



# MASSACHUSETTS WATER RESOURCES AUTHORITY

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June 20, 2017

Ms. Susan Studlien  
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Mail Code OES04-5  
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Ms. Susannah King  
NPDES Program Manager  
Division of Watershed Management  
Department of Environmental Protection  
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Boston, MA 02108

RE: Massachusetts Water Resources Authority  
Permit Number MA 0103284  
MWRA Contingency Plan Threshold Exceedance: Red Tide 2017

Dear Ms. Studlien and Ms. King:

In its outfall ambient monitoring program, MWRA monitors levels of the red-tide alga *Alexandrium fundyense* (*Alexandrium*), the cause of paralytic shellfish poisoning ("PSP"). Reporting on per-sample abundances of *Alexandrium* in the outfall nearfield is part of MWRA's Ambient Monitoring Plan<sup>1</sup> and Contingency Plan.<sup>2</sup> The Contingency Plan also specifies that MWRA conduct additional targeted monitoring for *Alexandrium* if any sample exceeds 100 cells/liter.

On June 13, 2017, MWRA carried out a planned water column survey which included measurements of *Alexandrium*. On June 16, MWRA was notified that results from that survey showed that two of the eight samples collected from nearfield stations in the vicinity of MWRA's outfall *Alexandrium* in abundances exceeding the Contingency Plan threshold of 100 cells per liter. Stations N07 and N04, at the northeastern and southeastern border of the nearfield, had *Alexandrium* abundance in surface samples of 143 and 494 cells per liter, respectively. This exceedance for *Alexandrium* requires regulatory and public notification. This letter constitutes that notification.

A surface sample from station F10 had 107 *Alexandrium* cells per liter. All other *Alexandrium* surface samples, and all subsurface samples, had cell counts less than 100 cells per liter. The following table shows the results of the June 13 survey; sampling sites are shown on the map.

<sup>1</sup> *Ambient Monitoring Plan for the Massachusetts Water Resources Authority Effluent Outfall Revision 2*. July 2010. Boston: Massachusetts Water Resources Authority. Report 2010-04.

<http://www.mwra.state.ma.us/harbor/enquad/trlist.html>

<sup>2</sup> *Massachusetts Water Resources Authority Contingency Plan Revision 1*. 2001. Report ENQUAD 2001-ms-071.

<http://www.mwra.state.ma.us/harbor/enquad/trlist.html>

### Results of MWRA June 13, 2017 *Alexandrium* testing

The nearfield sample counts resulting in the exceedance are in **red** text. Note that station N21 is not sampled for *Alexandrium*.

Station	Depth Code C= mid-depth (nominally 10 meters) A= surface		<i>A. fundyense</i> cells/liter
F23	A	0	
	C	1	
N01	A	2	
	C	1	
N04	A	<b>494</b>	
	C	0	
F22	A	0	
	C	1	
N18	A	48	
	C	2	
N07	A	<b>143</b>	
	C	8	
F15	A	89	
	C	1	
F10	A	107	
	C	46	
F06	A	36	
	C	92	
F13	A	34	
	C	0	

MWRA staff have been tracking the progress of this year's *Alexandrium* bloom since March 2017. We have been receiving frequent updates from shellfish monitoring staff from Maine, New Hampshire, and Massachusetts, as well as updates from scientists at the Woods Hole Oceanographic Institution.

There are no indications this exceedance is related to the Deer Island Treatment Plant outfall discharge. High (PSP) toxicity and *Alexandrium* cell counts have been observed at the Isles of Shoals in New Hampshire in recent weeks, leading to a closure of New Hampshire coastal waters to shellfishing. Low levels of PSP toxicity have also been detected at some Massachusetts Division of Marine Fisheries monitoring stations north of Cape Ann during the past 2-3 weeks. While the results are below the level at which shellfish beds are closed and are close to the method detection limit, they also indicate *Alexandrium* has been present in waters to the north of Massachusetts Bay.

Additionally, the experimental Gulf of Maine *Alexandrium fundyense* Nowcast/Forecast Simulation provided by NOAA National Center for Coastal Ocean Science (<https://products.coastalscience.noaa.gov/hab/gomforecast.aspx>) has projected the intermittent presence of moderate *Alexandrium* cell counts in Massachusetts Bay since late April with a more consistent presence in the Bay for the June model output.

These and other results available so far indicate that a portion of the coastal population of *Alexandrium* north of Cape Ann was transported into Massachusetts Bay by winds and currents, leading to the result observed. As described in its rapid response plan,<sup>3</sup> MWRA will carry out weekly *Alexandrium* surveys until the nearfield cell counts drop below the 100 cells/liter threshold. MWRA will report data from future surveys when they become available.

If you have any questions regarding this matter, please call Betsy Reilley at 617-788-4940.

Sincerely,

Michael J. Hornbrook  
Chief Operating Officer

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<sup>3</sup> Libby S, Rex AC, Keay KE, Mickelson MJ. 2013. *Alexandrium* Rapid Response Study Survey Plan. Revision 1. Boston: Massachusetts Water Resources Authority. Report 2013-06. 13 p.  
<http://www.mwra.state.ma.us/harbor/enquad/pdf/2013-06.pdf>

**Cc:**

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