



June 4, 2024

Judy Edelbrock  
 Water Enforcement Branch  
 U.S. EPA Region 6  
 1201 Elm Street, Suite 500  
 Dallas, TX 75270-2102

Re: City of Angleton Oyster Creek Wastewater Treatment Plant  
 Docket Number CWA-06-2024-1751

Ms. Edelbrock:

The City of Angleton is in receipt of your email dated May 16, 2024, which included a Findings of Violation and Compliance Order, Docket Number CWA-06-2024-1751. The Compliance Order requires the City to a) submit a list of the specific actions taken to correct the Ammonia Nitrogen and Total Suspended Solids violations, and b) provide written certification to EPA Region 5 that the violations cited have been corrected and the facility is compliant with the requirements of the permit.

The Compliance Order pertains to the following effluent quality violations, which were provided in Attachment B of the Compliance Order:

Monitoring Period	Parameter	Units	Measure	Limit	DMR Value
March 2023	Ammonia	mg/L	Daily Avg	3	3.11
March 2023	Ammonia	mg/L	Daily Max	7	9.41
April 2023	Ammonia	mg/L	Daily Avg	3	3.51
April 2023	Ammonia	mg/L	Daily Max	7	13.8
June 2023	Ammonia	mg/L	Daily Avg	3	3.17
June 2023	Ammonia	mg/L	Daily Max	7	8.62
September 2023	Ammonia	mg/L	Daily Avg	3	3.95
September 2023	Ammonia	mg/L	Daily Max	7	15.47
September 2023	Total Suspended Solids	mg/L	Daily Avg	15	26.68
September 2023	Total Suspended Solids	mg/L	Daily Max	40	195



### **Capital Repairs That Likely Impacted Effluent Quality**

The City performed two capital repair projects that may have been a factor in these violations.

1. The City replaced the air diffusers in the treatment plant's aeration basin. This work began on March 25, 2023, and concluded on June 21, 2023. The plant has two aeration basins. The replacement was performed sequentially so that one of the two basins was always in service. There was no other way feasible to perform this work. The reduced volume of aeration during this period may have resulted in a lesser performance of ammonia removal, since nitrification of ammonia requires sufficient air flow and hydraulic retention time.
2. On September 28, 2023, the City began having issues with the blowers. One blower had operational issues, and as it was being repaired, a second blower's motor became damaged. This left the plant operating on one blower. Then as one blower was repaired, the third blower's motor also became damaged. All these repairs were repaired as quickly as possible, but the plant operated on one blower for several days throughout this period. The City installed variable frequency drives on the three aeration blowers at the treatment plant to remedy this situation. In addition, a fourth blower was purchased and remains in protective storage in case it is needed. Much like the diffuser replacement project, insufficient aeration may have been a factor in the ammonia and total suspended solids levels in the effluent.

### **Proactive Steps Taken By the City**

In 2024, the City has taken steps to improve the plant performance, one focused on operation and the other focused on capital.

#### **Operations Steps**

In March 2024, the City requested that its engineering firm, HDR Inc., perform an assessment of potential causes and remedies of recent treatment issues. The engineer recommendations for two areas of focus:

1. Better Methods for Solids Balance- One issue involved a highly fluctuating mixed liquor suspended solids (MLSS) concentration in the aeration basins. To keep this at a more uniform level, the recommendations were:
  - a. More frequent visits from the solids dewatering and transportation company. Longer times between visits resulted in more difficulty for the operators being able to waste solids to the digester as frequently as needed. This is occurring.
  - b. Determine MLSS with less delay. The plant regularly runs centrifuge tests to estimate MLSS levels, plus took two samples per week to send to a third party laboratory. It can be over a week before they get the results back, so they use the 30 minute settleometer test and centrifuge tests for determining the amount to waste. Although this is common industry practice, it is difficult to accurately determine MLSS concentrations. To better understand MLSS with less delay, the City now samples MLSS five times per week and has a much quicker turnaround time for results to be communicated back to them.



- c. Install a timer on the Waste Activated Sludge to have a more consistent wasting pattern. This has been done.
2. Optimize Air Flow to the Aeration Basins – In an attempt to increase aeration and prevent ammonia excursions, several of the new fine bubble diffusers appear to have been damaged. Operational recommendations to better manage aeration practices included:
  - a. Install flowmeter on the aeration header. This will be used to compare air flow to the maximum allowed by the diffusers.
  - b. Perform a treatment process model to identify shortcomings of the aeration system. This can be used to generate solutions for the medium term and long term.
  - c. Both of these recommendations for airflow optimization are potentially going to be included in the Schneider Electric project explained below.

### **Capital Related Steps**

The City is in final negotiations with Schneider Electric to perform several capital related improvements that will likely result in more reliable effluent quality. Although the improvements include other items that are not related to the issues in this Compliance Order, there are several that will improve ammonia and TSS removal. These improvements include:

1. New, more efficient blowers and related controls
2. New mixers and fine bubble diffusers in the aeration basin
3. New on-site solids dewatering system

Angleton City Council has approved the City entering a contract with Schneider Electric that will likely utilize an energy savings performance contracting model to finance the project. It is anticipated that the design of these improvements will begin later in 2024.

If you have any questions or require additional information, please contact me at 979-824-3333.

Sincerely,

Hector Renteria  
Public Works Director