

## Storm Data and Unusual Weather Phenomena - September 2014

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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### OKLAHOMA, Panhandle

(OK-Z001) CIMARRON, (OK-Z002) TEXAS, (OK-Z003) BEAVER

09/01/14 00:00 CST	0	Drought
09/30/14 23:59 CST	0	

September saw above normal precipitation for the western two thirds of the Oklahoma Panhandle, but very little fell over Beaver County. Most areas measured at least 1.5 to 2 inches during the month, with scattered amounts exceeding 3 inches or measuring less than 1 inch. Throughout the month, Cimarron and Texas Counties were generally rated at Severe (D2) Drought conditions; Beaver County was mostly rated at Severe (D3) Drought conditions. Guymon recorded 1.85 inches of precipitation for the month (0.06 inches above normal).

Soil moisture was rated mostly short to adequate during the month. Crops fared well during the month, and some development was even limited by too much rain and cloudiness. Rangeland and pasture continued to improve in some areas, but cattle herd sizes remained limited due to prolonged drought. Upper soil zones were mostly in the 10 to 30 percent full range, with locations in the eastern Panhandle generally drier. Deeper soil moisture was still below normal in much of the Oklahoma Panhandle, but values were estimated to be greater than 150 percent of normal where rainfall had been most frequent. The Palmer Drought Severity Index indicated a rating of Moderate Drought for the Oklahoma Panhandle. No burn bans were in effect.

Reservoirs and stream flows across the Oklahoma Panhandle were generally below normal levels through September.

Economic losses due to the drought through September were predominately the result of supplemental watering in the driest areas and supplemental feed for cattle on drought-thinned rangeland and pastures.

### TEXAS, North Panhandle

(TX-Z001) DALLAM, (TX-Z002) SHERMAN, (TX-Z003) HANSFORD, (TX-Z005) LIPSCOMB, (TX-Z006) HARTLEY, (TX-Z007) MOORE, (TX-Z008) HUTCHINSON, (TX-Z009) ROBERTS, (TX-Z010) HEMPHILL, (TX-Z012) POTTER, (TX-Z013) CARSON, (TX-Z014) GRAY, (TX-Z015) WHEELER, (TX-Z017) RANDALL, (TX-Z018) ARMSTRONG, (TX-Z019) DONLEY, (TX-Z020) COLLINGSWORTH

09/01/14 00:00 CST	0	Drought
09/30/14 23:59 CST	0	

September saw above normal precipitation for the western two thirds of the Texas Panhandle, but very little fell over the eastern third of the Panhandle. Most areas measured at least 2 to 3 inches during the month, with isolated amounts in the southwest Texas Panhandle exceeding 5 inches. Some areas in the eastern Panhandle measured less than one half an inch of rain. All areas of Exceptional (D4) Drought improved due to frequent rain during the month. Extreme (D3) Drought remained along a line from east of Dalhart to near Clarendon and in extreme eastern portions of the Panhandle. Deaf Smith County to western Hartley County improved to a mix of Abnormally Dry (D0) to Moderate (D1) Drought conditions following the widespread heavy rain in those areas. Otherwise, the remainder of the Panhandles were rated at Moderate (D1) to Severe (D2) Drought conditions. Amarillo recorded 4.16 inches of precipitation for the month (2.24 inches above normal), Dalhart recorded 1.55 inches of precipitation (0.10 inches below normal), and Borger recorded 1.82 inches of precipitation (0.56 inches below normal).

Soil moisture was rated mostly short to adequate during the month. Crops fared well during the month, and some development was even limited by too much rain and cloudiness. Rangeland and pasture continued to improve in some areas, but cattle herd sizes remained limited due to prolonged drought. Upper soil zones were mostly in the 10 to 30 percent full range, with locations in the eastern Panhandle generally drier. Deeper soil moisture was still below normal in much of the Texas Panhandle, but values were estimated to be greater than 150 percent of normal where rainfall had been most frequent. The Palmer Drought Severity Index indicated a rating of Moderate Drought to Near Normal conditions for the Texas Panhandle. Countywide burn bans were supported in several counties.

Stream flows across the Texas Panhandle ranged from near normal to below normal during September. The reservoirs of Lake Meredith and Palo Duro were below 5 percent and 3 percent capacity respectively, and Greenbelt Lake was below 13 percent capacity. Water watches for several public water systems persisted through September while voluntary to mandatory mild water restrictions were continued.

Economic losses due to the drought through September were predominately the result of supplemental watering in the driest areas and supplemental feed for cattle on drought-thinned rangeland and pastures.

POTTER COUNTY --- 1.1 E AMARILLO [35.20, -101.80], 3.2 NE AMARILLO [35.23, -101.78]

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	09/02/14 17:41 CST		0	Hail (1.00 in)
	09/02/14 17:42 CST		0	Source: Public

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, a member of the public reported quarter size hail (1.00 inch) one mile east-southeast of town (Potter County). After producing this hail, the thunderstorm slowly moved off to the northeast.

**RANDALL COUNTY --- 4.8 SE AMARILLO [35.15, -101.76], 4.7 E AMARILLO [35.20, -101.74]**

09/02/14 17:42 CST	0	Hail (1.00 in)
09/02/14 17:43 CST	0	Source: Public

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, a member of the public reported quarter size hail (1.00 inch) five miles southeast of town (Randall County). After producing this hail, the thunderstorm slowly moved off to the northeast.

**RANDALL COUNTY --- 3.1 SE AMARILLO [35.17, -101.78], 3.7 E AMARILLO [35.21, -101.76]**

09/02/14 17:43 CST	0	Hail (1.00 in)
09/02/14 17:44 CST	0	Source: Public

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, a member of the public reported quarter size hail (1.00 inch) three miles southeast of town (Randall County). After producing this hail, the thunderstorm slowly moved off to the northeast.

**POTTER COUNTY --- 2.2 SW (AMA)AMARILLO INTL A [35.20, -101.75], 1.0 W (AMA)AMARILLO INTL A [35.22, -101.74]**

09/02/14 17:52 CST	0	Hail (1.25 in)
09/02/14 17:53 CST	0	Source: Public

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, a member of the public reported half dollar size hail (1.25 inches) four miles east of town (Potter County). After producing this hail, the thunderstorm slowly moved off to the northeast.

**POTTER COUNTY --- 0.9 NE (AMA)AMARILLO INTL A [35.23, -101.71], 2.8 NE (AMA)AMARILLO INTL A [35.25, -101.69]**

09/02/14 17:53 CST	0	Hail (1.00 in)
09/02/14 17:54 CST	0	Source: Official NWS Observations

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, the National Weather Service office observed quarter size hail (1.00 inch) 7 miles east-northeast of town (Randall County). After producing this hail, the thunderstorm slowly moved off to the northeast.

**POTTER COUNTY --- 0.9 NE (AMA)AMARILLO INTL A [35.23, -101.71], 3.4 NNE (AMA)AMARILLO INTL A [35.26, -101.69]**

09/02/14 17:59 CST	0	Hail (1.25 in)
09/02/14 18:00 CST	0	Source: Official NWS Observations

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, the National Weather Service office observed half dollar size hail (1.25 inches) 7 miles east-northeast of town (Potter County). After producing this hail, the thunderstorm slowly moved off to the northeast.

**POTTER COUNTY --- 0.9 NE (AMA)AMARILLO INTL A [35.23, -101.71], 3.5 NNE (AMA)AMARILLO INTL A [35.27, -101.69]**

09/02/14 18:03 CST	0	Hail (1.00 in)
09/02/14 18:04 CST	0	Source: Official NWS Observations

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, the National Weather Service office observed quarter size hail (1.00 inch) 7 miles east-northeast of town (Potter County). After producing this hail, the thunderstorm slowly moved off to the northeast.

**POTTER COUNTY --- 0.9 NE (AMA)AMARILLO INTL A [35.23, -101.71], 4.7 NE (AMA)AMARILLO INTL A [35.27, -101.67]**

09/02/14 18:08 CST	0	Hail (1.00 in)
09/02/14 18:10 CST	0	Source: Official NWS Observations

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, the National Weather Service office observed quarter size hail (1.00 inch) 7 miles east-northeast of town (Potter County). After producing this hail, the thunderstorm slowly moved off to the northeast.

**POTTER COUNTY --- AMARILLO [35.20, -101.82], 2.0 NNE AMARILLO [35.22, -101.80]**

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	09/02/14 18:10 CST		0	Hail (1.75 in)
	09/02/14 18:12 CST		0	Source: Other Federal Agency

A discrete thunderstorm developed over the city of Amarillo (Potter and Randall County) during the evening hours of the 2nd. While over the city, employees at Bell Helicopter reported golf ball size hail (1.75 inches). After producing this hail, the thunderstorm slowly moved off to the northeast.

**Isolated convection developed over the southern Texas Panhandle during the early evening hours of the 2nd. A weak upper level disturbance combined with moderate instability to allow this convection to become severe. Hail up to the size of golf ball were reported in the city of Amarillo before the storm dissipated.**

**(TX-Z012) POTTER, (TX-Z017) RANDALL**

09/07/14 01:00 CST	0	Dense Fog
09/07/14 07:00 CST	0	

The combination of calm surface winds, abundant near surface moisture, and a clear sky led to the development of dense fog during the early morning hours of the 7th. This fog dropped visibility in Amarillo (Potter and Randall Counties) below a quarter mile from 1 AM CST until 7 AM CST. The lower visibility caused morning traffic to slow throughout the city. By 7 AM CST, low level winds picked up and mixed out the dense fog.

**(TX-Z016) DEAF SMITH**

09/21/14 02:30 CST	0	Dense Fog
09/21/14 05:30 CST	0	

The combination of calm surface winds, abundant near surface moisture, and a clear sky led to the development of dense fog during the early morning hours of the 21st. This fog dropped visibility in Hereford (Deaf Smith County) below a quarter mile from 2:30 AM CST until 5:30 AM CST. The lower visibility caused morning traffic to slow throughout the city. By 5:30 AM CST, light drizzle began and dissipated the fog.

**OLDHAM COUNTY --- 1.4 S BOYS RANCH [35.51, -102.25], 2.0 SSW BOYS RANCH [35.50, -102.26]**

09/24/14 11:47 CST	0	Hail (1.75 in)
09/24/14 11:48 CST	0	Source: Public

A line of severe thunderstorms moved across Oldham County during the early afternoon hours of the 24th. As this line moved over the town of Boys Ranch (Oldham County), a member of the public reported golf ball size hail (1.75 inches) in town. After producing this hail the line of storms continued moving southwestward across the county.

**OLDHAM COUNTY --- 1.4 S BOYS RANCH [35.51, -102.25], 2.6 S BOYS RANCH [35.49, -102.26]**

09/24/14 11:49 CST	0	Hail (1.75 in)
09/24/14 11:50 CST	0	Source: Emergency Manager

A line of severe thunderstorms moved across Oldham County during the early afternoon hours of the 24th. As this line moved over the town of Boys Ranch (Oldham County), the County Emergency Manager reported golf ball size hail (1.75 inches) in town. After producing this hail the line of storms continued moving southwestward across the county.

**OLDHAM COUNTY --- 1.4 S BOYS RANCH [35.51, -102.25], 2.6 S BOYS RANCH [35.49, -102.26]**

09/24/14 11:51 CST	0	Hail (1.75 in)
09/24/14 11:52 CST	0	Source: Broadcast Media

A line of severe thunderstorms moved across Oldham County during the early afternoon hours of the 24th. As this line moved over the town of Boys Ranch (Oldham County), local broadcast media reported golf ball size hail (1.75 inches) in town. After producing this hail the line of storms continued moving southwestward across the county.

**POTTER COUNTY --- 6.4 NNW AMARILLO [35.29, -101.85], 5.8 NNW AMARILLO [35.28, -101.86]**

09/24/14 12:28 CST	0	Hail (0.88 in)
09/24/14 12:29 CST	0	Source: Broadcast Media

A line of severe thunderstorms moved across Potter County during the early afternoon hours of the 24th. As this line moved over the town of Amarillo (Potter County), local broadcast media reported nickel size hail (0.88 inch) six miles north- northwest of Amarillo (Potter County). After producing this hail the line of storms continued moving southwestward across the county.

**POTTER COUNTY --- 6.4 NNW AMARILLO [35.29, -101.85], 5.9 NNW AMARILLO [35.28, -101.86]**

09/24/14 12:31 CST	0	Hail (1.00 in)
09/24/14 12:32 CST	0	Source: Broadcast Media

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<p>A line of severe thunderstorms moved across Potter County during the early afternoon hours of the 24th. As this line moved over the town of Amarillo (Potter County), local broadcast media reported quarter size hail (1.00 inch) six miles north- northwest of Amarillo (Potter County). After producing this hail the line of storms continued moving southwestward across the county.</p>				
<b>POTTER COUNTY --- 0.9 NE (AMA)AMARILLO INTL A [35.23, -101.71], 1.0 S (AMA)AMARILLO INTL A [35.21, -101.72]</b>				
	09/24/14 12:40 CST		0	Hail (1.00 in)
	09/24/14 12:41 CST		0	Source: Official NWS Observations
<p>A line of severe thunderstorms moved across Potter County during the early afternoon hours of the 24th. As this line moved over the town of Amarillo (Potter County), the local National Weather Service office reported quarter size hail (1.00 inch) seven miles east-northeast of Amarillo (Potter County). After producing this hail the line of storms continued moving southwestward across the county.</p>				
<b>OLDHAM COUNTY --- 6.4 WNW WILDORADO [35.22, -102.31], 6.9 ESE VEGA [35.20, -102.33]</b>				
	09/24/14 12:44 CST		0	Hail (1.00 in)
	09/24/14 12:45 CST		0	Source: Trained Spotter
<p>A line of severe thunderstorms moved across Oldham County during the early afternoon hours of the 24th. As this line moved west of the town of Wildorado (Oldham County), a trained storm spotter reported quarter size hail (1.00 inch) four miles west of Wildorado (Oldham County). After producing this hail the line of storms continued moving southwestward across the county.</p>				
<b>OLDHAM COUNTY --- 1.3 ENE ADRIAN [35.28, -102.66], 0.8 SE ADRIAN [35.26, -102.67]</b>				
	09/24/14 13:00 CST		0	Hail (2.75 in)
	09/24/14 13:01 CST		0	Source: Public
<p>A line of severe thunderstorms moved across Oldham County during the early afternoon hours of the 24th. As this line moved over the town of Adrian (Oldham County), an employee for Adrian Independent School District reported baseball size hail (2.75 inches) breaking out car windows and school windows in town (Oldham County). After producing this hail the line of storms continued moving southwestward across the county.</p>				
<b>OLDHAM COUNTY --- 4.0 E ADRIAN [35.28, -102.61], 3.3 E ADRIAN [35.26, -102.62]</b>				
	09/24/14 13:05 CST		0	Hail (1.00 in)
	09/24/14 13:06 CST		0	Source: Trained Spotter
<p>A line of severe thunderstorms moved across Oldham County during the early afternoon hours of the 24th. As this line moved east of the town of Adrian (Oldham County), a trained storm spotter reported quarter size hail (1.00 inch) 3 miles east of town (Oldham County). After producing this hail the line of storms continued moving southwestward across the county.</p>				
<b>RANDALL COUNTY --- 1.5 NNW CANYON [35.00, -101.93], 5.0 SW CANYON [34.93, -101.98]</b>				
	09/24/14 13:35 CST		0	Hail (1.00 in)
	09/24/14 13:36 CST		0	Source: NWS Employee
<p>A line of severe thunderstorms moved across Randall County during the early afternoon hours of the 24th. As this line moved north of the town of Canyon (Randall County), a off duty NWS employee reported quarter size hail (1.00 inch) one mile north-northwest of Canyon (Randall County). After producing this hail the line of storms continued moving southwestward across the county.</p>				
<b>DEAF SMITH COUNTY --- 7.1 NNE WALCOTT [35.03, -102.80], 4.3 N WALCOTT [34.99, -102.83]</b>				
	09/24/14 14:00 CST		0	Hail (1.00 in)
	09/24/14 14:01 CST		0	Source: Public
<p>A line of severe thunderstorms moved across Deaf Smith County during the early afternoon hours of the 24th. As this line moved west of the town of Simms (Deaf Smith County), a member of the public reported quarter size hail (1.00 inch) eight miles west of town (Deaf Smith County). After producing this hail the line of storms continued moving southwestward across the county.</p>				
<b>DEAF SMITH COUNTY --- 1.8 WNW HEREFORD [34.83, -102.43]</b>				
	09/24/14 14:05 CST		0	Thunderstorm Wind (MG 51 kt)
	09/24/14 14:06 CST		0	Source: Mesonet
<p>A line of severe thunderstorms moved across Deaf Smith County during the early afternoon hours of the 24th. As this line moved west of the town of Hereford (Deaf Smith County), the West Texas Mesonet site 2 miles west-northwest of Hereford (Deaf Smith County) reported a 59 mph thunderstorm downburst. After producing this downburst the line of storms continued moving southwestward across the county.</p>				
<b>DEAF SMITH COUNTY --- HEREFORD [34.82, -102.40], 2.7 SSW HEREFORD [34.78, -102.42]</b>				
	09/24/14 14:05 CST		0	Hail (0.88 in)
	09/24/14 14:06 CST		0	Source: COOP Observer

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
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A line of severe thunderstorms moved across Deaf Smith County during the early afternoon hours of the 24th. As this line moved over of the town of Hereford (Deaf Smith County), the Hereford COOP observer reported nickel size hail (0.88 inch) in town (Deaf Smith County). After producing this hail the line of storms continued moving southwestward across the county.

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**DEAF SMITH COUNTY --- 0.9 NW HEREFORD MUNI ARPT [34.86, -102.33]**

09/24/14 14:15 CST	0	Thunderstorm Wind (MG 50 kt)
09/24/14 14:16 CST	0	Source: AWOS

A line of severe thunderstorms moved across Deaf Smith County during the early afternoon hours of the 24th. As this line moved east of the town of Hereford (Deaf Smith County), the Hereford AWOS 5 miles east-northeast of Hereford (Deaf Smith County) reported a 58 mph thunderstorm downburst. After producing this downburst the line of storms continued moving southwestward across the county.

**The combination of lowering heights aloft and moderate elevated instability led to the development of a complex of severe storms over the southern Texas Panhandle during the early afternoon hours of the 24th. Scattered storms across the northern Texas Panhandle slowly drifted southward through the morning hours of the 24th. As heating peaked during the early afternoon, these storms broke through the low level capping where they were able to access the moderate elevated instability. The storms quickly formed into a southwestward moving line which produced a combination of large hail and damaging winds. The storms quickly moved into northwestern Texas and eastern New Mexico Plains by 3 PM CST.**

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**RANDALL COUNTY --- 0.7 SSW PALO DURO CANYON STATE PARK [34.94, -101.67], 2.1 SE PALO DURO CANYON STATE PARK [34.93, -101.64], 1.9 E PALO DURO CANYON STATE PARK [34.95, -101.64], 0.5 NNW PALO DURO CANYON STATE PARK [34.96, -101.67]**

09/24/14 14:05 CST	0	Flash Flood (due to Heavy Rain)
09/24/14 15:00 CST	0	Source: Park/Forest Service

Intense rainfall from a line of thunderstorms which moved through Randall County during the early afternoon hours of the 24th led to the development of Flash Flooding in Palo Duro Canyon State Park. Park officials reported the water crossing number 2 had between 8-10 inches of water flowing over the road, and water crossing numbers 3 and 5 had 5 inches of water flowing over those crossings. Once storms moved south of Randall County, this flash flooding was able to recede.

**A line of severe storms moved across Randall County during the early afternoon hours of the 24th. These storms also produced intense rainfall across the southern portion of Randall County which led to the development of flash flooding. Once the storms moved out of the Southern Plains this flash flooding was able to recede.**