

<b>NWS FORM E-5</b> (11-88) (PRES. by NWS Instruction 10-924)	<b>U.S. DEPARTMENT OF COMMERCE</b> <b>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION</b> <b>NATIONAL WEATHER SERVICE</b>	HYDROLOGIC SERVICE AREA (HSA) <b>WFO Midland, Texas</b>
	<b>MONTHLY REPORT OF HYDROLOGIC CONDITIONS</b>	REPORT FOR: MONTH <b>September</b> YEAR <b>2014</b> SIGNATURE <b>J. DeBerry</b> In Charge of HSA DATE <b>October 15, 2014</b>
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		

*When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)*

An X inside this box indicates that no river flooding occurred within this hydrologic service area.

September got off to a good start hydrologically when Hurricane Norbert formed off the coast of Baja in the Pacific, and Tropical Storm Dolly developed in the Gulf of Mexico and moved onshore south of Brownsville, Texas. Tropical moisture from both of these systems was drawn up into West Texas and Southeast New Mexico during the first few days of September. Coupled with the first real cold front of the fall, widespread convection developed over the region on September 5<sup>th</sup>, and continued through the 7<sup>th</sup>. Radar estimates of 3-5+” of rainfall were noted over Southeast New Mexico, the Texas upper Trans Pecos, and Presidio and Brewster Counties. Similar, if not higher, amounts were noted south of the Rio Grande. As a result, the Rio Grande rose into minor to moderate flood from Candelaria (CDET2) downstream to Castolon (CSTT2).

On September 11<sup>th</sup>, a stronger cold front moved through the region, tapping into a very moist airmass already in place over the area. Convection began over the lower Trans Pecos, with numerous low water crossings on U.S. Hwy 385 south of Fort Stockton flooding. Convection then developed north and west throughout the evening. In Eunice in Lea County, heavy rainfall flooded numerous roadways, some up to 3’ deep in runoff, and many of which required barricading.

Convection continued overnight. Early in the morning of the 12<sup>th</sup>, in Andrews County, the city of Andrews reported flooding in town. St. Hwy 176 and FM NW 2001, and FM SW 2001 outside of town flooded, as well. These roads were barricaded, and detours established. Further east, in Snyder in Scurry County, roads in town were also barricaded. During the afternoon, the focus developed into Southeast New Mexico. Numerous roads in Artesia in Eddy County flooded, as well as U.S. 285 north of town. Numerous road closures throughout Eddy County took place the rest of the afternoon. Dark Canyon Rd. and CR 408 flooded with 5’ of runoff at Juniper Canyon. Meanwhile, Andrews continued flooding as well. Convection drifted south during late afternoon. Roads in and around Fort Davis in Jeff Davis County were inundated with as much as 4’ of runoff, and were barricaded. Portions of St. Hwy 17 near Balmorhea in Reeves County were closed due to flooding as well.

Radar estimates for this event were as high as 6-8”, mainly over Lea, Gaines, and Andrews Counties. These areas are either non-contributing or in the upper, flat reaches of the Colorado River watershed. Thus, no river flooding occurred. However, elevated flows were noted on all 3 mainstem rivers and many tributaries. The highest measured rainfall was an unofficial 9.5” in north Loving County.

Early morning September 18<sup>th</sup>, thunderstorms developed over the Permian Basin, beginning in Andrews County, where portions of FM 1788 were barricaded throughout the morning due to up to 2.5’ of high water, resulting in at least one vehicle accident. Odessa in Ector County was hit directly, and heavy rainfall resulted in a couple of water rescues there. One county over, in Greenwood in Midland County, road closures were necessary due to flooding. Thunderstorms later moved into

Culberson and Eddy Counties from the west. Heavy rainfall caused a mud and rockslide on U.S. Hwy 62/180 in Guadalupe Pass in Culberson County. In Eddy County, high flows came out of Dark Canyon. Combined with heavy rainfall outside of the canyon, this resulted in closure of several roads on the south side of Carlsbad. Storm activity abated somewhat during the day, but increased later during the afternoon. Street flooding was reported in Hobbs in Lea County.

Early in the morning of the 19<sup>th</sup>, the Colorado River near Gail (JBGT2) rose to a gage height of 15' from heavy rainfall in the upper Colorado watershed the previous day. This was the first time the Colorado rose that high there since September 2008. Further west, thunderstorms trained over Eddy, Culberson, Lea, and Reeves Counties all night long. High water prompted numerous road closures in these counties, mainly near the Texas-New Mexico border. Many motorists were stranded, and numerous swift water rescues took place, especially in Eddy County. Unfortunately, an oilfield worker from Texas lost his life in the flood waters. In Eddy County, tributaries and arroyos to the Pecos ran high, including Four Mile Draw, South Seven Rivers, Rocky Arroyo, Dark Canyon, Blue Springs, the Black River, and the Delaware River. The Black River west of Malaga (MLAN5) briefly went into minor flood. This is the first time since 1990 that the Black River has reached flood stage. As a result, the Pecos 10 miles south of Malaga (RBFN5) also went into minor flood for a few hours. Walnut Canyon leading to Carlsbad Caverns National Park flooded, closing the park and cutting off access. Fortunately, Brantley Reservoir, already at 111% of conservation capacity before this event, had enough excess flood storage capacity to capture any inflow from the Pecos to the north. Brantley continued filling into October, topping out at a pool elevation of 3263.55' (204% conservation capacity). Normal pool is 3256.70'. Avalon Reservoir filled to 3180.72' (150% conservation capacity). Normal pool is 3177.40'. Further south, excess flows out of the Black and Delaware Rivers into the Pecos began filling Red Bluff Reservoir, which reached 100% capacity for the first time in around 20 years. Red Bluff peaked at 2832.35'. Normal pool is 2827.40'. Uncontrolled discharge and excess rainfall in the vicinity and just downstream of Red Bluff Reservoir sent a flood wave down the Pecos below Red Bluff, beginning at Orla early that morning, and arriving at Pecos late on the evening of September 20<sup>th</sup>. Eastern portions of the city of Pecos near the river were evacuated, and a Red Cross shelter was opened at a nearby high school. Flood waves continued through this stretch of the Pecos for a week or so before the river finally started coming down.

On September 20<sup>th</sup>, circulatory remnants of Odile passed through West Texas. Over 10" of measured rainfall fell in Borden County near Gail, with radar estimates much higher. The Colorado River above Lake J.B. Thomas 13 miles southwest of Gail (JBGT2) rose to a record 24.64' (118757 cfs). Much of the year, the river there is dry or at low flow. This began filling Lake J.B. Thomas, which has been at under 2% conservation capacity for several years. J.B. Thomas rose within a week to 47% capacity, the highest since 1987.

On the 21<sup>st</sup>, showers and thunderstorms redeveloped over Eddy County, resulting in flooding from Artesia south to Carlsbad. Dark Canyon, already flooded, continued to take on water and flood portions of Carlsbad, prompting evacuations.

During all this, the Rio Grande went into minor flood in Presidio due to releases from Luis Leon Reservoir on the Rio Conchos in Mexico.

Overall, September was the first time in recent memory that the Colorado River, Pecos River, and Rio Grande have all been in flood simultaneously. See accompanying E-3. Record stages were noted at 8 gage sites on the Colorado and Pecos Rivers, and tributaries such as Dark Canyon, Blue Spring, and the Black River. J.B. Thomas, Brantley, Avalon, and Red Bluff Reservoirs all rose to the highest levels in recent memory, as well.

Precipitation amounts from area ASOS's:

City	ASOS ID	September	August
Carlsbad, NM	CNM	0.03"	0.03"
Fort Stockton	FST	2.80"	2.17"
Guadalupe Pass	GDP	7.12"	1.00"
Midland Int'l	MAF	1.69"	0.77"
Odessa	ODO	4.27"	0.97"
Terrell County	6R6	1.74"	0.70"
Wink	INK	4.94"	0.29"

Precipitation amounts from area AWOS's:

City	AWOS ID	September	August
Alpine	E38	2.76"	2.74"
Artesia, NM	ATS	M	0.28"(E)
Big Spring	BGP	3.00"	2.08"
Gaines County	GNC	7.29"	0.30"
Hobbs	HOB	0.87"	0.21"
Marfa	MRF	2.27"	2.19"
Midland Airpark	MDD	2.54"	0.27"
Pecos	PEQ	2.53"	0.21"
Snyder	SNK	5.94"	0.40"

Some other locations in the HSA that received notable amounts of precipitation for September were:

McKittrick Canyon, Culberson County	15.53"
Pine Springs, Culberson County	17.85"
Gail, Borden County	18.25"
The Bowl, Culberson County	19.13"

91 locations reported rainfall for the month of September, for an average of 5.69".

Normal September precipitation for Midland International Airport is 1.86". Total precipitation for Midland International Airport for 2014 ending October 1<sup>st</sup> was 6.43", or 5.15" below normal.

As a result of the abundant rainfall in September, drought conditions have improved significantly across the region. As of September 30<sup>th</sup>, in Southeast New Mexico, only northwest Eddy County was in moderate drought. The rest of Southeast New Mexico was either abnormally dry or out of drought. In West Texas, portions of the Western Low Rolling Plains, Permian Basin, and southeast Terrell County were in moderate drought. The rest of West Texas was either abnormally dry or out of drought. Overall, drought conditions are the best they've been since 2010.

Reservoir levels across the HSA averaged 76.0% of conservation capacity as of October 1<sup>st</sup>:

Reservoir (County, State)	September Conserv Cap (%)	August Conserv Cap (%)
JB Thomas (Scurry, TX)	46.8	0.9
Colorado City (Mitchell, TX)	24.9	23.4

Champion Creek (Mitchell, TX)	6.3	6.1
Natural Dam Salt Lake (Howard, TX)	48.6	48.6
Moss Creek (Howard, TX)	79.0	75.0
Brantley (Eddy, NM)	201.0+	93.0
Avalon (Eddy, NM)	101.0+	33.0
Red Bluff (Reeves, TX)	100.0+	51.4

**Non-Routine Products Issued for September:**

Flash Flood Watches (FFA): 29  
Flash Flood Warnings (FFW): 93  
Flash Flood Statements (FFS): 80  
Flood Warnings (FLW): 79  
Flood Advisories/Statements (FLS): 127

**Total Non-Routine Products Issued: 408**

**cc: email: COE ABQ, HIC, IBWC ELP, IBWC PRD, LCRA, NWS ABQ, NWS EPZ, NWS LBB,  
NWS MAF, NWS SJT, SRH, TAMU, TCEQ, USGS CNM, USGS SJT, WGRFC**