



*Municipal Corp. of  
Cape Charles*

Ms. Julie Laferriere  
Water Compliance Manager  
DEQ-TRO  
5636 Southern Blvd  
Virginia Beach, VA 23463

August 26, 2022

RE: NOV-W2022-08-T-0001  
Town of Cape Charles Wastewater Treatment Plant (WWTP)  
VPDES Permit or Registration No. VA0021288

Dear Ms. Laferriere,

Please accept this letter as response to the Department of Environmental Quality Notice of Violation (NOV) letter noted above, dated August 19, 2022. This NOV deals with several issues found by DEQ inspector Kevin Cline during his inspection of the Town's Wastewater Treatment Plant on 8/01/2022 and 8/17/2022.

This response will address each of the nine observations noted. The actions outlined are intended to resolve the existing problems, as well as put preventive measures in place to keep these issues from happening again. All corrective actions that are within our direct control are in progress and are anticipated to be completed within 30 to 45 days. For items not within our direct control, we will offer anticipated timelines as soon as available.

**Observations and Town Corrections/ Preventive Measures:**

- 1. Observations: According to Facility records, a bypass of the Facility sludge press began on June 26, 2022 and continued to date of the initial inspection on August 1, 2022. The bypass was ongoing at the time of the August 17, 2022 inspection. DEQ has not received any information to date that the bypass has stopped. An oral report of the sludge press bypass was provided to DEQ Central Office staff during a separate compliance assistance visit on July 25, 2022. A written report of the bypass was submitted to DEQ on July 28, 2022, 32 days after the bypass began.**

*Overview:* The pump on the plant's belt filter press was inoperable from June 28, until July 7, 2022. The delay in servicing this pump was impacted by two other priority projects and the fourth of July holiday. A plant operator did repair the pump and returned the belt filter press to operation; however, the pump was only running

at about 75% efficiency. On July 12<sup>th</sup> the operator ordered a replacement pump and motor and found the lead time on these parts to be 12 weeks. This operator continued to monitor and adjust the pump and motor to optimize treatment as well as possible until the new parts arrived. The initial backlog and slowdown in sludge processing, along with the additional flow and biologic growth related to the warm weather has led to the issue. The plant's lead operator believed that by increasing the hours of operation for the pump, progress could be made toward reducing the buildup and eliminating the issue.

Correction: A new pump and motor combination for the belt filter press will be installed by COB on August 31<sup>st</sup>. On Friday August 26<sup>th</sup> Hepaco began pumping out sludge from the Waste Sludge Holding Tanks to create more room for additional wasting. This process will continue as frequently as the contractor can accommodate until the level of solids in the aeration tanks are back to normal (approx. 9,000 mg/L). We are also investigating additional ways to assist with sludge removal, by exploring solutions such as roll-off truck rental, additional sludge containers, etc.

Preventative action: A second pump and motor was ordered on July 29<sup>th</sup> and should arrive by mid-September; they will be placed on the shelf as spare parts to ensure this problem does not happen again. The town will also order a lab centrifuge to conduct daily checks on the solids to closely monitor their levels. We will also be creating a Solids Management Plan that will serve as a guideline to plant operators for this issue.

- 2. Observations:** At the time of the August 1, 2022 inspection, in-situ dissolved oxygen (DO) probes installed at the treatment unit all read 0.0 milligrams per liter (mg/L) or reported an error message. Daily DO readings documented in the daily logs at the biological treatment unit were reviewed from June 26, 2022 to July 31, 2022. All results were below the target minimum DO of 2.0 mg/L, with most reported as 0.0 mg/L or not reported. At the time of the August 17, 2022 inspection DO readings were taken in each of the biological treatment units with values between 0.1 and 0.2 mg/L at each of the four locations read. During both inspections the biological treatment unit was observed to be black and gray in color with thick black foam present.

Overview: This issue is a direct result of the conditions noted in Observation #1.

Correction: This problem will resolve once the solids have returned to normal. Please refer to our response to Observation #1. Also, Hach came on August 18<sup>th</sup> to calibrate and service the DO meters to make sure they are reading correctly and will show improvement in the DO levels once the solids issue is corrected.

Preventative action: Quarterly checks and calibrations of the meters have been made part of operational checklists.

- 3. Observations:** The ultraviolet (UV) disinfection system control box computer screen was not operational at the time of the August 1, 2022 or August 17, 2022 inspections. According to the operator, no other way exists to interface with the UV system. Due to this malfunction, the operational characteristics of the system could not be

observed. A malfunctioning UV system was also reported during inspections conducted in 2018, 2020 and 2021.

Correction: A new HMI was ordered from Trojan Inc. on July 22<sup>nd</sup>. Once it arrives it will be installed as soon as possible. We have requested an ETA for the HMI's arrival but have not yet received it.

Preventative action: We ordered a second HMI on August 26<sup>th</sup> to keep on the shelf as this has proven to be a problematic component of our UV system. We will also install a sunshade and some type of cover for the HMI screen because we believe the problem we have been experiencing may be due to the UV cabinet, which houses the HMI, getting very hot. These alterations will be installed once the new HMI is installed.

**4. Observations: Daily operator logs documented the presence of foam at the outfall on July 8th, 10th, 20th, 22nd, 24th, and 25th, 2022.**

Overview: We believe this condition is caused by some anoxic conditions in the plant and high water temperatures, around 89-degree F.

Corrective: The effluent going out will be closely monitored and the presence of foam will be noted on the daily log sheets. When foam carry over from the aeration tank is observed in the effluent discharge, an investigation will be conducted to identify the source of the problem (based on the foam color and type).

Preventative Action: Routine monitoring will be incorporated into the daily log sheets and treatment will be reviewed to reduce foam formation.

**5. Observations: The plant's sampler refrigerator was observed with the current temperature reading of 7° C that exceeds the required temperature for monitoring (preservation) of < 6° C.**

Overview: A new sampler refrigerator was purchased earlier this year to resolve this same problem, but it was found to be the wrong model and did not fix the problem. We therefore went back to using the old sampler refrigerator, which initially seemed to be able to maintain the proper temperature for the samples.

Corrective: The town is getting quotes for a new sampler refrigerator that will be able to maintain the < 6 degree C temperature requirement. The new sampler refrigerator will be ordered early next week and installed as soon as it arrives. We will request an ETA for arrival upon ordering.

Preventative Action: The town will place a sign on the front of the new sampler refrigerator reminding the operators of the < 6 degree C requirement. The daily Log has also been amended to document the sampler's temperature.

**6. Observations: Logs required by the Facility O&M manual were not complete. The monthly log and checklist were reviewed for April 2022 through July 2022:**

- a. A check of the operator's certificates of competency was not completed as scheduled in April.
- b. A review of laboratory control samples for the pH and DO laboratory parameter was not conducted in June as scheduled.

- c. A monthly check of all system pump stations was not completed as scheduled in July. Daily operator logs between June 26, 2022 and July 31, 2022 were reviewed:
- d. Each provided log was incomplete with no logs documenting the required malfunctioning UV system observations. Logs were observed with a significant amount of incomplete information on July 8th, 9th, 11th, 12th, and 13th.
- e. Daily solids wasting observations were not documented on logs observed for June 28th and 29th, July 8th, 9th, 12th, 13th, 18th, 22nd, 26th, 27th, and 28th.
- f. Dissolved oxygen observations were not documented on logs observed for July 9th, 13th, and 18th.
- g. Outfall observations were not documented on logs observed for July 14th and 15th.
- h. Membrane observations were not documented on logs provided for July 10th and 16th.

Corrective: There is an existing daily operator log sheet. A new S.O.P. for the daily operator logs was created on August 26<sup>th</sup> to ensure the form is completed properly. The operator's certificate of competency and the pH and DO laboratory parameters will be checked and completed by September 2<sup>nd</sup>, putting the town back on schedule.

Preventative Action: The entire staff will be trained on the plant's logs to ensure all staff are filling them out properly. Staff will be trained on the daily logs by September 2<sup>nd</sup>. One notable change will be that even if the procedure was not used that day (for example a waste) zero or N/A will be logged for that item, not left blank, indicating that the item was checked.

- 7. Observations: A plan for the management and/or disposal of waste solids and residues, a Sludge Management Plan, was requested for review and was not provided.**

Corrective: The town is in the process of finalizing a Sludge Management Plan, which will be implemented by September 2<sup>nd</sup>. The town has spoken with a consultant who is assisting with a template for this document. Once finished, a copy will be sent to Mr. Cline for review and any suggestions or changes.

Preventative Action: Once the Sludge Management Plan is finalized and approved, a yearly review will be scheduled to ensure the information remains current and that the plan still serves the plant's needs.

- 8. Observations: The process control and influent testing schedule documented in Appendix C of the Facility's O&M manual was not completed. Influent total phosphorous, orthophosphate, total Kjeldahl nitrogen (TKN), and ammonia nitrogen were not completed in June 2022. The May 2022 influent testing results did not include orthophosphate or ammonia nitrogen. Additional "as needed" testing outlined in the sampling schedule was not completed during this bypass event.**

Overview: The plant's lead operator experienced a death in the family in June and sending out this set of samples for the influent was unintentionally overlooked.

Corrective: The plant has reached out to Jason Spicer and Wayne Staples of DEQ to schedule training. A topic of particular interest is addressing the Process Control testing the plant should be doing. We are preparing draft process control monitoring using a Hach colorimeter and tests.

Preventative Action: We will get more operators current on the plants sampling schedule and procedures, this will give the town better oversight and will not put all the information in one person's hands.

**9. Observations: Discharge monitoring reports (DMR) containing the following relevant data results were submitted to DEQ.**

**Outfall 001(Effluent Monitoring)**

| Observations- DMR monitoring Period and Relevant Reported Monitoring Results |       |      |      |  | Legal Req.* |
|--|-------|------|------|--|-------------|
| Parameter  |       |      |      |  |             |
|  | 12/21 | 1/22 | 5/22 |  |             |
| Phosphorus, Total average concentration (mg/L)                               | 0.41  |      |      |  | 0.30        |
| TSS maximum concentration (mg/L)   |       | 17.4 | 16.6 |  | 15          |
| TSS maximum quantity (kg/d)  |       |      | 28.1 |  | 14          |
|  |       |      |      |  |             |

Overview: A note explaining and documenting the overages should have been included in the monthly report.

Corrective: Staff has accepted DEQ offered training (scheduled on September 7<sup>th</sup>) to ensure staff (i) remains current on all procedures for filling out the EDMR report timely and (ii) prepares state notification when experiencing issues. We also plan to develop a list of treatment goals and improving our process control monitoring to adjust treatment when these goals are not met.

Preventative Action: This training will offer an opportunity to develop redundancy with a second operator getting current on procedures for filling out the EDMR report timely. The town will also strive to become pro-active, adjusting treatment to prevent permit exceedances.

The Town is truly disheartened and concerned over these additional observations and is taking all corrective and preventive actions very seriously. Additionally, we are actively seeking professional technical assistance to help us address these issues and to improve ongoing

operations. We do understand the importance of holding the public trust associated with our permits, and we are committed to taking whatever steps may be necessary to resolve these issues.

We also wish to extend our sincere appreciation for the continuing help provided by DEQ, and especially from Kevin Cline, Jason Spicer, and Wayne Staples. The Town will keep the DEQ informed regarding the timeline associated with the ongoing aspects of the corrections listed above and to provide updates. Please don't hesitate to contact me, or the plant manager Patrick Christman, if you have any questions or concerns. Patrick can be reached at either: [patrick.christman@capecharles.org](mailto:patrick.christman@capecharles.org) or (757) 331-1150.

Best Regards,



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Town Manager  
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CC: John Brandt – Enforcement  
Kevin Cline – Inspection  
Patrick Christman – Plant Manager