

Bay Area WTP

Monthly Operations Report



February, 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

February, 2018
 Month, Year

F1
 Water Plant Classification

Bay
 County

Mark Moers
 Operator-in-charge

F1
 Certification of Operator-in-charge

Treatment Rate and Membrane Data

Treatment Rate, Approved Rated Plant Capacity	17.4	Millions of Gallons per Day
Treatment Rate, Maximum	7.4	Millions of Gallons per Day
Maximum Approved Transmembrane Pressure	22	PSI
Maximum Operating Transmembrane Pressure	22	PSI

Chemical Data

Sodium Hypochlorite on hand:	6,477	Gallons	Estimated Supply:	117.4	days
Caustic Soda on hand:	934	Gallons	Estimated Supply:	120.0	days
Corrosion Inhibitor on hand:	1,264	Gallons	Estimated Supply:	72.1	days
Hydrofluosilicic Acid on hand:	0	Gallons	Estimated Supply:	0.0	days
Aluminum Chlorohydrate on hand:	760	Gallons	Estimated Supply:	116.0	days
Sulfuric Acid on hand:	165	Gallons	Estimated Supply:	30.0	days
Sodium Bisulfite on hand:	348	Gallons	Estimated Supply:	66.9	days
Citric Acid on hand:	836	Gallons	Estimated Supply:	101.1	days
Cost of All Chemicals per Million Gallons:	59.13	Dollars			
Estimated Electrical Cost per Million Gallons:	106.11	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

- *Fluoride feed out of service all month due to room and tank damage from 8/9/17 Hydrofluorosilicic Acid bulk tank leak.
- *PASS 10 (Polyaluminum Silicate Sulphate) fed from 2/1/18 to 2/8/18 as the coagulant in the clarifiers. From 2/8/18 to 2/28/18, Aluminum Chlorohydrate was used.



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	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	FIT-4040-1	FIT-4040-2	Calculated	Calculated			
2/1/2018	0.00	6.26	6.26	0.24	0.00	0.06	6.52	3.16	3.14	6.30						
2/2/2018	0.00	6.52	6.52	0.26	0.00	0.04	6.78	3.22	3.22	6.45						
2/3/2018	0.00	6.65	6.65	0.25	0.00	0.05	6.70	3.21	3.22	6.43						
2/4/2018	0.00	7.11	7.11	0.25	0.00	0.05	6.84	3.30	3.30	6.60						
2/5/2018	0.00	7.09	7.09	0.24	0.00	0.05	6.59	3.26	3.27	6.53						
2/6/2018	0.00	6.98	6.98	0.27	0.00	0.06	6.92	3.32	3.32	6.64						
2/7/2018	0.00	6.75	6.75	0.24	0.00	0.07	6.86	3.28	3.23	6.50						
2/8/2018	0.00	6.55	6.55	0.26	0.00	0.06	6.32	3.18	3.04	6.22						
2/9/2018	0.00	6.64	6.64	0.24	0.00	0.07	6.32	3.15	3.01	6.17						
2/10/2018	0.00	6.12	6.12	0.25	0.00	0.06	6.78	3.22	3.10	6.33						
2/11/2018	0.00	6.06	6.06	0.24	0.00	0.06	6.58	3.28	3.13	6.41						
2/12/2018	0.00	6.70	6.70	0.25	0.00	0.05	6.83	3.36	3.18	6.54						
2/13/2018	0.00	6.90	6.90	0.27	0.00	0.04	6.63	3.35	3.23	6.58						
2/14/2018	0.00	5.54	5.54	0.27	0.00	0.05	7.40	3.59	3.48	7.07						
2/15/2018	0.00	4.74	4.74	0.26	0.00	0.06	7.37	3.65	3.48	7.14						
2/16/2018	0.00	6.83	6.83	0.27	0.00	0.05	6.80	3.36	3.20	6.56						
2/17/2018	0.00	8.52	8.52	0.25	0.00	0.05	6.69	3.41	3.24	6.65						
2/18/2018	0.00	8.46	8.46	0.24	0.00	0.05	6.81	3.29	3.17	6.46						
2/19/2018	0.00	8.27	8.27	0.27	0.00	0.05	6.76	3.31	3.17	6.48						
2/20/2018	0.00	6.33	6.33	0.26	0.00	0.05	6.62	3.38	3.22	6.60						
2/21/2018	0.00	6.37	6.37	0.26	0.00	0.05	6.87	3.32	3.18	6.50						
2/22/2018	0.00	6.91	6.91	0.27	0.00	0.04	6.70	3.30	3.16	6.46						
2/23/2018	0.00	7.25	7.25	0.25	0.00	0.04	6.33	3.10	2.96	6.06						
2/24/2018	0.00	6.37	6.37	0.25	0.00	0.05	6.48	3.25	3.11	6.36						
2/25/2018	0.00	5.87	5.87	0.27	0.00	0.05	6.87	3.36	3.25	6.62						
2/26/2018	0.00	6.72	6.72	0.25	0.00	0.05	6.88	3.38	3.23	6.62						
2/27/2018	0.00	7.31	7.31	0.25	0.00	0.05	6.75	3.31	3.18	6.49						
2/28/2018	0.00	7.13	7.13	0.26	0.00	0.06	6.51	3.25	3.10	6.35						
Total	0.00	188.96	188.96	7.14	0.00	1.48	188.50	92.54	89.56	182.09						
AVG	0.00	6.75	6.75	0.25	0.00	0.05	6.73	3.30	3.20	6.50						
Min	0.00	4.74	4.74	0.24	0.00	0.04	6.32	3.10	2.96	6.06						
Max	0.00	8.52	8.52	0.27	0.00	0.07	7.40	3.65	3.48	7.14						



Raw Water Analysis

Date	Temp		pH		Turbidity		F ⁻		Free Cl (Mem. Feed)		Bacti	
	Average	°C	Average	AIT-1000-2	Average	NTU	Maximum	Grab	Average	mg/L	Total Coliform	Positive/Negative
	TIT-1000					AIT-1000-1	mg/L	mg/L	AIT-1035-2	mg/L	Lab	Lab
2/1/2018	2.76		7.93		0.53	1.54		0.09	0.34	Negative	Negative	
2/2/2018	2.79		7.93		0.37	0.57		0.10	0.31	Negative	Negative	
2/3/2018	2.77		7.92		0.41	0.55		0.09	0.29	Negative	Negative	
2/4/2018	2.77		7.92		0.40	0.57		0.10	0.34	Negative	Negative	
2/5/2018	2.80		7.92		0.31	0.53		0.09	0.38	Negative	Negative	
2/6/2018	2.78		7.93		0.47	1.21		0.09	0.35	Negative	Negative	
2/7/2018	2.77		7.93		0.29	0.37		0.10	0.32	Negative	Negative	
2/8/2018	2.76		7.92		0.26	0.40		0.11	0.34	Negative	Negative	
2/9/2018	2.71		7.93		0.24	0.27		0.11	0.34	Negative	Negative	
2/10/2018	2.73		7.93		0.29	0.46		0.10	0.34	Negative	Negative	
2/11/2018	2.81		7.91		0.28	0.38		0.10	0.36	Negative	Negative	
2/12/2018	2.76		7.91		0.24	0.29		0.10	0.40	Negative	Negative	
2/13/2018	2.68		7.91		0.24	0.80		0.10	0.41	Negative	Negative	
2/14/2018	2.56		7.93		0.22	0.24		0.11	0.38	Negative	Negative	
2/15/2018	2.54		7.93		0.23	0.28		0.08	0.36	Negative	Negative	
2/16/2018	2.52		7.93		0.21	0.25		0.09	0.36	Negative	Negative	
2/17/2018	2.57		7.94		0.27	0.47		0.09	0.33	Negative	Negative	
2/18/2018	2.58		7.92		0.29	0.50		0.08	0.36	Negative	Negative	
2/19/2018	2.48		7.93		0.28	0.60		0.09	0.38	Negative	Negative	
2/20/2018	2.56		7.93		0.21	0.32		0.09	0.34	Negative	Negative	
2/21/2018	2.56		7.92		0.18	0.22		0.09	0.34	Negative	Negative	
2/22/2018	2.54		7.92		0.20	0.40		0.08	0.36	Negative	Negative	
2/23/2018	2.57		7.92		0.22	1.31		0.09	0.35	Negative	Negative	
2/24/2018	2.61		7.92		0.22	0.32		0.09	0.35	Negative	Negative	
2/25/2018	2.75		7.93		0.24	0.56		0.09	0.33	Negative	Negative	
2/26/2018	2.74		7.88		1.37	2.59		0.09	0.30	Negative	Negative	
2/27/2018	2.68		7.85		0.68	1.27		0.10	0.39	Negative	Negative	
2/28/2018	2.71		7.88		0.37	0.97		0.09	0.46	Negative	Negative	
Avg	2.7		7.92		0.34	0.65		0.09	0.35	NA	NA	
Min	2.5		7.85		0.18	0.22		0.08	0.29	NA	NA	
Max	2.8		7.94		1.37	2.59		0.11	0.46	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 mg/L	Calcium (as CaCO ₃) mg/L	Dissolved Oxygen		Conductivity uS/cm	Langelier Saturation Index	Chloride: Sulfate Mass Ratio	Larson- Skold Index	Bacti	
				Tap	Dist		Carbonate	Bicarbonate				Grab	Lab					Grab	Lab
2/1/2018	1.8	7.74	3.16	0.09	0.09	1.51	0	80	9	14	74	12.0	235	-0.90	0.64	0.42	Negative	Negative	
2/2/2018	1.7	7.76	3.15	0.10	0.10	1.50	0	81	9	15	74	11.2	237	-0.88	0.60	0.43	Negative	Negative	
2/3/2018	1.6	7.76	3.11	0.09	0.09	1.50	0	80	9	13	74	12.0	238	-0.89	0.60	0.40	Negative	Negative	
2/4/2018	1.7	7.75	3.10	0.10	0.10	1.52	0	80	9	13	72	12.3	231	-0.91	0.69	0.40	Negative	Negative	
2/5/2018	1.6	7.74	3.15	0.09	0.09	1.53	0	79	9	12	70	12.3	235	-0.93	0.75	0.39	Negative	Negative	
2/6/2018	1.6	7.74	3.25	0.09	0.09	1.51	0	84	9	18	78	12.7	235	-0.86	0.50	0.45	Negative	Negative	
2/7/2018	1.6	7.75	3.20	0.10	0.10	1.50	0	83	9	18	72	11.6	237	-0.89	0.50	0.46	Negative	Negative	
2/8/2018	1.7	7.75	3.17	0.11	0.11	1.51	0	84	9	14	74	12.9	233	-0.87	0.64	0.40	Negative	Negative	
2/9/2018	1.6	7.75	3.14	0.11	0.11	1.49	0	82	8	16	74	11.8	234	-0.88	0.50	0.42	Negative	Negative	
2/10/2018	1.6	7.75	3.14	0.10	0.10	1.50	0	82	8	17	74	11.8	228	-0.89	0.47	0.43	Negative	Negative	
2/11/2018	1.5	7.74	3.15	0.11	0.11	1.51	0	84	9	19	76	12.5	236	-0.87	0.47	0.47	Negative	Negative	
2/12/2018	1.5	7.75	3.15	0.10	0.10	1.52	0	82	8	19	76	12.4	229	-0.88	0.42	0.46	Negative	Negative	
2/13/2018	1.6	7.74	3.14	0.10	0.10	1.51	0	80	10	18	66	13.6	223	-0.95	0.56	0.50	Negative	Negative	
2/14/2018	1.5	7.74	3.14	0.11	0.11	1.51	0	80	10	20	70	12.5	223	-0.94	0.50	0.54	Negative	Negative	
2/15/2018	1.6	7.74	3.18	0.08	0.08	1.51	0	80	10	19	68	12.5	233	-0.93	0.53	0.52	Negative	Negative	
2/16/2018	1.4	7.74	3.22	0.09	0.09	1.50	0	82	9	19	70	12.7	234	-0.92	0.47	0.49	Negative	Negative	
2/17/2018	1.4	7.76	3.21	0.09	0.09	1.49	0	81	9	18	72	12.5	234	-0.90	0.50	0.48	Negative	Negative	
2/18/2018	1.3	7.76	3.18	0.09	0.09	1.52	0	79	9	17	70	13.3	223	-0.93	0.53	0.47	Negative	Negative	
2/19/2018	1.2	7.75	3.17	0.09	0.09	1.52	0	78	10	20	74	12.6	235	-0.92	0.50	0.55	Negative	Negative	
2/20/2018	1.4	7.74	3.17	0.09	0.09	1.49	0	82	10	19	72	12.8	227	-0.91	0.53	0.51	Negative	Negative	
2/21/2018	1.4	7.75	3.16	0.09	0.09	1.50	0	80	9	17	70	12.4	229	-0.92	0.53	0.47	Negative	Negative	
2/22/2018	1.4	7.74	3.14	0.09	0.09	1.51	0	79	9	18	70	12.6	219	-0.93	0.50	0.49	Negative	Negative	
2/23/2018	1.4	7.74	3.14	0.09	0.09	1.50	0	78	9	15	66	12.8	226	-0.97	0.60	0.45	Negative	Negative	
2/24/2018	1.4	7.74	3.13	0.09	0.09	1.49	0	79	9	18	68	11.8	223	-0.95	0.50	0.49	Negative	Negative	
2/25/2018	1.4	7.75	3.19	0.09	0.09	1.49	0	80	9	17	68	11.9	228	-0.93	0.53	0.47	Negative	Negative	
2/26/2018	1.5	7.75	3.23	0.09	0.09	1.49	0	80	9	20	70	11.5	222	-0.92	0.45	0.51	Negative	Negative	
2/27/2018	1.3	7.73	3.19	0.10	0.10	1.53	0	80	11	16	78	12.1	253	-0.90	0.69	0.49	Negative	Negative	
2/28/2018	1.2	7.72	3.21	0.09	0.08	1.52	0	80	9	15	76	12.0	238	-0.92	0.60	0.43	Negative	Negative	
Avg	1.5	7.75	3.17	0.10	0.09	1.51	0	81	9	17	72	12.3	231	-0.91	0.55	0.46	NA	NA	
Min	1.2	7.72	3.10	0.08	0.08	1.49	0	78	8	12	66	11.2	219	-0.97	0.42	0.39	NA	NA	
Max	1.8	7.76	3.25	0.11	0.10	1.53	0	84	11	20	78	13.6	253	-0.86	0.75	0.55	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		
	NTU											
	AIT-1000-1		AIT-5030-1	AIT-1035-3	AIT-4000-1					Calculated		
2/1/2018	0.53	1.54	6.67	1.43	0.014	0.015	96	0	0.0	0.011		
2/2/2018	0.37	0.57	3.09	0.80	0.014	0.015	96	0	0.0	0.011		
2/3/2018	0.41	0.55	6.06	0.93	0.014	0.015	96	0	0.0	0.011		
2/4/2018	0.40	0.57	3.20	0.69	0.014	0.015	96	0	0.0	0.011		
2/5/2018	0.31	0.53	3.66	0.63	0.014	0.015	96	0	0.0	0.011		
2/6/2018	0.47	1.21	3.20	0.69	0.014	0.015	96	0	0.0	0.011		
2/7/2018	0.29	0.37	6.00	0.83	0.014	0.015	96	0	0.0	0.011		
2/8/2018	0.26	0.40	4.05	0.64	0.014	0.015	96	0	0.0	0.011		
2/9/2018	0.24	0.27	2.53	0.46	0.014	0.015	96	0	0.0	0.011		
2/10/2018	0.29	0.46	1.09	0.34	0.014	0.015	96	0	0.0	0.011		
2/11/2018	0.28	0.38	1.10	0.38	0.014	0.015	96	0	0.0	0.011		
2/12/2018	0.24	0.29	1.03	0.34	0.014	0.015	96	0	0.0	0.011		
2/13/2018	0.24	0.80	1.85	0.33	0.014	0.015	96	0	0.0	0.011		
2/14/2018	0.22	0.24	3.39	0.39	0.014	0.015	96	0	0.0	0.011		
2/15/2018	0.23	0.28	1.18	0.36	0.014	0.015	96	0	0.0	0.011		
2/16/2018	0.21	0.25	1.21	0.47	0.014	0.015	96	0	0.0	0.011		
2/17/2018	0.27	0.47	1.02	0.33	0.014	0.015	96	0	0.0	0.011		
2/18/2018	0.29	0.50	1.25	0.36	0.014	0.015	96	0	0.0	0.011		
2/19/2018	0.28	0.60	0.96	0.34	0.014	0.016	96	0	0.0	0.011		
2/20/2018	0.21	0.32	1.33	0.33	0.014	0.015	96	0	0.0	0.011		
2/21/2018	0.18	0.22	1.72	0.39	0.014	0.015	96	0	0.0	0.011		
2/22/2018	0.20	0.40	1.06	0.26	0.014	0.015	96	0	0.0	0.011		
2/23/2018	0.22	1.31	0.84	0.21	0.014	0.015	96	0	0.0	0.011		
2/24/2018	0.22	0.32	1.13	0.24	0.014	0.015	96	0	0.0	0.011		
2/25/2018	0.24	0.56	1.22	0.34	0.014	0.015	96	0	0.0	0.011		
2/26/2018	1.37	2.59	1.97	0.69	0.015	0.015	96	0	0.0	0.011		
2/27/2018	0.68	1.27	4.56	0.94	0.015	0.015	96	0	0.0	0.011		
2/28/2018	0.37	0.97	4.38	0.69	0.014	0.015	96	0	0.0	0.011		
Avg	0.34	0.65	2.53	0.53	0.014	0.015	96	0	0.0	0.011		
Min	0.18	0.22	0.84	0.21	0.014	0.015	96	0	0.0	0.011		
Max	1.37	2.59	6.67	1.43	0.015	0.016	96	0	0.0	0.011		

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 Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail	Air Hold Start Pressure (PSI)	Air Hold Stop Pressure (PSI)	Pass / Fail
2/1/2018	15.1	14.8	PASS	14.6	14.3	PASS	14.9	14.6	PASS	14.4	14.0	PASS	15.3	15.0	PASS	14.3	13.9	PASS	14.9	14.5	PASS	14.4	14.0	PASS
2/2/2018	15.1	14.7	PASS	14.6	14.2	PASS	15.2	14.9	PASS	14.5	14.0	PASS	15.3	15.0	PASS	14.3	14.0	PASS	14.8	14.5	PASS	14.4	14.0	PASS
2/3/2018	15.2	14.8	PASS	14.6	14.2	PASS	15.4	15.2	PASS	14.4	14.0	PASS	15.3	14.9	PASS	14.4	14.0	PASS	14.6	14.1	PASS	14.5	14.0	PASS
2/4/2018	15.0	14.7	PASS	14.6	14.3	PASS	15.1	14.8	PASS	14.4	14.0	PASS	15.2	15.0	PASS	14.3	14.0	PASS	14.7	14.3	PASS	14.5	14.1	PASS
2/5/2018	15.0	14.6	PASS	14.6	14.3	PASS	15.4	15.2	PASS	14.6	14.3	PASS	15.1	14.7	PASS	14.5	14.1	PASS	14.7	14.3	PASS	14.5	14.1	PASS
2/6/2018	15.0	14.7	PASS	14.7	14.3	PASS	15.0	14.6	PASS	14.5	14.1	PASS	15.2	14.8	PASS	14.3	13.9	PASS	14.9	14.5	PASS	14.4	14.0	PASS
2/7/2018	15.1	14.8	PASS	14.5	14.2	PASS	15.0	14.6	PASS	14.4	14.0	PASS	15.0	14.6	PASS	14.6	14.4	PASS	14.6	14.2	PASS	14.4	14.0	PASS
2/8/2018	15.1	14.7	PASS	14.6	14.2	PASS	15.4	15.2	PASS	14.4	14.0	PASS	15.2	14.8	PASS	14.3	13.9	PASS	14.6	14.2	PASS	14.4	14.0	PASS
2/9/2018	15.2	15.0	PASS	14.6	14.2	PASS	15.1	14.7	PASS	14.4	14.0	PASS	15.2	14.9	PASS	14.4	14.0	PASS	14.6	14.2	PASS	14.4	14.0	PASS
2/10/2018	15.1	14.8	PASS	14.6	14.2	PASS	15.0	14.6	PASS	14.5	14.1	PASS	15.2	14.8	PASS	14.4	14.0	PASS	14.6	14.2	PASS	14.4	14.0	PASS
2/11/2018	15.1	14.7	PASS	14.5	14.2	PASS	15.0	14.6	PASS	14.5	14.0	PASS	15.4	15.3	PASS	14.5	14.1	PASS	14.7	14.2	PASS	14.4	14.0	PASS
2/12/2018	15.1	14.8	PASS	14.6	14.2	PASS	15.0	14.5	PASS	14.4	14.0	PASS	15.1	14.7	PASS	14.3	14.0	PASS	15.2	14.7	PASS	14.4	14.0	PASS
2/13/2018	15.1	14.8	PASS	14.6	14.2	PASS	15.0	14.6	PASS	14.4	14.0	PASS	15.1	14.7	PASS	14.3	14.0	PASS	14.8	14.4	PASS	14.4	14.0	PASS
2/14/2018	15.3	15.0	PASS	14.7	14.5	PASS	15.1	14.8	PASS	14.4	14.0	PASS	15.1	14.7	PASS	14.3	14.0	PASS	14.8	14.4	PASS	14.4	14.0	PASS
2/15/2018	15.4	15.2	PASS	14.7	14.5	PASS	15.0	14.7	PASS	14.4	14.0	PASS	14.9	14.5	PASS	14.6	14.3	PASS	15.1	14.3	PASS	14.4	14.0	PASS
2/16/2018	15.2	15.0	PASS	14.6	14.2	PASS	15.0	14.5	PASS	14.4	14.0	PASS	15.2	14.9	PASS	14.4	14.0	PASS	14.9	14.4	PASS	14.4	14.0	PASS
2/17/2018	15.2	14.9	PASS	14.6	14.2	PASS	14.9	14.5	PASS	14.4	13.9	PASS	15.5	15.3	PASS	14.4	14.0	PASS	14.8	14.4	PASS	14.4	14.0	PASS
2/18/2018	15.2	14.8	PASS	14.6	14.2	PASS	15.0	14.7	PASS	14.4	14.0	PASS	15.1	14.7	PASS	14.4	14.0	PASS	14.8	14.4	PASS	14.4	14.0	PASS
2/19/2018	15.1	14.7	PASS	14.5	14.1	PASS	15.0	14.6	PASS	14.4	14.0	PASS	15.0	14.6	PASS	14.4	14.0	PASS	14.9	14.5	PASS	14.4	14.0	PASS
2/20/2018	15.1	14.8	PASS	14.6	14.2	PASS	15.1	14.7	PASS	14.4	14.0	PASS	15.1	14.8	PASS	14.4	14.0	PASS	14.7	14.3	PASS	14.4	14.0	PASS
2/21/2018	15.2	15.0	PASS	14.6	14.2	PASS	15.0	14.7	PASS	14.8	14.6	PASS	15.1	14.7	PASS	14.5	14.1	PASS	14.8	14.4	PASS	14.4	14.0	PASS
2/22/2018	15.2	14.9	PASS	14.6	14.2	PASS	15.0	14.5	PASS	14.6	14.3	PASS	15.0	14.5	PASS	14.4	14.0	PASS	14.7	14.3	PASS	14.5	14.1	PASS
2/23/2018	15.1	14.8	PASS	14.6	14.2	PASS	15.1	14.7	PASS	14.5	14.2	PASS	15.1	14.7	PASS	14.4	14.0	PASS	14.8	14.5	PASS	14.4	14.0	PASS
2/24/2018	15.0	14.6	PASS	14.5	14.2	PASS	15.3	15.1	PASS	14.5	14.1	PASS	15.1	14.8	PASS	14.4	14.1	PASS	15.0	14.8	PASS	14.5	14.1	PASS
2/25/2018	15.2	14.8	PASS	14.5	14.2	PASS	14.9	14.6	PASS	14.5	14.1	PASS	14.9	14.5	PASS	14.4	14.1	PASS	15.2	14.9	PASS	14.4	14.0	PASS
2/26/2018	15.2	14.8	PASS	14.5	14.2	PASS	15.1	14.8	PASS	14.5	14.1	PASS	15.0	14.6	PASS	14.3	14.0	PASS	14.8	14.4	PASS	14.4	14.0	PASS
2/27/2018	15.2	14.8	PASS	14.6	14.4	PASS	15.1	14.7	PASS	14.4	14.0	PASS	15.0	14.6	PASS	14.4	14.0	PASS	15.0	14.6	PASS	14.4	14.0	PASS
2/28/2018	14.9	14.5	PASS	14.6	14.2	PASS	14.9	14.5	PASS	14.6	14.2	PASS	15.4	15.2	PASS	14.4	14.0	PASS	15.4	15.2	PASS	14.4	14.0	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	Free Cl ₂	Free Cl ₂	Free Cl ₂	Free Cl ₂	Free Cl ₂	Free Cl ₂
	MG	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	Daily	Average	Average	Average	Average	Average	Average
	FIT-4000-1	Added	AIT-1035-2	Added	AIT-4030-1	AIT-4050-1	Added
2/1/2018	6.5	0.00	0.34	1.10	1.61	1.51	0.00
2/2/2018	6.8	0.00	0.31	1.15	1.59	1.50	0.00
2/3/2018	6.7	0.00	0.29	1.15	1.62	1.50	0.00
2/4/2018	6.8	0.00	0.34	1.11	1.63	1.52	0.00
2/5/2018	6.6	0.00	0.38	1.09	1.64	1.53	0.00
2/6/2018	6.9	0.00	0.35	1.03	1.61	1.51	0.00
2/7/2018	6.9	0.00	0.32	1.06	1.62	1.50	0.00
2/8/2018	6.3	0.00	0.34	1.20	1.60	1.51	0.00
2/9/2018	6.3	0.00	0.34	1.22	1.59	1.49	0.00
2/10/2018	6.8	0.00	0.34	1.22	1.61	1.50	0.00
2/11/2018	6.6	0.00	0.36	1.22	1.62	1.51	0.00
2/12/2018	6.8	0.00	0.40	1.16	1.63	1.52	0.00
2/13/2018	6.6	0.00	0.41	1.16	1.61	1.51	0.00
2/14/2018	7.4	0.00	0.38	1.20	1.61	1.51	0.00
2/15/2018	7.4	0.00	0.36	1.20	1.60	1.51	0.00
2/16/2018	6.8	0.00	0.36	1.20	1.60	1.50	0.00
2/17/2018	6.7	0.00	0.33	1.24	1.60	1.49	0.00
2/18/2018	6.8	0.00	0.36	1.22	1.64	1.52	0.00
2/19/2018	6.8	0.00	0.38	1.22	1.63	1.52	0.00
2/20/2018	6.6	0.00	0.34	1.22	1.59	1.49	0.00
2/21/2018	6.9	0.00	0.34	1.22	1.62	1.50	0.00
2/22/2018	6.7	0.00	0.36	1.22	1.60	1.51	0.00
2/23/2018	6.3	0.00	0.35	1.25	1.60	1.50	0.00
2/24/2018	6.5	0.00	0.35	1.24	1.60	1.49	0.00
2/25/2018	6.9	0.00	0.33	1.26	1.59	1.49	0.00
2/26/2018	6.9	0.00	0.30	1.30	1.60	1.49	0.00
2/27/2018	6.7	0.00	0.39	1.18	1.66	1.53	0.00
2/28/2018	6.5	0.00	0.46	1.15	1.63	1.52	0.00
Avg	6.7	0.00	0.35	1.19	1.61	1.51	0.00
Min	6.3	0.00	0.29	1.03	1.59	1.49	0.00
Max	7.4	0.00	0.46	1.30	1.66	1.53	0.00



Disinfection CT															
Pipeline CT					FW Tank CT										
Date	Whitestone Flow MGD	Travel Time Min	Residual RW mg/L	CT Achieved mg-min/L	FW Tank 1 Min Level ft	FW Tank 2 Min Level ft	Plant Flow MGD	Contact Time Min	Free Cl ₂ Min mg/L	CT		Temp Avg °C	Compliance		
										Calculated	Achieved		Required	Calculated	
2/1/2018	44.0	2,845	0.34	966	24.1	23.8	6.3	522	1.47	1,732.95	1,732.95	2.8	12.00	12.00	Y
2/2/2018	46.0	2,718	0.31	847	23.5	23.2	6.4	496	1.46	1,569.72	1,569.72	2.8	12.00	12.00	Y
2/3/2018	57.6	2,170	0.29	636	22.6	22.3	6.4	478	1.48	1,342.86	1,342.86	2.8	12.00	12.00	Y
2/4/2018	55.9	2,236	0.34	766	23.4	23.1	6.5	483	1.49	1,486.61	1,486.61	2.8	12.00	12.00	Y
2/5/2018	48.4	2,583	0.38	970	23.9	23.6	6.5	498	1.51	1,723.02	1,723.02	2.8	12.00	12.00	Y
2/6/2018	40.6	3,080	0.35	1,078	23.9	23.6	6.6	490	1.48	1,801.44	1,801.44	2.8	12.00	12.00	Y
2/7/2018	39.7	3,155	0.32	1,014	24.0	23.7	6.5	504	1.48	1,761.50	1,761.50	2.8	12.00	12.00	Y
2/8/2018	41.2	3,033	0.34	1,031	24.3	24.0	6.2	533	1.47	1,815.03	1,815.03	2.8	12.00	12.00	Y
2/9/2018	44.7	2,801	0.34	950	22.8	22.5	6.2	504	1.45	1,680.20	1,680.20	2.7	12.00	12.00	Y
2/10/2018	57.7	2,169	0.34	742	23.5	23.2	6.3	506	1.48	1,489.60	1,489.60	2.7	12.00	12.00	Y
2/11/2018	53.8	2,323	0.36	835	24.5	24.2	6.4	521	1.49	1,611.69	1,611.69	2.8	12.00	12.00	Y
2/12/2018	46.5	2,687	0.40	1,069	24.2	23.9	6.5	505	1.51	1,832.00	1,832.00	2.8	12.00	12.00	Y
2/13/2018	44.0	2,840	0.41	1,170	23.5	23.2	6.6	486	1.50	1,899.19	1,899.19	2.7	12.00	12.00	Y
2/14/2018	41.2	3,034	0.38	1,153	23.7	23.4	7.1	457	1.47	1,824.53	1,824.53	2.6	12.00	12.00	Y
2/15/2018	36.5	3,423	0.36	1,231	24.3	24.0	7.1	464	1.48	1,919.97	1,919.97	2.5	12.00	12.00	Y
2/16/2018	42.7	2,929	0.36	1,046	25.1	24.8	6.6	522	1.48	1,816.47	1,816.47	2.5	12.00	12.00	Y
2/17/2018	57.4	2,178	0.33	715	21.9	21.6	6.7	449	1.47	1,375.26	1,375.26	2.6	12.00	12.00	Y
2/18/2018	55.2	2,267	0.36	825	23.4	23.1	6.5	492	1.47	1,549.03	1,549.03	2.6	12.00	12.00	Y
2/19/2018	44.0	2,842	0.38	1,075	24.5	24.2	6.5	516	1.51	1,851.81	1,851.81	2.5	12.00	12.00	Y
2/20/2018	36.3	3,446	0.34	1,183	22.8	22.5	6.6	470	1.46	1,867.72	1,867.72	2.6	12.00	12.00	Y
2/21/2018	36.5	3,428	0.34	1,167	21.0	20.7	6.5	439	1.48	1,815.96	1,815.96	2.6	12.00	12.00	Y
2/22/2018	38.2	3,273	0.36	1,170	24.3	24.0	6.5	513	1.48	1,927.51	1,927.51	2.5	12.00	12.00	Y
2/23/2018	43.1	2,900	0.35	1,014	24.4	24.1	6.1	548	1.46	1,816.64	1,816.64	2.6	12.00	12.00	Y
2/24/2018	52.9	2,363	0.35	829	23.3	23.0	6.4	499	1.47	1,563.08	1,563.08	2.6	12.00	12.00	Y
2/25/2018	49.5	2,525	0.33	835	23.5	23.2	6.6	484	1.46	1,542.93	1,542.93	2.8	12.00	12.00	Y
2/26/2018	41.8	2,989	0.30	911	23.8	23.5	6.6	490	1.47	1,632.34	1,632.34	2.7	12.00	12.00	Y
2/27/2018	37.4	3,347	0.39	1,313	24.1	23.8	6.5	506	1.49	2,066.61	2,066.61	2.7	12.00	12.00	Y
2/28/2018	38.7	3,234	0.46	1,491	23.6	23.3	6.4	505	1.36	2,178.31	2,178.31	2.7	12.00	12.00	Y
Avg	45.4	2,815	0.35	1,001	23.6	23.3	6.5	496	1.47	1,731.93	1,731.93	2.7	12.00	12.00	NA
Min	36.3	2,169	0.29	636	21.0	20.7	6.1	439	1.36	1,342.86	1,342.86	2.5	12.00	12.00	NA
Max	57.7	3,446	0.46	1,491	25.1	24.8	7.1	548	1.51	2,178.31	2,178.31	2.8	12.00	12.00	NA

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



Distribution System Monitoring
Akron (0072), Bangor Township (0390), Bangor Monitor Dist. (0400), Bay City (0470), Bay County (0485)
 Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl2)

Date	Akron		Bangor Township			Bangor Monitor Dist.			Bay City							Bay County (Frankenlust, Monitor, Portsmouth)									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
2/1/2018																									
2/2/2018																									
2/3/2018																									
2/4/2018																									
2/5/2018											1.10	0.82	0.90	1.22	0.80	1.29	0.99								
2/6/2018																									
2/7/2018							1.44		1.48																
2/8/2018	0.80																								
2/9/2018																									
2/10/2018																									
2/11/2018																									
2/12/2018																									
2/13/2018																									
2/14/2018																									
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2/22/2018																									
2/23/2018																									
2/24/2018																									
2/25/2018																									
2/26/2018																									
2/27/2018																									
2/28/2018																									
Average	0.80																								
Min	0.80																								
Max	0.80																								



MONITORING STATION ADDRESSES

- | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> 1. William Sanders, 6116 Slocum Dr 2. TBD 3. Bangor Twp Hall, 3921 Wheeler 4. BCDWS Admin. Bldg, 3933 Patterson Rd. 5. 7-11, 3543 S. Old Kawkawin Rd. 6. Admiral Petroleum, 314 S Euclid Ave. 7. Sequin Lumber, 3881 Euclid Ave 8. Euclid Auto, 823 N Euclid Ave 9. Monitor Pharmacy, 2981 Midland Rd 10. Little Caesars, 3475 E North Union Rd | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 18. Bay Valley Animal Hospital 6015 WS Saginaw Rd 19. Dore's Mobile Mart, 6183 WS Saginaw Rd 20. Pump Station #13, 6000 WS Saginaw Rd 21. TBD 22. The Char House, 432 N. Tuscola Rd 23. Krzyziak's Market, 1605 Michigan Ave 24. Little Learners Daycare, 1694 Cass Ave. 25. J&T Tool & Die, 354 S Tuscola Rd |
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Distribution System Monitoring
Beaver Rd. Area (0517), Beaver Twp (0518), Essexville (2180), Fraser Twp (2465), Hampton (2960), Kawkawlin Twp (3565), Kawkawlin Metro (3570), Merritt Twp (4280)
Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl2)

Date	Beaver Rd. Area		Beaver Township		Essexville		Fraser Township		Hampton Township		Kawkawlin Twp.			Kawkawlin Metro			Merritt Township							
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
2/1/2018																								
2/2/2018																								
2/3/2018																								
2/4/2018																								
2/5/2018																								
2/6/2018																								
2/7/2018																								
2/8/2018																								
2/9/2018																								
2/10/2018																								
2/11/2018																								
2/12/2018																								
2/13/2018	1.19	1.26	1.13	0.90			1.29	1.01	1.00		1.00	1.29	0.92		1.28	1.03		1.04						
2/14/2018																								
2/15/2018																								
2/16/2018																								
2/17/2018																								
2/18/2018																								
2/19/2018																								
2/20/2018																								
2/21/2018																								
2/22/2018																								
2/23/2018																								
2/24/2018																								
2/25/2018																								
2/26/2018																								
2/27/2018																								
2/28/2018																								
Average		1.19		0.96			1.34		1.01		1.03				1.23			1.08						0.96
Min		1.13		0.90			1.25		1.00		0.66				1.03			1.04						0.80
Max		1.26		1.02			1.45		1.01		1.29				1.39			1.12						1.13



MONITORING STATION ADDRESSES

- 26. Wieland Contracting, 2443 S Mackinaw Rd
- 27. St. Bartholomew School, 1033 E Beaver Rd
- 28. Dore's Party Store, 825 E Beaver Rd
- 29. Karmen Roberts, 2515 S 11 Mile Rd
- 30. Parkview Country Store, 3 W Beaver Rd
- 31. TBD
- 32. Essexville City Hall, 1107 Woodside Ave
- 33. TBD
- 34. Fraser Elevated Tank, N. Huron Rd
- 35. Lloyd's Cabinet, 1947 N Huron Rd
- 36. TBD
- 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, West of S Huron Rd
- 42. Linwood Tile, 205 S Huron Rd
- 43. Kawkawlin Party Store, 105 Grove St
- 44. Days of Discovery Preschool, 3473 S Huron Rd
- 45. Kawkawlin Restaurant, 103 S Huron Rd
- 46. John's Bar, 1476 S Tuscola Rd
- 47. Crop Production Services, 107 S Farley Rd
- 48. Tool Shed Bar, 12 W Munger Rd

Distribution System Monitoring
Monitor Twp (4440), City of Pinconning (5330), Pinconning Twp (5335), Portsmouth Twp (5540), Williams Twp (7125), Wisner (7134)

Date	Monitor Township					City of Pinconning					Pinconning Township					Portsmouth Twp					Williams Township					Wisner		
	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73			
2/1/2018																												
2/2/2018																												
2/3/2018																												
2/4/2018																												
2/5/2018																												
2/6/2018	1.50	1.10	1.31	1.19					0.69						0.90		1.09											
2/7/2018																												
2/8/2018																												
2/9/2018																												
2/10/2018																												
2/11/2018																												
2/12/2018																												
2/13/2018											1.08																	
2/14/2018																												
2/15/2018																												
2/16/2018																												
2/17/2018																												
2/18/2018																												
2/19/2018																												
2/20/2018																												
2/21/2018																												
2/22/2018																												
2/23/2018																												
2/24/2018																												
2/25/2018																												
2/26/2018																												
2/27/2018																												
2/28/2018																												
Average																												
Min																												
Max																												



- MONITORING STATION ADDRESSES**
- 49. Traxler's Party Store, 2951 E Wilder Rd
 - 50. Monitor Township Hall, 2483 E Midland Rd
 - 51. Pump Station #14, 2000 E Midland Rd
 - 52. Midland Rd Elevated Tank, East of Mackinaw
 - 53. Dale Ramseyer, 2186 E Wheeler Rd
 - 54. Michigan Sugar, 1459 S Valley Center Dr
 - 55. Auburn Fertilizer, 4640 S 7 Mile Rd
 - 56. Trinity Lutheran School, 20 E Saizburg Rd
 - 57. H&H Bakery, 200 S Mable Rd
 - 58. Pinconning City Hall, 208 S Manitou St
 - 59. Marathon Gas Station, 511 S Mabel St
 - 60. TBD
 - 61. Pinconning Meter Pit, 3005 N Huron Rd
 - 62. Keith Pickvett, 4732 Maloney Rd
 - 63. Master Meter Pit, Pinconning @ Maloney Rd
 - 64. TBD
 - 65. Ike's Welding, 50 N Finn Rd
 - 66. TBD
 - 67. Fruitland Market, 1646 W Midland Rd
 - 68. Williams Township Hall, 1080 W Midland Rd
 - 69. Saizburg Rd Pump Station, 9 Mile @ Saizburg
 - 70. 11 Mile Elevated Tank, 11 Mile @ US-10
 - 71. Mieske's Market, 2509 W Midland Rd
 - 72. Lindy's Sales, 9051 M-25
 - 73. TBD

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

February, 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	0.80	1	1	0	0
BAY	Bangor Township	0390	1.13	10	10	0	0
BAY	Bangor-Monitor Dist.	0400	1.44	3	3	0	0
BAY	Bay City	0470	1.03	40	54	0	0
BAY	Bay County (Frankl./Monitor/Portsm.)	0485	1.10	9	9	0	0
BAY	Beaver Road Area	0517	1.19	1	3	0	0
BAY	Beaver Township	0518	0.96	2	2	0	0
BAY	Essexville	2180	1.34	4	4	0	0
BAY	Fraser Township	2465	1.01	2	2	0	0
BAY	Hampton Township	2960	1.03	10	12	0	0
BAY	Kawkawlin Township	3565	1.23	3	3	0	0
BAY	Kawkawlin Metro Dist.	3570	1.08	2	2	0	0
BAY	Merritt Township	4280	0.96	2	3	0	0
BAY	Monitor Township	4440	1.26	6	6	0	0
BAY	City of Pinconning	5330	0.89	2	2	0	0
BAY	Pinconning Township	5335	0.96	2	3	0	0
BAY	Portsmouth Township	5540	1.09	1	1	0	0
BAY	Williams Township	7125	1.07	6	6	0	0
Tuscola	Wisner	7134	0.80	1	1	0	0

Average Free Cl2 Residual of All Distribution Sites

1.07 mg/L

- Total distribution samples
- Total distribution samples with detectable free cl2 residual
- Total distribution samples with no detectable free cl2 residual
- Total distribution samples with no detectable free cl2 residual and HPC was <500
- Total distribution samples with no detectable free cl2 residual and HPC was >500
- Percent of distribution samples with no detectable free cl2 residual
- Percent shown line #6 in previous monthly report

127
127
0
NA
NA
0.00%
0.00%

