DEQ MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

MONTHLY OPERATION REPORT - CLASS D WATER TREATMENT PLANT

Issued under authority of 1976 PA 399 and the Administrative Rules, as amended. Administrative Rule R 325.11512 says in part, "A supplier of water where treatment is employed shall prepare an operation report on a form provided by the department for each month of operation." Failure to submit this form is a violation of the Act and may subject the water supply to enforcement penalties.

Water Supply Information

CITY OF WATERVLIET		6930
Supply Name		WSSN
MARK A BOLIN	D-3	Nov
Operator In Charge (OIC)	System Classification	Month (mmm)
		30 = number of days this month
S-2 D-3	BERRIEN	2016
Certification Level of OIC	County	Year (yyyy)

Distribution Chlorine Residual Monitoring

(Sampling Conducted per DBPR Monitoring Plan)

Number of chlorine residual measurements taken during the month:	3
Number of chlorine residual measurements that exceeded 4 mg/L:	3
Monthly average chlorine residual: (indicate free or total)	0.62

Comments

Certification

MARK A BOLIN

Name and Title of Authorized Agent

Signature

Date Submitted

Send Completed Report To:

Department of Environmental Quality (DEQ)
Office of Drinking Water and Municipal Assistance
7953 ADOBE ROAD
KALAMAZOO, MI 49009
WOZNIAKG@MICHIGAN.GOV

Staff and Contact Information

[enter name], Analyst, [enter phone and email]
[enter name], Engineer, [enter phone and email]
[enter name], Supervisor, [enter phone and email]
Fax [enter fax number]
PEAS Hotline 1-800-292-4706

Pumpage

CITY OF WATERVLIET — Name of Supply

6930 — WSSN

Nov — Month

2016 — Year

Day of Month	Pumpage in Million of Gallons								Daily Total MGD	Comments
	Well 1	Well 2	Well 3	Well 4	Well 5	Well 6	Well 7	Well 8		
1	0.050	0.075		0.075					0.200	
2	0.072	0.053		0.054					0.179	
3	0.055	0.067		0.068					0.191	
4	0.019	0.099		0.084					0.202	
5	0.000	0.090		0.089					0.179	
6	0.000	0.096		0.088					0.184	
7	0.074	0.044		0.050					0.167	
8	0.056	0.049		0.075					0.180	
9	0.078	0.049		0.071					0.198	
10	0.053	0.067		0.080					0.200	
11	0.072	0.072		0.082					0.225	
12	0.053	0.065		0.074					0.192	
13	0.052	0.055		0.054					0.161	
14	0.076	0.064		0.052					0.192	
15	0.075	0.047		0.052					0.174	
16	0.075	0.047		0.052					0.174	
17	0.051	0.070		0.054					0.176	
18	0.051	0.040		0.110					0.201	
19	0.075	0.062		0.053					0.190	
20	0.068	0.055		0.072					0.196	
21	0.038	0.049		0.074					0.160	
22	0.052	0.051		0.078					0.181	
23	0.056	0.055		0.078					0.189	
24	0.049	0.062		0.045					0.155	
25	0.049	0.052		0.055					0.156	
26	0.070	0.054		0.053					0.177	
27	0.073	0.056		0.056					0.185	
28	0.076	0.053		0.055					0.184	
29	0.057	0.066		0.075					0.198	
30	0.071	0.046		0.056					0.173	
31										
Total	1.693	1.810		2.014					5.52	
Average	0.056	0.060		0.067					0.184	
Maximum	0.078	0.099		0.110					0.23	
Minimum	0.000	0.040		0.045					0.15	

Treatment

CITY OF WATERVLIET — Name of Supply

6930 — WSSN

IRON REMOVAL PLANT — Entry Point (e.g. Well 1)

Nov — Month

2016 — Year

Day of Month	Treated Water Metered Million Gallons	Treated Water Metered Million Lbs	Chlorine Application Solution Lbs	Chlorine Application Avail Cl or Gas in Lbs	Chlorine Application Cl Applied mg/L	Chlorine Residual - mg/L Entry Point Free	Chlorine Residual - mg/L Entry Point Total	Chlorine Residual - mg/L Distribution System Free	Chlorine Residual - mg/L Distribution System Total
1	0.194	1.620		9.63	5.94	1.16	1.50	0.78	0.97
2	0.175	1.459		9.05	6.20	0.91	1.21	0.88	1.15
3	0.185	1.547		9.85	6.37	1.56	1.89	0.89	0.98
4	0.182	1.517		7.85	5.17	0.95	1.26	0.77	0.89
5	0.173	1.439		6.22	4.32				
6	0.178	1.482		8.63	5.82				
7	0.164	1.367		8.24	6.03	0.83	1.17	0.96	1.11
8	0.175	1.457		8.70	5.97	0.77	1.01	0.79	0.92
9	0.193	1.608		9.78	6.08	1.35	1.57	0.76	0.88
10	0.194	1.619		9.84	6.08	0.85	1.12	0.78	0.90
11	0.220	1.834		10.64	5.80				
12	0.187	1.562		10.26	6.57				
13	0.157	1.312		7.84	5.98				
14	0.188	1.572		9.81	6.24	1.21	1.50	0.77	0.87
15	0.170	1.419		8.66	6.10	0.84	1.19	0.96	1.01
16	0.170	1.419		8.66	6.10	0.69	1.13	0.59	0.80
17	0.172	1.432		8.33	5.82	1.18	1.48	0.66	0.81
18	0.166	1.383		9.77	7.06	0.83	1.12	0.36	0.48
19	0.187	1.556		8.35	5.37				
20	0.191	1.589		10.04	6.32				
21	0.155	1.297		8.06	6.22	0.82	1.18	0.75	0.86
22	0.175	1.462		8.52	5.83	0.81	1.10	0.35	0.46
23	0.184	1.534		9.62	6.27	1.33	1.55	0.65	0.76
24	0.152	1.266		7.24	5.71				
25	0.152	1.269		8.03	6.33				
26	0.173	1.446		9.24	6.39				
27	0.181	1.510		9.84	6.52				
28	0.180	1.505		9.23	6.14	0.81	1.13	0.97	1.11
29	0.193	1.610		9.33	5.79	0.99	1.23	0.74	0.89
30	0.169	1.409		8.47	6.02	1.01	1.34	0.78	0.92
31									
Total	5.336	44.500		267.73					
Average	0.178	1.483		8.92	6.02	0.99	1.30	0.75	0.88
Maximum	0.220	1.834		10.64	7.06	1.56	1.89	0.97	1.15
Minimum	0.152	1.266		6.22	4.32	0.69	1.01	0.35	0.46

Iron Removal

CITY OF WATERVLIET — Name of Supply
6930 — WSSN
IRON REMOVAL PLANT — Entry Point (e.g. Well 1)
Nov — Month
2016 — Year

Day of Month	Water in Millions of Gallons: Raw Water To Plant	Backwash Waste Water	Flow Thru	Total Water To System	Head Loss Thru Filter Ft/PSI	Raw Water Analysis: Iron as Fe mg/L	Mn mg/l	Entry Point Analysis: Iron as Fe mg/L	Mn mg/l	Removal Efficency %
1	0.200			0.200		0.68		0.01		98.00
2	0.179			0.179		0.70		0.01		98.00
3	0.191			0.191		0.66		0.01		98.00
4	0.202	0.030		0.172		0.70		0.02		97.00
5	0.179			0.179						
6	0.184			0.184						
7	0.167			0.167		0.65		0.01		98.00
8	0.180			0.180		0.70		0.01		98.00
9	0.198			0.198		0.64		0.01		98.00
10	0.200			0.200		0.65		0.01		98.00
11	0.225			0.225						
12	0.192			0.192						
13	0.161			0.161						
14	0.192			0.192		0.68		0.01		98.00
15	0.174			0.174		0.60		0.01		98.00
16	0.174			0.174		0.64		0.02		97.00
17	0.176			0.176		0.67		0.01		98.00
18	0.201	0.030		0.172		0.69		0.01		98.00
19	0.190			0.190						
20	0.196			0.196						
21	0.160			0.160		0.64		0.01		98.00
22	0.181			0.181		0.68		0.01		98.00
23	0.189			0.189		0.60		0.01		98.00
24	0.155			0.155						
25	0.156			0.156						
26	0.177			0.177						
27	0.185			0.185						
28	0.184			0.184		0.65		0.01		98.00
29	0.198			0.198		0.70		0.01		98.00
30	0.173			0.173		0.69		0.01		98.00
31				#VALUE!						
Total	5.517	0.059		#VALUE!						
Average	0.184	0.002		#VALUE!		0.66		0.01		
Maximum	0.225	0.030		#VALUE!		0.70		0.02		
Minimum	0.155	0.030		#VALUE!		0.60		0.01		

PSI DIFFERENTIAL

DATE	EAST TRAIN	WEST TRAIN
11-1-16	2.6	2.8
11-2-16	3.0	3.0
11-3-16	3.2	3.4
11-4-16	3.4	3.8
11-7-16	0.1	0.2
11-8-16	0.2	0.8
11-9-16	0.4	1.2
11-10-16	0.5	1.4
11-14-16	2.4	2.8
11-15-16	2.4	3.0
11-16-16	2.8	3.0
11-17-16	3.4	3.6
11-18-16	3.8	3.8
11-21-16	0.1	1.2
11-22-16	0.4	1.4
11-23-16	1.0	1.6
11-28-16	2.0	2.2
11-29-16	2.4	2.8
11-30-16	2.8	3.0

Bacteriological Results and Chlorine Residual Measurements

CITY OF WATERVLIET	6930	Nov	2016
Name of Supply	WSSN	Month	Year

3	Routine samples required		Repeat samples taken
3	Routine samples taken		Repeat samples total coliform positive
0	Routine samples positive		Analytical Method

Chlorine Residual From Routine & Repeat		
Ave	0.62	0.72
Max	0.96	1.01
Min	0.35	0.47

Distribution System - **Routine** Samples			Total Coliform Result	Chlorine Residual mg/l	
Count	Sample Location	Date Collected		Free	Total
1	ARNT AVE.	11/15/16	0	0.56	0.68
2	MEDICAL PARK	11/15/16	0	0.96	1.01
3	PEACH TREE	11/15/16	0	0.35	0.47
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Distribution System - **Repeat** Samples			Total Coliform Result	Chlorine Residual mg/l	
Count	Sample Location	Date Collected		Free	Total
1					
2					
3					
4					
5					
6					
7					
8					
9					

Other: well samples, entry point (plant tap), samples following construction/repair, etc.			Total Coliform Result	Chlorine Residual mg/l	
Count	Sample Location	Date Collected		Free	Total
1					
2					
3					
4					
5					
6					
7					
8					
9					

Paw Paw Laboratory

110 Harry L. Bush Blvd
Paw Paw, Michigan 49079
Phone: 269-657-3169
Fax: 269-657-6023

Office Hours: M-F 7:00am-3.30pm, NO SAMPLES FRIDAY
State Certification Number: 5210
Expiration Date: November 28, 2018

Lab ID # 1H5-4
(Lab Use Only)
Page 1 of 1

Analysis of Drinking Water

Bacterial Analysis by Colilert or Colisure Method (Method #9223 B) ONPG-MUG(MMO-MUG)
Nitrate Analysis by Ion Selective Electrode (Standard Method # 4500-NO3-D)

Nitrate Detection Limit
0.1 mg/L

Person Requesting Results:

Name: CITY OF WATERVLIET	Phone: 269-277-6654	Fax: 269-463-7708
Address: 158 W. PLEASANT PO 86	City: WATERVLIET	Michigan, Zip Code: 49098

Chain of Custody: *to be filled out by both parties at the time sample is dropped off at lab*

Relinquished by: Bolin		Received by: DN	
Date: 11-15-16	Time: 1:58 am/pm	Date: 11-15-16	Time: 1:58 am/pm

Sample #1

Property Owner: CITY OF WATERVLIET		Sampler: Bolin	Date: 11-15-16	Time: 9 am/pm
Address: MEADICA PARK ST		Sampling Point: kitchen sink, bathroom sink, sample tap, etc.		
City: WATERVLIET	Mi., Zip Code: 49098	Origin of Sample: private well, public water system, pool, etc.		
Unusual Sample Condtion:		Nitrate Analyst:	Date:	Time: am/pm

Test Results:

Bacterial	Nitrate
result	mg/L
ND	

Sample #2 *(Fill out this section if more than one sample is being analyzed)*

Property Owner: CITY OF WATERVLIET		Sampler: Bolin	Date: 11-15-16	Time: 10 am/pm
Address: PEACH TREE		Sampling Point: kitchen sink, bathroom sink, sample tap, etc.		
City: WATERVLIET	Mi., Zip Code: 49098	Origin of Sample: private well, public water system, pool, etc.		
Unusual Sample Condtion:		Nitrate Analyst:	Date:	Time: am/pm

Test Results:

Bacterial	Nitrate
result	mg/L
ND	

Sample #3 *(Fill out this section if more than two samples are being analyzed)*

Property Owner: CITY OF WATERVLIET		Sampler: Bolin	Date: 11-15-16	Time: 11 am/pm
Address: ARTT AVE		Sampling Point: kitchen sink, bathroom sink, sample tap, etc.		
City: WATERVLIET	Mi., Zip Code: 49098	Origin of Sample: private well, public water system, pool, etc.		
Unusual Sample Condtion:		Nitrate Analyst:	Date:	Time: am/pm

Test Results:

Bacterial	Nitrate
result	mg/L
ND	

Explanation of Results

ND = **Coliforms Not Detected**-This result meets State safety standards for the time of sampling. Total Coliform and E. Coli bacteria **were not** found.

POS= **Coliform Organisms Detected**-The water supply may not be isolated from outside sources of contamination. Total Coliform **was found** and E. Coli **was not found**.

EC POS= **E. Coli Organisms Detected**-The water supply may not be isolated from sources of fecal contamination, more likely to contain disease organisms. Precautions are recommended in use of the water. Total Coliform and E. Coli bacteria **were** found.

Nitrate= Levels less than the Maximum Contaminant Limit of **10 mg/L** are considered safe for consumption by the State of Michigan Department of Environmental Quality.

Billing Information: Lab Use Only

Analysis Fee:	Bacterial Analysis: **$25.00**	Nitrate Analysis (3 day results): **$25.00**

		amount		amount	number		# samples	STAMP HERE IF PAID
Fee Received:	Cash	$	Check	$		Account	X3	

*******Payment is required at time of sample drop-off.*******

Notify by:	Phone		Fax	X	Other		notes: 11-16-16
Results reported:	Phone		Fax		Other		Date/Time: 2:03 am/pm Init. DN

*This serves as your **RECEIPT** and also as the **CHAIN OF CUSTODY** form. Daily samples received will be run between 2-3 pm on day of receipt. Results will be available in 24 hours for bacterial analysis, 5 days for Nitrate*