

Historic and Future Droughts in the Big Bend Region of the Chihuahuan Desert

WWF Project Final Report

*Brent McRoberts and John Nielsen-Gammon
Office of the State Climatologist, Texas
Texas A&M University, College Station, Texas*

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Summary

The future of ecosystems in the Big Bend region of the Chihuahuan Desert largely depends on the response to future droughts. Most of the precipitation in the region falls in the 6-month period from May to October due in large part to the Southwestern United States monsoon. There is considerably less interannual variability in precipitation during these 6 months than in the rest of the year. The interannual variations tend to occur simultaneously throughout the region, indicating that drought is a regional-scale rather than a local-scale phenomenon despite the hit-or-miss nature of summertime convection.

There is uncertainty in the future of precipitation in the region, but the interannual variability of precipitation is expected to far outweigh any change in the long-term trend. However, future temperatures are expected to significantly increase, so past precipitation and temperature records were examined to determine periods that would serve as analogs for drought in a warmer overall environment. The identification of analogs relies in part on a detailed assessment of station metadata to assess the quality of their precipitation and temperature records. There is a greater availability of quality precipitation records in the region than temperature records, which are more influenced by changes in the land surrounding an observation site.

Several future drought analogs were identified for the region. Most of the analogs occurred in the late 1990s or early 2000s. It is likely that some future droughts will occur with temperatures well beyond what has previously been observed in the area.

Introduction

An assessment of current and past precipitation and temperature patterns and an understanding of future patterns is essential for the identification of the potential impacts of future droughts in the Big Bend region of the Chihuahuan Desert (BB-CD). The identification of useful past drought analogs will provide useful lessons regarding the natural resources most affected by drought in the BB-CD. In order to identify drought analogs, stations in the BB-CD were thoroughly investigated to find a network of reliable, long-term stations to accurately portray the history of drought in the region. The climate records from these stations were then examined for evidence of past

drought events that would be similar to future droughts under climate change projections.

Although the Chihuahuan Desert extends well into Mexico (Fig. 1), this study was constrained to the United States section north of the Rio Grande River. Stations used in analyses are part of the Cooperative Observer Program (COOP) network of stations run by the National Weather Service and data were obtained from the National Climatic Data Center (NCDC). The northern boundary of the study area was chosen to be Roswell, NM, and the COOP stations used were located between the Rio Grande and Pecos River.

NCDC climate division data, some of which dates back to 1895, were used to compute monthly averages of precipitation (Fig. 2) for one Texas and four New Mexico climate divisions (Fig. 3). Precipitation in each climate division neatly separates into a warm season (May–October) and a cool season (November–April). In the BB-CD, the warm season coincides with the local growing season. Average monthly precipitation during the cool season is less than an inch throughout the BB-CD. Precipitation generally increases during the late spring before reaching a maximum during the summer months. About 70% of the annual precipitation falls in the warm season months in a typical year. The summertime precipitation maximum in the BB-CD can be attributed in large part to the summer monsoon.

While climate division data can provide a general overview of the past precipitation climate, these divisions do not provide an ideal segmentation of the BB-CD. The local distribution of precipitation in the region is largely controlled by the relationship between the topography and the wind direction, with precipitation favored in locations where topography has caused the air to ascend. One might expect year-to-year (or longer-term) changes in wind patterns to lead to wetter conditions in some areas and drier conditions in others. The BB-CD region lies near the eastern edge of the North American Cordillera, with the Pecos drainage generally lying east of the easternmost mountains and the Rio Grande drainage within and above Big Bend lying within the mountains.

Based on these topographic features, the COOP stations in the BB-CD were geographically grouped into four basins, the Upper Pecos, Lower Pecos, Upper Rio Grande, and Lower Rio Grande (Fig. 4). Precipitation records at BB-CD stations are analyzed to determine periods of historical drought. The best analogs of future drought in the BB-CD region will be those that have a lack of rainfall in a temperature regime thought to be typical of future conditions, i.e., warmer average temperatures. Therefore, station temperature records in the area likewise underwent a thorough investigation.

Metadata analysis of long-term COOP stations

The initial stage in the metadata analysis was to determine which COOP stations in the BB-CD contained a sufficient amount of data to continue with further analysis. In order

to restrict attention to COOP stations with a comprehensive historical dataset, including the drought of record in the 1950s, each station was required to have at least 50 years in its period of record. The hundreds of candidate COOP stations in the study area were narrowed to 24 stations in New Mexico and 27 stations in Texas (Table 1) that would be included in the analysis of historical metadata documents.

Each candidate COOP station was investigated to determine non-climatic, artificial changes over its period of record. Detailed metadata documents at each COOP station were obtained via the NCDC Environmental Document Access and Display System (EDADS) portal. Although station metadata reports were not originally designed specifically for long-term climate studies, the documents contain critical information pertaining to artificial changes in data. With few exceptions, the station documents are forms filled out by either an inspector or an observer that includes information on changes to the station. This metadata record is notoriously incomplete, particularly with regard to the timing of changes, but it is generally possible to compare the station characteristics early in the period of record to present-day characteristics.

Each COOP station contains a summary document that lists reported station location moves, changes in observers, instrumentation changes and other major issues, starting at the inception of the station and lasting until the 1970s. During the first half of the 20th century, the summary document makes metadata analysis more complete since specific dates of major changes were generally not well documented. An example of the summary document is included for COOP station 290600, Artesia 6S, NM (Fig. 6). The summary documents also correct station coordinates and elevations to more accurately reflect the real station locations, since the estimates were generally imprecise in the early 20th century.

The remaining metadata documents at each COOP station either denoted station inspections, prior to the 1970s, or denoted station changes, from the 1970s to the present. From the early 1940s until the modernization of the station change forms in the late 1980s, observers/inspectors were required to sketch the station's observation site. The sketches were intended to point out possible obstructions, trees and buildings, e.g., to the equipment would provide less than ideal exposure to record data. More recent forms list the information digitally in terms of distance and angle of surrounding exposures. Figure 5 is an example of one of the first station inspection forms, for COOP station 290600 documented on April 24, 1906, the initial inspection.

Following is an example of information that can be denoted from a station inspection document (Fig. 5) and the station history summary (Fig. 6) for the origin of COOP station 290600 on June 4, 1905:

- Initial station observations: Precipitation and temperature
- Original equipment: Cotton region shelter, Max-Min thermometer, Standard rain gauge

- Original coordinates: 32°51'N 104°24'W
- Original elevation: 3350'
- Original observer: Will Benson
- Original description: Station is in village of Artesia on level land at a house on the W side of First Street. Much land on ranges open for cattle both E and W of station.
- Time of observation: 18:00
- CRS: On cultivated ground, door faces N with bottom of shelter is 3.5'agl
- SRG: Top of gauge is 3.25'agl
- Exposure: Building 40' from CRS and 65' from SRG
- Remarks: Break in record from 3/31/1907 – 1/17/1910.

After the initial documentation at a COOP station, it is important to denote changes that might produce non-climatic, artificial changes in the data record. Below is information that was documented from a station move (Fig. 7) for COOP station 290600 on February 2, 1967, with the sketch of the observation site also documented (Fig. 8):

- Station relocation: 5mi. SSE of previous location
- New coordinates: 32°46'N 104°23'W (-4'N, -1'W)
- New elevation: 3320 (-65')
- New observer: NMSU – Southeastern Branch (Radio station KSVP)
- New description: Generally level in the immediate vicinity with rolling plains in the distance.
- Time of observation: 07:30 (17:00)
- Exposure (New location): Tree to NE (38°), residence to E (15°), office with greenhouse to SE (18°), tree to S (28°), State Road 229 to N, entrance road to E
- Remarks: Change in station name to Artesia 6S

Assessment of long-term COOP stations

The station metadata history analysis was followed by a subjective assessment on the magnitude of the effect each recorded metadata change might have on the precipitation record, temperature record, or both at each COOP station. The quality of a precipitation or temperature record is inversely proportional to the number and significance of artificial changes over its history.

Nearly every bit of information that changed from one period of time to another in each station's record was recorded, but some metadata are more likely to indicate artificial changes than others. Below is a list of common and influential non-climatic changes a station record may contain:

- Station relocation
- Equipment move
- Equipment change

- Repairs to existing equipment
- Elevation change
- Change in observer
- Change in obstructions surrounding the station
- Change in the land use surrounding the station
- Change in the time of observation
- Change in the observing practices/forms
- Destruction or degradation of equipment by humans, animals, or nature

Changes in land use that have impacts temperature records in the BB-CD are the growth of irrigated farming and urbanization. Irrigated fields can lower warm season maximum temperatures relative to nearby non-irrigated areas, creating an artificial cooling effect. Urbanization results in an artificial increase in temperatures relative to surrounding areas, and its effects are more pronounced during nighttime hours, which can artificially inflate minimum temperatures.

Because changes in land use surrounding a station may not be fully documented in the station records, the locations of each station over time were examined using Google Maps to identify likely changes in land use caused by station moves.

An example of urbanization in the BB-CD is the COOP station at Ysleta, which transitioned from being surrounded by irrigated farmland to its current location in a parking lot. In the period 1964-1994, the least-squares linear trend was more than +7°F for average December minimum temperatures at Ysleta, compared to only +1°F for maximum temperatures. Over the same period, nearby COOP stations at Candelaria and Conduras Service Station, both unaffected by urbanization, reported December minimum temperature trends between +1°F and +2°F.

Changes in time of observation (TObs) produce sudden discontinuities in temperature records rather than a gradual warming or cooling of temperatures over time. While TObs changes can cause dramatic inhomogeneities in a station's temperature record, these changes are generally well documented, whereas changes in land use are more gradual and ambiguous.

Morning observation times are artificially cooler than observation times at other times of the day since daily temperature minima normally occur in the morning hours. When an exceptionally low minimum temperature occurs around the time of observation, it is "double counted". The minimum temperature is recorded for the previous 24 hours, and the minimum temperature for the following 24 hours will be similar to the minimum recorded, regardless of the temperature the following morning. Conversely, stations with afternoon observation times tend to be artificially warmer than other times of the day, since exceptionally warm days are "double counted".

An example of a station where time of observation corrections would be useful is at Bitter Lakes Wildlife Refuge (Fig. 9). Other than a change of observation time on January 22, 1969, this station was dubbed as a “pristine” station containing very few inhomogeneities in its climate record. Prior to 1969, the time of observation was 5:00 PM LST and this led to an artificial warming of the temperature record. From 1969 through the present, the time of observation has been 8:00 AM LST, and a noticeable discontinuity appears in both the cool season and warm season temperature record. Though the long-term trend appears to be close to zero, an adjustment of the time series to correct for time of observation would indicate a long-term increase in temperatures.

Artificial changes in the precipitation records of stations in the BB-CD resulted from changes in land use, nearby obstructions, and elevation. A change in the land from native vegetation to irrigated farmland can cause a change in the precipitation microclimate of the station, resulting in an artificial increase in warm season precipitation. Nearby obstructions can alter the ability of the rain gauge to intercept precipitation, and these include trees, tall buildings, and even damage caused by humans. Several obstructions were documented at the La Tuna 1S station, located at a Texas Correctional facility since 1943. However, the overall effects of obstructions on the precipitation records in the BB-CD appear to be minor.

The effects of station moves in regions with large gradients in elevation, such as the Upper Rio Grande, led to inhomogeneities in the precipitation record at some stations. An example of a station where changes in location can have a drastic effect on expected precipitation is Alamogordo, which is located to the west of the Sacramento Mountains. The approximate location of the Alamogordo COOP station for three different time periods is shown on Figure 10.

Each location of the Alamogordo COOP station was paired with a co-located PRISM grid point 1971-2000 annual precipitation normal. The PRISM climate group at Oregon State University produces high-resolution, gridded precipitation datasets using a digital elevation model, and the resolution was fine enough to produce a different normal for each of the three locations. The Alamogordo station was moved 1.3 miles to the southeast in 1953, and one can see a significant increase in the average precipitation even though the 1971-2000 annual normals at each location are similar (Fig. 11). However, the location of the station from 2003-present is more than 4 miles to the north of the 1953-2002 location, with an increase in the 1971-2000 annual normal of almost three inches (Fig. 11). This would suggest that a real increase in the precipitation at the Alamogordo station occurred during the second half of the 20th century, but that the annual precipitation totals after 2002 will be artificially inflated relative to the precipitation record from 1910-2002.

Each date regarded as a metadata change point at a particular COOP station was assessed a numerical ranking from zero (no artificial change) to five (major artificial

change), with separate rankings for precipitation and temperature impacts. The Appendix contains the complete metadata analysis along with a short summary describing the overall quality and qualitative ranking (poor, fair, good, very good, excellent) of each station's precipitation and temperature record. Table 2 is a summary of the precipitation/temperature rating each station was given for its period of record, organized by basin.

The assessment of station metadata found that high quality historical records (very good and excellent) were more abundant for precipitation than temperature in the BB-CD (Table 2). Perhaps the main reason for the lack of high quality temperature records is their higher sensitivity to changes at a station than precipitation records. A spatial representation of the quality of precipitation records shows that lower quality stations are most numerous in the mountainous areas of New Mexico. The spatial distribution of the lower quality temperature records was more random.

Precipitation and temperature characteristics of the BB-CD

After assigning each of the COOP stations to one of the four basins, the long-term trends and spatial patterns of precipitation were examined using "quality" station records in each basin. The spatial and temporal variations in precipitation across the BB-CD are more complex than with temperature, so past precipitation will be analyzed in detail followed by a brief assessment of temperature characteristics in the BB-CD.

Each basin has a unique annual precipitation cycle (Fig. 12), with the same basic warm season and cool season precipitation pattern seen in the climate division data. The Lower Pecos has a bimodal annual distribution with a secondary late spring maximum that is characteristic of much of Texas. The Lower Rio Grande has a summer maximum that coincides with the summer monsoon season, and picks up more than 50% of its normal precipitation from July through September.

Farther north, the Upper Pecos has a distinct maximum in September while the Upper Rio Grande basin has a distinct August maximum. In each basin, precipitation normally decreases drastically during the fall months, and in each basin except the Upper Rio Grande stays dry during the winter and early spring. In the Upper Rio Grande, there is an increase in moisture during December as frontal boundaries bring precipitation to high elevation areas, often in the form of snow.

Interannual variations of precipitation tend to be spatially uniform throughout the BB-CD, which indicates that drought is a regional-scale rather than a local-scale phenomenon. Time series of cool and warm seasonal precipitation were created using COOP stations in each basin considered to have a "quality" precipitation record (Table 2). The inter-annual variability of warm season precipitation (Fig. 13) is considerably less relative to cool season precipitation (Fig. 14), as measured by changes in percent of normal precipitation.

The seasonal precipitation in each basin has a positive 1911-2010 linear trend, except for the cool season precipitation in the Upper Pecos basin. However, the magnitude of the precipitation trend in each basin is small when compared to the year-to-year variability of precipitation. Therefore it is difficult to make any sound judgment about future precipitation based on an extrapolation of the long-term trend into the future.

Further investigation of the interannual changes in the warm season precipitation reveals that rainfall in the Lower Pecos basin is more variable than in the rest of the BB-CD, and in particular more variable than the Lower Rio Grande basin (Fig. 15). Precipitation in the Lower Pecos normally decreases during the early summer, whereas it is increasing in the other basins. This would suggest that the summer monsoon does not exert as much influence in the Lower Pecos as in other regions of the BB-CD and thus this region is more susceptible to drought conditions.

The availability of quality temperature records in the BB-CD is sparse before 1950, so time series of temperature over the past 100 years will be shown using climate division data. As with interannual variations in precipitation, interannual variations in temperature are mostly synchronous throughout the BB-CD in both the cool season (Fig. 16) and warm season (Fig. 17). The century-long temperature in both seasons shows a +1°F to +2°F increase in all climate divisions, with a higher magnitude of temperature increase since the 1970s.

Time series constructed using reliable COOP stations indicate a significant warming trend in both the cool season (Fig. 18) and warm season (Fig. 19) temperatures since the 1970s. Both the climate division and station data show that the interannual variability in cool season temperature is higher than that in the warm season. In the past 15-20 years, there have been very few warm seasons in each basin where temperatures were not above normal relative to the overall temperature record. In fact, every warm season in the BB-CD has been above normal since 1993 when using stations with quality records.

Furthermore, the recent warming may be somewhat underestimated by station data as more than half of the stations with quality temperature records had a shift from afternoon to morning observations. As explained earlier, a shift to daily morning observation time from afternoon observing introduces an artificial cooling bias into the temperature record. It is clear that the climate in the BB-CD has warmed over the past century and this warming has accelerated since the 1970s.

Impacts of projected climate change on future droughts

Temperatures are projected to continue increasing throughout the 21st century, and the warming is may accelerate as time goes by, depending on future emissions and other factors. Average temperatures in the BB-CD are expected to rise 3°F to 5°F by the middle of the 21st century (Nielsen-Gammon 2008). When considering interannual

variability, even cool years during the middle of the 21st century will be normal or above normal relative to current temperatures.

The effects of climate change on precipitation are much less predictable, with models suggesting a slight decrease in precipitation across Texas. However, changes in precipitation are projected to be much smaller than the natural variability. For a given amount of precipitation, evaporation increases with increased temperatures and this will make future droughts even if rainfall stays the same. Additionally, increased evaporation will create dwindling water supplies and the projected increase in population will further decrease water.

Warm season temperatures show less variability than cool season temperatures, so the expectation is that future summertime temperatures will be consistently warmer than what has been recorded in the 20th and early 21st centuries. The situation in the BB-CD is eye-opening because the majority of precipitation falls during the warm season. Therefore, the availability of water will depend more and more on cool season precipitation, which is normally sparse in the BB-CD.

There are two things that are fairly certain in the BB-CD: because of the natural variability of precipitation, droughts will occur and secondly, droughts will take place in a warmer environment. Therefore, the best drought analogs would be those that combine high temperatures and a lack of precipitation, though none of the previously observed temperatures are likely to be warm enough for the middle to late 21st century.

Analogs of future drought were determined separately for cool and warm seasons, and used all available COOP station data. For each year from 1895-2009, stations with data were averaged to calculate the basin-wide percent of normal precipitation and temperature departure. The cool season analogs for future droughts were found to be 2000 and 2006, each with a temperature more than 2.5°F above normal (Fig. 20). The best warm season analogs were found to be 1934 and 1998 (Fig. 21), both about 3°F above the warm season period of record mean.

Cool season droughts tend to be more severe, relative to percent of normal precipitation, than warm season droughts. In both the 2000 (Fig. 22) and 2006 (Fig. 23) cool season analogs, the deficiency in precipitation was all-encompassing, with most stations receiving less than half of the normal warm season precipitation. The 1934 warm season (Fig. 24) precipitation was much below normal, but the extent of the warmth is difficult to assess due to a lack of data. The 1998 warm season precipitation (Fig. 24) was roughly 50%-75% of normal in most locations with a few stations slightly above normal. All 26 stations reporting temperature in the 1998 warm season (Fig. 24) were above normal, and overall temperatures are probably representative of an "average" summer by the middle of the 21st century.

It should be noted that the analogs represent what are projected to be typical temperatures in the next few decades. Each analog is about 3°F above normal relative to the available temperature record. There are no analogs currently available to characterize droughts during an unusually warm future year. Therefore, it is recommended that in order to get a true sense of future “worst case scenario” droughts, changes in location should also be considered. For example, because temperature increases and precipitation decreases with altitude, future drought-like conditions at a given location may correspond to current drought-like conditions at a location a thousand or so feet lower in altitude.

Figures



Figure 1. The Chihuahuan Desert in the United States and Mexico.

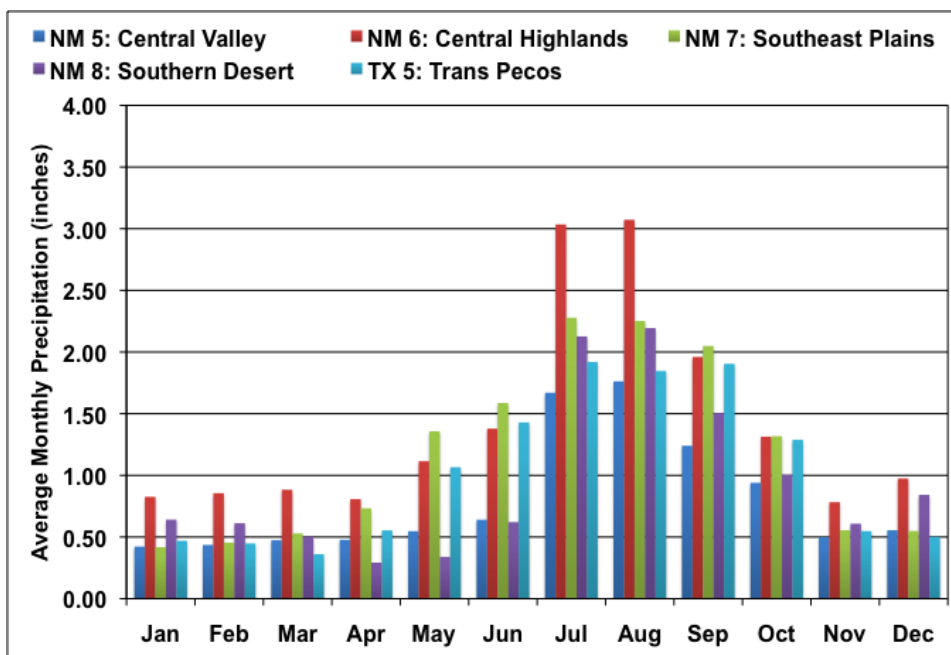


Figure 2. Average monthly precipitation for the period 1895-2009 in the climate divisions located in the BB-CD.

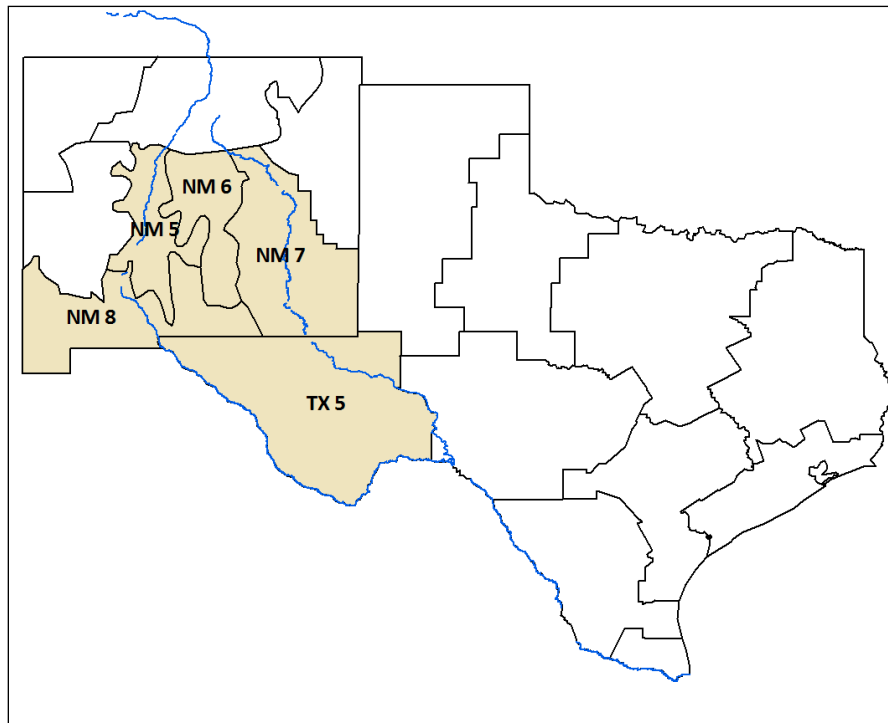


Figure 3. Map of four New Mexico climate divisions and Texas CD 5 in the BB-CD (tan).

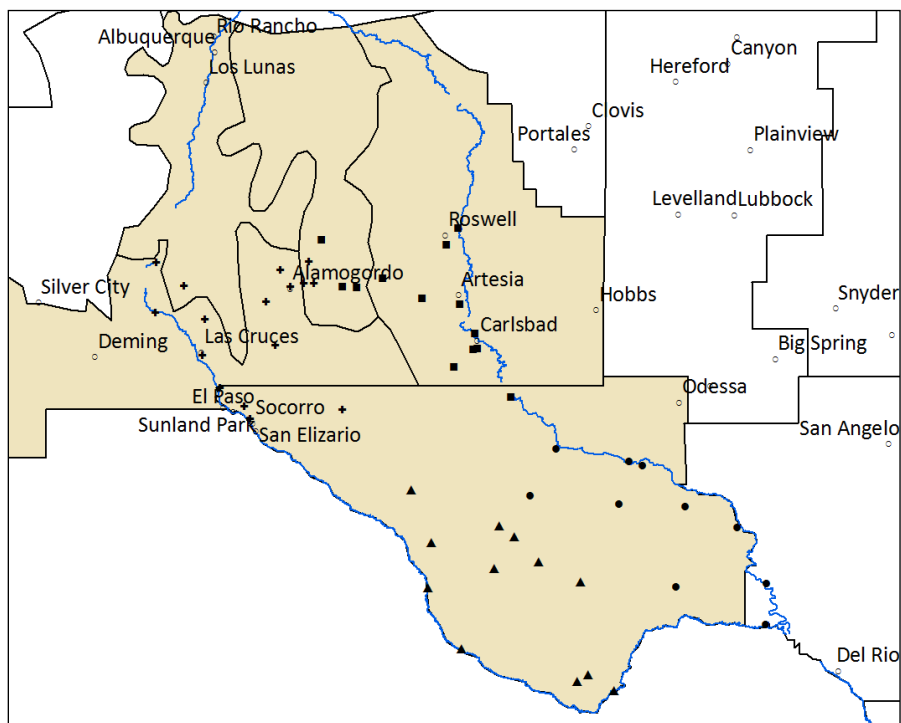


Figure 4. The four basins of the BB-CD: the Upper Pecos (square), Lower Pecos (circle), Upper Rio Grande (plus sign), and Lower Rio Grande (triangle).

Form No. 4029-Mis.
U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Description of Cooperative Observer's Station and Instruments.

Station: Artesia ; County: Eddy ; State: N. Mex
 Latitude: 32° 55' Authority: _____
 Longitude: 104° 25' Authority: _____
 Elevation of ground above sea level: 3350 Authority: Pecos Valley R.R.

EQUIPMENT.

Kind of thermometers in use: Govt. Mex & Min.
 Kind of shelter in use: Cotton region
 Kind of rain gage in use: standard

Location of shelter [Describe position, whether over sod or cultivated ground, or upon a building, etc.; distance from nearest high objects; direction toward which door opens; height of floor above ground]:
On cultivated ground, 40 ft. to nearest high object, door faces north, floor 41 in. from soil.

Location of rain gage [On ground or building; distance from nearest high objects; height of top of gage above ground]:
On ground, 65 ft. from high object, top of gage 39 inches from ground.

General description of station [Is country generally level, rolling, or mountainous; if forest or bodies of water in vicinity, give distance from shelter, approximately; if station is in town, give street and number of house]:
Station is in village of Artesia; land level; house on west side of 1st Street.

Time of observation [local]: 6 pm.
 Name of observer: Will Benson
 Postoffice address: Artesia, New Mex.
 Date: April 29, 1906

10,000-12, 1905.

SCANNED
ORKAND

Figure 5. Station form for COOP station 290600 for April 24, 1906, denoting the first inspection of the station.

UNITED STATES DEPARTMENT OF COMMERCE
WEATHER BUREAU
SUBSTATION HISTORY

Office preparing form Albuquerque, N.M.

Station ARTESIA 65 County EDDY State NEW MEXICO Index No. 060027 Date prepared Jan. 21, 1953

Location	Latitude	Longitude	Sec. Twp. Rng.	Elevation mst	Direction and distance from Post Office	Station known as	Description of exposure
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1st	32° 51'	104° 24'		3350	On First Street near PO	ARTESIA	On ground, shelter 40' from building RG 65' from building
2nd	32° 51'	104° 24'		3350	At High School	"	
3rd	32° 50'	104° 24'		3350	1 1/3 mile SSE of PO	"	On ground
4th	32° 51'	104° 24'		3375	6 blocks NE of PO	"	On ground
5th	32° 50'	104° 24'		3385	1.2 mile South of PO	Artesia	Moved by 1/2 mile SSW to Radio Station KSWP
6th	32° 46'	104° 23'	16 18S 26E	3320	6 miles South	Artesia 65	Eqmt. relocated 5 miles SSE.

(Con't)	Instruments used	Record			Observers and Dates	Remarks
		Original located	Where published	Dates 1st and last observations		
(a)	(i)	(j)	(k)	(l)	(m)	(n)
1st	CBS, Mx, Mn, SRG	WEAS	IMOD	6/04/05 3/1/21	Will Benson 6/05 to 3/21	Break in record from 3/31/07 to 1/17/10
2nd	same	Artesia, N.M.	"	4/1/21 6/30/28	R.W. Bruce 4/21 to 12/20	
3rd	same	"	"	7/1/28 2/28/35	R.A. Denton, W.G. Martin 1/32 to 7/32 8/32 to 2/35	Evidently same location for Bruce, Denton & Martin 7/28 to 2/35
4th	CBS, Mx, Mn, SRG, RRG	"	EMOD & Hydro	3/1/35 1/31/67	Southern Union Gas Co. 3/35 to 1/31/67	RRRG added 3/8/40 RRRG moved 10' NW 11/17/61
5th	Mx, Mn, SRG, RRG	NWRC	CD, HPD	2/1/67 3/26/68	Radio Station KSWP 2/1/67 to 3/26/68	
6th	Mx, Mn, SRG, RRG	NWRC	CD, HPD	3/27/68 2/1/73	NWSU - Southeastern Branch 3/27/68 to 2/1/73	Eff. 3/23/71, equipment moved 200' South to improve exposure.

Eff. 10/16/73, F/P gage installed & commissioned.
*Installed solar panel and rechargeable battery eff. 10/22/80.

WB Form 830-1

Figure 6. Summary document of major station changes for COOP station 290600.

Coded For: CSM 4/8/68
 U. S. DEPARTMENT OF COMMERCE
 ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
 WEATHER BUREAU

WB Form 531-1 (Duplicate) (10-67) Complete rendition No. 5
 Supplement letter _____
 To complete No. _____
 Network AB (a, ab, b, c, x)

REPORT ON SUBSTATION

Substation Artesia, 6S County Eddy State New Mexico

Station number 29-0600-7 Latitude 32° 46' Longitude 104° 23' 5 miles SSE
(Punch card code to 7 digits) (Dist. & dir. from previous locations)

Section 16 Township 18S Range 26E Elevation 3320 USGS BM
(Feet, meters) (How determined)

Equipment is located at Southeastern Br. Exp. Station which is outside city or town limits
(Street address, bldg. name, highway No., etc.) (Within or outside)

Location is 6 miles South of Post Office at Artesia, New Mexico
(Indicate miles to town or feet and direction)

Weather Bureau services (records and/or reports) (Paid) None
(River, evaporation, temperature and/or precipitation, rainfall (river), etc., for S&E substations and evapo-ration, recording, reporting (river/rainfall) etc., followed by working fund symbol (FC-1, FC-3, IRPN-1, etc.) for stations operated with transferred funds)

(Non-Paid) Temperature & Precipitation (S&E), Recording (RC-1)

Wage Rate None Authorization Cir. II, 1964
(Indicate Funds) (Date and reference letter authorizing establishment and/or payment)

Instrumental equipment Mr. Mn. CRS. SRG. RRNG (12" D.T., 24 Hr.)
(List equipment; indicate ownership if not Weather Bureau. Indicate if precipitation gage is shielded)

Serial numbers of weighing rain gage WBZ 51791 596-39
(WB No.) (Manufacturer's No.)

Time of observation 7:30AM 7:30AM Time zone Mountain Drainage Pecos - 11
(Precipitation) (Temperature) (Pacific, Central, etc.) (Name and No. as listed in CD)

Reports (other than forms) transmitted by _____ Sent to _____
(Telegraph, phone, radio, etc.)

Data reported _____ Reporting criteria _____
(Temperature, precipitation, river stage, etc.) (Daily, weekly, 0.1 inch precip., etc.)

Charts No. 1028-C RSMS Record forms No. 612-14 NWRC
(Mailed to) (Mailed to)

Record published Temp. & Precip. in N. Mexico LCD; Hrly. Precip. in N. Mexico HPD.
(Name of publication and in which publication)

Observer Route 1, Box 121 Phone: Home None Office 746-4908
(ZIP Code)

Address: Mail Artesia, New Mexico - 88210 Freight Same

OCCASION FOR THIS REPORT 1. Establishment 2. Relocation of equipment 3. Discontinuance
 4. Publication of record 5. Change of observer 6. Change of station name; station formerly known as Artesia
(Change in operating conditions, equipment, fees to observer, etc.)

Remarks: feet decrease in elevation. Records will be compatible and are continuous.
(Pertinent information such as reason for discontinuance, substitute observer, serial numbers of river gage, etc.)
This also reflects a change in time of observation from 5:30P to 7:30AM.

SCANNED
07/11/82

3-27-68 Wallace W. Reed 4-1-68
(Effective date) (Name of person submitting form) (Date prepared)

Original to C. O.; copies RSMS, NWRC (2), RB, SC/AM, FA/ABQ
(Indicate all offices receiving copy of form)

(OVER)

WB Form 531-1

Figure 7. Station form for COOP station 290600 for March 27, 1968, denoting a station move to NMSU – Southeastern Branch from radio station KSVP.

INSTRUCTIONS FOR USE OF WB FORM 531-1

A report on WB Form 531-1 should be prepared for the establishment, discontinuance or any change in a substation within the hydroclimatic network. (This form is required in addition to Forms 531-4 and 531-41). A complete copy will be made the first time this form is prepared and whenever any piece of equipment is moved in any respect. It will be designated as "Complete rendition No. 1", other spaces remaining blank. Later minor changes (where no equipment is moved) can be shown by filling in pertinent blanks only (e.g., "Supplement letter 'A'"). To complete No. 1, the second supplement will be "2" to "complete No. 1", etc., complete renditions space remaining blank. When the next move of any instrument or other major change is made, a complete rendition is necessary and should be designated as No. 2, etc. A supplemental rendition, if used, should completely describe the minor change. This report should be prepared by the Field Aide (HC) or other Weather Bureau employee at the time the action is effected. In case the equipment is relocated by the observer, he should be requested to furnish sufficient information for a complete report. The employee effecting the action will submit draft copy of Form 531-1 to RSM's in whose region the station is located, for typing and distribution. The original copy will be forwarded to the Central Office, with copies to NWRC, all other interested offices, and one for the Field Aide's (HC) file. **NOTE:** In completing "OCCASION FOR THIS REPORT" item 2 "Relocation of Equipment" should not be checked if relocation breaks record. In this case use item 1, "Establishment" and item 3 "Discontinuance" with separate forms.

SKETCH OF INSTRUMENT LOCATION: To begin sketch, attach Form 531-1 to clip board and place on top of rain gage with top of form towards north using the rain gage as the center of sketch area. Step off distance of each obstruction from gage. Using a scale of 1 inch to 100 feet, sketch the obstructions in their respective locations, with regard to direction and distance from the gage. Place a clinometer level on top of clip board and sight the angle of each obstruction from top of gage to top of obstruction. Indicate the angle of obstruction on a straight line drawn from the gage toward the object. Make detail sketch of location of instrumental equipment in lower left-hand corner of sketch area. A new diagram is required (even when substation is closed) whenever the old sketch does not accurately represent the exposure of the instrument.

STATION NAME: Artesia GS, New Mexico

<p>N</p> <p>W ← E</p> <p>S</p>	<p>-- Open Fields all quadrants --</p> <p>State Rd. No. 229</p> <p style="text-align: right;">E n t r a l - Greenhouse</p> <p style="text-align: right;">Resident</p> <p style="text-align: right;">Office</p> <p style="text-align: right;">Warehouse</p>	
<p>STATION DETAIL</p> <p>⊕ RRNG</p> <p>+</p> <p>☐ CRS</p>		Warehouse
Scale, 1" = 20'		Scale 1" = 100'

TOPOGRAPHY: (State briefly the general nature of the topography within 3 to 5 miles radius.)

Generally level in the immediate vicinity with distant rolling plains.

DIRECTIONS FOR REACHING STATION: Give instructions in detail. If outside town or city, give direction and distance, highway number or name, and any other pertinent information which will enable the Inspector to drive directly to the station without previous knowledge of its location.

About 6 miles south of Artesia at Intersection of State Rd. No. 229 and State Hwy. No. 285, turn East for 0.8 miles to station on right.

Figure 8. Station exposure for COOP station 290600 on March 27, 1968, after a station move to NMSU – Southeastern Branch.

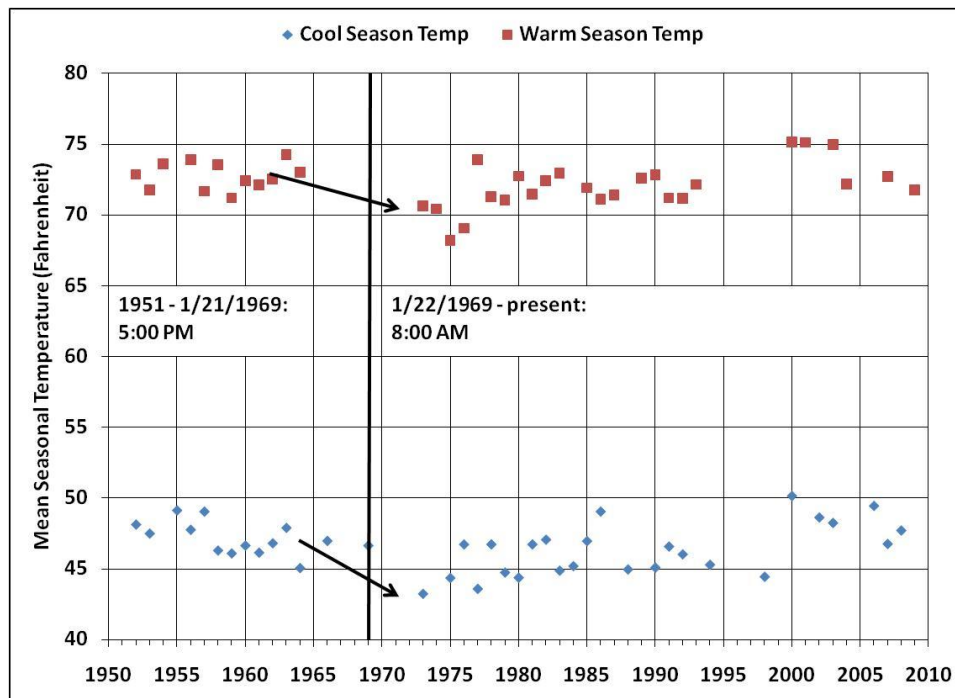


Figure 9. Time series of seasonal temperature at Bitter Lakes Wildlife Refuge, including a time of observation change on January 22, 1969.

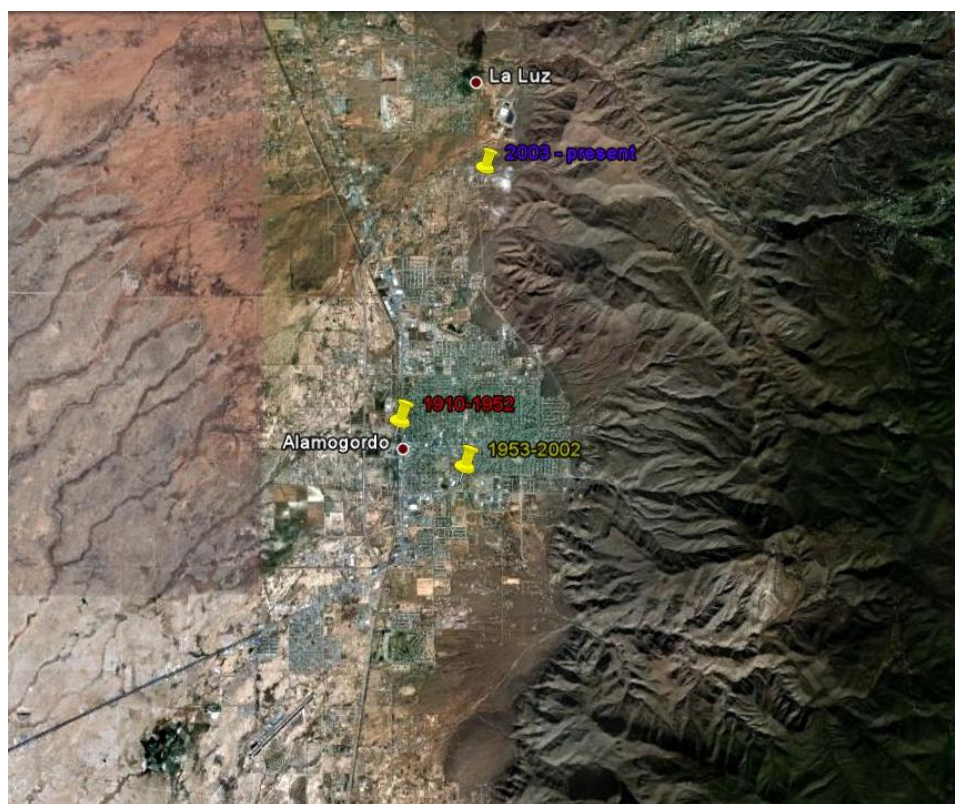


Figure 10. Locations for different time period of Alamogordo COOP station.

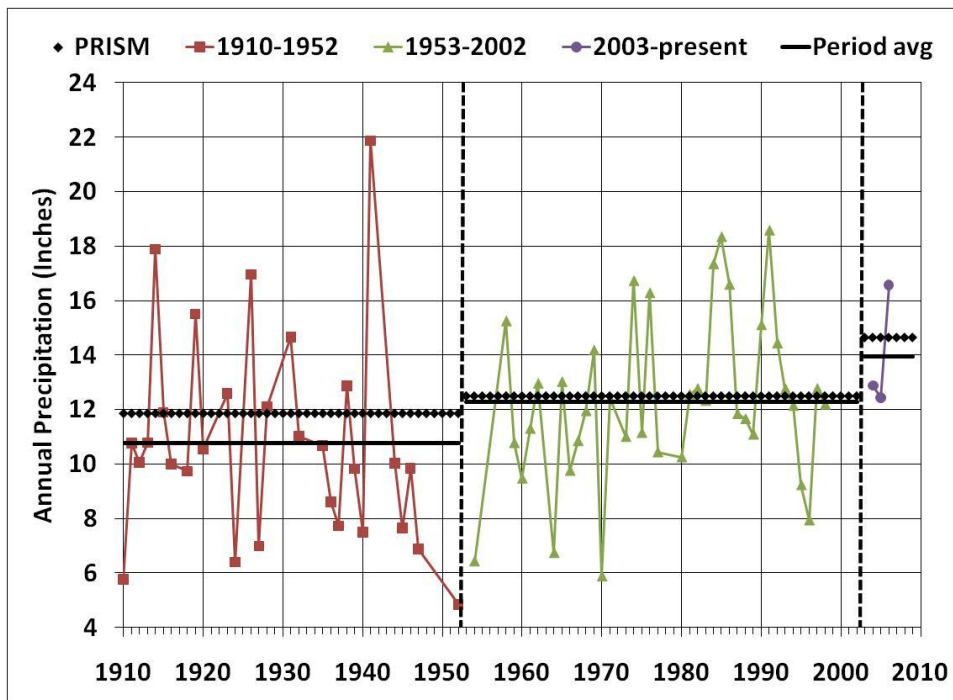


Figure 11. Time series of annual precipitation at Alamogordo for three different station locations. The 1971-2000 PRISM normal and period average for each location is included.

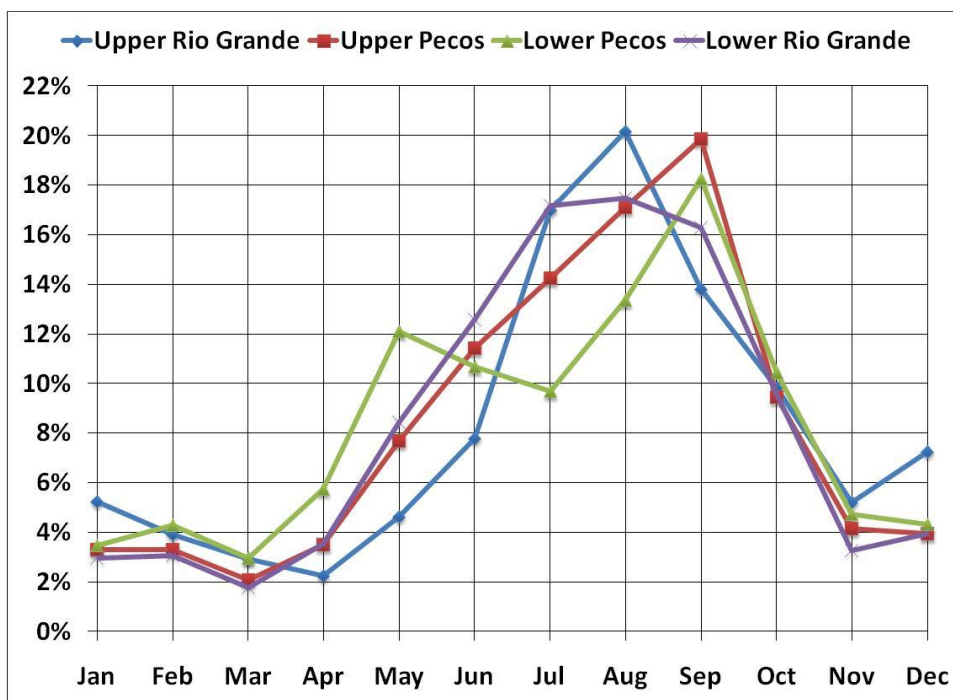


Figure 12. Climatological monthly precipitation for each of the four basins in the BB-CD, expressed as percentage of annual precipitation.

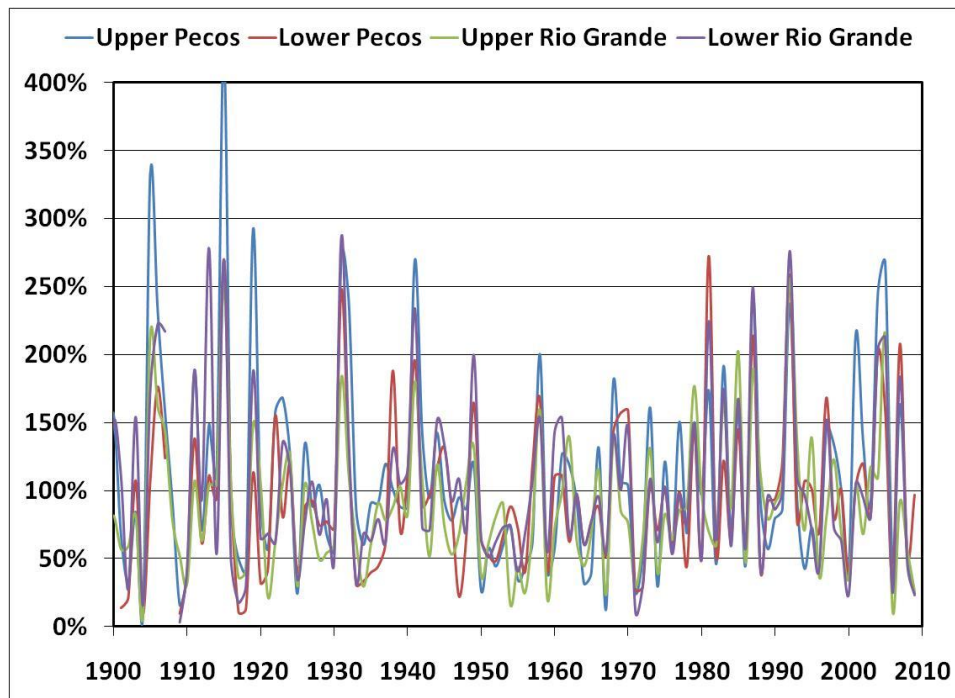


Figure 13. Cool seasonal precipitation time series for each of the four basins in the BB-CD, expressed as percent of normal.

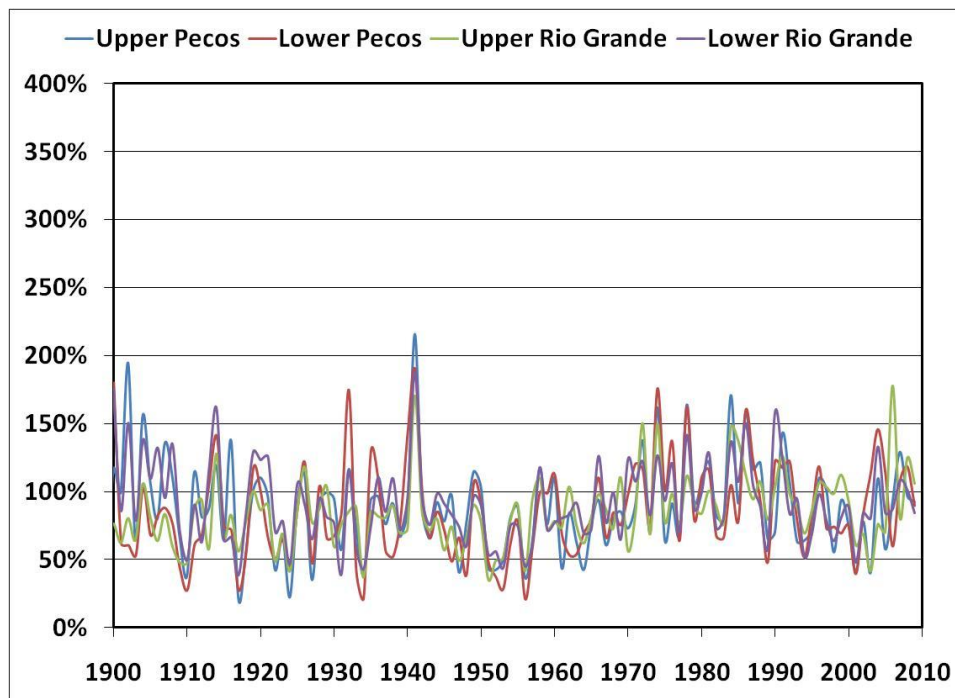


Figure 14. Warm seasonal precipitation time series for each of the four basins in the BB-CD, expressed as percent of normal.

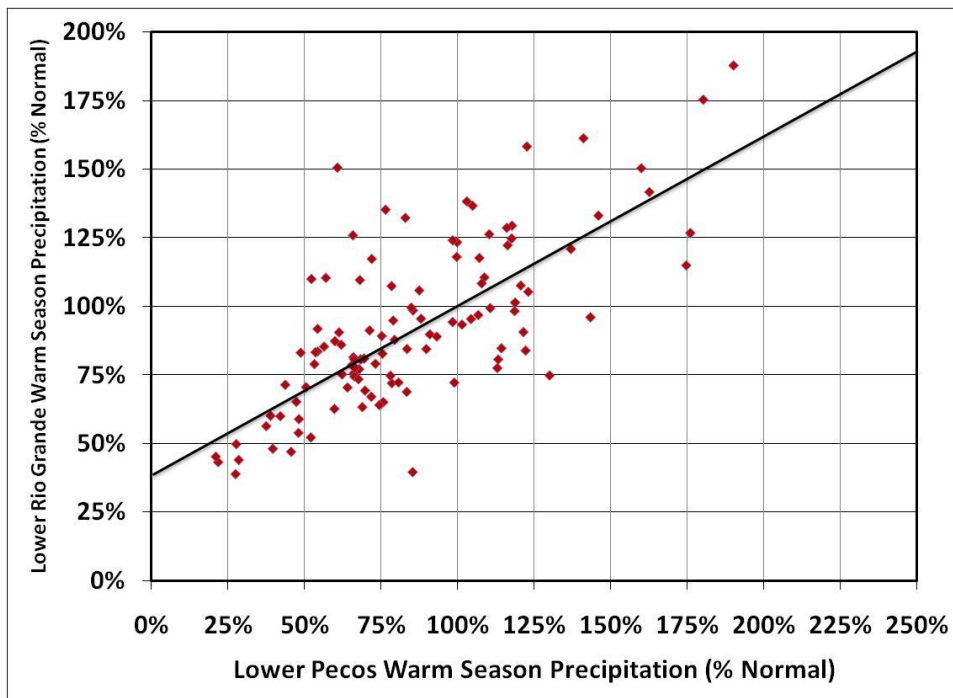


Figure 15. Scatter plot of concurrent Lower Rio Grande (y-axis) basin and Lower Pecos basin warm season precipitation.

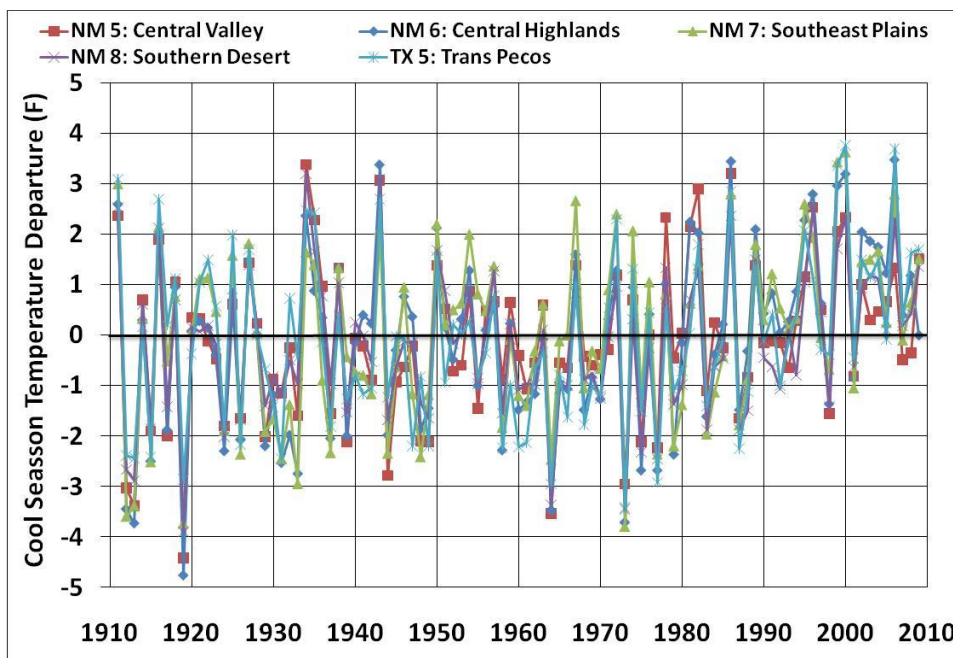


Figure 16. Time series of cool season temperature departures (from the period of record mean) for the five climate divisions in the BB-CD.

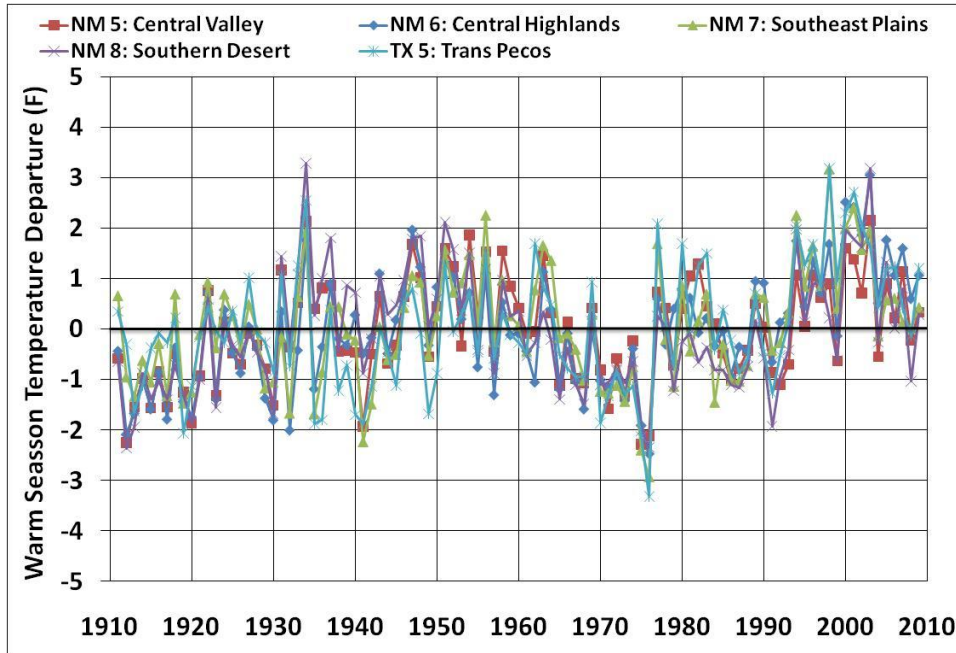


Figure 17. Time series of warm season temperature departures (from the period of record mean) for the five climate divisions in the BB-CD.

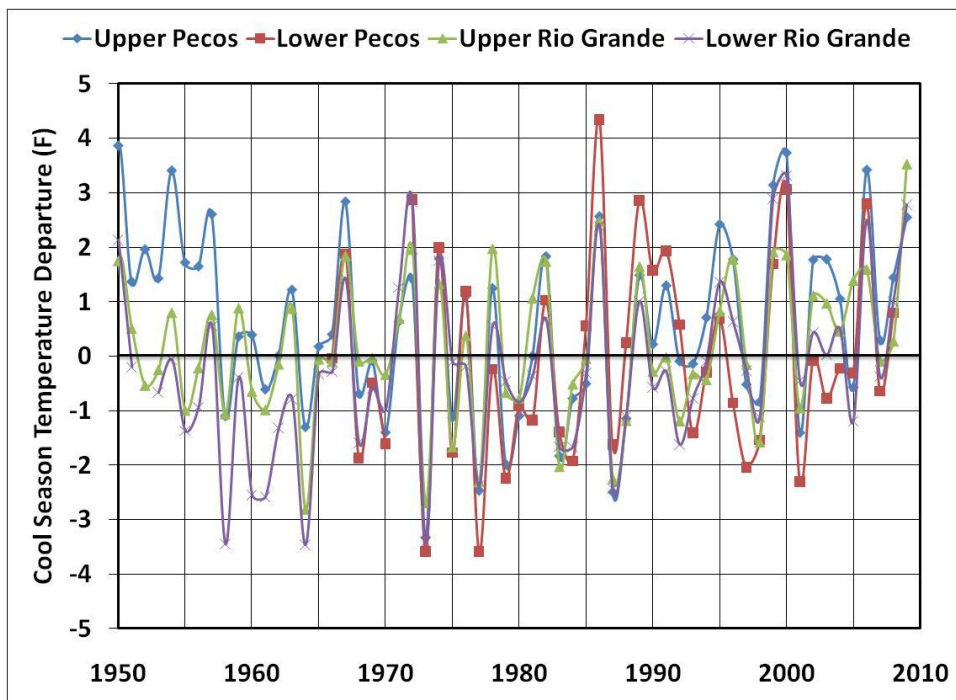


Figure 18. Time series of cool season temperature departures (from the period of record mean) for each basin in the BB-CD. Departures are based on available stations in each basin for a given year.

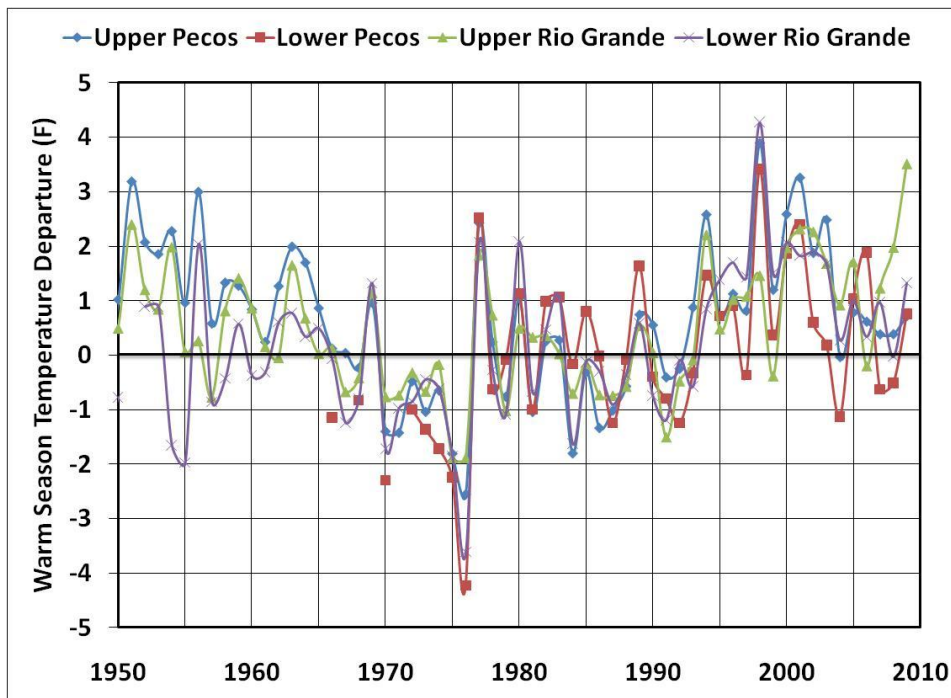


Figure 19. Time series of warm season temperature departures (from the period of record mean) for each basin in the BB-CD. Departures are based on available stations in each basin for a given year.

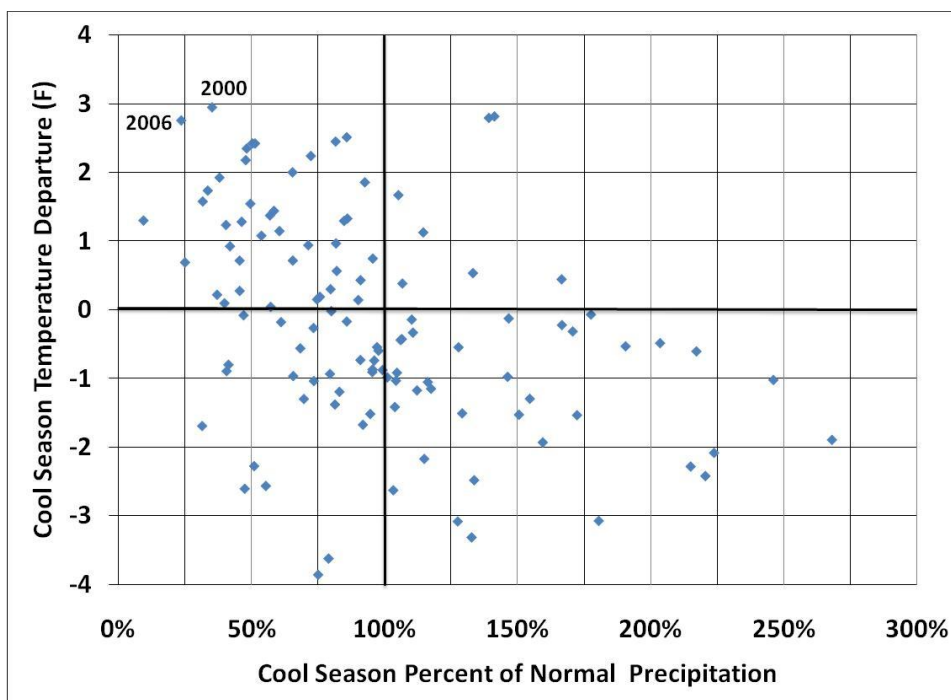


Figure 20. Scatter plot of cool season percent of normal precipitation versus concurrent cool season temperature departure, averaged for all stations with available data in the BB-CD for a given year.

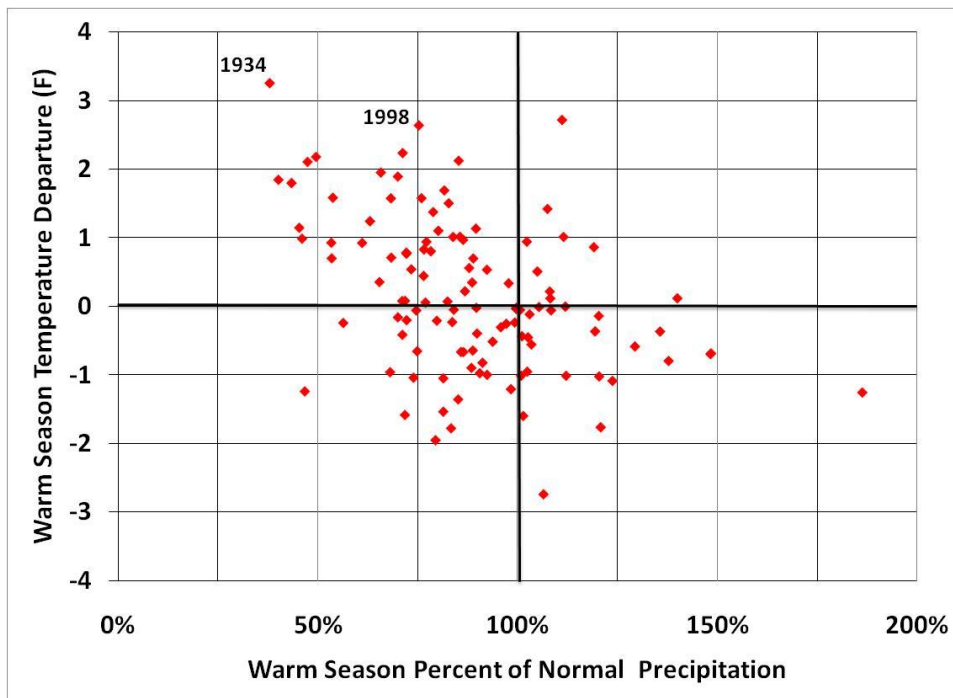


Figure 21. Scatter plot of warm season percent of normal precipitation versus concurrent warm season temperature departure, averaged for all stations with available data in the BB-CD for a given year.

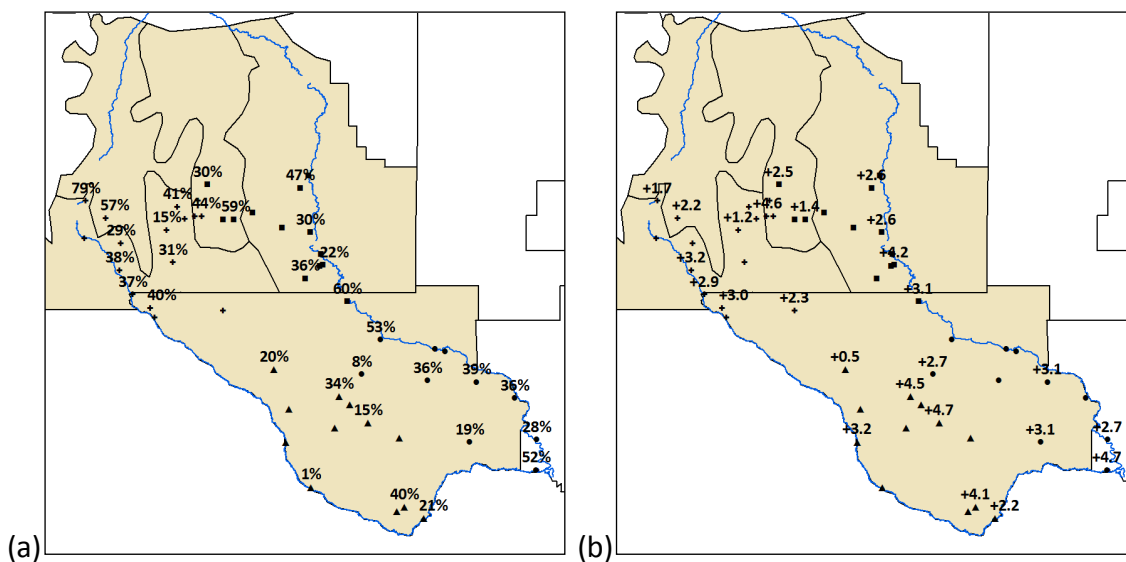


Figure 22. Cool season percent of normal precipitation (a) and temperature departures from normal (b) for stations in the BB-CD available in 2000.

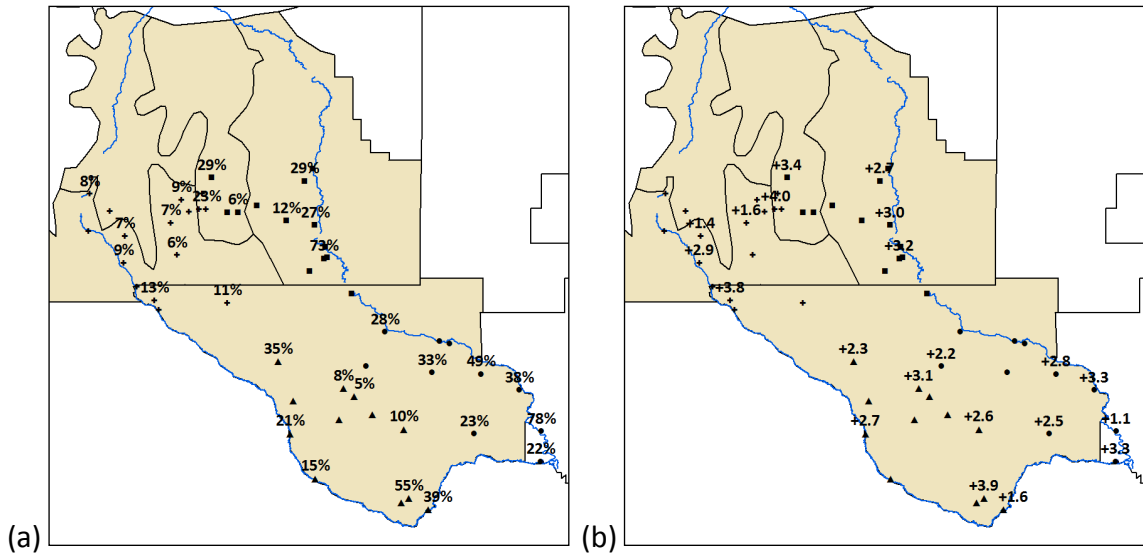


Figure 23. Cool season percent of normal precipitation (a) and temperature departures from normal (b) for stations in the BB-CD available in 2006.

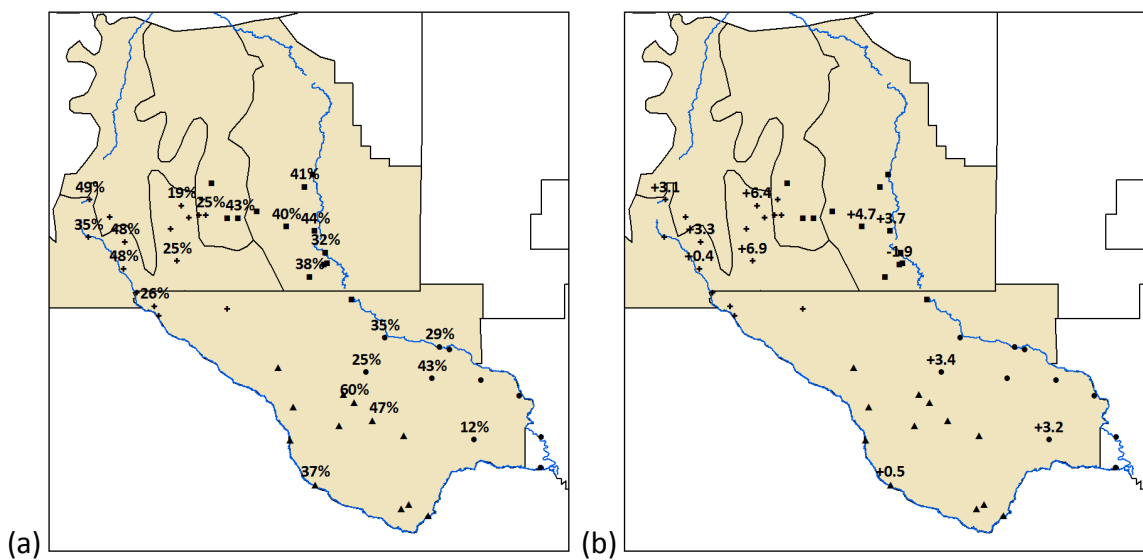


Figure 24. Warm season percent of normal precipitation (a) and temperature departures from normal (b) for stations in the BB-CD available in 1934.

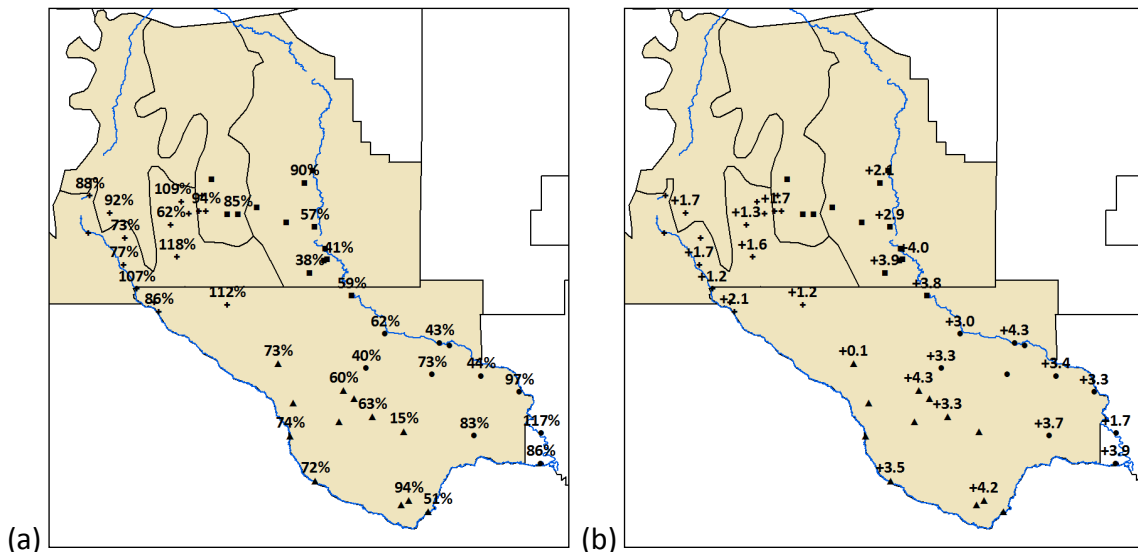


Figure 24. Warm season percent of normal precipitation (a) and temperature departures from normal (b) for stations in the BB-CD available in 1998.

Tables

COOP ID	Station	State	Latitude	Longitude	Elevation
290199	ALAMOGORDO	NM	32.92	-105.95	4350
290268	ALEMAN RCH	NM	32.93	-106.93	4521
290600	ARTESIA 6S	NM	32.75	-104.38	3366
290992	BITTER LAKES WR	NM	33.46	-104.40	3664
291469	CARLSBAD	NM	32.35	-104.22	3120
291475	CAVERN CITY AIRPORT	NM	32.34	-104.26	3232
291480	CARLSBAD CAVERNS	NM	32.18	-104.44	4435
291931	CLOUDCROFT	NM	32.97	-105.75	8821
292848	ELEPHANT BUTTE DAM	NM	33.15	-107.18	4576
292865	ELK	NM	32.94	-105.33	5845
293237	<i>FLYING H</i>	<i>NM</i>	<i>33.00</i>	<i>-105.10</i>	<i>5305</i>
293855	HATCH	NM	32.68	-107.20	4075
294112	HOPE	NM	32.81	-104.73	4091
294426	JORNADA EXP RANGE	NM	32.62	-106.74	4266
294736	LAKE AVALON	NM	32.48	-104.25	3212
295502	MAYHILL RS	NM	32.92	-105.47	6565
295657	MESCALERO	NM	33.15	-105.78	6716
295960	MTN PARK	NM	32.95	-105.82	6780
296435	OROGRANDE	NM	32.38	-106.09	4182
297610	ROSWELL IND AP	NM	33.31	-104.51	3649
297649	RUIDOSO	NM	33.36	-105.67	6930
298535	STATE UNIV	NM	32.28	-106.76	3881
299165	TULAROSA	NM	33.07	-106.04	4430
299686	WHITE SANDS NATL MON	NM	32.78	-106.17	3995
410174	ALPINE	TX	30.38	-103.66	4450
410482	BAKERSFIELD	TX	30.89	-102.30	2547
410498	BALMORHEA	TX	30.98	-103.74	3220
410950	BOQUILLAS RS	TX	29.19	-102.96	1858
411416	CANDELARIA	TX	30.14	-104.68	2877
411715	CHISOS BASIN	TX	29.27	-103.30	5300
412012	CORNUDAS SVC STN	TX	31.78	-105.47	4480
412797	EL PASO AP	TX	31.81	-106.38	3918
413262	FT DAVIS	TX	30.60	-103.89	4858
413280	FT STOCKTON	TX	30.91	-102.92	3038
413680	GRANDFALLS 3SSE	TX	31.30	-102.82	2425
414425	<i>IMPERIAL</i>	<i>TX</i>	<i>31.27</i>	<i>-102.70</i>	<i>2400</i>
414931	LA TUNA 1 S	TX	31.98	-106.60	3800
415048	LANGTRY	TX	29.79	-101.56	1290
415579	MARATHON	TX	30.19	-103.27	3989

415596	MARFA 3W	TX	30.31	-104.07	4790
416104	MT LOCKE	TX	30.71	-104.02	6790
416780	PANDALE 1 N	TX	30.17	-101.56	1689
416792	PANTHER JUNCTION	TX	29.33	-103.21	3740
416892	PECOS	TX	31.42	-103.50	2610
417262	PRESIDIO	TX	29.57	-104.37	2605
417481	RED BLUFF DAM	TX	31.90	-103.92	2847
418022	SANDERSON	TX	30.14	-102.39	2760
418252	SHEFFIELD	TX	30.69	-101.83	2175
<i>419275</i>	<i>VALENTINE 10 WSW</i>	<i>TX</i>	<i>30.55</i>	<i>-104.65</i>	<i>4394</i>
419295	VAN HORN	TX	31.04	-104.84	4065
419966	YSLETA	TX	31.70	-106.32	3670

Table 1. COOP stations included in the historical metadata analysis. Stations reporting only precipitation are in *italics*.

Station	Precipitation		Temperature	
	Rating	POR	Rating	POR
ALAMOGORDO	VG	1909-2004	P	1909-present
ALEMAN RCH	F	1940-2002	F-VG	1956-2002
ARTESIA 6S	VG	1905-present	P	1905-present
BITTER LAKES WR	E	1950-present	E	1950-present
CARLSBAD	VG	1894-2001	P	1894-present
CAVERN CITY AIRPORT	VG	1948-present	VG	1948-present
CARLSBAD CAVERNS	VG	1930-present	VG	1943-present
CLOUDCROFT	G	1901-present	P	1901-present
ELEPHANT BUTTE DAM	E	1908-present	VG	1908-present
ELK	P	1895-present	F	1895-present
FLYING H	VG	1917-1978	N/A	N/A
HATCH	F	1894-present	P	1894-present
HOPE	G	1905-present	P	1905-present
JORNADA EXP RANGE	E	1914-present	G	1914-present
LAKE AVALON	E	1914-1979	E	1951-1979
MAYHILL RS	G	1917-1976	VG	1940-1976
MESCALERO	G	1911-1978	F	1911-1978
MTN PARK	VG	1912-present	G	1912-present
OROGRANDE	VG	1906-present	VG	1906-present
ROSWELL IND AP	F	1893-present	P	1893-present
RUIDOSO	F	1942-present	F	1942-present
STATE UNIV	VG	1878-1886, 1892-present	G	1878-1886, 1892-present
TULAROSA	F	1909-present	F	1909-present
WHITE SANDS NATL MON	E	1939-present	E	1939-present
ALPINE	VG	1911-present	F	1929-present
BAKERSFIELD	E	1940-present	VG	1965-present
BALMORHEA	G	1923-present	F	1923-present
BOQUILLAS RS	VG	1940-present	VG	1949-present
CANDELARIA	E	1940-present	VG	1964-present
CHISOS BASIN	E	1940-present	F	1947-present
CORNUDAS SVC STN	E	1940-present	VG	1970-present
EL PASO AP	G	1930-present	P	1930-present
FT DAVIS	G	1854-present	G	1854-present
FT STOCKTON	G	1859-present	F	1859-present
GRANDFALLS 3SSE	F	1910-present	P	1940-present
IMPERIAL	VG	1940-1993	N/A	N/A
LA TUNA 1 S	VG	1943-present	F	1943-present
LANGTRY	E	1934-present	G	1970-present

MARATHON	VG	1940-present	G	1940-present
MARFA 3W	G	1958-present	F	1958-present
MT LOCKE	E	1935-present	VG	1935-present
PANDALE 1 N	G	1943-present	P	1965-present
PANTHER JUNCTION	VG	1955-present	F	1955-present
PECOS	VG	1893-2001	F	1893-2001
PRESIDIO	VG	1943-present	F	1943-present
RED BLUFF DAM	E	1939-2004	VG	1939-2004
SANDERSON	VG	1896-present	G	1896-1934, 1962-present
SHEFFIELD	E	1938-present	F	1962-present
VALENTINE 10 WSW	E	1936-present	N/A	N/A
VAN HORN	VG	1938-present	F	1938-present
YSLETA	G	1939-present	P	1939-present

Table 2. Qualitative rating and period of record for each COOP station in the BB-CD. E = excellent, VG = very good, G = good, F = fair, P = poor, N/A = not available.

Appendix: Complete Metadata Analysis of COOP stations in the BB-CD

COOP Station 290199, CD 8: Alamogordo, Otero County, NM			
<p>Summary: Station on edge of Alamogordo until 11/2/1999, when it moved to near the center of town, causing a large inhomogeneity in temperature. Then moved well north of town, with UHI similar to beginning of station, but different altitude and closer to mountains plus exposure issues. Lots of changes in time of observation, with important impact on temperature and less important impact on precipitation. Possible increase of precipitation with 4/11/1953 move closer to the mountains; likely increase with 12/10/2003 move.</p> <p>Temperature rating: Poor (1909-present) Precipitation rating: Very good (1909-2004)</p>			
7/1/1909	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 32°54'N 105°58'W • <u>Original elevation:</u> 4320' • <u>Original observer:</u> Agents from Southern Pacific Railroad • <u>Original description:</u> Level valley with mountain range about 5 mi. E. No forest of body of water in general vicinity, though a well-wooded park with lagoons is 600' away. • <u>Time of observation:</u> 17:00 • <u>SRG:</u> Top of gauge is 2.5'agl • <u>Exposure:</u> SRG is 200' from depot 	TEMP Impact	PRCP Impact
1/1/1913	<ul style="list-style-type: none"> • <u>Station observations:</u> Establishment of temperature • <u>Equipment:</u> Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Remarks:</u> Temperature records since 7/1/1912, but the record is rather broken. 	0	0
2/20/1916	<ul style="list-style-type: none"> • <u>New description:</u> Station in generally level country with two small ponds to the NE in a park. Water sheds are to the N and S, with the Sacramento and Andreas mountains in the distance about 10mi. • <u>CRS:</u> Bottom of shelter is 3.5'agl, door opens to the E, over cinder-covered ground 	2	0

	<ul style="list-style-type: none"> • <u>Time of observation</u>: 18:00 (17:00) • <u>Exposure (Same location)</u>: Steel tank 75' to the W 		
10/25/1922	<ul style="list-style-type: none"> • <u>SRG</u>: Funnel taken to the shop for repairs and later returned, moved to the vicinity of the CRS to be in a better position. • <u>CRS</u>: Door opens to the N (E), over bare ground (cinder-covered ground), moved from the S end of the depot and is now less open to meddling 	2	1
10/10/1927	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 3'agl (-0.5'), over gravel, hard, with no growth (bare ground) • <u>MxMn</u>: Thermometers are giving good records 	1	0
5/18/1937	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 4'agl (+1') • <u>SRG</u>: Top of gauge is 3.5'agl (+1') • <u>Remarks</u>: Railroad station that is not used much, as there is a good station in town. 	1	1
6/10/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-0.5') • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Depot to the NE (9°), train tracks to the E between the depot and the observation site 	1	0
8/29/1940	<ul style="list-style-type: none"> • <u>CRS</u>: Over cinders (gravel, hard, with no growth) 	0	0
11/18/1952	<ul style="list-style-type: none"> • <u>New description</u>: Generally flat to semi-arid. • <u>Time of observation</u>: 08:00 (18:00) • <u>Exposure (Same location)</u>: On railroad track system with no permanent obstructions within 100' of the observation site 	3	1
4/21/1953	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.3mi. SE of the previous location • <u>New coordinates</u>: 32°53'N 105°57'W (-1'N, -1'W) • <u>New elevation</u>: 4350' (+30') • <u>New observer</u>: Harry Albers (Agents from Southern Pacific Railroad) • <u>New description</u>: Generally level semi-arid to arid, desert vegetation with mountains in the E quadrant. • <u>Time of observation</u>: 17:30 (08:00) 	3	2

	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at Radio Station KALG. Station name change to Alamogordo from Alamogordo #2. • <u>Exposure (New location)</u>: Radio tower 100' to the S, radio station 50' to the NNW 		
3/1/1957	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (17:30) 	3	1
2/25/1963	<ul style="list-style-type: none"> • <u>New observer</u>: Don Hormell (Harry Albers) • <u>Time of observation</u>: 18:00 (08:00) • <u>Daily recording of observations</u>: Form 612-14 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Building to the N (10°), building to the NE (5°), 2 buildings to the ENE (4°, 6°), building to the E (3°), radio tower to the S, Canyon Road to the E, road to the W, open fields to the W between the road and the observation site 	3	1
10/1/1966	<ul style="list-style-type: none"> • <u>Time of observation</u>: Midnight (18:00) 	2	1
9/5/1968	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Recording rain gauge (R/RNG) • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station upgraded to class "ab" status from class "a" status. • <u>Exposure (Same location)</u>: Low line of bushes to the SW (12°), KALG studio to the WNW (6°), Canyon Road to the N 	0	2
1/1/1973	<ul style="list-style-type: none"> • <u>New observer</u>: Mr. Cabiness (Harry Albers) • <u>Daily recording of observations</u>: Form F-10 sent to NCC • <u>Time of observation</u>: 18:30 (Midnight) 	2	1
12/12/1977	<ul style="list-style-type: none"> • <u>New observer</u>: Radio Station KPSA (Mr. Cabiness) • <u>New description</u>: Generally level terrain, semi-arid to arid with mainly desert vegetation. Sacramento Mountains rise abruptly 5-6mi. NE-SE at 7500'-9500'. • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Exposure (Same location)</u>: Radio station to the N (10°), 2 buildings to the NE (5°), 2 buildings to the ENE (4°, 6°), building to the E (3°), 2 buildings to the ESE (4°), radio tower to the 	0	0

	SW surrounded by fence, road to the E, road to the W, high school complex to the W, open fields to the S and NW of the observation site		
3/13/1984	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Less than 0.1°F difference from MxMn • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Time of observation</u>: 16:30 (18:30) 	2	0
9/10/1984	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	2
4/12/1990	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.25''$ in 24 hours to WSO-Albuquerque, temperature reported daily to WSO-Albuquerque • <u>Time of observation</u>: 17:00 (16:30) • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	1	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0
11/2/1999	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2mi. NNW of the previous location • <u>New coordinates</u>: 32°53'55"N 105°56'48"W (+55"N, -12"W) • <u>New observer</u>: Alamogordo Daily News (Radio Station KPSA) • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Albuquerque, temperature digitally reported daily to WSO-Albuquerque • <u>Remarks</u>: Station is located at the newspaper office and is compatible for a continuation of the previous record. Updated for ROSA to AWIPS. New coordinates obtained via Garmin 45 GPS. • <u>Exposure (New location)</u>: Building to the N (15°), tree to the NW(20°) 	4	2
3/13/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.91833 -105.94667 (+0.01972N), no station move reported 	1	1

6/3/2003	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.91806 -105.94667 (-0.00027N), no station move reported • <u>New elevation</u>: 4380' (+30') • <u>Remarks</u>: Updated to IV-ROCS from ROSA. 	1	1
8/11/2003	<ul style="list-style-type: none"> • <u>MMTS</u>: Previous indicator replaced due to low and possibly erratic readings. 	1	0
12/10/2003	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.8mi. NNE of the previous location • <u>New coordinates</u>: 32.95650 -105.94080 (+0.03844N, -0.00587W) • <u>New elevation</u>: 4701' (+321') • <u>New observer</u>: Unknown (Alamogordo Daily News) • <u>New description</u>: Located on a gradual rise before entering the Sacramento Mountains to the E. Semi-arid to arid with mainly desert-type vegetation and mountains rising abruptly about 0.5mi. to the E. • <u>Exposure (New location)</u>: Tree to the NE (31°), tree to the SE (29°), mobile home to the S (8°), tree to the SSW (32°), tree to the W (22°) 	3	3
5/20/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS 	2	0

COOP Station 290268, CD 5: Aleman Ranch, Sierra County, NM

Summary: Open rangeland with isolated house(s), no irrigation, no urban effects. Locations A and B are on valley edge, location C is near valley bottom. Moves: 1/2/59 from A to B, 10/1/63 from B to C, 6/1/64 from C to A, 10/1/67 from A to C, 3/20/84 MMTS closer to house.

Temperature rating: Fair–very good (1956–2002)

Precipitation rating: Fair (1940-2002)

7/18/1940	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation • <u>Original equipment</u>: Standard rain gauge (SRG) • <u>Original coordinates</u>: 32°59'N 107°00'W • <u>Original elevation</u>: 5000' • <u>Original observer</u>: B.C. Nelson • <u>Original description</u>: Level grazing land. On 	TEMP Impact	PRCP Impact
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	<p>ground near residence.</p> <ul style="list-style-type: none"> • <u>Remarks</u>: Station is established but original records are not available until 1/1/1943. 		
9/10/1943	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 1006 sent to WSO-Fort Worth • <u>Remarks</u>: The observer is an employee of R.K. Stovall, owner of a ranch. • <u>Exposure (Same location)</u>: Wire fence to the NE (5.5' tall), barns to the S, tree 15' to SW (18' tall), houses and trees 100' to W, hedge to the NW (5' tall), gate to the N, flat grazing land to the E of the observation site 		0
8/1/1945	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 5/17/1948. 		0
5/17/1948	<ul style="list-style-type: none"> • <u>New observer</u>: Roy K. Stovall (B.C. Nelson) • <u>Time of observation</u>: After rains • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>SRG</u>: Top of gauge is 4'agl • <u>Remarks</u>: Reactivation of station closed since 8/1/1945, located at Aleman Ranch. No change in the location of the instrumental equipment or the observer. • <u>Exposure (Same location)</u>: Corrals to the S, ranch residences 75' to W (18' tall), small trees to the W, road to N, fence to the E, fence to the S between the corrals and the observation site, railroad to El Paso to the W 		1
8/12/1950	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Corrals to E, 2 trees to the WSW (10' tall, 10' tall), house to the W (18' tall) 		0
3/1/1952	<ul style="list-style-type: none"> • <u>New observer</u>: Loyd W. Smith (Roy K. Stovall) • <u>SRG</u>: Change in the type of gauge 		2
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "a" status. 		0
2/18/1955	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>New observer</u>: Ben Cain (Loyd W. Smith) 		0
1/16/1956	<ul style="list-style-type: none"> • <u>Station relocation</u>: 300' W of the previous location • <u>New coordinates</u>: 33°00'N 107°00'W (+1'N) 	2	0

	<ul style="list-style-type: none"> • <u>New elevation</u>: 4668' (-332') • <u>New description</u>: Generally level, wide grassy valley with small arid type shrubbery. Drainage is classified as Lower Rio Grande but locally is a small feed drainage of the Jornada flat. • <u>Time of observation</u>: 17:00 (After rains) • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Remarks</u>: Station is located at Aleman Ranch, the equipment relocated for convenience of observer. • <u>Exposure (New location)</u>: Ranch house to the ENE (12°), shed to the SE (10°), low shed to the SE, chicken to the NW (6°), wire fence surrounding the observation site 		
1/2/1959	<ul style="list-style-type: none"> • <u>Station relocation</u>: 7mi. S of the previous location • <u>New coordinates</u>: 32°53'N 106°59'W (-7'N, -1'W) • <u>New elevation</u>: 4550' (-118') • <u>New observer</u>: Lewis D. Cain (Ben Cain) • <u>New description</u>: Generally level, wide grassy valley with small arid type vegetation. • <u>Remarks</u>: Station is located at the observer's ranch headquarters and compatible for a continuation of the previous record due to the nature of the terrain, even though the move was 7mi. • <u>Exposure (New location)</u>: Engine house to N (4°), corrals to the NE and E, observer's trailer house to SW (4°), building to SW (5°), open range land to the N, wire fence between the corrals and the observation site 	3	3
10/1/1963	<ul style="list-style-type: none"> • <u>Station relocation</u>: 4mi. ENE of the previous location • <u>New coordinates</u>: 32°55'N 106°56'W (+2'N, -3'W) • <u>New elevation</u>: 4527' (-23') • <u>New description</u>: On the E slope of an isolated hill in level, wide valley with semi-arid vegetation. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC 	3	3

	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the observer's ranch headquarters and is compatible for a continuation of the previous record due to the nature of the terrain, even though the move was 4mi. • <u>Exposure (New location)</u>: Residence and trailer 300' to N, upslope to hill to S (2°), summit of hill to W (8°) 		
6/1/1964	<ul style="list-style-type: none"> • <u>Station relocation</u>: 6.4mi. NW of previous location. • <u>New coordinates</u>: 33°00'N 107°00'W (+5'N, +4'W) • <u>New elevation</u>: 4668' (+141') • <u>New description</u>: On Generally level, wide grassy valley, small arid type shrubbery. • <u>Remarks</u>: Station is located at the observer's ranch headquarters and compatible for a continuation of the previous record at the same location as 1/16/1956 – 1/1/1959. • <u>Exposure (New location)</u>: 2 trees to the SSE (8°, 12°), corrals to the S, tree to the S (20°), house to the SW (6°), tree to the SW (20°), horse corral just to the NW, road to the highway to the N, open range land to the NE, barbed wire fence to the NW between the horse corral and the observation site 	3	3
10/1/1967	<ul style="list-style-type: none"> • <u>Station relocation</u>: 6.4mi. SE of the previous location • <u>New coordinates</u>: 32°55'N 106°56'W (-5'N, -4'W) • <u>New elevation</u>: 4527' (-141') • <u>New description</u>: On the E slope of an isolated hill in level, wide valley with semi-arid vegetation. • <u>Remarks</u>: Station is located at the observer's ranch and is compatible for a continuation of the previous record at the same location as 10/1/1963–5/31/1964. • <u>Exposure (New location)</u>: Residence and trailer 300' to N, upslope to hill to S (2°), summit of hill to W (8°) 	3	3
3/19/1979	<ul style="list-style-type: none"> • <u>New description</u>: Located at the S end of the Jornada Del Muerto (desert-like plateau), just 	0	0

	<p>W of the San Andreas Mountains. On the E slope of an isolated hill in level, wide semi-arid valley. Vegetation includes cactus, mesquite, and associated arid grasses and flowers.</p> <ul style="list-style-type: none"> • <u>SRG</u>: Gauge is attached to the fence on the N border of the horse/cattle corrals • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Exposure (Same location)</u>: Residence to the N, ranch buildings to the ENE, horse cattle corrals to the S, hill to the S (2°), hill to the W (8°), entrance road to the N, fence just to the S of the CRS between horse/cattle corrals and the observation site 		
11/5/1981	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 5' SE of the previous location, CRS moved 20' SE of the previous location • <u>New elevation</u>: 4523' (-4') • <u>Remarks</u>: Station is located at the observer's ranch and is compatible for a continuation of the previous record. Reason for relocation was the almost complete destruction of the CRS by brood mares in the adjoining corral. 	2	1
3/20/1984	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed 154' NNE of the old CRS location, with 5' loss in elevation, compatible for a continuation of the previous record • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Time of observation</u>: 18:00 (17:00) • <u>Remarks</u>: Relocation of the MMTS due to the almost impossible trench construction and other difficulties. 	3	0
7/25/1989	<ul style="list-style-type: none"> • <u>New description</u>: On the E slope of an isolated hill gradually sloping E onto a wide semi-arid valley with desert-type vegetation. 	0	0
1/9/1990	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 123' NNE of the previous location • <u>New elevation</u>: 4521' (-2') • <u>Remarks</u>: Station is located at the observer's ranch and is compatible for a continuation of 	0	1

	the previous record.		
4/1/1993	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque 	0	0
1/7/1994	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Trailer to the S (8°), trailer to the WNW (6°) 	0	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0
7/25/2001	<ul style="list-style-type: none"> • <u>Remarks</u>: Station placed on inactive status until further notice. 		
5/1/2002	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed. 		

COOP Station 290600, CD 7: Artesia 6S, Eddy County, NM			
<p>Summary: Station moved around growing Artesia (town with irrigated fields to E) until 3/27/1968. Afterwards, located at agricultural experiment facility with occasional irrigation. Inhomogeneities within and between moves.</p> <p>Temperature rating: Poor (1905-present) Precipitation rating: Very good (1905-present)</p>			
6/4/1905	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: 32°51'N 104°24'W • <u>Original elevation</u>: 3350' • <u>Original observer</u>: Will Benson • <u>Original description</u>: Located in village of Artesia on level land. • <u>SRG</u>: Top of gauge is 3.3'agl • <u>CRS</u>: Bottom of shelter is 3.5'agl, door opens to the N, over cultivated ground • <u>Time of observation</u>: 18:00 • <u>Exposure</u>: SRG 65' from the nearest high object. 	TEMP Impact	PRCP Impact
3/31/1907	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 1/17/1910. 	0	0
1/17/1910	<ul style="list-style-type: none"> • <u>Remarks</u>: Reactivation of station closed since 3/31/1907. 	0	0
9/26/1917	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 10'agl (+6.7') 	1	0

	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 3'agl (-0.5'), door opens to the E (N), over bare ground (cultivated ground) • <u>MxMn</u>: Minimum thermometer adjusted • <u>Remarks</u>: Observer considers the heat in the lot rather too high, accounting for high temperature readings the past 2-3 years. 		
11/16/1917	<ul style="list-style-type: none"> • <u>CRS</u>: Door opens to the N (E) 	1	0
4/1/1921	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. S of the previous location • <u>New observer</u>: R.W. Bruce (Will Benson) • <u>SRG</u>: Top of gauge is 2.5'agl (-7.5'), box stand nailed and secured • <u>CRS</u>: Minor repairs made • <u>MxMn</u>: Thermometers adjusted and rescaled • <u>Remarks</u>: Station is located at the high school in the city of Artesia with an excellent location and an observer much interested in the climatic record. 	3	1
7/1/1928	<ul style="list-style-type: none"> • <u>Station relocation</u>: Unknown proximity to the previous location • <u>New coordinates</u>: 32°50'N 104°24'W (-1'N) • <u>CRS</u>: Bottom of shelter is 4'agl (+1') • <u>Remarks</u>: Station is located at the home of the observer. 	2	1
10/13/1929	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (+0.5'), smoothed up the funnel and its rim • <u>CRS</u>: Over some bare ground, some lawn (bare ground) • <u>MxMn</u>: Minimum thermometer adjusted • <u>Remarks</u>: Anemometer added to the observation site. 	1	1
5/26/1930	<ul style="list-style-type: none"> • <u>New description</u>: Open valley country. • <u>CRS</u>: Bottom of shelter is 3.3'agl (-0.7'), over sod (some bare ground, some lawn) • <u>Exposure (New location)</u>: Residence 40' to the E, low shed 40' to the E, low cement tank 35' away 	3	2
1/1/1932	<ul style="list-style-type: none"> • <u>New observer</u>: H.A. Denton (R.W. Bruce) 	1	1
8/1/1932	<ul style="list-style-type: none"> • <u>New observer</u>: W.C. Martin (H.A. Denton) 	1	1
3/8/1935	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1mi. from the previous location 	3	3

	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32°51'N 104°24'W (+1'N) • <u>New elevation</u>: 3375' (+25') • <u>New observer</u>: Pecos Valley Gas Company (W.C. Martin) • <u>New description</u>: No forest or bodies of water near. • <u>CRS</u>: Bottom of shelter is 5'agl (+1.7'), over bare ground (sod) • <u>SRG</u>: Top of gauge is 4'agl (-1') • <u>Time of observation</u>: 07:00 (18:00) • <u>Exposure (New location)</u>: Unobstructed with no high objects nearby 		
5/17/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 4.5'agl (+0.5') • <u>CRS</u>: Not standard, new one to be furnished • <u>MxMn</u>: Townsend support replaced • <u>Remarks</u>: Removal of the anemometer from the observation site. • <u>Exposure (Same location)</u>: SRG moved to best possible location, previously between 2 buildings 	1	3
3/8/1940	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Recording rain gauge (R/RNG) • <u>New observer</u>: New Mexico Eastern Gas Company (Pecos Valley Gas Company) • <u>MxMn</u>: Thermometers agreed within 6°F after resetting, minimum thermometer replaced • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Tree to the NNE, shed to the SE (8°), tree to the NNW, road to the W 	2	2
4/20/1954	<ul style="list-style-type: none"> • <u>New observer</u>: Southern Union Gas Company (New Mexico Eastern Gas Company) • <u>New description</u>: In fairly well built-up town in a wide, nearly level valley. • <u>Time of observation</u>: 07:30 (07:00) • <u>Remarks</u>: Station is located at the Southern Union Border Station. • <u>Exposure (Same location)</u>: Regulator station to the SE (8' tall), street to the W. 	1	0
12/14/1959	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to WSO-Albuquerque 	1	0

	<ul style="list-style-type: none"> • <u>New description</u>: Surrounding area is generally level to rolling plains. • <u>Time of observation</u>: 08:00 (07:30) • <u>Exposure (Same location)</u>: Southern Union storage yard 325' to the NE, building to the SE (8°), building to the SSE (4°), 2 trees to the SSE (20°, 38°), tree to the SW (42°), road to the W 		
1/1/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: R/RNG moved 10' NNW of the previous location • <u>R/RNG</u>: Moved to improve exposure • <u>Exposure (Same location)</u>: Southern Union storage yard 325' to the NE, building to the SE (8°), building to the SSE (4°), 2 trees to the SSE (25°, 42°), tree to the SW (50°), road to the W 	0	2
11/28/1962	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Southern Union storage yard 325' to the NE, building to the ESE (4°), 2 trees to the SE, tree to the SSW (13°), Freeman Road to the W, fence (3' tall) surrounding the observation site 	0	0
10/1/1966	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Surrounding obstructions all below 8°, enclosure (6' tall) surrounding the observations site 	0	0
2/1/1967	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.3 mi. SSW of the previous location • <u>New coordinates</u>: 32°50'N 104°24'W (-1'N) • <u>New elevation</u>: 3385' (+10') • <u>New observer</u>: Radio station KSVP (Southern Union Gas Company) • <u>Time of observation</u>: 17:00 (08:00) • <u>Remarks</u>: Station is located at Radio Station KSVP and is compatible for a continuation of the previous record, with a 2.5 month break in the record. • <u>Exposure (New location)</u>: House to the NE (6°), tree to the NE (20°), radio station to the SW (18°), tree to the NW (38°), road to the E, open pasture to the E of the road and to the W of the observation site 	3	1
5/1/1967	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC 	0	0
3/27/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 5mi. SSE of the previous location 	4	3

	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32°46'N 104°23'W (-4'N, -1'W) • <u>New elevation</u>: 3320 (-65') • <u>New observer</u>: NMSU – Southeastern Branch (Radio station KSVP) • <u>New description</u>: Generally level in the immediate vicinity with rolling plains in the distance. • <u>Time of observation</u>: 07:30 (17:00) • <u>Remarks</u>: Station is located at the Southeastern Branch Experimental Station and is compatible for a continuation of the previous record. Station name change to Artesia 6S from Artesia. • <u>Exposure (New location)</u>: Tree to the NE (38°), residence to the E (15°), office to the SE (18°), warehouse to the SE, tree to S (28°), State Road 229 to the N, entrance road to the E, open fields in all quadrants surrounding the observation site 		
3/23/1971	<ul style="list-style-type: none"> • <u>Station relocation</u>: 200' S of the previous location • <u>R/RNG</u>: Installed new support, 1.5' x 1.5' cement foundation poured beneath • <u>CRS</u>: Needs to be replaced, note to install on next visit • <u>Daily recording of observations</u>: Form 612-14 sent to NCC • <u>Remarks</u>: Station is located at the Southeastern Branch Experimental Station, equipment was moved to improve exposure. • <u>Exposure (New location)</u>: Office to the NNE (6°), warehouse to the E (6°), State Road 229 to the N, entrance road to the E, open fields in all quadrants surrounding the observation site 	3	1
10/16/1973	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>Daily recording of observations</u>: Form E-15 sent to NCC 	0	2
4/15/1976	<ul style="list-style-type: none"> • <u>Remarks</u>: Soil thermometers added to the observation site. 	0	0
8/25/1980	<ul style="list-style-type: none"> • <u>New description</u>: Generally level agricultural and pasture land in the immediate vicinity 	0	0

	<p>giving way to rolling plains in the distance with extensive oil and gas leases to E and S.</p> <ul style="list-style-type: none"> • <u>Remarks</u>: Anemometer, evaporation equipment, and hygrothermograph added to the observation site. • <u>Exposure (Same location)</u>: Office to NNE (6°), manager's home to the NE, warehouse to the ENE, heavy equipment warehouse to the E, State Road 229 to the N, entrance road to the E, dirt road to the S, cultivated fields to the S of the dirt road and to the W of the observation site 		
10/22/1980	<ul style="list-style-type: none"> • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
10/31/1984	<ul style="list-style-type: none"> • <u>F/P</u>: Installation of Model III timer • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque 	0	0
4/10/1991	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Albuquerque, temperature reported daily to WSO-Albuquerque • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
6/2/1993	<ul style="list-style-type: none"> • <u>New observer</u>: NMSU Agricultural Science Center – Artesia (NMSU – Southeastern Branch) • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Office to the N (6°), garage to the E (9°) 	0	0
8/1/1995	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32°45'15"N 104°23'2"W (-45"N, +2"W), no station move reported • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0
3/1/1996	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS) • <u>Station relocation</u>: 50' from the previous location • <u>Remarks</u>: Station is located at the Agricultural Science Center and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Office to the N (6°) 	3	0

7/1/1996	<ul style="list-style-type: none"> <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Albuquerque, temperature digitally reported daily to WSO-Albuquerque 	0	0
2/17/1999	<ul style="list-style-type: none"> <u>New coordinates</u>: 32.75472 -104.38361 (-0.01195N, -0.00028W), no station move reported <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 	1	1
7/6/2000	<ul style="list-style-type: none"> <u>Remarks</u>: Updated for ROSA to AWIPS. 	0	0
3/9/2004	<ul style="list-style-type: none"> <u>New observer</u>: Unknown (NMSU Agricultural Science Center – Artesia) 	1	1
8/29/2004	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS, CRS, and MxMn 	2	0
1/29/2008	<ul style="list-style-type: none"> <u>F/P</u>: Gauge replaced 	0	1

COOP Station 290992, CD 7: Bitter Lakes Wildlife Refuge, Chaves County, NM

Summary: Pristine station, no known land use or equipment changes, unless management of Bitter Lakes levee system has evolved. Were nearby roads always paved?

Temperature rating: Excellent (1950-present)

Precipitation rating: Excellent (1950-present)

11/21/1950	<ul style="list-style-type: none"> <u>Initial station observations</u>: Precipitation and temperature <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) <u>Original coordinates</u>: 33°29'N 104°24'W <u>Original elevation</u>: 3670' <u>Original observer</u>: US Fish and Wildlife Service <u>Original description</u>: Rolling land. <u>Daily recording of observations</u>: Form 1009 	TEMP Impact	PRCP Impact
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	<p>sent to WSO-Albuquerque</p> <ul style="list-style-type: none"> • <u>Time of observation</u>: 16:00 • <u>Remarks</u>: Station is located at Bitter Lakes Wildlife Refuge at the request of Fish and Wildlife Services. • <u>Exposure</u>: House to the NE (10' tall), trees to the NE (15' tall), observation site surrounded by a curb and is on an island 		
1/19/1951	<ul style="list-style-type: none"> • <u>Station relocation</u>: 300' S of the previous location • <u>New description</u>: Rolling bottom land. • <u>Daily recording of observations</u>: Form 1024 sent to WSO-Albuquerque • <u>Time of observation</u>: 17:00 (16:00) • <u>Remarks</u>: Station is located at Bitter Lakes Wildlife Refuge, with an anemometer and evaporation equipment, which was moved from WSO-Roswell, added to the observation site. • <u>Exposure (New location)</u>: Fence surrounds the observation site and no obstructions within 200' 	2	0
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "b" status. 	0	0
12/9/1959	<ul style="list-style-type: none"> • <u>New description</u>: Flat to rolling Sandy River Valley. • <u>Daily recording of observations</u>: Form 612-15 sent to WRPC • <u>Exposure (Same location)</u>: Administration building to the N (5°), fence surrounds the observation site 	0	0
1/22/1969	<ul style="list-style-type: none"> • <u>New description</u>: Flat to rolling pasture land in the Sandy River Valley. • <u>New observer</u>: Bureau of Sport Fisheries and Wildlife (US Fish and Wildlife Service) • <u>Daily recording of observations</u>: Form 612-15 sent to NWRC • <u>Time of observation</u>: 08:00 (17:00) • <u>Remarks</u>: Chain-link enclosure installed and the equipment was moved to comply with Weather Bureau Standards. • <u>Exposure (Same location)</u>: Foreman's residence to the NNE, refuge manager's 	3	0

	residence to the NE (3°), cedar tree to the W (20°), office to the NNW (5°), road to the E, entrance road to the NW, open area to the E and W of the observation site		
10/1/1978	<ul style="list-style-type: none"> • <u>New description</u>: Flat to slightly rolling pasture land sloping gently into the sandy Pecos River Valley. • <u>Remarks</u>: Station upgraded to class “ab” status from class “b” status. • <u>Exposure (Same location)</u>: Foreman’s residence to the NNE, refuge manager’s residence to the NE (3°), cedar tree to the W (20°), maintenance building to the NW, office to the NNW (5°), road to the E, entrance road to the N, open area to the E and W of the observation site 	0	0
4/21/1981	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-22 sent to NCC 	0	0
7/31/1987	<ul style="list-style-type: none"> • <u>Station relocation</u>: 448’ N of the previous location • <u>New coordinates</u>: 33°28’N 104°24’W (-1’N) • <u>New elevation</u>: 3664’ (-6’) • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Albuquerque • <u>Remarks</u>: Station is located at the refuge headquarters and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: 4 buildings to the S (2°, 2°, 2°, 2°) 	2	0
4/19/1989	<ul style="list-style-type: none"> • <u>Remarks</u>: Hygrothermograph was added to the observation site to record temperatures over the holidays and weekends. 	0	0
6/2/1993	<ul style="list-style-type: none"> • <u>New observer</u>: US Fish and Wildlife Service (Bureau of Sport Fisheries and Wildlife) • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: 2 buildings to the S (4°, 5°) 	0	0
7/20/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 33.45944 -104.40417 (-0.00723N +0.00417W), no station move reported 	0	0

COOP Station 291469, CD 7: Carlsbad, Eddy County, NM			
<p>Summary: Rooftop location in city until 1949, then stable location in residential area until 2001. City of Carlsbad grew up around station. Current location is hilly residential area south of town.</p> <p>Temperature rating: Poor (1894-present) Precipitation rating: Very good (1894-2001)</p>			
5/1/1894	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates:</u> 32°25'N 104°14'W • <u>Original elevation:</u> 3120' • <u>Original observer:</u> G.W. Lane • <u>Remarks:</u> No observational record, thought to be located near a school. 	TEMP Impact	PRCP Impact
11/1/1895	<ul style="list-style-type: none"> • <u>New observer:</u> A.A. Driggs (G.W. Lane) 	1	1
7/1/1896	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 8/1/1896. 		
8/1/1896	<ul style="list-style-type: none"> • <u>New observer:</u> H.G. Holabird (A.A. Driggs) • <u>Remarks:</u> Reactivation of station closed since 7/1/1896. 	1	1
4/1/1897	<ul style="list-style-type: none"> • <u>New observer:</u> E.M. Skeats (H.G. Holabird) 	1	1
4/1/1900	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 6/12/1901. 		
6/12/1901	<ul style="list-style-type: none"> • <u>Station relocation:</u> 0.1mi. W of the previous location • <u>New elevation:</u> 3122' (+2') • <u>New observer:</u> US Bureau of Reclamation (E.M. Skeats) • <u>Remarks:</u> Reactivation of station closed since 4/1/1900, located at the headquarters of the US Reclamation Service. 	2	10
5/1/1906	<ul style="list-style-type: none"> • <u>New description:</u> Generally level valley with no forestation and the Pecos River about 0.5mi. in the distance. • <u>Time of observation:</u> 18:00 • <u>CRS:</u> Bottom of shelter is 10'agl, door opens to the E, over shingle roof • <u>Exposure (Same location):</u> SRG and CRS on roof of a small building, 2-story building 60' to 	0	0

	the E		
9/27/1917	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 8'agl, new stand crate and steps to be constructed • <u>CRS</u>: Bottom of shelter is 7.5'agl (-2.5'), over board platform with weeds below (shingle roof), shelter framing formerly used for pans of an evaporation station • <u>MxMn</u>: Minimum thermometer adjusted • <u>Remarks</u>: Observations taken by one of the students at the local high school. • <u>Exposure (Same location)</u>: SRG and CRS in vacant lot adjoining backyard of a 2-story building 	2	0
10/21/1922	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 10'agl (+2') • <u>CRS</u>: Bottom of shelter is 6'agl (-1.5'), over weedy field (board platform with weeds below) • <u>MxMn</u>: Thermometers adjusted and rescaled • <u>Remarks</u>: Station is in the back of a 2-story building occupied by the US Reclamation Service, which provides excellent observations. 	2	1
10/12/1929	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 12'agl (+2'), Townsend support exchanged • <u>CRS</u>: Bottom of shelter is 12'agl (+6'), door opens to the S (E), over bare backyard (weedy field) • <u>MxMn</u>: Minimum thermometer adjusted • <u>Remarks</u>: Observer spent considerable money erecting a base, steps, and platform for the observation site. • <u>Exposure (Same location)</u>: SRG and CRS on top of shed 35' from 2-story building. 	2	1
5/28/1930	<ul style="list-style-type: none"> • <u>New description</u>: Country is generally level in the valley of the Pecos River. • <u>SRG</u>: Top of gauge is 7.5'agl (-4.5') • <u>CRS</u>: Bottom of shelter is 15'agl (+3'), door opens to the E (S) • <u>Time of observation</u>: 16:00 (18:00) 	3	1
5/15/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 17'agl (+9.5') • <u>CRS</u>: Over hard ground on roof of building (bare backyard), new shelter needed and to 	0	2

	<p>be furnished</p> <ul style="list-style-type: none"> • <u>Remarks</u>: Excellent station located in the back of the US Reclamation Service office. 		
7/19/1939	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>New description</u>: Generally level with no forest. • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Remarks</u>: R/RNG owned by the Soil Conservation Service, mounted very securely to roof of 2-story US Reclamation service building with vibration due to the roof. • <u>Exposure (Same location)</u>: Office building 35' to the E (23°), tree to the NNW (6°) 	0	2
8/15/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Painted the support • <u>CRS</u>: Replaced 2 slats and painted the shelter and the support • <u>MxMn</u>: Probably a hard-setting maximum thermometer 	1	0
11/28/1949	<ul style="list-style-type: none"> • <u>Station relocation</u>: Unknown proximity to the previous location • <u>New elevation</u>: 3120' (-2') • <u>New observer</u>: Nathan Wright (US Bureau of Reclamation) • <u>Remarks</u>: Station is located at the City Water pumping station. 	3	2
1/1/1950	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.0mi. W of the previous location • <u>New observer</u>: Oren Matney (Nathan Wright) • <u>Time of observation</u>: 08:00 (16:00) • <u>Remarks</u>: Station is located at the City Water pumping station. • <u>Exposure (New location)</u>: Administration building to the SW (12' tall), trees to the SW (25' tall), tree to the W (12' tall), street to the S, lawn in all quadrants surrounding the observation site 	1	1
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "ab" status. 	0	0
3/16/1959	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 20' ESE of the previous location 	2	2

	<ul style="list-style-type: none"> • <u>New observer</u>: Carlsbad Water Department (Oren Matney) • <u>Daily recording of observations</u>: Form 612-14 sent to WSO-Albuquerque • <u>Remarks</u>: Station is located at the City Water pumping station and was moved to provide better exposure. Former observer suffered a heart attack and had to resign as observer. • <u>Exposure (New location)</u>: Ornamental, low cedar trees to the NE (1°-3°), tree to the E (15°), 2 trees to the ESE (20°, 28°), office to the SW, trees to the SW (20°-28°), tree to the WNW (35°), Cypress Street to the E, Stevens Street to the S, lawn to the E and NW of the observation site 		
7/10/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG and R/RNG moved 135' W of the previous location • <u>Remarks</u>: Station is located at the City Water pumping station, SRG and R/RNG relocated due to construction of the building adjacent to the former observation site. Water tank to be removed. • <u>Exposure (New location)</u>: 4 trees to the N (18°, 22°, 24°, 26°), building to the NNE (8°), 2 trees to the NE (28°, 43°), 3 trees to the E (20°, 24°, 28°), building to the E (6°), building to the ESE (6°), 2 trees to the SE (30°, 30°), 4 trees to the S (14°, 28°, 28°, 32°), water tank to the SW (50°), 2 trees to the W (26°, 30°), Cypress Street to the E, Stevens Street to the S 	2	1
5/4/1962	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG and R/RNG moved 125' WSW of the previous location, CRS moved 330' WSW of the previous location • <u>New description</u>: In residential section of Carlsbad with the surrounding area hilly and semi-arid with mostly desert-type vegetation and rocky ground. • <u>Remarks</u>: Station located at the City Water pumping station and was moved to a permanent observation site as a result of a new office and pumping building. • <u>Exposure (New location)</u>: 3 trees to the NNE (8°, 16°, 18°), tree to the ENE (20°), building to 	2	1

	the E, 6 trees to the E (16°, 16°, 20°, 22°, 28°, 38°), small building to the NW (20°), Stevens Street to the S, fence (6' tall) to the S and W near the observation site.		
5/1/1967	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to the New Mexico State Climatologist 	0	0
5/1/1969	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC 	0	0
3/20/1974	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>F/P</u>: Instructed the observer on the operation • <u>CRS</u>: Installed latch and was tightened, paint job "not too good" • <u>Daily recording of observations</u>: Form F-10 sent to NCC • <u>Exposure (Same location)</u>: Warehouses to the NE, workshop to the E, office to the E, tree to the ESE, Stevens Street to the S, chain-link fence (10' tall) to the S and W of the observation site 	1	2
5/13/1983	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
3/6/1985	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG and F/P moved 196' NE of the previous location • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed at the old CRS location. • <u>Remarks</u>: Station is located at the City of Carlsbad Public Service Complex and is compatible for a continuation of the previous record. SRG and F/P relocated to get away from large storage area of cement water pipe that could, at times, grossly affect both the precipitation and temperature readings. • <u>Exposure (New location)</u>: City of Carlsbad service complex to the N, residences to the E, city building to the S, shop to the WSW, building to the NW, North Cypress Street to the E, Stevens Street to the S, driveway to the NW, grass surrounding the observation site 	2	2

6/4/1985	<ul style="list-style-type: none"> • <u>F/P</u>: Installation of Model III timer 	0	1
6/2/1993	<ul style="list-style-type: none"> • <u>New description</u>: Residential section outside of town with hilly, semi-arid desert land. • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Building to the S (13°), building to the NW (12°) 	0	0
7/1/1996	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32°25'50"N 104°14'44"W (+50"N, +44"W), no station move reported • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland • <u>Time of observation</u>: 07:00 (08:00) • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 	0	0
2/16/2001	<ul style="list-style-type: none"> • <u>Station relocation</u>: 4.0mi. S of the previous location • <u>New coordinates</u>: 32.34778 -104.22194 (-0.08276N -0.02362W) • <u>New description</u>: Hilly, semi-arid desert land, south side of town near airport. • <u>Exposure (New location)</u>: Storage building to the W (25°), mobile home to the NW (10°) 	4	2
3/10/2004	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.34778 -104.22250 (-0.00056W), no station move reported • <u>Remarks</u>: New coordinates obtained via Garmin V. 	1	1
7/9/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS 	2	0
6/2/2005	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge 	0	1
9/7/2005	<ul style="list-style-type: none"> • <u>NIMBUS</u>: Replaced display unit 	0	0
9/12/2006	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge 	0	1
1/29/2008	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge 	0	1
10/1/2009	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge 	0	1

COOP Station 291475, CD 7: Carlsbad FAA AP, Eddy County, NM

Summary: Time of observation issues but no major station moves except to avoid buildings.

Temperature rating: Very good (1948-present)

Precipitation rating: Very good (1948-present)			
8/22/1942	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates:</u> 32°20'N 104°16'W • <u>Original elevation:</u> 3239' • <u>Original observer:</u> Continental Airlines • <u>Original description:</u> Foot-hill country. • <u>SRG:</u> Top of gauge is 2.7'agl • <u>CRS:</u> Bottom of shelter is 4'agl • <u>Reporting of observations:</u> Precipitation reported daily to WSO-Albuquerque, temperature reported daily to WSO-Albuquerque • <u>Daily recording of observations:</u> Form 1009 sent to WSO-Albuquerque • <u>Time of observation:</u> 08:30 • <u>Remarks:</u> Station is located at Carlsbad Airport, with the SRG and MxMn thermometers moved from Hobbs Airport by the former observer. Continental Airlines closed their terminal at Hobbs and moved personnel to Carlsbad since it is the site of a new Army Air Base. • <u>Exposure:</u> Office 60' to the NNE (20' tall) 		
5/6/1943	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 6/12/1948. 		
6/12/1948	<ul style="list-style-type: none"> • <u>New observer:</u> Federal Aviation Agency (Continental Airlines) • <u>New elevation:</u> 3232' (-7') • <u>Remarks:</u> Reactivation of station closed since 5/6/1943, located at Carlsbad FAA Airport. 	1	1
10/30/1958	<ul style="list-style-type: none"> • <u>Station relocation:</u> Unknown proximity to the previous location • <u>Remarks:</u> Barograph added to the observation site. • <u>Remarks:</u> Station is located at Carlsbad FAA Airport. 	1	0
7/28/1959	<ul style="list-style-type: none"> • <u>Remarks:</u> Anemometer added to the observation site. 	0	0

3/18/1960	<ul style="list-style-type: none"> • <u>Remarks</u>: Hygrothermograph added to the observation site. 	0	0
8/1/1960	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form MF1-10 sent to NCC • <u>Time of observation</u>: Midnight (08:30) 	3	0
12/1/1964	<ul style="list-style-type: none"> • <u>New description</u>: Guadalupe Mountains about 9000' high are 60mi. to the WSW, with the immediate area broken with low ridges and hills. Arid country with the Pecos River 7mi. NE and numerous canyons oriented E-W. 	0	0
3/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Hygrothermograph is the primary equipment used for temperature measurements. 	0	0
7/20/1982	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) for backup • <u>Station relocation</u>: SRG moved 219' ESE of the previous location • <u>New description</u>: Surrounding area is generally flat with a few rolling hills and the Pecos River Valley located about 8mi. NW-E and the Guadalupe Mountains about 20mi. to the W. Land is semi-arid desert with sparse vegetation, few natural trees, and sparse grasses for cattle and sheep with extensive oil , natural gas, and potash deposits over the entire region. • <u>Time of observation</u>: 18:00 (Midnight) • <u>Remarks</u>: Station is located at Carlsbad FAA Airport. Air Midwest Airlines has begun taking partial observations from 18:00-20:00 daily and combines with the city of Carlsbad to cover periods when the observer has down time. • <u>Exposure (New location)</u>: Small building to the N, trees to the E, trees to the SSE, terminal building to the W, airport entrance to the S, parking area just to the W, open area with grass near and to the E of the observation site 	3	0
4/1/1986	<ul style="list-style-type: none"> • <u>Remarks</u>: Hygrothermograph equipment changed to the HO-83 from the HO-60. 	2	0
7/2/1991	<ul style="list-style-type: none"> • <u>New description</u>: Flat with few rolling hills and semi-arid type vegetation. 	0	0

	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form MF1-10C sent to NCDC 		
4/1/1992	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 90' W of the previous location • <u>Remarks</u>: SRG moved to improve exposure. • <u>Remarks</u>: Station is located at Carlsbad FAA Airport. 	0	2
10/12/1993	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2400' SW of the previous location • <u>Remarks</u>: Station is located at Carlsbad FAA Airport. • <u>Exposure (New location)</u>: Terminal to the ESE (12°) 	2	1
8/1/1999	<ul style="list-style-type: none"> • <u>Time of observation</u>: Midnight (18:00) 	2	0
11/29/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.33750 -104.26333 (+0.00420N, -0.00334W), no station move reported 	0	0
5/23/2003	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Tipping bucket rain gauge (TB) 	0	2

COOP Station 291480, CD 7: Carlsbad Caverns, Eddy County, NM

Summary: Reasonably stable site, ridgeline location, temperature unreliable prior to 1943 (rooftop), and no urbanization or land use changes. Record should be especially stable from 1962 through 2008.

Temperature rating: Very good (1943-present)

Precipitation rating: Very good (1930-present)

1/15/1930	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton Region Shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: 32°11'N 104°27'W • <u>Original elevation</u>: 4435' • <u>Original observer</u>: National Park Service • <u>Original description</u>: Rolling hill country with the station on a rather high ridge. 	TEMP Impact	PRCP Impact
1/1/1935	<ul style="list-style-type: none"> • <u>Station relocation</u>: 600' W of the previous 	2	2

	<p>location</p> <ul style="list-style-type: none"> • <u>New description</u>: Rolling country with no forests or water nearby, but scrub trees and brush all over the hills. • <u>SRG</u>: Top of gauge is 3'agl • <u>CRS</u>: Over rough rocky ground, some grass • <u>Time of observation</u>: Near sunset • <u>Exposure (New location)</u>: SRG is unobstructed with no high objects nearby 		
5/16/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 5.5'agl (+2.5') • <u>CRS</u>: Bottom of shelter is 7'agl, door opens to the N, over concrete floor(rough rocky ground, some grass) • <u>Remarks</u>: This station breaks many thermometers. 	3	1
4/11/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 10'agl (+4.5') , in fair condition and does not leak, installed new Townsend support • <u>CRS</u>: Bottom of shelter is 10'agl (+3'), door opens to the NNW (N), over roof that is concrete slab (concrete floor), door has piece chipped off, painted • <u>MxMn</u>: Probably a hard-setting maximum thermometer • <u>Exposure (Same location)</u>: SRG is unobstructed with no high objects nearby 	2	1
2/1/1943	<ul style="list-style-type: none"> • <u>Remarks</u>: SRG and CRS moved to a ground exposure from the top of a concrete roof. 	3	2
8/24/1950	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Time of observation</u>: 16:00 (Near sunset) • <u>Remarks</u>: Station is located at the monument grounds. • <u>Exposure (Same location)</u>: Fence surrounds the observation site 	0	0
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "ab" status. 	0	0
12/11/1959	<ul style="list-style-type: none"> • <u>New description</u>: Rocky and mountainous with semi-arid land. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Remarks</u>: Station is located at the rear of the 	0	0

	<p>National Park Administration office.</p> <ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Observation site on rocky knoll with no obstructions 		
9/12/1962	<ul style="list-style-type: none"> • <u>Station relocation</u>: 900' SSE of the previous location • <u>New elevation</u>: 4495' (+60') • <u>New description</u>: Rocky and mountainous with semi-arid land and scattered desert-type vegetation. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station is located at the rear of the National Park Administration office and was moved due to construction in the area around the former observation site. • <u>Exposure (New location)</u>: Building to the NE (6°), administration office to the SSW (5°), building to the W (4°), building to the NW (3°), building to the NNW (3°), roadway to the S between the administration office and the observation site, land slopes upward to the N 	2	2
5/12/1968	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (16:00) • <u>Remarks</u>: No observer was available to make afternoon readings. 	3	0
2/9/1972	<ul style="list-style-type: none"> • <u>CRS</u>: Shelter very old and needs to be replaced • <u>MxMn</u>: Thermometers checked and were OK • <u>Remarks</u>: Since December 1971, have been off-setting the maximum temperature entries on the day of the occurrence and not for the past 24-hour period. 	1	0
1/1/1975	<ul style="list-style-type: none"> • <u>Remarks</u>: Station downgraded to class "a" status from class "ab" status. 	0	0
1/13/1977	<ul style="list-style-type: none"> • <u>New description</u>: Rocky and mountainous with semi-arid land and scattered desert-type vegetation with numerous cuts and canyons criss-crossing the region. • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Remarks</u>: Station is located at the monument grounds, an anemometer owned by the National Park Service added to the observation site. • <u>Exposure (Same location)</u>: Housing to the N 	0	0

	(5°), housing to the NE (6°), park housing to the ESE, 2 park housing buildings to the W, housing to the NW (3°), paved roadway to the S with path leading to the observation site, bluff rising 3°-5° to the N, canyon bottom to the S, entrance to a cave to the S		
10/26/1978	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>Station relocation</u>: 800' ENE of the previous location • <u>New elevation</u>: 4505' (+10') • <u>Remarks</u>: Station is located at the resident quarter's area and is compatible for a continuation of the previous record. A thermograph and fire weather equipment owned by the National Park Service added to the observation site. Relocation was done properly by National Park Service employees to a combined fenced area with easy access. • <u>Exposure (New location)</u>: 2 houses to the WSW, 3 houses to the W, warehouse to the WNW, paved road just to the N, E, and S of the observation site, main road to the WNW 	2	1
10/22/1980	<ul style="list-style-type: none"> • <u>SRG</u>: Replaced NWS gauge with a US National Park Service gauge, leaving the NWS Townsend support • <u>CRS</u>: Replaced NWS shelter with a US National Park Service shelter • <u>Remarks</u>: Additional anemometer, along with a hygrothermograph and solar equipment added to the observation site. 	2	2
7/30/1992	<ul style="list-style-type: none"> • <u>New observer</u>: Carlsbad Caverns National Park (National Park Service), change in name only • <u>New description</u>: Rocky and mountainous with semi-arid land and scattered desert-type vegetation. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque 	0	0
9/21/1992	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32°32'5"N 103°56'12"W (+21'5"N, -30'48"W), no station move reported 	0	0

	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 		
7/20/2000	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland • <u>Remarks</u>: Updated for ROSA to AWIPS. 	0	0
5/15/2002	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Maximum-minimum temperature system (MMTS), removal of CRS and MxMn 	2	0
6/1/2004	<ul style="list-style-type: none"> • <u>New elevation</u>: 4402' (-3') 	0	0
4/29/2005	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS 	2	0
2/2/2006	<ul style="list-style-type: none"> • <u>New observer</u>: Unknown (Carlsbad Caverns National Park) 	0	0
12/19/2008	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.16mi. W of the previous location • <u>New coordinates</u>: 32.17833 -104.44333 (+0.00139N) • <u>New elevation</u>: 4435' (+33') • <u>Exposure (New location)</u>: Bush to the E (25°), house to the SE (13°), tree to the S (31°), tree to the SW (19°) • <u>Remarks</u>: Station is compatible for continuation of the previous record. 	2	1

COOP Station 291931, CD 6: Cloudcroft, Otero County, NM

Summary: Ridgetop station that wandered around a bit through Cloudcroft, which probably remained small enough to avoid an urban heat island effect. But the station moved from valleys to ridges and back again, leading to massive microclimate influences. Precipitation probably much more stable. Location remained within 0.6 km a radius the whole time. The 1987 move was 1.1 miles by road, 0.7 miles by crow.

Temperature rating: Poor (1901-present)

Precipitation rating: Good (1901-present)

12/1/1901	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and 	TEMP Impact	PRCP Impact
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	<p>temperature</p> <ul style="list-style-type: none"> • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton Region Shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: 32°57'N 105°45'W • <u>Original elevation</u>: 8650' • <u>Original observer</u>: El Paso & Southwestern Railroad • <u>Original description</u>: Mountainous, wooded country. 		
4/22/1906	<ul style="list-style-type: none"> • <u>New description</u>: Near the summit of a mountain on a wooded slope. • <u>SRG</u>: Top of gauge is 3.8'agl • <u>CRS</u>: Bottom of shelter is 3.9'agl, door opens to the N, over uncultivated ground • <u>Time of observation</u>: 17:00 • <u>Exposure (Same location)</u>: House to the E, several trees 20' from the observation site 	0	0
7/1/1909	<ul style="list-style-type: none"> • <u>New description</u>: Mountainous with forest in all directions. • <u>SRG</u>: Top of gauge is 3'agl (-0.8') • <u>Exposure (Same location)</u>: SRG 50' from nearest high object in a forest clearing 	2	1
10/24/1922	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 2.5'agl (-0.5'), funnel was stolen and new one will be sent ASAP • <u>CRS</u>: Bottom of shelter is 3.5'agl (-0.4), over wooden station platform (uncultivated ground), repairs made to door • <u>Remarks</u>: Station has been located at the depot platform since 1909, previously located at the observer's home. Though exposure is good, the equipment is rather open to mischief, particularly troublesome kids since the location is near a summer resort. • <u>Exposure (Same location)</u>: Fair exposure at the depot 	0	0
10/10/1927	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 0.5'agl (-3') • <u>Remarks</u>: CRS to be moved 30' W, placed on a support 4' tall with labor and material furnished by the railroad company. 	2	0
5/17/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (+1'), gauge worn out and new one to be furnished 	2	1

	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 4'agl (+3.5'), will be painted • <u>MxMn</u>: Recommend a replacement of the thermometers 		
3/20/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Gauge in good condition after tested for leaks • <u>CRS</u>: Bottom of shelter is 3'agl (-1'), door opens to the NE (N), over barren ground (wooden platform) • <u>Remarks</u>: Observer had replaced the SRG and relinquished the old SRG, which will be used at another station. • <u>Exposure (Same location)</u>: Tree 50' to the NE (40'tall) 	1	0
8/31/1947	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 5/10/1948. 		
5/10/1948	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1200' NE of the previous location • <u>New coordinates</u>: 32°57'N 105°44'W (-1'W) • <u>New elevation</u>: 8575' (-75') • <u>New observer</u>: David L.C. Hover (El Paso & Southwestern Railroad) • <u>New description</u>: Steep, hilly, and rocky land on a high mesa. • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Time of observation</u>: 18:00 (17:00) • <u>Remarks</u>: Reactivation of station closed since 8/31/1947, located at the observer's residence using new US Weather Bureau equipment. Station name change to Cloudcroft #1 from Cloudcroft. • <u>Exposure (New location)</u>: Garage to the NE (12' tall), observer house to the SE (20' tall), tree to the S (20' tall), 2 trees to the SSW (20' tall, 30' tall), garden to the NW, fence to the E, street to the E, land slopes downward 25° to the W of the observation site 	2	2
11/19/1952	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. WSW of the previous location • <u>New observer</u>: E.T. Harndon (David L.C. Hover) • <u>New description</u>: On a high mesa surrounded by mountainous country. 	2	2

	<ul style="list-style-type: none"> • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Station is located at the observer's home after the former observer resigning due to bad health. • <u>Exposure (New location)</u>: Building to the NE (10' tall) 		
2/1/1953	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.4mi. SE of the previous location • <u>New observer</u>: Roger E. Mayfield (E.T. Harndon) • <u>Remarks</u>: Station is located at Wayside Cabins after the former observer resigning due to bad health. • <u>Exposure (New location)</u>: Building to the N (12' tall), garage to the E (10' tall), house to the SE (20' tall), building to the WNW (8' tall) 	2	2
11/13/1958	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. NE of the previous location • <u>New elevation</u>: 8700' (+125') • <u>New observer</u>: US Forest Service (Roger E. Mayfield) • <u>New description</u>: On a high divide in the Sacramento Mountains. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 17:30 (17:00) • <u>Remarks</u>: Station is located at the Cloudcroft Ranger Station after the US Forest Service desired to operate a station in Cloudcroft. Station name change to Cloudcroft Ranger Station from Cloudcroft #1. • <u>Exposure (New location)</u>: Tree to the N (40°), 2 trees to the NE (15°, 20°), tree to the SSW (75°), office to the W (8°), tree to the NW (30°), path to the highway to the SSE, ridge to the N rises 5°-10° from the observation site 	3	2
3/30/1960	<ul style="list-style-type: none"> • <u>Station relocation</u>: 45' SSE of the previous location • <u>New coordinates</u>: 32°58'N 105°45'W (+1'N, +1'W) • <u>New elevation</u>: 8695' (-5') • <u>Time of observation</u>: 17:00 (17:30) 	1	1

	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the Cloudcroft Ranger Station. • <u>Exposure (New location)</u>: Tree to the N (34°), 3 trees to the NE (20°, 35°, 40°), 2 trees to the E (40°, 42°), office to the SE (4°), tree to the SW (38°), tree to the WNW (58°), 2 trees to the NNW (30°, 45°), ridge to the N rises approximately 10° from the observation site 		
6/4/1969	<ul style="list-style-type: none"> • <u>New description</u>: On a high divide in the Sacramento Mountains heavily covered by ponderosa pine and spruce. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Exposure (New location)</u>: 2 trees to the NE (43°, 50°), office to the E, garages to the W, tree to the NW (42°), cement ramp and parking area to the S 	0	0
2/4/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. SW of the previous location • <u>New elevation</u>: 8827' (+132') • <u>New observer</u>: C.W. Ritter (US Forest Service) • <u>Remarks</u>: Station located at Cloudcroft Lodge and is compatible for a continuation of the previous record, relocation considered necessary to continue the record. Station name change to Cloudcroft Lodge from Cloudcroft Ranger Station. • <u>Exposure (New location)</u>: Lodge to the N (40°), pool to the NE, store to the SE (2°), line of pine trees to the W (35°), entrance to the S, parking area to the W, observation site is located in a grassy area 	2	2
4/1/1970	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported on request to WSO-Albuquerque • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-Albuquerque • <u>Remarks</u>: River rainfall reporting services added at this station. 	0	0
4/1/1973	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported on request to WSO-El Paso • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-El Paso 	0	0
7/1/1973	<ul style="list-style-type: none"> • <u>New observer</u>: Cloud Country Lodge (C.W.) 	0	0

	<p>Ritter)</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-El Paso • <u>Remarks</u>: Station name change to Cloud Country Lodge from Cloudcroft Lodge. COOP ID changes to 291933 from 291927. 		
7/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
7/28/1976	<ul style="list-style-type: none"> • <u>New observer</u>: Cloud Country Club (Cloud Country Lodge) • <u>Remarks</u>: Station name change to Cloud Country Club from Cloudcroft Country Lodge at the request of the owner, who no longer takes observations, which are instead taken by the establishment employees. 	1	1
3/20/1979	<ul style="list-style-type: none"> • <u>New description</u>: Located on a high divide in the Sacramento Mountains in a heavily wooded region covered with ponderosa pine, spruce, and other conifer species and elevations from 9000'-10000' falling off sharply to 4300' about 20mi. W in the Tularosa Basin. • <u>Exposure (Same location)</u>: Lodge to the N (40°), pool to the NE, store to the SE (2°), trees to the SE, line of pine trees to the W (35°), parking area to the E, entrance to the S, road to the S, parking area to the W, observation site is located in a grassy area 	0	0
10/11/1979	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.8mi. NNE of the previous location • <u>New elevation</u>: 8801' (-26') • <u>New observer</u>: Cloudcroft Cable TV (Cloud Country Club) • <u>Time of observation</u>: 16:30 (17:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Previous observation site needed relocation for some time, but none were available until recently and thus the previous observer was terminated on 10/10/1979. Station name change to Cloudcroft Cable TV from Cloud Country Club. COOP ID change to 291927 from 291933. 	2	2

	<ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Tree to the N (45°), trees in to the NE, house to the NE, tree to the E (51°), tree to the SE (53°), tree to the S (50°), 2 trees to the W (24°, 32°), observer's house to the WNW, 2 cable TV towers to the NW (51°, 54°), trees to the NE, driveway to the E, Geronimo Street to the S, driveway just to the W 		
10/1/1982	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
8/27/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 330' E of the previous location • <u>New elevation</u>: 8819' (+18') • <u>New observer</u>: Barbara Frazer (Cloudcroft Cable TV) • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours (on request) to WSO-El Paso, temperature reported to WSO-El Paso • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record after the observer sold her cable TV operations and moved to a new residence on the same side of the street as the old observation site. Station name change to Cloudcroft from Cloudcroft Cable TV. • <u>Exposure (New location)</u>: Trees to the N, observer's house to the N between trees and the observation site, Geronimo Street to the S, driveway to the W 	2	1
6/10/1987	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 6/11/1987. 		
6/11/1987	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.1mi. SSE of the previous location • <u>New coordinates</u>: 32°57'N 105°44'W (-1'N, -1'W) • <u>New elevation</u>: 8660' (-159') • <u>New observer</u>: Merle M. Mills (Barbara Frazer) • <u>New description</u>: Located on the high divide in 	4	2

	<p>a shallow valley that is surrounded by heavily wooded, mountainous terrain.</p> <ul style="list-style-type: none"> • <u>MxMn</u>: Minimum temperatures 4°F-6°F cooler and maximum temperatures 2°F-3°F higher than the previous location • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours to WSO-Albuquerque, temperature not reported • <u>Remarks</u>: Reactivation of station closed since 6/10/1987, located at the observer's residence but not compatible for a continuation of the previous record. Incompatibility due to the drop in elevation from the side of a ridge to the valley floor. COOP ID changes to 291931 from 291927. • <u>Exposure (New location)</u>: Trees to the ENE (43°), house to the ESE (18°), trees to the SW (34°), trees to the WNW (60°) 		
4/1/1989	<ul style="list-style-type: none"> • <u>New observer</u>: Bobby D. Cook (Merle M. Mills) • <u>Remarks</u>: Previous observer terminated on 3/31/1989, no change in station location. 	1	1
4/11/1990	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.25''$ in 24 hours (when rains $\geq 0.50''$ in 24 hours) to WSO-Albuquerque • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
9/3/1993	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.25''$ in 24 hours to WSO-Albuquerque, temperature reported daily to WSO-Albuquerque • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque • <u>Remarks</u>: Reporting of precipitation and temperature to be used for WSO-Albuquerque zone forecast verification. 	0	0
12/11/1995	<ul style="list-style-type: none"> • <u>New observer</u>: David Gilbreath (Bobby D. Cook) • <u>Reporting of observations</u>: Precipitation digitally reported by event to WSO-Albuquerque, temperature digitally reported by event to WSO-Albuquerque 	1	1
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0

9/12/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.95444 -105.73528 (+0.00444N +0.00195W), no station move reported 		
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COOP Station 292848, CD 5: Elephant Butte Dam, Sierra County, NM			
<p>Summary: Very stable location and observers, no urbanization. On side of bluff, so no valley pooling of cold air at night. Initial elevation appears to be base of dam rather than elevation of station. Station “relocation” in 1933 appears to be correction of elevation from base of dam and distance of observing site from base of dam; present location is still consistent with reported location prior to 1933. Temperature may be subject to inhomogeneities due to changes in operating level of Elephant Butte Reservoir and time of observation changes.</p> <p>Temperature rating: Very good (1908-present) Precipitation rating: Excellent (1908-present)</p>			
8/15/1908	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: 33°09’N 107°11’W • <u>Original elevation</u>: 4265’ • <u>Original observer</u>: US Bureau of Reclamation • <u>Original description</u>: Small valley surrounded by hills in the country. 	TEMP Impact	PRCP Impact
7/17/1913	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 2.5’agl • <u>CRS</u>: Bottom of shelter is 3.7’agl, door opens to the S, over bare ground • <u>Time of observation</u>: 18:00 • <u>Exposure (Same location)</u>: SRG is 30’ from the nearest high object, office building 150’ to the SE 	0	0
5/14/1916	<ul style="list-style-type: none"> • <u>Remarks</u>: Anemometer and evaporation equipment added to the observation site. 	0	0
4/1/1917	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 4’agl (+0.3’), door opens to the N (S) • <u>New description</u>: On a bluff adjoining the lake created by the dam, which is about 	1	0

	<p>1mi. NW, with the nearest approach of the lake about 200' to the N.</p> <ul style="list-style-type: none"> • <u>Remarks</u>: Station name change to Elephant Butte from Rio Grande Dam 		
11/1/1919	<ul style="list-style-type: none"> • <u>Station relocation</u>: 600' SE of the previous location • <u>Remarks</u>: Station was moved from the face of the bluff near the office building to a bluff just S of the observer's home. 	2	1
11/3/1923	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (+1') • <u>MxMn</u>: Minimum thermometer adjusted • <u>Remarks</u>: Station is located at the home of the dam's caretaker, with an observer that keeps excellent records. • <u>Exposure (Same location)</u>: Fence surrounds the observation site 	0	0
9/30/1927	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-0.5'), Townsend support painted • <u>CRS</u>: Painted • <u>MxMn</u>: Thermometers rescaled • <u>Remarks</u>: The anemometer was cleaned and oiled. 	1	0
7/7/1933	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.8mi. from the previous location • <u>New elevation</u>: 4576' (+311') 	1	1
3/2/1950	<ul style="list-style-type: none"> • <u>New description</u>: Located on top of a small knoll with sandy and rocky soil and little vegetation. • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Albuquerque, temperature reported daily to WSO-Albuquerque • <u>Daily recording of observations</u>: Form 1024 sent to WSO-Albuquerque • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Station is located at Elephant Butte Reservoir. • <u>Exposure (Same location)</u>: Unobstructed with a fence surrounding the observation site 	2	0
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "ab" status. 	0	0

12/6/1960	<ul style="list-style-type: none"> • <u>New description</u>: Rocky and mountainous with a semi-arid climate. • <u>Reporting of observations</u>: Precipitation and temperature not reported • <u>Daily recording of observations</u>: Form 612-25 sent to WSO-Albuquerque • <u>Remarks</u>: Water thermometers added to the observation site. • <u>Exposure (Same location)</u>: Elephant Butte to the N (2°), ridge to the E (2°), ridge to the S (1°), ridge to the W (5°), roadway to the N about 10° below the observation site, drive surrounding the observation site, which is on top of a small knoll and surrounded by a fence 	0	0
5/1/1969	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-25 sent to NWRC 	0	0
1/7/1974	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-22 sent to NCC • <u>Time of observation</u>: 16:30 (17:00) 	1	0
3/21/1980	<ul style="list-style-type: none"> • <u>New observer</u>: Water, Power, and Resources Administration (US Bureau of Reclamation) 	1	1
3/1/1981	<ul style="list-style-type: none"> • <u>New description</u>: Area generally rocky and mountainous in all directions except the Rio Grande Valley to the N with all vegetation semi-arid to desert-like, even close to the lake. The Cristobal Mountain range extends through the entire W edge of the lake area to the Caballo Mountains to the S. Gradual rise in elevation from the lake and river valley to the Black Mountains 25-30mi. to the W. • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>R/RNG</u>: The primary equipment used for precipitation measurements • <u>Time of observation</u>: Midnight (16:30) • <u>Remarks</u>: Station funding changed with NWS equipment now used as backup in case of equipment failure. Thermograph, additional evaporation equipment, and an additional anemometer owned by the 	3	2

	<p>Water, Power, and Resources Administration added to the observation site. The thermograph is the primary equipment used for temperature measurements.</p> <ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Elephant Butte to the N (2°), houses to the NE, ridge to the E (2°), ridge to the S (1°), ridge to the W (5°), roadway to the N about 10° below the observation site, drive surrounding the observation site, which is on top of a small knoll and surrounded by a chain-link fence 		
3/16/1981	<ul style="list-style-type: none"> • <u>New observer</u>: US Bureau of Reclamation (Water, Power, and Resources Administration) • <u>Remarks</u>: Change of station name was instituted by the Secretary of the Interior, James Watt. 	0	0
7/1/1981	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (Midnight) • <u>Remarks</u>: Change in observation time brings this station in line with other evaporation stations in New Mexico and was more convenient to the observer. 	3	0
7/19/1991	<ul style="list-style-type: none"> • <u>New observer</u>: US Bureau of Reclamation – Power and Storage Division (US Bureau of Reclamation) • <u>New description</u>: In the Rio Grande River Valley, 0.25mi. S of the dam and lake with desert-type vegetation. Outside the valley, the terrain is rocky and mountainous. • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Albuquerque 	0	0
3/31/1993	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Albuquerque 	0	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-92 sent to WSO-El Paso 	0	0
12/6/1996	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Phone tower to the E (60°) • <u>Remarks</u>: Replaced the stolen anemometer. 	0	0
8/30/2001	<ul style="list-style-type: none"> • <u>Coordinates (current)</u>: 33.146110 N, - 107.184440 W 	0	0

COOP Station 292865, CD 7: Elk, Chaves County, NM			
<p>Summary: Station in foothills, has gradually migrated up the canyon over time probably leading to positive bias in precipitation trend and negative bias in temperature trend. Station was always in bottomland, but temperatures subject to inhomogeneities due to changes in elevation and local subsistence irrigation. No instrument shelter until 1920; should ignore temperatures prior to 1920.</p> <p>Temperature rating: Fair (1895-present) Precipitation rating: Poor (1895-present)</p>			
6/1/1895	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Max-Min thermometer (MxMn) • <u>Original coordinates:</u> 32°54'N 105°15'W • <u>Original elevation:</u> 5600' • <u>Original observer:</u> Henning Von Bosse • <u>Original description:</u> Rolling foothills. 	TEMP Impact	PRCP Impact
11/1/1896	<ul style="list-style-type: none"> • <u>New observer:</u> J.F. Hinkle (Henning Von Bosse) 	1	1
7/1/1901	<ul style="list-style-type: none"> • <u>New observer:</u> A.W. Criswell (J.F. Hinkle) 	1	1
6/1/1902	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 8/1/1904. 		
8/1/1904	<ul style="list-style-type: none"> • <u>Station relocation:</u> Unknown proximity to the previous location • <u>New coordinates:</u> 32°56'N 105°17'W (+2'N, +2'W) • <u>New elevation:</u> 5700' (+100') • <u>New observer:</u> Boyd Williams (A.W. Criswell) • <u>New description:</u> Country is hilly, sloping to the S downhill toward the Penasco River. • <u>Remarks:</u> Reactivation of station closed since 6/1/1902. Station name change to Elk from Lower Penasco. 	3	2
6/1/1906	<ul style="list-style-type: none"> • <u>MxMn:</u> Mounted on a small porch • <u>Time of observation:</u> Sunset • <u>Exposure (Same location):</u> "Moderately-sized" cottonwood tree 50' to the N, Penasco River to the S (600') 	0	0
3/31/1910	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 6/12/1920. 		
6/12/1920	<ul style="list-style-type: none"> • <u>Equipment:</u> Addition of Cotton region shelter 	3	2

	<p>(CRS)</p> <ul style="list-style-type: none"> • <u>Station relocation</u>: 1.0mi. E of the previous location • <u>Remarks</u>: Reactivation of station closed since 3/31/1910. Station name change to Elk (near) from Elk. 		
10/23/1922	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl, in poor condition, outer can was taken to Alamogordo and repaired, re-nailed gauge to the stand • <u>CRS</u>: Bottom of shelter is 4'agl, door opens to the N, over plowed ground, shelter was secured, replaced slats, repaired the door • <u>MxMn</u>: Thermometers adjusted and rescaled • <u>Remarks</u>: The observer is a fine ranchman who has an unusually fine record. 	1	1
12/1/1925	<ul style="list-style-type: none"> • <u>New description</u>: In the foothills of the Sacramento Mountains on the Rio Penasco about 150' away. • <u>CRS</u>: Over sod (plowed ground) • <u>Exposure (Same location)</u>: SRG is 60' from the observer's house 	1	0
10/14/1929	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. E of the previous location • <u>SRG</u>: Smoothed up the rim and funnel • <u>CRS</u>: Bottom of shelter is 3'agl (-1'), door opens to the SW (N), over bare ground (sod), left temporarily on a large box, observer set to reface and paint the shelter • <u>MxMn</u>: Minimum thermometer adjusted • <u>Remarks</u>: Station is located at the observer's home that was recently built. 	2	2
5/17/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5') • <u>CRS</u>: Bottom of shelter is 4'agl (+1'), door opens to the N (SW), over plowed ground (bare ground) • <u>Exposure (Same location)</u>: SRG in best possible location, but grape vines are "rather too close" 	2	2
3/19/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-0.5'), new gauge support furnished • <u>CRS</u>: Bottom of shelter is 3'agl (-1'), door opens to the W (N), over turf (plowed 	2	1

	<p>ground), new shelter needed and will be furnished</p> <ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Nearest high object is 2' to the E (2' tall) 		
5/4/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5') • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Lombardy poplar to the N (45°), house to the WSW (17°), tree to the W (30°) 	0	1
8/5/1953	<ul style="list-style-type: none"> • <u>New description</u>: In Penasco River Valley. • <u>Time of observation</u>: 18:00 (Sunset) • <u>Remarks</u>: Station name change to Elk from Elk (near). • <u>Exposure (Same location)</u>: 3 trees to the NE (12'-15' tall), tree to the SE (25' tall), tree to the W (10' tall), poplar tree to the NW (60' tall) 	0	0
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "a" status. 	0	0
5/25/1955	<ul style="list-style-type: none"> • <u>Remarks</u>: Station name change to Elk 3E from Elk. 	0	0
1/27/1959	<ul style="list-style-type: none"> • <u>New observer</u>: Evans T. Williams (Boyd Williams) 	1	1
3/4/1965	<ul style="list-style-type: none"> • <u>Station relocation</u>: 35' SE of the previous location • <u>New description</u>: In Penasco River Valley with some orchards and irrigated farms. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station is located at the observer's home, moved to improve exposure. • <u>Exposure (New location)</u>: Tree to the N (26°), 2 trees to the NE (22°, 34°), 2 trees to the SE (28°, 36°), 2 trees to the S (24°, 29°), 2 trees to the WSW (44°, 48°), building to the W (10°), poplar tree to the WNW (28°), poplar tree to the NW (44°), 2 trees to the NW (20°, 22°), driveway to the NW, open fields to the N and S, orchards to the E 	2	1
9/20/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 100' NE of the previous location • <u>New observer</u>: Charles W. Mulcock (Evans T. 	2	1

	<p>Williams)</p> <ul style="list-style-type: none"> • <u>New description</u>: In Penasco River Valley with ranch land, some orchards, and irrigated farms. • <u>SRG</u>: Installed new gauge on a metal support • <u>CRS</u>: Installed new shelter with metal support • <u>Daily recording of observations</u>: Form F-10 sent to NCC • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Former observer passed away and the new observer is his nephew. • <u>Exposure (New location)</u>: Line of trees to the N, building surrounded by chain-link fence to the N between the observation site and the line of trees, orchard trees to the S (30°), tree to the W (34°), open area to the NE and NW of the observation site 		
1/3/1977	<ul style="list-style-type: none"> • <u>Station relocation</u>: 900' N of the previous location • <u>New elevation</u>: 5705' (+5') • <u>New description</u>: In Penasco River Valley with moderate mountains surrounding the entire area. Ranch land covers most of the area, except the Rio Penasco Valley, which is extensively used for irrigated farming of wheat, corn, fruit, orchards, etc. • <u>Remarks</u>: Station is located at the observer's residence, a new home, and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Base of low mountain to the NE, house to the S (15°), walnut tree grove to the W, Highway 82 to the N, ranch road to the S, driveway to the SW 	3	2
8/29/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 1.3mi. WNW of the previous location • <u>New coordinates</u>: 32°57'N 105°18'W (+1'N, +1'W) • <u>New elevation</u>: 5727' (+22') 	3	2

	<ul style="list-style-type: none"> • <u>New observer</u>: Ruth T. Cleve (Charles W. Mulcock) • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Station name change to Elk 2E from Elk 3E. Previous observer rarely at home before moving to Artesia, NM, resulting in a poor record, which should immediately show marked improvement. • <u>Exposure (New location)</u>: Orchard to the SE, garage to the S, ranch house to the SW, Highway 82 to the N, driveway to the W, observation site located in a grassy area 		
9/11/1989	<ul style="list-style-type: none"> • <u>New description</u>: Located in extensively irrigated farm land of the Rio Penasco Valley, with the foot hills of the Sacramento Mountains surrounding the area. 	0	0
9/24/1992	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.25''$ or snows $\geq 1''$ in 24 hours to WSO-Albuquerque • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
8/4/1993	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Tree to the N (12°), trees to the NE (12°), tree to the NW (10°) 	0	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0
2/16/2000	<ul style="list-style-type: none"> • <u>Station relocation</u>: 3.0mi. E of the previous location • <u>New coordinates</u>: 32.94417 -105.33417 (-0.00583N +0.03417W) • <u>New elevation</u>: 5845' (+118') • <u>New observer</u>: Helen Lewis (Ruth T. Cleve) • <u>Reporting of observations</u>: Precipitation not reported • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record, moved after the previous observer quit. Station name change to Elk from Elk 2E. New coordinates obtained 	3	2

	via GPS. <ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Building to the E (15°), building to the SW (10°), trees to the W (25°), building to the NW (10°) 		
3/24/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS • <u>Station relocation</u>: 2.0mi. S of the previous location • <u>New coordinates</u>: 32.91600 -105.33810 (-0.02817N +0.00393W) • <u>New elevation</u>: 5934' (+89') • <u>New description</u>: Located between paved highway and Rio Penasco near the E edge of Lincoln National Forest in the Sacramento Mountain foothills. Rocky, trees at higher elevations with grass and sparse brush. A few orchards and cultivated areas near the river. • <u>Exposure (New location)</u>: Row of trees to the S (51°-55°), car port to the S (4°), 2 trees to the W (25°, 41°), house to the NW (5°) 	3	2

COOP Station 293237, CD 7: Flying H Ranch, Chaves County, NM			
Summary: Precipitation-only station in east-facing foothills. Stable precipitation record from 1928 to 1978, except for exposure relocation in 1970.			
Temperature rating: N/A			
Precipitation rating: Very good (1917-1978)			
3/17/1917	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: 33°01'N 105°14'W • <u>Original elevation</u>: 5600' • <u>Original observer</u>: Ora McLane • <u>Original description</u>: Valley bordered by rolling hills. 	TEMP Impact	PRCP Impact
9/30/1919	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 7/1/1928. 		
7/1/1928	<ul style="list-style-type: none"> • <u>Station observations</u>: Discontinuance of 		3

	<p>temperature</p> <ul style="list-style-type: none"> • <u>Equipment</u>: Removal of CRS and MxMn • <u>Station relocation</u>: 20.0mi. NE of the previous location • <u>New coordinates</u>: 33°00'N 105°06'W (-1'N,-8'W) • <u>New elevation</u>: 5300' (-300') • <u>New observer</u>: Felix Cattle Company (Ora McLane) • <u>New description</u>: On a hill in the small mountain country of SW Chaves County with several hundred acres under cultivation and irrigation, with large orchards, extensive alfalfa fields. • <u>SRG</u>: Top of gauge is 3.8'agl • <u>Time of observation</u>: Evening • <u>Remarks</u>: Reactivation of station closed since 9/30/1919. Station name change to Felix (near) from Felix. • <u>Exposure (New location)</u>: SRG 75' from the nearest high object, a tree 		
10/15/1929	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-0.8') • <u>Remarks</u>: The observer is a ranch foreman and has been taking observations since the reactivation of the station. 		1
12/31/1929	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 2/1/1931. 		
2/1/1931	<ul style="list-style-type: none"> • <u>New observer</u>: Flying H Ranch (Felix Cattle Company) • <u>Remarks</u>: Reactivation of station closed since 12/31/1929. Station name change to Felix from Felix (near). 		1
3/30/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5'), repaired gauge support and painted it • <u>Exposure (Same location)</u>: Tree 30' to the E (25' tall) 		1
3/26/1963	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the observer's ranch. 		0
5/30/1964	<ul style="list-style-type: none"> • <u>New observer</u>: Elsie C. Hendricks (Flying H Ranch) • <u>New description</u>: Rolling, rocky rangeland in the Rio Felix Valley. • <u>Daily recording of observations</u>: Form 612-14 		1

	<p>sent to NWRC</p> <ul style="list-style-type: none"> • <u>Time of observation</u>: 17:00 (Evening) • <u>Remarks</u>: Station is located at the observer's ranch home with no break from the previous record. Former observer died on 5/28/1964 and the new observer is his daughter-in-law who lives at the ranch. Station name change to Flying H from Felix. COOP ID changes to 293237 from 293174. • <u>Exposure (Same location)</u>: Post office to the E (34°), tree to the S (32°), building to the S (14°), building to the SW (12°), 4 trees to the SW (16°, 23°, 24°, 26°), building to the W (16°), drive just to the S 		
3/30/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 50' NNE of the previous location • <u>SRG</u>: Relocated to provide a satisfactory exposure • <u>Exposure (New location)</u>: Post office to the SSW (20°), residence to the W (10°), tree to the W (25°), shed to the WNW, orchard to the NW, tree to the NNW (30°), entrance to the ranch to the W between the tree and the observation site 		2
1/13/1977	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Exposure (New location)</u>: Orchard to the N, house to the E, trailer to the ESE, post office to the SSW (20°), ranch headquarters to the W (10°), tree to the W (28°), shed to the WNW, tree to the NNW (30°), entrance to the ranch W between the tree and the observation site, dirt driveway to the W between the tree and the observation site 		0
7/14/1978	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed to satisfy requirements of non-reporting "b" network stations. 		

COOP Station 293855, CD 8: Hatch 5NW, Dona Ana County, NM

Summary: Station originally in desert town (1894-1918), then farm town (1928-1970),

<p>then irrigated farmland (1970-1995), then desert town (1996-1998), and then irrigated farmland (1998-present). Moves in 1928 and 1970 took station 8 mi west, with possible impact on precipitation. Temperatures seem wholly untrustworthy.</p> <p>Temperature rating: Poor (1894-present) Precipitation rating: Very good (1894-present)</p>			
3/1/1894	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Max-Min thermometer (MxMn), Standard rain gauge (SRG) • <u>Original coordinates:</u> 32°40'N 107°04'W • <u>Original elevation:</u> 4063' • <u>Original observer:</u> AT & SF Railroad • <u>Original description:</u> Rolling foothill country 1 mi. E of Rio Grande River. • <u>Remarks:</u> Station is located at the railroad depot. 	TEMP Impact	PRCP Impact
4/20/1897	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge 1'agl • <u>MxMn:</u> Thermometers are 7'agl, underneath a 18' x 18' shed • <u>Exposure (Same location):</u> SRG is 50' from the nearest high object 	0	0
6/30/1900	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 4/11/1905. 		
4/11/1905	<ul style="list-style-type: none"> • <u>Equipment:</u> Addition of a Cotton region shelter (CRS) <u>New observer:</u> W.A. Foote (AT & SF Railroad) • <u>Remarks:</u> Reactivation of station closed since 6/30/1900. • <u>Exposure (Same location):</u> SRG and CRS out in the open 	2	1
4/30/1906	<ul style="list-style-type: none"> • <u>New description:</u> Open valley with mountains in the distance and the Rio Grande River about 1mi. away. • <u>SRG:</u> Top of gauge 3'agl (+2') • <u>CRS:</u> Bottom of shelter is 4.5'agl, door opens to the N, over sod • <u>Time of observation:</u> 17:00 • <u>Remarks:</u> River gauge is 3mi. from the observation site and fastened to a railroad bridge. • <u>Exposure (Same location):</u> SRG is 30' from the 	1	1

	nearest high object		
8/1/1907	<ul style="list-style-type: none"> • <u>New observer</u>: AT & SF Railroad (W.A. Foote) • <u>Remarks</u>: Station is located in Santa Fe Railroad Park. 	1	1
11/1/1914	<ul style="list-style-type: none"> • <u>Station relocation</u>: Unknown proximity to the previous location 	2	1
11/1/1916	<ul style="list-style-type: none"> • <u>New observer</u>: Samuel Mayre (AT & SF Railroad) 	1	1
10/31/1917	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge 2.5'agl (-0.5'), overflow was leaking, gauge was fastened more securely and the overflow can was repaired • <u>CRS</u>: Bottom of shelter is 3.5'agl (+1'), door opens to the E (N), some slats were out and these were repaired • <u>MxMn</u>: Minimum thermometer adjusted • <u>Remarks</u>: Station is located in the yard of the former observer with fair exposure. No suitable location near the observer's home, which is without fencing and fully open to livestock and children. Present observer will probably not be permanently located in Rincon, so a new observer is being pursued. • <u>Exposure (Same location)</u>: Fruit tree and house "little too close" to the observation site 	1	2
12/1/1917	<ul style="list-style-type: none"> • <u>New observer</u>: J.D. Sneeringer (Samuel Mayre) 	2	1
6/30/1918	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 12/1/1929. 		
12/1/1929	<ul style="list-style-type: none"> • <u>Station observations</u>: Discontinuance of temperature • <u>Equipment</u>: Removal of CRS and MxMn • <u>Station relocation</u>: 5.0mi. W of previous location • <u>New coordinates</u>: 32°40'N 107°09'W (+5'W) • <u>New elevation</u>: 4042' (-21') • <u>New observer</u>: E.L. Clapp (J.D. Sneeringer) • <u>Remarks</u>: Reactivation of station closed since 6/30/1900. Station name change to Hatch from Rincon. 		3
1/31/1930	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 1/16/1931. 		
1/16/1931	<ul style="list-style-type: none"> • <u>Station observations</u>: Reestablishment of temperature • <u>Equipment</u>: Addition of CRS and MxMn 	3	1

	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. NE of the previous location • <u>New observer</u>: US Bureau of Reclamation (E.L. Clapp) • <u>Remarks</u>: Reactivation of station closed since 1/31/1930, located at the grounds of the US Reclamation Service. 		
2/7/1937	<ul style="list-style-type: none"> • <u>New description</u>: In the Rio Grande Valley on level, irrigated land. • <u>SRG</u>: Top of gauge 3.5'agl (+1') • <u>CRS</u>: Bottom of shelter is 4'agl (+0.5'), door opens to the N (E) 	1	1
3/27/1939	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge 3'agl (-0.5'), replaced the overflow can • <u>Exposure (Same location)</u>: Nearest high object 40' to the NW (15' tall) • <u>Remarks</u>: Observer is to move the CRS 50' to the W of the current location that is next to the driveway and been bumped by trucks in the past. 	2	1
6/8/1940	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Office to the NE (27°), tree to the SE (21°), tree to the SSE (20°), tree to the SW (19°), house to the NW 	0	0
8/31/1940	<ul style="list-style-type: none"> • <u>CRS</u>: Door opens to the W (N) • <u>MxMn</u>: Probably a hard-setting maximum thermometer 	1	0
5/14/1948	<ul style="list-style-type: none"> • <u>Station relocation</u>: 100' N of the previous location • <u>Time of observation</u>: 08:00 (17:00) • <u>Remarks</u>: Station is located at the US Reclamation Service Office with no change in exposure. • <u>Exposure (Same location)</u>: Trees to the N, small tree to the NE (10°), trees to the E (8°-14°), residence to the SW, warehouses to the W, office to the NW (30°), street to the E beyond the trees 	3	1
11/1/1950	<ul style="list-style-type: none"> • <u>New description</u>: Flat land. • <u>Exposure (Same location)</u>: Shed to the SW (10°), office to the NW (28°) 	0	0

6/3/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class “a”. • <u>Exposure (Same location)</u>: Shed to the SW (10°), office to the NW (28°) 	0	0
2/1/1960	<ul style="list-style-type: none"> • <u>New description</u>: Generally flat irrigated farm land surrounds the town. • <u>Daily recording of observations</u>: Form 612-14 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Hatch canal embankment to the N (6°), tree to the N, trees to the NE, tree to the S, shed to the SW (10°), office to the NW (28°), Main Street to the E beyond the trees 	0	0
9/14/1966	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 10’ SW of the previous location • <u>Exposure (Same location)</u>: Hatch canal embankment to the NE (6°), trees to the NE (42°), tree to the SE (42°), 3 trees to the S (15°, 20°, 35°), shed to the SW (11°), garage to the WSW (7°), SCS office to the NW (22°), Main Street to the E, driveway just to the S 	0	1
5/1/1969	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC 	0	0
3/27/1970	<ul style="list-style-type: none"> • <u>CRS</u>: Installed new shelter and metal support • <u>MxMn</u>: New Townsend support needs replaced, will be installed on next visit • <u>Remarks</u>: Observer was out “riding ditch” and was informed that observations at this location would be discontinued on 3/31/1970. International Boundary Commission was making unofficial observations and might be recruited as a new observer. 	1	0
6/29/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.0mi. W of the previous location • <u>New coordinates</u>: 32°40’N 107°11’W (+2’W) • <u>New elevation</u>: 4052’ (+10’) • <u>New observer</u>: International Boundary Commission (US Bureau of Reclamation) • <u>New description</u>: Generally flat irrigated farm land in fertile valley. • <u>Time of observation</u>: 16:30 (08:00) • <u>Remarks</u>: Station is located at the International Boundary Office and is 	3	2

	<p>compatible for a continuation of the previous record. Station name change to Hatch 2W from Hatch.</p> <ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Residence to the N, trees to the NE (20°, 30°, 35°), warehouse to the SE, garages to the SW, US Highway 85 to the N 		
1/28/1980	<ul style="list-style-type: none"> • <u>New description</u>: Generally flat irrigated farm land in the fertile Rio Grande Valley and the town of Hatch, nationally known as the green chili capital of the world. • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Exposure (Same location)</u>: Residence to the N, trees to the NE (20°, 30°, 35°), warehouse to the SE (13°), garages to the SW, US Highway 85 to the N, chain-link fence surrounding the observation site 	0	0
10/25/1985	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Time of observation</u>: 07:30 (16:30) • <u>Remarks</u>: Observer requested a change in the observation time to fit into their daily work schedule and has been making observations at the new time for a while. 	3	1
9/1/1987	<ul style="list-style-type: none"> • <u>New description</u>: Generally flat irrigated farm land located in the Rio Grande Valley. • <u>Remarks</u>: Station closed until 3/1/1988 as it will be unmanned due to station personnel being relocated on a special project. • <u>Exposure (Same location)</u>: House to the N (10°), warehouse to the SE (13°) 		
3/1/1988	<ul style="list-style-type: none"> • <u>Remarks</u>: Reactivation of station closed since 9/1/1987 after the return of employees who were transferred to a project S of El Paso. 	1	1
1/1/1995	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until a new observer can be found (3/1/1995) with the International Boundary Commission complex to be shut down in the near future and the retirement of the current observer on 12/31/1994. 		
3/1/1995	<ul style="list-style-type: none"> • <u>New observer</u>: Mariano Legarretta (International Boundary Commission) 	1	1

	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque • <u>Remarks</u>: Reactivation of station closed since 1/1/1995 that is still located at the deactivated International Boundary Commission complex, the observer has access to the yard for making observations. 		
10/1/1995	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until further notice (3/12/1996) as the observer does not want to drive to the yard each day to make observations. 		
3/12/1996	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.3mi. N of the previous location • <u>New coordinates</u>: 32.71667 -107.21667 (+0.05000N, +0.03334W) • <u>New elevation</u>: 4040' (-12') • <u>New observer</u>: Yolanda Batrez (Mariano Legarretta) • <u>Time of observation</u>: 09:00 (07:30) • <u>Remarks</u>: Reactivation of station closed since 10/1/1995, located at the observer's house and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Building to the N (7°), tree to the NE (25°), house to the E (17°), tree to the SE (20°), 3 trees to the SW (15°, 25°, 25°), house to the NW (20°) 	3	2
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0
7/29/1997	<ul style="list-style-type: none"> • <u>New description</u>: Residential area on the E side of the Rio Grande Valley. • <u>Remarks</u>: Station closed until a new observer can be found (7/30/1998), will attempt to find a compatible location by the end of 1997. New coordinates obtained via Garmin 45 GPS. 		
7/30/1998	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 5.1mi. SE of the previous location • <u>New coordinates</u>: 32.67167 -107.14167 (-0.04500N, -0.07500W) • <u>New observer</u>: Arnold D. Black (Yolanda 	3	2

	Batrez) <ul style="list-style-type: none"> • <u>New description</u>: Level farm land with low mountains 5mi. to both the E and the W. • <u>Remarks</u>: Reactivation of station closed since 7/29/1997, located at the observer's house and is compatible for a continuation of the previous record. New coordinates obtained via Garmin 45 GPS. • <u>Exposure (New location)</u>: Tree to the NNE (10°), trees to the S (30°), building to the SW (10°) 		
3/7/2000	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed after the observer moved. 		
6/23/2006	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS • <u>Station relocation</u>: 1.2mi. WNW of the previous location • <u>New coordinates</u>: 32.6775 -107.19583 (+0.00583N, +0.05416W) • <u>New elevation</u>: 4075' (+35') • <u>Time of observation</u>: 07:00 (09:00) • <u>Remarks</u>: Reactivation of station closed since 3/7/2000. • <u>Exposure (New location)</u>: Tree to the NNE (35°), building to the SW (15°) 	2	1

COOP Station 294112, CD 7: Hope, Eddy County, NM

Summary: Station at west side of valley at base of foothills. Frequent problems with equipment, station exposure, and observer reliability. Station was occasionally within town (on lawn) and outside of town, and surrounding farmland was irrigated, originally orchards but no longer. Expect all inhomogeneities are man-made, some of which will be predictable due to station moves and others, which will be unpredictable due to changes in farming practices. Rainfall possibly influenced by land use. Forms an interesting transect: Artesia-Hope-Flying H-Elk-Cloudcroft.

Temperature rating: Poor (1905-present)

Precipitation rating: Good (1905-present)

8/4/1905	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation • <u>Original equipment</u>: Standard rain gauge 	TEMP Impact	PRCP Impact
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	<p>(SRG)</p> <ul style="list-style-type: none"> • <u>Original coordinates</u>: 32°49'N 104°44'W • <u>Original elevation</u>: 4085' • <u>Original observer</u>: N.L. Johnson • <u>Original description</u>: Rolling country surrounds the station situated on a small mesa. • <u>SRG</u>: Top of gauge is 3'agl • <u>Time of observation</u>: 18:00 • <u>Exposure</u>: SRG is 60' from the nearest high object 		
12/31/1908	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 3/27/1919. 		
3/27/1919	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>New observer</u>: E.L. Brewer (N.L. Johnson) • <u>Remarks</u>: Reactivation of station closed since 12/31/1908. 		1
10/23/1922	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.2mi. E of the previous location • <u>New observer</u>: W.S. Medcalf (E.L. Brewer) • <u>New description</u>: Level valley. • <u>SRG</u>: Top of gauge is 2.5'agl (-0.5'), minor repairs made to gauge stand • <u>CRS</u>: Bottom of shelter is 4'agl, door opens to the N, over sod, minor repairs made • <u>MxMn</u>: Thermometers adjusted and rescaled • <u>Remarks</u>: Station is located at the home of the observer, who is the postmaster. The old observer had left town, so the equipment was moved to a good, convenient location. • <u>Exposure (New location)</u>: House to the N, observation site located on a lawn 	3	1
2/1/1927	<ul style="list-style-type: none"> • <u>New description</u>: Level valley country in the Rio Penasco Valley with orchards, but no forests, nearby. • <u>SRG</u>: Top of gauge is 3'agl (+0.5') • <u>CRS</u>: Over sod at the edge of a garden (sod) • <u>Time of observation</u>: 17:30 (18:00) • <u>Exposure (Same location)</u>: SRG is 20' from the nearest high object, a dwelling 	1	0

10/14/1929	<ul style="list-style-type: none"> • <u>CRS</u>: Over front lawn (sod at the edge of a garden), minor repairs made, paint left with the observer • <u>MxMn</u>: Maximum thermometer was broken few days before visit, minimum rescaled and bubbles removed 	2	0
5/17/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5') • <u>CRS</u>: Over sod (front lawn), painted • <u>Remarks</u>: SRG was moved to get good exposure, but this task was not accomplished. • <u>Exposure (Same location)</u>: SRG under tree planted since last inspection 	2	3
9/1/1938	<ul style="list-style-type: none"> • <u>New observer</u>: E.C. Hawkins (W.S. Medcalf) 	1	1
11/15/1939	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.2mi. SE of the previous location • <u>New observer</u>: Floyd L. Cole (E.C. Hawkins) 	2	1
3/19/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-0.5') • <u>CRS</u>: Bottom of shelter is 3.5'agl (-0.5'), over turf (sod), slat was repaired, painted the support • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Tree to the E (45°), house to the SSE (15°), tree to the SW (45°), wire fence just to the N and to the W 	2	2
6/20/1945	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.9mi. W of the previous location • <u>New observer</u>: Babe L. McElroy (Floyd L. Cole) • <u>New description</u>: Level farming land. • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5') • <u>CRS</u>: Bottom of shelter is 4'agl (+0.5') • <u>Time of observation</u>: Sunset (17:30) • <u>Remarks</u>: Station is located at the home of the observer, who is interested and intelligent and likely to make a good observer. The former observer did not have time to make observations due to a shortage of help. • <u>Exposure (New location)</u>: Observer's residence to the NNE (12' tall), drive to the N between the observer's residence and the observation site, road to the W, fence to the W between the road and the observation site 	2	1

6/30/1946	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 5/1/1965 after the observer resigned due to increased duties away from home and a new observer could not be found in the close vicinity. 		
5/1/1965	<ul style="list-style-type: none"> • <u>Station observations</u>: Discontinuance of temperature • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG), removal of SRG • <u>Station relocation</u>: 90' E of the previous location • <u>New observer</u>: Mildred Cole (Babe L. McElroy) • <u>New description</u>: Level to gently rolling range land and the Rio Penasco to the S with very little natural vegetation in a semi-arid climate. • <u>R/RNG</u>: Previously located at the station Cienega 5SSW • <u>Time of observation</u>: Midnight (Sunset) • <u>Remarks</u>: Reactivation of station closed since 6/30/1946, located at the observer's home and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Building to the N (4°), tank to the N (10°), trees to the NE (10°), barn to the ENE (8°), shed to the ESE (3°), tree to the SW (15°), shed to the SW (4°), tree to the W (14°), 2 trees to the WNW (20°, 22°), house to the WNW (6°), 3 trees to the NW (10°, 10°, 14°), road to the N leading to the observation site 		2
4/1/1966	<ul style="list-style-type: none"> • <u>Station observations</u>: Reestablishment of temperature • <u>Equipment</u>: Addition of SRG, CRS, and MxMn • <u>Reporting of observations</u>: Precipitation reported when rains ≥ 0.25" in 24 hours to WSO-Albuquerque • <u>Daily recording of observations</u>: Form 612-14 sent to WSO-Albuquerque • <u>Time of observation</u>: 16:30 (Midnight) • <u>Remarks</u>: River and rainfall reporting services added at this station. Station upgraded to class "ab" status from "b" status. Change in the rate of the observer pay. • <u>Exposure (Same location)</u>: Garage to the N 	2	2

	(7°), tank barn to the NE (12°), shed to the EE (8°), tree to the W (25°), shed 2 trees to the WNW (20°, 25°), house to the WNW (8°), road leading to US Highway 82 to the N, fence to the S		
4/1/1970	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
10/20/1970	<ul style="list-style-type: none"> • <u>R/RNG</u>: Checked calibration, winterized the gauge • <u>MxMn</u>: Separation in the maximum thermometer of 6°F, maximum thermometer replaced • <u>Remarks</u>: Observer is on vacation and has a neighbor doing the observing, which is very unsatisfactory. 	3	1
7/15/1971	<ul style="list-style-type: none"> • <u>Station relocation</u>: 90' W of the previous location • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-Albuquerque • <u>Remarks</u>: Station is located at the observer's residence and was moved to improve exposure. • <u>Exposure (New location)</u>: Tree to the N (25°), house to the NNE (10°), barn to the NE, entrance to the N, barbed-wire fence surrounding the observation site to the E, S, and W. 	2	2
8/15/1972	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque 	0	2
1/11/1974	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours (when rains $\geq 0.25''$ in 24 hours) to WSO-Albuquerque 	0	0
7/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
10/14/1976	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. SSW of the previous location • <u>New elevation</u>: 4089 (+4') • <u>New observer</u>: J.W. Mellard (Mildred Cole) • <u>Time of observation</u>: 08:00 (16:30) • <u>Remarks</u>: Station is located at the observer's 	1	3

	<p>residence and is compatible for a continuation of the previous record; equipment was relocated after the previous observer moved on 10/1/1976.</p> <ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Tree to the N, barn to the SE, swimming pool to the SE, house to the SSE, wall to the SE between the observation site and the barn, swimming pool, and house, driveway to the W, parking area to the S, road to the NW connecting to the driveway and separated by a cattle guard, pasture to the NE and W of the driveway, hay/alfalfa fields to the E, fence to the E between the observation site and the hay/alfalfa fields 		
7/5/1977	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.8mi. W of the previous location • <u>New elevation</u>: 4100 (+11') • <u>New observer</u>: Joyce Laumbach (J.W. Mellard) • <u>Time of observation</u>: 18:00 (08:00) • <u>Remarks</u>: Station is located at the observer's ranch and is compatible for a continuation of the previous record, with the observation time changed at the request of the observer. • <u>Exposure (New location)</u>: Stock sheds to the N, house to the ENE, tree to the E, observer's trailer to the E, tank to the W, shed to the WNW, fence just to the N between the observation site and the stock sheds, Highway 82 to the NE intersecting with paved road to the E, fence to the E between the observation site and the paved road, dirt road to the S, open pasture to the S, open pasture to the NW 	2	3
10/1/1982	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
5/13/1983	<ul style="list-style-type: none"> • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
10/31/1984	<ul style="list-style-type: none"> • <u>F/P</u>: Installation of Model III timer 	0	1
4/12/1990	<ul style="list-style-type: none"> • <u>New description</u>: Level to gently rolling range land. • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.25''$ in 24 hours (when 	0	0

	<ul style="list-style-type: none"> rains $\geq 0.50''$ in 24 hours) to WSO-Albuquerque <u>Remarks</u>: Encoder pad or phone installed at the observation site. 		
2/1/1995	<ul style="list-style-type: none"> <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque 	0	0
6/1/1996	<ul style="list-style-type: none"> <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains $\geq 0.25''$ in 24 hours) to WSO-Albuquerque, temperature digitally reported daily to WSO-Albuquerque <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland <u>Exposure (Same location)</u>: Barn to the NW (12°) 	0	0
7/6/2000	<ul style="list-style-type: none"> <u>Station relocation</u>: 0.5mi. E of the previous location <u>New coordinates</u>: 6 -104.73361 (-0.00584N, +0.00028W) <u>New observer</u>: US Post Office (Joyce Laumbach) <u>Remarks</u>: Station is located at the Hope post office. New coordinates obtained via Garmin 45 GPS. Updated for ROSA to AWIPS. <u>Exposure (New location)</u>: Building to the S (15°) 	2	1
7/6/2000	<ul style="list-style-type: none"> <u>Time of observation</u>: 08:00 (18:00) 	3	1
7/5/2001	<ul style="list-style-type: none"> <u>New elevation</u>: 4091' (-9') 	0	0
11/14/2003	<ul style="list-style-type: none"> <u>New coordinates</u>: 32.81111 -104.73361 (+0.00028N), no station move reported 	1	1
7/17/2004	<ul style="list-style-type: none"> <u>F/P</u>: Replaced gauge 	0	1
9/10/2004	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), replaced MMTS 	2	0
9/26/2006	<ul style="list-style-type: none"> <u>New observer</u>: Unknown (US Post Office) 	1	1

COOP Station 294426, CD 8: Jornada Experimental Range, Dona Ana County, NM

Summary: Site in open plains. Latest Google Maps coordinates, based on SurfaceStations.org site photos, and are: 32.6161N, -106.7403W, with the stations in a nice little compound and consistent with SurfaceStations.org GPS report. Suspect that this represents a move since 2002, and that previous site 1983-200x was in the middle of compound with possible influences of gravel parking and irrigated lawns. Rainfall

record should be excellent, and current temperatures should be consistent with at least pre-1950 temperatures.

Temperature rating: Good (1914-present)

Precipitation rating: Excellent (1914-present)

6/4/1914	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton regions shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates:</u> 32°37'N 106°44'W • <u>Original elevation:</u> 4265' • <u>Original observer:</u> Charles T. Turney • <u>Original description:</u> In slightly rolling country in the middle of a wide open plain. • <u>CRS:</u> Door opens to the E, over bare ground • <u>Exposure:</u> Stone house 75' to the E 	TEMP Impact	PRCP Impact
12/1/1924	<ul style="list-style-type: none"> • <u>New observer:</u> US Forest Service (Charles T. Turney) 	1	1
1/1/1926	<ul style="list-style-type: none"> • <u>Remarks:</u> Station name change to Jornada Range Reserve from Turney's Ranch. 	0	0
10/27/1927	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 3'agl • <u>CRS:</u> Bottom of shelter is 3.5'agl, door opens to the S (E), over turf (bare ground) • <u>Remarks:</u> There are about 15 additional rain gauges at Jornada Reserve for rainfall records. 	0	0
6/1/1929	<ul style="list-style-type: none"> • <u>Remarks:</u> Evaporation equipment added to the observation site. 	0	0
1/1/1931	<ul style="list-style-type: none"> • <u>Remarks:</u> Station name change to Jornada Experimental Range from Jornada Range Reserve. 	0	0
2/7/1937	<ul style="list-style-type: none"> • <u>New description:</u> In slightly rolling desert country that is very sandy and in the middle of wide open country with mountains about 15mi. to the E. • <u>SRG:</u> Top of gauge is 3.5'agl (+0.5') • <u>CRS:</u> Bottom of shelter is 4'agl (+0.5'), door opens to the N (S), over sand in desert country (turf) • <u>Time of observation:</u> 17:00 • <u>Remarks:</u> Very excellent station with 9 rain 	1	1

	gauges, owned by the US Forest Service, that are scattered over a 12sq-mi. area.		
3/27/1939	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-0.5') • <u>CRS</u>: Over native grass (sand in desert country) • <u>MxMn</u>: Removed small bubble from the minimum thermometer • <u>Remarks</u>: Anemometer added to the observation site. 	0	1
2/23/1940	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) 	02	
8/30/1940	<ul style="list-style-type: none"> • <u>CRS</u>: Over barren ground (native grass) • <u>MxMn</u>: Probably a hard-setting maximum thermometer • <u>Daily recording of observations</u>: Form 1024 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Unobstructed with no high objects nearby and a fence surrounds the observation site. 	0	0
11/25/1940	<ul style="list-style-type: none"> • <u>R/RNG</u>: Gauge checked and charged for the winter. 	0	0
10/30/1950	<ul style="list-style-type: none"> • <u>New description</u>: Flat to gently rolling land. • <u>Remarks</u>: Station is located at the headquarters of the Jornada Experiment Range. • <u>Exposure (Same location)</u>: Low brush to the W, fence surrounding the observation site. 	0	0
2/2/1951	<ul style="list-style-type: none"> • <u>Station relocation</u>: 70' from the previous location • <u>Remarks</u>: Station is located at the Jornada Experimental Range, equipment moved to a more desirable location and pscyhrometer added to the observation site. • <u>Exposure (New location)</u>: Buildings to the S (4°-6°), building 200' to the NW (6°), small desert brush (2-5' tall) outside a fence surrounding the observation site. 	2	1
2/2/1960	<ul style="list-style-type: none"> • <u>New observer</u>: Agricultural Research Service (US Forest Service) • <u>New description</u>: Flat to rolling semi-arid range land with the San Andreas Mountains rising 11mi. to the E. 	0	0

	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-25 sent to WRPC • <u>Remarks</u>: There has been no change in the actual observer but rather a transfer in responsibility of the Range to the Agricultural Research Service from the US Forest Service. 		
9/15/1966	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-25 sent to NWRC • <u>Exposure (Same location)</u>: 2 trees to the ENE (10°, 10°), office to the E (8°), tree to the SE (12°), garage to the SE (5°), entrance road to the E, observation site located in and to the E of an open field. 	0	0
7/1/1969	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (17:00) • <u>Remarks</u>: New anemometer added to the observation site. 	2	0
1/8/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: 300' SW of the previous location • <u>New elevation</u>: 4275' (+10') • <u>Remarks</u>: Station is located at the Jornada Experimental Range headquarters, equipment moved to gain a satisfactory exposure with a new 20' x 20' chain-link fence constructed to surround the equipment. • <u>Exposure (New location)</u>: Office to the NNE, residence to the NNE, garage to the NE, spruce to the SE (10°), pump house to the SE, road surrounding the observation site, open range surrounding the observation site in all quadrants 	2	1
3/1/1977	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>F/P</u>: Installed at the location of the old R/RNG • <u>Daily recording of observations</u>: Form E-22 sent to NCC 	0	2
9/30/1979	<ul style="list-style-type: none"> • <u>New description</u>: Flat to rolling semi-arid range land, region is treeless except for numerous yuccas. • <u>Remarks</u>: Removal of the anemometer, evaporation equipment, and pscychrometer from the observation site to be turned over to the USDA and used for scientific research purpose. 	0	0

	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Office to the NNE, several resident housing buildings to the NE, spruce to the SE (10°), pump house to the SE, road surrounding the observation site, open range surrounding the observation site in all quadrants 		
2/24/1983	<ul style="list-style-type: none"> • <u>Station relocation</u>: 704' ENE of the previous location • <u>New elevation</u>: 4266' (-9') • <u>F/P</u>: Modifications required are up to date • <u>Remarks</u>: Station is located at the Jornada Experimental Range and is compatible for a continuation of the previous record. Solar panel and rechargeable battery installed at the observation site. • <u>Exposure (New location)</u>: Maintenance garage to the N, building to the E, stock pens to the E beyond the building, trailer to the W, building to the NW, main office to the NNW, dirt road to the N and W, fence to the E between the stock pens and building, fence surrounding the observation site. 	2	1
6/9/1983	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Albuquerque • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
9/26/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed 22' E of the old CRS location. 	2	0
7/21/1993	<ul style="list-style-type: none"> • <u>New description</u>: Flat to rolling semi-arid range land. • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Building to the E (12°), trees to the SW (15°), building to the NNW (12°) 	0	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-92 sent to WSO-El Paso 	0	0
4/3/2002	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.61694 -106.74111 (+0.00027N, +0.00778W), no station move reported 	1	1

COOP Station 294736, CD 7, Lake Avalon, Eddy County, NM			
<p>Summary: Site is 5 miles upstream of Carlsbad in rolling terrain at irrigation control reservoir. Period of record relatively short, but no important station moves or local land use inhomogeneities.</p> <p>Temperature rating: Excellent (1951-1979) Precipitation rating: Excellent (1914-1979)</p>			
8/1/1914	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 32°29'N 104°15'W • <u>Original elevation:</u> 3208' • <u>Original observer:</u> US Bureau of Reclamation • <u>Original description:</u> Rolling country on the shore of a lake formed by a dam of the Pecos River. • <u>Time of observation:</u> Sunset • <u>Remarks:</u> Evaporation equipment at the observation site. • <u>Exposure:</u> SRG on building built over waters of the lake with no high objects nearby 	TEMP Impact	PRCP Impact
9/27/1917	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 9'agl • <u>Remarks:</u> Observations taken by an employee of the US Reclamation Service, the hope is to bring the work up to a better standard. 		0
10/22/1922	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 10'agl (+1') • <u>Remarks:</u> Station is located at the home of the dam's caretaker. • <u>Exposure (Same location):</u> SRG on a shed, observer's home to the NE 		1
5/1/1933	<ul style="list-style-type: none"> • <u>Remarks:</u> Removal of the evaporation equipment from the observation site. 		0
5/16/1937	<ul style="list-style-type: none"> • <u>SRG:</u> Gauge was worn out, new gauge and stand were furnished • <u>Exposure (Same location):</u> SRG on a tower built for its exposure 		1
3/29/1940	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 9'agl (-1') • <u>Daily recording of observations:</u> Form 1009 		1

	<ul style="list-style-type: none"> sent to WSO-Albuquerque <u>Exposure (Same location)</u>: SRG built into stone wall (7.5' tall), house to the E (14°), warehouse to the W (14°) 		
8/24/1950	<ul style="list-style-type: none"> <u>Time of observation</u>: 18:00 (Sunset) <u>Remarks</u>: Station is located at the dam site. <u>Exposure (Same location)</u>: SRG built into a wall (6' tall), line of trees to the E (20' tall), outhouse to the W (8' tall), rough rolling land to the SW of the observation site 		1
12/1/1951	<ul style="list-style-type: none"> <u>Station observations</u>: Establishment of temperature <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) <u>New observer</u>: Howard A. Drake (US Bureau of Reclamation) <u>New description</u>: Rolling barren hills surround the station at some distance with Lake Avalon to the N and NNW about 350' away and the head gates of the dam about 200' to the W. <u>Daily recording of observations</u>: Form 1024 sent to WSO-Albuquerque <u>Remarks</u>: Station is located at Lake Avalon Dam site, with an anemometer and evaporation equipment added to the observation site. Evaporation equipment was relocated to this station from Lake McMillan. <u>Exposure (Same location)</u>: 3 trees to the NE (15' tall, 15' tall, 18' tall), terrace to the NE (3' tall) between the trees and the observation site, roadway to the S and W, fence surrounding the observation site 		1
3/1/1960	<ul style="list-style-type: none"> <u>New observer</u>: William H. Mitchell (Howard A. Drake) <u>Daily recording of observations</u>: Form 612-25 sent to WRPC <u>Time of observation</u>: 08:00 (18:00) <u>Exposure (Same location)</u>: House to the E (5°), terraced area with small trees to the E, driveway to the N, S, and W, canal to the SW, dam and control site to the W, Lake Avalon to the NW 	3	1

12/11/1963	<ul style="list-style-type: none"> • <u>Remarks</u>: Water thermometers added to the observation site. 	0	0
1/14/1966	<ul style="list-style-type: none"> • <u>New description</u>: In terraced area 4' above the roadway and is unobstructed with rolling barren hills surrounding the station with Lake Avalon to the N and NNW about 300'-350' away and the head gates of the dam about 200' to the W. • <u>Daily recording of observations</u>: Form 612-25 sent to NWRC • <u>Exposure (Same location)</u>: House to the E (5°), driveway to the N, S, and W, canal to the SW, dam and control site to the W, Lake Avalon to the NW 	2	0
2/7/1972	<ul style="list-style-type: none"> • <u>New description</u>: In terraced area 4' above the roadway and is unobstructed with rolling barren hills surrounding the station with Lake Avalon to the NW about 150' away. • <u>Daily recording of observations</u>: Form 612-25 sent to NCC • <u>Remarks</u>: An anemometer added to the observation site as a replacement and a 16' x 20' chain-link fence was constructed surrounding the observation site. • <u>Exposure (Same location)</u>: Residence to the ENE (6°), work shop the ESE (6°), black wall to the E connects residence and workshop, road to the N, canal to the SW, dam and control site to the W, Lake Avalon to the NW 	0	0
3/28/1979	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-22 sent to NCC • <u>Remarks</u>: Station placed on inactive status until further notice. 	0	0
2/11/1980	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed after being placed on inactive status on 3/28/1979. 		

COOP Station 295502, CD 6, Mayhill Ranger Station, Otero County, NM

Summary: Station fairly high in mountains, at same location except for final 10 years. Last move was 1.5 miles to the northeast. Other inhomogeneities are due to tree growth.

<u>Temperature rating:</u> Very good (1940-1976) <u>Precipitation rating:</u> Good (1917-1976)			
2/1/1917	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 32°55'N 105°28'W • <u>Original elevation:</u> 6538' • <u>Original observer:</u> US Forest Service • <u>Original description:</u> Rough mountainous country, partly timbered. • <u>Exposure:</u> On ground, near the ranger station 	TEMP Impact	PRCP Impact
10/24/1922	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 2.5'agl, funnel in need of repair, taken to Alamogordo for repairs • <u>Remarks:</u> Location is good and the current observer is much interested in keeping a good record. 		2
12/12/1923	<ul style="list-style-type: none"> • <u>New description:</u> Heavy rolling country, located on bluffs rising from the Penasco Mountains, small timber over rising bluffs, orchards to the W, and the Penasco River 300' to the SW. • <u>Time of observation:</u> 18:00 • <u>Remarks:</u> Station is located in the yard of the ranger's home. • <u>Exposure (Same location):</u> House 60' to the SW, small orchard to the W 		1
10/15/1929	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 3'agl (+0.5'), replaced funnel for soldering 		1
5/17/1937	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 4.5'agl (+1.5') 		1
3/20/1940	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 3'agl (-1.5') • <u>Remarks:</u> There is a Cotton region shelter (CRS) and Maximum-minimum thermometer (MxMn) at this station that is US Forest Service property, but reports are not being sent from these instruments. • <u>Exposure (Same location):</u> Nearest high object is 25' to the S (10' tall) 		1
4/28/1940	<ul style="list-style-type: none"> • <u>Station observations:</u> Establishment of temperature • <u>Equipment:</u> Addition of CRS, MxMn 		0

	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Office to the ENE (14°), fence surrounds the observation site 		
10/20/1950	<ul style="list-style-type: none"> • <u>New description</u>: Mountainous country. • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Station is located at Mayhill Ranger Station. • <u>Exposure (Same location)</u>: Line of trees to the E (20' tall), line of trees to the S (16' tall) 	1	1
10/22/1959	<ul style="list-style-type: none"> • <u>New description</u>: Mountainous country with no heavy timber in the immediate area, though mountains to the N and W are heavily timbered. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Remarks</u>: SRG and MxMn are property of the Weather Bureau and the CRS is US Forest Service property • <u>Exposure (Same location)</u>: Hill rises to the NE (8°), building to the NE (12°), line of trees to the E, hill rises to the S (14°), 4 trees to the S (30°, 32°, 42°, 55°), hill rises to the W (10°), open fields to the N, open fields with scattered timber to the NW, wire fence (2.5' tall) surrounds the observation site 	0	0
4/15/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: 15' NW of the previous location • <u>Remarks</u>: Station is located at Mayhill Ranger Station, moved to secure a better exposure. • <u>Exposure (New location)</u>: Hill rises to the NE (8°), building to the NE (11°), 4 trees to the NE (28°, 28°, 30°, 34°), 4 trees to the SE (20°, 28°, 28°, 30°), hill rises to the S (12°), hill rises to the W (12°), open fields with scattered juniper to the NW, wire fence (2.5' tall) surrounds the observation site 	2	2
4/1/1968	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "c" status from class "x" status to continue its long period of record, will continue as long as satisfactory records are maintained by the observers. 	0	0
11/7/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.5mi. SW of the previous 	3	2

	<p>location</p> <ul style="list-style-type: none"> • <u>New coordinates</u>: 32°53'N 105°29'W (-2'N, +1'W) • <u>New elevation</u>: 6558' (+20') • <u>New description</u>: Situated in a valley running N-S, mountains rising E and NNW with tops approximately 0.3mi. away and 15° in elevation, generally heavily timbered. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station is located at the Forest Service Office and is compatible for a continuation of the previous record, relocated by the observer. • <u>Exposure (New location)</u>: Barn to the NE (2°), Forest Service office to the SW (12°), US Highway 82 to the W beyond the Forest Service office, open area to the E 		
4/21/1976	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.5mi. SE of the previous location • <u>New coordinates</u>: 32°55'N 105°28'W (+2'N, -1'W) • <u>New description</u>: Mountainous country. • <u>Daily recording of observations</u>: Form 612-14 sent to NCC • <u>Remarks</u>: Station is located at the Mayhill Administrative Site and is compatible for a continuation of the previous record, relocated by the observer close to the original observation site. • <u>Exposure (New location)</u>: Line of trees to the NE (15°), hill rises to the SE (20°), garages and warehouses to the SE, Forest Service residences to the SW, hill rises to the W (8°), hill rises to the NW (10°), entrance road to the S 	3	2
8/31/1976	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed under authorization as it is part of the class "c" Cooperative network. 		

COOP Station 295657, CD 6, Mescalero, Otero County, NM

<p>Summary: Station west of crest of mountains and moved around a bit and didn't last long. Microclimate issues not always clear.</p> <p>Temperature rating: Fair (1911-1978) Precipitation rating: Good (1911-1978)</p>			
6/1/1911	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates:</u> 33°10'N 105°47'W • <u>Original elevation:</u> 6590' • <u>Original observer:</u> Richard H. Harper • <u>Original description:</u> Valley with timbered mountains to the N and S and Rio Tularosa 0.25mi. away. 	TEMP Impact	PRCP Impact
7/25/1913	<ul style="list-style-type: none"> • <u>CRS:</u> Bottom of shelter is 4.5'agl, door opens to the N, over uncultivated mountain soil • <u>SRG:</u> Top of gauge is 3'agl • <u>Time of observation:</u> 18:00 • <u>Exposure (Same location):</u> SRG is 80' from the nearest high object, a house 	0	0
1/1/1915	<ul style="list-style-type: none"> • <u>New observer:</u> James Dykema (Richard H. Harper) 	1	1
10/1/1915	<ul style="list-style-type: none"> • <u>New observer:</u> N.R. Curtis (James Dykema) 	1	1
4/1/1918	<ul style="list-style-type: none"> • <u>New observer:</u> M.W. Thomas (N.R. Curtis) 	1	1
1/1/1919	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 4/1/1919. 		
4/1/1919	<ul style="list-style-type: none"> • <u>New observer:</u> US Indian Service (M.W. Thomas) • <u>Remarks:</u> Reactivation of station closed since 1/1/1919. 	1	1
10/25/1922	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 2.5'agl (-0.5') • <u>CRS:</u> Bottom of shelter is 4'agl (-0.5'), over sod (uncultivated mountain soil), minor repairs made, in need of painting • <u>Remarks:</u> This station is located at the US Indian Agency of the Mescalero Apache Indians; equipment is occasionally moved to new observation sites and given good exposure. The observer is much interested 	3	1

	and gives excellent service.		
10/10/1927	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (+0.5') • <u>CRS</u>: Over turf (sod), 2 slats in need of repair, painting to be done in near future • <u>MxMn</u>: Observer instructed in the proper reading of the thermometers 	0	1
5/18/1937	<ul style="list-style-type: none"> • <u>Station relocation</u>: Unknown proximity to the previous location • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5') • <u>CRS</u>: Shelter in need of repair and painting • <u>Exposure (New location)</u>: SRG moved out into the open from an observation site "too near trees" 	2	1
3/20/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-0.5') • <u>CRS</u>: Bottom of shelter is 3'agl (-1'), shelter needs to be braced • <u>MxMn</u>: Large difference in maximum and minimum readings after alcohol column became separated, minimum thermometer shaken and reduced difference to 2°F • <u>Exposure (Same location)</u>: House 25' to the W (18' tall) 	3	1
8/29/1940	<ul style="list-style-type: none"> • <u>Station relocation</u>: 20' N of the previous location • <u>SRG</u>: Rim has come apart from the funnel, recommended that a new funnel be furnished • <u>MxMn</u>: Probably a hard-setting maximum thermometer • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (New location)</u>: Line of trees to the E (34°), tree to the SSE (38°), house to the W (26°) 	1	1
2/18/1950	<ul style="list-style-type: none"> • <u>New description</u>: On a rocky bluff facing N with soil that is mostly barren, some grass, small shrubs, and trees. • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Albuquerque, temperature reported daily to WSO-Albuquerque • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: This station is located at the Indian 	2	1

	<p>Service office.</p> <ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Tree to the ESE (15' tall), administration building to the S (20' tall), Indian hut to WSW (8' tall), tree to SW (10' tall), bluff to the N, observation site located on terrain with gravel and sand 		
1/31/1951	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 8/20/1951 		
8/20/1951	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.8mi. W of the previous location • <u>New coordinates</u>: 33°10'N 105°48'W (+1'W) • <u>New elevation</u>: 6575' (-15') • <u>New observer</u>: Stanley McNatt (US Indian Service) • <u>New description</u>: Wooded mountainous country. • <u>Reporting of observations</u>: Precipitation and temperature not reported • <u>Time of observation</u>: 17:30 (17:00) • <u>Remarks</u>: Reactivation of station closed since 5/1/1974, located at the observer's store. • <u>Exposure (New location)</u>: Bank to the N (12' tall) gradually sloping to the mountains, 2-story building 90' to the E (30' tall), road to S (10' below) that intersects US Highway 70 	2	2
2/12/1952	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.2mi. E of the previous location • <u>New elevation</u>: 6585' (+10') • <u>New observer</u>: John D. Hall (Stanley McNatt) • <u>New description</u>: In mountain valley with timbered mountains to the N and S. • <u>Time of observation</u>: 17:00 (17:30) • <u>Remarks</u>: Station is located at the observer's home. Former observer stated he no longer had time for observational duties. • <u>Exposure (New location)</u>: Tree line to the W (20'-25' tall) 	2	1
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "b" status. 	0	0
2/1/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. E of the previous location • <u>New elevation</u>: 6785' (+200') • <u>New observer</u>: Bureau of Indian Affairs (John D. Hall) 	3	2

	<ul style="list-style-type: none"> • <u>New description</u>: In valley surrounded by timbered mountains. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Remarks</u>: Station is located at the Bureau of Indian Affairs office, the approximate observation site of this station from 6/1/1911-1/31/1951. The former observer was terminated on 1/31/1961. • <u>Exposure (New location)</u>: No obstructions in immediate area, embankment to the S (20' drop), office to the SSW (6°), 3 trees to the SW (8°, 8°, 10°), parking area to the SE below the embankment, road to the S below the embankment, wire fence (4' tall) surrounds the observation site 		
5/16/1963	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. SW of the previous location • <u>New coordinates</u>: 33°09'N 105°47'W (-1'N, -1'W) • <u>New elevation</u>: 6705' (-80') • <u>New observer</u>: Bureau of Indian Affairs - Branch of Forestry (Bureau of Indian Affairs) • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station is located at the Bureau of Indian Affairs Forestry Division office and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: 5 trees to the E (4°, 4°, 8°, 10°, 10°), anemometer pole to the SE (14' tall), embankment to the S (20' drop), building to the S (6°), building to the SW (4°), chain-link fence surrounding a tennis court to the W (12°), office to the W beyond the tennis court (4°), building to the W beyond the office (5°), paved road to the N, State highway 24 to the E beyond the trees, road to the S below the embankment, fence surrounds the observation site 	2	1
1/13/1977	<ul style="list-style-type: none"> • <u>New description</u>: Valley with heavily timbered mountains surrounding the area. Cedar, pinion, and ponderosa pine abound, with 	0	0

	<p>Sierra Blanca Mountains to the N rising to 12,000'.</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Exposure (Same location)</u>: Anemometer pole to the SE (14' tall), Bureau of Indian Affairs motor pool area to the SE, embankment to the S (20' drop), Bureau of Indian Affairs Forestry warehouse to the S (6°), 2 buildings to the SW, scattered buildings to the NW, road to the S below the embankment, fence surrounds the observation site, observation site located on level area. Trees to E, tennis court, office to W no longer on map; helicopter landing pad now to NE, BIA motor pool area now to SE 		
9/30/1978	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed under authorization as it is part of the non-reporting class "b" Cooperative network. 		

COOP Station 295960, CD 6, Mountain Park, Otero County, NM			
<p>Summary: On bench area, on western slope of mountain range. Station moved around some, but land use seems reasonably constant throughout period of record. Ignore prior to 1912 station move.</p> <p>Temperature rating: Good (1912-present) Precipitation rating: Very good (1894-present)</p>			
10/15/1894	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates</u>: 32°57'N 105°51'W • <u>Original elevation</u>: 6300' • <u>Original observer</u>: Nora Baze • <u>Original description</u>: Mountainous, timbered country. 	TEMP Impact	PRCP Impact
4/1/1895	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 2/1/1912. 		
2/1/1912	<ul style="list-style-type: none"> • <u>Station observations</u>: Discontinuance of 	3	3

	<ul style="list-style-type: none"> temperature <u>Equipment</u>: Removal of CRS and MxMn <u>Station relocation</u>: 1.5mi. E of the previous location <u>New coordinates</u>: 32°57'N 105°49'W (-2'W) <u>New elevation</u>: 6720' (+420') <u>New observer</u>: Charles E. Beasley (Nora Baze) <u>New description</u>: Farm in a mountain valley. <u>Remarks</u>: Reactivation of station closed since 4/1/1895. Station name change to Mountain Park from Frenal. 		
8/31/1913	<ul style="list-style-type: none"> <u>New description</u>: Mountainous with no forests or bodies of water nearby. <u>SRG</u>: Top of gauge is 3'agl <u>Time of observation</u>: 08:00 <u>Exposure (Same location)</u>: SRG is 50' from the nearest high object, a building 		0
8/1/1915	<ul style="list-style-type: none"> <u>Station observations</u>: Reestablishment of temperature <u>Equipment</u>: Addition of CRS and MxMn 		0
10/24/1922	<ul style="list-style-type: none"> <u>SRG</u>: Top of gauge is 2.5'agl, funnel in need of repair and taken to Alamogordo for repairs <u>CRS</u>: Bottom of shelter is 4'agl, door opens to the N, over sod, rebraced <u>MxMn</u>: Thermometers adjusted and rescaled <u>Remarks</u>: Station is located at the observer's ranch home, observer is an intelligent orchardist. 	1	2
12/1/1923	<ul style="list-style-type: none"> <u>Remarks</u>: Station closed until 5/1/1924. 		
5/1/1924	<ul style="list-style-type: none"> <u>New observer</u>: Jim Allen (Charles E. Beasley) <u>Remarks</u>: Reactivation of station closed since 12/1/1923. 	1	1
6/1/1925	<ul style="list-style-type: none"> <u>Remarks</u>: Station closed until 2/1/1928. 		
10/10/1927	<ul style="list-style-type: none"> <u>SRG</u>: Top of gauge is 2.8'agl (+0.3') <u>CRS</u>: Bottom of shelter is 3.5'agl (-0.5'), over old garden with weeds (sod), painted and erected, moved 600' N to the current observation from the old observation site <u>MxMn</u>: Thermometers adjusted and rescaled <u>Remarks</u>: Station is located at the observer's ranch home, observer is an intelligent orchardist. 	2	1

2/1/1928	<ul style="list-style-type: none"> • <u>Station relocation</u>: 900' N of the previous location • <u>New observer</u>: Edgar E. Cadwallader (Jim Allen) • <u>Remarks</u>: Reactivation of station closed since 6/1/1925, located at the observer's residence. 	2	1
6/21/1930	<ul style="list-style-type: none"> • <u>New description</u>: Mountainous country with some forest, with no large bodies of water nearby. • <u>SRG</u>: Top of gauge is 3'agl (+0.2') • <u>CRS</u>: Over cultivated ground (old garden with weeds) • <u>Time of observation</u>: 07:00, 19:00 (08:00) 	2	2
5/17/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5') • <u>CRS</u>: Shelter in very bad condition, all slats out on E side, repaired • <u>MxMn</u>: Old thermometer support was broken, replaced • <u>Remarks</u>: Station was in very bad condition, but put in good order during a visit. • <u>Exposure (Same location)</u>: SRG in "bad location, too near buildings" 	2	0
3/11/1946	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. SW of the previous location • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Time of observation</u>: 08:00 (07:00, 19:00) • <u>Remarks</u>: Station is located at the observer's home, no important change in elevation or exposure. • <u>Exposure (New location)</u>: Tree 35' to the SSW (15' tall), observer's residence to the SW (12' tall), 2 buildings to the SW, scattered trees to the S and W of the observation site 	3	3
8/5/1953	<ul style="list-style-type: none"> • <u>New description</u>: Mountainous in surrounding areas, immediate area is a garden with numerous surrounding trees. • <u>Time of observation</u>: 17:00 (08:00) • <u>Exposure (Same location)</u>: Numerous trees to the N, E, and NW (10'-30' tall), building to the WSW (18' tall) 	3	2
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "a" status. 	0	0

7/10/1962	<ul style="list-style-type: none"> • <u>New observer</u>: Jon. T. Cadwallader (Edgar E. Cadwallader) • <u>Remarks</u>: Former observer died 7/9/1962 with no change in the location of the equipment. 	1	1
10/11/1962	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 340' SW of the previous location, CRS moved 200' S of the previous location • <u>New coordinates</u>: 32°57'N 105°50'W (+1'W) • <u>New description</u>: Mountainous with numerous orchards in the area, also pinion and juniper trees widespread in the area. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station is located at the observer's home with new equipment installed and the observation site changed to improve exposure and to increase the convenience of the observer. • <u>Exposure (New location)</u>: 2 trees to the N (18°, 22°), 2 trees to the NE (16°, 20°), building to the NE (6°), 2 trees to the E (18°, 20°), orchards to the E beyond the 2 trees, pinion and juniper trees to the SSE (6°-18°), 2 trees to the SSW (18°, 22°), building to the W (12°), pinion and juniper trees to the W, shed to the NW (20°), tree to the NW (30°), observer's home to the NW, road to the N, fence to the W 	2	1
8/4/1969	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. W of the previous location • <u>New coordinates</u>: 32°57'N 105°51'W (+1'W) • <u>New elevation</u>: 6630' (-90') • <u>New observer</u>: August L. Abelt (Jon. T. Cadwallader) • <u>New description</u>: Mountainous with numerous orchards in the area, mountain tops generally covered with pinion and juniper trees. • <u>Time of observation</u>: 18:00 (17:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record, with a 3-day break. • <u>Exposure (New location)</u>: Pinion trees to the N 	3	2

	(20°), residence to the NE, pinion trees to the E (20°), juniper tree to the SW (30°), road to the S and W, fire station to the SSE beyond the road, church to the S beyond the road		
9/8/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. E of the previous location • <u>New coordinates</u>: 32°57'N 105°49'W (-2'W) • <u>New elevation</u>: 6780' (+150') • <u>New observer</u>: James K. Cadwallader (August L. Abelt) • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record • <u>Exposure (New location)</u>: Tree to the N (25°), house to the ESE, entrance road to the W, orchards in all quadrants surrounding the observation site, slopes downward to the S (4°) 	3	2
1/28/1980	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to NCC 	0	0
8/28/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed 110' ESE of the old CRS location. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (Same location)</u>: Observer's house to the E, parking lot to the S, farm road to the S, orchards to the N of the observation site, orchards to the S of the farm road 	0	2
3/16/1994	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque 	0	0
4/5/1994	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Tree to the N (14°), house to the ESE (15°), trees to the SSE (16°), tree to the W (18°) 	0	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0

7/20/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.95472 -105.82417 (+0.00472N, +0.00750W), no station move reported 	0	0
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COOP Station 296435, CD 8, Orogrande, Otero County, NM			
<p>Summary: Station in open plain near some low mountains, on slight slope. Location confirmed from SurfaceStations.org photos and Google Maps. Station moved around a lot but stayed within the town. No irrigation or land use variations, so overall probably homogeneous. Station move distances inconsistent unless 1976 move is much shorter than listed.</p> <p>Temperature rating: Very good (1906-present) Precipitation rating: Very good (1904-present)</p>			
12/1/1904	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation • <u>Original equipment</u>: Standard rain gauge (SRG) • <u>Original coordinates</u>: 32°24'N 106°08'W • <u>Original elevation</u>: 4300' • <u>Original observer</u>: F.B. Schermerhorn • <u>Original description</u>: Level, sandy plains. 	TEMP Impact	PRCP Impact
5/26/1906	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Station relocation</u>: 2.5mi. SE of the previous location • <u>New coordinates</u>: 32°23'N 106°06'W (-1'N, -2'W) • <u>New elevation</u>: 4188 (-112') • <u>New observer</u>: Ed Beasley (F.B. Schermerhorn) • <u>Remarks</u>: Station name change to Orogrande from Brice. 		3
7/1/1908	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. SE of the previous location • <u>New coordinates</u>: 32°22'N 106°05'W (-1'N, -1'W) 	2	1

	<ul style="list-style-type: none"> • <u>New elevation</u>: 4180 (-8') • <u>New observer</u>: Southern Pacific Railroad (Ed Beasley) • <u>New description</u>: Country is rolling and 2mi. from Jarilla Mountains with no forest or bodies of water in near vicinity • <u>Time of observation</u>: 17:00 • <u>SRG</u>: Top of gauge is 8'agl • <u>Exposure (New location)</u>: SRG is 8' from the nearest high object, overhanging eaves 		
2/20/1916	<ul style="list-style-type: none"> • <u>Time of observation</u>: Midnight, 06:00, 12:00, 15:30, 18:00 (17:00) 	2	2
10/8/1927	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 6.5'agl (-1.5') • <u>CRS</u>: Bottom of shelter is 3'agl, door opens to N, over sandy soil with no growth 	1	1
5/18/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (-3'), worn out and leaking • <u>CRS</u>: Bottom of shelter is 4'agl (+1'), turf below (sandy soil with no growth) • <u>MxMn</u>: Minimum thermometer was broken and replaced • <u>Remarks</u>: Observer asked to take better care of the equipment. 	2	1
6/9/1940	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>SRG</u>: Top of gauge is 6.5'agl (+3') • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Building 39' to NE (14°) 	1	1
8/30/1940	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of R/RNG • <u>CRS</u>: Bottom of shelter is 3.5'agl (-0.5'), sod below (turf) 	1	1
5/2/1947	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a R/RNG 	0	1
2/1/1953	<ul style="list-style-type: none"> • <u>Time of observation</u>: 17:00 (Midnight, 06:00, 12:00, 15:30, 18:00) • <u>Exposure (Same location)</u>: SRG moved to N of depot, fence to N and W 4' tall, 3 trees to E (18-20' tall) 	2	2
4/1/1954	<ul style="list-style-type: none"> • <u>New observer</u>: Richard Coca (Southern Pacific Railroad) 	1	1
10/1/1956	<ul style="list-style-type: none"> • <u>Time of observation</u>: 16:00 (17:00) 	1	1

10/1/1957	<ul style="list-style-type: none"> • <u>Time of observation</u>: 07:00 (16:00) 	3	1
12/1/1959	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.4mi. WNW of the previous location • <u>New coordinates</u>: 32°23'N 106°06'W (+1'N, +1'W) • <u>New elevation</u>: 4200 (+20') • <u>New description</u>: Level to rolling terrain with isolated hills to the N 2-5 mi. from the station, Organ Mountains rise about 30mi. to the W. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 17:00 (07:00) • <u>Remarks</u>: Station is located at Oro Trailer Park and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Workshop to N, observer's trailer to S, CRS to NNW (20°), 4' tall fence surrounding observation site, open fields to W, trailer park to N and to E 	2	1
9/1/1960	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 1/24/1961. 		
1/24/1961	<ul style="list-style-type: none"> • <u>New observer</u>: Audrey K. Coca (Richard Coca) • <u>Time of observation</u>: 08:00 (17:00) • <u>Remarks</u>: Reactivation of station closed since 9/1/1960. Former observer resigned due to business interests. 	3	1
5/22/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.1mi. NNE of the previous location • <u>New coordinates</u>: 32°24'N 106°05'W (+1'N, -1'W) • <u>New elevation</u>: 4240 (+40') • <u>New observer</u>: Gladys L. Robinson • <u>New description</u>: Level to rolling terrain generally covered by semi-arid vegetation with isolated hills to the 2-5 mi. N, Organ Mountains rise about 30mi. to the W. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 17:00 (08:00) • <u>Remarks</u>: Station is located at the observer's ranch and is compatible for a continuation of the previous record. Station name change to 	2	1

	<p>Orogrande 1N from Orogrande.</p> <ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Trailer to the N (8°), driveway to the E and W, hills to the NW (5°), Highway 54 to the E 		
1/1/1969	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (17:00) 	3	1
10/20/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.7mi. SSW of the previous location • <u>New coordinates</u>: 32°23'N 106°06'W (-1'N, +1'W) • <u>New elevation</u>: 4200 (-40') • <u>Remarks</u>: Station is located at the observer's trailer home and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Building to the SE, trailer house to the S (3°), white house to the SW, Highway 54 to the E, entrance road to the S, open fields to the N and W of observation site 		
7/1/1975	<ul style="list-style-type: none"> • <u>Remarks</u>: Observer was married and now goes by Gladys L. Basler. 	0	0
5/1/1976	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.1mi. SE of the previous location • <u>New elevation</u>: 4175 (-25') • <u>New observer</u>: Joe M. Wells (Gladys L. Basler) • <u>New description</u>: Level to rolling terrain with isolated hills to the N 2-5 mi. from the station, Organ Mountains rise about 30mi. to the W. Generally covered by semi-arid vegetation with White Sands Missile Range nearby. • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Remarks</u>: Station is located at the observer's home and is compatible for a continuation of the previous record. Previous observer unable to properly operate weather station, so past records are poor and incomplete. • <u>Exposure (New location)</u>: Shed to the N, observer's trailer to the NE, several houses to the S, several buildings to the W, dirt road to W, Highway 54 to W, fence surrounds the observation site 	2	2
4/23/1980	<ul style="list-style-type: none"> • <u>Station relocation</u>: 600' WSW of the previous 	3	2

	<p>location</p> <ul style="list-style-type: none"> • <u>New elevation</u>: 4179 (+4') • <u>New observer</u>: Woody Johnson (Joe M. Wells) • <u>Time of observation</u>: 17:00 (08:00) • <u>Remarks</u>: Station is located at the observer's home and is compatible for a continuation of the previous record. Previous observer was terminated. • <u>Exposure (New location)</u>: Restaurant to the N, light pole (34°) in a parking lot to the E, Shell station to the ESE, restaurant to the S (25°), numerous trailers to the SW, dirt road to the N, Highway 54 to the E, fence just to the N 		
4/5/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>Station relocation</u>: 0.2mi. N of previous location • <u>New elevation</u>: 4182 (+3') • <u>New observer</u>: Patsy Rumsey (Joe M. Wells) • <u>New description</u>: Level to rolling desert terrain and vegetation. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Time of observation</u>: 18:00 (17:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Former observer passed away, loss of records from 3/18/1985-4/4/1985 • <u>Exposure (New location)</u>: Observer's house to N, scattered residences to S, trees to W (15°), Highway 54 just to W of observation site 	2	1
4/12/1993	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque • <u>Remarks</u>: Change in observer name to Patsy Johnson due to marriage. 	0	0
3/30/1995	<ul style="list-style-type: none"> • <u>Equipment move</u>: Relocated 0.1mi. to the NE • <u>Exposure (New location)</u>: Trees to S (30°) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a 	1	1

	continuation of the previous record.		
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0
3/14/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.37889 -106.09111 (-0.00444N, -0.00889W), no station move reported 	0	0
6/3/2003	<ul style="list-style-type: none"> • <u>New elevation</u>: 4223' (+41') • <u>Remarks</u>: Change to IV-ROCS from ROSA. 	0	0
10/16/2003	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.4mi. S of the previous location • <u>New coordinates</u>: 32.37360 -106.09140 (-0.00529N, +0.00029W) • <u>New elevation</u>: 4197' (-26') • <u>Remarks</u>: Station reactivated after being closed since 10/1/2003 and is located at the observer's residence. • <u>Exposure (New location)</u>: House to the N (9°) 	2	1
9/16/2004	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge • <u>MMTS</u>: Replaced equipment 	1	1
11/14/2005	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.25mi. NNE of the previous location • <u>New coordinates</u>: 32.37660 -106.08980 (+0.00307N, +0.00008W) • <u>New elevation</u>: 4208' (+11') • <u>Exposure (New location)</u>: Tree to the N (24°), house to the E (51°), telephone pole to the SW (48°) 	1	1
110/5/2008	<ul style="list-style-type: none"> • <u>Remarks</u>: Daily data unavailable since cable not connected to MMTS, and observer is unmotivated to reliably get daily rainfall though hourly rainfall data is still available. 	1	1

COOP Station 297610, CD 7, Roswell Industrial Air Center, Chaves County, NM

Summary: Station in valley east of mountains. Originally rooftop USWB observations, then airport 1.3 mi to the northeast (1947), then to current airport 6 mi southwest of town in 1972. Current location according to SurfaceStations.org site survey and Google Maps is 33.307362N, -104.508326W. Station apparently moves around a bit about the airport. Suspect that 6/1/1996 location is off by 0.1N. Temperature data before 1947 inconsistent with data thereafter due to rooftop location and urbanization. Locations

until 1972 probably affected by irrigation too.			
Temperature rating: Poor (1893-present)			
Precipitation rating: Fair (1893-present)			
1/1/1893	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates:</u> Unknown • <u>Original elevation:</u> Unknown • <u>Original observer:</u> Unknown 	TEMP Impact	PRCP Impact
5/12/1937	<ul style="list-style-type: none"> • <u>New observer:</u> US Weather Bureau (Unknown) • <u>SRG:</u> Top of gauge is 69'agl • <u>CRS:</u> Door opens to the N • <u>Remarks:</u> First Order Airways station, with an anemometer, barograph, and pscyhrometer at the observation site. Called on official in charge, but did not inspect since Roswell is a First Order Airways station. 	0	0
10/29/1940	<ul style="list-style-type: none"> • <u>Equipment:</u> Addition of a Recording rain gauge (R/RNG) • <u>New coordinates:</u> 33°24'N 104°27'W (Unknown) • <u>New elevation:</u> 3602' (Unknown) • <u>Remarks:</u> Station name change to Roswell (City) from Roswell. • <u>Exposure (Same location):</u> Penthouse 15' to the S, smokestack to the W (22°), observation site on a wooden platform located on the roof of a federal building 	0	0
1/1/1947	<ul style="list-style-type: none"> • <u>Station relocation:</u> 1.3mi. NW of the previous location • <u>New coordinates:</u> 33°24'N 104°32'W (+5'W) • <u>New elevation:</u> 3611' (+9') • <u>Remarks:</u> Station is located at the municipal airport. Station name change to Roswell (WBO) from Roswell (City). 	3	2
3/21/1950	<ul style="list-style-type: none"> • <u>Daily recording of observations:</u> Form 1024 sent to WSO-Albuquerque 	2	1

	<ul style="list-style-type: none"> • <u>Time of observation</u>: 16:00 • <u>Remarks</u>: Evaporation equipment added to the observation site, moved from the former station a distance of 9mi. to the NW. • <u>Exposure (Same location)</u>: Though temporary, a satisfactory exposure has been obtained. 		
1/18/1951	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the Weather Bureau Airport Station. Evaporation equipment was removed from the observation site, relocated to the Bitter Lakes Wildlife Refuge Station that is considered to be a better location. 	0	0
1/26/1967	<ul style="list-style-type: none"> • <u>New elevation</u>: 3617' (+6') • <u>New description</u>: Located on the W edge of town, 8mi. to the W of the Pecos River, 0.8mi. N of the Spring River, and 2mi. N of the Rio Hondo. Land is gently rolling semi-desert pasture land and fairly flat irrigated farm land. • <u>Daily recording of observations</u>: Form WBAN-10 sent to WSO-Albuquerque • <u>Time of observation</u>: Midnight (16:00) • <u>Remarks</u>: Elevation listed is for the CRS, while the SRG elevation is 3636' with a rooftop exposure. • <u>Exposure (Same location)</u>: Tower to the S (35°), parking area to the E, College Avenue to the E beyond the parking area. 	2	0
1/15/1969	<ul style="list-style-type: none"> • <u>New elevation</u>: 3636' (+19') • <u>Remarks</u>: Temperature now taken from the rooftop exposure, formerly taken by automatic equipment on the field at an elevation of 3617'. Temperature observations are compatible for a continuation of the previous record. 	3	0
12/1/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 8.0mi. SE of the previous location • <u>New coordinates</u>: 33°18'N 104°32'W (-6'N) • <u>New elevation</u>: 3649' (+13') • <u>New observer</u>: National Weather Service (US Weather Bureau) • <u>New description</u>: Land is gently rolling semi-desert pasture land and flat farm land. • <u>Daily recording of observations</u>: Form WBAN- 	3	3

	<p>10 sent to NCC</p> <ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at Roswell Industrial Air Center, moved 8mi. SE and not compatible for a continuation of the previous record. Station name change to Roswell WSO AP from Roswell (WBO). COOP ID change to 291933 from 291927. Addition of hygromograph (HYGR) to the observation site. • <u>Exposure (New location)</u>: Building to the S, Cessna aviation to the SW (4°), National Weather Service office to the WNW (4°), hanger to the NW (4°), road just to the W, open fields to the N and to the E of the observation site 		
8/6/1976	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form F-6 sent to NCC 	0	0
8/24/1982	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>Station relocation</u>: SRG moved 111' SW of the previous location • <u>New description</u>: Land gently rolling semi-desert pasture land and flat farm land with scattered irrigated farm land found E, S, and NW. Cotton, alfalfa, pecan trees are major crops, and livestock cattle and sheep are also the main industry. • <u>SRG</u>: Now the primary equipment used for precipitation measurements, previously R/RNG • <u>F/P</u>: The primary equipment used for hourly precipitation measurements • <u>HYGR</u>: Now the primary equipment used for temperature measurements. • <u>Remarks</u>: Station is located at Roswell Industrial Air Center. Change to Second Order Airways station. Station name change to Roswell FAA AP from Roswell WSO AP. • <u>Exposure (New location)</u>: Great Southwest Aviation terminal to the S, FAA building to the W, tower to the W, Great Southwest Aviation terminal to the NNW, paved road to the E, parking area to the S, sidewalk just to the S 	2	2

	between the parking area and the observation site, open area beyond the paved road to the E		
3/2/1983	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: MET-10C sent to NCC • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
9/18/1984	<ul style="list-style-type: none"> • <u>F/P</u>: Installation of Model III timer • <u>Daily recording of observations</u>: Form MF1-10C sent to NCC 	0	1
11/6/1985	<ul style="list-style-type: none"> • <u>Remarks</u>: Hygrothermograph equipment changed to the HO-83 from the HO-60. 	2	0
7/6/1989	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>New description</u>: Land gently flat semi-desert land with some irrigated farm land. • <u>Daily recording of observations</u>: Form MF1-10C sent to NCDC • <u>Remarks</u>: Thermograph added to the observation site to take observations on the weekends, holidays, and other unmanned periods. 	2	2
11/16/1993	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Building to the SE (7°), hanger to the SE (16°), building to the W (19°) 	1	1
9/1/1995	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of the F/P • <u>New observer</u>: Met Tech Incorporated (National Weather Service) • <u>F/P</u>: Relocated to station 297605 • <u>Remarks</u>: Hourly precipitation measurements no longer taken. 	1	2
6/1/1996	<ul style="list-style-type: none"> • <u>New coordinates</u>: 33.40750 104.51678 (+0.10750N, -0.01655W), no station move reported • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Albuquerque, temperature reported daily to WSO-Albuquerque • <u>Daily recording of observations</u>: Form ADP sent to NCDC • <u>Remarks</u>: Station commissioned to be an ASOS site. New coordinates obtained via 	1	1

	Garmin 45 GPS.		
10/1/1996	<ul style="list-style-type: none"> • <u>New coordinates</u>: 33.30806 104.54111 (-0.09944N, +0.02433W), no station move reported • <u>Equipment</u>: Addition of Tipping bucket gauge (TB), now the primary equipment for precipitation measurements 	1	2
10/1/1997	<ul style="list-style-type: none"> • <u>New coordinates</u>: 33.30722 104.50861 (-0.00084N, -0.03250W), no station move reported • <u>New observer</u>: FAA (Met Tech Incorporated) • <u>F/P</u>: Now the primary equipment for temperature measurements 	2	1
3/25/2003	<ul style="list-style-type: none"> • <u>TB</u>: Now the primary equipment for precipitation measurements • <u>F/P</u>: Now the backup equipment for precipitation measurements 	0	2
3/31/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Other rain gauge (PCPN1), now the primary equipment for temperature measurements 	0	2
6/8/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of AWPAG (PCPN), now the primary equipment for hourly precipitation measurements 	0	2

COOP Station 297649, CD 6: Ruidoso, Lincoln County, NM			
<p>Summary: Station is in mountain range east of crest. Town lies along canyon and in flat area to north. Station was in canyon 1942-1968, at airport in flat area until 1993, in canyon until 2001, then back to flat area. Current site is in business area close to airport that is now irrigated golf course. Wide range of elevation and microclimate issues.</p> <p>Temperature rating: Fair (1942-present) Precipitation rating: Fair (1942-present)</p>			
1/30/1942	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Cotton region shelter (CRS), Max-Min thermometer (MxMn), Standard rain gauge (SRG), Recording rain gauge (R/RNG) • <u>Original coordinates</u>: 33°20'N 105°40'W 	TEMP Impact	PRCP Impact

	<ul style="list-style-type: none"> • <u>Original elevation</u>: 6875' • <u>Original observer</u>: Charles A. Culver • <u>Original description</u>: Narrow valley with mountains all around and considerable forest. 		
10/18/1942	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.8mi. W of the previous location • <u>New coordinates</u>: 33°20'N 105°41'W (+1'W) • <u>New observer</u>: Ike N. Winfield (E.L. Brewer) 	3	2
9/18/1943	<ul style="list-style-type: none"> • <u>Station relocation</u>: 300' E of the previous location • <u>New observer</u>: Josie T. Nelson (Ike N. Winfield) • <u>New description</u>: Located near a river bottom with tall pine trees in the vicinity. • <u>CRS</u>: Bottom of shelter is 3.8'agl, over vegetation • <u>SRG</u>: Top of gauge is 4'agl • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Time of observation</u>: 18:00 • <u>Remarks</u>: Station is located at the observer's residence, observer elderly but still quite interested in the job. • <u>Exposure (New location)</u>: Garden to the N, pine tree 75' to the NE (70' tall), bush 18' to the S (8' tall), house to the S, house to the SW, observer's house to the WNW, tree 30' to the WNW (15' tall), fence to the E between the observer's residence and the observation site. 	2	1
7/7/1945	<ul style="list-style-type: none"> • <u>Station relocation</u>: 200' NE of the previous location • <u>New coordinates</u>: 33°20'N 105°40'W (-1'W) • <u>New observer</u>: Charles A. Culver (Josie T. Nelson) • <u>Remarks</u>: Station is located 400' N of the observer's laundry station, relocated for the observer's convenience. • <u>Exposure (New location)</u>: Tree 50' to the SE (75'tall), laundry station 400' to the S, Main Street to the S, side street to the W between Main Street and the observation site 	2	1

10/25/1950	<ul style="list-style-type: none"> • <u>New description</u>: In a deep, long canyon about 0.5mi wide with walls running E and W, surrounding country is mountainous, timbered. • <u>Time of observation</u>: Sunset (18:00) • <u>Remarks</u>: Station is located at the observer's residence. • <u>Exposure (Same location)</u>: House to the SE (20' tall), house to the S (30' tall), shed to the W (9' tall), 2 houses to the NW (12' tall, 12' tall), vacant lots to the E 	2	1
8/5/1953	<ul style="list-style-type: none"> • <u>Station relocation</u>: 450' NE of the previous location • <u>New elevation</u>: 6855' (-20') • <u>Remarks</u>: Station is located at the town fire station, with no change in the observer. • <u>Exposure (New location)</u>: 3 trees to the E (25' tall, 25' tall, 25' tall), fire station 50' to the SE 	2	1
1/26/1960	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. E of the previous location • <u>New elevation</u>: 6755' (-100') • <u>New description</u>: In a long canyon through which the Ruidoso River runs generally E to W, surrounding country is mountainous and mostly timbered. • <u>Daily recording of observations</u>: Form 612-14 sent to WSO-Albuquerque • <u>Time of observation</u>: 16:30 (Sunset) • <u>Remarks</u>: Station is located at the Chamber of Commerce building and is compatible for a continuation of the previous record, relocation was to secure a more representative site and move the equipment closer to the observer's residence. • <u>Exposure (New location)</u>: Ridge to the N (22°), ridge to the S (18°), chamber of commerce to the W (20°), tree to the NW (75°), Highway 37 just to the S 	2	2
8/10/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 25' W of the previous location, R/RNG moved 8' WSW of the previous location • <u>Remarks</u>: Station is located at the Chamber of Commerce building, moved because of a tree 	1	1

	<p>planted by the Chamber of Commerce.</p> <ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Tree to the N (77°), ridge to the N (23°), spruce to the E (38°), chamber of commerce to the W (36°), State Highway 37 just to the S 		
3/2/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.3mi. N of previous location • <u>New coordinates</u>: 33°22'N 105°40'W (+2'N) • <u>New elevation</u>: 6838' (+83') • <u>New observer</u>: Municipal Airport (Charles A. Culver) • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 16:00 (16:30) • <u>Remarks</u>: Station is located at the Municipal Airport and is compatible for a continuation of the previous record. 	3	2
9/1/1977	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>New description</u>: Located about the center of an open mountain valley about 0.5mi. wide, 2mi. long and vegetation includes mountain grasses, ponderosa pine, evergreens. • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Exposure (Same location)</u>: Drainage ditch to the E (-8°), terminal to the SW (16°), hanger to the NW (8°), open meadow to the E, parking lot to the SW, runway to the W beyond the terminal building, parking lot to the NW 	0	2
2/28/1981	<ul style="list-style-type: none"> • <u>Remarks</u>: Station placed on inactive status due to unqualified airport personnel to take observations. 		
4/23/1981	<ul style="list-style-type: none"> • <u>MxMn</u>: Minimum temperatures recording on the low side when high winds were present, problem was fixed • <u>Remarks</u>: Observations have been taken since the station was placed on inactive status on 2/28/1981, compatible for a continuation of the previous record. 	3	1
6/7/1983	<ul style="list-style-type: none"> • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0

6/9/1987	<ul style="list-style-type: none"> • <u>New description</u>: Located about the center of an open mountain valley about 0.5mi. wide, 2mi. long with wooded mountains surrounding the area and the Sierra Blanca 12mi. to the W. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque • <u>Remarks</u>: Station closed until 9/1/1993. 		
9/1/1993	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2mi. SW of the previous location • <u>New coordinates</u>: 33.33333 -105.68333 (+0.01666W) • <u>New elevation</u>: 6760' (-78') • <u>New observer</u>: Ruidoso Police Department (Municipal Airport) • <u>New description</u>: Located on S upslope side of long canyon, with immediate area fairly open and the Ruidoso River running E-W through the canyon. • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Albuquerque, temperature reported daily to WSO-Albuquerque • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque • <u>Remarks</u>: Reactivation of station closed since 6/9/1987, located at the Ruidoso Police Department and is compatible for a continuation of the previous record. Station name change to Ruidoso from Ruidoso 2NNE. • <u>Exposure (New location)</u>: Tree to the NE (26°), tree to the ENE (32°), building to the SE (19°) 	3	2
5/9/2001	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.3mi. N of the previous location • <u>New coordinates</u>: 33.35917 -105.66556 (+0.02584N, -0.01777W) • <u>New elevation</u>: 6935' (+175') 	3	2
6/24/2005	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS • <u>Station relocation</u>: 0.7mi. N of the previous location • <u>New coordinates</u>: 33.35910 -105.66550 (-0.00007N, -0.00006W) 	2	1

	<ul style="list-style-type: none"> • <u>New elevation</u>: 6930' (-5') • <u>Remarks</u>: Station is considered compatible for continuation of the previous record. 		
11/25/2008	<ul style="list-style-type: none"> • <u>New coordinates</u>: 33.35889 -105.66528 (-0.00021N, -0.00022W), no station move reported 	0	0

COOP Station 298535, CD 8: State University, Dona Ana County, NM			
<p>Summary: Remarkable stability in local site, but expect inhomogeneities due to growth of Las Cruces around station and possible variations in irrigation practice on campus and in surrounding farmlands. Location stable 1878-1886 and 1892-present. Windmills (1986) are still there, according to SurfaceStations.org images. Not sure how inhomogeneous precipitation will be due to urban and irrigation influences, but no microclimate influences.</p> <p>Temperature rating: Good (1892-present) Precipitation rating: Very good (1892-present)</p>			
9/1/1851	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation • <u>Original equipment</u>: Standard rain gauge (SRG) • <u>Original coordinates</u>: 32°14'N 106°42'W • <u>Original elevation</u>: 3900' • <u>Original observer</u>: US Army Post Surgeon • <u>Original description</u>: Level valley floor at the Army Post. 	TEMP Impact	PRCP Impact
11/1/1865	<ul style="list-style-type: none"> • <u>Station relocation</u>: 21mi. NW of the previous location • <u>New coordinates</u>: 32°29'N 106°55'W (+15'N, +13'W) • <u>New elevation</u>: 3950' (+50') • <u>New observer</u>: US Army (US Army Post Surgeon) • <u>Remarks</u>: Station name change to Fort Seldon from Fort Filmore. 		3
8/1/1878	<ul style="list-style-type: none"> • <u>Station relocation</u>: 16mi. SE of the previous location • <u>New coordinates</u>: 32°15'N 106°45'W (-14'N, -10'W) • <u>New elevation</u>: 3900' (-50') 		3

	<ul style="list-style-type: none"> • <u>Remarks</u>: Station name change to La Mesilla from Fort Seldon. 		
1/1/1886	<ul style="list-style-type: none"> • <u>Station relocation</u>: 16mi. NE of the previous location • <u>New coordinates</u>: 32°29'N 106°55'W (+14'N, +10'W) • <u>New elevation</u>: 3950' (+50') • <u>Remarks</u>: Station name change to Fort Seldon from La Mesilla. Same location as 11/1/1865-7/31/1878 location. 		3
9/30/1890	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 1/1/1892. 		
1/1/1892	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Station relocation</u>: 14mi. SE of the previous location • <u>New coordinates</u>: 32°17'N 106°45'W (-12'N, -10'W) • <u>New elevation</u>: 3909' (-41') • <u>New observer</u>: Agricultural College (US Army) • <u>Remarks</u>: Reactivation of station closed since 9/30/1890. Records at this location have the station name of either Las Cruces or Mesilla Park, the same location. 	3	3
7/15/1913	<ul style="list-style-type: none"> • <u>New description</u>: Country slopes to the W, comparatively level, with no forest or bodies of water near. • <u>SRG</u>: Top of gauge is 30'agl • <u>CRS</u>: Bottom of shelter is 6'agl, door opens to the N, over ground covered with sage brush • <u>Time of observation</u>: 18:00 • <u>Exposure (Same location)</u>: SRG on roof of science hall and unobstructed with no high objects near. 	0	0
10/1/1917	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 7'agl (+1'), over prairie and mesquite growth, bramble (ground covered with sage brush), steps in need of repair • <u>Remarks</u>: Station is located at the State Agricultural College and Experiment station, 	1	0

	with several instruments located all around campus, including new and up-to-date Weather Bureau equipment. An anemometer, barometer, barograph, hygrometer, psychrometer, and thermograph at the observation site.		
9/12/1918	<ul style="list-style-type: none"> • <u>Remarks</u>: Evaporation equipment added to the observation site. Station upgraded to class "a" status. 	0	0
10/7/1927	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-27') • <u>CRS</u>: Bottom of shelter is 5'agl (-2'), over mesa growth, small shrubs (prairie and mesquite growth, bramble) 	2	2
2/7/1937	<ul style="list-style-type: none"> • <u>New description</u>: In Rio Grande Valley, college farm land all around, slopes to W. High mountains 15mi. to the E and Rio Grande River about 2mi. W. • <u>Time of observation</u>: 05:00, 17:00 (18:00) • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5') • <u>CRS</u>: Bottom of shelter is 4'agl (-1'), over bare ground (ground covered with sage brush) 	2	1
8/31/1940	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 3'agl (-1'), over sod (bare ground) • <u>MxMn</u>: Probably a hard-setting maximum thermometer 	1	0
1/31/1951	<ul style="list-style-type: none"> • <u>New description</u>: To the N, S, and W, the land is flat or gently rolling bottomland with a bluff about 4mi. W that is 200' high and the Rio Grande River flowing at its base. • <u>Daily recording of observations</u>: Form 1024 sent to WSO-Albuquerque • <u>Time of observation</u>: 17:00 (05:00, 17:00) • <u>Remarks</u>: Station is located at the recreation field of the college. • <u>Exposure (Same location)</u>: Music building 200' to ESE (40' tall), fence to N, street to the N beyond the fence, fence to the E, street to the E beyond the fence, athletic and recreation field to the SW of the observation site 	2	1
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "ab" status from class "a" status. 	0	0
4/8/1959	<ul style="list-style-type: none"> • <u>New observer</u>: State University (Agricultural College) 	0	0

	<ul style="list-style-type: none"> • <u>Remarks</u>: Station name change to State University from Agricultural College, requested by the dean of the college. COOP ID change to 298535 from 290131. 		
2/2/1960	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-15 sent to WSO-Albuquerque • <u>Remarks</u>: Station is located at the agronomy building and recreation field. • <u>Exposure (Same location)</u>: Tree to the N (29°), music building to the ESE (now 8°), trees to E (14°, 14°, 16°), street to the N, residences to the N beyond the street, street to the E, open recreation field to the SW of the observation site 	0	0
5/27/1964	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1300' WSW of the previous location • <u>New elevation</u>: 3881' (-28') • <u>Daily recording of observations</u>: Form 612-25 sent to WSO-Albuquerque • <u>Remarks</u>: Station is located at the agronomy building and recreation field. Water thermometers added to the observation site. • <u>Exposure (New location)</u>: Tree to the ENE (10°), tree to the ESE (16°), building to the ESE (6°), building to the W (8°), College Drive to the S, driveway just to the W, 6' tall fence surrounds the observation site, cultivated land to the N, lawn to the E 	2	1
8/11/1964	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG), removal of the SRG • <u>R/RNG</u>: Now the primary equipment used for precipitation measurements. 	0	2
1/10/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 130' NE of the previous location • <u>New description</u>: Flat bottomland to gently rolling hills to the N, S, and W, with rocky mountains rising to the E. • <u>Daily recording of observations</u>: Form 612-15 sent to NWRC • <u>Remarks</u>: Station is located at the police station on College Drive. • <u>Exposure (New location)</u>: Police station to the S, cultivated open land to the N, open field to 	1	1

	the E, open field to the W, fence surrounds the observation site		
5/1/1973	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (17:00) • <u>Daily recording of observations</u>: Form E-22 sent to NCC • <u>Remarks</u>: Changes were due to the abolishment of the state climatologist position. 	3	0
3/10/1976	<ul style="list-style-type: none"> • <u>Remarks</u>: Soil thermometers added to the observation site, soil temperatures reported to WSO-Albuquerque. 	0	0
3/2/1977	<ul style="list-style-type: none"> • <u>New description</u>: Flat bottomland to gently rolling hills to the N, S, and W. Rio Grande River Valley proper is located about 3mi. sloping gently S-W. Low mountain range located 12mi. NW and higher rocky, Organ Mountains 10mi. due E. Climate generally mild year round which affords extensive farming and all kinds of vegetation and trees. • <u>Remarks</u>: Station is located at the New Mexico State University Police and Security building. Evaporation equipment added to the observation site as a replacement. • <u>Exposure (Same location)</u>: Police and security building to the S, parking lot to the S between the police and security building and the observation site, farm machinery building to the WSW, cultivated farm land to the N, road to the N beyond the cultivated farm land, open field to the E, open field to the W, fence surrounds the observation site 	0	0
9/1/1977	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG 	0	2
12/1/1977	<ul style="list-style-type: none"> • <u>Remarks</u>: Soil thermometers added to the observation site as a replacement. 	0	0
2/5/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS) • <u>MMTS</u>: Now the primary equipment for temperature measurements • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Albuquerque 	2	0
10/1/1985	<ul style="list-style-type: none"> • <u>Remarks</u>: A 100-foot arc to the E of the weather station will be defined with barricades graded to avoid drainage problems in regards 	2	0

	to the development of a parking lot.		
5/21/1986	<ul style="list-style-type: none"> • <u>New description</u>: Flat river bottomlands to gently rolling hills to the N, S, and W and extensive farming of all kinds. • <u>F/P</u>: Installation of Model III timer • <u>Remarks</u>: Evaporation reported to WSO-Albuquerque. • <u>Exposure (Same location)</u>: Building to the ESE (8°), wind mills to the S (35°), trees to the SE (20°), trees to the SW (18°) 	0	1
4/19/1991	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported daily April-June to WSO-Albuquerque, temperature reported daily April-June to WSO-Albuquerque 	0	0
7/16/1992	<ul style="list-style-type: none"> • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
3/16/1994	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Albuquerque • <u>Remarks</u>: Claude Gobble takes the actual observations and calls from his residence. • <u>Exposure (Same location)</u>: Wind mills to the S (35°), trees to the SE (20°), trees to the SW (18°) 	0	0
6/6/1995	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.28056 -106.76750 (-0.00277N, +0.01750W), no station move reported • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 	0	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-92 sent to WSO-El Paso 	0	0
7/7/2003	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Hygrothermograph (HTG) • <u>MxMn</u>: Now the backup equipment for temperature measurements • <u>HTG</u>: Now the second backup equipment for temperature measurements 	1	0
2/2/2005	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.28222 -106.75972 (+0.00164N, -0.00778W), no station move reported • <u>Remarks</u>: Change in the backup observer. 	1	1

COOP Station 299165, CD 8: Tularosa, Otero County, NM			
<p>Summary: Station on east slope of valley near foot of mountains. Town is small but is a desert oasis, with surrounding irrigated farmland. Station west of town from 1909-1946, in town 1946-1969, east side of town 1969-1972, and back west of town 1972-present. Leaky rain gauge in mid 1930s. Fairly large changes in proximity to mountains.</p> <p>Temperature rating: Fair (1909-present) Precipitation rating: Fair (1909-present)</p>			
7/1/1909	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 33°04'N 106°02'W • <u>Original elevation:</u> 4449' • <u>Original observer:</u> Southern Pacific Railroad • <u>Original description:</u> Level valley land with mountains 30mi. to the W and 3mi. to the E with forest on summit of mountains and no water near. • <u>SRG:</u> Top of gauge is 3'agl • <u>Time of observation:</u> 18:00 	TEMP Impact	PRCP Impact
10/14/1913	<ul style="list-style-type: none"> • <u>New description:</u> Level, no forest, some irrigated orchards and vineyards extending 3-4 mi. to the E. • <u>SRG:</u> Top of gauge is 2.8'agl (-0.2') • <u>Time of observation:</u> Midnight (18:00) • <u>Exposure (Same location):</u> SRG is 25' from the nearest high object 		1
4/1/1914	<ul style="list-style-type: none"> • <u>Station observations:</u> Establishment of temperature • <u>Equipment:</u> Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Remarks:</u> Station name change to Tularosa from Monterey. 		0
10/25/1922	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 2.5'agl (-0.3'), taken to shops for repairs • <u>CRS:</u> Bottom of shelter is 3'agl; door opens to the N, over bare ground, moved since prior visit and "less liable to troublemakers." 	2	1

	<ul style="list-style-type: none"> • <u>MxMn</u>: Thermometers adjusted and rescaled • <u>Remarks</u>: Some of the observers have taken an interest while others have not, leaving records somewhat mixed. 		
10/11/1927	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 2.3'agl (-0.2') • <u>CRS</u>: Over hard surface (bare ground) • <u>MxMn</u>: Six-pattern apparently gives a reliable record • <u>Remarks</u>: Observer on vacation for six weeks or longer, substitute observer has been making observations. 	0	1
5/18/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.5'agl (+1'), described as "worn out, leaks" and to be replaced • <u>CRS</u>: Bottom of shelter is 4'sgl (+1'), over cinders (bare ground) • <u>MxMn</u>: Maximum thermometer to be replaced 	3	3
6/10/1940	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (-0.5') • <u>CRS</u>: Painted • <u>MxMn</u>: Probably a hard-setting maximum thermometer • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque • <u>Exposure (Same location)</u>: Depot to the ENE (15°), tree to the W (30°) 	2	1
11/1/1946	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.0mi. E of the previous location • <u>New coordinates</u>: 33°04'N 106°01'W (-1'W) • <u>New elevation</u>: 4443' (-6') • <u>New observer</u>: William L. Weber (Southern Pacific Railroad) • <u>New description</u>: Semi-arid desert land with some irrigated farmland in immediate vicinity and mountains 2.5-3mi. to the E. • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Station is located at the Tularosa Town Hall. • <u>Exposure (New location)</u>: Tree line 50' to the N (10'-35' tall), tree line 65' to the E (10'-35' tall), town hall 70' to the S, old school 60' to the W (35' tall), Highway 54 to the E beyond the tree line, observation site located in an 	3	2

	open lot		
2/12/1952	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Town hall to the SE 	0	0
6/30/1954	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "a" status. 	0	0
5/1/1954	<ul style="list-style-type: none"> • <u>New observer</u>: Ernest Duran (William L. Weber) 	1	1
2/5/1957	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.2mi. ENE of the previous location • <u>New coordinates</u>: 33°04'N 106°02'W (+1'W) • <u>New elevation</u>: 4450' (+7') • <u>New observer</u>: James A. Goforth (Ernest Duran) • <u>New description</u>: In residential section with the area surrounding town semi-arid desert land, irrigated farmland in vicinity and mountains rising 2.5-3mi. to the E. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 19:00 (17:00) • <u>Remarks</u>: Station is located at the corner of 3rd Street and Encina Streets and is compatible for a continuation of the previous record, former observer no longer interested in operation of the station. • <u>Exposure (New location)</u>: Observer home 60' to the SE, tree to the SW (25°) 	2	1
8/1/1958	<ul style="list-style-type: none"> • <u>Time of observation</u>: 07:00 (19:00) 	3	2
1/1/1960	<ul style="list-style-type: none"> • <u>Time of observation</u>: 19:00 (07:00) 	3	2
7/31/1961	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 2/1/1962. 		
12/1/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. E of the previous location • <u>New elevation</u>: 4455' (+5') • <u>New description</u>: Suburban residential area with semi-desert land and irrigated farmland in surrounding areas. • <u>Time of observation</u>: 07:30 (19:00) • <u>Remarks</u>: Station is located at the observer's new home, change of observation time to improve the quality of the records. • <u>Exposure (New location)</u>: 2 buildings to the E (3°, 5°), building to the S (5°), open field to the N, Old Mescalero Road to the S, fence surrounds the observation site 	2	1

2/1/1962	<ul style="list-style-type: none"> • <u>Remarks</u>: Reactivation of station closed since 7/31/1961. 	0	0
10/24/1963	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1200' WNW of the previous location • <u>New elevation</u>: 4435' (-20') • <u>New observer</u>: Tony Candelaria (James A. Goforth) • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 17:30 (07:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Building to the N (8°), 2 trees to the N (10°, 34°), tree to the NE (20°), building to the WNW (4°), tree to the WNW (8°), Padilla Lane to the N, open fields to the S 	2	1
3/5/1965	<ul style="list-style-type: none"> • <u>Station relocation</u>: 30' SSE of the previous location • <u>Remarks</u>: Station is located at the observer's residence, moved to clear the observation site for expansion of the observer's home. • <u>Exposure (New location)</u>: Building to the N (6°), 2 trees to the N (11°, 33°), tree to the NW (22°), building to the SE (2°), building to the NW (2°), tree to the NW (6°), Padilla Lane to the N, driveway to the W, observation site located in an open field 	1	1
6/4/1966	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.4mi. NE of the previous location • <u>New observer</u>: Will A. Cox (Tony Candelaria) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record, moved after the station found abandoned on 6/3/1966. • <u>Exposure (New location)</u>: House to the S (10°), house to the SW (8°), Montclair Avenue to SW, wood fence surrounds the observation site, observation site located in garden area 	2	1
12/8/1967	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.9mi. SW of the previous location • <u>New coordinates</u>: 33°04'N 106°01'W (-1'W) 	2	1

	<ul style="list-style-type: none"> • <u>New observer</u>: John T. Beal (Will A. Cox) • <u>Remarks</u>: Station is located at the medical center and is compatible for a continuation of the previous record. Station has been inactive for over 2 months. • <u>Exposure (New location)</u>: Tree to the NNE (30°), office to the NE (15°), Texaco station to the SSE, house to the NW (11°), tree to the NNW (30°), US Highway 70 to the E, open fields to the SW 		
11/6/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.6mi. NNW of the previous location • <u>New coordinates</u>: 33°05'N 106°02'W (+1'N, +1'W) • <u>New observer</u>: Jeff Hardin (John T. Beal) • <u>Time of observation</u>: 08:00 (17:30) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record, former observer moved away leaving a 2-month break in the record. • <u>Exposure (New location)</u>: Tree to the N (38°), tree to the ENE (32°), orchard to the E, building to the SW (7°), intersection of Bosque and 6th Streets to NW, grape hedge surrounds the observation site 	2	1
6/4/1969	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.8mi. E of the previous location • <u>New coordinates</u>: 33°05'N 106°01'W (-1'W) • <u>New observer</u>: Charles A. McCuddy (Jeff Hardin) • <u>New description</u>: Residential area with semi-desert land and irrigated farmland in surrounding areas and mountains rising 1-2mi. to the E. • <u>Time of observation</u>: 17:00 (08:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: House to the S (6°), alley to the N, Chris drive to the S, Ethel Street to the W 	2	1
2/1/1971	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. ENE of the previous 	3	2

	<p>location</p> <ul style="list-style-type: none"> • <u>New coordinates</u>: 33°05'N 106°00'W (-1'W) • <u>New elevation</u>: 4555' (+20') • <u>New observer</u>: James G. Baldwin (Charles A. McCuddy) • <u>Daily recording of observations</u>: Form 612-14 sent to NCC • <u>Time of observation</u>: 07:00 (17:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Tree to the W (30°), building to the NW (12°), Old Mescalero Highway to the N, open fields to E, S, and W of the observation site 		
8/25/1971	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.8mi. N of the previous location • <u>New elevation</u>: 4435' (-20') • <u>New observer</u>: Roland Cooksey (James G. Baldwin) • <u>Time of observation</u>: 17:00 (07:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record, about 10-day break in the record and observer instructed in measuring temperatures and precipitation. • <u>Exposure (New location)</u>: Shed to the N, house to the SW (4°), residence to the WNW (4°), alley to the E, US Highway to the S, Apple Street to the W, 4' tall chain-link fence surrounds the observation site 	2	1
8/16/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.7mi. SW of the previous location • <u>New coordinates</u>: 33°04'N 106°02'W (-1'N, +2'W) • <u>New observer</u>: Bill Trammell (Roland Cooksey) • <u>Daily recording of observations</u>: Form F-10 sent to NCC • <u>Remarks</u>: Station is located at the observer's ranch and is compatible for a continuation of the previous record, 4.5 month break in the record. • <u>Exposure (New location)</u>: Building to the NE 	3	2

	(20°), corral to the W, tree to the NW (20°), barn to the NW, horse pasture to the N, entrance road to the N beyond the horse pasture, open alfalfa fields to the S, wire fence surrounds the observation site		
1/1/1980	<ul style="list-style-type: none"> • <u>Remarks</u>: Station placed on inactive status. 		
7/16/1980	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Remarks</u>: Station closed due to observer not mailing in forms for the last six months, relocation of station equipment will be made after no response from observer has been received in recent months. 		
2/18/1981	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.6mi. NW of the previous location • <u>New coordinates</u>: 33°05'N 106°03'W (+1'N, +1'W) • <u>New elevation</u>: 4430' (-5') • <u>New observer</u>: William F. Clark (Bill Trammell) • <u>New description</u>: Semi-arid desert land with irrigated farms and small ranches. Mountains rise sharply due E about 5 mi. • <u>Time of observation</u>: 18:00 (17:00) • <u>Remarks</u>: Reactivation of station closed since 1/1/1980, compatible for a continuation of the previous record. However, a break in the records of over a year exists and records over the past 5 years are sparse and of little use. This station is essential since this area is very important with respect to farming and ranching. 	2	1
7/23/1991	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque 	0	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0
8/27/1997	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS) • <u>New coordinates</u>: 33.07167 -106.04139 (-0.01166N, -0.00861W), no station move reported • <u>MxMn</u>: Now the backup equipment for temperature measurements • <u>Remarks</u>: New coordinates obtained via 	2	0

	Garmin 45 GPS.		
3/27/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 33.07194 -106.04167 (+0.00027N, +0.00028W), no station move reported 	0	0

COOP Station 299686, CD 8: White Sands National Monument, Otero County, NM			
<p>Summary: Extremely stable site in center of broad valley. Only possible major inhomogeneity is encroachment or retreat of white sands!</p> <p>Temperature rating: Excellent (1939-present) Precipitation rating: Excellent (1939-present)</p>			
1/10/1939	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: 32°47'N 106°10'W • <u>Original elevation</u>: 3995' • <u>Original observer</u>: US National Park Service • <u>Original description</u>: Level country about 0.5mi. NE of the White Sands National Monument. • <u>SRG</u>: Top of gauge is 3.5'agl • <u>CRS</u>: Bottom of shelter is 4'agl, door opens to the N, over desert loam • <u>Time of observation</u>: 17:30 • <u>Exposure (New location)</u>: Building 100' to the ESE, fence to the E 	TEMP Impact	PRCP Impact
6/10/1940	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque 	0	1
4/20/1954	<ul style="list-style-type: none"> • <u>New description</u>: In sand dunes located in wide valley. • <u>Time of observation</u>: 17:00 (17:30) • <u>Remarks</u>: Station is located at White Sands National Monument. • <u>Exposure (Same location)</u>: SRG is 	0	0

	unobstructed with no high objects nearby		
4/15/1959	<ul style="list-style-type: none"> • <u>New description</u>: Generally flat land in Tularosa Basin with arid, desert type vegetation. Terrain to the W is broken by sand dunes of the National Monument. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Exposure (Same location)</u>: Administration building to the ENE (4°), building to the ESE (4°), road to the E, parking area to the SE, walkway just to the S, Highway 70 to the S. 	0	0
5/20/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. NW of the previous location • <u>New coordinates</u>: 32°47'N 106°11'W (+1'W) • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station is located at the guard entrance and is compatible for a continuation of the previous record, moved for the convenience of the Park Service. • <u>Exposure (New location)</u>: Guard houses to the SSE (8°), sand dunes to the SW (5°), entrance road to SE, open area in all quadrants surround the observation site 	2	1
7/30/1979	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Description</u>: Generally flat land in Tularosa Basin with arid, desert type vegetation and sparse. Terrain to the N is broken by sand dunes of the National Monument. San Andreas Mountains extend from SW to NW about 15-18mi. from 7200-8200'. Valley of Fires lava flow located just N of the Monument, which is located within boundaries of White Sands Missile Range. • <u>Exposure (Same location)</u>: Park residences to the distant NE, office to the ENE, maintenance buildings to the SE, guard booths to the SSE (8°), entrance road to the SE and S, US Highway 70 0.3mi. to the E 	0	0
8/30/1984	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>F/P</u>: Installed in the same location as the old 	0	2

	<p>R/RNG</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Albuquerque 		
3/14/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Description</u>: Generally flat Tularosa Basin with desert-type vegetation. • <u>MMTS</u>: Installed 0.3mi. E of the old CRS location, relocated at request of park manager to maintain “projected eye appeal” of the park • <u>Remarks</u>: Station is located at the US National Park Service complex building and is compatible for a continuation of the previous record. • <u>Exposure (Same location)</u>: Toll booths to the S (8°), entrance road to the S 	2	1
8/16/1990	<ul style="list-style-type: none"> • <u>Station relocation</u>: CRS moved 0.3mi. NW of the previous location • <u>Remarks</u>: Station is located at the national monument and is compatible for a continuation of the previous record, relocated at request of park manager. 	2	1
2/26/1991	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (17:00) 	3	1
4/16/1992	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Albuquerque 	0	0
6/5/1993	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Toll booths to the S (8°) 	0	0
4/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0
3/14/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 32.78167 -106.17472 (-0.00166N, -0.00861W), no station move reported 	0	0
10/3/2002	<ul style="list-style-type: none"> • <u>F/P</u>: Gauge replaced 	0	2
7/2/2003	<ul style="list-style-type: none"> • <u>Remarks</u>: Updated to IV-ROCS from ROSA. 	0	0
10/22/2004	<ul style="list-style-type: none"> • <u>New observer</u>: New employee of US National Park Service (US National Park Service) 	1	1
5/22/2009	<ul style="list-style-type: none"> • <u>Station relocation</u>: 520' to the WNW of the previous location • <u>New coordinates</u>: 32.78222 -106.17583 (+0.00055N, +0.00111W) 	2	1

	<ul style="list-style-type: none"> • <u>New elevation</u>: 4006' (+11') • <u>New description</u>: Generally flat Tularosa Basin with a 275-square mile gypsum dune field extending SW-N of the observation site, otherwise flat desert with sparse, desert type vegetation. • <u>Remarks</u>: Station is located at the new monument entry buildings and is compatible for a continuation of the previous record. 		
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COOP Station 410174, CD 5: Alpine, Brewster County, TX			
<p>Summary: Station on plain partly surrounded by mountains and hills. Station originally at Sul Ross, but was Sul Ross originally at Sul Ross? Temperature inhomogeneities due to growth of irrigated town over time. Current location unknown: relocation distance inconsistent with coordinates, which are inconsistent with elevation.</p> <p>Temperature rating: Fair (1929-present) Precipitation rating: Very good (1911-present)</p>			
3/1/1900	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation • <u>Original equipment</u>: Standard rain gauge (SRG) • <u>Original coordinates</u>: 30°21'N 103°40'W • <u>Original elevation</u>: 4482' • <u>Original observer</u>: D.B. Hoorubeck • <u>Original description</u>: Generally mountainous country. 	TEMP Impact	PRCP Impact
9/1/1900	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 4/1/1911. 		
4/1/1911	<ul style="list-style-type: none"> • <u>New observer</u>: J. Frank Dobie (D.B. Hoorubeck) • <u>New description</u>: Country generally mountainous, without forests or bodies of water. • <u>Time of observation</u>: 18:00 • <u>SRG</u>: Top of gauge is 3.4'agl • <u>Remarks</u>: Reactivation of station closed since 9/1/1900, located at a schoolhouse and large yard. • <u>Exposure (Same location)</u>: SRG is 230' from the nearest high object, a building and 50' 		1

	from a low fence		
7/1/1912	<ul style="list-style-type: none"> • <u>New observer</u>: G.W. Page (J. Frank Dobie) 		1
8/5/1912	<ul style="list-style-type: none"> • <u>New observer</u>: H.B. Cowles (G.W. Page) 		1
12/1/1915	<ul style="list-style-type: none"> • <u>New observer</u>: E.R. Bentley (H.B. Cowles) 		1
3/1/1917	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 3/22/1929. 		
3/22/1929	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Station relocation</u>: Unknown proximity to the previous location • <u>New observer</u>: F.G. Walker (E.R. Bentley) • <u>New description</u>: Country generally mountainous, without forests or bodies of water and near Sul Ross State Teachers College. • <u>SRG</u>: Top of gauge is 6'agl (+2.6'), nailed to the top of a cedar post • <u>CRS</u>: Bottom of shelter is 3.5'agl, door opens to the N, over thin sod • <u>Time of observation</u>: Around sunset (18:00) • <u>Remarks</u>: Reactivation of station closed since 3/1/1917. SRG nailed to the top of a fence in order to avoid disruption by the observer's 3 boys that tend to play in the vicinity. • <u>Exposure (Same location)</u>: SRG is 20' from the nearest high object, a small garage 		1
4/1/1937	<ul style="list-style-type: none"> • <u>New observer</u>: Sul Ross College (F.G. Walker) • <u>SRG</u>: Top of gauge is 3'agl (-3') • <u>CRS</u>: Bottom of shelter is 4'agl (+0.5'), over turf (thin sod) • <u>Remarks</u>: Change to Second Order Airways station located at Sul Ross College, with an anemometer, barometer, and pscyhrometer added to the observation site. • <u>Exposure (Same location)</u>: SRG is unobstructed with no high objects nearby 	1	1
6/1/1944	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 7/1/1944. 		
7/1/1944	<ul style="list-style-type: none"> • <u>New observer</u>: Wallace W. Duncan (Sul Ross College) • <u>Remarks</u>: Reactivation of station closed since 	1	1

	6/1/1944.		
4/1/1946	<ul style="list-style-type: none"> • <u>New observer</u>: Wallace E. Duncan (Wallace W. Duncan) 	1	1
9/1/1958	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 11/10/1958. 		
11/10/1958	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.0mi. NNW of the previous location • <u>New coordinates</u>: 30°22'N 103°39'W (-1'N, -1'W) • <u>New elevation</u>: 4433' (-49') • <u>New observer</u>: Radio Station KVLFF (Wallace E. Duncan) • <u>New description</u>: Almost treeless hills and mountains within a 2mi. radius. • <u>Remarks</u>: Reactivation of station closed since 9/1/1958, located at radio station KVLFF after move from Sul Ross College. 	2	1
6/1/1959	<ul style="list-style-type: none"> • <u>New observer</u>: Phil W. Ebensberger (Radio Station KVLFF) • <u>Reporting of observations</u>: Precipitation reported every 6 hours to WSO-Midland, temperature reported every 6 hours to WSO-Midland • <u>Daily recording of observations</u>: Form 612-14 sent to WSO-Midland • <u>Time of observation</u>: Midnight (18:00) • <u>Exposure (Same location)</u>: Radio station to the NE (11°), broadcast tower to the SW (35°), fence surrounds the observation site (5' tall), State Highway 223 to the NE beyond the radio station 	2	1
3/1/1962	<ul style="list-style-type: none"> • <u>Time of observation</u>: 18:00 (Midnight) 	2	1
12/15/1963	<ul style="list-style-type: none"> • <u>Remarks</u>: Radio station KVLFF will no longer serve as Alpine observing station, closed until 1/18/1964. 		
1/18/1964	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. SW of the previous location • <u>New coordinates</u>: 30°21'N 103°40'W (-1'N, +1'W) • <u>New elevation</u>: 4455' (+22') • <u>New observer</u>: William H. Hudgins (Phil W. Ebensberger) • <u>New description</u>: Almost treeless hills and 	2	1

	<p>mountains within a 3-5mi. radius.</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Reactivation of station closed since 12/15/1963, located at the observer's residence. • <u>Exposure (New location)</u>: Utility pole to the N (43°), house to the SW (13°), sidewalk just to the S 		
6/25/1964	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 60' NE of the previous location • <u>Remarks</u>: SRG was relocated for better exposure. 	0	2
8/11/1971	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>New observer</u>: Conrad D. Miller (William H. Hudgins) • <u>Reporting of observations</u>: Precipitation reported every 6 hours to WSO-El Paso, temperature reported every 6 hours to WSO-El Paso • <u>Daily recording of observations</u>: Form 612-25 sent to WSO-Midland • <u>Time of observation</u>: 06:30 (18:00) • <u>Remarks</u>: Evaporation equipment was added to this station at the request of the Corps of Engineers. 	2	2
6/24/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.7mi. SSW of the previous location • <u>New elevation</u>: 4480' (+25') • <u>New observer</u>: Wayne Hale (Conrad D. Miller) • <u>Reporting of observations</u>: Precipitation and temperature not reported • <u>Daily recording of observations</u>: Form E-22 sent to RSMS • <u>Remarks</u>: Station is located at observer's residence, equipment necessary for synoptic observations not relocated from the previous observation site with removal of the barometer and pscyhrometer, water thermometers added to the observation site. • <u>Exposure (New location)</u>: Building to the NE (10°), tree to the E (11°), tree to the SE (10°), 	2	1

	home to the SE (7°), Avenue D to the S beyond the observer's home		
8/18/1972	<ul style="list-style-type: none"> • <u>Remarks</u>: All equipment was cleaned and checked, records have been fairly good. 	0	0
1/16/1973	<ul style="list-style-type: none"> • <u>Time of observation</u>: 17:00 (06:30) 	3	2
5/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
1/1/1976	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-22 sent to NCC • <u>Exposure (Same location)</u>: Building to the NE (10°), tree to the E (15°), tree to the SE (10°), home to the SE (7°), Avenue D to the S beyond the observer's home 	0	0
4/5/1978	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>F/P</u>: Installed in same location as the old R/RNG 	0	2
7/25/1979	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1800' N of the previous location • <u>New coordinates</u>: 30°22'N 103°40'W (+1'N) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record, equipment moved to a new observation site 0.3mi. N of town. • <u>Exposure (New location)</u>: Rental trailer to the N (20°), storage shed to the WSW, bushes to the WSW, observer's trailer to the WNW (12°), fence surrounds the observation site 	2	1
3/10/1981	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Lubbock, temperature reported daily to WSO-Lubbock 	0	0
9/30/1982	<ul style="list-style-type: none"> • <u>Remarks</u>: Anemometer, evaporation equipment, and water thermometers removed from the observation site. 	0	0
11/16/1982	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported daily to WSO-El Paso, temperature reported daily to WSO-El Paso • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0

2/18/1984	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock 	0	0
10/7/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS) • <u>CRS</u>: Left at the observation site for short time to compare with MMTS, no longer official observations 	2	0
4/12/1994	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported daily to WSO-El Paso, temperature reported daily to WSO-Lubbock • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Remarks</u>: Encoder pad or phone installed at the observation site. • <u>Exposure (New location)</u>: Building to the N (20°), building to the NNW (12°) 	0	0
5/23/1995	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30°21'43"N 103°40'15"W (-17"N, +15"W), no station move reported • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland • <u>Remarks</u>: New coordinates obtained via GPS. 	0	0
6/8/1995	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.8mi. ENE of the previous location • <u>New coordinates</u>: 30°22'N 103°40'W (+17"N, -15"W) • <u>New elevation</u>: 4530' (+50') • <u>New observer</u>: George P. Barnes (Wayne Hale) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. New coordinates obtained via GPS. • <u>Exposure (New location)</u>: House to the W (11°), tree to the W (20°) 	2	1
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Lubbock, temperature digitally reported daily to WSO-Lubbock 	0	0
2/17/1999	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.36167 -103.67083 (-0.00014N, +0.00011W), no station move reported • <u>Reporting of observations</u>: Precipitation 	0	0

	<p>digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland</p> <ul style="list-style-type: none"> • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 		
7/29/2000	<ul style="list-style-type: none"> • <u>Remarks</u>: Updated for ROSA to AWIPS. 	0	0
5/18/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.36500 -103.65639 (+0.00333N, -0.01444W), no station move reported 	0	0
3/21/2003	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.75mi. NW of the previous location • <u>New coordinates</u>: 30.37361 -103.66250 (+0.00861N, +0.00611W) • <u>New elevation</u>: 4438 (-94') • <u>Time of observation</u>: 07:30 (17:00) 	2	1
10/28/2003	<ul style="list-style-type: none"> • <u>New elevation</u>: 4419 (-19'), no station move reported 	0	0
11/4/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) 	2	0
2/3/2005	<ul style="list-style-type: none"> • <u>F/P</u>: Gauge replaced 	0	1
4/12/2005	<ul style="list-style-type: none"> • <u>NIMBUS</u>: Replaced display unit 	0	0
4/1/2006	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of F/P, hourly precipitation observations no longer taken 	0	0
4/10/2007	<ul style="list-style-type: none"> • <u>Remarks</u>: Reactivation of station closed since 2/21/2007. 		
5/1/2008	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.4mi. SE of the previous location • <u>New coordinates</u>: 30.37639 -103.66000 (+0.00268N, -0.00625W) • <u>New elevation</u>: 4450 (+31') • <u>Remarks</u>: Station is considered for continuation of the previous record. Reactivation of station closed since 12/16/2007. 	2	1
9/1/2008	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (07:30) 	1	0
6/17/2009	<ul style="list-style-type: none"> • <u>MMTS</u>: Now the backup equipment for temperature measurements 	0	0

COOP Station 410482, CD 5: Bakersfield, Pecos County, TX

<p>Summary: Station established in a ghost town east of Fort Stockton. Except for 1984-1992, station barely moved. Only likely source of IHG is possible lawn-watering.</p> <p>Temperature rating: Very good (1965-present) Precipitation rating: Excellent (1940-present)</p>			
3/1/1940	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 30°53'N 102°18'W • <u>Original elevation:</u> 2350' • <u>Original observer:</u> Fred F. Davidson • <u>Original description:</u> Located in large valley with sandy land, sloping gently E and distant hills in all directions about 500'. 	TEMP Impact	PRCP Impact
4/20/1953	<ul style="list-style-type: none"> • <u>Station relocation:</u> 43' SW of the previous location • <u>Daily recording of observations:</u> Form 1009 sent to WSO-Houston • <u>Time of observation:</u> 18:00 • <u>Remarks:</u> Station is located at the post office, equipment moved for better exposure. • <u>Exposure (New location):</u> Trees to the NE (20°, 30°), shrubbery to the S (10'-12' tall), windmill to the W (30°), row of trees to the NW (27°), post office and store to the NW 		2
10/1/1953	<ul style="list-style-type: none"> • <u>New observer:</u> Irvin O. Smith (Fred F. Davidson) • <u>Remarks:</u> Former observer died and the new observer is the previous observer's son-in-law. 		1
4/13/1960	<ul style="list-style-type: none"> • <u>Daily recording of observations:</u> Form 612-14 sent to WRPC 		0
1/28/1965	<ul style="list-style-type: none"> • <u>Station observations:</u> Establishment of temperature • <u>Equipment:</u> Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Station relocation:</u> 140' WSW of the previous location • <u>Daily recording of observations:</u> Form 612-14 sent to NWRC 		2

	<ul style="list-style-type: none"> • <u>Time of observation</u>: 09:00 (18:00) • <u>Remarks</u>: Station is located at the observer's home, upgraded with the addition of temperature equipment. • <u>Exposure (New location)</u>: House to the N (10°), post office and store to the NE, Highway 290 to the N beyond the house, fence to the N between Highway 290 and the observation site 		
11/1/1965	<ul style="list-style-type: none"> • <u>New observer</u>: Clyde Graves (Irvin O. Smith) • <u>Remarks</u>: The former observer moved to Fort Worth. 	1	1
12/1/1965	<ul style="list-style-type: none"> • <u>Station relocation</u>: 100' NNW of the previous location • <u>Remarks</u>: Station is located at the observer's business, moved at the request of the observer. • <u>Exposure (New location)</u>: Ice vending machine to the NE (18°), post office and store to the ESE (8°), house to the S (13°), tree to the S 	1	1
7/1/1971	<ul style="list-style-type: none"> • <u>New observer</u>: R.E. Bohannon (Clyde Graves) 	1	1
6/1/1975	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form F-10 sent to NCC 	0	0
3/1/1982	<ul style="list-style-type: none"> • <u>New observer</u>: D.L. Kneupper (R.E. Bohannon) 	1	1
10/1/1982	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to NCC 	0	0
8/9/1984	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.0mi. NW of the previous location • <u>New coordinates</u>: 30°55'N 102°19'W (+2'N, +1'W) • <u>New elevation</u>: 2550' (+200') • <u>New description</u>: Located at the edge of some rolling hills, with hardly any trees or grasses. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Time of observation</u>: 18:00 (09:00) • <u>Remarks</u>: Station is located at the observer's home and is compatible for continuation of record. Station name change to Bakersfield 	2	2

	<p>2NW.</p> <ul style="list-style-type: none"> • <u>Exposure (New location)</u>: House to the SE, observation site located in an open area 		
8/1/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn 	2	0
6/21/1989	<ul style="list-style-type: none"> • <u>New description</u>: On the edge of rolling hills with sparse vegetation. • <u>Exposure (Same location)</u>: Unobstructed with no high objects nearby 	0	0
7/22/1992	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.0mi. SE of the previous location • <u>New coordinates</u>: 30°53'N 102°19'W (-2'N) • <u>New elevation</u>: 2540' (-10') • <u>New observer</u>: Roger Wolfe (D.L. Kneupper) • <u>New description</u>: Located in a large valley with distant hills in all directions. • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Time of observation</u>: 07:00 (18:00) • <u>Remarks</u>: Station is located at an Exxon Station at the intersection of I-10 and FM-11 and is compatible for continuation of record. Previous observer quit on 7/21/1992. • <u>Exposure (New location)</u>: Building to the N (4°) 	2	2
3/25/1994	<ul style="list-style-type: none"> • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Lubbock • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0
2/17/1999	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.88778 -102.30028 (+0.00445N, -0.01639W), no station move reported • <u>New elevation</u>: • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 	0	0

7/6/2000	<ul style="list-style-type: none"> • <u>Remarks</u>: Updated for ROSA to AWIPS. 	0	0
3/26/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.88778 -102.30056 (+0.00028W), no station move reported • <u>New elevation</u>: 2553' (+13') 	0	0
11/1/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) 	2	1
3/25/2005	<ul style="list-style-type: none"> • <u>New observer</u>: Institution (Roger Wolfe) • <u>Remarks</u>: Former observer now the backup observer. 	1	1
1/12/2006	<ul style="list-style-type: none"> • <u>NIMBUS</u>: Replacement of display unit 	0	0
10/20/2006	<ul style="list-style-type: none"> • <u>NIMBUS</u>: Replacement of display unit 	0	0
6/21/2006	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 30' E of the previous location • <u>New coordinates</u>: 30.88778 -102.30444 (+0.00388W) • <u>New elevation</u>: 2547' (-6') 	0	1

COOP Station 410498, CD 5: Balmorhea, Reeves County, TX

Summary: On a plain northeast of Davis Mountains. Current location from SurfaceStations.org and Google Maps: 30.9839N, 103.7408W. Station had two main locations over time: irrigated farmland 1923-1964 and center of small town with some urban irrigation 1964-present and farmland surrounding. Small town closer to mountains with possible precipitation influence. Temperature inhomogeneities associated with move and irrigation practices.

Temperature rating: Fair (1923-present)

Precipitation rating: Good (1923-present)

9/1/1923	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates</u>: 31°00'N 103°41'W • <u>Original elevation</u>: 3225' • <u>Original observer</u>: Texas Agricultural Experimental Station • <u>Original description</u>: Station on level plains country, 15mi. from the foot of the Davis 	TEMP Impact	PRCP Impact
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	<p>Mountains.</p> <ul style="list-style-type: none"> • <u>Remarks</u>: Records from 1916-1922 available from Texas A&M College. 		
8/15/1925	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 3.5'agl, door opens to N, over sod • <u>SRG</u>: Top of gauge is 2.3'agl • <u>Time of observation</u>: 07:00, 19:00 • <u>Exposure (Same location)</u>: SRG is 200' from the nearest high object, a building 	0	0
11/2/1937	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 4'agl (+0.5'), over heavy turf (sod) • <u>SRG</u>: Top of gauge is 3.5'agl (+1.2') • <u>Remarks</u>: Anemometer, evaporation equipment, and pscyhrometer added to the observation site. Station exceptionally well-located, well cared for, and records carefully kept. • <u>Exposure (Same location)</u>: SRG is near shrubbery, but "too far to affect the catch" 	1	1
1/13/1940	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>New description</u>: Large trees in the background. • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Albuquerque 	0	2
9/1/1948	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Houston • <u>Time of observation</u>: 08:00 (07:00, 19:00) 	2	1
2/13/1949	<ul style="list-style-type: none"> • <u>Remarks</u>: Station name change to Balmorhea Exp. Pan from Balmorhea (near) 	0	0
11/8/1957	<ul style="list-style-type: none"> • <u>New description</u>: Nearly level, irrigated farmland • <u>Daily recording of observations</u>: Form A&M sent to Texas A&M College • <u>Time of observation</u>: Midnight (08:00) • <u>Remarks</u>: Station is located at Texas A&M Substation No. 9, hygrothermograph added to the observation site. • <u>Exposure (Same location)</u>: Unobstructed with no high objects nearby 	2	1
11/29/1958	<ul style="list-style-type: none"> • <u>New description</u>: Level to gently rolling plain, intensely cultivated and irrigated, sloping NE 	0	0

	<p>to the Pecos River, bounded by low E-W mountain range 6mi. S and broken by the Toyah Creek draw 5mi. E.</p> <ul style="list-style-type: none"> • <u>Remarks</u>: Maximum and minimum temperatures checked against a hygromograph. • <u>Exposure (Same location)</u>: Trees to the N (8°), trees to the NE (8°), trees to the NW (12°) 		
8/28/1964	<ul style="list-style-type: none"> • <u>Station relocation</u>: 4.0mi. WSW of the previous location • <u>New coordinates</u>: 30°59'N 103°45'W (-1'N, +4'W) • <u>New elevation</u>: 3220' (-5') • <u>New observer</u>: D.L. Dotson (Texas Agricultural Experimental Station) • <u>New description</u>: Nearly level irrigated farmland on each side of a narrow valley. • <u>Daily recording of observation</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 17:00 (Midnight) • <u>Remarks</u>: Station is located at the soil conservation office and is compatible for a continuation of the previous record. Station downgraded to class "a" status from class "ab" status as the anemometer, evaporation equipment, hygromograph, and psychrometer were removed from the observation site. • <u>Exposure (New location)</u>: Office to the SE (12°), tank to the S, street to the E beyond the office 	3	2
7/17/1965	<ul style="list-style-type: none"> • <u>New observer</u>: Richard F. Hagelstein (D.L. Dotson) • <u>Remarks</u>: Evaporation equipment was removed from the observation site. The previous observer has moved to Fort Stockton. 	1	1
5/5/1966	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1300' NE of the previous location • <u>New observer</u>: Reeves County Water District (Richard F. Hagelstein) • <u>Time of observation</u>: 08:00 (17:00) • <u>Remarks</u>: Station is located at the Reeves 	3	2

	<p>County Water District lot.</p> <ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Office to the N, 3 trees to the N (10°, 12°, 12°), storage building to the NW, wire fence surrounds the observation site 		
9/1/1971	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1300' SW of the previous location • <u>New observer</u>: Soil Conservation Service (Reeves County Water District) • <u>Daily recording of observation</u>: Form F-10 sent to NWRC • <u>Remarks</u>: Station is located at the Soil Conservation Office, equipment moved to a site convenient to the new observer without contacting any WSO. Though a good job was done in moving the equipment, many observations were missed but the observer informed most of the readings were in his notes. • <u>Exposure (New location)</u>: Building to the SE (11°), street to the E beyond the office 	2	1
9/7/1972	<ul style="list-style-type: none"> • <u>MxMn</u>: Minimum readings from this station have been too low, all records from 6/1/1972-9/1/1972 should increase the minimum temperature by 15 degrees • <u>Remarks</u>: All equipment was checked. 	4	0
10/26/1982	<ul style="list-style-type: none"> • <u>Daily recording of observation</u>: Form E-15 sent to NCC 	0	0
8/28/1986	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>New description</u>: Nearly level irrigated farmland on each side of a narrow valley with E-W mountain range 6mi. S. • <u>MMTS</u>: Installed 50' S of the old CRS location • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Exposure (Same location)</u>: Tree to the E (27°) 	2	0
3/31/1995	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.98436 -103.74014 (+0.00103N, -0.00986W), no station move reported • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Midland 	0	0

	<ul style="list-style-type: none"> • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 		
6/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland • <u>Time of observation</u>: 07:00 (08:00) 	1	0
2/17/1999	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.98444 -103.74028 (+0.00008N, +0.00014W), no station move reported • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>Remarks</u>: Updated for ROSA to AWIPS. 	0	0
6/9/2004	<ul style="list-style-type: none"> • <u>New coordinates</u>: • <u>Remarks</u>: New coordinates obtained using Garmin V. 	0	0
9/17/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) 	2	0
4/5/2005	<ul style="list-style-type: none"> • <u>Remarks</u>: Deleted the reporting observation mode for precipitation and temperature as the observer was not calling in observations. 	0	0

COOP Station 410950, CD 5: Boquillas Ranger Station, Brewster County, TX			
<p>Summary: Station initially moved around quite a bit, but settled down in 1949 to the Boquillas Campground area. Little or no land use changes or other inhomogeneities since 1949, assuming 1967 move produced insignificant temperature change.</p> <p>Temperature rating: Very good (1949-present) Precipitation rating: Very good (1940-present)</p>			
6/1/1910	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: Unknown • <u>Original elevation</u>: Unknown • <u>Original observer</u>: J.O. Langford 	TEMP Impact	PRCP Impact
11/15/1910	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 3/1/1940. 		

3/1/1940	<ul style="list-style-type: none"> • <u>Station observations</u>: Discontinuance of temperature • <u>Equipment</u>: Removal of CRS and MxMn • <u>Station relocation</u>: 4.0mi. W of the previous location • <u>New coordinates</u>: 29°11'N 103°00'W (Unknown) • <u>New elevation</u>: 2200' (Unknown) • <u>New observer</u>: Bessie W. Langford (J.O. Langford) • <u>New description</u>: 450'NW of the Rio Grande River. • <u>Remarks</u>: Station name change to Hot Springs from Boquillas. COOP ID change to 414299 from 410950. Some overlap between separate Boquillas station and this station until 10/28/1940, when the Boquillas station ceased operations. 		2
11/21/1940	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) 		2
12/1/1942	<ul style="list-style-type: none"> • <u>Station relocation</u>: 4.0mi. NNW of the previous location • <u>New coordinates</u>: 29°14'N 103°02'W (+3'N, +2'W) • <u>New observer</u>: William L. Hannold (Bennie W. Langford) • <u>New description</u>: Rio Grande River 4mi. to the S, Tornillo Arroyo 450' to the E. • <u>Remarks</u>: Station is located at the observer's ranch. Station name change to Hannold Ranch from Hot Springs. 		2
6/22/1943	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 7/25/1943. 		
7/25/1943	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of the SRG • <u>Station relocation</u>: 4.0mi. SSE of the previous location • <u>New coordinates</u>: 29°11'N 103°00'W (-3'N, -2'W) • <u>New observer</u>: Henry B. Smith (William L. Hannold) • <u>New description</u>: Near the Rio Grande River. • <u>Remarks</u>: Reestablishment of station that was discontinued on 6/22/1943 after the former 		2

	observer resigned. Station name change to Hot Springs from Hannold Ranch.		
2/16/1949	<ul style="list-style-type: none"> • <u>Station observations</u>: Reestablishment of temperature • <u>Equipment</u>: Addition of SRG, CRS, and MxMn, removal of the R/RNG • <u>Station relocation</u>: 3.5mi. ENE of the previous location • <u>New coordinates</u>: 29°12'N 102°57'W (+1'N, -3'W) • <u>New elevation</u>: 1873' (-327') • <u>New observer</u>: US National Park Service (Henry B. Smith) • <u>New description</u>: On the banks of the Rio Grande River in a shallow canyon, with the vegetation low and scrubby. • <u>CRS</u>: Bottom of shelter is 7'agl • <u>SRG</u>: Top of gauge is 3'agl • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Houston • <u>Time of observation</u>: 17:00 • <u>Remarks</u>: Station is located at the ranger station custom station, equipment relocated 34.5mi. ENE of an inactive station in Castalon. Station name change to Boquillas Ranger Station from Hot Springs. Some overlap between separate Hot Springs station and this station until 5/1/1951. • <u>Exposure (New location)</u>: Custom house to the S (12' tall), building to the SSW (10' tall), road just to the S between the building and the observation site 		2
5/1/1951	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 2/1/1952, as manpower shortage at the US National Park Service prevented observations. 		
2/1/1952	<ul style="list-style-type: none"> • <u>Remarks</u>: Reactivation of station closed since 5/1/1951. Some overlap between separate Hot Springs station and this station until 6/30/1952. 	1	1
1/16/1953	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a R/RNG • <u>Station relocation</u>: 0.3mi. ESE of the previous location • <u>New observer</u>: Mildred Shiner Miller (US 	2	1

	<p>National Park Service)</p> <ul style="list-style-type: none"> • <u>New description</u>: Rough, rocky and mountainous to the N. Boquillas Canyon, narrow, precipitous, and extremely rocky is 0.5mi. to the NE. Rio Grande River, flowing from SW to NE is 0.25mi. S in a narrow valley. High mountain ranges to the S in Old Mexico 10-15mi. distant. Fairly open, wide valley with many hills and depressions extends N several miles. • <u>SRG</u>: New rain gauge installed • <u>R/RNG</u>: Moved from the former Hot Springs station • <u>Remarks</u>: Station is located at the Boquillas Ranger Station. • <u>Exposure (New location)</u>: Ranger station to the SE, CRS to the SW (25°), 4' stone fence to the E, Panther Junction Road to the N 		
8/12/1953	<ul style="list-style-type: none"> • <u>New observer</u>: Joan S. Plamer (Mildred S. Miller) • <u>Remarks</u>: The former observer moved away and the new observer moved into the residence, equipment not moved. 	1	1
3/21/1955	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of the R/RNG • <u>R/RNG</u>: Transferred to the station at Panther Junction • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC, temperatures changed to published from unpublished • <u>Remarks</u>: Station downgraded to class "b" status. 	0	1
4/2/1957	<ul style="list-style-type: none"> • <u>New observer</u>: Big Bend National Park Service (Jean S. Plamer) 	1	1
3/23/1967	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.0mi. WSW of the previous location • <u>New coordinates</u>: 29°11'N 102°58'W (-1'N, +1'W) • <u>New elevation</u>: 1880' (+7') • <u>New description</u>: Very rugged mountain land to the W with terrain gradually sloping SE toward the Rio Grande about 1mi. away, vegetation is very sparse except the areas which are irrigated. 	3	2

	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 08:00 (17:00) • <u>Remarks</u>: Station is located at Rio Grande Park, the park rangers have moved from their former location. • <u>Exposure (New location)</u>: Dwelling to the SE (9°), tree to the S (10°), park road to the S 		
5/1/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: 150' SE of the previous location • <u>Exposure (New location)</u>: Dwelling to the NW (8°), park road to the S 	1	1
3/15/1978	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "a" status from class "b" status. 	0	0
2/21/1980	<ul style="list-style-type: none"> • <u>Station relocation</u>: 150' N of the previous location • <u>Remarks</u>: Station is located at Rio Grande Park and is compatible for a continuation of the previous record, equipment relocated for better exposure. 	1	1
4/22/1980	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to NCC, temperatures changed to published from unpublished 	0	0
6/10/1986	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 0.6mi. SSW of the previous location • <u>New description</u>: Rugged mountainous terrain to the W, terrain slopes SE to the Rio Grande about 0.5mi. away with irrigated trees and vegetation in the Rio Grande Valley. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Remarks</u>: Station is located at Rio Grande Park near the new ranger office. • <u>Exposure (New location)</u>: Building to the NE (10°) 	2	1
5/23/1995	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.18969 -102.96314 (+0.00636, -0.00353W), no station move reported • <u>Daily recording of observations</u>: Form B-91 	0	0

	<ul style="list-style-type: none"> sent to WSO-Midland • <u>Remarks</u>: New coordinates obtained via GPS. 		
7/6/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.18500 -102.96194 (-0.00469N, -0.00120W), no station move reported 	0	0
11/16/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.18500 -102.96222 (+0.00028W), no station move reported • <u>New elevation</u>: 1857' (-23') 	0	0
11/15/2003	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.18528 -102.96222 (+0.00028N), no station move reported • <u>New elevation</u>: 1858' (+1') 	0	0
11/4/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS 	2	0

COOP Station 411416, CD 5: Candelaria, Presidio County, TX			
<p>Summary: Extremely stable site along Rio Grande above Presidio. Temperatures only recorded since 1964 and may have been affected by changes in irrigation and land use in Rio Grande flood plain immediately to west.</p> <p>Temperature rating: Very good (1964-present) Precipitation rating: Excellent (1940-present)</p>			
2/23/1940	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation • <u>Original equipment</u>: Standard rain gauge (SRG) • <u>Original coordinates</u>: 30°09'N 104°41'W • <u>Original elevation</u>: 2875' • <u>Original observer</u>: H.H. Kilpatrick • <u>Original description</u>: In an irrigated river valley, 0.5mi. to the Rio Grande River. 	TEMP Impact	PRCP Impact
2/2/1948	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.1mi. SE of the previous location • <u>New observer</u>: Vera W. Harkey (H.H. Kilpatrick) • <u>Remarks</u>: The post office at Candelaria closed until 2/8/1949. 		1
2/8/1949	<ul style="list-style-type: none"> • <u>Station relocation</u>: 600' NW of the previous location • <u>New observer</u>: Frances E. Howard (Vera W. 		1

	<p>Harkey)</p> <ul style="list-style-type: none"> • <u>New description</u>: Located in river valley used for irrigated farming, soil is light sand. • <u>Daily recording of observations</u>: Form 1009 sent to WRPC • <u>SRG</u>: Top of gauge is 3'agl • <u>Time of observation</u>: After rains • <u>Remarks</u>: Station is located at the Candelaria post office, which was reestablished after being closed since 2/2/1948. • <u>Exposure (New location)</u>: Building to the ENE (12' tall), cotton gin to the ESE, post office and general store to the SE (25' tall), small object to the S (10' tall), stable to the W (15' tall), fence just to the W 		
10/6/1958	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 18:00 (After rains) 		2
9/22/1962	<ul style="list-style-type: none"> • <u>New description</u>: Located in river valley used for irrigated farming sloping SW to the Rio Grande River, low hills to the E rising to high mountains about 5mi. to the E and N and 10mi. to the S and W. • <u>Time of observation</u>: After rains (18:00) • <u>Exposure (Same location)</u>: 2 trees to the E (7°, 12°), post office and general store to the SE (9°), tree to the S (16°), shed to the W (5°), fence just to the W 		2
6/23/1964	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 19:00 (18:00) • <u>Remarks</u>: Station is located at the Candelaria Store. Station upgraded to class "ab" status from class "ab-" status. • <u>Exposure (New location)</u>: Tree to the N (7°), 2 trees to the NE (7°, 7°), building to the E (5°), shed to the NW (3°), fence just to the E 		1
5/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer 	0	0

	pay.		
6/1/1975	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form F-10 sent to NCC • <u>Exposure (Same location)</u>: Tree to the NE (15°), building to the NE, dwelling and business to the SE 	0	0
10/1/1982	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
5/20/1987	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed 21' S of the old CRS location. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Remarks</u>: Installed the MMTS 21' S of the old CRS location. • <u>Exposure (Same location)</u>: Tree to the NE (25°), tree to the E (35°) 	2	0
1/1/1994	<ul style="list-style-type: none"> • <u>New observer</u>: Maria A. Avila (Frances E. Howard) • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Remarks</u>: Station is located at the Candelaria Store after the previous observer sold her business. 	1	1
2/1/1995	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.13972 -104.68583 (-0.01028N, +0.00250W), no station move reported • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Lubbock • <u>Remarks</u>: New coordinates obtained via GPS. Encoder pad or phone installed at the observation site. 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Lubbock, temperature digitally reported daily to WSO-Lubbock • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland • <u>Time of observation</u>: 18:00 (19:00) 	0	0

7/6/2000	<ul style="list-style-type: none"> <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland <u>Remarks</u>: Updated for ROSA to AWIPS. 	0	0
11/7/2001	<ul style="list-style-type: none"> <u>New coordinates</u>: 30.13833 -104.68222 (-0.00139N, -0.00361W), no station move reported 	0	0
11/15/2003	<ul style="list-style-type: none"> <u>New elevation</u>: 2877' (-2'), no station move reported 	0	0
1/7/2005	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS 	2	0
3/13/2006	<ul style="list-style-type: none"> <u>NIMBUS</u>: Replaced display unit 	0	0
8/28/2009	<ul style="list-style-type: none"> <u>NIMBUS</u>: Replaced display unit 	0	0

COOP Station 411715, CD 5: Chisos Basin, Brewster County, TX

Summary: Mountain valley observing location. Temperatures affected by 1960 move up slope and possibly by proximity to parking lot. Precipitation probably biased upward by 1960 move too.

Temperature rating: Fair (1964-present), good (1960-present)

Precipitation rating: Good (1940-present), excellent (1960-present)

2/23/1940	<ul style="list-style-type: none"> <u>Initial station observations</u>: Precipitation <u>Original equipment</u>: Standard rain gauge (SRG) <u>Original coordinates</u>: 29°16'N 103°18'W <u>Original elevation</u>: 5100' <u>Original observer</u>: US National Park Service <u>Original description</u>: Located at National Park Headquarters at a gentle slope in the basin. 	TEMP Impact	PRCP Impact
4/1/1942	<ul style="list-style-type: none"> <u>Remarks</u>: Station closed until 7/1/1942. 		
7/1/1942	<ul style="list-style-type: none"> <u>Remarks</u>: Reactivation of station closed since 4/1/1942. 		1
1/30/1947	<ul style="list-style-type: none"> <u>Station observations</u>: Establishment of temperature <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) 		0

	<ul style="list-style-type: none"> • <u>New description</u>: Mountains on all sides with elevations up to 7835' at Emory Peak, which is about 3mi. to the SSW. • <u>Remarks</u>: Station name change to Chisos Basin from Big Bend Park. 		
5/8/1958	<ul style="list-style-type: none"> • <u>Station relocation</u>: 150' NW of the previous location • <u>New description</u>: In bowl-shaped Chisos Basin with Emory Peak about 2mi. in the distance, surrounded by the Chisos Mountains with peaks to 7835'. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 17:00 • <u>Remarks</u>: Station is located at Chisos Basin Park Ranger Station and is compatible for a continuation of the previous record, relocated due to road construction. • <u>Exposure (New location)</u>: Observer's residence to the SE (15°), 2 trees to the S (12°, 12°), 2 trees to the W (12°, 12°) 	2	1
10/27/1960	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. S of the previous location • <u>New elevation</u>: 5300' (+200') • <u>Remarks</u>: Station is located at Chisos Basin Park Ranger Station and is compatible for a continuation of the previous record, relocated because of a building program. 	3	2
3/23/1967	<ul style="list-style-type: none"> • <u>Time of observation</u>: 08:00 (17:00) 	3	2
2/1/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: CRS moved 200' NW of the previous location • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station is located at Chisos Basin Park Ranger Station, relocated the CRS to an excellent exposure 15' E of the SRG. • <u>Exposure (Same location)</u>: Ranger station to the NE (8°), post office to the E, lodge to the SE, road to the E and S of the observation site 	2	1
6/1/1979	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "a" status. 	0	0
6/10/1986	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum 	2	0

	<p>temperature system (MMTS), removal of CRS and MxMn</p> <ul style="list-style-type: none"> • <u>MMTS</u>: Installed 142' NNE of the old CRS location. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Exposure (Same location)</u>: Unobstructed with no high objects nearby 		
12/3/1991	<ul style="list-style-type: none"> • <u>Station relocation</u>: 100' SW of the previous location • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Remarks</u>: Station is located at Chisos Basin Park Ranger Station and is compatible for a continuation of the previous record, equipment moved across the street to a new ranger building. • <u>Exposure (New location)</u>: Building to the N (6°), building to the SSW (12°) 	2	1
5/23/1995	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.27000 -103.30278 (+0.00333N, +0.00278W), no station move reported • <u>Remarks</u>: New coordinates obtained via GPS. 	0	0
5/17/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.27944 -103.30111 (+0.00944N, -0.00167W), no station move reported 	0	0
11/3/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) • <u>New coordinates</u>: 29.27028 -103.30028 (-0.00916N, -0.00083W), no station move reported • <u>Remarks</u>: New coordinates obtained via Garmin V. 	2	1
10/6/2009	<ul style="list-style-type: none"> • <u>New observer</u>: Unknown (US National Park Service) 	1	1

COOP Station 412012, CD 5: Conduras Service Station, Hudspeth County, TX

<p>Summary: Extremely stable site in plain between El Paso and Guadalupe. Only possible inhomogeneity is microclimate.</p> <p>Temperature rating: Very good (1970-present)</p> <p>Precipitation rating: Excellent (1940-present)</p>			
3/1/1940	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 31°47'N 105°28'W • <u>Original elevation:</u> 4480' • <u>Original observer:</u> Lee R. Tinnin • <u>Original description:</u> Arid rangeland. 	TEMP Impact	PRCP Impact
3/1/1950	<ul style="list-style-type: none"> • <u>New observer:</u> C.M. Tinnin (L.R. Tinnin) 		1
10/1/1955	<ul style="list-style-type: none"> • <u>New observer:</u> Lee R. Tinnin (C.M. Tinnin) • <u>New description:</u> Gently rolling mesa and treeless with mountain peaks and ranges to the N, S, and SE. • <u>Daily recording of observations:</u> Form 612-14 sent to WRPC • <u>Time of observation:</u> 18:00 • <u>Remarks:</u> Station is located at the Conduras Service Station. The new observer is the son of the previous observer, took over due to his father's illness. • <u>Exposure (Same location):</u> Water tower to the NE (15°), greenhouse to the SE (7°), café to the WSW, Conduras Service Station to the SW (12°), 3 trees to the W (12°, 17°, 18°), residence to the NW (12°), US 180 to the S beyond the Conduras Service Station 		1
8/1/1962	<ul style="list-style-type: none"> • <u>Station observations:</u> Establishment of temperature • <u>Equipment:</u> Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) 		0
4/1/1970	<ul style="list-style-type: none"> • <u>Daily recording of observations:</u> Form 612-14 sent to NWRC • <u>Remarks:</u> Increase in the rate of the observer pay. 	0	0
5/1/1974	<ul style="list-style-type: none"> • <u>Remarks:</u> Increase in the rate of the observer pay. 	0	0
6/1/1975	<ul style="list-style-type: none"> • <u>Daily recording of observations:</u> Form F-10 sent 	0	0

	<ul style="list-style-type: none"> to NCC <u>Exposure (Same location)</u>: Greenhouse to the S (7°), service station to the SW (12°) 		
8/11/1978	<ul style="list-style-type: none"> <u>Remarks</u>: Station closed until 9/20/1978 after the observer resigned. 		
9/20/1978	<ul style="list-style-type: none"> <u>New observer</u>: Fred Raymond (Lee R. Tinnin) <u>Remarks</u>: Former observer resigned and moved to El Paso, termination effective on 8/11/1978. Increase in the rate of the observer pay. 	1	1
3/1/1982	<ul style="list-style-type: none"> <u>New observer</u>: Robert Derrick (Fred Raymond) <u>Time of observation</u>: 17:00 (18:00) <u>Remarks</u>: The former observer sold his business and moved to Orla, termination effective 2/28/1982. 	1	1
10/1/1982	<ul style="list-style-type: none"> <u>Daily recording of observations</u>: Form E-15 sent to NCC <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
7/1/1983	<ul style="list-style-type: none"> <u>New observer</u>: May Carson (Robert Derrick) <u>Time of observation</u>: 18:00 (17:00) <u>Remarks</u>: Station is located at the Conduras Service Station and is compatible for a continuation of the previous record. The former observer sold his business to the new observer, termination effective 6/30/1983. <u>Exposure (Same location)</u>: Trailer house to the ESE, motel to the SE, building to the S (10°), building to the SW (18°), service station to the SW 	1	1
1/3/1986	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock <u>Exposure (Same location)</u>: House to the S (10°), house to the W (18°) 	2	0
12/1/1995	<ul style="list-style-type: none"> <u>Daily recording of observations</u>: Form B-91 sent to WSO-El Paso 	0	0
2/24/2005	<ul style="list-style-type: none"> <u>New coordinates</u>: 31.78000 -105.47000 (-0.00333N, +0.00333W), no station move reported 	0	0
4/1/2006	<ul style="list-style-type: none"> <u>New observer</u>: Unknown (May Carson) 	1	1

	<ul style="list-style-type: none"> • <u>Remarks</u>: Previous observer sold property and moved out of town. 		
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COOP Station 412797, CD 5: El Paso International Airport, El Paso County, TX			
<p>Summary: At airport at least since 1930; need info on history before that time. Temperature measurements moved to roof sometime between 1942 and 1974 all moved to ASOS from 1995 onward. Probably major inhomogeneity associated with rooftop observing switches. Unable to rate super-long-term record without pre-1930 metadata. Precipitation probably affected by eastward moves.</p> <p>Temperature rating: Poor (1930-present) Precipitation rating: Good (1930-present)</p>			
11/6/1877	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: 31.78333 -106.50000 • <u>Original elevation</u>: 3773' • <u>Original observer</u>: Unknown 	TEMP Impact	PRCP Impact
11/24/1941	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Recording rain gauge (R/RNG) • <u>Station relocation</u>: 7.5mi. ENE of the previous location • <u>New coordinates</u>: 31.80000 -106.40000 (+0.11667N, -0.10000W) • <u>New elevation</u>: 3916' (+143') • <u>New observer</u>: US Weather Bureau (Unknown) • <u>Remarks</u>: Station is not considered compatible for a continuation of the previous record. Change in COOP ID to 412797 from 412799. • <u>Exposure (New location)</u>: Radio mast 33' to the ESE, RAOB and pilot balloon house 48' to the W (14' tall), US weather bureau office 155' to the NW 	3	3
11/3/1942	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. E of the previous location 	1	1

5/7/1944	<ul style="list-style-type: none"> • <u>Station relocation</u>: R/RNG moved 400' NNE of previous location • <u>Exposure (New location)</u>: R/RNG on roof of 2-story Municipal Airport building 	2	2
9/1/1963	<ul style="list-style-type: none"> • <u>R/RNG</u>: Now the primary equipment for precipitation measurements 	0	2
3/1/1974	<ul style="list-style-type: none"> • <u>New elevation</u>: 3918' (+2'), no station move reported • <u>New description</u>: The WSO is located on a fairly level plain about 5mi. E of the bases of the Franklin Mountains and the Rio Grande River is about 6mi. to the SW. • <u>Time of observation</u>: Midnight • <u>Exposure (Same location)</u>: All equipment located on the roof of the WSO/FAA building, staircase to the WNW of SRG (8°) 	3	0
8/6/1982	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of hygrothermometer (HYGR), now the primary equipment for temperature measurements • <u>Daily recording of observations</u>: Form MF-1 sent to NCC • <u>Exposure (Same location)</u>: HYGR located near the airport center runway 	2	0
10/24/1994	<ul style="list-style-type: none"> • <u>HYGR</u>: Equipment changed to HO-83 from HO-62 • <u>Daily recording of observations</u>: Form F-6 sent to NCDC 	2	0
6/1/1995	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Tipping bucket rain gauge (TB), now the primary equipment for precipitation measurements • <u>Station relocation</u>: 1.0mi. N of the previous location • <u>New coordinates</u>: 31.81111 -106.37583 (+0.01111N, -0.02417W) • <u>SRG</u>: Now the backup equipment for precipitation measurements • <u>HYGR</u>: Equipment changed to HO-1088 from HO-83 • <u>MxMn</u>: Now the backup equipment for temperature measurements • <u>Reporting of observations</u>: Precipitation reported daily to WSO-El Paso, 	3	2

	temperature reported daily hours to WSO-El Paso <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: ADP sent to NCDC • <u>Remarks</u>: Station is located at an ASOS sensor considered compatible for a continuation of the previous record. • <u>Exposure (Same location)</u>: Fire station 1200' to the NE 		
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COOP Station 413262, CD 5: Fort Davis, Jeff Davis County, TX			
<p>Summary: Valley station surrounded by mountains. Station moves caused up to 80 feet of elevation change, but town population was probably fairly stable. Station now at its lowest point, implying warming bias of 0.3 C.</p> <p>Temperature rating: Good (1854-present) Precipitation rating: Good (1854-present)</p>			
11/1/1854	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Max-Min thermometer (MxMn) • <u>Original coordinates</u>: Unknown • <u>Original elevation</u>: Unknown • <u>Original observer</u>: Unknown • <u>Original description</u>: Mountainous to the N and W, rolling plains to the E and S. 	TEMP Impact	PRCP Impact
1/1/1902	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30°36'N 103°53'W (Unknown) • <u>New elevation</u>: 4800' (Unknown) • <u>New observer</u>: J.L. James (Unknown) 	1	1
4/30/1904	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 5'agl • <u>Time of observation</u>: 18:00 • <u>Exposure (Same location)</u>: House 15' to the S, small tree in vicinity 	1	1
2/5/1906	<ul style="list-style-type: none"> • <u>CRS</u>: Bottom of shelter is 4.5'agl (-0.5'), door opens to the N, over sod • <u>SRG</u>: Top of gauge is 3'agl 	1	1

4/1/1906	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 7/1/1906. 		
7/1/1906	<ul style="list-style-type: none"> • <u>New observer</u>: M.B. Pruitt (J.L. James) • <u>Remarks</u>: Reactivation of station closed since 4/1/1906. 	1	1
11/1/1906	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 4/1/1907. 		
4/1/1907	<ul style="list-style-type: none"> • <u>New observer</u>: W.E. Pruitt (M.B. Pruitt) • <u>Remarks</u>: Reactivation of station closed since 11/1/1906. 	1	1
11/1/1907	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 12/1/1911. 		
12/1/1911	<ul style="list-style-type: none"> • <u>Station observations</u>: Discontinuance of temperature • <u>Equipment</u>: Removal of CRS and MxMn • <u>Station relocation</u>: 1.0mi. SSE of the previous location • <u>New coordinates</u>: : 30°35'N 103°53'W (-1'N) • <u>New observer</u>: Theodore I. Dumble (W.E. Pruitt) • <u>Remarks</u>: Reactivation of station closed since 11/1/1907. 	2	2
8/1/1912	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 12/1/1912. 		
12/1/1912	<ul style="list-style-type: none"> • <u>New observer</u>: C.H. Bird (Theodore I. Dumble) • <u>Remarks</u>: Reactivation of station closed since 8/1/1912. 	1	1
1/1/1926	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 2/1/1927. 		
2/1/1927	<ul style="list-style-type: none"> • <u>New observer</u>: E.H. Carlton (C.H. Bird) • <u>Remarks</u>: Reactivation of station closed since 1/1/1926. 	1	1
11/2/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 5'agl (+2'), new box support installed • <u>Remarks</u>: Station well located at the edge of town, observer is interested and does good work. • <u>Exposure (Same location)</u>: Apple trees to the W (10°), "too far away to affect catch" 	1	1
9/1/1938	<ul style="list-style-type: none"> • <u>New observer</u>: C.E. Carlton (E.H. Carlton) 	1	1
1/1/1941	<ul style="list-style-type: none"> • <u>New observer</u>: C.N. Carlton (C.E. Carlton) 	1	1
7/1/1942	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.1mi. NNW of the previous location • <u>New coordinates</u>: 30°36'N 103°53'W (+1'N) • <u>New observer</u>: B.E. Coan (C.N. Carlton) 	2	2
12/13/1942	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. SSW of the previous location 	2	1

	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30°35'N 103°53'W (-1'N) • <u>New observer</u>: E.B. Cole (B.E. Coan) 		
7/14/1943	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. NE of the previous location • <u>New coordinates</u>: 30°36'N 103°53'W (-1'N) • <u>New elevation</u>: 4900' (+100') • <u>New observer</u>: Harold A. King (E.B. Cole) • <u>SRG</u>: Top of gauge is 3.5'agl (-1.5'), support reset and painted • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Houston • <u>Remarks</u>: Station is located in the backyard of the observer's residence. Observer is much interested and anxious to submit reports correctly and should make an excellent observer. • <u>Exposure (New location)</u>: House 42' to the ENE (20' tall), observer's residence to the SE (12' tall), adobe wall 14' to the S (7' tall), plank fence 8' to the W (5' tall) 	2	2
10/24/1948	<ul style="list-style-type: none"> • <u>New observer</u>: Harry Scobee (Harold A. King) 	1	1
4/5/1957	<ul style="list-style-type: none"> • <u>New description</u>: Located in the Trans Pecos on high plateau from which Davis Mountains rise. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Station is located at the observer's residence. • <u>Exposure (Same location)</u>: Building to the N (5°), building to the ENE (45°), building to the ESE (25°), tree to the SE (35°), tree to the SW (20°), building to the SW beyond the tree, building to the W (10°) 	1	1
2/1/1975	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed (7/1/1981) after the observer resigned, station is no longer needed. 		
7/1/1981	<ul style="list-style-type: none"> • <u>Station observations</u>: Reestablishment of temperature • <u>Equipment</u>: Addition of CRS and MxMn • <u>Station relocation</u>: 800'N of the previous location 	2	1

	<ul style="list-style-type: none"> • <u>New elevation</u>: 4880' (-20') • <u>New observer</u>: Fort Davis National Historical Site (Harry Scobee) • <u>New description</u>: Locally flat high plateau from which the Davis Mountains rise. • <u>Reporting of observations</u>: Precipitation reported when rains ≥ 0.50" in 24 hours to WSO-El Paso • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Time of observation</u>: 16:30 (17:00) • <u>Remarks</u>: Reactivation of station closed since 2/1/1975, located at the National Historical Site and is compatible for continuation of the old record. Station upgraded to class "ab" status from class "a" status. • <u>Exposure (New location)</u>: Maintenance building to the ENE (15°), maintenance building to the ESE (18°), street to the E between the maintenance buildings and the observation site, entrance to the SE 		
10/16/1990	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock 	0	0
3/8/1994	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains ≥ 0.50" in 24 hours) to WSO-Lubbock • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland • <u>Exposure (New location)</u>: Unobstructed with no high objects nearby 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.60333 -103.88722 (+0.00333N +0.00389W), no station move reported • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland • <u>Remarks</u>: Updated for ROSA to AWIPS. New coordinates obtained via Garmin 45 GPS. 	0	0

8/24/2003	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn 	2	1
8/24/2003	<ul style="list-style-type: none"> <u>Station relocation</u>: 125' E of the previous location <u>New coordinates</u>: 30.60333 -103.88611 (-0.00111W) <u>New elevation</u>: 4858' (-22') 	1	1
11/4/2004	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS 	2	0
1/10/2007	<ul style="list-style-type: none"> <u>Remarks</u>: Change in the backup observer. 	0	0

COOP Station 413280, CD 5: Fort Stockton, Pecos County, TX

Summary: Station began in lightly populated town, and then moved to irrigated farmland northeast of town in 1940. Moved back to southern edge of town 1961-2000, then moved to airport site with nearby asphalt parking and irrigated golf course to southeast. Hard to say what impact all this had, except that the station experienced four distinct microclimates during its history.

Temperature rating: Fair (1859-present)

Precipitation rating: Good (1859-present)

7/1/1859	<ul style="list-style-type: none"> <u>Initial station observations</u>: Precipitation <u>Original equipment</u>: Standard rain gauge (SRG) <u>Original coordinates</u>: 30°53'N 102°53'W <u>Original elevation</u>: 3010' <u>Original observer</u>: Unknown <u>Original description</u>: Level for several miles in all directions with no forests or bodies of water near. 	TEMP Impact	PRCP Impact
1/1/1897	<ul style="list-style-type: none"> <u>New observer</u>: Frank Rooney (Unknown) <u>SRG</u>: Top of gauge is 2'agl <u>Time of observation</u>: 17:00 <u>Exposure (Same location)</u>: SRG is 60' from the nearest high object 		1
5/1/1904	<ul style="list-style-type: none"> <u>Station observations</u>: Establishment of temperature <u>Equipment</u>: Addition of Cotton region shelter 		1

	<p>(CRS), Maximum-minimum thermometer (MxMn)</p> <ul style="list-style-type: none"> • <u>New observer</u>: Herman H. Butz (Frank Rooney) • <u>Exposure (Same location)</u>: SRG is 100' from the nearest high object, a house 		
6/1/1914	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3'agl (+1') • <u>CRS</u>: Bottom of shelter is 4.7'agl, door opens to the N, over sod • <u>Time of observation</u>: 19:00 (17:00) 	2	1
11/3/1937	<ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 2.8'agl (-0.2') • <u>CRS</u>: Bottom of shelter is 3.5'agl (-1.2'), over turf (sod) • <u>Remarks</u>: Well located station, observations taken on time and the record was faithfully kept. • <u>Exposure (Same location)</u>: Fences and shrubs to the SW (10°), "do not interfere with catch" 	2	1
4/21/1940	<ul style="list-style-type: none"> • <u>Station relocation</u>: 4mi. NE of the previous location • <u>New coordinates</u>: : 30°54'N 102°52'W (+1'N, -1'W) • <u>New elevation</u>: 2925 (-85') • <u>New observer</u>: Joseph Schlegel (H.H. Butz) • <u>New description</u>: Level irrigated valley. • <u>Remarks</u>: Anemometer and evaporation equipment added to the observation site. Station name change to Fort Stockton (near) from Fort Stockton. COOP ID change to 413280 from 413276, which remained open until 6/30/1945. 	3	2
4/17/1944	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.4mi. SSE of the previous location • <u>New coordinates</u>: : 30°54'N 102°52'W (+1'N, -1'W) • <u>New observer</u>: John E. Deck (Joseph Schlegel) • <u>New description</u>: Located in shallow valley, irrigated by springs, with gravel-like adobe soil at observation site. • <u>SRG</u>: Top of gauge is 3.3'agl (+0.5'), gauge support repainted • <u>CRS</u>: Bottom of shelter is 4'agl (+0.5'), over 	2	1

	<ul style="list-style-type: none"> adobe (sod), shelter and support repainted • <u>MxMn</u>: Minimum thermometer replaced • <u>Daily recording of observations</u>: Form 1024 sent to WSO-Albuquerque • <u>Time of observation</u>: 09:30 (19:00) • <u>Remarks</u>: Station is located at the observer's residence. • <u>Exposure (Same location)</u>: SRG is 21' from the nearest high object (10' tall) 		
4/23/1953	<ul style="list-style-type: none"> • <u>New description</u>: Sandy, nearly level with irrigated farmland 0.5mi. N and 0.5mi. E and mountains in the distance to the SE and NE. • <u>Daily recording of observations</u>: Form 1024 sent to WSO-Houston • <u>Time of observation</u>: 08:00 (09:30) • <u>Exposure Same location</u>: Trees to the N (20°), residence to the ENE (12°), tree to the E (25°), tall object to the SW (45°) 	1	1
3/31/1955	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>R/RNG</u>: Previously located at the station Marfa 25WSW • <u>Time of observation</u>: 07:00 (08:00) 	1	2
8/1/1956	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-25 sent to WRPC 	0	0
6/1/1957	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours at 07:00 or $\geq 0.50''$ in 6 hours at 13:00, 19:00 to WSO-Brownsville, temperature reported daily to WSO-Brownsville • <u>Remarks</u>: River and rainfall reporting services added at this station. 	0	0
12/1/1958	<ul style="list-style-type: none"> • <u>New description</u>: Level to rolling plains with isolated flat-topped hills and mesas 5mi. to the ENE and 5mi. to the SE. • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours (when rains $\geq 1.00''$ in 24 hours at 07:00 or $\geq 0.50''$ in 6 hours at 13:00, 19:00) to WSO-Brownsville, temperature not reported • <u>Remarks</u>: From April through October, 0.01" or more of rainfall reported to WSO-Houston 	0	0

	<p>and from November through March, 1.00" or more of rainfall reported to WSO-Brownsville.</p> <ul style="list-style-type: none"> • Station name change to Fort Stockton 2NE from Fort Stockton. • <u>Exposure (Same location)</u>: Trees to the N (5°), building to the ENE (7°), trees to the E (12°) 		
4/1/1959	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours to WSO-Brownsville and when rains from April-October to WSO-Houston 	0	0
3/2/1960	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of the R/RNG • <u>Remarks</u>: Barograph added to the observation site. 	0	2
5/19/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: 3.5mi. SW of the previous location • <u>New coordinates</u>: : 30°52'N 102°54'W (-2'N, +2'W) • <u>New elevation</u>: 2995' (+70') • <u>New observer</u>: James J. Parr (John E. Deck) • <u>New description</u>: Almost level and slightly sloping to the S with treeless, low brush plains. • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-Brownsville • <u>Remarks</u>: Station is located at Radio Station KFST. Removal of the anemometer and evaporation equipment from the observation site. Station name change to Fort Stockton KFST Radio from Fort Stockton 2NE. • <u>Exposure (New location)</u>: Radio tower to the N, radio station to ESE (4°), US Highway 385 to the E beyond the radio station 	3	2
4/12/1962	<ul style="list-style-type: none"> • <u>New observer</u>: Jim W. Hawkins (James J. Parr) • <u>Remarks</u>: Former observer moved away and Mr. Hawkins has replaced him as station manager. 	1	1
5/14/1963	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours from November-March (when rains $\geq 1.00''$ in 24 hours) to WSO-Brownsville and when rains from April-October to WSO-Houston • <u>Time of observation</u>: 07:00 for precipitation, 19:00 for temperature (07:00) 		

8/21/1968	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains when rains ≥ 1.00" in 24 hours (when rains ≥ 1.00" in 24 hours from November-March and when rains from April-October) to WSO-Brownsville • <u>New observer</u>: Radio Station KFST (Jim W. Hawkins) • <u>Time of observation</u>: 07:00 (07:00 for precipitation and 19:00 for temperature) • <u>Remarks</u>: Change in "reporting of observations" criteria for precipitation to 1.00" in 24 hours. 	3	1
4/1/1973	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains ≥ 1.00" in 24 hours to WSO-Midland • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Midland • <u>New description</u>: Slightly sloping to the S in primarily ranch terrain with very little vegetation. 	0	0
7/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
3/1/1976	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock 	0	0
8/8/1984	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 1.6mi. ENE of the previous location • <u>New coordinates</u>: : 30°53'N 102°52'W (+1'N, -2'W) • <u>New elevation</u>: 2980' (-15') • <u>New observer</u>: Texas A&M Extension Service (John E. Deck) • <u>New description</u>: Mostly level ranch land with very little vegetation. • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Midland • <u>Time of observation</u>: 08:00 (07:00) • <u>Remarks</u>: Station is located at the Texas A&M Extension Service and is compatible for a continuation of the previous record. Evaporation equipment and soil 	2	1

	<p>thermometers added to the observation site. Station name change to Fort Stockton from Fort Stockton KFST.</p> <ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Office building to the E (28°), drive to the N and W, observation site located in an open area 		
10/25/1994	<ul style="list-style-type: none"> • <u>New elevation</u>: 3000' (+20'), no station move reported • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Lubbock • <u>Exposure (Same location)</u>: Office buildings to the E (28°), tree to the S (28°) 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Midland 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.4mi. WNW of the previous location • <u>New coordinates</u>: 30.90806 -102.91556 (+0.02473N, +0.04889W), no station move reported • <u>New elevation</u>: 3038' (+38') • <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains $\geq 1.00''$ in 24 hours) to WSO-Midland, temperature digitally reported daily to WSO-Midland • <u>Remarks</u>: Station is located at the Texas A&M Extension Service. Updated for ROSA to AWIPS. New coordinates obtained via Garmin 45 GPS. • <u>Exposure (New location)</u>: Shed to the NE (24°), building to the SE (22°) 	3	2
1/29/2002	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.90667 -102.91500 (-0.00133N, -0.00056W), no station move reported 	0	0
6/9/2004	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.90722 -102.91528 (+0.00055N, +0.(W), no station move reported • <u>Remarks</u>: New coordinates obtained via Garmin V. 	0	0
10/13/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS 	2	0

COOP Station 413680, CD 5: Grandfalls 3SSE, Ward County, TX			
<p>Summary: Station somewhere between Monahans and Fort Stockton. Station originally in town, then on other side of Pecos, then in (former) irrigated farmland. Inhomogeneities are due to large location changes and changing irrigation practices.</p> <p>Temperature rating: Poor (1940-present) Precipitation rating: Fair (1910-present)</p>			
2/1/1909	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 31°21'N 102°56'W • <u>Original elevation:</u> 2300' • <u>Original observer:</u> W.C. Birdwell • <u>Original description:</u> Level country with the Pecos River 1.5mi. to the S and no forests or bodies of water in the vicinity. • <u>Exposure:</u> Observation site located on top of a building 	TEMP Impact	PRCP Impact
4/1/1909	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 3/31/1911. 		
4/1/1911	<ul style="list-style-type: none"> • <u>New observer:</u> W.A. White (W.C. Birdwell) • <u>SRG:</u> Top of gauge is 4'agl • <u>Time of observation:</u> Sunset • <u>Remarks:</u> Reactivation of station closed since 4/1/1909. • <u>Exposure (Same location):</u> SRG is unobstructed with no high objects nearby 		1
2/1/1918	<ul style="list-style-type: none"> • <u>New observer:</u> L. Wadsworth (W.A. White) 		1
7/1/1919	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 2/1/1921. 		
2/1/1921	<ul style="list-style-type: none"> • <u>New observer:</u> T.M. White (L. Wadsworth) • <u>Remarks:</u> Reactivation of station closed since 7/1/1919. 		1
2/1/1924	<ul style="list-style-type: none"> • <u>New observer:</u> J.B. Hudson (T.M. White) 		1
1/1/1926	<ul style="list-style-type: none"> • <u>New observer:</u> M.B. Murray (J.B. Hudson) 		1
11/4/1937	<ul style="list-style-type: none"> • <u>SRG:</u> Top of gauge is 10'agl (-6'), moved to the top of high post from a roof exposure • <u>Remarks:</u> Observer has grown careless about observations, but promised to take the work up once more. • <u>Exposure (Same location):</u> SRG is unobstructed with no high objects nearby 		2

9/1/1938	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 1/10/1940. 		
1/10/1940	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Station relocation</u>: 0.5mi. NW of the previous location • <u>New coordinates</u>: : 31°21'N 102°52'W (-4'W) • <u>New elevation</u>: 2430' (+130') • <u>New observer</u>: Red Bluff Power Company (M.B. Murray) • <u>New description</u>: Country to the SE is irrigated farmland, rangeland in all other directions. • <u>SRG</u>: Top of gauge is 3.5'agl • <u>CRS</u>: Bottom of shelter is 4'agl, door opens to the N, over sandy loam • <u>Daily recording of observations</u>: Form 1024 sent to WSO-Albuquerque • <u>Time of observation</u>: 18:00 (Sunset) • <u>Remarks</u>: Reactivation of station closed since 9/1/1938, located in the yard of the Red Bluff Water Power Control District. Anemometer and evaporation equipment added to the observation site. • <u>Exposure (New location)</u>: Office to the SE (5°), house to the SSE (5°), power plant to the S (13°) 		2
9/1/1948	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Houston • <u>Time of observation</u>: 08:00 (18:00) • <u>Remarks</u>: Station is located at the light plant, anemometer removed from the observation site. 	3	2
5/1/1950	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 9/18/1953. 		
9/18/1953	<ul style="list-style-type: none"> • <u>Station relocation</u>: 6.4mi. SSW of the previous location • <u>New coordinates</u>: : 31°14'N 102°53'W (-7'N, +1'W) • <u>New elevation</u>: 2436' (+6') • <u>New observer</u>: Texas Natural Gas Corporation 	3	2

	<p>(Red Bluff Power Company)</p> <ul style="list-style-type: none"> • <u>New description</u>: Slightly sloping range with a semi-desert environment. • <u>Time of observation</u>: 16:30 (08:00) • <u>Remarks</u>: Reactivation of station closed since 5/1/1950, located at the Texas Natural Gasoline Corporation plant. Station name change to Grandfalls 6 SSW from Grandfalls. • <u>Exposure (New location)</u>: Building to the NNE (50' tall), plant operating building to the E (18' tall), building to the SE (20' tall), office building to the WNW, fence to the W (7' tall), Highway 82 to the W beyond the office building 		
4/1/1955	<ul style="list-style-type: none"> • <u>New observer</u>: Daryl J. Roberts (Texas Natural Gas Corporation) • <u>Time of observation</u>: 08:30 (16:30) • <u>Remarks</u>: Station is located at the Santa Rosa Gasoline Plant. The new observers were afraid they could not do observations correctly without field instructions. 	3	2
10/16/1956	<ul style="list-style-type: none"> • <u>Station observations</u>: Discontinuance of temperature • <u>Equipment</u>: Removal of CRS and MxMn • <u>Station relocation</u>: 5.0mi. NE of the previous location • <u>New coordinates</u>: 31°18'N 102°50'W (+4'N, -3'W) • <u>New elevation</u>: 2440' (+4') • <u>New observer</u>: Charles W. Potts (Daryl J. Roberts) • <u>New description</u>: Rolling to level plains, sloping S to the Pecos River with grass and small brush. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 07:00 (08:30) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record, removal of the evaporation equipment. Station name change to Grandfalls 3 SSE from Grandfalls 6 SSW. 		2

	<ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Residence to the N (14°), water tank to the NW (10°) 		
4/3/1962	<ul style="list-style-type: none"> • <u>New description</u>: Flat plains gently sloping to the S and E. • <u>Exposure (Same location)</u>: House to the N (15°), tree to the E (12°), road just to the N, fence just to the S 		0
8/15/1963	<ul style="list-style-type: none"> • <u>Station observations</u>: Reestablishment of temperature • <u>Equipment</u>: Addition of CRS and MxMn • <u>New description</u>: Flat plains gently sloping to the SW. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station upgraded to class “ab” status. • <u>Exposure (Same location)</u>: House to the N (15°), tree to the E (12°) 		0
9/11/1973	<ul style="list-style-type: none"> • <u>New observer</u>: Helen E. Potts (Charles W. Potts) • <u>Daily recording of observations</u>: Form F-10 sent to NCC • <u>Exposure (Same location)</u>: House to the N (15°), driveway just to the N, fence to the E, FM 872 to the SE 	1	1
8/1/1977	<ul style="list-style-type: none"> • <u>Remarks</u>: Observer was married and now goes by Helen E. Pollard. 	0	0
1/11/1984	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed 65’ NE of the old CRS location. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Exposure (Same location)</u>: House to the N (15°), shed to the N beyond the house, driveway just to the N, building to the NNW, 4’ fence to the E, FM 872 to the SE 	2	0
12/1/1993	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Exposure (Same location)</u>: House to the N (22°) 	0	0

5/10/1994	<ul style="list-style-type: none"> • <u>Equipment move</u>: Relocated 0.4mi. to the NNE • <u>New observer</u>: Frances J. Deck (Helen E. Pollard) • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Lubbock • <u>Time of observation</u>: 08:00 (07:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Previous observer quit due to health reasons. Encoder pad or phone installed at the observation site. • <u>Exposure (New location)</u>: House to the W (12°), tree to the W (28°) 	1	1
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Lubbock • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0
7/25/1999	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.30667 -102.84472 (+0.00667N, +0.01139W), no station move reported • <u>Remarks</u>: Station placed on inactive status until new observer can be found, former observer resigned. New coordinates obtained via Garmin 45 GPS. 	0	0
3/11/2000	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed after being placed on inactive status on 7/25/1999. 		
8/7/2001	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.25mi. W of the previous location • <u>New coordinates</u>: 31.30278 -102.82194 (-0.00389N, -0.02278W) • <u>New elevation</u>: 2425' (-15') • <u>Remarks</u>: Reactivation of station closed since 7/25/1999. 	2	1
7/15/2005	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS • <u>SRG</u>: Added materials to the gauge • <u>Remarks</u>: Addition of backup observer. 	2	0

COOP Station 414425, CD 5: Imperial, Pecos County, TX			
Summary: Station stayed within 1.2 mile radius, between Monahans and Fort Stockton, over flat terrain.			
Temperature rating: N/A			
Precipitation rating: Very good (1940-1993)			
3/6/1940	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 31°16'N 102°43'W • <u>Original elevation:</u> 2360' • <u>Original observer:</u> Warren K. Heagy • <u>Original description:</u> Level land with sandy soil. • <u>Daily recording of observation:</u> Form 1006 sent to WSO-Fort Worth • <u>Time of observation:</u> After precipitation • <u>Remarks:</u> Station is located at the Soil Conservation Service. 	TEMP Impact	PRCP Impact
3/20/1945	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed, Soil Conservation Service workers instructed to reestablish the station at the first opportunity (6/4/1945). 		
6/4/1945	<ul style="list-style-type: none"> • <u>Station relocation:</u> 0.1mi. SE of the previous location • <u>New coordinates:</u> 31°16'N 102°42'W (-1'W) • <u>New observer:</u> Mildred Reinerteen (Warren K. Heagy) • <u>New description:</u> Nearly level to slightly rolling treeless plains with slight slope 3mi. to the N to the Pecos River. • <u>Daily recording of observation:</u> Form 1009 sent to WSO-Houston • <u>Time of observation:</u> 10:00 (After precipitation) • <u>Remarks:</u> Reactivation of station closed since 3/20/1945, located at the Office of Water Control Board. • <u>Exposure (New location):</u> Office 90' to the SE (14' tall), highway intersection to the S 		1
1/19/1948	<ul style="list-style-type: none"> • <u>Time of observation:</u> 17:00 (10:00) 		2

	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: SRG is unobstructed with no high objects nearby 		
7/31/1949	<ul style="list-style-type: none"> • <u>New observer</u>: Pecos County Water District No. 2 (Mildred Reinerteen) 		1
11/29/1958	<ul style="list-style-type: none"> • <u>Daily recording of observation</u>: Form 612-14 sent to WRPC • <u>Exposure (Same location)</u>: Building to the ENE (6°), building to the ESE (9°) 		0
9/24/1963	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>R/RNG</u>: Previously located at the station Buena Vista 2NNW, which is 4mi. from this station. • <u>Daily recording of observation</u>: Form 612-14 sent to NWRC 		2
6/1/1972	<ul style="list-style-type: none"> • <u>New observer</u>: Luella M. Johns (Pecos County Water District #2) 		1
5/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 		1
6/1/1975	<ul style="list-style-type: none"> • <u>Daily recording of observation</u>: Form F-10 sent to NCC 		1
9/1/1979	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>Station relocation</u>: 1.8mi. W of the previous location • <u>New coordinates</u>: 31°16'N 102°44'W (+2'W) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Station name change to Imperial 2W from Imperial. • <u>Exposure (New location)</u>: House surrounded by trees to the N, barn to the W, driveway just to the N, road to the E, observation site in an empty lot 		2
5/18/1983	<ul style="list-style-type: none"> • <u>F/P</u>: Installation of Model III timer • <u>Daily recording of observation</u>: Form 612-14 sent to WSO-Lubbock 		2
16/3/1993	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.3mi. E of the previous location • <u>New coordinates</u>: : 31°16'N 102°42'W (-2'W) • <u>New elevation</u>: 2400' (+40') • <u>New observer</u>: Richard H. Nye (Luella M. 		2

	<p>Johns)</p> <ul style="list-style-type: none"> • <u>Daily recording of observation</u>: Form B-91 sent to WSO-Lubbock • <u>Time of observation</u>: 08:00 (17:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record; previous observer sold her farm and moved away. Station name change to Imperial from Imperial 2W. • <u>Exposure (New location)</u>: Trees to the SE (22°), house to the NW (6°) 		
10/31/1993	<ul style="list-style-type: none"> • <u>Remarks</u>: Station placed on inactive status until a new observer can be found, previous observer moved away. 		
6/1/1994	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed after being placed on inactive status on 10/31/1993, no observer available in the area. 		

COOP Station 414931, CD 5: La Tuna 1 S, El Paso County, TX			
<p>Summary: Station north of El Paso along Rio Grande. Station on or near pavement or among buildings. Precipitation may have been subject to obstructions.</p> <p>Temperature rating: Fair (1943-present) Precipitation rating: Very good (1943-present)</p>			
1/18/1943	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates</u>: 31°59'N 106°36'W • <u>Original elevation</u>: 3800' • <u>Original observer</u>: Federal Correctional Institution • <u>Original description</u>: On large irrigated farm in the Rio Grande Valley with the Franklin Mountains 5mi. to the E. • <u>CRS</u>: Bottom of shelter is 4'agl, over sand and 	TEMP Impact	PRCP Impact

	<ul style="list-style-type: none"> gravel <u>SRG</u>: Top of gauge is 3.5'agl <u>Daily recording of observation</u>: Form 1009 sent to WSO-Houston <u>Time of observation</u>: 18:00 <u>Remarks</u>: Station is located at the Federal Correctional Institution. One of the guards has several years of experience keeping detailed records in Utah and will serve to train prison personnel <u>Exposure</u>: Guard house 8' to the SW (7' tall), wire fence inclosing gas regulator to the W (4' tall) 		
3/12/1956	<ul style="list-style-type: none"> <u>New description</u>: Wide valley that is 5-6mi. wide and treeless with low mountain ranges to the E and the W, the ground slopes downward to the W. <u>Daily recording of observation</u>: Form 612-14 sent to WRPC <u>Time of observation</u>: Midnight for precipitation, 18:00 for temperature (18:00) <u>Remarks</u>: Station name change to La Tuna 1S from La Tuna <u>Exposure (Same location)</u>: Building to the ENE (10°), building to the ESE (30°), sentry box to the W (50°), escarpment to the W (15' tall), driveway entrance to the N 	1	1
5/24/1961	<ul style="list-style-type: none"> <u>Station relocation</u>: 400' E of the previous location <u>Original coordinates</u>: 31°58'N 106°36'W (-1'N) <u>Time of observation</u>: 06:00 (Midnight for precipitation, 18:00 for temperature) <u>Remarks</u>: Station is located at the Federal Correctional Institution; equipment was moved into the prison yard by the institution. 	1	1
10/1/1969	<ul style="list-style-type: none"> <u>Daily recording of observation</u>: Form 612-14 sent to NWRC <u>Time of observation</u>: 18:00 (06:00) <u>Exposure (Same location)</u>: Tower to the N, prison facilities to the E (10°), prison facilities to the S, prison facilities to the W (45°), building annex to the NW (30°), gates leading into the prison courtyard to the N, observation 	1	1

	site in prison courtyard		
6/1/1975	<ul style="list-style-type: none"> • <u>Daily recording of observation</u>: Form F-10 sent to NCC 	0	0
5/1/1978	<ul style="list-style-type: none"> • <u>Remarks</u>: Station upgraded to class "a" status from class "b" status 	0	0
11/4/1981	<ul style="list-style-type: none"> • <u>Station relocation</u>: 400' NNW of the previous location • <u>Daily recording of observation</u>: Form E-15 sent to NCC • <u>Time of observation</u>: 07:00 (18:00) • <u>Remarks</u>: Station is located at the Federal Correctional Institution and is compatible for a continuation of the previous record. Equipment was moved for better exposure and to keep down vandalism. • <u>Exposure (New location)</u>: Building to the E, tower to the SE, prison wall to the S, bluff drop-off to the N, road to the S between the observation site and prison wall 	3	2
2/6/1987	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: SRG moved 350' S of the previous location • <u>MMTS</u>: Installed 700' S of the old CRS location in the prison courtyard • <u>Daily recording of observation</u>: Form E-15 sent to WSO-Lubbock • <u>Remarks</u>: Station is located at the Federal Correctional Institution and is compatible for a continuation of the previous record, relocated for security purposes. 	3	1
1/29/1991	<ul style="list-style-type: none"> • <u>Time of observation</u>: 17:00 (07:00) 	3	2
12/1/1995	<ul style="list-style-type: none"> • <u>Daily recording of observation</u>: Form B-91 sent to WSO-El Paso 	0	0
7/16/2003	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.98000 -106.59750 (+0.01333N, -0.00250W), no station move reported 	0	0

COOP Station 415048, CD 6: Langtry, Val Verde County, TX

<p>Summary: Station on bench above Rio Grande. Actual location seems to be 29.8093N, -101.5605W. Listed location is in Mexico. A few observations beginning in 1897, then 9 miles east from 1928-1934, then back to Langtry for remainder of period. Changing local surface may introduce temperature inhomogeneities.</p> <p>Temperature rating: Good (1970-present) Precipitation rating: Excellent (1934-present)</p>			
7/1/1897	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates:</u> 29°49'N 101°31'W • <u>Original elevation:</u> 1397' • <u>Original observer:</u> R.B. Trent • <u>Original description:</u> Mountainous country. • <u>Time of observation:</u> 09:00 • <u>Remarks:</u> Records only found from 7/1/1897-10/31/1898. • <u>Exposure (Same location):</u> SRG is 40' from the nearest high object, a house 	TEMP Impact	PRCP Impact
9/1/1904	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 10/1/1928. 		
10/1/1928	<ul style="list-style-type: none"> • <u>Station observations:</u> Discontinuance of temperature • <u>Equipment:</u> Removal of CRS and MxMn • <u>Station relocation:</u> 9.0mi. W of the previous location • <u>New coordinates:</u> 29°49'N 101°43'W (+12'W) • <u>New observer:</u> W.C. Hodge, Jr. (R.B. Trent) • <u>New description:</u> In the bed of a large canyon. • <u>SRG:</u> Top of gauge is 3'agl, well-anchored by 2 railroad ties in an open space • <u>Time of observation:</u> Sunset (09:00) • <u>Remarks:</u> Station name change to Langtry (near) from Langtry. • <u>Exposure (Same location):</u> SRG is 50' from the nearest high object 		3
9/1/1934	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 10/1/1934. 		
10/1/1934	<ul style="list-style-type: none"> • <u>Station relocation:</u> 9.0mi. E of the previous location • <u>New coordinates:</u> 29°48'N 101°34'W (-1'N, - 		3

	<p>9'W)</p> <ul style="list-style-type: none"> • <u>New observer</u>: W.H. Dodd (W.C. Hodge, Jr.) • <u>New description</u>: Location is 0.5 mi. N of the Rio Grande River • <u>Remarks</u>: Reactivation of station closed since 10/1/1934. 		
2/20/1940	<ul style="list-style-type: none"> • <u>Remarks</u>: Station name change to Langtry No. 1 from Langtry (near). 		0
12/14/1945	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. E of the previous location • <u>New observer</u>: Guy R. Skiles (W.H. Dodd) • <u>New description</u>: On the E bank of the Rio Grande River with terrain in the vicinity rolling and rocky. 		1
7/1/1947	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG), removal of the SRG • <u>Station relocation</u>: 80' N of the previous location • <u>New elevation</u>: 1310' (-87') • <u>New observer</u>: Susie G. Montgomery (Guy R. Skiles) • <u>New description</u>: Scrub mesquite in the area, 300' N of the Rio Grande River with a drop off of 300'-400' to the river. • <u>R/RNG</u>: Operated in close proximity to Langtry #1 from 2/20/1940-6/30/1947. • <u>Remarks</u>: Station is located at the observer's residence. Station name change to Langtry No. 2 from Langtry No.1. 		1
2/16/1948	<ul style="list-style-type: none"> • <u>Station relocation</u>: 150' N of the previous location • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Houston • <u>Remarks</u>: Station is located at the observer's residence. Station name change to Langtry from Langtry #2. • <u>Exposure (New location)</u>: Shrubs to the E (3'-40' tall), shed 10' to the SE (6' tall), residence 30' to the S (12' tall), shrubs to the W (5'-40' tall), fence to the E and the W of the observation site 		1
4/7/1955	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation 		2

	<p>reported when rains $\geq 1.00''$ in 24 hours to WSO-Brownsville</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-Brownsville • <u>Time of observation</u>: 07:00, 13:00, 19:00 (09:00) • <u>Remarks</u>: River and rainfall reporting services added at this station, river gauge added and is located on the Mexican side of the Rio Grande River. 		
5/10/1958	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.2mi. NW of the previous location • <u>New observer</u>: Neal. E. Billings (Susie G. Montgomery) • <u>Reporting of observations</u>: Precipitation not reported • <u>Daily recording of observations</u>: Form 612-13 sent to WRPC • <u>Remarks</u>: Station is located at Judge Roy Bean Museum and is compatible for a continuation of the previous record, with separate station to be established for river and rainfall reports. The former observer resigned. • <u>Exposure (New location)</u>: Building to the E (8°), building to the NNW (10°) 		1
7/22/1960	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1000' SE of the previous location • <u>New elevation</u>: 1300' (-10') • <u>New description</u>: Located in rolling to hilly brush country in the Rio Grande River plain in a shallow depression almost completely surrounded by a rim of hills at a distance of 4-10mi. • <u>Time of observation</u>: Midnight (07:00, 13:00, 19:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record • <u>Exposure (New location)</u>: Trees to the NE (8°), building to the S (7°), trees to the W (8°) 		1
1/1/1964	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1000' NW of previous location • <u>New elevation</u>: 1310' (+10') 		1

	<ul style="list-style-type: none"> • <u>New description</u>: Almost treeless with some brush, rocky and hilly. • <u>Remarks</u>: Station is located at the Judge Roy Bean Museum. • <u>Exposure (New location)</u>: Judge Bean's building to the N, shop to the SE (6°), Judge Bean's museum to the W (9°), street to the N, Highway 90 loop to the distant E 		
10/12/1964	<ul style="list-style-type: none"> • <u>Remarks</u>: Station downgraded to class "b" status from class "ab-" status. 		0
1/15/1965	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P) • <u>F/P</u>: Installed 8' N of the R/RNG • <u>R/RNG</u>: To be removed when the F/P gauge is commissioned. 		2
5/14/1965	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of the F/P • <u>F/P</u>: Moved to station Langtry No. 2 		
10/20/1965	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of the R/RNG • <u>Remarks</u>: Station closed until 8/23/1968. 		
8/23/1968	<ul style="list-style-type: none"> • <u>Station observations</u>: Reestablishment of temperature • <u>Equipment</u>: Addition of CRS and MxMn • <u>Station relocation</u>: 0.5mi. NE of the previous location • <u>New coordinates</u>: 29°48'N 101°33'W (-1'W) • <u>New elevation</u>: 1290' (-20') • <u>New observer</u>: Jack R. Skiles (Neal E. Billings) • <u>New description</u>: Surrounding terrain consisting of hills and valleys with the Rio Grande less than 1.0mi. to the S and the E. • <u>Reporting of observations</u>: Precipitation reported when rains ≥ 0.50 in 24 hours (when rains ≥ 1.00 in 24 hours) to WSO-Brownsville • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-Brownsville • <u>Time of observation</u>: 17:30 (Midnight) • <u>Remarks</u>: Reactivation of station closed since 10/20/1965, located at the observer's residence. Equipment was moved from station Langtry No. 2. River and rainfall reporting services added at this station. Station upgraded to class "ab" status from 		2

	<p>class “b” status.</p> <ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Canyon to the NE, dwelling to the SE (3°), 8% grade sloping downward from WSW to ENE at the observation site 		
1/10/1969	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of F/P • <u>Station relocation</u>: 0.4mi. WSW of the previous location • <u>New coordinates</u>: 29°48’N 101°34’W (+1’ W) • <u>New description</u>: The local terrain characterized by moderate hills and valleys with the general slope to the S and E toward the Rio Grande River, which is less than a mile away. • <u>F/P</u>: Moved from station Langtry No.2 • <u>Daily recording of observation</u>: Form 612-13 sent to WSO-Brownsville • <u>Time of observation</u>: 08:00 (17:30) • <u>Remarks</u>: Station is located at the Roy Bean Museum. • <u>Exposure (New location)</u>: Tree to the N (5°), museum to the distant ESE, tree to the SE (20°), cedar fence to the S (7°), chain-link fence to the W 	3	2
4/1/1970	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
4/1/1973	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains ≥ 0.50 in 24 hours to WSO-Del Rio • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Del Rio 	0	0
5/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
7/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
8/20/1980	<ul style="list-style-type: none"> • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
9/30/1981	<ul style="list-style-type: none"> • <u>Remarks</u>: River and rainfall reporting services discontinued at this station, river gauges removed from the observation site. 	0	0
11/15/1984	<ul style="list-style-type: none"> • <u>F/P</u>: Installation of Model III timer • <u>Daily recording of observations</u>: Form E-15 	0	1

	sent to WSO-Lubbock		
8/1/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed 75' S of the old CRS location • <u>Exposure (Same location)</u>: Museum to the SE, house to the SE, storage shed to the SE beyond the house, storage shed to the S, cedar fence to the S, chain-link fence to the W 	2	1
3/1/1987	<ul style="list-style-type: none"> • <u>New description</u>: Moderate hills and valleys with general slope to the S and E and the Rio Grande River less than a 1mi. to the W, scrubby type vegetation. • <u>New observer</u>: Vernon N. Billings (Jack R. Skiles) • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock 	1	1
11/8/1988	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 8' NNW of the previous location • <u>SRG</u>: Moved for better exposure • <u>Exposure (New location)</u>: Building to the W (15°) 	0	2
4/2/1996	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.79306 -101.56028 (-0.00694N, -0.00639W), no station move reported • <u>Reporting of observations</u>: Precipitation reported by event (when rains ≥ 0.50 in 24 hours) to WSO-Del Rio • <u>Daily recording of observations</u>: Form B-91 sent to WSO-New Braunfels • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily (by event) to WSO-New Braunfels, temperature digitally reported daily to WSO-New Braunfels • <u>Remarks</u>: Updated for ROSA to AWIPS. 	0	0
5/11/2004	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.79310 -101.56030 (+0.00004N, +0.00002W), no station move reported • <u>MMTS</u>: Replaced equipment 	2	0
4/10/2006	<ul style="list-style-type: none"> • <u>New observer</u>: Unknown (Vernon N. Billings) • <u>F/P</u>: Replaced gauge 	1	2

	<ul style="list-style-type: none"> • <u>Remarks</u>: Previous observer retired. 		
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COOP Station 415579, CD 5: Marathon, Brewster County, TX			
<p>Summary: In plain with nearby mountains. Sporadic observations from 1889-1915, then nearly continuous from 1940 onward. Station moved around within a square mile of Marathon except for a few months east of town in 1969 and the most recent move in 2006, 2 miles southwest of town at a slightly lower elevation. Probably some urbanization effect.</p> <p>Temperature rating: Good (1940-present) Precipitation rating: Very good (1940-present)</p>			
1/1/1889	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation • <u>Original equipment</u>: Standard rain gauge (SRG) • <u>Original coordinates</u>: Unknown • <u>Original elevation</u>: Unknown • <u>Original observer</u>: Unknown • <u>Original description</u>: Mountainous country with rolling valleys between the mountains. 	TEMP Impact	PRCP Impact
1/1/1893	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 7/1/1896. 		
7/1/1896	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Remarks</u>: Reactivation of station closed since 1/1/1893. 		1
1/1/1897	<ul style="list-style-type: none"> • <u>New observer</u>: W.A. Barter (Unknown) • <u>CRS</u>: Door opens to the N • <u>Time of observation</u>: 09:00, 14:00, 18:00 	1	1
2/1/1900	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 1/1/1910 		
1/1/1910	<ul style="list-style-type: none"> • <u>Station relocation</u>: Unknown proximity to the previous location • <u>New coordinates</u>: 30°13'N 103°13'W (Unknown) • <u>New elevation</u>: 4043' (Unknown) • <u>New observer</u>: A.P. Willis (W.A. Barter) • <u>New description</u>: Mountainous country with rolling valleys between the mountains and 	2	2

	<ul style="list-style-type: none"> no forests or bodies of water in the vicinity. <u>SRG</u>: Top of gauge is 4'agl <u>CRS</u>: Bottom of shelter is 1.5'agl, door opens to the W (N), over sod <u>Time of observation</u>: Sunset (09:00, 14:00, 18:00) <u>Remarks</u>: Reactivation of station closed since 2/1/1900. <u>Exposure (New location)</u>: SRG is 115' from the nearest high object, a building 		
9/1/1915	<ul style="list-style-type: none"> <u>Remarks</u>: Station closed until 2/9/1940. 		
2/9/1940	<ul style="list-style-type: none"> <u>Station relocation</u>: Unknown proximity to the previous location <u>New coordinates</u>: 30°12'N 103°15'W (-1'N, +2'W) <u>New observer</u>: Thomas B. Henderson (A.P. Willis) <u>New description</u>: Prairie with low hills. <u>Remarks</u>: Reactivation of station closed since 9/1/1915, located at a light plant. 	2	2
2/14/1948	<ul style="list-style-type: none"> <u>Station relocation</u>: 0.4mi. W of the previous location <u>New coordinates</u>: 30°13'N 103°15'W (+1'N) <u>New elevation</u>: 4050' (+17') <u>New observer</u>: Lawrence A. Preston (Thomas B. Henderson) <u>New description</u>: Rolling plateau with mountains to the N, W, and S in the Trans Pecos Big Bend area. <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours to WSO-El Paso <u>Daily recording of observations</u>: Form 1009 sent to WSO-Houston <u>Remarks</u>: Station is located at the Marathon Motel. River and rainfall reporting services at this station. <u>Exposure (New location)</u>: Laundry building to the NE (10' tall), 4 trees to the S (10', 12' 12', 14' tall), office to the SW (10' tall), cottage to the W (10' tall), several trees to the NW (3'-12' tall), open area to the E 	2	1

4/2/1957	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-13 to WSO-El Paso • <u>Exposure (Same location)</u>: 3 trees to the S (12°, 20°, 25°), office to the SW, 2 trees to the NW (15°) 	0	0
9/1/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. S of the previous location • <u>New coordinates</u>: 30°12'N 103°15'W (-1'N) • <u>New elevation</u>: 4025' (-25') • <u>New observer</u>: Alberto U. Garcia (Lawrence A. Preston) • <u>New description</u>: Rolling plateau with mountains 5-10mi. on all sides. • <u>Time of observation</u>: 07:30 for precipitation, 19:00 for temperature (Sunset) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: House to the SW (27°), building to the W (4°), 2 trees to the NW (8°, 14°), fence to the N and E of the observation site, street to the E beyond the fence 	2	1
12/6/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.4mi. E of the previous location • <u>New elevation</u>: 4020' (-5') • <u>New observer</u>: Juan B. Cardova (Alberto U. Garcia) • <u>Time of observation</u>: 08:00 (07:30 for precipitation, 19:00 for temperature) • <u>Remarks</u>: Station is located at the observer's home. • <u>Exposure (Same location)</u>: Tank to the W, windmill to the W, dwelling to the NW (6°), wire fence to the W and S, alley to the S of the wire fence 	2	1
5/15/1969	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.9mi. E of the previous location • <u>New coordinates</u>: 30°12'N 103°14'W (-1'W) • <u>New elevation</u>: 4080' (+55') • <u>New observer</u>: Jim T. Taylor (Alberto U. Garcia) 	2	1

	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the observer's business. • <u>Exposure (New location)</u>: Tree to the NNE (8°), office to the SW (10°), US Highway to the distant W 		
10/14/1969	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.7mi. WNW of the previous location • <u>New observer</u>: Shirley S. Rooney (Jim W. Taylor) • <u>Time of observation</u>: 07:30 (08:00) • <u>Remarks</u>: Station is located at the observer's home. • <u>Exposure (New location)</u>: Storage shed to the N (5°), dwelling to the WNW (4°), picket fence just to the W 	2	1
3/15/1974	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1300' WSW of the previous location • <u>New elevation</u>: 4040' (-40') • <u>New observer</u>: J.W.T. Harrington (Shirley S. Rooney) • <u>Daily recording of observations</u>: Form E-15 sent to WSO-El Paso • <u>Time of observation</u>: 08:00 (07:30) • <u>Exposure (New location)</u>: Building to the NE (12°), building to the S (5°), building to the SW (15°) 	2	1
7/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
3/5/1975	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.4mi. SW of the previous location • <u>New coordinates</u>: 30°12'N 103°15'W (+1'W) • <u>New elevation</u>: 4021' (-19') • <u>New observer</u>: Jackie McKinney (J.W.T. Harrington) • <u>Remarks</u>: Station is located at the observer's residence. • <u>Exposure (New location)</u>: Observer's residence to the SW (9°), road to the W 	2	1
6/6/1978	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. NE of the previous location • <u>New coordinates</u>: 30°13'N 103°14'W (+1'N, -1'W) 	2	1

	<ul style="list-style-type: none"> • <u>New elevation</u>: 4030' (+9') • <u>New observer</u>: Thomas B. Henderson (Jackie McKinney) • <u>Time of observation</u>: 18:30 (08:00) • <u>Remarks</u>: Station is located at the residence of the observer, who had served from 2/9/1940-2/13/1948, and is compatible for a continuation of the previous record. Former observer was terminated on 5/31/1978. • <u>Exposure (New location)</u>: Shed to the NNE, trees to the SSW, observer's residence to the SW, horse lot just to the W, intersection of Highway 90 with road to the SW 		
10/1/1982	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
8/13/1986	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 0.7mi. NE of the previous location • <u>New elevation</u>: 4090' (+60') • <u>New observer</u>: Alma Chambers (Thomas B. Henderson) • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours (when rains $\geq 1.00''$ in 24 hours) to WSO-El Paso • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Time of observation</u>: 07:00 for precipitation, 18:00 for temperature (18:30) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Previous observer retired due to health reasons on 8/12/1986. • <u>Exposure (New location)</u>: Trees to the SSE (28°), trees to the SW (28°) 	2	2
3/8/1994	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
9/23/1995	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30°12'47"N 103°14'21"W 	0	0

	<ul style="list-style-type: none"> (-13"N, +21"W), no station move reported <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland <u>Remarks</u>: New coordinates obtained via GPS. 		
6/1/1996	<ul style="list-style-type: none"> <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains ≥ 0.50" in 24 hours) to WSO-Lubbock 	0	0
3/15/1999	<ul style="list-style-type: none"> <u>Remarks</u>: Station closed until a new observer can be found (5/21/1999); current observer is unable to take observations. 		
5/21/1999	<ul style="list-style-type: none"> <u>Station relocation</u>: 1.5mi. S of the previous location <u>New coordinates</u>: 30.20833 -103.23889 (-0.00475N, -0.00014W) <u>New elevation</u>: 4055' (-35') <u>New observer</u>: Mustang Propane (Alma Chambers) <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland <u>Time of observation</u>: 08:00 (07:00 for precipitation, 18:00 for temperature) <u>Remarks</u>: Reactivation of station closed since 3/15/1999, located at the observer's place of business. Updated for ROSA to AWIPS. New coordinates obtained via Garmin 45 GPS. <u>Exposure (New location)</u>: Trees to the SSE (28°), trees to the SE (28°), building to the W (10°) 	3	1
8/13/2001	<ul style="list-style-type: none"> <u>New coordinates</u>: 30.20667 -103.24472 (+0.00166N, +0.00583W), no station move reported 	0	0
4/14/2004	<ul style="list-style-type: none"> <u>Station relocation</u>: SRG moved 42'N of the previous location <u>New elevation</u>: 4066' (+11') <u>MMTS</u>: Moved to previous location of the SRG 	1	1
10/11/2006	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) <u>Station relocation</u>: 2.0mi. SW of the previous location 	3	2

	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.19250 -103.27167 (-0.01417N, 0.02695W) • <u>New elevation</u>: 3989' (-77') • <u>Remarks</u>: Station is compatible for continuation of the previous record. 		
7/12/2007	<ul style="list-style-type: none"> • <u>NIMBUS</u>: Replacement of display unit 	0	0
1/1/2009	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 6/1/2009 		
6/1/2009	<ul style="list-style-type: none"> • <u>Remarks</u>: Reactivation of station closed since 1/1/2009. 	1	1

COOP Station 415596, CD 5: Marfa 3W, Presidio County, TX			
<p>Summary: On high plateau with mountains nearby. Station mostly on north side of town until 2000 (east side), and then big moves in 2006 to south and 2008 to west. Urban growth a possible issue for daytime temperatures.</p> <p>Temperature rating: Fair (1958-present) Precipitation rating: Good (1958-present)</p>			
10/13/1958	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates</u>: 30°18'N 104°01'W • <u>Original elevation</u>: 4692' • <u>Original observer</u>: James J. O'Brien • <u>Original description</u>: High rolling plateau near the NW edge of Big Bend area with mountains to the NW and SW • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 18:00 • <u>Remarks</u>: Station is located in the observer's backyard, established in connection with the approved network map of Texas. • <u>Exposure</u>: Tree to the N (5°), 2 trees to the NE (12°, 15°), building to the E (22°), building to the SE (6°), tree to the S (29°), tree to the SW (17°), tree to the W (24°), building to the NW (18°), tree to the NNW (32°) 	TEMP Impact	PRCP Impact

5/22/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: 800' E of the previous location • <u>Remarks</u>: Station is located at the same observer's new residence. • <u>Exposure (New location)</u>: Apartment building to the ESE (23°), tree to the SE (27°) beyond the apartment building, tree to the SSE (31°), house to the SE (13°), house to the WNW (12°), tree to the NW (37°), fence to the N, alley to the N beyond the fence, street to the distant W, walkway just to the SE of the observation site 	2	1
9/24/1962	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. N of the previous location • <u>New elevation</u>: 4706' (+18') • <u>New observer</u>: Harry W. Firstbrook (James J. O'Brien) • <u>New description</u>: High rolling plateau sloping to the S near the NW edge of Big Bend area with high mountains to the distant N, E, and S. • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: House to the N (12°), house to the NE (10°), trees to the SE (27°-30°), house to the S (14°), trees to the SW (23°), hedge to the SW, Second Street to N, Highland Ave to E, First Street to S, fence surrounds the observation site in the yard of the residence and is between the observation site and the obstructions to the S 	2	1
7/24/1968	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) • <u>R/RNG</u>: Installed 25' WNW of the SRG • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station upgraded to class "ab" status from class "a" status. 	0	2
10/20/1968	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Fisher and Porter rain gauge (F/P) • <u>F/P</u>: Installed 10' W of the SRG • <u>Remarks</u>: The R/RNG will be removed when 	0	0

	the F/P is commissioned.		
2/1/1969	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of the R/RNG • <u>F/P</u>: Commissioned effective on this date. 	0	2
7/11/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.9mi. E of the previous location • <u>New coordinates</u>: 30°18'N 103°59'W (-2'W) • <u>New elevation</u>: 4760' (+54') • <u>Remarks</u>: Station is located at the observer's home. Station name change to Marfa 2ENE from Marfa No. 2 • <u>Exposure (New location)</u>: Garage to the NNE (8°), observer's home to the NE (14°), storage shed to the NW, picket fence to E and just to the S of the observation site 	2	2
1/15/1971	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.9mi. W of the previous location • <u>New coordinates</u>: 30°18'N 104°01'W (+2'W) • <u>New elevation</u>: 4710' (-50') • <u>Remarks</u>: Station is located at the observer's home. Station name change to Marfa No. 2 from Marfa 2ENE. • <u>Exposure (New location)</u>: Tree to the NE (14°), tanks to the SE, tree to the SW (20°), tree to the W (23°), observer's home to the (12°) 	2	2
10/1/1972	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
5/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
8/1/1975	<ul style="list-style-type: none"> • <u>F/P</u>: Installation of Mark IV timer 	0	1
10/1/1982	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.1mi. N of the previous location • <u>New observer</u>: Paul Buren (Harry W. Firstbrook) • <u>New description</u>: High rolling plateau sloping to the S. • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Time of observation</u>: 18:00 (17:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Tree to the SE (32°), 	2	1

	tree to the S (28°), garage to the S beyond the tree, house to the SSW, tree to the SW (28°), tree to the WNW (20°), alley to the N		
11/17/1982	<ul style="list-style-type: none"> • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
11/1/1984	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 0.4mi. SSW of the previous location • <u>New observer</u>: Dennis McKnight (Paul Buren) • <u>New description</u>: High rolling plateau sloping S near the NW edge of the Big Bend area, scrubby vegetation outside the city. • <u>F/P</u>: Installation of Model III timer • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Tree to the SE (18°), house to the SE (16°), tree to the S (25°), Rockwall to the N (2.5' tall), street to the N beyond the rock wall, wire fence just to the W, 	2	1
1/10/1991	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.6mi. WNW of the previous location • <u>New elevation</u>: 4760' (+50') • <u>New observer</u>: Mickey Threadgill (Dennis McKnight) • <u>Time of observation</u>: 08:00 (18:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. New observer was the previous observer at the Fort Hancock station. • <u>Exposure (New location)</u>: Building to the N (19°), tree to the S (40°) 	2	1
4/25/1996	<ul style="list-style-type: none"> • <u>F/P</u>: Replacement of the equipment 	0	1
6/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0
2/27/1999	<ul style="list-style-type: none"> • <u>Remarks</u>: Station placed on inactive status until a new observer can be recruited, former observer quit. • <u>Exposure (Same location)</u>: Trees to the N 		

	(30°), house to the SE (5°), tree to the S (35°), house to the S (10°)		
3/11/2000	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed after being placed on inactive status on 2/27/1999. 		
8/15/2000	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.5mi. SE of the previous location • <u>New coordinates</u>: 30.31500 -104.00667 (+0.31500N, -0.01000W) • <u>New elevation</u>: 4730' (-30') • <u>Remarks</u>: Reactivation of station closed since 2/27/1999. 	2	2
11/15/2003	<ul style="list-style-type: none"> • <u>New elevation</u>: 4728' (-2'), no station move reported 	0	0
11/10/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) 	2	0
9/12/2006	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 9/21/2006. 		
9/21/2006	<ul style="list-style-type: none"> • <u>Station relocation</u>: 4.5mi. S of the previous location • <u>New coordinates</u>: 30.25000 -104.04883 (-0.06500N, +0.04166W) • <u>New elevation</u>: 4586' (-142') • <u>Remarks</u>: Reactivation of station closed since 9/12/2006. Station name change to Marfa 4S from Marfa No. 2. 	3	3
4/1/2008	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 7/1/2008. 		
7/1/2008	<ul style="list-style-type: none"> • <u>Station relocation</u>: 3.5mi. WSW of the previous location • <u>New coordinates</u>: 30.31250 -104.07222 (-0.06250N, +0.02389W) • <u>New elevation</u>: 4790' (+204') • <u>Time of observation</u>: 21:00 (8:00) • <u>Remarks</u>: Reactivation of station closed since 4/1/2008. Station name change to Marfa 3W from Marfa 4S. 	3	3

COOP Station 416104, CD 5: Mount Locke, Jeff Davis County, TX

Summary: Mountaintop site with location based on site visit and Google Maps: 30.6713N, 104.0232 W, suggesting an error in latitude in the 1996 GPS fix. Stable site, with inhomogeneities possible from nearby parking lot.

<p><u>Temperature rating:</u> Very good (1935-present) <u>Precipitation rating:</u> Excellent (1935-present)</p>			
2/12/1935	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates:</u> 30°40'N 104°00'W • <u>Original elevation:</u> 6790' • <u>Original observer:</u> McDonald Observatory • <u>Original description:</u> Country mountainous and is located on top of a mountain. • <u>Remarks:</u> Station is located at the McDonald Observatory. 	TEMP Impact	PRCP Impact
11/2/1937	<ul style="list-style-type: none"> • <u>CRS:</u> Bottom of shelter is 4'agl, door opens to the N, over thin turf • <u>SRG:</u> Top of gauge is 2.5'agl • <u>Exposure (Same location):</u> Unobstructed with no high objects nearby 	0	0
8/1/1939	<ul style="list-style-type: none"> • <u>Remarks:</u> Recording rain gauge (R/RNG) in operation at the McDonald's Observatory station until 5/31/1948. 	0	2
6/1/1948	<ul style="list-style-type: none"> • <u>Equipment change:</u> Addition of R/RNG • <u>Daily recording of observations:</u> Form 1009 sent to WSO-Houston • <u>Time of observation:</u> Sunset • <u>Remarks:</u> Records from R/RNG prior have been published as McDonald Observatory; effective today will be published as Mount Locke. • <u>Exposure (Same location):</u> Low bushes to the NE, observatory to the E beyond the low bushes 	1	2
9/25/1962	<ul style="list-style-type: none"> • <u>New description:</u> Located atop Mount Locke, one of the highest peaks in the Davis Mountains, with low brush and medium pine and oak trees. Very mountainous sloping sharply 500'-2000' downhill in all directions. • <u>Daily recording of observations:</u> Form 612-14 sent to WRPC • <u>Time of observation:</u> 18:00 (Sunset) 	2	1

	<ul style="list-style-type: none"> • <u>Exposure (Same location)</u>: Trees to the NE (14°), McDonald observatory to the SE (38°), trees to the SE (22°), trees to the S (14°), trees to the W (21°), cul-de-sac road to the E beyond the trees 		
4/17/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 225' S of the previous location • <u>Daily recording of observations</u>: Form 612-25 sent to NWRC • <u>Remarks</u>: Anemometer and evaporation equipment added to the observation site. • <u>Exposure</u>: Trees in all directions (12°-18°), observatory to the NE beyond the trees, road to the S beyond the trees, chain-link fence surrounds the observation site and is between the trees and the observation site 	2	1
9/12/1974	<ul style="list-style-type: none"> • <u>R/RNG</u>: Replacement of the timer mechanism 	0	1
10/1/1978	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-22 sent to NCC 	0	0
2/28/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Lubbock 	0	1
8/27/1986	<ul style="list-style-type: none"> • <u>Time of observation</u>: 09:00 (18:00) • <u>F/P</u>: Replaced equipment • <u>Exposure (Same location)</u>: Trees in all directions (35°) 	3	2
4/1/1996	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.70528 -104.02333 (+0.03861N, +0.2333W), no station move reported • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Midland • <u>Remarks</u>: Removal of the anemometer from the observation site. • <u>Remarks</u>: Likely an error in the new longitude, previous longitude looks better according to a map. 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-Midland • <u>Remarks</u>: Updated for ROSA to AWIPS. 	0	0

COOP Station 416780, CD 6: Pandale 1 N, Val Verde County, TX			
<p>Summary: Station at bottom of canyons of Pecos and tributaries. Temperatures only recorded since 1965. Station was well to the south from 1975-1987, but in same general area otherwise. Not known to what extent growth of salt cedar has affected canyon bottomland temperatures.</p> <p>Temperature rating: Poor (1965-present) Precipitation rating: Good (1943-present)</p>			
7/20/1943	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation • <u>Original equipment:</u> Standard rain gauge (SRG) • <u>Original coordinates:</u> 30°11'N 101°35'W • <u>Original elevation:</u> 1664' • <u>Original observer:</u> Henry J.Y. Mills, Jr. • <u>Original description:</u> Mountainous, sparsely wooded rangeland on the west slope of Pecos River Valley. Dry creek known as Howard's Draw drains into the Pecos River 2.5mi. SSW. • <u>Daily recording of observations:</u> Form 1009 sent to WSO-Fort Worth • <u>Remarks:</u> Station is located at the ranch of the observer. The observer has a private record for six years prior to his official appointment. 	TEMP Impact	PRCP Impact
2/16/1948	<ul style="list-style-type: none"> • <u>Daily recording of observations:</u> Form 1009 sent to WSO-Houston • <u>Time of observation:</u> 07:00 • <u>Exposure (Same location):</u> Fence to the S (4' tall), post office and store to the SSW, tree to the NW (25' tall), observer's residence to the NW (18' tall), country road to the E, road to the S 		0
8/1/1957	<ul style="list-style-type: none"> • <u>New description:</u> Pecos River is approximately 1.5mi. to the W. • <u>Reporting of observations:</u> Precipitation reported when rains $\geq 1.00''$ in 24 hours to WSO-Brownsville • <u>Daily recording of observations:</u> Form 612-13 sent to WSO-Brownsville 		0

	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the observer's residence. River and rainfall reporting services added at this station. Station upgraded to class "ab" status from class "a" status. • <u>Exposure (Same location)</u>: Tree to the N (18°), post office to the SSW (6°), observer's residence to the NNW (10°), fence to the E and S, gravel road to the SE beyond the fence 		
10/25/1959	<ul style="list-style-type: none"> • <u>Station relocation</u>: 70' WSW of the previous location • <u>New coordinates</u>: 30°11'N 101°34'W (-1'W) • <u>Original description</u>: On the W side of a wide N-S draw, 0.6mi. downstream from the junction of Howard Creek and Devil's River Canyon, completely surrounded by curving brushy hill ranges. • <u>Time of observation</u>: 06:00 (07:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record, relocated because of a growing pecan tree. • <u>Exposure</u>: Observer's residence to the NNE, tree to the NE (16°), post office to the SE (15°), trees to the S (8°), trees to the NNW (11°) 		1
4/13/1962	<ul style="list-style-type: none"> • <u>SRG</u>: Cleaned and painted the gauge and the support • <u>Remarks</u>: The observer's brother seems to do most of the work, and their history of reporting is not good. This station has been approved for temperature observations in the future. 		0
6/25/1965	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS) and Maximum-minimum thermometer (MxMn) • <u>Station relocation</u>: 60' NW of the previous location • <u>New observer</u>: Moss A. Mills (Henry J.Y. Mills, Jr.) • <u>New description</u>: Rugged hills with narrow valleys. 		0

	<ul style="list-style-type: none"> • <u>CRS</u>: Installed 120' S of the SRG, mount was lubricated • <u>Remarks</u>: The installation of the CRS was almost complete when the observer's wife saw the size of the CRS and requested it to be moved further from the dwelling. 		
7/30/1965	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 125' S of the previous location • <u>New description</u>: Rugged hills and moderately narrow valleys constitute the terrain; the Pecos River is approximately 1.5mi. W. • <u>Time of observation</u>: 09:00 (06:00) • <u>SRG</u>: Gauge and support were painted, moved because of an observer request • <u>CRS</u>: Painted • <u>MxMn</u>: Minimum thermometer was defective, maximum thermometer giving the observer difficulty, both thermometers replaced • <u>Remarks</u>: Equipment move made because of an observer's request. • <u>Exposure (New location)</u>: Post office and store to the NE (8°), tree to the E (12°), road to the E 	1	1
8/1/1966	<ul style="list-style-type: none"> • <u>Time of observation</u>: 17:00 (09:00) 	3	1
4/26/1967	<ul style="list-style-type: none"> • <u>MxMn</u>: Observer could not explain apparent "high sets" in his February report • <u>Remarks</u>: Equipment was cleaned and checked, all were in good condition. Appears to becoming negligent with time, as he is trying to sell his business and move to Florida. 	3	0
1/11/1968	<ul style="list-style-type: none"> • <u>New observer</u>: A.F. Mills (Moss A. Mills) • <u>Time of observation</u>: 09:00 (17:00) • <u>Remarks</u>: Equipment was cleaned and checked, all were in very good condition. Previous observer moved to Florida, and his brother assumed control of observing. 	3	0
7/16/1971	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.6mi. NNW of the previous location • <u>New coordinates</u>: 30°12'N 101°34'W (+1'N) • <u>New elevation</u>: 1720' (+56') • <u>Daily recording of observations</u>: Form E-15 	2	1

	<p>sent to WSO-Brownsville</p> <ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the observer's home. • <u>Exposure (New location)</u>: Dwelling to the NE, tree to the NNW (20°) 		
8/15/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.6mi. SSE of the previous location • <u>New coordinates</u>: 30°11'N 101°34'W (-1'N) • <u>New elevation</u>: 1664' (-56') • <u>New observer</u>: Henry Mills (A.F. Mills) • <u>Time of observation</u>: 19:00 (09:00) • <u>Remarks</u>: Station is located at the post office. • <u>Exposure (New location)</u>: Post office and store to the NE (8°), tree to the E (18°), road to the E beyond the post office and store, grass and scrub mesquite to the W 	2	1
4/1/1973	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours to WSO-Del Rio • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Del Rio 	0	0
4/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in rate of the observer pay. 	0	0
4/11/1975	<ul style="list-style-type: none"> • <u>Station relocation</u>: 4.0mi. S of the previous location • <u>New coordinates</u>: 30°07'N 101°34'W (-4'N) • <u>New elevation</u>: 1610' (-54') • <u>New observer</u>: Myrtle G. Everett (A.F. Mills) • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours (when rains $\geq 1.00''$ in 24 hours) to WSO-Del Rio • <u>Remarks</u>: Station is located at the observer's residence. Station name changed to Pandale 4S from Pandale. • <u>Exposure (New location)</u>: Storage to the S (5°), trailer house to the SW (6°), Pecos River to the distant W 	3	3
9/9/1976	<ul style="list-style-type: none"> • <u>Time of observation</u>: 07:00 (19:00) 	3	2
10/1/1982	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in rate of the observer pay. 	0	0
11/1/1984	<ul style="list-style-type: none"> • <u>Remarks</u>: Station downgraded to class "b" status from class "ab" status. 	0	0
3/28/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), replaced the 	2	1

	<p>CRS and MxMn</p> <ul style="list-style-type: none"> • <u>Station relocation</u>: 2.0mi. E of the previous location • <u>New coordinates</u>: 30°07'N 101°32'W (-2'W) • <u>New elevation</u>: 1590' (-20') • <u>New observer</u>: Tom Everett Sr. (Myrtle G. Everett) • <u>New description</u>: Rugged hills and moderately narrow valleys constitute the terrain; the Pecos River is within 900' of observer's home. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Remarks</u>: Station is located at the observer's ranch house and is compatible for a continuation of the previous record. Station upgraded to class "ab" status from class "b" status. Station name change to Pandale 5SSE from Pandale 4S. • <u>Exposure (New location)</u>: House to the ENE, trees to the N, S, and W, wire fence surrounding house to the ENE, driveway to the NW, scrub and mesquite to the W 		
7/9/1987	<ul style="list-style-type: none"> • <u>Station relocation</u>: 5.0mi. NNW of the previous location • <u>New coordinates</u>: 30°12'N 101°33'W (+5'N, +1'W) • <u>New elevation</u>: 1640' (+50') • <u>New observer</u>: Billy Lockridge (Tom Everett Sr.) • <u>New description</u>: Moderate hills and narrow valleys with scrub brush vegetation. • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Station name change to Pandale 2NE from Pandale 5SSE • <u>Exposure (New location)</u>: Building to the N (6°) 	3	3
7/31/1988	<ul style="list-style-type: none"> • <u>Remarks</u>: Station placed on inactive status after the former observer sold his store, waiting on the new store owner to arrive. 		
11/1/1988	<ul style="list-style-type: none"> • <u>New observer</u>: Vivian Grimm (Billy Lockridge) • <u>Time of observation</u>: 08:00 (07:00) 	1	1

	<ul style="list-style-type: none"> • <u>Remarks</u>: Reactivation of station closed since 7/31/1988. Equipment not moved so compatible for a continuation of the previous record. 		
1/1/1995	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. NNE of the previous location • <u>New coordinates</u>: 30°12'N 101°32'W (-1'W) • <u>New elevation</u>: 1670' (+30') • <u>New observer</u>: Cindy Davis (Billy Lockridge) • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Station name change to Pandale 3NE from Pandale 2NE. • <u>Exposure (New location)</u>: Building to the S (6°) 	2	1
4/11/1996	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.0mi. SW of the previous location • <u>New coordinates</u>: 30.20639 -101.55750 (+0.00639N, +0.02417W) • <u>New elevation</u>: 1689' (+19') • <u>New observer</u>: Betty Kleeper (Cindy Davis) • <u>New description</u>: Narrow canyon running N-S, 2700' wide with the top of the canyon walls 400' with scrub vegetation. • <u>Reporting of observations</u>: Precipitation reported by event (when rains $\geq 0.50''$ in 24 hours) to WSO-New Braunfels • <u>Daily recording of observations</u>: Form B-91 sent to WSO-New Braunfels • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Station name change to Pandale 1 N from Pandale 3NE. Encoder pad or phone installed at the observation site. New coordinates obtained via GPS. • <u>Exposure (New location)</u>: Trailer to the E (6°), 2 poles to the S (11°, 13°) 	3	1
1/10/2000	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-New Braunfels, temperature digitally reported 	0	0

	daily to WSO-New Braunfels		
	<ul style="list-style-type: none"> • <u>Remarks</u>: Updated for ROSA to AWIPS. 		

COOP Station 416792, CD 5: Panther Junction, Brewster County, TX			
<p>Summary: Station located at the northeast foot of the Chisos Mountains. Problems with precipitation observers in 1960s. Station should be stable since 1965, except possibly for MMTS installation and relocation in 1986.</p> <p>Temperature rating: Fair (1955-present) Precipitation rating: Very good (1955-present)</p>			
3/21/1955	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Recording rain gauge (R/RNG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates</u>: 29°19'N 103°13'W • <u>Original elevation</u>: 3800' • <u>Original observer</u>: Big Bend National Park Service • <u>Original description</u>: Long, sharp slopes with desert vegetation and large mountains near the base of the slope to the NE. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>R/RNG</u>: Moved from the Boquillas Ranger Station • <u>Time of observation</u>: 17:00 • <u>Remarks</u>: Station is located at the Panther Junction National Park Service headquarters. Unofficial weather records prior to being recognized as a station. • <u>Exposure</u>: Headquarters building 60' to the E (12' tall), driveway just to the S 	TEMP Impact	PRCP Impact
9/20/1962	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. N of the previous location • <u>New elevation</u>: 3740' (-60') • <u>New description</u>: Located on a long slope NE of the Chisos Mountains with peaks well over 	3	1

	<p>7000', slopes NE about 10mi. with small hills and a valley about 15mi. across in mountainous area.</p> <ul style="list-style-type: none"> • <u>R/RNG</u>: Not relocated • <u>Reporting of observations</u>: Precipitation reported daily to WSO-El Paso, temperature reported daily to WSO-El Paso • <u>Remarks</u>: Station is located at the Big Bend National Park headquarters and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Service building to the SE (8°), building to the S (7°), park headquarters to the NW (5°) 		
11/1/1962	<ul style="list-style-type: none"> • <u>New observer</u>: National Park Service Panther Junction Station (Big Bend National Park Service), change in name only • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Remarks</u>: Station is located at the Panther Junction National Park station. 	0	0
10/14/1964	<ul style="list-style-type: none"> • <u>SRG</u>: Painted • <u>R/RNG</u>: Painted • <u>CRS</u>: Painted • <u>MxMn</u>: Cleaned and the mounts were lubricated • <u>Remarks</u>: Equipment was cleaned and checked, all were in very good condition. Discrepancies in the reports at this station, and observer promised to correct this. 	1	3
7/14/1965	<ul style="list-style-type: none"> • <u>R/RNG</u>: Timer was causing trouble and was replaced. • <u>MxMn</u>: Cleaned and the mounts lubricated • <u>Remarks</u>: R/RNG reported to be entirely out of order and was corrected, with observers shown how to properly operate. 	1	3
10/20/1965	<ul style="list-style-type: none"> • <u>MxMn</u>: Cleaned and the mounts were lubricated • <u>Remarks</u>: Equipment was cleaned and checked. 	1	0
6/24/1966	<ul style="list-style-type: none"> • <u>SRG</u>: Painted • <u>CRS</u>: Painted • <u>Remarks</u>: Equipment was cleaned and 	1	1

	checked.		
11/1/1966	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported daily during the work week (daily) to WSO-El Paso, temperature reported daily during the work week (daily) to WSO-El Paso • <u>Time of observation</u>: 08:00 (17:00) 	0	0
1/12/1972	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P) • <u>F/P</u>: Installed 25' NNW of the R/RNG • <u>R/RNG</u>: To be removed when the F/P is commissioned. 	0	0
2/1/1972	<ul style="list-style-type: none"> • <u>Equipment</u>: Removal of the R/RNG • <u>F/P</u>: Commissioned for use 	0	2
7/1/1975	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form F-10 sent to NCC 	0	0
8/20/1980	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation and temperature not reported • <u>Remarks</u>: Addition of solar panel and rechargeable battery to the observation site. 	0	0
6/9/1986	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), replaced the CRS and MxMn • <u>MMTS</u>: Installed 345' NW of the old CRS location • <u>Daily recording of observations</u>: Form E-15 sent to NCC • <u>Exposure (Same location)</u>: Building to the N (5°) 	3	1
5/23/1995	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.32686 -103.20739 (+0.01019N, -0.00928W), no station move reported • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland • <u>Remarks</u>: New coordinates obtained via GPS. 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.32778 -103.20611 (+0.00092N, -0.00128W), no station move reported 	0	0
11/2/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS), removal of MMTS • <u>New coordinates</u>: 29.32722 -103.20611 (-0.00056N), no station move reported • <u>Remarks</u>: New coordinates obtained via 	2	0

	Garmin V.		
4/12/2005	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of MMTS, removal of NIMBUS 	1	0
5/3/2005	<ul style="list-style-type: none"> <u>Equipment</u>: Addition of NIMBUS, removal of MMTS 	1	0

COOP Station 416892, CD 5: Pecos, Reeves County, TX			
<p>Summary: Flat plain site with station on range/farmland from 1893-1917, then after gap, was located in town from 1934-2001. Inhomogeneities due to urban irrigation and changing farming irrigation practices in surrounding lands.</p> <p>Temperature rating: Fair (1893-2001) Precipitation rating: Very good (1893-2001)</p>			
3/1/1889	<ul style="list-style-type: none"> <u>Initial station observations</u>: Precipitation and temperature <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) <u>Original coordinates</u>: 31°25'N 103°32'W <u>Original elevation</u>: 2580' <u>Original observer</u>: Unknown <u>Original description</u>: Rolling country 3mi. to the E of the town of Pecos. 	TEMP Impact	PRCP Impact
1/1/1904	<ul style="list-style-type: none"> <u>New observer</u>: Ty Casey (Unknown) 	0	0
11/1/1913	<ul style="list-style-type: none"> <u>New observer</u>: J.M. Thomson (Ty Casey) <u>CRS</u>: Bottom of shelter is 4'agl, over sod <u>SRG</u>: Top of gauge is 3.7'agl <u>Time of observation</u>: 07:00, 19:00 <u>Exposure (Same location)</u>: SRG is 220' from the nearest high object, a house 	0	0
9/1/1914	<ul style="list-style-type: none"> <u>New observer</u>: F.E. Stewart (J.M. Thomson) 	0	0
2/1/1915	<ul style="list-style-type: none"> <u>New observer</u>: J.W. Jackson (F.E. Stewart) 	0	0
12/31/1916	<ul style="list-style-type: none"> <u>Remarks</u>: Station closed until 6/1/1934. 		
6/1/1934	<ul style="list-style-type: none"> <u>Station relocation</u>: 3.5mi. ENE of the previous location <u>New coordinates</u>: 31°26'N 103°30'W (+1'N, -2'W) <u>New observer</u>: Southern Union Gas Company 	3	2

	<p>(J.W. Jackson)</p> <ul style="list-style-type: none"> • <u>SRG</u>: Top of gauge is 3.0'agl (-0.7') • <u>CRS</u>: Bottom of shelter is 6'agl (+2'), door opens to the N, over gravel (sod) • <u>Time of observation</u>: 08:30 (07:00, 19:00) • <u>Remarks</u>: Reactivation of station closed since 1/1/1917. Station well located with very good exposure, observations well done and records in good shape. • <u>Exposure (Same location)</u>: SRG is 50' from the nearest high object 		
3/15/1956	<ul style="list-style-type: none"> • <u>New description</u>: Nearly level to slightly rolling plains and treeless with the Pecos River 1.0mi. to the E. • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 08:00 (08:30) • <u>Remarks</u>: Station is located at the Southern Union Gas Company Border Station. • <u>Exposure (Same location)</u>: Shop to the NE (8°), tool shed to the W (6°), 4th Street to the N, Grange Street to the E 	0	0
6/1/1957	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ at 08:00 or $\geq 0.50''$ at 13:00, 19:00 to WSO-Brownsville • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-Brownsville • <u>Remarks</u>: River and rainfall reporting services added at this station. 	0	0
3/3/1962	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the Pecos Border Station. • <u>Exposure (Same location)</u>: Shop to the E (28°), tool shed to the E (15°), 4th Street to the N, fence to the N of the observation site, Almond Street to the E, Orange Street to the SW 	0	0
12/15/1964	<ul style="list-style-type: none"> • <u>SRG</u>: Gauge and support were painted • <u>CRS</u>: Painted • <u>MxMn</u>: Minimum thermometer recording 1.5 degrees too low and replaced, maximum was cleaned and the mount lubricated • <u>Remarks</u>: Equipment is in good condition and the exposure is excellent. Observation is done 	1	0

	very efficiently by company personnel.		
5/12/1965	<ul style="list-style-type: none"> • <u>Remarks</u>: Forms for the past 6 months were not received in time for processing. 	0	0
5/10/1968	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.0mi. SW of the previous location • <u>New coordinates</u>: 31°24'N 103°31'W (-2'N, +1'W) • <u>New elevation</u>: 2620' (+40') • <u>New observer</u>: R.G. Woodruff (Southern Union Gas Company) • <u>New description</u>: Slightly rolling, partially irrigated farm and ranch land. • <u>SRG</u>: Paint badly discolored due to leaking gas at previous observation site, cleared and a coat of paint was added • <u>CRS</u>: Paint badly discolored due to leaking gas at previous observation site, cleared and a coat of paint was added • <u>Remarks</u>: Station is located at the observer's home, relocated to a site with very good exposure in the SW Pecos River Valley. New observer has been reporting for the former observer for the last 9 years. • <u>Exposure (New location)</u>: Shed to the N (4°), dwelling to the NE (5°), wood panel fence just to the W (5' tall), Wyoming Street to the E beyond the dwelling, street to the S, alley to the W just beyond the wood panel fence 	2	1
5/13/1969	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.4mi. ENE of the previous location • <u>New coordinates</u>: 31°25'N 103°30'W (+1'N, -1'W) • <u>New elevation</u>: 2610' (-10') • <u>New observer</u>: Leon V. McCracken (R.G. Woodruff) • <u>Time of observation</u>: 07:30 (08:00) • <u>Exposure (New location)</u>: Tree to the NE (16°), tree to the ESE (25°), bush to the W (13°), dwelling to the NW (10°), tree to the NNW (18°), wood panel fence surrounding the observation site, alley just to the E of the fence, South Park Street to the W beyond the dwelling 	2	1

4/1/1973	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ at 08:00 or $\geq 0.50''$ at 13:00, 19:00 to WSO-Midland • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Midland 	0	0
6/11/1987	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed 40' N of the old CRS location. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Exposure (Same location)</u>: House to the NW (10°) 	2	0
2/2/1994	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
3/31/1995	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains $\geq 1.00''$ at 08:00 or $\geq 0.50''$ at 13:00, 19:00) to WSO-Midland, temperature digitally reported daily to WSO-Midland 	0	0
5/23/1999	<ul style="list-style-type: none"> • <u>New observer</u>: Frank Apolinar (Leon V. McCracken) • <u>Exposure (Same location)</u>: House to the W (10°) 	1	1
12/27/2001	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed. 		
12/27/2001	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed. 		

COOP Station 417262, CD 5: Presidio, Presidio County, TX

Summary: Station is located along Rio Grande. Station moved around town a lot. Temperatures probably strongly affected by changes/increases in irrigation.

Temperature rating: Fair (1943-present)

Precipitation rating: Very good (1943-present)

5/10/1943	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and 	TEMP	PRCP
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		Impact	Impact
	temperature <ul style="list-style-type: none"> • <u>Original coordinates</u>: 29°33'N 104°23'W • <u>Original elevation</u>: 2582' • <u>Original observer</u>: Unknown 		
10/16/1950	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>New coordinates</u>: 29°33'N 104°23'W • <u>New elevation</u>: 2582' • <u>New observer</u>: Oliver Harper (Unknown) • <u>New description</u>: Broad, level to slightly rolling, Rio Grande Valley with mountains in the distance in all directions. Sandy soil, with the Rio Grande River 0.5mi. to the W and Cibolo Creek 0.5mi. to the NW. • <u>Remarks</u>: Station is located at Harper's Hardware store. A second order synoptic station, with anemometer, barograph, pscyhrometer, and thermograph at the observation site. 	0	0
3/6/1956	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported every 6 hours to WSO-El Paso, temperature reported every 6 hours to WSO-El Paso • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-El Paso • <u>Time of observation</u>: Midnight • <u>Exposure (Same location)</u>: Anemometer to the E (17°), Harper's Hardware store to the SE, trees to the S (37°), building to the SW (5°), building to the W (5°), Main Street to the S 	0	0
12/1/1964	<ul style="list-style-type: none"> • <u>New description</u>: Town located on S slope of foothills above the Rio Grande River, about 1mi. N of and 32' above the river in a valley that is 2-4mi. wide, with sparse surrounding vegetation. • <u>Exposure (Same location)</u>: House 15' to the ESE (8') 	0	0
7/1/1969	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.8mi. ESE of the previous location • <u>New coordinates</u>: 29°33'N 104°21'W (-2'W) • <u>New elevation</u>: 2590' (+8') 	2	1

	<ul style="list-style-type: none"> • <u>New observer</u>: Ted Millington (Oliver Harper) • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 18:00 (Midnight) • <u>Remarks</u>: Station is located at the observer's grocery store. Station has changed from second order synoptic station to non-paid climatological, located at the observer's grocery store. Anemometer, barograph, and thermograph removed from the observation site. 		
11/21/1969	<ul style="list-style-type: none"> • <u>MxMn</u>: Separation in the minimum thermometer of 2°F, spare minimum thermometer left • <u>Remarks</u>: Equipment was checked and found to be in good condition. Observer has been doing excellent job with the readings and observations. 	3	0
8/17/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.8mi. WNW of the previous location • <u>New coordinates</u>: 29°34'N 104°23'W (+1'N, +2'W) • <u>New observer</u>: Hector Acosta (Ted Millington) • <u>New description</u>: Located in the Rio Grande Valley where extensive truck farming is practiced and the river less than 1.0mi. away. • <u>Daily recording of observations</u>: Form F-10 sent to NCC • <u>Time of observation</u>: 17:30 (18:00) • <u>Remarks</u>: Station is located at the observer's home. • <u>Exposure (New location)</u>: 3 trees to the E (15°), dwelling to the E beyond the trees, street to the S, street to the W 	2	1
11/28/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.1mi. NE of the previous location • <u>New observer</u>: F. Daly (Hector Acosta) • <u>Reporting of observations</u>: Precipitation reported daily to WSO-Lubbock, temperature reported daily to WSO-Lubbock • <u>Daily recording of observations</u>: Form F-10 sent to WSO-Lubbock • <u>Time of observation</u>: 17:00 (17:30) 	2	1

	<ul style="list-style-type: none"> • <u>Remarks</u>: Station is located at the observer's home. • <u>Exposure (New location)</u>: Observer's home to the NE (10°), 4 trees to the WNW (10°, 11°, 12°, 13°), house to the NW (9°) 		
7/22/1976	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.0mi. ESE of the previous location • <u>New coordinates</u>: 29°33'N 104°21'W (-1'N, -2'W) • <u>New elevation</u>: 2570' (-20') • <u>New observer</u>: Raul Barriga (F. Daly) • <u>Time of observation</u>: 18:30 (17:00) • <u>Remarks</u>: Station is located at the observer's home and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Storage shed to the E (5°), residence to the NNW (11°), road to the W 	2	1
5/6/1980	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.3mi. NW of the previous location • <u>New coordinates</u>: 29°34'N 104°23'W (+1'N, +2'W) • <u>New elevation</u>: 2550' (-20) • <u>New observer</u>: International Boundary and Water Commission (Raul Barriga) • <u>New description</u>: Located in the broad Rio Grande Valley where extensive cantaloupe farming is practiced and the river is less than 1.0mi. away, mountains with elevations of 1800' on all sides. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Time of observation</u>: 18:00 (18:30) • <u>Remarks</u>: Station is located at the Border Control Compound and is compatible for a continuation of the previous record. Previous observer missed taking several observations each month and did not take care of equipment, leading to his termination on 5/5/1980. • <u>Exposure (New location)</u>: Garages to the WSW, chainlike fence just to the N and E of the observation site, US Highway 67 to the E 	2	1

	beyond the chain-link fence		
2/2/1983	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.0mi. SE of the previous location • <u>Reporting of observations</u>: Precipitation reported daily to WSO-El Paso, temperature reported daily to WSO-El Paso • <u>Remarks</u>: Station is located at the Border Control Compound and is compatible for a continuation of the previous record. Equipment was moved as they were paving the area with asphalt and the equipment would have been sitting over the asphalt. • <u>Exposure (New location)</u>: Office to the NE, maintenance building to the SE, fence to the W (6' tall), parking area to the E, road to the W beyond the fence 	2	1
1/26/1986	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>New description</u>: Located in the broad Rio Grande Valley and the river is less than 1.0mi. away, mountains on all sides. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Exposure (Same location)</u>: Building to the E (26°) 	2	0
9/14/1989	<ul style="list-style-type: none"> • <u>Station relocation</u>: 1.3mi. ESE of the previous location • <u>New coordinates</u>: 29°32'N 104°20'W (-2'N, -3'W) • <u>New elevation</u>: 2560' (+10) • <u>New observer</u>: John Ferguson (International Boundary and Water Commission) • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. The previous observer was terminated effective 8/23/1989. • <u>Exposure (New location)</u>: House to the N (10°), tree to the W (22°) 	2	1
3/8/1994	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock 	0	0

	<ul style="list-style-type: none"> • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 		
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-El Paso, temperature digitally reported daily to WSO-El Paso 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 29.55111 -104.34258 (+0.01778N, +0.00925W), no station move reported • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Midland, temperature digitally reported daily to WSO-El Paso • <u>Remarks</u>: Updated for ROSA to AWIPS. New coordinates obtained via Garmin 45 GPS. 	0	0
5/1/2005	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.5mi. NW of the previous location • <u>New coordinates</u>: 29.57111 -104.37139 (+0.0200N, +0.02611W) • <u>New elevation</u>: 2605' (+45') • <u>Time of observation</u>: 08:00 (17:00) • <u>Remarks</u>: Station is compatible for a continuation of the previous record. 	3	1
11/22/2006	<ul style="list-style-type: none"> • <u>MMTS</u>: Moved 76' N of the previous location 	2	0
5/19/2009	<ul style="list-style-type: none"> • <u>Station relocation</u>: 371' to the WNW of the previous location • <u>New elevation</u>: 2610' (+5') • <u>New observer</u>: Unknown (John Ferguson) • <u>Remarks</u>: Station is located at the new office. 	2	1

COOP Station 417481, CD 5: Red Bluff Dam, Reeves County, TX

Summary: Station on height-of-land with Red Bluff Reservoir just to the north. Station location extremely stable, unaffected by irrigation or urbanization.

Temperature rating: Very good (1939-2004)

Precipitation rating: Excellent (1939-2004)

10/12/1939	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature 	TEMP Impact	PRCP Impact
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	<ul style="list-style-type: none"> • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates</u>: 31°54'N 103°55'W • <u>Original elevation</u>: 2800' • <u>Original observer</u>: Red Bluff Water Power Control District • <u>Original description</u>: Red Bluff Lake 0.3mi. to the N, grazing land nearby with gravel at the observation site. • <u>Remarks</u>: Station is located at Red Bluff Dam, with an anemometer and evaporation equipment at the observation site. 		
9/1/1948	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Houston • <u>Time of observation</u>: Sunset • <u>Remarks</u>: Station closed until 9/12/1950. 	0	0
9/12/1950	<ul style="list-style-type: none"> • <u>Station relocation</u>: 900' E of the previous location • <u>New description</u>: Gently rolling with scrub brush. • <u>New observer</u>: H.G. Hamilton (Red Bluff Water Power Control District) • <u>Daily recording of observations</u>: Form 1024 sent to WSO-Houston • <u>Time of observation</u>: 18:00 (Sunset) • <u>Remarks</u>: Reactivation of station closed since 9/1/1948, located at Red Bluff Lodge. • <u>Exposure (New location)</u>: Cabin to the SE, 2 trees to the S (10°, 10°), lodge to the S (30°), cabin to the SW, observation site at the edge of a yard that slopes downhill to the N 	2	1
4/14/1951	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of a Recording rain gauge (R/RNG) 	0	2
1/1/1952	<ul style="list-style-type: none"> • <u>New observer</u>: W.B. Jenson (H.G. Hamilton) • <u>Remarks</u>: The former observer resigned and moved away. New observer is operator of Red Bluff Dam for the Red Bluff Power Control District. 	1	1
6/1/1957	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours to WSO-Brownsville 	0	0

	<ul style="list-style-type: none"> • <u>Remarks</u>: River and rainfall reporting services added at this station. 		
10/23/1958	<ul style="list-style-type: none"> • <u>New description</u>: Sloping moderately N about 600' to Red Bluff Lake. Rolling plains, broken by draws to the Pecos River, with only brush type timber, mostly mesquite vegetation. • <u>Daily recording of observations</u>: Form 612-25 sent to WRPC • <u>Exposure (Same location)</u>: Building to ESE (14°), Red Bluff Lodge to the SE (3°), building to the S (19°), building to the SW (4°), mesquite brush to the N 	0	0
1/11/1966	<ul style="list-style-type: none"> • <u>MxMn</u>: Thermometers cleaned and checked, maximum thermometer mount was lubricated, minimum was giving trouble and replaced, observer said minimum mount was likely accurate since 12/27/1965 • <u>Remarks</u>: All equipment was cleaned and checked. Observer doing good job with reports and equipment receives excellent care. Occasional vandalism problems, even though the gate protecting the equipment was locked. 	2	0
9/2/1966	<ul style="list-style-type: none"> • <u>MxMn</u>: Maximum was difficult to reset, and was replaced • <u>Remarks</u>: All equipment was cleaned, checked, and painted. 	1	0
10/27/1967	<ul style="list-style-type: none"> • <u>Remarks</u>: All equipment was cleaned and checked. 	0	0
1/1/1970	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-25 sent to NWRC 	0	0
11/18/1971	<ul style="list-style-type: none"> • <u>Remarks</u>: Old anemometer was removed from the premises. 	0	0
5/1/1972	<ul style="list-style-type: none"> • <u>New observer</u>: R.D. Proctor (W.B. Jenson) 	1	1
4/1/1973	<ul style="list-style-type: none"> • <u>New description</u>: The location is about 600' to Red Bluff Lake, with a moderate slope to the N, which is a lake. The general terrain is broken plains, broken by draws to the Pecos River, with only brush type timber, mostly mesquite vegetation. • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours at 07:00 or $\geq 0.50''$ in 6 hours at 13:00, 19:00 	1	1

	<p>(when rains $\geq 1.00''$ in 24 hours) to WSO-Midland</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Midland • <u>Remarks</u>: Change in supervision and operations of this station. • <u>Exposure (Same location)</u>: 4 trees to the N (6°, 6°, 6°, 6°), building to the NE (14°), Red Bluff Lodge to the ESE (3°), building to the S (14°) 		
4/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Station placed on inactive status, received information that reactivation not possible under the present arrangement. 		
2/4/1975	<ul style="list-style-type: none"> • <u>New observer</u>: George Rust (R.D. Proctor) • <u>Time of observation</u>: 17:00 (18:00) • <u>Remarks</u>: Reactivation of station closed since 5/1/1974 due to the low monthly pay and no observer. Increase in the rate of the observer pay. • <u>Exposure (Same location)</u>: Building to the SE (3°), building to the S (19°), chain link fence surrounding the observation site 	2	1
5/1/1980	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG 	0	2
11/18/1982	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
9/30/1990	<ul style="list-style-type: none"> • <u>New description</u>: Sparse mesquite and native grasses. The general terrain is broken with draws to the Pecos River, with Red Bluff Lake 600' to the N. • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours (when rains $\geq 1.00''$ in 24 hours at 07:00 or $\geq 0.50''$ in 6 hours at 13:00, 19:00) to WSO-Midland • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Lubbock • <u>Remarks</u>: Station closed until 7/1/1992. Observer quit due to health reasons, and no other observers were available. Removed all the equipment and returned it to storage. 		
7/1/1992	<ul style="list-style-type: none"> • <u>New observer</u>: L.G. Scrogum (George Rust) 	3	1

	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours (when rains $\geq 1.00''$ in 24 hours) to WSO-Midland • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Lubbock • <u>Time of observation</u>: 08:00 (17:00) • <u>Exposure (Same location)</u>: No obstructions, observation site in 16'x20' fenced-in area • <u>Remarks</u>: Reactivation of station closed since 9/30/1990 with no observer available. Installed all the equipment. 		
1/1/1993	<ul style="list-style-type: none"> • <u>New observer</u>: Jerry Clayton (L.G. Scrogum) • <u>Time of observation</u>: 18:00 (08:00) 	3	2
2/24/1994	<ul style="list-style-type: none"> • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
7/1/1994	<ul style="list-style-type: none"> • <u>New observer</u>: Willie L. Calaway (Jerry Clayton) • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours to WSO-Midland, temperature reported daily to WSO-Lubbock 	1	1
5/23/1995	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-92 sent to WSO-Midland 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains $\geq 0.50''$) in 24 hours to WSO-Lubbock, temperature digitally reported daily to WSO-Lubbock 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.90611 -103.92944 (+0.00611N, +0.01277W), no station move reported • <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains $\geq 0.50''$) in 24 hours to WSO-Midland, temperature digitally reported daily to WSO-Midland • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 	0	0
1/2/2003	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn 	2	0
11/14/2003	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.89500 -103.91833 (-0.01111N, -0.01111W), no station move reported 	0	0

	<ul style="list-style-type: none"> • <u>New elevation</u>: 2847' (+47') 		
2/6/2004	<ul style="list-style-type: none"> • <u>Remarks</u>: Station permanently closed. 		

COOP Station 418022, CD 5: Sanderson, Terrell County, TX			
<p>Summary: Station within canyon in Edwards Plateau area. Station moved around a bit, from high to low parts of town, and from main part of town to west side highway intersection. Potential inhomogeneities due to variations in urban irrigation and microclimate.</p> <p>Temperature rating: Good (1896-1934, 1962-present) Precipitation rating: Very good (1896-present)</p>			
9/1/1896	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and temperature • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates</u>: 30°08'N 102°24'W • <u>Original elevation</u>: 2775' • <u>Original observer</u>: J.G. Ewalde • <u>Original description</u>: Mountainous. • <u>CRS</u>: Door opens to the N • <u>Exposure</u>: SRG out in the open, CRS on the side of a railroad depot 	TEMP Impact	PRCP Impact
9/1/1897	<ul style="list-style-type: none"> • <u>New observer</u>: G.C. Haseltine (J.G. Ewalde) 	1	1
10/1/1898	<ul style="list-style-type: none"> • <u>New observer</u>: J.G. Ewalde (G.C. Haseltine) 	1	1
1/1/1899	<ul style="list-style-type: none"> • <u>Remarks</u>: Station inactive until 1/1/1900. 		
1/1/1900	<ul style="list-style-type: none"> • <u>New observer</u>: J.C. Stansell (J.G. Ewalde) • <u>Remarks</u>: Reactivation of station closed since 1/1/1899. 	1	1
8/1/1903	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 12/1/1928. 		
12/1/1928	<ul style="list-style-type: none"> • <u>New observer</u>: Clyde Griffith (J.C. Stansell) • <u>SRG</u>: Top of gauge is 3'agl • <u>CRS</u>: Bottom of shelter is 4.5'agl, over sod • <u>Time of observation</u>: 18:00 • <u>Remarks</u>: Reactivation of station closed since 8/1/1903. • <u>Exposure (Same location)</u>: SRG 35' from a shed (14' tall) 	2	1

3/1/1934	<ul style="list-style-type: none"> • <u>Station observations</u>: Discontinuance of temperature • <u>Equipment</u>: Removal of CRS and MxMn • <u>Station relocation</u>: 0.1mi. E of the previous location • <u>New observer</u>: W.M. Grigsby (Clyde Griffith) • <u>New description</u>: Mountainous country with no forests or bodies of water nearby. • <u>SRG</u>: Top of gauge is 3.5'agl (+0.5') • <u>Exposure (New location)</u>: Observation site on a roof 35'agl 		1
7/27/1953	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours to WSO-El Paso and when rains from April-October to WSO-Houston • <u>Daily recording of observations</u>: Form 1006 sent to WSO-El Paso • <u>Time of observation</u>: 08:00 (18:00) • <u>Remarks</u>: Station is located at the Kerr Mercantile Building. River and rainfall reporting services added at this station. 		2
10/25/1960	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. N of the previous location • <u>New coordinates</u>: 30°08'N 102°22'W (-2'W) • <u>New elevation</u>: 3000' (+225') 		1
8/29/1961	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.6mi. W of the previous location • <u>New coordinates</u>: 30°09'N 102°24'W (+1'N, +2'W) • <u>New elevation</u>: 2800' (-200') • <u>Remarks</u>: Station is located at the Desert Air Motel. 		1
6/17/1962	<ul style="list-style-type: none"> • <u>Station observations</u>: Reestablishment of temperature • <u>Equipment</u>: Addition of CRS and MxMn • <u>New description</u>: Moderate rolling hills in all directions, situated in valley with hills to the N and S, with small trees and scrub brush vegetation on the hills. • <u>CRS</u>: Installed 140' NE of the SRG • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours (when 		1

	<p>rains $\geq 1.00''$ in 24 hours and when rains from April-October) to WSO-El Paso</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-13 sent to WSO-El Paso • <u>Remarks</u>: Station upgraded to class "ab" status from class "a" status. • <u>Exposure (Same location)</u>: Building to the N (5°), 2 buildings to the NE, motel to the NE, sign to the E (9°), building to the NNW (6°), grass island with CRS to the NE, parking lot to the E, US Highway 290 to the S, cactus garden to the NW, fence posts to the NW 		
10/13/1964	<ul style="list-style-type: none"> • <u>SRG</u>: Painted • <u>CRS</u>: Painted • <u>MxMn</u>: Separation in the maximum thermometer of 2°F, new maximum thermometer left with observer • <u>Remarks</u>: Equipment is in good condition, exposure excellent. 	3	1
5/13/1965	<ul style="list-style-type: none"> • <u>MxMn</u>: Observer was improperly resetting the minimum thermometer • <u>Remarks</u>: Observer taught how to take proper readings and also to compare readings over the past few months. 	3	1
4/18/1968	<ul style="list-style-type: none"> • <u>Remarks</u>: Equipment was cleaned and checked. Observer was setting maximum temperature readings back one day, but this error was believed to be corrected and will no longer occur. 	2	1
4/1/1973	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours to WSO-Midland • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Midland • <u>Exposure (Same location)</u>: Motel to the NE, US Highway 90 to the S, fence to the NNW, cacti in vicinity of the observation site 	0	0
7/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
11/16/1974	<ul style="list-style-type: none"> • <u>MxMn</u>: Separation in the minimum thermometer of 3°F was cleared, been an issue for about a month • <u>Remarks</u>: Other than minimum thermometer, 	1	0

	the equipment was in good condition. Observer has been very dependable, but will not repair damaged equipment.		
5/1/1977	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported daily (when rains $\geq 0.50''$ in 24 hours) to WSO-Lubbock, temperature reported daily to WSO-Lubbock • <u>Remarks</u>: Climatological reporting services temporarily added to this station. 	0	0
2/1/1979	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 0.50''$ in 24 hours (daily) to WSO-Midland, temperature not reported • <u>Remarks</u>: Climatological reporting services no longer necessary and terminated. 	0	0
3/29/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 0.3mi. N of the previous location • <u>New elevation</u>: 2820' (+20') • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: House to the WSW (20°), 2 trees to the WNW (25°), fence to the E, street to the E just to the other side of the fence 	2	1
7/1/1990	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.1mi. E of the previous location • <u>New elevation</u>: 2840' (+20') • <u>New observer</u>: Lee Warrington (W.M. Grigsby) • <u>Exposure (New location)</u>: Tree to the SE (20°), house to the W (25°) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. Previous observer quit due to failing health. 	2	1
6/1/1996	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0

7/1/1998	<ul style="list-style-type: none"> • <u>Station relocation</u>: 2.0mi. NE of the previous location • <u>New coordinates</u>: 30.14361 -102.39639 (-0.00639N, -0.00361W) • <u>New observer</u>: John Palm (Lee Warrington) • <u>Exposure (New location)</u>: Building to the SW (10°), house to the WSW (10°), 2 trees to the W (30°, 35°), building to the NW (10°), tree to the N (20°) 	2	1
7/6/2000	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. NW of the previous location • <u>New coordinates</u>: 30.14556 -102.39861 (+0.00195N, +0.00222W) • <u>New elevation</u>: 2855' (+15') • <u>New observer</u>: Lee Brandon (John Palm) • <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains $\geq 0.50''$ in 24 hours) to WSO-Midland, temperature digitally reported daily to WSO-Midland • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. • <u>Exposure (New location)</u>: House to the N (5°), building to the E (5°), tree to the ESE (15°), house to the SE (3°), tree to the SE (20°), tree to the S (15°), tree to the SW (25°), tree to the W (5°) 	2	1
5/4/2006	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) • <u>Remarks</u>: New coordinates obtained via Garmin V. 	2	0
4/11/2007	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until 10/1/2007. 		
10/1/2007	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. S of the previous location • <u>New coordinates</u>: 30.13861 -102.39194 (-0.00695N, -0.00667W) • <u>New elevation</u>: 2760' (-85') • <u>Remarks</u>: Station reactivated after being closed since 4/11/2007 and is compatible for continuation of the previous record. 	2	1

COOP Station 418252, CD 5: Sheffield, Pecos County, TX			
<p>Summary: Station in Edwards Plateau area, in valley near Pecos River. Observations within town the whole time, but probably affected by microclimate differences and changes in irrigation practices in surrounding areas.</p> <p>Temperature rating: Fair (1962-present) Precipitation rating: Excellent (1938-present)</p>			
10/17/1938	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates:</u> 30°40'N 101°51'W • <u>Original elevation:</u> 2300' • <u>Original observer:</u> H.O. Noelke, Jr. • <u>Original description:</u> Mountainous country with no forests of water nearby. • <u>CRS:</u> Over sod 	TEMP Impact	PRCP Impact
2/27/1940	<ul style="list-style-type: none"> • <u>Station observations:</u> Discontinuance of temperature • <u>Equipment:</u> Addition of Recording rain gauge (R/RNG), removal of SRG, CRS, and MxMn • <u>Station relocation:</u> 1.3mi. NE of the previous location • <u>New coordinates:</u> 30°41'N 101°50'W (+1'N, -1'W) • <u>New elevation:</u> 2200' (-100') • <u>New observer:</u> Flossie M. Poynor (H.O. Noelke, Jr.) 		1
12/17/1951	<ul style="list-style-type: none"> • <u>New observer:</u> Ruby I. Dennis (Flossie M. Poynor) • <u>Time of observation:</u> 13:00, 19:00 		1
4/1/1955	<ul style="list-style-type: none"> • <u>New observer:</u> Earl E. Burris (Ruby I. Dennis) • <u>Reporting of observations:</u> Precipitation reported when rains $\geq 1.00''$ in 24 hours to WSO-Brownsville • <u>Daily recording of observations:</u> Form 612-13 sent to WSO-Brownsville • <u>Time of observation:</u> 07:00 (13:00, 19:00) • <u>Remarks:</u> River and rainfall reporting services 		2

	added at this station. River gauge installed on the downstream side of the Pecos River on US Highway 290.		
4/29/1958	<ul style="list-style-type: none"> • <u>Station relocation</u>: 400' S of the previous location • <u>New elevation</u>: 2170' (-30') • <u>Original description</u>: Rolling prairie plains broken by mesa and canyons. • <u>Remarks</u>: Station is at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Tree to the ENE (10°), building to the SE (15°), tree to the S (18°) 		1
8/1/1961	<ul style="list-style-type: none"> • <u>New observer</u>: Dorothy E. Martin (Earl E. Burris) • <u>Remarks</u>: The new observer purchased the house from the former observer. 		1
6/12/1962	<ul style="list-style-type: none"> • <u>Station observations</u>: Reestablishment of temperature • <u>Equipment</u>: Addition of CRS and MxMn • <u>Remarks</u>: Station upgraded to class "ab" status from class "ab-" status. • <u>Exposure (Same location)</u>: House to the E (21°), tree to the SE (16°), street to the N, alley to the W 		0
1/1/1963	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.2mi. S of the previous location • <u>New elevation</u>: 2162' (-8') • <u>New observer</u>: Herbert A. Holmes (Dorothy E. Martin) • <u>Time of observation</u>: 07:00 for precipitation, 19:00 for temperature (07:00) • <u>Remarks</u>: Station is located at the observer's residence, new observer appointed after the previous observer moved. • <u>Exposure (New location)</u>: Building to the NE (10°), tree to the SE (15°), 2 buildings to the NW (10°) 	2	1
2/7/1963	<ul style="list-style-type: none"> • <u>SRG</u>: Painted • <u>CRS</u>: Painted • <u>R/RNG</u>: Cleaned and calibrated, painted 	1	1

	<ul style="list-style-type: none"> • <u>Remarks</u>: Moved all the equipment to the new observer's house. 		
6/26/1964	<ul style="list-style-type: none"> • <u>Remarks</u>: All equipment was in excellent condition, with good exposure, and was cleaned and painted. Observer had never fully understood the observation procedure, with at least two maximums and minimums recorded a day later. 	1	1
8/1/1964	<ul style="list-style-type: none"> • <u>New observer</u>: Denzel L. Holmes (Herbert A. Holmes) • <u>Remarks</u>: Station is located adjacent to the observer's residence. Previous observer resigned and new observer is his son. 	1	1
2/17/1966	<ul style="list-style-type: none"> • <u>Remarks</u>: All equipment was cleaned and checked. The observer continues to do a good job, much like his father. 	0	0
7/28/1966	<ul style="list-style-type: none"> • <u>SRG</u>: Painted • <u>CRS</u>: Painted • <u>Remarks</u>: All equipment was cleaned and checked. 	1	1
10/1/1966	<ul style="list-style-type: none"> • <u>New observer</u>: J. Wayne Holmes (Denzel L. Holmes) • <u>Time of observation</u>: 08:00 for precipitation, 17:00 for temperature (07:00 for precipitation, 19:00 for temperature) • <u>Remarks</u>: The new observer is the brother of the former observer. 	2	1
10/12/1967	<ul style="list-style-type: none"> • <u>SRG</u>: Painted • <u>CRS</u>: Painted • <u>Remarks</u>: All equipment was cleaned and checked; observer continues to do a good job. 	1	1
4/1/1970	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
4/1/1972	<ul style="list-style-type: none"> • <u>New observer</u>: Herbert A. Holmes (J. Wayne Holmes) • <u>Remarks</u>: New observer had been taking most of the observations and filing most of the reports. 	1	1
4/1/1973	<ul style="list-style-type: none"> • <u>New observer</u>: Blanche Holmes (Herbert A. Holmes) • <u>Reporting of observations</u>: Precipitation reported when rains $\geq 1.00''$ in 24 hours to 	1	1

	<p>WSO-Midland</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Midland • <u>Exposure (Same location)</u>: Dwelling to the NE (10°), tree to the SE (20°), 2 buildings to the NW (10°) 		
5/23/1973	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.2mi. NNW of the previous location • <u>New coordinates</u>: 30°42'N 101°50'W (+1'N) • <u>New elevation</u>: 2170' (+8') • <u>New observer</u>: Opal Evans (Blanche Holmes) • <u>New description</u>: Moderately rugged range topography. • <u>Time of observation</u>: 18:00 (08:00 for precipitation, 17:00 for temperature) • <u>Remarks</u>: Station is located at the observer's residence. • <u>Exposure (New location)</u>: Tree to the S, residence to the SW (6°), 2 trees to the W (10°, 16°), driveway to the NW 	3	1
5/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
5/1/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
12/6/1977	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Fisher and Porter rain gauge (F/P), removal of the R/RNG 	0	2
2/20/1979	<ul style="list-style-type: none"> • <u>Remarks</u>: Observer was married and now goes by Opal Polach 	0	0
7/21/1981	<ul style="list-style-type: none"> • <u>Remarks</u>: Solar panel and rechargeable battery installed at the observation site. 	0	0
10/1/1982	<ul style="list-style-type: none"> • <u>Remarks</u>: Increase in the rate of the observer pay. 	0	0
10/31/1985	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>MMTS</u>: Installed 100' W of the old CRS location. • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock 	2	0
10/1/1991	<ul style="list-style-type: none"> • <u>New observer</u>: Tom Polach (Opal Polach) • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock 	0	0

	<ul style="list-style-type: none"> • <u>Remarks</u>: The wife wants her husband to take over as the observer. 		
3/23/1994	<ul style="list-style-type: none"> • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Lubbock, temperature digitally reported daily to WSO-Lubbock • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.68833 -101.82694 (-0.01667N, -0.00639W), no station move reported • <u>Reporting of observations</u>: Precipitation digitally reported daily (when rains ≥ 1.00" in 24 hours) to WSO-Midland, temperature digitally reported daily to WSO-Midland • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 	0	0
10/30/2002	<ul style="list-style-type: none"> • <u>Station relocation</u>: 55'WNW of the previous location 	1	1
11/15/2003	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30.68861 -101.82722 (-0.00028N, +0.00028W), no station move reported • <u>New elevation</u>: 2175' (+5') 	0	0
2/25/2004	<ul style="list-style-type: none"> • <u>MMTS</u>: Replaced display unit. 	0	0
10/14/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) 	2	0
12/27/2004	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge 	0	1
9/9/2005	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge 	0	1
6/14/2006	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge • <u>NIMUBS</u>: Replaced display unit 	0	1
6/7/2008	<ul style="list-style-type: none"> • <u>F/P</u>: Replaced gauge 	0	1
8/1/2008	<ul style="list-style-type: none"> • <u>Time of observation</u>: 06:00 (18:00) 	3	2

COOP Station 419275, CD 5: Valentine 10 WSW, Presidio County, TX

Summary: Station at east edge of mountain range recording precipitation since 1936. Distant observations in town 1897-1901 and 1911-1912 are not comparable.

<u>Temperature rating:</u> N/A <u>Precipitation rating:</u> Excellent (1936-present)			
2/16/1897	<ul style="list-style-type: none"> • <u>Initial station observations:</u> Precipitation and temperature • <u>Original equipment:</u> Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates:</u> Unknown • <u>Original elevation:</u> Unknown • <u>Original observer:</u> F.E. Black • <u>Original description:</u> Mountainous. • <u>SRG:</u> Top of gauge is 5'agl • <u>CRS:</u> Bottom of shelter is 6'agl • <u>Time of observation:</u> 07:00 • <u>Exposure:</u> SRG out in the open, CRS on the side of a house 	TEMP Impact	PRCP Impact
1/1/1898	<ul style="list-style-type: none"> • <u>New observer:</u> H.H. Hoover (F.E. Black) 	1	1
1/1/1900	<ul style="list-style-type: none"> • <u>New observer:</u> C.H. Wright (H.H. Hoover) 	1	1
6/1/1900	<ul style="list-style-type: none"> • <u>New observer:</u> J.S. Hurlbut (C.H. Wright) 	1	1
7/1/1901	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 5/16/1911. 		
5/16/1911	<ul style="list-style-type: none"> • <u>Station relocation:</u> Unknown proximity to the previous location • <u>New coordinates:</u> 30°34'N 104°29'W (Unknown) • <u>New elevation:</u> 4421' (Unknown) • <u>New observer:</u> Harry A. Richards (C.H. Wright) • <u>New description:</u> Country mountainous, with station in a level valley about 25mi. wide. • <u>CRS:</u> Door opens to the SW, over sod • <u>Time of observation:</u> 18:30 (07:00) • <u>Remarks:</u> Reactivation of station closed since 10/1/1912. • <u>Exposure (New location):</u> SRG 17' from the nearest high object 	1	1
10/1/1912	<ul style="list-style-type: none"> • <u>Remarks:</u> Station closed until 4/1/1936. 		
4/1/1936	<ul style="list-style-type: none"> • <u>Station observations:</u> Discontinuance of temperature • <u>Equipment:</u> Removal of CRS and MxMn • <u>Station relocation:</u> 10mi. WSW of the previous location 		4

	<ul style="list-style-type: none"> • <u>New coordinates</u>: 30°30'N 104°38'W (-4'N, +9'W) • <u>New observer</u>: C.E. Miller (Harry A. Richards) • <u>New description</u>: Located in Holland Canyon, with mountains rising about 0.5mi. W and no forests or bodies of water nearby. • <u>SRG</u>: Top of gauge is 5.8'agl (+0.8') • <u>Time of observation</u>: Sunset (18:30) • <u>Remarks</u>: Reactivation of station closed since 10/1/1912, located at the C.E. Miller Ranch. Station name change to Valentine 10 WSW from Valentine. New observer has personal records dating back to 1932. • <u>Exposure (New location)</u>: Trees 150' to the N (30' tall) 		
6/13/1954	<ul style="list-style-type: none"> • <u>New description</u>: Gently rolling to hilly, sloping generally to the S, surrounded by rangeland and pasture. • <u>Daily recording of observations</u>: Form 1009 sent to WSO-Houston • <u>Time of observation</u>: After rains (Sunset) • <u>Remarks</u>: Observer resides in Fort Davis, with ranch hand acting as sub-observer. • <u>Exposure (Same location)</u>: Ranch house 200' to the N, observation site in fenced-in garden space 		2
4/10/1962	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form 612-14 sent to WRPC • <u>Time of observation</u>: 07:00, after rains (After rains) 		2
3/1/1964	<ul style="list-style-type: none"> • <u>Station relocation</u>: 200' NW of the previous location • <u>New elevation</u>: 4420' (-1') • <u>New observer</u>: C.E. Miller, Jr. (C.E. Miller) • <u>New description</u>: Slightly sloping, broad shallow valley with prairie land and mountainous 2mi. W. • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 07:00 (07:00, after rains) • <u>Remarks</u>: Station located at the C.E. Miller 		1

	<ul style="list-style-type: none"> Ranch, moved at the request of the observer. <u>Exposure (New location)</u>: Tree line to the SE (10°-15°), dwelling to the SE (12°), barn to the S (5°), rock fence to the SE, road to the W, cattle guard to the W between observation site and the road 		
7/1/1975	<ul style="list-style-type: none"> <u>Daily recording of observations</u>: Form F-10 sent to NCC 		0
7/11/1978	<ul style="list-style-type: none"> <u>Remarks</u>: Station authorized to be placed in the flash flood network. 		0
12/14/1990	<ul style="list-style-type: none"> <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock 		0
6/1/1996	<ul style="list-style-type: none"> <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 		0
7/6/2000	<ul style="list-style-type: none"> <u>Station relocation</u>: 200' E of the previous location <u>New coordinates</u>: 30.50444 -104.64139 (+0.00444N, +0.00806W) <u>Remarks</u>: Station is located at the observer's ranch. <u>Exposure (New location)</u>: Tree line to the SE (10°-15°), dwelling to the SE (12°), barn to the S (5°) 		1
11/16/2001	<ul style="list-style-type: none"> <u>New coordinates</u>: 30.55250 -104.64667 (+0.04806N, +0.00528W), no station move reported 		0
11/15/2003	<ul style="list-style-type: none"> <u>New elevation</u>: 4394' (-26'), no station move reported 		0

COOP Station 419295, CD 5: Van Horn, Culberson County, TX

Summary: Station in sloping alluvial valley amid mountains. Station remained in town most of the time, except for an excursion downslope to the airport 1986-1994. If current location is correct, could be heavy microclimate effect.

Temperature rating: Fair (1938-present)

Precipitation rating: Very good (1938-present)

10/11/1938	<ul style="list-style-type: none"> <u>Initial station observations</u>: Precipitation <u>Original equipment</u>: Standard rain gauge 	TEMP Impact	PRCP Impact
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	<p>(SRG)</p> <ul style="list-style-type: none"> • <u>Original coordinates</u>: 31°02'N 104°51'W • <u>Original elevation</u>: 4050' • <u>Original observer</u>: Unknown • <u>Original description</u>: Unknown 		
5/20/1942	<ul style="list-style-type: none"> • <u>Station observations</u>: Establishment of temperature • <u>Equipment</u>: Addition of Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Remarks</u>: Change to Second Order Airways station, with an anemometer, barograph, and pscyhrometer at the observation site. 		0
11/3/1954	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. SSE of the previous location • <u>New elevation</u>: 4048' (-2') • <u>New observer</u>: William H. McVay (Unknown) • <u>New description</u>: Broad, level to slightly rolling valley, about 20mi. wide and lying NNE-SSW. Low greasewood brush and drainage to Wildhorse Creek, which is normally dry. Distant mountains, 400'-1000' higher than the station in all directions outside a 10mi. radius. • <u>Reporting of observations</u>: Precipitation reported daily to WSO-El Paso, temperature reported daily to WSO-El Paso • <u>Daily recording of observations</u>: Form 612-14 sent to WSO-El Paso • <u>Time of observation</u>: 18:30 • <u>Remarks</u>: Station is located at McVay's Tourist Court and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Store to the N, office to the ENE (7°), court to the S (6°), tree to the SW (18°), court to the W, tree to the NNW (25°), US Highway 80 to the N, driveway surrounding the observation site 	2	1
10/28/1957	<ul style="list-style-type: none"> • <u>Station relocation</u>: 100' N of the previous location • <u>Remarks</u>: Station located at McVay Motor Court and is compatible for a continuation of the previous record. 	1	1

	<ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Office to the E (15°), tree to the S (5°), courts to the W (10°), store to the NW (30°) 		
12/16/1964	<ul style="list-style-type: none"> • <u>SRG</u>: Painted • <u>CRS</u>: Painted • <u>MxMn</u>: Minimum thermometer had a reading 3°F low without having a separation, was replaced with new thermometer • <u>Remarks</u>: Equipment was in good condition, other than the anemometer. Good observer who has a keen interest in making observations. 	3	1
5/21/1965	<ul style="list-style-type: none"> • <u>Station relocation</u>: SRG moved 60' WNW of the previous location • <u>Exposure (New location)</u>: Tree 25' to the E (11' tall) 	1	1
5/1/1969	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.7mi. NE of the previous location • <u>New coordinates</u>: 31°03'N 104°50'W (+1'N, -1'W) • <u>New elevation</u>: 4030' (-18') • <u>New observer</u>: Francisco Quintana (William H. McVay) • <u>New description</u>: Broad, level to slightly rolling valley, about 20mi. wide and lying NNE-SSW. Low greasewood brush constitutes the vegetation. • <u>Reporting of observations</u>: Precipitation and temperature not reported • <u>Daily recording of observations</u>: Form 612-14 sent to NWRC • <u>Time of observation</u>: 08:30 (18:30) • <u>Remarks</u>: Change to a non-paid climatological station located at the observer's home from a Second Order Airways station, with removal of the anemometer, barograph, and pscyhrometer from the observation site. • <u>Exposure (New location)</u>: House to the E (5°), house to the SW (6°), dwelling to the W (7°), tree to the NW (12°), corral to the NW, alley to the E between the house and the observation site 	2	1
6/21/1969	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. W of the previous 	2	1

	<p>location</p> <ul style="list-style-type: none"> • <u>New elevation</u>: 4060' (+30') • <u>New observer</u>: Clara Landers Simpson (Francisco Quintana) • <u>Time of observation</u>: 17:30 (08:30) • <u>Remarks</u>: Station is located at the observer's home. 		
3/4/1970	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.6mi. NNE of the previous location • <u>New elevation</u>: 4030' (-30') • <u>New observer</u>: Harold Smith (Clara Landers Simpson) • <u>Remarks</u>: Station is located at the observer's home. • <u>Exposure (New location)</u>: Dwelling to the NE (13°), Summer Street to the E, cedar fence (6' tall) surrounding the observation site 	2	1
4/1/1970	<ul style="list-style-type: none"> • <u>Remarks</u>: All equipment was checked and found to be in good condition. The observer had missed some observations after his wife had broken her hip and was taken to El Paso for hospital care. 	0	0
1/14/1971	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.6mi. SSW of the previous location • <u>New elevation</u>: 4060' (+30') • <u>New observer</u>: Douglas Wofford (Harold Smith) • <u>Time of observation</u>: 18:00 (17:30) • <u>Remarks</u>: Station was relocated to a site of excellent exposure at the observer's home, and equipment was in good condition. Previous observer left Van Horn after being terminated from his job, leaving a gap in the record dating back to 12/1/1970. New observer is a sophomore in high school. • <u>Exposure (New location)</u>: Dwelling to the SW (18°), church to the SW, concrete fence (3' tall) to the N and E 	2	1
6/1/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.4mi. NNW of the previous location • <u>New elevation</u>: 4070' (+10') • <u>New observer</u>: Matthew Fillmon (Douglas 	2	1

	<p>Wofford)</p> <ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form F-10 sent to NCC • <u>Remarks</u>: Station is located at the observer's home. • <u>Exposure (New location)</u>: Tree to the NE (16°), dwelling to the E (8°), tree to the SE (13°), fence surrounds the observation site 		
8/17/1972	<ul style="list-style-type: none"> • <u>Station relocation</u>: 300' SSW of the previous location • <u>Remarks</u>: Station is located at the observer's home. • <u>Exposure (New location)</u>: Dwelling to the N (11°), 2 trees to the ENE (12°, 14°), tree to the W (13°) 	2	1
5/23/1974	<ul style="list-style-type: none"> • <u>Remarks</u>: All equipment was checked, and current observer informed that he would soon be leaving Van Horn. 	0	0
7/1/1974	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.6mi. NE of the previous location • <u>New elevation</u>: 4030' (-40') • <u>New observer</u>: Edward J. Smith (Matthew Fillmon) • <u>Remarks</u>: Station is located at the observer's residence. • <u>Exposure (New location)</u>: Dwelling to the NW (15°), wire fence just to the N, alley to the E, Summer Street to the W 	2	1
7/15/1975	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.7mi. SW of the previous location • <u>New elevation</u>: 4060' (+30') • <u>New observer</u>: John C. Harper (Edward J. Smith) • <u>Time of observation</u>: 09:00 (18:00) • <u>Remarks</u>: Station is located at the observer's residence. • <u>Exposure (New location)</u>: Dwelling to the S (15°), tree to the SW (18°), tree to the W (22°), 3rd Street to the N, Crockett Street to the E 	2	1
4/1/1976	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form F-10 sent to WSO-Lubbock 	0	0

12/16/1976	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.6mi. NE of the previous location • <u>New elevation</u>: 4050' (-10') • <u>New observer</u>: Larry D. Simpson (John C. Harper) • <u>Daily recording of observations</u>: Form E-15 sent to WSO-Lubbock • <u>Time of observation</u>: 08:00 (09:00) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Tree to the S (15°), dwelling to the SW (10°), carport to the SW (10°), 2 trees to the WSW (12°, 15°), observations site very near a 2.5' concrete block fence 	2	1
4/8/1982	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.3mi. SSE of the previous location • <u>New observer</u>: Terry B. Neill (Larry D. Simpson) • <u>Remarks</u>: Station is located at the new observer's residence and is compatible for a continuation of the previous record, former observer terminated. • <u>Exposure (New location)</u>: Carport to the NNE, newspaper office and residence to the NW (15°), alley to the E, Highway 54 to the W, observation site is in an open lot 	2	1
8/17/1982	<ul style="list-style-type: none"> • <u>Station relocation</u>: 0.5mi. NNW of the previous location • <u>New observer</u>: Steve Schaffer (Terry B. Neill) • <u>Remarks</u>: Station is located at the new observer's residence and is compatible for a continuation of the previous record, former observer terminated. • <u>Exposure (New location)</u>: House to the ESE, 9th Street to the N, Houston Street to the E, alley to the W, open area to W on other side of the street from the observation area 	2	1
6/30/1984	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed until a new observer can be found (8/7/1984). Former observer terminated for missing too many observations and always being late. 		

8/7/1984	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Maximum-minimum temperature system (MMTS), removal of CRS and MxMn • <u>Station relocation</u>: 0.3mi. NW of the previous location • <u>New coordinates</u>: 31°03'N 104°51'W (+1'W) • <u>New elevation</u>: 4045' (-5') • <u>New observer</u>: Orel Desjardins (Steve Schaffer) • <u>Remarks</u>: Reactivation of station closed since 6/30/1984, located at the observer's residence and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Trailer house to the SW, observation site in an open area 	2	1
6/20/1985	<ul style="list-style-type: none"> • <u>Remarks</u>: Station closed (until 8/13/1986) after the observer quit and were unable to find another observer with a suitable location. 		
8/13/1986	<ul style="list-style-type: none"> • <u>Station relocation</u>: 4.0mi. ENE of the previous location • <u>New coordinates</u>: 31°04'N 104°47'W (+1'N, -4'W) • <u>New elevation</u>: 3955' (-90') • <u>New observer</u>: Larry D. Simpson (Orel Desjardins) • <u>Time of observation</u>: 07:00 (08:00) • <u>Remarks</u>: Reactivation of station closed since 6/20/1985, located at the Van Horn Airport and is compatible for a continuation of the previous record. • <u>Exposure (New location)</u>: Building to the S (11°) 	3	2
3/9/1994	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Lubbock • <u>Remarks</u>: Encoder pad or phone installed at the observation site. 	0	0
9/1/1994	<ul style="list-style-type: none"> • <u>Station relocation</u>: 3.3mi. W of the previous location • <u>New coordinates</u>: 31°03'N 104°51'W (-1'N, +4'W) • <u>Remarks</u>: Station is located at the observer's residence and is compatible for a continuation 	3	2

	<p>of the previous record. Same observer but the equipment is at the son-in-law's residence, and the son-in-law will serve as an alternate observer.</p> <ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Tree to the NE (20°) 		
5/31/1995	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-91 sent to WSO-Midland 	0	0
6/1/1996	<ul style="list-style-type: none"> • <u>Reporting of observations</u>: Precipitation digitally reported daily to WSO-Lubbock, temperature digitally reported daily to WSO-Lubbock 	0	0
7/6/2000	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.04167 -104.83694 (-0.00833N, -0.01306W), no station move reported • <u>Remarks</u>: New coordinates obtained via Garmin 45 GPS. 	0	0
11/15/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.04167 -104.83750 (+0.00056W), no station move reported 	0	0
11/4/2004	<ul style="list-style-type: none"> • <u>Equipment</u>: Addition of Nimbus temperature system (NIMBUS) 	2	0
4/6/2005	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.04160 -104.83750 (-0.00007N), no station move reported • <u>Remarks</u>: Coordinates updated via Garmin V. 	0	0
12/9/2005	<ul style="list-style-type: none"> • <u>NIMBUS</u>: Replaced display unit 	0	0
10/1/2009	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.04168 -104.83722 (+0.00007N, -0.00028W) • <u>NIMBUS</u>: Moved 9' W of the previous location, replaced display unit 	2	0

COOP Station 419966, CD 5: Ysleta, El Paso County, TX

Summary: Station near El Paso, near railroad tracks in former irrigated farmland area that quickly became urbanized. Station located in a parking lot by a road, and it's hard to imagine a warmer microclimate. Precipitation and temperature subject to vandalism during early part of record.

Temperature rating: Poor (1939-present)

Precipitation rating: Good (1939-present)

1/24/1939	<ul style="list-style-type: none"> • <u>Initial station observations</u>: Precipitation and 	TEMP Impact	PRCP Impact
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	<p>temperature</p> <ul style="list-style-type: none"> • <u>Original equipment</u>: Standard rain gauge (SRG), Cotton region shelter (CRS), Maximum-minimum thermometer (MxMn) • <u>Original coordinates</u>: 31°42'N 106°19'W • <u>Original elevation</u>: 3668' • <u>Original observer</u>: US Bureau of Reclamation • <u>Original description</u>: Country generally level with barren and sandy soil. • <u>Remarks</u>: Station is located at US Bureau of Reclamation Headquarters, with an anemometer and evaporation equipment at the observation site. 		
10/26/1957	<ul style="list-style-type: none"> • <u>New description</u>: Level to gently rolling Rio Grande Valley, about 3mi. wide with mountains to the W and NW in the distance. High mesa, 250'-300' higher, builds up gradually to the NE. Shade trees abundant in the immediate residential area, otherwise treeless. • <u>Daily recording of observations</u>: Form 612-25 sent to WRPC • <u>Time of observation</u>: 09:00 • <u>Exposure (Same location)</u>: Tree to the NE (20°), tree to the NNW (25°), irrigation canal just to the S 	0	0
9/23/1965	<ul style="list-style-type: none"> • <u>MxMn</u>: Thermometers cleaned and checked, mount was lubricated, separation in the minimum thermometer of 1°F that was removed • <u>Remarks</u>: Observer denoted a decrease in vandalism to the equipment recently. 	2	0
6/22/1966	<ul style="list-style-type: none"> • <u>Remarks</u>: Observer was making incorrect precipitation observations. 	0	2
10/26/1967	<ul style="list-style-type: none"> • <u>Station relocation</u>: 500' E of the previous location • <u>New elevation</u>: 3670' (+2') • <u>Daily recording of observations</u>: Form 612-25 sent to NWRC • <u>Remarks</u>: Station is located at US Bureau of Reclamation Headquarters, moved after observer request for relocation to eliminate acts of vandalism to the equipment. 	2	1

	<ul style="list-style-type: none"> • <u>Exposure (New location)</u>: Tree to the SE (19°), shop building to the W (9°), 2 shop buildings to the NW (9°), chain link fence to the NE, otherwise a stone fence (4' tall) surrounding the observation site. 		
7/1/1976	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form E-22 sent to NCC 	0	0
7/29/1980	<ul style="list-style-type: none"> • <u>New observer</u>: Water and Power Resources (US Bureau of Reclamation), change in name only 	0	0
3/16/1981	<ul style="list-style-type: none"> • <u>New observer</u>: El Paso County Water Improvement District (US Bureau of Reclamation) • <u>Daily recording of observations</u>: Form E-22 sent to WSO-Lubbock • <u>Time of observation</u>: 08:00 (09:00) • <u>Remarks</u>: Former observer was terminated on 3/12/1981. • <u>Exposure (New location)</u>: Shop building to the W (9°), shop building to the NW, shop building to the NNW (9°), chain link fence to the NE, otherwise a stone fence (4' tall) surrounding the observation site. 	1	1
6/27/1991	<ul style="list-style-type: none"> • <u>New description</u>: Level to gently rolling Rio Grande Valley, about 3mi. wide. Shade trees abundant in the immediate residential area, otherwise treeless. • <u>Exposure (Same location)</u>: Shop building to the W (10°), shop building to the NNW (9°) 	0	0
12/1/1995	<ul style="list-style-type: none"> • <u>Daily recording of observations</u>: Form B-92 sent to WSO-El Paso 	0	0
8/2/2001	<ul style="list-style-type: none"> • <u>New coordinates</u>: 31.69528 -106.32167 (-0.00472N, +0.00500W), no station move reported 	0	0