PLUM CREEK CONSERVATION DISTRICT

Plum Creek Conservation District NEWSLETTER

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2013 Halloween Flood Cleanup & Repair

INSIDE THIS ISSUE:

On October 31st , 2013, areas in our District experienced severe flooding with some areas receiving up to 10 inches of rainfall. It was for these type of events that the Plum Creek Conservation District was initially created back in 1957. Before PCCD's dams were ever built, a 1960 Soil Conservation Service study, estimated the average annual floodwater damage to be $109,569. In today's dollars, considering inflation, this would equal $ 874,000. During the October flooding many of our sites had considerable amounts of debris wash into them and, unfortunately, a few dams suffered structural damage. PCCD applied for and was granted financial assistance through FEMA for the necessary clean up and repairs. Three dams, sites 11,12 and 14, had repairs completed to their plunge basins. The function of a plunge basin is to catch and dissipate the water flow being released from the principal spillway, minimizing erosion as water moves downstream. The repairs to the plunge basins entailed sculpting the basins as originally designed, lining the bottoms with special material and adding and replacing the rock that had been displaced. In addition, site 12 had repairs to areas along the dam, where wave action had caused erosional damage. A portion of Site 12's auxiliary spillway had also been eroded and was repaired. The purpose of an auxiliary spillway is to convey excess flood waters around the dam when floodwaters rise past the spillway crest. Sites 12,14, and 16 had waters flow around their auxiliary spillways, while many of the other dams had water levels nearly reach their spillway crests. Last, considerable amounts of debris were either mulched or removed for sites 1,2,5,6,8,12,14,16,21, and 27. The total cost for cleanup and repairs was $135,738.

Site # 2 scattered debris along the dam right after flooding

Site # 6 debris cleanup in progress

Site # 14 repair of the plunge basin

Winter 2014/2015 Water Levels

Detecting Water Leaks

Winter 2014/2015 Water Levels

The table below shows water levels for 9 wells that were measured in the Winter of 2014/2015 along with their corresponding lowest recorded water level. If you are interested in finding out the water level in your well and how it compares to other wells in the area, contact us to schedule a time to measure your well. A complete listing of PCCD water levels can be found on our website www.pccd.org

Well	Winter 2014/2015Levels	Lowest Recorded Level
Cargile	- 44.25	- 66.00
Kosarek	- 50.5	- 50.8
Larsen	- 22.8	- 22.8
Lipscomb	- 91.9	- 93.9
Nohra	- 105.55	- 130.67
Moore	- 67.05	- 70.6
Platt	- 123.15	- 123.15
Lockhart #8	- 79.1	- 108.0
Wells	- 81.4	- 90.35

Detecting Water Leaks

Are you experiencing higher than normal water bills? If the answer is yes, it may be the result of a water leak. Determining the nature of a water leak and its source may be somewhat challenging, so listed below are a few helpful tips for your consideration.

One of the very first steps in investigating a leak is checking your water meter , making sure all water devices have been turned off. If your water meter is still running, then there is probably a leak somewhere.

Next, close the shut off valve where it enters the house. Again check your water meter to see if it is still running. If it is still running ,then there is a leak somewhere between the meter and your house. Call your water utility company to notify them of the leak.

To check for toilet leaks, place a few drops of food coloring in your tank and wait a couple of minutes. If color appears, then you have a leak. Inspect the components of you toilet system or call a professional plumber for assistance. It could be that the length of the flapper chain is not set properly or that other components such as the flapper , valve seat , float or refill valve have been damaged. Many of these components can be replaced by a homeowner, but if you are unsure call a plumber.

Dripping faucets, shower heads, and outside faucets can account for significant water loss over an extended period of time if not repaired. Fixing a leaky faucet may be as simple as replacing a worn out washer.

Inspect for swimming pool leaks. Check around the pool areas for damp areas. Look for cracks in the pool and deck area. Measure the water level in your pool over a 24 hr. period by placing a 5 gallon bucket with water in it on the first entrance step of the pool. Place a piece of tape on the inside and outside of the bucket and mark the water level. Monitor the water level to see if it has gone down on the outside tape. A drop of only an eighth of an inch can indicate a water leak.

When checking for irrigation system leaks look for areas that are excessively wet or have puddles that do not dry up. If you spot these areas, there may be a damaged irrigation line or sprinkler head. Call an irrigation specialist for further assistance.

Some leaks are harder to locate than others. If after fixing known leaks and your water meter still indicates that there is a leak somewhere, you may have an underground leak. Check for condensation around the floors, walls and wood work. Around the perimeter of your home inspect for dampness and look for any water flow near your driveway and street side curb.

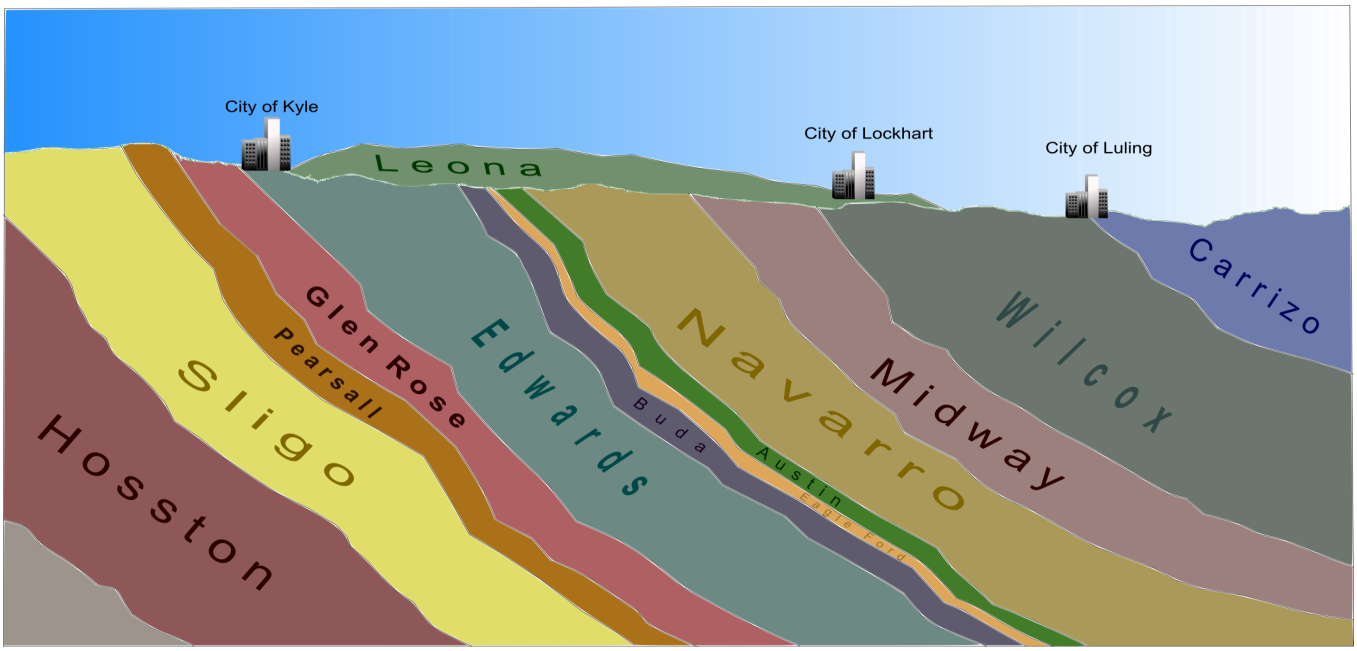
Other sources of leaks that may need to be inspected are air conditioner units, humidifier systems, washers, and dishwashers.

All Aquifers Are Not Created Equal

PCCD is located in a unique geological setting where there are multiple aquifers. These aquifers include the Edwards, Wilcox, Trinity Group, Carrizo, and Leona. An Aquifer by simple definition is a "geological structure that contains and conducts groundwater." Texas' State Water Plan relies on groundwater supplies from its aquifers to meet the growing projected water demand. Caldwell County's expected water demand, according to the State Water Plan, for the year 2030 is 11,001 acre feet per year, while Hays County's water demand is 41,776 acre feet. According to 2013 District records, approximately 71% percent of the groundwater used in the District was for public supply, 11% for irrigation needs, 8% for poultry needs and 10 % for exempt use purposes.

When Caldwell County was first settled, landowners dug wells into the shallow Leona Aquifer. The earliest known Caldwell County Leona well was dug in 1850. Prior to 1953, Lockhart's water supply was supplied by the Leona Aquifer. The Leona extends in a 2 – 4 mile wide band from Kyle southeasterly through Lockhart approximately 25 miles. The Leona, compared to other aquifers in our District , is a fairly shallow aquifer with thicknesses ranging from a few feet at its margins to about 40 feet near its center. The Leona is primarily composed of stratified gravel with minor amounts of sand, silt, caliche, sandstone and conglomerate. One major water quality concern is the high Nitrate levels that are pervasive throughout the aquifer and in many places exceed the 10 MG/L Safe Drinking Water Act limit.

During the late 1950s and early 1960s the City of Lockhart developed multiple water wells into the Wilcox formation. These wells, in addition to surface water, currently supply Lockhart's potable water. The Wilcox is a vast aquifer that extends from the border of Louisiana to the Mexican border. In PCCD, it outcrops in an 8-14 mile-wide band across central Caldwell County, dipping southeastwardly at an average of 150 ft. per mile while increasing in thickness in the direction of the dip. The Wilcox consists chiefly of sand and lesser amounts of clay, sandstone and silty shale and is divided into 3 layers (upper, middle and lower) that are somewhat difficult to distinguish in Caldwell County . Within PCCD there is considerable variation in the Wilcox's water quality. Areas in the vicinity of Luling have slightly saline or brackish water that exceed the 1500 MG/L level, while most other areas fall below this level. Water well production capabilities also vary throughout the District, ranging from 5 GPM to 1000 GPM. Areas in



southeast Caldwell County have limited production due to the Yoakum Channel, a buried submarine channel that is composed of shale and clay. Currently, the District is mapping the subsurface of the Wilcox using hundreds of geophysical logs and age dating water samples from specific well locations in order to get a better understanding of the aquifer.

Outcropping in southeast Caldwell County is the Carrizo Aquifer that has recently been targeted as a viable water supply for the growing communities along I-35. Similar to the Wilcox, the Carrizo is a vast and prolific aquifer. The District has approximately 5691 acres overlying the Carrizo. The Carrizo is composed of course loose sand and its water quality is generally very good. Currently, the District does not have any Carrizo wells permitted; however, just outside of our District ,in neighboring Gonzales County Underground Water Conservation District, 27,000 acre feet of water per year has been recently permitted.

Two aquifers in PCCD that have the potential to be developed as an alternate water supply, if they are desalinated, are the Edwards and Trinity. The Edwards is an extensive karst aquifer that supplies significant freshwater supplies to many areas throughout Texas. In PCCD, the Edwards Aquifer that is located east of the so called " Bad Water Line" (a line that demarks the 1000 MG/L TDS level), becomes increasingly brackish. The "Bad Water Line" in PCCD generally runs parallel with IH-35.

The Trinity Aquifer, a major aquifer, extends across much of the central and northeastern part of the state. It is composed of several smaller aquifers contained within the Trinity Group. Although referred to differently in different parts of the state, they include the Antlers, Glen Rose, Paluxy, Twin Mountains, Travis Peak, Hensell, and Hosston aquifers. These aquifers consist of limestones, sands, clays, gravels, and conglomerates. There is limited information about the Trinity in PCCD; however, recently there has been a test well drilled into the Trinity-Hosston formation that should provide more information.