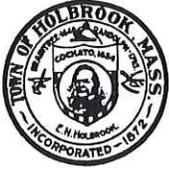


F



RANDOLPH-HOLBROOK JOINT WATER BOARD



Town of Holbrook
Office of Joint Superintendent
(781) 767-1800
Fax (781) 767-0705

50 North Franklin Street
Holbrook, MA 02343

Town of Randolph

January 10, 2020

Commonwealth of Massachusetts
Department of Environmental Protection
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02374

Monthly Reports Filtered System Forms
Forms F, G, I, J, TT
Analysis for TOC, DOC and SUVA
Chemical Addition Reports
DBPR Compliance Report
December, 2019 Randolph/Holbrook
Joint Water System, PWS #424001

Gentlemen:

Enclosed please find all reports as referenced above for the month of December, 2019. Should there be any questions, please do not hesitate to call.

Sincerely,

William Cookerly
Chief Plant Operator

Enclosures

Cc: Board of Health
Ryan Allgrove, EPG



Massachusetts Department of Environmental Protection - Drinking Water Program
Compliance Determination for Filtered Systems - Monthly Report

SWTR
G

I. PWS INFORMATION:

PWSID#: 4244001 PWS Name: RANDOLPH-HOLBROOK JOINT WATER PWS Town: RANDOLPH
 Treatment Plant Name: RANDOLPH WATER PLANT Reporting Period → Month: DECEMBER Year: 2019

II. TURBIDITY PERFORMANCE CRITERIA:

1. Monthly Turbidity (95%) NTU Limit - The turbidity level of a system's filtered water must be less than or equal to the Monthly Turbidity NTU Limit in at least 95% of the measurements taken each month for the filtration technology used, otherwise SWTR TT Violation (Tier 2).

<u>186</u>	= A	Total # of filtered water turbidity measurements for month (SWTR - Form F)
<u>186</u>	= B	Total # of filtered water turbidity measurements less than or equal to the specified limits for the filtration technology used. (SWTR - Form F)
<u>100</u>	= (B / A) × 100	The percentage of turbidity measurements meeting the Monthly Turbidity 95% NTU Limit.

2. Max Day NTU Limit - The turbidity level of a system's filtered water must at no time exceed the Max Day NTU Limit for the filtration technology used, otherwise SWTR TT Violation (Tier 2).

Record the date and turbidity value for any measurements exceeding the Max Day NTU. Check box if "None"

Date	Value	Date Reported to DEP	Date	Value	Date Reported to DEP

For each day the Max Day NTU limit is exceeded, the DEP must be notified by the end of the next business day. SWTR TT Violation (Tier 2). If DEP is not consulted within 24 hours then it is a SWTR TT (Tier 1) violation requiring public notification within 24 hours.

III. DISINFECTION PERFORMANCE CRITERIA:

1. Point-of-Entry Minimum Disinfectant Residual Criteria - Residual Disinfectant concentration cannot be < 0.2 mg/L for more than 4 hours. SWTR TT Violation (Tier 2).

Minimum Disinfectant Residual at Point-of-Entry to Distribution System:

Day	Cl ₂ mg/l	Day	Cl ₂ mg/l	Day	Cl ₂ mg/l	Day	Cl ₂ mg/l	Day	Cl ₂ mg/l	Day	Cl ₂ mg/l	Day	Cl ₂ mg/l
1	1.97	6	2.16	11	1.88	16	1.95	21	1.88	26	1.93	31	1.95
2	1.87	7	2.09	12	1.87	17	1.96	22	1.98	27	1.89	Residual Measured <input checked="" type="checkbox"/> Free Cl ₂ <input type="checkbox"/> Total Cl ₂ <input type="checkbox"/> Combined Cl ₂	
3	1.99	8	2.06	13	2.00	18	1.81	23	1.69	28	2.09		
4	1.97	9	2.09	14	1.91	19	1.69	24	1.81	29	1.90		
5	2.17	10	1.91	15	1.86	20	1.87	25	1.96	30	1.95		
If at any time the residual falls below 0.2 mg/l in the water entering the distribution system, the supplier of water must notify the Department as soon as possible, but no later than by the end of the next business day. The supplier of water also must notify the Department by the end of the next business day whether or not the residual was restored to at least 0.2 mg/l within four hours.													

Date(s) Residual < 0.2 mg/l	Duration of Low Level (hrs.)	Date Reported to DEP	Date(s) Residual < 0.2 mg/l	Duration of Low Level (hrs.)	Date Reported to DEP

2. Distribution System Disinfectant Residual Criteria - Residual Disinfectant concentration (V) cannot be undetectable in greater than 5% of samples in a month, for any two consecutive months. SWTR TT Violation (Tier 2). Chlorine residuals must be measured at the same time and location as total coliform *distribution routine & repeat* samples. If no residual is detected, an HPC sample must be collected and analyzed.

Total # of HPC samples taken during month: 65 # HPC sites > 500/mL: 0 # HPC sites ≤ 500/mL: 65

<u>70</u>	= a	# of sites where Cl ₂ residual measurements were made, whether a residual was detected or not (should be the same # of sites reported on your monthly DBPR Cl ₂ residual report)
<u>0</u>	= b	# of sites HPC samples were analyzed <i>instead of</i> Cl ₂ residual measurements
<u>0</u>	= c	# of sites where no Cl ₂ residual was detected and no HPC sample was analyzed
<u>0</u>	= d	# of sites where no Cl ₂ residual was detected and HPC > 500 CFU/mL
<u>0</u>	= e	# of sites where no Cl ₂ residual measurement was made and HPC > 500 CFU/mL

Water in the distribution system with a heterotrophic bacteria concentration (HPC) less than or equal to 500/mL, is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. When analyzed, report HPC results on your monthly DEP Bacteriological Report.

V = $\frac{(c+d+e)}{(a+b)} \times 100$ This Month % V = 0 Previous Month % V = 0 Is V > 5% for 2 months? Yes or No

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true.

PWS Authorized Signature: William Coakley Chief Operator



TURBIDITY DATA SHEET FOR FILTERED SYSTEMS

PWS INFORMATION

PWSID#: 424001 PWS Name: RANDOLPH-HOLBROOK JOINT WATER PWS Town: RANDOLPH
Treatment Plant Name: RANDOLPH WATER PLANT Reporting Period → Month: DECEMBER Year: 2019

DAILY REPORTING

Filtered Water Turbidity Measured: (check only one) Combined Filter Effluent Individual Filter Effluent Clearwell Plant Effluent

Filtration Technology: Conventional Direct Alternative Slow Sand Diatomaceous Earth
Monthly Turbidity (95%) NTU Limit = 0.3 Max Day Turbidity NTU Limit = 1
Monthly Turbidity (95%) NTU Limit = 1 Max Day Turbidity NTU Limit = 5

Day	Max Filtered Water Turbidity Result (NTU)	Number of Turbidity Measurements	Number of Turbidity Measurements < Monthly (95%) NTU Limit	Number of Turbidity Measurements > Max Day NTU Limit
1	.08	6	6	0
2	.08	6	6	0
3	.07	6	6	0
4	.09	6	6	0
5	.09	6	6	0
6	.08	6	6	0
7	.08	6	6	0
8	.09	6	6	0
9	.10	6	6	0
10	.09	6	6	0
11	.08	6	6	0
12	.08	6	6	0
13	.08	6	6	0
14	.09	6	6	0
15	.09	6	6	0
16	.07	6	6	0
17	.07	6	6	0
18	.08	6	6	0
19	.08	6	6	0
20	.08	6	6	0
21	.07	6	6	0
22	.09	6	6	0
23	.07	6	6	0
24	.08	6	6	0
25	.07	6	6	0
26	.09	6	6	0
27	.09	6	6	0
28	.08	6	6	0
29	.08	6	6	0
30	.09	6	6	0
31	.10	6	6	0
31	.08	6	6	0
Totals		186	186	0

% Turbidity Meeting 95% Limit
B/A = 100% = X
(Enter on SWTR - Form G)

May be used by systems serving less than 10,000 persons, subject to DEP approval.
Enter the Maximum Filtered Water Turbidity Result recorded each day, at the 4th hour or other approved interval.
Enter the Total # of Turbidity measurements taken for each day. Measurements must be taken at a minimum of 4-hour intervals (i.e. 6 readings per day).
For continuous monitors count each 4-hour period as 1 measurement. Record the actual turbidity result at the specified interval of time. Do not average turbidity measurements. If DEP approved, 15-minute readings (i.e. 96 readings per day) may be submitted. Filtered turbidity data must be kept on file for DEP review.
Out of the # of turbidity measurements taken and recorded in the previous column, enter the number of turbidity measurements that were less than or equal to the Monthly (95%) NTU Limit for the filtration technology used.
If at any at time the filtered turbidity Max Day NTU Limit is exceeded, the DEP must be notified no later than the end of the next business day. For each exceedance, record the turbidity value(s) and date(s) on SWTR - Form G

PWS Authorized Signature: Melvin Cooker
Date: 1-1-20 Title: Chief Plant Operator



CT Determination for Filtered Systems

I. PWS INFORMATION:

PWSID#: 4244001 PWS Name: Randolph Hill Brook Joint Water PWS Town: Randolph
Treatment Plant Name: Randolph Water Plant Reporting Period -> Month: DECEMBER Year: 2019
Disinfectant: Chlorine Gas/Ester Eff. Sequence of Application: 1st 2nd 3rd 4th 5 6th

II. DAILY REPORTING All measurements taken during peak hourly flow

Table with 10 columns: Day, Peak Hourly Flow (gpm), Disinfectant Concentration (mg/L), Disinfectant Contact Time (min.), CT calc (= C x T), pH, Water Temp (°C), CT 99.9, Inactivation Ratio (CT calc / CT 99.9), Inactivation Ratio < 1.0. Rows 1-31 contain daily data.

- 1. Use a separate form for each disinfectant/sampling point. Enter disinfectant and sequence position, e.g. "ozone/1st" or "ClO2/3rd". If more than one disinfectant sampling point, you must also complete SWTR Form H and calculate the cumulative inactivation ratio SUM (CTcalc/CT99.9) to determine compliance.
2. Peak hourly flow means the highest pumpage hour during the day, not the absolute peak flow at any instant.
3. The residual disinfectant concentration(s) ("C") of the water before or at the first customer must be measured each day during peak hourly flow.
4. The disinfectant contact time(s) ("T") must be determined for each day during peak hourly flow. The time T used in calculating CT, is the time it takes the water, during peak hourly flow, to move between the point of disinfection application and the point at which the residual is measured.
5. If the system uses free chlorine, the pH of the disinfected water must be measured at least once per day at each chlorine residual disinfectant concentration sampling point during peak hourly flow.
6. The temperature of the disinfected water must be measured at least once per day at each residual disinfectant concentration sampling point during peak hourly flow.
7. Use Inactivation Tables at 310 CMR 22.20A Tables 1.1 - 1.6, 2.1 and/or 3.1
8. The inactivation ratio (CTcalc/CT99.9) is determined before or at the first customer during peak hourly flow and if the (CTcalc/CT99.9) is < 1.0, the 99.9% Giardia lamblia inactivation requirement has not been achieved.
9. More than one "Yes" response above may indicate a SWTR Treatment Technique violation (Tier 2).

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

PWS Authorized Signature:

William Cookley
Chief Plant Operator

Date: 1-1-20

Title:



Massachusetts Department of Environmental Protection – Drinking Water Program
CHEMICAL ADDITION REPORT – 310 CMR 11.15(4) Chemical Addition Reporting Requirements

C-ADD

I. PWS Information - Refer to MassDEP "Chemical Addition Report Guidance and Instructions" for details.					
PWS Name ¹ :	RANDOLPH-HOLBROOK JW	Town ¹ :	RANDOLPH-HOLBROOK	PWSID ¹ :	424001
Treatment Plant Name ² :	RANDOLPH WATER PLANT	Treatment Plant ID# ² :	4244001-01T	Reporting Period ³ :	DECEMBER 2019
			Month	Year	

II. Chemical & Operational Information					
Chemical Name ⁴ :	POLYALUMINUM CHLORIDE	Purchased Strength ⁵ :	1.0	Target Range/min ¹² :	> 18
Manufacturer ⁶ :	HOLLAND COMPANY	Purchased Density (lbs/gal) ⁹ :	10.3	Target Dose ¹³ :	2.35
Product Name ⁸ :	PCH-180	Dilution Factor or Mix Ratio ¹⁰ :	N/A	Alarm Setting (low) ¹⁴ :	N/A
Reason for Adding Chemical ⁷ :	COAGULATION	NSF Approved (Y/N) ¹¹ :	Y	Alarm Setting (high) ¹⁴ :	N/A
			Date of last anti-siphon valve inspection/replacement ¹⁵ :	N/A	

III. Daily Reporting Note: Water quality data reported on C-ADD form may be considered for compliance purposes.

Day	Treated Water ¹⁹ <input type="checkbox"/> Gallons. <input checked="" type="checkbox"/> MG	Measured Chemical Used		Calculated Chemical Used (lbs) ¹⁸	Chemical Dosage ¹⁹ (mg/L)	Parameters Measured*, Results, Units and Method ²⁰ - (G)rab or Continuous (A)nalyzer ²¹			O&M Notes/Comments ²² PWS note any equipment breakdown, off-line status, changes in purchased product or batch mixing day, measured parameters or dosages that are out of target range, etc.	
		Volume ¹⁷ (gal/day)	Weight ¹⁷ (lbs/day)			a. Raw Ph	b.	c.		
1	2.8	146		1,504	21	7.15	<input checked="" type="checkbox"/> G <input type="checkbox"/> A	<input type="checkbox"/> G <input type="checkbox"/> A	<input type="checkbox"/> G <input type="checkbox"/> A	
2	2.2	135		1,391	25	7.10				
3	3.0	160		1,648	22	7.10				
4	2.4	136		1,401	23	7.20				
5	2.8	129		1,329	19	7.20				
6	2.7	130		1,339	20	7.15				
7	3.1	142		1,463	19	7.20				
8	2.8	124		1,277	18	7.25				
9	2.8	135		1,391	20	7.15				
10	2.7	145		1,494	22	7.20				
11	2.9	139		1,432	20	7.20				
12	2.7	130		1,339	20	7.05				
13	2.7	130		1,339	20	7.15				
14	2.8	160		1,648	23	7.10				
15	2.8	140		1,442	20	7.10				
16	2.7	118		1,215	18	7.15				
17	2.8	156		1,607	23	7.10				
18	2.8	170		1,757	25	7.05				
19	2.5	120		1,236	20	7.10				
20	2.8	128		1,318	19	7.15				
21	2.8	157		1,617	23	7.15				
22	2.7	116		1,195	18	7.20				
23	2.7	118		1,215	18	7.10				
24	2.7	130		1,339	20	7.10				
25	2.9	139		1,432	20	7.15				
26	2.8	152		1,566	22	7.20				
27	2.8	160		1,648	23	7.20				
28	2.9	180		1,854	25	7.10				
29	2.8	130		1,339	19	7.10				
30	2.8	147		1,514	21	7.15				
31	2.7	153		1,576	23	7.00				

Total Indicate total # of days the residual was off-target for the month (from Section II) Monthly Target Summary²³:

*Describe result (daily average, min/max, instantaneous reading, grab, etc), sample location (entry-point, before/after filters, tanks, etc.) and instrumentation used (SCADA, chart recorder, test kit, bench, etc.)²⁰:

a. Raw Ph, Daily Average, Test Kit

b.

c.

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

PWS Authorized Person - Signature & Date²⁴:
 William Cookery 1-1-20
 Print Name: William Cookery Title: Chief Operator



I. PWS Information – Refer to MassDEP "Chemical Addition Report Guidance and Instructions" for details.

PWS Name ¹ :	RANDOLPH-HOLBROOK JOINT WATER	Town ¹ :	RANDOLPH-HOLBROOK	PWSID ¹ :	424001
Treatment Plant Name ² :	RANDOLPH WATER PLANT	Treatment Plant ID# ² :	4244001-01T	Reporting Period ³ :	DECEMBER 2019 Month Year

II. Chemical & Operational Information

Chemical Name ⁴ :	CHLORINE	Purchased Strength ⁵ :	1.0	Target Range/min ¹² :	0.20
Manufacturer ⁵ :	AXIAL, LLC	Purchased Density (lbs/gal) ⁶ :	12.3	Target Dose ¹³ :	NA
Product Name ⁶ :	CHLORINE	Dilution Factor or Mix Ratio ¹⁰ :	NA	Alarm Setting (low) ¹⁴ :	1.0
Reason for Adding Chemical ⁷ :	DISINFECTANT	NSF Approved (Y/N) ¹¹ :	Y	Alarm Setting (high) ¹⁴ :	3.0
		Date of last anti-siphon valve inspection/replacement ¹⁵ :	NA		

III. Daily Reporting Note: Water quality data reported on C-ADD form may be considered for compliance purposes.

Day	Treated Water ¹⁶ <input type="checkbox"/> Gallons <input checked="" type="checkbox"/> MG	Measured Chemical Used		Calculated Chemical Used (lbs) ¹⁸	Chemical Dosage ¹⁹ (mg/L)	Parameters Measured ⁸ , Results, Units and Method ²⁰ - (G) grab or Continuous (A) analyzer ²¹			O&M Notes/Comments ²² PWS note any equipment breakdown, off-line status, changes in purchased product or batch mixing day, measured parameters or dosages that are out of target range, etc.
		Volume ¹⁷ (gal/day)	Weight ¹⁷ (lbs/day)			a.FREE Cl ₂ FINISHED	b.FREE Cl ₂ FINISHED	c.	
1	2.8		71	3.0	2.16	1.92			
2	2.2		55	3.0	2.08	1.87			
3	3.0		69	2.8	2.19	1.99			
4	2.4		66	2.3	2.18	1.97			
5	2.8		73	3.1	2.31	2.17			
6	2.7		69	3.1	2.32	2.16			
7	3.1		71	2.8	2.27	2.09			
8	2.8		77	3.3	2.22	2.06			
9	2.8		71	3.0	2.24	2.09			
10	2.7		70	3.1	2.22	1.91			
11	2.9		70	2.9	2.06	1.88			
12	2.7		71	3.2	2.05	1.87			
13	2.7		73	3.2	2.08	2.00			
14	2.8		67	2.9	2.01	1.91			
15	2.8		68	2.9	2.08	1.86			
16	2.7		72	3.2	2.07	1.95			
17	2.8		68	2.9	2.11	1.96			
18	2.8		68	2.9	2.04	1.81			
19	2.5		66	3.2	2.03	1.69			
20	2.8		73	3.1	2.10	1.87			
21	2.8		68	2.9	2.07	1.88			
22	2.7		70	3.1	2.07	1.98			
23	2.7		73	3.2	1.98	1.69			
24	2.7		72	3.2	2.02	1.81			
25	2.9		78	3.2	2.07	1.96			
26	2.8		77	3.3	2.05	1.93			
27	2.8		63	2.7	2.13	1.89			
28	2.9		72	3.0	2.16	2.09			
29	2.8		72	3.1	2.06	1.90			
30	2.8		73	3.1	2.13	1.85			
31	2.7		69	3.1	2.07	1.95			

Total Indicate total # of days the residual was off-target for the month (from Section II) Monthly Target Summary²³:

*Describe result (daily average, min/max, instantaneous reading, grab, etc), sample location (entry-point, before/after filters, tanks, etc.) and instrumentation used (SCADA, chart recorder, test kit, bench, etc.)²⁰:
 a. Daily Average, Free Chlorine, Finished Water, Grab Sample, Test Kit
 b. Daily Minimum, Free Chlorine, Finished Water, Grab Sample, Test Kit
 c.

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.
 PWS Authorized Person - Signature & Date²⁴:
 William Corbett 1-1-20
 Print Name: William Corbett Title: Chief Operator



Massachusetts Department of Environmental Protection – Drinking Water Program
CHEMICAL ADDITION REPORT – 310 CMR 11.15(4) Chemical Addition Reporting Requirements

C-ADD

I. PWS Information - Refer to MassDEP "Chemical Addition Report Guidance and Instructions" for details.

PWS Name ¹ :	RANDOLPH-HOLBROOK JW	Town ¹ :	RANDOLPH-HOLBROOK	PWSID ¹ :	424001
Treatment Plant Name ² :	RANDOLPH WATER PLANT	Treatment Plant ID# ² :	424001-01T	Reporting Period ³ :	DECEMBER 2019 Month Year

II. Chemical & Operational Information

Chemical Name ⁴ :	CALCIUM HYDROXIDE	Purchased Strength ⁸ :	0.85	Target Range/min ¹² :	NA
Manufacturer ⁵ :	CARMEUSE LIME & STONE	Purchased Density (lbs/gal) ⁹ :	18.7	Target Dose ¹³ :	NA
Product Name ⁶ :	HYDRATED LIME	Dilution Factor or Mix Ratio ¹⁰ :	NA	Alarm Setting (low) ¹⁴ :	NA
Reason for Adding Chemical ⁷ :	PH ADJUSTMENT	NSF Approved (Y/N) ¹¹ :	Y	Alarm Setting (high) ¹⁴ :	NA
		Date of last anti-siphon valve inspection/replacement ¹⁵ :		NA	

III. Daily Reporting Note: Water quality data reported on C-ADD form may be considered for compliance purposes.

Day	Treated Water ¹⁶		Measured Chemical Used		Calculated Chemical Used (lbs) ¹⁸	Chemical Dosage ¹⁹ (mg/L)	Parameters Measured ²⁰ , Results, Units and Method ²⁰ - (G)rab or Continuous (A) analyzer ²¹			O&M Notes/Comments ²² PWS note any equipment breakdown, off-line status, changes in purchased product or batch mixing day, measured parameters or dosages that are out of target range, etc.
	<input type="checkbox"/> Gallons <input checked="" type="checkbox"/> MG	Volume ¹⁷ (gal/day)	Weight ¹⁷ (lbs/day)	Chemical Dosage ¹⁹ (mg/L)			a. FINISHED PH G <input checked="" type="checkbox"/> A <input type="checkbox"/>	b. G <input type="checkbox"/> A <input type="checkbox"/>	c. G <input type="checkbox"/> A <input type="checkbox"/>	
1	2.4		100		5.0	7.05				
2	2.0		100		6.0	7.05				
3	2.4		100		5.0	7.00				
4	2.1		100		5.7	7.15				
5	2.4		100		5.0	7.10				
6	2.3		100		5.2	7.15				
7	2.3		100		5.2	7.05				
8	2.4		100		5.0	7.15				
9	2.3		100		5.2	7.15				
10	2.3		100		5.2	7.05				
11	2.4		100		5.0	7.10				
12	2.3		100		5.2	7.10				
13	2.2		100		5.2	7.00				
14	2.2		100		5.5	7.10				
15	2.4		100		5.0	7.05				
16	2.4		100		5.0	7.15				
17	2.3		100		5.2	7.15				
18	2.3		100		5.2	7.00				
19	2.1		100		5.7	7.10				
20	2.4		100		5.0	7.05				
21	2.3		100		5.2	7.15				
22	2.4		100		5.0	7.10				
23	2.4		100		5.0	7.00				
24	2.4		100		5.0	7.05				
25	2.5		100		4.8	7.00				
26	2.4		100		5.0	7.15				
27	2.4		100		5.0	7.10				
28	2.4		100		5.0	7.05				
29	2.4		100		5.0	7.20				
30	2.4		100		5.0	7.15				
31	2.3		100		5.2	7.05				
Total	Indicate total # of days the residual was off-target for the month (from Section II) Monthly Target Summary ²³ :									

*Describe result (daily average, min/max, instantaneous reading, grab, etc), sample location (entry-point, before/after filters, tanks, etc.) and instrumentation used (SCADA, chart recorder, test kit, bench, etc.)²⁰:

a. Finished Water Ph, Daily Average, Test Kit

b. I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

c. PWS Authorized Person - Signature & Date²⁴:
 William Carterby 1-1-20
 Print Name: William Carterby Title: Chief Operator



Massachusetts Department of Environmental Protection – Drinking Water Program
CHEMICAL ADDITION REPORT – 310 CMR 11.15(4) Chemical Addition Reporting Requirements

C-ADD

I. PWS Information - Refer to MassDEP "Chemical Addition Report Guidance and Instructions" for details.

PWS Name ¹ :	RANDOLPH-HOLBROOK JW	Town ¹ :	RANDOLPH-HOLBROOK	PWSID ¹ :	424001
Treatment Plant Name ² :	RANDOLPH WATER PLANT	Treatment Plant ID# ² :	4244001-017	Reporting Period ³ :	DECEMBER 2019 Month Year

II. Chemical & Operational Information

Chemical Name ⁴ :	SODIUM BISULFATE	Purchased Strength ⁸ :	10-15	Target Range/min ¹² :	NA
Manufacturer ⁵ :	CARUS CORPORATION	Purchased Density (lbs/gal) ⁹ :	12.03	Target Dose ¹³ :	NA
Product Name ⁶ :	CARUS 3350	Dilution Factor or Mix Ratio ¹⁰ :	0.33	Alarm Setting (low) ¹⁴ :	NA
Reason for Adding Chemical ⁷ :	CORROSION INHIBITOR	NSF Approved (Y/N) ¹¹ :	Y	Alarm Setting (high) ¹⁴ :	NA
		Date of last anti-siphon valve inspection/replacement ¹⁵ :			
		NA			

III. Daily Reporting Note: Water quality data reported on C-ADD form may be considered for compliance purposes.

Day	Treated Water ¹⁶ <input type="checkbox"/> Gallons <input checked="" type="checkbox"/> MG	Measured Chemical Used		Calculated Chemical Used (lbs) ¹⁸	Chemical Dosage ¹⁹ (mg/L)	Parameters Measured ⁴ , Results, Units and Method ²⁰ - (G)rab or Continuous (A)nalyzer ²¹			O&M Notes/Comments ²² <small>PWS note any equipment breakdown, off-line status, changes in purchased product or batch mixing day, measured parameters or dosages that are out of target range, etc.</small>
		Volume ¹⁷ (gal/day)	Weight ¹⁷ (lbs/day)			a. Finished Water Ph	b.	c.	
1	2.4					7.05			
2	2.0					7.05			
3	2.4					7.00			
4	2.1					7.15			
5	2.4					7.10			
6	2.3					7.15			
7	2.3					7.05			
8	2.4					7.15			
9	2.3					7.15			
10	2.3					7.05			
11	2.4					7.10			
12	2.3					7.10			
13	2.2					7.00			
14	2.2					7.10			
15	2.4					7.05			
16	2.4					7.15			
17	2.3					7.15			
18	2.3					7.00			
19	2.3					7.10			
20	2.4					7.05			
21	2.3					7.15			
22	2.4					7.10			
23	2.4					7.00			
24	2.4					7.05			
25	2.5					7.00			
26	2.4					7.15			
27	2.4					7.10			
28	2.4					7.05			
29	2.4					7.20			
30	2.4					7.15			
31	2.3					7.05			

Total Indicate total # of days the residual was off-target for the month (from Section II) Monthly Target Summary²³:

*Describe result (daily average, min/max, instantaneous reading, grab, etc), sample location (entry-point, before/after filters, tanks, etc.) and instrumentation used (SCADA, chart recorder, test kit, bench, etc.)²⁰:

a. *Finished Water Ph, Daily Coverage, Test Kit*

b. *[Blank]*

c. *[Blank]*

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

PWS Authorized Person - Signature & Date²⁴:
William Cookeby 1-1-20

Print Name: *William Cookeby* Title: *Chief Operator*



Massachusetts Department of Environmental Protection - Drinking Water Program
 TURBIDITY - INDIVIDUAL FILTER MONITORING
 For Conventional or Direct Filtered Systems

SWTR

(Page 2 of 2)

DAILY REPORTING

Day	Filter Number: 1		Filter Number: 2		Filter Number: 3		Filter Number: 4	
	Max Day NTU	Max after 4 Hours NTU	Max Day NTU	Max after 4 Hours NTU	Max Day NTU	Max after 4 Hours NTU	Max Day NTU	Max after 4 Hours NTU
1	.06	-	OUT OF SERVICE		.06	-	.10	.05
2	.10	.05			.16	.05	.15	.05
3	.10	.05			.17	.08	.10	-
4	.08	.06			.05	.04	.19	.06
5	.05	-			.22	.08	.11	.07
6	.10	.07			.12	.07	.08	.05
7	.12	.05			.11	.04	.09	-
8	.13	-			.06	-	.16	.06
9	.17	.05			.20	.05	.16	.06
10	.11	.04			.08	.04	.09	.05
11	.08	.05			.11	.06	.17	.05
12	.09	.05			.11	.04	.15	.06
13	.09	.06			.15	.05	.06	-
14	.05	-			.04	-	.11	.06
15	.12	.04			.10	.04	.20	.05
16	.15	.06			.20	.06	.08	-
17	.17	-			.17	-	.24	.06
18	.42	.06			.21	.11	.14	.08
19	.16	.06			.17	.06	.18	.10
20	.21	-			.25	.12	.08	-
21	.21	.06			.12	.07	.13	.08
22	.32	.06			.14	.08	.25	.09
23	.18	.06			.23	.06	.21	.07
24	.18	.07			.13	.08	.11	.06
25	.07	.05			.07	.05	.17	.07
26	.09	.06			.08	.06	.11	.07
27	.08	.05			.07	.05	.11	.08
28	.26	.08			.38	-	.05	-
29	.12	-			.10	.05	.25	.06
30	.16	.07			.10	.05	.14	.07
31	.22	.05			.15	.07	.10	.08

- Systems shall conduct continuous turbidity monitoring of the filter effluent for each individual filter at the filtration facility and record turbidity measurements every 15-minutes. Record the actual turbidity result at the specified interval of time. Do not average turbidity measurements. Individual filter turbidity records must be retained for 3 years and kept on file for MassDEP review.
- Systems serving less than 10,000: If the treatment system has only one or two filters, the supplier may conduct continuous monitoring of the CFE turbidity in lieu of individual filter effluent (IFE) turbidity monitoring. If there are two filters, a continuous turbidity monitor can be installed on the combined filter effluent. If a CFE problem appears, follow-up action must then be completed on both filters.
- Enter the highest daily 15-minute interval turbidity measurement recorded for the filter specified.
- Enter the highest daily 15-minute interval turbidity measurement recorded at the end of the first four hours of continuous filter operation after the filter has been backwashed or otherwise taken offline.

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

PWS Authorized Signature:

William Cooper
 Chief Plant Operator

Date: 1-1-20

Title:



Massachusetts Department of Environmental Protection - Drinking Water Program
 TURBIDITY - INDIVIDUAL FILTER MONITORING
 For Conventional or Direct Filtered Systems

SWTR
 J

(Page 2 of 2)

DAILY REPORTING

Day	Filter Number: 5		Filter Number: 6		Filter Number: 7		Filter Number: 8	
	³ Max Day NTU	⁴ Max after 4 Hours NTU	³ Max Day NTU	⁴ Max after 4 Hours NTU	³ Max Day NTU	⁴ Max after 4 Hours NTU	³ Max Day NTU	⁴ Max after 4 Hours NTU
1	.11	.05	.12	.07	.13	.07	.13	.04
2	.17	.06	.10	-	.06	-	.10	-
3	.05	-	.11	.06	.12	.06	.07	-
4	.14	.06	.20	.06	.12	.07	.07	.04
5	.09	.06	.13	.07	.10	.07	.08	.06
6	.09	.06	.09	.09	.06	-	.04	-
7	.05	-	.06	-	.13	.06	.09	.04
8	.13	.05	.17	.06	.13	.07	.13	.04
9	.22	.08	.16	.07	.11	.07	.04	-
10	.09	.06	.13	.05	.06	-	.06	.04
11	.11	.05	.08	-	.11	.06	.11	.04
12	.05	-	.14	.07	.13	.06	.08	.04
13	.16	.07	.20	.06	.13	.07	.08	.03
14	.12	.05	.19	.06	.13	.06	.22	.04
15	.14	.05	.11	-	.08	-	.04	-
16	.05	-	.13	.07	.11	.07	.11	.04
17	.12	.05	.23	.07	.16	.07	.11	.04
18	.26	.06	.35	.06	.06	-	.04	-
19	.05	-	.08	-	.17	.08	.16	.04
20	.16	.07	.15	.08	.16	.09	.14	.05
21	.14	.08	.20	.08	.29	.08	.11	-
22	.15	.09	.26	.07	.06	-	.16	.06
23	.05	-	.13	-	.18	.07	.15	.05
24	.14	.06	.15	.08	.14	.09	.08	.04
25	.12	.06	.15	.07	.11	.06	.07	.04
26	.13	.08	.18	.06	.15	.08	.09	.05
27	.09	.05	.14	.07	.11	.07	.06	.04
28	.09	.06	.16	.07	.10	.07	.06	.03
29	.11	.06	.14	.07	.12	.07	.08	-
30	.16	.07	.11	.07	.10	.06	.09	.05
31	.08	.05	.10	.05	.17	.06	.11	-

Systems shall conduct continuous turbidity monitoring of the filter effluent for each individual filter at the filtration facility and record turbidity measurements every 15-minutes. Record the actual turbidity result at the specified interval of time. Do not average turbidity measurements. Individual filter turbidity records must be retained for 3 years and kept on file for MassDEP review.

Systems serving less than 10,000: If the treatment system has only one or two filters, the supplier may conduct continuous monitoring of the CFE turbidity in lieu of individual filter effluent (IFE) turbidity monitoring. If there are two filters, a continuous turbidity monitor can be installed on the combined filter effluent. If a CFE problem appears, follow-up action must then be completed on both filters.

Enter the highest daily 15-minute interval turbidity measurement recorded for the filter specified.

Enter the highest daily 15-minute interval turbidity measurement recorded at the end of the first four hours of continuous filter operation after the filter has been backwashed or otherwise taken offline.

I certify under penalties of law that I am the person authorized to sign this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

PWS Authorized Signature:

William Coakley

Date: 1-1-20

Title:

Chief Plant Operator



DBPR TT Compliance Report

I. PWS INFORMATION

PWS ID #: 4244001 City/Town: RANDOLPH
 PWS Name: RANDOLPH-HOLBROOK JOINT WATER PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Date Collected	Collected By
<u>0.15/10.300</u>	<u>Raw Water / Combined Filter Effluent</u>	<u>12-2-19</u>	<u>Bill Coakley</u>
SAMPLE NOTES:			

II. COMPLIANCE CALCULATIONS

Month	# of Paired Samples	A: % Removal of TOC ¹	B: Required % Removal of TOC ²	Met Alternative Compliance Criteria	Alternative Criteria Result(s) ³ (See Below)	A ÷ B ⁴
1-19	1	43	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.23
2-19	1	52	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.49
3-19	1	49	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.40
4-19	1	49	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.40
5-19	1	34	35	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	TWSUVA	1.00
6-19	1	52	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.49
7-19	1	46	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.31
8-19	1	56	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.60
9-19	1	39	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.11
10-19	1	42	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.20
11-19	1	44	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.26
12-19	1	51	35	<input type="checkbox"/> YES <input type="checkbox"/> NO		1.46
Sum of Past 12 Months:						15.95
Compliance Value (Sum of Past 12 Months/ 12):						1.33

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

PWS Authorized Signature: William CoakleyDate: 1-13-2020

Mail ONE copy of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

¹ Percent Removal: $(1 - (\text{Treated Water TOC} \div \text{Raw Water TOC})) \times 100$. If > 1 paired sample sets in any month report the average of all individual percent TOC removals (Example: % TOC Removal = (Average of Set 1 + Average of Set 2) ÷ 2).

² From table at 310.CMR 22.07E(10)(b)2.

³ As listed at 310 CMR 22.07E(10)(a)2 and 310 CMR 22.07E(10)(a)3, summarized as follows:

Alternative Compliance Criteria	Code Value	Result(s) to Report (RAA = Running Annual Average)
Source Water TOC < 2.0 mg/L	SWTOC	RAA of source water TOC
Treated Water < 2.0 mg/L	TWTOC	RAA of treated water TOC
Source Water TOC < 4.0 mg/L AND Alkalinity > 60 mg/L (as CaCO ₃) AND TTHM/HAA5 ≤ 0.040/0.030 mg/L	COMBO	RAA of source water TOC, RAA of source water alkalinity, RAA of TTHM and HAA5
TTHM/HAA5 ≤ 0.040/0.030 mg/L AND only using chlorine	TTHM/HAA5	RAA of TTHM and HAA5
Source Water SUVA ≤ 2.0 L/mg-m	SWSUVA	RAA of treated water SUVA
Treated Water SUVA ≤ 2.0 L/mg-m	TWSUVA	RAA of treated water SUVA
Softening that lowers alkalinity to < 60 mg/L (as CaCO ₃)	SOFT60	RAA of treated water alkalinity
Softening that removes ≥ 10 mg/L (as CaCO ₃) of hardness	SOFT10	RAA of hardness (as CaCO ₃) removal

Note: All supplemental measurements and calculations used to meet the alternative criteria must be attached to this report.

⁴ For any month where the system met an alternative compliance criteria a value of 1.0 may be inserted.

DEP REVIEW STATUS (Initial & Date)	Review Comments
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____	

Massachusetts Department of Environmental Protection - Drinking Water Program

TOC

Total Organic Carbon Report

PWS Information: Please refer to your DEP Water Sampling Schedule (WQSS) to help complete this form.

PWS ID #: 4244001

City/Town: Holbrook

PWS Name: Randolph-Holbrook Joint Water Board

PWS Class: COM X NTNC NC

DEP location ID	DEP location name	Sample Information	Collected		Collected by	
			Date	Time		
A	01S	Raw Water <input type="checkbox"/> Multiple <input checked="" type="checkbox"/> Single	<input checked="" type="checkbox"/> Raw <input type="checkbox"/> Finished	12/02/2019	09:00	B. Cookerly
B	10300	Combined Filter Effluent <input type="checkbox"/> Multiple <input checked="" type="checkbox"/> Single	<input type="checkbox"/> Raw <input checked="" type="checkbox"/> Finished	12/02/2019	09:00	B. Cookerly
Routine or Special Sample		Original or Resubmitted or Confirmation Report		If resubmitted report, list below:		
				Reason for resubmission		Collection date of original sample
A	<input checked="" type="checkbox"/> RS <input type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted		<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Corr.		
B	<input checked="" type="checkbox"/> RS <input type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted		<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Corr.		
Lab sample notes:						
A						
B						

II. Analytical Laboratory Information:

Primary Lab MA Cert. # M-MA022 Primary Lab name: Analytical Balance Corp. Subcontracted? Y N

TOC analyzed by (check one): <input type="checkbox"/> PWS <input checked="" type="checkbox"/> Lab			Samples acidified? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
TOC result (mg/L)	MDL (mg/L)	Lab Method	Date Analyzed	Analysis Lab MA Cert. #	Analysis Lab Name	Lab Sample ID #
A	6.21	SM 5310B	12/06/2019	M-RI002	ESS	42822-01
B	3.02	SM 5310B	12/06/2019	M-RI002	ESS	42822-02

Surface water or GWUDI systems ≥ 500 persons

Monthly source (raw) water TOC samplings required at each surface/GWUDI source to qualify for and remain on reduced THM/HAA5 monitoring.

Each source must maintain a running annual average source (raw) water TOC level of ≤ 4.0 mg/L (calculated quarterly).

TOC analysis does not require the use of a Massachusetts or EPA certified laboratory.

Surface or GWUDI sources using conventional filtration shall each month (unless monitoring is reduced): take one TOC sample at each treatment plant no later than the point of combined filter effluent turbidity monitoring representative of the treated (finished) water, one source (raw) sample prior to any treatment, and one alkalinity source (raw) water sample - at a time representative of normal operating conditions and influent water quality.

The time between collection of raw and treated (finished) water must not exceed the time it takes to move through the plant.

Alkalinity analyzed by (check one): <input type="checkbox"/> PWS <input checked="" type="checkbox"/> Lab							
Alkalinity result (mg/L as CaCO ₃)	MDL (mg/L)	Lab Method	Date Analyzed	Analysis Lab MA Cert. #	Analysis Lab Name	Lab Sample ID #	
A	23.5	SM 2320B	12/10/2019	M-MA022	Analytical Balance	42822-01	
B	—	—	—	—	—	—	

If using conventional filtration - raw water alkalinity must be measured at the same time as the raw water TOC sample is collected.
Alkalinity analysis does not require the use of a Massachusetts or EPA certified laboratory.

Lab sample notes:						
A						
B						

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Robert E. Bentley

Digitally signed by Robert E. Bentley
CN=Robert E. Bentley
O=Analytical Balance Corp.
E=rob@h2otest.net

Primary Lab Director Signature/ Date: 12/16/2019

p 1 of 1

If not submitting these results electronically, mail TWO copies of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

DEP REVIEW STATUS (Initial & date)	Review comments	WQTS data entered
Accepted _____ Disapproved _____		<input type="checkbox"/> WQTS data entered



Keith Nastasia
Randolph-Holbrook Joint Water Board
50 N. Franklin Street
Holbrook, MA 02343
COLLECTED BY: B. Cookerly
TIME: 9:00
LOCATION: Raw Water
01S

CERTIFICATE OF ANALYSIS

REPORTED: 12/16/2019
ORDER #: G1942821
SAMPLE DATE: 12/2/2019
DATE RECEIVED: 12/2/2019
SAMPLE ID: Grab
DESCRIPTION: DRINKING WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	MCL ¹ / Rec. Limit ²	Result
Test Parameters						
LAB-ID#: 1942821-01						
Carbon, Total Dissolved Organic	SM 5310B	12/06/2019	mg/L	0.500	---	4.77
SUVA	Calculation	12/12/2019	# per 100 mL	0	0	0.014
UV 254	SM 5910B	12/03/2019	Abs/cm	0.002	-----	0.065

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022). DOC and UV254 were analyzed by subcontract lab M-RI002.



Keith Nastasia
 Randolph-Holbrook Joint Water Board

50 N. Franklin Street
 Holbrook, MA 02343

COLLECTED BY: B. Cookerly

TIME: 9:00

LOCATION: Combined Filter Effluent
 10300

REPORTED: 12/16/2019

ORDER #: G1942821

SAMPLE DATE: 12/2/2019

DATE RECEIVED: 12/2/2019

SAMPLE ID: Grab

DESCRIPTION: DRINKING WATER

RESULTS OF ANALYSIS

Parameter	Analytical Method	Date Analyzed	Units	Det. Limit*	MCL ¹ / Rec. Limit ²	Result
Test Parameters				LAB-ID#: <u>1942821-02</u>		
Carbon, Total Dissolved Organic	SM 5310B	12/06/2019	mg/L	0.500	---	3.24
SUVA	Calculation	12/12/2019	# per 100 mL	0	0	0.011
UV 254	SM 5910B	12/03/2019	Abs/cm	0.002	-----	0.037

Unless otherwise noted, all analyses were conducted by Analytical Balance Corp. (M-MA022). DOC and UV254 were analyzed by subcontract lab M-RI002.

NA = Not Applicable
 ND = Not Detected
 '<' = Less Than
 '*' = Detection Limit

Approved By: Amanda Cronin Digitally signed by Amanda Cronin
 CN=Amanda Cronin
 O=Analytical Balance Corp.
 E=amanda@h2oest.net
 Lab Manager / Date

1. MCL = Maximum Contaminant Level as adopted by the Commonwealth of Massachusetts and represents the maximum acceptable level in drinking water.
2. Recommended limits are suggested levels of materials allowed in water. These may be for aesthetic reasons rather than for human health.
3. Currently there are no limits (recommended or mandated) for this parameter. This is merely presented for guidance.
4. If present, coliform values (in parentheses) are defined as estimated numbers.



Massachusetts Department of Environmental Protection - Drinking Water Program
CHLORINE/CHLORAMINES - MONTHLY REPORT

CI

I. PWS INFORMATION:

PWS ID #: **4133000** PWS Name: **TOWN OF HOLBROOK** City/Town: **HOLBROOK** Class: COM NTNC TNC

II. ANALYTICAL INFORMATION: Refer to your MassDEP Coliform Sampling Plan and/or DBPR monitoring plan to help complete this section.

Type Measured: Free Chlorine Total Chlorine Combined Chlorine Analytical Method: SM 4500-Cl: D E F G H I ASTM D1253-86

Notes:

DEP APPROVED SAMPLE SITE INFORMATION ¹		CHLORINE RESULT ² (mg/L)	COLLECTION AND ANALYSIS ³ :		COLLECTED AND ANALYZED BY:
DEP Sample Type ^{1,4}	DEP Approved SAMPLE LOCATION ¹		DATE	TIME	
RS 001	TOWN HALL	0.7	12/2/2019	07:09	T. Duggan
RS 004	COTTAGE VARIETY	0.7	12/2/2019	08:09	T. Duggan
RS 005	AGAPE INN	0.7	12/2/2019	08:55	T. Duggan
RS 006	COMMUNITY CENTER	0.2	12/2/2019	07:47	T. Duggan
RS 001	TOWN HALL	0.8	12/9/2019	07:09	T. Duggan
RS 004	COTTAGE VARIETY	0.8	12/9/2019	08:05	T. Duggan
RS 005	AGAPE INN	0.7	12/9/2019	08:38	T. Duggan
RS 006	COMMUNITY CENTER	0.2	12/9/2019	07:41	T. Duggan
RS 001	TOWN HALL	0.7	12/16/2019	07:05	T. Duggan
RS 004	COTTAGE VARIETY	0.8	12/16/2019	07:53	T. Duggan
RS 005	AGAPE INN	0.7	12/16/2019	08:43	T. Duggan
RS 006	COMMUNITY CENTER	0.2	12/16/2019	07:31	T. Duggan
RS 001	TOWN HALL	0.8	12/18/2019	07:09	T. Duggan
RS 004	COTTAGE VARIETY	1.0	12/18/2019	08:03	T. Duggan
RS 005	AGAPE INN	0.7	12/18/2019	08:40	T. Duggan
RS 006	COMMUNITY CENTER	0.3	12/18/2019	07:32	T. Duggan
RS 001	TOWN HALL	0.7	12/30/2019	07:09	T. Duggan
RS 004	COTTAGE VARIETY	0.7	12/30/2019	08:03	T. Duggan
RS 005	AGAPE INN	0.4	12/30/2019	08:25	T. Duggan
RS 006	COMMUNITY CENTER	0.2	12/30/2019	08:45	T. Duggan

¹ DEP Sample Type, Location Code#, and DEP Approved Sample Site Location must correspond to the same information on your DEP Total Coliform Sampling Plan.
² SWTR systems: HPC must be collected at distribution sites with zero chlorine residual and results reported on the DEP Bacteriological Monthly Report form and on the appropriate SWTR Form.
³ Collection and Analysis: Chlorine residual shall be measured in the field (immediately upon collection) at the same time and location in the distribution system as total coliforms are sampled. Record ND values as 0 (zero).
⁴ Sample Type: RS-Routine Distribution Sample, RO-Original Site Repeat, UR-Upstream Repeat, DR-Downstream Repeat, AR-Additional Repeat, or SS-Special Sample (as determined by DEP).
⁵ All DISTRIBUTION samples taken and analyzed shall be included in determining compliance, even if that number is greater than the minimum required. If you collect repeat coliform samples within the distribution system during the month, you must also measure for a detectable chlorine residual at the repeat sites and include these samples. DO NOT include raw water (RW) or plant tap (PT) chlorine residual samples in your calculations.

III. COMPLIANCE REPORTING:

Total # of Samples Collected for Month⁵: **70**

Average Chlorine Result of All Samples For Month⁵ (mg/L): **1.21**

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Certified Operator Signature and Date: *William Gorky* 1-13-2020

DEP Review Status: Accepted Disapproved Review Comments:

CHLORINE/CHLORAMINES - MONTHLY REPORT

I. PWS INFORMATION:

PWS ID #: 4244000 PWS Name: RANDOLPH WATER DEPARTMENT City/Town: RANDOLPH Class: CCM NTNG TNG

II. ANALYTICAL INFORMATION: Refer to your MassDEP Coliform Sampling Plan and/or DEPR monitoring plan to help complete this section.

Type Measured: Free Chlorine Total Chlorine Combined Chlorine Analytical Method: SM 4500-Cl D E F G H I ASTM D1283-86

Notes:

DEP APPROVED SAMPLE SITE INFORMATION		CHLORINE RESULT (mg/L)	COLLECTION AND ANALYSIS		COLLECTED AND ANALYZED BY:
DEP Sample Type #	DEP Location Code #		DATE	TIME	
RS 003	TOWER HILL SCHOOL - ADAMS STREET	1.4	12/2/19	10:00AM	J. STEWARD
RS 004	JFK SCHOOL - 20 HURLEY DRIVE	1.64	12/2/19	8:10AM	
RS 005	MARTIN E. YOUNG SCHOOL-COURTNEY DRIVE	.91	12/2/19	7:50AM	
RS 006	STAYBROOK INN - 1874 NORTH MAIN STREET	1.63	12/2/19	10:35AM	
RS 008	NORTH MIDDLE SCHOOL - HIGH STREET	1.17	12/2/19	10:15AM	
RS 011	MOBIL STATION - 93 MAZZEO DRIVE	1.61	12/2/19	9:40AM	
RS 012	7-11 FOOD SHOP - 676 NORTH STREET	.58	12/2/19	8:35AM	
RS 014 A	EMERY ROSS - 299 NORTH MAIN STREET	1.53	12/2/19	11:05AM	
RS	OAK GROVE STANDPIPE	.93	12/2/19	11:25AM	
RS	SOUTH MAIN STREET STANDPIPE	.85	12/2/19	11:45AM	

DEP Sample Type, Location Code, and DEP Approved Sample Site Location must correspond to the same information on your DEP Total Coliform Sampling Plan. SWTR system MPC must be collected at distribution sites with zero chlorine residual and results reported on the DEP Bacteriological Monthly Report form and on the appropriate SWTR Form. Collection and Analytical Chlorine residual shall be measured in the field (immediately upon collection) at the same time and location in the distribution system as total coliforms are sampled. Record ND values as 0 (zero). Sample Types: RS-Routine Distribution Sample, RO-Original Site Repeat, DR-Distribution Repeat, DS-Downstream Repeat, AS-Additional Repeat, or SS-Special Sample (as determined by DEPR). All DISTRIBUTION samples taken and analyzed shall be included in determining compliance, even if that number is greater than the minimum required. If you collect repeat/duplicate samples within the distribution system during the month, you must also measure for a detectable chlorine residual at the repeat sites and indicate these samples. DO NOT include raw water (RW) or plant tap (PT) chlorine residual samples in your calculations.

III. COMPLIANCE REPORTING:

Total # of Samples Collected for Month: 70

Average Chlorine Result of All Samples for Month (mg/L): 1.21

I certify under penalty of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Certified Operator Signature and Date: T. Steward 1-3-20

DEP Review Status: Accepted Disapproved Review Comments:

CHLORINE CHLORAMINES - MONTHLY REPORT

I. PWS INFORMATION:

PWS ID #: 4244000 PWS Name: RANDOLPH WATER DEPARTMENT City/Town: RANDOLPH Class: COM NTNG TNG

II. ANALYTICAL INFORMATION: Refer to your MassDEP Coliform Sampling Plan and/or DEP's monitoring plan to help complete this section.

Type Measured: Free Chlorine Total Chlorine Combined Chlorine Analytical Method: SM 4500-Cl D E F G H I ASTM D1253-86

Notes:

DEP Sample Type	DEP Location Code #	DEP APPROVED SAMPLE SITE INFORMATION ¹		CHLORINE RESULT (mg/L)	COLLECTION AND ANALYSIS ²		COLLECTED AND ANALYZED BY:
		DEP Approved SAMPLE LOCATION ³	DEP Approved SAMPLE LOCATION ⁴		DATE	TIME	
RS	003	TOWER HILL SCHOOL	ADAMS STREET	1.51	12/9/19	10:10 AM	A. P. RICE-LOUIS
RS	004	JFK SCHOOL	20 HURLEY DRIVE	1.18	12/9/19	8:45 AM	
RS	005	MARTIN E. YOUNG SCHOOL	COURTNEY DRIVE	.85	12/9/19	7:30 AM	
RS	006	CLYDEMAN INN	1874 NORTH MAIN STREET	1.16	12/9/19	10:50 AM	
RS	008	NORTH MIDDLE SCHOOL	HIGH STREET	1.35	12/9/19	10:30 AM	
RS	011	MOBIL STATION	83 MAZZEO DRIVE	1.07	12/9/19	9:45 AM	
RS	012	7-11	FOOD SHOP 676 NORTH STREET	.38	12/9/19	9:10 AM	
RS	014 A	SEWERHOUSE	277 NORTH MAIN STREET	1.52	12/9/19	9:30 AM	
RS		OAK GROVE STANDPIPE		1.18	12/9/19	12:00 PM	
RS		SOUTH MAIN STREET STANDPIPE		1.14	12/9/19	12:20 PM	

¹ DEP Sample Type, Location Code, and DEP Approved Sample Site Location must correspond to the same information on your DEP Total Coliform Sampling Plan.
² SWTR systems: PWS that is collected at distribution sites with zero chlorines residual and results reported on the DEP Bacteriological Monthly Report form and on the appropriate SWTR Form.
³ Collection and Analytical Method: Chlorine residual shall be measured in the field (immediately upon collection) at the same time and location in the distribution system as total coliforms are sampled. Record MP values as 0 (zero).
⁴ Sample Type: RS-Routine Distribution Sample, RC-Original Site Repeat, DR-Downstream Repeat, AS-Additional Repeat, or SS-Special Sample (as determined by DEP).
 All BACTERIOLOGICAL samples taken and analyzed shall be included in determining compliance, even if that number is greater than the minimum required. If you collect representative samples within the distribution system during the month, you must also measure for a detectable chlorine residual at the repeat sites and include these samples. DO NOT include raw water (RW) or plant tap (PT) chlorine residual samples in your calculations.

III. COMPLIANCE REPORTING: Total # of Samples Collected for Month: 70 Average Chlorine Residual for All Samples for Month (mg/L): 1.21

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Certified Operator's Signature and Date: William Corbett 1-3-20

DEP Review Status: Accepted Disapproved Review Comments:



CHLORINE/CHLORAMINES - MONTHLY REPORT

I. PWS INFORMATION:

PWS ID #: 4244000 PWS Name: RANDOLPH WATER DEPARTMENT City/Town: RANDOLPH Class: COM NTNG TNG

II. ANALYTICAL INFORMATION: Refer to your MassDEP Coliform Sampling Plan and/or DEAP monitoring plan to help complete this section.

Type Measured: Free Chlorine Total Chlorine Combined Chlorine Analytical Method: SM 4500-Cl: D E F G H I ASTM D1253-86

Notes:

DEP Sample Type	DEP APPROVED SAMPLE SITE INFORMATION ¹		CHLORINE RESULT ² (mg/L)	COLLECTION AND ANALYSIS ³		COLLECTED AND ANALYZED BY ⁴
	DEP Location Code # ⁵	DEP Approved Sample Location ⁶		DATE	TIME	
RS	003	TOWER HILL SCHOOL - ADAMS STREET	1.41	12-30-19	9:55 AM	A. Pierre-Louis
RS	004	JFK SCHOOL - 20 HURLEY DRIVE	1.59	12-30-19	8:15 AM	
RS	006	MARTIN E. YOUNG SCHOOL-COURTNEY DRIVE	.99	12-30-19	7:40 AM	
RS	008	CAMPBELL INN - 1374 NORTH MAIN STREET	1.39	12-30-19	10:50 AM	
RS	008	NORTH MIDDLE SCHOOL - HIGH STREET	1.37	12-30-19	10:20 AM	
RS	011	MOBIL STATION - 83 MAZZEO DRIVE	1.48	12-30-19	9:30 AM	
RS	012	7-11 FOOD SHOP - 676 NORTH STREET	.82	12-30-19	8:40 AM	
RS	014 A	EVERETT - 277 NORTH MAIN STREET	1.51	12-30-19	9:10 AM	
RS		OAK GROVE STANDPIPE	1.25	12-30-19	12:00 PM	
RS		SOUTH MAIN STREET STANDPIPE	1.09	12-30-19	12:30 PM	

¹ DEP Sample Type, Location Code, and DEP Approved Sample Site Location must correspond to the same information on your DEP Total Coliform Sampling Plan.
² SWTR systems: MPC must be collected at distribution sites with zero chlorine residual and results reported on the DEP Bacteriological Monthly Report form and on the appropriate SWTR Form.
³ Collection and Analysis: Chlorine residual shall be measured in the field (immediately upon collection) at the same time and location in the distribution system as total coliforms are sampled. Record MPC values as 0 (zero).
⁴ Sample Type: RS-Routine Distribution Sample, RO-Original Site Repeat, DR-Downstream Repeat, AR-Additional Repeat, or SS-Special Sample (as determined by DEAP).
⁵ All ELECTRICAL samples taken and analyzed shall be included in determining compliance, even if that number is greater than the minimum required. If you collect representative samples within the distribution system during the month, you must also measure for a detectable chlorine residual at the repeat sites and include these samples. DO NOT include raw water (RW) or plant tap (PT) chlorine residual samples in your calculations.

III. COMPLIANCE REPORTING: Total # of Samples Collected for Month: 70 Average Chlorine Residual of All Samples for Month⁷ (mg/L): 1.21

I certify under penalty of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Physically Certified Operator Signature and Date: Jillien Cortez 1-3-20

DEP Review Status: Accepted Disapproved Review Comments:



Massachusetts Department of Environmental Protection - Drinking Water Program
Disinfection Byproducts Rule Compliance Report

DBPR

I. PWS INFORMATION: Please refer to your DBPR Monitoring Plan to help complete this form.

PWS ID #: 4244001 City / Town: RANDOLPH
 PWS Name: RANDOLPH-HOLBROOK JOINT WATER PWS Class: COM NTNC TNC
 Monitoring Period (YEAR): 2019 Monitoring Period (QUARTER): Q1 (Jan-Mar) Q2 (Apr-Jun) Q3 (Jul-Sep) Q4 (Oct-Dec)

II. FOR SYSTEMS USING CHLORINATION

A. Trihalomethanes (TTHM)

Total Number of TTHM Samples:		Quarterly Average:	µg/L
Was the Running Annual Average MCL (80 µg/L) exceeded?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Running Annual Average:	µg/L

B. Haloacetic Acids (HAA5)

Total Number of HAA5 Samples:		Quarterly Average:	µg/L
Was the Running Annual Average MCL (60 µg/L) exceeded?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Running Annual Average:	µg/L

C. Chlorine/Chloramines

Total Number of Samples:	Month 1: <u>64 OCT</u>	Monthly Averages: (report all 3 months per quarter)	<u>0.88</u> mg/L	Quarterly Average:	<u>1.03</u> mg/L
	Month 2: <u>64 NOV</u>		<u>1.00</u> mg/L		
	Month 3: <u>70 DEC</u>		<u>1.21</u> mg/L		
Was the Running Annual Average MRDL (4.0 mg/L) exceeded?				Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Running Annual Average: <u>0.88</u> mg/L

D. Total Organic Carbon - raw (TOC) (Required for SW or GWUDI systems >499 seeking or approved to reduce THM/HAA5 monitoring.) Plant Name: _____
 (Attach additional sheet(s) to report more than 1 plant)

Total Number of Samples:	Month 1:	Monthly Averages: (report all 3 months per quarter)	mg/L	Quarterly Average:	mg/L
	Month 2:		mg/L		
	Month 3:		mg/L		
Was the (4.0 mg/L) threshold exceeded?				Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Running Annual Average: mg/L

III. FOR SYSTEMS USING OZONATION - attach additional sheet(s) to report more than 1 plant

E. Bromate (treated) Plant Name: _____

Total Number of Samples:	Month 1:	Monthly Averages: (report all 3 months per quarter)	mg/L	Quarterly Average:	mg/L
	Month 2:		mg/L		
	Month 3:		mg/L		
Was the Running Annual Average MCL (0.010 ug/l) exceeded?				Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Running Annual Average: mg/L

F. Bromide (raw) Plant Name: _____
 Required for systems seeking or approved to reduce Bromate monitoring

Total Number of Samples:	Month 1:	Monthly Averages: (report all 3 months per quarter)	mg/L	Quarterly Average:	mg/L
	Month 2:		mg/L		
	Month 3:		mg/L		
Was the (0.05 mg/l) threshold exceeded?				Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Running Annual Average: mg/L

IV. FOR SYSTEMS USING CHLORINE DIOXIDE - Report compliance information on your Chlorine/Chlorine Dioxide (Daily Samples) report

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Certified Operator Signature: William Coakley Date: 1-13-2022

DEFINITIONS

MONTHLY AVERAGE:	Monthly average = average of all results within the current month.
QUARTERLY AVERAGE:	Quarterly Average = average result of all locations sampled during monitoring period
RUNNING ANNUAL AVERAGE:	Running Annual Average = Average of 4 quarters. Average of this quarter and three prior consecutive quarterly averages (for systems on quarterly monitoring)
TOTAL NUMBER OF SAMPLES:	Total number of samples collected during the monitoring period.

NOTE: Record and calculate all ND or <MDL results as the number zero (0).

Submit one copy of this form each quarter to your DEP regional office (by Jan 10th, April 10th, July 10th, and Oct 10th of each year)

DEP REVIEW STATUS (Initial & Date)	Review Comments
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____	