NYC Environmental Protection

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May 6, 2020

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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 April 2020

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

Enclosed, please find the New York City Water Quality report for the month of **April 2020**. There was no well pumpage to distribution in the Groundwater System this month. Croton water was not feeding into distribution for the month of April 2020. 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 November 1, 2019 to April 30, 2020. 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 0.95 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 0.50 mg/L, 1S03A (Tunnel 2) was 0.75 mg/L, and 1S03B (Tunnel 3) was 0.54 mg/L.

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

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 1160 distribution samples were tested for free chlorine residual this month. For all monthly distribution sites free chlorine residual ranged from 0.01 to 1.09 mg/L, and averaged 0.53 mg/L.

5. *Trihalomethane Monitoring / HAA5 Monitoring* (Section 141.71(b)(6)):
Requirements met. The results for first quarter of 2020 were included in the report dated March 9, 2020 (For the February 2020 reporting period).

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 799 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 was one (1) sample that tested positive for total coliform, and all samples were negative for *E. coli*.

- A sample collected on 04/13/2020 from Site 45650 (sample station in front of 107-02 109th Street, first sampling station south of 107th Avenue) was positive for total coliform. Repeat sampling on 04/15/2020 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 and *E. coli*.

The analyses of 360 distribution Operational samples resulted in one (1) sample testing positive for total coliform and *E. coli* at 1 MPN/100mL, which was collected on 4/16/2020 at site 40200, located on the south side of 19th Avenue, between 41st and Steinway Streets, in front of 40-14 19th Ave. The resample collected on 4/17/2020 was negative. A follow up investigation found no QC failures or issues in the laboratory or field.

The analyses of 238 Pre-Finished samples resulted in no samples testing positive for total coliform or *E. coli*.

The analyses of Autosampler Pre-finished samples were suspended under the COVID-19 Reduced Monitoring Plan.

8. Distribution Turbidity Monitoring:
For distribution sites, turbidity ranged from 0.49 to 2.16 NTU and averaged 0.70 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 (90 samples in total), produced monthly average color value 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-two (22) distribution and three (3) entry point samples were analyzed for volatile organic contaminants (VOC). All VOC's were below detection in all samples. Twenty-two (22) distribution samples were analyzed for TTHM and ranged from 16 µg/L to 36 µg/L. Three (3) entry point samples were analyzed for TTHM and ranged from 14 µg/L to 37

µg/L. Twenty-two (22) distribution samples were analyzed for HHA5 and ranged from 26 µg/L to 51 µg/L. Three (3) entry point samples were analyzed for HAA5 and ranged from 23 µg/L to 50 µg/L.

11. *Semivolatile and Other Organic Chemicals/parameters:*
None conducted this month.

12. *Fluoride Monitoring:*
Daily analyses of entry point samples (90 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:
Monitoring for Taste and Odor (T&O) compounds Geosmin and 2-Methylisoborneol (MIB) was conducted in April on 10 samples from the New Croton Reservoir. Results ranged from ND to 5.2 ng/L for Geosmin and from 12 ng/L to 31 ng/L for MIB. 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,

Steven C. Schindler
Director, Water Quality

Enclosure

cc:

Mr. Andrew Brunsden, Inspector General for NYCDEP
Mr. Kenneth Kosinski, NYSDEC (by email only)
Mr. David Kvinge, Westchester County Water Agency (by email only)
Mr. Huan Li, NYCDOHMH
Ms. Millie Magraw, Westchester County Water Agency (by email only)
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

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: 02/18 To: 04/20
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
2-18	28	1	3.57	3.33
3-18	31	0	0.00	1.64
4-18	30	0	0.00	1.10
5-18	31	0	0.00	0.82
6-18	30	0	0.00	0.66
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
9-19	30	0	0.00	0.00
10-19	31	0	0.00	0.00
11-19	30	0	0.00	0.00
12-19	31	0	0.00	0.00
1-20	31	0	0.00	0.00
2-20	29	0	0.00	0.00
3-20	31	0	0.00	0.00
4-20	30	0	0.00	0.00

J W Robinson 5/5/20

Reported by: David Robinson, Deputy Chief, Hawthorne Water Quality Operations 5/4/2020

RAW WATER TURBIDITY
(FAD Requirement)

NYCDEP Division of Watershed Water Quality Operations

Water Systems Operation Report - Catskill/Delaware System

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: April, 2020**

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)
4/1/20	0.70	0.70	0.70	0.85	0.85	0.80	E8	<1
4/2/20	0.80	0.80	0.80	0.65	0.70	0.75	E8	<1
4/3/20	0.70	0.75	0.65	0.65	0.70	0.70	<2	<1
4/4/20	0.70	0.65	0.70	0.80	0.75	0.75	E2	<1
4/5/20	0.75	0.70	0.70	0.70	0.70	0.75	<2	<1
4/6/20	0.70	0.70	0.70	0.70	0.70	0.70	E4	E1
4/7/20	0.70	0.75	0.70	0.80	0.65	0.70	<2	<1
4/8/20	0.70	0.70	0.70	0.70	0.65	0.70	E2	<1
4/9/20	0.65	0.70	0.75	0.65	0.65	0.60	<2	<1
4/10/20	0.65	0.70	0.60	0.60	0.60	0.60	E5	<1
4/11/20	0.60	0.60	0.60	0.70	0.70	0.70	E4	<1
4/12/20	0.75	0.75	0.70	0.65	0.65	0.60	E4	<1
4/13/20	0.65	0.65	0.65	0.95	0.90	0.80	E4	<1
4/14/20	0.80	0.90	0.85	0.80	0.70	0.75	E14	E1
4/15/20	0.85	0.75	0.85	0.70	0.75	0.75	E24	E1
4/16/20	0.75	0.80	0.65	0.80	0.80	0.75	E6	E1
4/17/20	0.85	0.85	0.75	0.70	0.80	0.75	E8	E1
4/18/20	0.80	0.75	0.70	0.80	0.80	0.85	E4	<1
4/19/20	0.85	0.75	0.80	0.85	0.85	0.65	E5	<1
4/20/20	0.75	0.80	0.85	0.80	0.70	0.85	E10	<1
4/21/20	0.85	0.75	0.80	0.75	0.75	0.75	E8	<1
4/22/20	0.70	0.70	0.70	0.70	0.70	0.70	E2	<1
4/23/20	0.75	0.70	0.70	0.75	0.65	0.65	E8	<1
4/24/20	0.75	0.70	0.70	0.75	0.65	0.75	E4	<1
4/25/20	0.70	0.70	0.70	0.75	0.80	0.75	E8	<1
4/26/20	0.70	0.70	0.70	0.75	0.85	0.80	E4	<1
4/27/20	0.80	0.80	0.90	0.80	0.80	0.80	E12	<1
4/28/20	0.70	0.80	0.90	0.75	0.70	0.65	E2	<1
4/29/20	0.65	0.75	0.65	0.75	0.90	0.85	<2	<1
4/30/20	0.80	0.80	0.80	0.90	0.75	0.75	E4	<1

.: 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 5/5/20

Reported by: David Robinson, Deputy Chief, Hawthorne Water Quality Operations 5/4/2020

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.

Report Printed on 05/04/202010:32 am

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: April 2020

Date/Time	Site	Analytes Affected	Qualifier
4/7/20 11:55	DEL18DT	Turbidity	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

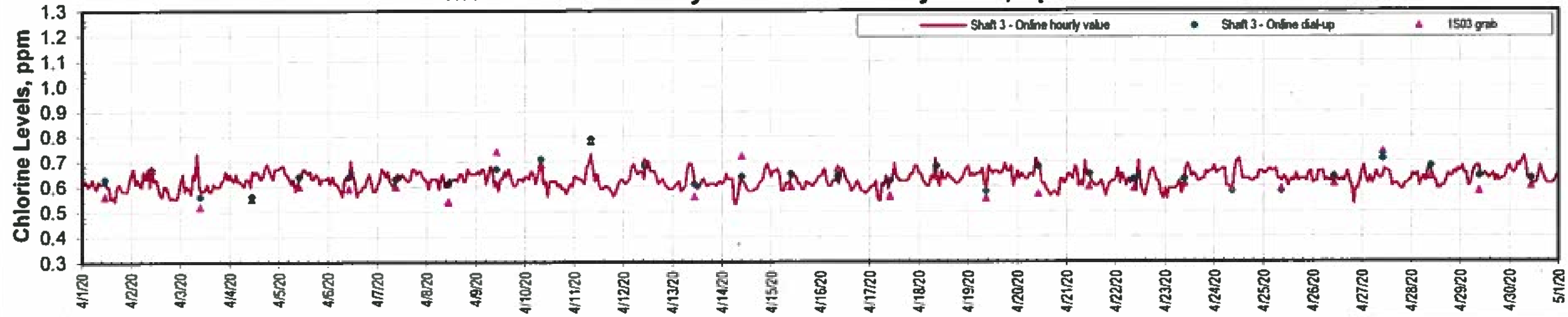
Daily Minimum Chlorine Readings Recorded at Tunnel Entry Shafts for Catskill/Delaware System

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
04/01/20	0.53		04/01/20	0.87		04/01/20	0.58	
04/02/20	0.54		04/02/20	0.89		04/02/20	0.59	
04/03/20	0.51		04/03/20	0.84		04/03/20	0.60	
04/04/20	0.56		04/04/20	0.89		04/04/20	0.54	
04/05/20	0.58		04/05/20	0.90		04/05/20	0.58	
04/06/20	0.55		04/06/20	0.87		04/06/20	0.59	
04/07/20	0.57		04/07/20	0.83		04/07/20	0.55	
04/08/20	0.55		04/08/20	0.88		04/08/20	0.58	
04/09/20	0.58		04/09/20	0.88		04/09/20	0.58	
04/10/20	0.56		04/10/20	0.86		04/10/20	0.56	
04/11/20	0.56		04/11/20	0.86		04/11/20	0.55	
04/12/20	0.58		04/12/20	0.82		04/12/20	0.56	
04/13/20	0.54		04/13/20	0.86		04/13/20	0.58	
04/14/20	0.50		04/14/20	0.81		04/14/20	0.56	
04/15/20	0.55		04/15/20	0.85		04/15/20	0.55	
04/16/20	0.56		04/16/20	0.85		04/16/20	0.58	
04/17/20	0.52		04/17/20	0.86		04/17/20	0.56	
04/18/20	0.60		04/18/20	0.86		04/18/20	0.59	
04/19/20	0.57		04/19/20	0.75		04/19/20	0.60	
04/20/20	0.55		04/20/20	0.89		04/20/20	0.59	
04/21/20	0.56		04/21/20	0.84		04/21/20	0.57	
04/22/20	0.55		04/22/20	0.82		04/22/20	0.58	
04/23/20	0.50		04/23/20	0.85		04/23/20	0.56	
04/24/20	0.58		04/24/20	0.82		04/24/20	0.58	
04/25/20	0.60		04/25/20	0.82		04/25/20	0.58	
04/26/20	0.58		04/26/20	0.86		04/26/20	0.57	
04/27/20	0.59		04/27/20	0.84		04/27/20	0.56	
04/28/20	0.58		04/28/20	0.84		04/28/20	0.55	
04/29/20	0.60		04/29/20	0.82		04/29/20	0.57	
04/30/20	0.58		04/30/20	0.86		04/30/20	0.56	

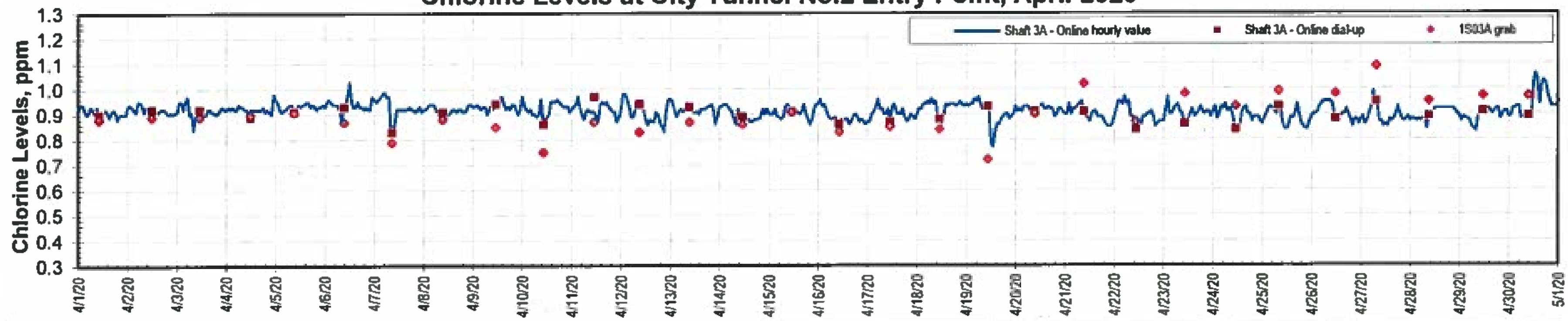
Legend: MinCl_1DL: Shaft 3's minimum chlorine level measured at the shaft and recorded at the location via data logger, in ppm.
MinCl_2DL: Shaft 3A's minimum chlorine level measured at the shaft and recorded at the location via data logger, in ppm.
MinCl_3DL: Shaft 3B's minimum chlorine level measured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

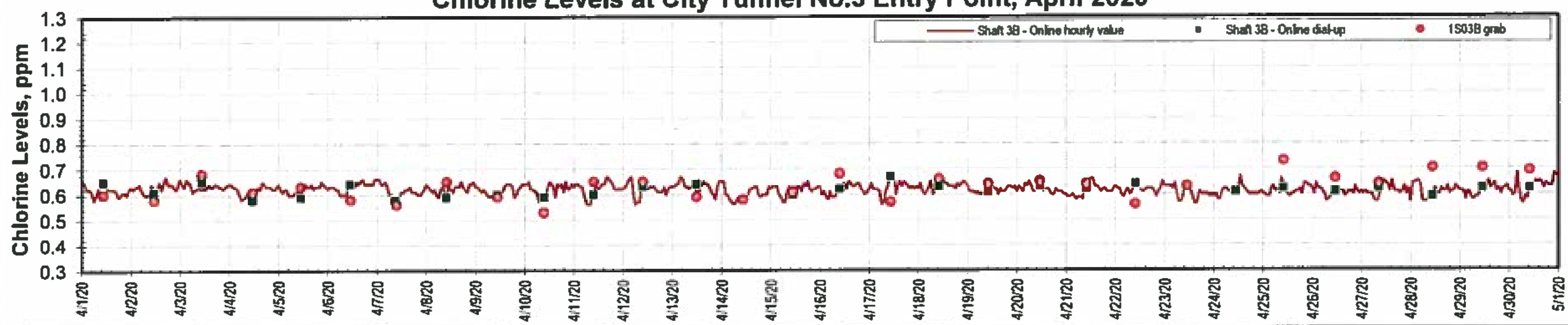
Chlorine Levels at City Tunnel No.1 Entry Point, April 2020



Chlorine Levels at City Tunnel No.2 Entry Point, April 2020



Chlorine Levels at City Tunnel No.3 Entry Point, April 2020



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 3/8/2020, all online readings, grab and online dial-up readings were recorded in Eastern Daylight Saving Time.

New York City Department of Environmental Protection
Bureau of Water Supply

Daily Minimum Chlorine Readings Recorded at Croton Distribution Entry Points

Low Service			High Service		
Date	MinCl_1SCL1	Remark 1	Date	MinCl_1SCH3	Remark 2
04/01/20		No Croton water.	04/01/20		No Croton water.
04/02/20			04/02/20		
04/03/20			04/03/20		
04/04/20			04/04/20		
04/05/20			04/05/20		
04/06/20			04/06/20		
04/07/20			04/07/20		
04/08/20			04/08/20		
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04/25/20			04/25/20		
04/26/20			04/26/20		
04/27/20			04/27/20		
04/28/20			04/28/20		
04/29/20			04/29/20		
04/30/20			04/30/20		

Legend: MinCl_1SCL1: 1SCL1's minimum chlorine level measured and recorded at the location via data logger, in ppm.
MinCl_1SCH3: 1SCH3's minimum chlorine level measured and recorded at the location via data logger, in ppm.

Note: Croton water fed to High Service time period was determined by specific conductance greater than 150 uS/cm.

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

April 2020

All Distribution Sites			
Samples	Min	Max	Average
1160	0.01	1.09	0.53

Hach DPD Method (analyte is not ELAP certified)

SAMPLE NUMBER	SAMPLE DATE	SAMPLE SITE	LOCATION TYPE	RESIDUAL CHLORINE	COMMENT
11029	4/27/20	40200	Reg Stop	1.09	Max
11060	4/27/20	1S03A	Sub	1.09	Max
9257	4/3/20	30350	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.

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

4/1/2020 to 4/30/2020

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	131	131	0	0	0.0%
Brooklyn	70	193	193	0	0	0.0%
Manhattan	57	163	163	0	0	0.0%
Queens ***	79	227	227	1	0	0.4%
Staten Island	29	85	85	0	0	0.0%
Ground Water Supply ***	-	-	-	-	-	-
Total	281	799	799	1	0	0.1%

* 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: _____ Date: 05/05/20

Director: _____ Date: 05/06/2020

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
4/1/2020 to 4/30/2020

Date	Time	Site Number	Boro	Location	Coliform *	E. coli *	Chlorine Residual (mg/L) **	Remarks
4/13/2020	8:42 AM	45650	Queens	SS - IFO 107-02 W/S 109th St, 1st SS S/O 107th Ave, 12 "	6.4	<1	0.56	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: Rupe Agga Date: 05/05/20

Director: Date: 05/06/2020

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

4/1/2020 to 4/30/2020

Date	Time	Site Number	Boro	Location	Coliform *	E. coli *	Chlorine Residual (mg/L) **	Remarks
4/15/2020	9:01	45650	Queens	SS - W/S 109th St, 1st SS N/O 109th Ave, IFO 107-28 109th St.	<1	<1	0.59	Upstream
4/15/2020	9:22	45650	Queens	SS - IFO 107-02 W/S 109th St, 1st SS S/O 107th Ave, 12 "	<1	<1	0.62	Original Location
4/15/2020	9:40	45650	Queens	SS - W/S 109th St, BTW Liberty & 107th Aves, IFO 104-66 109th St	<1	<1	0.54	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: 05/05/20

Director: [signature] Date: 05/06/2020

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

4/1/2020 to 4/30/2020

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	131	131	0	0	0	–	0	0.0%
Brooklyn	70	193	193	0	0	0	–	0	0.0%
Manhattan	57	163	163	5	5	0	–	0	0.0%
Queens †	79	227	227	16	16	0	–	0	0.0%
Staten Island	29	85	85	10	10	0	–	0	0.0%
Ground Water Supply †	-	-	-	-	-	-	–	-	-
Total	281	799	799	31	31	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: 05/05/20

Director: [signature] Date: 05/06/2020

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

April 2020

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

April 2020

All Distribution Sites			
Samples	Min	Max	Average
1160	0.49	2.16	0.70

Analytical Method SM 2130 B

SAMPLE NUMBER	SAMPLE DATE	SAMPLE SITE	LOCATION TYPE	TURBIDITY	COMMENT
9888	4/12/20	51150	Reg Stop	2.16	Max
10099	4/15/20	77750	Reg Stop	0.49	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

April 2020

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
Catskill/Delaware 1S03 (Tunnel 1)	5	6	6	6	7	7	6	6	5	6	6	7	6	6	7	6	6	6	7	6	7	6	6	6	6	6	6	7	6	6
Catskill/Delaware 1S03A (Tunnel 2)	5	7	7	6	7	7	7	7	6	6	6	7	6	6	7	7	6	6	7	7	7	6	6	7	6	6	7	7	6	6
Catskill/Delaware 1S03B (Tunnel 3)	5	7	7	6	6	7	6	7	6	6	6	7	5	6	6	7	6	6	7	6	7	7	6	6	6	6	7	7	5	6
Croton System 1SCL1 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croton System 1SCH3 [b]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 12/24/19 at 1SCL1.

[b] Croton System offline as of 12/4/19 at 1SCH3.

Entry Point	Samples	Minimum	Maximum	Average
Catskill/Delaware 1S03 (Tunnel 1)	30	5	7	6
Catskill/Delaware 1S03A (Tunnel 2)	30	5	7	6
Catskill/Delaware 1S03B (Tunnel 3)	30	5	7	6
Croton System 1SCL1 [a]	-	-	-	-
Croton System 1SCH3 [b]	-	-	-	-

Supervisor _____ Date 05/04/20

Director _____ Date 5/4/2020

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
April 2020

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
Catskill/Delaware 1S03 (Tunnel 1)	0.71	0.71	0.70	0.71	0.70	0.71	0.71	0.70	0.71	0.71	0.71	0.71	0.71	0.70	0.72	0.71	0.69	0.71	0.70	0.70	0.70	0.71	0.71	0.72	0.72	0.72	0.71	0.71	0.71	0.71
Catskill/Delaware 1S03A (Tunnel 2)	0.71	0.73	0.70	0.71	0.71	0.70	0.70	0.70	0.71	0.71	0.71	0.72	0.71	0.70	0.72	0.71	0.69	0.72	0.70	0.70	0.68	0.71	0.71	0.72	0.73	0.72	0.71	0.72	0.71	0.71
Catskill/Delaware 1S03B (Tunnel 3)	0.71	0.71	0.70	0.71	0.71	0.70	0.70	0.70	0.71	0.71	0.71	0.71	0.71	0.70	0.72	0.71	0.69	0.71	0.71	0.70	0.69	0.71	0.71	0.71	0.73	0.72	0.71	0.72	0.71	0.71
Croton System 1SCL1 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croton System 1SCH3 [b]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 12/24/19 at 1SCL1.

[b] Croton System offline as of 12/4/19 at 1SCH3.

Entry Point	Samples	Minimum	Maximum	Average
Catskill/Delaware 1S03 (Tunnel 1)	30	0.69	0.72	0.71
Catskill/Delaware 1S03A (Tunnel 2)	30	0.68	0.73	0.71
Catskill/Delaware 1S03B (Tunnel 3)	30	0.69	0.73	0.71
Croton System 1SCL1 [a]	-	-	-	-
Croton System 1SCH3 [b]	-	-	-	-

Supervisor _____ Date 05/04/20

Director _____ Date 5/4/2020