New York City

2017

Beach Surveillance and Monitoring Program

Photo by Maria Colon

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SECTION 1

INTRODUCTION

In accordance with the New York City Administrative Code §18-131(c)(4), this annual report summarizes the 2017 New York City Beach Surveillance and Monitoring Program for beaches permitted by the Department of Health and Mental Hygiene (DOHMH or the "Department"). This law requires that the Health Commissioner "forward a combined report of the dates and results of all inspections of all beaches and the dates and reasons for any warning advisory or closure, and such other information deemed appropriate by the Commissioner of Health and Mental Hygiene, for the Friday proceeding the last Monday of May until the Friday after the first Monday of September of each year, to the mayor, the public advocate and the speaker of the council."

With the principal goal of protecting ocean beachgoers from potential health and safety hazards, the Department closely monitors and conducts surveillance of permitted beaches in New York City. Under the regulatory directive and authority of both Article 167 of the New York City Health Code (Article 167) and Subpart 6-2 of the New York State Sanitary Code (Subpart 6-2), the Department administers the Beach Surveillance and Monitoring Program for all beaches operating within the city limits and with a permit issued by the Department. The Program responsibilities include: 1) beach monitoring and surveillance 2) public notification and communication, and 3) safety inspections.

The city's beaches function as an important recreational resource for city residents and neighboring communities. As shown in Figure 1 (page 2) and Table 1 (page 3), there are eight public beaches operated by the Department of Parks and Recreations (the Parks Department) and 17 privately operated beaches permitted within New York City limits.

This year, the 8 Parks Department-operated public beaches remained open an additional week – until September 10th – for the 2017 beach season to coincide with the school calendar.

FIGURE 1: NEW YORK CITY PERMITTED BEACHES

= Public Beach (NYC Dept. Parks and Recreation)

TABLE 1: NEW YORK CITY PERMITTED BEACHES AND WATER BODY IDENTIFICATION

Borough	Beaches	Water Body
Brooklyn	*Public:* Coney Island, Manhattan *Private:* Seagate, Kiddie Gerritsen, Kingsborough	Lower New York Harbor
Bronx	*Public:* Orchard Beach *Private:* American Turner, Danish American, Manhem, White Cross Fishing, Morris Yacht Club, Schuyler Hill, Trinity Danish, Locust Point Yacht Club, West Fordham Street	Eastchester Bay, Western Long Island Sound
Queens	*Public:* Rockaway *Private:* Breezy Point	Atlantic Ocean
	Private: Douglaston Manor, Whitestone Booster Civic Association	Western Long Island Sound
Staten Island	*Public:* South Beach, Midland, Cedar Grove, Wolfe's Pond Park *Private*: Staten Island YMCA	Lower New York Bay

1.1 Public Risk Communication

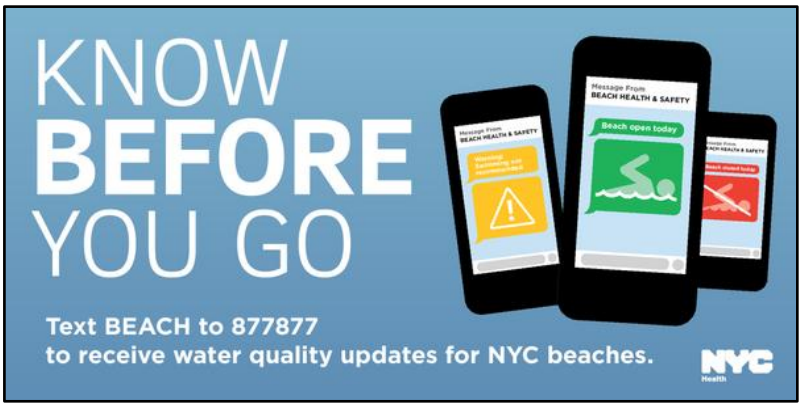
The Department continued to improve its public notification and risk communication efforts during the 2017 beach season. Easy-to-interpret signs shown in Figure 2, developed and implemented several years ago, were in continuous use for beach closures and warnings in 2017.

FIGURE 2: BEACH WARNING AND CLOSED SIGNS

"Know Before You Go", a free texting service introduced in 2014, was continued for the 2017 beach season. The service enables subscribers to make informed decisions before they go to a public beach by checking if the beach is open or closed or if there are any warnings due to wet weather conditions or water quality concerns. Subscribers simply text "BEACH" to 877-877 to learn the status of any of the eight public beaches in New York City. This tool also can be used by the Department to deliver notifications of high priority water quality warnings or closures, as well as safety-related messages such as warnings for high rip currents, closures for extreme weather and when beaches open and close for the season.

In 2017, the Department's marketing strategy included promotional posts on its social media channels (Twitter and Facebook), examples of which are shown in Figure 3, as well as scrolling news messages at the Staten Island Ferry terminal buildings. At the beginning of the season, the texting service had 8,661 English-language subscribers and 201 Spanish-language subscribers. By the close of the beach season, there were 9,901 English-language subscribers (13% increase) and 436 Spanish-language subscribers (54% increase).

FIGURE 3: KNOW BEFORE YOU GO TEXTING PROGRAM



SECTION 2

BACKGROUND INFORMATION

This chapter provides background information on the New York City Beach Surveillance and Monitoring Program. The topics of discussion include: bacteriological water quality criteria; preemptive rainfall thresholds; beach classifications; monitoring and surveillance; public notification and risk communication; and safety inspections.

2.1 Water Quality Criteria

Under the New York State Sanitary Code §6-2.15, Article §167.13 of the New York City Health Code and the Federal Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH) Act, enterococcus is the indicator organism mandated for evaluating the microbiological quality of marine (saline) recreational beach water.

Under the New York State Sanitary Code and the New York City Health Code, enterococci concentrations for a single sample shall not exceed 104 Colony Forming Units (CFU)/100 ml (61 CFU/100 ml for fresh water), and the enterococci geometric mean shall not exceed 35 CFU/100 ml (33 CFU/100 ml for fresh water) for a series of five or more samples collected during a 30-day period. The geometric mean and single sample maximum is determined by analyzing samples for the presence and quantification of enterococci using EPA method 1600.

In November 2012, the Environmental Protection Agency (EPA) released revised recreational water quality criteria (RWQC) recommendations. The revised criteria use a geometric mean and a statistical threshold value to indicate whether waters designated for primary contact recreation use are protective of human health. The 2012 revised criteria for marine waters are a 30-day geometric mean of 30 enterococci (CFU/100 ml) and a statistical threshold value of 110 enterococci (CFU/100 ml); the statistical threshold value is calculated as no more than 10% of samples within 30 days shall exceed the criteria. The EPA also introduced a Beach Action Value (BAV) of 60 enterococci (CFU/100 ml) to be used as a notification threshold for beach management, replacing earlier guidance that provided single sample maximum values. These revised recreational criteria recommendations are expected to be promulgated at the State level in 2018 and subsequently implemented by local beach programs in future seasons.

2.2 Rainfall Events

Preemptive rainfall thresholds have been developed for New York City beaches through statistical modeling of historical precipitation and water quality data. These preemptive thresholds are used as a management tool to provide a quick and reliable indication of water quality conditions. Because the majority of the city has combined stormwater and sewer conveyance systems, high levels of precipitation may result in combined sewage and stormwater runoff bypassing the

treatment system and overflowing into local water bodies. This phenomenon, known as Combined Sewer Overflow (CSO), poses a public health threat to nearby beaches. When preemptive rainfall thresholds are met, as defined in Table 2, a public notification or warning takes effect for the predetermined duration.

TABLE 2: NEW YORK CITY PREEMPTIVE RAINFALL THRESHOLDS

Beach (Borough)	Rainfall Threshold (within 24 hrs)	Duration of Warning
South Beach, Midland Beach, Cedar Grove, Staten Island YMCA (Staten Island), Manhattan Beach, Kingsborough Community College (Brooklyn)	1.5 – 2.5 inches	12 hours
	> 2.5 inches	24 hours
Orchard Beach (Brooklyn)	> 2.5 inches	24 hours
Coney Island (Brooklyn)	> 2.5 inches	12 hours
Gerritsen/Kiddie Beach (Brooklyn) Whitestone Booster (Queens)	0.3 - 0.6 inches	18 hours
	> 0.6 inches	40 hours
American Turner, Danish American , Manhem, White Cross, Morris Yacht, Schuyler Hill, Trinity Danish, Locust Point Yacht Club, West Fordham Street Association (Bronx)	0.6 – 2.5 inches	36 hours
	> 2.5 inches	48 hours
Douglaston Manor (Queens)	0.3 – 0.6 inches	30 hours
	0.6 – 2.5 inches	60 hours
	> 2.5 inches	72 hours

2.3 Beach Classifications

There are three swimming classifications for New York City beaches which are determined by assessing water quality, rainfall and pollution events, on-site sanitary surveys, and/or historical information. Beaches, except those specifically restricted under Article §167.05, are classified as follows:

Class A: Open for Swimming and Wading. Beaches may be classified as open and approved for swimming and wading when *all* of the following conditions are met:

1. Beach water quality is in accordance with standards defined under Article §167.13;
2. Sanitary and safety surveys are satisfactory in accordance with Article §167.25; and

3. The epidemiological history is satisfactory to the Department, i.e., no repeated complaints or reports of illness/injury received from the public or from owners/operators of city beaches.

Class B: Warning – Not Recommended for Swimming and Wading. Beaches may be classified as "Not Recommended for Swimming and Wading", resulting in notifications to the public that swimming should be avoided to prevent contracting a swimming-related illness, when *one or more* of the following conditions exists:

1. Rainfall events exceed the preemptive rainfall thresholds; and/or
2. A water quality sample exceeds the water quality standard or beach notification threshold. The notification should remain in effect until resampling indicates that the beach water quality standard and/or notification thresholds are being met; and/or
3. An on-site sanitary survey or investigation reveals the presence of floatable debris, medical/infectious waste or toxic contaminants, petroleum products and/or other contamination on the beach, or evidence of sewage and wastewater discharge.

Class C: Closed – Temporarily Restricted for Swimming and Wading: Beaches may be classified as "Temporarily Restricted for Swimming and Wading" when *one or more* of the following conditions exists:

1. Sampling by bacteriological testing that finds beach water quality exceeding the statutory water quality standard for marine water beaches; and/or
2. Epidemiological data indicate a significant incidence of related illnesses or repeated complaints or reports of illness/injury received from beach patrons; and/or
3. A sanitary and safety survey or an investigation reveals the presence of potentially hazardous amounts of floatable debris, medical/infectious waste, toxic contaminants, petroleum products or other contaminants on the beach, or there is evidence of sewage and wastewater discharges in sufficient quantities that will adversely affect the quality of the beach water; and/or
4. Any other environmental factors determined to be a public health or safety hazard by the Department.

2.4 Beach Monitoring and Surveillance

Starting one month before the beach season, the Department monitors and samples each beach on a weekly basis with the exception of the Rockaway and Breezy Point beaches, which are sampled bi-weekly. In addition to routine water quality monitoring, the Department monitors on a daily basis the regional wet weather conditions and occasional Waste Water Treatment Plant (WWTP) bypasses, operational upsets and spills through interagency communication and cooperation. This information can be used to assess and make beach status determinations.

During a sample event, a routine on-site sanitary survey inspection is performed to identify any existing and/or potential sources of pollution that are likely to affect beach water quality. Water samples are collected at knee-depth (18 inches) in three feet of water, from the center left and right of the beach. At larger beaches, such as Coney Island and Rockaway, samples are taken from multiple locations to ensure adequate representation and reliable results. The collected samples are delivered to the Department's Public Health Laboratory for analysis. The analytical turnaround time for enterococci is 24 hours.

The water quality of the samples analyzed is reviewed and assessed for conformance to applicable standards. If the regulatory limit for enterococci is exceeded or conditions exist that may pose a threat to the health and/or safety of the public, the Department initiates one of the following actions: conducts immediate re-sampling; issues a warning and conducts re-sampling; and/or closes the beach and conducts re-sampling. The determining factors for additional sampling may include: proximity to suspected pollution sources; extent of pollution; beach use; historical water quality data; and other health risk factors.

2.5 Public Notification and Risk Communication

When beach status changes based upon evaluation and assessment of beach water quality as specified above, the Department notifies the public through on-site beach signage, website postings, 311 non-emergency government service hotline, Notify NYC (via Twitter, RSS feed, e-mail, and SMS), "Know Before You Go" texting service, and Department press releases when necessary. Beach operators are notified by phone, email and/or text as to the necessary on-site postings. The specific notification procedures and requirements for each of the above conditions are as follows:

On-Site Signage: When notified by the Department, the permittee is required to post or remove the warning or closure signs in designated areas visible to beach users such as beach entrances, bulletin boards, comfort stations or the general vicinity of the common swimming areas.

"Know Before You Go" Texting Service: Subscribers text "BEACH" to 877-877 to learn the beach status of any of the eight public beaches in New York City.

Website Postings: The Department has developed an easily accessible website with up-to-date information for all permitted beaches: www.nyc.gov/health/beach. The website contains background information on the beach program, explains the causes and sources of surface water pollution, and summarizes the beach classification system, including the different types of warnings. A list of city beaches by borough, along with their respective status (Open, Closed, or Warning) and sample results are promptly updated on the website. Beach warnings or closures

are also posted under the "NYC Right Now" link on the City website, www.nyc.gov, during the beach season. The public can report suspected swimming-related illnesses through the website.

Notify NYC: When notified by the Department of status changes relating to public beaches, the Office of Emergency Management will share this information with members of the public who have signed up for Notify NYC via Twitter, RSS feed, e-mail and SMS.

311: The 311 telephone operators monitor the Department's website for updates on warning or closure information, as described above, and convey that information to 311 callers. The public can also report a swimming related illness via 311.

NYC Press Release: Press releases are disseminated to various types of media (newspaper, radio, website, television), as well as elected officials.

2.6 Inspections

The Department conducts annual safety inspections and complaint inspections at bathing beaches to assure that (1) all staff, especially lifeguards and supervisors, have proper certificates and coverage, including CPR certification; (2) all required life-saving equipment is available, including rescue tubes, spine boards, first aid kits, and resuscitation equipment; and (3) there is proper signage posted on site. Direct observations of conditions are supplemented by interviews with lifeguards and other personnel. The inspections also evaluate beach facility hygiene.

SECTION 3

FINDINGS

3.1 Water Quality and Illness Reporting

Routine water quality monitoring and sample collection was performed at all 25 permitted beaches. Approximately 1,500 samples were collected and analyzed from these beaches between April and September 2017. There were no recreational water illnesses or complaints reported to the Department during the season.

Water quality sample results, including 30-day geometric mean and daily averages and exceedances of the single-sample maximum, can be found in Appendix A (pages 12 – 18). Warnings and closures issued by the Department throughout the season are summarized in Appendix B (pages 18 – 20).

For private beaches, American Turner had the highest exceedance rate (50%), while Breezy Point (219 and Reid Avenue) had no exceedances. Bronx private beaches are located in the western terminus of the Long Island Sound which has a complex hydrodynamic system. Long retention times, complex water circulation and mixing patterns and seasonal tidal variations can produce poor mixing in these waters and may contribute to extended periods of reduced water quality.

For public beaches, Cedar Grove Beach in Staten Island had the highest exceedance rate for all public beaches (9.1%), while Rockaway Beach had no exceedances.

3.2 Public Notification for Warnings and Closures

There are 17 private beaches, of which 15 were issued at least one swimming advisory warning notice during the 2017 bathing season. Of the private beaches that exceeded water quality standards, there were 826 warning days (102 of which were a result of wet weather conditions). The length of the notifications ranged from 1 to 107 days, most of which ranged between 1 and 7 days. There were 7 private beaches which were under “advisory” for more than half of the 2017 beach season. Douglaston Manor was under advisory for the whole season due to elevated sample results. Of the public beaches that exceeded water quality standards, there were 22 warning days (none of which were a result of wet weather conditions). The length of notification ranged from 2 to 7 days. The specific warning dates for each beach are shown in Appendix B (pages 18 – 20).

3.3 Inspections

During the 2017 beach season, 25 inspections of public and private beaches were conducted by the Department at 23 permitted facilities. Two facilities were cited for either general or public health hazards at the time of inspection as detailed in Table C (page 21).

APPENDIX A: 2017 WATER QUALITY RESULTS AND EXCEEDANCES

Table A1-1: Brooklyn Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards: 30 day geomean limit: 35cfu/100ml, Daily average limit: 104cfu/100ml

Date of Week Ending	CONEY ISLAND BEACH (public)		MANHATTAN BEACH (public)		GERRITSEN/ KIDDIE BEACH (private)		KINGSBOROUGH COMMUNITY COLLEGE (private)		SEA GATE 42ND (private)		SEA GATE BEACH CLUB (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/27/2017	6	5	6	4	12	331	10	7	6	4	6	4
6/3/2017	7	9	8	16	17	28	8	8	6	11	8	16
6/10/2017	6	4	7	13	22	67	8	15	6	4	9	17
6/17/2017	5	5	7	7	25	9	10	15	5	4	11	35
6/24/2017	5	5	11	36	28	11	11	47	5	4	9	4
7/1/2017	6	11	12	8	20	27	11	5	5	4	11	11
7/8/2017	5	5	10	7	28	168	10	5	4	4	9	4
7/15/2017	6	11	9	8	17	5	8	4	4	8	7	4
7/22/2017	6	7	9	7	17	12	7	4	4	4	4	4
7/29/2017*	11	17	12	16	32	217	10	347	9	324	10	213
8/5/2017	10	37	12	11	23	4	10	4	9	4	15	72
8/12/2017**	11	12	22	137	13	9	14	31	16	53	18	11
8/19/2017	10	4	32	99	18	25	27	207	14	4	21	8
8/26/2017***	10	5	34	27	20	20	44	45	14	4	21	4
9/2/2017	6	5	33	12	10	9	49	680	7	8	10	5
9/9/2017	5	6	31	8	12	15	57	9	7	4	6	5

Values highlighted in red indicate exceedance of recreational water quality criteria

* mid-week sample on result 7/24/2017 at Coney Island and Manhattan beaches resulted in a water quality exceedance, see appendix B for description.

** mid-week sample result on 8/7/2017 at Manhattan Beach resulted in a water quality exceedance, see appendix B for description.

*** mid-week sample result on 8/21/2017 at Manhattan Beach resulted in a water quality exceedance, see appendix B for description.

Table A1-2: Bronx Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards: 30 day geomean limit: 35cfu/100ml, Daily average limit: 104cfu/100ml

Date of Week Ending	ORCHARD BEACH (public)		AMERICAN TURNER (private)		DANISH AMERICAN BEACH CLUB (private)		LOCUST POINT YACHT CLUB (private)		MANHEM CLUB (private)		MORRIS YACHT AND BEACH CLUB (private)		SCHUYLER HILL CIVIC ASSOC. (private)		TRINITY DANISH (private)		WEST FORDHAM STREET ASSOC. (private)		WHITE CROSS FISHING CLUB (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/27/2017*	6	17	46	173	37	80	27	580	22	45	12	171	13	11	39	143	22	277	55	197
6/3/2017	6	4	63	673	27	40	34	95	17	40	11	9	9	16	29	28	14	23	47	113
6/10/2017	7	25	102	203	57	473	69	150	33	193	15	23	12	59	55	157	20	57	80	267
6/17/2017	7	4	51	4	35	11	47	4	27	12	14	4	11	4	25	4	19	4	45	9
6/24/2017	9	9	106	160	58	106	85	147	41	31	25	89	22	163	38	33	40	173	82	83
7/1/2017	9	9	131	480	86	493	35	7	65	453	12	4	37	153	28	35	18	4	93	420
7/8/2017	8	4	100	187	121	177	33	69	91	217	14	23	31	5	35	79	16	19	98	143
7/15/2017	5	4	53	16	49	5	16	4	42	4	10	4	19	5	17	5	12	9	44	5
7/22/2017	6	7	71	109	42	4	16	4	35	5	15	37	19	4	21	19	16	20	52	31
7/29/2017	6	16	101	867	56	353	11	29	62	507	12	36	19	213	36	573	10	15	75	513
8/5/2017	5	4	39	4	21	4	11	5	24	4	14	11	9	4	50	218	11	9	34	8
8/12/2017	7	16	41	233	27	487	8	15	28	493	14	29	14	45	63	223	9	4	41	387
8/19/2017	8	8	37	5	36	131	10	15	39	24	16	11	36	507	101	53	8	4	52	17
8/26/2017	7	4	42	32	45	15	11	9	47	15	11	5	38	5	135	39	7	7	48	15
9/2/2017**	11	9	19	19	21	8	10	21	22	12	8	5	17	4	59	12	5	4	23	16
9/9/2017	11	4	32	49	35	55	11	8	36	45			22	13			11	563		
9/16/2017							9	9												

Values highlighted in red indicate exceedance of recreational water quality criteria

* mid-week sample on result 5/26/2017 for a potential contamination, see appendix B for description.

**mid-week sample result on 8/29/2017 at Orchard Beach resulted in a water quality exceedance, see appendix B for description.

Table A1-3: Queens Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards- 30 day geomean limit: 35cfu/100ml, Daily Average limit: 104cfu/100ml

Date of Week Ending	ROCKAWAY BEACH* (public)		BREEZY POINT 219 (private)		BREEZY POINT Reid Ave (private)		WHITESTONE BOOSTER CIVIC ASSOCIATION (private)		DOUGLASTON MANOR ASSOCIATION (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/27/2017	4	5	4	4	4	4	21	170	23	112
6/3/2017							23	91	25	123
6/10/2017	4	4	4	4	5	8	38	51	38	33
6/17/2017							47	48	49	57
6/24/2017	4	4	4	4	5	4	112	727	115	973
7/1/2017							75	23	98	51
7/8/2017	4	4	4	4	6	8	42	4	61	12
7/15/2017							25	4	76	102
7/22/2017	4	5	4	4	5	4	18	9	137	1593
7/29/2017							19	1327	92	135
8/5/2017	4	5	4	4	5	4	14	4	58	5
8/12/2017							27	123	87	72
8/19/2017	5	7	4	4	4	4	43	43	114	443
8/26/2017							46	13	90	313
9/2/2017	7	14	5	8	4	4	20	13	66	29
9/9/2017							23	9	102	45

Values highlighted in red indicate exceedance of recreational water quality criteria

Table A1-4: Staten Island Beaches Water Quality Results

Enterococci 30 Day Geometric Mean/Daily Average (Count/100ml)

Water Quality Standards- 30 day Geomean limit: 35cfu/100ml, Daily Average limit: 104cfu/100ml

Fresh Water Standards- 30 day Geomean limit: 33cfu/100ml, Daily Average limit: 61cfu/100ml

Date of Week Ending	SOUTH BEACH (public)		MIDLAND BEACH (private)		CEDAR GROVE BEACH (private)		WOLFE'S POND BEACH (private)	
	30 Day	Daily	30 Day	Daily	30 Day	Daily	30 Day	Daily
5/27/2017	6	7	6	8	8	4	6	15
6/3/2017	7	9	7	16	12	39	8	16
6/10/2017*	8	43	8	12	23	17	9	12
6/17/2017	7	4	7	4	20	4	7	4
6/24/2017	7	7	7	4	28	28	8	5
7/1/2017	7	11	6	4	29	5	6	5
7/8/2017	6	4	5	4	23	25	5	4
7/15/2017	5	4	4	4	9	11	4	4
7/22/2017	7	27	5	43	9	5	4	4
7/29/2017**	12	11	9	4	14	13	16	16
8/5/2017	12	11	11	12	13	4	15	4
8/12/2017	12	4	11	5	18	55	15	4
8/19/2017	13	5	11	4	17	7	15	4
8/26/2017	11	9	10	8	18	11	20	21
9/2/2017	7	12	6	5	9	4	7	12
9/9/2017	6	5	5	5	12	21	8	12

Values highlighted in red indicate exceedance of recreational water quality criteria

* mid-week sample result on 6/5/22017 at Cedar Grove beaches resulted in water quality exceedances, see appendix B for description.

** mid-week sample result on 7/24/22017 at Cedar Grove, Midland, South and Wolfe's Pond beaches resulted in water quality exceedances, see appendix B for description.

Table A2-1: 2017 Summary of Beach Samples and Single-Sample Exceedances

Beach	Sample Location	Total # of Samples	# of Sample exceed 104	% of Sample exceed 104
ALL Beaches TOTAL		**1510**	**231**	**15.3%**
Public Beaches TOTAL		**596**	**29**	**4.9%**
Private Beaches TOTAL		**914**	**202**	**22.1%**

Table A2-2: 2017 Public Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples	# of Sample exceed 104	% of Sample exceed 104 (Location)	% of Sample exceed 104 (Beach)
CEDAR GROVE	CEDAR GROVE	Left	22	2	9.1%	*9.1%*
	CEDAR GROVE	Center	22	2	9.1%	
	CEDAR GROVE	Right	22	2	9.1%	
CONEY ISLAND	CONEY ISLAND BR. 15TH - 6TH	Center	21	1	4.8%	*2.4%*
	CONEY ISLAND BR. 6TH - OCEAN PKWY	Center	21	0	0.0%	
	CONEY ISLAND OCEAN PKWY - WEST 8TH	Center	21	0	0.0%	
	CONEY ISLAND WEST 8TH - PIER	Center	21	0	0.0%	
	CONEY ISLAND WEST 16TH - WEST 27TH	Center	21	1	4.8%	
	CONEY ISLAND WEST 28TH - WEST 37TH	Center	21	1	4.8%	
MANHATTAN BEACH	MANHATTAN BEACH	Left	23	1	4.3%	*8.7%*
	MANHATTAN BEACH	Center	23	3	13.0%	
	MANHATTAN BEACH	Right	23	2	8.7%	
MIDLAND BEACH	MIDLAND BEACH	Left	21	1	4.8%	*6.3%*
	MIDLAND BEACH	Center	21	1	4.8%	
	MIDLAND BEACH	Right	21	2	9.5%	
ORCHARD BEACH	ORCHARD BEACH	Left	22	1	4.5%	*4.5%*
	ORCHARD BEACH	Center	22	1	4.5%	
	ORCHARD BEACH	Right	22	1	4.5%	
ROCKAWAY BEACH	ROCKAWAY BEACH 9TH - 13TH	Center	10	0	0.0%	*0.0%*
	ROCKAWAY BEACH 15TH - 22TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 23RD - 59TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 59TH - 80TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 80TH - 95TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 95TH - 116TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 116TH - 126TH	Center	10	0	0.0%	
	ROCKAWAY BEACH 126TH - 149TH	Center	10	0	0.0%	
SOUTH BEACH	SOUTH BEACH	Left	21	1	4.8%	*6.3%*
	SOUTH BEACH	Center	21	1	4.8%	
	SOUTH BEACH	Right	21	2	9.5%	
WOLFE'S POND BEACH	WOLFE'S POND BEACH	Left	21	1	4.8%	*4.8%*
	WOLFE'S POND BEACH	Center	21	1	4.8%	
	WOLFE'S POND BEACH	Right	21	1	4.8%	
Public Beaches (Locations) Total			**596**	**29**	**4.9%**	

Table A2-3: 2017 Private Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples		# of Sample exceed 104	% of Sample exceed 104 (Location)	% of Sample exceed 104 (Beach)
AMERICAN TURNER	AMERICAN TURNER	Left	20		11	55.0%	*50.0%*
	AMERICAN TURNER	Center	20		10	50.0%	
	AMERICAN TURNER	Right	20		9	45.0%	
BREEZY POINT 219	BREEZY POINT 219	Center	10		0	0.0%	*0.0%*
BREEZY POINT Reid	BREEZY POINT Reid Ave	Center	10		0	0.0%	*0.0%*
DANISH AMERICAN BEACH CLUB	DANISH AMERICAN BEACH CLUB	Left	20		9	45.0%	*36.7%*
	DANISH AMERICAN BEACH CLUB	Center	20		6	30.0%	
	DANISH AMERICAN BEACH CLUB	Right	20		7	35.0%	
DOUGLASTON MANOR ASSOCIATION	DOUGLASTON MANOR ASSOCIATION	Left	20		7	35.0%	*31.7%*
	DOUGLASTON MANOR ASSOCIATION	Center	20		6	30.0%	
	DOUGLASTON MANOR ASSOCIATION	Right	20		6	30.0%	
GERRITSEN/KIDDIE BEACH	GERRITSEN/KIDDIE BEACH	Left	20		3	15.0%	*10.0%*
	GERRITSEN/KIDDIE BEACH	Center	20		2	10.0%	
	GERRITSEN/KIDDIE BEACH	Right	20		1	5.0%	
KINGSBOROUGH COMMUNITY COLLEGE	KINGSBOROUGH COMMUNITY COLLEGE	Left	20		3	15.0%	*11.7%*
	KINGSBOROUGH COMMUNITY COLLEGE	Center	20		2	10.0%	
	KINGSBOROUGH COMMUNITY COLLEGE	Right	20		2	10.0%	
LOCUST POINT YACHT CLUB	LOCUST POINT YACHT CLUB	Left	21		3	14.3%	*15.9%*
	LOCUST POINT YACHT CLUB	Center	21		4	19.0%	
	LOCUST POINT YACHT CLUB	Right	21		3	14.3%	
MANHEM CLUB	MANHEM CLUB	Left	20		7	35.0%	*31.7%*
	MANHEM CLUB	Center	20		6	30.0%	
	MANHEM CLUB	Right	20		6	30.0%	
MORRIS YACHT AND BEACH CLUB	MORRIS YACHT AND BEACH CLUB	Left	19		1	5.3%	*3.5%*
	MORRIS YACHT AND BEACH CLUB	Center	19		0	0.0%	
	MORRIS YACHT AND BEACH CLUB	Right	19		1	5.3%	
SCHUYLER HILL CIVIC ASSOCIATION	SCHUYLER HILL CIVIC ASSOCIATION	Left	20		4	20.0%	*21.7%*
	SCHUYLER HILL CIVIC ASSOCIATION	Center	20		5	25.0%	
	SCHUYLER HILL CIVIC ASSOCIATION	Right	20		4	20.0%	
SEA GATE 42ND	SEA GATE 42ND	Left	20		0	0.0%	*1.7%*
	SEA GATE 42ND	Center	20		1	5.0%	
	SEA GATE 42ND	Right	20		0	0.0%	
SEA GATE BEACH CLUB	SEA GATE BEACH CLUB	Left	20		1	5.0%	*5.0%*
	SEA GATE BEACH CLUB	Center	20		1	5.0%	
	SEA GATE BEACH CLUB	Right	20		1	5.0%	
TRINITY DANISH	TRINITY DANISH	Left	19		6	31.6%	*35.1%*
	TRINITY DANISH	Center	19		7	36.8%	
	TRINITY DANISH	Right	19		7	36.8%	
WEST FORDHAM STREET ASSOCIATION	WEST FORDHAM STREET ASSOCIATION	Left	20		3	15.0%	*18.3%*
	WEST FORDHAM STREET ASSOCIATION	Center	20		4	20.0%	
	WEST FORDHAM STREET ASSOCIATION	Right	20		4	20.0%	
WHITE CROSS FISHING CLUB	WHITE CROSS FISHING CLUB	Left	19		9	47.4%	*47.4%*
	WHITE CROSS FISHING CLUB	Center	19		9	47.4%	
	WHITE CROSS FISHING CLUB	Right	19		9	47.4%	
WHITESTONE BOOSTER CIVIC ASSOCIATION	WHITESTONE BOOSTER CIVIC ASSOCIATION	Left	20		3	15.0%	*20.0%*
	WHITESTONE BOOSTER CIVIC ASSOCIATION	Center	20		4	20.0%	
	WHITESTONE BOOSTER CIVIC ASSOCIATION	Right	20		5	25.0%	
Private Beaches (Locations) Total			**914**		**202**	**22.1%**	

Table A2-3: 2017 Private Beaches Samples and Single-Sample Exceedances

Beach	Sample Location		Total # of Samples	# of Sample exceed 61	% of Sample exceed 61(Location)	% of Sample exceed 61 (Beach)
Staten Island YMCA	Staten Island YMCA	Left	20	6	30.0%	*26.7%*
	Staten Island YMCA	Center	20	6	30.0%	
	Staten Island YMCA	Right	20	4	20.0%	
Private Freshwater Beaches (Locations) Total			**60**	**16**	**26.7%**	

APPENDIX B: 2017 WARNINGS AND CLOSURES

Table B-1: Summary of Beach Warnings and Closure

Beach	Types	Reason	Start Date	End Date	Beach Season Days	Total Notification Days		
						Warning	Closure	Total
NYC ALL Beaches (N= 25)	Warning or Closure	Enterococci Exceedance or Rainfall Event	5/27/17	9/13/17	**1779**	**848**	**0**	**848**

Table B-2: Public Beaches Warnings and Closures

Beach	Types	Reason	Start Date	End Date	Total Notification Days		
					Warning	Closure	Total
CEDAR GROVE	Warning	Enterococci Exceedance	6/6/17	6/8/17	4	0	4
	Warning	Enterococci Exceedance	7/26/17	7/27/17			
CONEY ISLAND					0	0	0
MANHATTAN BEACH	Warning	Enterococci Exceedance	8/9/17	8/15/17	10	0	10
	Warning	Enterococci Exceedance	8/23/17	8/25/17			
MIDLAND BEACH	Warning	Enterococci Exceedance	7/26/17		2	0	2
ROCKAWAY BEACH					0	0	0
ORCHARD BEACH	Warning	Enterococci Exceedance	8/31/17	9/1/17	2	0	2
SOUTH BEACH	Warning	Enterococci Exceedance	7/26/17	7/27/17	2	0	2
WOLFE'S POND PARK	Warning	Enterococci Exceedance	7/26/17	7/27/17	2	0	2
Public Beaches TOTAL					**22**	**0**	**22**

Table B-3: Private Beaches Warnings and Closures

Beach	Types	Reason	Start Date	End Date	Total Notification Days		
					Warning	Closure	Total
AMERICAN TURNERS	Warning	Enterococci Exceedance	5/27/17	8/30/17	98	0	98
	Warning	Rainfall Event	9/3/17	9/4/17			
BREEZY POINT 219					0	0	0
BREEZY POINT REID					0	0	0
DANISH AMERICAN BEACH CLUB	Warning	Enterococci Exceedance	5/27/17	6/1/17	87	0	87
	Warning	Enterococci Exceedance	6/8/17	8/2/17			
	Warning	Rainfall Event	8/4/17	8/5/17			
	Warning	Enterococci Exceedance	8/10/17	8/30/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
DOUGLASTON HOMEOWNERS ASSOCIATION	Warning	Enterococci Exceedance	5/27/17	9/10/17	107	0	107
GERRITSEN/KIDDIE BEACH	Warning	Enterococci Exceedance	5/27/17	5/31/17	32	0	32
	Warning	Rainfall Event	6/18/17	6/18/17			
	Warning	Rainfall Event	6/20/17	6/21/17			
	Warning	Rainfall Event	6/24/17	6/25/17			
	Warning	Rainfall Event	7/2/17	7/2/17			
	Warning	Enterococci Exceedance	7/7/17	7/11/17			
	Warning	Rainfall Event	7/23/17	7/25/17			
	Warning	Enterococci Exceedance	7/26/17	8/1/17			
	Warning	Rainfall Event	8/5/17	8/5/17			
	Warning	Rainfall Event	8/8/17	8/8/17			
	Warning	Rainfall Event	8/30/17	8/31/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
KINGSBOROUGH COMMUNITY COLLEGE	Warning	Enterococci Exceedance	7/26/17	8/1/17	27	0	27
	Warning	Enterococci Exceedance	8/16/17	9/4/17			
LOCUST POINT YACHT CLUB	Warning	Enterococci Exceedance	5/27/17	6/1/17	37	0	37
	Warning	Enterococci Exceedance	6/8/17	6/28/17			
	Warning	Rainfall Event	7/8/17	7/8/17			
	Warning	Rainfall Event	7/23/17	7/25/17			
	Warning	Rainfall Event	8/4/17	8/5/17			
	Warning	Rainfall Event	8/18/17	8/19/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
MANHEM BEACH CLUB	Warning	Enterococci Exceedance	6/8/17	6/14/17	81	0	81
	Warning	Rainfall Event	6/18/17	6/21/17			
	Warning	Enterococci Exceedance	6/22/17	8/2/17			
	Warning	Rainfall Event	8/4/17	8/5/17			
	Warning	Enterococci Exceedance	8/10/17	8/30/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
	Warning	Enterococci Exceedance	9/8/17	9/10/17			

Table B-3: Private Beaches Warnings and Closures (continued)

Beach	Types	Reason	Start Date	End Date	Total Notification Days		
					Warning	Closure	Total
MORRIS YACHT BEACH CLUB	Warning	Enterococci Exceedance	5/27/17	6/1/17	22	0	22
	Warning	Rainfall Event	6/18/17	6/21/17			
	Warning	Rainfall Event	6/24/17	6/25/17			
	Warning	Rainfall Event	7/8/17	7/8/17			
	Warning	Rainfall Event	7/23/17	7/25/17			
	Warning	Rainfall Event	8/4/17	8/5/17			
	Warning	Rainfall Event	8/18/17	8/19/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
SCHUYLER HILL CIVIC ASSOCIATION	Warning	Rainfall Event	6/18/17	6/21/17	50	0	50
	Warning	Enterococci Exceedance	6/22/17	7/7/17			
	Warning	Rainfall Event	7/8/17	7/8/17			
	Warning	Rainfall Event	7/23/17	7/25/17			
	Warning	Enterococci Exceedance	7/26/17	8/2/17			
	Warning	Rainfall Event	8/4/17	8/5/17			
	Warning	Enterococci Exceedance	8/17/17	8/30/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
SEAGATE 42nd	Warning	Enterococci Exceedance	7/26/17	8/1/17	7	0	7
SEAGATE BEACH CLUB	Warning	Enterococci Exceedance	7/26/17	8/1/17	7	0	7
TRINITY DANISH YOUNG PEOPLE'S SOCIETY	Warning	Rainfall Event	5/30/17	5/31/17	8	0	8
	Warning	Rainfall Event	6/6/17	6/6/17			
	Warning	Rainfall Event	7/5/17	7/6/17			
	Warning	Rainfall Event	7/26/17	7/26/17			
	Warning	Rainfall Event	7/29/17	7/30/17			
WEST FORDHAM STREET ASSOCIATION	Warning	Enterococci Exceedance	5/27/17	6/1/17	30	0	30
	Warning	Rainfall Event	6/18/17	6/21/17			
	Warning	Enterococci Exceedance	6/22/17	6/28/17			
	Warning	Rainfall Event	7/8/17	7/8/17			
	Warning	Rainfall Event	7/23/17	7/25/17			
	Warning	Rainfall Event	8/4/17	8/5/17			
	Warning	Rainfall Event	8/18/17	8/19/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
	Warning	Enterococci Exceedance	9/8/17	9/10/17			
WHITE CROSS FISHING CLUB	Warning	Enterococci Exceedance	5/27/17	8/2/17	93	0	93
	Warning	Rainfall Event	8/4/17	8/5/17			
	Warning	Enterococci Exceedance	8/10/17	8/30/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
WHITESTONE BOOSTER CIVIC ASSOCIATION	Warning	Enterococci Exceedance	5/27/17	6/1/17	79	0	79
	Warning	Enterococci Exceedance	6/8/17	7/12/17			
	Warning	Rainfall Event	7/15/17	7/15/17			
	Warning	Rainfall Event	7/23/17	7/25/17			
	Warning	Enterococci Exceedance	7/26/17	8/2/17			
	Warning	Rainfall Event	8/4/17	8/5/17			
	Warning	Rainfall Event	8/8/17	8/8/17			
	Warning	Enterococci Exceedance	8/10/17	8/30/17			
	Warning	Rainfall Event	9/3/17	9/4/17			
Private Beaches TOTAL					**826**	**0**	**826**

APPENDIX C: 2017 INSPECTION SUMMARY

Table C-1: Inspection Non-Compliance Summary *

Beach Name	General Violations**	
	167.31(b) & 167.39(b)(2)	167.09(b)
MIDLAND BEACH	X	
SEA GATE BEACH CLUB		X

* All other beaches were in full compliance of the regulations at the time of inspection

**** General Violations:**

§167.31(d) & §167.39(b)(2) Failure to provide liquid soap, paper towels or electric hand dryer

§167.09(b) Most recent inspection report is not readily available at facility for inspection