

Bay Area WTP


Monthly Operations Report



July, 2018

Water Systems Serial Number:

0465



Ryan Goebel

Operations Supervisor

F1

Title

Classification


Mark Moers

Water Superintendent

F1

Title

Classification

Bay Area Water Treatment Plant

Monthly Operations Report

Supply Name: Bay Area Water System
 WSSN: 0465

Mark Moers
 Operator-in-charge

July, 2018
 Month, Year

F1
 Certification of Operator-in-charge

F1
 Water Plant Classification

Bay
 County

Treatment Rate and Membrane Data

Treatment Rate, Approved Rated Plant Capacity	<u>17.4</u>	Millions of Gallons per Day
Treatment Rate, Maximum	<u>12.7</u>	Millions of Gallons per Day
Maximum Approved Transmembrane Pressure	<u>22</u>	PSI
Maximum Operating Transmembrane Pressure	<u>22</u>	PSI

Chemical Data

Sodium Hypochlorite on hand:	<u>3,127</u>	Gallons	Estimated Supply:	<u>30.5</u>	days
Caustic Soda on hand:	<u>4,247</u>	Gallons	Estimated Supply:	<u>400.0</u>	days
Corrosion Inhibitor on hand:	<u>1,691</u>	Gallons	Estimated Supply:	<u>52.4</u>	days
Hydrofluosilicic Acid on hand:	<u>1,265</u>	Gallons	Estimated Supply:	<u>39.3</u>	days
Aluminum Chlorohydrate on hand:	<u>635</u>	Gallons	Estimated Supply:	<u>43.3</u>	days
Sulfuric Acid on hand:	<u>487</u>	Gallons	Estimated Supply:	<u>188.4</u>	days
Sodium Bisulfite on hand:	<u>551</u>	Gallons	Estimated Supply:	<u>113.3</u>	days
Citric Acid on hand:	<u>2,874</u>	Gallons	Estimated Supply:	<u>334.0</u>	days
Cost of All Chemicals per Million Gallons:	<u>64.21</u>	Dollars			
Estimated Electrical Cost per Million Gallons:	<u>95.93</u>	Dollars			

Remarks

Number of periods of filter confluence turbidity samples > 0.3 NTU 0
 Percent of membrane period confluence samples > 0.3 NTU: 0.00%

Did any individual membrane skid exceed:
 1.0 NTU in two consecutive measurements taken 15 minutes apart?
 If yes, attach specific filter(s) information and indicate required follow-up status. No

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

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

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

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

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

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

Was continuous POE chlorine residual monitoring equipment off-line during the month?
 If yes, date(s) and duration will be indicated on the rule page. No

Notes



Bay Area WTP Monthly Operating Report

Date	Flows														
	Raw Water (MG)			Clarified (MG)		Wasted (MG)		Sludge (MG)		Treated (MG)			Finished Water Pumped (MG)		
	North	South	Total	Total	Total	Total	Total	Total	Total	Total	N. Euclid	Lauria Road	Total		
	FIT-1000-1	FIT-1000-2	Calculated	FIT-5520-1	FIT-5520-2	FIT-5180	FIT-4000-1	FIT-4040-1	FIT-4040-2	Calculated					
7/1/2018	5.11	5.96	11.07	0.35	0.00	0.06	10.33	5.29	5.04	10.34					
7/2/2018	5.05	5.42	10.47	0.39	0.00	0.06	11.24	5.63	5.36	10.99					
7/3/2018	5.15	5.75	10.90	0.40	0.00	0.05	11.47	5.70	5.43	11.13					
7/4/2018	5.27	6.83	12.10	0.43	0.00	0.05	11.42	5.72	5.46	11.19					
7/5/2018	5.31	6.91	12.22	0.36	0.00	0.06	11.47	5.73	5.48	11.21					
7/6/2018	5.31	6.17	11.48	0.41	0.00	0.05	11.58	5.86	5.60	11.47					
7/7/2018	5.11	6.01	11.12	0.38	0.00	0.06	11.54	5.74	5.47	11.21					
7/8/2018	5.03	5.90	10.93	0.39	0.00	0.06	11.71	5.97	5.72	11.70					
7/9/2018	5.78	6.08	11.86	0.40	0.00	0.07	12.67	6.32	6.06	12.38					
7/10/2018	6.36	6.28	12.64	0.42	0.00	0.06	12.27	6.18	5.90	12.07					
7/11/2018	6.10	6.79	12.90	0.42	0.00	0.05	12.50	6.28	6.03	12.31					
7/12/2018	5.65	7.43	13.08	0.41	0.00	0.05	12.60	6.44	6.20	12.64					
7/13/2018	5.23	6.81	12.04	0.41	0.00	0.05	10.68	5.32	5.09	10.41					
7/14/2018	5.15	5.49	10.64	0.39	0.00	0.05	10.34	5.07	4.80	9.86					
7/15/2018	4.04	4.32	8.35	0.37	0.00	0.05	10.55	5.39	5.15	10.53					
7/16/2018	6.13	6.21	12.35	0.37	0.00	0.05	10.91	5.43	5.21	10.65					
7/17/2018	5.25	5.64	10.89	0.38	0.00	0.05	10.42	5.13	4.91	10.04					
7/18/2018	3.92	4.91	8.82	0.41	0.00	0.05	11.07	5.54	5.32	10.86					
7/19/2018	5.03	6.40	11.43	0.39	0.00	0.06	11.03	5.55	5.30	10.85					
7/20/2018	5.03	7.04	12.07	0.35	0.00	0.06	10.47	5.29	5.02	10.31					
7/21/2018	4.00	5.06	9.06	0.38	0.00	0.05	9.01	4.62	4.38	8.99					
7/22/2018	3.71	5.26	8.98	0.31	0.00	0.05	8.97	4.45	4.22	8.67					
7/23/2018	4.51	4.41	8.92	0.31	0.00	0.07	9.23	4.63	4.38	9.01					
7/24/2018	5.30	4.61	9.91	0.31	0.00	0.07	9.60	4.79	4.53	9.32					
7/25/2018	4.88	4.72	9.60	0.32	0.00	0.08	10.18	5.13	4.87	10.01					
7/26/2018	4.54	5.29	9.83	0.31	0.00	0.12	11.39	5.69	5.45	11.14					
7/27/2018	5.37	5.98	11.35	0.27	0.00	0.12	9.93	5.01	4.79	9.80					
7/28/2018	5.04	6.07	11.11	0.32	0.00	0.06	9.00	4.56	4.33	8.90					
7/29/2018	4.02	4.81	8.83	0.32	0.00	0.07	9.97	4.98	4.79	9.77					
7/30/2018	5.43	4.70	10.13	0.37	0.00	0.08	11.42	5.70	5.52	11.22					
7/31/2018	5.92	5.14	11.06	0.36	0.00	0.05	9.71	5.24	5.07	10.31					
Total	157.73	178.41	336.14	11.39	0.00	1.92	334.68	168.41	160.89	329.30					
Avg	5.09	5.76	10.84	0.37	0.00	0.06	10.80	5.43	5.19	10.62					
Min	3.71	4.32	8.35	0.27	0.00	0.05	8.97	4.45	4.22	8.67					
Max	6.36	7.43	13.08	0.43	0.00	0.12	12.67	6.44	6.20	12.64					



Raw Water Analysis									
Date	Temp	pH	Turbidity		F ⁻	Free Cl (Mem. Feed)	Bacti		
	Average	Average	Average	Maximum	Grab	Average	Total Coliform	Positive/Negative	E. coli
	°C		NTU		mg/L	mg/L			Lab
	TIT-1000	AIT-1000-2	AIT-1000-1		Lab	AIT-1035-2			
7/1/2018	17.10	7.98	0.96	1.72	0.10	0.19	Negative	Negative	Negative
7/2/2018	16.99	7.94	0.69	2.20	0.10	0.25	Negative	Negative	Negative
7/3/2018	16.52	7.90	0.60	6.76	0.09	0.37	Negative	Negative	Negative
7/4/2018	16.26	7.90	0.58	0.73	0.09	0.52	Negative	Negative	Negative
7/5/2018	16.46	7.95	0.63	16.76	0.10	0.53	Negative	Negative	Negative
7/6/2018	16.42	7.96	0.63	7.32	0.11	0.49	Negative	Negative	Negative
7/7/2018	17.37	8.09	1.24	33.21	0.10	0.37	Negative	Negative	Negative
7/8/2018	18.29	8.19	0.91	1.46	0.11	0.15	Negative	Negative	Negative
7/9/2018	17.29	8.04	0.81	4.45	0.10	0.24	Negative	Negative	Negative
7/10/2018	15.58	7.95	0.63	0.80	0.10	0.46	Negative	Negative	Negative
7/11/2018	14.85	7.94	0.66	0.83	0.10	0.56	Negative	Negative	Negative
7/12/2018	15.20	8.05	0.72	0.99	0.08	0.51	Negative	Negative	Negative
7/13/2018	16.38	8.11	0.67	3.74	0.08	0.30	Negative	Negative	Negative
7/14/2018	15.69	8.03	0.69	0.90	0.08	0.31	Negative	Negative	Negative
7/15/2018	15.70	8.02	0.56	0.70	0.08	0.33	Negative	Negative	Negative
7/16/2018	15.33	7.99	0.59	2.88	0.07	0.40	Negative	Negative	Negative
7/17/2018	15.24	7.99	0.49	1.48	0.08	0.41	Negative	Negative	Negative
7/18/2018	15.28	8.00	0.52	0.77	0.07	0.36	Negative	Negative	Negative
7/19/2018	16.63	8.13	0.68	1.13	0.07	0.25	Negative	Negative	Negative
7/20/2018	18.11	8.17	0.58	0.89	0.08	0.14	Negative	Negative	Negative
7/21/2018	18.74	8.14	0.87	1.47	0.07	0.14	Negative	Negative	Negative
7/22/2018	18.94	8.11	0.72	1.17	0.07	0.16	Negative	Negative	Negative
7/23/2018	19.30	8.26	1.15	1.94	0.08	0.10	Negative	Negative	Negative
7/24/2018	19.47	8.22	1.80	11.01	0.08	0.05	Negative	Negative	Negative
7/25/2018	19.56	8.16	1.57	2.60	0.08	0.05	Negative	Negative	Negative
7/26/2018	19.54	8.16	1.97	13.13	0.10	0.04	Negative	Negative	Negative
7/27/2018	19.44	8.00	1.20	2.01	0.10	0.07	Negative	Negative	Negative
7/28/2018	18.99	7.91	1.83	2.78	0.08	0.19	Negative	Negative	Negative
7/29/2018	18.44	7.92	1.07	2.43	0.09	0.20	Negative	Negative	Negative
7/30/2018	18.03	7.94	0.81	1.29	0.09	0.26	Negative	Negative	Negative
7/31/2018	17.82	7.93	0.78	8.68	0.09	0.35	Negative	Negative	Negative
Avg	17.3	8.04	0.89	4.46	0.09	0.28	NA	NA	NA
Min	14.8	7.90	0.49	0.70	0.07	0.04	NA	NA	NA
Max	19.6	8.26	1.97	33.21	0.11	0.56	NA	NA	NA



Finished Water Analysis

Date	Temp Average °C	pH Average	Phosphate Average mg/L	Fluoride		Free Cl ₂ Average mg/L	Alkalinity (as CaCO ₃)		Chloride mg/L	Sulfate		Calcium (as CaCO ₃) mg/L	Dissolved Oxygen		Conductivity		Langelier Saturation Index	Chloride: Sulfate Mass Ratio	Larson- Skold Index	Bacti					
				Tap	Dist		Carbonate	Bicarbonate		Grab	Grab		Grab	Grab	Grab	Grab				Lab	Lab	Lab	Lab	Total	E. coli
				mg/L			mg/L			mg/L			mg/L		mg/L					mg/L		uS/cm		Calculated	
7/1/2018	19.5	7.66	3.19	0.79		1.04	0	88	12	13	84	7.9	253	-0.45	0.92	0.43	Negative	Negative							
7/2/2018	19.2	7.62	3.28	0.79	0.80	1.03	0	85	11	12	82	8.4	243	-0.52	0.92	0.40	Negative	Negative							
7/3/2018	18.6	7.59	3.18	0.79		1.04	0	80	9	13	70	8.6	230	-0.66	0.69	0.40	Negative	Negative							
7/4/2018	18.0	7.56	3.21	0.77		1.02	0	78	9	17	64	8.9	223	-0.74	0.53	0.48	Negative	Negative							
7/5/2018	17.7	7.57	3.21	0.77		1.01	0	76	10	13	70	9.2	222	-0.72	0.77	0.45	Negative	Negative							
7/6/2018	17.4	7.59	3.20	0.78		0.99	0	76	9	13	68	8.9	223	-0.71	0.69	0.42	Negative	Negative							
7/7/2018	17.8	7.61	3.18	0.75		1.00	0	80	10	14	68	8.7	228	-0.66	0.71	0.44	Negative	Negative							
7/8/2018	18.9	7.67	3.16	0.76		1.00	0	82	10	17	66	8.5	244	-0.58	0.59	0.48	Negative	Negative							
7/9/2018	19.2	7.68	3.17	0.76		1.02	0	78	10	15	70	7.7	233	-0.56	0.67	0.47	Negative	Negative							
7/10/2018	17.4	7.61	3.18	0.77		1.03	0	77	10	14	70	8.5	218	-0.67	0.71	0.46	Negative	Negative							
7/11/2018	15.5	7.60	3.18	0.79	0.79	1.04	0	77	10	12	66	9.1	214	-0.75	0.83	0.42	Negative	Negative							
7/12/2018	14.6	7.61	3.20	0.73		1.02	0	77	10	13	68	9.0	216	-0.70	0.77	0.44	Negative	Negative							
7/13/2018	15.8	7.64	3.21	0.75		0.99	0	79	10	12	68	8.9	224	-0.68	0.83	0.41	Negative	Negative							
7/14/2018	16.6	7.63	3.20	0.77		1.02	0	78	10	13	68	9.3	219	-0.68	0.77	0.44	Negative	Negative							
7/15/2018	16.3	7.62	3.18	0.75		1.03	0	78	10	13	68	9.3	217	-0.69	0.77	0.44	Negative	Negative							
7/16/2018	16.0	7.61	3.17	0.77		1.02	0	74	10	12	70	8.8	215	-0.71	0.83	0.42	Negative	Negative							
7/17/2018	15.4	7.60	3.17	0.77	0.84	1.02	0	74	10	12	70	8.8	215	-0.74	0.83	0.44	Negative	Negative							
7/18/2018	15.2	7.60	3.16	0.77		1.02	0	75	10	11	68	9.3	215	-0.76	0.91	0.42	Negative	Negative							
7/19/2018	15.9	7.61	3.17	0.79		1.02	0	76	10	10	70	8.5	222	-0.71	1.00	0.40	Negative	Negative							
7/20/2018	17.9	7.66	3.19	0.81		1.01	0	78	11	13	70	8.5	233	-0.61	0.85	0.46	Negative	Negative							
7/21/2018	19.4	7.66	3.19	0.79		1.00	0	78	12	13	70	8.0	233	-0.57	0.92	0.48	Negative	Negative							
7/22/2018	20.0	7.66	3.18	0.81		1.00	0	79	12	12	70	8.3	230	-0.55	1.00	0.46	Negative	Negative							
7/23/2018	20.4	7.67	3.17	0.81	0.80	1.00	0	79	12	13	70	7.2	235	-0.54	0.92	0.47	Negative	Negative							
7/24/2018	21.0	7.71	3.17	0.77		1.00	0	85	13	15	84	7.5	248	-0.38	0.87	0.49	Negative	Negative							
7/25/2018	21.3	7.69	3.18	0.81		1.02	0	87	15	13	84	7.2	247	-0.38	1.15	0.49	Negative	Negative							
7/26/2018	21.3	7.70	3.19	0.77		1.01	0	86	11	14	78	7.3	258	-0.41	0.79	0.43	Negative	Negative							
7/27/2018	21.2	7.70	3.18	0.79		1.02	0	90	11	14	86	7.1	260	-0.35	0.79	0.41	Negative	Negative							
7/28/2018	20.9	7.63	3.18	0.76		1.06	0	85	11	12	82	7.7	238	-0.47	0.92	0.40	Negative	Negative							
7/29/2018	20.3	7.59	3.19	0.77	0.77	1.07	0	82	10	12	74	8.2	232	-0.58	0.83	0.40	Negative	Negative							
7/30/2018	19.6	7.58	3.19	0.76		1.06	0	84	11	12	82	7.6	228	-0.55	0.92	0.41	Negative	Negative							
7/31/2018	19.0	7.61	3.18	0.76		1.06	0	78	10	17	72	7.9	223	-0.62	0.59	0.50	Negative	Negative							
Avg	18.3	7.63	3.19	0.78	0.80	1.02	0	80	11	13	73	8.4	230	-0.60	0.82	0.44	NA	NA							
Min	14.6	7.56	3.16	0.73	0.77	0.99	0	74	9	10	64	7.1	214	-0.76	0.53	0.40	NA	NA							
Max	21.3	7.71	3.28	0.81	0.84	1.07	0	90	15	17	86	9.3	260	-0.35	1.15	0.50	NA	NA							



Turbidity												
Date	Raw Water		Clarified Water	Membrane Feed Water	Combined Membrane Filtrate					Finished Average		
	Avg	Max	Avg	Avg	Avg	Max	# Samples	# > 0.3	% Exceeded	Avg		
	AIT-1000-1		AIT-5030-1	AIT-1035-3	AIT-4000-1					Calculated		
	NTU											
7/1/2018	0.96	1.72	1.97	1.13	0.011	0.013	96	0	0.0	0.011		
7/2/2018	0.69	2.20	1.43	0.84	0.011	0.011	96	0	0.0	0.011		
7/3/2018	0.60	6.76	1.42	0.71	0.011	0.011	96	0	0.0	0.011		
7/4/2018	0.58	0.73	1.14	0.59	0.011	0.011	96	0	0.0	0.012		
7/5/2018	0.63	16.76	1.51	0.58	0.011	0.011	96	0	0.0	0.012		
7/6/2018	0.63	7.32	2.57	0.58	0.011	0.011	96	0	0.0	0.012		
7/7/2018	1.24	33.21	1.34	0.88	0.011	0.015	96	0	0.0	0.012		
7/8/2018	0.91	1.46	2.03	0.94	0.015	0.015	96	0	0.0	0.012		
7/9/2018	0.81	4.45	1.87	0.84	0.015	0.016	96	0	0.0	0.012		
7/10/2018	0.63	0.80	1.12	0.66	0.015	0.015	96	0	0.0	0.012		
7/11/2018	0.66	0.83	1.48	0.64	0.015	0.015	96	0	0.0	0.012		
7/12/2018	0.72	0.99	1.32	0.66	0.015	0.016	96	0	0.0	0.012		
7/13/2018	0.67	3.74	1.72	0.63	0.015	0.015	96	0	0.0	0.012		
7/14/2018	0.69	0.90	1.75	0.75	0.015	0.015	96	0	0.0	0.012		
7/15/2018	0.56	0.70	1.09	0.65	0.015	0.015	96	0	0.0	0.012		
7/16/2018	0.59	2.88	0.99	0.63	0.015	0.016	96	0	0.0	0.012		
7/17/2018	0.49	1.48	1.05	0.57	0.015	0.016	96	0	0.0	0.012		
7/18/2018	0.52	0.77	1.36	0.57	0.015	0.015	96	0	0.0	0.012		
7/19/2018	0.68	1.13	1.78	0.69	0.015	0.015	96	0	0.0	0.012		
7/20/2018	0.58	0.89	2.75	0.77	0.015	0.016	96	0	0.0	0.012		
7/21/2018	0.87	1.47	1.36	0.70	0.015	0.016	96	0	0.0	0.012		
7/22/2018	0.72	1.17	1.07	0.74	0.015	0.016	96	0	0.0	0.012		
7/23/2018	1.15	1.94	2.48	0.88	0.015	0.016	96	0	0.0	0.012		
7/24/2018	1.80	11.01	4.12	1.48	0.015	0.016	96	0	0.0	0.012		
7/25/2018	1.57	2.60	3.91	1.53	0.016	0.016	96	0	0.0	0.012		
7/26/2018	1.97	13.13	11.21	1.89	0.016	0.016	96	0	0.0	0.012		
7/27/2018	1.20	2.01	4.57	1.57	0.016	0.016	96	0	0.0	0.013		
7/28/2018	1.83	2.78	0.82	1.40	0.016	0.016	96	0	0.0	0.012		
7/29/2018	1.07	2.43	1.10	1.45	0.015	0.016	96	0	0.0	0.012		
7/30/2018	0.81	1.29	1.41	1.06	0.015	0.016	96	0	0.0	0.012		
7/31/2018	0.78	8.68	0.86	0.95	0.015	0.016	96	0	0.0	0.013		
Avg	0.89	4.46	2.08	0.90	0.014	0.015	96	0	0.0	0.012		
Min	0.49	0.70	0.82	0.57	0.011	0.011	96	0	0.0	0.011		
Max	1.97	33.21	11.21	1.89	0.016	0.016	96	0	0.0	0.013		

Note: % Exceeded are 4 hr compliance periods where 50% of the samples are greater than 0.3 NTU



Date	Membrane Integrity																							
	Membrane 1			Membrane 2			Membrane 3			Membrane 4			Membrane 5			Membrane 6			Membrane 7			Membrane 8		
	Air Hold Pressure (PSI)	Stop Pressure (PSI)	Pass / Fail	Air Hold Pressure (PSI)	Stop Pressure (PSI)	Pass / Fail	Air Hold Pressure (PSI)	Stop Pressure (PSI)	Pass / Fail	Air Hold Pressure (PSI)	Stop Pressure (PSI)	Pass / Fail	Air Hold Pressure (PSI)	Stop Pressure (PSI)	Pass / Fail	Air Hold Pressure (PSI)	Stop Pressure (PSI)	Pass / Fail	Air Hold Pressure (PSI)	Stop Pressure (PSI)	Pass / Fail	Air Hold Pressure (PSI)	Stop Pressure (PSI)	Pass / Fail
7/1/2018	14.8	14.5	PASS	14.4	13.9	PASS	14.6	14.1	PASS	14.6	14.3	PASS	15.3	15.0	PASS	14.6	14.3	PASS	14.7	14.7	PASS	14.7	14.4	PASS
7/2/2018	15.1	15.2	PASS	14.3	13.9	PASS	15.0	14.6	PASS	14.6	14.4	PASS	14.7	14.2	PASS	14.5	14.1	PASS	14.5	14.5	PASS	14.3	13.8	PASS
7/3/2018	15.1	14.7	PASS	14.4	13.9	PASS	14.9	14.5	PASS	14.6	14.4	PASS	14.7	14.2	PASS	14.5	14.3	PASS	14.5	14.3	PASS	14.6	14.2	PASS
7/4/2018	15.4	15.1	PASS	14.7	14.4	PASS	14.7	14.3	PASS	14.5	14.3	PASS	15.4	15.2	PASS	14.5	14.3	PASS	14.5	14.2	PASS	14.4	13.9	PASS
7/5/2018	15.2	14.9	PASS	14.4	14.0	PASS	15.5	15.3	PASS	14.4	14.2	PASS	14.4	14.0	PASS	14.5	14.2	PASS	14.5	15.1	PASS	14.3	14.0	PASS
7/6/2018	15.0	14.6	PASS	14.4	14.0	PASS	15.1	14.7	PASS	14.4	14.0	PASS	15.5	15.3	PASS	14.5	14.3	PASS	14.5	14.7	PASS	14.3	13.9	PASS
7/7/2018	15.1	14.7	PASS	14.5	14.2	PASS	15.1	14.7	PASS	14.4	14.1	PASS	15.6	15.5	PASS	14.5	14.3	PASS	14.8	14.5	PASS	14.7	14.5	PASS
7/8/2018	15.4	15.1	PASS	14.4	13.9	PASS	15.5	15.3	PASS	14.6	14.3	PASS	14.6	14.2	PASS	14.5	14.3	PASS	14.5	14.4	PASS	14.8	14.6	PASS
7/9/2018	14.9	14.5	PASS	14.4	14.0	PASS	14.6	14.1	PASS	14.6	14.4	PASS	14.3	13.9	PASS	14.5	14.3	PASS	14.5	14.2	PASS	14.5	14.3	PASS
7/10/2018	15.0	14.6	PASS	14.5	14.1	PASS	15.2	15.0	PASS	14.4	14.1	PASS	14.8	14.3	PASS	14.6	14.3	PASS	14.4	14.4	PASS	14.5	14.1	PASS
7/11/2018	15.2	14.8	PASS	14.4	13.9	PASS	15.5	15.3	PASS	14.4	14.1	PASS	15.4	15.2	PASS	14.4	14.2	PASS	14.6	14.3	PASS	14.5	14.1	PASS
7/12/2018	14.9	14.5	PASS	14.4	14.0	PASS	15.5	15.2	PASS	14.7	14.4	PASS	15.0	14.6	PASS	14.5	14.2	PASS	14.6	14.3	PASS	14.6	14.3	PASS
7/13/2018	14.9	14.4	PASS	14.4	14.0	PASS	15.1	14.7	PASS	14.4	14.1	PASS	15.4	15.0	PASS	14.5	14.2	PASS	14.5	14.5	PASS	14.3	13.9	PASS
7/14/2018	15.0	14.6	PASS	14.4	13.9	PASS	15.3	15.0	PASS	14.3	14.1	PASS	15.2	14.8	PASS	14.5	14.2	PASS	14.5	14.9	PASS	14.7	14.4	PASS
7/15/2018	15.2	14.8	PASS	14.4	13.9	PASS	15.5	15.3	PASS	14.3	14.1	PASS	15.4	15.2	PASS	14.5	14.2	PASS	14.5	14.9	PASS	14.6	14.3	PASS
7/16/2018	15.2	14.8	PASS	14.4	13.9	PASS	15.5	15.3	PASS	14.7	14.3	PASS	15.5	15.2	PASS	14.5	14.1	PASS	14.5	14.5	PASS	14.3	13.7	PASS
7/17/2018	15.1	14.7	PASS	14.3	13.9	PASS	15.0	14.6	PASS	14.4	14.1	PASS	14.8	14.4	PASS	14.4	14.2	PASS	14.4	14.2	PASS	14.3	13.8	PASS
7/18/2018	15.0	14.6	PASS	14.4	13.9	PASS	15.3	15.0	PASS	14.8	14.4	PASS	15.5	15.1	PASS	14.5	14.2	PASS	14.4	14.6	PASS	14.3	13.8	PASS
7/19/2018	15.2	14.8	PASS	14.3	13.9	PASS	15.5	15.2	PASS	14.4	14.2	PASS	15.4	15.2	PASS	14.4	14.2	PASS	14.5	14.9	PASS	14.6	14.2	PASS
7/20/2018	15.4	15.2	PASS	14.3	13.8	PASS	14.7	14.3	PASS	14.6	14.2	PASS	15.0	14.6	PASS	14.5	14.3	PASS	14.5	14.5	PASS	14.4	13.9	PASS
7/21/2018	14.7	14.4	PASS	14.3	13.8	PASS	14.8	14.4	PASS	14.6	14.3	PASS	14.8	14.3	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.6	14.3	PASS
7/22/2018	14.9	14.5	PASS	14.3	13.8	PASS	14.7	14.3	PASS	14.5	14.2	PASS	15.5	15.2	PASS	14.5	14.2	PASS	14.5	14.6	PASS	14.5	14.3	PASS
7/23/2018	14.8	14.4	PASS	14.3	13.8	PASS	14.5	14.0	PASS	14.4	14.0	PASS	14.4	14.0	PASS	14.6	14.3	PASS	14.8	14.5	PASS	14.6	14.3	PASS
7/24/2018	14.7	14.4	PASS	14.6	14.2	PASS	14.3	13.8	PASS	14.3	13.8	PASS	15.0	14.6	PASS	14.6	14.3	PASS	14.7	14.4	PASS	14.6	14.2	PASS
7/25/2018	14.8	14.4	PASS	14.3	13.8	PASS	14.8	14.4	PASS	14.6	14.3	PASS	14.8	14.3	PASS	14.6	14.3	PASS	14.6	14.4	PASS	14.6	14.2	PASS
7/26/2018	14.8	14.4	PASS	14.3	13.8	PASS	14.6	14.1	PASS	14.6	14.3	PASS	14.4	14.0	PASS	14.4	14.1	PASS	14.5	14.2	PASS	14.7	14.5	PASS
7/27/2018	14.7	14.3	PASS	14.3	13.8	PASS	14.1	13.6	PASS	14.6	14.3	PASS	14.6	14.1	PASS	14.4	14.1	PASS	14.4	14.1	PASS	14.4	13.8	PASS
7/28/2018	14.7	14.3	PASS	14.2	13.7	PASS	14.7	14.3	PASS	14.6	14.3	PASS	14.6	14.2	PASS	14.5	14.2	PASS	14.5	14.8	PASS	14.5	14.2	PASS
7/29/2018	14.8	14.4	PASS	14.3	13.9	PASS	15.5	15.3	PASS	14.4	14.1	PASS	14.8	14.4	PASS	14.6	14.3	PASS	14.6	14.3	PASS	14.3	13.8	PASS
7/30/2018	14.8	14.4	PASS	14.4	13.9	PASS	14.5	14.1	PASS	14.5	14.3	PASS	14.8	14.3	PASS	14.5	14.2	PASS	14.6	14.2	PASS	14.7	14.4	PASS
7/31/2018	14.8	14.4	PASS	14.3	13.8	PASS	15.5	15.3	PASS	14.3	14.0	PASS	15.3	15.0	PASS	14.5	14.2	PASS	14.4	14.0	PASS	14.4	14.1	PASS

Integrity test performed every 24-hours



Chlorination

Date	Treated Water	RW Tank	Membrane Feed Water	Added pre-FW Tanks	Treated Water	Post FW Tanks	Added Post FW Tank
	Volume	OCL	Free Cl ₂	OCL	Free Cl ₂	Free Cl ₂	OCL
	MG	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	Daily	Average	Average	Average	Average	Average	Average
FIT-4000-1	AIT-1035-2	AIT-4030-1	AIT-4050-1				
7/1/2018	10.3	0.00	0.19	1.74	1.24	1.04	0.00
7/2/2018	11.2	0.00	0.25	1.65	1.19	1.03	0.00
7/3/2018	11.5	0.00	0.37	1.20	1.20	1.04	0.00
7/4/2018	11.4	0.00	0.52	1.12	1.15	1.02	0.00
7/5/2018	11.5	0.00	0.53	1.09	1.15	1.01	0.00
7/6/2018	11.6	0.00	0.49	1.12	1.12	0.99	0.00
7/7/2018	11.5	0.00	0.37	1.28	1.15	1.00	0.00
7/8/2018	11.7	0.00	0.15	1.46	1.19	1.00	0.00
7/9/2018	12.7	0.00	0.24	1.28	1.21	1.02	0.00
7/10/2018	12.3	0.00	0.46	0.71	1.19	1.03	0.00
7/11/2018	12.5	0.00	0.56	0.60	1.18	1.04	0.00
7/12/2018	12.6	0.00	0.51	0.75	1.15	1.02	0.00
7/13/2018	10.7	0.00	0.30	0.93	1.11	0.99	0.00
7/14/2018	10.3	0.00	0.31	0.85	1.17	1.02	0.00
7/15/2018	10.5	0.00	0.33	0.84	1.17	1.02	0.00
7/16/2018	10.9	0.00	0.40	0.74	1.16	1.03	0.00
7/17/2018	10.4	0.00	0.41	0.72	1.14	1.02	0.00
7/18/2018	11.1	0.00	0.36	0.82	1.15	1.02	0.00
7/19/2018	11.0	0.00	0.25	0.95	1.14	1.02	0.00
7/20/2018	10.5	0.00	0.14	1.05	1.19	1.01	0.00
7/21/2018	9.0	0.00	0.14	1.15	1.17	1.00	0.00
7/22/2018	9.0	0.00	0.16	1.10	1.18	1.00	0.00
7/23/2018	9.2	0.00	0.10	1.23	1.17	1.00	0.00
7/24/2018	9.6	0.00	0.05	1.30	1.21	1.00	0.00
7/25/2018	10.2	0.00	0.05	1.26	1.22	1.02	0.00
7/26/2018	11.4	0.00	0.04	1.29	1.20	1.01	0.00
7/27/2018	9.9	0.00	0.07	1.27	1.24	1.02	0.00
7/28/2018	9.0	0.00	0.19	1.10	1.20	1.06	0.00
7/29/2018	10.0	0.00	0.20	0.95	1.23	1.07	0.00
7/30/2018	11.4	0.00	0.26	0.98	1.18	1.06	0.00
7/31/2018	9.7	0.00	0.35	0.90	1.17	1.06	0.00
Avg	10.8	0.00	0.28	1.08	1.18	1.02	0.00
Min	9.0	0.00	0.04	0.60	1.11	0.99	0.00
Max	12.7	0.00	0.56	1.74	1.24	1.07	0.00



Date	Disinfection CT										Compliance				
	Pipeline CT					FW Tank CT					Temp	CT	Met		
	Whitestone	Travel Time	Residual	CT	FW Tank 1	FW Tank 2	Plant	Contact Time	Free Cl ₂	Total CT				Temp	CT
											Flow	MGD	Min Level		
MGD	Minutes	mg/L	mg-min/L	ft	ft	MGD	Minutes	mg/L	mg-min/L	°C	mg-min/L	mg-min/L	mg-min/L	mg-min/L	mg-min/L
Entry	Calculated	AIT-1035-4	Calculated	LIT-4005-1	LIT-4005-2	Calculated	Calculated	Calculated	Calculated	TIT-1000	Calculated	Calculated	Calculated	Calculated	Calculated
7/1/2018	80.7	1,549	0.19	302	21.9	21.6	10.3	289	0.96	577.40	17.1	4.00	4.00	Y	
7/2/2018	74.7	1,674	0.25	426	23.4	23.1	11.0	290	0.93	694.99	17.0	4.00	4.00	Y	
7/3/2018	64.6	1,938	0.37	720	23.9	23.6	11.1	293	1.00	1,013.81	16.5	4.00	4.00	Y	
7/4/2018	66.7	1,876	0.52	984	25.6	25.3	11.2	312	0.98	1,288.30	16.3	4.00	4.00	Y	
7/5/2018	68.8	1,818	0.53	967	24.4	24.1	11.2	297	0.96	1,250.22	16.5	4.00	4.00	Y	
7/6/2018	70.2	1,783	0.49	871	24.8	24.5	11.5	295	0.95	1,150.43	16.4	4.00	4.00	Y	
7/7/2018	82.3	1,520	0.37	555	23.1	22.7	11.7	280	0.80	780.44	17.4	4.00	4.00	Y	
7/8/2018	82.6	1,515	0.15	232	24.5	24.2	11.7	285	0.92	494.08	18.3	4.00	4.00	Y	
7/9/2018	76.4	1,637	0.24	397	23.1	22.8	12.4	254	0.98	646.17	17.3	4.00	4.00	Y	
7/10/2018	69.7	1,795	0.46	831	26.3	26.0	12.1	297	0.98	292.04	15.6	4.00	4.00	Y	
7/11/2018	71.7	1,744	0.56	973	25.0	24.6	12.3	276	0.91	1,224.95	14.8	6.00	6.00	Y	
7/12/2018	72.8	1,718	0.51	879	20.9	20.5	12.6	224	0.94	1,089.83	15.2	4.00	4.00	Y	
7/13/2018	74.0	1,690	0.30	502	21.0	20.7	10.4	274	0.79	718.48	16.4	4.00	4.00	Y	
7/14/2018	74.6	1,676	0.31	522	25.0	24.6	9.9	345	0.91	837.43	15.7	4.00	4.00	Y	
7/15/2018	75.0	1,669	0.33	557	25.5	25.2	10.5	330	0.95	869.80	15.7	4.00	4.00	Y	
7/16/2018	68.8	1,819	0.40	729	25.7	25.4	10.6	328	0.92	1,030.77	15.3	4.00	4.00	Y	
7/17/2018	67.9	1,842	0.41	754	26.6	24.8	10.0	351	0.99	1,101.10	15.2	4.00	4.00	Y	
7/18/2018	64.4	1,942	0.36	697	29.1	24.3	10.9	337	0.89	995.59	15.3	4.00	4.00	Y	
7/19/2018	64.7	1,931	0.25	477	29.0	24.8	10.9	340	0.98	810.69	16.6	4.00	4.00	Y	
7/20/2018	61.6	2,031	0.14	292	28.9	26.5	10.3	368	0.72	265.63	18.1	4.00	4.00	Y	
7/21/2018	75.6	1,656	0.14	231	28.6	23.1	9.0	394	0.96	378.74	18.7	4.00	4.00	Y	
7/22/2018	75.9	1,648	0.16	267	28.8	23.0	8.7	409	0.97	664.09	18.9	4.00	4.00	Y	
7/23/2018	68.3	1,831	0.10	177	28.8	25.2	9.0	410	0.96	568.57	19.3	4.00	4.00	Y	
7/24/2018	55.8	2,243	0.05	105	28.9	25.4	9.3	399	0.98	494.06	19.5	4.00	4.00	Y	
7/25/2018	56.1	2,232	0.05	120	29.0	25.7	10.0	374	0.98	487.60	19.6	4.00	4.00	Y	
7/26/2018	55.5	2,256	0.04	82	28.9	21.2	11.1	308	0.91	361.51	19.5	4.00	4.00	Y	
7/27/2018	58.5	2,139	0.07	141	28.6	21.0	9.8	347	0.90	279.78	19.4	4.00	4.00	Y	
7/28/2018	76.5	1,636	0.19	306	28.7	24.0	8.9	406	1.02	412.52	19.0	4.00	4.00	Y	
7/29/2018	76.8	1,629	0.20	321	28.3	23.4	9.8	363	1.01	366.83	18.4	4.00	4.00	Y	
7/30/2018	70.9	1,765	0.26	454	28.9	23.6	11.2	321	1.03	784.31	18.0	4.00	4.00	Y	
7/31/2018	61.9	2,022	0.35	702	28.6	9.2	10.3	251	1.04	962.84	17.8	4.00	4.00	Y	
Avg	69.8	1,814	0.28	502	26.3	23.4	10.6	324	0.94	808.03	17.3	4.06	4.06	NA	
Min	55.5	1,515	0.04	82	20.9	9.2	8.7	224	0.72	211.02	14.8	4.00	4.00	NA	
Max	82.6	2,256	0.56	984	29.1	26.5	12.6	410	1.04	1,288.30	19.6	6.00	6.00	NA	



Notes: Pipeline volume factor in SMMWSC to RW tank: 125,090 MG-min/day

Distribution System Monitoring

Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl2)

WSSN:	0072 Akron			0390 Bangor Twp.			0400 Bangor Monitor Dist.			0470 Bay City						0485 Bay County						0517 Beaver Rd			0518 Beaver Twp			2180 Essexville								
	1	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	29	30	32												
Date																																				
7/1/2018									0.60	0.21	0.26	0.41	0.11	0.77	0.48																					
7/2/2018																																				
7/3/2018																																				
7/4/2018									0.56	0.21	0.30	0.49	0.12	0.68	0.47																					
7/5/2018																																				
7/6/2018																																				
7/7/2018																																				
7/8/2018																																				
7/9/2018																																				
7/10/2018	0.25	0.30	0.26	0.47	0.95				0.61	0.16	0.26	0.55	0.11	0.74	0.50	0.57	0.66	0.63	0.50																	
7/11/2018						0.99	1.00																													
7/12/2018																																				
7/13/2018																																				
7/14/2018																																				
7/15/2018																																				
7/16/2018																																				
7/17/2018		0.29	0.49	0.59	0.91				0.56	0.20	0.34	0.56	0.17	0.73	0.51	0.69	0.69	0.75	0.76	0.78																
7/18/2018																																				
7/19/2018																																				
7/20/2018								0.93	0.53	0.22	0.28	0.57	0.14	0.65	0.62					0.82																
7/21/2018																																				
7/22/2018																																				
7/23/2018																																				
7/24/2018		0.48	0.39						0.45	0.18	0.47			0.68	0.35																					
7/25/2018																																				
7/26/2018																																				
7/27/2018																																				
7/28/2018																																				
7/29/2018																																				
7/30/2018									0.56	0.20	0.20	0.14	0.76	0.29																						
7/31/2018																																				
Average	0.25			0.51			0.97				0.42									0.67						0.82										
Min	0.25			0.26			0.93				0.11									0.50						0.82										
Max	0.25			0.95			1.00				0.77									0.78						1.02										



MONITORING STATION ADDRESSES

- 1. Sample station at corner of 5758 M-25 & F
- 3. Bangor Fire Station, 3921 Wheeler
- 4. BCDWS Admin. Bldg. 3933 Patterson Rd.
- 5. 7-11, 3543 S. Old Kawkawlin Rd.
- 6. Admiral Petroleum, 314 S Euclid Ave.
- 7. Sequin Lumber, 3881 Euclid Ave
- 9. B's Boutique, 2981 Midland Rd
- 10. Little Caesars, 3475 E North Union Rd
- 11. Number 1 Fire Station, 1401 Center Ave
- 12. Number 2 Fire Station, 1000 Fremont Ave
- 13. Skizak's Sport Shop, 807 Saizburg Ave
- 14. Number 4 Fire Station, 212 S. Dean St
- 15. Number 5 Fire Station, 1209 Smith St
- 16. Bay City Hall, 301 Washington Ave
- 17. Skipper Buds Marina, 1809 S Water St
- 18. Bay Valley Animal Hospital 6015 WS Saginaw Rd
- 19. Dore's M-84 Party Store, 6183 WS Saginaw Rd
- 20. Pump Station #13, 6000 WS Saginaw Rd
- 22. Duce's Char House, 432 N. Tuscola Rd
- 24. Little Learners Daycare, 1694 Cass Ave.
- 26. Wieland Contracting, 2443 S Mackinaw Rd
- 29. Sample Station, 2515 S. 11 Mile Rd
- 30. Sample Station, 340 W. Beaver Rd
- 32. Essexville City Hall, 1107 Woodside Ave

Distribution System Monitoring

Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl₂)

WSSN:	2465 Fraser Twp.			2960 Hampton Twp.			3565 Kawkawlin Twp.			3570 Kawkawlin Met.			4280 Merritt Twp.			4440 Monitor Twp.			5330 City Pinconning			5335 Pinconning Twp.			5540 Portsmouth			7125 Williams Twp.			7134 Wisner						
	34	35	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Date																																					
7/1/2018																																					
7/2/2018																																					
7/3/2018																																					
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MONITORING STATION ADDRESSES

- 34. Fraser Elevated Tank, 2949 1/2 N. Huron Rd
- 35. Lloyd's Cabinet, 1947 N Huron Rd
- 37. Hampton DPW, 950 Wagner Rd.
- 38. Bay County Golf Course, 584 W Hampton Rd.
- 39. Sewer Lift Station, 902 Nebobish Rd.
- 40. Bay Co. Road Commission, 2600 E Beaver Rd
- 41. Parish Rd. Elevated Tank, 1770 E. Parish Rd
- 42. Linwood Tile, 205 S Huron Rd
- 43. Kawkawlin Party Store, 105 Grove St
- 45. Kawkawlin Restaurant, 103 S Huron Rd
- 46. John's Bar, 1476 S Tuscola Rd
- 48. Tool Shed Bar, 12 W Mungler Rd
- 49. Wilder Rd Party Store, 2951 E Wilder Rd
- 52. Monitor Twp. Elevated Tank, 1611 E. Midland Rd
- 55. Auburn Fertilizer, 4640 S 7 Mile Rd
- 58. Pinconning City Hall, 208 S Manitou St
- 59. Marathon Gas Station, 511 S Mabel St
- 61. Pinconning Meter Pit, 3005 N Huron Rd
- 63. Master Meter Pit, 2865 Pinconning Rd
- 65. Ike's Welding, 50 N Finn Rd
- 68. Williams Township Hall, 1080 W Midland Rd
- 69. Pump Station, 490 W. Salzburg & 9 Mile Rd
- 70. 11 Mile Elevated Tank, 5003 S. 11 Mile Rd
- 72. Lindy's Sales, 9051 M-25

Distribution System Bacteriological

Water Supplier Bacteriological Analysis Report

Name of Water Supply
Bay Area Water Treatment Plant

MICHIGAN DEPARTMENT OF PUBLIC HEALTH
Bureau of Environmental Health
Water Supplier Bacteriological Analysis Report

July, 2018

COUNTY	COMMUNITY	WSSN NUMBER	DISTRIBUTION SYSTEM SAMPLES				
			avg free cl2 mg/L	NUMBER REQUIRED	NUMBER COLLECTED	NUMBER POSITIVE	NUMBER REPEAT SAMPLES
Tuscola	Akron	0072	0.25	1	1	0	0
BAY	Bangor Township	0390	0.51	10	10	0	0
BAY	Bangor-Monitor Dist.	0400	0.97	3	3	0	0
BAY	Bay City	0470	0.42	40	45	0	0
BAY	Bay County (Frankl./Monitor/Portsm.)	0485	0.67	10	10	0	0
BAY	Beaver Road Area	0517	0.82	1	1	0	0
BAY	Beaver Township	0518	0.31	2	2	0	0
BAY	Essexville	2180	0.82	4	5	0	0
BAY	Fraser Township	2465	0.79	2	2	0	0
BAY	Hampton Township	2960	0.33	10	10	0	0
BAY	Kawkawlin Township	3565	0.73	3	3	0	0
BAY	Kawkawlin Metro Dist.	3570	0.50	2	2	0	0
BAY	Merritt Township	4280	0.40	2	2	0	0
BAY	Monitor Township	4440	0.76	6	6	0	0
BAY	City of Pinconning	5330	0.38	2	2	0	0
BAY	Pinconning Township	5335	0.69	2	2	0	0
BAY	Portsmouth Township	5540	0.40	1	1	0	0
BAY	Williams Township	7125	0.41	6	6	0	0
Tuscola	Wisner	7134	0.50	1	1	0	0

Average Free Cl2 Residual of All Distribution Sites

0.56 mg/L

1. Total distribution samples
2. Total distribution samples with detectable free cl2 residual
3. Total distribution samples with no detectable free cl2 residual
4. Total distribution samples with no detectable free cl2 residual and HPC was <500
5. Total distribution samples with no detectable free cl2 residual and HPC was >500
6. Percent of distribution samples with no detectable free cl2 residual
7. Percent shown line #6 in previous monthly report

114
114
0
NA
NA
0.00%
0.00%

