

WATER LOSS REDUCTION ACTIONS

Around July 2020 Readings showed we was buying a lot more water from Knott Co. Water. These purchases were through meter at Jacks Creek. So we started Leak Detection in that area. While leak detecting in that area, we developed a Major Leak at Estill Bottom. With the Estill Bottom Leak we had to turn on the Master Meter at Lick Skillet from Knott Co., which drove our Purchases up to as high as 12 MG a month. We couldn't do the repairs on Estill Bottom and got a Emergency Grant. So we still focused on driving down the purchase's in Jacks Creek. We pulled the leaks down and got Jacks Creek Master Meter down and brought our total purchases down to a little over 5 MG a month. At this point we no longer bought through Jacks Creek Master Meter in emergency. We couldn't do anything to cut the Lick Skillet meter down until Emergency Grant and Construction was completed. This kept the Knott Co purchases up until November 2021. Upon completion of the Estill Bottom Project it allowed us to shut Master Meter at Lick Skillet and we now only make purchases through that meter in Emergency situations. We have had to open the meter at Jacks Creek twice since then once in January of 2022 due to Backwash pump at plant being down and had to have emergency crew from Contractor to repair on a Saturday. This resulted in 1.7 MG being bought in January 2022. Then we had it opened for two days in February to maintain water in the area while we drained and cleaned Basin's at the Plant. But in time with better planning, we should be able to leave it off during Basin Cleaning. So I look for Knott Co. to sale us very little water in the year of 2022, which will alleviate an average of 2 MG off our purchased water and result in a savings of around 7,000 a month.

We were having several leaks on Toler Creek. We found main line pressure had been raised higher than design pressure due to a line extension to a new Community on Cam Branch which is a lot higher elevation than the remaining Toler Creek Area. We added a Booster Pump Station to supply Cam Branch Customers with adequate pressure which they weren't receiving beforehand and thus allowing us to drop the main line pressure on Toler Creek down almost 100 psi.

We were having several leaks in the Spewing camp area. We found that the highest bases in the area had 100 psi or more. The line at the mouth of the holler was tied in to the High Side of Spewing Camp Booster Station. We then added a PRV which reduced the pressure in the Spewing Camp area, thus reducing the number of leaks. We have had only 1 leak since install of PRV and it was due to Flooding.

We added a Booster Station In Ligon Camp because the customers had inadequate pressure. Customers at the end of the line only had 5psi and could not even use their base.

We were having a lot of leaks on Big Branch. Upon Investigation we found that Big Branch at one time had a Booster Pump Station almost in the head of the Branch. Someone in the past had removed the Booster and raised the PRV settings on Little Mud to give pressure to the head of Big Branch. This had raised the Pressure in the entire area to exceed design. We then put a PRV in line to the Big Branch area. We then moved to the Little Mud PRV and found it was not functioning at all due being set at a setting which kept the Regulator at full capacity. So we installed a new PRV and then adjusted it to lower main line pressure and then done the readjustments on Big Branch.

We was buying a lot of water in the Mud Creek area from Pikeville Utilities. With these adjustments made on Little Mud we found we could now send our Produced Water across Spurlock and feed some of the Mud Creek area thus reducing our purchases from Pikeville Utilities. But we could sustain the tank levels at Spurlock for only around 4 days. So we would open and close the valves as necessary.

Upon Completion of the Clinic Hill Tank Project which replaced a leaky tank called Old Mink, we found that we can sustain feeding some of Mud Creek area, without running people to turn valves roughly every 4 days. We are now in the process of finding how much we can sustain. We keep supplying more and more of the area with our produced water and see how the system reacts.

We added a new Raw Water Intake Pump, when I discovered we only had one that could supply the water we needed to run the district. I had the other pump removed and took back to be re-furbished so in the future we have a backup.

Several Stations only had one functioning pump. We have been taking them one by one and repairing and adding a second pump. Maytown BPS was a main station which had only one pump, I put a new pump in and installed a VFD. I also added a new Pump to Spewing Camp BPS which not only gave us two pumps, but we found the only pump in the station was worn and the new pump greatly increased the gpm we could feed which lowered the run times of the station and also allowed us to send more of our produced water to the area thus lowering purchases from Knott Co. and Pikeville Utilities.

Telemetry was in bad need of repairs. I changed out the Martin Tank Telemetry which was calibrated poorly and off several foot. The adjustment block in the panel had been broken off in the past. I installed new Telemetry and thus lowered overflows of the tank. We then added Telemetry also to Dutch Clarke BPS and Branhams Creek Tank which had never had telemetry before. This reduced all the traveling each day checking tank and adjusting time on station and provided a more reliable service to customers in that area. Then we added Telemetry to Abner Tank which had never had Telemetry. This Tank feeds a Pneumatic station that feeds a really high elevation community. This allowed us to provide a better service to that community as in the past Abner tank would get low thus not allowing the pneumatic pump to operate. We then changed out Tackett Fork tank due to the telemetry being nonfunctioning. Then we changed out the Telemetry at Minnie tank. The old Telemetry was not functioning in times of low temperature. I took several steps trying to repair the original telemetry but could never alleviate the problem. Brush Creek Tank Telemetry went out, I replaced it with new Telemetry. Then Melvin Tank started going in and out, I replaced it with new Telemetry. We are currently having issues with Buckingham Tank.

Water plant was at a point we could shutdown around 4 or so hours a night and still maintain our tank levels. Instead of shutting down as I told you we decided to run it for those hours. A plant is more efficient if it is not shut down and our water is cheaper to produce than buy. We have updated the plant with new Turbidity meters. We painted and cleaned the entire Plant. Replaced all the lights with LED to lower power bill. WE cleaned the basement and painted the entire pipe gallery with the proper colors. We ran new chlorine lines from inside of the plant all the way to Chlorine building due to leaks. We repaired telemetry from Plant to Raw Water intake building. I have ordered a replacement assembly for the Water Plant Meter as we feel it is not giving accurate numbers and has not been calibrated in 10 years.

We still have a long way to go on our recovery. In the future we have planned zone meters with Telemetry which will show us in real time our gpm so we can monitor changes faster and give us numbers to use in leak detection. We are planning to have a leak detection crew go out at night using the zone meters and listening devices to pin point more leaks to further tighten the system. Add more telemetry to John Hall Br Tank and Minks Br Tank.