

## **ALBERTA- What is sky blue, about 170 feet tall and creates hundreds of bubbles every hour?**

It's the newest addition to Alberta's water tank.

Alberta's bubble aeration system is used to strip off chloroforms from water by an aeration process. An aeration piping grid has just been installed in the town's 200,000 gallon elevated water tank to uniformly bubble aerate the water in the tank. The piping grid was connected to a blower located adjacent to the tank to force about 70 cubic feet of air per minute into the tank which causes the water to be aerated and strip off chloroforms.

Several concerned water customers who have visited the recent Alberta Council meetings have inquired about the safety of the water they are receiving from the Town. Quarterly notices are required to be sent each to each water user by the Virginia Department of Health.

Alberta Mayor, Melissa Parrish shed light on the subject by explaining that she had applied for and received a \$25,000 grant to study the situation that led to the approval of \$356,950 from VDH for a construction grant that has paid for a new system that has just been installed in the Town's 200,000 elevated water storage tank situated at I-85. She notes that there was no cost to the Town to construct the new system that will essentially bubble the contaminants out of the water supply.

She did note that water users may receive one or two more notices since the contaminants or TTHM's in this case, are based on a rolling 12 month average. "As the calendar pages fall off, the average drops," said Parrish but the numbers are coming down fast according to our monthly reports submitted to the Virginia Department of Health.

TTHM's are created when routine disinfectant is added to the water supply at the Town's booster station and it mixes with organic materials found in most water lines. The age of the water in several areas of service can be as old as 20 or more days causing the retention of the TTHM's. Warm weather also accelerates the process.

Engineers for the project are B&B Consultants. They coordinated construction of a diffused air stripping system for the disinfection by-product removal, a line tie-in to the mainline and the addition and the addition of an altitude valve, and concrete vault.

The system consists of a new separate 6-inch diameter inlet to the existing 200,000 gallon elevated storage tank. The existing 12-inch combined inlet/outlet will become a dedicated outlet. A new 12-inch diameter waterline and check valve will provide backpressure on the waterline between the booster pump station and the elevated storage tank when the booster pump station is not in operation. Dual blowers, capable of producing 90 CFM at a TDH of 12 psi, will be equipped with 10-HP motors. Additional belts and pulleys will be provided so that the blowers can be set up for 70 CFM which is the anticipated mode of operation.

A 3-inch airline will carry the air into the weighted distribution grid which will be approximately 5 feet off of the bottom of the tank. A total of 38 fine bubble diffusers with a flow range of up to 3 CFM each will be provided for the equal dispersion of air throughout the tank.

A satellite telemetry system was provided that allows the Alberta Utility Department to monitor the water tank level, booster pumping station operation status and flow. Alberta will be required to maintain a 1.0 mg/L free chlorine residual leaving the 200,000 gallon elevated storage tank whenever the aeration system is in operation.

B & B President, Dr. Henry M. Bugg., P.E., L.S. wrote and performed the planning grant. He then, turned right around and wrote the construction grant application that was ultimately approved, explained Mayor Parrish. She said special thanks go to Steven D. Pellei, P. E. and Director of the Division of Construction Assistance, Planning & Policy for VDH who was familiar with the Town and its limited resources. Barry E. Matthews, P. G. with VDH visited the job site and assisted with the financial end of the work. Alberta Clerk, Mrs. Linda Helm handled the bookkeeping. Alberta's project was the only one that was funded entirely by a grant, she said. Parrish also contributed the success of the construction to Alberta Utility Superintendent, Jeff Swenson who followed the work progress step by step along the way looking out for the best interests of the Town. Parrish oversaw the entire project from conception to completion.

Southern Corrosion, Inc. of Roanoke rapids, NC was the contractor for the system. Those also providing services included subcontractors Jones Electric, Biggs Construction, Glover's Welding, and Cooke's Construction Services.