



**2021 Fecal Indicator Bacteria Sampling Report**

**Project Site: Waters west of Pier 35/Two Bridges**

**Sampling Dates:** June 3, 2021 -- September 9, 2021 (18 weeks)

**Sampling Lab:** Billion Oyster Project Lab @ Domino Park

**Indicator bacteria:** Enterococcus

*Weekly Sampling*

As part of the Citizens Water Quality Testing Program (CWQT), trained volunteers collected 100-ml samples at the Pier 35 site every Thursday morning over an 18-week period in Summer 2021. The samples were collected and transported per [CWQT sampling guidelines](#) to the Billion Oyster Project (BOP) water quality lab on Kent Avenue in Williamsburg where they were processed using the [IDEXX Enterolert system](#). The data was uploaded and analyzed by BOP lab techs Hana Isihara and Cody Herrmann. Click [here](#) for a spreadsheet of the weekly results from Pier 35, and see below for a graph of the same results. Click [here](#) for a spreadsheet showing 2021 weekly results at all CWQT sites.

*Wet Weather Sampling*

Additional samples were collected at the site during Tropical Storm Henri (Week 13). Henri originated from a well-defined low-pressure system north-northeast of Bermuda and strengthened into Tropical Storm Henri on August 17, eventually making landfall in Westerly, Rhode Island, on August 22. The result for New York City was more than 8.39 inches of rainfall (as recorded in Central Park) from August 19-23.

**2021 Weekly Entero at Pier 35**

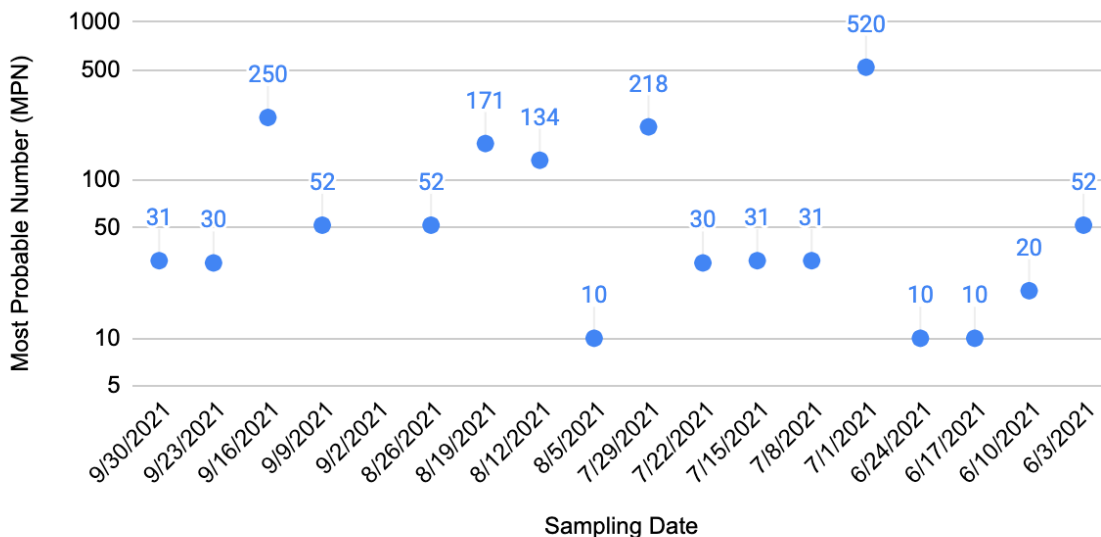


Figure 1: MPN at Pier 35, Summer 2021

## SUMMARY OF SAMPLING BY WEEK

\*All samples collected Thursday mornings and tested Thursday mid-day.

### Week 1: 5/28/21 - 6/3/21

Sample Date: 6/3/21

Sample Time: 9:38:00 AM

Enterococcus colonies per 100 ml: 52

Total Rainfall (inches): 2.97

Daily Rainfall (inches):

Friday:	1.22
Saturday:	0.46
Sunday:	0.89
Monday:	0.02
Tuesday:	0
Wednesday:	0
Thursday:	0.38*

### Week 4: 6/18/21 - 6/24/21

Sample Date: 6/24/21

Sample Time: 9:38 AM

Enterococcus colonies per 100 ml: <10

Total Rainfall (inches): 0.23

Daily Rainfall (inches):

Friday:	0
Saturday:	0.14
Sunday:	0
Monday:	Trace
Tuesday:	0.24
Wednesday:	0
Thursday:	0*

### Week 2: 6/4/21 - 6/10/21

Sample Date: 6/10/21

Sample Time: 9:00:00 AM

Enterococcus colonies per 100 ml: 20

Total Rainfall (inches): 0.94

Daily Rainfall (inches):

Friday:	0.39
Saturday:	0
Sunday:	0
Monday:	0.07
Tuesday:	0.47
Wednesday:	0.01
Thursday:	0*

### Week 5: 6/25/21 - 7/1/21

Sample Date: 7/1/21

Sample Time: 9:41 AM

Enterococcus colonies per 100 ml: 520

Total Rainfall (inches): 1.59

Daily Rainfall (inches):

Friday:	0
Saturday:	0.04
Sunday:	0
Monday:	0
Tuesday:	0
Wednesday:	0.65
Thursday:	0.9*

### Week 3: 6/11/21 - 6/17/21

Sample Date: 6/17/21

Sample Time: 9:38 AM

Enterococcus colonies per 100 ml: 10

Total Rainfall (inches): 0.23

Daily Rainfall (inches):

Friday:	Trace
Saturday:	0
Sunday:	0.01
Monday:	0.22
Tuesday:	Trace
Wednesday:	0
Thursday:	0*

### Week 6: 7/2/21 - 7/8/21

Sample Date: 7/8/21

Sample Time: 9:42 AM

Enterococcus colonies per 100 ml: 31

Total Rainfall (inches): 3.83

Daily Rainfall (inches):

Friday:	0.67
Saturday:	0.34
Sunday:	0
Monday:	0
Tuesday:	0.55
Wednesday:	0
Thursday:	2.27*

**Week 7: 7/8/21 - 7/15/21**

Sample Date: 7/15/21

Sample Time: 11:15 AM

Enterococcus colonies per 100 ml: 31

Total Rainfall (inches): 3.76

Daily Rainfall (inches):

Friday:	2.06
Saturday:	0.27
Sunday:	0.01
Monday:	1.42
Tuesday	Trace
Wednesday	Trace
Thursday:	0*

**Week 8: 7/16/21 - 7/22/21**

Sample Date: 7/22/21

Sample Time: 9:42 AM

Enterococcus colonies per 100 ml: 30

Total Rainfall (inches): 0.71

Daily Rainfall (inches):

Friday:	0
Saturday:	0.62
Sunday:	0.03
Monday:	0.01
Tuesday	0
Wednesday	0.05
Thursday:	0*

**Week 9: 7/23/21 - 7/29/21**

Sample Date: 7/29/21

Sample Time: 9:47 AM

Enterococcus colonies per 100 ml: 218

Total Rainfall (inches): 1.76

Daily Rainfall (inches):

Friday:	0.01
Saturday:	0
Sunday:	0.49
Monday:	0.78
Tuesday	Trace
Wednesday	0.01
Thursday:	0.47*

**Week 10: 7/30/21 - 8/5/21**

Sample Date: 8/5/21

Sample Time: 9:37 AM

Enterococcus colonies per 100 ml: <10

Total Rainfall (inches): 0.4

Daily Rainfall (inches):

Friday:	0
Saturday:	0
Sunday:	0.4
Monday:	0
Tuesday	0
Wednesday	0
Thursday:	0*

**Week 11: 8/6/21 - 8/12/21**

Sample Date: 8/12/21

Sample Time: 10:12 AM

Enterococcus colonies per 100 ml: 134

Total Rainfall (inches): 1.22

Daily Rainfall (inches):

Friday:	0
Saturday:	0
Sunday:	0.21
Monday:	Trace
Tuesday	0.83
Wednesday	0.18
Thursday:	Trace*

**Week 12: 8/13/21 - 8/19/21**

Sample Date: 8/19/21

Sample Time: 9:30 AM

Enterococcus colonies per 100 ml: 171

Total Rainfall (inches): 0.2

Daily Rainfall (inches):

Friday:	Trace
Saturday:	0
Sunday:	0
Monday:	0
Tuesday	Trace
Wednesday	0
Thursday:	0.2*

## Tropical Storm Henri\*\*

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### Week 13: 8/20/21 - 8/26/21 (Wet Weather Sampling Event)

Sample Date: 8/23/21

Sample Time: 2:51 PM

Enterococcus colonies per 100 ml: 910

Sample Date: 8/25/21

Sample Time: 3:16 PM

Enterococcus colonies per 100 ml: 10

Sample Date: 8/24/21

Sample Time: 12:13 PM

Enterococcus colonies per 100 ml: 131

Sample Date: 8/26/21

Sample Time: 9:10 AM

Enterococcus colonies per 100 ml: 52

Total Rainfall (inches): 9.19

Daily Rainfall (inches):

Friday: Trace

Saturday: 4.45

Sunday: 2.67

Monday: 1.07

Tuesday 0

Wednesday 0

Thursday: 0\*

Click [here](#) for a spreadsheet showing the results of samples collected at Pier 35 and three other East River sites during Tropical Storm Henri. While the number of data points is limited, it suggests that the results at Pier 35 are in line with the other East River sites (Wallabout Channel is an exception, but it's a semi-enclosed waterway with two CSOs) and that 24-48 hours is likely enough for bacteria levels to drop to safe levels, even after a major storm.

*\*\*Additional Data on other sampling sites during Tropical Storm Henri available upon request.*

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**Week 14: 8/27/21 - 9/2/21**

Sample Date: 9/2/21

Sample Time: 10:15 AM

Enterococcus colonies per 100 ml: 3130

Total Rainfall (inches): 7.9

Daily Rainfall (inches):

Friday:	0.67
Saturday:	Trace
Sunday:	0
Monday:	Trace
Tuesday	0
Wednesday	7.13
Thursday:	0.1*

**Week 15: 9/3/21 - 9/9/21**

Sample Date: 9/9/21

Sample Time: 9:32 AM

Enterococcus colonies per 100 ml: 52

Total Rainfall (inches): 0.28

Daily Rainfall (inches):

Friday:	0
Saturday:	0
Sunday:	0.02
Monday:	Trace
Tuesday	0
Wednesday	0
Thursday:	0.26*

**Week 16: 9/10/21 - 9/16/21**

Sample Date: 9/16/21

Sample Time: 9:37 AM

Enterococcus colonies per 100 ml: 250

Total Rainfall (inches): 0.12

Daily Rainfall (inches):

Friday:	0
Saturday:	0
Sunday:	0
Monday:	0.12
Tuesday	0
Wednesday	Trace
Thursday:	Trace*

**Week 17: 9/17/21 - 9/23/21**

Sample Date: 9/23/21

Sample Time: 10:48 AM

Enterococcus colonies per 100 ml: 30

Total Rainfall (inches): 1.48

Daily Rainfall (inches):

Friday:	Trace
Saturday:	0
Sunday:	0
Monday:	0
Tuesday	0.09
Wednesday	0.02
Thursday:	1.37

**Week 18: 9/24/21 - 9/30/21**

Sample Date: 9/30/21

Sample Time: 9:30 AM

Enterococcus colonies per 100 ml: 31

1. Total Rainfall (inches): 0.93

Daily Rainfall (inches):

Friday:	0.66
Saturday:	0
Sunday:	0
Monday:	0
Tuesday	0.27
Wednesday	Trace
Thursday:	0

## 2021 Weekly Sampling Summary

Total Rainfall*	Sampling Time	Sampling Date	MPN**	High Tide
0.93	9:30 AM	9/30/2021	31	3:59 AM
1.48	10:48 AM	9/23/2021	30	10:34 AM
0.12	9:37 AM	9/16/2021	250	5:02 AM
0.28	9:32 AM	9/9/2021	52	10:29 AM
7.9	10:15 AM	9/2/2021	3130	5:35 AM
9.19	9:10 AM	8/26/2021	52	11:59 AM
0.2	9:30 AM	8/19/2021	171	6:15 AM
1.22	10:12 AM	8/12/2021	134	11:48 AM
0.4	9:37 AM	8/5/2021	10	7:00 AM
1.76	9:47 AM	7/29/2021	218	12:50 AM
0.71	9:42 AM	7/22/2021	30	7:23 AM
3.76	11:15 AM	7/15/2021	31	12:07 AM
3.83	9:42 AM	7/8/2021	31	8:11 AM
1.59	9:41 AM	7/1/2021	520	2:13 AM
0.38	9:38 AM	6/24/2021	10	8:29 AM
0.23	9:38 AM	6/17/2021	10	1:19 AM
0.94	9:00 AM	6/10/2021	20	9:17 AM
2.97	9:38 AM	6/3/2021	52	3:40 AM

\*Weekly Rainfall (Fri-Thur)

\*\*Most Probable Number (MPN), Enterococcus colonies per 100 ml

*Figure 2: Weekly Sampling Pier 35, Summer 2021*

### About CWQT

Since 2012, CWQT has leveraged volunteer “citizen scientists” to collect samples from a growing number of sites in the waters around New York Harbor and analyze them for sewage pollution. Samples are collected every Thursday from the middle of May to the end of September and transported safely to one of several ‘partner labs,’ most of them attached to academic institutions. CWQT uses the EPA-approved Enterolert system from IDEXX Laboratories to test the samples for microbes of the genus Enterococcus (“Enter”). Enterococci are commonly found in the feces of humans and other warm-blooded animals; their presence in the water is an indication of fecal pollution and the possible presence of pathogens that could be harmful to human health. CWQT publishes test results every Friday throughout the summer season. The idea is to create a baseline of data that, when correlated with rain and tide information, can help better inform recreational users of the harbor of likely water quality at their preferred access points and launch sites.

**CWQT Partner Labs (and contacts)**

[Billion Oyster Project](#) (Rob Buchanan and Cody Herrmann)

[The River Project](#) (Siddhartha Hayes)

[Bronx River Alliance](#) (Christian Murphy)

[Interstate Environmental Commission](#) (Jessica Bonamusa)

[LaGuardia Community College Biology Department](#) (Holly Porter-Morgan)

[Queens College School of Earth and Environmental Sciences](#) (Greg O'Mullan)

[St. Francis College Biology Department](#) (Jenna Ellington)

[Sarah Lawrence Center for the Urban River at Beczak](#) (Ryan Palmer)

[SUNY Maritime College](#) (Caterina Panzeca)

[Monsignor Farrel High School](#) (Jenn Frydberg)