



HANNIBAL BOARD OF PUBLIC WORKS

ELECTRIC, WATER AND WASTEWATER

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DATE: September 12, 2017

TO: Hannibal Board of Public Works
Hannibal City Council

FROM: Robert W. Stevenson, P.E.

Re: Chloramine Replacement Project

I last reported the status of this project to the City Council on August 15, 2017.

Since that last report we have accomplished the following:

Black and Veatch: Black & Veatch has collected the samples for the Bench Scale #2 test set and as of Sept. 12 has completed a preliminary analysis of those samples. More detail will be presented in the Power Point slides available at the time of the meeting.

Calgon: Calgon is working under a contract directly with HBPW to furnish and install a pilot test column. The column was just delivered by the time we reported to the Council in August. Since then a service engineer from Calgon came to our treatment plant and supervised the temporary installation of their equipment including piping and power supplies. Also the engineer provided appropriate calibration of water flows and pressures to mimic our anticipated future filter conditions. The columns were filled with granular activated carbon according to specifications provided by Black & Veatch.

Of the four columns provided in the test equipment, two are being used to simulate a GAC cap on our existing sand filters. Two more are being used to simulate two post GAC filter pressure vessels in series as proposed by the Jacob's study.

Data collection by as required by Black & Veatch began on about Aug. 22 and continues daily.

Almost immediately after the equipment was set up and data collection began, a small water feed pump furnished as part of the Calgon scope failed with a burned up motor. Calgon provided a replacement pump which also failed. Calgon provided a third pump which also failed. Finally HBPW staff provided a used chemical feed pump which had operating parameters meeting Calgon's requirements. That pump has not failed to date and data collection has begun with some consistency.

Only the test columns simulating the GAC filter cap arrangement have been affected by the pump failures. The two columns simulating post filter GAC pressure vessels have been unaffected by the pump failures and have produced consistent data from the first day.

HBPW: Our own staff is responsible to collect data from the test columns and log the data in spreadsheets provided by Black and Veatch. Periodically the data collected is transmitted to Black & Veatch electronically for their review and analysis. Part of the data we are collecting involves the weekly shipping of samples to a certified lab for analysis. Samples have been delivered weekly since we started testing but no results have returned to date.

Also our staff is responsible to maintain the test column equipment, ensure the water feed pumps continue to operate properly, watch for leaks or spills, and report any malfunctions to Black & Veatch.

Staff is carrying out their responsibilities daily and plan to continue to do so until the testing phase ends in about six months.

Staff is currently working to copy the construction of the test column device so we can have one to own for future testing. As an alternative we are getting a quote from Calgon to simply buy the one we are currently renting. We think this will be useful to us in evaluating future supplies of GAC. We know that carbon sources are subject to change over time and we will from time to time have to change with them. Not all carbon sources will work equally well with our source water.

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