

From: [Hotaling, Greg \(ghotaling@mrbgroup.com\)](mailto:ghotaling@mrbgroup.com)
To: jfletcher@townofcanandaigua.org
Cc: "[Terry Fennelly](#)"; [Doug Finch, Town Manager](#); "[Jared Simpson](#)"
Subject: FW: system pressure study - brickyard
Date: Monday, February 7, 2022 12:34:41 PM

Guys- just sending this along as this was the one issue I didn't answer very well on Thursday night. See below. Call with any questions.

Sincerely,

Greg Hotaling
The logo for MRB group, with "MRB" in a bold, blue, sans-serif font and "group" in a smaller, blue, sans-serif font to its right, separated by a vertical line.

From: Anderson, Derek
Sent: Monday, February 7, 2022 11:44 AM
To: Hotaling, Greg <ghotaling@mrbgroup.com>
Cc: Davis, Bill <bdavis@mrbgroup.com>
Subject: RE: system pressure study - brickyard

Greg:

Quick answer with no background to, "how many times did we study the pressure in the system to determine the impact of Pactiv?", over 132 (number of weeks of data we have at the Brickyard tank).

Comprehensive answer:

- The 2002 Canandaigua Farmington and North Farmington Water Districts, Water System Master Plan Report identified improvements to the distribution system and established a plan for expansion of the system. The two districts have since been combined.
- In 2004, the New York State Department of Health recommended that the Towns of Farmington and Manchester investigate the storage capacity of the existing distribution network as part of any new water district formation. A feasibility study that reviewed the storage requirements for the Canandaigua Farmington and Town of Manchester Water Districts was subsequently prepared. The study identified a long term need for additional storage to bolster fire flows. New storage (in Manchester) was not added to the system since it was found that minimum flows (>500 gpm) can be provided using the existing tanks in Farmington.
- In 2010 (updated 2012) the Town recognized the need to update of the hydraulic analysis utilized for the Master Plan to incorporate water districts and developments added to the system since 2002. The purpose of the study was identify potential deficiencies, improvements needs for growth, and make identify methods to reduce water age in the

Brickyard Road and Bowerman Road tanks.

- All of these studies noted that both the Brickyard Road tank and the Bowerman Road tank are locked out of the system.
- None of these studies mention Pactiv.
- In 2014, the Town decided to move ahead with improvements to the Brickyard Road tank. It was only while preparing the PER that we became aware of Pactiv. Previous studies relied on Town provide level information for each tank that showed minimum movement in the tanks. This was expected since we knew the tanks were locked out of the system. The Town pressure sensors at each tank only measure actual level in the tank, not system pressures.
- While preparing the PER, we reviewed a Brickyard Road tank inspection report by Liquid Engineering that made a comment that the ROV could not review conditions around the upper level of the tank or the overflow because the tank was low. This surprised me because the tank should be full since it was locked out of the system. I asked Jim Crane if the altitude valve was set to maintain a lower level. Jim responded that no, the tank was low because Pactiv had tested its fire pump just before the tanks were inspected. He also related that the fire pump testing was a known issue and that on at least one occasion, cars got stuck in the local carwash when the pressures dropped and shut down the wash system. This was the first time anyone at MRB had heard about Pactiv.
- In August 2015 I borrowed WCWSA's data logger and placed it on a hydrant on North Street, across from Pactiv and happened to catch their super test. For this test Pactiv open every fire connection at the same time with all fire pumps running. The test was performed on a Saturday and dropped the pressure on North Street to 20 psi.
 - We later learned that Pactiv performs this super test one a year, sometimes they warn the Town.
 - We also learned that Pactiv tests its main fire pump once a week on Wednesday.
 - The data from the tank also shows that someone- may also be Pactiv, performs a pump test on Mondays.
- For the PER I had to balance the model to match both the Pactiv fire tests and normal daily flows. I used the data logger information from non-test days to develop a daily use pattern for Canandaigua.
- When the project went to final design, we talked the Town into installing a data logger on the water system side at Brickyard tank. The data logger was installed May 5, 2019 and I have been monitoring ever since. The Final Engineering Report is based on Tank data from May 2019 to June 2020, and hydrant flow test and system pressures in June and July 2019.
 - Note: This is part of the reason it took over a year to write the PER. We wanted the pressure data to make sure we had at least a years' worth of data to see what happens in the system.

- Note: The tank data from 2019 to date is the data I showed you after bids were received. The data is starting to show a gradual decrease in system pressure at the tank.
- Last year, in response to pressure complains by people in Zone 2, we put out the data loggers for a few weeks. We placed them in Zone 1 and Zone 2. This is when we found that at least one of the PRVs between the zones was not working.
- While the system typically meets RSWW requirements for working pressure and minimum pressures at all points under all flow conditions, it does not meet the pressure stabilization requirements. RSWW all for a maximum change in tank level of 30-feet (12.6 psi). In my opinion, since Pactiv tests once a week, the changes in system pressure caused by their tests is part of the normal system operation. It is not an abnormal occurrence such as a fire or water main break.
- Note: The PER and FER focused on low pressures. The more I look a the tank data, and other field data, I notice that the HGL at the tank has exceeded the low lev of the City reservoirs 8% of the time and approached he reservoir HGL a least once. Weh we looked at pressures to address the pressure complaints, I also a few times where the pressure created an HGL higher than the City reservoirs. Since we do not have continuous level reading for the City reservoirs that match the time period at Brickyard, I can only speculate that when Pactiv shuts off its fire pumps (or when it fills its fire tank), that there is a pressure sure in the system. The tank will dampen this surge.
- Pactiv Testing.
 - I believe Pactiv told me that on Monday they test the fire pump that draws directly off the water system through a connection on Summers Drive. Test last ½ hour +/-.
 - On Wednesday they test the North Street pump. This pump draws from an on-site tank. When the tank level is low, a valve opens to re-fill the tank. The valve opens while the pump is running. When the pump test is done, the tank fills and the valve closes at high level. The valve is open/closed, no backpressure of rate of flow feature. The flow rate to the fill the tank is greater than the pump rate. Test lasts ½ hour +/-.
 - For the supper test, they open all the fire connections around the facility, turn on all fire pumps (they have one that draws from the pond), and see how much water they can supply. The fire pumps are not limited by suction pressure. Test last 1 hour +/-.
 - Based on the pressure data, I suspect there may be another company that test fire pumps but am not sure who or where, I just see regular dips in pressure.

Derek Anderson, P.E.

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From: Hotaling, Greg
Sent: Monday, February 7, 2022 9:43 AM
To: Anderson, Derek <danderson@mrbgrou.com>
Cc: Davis, Bill <bdavis@mrbgrou.com>
Subject: system pressure study - brickyard

Derek – how many times did we study the pressure in the system to determine the impact of Pactiv? It wasn't 1 time if I remember...

Greg Hotaling
Project Manager



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