	116368	58.80	18.44	-99.99	90.68
JUN	116368	67.05	18.81	-99.99	99.50
JUL	116368	71.65	19.37	-99.99	105.35
AUG	116368	70.12	19.22	-99.99	104.60
SEP	116368	63.09	18.95	-99.99	94.37
OCT	116368	52.61	18.01	-99.99	84.11
NOV	116368	40.70	17.39	-99.99	80.28
DEC	116368	31.31	18.30	-99.99	77.87
WIN	116368	28.89	23.09	-99.99	76.69
SPR	116368	49.09	19.50	-99.99	80.17
SUM	116368	69.23	20.63	-99.99	102.25
FAL	116368	51.76	19.37	-99.99	81.53
ANN	116368	47.04	28.28	-99.99	79.21

Table 22. Characteristics of numeric variables in the monthly minimum temperature data file that have been adjusted for urbanization effects (UR94MIN.ASC)

Variable	Number of observations	Mean	Standard deviation	Minimum value	Maximum value
STACOD	116408	257891.88	135226.60	11084.00	489905.00
YEAR	116408	1946.25	28.37	1873.00	1994.00
JAN	116408	18.28	17.64	-99.99	73.71
FEB	116408	20.94	17.33	-99.99	72.17
MAR	116408	28.55	16.63	-99.99	72.94
APR	116408	37.49	15.94	-99.99	75.65
MAY	116408	46.25	16.29	-99.99	78.19
JUN	116408	54.29	16.89	-99.99	88.39
JUL	116408	58.74	17.21	-99.99	96.10
AUG	116408	57.13	17.43	-99.99	94.94
SEP	116408	50.11	17.20	-99.99	86.45
OCT	116408	39.73	16.29	-99.99	79.28
NOV	116408	29.61	15.64	-99.99	75.80
DEC	116408	21.62	16.29	-99.99	73.52
WIN	116408	18.94	20.78	-99.99	71.92
SPR	116408	37.15	17.10	-99.99	74.14
SUM	116408	56.43	18.37	-99.99	92.35
FAL	116408	39.57	17.14	-99.99	76.67
ANN	116408	36.08	24.10	-99.99	74.24

The following lists contain the first and last 5 records of the 14 data files distributed with this NDP. The first sample list is from the station inventory file (INVENT94.ASC).

```

011084 31.07 -87.05 85 BREWTON 3SSE AL 1890 9999 1891 1890 1891 1890
1904 1904 1904 1904 1904
012813 30.55 -87.88 23 FAIRHOPE 2NE AL 1918 9999 1918 1919 1918 1918
1919 1918 1918 1918 1918
013160 32.83 -88.13 125 GAINESVILLE LOCK AL 1893 9999 1893 1894 1893 1893
1893 1893 1893 1893 1893
013511 32.70 -87.58 220 GREENSBORO AL 1855 9999 1893 1856 1894 1893
1855 1892 1888 1892 1892
013816 31.95 -86.32 594 HIGHLAND HOME AL 1892 9999 1892 1892 1895 1892
1894 1892 1892 1892 1892
...
488160 44.83 -106.83 3750 SHERIDAN FIELD STATION WY 1891 9999 1892 1891 1894 1893
1891 1898 1898 1898 1898
488995 42.08 -104.22 4098 TORRINGTON EXP FARM WY 1922 9999 1923 1923 1923 1924
1922 1922 1922 1922 1922
489615 42.12 -104.95 4638 WHEATLAND 4N WY 1889 9999 1891 1891 1892 1892
1889 1893 1890 1897 1897
489770 44.02 -107.97 4060 WORLAND WY 1907 9999 1909 1908 1909 1907
1908 1907 1907 1907 1907
489905 44.97 -110.70 6230 YELLOWSTONE PARK MAMMOTH WY 1886 9999 1887 1886 1888 1888
1889 1903 1903 1903 1902

```

Sample listing from the station history file (SHF94.ASC).

011084 AL 07 BREWTON 3SSE ESCAMBIA

011084 12 01 1890 06 30 1894 1101000000000000 31 04 087 03 999 999 85 9999 999 BREWTON
 0100001100000001000000000000000000000000 9999 9999 0010000000000000 W
 J HOLLAND 00
 011084 10 01 1894 10 31 1897 1101000000000000 31 04 087 03 999 999 85 9999 999 BREWTON
 0100001100000001000000000000000000000000 9999 9999 0010000000000000 C
 F RANKIN 00
 011084 03 01 1900 12 31 1900 1101000000000000 31 04 087 03 999 999 85 9999 999 BREWTON
 0000000000000001000000000000000000000000 9999 9999 0010000000000000
 REV FENWICK L LEAVITT 00
 011084 01 21 1926 08 31 1928 0000000000000000 31 04 087 03 999 999 85 0001 N BREWTON
 0100001100000001000000000000000000000000 9179 0406 0010000000000000 W
 E BROOKS 00

...
 489905 12 01 1974 05 31 1975 0000000000000000 44 58 110 42 000 000 6230 0001 E
 YELLOWSTONE PARK 0100001100000001000000000000000000000000 1708 0305
 0010000000000000 US NATIONAL PARK SERVICE 00
 489905 06 01 1975 04 01 1978 0000000000000000 44 58 110 42 000 000 6230 0001 E
 YELLOWSTONE PARK 0100001100000001000000000000000000000000 1717 0305
 0010000000000000 US NATIONAL PARK SERVICE 00
 489905 04 01 1978 08 31 1987 0000000000000000 44 58 110 42 000 000 6230 0001 E
 YELLOWSTONE PARK 0100001100000001000000000000000000000000 0808 0305
 0010000000000000 US NATIONAL PARK SERVICE 00
 489905 09 01 1987 10 07 1992 0000000000000000 44 58 110 42 000 000 6230 0001 E
 YELLOWSTONE PARK 1100101100000001001000000000000000000000 0808 0305
 0010000000000000 US NATIONAL PARK SERVICE 00
 489905 10 07 1992 99 99 9999 0000000000000000 44 58 110 42 000 000 6230 0001 E
 YELLOWSTONE PARK MAMMOTH 110010110000000100100000000000000000 0808 0305
 0010000000000000 US NATIONAL PARK SERVICE 00

Sample listing from the U.S. HCN maximum temperature file (HCN94MAX.ASC).

011084 1891 1 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
 -9999 -9999 6270 3 -9999
 011084 1891 1+ -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
 -9999 -9999 6132 3F -9999
 011084 1891 1A -9999 M -9999 M -9999 M -9999 M -9999 M -9999 M -9999 M -9999
 M -9999 M -9999 M -9999 3 E -9999
 011084 1891 1C -9999 8X -9999 8X -9999 8X -9999 8X -9999 8X -9999 8X -9999 8X -9999 8X -9999
 8X -9999 8X -9999 8X -9999 8X -9999
 011084 1892 1 5450 3 6900 3 7110 3 8140 3 8320 3 9060 3 8740 3 9270 3 8790 3
 8660 3 S 7160 3 -9999 -9999

...
 489905 1993 1C 000 05 000 05 000 03 000 03 000 03 000 02 000 02 000 02 000
 03 000 03 000 03 000 05 -9999
 489905 1994 1 3550 1 2980 1 4470 1 5360 1 6600 1 7120 1 7880 1 8310 1 7360 1
 5210 1 3220 1 3330 1 5450
 489905 1994 1+ 3584 1G 3022 1G 4507 1G 5402 1G 6631 1G 7148 1G 7895 1G 8308 1G 7354
 1G 5211 1G 3228 1G 3365 1G 5471
 489905 1994 1A 3584 10 3022 10 4507 10 5402 10 6631 10 7148 10 7895 10 8308 10 7354
 10 5211 10 3228 10 3365 10 5471
 489905 1994 1C 000 05 000 05 000 03 000 03 000 03 000 02 000 02 000 02 000
 03 000 03 000 03 000 05 -9999

Sample listing from the U.S. HCN mean temperature file (HCN94MEA.ASC).

```

011084 1890 3 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
-9999 -9999 5820 2 X-9999
011084 1890 3+-9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
-9999 -9999 5820 2 X-9999
011084 1890 3A-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999
M-9999 M-9999 M-9999 2 M-9999
011084 1890 3C-9999 9X -9999 9X -9999 9X -9999 9X -9999 9X -9999 9X -9999
9X -9999 9X -9999 8X -9999 8X -9999
011084 1891 3 4910 2 5650 2 5770 2 6380 2 7040 2 8160 2 8100 2 8140 2 S 7600 2
6230 2 6260 2 5160 2 6620 2

...
489905 1993 3C 000 05 000 05 000 03 000 03 000 03 000 02 000 02 000 02 000
03 000 03 000 03 000 05 -9999
489905 1994 3 2750 1 1910 1 3340 1 4070 1 5260 1 5720 1 6260 1 6590 1 5680 1
4130 1 2210 1 2500 1 4200 1
489905 1994 3+ 2838 1G 1970 1G 3409 1G 4048 1G 5250 1G 5712 1G 6245 1G 6555 1G 5654
1G 4154 1G 2230 1G 2570 1G 4220
489905 1994 3A 2838 10 1970 10 3409 10 4048 10 5250 10 5712 10 6245 10 6555 10 5654
10 4154 10 2230 10 2570 10 4220
489905 1994 3C 000 05 000 05 000 03 000 03 000 03 000 02 000 02 000 02 000
03 000 03 000 03 000 05 -9999

```

Sample listing from the U.S. HCN average temperature file (HCN94AV2.ASC).

```

011084 1891 3+-9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
-9999 -9999 5038 F -9999
011084 1891 3A-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999
M-9999 M-9999 M-9999 E-9999
011084 1892 3+ 4246 F 5665 F 5595 F 6793 F 6880 F 7812 F 7850 F 8120 F 7565
FS 7158 FS 5517 F -9999 F -9999
011084 1892 3A-9999 E-9999 E-9999 E-9999 E-9999 E-9999 E-9999 E-9999
E-9999 E-9999 E-9999 M-9999
011084 1893 3+ 4266 F 5580 F 5490 F 6648 F 7125 F 7967 F 8130 F 7960 F 7640
F 6378 F 5462 F 5393 F 6503

...
489905 1992 3A 2390 O 3176 O 3868 O 4333 O 5215 O 5698 O 5790 O 6079 O 5144
O 4518 O 2595 O 1775 O 4215
489905 1993 3+ 1890 G 1971 G 3348 G 3758 G 5005 G 5308 G 5445 G 5729 G 5059
G 4148 G 2345 G 2370 G 3865
489905 1993 3A 1890 O 1971 O 3348 O 3758 O 5005 O 5308 O 5445 O 5729 O 5059
O 4148 O 2345 O 2370 O 3865
489905 1994 3+ 2835 G 1966 G 3403 G 4048 G 5250 G 5708 G 6245 G 6549 G 5654
G 4148 G 2225 G 2570 G 4217
489905 1994 3A 2835 C 1966 O 3403 O 4048 O 5250 O 5708 O 6245 O 6549 O 5654
O 4148 O 2225 O 2570 O 4217

```


Sample listing from the U.S. HCN minimum temperature file (HCN94MIN.ASC).

```

011084 1891 2 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
-9999 -9999 4050 3 -9999
011084 1891 2+-9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
-9999 -9999 3943 3F -9999
011084 1891 2A-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999
M-9999 M-9999 M-9999 3 E-9999
011084 1891 2C-9999 8X -9999 8X -9999 8X -9999 8X -9999 8X -9999 8X
8X -9999 8X -9999 8X -9999 8X -9999
011084 1892 2 3280 3 4560 3 4260 3 5520 3 5490 3 6600 3 6990 3 7010 3 6410 3
S 5780 3 4050 3 -9999 -9999

```

```

***
489905 1993 2C 000 05 000 05 000 03 000 03 000 03 000 02 000 02 000 02 000
03 000 03 000 03 000 05 -9999
489905 1994 2 1940 1 830 1 2200 1 2700 1 3920 1 4310 1 4640 1 4860 1 4000 1
3040 1 1190 1 1670 1 2940
489905 1994 2+ 2085 1G 910 1G 2299 1G 2693 1G 3868 1G 4267 1G 4595 1G 4790 1G 3954
1G 3085 1G 1221 1G 1775 1G 2962
489905 1994 2A 2085 10 910 10 2299 10 2693 10 3868 10 4267 10 4595 10 4790 10 3954
10 3085 10 1221 10 1775 10 2962
489905 1994 2C 000 05 000 05 000 03 000 03 000 03 000 02 000 02 000 02 000
03 000 03 000 03 000 05 -9999

```

Sample listing from the U.S. HCN total precipitation file (HCN94PCP.ASC).

```

011084 1890 4 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
-9999 -9999 170 2 -9999
011084 1890 4+-9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999 -9999
-9999 -9999 170 2 -9999
011084 1890 4A-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999 M-9999
M-9999 M-9999 M 187 2 E-9999
011084 1890 4C-9999 9X -9999 9X -9999 9X -9999 9X -9999 9X -9999 9X -9999
9X -9999 9X -9999 8X 133 8X -9999
011084 1891 4 550 2 561 2 575 2 165 2 275 2 670 2 425 2 172 2 200 2
000 2 930 2 525 2 5048

```

```

***
489905 1993 4C 100 0A 100 0A 100 0A 100 0A 100 0A 100 0A 100 0A 100
0A 100 0A 100 0A 100 0A -9999
489905 1994 4 052 1 110 1 078 1 097 1 141 1 285 1 150 1 058 1 076 1
143 1 071 1 13811 139911
489905 1994 4+ 052 1 110 1 078 1 097 1 141 1 285 1 150 1 058 1 076 1
143 1 071 1 13811 1399
489905 1994 4A 052 1 110 1 078 1 097 1 141 1 285 1 150 1 058 1 076 1
143 1 071 1 13811 1399
489905 1994 4C 100 0A 100 0A 100 0A 100 0A 100 0A 100 0A 100 0A 100
0A 100 0A 100 0A 100 0A -9999

```

Sample listing from the U.S. HCN maximum/minimum temperature quality assessment file (QA94MXMN.ASC).

AL BREWTON 3SSE	01	1084-07	31-04	87-03	85	12/1891	2	70.9	9	09/1993
7 02/1916 8 23.9 9 07 6	08	6 08	6 05 4	06	5	06 5	0.58	8	0.76	9
10 5 10 5 16 8	00	0								
AL FAIRHOPE 2NE	01	2813-08	30-33	87-53	23	03/1918	9	98.6	2	10/1969
2 01/1918 9 1.8 1 01 0	01	0 01	0 01 0	01	0	01 0	0.10	0	0.08	0
12 6 12 6 04 3	02	1								
AL GAINESVILLE LOCK	01	3160-06	32-50	88-08	125	02/1893	3	97.9	4	10/1948
1 01/1893 2 2.5 1 05 4	05	3 05	3 05 4	05	4	05 4	0.36	4	0.40	4
16 8 10 5 16 8	10	6								
AL GREENSBORO	01	3511-06	32-42	87-35	220	03/1892	2	99.1	1	11/1983
3 01/1892 1 6.5 3 07 6	07	6 07	6 07 7	07	6	07 6	0.60	8	0.88	9
10 5 18 9 08 5	14	8								
AL HIGHLAND HOME	01	3816-07	31-57	86-19	594	05/1892	2	97.4	4	09/1990
6 01/1892 1 5.1 2 06 5	06	5 06	4 06 5	07	6	07 6	0.57	8	0.56	7
06 3 08 4 00 0	04	2								

WY SHERIDAN FIELD STATION	48	8160-05	44-50	106-50	3750	10/1891	1	91.1	8	11/1978
2 03/1910 8 8.8 4 03 2	05	3 05	3 03 2	03	1	03 1	0.10	0	0.10	0
02 1 16 8 12 7	20	9								
WY TORRINGTON EXP FARM	48	8995-08	42-05	104-13	4098	01/1922	9	99.2	1	08/1983
3 01/1922 9 0.9 0 07 2	03	1 03	1 03 2	03	1	03 1	0.41	5	0.41	4
00 0 10 5 20 9	12	7								
WY WHEATLAND 4N	48	9615-08	42-07	104-57	4638	11/1891	1	88.4	9	03/1983
3 06/1911 8 18.1 8 10 8	11	8 12	9 08 7	08	7	08 7	0.28	2	0.32	3
18 9 02 1 06 4	08	5								
WY WORLAND	48	9770-04	44-01	107-58	4060	02/1907	8	95.3	6	10/1984
4 01/1907 7 16.5 7 09 8	09	7 09	7 09 8	09	8	09 8	0.42	5	0.62	8
06 3 08 4 00 0	10	6								
WY YELLOWSTONE PARK MAMMOTH	48	9905-01	44-58	110-42	6230	01/1887	9	97.2	4	09/1985
4 03/1904 6 3.0 1 04 3	04	2 04	2 03 2	03	1	03 1	0.48	6	0.57	7
08 4 20 9 12 7	06	4								

Sample listing from the U.S. HCN mean temperature quality assessment file (QA94MEAN.ASC).

AL BREWTON 3SSE	01	1084-07	31-04	87-03	85	12/1890	4	71.0	9	09/1993
7 02/1916 8 23.9 9 07 6	08	6 05	4 06 4	06 4	0.55	9 02 1	12	7		
AL FAIRHOPE 2NE	01	2813-08	30-33	87-53	23	03/1918	9	98.0	3	10/1969
2 01/1918 9 2.2 1 01 0	01	0 01	0 01 0	0	0.07	0 02 1	12	7		
AL GAINESVILLE LOCK	01	3160-06	32-50	88-08	125	02/1893	5	97.8	3	10/1948
1 01/1893 4 2.6 1 05 3	05	3 05	4 05 3	0.29	4 16 8	14	8			
AL GREENSBORO	01	3511-06	32-42	87-35	220	06/1856	0	82.9	8	11/1983
3 01/1888 1 6.2 3 08 7	10	8 07	6 07 5	0.55	9 02 1	08	5			
AL HIGHLAND HOME	01	3816-07	31-57	86-19	594	05/1892	5	97.0	4	09/1990
6 01/1892 3 6.3 3 06 5	06	4 06	5 07 5	0.40	7 14 7	06	4			

WY SHERIDAN FIELD STATION	48	8160-05	44-50	106-50	3750	09/1891	4	94.4	5	11/1978
2 09/1904 7 6.7 3 03 1	05	3 03	2 03 1	0.14	0 12 6	18	9			
WY TORRINGTON EXP FARM	48	8995-08	42-05	104-13	4098	01/1922	9	99.0	1	08/1983
3 01/1922 9 1.0 0 03 1	03	1 03	2 03 1	0.34	5 18 9	06	4			
WY WHEATLAND 4N	48	9615-08	42-07	104-57	4638	01/1890	4	90.4	7	03/1983
3 03/1902 6 24.2 9 10 8	12	8 09	8 11 8	0.35	5 16 8	10	6			
WY WORLAND	48	9770-04	44-01	107-58	4060	02/1907	8	94.9	5	10/1984
4 01/1907 7 16.7 7 09 7	09	7 09	8 09 7	0.41	7 02 1	00	0			
WY YELLOWSTONE PARK MAMMOTH	48	9905-01	44-58	110-42	6230	11/1886	3	97.9	3	09/1985
4 03/1904 7 1.5 0 04 2	04	2 03	2 03 1	0.40	7 20 9	04	3			

Sample listing from the U.S. HCN total precipitation quality assessment file (QA94PCP.ASC).

AL BREWTON 3SSE	01	1084-07	31-04	87-03	85	12/1890	4	72.3	9	01/1990						
6 05/1934 3	0.1	0	04	3	08	6	04	6	03	5	1.09	7	00	2	08	6
AL FAIRHOPE 2NE	01	2813-08	30-33	87-53	23	03/1918	9	99.6	2	03/1919						
1 01/1918 3	0.5	1	01	0	01	0	01	2	01	2	1.02	2	02	3	06	5
AL GAINESVILLE LOCK	01	3160-06	32-50	88-08	125	01/1893	5	99.9	1	04/1912						
1 01/1893 1	0.4	1	06	5	06	4	06	7	06	7	1.06	6	00	2	16	9
AL GREENSBORO	01	3511-06	32-42	87-35	220	01/1855	0	87.9	8	11/1983						
4 10/1980 6	0.5	1	07	6	08	6	01	2	00	0	1.00	1	08	5	18	9
AL HIGHLAND HOME	01	3816-07	31-57	86-19	594	01/1892	5	99.4	2	04/1988						
6 09/1957 5	2.2	3	06	5	07	5	03	5	03	5	1.03	3	02	3	18	9

WY SHERIDAN FIELD STATION	48	8160-05	44-50	106-50	3750	09/1891	5	98.9	3	01/1893						
0 99/9999 9	-999.9	9	04	3	06	4	-99	9	-9.99	9	00	2	00	2		
WY TORRINGTON EXP FARM	48	8995-08	42-05	104-13	4098	01/1922	9	99.8	1	08/1983						
4 01/1922 3	0.1	0	02	1	02	1	02	3	1.04	4	16	8	18	9		
WY WHEATLAND 4N	48	9615-08	42-07	104-57	4638	05/1889	4	89.1	8	05/1930						
2 99/9999 9	-999.9	9	07	6	11	8	-99	9	-9.99	9	00	2	00	2		
WY WORLAND	48	9770-04	44-01	107-58	4060	02/1907	8	95.6	6	10/1984						
4 99/9999 9	-999.9	9	09	8	11	8	-99	9	-9.99	9	00	2	00	2		
WY YELLOWSTONE PARK MAMMOTH	48	9905-01	44-58	110-42	6230	01/1889	4	98.8	3	09/1985						
5 01/1905 2	1.2	2	04	3	04	2	03	5	03	5	1.08	6	05	4	07	5

Sample listing from the urbanization effects maximum temperature file (UR94MAX.ASC).

011084	1904	-99.99	-99.99	-99.99	-99.99	-99.99	83.25	-99.99	84.78	84.57	87.20	-99.99	63.08
-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1905	-99.99	-99.99	-99.99	-99.99	-99.99	85.10	-99.99	85.65	86.35	88.55	-99.99	66.42
-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1906	-99.99	-99.99	-99.99	-99.99	-99.99	82.42	-99.99	84.16	87.13	85.83	-99.99	67.35
-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1907	-99.99	-99.99	-99.99	-99.99	-99.99	80.83	-99.99	85.36	86.02	84.07	-99.99	61.04
-99.99	-99.99	-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1908	-99.99	-99.99	-99.99	-99.99	-99.99	82.60	-99.99	84.73	85.84	82.92	72.66	68.07
67.85	-99.99	-99.99	-99.99	-99.99	74.55	-99.99							

489905	1990	31.44	31.52	42.08	54.23	55.62	69.79	80.26	80.09	75.64	50.81	40.68	
18.75	31.00	50.65	76.71	55.71	52.58								
489905	1991	27.74	42.32	40.18	45.43	56.62	70.69	82.46	82.39	68.34	54.21	33.48	
32.15	29.60	47.41	78.51	52.01	53.00								
489905	1992	33.14	41.72	50.28	55.63	66.42	70.79	71.66	77.69	65.64	57.61	34.48	
26.95	35.67	57.45	73.38	52.58	54.33								
489905	1993	28.14	33.32	43.88	46.93	63.52	66.09	67.66	72.09	66.44	53.81	34.18	
32.55	29.47	51.45	68.61	51.48	50.72								
489905	1994	35.84	30.22	45.08	54.03	66.32	71.49	78.96	83.09	73.54	52.11	32.28	
33.65	32.87	55.15	77.85	52.65	54.72								

Sample listing from the urbanization effects mean temperature file (UR94MEAN.ASC).

011084	1904	-99.99	-99.99	-99.99	-99.99	-99.99	69.17	-99.99	76.42	76.33	76.22	-99.99	52.17
		-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1905	-99.99	-99.99	-99.99	-99.99	-99.99	73.98	-99.99	77.55	78.36	77.49	-99.99	56.02
		-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1906	-99.99	-99.99	-99.99	-99.99	-99.99	69.92	-99.99	76.93	78.91	77.10	-99.99	56.68
		-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1907	-99.99	-99.99	-99.99	-99.99	-99.99	69.56	-99.99	77.79	78.05	75.11	-99.99	51.17
		-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1908	-99.99	-99.99	-99.99	-99.99	-99.99	70.44	-99.99	76.71	78.02	73.64	58.93	56.36
		-99.99	-99.99	-99.99	-99.99	-99.99	62.97	-99.99					
...													
489905	1990	24.15	21.37	31.87	41.76	44.78	56.09	64.12	63.72	58.61	40.31	31.87	
		9.67	22.03	39.47	61.31	43.60	40.69						
489905	1991	19.55	32.17	30.67	36.56	45.48	56.49	65.22	65.72	53.51	40.31	24.87	
		23.37	20.47	37.57	62.48	39.56	41.16						
489905	1992	23.85	31.77	38.67	43.36	52.18	56.99	57.92	60.82	51.41	45.21	25.97	
		17.77	26.33	44.74	58.58	40.86	42.16						
489905	1993	18.85	19.67	33.47	37.56	50.08	53.09	54.42	57.32	50.61	41.51	23.47	
		23.67	18.77	40.37	54.94	38.53	38.64						
489905	1994	28.35	19.67	34.07	40.46	52.48	57.09	62.42	65.52	56.51	41.51	22.27	
		25.67	23.90	42.34	51.68	40.10	42.17						

Sample listing from the urbanization effects average temperature file (UR94AV2.ASC).

011084	1904	-99.99	-99.99	-99.99	-99.99	-99.99	69.52	-99.99	76.23	76.00	75.21	-99.99	50.67
		-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1905	-99.99	-99.99	-99.99	-99.99	-99.99	74.37	-99.99	77.29	77.95	76.49	-99.99	54.70
		-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1906	-99.99	-99.99	-99.99	-99.99	-99.99	70.30	-99.99	76.79	78.55	76.17	-99.99	55.04
		-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1907	-99.99	-99.99	-99.99	-99.99	-99.99	69.93	-99.99	77.63	77.69	74.08	-99.99	49.61
		-99.99	-99.99	-99.99	-99.99	-99.99							
011084	1908	-99.99	-99.99	-99.99	-99.99	-99.99	70.74	-99.99	76.59	77.51	72.66	58.31	55.32
		-99.99	-99.99	-99.99	-99.99	-99.99	62.10	-99.99					
...													
489905	1990	24.12	21.39	31.87	41.71	44.73	56.05	64.08	63.67	58.61	40.25	31.82	
		9.68	22.03	39.44	61.27	43.56	40.67						
489905	1991	19.57	32.14	30.62	36.51	45.43	56.50	65.18	65.67	53.46	40.30	24.87	
		23.33	20.46	37.52	62.45	39.54	41.13						
489905	1992	23.87	31.74	38.67	43.31	52.13	56.95	57.88	60.77	51.41	45.15	25.97	
		17.73	26.31	44.70	58.53	40.83	42.13						
489905	1993	18.87	19.69	33.47	37.56	50.03	53.05	54.43	57.27	50.56	41.45	23.42	
		23.68	18.76	40.35	54.92	38.48	38.62						
489905	1994	28.32	19.64	34.02	40.46	52.48	57.05	62.43	65.47	56.51	41.45	22.22	
		25.68	23.88	42.32	61.65	40.06	42.14						

Sample listing from the urbanization effects minimum temperature file (UR94MIN.ASC).

011084	1904	-99.99	-99.99	-99.99	-99.99	55.79	66.19	67.67	67.42	63.21	-99.99	38.25
		-99.99	-99.99	-99.99	67.09	-99.99	-99.99					
011084	1905	-99.99	-99.99	-99.99	-99.99	63.63	67.36	68.93	69.54	64.42	-99.99	42.98
		-99.99	-99.99	-99.99	68.61	-99.99	-99.99					
011084	1906	-99.99	-99.99	-99.99	-99.99	58.18	68.29	69.42	69.97	66.50	-99.99	42.72
		-99.99	-99.99	-99.99	69.23	-99.99	-99.99					
011084	1907	-99.99	-99.99	-99.99	-99.99	59.03	64.58	69.90	69.35	64.08	-99.99	38.18
		-99.99	-99.99	-99.99	67.94	-99.99	-99.99					
011084	1908	-99.99	-99.99	-99.99	-99.99	58.87	65.96	68.44	69.17	62.40	43.96	42.57
		-99.99	-99.99	-99.99	67.86	49.64	-99.99					
...												
489905	1990	16.80	11.25	21.65	29.19	33.84	42.31	47.89	47.24	41.58	29.69	22.95
	0.60	13.05	28.22	45.82	31.41	28.75						
489905	1991	11.40	21.95	21.05	27.59	34.24	42.31	47.89	48.94	38.58	26.39	16.25
	14.50	11.32	27.62	46.38	27.07	29.26						
489905	1992	14.60	21.75	27.05	30.99	37.84	43.11	44.09	43.84	37.18	32.69	17.35
	8.50	16.95	31.96	43.68	29.07	29.92						
489905	1993	9.60	6.05	23.05	28.19	36.54	40.01	41.19	42.44	34.68	29.09	12.65
	14.80	8.05	29.26	41.22	25.47	26.53						
489905	1994	20.80	9.05	22.95	26.89	38.64	42.61	45.89	47.84	39.48	30.79	12.15
	17.70	14.89	29.49	45.45	27.47	29.57						



Appendix A: Station Inventory

U.S Historical Climatology Network Station Inventory

Several statistics have been compiled regarding data availability, station changes, and confidence intervals for the U.S. HCN. The station inventory information in this appendix is from the file INVENT94.ASC and provides beginning year-of-record information, which may be used in the station selection process. This information may be used to identify stations that should, or should not, be included in a particular analysis or study.

The data provided in this appendix are sorted by station code (i.e., state and station number). For reference purposes, the codes used to identify each state, along with their corresponding Federal Information Processing System codes, are listed in Table A-1.

Table A-1. Listing of the state codes used in the United States Historical Climatology Network and corresponding state Federal Information Processing System codes (FIPS)

State code	State name	FIPS code	State code	State name	FIPS code
01	Alabama	01	25	Nebraska	31
02	Arizona	04	26	Nevada	32
03	Arkansas	05	27	New Hampshire	33
04	California	06	28	New Jersey	34
05	Colorado	08	29	New Mexico	35
06	Connecticut	09	30	New York	36
07	Delaware	10	31	North Carolina	37
08	Florida	12	32	North Dakota	38
09	Georgia	13	33	Ohio	39
10	Idaho	16	34	Oklahoma	40
11	Illinois	17	35	Oregon	41
12	Indiana	18	36	Pennsylvania	42
13	Iowa	19	37	Rhode Island	44
14	Kansas	20	38	South Carolina	45
15	Kentucky	21	39	South Dakota	46
16	Louisiana	22	40	Tennessee	47
17	Maine	23	41	Texas	48
18	Maryland	24	42	Utah	49
19	Massachusetts	25	43	Vermont	50
20	Michigan	26	44	Virginia	51
21	Minnesota	27	45	Washington	53
22	Mississippi	28	46	West Virginia	54
23	Missouri	29	47	Wisconsin	55
24	Montana	30	48	Wyoming	56

The station code, current station name, state two-character post office code, most recent latitude (LAT-N) and longitude (LONG-W) in decimal degrees, and elevation (ELV) in feet are shown in Table A-2 for each U.S. HCN station. The beginning year-of-record (BYR) and ending year-of-record (EYR) from the station history file is given, as well as the beginning year of record for the five monthly U.S. HCN data files [i.e., minimum (HCNMN), mean (HCNAVG), average (HCNAV2), and maximum (HCNMX) temperature data; total precipitation (HCNPCP)] and the four temperature files that have been adjusted for urbanization effects [i.e., minimum (URMN), mean (URAVG), average (URAV2), maximum (URMX)]. The beginning year of record given for the U.S. HCN total precipitation and temperature data are for the first year with original or estimated data (i.e., in some cases estimated data are available before original data). A value of 9999 in the station history EYR column indicates that the station was still in operation on December 31, 1994.

Table A-2. Listing of the station inventory file (INVENT94.ASC)

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNAV2	HCTMX	HCNCP	URMN	URAV2	URAV2	URMX
11084	31.07	-87.05	85	BREWTON 3SSE	AL	1890	9999	1891	1890	1891	1891	1890	1904	1904	1904	1904
12813	30.55	-87.88	23	FAIRHOPE 2NE	AL	1918	9999	1918	1919	1918	1918	1919	1918	1918	1918	1918
13160	32.83	-88.13	125	GAINESVILLE LOCK	AL	1893	9999	1893	1893	1893	1893	1893	1893	1893	1893	1893
13511	32.70	-87.58	220	GAINESBORO	AL	1855	9999	1893	1856	1894	1893	1855	1892	1892	1892	1892
13816	31.95	-86.32	594	HIGHLAND HOME	AL	1892	9999	1892	1892	1895	1892	1894	1892	1892	1892	1892
15749	34.75	-87.62	536	MUSCLE SHOALS FAA AP	AL	1939	9999	1941	1940	1940	1940	1940	1940	1940	1940	1940
17157	34.17	-86.82	800	ST BERNARD	AL	1907	9999	1907	1907	1911	1907	1909	1907	1907	1907	1907
17304	34.68	-86.05	615	SCOTTSBORO	AL	1882	9999	1891	1882	1893	1891	1884	1891	1885	1891	1891
17366	32.42	-87.00	147	SELMA	AL	1858	9999	1889	1889	1891	1889	1859	1889	1889	1889	1889
18024	33.43	-86.10	555	TALLADEGA	AL	1887	9999	1893	1889	1897	1893	1889	1893	1893	1893	1893
18178	31.92	-87.73	405	THOMASVILLE	AL	1891	9999	1892	1891	1893	1892	1892	1949	1949	1949	1949
18323	31.78	-85.95	498	TROY	AL	1872	9999	1909	1874	1910	1909	1873	1908	1891	1908	1908
18380	33.23	-87.62	169	TUSCALOOSA FAA AP	AL	1854	9999	1887	1855	1885	1884	1854	1889	1895	1889	1889
18438	32.02	-85.75	440	UNION SPRINGS 9S	AL	1867	9999	1887	1889	1887	1888	1868	1891	1887	1891	1891
18469	34.57	-85.62	1062	VALLEY HEAD	AL	1885	9999	1894	1885	1893	1894	1886	1893	1885	1893	1893
20080	32.37	-112.87	1800	AJO	AZ	1913	9999	1915	1915	1917	1916	1913	1915	1915	1915	1915
21026	33.38	-112.58	890	BUCKEYE	AZ	1889	9999	1894	1894	1897	1893	1890	1893	1893	1893	1893
21248	36.15	-109.53	5610	CANYON-DE-CHELLEY	AZ	1908	9999	1909	1909	1909	1909	1909	1916	1908	1916	1938
21614	34.35	-111.70	2650	CHILDS	AZ	1915	9999	1915	1915	1918	1916	1916	1916	1915	1915	1915
22659	31.35	-109.53	4040	DOUGLAS	AZ	1903	9999	1905	1905	1903	1903	1903	1903	1903	1903	1903
23160	35.27	-111.73	7347	FORT VALLEY	AZ	1909	9999	1909	1909	1912	1909	1909	1909	1909	1909	1909
23596	36.05	-112.15	6785	GRAND CANYON NATL PARK 2	AZ	1903	9999	1903	1903	1906	1903	1903	1903	1903	1903	1903
24089	34.90	-110.17	5070	HOLBROOK	AZ	1886	9999	1891	1887	1893	1892	1887	1897	1887	1897	1897
24645	35.20	-114.02	3539	KINGMAN 2	AZ	1901	9993	1902	1902	1902	1902	1902	1901	1901	1901	1901
24849	36.87	-111.60	3210	LEES FERRY	AZ	1916	9999	1921	1921	1921	1921	1916	1921	1921	1921	1921
25467	33.42	-111.80	1235	MESA	AZ	1896	9999	1896	1897	1896	1897	1898	1896	1896	1896	1896
25512	33.40	-110.88	3560	MIAMI	AZ	1913	9999	1913	1915	1913	1913	1913	1913	1913	1913	1913
26796	34.57	-112.43	5205	PRESCOTT	AZ	1893	9999	1894	1894	1893	1893	1894	1893	1893	1893	1893
27281	33.67	-111.15	2205	ROOSEVELT 1WNW	AZ	1865	9999	1899	1865	1900	1899	1866	1898	1865	1898	1898
27370	33.07	-111.75	1285	SACATON	AZ	1905	9999	1906	1907	1905	1905	1905	1905	1905	1905	1905
27390	32.82	-109.68	2954	SAFFORD AGRICULTURAL CENTER	AZ	1898	9999	1898	1899	1898	1899	1899	1898	1898	1898	1898
27435	34.52	-109.38	5790	SAINTE JOHN'S	AZ	1889	9999	1901	1902	1903	1902	1890	1901	1901	1901	1901
27716	35.32	-112.88	5250	SELIGMAN	AZ	1888	9999	1904	1888	1904	1904	1891	1904	1901	1904	1904
28619	31.70	-110.05	4610	TOMBSTONE	AZ	1888	9999	1895	1891	1898	1893	1891	1893	1889	1893	1893
28815	32.23	-110.95	2435	TUCSON U OF AZ	AZ	1875	9999	1891	1876	1894	1892	1868	1891	1875	1891	1891
29271	33.83	-109.97	5120	WHITERIVER 1SW	AZ	1871	9999	1897	1872	1900	1897	1873	1914	1879	1914	1914
29287	33.98	-112.73	2095	WICKENBURG	AZ	1875	9999	1909	1876	1910	1908	1875	1908	1896	1908	1908
29359	35.25	-112.18	6750	WILLIAMS	AZ	1888	9999	1897	1888	1898	1898	1889	1897	1896	1897	1897
29652	32.62	-114.65	191	YUNA CITRUS	AZ	1920	9999	1920	1921	1924	1921	1920	1920	1920	1920	1920
30936	34.88	-91.18	200	BRINKLEY	AR	1882	9999	1888	1882	1890	1888	1883	1888	1882	1888	1888
31586	35.08	-92.47	310	CONWAY	AR	1884	9999	1898	1885	1900	1897	1885	1897	1885	1897	1897
31632	36.40	-90.58	300	CORNING	AR	1892	1994	1893	1892	1893	1894	1893	1892	1892	1892	1892
32356	36.42	-93.78	1420	EUREKA SPRINGS 3MNW	AR	1888	9999	1903	1888	1903	1904	1889	1902	1888	1902	1902
32444	36.10	-94.17	1270	FAYETTEVILLE EXP STN	AR	1870	9999	1894	1881	1896	1894	1870	1893	1885	1893	1893
32930	36.43	-94.45	1260	FAYETTEVILLE	AR	1898	9999	1898	1898	1899	1899	1898	1898	1898	1898	1898

STACOD	LAT	LONG	ELEV	STNAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNV2	HCNMX	HCNCP	URMN	URAV2	URMX
34572	36.48	-91.53		650 MAMMOTH SPRING	AR	1904	9999	1904	1904	1907	1905	1904	1904	1904	1904
34756	34.57	-94.27	1130	MENA	AR	1887	9999	1890	1890	1894	1891	1888	1891	1888	1891
35186	35.60	-91.28	228	NEWPORT	AR	1884	9999	1890	1888	1891	1888	1886	1889	1887	1889
35508	35.48	-93.82	390	OZARK	AR	1891	9999	1893	1892	1892	1892	1892	1891	1892	1892
35754	34.22	-92.02	215	PINE BLUFF	AR	1884	9999	1890	1888	1892	1888	1885	1889	1888	1889
35820	36.27	-90.97	315	POCAHONTAS 1	AR	1894	9999	1895	1896	1895	1895	1894	1894	1894	1894
35908	33.80	-93.38	308	PRESCOTT	AR	1882	9999	1890	1882	1892	1888	1888	1888	1885	1888
36253	33.80	-91.27	150	ROHWER 2NNE	AR	1894	9999	1895	1894	1895	1895	1894	1894	1894	1894
36928	35.30	-93.65	500	SUBIACO	AR	1897	9999	1898	1897	1897	1897	1897	1897	1897	1897
40693	37.87	-122.27	299	BERKELEY	CA	1886	9999	1893	1888	1894	1886	1886	1893	1886	1893
40924	33.62	-114.60	268	BLTYHE	CA	1909	9999	1914	1909	1913	1914	1910	1912	1909	1913
41048	32.95	-115.55	-100	BRAWLEY 2SW	CA	1909	9999	1909	1911	1913	1910	1909	1909	1909	1909
41614	41.53	-120.17	4670	CEDARVILLE	CA	1894	9999	1894	1895	1898	1894	1894	1894	1894	1894
41715	39.70	-121.82	185	CHICO UNIV FARM	CA	1870	9999	1902	1870	1904	1903	1871	1902	1870	1902
41758	32.60	-117.10	56	CHULA VISTA	CA	1918	9999	1918	1919	1918	1919	1918	1918	1918	1918
41912	39.10	-120.95	2410	COLFAX	CA	1870	9999	1905	1871	1905	1906	1872	1905	1870	1905
42239	32.98	-116.58	4640	CUYAMACA	CA	1887	9999	1910	1899	1911	1911	1888	1910	1899	1910
42294	38.53	-121.77	60	DAVIS EXP FARM 2MSW	CA	1871	9999	1909	1872	1910	1910	1872	1908	1871	1908
42319	36.47	-116.87	-194	DEATH VALLEY	CA	1911	9999	1911	1911	1912	1911	1912	1911	1911	1911
42728	38.33	-120.67	715	ELECTRA PH	CA	1903	9999	1907	1907	1908	1905	1903	1905	1905	1905
42910	40.80	-124.17	43	EUREKA WSO	CA	1886	9999	1886	1886	1890	1887	1879	1886	1886	1886
42941	34.70	-118.43	3060	FAIRMONT	CA	1909	9999	1914	1913	1917	1912	1910	1912	1912	1912
43161	39.50	-123.78	120	FORT BRAGG 5N	CA	1860	9999	1895	1897	1897	1895	1861	1912	1912	1912
43257	36.78	-119.72	336	FRESNO WSO AP	CA	1877	9999	1887	1888	1889	1887	1877	1893	1887	1893
43747	36.30	-119.65	245	HANFORD 1S	CA	1880	9999	1899	1931	1901	1899	1880	1899	1899	1899
43761	41.80	-123.37	1120	HAPPY CAMP RS	CA	1914	9999	1915	1914	1915	1915	1915	1914	1914	1914
43875	38.62	-122.87	108	HEALDSBURG	CA	1876	9999	1901	1894	1901	1899	1878	1899	1893	1899
44232	36.80	-118.20	3950	INDEPENDENCE	CA	1862	9999	1893	1862	1894	1894	1862	1930	1870	1930
44259	33.73	-116.27	-21	INDIO FIRE STATION	CA	1877	9999	1904	1878	1908	1905	1878	1904	1877	1904
44713	39.32	-120.63	5156	LAKE SPAULDING	CA	1894	9999	1915	1916	1914	1915	1896	1914	1914	1914
44890	36.38	-119.03	513	LEMON COVE	CA	1895	9999	1896	1895	1895	1896	1899	1899	1895	1899
44997	37.67	-121.77	480	LIVERMORE	CA	1870	9999	1903	1871	1903	1904	1871	1903	1870	1903
45032	38.12	-121.28	40	LODI	CA	1881	9999	1894	1882	1896	1894	1882	1893	1882	1893
45385	39.15	-121.60	57	MARYSVILLE	CA	1857	9999	1897	1857	1897	1898	1863	1897	1870	1897
45532	37.28	-120.52	153	MERCED MUNICIPAL AP	CA	1872	9999	1899	1873	1899	1899	1872	1899	1872	1899
45983	41.32	-122.32	3590	MOUNT SHASTA	CA	1888	9999	1905	1893	1908	1905	1889	1904	1891	1904
46074	38.28	-122.27	35	NAPA STATE HOSPITAL	CA	1877	9999	1894	1876	1897	1894	1877	1904	1876	1904
46118	34.77	-114.62	914	NEEDLES FAA AP	CA	1883	9999	1894	1883	1895	1894	1885	1893	1893	1893
46175	33.60	-117.88	10	NEWPORT BEACH HARBOR	CA	1909	9999	1909	1909	1910	1909	1911	1909	1909	1909
46399	34.45	-119.23	750	OJAI	CA	1905	9999	1910	1906	1911	1910	1906	1910	1906	1910
46506	39.75	-122.20	254	ORLAND	CA	1883	9999	1903	1884	1905	1904	1885	1903	1883	1903
46508	41.30	-123.53	410	ORLEANS	CA	1885	9999	1904	1903	1904	1904	1885	1903	1903	1903
46719	34.15	-118.15	864	PASADENA	CA	1899	9999	1894	1893	1898	1893	1890	1898	1898	1898
46730	35.63	-120.68	700	PASO ROBLES	CA	1896	9999	1895	1896	1897	1895	1886	1894	1894	1894
46826	38.27	-122.65	31	PETALUMA FIRE STN #2	CA	1871	9999	1914	1893	1913	1913	1871	1913	1893	1913
47195	39.97	-120.95	3408	QUINCY	CA	1895	9999	1896	1897	1899	1896	1896	1903	1895	1904

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNM3	HCNAV2	HCNAV2	HCNM3	HCNFCP	URM1	URAV2	URAV2	URM1	URAV2	URM1	URAV2
47304	40.50	-122.30	502	REDDING WSO	CA	1875	9999	1893	1876	1896	1893	1876	1893	1875	1893	1893	1893	1893	1893
47306	34.05	-117.18	1318	REDLANDS	CA	1888	9999	1900	1892	1899	1898	1899	1898	1892	1898	1898	1898	1898	1898
47851	35.30	-120.67	315	SAN LUIS OBISPO POLY	CA	1869	9999	1896	1888	1897	1894	1869	1894	1887	1894	1894	1894	1894	1894
47902	34.42	-119.68	5	SANTA BARBARA	CA	1867	9999	1893	1894	1895	1893	1867	1893	1893	1893	1893	1893	1893	1893
47916	36.98	-122.02	130	SANTA CRUZ	CA	1873	9999	1893	1874	1893	1893	1874	1893	1873	1893	1893	1893	1893	1893
47965	38.45	-122.70	167	SANTA ROSA	CA	1888	9999	1903	1891	1903	1904	1899	1902	1891	1902	1891	1902	1891	1902
48702	40.38	-120.57	4146	SUSANVILLE AP	CA	1885	9999	1896	1893	1898	1896	1895	1895	1893	1895	1895	1895	1895	1895
48758	39.17	-120.13	6230	TAHOE CITY	CA	1903	9999	1898	1900	1901	1898	1897	1909	1909	1909	1909	1909	1909	1909
48839	35.03	-118.75	1425	TEJON RANCHO	CA	1895	9999	1898	1900	1901	1898	1897	1909	1898	1898	1898	1898	1898	1898
49087	33.73	-117.78	118	TUSTIN IRVINE RANCH	CA	1877	9999	1900	1900	1901	1901	1878	1899	1899	1899	1899	1899	1899	1899
49122	39.15	-123.20	633	UKIAH	CA	1877	9999	1893	1892	1897	1895	1877	1893	1892	1893	1893	1893	1893	1893
49200	38.40	-121.95	110	VACAVILLE	CA	1880	9999	1905	1888	1909	1905	1882	1905	1887	1905	1905	1905	1905	1905
49452	35.60	-119.33	345	WASCO	CA	1899	9999	1900	1900	1899	1900	1901	1899	1899	1899	1899	1899	1899	1899
49490	40.73	-122.93	2050	WEAVERVILLE RS	CA	1871	9999	1897	1894	1901	1897	1871	1908	1906	1908	1908	1908	1908	1908
49699	39.52	-122.30	233	WILLOWS 6W	CA	1878	9999	1895	1878	1895	1895	1878	1893	1878	1894	1894	1894	1894	1894
49855	37.75	-119.58	3966	YOSEMITE PARK HEADQUARTERS	CA	1904	9999	1906	1906	1909	1906	1904	1906	1906	1906	1906	1906	1906	1906
49866	41.72	-122.63	2625	YREKA	CA	1871	9999	1894	1894	1893	1894	1873	1893	1893	1893	1893	1893	1893	1893
50848	40.00	-105.27	5484	BOULDER	CO	1893	9999	1893	1893	1896	1893	1895	1893	1893	1893	1893	1893	1893	1893
51294	38.42	-105.23	5330	CANON CITY	CO	1886	9999	1888	1886	1889	1888	1890	1889	1887	1889	1889	1889	1889	1889
51528	39.22	-105.28	6880	CHEESMAN	CO	1889	9999	1898	1890	1897	1898	1899	1897	1889	1897	1897	1897	1897	1897
51564	38.82	-102.35	4250	CHEYENNE WELLS	CO	1892	9999	1900	1902	1902	1900	1893	1900	1900	1900	1900	1900	1900	1900
51741	39.25	-107.97	5980	COLLBRAN	CO	1889	9999	1896	1892	1900	1896	1893	1904	1904	1904	1904	1904	1904	1904
52184	37.67	-106.35	7880	DEL NORTE	CO	1888	9999	1896	1892	1899	1896	1892	1893	1904	1904	1904	1904	1904	1904
52281	39.63	-105.03	9065	DILLON 1E	CO	1888	9999	1910	1910	1910	1910	1888	1910	1910	1910	1910	1910	1910	1910
52432	37.28	-107.88	6600	DURANGO	CO	1886	1991	1895	1887	1895	1895	1887	1894	1889	1894	1894	1894	1894	1894
52446	38.48	-102.78	4211	EADS 2S	CO	1872	9999	1908	1907	1908	1908	1908	1907	1907	1907	1907	1907	1907	1907
53005	40.58	-105.08	5004	FORT COLLINS	CO	1895	9999	1899	1872	1888	1889	1873	1888	1873	1888	1873	1888	1888	1888
53038	40.22	-103.80	4331	FORT MORGAN 2S	CO	1895	9999	1898	1898	1899	1898	1895	1897	1897	1897	1897	1897	1897	1897
53146	39.17	-108.75	4480	FRUITA 1W	CO	1889	9999	1891	1889	1896	1891	1890	1893	1893	1893	1893	1893	1893	1893
53662	38.53	-106.97	7640	GUNNISON 3SW	CO	1884	9999	1895	1887	1896	1895	1895	1893	1886	1893	1893	1893	1893	1893
53951	37.77	-107.13	9000	HERMIT 7ESE	CO	1894	9999	1895	1895	1895	1895	1894	1894	1894	1894	1894	1894	1894	1894
54076	38.05	-102.12	3390	HOLLY	CO	1894	9999	1899	1900	1902	1900	1895	1899	1899	1899	1899	1899	1899	1899
54770	38.08	-102.62	3627	LAMAR	CO	1889	9999	1891	1890	1892	1889	1893	1893	1889	1893	1893	1893	1893	1893
54834	38.07	-103.22	3890	LAS ANIMAS	CO	1867	9999	1891	1868	1892	1892	1867	1891	1888	1891	1891	1891	1891	1891
55322	37.17	-105.95	7690	MANASSA	CO	1892	9999	1893	1894	1894	1894	1892	1893	1888	1893	1893	1893	1893	1893
55722	38.48	-107.88	5785	MONTROSE #2	CO	1885	9999	1894	1885	1896	1893	1896	1895	1895	1895	1895	1895	1895	1895
57167	38.03	-103.70	4170	ROCKY FORD 2SE	CO	1888	9999	1891	1889	1893	1889	1899	1889	1888	1889	1889	1889	1889	1889
57337	38.08	-106.13	7692	SAGUACHE	CO	1886	9999	1894	1886	1896	1895	1886	1894	1892	1894	1894	1894	1894	1894
57936	40.50	-106.83	6840	STEAMBOAT SPRINGS	CO	1891	9999	1891	1893	1892	1892	1892	1894	1891	1894	1894	1894	1894	1894
58204	37.95	-107.87	8672	TELLURIDE	CO	1900	9999	1900	1901	1901	1901	1901	1900	1900	1900	1900	1900	1900	1900
58429	37.17	-104.48	6030	TRINIDAD	CO	1877	9999	1900	1886	1903	1901	1877	1899	1889	1899	1899	1899	1899	1899
59243	40.07	-102.23	3535	WRAY	CO	1890	9999	1894	1894	1895	1895	1891	1891	1893	1893	1893	1893	1893	1893
62658	41.95	-73.37	550	FALLS VILLAGE	CT	1889	9999	1917	1917	1916	1918	1889	1916	1916	1916	1916	1916	1916	1916
63207	41.35	-72.05	40	GROTON	CT	1856	9999	1886	1872	1887	1887	1856	1885	1871	1885	1885	1885	1885	1885
67970	41.13	-73.55	190	STAMFORD 5N	CT	1892	9999	1892	1894	1894	1893	1892	1892	1892	1892	1892	1892	1892	1892
68138	41.80	-72.25	650	STORRS	CT	1888	9999	1894	1892	1896	1895	1890	1893	1892	1893	1893	1893	1893	1893

STACOD	LAT	LONG	ELEV	STANAME	STATE	B'YRSHF	EYRSHF	HCNMN	HCNAV2	HCIAV2	HCMX	HCNCP	URMN	URAV2	UPAV2	URMX
72730	39.15	-75.52	30	DOVER	DE	1870	9999	1892	1870	1892	1891	1871	1892	1891	1892	1892
73595	38.83	-75.58	45	GREENWOOD 2NE	DE	1890	9999	1893	1893	1894	1892	1892	1892	1892	1892	1892
75915	38.90	-75.47	30	MILFORD 4SE	DE	1857	1991	1893	1859	1896	1894	1859	1893	1898	1893	1893
76410	39.67	-75.73	90	NEWARK UNIV FARM	DE	1894	9999	1894	1888	1897	1895	1889	1894	1889	1894	1894
79605	39.77	-75.53	270	WILMINGTON PORTER RESERVOIR	DE	1894	9999	1895	1895	1896	1896	1896	1894	1894	1894	1894
80211	29.73	-85.03	19	APALACHICOLA WSO AP	FL	1903	9999	1904	1903	1903	1905	1903	1903	1903	1903	1903
80228	27.23	-81.85	63	ARCADIA	FL	1899	9999	1900	1900	1902	1899	1899	1899	1899	1899	1899
80478	27.90	-81.85	125	BARTOW	FL	1887	9999	1893	1887	1895	1888	1888	1893	1893	1893	1893
80611	26.65	-80.63	15	BELLE GLADE EXP STN	FL	1924	9999	1926	1924	1928	1924	1926	1924	1924	1924	1924
82230	30.73	-86.07	230	DE FUNIAK SPRINGS	FL	1896	9999	1897	1897	1897	1898	1897	1896	1896	1896	1896
82850	25.85	-81.38	5	EVERGLADES	FL	1926	9999	1927	1927	1927	1926	1927	1926	1926	1926	1926
82915	29.75	-81.53	5	FEDERAL POINT	FL	1892	9999	1892	1892	1892	1893	1892	1892	1892	1892	1892
82944	30.65	-81.47	13	FERNANDINA BEACH	FL	1891	9999	1892	1892	1893	1893	1891	1894	1891	1894	1894
83163	26.10	-80.20	16	FORT LAUDERDALE	FL	1912	9999	1912	1912	1916	1913	1914	1912	1912	1912	1912
83186	26.60	-81.87	15	FORT MYERS FAA AP	FL	1891	9999	1892	1891	1893	1891	1891	1891	1891	1891	1891
83207	27.47	-80.35	25	FORT PIERCE	FL	1840	9999	1902	1840	1903	1903	1852	1901	1894	1901	1901
84289	28.73	-82.32	40	INVERNESS 3SE	FL	1899	9999	1900	1900	1902	1899	1901	1899	1899	1899	1899
84570	24.55	-81.75	4	KEY WEST WSO AP	FL	1830	9999	1872	1830	1874	1873	1833	1887	1884	1887	1887
84731	30.18	-82.60	112	PENSACOLA FAA AP	FL	1857	9999	1893	1857	1893	1892	1857	1892	1882	1892	1892
85275	30.53	-83.43	180	MADISON 4N	FL	1889	9999	1892	1890	1896	1893	1890	1892	1891	1892	1892
86414	29.20	-82.08	75	OCALA	FL	1832	9999	1899	1834	1902	1898	1890	1898	1886	1898	1898
86997	30.47	-87.20	112	PENSACOLA FAA AP	FL	1879	9999	1880	1880	1881	1879	1880	1888	1880	1888	1888
87020	25.58	-80.43	10	PERRINE 4W	FL	1910	9999	1910	1910	1913	1911	1910	1910	1910	1910	1910
87851	28.33	-82.27	190	SAINTE LEO	FL	1890	9999	1892	1891	1891	1893	1891	1891	1891	1891	1891
88758	30.38	-84.37	55	TALLAHASSEE WSO AP	FL	1883	9999	1894	1883	1894	1893	1885	1893	1883	1893	1893
88824	28.15	-82.75	8	TARPON SPRINGS SEWAGE PLANT	FL	1884	9999	1892	1885	1894	1891	1885	1936	1893	1893	1893
88942	28.62	-80.82	5	TITUSVILLE	FL	1887	9999	1902	1902	1904	1903	1901	1901	1901	1901	1901
90140	31.53	-84.13	180	ALBANY 3SE	GA	1878	9999	1892	1879	1895	1891	1879	1891	1878	1891	1891
90586	30.80	-84.65	190	BAINBRIDGE INT PAPER	GA	1882	9999	1894	1882	1892	1892	1884	1892	1882	1892	1892
90979	31.35	-84.95	268	BLAKELY	GA	1882	1993	1892	1882	1893	1891	1882	1891	1882	1891	1891
91340	31.17	-81.50	13	BRUNSWICK	GA	1878	9999	1895	1879	1899	1896	1878	1897	1897	1897	1897
92318	33.60	-83.87	770	COVINGTON	GA	1859	9999	1893	1880	1897	1894	1876	1900	1900	1900	1900
92475	34.55	-84.02	1360	DAHLONEGA 2NW	GA	1874	9999	1892	1876	1894	1893	1874	1892	1882	1892	1892
92966	32.20	-83.20	400	EASTMAN 1W	GA	1882	9999	1892	1882	1894	1891	1883	1891	1882	1891	1891
93521	34.30	-83.85	1170	GAINESVILLE	GA	1872	9999	1891	1872	1895	1892	1872	1892	1884	1892	1892
93754	31.93	-81.92	170	GLENNVILLE	GA	1904	9999	1905	1906	1905	1905	1905	1905	1905	1905	1905
94170	32.27	-83.47	272	HAWKINSVILLE	GA	1892	9999	1892	1893	1892	1892	1893	1892	1892	1892	1892
95074	33.08	-83.25	400	MILLEDGEVILLE	GA	1878	9999	1892	1878	1893	1892	1880	1891	1882	1891	1891
95882	32.87	-81.97	195	MILLEN 4N	GA	1882	9999	1892	1882	1895	1892	1884	1891	1882	1891	1891
96335	33.43	-84.78	920	NEWMAN 4NE	GA	1882	9999	1892	1882	1895	1892	1884	1891	1882	1891	1891
97276	30.80	-83.58	185	QUITMAN 2NW	GA	1882	9999	1892	1882	1891	1892	1883	1891	1882	1891	1891
97600	34.25	-85.15	620	ROME	GA	1855	9999	1893	1878	1892	1893	1856	1892	1884	1891	1891
97847	32.13	-81.20	46	SAVANNAH WSO AP	GA	1832	9999	1874	1836	1875	1874	1837	1892	1887	1892	1892
98535	32.68	-84.55	730	TALBOTTON	GA	1878	9999	1892	1878	1894	1892	1878	1892	1885	1892	1892
98703	31.50	-83.53	380	TIFTON EXP STN	GA	1911	9999	1912	1911	1915	1912	1911	1911	1911	1911	1911
98740	34.58	-83.32	1019	TOCCOA	GA	1879	9999	1891	1880	1891	1891	1881	1892	1882	1892	1892

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCIYMN	HCONAV2	HCONMX	HCHPCP	URMN	UPAV2	URAV2	URMX
99141	33.42	-82.65	510	WARRENTON	GA	1884	9999	1891	1885	1892	1885	1891	1884	1891	1891
99157	33.72	-82.72	620	WASHINGTON 2ESE	GA	1884	9999	1892	1884	1892	1885	1895	1884	1891	1891
99186	31.25	-82.32	145	WAYCROSS 4NE	GA	1882	9999	1893	1882	1894	1882	1892	1882	1882	1892
99291	32.87	-85.18	575	WEST POINT	GA	1882	9999	1891	1884	1895	1882	1891	1882	1891	1891
100010	42.95	-112.83	4405	ABERDEEN EXPERIMENT STATION	ID	1914	9999	1915	1915	1914	1914	1914	1914	1914	1914
100448	43.60	-115.92	3275	ARROWROCK DAM	ID	1911	9999	1912	1912	1912	1911	1911	1911	1911	1911
100470	44.07	-111.45	5260	ASHTON	ID	1897	9999	1898	1898	1900	1899	1897	1897	1897	1897
101380	43.67	-116.68	2370	CALDWELL	ID	1904	9999	1904	1904	1904	1905	1904	1904	1904	1904
101408	44.57	-116.68	2650	CAMBRIDGE	ID	1894	9999	1895	1896	1898	1894	1901	1901	1901	1901
101663	44.50	-114.23	5175	CHALLIS	ID	1895	9999	1895	1895	1897	1895	1900	1900	1900	1900
101960	47.77	-116.82	2307	COEUR D'ALENE AP	ID	1884	1990	1893	1884	1896	1885	1901	1901	1901	1901
102845	46.50	-116.30	995	DWORSHAK FISH HATCHERY	ID	1903	9999	1904	1904	1905	1905	1903	1903	1903	1903
103143	46.10	-115.55	1585	FENN RANGER STN	ID	1908	9999	1909	1910	1908	1908	1908	1908	1908	1908
103631	42.93	-115.32	2510	GLENNS FERRY	ID	1905	9999	1905	1905	1910	1906	1905	1905	1905	1905
103732	42.58	-111.73	5550	GRACE	ID	1907	9999	1908	1909	1908	1907	1907	1907	1907	1907
104140	42.60	-114.13	4060	HAZELTON	ID	1917	9999	1918	1919	1920	1917	1917	1917	1917	1917
104295	42.35	-114.57	4525	HOLLISTER	ID	1908	9999	1908	1908	1911	1908	1909	1908	1908	1908
104670	42.73	-114.52	3740	JEROME	ID	1915	9999	1916	1916	1919	1915	1916	1915	1916	1916
104831	47.53	-116.12	2320	KELLOGG	ID	1905	9999	1905	1905	1906	1906	1905	1905	1905	1905
104845	43.68	-114.35	5890	KETCHUM RS	ID	1892	9999	1895	1895	1896	1892	1894	1894	1894	1894
105241	46.38	-117.02	1436	LEWISTON WSO AP	ID	1878	9999	1895	1889	1898	1878	1902	1902	1902	1902
105275	42.12	-111.30	5926	LIFTON PUMPING STATION	ID	1919	9999	1920	1920	1921	1919	1919	1919	1919	1919
105462	43.92	-113.62	5897	MACKAY RS	ID	1907	9999	1908	1908	1911	1908	1909	1908	1908	1908
105559	42.17	-112.28	4470	MALAD CITY	ID	1904	9999	1905	1905	1907	1905	1906	1907	1907	1907
106152	46.73	-116.97	2660	MOSCOW U OF ID	ID	1892	9999	1894	1893	1894	1892	1893	1892	1893	1893
106388	44.97	-116.28	3870	NEW MEADOWS RS	ID	1895	9999	1904	1903	1906	1904	1904	1903	1903	1903
106542	42.23	-113.88	4560	OAKLEY	ID	1893	9999	1895	1893	1895	1894	1893	1893	1893	1893
106891	44.08	-116.93	2150	PAYETTE	ID	1890	9999	1893	1890	1896	1891	1892	1890	1892	1892
107264	49.00	-116.50	1775	PORTHILL	ID	1889	9999	1895	1891	1895	1891	1899	1899	1899	1898
107386	48.35	-116.83	2380	PRIEST RIVER EXPERIMENT STN	ID	1898	9999	1899	1900	1898	1900	1900	1900	1900	1898
108080	45.18	-113.90	3931	SALMON KSRA	ID	1905	9999	1906	1905	1905	1906	1905	1905	1905	1905
108137	48.28	-116.57	2100	SANDPOINT EXP STN	ID	1910	9999	1912	1910	1911	1911	1910	1910	1910	1910
110072	41.23	-90.73	720	ALEDO	IL	1874	9999	1901	1880	1903	1876	1901	1887	1901	1901
110187	37.47	-89.23	640	ANNA IE	IL	1875	9999	1899	1899	1899	1876	1896	1887	1896	1896
110338	41.75	-88.35	640	AUROPA	IL	1857	9999	1888	1858	1891	1858	1891	1885	1891	1891
111280	39.28	-89.87	630	CARLINVILLE	IL	1891	9999	1894	1892	1894	1891	1893	1891	1893	1893
111436	39.48	-88.17	680	CHARLESTON	IL	1896	9999	1897	1897	1899	1898	1896	1896	1896	1896
112140	40.13	-87.65	558	DANVILLE	IL	1895	9999	1898	1896	1901	1895	1897	1895	1897	1897
112193	39.83	-89.02	620	DECATUR	IL	1868	9999	1893	1876	1896	1869	1893	1889	1893	1893
112348	41.83	-89.52	700	DIXON INW	IL	1881	9999	1887	1888	1898	1883	1891	1889	1891	1891
112483	37.98	-89.20	420	DUQUOIN 4SE	IL	1886	9999	1888	1886	1893	1887	1893	1887	1893	1893
113335	41.17	-90.05	860	GALVA	IL	1862	9999	1893	1862	1893	1862	1893	1888	1893	1893
113717	39.72	-90.73	700	GRIGSVILLE	IL	1882	9999	1887	1882	1889	1883	1887	1882	1887	1887
113879	37.73	-88.52	365	HARRISBURG	IL	1898	9999	1898	1898	1900	1887	1887	1882	1887	1887
114108	39.15	-89.48	630	HILLSBORO	IL	1895	9999	1896	1895	1896	1896	1895	1895	1898	1898
114198	40.47	-87.67	710	HOOPERSTON 1NE	IL	1887	9999	1887	1889	1887	1888	1887	1887	1893	1893

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCRMIN	HCNAV2	HCNAV2	HCNMX	HCNFCP	URMN	URAV2	URAV2	URMX
114442	39.73	-90.20	610	JACKSONVILLE 2E	IL	1858	9999	1895	1860	1898	1895	1862	1895	1888	1895	1895
114823	40.58	-90.97	700	LA HARPE	IL	1895	9999	1896	1896	1897	1895	1895	1895	1885	1895	1895
115079	40.15	-89.40	590	LINCOLN	IL	1906	9999	1907	1906	1908	1906	1908	1906	1906	1906	1906
115326	42.25	-88.60	820	MARENGO	IL	1855	9999	1893	1857	1896	1893	1857	1893	1856	1893	1893
115515	38.10	-88.50	480	MCLEANSBORO 2ENE	IL	1882	9999	1890	1882	1889	1890	1883	1893	1882	1893	1893
115712	40.90	-89.05	750	MINONK	IL	1886	9999	1898	1888	1887	1898	1887	1896	1882	1896	1896
115768	40.92	-90.63	770	MONMOUTH	IL	1881	9999	1893	1881	1895	1893	1893	1893	1887	1893	1893
115833	41.82	-89.97	603	MORRISON	IL	1880	9999	1896	1880	1899	1896	1880	1895	1891	1895	1895
115901	42.10	-89.98	640	MOUNT CARROLL	IL	1887	9999	1898	1888	1900	1898	1888	1897	1891	1897	1897
115943	38.35	-88.87	490	MT VERNON 3NE	IL	1878	9999	1895	1879	1895	1895	1878	1895	1887	1895	1895
116446	38.70	-88.07	480	OLNEY 2S	IL	1887	9999	1897	1888	1896	1897	1887	1895	1887	1895	1895
116526	41.33	-88.92	525	OTTAWA 4SW	IL	1854	9999	1888	1855	1894	1888	1856	1887	1878	1887	1887
116558	39.00	-87.62	520	PALESTINE	IL	1882	9999	1894	1883	1896	1894	1871	1893	1882	1893	1893
116579	39.38	-89.08	700	PANA	IL	1869	9999	1894	1870	1893	1894	1871	1893	1887	1893	1893
116610	39.62	-87.70	720	PARIS WATERWORKS	IL	1886	9999	1893	1887	1893	1893	1886	1893	1886	1893	1893
116910	40.88	-88.63	650	PONTIAC	IL	1885	9999	1903	1887	1905	1903	1885	1891	1903	1903	1903
117551	40.12	-90.55	660	RUSHVILLE	IL	1889	9999	1893	1891	1893	1893	1891	1893	1889	1893	1893
118147	38.17	-89.70	520	SPARTA 3N	IL	1887	1993	1894	1888	1897	1894	1888	1893	1887	1893	1893
118740	40.10	-88.23	743	URBANA	IL	1888	9999	1889	1889	1889	1889	1889	1893	1888	1893	1889
118916	41.55	-89.60	690	WALNUT	IL	1892	9999	1893	1892	1896	1893	1892	1893	1892	1893	1893
119241	39.43	-90.38	580	WHITE HALL 1E	IL	1854	9999	1895	1855	1894	1895	1855	1894	1882	1894	1894
119354	39.43	-88.60	685	WINDSOR	IL	1888	9999	1886	1887	1885	1888	1886	1893	1887	1893	1893
120177	40.10	-85.72	845	ANDERSON SEWAGE PLANT	IN	1895	9999	1896	1895	1898	1896	1895	1895	1895	1895	1895
120200	41.63	-84.98	1010	ANGOLA	IN	1884	9999	1887	1887	1889	1887	1885	1887	1885	1887	1887
120676	40.67	-84.95	860	BERNE	IN	1910	9999	1911	1910	1911	1911	1911	1910	1910	1910	1910
120784	39.17	-86.52	825	BLOOMINGTON IN UNIV	IN	1868	9999	1898	1869	1898	1898	1870	1896	1884	1896	1896
121030	39.42	-85.02	760	BROOKVILLE	IN	1882	9999	1925	1885	1928	1883	1925	1883	1902	1925	1925
121229	39.87	-85.18	999	CAMBRIDGE CITY	IN	1892	9999	1892	1892	1893	1892	1893	1892	1892	1892	1892
121425	38.37	-85.68	525	CHARLESTOWN ORD PLT	IN	1895	9999	1896	1896	1897	1896	1897	1895	1895	1895	1895
121747	39.20	-85.92	621	COLUMBUS	IN	1884	9999	1895	1884	1896	1895	1884	1893	1884	1893	1893
121873	39.97	-86.93	762	CRAWFORDSVILLE 5S	IN	1885	9999	1894	1886	1892	1894	1885	1892	1885	1892	1892
122149	40.62	-86.67	560	DELPHI 3NNE	IN	1885	9999	1887	1886	1893	1887	1886	1887	1885	1887	1887
123418	41.57	-85.83	805	GOSHEN COLLEGE	IN	1914	9999	1914	1915	1916	1914	1914	1914	1914	1914	1914
123513	39.63	-86.85	860	GREENCASTLE 1SE	IN	1882	9999	1896	1886	1898	1896	1882	1895	1884	1895	1895
123527	39.78	-85.75	865	GREENFIELD	IN	1883	9999	1903	1884	1905	1903	1884	1903	1884	1903	1903
124008	41.55	-87.28	640	HOBART 2MNW	IN	1919	9999	1919	1919	1920	1919	1920	1919	1919	1919	1919
124181	40.85	-85.50	725	HUNTINGTON	IN	1882	9999	1894	1894	1895	1894	1883	1893	1893	1893	1893
124837	41.60	-86.72	810	LAPORTE	IN	1849	9999	1898	1851	1901	1898	1849	1904	1904	1904	1904
125237	38.73	-85.40	455	MADISON SEWAGE PLANT	IN	1854	9999	1893	1855	1894	1893	1860	1893	1883	1893	1893
125337	40.57	-85.67	790	MARION 2H	IN	1885	9999	1892	1886	1894	1892	1886	1891	1885	1891	1891
126001	37.95	-87.88	415	MOUNT VERNON	IN	1887	9999	1894	1888	1896	1894	1887	1893	1887	1893	1893
126580	38.88	-86.55	650	OOLITIC PURDUE EXP FM	IN	1893	9999	1894	1894	1893	1894	1893	1893	1893	1893	1893
126705	38.55	-86.48	560	PAOLI	IN	1898	9999	1899	1898	1901	1899	1899	1898	1898	1898	1898
127125	38.35	-87.58	480	PRINCETON 1W	IN	1882	9999	1900	1884	1900	1900	1883	1899	1884	1899	1893
127298	40.93	-87.15	650	RENSELAER	IN	1864	9999	1900	1865	1900	1900	1865	1900	1885	1900	1900
127482	41.07	-86.22	770	ROCHESTER	IN	1904	9999	1904	1904	1904	1904	1905	1904	1904	1904	1904

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMRN	HCNAV2	HCNAV2	HCNMX	HCNPCP	URMN	UPAV2	URAV2	URMX
127522	39.77	-87.23	690	ROCKVILLE	IN	1860	9999	1887	1862	1890	1887	1860	1887	1883	1887	1887
127646	39.60	-85.45	955	RUSHVILLE SEWAGE PL	IN	1881	9999	1887	1884	1892	1887	1882	1887	1883	1887	1887
127755	38.62	-86.08	800	SALEM	IN	1882	9999	1897	1884	1898	1897	1884	1897	1884	1897	1897
127875	38.70	-85.77	550	SCOTTSBURG	IN	1894	9999	1896	1894	1896	1896	1894	1896	1894	1896	1896
127935	38.98	-85.90	573	SEYMOUR 2N	IN	1887	9999	1893	1887	1892	1887	1887	1915	1915	1915	1915
128036	38.67	-86.80	550	SHOALS HIGHWAY 50 BRIDGE	IN	1911	9999	1913	1913	1913	1913	1911	1912	1912	1912	1912
129080	38.75	-85.07	470	VEVAY	IN	1864	9999	1887	1865	1887	1887	1865	1887	1864	1887	1887
129113	38.73	-87.50	450	VINCENNES 5NE	IN	1882	9999	1894	1895	1894	1894	1894	1894	1894	1894	1894
129253	38.67	-87.18	485	WASHINGTON	IN	1896	9999	1896	1896	1899	1896	1896	1896	1896	1896	1896
129511	41.25	-87.08	655	WHEATFIELD 4NNW	IN	1916	9999	1917	1916	1920	1917	1916	1916	1916	1916	1916
129557	40.00	-86.35	935	WHITESTOWN	IN	1896	9999	1897	1896	1898	1897	1896	1896	1896	1896	1896
129670	41.02	-86.58	690	WINAMAC 2SSE	IN	1897	9999	1898	1897	1899	1898	1897	1902	1902	1902	1902
130112	41.07	-92.78	880	ALBIA 3NNE	IA	1887	9999	1898	1891	1897	1898	1891	1897	1891	1897	1897
130133	43.07	-94.30	1230	ALGONA 3W	IA	1861	9999	1893	1861	1895	1893	1861	1893	1887	1893	1893
130600	41.90	-92.27	840	BELLE PLAINE	IA	1889	9999	1892	1890	1894	1892	1891	1890	1889	1890	1890
131402	43.05	-92.67	1013	CHARLES CITY	IA	1865	9999	1890	1873	1893	1890	1873	1890	1879	1890	1890
131533	40.73	-95.03	1050	CLARINDA	IA	1857	9999	1894	1858	1895	1894	1860	1893	1878	1893	1893
131635	41.80	-90.27	585	CLINTON #1	IA	1857	9999	1894	1858	1895	1894	1860	1893	1878	1893	1893
132724	43.42	-94.83	1302	ESTHERVILLE 2N	IA	1875	9999	1896	1895	1899	1896	1895	1895	1895	1895	1895
132864	42.85	-91.80	1050	FAYETTE	IA	1888	9999	1893	1889	1895	1893	1888	1893	1880	1893	1893
132879	41.03	-91.95	740	FAIRFIELD	IA	1855	9999	1891	1855	1894	1891	1859	1893	1880	1893	1893
132977	43.28	-93.63	1300	FOREST CITY 2NNE	IA	1863	9999	1894	1864	1894	1894	1863	1893	1887	1893	1893
132999	42.50	-94.20	1115	FORT DODGE	IA	1851	9999	1900	1851	1902	1900	1852	1900	1887	1900	1900
134063	41.37	-93.55	940	INDIANOLA	IA	1875	9999	1890	1882	1892	1890	1876	1890	1883	1890	1890
134142	42.52	-93.25	1130	IOWA FALLS	IA	1863	9999	1894	1864	1894	1894	1863	1893	1887	1893	1893
134735	42.78	-96.17	1195	LE MARS	IA	1876	9999	1897	1897	1899	1897	1877	1896	1896	1896	1896
134894	41.63	-95.78	990	LOGAN	IA	1866	9999	1891	1867	1894	1891	1866	1890	1886	1890	1890
135769	40.68	-94.30	1240	MOUNT AYR 4SW	IA	1892	9999	1892	1892	1895	1892	1892	1892	1892	1892	1892
135796	40.95	-91.55	730	MOUNT PLEASANT 1SSW	IA	1863	9999	1899	1865	1898	1899	1864	1898	1878	1898	1898
135952	43.07	-92.32	1160	NEW HAMPTON	IA	1897	9999	1898	1897	1899	1898	1897	1897	1897	1897	1897
137147	43.43	-96.17	1350	ROCK RAPIDS	IA	1893	9999	1893	1894	1897	1893	1894	1893	1893	1893	1893
137979	42.63	-95.18	1425	STORM LAKE 2E	IA	1876	9999	1891	1891	1893	1891	1876	1891	1889	1891	1891
138296	41.98	-92.58	890	TOLEDO	IA	1894	9999	1895	1895	1895	1895	1894	1895	1894	1895	1895
138688	41.28	-91.68	756	WASHINGTON	IA	1861	9999	1891	1875	1894	1891	1876	1892	1879	1892	1892
140264	37.15	-98.08	1340	ANTHONY	KS	1896	9999	1906	1907	1909	1906	1897	1906	1906	1906	1906
140365	37.20	-99.77	1970	ASHLAND	KS	1888	9999	1890	1888	1889	1889	1889	1889	1888	1889	1889
140405	39.57	-95.12	945	ATCHISON	KS	1865	9999	1892	1866	1893	1892	1866	1891	1865	1891	1891
141704	37.27	-99.33	2083	COLDWATER	KS	1888	9999	1889	1889	1891	1889	1889	1889	1888	1889	1890
141740	37.17	-94.85	900	COLUMBUS 1SW	KS	1889	9999	1892	1892	1891	1892	1890	1891	1891	1891	1891
142401	37.82	-96.83	1340	EL DORADO	KS	1886	9999	1894	1887	1893	1894	1887	1893	1891	1893	1893
142459	38.72	-98.23	1530	ELLSWORTH	KS	1866	9999	1888	1868	1888	1888	1866	1891	1891	1891	1891
142602	38.85	-96.10	1420	ESKRIDGE 1SE	KS	1897	9999	1898	1898	1901	1898	1898	1897	1897	1897	1897
142835	37.85	-94.70	845	FORT SCOTT	KS	1843	9999	1897	1844	1900	1897	1844	1896	1868	1896	1896
143527	38.87	-99.33	2010	HAYS 1S	KS	1867	9999	1894	1866	1893	1894	1867	1893	1885	1893	1893
143810	39.67	-95.52	1030	HORTON	KS	1888	9999	1891	1888	1892	1891	1889	1890	1888	1890	1890

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCAV2	HCMX	HCMPCP	URM1	URAV2	UPAV2	URMX
143954	37.25	-95.70	780	INDEPENDENCE	KS	1872	9999	1888	1874	1889	1872	1888	1872	1888	1888
144087	38.25	-99.97	2270	JETMORE 12NNW	KS	1900	9999	1901	1901	1904	1902	1900	1901	1901	1901
144464	37.93	-101.25	2998	LAKIN	KS	1889	9999	1889	1889	1890	1890	1889	1889	1889	1889
144530	38.18	-99.10	1995	LARNED	KS	1860	9999	1891	1860	1897	1893	1891	1891	1891	1891
144559	38.97	-95.27	980	LAWRENCE	KS	1857	9999	1895	1858	1894	1894	1894	1864	1864	1894
144588	39.32	-94.93	910	LEAVENWORTH	KS	1840	9999	1901	1832	1901	1836	1901	1878	1901	1901
144695	37.05	-100.92	2834	LIBERAL	KS	1892	9999	1893	1892	1896	1893	1896	1894	1896	1896
144972	39.20	-96.58	1065	MANHATTAN	KS	1858	9999	1894	1858	1894	1859	1893	1858	1893	1893
145122	38.38	-97.67	1495	MCPHERSON	KS	1876	9999	1892	1892	1894	1877	1891	1891	1891	1891
145173	37.28	-98.58	1500	MCPHERSON LODGE	KS	1891	9999	1896	1895	1898	1891	1895	1895	1895	1895
145363	39.13	-97.70	1310	MINNEAPOLIS	KS	1889	9999	1889	1889	1892	1890	1889	1889	1889	1889
145856	39.70	-99.83	2360	NORTON 9SSE	KS	1887	9999	1891	1891	1892	1891	1891	1891	1891	1891
145906	39.83	-100.52	2540	OVERLIN 1E	KS	1887	9999	1915	1914	1916	1893	1913	1913	1913	1913
145972	38.88	-94.77	1055	OLATHE 3E	KS	1864	9999	1894	1865	1895	1893	1893	1864	1893	1893
146128	38.62	-95.28	900	OTTAWA	KS	1895	9999	1896	1895	1896	1896	1895	1895	1895	1895
146374	39.73	-99.32	1907	PHILLIPSBURG 1SSE	KS	1891	9999	1892	1893	1891	1892	1891	1891	1891	1891
147093	39.77	-101.80	3362	SAINT FRANCIS	KS	1908	9999	1909	1908	1909	1908	1908	1908	1908	1908
147271	38.48	-100.90	2970	SCOTT CITY	KS	1889	9999	1895	1890	1895	1890	1895	1891	1895	1895
147305	37.13	-96.18	880	SEDAN	KS	1885	9999	1887	1886	1888	1887	1885	1885	1887	1887
148495	39.02	-99.88	2450	WAKEENEY	KS	1883	9999	1894	1883	1894	1893	1893	1883	1893	1893
150254	38.45	-82.62	560	ASHLAND	KY	1882	9999	1893	1882	1896	1895	1893	1882	1893	1893
150619	37.57	-84.30	1070	BEREA COLLEGE	KY	1901	9999	1901	1901	1902	1902	1901	1901	1901	1901
150909	36.97	-86.43	528	BOWLING GREEN FAA AP	KY	1878	9999	1890	1879	1892	1890	1890	1878	1890	1890
152791	38.12	-83.55	680	FARMERS 2S	KY	1904	9999	1905	1906	1905	1904	1904	1904	1904	1904
153028	38.23	-84.87	500	FRANKFORT LOCK 4	KY	1881	9999	1896	1882	1895	1895	1895	1881	1895	1895
153430	37.25	-85.50	590	GREENSBURG	KY	1887	9999	1896	1893	1896	1887	1896	1896	1896	1896
153994	36.83	-87.50	590	HOPKINSVILLE	KY	1896	9999	1896	1896	1896	1896	1896	1896	1896	1896
154703	37.52	-86.30	620	LEITCHFIELD 2N	KY	1895	9999	1895	1895	1896	1896	1895	1895	1895	1895
155389	36.60	-83.73	1175	MIDDLESBORO	KY	1891	1991	1892	1892	1893	1891	1893	1891	1893	1893
156091	37.77	-87.15	405	OWENSBORO 3W	KY	1896	9999	1896	1897	1899	1897	1896	1896	1896	1896
157324	38.20	-85.20	730	SHELBYVILLE 1E	KY	1888	9999	1889	1889	1893	1889	1889	1888	1889	1889
158709	36.73	-84.17	1000	WILLIAMSBURG	KY	1887	9999	1893	1892	1896	1887	1893	1892	1893	1893
158714	38.65	-84.62	940	WILLIAMSBURG 3NW	KY	1902	9999	1902	1902	1902	1902	1902	1902	1902	1902
160098	31.32	-92.47	87	ALEXANDRIA	LA	1882	9999	1888	1884	1890	1888	1888	1883	1889	1888
160205	30.70	-90.53	170	AMITE	LA	1882	9999	1888	1884	1890	1888	1883	1889	1889	1888
160537	32.78	-91.90	150	BASTROP	LA	1893	9999	1894	1895	1895	1894	1894	1893	1893	1893
160549	30.53	-91.13	64	BATON ROUGE WSO AP	LA	1822	9999	1891	1822	1889	1883	1889	1888	1889	1889
161287	30.95	-92.17	80	BUNKIE	LA	1882	9999	1889	1882	1892	1889	1883	1889	1889	1889
161411	32.52	-92.33	180	CALHOUN RESEARCH STN	LA	1888	9999	1890	1888	1891	1888	1890	1888	1890	1890
162151	30.53	-90.12	40	COVINGTON 4NNW	LA	1892	9999	1894	1893	1893	1894	1894	1892	1893	1893
162534	30.07	-91.03	30	DONALDSONVILLE 4SW	LA	1884	9999	1888	1884	1890	1888	1884	1889	1889	1889
163313	29.82	-91.55	12	FRANKLIN 3NW	LA	1882	9999	1894	1882	1896	1893	1882	1888	1892	1892
163800	30.43	-92.03	55	GRAND COTEAU	LA	1885	9999	1889	1889	1889	1889	1886	1889	1889	1889
164407	29.58	-90.73	15	HOUMA	LA	1888	9999	1888	1888	1891	1888	1889	1888	1889	1889
164700	30.20	-92.67	25	JENNINGS	LA	1897	9999	1897	1899	1897	1898	1897	1897	1897	1897
165026	30.20	-91.98	38	LAFAYETTE FCWOS	LA	1884	9999	1890	1885	1891	1889	1885	1889	1889	1889

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNMX	HCNFCP	URMN	URAV2	URMx
166664	29.92	-90.13		6 NEORLEANS AUDUBON	LA	1888	9999	1889	1888	1888	1889	1889	1888	1889 1889
167344	32.90	-93.68		290 PLAIN DEALING	LA	1892	9999	1892	1893	1893	1892	1892	1892	1892 1892
168163	31.95	-91.23		78 SAINT JOSEPH 3N	LA	1894	9999	1908	1894	1907	1895	1907	1890	1897 1892
169013	29.77	-90.78		15 THIBODAUX 3ESE	LA	1884	9999	1893	1894	1892	1884	1892	1892	1892 1892
169806	32.10	-91.72		80 WINNSBORO 5SSE	LA	1890	9999	1891	1890	1891	1891	1954	1954	1954 1885
170100	44.35	-68.27		470 ACADIA NATIONAL PARK	ME	1885	9999	1885	1886	1887	1885	1885	1885	1885 1885
172426	44.92	-67.00		85 EASTPORT	ME	1822	9999	1885	1822	1888	1841	1886	1835	1886 1886
172765	44.68	-70.15		420 FARMINGTON	ME	1889	9999	1892	1889	1892	1891	1889	1889	1891 1891
173046	44.22	-69.78		140 GARDINER	ME	1885	9999	1885	1837	1886	1885	1837	1884	1885 1885
173944	46.20	-67.83		390 HOULTON 5N	ME	1829	9999	1893	1829	1892	1893	1837	1894	1894 1894
174566	44.10	-70.22		180 LEWISTON	ME	1886	9999	1887	1887	1886	1887	1886	1886	1886 1886
175304	45.65	-68.70		360 MILLINOCKET	ME	1903	9999	1903	1903	1904	1904	1903	1903	1903 1903
176430	44.90	-68.67		115 ORONO	ME	1869	9999	1885	1870	1885	1870	1885	1870	1885 1885
176905	43.65	-70.30		45 PORTLAND WSFO AP	ME	1820	9999	1875	1820	1875	1840	1884	1835	1884 1884
176937	46.65	-68.00		599 PRESQUE ISLE	ME	1915	9999	1925	1925	1926	1925	1925	1925	1925 1925
177174	45.88	-69.18		965 RIPOGENUS DAM	ME	1917	9999	1920	1920	1921	1917	1920	1920	1920 1920
179891	45.15	-67.40		140 WOODLAND	ME	1817	9999	1894	1820	1894	1820	1893	1889	1893 1893
180470	39.28	-76.62		14 BALTIMORE WSO CITY	MD	1892	9999	1894	1820	1894	1820	1893	1889	1893 1893
181385	38.57	-76.07		5 CAMBRIDGE WATER TRMT PLANT	MD	1892	9999	1894	1820	1894	1820	1893	1889	1893 1893
181750	39.22	-76.07		40 CHESTERTOWN	MD	1855	9999	1894	1855	1893	1893	1893	1889	1893 1893
181995	38.98	-76.95		90 COLLEGE PARK	MD	1861	9999	1895	1895	1894	1861	1894	1894	1894 1894
182282	39.63	-78.75		730 CUMBERLAND 2	MD	1859	9999	1892	1859	1894	1861	1894	1894	1894 1894
182523	38.88	-75.80		50 DENTON 2E	MD	1891	9999	1895	1893	1897	1891	1891	1870	1891 1891
183675	38.97	-76.80		150 GLENN DALE BELL STN	MD	1921	9999	1921	1921	1922	1921	1921	1921	1921 1921
185111	39.10	-76.90		400 LAUREL 3W	MD	1895	9999	1895	1895	1896	1896	1895	1895	1895 1895
185985	39.27	-75.87		30 MILLINGTON 1SE	MD	1898	9999	1898	1899	1901	1898	1898	1898	1898 1898
186620	39.40	-79.40		2420 OAKLAND 1SE	MD	1894	9999	1894	1894	1895	1893	1893	1893	1893 1893
186770	38.68	-76.67		160 OWINGS FERRY LANDING	MD	1917	9999	1918	1918	1919	1917	1917	1917	1917 1917
186915	38.33	-76.42		38 PATUXENT RIVER	MD	1892	9999	1892	1892	1893	1893	1892	1892	1892 1892
187330	38.22	-75.68		20 PRINCESS ANNE	MD	1823	9999	1894	1830	1894	1895	1894	1889	1894 1894
187806	38.72	-76.18		10 ROYAL OAK 2SSW	MD	1891	9999	1893	1891	1897	1894	1891	1891	1891 1891
188000	38.37	-75.58		10 SALISBURY	MD	1906	9999	1907	1906	1907	1906	1906	1906	1906 1906
189440	39.55	-76.97		765 WESTMINSTER POLICE BRKS	MD	1893	9999	1895	1895	1898	1895	1901	1901	1901 1901
189750	39.33	-76.87		460 WOODSTOCK	MD	1870	9999	1892	1870	1892	1891	1870	1870	1891 1891
190120	42.38	-72.53		150 AMHERST	MA	1835	9999	1894	1836	1895	1893	1837	1836	1893 1893
190535	42.48	-71.28		160 BEDFORD	MA	1885	9999	1894	1886	1897	1893	1887	1885	1885 1885
190736	42.22	-71.12		630 BLUE HILL	MA	1831	9999	1896	1831	1887	1885	1885	1835	1885 1885
191447	42.33	-71.15		120 CHESTNUT HILL	MA	1873	1986	1885	1886	1884	1884	1884	1884	1884 1884
191561	42.40	-71.68		398 CLINTON	MA	1887	1986	1906	1906	1907	1887	1887	1905	1905 1905
192975	42.28	-71.42		170 FRAMINGHAM	MA	1843	1990	1895	1885	1887	1884	1884	1884	1884 1884
193213	42.18	-73.40		730 GREAT BARRINGTON AP	MA	1929	9999	1930	1930	1932	1931	1929	1929	1929 1929
194105	42.70	-71.17		60 LAWRENCE	MA	1856	9999	1886	1857	1886	1887	1885	1856	1885 1885
195246	41.63	-70.93		70 NEW BEDFORD	MA	1812	9999	1886	1815	1889	1885	1817	1885	1885 1885
196486	41.98	-70.70		45 PLYMOUTH-KINGSTON	MA	1886	9999	1903	1887	1906	1904	1886	1886	1903 1903
196681	42.05	-70.18		20 PROVINCETOWN	MA	1882	9999	1886	1883	1885	1885	1885	1885	1885 1885
198367	41.90	-71.07		20 TAUNTON	MA	1871	9999	1884	1872	1887	1885	1874	1871	1884 1884

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCMIN	HCMAX	HCMPCF	URMN	UPAV2	URAV2	URMX
200032	41.92	-84.02	760	ADRIAN 2NNE	MI	1870	9999	1899	1872	1888	1887	1871	1887	1887
200128	42.58	-85.78	750	ALLEGAN 5NE	MI	1886	9999	1890	1891	1891	1890	1888	1890	1890
200146	42.38	-84.67	760	ALMA	MI	1887	9999	1888	1889	1889	1888	1889	1887	1889
200230	42.30	-83.72	900	ANN ARBOR UNIV OF MI	MI	1849	9999	1850	1854	1890	1889	1850	1889	1889
200779	43.70	-85.48	930	BIG RAPIDS WATERWORKS	MI	1887	9999	1888	1888	1890	1887	1888	1887	1887
201439	46.52	-87.98	1565	CHAMPION VAH RIPER PK	MI	1898	9999	1899	1899	1900	1898	1899	1898	1898
201486	46.33	-86.92	870	CHATHAM EXP FARM #2	MI	1900	9999	1901	1901	1900	1900	1901	1900	1900
201492	45.65	-84.47	590	CHEBOYGAN STATE SCHOOL	MI	1890	9999	1891	1891	1890	1890	1891	1890	1891
201675	41.95	-85.00	984	COLDWATER STATE SCHOOL	MI	1868	9999	1887	1868	1892	1888	1868	1887	1887
202423	44.28	-83.50	586	EAST TAWAS	MI	1883	9999	1887	1883	1890	1888	1885	1884	1891
202737	45.67	-86.72	745	FAYETTE 4SW	MI	1920	9999	1920	1920	1922	1921	1920	1920	1920
203632	43.68	-86.35	700	HART	MI	1887	9999	1887	1887	1891	1888	1889	1887	1891
203823	41.93	-84.63	1080	HILLSDALE	MI	1880	9999	1897	1880	1897	1898	1881	1897	1897
204090	45.78	-88.08	1060	IRON MOUNTAIN KINGSFORD WWTP	MI	1899	9999	1901	1900	1901	1899	1900	1899	1899
204104	46.47	-90.18	1430	IRONWOOD	MI	1901	9999	1901	1901	1902	1902	1901	1901	1901
204244	42.28	-85.60	950	KALAMAZOO STATE HOSPITAL	MI	1876	9999	1893	1877	1894	1892	1877	1892	1892
205434	43.62	-84.22	640	MIDLAND	MI	1896	9999	1896	1898	1899	1897	1896	1896	1896
205650	42.62	-82.83	580	MOUNT CLEMENS ANG BASE	MI	1896	9999	1897	1896	1896	1896	1896	1896	1896
205662	43.58	-84.77	796	MOUNT PLEASANT UNIVERSITY	MI	1887	9999	1897	1888	1896	1895	1888	1895	1895
205690	46.42	-85.67	680	MUNISING	MI	1896	9999	1897	1898	1898	1897	1896	1896	1896
205816	46.33	-85.50	875	NEWBERRY STATE HOSPITAL	MI	1896	9999	1897	1896	1899	1897	1897	1896	1896
206300	43.03	-84.18	740	OWOSSO 3NNW	MI	1896	9999	1898	1896	1900	1898	1897	1896	1896
207690	42.40	-86.28	620	SOUTH HAVEN	MI	1895	9999	1895	1896	1895	1895	1897	1895	1895
207812	46.05	-88.62	1560	STAMBAUGH 2SSE	MI	1896	9999	1897	1896	1900	1897	1897	1896	1896
210018	47.30	-96.52	910	ADA	MN	1892	9999	1894	1892	1893	1894	1893	1892	1893
210075	43.62	-93.42	1230	ALBERT LEA 3SE	MN	1885	9999	1892	1885	1895	1892	1886	1892	1892
210515	48.72	-94.62	1075	BAUDETTE	MN	1908	9999	1909	1909	1913	1909	1910	1909	1909
211465	44.80	-93.58	720	CHASKA	MN	1892	9999	1893	1892	1897	1893	1888	1893	1893
211630	46.70	-92.52	1265	CLOQUET	MN	1911	9999	1911	1911	1912	1911	1912	1911	1911
212142	46.83	-95.85	1375	DETROIT LAKES INNE	MN	1895	9999	1896	1895	1898	1896	1895	1895	1895
212645	47.47	-92.57	1445	EVELETH WASTE WATER PL	MN	1893	9999	1894	1893	1895	1894	1893	1893	1893
212698	43.63	-94.47	1187	FAIRMONT	MN	1887	9999	1893	1888	1893	1889	1892	1887	1892
212737	44.67	-93.18	980	FARMINGTON 3NW	MN	1888	9999	1893	1888	1894	1893	1888	1892	1892
212916	47.57	-95.73	1310	FOSSTON	MN	1909	9999	1909	1910	1912	1898	1892	1888	1892
213290	43.70	-92.57	1350	GRAND MEADOW	MN	1887	9999	1893	1887	1895	1893	1887	1887	1893
213455	48.77	-96.95	810	HALLOCK	MN	1899	9999	1900	1900	1899	1900	1899	1899	1899
214106	47.22	-95.20	1490	ITASCA U OF MN	MN	1911	9999	1911	1913	1915	1911	1912	1911	1911
214652	47.25	-94.22	1302	LEECH LAKE DAM	MN	1887	9999	1897	1888	1898	1897	1887	1887	1897
215400	45.13	-95.93	1020	MILAN 1NW	MN	1893	9999	1894	1894	1896	1894	1894	1893	1893
215435	44.88	-93.22	834	MINNEAPOLIS WSFO AP	MN	1919	9999	1890	1821	1890	1890	1836	1890	1890
215563	44.93	-95.75	985	MONTEVIDEO 1SW	MN	1889	9999	1894	1889	1897	1894	1890	1893	1893
215615	45.88	-93.30	1005	MORA	MN	1904	9999	1905	1904	1905	1905	1905	1904	1904
215638	45.58	-95.88	1140	MORRIS WC EXPERIMENT STATION	MN	1885	9999	1886	1886	1887	1886	1885	1885	1886
215887	44.30	-94.45	860	NEW ULM	MI	1864	9999	1895	1866	1893	1895	1865	1893	1893
216152	44.72	-94.93	1100	OLIVIA 3SE	MI	1885	9999	1893	1885	1894	1893	1886	1892	1892
216360	46.90	-95.07	1443	PARK RAPIDS 2S	MN	1885	9999	1893	1885	1885	1893	1886	1893	1893

STACOD	'LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNWN	HCNAV2	HCNAV2	HCNMX	HCNCP	URMN	URAV2	URAV2	URMX
216547	46.67	-94.12	1250	PINE RIVER DAM	MS	1887	9999	1898	1888	1898	1898	1887	1897	1887	1897	1897
216565	44.02	-96.32	1705	PIRESTONE	MS	1898	9999	1899	1900	1899	1899	1892	1899	1899	1899	1899
216612	47.25	-93.58	1280	POKAGAMA DAM	MS	1887	9999	1898	1887	1898	1898	1887	1897	1887	1897	1897
217087	48.85	-95.73	1047	ROSEAU LE	MS	1894	9999	1895	1894	1898	1895	1895	1895	1894	1895	1895
217405	44.30	-93.97	850	SALNT PETER 2SW	MS	1877	9999	1893	1878	1895	1893	1888	1893	1887	1893	1893
217460	46.80	-93.32	1234	SANDY LAKE DAM LIBBY	MS	1892	9999	1898	1892	1897	1898	1892	1897	1892	1897	1897
218419	47.02	-91.67	625	TWO HARBORS	MS	1894	9999	1894	1894	1895	1894	1894	1894	1894	1894	1894
218618	47.07	-94.58	1410	WALKER AH-GWAH-CHING	MS	1907	9999	1908	1908	1907	1908	1908	1907	1907	1907	1907
219046	43.77	-94.17	1110	WINNEBAGO	MS	1896	9999	1896	1896	1895	1896	1896	1895	1895	1895	1895
219059	47.43	-94.05	1315	WINNIBIGOSHISH DAM	MS	1887	9999	1897	1888	1899	1897	1888	1897	1887	1897	1897
219249	44.30	-92.67	985	ZUMBROTA	MS	1894	9999	1904	1896	1906	1904	1895	1903	1895	1903	1903
220021	33.83	-88.52	198	ABERDEEN	MS	1882	9999	1889	1883	1891	1889	1883	1889	1882	1889	1889
220488	34.30	-89.98	220	BATESVILLE 2SW	MS	1882	9999	1889	1882	1889	1889	1883	1889	1882	1889	1889
220955	34.67	-88.57	490	BOONEVILLE	MS	1889	9999	1889	1889	1891	1889	1889	1889	1889	1889	1889
221094	31.55	-90.45	435	BROOKHAVEN CITY	MS	1868	9999	1890	1870	1891	1890	1869	1889	1888	1889	1889
221389	32.60	-90.03	228	CANTON	MS	1882	1990	1890	1890	1890	1891	1882	1889	1890	1890	1890
221707	34.20	-90.57	173	CLARKSDALE	MS	1892	9999	1892	1893	1892	1893	1893	1892	1892	1892	1892
221865	31.25	-89.83	155	COLUMBIA	MS	1903	9999	1905	1903	1905	1903	1903	1903	1903	1903	1903
221880	33.52	-88.40	142	COLUMBUS LUXAPALLILA	MS	1855	9999	1890	1855	1890	1891	1855	1890	1880	1890	1890
221962	34.92	-88.52	385	CORINTH CITY	MS	1882	9999	1896	1884	1899	1895	1883	1895	1883	1895	1895
222094	31.97	-90.37	487	CRYSTAL SPRINGS EXP STN	MS	1892	9999	1892	1892	1892	1893	1892	1892	1892	1892	1892
223107	32.32	-89.48	480	FOREST 3S	MS	1882	9999	1890	1882	1889	1899	1884	1949	1949	1949	1949
223265	33.38	-91.02	132	GREENVILLE	MS	1887	9999	1890	1887	1891	1889	1888	1889	1887	1889	1889
223887	31.32	-89.30	161	HATTIESBURG	MS	1890	9999	1891	1890	1890	1890	1890	1890	1890	1890	1890
223975	34.83	-90.00	363	HERNANDO	MS	1882	9999	1889	1882	1889	1890	1883	1889	1882	1889	1889
224173	34.82	-89.43	483	HOLLY SPRINGS 4N	MS	1867	9999	1890	1867	1892	1891	1868	1889	1882	1889	1889
224776	33.05	-89.60	410	KOSCIUSKO	MS	1889	9999	1890	1889	1890	1891	1889	1890	1948	1948	1948
224939	31.68	-89.12	225	LAUREL	MS	1902	9999	1903	1903	1906	1902	1902	1902	1902	1902	1902
225247	33.13	-89.07	581	LOUISVILLE	MS	1888	9999	1890	1888	1890	1891	1888	1889	1888	1889	1889
225987	31.55	-90.10	220	MONTICELLO	MS	1907	9999	1908	1908	1911	1909	1908	1908	1908	1908	1908
226009	33.45	-90.52	117	MOORHEAD	MS	1913	9999	1914	1914	1915	1915	1914	1913	1913	1913	1913
226177	31.55	-91.38	195	NATCHEZ	MS	1799	9999	1899	1801	1890	1890	1800	1959	1959	1959	1959
226718	30.40	-88.48	11	PASCAGOULA 3NE	MS	1887	9999	1893	1887	1897	1894	1888	1893	1889	1893	1893
227111	34.15	-89.00	405	PONTOTOC EXP STN	MS	1889	9999	1891	1889	1890	1899	1890	1889	1889	1889	1889
227128	30.85	-89.55	313	POPLARVILLE EXP STN	MS	1903	9999	1905	1903	1907	1903	1904	1903	1903	1903	1903
227132	31.97	-91.00	120	PORT GIBSON INW	MS	1855	9999	1889	1856	1891	1890	1856	1957	1957	1957	1957
228374	33.47	-88.78	185	STATE UNIVERSITY	MS	1882	9999	1889	1886	1889	1890	1885	1889	1886	1889	1889
229079	34.38	-89.53	380	UNIVERSITY	MS	1854	9999	1889	1854	1892	1890	1856	1889	1882	1889	1889
229400	34.17	-89.63	376	WATER VALLEY INNE	MS	1886	9999	1889	1890	1890	1890	1886	1889	1889	1889	1889
229426	30.30	-89.38	8	WAVELAND	MS	1833	9999	1891	1835	1890	1890	1886	1889	1889	1890	1890
229439	31.68	-88.67	200	WAYNESBORO 2W	MS	1882	9999	1891	1883	1892	1891	1882	1891	1888	1891	1891
229793	31.10	-91.23	400	WOODVILLE 4ESE	MS	1893	9999	1894	1894	1894	1893	1893	1893	1893	1893	1893
229860	32.90	-90.38	107	YAZOO CITY 5NNE	MS	1886	9999	1889	1893	1896	1893	1887	1893	1893	1893	1893
230204	38.20	-94.03	800	APPLETON CITY	MO	1889	9999	1893	1890	1893	1894	1890	1893	1890	1893	1893
230856	39.37	-91.18	710	BOWLING GREEN 2NE	MO	1878	9999	1897	1884	1900	1898	1879	1897	1886	1897	1897
231037	39.42	-93.12	645	BRUNSWICK	MO	1874	9999	1895	1891	1893	1893	1875	1893	1889	1893	1893

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMIN	HCNAV2	HCMIX	HCHPCP	URMIN	URAV2	URAV2	URMX
231364	36.20	-89.67	280	CARUTHERSVILLE	MO	1878	9999	1899	1895	1898	1878	1898	1893	1898	1898
231711	38.40	-93.77	770	CLINTON	MO	1906	9999	1907	1908	1906	1907	1906	1906	1906	1906
231822	40.25	-94.68	1108	CONCEPTION	MO	1883	9999	1893	1889	1894	1883	1893	1888	1893	1893
232289	36.58	-90.82	330	DONIPHAN	MO	1904	9999	1904	1904	1905	1905	1904	1904	1904	1904
232809	37.78	-90.40	900	FARMINGTON	MO	1878	9999	1897	1879	1896	1878	1896	1879	1896	1896
234271	38.58	-92.18	670	JEFFERSON CITY WATER PLANT	MO	1891	9999	1894	1891	1896	1879	1893	1891	1893	1893
234705	37.50	-94.27	980	LAMAR	MO	1877	9999	1894	1895	1894	1877	1893	1885	1893	1893
234825	37.67	-92.65	1279	LEBANON 2W	MO	1878	9999	1893	1891	1896	1879	1893	1890	1893	1893
234850	38.88	-94.33	1000	LEE'S SUMMIT REED WLR	MO	1863	9999	1893	1863	1894	1864	1893	1884	1893	1893
234904	39.20	-93.87	825	LEXINGTON 3NE	MO	1875	9999	1898	1879	1896	1876	1896	1878	1896	1896
235027	37.38	-93.95	1080	LOCKWOOD	MO	1903	9999	1904	1905	1907	1905	1904	1904	1904	1904
235253	37.30	-89.97	390	MARBLE HILL	MO	1891	9999	1895	1891	1896	1891	1893	1891	1893	1893
235541	39.17	-91.90	770	MEXICO	MO	1878	9999	1894	1892	1893	1895	1893	1892	1893	1893
235671	39.40	-92.43	840	MOBERLY	MO	1899	9999	1900	1900	1901	1900	1899	1899	1899	1899
235834	37.15	-92.27	1450	MOUNTAIN GROVE 2N	MO	1901	9999	1903	1903	1902	1901	1901	1901	1901	1901
235976	36.87	-94.37	1011	NEOSHO	MO	1878	9999	1893	1878	1895	1894	1893	1888	1893	1893
237263	37.95	-91.77	1180	ROLLA UNIV OF MO	MO	1866	9999	1907	1868	1908	1896	1907	1883	1907	1907
237963	40.25	-93.72	875	SPICKARD 7W	MO	1895	9999	1895	1895	1898	1897	1895	1895	1895	1895
238051	39.97	-91.88	690	STEFFENVILLE	MO	1893	9999	1899	1897	1900	1898	1897	1897	1897	1897
238223	38.97	-93.42	680	SWEET SPRINGS	MO	1868	9999	1900	1869	1899	1837	1899	1883	1899	1899
238456	38.25	-93.37	632	TRUMAN DAM & RESERVOIR	MO	1892	9999	1893	1893	1897	1894	1892	1893	1893	1893
238523	40.48	-93.00	1062	UNIONVILLE	MO	1893	9999	1893	1893	1895	1894	1894	1937	1937	1937
238725	38.82	-91.13	845	WARRENTON 1N	MO	1859	9999	1893	1860	1893	1895	1893	1883	1893	1893
240199	46.13	-112.95	5280	ANACONDA	MT	1905	9999	1906	1906	1908	1905	1907	1905	1905	1905
240364	47.48	-112.38	4070	AUGUSTA	MT	1895	9999	1897	1897	1900	1896	1901	1901	1901	1901
240780	45.83	-109.95	4100	BIG TIMBER	MT	1894	9999	1895	1895	1894	1895	1903	1903	1903	1903
241044	45.67	-111.05	4856	BOZEMAN MONTANA ST UNIV	MT	1868	9999	1892	1868	1893	1892	1900	1900	1900	1900
241552	47.22	-111.72	3360	CASCADE 5S	MT	1904	9999	1906	1904	1907	1905	1904	1904	1904	1904
241722	48.58	-109.23	2340	CHINOOK	MT	1895	9999	1896	1897	1897	1895	1896	1903	1903	1903
241737	47.82	-112.17	3945	CHOTEAU AP	MT	1890	9999	1892	1891	1893	1891	1904	1904	1904	1904
242112	45.60	-107.45	3030	CROW AGENCY	MT	1879	9999	1892	1888	1892	1894	1893	1893	1893	1893
242173	48.60	-112.37	3838	CUT BANK FAA AP	MT	1903	9999	1905	1903	1908	1904	1903	1903	1903	1903
242409	45.20	-112.63	5228	DILLON WNCCE	MT	1895	9999	1896	1897	1900	1896	1895	1898	1898	1898
242689	45.88	-104.53	3425	EKALAKA	MT	1897	9999	1897	1898	1897	1898	1898	1897	1898	1898
242793	45.35	-111.72	4953	ERNIS	MT	1917	9999	1919	1918	1920	1918	1918	1918	1918	1918
243013	46.85	-108.32	3138	FLATWILLOW 4ENE	MT	1913	9999	1914	1913	1915	1913	1913	1913	1913	1913
243089	48.78	-107.47	2600	FORKS JNNE	MT	1915	9999	1915	1917	1916	1917	1915	1915	1915	1915
243110	48.50	-109.80	2613	FORT ASSINNIBOINE	MT	1880	9999	1892	1881	1895	1892	1891	1907	1907	1907
243139	48.78	-114.90	3000	FORTINE 1N	MT	1906	9999	1906	1906	1907	1907	1906	1906	1906	1906
243558	48.22	-106.62	2284	GLASGOW WSO AP	MT	1893	9999	1894	1894	1896	1893	1894	1906	1906	1906
243581	47.10	-104.72	2076	GLENDAVE	MT	1889	9999	1891	1889	1891	1891	1903	1889	1903	1903
243751	47.48	-111.37	3663	GREAT FALLS WSCMO AP	MT	1891	9999	1891	1891	1891	1893	1894	1894	1894	1894
243885	46.25	-114.15	3529	HAMILTON	MT	1895	9999	1895	1895	1895	1897	1896	1900	1900	1900
243984	47.38	-115.35	3100	HAUGAN (DEBORGIA) 3E	MT	1912	9999	1914	1912	1914	1913	1908	1912	1912	1912
244038	44.87	-111.33	6489	HEBGEN DAM	MT	1904	9999	1904	1904	1907	1906	1905	1904	1905	1904
244055	46.60	-112.00	3828	HELENA WSO	MT	1880	9999	1893	1880	1894	1892	1891	1892	1892	1892

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNAV2	HCNMX	HCNCP	URM1	URAV2	URAV2	URMX	
244345	45.92	-108.25	2990	HUNTLEY EXPERIMENT STATION	MT	1906	9999	1907	1906	1909	1907	1907	1906	1906	1906	1906	1906
244522	47.32	-106.90	2590	JORDAN	MT	1905	9999	1905	1906	1905	1905	1905	1905	1905	1905	1905	1905
244558	48.30	-114.27	2965	KALISPELL WSO AP	MT	1896	9999	1897	1898	1897	1896	1896	1896	1896	1896	1896	1896
245015	48.40	-115.53	2096	LIBBY INE RS	MT	1895	9999	1896	1895	1896	1896	1896	1896	1896	1896	1896	1896
245080	48.48	-110.57	4870	LIVINGSTON 12S	MT	1905	9999	1907	1905	1898	1895	1895	1898	1898	1905	1905	1905
245338	48.40	-107.73	2245	MALTA 7E	MT	1905	9999	1907	1905	1905	1906	1906	1905	1905	1905	1905	1905
245572	48.48	-104.45	1952	MEDICINE LAKE 3SE	MT	1911	9999	1911	1911	1912	1913	1911	1911	1911	1911	1911	1911
245668	46.77	-104.97	2510	MILDRED 5N	MT	1909	9999	1918	1918	1921	1919	1909	1918	1918	1918	1918	1918
245690	46.43	-105.87	2629	MILES CITY FCWOS	MT	1877	9999	1893	1879	1894	1892	1879	1899	1898	1899	1898	1898
245761	47.05	-109.95	4300	MOCCASIN EXPERIMENT STATION	MT	1909	9999	1910	1910	1912	1910	1910	1909	1909	1909	1909	1909
246157	45.48	-111.63	4745	MORRIS MADISON POWER HOUSE	MT	1907	9999	1908	1908	1904	1907	1908	1907	1907	1907	1907	1907
246472	46.32	-113.30	5270	PHILIPSBURG RS	MT	1903	9999	1904	1904	1904	1903	1904	1903	1903	1903	1903	1903
246601	46.42	-104.50	2765	PLEVNA	MT	1912	9999	1914	1913	1916	1913	1913	1912	1912	1912	1912	1912
246660	48.13	-105.15	2900	POPLAR	MT	1888	9999	1891	1890	1890	1892	1890	1892	1892	1892	1892	1892
246918	45.18	-109.25	5850	RED LODGE 1NW	MT	1894	9999	1896	1894	1894	1895	1894	1894	1900	1900	1900	1900
247286	47.32	-114.10	2900	SAINTE IGNATIUS	MT	1896	9999	1897	1896	1896	1896	1896	1901	1901	1901	1901	1901
247382	47.45	-104.35	1985	SAVAGE	MT	1905	9999	1906	1905	1905	1905	1907	1905	1905	1905	1905	1905
248501	48.32	-112.25	3895	VALIER	MT	1911	9999	1912	1911	1911	1911	1911	1911	1911	1911	1911	1911
248597	45.30	-111.95	5773	VIRGINIA CITY	MT	1871	9999	1892	1888	1893	1891	1872	1900	1900	1900	1900	1900
248857	44.65	-111.10	6659	WEST YELLOWSTONE	MT	1905	9999	1907	1905	1908	1905	1906	1905	1905	1905	1905	1905
248930	46.52	-110.88	5200	WHITE SULPHUR SPRINGS #2	MT	1894	9999	1894	1894	1896	1895	1896	1902	1902	1902	1902	1902
250070	41.67	-97.98	1745	ALBION	NE	1892	9999	1895	1893	1897	1893	1892	1893	1892	1893	1893	1893
250130	42.10	-102.99	3994	ALLIANCE 1WNW	NE	1899	9999	1902	1899	1902	1900	1899	1900	1894	1900	1900	1900
250375	41.05	-96.35	1070	ASHLAND 2	NE	1883	9999	1894	1889	1897	1893	1893	1893	1888	1893	1893	1893
250420	42.53	-98.98	2110	ATKINSON	NE	1906	9999	1907	1906	1907	1908	1907	1906	1906	1906	1906	1906
250435	40.37	-95.75	930	AUBURN SESE	NE	1874	9999	1899	1875	1902	1900	1874	1899	1887	1899	1899	1899
250622	40.30	-96.75	1297	BEATRICE 1N	NE	1891	9999	1894	1891	1895	1895	1892	1893	1891	1893	1893	1893
250640	40.13	-99.83	2160	BEAVER CITY	NE	1890	9999	1893	1890	1897	1894	1890	1893	1890	1893	1893	1893
251145	41.67	-103.10	3666	BEAVER CITY	NE	1897	9999	1897	1898	1898	1898	1898	1897	1897	1897	1897	1897
251200	41.42	-99.68	2500	BRIDGEPORT	NE	1894	9999	1902	1894	1904	1901	1895	1901	1894	1901	1901	1901
252020	40.62	-96.95	1435	CRETE	NE	1880	9999	1895	1882	1897	1893	1880	1893	1885	1893	1893	1893
252100	40.67	-100.50	2721	CURTIS 3NNE	NE	1893	9999	1894	1893	1894	1893	1893	1893	1893	1893	1893	1893
252205	41.27	-97.12	1610	DAVID CITY	NE	1888	9999	1898	1890	1900	1899	1899	1897	1888	1897	1897	1897
252820	40.15	-97.17	1430	FAIRBURY	NE	1875	9999	1895	1893	1895	1896	1875	1895	1892	1895	1895	1895
252840	40.63	-97.58	1640	FAIRMONT	NE	1894	9999	1897	1895	1896	1896	1896	1896	1894	1896	1896	1896
253035	40.10	-98.97	1855	FRANKLIN	NE	1887	1990	1899	1888	1888	1888	1888	1890	1888	1890	1890	1890
253175	40.53	-97.60	1630	GENEVA	NE	1890	9999	1893	1894	1897	1894	1891	1893	1893	1893	1893	1893
253185	41.45	-97.77	1590	GENOA 2W	NE	1875	9999	1893	1875	1894	1894	1875	1893	1893	1893	1893	1893
253365	40.93	-100.17	2585	GOTHENBURG	NE	1894	9999	1895	1894	1897	1894	1894	1894	1894	1894	1894	1894
253540	41.90	-100.32	2705	HALSEY 2W	NE	1903	9999	1903	1903	1905	1904	1903	1903	1903	1903	1903	1903
253615	42.68	-103.88	4850	HARRISON	NE	1893	9999	1914	1894	1917	1915	1893	1914	1906	1914	1914	1914
253630	42.60	-97.27	1370	HARTINGTON	NE	1891	9999	1894	1892	1896	1895	1892	1893	1891	1893	1893	1893
253660	40.65	-98.38	1940	HASTINGS 4N	NE	1880	9999	1907	1892	1908	1908	1881	1907	1890	1907	1907	1907
253715	42.50	-102.70	3805	HAY SPRINGS 12S	NE	1885	9999	1893	1887	1896	1894	1886	1893	1886	1893	1893	1893
253735	40.17	-97.58	1480	HEBRON	NE	1886	9999	1893	1886	1894	1894	1888	1893	1886	1893	1893	1893
253910	40.43	-99.37	2320	HOLDREGE	NE	1890	9999	1902	1892	1904	1901	1891	1901	1894	1901	1901	1901

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNNM	HCNAV2	HCNNX	HCHPCP	URMN	URAV2	URAV2	URMX
254110	40.52	-101.63	3278	IMPERIAL	NE	1890	9999	1894	1891	1898	1890	1894	1890	1894	1894
254440	41.25	-103.67	4760	KIMBALL	NE	1887	9999	1893	1887	1895	1888	1893	1887	1893	1893
254900	41.15	-102.63	3832	LODGEPOLE	NE	1894	9999	1894	1894	1894	1895	1894	1894	1894	1894
254985	41.28	-98.97	2065	LOUP CITY	NE	1894	9999	1902	1896	1905	1895	1902	1895	1902	1902
255080	41.83	-97.45	1580	MADISON	NE	1884	9999	1898	1885	1898	1884	1898	1890	1898	1898
255310	40.20	-100.60	2530	MCCOOK	NE	1882	9999	1909	1884	1912	1883	1909	1889	1909	1909
255470	42.92	-101.68	3250	MERRIMAN	NE	1887	9999	1915	1916	1918	1900	1915	1915	1915	1915
255565	40.52	-98.95	2160	MINDEN	NE	1878	9999	1901	1884	1900	1880	1900	1884	1900	1900
256040	41.50	-98.77	1960	NORTH LOUP	NE	1883	9999	1896	1888	1895	1887	1895	1890	1895	1895
256135	42.07	-97.97	1710	OAKDALE	NE	1883	9999	1893	1889	1893	1883	1893	1888	1893	1893
256570	40.10	-96.15	1185	PAWNEE CITY	NE	1878	9999	1903	1882	1905	1880	1903	1887	1903	1903
256970	42.07	-100.25	2690	PURDUM	NE	1902	9999	1902	1902	1902	1903	1902	1902	1902	1902
257070	40.10	-98.52	1720	RED CLOUD	NE	1872	9999	1901	1872	1903	1873	1901	1895	1901	1901
257515	41.27	-98.47	1775	SAINT PAUL	NE	1895	9999	1901	1897	1903	1897	1900	1895	1900	1900
257715	40.90	-97.10	1480	SEWARD	NE	1885	9999	1900	1887	1903	1888	1900	1885	1900	1900
258395	40.67	-96.18	1100	SYRACUSE	NE	1871	9999	1894	1872	1895	1871	1894	1871	1894	1894
258465	40.37	-96.22	1150	TECUMSEH	NE	1878	9999	1893	1885	1897	1879	1893	1884	1893	1893
258480	41.77	-96.22	1040	TEKAMAH	NE	1890	9999	1893	1890	1894	1891	1893	1890	1893	1893
258915	42.27	-96.87	1390	WAKEFIELD	NE	1894	9999	1899	1898	1900	1894	1897	1897	1897	1897
259090	40.87	-96.15	1100	WEEPING WATER	NE	1878	9999	1908	1882	1907	1879	1907	1882	1907	1907
259510	40.87	-97.60	1610	YORK	NE	1884	9999	1902	1893	1904	1885	1901	1892	1901	1901
260507	39.50	-117.08	6605	AUSTIN	NV	1877	9999	1889	1889	1892	1888	1889	1888	1890	1888
260691	40.62	-116.88	4540	BATTLE MOUNTAIN 4SE	NV	1870	9999	1902	1870	1904	1870	1902	1870	1902	1902
261071	35.98	-114.85	2525	BOULDER CITY	NV	1931	9999	1932	1932	1931	1933	1931	1931	1931	1931
262573	40.83	-115.78	5050	ELKO FAA AP	NV	1870	9999	1889	1870	1892	1830	1871	1888	1870	1888
262790	39.45	-118.78	3965	FALLON EXPERIMENT STATION	NV	1889	9999	1890	1890	1891	1889	1889	1889	1889	1889
263245	40.95	-117.48	4392	GOLCONDA	NV	1870	9999	1907	1879	1908	1878	1906	1888	1906	1906
264698	40.18	-118.47	3975	LOVELOCK	NV	1888	9999	1903	1888	1902	1888	1902	1888	1902	1902
264950	39.40	-114.77	6300	MCGILL	NV	1891	9999	1892	1891	1897	1893	1893	1893	1893	1893
265168	38.38	-118.10	4550	MINA	NV	1889	9999	1896	1890	1898	1897	1896	1889	1896	1896
266779	39.50	-119.78	4404	RENO WSFO AP	NV	1870	9999	1888	1871	1890	1889	1888	1870	1888	1888
267369	35.47	-114.92	3540	SEARCHLIGHT	NV	1913	9999	1914	1913	1917	1914	1913	1913	1913	1913
268988	41.12	-114.97	5650	WELLS	NV	1870	9999	1895	1872	1898	1876	1870	1877	1888	1888
269171	40.90	-117.80	4298	WINNEMUCCA WSG AP	NV	1870	9999	1878	1877	1877	1877	1870	1888	1877	1888
270703	44.28	-71.68	1380	BETHLEHEM	NH	1892	1992	1892	1892	1896	1893	1892	1892	1892	1892
272174	43.15	-70.95	80	DURHAM	NH	1892	9999	1893	1892	1895	1893	1893	1892	1893	1893
272999	45.08	-71.28	1660	FIRST CONNECTICUT LAKE	NH	1918	9999	1918	1918	1922	1919	1918	1918	1918	1918
273850	43.70	-72.28	603	HANOVER	NH	1834	9999	1889	1835	1893	1836	1889	1835	1889	1889
274399	42.95	-72.32	510	KEENE	NH	1893	9999	1893	1893	1895	1894	1893	1893	1893	1893
280325	39.38	-74.41	10	ATLANTIC CITY STATE MARINA	NJ	1873	9999	1875	1875	1878	1874	1885	1885	1885	1885
280734	40.83	-75.08	263	BELVIDERE BRIDGE	NJ	1881	9999	1893	1891	1893	1883	1893	1891	1893	1893
280907	40.90	-74.40	280	BOONTON 1SE	NJ	1892	9999	1895	1893	1895	1893	1893	1893	1893	1893
281582	41.03	-74.43	760	CHARLOTTEBURG RESERVOIR	NJ	1893	9999	1894	1894	1895	1893	1893	1893	1893	1893
283029	40.57	-74.88	260	FLEMINGTON 5NNW	NJ	1879	9999	1898	1899	1902	1879	1898	1898	1898	1898
283951	40.27	-74.57	100	HIGHTSTOWN 2W	NJ	1891	9999	1892	1892	1894	1892	1892	1891	1892	1892
284229	39.80	-74.78	100	INDIAN MILLS 2W	NJ	1901	9999	1902	1901	1904	1901	1901	1901	1901	1901

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNAV2	HCNMX	HCNCP	URMN	URAV2	URAV2	URMX
284987	40.27	-74.00	30	LONG BRANCH OAKHURST	NJ	1874	9999	1907	1875	1911	1908	1874	1907	1885	1907	1907
285728	39.97	-74.97	45	MOORESTOWN	NJ	1863	9999	1894	1863	1896	1895	1866	1893	1888	1893	1893
286055	40.47	-74.43	86	NEW BRUNSWICK 3SE	NJ	1847	9999	1892	1864	1892	1893	1855	1892	1888	1892	1893
287079	40.60	-74.40	90	PLAINFIELD	NJ	1887	9999	1893	1889	1893	1892	1887	1892	1888	1892	1892
288899	39.60	-74.35	20	TUCKERTON	NJ	1898	9999	1898	1899	1901	1899	1899	1898	1898	1898	1898
290692	36.83	-108.00	5644	AZTEC RUINS NATL MONUMENT	NM	1895	9999	1895	1896	1896	1896	1896	1906	1906	1906	1906
290858	35.53	-104.10	4500	BELL RANCH	NM	1899	9999	1905	1904	1904	1899	1899	1904	1904	1904	1904
291469	32.42	-105.23	3120	CARLSBAD	NM	1894	9999	1901	1895	1900	1902	1895	1900	1894	1900	1900
291515	33.63	-104.88	5405	CARRIZOZO 1SW	NM	1908	9999	1908	1910	1908	1909	1909	1908	1908	1908	1908
291664	36.92	-106.58	7850	CHAMA	NM	1889	9999	1892	1889	1894	1891	1889	1901	1900	1901	1901
291813	36.47	-104.95	6540	CINARRON 4SW	NM	1904	9999	1904	1906	1906	1905	1905	1904	1904	1904	1904
291887	36.45	-103.15	4970	CLAYTON WSO AP	NM	1896	9999	1898	1897	1898	1896	1896	1896	1896	1896	1896
292848	33.15	-107.18	4576	ELEPHANT BUTTE DAM	NM	1908	9999	1909	1908	1912	1908	1909	1908	1908	1908	1908
293265	32.80	-108.15	6142	FORT BAYARD	NM	1867	9999	1895	1868	1898	1896	1869	1895	1893	1895	1895
293294	34.47	-104.25	4025	FORT SUMNER	NM	1864	9999	1910	1865	1911	1909	1864	1909	1904	1909	1909
293368	32.22	-108.02	4410	GAGE 4ESE	NM	1899	9999	1907	1906	1908	1906	1900	1906	1906	1906	1906
294369	35.77	-106.68	6262	JEMEZ SPRINGS	NM	1910	9999	1911	1910	1910	1910	1910	1910	1910	1910	1910
294426	32.62	-106.73	4266	JORNADA EXPERIMENTAL RANGE	NM	1914	9999	1914	1914	1915	1915	1915	1914	1914	1914	1914
294862	35.53	-105.20	6349	LAS VEGAS SEWAGE PLT	NM	1887	9999	1892	1888	1894	1893	1888	1900	1900	1900	1900
295150	34.77	-108.75	4840	LOS LUNAS 3SSW	NM	1889	9999	1892	1890	1894	1893	1891	1891	1889	1891	1891
295273	33.83	-108.93	7050	LUNA RS	NM	1900	9999	1901	1901	1904	1900	1902	1900	1900	1900	1900
295960	32.95	-105.85	6780	MOUNTAIN PARK	NM	1894	9999	1896	1894	1894	1894	1895	1904	1904	1904	1904
295965	34.52	-106.25	6520	MOUNTAINAIR	NM	1902	9999	1902	1902	1902	1903	1903	1902	1902	1902	1902
296435	32.38	-106.10	4182	OCROGRANDE	NM	1904	9999	1905	1906	1909	1906	1904	1908	1908	1908	1908
297323	36.70	-105.40	8676	RED RIVER	NM	1906	9999	1906	1907	1907	1907	1907	1906	1906	1906	1906
297610	33.30	-104.53	3649	ROSWELL FAA AP	NM	1894	9999	1894	1894	1897	1895	1878	1894	1893	1894	1894
297867	35.12	-103.33	4230	SAN JON	NM	1907	9999	1907	1907	1909	1908	1907	1907	1907	1907	1907
288107	34.95	-104.68	4620	SANTA ROSA	NM	1908	9999	1908	1908	1908	1909	1908	1908	1908	1908	1908
298387	34.08	-106.88	4585	SOCORRO	NM	1849	9999	1894	1850	1894	1893	1850	1901	1901	1901	1901
298501	36.37	-104.58	5922	SPRINGER	NM	1887	9999	1892	1891	1895	1891	1888	1897	1897	1897	1897
298535	32.28	-106.75	3881	STATE UNIVERSITY	NM	1851	9999	1892	1851	1892	1893	1853	1892	1886	1892	1892
299156	35.20	-103.68	4086	TUCUMCARI 4NE	NM	1904	9999	1906	1906	1906	1907	1906	1906	1905	1905	1905
299165	33.08	-106.05	4430	TULAROSA	NM	1908	9999	1909	1910	1910	1908	1909	1908	1908	1908	1908
300042	42.75	-73.80	275	ALBANY WFOAP	NY	1795	9999	1874	1813	1878	1875	1826	1888	1888	1888	1888
300085	42.25	-77.78	1770	ALFRED	NY	1852	9999	1894	1853	1893	1893	1853	1893	1884	1893	1893
300093	42.10	-78.75	1500	ALLEGANY STATE PARK	NY	1824	9999	1924	1925	1926	1925	1925	1924	1924	1924	1924
300183	42.30	-78.02	1425	ANGELICA	NY	1854	9999	1898	1854	1896	1893	1856	1893	1888	1893	1893
300321	42.92	-76.53	770	AUBURN	NY	1827	9999	1898	1828	1898	1897	1828	1897	1889	1897	1897
300360	42.28	-75.45	994	BAINBRIDGE 2E	NY	1907	9999	1937	1937	1937	1938	1909	1936	1936	1936	1936
300443	42.98	-78.18	890	BATAVIA	NY	1912	9999	1932	1933	1935	1933	1932	1932	1932	1932	1932
300448	42.35	-77.35	1120	BATH	NY	1890	9999	1895	1891	1898	1896	1891	1895	1890	1895	1895
300687	42.22	-75.98	1600	BINGHAMTON WSO AP	NY	1930	9999	1890	1890	1893	1891	1892	1893	1890	1893	1893
300889	40.95	-72.30	60	BRIDGEHAMPTON	NY	1930	9999	1931	1931	1932	1932	1930	1930	1930	1930	1930
300937	43.20	-77.93	535	BROCKPORT	NY	1831	9999	1895	1891	1893	1893	1891	1893	1890	1893	1893
301012	42.93	-78.73	705	BUFFALO WSCMO AP	NY	1831	9999	1874	1832	1876	1873	1842	1873	1870	1873	1873
301185	44.57	-75.12	440	CANTON 4SE	NY	1854	9999	1894	1855	1896	1893	1855	1893	1872	1893	1893

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCTMND	HCHAV2	HCHAV2	HCHAV2	HCNMX	HCNMX	HCNMX	URMN	UPAV2	URAV2	URMX
301387	44.75	-74.22	1060	CHASM FALLS	NY	1926	9999	1927	1927	1931	1929	1926	1927	1927	1927	1927	1927	1927
301401	44.88	-73.43	170	CHAZY	NY	1891	9999	1902	1899	1902	1903	1891	1902	1899	1902	1902	1902	1902
301752	42.70	-74.92	1200	COOPERSTOWN	NY	1854	9999	1894	1855	1895	1893	1854	1893	1854	1893	1854	1893	1893
301799	42.60	-76.18	1129	CORTLAND	NY	1829	9999	1893	1892	1896	1892	1851	1892	1892	1892	1892	1892	1892
301966	44.72	-73.72	1340	DANNEMORA	NY	1906	9999	1908	1906	1906	1906	1907	1906	1906	1906	1906	1906	1906
301974	42.57	-77.72	660	DANVILLE	NY	1917	9999	1919	1920	1920	1920	1917	1918	1918	1918	1918	1918	1918
302610	42.10	-76.80	844	ELMIRA	NY	1851	9999	1894	1853	1897	1895	1851	1898	1888	1888	1888	1888	1894
303033	42.45	-79.30	760	FREDONIA	NY	1829	9999	1914	1829	1916	1915	1830	1914	1885	1914	1885	1914	1914
303184	42.88	-77.03	718	GENEVA RESR FM	NY	1850	9999	1892	1853	1895	1893	1850	1897	1889	1889	1889	1897	1897
303259	41.52	-73.93	275	GLENHAM	NY	1932	9999	1934	1932	1936	1932	1933	1932	1932	1932	1932	1932	1932
303319	43.05	-74.35	812	GLOVERSVILLE	NY	1892	9999	1893	1892	1893	1894	1893	1893	1892	1892	1892	1893	1893
303773	42.78	-77.62	902	HEMLOCK	NY	1898	9999	1899	1899	1900	1898	1898	1898	1898	1898	1898	1898	1898
304102	43.75	-74.28	1660	INDIAN LAKE 2SW	NY	1899	9999	1900	1900	1900	1899	1899	1899	1899	1899	1899	1899	1899
304174	42.45	-76.45	960	ITHACA CORNELL UN	NY	1827	9999	1893	1827	1896	1894	1833	1893	1889	1889	1893	1893	1893
304555	44.25	-73.98	1940	LAKE PLACID 2S	NY	1897	9999	1897	1898	1898	1898	1898	1898	1897	1897	1897	1897	1897
304647	44.75	-74.65	500	LAWRENCEVILLE	NY	1931	9999	1931	1931	1933	1932	1931	1931	1931	1931	1931	1931	1931
304791	43.07	-74.87	900	LITTLE FALLS CITY RESER	NY	1897	9999	1897	1898	1898	1898	1897	1897	1897	1897	1897	1897	1897
304796	43.03	-74.87	360	LITTLE FALLS MILL ST	NY	1897	9999	1898	1897	1900	1897	1897	1897	1897	1897	1897	1897	1897
304844	43.18	-78.65	520	LOCKPORT 2NE	NY	1848	9999	1893	1849	1895	1894	1871	1893	1884	1884	1893	1893	1893
304912	43.80	-75.48	860	LOWVILLE	NY	1827	9999	1892	1831	1896	1892	1829	1892	1885	1892	1892	1892	1892
305113	42.52	-74.97	1192	MARYLAND 6SW	NY	1894	9999	1895	1894	1894	1895	1895	1894	1894	1894	1894	1894	1894
305426	41.77	-74.15	1245	MORONK LAKE	NY	1896	9999	1898	1897	1900	1896	1896	1896	1896	1896	1896	1896	1896
305512	42.85	-75.65	1340	MORRISVILLE 3S	NY	1911	9999	1911	1912	1911	1911	1911	1911	1911	1911	1911	1911	1911
305801	40.78	-73.97	130	NEW YORK CENTRAL PARK	NY	1821	9999	1878	1823	1875	1876	1837	1876	1869	1876	1876	1876	1876
306085	42.53	-75.53	1020	NORWICH	NY	1906	9999	1906	1906	1909	1906	1907	1906	1906	1906	1906	1906	1906
306164	44.73	-75.43	280	OGDENSBURG 4NE	NY	1838	9999	1893	1838	1894	1893	1838	1893	1884	1893	1893	1893	1893
306314	43.47	-76.50	350	OSWEGO EAST	NY	1844	9999	1891	1844	1892	1889	1845	1889	1870	1889	1889	1889	1889
306517	42.67	-77.18	997	PENN YAN 8W	NY	1829	9999	1899	1832	1898	1897	1830	1897	1884	1897	1897	1897	1897
306659	44.65	-73.47	165	PLATTSBURGH AFB	NY	1839	9999	1895	1840	1899	1895	1841	1841	1841	1841	1841	1841	1841
306774	41.38	-74.68	470	PORT JERVIS	NY	1880	9999	1893	1881	1895	1894	1880	1893	1885	1893	1885	1893	1893
306820	41.63	-73.92	170	POUGHKEEPSIE	NY	1828	9999	1893	1830	1893	1893	1830	1893	1885	1893	1885	1893	1893
307167	43.13	-77.67	600	ROCHESTER AIRPORT	NY	1829	9999	1872	1830	1874	1872	1830	1889	1871	1889	1889	1889	1889
307484	43.03	-73.82	310	SARATOGA SPRINGS 4SW	NY	1903	9999	1904	1903	1904	1904	1903	1903	1903	1903	1903	1903	1903
307497	40.98	-73.80	199	SCARSDALE	NY	1904	9999	1905	1905	1904	1906	1905	1904	1904	1904	1904	1904	1904
307633	40.97	-73.10	40	SETAUKET STRONG	NY	1885	9999	1885	1887	1886	1886	1886	1885	1885	1885	1885	1885	1885
308248	43.88	-75.03	1690	STILLWATER RESERVOIR	NY	1921	9999	1927	1927	1931	1928	1921	1927	1927	1927	1927	1927	1927
308383	43.12	-76.12	420	SYRACUSE WSO AP	NY	1902	9999	1902	1843	1906	1902	1843	1902	1889	1902	1902	1902	1902
308600	42.75	-73.68	24	TROY LOCK & DAM	NY	1898	9999	1898	1837	1899	1898	1837	1898	1895	1898	1898	1898	1898
308631	44.23	-74.43	1680	TUPPER LAKE SUNMOUNT	NY	1899	9999	1899	1900	1901	1899	1900	1899	1899	1899	1899	1899	1899
308739	43.08	-75.20	580	UTICA	NY	1826	9999	1893	1827	1896	1893	1828	1893	1891	1893	1893	1893	1893
308906	41.55	-74.17	380	WALDEN LESE	NY	1922	9999	1926	1926	1929	1926	1923	1925	1925	1925	1925	1925	1925
308910	42.75	-78.52	1090	WALES	NY	1931	9999	1932	1931	1935	1932	1931	1931	1931	1931	1931	1931	1931
308944	44.15	-74.90	1510	WANAKENA RANGER SCHOOL	NY	1910	9999	1911	1910	1911	1910	1911	1910	1910	1910	1910	1910	1910
309000	43.97	-75.87	497	WATERTOWN	NY	1856	9999	1894	1857	1895	1894	1859	1893	1889	1893	1889	1893	1893
309292	41.38	-73.97	320	WEST POINT	NY	1824	9999	1891	1824	1890	1891	1837	1890	1863	1890	1863	1890	1890
309670	41.27	-73.80	670	YORKTOWN HEIGHTS 1W	NY	1888	9999	1893	1889	1895	1893	1888	1893	1888	1893	1888	1893	1893

STACCD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNMX	HCNFCP	URMN	URAV2	UPAV2	UPMX
310090	35.37	-80.18	610	ALBEHARLE	NC	1911	9999	1911	1912	1911	1912	1911	1911	1911	1911
310506	36.17	-81.87	3750	BANNER ELK	NC	1907	9999	1909	1907	1908	1907	1907	1907	1907	1907
311458	35.27	-75.55	8	CAPE HATTERAS WSO	NC	1874	9999	1884	1874	1883	1874	1887	1887	1887	1887
311677	35.92	-79.10	500	CHAPEL HILL 2W	NC	1820	9999	1892	1844	1895	1892	1889	1889	1889	1891
312635	36.05	-76.62	20	EDENTON	NC	1896	9999	1897	1897	1897	1896	1896	1896	1896	1896
312719	36.32	-76.20	8	ELIZABETH CITY	NC	1911	9999	1912	1912	1912	1911	1911	1911	1911	1911
313017	35.07	-78.87	96	FAYETTEVILLE	NC	1871	9999	1896	1871	1897	1896	1889	1889	1889	1895
313510	35.33	-77.97	109	GOLDSBORO 4SE	NC	1856	9999	1891	1856	1891	1862	1893	1893	1893	1893
313969	36.37	-78.42	480	HENDERSON 2NW	NC	1893	9999	1893	1894	1894	1894	1893	1893	1893	1893
313976	35.33	-82.45	2160	HENDERSONVILLE 1NE	NC	1890	9999	1898	1891	1902	1899	1898	1890	1898	1898
314955	35.03	-83.18	3840	HIGHLANDS	NC	1877	9999	1891	1877	1893	1892	1884	1884	1892	1992
314684	35.22	-77.53	55	KINSTON 5SE	NC	1899	9999	1901	1899	1903	1900	1899	1899	1899	1899
314938	35.92	-81.53	1200	LENCIR	NC	1871	9999	1891	1872	1891	1892	1891	1871	1891	1891
315123	36.10	-78.32	260	LOUISBURG	NC	1891	9999	1893	1892	1891	1892	1891	1891	1891	1891
315177	34.62	-78.98	112	LUMBERTON 3SE	NC	1882	9999	1894	1882	1893	1883	1950	1950	1950	1950
315340	35.68	-82.00	1425	MARION	NC	1888	9999	1891	1889	1894	1892	1891	1888	1888	1898
315356	35.80	-82.67	2000	MAFSHALL	NC	1888	9999	1900	1898	1901	1899	1898	1898	1898	1898
315771	34.97	-80.50	580	MONROE 4SE	NC	1888	9999	1898	1888	1897	1897	1896	1888	1888	1896
315830	34.73	-76.73	10	MOREHEAD CITY 2WNW	NC	1896	9999	1896	1896	1897	1897	1896	1896	1896	1896
315838	35.75	-81.68	1160	MORGANTON	NC	1889	9999	1892	1890	1891	1889	1891	1889	1891	1891
315890	36.52	-80.62	1030	MOUNT AIRY	NC	1889	9999	1892	1890	1892	1890	1891	1889	1891	1891
317202	36.38	-79.70	890	REIDSVILLE 2NW	NC	1901	9999	1902	1902	1902	1901	1901	1901	1901	1901
317615	35.68	-80.48	700	SALISBURY	NC	1882	9999	1892	1882	1892	1883	1891	1882	1891	1891
317994	35.52	-78.35	150	SMITHFIELD	NC	1889	9999	1892	1889	1893	1891	1891	1889	1891	1891
318113	34.00	-78.02	20	SOUTHPORT 5N	NC	1822	9999	1892	1822	1893	1891	1845	1889	1893	1893
318292	35.82	-80.88	950	STATESVILLE 2MNE	NC	1866	9999	1902	1866	1903	1901	1866	1901	1866	1901
318500	35.88	-77.53	35	TARBORO 1S	NC	1871	9999	1889	1872	1887	1887	1891	1891	1892	1892
319147	35.48	-82.97	2658	WAYNESVILLE 1E	NC	1894	9999	1895	1894	1897	1895	1894	1894	1894	1894
319476	35.70	-77.95	110	WILLSON 3SW	NC	1904	9999	1906	1905	1905	1905	1904	1904	1904	1904
320941	48.83	-100.45	1640	BOTTINEAU	ND	1892	9999	1893	1892	1893	1892	1892	1892	1892	1892
321871	48.90	-103.30	1952	CROSBY	ND	1907	9999	1909	1908	1909	1907	1907	1907	1907	1907
322188	46.88	-102.80	2460	DICKINSON EXP STN1	ND	1891	9999	1895	1892	1893	1894	1893	1891	1893	1893
322365	47.35	-102.65	2232	DUNN CENTER 2SW	ND	1918	9999	1920	1920	1921	1920	1919	1919	1919	1919
323207	46.05	-100.67	1675	FORT YATES 4SW	ND	1882	9999	1892	1883	1895	1883	1883	1882	1892	1892
323287	46.15	-98.40	1435	FULLERTON 1ESE	ND	1898	9999	1899	1898	1898	1899	1898	1898	1898	1898
323594	48.42	-97.42	827	GRAFTON	ND	1891	9999	1893	1891	1895	1893	1892	1891	1892	1892
323621	47.93	-97.08	830	GRAND FORKS UNIVERSITY	ND	1887	9999	1892	1887	1896	1887	1892	1887	1892	1892
324178	45.98	-102.65	2680	HETTINGER	ND	1905	9999	1908	1907	1907	1908	1907	1907	1907	1907
324203	47.45	-97.07	910	HILLSBORO 3N	ND	1905	9999	1906	1905	1908	1906	1905	1905	1905	1905
324418	46.88	-98.68	1467	JAMESTOWN STATE HOSPITAL	ND	1891	9999	1894	1892	1896	1892	1893	1892	1893	1893
324958	48.75	-98.33	1615	LANGDON EXPERIMENT STN	ND	1896	9999	1897	1897	1898	1897	1897	1896	1897	1897
325220	46.43	-97.68	1110	LISBON	ND	1897	9999	1904	1898	1903	1904	1903	1897	1903	1903
325479	46.80	-100.90	1750	MANDAN EXPERIMENT STN	ND	1913	9999	1913	1913	1916	1914	1913	1913	1913	1913
325660	47.50	-97.32	935	MAVILLIE	ND	1893	9988	1895	1896	1896	1895	1893	1893	1893	1893
326015	46.67	-100.25	1800	MOFFIT 3SE	ND	1889	9999	1894	1890	1898	1889	1894	1889	1894	1894
326155	46.38	-102.33	2515	MOTT	ND	1907	9999	1909	1907	1910	1908	1907	1907	1907	1907

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMI	HCNAV2	HCNAV2	HCIMX	HCIPCP	URMI	URAV2	URAV2	URMX
326255	46.50	-99.77	1980	NAPOLEON	ND	1889	9999	1894	1889	1893	1893	1890	1892	1889	1892	1892
326315	46.55	-102.87	2639	NEW ENGLAND	ND	1888	9999	1894	1888	1896	1896	1889	1894	1889	1894	1894
326947	48.97	-97.23	790	PEMBINA	ND	1871	9999	1899	1871	1899	1898	1872	1898	1889	1898	1898
327530	46.88	-102.32	2470	RICHARDTON ABBEY	ND	1916	9999	1917	1917	1920	1916	1918	1916	1916	1916	1916
328792	48.35	-100.40	1480	TOWNER 2HE	ND	1896	9999	1897	1898	1898	1896	1898	1898	1889	1898	1898
329100	46.32	-96.60	956	WAHPETON 3H	ND	1889	9999	1892	1889	1893	1893	1889	1892	1889	1892	1892
329445	48.62	-100.30	1460	WILLOW CITY	ND	1891	9999	1893	1891	1894	1892	1892	1892	1891	1892	1892
331072	40.82	-82.97	955	BUCYRUS	OH	1889	9999	1893	1889	1896	1894	1901	1893	1889	1893	1893
331152	40.27	-81.00	1260	CADIZ	OH	1903	9999	1904	1904	1904	1904	1903	1903	1903	1903	1903
331541	41.05	-81.93	1180	CHIPPEWA LAKE	OH	1857	9999	1895	1859	1899	1896	1858	1895	1882	1895	1895
331592	39.62	-82.95	673	CIRCLEVILLE	OH	1887	9999	1896	1898	1898	1895	1887	1895	1895	1895	1895
331890	40.25	-81.87	760	COSHOCOTON WPC PLANT	OH	1908	9999	1916	1916	1919	1916	1908	1915	1915	1915	1915
332119	40.28	-83.07	868	DELAWARE	OH	1896	9999	1896	1896	1897	1896	1897	1896	1896	1896	1896
332791	41.05	-83.67	768	FINDLAY WPC	OH	1885	9999	1894	1887	1894	1893	1888	1893	1886	1893	1893
333375	40.10	-84.65	1024	GREENVILLE WATER PLANT	OH	1885	9999	1893	1886	1896	1895	1887	1893	1886	1893	1893
333758	39.20	-83.62	1100	HILLSBORO	OH	1836	9999	1893	1836	1894	1894	1855	1893	1885	1893	1893
333780	41.30	-81.15	1230	HIRAM	OH	1855	9999	1895	1855	1894	1894	1856	1893	1874	1893	1893
334189	40.65	-83.60	995	KENTON	OH	1862	9999	1894	1862	1896	1893	1863	1893	1881	1893	1893
335041	39.65	-81.85	660	MCCONNELLSVILLE LOCK 7	OH	1884	9999	1895	1885	1894	1894	1885	1893	1884	1893	1893
335297	40.55	-81.92	819	MILLERSBURG	OH	1916	9999	1920	1919	1922	1919	1916	1919	1919	1919	1919
335315	40.72	-80.90	1145	MILLPORT 2NW	OH	1892	9999	1895	1893	1895	1893	1894	1893	1893	1893	1893
335669	41.37	-84.15	682	NAPOLEON	OH	1885	9999	1893	1886	1893	1893	1885	1893	1885	1893	1893
336118	41.27	-82.62	670	NORWALF WWTP	OH	1861	9999	1896	1861	1896	1896	1862	1894	1885	1894	1894
336196	41.27	-82.22	816	OVERLIN	OH	1849	9999	1891	1855	1892	1891	1856	1891	1882	1891	1891
336600	39.83	-81.92	1020	PHILO 3SW	OH	1895	9999	1895	1897	1896	1895	1895	1895	1895	1895	1895
336781	38.75	-82.88	540	PORTSMOUTH-SCIOTOVILLE	OH	1824	9999	1894	1826	1893	1894	1830	1893	1858	1893	1893
338313	41.12	-83.17	740	TIFFIN	OH	1873	9999	1894	1873	1895	1894	1875	1893	1882	1893	1893
338534	40.83	-83.28	854	UPPER SANDUSKY	OH	1882	9999	1893	1883	1893	1893	1883	1893	1882	1893	1893
338552	40.10	-83.78	1000	URBANA WWTP	OH	1832	9999	1895	1855	1897	1895	1853	1895	1883	1895	1895
338769	41.20	-80.82	900	WARREN 3S	OH	1882	9999	1894	1883	1894	1894	1882	1893	1885	1893	1893
338822	41.52	-84.15	750	WAUSEON WATER PLANT	OH	1869	9999	1894	1871	1896	1894	1873	1893	1870	1893	1893
338830	39.12	-82.98	560	WAVERLY	OH	1883	9999	1893	1883	1894	1893	1883	1893	1883	1893	1893
339312	40.78	-81.92	1020	WOOSTER EXP STN	OH	1864	9999	1891	1864	1894	1891	1869	1891	1882	1891	1891
340017	34.78	-96.68	1015	ADA	OK	1907	9999	1909	1908	1910	1909	1908	1907	1907	1907	1907
340179	34.58	-99.33	1380	ALTUS IRRIGATION RES STN	OK	1903	9999	1915	1905	1914	1915	1914	1913	1905	1913	1913
340256	34.25	-95.63	520	ANTLERS	OK	1917	9999	1919	1920	1918	1919	1917	1918	1918	1918	1918
340292	34.20	-97.15	840	ARDMORE	OK	1901	9999	1902	1902	1901	1902	1902	1901	1901	1901	1901
340548	36.75	-96.00	715	BARTLESVILLE 2W	OK	1907	9999	1908	1907	1908	1908	1907	1907	1907	1907	1907
340593	36.82	-100.53	2465	BEAVER	OK	1896	9999	1897	1896	1900	1897	1896	1900	1900	1900	1900
340908	36.73	-102.48	4145	BOISE CITY 2E	OK	1908	9999	1910	1908	1908	1910	1925	1908	1908	1908	1908
341243	36.83	-99.62	1795	BUFFALO	OK	1907	9999	1907	1908	1911	1907	1907	1907	1907	1907	1907
341504	35.12	-98.57	1290	CARNEGIE 2ENE	OK	1914	9999	1914	1914	1917	1914	1916	1914	1914	1914	1914
341724	36.77	-98.35	1180	CHEROKEE	OK	1915	9999	1915	1916	1918	1915	1915	1915	1915	1915	1915
341828	36.32	-95.58	588	CLAREMORE 2ENE	OK	1901	9999	1901	1900	1900	1901	1901	1900	1900	1900	1900
342678	34.02	-96.38	660	DURANT-USDA	OK	1901	9999	1901	1901	1902	1901	1901	1901	1901	1901	1901
342912	36.42	-97.87	1245	ENID	OK	1894	9999	1894	1895	1896	1894	1894	1894	1894	1894	1894

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCVAV2	HCNMK	HCNCP	URMN	URAV2	URAV2	URM
342944	35.20	-98.80	1985	ERICK 4E	OK	1904	9999	1904	1905	1906	1904	1904	1904	1904	1904	1904
343497	35.63	-98.32	1595	GEARY	OK	1911	9999	1913	1911	1913	1913	1912	1911	1911	1911	1911
343628	36.60	-101.62	3310	GOODWELL RESEARCH STATION	OK	1910	9999	1911	1910	1914	1911	1911	1910	1910	1910	1910
343821	35.88	-97.45	1630	GUTHRIE	OK	1889	9999	1892	1889	1892	1892	1894	1895	1895	1895	1895
343871	35.60	-99.40	1820	HAMMON 3SSW	OK	1895	9999	1913	1913	1914	1913	1913	1913	1913	1913	1913
344055	36.10	-97.83	1150	HENNESSEY 4ESE	OK	1895	9999	1895	1895	1896	1895	1897	1895	1895	1895	1895
344204	35.00	-99.05	1552	HOBART FAA AP	OK	1901	9999	1904	1904	1903	1904	1902	1901	1901	1901	1901
344235	35.08	-96.40	860	HOLDENVILLE	OK	1900	9999	1903	1903	1904	1903	1904	1901	1901	1901	1901
344298	36.87	-101.22	2995	HOOVER	OK	1906	9999	1906	1906	1906	1906	1906	1906	1906	1906	1906
344384	34.00	-95.52	570	HUGO	OK	1913	9999	1914	1914	1914	1914	1914	1914	1913	1913	1913
344573	36.72	-97.80	1045	JEFFERSON	OK	1894	9999	1895	1895	1895	1895	1894	1894	1894	1894	1894
344766	36.90	-102.97	4350	KENTON	OK	1900	9999	1901	1901	1904	1901	1901	1901	1900	1900	1900
344861	35.85	-97.90	1100	KINGFISHER 2SE	OK	1897	9999	1898	1898	1897	1898	1898	1897	1897	1897	1897
345063	34.62	-98.45	1150	LAWTON	OK	1912	9999	1912	1912	1913	1912	1912	1912	1912	1912	1912
345509	34.83	-99.43	1520	MANGUM RESEARCH STATION	OK	1892	9999	1893	1893	1892	1893	1893	1893	1893	1893	1893
345779	35.50	-96.98	925	MEEKER 4W	OK	1894	9999	1896	1896	1895	1896	1895	1894	1894	1894	1894
345855	36.88	-94.88	805	MIAMI	OK	1917	9999	1917	1917	1921	1917	1917	1917	1917	1917	1917
346130	35.77	-95.33	583	MUSKOGEE	OK	1899	9999	1900	1900	1902	1900	1900	1899	1899	1899	1899
346139	36.23	-99.17	1865	MUTUAL	OK	1907	9999	1907	1907	1909	1907	1909	1909	1909	1909	1909
346278	36.88	-97.05	1140	NEWKIRK	OK	1897	9999	1897	1897	1897	1897	1897	1897	1897	1897	1897
346629	36.12	-98.32	1210	OKEENE	OK	1903	9999	1904	1904	1904	1904	1904	1904	1903	1903	1903
346638	35.43	-96.30	935	OKEMAH	OK	1912	9999	1913	1913	1912	1913	1912	1912	1912	1912	1912
346638	35.43	-96.30	935	OKEMAH	OK	1912	9999	1913	1913	1912	1913	1912	1912	1912	1912	1912
346770	35.62	-96.02	647	OKMULGEE WATER WORKS	OK	1892	9999	1892	1892	1893	1892	1892	1892	1892	1892	1892
346926	34.73	-97.28	940	PAULS VALLEY 4NSW	OK	1892	9999	1892	1892	1893	1892	1892	1892	1892	1892	1892
346935	36.67	-96.35	835	PANHUSKA	OK	1897	9999	1900	1900	1899	1900	1899	1898	1898	1898	1898
347012	36.28	-97.30	1025	PERRY	OK	1898	9999	1898	1898	1902	1898	1898	1898	1898	1898	1898
347254	35.05	-94.62	440	PCTEAU WATER WORKS	OK	1917	9999	1917	1917	1919	1917	1917	1917	1917	1917	1917
348501	36.12	-97.10	895	STILLWATER 2W	OK	1893	9999	1894	1894	1894	1894	1894	1893	1893	1893	1893
348677	35.93	-94.97	850	TAHLEQUAH	OK	1894	9999	1894	1894	1897	1894	1894	1894	1894	1894	1894
349395	34.17	-98.00	875	WAURIKA	OK	1910	9999	1910	1910	1911	1910	1910	1910	1910	1910	1910
349422	35.52	-98.70	1635	WEATHERFORD	OK	1901	9999	1902	1902	1903	1902	1901	1901	1901	1901	1901
349445	35.48	-95.20	550	WEBBERS FALLS 5SW	OK	1898	9999	1900	1900	1903	1900	1901	1900	1900	1900	1900
350304	42.22	-122.72	1750	ASHLAND	OR	1879	9999	1891	1891	1892	1891	1880	1889	1889	1889	1889
350328	46.15	-123.88			OR	1850	9999	1894	1869	1893	1894	1850	1892	1885	1889	1889
350412	44.83	-117.82	3368	BAKER FAA AP	OR	1899	9999	1889	1890	1891	1889	1889	1893	1903	1903	1903
350694	44.07	-121.28	3660	BEND	OR	1901	9999	1902	1903	1901	1902	1902	1902	1908	1908	1908
350854	42.43	-121.10	4378	BLY 3NW	OR	1920	9999	1921	1920	1921	1921	1921	1920	1920	1920	1920
351055	42.03	-124.25	46	BROOKINGS 2SE	OR	1912	9999	1914	1913	1916	1914	1913	1913	1913	1913	1913
351433	44.40	-122.48	860	CASCADIA	OR	1908	9999	1919	1920	1922	1919	1909	1919	1919	1919	1919
351765	45.23	-120.18	2861	CONDON	OR	1894	9999	1894	1895	1895	1894	1894	1900	1900	1900	1900
351862	44.63	-123.20	225	CORVALLIS STATE UNIV	OR	1889	9999	1891	1891	1893	1890	1890	1889	1889	1889	1889
351897	43.78	-123.07	650	COTTAGE GROVE 1S	OR	1916	9999	1918	1918	1919	1918	1917	1916	1916	1916	1916
351946	42.90	-122.13	6475	CRATER LAKE NPS HQ	OR	1919	9999	1921	1921	1920	1921	1920	1919	1919	1919	1919
352135	42.93	-117.33	4225	DANNER	OR	1929	9999	1930	1930	1931	1930	1929	1929	1929	1929	1929
352406	43.67	-123.32	292	DRAIN	OR	1902	9999	1903	1903	1903	1903	1904	1903	1903	1903	1903
352440	45.45	-121.13	1330	DUFUR	OR	1909	9999	1911	1911	1911	1911	1909	1910	1910	1910	1910

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCMNEN	HCONAV2	HCHMX	HCMPCP	URMN	URAV2	URAV2	URMK
352997	45.53	-123.10	180	FOREST GROVE	OR	1889	9999	1892	1892	1892	1890	1902	1902	1902	1902
353095	43.38	-121.20	4609	FREMONT SNW	OR	1909	9999	1919	1919	1919	1910	1918	1918	1918	1918
353445	42.43	-123.35	925	FREMONT PASS	OR	1889	9999	1890	1890	1890	1890	1889	1889	1889	1889
353770	45.45	-122.15	748	HEADWATER'S PORTLAND WTRB	OR	1899	9999	1902	1902	1902	1900	1901	1901	1901	1901
353827	45.37	-119.55	1885	HEPPNER	OR	1889	9999	1890	1890	1890	1889	1900	1900	1900	1900
353847	45.82	-119.27	640	HERMISTON 1SE	OR	1906	9999	1908	1908	1908	1906	1907	1907	1907	1907
354003	45.68	-121.52	500	HOOD RIVER EXPERIMENT STN	OR	1884	9999	1892	1892	1892	1885	1900	1900	1900	1900
354506	42.20	-121.78	4098	KLAMATH FALLS 2SSW	OR	1884	9999	1890	1885	1894	1884	1889	1902	1902	1902
354670	42.22	-120.37	4778	LAKEVIEW 2NNW	OR	1884	9999	1888	1885	1891	1888	1889	1889	1889	1889
355162	43.28	-118.83	4109	MALHEUR REFUGE HDQ	OR	1937	9999	1937	1937	1937	1937	1937	1937	1937	1937
355364	45.22	-122.12	1478	MCKENZIE BRIDGE RS	OR	1902	9999	1902	1903	1903	1902	1912	1912	1912	1912
355593	45.95	-118.42	970	MCMINNVILLE	OR	1888	9999	1891	1888	1891	1891	1890	1899	1899	1899
355734	45.48	-120.72	1870	MILTON-FREEWATER	OR	1914	9999	1915	1916	1916	1915	1914	1914	1914	1914
356032	44.63	-124.05	122	MORO	OR	1897	9999	1900	1898	1902	1898	1900	1900	1900	1900
356073	43.42	-124.25	122	NEWPORT	OR	1887	9999	1892	1891	1892	1892	1891	1891	1891	1891
356426	42.70	-120.53	4360	NORTH BEND FAA AP	OR	1902	9999	1903	1904	1902	1903	1902	1902	1902	1902
356634	45.48	-118.82	1720	PAISLEY	OR	1892	9999	1904	1894	1906	1892	1904	1892	1904	1904
356883	44.35	-120.90	2840	PRINEVILLE 1SE	OR	1908	9999	1909	1910	1909	1909	1909	1909	1909	1909
356907	42.73	-122.52	2482	PRINEVILLE 4NW	OR	1897	9999	1897	1898	1897	1897	1908	1908	1908	1908
357169	42.95	-123.35	680	PROSPECT 2SW	OR	1905	9999	1906	1905	1906	1906	1905	1905	1905	1905
357331	43.22	-123.37	425	RIDDLE	OR	1891	9999	1915	1891	1915	1892	1913	1913	1913	1913
358466	45.12	-122.07	1120	ROSEBURG KOEN	OR	1877	9999	1878	1878	1879	1878	1904	1877	1904	1904
358494	45.45	-123.87	10	THREE LYHX	OR	1923	9999	1925	1925	1926	1925	1925	1925	1925	1925
358746	45.22	-117.88	2765	TILLAMOOK 1W	OR	1889	9999	1894	1889	1899	1894	1894	1894	1894	1894
358797	43.98	-117.25	2240	UNION EXP STN	OR	1911	9999	1911	1911	1911	1912	1911	1911	1911	1911
358937	45.57	-117.53	2923	WALLE	OR	1891	9999	1891	1892	1895	1891	1911	1911	1911	1911
360106	40.65	-75.43	387	WALLOWA	OR	1903	9999	1903	1904	1903	1903	1903	1903	1903	1903
361354	39.93	-77.63	640	ALBENTOWN WSO AP	PA	1911	9999	1922	1924	1925	1922	1922	1922	1922	1922
362537	39.80	-77.27	520	CHAMBERSBURG LESE	PA	1858	9999	1894	1859	1896	1894	1861	1899	1899	1899
362882	42.08	-80.18	732	EISENHOWER NATL HIST SITE	PA	1839	9999	1895	1839	1895	1839	1895	1895	1895	1895
363028	41.38	-79.82	990	ERIE WSO AP	PA	1873	9999	1874	1873	1875	1874	1888	1873	1888	1888
363056	41.02	-75.90	1900	FRANKLIN	PA	1867	9999	1898	1867	1899	1868	1897	1867	1897	1897
363526	41.42	-80.37	1130	FREELAND	PA	1914	9999	1920	1921	1921	1914	1920	1920	1920	1920
363599	40.22	-76.85	340	GREENVILLE 2NE	PA	1871	9999	1894	1872	1898	1894	1872	1894	1894	1894
364385	40.33	-78.92	1214	HARRISBURG CAPITAL CITY	PA	1840	9999	1841	1889	1889	1840	1889	1871	1889	1889
365315	41.83	-75.87	1560	JOHNSTOWN	PA	1868	9999	1894	1869	1894	1869	1894	1871	1894	1894
366233	41.02	-80.37	825	MONTROSE	PA	1903	9999	1904	1905	1906	1904	1903	1903	1903	1903
366689	40.80	-75.62	410	NEW CASTLE IN	PA	1866	9999	1894	1866	1898	1870	1894	1882	1894	1894
367222	40.42	-75.93	360	PALMERTON	PA	1917	9999	1917	1918	1918	1919	1917	1917	1917	1917
367477	41.42	-78.75	1360	READING 4NNW	PA	1839	9999	1900	1866	1898	1900	1839	1898	1898	1898
367931	40.77	-76.87	420	RIDGWAY	PA	1887	9999	1915	1915	1916	1892	1913	1913	1913	1913
368449	40.80	-77.87	1170	SELINGSGROVE 2S	PA	1888	9999	1895	1890	1896	1895	1888	1894	1889	1894
368596	41.00	-75.18	480	STATE COLLEGE	PA	1882	9999	1894	1883	1894	1884	1893	1888	1893	1893
368905	41.75	-76.42	750	STROUDSBURG	PA	1910	9999	1912	1912	1914	1912	1911	1911	1911	1911
369050	39.92	-79.72	956	TOWANDA LESE	PA	1894	9999	1894	1894	1896	1894	1894	1894	1894	1894
369050	39.92	-79.72	956	UNIONTOWN 1NE	PA	1888	9999	1895	1890	1895	1890	1894	1889	1894	1894

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNMX	HCNPPC	URMN	UPAY2	URAY2	URMX
369298	41.85	-79.15	1210	WARREN	PA	1885	9999	1897	1897	1900	1897	1886	1896	1896	1895
369408	41.70	-77.27	1863	WELLSBORO 4SSE	PA	1879	9999	1898	1880	1897	1880	1880	1897	1879	1897
369464	39.97	-75.63	450	WEST CHESTER 1W	PA	1817	1992	1893	1894	1894	1818	1893	1893	1843	1893
369728	41.25	-76.92	527	WILLIAMSPORT WSO AP	PA	1873	9999	1896	1874	1895	1874	1895	1888	1895	1895
369933	39.92	-76.75	390	YORK PUMP STATION 3SSW	PA	1886	9999	1895	1888	1894	1888	1894	1888	1894	1894
370996	41.17	-71.58	110	BLOCK ISLAND STATE AP	RI	1880	9999	1882	1880	1883	1882	1884	1880	1884	1884
374266	41.48	-71.53	100	KINGSTON	RI	1888	9999	1891	1889	1890	1889	1889	1889	1889	1889
376698	41.73	-71.43	51	PROVIDENCE WSO AP	RI	1831	9999	1886	1831	1888	1831	1884	1835	1884	1884
380074	33.60	-81.68	400	AIKEN AVE	SC	1884	9999	1894	1857	1894	1854	1884	1884	1893	1893
380165	34.53	-82.67	800	ANDERSON	SC	1884	9999	1901	1885	1903	1884	1901	1884	1901	1901
380559	32.38	-80.77	20	BEAUFORT 7SW	SC	1862	9999	1889	1862	1893	1889	1863	1892	1891	1893
380764	33.37	-81.32	324	BLACKVILLE 3W	SC	1884	9999	1889	1884	1890	1885	1892	1891	1892	1892
381277	34.08	-82.58	530	CALHOUN FALLS	SC	1892	9999	1918	1918	1917	1893	1917	1917	1917	1917
381310	34.25	-80.65	140	CAMDEN 3W	SC	1849	9999	1906	1854	1909	1851	1906	1884	1905	1906
381549	32.78	-79.93	10	CHARLESTON CITY	SC	1738	9999	1872	1824	1871	1872	1807	1893	1886	1893
381588	34.70	-79.88	140	CHEPAW	SC	1882	9999	1889	1883	1891	1889	1882	1893	1884	1893
381770	34.68	-82.82	819	CLEMSON UNIVERSITY	SC	1892	9999	1896	1897	1896	1896	1892	1896	1896	1896
381944	33.98	-81.02	242	COLUMBIA U OF SC	SC	1872	9999	1887	1873	1889	1887	1873	1891	1887	1891
381997	33.83	-79.05	20	CONWAY	SC	1888	9999	1890	1889	1893	1888	1893	1893	1893	1893
382260	34.30	-79.88	150	DARLINGTON	SC	1893	9999	1902	1895	1902	1896	1901	1893	1901	1901
383468	33.35	-79.25	10	GEORGETOWN 2E	SC	1893	9999	1894	1894	1895	1894	1894	1893	1893	1893
383747	34.17	-82.22	957	GREENVILLE-SPARTANBURG AP	SC	1884	9999	1894	1885	1895	1878	1893	1884	1893	1893
383754	34.17	-82.20	615	GREENWOOD 3W	SC	1884	9999	1889	1884	1888	1884	1891	1884	1891	1891
384690	34.55	-80.58	503	KERSHAW	SC	1916	1993	1916	1916	1918	1916	1916	1916	1916	1916
384753	33.65	-79.82	60	KINGSTREE 1SE	SC	1882	9999	1889	1882	1888	1882	1891	1882	1891	1891
385017	34.50	-82.03	589	LAURENS	SC	1901	9999	1902	1901	1904	1902	1901	1901	1901	1901
385200	34.20	-81.42	711	LITTLE MOUNTAIN	SC	1893	9999	1895	1894	1898	1895	1894	1894	1894	1894
385209	34.28	-81.62	476	NEWBERRY	SC	1887	9999	1893	1887	1895	1887	1893	1887	1893	1893
386527	33.50	-80.87	180	ORANGEBURG 2	SC	1916	9999	1917	1916	1916	1916	1916	1916	1916	1916
387631	33.98	-81.77	489	SALUDA	SC	1902	9999	1903	1902	1904	1903	1902	1902	1902	1902
387722	34.63	-81.52	520	SANTUCK	SC	1893	9999	1896	1893	1895	1896	1893	1895	1895	1895
388426	32.98	-80.18	35	SUMMERVILLE	SC	1898	9999	1898	1900	1902	1900	1900	1898	1898	1898
388440	33.93	-80.35	177	SUNTER	SC	1901	9999	1901	1903	1903	1903	1901	1901	1901	1901
388887	34.75	-83.08	980	WALHALLA	SC	1889	9999	1896	1891	1896	1891	1900	1900	1900	1900
389350	34.93	-81.03	690	WINNERSBORO	SC	1887	9999	1888	1887	1888	1888	1889	1887	1887	1892
389469	32.68	-80.85	25	YEMASSEE COLLEGE	SC	1899	9999	1900	1901	1900	1901	1901	1900	1900	1900
390020	45.45	-98.43	1296	ABERDEEN WSO AP	SD	1882	9999	1897	1883	1895	1883	1895	1891	1895	1895
390043	43.50	-99.07	1680	ACADEMY 2NE	SD	1898	9999	1894	1892	1897	1894	1890	1893	1893	1893
390128	43.65	-97.78	1350	ALEXANDRIA	SD	1882	9999	1893	1882	1897	1893	1883	1887	1893	1893
391392	43.30	-96.67	1345	CANTON 4WNW	SD	1889	9999	1896	1889	1897	1896	1889	1896	1896	1896
391739	44.88	-97.73	1780	CLARK	SD	1889	9999	1894	1889	1895	1894	1889	1893	1893	1893
391972	43.97	-101.87	2414	COTTONWOOD 2E	SD	1909	9999	1910	1910	1910	1910	1909	1909	1909	1909
392429	45.05	-101.60	2370	DUPREE	SD	1922	9999	1923	1923	1923	1923	1922	1922	1922	1922
392757	45.78	-99.63	1870	EUREKA	SD	1897	9999	1897	1897	1897	1897	1899	1898	1898	1898
392927	45.03	-99.13	1570	FAULKTON 1NW	SD	1892	9999	1894	1893	1895	1894	1893	1892	1893	1893

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNAV2	HCNMX	HCNCP	URMIN	URAV2	URAV2	URMK
393029	44.03	-98.07	1231	FORESTBURG 3NE	SD	1891	9999	1894	1891	1893	1894	1891	1893	1891	1893	1893
393217	44.07	-99.07	1720	GANN VALLEY 4NW	SD	1886	9999	1894	1889	1895	1894	1888	1893	1891	1893	1893
393832	44.52	-99.47	1890	HIGHMORE 1W	SD	1887	9999	1894	1887	1898	1894	1888	1894	1887	1894	1894
394007	43.43	-103.47	3560	HOT SPRINGS	SD	1890	9999	1898	1898	1900	1898	1899	1897	1897	1897	1897
394037	44.02	-97.52	1560	HOWARD	SD	1897	9999	1895	1892	1895	1895	1890	1893	1890	1893	1893
394516	43.92	-99.87	1700	KENNEBEC	SD	1892	9999	1894	1892	1894	1894	1893	1893	1892	1893	1893
395456	45.15	-98.50	1290	MELLETTTE	SD	1892	9999	1896	1893	1898	1896	1893	1895	1892	1895	1895
395481	43.23	-97.58	1324	MENNO	SD	1896	9999	1896	1896	1898	1896	1896	1896	1896	1896	1896
395536	45.20	-96.63	1160	MILBANK 2SSW	SD	1889	9999	1893	1890	1896	1893	1889	1893	1890	1893	1893
395891	43.88	-100.70	2320	MURDO	SD	1907	9999	1908	1909	1908	1908	1907	1908	1908	1908	1908
396170	44.45	-100.42	1660	OAHE DAM	SD	1909	9999	1910	1909	1913	1910	1909	1909	1909	1909	1909
396597	44.38	-100.28	1726	PIERRE FAA AP	SD	1866	9999	1891	1868	1894	1891	1868	1891	1890	1891	1891
396947	44.12	-103.28	3450	RAPID CITY	SD	1888	9999	1888	1890	1891	1888	1889	1894	1894	1894	1894
398522	42.75	-96.92	1190	VERMILLION 2SE	SD	1883	9999	1894	1885	1893	1894	1883	1893	1890	1894	1894
398932	44.92	-97.15	1746	WATERTOWN FAA AP	SD	1891	9999	1894	1891	1896	1894	1892	1893	1891	1893	1893
399442	43.50	-100.48	2180	WOOD	SD	1913	9999	1914	1913	1914	1914	1913	1913	1913	1913	1913
401790	36.55	-87.37	382	CLARKSVILLE SEWAGE PLANT	TN	1854	9999	1891	1854	1891	1891	1855	1890	1883	1890	1890
402024	35.00	-84.38	1535	COPPERHILL	TN	1914	9999	1914	1916	1915	1914	1915	1914	1914	1914	1914
402108	35.57	-89.67	310	COVINGTON 1W	TN	1883	9999	1894	1883	1894	1894	1885	1893	1883	1893	1893
402302	36.02	-85.13	1810	CROSSVILLE EXPERIMENT STN	TN	1912	9999	1912	1912	1912	1912	1912	1912	1912	1912	1912
402489	36.07	-87.38	780	DICKSON	TN	1884	9999	1901	1886	1902	1901	1885	1900	1887	1900	1900
402589	36.48	-87.85	475	DOVER 1W	TN	1897	9999	1898	1899	1900	1898	1900	1898	1898	1898	1898
404561	35.62	-88.83	400	JACKSON EXPERIMENT STN	TN	1891	9999	1900	1892	1900	1899	1899	1900	1891	1900	1900
405187	35.45	-86.80	787	LEWISBURG EXPERIMENT STN	TN	1888	9999	1899	1888	1899	1899	1889	1899	1888	1899	1899
405882	35.68	-85.80	940	MCMINNVILLE	TN	1872	9999	1895	1872	1897	1895	1873	1894	1888	1894	1894
406371	35.92	-86.37	550	MURFREESBORO 5N	TN	1882	9999	1896	1884	1896	1896	1882	1894	1883	1894	1894
406534	35.98	-83.20	1036	NEWPORT 1NW	TN	1888	9999	1896	1888	1896	1896	1888	1896	1888	1896	1896
407884	36.42	-82.98	1355	ROGERSVILLE 1NE	TN	1883	9999	1896	1883	1897	1896	1883	1896	1883	1896	1896
409155	35.35	-86.20	1048	TULLAHOVA	TN	1889	9999	1896	1890	1897	1896	1890	1896	1886	1896	1896
409219	36.40	-89.05	350	UNION CITY	TN	1884	9999	1896	1884	1897	1896	1884	1895	1886	1895	1895
409502	35.30	-87.77	750	WAYNESBORO	TN	1884	9999	1897	1885	1899	1897	1885	1897	1884	1897	1897
410120	32.73	-99.28	1420	ALBANY	TX	1892	9999	1904	1893	1905	1904	1893	1902	1892	1902	1902
410144	27.73	-98.07	201	ALICE	TX	1892	9999	1894	1893	1894	1894	1893	1893	1893	1893	1893
410174	30.37	-103.67	4480	ALPINE	TX	1900	9999	1900	1902	1900	1900	1901	1900	1900	1900	1900
410493	31.73	-99.98	1755	BALLINGER 2NW	TX	1895	9999	1897	1896	1897	1897	1895	1896	1895	1896	1896
410498	30.98	-103.75	3220	BALMORHEA	TX	1923	9999	1924	1924	1924	1924	1924	1923	1923	1923	1923
410639	28.45	-97.70	255	BEEVILLE SNE	TX	1895	9999	1897	1896	1898	1897	1896	1896	1895	1896	1896
410832	30.10	-98.42	1370	BLANCO	TX	1896	9999	1897	1896	1898	1897	1897	1896	1896	1896	1896
410902	29.80	-98.72	1422	BOERNE	TX	1876	9999	1906	1878	1907	1906	1878	1904	1878	1904	1904
411700	35.53	-102.25	3191	BOYS RANCH	TX	1923	9999	1924	1925	1925	1924	1925	1923	1923	1923	1923
411048	30.17	-96.40	313	BRENHAM	TX	1885	9999	1897	1885	1899	1897	1885	1896	1885	1896	1896
411138	31.72	-99.00	1385	BROWNWOOD	TX	1888	9999	1894	1889	1897	1894	1888	1894	1889	1894	1894
411528	28.33	-99.63	560	CATARINA	TX	1910	9999	1916	1917	1918	1916	1910	1916	1916	1916	1916
411772	33.63	-95.03	435	CLARKSVILLE 2NE	TX	1870	9999	1903	1871	1903	1903	1872	1903	1885	1903	1903
412015	27.77	-97.50	41	CORPUS CHRISTI WSO AP	TX	1887	9999	1888	1887	1890	1888	1888	1887	1887	1887	1887
412019	32.08	-96.47	425	CORSICANA	TX	1874	9999	1897	1874	1900	1897	1876	1896	1874	1896	1896

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNAV2	HCNMX	HCNPCP	URMNM	URAV2	URAV2	URMX
412121	33.65	-101.25	3010	CROSBYTON	TX	1886	9999	1895	1887	1894	1895	1886	1894	1899	1894	1894
412266	29.05	-96.23	70	DANEVANG 1W	TX	1896	9999	1898	1897	1899	1896	1898	1896	1896	1896	1896
412598	32.10	-98.33	1502	DUBLIN	TX	1890	9999	1896	1896	1900	1896	1895	1896	1895	1896	1896
412679	28.70	-100.48	805	EAGLE PASS	TX	1849	9999	1896	1849	1896	1896	1850	1896	1870	1896	1896
412797	31.80	-106.40	3918	EL PASO WSO AP	TX	1877	9999	1878	1878	1890	1879	1878	1890	1908	1908	1907
412906	28.03	-99.42	590	ENCINAL	TX	1907	9999	1908	1908	1909	1908	1907	1908	1908	1908	1907
413063	27.23	-98.13	120	FALFURRIAS	TX	1907	9999	1908	1908	1907	1908	1907	1907	1907	1907	1907
413183	29.67	-97.12	520	FALFURRIAS	TX	1908	9999	1909	1909	1910	1909	1908	1908	1908	1908	1908
413280	30.88	-102.87	2980	FORT STOCKTON	TX	1859	9999	1904	1859	1905	1904	1860	1904	1894	1904	1904
413420	33.63	-97.07	870	GAINESVILLE 5ENE	TX	1889	9999	1895	1889	1894	1894	1890	1893	1889	1893	1893
413734	33.15	-96.12	535	GREENVILLE	TX	1900	9999	1901	1900	1903	1901	1901	1900	1900	1900	1900
413873	29.47	-96.95	275	HALLETTSVILLE 2N	TX	1891	9999	1894	1891	1896	1893	1892	1893	1891	1893	1893
413992	33.17	-99.75	1600	HASKELL	TX	1890	9999	1894	1890	1894	1894	1891	1894	1891	1894	1894
415018	31.05	-98.18	1024	LAMPASAS	TX	1888	9999	1897	1888	1899	1896	1888	1896	1888	1896	1896
415196	30.05	-94.80	35	LIBERTY	TX	1903	9999	1905	1904	1908	1905	1903	1904	1904	1904	1904
415272	30.75	-98.68	1040	LLANO	TX	1891	9999	1902	1892	1905	1902	1892	1902	1891	1902	1902
415429	29.67	-97.65	398	LULING	TX	1882	9999	1888	1883	1889	1888	1888	1888	1882	1888	1888
415618	32.53	-94.35	352	MARSHALL	TX	1892	9999	1895	1893	1896	1894	1892	1893	1892	1893	1893
415707	31.13	-102.20	2450	MCCAMEY	TX	1932	9999	1933	1933	1932	1932	1932	1932	1932	1932	1932
415869	31.68	-96.48	535	MEXIA	TX	1888	9999	1905	1889	1904	1904	1889	1904	1889	1904	1904
416135	34.23	-102.73	3825	MULESHOE 1	TX	1921	9999	1927	1928	1927	1927	1922	1927	1927	1927	1927
416276	29.73	-98.12	710	NEW BRAUNFELS	TX	1853	9999	1891	1854	1891	1891	1855	1891	1874	1891	1891
416892	31.42	-103.50	2610	PECOS	TX	1889	9999	1904	1889	1905	1904	1890	1909	1909	1909	1909
417079	34.18	-101.70	3370	PLAINVIEW	TX	1889	9999	1895	1890	1898	1894	1889	1894	1894	1894	1894
417336	34.25	-99.68	1495	QUANAH 5SE	TX	1891	9999	1895	1893	1897	1894	1891	1893	1891	1893	1893
417622	26.38	-98.87	176	RIO GRANDE CITY 3W	TX	1849	9999	1897	1849	1896	1897	1850	1904	1904	1904	1904
417945	29.53	-98.47	788	SAN ANTONIO WSFO	TX	1846	9999	1886	1846	1887	1885	1850	1892	1887	1896	1896
418201	32.72	-102.67	3340	SEMINOLE	TX	1922	9999	1923	1922	1923	1923	1923	1922	1922	1922	1922
418433	32.72	-100.92	2335	SNYDER	TX	1889	9999	1912	1891	1911	1911	1890	1911	1898	1911	1911
418692	36.35	-102.08	3693	SPRATFORD	TX	1911	9999	1911	1911	1913	1911	1913	1913	1911	1913	1913
418910	31.08	-97.32	635	TEMPLE	TX	1882	9999	1891	1882	1891	1893	1882	1891	1882	1891	1891
419532	32.77	-97.82	1065	WEATHERFORD	TX	1882	9999	1897	1882	1897	1899	1882	1897	1889	1897	1897
420086	37.43	-112.48	7040	ALTON	UT	1915	9999	1916	1917	1917	1916	1917	1915	1915	1915	1915
420519	38.30	-112.65	5940	BEAVER	UT	1889	9999	1893	1894	1899	1893	1890	1911	1911	1911	1911
420738	37.62	-109.48	6040	BLANDING	UT	1904	9999	1904	1904	1908	1904	1905	1906	1906	1906	1906
420788	37.28	-109.55	4315	BLUFF	UT	1911	9999	1911	1911	1915	1911	1911	1911	1911	1911	1911
421731	41.55	-112.12	4220	CORINNE	UT	1870	9999	1897	1870	1899	1898	1870	1897	1874	1897	1897
422101	39.28	-112.65	4590	DESERET	UT	1891	9999	1893	1892	1895	1891	1892	1893	1891	1893	1893
422253	40.17	-110.40	5520	DUCHESNE	UT	1906	9999	1906	1906	1906	1908	1908	1906	1906	1906	1906
422418	39.95	-111.95	4690	ELBERTA	UT	1902	9999	1904	1903	1904	1903	1903	1902	1902	1902	1902
422592	37.77	-111.60	5810	ESCALANTE	UT	1901	9999	1901	1901	1901	1902	1902	1901	1901	1901	1901
422828	38.95	-112.32	5120	FILLMORE	UT	1892	9999	1895	1893	1895	1894	1893	1893	1892	1893	1893
422996	40.28	-109.87	5050	FORT DUCHESNE	UT	1887	9999	1898	1887	1898	1897	1888	1909	1887	1909	1909
423418	39.00	-110.17	4070	GREEN RIVER AVIATION	UT	1893	9999	1893	1893	1894	1894	1893	1893	1893	1893	1893
423611	38.37	-110.72	4308	HANKSVILLE	UT	1910	9999	1911	1911	1911	1911	1910	1910	1910	1910	1910

STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNNM	HCAV2	HCAV2	HCNAV2	HCNMX	HCNCP	URMH	URAV2	URAV2	URMX
423809	40.50	-111.42	5630	HEBER	UT	1893	9999	1893	1893	1895	1894	1894	1894	1893	1893	1893	1893
423896	39.48	-111.02	7280	HIAWATHA	UT	1916	1992	1922	1923	1925	1922	1922	1916	1921	1921	1921	1921
424508	37.05	-112.53	4950	FANAB	UT	1872	9999	1903	1903	1905	1902	1902	1877	1904	1902	1905	1905
424856	41.82	-111.32	5980	LAKETOWN	UT	1900	9999	1902	1900	1902	1901	1902	1900	1900	1900	1900	1900
425065	39.57	-111.87	5300	LEVAN	UT	1889	9999	1896	1892	1897	1896	1896	1890	1895	1890	1895	1895
425148	38.40	-111.65	7070	LOA	UT	1892	9999	1894	1892	1895	1893	1893	1893	1895	1895	1895	1895
425186	41.75	-111.80	4790	LOGAN USU	UT	1890	9999	1893	1891	1896	1894	1894	1890	1893	1891	1893	1893
425402	39.25	-111.63	5740	MANTI	UT	1892	9999	1894	1894	1894	1894	1894	1893	1893	1893	1893	1893
425733	38.58	-109.55	4021	MOAB	UT	1889	9999	1894	1889	1896	1893	1891	1893	1889	1889	1893	1893
425752	37.80	-113.92	5460	MODENA	UT	1901	9999	1901	1901	1901	1901	1901	1903	1901	1901	1901	1901
425826	41.03	-111.55	5080	MORGAN COMO SPRINGS	UT	1903	9999	1904	1904	1904	1904	1904	1903	1903	1903	1903	1903
426404	41.25	-111.95	4350	OGDEN PIONEER P H	UT	1870	9999	1904	1871	1902	1903	1871	1902	1870	1902	1902	1902
426601	37.82	-112.43	6610	PANGUITCH	UT	1904	9999	1912	1911	1913	1912	1904	1911	1911	1911	1911	1911
426886	37.83	-112.83	6000	PAROWAN POWER PLANT	UT	1890	9999	1894	1890	1893	1894	1891	1893	1893	1890	1893	1893
427260	38.77	-112.08	5300	RICHFIELD RADIO K SVC	UT	1889	9999	1894	1890	1896	1894	1889	1889	1909	1909	1909	1909
427318	41.15	-112.00	4400	RIVERDALE	UT	1914	1991	1915	1914	1914	1915	1915	1914	1914	1914	1914	1914
427516	37.12	-113.57	2770	SAINTE GEORGE	UT	1877	9999	1894	1890	1895	1893	1878	1901	1889	1901	1893	1893
427714	39.25	-112.10	5300	SCIPIO	UT	1894	9999	1896	1896	1895	1895	1895	1895	1895	1895	1895	1895
427909	40.55	-111.50	6010	SNAKE CREEK PH	UT	1914	9999	1914	1915	1914	1916	1914	1914	1914	1914	1914	1914
428119	40.08	-111.60	4720	SPANISH FORK PH	UT	1909	9999	1909	1910	1909	1909	1909	1909	1909	1909	1909	1909
428705	38.97	-109.72	5100	THOMPSON	UT	1911	9999	1911	1912	1911	1913	1911	1911	1911	1911	1911	1911
428771	40.53	-112.30	5070	TOOELE	UT	1896	9999	1896	1896	1899	1898	1896	1896	1896	1896	1896	1896
428973	40.37	-111.90	4497	UTAH LAKE LEHI	UT	1904	9999	1905	1905	1909	1905	1904	1904	1905	1905	1905	1905
429111	40.45	-109.52	5260	VERNAL AP	UT	1894	9999	1929	1917	1928	1929	1929	1929	1928	1915	1928	1928
429382	40.73	-114.03	4237	WENDOVER AMOS	UT	1911	9999	1911	1912	1912	1913	1911	1911	1911	1911	1911	1911
429595	41.53	-111.15	6315	WOODRUFF	UT	1897	9999	1899	1897	1900	1898	1899	1899	1902	1902	1902	1902
429717	37.22	-112.98	4050	ZION NATIONAL PARK	UT	1904	9999	1906	1905	1906	1906	1906	1906	1904	1904	1904	1904
431081	44.47	-73.15	332	BURLINGTON AP	VT	1828	9999	1893	1828	1893	1893	1833	1892	1837	1892	1892	1892
431243	43.38	-72.60	800	CAVENDISH	VT	1885	9999	1895	1885	1896	1895	1885	1885	1885	1885	1895	1895
431360	43.98	-72.45	800	CHELSEA	VT	1886	9999	1895	1895	1894	1894	1895	1887	1894	1894	1894	1894
431580	43.95	-73.22	490	CORNWALL	VT	1891	9999	1891	1891	1894	1891	1891	1891	1891	1891	1891	1891
432769	44.92	-72.82	420	ENOSBURG FALLS	VT	1887	9999	1887	1887	1887	1887	1887	1887	1887	1887	1887	1887
435740	44.10	-72.62	1410	NORTHFIELD 3SSE	VT	1853	9999	1895	1854	1895	1895	1856	1894	1883	1894	1894	1894
437054	44.42	-72.02	699	SAINT JOHNSBURY	VT	1891	9999	1893	1892	1895	1893	1892	1891	1891	1891	1891	1891
440766	37.18	-80.42	2000	BLACKSBURG 3SE	VA	1898	9999	1899	1900	1902	1900	1898	1898	1898	1898	1898	1898
440993	37.70	-78.30	225	BREMO BLUFF	VA	1896	9999	1897	1898	1898	1898	1896	1896	1896	1896	1896	1896
441209	37.08	-81.33	3300	BURKES GARDEN	VA	1837	9999	1895	1837	1896	1896	1893	1850	1893	1880	1893	1893
441593	38.03	-78.52	870	CHARLOTTESVILLE 2W	VA	1880	9999	1894	1880	1893	1895	1880	1880	1880	1880	1893	1893
442208	38.45	-78.93	1400	DALE ENTERPRISE	VA	1851	9999	1917	1916	1918	1917	1891	1916	1916	1916	1916	1916
442245	36.58	-79.38	410	DANVILLE	VA	1894	9999	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894
442941	37.33	-78.38	450	FARMVILLE 2N	VA	1897	9999	1898	1897	1897	1897	1897	1897	1903	1903	1903	1903
443192	38.32	-77.45	90	FARMVILLE 2N	VA	1893	9999	1893	1894	1893	1893	1893	1894	1893	1893	1893	1893
444101	37.30	-77.30	40	FREDERICKSBURG NATIONAL PARK	VA	1916	9999	1918	1917	1918	1918	1916	1917	1916	1916	1916	1916
444128	38.00	-79.83	2236	HOT SPRINGS	VA	1892	1991	1894	1893	1892	1892	1893	1892	1892	1892	1892	1892
444876	37.78	-79.43	1060	LEXINGTON	VA	1861	9999	1890	1861	1891	1891	1861	1889	1879	1889	1889	1889
444909	39.12	-77.72	500	LINCOLN	VA	1900	9999	1900	1900	1900	1900	1901	1901	1900	1900	1900	1900

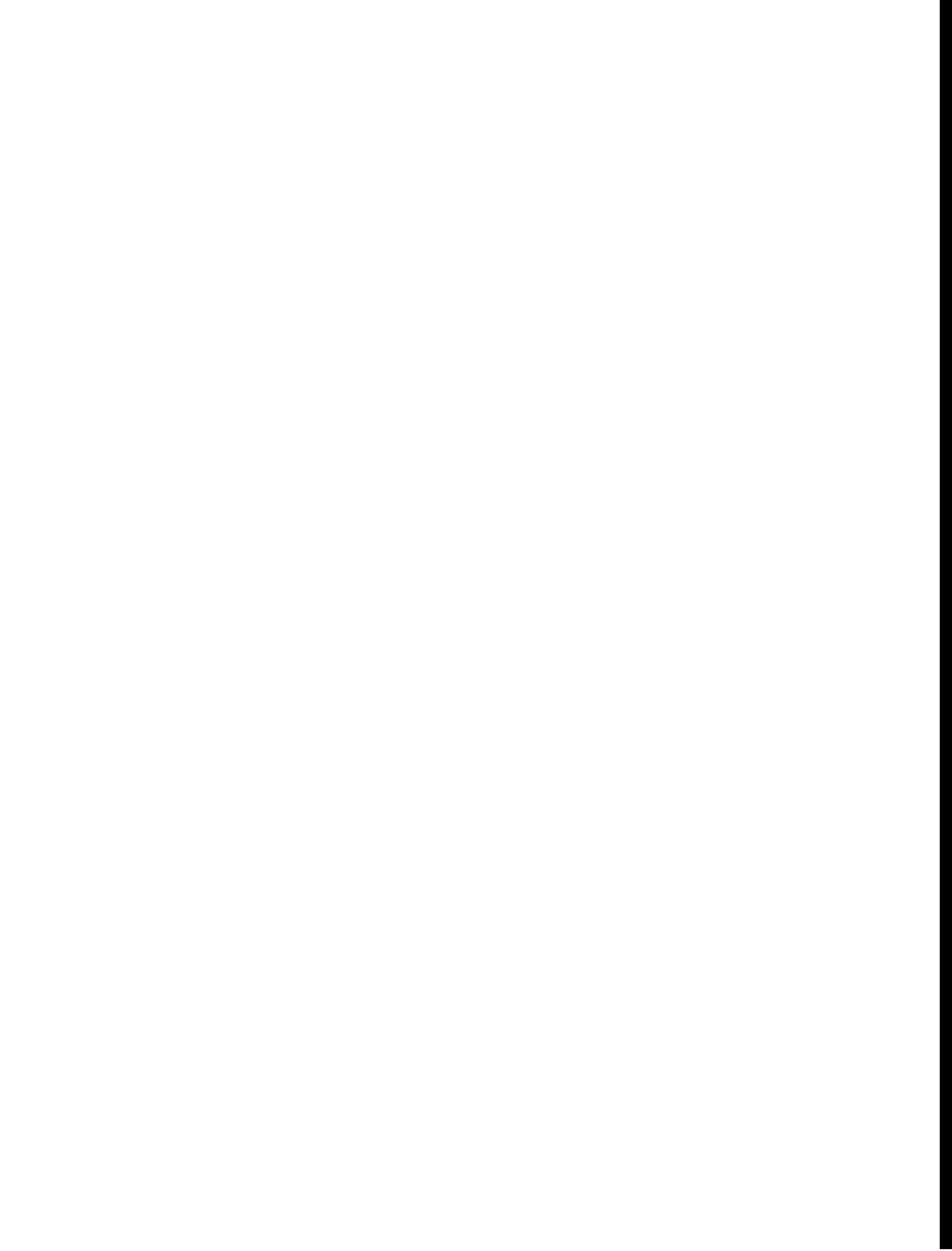
STACOD	LAT	LONG	ELEV	STANAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCNAV2	HCNMX	HCNPCP	URMN	URAV2	URMX
446139	36.90	-76.20	24	NORFOLK WSO AP	VA	1871	9999	1910	1871	1909	1909	1871	1909	1909	1909
446626	36.75	-83.05	1510	PENNINGTON GAP	VA	1931	9999	1932	1932	1931	1931	1932	1931	1931	1931
446712	38.22	-78.12	520	PIEDMONT RESEARCH STN	VA	1907	9999	1907	1907	1907	1907	1907	1907	1907	1907
447338	37.00	-79.90	1232	ROCKY MOUNT	VA	1894	9999	1894	1894	1894	1894	1894	1894	1894	1894
448062	38.15	-79.03	1390	STAUNTON SEWAGE PLANT	VA	1868	9999	1894	1868	1894	1894	1868	1893	1893	1893
449151	37.30	-76.70	70	WILLIAMSBURG 2N	VA	1900	9999	1901	1901	1903	1901	1901	1900	1900	1900
449263	38.90	-78.47	660	WOODSTOCK 2NE	VA	1889	9999	1898	1897	1900	1898	1890	1897	1897	1897
450008	46.97	-123.82	10	ABERDEEN	WA	1891	9999	1891	1891	1892	1892	1893	1895	1895	1895
450587	48.72	-122.52	15	BELLINGHAM 3SSW	WA	1857	9999	1895	1857	1896	1895	1858	1895	1895	1895
450729	49.00	-122.75	60	BLAINE	WA	1893	9999	1894	1894	1893	1893	1893	1896	1896	1896
450945	47.17	-122.00	685	BUCKLEY 1NE	WA	1913	9999	1913	1914	1916	1913	1913	1913	1913	1913
451233	47.42	-121.73	1560	CEDAR LAKE	WA	1898	9999	1910	1910	1912	1911	1898	1909	1909	1909
451276	46.72	-122.95	185	CENTRALIA	WA	1893	9999	1895	1894	1899	1893	1890	1893	1893	1893
451484	48.97	-122.33	64	CLEARBROOK	WA	1903	9999	1904	1903	1904	1904	1904	1903	1903	1903
451504	47.18	-120.95	1920	CLE ELUM	WA	1899	9999	1900	1899	1903	1899	1901	1899	1899	1899
451586	46.88	-117.38	1365	COLFAX 1NW	WA	1881	9999	1893	1893	1895	1893	1881	1892	1892	1892
451654	48.58	-117.80	3000	COLVILLE SNE	WA	1859	9999	1900	1859	1899	1899	1860	1899	1899	1899
451666	48.55	-119.75	2320	CONCONULLY	WA	1894	9999	1895	1894	1899	1895	1895	1895	1896	1896
452007	47.65	-118.13	2440	DAVENPORT	WA	1893	9999	1893	1893	1899	1894	1894	1899	1899	1899
452030	46.32	-118.00	1557	DAYTON 1MSW	WA	1879	9999	1893	1891	1897	1894	1880	1900	1900	1900
452505	46.97	-120.55	1480	ELENSBURG	WA	1894	9999	1893	1886	1894	1893	1884	1893	1893	1893
452675	47.98	-122.18	60	EVERETT	WA	1894	9999	1895	1895	1899	1894	1894	1896	1896	1896
452914	47.95	-124.37	350	FORKS 1E	WA	1907	9999	1908	1908	1910	1908	1907	1908	1908	1908
453226	45.82	-120.82	1700	GOLDENDALE	WA	1905	9999	1906	1906	1906	1907	1905	1905	1905	1905
453284	47.30	-122.87	51	GRAPEVIEW 3SW	WA	1907	9999	1908	1908	1909	1907	1907	1907	1907	1907
454154	46.22	-119.10	390	KENNEWICK	WA	1884	9999	1895	1895	1894	1894	1884	1900	1900	1900
454748	46.37	-124.03	25	LONG BEACH EXP STN	WA	1878	9999	1883	1885	1886	1883	1879	1892	1892	1892
454764	46.75	-121.82	2762	LONGMIRE RAINIER NPS	WA	1909	9999	1911	1911	1909	1909	1910	1909	1909	1909
454769	46.15	-122.92	12	LONGVIEW	WA	1924	9999	1925	1925	1927	1926	1926	1925	1925	1925
455946	48.92	-117.78	1350	NORTHPORT	WA	1910	9999	1910	1910	1910	1911	1911	1910	1910	1910
456039	47.32	-118.70	1530	ODESSA	WA	1902	9999	1904	1904	1904	1905	1904	1903	1903	1903
456096	48.62	-122.80	80	OLGA 2SE	WA	1890	9999	1893	1891	1895	1891	1890	1891	1891	1891
456610	46.48	-117.58	1900	POWEROY	WA	1891	9999	1892	1891	1895	1891	1882	1908	1908	1908
456624	48.12	-123.43	90	PORT ANGELES	WA	1883	9999	1892	1891	1893	1891	1884	1895	1895	1895
456678	48.12	-122.75	100	PORT TOWNSEND	WA	1857	9999	1892	1859	1893	1893	1861	1895	1895	1895
456789	46.77	-117.18	2545	PULLMAN 2NW	WA	1893	9999	1894	1893	1895	1893	1895	1893	1893	1893
456803	47.20	-122.33	50	PUYALLUP EXPERIMENT STN 2W	WA	1924	9999	1915	1916	1914	1915	1915	1914	1914	1914
456914	46.65	-123.72	30	RAYMOND 2S	WA	1895	9999	1896	1895	1895	1897	1896	1895	1895	1895
457059	47.12	-118.37	1830	RITZVILLE 1SSE	WA	1899	9999	1916	1917	1916	1917	1900	1916	1916	1916
457458	47.65	-122.30	19	SEATTLE-URBAN SITE	WA	1909	9999	1909	1910	1911	1910	1911	1909	1909	1909
457507	48.50	-122.23	60	SEDRO WOOLLEY	WA	1898	9999	1896	1897	1898	1897	1897	1896	1896	1896
457773	47.55	-121.85	440	SNOQUALMIE FALLS	WA	1896	9999	1899	1900	1902	1900	1900	1899	1899	1899
457938	47.63	-117.53	2356	SPOKANE WSO AP	WA	1880	9999	1881	1881	1883	1881	1880	1899	1899	1899
458059	48.35	-120.72	1270	STEHEKIN 4NW	WA	1906	9999	1907	1907	1907	1907	1906	1906	1906	1906
458207	46.32	-120.00	747	SUNNYSIDE	WA	1894	9999	1895	1895	1896	1895	1894	1894	1894	1894
458773	45.68	-122.65	210	VANCOUVER 4NNE	WA	1849	9999	1892	1851	1891	1891	1849	1891	1891	1891

STACOD	LAT	LONG	ELEV	STAIAME	STATE	BYRSHF	EYRSHF	HCNMN	HCNAV2	HCIAV2	HCNMX	HCNPPC	URMN	URAV2	URAV2	URMX
459928	46.10	-118.28	1166	WALLA WALLA FAA AP	WA	1872	9999	1885	1873	1886	1885	1875	1903	1903	1903	1903
459012	47.65	-120.07	2620	WATERVILLE	WA	1890	9999	1891	1890	1891	1892	1891	1891	1890	1890	1891
459074	47.42	-120.32	640	WENATCHEE	WA	1912	9999	1912	1913	1912	1913	1912	1912	1912	1912	1912
459238	47.75	-118.67	2230	WILBUR	WA	1892	9999	1893	1895	1897	1894	1893	1893	1892	1893	1893
459376	48.47	-120.18	1755	WINTHROP 1WSW	WA	1904	9999	1908	1906	1908	1906	1908	1906	1906	1906	1906
461220	38.98	-80.22	1455	BUCKHANNON	WV	1887	9999	1892	1891	1895	1893	1888	1893	1891	1893	1893
461330	39.22	-81.12	925	CAIRO 3ENE N BEND SP	WV	1900	9999	1900	1901	1900	1900	1900	1900	1900	1900	1900
463353	37.37	-81.55	1430	GARY	WV	1917	1989	1920	1921	1921	1920	1917	1920	1920	1920	1920
463544	38.93	-80.82	720	GLENVILLE 1ENE	WV	1887	9999	1893	1894	1894	1893	1888	1893	1893	1893	1893
465224	37.85	-80.40	2303	LEWISBURG 3N	WV	1854	9999	1901	1854	1854	1900	1855	1900	1882	1900	1900
465626	39.53	-80.50	1100	MANNINGTON 7WNW	WV	1901	9999	1903	1901	1904	1901	1903	1901	1901	1901	1901
465707	39.40	-77.98	537	MARTINSBURG FAA AIRPORT	WV	1891	9999	1892	1893	1891	1892	1892	1891	1891	1891	1891
466867	39.10	-79.67	1770	PARSONS 1NE	WV	1899	9999	1899	1900	1899	1900	1899	1899	1899	1899	1899
467001	38.62	-80.18	3499	PICKENS 4SSE	WV	1902	9999	1902	1903	1902	1903	1902	1902	1902	1902	1902
468384	38.80	-81.35	740	SPENCER 1SE	WV	1892	9999	1892	1893	1894	1892	1892	1893	1892	1893	1893
469168	40.28	-80.62	660	WELLSBURG WATER TRMT PLANT	WV	1878	9999	1900	1901	1900	1900	1878	1899	1899	1899	1899
469605	37.67	-82.28	670	WILLIAMSON	WV	1900	1993	1900	1901	1903	1900	1900	1900	1900	1900	1900
469683	38.53	-81.92	571	WINFIELD LOCKS	WV	1900	9999	1900	1901	1904	1900	1900	1900	1900	1900	1900
470349	46.57	-90.97	650	ASHLAND EXPERIMENT FARM	WI	1856	9999	1893	1894	1896	1894	1856	1893	1893	1893	1893
470991	44.87	-88.98	1080	BOWLER	WI	1894	9999	1894	1895	1895	1895	1894	1894	1894	1894	1894
471078	42.62	-89.38	790	BRODHEAD	WI	1897	9999	1898	1899	1897	1898	1898	1897	1897	1897	1897
472001	42.68	-90.12	930	DARLINGTON	WI	1886	9999	1891	1889	1891	1892	1886	1891	1888	1891	1891
472839	43.80	-88.45	760	FOND DU LAC	WI	1902	9999	1902	1902	1902	1902	1904	1902	1902	1902	1902
473405	44.12	-89.53	1076	HANCOCK EXPERIMENT FARM	WI	1908	1993	1910	1908	1910	1908	1909	1908	1908	1908	1908
473471	44.40	-90.73	953	HATFIELD HYDRO PLANT	WI	1898	9999	1893	1899	1894	1893	1888	1892	1888	1892	1892
474546	42.83	-90.78	1040	LANCASTER 4WSW	WI	1851	9999	1892	1853	1896	1893	1859	1892	1851	1892	1892
475017	44.10	-87.68	660	MANITOWOC	WI	1851	9999	1914	1913	1913	1915	1913	1913	1913	1913	1913
475120	44.65	-90.13	1250	MARSHFIELD EXPERIMENT FARM	WI	1899	9999	1891	1891	1891	1892	1891	1891	1890	1891	1891
475255	45.13	-90.35	1470	MEDFORD	WI	1899	9999	1894	1896	1894	1895	1894	1894	1887	1894	1894
475474	43.07	-88.03	726	MILWAUKEE MT MARY COL	WI	1893	9999	1905	1904	1907	1903	1904	1903	1903	1903	1903
475516	45.88	-89.73	1580	MINCQUA DAM	WI	1903	9999	1896	1856	1899	1897	1857	1896	1888	1896	1896
475932	44.37	-88.72	805	NEW LONDON	WI	1856	9999	1892	1891	1894	1892	1890	1891	1890	1891	1891
476208	44.90	-87.95	660	ONONTO 4W	WI	1890	9999	1891	1888	1894	1892	1889	1891	1888	1891	1891
476330	44.03	-88.55	750	OSHKOSH	WI	1888	9999	1891	1891	1899	1897	1887	1896	1890	1896	1896
476718	43.52	-89.43	800	PORTAGE	WI	1887	9999	1896	1891	1899	1897	1887	1896	1890	1896	1896
476927	43.03	-91.15	658	PRAIRIE DU CHIEN	WI	1822	9999	1891	1890	1895	1892	1896	1891	1887	1891	1891
476922	42.70	-87.77	595	RACINE	WI	1855	9999	1896	1856	1900	1897	1896	1896	1888	1896	1896
478027	45.82	-91.88	1100	SPOONER EXPERIMENT FARM	WI	1894	9999	1894	1896	1894	1895	1894	1894	1894	1894	1894
478110	44.97	-90.93	1080	STANLEY	WI	1903	9999	1904	1903	1906	1904	1904	1903	1903	1903	1903
478827	43.57	-90.92	1185	VIROQUA 2NW	WI	1889	9999	1892	1889	1892	1891	1891	1891	1889	1891	1891
478919	43.18	-88.73	820	WATERTOWN	WI	1891	9999	1892	1892	1892	1893	1891	1891	1891	1891	1891
480140	43.78	-111.03	6430	ALTA INNW	WY	1909	9999	1910	1910	1910	1910	1909	1909	1909	1909	1909
480540	44.38	-108.05	3837	BASIN	WY	1998	9999	1899	1998	1899	1899	1900	1903	1903	1903	1903
480915	42.25	-111.03	6110	BORDER 3N	WY	1902	1993	1903	1902	1906	1903	1904	1902	1902	1902	1902
481175	44.50	-109.18	5156	BUFFALO BILL DAM	WY	1905	9999	1906	1905	1907	1906	1907	1905	1905	1905	1905
481675	41.15	-104.82	6130	CHEYENNE WFSO	WY	1870	9999	1873	1872	1874	1873	1871	1884	1884	1884	1884

STACOD	LAT	LONG	ELEV	STNAME	STATE	BYRSHF	EYRSHF	HCRMN	HCNAV2	HCNAV2	HCNMX	HCNFCP	URMN	URAV2	URAV2	URMX
481730	41.75	-104.82	5304	CHUGWATER	WY	1900	9999	1900	1901	1901	1900	1900	1900	1900	1900	1900
481905	44.93	-104.20	3570	COLONY	WY	1914	9999	1917	1914	1916	1915	1916	1915	1914	1915	1915
482595	43.23	-108.93	5575	DIVERSION DAM	WY	1907	9999	1908	1908	1911	1908	1907	1907	1907	1907	1907
482715	43.57	-109.63	6960	DUBOIS	WY	1905	9999	1907	1907	1910	1908	1907	1907	1907	1907	1907
483100	41.27	-110.95	6825	EVANSTON IE	WY	1889	9999	1898	1889	1899	1899	1889	1898	1891	1898	1898
484065	41.53	-109.47	6089	GREEN RIVER	WY	1897	9999	1898	1889	1903	1898	1897	1897	1897	1897	1897
485345	44.55	-110.40	7770	LAKE YELLOWSTONE	WY	1904	9999	1905	1904	1908	1905	1904	1904	1904	1904	1904
485415	41.32	-105.68	7266	LARAMIE AP	WY	1866	9999	1892	1866	1895	1892	1868	1892	1887	1892	1892
485830	42.75	-104.48	5090	LUSK ZSW	WY	1889	9999	1891	1889	1893	1892	1889	1893	1889	1893	1893
486195	43.40	-106.28	4815	MIDWEST	WY	1922	9999	1923	1923	1925	1924	1923	1922	1922	1922	1922
486440	43.85	-110.58	6798	MORAN SWNW	WY	1911	9999	1911	1912	1913	1912	1912	1911	1911	1911	1911
486660	43.85	-104.22	4315	NEWCASTLE	WY	1906	9999	1906	1906	1906	1906	1906	1906	1906	1906	1906
487105	42.47	-106.85	5930	PATHFINDER DAM	WY	1899	9999	1899	1899	1901	1899	1899	1899	1899	1899	1899
487115	43.25	-108.68	5440	PAVILLION	WY	1919	9999	1919	1919	1922	1920	1919	1919	1919	1919	1919
487240	41.17	-104.15	5180	PINE BLUFFS 5W	WY	1900	9999	1901	1901	1904	1901	1901	1900	1900	1900	1900
487260	42.87	-109.87	7175	PINEDALE	WY	1906	9999	1906	1907	1907	1907	1907	1919	1906	1919	1919
487388	44.78	-108.75	4370	POWELL FIELD STATION	WY	1907	9999	1908	1907	1909	1908	1907	1907	1907	1907	1907
487760	43.02	-108.38	4950	RIVERTON	WY	1907	9999	1908	1907	1907	1908	1907	1907	1907	1907	1907
487845	41.60	-109.07	6741	ROCK SPRINGS FAA AP	WY	1908	9999	1909	1908	1908	1909	1908	1908	1908	1908	1908
487990	41.45	-106.82	6790	SARATOGA	WY	1889	9999	1900	1891	1902	1900	1891	1900	1897	1900	1900
488160	44.83	-106.83	3750	SHERIDAN FIELD STATION	WY	1891	9999	1892	1891	1894	1893	1891	1898	1898	1898	1898
488995	42.08	-104.22	4098	TORRINGTON EXP FARM	WY	1922	9999	1923	1923	1923	1924	1922	1922	1922	1922	1922
489615	42.12	-104.95	4638	WHEATLAND 4N	WY	1889	9999	1891	1891	1892	1892	1889	1893	1890	1897	1897
489770	44.02	-107.97	4060	WORLAND	WY	1907	9999	1909	1908	1909	1907	1908	1907	1907	1907	1907
489905	44.97	-110.70	6230	YELLOWSTONE PARK MAMMOTH	WY	1886	9999	1887	1886	1888	1888	1889	1903	1903	1903	1902



Appendix B: Quality Assessments of the Station Data



Data Quality Assessments for each Station in the U.S. HCN

The quality assessment files provided with this database (listed in Tables B-2 through B-4) contain several variables that may be used to compare the length and quality of a station's record with those of its neighbors, as well as the entire network. To assist the data user, several relative ranking variables were derived and are included in the quality assessment files.

This example illustrates how the rank variables, derived from the following eight data variables in the mean temperature quality assessment file, may be used to determine the relative quality of a station's data (the selection of the most important variable is dependent on the research goal to be achieved).

1. The beginning period of record for original data (BPORDATE).
2. The percent of original data available for the entire station record (PERORIG).
3. The serial completion date for the adjusted data (ASCDATE).
4. The percent of data estimated since ASCDATE (PERASCD).
5. The average confidence factor over the period of adjusted data (CONF).
6. The number of potential discontinuities since ASCDATE (PDASCD).
7. For the **adjusted** data, the consistency of the station on an annual basis with its nearest 20 neighbors over the past 40 years (CONS40).
8. For the **adjusted** data, the consistency of the station on an annual basis with its nearest 20 neighbors for the full period of record (CONSF).

The goal of this example is to identify the station with the best record from three closely spaced stations (i.e., Scottsboro, Talladega, and Thomasville, Alabama). The selection criteria for the "best" station will be (1) station record with the fewest discontinuities, (2) best adjusted data over the last 40 years, and (3) lowest percentage of estimated data since the serially complete date.

To judge the relative quality of each station in the network, each variable was ranked between 0 and 9, and the assigned numeric value was saved in a "new" rank variable. These values are related to the decile rankings of each category; 0 implies the 1 to 10 percentile, 1 implies 10 to 20 percentile, whereas 9 implies 90 to 100 percentile. The lowest decile values are associated with the following "good" qualities in the eight variables:

1. Longest record (BPORDATE, R1).
2. Greatest percent of original data available (PERORIG, R2).
3. Longest serially complete adjusted record (ASCDATE, R4).
4. Smallest amount of estimated data since ASCDATE (PERASCD, R5).
5. Lowest (i.e., best) confidence factor (CONF, R6).
6. Fewest discontinuities since ASCDATE (PDASCD, PDR3).
7. Most consistent, lowest difference, short-term (CONS40, R7).
8. Most consistent, lowest difference, long-term (CONSF, R8).

The relative rank variables associated with the eight data variables for the U.S. HCN mean-temperature quality-assessment file are R1, R2, R4, R5, R6, PDR3, R7, and R8.

The usefulness of these numeric ranking variables is best demonstrated by inspecting Figures B-1 through B-3, which show the original and adjusted annual mean temperature data for the three stations. Note that even at this resolution (annual versus monthly data) it is difficult to identify breaks in the record of less than 2 or 3 years. In fact, the only thing these figures show well is that the three stations have similar beginning years of record and appear to be correlated.

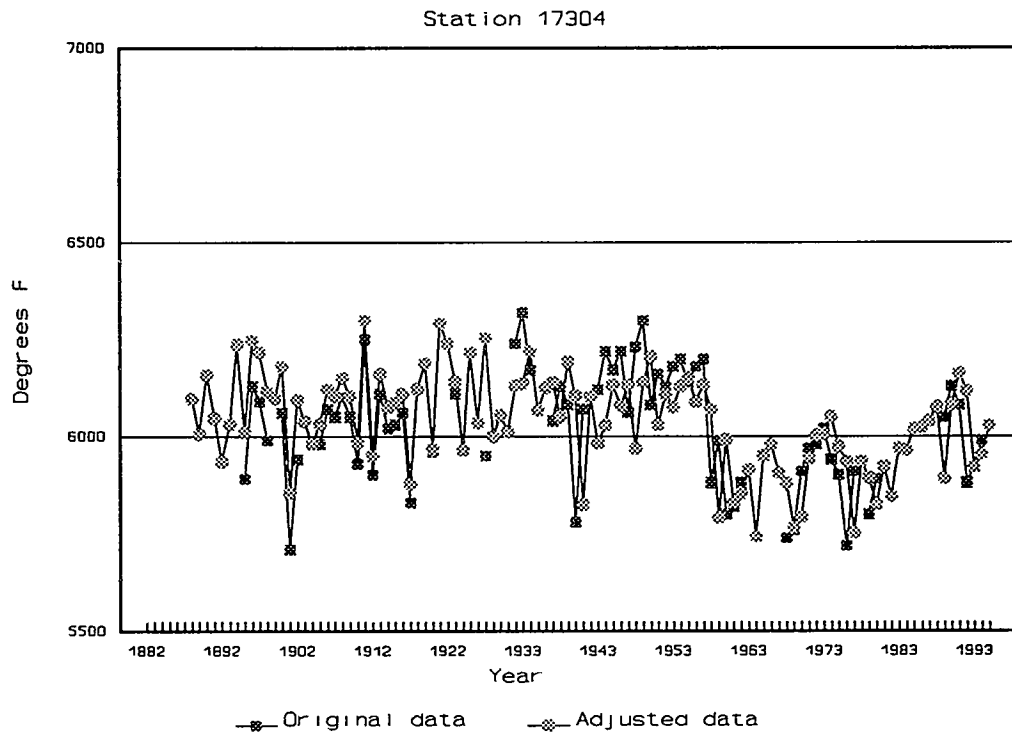


Figure B-1. Original and adjusted annual mean temperature data for Scottsboro, Alabama.

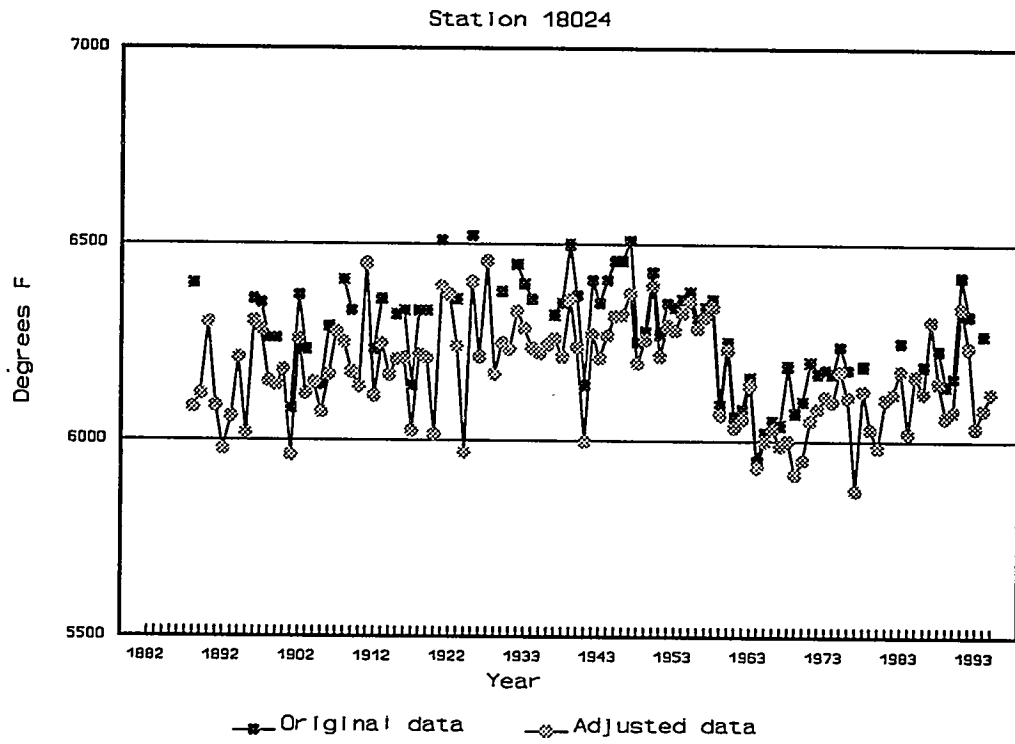


Figure B-2. Original and adjusted annual mean temperature data for Talladega, Alabama.

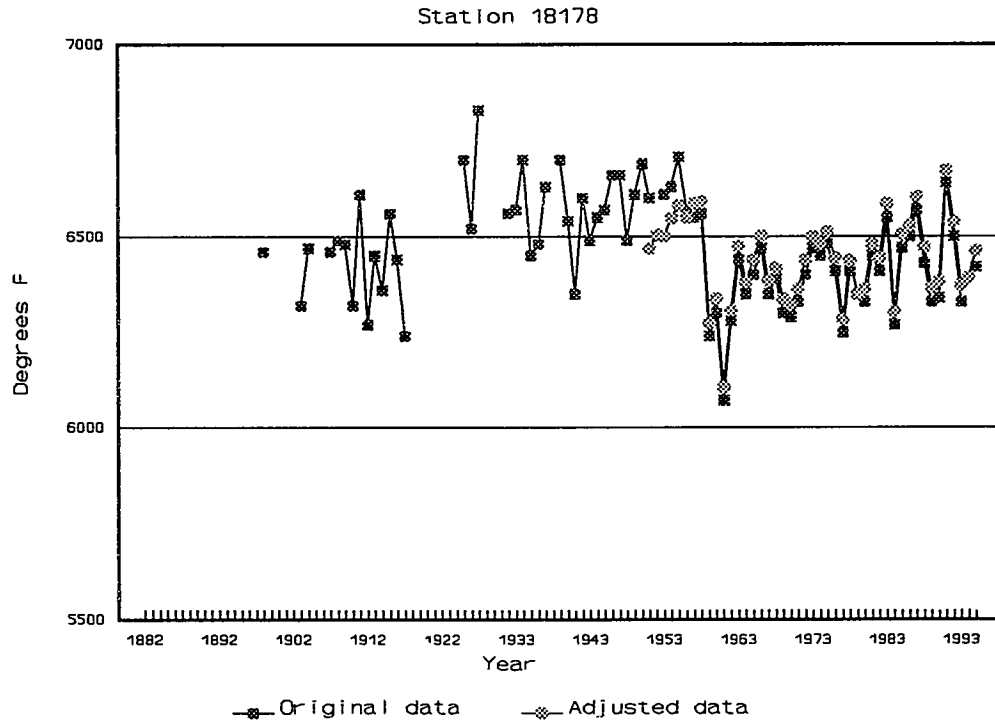


Figure B-3. Original and adjusted annual mean temperature data for Thomasville, Alabama.

The eight rank variables and serially complete date variable may be used to compare the quality of these station's records. In this example, the values of each of the nine variables (ACSDATE, R1, R2, R4, R5, R6, PDR3, R7, and R8) have been extracted from the QA94MEAN.ASC file and are shown in Table B-1.

Table B-1. The serial complete date and eight relative rank variables with values between 0 and 9. Lower rank values indicate a longer period of record or higher data quality

Station name and number	ACSDATE	R1	R2	R4	R5	R6	PDR3	R7	R8
Scottsboro, AL 017304	09/1887	2	8	1	9	4	9	9	6
Talladega, AL 018024	01/1888	3	7	1	8	8	7	3	1
Thomasville, AL 018178	03/1955	4	5	9	0	0	0	5	6

The rank variables show the following: R1, the relative length of record (Scottsboro has the longest record); R2, the relative amount of original data available (Thomasville has the most); R4, the length of serially complete data (Thomasville has a relatively short record); R5, the relative amount of data estimated since the serially complete date (Thomasville has the least amount of estimated data); R6, the relative confidence level of the adjusted data (Thomasville has lower error bounds on its adjusted data); PDR3, the relative number of potential discontinuities in the adjusted record (Thomasville has the fewest); R7, the relative consistency of the record in the last 40 years (Talladega has the best short-term consistency); and R8, the relative consistency of the record over the full period of record (Talladega has the best long-term consistency).

Recall that our three selection criteria for the "best" station were as follows, station record with the fewest discontinuities, best adjusted data over the last 40 years, and least percentage of estimated data since the serial complete date. The Thomasville, Alabama, station would be selected as it has the fewest potential discontinuities (PDR3), lowest error bounds on its adjusted data (R6), a relatively consistent record over the last 40 years (R7), and least amount of estimated data (R5). However, if we had needed data from a station with at least 100 years of serially complete date, then Thomasville would not have been considered, and we would have selected Talladega, Alabama, as the best station for our study. In either case, the relative ranking variables are useful tools for station selection.

Table B-2. Listing of the maximum and minimum temperature quality assessment file (QA94MXMN.ASC)

MAXIMUM/MINIMUM TEMPERATURE

ST	STATE, STATION NAME & QUALIFIER	LAT-N	LONG-W	ELEV (FT)	BFOR R	ORIG DATA R	UNADJ SCD R	ADJ SCD R	BEET DATA R	EPD BFOR R	EPD MAX SCD R	EPD MIN SCD R	EPD ADJ MAX SCD R	EPD ADJ MIN SCD R	MAX CONF R	MIN CONF R	MAX CONS40 R	MIN CONS40 R	MAX CONSFULL R	MIN CONSFULL R
05	0848-04	40-00	105-16	5484	10/1893 4	96.1 5	09/1993 7	01/1893 2	24.7 9	15 9	17 9	15 9	16 9	17 9	0.64 8	0.74 9	06 3	12 5	02 1	18 9
02	1294-01	38-25	105-14	5330	03/1888 0	91.8 7	99/9999 9	10/1892 2	14.4 0	11 8	09 8	09 8	11 8	09 8	0.69 9	0.91 9	06 3	12 5	02 1	18 9
05	1564-03	38-43	105-17	6880	12/1902 7	99.5 1	12/1981 3	01/1902 6	14.4 0	11 8	09 8	09 8	11 8	09 8	0.69 9	0.91 9	06 3	12 5	02 1	18 9
05	1741-02	39-15	107-54	5800	04/1897 5	99.0 3	11/1985 4	01/1897 4	6.8 3	05 4	01 0	01 0	01 0	01 0	0.44 5	0.89 9	02 1	12 6	06 4	16 8
05	2184-05	37-40	106-21	7880	01/1891 5	71.9 7	04/1978 2	01/1900 5	20.8 8	14 9	14 9	14 9	14 9	14 9	0.53 7	0.42 5	16 8	18 9	16 8	18 9
05	2281-02	39-38	106-02	9065	05/1910 6	98.2 8	08/1988 1	01/1905 6	25.3 9	06 5	06 5	06 5	06 5	06 5	0.51 9	1.22 9	10 5	12 6	04 3	16 8
05	2482-02	37-17	107-53	6509	10/1894 4	98.2 8	08/1988 1	01/1894 8	19.2 3	06 5	07 6	07 6	07 6	07 6	0.43 5	0.52 7	03 1	12 6	04 3	16 8
05	3005-04	40-13	102-47	4211	04/1907 8	98.1 5	09/9999 9	01/1893 1	42.0 0	08 7	06 5	06 5	06 5	06 5	0.95 9	0.68 8	02 1	06 3	06 4	18 9
05	3038-04	40-13	103-48	4314	04/1907 8	96.1 5	08/1894 0	10/1892 1	0.4 0	03 2	03 2	03 2	03 2	03 2	0.60 8	0.71 9	08 4	08 4	02 0	12 7
05	3146-02	39-10	108-58	4480	07/1891 1	94.5 6	11/1984 8	01/1894 5	18.3 8	13 9	13 9	13 9	13 9	13 9	0.35 3	0.31 2	12 6	04 2	08 5	20 9
05	3662-02	38-32	107-08	3000	09/1899 6	91.6 7	04/1987 4	03/1902 6	12.9 3	12 9	12 9	12 9	12 9	12 9	0.30 2	0.39 4	20 9	06 3	02 1	02 1
05	3821-01	38-05	102-97	3850	02/1889 1	88.5 6	02/1984 8	07/1894 5	12.9 3	12 9	12 9	12 9	12 9	12 9	0.30 2	0.39 4	20 9	06 3	02 1	02 1
05	4770-01	38-04	105-13	7640	07/1891 4	94.5 6	11/1984 8	01/1891 7	12.9 3	12 9	12 9	12 9	12 9	12 9	0.30 2	0.39 4	20 9	06 3	02 1	02 1
05	4814-01	38-04	105-13	7640	07/1891 4	94.5 6	11/1984 8	01/1891 7	12.9 3	12 9	12 9	12 9	12 9	12 9	0.30 2	0.39 4	20 9	06 3	02 1	02 1
05	5322-02	38-29	107-53	3000	09/1899 6	91.6 7	04/1987 4	03/1902 6	18.7 8	14 9	14 9	14 9	14 9	14 9	0.56 8	0.65 8	12 6	20 9	08 5	20 9
05	5722-01	38-29	107-53	3000	09/1899 6	91.6 7	04/1987 4	03/1902 6	18.7 8	14 9	14 9	14 9	14 9	14 9	0.56 8	0.65 8	12 6	20 9	08 5	20 9
05	7157-01	38-02	108-08	7692	04/1894 4	93.6 7	06/1946 1	04/1894 3	32.2 9	15 9	15 9	15 9	15 9	15 9	0.43 5	0.42 5	18 9	02 1	14 8	12 7
05	7936-02	40-30	108-08	8420	07/1899 1	87.2 9	12/1993 8	10/1899 5	0.2 0	02 1	02 1	02 1	02 1	02 1	0.36 4	0.23 2	18 9	02 1	14 8	12 7
05	8206-02	37-37	109-22	8420	07/1899 1	87.2 9	12/1993 8	10/1899 5	15.0 7	06 5	07 6	07 6	07 6	07 6	0.66 9	0.90 9	04 2	20 9	16 8	10 6
05	8423-01	37-10	104-29	6030	11/1899 6	85.5 8	08/1972 0	01/1900 5	24.8 9	10 8	11 8	11 8	11 8	11 8	0.68 9	0.83 8	10 5	18 9	08 5	08 5
05	9243-01	40-04	102-14	3535	04/1893 3	91.0 8	01/1989 5	01/1893 2	16.2 7	07 6	07 6	07 6	07 6	07 6	0.48 6	0.65 8	10 5	18 9	06 4	02 1

MAXIMUM/MINIMUM TEMPERATURE

ST	STATE, STATION NAME & QUALIFIER	LAT-N	LONG-W	ELEV (FT)	BFOR R	ORIG DATA R	UNADJ SCD R	ADJ SCD R	BEET DATA R	EPD BFOR R	EPD MAX SCD R	EPD MIN SCD R	EPD ADJ MAX SCD R	EPD ADJ MIN SCD R	MAX CONF R	MIN CONF R	MAX CONS40 R	MIN CONS40 R	MAX CONSFULL R	MIN CONSFULL R
06	2658-01	41-57	73-22	550	02/1916 8	98.3 3	06/1948 1	01/1916 8	11.7 0	00 0	01 0	01 0	01 0	01 0	0.00 0	0.00 0	02 1	06 3	06 4	06 4
06	3207-03	41-21	72-03	240	06/1885 0	98.0 3	05/1982 2	09/1888 0	11.5 0	06 5	06 5	06 5	06 5	06 5	0.46 6	0.23 1	10 5	14 7	10 6	00 0
06	7970-03	41-08	73-33	190	01/1892 2	98.0 3	05/1982 2	09/1888 0	11.5 0	06 5	06 5	06 5	06 5	06 5	0.46 6	0.23 1	10 5	14 7	10 6	00 0
06	8138-02	41-48	72-15	650	02/1893 3	87.6 9	03/1993 7	01/1893 2	15.4 6	05 4	05 3	05 3	05 3	05 3	0.34 3	0.34 3	14 7	02 1	04 3	06 4

MAXIMUM/MINIMUM TEMPERATURE

ST	STATE, STATION NAME & QUALIFIER	LAT-N	LONG-W	ELEV (FT)	BFOR R	ORIG DATA R	UNADJ SCD R	ADJ SCD R	BEET DATA R	EPD BFOR R	EPD MAX SCD R	EPD MIN SCD R	EPD ADJ MAX SCD R	EPD ADJ MIN SCD R	MAX CONF R	MIN CONF R	MAX CONS40 R	MIN CONS40 R	MAX CONSFULL R	MIN CONSFULL R
07	2730-02	39-09	75-31	30	10/1891 1	87.9 9	02/1979 2	06/1892 1	20.8 8	07 6	08 6	07 7	08 7	08 7	0.32 3	0.25 1	06 3	14 7	16 8	02 1
07	3595-02	38-50	75-35	45	01/1892 2	89.3 8	09/9999 9	01/1892 1	0.5 0	03 2	03 1	03 2	03 1	03 1	0.28 2	0.28 2	12 6	10 5	04 3	18 9
07	5915-02	38-54	75-28	30	05/1893 3	89.3 8	09/9999 9	01/1892 1	12.1 6	08 6	08 6	08 6	08 6	08 6	0.42 5	0.28 2	12 6	10 5	04 3	18 9
07	6410-01	39-40	75-44	90	04/1894 4	71.3 9	03/1886 4	01/1894 3	13.1 6	08 6	08 6	08 6	08 6	08 6	0.42 5	0.23 1	02 1	02 1	14 8	12 7
07	9603-01	39-46	75-32	270	04/1894 4	82.7 9	11/1918 0	08/1897 4	19.5 8	04 3	05 3	05 3	05 3	05 3	0.22 1	0.18 0	02 1	18 9	04 3	06 4

Table B-3. Listing of the mean temperature quality assessment file (QA94MEAN.ASC)

MEAN TEMPERATURE

STATE, STATION NAME & QUALIFIER	ST	STR-DIV	LAT-N	LONG-W	ELEV (FT)	ORIG DATA		UNADJ		ADJ		BEST DATA	RPD	RPD	RPD	RPD	RPD	CONF	CONS								
						R	S	R	S	R	S																
CO BOULDER	05	0848-04	40-00	105-16	5484	10/1893	5	85.1	4	09/1993	7	01/1893	4	24.7	9	15	9	16	9	0.59	9	02	1	16	8		
CO CANON CITY	05	1294-01	38-25	105-14	5310	07/1896	3	85.9	4	09/1899	9	07/1899	4	21.2	8	11	8	11	8	0.58	9	08	4	04	3		
CO CHEYENNE WELLS	05	1524-04	39-33	105-17	6880	12/1902	7	89.7	0	12/1981	3	03/1892	6	10.4	5	01	0	01	0	0.42	7	04	2	18	9		
CO COLLIERAN	05	1741-02	38-15	102-58	4250	03/1899	3	85.9	4	11/1985	4	05/1899	2	20.3	8	14	9	15	9	0.6	4	0.42	7	04	2	06	4
CO DEL MONTE	05	2184-05	37-40	106-31	7880	01/1900	7	89.4	1	10/1929	0	01/1900	6	27.6	9	06	5	06	4	0.74	9	08	4	08	5		
CO DURANGO	05	2281-02	38-38	106-02	5055	05/1910	8	81.8	3	09/1982	1	05/1904	7	10.9	5	06	5	07	5	0.36	5	12	5	10	6		
CO ENDS 25	05	2432-02	37-17	107-53	6600	09/1896	8	88.4	7	09/1999	5	01/1907	7	4.2	5	06	5	07	5	0.48	9	02	1	02	1		
CO FORT COLLINS	05	3015-01	38-29	102-47	4211	03/1907	8	88.4	7	09/1988	0	01/1896	0	9.6	4	03	1	03	1	0.39	4	14	7	18	9		
CO FORT MORGAN 25	05	3016-04	40-13	105-05	5004	11/1892	1	87.6	3	02/1984	8	07/1897	5	26.1	9	13	9	13	9	0.21	4	10	5	08	5		
CO FRUITA IV	05	3018-04	40-13	105-05	4480	07/1897	6	88.1	6	10/1986	4	07/1882	1	25.3	9	14	9	15	9	0.31	4	10	5	08	5		
CO HERMIT 75E	05	3662-02	38-32	106-58	7640	01/1894	2	88.1	6	07/1983	7	09/1892	1	13.3	8	12	8	12	8	0.40	7	16	6	04	3		
CO HOLLY	05	3951-05	37-46	107-08	9000	09/1894	6	90.6	6	04/1987	0	06/1890	2	7.8	4	06	5	07	5	0.6	4	0.65	9	18	9		
CO LAS ANIMAS	05	4770-01	38-02	102-07	3390	09/1899	4	86.1	4	11/1916	0	06/1890	2	19.3	8	12	8	12	8	0.37	5	12	6	02	1		
CO MANASSA	05	4834-01	38-04	103-11	3827	10/1899	4	86.0	4	07/1986	4	03/1899	3	31.5	9	15	9	16	9	0.39	6	18	9	10	6		
CO MOUNTAIN 8	05	5322-05	37-10	105-57	7690	05/1887	1	82.4	6	05/1993	7	03/1892	3	2.2	1	07	6	07	5	0.26	3	10	5	02	1		
CO ROCKY ROAD 28E	05	5722-02	38-29	107-53	4170	10/1885	2	89.9	0	12/1989	0	10/1894	3	44.9	7	02	0	02	0	0.39	6	18	9	10	6		
CO SANGUACHE	05	7167-01	38-02	103-42	6920	09/1896	3	89.9	0	12/1993	8	10/1894	4	22.3	8	06	5	07	5	0.65	9	20	9	20	9		
CO STEAMBOAT SPRINGS	05	7836-03	40-05	106-08	8440	09/1891	4	87.1	8	12/1993	8	10/1894	4	24.8	9	10	8	11	8	0.63	9	10	5	12	7		
CO TELLURIDE	05	8034-02	37-57	107-59	6010	05/1890	2	81.0	7	06/1927	0	01/1900	6	18.7	8	08	7	08	6	0.33	8	06	8	04	3		
CO WYAT	05	8429-01	37-10	104-29	6335	01/1893	5	90.5	7	01/1989	5	01/1893	4	23.6	9	16	9	18	9	0.68	9	12	6	00	5		

MEAN TEMPERATURE

STATE, STATION NAME & QUALIFIER	ST	STR-DIV	LAT-N	LONG-W	ELEV (FT)	ORIG DATA		UNADJ		ADJ		BEST DATA	RPD	RPD	RPD	RPD	RPD	CONF	CONS						
						R	S	R	S	R	S														
CT FALLS VILLAGE	06	2658-01	41-57	72-22	550	02/1916	9	98.0	3	06/1948	1	01/1916	8	2.2	1	00	0	01	0	0.00	0	04	2	04	3
CT GROTON	06	3207-03	41-21	72-01	197	01/1991	1	86.7	4	06/1989	5	01/1971	0	8.5	4	07	6	07	5	0.48	2	06	8	12	7
CT GROTON	06	7970-03	41-08	73-33	190	01/1991	1	86.7	4	06/1989	5	01/1971	0	3.8	1	06	5	06	4	0.48	2	06	8	12	7
CT STORRS	06	8138-02	41-48	72-15	650	07/1892	5	96.7	4	03/1938	7	01/1892	3	3.7	1	05	3	05	4	0.29	4	10	5	18	6

MEAN TEMPERATURE

STATE, STATION NAME & QUALIFIER	ST	STR-DIV	LAT-N	LONG-W	ELEV (FT)	ORIG DATA		UNADJ		ADJ		BEST DATA	RPD	RPD	RPD	RPD	RPD	CONF	CONS							
						R	S	R	S	R	S															
DE DOVER	07	2710-02	39-09	75-31	30	08/1870	1	82.4	9	02/1979	2	01/1907	7	9.6	4	07	6	09	7	0.5	06	4	0.17	1	06	3
DE GREENWOOD 2HE	07	3595-02	38-50	75-35	45	01/1890	2	81.1	5	09/1990	6	01/1892	3	0.5	0	03	1	03	2	0.34	5	00	2	10	6	
DE GREENWOOD 3HE	07	3595-02	38-50	75-35	45	01/1890	2	81.1	5	09/1990	6	01/1892	3	0.5	0	03	1	03	2	0.34	5	00	2	10	6	
DE NEWARK UNIV FARM	07	5915-02	38-54	75-28	30	12/1857	0	73.1	5	03/1986	4	03/1890	2	15.1	7	09	7	09	7	0.8	6	0.34	5	00	2	
DE WILMINGTON PORTER RESERVOIR	07	8410-01	39-40	75-44	370	04/1898	3	88.2	9	03/1986	4	03/1890	2	18.9	9	03	1	03	2	0.5	3	0.17	1	02	1	
DE WILMINGTON PORTER RESERVOIR	07	8605-01	39-46	75-32	370	04/1898	3	88.2	9	03/1986	4	03/1890	2	18.9	9	03	1	03	2	0.5	3	0.17	1	02	1	

MEAN TEMPERATURE

Table with columns: STATE, STATION NAME & QUALIFIER, ST, STH-DIV, LAT-N, LONG-W, DEC-MIN, ELEV (FT), BFOR R, ORIG R, UNADJ R, SCD R, ADJ R, MEET DATA, BFOR R, BFOR R, BFOR R, EPD ADJ, EPD ADJ, EPD ADJ, EPD ADJ, EPD ADJ, CONF R, CONF R, CONF R, CONF R, CONS R, CONS R, CONS R, CONS R, CONS R, CONS R.

MEAN TEMPERATURE

Table with columns: STATE, STATION NAME & QUALIFIER, ST, STH-DIV, LAT-N, LONG-W, DEC-MIN, ELEV (FT), BFOR R, ORIG R, UNADJ R, SCD R, ADJ R, MEET DATA, BFOR R, BFOR R, BFOR R, EPD ADJ, EPD ADJ, EPD ADJ, EPD ADJ, EPD ADJ, CONF R, CONF R, CONF R, CONF R, CONS R, CONS R, CONS R, CONS R, CONS R, CONS R.

MEAN TEMPERATURE

STATE	STATION NAME & QUALIFIER	STN-DIV	LAT-N	LONG-W	ELEV (FT)	#PDR	DATE	UNDRY	ADU	ADU	#PDR	ADU	#PDR	ADU	#PDR	ADU	#PDR	ADU	CONF	CONF	CONF	CONF	
			DEC-MIN	DEC-MIN		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
MT	ANGUSTA	24	0162-01	45-08	5280	09/1905	98.8	2	06/1982	3	01/1905	7	4.9	2	04	2	04	2	04	2	04	2	04
MT	BIG TIMBER	24	0780-04	45-50	4700	07/1896	94.9	5	10/1974	2	12/1910	8	23.7	9	11	8	0	12	8	0	12	8	0
MT	BOZEMAN MONTANA ST UNIV	24	1044-02	45-40	4856	08/1868	97.8	8	05/1875	5	01/1905	7	6.3	3	0	0	0	0	0	0	0	0	0
MT	CASCADE 56	24	1552-04	47-13	3160	04/1904	99.5	1	11/1948	1	01/1901	9	9.7	0	0	1	0	0	0	0	0	0	0
MT	CHOTEAU AP	24	1722-03	48-35	2340	12/1895	92.4	6	06/1988	5	03/1907	7	26.5	6	1	1	0	0	0	0	0	0	0
MT	CUT BANK FFA AP	24	2111-02	47-49	3845	06/1890	82.8	8	01/1991	6	09/1906	7	31.9	8	09	7	10	8	0	9	0	9	0
MT	DILLON WME	24	2405-02	48-36	5228	02/1897	91.6	2	09/1992	7	12/1906	7	14.5	6	09	7	10	8	0	9	0	9	0
MT	ERLONA	24	2688-07	45-53	3425	02/1897	98.6	2	03/1986	5	01/1900	6	1.1	0	0	0	0	0	0	0	0	0	0
MT	FLY CATCHER	24	2793-02	45-21	4953	01/1918	99.5	1	03/1987	4	01/1918	9	2.3	1	0	0	0	0	0	0	0	0	0
MT	FLY CATCHER	24	3028-04	46-51	3338	09/1913	99.0	1	10/1980	3	01/1918	9	4.4	2	0	0	0	0	0	0	0	0	0
MT	FORT ASSINIBOINE	24	3119-03	48-30	2600	07/1915	98.2	2	02/1994	8	01/1915	8	0.3	0	0	0	0	0	0	0	0	0	0
MT	FORT TOWNSEND	24	3139-01	48-47	3000	03/1900	97.7	3	11/1970	2	03/1917	9	0.3	0	0	0	0	0	0	0	0	0	0
MT	GLANCON WEO AP	24	3581-06	47-06	2284	07/1893	96.1	5	05/1914	8	06/1916	7	0.8	5	06	5	0	0	0	0	0	0	0
MT	GREAT FALLS WCHO AP	24	3581-06	47-06	2284	07/1893	96.1	5	05/1914	8	06/1916	7	0.8	5	06	5	0	0	0	0	0	0	0
MT	HAMILTON	24	3681-04	47-29	3700	07/1915	97.5	3	05/1953	7	01/1912	9	12.7	6	0	0	0	0	0	0	0	0	0
MT	HAUGAN (DEMORGIA) 3E	24	3984-01	47-23	3160	07/1915	97.5	3	05/1953	7	01/1912	9	12.7	6	0	0	0	0	0	0	0	0	0
MT	HELENA DAM	24	4038-02	44-52	6189	06/1900	99.4	1	05/1993	7	01/1900	6	6.2	3	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	4055-04	46-36	2950	05/1908	99.4	1	05/1993	7	01/1900	6	2.9	1	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	4145-05	45-55	2590	02/1905	82.6	8	12/1985	0	03/1900	6	1.4	0	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	4158-01	46-19	2082	06/1896	98.8	0	12/1985	0	03/1900	6	1.4	0	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	5015-01	48-28	4870	10/1895	90.9	7	02/1981	3	03/1904	7	12.3	6	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	5080-05	45-29	2245	06/1905	99.4	1	05/1972	0	03/1907	7	12.8	1	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	5338-03	48-24	1952	01/1911	8	93.4	6	05/1918	1	01/1911	8	24.1	9	05	3	0	0	0	0	0	0
MT	HELENA WEO	24	5372-06	48-29	2510	05/1919	96.8	4	08/1984	3	01/1918	8	16.7	7	07	5	0	0	0	0	0	0	0
MT	HELENA WEO	24	5680-07	46-26	4300	04/1909	98.3	0	10/1978	2	01/1909	7	0.9	0	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	5761-04	47-03	4745	02/1907	8	89.8	0	10/1978	2	01/1909	7	0.9	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	6157-02	45-29	5270	10/1903	96.1	4	12/1984	0	01/1903	6	5.6	2	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	6472-01	46-19	2765	03/1912	9	98.2	0	02/1986	4	01/1912	6	7.4	3	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	6501-07	46-25	2000	12/1889	3	91.8	7	99/9999	0	06/1909	6	42.2	9	25	9	0	0	0	0	0	0
MT	HELENA WEO	24	6918-05	45-11	2900	09/1896	8	84.6	7	06/1917	0	01/1900	6	3.3	3	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	7286-01	47-19	1985	09/1905	8	99.2	1	07/1987	4	10/1905	7	11.3	5	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	7382-06	47-37	3805	09/1911	9	99.9	0	10/1912	0	01/1911	7	1.0	0	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	8501-03	48-19	5773	01/1888	3	87.6	8	10/1953	1	01/1917	9	3.9	1	0	0	0	0	0	0	0	0
MT	HELENA WEO	24	8827-02	45-18	6659	07/1900	8	92.6	6	07/1994	8	08/1905	7	22.5	8	11	8	0	0	0	0	0	0
MT	HELENA WEO	24	8930-04	48-31	5200	04/1894	5	80.4	9	12/1994	9	08/1902	6	24.2	9	11	8	0	0	0	0	0	0

MEAN TEMPERATURE

STATE, STATION NAME & QUALIFIER	ST	STR-DIV	LAT-N	LONG-W	ELEV	BORG	UNADJ	ADJ	BEET	FPD	FPD ADJ	FPD	FPD ADJ	CONF R	CONS
			DEC-MIN	DEC-MIN	(FT)	DATA	R	R	DATA	R	R	R	R	R	R
NH BETHLEHEM	27	0701-01	44-17	71-41	1380	12/1892	5	93.7	6	99/9999	9	01/1892	3	9.9	5
NH DURHAM	27	2309-01	43-05	70-37	1680	04/1892	5	98.4	2	09/1949	1	01/1892	3	7.1	3
NH FIRST CONNECTICUT LAKE	27	3850-02	43-43	72-37	603	11/1834	0	190.0	0	01/1918	0	01/1918	0	1.7	0
NH HANOVER	27	4399-02	42-57	72-19	510	01/1893	5	99.7	0	12/1993	0	01/1893	4	14.1	6
NH KEENE	27	4399-02	42-57	72-19	510	01/1893	5	99.7	0	12/1993	0	01/1893	4	14.1	6

MEAN TEMPERATURE

STATE, STATION NAME & QUALIFIER	ST	STR-DIV	LAT-N	LONG-W	ELEV	BORG	UNADJ	ADJ	BEET	FPD	FPD ADJ	FPD	FPD ADJ	CONF R	CONS
			DEC-MIN	DEC-MIN	(FT)	DATA	R	R	DATA	R	R	R	R	R	R
NJ ATLANTIC CITY STATE MARINA	28	0325-01	38-33	74-56	10	01/1874	1	99.3	1	08/1989	5	06/1889	2	0.8	0
NJ BELVIDERE BRIDGE	28	0714-01	40-30	74-56	280	11/1891	5	97.2	0	04/1994	8	01/1891	3	2.0	0
NJ BOXTON ISE	28	0907-01	40-34	74-34	760	04/1893	5	99.8	0	12/1928	2	01/1893	4	0.5	0
NJ CHARLOTTEBURG RESERVOIR	28	1582-01	41-02	74-36	260	03/1898	6	98.4	0	05/1966	4	01/1898	5	0.5	0
NJ HENNINGTON SPRNG	28	3029-01	40-34	74-53	100	05/1891	4	95.0	5	08/1934	0	01/1891	3	17.9	9
NJ INDIAN HILLS 2W	28	2531-02	40-36	74-34	100	05/1901	7	99.3	1	06/1989	8	07/1901	6	0.9	0
NJ LONG BRANCH COUNTRY	28	4937-02	40-36	74-50	45	04/1863	0	91.6	3	07/1994	8	08/1885	0	29.4	9
NJ MOORESTOWN	28	4937-02	40-36	74-50	45	04/1863	0	91.6	3	07/1994	8	08/1885	0	29.4	9
NJ NEW BRUNSWICK 3SE	28	6055-02	40-38	74-34	90	08/1863	0	92.2	6	11/1994	9	01/1888	1	8.4	4
NJ PALMFIELD	28	7079-01	40-36	74-34	20	05/1899	6	89.8	7	01/1966	2	01/1899	5	15.1	7
NJ TUCHENON	28	8899-02	39-36	74-21	20	05/1899	6	89.8	7	01/1966	2	01/1899	5	15.1	7

MEAN TEMPERATURE

STATE, STATION NAME & QUALIFIER	ST	STR-DIV	LAT-N	LONG-W	ELEV	BORG	UNADJ	ADJ	BEET	FPD	FPD ADJ	FPD	FPD ADJ	CONF R	CONS
			DEC-MIN	DEC-MIN	(FT)	DATA	R	R	DATA	R	R	R	R	R	R
NH AZTEC RUINS NATL MONUMENT	29	0692-01	36-50	108-00	5644	01/1895	6	82.5	9	04/1960	1	03/1988	9	14.7	6
NH BELL RANCH	29	0958-03	35-22	104-06	4500	01/1904	7	96.7	4	09/9999	9	01/1904	7	4.1	2
NH CARLEZZO ISL	29	1469-07	32-25	104-14	3120	01/1894	5	95.6	5	08/1988	5	01/1897	5	13.2	6
NH CHINA	29	1662-05	36-25	105-53	5405	01/1908	8	97.6	3	05/1988	5	01/1908	7	14.4	6
NH CHARRON 45N	29	1817-02	36-28	104-57	650	05/1909	7	90.6	7	06/1973	2	06/1901	6	21.6	8
NH CLAYTON WSO AP	29	1817-03	36-27	103-09	4970	02/1896	8	88.0	8	09/9999	9	01/1896	7	22.9	8
NH ELEPHANT BUTTE DMH	29	2848-05	33-09	107-11	4576	10/1908	8	99.9	0	07/1977	2	01/1908	7	1.0	0
NH FORT SUMNER	29	3265-04	32-48	108-09	6142	01/1864	1	94.7	5	09/1992	7	03/1897	5	3.9	1
NH GAGE 4ESE	29	3168-08	32-73	108-01	4025	01/1864	1	94.7	5	09/1992	7	03/1897	5	3.9	1
NH JEROME SPRINGS	29	4369-02	35-46	106-41	4266	01/1314	9	97.7	3	09/1993	7	01/1314	8	4.1	2
NH JOURNADA EXPERIMENTAL RANGE	29	4326-08	32-37	106-44	6349	09/1887	3	96.2	4	09/9999	9	03/1901	6	8.2	4
NH LAKE WEGE SEWAGE PLT	29	4862-02	35-32	105-12	4840	04/1889	3	98.0	3	12/1955	1	01/1889	2	6.0	2
NH LAKE WEGE 3SE	29	5170-03	34-46	106-45	4840	04/1889	3	98.0	3	12/1955	1	01/1889	2	6.0	2
NH LUDIA IS	29	5565-06	34-57	105-26	6520	01/1895	9	92.2	9	01/1975	2	05/1904	7	18.2	7
NH MOUNTAIN PARK	29	5965-06	34-57	105-26	6520	01/1895	9	92.2	9	01/1975	2	05/1904	7	18.2	7
NH MOUNTAIN PARK	29	6435-08	32-23	106-06	4822	12/1904	8	83.0	8	10/1993	7	01/1906	7	38.9	9
NH GROGANDE	29	7323-02	36-42	105-24	8676	07/1906	8	97.4	4	12/1950	1	01/1906	7	6.1	3
NH KESWICK	29	7610-07	31-38	104-32	3649	03/1893	5	99.3	1	01/1905	0	01/1893	4	6.5	3
NH KESWICK PAN AP	29	8107-07	34-57	104-40	4230	05/1907	8	99.3	1	01/1994	8	01/1907	7	6.5	3
NH SAN JON	29	8107-07	34-57	104-40	4230	05/1907	8	99.3	1	01/1994	8	01/1907	7	6.5	3
NH SANTA ROSA	29	8107-05	34-05	106-51	4585	11/1849	0	65.3	9	03/1952	7	01/1908	7	17.9	7
NH SOCORRO	29	8107-05	34-05	106-51	4585	11/1849	0	65.3	9	03/1952	7	01/1908	7	17.9	7
NH SPRINGER	29	8501-03	36-22	104-35	5922	01/1891	4	97.7	1	09/1993	7	09/1891	5	51.2	8
NH TULACAN 4NE	29	8535-08	32-17	106-45	3881	09/1851	0	89.3	7	12/1899	0	03/1892	3	5.2	0
NH TULACAN 4NE	29	8535-08	32-17	106-45	3881	09/1851	0	89.3	7	12/1899	0	03/1892	3	5.2	0
NH TULACAN 4NE	29	9158-08	33-12	103-41	4086	01/1905	8	98.7	2	10/1965	2	01/1905	7	14.8	7
NH TULACAN 4NE	29	9158-08	33-03	106-03	4430	04/1908	8	96.3	4	05/1987	4	12/1971	9	14.8	7

MEAN TEMPERATURE

ST	5TH-DIV	LAT-N	LONG-W	ELEV	BROR	DATA	UNADJ	ADJ	MEET	BROR	ADJ	BROR	ADJ	CONF	CONFS	CONFS
STATE, STATION NAME & QUALIFIER	DEC-MIN	DEC-MIN	DEC-MIN	(FT)	R	R	R	R	DATA	R	R	R	R	R	R	R
NY ALBANY WFOAP	30 0042-05	42-45	73-48	275	01/1795	0	86.7	01/1874	0	01/1889	2	2.9	1.3	9	00	0
NY ALBANY STATE PARK	30 0045-01	42-15	77-47	1770	01/1852	0	66.6	09/1994	8	08/1984	9	16.0	7	08	07	6
NY ALBANY STATE PARK	30 0051-01	42-06	78-45	1500	09/1924	9	99.4	02/1994	8	01/1924	9	6.1	02	0	02	6
NY ALBANY	30 0183-01	42-58	76-01	1435	05/1854	0	78.2	01/1991	6	05/1887	5	18.9	05	0	04	3
NY ALBANY	30 0211-10	42-55	76-32	770	01/1824	0	92.3	09/1999	9	01/1956	9	12.7	06	03	05	3
NY ALBANY	30 0360-02	42-17	75-17	690	03/1922	9	96.9	12/1995	4	01/1932	9	10.9	05	06	06	4
NY ALBANY	30 0446-01	42-31	77-31	1130	09/1890	4	98.3	08/1984	3	01/1890	2	21.2	08	10	08	0
NY ALBANY	30 0687-02	42-13	75-59	1600	07/1930	9	100.0	07/1890	0	01/1890	2	1.6	0	0	06	5
NY ALBANY	30 0889-04	40-57	77-18	60	08/1930	9	100.0	08/1930	0	01/1890	2	21.3	09	07	06	0
NY ALBANY	30 0917-09	43-12	77-56	532	03/1891	6	82.2	07/1858	0	01/1891	0	0.0	0	0	00	0
NY ALBANY	30 1012-09	42-56	78-07	440	01/1854	0	93.4	07/1906	0	03/1897	3	13.1	02	0	02	1
NY ALBANY	30 1187-08	44-45	74-13	1050	01/1927	9	90.1	07/1993	7	01/1927	9	13.1	02	0	02	1
NY ALBANY	30 1401-07	44-53	73-36	170	07/1899	7	96.0	4	12/1985	4	1.2	0	0	03	2	04
NY ALBANY	30 1752-02	42-42	76-11	1200	01/1854	0	96.6	04/1982	4	01/1899	5	4.6	02	0	04	3
NY ALBANY	30 1965-07	44-44	75-41	1129	03/1862	8	98.8	03/1982	4	01/1891	3	2.9	0	0	02	1
NY ALBANY	30 2610-01	43-06	76-48	844	02/1918	9	93.3	10/1987	5	01/1918	9	9.9	05	3	06	4
NY ALBANY	30 3033-09	42-37	79-18	760	01/1829	0	61.4	9	10/1984	8	0.4	0	0	0	0	0
NY ALBANY	30 3184-10	42-53	77-02	718	01/1852	0	82.8	02/1898	5	03/1934	8	0.4	0	0	0	0
NY ALBANY	30 3259-05	41-31	73-36	275	02/1853	5	87.9	07/1933	7	01/1892	3	4.0	0	0	0	0
NY ALBANY	30 3317-06	43-07	74-17	902	05/1868	6	97.6	11/1993	8	01/1892	3	2.5	0	0	0	0
NY ALBANY	30 4102-03	43-45	74-17	1650	09/1899	7	98.1	3	04/1990	5	01/1899	5	19.2	08	02	04
NY ALBANY	30 4555-03	44-15	73-59	940	08/1897	6	86.8	2	7/1987	4	0.0	0	0	0	0	0
NY ALBANY	30 4647-08	44-45	74-39	500	07/1897	6	87.7	09/1994	8	01/1931	9	2.1	0	0	0	0
NY ALBANY	30 4791-06	43-03	74-52	360	01/1897	6	50.8	99/1999	9	12/1899	5	11.9	02	0	02	1
NY ALBANY	30 4844-09	43-11	78-39	520	11/1848	0	75.1	9	04/1993	3	03/1899	2	2.1	0	0	0
NY ALBANY	30 4912-03	43-48	75-29	860	01/1827	0	75.9	12/1972	2	01/1894	4	1.4	0	0	0	0
NY ALBANY	30 5113-02	42-31	74-58	1192	09/1894	6	84.1	1	7/1992	0	01/1894	5	19.2	08	02	04
NY ALBANY	30 5425-05	41-46	74-09	1348	08/1911	9	87.8	59/1999	9	01/1911	8	29.3	09	12	9	12
NY ALBANY	30 5517-02	40-47	73-58	1020	09/1908	8	95.8	03/1991	6	01/1908	7	24.9	09	07	05	3
NY ALBANY	30 6085-02	42-32	75-32	1020	09/1908	8	95.8	03/1991	6	01/1908	7	39.5	05	07	05	04
NY ALBANY	30 6164-08	44-44	75-26	289	01/1838	0	65.8	08/1981	3	01/1906	7	3.0	0	0	0	0
NY ALBANY	30 6314-09	43-28	76-30	350	01/1848	0	65.2	99/1999	9	06/1907	7	1.0	0	0	0	0
NY ALBANY	30 6517-10	42-40	77-11	110	06/1901	7	91.7	6	10/1882	4	0.0	0	0	0	0	0
NY ALBANY	30 6577-02	41-23	74-41	165	01/1839	0	65.7	99/1999	9	06/1907	7	3.0	0	0	0	0
NY ALBANY	30 6820-05	43-08	73-55	170	01/1880	1	94.4	5	11/1984	8	08/1895	0	0	0	0	0
NY ALBANY	30 7167-09	41-38	77-40	600	01/1830	0	98.5	2	10/1882	4	0.0	0	0	0	0	0
NY ALBANY	30 7484-05	43-02	73-49	110	06/1901	7	91.7	6	10/1882	4	0.0	0	0	0	0	0
NY ALBANY	30 7497-04	40-59	73-08	140	06/1901	7	91.7	6	10/1882	4	0.0	0	0	0	0	0
NY ALBANY	30 8248-01	43-53	75-02	1690	01/1927	9	99.3	12/1993	7	01/1885	0	3.6	0	0	0	0
NY ALBANY	30 8383-10	43-07	76-07	420	01/1843	0	63.8	9	09/1902	0	01/1889	2	16.5	0	0	0
NY ALBANY	30 8739-04	42-45	73-41	24	01/1829	0	42.6	02/1901	8	01/1895	5	20.8	03	1	03	1
NY ALBANY	30 8631-03	44-14	74-26	1680	05/1872	0	51.5	99/1999	9	01/1925	9	23.7	09	13	9	13
NY ALBANY	30 8701-09	43-05	74-10	380	01/1925	9	80.0	99/1999	9	01/1925	9	20.0	08	04	2	04
NY ALBANY	30 8916-09	42-45	78-11	1090	10/1931	9	85.9	8	05/1994	0	01/1931	9	26.5	04	2	05
NY ALBANY	30 8944-03	44-09	74-54	1510	06/1910	8	98.4	2	01/1981	3	01/1910	9	13.2	06	0	06
NY ALBANY	30 9000-09	43-58	75-52	497	01/1856	0	71.0	2	05/1980	5	01/1865	0	13.9	6	07	6
NY ALBANY	30 9292-05	41-23	73-58	270	01/1868	5	97.0	4	06/1943	1	01/1868	1	3.1	0	0	0
NY ALBANY	30 9670-05	41-16	73-48	270	01/1868	5	97.0	4	06/1943	1	01/1868	1	3.1	0	0	0

MEAN TEMPERATURE

Table with columns: ST, ETD, DIV, LAT-N, LONG-W, LONG-MIN, DEC-MIN, ELEV (FT), BPR, MORIG R, UNADJ R, SCD R, ADJ R, MEET R, BPR R, EPD R, BPR R, EPD ADJ R, SCD R, ADJ R, CONF R, CONE R, FULL R. Rows include stations like OK MCVYHUS, OH CADIZ, OH CINCINNATI, etc.

MEAN TEMPERATURE

Table with columns: ST, ETD, DIV, LAT-N, LONG-W, LONG-MIN, DEC-MIN, ELEV (FT), BPR, MORIG R, UNADJ R, SCD R, ADJ R, MEET R, BPR R, EPD R, BPR R, EPD ADJ R, SCD R, ADJ R, CONF R, CONE R, FULL R. Rows include stations like OK NEW IRRIGATION RES ETD, OH AUSTIN, OH ARDMORE, etc.

Table with columns: ST, ETD, DIV, LAT-N, LONG-W, LONG-MIN, DEC-MIN, ELEV (FT), BPR, MORIG R, UNADJ R, SCD R, ADJ R, MEET R, BPR R, EPD R, BPR R, EPD ADJ R, SCD R, ADJ R, CONF R, CONE R, FULL R. Rows include stations like OK OREHAN EKE WATER WORKS, OH FAHNSHUSA, OH FERRY, etc.

MEAN TEMPERATURE

STATE	STATION NAME & QUALIFIER	LAT-N	LONG-W	ELEV (FT)	WQSIG R	UNADJ R	ADJ R	VEST DATA	#PD R	#PD ADJ R	#PD ADJ R	#PD ADJ R	CONF R	CONF R	CONF R
VT	ALTON	42 0086-04	73-26	112-29	7040	01/1915 9	99.5 1 99/9999 9 01/1915 8	1.1 0 05 3	06 4	05 4	05 4	05 4	0.12 4	0.12 4	0.12 4
VT	BLANDING	42 0519-04	73-18	112-39	5940	01/1893 5	82.7 8 99/9999 9 01/1922 8	12.4 7 07 6	09 7	07 6	09 7	09 7	0.39 6	0.44 7	0.57 8
VT	BLUFF	42 0788-07	73-17	109-29	6040	12/1904 9	90.7 7 07/1932 7 01/1911 8	20.1 8 09 7	10 8	09 8	11 8	09 8	0.57 9	0.57 9	0.57 9
VT	CORRIE	42 2101-01	73-17	111-39	4230	02/1870 1	98.9 1 01/1988 5 12/1888 1	32.1 9 23 9	23 9	22 9	22 9	22 9	0.67 9	0.67 9	0.67 9
VT	DEBERNE	42 2101-01	73-17	111-39	4530	08/1891 4	95.5 5 12/1994 9 08/1894 4	5.9 2 04 2	05 3	04 3	05 3	04 3	1.00 2	1.00 2	1.00 2
VT	ELBERTA	42 2253-06	40-10	110-24	5520	01/1906 8	98.8 2 11/1980 3 01/1906 7	9.7 4 12 2	08 2	06 2	06 2	05 2	0.38 6	0.38 6	0.38 6
VT	ELMONT	42 2418-03	39-57	111-57	4690	01/1902 7	96.3 4 99/9999 9 07/1907 7	12.5 7 05 3	07 5	04 3	06 4	06 4	0.41 7	0.41 7	0.41 7
VT	FILLMORE	42 2828-04	37-46	111-36	5910	05/1901 2	99.8 0 05/1908 1 12/1910 8	1.9 0 04 2	04 2	04 2	04 2	04 2	0.29 4	0.29 4	0.29 4
VT	FORT DUCHENEZ	42 2828-04	38-57	108-22	5050	12/1887 3	98.3 3 10/1922 7 06/1910 8	30.5 9 15 9	18 9	12 2	07 5	05 4	0.56 5	0.56 5	0.56 5
VT	GREEN RIVER AVIATION	42 3418-07	39-00	110-41	4030	12/1910 8	97.8 0 11/1990 6 06/1910 8	3.9 5 06 3	05 3	05 3	05 3	05 3	0.52 8	0.52 8	0.52 8
VT	HANATHA	42 3809-05	40-30	111-25	5630	01/1893 5	98.8 2 05/1926 2 03/1896 6	2.0 0 06 5	06 4	06 5	06 4	06 5	0.59 9	0.59 9	0.59 9
VT	KANAB	42 4508-04	41-08	111-39	7280	09/1893 7	91.6 6 08/1922 1 06/1908 7	34.4 9 08 7	08 6	04 3	04 3	04 3	0.27 3	0.27 3	0.27 3
VT	LANCASTON	42 5065-04	39-34	111-52	5300	11/1900 7	99.9 0 08/1909 0 01/1900 6	2.0 0 06 5	06 4	06 5	06 4	06 5	0.33 9	0.33 9	0.33 9
VT	LEWAN	42 5148-04	38-24	111-39	7070	01/1890 4	99.2 1 99/9999 9 01/1890 2	22.7 9 10 6	10 8	09 8	09 8	09 8	0.59 9	0.59 9	0.59 9
VT	LOGAN USU	42 5148-03	41-45	111-48	4790	09/1890 4	99.6 0 05/1895 1 07/1895 4	9.1 4 05 3	07 5	05 4	07 5	07 5	0.46 8	0.46 8	0.46 8
VT	MOAB	42 5402-04	39-15	111-38	3740	10/1886 4	98.2 2 11/1924 6 10/1889 2	16.4 4 13 9	13 9	13 9	13 9	13 9	0.45 8	0.45 8	0.45 8
VT	MODENA COMO SPRINGS	42 5731-07	39-28	113-25	5460	01/1901 7	98.2 2 11/1924 6 10/1889 2	16.4 4 13 9	13 9	13 9	13 9	13 9	0.45 8	0.45 8	0.45 8
VT	OGDEN BLOOMER P H	42 5626-05	41-02	111-57	4350	02/1903 7	99.5 1 09/1993 7 01/1903 6	12.1 6 08 2	09 2	09 2	09 2	09 2	0.27 6	0.27 6	0.27 6
VT	PAKUTICH	42 6604-03	41-15	111-57	4400	01/1914 9	95.0 5 99/9999 9 01/1914 8	12.1 6 08 2	09 2	09 2	09 2	09 2	0.27 6	0.27 6	0.27 6
VT	PANORAMA POWER PLANT	42 6601-04	37-50	112-26	6610	12/1911 9	92.3 6 07/1922 3 11/1886 8	17.6 7 13 9	13 9	13 9	13 9	13 9	0.55 9	0.55 9	0.55 9
VT	RICHFIELD RADIO KEVC	42 7168-04	48-06	112-00	5300	08/1889 4	90.2 7 01/1922 3 11/1883 4	12.1 6 08 2	09 2	09 2	09 2	09 2	0.27 6	0.27 6	0.27 6
VT	RIVERDALE	42 7518-02	37-07	113-34	4400	01/1914 9	95.0 5 99/9999 9 01/1914 8	12.1 6 08 2	09 2	09 2	09 2	09 2	0.27 6	0.27 6	0.27 6
VT	SPRING GEORGE	42 7714-04	39-15	112-06	2700	06/1889 4	97.7 3 09/1992 7 12/1907 7	25.0 9 18 3	18 3	18 3	18 3	18 3	0.47 6	0.47 6	0.47 6
VT	SHAKE CREEK PH	42 7709-05	40-33	111-30	5300	01/1895 6	98.8 2 99/9999 9 01/1895 5	5.1 2 03 1	03 1	03 1	03 1	03 1	0.36 5	0.36 5	0.36 5
VT	SPANISH FORK PH	42 8119-03	40-05	111-36	6310	01/1915 9	99.2 2 01/1993 7 11/1886 8	12.1 6 08 2	09 2	09 2	09 2	09 2	0.27 6	0.27 6	0.27 6
VT	THOMPSON	42 8771-01	40-33	112-18	5100	05/1911 8	94.7 5 99/9999 9 01/1911 8	7.4 3 02 0	02 1	02 1	02 1	02 1	0.48 9	0.48 9	0.48 9
VT	TOOLE	42 8771-01	40-33	112-18	5070	01/1908 6	100.0 0 01/1896 0 01/1896 5	6.4 3 06 5	07 5	07 5	07 5	07 5	0.44 8	0.44 8	0.44 8
VT	VERMILION LEHI	42 8573-03	40-22	111-54	4497	01/1905 8	93.8 2 07/1954 1 01/1905 7	11.1 3 02 0	02 0	02 0	02 0	02 0	1.04 9	1.04 9	1.04 9
VT	VERMILION AP	42 9111-06	40-27	109-31	5269	01/1915 9	98.7 2 07/1954 1 01/1905 7	11.1 3 02 0	02 0	02 0	02 0	02 0	1.04 9	1.04 9	1.04 9
VT	WENOVER AMOS	42 9382-01	40-44	114-02	4337	01/1911 8	98.3 1 08/1955 1 01/1905 7	10.2 5 09 7	10 8	09 8	10 8	09 8	0.50 8	0.50 8	0.50 8
VT	WOODRUFF	42 9595-05	41-32	111-39	4650	01/1904 7	95.1 5 12/1975 2 12/1905 8	27.1 9 07 6	12 8	09 8	11 8	09 8	0.12 0	0.12 0	0.12 0
VT	ZION NATIONAL PARK	42 9717-02	37-13	112-39	4650	01/1904 7	95.1 5 12/1975 2 12/1905 8	27.1 9 07 6	12 8	09 8	11 8	09 8	0.12 0	0.12 0	0.12 0

MEAN TEMPERATURE

STATE	STATION NAME & QUALIFIER	LAT-N	LONG-W	ELEV (FT)	WQSIG R	UNADJ R	ADJ R	VEST DATA	#PD R	#PD ADJ R	#PD ADJ R	#PD ADJ R	CONF R	CONF R	CONF R
VT	BURLINGTON AP	43 1081-02	44-28	73-09	332	01/1828 0	90.9 7 09/1886 0 09/1873 0	4.3 2 08 7	00 0	07 6	07 6	07 6	0.42 7	0.42 7	0.42 7
VT	CAVENDISH	43 1243-03	43-23	72-36	800	03/1923 2	95.9 4 10/1942 1 01/1903 6	1.8 0 01 0	01 0	01 0	01 0	01 0	0.04 0	0.04 0	0.04 0
VT	CHELSEA	43 1360-01	43-29	72-13	490	01/1894 5	96.6 4 09/1994 8 01/1894 4	4.9 2 04 2	05 3	04 3	05 3	05 3	0.38 6	0.38 6	0.38 6
VT	CORNWALL FALLS	43 2769-01	44-55	72-49	420	06/1891 4	93.6 5 10/1984 4 01/1891 3	10.0 5 04 2	05 3	05 4	05 4	05 4	0.30 4	0.30 4	0.30 4
VT	NORTHFIELD LESE	43 5746-01	44-06	72-37	1410	03/1887 3	95.3 5 99/9999 9 01/1887 2	9.1 4 03 1	03 1	02 1	02 1	02 1	0.08 0	0.08 0	0.08 0
VT	SAINT JOHNSBURY	43 7054-01	44-25	72-01	699	01/1853 0	75.8 9 09/1986 5 10/1863 0	9.1 4 03 1	03 1	02 1	02 1	02 1	0.08 0	0.08 0	0.08 0

MEAN TEMPERATURE

STATE, STATION NAME & QUALIFIER	ST	STR-DIV	LAT-N	LONG-W	ELEV (FT)	UNADJ				ADJ				REF				R				CONF				CONS																	
						BPOR	DATA	R	SCD	BPOR	DATA	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD			
VA BLACKSBURG JEE	44	0765-06	37-11	80-25	2000	04/1891	4	98.9	1	99/9999	9	03/1891	3	5.4	4	0.27	3	20	9	04	2	0.27	3	20	9	04	2	0.27	3	20	9	04	2	0.27	3	20	9	04	2				
VA BENO BUFF	44	0993-02	37-42	78-18	225	03/1898	7	96.0	4	99/9999	9	01/1898	5	11.3	5	0.32	4	06	3	04	3	0.32	4	06	3	04	3	0.32	4	06	3	04	3	0.32	4	06	3	04	3	0.32	4	06	3
VA CHARLOTTEVILLE 2N	44	1209-06	37-05	81-30	3300	04/1896	6	99.0	1	12/1975	2	01/1896	5	3.8	1	0.45	2	06	2	04	3	0.45	2	06	2	04	3	0.45	2	06	2	04	3	0.45	2	06	2	04	3	0.45	2	06	2
VA DALE ENTERPRISE	44	2208-03	38-27	78-21	170	07/1837	0	66.6	9	06/1990	6	10/1888	0	9.8	5	0.21	0	06	0	05	3	0.21	0	06	0	05	3	0.21	0	06	0	05	3	0.21	0	06	0	05	3	0.21	0	06	0
VA DANVILLE 2N	44	2245-03	36-35	79-23	40	04/1916	6	93.3	1	02/1983	3	03/1880	0	3.6	1	0.34	2	03	2	04	2	0.34	2	03	2	04	2	0.34	2	03	2	04	2	0.34	2	03	2	04	2	0.34	2	03	2
VA FARMVILLE 2N	44	2941-02	37-30	78-23	45	05/1897	6	73.8	9	05/1971	2	10/1905	6	11.2	0	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2
VA FREDERICKSBURG NATIONAL PARK	44	1122-01	38-19	77-27	40	10/1916	9	97.4	3	02/1991	6	01/1893	4	4.9	2	0.16	2	08	6	04	3	0.16	2	08	6	04	3	0.16	2	08	6	04	3	0.16	2	08	6	04	3	0.16	2	08	6
VA HOT SPRINGS	44	4101-01	35-07	77-18	2236	03/1892	5	95.0	5	11/1994	9	03/1899	8	21.3	8	0.29	4	06	4	07	6	0.29	4	06	4	07	6	0.29	4	06	4	07	6	0.29	4	06	4	07	6	0.29	4	06	4
VA LEWISBURG	44	4876-05	35-07	78-50	1500	10/1900	7	98.3	7	02/1916	6	06/1888	1	0.9	4	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0	02	1
VA LINCOLN	44	4909-04	35-07	77-43	24	01/1871	1	82.7	8	07/1978	0	03/1909	6	0.9	1	0.3	0	05	3	05	3	0.3	0	05	3	05	3	0.3	0	05	3	05	3	0.3	0	05	3	05	3	0.3	0	05	3
VA NORFOLK WFO AP	44	6139-01	36-54	76-12	1510	07/1931	9	98.5	2	11/1990	6	01/1931	9	7.6	0	0.3	0	02	1	02	1	0.3	0	02	1	02	1	0.3	0	02	1	02	1	0.3	0	02	1	02	1	0.3	0	02	1
VA PERRIN GAP	44	6626-06	36-45	83-03	520	08/1907	9	98.1	3	10/1979	3	01/1907	9	7.1	3	0.5	3	05	3	05	3	0.5	3	05	3	05	3	0.5	3	05	3	05	3	0.5	3	05	3	05	3	0.5	3	05	3
VA ROCKY MOUNT RESEARCH ETH	44	5712-04	38-13	78-07	122	05/1894	6	91.9	7	10/1990	6	12/1948	9	12.1	5	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2
VA ROCKY MOUNT	44	8082-03	38-09	78-25	122	05/1894	6	91.9	7	10/1990	6	12/1948	9	12.1	5	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2
VA STATTON SEWAGE PLANT	44	8082-03	38-09	78-25	122	05/1894	6	91.9	7	10/1990	6	12/1948	9	12.1	5	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2	04	2	0.4	2	04	2
VA WILLIAMSBURG 2N	44	9151-01	37-18	76-42	70	11/1900	7	92.0	9	09/1990	6	04/1891	3	13.2	5	0.9	7	06	4	05	4	0.9	7	06	4	05	4	0.9	7	06	4	05	4	0.9	7	06	4	05	4	0.9	7	06	4
VA WOODSTOCK 2NE	44	9263-04	38-54	78-28	660	01/1897	6	98.0	3	03/1962	1	03/1899	5	4.3	2	0.7	6	05	3	07	6	0.7	6	05	3	07	6	0.7	6	05	3	07	6	05	3	07	6	05	3	07	6		

MEAN TEMPERATURE

STATE, STATION NAME & QUALIFIER	ST	STR-DIV	LAT-N	LONG-W	ELEV (FT)	UNADJ				ADJ				REF				R				CONF				CONS																	
						BPOR	DATA	R	SCD	BPOR	DATA	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD	BPOR	R	SCD			
VA ABERDEEN	45	0008-01	46-58	122-49	10	01/1821	4	99.1	1	99/9999	9	06/1895	4	8.5	4	0.28	3	08	4	10	8	0.28	3	08	4	10	8	0.28	3	08	4	10	8	0.28	3	08	4	10	8	0.28	3	08	4
VA BELLINGHAM 3EN	45	0729-03	49-00	122-45	60	08/1891	5	92.5	2	10/1982	4	03/1890	2	9.2	4	0.47	2	08	4	10	8	0.47	2	08	4	10	8	0.47	2	08	4	10	8	0.47	2	08	4	10	8	0.47	2	08	4
VA BUCKLEY IRE	45	0945-04	47-10	122-00	685	01/1313	9	99.8	0	09/1986	4	01/1313	9	10.9	0	0.1	0	04	2	03	2	0.1	0	04	2	03	2	0.1	0	04	2	03	2	0.1	0	04	2	03	2	0.1	0		
VA CENTRAL AVE	45	1231-05	47-25	121-44	1560	07/1809	8	98.8	2	01/1914	0	01/1909	8	7.6	3	0.4	2	03	2	04	2	0.4	2	03	2	04	2	0.4	2	03	2	04	2	0.4	2	03	2	04	2	0.4	2		
VA CLEARBROOK	45	1748-03	46-43	122-57	185	01/1893	5	91.7	0	04/1893	3	06/1896	5	10.3	0	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0		
VA CLE ELON	45	1504-06	47-13	120-57	1926	01/1893	7	98.3	2	99/9999	9	01/1899	5	20.4	8	0.15	9	15	9	15	9	0.15	9	15	9	15	9	0.15	9	15	9	15	9	0.15	9	15	9	15	9	0.15	9	15	9
VA COLFAX 1HW	45	1568-10	46-53	117-23	1365	01/1893	5	98.3	2	99/9999	9	01/1899	5	10.3	0	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0	02	1	02	1	0.2	0		
VA COLVILLE 5NE	45	1654-09	48-35	117-48	3000	08/1894	6	94.5	5	01/1994	8	03/1904	7	12.4	6	0.6	5	08	6	06	5	0.6	5	08	6	06	5	0.6	5	08	6	06	5	08	6	06	5	08	6	06	5		
VA DAYTON 1WSN	45	1666-07	48-33	119-48	2420	08/1894	6	94.5	5	01/1994	8	03/1904	7	12.4	6	0.6	5	08	6	06	5	0.6	5	08	6	06	5	0.6	5	08	6	06	5	08	6	06	5	08	6	06	5		
VA DAYTON 2W	45	2017-07	47-39	118-08	2420	08/1894	6	94.5	5	01/1994	8	03/1904	7	12.4	6	0.6	5	08	6	06	5	0.6	5	08	6	06	5	0.6	5	08	6	06	5	08	6	06	5	08	6	06	5		
VA DAYTON 3W	45	2017-07	47-39	118-08	2420	08/1894	6	94.5	5	01/1994	8	03/1904	7	12.4	6	0.6	5	08	6	06	5	0.6	5	08	6	06	5	0.6	5	08	6	06	5	08	6	06	5	08	6	06	5		
VA ELLENBURG	45	2505-08	46-58	120-31	1480	02/1891	4	95.1	5	11/1974	2	05/1900	6	11.7	5	0.9	7	11	8	10	8	0.9	7	11	8	10	8	0.9	7	11	8	10	8	0.9	7	11	8	10	8	0.9	7	11	8
VA FONES 1E	45	2214-01	47-57	124-22	350	02/1908	8	94.8	5	01/1978	2	01/1908	7	7.0	3	0.6	7	10	6	08	7	0.6	7	10	6	08	7	0.6	7	10	6	08	7	10	6	08	7	10	6	08	7		
VA GREENVIEW 2E	45	3228-08	45-49	120-49	1700	11/1905	8	98.0	3	1																																	

Table B-4. Listing of the precipitation quality assessment file (QA94PCP.ASC)

PRECIPITATION

STATE, STATION NAME & QUALIFIER	ST	ETH-DIV	LAT-N	LONG-W	ELEV (FT)	BPRK	ORIG DATA	UNADJ SCD	ADJ SCD	ADJ R	WEST R	BPRK R	SPD ADJ BPRK	SPD ADJ SCD	SPD ADJ R	CONF R	CONF R	CONS FULL R	CONS FULL R	
OR ASTORIA WEO AP	35	0304-03	42-13	123-43	1750	01/1879	99.2	01/1900	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR ASTORIA WEO AP	35	0328-01	46-09	123-43	1750	01/1879	99.2	01/1900	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR BAKER FAP AP	35	0411-08	44-50	117-49	3368	07/1889	100.0	07/1920	0.07/1920	3.1	5.1	19.9	20.9	07.7	07.7	1.00	1.00	1.00	1.00	1.00
OR BEND	35	0694-07	44-04	121-17	3660	01/1902	100.0	01/1902	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR BLY JNN	35	0854-05	42-26	124-06	4378	03/1920	94.0	10/1992	0.99/1999	33.3	33.3	07.3	08.6	02.3	03.5	1.08	1.08	1.08	1.08	1.08
OR CASCADIA	35	1055-01	42-02	124-15	46	04/1912	99.4	05/1990	0.99/1999	100.0	100.0	18.9	16.9	00.0	00.0	1.20	1.20	1.20	1.20	1.20
OR CONDON	35	1762-06	45-14	123-19	2600	07/1908	98.5	07/1983	0.99/1999	2.0	3.8	18.9	23.9	00.0	00.0	1.02	1.02	1.02	1.02	1.02
OR CONWALL STATE UNIV	35	1862-02	44-38	123-12	221	01/1888	99.7	02/1917	0.99/1999	2.6	2.6	01.0	01.0	01.0	01.0	1.01	1.01	1.01	1.01	1.01
OR COTTAGE GROVE 1S	35	1945-05	42-54	123-04	650	08/1916	99.4	09/1990	0.99/1999	5.8	5.8	05.4	07.5	04.6	06.7	1.05	1.05	1.05	1.05	1.05
OR CRATER LAKE NPS HQ	35	2135-09	42-56	117-20	4225	08/1929	94.7	12/1993	0.99/1999	10.4	10.4	04.3	04.2	06.6	06.6	1.04	1.04	1.04	1.04	1.04
OR DANER	35	3770-02	45-27	122-09	1318	01/1903	91.0	01/1903	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR DANER	35	2440-06	45-20	121-09	180	01/1890	96.0	05/1989	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR FOREST GROVE	35	2597-02	45-32	123-06	4608	10/1909	99.4	06/1991	1.99/1999	100.0	100.0	06.5	07.1	02.3	03.5	1.02	1.02	1.02	1.02	1.02
OR FORT KIM	35	3095-05	43-23	121-12	748	01/1899	99.9	10/1987	0.99/1999	1.8	3.4	04.3	12.8	06.0	06.0	1.03	1.03	1.03	1.03	1.03
OR GRANTS PMS	35	3445-03	42-26	123-21	925	01/1889	99.4	06/1991	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR HERBES PORTLAND WTRB	35	3770-02	45-27	122-09	1318	01/1903	91.0	01/1903	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR HERMISTON 1SE	35	3847-06	45-42	119-12	825	05/1893	99.3	04/1990	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR HOOD RIVER EXPERIMENT ETH	35	4003-06	45-41	121-31	500	01/1884	99.9	03/1888	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR HOOD RIVER EXPERIMENT ETH	35	4506-07	42-12	121-47	4098	01/1884	96.5	08/1988	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR LAKEVIEW JNN	35	4670-07	42-13	120-22	4778	07/1937	97.3	08/1991	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR LAKEVIEW JNN HQ	35	5162-07	43-17	118-50	4109	07/1937	97.3	08/1991	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR MCINTIRE BRIDGE HS	35	5584-02	45-11	123-10	155	07/1898	99.2	03/1986	0.99/1999	12.2	12.2	04.4	02.3	02.3	02.3	1.02	1.02	1.02	1.02	1.02
OR MILTON-PREEMATER	35	5591-06	45-57	118-25	970	11/1897	100.0	03/1914	1.99/1999	16.2	16.2	01.2	01.2	01.2	01.2	1.01	1.01	1.01	1.01	1.01
OR MORO	35	5734-06	45-29	120-43	1870	11/1897	88.3	08/1990	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR NEWPORT SAND PAM AP	35	6032-01	44-38	124-03	122	11/1891	99.6	01/1991	0.99/1999	1.0	1.0	12.9	12.8	01.2	01.2	1.00	1.00	1.00	1.00	1.00
OR PALMYRA	35	6725-01	43-25	124-15	6	01/1902	99.6	01/1991	0.99/1999	3.1	3.1	10.2	10.8	03.5	03.5	1.02	1.02	1.02	1.02	1.02
OR PILOT ROCK 1SE	35	6836-06	45-28	118-49	1730	01/1896	99.3	12/1991	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR PRINEVILLE 4NW	35	6883-07	44-21	120-54	2840	01/1897	99.7	11/1987	0.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR PROSPECT 2SW	35	6907-03	42-44	122-31	2482	01/1905	99.9	02/1924	1.99/1999	6.2	6.2	05.4	07.5	01.2	01.2	1.01	1.01	1.01	1.01	1.01
OR RIDGEBURG KOEN	35	7169-03	42-57	123-21	680	11/1891	90.4	07/1913	0.99/1999	0.5	0.5	11.8	11.8	01.2	01.2	1.01	1.01	1.01	1.01	1.01
OR THREE LAKES	35	8465-01	43-03	123-22	435	07/1877	100.0	07/1877	0.99/1999	0.0	0.0	09.8	09.7	06.7	06.7	1.06	1.06	1.06	1.06	1.06
OR TILLAMOOK 1W	35	8465-01	43-03	123-22	1110	07/1889	99.0	09/1923	1.99/1999	0.2	0.2	01.2	01.2	01.2	01.2	1.01	1.01	1.01	1.01	1.01
OR UNION EXP ETH	35	8746-08	45-13	117-53	2765	01/1911	99.9	01/1911	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR UNION EXP ETH	35	8746-08	45-13	117-53	2765	01/1911	99.9	01/1911	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
OR WALLAWA	35	8997-08	45-34	117-32	2923	01/1903	100.0	01/1903	1.99/1999	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9

PRECIPITATION

STATE, STATION NAME & QUALIFIER	ST	ETH-DIV	LAT-N	LONG-W	ELEV (FT)	BPRK	ORIG DATA	UNADJ SCD	ADJ SCD	ADJ R	WEST R	BPRK R	SPD ADJ BPRK	SPD ADJ SCD	SPD ADJ R	CONF R	CONF R	CONS FULL R	CONS FULL R	
PA ALLENTOWN WEO AP	36	0106-02	40-39	75-26	387	01/1913	99.7	07/1992	0.99/1999	2.2	2.2	03.1	03.1	03.1	03.1	1.02	1.02	1.02	1.02	1.02
PA CHAMBERSBURG 1ESE	36	1354-04	39-36	77-38	640	02/1860	73.1	08/1994	0.99/1999	20.0	20.0	07.6	08.6	01.2	01.2	1.01	1.01	1.01	1.01	1.01
PA EIZENHOVER NATL HIST SITE	36	2537-04	39-48	77-16	520	01/1893	100.0	06/1873	1.99/1999	4.4	4.4	08.7	08.6	01.2	01.2	1.01	1.01	1.01	1.01	1.01
PA FAREHAM	36	2622-10	42-05	80-11	732	06/1873	100.0	06/1873	1.99/1999	4.4	4.4	08.7	08.6	01.2	01.2	1.01	1.01	1.01	1.01	1.01
PA FAREHAM	36	3056-01	41-01	78-54	1900	07/1864	97.2	07/1867	0.99/1999	8.2	8.2	11.0	12.1	02.1	02.1	1.02	1.02	1.02	1.02	1.02
PA GREENVILLE 2NE	36	3536-10	41-35	80-22	1130	03/1871	80.2	05/1911	0.99/1999	7.3	7.3	08.7	09.7	07.7	07.7	1.02	1.02	1.02	1.02	1.02
PA HARRISBURG CAPITAL CITY	36	3699-04	40-13	78-51	340	08/1840	82.4	09/1999	0.99/1999	2.1	2.1	04.3	05.3	04.6	04.6	1.03	1.03	1.03	1.03	1.03
PA JOHNSTOWN	36	4385-08	40-20	78-55	1234	02/1868	87.8	08/1999	0.99/1999	0.4	0.4	05.4	05.3	02.3	02.3	1.01	1.01	1.01	1.01	1.01
PA NEW CASTLE 1N	36	5215-06	41-50	78-52	1560	09/1903	99.0	10/1993	0.99/1999	17.7	17.7	02.1	04.2	02.3	02.3	1.05	1.05	1.05	1.05	1.05
PA PALMERTON	36	5699-02	40-48	79-17	410	04/1917	99.5	02/1932	0.99/1999	0.0	0.0	02.4	02.2	02.3	02.3	1.05	1.05	1.05	1.05	1.05
PA READING 4NW	36	7322-03	40-35	75-56	360	04/1859	80.1	05/1997	0.99/1999	22.4	22.4	07.6	07.5	07.7	07.7	1.01	1.01	1.01	1.01	1.01
PA RIDGWAY	36	7477-07	41-25	78-45	1360	08/1891	85.9	06/1954	0.99/1999	4.1	4.1	09.8	10.8	01.2	01.2	1.01	1.01	1.01	1.01	1.01
PA SELINGROVE 2F	36	7931-05	40-46	76-52	420	08/1888	99.5	05/1976	0.99/1999	1.5	1.5	07.6	07.5	02.3	02.3	1.02	1.02	1.02	1.02	1.02
PA STRONGSBURG	36	8162-07	40-00	71-32	1170	09/1892	97.8	11/1991	1.99/1999	9.3	9.3	07.4	07.3	04.6	04.6	1.04	1.04	1.04	1.04	1.04
PA TOWANDA 1EE	36	8505-06	41-45	78-35	750	10/1884	99.6	08/1985	0.99/1999	1.2	1.2	03.1	03.1	03.1	03.1	1.01	1.01	1.01	1.01	1.01
PA UNIONTOWN 1NE	36	9050-09	39-55	79-43	956	01/1888	98.2	04/1994	0.99/1999	2.0	2.0	08.7	08.6	01.2	01.2</					

PRECIPITATION

ST	STATION NAME & QUALIFIER	STAT	STATION NAME & QUALIFIER	ELEV (FT)	BROR R	DATA R	UNADJ R	ADJ R	SCD R	WEST DATA R	WEST DATA R	BROR R	ADJ R	SCD R	WEST DATA R	WEST DATA R	BROR R	ADJ R	SCD R	CONF R	CONF R	CONS FULL R	CONS FULL R	
37	0896-01 41-10 71-35	RI	BLOCK ISLAND STATE AP	110	09/1880	2	99.5	2	11/1994	0.6	1880	0	0	0	0	0	0	0	0	0	0	0	0	0
37	4266-01 41-29 71-32	RI	KINGSTON	100	04/1889	6	100.0	0	12/1831	0	1831	0	0	0	0	0	0	0	0	0	0	0	0	0
37	6598-01 41-44 71-26	RI	PROVIDENCE WEO AP	51	12/1831	0	100.0	0	12/1831	0	1831	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0074-05 31-36 81-41	SC	AILEEN AHS	400	05/1854	0	88.9	8	06/1985	5	03/1882	7	6.4	3	06	5	07	5	01	2	01	2	01	2
38	0155-02 34-23 82-40	SC	ANDERSON	800	06/1884	3	94.9	6	07/1881	2	06/1926	3	1.3	2	12	9	12	8	04	6	04	6	04	6
38	0559-07 32-23 80-46	SC	BEAUFORT 75N	20	06/1884	3	95.1	6	05/1950	0.9	1852	4	1.5	3	14	9	14	9	03	5	03	5	03	5
38	0751-07 34-05 82-35	SC	BLACKVILLE 3N	530	01/1892	5	98.7	4	06/1994	8	01/1892	1	13.9	6	10	8	10	8	03	5	03	5	03	5
38	1310-03 34-15 80-39	SC	CALHOUN FALLS	140	05/1849	0	99.6	2	12/1851	0	01/1892	1	0.0	0	08	7	08	6	06	7	06	7	06	7
38	1549-07 32-47 79-56	SC	CHARLESTON CITY	10	01/1807	0	89.3	8	08/1982	0	01/1898	1	0.0	0	08	7	08	6	06	7	06	7	06	7
38	1588-04 34-42 79-53	SC	CHEMUN UNIVERSITY	140	04/1882	2	97.9	4	02/1994	8	10/1885	1	0.1	0	04	3	04	2	04	6	04	6	04	6
38	1770-02 34-41 82-49	SC	COLUMBIA U OF SC	212	06/1872	1	98.4	4	12/1953	8	01/1865	5	2.2	3	12	9	13	9	01	2	02	3	02	3
38	1997-06 31-30 75-03	SC	COMMAN	150	02/1888	3	97.5	5	11/1993	8	01/1895	1	0.2	1	05	4	06	4	05	7	05	7	05	7
38	2260-04 34-18 79-53	SC	CORNING	10	06/1893	5	93.1	7	17/1969	3	10/1969	6	3.6	4	10	8	11	8	03	5	02	3	02	3
38	3468-04 33-21 79-15	SC	GEORGETOWN 2E	957	01/1878	2	92.9	5	11/1884	0.4	1977	7	2.1	3	12	9	12	8	01	2	01	2	01	2
38	3747-02 34-54 82-13	SC	GREENVILLE-SPARTANBURG AP	38	07/1882	3	99.5	9	09/1999	9	02/1976	6	6.1	5	10	7	11	8	02	3	02	3	02	3
38	3754-05 34-10 82-12	SC	GREENWOOD 36N	500	05/1895	9	96.5	6	10/1991	7	08/1923	3	0.1	0	07	6	07	5	03	5	03	5	03	5
38	4751-01 31-39 79-49	SC	KERSHAW	589	09/1901	7	85.0	8	11/1975	3	03/1943	4	0.9	2	08	7	09	7	03	5	03	5	03	5
38	5017-02 34-30 82-02	SC	KIMBLE 16Z	476	05/1897	3	99.8	1	06/1978	9	13/1977	6	0.8	0	04	5	06	4	02	3	01	2	01	2
38	5200-05 34-12 81-25	SC	LITTLE MOUNTAIN	711	10/1893	5	100.0	0	10/1893	0	11/1923	3	0.8	0	08	7	08	6	04	2	01	2	01	2
38	6209-05 34-17 81-37	SC	MENBERAY	476	05/1897	3	99.8	1	06/1978	9	13/1977	6	0.8	0	04	5	06	4	02	3	01	2	01	2
38	6527-06 33-30 80-32	SC	ORANGEBURG 2	480	01/1902	7	98.6	4	04/1949	3	05/1979	6	0.0	0	09	8	09	7	02	3	02	3	02	3
38	7722-02 34-38 81-31	SC	SAULDA	520	09/1893	5	99.7	2	02/1950	3	01/1900	2	3.5	4	06	5	06	4	02	3	02	3	02	3
38	8426-07 32-59 80-11	SC	SPARTANVILLE	35	07/1898	7	99.8	1	02/1950	3	01/1900	2	3.5	4	06	5	06	4	02	3	02	3	02	3
38	8527-06 33-30 80-32	SC	SPARTANVILLE	177	12/1901	7	73.5	9	12/1990	7	01/1901	2	10.7	0	03	1	08	6	03	5	03	5	03	5
38	8840-06 33-56 83-05	SC	SPURTER	980	07/1897	4	98.6	3	03/1986	5	02/1988	7	1.2	2	03	1	08	6	03	5	03	5	03	5
38	9327-03 34-42 81-30	SC	VALHALLA	560	01/1900	7	99.9	1	08/1949	3	01/1900	2	0.1	0	02	1	02	1	02	1	02	1	02	1
38	9459-07 32-41 80-51	SC	YANKEE	35	04/1882	2	89.7	8	07/1976	3	06/1981	6	0.6	1	09	8	09	7	02	3	02	3	02	3

PRECIPITATION

ST	STATION NAME & QUALIFIER	STAT	STATION NAME & QUALIFIER	ELEV (FT)	BROR R	DATA R	UNADJ R	ADJ R	SCD R	WEST DATA R	WEST DATA R	BROR R	ADJ R	SCD R	WEST DATA R	WEST DATA R	BROR R	ADJ R	SCD R	CONF R	CONF R	CONS FULL R	CONS FULL R	
39	0020-03 45-27 98-26	SD	ABERDEEN WEO AP	1286	03/1890	4	100.0	0	03/1890	0	08/1982	7	0.0	0	11	8	11	8	01	2	00	0	00	0
39	0043-08 43-39 97-47	SD	ACADEMY 2NE	1286	07/1898	7	99.9	1	02/1929	2	04/1957	5	0.4	1	06	5	06	4	03	5	03	5	03	5
39	0151-09 43-39 97-47	SD	ALEXANDRIA	1350	03/1882	2	91.6	7	04/1924	2	08/1924	3	8.0	5	09	8	12	8	06	7	06	7	06	7
39	1182-09 43-18 96-40	SD	CLARK 4NN	1345	07/1889	4	90.9	7	11/1972	3	03/1922	6	2.5	3	09	9	10	8	02	3	02	3	02	3
39	1739-07 44-53 97-44	SD	CLARK	1780	07/1889	4	95.0	6	09/1949	0.3	1952	4	3.6	4	09	8	10	8	02	3	02	3	02	3
39	1972-05 43-58 101-52	SD	COTTONWOOD 2E	2414	07/1909	8	98.5	4	11/1962	8	12/1950	4	-99.2	2	04	3	04	2	01	2	01	2	01	2
39	2429-01 45-03 101-38	SD	DUPREE	430	09/1847	7	89.4	8	08/1908	1	99/9999	9	-99.9	9	06	5	06	4	-99	9	-99	9	-99	9
39	2527-02 45-02 98-08	SD	FAYETTEVILLE	1570	03/1852	5	97.2	5	07/1984	8	05/1986	7	1.9	3	08	7	09	7	01	2	01	2	01	2
39	3029-07 44-02 98-04	SD	GAIN VALLEY 4NN	1231	05/1891	5	99.8	1	08/1918	1	02/1964	5	1.0	2	06	5	06	4	02	3	02	3	02	3
39	3832-06 44-31 99-28	SD	HIGHMORE 1N	1720	04/1886	3	99.0	3	10/1949	3	03/1942	4	17.2	7	00	0	00	0	00	0	00	0	00	0
39	4007-04 43-28 95-39	SD	HOT SPRINGS	1890	02/1887	2	95.2	7	02/1971	9	99/9999	9	-99.9	9	06	5	06	4	-99	9	-99	9	-99	9
39	4516-06 43-55 99-52	SD	HOWARD	1200	05/1892	5	98.7	3	12/1966	5	05/1963	5	0.7	2	13	9	13	9	02	3	02	3	02	3
39	5456-06 43-55 99-52	SD	HOWARD	1200	05/1892	5	98.7	3	12/1966	5	05/1963	5	0.7	2	13	9	13	9	02	3	02	3	02	3
39	5481-09 43-14 97-35	SD	HILKAT 2E5N	1324	05/1896	6	99.0	3	10/1949	7	05/1969	6	20.9	7	09	8	10	8	01	2	00	0	00	0
39	5536-03 45-12 96-38	SD	MURDO	1160	12/1887	6	97.9	4	03/1947	7	05/1982	4	10.5	2	06	15	16	9	03	5	03	5	03	5
39	5631-06 43-55 100-22	SD	PAID CITY	1660	09/1909	8	97.9	4	03/1951	3	01/1958	5	24.5	7	09	8	11	8	06	7	06	7	06	7
39	6537-06 44-23 100-17	SD	PAID CITY	1660	09/1909	8	97.9	4	03/1951	3	01/1958	5	24.5	7	09	8	11	8	06	7	06	7	06	7
39	6947-05 44-07 103-17	SD	PAID CITY	1728	04/1866	8	90.4	7	07/1911	3	10/1900	2	10.2	0	02	1	03	1	03	1	03	1	03	1
39	8622-09 42-45 96-55	SD	YEMMISON 2SE	3450	01/1888	3	98.4	8	11/1986	5	10/1988	7	2.6	3	06	3	06	3	05	7	04	5	04	5
39	8932-07 44-55 97-09	SD	WOOD	1190	12/1883	2	88.8	9	09/1982	5	11/1982	5	0.4	1	10	8	13	9	02	3	02	3	02	3
39	9442-08 43-50 100-29	SD	WOOD	1748	11/1911	3	95.5	6	11/1989	6	11/1989	7	0.0	0	04	3	04	2	00	0	00	0	00	0

PRECIPITATION

Table with columns: ST, STR-DIV, LAT-N, LONG-W, ELEV, ORIG, UNAD, ADJ, BEST, EPD, EPD ADJ, CONF, CONS, CONS. Rows include stations like VA BLACKSBURG 1SE, VA BIRDS BLUFF, VA BOKES GARDEN, etc.

PRECIPITATION

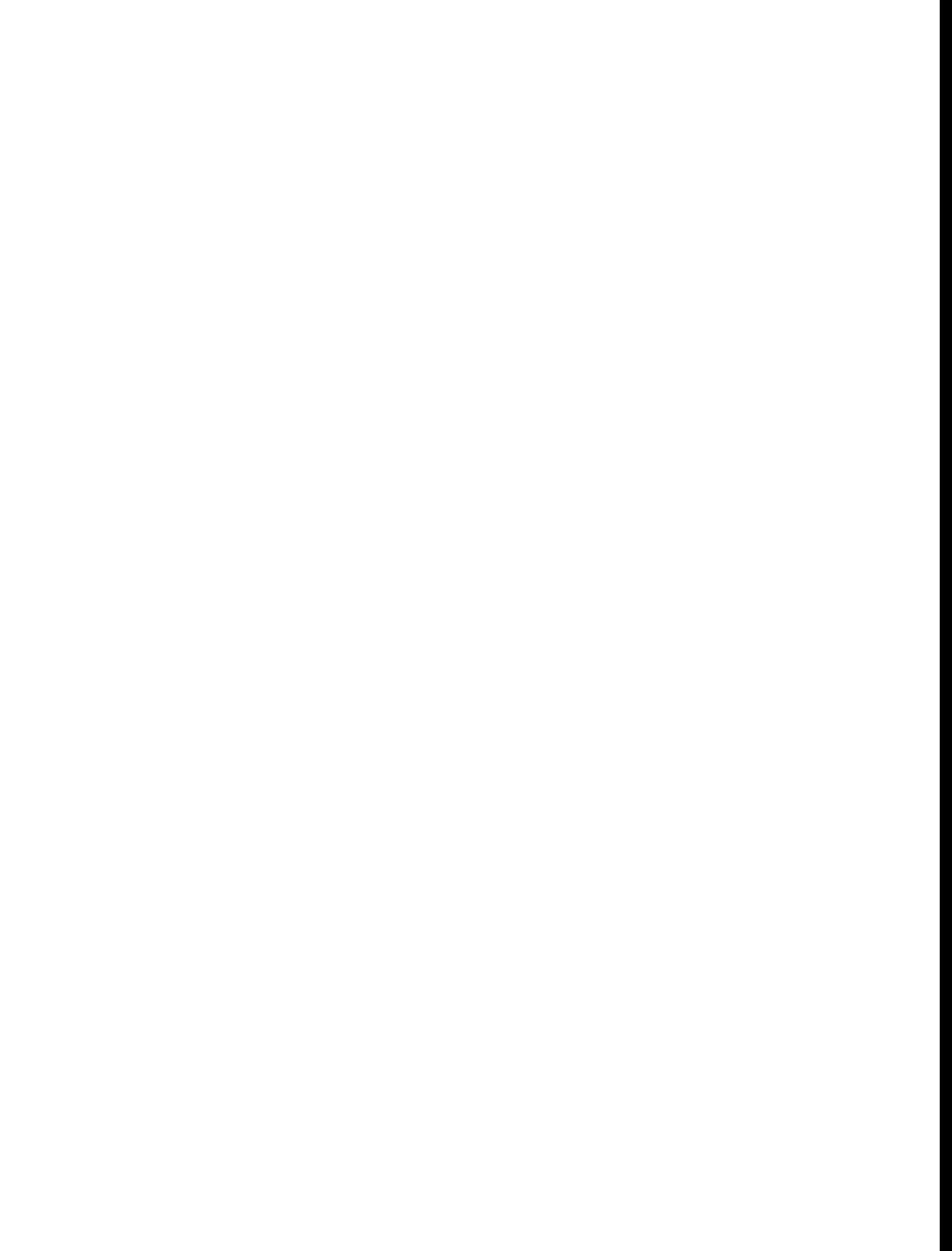
Table with columns: ST, STR-DIV, LAT-N, LONG-W, ELEV, ORIG, UNAD, ADJ, BEST, EPD, EPD ADJ, CONF, CONS, CONS. Rows include stations like VA BERTHELY, VA BELLINGHAM 36SW, VA BLAINE, etc.

PRECIPITATION

STATE	STATION NAME & QUALIFIER	ST	STN-DIV	LAT-N	LONG-W	ELEV (FT)	MOIST DATA	UNADJ	ADJ	NEET DATA	IPD ADJ	IPD ADJ	IPD ADJ	IPD ADJ	IPD ADJ	CONF	CONS	CONS												
				DEC-MIN	DEC-MIN		R	R	R	R	R	R	R	R	R	R	R	R												
MI	RICHMOND	46	1220-02	38-59	80-13	1455	08/1887	3	94.8	6	10/1890	7	01/1887	0	13.3	6	03	1	06	4	03	5	07	7	1.04	4	10	6	14	8
MI	CARO ZENE N BEND SP	46	1330-01	39-13	81-07	925	10/1900	7	96.9	5	10/1894	9	02/1888	7	78.3	7	05	4	05	3	01	2	01	2	1.10	7	08	5	04	4
MI	GARY	46	3353-05	37-22	81-33	1430	06/1817	9	92.8	7	09/9999	9	01/1817	3	7.6	5	00	0	00	0	00	0	01	2	1.01	10	0	2	06	9
MI	GRENVILLE 1EZE	46	3548-02	38-56	80-49	1200	08/1887	3	99.4	2	04/1879	2	06/1863	5	10.6	0	07	0	09	7	03	5	03	5	1.03	08	5	10	6	6
MI	LEWISBURG JN	46	5228-02	39-51	80-36	1103	01/1804	7	98.0	2	01/1885	2	07/1901	2	9.5	6	03	1	05	6	03	5	03	5	1.05	12	7	06	5	2
MI	MARTINDALE PMA AIRPORT	46	5707-06	39-24	77-59	537	10/1891	5	99.5	2	05/1823	2	01/1891	2	6.1	5	08	3	04	2	04	6	06	05	1.03	18	9	04	4	4
MI	PAREONS 1NE	46	6867-04	39-06	79-40	1770	01/1899	7	94.9	6	12/1990	7	05/1958	5	7.7	5	08	7	08	6	03	5	03	5	1.03	12	7	12	7	12
MI	PICKENS 4SEE	46	7001-04	38-37	80-11	3499	04/1902	7	96.5	5	09/9999	9	04/1989	7	78.2	7	05	4	05	3	01	2	01	2	1.12	12	7	19	9	9
MI	SPENCER 1SE	46	8384-03	38-48	81-21	740	02/1892	5	92.7	7	01/1878	3	01/1892	1	18.2	0	06	5	09	7	06	7	06	7	1.05	16	8	20	9	9
MI	WELLSBURG WATER TRMT PLANT	46	8688-01	37-40	82-17	670	08/1900	7	97.2	2	09/9999	9	01/1900	2	7.9	5	03	1	04	2	03	5	05	5	1.05	16	8	20	9	9
MI	WINDFIELD LOCKS	46	9683-03	38-32	81-55	571	10/1900	7	97.5	5	06/1904	1	01/1900	2	3.2	4	03	1	03	1	03	1	03	5	1.02	2	04	4	14	8

PRECIPITATION

STATE	STATION NAME & QUALIFIER	ST	STN-DIV	LAT-N	LONG-W	ELEV (FT)	MOIST DATA	UNADJ	ADJ	NEET DATA	IPD ADJ	IPD ADJ	IPD ADJ	IPD ADJ	IPD ADJ	CONF	CONS	CONS												
				DEC-MIN	DEC-MIN		R	R	R	R	R	R	R	R	R	R	R	R												
MI	ASHLAND EXPERIMENT FARM	47	0349-01	46-34	90-58	1650	07/1856	0	72.7	2	10/1898	6	02/1800	2	5.3	5	07	6	09	7	05	7	05	7	1.04	4	12	7	16	9
MI	BOWLER	47	1078-08	43-37	89-23	1790	11/1897	7	98.5	3	05/1887	5	03/1897	1	0.2	1	05	4	05	3	05	3	05	3	1.06	6	16	8	04	4
MI	DARLINGTON	47	2001-07	43-41	90-27	930	01/1901	7	94.0	7	09/9999	9	01/1910	2	1.6	3	05	4	05	3	04	6	05	6	1.04	12	7	14	8	8
MI	FOND DU LAC	47	2839-06	43-48	88-27	760	01/1886	3	99.6	2	09/1990	6	01/1847	4	1.7	3	06	5	07	5	02	3	02	3	1.02	2	06	5	02	3
MI	HANCOCK EXPERIMENT FARM	47	3405-05	44-07	89-32	1076	11/1902	7	98.3	4	10/1897	5	05/1861	5	0.7	2	05	4	05	3	02	3	02	3	1.01	1	02	5	00	2
MI	HATFIELD HYDRO PLANT	47	3471-04	44-24	90-44	933	01/1898	9	92.2	7	08/1872	3	01/1829	3	8.3	5	05	4	05	1	03	5	03	5	1.03	04	12	7	06	2
MI	LANCASTER WEN	47	4849-07	44-06	87-41	1660	02/1858	0	96.4	5	09/1590	6	04/1838	3	0.8	2	05	4	05	1	03	5	02	3	1.01	14	8	10	6	6
MI	MERSFIELD EXPERIMENT FARM	47	5120-05	44-06	90-08	1250	01/1913	9	100.0	0	01/1913	1	07/1940	4	1.3	2	04	3	04	2	04	2	03	5	1.02	20	9	20	9	
MI	MILWAUKEE MT MARY COL	47	5255-02	45-08	90-21	1870	06/1889	4	99.7	2	10/1887	5	04/1863	5	9.4	6	09	8	09	7	04	6	04	6	1.06	6	14	8	08	6
MI	MINOCQUA DAM	47	5516-02	45-53	89-44	726	03/1856	0	74.7	9	02/1887	5	02/1891	1	8.9	2	07	6	07	5	06	7	07	7	1.06	5	12	7	04	4
MI	NEW LONDON	47	6045-05	44-54	87-57	1800	01/1857	0	73.2	5	09/9999	9	01/1888	0	14.1	6	07	6	08	6	06	7	08	7	1.08	6	12	7	04	4
MI	OSHTON	47	6330-06	44-02	88-33	800	09/1888	4	97.2	5	10/1914	1	07/1950	4	13.1	6	11	8	12	8	04	6	03	5	1.04	14	8	10	6	6
MI	PORTAGE	47	6718-08	43-31	89-26	800	08/1887	3	100.0	0	08/1887	0	05/1957	5	0.2	1	09	8	09	7	03	5	02	3	1.04	14	8	10	6	6
MI	PRAIRIE DU CHIEN	47	6827-07	43-02	91-09	658	05/1836	0	71.5	9	04/1890	6	03/1800	2	2.9	3	11	2	16	6	03	5	03	5	1.00	14	8	10	6	6
MI	RACINE	47	6922-09	42-42	91-53	1300	04/1894	6	97.4	5	12/1889	6	05/1894	1	14.5	6	03	1	08	6	03	5	03	5	1.05	04	16	9	9	
MI	SPENCER EXPERIMENT FARM	47	8110-01	44-58	90-55	1080	09/1903	7	96.9	5	03/1883	4	05/1955	4	13.6	6	10	8	10	8	03	5	03	5	1.04	04	16	9	9	
MI	WILKONA ZIM	47	8827-07	43-34	90-55	1185	04/1891	5	99.5	2	09/1990	6	03/1927	3	14.9	2	07	5	07	5	06	7	07	7	1.08	6	02	3	02	3
MI	WATERLOO	47	8919-08	43-11	88-44	820	05/1891	5	99.5	2	09/1990	6	03/1927	3	0.8	2	07	5	07	5	06	7	07	7	1.04	4	02	3	02	3



Appendix C: Reprints of Pertinent Literature

OTHER SUGGESTED READING:

On the development and use of homogenized climate data sets. By D. R. Easterling, T. C. Peterson, and T. R. Karl. Submitted to the *Journal of Climate* for publication in 1996.

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Karl, T. R., C. N. Williams, Jr., P. J. Young, and W. M. Wendland. 1986. A model to estimate the time of observation bias associated with monthly mean maximum, minimum, and mean temperatures for the United States. *Journal of Climate and Applied Meteorology* 25:145–160.

Karl, T. R., and C. N. Williams, Jr. 1987. An approach to adjusting climatological time series for discontinuous inhomogeneities. *Journal of Climate and Applied Meteorology* 26:1744–1763.

Karl, T. R., H. F. Diaz, and G. Kukla. 1988. Urbanization: Its detection and effect in the United States climate record. *Journal of Climate* 1:1099–1123.

Quayle, R. G., D. R. Easterling, P. Y. Hughes, and T. R. Karl. 1991. Effects of recent thermometer changes in the cooperative network. *Bulletin of the American Meteorological Society* 72:1718-1724.

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