Environmental Protection

Vincent Sapienza, P.E.
Commissioner

Paul V. Rush, P.E.
Deputy Commissioner
Bureau of Water Supply
prush@dep.nyc.gov

59-17 Junction Boulevard
Flushing, NY 11373
T: (845) 340-7800
F: (845) 334-7175

September 10, 2019

Li Huang, P.E.
New York City Department of Health and Mental Hygiene
Environmental Sciences & Engineering
42-09 28th Street, 14th Floor CN# 56
Long Island City, NY 11101

Patrick Palmer
New York State Department of Health
Bureau of Water Supply Protection, NYC Watershed Section
Empire State Plaza, Corning Tower, Room 1198
Albany, NY 12237

Katie Lynch
United States Environmental Protection Agency
Clean Water Division - New York City Water Supply Protection Program
290 Broadway, 24th Floor
New York, New York 10007-1866

RE: Monthly Water Quality Report for August 2019

Dear Ms. Huang, Mr. Palmer and Ms. Lynch:

Enclosed, please find the New York City Water Quality report for the month of **August 2019**. There was no well pumpage to distribution in the Groundwater System this month. Croton water was not feeding into distribution the entire month. In addition to the following list of compliance reports, a disc of electronic files containing compliance and non-compliance data for this month is enclosed with this report.

- Raw Water Fecal Coliform Report
- Raw Water Turbidity Report
- Distribution Microbiological Compliance Reports
  - Summary
  - Positive Samples
  - Resamples
- Chlorine Residual Reports
  - Entry Point Online
  - Entry Point Daily Minimum
  - Heterotrophic Plate Count
  - Monthly Summary
- Distribution Turbidity Reports
  - Distribution Turbidity Report
  - Source Water > 1.49 NTU Table
- Color Entry Point Report

- Fluoride Reports
  - Fluoride Entry Point Report
  - Distribution Fluoride Report
- Quarterly Disinfection By-products Report

The reports are summarized as follows:

FAD REQUIREMENTS

1. *Raw Water Fecal Coliform Concentrations* (Section 141.71(a)(1)):
Requirements met. The Delaware Aqueduct effluent from Kensico Reservoir exhibited fecal coliform concentrations in water prior to disinfection at levels less than or equal to 20 CFU/100 mL in at least 90% of the samples collected in the six-month period from March 1, 2019 to August 31, 2019. The six month running percentage of samples collected with fecal coliform concentrations >20 CFU/100 mL was 0.00% for the Catskill/Delaware System for this time period.

2. *Raw Water Turbidity* (Section 141.71(a)(2)):
Requirements met. The raw water leaving Kensico Reservoir via the Delaware Aqueduct in compliance samples collected at DEL18DT, just prior to disinfection, exhibited turbidity levels less than or equal to 5 NTU on an ongoing basis during the month. The highest reported turbidity value was 1.0 NTU on the Catskill/Delaware System for the month.

3. *Entry Point Chlorine Residual* (Section 141.71(b)(1)(iii) and 141.72(a)(3)):
Requirements met. As required, continuous monitoring for free chlorine residual was maintained at the distribution entry points throughout the month and at no time did the concentration fall below 0.2 mg/L for more than four hours. The minimum daily free chlorine residual value for entry point readings for the Catskill/Delaware System from sites 1S03 (Tunnel 1) was 0.60 mg/L, 1S03A (Tunnel 2) was 0.92 mg/L, and 1S03B (Tunnel 3) was 0.59 mg/L.

The Croton Filtration Plant was offline and thus there was no operational Croton entry point for the month.

4. *Distribution System Disinfection Residuals* (Section 141.71(b)(1)(iv) and 141.72(a)(4)):
Requirements met. All free chlorine residuals measured at compliance sites within the distribution system during the month were greater than or equal to 0.01 mg/L.

A total of 1383 distribution samples were tested for free chlorine residual this month. For all distribution sites free chlorine residual ranged from 0.01 mg/L to 1.15 mg/L, and averaged 0.56 mg/L for the month.

5. *Trihalomethane Monitoring / HAA5 Monitoring* (Section 141.71(b)(6)):
Requirements met. The System's TTHM System-Wide Running Average (RAA) for the third quarter of 2019 was 41 µg/L, and the Locational Running Annual Averages (LRAA) ranged from 34 µg/L to 50 µg/L. These values meet the MCL of 80 µg/L for LRAA and RAA. TTHM quarterly results averaged 62 µg/L.

The System's HAA5 RAA for the third quarter of 2019 was 42 µg/L, and the LRAA ranged from 38 µg/L to 46 µg/L. These values meet the MCL of 60 µg/L for LRAA and RAA. HAA5 quarterly results averaged 35 µg/L.

6. Total Coliform Monitoring (Section 141.71(b)(5)):
Requirements met. The results of monthly coliform monitoring performed in the distribution system are enclosed. A total of 842 compliance samples were tested for total coliform during this period. HPC were all ≤500 CFU/mL, equivalent to a measurable free chlorine residual. Zero percent of the samples had an undetectable free chlorine residual or HPC >500 CFU/mL. This meets the requirements that a free chlorine residual be maintained at representative points in the distribution system, and that no more than 5% of the free chlorine residual samples be undetectable in any two months. During the month, there were four (4) samples that tested positive for total coliform, and all samples were negative for *E. coli*.

- A sample collected on 08/16/2019 from Site 77750 (sample station across 120-11 237th street, south of 120th Avenue) was positive for total coliform. Repeat sampling on 08/18/2019 was coliform negative at all locations.
- A sample collected on 08/18/2019 from Site 23150 (sample station in front of 1257 Ocean Parkway, 12 inch main) was positive for total coliform. Repeat sampling on 08/20/2019 was coliform negative at all locations.
- A sample collected on 08/29/2019 from Site 77150 (sample station north side of Linden Blvd and west of 230th Street) was positive for total coliform. Repeat sampling upstream on 8/31/2019 was coliform positive for total coliform. Repeat sampling on 09/02/2019 was coliform negative at all locations.

OTHER WATER QUALITY MONITORING

7. *Microbiological Monitoring:*
Coliform monitoring at distribution sites near first service connections, in response to source water having a turbidity >1.49 NTU, was not required this month, but all of these samples were negative for total coliform.

The analyses of 541 distribution Operational samples resulted in one (1) sample testing positive for total coliform. No *E. coli* were detected.

The analyses of 248 Pre-Finished samples resulted in two (2) samples testing positive for total coliform. No *E. coli* were detected.

The analyses of 586 Autosampler Pre-finished samples resulted in 4 (four) samples testing positive for total coliform. No *E. coli* were detected.

8. ***Distribution Turbidity Monitoring:***
For distribution sites turbidity ranged from 0.47 to 2.72 NTU and averaged 0.67 NTU for the month. This meets the MCL of 5 NTU for the monthly average of all distribution samples.

9. ***Color Monitoring:***
The MCL of 15 units for color was met at each Catskill/Delaware entry point for the month. Daily analyses of entry point samples (93 samples in total), produced monthly average color values of six (6) units for sites 1S03 (Tunnel 1), 1S03A (Tunnel 2), and 1S03B (Tunnel 3).

10. ***Volatile Organic/TTHM/HAA5 Monitoring:***
Monthly Results: Twenty-three (23) distribution and three (3) entry point samples were collected for volatile organic contaminant (VOC) analysis. All VOC samples from distribution sites and entry points were below detection. Twenty-three (23) TTHM distribution samples were collected ranging from 48 µg/L to 77 µg/L. Three (3) TTHM entry point samples were collected ranging from 44 µg/L to 72 µg/L. Twenty-three (23) HAA5 distribution samples were collected ranging from 25 µg/L to 43 µg/L. Three (3) HAA5 entry point samples were collected ranging from 26 µg/L to 28 µg/L.

11. ***Semivolatile and Other Organic Chemicals/parameters:***
EPA Method 525.3 monitoring for 112 compounds of specified and unspecified organic parameters was conducted on August 19, 2019 at the three (3) Catskill/Delaware entry points (1S07, 1S03A, and 1S03B), at the Croton Low Service entry point (1SCL1) and Croton High Service entry point (1SCH3), which were receiving distribution water this month, and six (6) distribution points. All semi-volatile organic contaminant samples from distribution sites and entry points were below detection limits.

Monitoring for Method 505 organohalide pesticides was conducted on August 27, 2019 (Hexachlorocyclopentadiene and methoxychlor were analyzed on August 29, 2019) at three (3) Catskill/Delaware entry points (1S07, 1S03A, and 1S03B), and at the Croton Low Service and High Service entry points (1SCL1 and 1SCH3). All results were below detection.

12. ***Fluoride Monitoring:***
Daily analyses of entry point samples (93 samples in total), produced monthly average fluoride levels of 0.71 mg/L for sites 1S03 (Tunnel 1), 1S03A (Tunnel 2), and 1S03B (Tunnel 3). The fluoride levels at the entry points did not exceed the MCL of 2.2 mg/L at any time during the month.

13. ***Other Monitoring:***
Sampling for Taste and Odor (T&O) compounds Geosmin and 2-Methylisoborneol (MIB) was conducted in August on two (2) Croton water samples at New Croton Reservoir. All results were ND. Contract laboratory reports of available data are included as pdf files on the disc of electronic files enclosed with this report.

Please feel free to contact me at (845) 340-7701 if you would like to discuss any of this information in greater detail.

Sincerely,

Salome Proud for SS

Steven C. Schindler
Director, Water Quality

Enclosure

cc:

Mr. Andrew Brunsden, Inspector General for NYCDEP
Mr. Kenneth Kosinski, NYSDEC
Mr. David Kvinge, Westchester County Water Agency (by email only)
Mr. Huan Li, NYCDOHMH
Mr. Trevor McProud, NYCDOHMH
Mr. Andy Tse, NYSDOH (by email only)
Mr. Steven Zahn, NYSDEC – Region 2

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RAW WATER FECAL COLIFORM CONCENTRATIONS
(FAD Requirement)

NYCDEP Division of Watershed Water Quality Operations

Catskill/Delaware System Raw Water Fecal Coliform Compliance Report

Environmental Protection

Hawthorne Laboratory, ELAP Lab ID No. 10771
15 Skyline Drive, Hawthorne, NY 10532

Deputy Chief: David Robinson
914-345-4973

Catskill/Delaware Public Water System at Shaft 18 (DEL18DT) - Raw Water — **Period: 06/17 To: 08/19**

Date	Number of Fecal Coliform Samples Examined per Month	Number of Fecal Coliform Samples with >20 colonies per 100 mL	Percent of Monthly Fecal Coliform Samples with >20 colonies per 100 mL	Percent of Monthly Fecal Coliform Samples with >20 colonies per 100 mL for Previous Six Months
6-17	30	0	0.00	0.00
7-17	31	0	0.00	0.00
8-17	31	0	0.00	0.00
9-17	30	0	0.00	0.00
10-17	31	0	0.00	0.00
11-17	30	0	0.00	0.00
12-17	31	0	0.00	0.00
1-18	31	0	0.00	0.00
2-18	28	1	3.57	0.55
3-18	31	0	0.00	0.55
4-18	30	0	0.00	0.55
5-18	31	0	0.00	0.55
6-18	30	0	0.00	0.55
7-18	31	0	0.00	0.55
8-18	31	0	0.00	0.00
9-18	30	2	6.67	1.09
10-18	31	2	6.45	2.17
11-18	30	0	0.00	2.19
12-18	31	0	0.00	2.17
1-19	31	0	0.00	2.17
2-19	28	0	0.00	2.21
3-19	31	0	0.00	1.10
4-19	30	0	0.00	0.00
5-19	31	0	0.00	0.00
6-19	30	0	0.00	0.00
7-19	31	0	0.00	0.00
8-19	31	0	0.00	0.00

D W. Robinson 9/4/19

Reported by: David Robinson, Deputy Chief, Hawthorne Water Quality Operations 9/3/2019

All results that fall within the scope of the NELAP program meet that program's requirements unless stated in the qualifiers addendum printed at the end of this

Report Printed on 09/03/2019 5:33 pm

RAW WATER TURBIDITY
(FAD Requirement)

NYCDEP Division of Watershed Water Quality Operations

Water Systems Operation Report - Catskill/Delaware System

Environmental Protection

Hawthorne Laboratory, ELAP Lab ID No. 10771
15 Skyline Drive, Hawthorne, NY 10532

Deputy Chief: David Robinson
914-345-4973

Catskill/Delaware Public Water System at Shaft 18 (DEL18DT) - Raw Water — **Period: August, 2019**

Date	Turbidity (NTU) 12 AM	4 AM	8 AM	12 PM	4 PM	8 PM	Total Coliform (Colonies per 100 mL)	Fecal Coliform (Colonies per 100 mL)
8/1/19	0.65	0.60	0.60	0.60	0.60	0.60	E90	E4
8/2/19	0.60	0.60	0.60	0.65	0.70	0.65	E40	<1
8/3/19	0.60	0.65	0.65	0.80	0.75	0.75	E10	E1
8/4/19	0.65	0.70	0.65	0.70	0.60	0.65	E40	E1
8/5/19	0.60	0.70	0.65	0.60	0.70	0.70	E60	E4
8/6/19	0.60	0.65	0.65	0.70	0.70	0.65	E80	E3
8/7/19	0.75	0.70	0.75	0.65	0.65	0.65	E70	E3
8/8/19	0.65	0.65	0.75	0.75	0.80	0.75	E90	E1
8/9/19	0.75	0.70	0.75	0.65	0.65	0.65	E30	<1
8/10/19	0.70	0.75	0.75	0.75	0.70	0.75	E50	E3
8/11/19	0.75	0.70	0.70	0.75	0.65	0.65	E40	E1
8/12/19	0.70	0.70	0.70	0.70	0.65	0.75	E40	<1
8/13/19	0.75	0.80	0.80	0.75	0.70	0.70	E60	E2
8/14/19	0.65	0.70	0.60	0.85	0.85	0.75	E10	<1
8/15/19	0.85	0.75	0.75	0.65	0.70	0.80	<10	<1
8/16/19	0.65	0.65	0.75	0.80	0.80	0.75	<10	<1
8/17/19	0.75	0.75	0.75	0.75	0.75	0.80	E20	E1
8/18/19	0.75	0.75	0.80	0.80	0.85	0.80	E40	<1
8/19/19	0.80	0.75	0.85	0.80	0.90	0.90	E70	<1
8/20/19	0.90	0.80	0.85	0.85	0.90	0.80	E10	<1
8/21/19	0.80	0.75	0.80	0.90	0.95	0.95	E20	E2
8/22/19	0.80	0.90	0.85	0.85	0.80	0.85	E40	<1
8/23/19	0.80	0.95	0.85	0.65	0.70	0.70	E40	E2
8/24/19	0.75	0.70	0.70	0.75	0.75	0.80	E20	<1
8/25/19	0.75	0.80	0.80	0.80	0.75	0.75	E40	E1
8/26/19	0.80	0.75	0.75	0.75	0.70	0.80	E10	E1
8/27/19	0.80	0.95	0.95	0.85	0.80	0.85	E10	<1
8/28/19	0.95	0.95	0.80	0.85	0.75	0.85	E40	<1
8/29/19	0.85	0.85	0.85	0.80	0.80	0.85	E30	E4
8/30/19	0.80	0.80	0.90	0.90	1.0	0.95	E20	<1
8/31/19	0.90	0.85	0.85	0.75	0.75	0.70	E90	E1

.: Aqueduct Shutdown, CONF: Confluent Growth (+ indicates positive coliform growth), LE: Lab Error, FE: Field Error,
E: estimated count based on non-ideal plate, >=: plate count may be biased low based on heavy growth, >: observed count replaced with dilution based value

1. Does a raw water turbidity M & R violation exist? ___ Yes X__ No
2. Does the turbidity reading exceed 5 NTU at any time? ___ Yes X_ No
   If yes, check for MCL violation, and notify state by the end of the next business day.
3. Minimum number of microbiological samples required per week: _5___
4. A daily microbiological sample is required every day the raw water turbidity exceeds 1 NTU.

Additional Comments:

D W. Robinson 9/4/19

Reported by: David Robinson, Deputy Chief, Hawthorne Water Quality Operations 9/3/2019

All results that fall within the scope of the NELAP program meet that program's requirements unless stated in the qualifiers addendum printed at the end of this report.

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NYCDEP Division of Watershed Water Quality Operations

Water Systems Operation Report - Qualifiers and Methods Addendum

Hawthorne Laboratory, ELAP Lab ID No. 10771
15 Skyline Drive, Hawthorne, NY 10532

Deputy Chief: David Robinson
914-345-4973

Data Qualifiers and Additional Notes — Period: August, 2019

Date/Time	Site	Analytes Affected	Qualifier
8/5/19 10:16	DEL18DT	Total Coliform	QC blank contamination
8/5/19 10:16	DEL18DT	Total Coliform	The duplicate analysis was not within the control limits.

Analytical Methods

Coliform, Fecal	-	SM 9222D (2006)
Coliform, Total	-	SM 9222B (2006)
Turbidity	-	SM 2130B (01)

ENTRY POINT CHLORINE RESIDUAL
(FAD Requirement)

New York City Department of Environmental Protection
Bureau of Water Supply

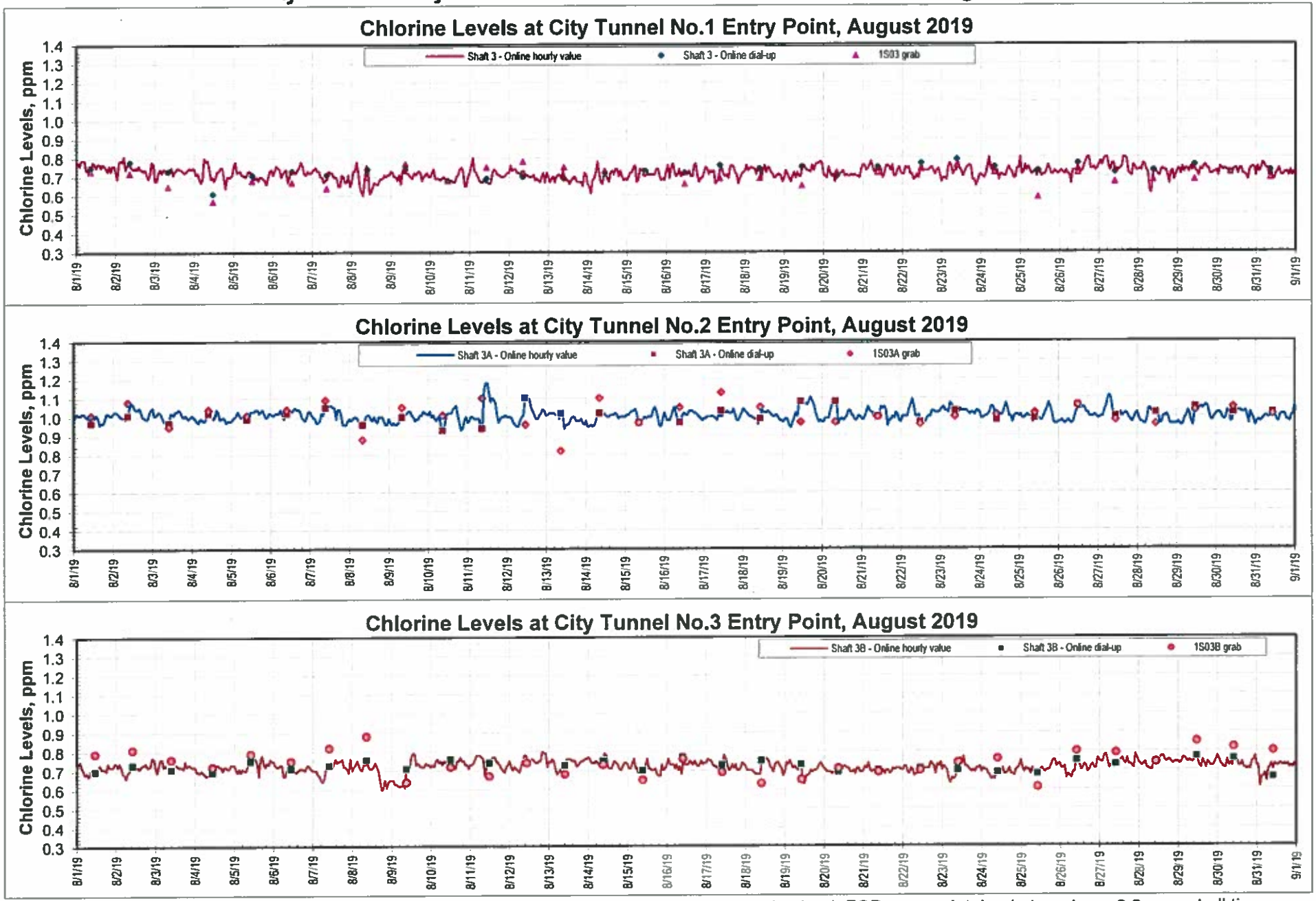
Daily Minimum Chlorine Readings Recorded at Tunnel Entry Shafts for Catskill/Delaware System

Tunnel No.1 (Catskill) at Shaft 3			Tunnel No.2 (Delaware) at Shaft 3A			Tunnel No.3 (Cat/Del) at Shaft 3B		
Date	MinCl_1DL	Remark 1	Date	MinCl_2DL	Remark 2	Date	MinCl_3DL	Remark 3
08/01/19	0.68		08/01/19	0.95		08/01/19	0.65	
08/02/19	0.66		08/02/19	0.98		08/02/19	0.66	
08/03/19	0.68		08/03/19	0.95		08/03/19	0.70	
08/04/19	0.64		08/04/19	0.96		08/04/19	0.62	
08/05/19	0.65		08/05/19	0.96		08/05/19	0.66	
08/06/19	0.65		08/06/19	0.96		08/06/19	0.65	
08/07/19	0.64		08/07/19	0.95		08/07/19	0.64	
08/08/19	0.60		08/08/19	0.94		08/08/19	0.59	
08/09/19	0.65		08/09/19	0.96		08/09/19	0.60	
08/10/19	0.63		08/10/19	0.92		08/10/19	0.71	
08/11/19	0.62		08/11/19	0.93		08/11/19	0.67	
08/12/19	0.63		08/12/19	0.93		08/12/19	0.69	
08/13/19	0.64		08/13/19	0.93		08/13/19	0.68	
08/14/19	0.61		08/14/19	0.95		08/14/19	0.70	
08/15/19	0.65		08/15/19	0.93		08/15/19	0.69	
08/16/19	0.67		08/16/19	0.96		08/16/19	0.71	
08/17/19	0.62		08/17/19	0.98		08/17/19	0.69	
08/18/19	0.65		08/18/19	0.96		08/18/19	0.65	
08/19/19	0.65		08/19/19	0.94		08/19/19	0.66	
08/20/19	0.65		08/20/19	0.96		08/20/19	0.67	
08/21/19	0.68		08/21/19	0.94		08/21/19	0.66	
08/22/19	0.63		08/22/19	0.96		08/22/19	0.66	
08/23/19	0.65		08/23/19	0.99		08/23/19	0.62	
08/24/19	0.67		08/24/19	0.94		08/24/19	0.68	
08/25/19	0.67		08/25/19	0.95		08/25/19	0.66	
08/26/19	0.64		08/26/19	0.96		08/26/19	0.65	
08/27/19	0.68		08/27/19	0.94		08/27/19	0.71	
08/28/19	0.61		08/28/19	0.95		08/28/19	0.69	
08/29/19	0.65		08/29/19	0.93		08/29/19	0.71	
08/30/19	0.65		08/30/19	0.95		08/30/19	0.68	
08/31/19	0.68		08/31/19	0.96		08/31/19	0.62	

Legend: MinCl_1DL: Shaft 3's minimum chlorine level measured at the shaft and recorded at the location via data logger, in ppm.
MinCl_2DL: Shaft 3A's minimum chlorine level measured at the shaft and recorded at the location via data logger, in ppm.
MinCl_3DL: Shaft 3B's minimum chlorine level measured at the shaft and recorded at the location via data logger, in ppm.

New York City Department of Environmental Protection
Bureau of Water Supply

City Tunnel Entry Point Residual Chlorine Continuous Monitoring Results



Note: Continuous monitoring of free chlorine residual (FCR) at distribution entry points was maintained. FCR was maintained at or above 0.2 ppm at all times. Since 3/10/19, all online readings, grab and online dial-up readings were recorded in Eastern Daylight Saving Time.

DISTRIBUTION SYSTEM DISINFECTION RESIDUAL
(FAD Requirement)

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Residual Chlorine (mg/L) Distribution Samples

August 2019

All Distribution Sites			
Samples	Min	Max	Average
1383	0.01	1.15	0.56

Hach DPD Method (analyte is not ELAP certified)

SAMPLE NUMBER	SAMPLE DATE	SAMPLE SITE	LOCATION TYPE	RESIDUAL CHLORINE	COMMENT
22981	8/7/19	12550	Reg Stop	1.15	Max
23087	8/8/19	77150	Reg Stop	0.01	Mini
24531	8/21/19	24550	Reg Stop	0.01	Mini

A FCR is to be maintained at representative points in the distribution system and no more than 5% of the samples can be undetectable in any two months.

VOLATILE ORGANIC / THM / HAA MONITORING

(FAD Requirement)

REPORT

NYC DEPT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

SUMMARY OF DISINFECTION BY-PRODUCTS ANALYSES (µg/L)

THIRD QUARTER, 2019

Site	Location	Sample Date	TTHM (µg/L) [a]				HAA5 (µg/L) [b]			
			Analysis Date	Result	LRAA	OEL	Analysis Date	Result	LRAA	OEL
15150	SS - IFO 1420 E/S Grand Concourse, 1st SS S/O E 171st St, 20"	8/6/19	8/6/19	57	39	46	8/9/19	31	39	38
18650	SS - N/S Dewey Ave, btw Quincy & Swinton Aves, 12"	8/6/19	8/6/19	49	34	38	8/9/19	39	41	39
23450	SS - N/S Jefferson Avenue, 2nd SS W/O Lewis Avenue, 20"	8/6/19	8/6/19	60	39	44	8/10/19	33	41	38
24350	SS - W/S Brighton 11th Street, 2nd SS S/O Cass Place, 12"	8/6/19	8/6/19	63	43	47	8/10/19	35	45	40
31750	SS - IFO 427 N/S W 26th St, 2nd SS W/O 9th Ave, 12"	8/6/19	8/6/19	73	49	54	8/9/19	25	40	34
31850	SS - IFO 82 S/S Warren St, 2nd SS E/O Greenwich St, 12"	8/6/19	8/7/19	76	45	53	8/9/19	30	43	37
32350	SS - IFO 116 E/S Ave C, 2nd SS N/O E 7th St, 12"	8/6/19	8/7/19	66	46	51	8/9/19	27	41	35
33450	SS - IFO 135 N/S W 112th St, 2nd SS W/O St Nicholas Ave, 12"	8/6/19	8/6/19	62	38	43	8/10/19	40	46	41
33950	SS - N/S E 104th Street, 2nd SS E/O 3rd Avenue, 12"	8/6/19	8/6/19	61	39	43	8/14/19	38	44	39
37950	SS - IFO 325 N/S E 12th Street, 2nd SS E/O 2nd Ave, 12"	8/6/19	8/7/19	54	45	47	8/9/19	30	41	35
38250	SS - IFO 309 N/S E 87th St, 2nd SS W/O 1st Ave, 12"	8/6/19	8/6/19	77	44	55	8/10/19	38	46	43
39650	SS - IFO 229 N/S E 49th St, 2nd SS W/O 2nd Ave, 12"	8/6/19	8/6/19	70	44	54	8/10/19	33	45	42
44350	SS - IFO 21-55 N/S 34th Ave, 1st SS W/O 24th St, 12"	8/6/19	8/6/19	72	50	55	8/14/19	38	43	40
45250	SS - E/S Beach 58th St, 2nd SS N/O Beach Channel Drive, 12"	8/6/19	8/6/19	60	38	43	8/9/19	38	42	40
50250	SS - IFO 937 N/S Victory Blvd, 2nd SS E/O Highland Ave, 20"	8/6/19	8/6/19	48	35	37	8/10/19	43	45	42
50750	SS - E/S Woodhull Ave, 1st SS S/O Albourne Ave, 8"	8/6/19	8/6/19	58	40	44	8/7/19	37	38	37
50850	SS - IFO 512 W/S Arlene St, 1st SS N/O Dawson Ct, 12"	8/6/19	8/6/19	63	41	47	8/8/19	33	39	37
52050	SS - IFO 218 W/S Nicholas Ave, 1st SS S/O Charles Ave, 12"	8/6/19	8/7/19	58	41	44	8/10/19	36	44	40
58650	SS - IFO 510 W/S Main St, 2nd SS S/O Hylan Blvd, 12"	8/6/19	8/6/19	62	46	48	8/8/19	41	41	43
77650	SS - OPP 110-52 E/S 207th St	8/6/19	8/6/19	49	35	38	8/9/19	39	40	40

TTHM			HAA5
48	QUARTERLY MINIMUM	25	
77	QUARTERLY MAXIMUM	43	
62	QUARTERLY AVERAGE	35	
41	SYSTEM-WIDE RAA	42	

[a] : analyzed by EPA Method 524.3

[b] : analyzed by EPA Method 552.3

LRAA: The Locational Running Annual Average (LRAA) is calculated by taking the value of this quarter and the three previous consecutive quarters.

RAA: The System-wide Running Annual Average (RAA) is calculated by taking the average of the Quarterly Average of this quarter and the three previous consecutive quarters.

OEL: The Operational Evalution Level (OEL) is calculated by averaging 2 times this quarter's value and the two previous consecutive quarters.

Both the LRAA and the System-wide RAA is not to exceed 80 µg/L for TTHM and 60 µg/L for HAA5.

TOTAL COLIFORM MONITORING
(FAD Requirement)

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Summary of Results for Microbiological Quality
Compliance Samples

8/1/2019 to 8/31/2019

Location	Number of Sampling Points	Number of Samples Collected	Number of Samples Tested	Number of Samples with Positive Coliform *	Number of Samples with Positive E. coli *	Percent of Samples with Positive Coliform **
Bronx	46	136	136	0	0	0.0%
Brooklyn	70	210	210	1	0	0.5%
Manhattan	57	174	174	0	0	0.0%
Queens ***	79	238	238	3	0	1.3%
Staten Island	28	84	84	0	0	0.0%
Ground Water Supply ***	-	-	-	-	-	-
Total	280	842	842	4	0	0.5%

* As determined by Colilert Quanti-Tray-18 Method (SM 9223 B).

** If more than 5.0 % of all monthly TCR compliance samples are positive for total coliform, a Level I Assessment must be conducted.

*** There was no groundwater sample this month because no well was in operation to distribution.

Supervisor: Rupa Agrawal Date: 09/05/19

Director: [signature] Date: 9/6/19

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Results for Microbiological Quality
Positive Compliance Samples
8/1/2019 to 8/31/2019

Date	Time	Site Number	Boro	Location	Coliform *	E. coli *	Chlorine Residual (mg/L) **	Remarks
8/16/2019	7:57	77750	Queens	SS - OPP 120-11 W/S 237th St, 1st SS S/O 120th Ave	2.0	<1	0.04	To Be Resampled
8/18/2019	11:18	23150	Brooklyn	SS - E/S Ocean Pkwy, 2nd SS N/O Ave M, IFO 1257 Ocean Pkwy, 12 "	144.5	<1	0.61	To Be Resampled
8/29/2019	10:10	77150	Queens	SS - N/S Linden Blvd, 1st SS W/O 230th St	7.5	<1	0.01	To Be Resampled
8/31/2019	8:28	77150	Queens	SS - N/S Linden Blvd, 1st SS E/O 230th St	3.1	<1	0.02	To Be Resampled

* As determined by Colilert Quanti-Tray-18 Method (SM 9223 B). Results expressed in "MPN/100 mL."

** As determined by Hach DPD Method (analyte is not ELAP certified).

Supervisor: Rupa Aggarwal Date: 09/05/19

Director: [signature] Date: 9/6/19

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Results for Microbiological Quality
Resamples for Positive Compliance Samples

8/1/2019 to 8/31/2019

Date	Time	Site Number	Boro	Location	Coliform *	E. coli *	Chlorine Residual (mg/L) **	Remarks
8/18/2019	9:59	77750	Queens	SS - W/S 237th St, 1st SS N/O 120th Ave	<1	<1	0.01	Upstream
8/18/2019	10:20	77750	Queens	SS - OPP 120-11 W/S 237th St, 1st SS S/O 120th Ave	<1	<1	0.04	Original Location
8/18/2019	10:39	77750	Queens	SS - W/S 237th St, 1st SS N/O 121st Ave	<1	<1	0.07	Downstream
8/20/2019	9:55	23150	Brooklyn	SS - E/S Ocean Pkwy, 1st SS S/O Ave L, IFO 1225 Ocean Pkwy (end of bldg)	<1	<1	0.65	Upstream
8/20/2019	9:43	23150	Brooklyn	SS - E/S Ocean Pkwy, 2nd SS N/O Ave M, IFO 1257 Ocean Pkwy, 12 "	<1	<1	0.77	Original Location
8/20/2019	9:21	23150	Brooklyn	SS - E/S Ocean Pkwy, 1st SS N/O Ave M, IFO 1277 Ocean Pkwy	<1	<1	0.63	Downstream
8/31/2019	8:28	77150	Queens	SS - N/S Linden Blvd, 1st SS E/O 230th St	3.1	<1	0.02	Upstream
8/31/2019	8:40	77150	Queens	SS - N/S Linden Blvd, 1st SS W/O 230th St	<1	<1	0.04	Original Location
8/31/2019	8:53	77150	Queens	SS - N/S Linden Blvd, 2nd SS W/O 230th St	<1	<1	0.03	Downstream
9/2/2019	8:57	77150	Queens	SS - N/S Linden Blvd, 1st SS E/O 230th St	<1	<1	0.02	Upstream
9/2/2019	9:16	77150	Queens	SS - N/S Linden Blvd, 1st SS W/O 230th St	<1	<1	0.04	Original Location
9/2/2019	9:42	77150	Queens	SS - N/S Linden Blvd, 2nd SS W/O 230th St	<1	<1	0.03	Downstream

* As determined by Colilert Quanti-Tray-18 Method (SM 9223 B). Results expressed in "MPN/100 mL."
** As determined by Hach DPD Method (analyte is not ELAP certified).

Supervisor: Rupa Aggarwal Date: 09/05/19

Director: [signature] Date: 9/6/19

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Results for Microbiological Quality
Free Chlorine Residual and Heterotrophic Plate Count
Compliance Samples

8/1/2019 to 8/31/2019

Location	Number of Sampling Points	Number of Samples Collected	Number of Samples Tested (Free Chlorine Residual)	Number of Samples Tested (Heterotrophic Plate Count)	Number of Samples with Free Chlorine Residual *		Range of Heterotrophic Plate Count (CFU/mL) for Free Chlorine Residual of 0.00 mg/L **	Number of Samples with Free Chlorine Residual of 0.00 mg/L and HPC > 500	Percent of Samples with Free Chlorine Residual of 0.00 mg/L and HPC > 500 ***
					< 0.20 mg/L	0.00 mg/L			
Bronx	46	136	136	96	2	0	–	0	0.0%
Brooklyn	70	210	210	154	20	0	–	0	0.0%
Manhattan	57	174	174	135	20	0	–	0	0.0%
Queens †	79	238	238	182	49	0	–	0	0.0%
Staten Island	28	84	84	62	8	0	–	0	0.0%
Ground Water Supply †	-	-	-	-	-	-	–	-	-
Total	280	842	842	629	99	0	–	0	0.0%

* Free chlorine residual is determined by Hach DPD Method (analyte is not ELAP certified).
** Heterotrophic plate count is determined by method SM 9215 B, PCA medium, 35°C, 48hrs. HPC result ≤ 500 CFU/mL is equivalent to a measurable FCR.
*** No more than 5 % of FCR samples shall be undetectable in any 2 consecutive months.

† There was no groundwater sample this month because no well was in operation to distribution.

Supervisor: Rupa Aggarwal Date: 09/05/19

Director: [signature] Date: 9/6/19

MICROBIOLOGICAL MONITORING

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Coliform Monitoring Results at Sample Sites near the First Service Connection When Source Water Turbidity Exceeds 1.49 NTU

August 2019

Source water		Distribution site near first service connection			
Date Turb>1.49 NTU	System	Sample Date	Sample Site	Coliform *	E.coli *

No official four-hour turbidity readings from Cat-Del source water were greater than 1.5 NTU this month.

*** As determined by Colilert Quanti-Tray-18 Method (SM 9223B). Results expressed in "MPN /100mL."**

DISTRIBUTION TURBIDITY MONITORING

REPORT

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY, DISTRIBUTION LAB (NYSDOH ELAP #10770; USEPA #NY01351)

Turbidity (NTU) Distribution Samples

August 2019

All Distribution Sites			
Samples	Min	Max	Average
1383	0.47	2.72	0.67

Analytical Method SM 2130 B

SAMPLE NUMBER	SAMPLE DATE	SAMPLE SITE	LOCATION TYPE	TURBIDITY	COMMENT
22873	8/6/19	52050	Reg Stop	2.72	Max
24050	8/17/19	78450	Reg Stop	0.47	Min
22739	8/5/19	77750	Reg Stop	0.47	Min

The monthly average of all distribution samples is not to exceed 5 NTU.

COLOR MONITORING

REPORT

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY DISTRIBUTION LABORATORY (NYSDOH ELAP #10770; USEPA #NY01351)

Color (U) for Distribution Entry Points

August 2019

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Catskill/Delaware 1S03 (Tunnel 1)	7	6	6	6	6	7	7	7	6	7	6	6	5	6	7	6	5	7	7	7	8	7	6	6	6	7	6	7	6	7	7
Catskill/Delaware 1S03A (Tunnel 2)	7	6	6	6	6	7	7	6	6	6	6	6	6	6	7	7	6	7	7	7	8	6	6	7	6	7	6	8	7	6	6
Catskill/Delaware 1S03B (Tunnel 3)	7	6	6	7	6	6	7	6	6	6	7	6	6	6	7	7	6	7	6	7	8	6	6	7	6	6	6	7	7	6	7
Croton System 1SCL1 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croton System 1SCH3 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analytical Method SM 2120 B. Apparent color.

The average of two consecutive samples from the same site is not to exceed the MCL of 15 color units.

[a] Croton System offline as of 6/4/19.

Entry Point	Samples	Minimum	Maximum	Average
Catskill/Delaware 1S03 (Tunnel 1)	31	5	8	6
Catskill/Delaware 1S03A (Tunnel 2)	31	6	8	6
Catskill/Delaware 1S03B (Tunnel 3)	31	6	8	6
Croton System 1SCL1 [a]	-	-	-	-
Croton System 1SCH3 [a]	-	-	-	-

Supervisor _____ **Date** 09/06/19

Director _____ **Date** 9/6/19

FLUORIDE MONITORING

REPORT

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY DISTRIBUTION LABORATORY (NYSDOH ELAP #10770; USEPA #NY01351)

Fluoride (mg/L) for Distribution Entry Points

August 2019

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Catskill/Delaware 1S03 (Tunnel 1)	0.69	0.70	0.70	0.71	0.71	0.71	0.71	0.70	0.72	0.71	0.70	0.71	0.70	0.70	0.70	0.72	0.70	0.72	0.72	0.72	0.72	0.72	0.71	0.71	0.72	0.71	0.71	0.70	0.71	0.72	0.72
Catskill/Delaware 1S03A (Tunnel 2)	0.69	0.70	0.69	0.71	0.71	0.71	0.71	0.70	0.73	0.71	0.70	0.71	0.71	0.70	0.71	0.72	0.71	0.72	0.73	0.72	0.72	0.73	0.71	0.71	0.72	0.71	0.71	0.70	0.72	0.72	0.71
Catskill/Delaware 1S03B (Tunnel 3)	0.69	0.71	0.70	0.70	0.71	0.70	0.71	0.70	0.72	0.71	0.70	0.70	0.70	0.70	0.70	0.71	0.70	0.72	0.72	0.72	0.72	0.73	0.71	0.70	0.72	0.72	0.71	0.70	0.71	0.72	0.72
Croton System 1SCL1 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croton System 1SCH3 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Analytical Method SM 4500 F C (97)

The average of two consecutive samples from the same distribution entry point site is not to exceed the MCL of 2.2 ppm.

[a] Croton System offline as of 6/4/19.

Entry Point	Samples	Minimum	Maximum	Average
Catskill/Delaware 1S03 (Tunnel 1)	31	0.69	0.72	0.71
Catskill/Delaware 1S03A (Tunnel 2)	31	0.69	0.73	0.71
Catskill/Delaware 1S03B (Tunnel 3)	31	0.69	0.73	0.71
Croton System 1SCL1 [a]	-	-	-	-
Croton System 1SCH3 [a]	-	-	-	-

Supervisor _____ Date 09/06/19

Director _____ Date 9/6/19