Appendix D

Hydrologic Information

Appendix D1

Data Gaps

Appendix D1. Data Uncertainties in Southwest Regional Supply and Demand Study

As requested by the Southwest New Mexico Regional Water Planning Steering Committee, Daniel B. Stephens & Associates, Inc. (DBS&A) has identified uncertainties in the available data regarding supply and demand in the Southwest Region. Section 1 summarizes the data uncertainties for each of the key types of data that were evaluated in the water supply, demand, and water budget components of the study. Section 2 provides overall conclusions about the ability of the supply to meet demands within the region, given the uncertainties in the available data.

D1.1 Data Uncertainties

The following summary discusses data uncertainties primarily as they pertain to the overall goal of regional water planning, which is to characterize the available water supplies and projected demands so that appropriate plans for meeting future water supply needs can be developed. While there is always some degree of uncertainty in evaluating hydrologic conditions based on available data, in some cases the uncertainty does not have a large impact on planning for future water demand, while in other cases, even lower degrees of uncertainty may have a great impact on the ability to accurately plan for future water needs. The following discussion therefore concentrates on uncertainties that affect the development of a reliable water plan for the Southwest Region. As the steering committee requested, we are also including a numeric scoring, based on our professional judgment, of the data uncertainties as they impact the ability to accurately plan for future water needs (Table 1).

D1.1.1 Water Supply

D1.1.1.1 Climate

The climate data used in the study were obtained from the National Oceanic and Atmospheric Administration (NOAA) and Natural Resources Conservation Service (NRCS) SNOTEL stations. The data that do exist are considered to be reliable and of high quality. Uncertainties regarding climatic data arise primarily from the distribution of climate stations within the region.

Table D1-1. Reliability of Supply and Demand Data for Southwest New Mexico Water Planning Region

Data Type	Data Certainty Rating [a]
Water supply	
Climate	
Precipitation	8
SNOTEL	7
Surface water	7
Reservoirs	6
Groundwater	
Hydrogeologic setting	8
Water levels	6
Aquifer properties	5
Recharge	4
Sustainable yields	3
Water quality	8
Legal issues	
Existing water rights	6
Water demand	
Commercial, industrial, power	9
Domestic water supply	6
Public water supply	8
Livestock	8
Irrigation	6
Mining	9
Reservoir evaporation	6
Riparian evaporation	3
Water budget	
Ability of supply to meet demand	5

[a] Based on a scale of 1 to 10, with 1 being the lowest level of data certainty.
--- = Not estimated as part of the supply/demand study

Due to local orographic and other climatic conditions, precipitation and snowfall patterns vary considerably within the region, and uncertainty arises when the concentration of precipitation stations is insufficient to reflect areal variations in climatic conditions. However, since the vast majority of precipitation (greater than 90 percent) is not seen as streamflow, it may be more useful to focus water supply planning efforts on actual streamflow measurements rather than on precipitation data. Conversely, to the extent that precipitation data are used to develop recharge estimates, it would be useful to have more up-to-date contoured precipitation data than the data available to WRRI for developing precipitation maps. Also, additional SNOTEL stations could help water resource managers provide better forecasts of spring snowmelt in the region.

D1.1.1.2 Surface Water

In general, we consider the data available from the USGS to be a reasonably accurate accounting of surface water flow. The uncertainties in surface water data that do exist are also related to the distribution of gaging stations within the region. Additionally, uncertainties arise

when the locations of stations were moved or stations were not operational for some period(s) of time.

For the most part the distribution of stream gaging stations on the main stem of the San Francisco and Gila Rivers and on the Mimbres River upstream of the Luna County line provides good data coverage. Conversely, little to no data are available within the planning region for the Mimbres River downstream of the Luna County line or for ephemeral stream reaches outside these three river basins. Additionally, the presence of ungaged tributaries presents some uncertainty regarding streamflow in each sub-basin.

Gaps in station operation occurred for several of the key stations. In such cases data for the missing time periods were estimated on a monthly or annual basis by developing relationships with nearby stations that did record streamflow data during the missing period, as described in Section 5.2 and Appendix D3. The specific stations and time periods that were used to estimate missing data are noted on the graphs in Appendix D3.

In addition, streamflow data after September 30, 2001 (water year 2002) had not been fully checked by the USGS at the time this analysis was completed and are therefore considered provisional. Some provisional daily data were missing from the periods of record of several gage stations due to equipment malfunctions or lack of reporting. Where such gaps existed, daily values were estimated as described in the report. Even though some surface water data were estimated, we feel that we have a reasonably accurate understanding of the range of surface water flows that occur within the region.

D1.1.1.3 Reservoirs

Information regarding reservoirs in the region, including storage volumes, sedimentation, and operation information, was difficult to obtain and in many instances was incomplete. The majority of information came from the New Mexico Office of the State Engineer (OSE), which prior to 1985 estimated the amount of evaporation from all reservoirs within the planning region; for years after 1985 the OSE only provides information for larger reservoirs. Additionally, more recent information was obtained through personal communication with the New Mexico and Arizona Game and Fish Departments and from available reservoir reports. However, detailed

information on operations was not available for all reservoir locations, and in some cases, several different storage capacities were given in the various reports, as noted in Table 5-8.

D1.1.1.4 Groundwater

Data uncertainties regarding groundwater in the region are discussed based on the following categories:

- *Hydrogeologic setting.* A great deal of good information regarding the general geology of the Southwest Region is available. Because of the geologic complexities of the region, local geologic conditions are not as well understood in some locations as in others, but the overall understanding of the hydrogeologic setting should be accurate for regional water planning purposes.

- *Water levels.* The USGS maintains monitoring wells in which water level data are recorded. These wells are not pumping wells and we consider the water level data from the wells to be accurate. Some uncertainty results from the scarcity of monitoring wells, particularly in Catron County where there are only two monitoring wells.

- *Aquifer properties.* From a regional perspective, quantitative data regarding aquifer properties such as transmissivity, storage coefficients, and specific yield are lacking. Although aquifer properties were found for certain locations of each major aquifer, these properties can vary substantially over small distances and at different depths within the same aquifer. Thorough quantification of the aquifers would require considerably more data than are currently available. Additional quantitative data would be valuable for calibration of groundwater models, which would be useful in developing quantitative estimates of the longevity of groundwater supplies in the region.

- *Recharge.* Estimates of recharge for the region have a high degree of uncertainty. Recharge varies considerably based on elevation and local conditions, yet there is a lack of field recharge measurements within the region. Additionally, water that infiltrates into the ground may take many years to reach the regional water table, if it reaches it at all. Recharge estimates may be more accurate in the locations for which groundwater

models exist (Silver City, Deming, and Lordsburg well fields), but even in those areas recharge remains uncertain.

- *Sustainable yields.* The models already developed by the OSE provide good assessments of the available water supplies for the areas evaluated, but have not been designed to provide quantitative estimates regarding sustainable yields and/or the amount of time that groundwater resources will be available to supply the region. The scenarios considered in the modeling efforts provide estimates of the ability of the well fields to meet demand over a 40-year time frame, but do not provide quantitative estimates of how long supplies will last without incurring subsidence, non-economic pumping costs, or other issues that may be relevant for regional water planning purposes. Additionally, the lack of good recharge information that can be reconciled with water demands at a local level creates difficulty in determining how much water can be withdrawn from renewable supplies.

D1.1.2 Water Quality

In general, data regarding total maximum daily loads (TMDLs) and locations of potential contaminant sources such as National Pollutant Discharge Elimination System (NPDES) permitted sites, Superfund sites, and UST sites are considered to be accurate and complete. Information regarding these sites was gathered from databases accessible on the Internet, and therefore is subject to the accuracy of periodic updates that are provided by the agencies making this data available to the public.

Uncertainty in water quality data comes primarily from two areas: (1) lack of comprehensive information about the locations of septic tanks and the quality of water in the vicinity of those tanks, and (2) lack of comprehensive data regarding background water quality that can potentially affect the usability of the water resources, in particular arsenic and salinity or total dissolved solids.

D1.1.3 Legal Issues

Overall, the understanding of legal issues affecting the region is good. Uncertainty in this area arises from incomplete knowledge of the water rights within the region. Water rights specified under the applicable decrees are defined, but there is a lack of comprehensive, accurate information about all water rights within the region.

D1.1.4 Water Demand

Estimates of data uncertainty by category of demand are provided below. These estimates are based on historical and current records. The uncertainty of future water use projections is even greater because of uncertainties regarding where and how growth will occur within the region.

- *Commercial, industrial, and power categories.* The data for these categories of water use are considered to be accurate and complete. Additionally, since these categories represent relatively small portions of the regional water use, any uncertainty in these estimates will not greatly affect the Region's ability to appropriately plan for future water use.

- *Public water supply.* Estimates regarding water use from public providers were generally available and were based on metered data, which should be accurate.

- *Domestic water supply.* Estimates of water supply by domestic wells have a greater degree of uncertainty because no records are kept regarding the amount of water used by domestic wells, and the WATERS database, which records the locations of domestic wells, is not complete and/or up to date.

- *Livestock.* Livestock numbers in the region appear to have remained relatively constant throughout the past few years, and estimates regarding water use for livestock are considered to be reliable. In addition, this category represents a relatively small portion of the regional water use, and any uncertainty in these estimates will not greatly affect the Region's ability to appropriately plan for future water use.

- *Irrigation.* The acreage that can potentially be irrigated (due to current water rights) was evaluated based on several different sources, and we have confidence in our understanding of this acreage. However, because both the diversions and return flows are generally estimated, rather than measured, there is uncertainty in the amount of water actually used for irrigation.

- *Mining.* Estimates regarding recent and existing mining use were for the most part provided by the mining companies in the region and are considered to be reliable.

- *Reservoir evaporation.* Estimates of reservoir evaporation are currently developed by the OSE only for lakes or reservoirs with a storage capacity greater than 5,000 acre-feet. We based our estimates of evaporation on earlier records when the smaller reservoirs and ponds were included. This approach helped to mitigate the uncertainty created by not including all of the reservoirs, but an up-to-date inventory of ponds with estimated surface areas and storage volumes would be required to develop more reliable estimates of reservoir evaporation within the region.

- *Riparian evaporation.* Riparian evaporation was estimated by multiplying estimated riparian areas by a representative riparian evapotranspiration rate. The estimates of riparian areas are uncertain, however, because they were based on digital elevation model (DEM) topographic coverage and selected aerial photographs, rather than on comprehensive mapping of riparian areas, which does not exist for the region. Additionally, site-specific data regarding riparian evapotranspiration rates are lacking for the region.

- *Fish and wildlife, recreation*. The OSE categories of water use do not consider instream flow needs for fish and wildlife and/or recreation (though recreation may be considered part of the commercial category in some instances). If meeting instream flow needs is a concern for the region, then estimates for this category would need to be developed, and the currently available data on this subject are sparse.

D1.1.5 Water Budget/Ability of Supply to Meet Demand

As discussed in Section 7 of the report, water budgets were developed for each basin by reconciling inflows to and outflows from each basin. The uncertainties in the water budgets are dependent on the accuracy or certainty of each of the inflow (e.g., recharge, return flow) and outflow (e.g., human withdrawals) components, which are discussed in Sections D.1.2 and D.1.4. Therefore, the water budget estimates are highly uncertain due to the combined uncertainty of each of the inflow and outflow terms. A greater degree of certainty could be achieved by developing and calibrating basin-scale groundwater models, by conducting more field investigations of components such as recharge, and by more metering of withdrawals and return flows.

D1.2 Summary of Water Supply and Demand Conditions in the Southwest Region

Based on the available data for the Southwest Region as well as the uncertainties regarding that data, the following conclusions regarding the summary of water supply and demand can be made:

- The areas that have the greatest uncertainty with regard to understanding available water supplies in the region are groundwater recharge and quantitative estimates of the longevity of groundwater supplies. Falling water levels in the vicinities of major well fields indicate that groundwater resources in those areas are declining, and it is anticipated that reliance on nonrenewable groundwater resources may not be viable in the long term. The effort to use renewable supplies, such as Central Arizona Project water on the Gila when available, can help to offset these declines. Quantitative evaluation of the longevity of groundwater supplies, through development of comprehensive groundwater models, would help future planning efforts.

- Similarly, sustainable yield is one of the greatest areas of uncertainty in the regional water planning process. Additional field data to better characterize the distribution of

aquifer properties, in conjunction with additional groundwater modeling, is needed to develop a more accurate assessment of sustainable yield.

- The greatest uncertainty in historical and current demand estimates is in riparian evapotranspiration. Additionally, estimates of instream flow needs have not been developed. These two uses could be a substantial part of the demands in the region, and additional data in these areas would improve demand estimates. More comprehensive measurement (as opposed to estimates) of agricultural diversions and return flows is also needed to more accurately characterize demands.

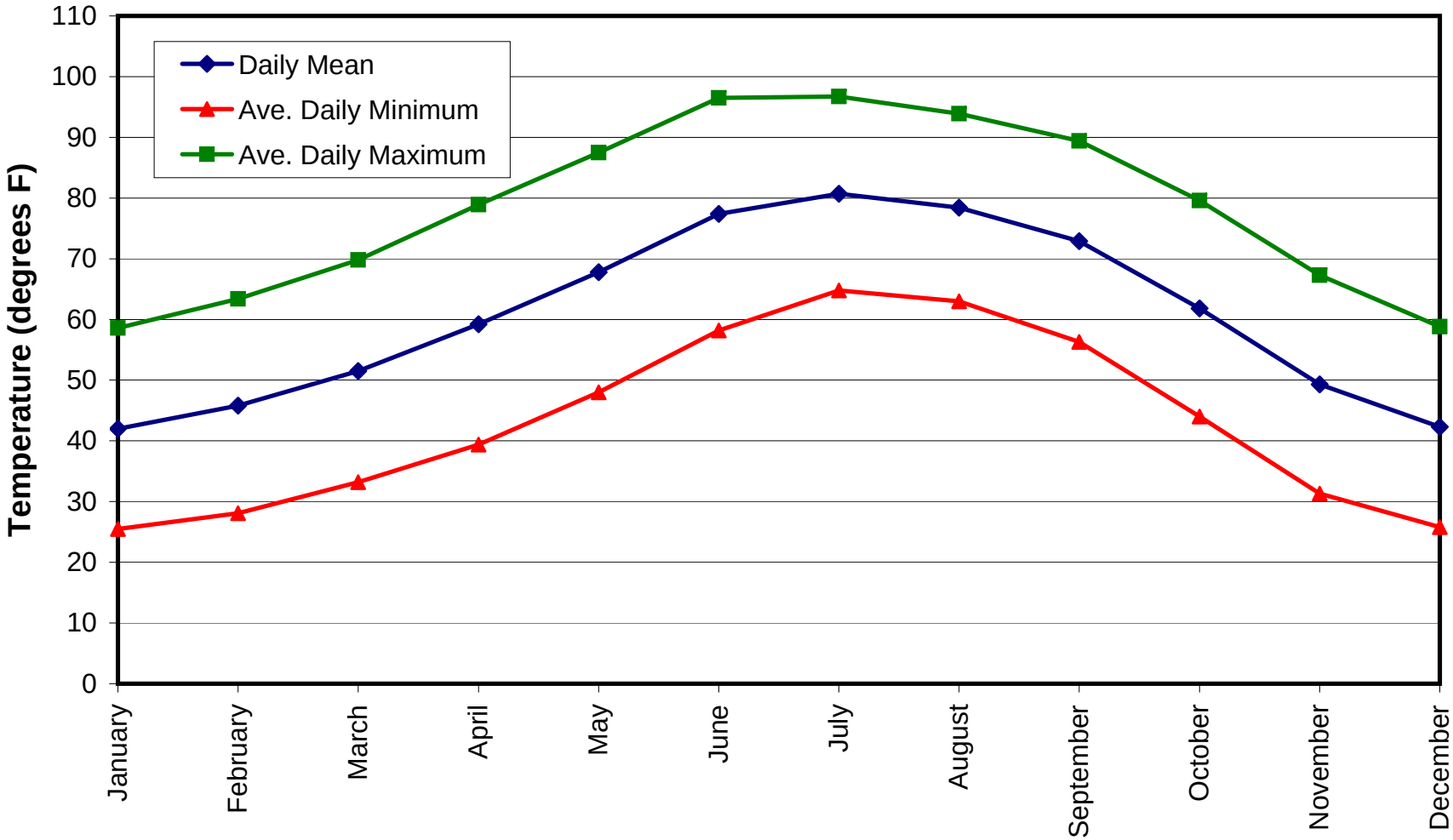
- The development of estimates of future water demand is affected by the legal availability of water in the planning region. For example, the amount of land that can legally be irrigated has remained relatively steady in the region (there is no growth trend that can be projected forward). This does not necessarily mean, however, that demand for additional water for irrigation would not be greater if more water were available. Additionally, unknowns regarding future development (i.e., whether mining will occur, how population growth will proceed, etc.) introduce further uncertainty in the future demand projections.

Appendix D2

Climate Statistics

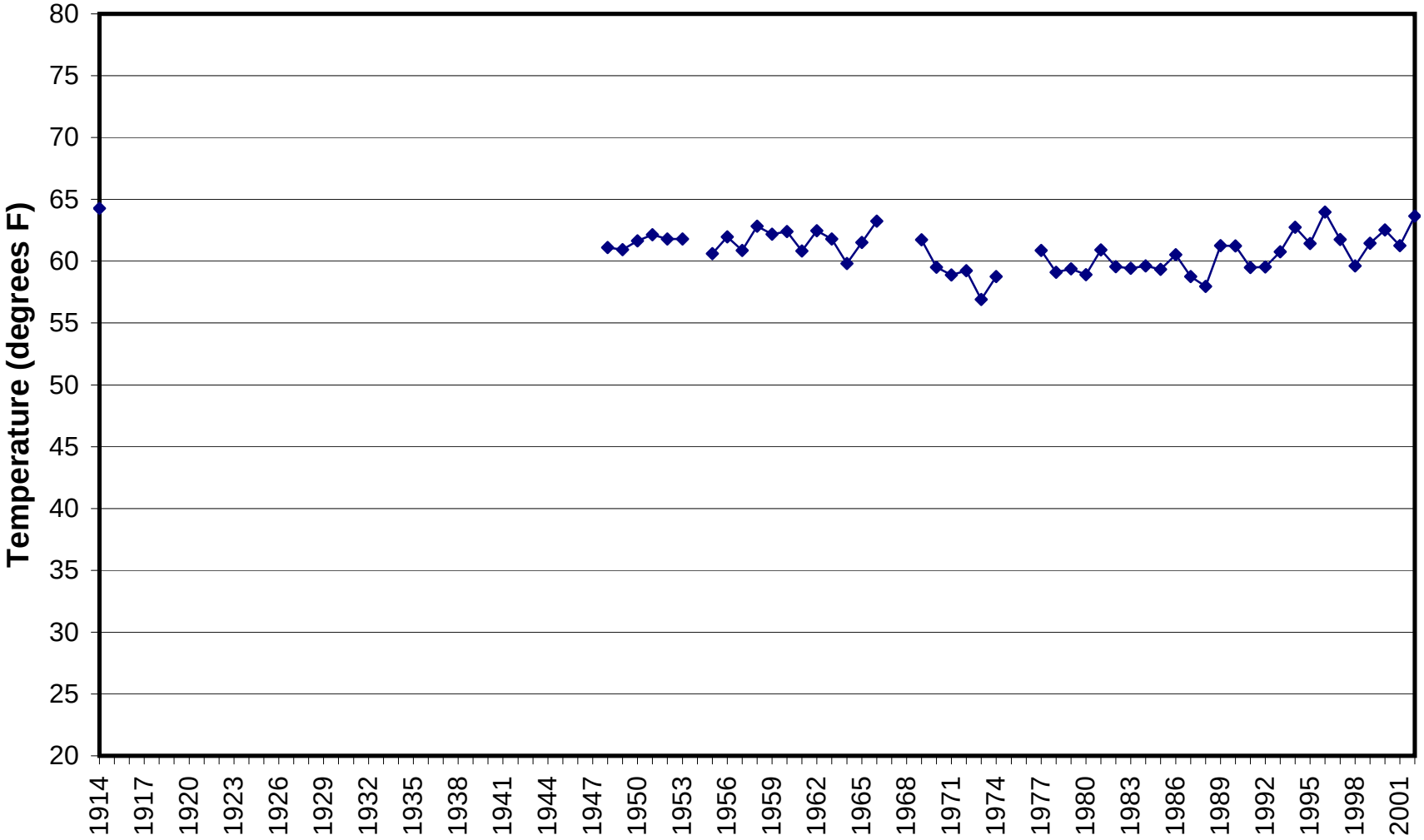
Lordsburg 4 SE

Monthly Temperature Statistics for Period of Record



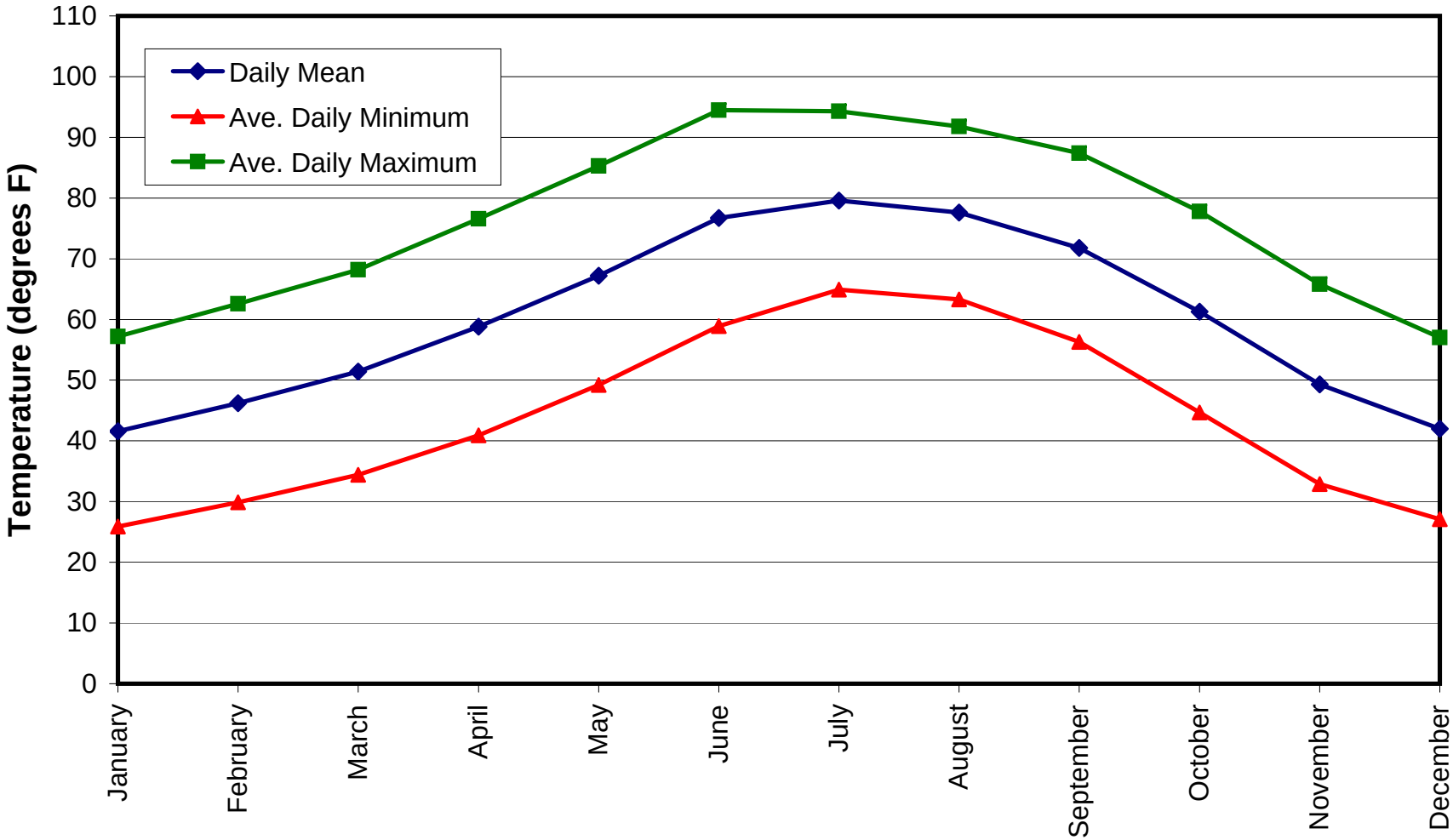
Lordsburg 4 SE

Average Annual Temperatures for Period of Record



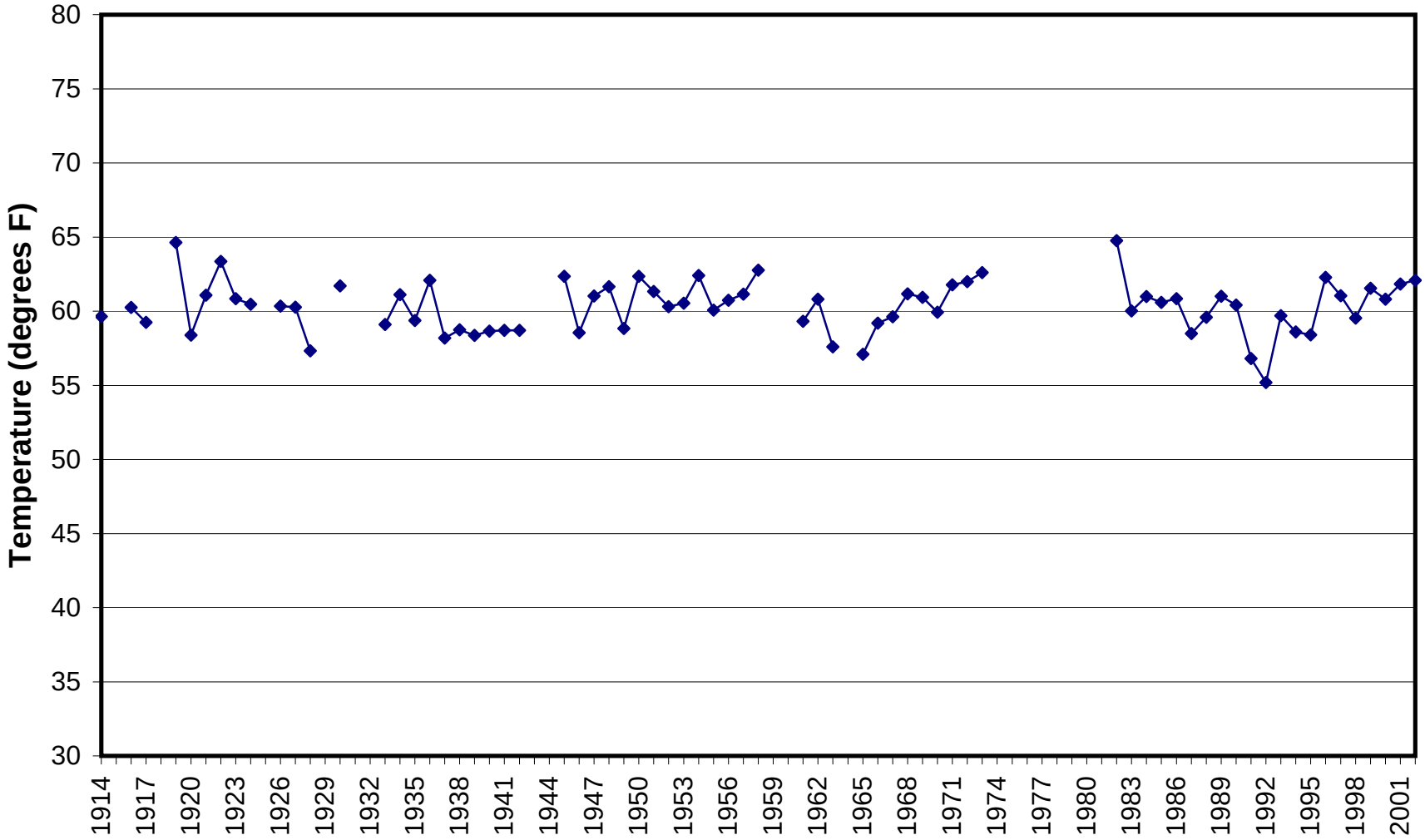
Deming

Monthly Temperature Statistics for Period of Record



Deming

Average Annual Temperatures for Period of Record



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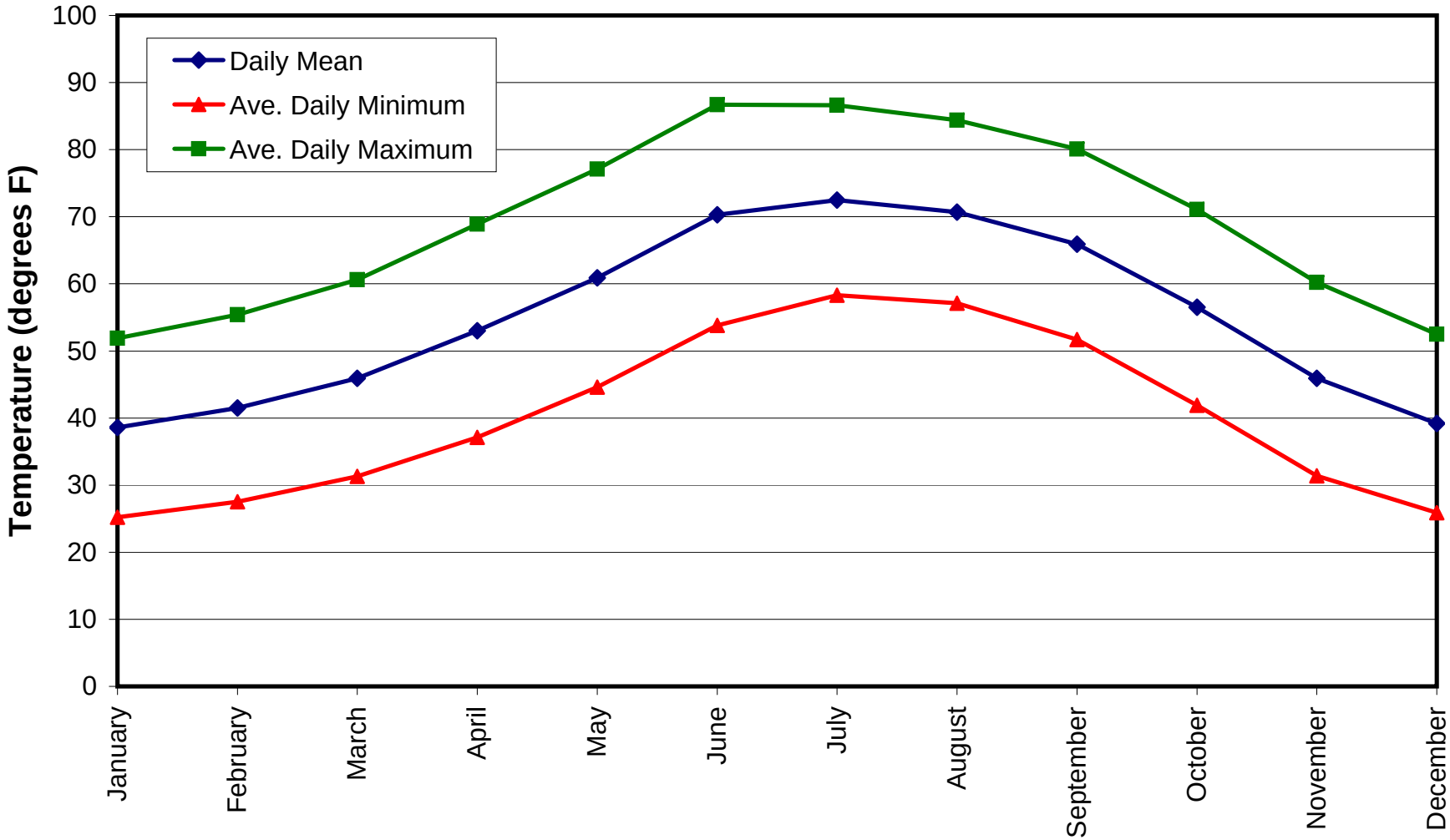
Fort Bayard

Monthly Temperature Statistics for Period of Record



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Fort Bayard

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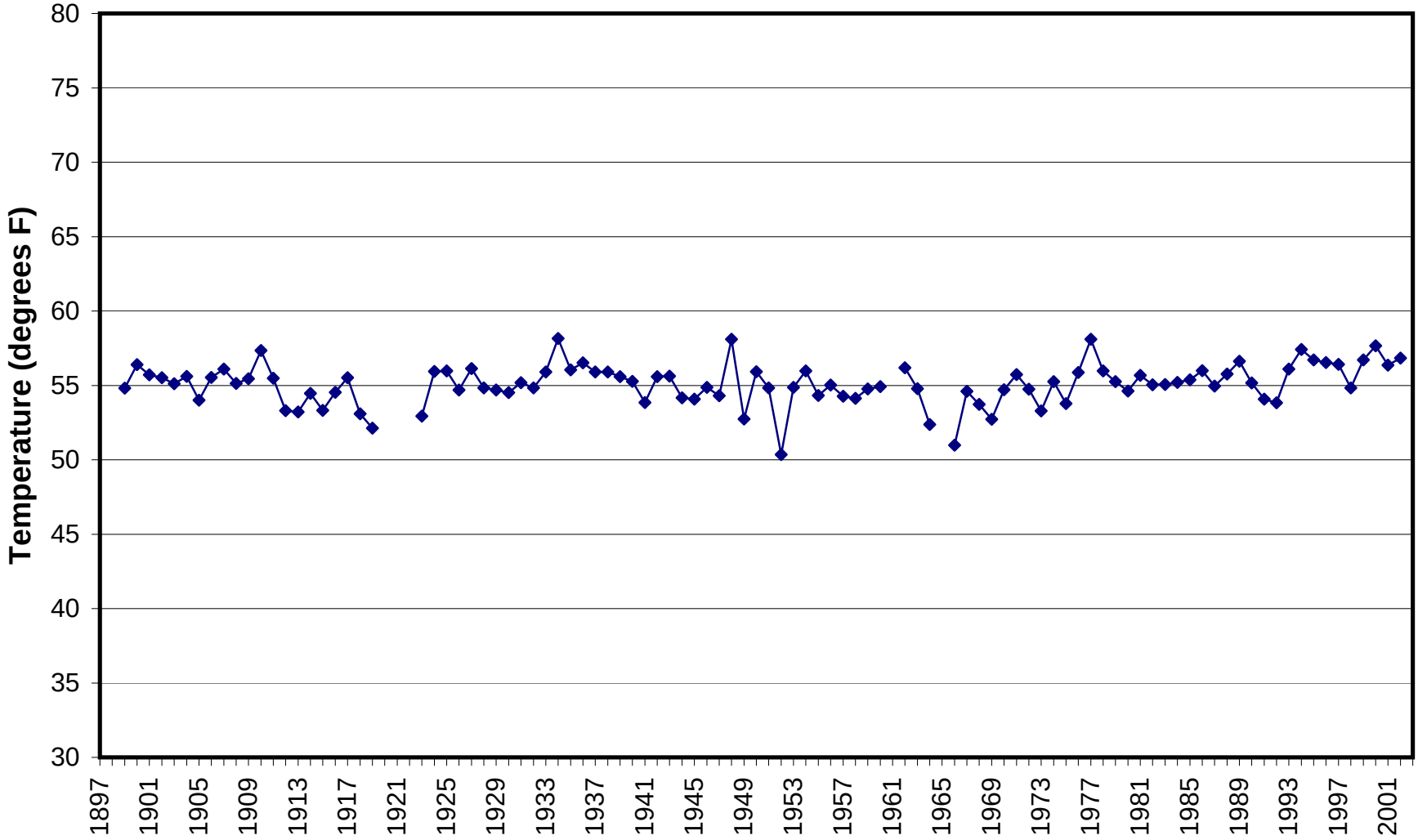
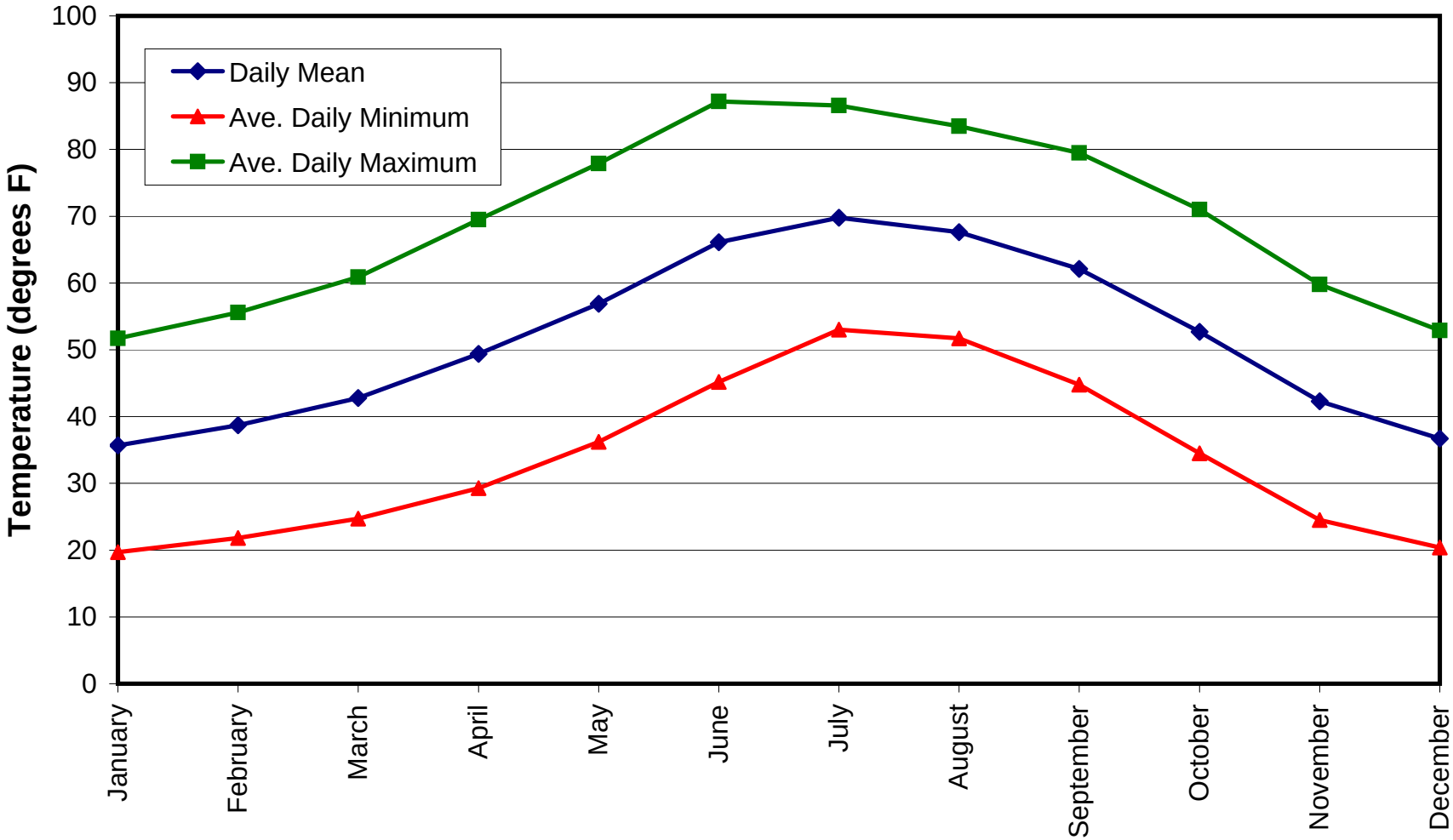


Mimbres Ranger Station

Monthly Temperature Statistics for Period of Record



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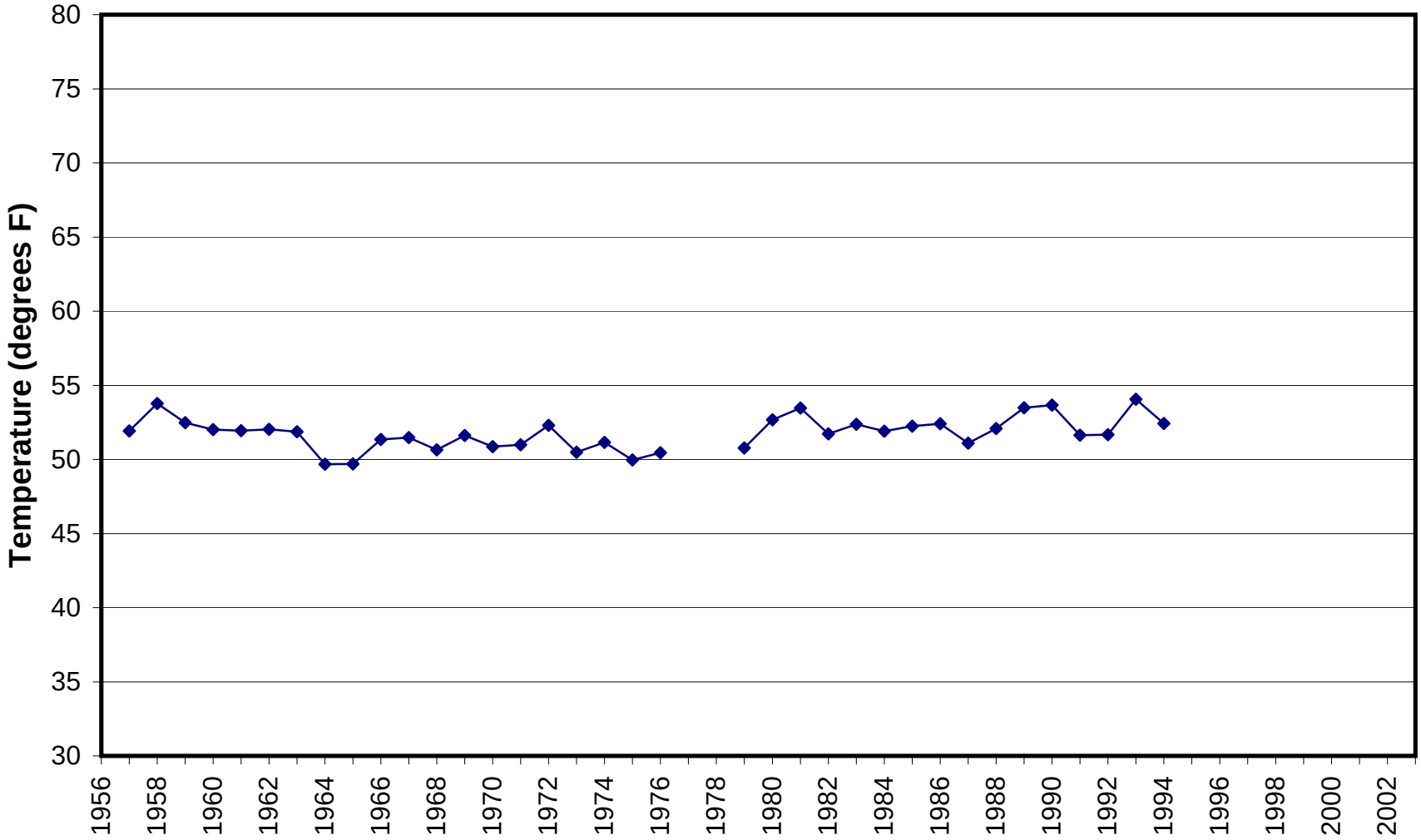
Mimbres Ranger Station

Average Annual Temperatures for Period of Record



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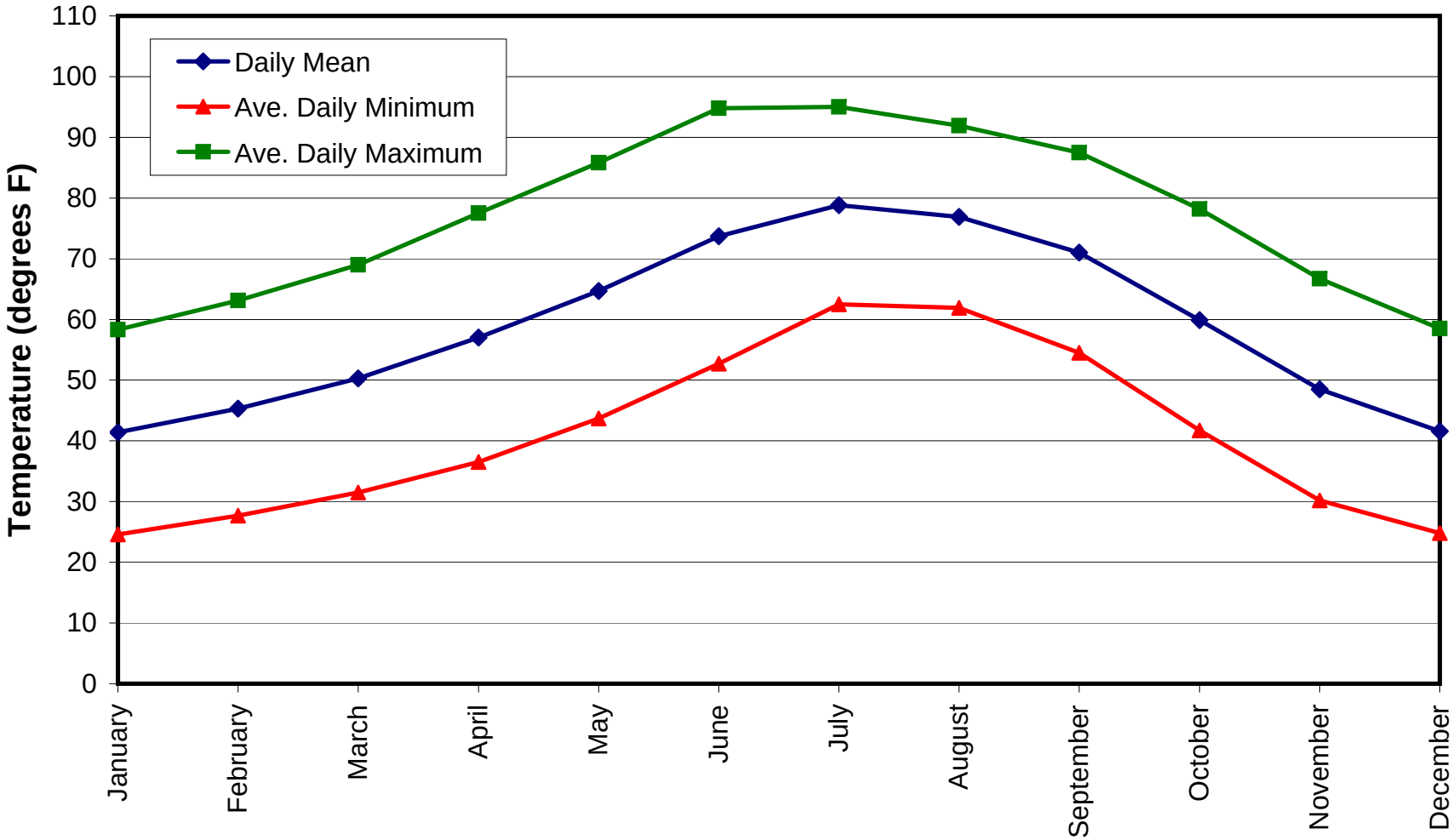
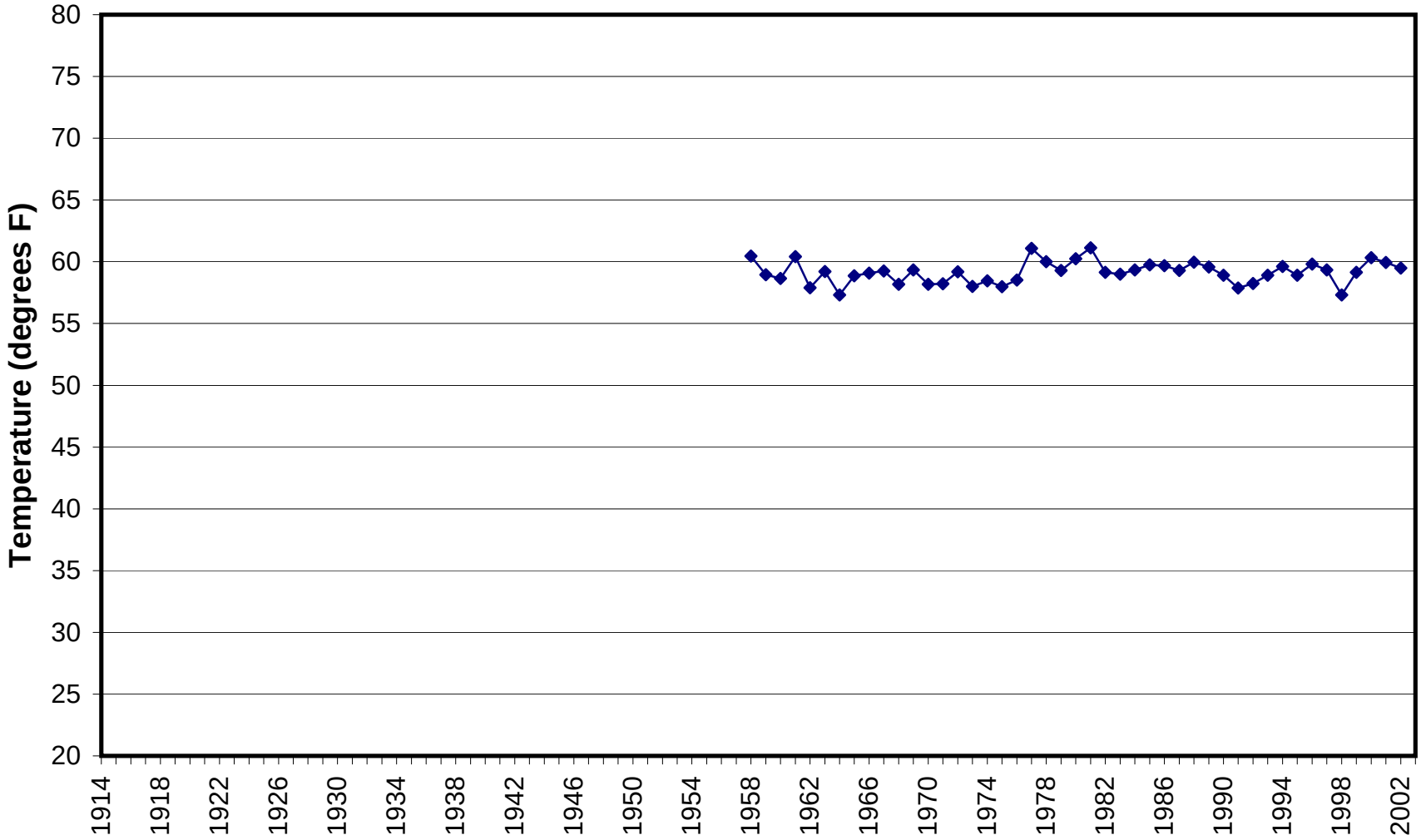
Redrock 1 NNE

Monthly Temperature Statistics for Period of Record



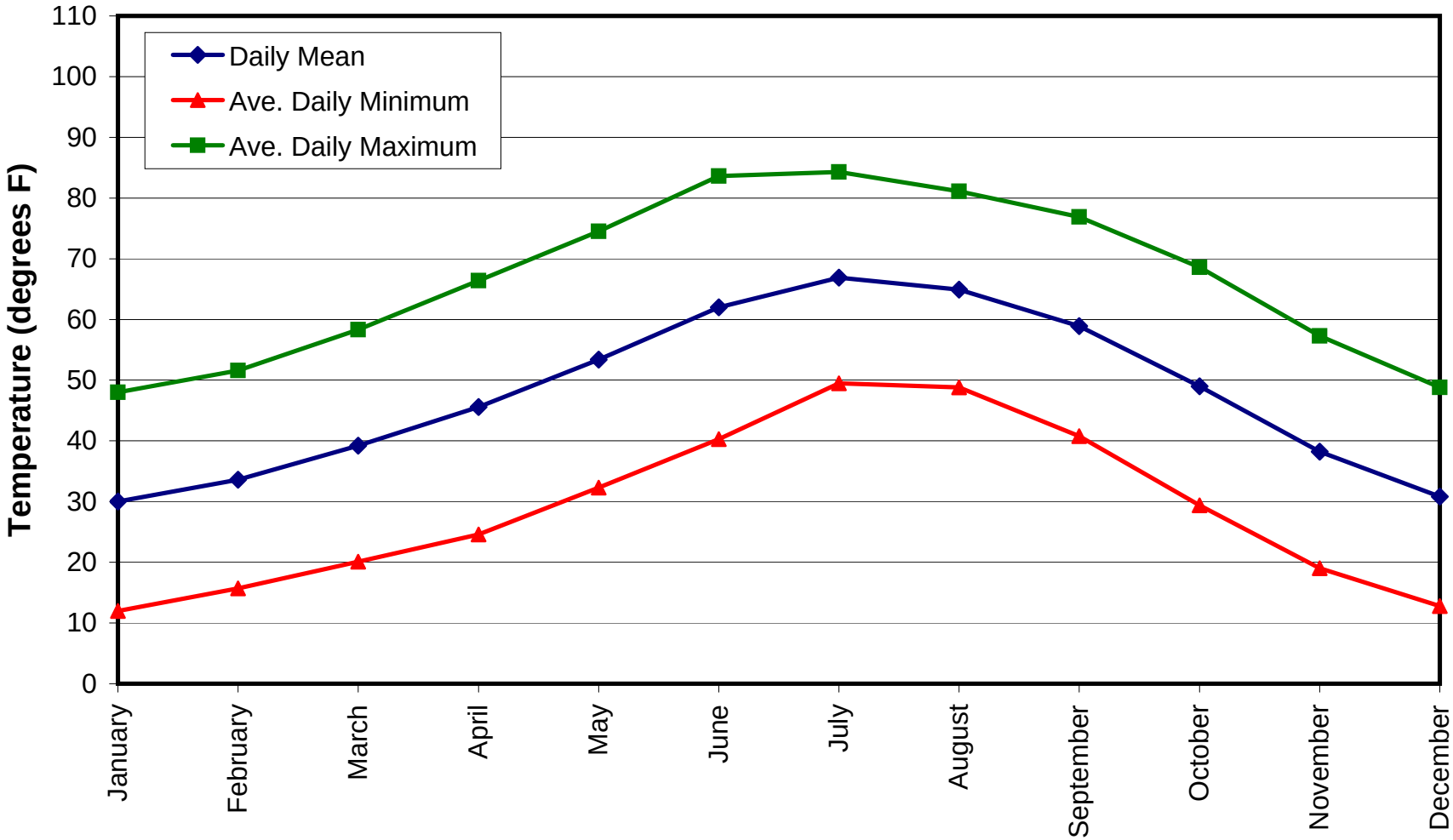
Redrock 1 NNE

Average Annual Temperatures for Period of Record



Beaverhead Ranger Station

Monthly Temperature Statistics for Period of Record



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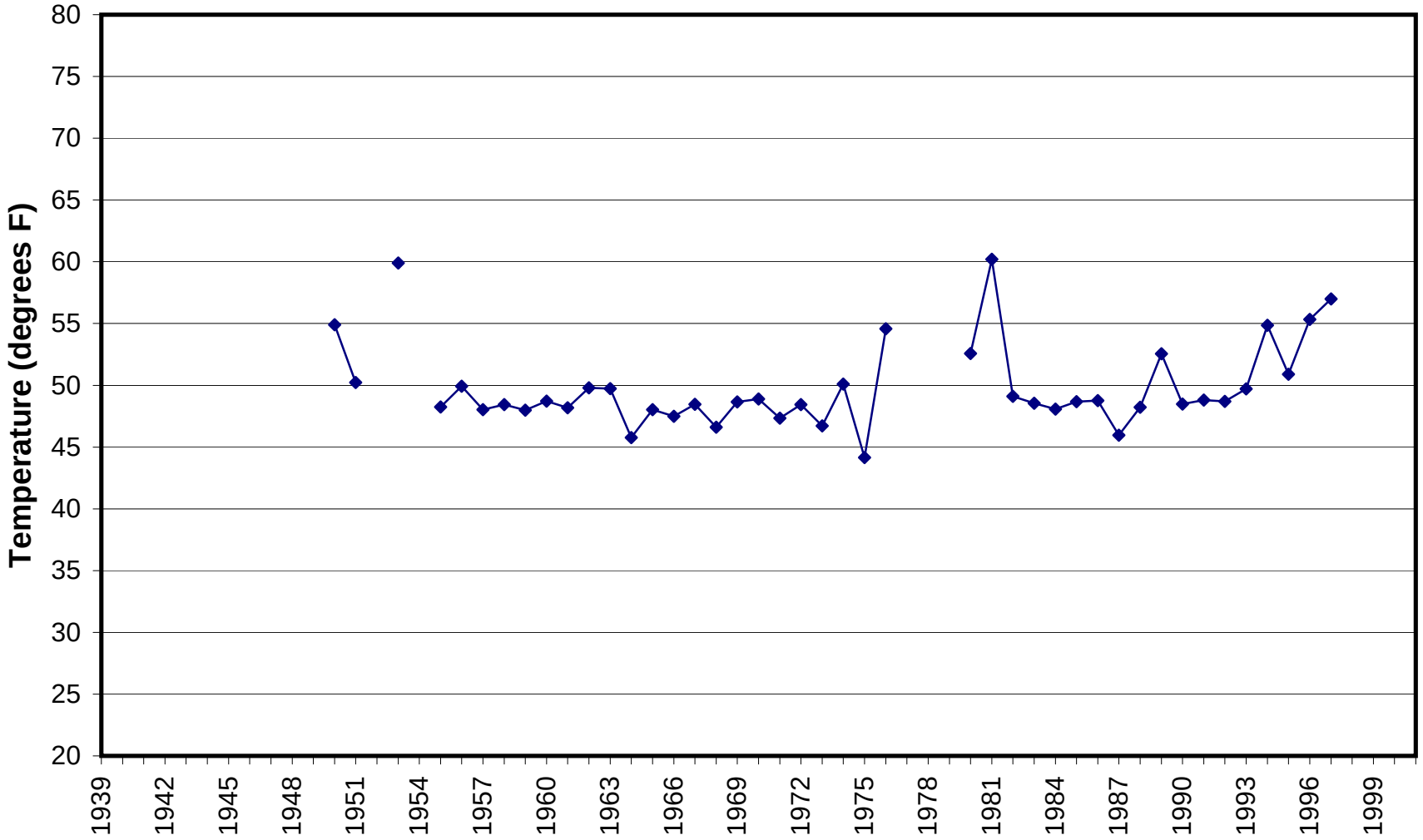
Beaverhead Ranger Station

Average Annual Temperatures for Period of Record



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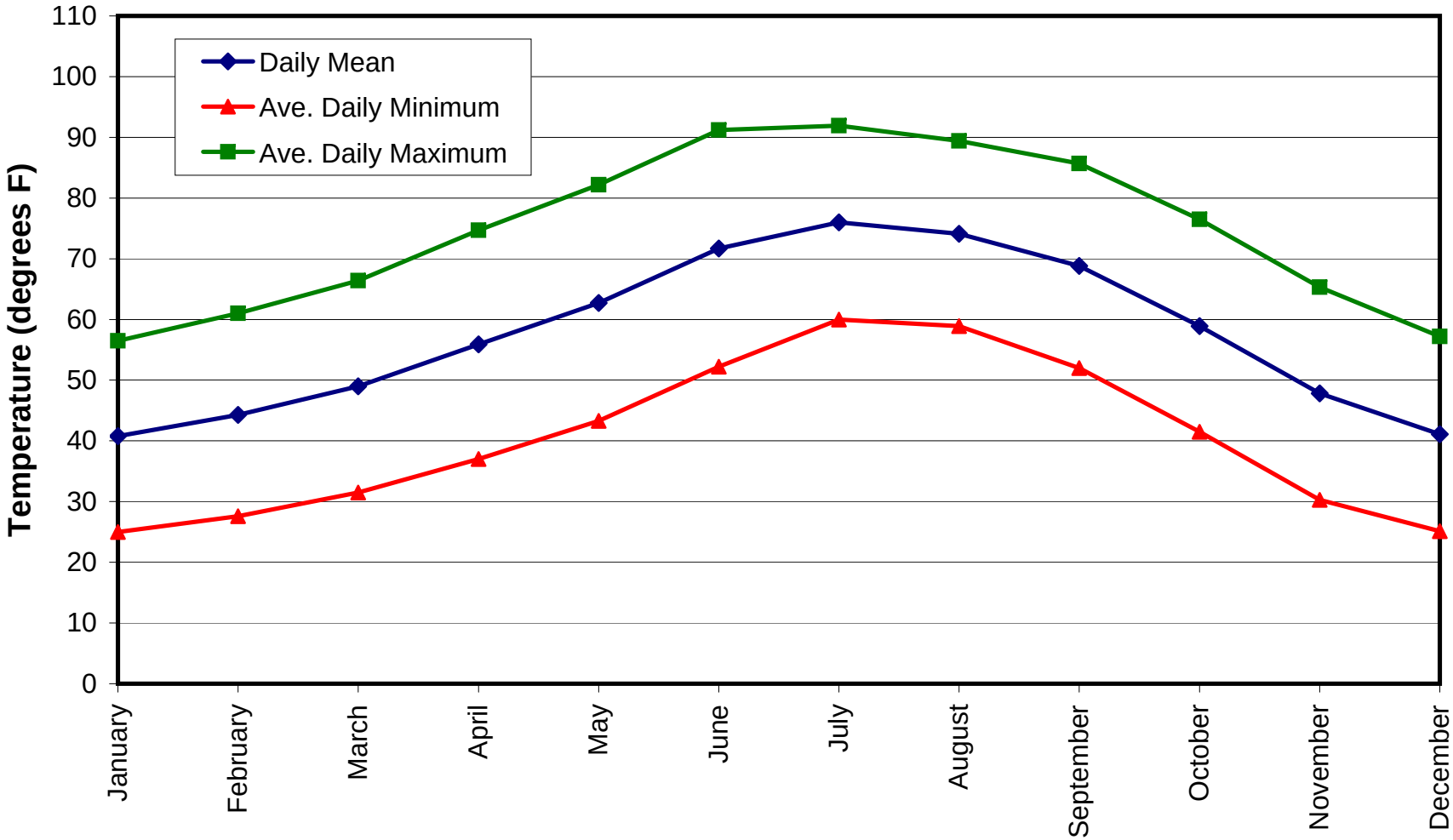
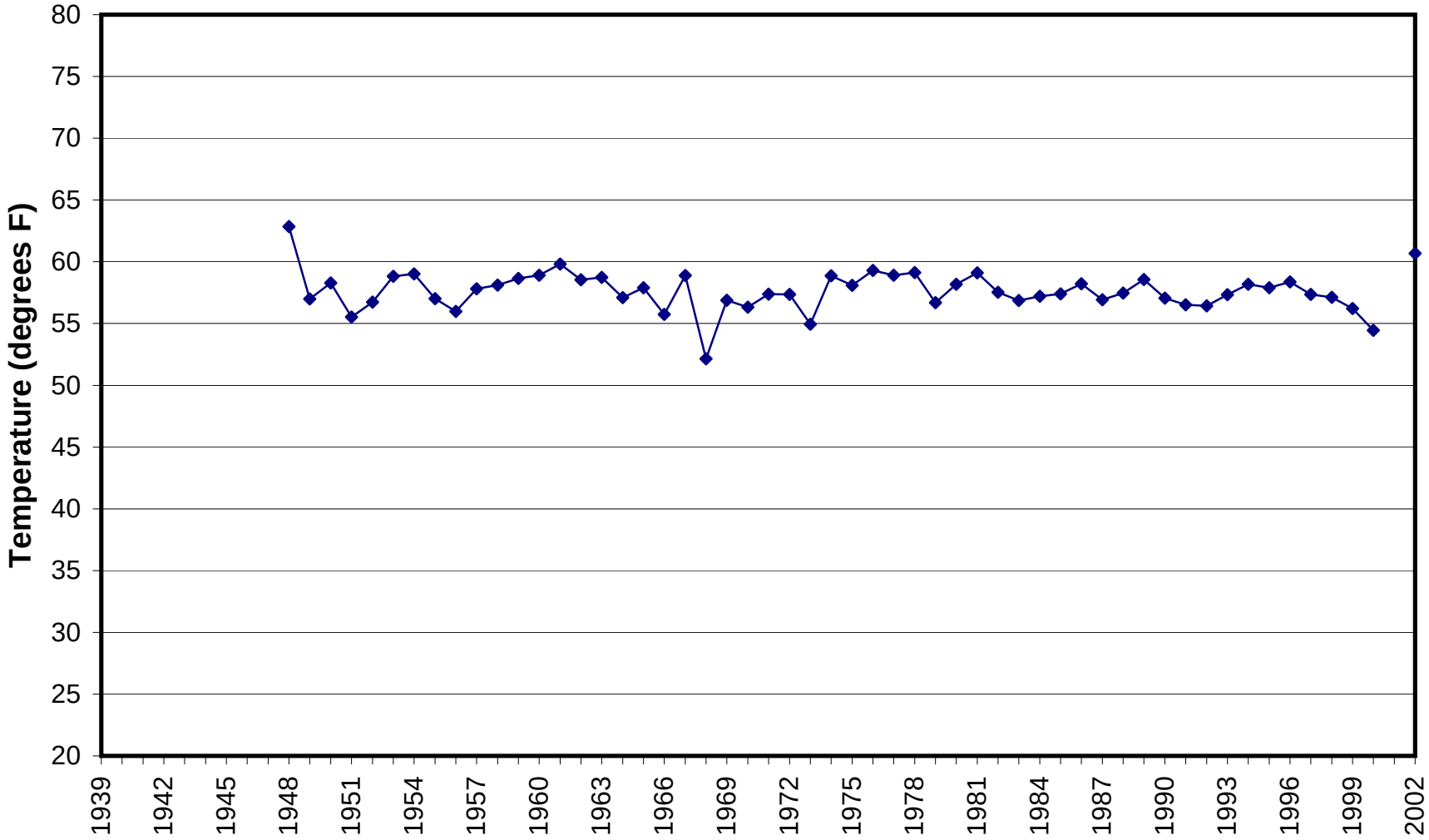
Glenwood

Monthly Temperature Statistics for Period of Record



Glenwood

Average Annual Temperatures for Period of Record



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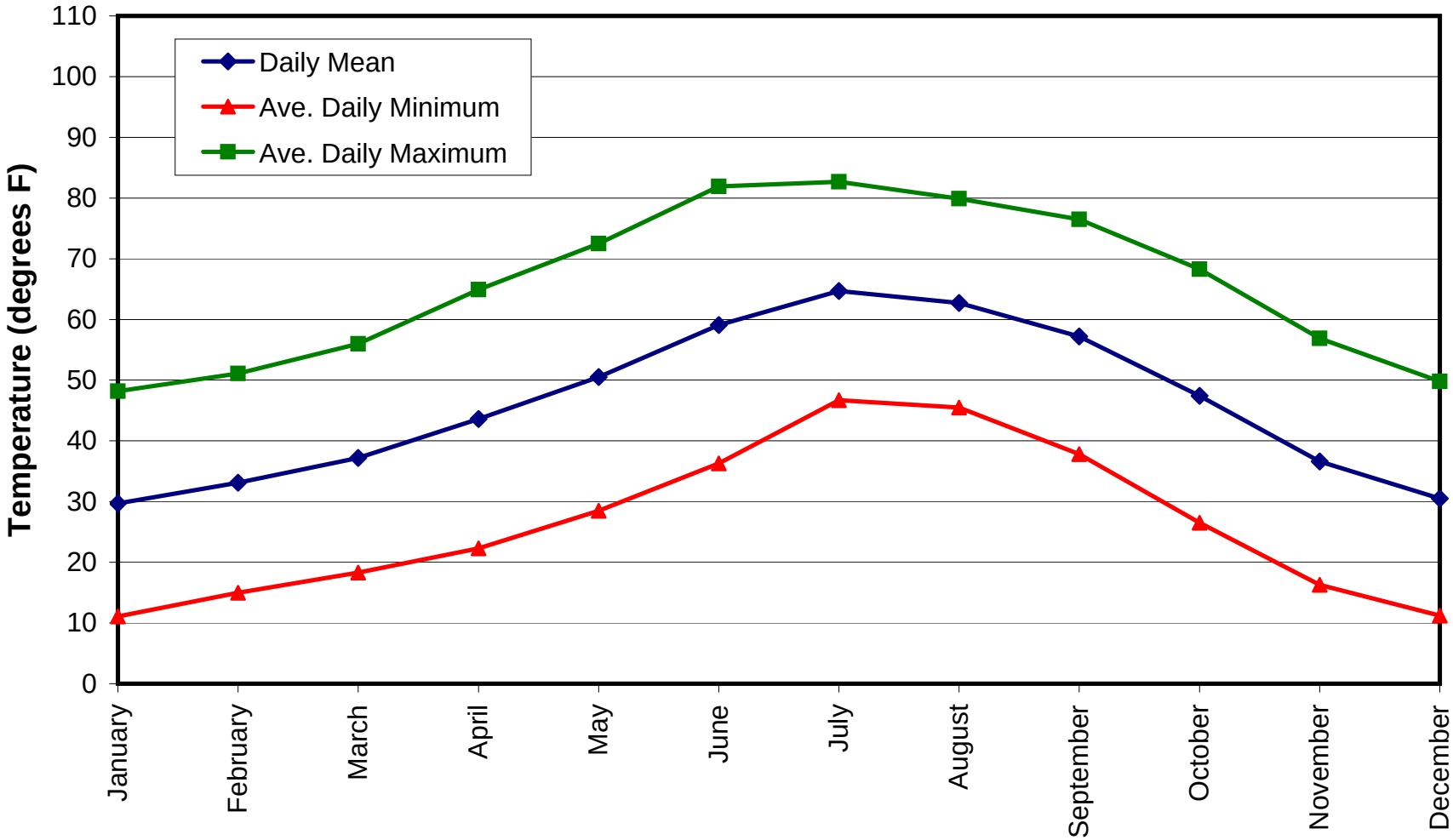
Luna Ranger Station

Monthly Temperature Statistics for Period of Record



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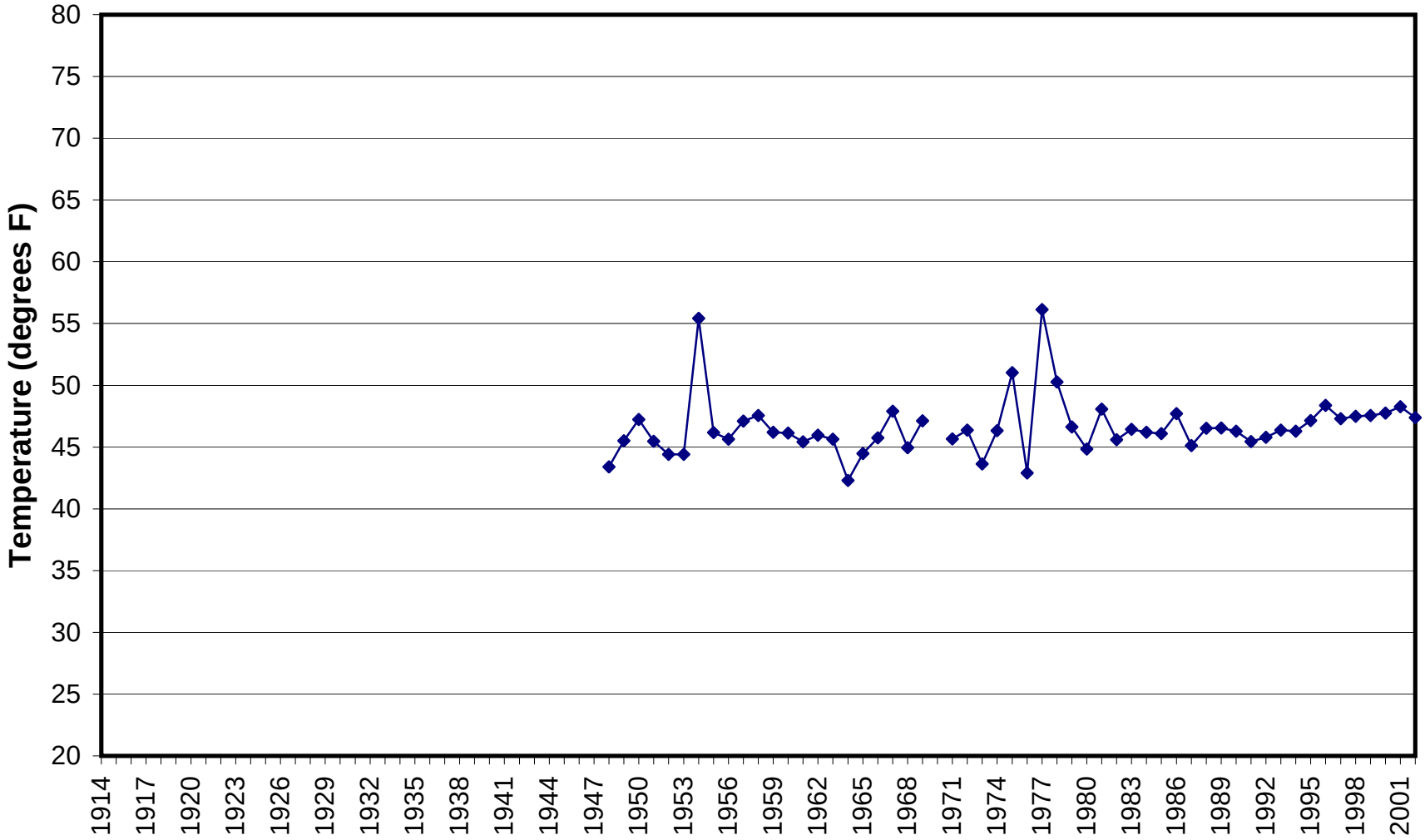
Luna Ranger Station

Average Annual Temperatures for Period of Record



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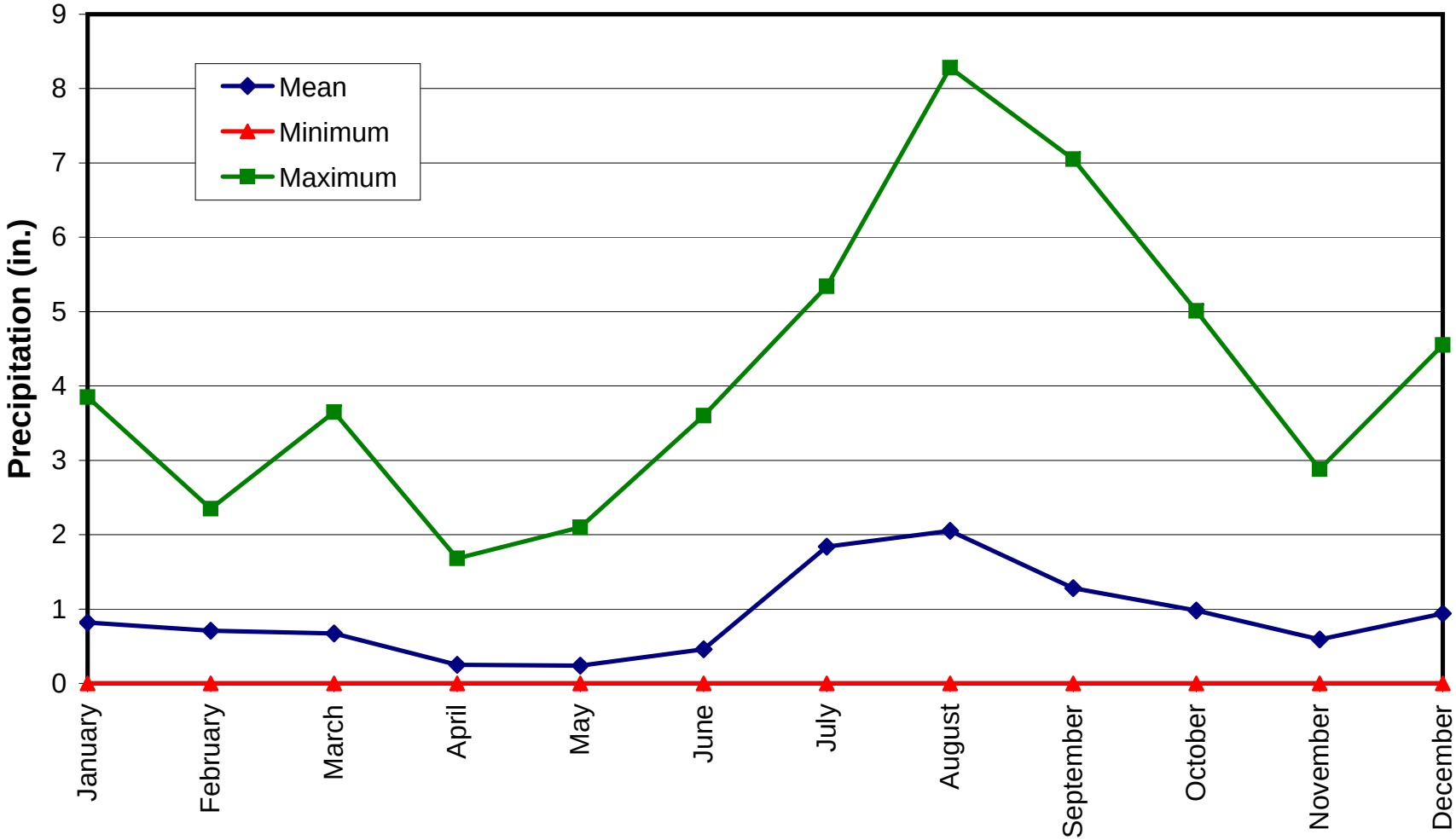
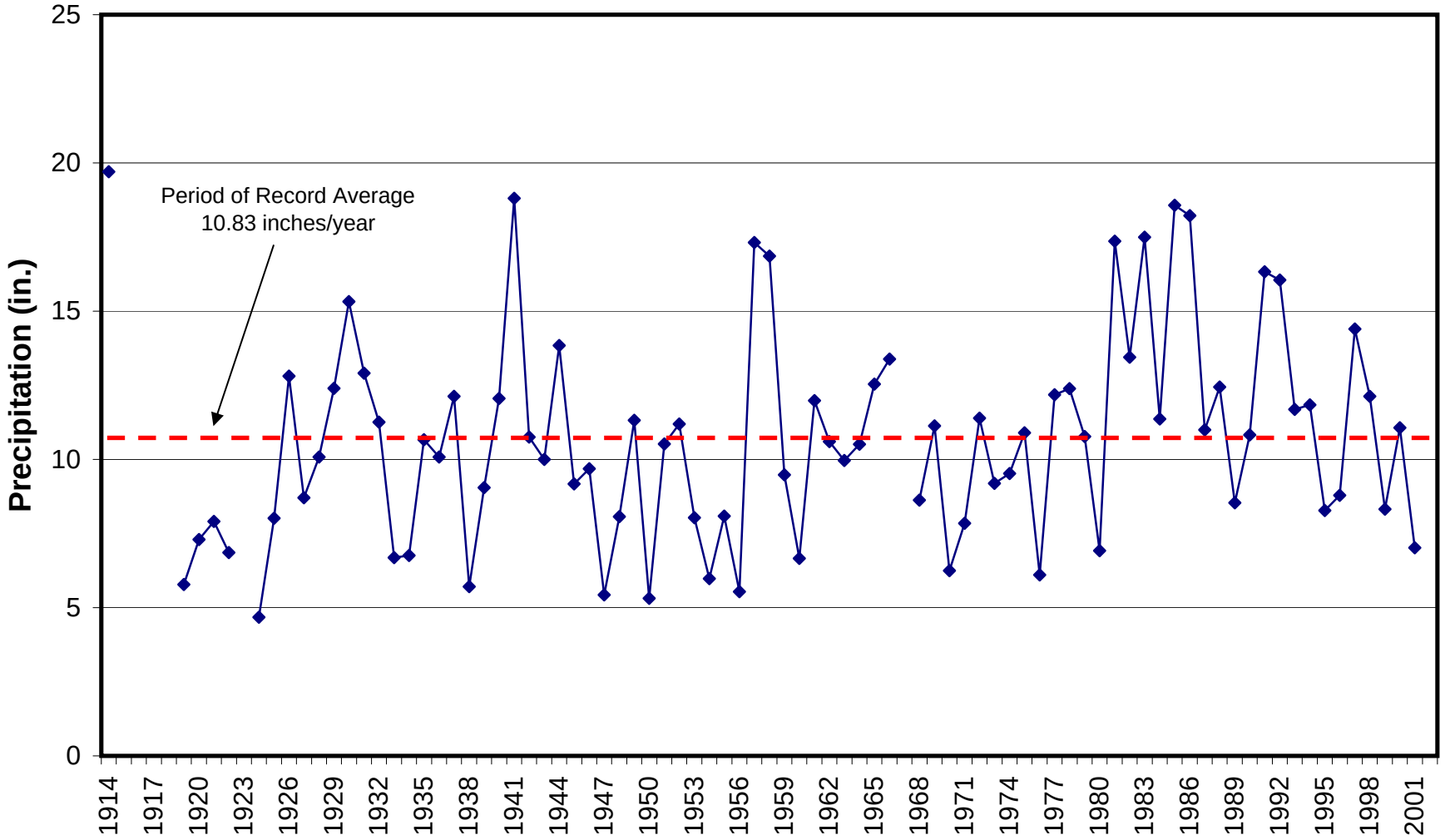
Lordsburg 4 SE

Monthly Precipitation Statistics for Period of Record



Lordsburg 4 SE

Total Annual Precipitation for Period of Record



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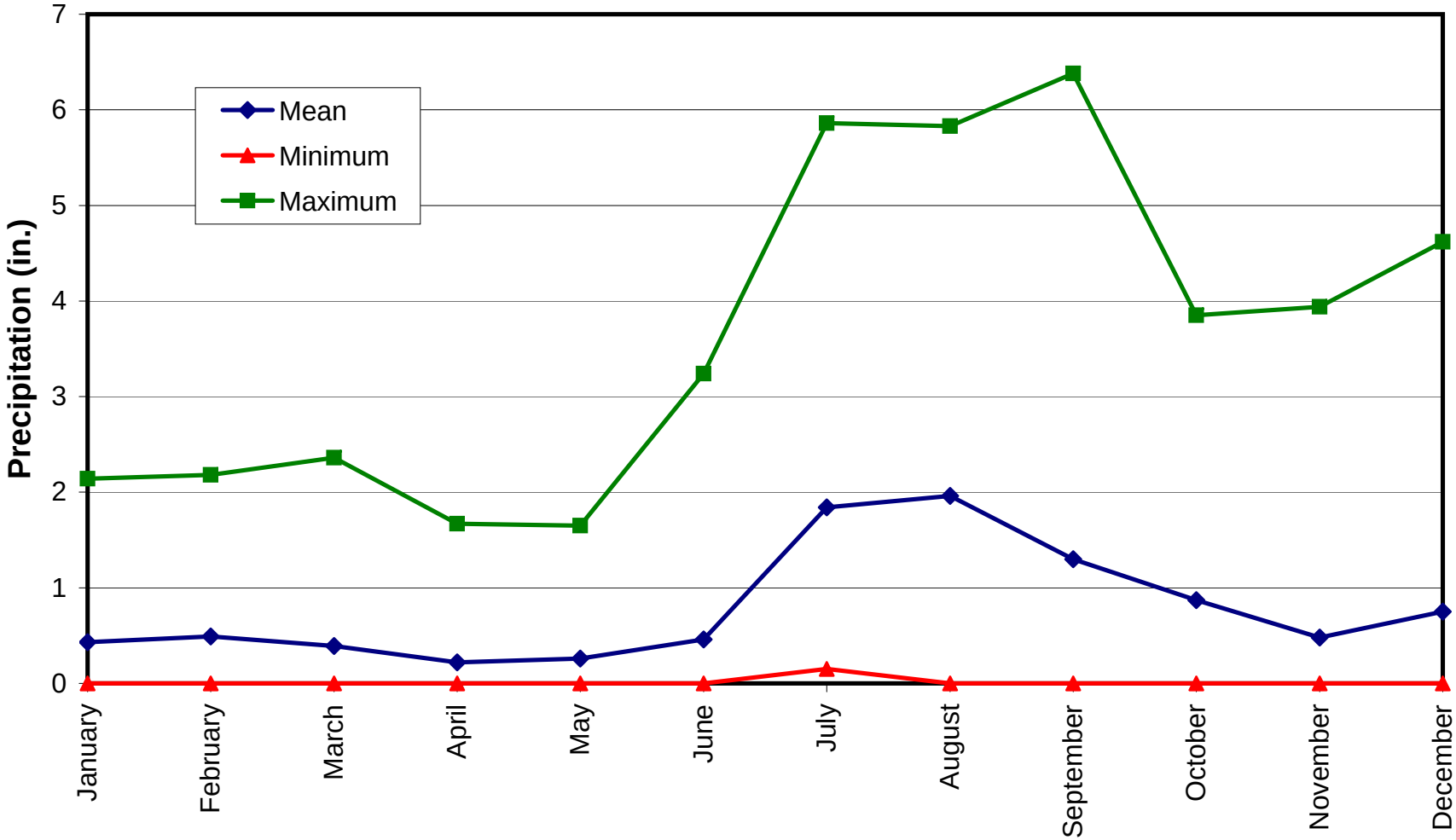
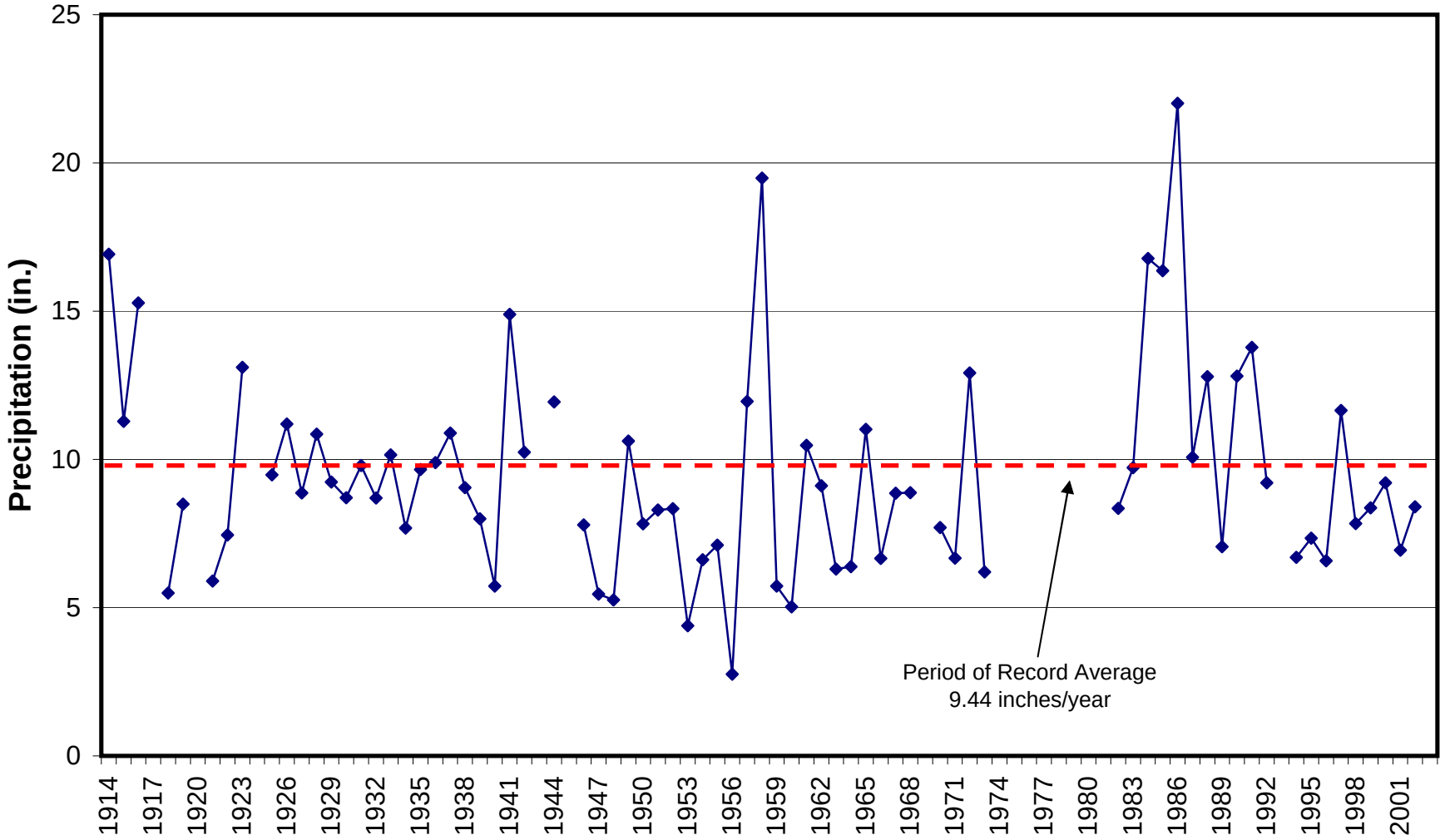
Deming

Monthly Precipitation for Period of Record



Deming

Annual Total Precipitation for Period of Record



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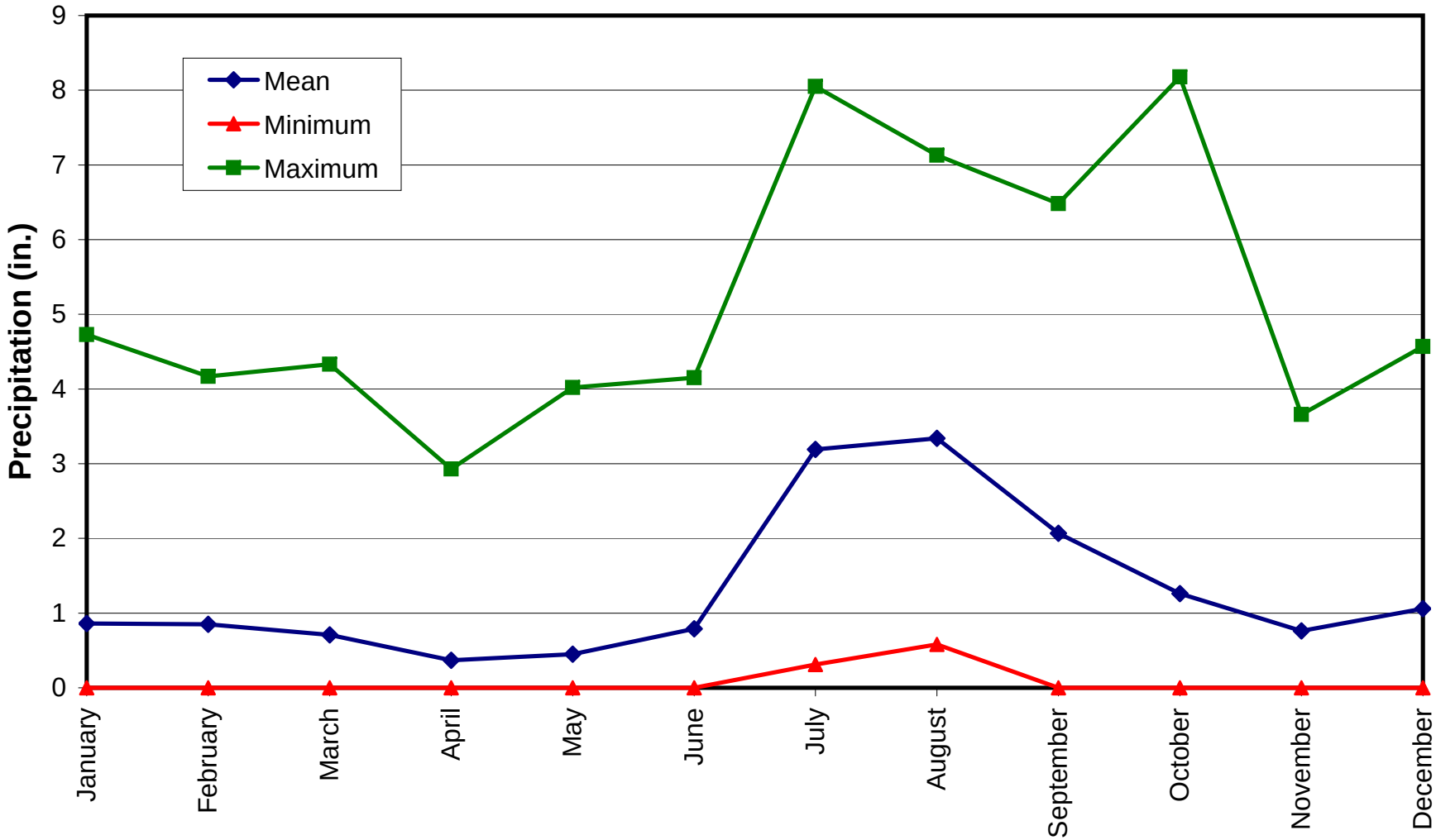
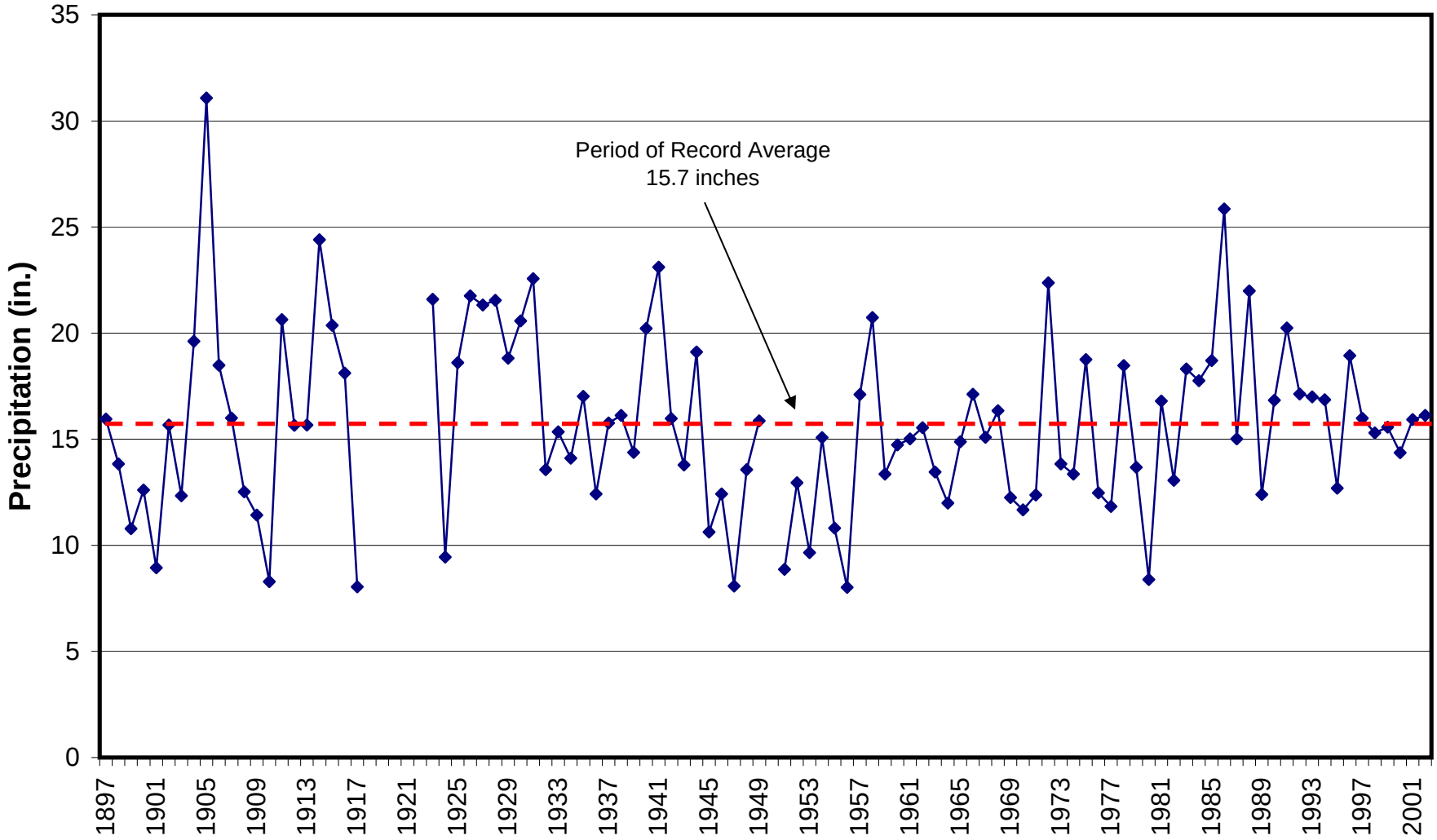
Fort Bayard

Monthly Precipitation Statistics for Period of Record



Fort Bayard

Total Annual Precipitation for Period of Record



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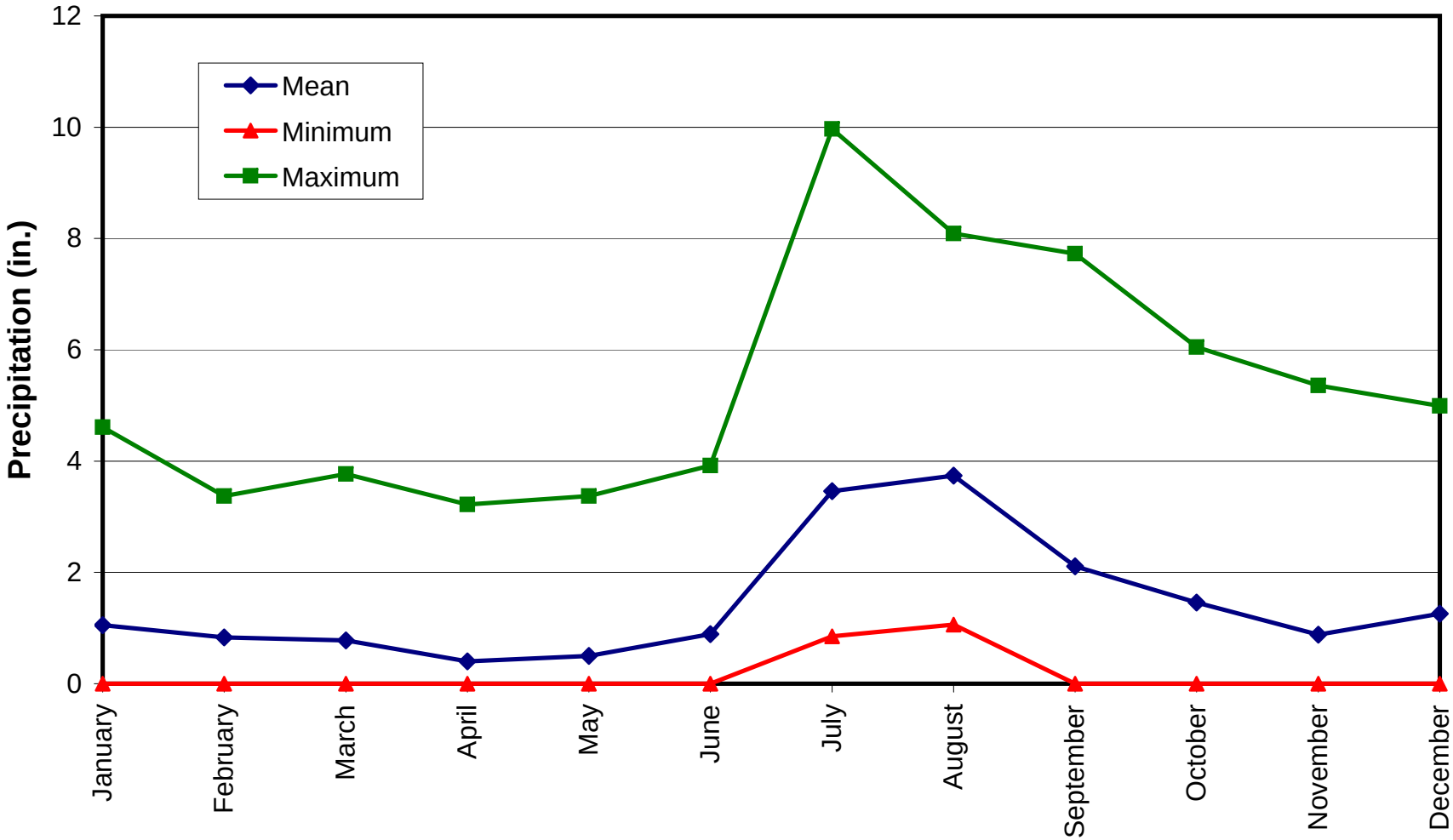
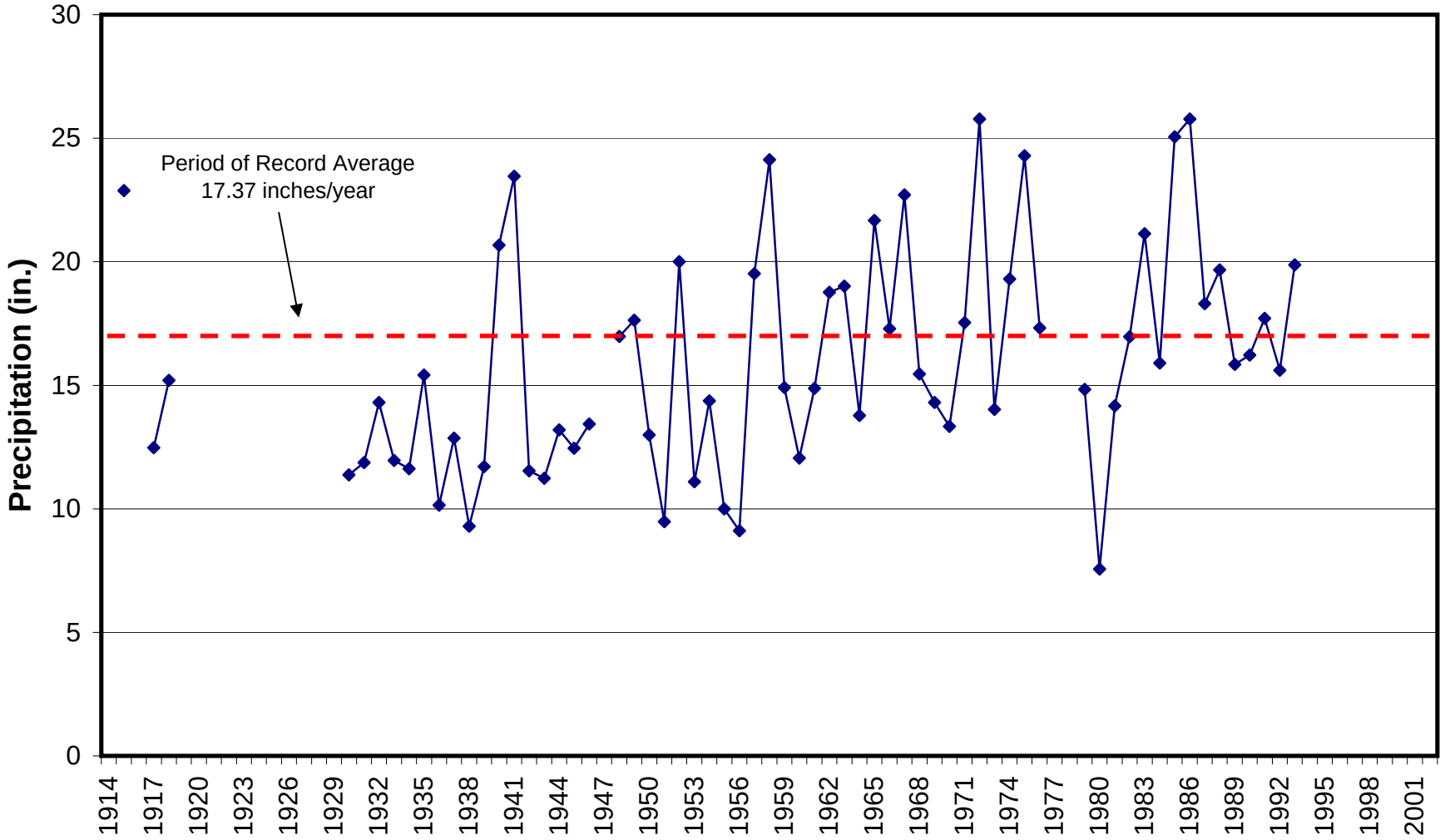
Mimbres Ranger Station

Monthly Precipitation Statistics for Period of Record



Mimbres Ranger Station

Total Annual Precipitation for Period of Record



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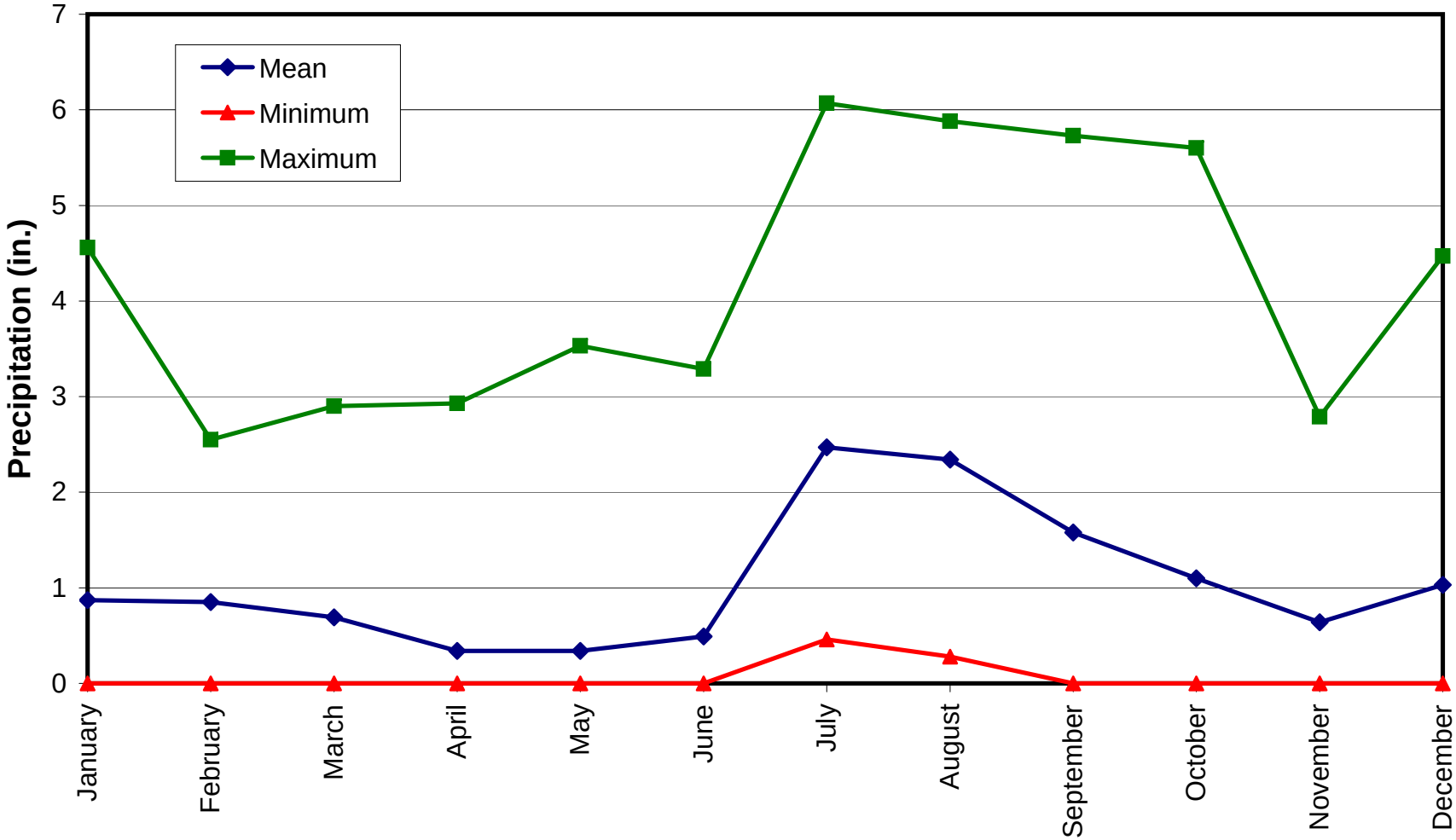
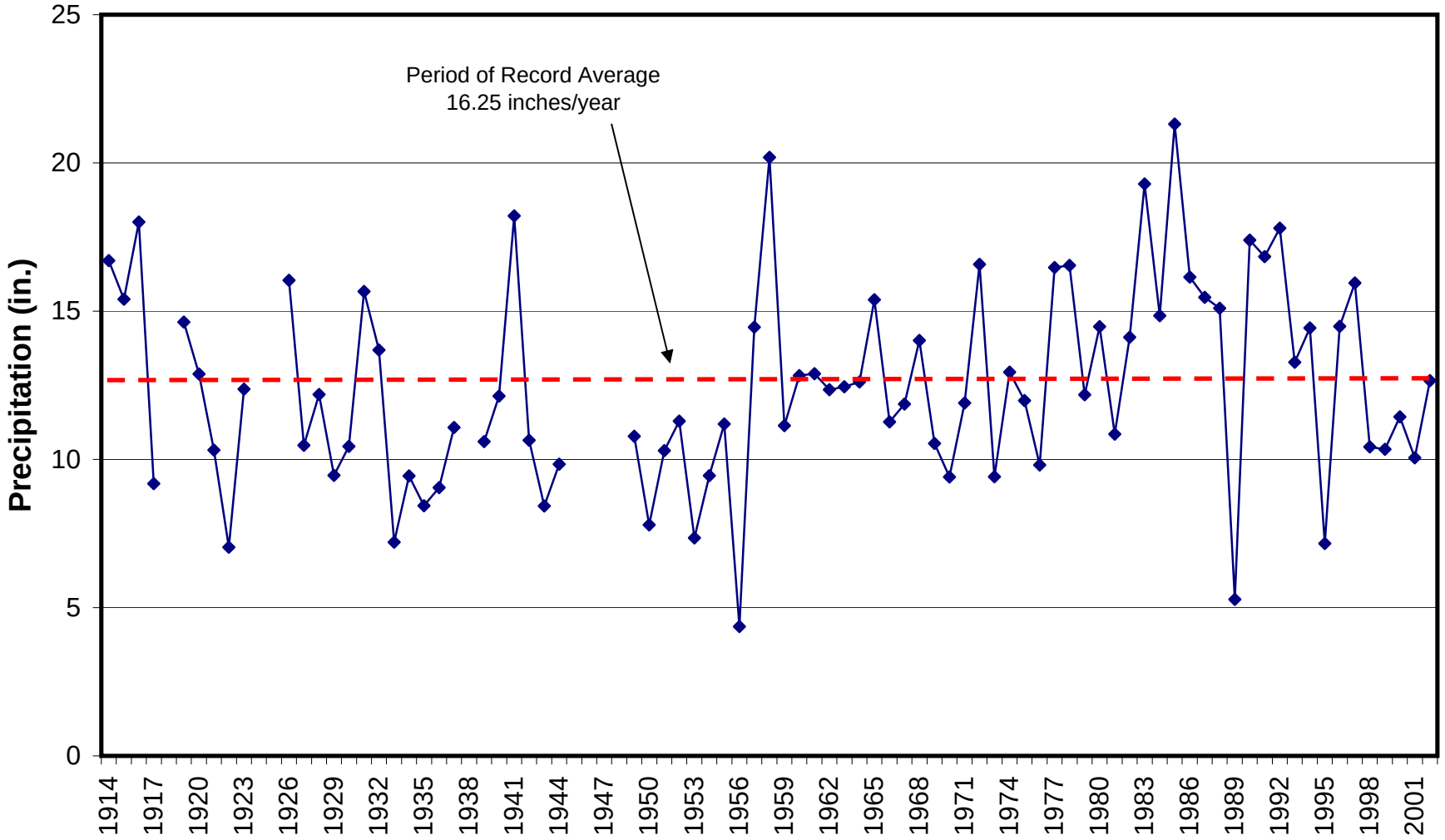
Redrock 1 NNE

Monthly Precipitation Statistics for Period of Record



Redrock 1 NNE

Total Annual Precipitation for Period of Record



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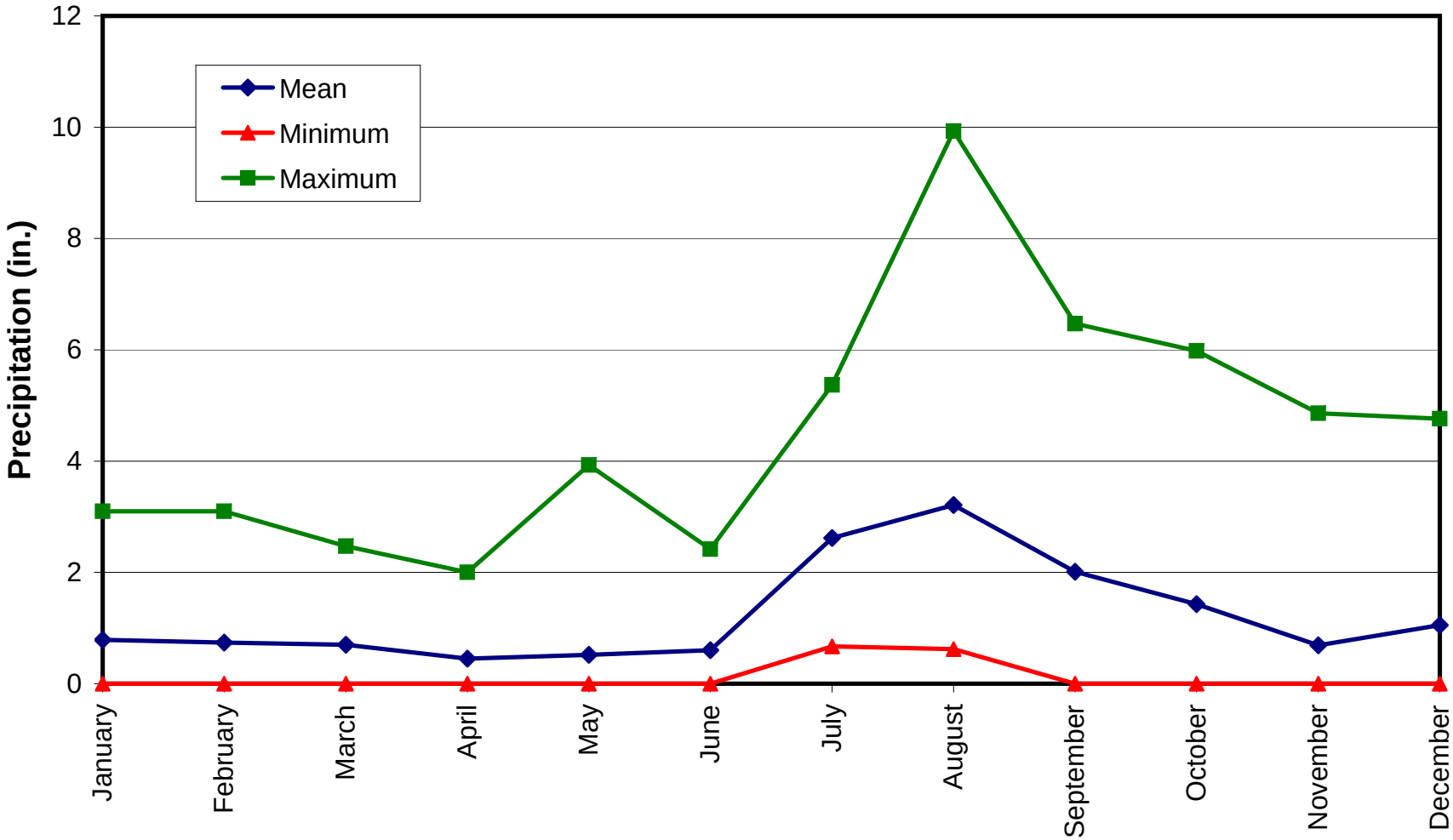
Beaverhead Ranger Station

Monthly Precipitation Statistics for Period of Record



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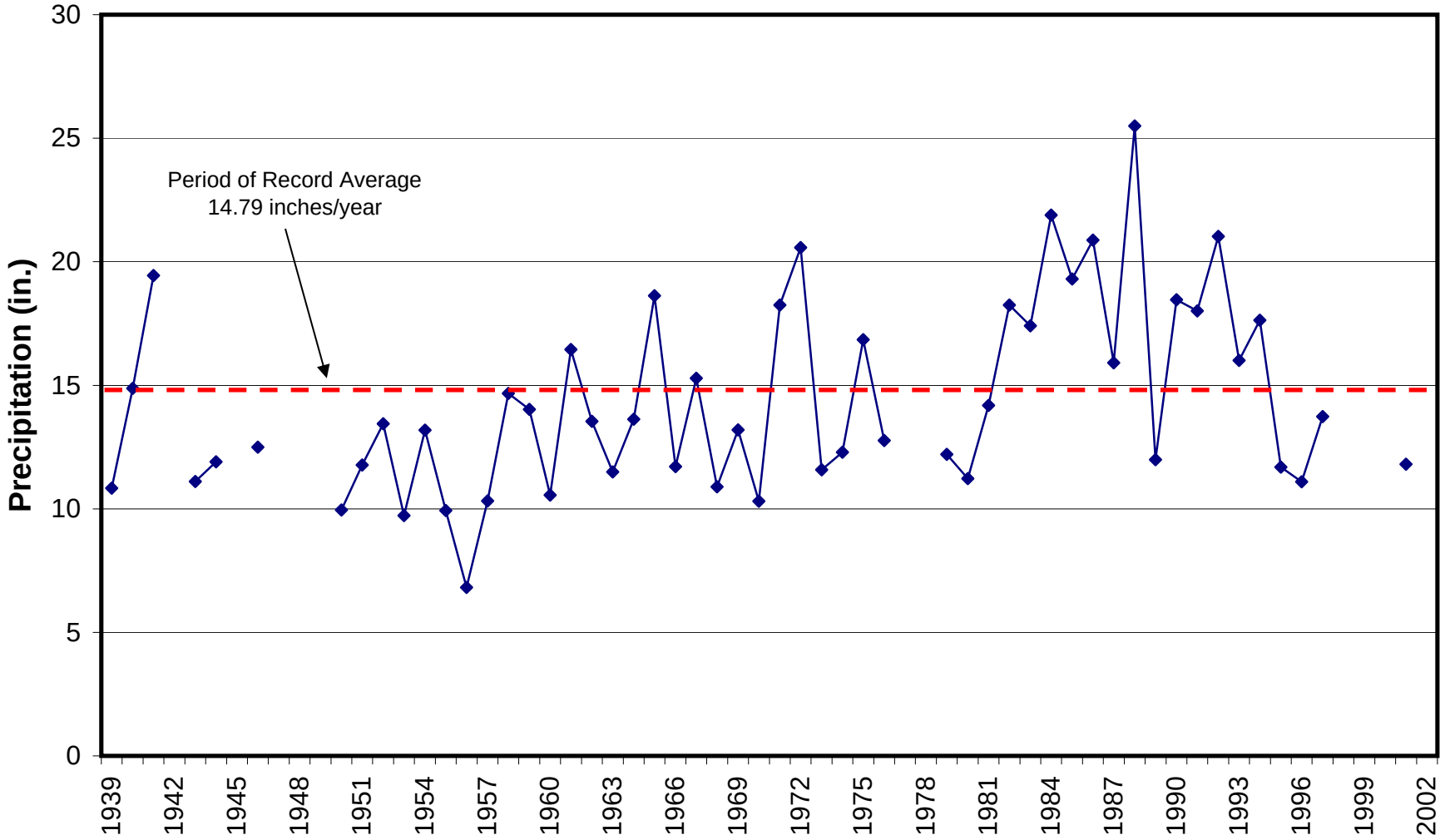
Beaverhead Ranger Station

Annual Total Precipitation for Period of Record



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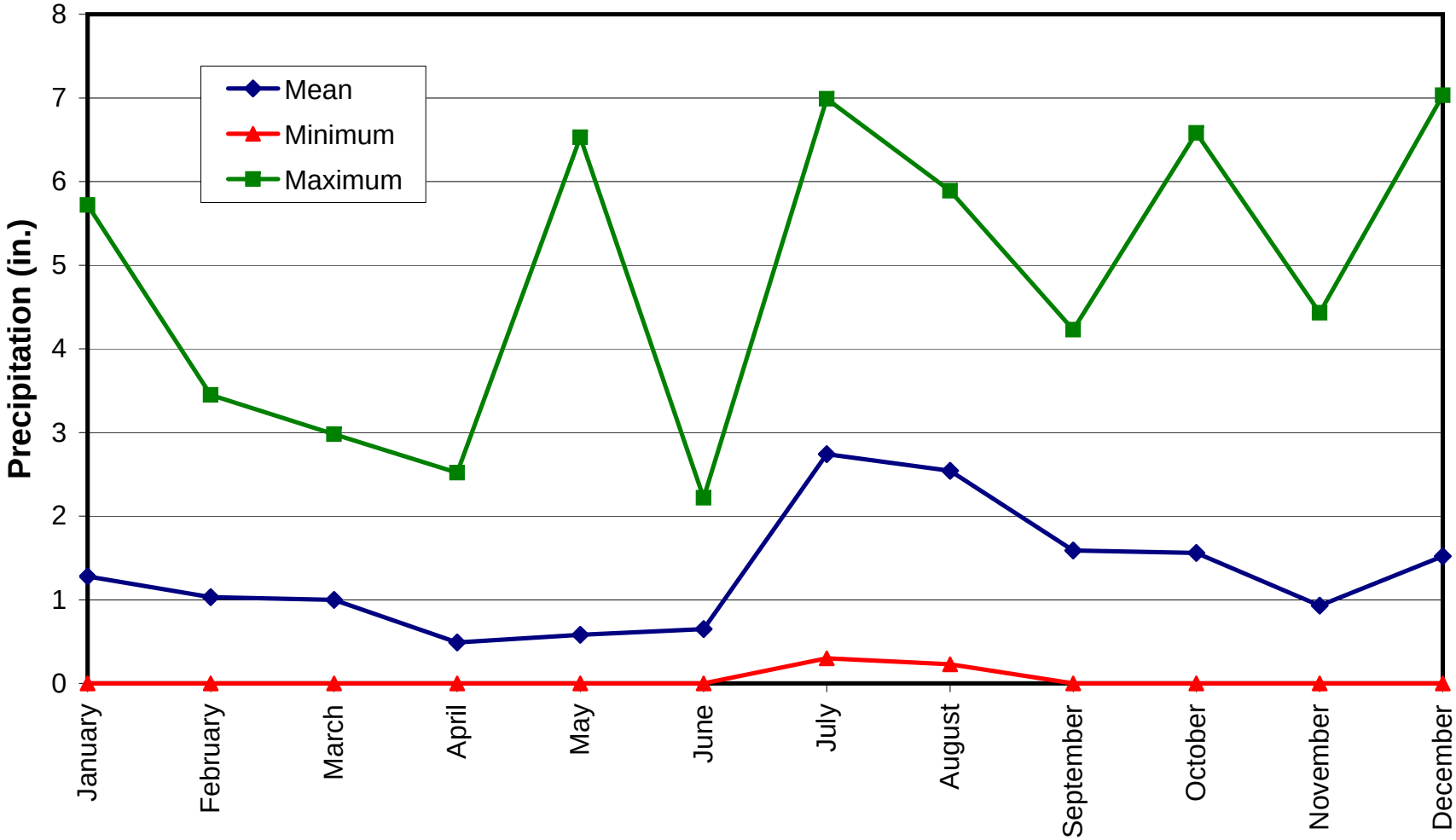
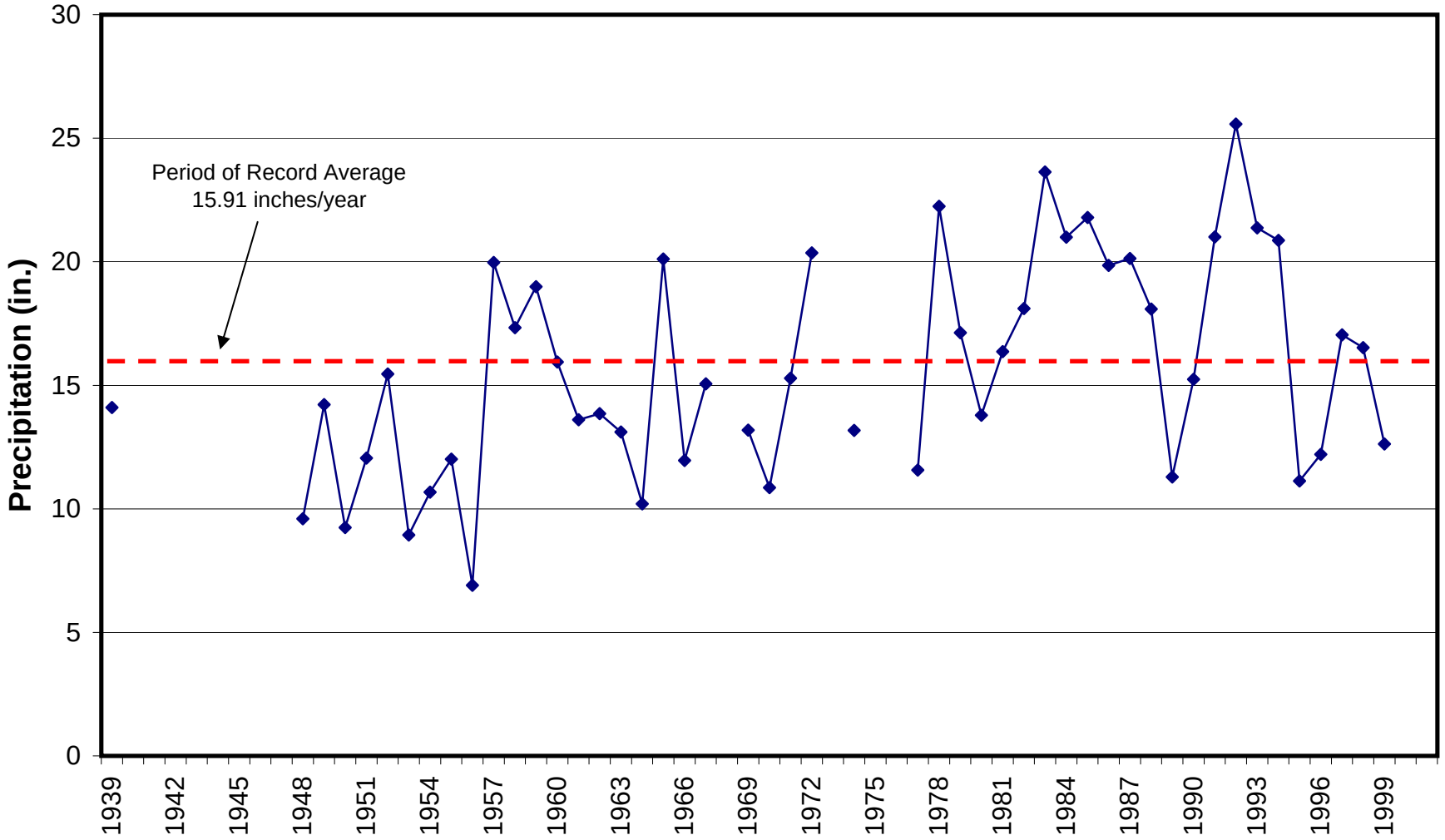
Glenwood

Monthly Precipitation Statistics for Period of Record



Glenwood

Total Annual Precipitation for Period of Record



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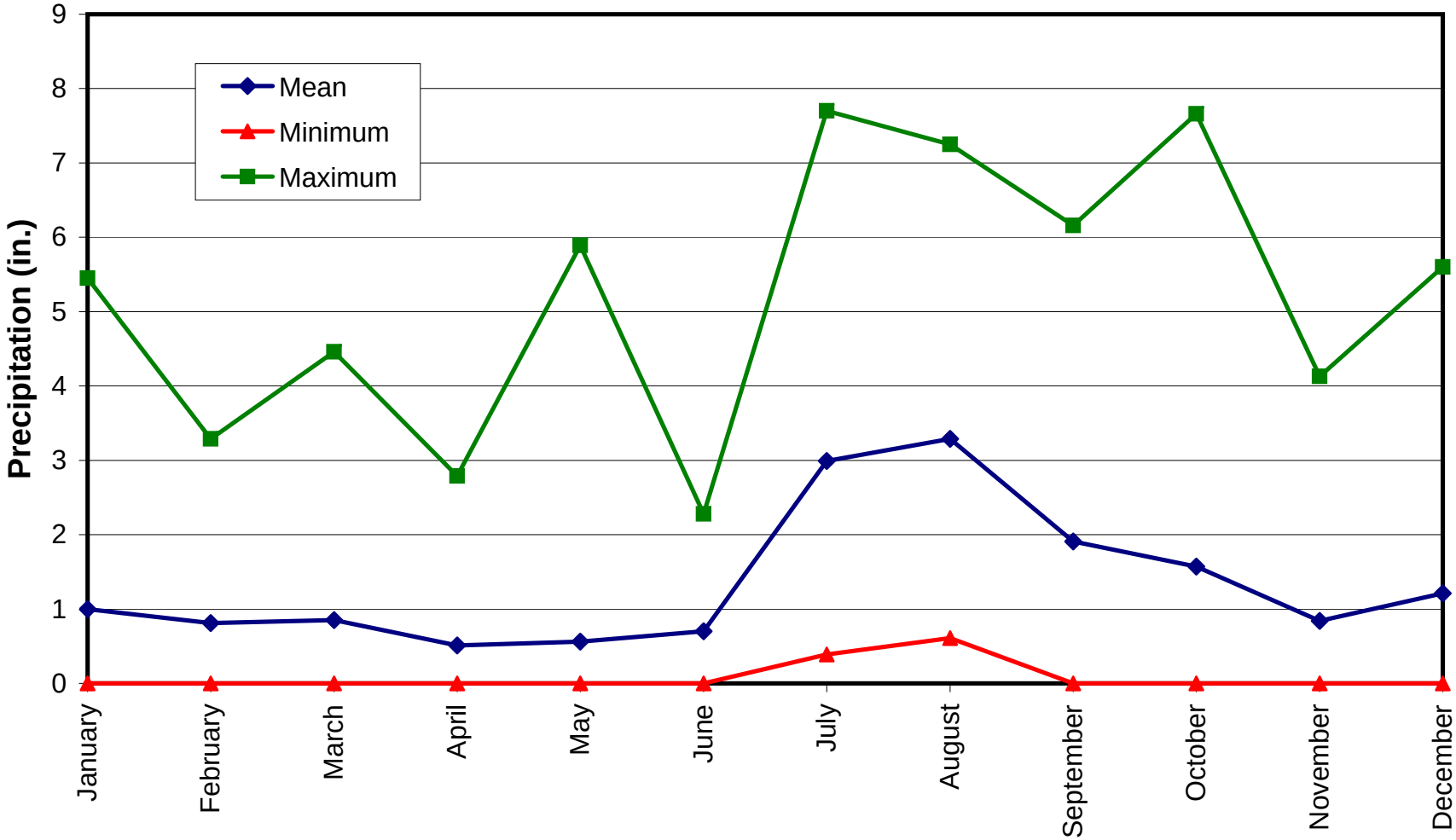
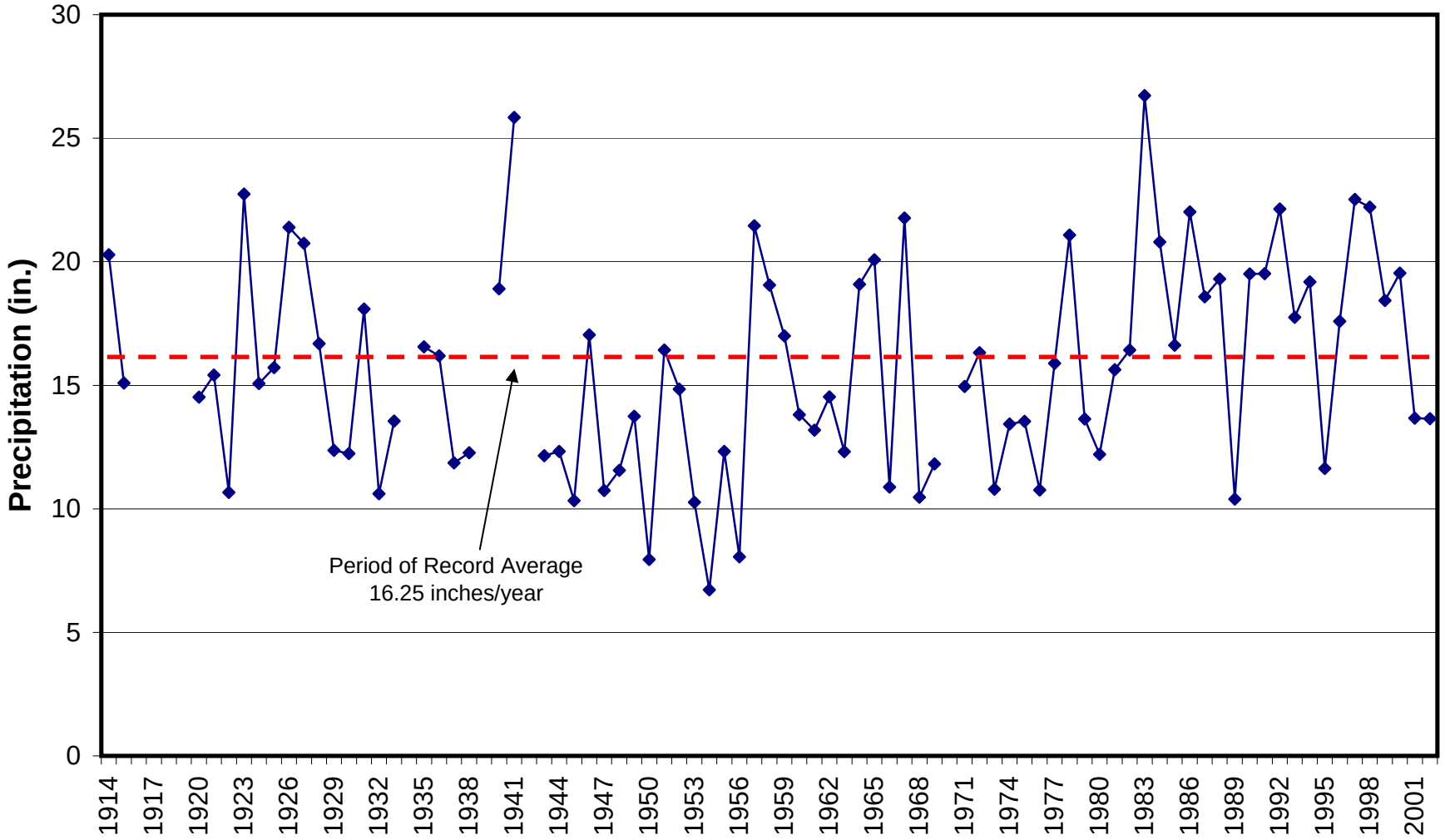
Luna Ranger Station

Monthly Precipitation Statistics for Period of Record



Luna Ranger Station

Total Annual Precipitation for Period of Record



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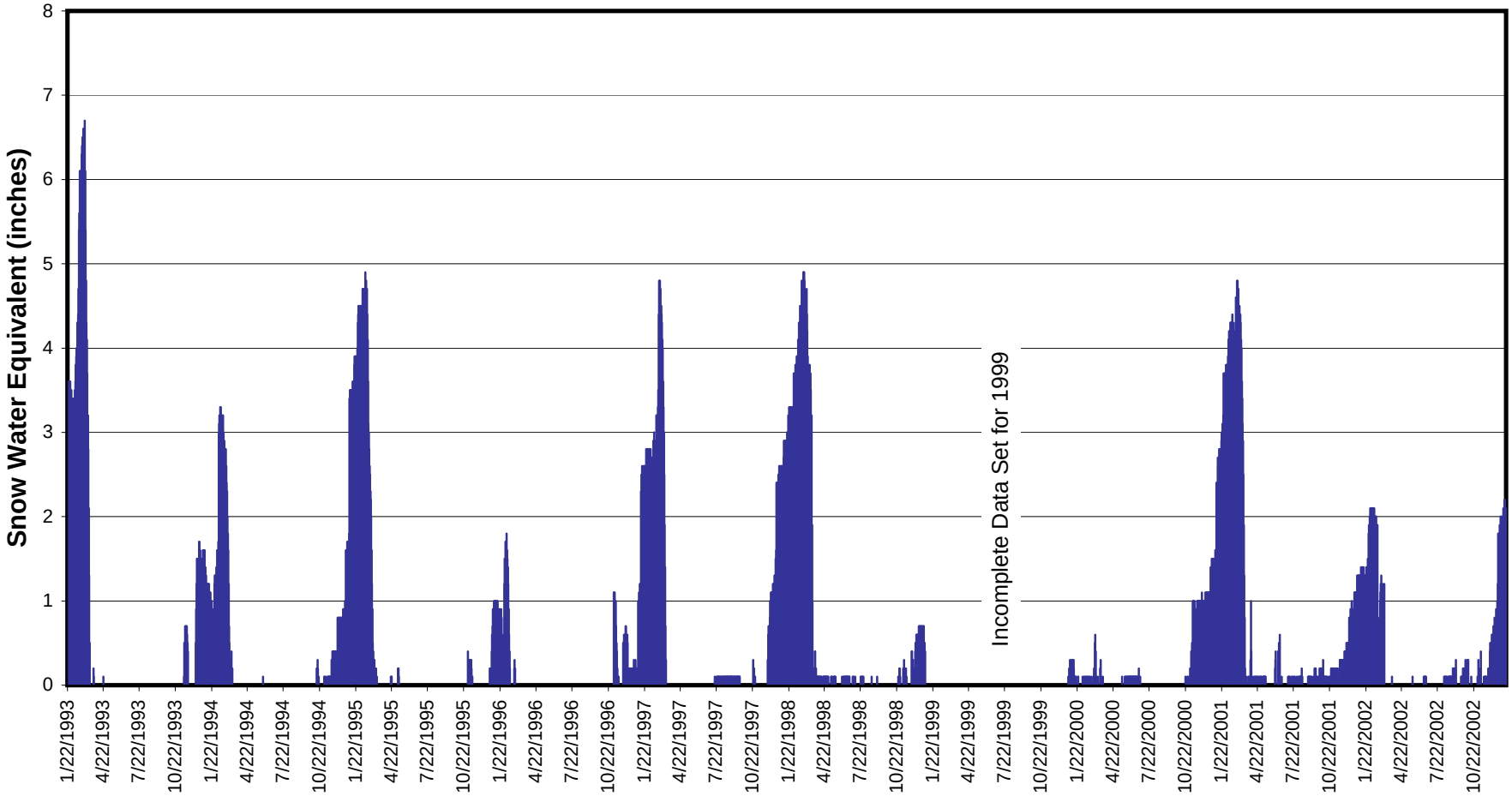
Frisco Divide SNOTEL Station

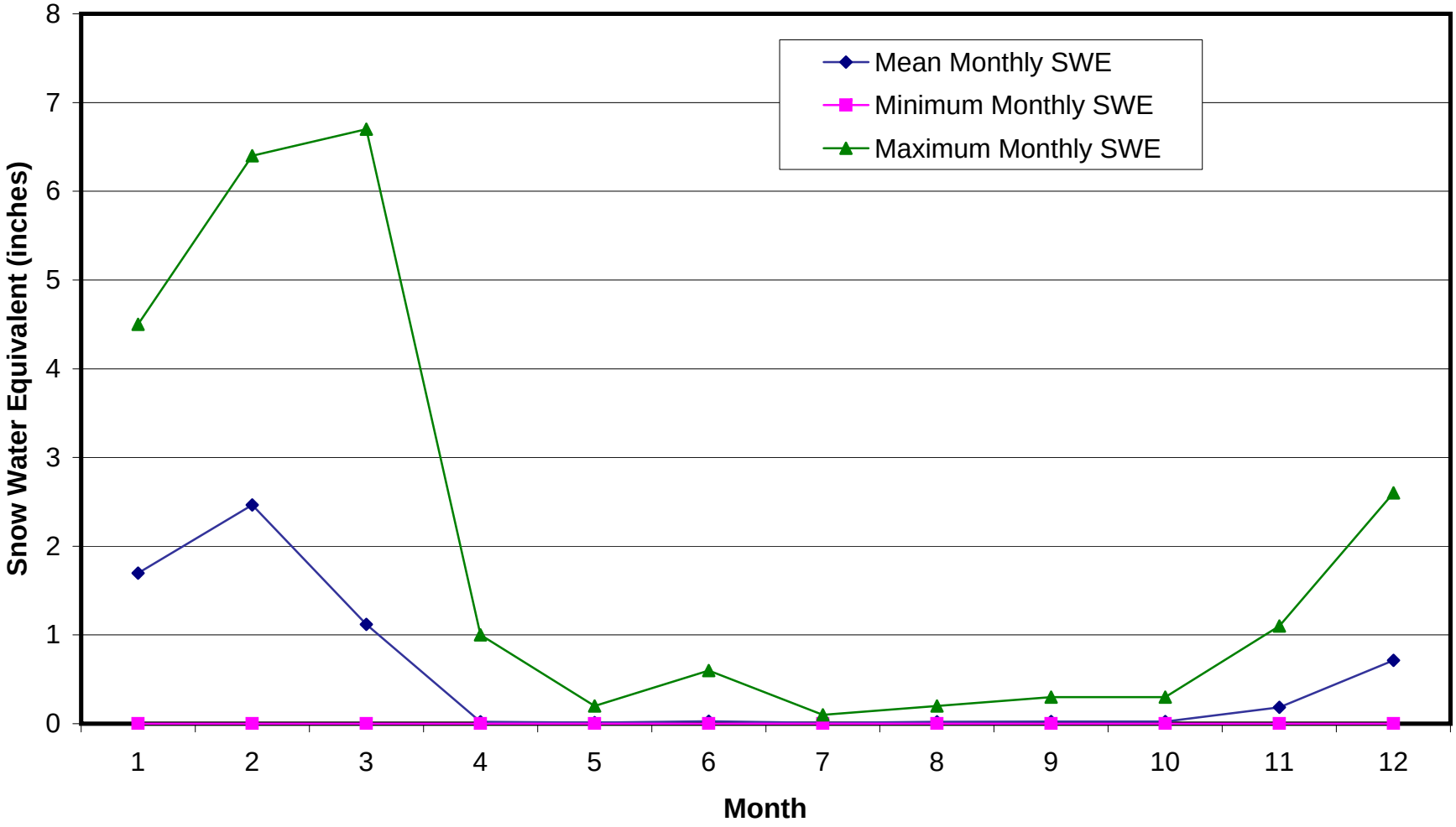
Daily Snow Water Equivalents for Period of Record



Note: Snow water equivalent shows the amount of snow pack on the ground in terms of the depth of water if the snow melted. On average, about 1 inch of water equals 10 inches of snow, however this can vary depending on the character of the snow and the degree of compaction.

Frisco Divide SNOTEL Station

Monthly SWE Statistics for Period of Record



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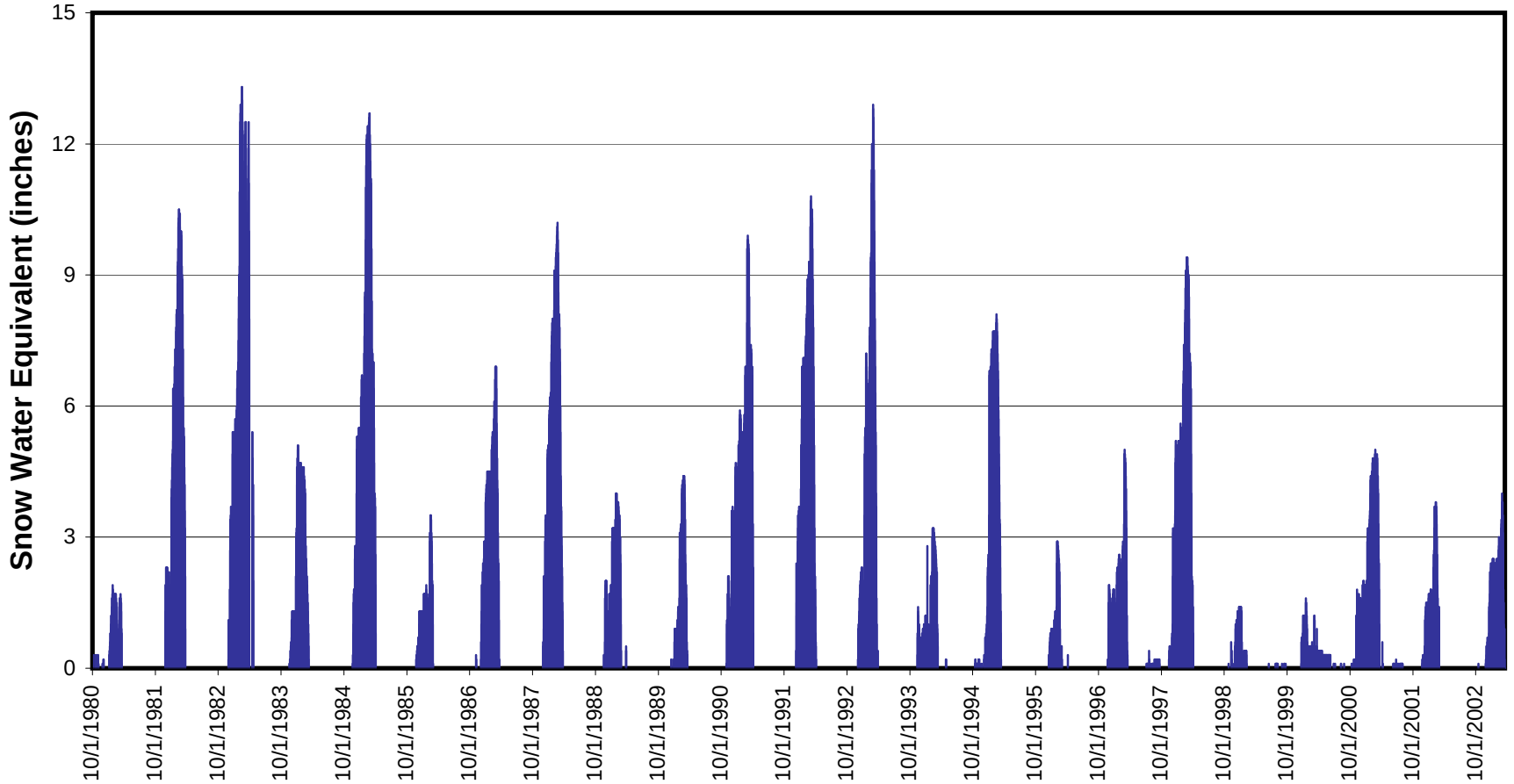
Signal Peak SNOTEL Station

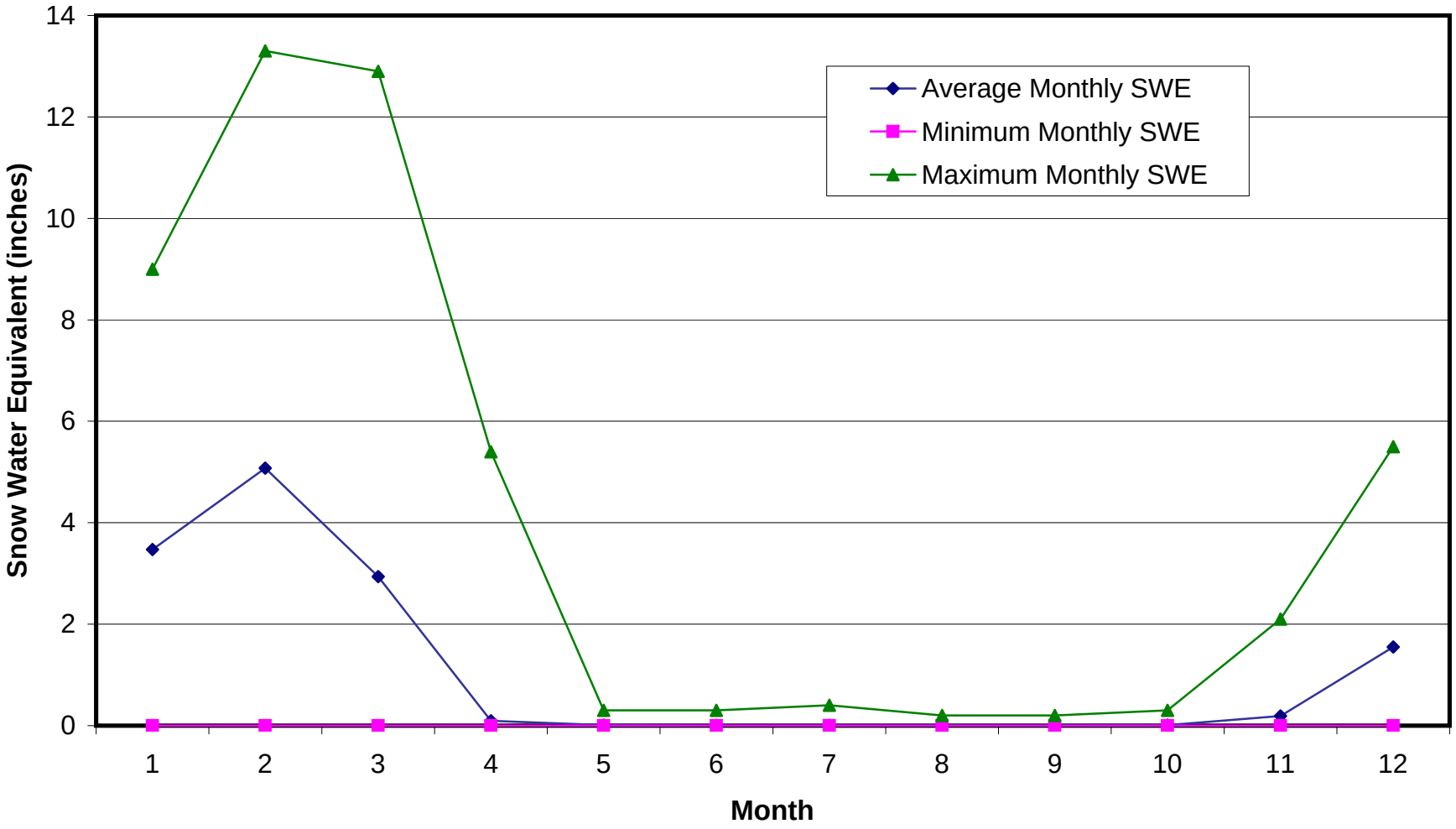
Daily Snow Water Equivalents for Period of Record



Note: Snow water equivalent shows the amount of snow pack on the ground in terms of the depth of water if the snow melted. On average, about 1 inch of water equals 10 inches of snow, however this can vary depending on the character of the snow and the degree of compaction.

Signal Peak SNOTEL Station

Monthly SWE Statistics for Period of Record



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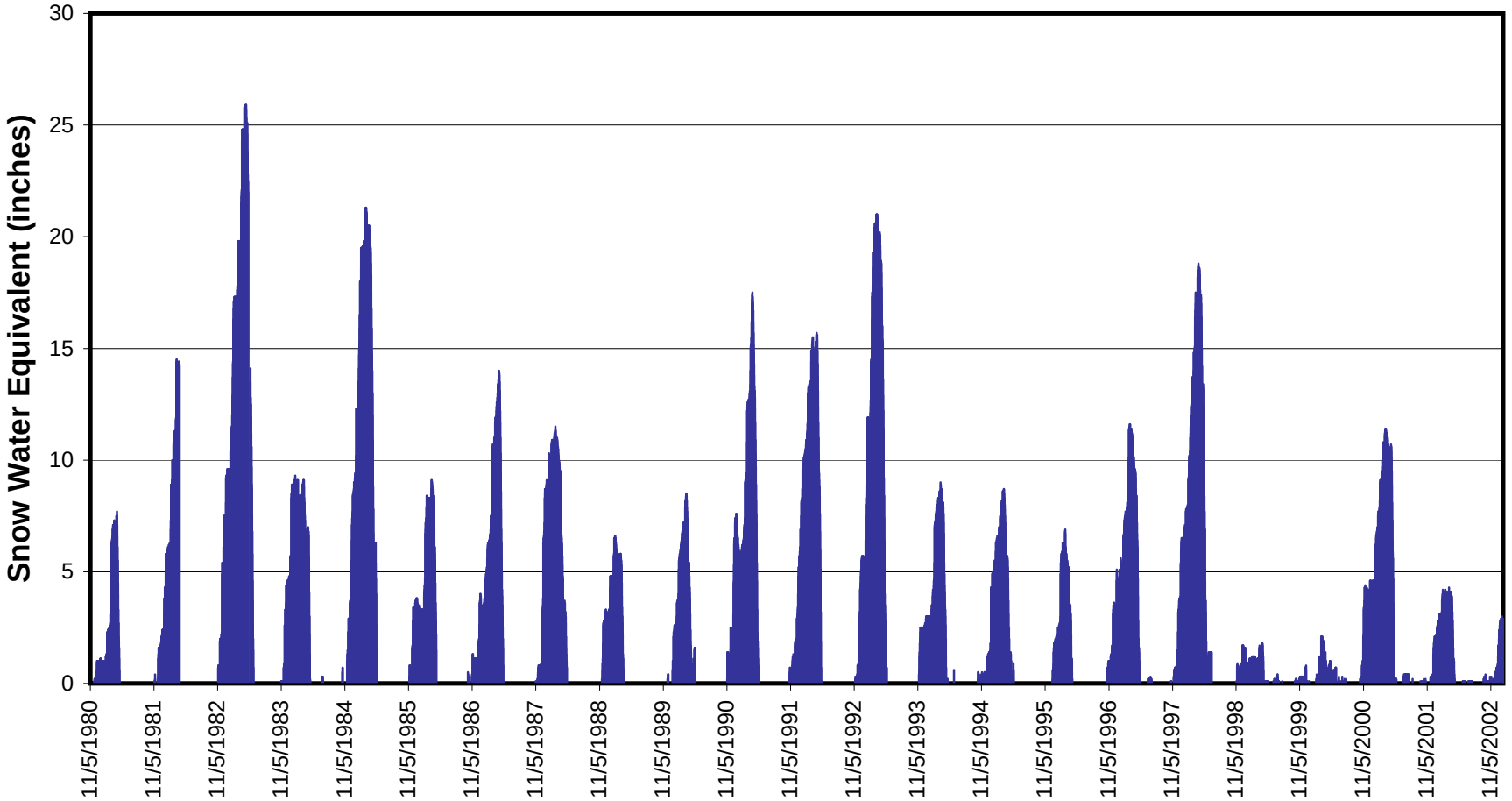
Silver Creek Divide SNOTEL Station

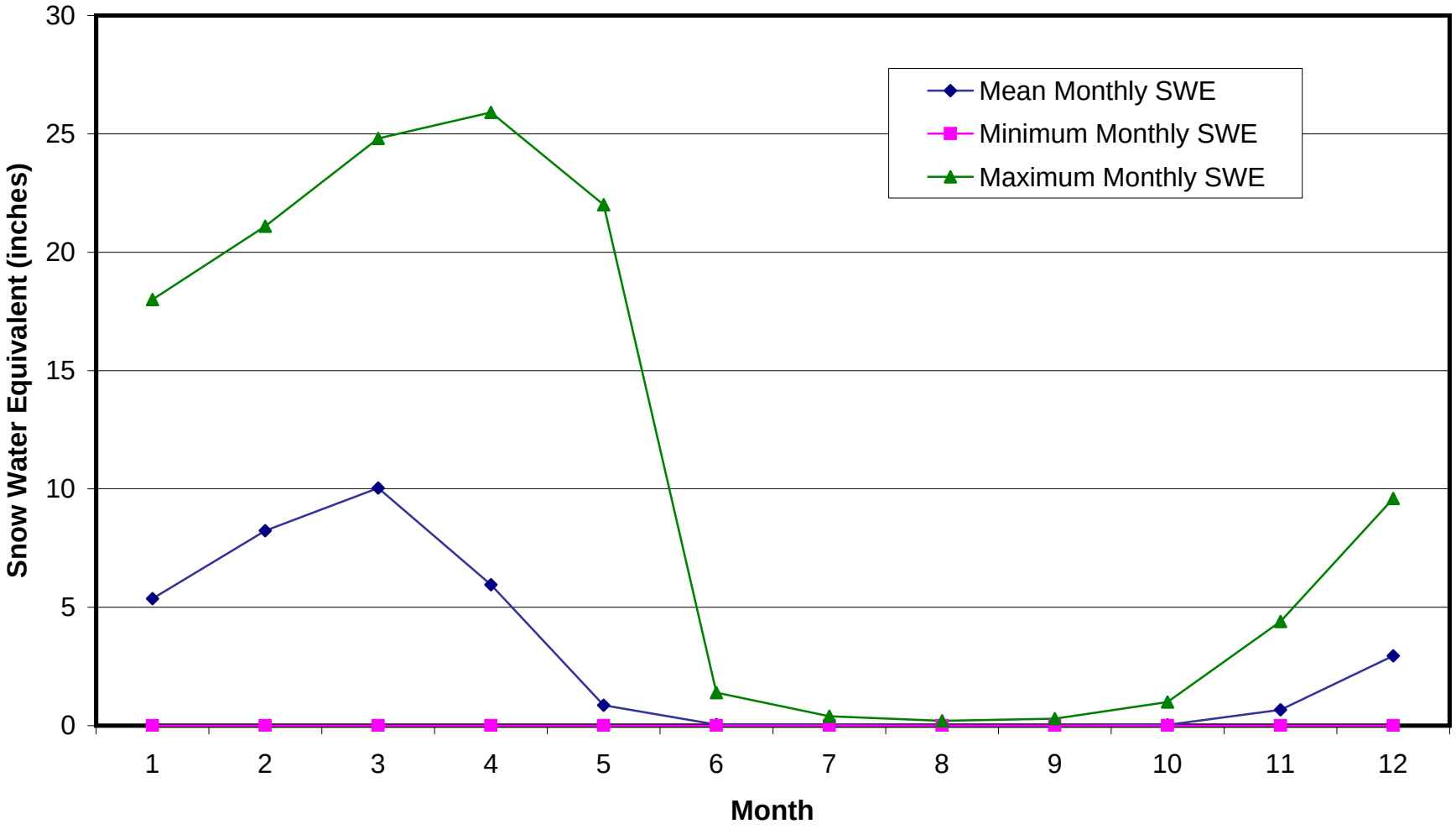
Daily Snow Water Equivalents for Period of Record



Note: Snow water equivalent shows the amount of snow pack on the ground in terms of the depth of water if the snow melted. On average, about 1 inch of water equals 10 inches of snow, however this can vary depending on the character of the snow and the degree of compaction.

Silver Creek Divide SNOTEL Station

Monthly SWE Statistics for Period of Record



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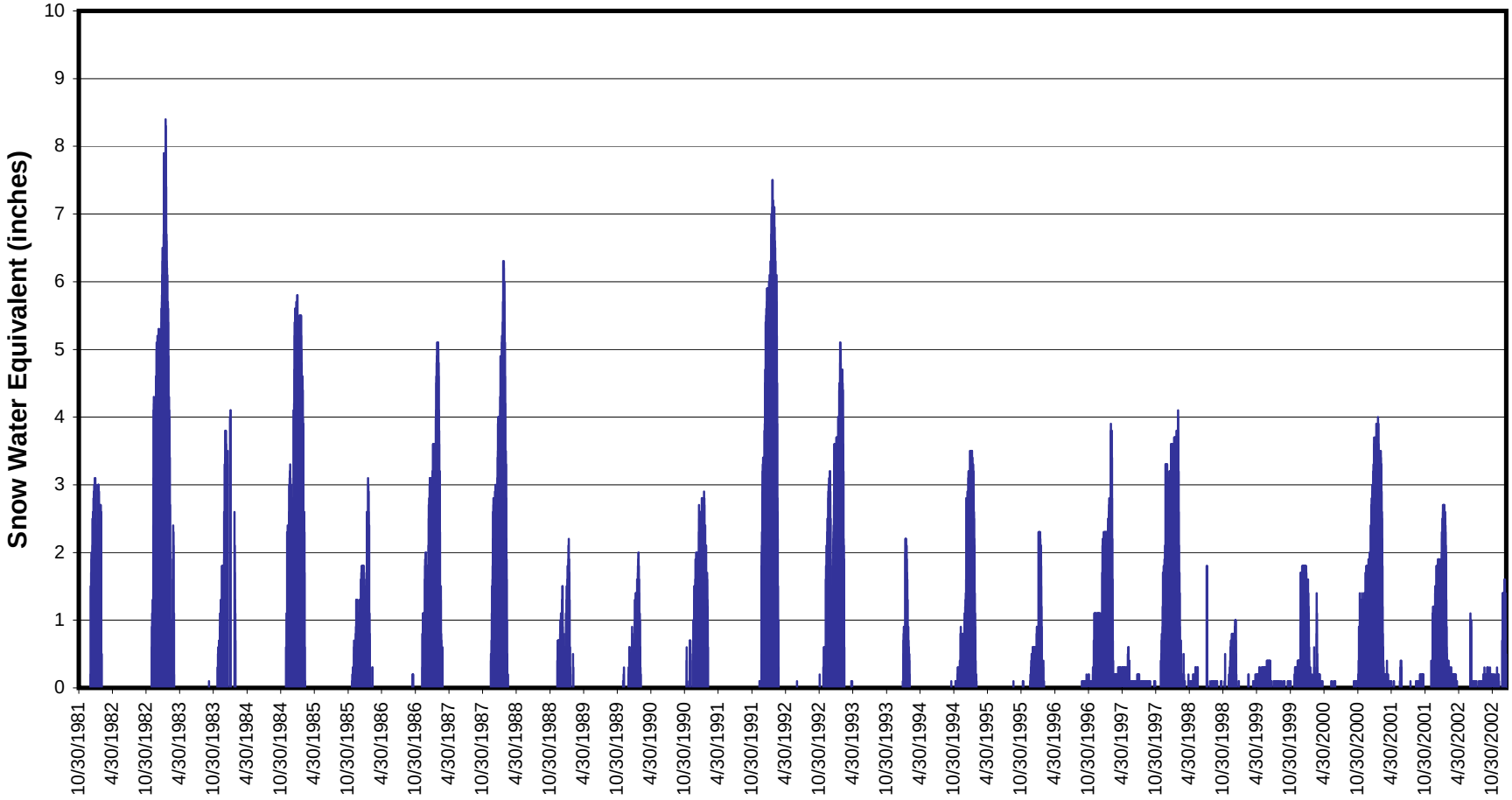
Lookout Mountain SNOTEL Station

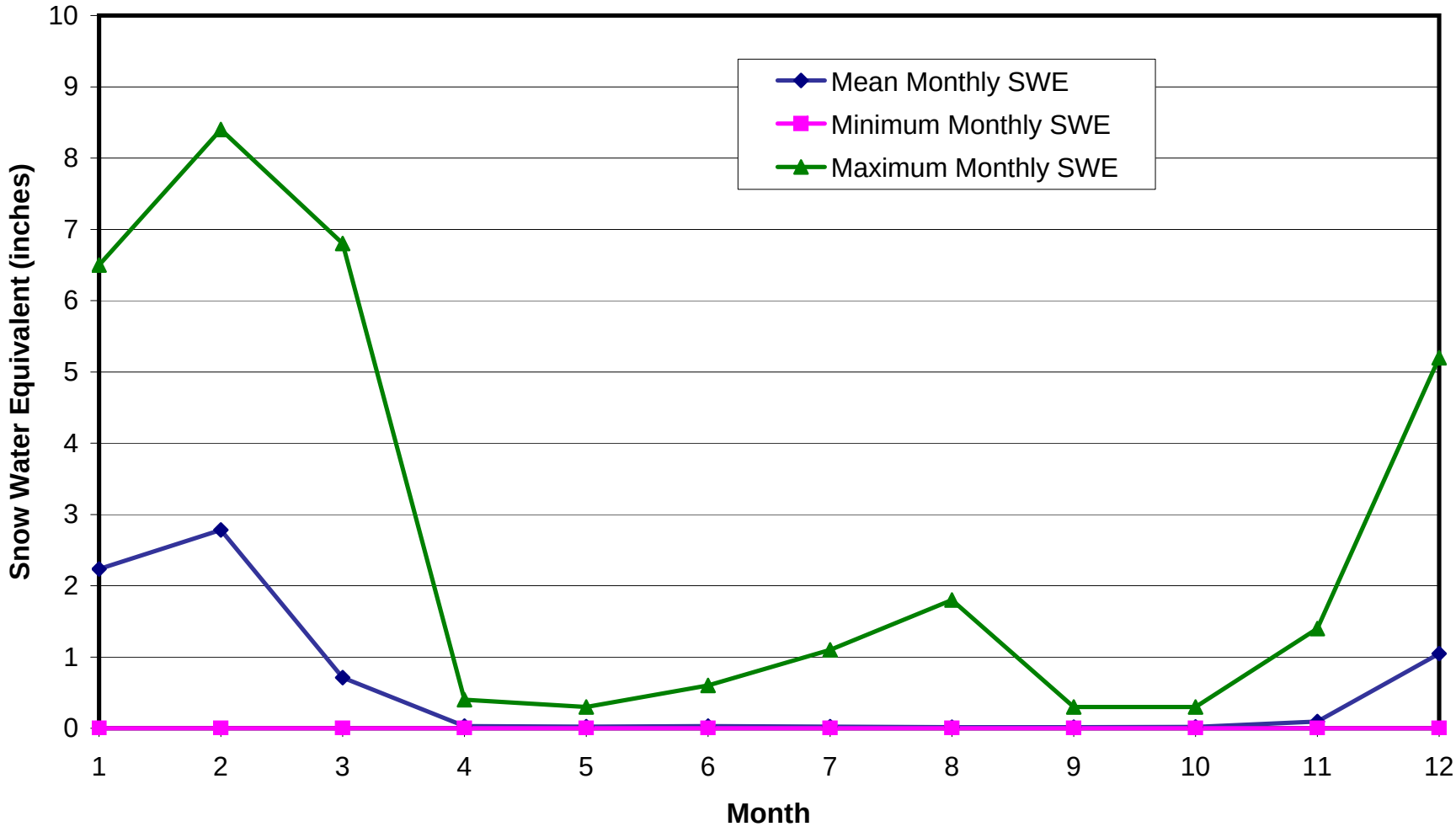
Daily Snow Water Equivalents for Period of Record



Note: Snow water equivalent shows the amount of snow pack on the ground in terms of the depth of water if the snow melted. On average, about 1 inch of water equals 10 inches of snow, however this can vary depending on the character of the snow and the degree of compaction.

Lookout Mountain SNOTEL Station

Monthly SWE Statistics for Period of Record



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Appendix D3

Streamflow Data

Appendix D3. Streamflow Data

For several of the key stations, streamflow data were missing for discrete time periods, such as when the stream gage was not operational. Data for these time periods were estimated on a monthly or annual basis by developing relationships with nearby stations that recorded streamflow data during the missing period. For example, no data were available for the San Francisco River near Reserve prior to March 1959; therefore, annual yields prior to 1959 were estimated from the San Francisco River near Glenwood station. The specific stations and time periods that were used to estimate missing data are noted on the hydrographs in Appendix D3.

In addition, streamflow data after September 30, 2001 (water year 2002) had not been fully checked by the USGS at the time this report was developed and are therefore considered provisional. Some provisional daily data were missing from the periods of record of several gage stations due to equipment malfunctions or lack of reporting. Where such gaps existed, daily values were calculated using the following procedures:

- If the difference between daily discharges on either side of the data gap was large (10 or more cubic feet per second [cfs]), it was divided by the number of missing daily values. The resultant value was added (or, if flow decreased, subtracted) to the last reported value before the data gap. The resultant value was then added (or subtracted) to each subsequent estimated daily value until the data gap was filled.

- If the change in daily discharge over the missing period was small (only a few cubic feet per second), the average of the daily discharges on either side of the data gap was used to estimate daily discharges during the data gap period.

USGS Streamgage Information for Southwest New Mexico Counties Water Planning Region

USGS Site Name	Location				Drainage Area (sq. mi.)	Drainage Area (acres)	Irrigated land upstream of gage (acres)	Type of Record	Start Date	End Date	Number of Missing Days for Daily Streamflow
	USGS Site Number	Latitude	Longitude	Elevation							
Catron County, New Mexico											
SWINGLE CANYON NR DATIL, NM	08500000	34 11 17	107 53 55	7,600.0	6.4	4,064	NA	peak streamflow	7/16/1977	8/15/1994	
LARGO CREEK NR MANGAS, NM	09386050	34 08 30	108 30 05	7,600.0	63.0	40,320	NA	daily streamflow	10/1/1960	9/30/1966	0
LARGO CREEK NR. QUEMADO, NM	09386100	34 19 25	108 31 40	6,900.0	151.0	96,640	NA	daily streamflow	10/1/1998	9/30/1999	0
								peak streamflow	8/6/1954	unknown 1995	
CARRIZO CREEK NEAR SALT LAKE, NM	09386200	34 30 39	109 01 35	NA	560.0	358,400	NA	peak streamflow	1/1/1957	9/3/1994	
SNOW CREEK NR. MOGOLLON, NM	09429900	33 24 50	108 29 40	7,270.0	89.6	57,344	NA	peak streamflow	unknown 1958	7/29/1967	
MAIL HOLLOW NR LUNA, NM	09442630	33 47 38	108 56 59	7,084.0	4.2	2,688	NA	peak streamflow	8/19/1970	7/14/1976	
ROMERO CRK NR N.M.-ARIZ. ST. LINE NR LUNA, NM	09442650	33 57 00	108 59 00	8,250.0	10.8	6,912	NA	peak streamflow	unknown	10/20/1972	
TROUT CREEK NR LUNA, NM	09442653	33 53 24	109 00 38	8,050.0	27.1	17,344	NA	daily streamflow	12/17/1968	1/11/1973	0
TROUT CREEK AT LUNA, NM	09442660	33 51 00	108 58 00	7,310.0	31.9	20,416	NA	peak streamflow	unknown 1954	8/20/1955	
SAN FRANCISCO RIVER NEAR RESERVE, NM	09442680	33 44 12	108 46 14	5,820.0	350.0	224,000	280	daily streamflow	3/1/1959	9/30/2001	0
								peak streamflow	7/19/1959	8/3/1999	
							NA	water quality samples	1/7/1976	12/10/1976	
TULAROSA RIVER NEAR ARAGON, NM	09442690	33 54 15	108 30 15	6,750.0	89.0	56,960	NA	peak streamflow	8/20/1955	unknown 1967	
TULAROSA RIVER ABOVE ARAGON, NM	09442692	33 53 29	108 30 54	6,750.0	94.0	60,160	0	daily streamflow	7/1/1966	9/30/1996	0
								peak streamflow	7/24/1967	5/18/1996	
								water quality samples	1/8/1976	12/10/1976	
NEGRO CANYON AT ARAGON, NM	09442695	33 53 00	108 33 00	6,640.0	9.6	6,157	NA	peak streamflow	9/27/1958	7/30/1971	
APACHE CREEK NR. APACHE CREEK, NM	09442700	33 55 50	108 39 45	6,760.0	94.6	60,544	NA	peak streamflow	8/24/1957	10/20/1972	
TULAROSA RIVER NEAR RESERVE, NM	09442740	33 44 00	108 42 10	5,900.0	426.0	272,640	NA	peak streamflow	7/28/1956	7/6/1999	
SAN FRANCISCO R NR ALMA, NM	09443000	33 22 05	108 54 35	4,842.0	1,546.0	989,440	1600 [a]	daily streamflow	2/1/1964	9/30/1986	0
								peak streamflow	7/18/1964	7/16/1986	
								water quality samples	1/4/1976	11/26/1976	
WHITEWATER CR NR MOGOLLON, NM [b]	09443500	33 22 00	108 48 30	NA	34.0	21,760	NA	daily streamflow	10/1/1909	6/30/1923	641
SAN FRANCISCO RIVER NEAR GLENWOOD, NM	09444000	33 14 48	108 52 47	4,560.0	1,653.0	1,057,920	2000	daily streamflow	10/1/1927	9/30/2001	0
								peak streamflow	7/28/1928	9/13/1999	
								water quality samples	4/2/1963	8/22/2001	
Grant County, New Mexico											
MIMBRES R AT MCKNIGHT DS NR MIMBRES, NM	08476300	32 56 14	108 00 55	6,236.7	97.3	62,272	NA	daily streamflow	11/1/1963	10/31/1972	0
								peak streamflow	8/18/1964	9/14/1972	
								water quality samples	8/15/1967	11/30/1972	
MIMBRES RIVER NEAR MIMBRES, NM	08477000	32 52 28	107 59 05	5,972.0	152.0	97,280	300	daily streamflow	10/1/1930	9/30/1976	0
								peak streamflow	8/10/1931	9/15/1976	
								water quality samples	1/15/1976	11/16/1979	
MIMBRES RIVER AT MIMBRES, NM	08477110	32 51 17	107 58 23	5,920.0	216.0	138,240	none reported	daily streamflow	3/1/1978	9/30/2001	0
								peak streamflow	11/25/1978	8/5/1999	
								water quality samples	1/20/1978	8/20/1986	
IRON CR NR KINGSTON, NM	08477200	32 54 50	107 46 35	7,680.0	0.7	474	NA	peak streamflow	7/11/1955	10/20/1972	
LITTLE WALNUT CREEK NEAR SILVER CITY, NM	08477560	32 48 20	108 17 35	6,050.0	5.1	3,264	NA	peak streamflow	8/14/1959	8/11/1960	
SILVA CREEK TRIB. AT SILVER CITY, NM	08477570	32 47 42	108 16 47	5,990.0	2.1	1,357	NA	peak streamflow	8/21/1958	9/3/1975	
SILVA CREEK AT SILVER CITY, NM	08477580	32 46 41	108 16 41	5,900.0	10.0	6,400	NA	peak streamflow	8/21/1958	7/17/1994	
PINOS ALTOS CREEK AT SILVER CITY, NM	08477590	32 46 52	108 16 04	5,925.0	4.6	2,963	NA	peak streamflow	8/21/1958	9/13/1999	
SAN VICENTE ARROYO AT SILVER CITY, NM	08477600	32 46 15	108 16 30	5,862.6	26.5	16,960	none reported	daily streamflow	10/1/1953	9/30/1965	0
								peak streamflow	9/9/1938	9/1/1965	

USGS Streamgage Information for Southwest New Mexico Counties Water Planning Region

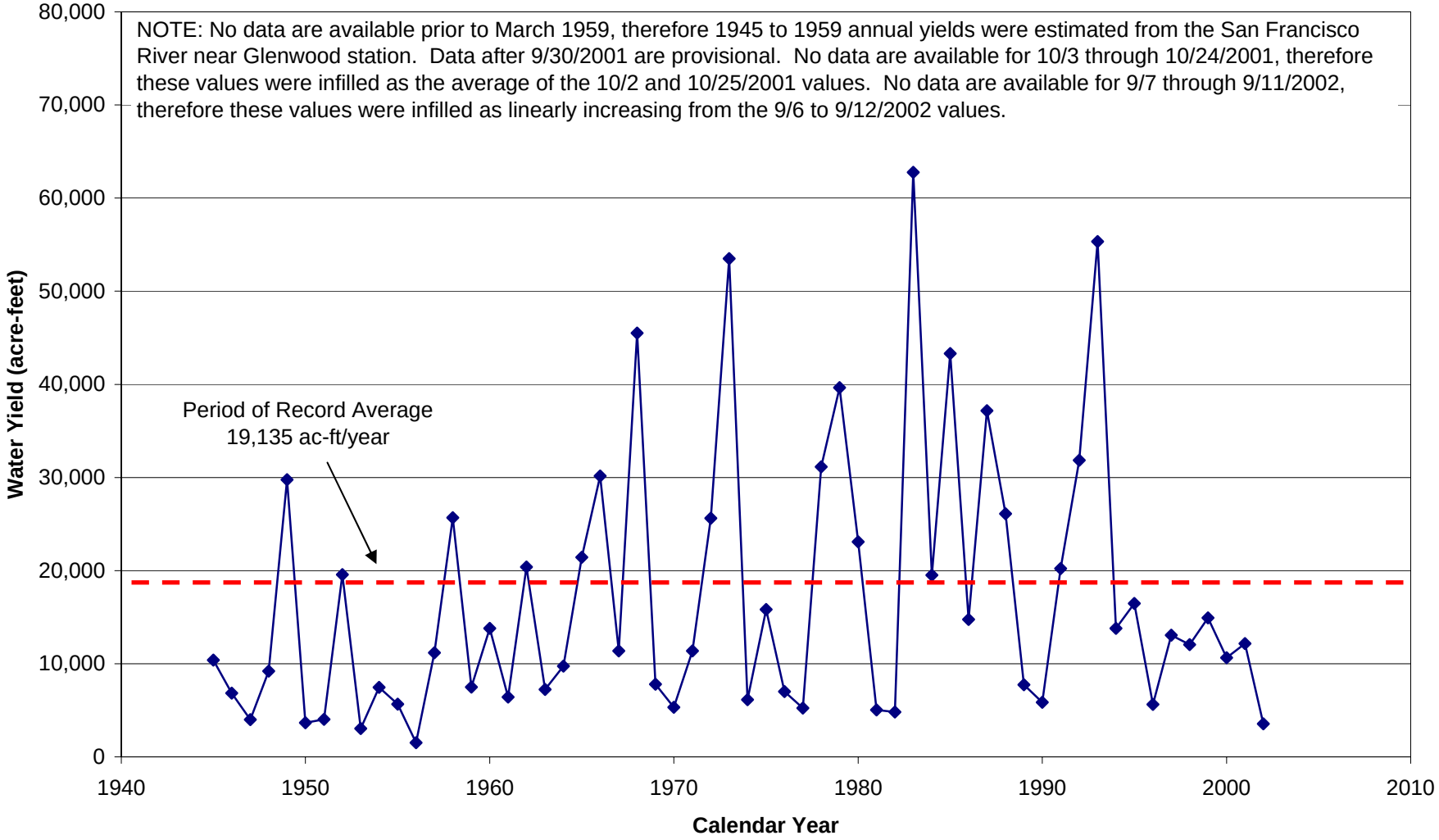
USGS Site Name	Location				Drainage Area (sq. mi.)	Drainage Area (acres)	Irrigated land upstream of gage (acres)	Type of Record	Start Date	End Date	Number of Missing Days for Daily Streamflow
	USGS Site Number	Latitude	Longitude	Elevation							
CAMERON CREEK AT CENTRAL, NM	08478000	32 47 00	108 10 00	5,990.0	18.8	12,032	NA	peak streamflow	9/25/1954	9/25/1954	
GILA R NR SILVER CITY, NM	09430000	33 10 30	108 12 30	5,530.0	1,600.0	1,024,000	NA	daily streamflow	7/1/1912	5/31/1919	0
SAPILLO CREEK BELOW LAKE ROBERTS, NM	09430150	33 01 56	108 10 06	5,990.0	78.0	49,920	NA	daily streamflow	6/1/1964	10/1/1971	0
								peak streamflow	9/23/1964	8/13/1971	
COPPERAS CANYON NR PINOS ALTOS, NM	09430300	33 04 42	108 12 14	6,340.0	4.0	2,528	NA	peak streamflow	8/4/1963	2/9/1993	
GILA RIVER NEAR GILA, NM	09430500	33 03 40	108 32 12	4,654.8	1,864.0	1,192,960	500	daily streamflow	12/1/1927	9/30/2001	0
								peak streamflow	8/23/1928	8/6/1999	
								water quality samples	12/26/1959	11/25/1976	
MOGOLLON CREEK NEAR CLIFF, NM	09430600	33 10 00	108 38 57	5,440.0	69.0	44,160	none reported	daily streamflow	2/21/1967	9/30/2001	0
								peak streamflow	8/12/1967	8/5/1999	
								water quality samples	2/21/1967	1/10/1996	
DUCK CREEK AT CLIFF, NM	09430900	32 58 00	108 36 00	4,500.0	228.0	145,920	NA	peak streamflow	8/13/1957	8/19/1959	
GILA RIVER NEAR CLIFF, NM	09431000	32 56 20	108 36 20	4,454.5	2,438.0	1,560,320	NA	daily streamflow	1/1/1942	9/30/1951	0
								peak streamflow	9/12/1942	9/18/1970	
MANGAS CREEK NEAR CLIFF, NM	09431130	32 51 39	108 34 01	NA	NA		NA	peak streamflow	7/30/1989	8/5/1999	
GILA RIVER NEAR REDROCK, NM	09431500	32 43 37	108 40 30	4,090.0	2,829.0	1,810,560	5000	daily streamflow	10/1/1930	9/30/2001	2557
								peak streamflow	11/26/1905	8/5/1999	
								water quality samples	7/19/1967	8/22/2001	
GILA RIVER BELOW BLUE CREEK, NEAR VIRDEN NM	09432000	32 38 53	108 50 43	3,875.0	3,203.0	2,049,920	6200	daily streamflow	7/1/1927	9/30/2001	153
								peak streamflow	9/22/1997	8/6/1999	
								water quality samples	3/25/1987	6/5/2001	
Hidalgo County, New Mexico											
DEER CREEK TRIB. NR. ANTELOPE WELLS, NM	08479300	31 23 00	108 42 15	5,170.0	4.3	2,752	NA	peak streamflow	8/21/1959	9/12/1994	
SUNSET CANAL NR VIRDEN, NM	09433000	32 39 20	108 56 00	NA	NA		NA	daily streamflow	10/1/1960	12/31/1967	0
NEW MODEL CA NR VIRDEN, NM	09436000	32 40 30	108 59 30	NA	NA		NA	daily streamflow	10/1/1960	12/31/1967	0
ANIMAS CREEK NR. CLOVERDALE, NM	09438200	31 34 15	108 52 30	5,020.0	157.0	100,480	NA	peak streamflow	unknown 1959	7/29/1960	
STEINS CREEK AT STEINS, NM	09455800	32 13 47	109 00 01	4,300.0	1.3	806	NA	peak streamflow	unknown 1959	7/23/1999	
GILA RIVER NR VIRDEN, NM	323922108571901	32 39 22	108 57 19	3,760.0	NA		NA	water quality samples	8/12/1993	8/12/1993	
Luna County, New Mexico											
MIMBRES RIVER NEAR FAYWOOD, NM	08477500	32 35 10	107 55 10	5,033.0	440.0	281,600	1750	daily streamflow	10/1/1930	9/30/1968	2983
								peak streamflow	8/10/1931	8/6/1968	
MIMBRES R NR SPALDING, NM	08477530	32 27 55	107 56 50	4,749.8	472.0	302,080	NA	daily streamflow	10/1/1963	9/30/1968	0
								peak streamflow	7/26/1964	8/12/1968	
WAMEL CANAL AT HEAD NR DEMING, NM	08478300	32 18 05	107 53 45	NA	NA		NA	daily streamflow	10/1/1963	9/30/1968	0
MIMBRES R BL WAMEL CA NR DEMING, NM	08478400	32 18 05	107 53 45	4,468.9	1,101.0	704,640	NA	daily streamflow	10/1/1963	9/30/1968	0
								peak streamflow	12/23/1965	8/13/1967	
MIMBRES RIVER AT DEMING, NM	08478500	32 17 00	107 45 35	4,330.0	1,370.0	876,800	NA	peak streamflow	8/7/1954	8/5/1999	
MIMBRES BASIN TRIB. NR. FLORIDA, NM	08478600	32 21 25	107 37 35	4,410.0	0.6	352	NA	peak streamflow	unknown 1959	unknown 1994	
SEVENTYSIX DRAW TRIB NEAR WATERLOO, NM	08478800	31 56 34	107 44 38	4,190.0	0.2	128	NA	peak streamflow	8/4/1967	8/5/1999	

[a] Station is not active, unable to confirm irrigated acreage above gage.

[b] Station was moved at least 3 times, drainage area was 24 square miles (15,360 acres) before October 1, 1911.

NA = not available

Annual Water Yield
San Francisco River near Reserve



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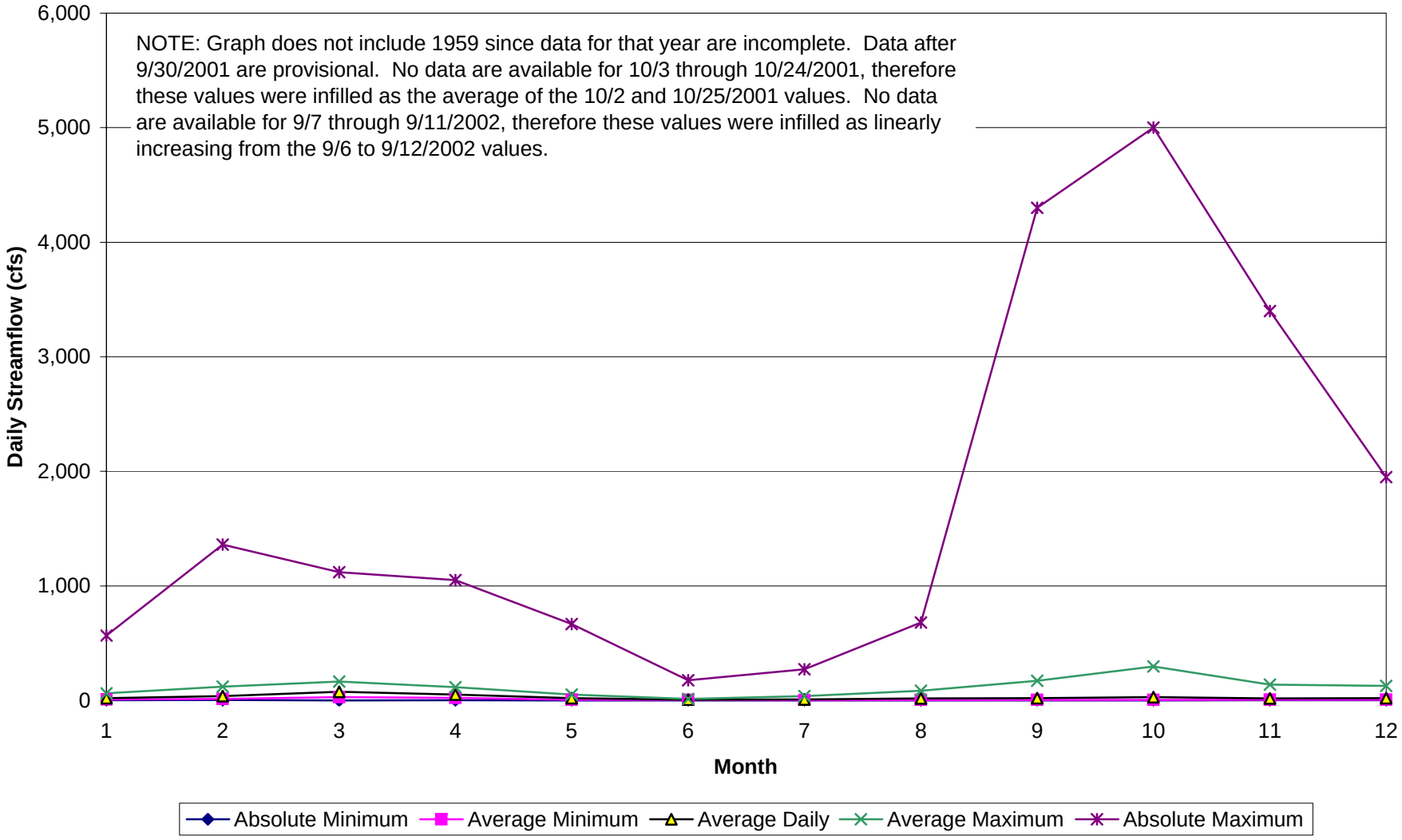
Daily Average Streamflow for Each Month, 1960 through 2002
San Francisco River near Reserve



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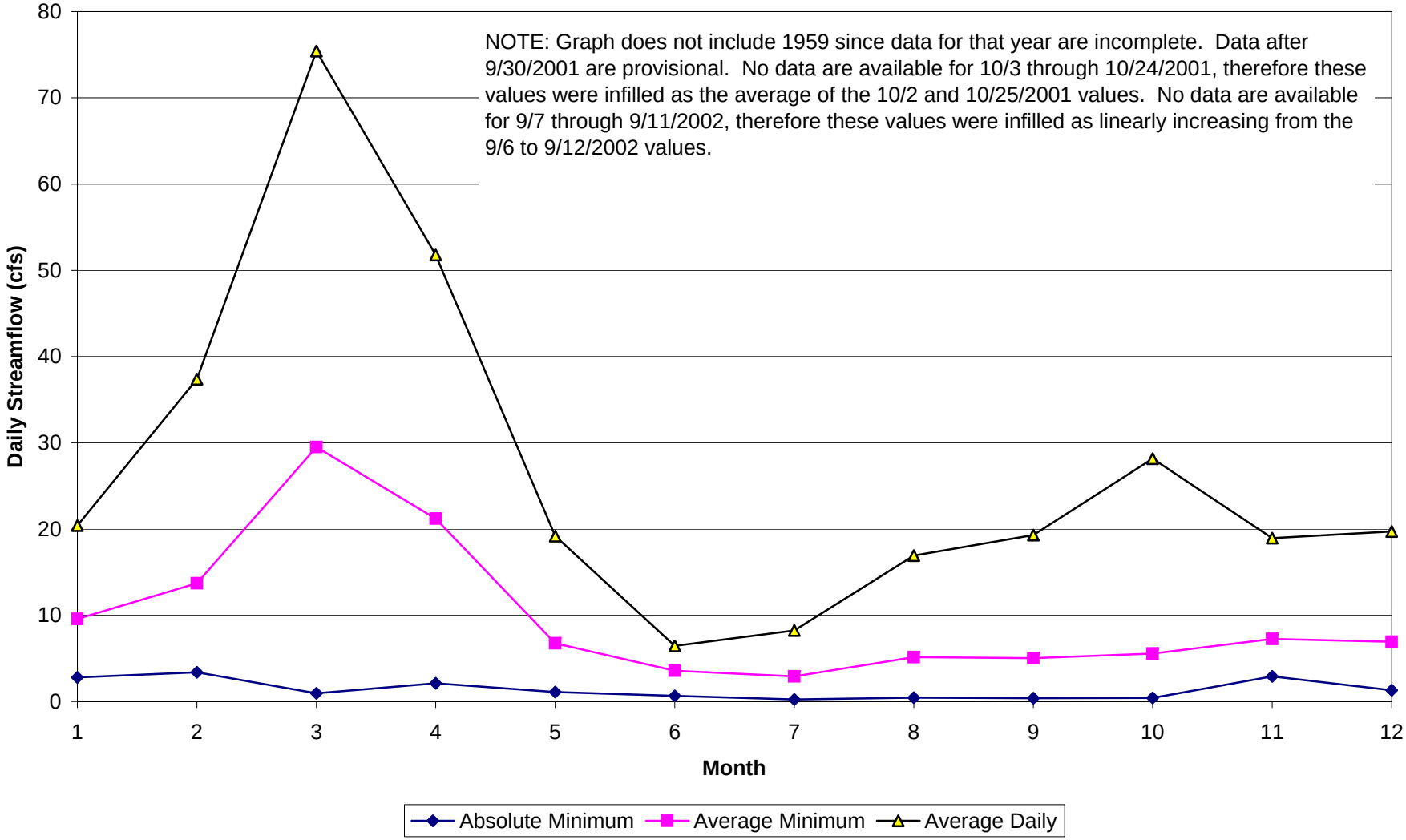
Daily Average Streamflow for Each Month, Excluding Maximums, 1960 through 2002
San Francisco River near Reserve



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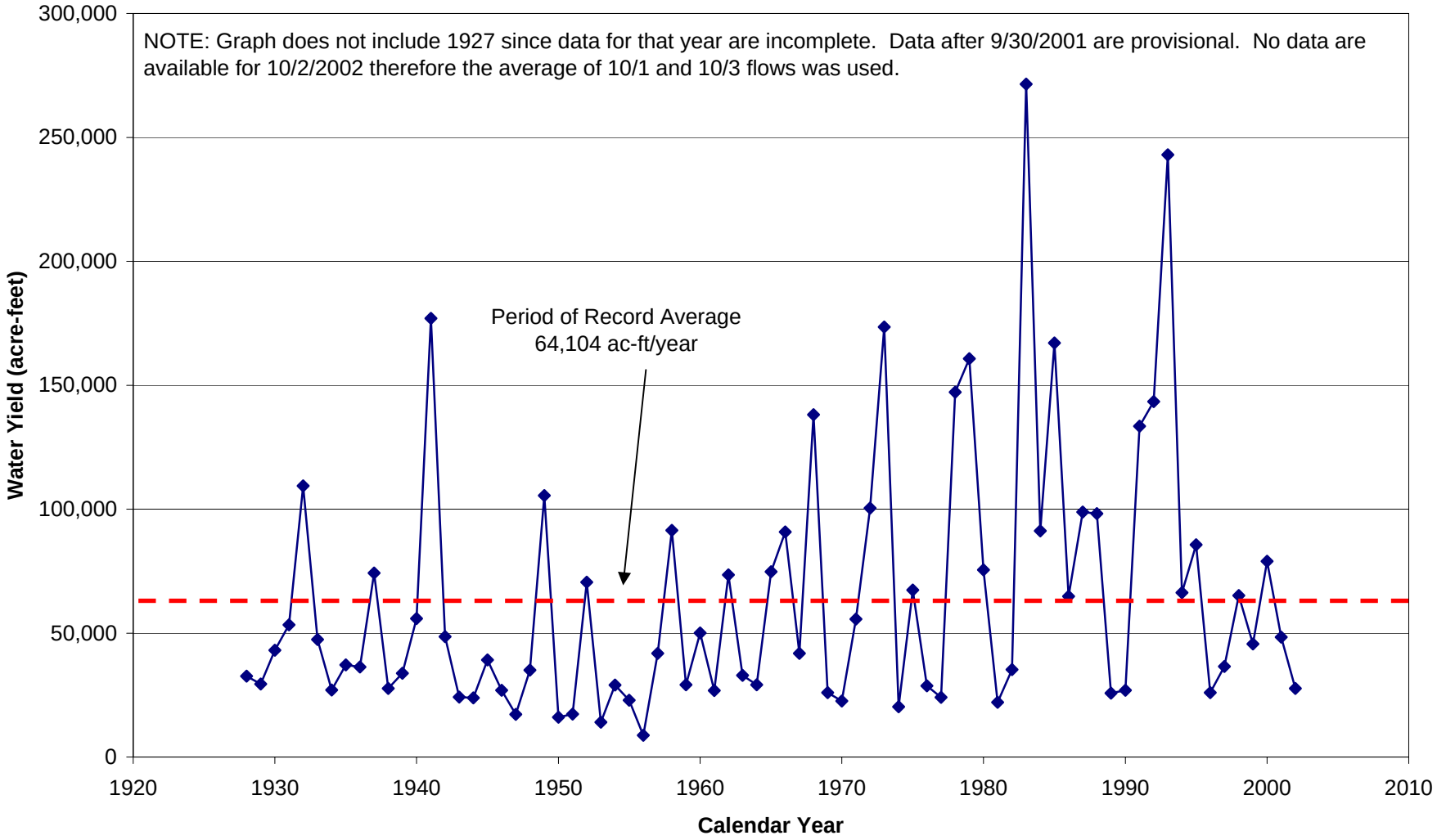
Annual Water Yield
San Francisco River near Glenwood



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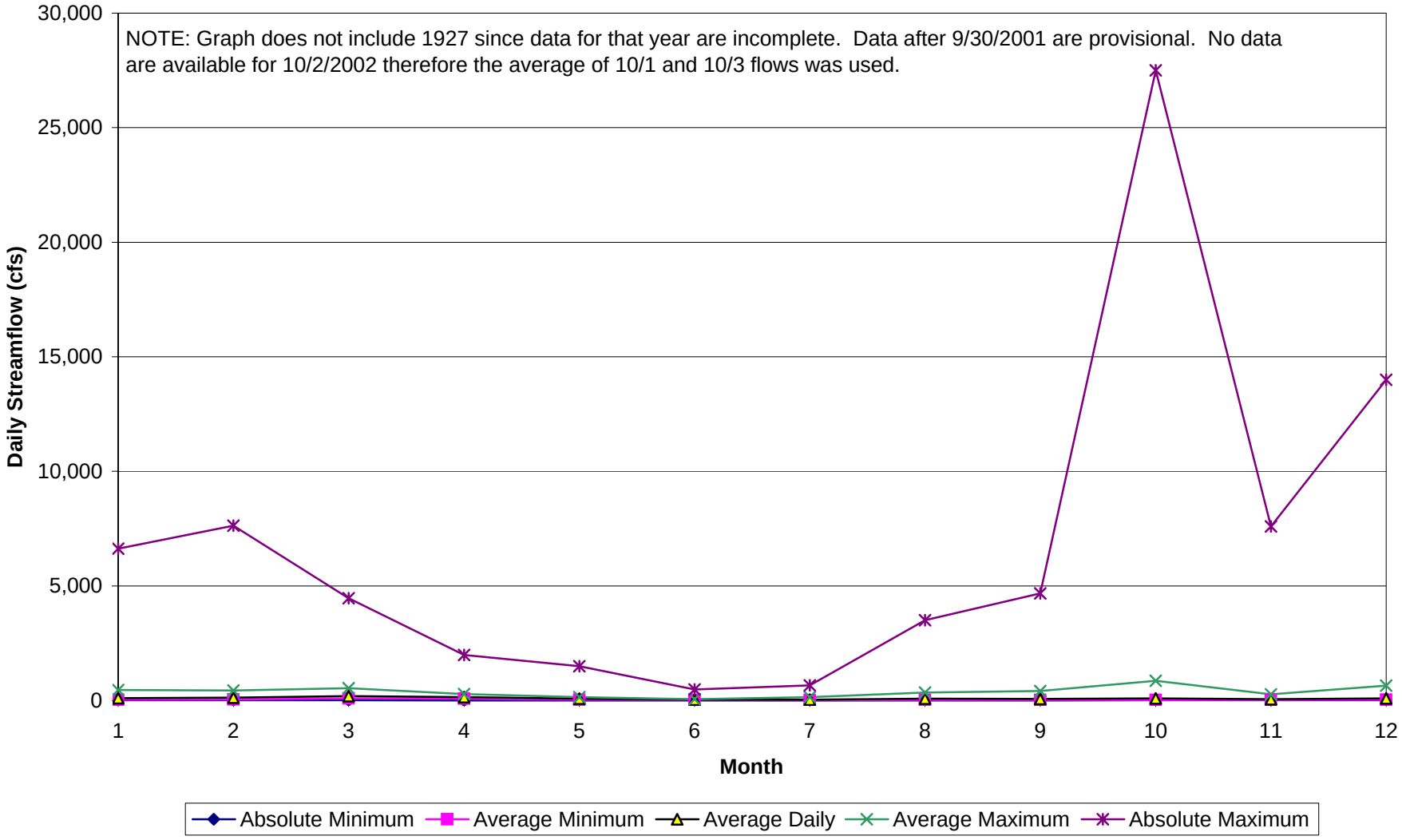
Daily Average Streamflow for Each Month, 1928 through 2002
San Francisco River near Glenwood



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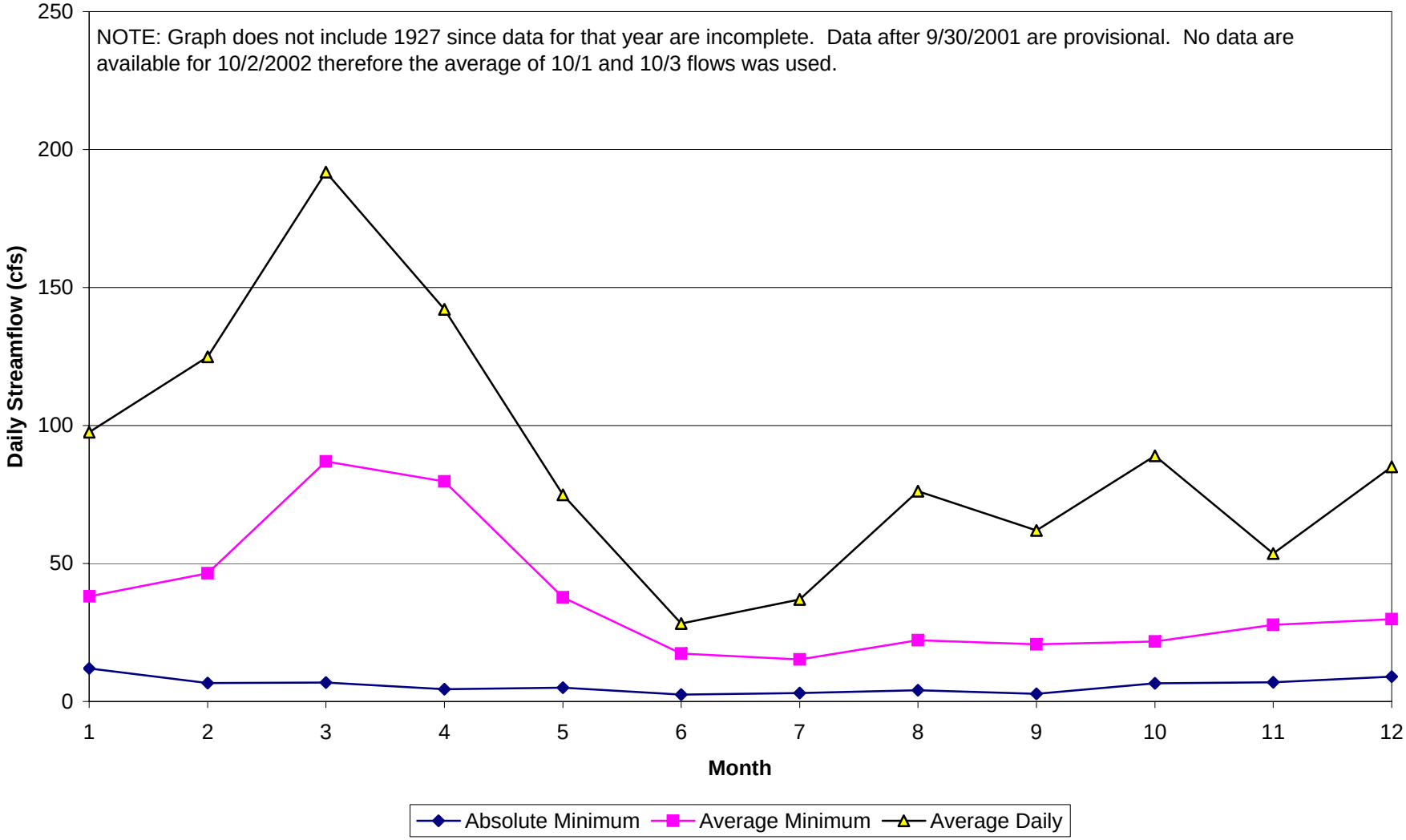
Daily Average Streamflow for Each Month, Excluding Maximums, 1928 through 2002
San Francisco River near Glenwood



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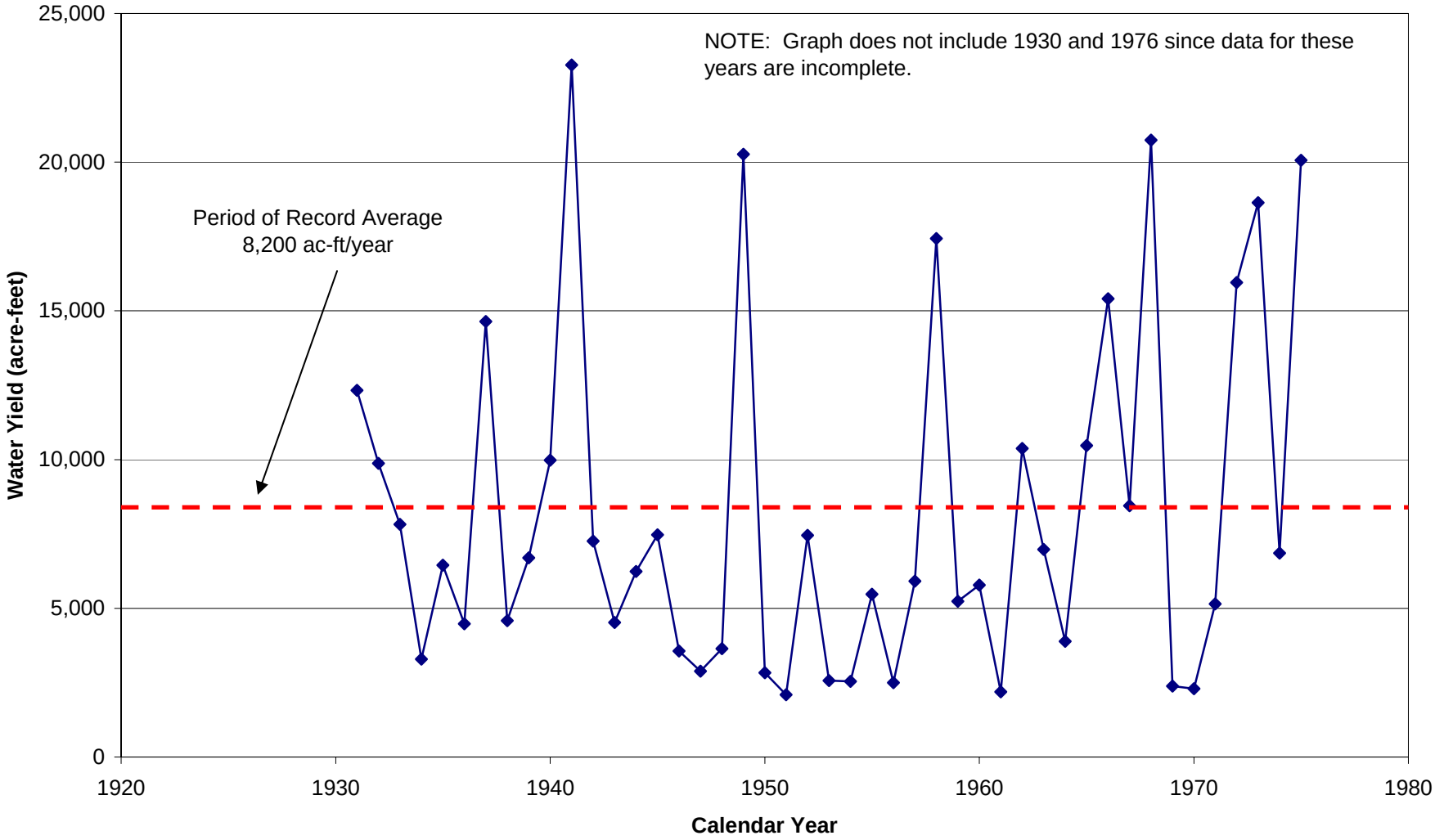
Annual Water Yield
Mimbres River near Mimbres



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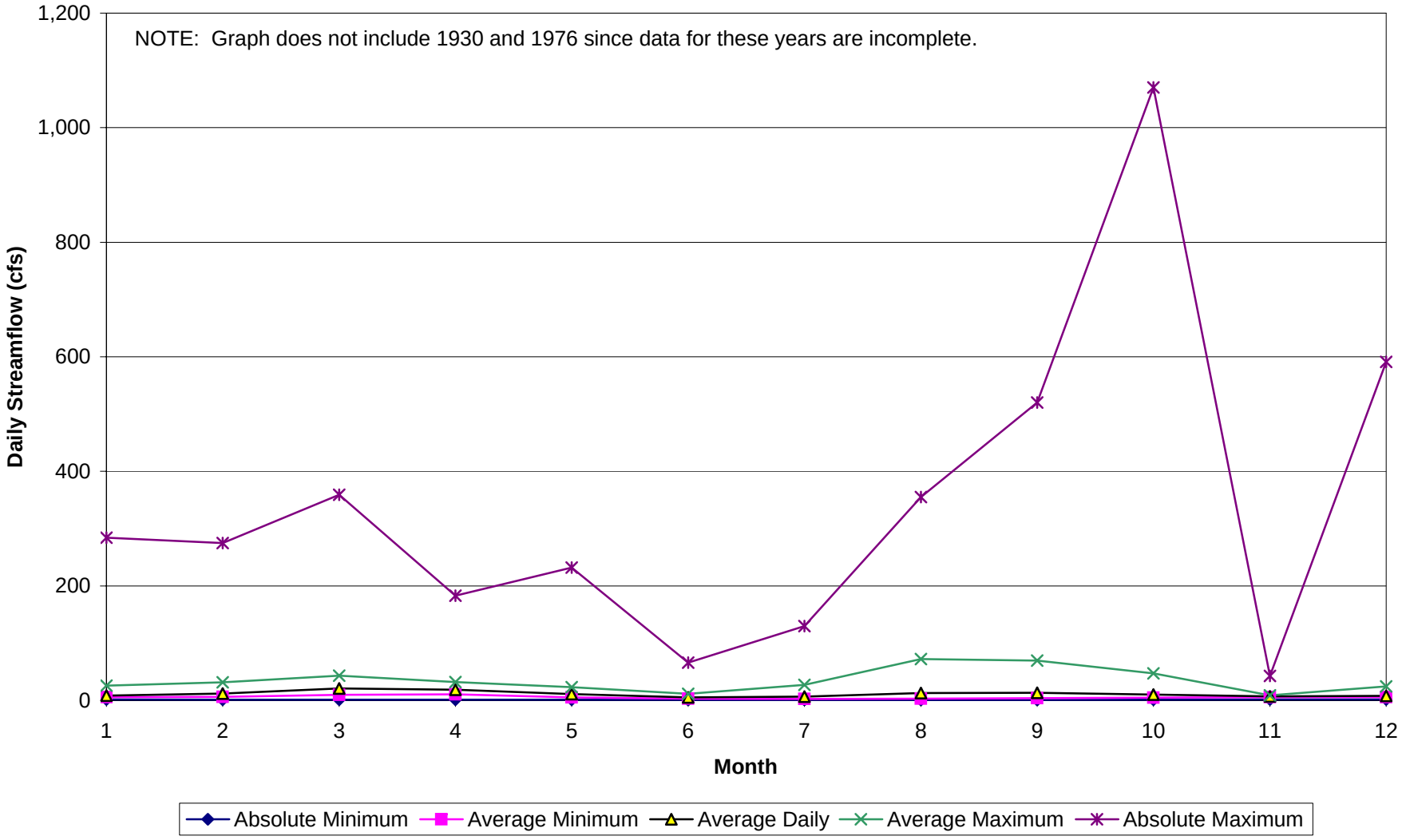
Daily Average Streamflow for Each Month, 1931 through 1975
Mimbres River near Mimbres



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Daily Average Streamflow for Each Month, Excluding Maximums, 1931 through 1975
Mimbres River near Mimbres

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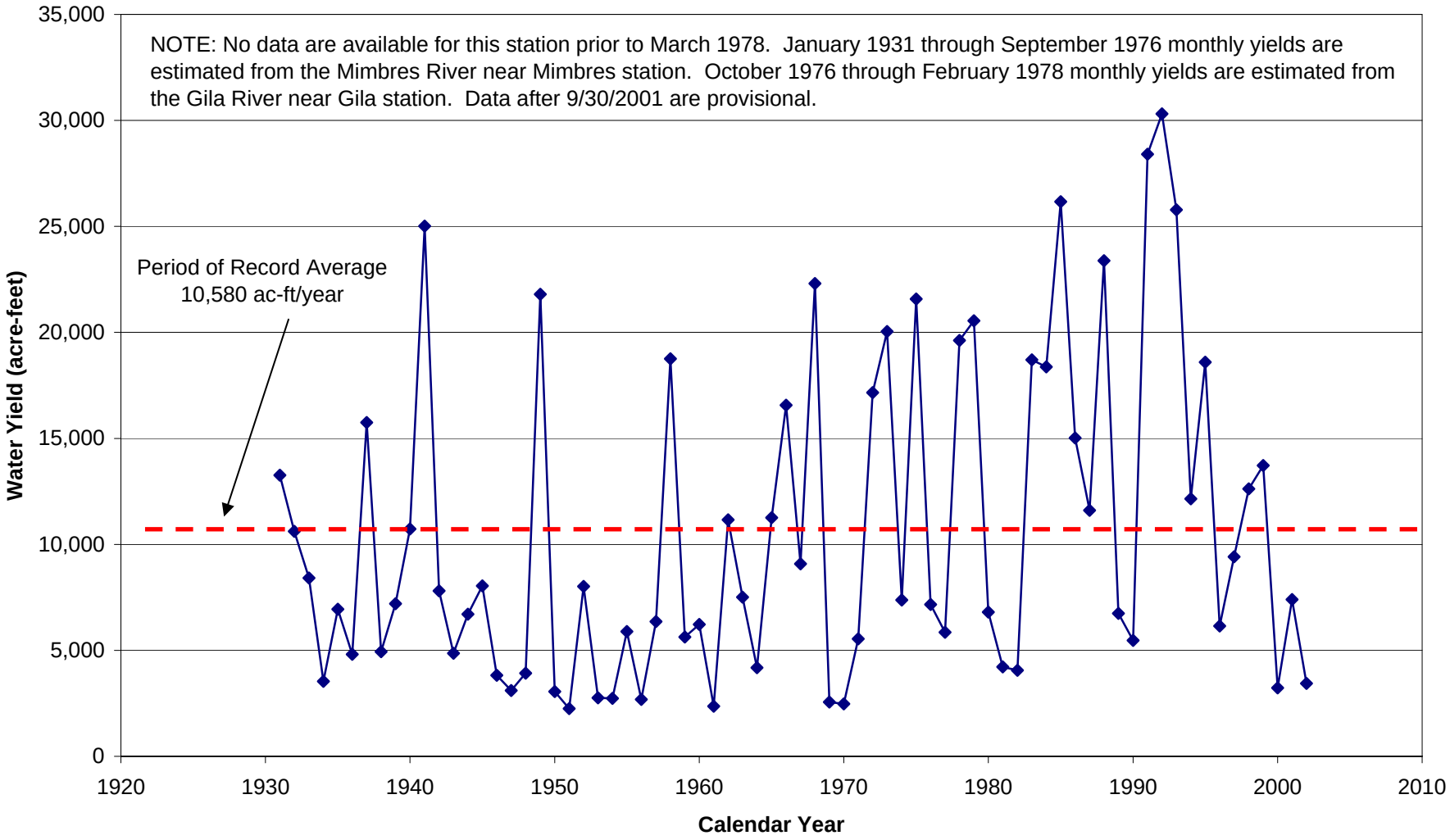
Annual Water Yield
Mimbres River at Mimbres



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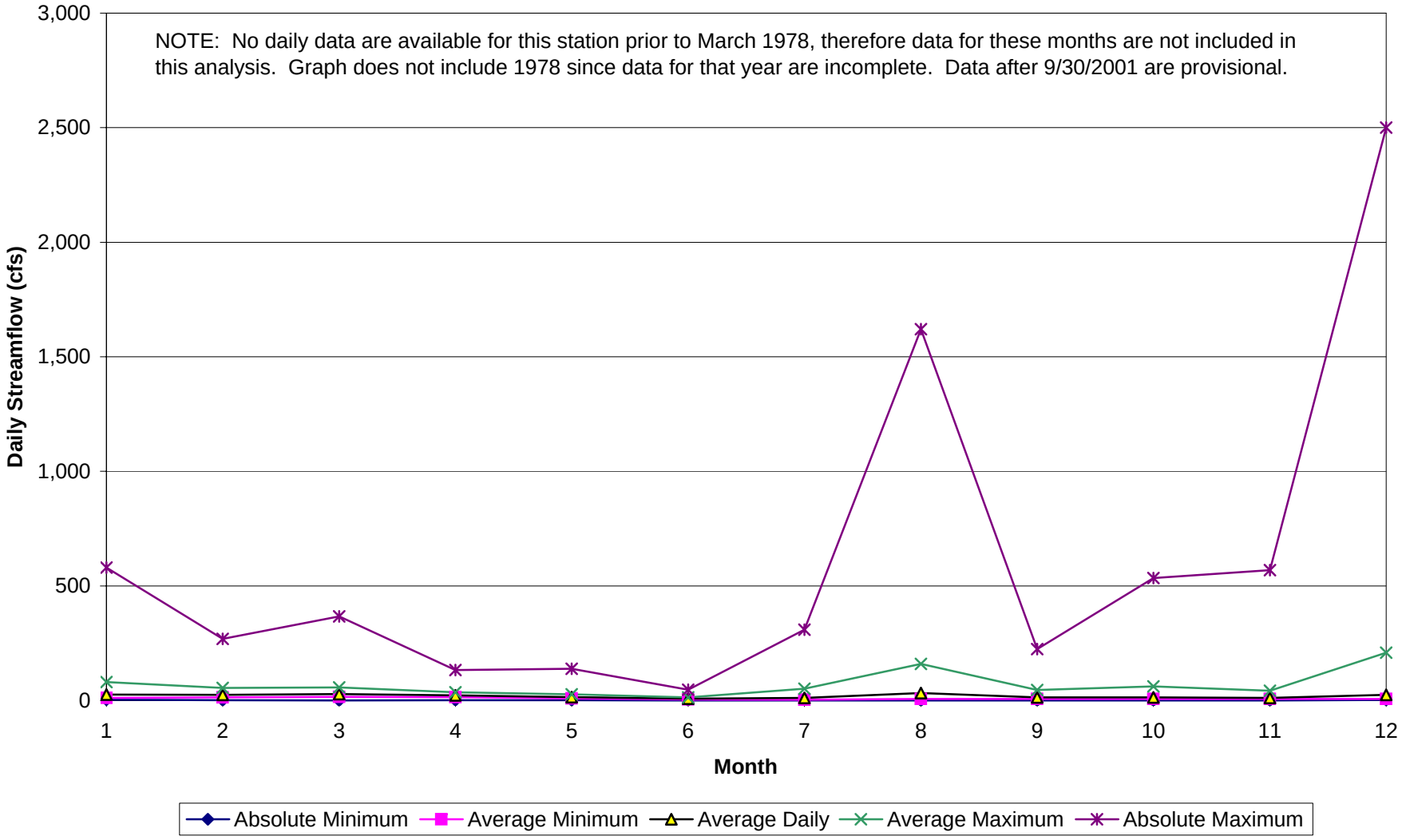
Daily Average Streamflow for Each Month, 1979 through 2002
Mimbres River at Mimbres



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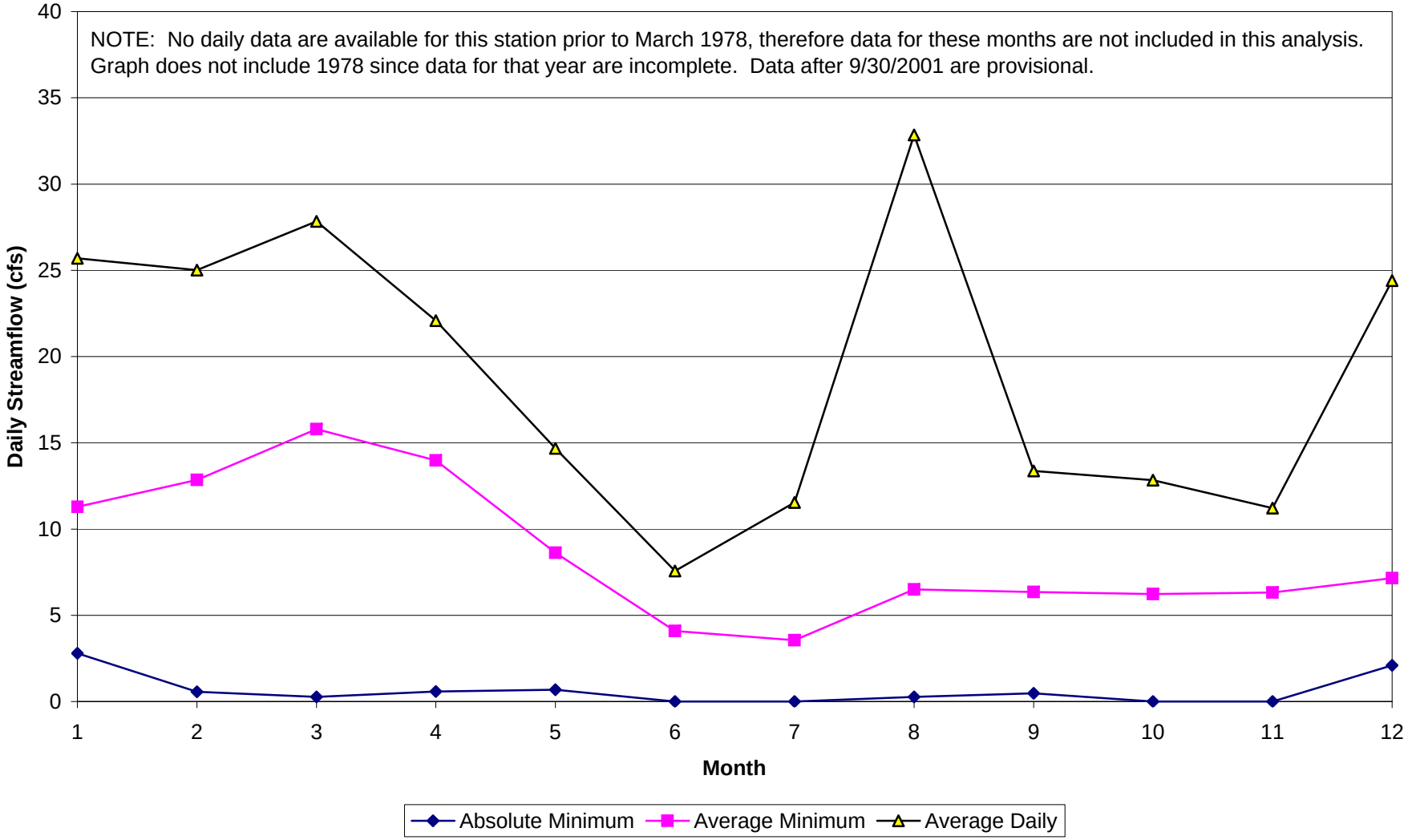
Daily Average Streamflow for Each Month, Excluding Maximums, 1979 through 2002
Mimbres River at Mimbres



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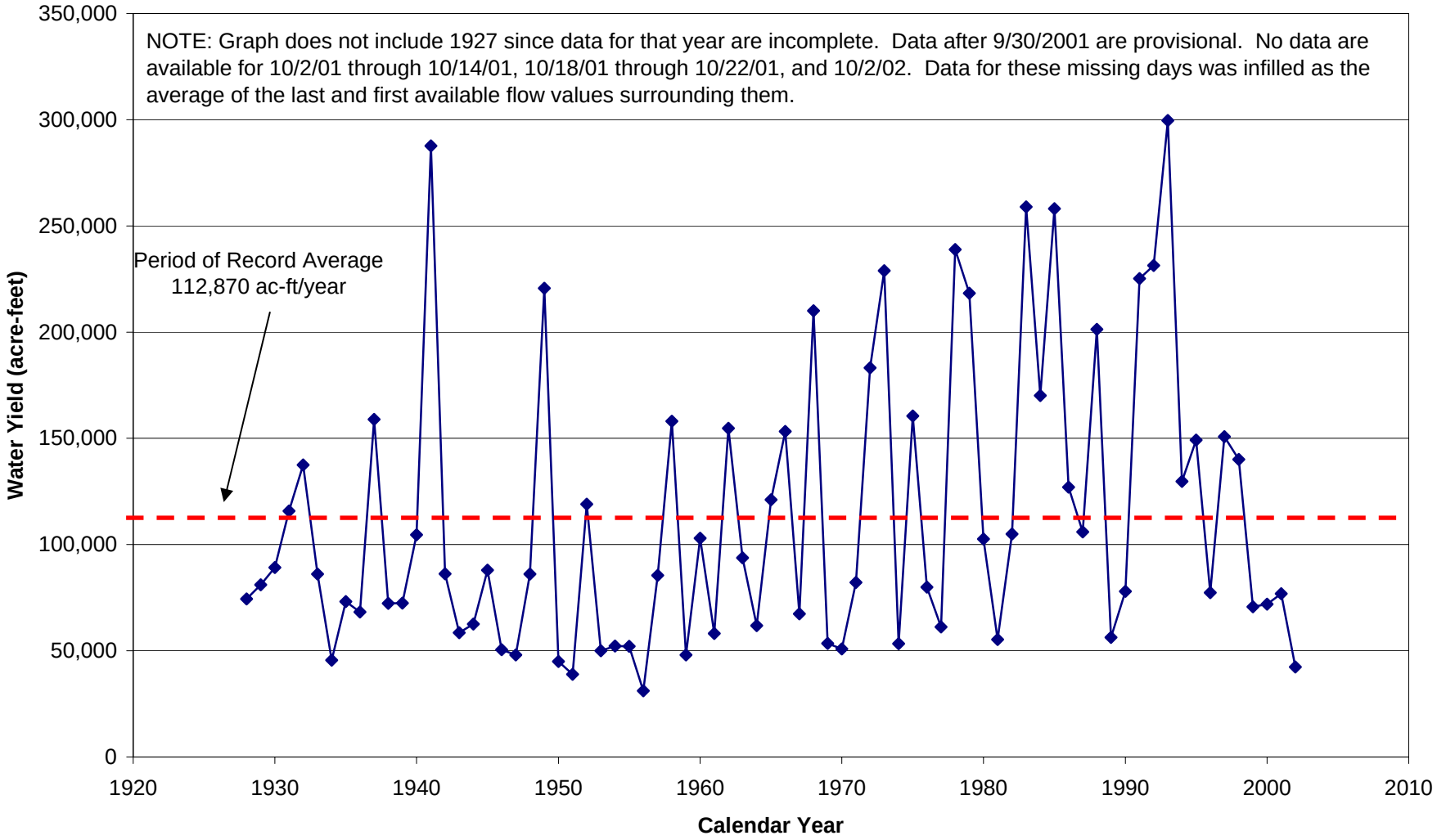
Annual Water Yield
Gila River near Gila



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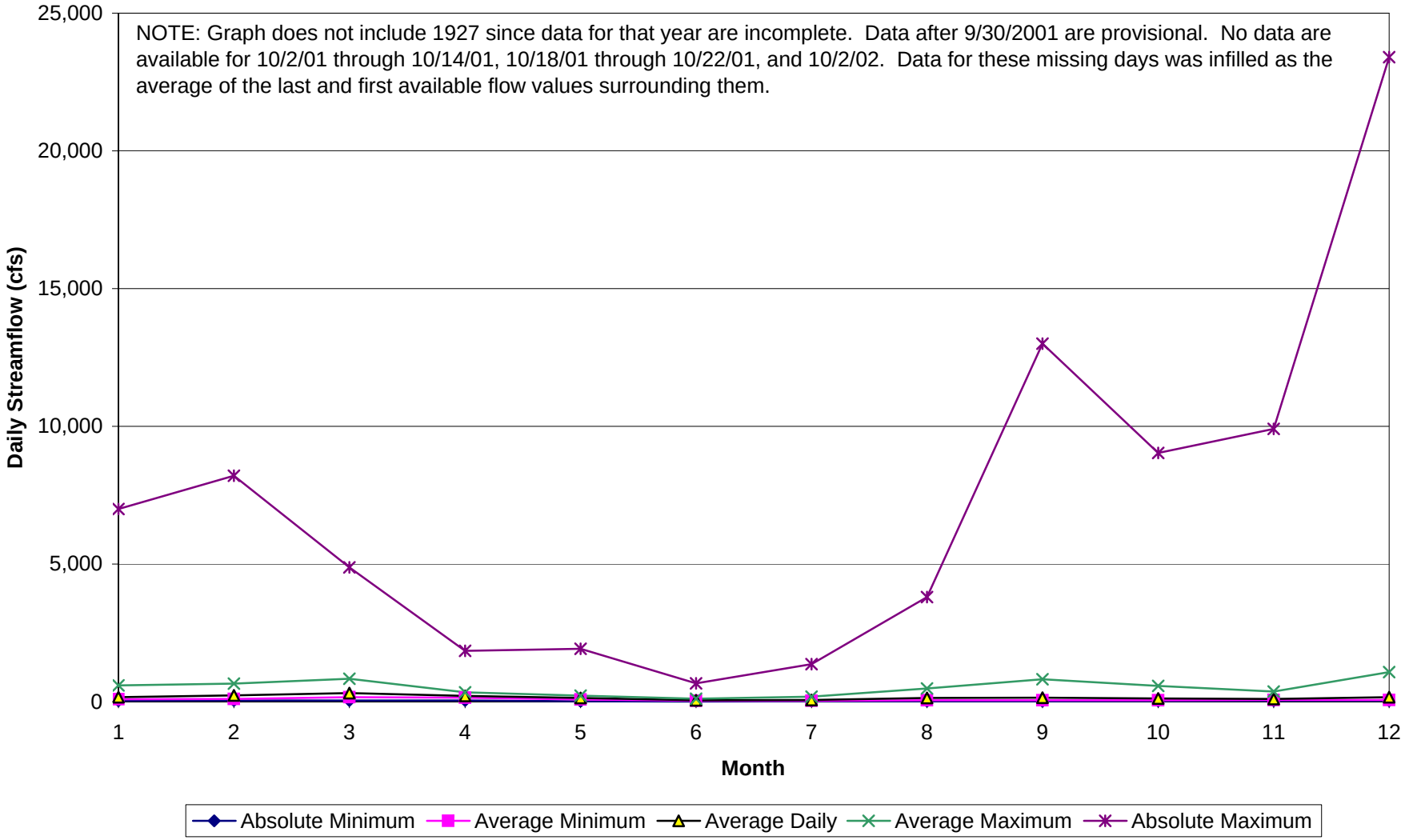
Daily Average Streamflow for Each Month, 1928 through 2002
Gila River near Gila



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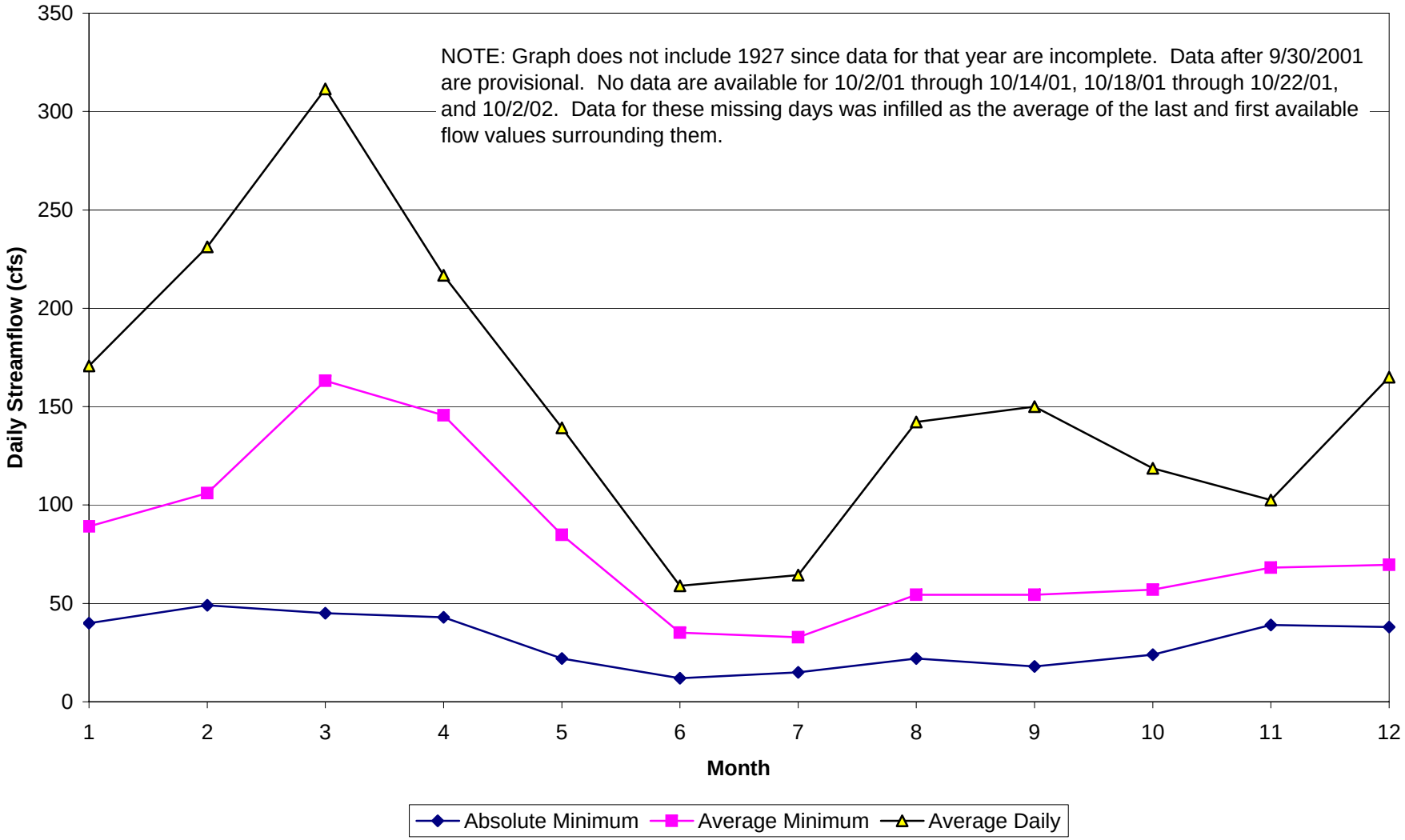
Daily Average Streamflow for Each Month, Excluding Maximums, 1928 through 2002
Gila River near Gila



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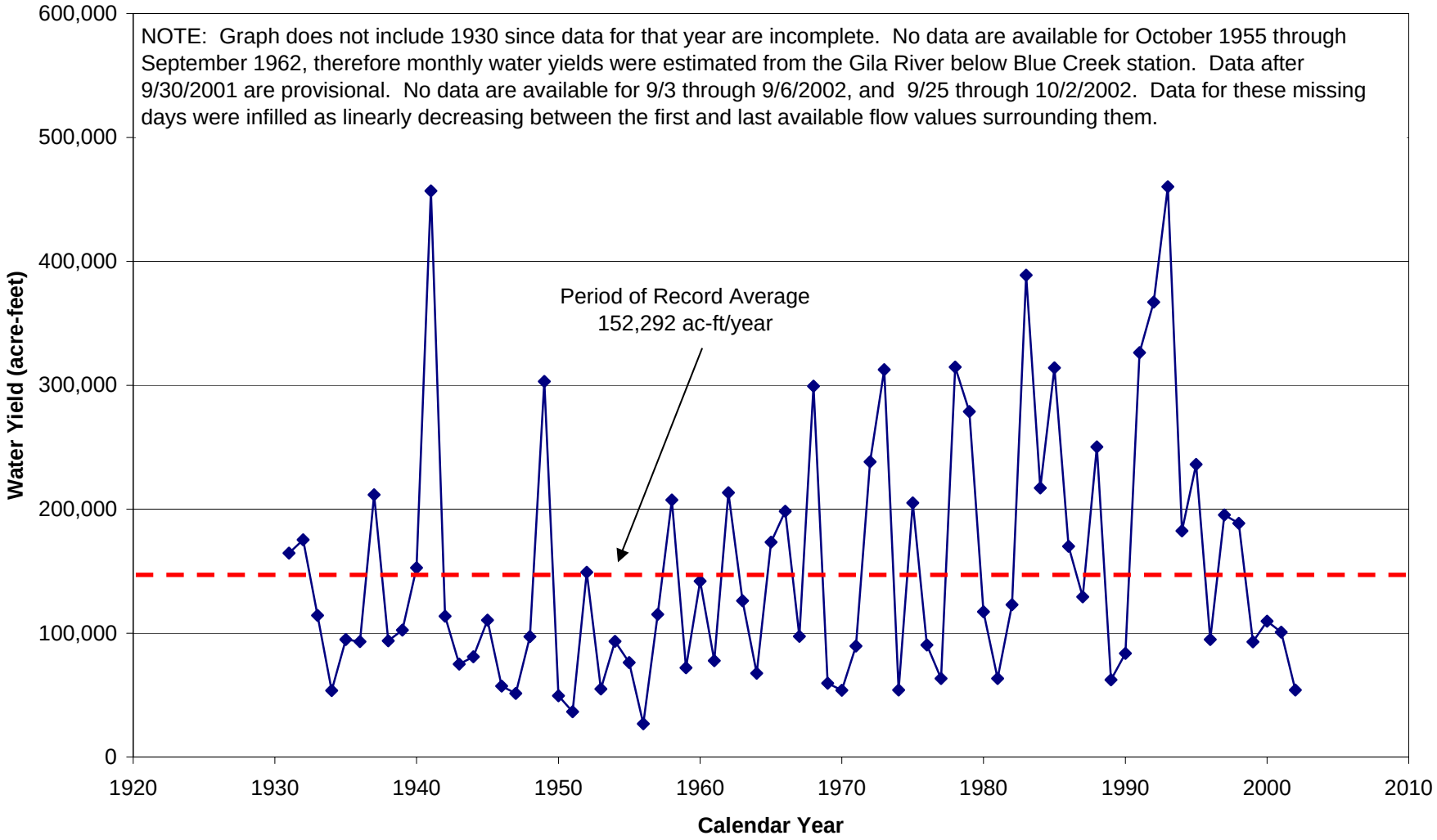
Annual Water Yield
Gila River near Redrock



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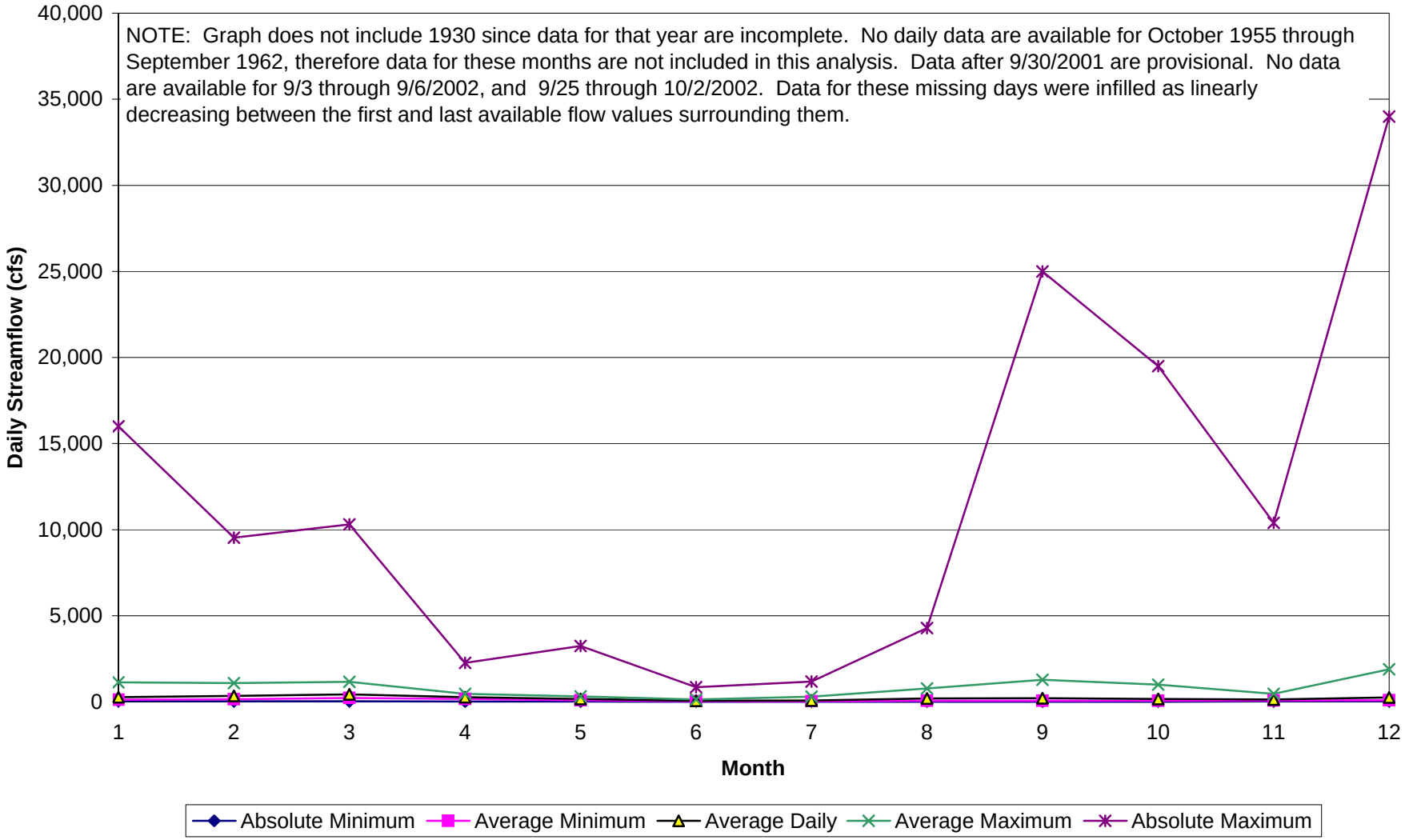
Daily Average Streamflow for Each Month, 1931 through 2002
Gila River near Redrock



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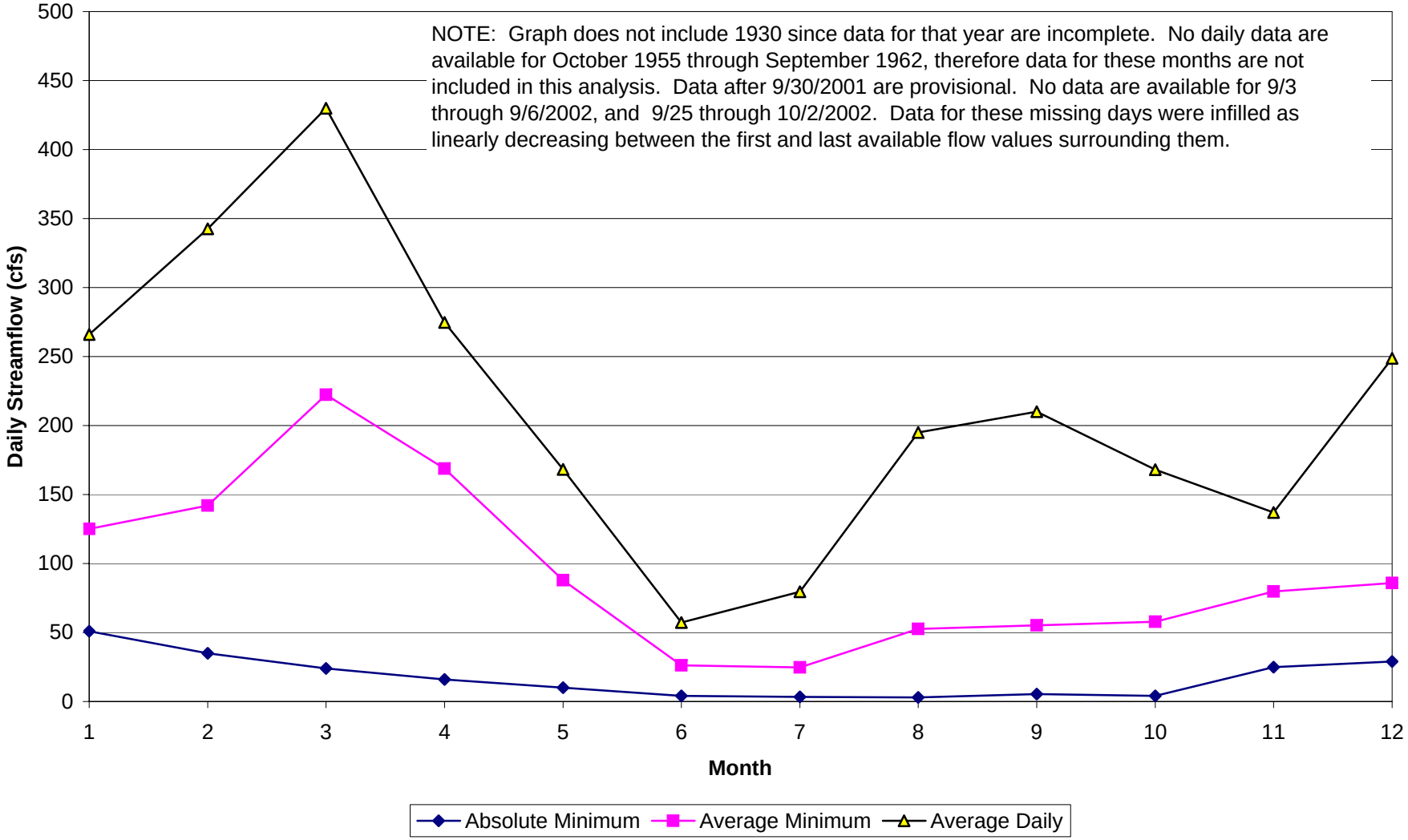
Daily Average Streamflow for Each Month, Excluding Maximums, 1931 through 2002
Gila River near Redrock



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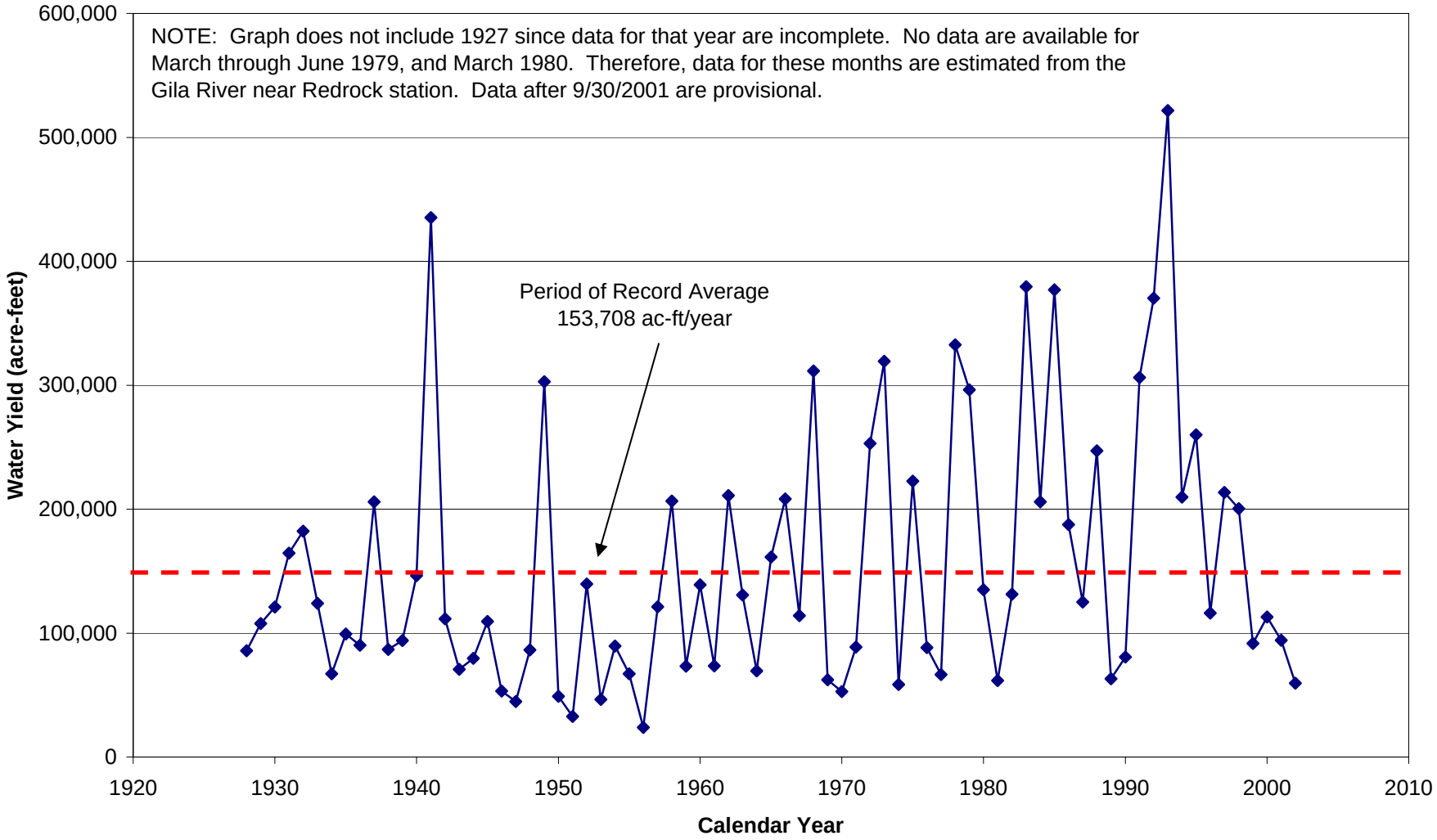
Annual Water Yield
Gila River below Blue Creek near Virden



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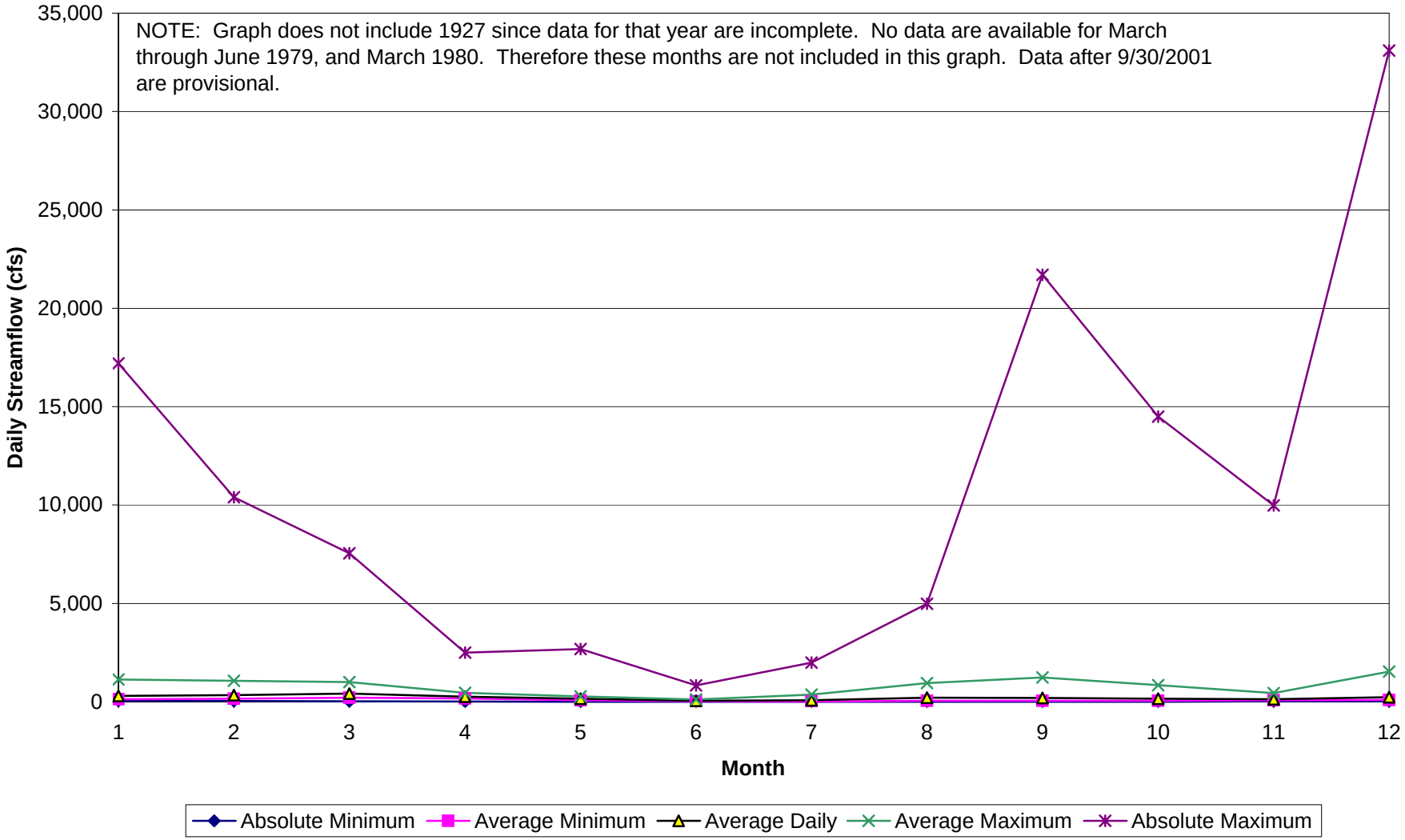
Daily Average Streamflow for Each Month, 1928 through 2002
Gila River below Blue Creek near Virden



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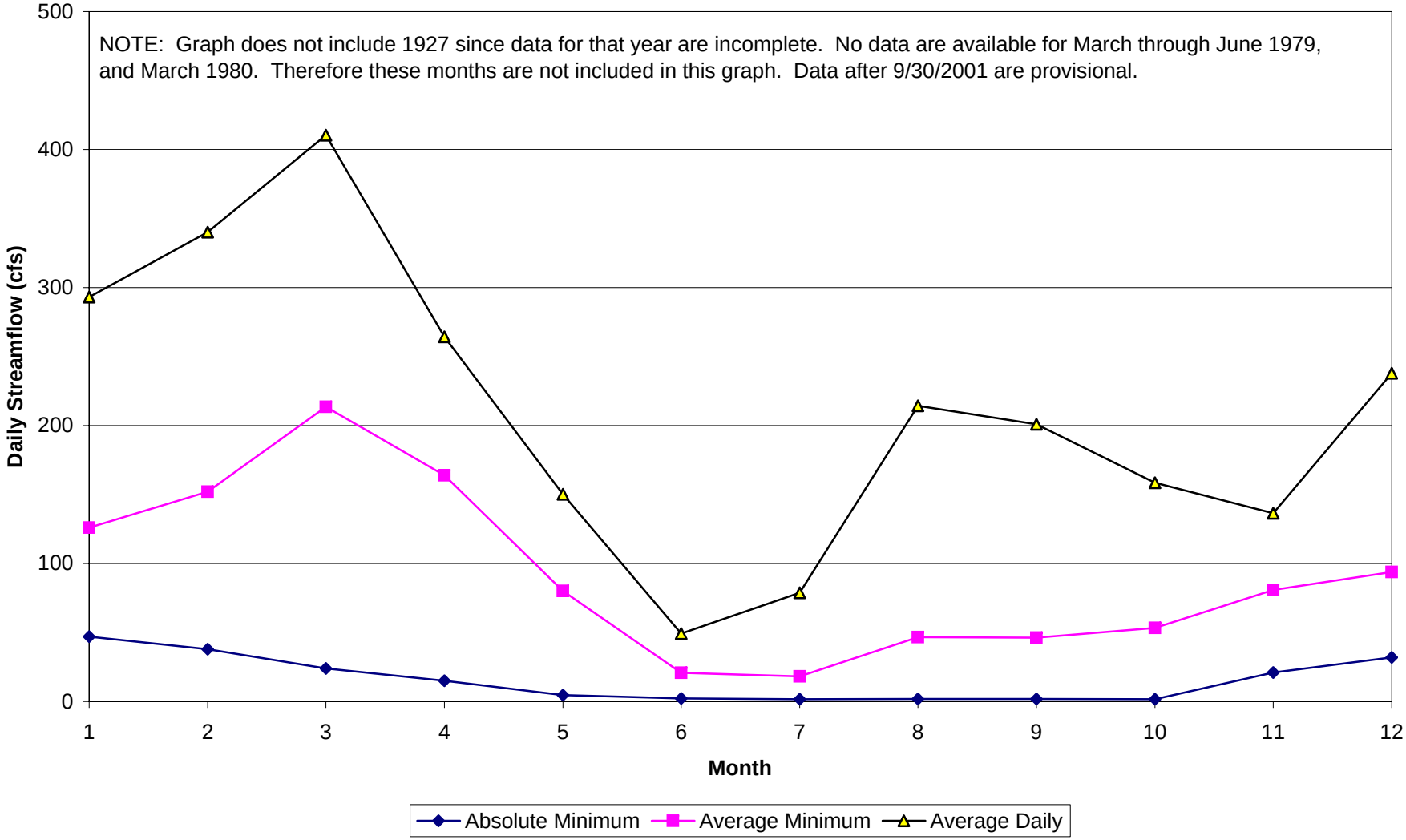
Daily Average Streamflow for Each Month, Excluding Maximums, 1928 through 2002
Gila River below Blue Creek near Virden



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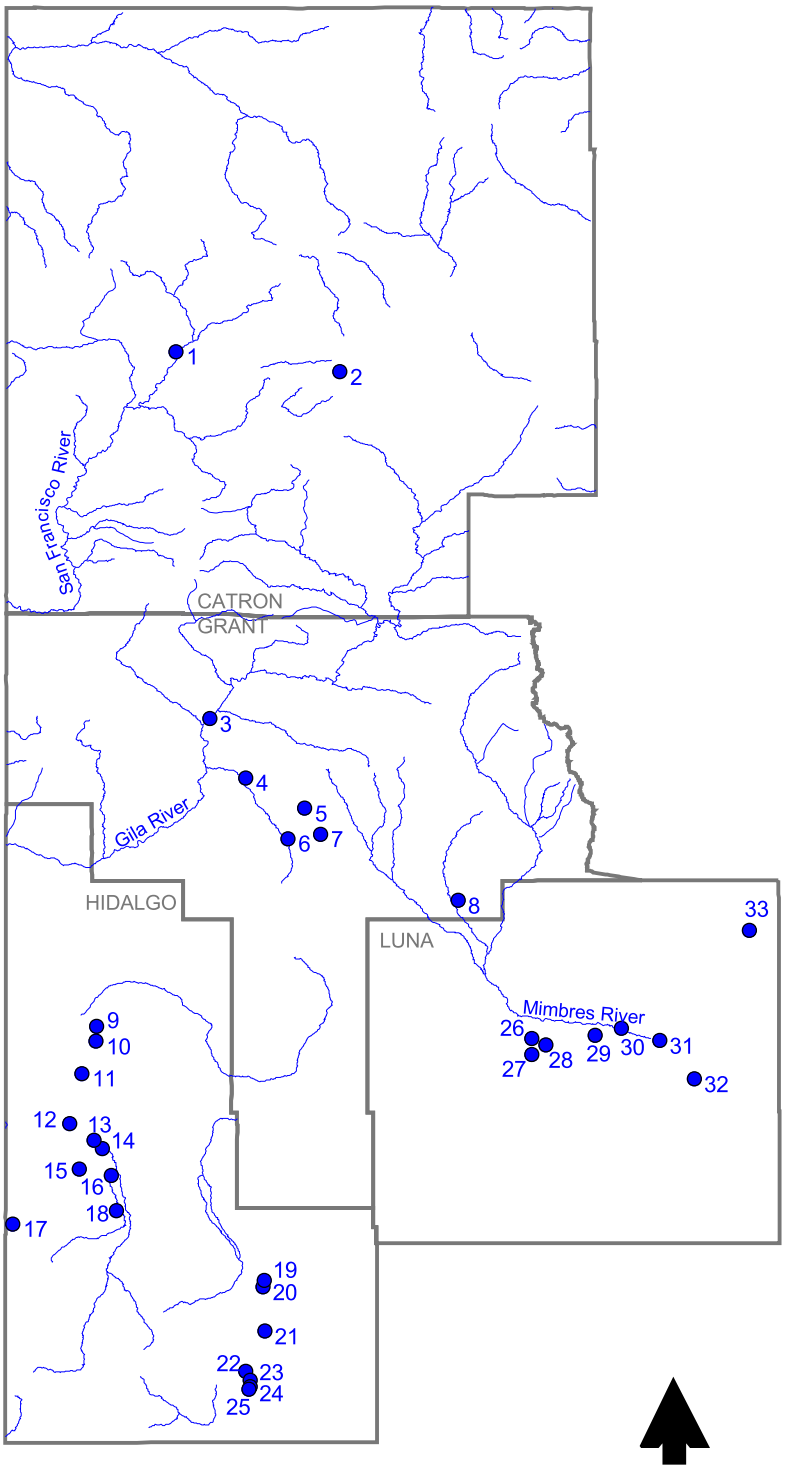
Appendix D4

Groundwater Hydrographs



N

0 15 30 Miles

Explanation

- Hydrograph well
- Stream
- County

SOUTHWEST NEW MEXICO REGIONAL WATER PLAN

Hydrograph Wells

Daniel B. Stephens & Associates, Inc.

8-20-03 11:18AM JN WR03.0004

(S:\PROJECTS\WR03.0004\GIS\PROJECTS (PROJECT = sw_regional_water_plan_0703.apr) (VIEW EXTENTS = TEMP) (VIEW NAME = V10 - H) (LAYOUT = L10 - H 300280)

Site Number	Map Number	Latitude	Longitude	Aquifer	County
334801108395201	1	033 48 01	108 39 52	basin fill	Catron
334516108173902	2	033 45 16	108 17 39	basin fill	Catron
325812108351901	3	032 58 12	108 35 19	basin fill	Grant
325008108302501	4	032 50 08	108 30 25	basin fill	Grant
324600108222501	5	032 46 00	108 22 25	gila	Grant
324153108243801	6	032 41 53	108 24 38	gila	Grant
324231108201401	7	032 42 31	108 20 14	gila	Grant
323332108013501	8	032 33 32	108 01 35	basin fill	Grant
321624108504001	9	032 16 24	108 50 40	basin fill	Hidalgo
321423108504301	10	032 14 23	108 50 43	basin fill	Hidalgo
321002108523701	11	032 10 02	108 52 37	basin fill	Hidalgo
320312108541701	12	032 03 12	108 54 17	basin fill	Hidalgo
320057108510101	13	032 00 57	108 51 01	basin fill	Hidalgo
315949108595001	14	031 59 49	108 49 50	basin fill	Hidalgo
315702108530201	15	031 57 02	108 53 02	basin fill	Hidalgo
315610108483901	16	031 56 10	108 48 39	basin fill	Hidalgo
314935109015901	17	031 49 35	109 02 02	basin fill	Hidalgo
315125108475801	18	031 51 25	108 47 58	basin fill	Hidalgo
314154108275101	19	031 41 58	108 27 52	basin fill	Hidalgo
314102108280601	20	031 41 02	108 28 06	basin fill	Hidalgo
313502108275001	21	031 35 02	108 27 50	basin fill	Hidalgo
312938108302301	22	031 29 38	108 30 23	basin fill	Hidalgo
312823108294801	23	031 28 24	108 29 48	basin fill	Hidalgo
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321236107513601	27	032 12 36	107 51 36	basin fill	Luna
321352107493901	28	032 13 52	107 49 39	basin fill	Luna
321513107425701	29	032 15 13	107 42 57	basin fill	Luna
321607107392301	30	032 16 07	107 39 23	basin fill	Luna
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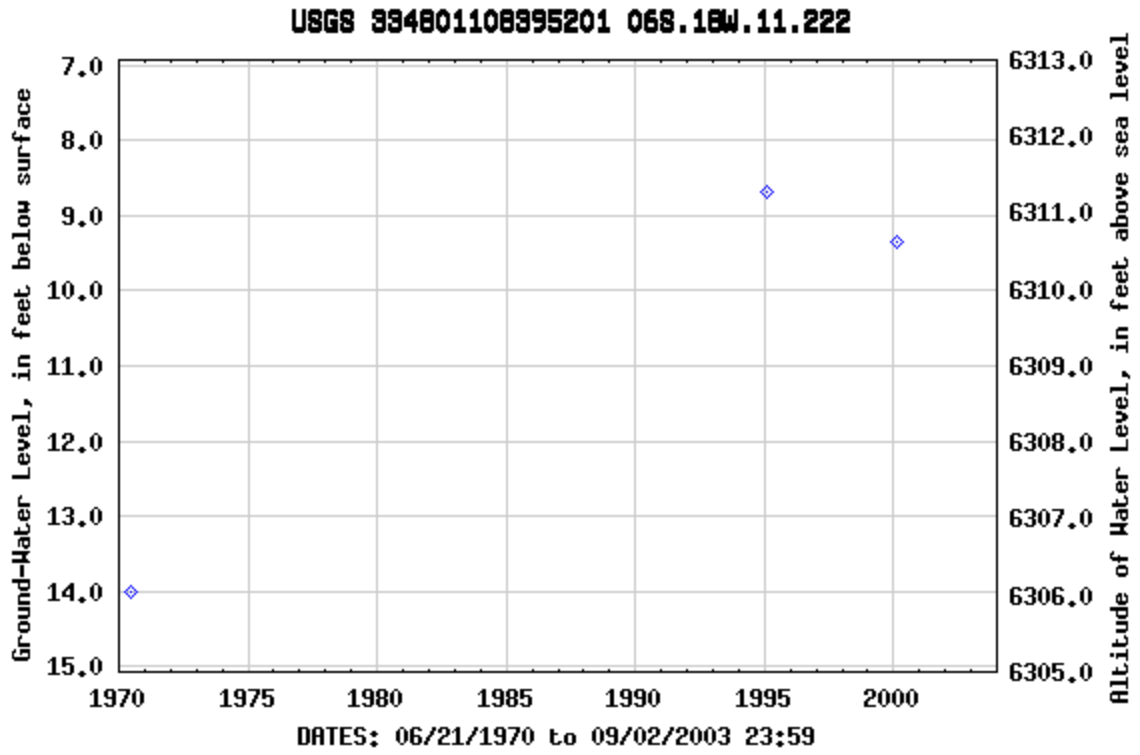
USGS



Provisional Data Subject to Revision

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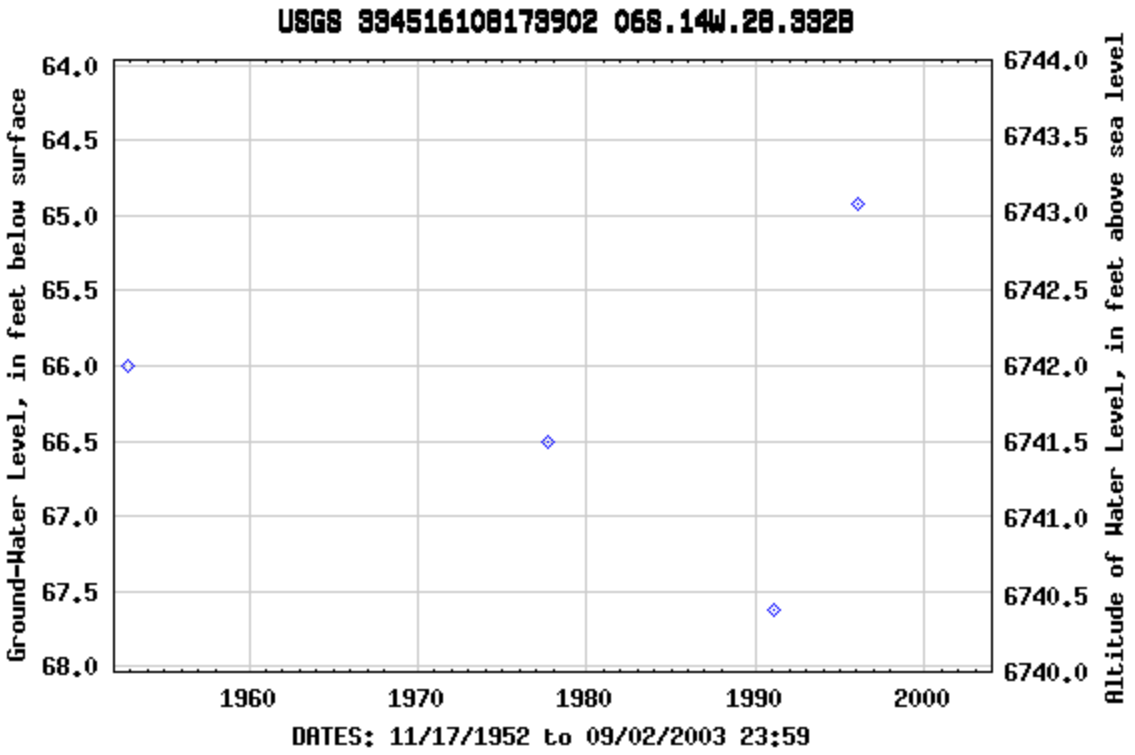

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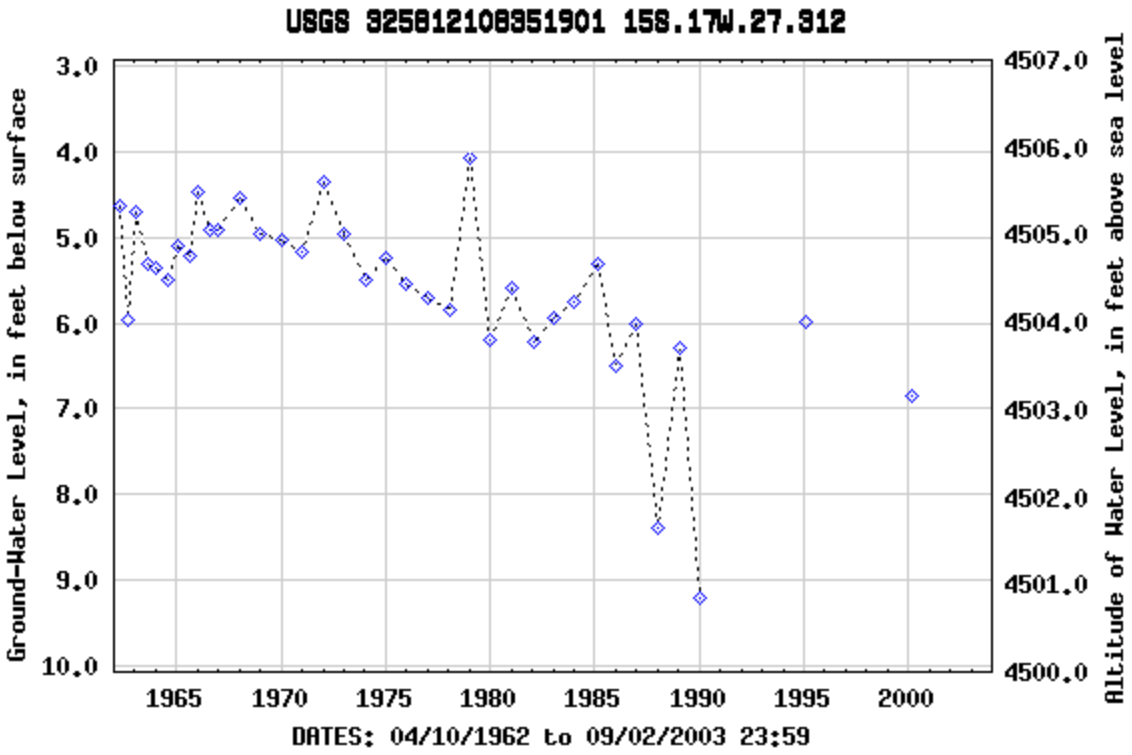

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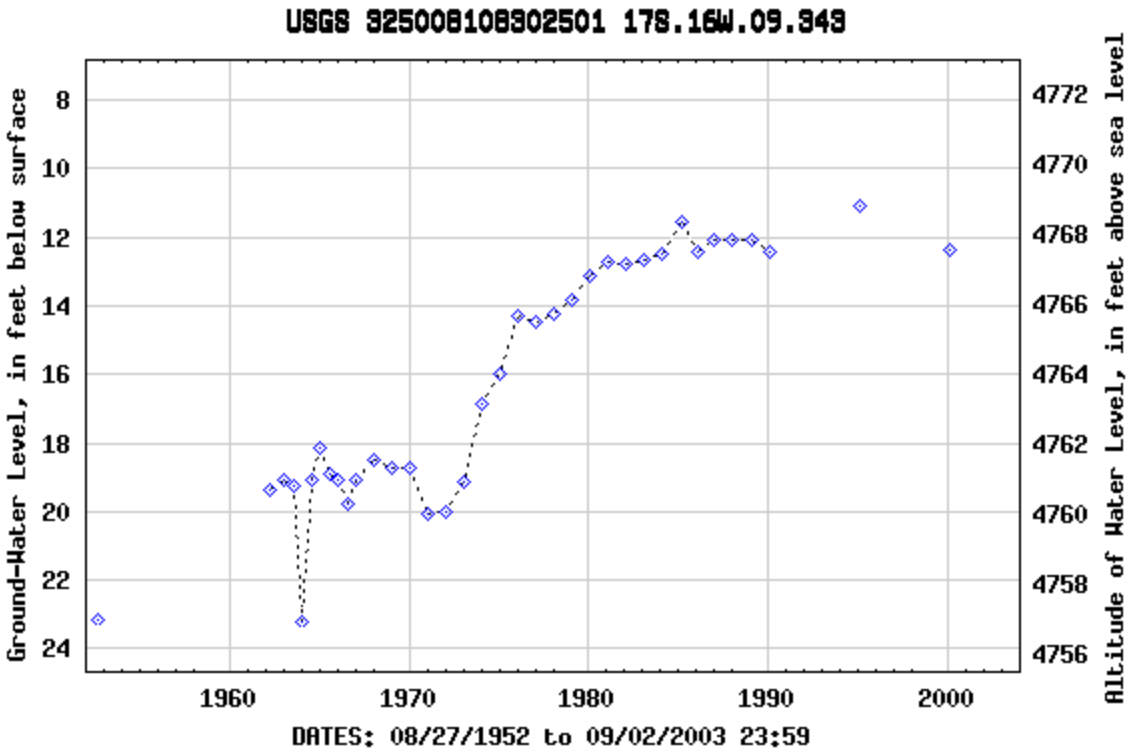

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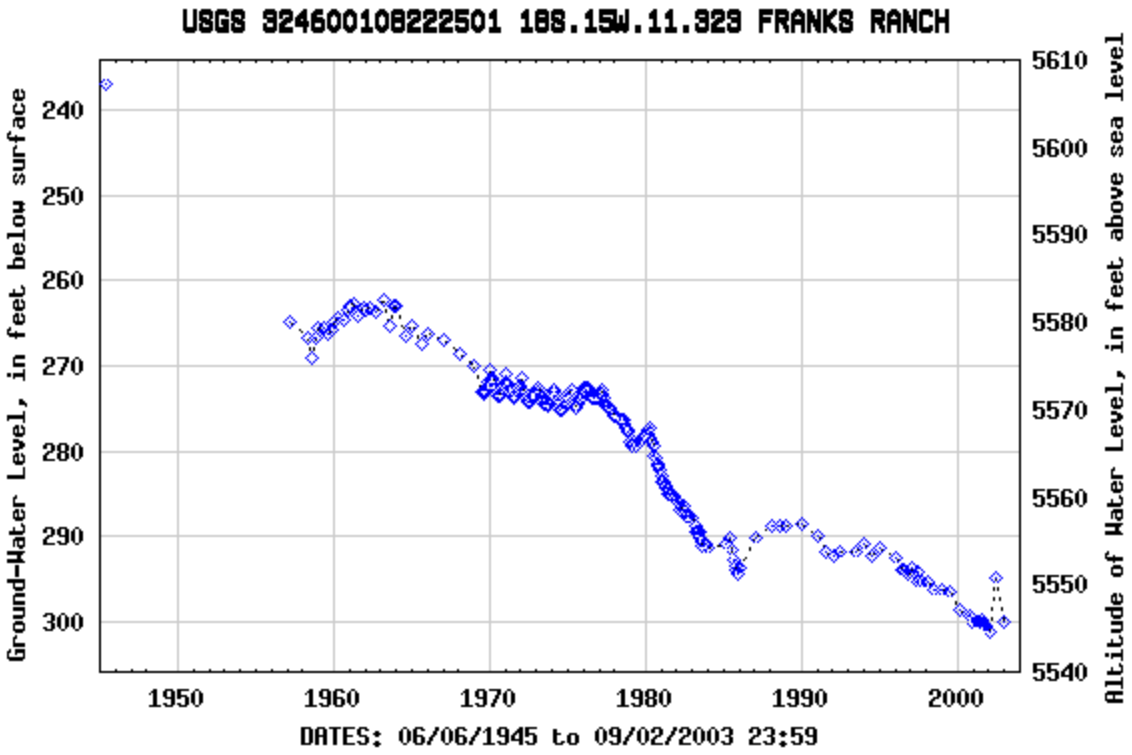

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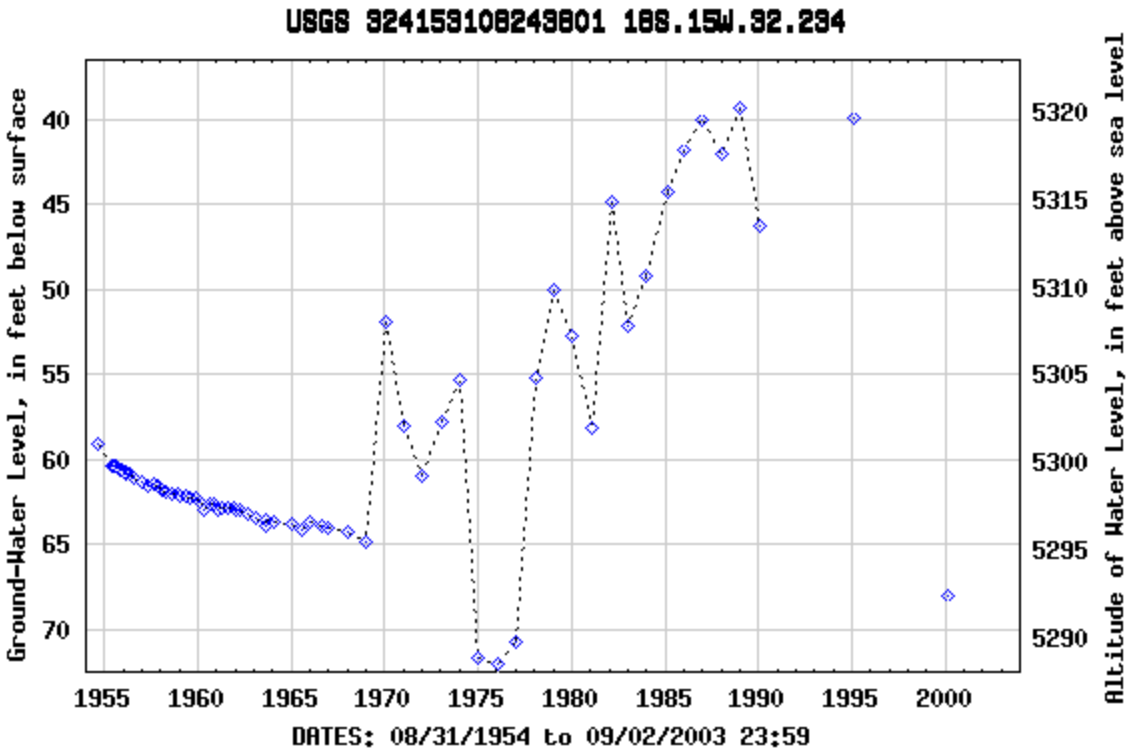

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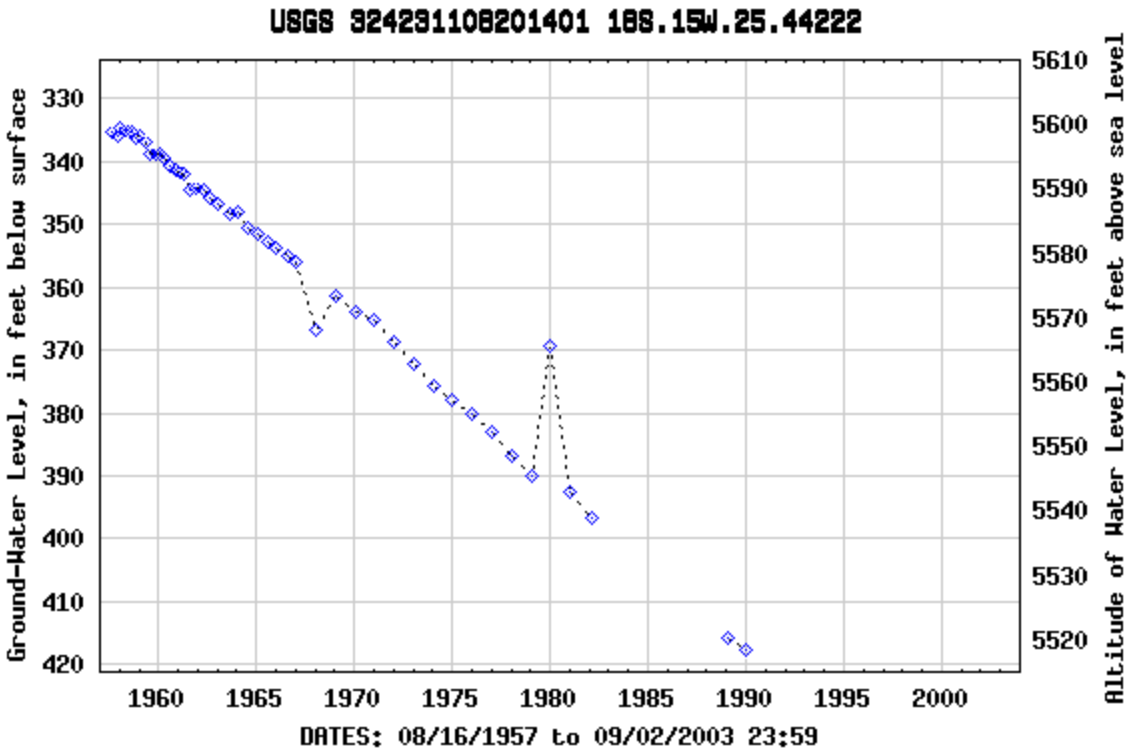

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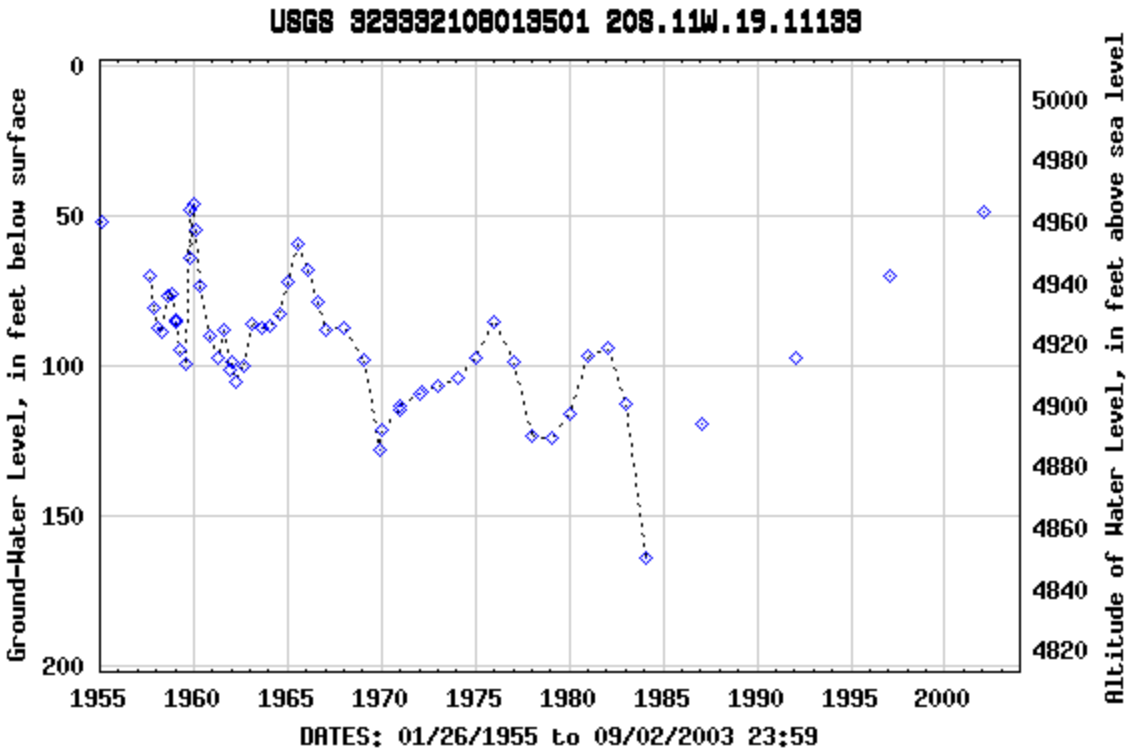

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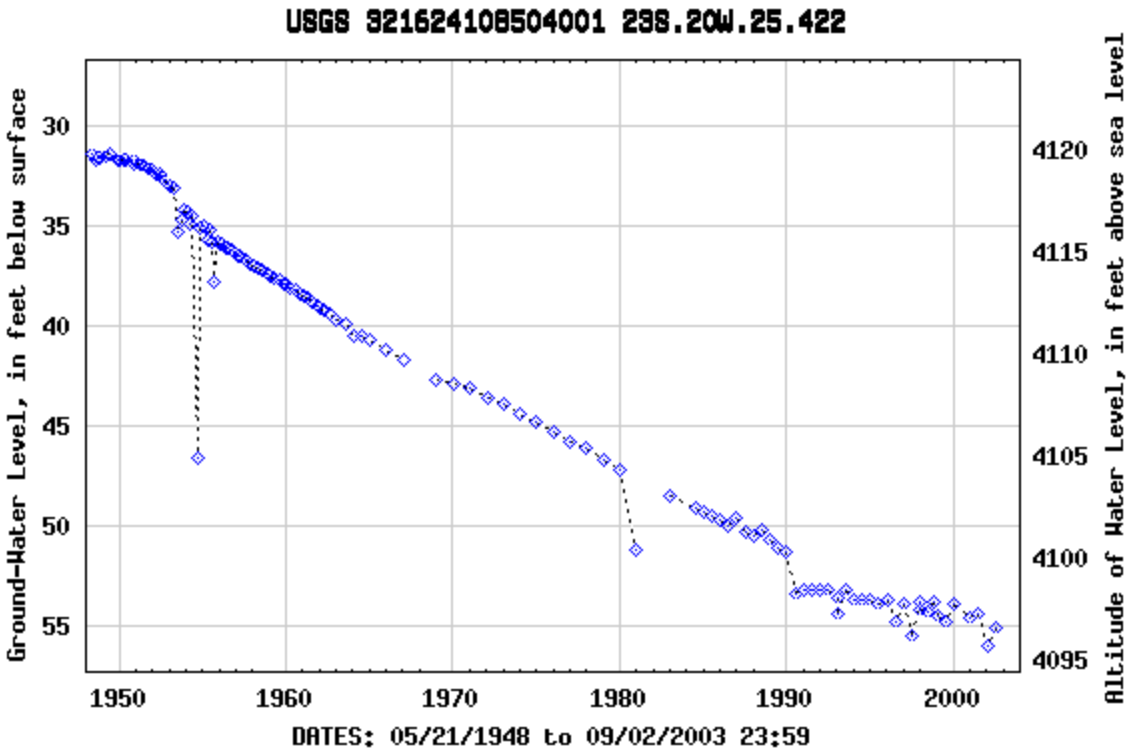

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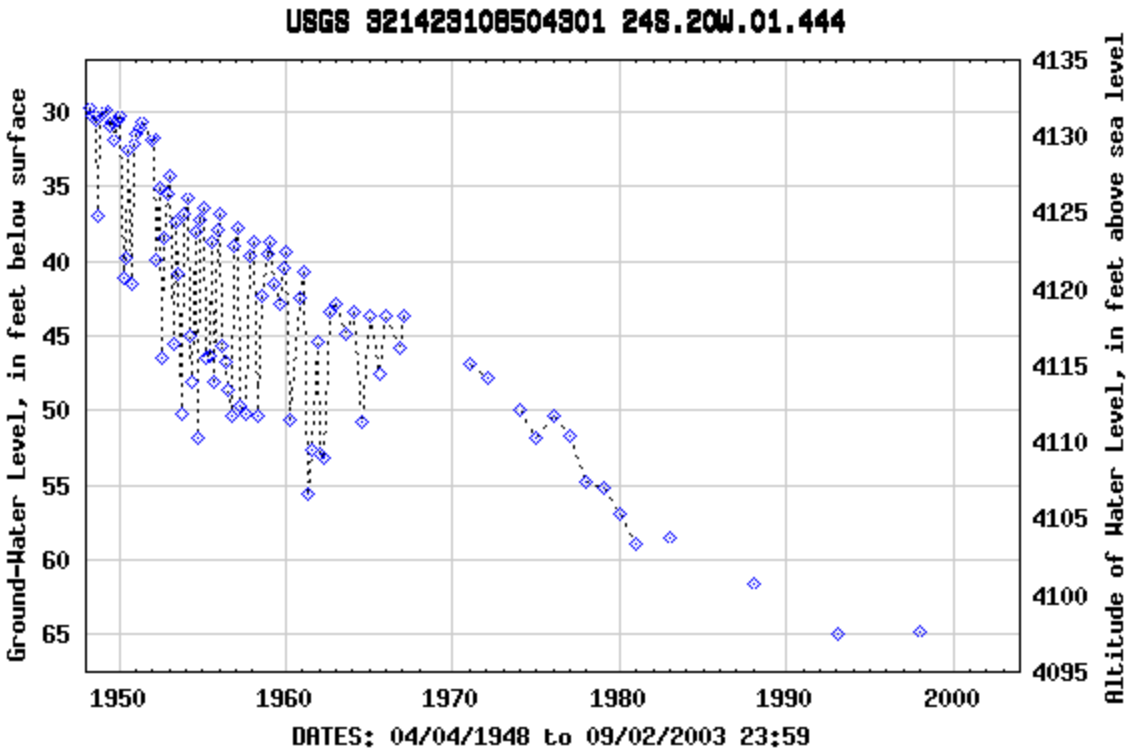

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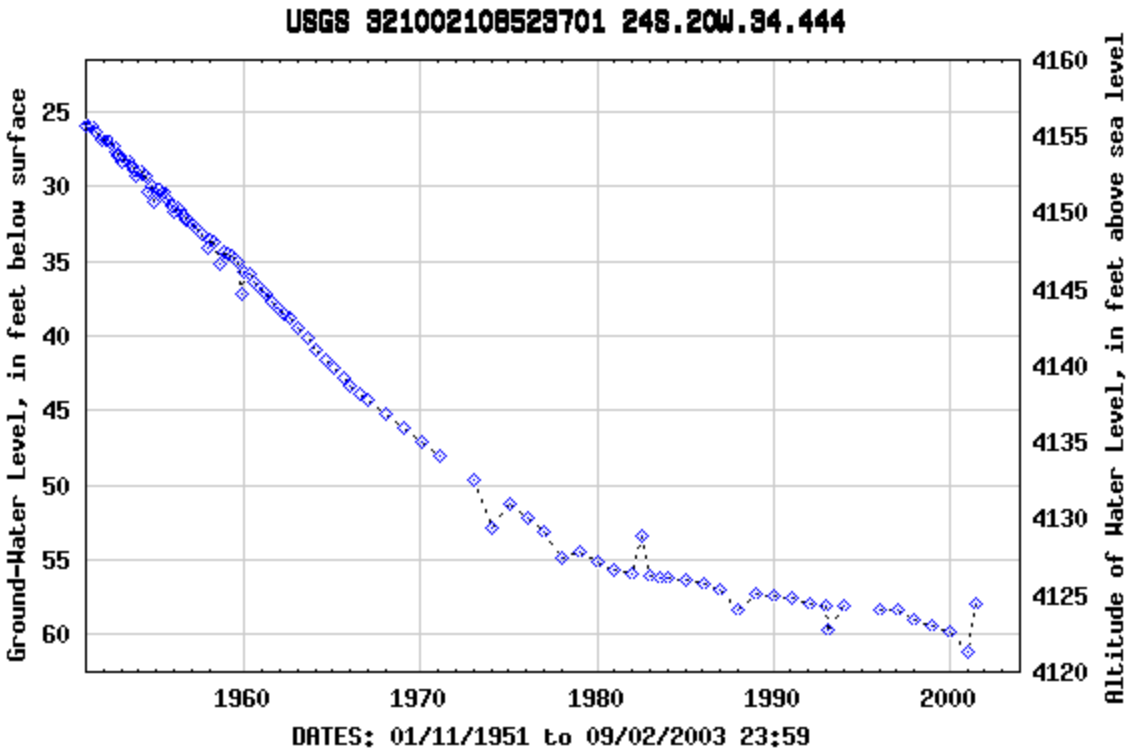

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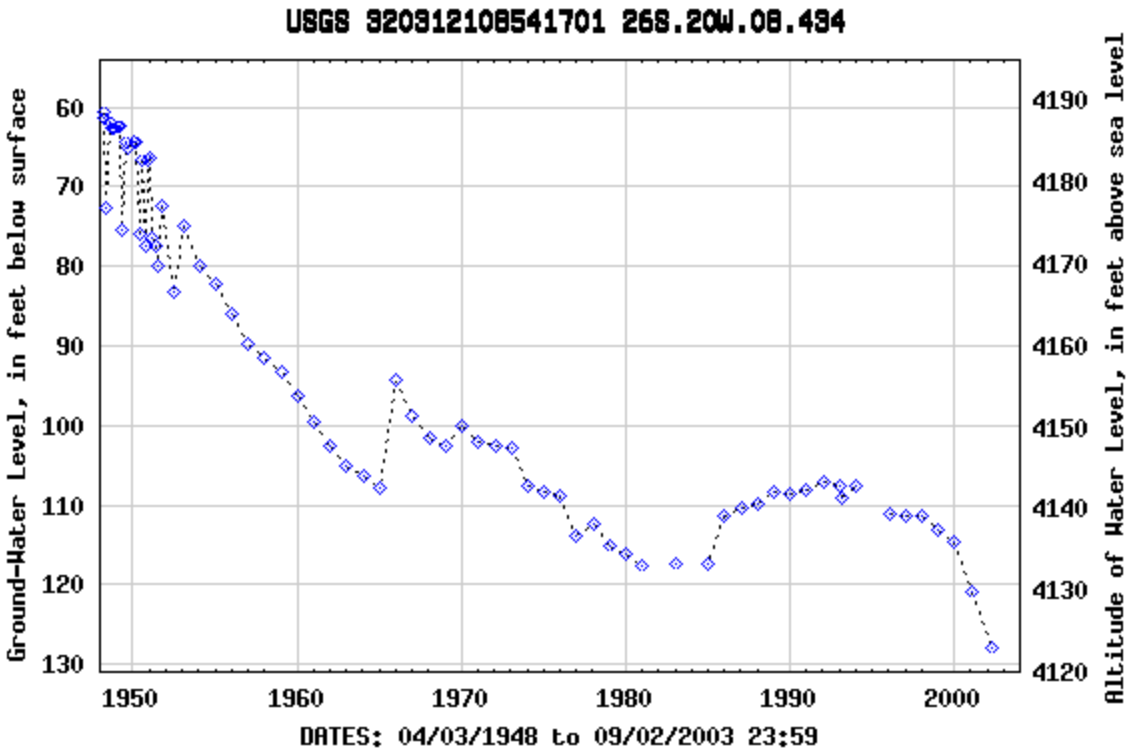

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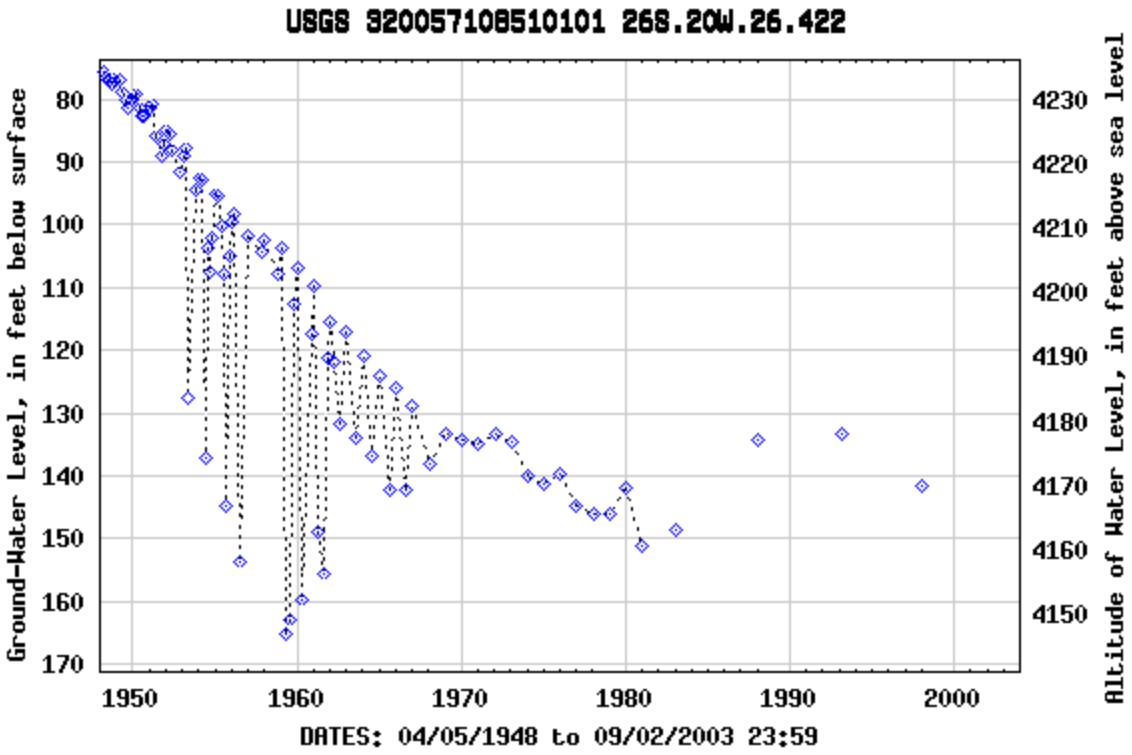

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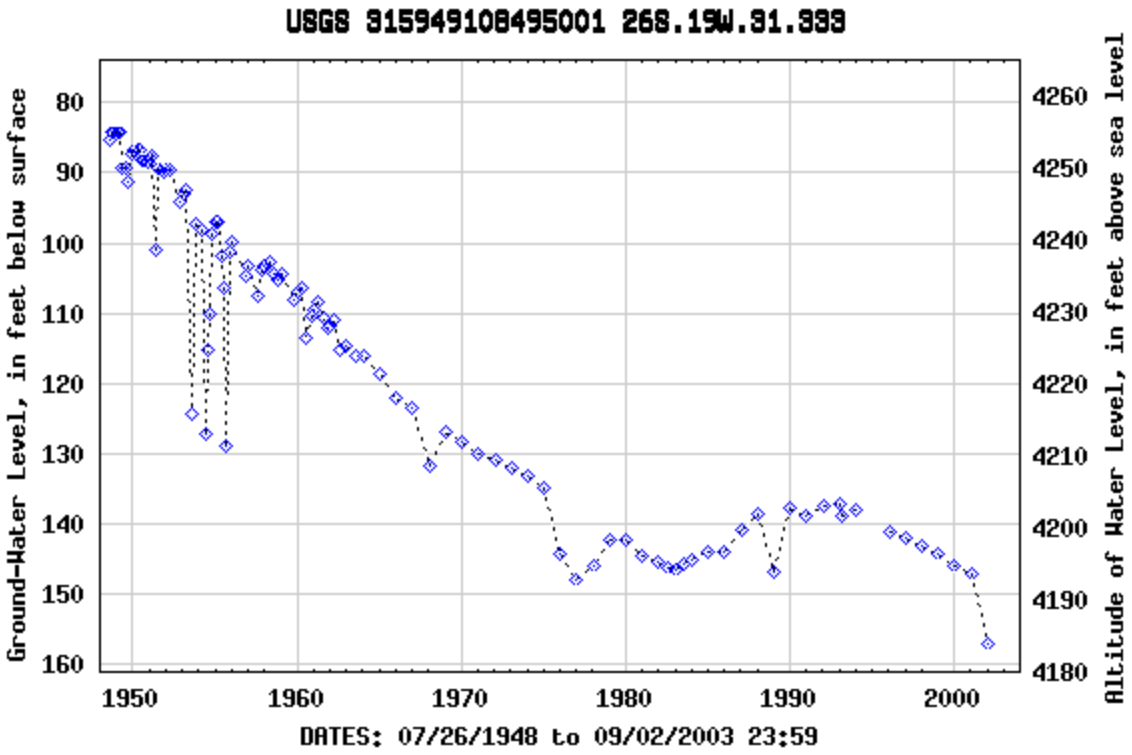

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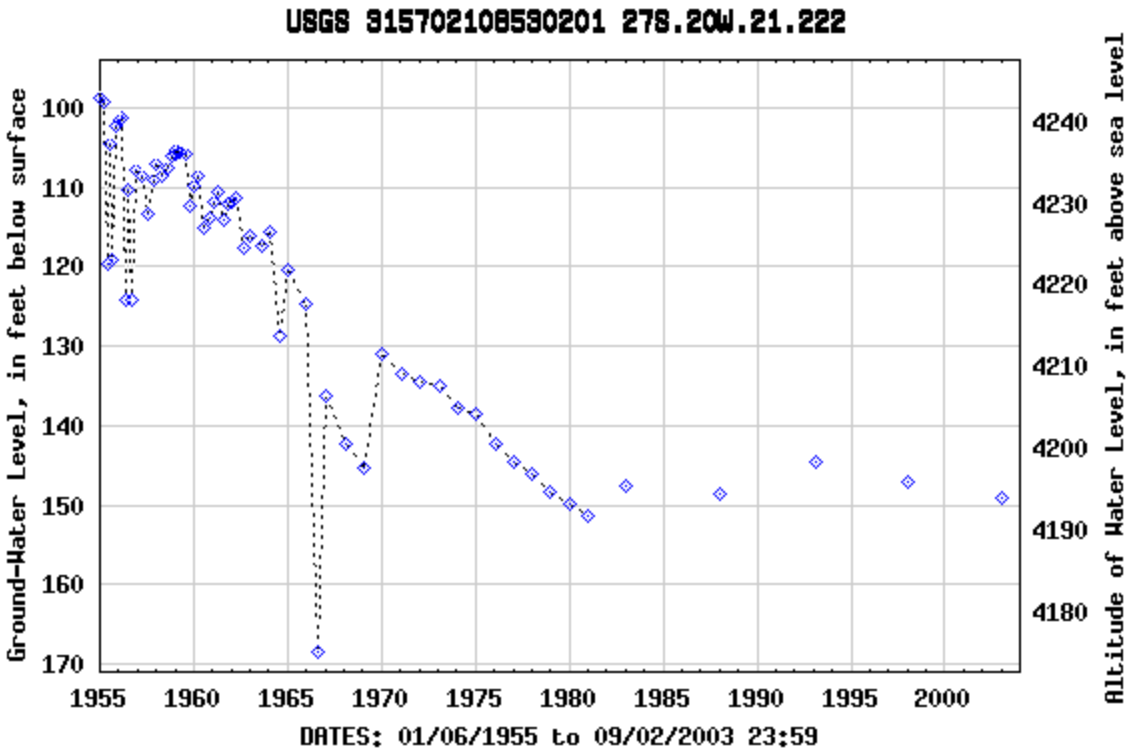

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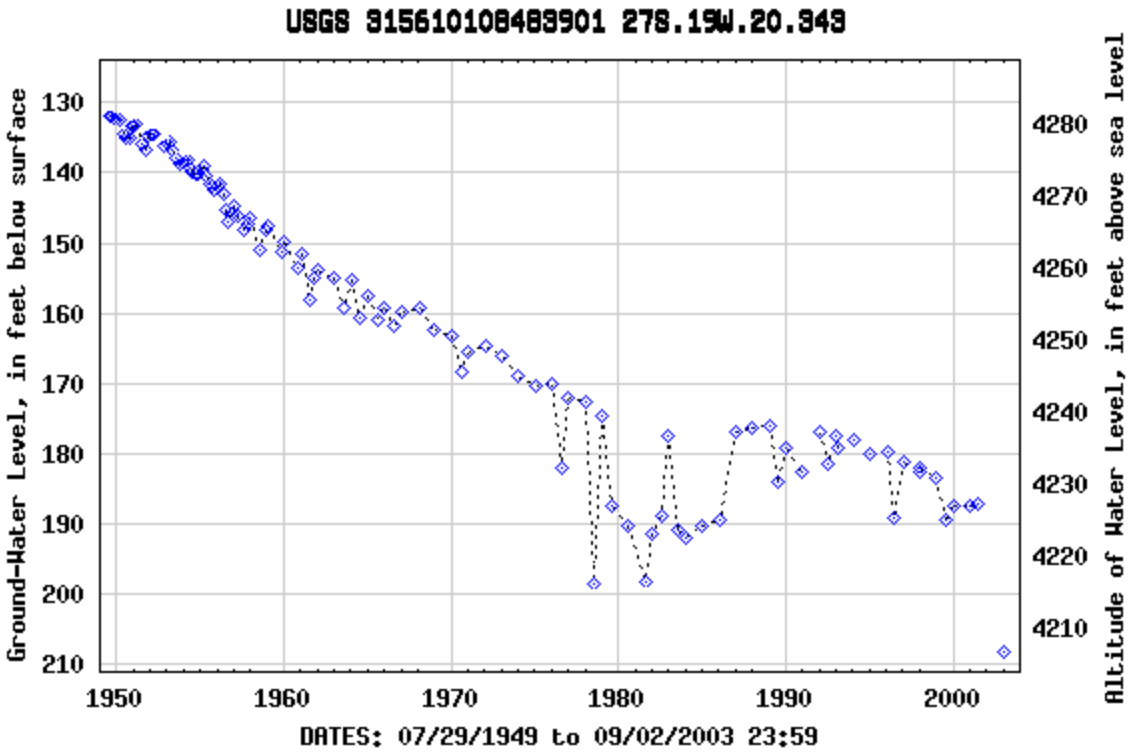

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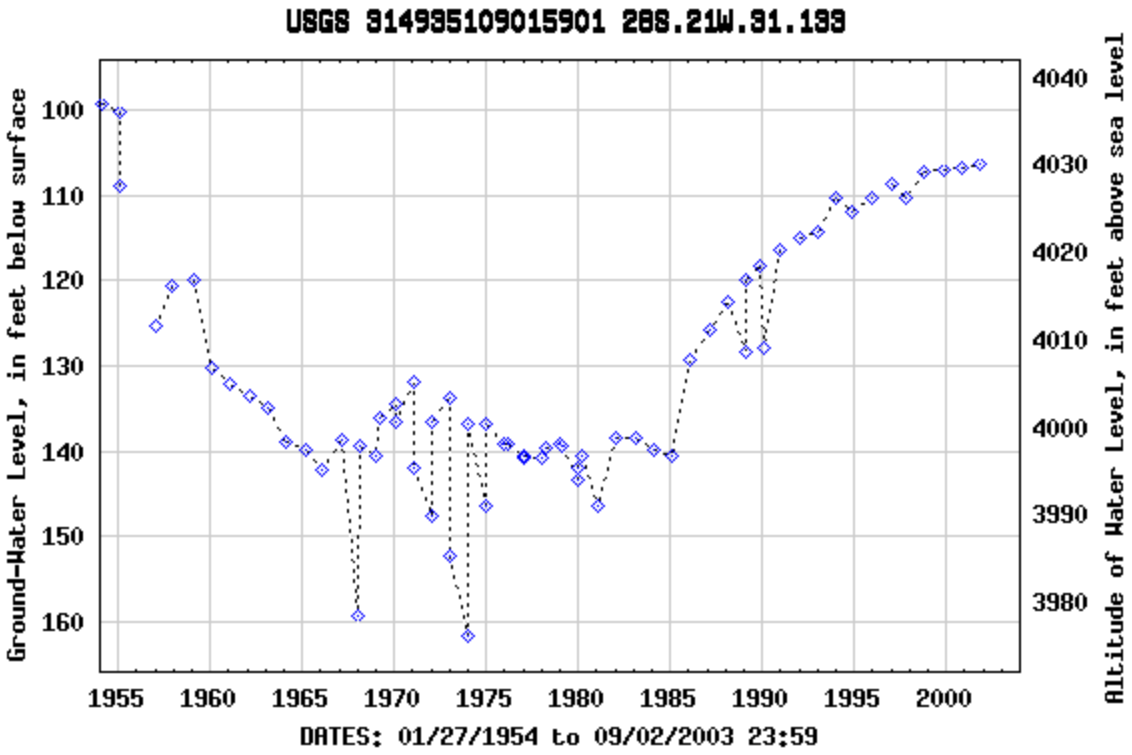

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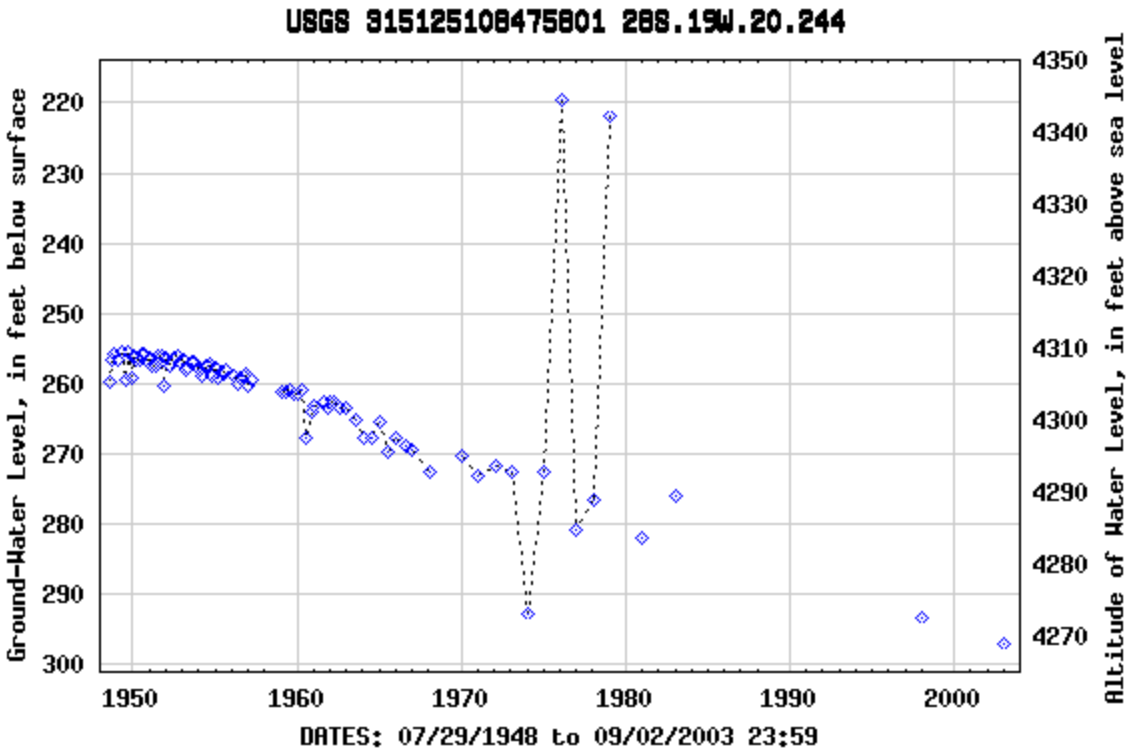

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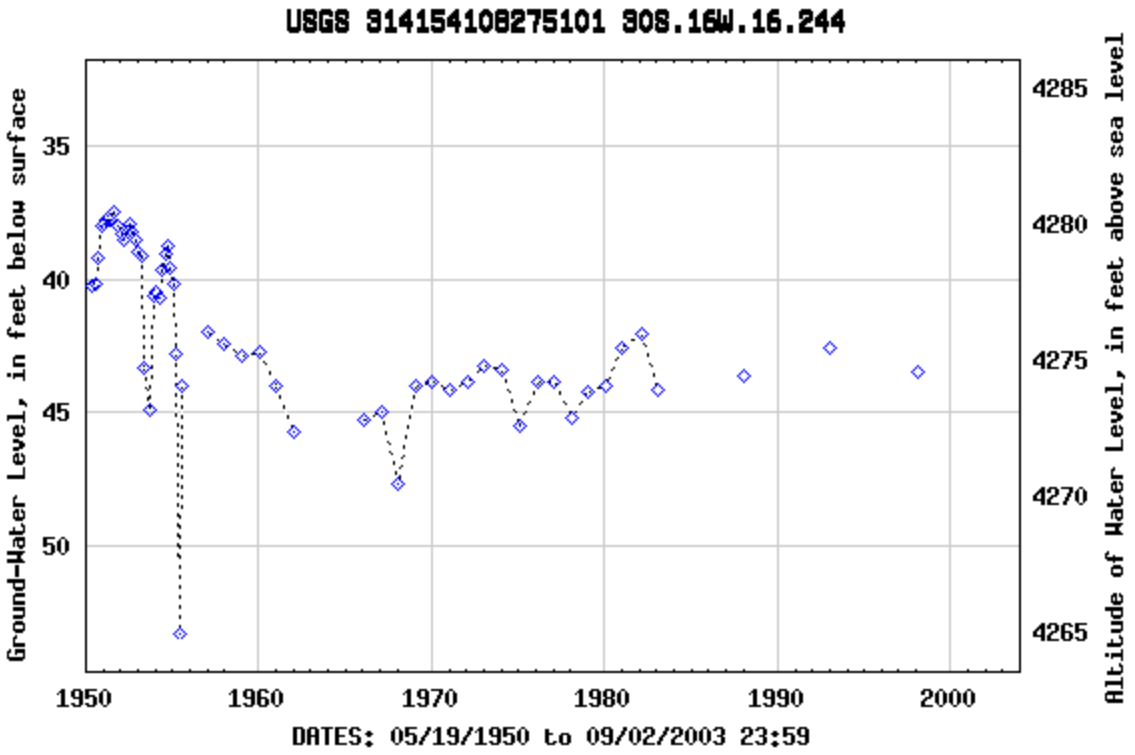

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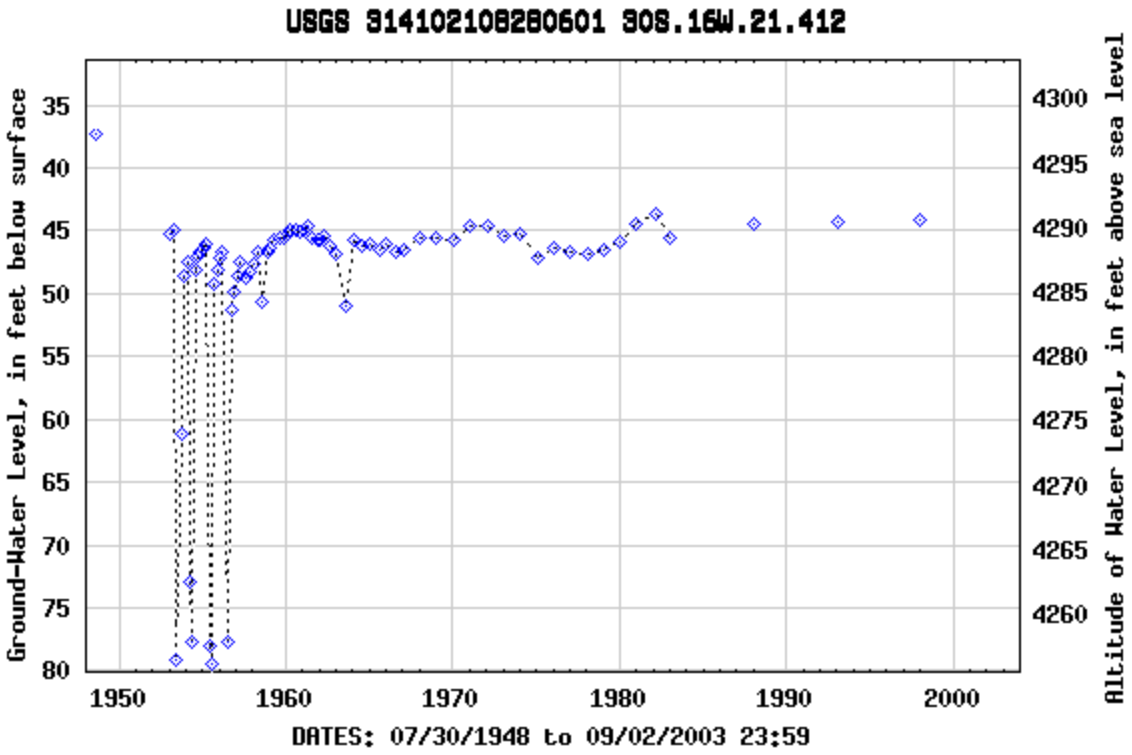

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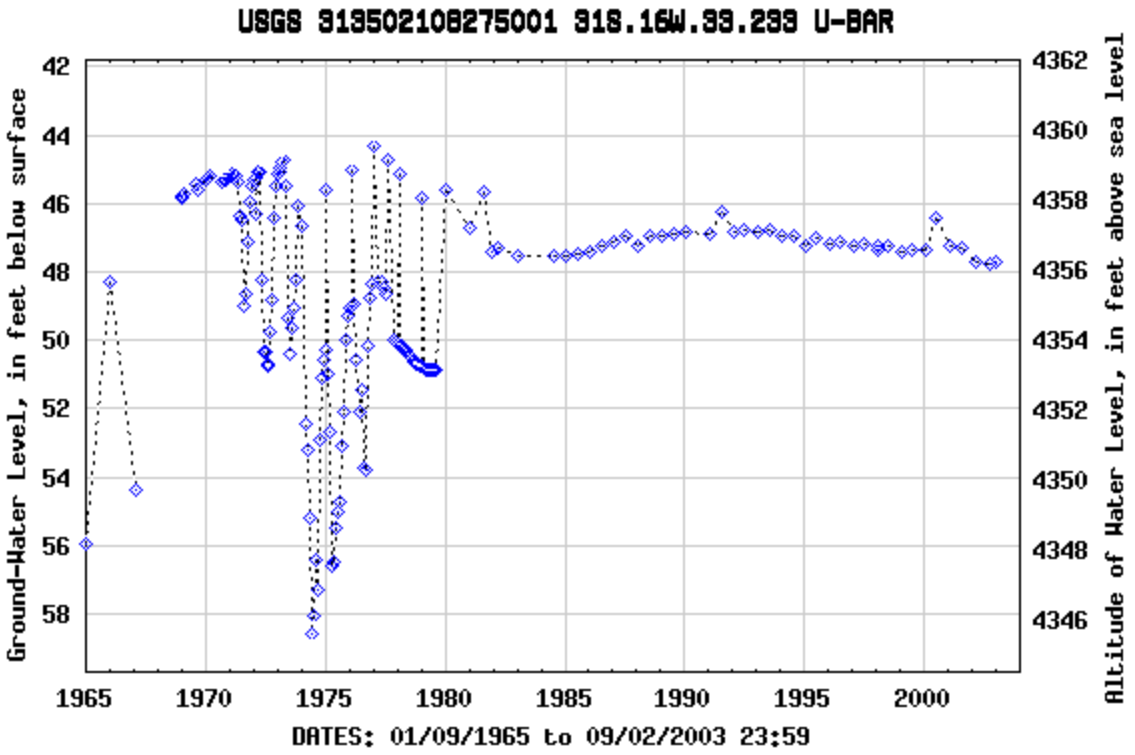

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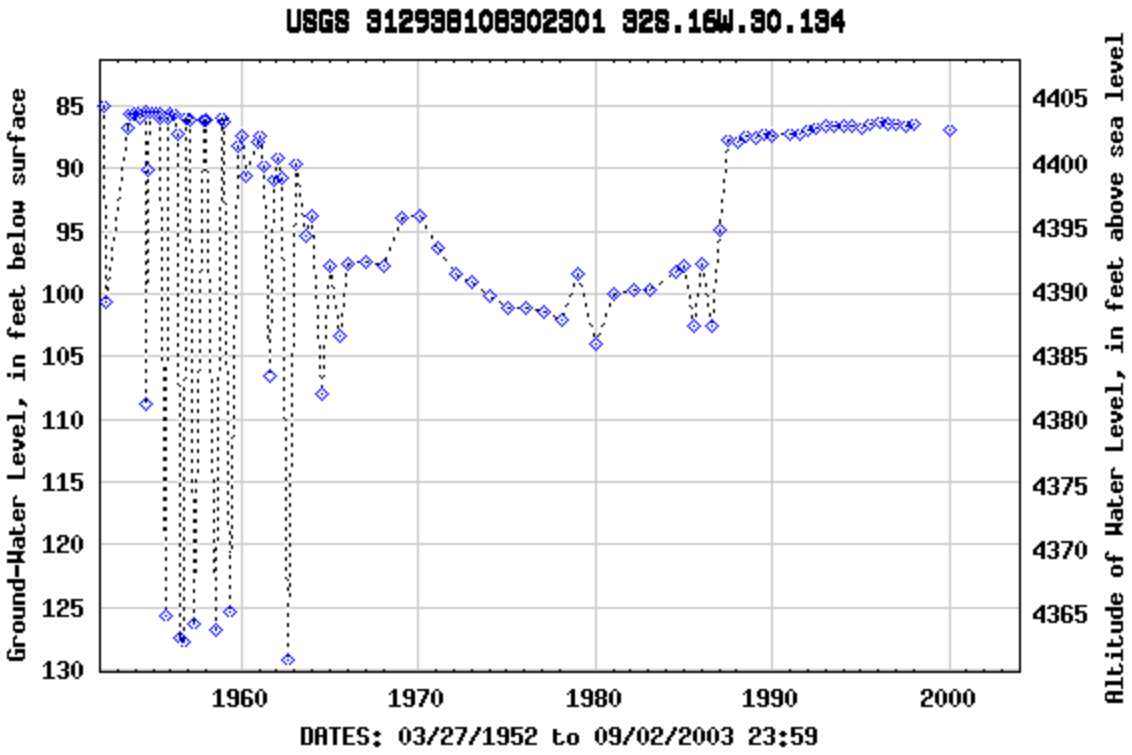

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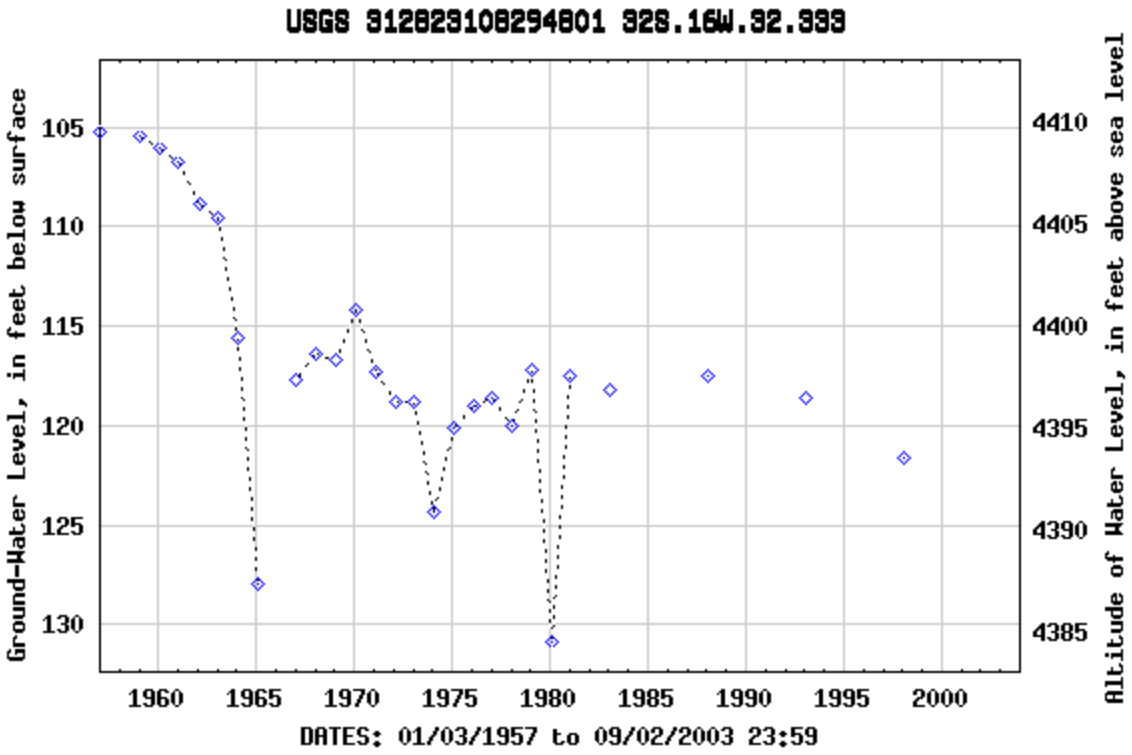

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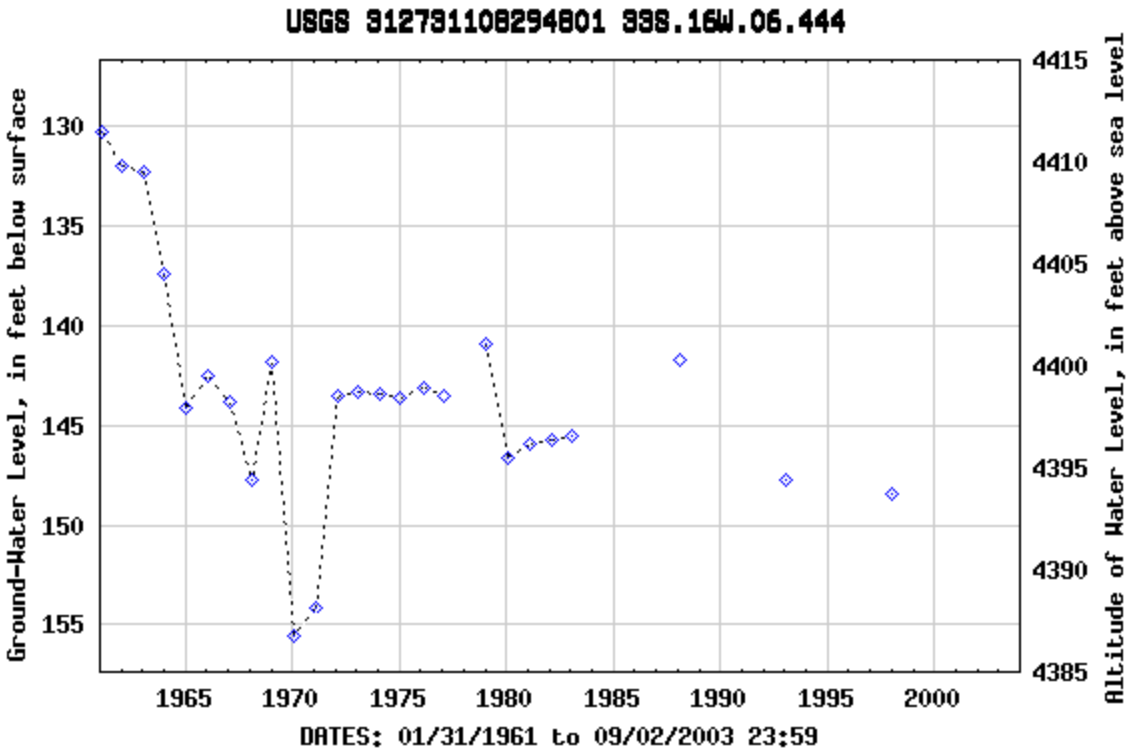

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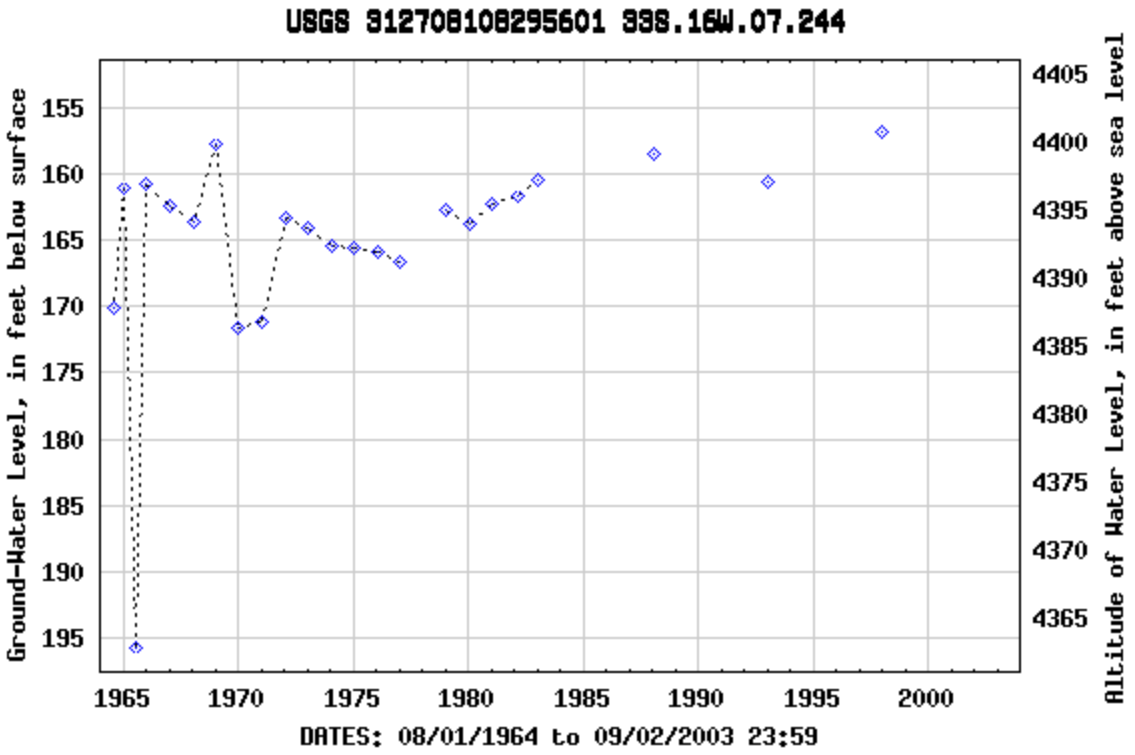

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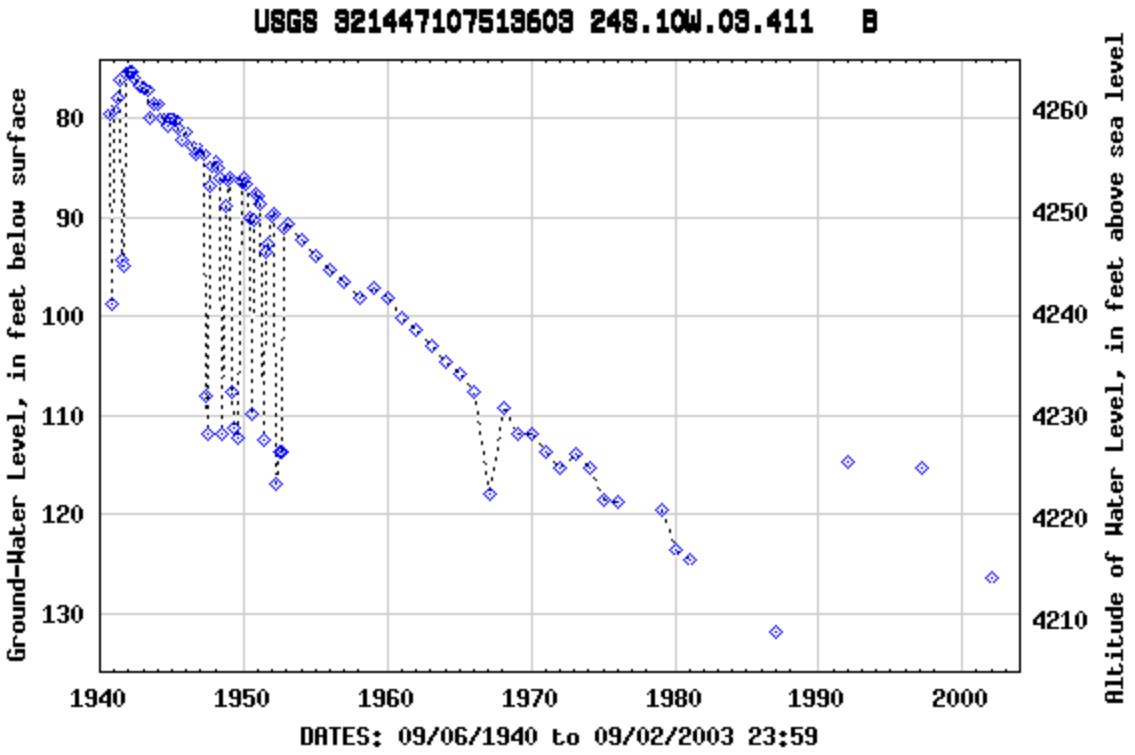

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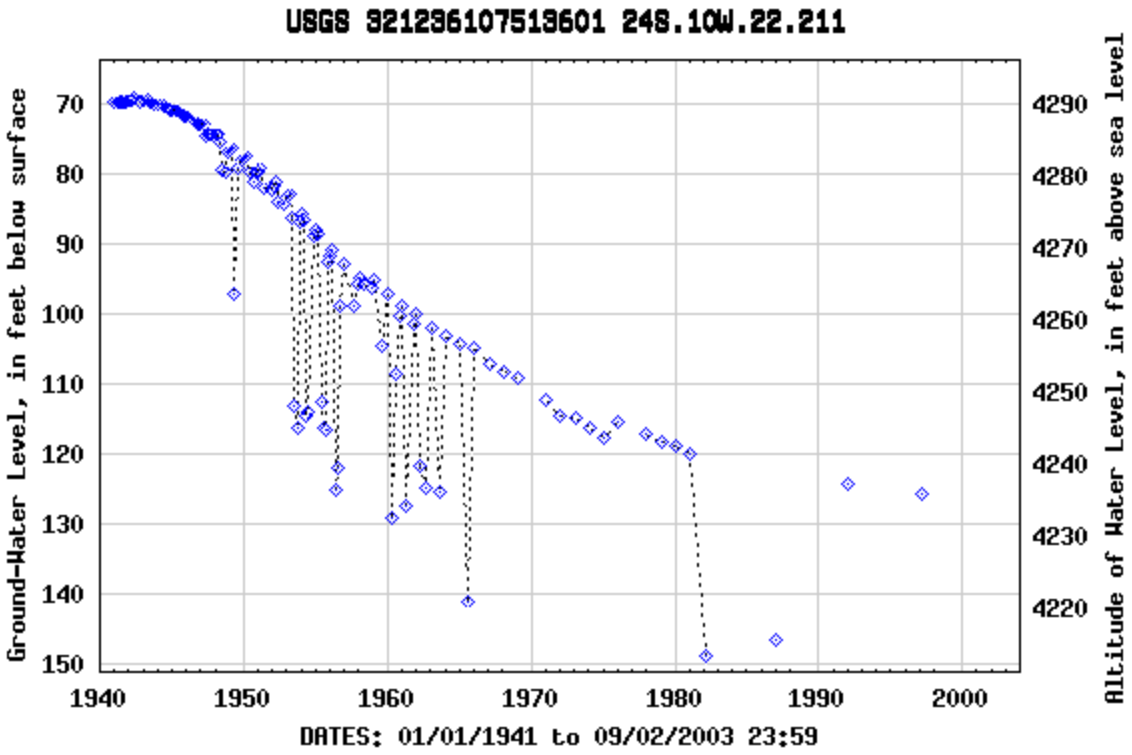

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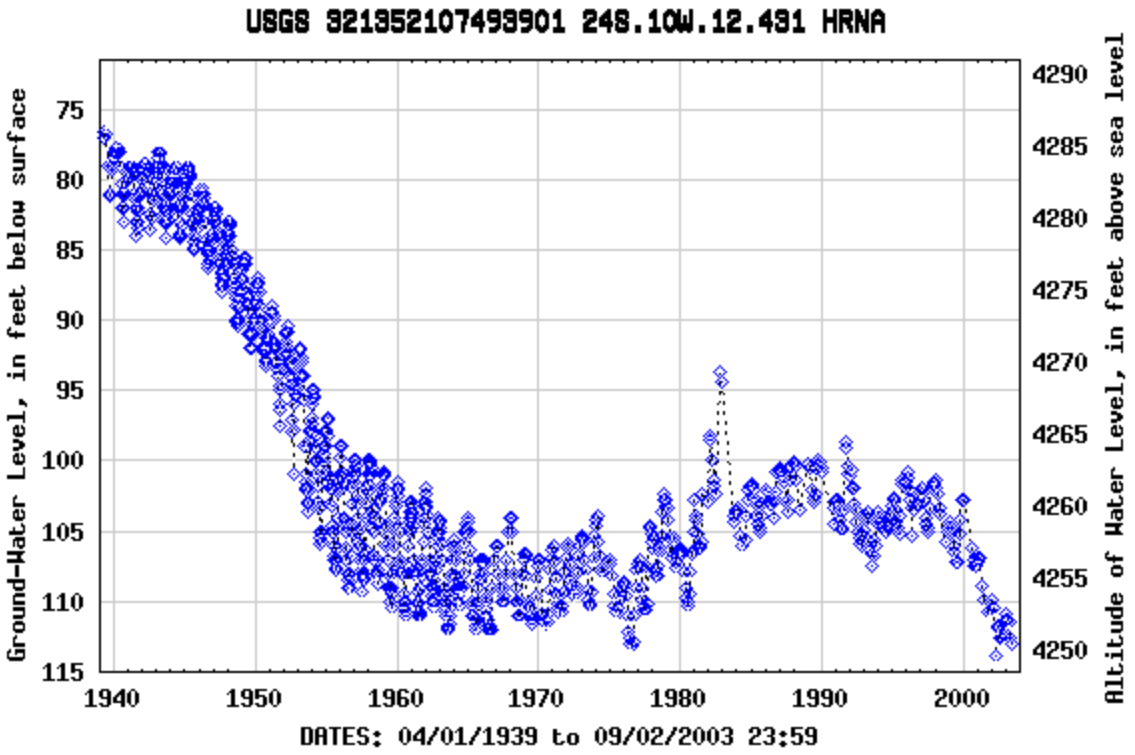

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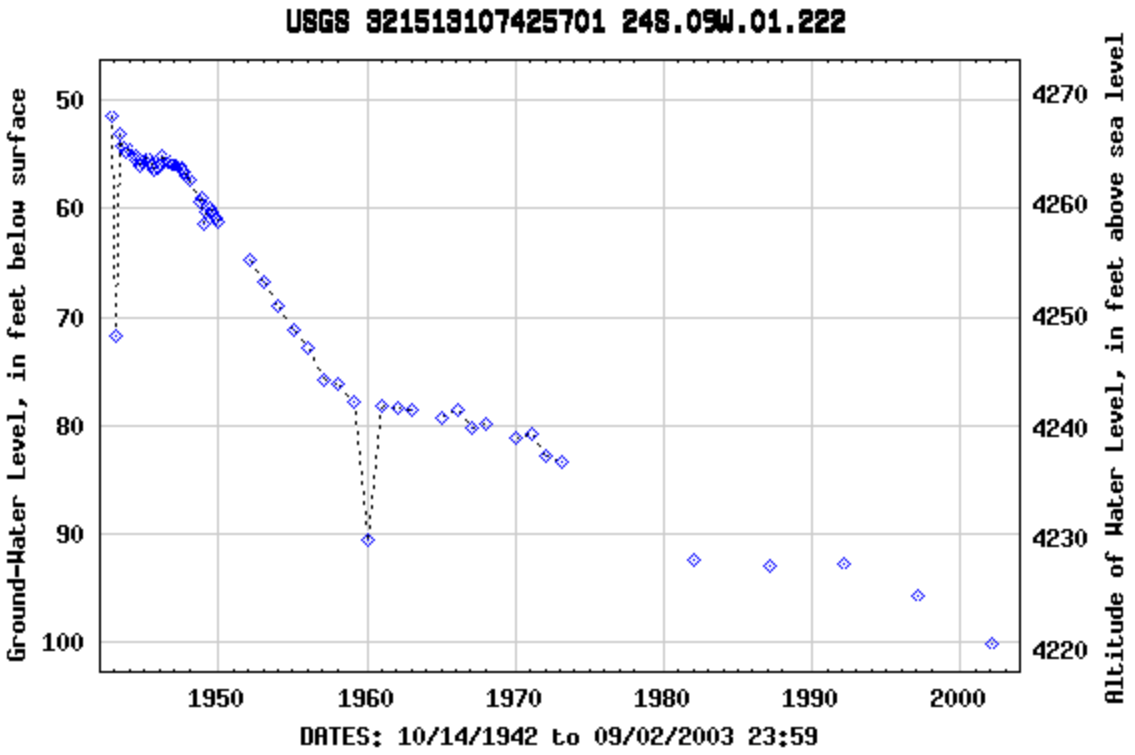

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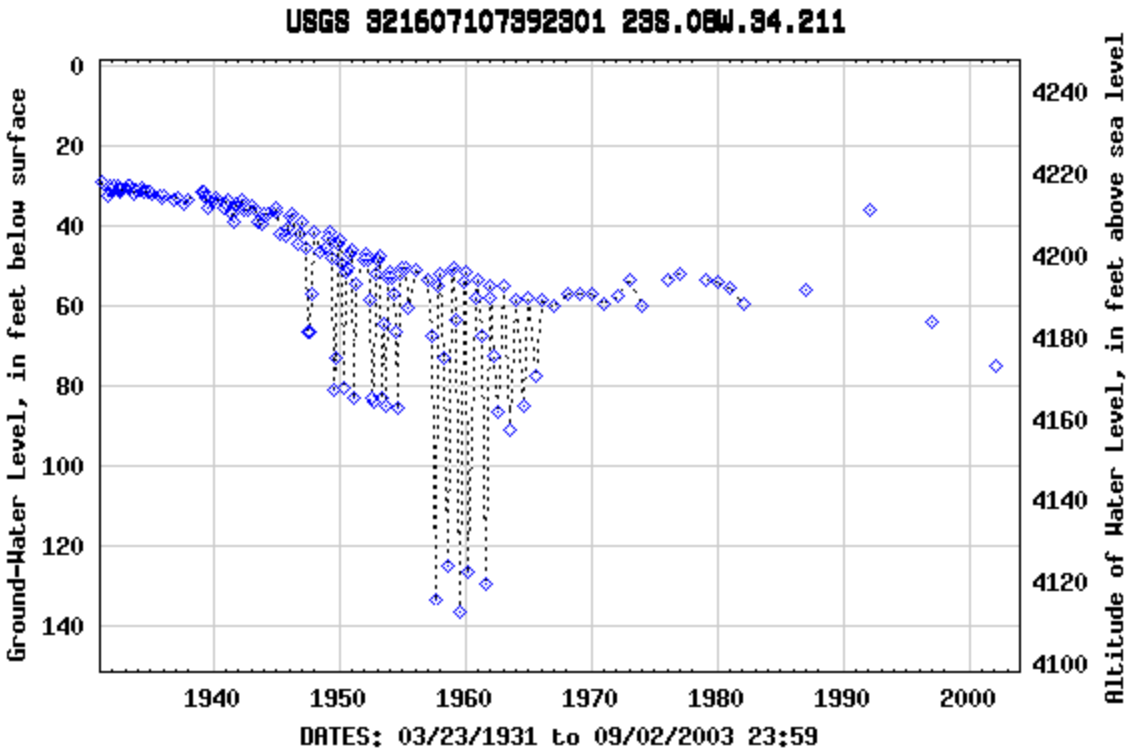

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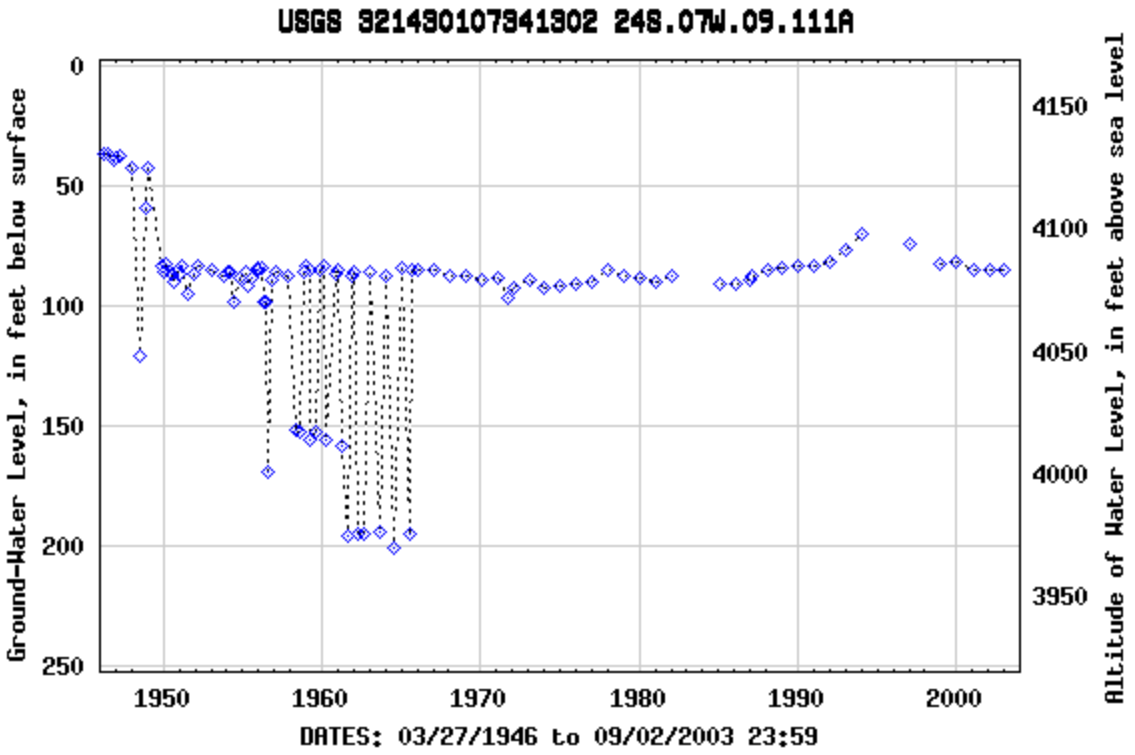
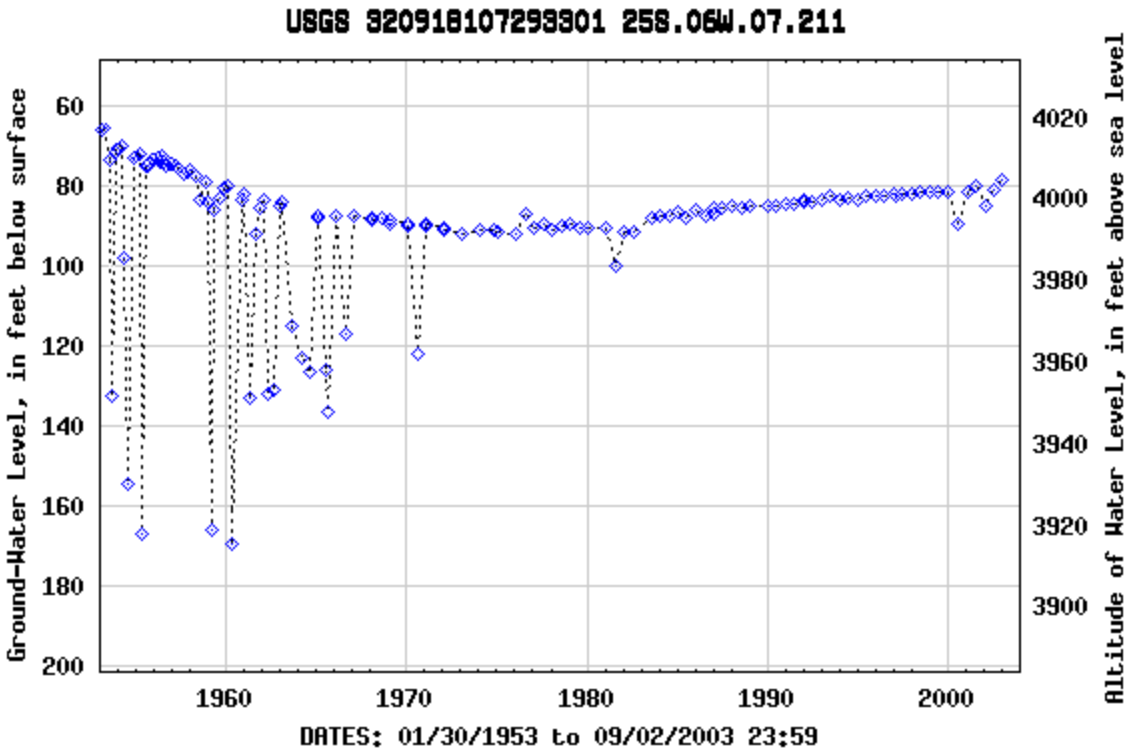


Provisional Data Subject to Revision

USGS



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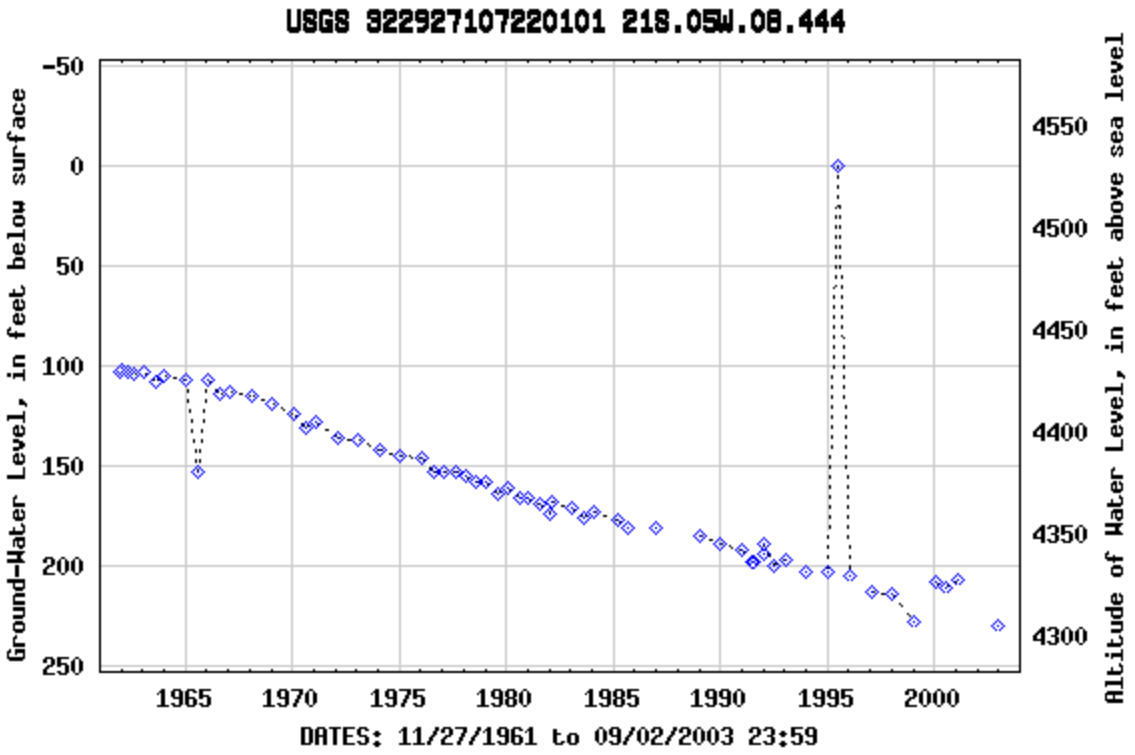

Provisional Data Subject to Revision

Appendix D5

Aquifer Characteristics

Table D5-1. Aquifer Properties from Pumping Tests Conducted in Southwest New Mexico

OSE Administrative GW Basin	Geologic GW Baisn	County	Aquifer Name	Aquifer Thickness (ft)	Hydraulic Conductivity (ft/day)	Transmissivity (gpd/ft)	Storativity	Specific Capacity (gpm/ft drawdown)	Specific Yield %	notes on aquifer parameters- how determined, test length, etc.
Gallup	Little Colorado	Catron	Alluvium/Basin Fill (f)	up to 190 (m, pp. 3-32) up to 200 (f, p. 21)	< 0.5 (m, pp. 3-32)	308-8,917 (m, pp. 3-30) 2,258-2,538 (m, pp. 3-32)	0.00075-0.05 (m, pp. 3-32)			yields range from 1 to 375 gpm in wells throughout basin (f, p. 21)
			Gila Conglomerate (f)	varies depending on location 2,000 (l, p. 10, 14, 21) 750 (f, p. 29)		insufficient data to estimate (f, p. 29)				2-5 gpm (f, p. 55)
			Bearwallow Mountain Andesite (f)	up to 2000 (f, p. 32)						yields 2.5 gpm (f, p. 32)
			Datil Group (f)							yields 2-10 gpm (f, p. 35)
			Baca Formation (f)							yields 5- 20 gpm (f, p. 36)
			Mesa Verde Group (f)	up to 1,140 (f, p. 38)	2.15 (m, pp. 3-32)	31-328 (m, pp. 3-32) 70-6,715 (m, pp. 3-32) 69-544 (m, pp. 3-32)	0.000024-0.0000014 (m, pp. 3-32)			yields 1-100 gpm (f, p. 38)
			Mancos Shale (f)	700-800 (f, p. 40) 500 (f, p. 40)						
			Dakota Sandstone (f)	20-60 (f, p. 42)	6.8 (f, p. 42)	5,250 (f, p. 42)				yields 1-122 gpm (f, p. 55)
			Chinle Formation (f)	up to 1,500 (f, p. 44)						
Rio Grande	Rio Grande	Catron	Alluvium/Basin Fill (f)	San Agustin Basin Aquifer up to 2,600, 4,600 includes Gila Conglomerate (l, p. 14, 21)		9,640 (g, p. 19) 527,998 (f, p. 26) 156,332 (l, p. 20) 344,080 (l, p. 20) 362,032 (l, p. 20) 162,316 (l, p. 20) 169,796 (l, p. 20) 320,144 (l, p. 20) 17,204 (l, p. 20) 17,952 (l, p. 20)	0.00025 (g, p. 19) 0.175 (l, p. 20) 0.193 (l, p. 20) 0.124 (l, p. 20) 0.136 (l, p. 20) 0.130 (l, p. 20) 0.143(l, p. 20)	16.95 (l, p. 20) 16.80 (l, p. 20) 90.00 (l, p. 20) 31.60 (l, p. 20) 5.70 (l, p. 20)	17.5 (l, p. 20) 19.30 (l, p. 20) 12.40 (l, p. 20) 13.60 (l, p. 20) 13.0 (l, p. 20) 14.3 (l, p. 20)	recovery and drawdown tests, 80-480 minute duration (f, p. 26)
			Gila Conglomerate (f)	2,000 (l, p. 10, 14, 21)					13.0 (l, p. 20)	yields 2-5 gpm (f, p. 55)
			Bearwallow Mountain Andesite (f)	up to 2000 (f, p. 32)						yields 2.5 gpm (f, p. 32)
			Datil Group (f)	up to 5,000 (l, p. 10)						< 10 gpm produced by wells in this unit (l, p. 24) yields 2-10 gpm (f, p. 35)
			Baca Formation (f)	540-700 (l, p. 11)						yields 5- 20 gpm (f, p. 36)
			Mesa Verde Group (f)	up to 1,140 (f, p. 38)						yields 1-100 gpm (f, p. 38)
			Dakota Sandstone (f)	20-60 (f, p. 42)	6.8 (g, p. 31)	5,300 (g, p. 10) 15,000 (g, p. 10) 370-790 (g, p. 10) 5,300 (g, p. 24)	0.005-0.00005 (g, p. 24)			yields 1-122 gpm (f, p. 55)
			Chinle Formation (f)	up to 1,500 (f, p. 44)						generally a confining layer and does not produce water (f, p. 44)
Gila-San Francisco	Gila and San Francisco Basins	Catron/Grant	Alluvium/Basin Fill (i)			5,000-15,000 (a) 17,204-359,000 (f, p. 26) 527,998 (f, p. 26) 39,644 (e, p. 71) 13,200 (f, p. 25)	0.00-0.53 (e, p. 65) 0.04 (e, p. 71)			
			Gila Conglomerate (i)	over 1,000 (i, p. 6)	0.01-10 (i, p. 4) 0.03-8 (i, p. 10) 0.67-4.4 (i, p. 11)	5,000-15,000 (a) 17,204-359,000 (f, p. 26) 527,998 (f, p. 26) 39,644 (e, p. 71) 13,200 (f, p. 25) 11,220 (o, p. 12) 5,610 (i, p. 6)	0.02-0.15 (e, p. 71) 0.04 (e, p. 71) 0.01-0.15 (i, p. 12)			yields 10-1,000 gpm (i, p. 4)

Table D5-1. Aquifer Properties from Pumping Tests Conducted in Southwest New Mexico

OSE Administrative GW Basin	Geologic GW Baisn	County	Aquifer Name	Aquifer Thickness (ft)	Hydraulic Conductivity (ft/day)	Transmissivity (gpd/ft)	Storativity	Specific Capacity (gpm/ft drawdown)	Specific Yield %	notes on aquifer parameters- how determined, test length, etc.
Gila-San Francisco (cont.)			Tertiary Volcanics (i)							the Haye's well has produced 1,500 gpm (i, p. 4) water levels in the frank's well field have declined 60 feet since 1945 (i, p. 7)
			Tertiary/Cretaceous Sedimentary rocks (i)		0.01 (i, p. 10)	600-35,250 (i, p. 6) 6,000 (i, p. 6)	0.00035 (i, p. 6)			20 gpm (i, p. 34)
Mimbres Basin	Mimbres and Hachita-Moscos Basins	Luna/Grant	Alluvium/Basin Fill (c)	0-4,200, including Gila conglomerate (o, p. 23)	0.3-800 (n, p. 88)	50,000 (a) 75-374,000 (n, p. 88) 523-38,148 (e, p. 64) 33,750-375,000 (o, p. 25)	0.00-0.53 (e, p. 65)	22.3 (n, p. 22) 13 (n, p. 22)		
			Gila Conglomerate (c)	up to 900 (o, p. 12)		17,204 (o, p. 13)				
			Tertiary Volcanics (n)							hayes well 1,404 ac-ft/yr max production in 1987 (o, p. 13)
Virden Valley	Gila Basin	Hidalgo	Gila Valley Aquifer-alluvium (c)	2-100 (c, p. 85)						
			Alluvium/Basin Fill (c)							
			Gila Conglomerate (c)							
Nutt-Hockett	Lower Rio Grande Basin	Luna	Alluvium/Basin Fill (i)							
			Gila Conglomerate (i)							
			Bell Top Formation (i)							
			Uvas Basaltic Andesite (i)							
Lordsburg Valley	Animas Basin	Hidalgo/Grant	Alluvium/Basin Fill (a)	1,000, productive zone (b, p. 89)		20,000 (a) 50,000 (d, p. 19)			10 (b, p. 93)	
			Gila Conglomerate (a)							
Animas	Animas Basin	Hidalgo	Alluvium/Basin Fill (c)	0-3,700 (n, p. 87) 0-2,000 (b, p. 89)		100,000 (a) 21,991-246,017; ave=50,004 (c, p. 66) 26,629 (c, p. 66) 61,710 (c, p. 66) 22,000 (h, p. 39) 67,000-87,000 (h, p. 39)	0.07-0.14; ave=0.11 (c, p. 66) 0.06-0.07 (c, p. 66) 0.07-0.14; ave=0.10 (h, p. 42)	5-70 (h, p. 31) 29 (h, p. 31) 16-100 (h, p. 41)	7-14 (h, p. 42)	average yield of ag wells in 1948-1950 was about 900 gpm with 16 feet of drawdown. in 1955 average yield was 660 gpm with 30 feet of drawdown (h, p. 31)
			Gila Conglomerate (c)						10 (b, p. 93)	
			Lightning Dock KGRA (k)							igneous intrusives/faulting expose basin fill aquifer to heat.
San Simon	San Simon Basin	Hidalgo	Alluvium/ Basin Fill (c)							
			Gila Conglomerate (d)							
Playas Valley	Playas-San Basillio Basin	Hidalgo	Alluvium/Basin FIll (a)	max 2000 (b, p. 71)		46,000 (a) 50,000 (d, p. 19) 20,000-80,000 (b, p. 70) 70,000 (d, p. 15) 20,000 (d, p. 15) 33,000 (d, p. 19) 50,000 (d, p 19)		23 (d, p. 19) 6-14 (b, p. 71)	10 (b, p. 73)	depth to water 4-200 feet gbs (d, p. 10)
			Gila Conglomerate (a)							

(a) RTI, 1991, Table 4.2
(b) Hawley et al., 2000
(c) Stone and O'Brien, 1990
(d) Doty, 1960
(e) Trauger, 1972
(f) Basabilvazo, 1997
(g) Myers, 1992
(h) Reeder, 1957
(i) Johnson, 2000
(j) Clemons, 1979
(k) Elston et al., 1983
(l) Myers et al., 1994
(m) U.S. BLM, 1990
(n) Hanson et al., 1994
(o) Johnson et al., 2002

Table D5-2. Estimated Groundwater in Storage
Southwest New Mexico Water Planning Region

County	Surface Basin	Aquifers	Area of Extent of Occurrence (Acres)	Average Available GW Thickness (ft)	Typical Specific Yield	Approximate Available GW in Storage (acre-ft)	Source [a]
Catron	Little Colorado Basin	Alluvial Fill	50,000	50	0.140	350,000	e, l, f, p
		Baca Formation	1,153,252	200	0.005	1,153,000	e, l, f, p
		Mesaverde Group	1,153,252	300	0.040	13,839,000	e, l, f, p
		Mancos Shale	1,153,252	300	0.005	1,730,000	e, l, f, p
		Dakota Sandstone	1,153,252	40	0.050	2,307,000	e, l, f, p
		Chinle Formation	1,153,252	500	0.001	577,000	e, l, f, p
		Total				19,956,000	
	North Plains Basin	Alluvial Fill	63,999	25	0.140	224,000	e, l, f, p
		Tertiary Basalt	63,999	50	0.050	160,000	e, l, f, p
		Datil Formation	188,514	200	0.005	189,000	e, l, f, p
		Total				573,000	
	Rio Salado Basin	Alluvial Fill	25,000	50	0.140	175,000	e, l, f, p
		Gila Group	151,453	330	0.100	4,998,000	e, l, f, p
		Baca Formation	151,453	200	0.005	151,000	e, l, f, p
		Mesaverde Group	151,453	300	0.040	1,817,000	e, l, f, p
		Mancos Shale	151,453	300	0.050	2,272,000	e, l, f, p
		Dakota Sandstone	151,453	40	0.050	303,000	e, l, f, p
		Chinle Formation	151,453	500	0.001	76,000	e, l, f, p
		Total				9,792,000	
	Middle Rio Grande	Alluvial Fill	25,000	50	0.140	175,000	e, l, f, p
		Gila Group	61,824	330	0.100	2,040,000	e, l, f, p
		Total				2,215,000	
	San Agustin Basin	Alluvial Fill	100,000	330	0.140	4,620,000	e, l, f, p
		Gila Group	984,507	330	0.100	32,489,000	e, l, f, p
		Datil Group	984,507	325	0.040	12,799,000	e, l, f, p
		Total				49,908,000	
	Gila Basin	Alluvial Fill	100,000	50	0.140	700,000	e, l, f, p
		Gila Group	801,236	280	0.100	22,435,000	e, l, f, p
		Datil Group	200,000	325	0.040	2,600,000	e, l, f, p
		Marine Sedimentary Units	50,000	350	0.100	1,750,000	e, l, f, p
		Total				27,485,000	
	San Francisco Basin	Alluvial Fill	200,000	50	0.140	1,400,000	e, l, f, p
		Gila Group	1,092,393	330	0.100	36,049,000	e, l, f, p
		Datil Group	250,000	325	0.040	3,250,000	e, l, f, p
		Tertiary/Cretaceous Sedimentary	25,000	330	0.020	165,000	
		Total				40,864,000	

[a] Key to sources provided at end of table

Table D5-2. Estimated Groundwater in Storage
Southwest New Mexico Water Planning Region

County	Surface Basin	Aquifers	Area of Extent of Occurrence (Acres)	Average Available GW Thickness (ft)	Typical Specific Yield	Approximate Available GW in Storage (acre-ft)	Source [a]
Grant County	San Francisco Basin	Alluvial Fill	10,000	50	0.140	70,000	e, l, f, p
		Gila Group	97,999	330	0.100	3,234,000	e, l, f, p
		Datil Group	97,999	325	0.040	1,274,000	e, l, f, p
		Total				4,578,000	
	Mimbres Basin	Alluvial Fill	178,910	50	0.140	1,252,370	b, d, p
		Gila Group	357,821	330	0.100	11,808,000	b, d, p
		Total				13,060,370	
	Animas Basin	Alluvial Fill	180,000	50	0.140	1,260,000	b, d, p
		Gila Group	180,000	330	0.100	5,940,000	b, d, p
		Total				7,200,000	
	Playas Basin	Alluvial Fill	13,700	50	0.140	96,000	b, d, p
		Gila Group	13,700	330	0.100	452,000	b, d, p
		Total				548,000	
	Hachita-Moscos Basin	Alluvial Fill	74,046	50	0.140	518,000	b, d, p
		Gila Group	74,046	330	0.100	2,444,000	b, d, p
		Total				2,962,000	
	Gila Basin	Alluvial Fill	100,000	50	0.140	700,000	e, l, f, p
		Gila Group	500,000	280	0.100	14,000,000	e, l, f, p
		Datil Group	500,000	325	0.040	6,500,000	e, l, f, p
		Marine Sedimentary Units	100,000	500	0.100	5,000,000	e, l, f, p
		Total				26,200,000	

[a] Key to sources provided at end of table

Table D5-2. Estimated Groundwater in Storage
Southwest New Mexico Water Planning Region

County	Surface Basin	Aquifers	Area of Extent of Occurrence (Acres)	Average Available GW Thickness (ft)	Typical Specific Yield	Approximate Available GW in Storage (acre-ft)	Source [a]
Hidalgo County	San Simon Basin	Alluvial Fill	5,000	50	0.140	35,000	b, d
		Gila Group	25,000	330	0.100	825,000	b, d
		Total				860,000	
	Playas Basin	Alluvial Fill	149,759	50	0.140	1,048,000	b, d, p
		Gila Group	149,759	330	0.100	4,942,000	b, d, p
		Total				5,990,000	
	Hachita-Moscos Basin	Alluvial Fill	150,000	50	0.140	1,050,000	b, d, p
		Gila Group	240,944	330	0.100	7,951,000	b, d, p
		Total				9,001,000	
	San Bernadino Basin	Alluvial Fill	10,000	50	0.140	70,000	b, d, p, k
		Gila Group	10,000	330	0.100	330,000	b, d, p, k
		Total				400,000	
	Animas Basin	Alluvial Fill	500,000	50	0.140	3,500,000	b, d, p, k
		Gila Group	1,074,018	330	0.100	35,443,000	b, d, p, k
		Total				38,943,000	
	Gila Basin	Alluvial Fill	100,000	50	0.140	700,000	b, d, p, k
		Gila Group	147,890	330	0.100	4,880,000	b, d, p, k
		Total				5,580,000	

[a] Key to sources provided at end of table

Table D5-2. Estimated Groundwater in Storage
Southwest New Mexico Water Planning Region

County	Surface Basin	Aquifers	Area of Extent of Occurrence (Acres)	Average Available GW Thickness (ft)	Typical Specific Yield	Approximate Available GW in Storage (acre-ft)	Source [a]
Luna County	Animas Basin	Alluvial Fill	17,850	50	0.140	125,000	b, d, p, k
		Gila Group	17,850	330	0.100	589,000	b, d, p, k
		Total				714,000	
	Hachita-Moscos Basin	Alluvial Fill	82,883	50	0.140	580,000	b, d, p
		Gila Group	82,883	330	0.100	2,735,000	b, d, p
		Total				3,315,000	
	Nutt-Hockett	Alluvial Fill	66,635	50	0.140	466,000	b, d, p
		Santa Fe Group	66,635	330	0.100	2,199,000	b, d, p
		Total				2,665,000	
	Mimbres	Alluvial Fill	809,570	50	0.140	5,666,990	b, d, p
		Gila Group	809,570	330	0.100	26,716,000	b, d, p
		Total				32,382,990	

ND = No data available to determine

(b) Hawley et al., 2000
(d) Doty, 1960
(e) Trauger, 1972
(f) Basabilvazo, 1997
(k) Elston et al, 1983
(l) Myers et al., 1994
(p) NM SEO, 1978

[a] Key to sources provided at end of table

References for Tables D5-1 and D5-2

Basabilvazo, G.T. 1997. *Ground-water resources of Catron County, New Mexico*. Prepared in cooperation with New Mexico State Engineer Office and New Mexico Bureau of Mines and Mineral Resources. U.S. Geological Survey, Water -Resources Investigations Report 96-4258.

Clemons, R.E. 1979. *Geology of Good Sight Mountains and Uvas Valley, southwest New Mexico*. New Mexico Bureau of Mines and Mineral Resources, Circular 169.

Doty, G.C. 1960. *Reconnaissance of ground water in Playas Valley, Hidalgo County, New Mexico*. Prepared in cooperation with U.S. Geological Survey. New Mexico State Engineer, Santa Fe, New Mexico. Technical Report 15.

Elston, W.E., E.G. Deal, and M.J. Logsdon. 1983. *Geology and geothermal waters of Lightning Dock region, Animas Valley and Pyramid Mountains, Hidalgo County, New Mexico*. New Mexico Bureau of Mines & Mineral Resources, Circular 177.

Hanson, R.T., J.S. McLean, and R.S. Miller. 1994. *Hydrogeologic framework and preliminary simulations of ground-water flow in the Mimbres Basin, southwestern New Mexico*. Prepared in cooperation with New Mexico State Engineer Office. U.S. Geological Survey, Water-Resources Investigations Report 94-4011.

Hawley, J.W., B.J. Hibbs, J.F. Kennedy, B.J. Creel, M.D. Remmenga, M. Johnson, M.M. Lee, and P. Dinterman. 2000. *Trans-international boundary aquifers in southwestern New Mexico*. Prepared for U.S. Environmental Protection Agency–Region 6 and International Boundary and Water Commission–U.S. Section. New Mexico Water Resources Research Institute, Technical Completion Report, Interagency contract number X-996350-01-3. March 2000.

Johnson, M.S. 2000. *Hydrologic evaluation of application GSF-1745 into GSF 1014 for permit to change location of well and place or purpose of use in the Gila-San Francisco Underground*

Water Basin, Grant County, New Mexico. New Mexico Office of the State Engineer, Technical Division Hydrology Report 00-3.

Johnson, M.S., L.M. Logan, and D.H. Rappuhn. 2002. *Analysis of effects of ground-water development to meet projected demands in Regional Planning District 4, Southwest New Mexico*. New Mexico Office of the State Engineer, Hydrology Bureau, Draft Hydrology Report 02-X.

Myers, R.G. 1992. *Geohydrology and potential hydrologic effects of surface coal mining of the San Agustin Coal Area and adjacent areas, Catron and Cibola Counties, New Mexico*. Prepared in cooperation with U.S. Bureau of Land Management. U.S. Geological Survey, Water-Resources Investigations Report 92-4004.

Myers, R.G., J.T. Everheart, and C.A. Wilson. 1994. *Geohydrology of the San Agustin Basin, Alamosa Creek Basin upstream from Monticello Box, and Upper Gila Basin in parts of Catron, Socorro, and Sierra Counties, New Mexico*. Prepared in cooperation with New Mexico State Engineer Office. U.S. Geological Survey, Water-Resources Investigations Report 94-4125.

New Mexico State Engineer Office (NM SEO). 1978. *Water resources of New Mexico: Occurrence, development and use.*

Reeder, H.O. 1957. *Ground water in Animas Valley, Hidalgo County, New Mexico*. Prepared in cooperation with U.S. Geological Survey. State of New Mexico State Engineer Office, Technical Report No. 11.

Resource Technology, Inc. (RTI). 1991. *Southwest New Mexico regional water plan*, *Southwest New Mexico Planning District V, Catron, Grant, Hidalgo, and Luna Counties*. Resource Technology, Inc., Albuquerque, New Mexico. April 1991.

Stone, W.J. and K.M. O'Brien. 1990. *Preliminary work for a hydrologic report on Hidalgo County, New Mexico*. Prepared in cooperation with Office of the New Mexico State Engineer

and U.S. Geological Survey. New Mexico Bureau of Mines and Mineral Resources, Open-File Report 372.

Trauger, F.D. 1972. *Water resources and general geology of Grant County, New Mexico*. Prepared in cooperation with U.S. Geological Survey, New Mexico State Engineer Office, and Grant County Commission. New Mexico State Bureau of Mines and Mineral Resources, Hydrologic Report 2.

U.S. Bureau of Land Management (U.S. BLM). 1990. *Draft environmental impact statement, Fence Lake project*. U.S. Department of the Interior, Bureau of Land Management, Las Cruces District Office, Socorro Resource Area. May 1990.

Appendix D6

TMDL Stream Reaches

Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan

Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
San Francisco River (Centerfire Creek to Arizona Border) Monitored Not supported NM-2602_20	14.91	Range grazing–Riparian and/or Upland, Natural sources, Grazing-related sources, Forest management (fire suppression), Agriculture	2002	Temperature	4/12/2002	None	CWF	No
				Plant nutrients	8/05/2002			
Centerfire Creek (San Francisco River to headwaters) Monitored Not supported NM-2603.A_50	16.12	Recreation and tourism activities, Range grazing–Riparian and/or Upland, Off-road vehicles, Natural sources, Grazing-related sources, Forest management (fire suppression), Agriculture	2009	Temperature	4/16/2002	None	HQCWF	No
			2002	Plant nutrients	---			
			2009	pH				
			2002	Conductivity				
Tularosa River (San Francisco River to Apache Creek) Monitored Not supported NM-2603.A_40	21.99	Range grazing–Riparian and/or Upland, Natural sources, Highway maintenance and runoff, Grazing-related sources, Forest management (fire suppression), Agriculture	2002	Conductivity	4/05/2002	None	HQCWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

[a] CWF = Cold water fishery
HQCWF = High quality coldwater fishery
MCWF = Marginal coldwater fishery
WWF = Warmwater fishery
IRR = Irrigation
TMDL = Total maximum daily load
NPDES = National Pollutant Discharge Elimination System
mi = Miles (used for streams)
ac = Acres (used for lakes and reservoirs)
--- = TMDL not yet submitted

Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan
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Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
Negrito Creek (South Fork) Monitored Not supported NM-2603.A_43	14.46	Removal of Riparian vegetation, Recreation and tourism activities, Range grazing–Riparian and/or Upland, Highway maintenance and runoff, Habitat modification, Grazing-related sources, Forest management (fire suppression), Agriculture	2002	Temperature	4/05/2002	None	HQCWF	No
Negrito Creek (Tularosa River to confl of N and S forks) Monitored Not supported NM-2603.A_42	12.41	Recreation and tourism activities, Pasture grazing–Riparian and/or Upland, Highway maintenance and runoff, Grazing-related sources, Forest management (fire suppression), Agriculture	2009	Temperature	---	None	HQCWF	No
Whitewater Creek (San Francisco River to Whitewater Campground) Monitored Not supported NM-2603.A_10	6.9	Removal of Riparian vegetation, Hydromodification , Highway maintenance and runoff, Habitat modification, Channelization, Bank or shoreline modification/destabilization	2002	Turbidity	4/12/2002	NMG&FD/ Glenwood Fish Hatchery (NM0030163)	HQCWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

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Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan

Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
Whitewater Creek (Whitewater Campground to headwaters) Monitored Not supported NM-2603.A_12	14.17	Recreation and tourism activities, Natural sources, Forest management (fire suppression)	2002	Aluminum–chronic	---	None	HQCWF	No
Gila River (East Fork) Monitored Not supported NM-2503_20	26.24	Recreation and tourism activities, Range grazing–Riparian and/or Upland, Off-road vehicles, Natural sources, Forest management (fire suppression), Agriculture	2002	Aluminum–chronic	4/15/2002	None	HQCWF	No
Gila River (Middle Fork) Monitored Not supported NM-2503_40	36.64	Recreation and tourism activities, Natural sources, Forest management (fire suppression)	2011	Temperature	---	None	HQCWF	No
Gila River (West Fork below Gila Cliff Dwellings) Monitored Not supported NM-2503_10	4.88	Recreation and tourism activities, Off-road vehicles, Natural sources, Forest management (fire suppression)	2011	Temperature	---	None	HQCWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

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Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan
Page 4 of 9

Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
Gilita Greek (Middle Fork to Willow Creek) Monitored Not supported NM-2503_45	6.28	Recreation and tourism activities, Range grazing–Riparian and/or Upland, Off-road vehicles, Natural sources, Grazing-related sources, Forest management (fire suppression)	2011	Temperature Aluminum–chronic	---	None	HQCWF	No
Lake Roberts Monitored Partially supported NM-2504_20	68.37	Road/Parking lot runoff, Recreation and tourism activities, Agriculture	12/31/2017	Temperature Plant nutrients pH	---	None	CWF	No
Mogollon Creek (Perennial reaches above USGS gage) Monitored Not supported NM-2503_02	29.49	Resource extraction, Range grazing–Riparian and/or Upland, Off-road vehicles, Mill tailings, Habitat modification (other than Hydromodification), Grazing-related sources, Forest management (fire suppression) Bank or shoreline modification/destabilization, Agriculture	2002	Aluminum–chronic De-list letter for SBD (sedimentation/siltation), chronic lead	4/05/2002	None	HQCWF	No
Canyon Creek (Middle Fork Gila River to headwaters) Evaluated Not supported NM-2503_43	14.25	Removal of Riparian vegetation, Range grazing–Riparian and/or Upland, Habitat modification, Grazing-related sources, Bank or shoreline modification/destabilization, Agriculture	2002	Turbidity Plant nutrients	4/10/2002	None	HQCWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

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Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan

Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
Black Canyon Creek (East Fork Gila River to headwaters) Evaluated Not supported NM-2503_21	25.21	Removal of Riparian vegetation, Recreation and tourism activities, Range grazing–Riparian and/or Upland, Off-road vehicles, Natural sources, Habitat modification, Grazing-related sources, Forest management (fire suppression), Agriculture	12/31/2001	Temperature	4/05/2002	None	HQCWF	No
Taylor Creek (Beaver Creek to Wall Lake) Monitored Not supported NM-2503_23	2.63	Upstream impoundment , Recreation and tourism activities, Range grazing–Riparian and/or Upland, Off-road vehicles, Grazing-related sources, Forest management (fire suppression), Agriculture	2011	Turbidity	---	None	HQCWF	No
			2002	Temperature				
			2002	Aluminum–chronic	4/15/2002			
Taylor Creek (Perennial reaches abv Wall Lake) Monitored Not Supported NM-2503_24	19.8	Range grazing–Riparian and/or Upland, Natural sources, Grazing-related sources, Forest management (fire suppression), Agriculture	2011	Turbidity Temperature Aluminum–chronic Aluminum–acute	---		HQCWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

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Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan
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Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
Turkey Creek (Gila River to headwaters) Monitored Not Supported NM-2503_03	16.94	Natural sources, Forest management (fire suppression)	2011	Temperature Dissolved oxygen	---	None	HQCWF	No
Wall Lake Monitored Not supported NM-2504_10	14.33	Silviculture, Removal of Riparian vegetation, Range grazing–Riparian and/or Upland, Natural sources, Highway maintenance and runoff, Habitat modification (other than Hyrdromodification), Grazing-related sources, Forest management (fire suppression), Bank or shoreline modification/ destabilization, Agriculture	12/31/2017	Plant nutrients Dissolved oxygen Sedimentation/ siltation (bottom deposits)	---	None	CWF	No
Sapillo Creek (Gila River to Lake Roberts) Monitored Partially supported NM-2503_04	11.88	Upstream impoundments, Removal of Riparian vegetation, Off-road vehicles, Highway maintenance and runoff, Habitat modification (other than Hydromodification), Forest management (fire suppression), Bank or shoreline modification/ destabilization	2002	Turbidity Total organic carbon De-list letter for biological impairment	4/05/2002	None	HQCWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

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Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan
Page 7 of 9

Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
Mangas Creek (Gila River to Mangas Springs) Monitored Not supported NM-2502.A_21	6.17	Removal of Riparian vegetation, Recreation and tourism activities, Range grazing–Riparian and/or upland, Onsite wastewater systems (septic tanks) Off-road vehicles, Natural sources, Land disposal, Habitat modification (other than hydromodification) Grazing-related sources, Bank or shoreline modification/destabilization, Agriculture	2002	Plant nutrients	4/16/2002	None	MCWF	No
Bear Canyon Reservoir Not supported NM-2504_30	8.63	Removal of Riparian vegetation, Range grazing–Riparian, Habitat modification (other than Hydromodification), Grazing-related sources, Bank or shoreline modification/ destabilization, Atmospheric deposition, Agriculture	12/31/2017	Plant nutrients Mercury in fish tissue Dissolved oxygen Bottom deposits	---	None	CWF	No
Mimbres River (Sheppard Canyon to Cooney Campground) Monitored Not supported NM-2804_00	14.27	Resource extraction, Removal of Riparian vegetation, Range grazing–Riparian and/or Upland, Hydromodification, Habitat modification, Grazing-related sources, Dredging, Dredge mining, Agriculture	12/31/2017	Temperature Bottom deposits Dissolved oxygen	---	None	HQCWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

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Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan
Page 8 of 9

Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
Mimbres River (Perennial reaches below Sheppard) Monitored Not supported NM-2803_00	12.5	Range grazing–Riparian and/or Upland, Irrigated crop production, Hydromodification, Grazing-related sources, Dredging, Crop-related sources, Agriculture,	12/31/2017	Temperature Bottom deposits	---	Chino Mines Co. (NM0020435)	IRR	No
Gallinas Creek (Mimbres River to headwaters) Evaluated Partially supported NM-2803_20	20.27	Resource extraction, Natural sources, Removal of Riparian vegetation, Range grazing–Riparian and/or Upland, Irrigated crop production, Habitat modification, Grazing-related sources, Crop-related sources, Agriculture, Abandoned mining	12/31/2017	Temperature	---	None	CWF	No
Hot Springs Creek (Mimbres River to headwaters) Evaluated Not supported NM-2803_10	10.52	Unknown	12/31/2017	Unknown	---	None	CWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

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Table D6-1. Total Maximum Daily Load Status of Streams in the Southwest New Mexico Regional Water Plan

Waterbody Name (Basin, Segment) Evaluated or Monitored Support Status Assessment Unit ID	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	TMDL Written and Approved	NPDES Permits on the Reach	Uses Not Fully Supported [a]	Acute Public Health Concern
Cold Springs Creek (Hot Springs Creek to headwaters) Monitored Not supported NM-2803_11	9.71	Subsurface mining, Resource extraction, Mine tailings	12/31/2017	Zinc–acute Copper–acute	---	None	CWF	No

Source: New Mexico Environment Department. 2004. *Record of decision (ROD) for the 2004-2006 State of New Mexico §303(d)/§305(b) integrated list for assessed surface waters.* Surface Water Quality Bureau, Santa Fe, New Mexico. June 8, 2004. Available at <http://www.nmenv.state.nm.us/wqcc/303d-305b/2004/2004-2006ROD.pdf>.

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Table D6-2. Total Maximum Daily Load Status of Delisted Streams in the Southwest New Mexico Regional Water Plan
Page 1 of 5

Water Body Name (Basin, Segment) Evaluated or Monitored Support Status	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	NPDES Permits on the Reach	Uses not fully Supported [a]	Acute Public Health Concern
San Francisco River from Whitewater Creek to Largo Canyon (San Francisco River, 2601) Monitored Not supported	46.5	Unknown sources Natural sources	12/31/2001	Stream bottom deposits	None	MCWF	No
San Francisco River from Centerfire Creek to the New Mexico-Arizona border (San Francisco, 2602) Monitored Not supported	15	Unknown sources Natural sources	12/31/2001	Turbidity	None	CWF	No
Apache Creek at its mouth on the Tularosa River to Hardcastle Canyon (San Francisco River 2603) Monitored Not supported	8.73	Rangeland Removal of riparian vegetation Streambank modification/ destabilization	12/31/2001	Conductivity De-list letter for conductivity	None	HQCWF	No

Source: http://www.nmenv.state.nm.us/swqb

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LW = Livestock watering
WWF = Warmwater fishery
PCR = Primary contact recreation
LWWF = Limited warmwater fishery
IRR = Irrigation
mi = Miles (used for streams)
ac = Acres (used for lakes and reservoirs)
TMDL = Total maximum daily load
WBS = Water body segment
NPDES = National Pollutant Discharge Elimination System
WWTP = Wastewater treatment plant

Table D6-2. Total Maximum Daily Load Status of Delisted Streams in the Southwest New Mexico Regional Water Plan
Page 2 of 5

Water Body Name (Basin, Segment) Evaluated or Monitored Support Status	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	NPDES Permits on the Reach	Uses not fully Supported [a]	Acute Public Health Concern
Silver Creek from the mouth on Mineral Creek to Little Fannie Mine (San Francisco River, 2603) Monitored Not supported	3.3	Unknown sources Natural sources	12/31/2001	Turbidity Conductivity	None	HQCWF LW	No
Whitewater Creek from the mouth on the San Francisco River to Whitewater Campground (San Francisco River, 2603) Monitored Not supported	5.6	Unknown sources Natural sources	12/31/2001 Written and approved 4/11/2002	Metals	None	HQCWF	No
		Hydromodification Road maintenance/runoff Removal of riparian vegetation Streambank modification/destabilization	12/31/2001	Stream bottom deposits			
Mineral Creek from the mouth on the San Francisco River, 2603) Monitored Not supported	17	Unknown sources Natural sources	12/31/2001	Temperature	None	HQCWF	No

Source: http://www.nmenv.state.nm.us/swqb

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Table D6-2. Total Maximum Daily Load Status of Delisted Streams in the Southwest New Mexico Regional Water Plan
Page 3 of 5

Water Body Name (Basin, Segment) Evaluated or Monitored Support Status	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	NPDES Permits on the Reach	Uses not fully Supported [a]	Acute Public Health Concern
Gila River from Mangas Creek to Mogollon Creek (Gila River, 2502) Monitored Not supported	15	Agriculture Removal of riparian vegetation Streambank modification/ destabilization	12/31/2001	Stream bottom deposits	None	MCWF WWF PCR	No
Gila River from the New Mexico-Arizona border to Mangas Creek (Gila River, 2501, 2502) Monitored Not supported	38.6	Agriculture Removal of riparian vegetation Streambank modification/ destabilization	12/31/2001	Turbidity Stream bottom deposits	None	LWWF WWF MCWF PCR	No
Snow Canyon Creek from the confluence with Gilita Creek to Snow Lake (Gila River, 2503) Monitored Partially supported	1	Rangeland Upstream impoundment Unknown sources Removal of riparian vegetation Streambank modification/destabilization	12/31/2001	Stream bottom deposits	None	HQCWF	No

Source: http://www.nmenv.state.nm.us/swqb

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Page 4 of 5

Water Body Name (Basin, Segment) Evaluated or Monitored Support Status	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	NPDES Permits on the Reach	Uses not fully Supported [a]	Acute Public Health Concern
Sapillo Creek from the mouth on the Gila River to Lake Roberts (Gila River, 2503) Monitored Partially supported	5	Rangeland Hydromodification Upstream impoundment Removal of riparian vegetation Streambank modification/destabilization	12/31/2001 Written and approved 4/5/2002	Biological impairment	None	HQCWF	No
Mogollon Creek, perennial portions above the USGS gauge (Gila River, 2503) Monitored Not supported	12.6	Rangeland Resource extraction Unknown sources Removal of riparian vegetation Streambank modification/ destabilization	12/31/2001 Written and approved 4/5/2002 12/31/2001	Metals Stream bottom deposits	None	HQCWF	No
Carlisle Creek, perennial portions in New Mexico (Gila River, 2501) Monitored Partially supported	10	Resource extraction Rangeland Removal of riparian vegetation Streambank modification/ destabilization	12/31/2001	Metals	None	LWWF IRR LW	No

Source: http://www.nmenv.state.nm.us/swqb

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Table D6-2. Total Maximum Daily Load Status of Delisted Streams in the Southwest New Mexico Regional Water Plan
Page 5 of 5

Water Body Name (Basin, Segment) Evaluated or Monitored Support Status	Affected Reach (mi or ac)	Probable Sources of Pollutant	TMDL Due Date	Specific Pollutant	NPDES Permits on the Reach	Uses not fully Supported [a]	Acute Public Health Concern
Mangas Creek from the mouth on the Gila River to Mangas Springs (Gila River, 2502) Monitored Partially supported	4.7	Rangeland Hydromodification Removal of riparian vegetation Streambank modification/destabilization	12/31/2001	Stream bottom deposits	None	MCWF WWF PCR	No
Bear Creek from the mouth on the Gila River to the headwaters (Gila River, 2502) Monitored Partially supported	2.5	Resource extraction Rangeland Removal of riparian vegetation Streambank modification/ destabilization	12/31/2001	Metals	Cyprus Pinos Altos Corp (NM0029157)	MCWF WWF LWWF	No

Source: http://www.nmenv.state.nm.us/swqb

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Appendix D7

Mines, Mills and Quarries in the Planning Region

Control Dist.; 111 West Second Street, Pecos, TX 79772
Surface Estate: Bureau of Reclamation; 700 E. San Antonio St., RMB318, El Paso, TX 79901

UNITED SALT CORP. MILL ★3
Salt
United Salt Corporation
PO Box SS, Carlsbad, NM 88220
(505) 885-2105
Type of Operation: Other
Status: Active Mining
MSHA Number: 2901043
Location: Sec 1 T22S R29E
USGS Quad: Tower Hill South
Mineral Estate: Private Land

UNITED SALT CORP. MINE ★4
Salt
United Salt Corporation
PO Box SS, Carlsbad, NM 88220
(505) 885-2105
Type of Operation: Surface Mine
Status: Active Mining
MSHA Number: 2901042
Location: Sec 17 T23S R29E
USGS Quad: Loving
Mineral Estate: Private Land

Grant County

BANKS MINE (LOST NEW SUMMIT MINE #1)
Silica/Flux ★1
Micrex Develpoment Corp.
9176 N 103 Place, Scottsdale, AZ 85258
(612) 314-3708
Type of Operation: Adit (horizontal shaft)
Status: Active Mining
MSHA Number: 2901637
Location: Sec 26, 35 T16S R21W
USGS Quad: Steeple Rock
Mineral Estate: National Bank Mining Corp., PO Box 920, Duncan, AZ 85534
Surface Estate: BLM

CENTER MINE ★2
Silica / Flux
Royal Minerals Inc.
PO Box 920, Duncan, AZ 85534
(602) 359 2835
Type of Operation: Underground Mine
Status: Under Development
MSHA Number: 2900752
Location: Sec 1 T17S R21W
USGS Quad: Steeple Rock
Mineral Estate: Royal Minerals Inc., PO Box 920, Duncan, AZ 85534

KB MINE ★3
Silica / Flux/Other
Southwest Silica Flux Co., Inc.
PO Box 36, Hanover, NM 88041
(505) 538-9084
Type of Operation: Surface Mine
Status: Active Mining
MSHA Number: 2900018
Location: Sec 17 T17S R12W
USGS Quad: Allie Canyon
Mineral Estate: Federal; Southwest Exploration, Inc. PO Box 3026, Silver City, NM 88062
Surface Estate: USFS - Gila Nat'l Forest; 3005 E Camino del Bosque, Silver City, NM 88061

KM MINE ★4
Silica / Flux
Southwest Silica Flux Co., Inc.
PO Box 36, Hanover, NM 88041
(505) 538-9084
Type of Operation: Surface Mine
Status: Active Mining
MSHA Number: 2902134
Location: Sec 14 T28S R16W
USGS Quad: Hachita Peak
Mineral Estate: Federal; BLM, Las Cruces Dist. Office; 1800 Marquess, Las Cruces, NM 88005
Surface Estate: Same

Hidalgo County

LORDSBURG DIST./NORTH ATWOOD PORTAL
Silica/ Flux ★1
Lordsburg Mining Corp.
PO Box 1670, T or C, NM 87901
(505) 743-5215
Type of Operation: Other
Status: Active Mining
MSHA Number: 2902059
Location: Sec 12 T23S R19W
USGS Quad: Gary
Mineral Estate: Lordsburg Mining Corp.
PO Box 1670, T or C, NM 87901
Surface Estate: Various Private and BLM

McKinley County

PUEBLO ALTO MINE ★1
Humate
Reid Enterprises, LLC
PO Box 15159, Rio Rancho, NM 87174-0159
(505) 771-1810
Type of Operation: Surface Mine
Status: Active Mining
Location: NW Sec 15 T20N R7W
USGS Quad: Star Lake
Mineral Estate: Private Land

STAR LAKE MINE ★2
Humate
Reid Enterprises, LLC
PO Box 15159, Rio Rancho, NM 87174-0159
(505) 771-1810
Type of Operation: Surface Mine
Status: Active Mining
Location: NW Sec 10 T19N R6W
USGS Quad: Star Lake
Mineral Estate: Federal Land

Metals

Catron County

HIAWATHA AND LITTLE JIM CLAIMS ◩1
Tin
Volcanic Stone Company
4601 Sunny Circle SW, Albuquerque, NM 87105
(505) 877-6832
Type of Operation: Surface Mine
Status: Under Development
Location: SW/NW Sec 29 T9S R10W
USGS Quad: Taylor Peak
Mineral Estate: Federal; not provided

Cibola County

ANP NO. 2 MINE ◩1
Limestone
Acid Neutralizing Products, Inc.
3301 Coors NW, R-289, Albuquerque, NM 87120
(505) 899-3302
Type of Operation: Surface Mine
Status: Active Mining
Location: S/2 Sec 10 T7N R4W
USGS Quad: Cerro Verde
Mineral Estate: Federal; New Mexico and Arizona Land Co.; 333 N 44th St. #420, Phoenix, AZ 87120
Surface Estate: Bureau of Land Management; 435 Montano Rd. NW, Albuquerque, NM 87107

Grant County

BANKS MINE (LOST NEW SUMMIT MINE #1)
Gold ◩1
Micrex Develpoment Corp.
9176 N 103 Place, Scottsdale, AZ 85258
(612) 314-3708
Type of Operation: Adit (Horizontal Shaft)
Status: Active Mining
MSHA Number: 2901637
Location: Sec 26, 35 T16S R21W
USGS Quad: Steeple Rock
Mineral Estate: National Bank Mining Corp., PO Box 920, Duncan, AZ 85534
Surface Estate: BLM

BOSTON HILL ◩2
Metals
Town Of Silver City
P. O. Box 13880, Silver City, NM 88062
Type of Operation: Not given
Status: Standby/Temporary Suspension
USGS Quad: Silver City
Mineral Estate: Not given

CENTER MINE ◩3
Gold/Silver
Royal Minerals Inc.
PO Box 920, Duncan, AZ 85534
(602) 359 2835
Type of Operation: Underground Mine
Status: Under Development
MSHA Number: 2900752
Location: Sec 1 T17S R21W
USGS Quad: Steeple Rock
Mineral Estate: Royal Minerals Inc., PO Box 920, Duncan, AZ 85534

CHINO MINE AND MILL (SANTA RITA OPEN PIT AND IVANHOE CONCENTRATOR) ◩4
Molybdenum/Copper/Silver/Gold
Chino Mines Company/Environmental Dept.
PO Box 7, Hurley, NM 88043
(505) 537-4100
Type of Operation: Surface Mine and Mill
Status: Active Mining
MSHA Number: 2900708 and 2901882
Location: Sec 26,27,32-35 T17S R12W
USGS Quad: Santa Rita
Mineral Estate: Private Land; Chino Mines Co.; PO Box 7, Hurley, NM 88043
Surface Estate: Same

CONTINENTAL OPEN PIT MINE/MILL ◩5
Copper/Molybdenum/Gold/Silver
Cobre Mining Co., Inc.
303 Fierro Road, Hanover, NM 88042
(505) 537-3391
Type of Operation: Other
Status: Standby/Temporary Suspension
MSHA Number: 2900731 and 2900725
Location: Sec 3, 4, 9 T17S R12W
USGS Quad: Santa Rita
Mineral Estate: Private Land; Cobre Mining Co., Inc.; PO Box 424 (303 Fierro Road), Hanover, NM 88041
Surface Estate: Same

MALONE PROPERTY ◩6
Precious Metals
Louis Osmer
P. O. Box 587, Tyrone, NM 88065
(505) 538-2195
Type of Operation: Shaft (Vertical)
Status: Standby/Temporary Suspension
Location: NW/4 Sec 29 T19S R16W
USGS Quad: Eagle Eye Peak
Mineral Estate: Not given

MOUNT ROYAL MINE/MILL ◩7
Gold/Silver
Micrex Development Corporation
156 Laurier Drive, Edmonton, Alberta, Canada
(403) 484-2512
Type of Operation: Other
Status: Under Development
Location: NW/SE Sec 23 T17S R21W
USGS Quad: Steeple Rock

Mineral Estate: Private Land; Micrex Development Corp.; 156 Laurier Drive, Edmonton, Alberta, Canada
Surface Estate: Same

SUMMIT MINE ◩8
Gold/Silver
St. Cloud Mining Co.
PO Box 1670, T or C, NM 87901
(505) 743-5215
Type of Operation: Adit (Horiz. Shaft)
Status: Standby/Temporary Suspension
Location: Sec 35 T17S R21W
USGS Quad: Steeple Rock
Mineral Estate: Federal; Biron Bay Resources
Surface Estate: Same

TYRONE MINE/MILL ◩9
Copper
Phelps Dodge Tyrone, Inc.
PO Drawer 571, Tyrone, NM 88065
(505) 538-5331
Type of Operation: Surface Mine
Status: Active Mining
MSHA Number: 2900159
Location: Sec 3-5,8-26,28,29,32,33 T19S R15W
USGS Quad: Tyrone
Mineral Estate: Private Land; Phelps Dodge Mining Co.; PO Drawer B, Tyrone, NM 88065
Surface Estate: Same

Hidalgo County

LORDSBURG DIST./NORTH ATWOOD PORTAL
Silica/ Flux ◩1
Lordsburg Mining Corp.
PO Box 1670, T or C, NM 87901
(505) 743-5215
Type of Operation: Other
Status: Active Mining
MSHA Number: 2902059
Location: Sec 12 T23S R19W
USGS Quad: Gary
Mineral Estate: Lordsburg Mining Corp.
PO Box 1670, T or C, NM 87901
Surface Estate: Various Private and BLM

VOLCANO MINE ◩2
Other
Dane Mining & Exploration Ltd.
PO Box 2129, Road Forks, NM 88045
(505) 542-8416
Type of Operation: Surface Mine
Status: Standby/Temporary Suspension
MSHA Number: 2901878
Location: Sec 17 T23S R21W
USGS Quad: Doubtful Canyon
Mineral Estate: Private Land; Judy Dane; PO Box 2129, Road Forks, NM 88045
Surface Estate: Same

Lincoln County

CAPITAN IRON MINE ◩1
Iron
El Capitan Ltd.
P. O. Box 1319, Capitan, NM 88316
(505) 354-7201
Type of Operation: Mill
Status: Active Mining
Location: Sec 10 T8S R14E
USGS Quad: Jacob Spring
Mineral Estate: Private Land; Don Rodolph and Norbert Rother; 123 56th Street, Clinton, OK 73601
Surface Estate: Don Rodolph and Norbert Rother; 124 56th Street, Clinton, OK 73601

Luna County

ASARCO DEMING MILL ◩1
Zinc/Copper
Asarco, Inc.
P. O. Box 5747, Tucson, AZ 85703
(520) 798-7745
Type of Operation: Other
Status: Under Development
Location: Sec 20 T23S R9W
USGS Quad: Deming West
Mineral Estate: Not given

DEMING MINERALS JIGGING PLANT ◩1
Manganese
American Minerals, Inc.
PO Box 389, Deming, NM 88031
(505) 546-7415
Type of Operation: Mill
Status: Active Mining
MSHA Number: 2901582
Location: Sec 25 T23S R9W
USGS Quad: Deming East
Mineral Estate: Private Land; American Minerals, Inc.; 3666 Doniphan Dr. El Paso, TX 79922

Sierra County

BURBANK CANYON ◩1
Precious Metals
Titan Mining/The Beenah Group
P. O. Box 2085, Thousand Oaks, CA 91358-2085
(805) 375-3759
Type of Operation: Other
Status: Under Development
MSHA Number: 2902077
Location: Sec 4 T16S R4W
USGS Quad: Caballo
Mineral Estate: Federal; BLM; 1800 Marquess St., Las Cruces, NM 88005
Surface Estate: Same

Taos County

QUESTA MINE/MILL ◩1
Molybdenum

Smelter, Converters & Refineries

Grant County

CHINO HURLEY SMELTER □1
Copper/Gold/Silver/Sulfuric Acid
Chino Mines Company/Environmental Dept.
PO Box 7, Hurley, NM 88043
(505) 537-4100
Type of Operation: Smelter
Status: Active Mining
Location: Sec 31 T18S R12W
USGS Quad: Silver City
Mineral Estate: Private Land; Chino Mines Company, PO Box 7, Hurley, NM 88043
Surface Estate: Same

Hidalgo County

HIDALGO SMELTER □1
Copper/Silver/Gold/Sulfuric Acid
Phelps Dodge Mining Co.
PO Drawer B, Tyrone, NM 88065
(505) 436-2211
Type of Operation: Smelter
Status: Active Mining
MSHA Number: 2902070
Location: Sec 22 T29S R17W
USGS Quad: Playas Lake South
Mineral Estate: Private Land; Phelps Dodge Corp., 2600 North Central Ave., Phoenix, AZ 85004-3015

Uranium Mining & Milling

Cibola County

MOUNT TAYLOR MINE ◆1
Uranium
Rio Grande Resources Corp.
PO Box 1150, Grants, NM 87020
(505) 287-7971
Type of Operation: Underground Mine
Status: Standby/Temporary Suspension
MSHA Number: 2901375
Location: E/2 Sec 24 T13N R8W
USGS Quad: San Mateo
Mineral Estate: Private Land; Chevron

McKinley County

AMBROSIA LAKE MILL ◆1
Uranium
Quivira Mining Co.
PO Box 218, Grants, NM 87020
(505) 287-8851
Type of Operation: Mill
Status: Active Mining
MSHA Number: 2900776
Location: All Sec 31 T14N R9W
USGS Quad: Ambrosia Lake
Mineral Estate: Private Land; Bank of Commerce; PO Box 17089, Ft. Worth, TX 76102
Surface Estate: Quivira Mining Company; PO Box 218, Grants, NM 87020

CHURCHROCK ISL MINE ◆2
Uranium
Hydro Resources, Inc.
PO Box 777, Crownpoint, NM 87313
(505) 786-5845
Type of Operation: Other
Status: Under Development
Location: SE/4 Sec 8 T16N R16W
USGS Quad: Church Rock
Mineral Estate: Private Land; HRI, Inc.; 12377 Merit Dr., Dallas, TX 75251
Surface Estate: Same

CROWNPOINT ISL MINE ◆3
Uranium
Hydro Resources, Inc.
PO Box 777, Crownpoint, NM 87313
(505) 786-5845
Type of Operation: Other
Status: Under Development
Location: SE/4 Sec 24 T17N R13W
USGS Quad: Crownpoint
Mineral Estate: Private Land; HRI, Inc.; 12750 Merit Dr.; Ste 1210 LB 12, Dallas, TX 75251
Surface Estate: Same

SECTION 19 MINE ◆4
Uranium
Quivira Mining Co.
PO Box 218, Grants, NM 87020
(505) 287-8851
Type of Operation: Shaft (Vertical)
Status: Active Mining
MSHA Number: 2900541
Location: SE/NW Sec 19 T14N R9W
USGS Quad: Ambrosia Lake
Mineral Estate: Private Land; Quivira Miining Co.; PO Box 218, Grants, NM 87020
Surface Estate: Same

SECTION 22 MINE ◆5
Uranium
Quivira Mining Co.
PO Box 218, Grants, NM 87020
(505) 287-8851
Type of Operation: Shaft (Vertical)
Status: Active Mining