23D-5a 1/86
Authority; Act 399, P.A. 1976

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

MONTHLY OPERATION REPORT
OF
WATER TREATMENT PLANT

For Month of November 2018

Flint Water Plant — NAME OF WATER SYSTEM
2310 — WSSN
Genesee — COUNTY

Robert Jones — CERTIFIED OPERATOR
D-1 — CLASSIFICATION

SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum 13.05 Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity 36 Million Gallons per Day
3. Average Filter Run N/A Hours, Average Head Loss N/A Feet
4. Average Filtration Rate N/A Gallons per Square Ft. per Minute
5. Maximum Filtration Rate N/A Gallons per Square Ft. per Minute
6. Average Wash Water Use N/A percent of Treated Water

CHEMICAL DATA

7. Sodium Hypochlorite on hand at CS2 2635 gal.: Estimated supply 54 days
8. Sodium Hypochlorite on hand at outstations 239 gal: Estimated supply 35 days
9. Phosphoric Acid on hand 338 gal.: Estimated supply 18 days
9. Sodium Hydroxide on hand 2578 gal.: Estimated supply 33 days

Remarks:

Submit to: MDEQ - Office of Drinking Water & Municipal Assistance
LANSING DISTRICT OFFICE
525 West Allegan Street, 1st Floor South
(Constitution Hall)
PO Box 30242
Lansing, MI 48909-7742

Failure to complete this form is a violation of Act 399, P.A. 1976 and is subject to penalties as outlined in the Act.

Nov-18

DATE	Total Million Gallons Purchased	Phosphate as PO_4 (mg/L) CSII	Phosphate applied as PO_4 (mg/L)	Phosphate as PO_4 (mg/L) Tap	25% Caustic Soda (mg/l)	Turbidity, NTU units Raw # of Samples	Raw Avg.	Raw Max		Plant Tap # of Samples	Plant Tap Avg.	Plant Tap Max
	1	1.29	1B	6	6a	7	8	9	10	11	12	13
1	10.3	1.2	2.33	3.5	1.9					2	0.08	0.09
2	10.6	1.1	2.34	3.6	1.9					2	0.08	0.08
3	9.8	1.3	2.29	3.4	1.8					2	0.09	0.10
4	9.5	1.1	2.31	3.5	1.8					2	0.08	0.08
5	10.5	1.1	2.50	3.4	1.8					2	0.08	0.07
6	9.8	1.1	2.44	3.6	1.8					2	0.06	0.07
7	10.8	1.3	2.34	3.6	1.9					2	0.07	0.08
8	9.1	1.2	2.35	3.7	2.1					2	0.10	0.13
9	10.9	1.2	2.30	3.6	2.0					2	0.09	0.09
10	10.0	1.3	2.24	3.7	2.0					2	0.11	0.11
11	10.1	1.2	2.33	3.6	1.6					2	0.09	0.10
12	9.6	1.4	2.34	3.7	1.8					2	0.11	0.13
13	10.5	1.2	2.27	3.5	1.9					2	0.09	0.10
14	9.8	1.3	2.35	3.6	2.1					2	0.07	0.10
15	10.2	1.2	2.30	3.6	2.1					2	0.12	0.14
16	10.1	1.3	2.29	3.5	2.1					2	0.10	0.10
17	10.8	1.2	2.27	3.5	2.1					2	0.10	0.12
18	9.3	1.3	2.27	3.6	2.4					2	0.10	0.11
19	10.5	1.3	2.23	3.5	2.4					2	0.13	0.14
20	12.2	1.2	2.24	3.4	2.4					2	0.08	0.09
21	10.5	1.3	2.31	3.6	2.4					2	0.10	0.10
22	9.9	1.3	2.36	3.6	2.4					2	0.10	0.13
23	9.6	1.3	2.24	3.7	2.5					2	0.14	0.17
24	10.0	1.3	2.14	3.5	3.2					2	1.58	0.11
25	10.3	1.3	2.37	3.6	2.7					2	0.10	0.11
26	10.6	1.3	2.26	3.5	2.4					2	0.09	0.10
27	8.7	1.3	2.37	3.6	2.7					2	0.12	0.12
28	8.8	1.3	2.29	3.6	2.7					2	0.17	0.14
29	13.0	1.3	2.22	3.7	2.7					2	0.11	0.12
30	8.7	1.3	2.26	3.7	2.7					2	0.19	0.27
31												
AVG	10.15	1.24	2.31	3.57	2.20					2	0.15	0.11
MAX	13.05	1.39	2.50	3.74	3.18					2	1.58	0.27
MIN	8.69	1.07	2.14	3.35	1.60					2	0.06	0.07
Total	304.57											

Fluoridation & Chlorination **WSSN 2310** **Nov-18**

DATE	Fluoride Applied F` mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
									Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist	Chlorine App. Mg/l	Chlorine (prior to filtration) mg/L OCl	Post Chlorine mg/L		Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1		0.67	0.71		0.97				1.0					1.6	
2		0.74	0.78		1.04				0.9					1.7	
3		0.68	0.64		0.95				1.0					1.7	
4		0.67	0.77		0.92				1.0					1.6	
5		0.69	0.78		1.01				0.9					1.6	
6		0.63	0.68		1.04				1.0					1.5	
7		0.67	0.72		0.92				0.9					1.6	
8		0.67	0.73		1.12				0.9					1.6	
9		0.63	0.61		1.14				1.0					1.7	
10		0.67	0.67		1.05				1.0					1.7	
11		0.67	0.74		1.06				1.0					1.7	
12		0.66	0.69		1.03				1.1					1.6	
13		0.67	0.70		0.97				1.0					1.6	
14		0.71	0.69		1.09				1.0					1.6	
15		0.78	0.78		1.09				1.0					1.7	
16		0.64	0.70		1.06				1.1					1.7	
17		0.67	0.64		1.09				1.0					1.7	
18		0.71	0.66		1.02				1.0					1.6	
19		0.72	0.72		0.83				1.0					1.6	
20		0.62	0.71		1.05				0.9					1.6	
21		0.70	0.67		1.00				1.0					1.7	
22		0.70	0.73		0.96				1.0					1.6	
23		0.62	0.66		0.91				1.1					1.6	
24		0.71	0.74		0.93				1.2					1.6	
25		0.68	0.68		1.16				1.0					1.7	
26		0.69	0.74		1.08				1.0					1.6	
27		0.73	0.80		1.10				1.1					1.7	
28		0.75	0.79		0.89				1.0					1.6	
29		0.76	0.70		0.92				1.1					1.6	
30		0.60	0.78		0.99				0.8					1.5	
31															
AVG		0.68	0.71		1.01				1.0					1.6	
MAX		0.78	0.80		1.16				1.2					1.7	
MIN		0.60	0.61		0.83				0.8					1.5	

FLINT
WATER PLANT & FACILITIES

Chemical Analyses **WSSN 2310** **Nov-18**

DATE	pH		Total Hardness as $CaCO_3$ mg/l		Total Alkalinity as $CaCO_3$ mg/l		NonCarbonate Hardness as $CaCO_3$ mg/l		Iron mg/L		Calcium Ca^{2+} mg/l		Magnesium as Mg^{2+} mg/l		Chloride as Cl^- mg/l	
	CSII	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
	29	30	31	32	33	34	35	36	37	38.00	39	40	41	42	43	44
1	7.49	7.54		102		80		32	0.00	0		28.1		7.8		13
2	7.49	7.54		100		84		30	0.01	0.0		28.1		7.3		14
3	7.40	7.52		100		78		30	0.00	0.01		28.1		7.3		15
4	7.45	7.47		100		70		40	0.06	0.02		24.0		9.7		14
5	7.50	7.49		100		76		30	0.02	0.01		28.1		7.3		15
6	7.47	7.48	104	106	84	82	34	36	0.02	0.03	28.1	28.1	8.7	8.3		13
7	7.50	7.42		100		84		30	0.01	0.01		28.1		7.3		15
8	7.44	7.56		106		82		36	0.01	0.01		28.1		8.7		13
9	7.53	7.52		92		78		24	0.02	0.03		27.3		5.8		13
10	7.50	7.49		100		80		36	0.02	0.03		25.7		8.7		14
11	7.50	7.57		100		84		30	0.01	0.01		28.1		7.3		12
12	7.44	7.50		106		84		36	0.03	0.00		28.1		8.7		12
13	7.44	7.51	104	106	82	84	34	36	0.01	0.02	28.1	28.1	8.3	8.7	13	13
14	7.49	7.53		100		74		30	0	0.00		28.1		7.3		15
15	7.45	7.48		100		80		30	0.01	0.02		28.1		7.3		11
16	7.48	7.54		94		80		24	0.02	0.02		28.1		5.8		13
17	7.45	7.47		102		80		28	0.01	0.02		29.7		6.8		13
18	7.44	7.50		100		80		36	0.01	0.01		25.7		8.7		13
19	7.46	7.50		102		82		30	0	0.01		28.9		7.3		15
20	7.44	7.48	98	100	82	80	26	30	0.02	0.02	72	28.1	6.3	7.3	15	15
21	7.44	7.47		100		80		30	0.02	0.02		28.1		7.3		15
22	7.40	7.46		100		82		30	0.01	0.03		28.1		7.3		16
23	7.30	7.46		104		84		34	0.03	0.02		28.1		8.3		12
24	7.43	7.53		100		82		32	0.02	0.02		27.1		7.8		16
25	7.42	7.60		106		84		38	0	0.01		27.3		9.2		12
26	7.43	7.48		100		82		32	0.01	0.01		27.3		7.8		16
27	7.44	7.48	100	100	78	80	32	28	0.02	0.01	27.3	28.9	7.78	6.8		14
28	7.49	7.57		100		82		30	0.02	0.01		28.1		7.3		15
29	7.46	7.52		102		82		34	0.01	0.02		27.3		8.26		16
30	7.32	7.53		98		82		30	0.04	0.06		27.3		7.29		16
31																
AVG	7.45	7.51		101		81		32		0.02		27.7		7.7		14
MAX	7.53	7.60		106		84		40		0.06		29.7		9.7		16.0
MIN	7.30	7.42		92		70		24		0.00		24.0		5.8		11.0

WSSN 2310 **Nov-18**

DATE	Total Coliform							Standard Plate Count		Conductivity (mS)	Temp deg.C	Color		Odor	
	Plant Tap														
			Dort	3MG Well	Sta II	Lab Tap		Raw	Tap			Raw	Tap	Raw	Tap
	60	61	62	63	64	65	66	67	68	69		71	72	73	74
1						2/0				0.22	14.9				
2						2/0				0.22	14.6				
3						2/0				0.23	13.8				
4						2/0				0.22	14.1				
5						2/0				0.22	14.0				
6						2/0				0.22	14.1				
7						2/0				0.22	15.9				
8						2/0				0.22	13.7				
9						2/0				0.22	14.0				
10						2/0				0.21	14.5				
11						2/0				0.21	14.0				
12						2/0				0.22	13.8				
13						2/0				0.22	14.1				
14						2/0				0.22	13.6				
15						2/0				0.21	13.3				
16						2/0				0.23	13.3				
17						2/0				0.23	13.1				
18						2/0				0.23	12.6				
19						2/0				0.21	13.2				
20						2/0				0.22	13.4				
21						2/0				0.22	12.7				
22						2/0				0.21	12.0				
23						2/0				0.22	12.2				
24						2/0				0.22	12.5				
25						2/0				0.23	12.3				
26						2/0				0.21	12.1				
27						2/0				0.22	11.6				
28						2/0				0.20	12.3				
29						2/0				0.22	11.3				
30						2/0				0.23	11.2				
31															
AVG										0.22	13.3				
MAX										0.23	15.9				
MIN										0.20	11.2				

Distribution System Monitoring **WSSN 2310** **Nov-18**

DATE	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l																								Chlorine only sites mg/l					
	1	2	3	4	CS	6	7	8	9	10	WR	12	13	14	15	16	17	18	19	20	26	27	28	29	30	21	22	23	24	25	Number of Samples
1	1.26	1.65	1.35	1.33	1.73																	1.49							1.26		7
2											1.14					1.40	1.40	1.15	1.20						1.50					0.89	7
3																															0
4																															0
5	1.10			1.27	1.66	1.01										1.36	1.44						0.94			1.10					8
6							0.83	1.60	1.40	1.45		0.83	0.86	1.33					1.08		1.11										9
7																															0
8	1.13	1.60	1.42	1.44	1.87															1.03		1.65		1.54				1.51	1.33		10
9											0.85				1.18	1.15	1.46	1.07	1.20						1.58					0.94	8
10																															0
11																															0
12	1.37	1.59	1.40	1.42	1.85	1.51																	1.51			1.27					8
13							1.22	1.58	1.63	1.35		1.37	0.86								1.18						1.24				8
14														1.35	0.71	1.42	1.52	1.17	1.10					1.35				1.51			8
15	1.21	1.63	1.15	0.98	1.48															1.05		1.58							1.38		8
16											1.44					1.47	1.19	0.79	1.33						1.58					1.06	7
17																															0
18																															0
19	1.15	1.50	1.42	1.42	1.79	1.42														0.99			1.49			1.08					9
20							1.13	0.65	1.52	1.53			0.97								0.70	1.04					1.27				8
21														1.30	0.95	1.56	1.45	1.20	1.30					0.84				1.66			8
22																															0
23											1.55					1.35	1.62	1.10												1.24	5
24																															0
25																															0
26	1.26		1.27	1.41	1.17	1.29																	1.06								6
27							1.27	1.61	1.62	1.55			0.94								1.24						1.29				7
28														0.90	0.90	1.73	1.42	1.00	0.42					1.53				1.67			8
29	1.20	1.43	1.38	1.44	1.38							0.66								1.10		1.55							1.35		9
30											1.31					1.44	1.64	1.22	0.26						1.52					1.42	7
31																															0

Monthly Cl_2 Avg.	**1.29**
Total Samples	**136**

Distribution System Monitoring **WSSN 2310** **Nov-18**

DATE	Total Chlorine Residual at Bacteriological Monitoring Stations mg/l																								Chlorine only sites mg/l					
	1	2	3	4	CS	6	7	8	9	10	WR	12	13	14	15	16	17	18	19	20	26	27	28	29	30	21	22	23	24	25	Number of Samples
1	1.51	1.94	1.68	1.63	2.03																	1.80							1.51		7
2											1.43					1.78	1.71	1.34	1.39						1.85					1.31	7
3																															0
4																															0
5	1.34			1.52	1.97	1.65										1.71	1.71						1.13			1.48					8
6							1.07	1.74	1.64	1.83		1.07	1.12	1.72					1.40		1.31										9
7																															0
8	1.37	1.79	1.64	1.65	2.06															1.19		1.92		1.79				1.71	1.58		10
9											1.35				1.46	1.73	1.80	1.42	1.53						1.79					1.20	8
10																															0
11																															0
12	1.61	1.89	1.64	1.66	2.04	1.72																	1.73			1.51					8
13							1.55	1.79	1.75	1.79		1.79	1.24								1.37						1.48				8
14														1.69	1.40	1.76	1.85	1.47	1.45					1.80				1.80			8
15	1.57	2.03	1.67	1.60	2.00															1.26		1.96							1.61		8
16											1.78					1.77	1.92	1.49	1.59						1.93					1.44	7
17																															0
18																															0
19	1.47	1.86	1.73	1.67	2.00	1.71														1.19			1.71			1.50					9
20							1.70	1.81	1.77	1.79			1.19								1.51	1.96					1.54				8
21														1.59	1.34	1.77	1.73	1.43	1.56					1.85				1.91			8
22																															0
23											1.69					1.57	1.81	1.27												1.46	5
24																															0
25																															0
26	1.51		1.63	1.61	1.39	1.46																	1.64								6
27							1.59	1.85	1.92	1.79			1.13								1.48						1.55				7
28														1.03	1.11	1.89	1.76	1.23	0.59					1.81				1.81			8
29	1.38	1.72	1.59	1.62	1.79							1.33								1.45		1.80							1.40		9
30											1.72					1.80	1.83	1.30	0.40						1.76					1.60	7
31																															0

Monthly Cl_2 Avg.	**1.61**
Total Samples	**136**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Nov-18

Total number of positive routine samples:				Total Coliform: 0			E.coli Bacteria: 0		Chlorine Residual (mg/L)	
Date	Monitoring Station	Total Coliform	E.coli Bacteria	Date	Time	Retest of Station, Upstream & Downstream	Total Coliform	E.coli Bacteria	Free	Total

Total number of routine distribution samples analyzed:	136
Total number of routine distribution samples required:	100