



MASSACHUSETTS WATER RESOURCES AUTHORITY

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March 18, 2010

Stephen Perkins
U.S. Environmental Protection Agency
Water Enforcement
OES4-SMR
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Glenn Haas, Acting Asst. Commissioner
Bureau of Resource Protection
Department of Environmental Protection
1 Winter Street
Boston, MA 02108

RE: Massachusetts Water Resources Authority
Permit Number MA 0103284
Nut Island Headworks Facility Bypass

Dear Mr. Perkins and Mr. Haas:

In accordance with Part II.D.1.e. of Massachusetts Water Resources Authority's ("MWRA") NPDES Permit Number MA 0103284, MWRA is submitting this written notification, which is a follow-up to its verbal notification made on March 15, 2010 regarding wet weather bypasses from its Nut Island Headworks Facility to Quincy Bay due to a massive and sustained rainstorm. These bypasses were unavoidable, there were no feasible alternatives to the bypasses. The bypasses were necessary to protect the Nut Island Headworks and Houghs Neck Pump Station from long term physical damage and to protect the public health. MWRA provided verbal notification within 24 hours in accordance with Part II.B.4.d. of its NPDES permit.

On March 13 through March 15, 2010, a major northeaster storm occurred in the greater Boston area causing widespread flooding, overflows, and sewer surcharges. Rainfall in the South System was very heavy (a three-day storm totals ranged from 8 to over 11 inches in the service area. Preliminary information indicates that this storm event is the biggest storm (24 hour basis) in Boston since June 1998 and on a 48-hour basis it is the largest since Hurricane Diane in August 1955. Most rivers in the service area were at or near record flood levels and the Governor declared a State of Emergency. The storm was between a 50- to 100-year event.

Prior to the bypass event at Nut Island, MWRA's Deer Island Treatment Plant ("DITP") set new records for pumping and treatment: 1,305 MGD and maximum hourly flow (old record 1,291 MGD) and 1,256 MGD average daily flow (old record 1,203 MGD), see Figure 1. Deer Island has also set new records during this storm event for hours above

1,200 MGD, 1,100 MGD, and over 1,000 MGD, see Figure 2. The South System also set new records with 394 MGD hourly flow (old record 387 MGD) and 390 MGD average daily flow (old record 377 MGD) (Figure 3). Both DITP and Nut Island were at maximum capacity.

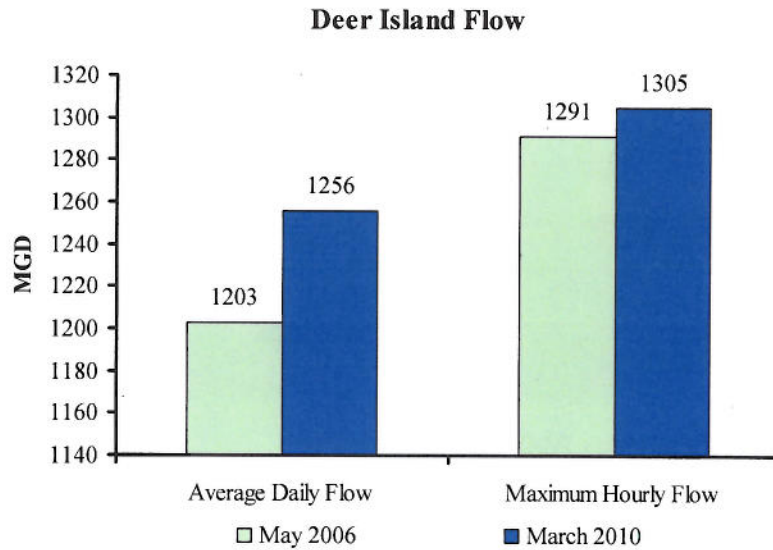


Figure 1 DITP measured new record levels of average daily and maximum hourly flow rates.

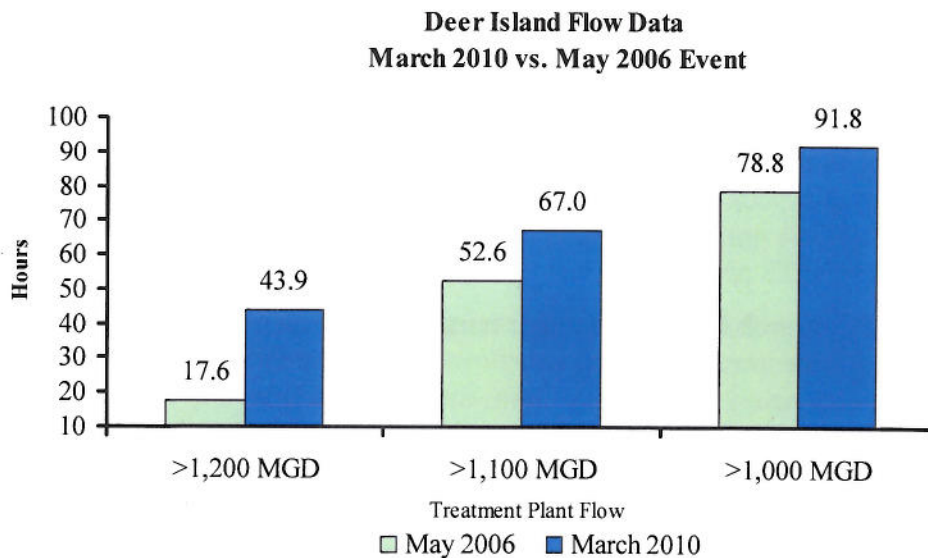


Figure 2 DITP set new records for the number of hours the flow levels exceed certain thresholds.

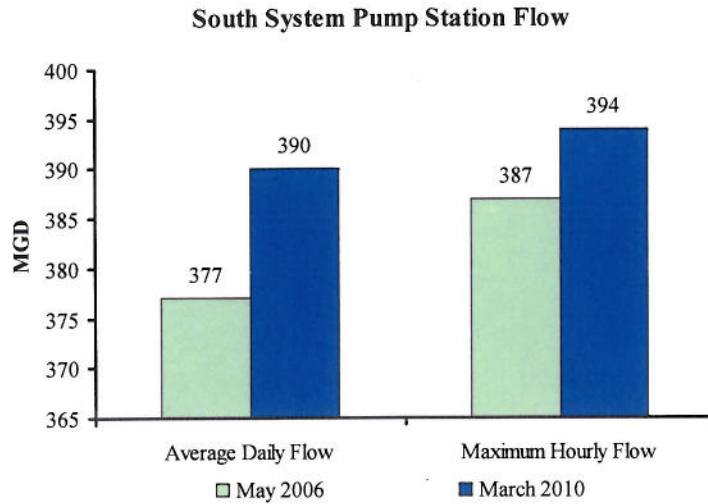


Figure 3 South System Pump Station set new record pumping levels.

Because of the extended period of heavy rain, flows from the South System exceeded the capacity of Nut Island Headworks on March 15 from 12:30 p.m. to 1:09 p.m. and from 3:50 p.m. to 4:08 p.m. making it necessary to open the gates to the emergency outfalls 101, 102, and 103 to protect the facility from severe property damage and to prevent backups of sewage into the Houghs Neck Pump Station, streets, homes and businesses. The emergency spillway was not opened. No more than 5-10 MG were discharged through the outfalls to Quincy Bay during these bypasses. During these two short timeframes, the full capacity of the Nut Island Headworks was on-line to convey flow to DITP.

MWRA staff sampled the shoreline of Nut Island for bacteria on March 16. Sampling locations are shown in Figure 4, and bacteria data are in Table 1. MWRA is repeating the sampling today, March 18. No physical evidence of raw wastewater was seen along the shoreline.

Table 1 Results of bacteria sampling in colonies/100 ml March 16, 2010.
Samples were collected between 6:55 a.m. and 7:35 a.m.

Site	Fecal coliform Standard = 200 colonies/100 ml	<i>Enterococcus</i> Standard = 104 colonies/100 ml
A Beach at Spillway	2,400	581
B Tip of Nut Island	937	488
C Nut Island Quincy Bay	210	231
D Houghs Neck Quincy Bay	171	86

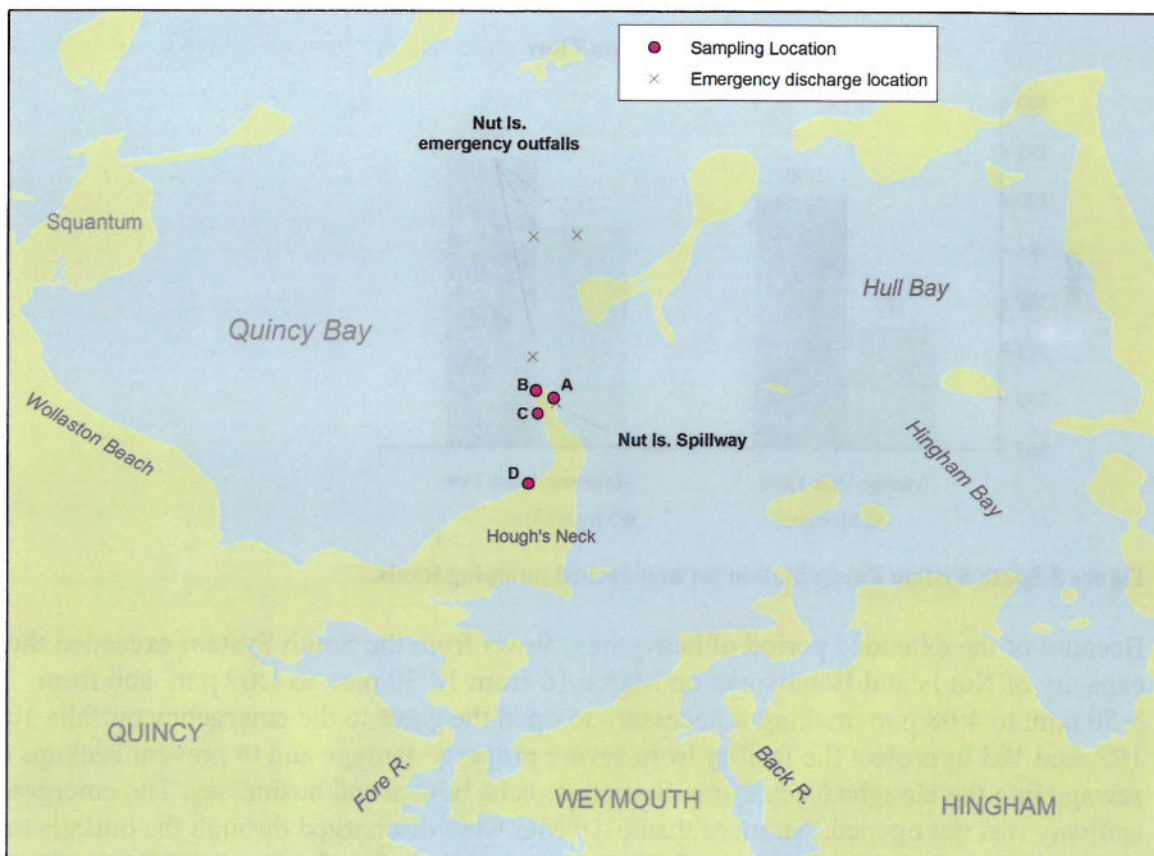


Figure 4 Locations of sampling sites and emergency Nut Island Headworks outfall locations. Outfalls 101, 102, and 103 were used on March 15; the emergency spillway outfall 104 was not used.

The bacteria results show moderately elevated counts, indicative of contamination typical of heavy rains. As a result of flow to the harbor from direct runoff, stormwater, and rivers it is difficult to say with any confidence whether the short-term bypasses were the source of the bacteria.

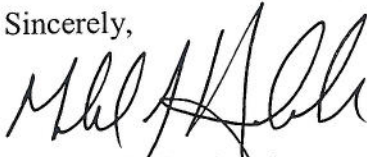
As discussed above, the bypasses at the Nut Island Headworks Facility occurred while DITP and Nut Island Headworks were operating at peak capacity and setting new records for the amount of sewage through the facilities. At that time, the sewer system was already exceeding capacity and overflowing in several areas. In order to prevent severe and long-term property damage to the facilities and to prevent backups of sewage into MWRA's Houghs Neck Pump Station, streets, homes and businesses, MWRA had to use the emergency outfalls. Because of these conditions, there was no available in-system storage and there were no feasible alternatives to bypass. During this event, MWRA complied with the provisions of Part II. B.4.d. of its NPDES permit.

March 17, 2010

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If you have questions or need additional information, please call me at (617) 788-4359.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Hornbrook". The signature is fluid and cursive, with the first name "Michael" and last name "Hornbrook" clearly distinguishable.

Michael J. Hornbrook
Chief Operating Officer

cc: Todd Borci, EPA
Kevin Brander, DEP
Richard Chretien, DEP
Frederick A. Laskey, MWRA
Richard Trubiano, MWRA
Steven Remsberg, MWRA
Gerard Gallinaro, MWRA

