



City of Pflugerville

Legislation Text

File #: 2021-0670, Version: 1

Discussion and update regarding the Central Wastewater Treatment Plant Current Operations.

The City received a letter from the EPA detailing violations from the Central WWTP, of which the majority of the findings are the same as the TCEQ letter that was communicated to Council previously; however as EPA has ultimate primacy over NPDES permits and is who we submit the monthly Discharge Monitoring Report to, it would make sense that we would get a letter from them some time either before or after the TCEQ letter we received. The effluent violations for calendar year 2020 were due to various equipment and component failures over the course of the year. Those equipment and component failures were filter media cloth that had been damaged due to improper operation of the previous cloth media filters as well as an over-chlorinating of the filter cloth which reduced the life span of the media. As this filter cloth had significant damage, it needed to be replaced at the beginning of calendar year 2020. This filter cloth media had caused exceedances in total suspended solids in January, February, and March of calendar year 2020. After the filter cloth was replaced in April/May 2020, the total suspended solid levels returned to well below permit levels.

After this, the only issue that was still ongoing (and continues to be ongoing) is the annual average flow through the plant. This flow exceedance is something that will be brought back into compliance after the Phase I Central WWTP expansion is completed which will bring the permitted flow to 7.25 MGD. The flow may again be a challenge later in the Phase II expansion as our current average plant flows are ranging between 6.2-6.5 MGD. This would put us at roughly 85% of our Phase I expansion permitted flow at the completion of the current Phase I expansion. Some of the flow pressure will be relieved once the Wilbarger WWTP is brought online in 2024. In regards to the ammonia exceedances that were experienced starting in August 2020, mechanical aerator # 2 had a gearbox failure that was found to have a bearing that had released from its race and it was released into the gearbox creating a catastrophic failure of the gears within the gearbox. The aerators are primarily responsible for creating the oxygen that allows for biological activity within the aeration tanks and prevent our bacteriological life from degrading or dying due to a lack of oxygen. When any aerobic wastewater treatment plant has a lower amount of dissolved oxygen (DO) than would be ideal for bacteriological life, septic conditions can occur and create primarily higher than normal levels of total ammonia. If that bacteriological life is totally deprived of any oxygen, it can kill an entire wastewater treatment plant. In order to minimize the effects of the aerator being down, we reached out to numerous companies for temporary oxygen-generating equipment which encompassed both blowers and floating aerators. Given that the floating aerators had both the quickest lead time and had the quickest route for installation, we started an emergency rental agreement and installed the units until we could get the aerator gearbox replacement in front of Council to purchase and replace. While these floating aerators did not generate nearly as much air as the mechanical aerator, they produced enough oxygen within our aeration basins to keep our bacteriological life alive and prevent us from having a complete plant failure. These floating aerators were in place until the aerator gearbox was installed in March 2021.

In January 2021, we were not producing nearly enough oxygen with the floating aerators to keep up

with the flows we were experiencing and the air that was required to keep our ammonia levels below our 2.0 mg/L permitted values which was also creating a secondary problem with the total suspended solids in the colder water temperatures. When water temperatures are colder and we have more anaerobic bacteria given the lack of enough oxygen, pin floc are formed that don't settle out properly given the viscosity of colder water temperatures. In February 2021, the wastewater treatment plant experienced some issues during the winter storm, but the majority of the flow had been reduced given the lack of potable water from the water treatment plant. After reviewing the data again, the flows that came into the wastewater treatment plant were averaging around 10 MGD for multiple days after the snow/ice melt and also after water was restored around the City. As was noted during the event, both of our centrifuges were down for multiple days which prevented the treatment plant from wasting properly, but it wasn't affecting the plant until after everything else had returned to normal throughout the City. During that event, TCEQ issued a suspension of NPDES permit standards given the Governor's disaster declaration during the winter storm. That suspension should have prevented any violations for the month of February 2021 given TCEQ's guidance and when the all of our sample results came back with higher than normal values. Operations staff called TCEQ after the event to ensure that this was the case in regards to the suspension and they confirmed that suspension would be in place until the disaster declaration was lifted.

When looking at the data from April 2021, we had a single day where the E. Coli sample results were higher than what we had been getting for the entire month. The only issue that we had during the entire month of April 2021 was a problem with our chlorine feed system (the primary treatment mechanism to handle E Coli) could not feed enough chlorine gas to consistently create a chlorine residual on the downstream side of our chlorine contact clarifier. Our operations staff were supplementing chlorine feed limitation by using calcium hypochlorite (granulated chlorine) to bring chlorine levels high enough to meet our permitted values. While it would have been preferred to re-take the E Coli sample another day after we had the chlorine system operation back to normal, we are limited in both our sampling time windows and when we receive sample results as we use a 3rd party lab that typically takes between 10-14 calendar days to receive results and these samples are taken every week as required. If we were to delay the sample, we would have been in non-compliance for not sampling at all. Staff have reached out to Mr. Vaughn with EPA Region 6 and after discussion, it was determined that they are sent out automatically by the EPA if the state agency (TCEQ) has not updated the record in the national database to show that they had acted. This is in an effort for the federal government to ensure that facilities with NPDES permit violations are contacted and to ensure that they are on a path back to compliance if the state agency has not acted upon them. The EPA representative stated that the letter that would need to be sent will be almost identical to the one that will be sent to the TCEQ regarding the permit violations over the past year and if we are detailed on what our path to compliance is, then no further action will be required for the EPA if we continue the plant expansion construction that is currently underway.

Prior City Council Action

NA

Deadline for City Council Action

Discuss Only - No Action to be taken.

Funding Expected: Revenue Expenditure N/A

Budgeted Item: Yes No N/A

Amount: NA

1295 Form Required? Yes No

Legal Review Required: N/A Required Date Completed: _____

Supporting documents attached:

Presentation

Recommended Action

Discuss Only - No Action to be taken.