

Subject: New Sewer Treatment Equipment
May 30, 2023

I write this weekly column to keep folks informed about what is going on in Highlands town government, so let me share what has just happened at our sewer plant on Arnold Road.

We have a new belt press! Some might say so what? But most may ask, what in the world is a belt press? Or why does it matter?

Before I tell you what it does for the town, let me give you the background story. Several decades ago, Highlands purchased a used belt press from the sewer department in Clyde, NC. The press was refurbished and then installed in our sewer plant.

The town had purchased the used belt press for a very good price and, through the years, kept it going through a lot of hard work and maintenance efforts. But in recent years, parts began to fail. Several years ago, the sewer department staff informed the public works director that the old reliable press was on life support. As a result, the town ordered a new state-of-the-art belt press in last year's budget; the new belt press and its installation cost nearly \$900,000.

Getting the unit was a supply chain issue; you just don't go to Home Depot and take one off the shelf - it had to be built, and it took a long time to get the belt press here to Highlands. But, about a month ago, the huge new machine was trucked up the mountain to the Highlands Sewer Department. It has taken several weeks for technicians to install the belt press, but it is now operational.

So, what does the belt press do? The sewer system has large settlement tanks that hold hundreds of thousands of gallons of liquid and solid sewage. Microbes break these solids down in a matter of hours. The resulting liquids are screened and processed -- I won't describe some of the objects caught by the screens. The positive outcome is that water goes back to the river, but not before an ultraviolet light system neutralizes E. coli bacteria in the water before it is returned to the river. The water coming from the sewer plant is cleaner than the water going over the Lake Sequoyah Dam. This system gives us an all-organic, chemical-free sewer plant. As a point of interest, you should know that the water naturally flowing over the dam is infused with E. coli and giardia from animal waste.

A by-product of the treatment process is sludge that accumulates in the bottom of the large settlement tanks. This material is siphoned off and is also processed. The final step is to run the sludge through a belt press to form a condensed, paper-thin solid material. This material is then placed in the landfill. Unfortunately, it can't be used for fertilizer where vegetables are grown. Also, transporting it to a factory where it could be made into fertilizer for shrubs and grasses is not economically feasible.

The old belt press was very slow, and over the years, its performance had declined. It took 16 hours for the old press to process a sludge cycle. The new press can process substantially more in just three hours. It condenses the sludge into much less volume. That faster time gives the plant operators more time to attend to other plant operations. Along with the new press, improvements were made to the disposal system. The improved and more compacted sludge is now automatically deposited in a large loader. When the loader is full, a truck takes it quickly to the landfill. So, this new piece of equipment has made the sewer plant more efficient. While the new belt press cost a lot more money, over the years, it will pay dividends for the department and town.

The town continuously upgrades water and sewer equipment. Those upgrades can be expensive, but they must be done. The town has other public works upgrades in the upcoming budget. A final budget review is scheduled for the June 15 town board meeting.