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

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

MONTHLY OPERATION REPORT
OF
WATER TREATMENT PLANT

For Month of December 2015

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

[redacted]

F-1R
CLASSIFICATION

[redacted]
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons
11. Total Power Cost per Million Gallons

Remarks:

DEQ
RESOURCE MANAGEMENT DIVISION
JAN 14 2016
LANSING DISTRICT

Submit to: [redacted]

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

FLINT WATER PLANT & FACILITIES

Dec-15

DATE	Total Million Gallons Purchased	Phosphate as PO4 (mg/L) CSII	Phosphate applied as PO4 (mg/L)	Phosphate as PO4 (mg/L) Tap	Turbidity, NTU units: Raw # of Samples	Raw Avg.	Raw Max		Plant Tap # of Samples	Plant Tap Avg.	Plant Tap Max
	1	1A	1B	6	7	8	9	10	11	12	13
1	12.0	1.27	n/a	1.22					2	0.10	0.11
2	11.6	1.16	n/a	1.17					2	0.09	0.11
3	11.8	1.15	n/a	1.19					2	0.14	0.19
4	12.1	1.17	n/a	1.18					2	0.10	0.10
5	11.3	1.15	n/a	1.22					2	0.10	0.11
6	12.3	1.19	n/a	1.21					2	0.11	0.12
7	12.4	1.18	n/a	1.09					2	0.10	0.11
8	13.1	1.22	n/a	1.16					2	0.08	0.09
9	11.8	1.31	2.75	1.20					2	0.12	0.14
10	11.3	1.19	2.46	3.19					2	0.11	0.13
11	11.5	1.17	2.46	3.35					2	0.11	0.13
12	12.0	1.03	2.79	3.37					2	0.16	0.16
13	11.0	1.10	2.80	3.32					2	0.09	0.09
14	12.3	1.12	2.67	3.73					2	0.09	0.09
15	11.6	1.18	2.70	3.89					2	0.10	0.10
16	13.1	1.18	2.70	3.79					2	0.14	0.15
17	12.0	1.21	2.60	3.44					2	0.12	0.13
18	11.6	1.28	2.60	3.76					2	0.13	0.14
19	11.1	1.24	2.60	3.60					2	0.13	0.14
20	10.8	1.25	2.50	3.91					2	0.16	0.19
21	11.0	1.15	2.50	3.08					2	0.17	0.20
22	11.5	1.22	2.70	3.76					2	0.10	0.10
23	11.6	1.26	2.30	3.46					2	0.15	0.17
24	11.1	1.24	2.30	2.96					2	0.16	0.20
25	11.3	1.22	2.40	3.09					2	0.18	0.20
26	11.1	1.26	2.45	3.52					2	0.13	0.15
27	11.7	1.25	2.80	3.60					2	0.11	0.11
28	12.9	1.20	2.60	3.47					2	0.14	0.14
29	11.9	1.27	2.40	3.47					2	0.15	0.16
30	11.9	1.26	2.60	3.80					2	0.11	0.11
31	10.5	1.23	2.60	3.80					2	0.13	0.15
AVG	11.72	1.20	2.58	2.84					2	0.12	0.14
MAX	13.10	1.31	2.80	3.91					2	0.18	0.20
MIN	10.50	1.03	2.30	1.09					2	0.08	0.09
Total	363.27										

Flouridation & Chlorination **WSSN 2310** **Dec-15**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Chlorine (prior to filtration) mg/L OCl-	Post Chlorine mg/L		Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist					Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			0.73						1.0					0.9	
2			0.73						1.0					0.9	
3			0.71						1.0					0.9	
4			0.74						0.9					0.9	
5			0.74						1.0					0.9	
6			0.71						0.9					0.8	
7			0.70						0.9					0.9	
8			0.74						1.0					0.9	
9			0.75						1.0					0.9	
10			0.72						0.9					0.9	
11			0.76						1.0					0.9	
12			0.73						1.1					1.0	
13			0.69						0.9					0.9	
14			0.68						0.9					0.9	
15			0.73						1.0					1.0	
16			0.70						0.9					0.8	
17			0.70						1.0					0.9	
18			0.71						0.9					1.0	
19			0.68						1.0					0.9	
20			0.66						1.0					0.8	
21			0.68						1.0					0.7	
22			0.73						1.0					1.0	
23			0.68						1.0					0.7	
24			0.68						1.0					0.6	
25			0.70						0.9					0.5	
26			0.72						1.0					0.9	
27			0.70						1.0					0.9	
28			0.69						0.9					0.9	
29			0.70						1.0					1.0	
30			0.71						0.9					0.9	
31			0.69						0.9					0.9	
AVG			0.71						1.0					0.9	
MAX			0.76						1.1					1.0	
MIN			0.66						0.9					0.5	

Chemical Analyses **WSSN 2310** **Dec-15**

DATE	pH		Total Hard as $CaCO_3$ mg/l		Total Alk as $CaCO_3$ mg/l		NonCarbonate Hardness as $CaCO_3$ mg/l				Calcium Ca ++ mg/l		Magnesium as Mg ++ 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	39	40	41	42	43	44
1	7.39	7.43		98		68		30				30.5		5.4		15
2	7.64	7.41		106		74		32				33.7		5.4		14
3	7.38	7.42		102		74		28				32.1		5.3		15
4	7.54	7.48		108		74		34				36.1		4.4		12
5	7.45	7.43		102		74		28				29.7		6.8		11
6	7.42	7.42		100		74		26				30.5		5.8		10
7	7.43	7.41		102		74		28				31.3		5.8		11
8	7.44	7.42		102		72		30				30.5		6.3		14
9	7.50	7.44		104		72		32				31.3		6.3		14
10	7.46	7.35		102		72		30				29.7		6.8		14
11	7.43	7.28		96		72		24				32.1		3.9		15
12	7.48	7.30		94		74		20				31.3		3.9		16
13	7.35	7.30		100		72		28				32.1		4.9		11
14	7.41	7.29		98		74		24				29.7		5.8		11
15	7.46	7.26		98		74		24				29.7		5.8		11
16	7.40	7.29		104		74		30				31.3		6.3		14
17	7.35	7.30		100		74		26				31.3		5.3		15
18	7.46	7.27		106		68		38				29.7		7.8		14
19	7.50	7.31		100		70		30				33.7		3.9		15
20	7.48	7.30		100		74		26				30.5		6.3		11
21	7.43	7.27		100		74		26				32.9		4.4		14
22	7.44	7.29		106		72		34				32.1		6.3		15
23	7.42	7.29		100		72		28				30.5		5.8		14
24	7.60	7.30		106		74		32				30.5		7.3		14
25	7.45	7.28		100		68		32				34.5		3.4		13
26	7.42	7.37		104		72		32				32.1		5.8		14
27	7.42	7.31		100		74		26				30.5		5.8		11
28	7.44	7.30		96		74		22				30.5		4.9		12
29	7.64	7.32		98		66		32				31.3		4.9		14
30	7.33	7.27		100		68		32				31.3		5.3		14
31	7.44	7.28		100		72		28				32.1		4.9		14
AVG	7.45	7.34		101		72		29				31.5		5.5		13.3
MAX	7.64	7.48		108		74		38				36.1		7.8		16.0
MIN	7.33	7.26		94		66		20				29.7		3.4		10.0

Bacteriological & Physical Parameters **WSSN 2310** **Dec-15**

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	2/0	2/0	2/0			< 2	0.21	15.3				
2			2/0	2/0	2/0	2/0			< 2	0.21	16.3				
3			2/0	2/0	2/0	2/0			< 2	0.21	15.7				
4			2/0	2/0	2/0	2/0			< 2	0.21	15.4				
5			2/0	2/0	2/0	2/0			< 2	0.21	16.8				
6			2/0	2/0	2/0	2/0			< 2	0.21	15.4				
7			2/0	2/0	2/0	2/0			< 2	0.21	14.3				
8			2/0	2/0	2/0	2/0			< 2	0.21	14.9				
9			2/0	2/0	2/0	2/0			< 2	0.21	14.8				
10			2/0	2/0	2/0	2/0			< 2	0.21	17.4				
11			2/0	2/0	2/0	2/0			< 2	0.21	15.6				
12			2/0	2/0	2/0	2/0			< 2	0.21	16.0				
13			2/0	2/0	2/0	2/0			< 2	0.21	15.9				
14			2/0	2/0	2/0	2/0			< 2	0.21	15.5				
15			2/0	2/0	2/0	2/0			< 2	0.21	15.9				
16			2/0	2/0	2/0	2/0			< 2	0.21	15.5				
17			2/0	2/0	2/0	2/0			< 2	0.21	15.2				
18			2/0	2/0	2/0	2/0			< 2	0.21	15.8				
19			2/0	2/0	2/0	2/0			< 2	0.21	17.8				
20			2/0	2/0	2/0	2/0			< 2	0.20	16.0				
21			2/0	2/0	2/0	2/0			< 2	0.22	20.8				
22			2/0	2/0	2/0	2/0			< 2	0.21	16.9				
23			2/0	2/0	2/0	2/0			< 2	0.22	20.1				
24			2/0	2/0	2/0	2/0			< 2	0.22	21.3				
25			2/0	2/0	2/0	2/0			< 2	0.21	17.4				
26			2/0	2/0	2/0	2/0			< 2	0.21	16.8				
27			2/0	2/0	2/0	2/0			< 2	0.20	16.2				
28			2/0	2/0	2/0	2/0			< 2	0.21	16.3				
29			2/0	2/0	2/0	2/0			< 2	0.21	15.9				
30			2/0	2/0	2/0	2/0			< 2	0.21	15.9				
31			2/0	2/0	2/0	2/0			< 2	0.21	15.8				
											16.4				
											21.3				
											14.3				

Distribution System Monitoring **WSSN 2310** **Dec-15**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WR	Number of Samples
1	0.3	1.1	0.7	0.5	0.5	0.3	0.3	1.0	0.6	0.8	10
2	0.1	1.0	0.9	0.7	0.5	0.1	0.2	0.8	0.9	1.1	10
3	0.2	0.6	0.8	0.5	0.3	0.2	0.4	0.8	0.8	1.0	10
4											0
5											0
6											0
7											0
8	0.3	1.0	0.9	0.8	0.5	0.2	0.3	0.9	0.8	0.8	10
9	0.2	0.9	0.8	0.6	0.5	0.2	0.3	0.8	0.7	0.9	10
10	0.2	1.0	0.7	0.6	0.3	0.2	0.4	0.8	0.8	0.8	10
11											0
12											0
13											0
14											0
15											0
16	0.2	0.9	0.7	0.7	0.4	0.1	0.7	0.7	0.7	0.8	10
17	0.3	1.0	0.6	0.7	0.4	0.2	0.5	0.8	0.7	0.8	10
18											0
19											0
20											0
21											0
22	0.3	0.8	0.8	0.8	0.7	0.2	0.8	0.8	1.0	3.2	10
23	0.3	0.9	1.3	0.7	0.6	0.2	0.5	0.9	1.8	3.1	10
24											0
25											0
26											0
27											0
28											0
29											0
30											0
31											0

Monthly Cl_2 Avg.	**0.678**
Total Samples	**100**

Distribution System Monitoring **WSSN 2310** **Dec-15**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WR	Number of Samples
1	0.5	1.3	0.9	0.7	0.7	0.5	0.5	1.2	0.8	1.0	10
2	0.3	1.2	1.1	0.9	0.7	0.3	0.4	1.0	1.1	1.3	10
3	0.4	0.8	1.0	0.7	0.5	0.4	0.6	1.0	1.0	1.2	10
4											0
5											0
6											0
7											0
8	0.5	1.2	1.1	1.0	0.8	0.4	0.5	1.1	1.0	1.0	10
9	0.4	1.1	1.0	0.8	0.7	0.4	0.5	1.0	0.9	1.0	10
10	0.4	1.2	0.9	0.8	0.5	0.4	0.6	1.0	1.0	1.0	10
11											0
12											0
13											0
14											0
15											0
16	0.4	1.1	0.9	0.9	0.6	0.3	0.9	0.8	0.9	1.0	10
17	0.5	1.2	0.8	0.9	0.6	0.2	0.7	1.0	0.9	1.0	10
18											0
19											0
20											0
21											0
22	0.5	1.0	1.0	1.0	0.9	0.4	1.0	1.0	1.2	3.4	10
23	0.5	1.1	1.5	0.9	2.7	0.4	0.7	1.1	2.0	3.3	10
24											0
25											0
26											0
27											0
28											0
29											0
30											0
31											0

Monthly Cl_2 Avg.	**0.894**
Total Samples	**100**

ROUTINE POSITIVE DISTRIBUTION SAMPLES

Dec-15

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform

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

D-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 2015

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

[redacted] — F-1R
CLASSIFICATION

[redacted]
SIGNATURE OF APPROPRIATE OFFICIAL

TREATMENT RATE AND FILTER DATA

1. Treatment Rate, Maximum____ Million Gallons Per Day
2. Treatment Rate, Approved Rated Plant Capacity____Million Gallons per Day
3. Average Filter Run___ Hours, Average Head Loss _____Feet
4. Average Filtration Rate _____ Gallons per Square Ft. per Minute
5. Maximum Filtration Rate _____ Gallons per Square Ft. per Minute
6. Average Wash Water Use _____ percent of Treated Water

CHEMICAL DATA

7. Chlorine on hand _____ lbs.: Estimated supply _____ days
8. Lime (CaO) on hand _____ lbs.: Estimated supply _____ days
9. Alum (Al3+) on hand _____ lbs.: Estimated supply _____ days
10. Cost of All Chemicals per Million Gallons
11. Total Power Cost per Million Gallons

Remarks:

DEQ
RESOURCE MANAGEMENT DIVISION
DEC 17 2015
LANSING DISTRICT

Submit to [redacted]

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

FLINT WATER PLANT & FACILITIES

Nov-15

DATE	Total Million Gallons Purchased	Phosphate as PO4 (mg/L)	Phosphate applied as PO4 (mg/L)	Phosphate as PO4 (mg/L)	Turbidity, NTU units						
					Raw				Plant Tap		
		Tap		Tap	# of Samples	Avg.	Max		# of Samples	Avg.	Max
	1	1A	1B	6	7	8	9	10	11	12	13
1	11.4	1.17							2	0.08	0.08
2	11.9	1.20							2	0.07	0.08
3	11.7	1.20							2	0.10	0.11
4	10.5	1.05							2	0.10	0.10
5	12.6	1.16							2	0.09	0.09
6	12.7	1.19							2	0.09	0.10
7	13.7	1.20							2	0.09	0.10
8	11.0	1.05							2	0.10	0.13
9	12.1	1.18							2	0.09	0.09
10	12.1	1.20							2	0.08	0.08
11	12.3	1.12							2	0.08	0.08
12	13.6	1.25							2	0.11	0.11
13	13.9	1.29							2	0.10	0.10
14	11.9	1.18							2	0.12	0.14
15	11.1	1.17							2	0.12	0.14
16	10.0	1.11							2	0.11	0.12
17	12.3	1.19							2	0.11	0.12
18	11.2	1.17							2	0.08	0.09
19	11.9	1.19							2	0.11	0.13
20	12.5	1.18							2	0.10	0.11
21	12.9	1.18							2	0.10	0.11
22	11.7	1.17							2	0.15	0.21
23	10.8	1.16							2	0.10	0.11
24	10.8	1.14							2	0.11	0.13
25	12.2	1.19							2	0.17	0.18
26	13.1	1.13							2	0.12	0.15
27	10.9	1.15							2	0.12	0.12
28	9.8	1.08							2	0.09	0.11
29	10.7	1.12							2	0.07	0.07
30	12.6	1.21							2	0.10	0.11
AVG	11.86	1.17							2	0.10	0.11
MAX	13.90	1.29							2	0.17	0.21
MIN	9.80	1.05							2	0.07	0.07
Total	355.90										

Flouridation & Chlorination **WSSN 2310** **Nov-15**

DATE	Fluoride Applied F- mg/l	Fluoride Analyses mg/l			Chlorine App. Mg/l			Chlorine Residual mg/l							
						Chlorine (prior to filtration) mg/L OCl-	Post Chlorine mg/L		Sta II	Dort	3MG Well		Tap		
		Raw	Tap	Dist					Free	Free	Free			Free	
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1			0.76						0.9					0.8	
2			0.78						0.9					0.8	
3			0.77						0.9					0.7	
4			0.77						0.9					0.5	
5			0.79						0.7					0.8	
6			0.77						0.7					0.8	
7			0.78						0.9					0.8	
8			0.76						0.9					0.8	
9			0.76						0.7					0.5	
10			0.76						0.8					0.7	
11			0.81						0.8					0.8	
12			0.78						0.9					0.8	
13			0.79						0.8					0.8	
14			0.81						0.9					0.8	
15			0.78						0.9					0.8	
16			0.75						0.9					0.7	
17			0.75						1.0					0.7	
18			0.73						1.0					0.9	
19			0.73						0.9					0.8	
20			0.69						0.8					0.7	
21			0.69						0.7					0.7	
22			0.70						0.6					0.8	
23			0.70						0.9					0.9	
24			0.69						0.9					1.0	
25			0.69						0.9					0.8	
26			0.65						0.7					0.7	
27			0.68						0.9					0.8	
28			0.65						0.9					0.8	
29			0.71						1.0					0.9	
30			0.73						1.0					1.0	
AVG			0.74						0.9					0.8	
MAX			0.81						1.0					1.0	
MIN			0.65						0.6					0.5	

FLINT WATER PLANT & FACILITIES

Chemical Analyses **WSSN 2310** **Nov-15**

DATE	pH		Total Hard as $CaCO_3$ mg/l		Total Alk as $CaCO_3$ mg/l		NonCarbonate Hardness as $CaCO_3$ mg/l				Calcium Ca ++ mg/l		Magnesium as Mg ++ mg/l		Chloride as Cl - mg/l	
	Raw	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	39	40	41	42	43	44
1		7.42		102		72		30				32.1		5.3		12
2		7.38		100		72		28				31.3		5.3		11
3		7.39		98		72		26				30.5		5.3		12
4		7.40		98		74		24				29.7		5.8		13
5		7.40		96		72		24				29.7		5.3		12
6		7.40		100		48		52				28.9		6.8		13
7		7.41		98		70		28				30.5		5.3		11
8		7.39		102		74		28				30.5		6.3		12
9		7.37		100		74		26				30.5		5.8		12
10		7.39		104		74		30				31.3		6.3		11
11		7.41		100		72		28				29.7		6.3		12
12		7.39		98		72		26				30.5		5.3		12
13		7.58		96		72		24				31.3		4.3		12
14		7.45		100		74		26				31.3		5.3		11
15		7.47		98		70		28				30.5		5.3		14
16		7.43		98		74		24				30.5		5.4		12
17		7.44		106		74		32				31.3		6.8		11
18		7.44		98		72		26				24.7		5.8		13
19		7.42		100		74		26				31.3		5.4		12
20		7.46		98		74		24				30.5		5.4		12
21		7.45		118		72		46				27.3		9.7		13
22		7.44		100		76		24				30.5		5.8		11
23		7.45		100		74		26				31.3		5.4		11
24		7.42		110		74		36				34.5		5.8		14
25		7.46		108		74		34				29.7		8.3		13
26		7.38		98		74		24				31.3		4.9		10
27		7.42		108		72		36				32.1		6.8		15
28		7.38		100		68		32				34.5		3.4		15
29		7.42		96		74		22				29.7		5.4		11
30		7.43		96		74		22				29.7		5.4		11
AVG		7.42		101		72		29				30.6		5.8		12.1
MAX		7.58		118		76		52				34.5		9.7		15.0
MIN		7.37		96		48		22				24.7		3.4		10.0

Bacteriological & Physical Parameters **WSSN 2310** **Nov-15**

DATE	Total Coliform							Standard Plate Count		Wind Direction	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	2/0	2/0	2/0			< 2		14.3				
2			2/0	2/0	2/0	2/0			< 2		14.3				
3			2/0	2/0	2/0	2/0			< 2		14.8				
4			2/0	2/0	2/0	2/0			< 2		14.6				
5			2/0	2/0	2/0	2/0			< 2		14.0				
6			2/0	2/0	2/0	2/0			< 2		14.9				
7			2/0	2/0	2/0	2/0			< 2		13.9				
8			2/0	2/0	2/0	2/0			< 2		15.1				
9			2/0	2/0	2/0	2/0			< 2		14.1				
10			2/0	2/0	2/0	2/0			< 2		13.8				
11			2/0	2/0	2/0	2/0			< 2		15.9				
12			2/0	2/0	2/0	2/0			< 2		16.0				
13			2/0	2/0	2/0	2/0			< 2		16.5				
14			2/0	2/0	2/0	2/0			< 2		17.2				
15			2/0	2/0	2/0	2/0			< 2		19.8				
16			2/0	2/0	2/0	2/0			< 2		20.2				
17			2/0	2/0	2/0	2/0			< 2		20.0				
18			2/0	2/0	2/0	2/0			< 2		18.5				
19			2/0	2/0	2/0	2/0			< 2		18.4				
20			2/0	2/0	2/0	2/0			< 2		17.4				
21			2/0	2/0	2/0	2/0			< 2		16.8				
22			2/0	2/0	2/0	2/0			< 2		20.1				
23			2/0	2/0	2/0	2/0			< 2		16.6				
24			2/0	2/0	2/0	2/0			< 2		17.6				
25			2/0	2/0	2/0	2/0			< 2		19.1				
26			2/0	2/0	2/0	2/0			< 2		16.2				
27			2/0	2/0	2/0	2/0			< 2		17.6				
28			2/0	2/0	2/0	2/0			< 2		18.3				
29			2/0	2/0	2/0	2/0			< 2		15.9				
30			2/0	2/0	2/0	2/0			< 2		15.2				
											16.6				
											20.2				
											13.8				

Distribution System Monitoring **WSSN 2310** **Nov-15**

DATE	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WR	Number of Samples
1											0
2											0
3	0.3	0.7	0.9	0.4	0.4	0.1	0.4	0.6	0.4	0.5	10
4	0.1	0.8	0.8	0.4	0.5	0.1	0.3	0.7	0.5	0.5	10
5	0.2	0.5	0.7	0.3	0.4	0.1	0.6	0.6	0.4	0.6	10
6											0
7											0
8											0
9											0
10	0.3	0.5	0.7	0.4	0.4	0.1	0.1	0.6	0.9	0.7	10
11	0.1	0.6	0.5	0.5	0.3	0.1	0.4	0.6	0.7	0.8	10
12	0.1	0.8	0.8	0.7	0.3	0.1	0.6	0.7	0.7	0.8	10
13											0
14											0
15											0
16											0
17	0.1	0.6	0.7	0.5	0.5	0.1	0.2	0.6	0.6	0.8	10
18	0.1	0.6	0.7	0.6	0.6	0.1	0.5	0.7	0.8	0.8	10
19	0.1	0.7	0.8	0.5	0.3	0.1	0.4	0.8	0.9	0.9	10
20											0
21											0
22											0
23											0
24	0.1	0.9	0.7	0.4	0.4	0.1	0.3	0.9	0.6	0.8	10
25											0
26											0
27											0
28											0
29											0
30											0

Monthly Cl_2 Avg.	**0.496**
Total Samples	**100**

Distribution System Monitoring **WSSN 2310** **Nov-15**

DATE	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WR	Number of Samples
1											0
2											0
3	0.4	0.8	1.0	0.5	0.5	0.2	0.5	0.7	0.5	0.7	10
4	0.2	0.9	0.9	0.5	0.6	0.2	0.4	0.8	0.6	0.6	10
5	0.3	0.7	0.8	0.4	0.5	0.2	0.7	0.7	0.5	0.8	10
6											0
7											0
8											0
9											0
10	0.4	0.6	0.8	0.5	0.5	0.2	0.2	0.7	1.0	0.9	10
11	0.2	0.7	0.6	0.6	0.4	0.2	0.5	0.7	0.8	0.9	10
12	0.2	0.9	0.9	0.8	0.4	0.2	0.8	0.7	0.8	0.9	10
13											0
14											0
15											0
16											0
17	0.2	0.8	0.8	0.7	0.7	0.3	0.4	0.7	0.8	0.9	10
18	0.3	0.8	0.8	0.8	0.8	0.2	0.7	0.9	1.0	1.0	10
19	0.3	0.9	1.0	0.7	0.5	0.3	0.6	1.0	1.1	1.1	10
20											0
21											0
22											0
23											0
24	0.3	1.1	0.9	0.6	0.6	0.2	0.5	1.1	0.8	1.0	10
25											0
26											0
27											0
28											0
29											0
30											0

Monthly Cl_2 Avg.	**0.633**
Total Samples	**100**

FLINT WATER PLANT & FACILITIES

ROUTINE POSITIVE DISTRIBUTION SAMPLES Nov-15

Total number of positive routine samples:				Total Coliform: 0		Fecal Coliform: 0	
Date	Monitoring Station	Total Coliform	Fecal Coliform	Date	Retest of Station, Upstream & Downstream	Total Coliform	Fecal Coliform
Total number of routine distribution samples analyzed:				100			
Total number of routine distribution samples required:				100			

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

October 2015
Month/Year

F-1R, F-2
Certification of Operator [redacted]

F-1
Water Plant Classification

[redacted]
Signature of Operator-in-Ch[redacted]

Genesee
County

Treatment Rate and Filter Data

Maximum Treatment Rate:	18.3	Million Gallons per Day	
Rated Plant Capacity:	36	Million Gallons per Day	
Average Filter Run:	63	Hours	
Average Head Loss:	n/a	Feet	*(filter head loss meters not operational)
Average Filtration Rate:	1.9	Gallons Per Square Feet per Minute	
Maximum Filtration Rate:	3.1	Gallons Per Square Feet per Minute	
Average Wash Water Use:	2.7%	Percent of Treated Water	

Chemical Data

Chlorine on hand:	18,000	lb.	Est. supply:	33	days
Primary Coagulant (Ferric Chloride) on hand:	181,220	lb.	Est. supply:	14	days
Lime (CaO) on hand:	161	tons	Est. supply:	15	days
Fluoride on Hand:	2,100	lb.	Est. supply:	6	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	0	0
Number of filter confluence samples collected:	82	82
Percent of filter confluence samples > 0.3 NTU:	0.0%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Coagulation Parameters & Softening Chemical Application

City of Flint Water Treatment Plant

October 2015

WSSN: 2310

Date	Million Gallons Treated	Million Gallons Purchased	Ozone Dosage (mg/L)	Ferric as Fe^{3+} mg/L	Lime Dosage (mg/L)	PW-340 Cationic Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
								Raw			Plate Settler	Applied
								Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	16.0		3.4	16.3	149.4	5.6	0.82	6	16.2	28.3	8.30	1.10
2	3.4		2.7	16.3	149.3	5.4	0.77	2	15.8	15.9	9.00	0.99
3	0.0		n/a	n/a	n/a	n/a	n/a	0	n/a	n/a	n/a	n/a
4	8.1		3.7	15.9	161.4	5.3	0.93	6	12.7	16.0	4.30	2.81
5	11.9		3.9	17.0	179.5	5.3	0.93	6	8.4	9.3	5.97	2.86
6	13.4		3.5	14.9	198.6	5.4	0.85	6	10.4	19.8	6.80	1.64
7	14.2		3.7	14.4	182.8	5.5	0.86	6	12.1	19.8	7.41	1.60
8	15.1		3.7	13.5	154.5	5.3	0.89	6	8.6	12.6	6.76	1.77
9	16.2		3.5	12.6	130.3	5.0	0.85	6	13.6	21.2	3.01	1.58
10	17.3		4.9	12.0	123.3	5.2	0.92	6	9.3	12.3	3.62	3.41
11	16.1		3.5	12.8	133.0	5.4	0.90	6	10.4	12.3	3.50	3.01
12	15.5		3.6	13.3	162.1	5.1	0.95	6	7.3	8.2	3.67	1.45
13	15.1		3.3	15.7	178.4	5.2	0.91	6	11.1	18.8	3.64	1.16
14	14.8		3.4	16.4	182.6	5.3	0.90	6	8.9	16.3	3.60	1.20
15	15.5		3.6	15.3	163.6	5.0	0.93	6	9.5	16.1	3.99	1.35
16	11.4		3.5	15.6	167.8	5.0	0.90	5	11.3	16.9	4.15	2.35
17		14.4										
18		12.6										
19		13.0										
20		12.2										
21		13.4										
22		11.3										
23		12.3										
24		11.2										
25		10.7										
26		10.7										
27		12.5										
28		11.9										
29		11.7										
30		13.9										
31		11.8										
Avg.	12.8	12.2	3.6	14.8	161.1	5.3	0.89	5	11.0			1.89
Max.	17.3	14.4	4.9	17.0	198.6	5.6	0.95	6	16.2	28.3	9.00	3.41
Min.	0.0	10.7	2.7	12.0	123.3	5.0	0.77	0	7.3			0.99
Total	204.0											

City of Flint Water Treatment Plant

WSSN: 2310

Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	6	0.09	0.10	6	0	0	6	0.08	0.09	6	0	0	0.08
2	2	0.09	0.10	2	0	0	2	0.12	0.13	2	0	0	0.08
3	0	n/a	n/a	0	0	0	0	n/a	n/a	0	0	0	n/a
4	4	0.11	0.13	4	0	0	4	0.11	0.15	4	0	0	0.10
5	5	0.10	0.11	5	0	0	5	0.09	0.10	5	0	0	0.09
6	6	0.10	0.11	6	0	0	6	0.09	0.11	6	0	0	0.09
7	6	0.09	0.10	6	0	0	6	0.09	0.10	6	0	0	0.09
8	6	0.10	0.12	6	0	0	6	0.10	0.12	6	0	0	0.10
9	6	0.10	0.10	6	0	0	6	0.09	0.09	6	0	0	0.09
10	6	0.12	0.13	6	0	0	6	0.12	0.13	6	0	0	0.11
11	6	0.12	0.14	6	0	0	6	0.11	0.12	6	0	0	0.12
12	6	0.11	0.13	6	0	0	6	0.11	0.12	6	0	0	0.10
13	6	0.11	0.13	6	0	0	6	0.09	0.10	6	0	0	0.11
14	6	0.10	0.12	6	0	0	6	0.09	0.10	6	0	0	0.09
15	6	0.10	0.11	6	0	0	6	0.10	0.11	6	0	0	0.10
16	5	0.12	0.14	5	0	0	5	0.12	0.15	5	0	0	0.10
17													0.31
18													0.34
19													0.11
20													0.10
21													0.10
22													0.08
23													0.09
24													0.08
25													0.08
26													0.07
27													0.08
28													0.08
29													0.08
30													0.10
31													0.08
Avg.	5	0.10	0.12	5	0	0	5	0.10	0.11	5	0	0	
Max.	6	0.12	0.14	6	0	0	6	0.12	0.15	6	0	0	0.34
Min.	0	0.09	0.10	0	0	0	0	0.08	0.09	0	0	0	

WSSN: 2310

Date	Fluoride Applied as F- mg/L	Fluoride Analysis (mg/L)			Phosphate Application (mg/L)			Phosphate Residual (mg/L)	Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					C.S. #2	P.S. #4	Total		Intermediate Chlorine	Post Chlorine	Total Chlorine	C.S. # 2		3 MG Well		Tap	
		Raw	Tap	Dist.				Tap				Free	Total	Free	Total	Free	Total
1	0.5	0.21	0.73							4.7	4.7			2.3	2.6	1.8	2.1
2	0.5	0.22	0.71							4.5	4.5			2.7	3.0	2.1	2.4
3	n/a	n/a	0.74							n/a	0.0			1.9	2.1	1.6	1.8
4	0.6	0.21	0.74							3.7	3.7			1.1	1.3	1.6	1.8
5	0.5	0.22	0.67							5.0	5.0			2.4	2.7	2.3	2.6
6	0.6	0.21	0.81							4.5	4.5			2.1	2.4	2.0	2.3
7	0.5	0.22	0.73							4.6	4.6			2.1	2.4	2.0	2.3
8	0.5	0.22	0.70	0.76						4.5	4.5			2.1	2.3	2.1	2.4
9	0.6	0.25	0.72							4.1	4.1			2.3	2.5	2.2	2.4
10	0.5	0.24	0.68							4.2	4.2			2.0	2.3	1.9	2.2
11	0.5	0.22	0.72							4.4	4.4			2.4	2.7	1.5	1.9
12	0.5	0.24	0.73							4.2	4.2			2.3	2.5	2.3	2.6
13	0.5	0.23	0.73							4.4	4.4			2.0	2.3	2.0	2.3
14	0.5	0.21	0.73	0.69						4.2	4.2			2.2	2.5	2.2	2.5
15	0.5	0.21	0.72							4.3	4.3			2.2	2.5	2.2	2.5
16	0.5	0.21	0.72							4.2	4.2			2.1	2.4	2.2	2.5
17			0.68									0.8	1.0			0.8	1.0
18			0.70					1.15				0.8	1.0			0.7	0.9
19			0.66									0.9	1.1			0.9	1.0
20			0.68	0.67				1.19				0.9	1.1			0.9	1.1
21			0.68					1.22				0.9	1.1			0.7	0.9
22			0.64					1.16				0.8	1.0			0.8	1.0
23			0.66									0.9	1.1			0.9	1.1
24			0.66					1.24				0.9	1.1			0.9	1.1
25			0.62									0.9	1.1			0.9	1.0
26			0.67					1.14				0.9	1.0			0.9	1.0
27			0.68	0.66								1.0	1.1			1.0	1.1
28			0.66					1.28				0.9	1.0			0.9	1.0
29		0.23	0.69					1.26				0.8	0.9			0.8	0.9
30			0.74									0.9	1.1			0.8	1.1
31			0.76									0.9	1.1			0.8	1.0
Avg.	0.51	0.22	0.70	0.70					0.0	4.4	4.1	0.9	1.1	2.1	2.4	1.4	1.7
Max.	0.60	0.25	0.81	0.78					0.0	5.0	5.0	1.0	1.1	2.7	3.0	2.3	2.6
Min.	0.50	0.21	0.62	0.66					0.0	3.7	0.0	0.8	0.9	1.1	1.3	0.7	0.9

Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.13	7.33	260	136	228	42	32	94	82.8	44.9	13.1	5.8	43	84
2	8.19	7.15	272	146	220	36	52	110	84.2	50.5	15	4.9	47	88
3	n/a	7.26	n/a	138	n/a	38	n/a	100	n/a	42.5	n/a	7.8	n/a	86
4	8.27	7.19	260	130	222	36	38	94	83.4	42.5	12.6	5.8	47	87
5	8.32	7.55	262	152	222	50	40	102	85.0	48.8	12.3	7.3	46	84
6	8.31	7.37	272	134	228	40	46	94	77.0	36.1	19.4	10.7	50	88
7	8.30	7.46	266	134	228	40	38	94	82.6	42.5	14.6	6.8	44	80
8	8.35	7.36	262	134	224	44	38	90	84.2	44.1	12.6	5.8	46	82
9	8.28	7.54	264	128	220	42	44	86	90.6	36.9	9.2	8.7	47	83
10	8.27	7.81	264	174	220	74	44	100	93.8	64.1	10.7	3.4	48	77
11	8.30	7.36	272	154	224	66	48	88	87.4	47.3	13.1	8.7	44	77
12	8.35	7.61	270	144	226	60	44	84	85.8	44.9	13.6	7.8	47	77
13	8.36	7.60	276	132	222	48	54	84	89.0	42.5	13.1	6.3	45	79
14	8.33	7.60	276	142	226	46	50	96	86.6	46.5	14.6	6.3	49	84
15	8.34	7.46	274	144	226	44	48	100	89.8	45.7	12.3	7.3	43	81
16	8.33	7.51	286	144	224	46	62	98	113.0	54.5	1.5	1.9	50	85
17		7.59		106		72		34		33.7		5.3		18
18		7.57		108		60		48		32.9		6.3		46
19		7.41		98		72		28		32.8		3.9		12
20		7.46		102		74		28		31.3		5.8		12
21		7.44		100		76		24		33.7		3.9		12
22		7.49		102		76		26		32.1		5.3		12
23		7.37		102		70		32		40.1		0.5		13
24		7.38		102		74		28		30.5		5.8		13
25		7.41		102		72		30		31.3		5.8		13
26		7.36		102		74		28		30.5		6.3		11
27		7.39		100		74		26		29.7		6.3		13
28		7.41		100		72		28		31.3		5.3		12
29	8.32	7.46	268	100	226	72	42	28	93.0	29.7	8.7	6.3	43	12
30		7.22		104		72		32		30.5		6.8		13
31		7.37		100		72		28		33.7		6.8		14

Avg.	8.30	7.45	269	122	224	59	45	63	88.0	39.3	12.3	6.0	46	50
Max.	8.36	7.98	286	174	228	76	62	110	113.0	64.1	19.4	10.7	50	88
Min.	8.13	7.15	260	98	220	36	32	24	77.0	29.7	1.5	0.5	43	11

Bacteriological & Physical Parameters

City of Flint Water Treatment Plant

WSSN: 2310

October 2015

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Temp. C	Color	
	Raw (Colilert MPN)		P.S. 4		Plant Tap								
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Tap	Raw	Tap
1	1	2143	6	0	1	0	1370	<2	0.47	18.8			
2	1	2187	6	0	1	0	2760	<2	0.47	17.3			
3	0	n/a	6	0	1	0	n/a	<2	0.48	n/a			
4	1	1585	6	0	1	0	1000	<2	0.39	15.2			
5	1	1789	6	0	1	0	900	<2	0.41	14.9			
6	1	3654	6	0	1	0	2160	<2	0.39	15.3			
7	1	2014	6	0	1	0	970	<2	0.38	15.1			
8	1	1860	6	0	1	0	900	<2	0.37	14.8			
9	1	12033	6	0	1	0	2310	<2	0.38	16.1			
10	1	2359	6	0	1	0	1120	<2	0.41	14.9			
11	1	4352	6	0	1	0	1950	<2	0.40	14.5			
12	1	2046	6	0	1	0	1280	<2	0.39	15.1			
13	1	2098	6	0	1	0	1280	<2	0.39	15.0			
14	1	2282	6	0	1	0	770	<2	0.38	14.9			
15	1	1720	6	0	1	0	1080	<2	0.38	14.9			
16	1	1250	6	0	1	0	880	2	0.38	14.8			
17					1	0		<2	0.21		16.5		
18					1	0		<2	0.27		15.4		
19					1	0		<2	0.19		15.3		
20					1	0		<2	0.20		15.2		
21					1	0		<2	0.20		15.1		
22					1	0			0.20		15.1		
23					1	0			0.19		15.1		
24					1	0			0.20		14.6		
25					2	0			0.20		14.8		
26					2	0			0.20		14.6		
27					2	0		<2	0.20		14.6		
28					2	0			0.20		14.7		
29	1	3076	2	0	2	0			0.20		14.4		
30			2	0	2	0			0.19		15.1		
31			2	0	2	0			0.20		14.9		
Avg.									0.31	15.4	15.0		
Max.		12033					2760	2	0.48	18.8	16.5		
Min.									0.19	14.5	14.4		

WSSN: 2310

Date	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	1.2	1.2	1.2	0.8	0.1	0.1	0.9	1.1	0.9	0.7	10
2											0
3											0
4											0
5											0
6											0
7	1.5	1.0	1.2	0.1	0.2	0.1	0.6	1.5	0.1	1.4	10
8	1.3	1.0	1.3	1.2	0.3	0.1	0.8	1.5	1.2	0.8	10
9											0
10											0
11											0
12											0
13	1.3	1.2	1.3	1.7	1.0	0.1	0.9	1.3	4.0	1.5	10
14	1.0	1.3	1.4	1.3	1.6	0.1	1.0	1.5	1.3	1.7	10
15	1.1	1.4	1.4	1.0	0.8	0.1	0.7	1.2	1.2	1.1	10
16											0
17											0
18											0
19											0
20	0.1	0.5	0.7	0.5	0.5	0.1	0.8	0.7	0.7	0.7	10
21	0.1	0.4	0.6	0.5	0.4	0.1	0.4	0.5	0.5	0.7	10
22											0
23											0
24											0
25											0
26											0
27	0.1	0.6	0.8	0.3	0.4	0.1	0.3	0.8	0.3	0.8	10
28	0.1	0.5	0.8	0.4	0.5	0.1	0.3	0.7	0.5	0.6	10
29											0
30											0

Distribution Sample Summary	
Total # of routine distribution samples analyzed	100
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	0.80

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	1.5	1.5	1.5	1.2	0.3	0.3	1.2	1.4	1.2	0.9	10
2											0
3											0
4											0
5											0
6											0
7	1.7	1.3	1.5	0.3	0.4	0.3	0.9	1.8	0.1	1.7	10
8	1.6	1.3	1.5	1.4	0.5	0.3	1.0	1.8	1.5	1.0	10
9											0
10											0
11											0
12											0
13	1.5	1.4	1.5	2.0	1.2	0.3	1.2	1.5	4.0	1.8	10
14	1.2	1.5	1.7	1.5	0.9	0.3	1.3	1.8	1.6	2.0	10
15	1.3	1.6	1.6	1.3	1.1	0.3	1.0	1.5	1.5	1.4	10
16											0
17											0
18											0
19											0
20	0.2	0.6	0.8	0.6	0.6	0.3	0.9	0.8	0.9	0.8	10
21	0.3	0.6	0.8	0.6	0.5	0.3	0.6	0.7	0.6	0.8	10
22											0
23											0
24											0
25											0
26											0
27	0.2	0.7	0.9	0.4	0.5	0.2	0.4	0.9	0.4	0.9	10
28	0.2	0.6	0.9	0.5	0.6	0.3	0.4	0.8	0.6	0.7	10
29											0
30											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.0

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

September 2015
Month/Year

F-1R, F-2
Certification of Operator in [redacted]

F-1
Water Plant Classification

[redacted]
Signature of Op[redacted]

Genesee
County

DEQ
RESOURCE MANAGEMENT DIVISION
OCT 16 2015
LANSING DISTRICT

Treatment Rate and Filter Data

Maximum Treatment Rate:	18.6	Million Gallons per Day	
Rated Plant Capacity:	36	Million Gallons per Day	
Average Filter Run:	60	Hours	
Average Head Loss:	n/a	Feet	*(filter head loss meters not operational)
Average Filtration Rate:	2.0	Gallons Per Square Feet per Minute	
Maximum Filtration Rate:	2.9	Gallons Per Square Feet per Minute	
Average Wash Water Use:	2.7%	Percent of Treated Water	

Chemical Data

Chlorine on hand:	20,000	lb.	Est. supply:	24	days
Primary Coagulant (Ferric Chloride) on hand:	151,901	lb.	Est. supply:	9	days
Lime (CaO) on hand:	223	tons	Est. supply:	20	days
Fluoride on Hand:	10,000	lb.	Est. supply:	24	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	0	0
Number of filter confluence samples collected:	179	178
Percent of filter confluence samples > 0.3 NTU:	0.0%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Coagulation Parameters & Softening Chemical Application

City of Flint Water Treatment Plant

WSSN: 2310

September 2015

Date	Million Gallons Treated	Ozone Dosage (mg/L)	Ferric as Fe3+ mg/L	Lime Dosage (mg/L)	PW-340 Cationic Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
							Raw			Plate Settler	Applied
							Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	18.2	5.6	12.8	161.5	5.2	0.75	6	7.0	7.8	5.15	1.41
2	17.6	5.6	14.0	175.0	4.8	0.79	6	9.7	24.1	5.46	1.61
3	17.5	6.3	13.4	170.3	4.8	0.73	6	7.7	8.6	5.54	1.46
4	17.2	6.2	14.9	174.7	5.1	0.76	6	10.6	12.0	5.32	1.34
5	15.9	5.1	18.1	158.2	5.6	0.86	6	13.4	22.3	5.34	1.31
6	15.7	5.7	18.3	157.7	5.7	0.86	6	12.3	21.8	6.40	1.37
7	15.1	4.5	19.2	161.1	5.9	0.87	6	10.1	12.4	6.25	1.45
8	14.5	2.9	18.4	172.4	6.3	0.92	6	15.6	23.0	6.55	1.45
9	14.5	2.9	17.9	167.3	6.3	0.93	6	14.3	24.5	6.65	1.42
10	14.4	2.8	18.8	165.6	6.3	0.94	6	13.9	22.4	6.08	1.43
11	14.3	2.7	18.5	160.2	6.5	0.88	6	10.9	12.6	6.54	1.37
12	14.2	2.7	17.5	156.9	6.5	0.85	6	12.0	18.8	6.78	1.80
13	14.2	2.6	16.3	158.7	6.6	0.85	6	11.0	11.3	7.03	1.40
14	14.1	2.6	17.1	154.7	6.6	0.83	6	10.4	12.6	6.78	1.40
15	14.2	2.7	17.9	157.3	6.7	0.77	6	23.6	38.9	6.93	1.34
16	14.2	3.3	16.9	175.9	6.6	0.81	6	16.1	32.2	9.76	1.32
17	14.2	3.3	19.5	167.1	6.6	0.77	6	12.5	22.8	6.10	1.50
18	14.7	3.8	20.6	164.6	6.4	0.71	6	8.9	11.3	7.43	1.29
19	14.8	2.8	20.7	161.3	6.5	0.71	6	8.2	11.1	7.32	1.2
20	14.6	3.2	21.1	139.9	6.5	0.63	6	8.9	13.0	7.72	1.04
21	14.9	4.0	17.7	139.6	6.3	0.67	6	8.7	11.1	7.94	1.71
22	14.9	4.0	18.5	152.0	6.3	0.87	6	7.0	8.2	7.52	1.28
23	14.9	4.0	17.9	174.2	6.4	0.86	6	8.3	11.5	8.11	1.22
24	15.2	5.0	18.0	161.6	6.2	0.76	6	6.8	9.4	8.13	1.30
25	15.3	5.0	17.8	174.0	5.7	0.86	6	14.2	21.2	7.68	1.29
26	15.2	5.0	17.7	142.7	5.7	0.84	6	15.6	27.7	7.46	2.88
27	15.2	5.0	17.6	156.7	5.7	0.87	6	10.0	11.2	7.28	1.02
28	15.4	4.9	17.0	149.0	5.7	0.80	6	12.1	19.1	7.38	1.24
29	15.6	4.9	16.9	153.7	5.7	0.80	6	14.4	20.7	6.82	1.10
30	15.9	4.7	16.9	169.7	5.6	0.81	6	13.3	19.9	7.72	1.38
Avg.	15.2	4.1	17.6	161.1	6.0	0.81	6	11.6			1.41
Max.	18.2	6.3	21.1	175.9	6.7	0.94	6	23.6	38.9	9.76	2.88
Min.	14.1	2.6	12.8	139.6	4.8	0.63	6	6.8			1.02
Total	456.6										

WSSN: 2310

Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	6	0.11	0.13	6	0	0	6	0.11	0.11	6	0	0	0.10
2	6	0.11	0.13	6	0	0	6	0.11	0.13	6	0	0	0.10
3	6	0.10	0.14	6	0	0	6	0.10	0.10	6	0	0	0.09
4	6	0.11	0.13	6	0	0	6	0.10	0.11	6	0	0	0.10
5	6	0.10	0.12	6	0	0	6	0.11	0.12	6	0	0	0.09
6	6	0.10	0.10	6	0	0	6	0.10	0.10	6	0	0	0.10
7	6	0.11	0.12	6	0	0	6	0.10	0.11	6	0	0	0.09
8	6	0.10	0.13	6	0	0	6	0.09	0.10	6	0	0	0.09
9	6	0.10	0.11	6	0	0	6	0.10	0.10	6	0	0	0.09
10	6	0.10	0.12	6	0	0	6	0.09	0.10	6	0	0	0.09
11	6	0.10	0.11	6	0	0	6	0.11	0.12	6	0	0	0.09
12	6	0.12	0.16	6	0	0	6	0.11	0.12	6	0	0	0.10
13	6	0.12	0.12	6	0	0	6	0.11	0.12	6	0	0	0.10
14	6	0.11	0.14	6	0	0	6	0.11	0.14	6	0	0	0.10
15	6	0.11	0.12	6	0	0	6	0.11	0.12	6	0	0	0.10
16	6	0.10	0.12	6	0	0	6	0.10	0.11	6	0	0	0.09
17	6	0.10	0.11	6	0	0	6	0.09	0.11	6	0	0	0.09
18	6	0.09	0.11	6	0	0	6	0.09	0.10	6	0	0	0.09
19	5	0.08	0.09	5	0	0	5	0.07	0.08	5	0	0	0.08
20	6	0.08	0.10	6	0	0	6	0.08	0.09	6	0	0	0.08
21	6	0.09	0.09	6	0	0	6	0.09	0.14	6	0	0	0.08
22	6	0.10	0.12	6	0	0	6	0.10	0.12	6	0	0	0.09
23	6	0.09	0.10	6	0	0	6	0.09	0.10	6	0	0	0.09
24	6	0.09	0.11	6	0	0	6	0.08	0.10	6	0	0	0.08
25	6	0.10	0.10	6	0	0	5	0.09	0.10	5	0	0	0.09
26	6	0.10	0.12	6	0	0	6	0.10	0.14	6	0	0	0.09
27	6	0.09	0.09	6	0	0	6	0.09	0.10	6	0	0	0.09
28	6	0.09	0.10	6	0	0	6	0.09	0.10	6	0	0	0.08
29	6	0.10	0.11	6	0	0	6	0.09	0.10	6	0	0	0.09
30	6	0.09	0.09	6	0	0	6	0.09	0.10	6	0	0	0.08
Avg.	6	0.10	0.11	6	0	0	6	0.10	0.11	6	0	0	
Max.	6	0.12	0.16	6	0	0	6	0.11	0.14	6	0	0	0.10
Min.	5	0.08	0.09	5	0	0	5	0.07	0.08	5	0	0	

Date	Fluoriode Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine			3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.5	0.22	0.77		0.0	4.8	4.8			2.3	2.6	2.4	2.6
2	0.5	0.21	0.79	0.73	0.0	4.7	4.7			2.3	2.6	2.3	2.7
3	0.5	0.21	0.78		0.0	4.5	4.5			2.4	2.8	2.2	2.5
4	0.6	0.20	0.73		0.0	5.0	5.0			2.1	2.5	1.9	2.3
5	0.6	0.20	0.81		0.0	5.2	5.2			2.2	2.6	1.9	2.2
6	0.6	0.21	0.81		0.0	5.4	5.4			2.5	2.8	1.9	2.2
7	0.7	0.19	0.81		0.0	5.8	5.8			2.2	2.4	1.9	2.2
8	0.6	0.19	0.81		0.0	4.9	4.9			2.5	2.8	2.2	2.6
9	0.6	0.21	0.79	0.79	0.0	5.0	5.0			2.3	2.6	2.0	2.4
10	0.6	0.21	0.80		0.0	5.0	5.0			2.2	2.4	2.1	2.4
11	0.5	0.22	0.76		0.0	5.1	5.1			2.1	2.4	2.0	2.4
12	0.5	0.19	0.72		0.0	5.3	5.3			2.3	2.6	2.2	2.5
13	0.6	0.18	0.75		0.0	5.2	5.2			1.7	2.0	1.8	2.1
14	0.6	0.19	0.78		0.0	5.5	5.5			2.2	2.6	2.2	2.6
15	0.6	0.22	0.80	0.78	0.0	5.1	5.1			2.4	2.7	2.4	2.7
16	0.6	0.20	0.77		0.0	5.1	5.1			2.1	2.4	2.1	2.4
17	0.6	0.21	0.81		0.0	5.2	5.2			2.0	2.3	1.9	2.2
18	0.5	0.21	0.75		0.0	5.1	5.1			2.2	2.5	2.1	2.6
19	0.5	0.20	0.72		0.0	5.0	5.0			2.1	2.3	1.9	2.3
20	0.5	0.21	0.74		0.0	5.1	5.1			2.1	2.4	1.9	2.3
21	0.4	0.21	0.70		0.0	5.3	5.3			2.0	2.3	1.8	2.1
22	0.5	0.23	0.75		0.0	5.1	5.1			2.2	2.5	2.0	2.3
23	0.6	0.22	0.76	0.75	0.0	4.9	4.9			2.2	2.5	2.0	2.3
24	0.5	0.20	0.72		0.0	4.8	4.8			2.4	2.6	1.9	2.1
25	0.5	0.21	0.76		0.0	4.8	4.8			2.1	2.4	1.8	2.3
26	0.5	0.20	0.70		0.0	3.9	3.9			2.3	2.6	1.8	2.0
27	0.5	0.21	0.75		0.0	4.8	4.8			2.3	2.7	2.3	2.7
28	0.5	0.21	0.76		0.0	4.7	4.7			2.3	2.6	2.2	2.5
29	0.5	0.21	0.74		0.0	4.8	4.8			2.3	2.5	2.3	2.6
30	0.5	0.21	0.74		0.0	4.8	4.8			2.1	2.4	1.8	2.1
Avg.	0.54	0.21	0.76	0.76	0.0	5.0	5.0			2.2	2.5	2.0	2.4
Max.	0.70	0.23	0.81	0.79	0.0	5.8	5.8			2.5	2.8	2.4	2.7
Min.	0.40	0.18	0.70	0.73	0.0	3.9	3.9			1.7	2.0	1.8	2.0

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Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.24	7.32	262	126	224	40	38	86	74.5	34.5	18.4	9.7	48	82
2	8.26	7.55	256	130	222	48	34	82	78.6	36.1	14.6	9.7	52	81
3	8.30	7.42	266	128	218	52	48	76	89.8	41.7	10.2	5.8	49	84
4	8.35	7.39	262	126	214	40	48	86	94.6	40.9	6.3	5.8	80	80
5	8.42	7.40	262	134	222	42	40	92	85.8	48.1	11.7	3.4	45	86
6	7.30	7.30	264	138	222	38	42	100	85.0	43.3	12.6	7.3	47	90
7	8.35	7.26	258	132	224	36	34	96	81.0	40.1	13.6	7.8	45	92
8	8.30	7.28	256	134	216	40	40	94	81.0	45.7	13.1	4.9	44	87
9	8.26	7.25	260	136	218	42	42	94	71.3	42.5	19.9	7.3	45	89
10	8.35	7.43	254	134	218	44	36	90	76.2	43.3	15.5	6.3	46	90
11	8.25	7.21	246	126	206	40	40	86	70.5	39.3	17	6.8	51	92
12	8.16	7.26	248	130	206	38	42	92	81.0	42.5	11.2	5.8	42	84
13	8.21	7.32	256	132	206	42	50	90	84.2	43.3	11.2	5.8	42	83
14	8.31	7.40	250	138	212	42	38	96	81.8	44.9	11.2	6.3	44	83
15	8.26	7.42	250	130	212	42	38	88	81.0	40.1	11.7	7.3	46	86
16	8.26	7.33	254	134	220	40	34	94	85.0	40.9	10.2	7.8	46	85
17	8.21	7.44	250	134	216	44	34	90	73.7	41.7	16	7.3	47	97
18	8.17	7.28	256	132	194	36	62	96	68.1	35.3	20.9	10.7	42	91
19	8.22	7.44	256	140	220	34	36	106	83.4	47.3	11.7	5.3	44	92
20	8.21	7.27	270	142	214	36	56	106	84.2	45.7	14.6	6.8	45	95
21	8.24	7.28	256	142	220	38	36	104	80.2	42.5	13.6	8.7	44	93
22	8.35	7.35	258	132	232	40	26	92	81.8	40.1	13.1	7.8	47	89
23	8.24	7.34	254	136	220	38	34	98	82.6	44.9	11.7	5.8	45	87
24	8.21	7.36	260	138	222	40	38	98	83.4	43.3	12.6	7.3	48	92
25	8.28	7.26	258	142	216	36	42	106	81.0	34.5	13.1	4.9	51	94
26	8.41	7.35	266	132	226	38	40	94	85.0	41.7	13.1	6.8	45	89
27	8.34	7.26	262	130	220	36	42	94	85.8	42.5	11.7	5.8	43	87
28	8.29	7.29	264	138	220	38	44	100	74.5	40.9	19	8.7	50	88
29	8.14	7.26	260	130	222	40	38	90	72.1	39.3	19.4	7.8	51	90
30	8.15	7.37	266	136	220	40	46	96	85.8	44.9	12.6	5.8	46	86
Avg.	8.23	7.34	258	134	217	40	41	94	80.8	41.7	13.7	6.9	47	88
Max.	8.42	7.55	270	142	232	52	62	106	94.6	48.1	20.9	10.7	80	97
Min.	7.3	7.21	246	126	194	34	26	76	68.1	34.5	6.3	3.4	42	80

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		P.S. 4		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	1850	6	0	1	0	1120	<2	0.38	21.9				
2	1	3255	6	0	1	0	2390	<2	0.41	22.3				
3	1	3076	6	0	1	0	1610	2	0.41	23.0				
4	1	12033	6	0	1	0	4140	<2	0.40	23.6				
5	1	17329	6	0	1	0	1830	<2	0.42	23.6				
6	1	5794	6	0	1	0	2230	<2	0.43	23.8				
7	1	5172	6	0	1	0	1510	<2	0.41	24.8				
8	1	19863	6	0	1	0	>7380	<2	0.41	24.6				
9	1	7270	6	0	1	0	3110	<2	0.41	25.0				
10	1	14136	6	0	1	0	1660	<2	0.41	23.7				
11	1	14136	6	0	1	0	2990	<2		23.3				
12	1	7701	6	0	1	0	3550	<2	0.41	21.5				
13	1	4611	6	0	1	0	1560	<2	0.41	19.6				
14	1	3873	6	0	1	0	1610	<2	0.41	19.6				
15	1	4352	6	0	1	0	7380	<2	0.40	20.0				
16	1	3654	6	0	1	0	>7380	<2	0.41	20.0				
17	1	2098	6	0	1	0	3110	<2	0.41	21.6				
18	1	3255	6	0	1	0	>7380	4	0.44	22.0				
19	1	9804	6	0	1	0	1710	2	0.44	22.2				
20	1	3448	6	0	1	0	1240	<2	0.44	20.3				
21	1	2187	6	0	1	0	1460	<2	0.49	20.3				
22	1	2700	6	0	1	0	1610	<2	0.48	20.3				
23	1	2143	6	0	1	0	1120	<2	0.49	20.2				
24	1	1872	6	0	1	0	1240	<2	0.49	20.3				
25	1	2282	6	0	1	0	1370	<2	0.48	22.2				
26	1	4352	6	0	1	0	1240	2	0.48	21.4				
27	1	3130	6	0	1	0	2020	<2	0.48	21.1				
28	1	2909	6	0	1	0	1710	<2	0.47	21.5				
29	1	2603	6	0	1	0	1460	<2	0.47	21.4				
30	1	2014	6	0	1	0	1950	<2	0.48	19.8				

Avg.									0.44	21.8				
Max.		19863					7380	< 2	0.49	25.0				
Min.									0.38	19.6				

WSSN: 2310

Date	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	1.3	1.1	1.6	1.0	0.6	0.3	0.4	1.8	1.4	1.9	10
2	1.0	1.4	1.3	1.1	0.5	0.1	0.5	1.4	1.0	1.2	10
3	1.3	1.5	1.3	0.8	0.4	0.1	1.2	1.4	0.7	1.6	10
4											0
5											0
6											0
7											0
8	1.3	1.0	1.5	1.0	0.5	0.1	0.9	1.6	0.5	0.8	10
9	0.8	0.5	1.6	1.0	0.3	0.1	0.9	1.3	0.9	0.7	10
10											0
11											0
12											0
13											0
14											0
15	1.3	1.6	1.6	1.4	0.5	0.1	0.9	1.6	0.5	0.7	10
16	0.6	1.2	1.4	0.8	0.4	0.2	0.7	1.3	0.5	1.6	10
17											0
18											0
19											0
20											0
21											0
22	1.0	1.0	1.3	1.0	0.5	0.5	0.1	0.6	1.2	0.5	10
23	0.1	1.1	1.3	1.0	0.4	0.1	0.8	1.2	0.4	1.2	10
24	1.0	0.8	1.3	0.8	0.3	0.1	0.6	1.2	0.9	0.6	10
25											0
26											0
27											0
28											0
29											0
30											0

Distribution Sample Summary	
Total # of routine distribution samples analyzed	100
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	0.90

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	1.5	1.4	1.9	1.2	0.9	0.5	0.7	2.1	1.7	2.2	10
2	1.3	1.7	1.6	1.4	0.8	0.1	0.8	1.7	1.3	1.5	10
3	1.6	1.8	1.6	1.2	0.7	0.2	1.5	1.7	1.0	1.8	10
4											0
5											0
6											0
7											0
8	1.6	1.3	1.8	1.3	0.8	0.3	1.3	1.9	0.8	1.0	10
9	1.1	0.7	1.9	1.3	0.5	0.3	1.2	1.6	1.2	0.9	10
10											0
11											0
12											0
13											0
14											0
15	1.6	1.9	1.9	1.7	0.7	0.2	1.2	2.0	0.7	1.0	10
16	0.9	1.5	1.7	1.1	0.6	0.3	1.0	1.6	0.7	1.9	10
17											0
18											0
19											0
20											0
21											0
22	1.3	1.3	1.6	1.3	0.7	0.7	0.3	0.9	1.5	0.7	10
23	0.3	1.4	1.6	1.3	0.6	0.3	1.1	1.5	0.6	1.5	10
24	1.3	1.1	1.6	1.1	0.5	0.3	0.9	1.5	1.3	0.9	10
25											0
26											0
27											0
28											0
29											0
30											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.2

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-In-Charge

August 2015
Month/Year

F-1R, F-2
Certi[redacted]rator [redacted]
Signature of Operator-In-Charg[redacted]

F-1
Water Plant Classification

Genesee
County

Treatment Rate and Filter Data

Maximum Treatment Rate:	20.2	Million Gallons per Day
Rated Plant Capacity:	36	Million Gallons per Day
Average Filter Run:	68	Hours
Average Head Loss:	n/a	Feet *(filter head loss meters not operational)
Average Filtration Rate:	2.2	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	2.9	Gallons Per Square Feet per Minute
Average Wash Water Use:	3.4%	Percent of Treated Water

DEQ
RESOURCE MANAGEMENT DIVISION
SEP 21 2015
LANSING DISTRICT

Chemical Data

Chlorine on hand:	20,000	lb.	Est. supply:	24	days
Primary Coagulant (Ferric Chloride) on hand:	179,000	lb.	Est. supply:	14	days
Lime (CaO) on hand:	192	tons	Est. supply:	19	days
Fluoride on Hand:	18,000	lb.	Est. supply:	40	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks

	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	0	0
Number of filter confluence samples collected:	213	213
Percent of filter confluence samples > 0.3 NTU:	0.0%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Coagulation Parameters & Softening Chemical Application — City of Flint Water Treatment Plant — August 2015 — Page 2

WSSN: 2310

Date	Million Gallons Treated	Ozone Dosage (mg/L)	Ferric as Fe^{3+} mg/L	Lime Dosage (mg/L)	PW-340 Cationic Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
							Raw			Plate Settler	Applied
							Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	16.1	4.5	16.5	149.6	4.8	0.90	6	7.8	10.6	3.91	2.72
2	15.1	4.6	16.0	168.6	5.0	0.88	6	7.2	10.2	3.54	2.58
3	15.5	4.7	15.9	155.0	4.8	0.91	6	11.2	17.5	3.53	1.17
4	15.8	4.3	15.3	160.3	4.7	0.87	6	9.0	10.3	4.34	1.65
5	15.7	4.5	16.3	159.4	4.7	0.89	6	7.1	8.2	3.62	1.23
6	15.5	4.3	16.4	148.6	4.6	0.93	6	7.2	8.6	3.58	1.55
7	16.5	4.5	15.3	135.9	4.5	0.88	6	6.6	7.3	3.42	1.18
8	17.2	4.2	14.6	147.5	4.8	0.88	6	6.8	7.7	3.17	1.29
9	17.4	4.3	14.7	164.8	4.7	0.90	6	8.5	10.6	4.06	1.54
10	17.4	4.3	14.8	168.4	4.5	0.84	6	10.1	13.5	4.02	1.24
11	17.2	4.1	14.0	171.5	4.5	0.83	6	9.9	20.1	3.96	1.10
12	17.2	4.0	14.0	148.3	4.3	0.84	6	16.5	42.3	4.09	1.50
13	17.3	4.3	15.0	163.2	4.5	0.93	6	14.3	39.7	4.33	1.45
14	17.5	4.2	16.0	156.7	1.7	0.89	6	16.6	25.2	4.48	1.20
15	17.7	4.2	16.6	150.8	4.7	0.90	6	10.0	21.5	5.65	1.05
16	17.7	4.2	16.8	149.5	4.8	0.84	6	11.6	22.9	4.96	1.19
17	17.3	4.2	19.3	158.5	4.9	0.85	6	12.1	24.8	4.52	1.07
18	17.7	4.1	16.6	160.0	4.7	0.85	6	4.7	5.1	4.57	1.54
19	17.8	4.1	16.0	175.3	4.6	0.87	6	7.0	13.4	4.01	1.4
20	17.9	4.3	16.4	165.9	4.5	0.81	6	5.9	8.7	4.90	1.05
21	18.1	4.5	16.7	155.5	4.4	0.82	6	7.3	8.2	4.58	1.73
22	19.0	4.4	15.0	170.5	4.3	0.84	6	9.1	22.4	3.93	1.23
23	19.1	4.5	16.6	173.7	4.7	0.86	6	10.7	23.2	5.05	1.31
24	18.9	4.9	16.3	179.7	4.9	0.90	6	7.1	8.2	5.39	1.28
25	19.7	4.9	15.7	165.7	4.7	0.87	6	9.1	22.4	4.99	0.94
26	19.8	5.0	15.9	160.0	4.6	0.08	6	10.7	23.2	5.10	1.32
27	19.5	5.1	15.8	153.5	4.7	0.78	6	7.1	8.2	5.63	1.26
28	19.0	5.1	17.6	163.5	4.9	0.80	6	8.5	20.1	6.02	1.04
29	19.3	5.2	15.9	162.1	4.9	0.80	6	8.5	9.6	5.85	1.49
30	18.4	5.3	18.8	165.5	5.1	0.79	6	7.0	7.6	6.25	1.10
31	18.8	5.4	15.8	151.1	5.0	0.79	6	7.6	8.5	5.54	2.02
Avg.	17.6	4.6	16.0	160.0	4.6	0.83	6	9.1			1.40
Max.	19.8	5.4	19.3	179.7	5.1	0.93	6	16.6	42.3	6.25	2.72
Min.	15.1	4.0	14.0	135.9	1.7	0.08	6	4.7			0.94
Total	547.1										

WSSN: 2310

Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	3	0.09	0.11	3	0	0	3	0.08	0.09	3	3	0	0.09
2	7	0.10	0.12	6	0	0	7	0.09	0.10	6	0	0	0.09
3	7	0.07	0.09	6	0	0	7	0.08	0.09	6	0	0	0.11
4	7	0.13	0.26	6	0	0	7	0.10	0.11	6	0	0	0.13
5	7	0.10	0.12	6	0	0	7	0.10	0.11	6	0	0	0.12
6	7	0.11	0.15	6	0	0	7	0.13	0.16	6	0	0	0.13
7	7	0.13	0.14	6	0	0	7	0.12	0.13	6	0	0	0.15
8	7	0.13	0.15	6	0	0	7	0.10	0.12	6	0	0	0.14
9	7	0.14	0.17	6	0	0	7	0.11	0.12	6	0	0	0.15
10	7	0.12	0.13	6	0	0	7	0.10	0.11	6	0	0	0.14
11	7	0.11	0.14	6	0	0	7	0.10	0.11	6	0	0	0.13
12	7	0.10	0.11	6	0	0	7	0.11	0.13	6	0	0	0.14
13	7	0.12	0.14	6	0	0	7	0.11	0.13	6	0	0	0.14
14	7	0.11	0.18	6	0	0	7	0.10	0.11	6	0	0	0.11
15	7	0.11	0.17	6	0	0	7	0.09	0.09	6	0	0	0.10
16	7	0.11	0.12	6	0	0	7	0.09	0.11	6	0	0	0.12
17	7	0.09	0.11	6	0	0	7	0.10	0.12	6	0	0	0.15
18	7	0.10	0.12	6	0	0	7	0.10	0.12	6	0	0	0.12
19	7	0.11	0.16	6	0	0	7	0.09	0.10	6	0	0	0.12
20	7	0.10	0.14	6	0	0	7	0.11	0.12	6	0	0	0.11
21	7	0.10	0.11	6	0	0	7	0.11	0.11	6	0	0	0.10
22	7	0.12	0.14	6	0	0	7	0.10	0.12	6	0	0	0.11
23	7	0.09	0.10	6	0	0	7	0.10	0.12	6	0	0	0.10
24	7	0.10	0.11	6	0	0	7	0.10	0.12	6	0	0	0.11
25	7	0.10	0.13	6	0	0	7	0.10	0.12	6	0	0	0.09
26	7	0.10	0.11	6	0	0	7	0.09	0.11	6	0	0	0.10
27	7	0.09	0.12	6	0	0	7	0.11	0.13	6	0	0	0.09
28	7	0.11	0.11	6	0	0	7	0.10	0.12	6	0	0	0.10
29	7	0.10	0.11	6	0	0	7	0.09	0.09	6	0	0	0.09
30	7	0.10	0.11	6	0	0	7	0.09	0.09	6	0	0	0.09
31	7	0.11	0.17	6	0	0	7	0.10	0.12	6	0	0	0.10
Avg.	7	0.11	0.13	6	0	0	7	0.10	0.11	6	0	0	
Max.	7	0.14	0.26	6	0	0	7	0.13	0.16	6	3	0	0.15
Min.	3	0.07	0.09	3	0	0	3	0.08	0.09	3	0	0	

Date	Fluoriode Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.6	0.18	0.78	0.74	2.2	3.6	5.8	0.4	0.6	2.3	2.6	2.0	2.4
2	0.6	0.19	0.64		2.2	4.6	6.8	0.6	0.9	2.3	2.6	2.1	2.4
3	0.6	0.19	0.84		0.9	5.6	6.5	0.2	0.5	2.6	3.0	2.6	3.0
4	0.6	0.19	0.77		0.0	4.9	4.9	0.0	0.0	2.3	2.9	1.2	1.6
5	0.6	0.20	0.77		0.0	5.4	5.4	0.0	0.0	2.3	2.7	1.8	2.1
6	0.6	0.18	0.78	0.76	0.0	5.6	5.6	0.0	0.0	2.5	3.0	2.4	2.9
7	0.6	0.19	0.76		0.0	5.3	5.3	0.0	0.0	2.5	2.9	2.0	2.5
8	0.5	0.19	0.72		0.0	5.3	5.3	0.0	0.0	2.4	2.8	2.0	2.3
9	0.6	0.19	0.78		0.0	5.7	5.7	0.0	0.0	2.4	2.8	2.0	2.3
10	0.6	0.18	0.75		0.0	5.2	5.2	0.0	0.0	2.2	2.5	1.8	2.2
11	0.5	0.19	0.76		0.0	5.8	5.8	0.0	0.0	2.3	2.7	1.1	1.4
12	0.5	0.20	0.78	0.75	0.0	5.3	5.3	0.0	0.0	1.8	2.4	1.6	1.9
13	0.6	0.20	0.76		0.0	5.5	5.5	0.0	0.0	2.3	3.0	2.2	2.6
14	0.6	0.20	0.73		0.0	5.4	5.4	0.0	0.0	2.4	2.9	2.1	2.4
15	0.6	0.18	0.75		0.0	5.6	5.6	0.0	0.0	2.2	2.4	2.0	2.3
16	0.6	0.20	0.75		0.0	5.1	5.1	0.0	0.0	2.6	2.9	1.7	1.9
17	0.6	0.19	0.76		0.0	5.6	5.6	0.0	0.0	2.1	2.3	2.0	2.3
18	0.6	0.17	0.74		0.0	5.1	5.1	0.0	0.0	2.6	2.9	2.4	2.7
19	0.6	0.20	0.76	0.79	0.0	5.2	5.2	0.0	0.0	2.4	2.7	2.2	2.5
20	0.6	0.19	0.74		0.0	5.7	5.7	0.0	0.0	2.4	2.7	1.7	2.1
21	0.6	0.19	0.71		0.0	5.8	5.8	0.0	0.0	2.0	2.4	1.6	1.9
22	0.5	0.21	0.72		0.0	5.2	5.2	0.0	0.0	2.2	2.5	2.0	2.4
23	0.5	0.20	0.72		0.0	5.0	5.0	0.0	0.0	2.2	2.5	1.3	1.5
24	0.6	0.21	0.76		0.0	4.9	4.9	0.0	0.0	2.4	2.7	2.4	2.7
25	0.5	0.19	0.74		0.0	4.8	4.8	0.0	0.0	2.2	2.5	1.8	2.2
26	0.5	0.21	0.75	0.79	0.0	5.0	5.0	0.0	0.0	2.2	2.5	2.0	2.3
27	0.5	0.20	0.79		0.0	5.1	5.1	0.0	0.0	2.7	2.9	2.3	2.7
28	0.5	0.19	0.67		0.0	5.2	5.2	0.0	0.0	2.3	2.5	1.9	2.3
29	0.6	0.20	0.78		0.0	5.1	5.1	0.0	0.0	2.3	2.6	2.3	2.6
30	0.6	0.20	0.79		0.0	4.7	4.7	0.0	0.0	2.3	2.6	2.3	2.6
31	0.5	0.20	0.70		0.0	4.7	4.7	0.0	0.0	2.2	2.5	1.9	2.3
Avg.	0.57	0.19	0.75	0.76	0.2	5.2	5.4	0.0	0.1	2.3	2.7	2.0	2.3
Max.	0.60	0.21	0.84	0.79	2.2	5.8	6.8	0.6	0.9	2.7	3.0	2.6	3.0
Min.	0.50	0.17	0.64	0.74	0.0	3.6	4.7	0.0	0.0	1.8	2.3	1.1	1.4

Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.01	7.48	248	160	212	64	36	96	81.8	57.7	10.7	3.9	44	87
2	8.06	7.45	254	142	210	50	44	92	81.8	48.9	12.2	4.9	42	86
3	8.09	7.28	238	126	208	38	30	88	72.9	40.9	13.6	5.8	45	87
4	8.23	7.24	254	126	212	34	42	92	81.0	43.3	12.6	4.4	43	80
5	8.22	7.26	250	138	208	40	42	98	81.0	44.9	11.7	6.3	44	85
6	8.27	7.38	254	128	208	38	46	90	83.4	42.5	11.2	5.3	43	82
7	8.37	7.24	244	130	206	38	38	92	77.0	37.7	12.6	8.7	46	86
8	8.33	7.38	252	128	216	36	36	92	81.8	41.7	10.2	5.8	43	81
9	8.33	7.53	260	122	216	38	44	84	82.6	40.9	13.1	4.9	42	80
10	8.24	7.25	256	124	222	34	34	90	84.2	41.7	11.2	4.9	41	80
11	8.21	7.17	254	128	218	36	36	92	82.6	46.5	11.7	3.9	44	81
12	8.23	7.26	258	132	224	40	34	92	69.7	38.5	20.4	8.7	44	85
13	8.40	7.27	254	130	214	44	40	86	72.9	36.9	17.5	9.2	45	82
14	8.28	7.42	252	128	216	42	36	86	91.4	47.3	5.8	2.4	45	81
15	8.20	7.44	254	134	210	40	44	94	80.2	43.3	13.1	6.3	42	89
16	8.25	7.30	260	136	216	38	44	98	85.0	45.7	11.7	5.3	43	85
17	8.33	7.32	260	138	218	34	42	104	79.4	44.1	15.1	6.8	44	90
18	8.30	7.40	256	128	220	38	36	90	81.0	39.3	13.1	7.3	44	89
19	8.21	7.33	254	134	222	44	32	90	76.2	38.5	15.6	9.2	46	84
20	8.11	7.42	252	128	216	46	36	82	74.5	43.3	16.0	4.9	51	86
21	8.20	7.40	252	124	218	40	34	84	73.7	40.1	16.5	5.8	45	90
22	8.20	7.37	256	132	212	40	44	92	79.4	38.5	14.1	8.7	45	83
23	8.23	7.34	262	130	214	38	48	92	85.0	41.7	12.2	6.3	44	85
24	8.33	7.39	258	128	222	38	36	90	81.0	41.7	13.6	5.8	45	85
25	8.30	7.43	260	138	222	44	38	94	82.6	50.5	13.1	5.3	46	90
26	8.26	7.21	262	130	218	38	44	92	85.0	42.5	12.2	5.8	45	84
27	8.24	7.33	256	134	226	40	30	94	82.6	44.1	12.2	5.8	47	88
28	8.30	7.38	254	134	214	40	40	94	89.0	48.9	7.8	2.9	44	83
29	8.30	7.19	262	128	218	34	44	94	86.6	40.1	11.2	6.8	44	85
30	8.23	7.41	258	132	214	30	44	102	81.8	44.1	13.1	5.3	45	85
31	8.38	7.41	266	134	228	40	38	94	85.8	45.7	12.6	4.9	43	83
Avg.	8.25	7.34	255	132	216	40	39	92	81.1	43.3	12.8	5.9	44	85
Max.	8.40	7.53	266	160	228	64	48	104	91.4	57.7	20.4	9.2	51	90
Min.	8.01	7.17	238	122	206	30	30	82	69.7	36.9	5.8	2.4	41	80

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		3 MG Well		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	9208	1	0	1	0	1660	< 2	0.46	25.3				
2	1	6896	1	0	1	0	1940	< 2	0.39	25.0				
3	1	24066	1	0	1	0	4960	2	0.41	25.1				
4	1	9222	1	0	1	0	2240	< 2	0.38	25.6				
5	1	7746	1	0	1	0	3320	< 2	0.38	24.2				
6	1	4494	1	0	1	0	2080	2	0.40	24.4				
7	1	6152	1	0	1	0	3900	< 2	0.39	25.0				
8	1	6896	6	0	1	0	3660	< 2	0.38	24.7				
9	1	5510	6	0	1	0	3900	< 2	0.38	24.2				
10	1	9222	6	0	1	0	6220	< 2	0.38	24.7				
11	1	4978	6	0	1	0	5140	< 2	0.37	23.6				
12	1	4128	6	0	1	0	4040	< 2	0.39	23.7				
13	1	3348	6	0	1	0	3660	< 2	0.39	26.6				
14	1	5510	6	0	1	0	5140	< 2	0.40	24.4				
15	1	16328	6	0	1	0	12460	< 2	0.42	24.1				
16	1	6510	6	0	1	0	4960	< 2	0.41	24.9				
17	1	8704	6	0	1	0	3540	< 2	0.41	25.7				
18	1	8212	6	0	1	0	3540	< 2	0.40	25.8				
19	1	8212	6	0	1	0	4180	< 2	0.39	25.9				
20	1	17328	6	0	1	0	4460	< 2	0.41	25.1				
21	1	5526	6	0	1	0	2820	< 2	0.41	25.4				
22	1	6510	6	0	1	0	3540	< 2	0.40	23.7				
23	1	6152	6	0	1	0	3420	< 2	0.40	23.5				
24	1	11588	6	0	1	0	3020	< 2	0.41	23.4				
25	1	5818	6	0	1	0	1480	< 2	0.41	22.3				
26	1	20924	6	0	1	0	3220	< 2	0.39	21.8				
27	1	2548	6	0	1	0	2320	< 2	0.41	21.1				
28	1	2878	6	0	1	0	2080	< 2	0.40	20.4				
29	1	5226	6	0	1	0	4040	< 2	0.39	20.9				
30	1	1808	6	0	1	0	960	< 2	0.38	21.3				
31	1	2500	6	0	1	0	1600	< 2	0.40	21.9				
Avg.									0.40	24.0				
Max.		24066					12460	< 2	0.46	26.6				
Min.									0.37	20.4				

WSSN: 2310

Date	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3	0.9	1.4	1.8	0.1	0.1	0.1	0.5	1.8	0.8	2.0	10
4											0
5	0.4	1.2	1.3	0.2	0.1	0.1	0.5	1.1	0.5	1.5	10
6											0
7											0
8											0
9											0
10											0
11	0.9	1.2	1.2	1.0	0.3	0.2	1.0	1.6	1.1	1.5	10
12	0.1	1.4	1.7	1.2	0.6	0.3	0.5	1.7	1.3	1.9	10
13											0
14											0
15											0
16											0
17											0
18	1.0	1.0	1.4	1.0	0.4	0.2	0.8	1.8	1.0	1.9	10
19	0.1	1.0	1.3	0.9	0.2	0.2	0.1	1.2	1.0	1.5	10
20	0.8	1.3	1.4	0.7	0.6	0.2	0.8	1.3	1.1	1.6	10
21											0
22											0
23											0
24											0
25	0.4	1.2	1.5	0.6	0.4	0.3	0.5	1.5	0.7	1.1	10
26	0.1	1.2	1.3	1.0	0.3	0.1	0.5	1.3	1.4	1.8	10
27	0.1	1.3	1.5	1.0	0.4	0.2	0.2	1.5	1.7	2.3	10
28											0
29											0
30											0
31											0

Distribution Sample Summary	
Total # of routine distribution samples analyzed	100
Total # of routine distribution samples required	100

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	0.92

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3	1.3	1.8	2.2	0.4	0.3	0.3	0.7	2.2	1.1	2.3	10
4											0
5	0.6	1.5	1.6	0.4	0.2	0.5	0.8	1.4	0.8	1.8	10
6											0
7											0
8											0
9											0
10											0
11	1.2	1.5	1.5	1.3	0.5	0.3	1.3	1.9	1.3	1.8	10
12	0.1	1.6	1.9	1.4	0.8	0.5	0.7	1.9	1.5	2.1	10
13											0
14											0
15											0
16											0
17											0
18	1.3	1.3	1.7	1.3	0.5	0.3	1.1	2.1	1.3	2.2	10
19	0.2	1.3	1.7	1.2	0.4	0.4	0.3	1.5	1.3	1.7	10
20	1.0	1.5	1.7	1.0	0.9	0.3	1.1	1.5	1.4	1.8	10
21											0
22											0
23											0
24											0
25	0.6	1.5	1.8	0.9	0.5	0.4	0.7	1.8	1.0	1.0	10
26	0.2	1.4	1.5	1.3	0.5	0.2	0.7	1.5	1.6	2.0	10
27	0.2	1.5	1.8	1.3	0.5	0.3	0.4	1.8	2.0	2.6	10
28											0
29											0
30											0
31											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.2

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

July 2015
Month/Year

F-1R, F-2
Certification of Operator-in-Charge

F-1
Water Plant Classification

[redacted]
Signature of Operator-in-Charge

Genesee
County

DEQ
RESOURCE MANAGEMENT DIVISION
AUG 17 2015
LANSING DISTRICT

Treatment Rate and Filter Data

Maximum Treatment Rate:	18.5	Million Gallons per Day	
Rated Plant Capacity:	36	Million Gallons per Day	
Average Filter Run:	124	Hours	
Average Head Loss:	n/a	Feet	*(filter head loss meters not operational)
Average Filtration Rate:	2.5	Gallons Per Square Feet per Minute	
Maximum Filtration Rate:	3.3	Gallons Per Square Feet per Minute	
Average Wash Water Use:	1.0%	Percent of Treated Water	

Chemical Data

Chlorine on hand:	24,000	lb.	Est. supply:	28	days
Primary Coagulant (Ferric Chloride) on hand:	153,000	lb.	Est. supply:	10	days
Lime (CaO) on hand:	197	tons	Est. supply:	17	days
Fluoride on Hand:	6,000	lb.	Est. supply:	13	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	1	0
Number of filter confluence samples collected:	218	218
Percent of filter confluence samples > 0.3 NTU:	0.5%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

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Date	Million Gallons Treated	Ozone Dosage (mg/L)	Ferric as Fe_{3+} mg/L	Lime Dosage (mg/L)	PW-340 Catioinc Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
							Raw			Plate Settler	Applied
							Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	14.3	4.3	16.6	125.6	5.0	0.64	7	29.1	66.3	5.14	2.17
2	14.1	3.6	19.1	126.5	5.1	0.64	7	26.5	50.4	5.18	1.47
3	14.5	3.8	18.6	131.9	5.0	0.64	8	18.4	47.8	5.91	2.03
4	14.6	3.2	17.8	129.1	4.9	0.63	8	28.6	107.0	7.01	2.18
5	14.5	3.6	17.9	127.3	5.0	0.65	8	32.1	14.6	6.42	1.66
6	14.6	3.9	17.7	122.6	4.7	0.75	7	22.5	12.1	4.54	2.00
7	15.9	3.1	14.6	113.6	4.2	0.71	7	16.3	38.7	1.69	2.88
8	16.1	4.2	16.6	126.9	4.3	0.69	7	12.0	10.2	2.43	1.48
9	18.1	4.3	15.1	105.1	3.8	0.62	7	17.6	51.9	2.43	1.85
10	17.7	4.4	14.8	116.1	4.2	0.67	7	25.6	88.6	2.24	1.67
11	17.1	4.1	16.5	109.7	4.3	0.68	7	14.8	30.6	2.13	1.54
12	14.9	3.9	16.0	114.4	4.3	0.79	7	11.0	23.8	2.78	1.33
13	14.8	3.9	13.9	116.8	4.5	0.84	7	11.2	34.6	2.13	0.96
14	15.0	3.4	13.0	113.0	4.4	0.74	7	13.2	21.1	2.62	1.41
15	14.6	4.0	13.8	123.4	4.5	0.80	7	39.4	122.0	2.47	1.50
16	14.5	4.1	13.9	120.8	4.5	0.75	7	27.0	126.0	2.14	1.83
17	14.7	3.8	13.1	127.3	4.5	0.82	7	18.0	73.9	1.70	1.62
18	14.3	4.7	13.8	154.2	4.6	0.86	7	14.8	44.6	3.03	1.97
19	14.3	4.2	14.0	177.9	5.0	0.88	7	23.3	109.0	2.55	1.51
20	14.3	4.7	13.3	171.8	5.0	0.83	7	27.9	139.0	2.71	1.65
21	14.6	4.4	13.7	172.3	4.9	0.86	7	29.2	146.0	2.52	1.49
22	15.3	4.5	16.0	203.7	4.7	0.82	7	25.1	89.1	4.17	1.50
23	15.8	4.0	18.8	158.9	4.7	0.80	7	22.2	68.3	4.94	1.99
24	14.5	1.2	19.8	166.3	5.3	0.82	7	15.7	31.9	7.01	1.94
25	13.6	0.0	24.3	195.2	5.5	0.88	7	22.8	81.4	8.62	2.00
26	13.6	0.0	23.4	194.1	5.6	0.90	7	28.6	139.0	7.85	1.79
27	13.9	0.0	23.1	194.9	5.4	0.86	7	18.3	63.5	7.24	1.93
28	13.8	0.0	22.7	195.9	5.4	0.91	7	31.6	165.0	5.89	1.13
29	14.3	0.0	22.2	198.8	5.2	0.82	7	20.0	73.4	4.91	1.61
30	14.7	0.4	21.0	180.6	5.1	0.83	7	16.5	46.3	5.14	1.22
31	15.8	4.2	18.5	181.8	4.9	0.94	7	8.0	9.1	3.97	1.22
Avg.	14.9	3.2	17.2	148.3	4.8	0.78	7	21.5			1.69
Max.	18.1	4.7	24.3	203.7	5.6	0.94	8	39.4	165	8.62	2.88
Min.	13.6	0.0	13.0	105.1	3.8	0.62	7	8.0			0.96
Total	462.8										

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Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	7	0.10	0.13	6	0	0	7	0.09	0.12	6	0	0	0.11
2	7	0.11	0.15	6	0	0	7	0.09	0.12	6	0	0	0.09
3	8	0.09	0.11	6	0	0	8	0.09	0.11	6	0	0	0.13
4	8	0.09	0.13	6	0	0	8	0.08	0.09	6	0	0	0.11
5	8	0.08	0.09	6	0	0	8	0.08	0.11	6	0	0	0.09
6	7	0.09	0.12	6	0	0	7	0.08	0.09	6	0	0	0.10
7	7	0.10	0.12	6	0	0	7	0.09	0.10	6	0	0	0.10
8	6	0.11	0.13	6	0	0	6	0.10	0.11	6	0	0	0.09
9	7	0.11	0.15	6	0	0	7	0.10	0.10	6	0	0	0.11
10	7	0.11	0.11	6	0	0	7	0.10	0.12	6	0	0	0.12
11	7	0.12	0.25	6	0	0	7	0.11	0.13	6	0	0	0.10
12	6	0.08	0.11	6	0	0	6	0.10	0.13	6	0	0	0.08
13	7	0.10	0.11	6	0	0	7	0.10	0.12	6	0	0	0.10
14	7	0.18	0.31	6	1	1	7	0.11	0.11	6	0	0	0.11
15	7	0.14	0.20	6	0	0	7	0.12	0.16	6	0	0	0.13
16	7	0.14	0.20	6	0	0	7	0.12	0.15	6	0	0	0.12
17	7	0.13	0.15	6	0	0	7	0.12	0.14	6	0	0	0.18
18	7	0.14	0.20	6	0	0	7	0.12	0.16	6	0	0	0.15
19	7	0.16	0.19	6	0	0	7	0.14	0.18	6	0	0	0.18
20	7	0.13	0.18	6	0	0	7	0.12	0.16	6	0	0	0.12
21	7	0.14	0.17	6	0	0	7	0.14	0.19	6	0	0	0.12
22	7	0.15	0.20	6	0	0	7	0.15	0.19	6	0	0	0.16
23	7	0.14	0.18	6	0	0	7	0.13	0.15	6	0	0	0.15
24	7	0.17	0.19	6	0	0	7	0.17	0.20	6	0	0	0.16
25	7	0.17	0.19	6	0	0	7	0.16	0.19	6	0	0	0.14
26	7	0.14	0.17	6	0	0	7	0.13	0.15	6	0	0	0.13
27	7	0.16	0.22	6	0	0	7	0.15	0.21	6	0	0	0.16
28	7	0.15	0.16	6	0	0	7	0.14	0.16	6	0	0	0.13
29	7	0.13	0.17	6	0	0	7	0.12	0.13	6	0	0	0.12
30	7	0.12	0.14	6	0	0	7	0.13	0.16	6	0	0	0.13
31	7	0.08	0.10	6	0	0	7	0.10	0.13	6	0	0	0.12
Avg.	7	0.12	0.16	6	0	0	7	0.11	0.14	6	0	0	
Max.	8	0.18	0.31	6	1	1	8	0.17	0.21	6	0	0	0.18
Min.	6	0.08	0.09	6	0	0	6	0.08	0.09	6	0	0	

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Date	Fluoriode Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.5	0.17	0.68	0.72	3.2	3.6	6.8	0.5	0.7	2.3	2.7	2.0	2.4
2	0.5	0.18	0.68		3.0	3.3	6.3	0.5	0.8	2.5	2.8	2.4	2.7
3	0.5	0.19	0.66		3.1	3.8	6.9	0.3	0.5	2.1	2.5	1.9	2.2
4	0.5	0.19	0.75		3.2	3.6	6.8	0.2	0.4	2.0	2.3	2.0	2.3
5	0.6	0.20	0.84		3.3	3.3	6.6	0.4	0.7	2.2	2.5	2.1	2.4
6	0.5	0.17	0.72		3.3	3.3	6.6	0.3	0.6	2.0	2.3	2.0	2.3
7	0.5	0.19	0.66		3.2	3.7	6.9	0.3	0.5	1.8	2.1	1.8	2.1
8	0.5	0.18	0.66		3.3	3.4	6.7	0.3	0.6	1.7	2.1	1.8	2.2
9	0.5	0.18	0.73	0.69	3.4	3.6	7.0	0.2	0.5	2.0	2.3	2.0	2.3
10	0.6	0.20	0.74		3.8	3.8	7.6	0.2	0.5	2.1	2.5	2.0	2.4
11	0.6	0.19	0.74		3.9	2.9	6.8	0.3	0.5	2.3	2.6	2.2	2.5
12	0.6	0.20	0.80		4.5	3.3	7.8	0.5	1.0	2.4	2.6	2.6	3.0
13	0.6	0.18	0.67		4.8	3.7	8.5	0.2	0.4	2.1	2.5	2.2	2.6
14	0.6	0.18	0.73		4.8	3.5	8.3	0.4	0.6	2.2	2.5	2.3	2.6
15	0.7	0.18	0.73		4.8	3.7	8.5	0.7	1.1	2.1	2.5	2.0	2.4
16	0.7	0.18	0.78		4.6	3.7	8.3	0.4	0.6	2.5	2.9	2.2	2.5
17	0.7	0.22	0.77		4.6	3.8	8.4	0.3	0.5	2.1	2.4	1.9	2.3
18	0.7	0.20	0.76		4.7	3.9	8.6	0.4	0.6	2.6	2.9	2.2	2.5
19	0.7	0.19	0.76		4.7	3.7	8.4	0.4	0.6	2.5	3.0	2.4	2.8
20	0.7	0.19	0.74		4.6	3.6	8.2	0.4	0.6	2.4	2.8	2.4	2.8
21	0.7	0.19	0.82		4.5	3.7	8.2	0.3	0.5	2.5	3.0	2.5	3.0
22	0.6	0.19	0.78		4.3	3.7	8.0	0.4	0.7	2.6	3.0	0.6	0.9
23	0.6	0.20	0.78	0.75	4.3	3.3	7.6	0.4	0.6	2.6	3.0	2.6	3.0
24	0.6	0.18	0.72		4.7	3.4	8.1	0.3	0.5	1.7	2.1	0.7	1.1
25	0.6	0.20	0.76		5.0	3.6	8.6	0.5	0.8	2.6	3.0	0.6	0.9
26	0.6	0.20	0.77		5.0	3.8	8.8	0.4	0.6	2.2	2.5	2.2	2.5
27	0.6	0.19	0.80		5.3	3.6	8.9	0.3	0.5	2.2	2.5	2.0	2.4
31	0.6	0.19	0.74		4.2	3.5	7.7	0.5	0.7	2.5	3.0	0.6	0.7
Avg.	0.59	0.19	0.74	0.72	4.3	3.6	7.8	0.4	0.6	2.2	2.6	1.9	2.3
Max.	0.70	0.22	0.84	0.75	5.5	4.2	9.7	0.7	1.1	2.6	3.0	2.6	3.0
Min.	0.50	0.17	0.66	0.69	3.0	2.9	6.3	0.2	0.4	1.7	2.1	0.6	0.7

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Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.37	7.59	232	148	190	56	42	92	67.3	46.5	15.6	7.8	45	84
2	8.12	7.36	260	150	220	54	40	96	77.8	50.5	16.0	5.8	47	87
3	8.40	7.43	260	155	218	55	42	100	89.0	56.9	9.2	2.9	43	89
4	8.35	7.40	252	153	210	52	42	101	80.2	52.1	12.6	3.9	42	86
5	8.18	7.49	258	156	216	54	42	102	89.8	52.1	8.3	6.8	42	86
6	8.19	7.48	264	156	208	56	56	100	85.8	57.7	12.2	2.9	44	88
7	8.06	7.68	258	156	212	50	46	106	87.4	50.5	9.7	7.3	48	85
8	7.98	7.52	252	148	208	54	44	94	85.0	51.3	9.7	4.9	43	77
9	8.18	7.49	246	152	208	52	38	100	80.2	52.9	11.2	4.9	43	82
10	8.22	7.47	244	150	202	52	42	98	84.2	55.3	8.3	2.9	43	77
11	8.30	7.54	250	150	206	62	44	88	85.8	48.9	8.7	6.8	47	81
12	8.21	7.45	256	144	214	48	42	96	79.4	47.3	14.1	6.8	42	89
13	8.36	7.60	242	142	200	50	42	92	79.4	47.3	10.7	5.8	45	83
14	7.83	7.45	250	144	208	50	42	94	75.4	39.3	15.1	11.2	50	84
15	8.13	7.38	250	134	212	48	38	86	81.8	41.7	11.2	7.3	44	81
16	8.16	7.43	252	156	212	48	40	108	78.6	44.1	13.6	11.2	44	79
17	8.05	7.36	256	140	206	52	50	88	82.6	45.7	9.2	8.7	43	78
18	8.07	7.42	248	132	206	42	42	90	80.2	40.1	11.7	7.8	41	80
19	8.13	7.45	252	134	212	44	40	90	80.2	47.3	12.6	3.9	43	76
20	8.21	7.53	248	142	214	46	34	96	78.6	43.3	12.3	8.3	42	79
21	8.15	7.35	250	134	220	54	30	80	82.6	41.7	10.7	7.3	42	79
22	8.31	7.42	252	132	216	44	36	88	76.2	36.9	15.1	9.7	44	80
23	8.33	7.35	252	136	214	36	38	100	81.8	40.1	11.7	8.7	43	84
24	8.28	7.34	246	136	206	34	40	102	79.4	39.3	11.7	9.2	43	83
25	8.24	7.52	248	149	208	47	40	102	76.2	38.5	14.1	8.7	43	81
26	8.15	7.43	254	153	212	51	42	102	85.0	47.3	10.2	7.3	43	89
27	8.14	7.40	258	146	216	48	42	98	77.0	48.9	16.0	5.8	45	88
28	8.19	7.42	248	162	210	58	38	104	79.4	61.7	12.2	1.9	45	96
29	8.03	7.32	242	152	206	50	36	102	79.4	54.5	10.7	3.9	47	100
30	7.97	7.37	240	158	206	60	34	98	70.5	58.5	15.6	2.9	51	98
31	7.91	7.37	248	156	212	52	36	104	75.4	55.3	14.6	4.4	51	99
Avg.	8.17	7.45	251	147	210	50	41	97	80.4	48.2	12.1	6.4	44	85
Max.	8.40	7.68	264	162	220	62	56	108	89.8	61.7	16.0	11.2	51	100
Min.	7.83	7.32	232	132	190	34	30	80	67.3	36.9	8.3	1.9	41	76

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Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	4884	12	0	1	0	2870	< 2	0.44	22.5				
2	1	3448	12	0	1	0	2020	< 2	0.44	22.3				
3	1	3654	12	0	1	0	2390	< 2	0.45	22.1				
4	1	4611	12	0	1	0	1830	< 2	0.44	23.5				
5	1	5172	12	0	1	0	1830	< 2	0.45	22.5				
6	1	3873	12	0	1	0	1890	< 2	0.45	22.8				
7	1	5794	12	0	1	0	1460	< 2	0.43	23.5				
8	1	3654	12	0	1	0	1950	< 2	0.41	22.0				
9	1	6867	12	0	1	0	2990	< 2	0.43	22.5				
10	1	4106	12	0	1	0	1830	< 2	0.41	23.3				
11	1	3654	12	0	1	0	2090	< 2	0.43	23.5				
12	1	3654	12	0	1	0	1510	< 2	0.42	22.9				
13	1	4884	12	0	1	0	1510	< 2	0.41	24.8				
14	1	11191	12	0	1	0	7380	< 2	0.40	23.3				
15	1	8164	12	0	1	0	3390	< 2	0.40	23.1				
16	1	6867	12	0	1	0	2020	< 2	0.40	25.9				
17	1	3873	12	0	1	0	1460	< 2	0.41	23.8				
18	1	3873	12	0	1	0	5550	< 2	0.39	24.4				
19	1	5794	12	0	1	0	3390	< 2	0.39	24.4				
20	1	6867	12	0	1	0	2870	< 2	0.39	24.4				
21	1	8664	12	0	1	0	2870	< 2	0.39	24.5				
22	1	4884	12	0	1	0	2870	< 2	0.39	25.1				
23	1	6480	12	0	1	0	3550	< 2	0.40	24.9				
24	1	6480	12	0	1	0	3390	< 2	0.40	25.1				
25	1	7270	12	0	1	0	4440	< 2	0.42	25.2				
26	1	8164	12	0	1	0	4140	< 2	0.44	25.1				
27	1	7270	12	0	1	0	2230	< 2	0.43	26.0				
28	1	5172	12	0	1	0	2660	< 2	0.47	27.6				
29	1	6867	12	0	1	0	6230	< 2	0.45	27.2				
30	1	17329	12	0	1	0	3240	< 2	0.48	26.2				
31	1	19863	12	0	1	0	4700	< 2	0.46	25.5				
Avg.									0.42	24.2				
Max.		19863					7380	< 2	0.48	27.6				
Min.									0.39	22.0				

WSSN: 2310

Date	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	0.5	1.0	1.1	0.3	0.2	0.2	0.6	1.3	0.7	1.4	10
2											0
3											0
4											0
5											0
6											0
7	0.1	1.1	1.0	0.2	1.9	0.2	0.5	1.0	1.3	4.0	10
8	1.1	0.3	1.2	0.1	0.8	0.3			0.5	1.2	8
9	0.1	0.7	1.2	0.2	0.1	0.2	0.4	1.1	0.2	1.3	10
10											0
11											0
12											0
13											0
14	0.9	1.0	1.0	0.1	0.2	0.2	0.5	1.3	0.3	1.2	10
15	0.1	0.9	1.0	0.4	0.6	0.1	0.2	1.3	0.6	1.2	10
16											0
17											0
18											0
19											0
20											0
21											0
22	0.5	0.5	0.9	0.2	0.1	0.1	0.3	1.0	0.6	1.6	10
23	0.6	0.7	0.9	0.2	0.1	0.1	0.1	1.2	0.1	1.3	10
24											0
25											0
26											0
27											0
28	0.6	0.9	1.0	0.3	0.3	0.1	0.5	1.0	0.9	1.0	10
29											0
30	0.6	0.7	0.8	0.1	0.1	0.5	0.3	1.7	0.1	1.2	10
31				0.2	0.4	0.2					3

Distribution Sample Summary	
Total # of routine distribution samples analyzed	101
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	1
Percent of routine distribution samples positive	1%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	0.67

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	0.9	1.3	1.4	0.6	0.4	0.4	0.9	1.7	1.0	1.7	10
2											0
3											0
4											0
5											0
6											0
7	0.1	1.4	1.2	0.3	2.2	0.4	0.8	1.3	1.6	4.0	10
8	1.4	0.6	1.6	0.4	1.0	0.5			0.8	1.5	8
9	0.2	1.0	1.5	0.4	0.2	0.5	0.6	1.4	0.4	1.6	10
10											0
11											0
12											0
13											0
14											0
15	1.3	1.3	1.3	0.3	0.4	0.4	0.8	1.7	0.5	1.5	10
16	0.2	1.2	1.3	0.7	0.9	0.2	0.5	1.5	0.9	1.5	10
17											0
18											0
19											0
20											0
21											0
22	0.8	0.8	1.3	0.5	0.3	0.2	0.5	1.4	0.9	2.0	10
23	0.9	1.1	1.2	0.5	0.4	0.3	0.3	1.5	0.1	1.6	10
24											0
25											0
26											0
27											0
28	0.8	1.3	1.3	0.5	0.5	0.2	0.8	1.4	1.3	1.3	10
29											0
30	1.0	1.2	1.3	0.3	0.3	0.2	0.6	2.3	0.3	1.5	10
31				0.4	0.6	0.4					3

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	0.9

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent
7/30/2015	[redacted]	7/31/2015	[redacted]	.4 / .6	Absent
		7/31/2015	[redacted]	.2 / .4	Absent
		7/31/2015	[redacted]	.2 / .4	Absent

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

June 2015
Month/Year

F-1R, F-2
Certification of Operator-in-Charge

F-1
Water Plant Classification

[redacted]
Signature of Operator-in-Charge

Genesee
County

DEQ
RESOURCE MANAGEMENT DIVISION
JUL 14 2015
LANSING DISTRICT

Treatment Rate and Filter Data

Maximum Treatment Rate:	18.6	Million Gallons per Day
Rated Plant Capacity:	36	Million Gallons per Day
Average Filter Run:	90	Hours
Average Head Loss:	n/a	Feet *(filter head loss meters not operational)
Average Filtration Rate:	2.3	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	3.3	Gallons Per Square Feet per Minute
Average Wash Water Use:	2.0%	Percent of Treated Water

Chemical Data

Chlorine on hand:	12,000	lb.	Est. supply:	13	days
Primary Coagulant (Ferric Chloride) on hand:	220,000	lb.	Est. supply:	13	days
Lime (CaO) on hand:	259	tons	Est. supply:	32	days
Fluoride on Hand:	18,000	lb.	Est. supply:	45	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks

	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	0	0
Number of filter confluence samples collected:	211	211
Percent of filter confluence samples > 0.3 NTU:	0.0%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Coagulation Parameters & Softening Chemical Application — City of Flint Water Treatment Plant — June 2015 — Page 2

WSSN: 2310

Date	Million Gallons Treated	Ozone Dosage (mg/L)	Ferric as Fe^{3+} mg/L	Lime Dosage (mg/L)	PW-340 Cationic Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
							Raw			Plate Settler	Applied
							Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	17.3	2.2	19.7	148.3	4.2	0.66	7	2.3	4.4	1.29	1.35
2	16.5	2.5	20.7	176.0	4.4	0.60	8	6.8	22.8	1.11	2.50
3	16.9	2.4	20.1	155.0	4.3	0.68	7	4.3	20.6	1.13	3.53
4	16.5	2.4	20.8	162.2	4.4	0.58	7	3.4	15.6	0.96	3.24
5	17.5	2.9	20.2	168.8	3.6	0.56	7	1.5	2.4	1.01	2.57
6	18.1	3.5	20.2	157.9	3.6	0.53	8	2.9	8.2	0.88	4.26
7	17.9	3.5	17.8	137.8	3.6	0.58	8	3.3	10.2	0.88	3.15
8	17.6	3.6	18.2	145.0	4.2	0.68	8	6.4	24.9	1.44	2.26
9	17.7	3.6	20.4	178.1	4.4	0.68	7	2.1	7.3	1.36	2.96
10	17.6	3.2	20.4	176.1	4.4	0.69	7	2.5	6.9	1.38	5.40
11	18.0	3.6	20.2	173.1	4.3	0.57	7	5.4	12.3	1.20	3.84
12	18.3	3.6	19.7	168.3	4.0	0.56	7	3.6	7.1	1.34	3.51
13	17.8	3.5	20.2	164.3	4.1	0.60	8	6.5	13.9	1.55	2.88
14	18.3	3.5	20.1	182.3	4.0	0.63	8	6.7	19.6	2.50	2.89
15	16.7	3.5	22.5	206.7	4.4	0.78	7	4.8	18.3	2.50	2.16
16	16.1	3.4	19.8	184.1	3.8	0.82	7	8.1	16.9	2.46	4.04
17	16.2	3.6	21.5	183.5	4.5	0.86	7	8.7	31.5	1.88	4.22
18	15.6	3.6	25.7	219.3	4.9	0.85	7	7.8	22.7	2.75	2.04
19	15.1	3.6	16.2	203.6	5.0	0.87	7	4.9	12.5	1.88	3.7
20	15.4	3.6	15.5	194.9	4.8	0.90	8	11.0	30.4	1.11	2.46
21	14.6	3.6	17.2	223.1	5.0	0.83	7	4.1	15.8	0.93	2.71
22	12.0	3.5	19.5	238.7	5.2	0.93	7	11.0	65.7	1.27	7.41
23	11.6	3.8	22.5	223.9	5.3	0.94	7	12.5	56.3	2.06	7.06
24	12.6	3.8	20.7	177.2	4.7	0.83	7	21.0	103.0	2.67	2.39
25	13.2	3.7	18.7	191.5	5.0	0.73	7	11.7	49.7	2.33	3.89
26	13.5	3.3	19.9	143.1	5.1	0.71	7	4.1	11.4	3.94	5.27
27	13.8	3.7	20.5	123.6	5.0	0.68	7	11.6	63.9	4.51	1.33
28	14.2	3.7	19.8	125.6	4.6	0.68	7	2.0	3.6	5.62	2.24
29	13.9	3.7	17.5	115.2	4.7	0.73	7	3.0	4.4	5.19	2.12
30	14.4	4.3	15.8	122.1	5.2	0.69	7	11.1	21.7	4.84	1.32
Avg.	15.8	3.4	19.7	172.3	4.5	0.71	7	6.5			3.29
Max.	18.3	4.3	25.7	238.7	5.3	0.94	8	21.0	103	5.62	7.41
Min.	11.6	2.2	15.5	115.2	3.6	0.53	7	1.5			1.32
Total	474.9										

WSSN: 2310

Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	7	0.10	0.13	6	0	0	7	0.09	0.09	6	0	0	0.09
2	8	0.07	0.09	6	0	0	8	0.07	0.08	6	0	0	0.07
3	7	0.09	0.11	6	0	0	7	0.08	0.12	6	0	0	0.09
4	6	0.09	0.11	6	0	0	6	0.08	0.09	6	0	0	0.09
5	7	0.09	0.10	6	0	0	7	0.08	0.09	6	0	0	0.09
6	8	0.08	0.10	6	0	0	8	0.07	0.08	6	0	0	0.08
7	7	0.07	0.08	6	0	0	7	0.07	0.10	6	0	0	0.09
8	8	0.09	0.13	6	0	0	8	0.06	0.08	6	0	0	0.08
9	6	0.09	0.15	6	0	0	7	0.08	0.09	6	0	0	0.07
10	7	0.13	0.23	6	0	0	7	0.07	0.11	6	0	0	0.09
11	7	0.08	0.14	6	0	0	7	0.07	0.10	6	0	0	0.12
12	7	0.08	0.10	6	0	0	7	0.08	0.09	6	0	0	0.08
13	7	0.08	0.11	6	0	0	7	0.08	0.10	6	0	0	0.09
14	8	0.09	0.16	6	0	0	8	0.08	0.10	6	0	0	0.09
15	7	0.08	0.09	6	0	0	7	0.07	0.08	6	0	0	0.08
16	7	0.07	0.11	6	0	0	7	0.08	0.13	6	0	0	0.08
17	7	0.07	0.10	6	0	0	7	0.06	0.07	6	0	0	0.07
18	6	0.08	0.10	6	0	0	6	0.08	0.09	6	0	0	0.07
19	6	0.07	0.08	5	0	0	6	0.06	0.07	5	0	0	0.09
20	8	0.08	0.09	6	0	0	8	0.08	0.11	6	0	0	0.09
21	7	0.09	0.10	6	0	0	7	0.09	0.11	6	0	0	0.10
22	7	0.07	0.09	6	0	0	7	0.08	0.11	6	0	0	0.09
23	7	0.07	0.10	6	0	0	7	0.06	0.08	6	0	0	0.08
24	7	0.09	0.11	6	0	0	7	0.08	0.12	6	0	0	0.08
25	7	0.09	0.10	6	0	0	7	0.08	0.09	6	0	0	0.09
26	6	0.11	0.15	5	0	0	6	0.08	0.10	5	0	0	0.09
27	7	0.10	0.14	6	0	0	7	0.09	0.12	6	0	0	0.10
28	7	0.13	0.17	6	0	0	7	0.09	0.11	6	0	0	0.12
29	7	0.10	0.12	6	0	0	7	0.09	0.10	6	0	0	0.10
30	7	0.12	0.15	6	0	0	7	0.10	0.13	6	0	0	0.09
Avg.	7	0.09	0.12	6	0	0	7	0.08	0.10	6	0	0	
Max.	8	0.13	0.23	6	0	0	8	0.10	0.13	6	0	0	0.12
Min.	6	0.07	0.08	5	0	0	6	0.06	0.07	5	0	0	

WSSN: 2310

Date	Fluoriode Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.6	0.20	0.73		2.8	2.6	5.4	0.4	0.7	1.6	1.9	1.4	1.8
2	0.6	0.19	0.81		2.7	2.3	5.0	0.5	0.8	1.7	2.0	1.7	1.9
3	0.6	0.20	0.79		2.7	2.5	5.2	0.4	0.5	1.7	2.0	1.7	2.0
4	0.6	0.20	0.82	0.76	2.8	2.1	4.9	0.5	0.7	1.8	2.0	1.7	1.9
5	0.6	0.20	0.82		2.6	2.2	4.8	0.6	0.8	1.9	2.2	1.4	1.7
6	0.6	0.20	0.74		2.5	2.2	4.7	0.4	0.6	1.9	2.2	1.8	2.1
7	0.6	0.20	0.76		2.1	2.1	4.2	0.3	0.6	1.8	2.1	1.7	1.9
8	0.6	0.19	0.78		2.2	2.3	4.5	0.4	0.5	1.9	2.1	1.8	2.1
9	0.6	0.20	0.70		2.7	2.7	5.4	0.5	0.7	1.6	1.8	1.6	1.8
10	0.6	0.20	0.74	0.70	2.6	2.6	5.2	0.4	0.5	1.9	2.1	1.5	1.8
11	0.6	0.20	0.75		2.6	2.7	5.3	0.3	0.5	1.5	1.7	1.5	1.7
12	0.6	0.20	0.72		2.6	2.6	5.2	0.5	0.8	1.7	2.1	1.6	1.9
13	0.6	0.20	0.70		2.7	2.4	5.1	0.3	0.5	1.7	2.0	1.7	2.0
14	0.6	0.19	0.69		2.8	2.7	5.5	0.3	0.4	1.7	1.9	1.7	1.9
15	0.6	0.20	0.72		2.9	2.8	5.7	0.3	0.5	1.8	2.1	1.7	1.9
16	0.6	0.20	0.80		2.5	2.2	4.7	0.3	0.5	1.8	2.0	1.8	2.0
17	0.5	0.19	0.70		2.9	2.3	5.2	0.5	0.7	1.8	2.0	1.7	2.0
18	0.5	0.20	0.70	0.72	2.8	2.8	5.6	0.4	0.5	1.9	2.3	1.9	2.3
19	0.6	0.20	0.74		2.6	2.5	5.1	0.5	0.7	1.8	2.2	0.7	0.9
20	0.5	0.19	0.71		3.0	2.6	5.6	0.3	0.5	1.7	1.9	1.7	1.9
21	0.6	0.19	0.72		3.1	2.9	6.0	0.3	0.5	1.8	2.1	1.7	2.0
22	0.6	0.19	0.70		3.4	2.6	6.0	0.4	0.7	1.9	2.2	0.7	0.9
23	0.6	0.19	0.81		3.6	2.9	6.5	0.4	0.7	1.7	1.9	1.7	1.9
24	0.6	0.20	0.82		3.4	2.6	6.0	0.5	0.7	1.7	2.0	1.5	1.8
25	0.6	0.19	0.73		3.3	2.5	5.8	0.3	0.5	1.5	1.7	0.5	0.8
26	0.6	0.19	0.72		3.2	3.5	6.7	0.6	0.8	2.5	2.8	2.0	2.2
27	0.5	0.18	0.71		3.1	3.2	6.3	0.5	0.7	2.7	3.0	0.6	0.9
28	0.5	0.18	0.65		3.2	3.6	6.8	0.3	0.5	1.8	2.1	1.7	2.0
29	0.5	0.19	0.70		3.3	3.2	6.5	0.4	0.7	2.4	2.8	2.3	2.6
30	0.5	0.19	0.71		3.2	3.5	6.7	0.3	0.6	1.8	2.1	1.8	2.1
Avg.	0.58	0.19	0.74	0.73	2.9	2.7	5.5	0.4	0.6	1.8	2.1	1.6	1.8
Max.	0.60	0.20	0.82	0.76	3.6	3.6	6.8	0.6	0.8	2.7	3.0	2.3	2.6
Min.	0.50	0.18	0.65	0.70	2.1	2.1	4.2	0.3	0.4	1.5	1.7	0.5	0.8

WSSN: 2310

Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.18	7.64	272	180	226	76	46	104	86.6	63.3	13.6	5.3	48	88
2	7.97	7.56	271	177	216	61	55	116	93.0	60.9	10.2	7.8	46	92
3	7.97	7.60	274	178	222	74	52	104	82.6	61.7	16.5	5.8	49	90
4	7.89	7.70	274	160	222	54	52	106	84.2	57.7	15.6	3.9	47	93
5	7.88	7.55	274	190	222	76	52	114	81.0	64.1	17.5	7.3	49	94
6	7.89	7.69	277	176	221	66	56	110	94.6	60.9	10.2	5.8	44	89
7	7.96	7.75	275	185	224	72	51	113	93.8	64.9	9.7	6.3	48	92
8	7.90	7.67	280	185	224	73	56	112	96.2	68.9	9.7	4.4	46	92
9	7.94	7.67	272	164	224	54	48	110	76.2	56.9	19.9	5.3	50	95
10	7.94	7.60	278	148	226	40	52	108	78.6	52.1	19.4	4.4	50	94
11	7.94	7.55	276	172	228	66	48	106	80.2	63.3	18.5	3.4	49	94
12	8.11	7.75	278	190	228	86	50	104	82.6	68.1	17.5	4.9	49	93
13	8.01	7.76	278	197	225	89	53	108	97.8	75.4	8.7	2.9	46	92
14	7.88	7.67	277	196	225	89	52	107	93.0	68.9	11.2	6.3	48	89
15	7.99	7.76	276	206	226	94	50	112	94.6	74.5	9.7	4.9	48	95
16	8.02	7.65	272	194	224	76	48	118	92.2	68.1	12.6	5.3	46	100
17	7.95	7.72	264	202	224	90	40	112	91.4	77.0	8.7	2.4	48	93
18	7.90	7.58	270	174	222	62	48	112	80.2	59.3	17.9	6.3	49	96
19	7.92	7.49	276	182	226	72	50	110	80.2	67.3	18.5	3.4	48	97
20	7.95	7.71	279	193	229	101	50	92	94.6	71.3	11.7	2.9	46	82
21	7.92	7.51	280	173	228	75	52	98	92.2	67.3	12.6	2.9	47	84
22	8.03	7.57	274	176	236	74	38	102	94.6	64.9	9.2	3.4	45	86
23	7.98	7.40	274	210	236	112	38	98	89.0	82.6	12.6	0.9	48	93
24	7.98	7.43	278	214	236	128	42	86	81.8	72.1	17.9	8.3	50	97
25	7.97	7.48	274	194	226	94	48	100	83.4	74.5	15.4	1.9	48	91
26	7.90	7.55	278	200	228	100	50	100	79.4	75.4	21.9	2.9	48	93
27	7.96	7.56	282	186	238	78	44	108	92.2	76.2	12.6	2.9	46	89
28	7.97	7.56	276	164	230	62	46	102	85.0	56.9	15.6	5.3	46	89
29	7.97	7.70	276	167	228	59	48	108	86.6	57.7	14.6	7.3	45	89
30	8.32	7.56	258	160	212	60	46	100	83.4	44.9	12.2	11.7	47	86
Avg.	7.97	7.61	275	183	226	77	49	106	87.4	65.9	14.1	4.9	47	92
Max.	8.32	7.76	282	214	238	128	56	118	97.8	82.6	21.9	11.7	50	100
Min.	7.88	7.40	258	148	212	40	38	86	76.2	44.9	8.7	0.9	44	82

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	2098	12	0	1	0	970	< 2	0.50	18.8				
2	1	295	12	0	1	0	280	< 2	0.50	18.5				
3	1	171	12	0	1	0	230	< 2	0.50	18.8				
4	1	262	12	0	1	0	230	< 2	0.47	18.8				
5	1	768	12	0	1	0	450	< 2	0.51	19.1				
6	1	262	12	0	1	0	300	< 2	0.48	18.7				
7	1	134	12	0	1	0	480	< 2	0.50	18.7				
8	1	98	12	0	1	0	350	< 2	0.50	19.4				
9	1	1733	12	0	1	0	623	< 2	0.47	19.5				
10	1	195	12	0	1	0	280	< 2	0.45	19.9				
11	1	175	12	0	1	0	230	< 2	0.49	20.0				
12	1	546	12	0	1	0	770	< 2	0.52	21.5				
13	1	426	12	0	1	0	260	< 2	0.54	20.5				
14	1	5172	12	0	1	0	800	2	0.52	20.3				
15	1	733	12	0	1	0	260	< 2	0.54	20.5				
16	1	512	12	0	1	0	260	< 2	0.52	21.0				
17	1	404	12	0	1	0	300	< 2	0.54	22.2				
18	1	228	12	0	1	0	1120	< 2	0.50	20.5				
19	1	2247	10	0	1	0	4400	< 2	0.52	21.2				
20	1	326	12	0	1	0	> 738	< 2	0.51	20.9				
21	1	265	12	0	1	0	2160	< 2	0.50	20.6				
22	1	683	12	0	1	0	1770	< 2	0.50	20.9				
23	1	2098	12	0	1	0	1660	< 2	0.56	20.9				
24	1	960	12	0	1	0	1120	< 2	0.60	20.8				
25	1	455	12	0	1	0	1120	< 2	0.54	21.1				
26	1	1246	10	0	1	0	3550	< 2	0.53	20.9				
27	1	395	12	0	1	0	450	< 2	0.49	20.3				
28	1	495	12	0	1	0	450	< 2	0.47	20.5				
29	1	428	12	0	1	0	450	< 2	0.46	20.8				
30	1	4884	12	0	1	0	2760	< 2	0.48	21.9				

Avg.									0.51	20.3				
Max.		5172					4400	< 2	0.60	22.2				
Min.									0.45	18.5				

WSSN: 2310

Date	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3	0.1	1.0	1.2	0.7	0.3	0.2	0.5	1.0	1.0	1.0	10
4	0.7	0.7	1.0	0.1	0.3	0.4	0.5	1.1	0.1	1.2	10
5											0
6											0
7											0
8											0
9	0.7	0.5	1.0	0.7	0.3	0.3	0.6	1.1	0.2	1.1	10
10	0.1	1.0	1.0	0.7	0.2	0.2	0.4	1.0	0.1	0.8	10
11	0.2	0.7	0.7	0.5	0.2	0.1	0.4	0.9	0.8	0.1	10
12											0
13											0
14											0
15											0
16											0
17	0.1	0.7	1.1	0.8	0.3	0.1	0.2	1.1	0.5	1.2	10
18	0.6	0.9	1.1	0.7	0.2	0.2	0.3	1.0	1.0	1.2	10
19											0
20											0
21											0
22											0
23	0.4	0.7	0.7	0.4	0.3				0.1	0.5	7
24	0.5	0.8	0.8	0.4	0.2	0.2	0.3	0.9	0.1	1.3	10
25						0.3	0.5	0.9	0.5		4
26											0
27											0
28											0
29											0
30	0.7	0.8	1.0	0.5	0.3	0.3	0.7	1.3	0.5	0.9	10

Distribution Sample Summary	
Total # of routine distribution samples analyzed	101
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	1
Percent of routine distribution samples positive	1%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	0.60

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3	0.3	1.2	1.5	1.0	0.5	0.4	0.8	1.2	1.2	1.2	10
4	1.0	1.0	1.3	0.2	0.5	0.5	0.8	1.3	0.2	1.5	10
5											0
6											0
7											0
8											0
9	1.0	0.8	1.3	1.0	0.4	0.5	0.9	1.3	0.3	1.4	10
10	0.1	1.3	1.3	1.0	0.5	0.4	0.6	1.2	0.2	1.0	10
11	0.3	1.0	1.0	0.8	0.4	0.2	0.7	1.1	1.0	0.2	10
12											0
13											0
14											0
15											0
16											0
17	0.2	1.1	1.3	1.1	0.6	0.4	0.5	1.5	0.8	1.5	10
18	0.9	1.2	1.3	1.0	0.5	0.5	0.5	1.4	1.2	1.5	10
19											0
20											0
21											0
22											0
23	0.6	1.0	1.0	0.7	0.5				0.1	0.8	7
24	0.7	1.1	1.1	0.6	0.4	0.4	0.5	1.2	0.2	1.5	10
25						0.4	0.7	1.2	0.7		4
26											0
27											0
28											0
29											0
30	1.0	1.2	1.3	0.7	0.5	0.5	1.0	1.6	0.8	1.1	10

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	0.8

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent
6/24/2015	[redacted]	6/25/2015	[redacted]	0.5 / 0.7	Absent
		6/25/2015	[redacted]	0.9 / 1.1	Absent
		6/25/2015	[redacted]	0.1 / 0.1	Absent

2310

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

May 2015
Month/Year

F-1R, F-2
Certification of Operator-in-Charge

F-1
Water Plant Classification

[redacted]
Signature of Operator-in-Charge

Genesee
County

DEQ
RESOURCE MANAGEMENT DIVISION
JUN 17 2015
LANSING DISTRICT

Treatment Rate and Filter Data

Maximum Treatment Rate:	20.3	Million Gallons per Day
Rated Plant Capacity:	36	Million Gallons per Day
Average Filter Run:	69	Hours
Average Head Loss:	n/a	Feet *(filter head loss meters not operational)
Average Filtration Rate:	3.1	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	2.3	Gallons Per Square Feet per Minute
Average Wash Water Use:	3.6%	Percent of Treated Water

Chemical Data

Chlorine on hand:	24,000	lb.	Est. supply:	33	days
Primary Coagulant (Ferric Chloride) on hand:	126,000	lb.	Est. supply:	7	days
Lime (CaO) on hand:	289	tons	Est. supply:	24	days
Fluoride on Hand:	15,000	lb.	Est. supply:	40	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	0	0
Number of filter confluence samples collected:	229	229
Percent of filter confluence samples > 0.3 NTU:	0.0%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Coagulation Parameters & Softening Chemical Application — City of Flint Water Treatment Plant — May 2015 — Page 2

WSSN: 2310

Date	Million Gallons Treated	Ozone Dosage (mg/L)	Ferric as Fe3+ mg/L	Lime Dosage (mg/L)	PW-340 Cationic Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
							Raw			Plate Settler	Applied
							Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	16.6	2.1	18.7	162.7	4.9	0.73	8	3.8	8.2	1.31	1.72
2	16.6	2.0	17.8	162.2	4.8	0.80	8	3.3	8.6	1.26	1.80
3	16.6	2.2	17.6	156.1	4.9	0.80	7	4.4	12.4	1.07	1.59
4	16.6	2.1	17.6	170.2	4.5	0.80	8	3.7	8.6	1.40	1.43
5	17.0	2.0	17.7	163.9	4.4	0.83	7	2.6	4.4	1.41	1.54
6	17.1	2.2	17.6	144.2	4.3	0.72	7	3.8	10.5	1.38	1.59
7	17.3	2.2	19.6	148.4	4.3	0.64	7	3.4	11.4	1.65	1.14
8	17.6	2.2	17.8	186.8	4.5	0.79	7	2.7	3.6	1.33	1.75
9	16.9	1.8	19.9	200.9	5.2	0.88	8	3.4	8.3	1.46	3.25
10	16.3	2.5	20.8	183.8	6.0	0.94	7	6.3	16.8	1.23	1.88
11	16.4	2.8	20.8	183.5	6.3	0.91	7	8.9	23.5	1.04	2.50
12	16.6	2.7	20.6	175.0	6.4	0.97	7	4.0	5.6	0.93	3.31
13	16.6	2.8	20.4	166.0	5.4	0.87	7	3.7	6.4	1.00	1.83
14	16.8	2.6	20.5	166.8	5.4	0.88	7	3.6	6.9	1.17	2.55
15	17.3	2.2	19.8	176.0	5.4	0.82	7	3.3	7.8	1.45	2.32
16	16.9	2.4	20.2	173.9	5.5	0.95	7	3.5	8.7	1.44	1.35
17	16.7	2.5	20.5	175.4	5.7	0.94	7	3.0	6.4	1.33	1.45
18	16.7	2.3	20.5	188.7	5.8	0.94	7	4.8	19.6	1.17	2.10
19	16.8	2.4	20.3	179.2	5.8	0.91	8	5.4	16.3	1.08	2.3
20	16.5	2.2	21.1	152.5	5.3	0.88	7	3.7	13.4	0.91	4.18
21	16.5	2.2	20.9	168.6	4.7	0.78	8	3.0	10.6	0.76	2.84
22	16.7	1.9	20.6	169.4	4.7	0.71	7	2.1	3.5	0.74	2.40
23	16.7	2.5	20.8	175.2	4.7	0.80	8	4.1	14.4	1.00	2.00
24	16.6	2.4	20.9	173.5	4.8	0.78	7	3.2	6.7	1.06	2.46
25	16.7	2.3	19.2	170.3	4.7	0.76	8	3.0	7.6	1.11	2.72
26	16.7	2.5	20.5	177.9	4.3	0.74	7	2.0	4.7	1.12	1.54
27	18.3	2.3	18.9	167.8	4.0	0.68	7	2.6	4.8	1.00	2.94
28	20.0	2.2	17.1	152.9	3.6	0.59	8	9.4	28.1	1.23	3.62
29	19.7	2.3	17.4	154.6	3.6	0.64	7	3.2	6.4	1.06	2.92
30	17.3	2.1	19.9	181.4	4.1	0.73	8	13.3	39.0	1.06	1.64
31	17.3	2.3	19.7	148.8	4.3	0.71	8	8.7	31.9	0.99	1.55
Avg.	17.0	2.3	19.5	169.6	4.9	0.80	7	4.4			2.20
Max.	20.0	2.8	21.1	200.9	6.4	0.97	8	13.3	39	1.65	4.18
Min.	16.3	1.8	17.1	144.2	3.6	0.59	7	2.0			1.14
Total	528.4										

WSSN: 2310

Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	8	0.07	0.09	6	0	0	8	0.07	0.08	6	0	0	0.07
2	8	0.06	0.09	6	0	0	8	0.06	0.08	6	0	0	0.06
3	8	0.07	0.11	6	0	0	8	0.07	0.08	6	0	0	0.07
4	8	0.08	0.09	6	0	0	8	0.07	0.09	6	0	0	0.07
5	7	0.08	0.09	6	0	0	7	0.07	0.08	6	0	0	0.07
6	7	0.08	0.11	6	0	0	7	0.08	0.12	6	0	0	0.08
7	6	0.08	0.11	6	0	0	6	0.07	0.09	6	0	0	0.07
8	7	0.07	0.08	6	0	0	7	0.08	0.09	6	0	0	0.07
9	8	0.08	0.09	6	0	0	8	0.07	0.08	6	0	0	0.07
10	8	0.06	0.08	6	0	0	8	0.06	0.07	6	0	0	0.06
11	7	0.06	0.06	6	0	0	7	0.06	0.09	6	0	0	0.06
12	7	0.08	0.12	6	0	0	7	0.07	0.09	6	0	0	0.08
13	7	0.07	0.09	6	0	0	7	0.07	0.09	6	0	0	0.06
14	7	0.06	0.08	6	0	0	7	0.07	0.12	6	0	0	0.06
15	6	0.06	0.07	6	0	0	6	0.06	0.11	6	0	0	0.07
16	7	0.07	0.09	6	0	0	7	0.07	0.08	6	0	0	0.07
17	7	0.07	0.09	6	0	0	7	0.06	0.07	6	0	0	0.07
18	4	0.07	0.09	5	0	0	4	0.06	0.07	5	0	0	0.07
19	8	0.07	0.09	5	0	0	8	0.07	0.09	5	0	0	0.08
20	8	0.07	0.08	4	0	0	8	0.07	0.08	4	0	0	0.08
21	7	0.06	0.07	6	0	0	7	0.06	0.07	6	0	0	0.08
22	7	0.07	0.12	6	0	0	7	0.07	0.08	6	0	0	0.07
23	8	0.08	0.18	6	0	0	8	0.07	0.08	6	0	0	0.08
24	8	0.08	0.10	6	0	0	8	0.08	0.11	6	0	0	0.08
25	8	0.07	0.09	6	0	0	8	0.06	0.08	6	0	0	0.07
26	8	0.08	0.10	6	0	0	8	0.08	0.10	6	0	0	0.08
27	8	0.08	0.11	6	0	0	8	0.08	0.09	6	0	0	0.08
28	8	0.09	0.11	6	0	0	8	0.08	0.09	6	0	0	0.11
29	8	0.10	0.18	6	0	0	8	0.08	0.10	6	0	0	0.09
30	7	0.09	0.12	6	0	0	7	0.09	0.13	6	0	0	0.11
31	7	0.08	0.11	6	0	0	7	0.08	0.10	6	0	0	0.10
Avg.	7	0.07	0.10	6	0	0	7	0.07	0.09	6	0	0	
Max.	8	0.10	0.18	6	0	0	8	0.09	0.13	6	0	0	0.11
Min.	4	0.06	0.06	4	0	0	4	0.06	0.07	4	0	0	

WSSN: 2310

Date	Fluoriode Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.5	0.19	0.69		1.9	2.5	4.4	0.6	0.8	2.0	2.4	1.7	2.0
2	0.6	0.19	0.74		1.4	2.9	4.3	0.2	0.5	1.8	2.0	1.6	1.8
3	0.6	0.20	0.75		1.4	3.1	4.5	0.2	0.4	1.8	2.0	1.8	2.0
4	0.5	0.19	0.74		1.4	3.2	4.6	0.2	0.4	2.1	2.3	2.0	2.3
5	0.5	0.20	0.73		1.4	3.0	4.4	0.3	0.5	2.0	2.2	2.0	2.2
6	0.5	0.21	0.69	0.69	1.2	2.9	4.1	0.4	0.6	1.8	2.1	1.6	1.8
7	0.5	0.19	0.70		1.2	3.1	4.3	0.3	0.5	1.8	2.1	1.7	1.9
8	0.5	0.20	0.68		1.1	3.3	4.4	0.6	0.8	1.7	2.1	1.4	1.7
9	0.6	0.20	0.75		1.1	3.5	4.6	0.5	0.6	1.7	1.9	1.7	1.9
10	0.6	0.18	0.74		1.1	3.2	4.3	0.4	0.7	1.8	2.2	1.3	1.6
11	0.6	0.19	0.78		1.0	3.5	4.5	0.4	0.6	1.5	1.8	1.1	1.4
12	0.6	0.19	0.79		0.7	3.9	4.6	0.4	0.5	1.7	2.1	1.6	2.0
13	0.6	0.19	0.79	0.74	0.7	4.1	4.8	0.4	0.6	2.1	2.4	1.8	2.0
14	0.6	0.20	0.79		0.7	3.4	4.1	0.3	0.4	1.9	2.3	1.8	2.2
15	0.6	0.20	0.82		0.7	3.4	4.1	0.4	0.5	1.6	2.0	1.5	1.9
16	0.6	0.20	0.82		0.7	3.4	4.1	0.4	0.6	1.8	2.1	1.7	2.1
17	0.5	0.17	0.76		0.7	3.2	3.9	0.3	0.5	1.5	1.8	1.5	1.8
18	0.6	0.20	0.76		0.7	3.6	4.3	0.3	0.5	1.8	2.1	1.3	1.5
19	0.6	0.18	0.73		0.7	3.5	4.2	0.5	0.6	1.8	2.0	1.7	1.9
20	0.5	0.18	0.75	0.73	0.9	2.4	3.3	0.4	0.5	1.9	2.2	0.6	0.8
21	0.6	0.19	0.78		1.6	3.2	4.8	0.5	0.7	1.9	2.2	1.8	2.1
22	0.5	0.20	0.78		1.6	3.0	4.6	0.2	0.8	2.0	2.4	0.9	1.1
23	0.5	0.19	0.72		1.7	4.0	5.7	0.5	0.6	1.6	1.9	1.6	1.7
24	0.6	0.19	0.76		2.0	2.8	4.8	0.4	0.6	1.6	1.7	1.6	1.8
25	0.6	0.21	0.79		2.0	2.5	4.5	0.5	0.7	1.9	2.2	1.7	2.0
26	0.6	0.20	0.79		2.2	2.9	5.1	0.3	0.5	1.4	1.6	1.4	1.6
27	0.5	0.18	0.74	0.73	2.1	3.2	5.3	0.6	0.9	1.6	1.8	1.5	1.9
28	0.5	0.20	0.70		2.5	3.1	5.6	0.5	0.6	1.9	2.2	1.8	2.2
29	0.5	0.22	0.75		2.7	2.8	5.5	0.6	0.8	1.8	2.2	1.8	2.2
30	0.6	0.18	0.78		2.9	3.2	6.1	0.4	0.5	1.6	1.8	1.6	1.8
31	0.6	0.18	0.77		2.8	2.8	5.6	0.3	0.5	2.2	2.5	2.3	2.5
Avg.	0.56	0.19	0.75	0.72	1.4	3.2	4.6	0.4	0.6	1.8	2.1	1.6	1.9
Max.	0.60	0.22	0.82	0.74	2.9	4.1	6.1	0.6	0.9	2.2	2.5	2.3	2.5
Min.	0.50	0.17	0.68	0.69	0.7	2.4	3.3	0.2	0.4	1.4	1.6	0.6	0.8

Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	7.91	7.88	265	163	214	61	51	102	84.2	48.9	14.1	8.3	47	92
2	7.88	7.82	267	163	214	60	53	103	89.8	54.5	10.7	6.3	45	92
3	7.91	7.75	278	178	219	73	59	105	96.2	64.9	8.3	4.9	50	96
4	7.88	7.75	270	171	218	66	52	105	90.6	55.3	10.2	7.8	50	90
5	7.80	7.68	270	166	218	66	52	100	81.0	60.9	16.5	3.3	51	92
6	7.81	7.70	266	161	216	64	50	97	88.2	57.7	11.2	4.1	48	84
7	7.74	7.67	266	172	216	70	50	102	88.2	60.9	11.2	4.9	50	88
8	7.82	7.68	268	164	218	60	50	104	81.8	54.5	15.6	6.8	49	88
9	7.79	7.51	265	168	214	65	51	103	94.6	59.3	8.7	4.9	45	93
10	7.83	7.58	267	172	216	66	51	106	92.2	64.9	8.7	2.4	47	90
11	7.78	7.48	260	170	217	65	43	105	81.8	59.3	15.6	4.4	49	91
12	7.80	7.53	268	162	216	56	52	106	97.0	63.3	6.3	1.0	48	90
13	7.88	7.35	266	174	216	70	50	104	95.4	60.1	6.8	4.4	46	92
14	7.77	7.56	274	158	216	50	58	108	95.4	60.1	8.7	1.9	44	90
15	7.92	7.57	270	167	220	64	50	103	90.6	64.1	10.7	2.4	46	90
16	7.85	7.56	270	185	220	80	50	105	80.2	72.1	17.0	2.4	46	91
17	7.88	7.55	266	163	220	54	46	109	94.6	56.9	7.3	2.4	44	87
18	7.85	7.43	272	156	222	44	50	112	81.8	56.9	16.5	3.4	47	91
19	7.89	7.54	278	175	219	64	59	111	94.6	63.3	10.7	3.0	46	88
20	7.87	7.63	275	176	218	74	57	102	82.6	69.7	17.5	1.9	45	90
21	7.85	7.53	276	159	220	52	56	107	78.6	56.9	18.9	4.9	46	92
22	7.94	7.45	272	148	218	40	54	108	90.6	54.5	11.2	2.9	47	93
23	7.86	7.44	276	168	217	54	59	114	94.6	60.9	9.7	3.9	46	93
24	7.92	7.51	275	175	215	63	60	112	96.2	65.7	8.7	2.4	46	89
25	7.94	7.65	275	170	221	58	54	112	94.6	64.9	9.7	2.9	46	91
26	7.90	7.57	276	177	224	68	52	109	85.8	61.7	15.1	5.3	47	93
27	7.87	7.61	278	161	224	54	54	107	81.0	57.7	18.4	4.4	47	91
28	8.20	7.60	279	175	233	71	46	104	97.0	60.1	8.3	5.8	46	86
29	8.25	7.60	274	164	220	64	54	100	80.2	56.9	18.0	5.3	51	90
30	8.21	7.68	278	192	222	86	56	106	94.6	64.9	10.2	6.8	47	85
31	8.17	7.69	275	182	220	68	55	114	93.0	60.1	11.2	8.3	45	84
Avg.	7.90	7.60	271	169	219	63	53	106	89.3	60.4	12.0	4.3	47	90
Max.	8.25	7.88	279	192	233	86	60	114	97.0	72.1	18.9	8.3	51	96
Min.	7.74	7.35	260	148	214	40	43	97	78.6	48.9	6.3	1.0	44	84

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	70	12	0	1	0	195	< 2	0.46	11.1				
2	1	61	12	0	1	0	239	< 2	0.45	11.9				
3	1	79	12	0	1	0	248	< 2	0.48	12.7				
4	1	88	12	0	1	0	202	< 2	0.46	14.3				
5	1	67	12	0	1	0	202	< 2	0.46	14.3				
6	1	86	12	0	1	0	231	< 2	0.46	13.9				
7	1	88	12	0	1	0	372	< 2	0.48	14.5				
8	1	142	12	1	1	0	392	< 2	0.46	14.4				
9	1	199	12	0	1	0	555	< 2	0.50	15.7				
10	1	138	12	1	1	0	440	< 2	0.47	15.7				
11	1	548	12	0	1	0	299	< 2	0.46	15.9				
12	1	921	12	3	1	0	738	< 2	0.46	15.4				
13	1	253	12	1	1	0	260	< 2	0.50	14.9				
14	1	225	12	6	1	0	738	< 2	0.44	14.7				
15	1	365	12	6	1	0	> 738	< 2	0.48	14.9				
16	1	722	12	4	1	0	> 738	< 2	0.47	15.1				
17	1	225	12	6	1	0	> 738	< 2	0.41	16.6				
18	1	262	12	2	1	0	2400	< 2	0.44	16.5				
19	1	292	12	2	1	0	1940	< 2	0.46	16.4				
20	1	134	12	0	1	0	830	< 2	0.46	16.2				
21	1	185	12	0	1	0	1160	< 2	0.47	15.8				
22	1	328	12	0	1	0	324	< 2	0.44	15.7				
23	1	199	12	0	1	0	150	< 2	0.48	16.7				
24	1	199	12	0	1	0	400	< 2	0.47	17.6				
25	1	272	12	0	1	0	590	< 2	0.46	17.0				
26	1	218	12	0	1	0	510	< 2	0.46	17.8				
27	1	365	12	0	1	0	470	< 2	0.43	18.3				
28	1	980	12	0	1	0	555	< 2	0.47	20.9				
29	1	909	12	0	1	0	1120	< 2	0.47	21.4				
30	1	5794	12	0	1	0	1040	< 2	0.49	22.7				
31	1	4884	12	0	1	0	1000	< 2	0.49	20.1				

Avg.									0.46	16.1				
Max.		5794					2400	< 2	0.50	22.7				
Min.									0.41	11.1				

WSSN: 2310

Date	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3											0
4											0
5	0.4	1.0	1.2	1.1	0.8	0.4	0.5	1.5	0.3	1.5	10
6	0.3	1.1	1.2	1.0	0.6	0.3	0.4	1.6	0.7	1.3	10
7	0.5	0.8	1.0	0.8	0.5	0.7	0.4	1.5	0.2	1.2	10
8											0
9											0
10											0
11											0
12	0.6	0.7	1.0	0.6	0.1	0.6	0.7	1.3	0.1	1.2	10
13	0.1	0.8	1.0	0.8	0.6	0.4	0.6	1.1	0.7	1.0	10
14	1.5	1.2	1.0	1.0	0.5	0.4	1.0	1.4	0.1	1.3	10
15											0
16											0
17											0
18	1.2	1.0	0.9	0.7	0.4	0.2	0.7	1.1	0.6	1.1	10
19											0
20	1.0	0.9	1.3	1.0	0.2	0.3	0.9	1.3	0.7	0.1	10
21											0
22											0
23											0
24											0
25											0
26	0.3	0.6	1.0	0.8	0.4	0.3	0.6	1.3	0.6	1.0	10
27	0.2	0.6	1.0	0.7	0.3	0.3	0.5	1.2	0.4	0.3	10
28											0
29											0
30											0
31											0

Distribution Sample Summary	
Total # of routine distribution samples analyzed	100
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	0.76

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3											0
4											0
5	0.6	1.2	1.5	1.4	1.0	0.7	0.7	1.8	0.5	1.8	10
6	0.5	1.4	1.5	1.3	1.0	0.5	0.6	1.8	1.0	1.6	10
7	0.8	1.0	1.3	1.0	0.8	1.0	0.7	1.7	0.4	1.4	10
8											0
9											0
10											0
11											0
12	0.9	1.0	1.3	1.0	0.2	0.7	0.9	1.5	0.2	1.5	10
13	0.3	1.0	1.3	1.0	0.8	0.6	0.8	1.3	1.0	1.3	10
14	1.8	1.5	1.4	1.3	0.7	0.6	1.3	1.7	0.3	1.7	10
15											0
16											0
17											0
18	1.6	1.4	1.3	1.0	0.6	0.4	0.9	1.5	0.9	1.4	10
19											0
20	1.4	1.3	1.7	1.3	0.5	0.5	1.1	1.5	1.1	0.4	10
21											0
22											0
23											0
24											0
25											0
26	0.4	1.0	1.4	1.1	0.7	0.4	0.9	1.6	0.9	1.4	10
27	0.4	1.0	1.2	1.0	0.5	0.4	0.7	1.4	0.5	0.5	10
28											0
29											0
30											0
31											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.0

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent

2310

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

April 2015
Month/Year

F-1R, F-2
Certification of Operator-in-Charge

F-1
Water Plant Classification

[redacted]
Signature of Operator-in-Charge

Genesee
County

DEQ
RESOURCE MANAGEMENT DIVISION
MAY 18 2015
LANSING DISTRICT

Treatment Rate and Filter Data

Maximum Treatment Rate:	21.1	Million Gallons per Day
Rated Plant Capacity:	36	Million Gallons per Day
Average Filter Run:	126	Hours
Average Head Loss:	n/a	Feet *(filter head loss meters not operational)
Average Filtration Rate:	2.4	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	3.0	Gallons Per Square Feet per Minute
Average Wash Water Use:	1.1%	Percent of Treated Water

Chemical Data

Chlorine on hand:	24,000	lb.	Est. supply:	35	days
Primary Coagulant (Ferric Chloride) on hand:	221,000	lb.	Est. supply:	12	days
Lime (CaO) on hand:	383	tons	Est. supply:	31	days
Fluoride on Hand:	13,300	lb.	Est. supply:	36	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	0	0
Number of filter confluence samples collected:	232	232
Percent of filter confluence samples > 0.3 NTU:	0.0%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Coagulation Parameters & Softening Chemical Application | City of Flint Water Treatment Plant | April 2015 | Page 2

WSSN: 2310

Date	Million Gallons Treated	Ozone Dosage (mg/L)	Ferric as Fe^{3+} mg/L	Lime Dosage (mg/L)	PW-340 Catioinc Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
							Raw			Plate Settler	Applied
							Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	18.0	3.1	17.0	108.6	4.4	0.60	8	6.1	7.4	1.10	0.99
2	18.0	2.9	17.5	108.9	4.4	0.70	8	8.6	19.1	1.09	0.95
3	18.1	3.2	16.6	108.3	4.5	0.56	8	5.2	5.9	1.03	0.84
4	17.9	2.3	17.0	77.2	5.1	0.67	8	5.3	6.2	1.18	1.07
5	18.1	2.6	16.9	76.5	5.0	0.62	8	6.7	15.4	1.19	1.11
6	18.1	3.1	18.0	103.9	4.6	0.59	8	3.4	3.8	1.28	0.84
7	18.1	2.8	18.2	113.2	4.6	0.65	8	3.4	3.7	1.73	1.26
8	18.1	2.9	15.0	117.4	4.6	0.67	8	6.0	14.8	1.60	1.11
9	18.2	3.0	15.1	116.1	4.5	0.65	8	3.9	4.2	1.57	0.98
10	18.1	2.0	15.8	109.7	4.5	0.67	8	4.3	6.1	1.60	1.05
11	17.9	2.0	15.5	109.4	4.7	0.71	8	7.9	19.8	1.76	1.03
12	17.8	2.0	15.3	105.9	4.4	0.63	8	6.9	21.4	1.58	1.11
13	17.8	1.9	15.4	117.6	4.6	0.68	8	8.5	30.1	1.51	1.02
14	17.7	3.5	15.3	142.2	4.7	0.62	7	6.2	20.4	1.44	1.27
15	18.5	2.6	11.4	131.2	4.5	0.60	7	5.4	9.6	1.56	1.29
16	20.3	2.1	13.5	119.1	4.1	0.56	7	11.2	17.9	1.92	1.07
17	20.4	2.3	16.7	118.8	4.0	0.55	7	10.7	17.5	2.16	1.09
18	20.0	2.3	15.0	126.0	4.2	0.57	8	12.9	28.9	1.96	1.52
19	19.8	2.1	16.1	140.1	4.2	0.57	8	14.2	27.7	2.02	1.4
20	19.5	2.0	18.2	136.6	4.2	0.60	8	18.4	42.4	2.29	2.70
21	18.8	1.9	19.5	140.0	4.3	0.56	7	13.7	26.7	2.20	1.19
22	19.1	2.3	18.3	132.5	4.2	0.56	7	11.0	26.2	2.24	0.95
23	17.7	2.8	18.8	143.0	4.6	0.61	8	11.3	29.6	1.98	1.36
24	16.1	2.5	18.3	151.8	5.1	0.68	8	8.4	17.7	1.77	0.99
25	16.3	2.1	16.1	148.0	4.9	0.64	8	5.7	12.6	1.70	1.33
26	16.5	2.0	14.3	154.8	4.7	0.58	8	4.2	11.9	1.61	1.57
27	16.5	2.3	15.9	158.8	4.8	0.58	8	4.5	13.8	1.51	1.40
28	16.5	2.0	16.4	158.9	4.8	0.65	8	4.4	13.8	1.62	1.07
29	16.6	2.2	18.3	162.6	4.8	0.65	7	2.5	5.3	1.56	1.25
30	16.7	2.1	18.2	165.3	4.7	0.64	7	2.6	4.8	1.42	1.29
Avg.	18.0	2.4	16.5	126.7	4.6	0.62	8	7.5			1.20
Max.	20.4	3.5	19.5	165.3	5.1	0.71	8	18.4	42.4	2.29	2.70
Min.	16.1	1.9	11.4	76.5	4.0	0.55	7	2.5			0.84
Total	541.2										

WSSN: 2310

Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	8	0.09	0.12	6	0	0	8	0.07	0.09	6	0	0	0.10
2	8	0.09	0.12	6	0	0	8	0.07	0.08	6	0	0	0.09
3	8	0.08	0.10	6	0	0	8	0.08	0.11	6	0	0	0.09
4	8	0.08	0.09	6	0	0	8	0.09	0.10	6	0	0	0.08
5	8	0.08	0.10	6	0	0	8	0.07	0.08	6	0	0	0.08
6	8	0.08	0.10	6	0	0	8	0.08	0.10	6	0	0	0.08
7	8	0.10	0.19	6	0	0	8	0.07	0.09	6	0	0	0.07
8	8	0.10	0.15	6	0	0	8	0.07	0.08	6	0	0	0.07
9	8	0.10	0.14	6	0	0	8	0.07	0.08	6	0	0	0.07
10	8	0.10	0.17	6	0	0	8	0.07	0.10	6	0	0	0.07
11	8	0.08	0.10	6	0	0	8	0.07	0.08	6	0	0	0.08
12	8	0.07	0.11	6	0	0	8	0.07	0.11	6	0	0	0.08
13	8	0.07	0.11	6	0	0	7	0.07	0.11	6	0	0	0.07
14	7	0.07	0.09	6	0	0	7	0.07	0.09	6	0	0	0.07
15	7	0.08	0.11	6	0	0	8	0.08	0.10	6	0	0	0.07
16	8	0.09	0.15	6	0	0	7	0.08	0.11	6	0	0	0.07
17	7	0.09	0.13	6	0	0	8	0.08	0.10	6	0	0	0.08
18	8	0.08	0.10	6	0	0	8	0.07	0.08	6	0	0	0.08
19	8	0.09	0.11	6	0	0	8	0.08	0.10	6	0	0	0.08
20	8	0.09	0.14	6	0	0	8	0.09	0.14	6	0	0	0.08
21	7	0.10	0.13	6	0	0	7	0.08	0.09	6	0	0	0.09
22	7	0.10	0.11	6	0	0	7	0.08	0.10	6	0	0	0.10
23	8	0.08	0.10	6	0	0	8	0.07	0.09	6	0	0	0.07
24	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.07
25	8	0.08	0.09	6	0	0	8	0.08	0.09	6	0	0	0.07
26	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.08
27	8	0.07	0.10	6	0	0	8	0.07	0.09	6	0	0	0.07
28	8	0.07	0.11	6	0	0	8	0.07	0.08	6	0	0	0.08
29	7	0.09	0.14	6	0	0	7	0.07	0.09	6	0	0	0.07
30	7	0.08	0.09	6	0	0	7	0.07	0.08	6	0	0	0.07
Avg.	8	0.08	0.12	6	0	0	8	0.07	0.09	6	0	0	
Max.	8	0.10	0.19	6	0	0	8	0.09	0.14	6	0	0	0.10
Min.	7	0.07	0.09	6	0	0	7	0.07	0.08	6	0	0	

Date	Fluoriode Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.4	0.17	0.62	0.61	2.1	2.6	4.7	0.6	0.9	2.5	3.1	2.0	2.7
2	0.5	0.16	0.68		1.9	2.5	4.4	0.5	0.7	2.5	2.9	2.0	2.2
3	0.5	0.15	0.66		1.9	2.7	4.6	0.6	0.7	2.5	3.1	2.0	2.6
4	0.5	0.16	0.64		1.9	2.7	4.6	0.6	0.8	2.5	3.1	2.1	2.6
5	0.5	0.15	0.65		1.9	2.7	4.6	0.5	0.7	2.5	2.7	2.4	2.7
6	0.5	0.16	0.65		1.9	2.6	4.5	0.5	0.8	2.8	3.1	2.0	2.5
7	0.5	0.15	0.65		1.9	2.7	4.6	0.4	0.5	2.6	3.0	2.3	2.7
8	0.5	0.17	0.68	0.63	1.9	2.8	4.7	0.5	0.8	2.2	2.5	1.8	2.2
9	0.5	0.15	0.64		1.8	2.6	4.4	0.5	0.7	2.2	2.6	2.1	2.4
10	0.5	0.16	0.65		1.9	2.4	4.3	0.5	0.6	2.3	2.7	1.5	1.8
11	0.5	0.16	0.71		1.9	2.4	4.3	0.5	0.6	2.3	2.7	2.2	2.4
12	0.5	0.15	0.71		1.9	2.0	3.9	0.5	0.7	1.7	1.9	1.8	2.0
13	0.5	0.15	0.67		1.9	2.4	4.3	0.2	0.4	1.8	2.0	1.6	1.9
14	0.5	0.17	0.74		2.0	2.3	4.3	0.6	0.8	2.1	2.3	2.1	2.3
15	0.5	0.16	0.68	0.66	1.9	2.1	4.0	0.5	0.7	1.9	2.2	1.7	2.0
16	0.5	0.19	0.67		1.8	2.3	4.1	0.3	0.5	1.9	2.2	1.7	1.8
17	0.5	0.18	0.69		1.9	2.4	4.3	0.6	0.7	2.1	2.4	1.4	1.7
18	0.5	0.16	0.73		2.0	2.3	4.3	0.3	0.4	1.8	2.1	1.9	2.1
19	0.5	0.18	0.74		2.1	2.3	4.4	0.3	0.5	1.8	2.2	1.9	2.3
20	0.5	0.17	0.65		2.2	2.4	4.6	0.4	0.6	1.9	2.2	1.9	2.2
21	0.5	0.19	0.67		2.2	2.5	4.7	0.4	0.6	2.0	2.4	1.9	2.2
22	0.5	0.18	0.67	0.65	2.2	2.3	4.5	0.4	0.6	2.0	2.2	1.9	2.2
23	0.5	0.19	0.72		2.3	2.4	4.7	0.5	0.8	2.1	2.4	2.0	2.4
24	0.5	0.19	0.67		2.2	2.1	4.3	0.8	1.0	2.0	2.4	1.6	1.8
25	0.5	0.19	0.72		2.2	2.3	4.5	0.5	0.7	2.0	2.3	1.9	2.2
26	0.5	0.17	0.65		2.2	2.3	4.5	0.7	0.9	2.1	2.4	2.1	2.3
27	0.5	0.17	0.72		2.1	2.3	4.4	0.6	0.8	2.0	2.2	1.8	2.1
28	0.5	0.18	0.73		2.1	2.4	4.5	0.6	0.8	2.0	2.2	1.9	2.2
29	0.5	0.19	0.72		2.1	2.4	4.5	0.4	0.7	2.0	2.3	2.0	2.3
30	0.5	0.17	0.70	0.65	2.2	2.3	4.5	0.4	0.6	1.9	2.1	1.8	2.0
Avg.	0.50	0.17	0.68	0.64	2.0	2.4	4.4	0.5	0.7	2.1	2.5	1.9	2.2
Max.	0.50	0.19	0.74	0.66	2.3	2.8	4.7	0.8	1.0	2.8	3.1	2.4	2.7
Min.	0.40	0.15	0.62	0.61	1.8	2.0	3.9	0.2	0.4	1.7	1.9	1.4	1.7

Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.07	7.73	227	158	176	64	51	94	80.2	55.3	6.8	4.9	32	69
2	8.16	7.76	232	159	183	61	49	98	72.9	49.7	12.2	8.7	32	71
3	8.17	7.73	228	155	182	59	46	96	79.4	56.1	7.8	3.4	32	70
4	8.12	7.81	228	153	180	60	48	93	81.8	55.3	6.3	2.9	33	70
5	7.98	7.89	230	153	179	68	51	85	75.4	48.9	10.2	7.8	34	76
6	8.05	7.99	228	159	183	60	45	99	85.0	56.1	4.4	4.9	31	71
7	8.05	7.54	229	165	186	59	43	106	80.2	54.5	6.8	8.3	33	76
8	7.96	7.81	231	151	188	57	43	94	72.9	45.7	12.6	9.2	33	68
9	7.94	7.78	229	155	185	60	44	95	77.4	56.9	7.8	3.4	33	67
10	8.04	7.86	230	142	184	69	46	73	80.2	51.3	7.8	3.9	33	67
11	7.99	7.79	231	157	188	64	43	93	71.3	49.7	12.6	9.2	33	69
12	8.03	7.82	237	150	189	55	48	95	77.0	44.9	10.2	9.2	36	71
13	8.02	7.83	242	160	197	66	45	94	77.8	46.5	11.2	9.7	33	69
14	7.95	8.00	242	156	198	64	44	92	81.8	48.9	9.2	8.3	38	74
15	7.95	7.99	252	154	196	68	56	86	78.6	50.5	13.6	6.8	39	70
16	8.36	7.88	271	170	217	81	54	89	92.2	53.7	10.2	7.3	41	67
17	8.35	8.00	270	186	220	90	50	96	85.8	60.9	13.6	8.3	41	77
18	8.36	7.99	274	184	219	84	55	100	90.6	57.7	12.2	9.2	40	76
19	8.34	8.02	272	185	223	78	49	107	81.8	55.3	15.6	10.7	38	75
20	8.30	7.98	268	197	224	92	44	105	90.6	68.1	9.7	5.8	38	80
21	8.26	7.63	264	194	220	94	44	100	91.4	69.7	8.7	4.9	42	82
22	8.32	7.88	274	196	216	90	58	106	95.4	72.1	8.7	3.9	44	85
23	8.39	7.69	267	173	221	68	46	105	91.4	58.5	9.2	5.8	45	85
24	8.36	7.78	274	173	220	75	54	98	90.6	62.5	11.7	4.9	44	83
25	8.25	7.65	267	180	216	61	51	119	89.0	60.1	10.7	9.2	41	82
26	8.14	7.79	268	153	214	52	54	101	93.0	49.7	9.2	6.8	43	77
27	8.03	7.99	272	161	213	64	59	97	89.8	50.5	11.2	7.8	44	76
28	7.95	7.72	266	172	215	64	51	108	90.6	57.7	9.7	6.3	44	86
29	8.08	7.87	268	176	216	74	52	102	88.2	58.5	11.7	7.3	46	84
30	7.93	7.83	268	182	208	64	60	118	89.8	60.9	10.7	7.3	45	92

Avg.	8.13	7.83	251	167	202	69	49	98	84.1	55.5	10.1	6.9	38	76
Max.	8.39	8.02	274	197	224	94	60	119	95.4	72.1	15.6	10.7	46	92
Min.	7.93	7.54	227	142	176	52	43	73	71.3	44.9	4.4	2.9	31	67

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	140	12	0	1	0	372	< 2	0.43	8.5				
2	1	127	12	0	1	0	189	< 2	0.43	6.5				
3	1	79	12	0	1	0	276	< 2	0.38	8.2				
4	1	96	12	0	1	0	299	< 2	0.38	7.3				
5	1	61	12	0	1	0	470	< 2	0.39	7.8				
6	1	59	12	0	1	0	276	< 2	0.39	8.2				
7	1	64	12	0	1	0	339	< 2	0.39	8.2				
8	1	54	12	0	1	0	239	< 2	0.38	8.1				
9	1	201	12	0	1	0	161	< 2	0.39	8.2				
10	1	133	12	0	1	0	137	< 2	0.37	9.1				
11	1	261	12	0	1	0	339	< 2	0.37	8.5				
12	1	613	12	0	1	0	202	< 2	0.39	8.1				
13	1	172	12	0	1	0	507	< 2	0.38	8.9				
14	1	124	12	0	1	0	248	< 2	0.39	9.0				
15	1	67	12	0	1	0	555	< 2	0.42	9.9				
16	1	127	12	0	1	0	470	< 2	0.42	13.1				
17	1	108	12	0	1	0	1020	< 2	0.46	11.7				
18	1	80	12	0	1	0	200	< 2	0.45	12.9				
19	1	210	12	0	1	0	507	< 2	0.43	13.4				
20	1	345	12	0	1	0	555	< 2	0.46	14.2				
21	1	162	12	0	1	0	623	< 2	0.48	12.9				
22	1	73	12	0	1	0	105	< 2	0.49	12.9				
23	1	43	12	0	1	0	60	< 2	0.44	9.9				
24	1	52	12	0	1	0	190	< 2	0.48	10.1				
25	1	46	12	0	1	0	266	< 2	0.44	10.3				
26	1	51	12	0	1	0	287	< 2	0.41	10.4				
27	1	44	12	0	1	0	355	< 2	0.40	10.9				
28	1	50	12	0	1	0	146	< 2	0.41	10.9				
29	1	32	12	0	1	0	171	< 2	0.42	11.3				
30	1	113	12	0	1	0	77	< 2	0.47	11.2				

Avg.									0.42	10.0				
Max.		613					1020	< 2	0.49	14.2				
Min.									0.37	6.5				

Date	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	2.0	2.0	1.8	1.7	1.3	0.5	1.5	2.5		2.1	9
2	0.8	1.4	2.2	1.6	1.1	0.7	0.9	2.3		2.3	9
3											0
4											0
5											0
6											0
7	1.1	1.8	1.8	2.0	1.1	0.6	1.4	2.0		1.2	9
8	0.7	0.6	1.7	2.1	1.3	0.6	0.7	2.2		1.7	9
9	0.8	2.4	1.8	1.9	1.2	0.5	1.1	2.0		1.9	9
10											0
11											0
12											0
13											0
14	0.5	1.2	1.2	1.2	0.5	0.5	1.0	1.7		1.6	9
15	0.4	0.5	1.2	1.3	0.8	0.4	1.0	1.6		1.0	9
16											0
17											0
18											0
19											0
20											0
21	0.3	0.3	1.1	1.3	1.0	0.3	0.9	1.4	1.9	1.3	10
22	0.3	0.5	1.0	1.1	0.9	0.3	0.2	1.6	0.8	1.5	10
23											0
24											0
25											0
26											0
27									1.1	1.5	2
28											0
29	0.4	0.5	1.3	1.3	0.8	0.5	1.0	1.8	1.0	1.5	10
30	0.4	1.5	1.5	1.4	0.8	0.9	1.2	1.9	0.6	1.5	10
31											0

Distribution Sample Summary	
Total # of routine distribution samples analyzed	105
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.21

Date	Total Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	2.4	2.3	2.2	2.2	1.6	0.9	1.8	2.8		2.3	9
2	1.3	1.6	2.5	1.8	1.3	0.8	1.2	2.6		2.7	9
3											0
4											0
5											0
6											0
7	1.4	2.1	2.1	2.3	1.4	0.8	1.8	2.4		1.5	9
8	1.1	0.9	2.2	2.5	1.5	0.8	0.9	2.4		2.2	9
9	1.0	2.7	2.1	2.2	1.6	0.8	1.4	2.3		2.2	9
10											0
11											0
12											0
13											0
14	0.7	1.5	1.5	1.5	0.8	0.8	1.3	2.0		1.9	9
15	0.7	0.8	1.5	1.6	1.1	0.6	1.3	1.9		1.3	9
16											0
17											0
18											0
19											0
20											0
21	0.6	0.5	1.5	1.6	1.2	0.5	1.2	1.7	2.1	1.6	10
22	0.6	0.8	1.3	1.4	1.1	0.4	0.4	1.9	1.1	1.8	10
23											0
24											0
25											0
26											0
27									1.3	1.9	2
28											0
29	0.6	0.7	1.6	1.6	1.0	0.8	1.3	2.2	1.2	1.8	10
30	0.8	1.8	1.8	1.7	1.1	1.2	1.4	2.1	0.8	1.8	10
31											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.5

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

March 2015
Month/Year

F-1R, F-2
Certification of Operator-in-[redacted]

F-1
Water Plant Classification

[redacted]
Signature of Operator-in-[redacted]

Genesee
County

DEQ
RESOURCE MANAGEMENT DIVISION
APR 24 2015
LANSING DISTRICT

Treatment Rate and Filter Data

Maximum Treatment Rate:	25.4	Million Gallons per Day
Rated Plant Capacity:	36	Million Gallons per Day
Average Filter Run:	96	Hours
Average Head Loss:	n/a	Feet *(filter head loss meters not operational)
Average Filtration Rate:	2.3	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	3.3	Gallons Per Square Feet per Minute
Average Wash Water Use:	1.3%	Percent of Treated Water

Chemical Data

Chlorine on hand:	20,000	lb.	Est. supply:	19	days
Primary Coagulant (Ferric Chloride) on hand:	157,700	lb.	Est. supply:	9	days
Lime (CaO) on hand:	348	tons	Est. supply:	29	days
Fluoride on Hand:	23,300	lb.	Est. supply:	48	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks

	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	2	4
Number of filter confluence samples collected:	242	242
Percent of filter confluence samples > 0.3 NTU:	0.8%	1.7%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

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Date	Million Gallons Treated	Ozone Dosage (mg/L)	Ferric as Fe3+ mg/L	Lime Dosage (mg/L)	PW-340 Cationic Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
							Raw			Plate Settler	Applied
							Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	24.3	4.9	15.0	121.0	3.8	0.40	8	12.4	47.2	5.63	1.69
2	24.3	4.9	14.6	121.0	4.0	0.41	8	4.4	15.6	5.73	1.61
3	24.3	4.9	14.0	132.1	3.8	0.41	8	4.1	13.3	5.42	1.45
4	24.4	4.9	14.1	123.0	3.9	0.41	8	2.5	3.9	5.54	1.32
5	24.6	4.9	13.7	120.0	3.8	0.43	8	3.2	6.1	5.43	1.47
6	24.9	4.9	14.0	120.4	3.8	0.46	8	2.4	3.0	5.95	1.54
7	24.8	4.9	13.9	117.7	3.7	0.43	8	2.4	3.0	5.89	1.57
8	24.7	4.9	14.4	117.5	3.8	0.40	8	4.6	15.3	5.75	1.62
9	24.8	4.0	14.3	119.3	3.7	0.43	8	4.4	7.5	5.52	1.62
10	24.8	4.7	14.1	116.0	3.7	0.44	8	6.0	8.1	5.31	1.66
11	24.9	4.7	13.6	113.1	3.7	0.44	8	8.9	15.4	4.79	1.87
12	25.1	4.6	14.0	119.2	3.7	0.43	8	4.6	5.5	4.79	1.73
13	25.4	4.9	14.0	108.8	3.7	0.39	8	3.5	4.1	4.79	1.52
14	25.4	4.8	13.2	108.9	3.8	0.39	8	4.6	5.7	6.77	1.52
15	25.4	4.9	13.6	106.0	3.8	0.40	8	15.2	38.1	1.91	2.45
16	24.0	5.0	13.4	104.2	4.0	0.44	8	15.9	21.0	2.87	2.21
17	24.0	4.5	14.2	108.5	4.0	0.43	8	12.5	28.5	2.02	1.60
18	21.9	4.5	14.6	135.0	4.5	0.57	8	10.8	16.0	1.48	1.28
19	21.7	4.6	13.2	104.6	2.1	0.46	8	20.5	35.8	1.96	33.9
20	23.6	4.4	14.8	116.9	1.6	0.35	8	11.6	13.5	2.63	4.11
21	24.0	4.5	16.7	38.4	1.8	0.41	8	11.1	12.3	1.96	2.15
22	24.2	3.8	17.3	41.4	1.5	0.41	8	13.4	19.6	1.98	1.97
23	24.6	3.6	17.5	58.1	1.7	0.34	8	11.8	21.6	1.95	1.65
24	23.9	3.8	16.6	62.6	2.2	0.37	8	9.8	10.7	2.20	1.94
25	24.3	3.5	16.8	64.2	2.2	0.37	8	11.7	17.3	1.79	1.45
26	23.8	3.8	16.6	66.7	2.4	0.34	8	8.2	9.8	1.75	1.40
27	23.3	1.5	17.8	69.3	2.9	0.38	8	8.3	10.8	1.50	1.24
28	22.0	3.0	16.4	74.1	2.6	0.47	8	6.9	8.0	1.52	1.28
29	19.6	4.6	16.1	87.3	4.0	0.53	8	11.0	30.7	1.26	1.08
30	18.1	5.0	16.3	99.2	4.4	0.56	8	9.4	13.6	1.19	1.19
31	18.1	3.0	16.8	106.0	4.4	0.58	8	15.0	42.7	1.14	0.95
Avg.	23.7	4.4	15.0	100.0	3.3	0.43	8	8.7			2.71
Max.	25.4	5.0	17.8	135.0	4.5	0.58	8	20.5	47.2	6.77	33.9
Min.	18.1	1.5	13.2	38.4	1.5	0.34	8	2.4			0.95
Total	733.2										

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Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	8	0.15	0.18	6	0	0	8	0.11	0.15	6	0	0	0.16
2	8	0.10	0.15	6	0	0	8	0.09	0.14	6	0	0	0.11
3	8	0.11	0.16	6	0	0	8	0.11	0.18	6	0	0	0.11
4	8	0.14	0.20	6	0	0	8	0.12	0.18	6	0	0	0.14
5	8	0.16	0.20	6	0	0	8	0.11	0.17	6	0	0	0.12
6	8	0.11	0.20	6	0	0	8	0.15	0.29	6	0	0	0.16
7	8	0.09	0.13	6	0	0	8	0.07	0.09	6	0	0	0.12
8	8	0.14	0.19	6	0	0	8	0.11	0.18	6	0	0	0.13
9	8	0.12	0.20	6	0	0	8	0.10	0.14	6	0	0	0.13
10	8	0.10	0.13	6	0	0	8	0.13	0.17	6	0	0	0.12
11	8	0.12	0.18	6	0	0	8	0.09	0.11	6	0	0	0.11
12	8	0.12	0.16	6	0	0	8	0.10	0.13	6	0	0	0.11
13	8	0.10	0.12	6	0	0	8	0.12	0.15	6	0	0	0.11
14	8	0.11	0.15	6	0	0	8	0.08	0.09	6	0	0	0.10
15	8	0.12	0.17	6	0	0	8	0.14	0.20	6	0	0	0.14
16	8	0.15	0.17	6	0	0	8	0.14	0.17	6	0	0	0.17
17	8	0.11	0.18	6	0	0	8	0.09	0.12	6	0	0	0.16
18	2	0.07	0.07	1	0	0	2	0.07	0.07	1	0	0	0.08
19	8	0.14	0.22	6	0	0	8	0.14	0.22	6	0	0	0.19
20	8	0.27	0.35	6	1	2	8	0.29	0.36	6	3	4	0.42
21	8	0.15	0.16	6	0	0	8	0.15	0.20	6	0	0	0.33
22	8	0.20	0.23	6	0	0	8	0.18	0.20	6	0	0	0.35
23	8	0.19	0.23	6	0	0	8	0.17	0.23	6	0	0	0.37
24	8	0.19	0.20	6	0	0	8	0.16	0.18	6	0	0	0.23
25	8	0.16	0.21	6	0	0	8	0.12	0.15	6	0	0	0.14
26	8	0.17	0.22	6	0	0	8	0.10	0.12	6	0	0	0.15
27	8	0.13	0.16	6	0	0	8	0.14	0.24	6	0	0	0.13
28	8	0.11	0.17	6	0	0	8	0.10	0.12	6	0	0	0.09
29	8	0.09	0.13	6	0	0	8	0.09	0.12	6	0	0	0.07
30	8	0.09	0.12	6	0	0	8	0.08	0.09	6	0	0	0.10
31	8	0.07	0.09	6	0	0	8	0.08	0.12	6	0	0	0.11
Avg.	8	0.13	0.17	6	0	0	8	0.12	0.16	6	0	0	
Max.	8	0.27	0.35	6	1	2	8	0.29	0.36	6	3	4	0.42
Min.	2	0.07	0.07	1	0	0	2	0.07	0.07	1	0	0	

Date	Fluoriode Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.3	0.24	0.60		2.3	2.5	4.8	0.6	0.7	2.4	2.7	1.9	2.1
2	0.3	0.25	0.62		2.2	2.6	4.8	0.4	0.6	2.5	2.8	2.0	2.4
3	0.3	0.23	0.57	0.55	2.2	2.8	5.0	0.6	0.7	2.5	2.9	2.0	2.5
4	0.3	0.24	0.59		2.3	2.6	4.9	0.5	0.7	2.3	2.9	2.1	2.3
5	0.3	0.22	0.57		2.2	2.5	4.7	0.5	0.7	2.7	3.1	2.3	2.8
6	0.3	0.25	0.58		2.2	2.3	4.5	0.4	0.6	2.5	3.0	1.9	2.5
7	0.3	0.23	0.56		2.2	2.8	5.0	0.4	0.7	2.3	2.7	1.8	2.3
8	0.3	0.23	0.61		2.2	2.8	5.0	0.6	0.8	2.5	2.8	2.5	2.8
9	0.3	0.26	0.64		2.2	2.8	5.0	0.5	0.7	2.5	2.8	2.5	2.8
10	0.3	0.23	0.56		2.7	2.9	5.6	0.4	0.6	2.6	3.2	2.2	2.7
11	0.3	0.23	0.52		2.2	3.0	5.2	0.6	0.8	2.4	2.7	2.2	2.6
12	0.3	0.23	0.53	0.50	2.3	2.9	5.2	0.4	0.6	2.8	3.1	2.3	2.7
13	0.3	0.24	0.54		2.3	2.9	5.2	0.4	0.7	2.6	3.3	2.0	2.5
14	0.3	0.24	0.52		2.3	2.7	5.0	0.6	0.8	3.2	3.5	2.0	2.4
15	0.3	0.21	0.49		2.3	3.4	5.7	1.0	1.4	1.7	2.0	1.8	2.0
16	0.3	0.19	0.52		2.5	4.9	7.4	1.6	1.9	2.0	2.3	2.0	2.2
17	0.3	0.21	0.54		2.4	4.3	6.7	0.6	1.0	2.8	3.1	2.5	3.1
18	0.3	0.21	0.51	0.52	2.3	3.4	5.7	0.3	0.5	3.0	3.5	3.0	3.5
19	0.3	0.20	0.52		2.4	3.2	5.6	0.6	1.1	3.0	3.3	2.5	2.8
20	0.3	0.17	0.55		2.2	3.9	6.1	0.3	1.0	2.9	3.3	1.3	1.6
21	0.3	0.17	0.48		2.5	4.1	6.6	0.6	1.3	2.6	3.3	1.7	2.3
22	0.3	0.14	0.51		2.7	3.7	6.4	0.5	1.4	2.6	2.9	2.5	2.8
23	0.3	0.16	0.55		2.7	3.6	6.3	0.5	1.3	2.6	3.0	2.6	2.9
24	0.4	0.16	0.58		2.9	3.5	6.4	0.3	0.8	2.7	3.2	2.5	2.9
25	0.4	0.17	0.62	0.53	2.8	3.4	6.2	0.3	0.7	2.5	2.9	2.3	3.0
26	0.4	0.15	0.56		2.8	3.3	6.1	0.3	0.5	2.8	3.3	2.4	2.8
27	0.5	0.19	0.64		2.9	3.1	6.0	0.3	0.5	2.5	3.1	2.0	2.6
28	0.5	0.16	0.66		2.9	2.8	5.7	0.6	0.8	3.0	3.5	2.3	3.0
29	0.5	0.14	0.59		2.9	2.8	5.7	0.5	0.7	2.7	3.1	2.5	3.0
30	0.4	0.18	0.66		2.5	2.5	5.0	0.8	1.0	2.6	3.0	2.6	3.0
31	0.5	0.17	0.65		2.1	2.6	4.7	0.5	0.7	2.4	2.7	2.0	2.3
Avg.	0.34	0.20	0.57	0.53	2.4	3.1	5.6	0.5	0.8	2.6	3.0	2.2	2.6
Max.	0.50	0.26	0.66	0.55	2.9	4.9	7.4	1.6	1.9	3.2	3.5	3.0	3.5
Min.	0.30	0.14	0.48	0.50	2.1	2.3	4.5	0.3	0.5	1.7	2.0	1.3	1.6

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Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.27	8.09	366	229	297	122	69	107	113.0	72.1	20.4	11.2	51	89
2	7.95	8.06	358	243	295	111	63	132	110.6	68.9	20.4	18.5	52	88
3	7.95	7.74	360	234	297	122	63	112	116.2	71.3	16.5	14.1	52	87
4	7.81	7.82	354	243	285	129	69	114	129.1	89.8	8.3	4.4	54	85
5	7.97	7.77	360	235	290	126	70	109	117.0	71.3	16.5	13.6	54	95
6	7.55	7.69	362	239	288	124	74	115	133.1	89.0	7.3	2.9	55	89
7	7.90	7.94	351	234	288	124	63	110	126.7	87.4	18.0	13.6	54	87
8	7.93	8.26	363	235	288	123	75	112	120.2	74.5	15.6	11.7	48	87
9	7.96	7.84	357	237	286	125	71	112	116.2	74.5	16.5	12.2	57	95
10	8.01	8.08	349	233	273	129	76	104	122.6	81.0	10.7	7.3	64	98
11	7.92	8.29	347	233	281	117	66	116	115.4	72.1	13.6	11.2	61	95
12	8.00	7.94	345	233	279	127	66	106	125.0	84.2	8.7	5.3	54	91
13	8.07	7.92	348	235	282	127	66	108	126.7	84.2	7.8	5.3	54	88
14	7.99	8.11	343	226	273	112	70	114	123.4	81.8	8.7	3.9	54	85
15	8.00	8.15	309	210	236	99	73	111	97.0	65.7	17.5	12.6	51	87
16	8.00	7.97	251	176	198	78	53	98	79.4	50.5	15.1	12.2	42	76
17	7.99	7.66	305	191	242	92	63	99	97.8	55.3	14.1	11.7	46	76
18	8.00	7.95	270	203	223	104	47	99	89.0	72.1	12.6	4.4	46	84
19	7.90	9.90	256	151	204	58	52	93	79.4	38.5	15.6	12.2	41	78
20	7.85	7.30	240	240	189	135	51	105	81.8	87.4	8.7	5.3	38	70
21	7.97	7.34	214	210	175	119	39	91	78.6	81.8	5.3	1.5	34	73
22	7.95	7.37	219	211	173	104	46	107	63.3	60.9	15.6	14.1	33	69
23	8.01	7.53	212	187	173	92	39	95	64.9	59.3	12.6	9.7	34	69
24	7.94	7.45	211	170	171	77	40	93	74.5	59.3	6.3	5.3	33	69
25	8.01	7.80	218	173	172	77	46	96	67.3	56.1	11.7	9.2	32	72
26	8.03	7.72	214	171	173	78	41	93	71.3	59.3	9.7	5.3	31	69
27	8.02	7.67	215	168	174	77	41	91	75.4	60.1	6.8	4.4	31	68
28	8.05	7.73	218	169	174	77	44	92	78.6	63.3	5.8	1.5	30	72
29	8.12	7.95	229	177	182	80	47	97	71.3	53.7	12.6	9.7	31	73
30	8.18	7.85	229	171	182	79	47	92	73.7	53.7	11.7	8.7	34	71
31	8.08	7.80	228	168	183	70	45	98	68.9	52.1	13.6	10.7	33	72
Avg.	7.98	7.89	290	208	233	104	57	104	97.0	68.7	12.4	8.8	45	81
Max.	8.27	9.90	366	243	297	135	76	132	133.1	89.8	20.4	18.5	64	98
Min.	7.55	7.30	211	151	171	58	39	91	63.3	38.5	5.3	1.5	30	68

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	155	12	0	1	0	120	< 2	0.60	2.2				
2	1	135	12	0	1	0	146	< 2	0.60	2.8				
3	1	214	12	0	1	0	83	< 2	0.58	1.0				
4	1	84	12	0	1	0	100	< 2	0.61	2.5				
5	1	118	12	0	1	0	120	< 2	0.64	1.2				
6	1	79	12	0	1	0	43	< 2	0.62	1.5				
7	1	162	12	0	1	0	51	< 2	0.60	1.7				
8	1	86	12	0	1	0	100	< 2	0.62	2.6				
9	1	225	12	0	1	0	189	< 2	0.64	2.0				
10	1	205	12	0	1	0	248	< 2	0.64	2.6				
11	1	387	12	0	1	0	339	< 2	0.61	3.2				
12	1	770	12	0	1	0	440	< 2	0.31	3.7				
13	1	442	12	0	1	0	340	< 2	0.43	4.7				
14	1	4196	12	0	1	0	1120	< 2	0.58	5.7				
15	1	48392	12	0	1	0	> 14760	< 2	0.56	5.7				
16	1	> 48392	12	0	1	0	> 14760	< 2	0.43	4.2				
17	1	39726	12	0	1	0	12460	< 2	0.45	2.8				
18	1	24066	12	0	1	0	> 14760	< 2	0.55	3.6				
19	1	> 48392	12	0	1	0	11100	< 2	0.38	6.5				
20	1	34658	12	0	1	0	7100	< 2	0.56	4.8				
21	1	12262	12	0	1	0	9400	< 2	0.49	6.3				
22	1	4764	12	0	1	0	2920	< 2	0.49	4.5				
23	1	1596	12	0	1	0	1940	< 2	0.45	4.1				
24	1	1182	12	0	1	0	960	< 2	0.41	4.0				
25	1	550	12	0	1	0	1060	< 2	0.41	4.5				
26	1	399	12	0	1	0	560	< 2	0.41	5.6				
27	1	195	12	0	1	0	450	< 2	0.40	6.0				
28	1	122	12	0	1	0	400	< 2	0.41	5.9				
29	1	98	12	0	1	0	480	< 2	0.42	4.9				
30	1	201	12	0	1	0	> 738	< 2	0.40	5.9				
31	1	187	12	0	1	0	507	< 2	0.42	5.2				

Avg.									0.51	3.9				
Max.		48392					12460	< 2	0.64	6.5				
Min.									0.31	1.0				

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Date	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3	1.5	1.3	1.8	1.4	1.5	0.3	1.1	1.8		2.6	9
4	1.5	1.3	1.9	1.5	1.5	0.4	1.7	2.1		1.3	9
5	1.0	0.9	1.7	0.9	1.5	0.4	1.0	2.1		1.3	9
6											0
7											0
8											0
9											0
10	1.8	1.2	1.5	1.2	1.4	0.4	1.4	1.9		2.1	9
11	1.4	0.5	1.7	1.3	1.1	0.6	1.5	1.8	1.5	1.1	10
12	1.7	1.0	1.6	1.7	1.6	0.5	1.5	2.0		2.1	9
13											0
14											0
15											0
16											0
17	1.2	1.2	1.6	1.7	1.1	0.6	1.0	2.2	0.7	2.2	10
18	2.0	1.2	2.0	1.9	1.3	0.5	1.7	2.8		0.9	9
19	1.1	1.7	2.2	1.5	0.7	0.5	1.1	0.9		0.9	9
20											0
21											0
22											0
23											0
24	1.9	1.1	2.0	1.9	0.8	0.5	1.7	1.9		2.0	9
25	1.4	1.7	2.1	1.9	1.7	0.6	1.4	1.7		2.0	9
26	1.9	1.4	1.4	1.8	1.3	0.5	1.4	1.9		1.9	9
27											0
28											0
29											0
30											0
31	1.7	0.9	1.6	1.9	1.7	0.7	0.9	1.5		1.0	9

Distribution Sample Summary	
Total # of routine distribution samples analyzed	119
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.42

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3	1.7	1.6	2.2	1.6	1.6	0.4	1.5	2.0		2.8	9
4	1.8	1.6	2.2	1.7	1.8	0.6	2.0	2.3		1.6	9
5	1.7	1.3	2.2	1.2	1.8	0.5	1.7	2.5		1.5	9
6											0
7											0
8											0
9											0
10	2.1	1.5	1.7	1.5	1.6	0.5	1.7	2.2		2.4	9
11	1.7	0.7	2.0	1.6	1.5	0.7	1.7	2.4	1.7	1.4	10
12	2.0	1.2	1.9	2.0	1.9	0.6	1.7	2.3		2.3	9
13											0
14											0
15											0
16											0
17	1.7	1.5	2.0	1.9	1.4	0.7	1.5	2.7	0.9	2.6	10
18	2.3	1.4	2.3	2.2	1.5	0.6	1.9	3.0		1.1	9
19	1.4	1.9	2.7	1.8	1.0	0.7	1.4	1.5		1.1	9
20											0
21											0
22											0
23											0
24	2.4	1.4	2.3	2.3	1.1	0.7	2.0	2.4		2.5	9
25	1.6	2.3	2.7	2.5	1.9	0.8	1.7	1.9		2.5	9
26	2.4	1.8	1.9	2.1	1.6	0.7	1.8	2.2		2.3	9
27											0
28											0
29											0
30											0
31	2.2	1.2	1.9	2.6	1.9	0.9	1.3	1.8		1.3	9

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.7

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

February 2015
Month/Year

F-1R, F-2
Certification of Operator-in-Charge

F-1
Water Plant Classification

[redacted]
Signature of Operator-in-Charge

Genesee
County

Treatment Rate and Filter Data

Maximum Treatment Rate:	25.3	Million Gallons per Day
Rated Plant Capacity:	36	Million Gallons per Day
Average Filter Run:	86	Hours
Average Head Loss:	n/a	Feet *(filter head loss meters not operational)
Average Filtration Rate:	2.4	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	3.3	Gallons Per Square Feet per Minute
Average Wash Water Use:	2.4%	Percent of Treated Water

DEQ
RESOURCE MANAGEMENT DIVISION
MAR 16 2015
LANSING DISTRICT

Chemical Data

Chlorine on hand:	8,000	lb.	Est. supply:	8	days
Primary Coagulant (Ferric Chloride) on hand:	125,000	lb.	Est. supply:	3	days
Lime (CaO) on hand:	397	tons	Est. supply:	31	days
Fluoride on Hand:	26,600	lb.	Est. supply:	40	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks

	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	1	0
Number of filter confluence samples collected:	218	218
Percent of filter confluence samples > 0.3 NTU:	0.5%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Coagulation Parameters & Softening Chemical Application | City of Flint Water Treatment Plant | February 2015 | Page 2

WSSN: 2310

Date	Million Gallons Treated	Ferric as Fe^{3+} mg/L	Lime Dosage (mg/L)	PW-340 Cationic Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
						Raw			Plate Settler	Applied
						Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	15.9	21.6	189.2	4.9	0.98	8	2.8	4.1	2.25	1.53
2	18.1	16.3	169.3	4.3	0.70	8	3.1	7.2	1.57	2.25
3	18.3	15.4	254.4	6.8	0.86	8	2.8	5.9	1.71	2.45
4	18.3	16.0	222.8	5.7	0.82	8	2.9	5.1	1.65	1.69
5	18.2	16.2	188.4	5.9	0.76	8	3.0	5.1	1.58	2.01
6	18.1	18.3	205.7	6.3	0.80	7	3.3	3.8	1.39	1.57
7	18.1	17.9	178.8	6.3	0.81	8	3.0	5.1	1.39	1.20
8	18.0	17.9	175.9	6.4	0.87	8	2.6	4.1	1.36	1.34
9	18.1	17.4	162.4	6.1	0.69	8	2.5	4.8	1.37	1.56
10	18.4	16.5	185.7	6.6	0.88	7	2.1	2.4	1.49	1.97
11	18.5	15.4	179.0	6.3	0.86	8	2.2	2.7	1.39	1.82
12	19.4	16.0	195.7	6.2	0.87	8	2.5	3.1	1.65	1.75
13	20.1	17.5	209.7	6.3	0.87	8	2.6	2.8	2.04	1.59
14	20.0	18.2	198.9	6.2	0.89	7	2.6	2.8	1.74	1.34
15	20.1	17.0	178.9	6.3	0.84	8	2.9	3.7	1.70	1.52
16	20.1	18.1	183.7	6.5	0.82	8	3.0	4.8	1.79	1.85
17	20.6	16.7	192.1	5.6	0.85	8	4.2	8.5	2.18	2.11
18	22.7	15.9	131.2	3.8	0.78	8	2.8	3.4	3.97	2.14
19	23.0	14.9	137.5	3.8	0.50	8	3.7	7.6	3.81	1.80
20	23.2	14.1	138.3	3.9	0.55	8	3.2	7.2	3.66	1.50
21	23.5	14.8	132.4	3.8	0.54	8	2.5	2.7	4.35	1.66
22	23.4	14.8	128.7	3.9	0.54	8	2.9	3.9	4.28	1.51
23	24.1	14.4	121.2	3.7	0.58	8	3.2	6.2	4.98	1.76
24	24.3	15.1	132.0	3.7	0.52	8	2.7	3.5	5.90	2.56
25	24.5	15.1	124.8	3.8	0.64	8	7.1	22.5	6.32	1.64
26	24.5	14.5	124.6	3.8	0.52	8	2.6	3.3	6.03	1.56
27	24.5	15.2	123.2	3.8	0.52	8	2.6	3.3	6.00	1.45
28	24.3	14.6	129.2	3.8	0.42	8	2.5	3.1	5.80	1.64
Avg.	20.7	16.3	167.6	5.2	0.72	8	3.0			1.74
Max.	24.5	21.6	254.4	6.8	0.98	8	7.1	22.5	6.32	2.56
Min.	15.9	14.1	121.2	3.7	0.42	7	2.1			1.20
Total	580.3									

City of Flint Water Treatment Plant

WSSN: 2310

Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	8	0.07	0.09	6	0	0	8	0.06	0.09	6	0	0	0.07
2	7	0.06	0.10	6	0	0	7	0.06	0.07	6	0	0	0.07
3	8	0.07	0.15	6	0	0	8	0.06	0.07	6	0	0	0.08
4	8	0.05	0.08	6	0	0	8	0.05	0.07	6	0	0	0.07
5	8	0.07	0.10	6	0	0	8	0.06	0.07	6	0	0	0.07
6	7	0.06	0.08	6	0	0	7	0.06	0.08	6	0	0	0.07
7	8	0.06	0.07	6	0	0	8	0.06	0.06	6	0	0	0.07
8	8	0.06	0.07	6	0	0	8	0.06	0.07	6	0	0	0.06
9	8	0.07	0.09	6	0	0	8	0.05	0.06	6	0	0	0.09
10	7	0.06	0.07	6	0	0	7	0.05	0.06	6	0	0	0.08
11	8	0.06	0.07	6	0	0	8	0.05	0.07	6	0	0	0.07
12	8	0.06	0.08	6	0	0	8	0.06	0.08	6	0	0	0.06
13	8	0.06	0.09	6	0	0	8	0.09	0.18	6	0	0	0.08
14	8	0.06	0.09	6	0	0	8	0.06	0.10	6	0	0	0.05
15	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
16	8	0.06	0.08	6	0	0	8	0.05	0.07	6	0	0	0.06
17	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
18	8	0.07	0.09	6	0	0	8	0.07	0.09	6	0	0	0.07
19	8	0.07	0.09	6	0	0	8	0.06	0.08	6	0	0	0.07
20	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.07
21	8	0.08	0.14	6	0	0	8	0.08	0.10	6	0	0	0.08
22	8	0.09	0.12	6	0	0	8	0.10	0.13	6	0	0	0.08
23	8	0.13	0.16	6	0	0	8	0.07	0.10	6	0	0	0.10
24	7	0.19	0.36	6	1	1	7	0.14	0.18	6	0	0	0.17
25	8	0.08	0.10	6	0	0	8	0.10	0.12	6	0	0	0.11
26	8	0.13	0.17	6	0	0	8	0.13	0.18	6	0	0	0.14
27	8	0.19	0.29	6	0	0	8	0.15	0.18	6	0	0	0.15
28	8	0.20	0.27	6	0	0	8	0.13	0.18	6	0	0	0.15
Avg.	8	0.08	0.12	6	0	0	8	0.07	0.10	6	0	0	
Max.	8	0.20	0.36	6	1	1	8	0.15	0.18	6	0	0	0.17
Min.	7	0.05	0.07	6	0	0	7	0.05	0.06	6	0	0	

WSSN: 2310

Date	Fluoride Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.3	0.23	0.53		1.6	3.1	4.7	0.3	0.6	2.6	3.0	2.5	2.9
2	0.3	0.22	0.48		1.8	2.9	4.7	0.3	0.5	2.4	2.7	2.2	2.5
3	0.3	0.23	0.51	0.52	1.9	3.0	4.9	0.8	1.2	2.6	2.9	2.4	2.7
4	0.4	0.22	0.53		1.9	3.0	4.9	0.6	0.8	2.8	3.0	2.7	3.0
5	0.3	0.22	0.53		1.9	2.9	4.8	0.5	0.7	2.6	3.0	2.2	2.5
6	0.4	0.22	0.57		2.0	3.0	5.0	0.8	1.0	2.7	3.0	2.3	2.8
7	0.3	0.22	0.58		2.1	2.7	4.8	0.3	0.6	2.6	2.9	2.1	2.4
8	0.4	0.23	0.56		2.1	2.7	4.8	0.6	0.8	2.7	3.0	2.2	2.5
9	0.4	0.22	0.64		1.9	2.8	4.7	0.4	0.6	2.7	3.0	2.3	2.6
10	0.4	0.24	0.63	0.56	2.2	2.9	5.1	0.5	0.7	2.8	3.1	2.1	2.4
11	0.4	0.21	0.55		2.2	2.8	5.0	0.7	0.9	2.6	2.8	1.9	2.4
12	0.4	0.21	0.58		2.2	2.7	4.9	0.6	0.8	2.5	2.8	2.1	2.5
13	0.4	0.23	0.59		2.2	2.4	4.6	0.4	0.6	2.0	2.5	1.7	2.2
14	0.4	0.22	0.55		2.2	2.2	4.4	0.6	0.8	2.3	2.6	1.5	2.1
15	0.4	0.21	0.60		2.1	2.2	4.3	0.4	0.6	2.0	2.4	1.9	2.2
16	0.4	0.23	0.59		2.1	2.2	4.3	0.4	0.6	2.1	2.4	1.8	2.1
17	0.4	0.21	0.61	0.54	2.1	2.3	4.4	0.8	1.0	2.0	2.4	1.3	1.7
18	0.3	0.23	0.58		2.0	2.2	4.2	0.3	0.6	1.9	2.4	1.5	2.0
19	0.3	0.24	0.64		2.2	2.1	4.3	0.6	0.8	2.0	2.4	1.7	2.2
20	0.4	0.23	0.56		2.2	2.1	4.3	0.7	1.0	2.0	2.5	1.5	1.9
21	0.4	0.24	0.61		2.2	2.1	4.3	0.5	0.7	1.7	2.2	1.5	2.0
22	0.4	0.23	0.55		2.2	2.1	4.3	0.4	0.6	2.0	2.3	1.7	1.9
23	0.3	0.24	0.64		2.2	2.2	4.4	0.5	0.6	2.0	2.1	1.5	1.6
24	0.3	0.24	0.56	0.54	2.3	2.6	4.9	0.4	0.6	2.5	3.3	2.1	2.5
25	0.3	0.23	0.62		2.3	2.6	4.9	0.5	0.7	2.5	2.9	2.4	2.7
26	0.3	0.23	0.54		2.3	2.7	5.0	0.5	0.7	2.7	3.1	2.5	3.0
27	0.3	0.24	0.56		2.3	2.5	4.8	0.6	0.8	2.3	2.9	2.1	2.5
28	0.3	0.24	0.56		2.3	2.5	4.8	0.6	0.8	2.3	2.8	1.9	2.5
Avg.	0.35	0.23	0.57	0.54	2.1	2.6	4.7	0.5	0.7	2.4	2.7	2.0	2.4
Max.	0.40	0.24	0.64	0.56	2.3	3.1	5.1	0.8	1.2	2.8	3.3	2.7	3.0
Min.	0.30	0.21	0.48	0.52	1.6	2.1	4.2	0.3	0.5	1.7	2.1	1.3	1.6

WSSN: 2310

Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	7.78	7.91	339	198	273	60	66	138	109.0	56.9	17.5	14.1	51	98
2	7.92	7.64	343	203	274	77	69	126	110.6	60.1	15.6	12.6	52	91
3	7.75	8.69	344	176	276	62	68	114	113.8	54.5	13.6	10.2	57	90
4	8.04	7.88	346	176	277	62	69	114	114.6	54.5	14.6	10.2	49	88
5	7.77	7.56	349	183	284	63	65	120	118.6	60.9	12.6	7.3	55	89
6	7.92	7.63	350	180	276	52	74	128	117.8	52.9	13.6	11.7	54	95
7	8.07	7.76	348	185	282	68	66	117	113.8	54.5	15.6	11.7	52	92
8	8.05	7.57	347	181	278	50	69	131	111.4	51.3	16.5	12.6	51	91
9	8.11	7.66	349	183	280	62	69	121	112.2	52.9	16.5	12.2	53	94
10	7.95	7.65	350	168	284	47	66	121	113.0	57.7	16.5	6.8	56	95
11	7.97	7.76	345	173	274	54	71	119	109.0	49.7	17.9	12.6	51	92
12	7.85	7.66	342	169	274	51	68	118	117.8	59.3	12.2	5.3	55	92
13	7.77	7.70	345	170	267	53	78	117	121.0	57.7	11.2	4.9	54	90
14	7.86	7.54	344	173	269	52	75	121	125.0	63.3	7.3	3.9	56	93
15	8.00	7.73	349	176	280	53	69	123	113.0	50.5	16.0	12.2	50	94
16	7.89	7.68	353	169	285	47	68	122	123.4	53.7	10.7	8.7	55	95
17	8.05	7.92	360	172	281	49	79	123	118.6	48.9	15.6	11.7	53	92
18	7.96	7.97	352	218	282	102	70	116	125.9	78.6	8.7	5.3	54	91
19	8.11	7.82	358	208	291	91	67	117	120.2	59.3	14.6	13.1	53	92
20	7.93	7.90	362	207	286	94	76	113	133.1	76.2	7.3	4.4	55	87
21	8.00	8.06	362	214	284	98	78	116	133.9	76.2	6.8	4.4	54	86
22	7.98	8.03	366	227	294	113	72	114	116.2	67.3	18.5	14.1	52	88
23	8.07	8.31	361	225	293	112	68	113	121.8	68.9	14.1	12.6	52	86
24	7.95	7.85	361	227	289	101	72	126	133.9	78.6	5.8	6.8	54	88
25	8.03	8.14	365	244	295	127	70	117	118.6	77.8	16.5	11.7	55	89
26	7.91	7.88	365	235	288	108	77	127	132.3	86.6	8.3	4.9	55	89
27	7.96	7.85	354	241	291	117	63	124	131.5	91.4	6.3	2.9	57	89
28	7.90	7.72	358	228	228	115	130	113	127.5	84.2	9.7	3.9	54	87
Avg.	7.95	7.84	352	197	280	76	73	120	119.9	63.7	12.9	9.0	54	91
Max.	8.11	8.69	366	244	295	127	130	138	133.9	91.4	18.5	14.1	57	98
Min.	7.75	7.54	339	168	228	47	63	113	109.0	48.9	5.8	2.9	49	86

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	41	12	0	1	0	150	< 2	0.53	4.0				
2	1	117	12	0	1	0	132	< 2	0.55	4.2				
3	1	96	12	0	1	0	146	< 2	0.49	4.3				
4	1	86	12	0	1	0	90	< 2	0.51	4.1				
5	1	105	12	0	1	0	183	< 2	0.51	3.5				
6	1	276	12	0	1	0	128	< 2	0.50	2.4				
7	1	124	12	0	1	0	97	< 2	0.50	3.8				
8	1	120	12	0	1	0	80	< 2	0.48	3.8				
9	1	104	12	0	1	0	90	< 2	0.51	4.2				
10	1	93	12	0	1	0	132	< 2	0.50	4.0				
11	1	115	12	0	1	0	83	< 2	0.47	4.3				
12	1	115	12	0	1	0	93	< 2	0.46	3.8				
13	1	153	12	0	1	0	80	< 2	0.50	4.5				
14	1	154	12	0	1	0	93	< 2	0.48	3.6				
15	1	138	12	0	1	0	83	< 2	0.52	0.5				
16	1	179	12	0	1	0	137	< 2	0.50	0.7				
17	1	365	12	0	1	0	166	< 2	0.50	1.2				
18	1	219	12	0	1	0	177	< 2	0.51	1.7				
19	1	153	12	0	1	0	112	< 2	0.45	2.2				
20	1	192	12	0	1	0	62	< 2	0.56	1.9				
21	1	142	12	0	1	0	116	< 2	0.51	4.1				
22	1	160	12	0	1	0	146	< 2	0.55	2.1				
23	1	129	12	0	1	0	112	< 2	0.58	1.0				
24	1	135	12	0	1	0	100	< 2	0.61	3.4				
25	1	145	12	0	1	0	156	< 2	0.61	2.0				
26	1	115	12	0	1	0	108	< 2	0.61	1.2				
27	1	86	12	0	1	0	74	< 2	0.61	3.3				
28	1	84	12	0	1	0	65	< 2	0.56	3.3				

Avg.									0.52	3.0				
Max.		365					183	0	0.61	4.5				
Min.									0.45	0.5				

WSSN: 2310

Date	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3	0.7	1.5	1.5	1.5	1.5	0.2	1.7	1.7	1.3	2.0	10
4											0
5	1.0	1.7	1.7	1.7	1.1	0.2	1.8	2.0	0.7	1.4	10
6											0
7											0
8											0
9											0
10	1.0	1.2	1.5	1.3	1.0	0.2	2.0	1.9	0.7	1.0	10
11	1.0	1.3	1.7	1.7	0.9	0.3	1.7	2.3	0.5	0.9	10
12	0.4	1.4	2.3	1.8	0.7	0.2	1.9	2.2	0.5	1.2	10
13											0
14											0
15											0
16											0
17	1.1	0.7	1.2	1.5	0.7	0.2	1.1	1.3		1.5	9
18	1.2	0.8	1.6	1.2	0.8	0.2	1.8	1.7		1.4	9
19	0.9	0.7	1.3	1.0	0.7	0.2	0.8	1.3		1.0	9
20											0
21											0
22											0
23	1.3	0.8	1.3	1.1	0.6	0.2	0.6	1.5		0.8	9
24	1.5	1.1	1.7	1.2	1.0	0.2	2.5	2.2		2.3	9
25											0
26	1.7	1.4	2.0	1.5	1.1	0.3	1.8	1.8		2.1	9
27											0
28											0

Distribution Sample Summary	
Total # of routine distribution samples analyzed	104
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.22

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1											0
2											0
3	1.0	1.8	1.8	1.9	1.8	0.3	2.0	1.9	1.7	2.4	10
4											0
5	1.3	2.1	2.0	2.0	1.3	0.4	2.1	2.3	1.0	1.6	10
6											0
7											0
8											0
9											0
10	1.3	1.5	1.9	1.6	1.3	0.4	2.4	2.2	1.0	1.3	10
11	1.2	1.5	1.8	1.9	1.1	0.4	1.9	2.6	0.7	1.2	10
12	0.5	1.6	2.4	2.0	0.9	0.4	2.1	2.4	0.6	1.4	10
13											0
14											0
15											0
16											0
17	1.3	1.0	1.4	1.8	0.9	0.3	1.5	1.8		1.7	9
18	1.5	1.0	1.9	1.5	1.0	0.3	2.1	2.0		1.7	9
19	1.3	1.1	1.6	1.5	1.0	0.3	1.0	1.7		1.3	9
20											0
21											0
22											0
23	1.5	1.0	1.6	1.3	0.8	0.3	0.8	1.8		1.2	9
24	1.7	1.3	1.9	1.4	1.2	0.4	2.8	2.4		2.5	9
25											0
26	1.9	1.6	2.4	1.7	1.4	0.5	2.1	2.0		2.5	9
27											0
28											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.5

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT
WSSN: 2310

[redacted]
Operator-in-Charge

January 2015
Month/Year

F-1R, F-2
Certification of Operator-in-Charge

F-1
Water Plant Classification

[redacted]
Signature of Operator-in-Charge

Genesee
County

DEQ
RESOURCE MANAGEMENT DIVISION
FEB 17 2015
LANSING DISTRICT

Treatment Rate and Filter Data

Maximum Treatment Rate:	19.3	Million Gallons per Day
Rated Plant Capacity:	36	Million Gallons per Day
Average Filter Run:	76	Hours
Average Head Loss:	n/a	Feet *(filter head loss meters not operational)
Average Filtration Rate:	2.1	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	3.6	Gallons Per Square Feet per Minute
Average Wash Water Use:	3.2%	Percent of Treated Water

Chemical Data

Chlorine on hand:	12,000	lb.	Est. supply:	18	days
Primary Coagulant (Ferric Chloride) on hand:	110,000	lb.	Est. supply:	10	days
Lime (CaO) on hand:	257	tons	Est. supply:	22	days
Fluoride on Hand:	16,630	lb.	Est. supply:	42	days
Cost of All Chemicals per Million Gallons:	n/a	dollars			
Total Power Cost per Million Gallons:	n/a	dollars			

Remarks

	Confluence Point # 1 (N)	Confluence Point # 2 (S)
Number of filter confluence samples > 0.3 NTU:	0	0
Number of filter confluence samples collected:	244	242
Percent of filter confluence samples > 0.3 NTU:	0.0%	0.0%
Number of filter confluence samples > 1 NTU	0	0

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months? NO
If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month? NO
If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month? YES
If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month? NO
If yes, indicate date(s) and duration on a separate sheet.

Coagulation Parameters & Softening Chemical Application — City of Flint Water Treatment Plant — January 2015 — Page 2

WSSN: 2310

Date	Million Gallons Treated	Ferric as Fe^{3+} mg/L	Lime Dosage (mg/L)	PW-340 Cationic Polymer Dosage (mg/L)	P-142PWG Anionic Polymer Dosage (mg/L)	Turbidity, Units				
						Raw			Plate Settler	Applied
						Number of Samples	Avg.	Max.	Effluent Avg.	Applied Avg.
1	10.3	20.7	145.0	5.9	0.93	8	5.0	6.0	0.38	3.48
2	17.8	19.4	130.0	4.6	0.85	7	4.7	4.9	1.17	1.32
3	19.0	20.4	115.0	4.5	0.79	8	4.5	4.8	1.21	1.01
4	18.8	18.1	109.0	4.4	0.73	8	5.5	12.3	1.42	1.18
5	18.9	17.6	121.0	4.4	0.73	8	3.8	5.3	1.52	1.54
6	18.9	17.5	122.0	4.7	0.68	8	3.6	4.4	1.51	1.31
7	18.8	16.7	121.0	4.5	0.71	8	3.9	5.6	1.43	1.23
8	16.1	16.6	135.0	5.5	0.88	8	4.9	8.1	1.38	1.10
9	12.3	14.9	151.0	6.9	0.91	8	8.0	8.2	1.36	0.94
10	12.3	16.8	159.0	7.4	0.91	8	8.2	9.0	1.61	1.01
11	12.2	18.0	164.0	6.5	0.78	8	8.0	8.5	1.36	1.17
12	12.6	17.8	149.0	6.2	0.73	8	7.5	8.1	1.44	1.07
13	12.0	20.6	169.0	5.6	0.84	8	7.1	7.7	1.77	1.01
14	13.4	21.0	171.0	5.7	0.81	8	7.5	8.1	1.69	1.30
15	14.3	18.8	172.0	5.5	0.86	8	7.0	7.3	1.44	1.45
16	16.3	17.8	164.0	5.8	0.75	8	6.7	7.0	0.95	1.50
17	18.2	15.8	129.0	4.9	0.71	8	6.3	6.6	1.37	1.96
18	18.6	15.3	137.2	4.8	0.70	8	6.2	8.2	1.41	1.95
19	18.7	15.6	145.0	4.9	0.77	8	5.6	7.2	1.47	1.64
20	18.6	14.1	160.6	4.9	0.75	8	4.9	5.1	1.47	2.94
21	18.7	13.9	150.0	4.9	0.69	8	4.7	6.3	1.49	1.52
22	18.6	15.0	142.0	4.9	0.72	8	3.9	4.4	1.39	1.64
23	18.5	14.4	170.0	5.0	0.71	7	3.7	3.9	1.41	2.28
24	18.5	15.1	191.0	5.0	0.77	8	5.8	19.4	1.53	1.44
25	18.4	16.0	174.0	5.0	0.71	8	3.8	5.5	1.35	1.57
26	18.1	15.6	164.0	5.1	0.71	8	3.7	5.3	1.45	1.72
27	18.5	14.2	180.0	5.1	0.76	7	3.5	5.3	1.59	1.69
28	18.2	13.6	180.0	4.9	0.74	7	4.1	10.2	1.63	1.71
29	18.6	14.4	188.0	5.1	0.70	7	2.8	3.4	1.66	1.58
30	18.5	15.3	168.0	5.2	0.68	8	2.7	3.4	1.72	1.75
31	16.9	19.0	180.0	5.8	0.81	8	2.7	3.5	1.52	1.34
Avg.	16.8	16.8	153.4	5.3	0.77	8	5.17			1.56
Max.	19.0	21.0	191.0	7.4	0.93	8	8.2	19.4	1.77	3.48
Min.	10.3	13.6	109.0	4.4	0.68	7	2.70			0.94
Total	519.5									

Filter turbiditiy

City of Flint Water Treatment Plant

WSSN: 2310

January 2015 Page 3

Date	Turbidity, Units												
	Confluence Point, No.1 (N) North						Confluence Point, No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	8	0.07	0.08	6	0	0	8	0.06	0.09	6	0	0	0.08
2	7	0.07	0.09	6	0	0	7	0.06	0.07	6	0	0	0.07
3	8	0.06	0.08	6	0	0	8	0.06	0.07	6	0	0	0.08
4	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.07
5	8	0.06	0.09	6	0	0	8	0.06	0.09	6	0	0	0.07
6	8	0.08	0.09	6	0	0	8	0.07	0.10	6	0	0	0.07
7	8	0.09	0.15	6	0	0	8	0.07	0.09	6	0	0	0.08
8	8	0.08	0.10	6	0	0	8	0.07	0.11	6	0	0	0.08
9	8	0.06	0.08	6	0	0	8	0.05	0.07	6	0	0	0.07
10	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
11	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
12	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.09
13	8	0.06	0.12	6	0	0	8	0.05	0.07	6	0	0	0.06
14	8	0.07	0.09	6	0	0	8	0.06	0.09	6	0	0	0.07
15	8	0.06	0.09	6	0	0	8	0.07	0.09	6	0	0	0.07
16	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.09
17	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.07
18	8	0.08	0.11	6	0	0	8	0.07	0.08	6	0	0	0.07
19	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.07
20	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.11
21	8	0.08	0.11	6	0	0	8	0.07	0.08	6	0	0	0.09
22	8	0.09	0.11	6	0	0	8	0.08	0.09	6	0	0	0.09
23	7	0.08	0.10	6	0	0	7	0.07	0.09	6	0	0	0.08
24	8	0.07	0.09	6	0	0	8	0.06	0.10	6	0	0	0.07
25	8	0.06	0.07	6	0	0	8	0.07	0.09	6	0	0	0.07
26	8	0.07	0.09	6	0	0	6	0.08	0.10	6	0	0	0.07
27	7	0.08	0.11	6	0	0	7	0.07	0.10	6	0	0	0.08
28	7	0.07	0.09	6	0	0	7	0.07	0.10	6	0	0	0.07
29	7	0.07	0.10	6	0	0	7	0.07	0.08	6	0	0	0.07
30	8	0.07	0.09	6	0	0	8	0.07	0.08	6	0	0	0.08
31	8	0.06	0.10	6	0	0	8	0.06	0.08	6	0	0	0.07
Avg.	8	0.07	0.09	6	0	0	8	0.07	0.09	6	0	0	
Max.	8	0.09	0.15	6	0	0	8	0.08	0.11	6	0	0	0.11
Min.	7	0.06	0.07	6	0	0	6	0.05	0.07	6	0	0	

Date	Fluoriode Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.4	0.24	0.70		1.3	3.5	4.8	0.6	0.9	2.7	3.0	2.1	2.4
2	0.4	0.21	0.62		1.4	3.5	4.9	0.6	0.8	2.6	3.1	2.2	2.6
3	0.3	0.22	0.55		1.8	2.6	4.4	0.5	0.7	2.7	3.3	2.8	3.2
4	0.4	0.20	0.60		1.8	2.5	4.3	0.8	1.0	2.8	3.0	2.9	3.2
5	0.4	0.19	0.23		1.9	2.5	4.4	0.7	1.0	2.8	3.0	2.7	3.0
6	0.3	0.19	0.49	0.39	1.9	2.7	4.6	0.6	0.9	2.7	3.2	2.5	3.2
7	0.3	0.23	0.61		1.9	2.6	4.5	0.7	0.9	2.7	3.0	2.2	2.7
8	0.3	0.19	0.51		1.9	2.6	4.5	0.6	0.9	2.4	3.1	2.1	2.6
9	0.0	0.19	0.51		2.0	3.2	5.2	0.4	0.7	2.8	3.1	2.3	2.8
10	0.0	0.22	0.44		1.8	3.1	4.9	0.4	0.4	2.4	2.9	1.8	2.3
11	0.0	0.20	0.22		1.8	3.0	4.8	0.8	1.1	2.7	3.1	2.5	2.9
12	0.0	0.21	0.21		1.6	3.2	4.8	0.5	0.8	2.8	3.1	2.4	2.8
13	0.0	0.19	0.19	0.35	1.7	3.1	4.8	0.8	1.2	2.8	3.1	2.2	2.6
14	0.0	0.21	0.21		1.6	3.0	4.6	0.4	0.6	2.8	3.1	2.3	2.8
15	0.0	0.22	0.24		1.6	3.0	4.6	0.5	0.9	2.7	3.1	2.0	2.3
16	0.1	0.20	0.20		1.6	3.0	4.6	0.5	0.9	2.3	3.0	2.0	2.5
17	0.3	0.22	0.23		1.7	3.0	4.7	0.4	0.6	2.5	3.0	1.8	2.3
18	0.4	0.19	0.55		1.8	3.2	5.0	0.5	0.8	2.7	3.0	2.5	2.9
19	0.4	0.20	0.64		1.9	3.2	5.1	0.4	0.6	2.8	3.2	2.2	2.6
20	0.0	0.22	0.45	0.31	2.0	3.0	5.0	0.5	0.9	2.9	3.4	2.1	2.7
21	0.2	0.21	0.31		1.9	2.8	4.7	0.5	0.8	2.6	3.0	2.2	2.5
22	0.4	0.20	0.67		1.9	2.9	4.8	0.4	0.7	2.8	3.2	1.9	2.2
23	0.4	0.22	0.41		2.0	3.1	5.1	0.4	0.8	2.6	3.0	1.5	1.8
24	0.4	0.21	0.67		2.0	3.2	5.2	0.7	0.9	2.8	3.0	2.7	3.0
25	0.4	0.23	0.59		2.1	3.1	5.2	0.5	0.8	2.9	3.4	2.4	2.7
26	0.4	0.21	0.57		2.0	3.0	5.0	0.4	0.7	2.7	3.1	2.4	2.7
27	0.4	0.23	0.54	0.55	2.1	3.1	5.2	0.4	0.6	2.7	3.0	2.2	2.5
28	0.4	0.22	0.59		2.0	2.9	4.9	0.8	1.0	2.4	2.7	1.9	2.3
29	0.4	0.25	0.62		2.0	2.9	4.9	0.7	0.9	2.8	3.2	2.2	2.5
30	0.4	0.22	0.63		2.0	3.0	5.0	0.7	0.8	2.5	2.9	2.0	2.5
31	0.3	0.19	0.52		1.9	3.0	4.9	0.6	0.8	2.8	3.2	2.8	3.2
Avg.	0.26	0.21	0.47	0.40	1.8	3.0	4.8	0.6	0.8	2.7	3.1	2.3	2.7
Max.	0.40	0.25	0.70	0.55	2.1	3.5	5.2	0.8	1.2	2.9	3.4	2.9	3.2
Min.	0.00	0.19	0.19	0.31	1.3	2.5	4.3	0.4	0.4	2.3	2.7	1.5	1.8

Date	pH (S.U.)		Total Hardness as CaCO3 (mg/L)		Total Alkalinity as CaCO3 (mg/L)		Non-Carbonate Hardness as CaCO3 (mg/L)		Calcium as Ca2+ (mg/L)		Magnesium as Mg2+ (mg/L)		Chloride as Cl- (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.23	7.65	323	185	264	65	59	120	108.2	55.3	13.6	11.7	47	85
2	7.84	7.31	324	193	258	76	66	117	121.0	65.7	6.3	4.9	47	87
3	7.77	7.38	323	212	257	98	66	114	120.0	77.0	5.8	4.9	48	87
4	8.15	7.86	325	218	261	96	64	122	105.8	64.9	14.6	13.1	48	88
5	8.31	7.80	318	206	262	94	56	112	103.4	60.9	14.6	13.6	45	78
6	8.09	7.97	320	208	256	95	64	113	121.0	69.7	4.9	8.7	48	85
7	8.04	7.91	313	194	256	97	57	97	101.8	61.7	15.6	10.7	43	82
8	8.19	8.04	313	202	251	87	62	115	121.0	72.9	2.9	3.9	48	83
9	8.08	7.96	311	205	248	93	63	112	115.4	70.5	5.8	6.3	47	84
10	7.98	7.75	316	181	255	73	61	108	114.6	64.1	6.8	3.4	47	88
11	8.01	8.24	321	174	256	63	65	111	100.2	44.9	17.5	14.6	44	80
12	8.09	7.68	318	177	250	57	68	120	101.0	46.5	16.0	14.6	49	81
13	7.94	7.69	320	165	245	46	75	119	105.8	44.1	14.1	13.1	47	87
14	7.80	7.52	321	172	252	58	69	114	115.4	56.9	7.8	6.8	48	88
15	7.96	7.64	323	173	258	48	65	125	105.8	48.9	14.1	13.1	45	91
16	7.94	7.47	324	172	257	44	67	128	117.8	58.5	6.8	6.8	47	88
17	7.82	7.95	320	174	252	54	68	120	119.4	58.5	4.9	5.3	46	89
18	8.02	7.72	322	185	258	69	64	116	104.2	55.3	15.1	11.2	48	83
19	8.03	7.62	321	184	255	59	66	125	102.6	54.5	16.0	11.7	48	86
20	7.89	7.59	321	184	255	67	66	117	116.2	64.9	7.8	4.9	49	91
21	7.86	7.79	324	183	257	72	67	111	105.0	51.3	15.1	13.1	50	83
22	7.59	7.42	325	193	262	81	63	112	116.2	68.9	8.3	4.9	49	84
23	7.70	7.44	344	186	256	78	88	108	112.2	59.3	15.6	9.2	52	87
24	7.91	7.51	327	187	259	72	68	115	101.0	48.1	18.5	16.0	48	85
25	7.93	7.71	326	188	260	75	66	113	100.2	50.5	18.5	14.6	47	85
26	7.95	7.82	328	194	259	71	69	123	105.8	54.5	15.6	13.6	51	88
27	7.77	7.99	332	191	266	68	66	123	111.4	60.1	13.1	9.2	51	89
28	7.99	7.98	334	188	264	76	70	112	107.4	51.3	16.0	14.6	48	85
29	7.80	7.83	334	196	268	76	66	120	106.6	57.7	16.5	12.6	55	86
30	7.84	7.78	331	193	272	78	59	115	113.0	59.3	13.1	10.7	55	90
31	7.96	7.91	335	197	267	69	68	128	108.2	56.1	15.6	13.6	51	92

Avg.	7.95	7.74	324	189	258	73	66	116	109.9	58.5	12.2	10.2	48	86
Max.	8.31	8.24	344	218	272	98	88	128	121.0	77	18.5	16.0	55	92
Min.	7.59	7.31	311	165	245	44	56	97	100.2	44.1	2.9	3.4	43	78

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colilert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	2592	12	0	1	0	800	< 2	0.37	5.6				
2	1	1684	12	0	1	0	600	< 2	0.36	4.5				
3	1	960	12	0	1	0	2400	< 2	0.42	4.0				
4	1	718	12	0	1	0	200	< 2	0.44	3.8				
5	1	1732	12	0	1	0	5980	< 2	0.41	3.0				
6	1	874	12	0	1	0	200	< 2	0.41	4.5				
7	1	2086	12	0	1	0	200	< 2	0.39	4.2				
8	1	960	12	0	1	0	120	< 2	0.39	5.5				
9	1	1146	12	0	1	0	420	< 2	0.40	2.6				
10	1	2994	12	0	1	0	760	38	0.31	2.6				
11	1	978	12	0	1	0	520	10	0.36	2.1				
12	1	1042	12	0	1	0	600	< 2	0.36	1.9				
13	1	862	12	0	1	0	340	< 2	0.37	1.4				
14	1	646	12	0	1	0	200	< 2	0.36	1.9				
15	1	736	12	0	1	0	300	< 2	0.36	3.5				
16	1	2224	12	0	1	0	200	< 2	0.37	1.9				
17	1	320	12	0	1	0	200	< 2	0.36	4.9				
18	1	40	12	0	1	0	200	2	0.38	4.9				
19	1	148	12	0	1	0	120	< 2	0.40	5.2				
20	1	770	12	0	1	0	146	< 2	0.38	4.9				
21	1	148	12	0	1	0	80	< 2	0.37	5.9				
22	1	201	12	0	1	0	190	< 2	0.39	5.8				
23	1	345	12	0	1	0	120	< 2		4.9				
24	1	97	12	0	1	0	150	< 2	0.38	6.4				
25	1	146	12	0	1	0	60	< 2	0.39	4.4				
26	1	181	12	0	1	0	230	< 2	0.40	3.8				
27	1	146	12	0	1	0	120	< 2	0.38	4.9				
28	1	172	12	0	1	0	128	< 2	0.38	4.3				
29	1	261	12	0	1	0	137	< 2	0.49	4.2				
30	1	155	12	0	1	0	93	< 2	0.43	4.0				
31	1	41	12	0	1	0	60	< 2	0.53	4.0				

Avg.									0.39	4.0				
Max.							5980	38	0.53	6.4				
Min.									0.31	1.4				

Date	Free Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	0.7	0.1	1.3	1.6	0.7	0.2	0.2		1.5	1.4	9
2											0
3											0
4											0
5											0
6	0.6	0.7	1.5	2.0	0.8	0.1	1.4	1.8	1.8	1.8	10
7	0.6	0.7	1.7	1.5	0.7	0.2	1.1	2.0	0.8	1.7	10
8	0.8	0.3	1.0	1.3	0.8	0.1	1.4	1.8	0.8	1.7	10
9											0
10											0
11											0
12											0
13	0.4	1.0	1.7	1.4	0.7	0.2	1.4	1.7	0.4	1.7	10
14	0.2	0.5	1.8	1.6	0.5	0.1	2.1	2.2	0.4	2.0	10
15											0
16											0
17											0
18											0
19											0
20	0.1	1.6	1.7	1.4	0.9	0.3	1.9	2.0	1.3	1.8	10
21											0
22											0
23											0
24											0
25											0
26									1.6	1.8	2
27	0.9	1.3	1.2	1.7	0.7	0.2	1.3	1.8	1.4	0.8	10
28	0.8	0.5	1.4	1.5	0.8	0.2	1.8	1.8	1.5	1.8	10
29	0.9	1.7	1.6	1.7	1.0	0.1	2.0	1.9	0.9	2.0	10
30											0
31											0

Distribution Sample Summary	
Total # of routine distribution samples analyzed	101
Total # of routine distribution samples required	100

Distribution Bacteriological Summary	
Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary	
Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.15

WSSN: 2310

Date	Total Chlorine Residual at Bacteriological Montioring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	0.8	0.2	1.5	1.8	0.9	0.3	0.3		1.7	1.5	9
2											0
3											0
4											0
5											0
6	0.9	0.9	1.4	2.3	1.0	0.2	1.6	2.1	2.2	2.1	10
7	0.8	0.9	1.9	1.8	1.0	0.2	1.3	2.2	1.0	2.0	10
8	1.0	0.5	1.2	1.5	1.1	0.3	1.6	2.0	1.0	2.0	10
9											0
10											0
11											0
12											0
13	0.7	1.5	2.0	1.7	0.9	0.2	1.7	2.3	0.6	2.1	10
14	0.4	1.8	2.1	1.8	0.8	0.3	2.4	2.5	0.5	2.3	10
15											0
16											0
17											0
18											0
19											0
20	0.3	1.9	2.0	1.6	1.2	0.6	2.2	2.3	1.5	2.2	10
21											0
22											0
23											0
24											0
25											0
26									1.9	2.2	2
27	1.3	1.9	1.7	2.1	0.9	0.4	1.7	2.0	1.8	1.0	10
28	1.2	0.8	1.7	1.8	1.2	0.4	2.1	2.3	1.9	2.2	10
29	1.2	2.0	1.9	1.9	1.3	0.2	2.3	2.3	1.1	2.3	10
30											0
31											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.4

Positive Distribution Samples

Date	Monitoring station	Date	Repeat Monitoring Stations	Residual (mg/L) Free / Total	Present or Absent