



King County

Department of Natural Resources and Parks
Wastewater Treatment Division
West Point Treatment Plant
1400 Discovery Park Blvd.
Seattle, WA 98199

November 1, 2024

Tara Martich
NPDES Compliance Unit
U.S. Environmental Protection Agency, Region 10
Office of Compliance and Enforcement
Alaska Operations Office
222 West 7th Avenue #19
Anchorage, AK 99513

Sean Wilson, P.E.
Washington Department of Ecology
Northwest Regional Office
PO Box 330316
Shoreline, WA 98133-9716

Re: Total Residual Chlorine Limits, Elliot West, October 27, 2024

Dear Ms. Martich and Mr. Wilson:

King County is providing this report, as required by its Consent Decree (Civil Action No. 2:13-cv-677) and to fulfill the five-day reporting obligation of National Pollution Discharge Elimination System (NPDES) permit No. WA0029181.

On October 26-27, 2024, a total of 1.06 inches of rain fell at the Seattle-Tacoma International Airport according to the National Weather Service. The rain resulted in significant flow into the Elliott West Combined Sewer Overflow (EWCSO) facility, and EWCSO eventually discharged.

During the event, EWCSO exceeded its Total Residual Chlorine (TRC) limit of 109 µg/L. The daily sampling period for these discharges is from 7:00 a.m. to 6:59 a.m. The violation was reported to the Department of Ecology and was assigned ERTS number 734656.

EWCSO, located at 545 Elliott Avenue West in Seattle, Washington, discharged from 3:48 a.m. to 6:01 a.m. on October 27. The estimated total discharge volume was 4.0 million gallons (MG) over 2.2 hours.

During this storm event, EWCSO exceeded its daily permit limit of 109 µg/L for TRC, averaging 169 ug/L. The duration and volume of discharge exceeding 109 µg/L was 0.22 hours and 0.67 MG.

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The beginning of an event poses challenges for the chemical systems as they must adjust and stabilize to accommodate the incoming flows, both in terms of volume and intensity. The average TRC during the first five minutes was 500 µg/L.

TRC levels were also off near the end of the event. The TRC levels from 5:45 a.m. to 5:52 a.m. were extremely high, ranging from 1,000 to 5,000 µg/L. Prior to this period, the event TRC average was 24 µg/L. Staff is still reviewing the data and the sequence of events to confirm the violation and to further investigate potential causes of the high TRC levels.

At this time, there are three issues which may have combined to result in the high TRC.

1. Dip in the pre-dechlor TRC reading – The pre-dechlor TRC analyzer provides the input for dosing the sodium bisulfite (SBS) used for dechlorination. The pre-dechlor TRC levels were trending upwards during the event, as one would expect with the CSO flows becoming more dilute and its chlorine demand decreasing. However, just prior to 5:45 a.m., there was a dip in these readings (a decrease followed by a return to the previous high level).
2. Loss of communication – Data from the pre-dechlor analyzer was lost for two minutes immediately following the dip. While data was being transmitted intermittently, which showed the pre-dechlor TRC levels bouncing back up, the intermittent signals may have prevented the SBS system from applying at an adequate dose.
3. Inadequate SBS carrier water flow – Carrier water is added to the SBS flow to provide better mixing with the CSO. During the event, there were issues with the carrier water system, including a stuck valve on the final effluent sample pump backflush system, that could have limited carrier water flow.

If the initial five minutes and the seven-minute period near the end of the event were excluded, average TRC for the event would have been 2.3 µg/L.

Improvements that will allow the EWCSO facility to better meet its permit limits are underway with several ongoing improvement projects.

1. Hypochlorite System Improvement Project - Design is finished and contract has been awarded. This work is expected to take place during the wet season and is projected to be completed in 2025.
2. Dechlorination System Improvement Project Part 1 - This includes re-doing sampling lines and strainers to improve measurement of TRC and sample flow. The project is currently undergoing 100% design review and is scheduled for completion during the next dry season.
3. Dechlorination System Improvement Project Part 2 - This includes dechlor pump replacement and is scheduled for completion during the next dry season.

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If you have additional questions concerning this event, please contact me at 206-477-5600.

Sincerely,

DocuSigned by:

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Rebecca Singer
Operations Manager

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

cc:

Kamuron Gurol, Director, Wastewater Treatment Division (WTD), Department of
Natural Resources and Parks (DNRP)
Bruce Kessler, Deputy Director, WTD, DNRP
Jeff Lafer, Project/Program Manager IV, WTD, DNRP
Faon O'Connor, CSO Program Manager, WTD, DNRP
Verna Overturf, Offsite Supervisor, West Section, WTD, DNRP
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