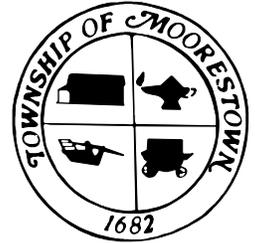


# The Township of *MOORESTOWN*



601 East Third Street • Moorestown • New Jersey • 08057-2480

To: Kevin Aberant, Township Manager  
From: Don Lloyd, Public Works Director  
Date: August 22, 2025  
Re: Carbon Filter Testing of Volatile Organics

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The purpose of the memo is to provide an update as to operational changes that have been implemented at North Church Street Water Treatment Plant (WTP) to avoid exceeding NJDEP standards for 1,2,3 – Trichloro propane (TCP) such as happened earlier in 2025.

By way of background, the reconstruction of the WTP that was completed in 2020 included the installation of six Granulated Activated Carbon Filters, that work as three pairs of two filters each. These filters remove volatile organic compounds such as TCP, a compound that has been found in the aquifer the well draws water from. Raw well water is pumped through the filters and the carbon absorbs the contaminants. In essence, these are large Brita filters such as what some homeowners use.

Over time the carbon's ability to absorb contaminants is diminished and it must be replaced (similar to a Brita filter). The guidance from the original vendor suggested the lifespan of the carbon would be seven years from start up, which would have meant the filters should need to be replaced in 2026.

Current NJDEP standards require quarterly testing for various parameters, including TCP. From the beginning of plant operations until August, 2024, every post-treatment test for the presence of TCP was a "ND" or Non-Detect. This was evidence the treatment process was working as intended.

However, samples obtained on August 20, 2024 indicated the presence of TCP. The carbon vendor was consulted, and samples of all six filters were obtained. The results of the tests indicated the carbon in filters 1 and 2 were at the point of replacement, but the remaining four filters still had the capacity to effectively filter contaminants. The vendor's recommendation was to stop using filters 1 and 2, and only use the remaining four filters until replacement carbon could be installed. Based on the vendor's experience, the plant could still operate using the remaining four filters until the carbon in filters 1 and 2 was replaced.

Follow up test results obtained in September and October showed a decrease in the levels of TCP, indicating the remaining four filters were performing satisfactorily. As you may recall, the next round of quarterly testing in February 2025 showed increased levels of TCP, which led to the plant being taken out of service until the carbon could be replaced.

Since that time, the carbon in filters 1 and 2 was replaced (July 2) and the carbon in filters 3 and 4 has also been replaced (September 30). Post installation testing has confirmed the absence of TCP in the treated water samples.

The replacement process for filters 1 and 2 involved removal of the existing carbon and installation of new (virgin) carbon. The “spent” carbon in filters 1 and 2 was then retained by the vendor and then processed to restore its ability to remove contaminants. The replacement process for filters 3 and 4 involved removing the spent carbon and installing the restored carbon that was originally in filters 1 and 2. The vendor retained the carbon from filters 3 and 4 and will process it for future installation in filters 5 and 6 (likely some time in 2026). Going forward, there will be a rotation of carbon so that there is always available carbon in reserve to install when needed.

In an effort to prevent the recurrence of exceeding NJDEP standards, two primary operational changes are being implemented. Initially, the Township is increasing the frequency of testing water samples. Although NJDEP standards only require quarterly testing, the township will be performing monthly testing for the following volatile organics: TCP, 1,2 – Dibromo -3- Chloropropane, and 1,2 – Dibromoethane. These compounds are removed by the carbon filters, so performing monthly testing will provide a basis to confirm the treatment process is working as designed.

In the event any test results come back other than as a non-detect (ND) the impacted carbon filters will be turned off until a carbon exchange is performed. as detailed above, the vendor will always have cleaned carbon for at least two of the six vessels to expedite the exchange when needed. The treatment plant can still operate at full capacity with only four of the six carbon vessels.

Finally, based on the sooner than expected exhaustion of the carbon that was experienced, the carbon will be rotated at least every three to five years even if the test results do not show any detected volatile organics.