Contingency Plan Quarterly Report on Ambient Monitoring Results

First Quarter 2026

MWRA gathers data on various Contingency Plan thresholds near the outfall location in Massachusetts Bay. These thresholds are part of the Deer Island Treatment Plant (DITP) NPDES discharge permit. This report presents ambient monitoring results for Contingency Plan thresholds that became available in January through March 2026.

This report includes the results of 2026 winter nuisance algae *Alexandrium* abundances, and 2025 autumn and annual water column chlorophyll. There are no exceedances of Contingency Plan thresholds in this report.

CHLOROPHYLL – autumn (September – October) and annual 2025

There were no exceedances of 2025 autumn chlorophyll or annual chlorophyll caution level thresholds. The chlorophyll seasonal caution level threshold value was derived from the 95th percentile of seasonal baseline means. Seasonal mean chlorophyll concentration at nearfield stations are compared against threshold values. The caution level threshold is 239 mg/m^2 for the autumn season. The annual caution-level and warning-level thresholds were set as 1.5 times and 2 times of annual baseline means. The annual caution level threshold for chlorophyll is 108 mg/m^2 and warning level threshold is 144 mg/m^2.

The 2025 annual nearfield mean areal chlorophyll was 108 mg/m^2, which is equal to the caution level threshold of 108 mg/m2 and therefore not an exceedance (Figure 2). This relatively high result was driven primarily by the calibrated fluorescence from the first two surveys in February and March 2025. There were observed high abundances of the large-celled diatom *Coscinodiscus radiatus*. This may have contributed to high lab extracted chlorophyll relative to the field fluorescence, driving up the calibrated areal chlorophyll used in this threshold test. The 2025 autumn nearfield mean areal chlorophyll was 109 mg/m^2, which was well below the autumn caution level threshold (Figure 3).

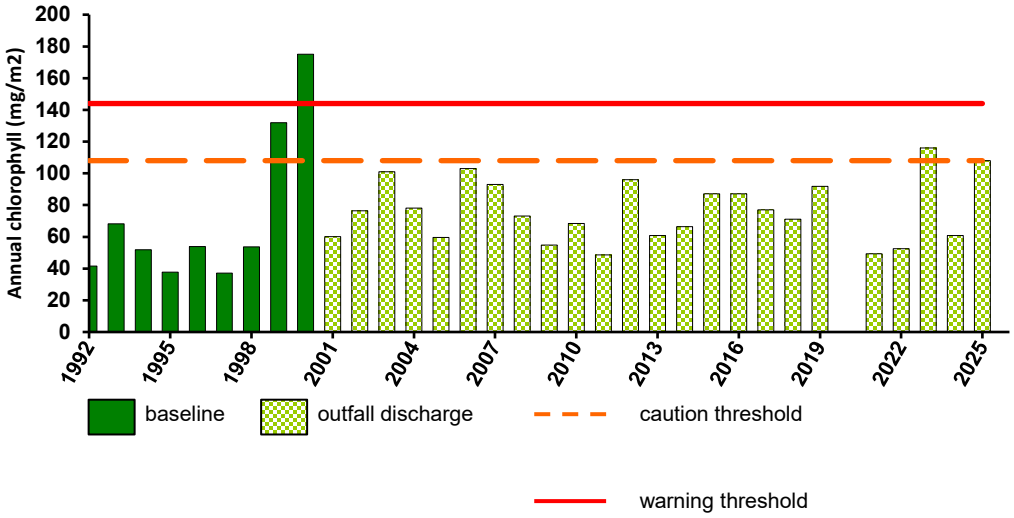

Figure 2. Nearfield annual mean areal chlorophyll-a concentrations (1992-2025)
Note that no annual result is available for 2020 because winter/spring surveys in March and April were dropped due to Coronavirus pandemic related restrictions.

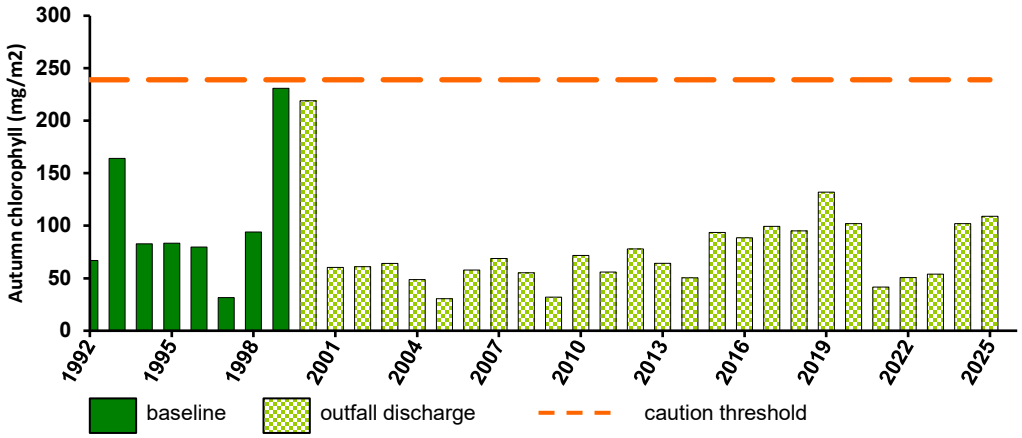

Figure 3. Nearfield autumn mean areal chlorophyll-a concentrations (1992-2025)

NUISANCE ALGAE

ALEXANDRIUM – February - March 2026

The nuisance algae *Alexandrium catenella* ("*Alexandrium*") can cause paralytic shellfish poisoning (PSP, or "red tide") in Massachusetts Bay. MWRA measures *Alexandrium* abundance using a molecular probe (NA1) thought to be specific to the *Alexandrium* red tide species *tamarense*, *catenella*, and *fundyense*[1].

MWRA checks observations of shellfish PSP toxicity from state fisheries agencies and other regional monitoring programs to track *Alexandrium* blooms in Massachusetts Bay and the Gulf of Maine region.

During the surveys conducted in February and March 2026, preliminary analysis shows that no *Alexandrium* cells were detected in any samples collected from nearfield stations (stations within 7.5 kilometers from the outfall) and farfield stations (reference stations). Only a sample with 100 or more cells of *Alexandrium* per liter from a nearfield station would constitute an exceedance under the Contingency Plan.

In Figure 1 below, we compare the preliminary results of *Alexandrium* abundance in samples collected from nearfield stations February 2025 against those from all prior years since 1992. Due to reductions in the number of surveys conducted each year, the historical results encompass more time-points than shown for the current year.[2]

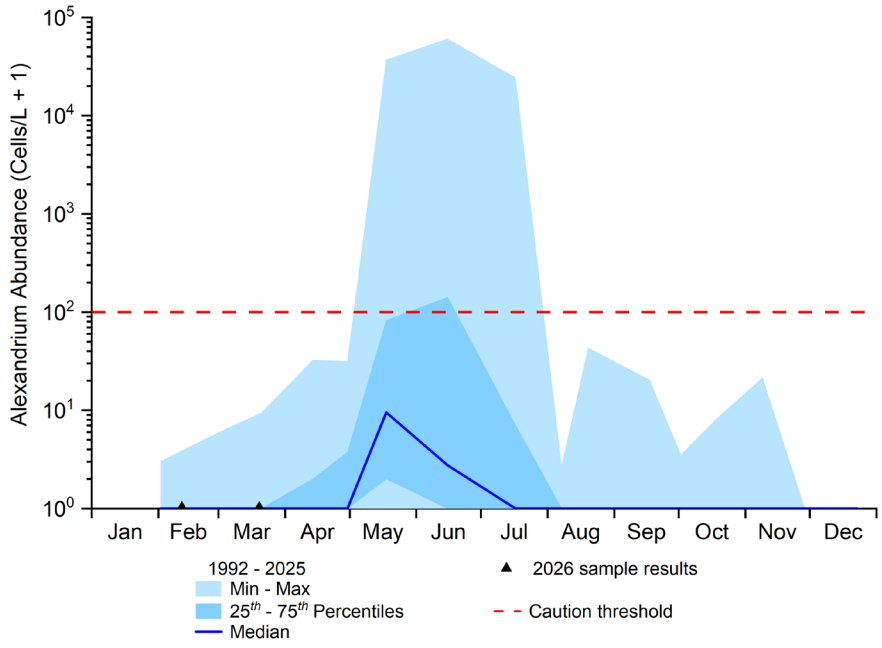

Figure 1. Nearfield *Alexandrium* cell concentrations (1992-2026)

[1] https://doi.org/10.1016/j.dsr2.2005.06.015

[2] There were two major modifications to the ambient monitoring plan for the outfall in 2004 and 2010; the numbers of surveys and monitoring stations were reduced through these revisions. More information can be found at: https://www.mwra.com/harbor/enquad/pdf/2010-04.pdf and https://www.mwra.com/harbor/enquad/pdf/2004-ms-92.pdf