

# [LKWCD Current]

Winter Issue

January 26, 2015

## A Look at 2014 Data

### Rainfall

The data for rainfall for Tom Green, Runnels, and Concho counties for the year of 2014 is now complete. Most areas did not receive more than a few hundredths until the epic rainfall event in May. There were some areas that actually had higher than average levels of rainfall for the year and others that were quite deficient. For example, rain station 22 is located on county road 287 in Concho county and had an annual total of 28.17 inches, while rain station 18 in Runnels county had a mere 9.92 total inches of rainfall for the entire year. We also have a large number of constituents within the district that keep a log of rainfall at their location and send in the data to us quarterly, giving us many more rainfall data points. Using both the rain station and rain gauge data I put together annual rainfall averages for all three counties for the past three years (2012-2014). The overall trend in all three counties in the last three years has been decline in annual precipitation. With all three years averaged together the three year average for each county is as follows: 22.44 inches for Tom Green, 24.74 inches for Concho, and 22.55 inches for Runnels. As stated earlier, most areas in 2014 had received only a few hundredths of precipitation until the very end of May. The good news is that we have already received over an inch in many areas of the district for

January 2015 and are expecting more rain this weekend. If this trend of frequent precipitation continues we should have a nice wet year for 2015!

### Water Levels

Although annual precipitation has been on the decline for the last few years, there were a high percentage of monitor wells that had a higher static water level than had been measured in years. There were also a handful that were slightly up but many wells stayed relatively near or at their normal static level. With the early rains this January and the expected rains this weekend I would forecast the water levels coming up quite nicely by mid February, especially with the lack of irrigation.

### Efficient Agricultural Irrigation

The most important form of conserving water throughout our water district is through efficient irrigation practices. I have taken an excerpt from an environmental fact sheet that I thought was very informative on irrigation management for water efficiency. The remainder of this article was taken from the fact sheet.

### **Irrigation Management for Water Efficiency**

Incorporating a crop demand-dependent irrigation schedule saves water without affecting crop yields. In order to efficiently apply water to the root zone, estimate the water demand based on soil type, precipitation, crop needs and soil moisture retention. The process for developing an irrigation schedule is described below. For an in-depth discussion of irrigation scheduling based on crop water use, refer to the Nebraska Cooperative Extension article, "Irrigation Scheduling: Checkbook Method" at [www.ianrpubs.unl.edu/epublic/live/ec709/buid/ec709.pdf](http://www.ianrpubs.unl.edu/epublic/live/ec709/buid/ec709.pdf).

- Determine your soil type. Soil characteristics help determine effective irrigation application rates, durations and frequencies. For instance, sandy soils may require more frequent but shorter duration applications.
- Determine weekly precipitation amounts. Install a rain gauge in a central location. Although local radio and TV weather services can give you general precipitation rates for the week, site-specific information is more accurate.
- Determine each crop's water quantity needs. Contact your county cooperative extension service for irrigation demand information for individual crops.
- Monitor soil moisture to determine whether irrigation is necessary. If the soil moisture content is adequate for the crop's water

quantity needs, no additional water application is required. Soil moisture can be measured with tensiometers, electrical resistance blocks ("gypsum," "ceramic" or "moisture" blocks) or neutron probes.

- Measure the output from your irrigation devices. Use flow meters or gauged water pans to measure the output of sprinklers and drip irrigation heads.
- Combine the five pieces of information above to determine a week-by-week irrigation schedule. Update the schedule as weather and soil moisture conditions change.
- Recheck soil moisture 1-2 days after irrigation to determine depth of applied water and uniformity. If water penetration is too deep, too shallow, or spotty adjust your irrigation schedule to correct it.