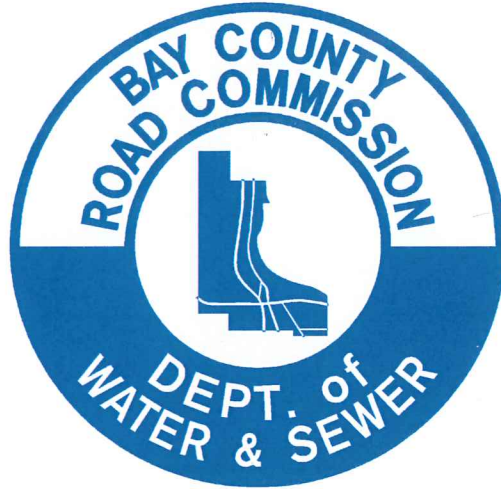


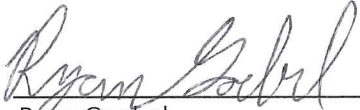
# Bay Area WTP

## Monthly Operations Report



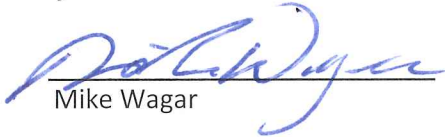
February, 2023

Water Systems Serial Number: 0465

  
\_\_\_\_\_  
Ryan Goebel

Water Plant Superintendent  
Title

F-1  
Classification

  
\_\_\_\_\_  
Mike Wagar

Operations Supervisor  
Title

F-2  
Classification

# Bay Area Water Treatment Plant

## Monthly Operations Report

Supply Name: Bay Area Water System  
 WSSN: 0465

Ryan Goebel  
 Operator-in-charge

February, 2023  
 Month, Year

F-1  
 Certification of Operator-in-charge

F-1  
 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>7.1</u>	Millions of Gallons per Day
Maximum Approved Transmembrane Pressure	<u>22</u>	PSI
Maximum Operating Transmembrane Pressure	<u>13.99</u>	PSI
Maximum Approved Flux Rate	<u>36.25</u>	gpd/sq.ft.
Maximum Operating Flux Rate	<u>21.80</u>	gpd/sq.ft.

### Chemical Data

Sodium Hypochlorite on hand:	<u>5,226</u>	Gallons	Estimated Supply:	<u>87.3</u>	days
Caustic Soda on hand:	<u>2,591</u>	Gallons	Estimated Supply:	<u>177.5</u>	days
Corrosion Inhibitor on hand:	<u>848</u>	Gallons	Estimated Supply:	<u>40.3</u>	days
Hydrofluosilicic Acid on hand:	<u>615</u>	Gallons	Estimated Supply:	<u>35.4</u>	days
Aluminum Chlorohydrate on hand:	<u>253</u>	Gallons	Estimated Supply:	<u>37.4</u>	days
Sulfuric Acid on hand:	<u>824</u>	Gallons	Estimated Supply:	<u>412.0</u>	days
Sodium Bisulfite on hand:	<u>1,137</u>	Gallons	Estimated Supply:	<u>392.0</u>	days
Citric Acid on hand:	<u>2,732</u>	Gallons	Estimated Supply:	<u>218.6</u>	days
Cost of All Chemicals per Million Gallons:	<u>95.21</u>	Dollars			
Estimated Electrical Cost per Million Gallons:		Dollars			
Estimated Natural Gas Cost per Million Gallons:		Dollars			

### Remarks

Number of periods of filter confluence turbidity samples > 0.3 NTU	<u>0</u>
Percent of membrane period confluence samples > 0.3 NTU:	<u>0.00%</u>
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.	<u>No</u>
Did POE disinfectant residual fall below 0.2 ppm during the month? If yes, indicate date(s) and duration on a separate sheet.	<u>No</u>
Was minimum C*T credit achieved for the entire month? If no, indicate on a separate sheet the date(s) not achieved.	<u>Yes</u>
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.	<u>No</u>



### Notes

-Filter #5 out for membrane replacement 1-23-23 at 6:41am and back in service on 2-6-23 at 11:00 am

# Bay Area WTP Monthly Operating Report

Flows									
Date	Raw Water (MG)			Clarified (MG)	Sludge (MG)	Treated (MG)	Finished Water Pumped (MG)		
	North	South	Total	Total	Total	Total	N. Euclid	Lauria Road	Total
	FIT-1000-1	FIT-1000-2	Calculated	FIT-5520-1	FIT-5180	FIT-4000-1	FIT-4040-1	FIT-4040-2	Calculated
2/1/2023	0.00	6.98	6.98	0.31	0.08	6.97	3.43	3.26	6.69
2/2/2023	0.00	6.78	6.78	0.30	0.08	6.70	3.33	3.16	6.49
2/3/2023	0.00	6.62	6.62	0.27	0.08	6.94	3.44	3.27	6.71
2/4/2023	0.00	7.02	7.02	0.30	0.08	7.11	3.53	3.36	6.89
2/5/2023	0.00	7.27	7.27	0.29	0.08	7.09	3.53	3.36	6.89
2/6/2023	0.00	7.37	7.37	0.29	0.08	7.11	3.44	3.27	6.71
2/7/2023	0.00	7.03	7.03	0.31	0.08	6.58	3.29	3.12	6.41
2/8/2023	0.00	6.44	6.44	0.30	0.08	7.03	3.47	3.30	6.77
2/9/2023	0.00	7.06	7.06	0.31	0.08	6.88	3.37	3.24	6.61
2/10/2023	0.00	7.05	7.05	0.31	0.08	6.63	3.18	3.11	6.29
2/11/2023	0.00	6.45	6.45	0.28	0.08	6.50	3.12	3.05	6.17
2/12/2023	0.00	6.11	6.11	0.30	0.08	6.75	3.35	3.18	6.53
2/13/2023	0.00	6.84	6.84	0.29	0.08	6.66	3.30	3.13	6.43
2/14/2023	0.00	6.93	6.93	0.29	0.08	6.38	3.16	2.99	6.15
2/15/2023	0.00	6.32	6.32	0.28	0.08	6.47	3.18	3.01	6.19
2/16/2023	0.00	6.05	6.05	0.26	0.08	6.37	3.19	3.02	6.21
2/17/2023	0.00	6.38	6.38	0.24	0.08	6.53	3.22	3.05	6.27
2/18/2023	0.00	6.46	6.46	0.30	0.08	6.56	3.17	3.00	6.17
2/19/2023	0.00	6.60	6.60	0.32	0.08	6.25	3.09	2.92	6.01
2/20/2023	0.00	6.19	6.19	0.25	0.08	6.64	3.34	3.17	6.51
2/21/2023	0.00	7.04	7.04	0.29	0.08	6.49	3.17	3.00	6.17
2/22/2023	0.00	6.65	6.65	0.30	0.08	6.54	3.20	3.03	6.23
2/23/2023	0.00	6.16	6.16	0.29	0.08	6.19	3.07	2.91	5.98
2/24/2023	0.00	6.29	6.29	0.31	0.08	7.08	3.46	3.29	6.75
2/25/2023	0.00	6.67	6.67	0.27	0.08	6.09	3.02	2.85	5.87
2/26/2023	0.00	6.44	6.44	0.31	0.08	6.72	3.25	3.08	6.33
2/27/2023	0.00	6.96	6.96	0.28	0.08	6.45	3.20	3.03	6.23
2/28/2023	0.00	6.85	6.85	0.28	0.08	6.64	3.22	3.05	6.27
Total	0.00	187.01	187.01	8.12	2.14	186.34	91.72	87.22	178.94
Avg	0.00	6.68	6.68	0.29	0.08	6.66	3.28	3.11	6.39
Min	0.00	6.05	6.05	0.24	0.08	6.09	3.02	2.85	5.87
Max	0.00	7.37	7.37	0.32	0.08	7.11	3.53	3.36	6.89



Raw Water Analysis								
Date	Temp	pH	Turbidity		F <sup>-</sup>	Free Cl	Bacti	
	Average	Average	Average	Maximum	Grab	Average	Positive/Negative	
	°C		NTU		mg/L	mg/L	Total Coliform	E. coli
	TIT-1000	AIT-1000-2	AIT-1000-1		Lab	AIT-1035-2	Lab	
2/1/2023	4.3	7.82	1.13	1.97	0.10	0.50	Negative	Negative
2/2/2023	4.2	7.83	0.84	1.17	0.08	0.47	Negative	Negative
2/3/2023	4.0	7.84	1.00	1.41	0.08	0.45	Negative	Negative
2/4/2023	3.9	7.83	1.06	1.60	0.08	0.47	Negative	Negative
2/5/2023	3.8	7.83	1.08	2.23	0.08	0.50	Negative	Negative
2/6/2023	3.5	7.83	0.70	1.18	0.08	0.50	Negative	Negative
2/7/2023	3.5	7.85	0.67	0.86	0.09	0.40	Negative	Negative
2/8/2023	3.5	7.85	0.63	0.75	0.08	0.41	Negative	Negative
2/9/2023	3.6	7.85	0.49	0.65	0.09	0.49	Negative	Negative
2/10/2023	3.5	7.85	0.38	0.47	0.08	0.50	Negative	Negative
2/11/2023	3.5	7.85	0.53	0.91	0.09	0.50	Negative	Negative
2/12/2023	3.4	7.84	0.62	0.91	0.08	0.54	Negative	Negative
2/13/2023	3.5	7.84	0.54	9.44	0.09	0.53	Negative	Negative
2/14/2023	3.5	7.85	0.43	0.53	0.08	0.50	Negative	Negative
2/15/2023	3.8	7.84	0.38	0.56	0.08	0.51	Negative	Negative
2/16/2023	3.6	7.85	0.37	0.44	0.09	0.46	Negative	Negative
2/17/2023	3.7	7.86	0.39	0.61	0.08	0.40	Negative	Negative
2/18/2023	3.8	7.85	5.44	15.66	0.08	0.31	Negative	Negative
2/19/2023	3.8	7.84	2.80	9.40	0.08	0.43	Negative	Negative
2/20/2023	3.7	7.83	1.20	3.18	0.08	0.50	Negative	Negative
2/21/2023	3.7	7.84	0.70	1.22	0.08	0.42	Negative	Negative
2/22/2023	3.7	7.85	0.57	1.20	0.08	0.41	Negative	Negative
2/23/2023	3.5	7.85	0.49	1.00	0.08	0.40	Negative	Negative
2/24/2023	3.6	7.85	5.20	19.24	0.08	0.27	Negative	Negative
2/25/2023	3.8	7.85	12.12	28.19	0.08	0.30	Negative	Negative
2/26/2023	3.7	7.84	5.13	19.69	0.08	0.52	Negative	Negative
2/27/2023	3.5	7.86	5.87	12.82	0.08	0.52	Negative	Negative
2/28/2023	3.4	7.83	2.17	3.35	0.09	0.51	Negative	Negative
Avg	3.7	7.84	1.89	5.02	0.08	0.45	NA	NA
Min	3.4	7.82	0.37	0.44	0.08	0.27	NA	NA
Max	4.3	7.86	12.12	28.19	0.10	0.54	NA	NA



**Finished Water Analysis**

Date	Temp	pH	Phosphate	Fluoride		Free Cl <sub>2</sub>	Alkalinity (as CaCO <sub>3</sub> )		Chloride	Sulfate	Calcium (as CaCO <sub>3</sub> )	Dissolved Oxygen	Conductivity	Langelier Saturation Index	Chloride: Sulfate Mass Ratio	Larson-Skold Index	Bacti	
	Average	Average	Average	Tap	Dist	Average	Carbonate	Bicarbonate	Grab	Grab	Grab	Grab	Grab				Positive/Negative	
	°C		mg/L	mg/L		mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	uS/cm				Total Coliform	E. coli
	AIT-4040-1	AIT-4050-2	AIT-4040-5	Lab		AIT-4050-1	Lab		Lab	Lab	Lab	Lab	Lab				Calculated	
2/1/2023	3.6	7.53	3.37	0.97		1.01	0	74	10	12	76	13.0	214	-1.08	0.83	0.44	Negative	Negative
2/2/2023	3.5	7.53	3.38	0.76		1.01	0	75	10	10	74	13.7	217	-1.08	1.00	0.40	Negative	Negative
2/3/2023	3.4	7.54	3.37	0.76		1.00	0	76	10	10	74	11.4	217	-1.08	1.00	0.40	Negative	Negative
2/4/2023	3.2	7.54	3.37	0.80		1.00	0	76	10	10	74	11.3	217	-1.08	1.00	0.40	Negative	Negative
2/5/2023	3.1	7.54	3.38	0.76		1.02	0	77	10	9	70	10.9	223	-1.10	1.11	0.37	Negative	Negative
2/6/2023	2.7	7.54	3.37	0.77	0.78	1.01	0	77	9	9	72	13.9	225	-1.10	1.00	0.35	Negative	Negative
2/7/2023	2.6	7.56	3.37	0.79		0.98	0	78	10	10	70	13.7	238	-1.10	1.00	0.39	Negative	Negative
2/8/2023	2.6	7.57	3.37	0.79		0.99	0	78	12	11	76	14.0	238	-1.05	1.09	0.45	Negative	Negative
2/9/2023	2.6	7.57	3.37	0.79		1.01	0	74	11	12	76	13.1	237	-1.07	0.92	0.47	Negative	Negative
2/10/2023	2.6	7.58	3.37	0.78		1.01	0	77	10	12	76	13.3	229	-1.05	0.83	0.42	Negative	Negative
2/11/2023	2.7	7.58	3.37	0.78		1.01	0	73	11	12	76	13.0	225	-1.07	0.92	0.47	Negative	Negative
2/12/2023	2.7	7.57	3.37	0.80		1.01	0	73	10	12	74	12.8	226	-1.08	0.83	0.45	Negative	Negative
2/13/2023	2.7	7.57	3.37	0.80	0.81	1.01	0	72	10	11	72	12.9	225	-1.10	0.91	0.44	Negative	Negative
2/14/2023	2.8	7.57	3.37	0.78		1.01	0	74	10	10	76	13.0	224	-1.06	1.00	0.41	Negative	Negative
2/15/2023	2.9	7.58	3.37	0.79		1.01	0	73	10	12	76	13.0	221	-1.06	0.83	0.45	Negative	Negative
2/16/2023	3.0	7.58	3.36	0.79		1.01	0	79	10	10	70	14.8	250	-1.06	1.00	0.38	Negative	Negative
2/17/2023	3.0	7.59	3.36	0.79		0.99	0	75	10	9	72	13.0	219	-1.05	1.11	0.38	Negative	Negative
2/18/2023	3.1	7.60	3.37	0.78		1.00	0	78	10	10	78	13.6	220	-0.99	1.00	0.39	Negative	Negative
2/19/2023	3.1	7.60	3.37	0.81		1.00	0	76	11	11	76	14.4	229	-1.02	1.00	0.44	Negative	Negative
2/20/2023	2.9	7.60	3.36	0.80		1.01	0	75	11	10	76	13.6	227	-1.03	1.10	0.43	Negative	Negative
2/21/2023	2.9	7.61	3.37	0.79	0.80	1.00	0	75	10	9	76	13.7	222	-1.01	1.11	0.38	Negative	Negative
2/22/2023	2.8	7.61	3.36	0.77		1.00	0	71	10	10	72	13.2	223	-1.07	1.00	0.42	Negative	Negative
2/23/2023	2.7	7.62	3.37	0.77		0.99	0	76	10	9	72	13.1	222	-1.03	1.11	0.38	Negative	Negative
2/24/2023	2.8	7.61	3.35	0.77		1.02	0	72	10	9	78	13.6	222	-1.02	1.11	0.40	Negative	Negative
2/25/2023	2.7	7.61	3.35	0.78		1.01	0	78	10	9	70	13.1	227	-1.04	1.11	0.37	Negative	Negative
2/26/2023	2.6	7.63	3.35	0.78		1.02	0	78	10	9	78	13.8	229	-0.98	1.11	0.37	Negative	Negative
2/27/2023	2.4	7.63	3.34	0.77	0.78	1.02	0	76	10	9	74	13.1	228	-1.01	1.11	0.38	Negative	Negative
2/28/2023	2.4	7.63	3.34	0.79		1.01	0	79	10	10	72	12.8	228	-1.01	1.00	0.38	Negative	Negative
Avg	2.9	7.58	3.36	0.79	0.79	1.01	0	76	10	10	74	13.2	226	-1.05	1.01	0.41	NA	NA
Min	2.4	7.53	3.34	0.76	0.78	0.98	0	71	9	9	70	10.9	214	-1.10	0.83	0.35	NA	NA
Max	3.6	7.63	3.38	0.97	0.81	1.02	0	79	12	12	78	14.8	250	-0.98	1.11	0.47	NA	NA



Turbidity										
Date	Raw Water		Clarified Water	Membrane Feed Water	Combined Membrane Filtrate					Finished Water
	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
2/1/2023	1.13	1.97	3.65	2.21	0.022	0.022	96	0	0.0	0.016
2/2/2023	0.84	1.17	2.80	1.35	0.022	0.022	96	0	0.0	0.016
2/3/2023	1.00	1.41	2.88	1.00	0.022	0.022	96	0	0.0	0.016
2/4/2023	1.06	1.60	3.17	0.97	0.022	0.022	96	0	0.0	0.016
2/5/2023	1.08	2.23	3.04	0.94	0.022	0.022	96	0	0.0	0.016
2/6/2023	0.70	1.18	2.95	0.79	0.022	0.022	96	0	0.0	0.016
2/7/2023	0.67	0.86	3.10	0.68	0.022	0.022	96	0	0.0	0.016
2/8/2023	0.63	0.75	3.46	0.67	0.022	0.022	96	0	0.0	0.016
2/9/2023	0.49	0.65	3.89	0.64	0.022	0.022	96	0	0.0	0.016
2/10/2023	0.38	0.47	2.35	0.48	0.022	0.022	96	0	0.0	0.016
2/11/2023	0.53	0.91	1.63	0.43	0.022	0.022	96	0	0.0	0.016
2/12/2023	0.62	0.91	1.97	0.53	0.022	0.022	96	0	0.0	0.016
2/13/2023	0.54	9.44	1.90	0.53	0.022	0.022	96	0	0.0	0.016
2/14/2023	0.43	0.53	1.81	0.44	0.022	0.022	96	0	0.0	0.016
2/15/2023	0.38	0.56	1.67	0.39	0.022	0.022	96	0	0.0	0.016
2/16/2023	0.37	0.44	1.58	0.36	0.022	0.022	96	0	0.0	0.016
2/17/2023	0.39	0.61	1.32	0.35	0.022	0.022	96	0	0.0	0.016
2/18/2023	5.44	15.66	2.44	1.36	0.022	0.022	96	0	0.0	0.016
2/19/2023	2.80	9.40	3.80	2.76	0.022	0.022	96	0	0.0	0.016
2/20/2023	1.20	3.18	3.05	1.95	0.022	0.022	96	0	0.0	0.016
2/21/2023	0.70	1.22	3.14	1.22	0.022	0.022	96	0	0.0	0.016
2/22/2023	0.57	1.20	2.12	0.90	0.023	0.026	96	0	0.0	0.019
2/23/2023	0.49	1.00	1.93	0.73	0.024	0.024	96	0	0.0	0.020
2/24/2023	5.20	19.24	1.72	1.64	0.024	0.024	96	0	0.0	0.020
2/25/2023	12.12	28.19	1.29	7.70	0.024	0.024	96	0	0.0	0.020
2/26/2023	5.13	19.69	1.91	7.60	0.024	0.024	96	0	0.0	0.020
2/27/2023	5.87	12.82	2.70	7.06	0.024	0.024	96	0	0.0	0.021
2/28/2023	2.17	3.35	2.70	5.31	0.024	0.025	96	0	0.0	0.020
Avg	1.89	5.02	2.50	1.82	0.022	0.022	96	0	0.0	0.017
Min	0.37	0.44	1.29	0.35	0.022	0.022	96	0	0.0	0.016
Max	12.12	28.19	3.89	7.70	0.024	0.026	96	0	0.0	0.021

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



Date	Membrane LRV/Integrity/Max Turbidity																									
	Membrane 1			Membrane 2			Membrane 3			Membrane 4			Membrane 5			Membrane 6			Membrane 7			Membrane 8				
	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity	LRV	Integrity	Turbidity		
	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max	Average	Max	Max		
psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU	psi/min	Pass/Fail	NTU
2/1/2023	4.18	PASS	0.019	4.32	PASS	0.024	4.16	PASS	0.020	4.45	PASS	0.014	Out for Membrane Replacement	4.49	PASS	0.025	4.36	PASS	0.028	4.85	PASS	0.021				
2/2/2023	4.18	PASS	0.019	4.28	PASS	0.023	4.39	PASS	0.020	4.38	PASS	0.014		4.46	PASS	0.023	4.34	PASS	0.028	4.86	PASS	0.020				
2/3/2023	4.17	PASS	0.019	4.28	PASS	0.023	4.34	PASS	0.021	4.34	PASS	0.014		4.42	PASS	0.026	4.36	PASS	0.028	4.89	PASS	0.021				
2/4/2023	4.15	PASS	0.019	4.26	PASS	0.024	4.26	PASS	0.020	4.40	PASS	0.014		4.48	PASS	0.031	4.45	PASS	0.029	4.98	PASS	0.021				
2/5/2023	4.18	PASS	0.020	4.35	PASS	0.023	4.27	PASS	0.020	4.35	PASS	0.014		4.49	PASS	0.026	4.40	PASS	0.029	4.98	PASS	0.021				
2/6/2023	4.21	PASS	0.020	4.49	PASS	0.024	4.35	PASS	0.022	4.35	PASS	0.014		4.87	PASS	0.021	4.41	PASS	0.025	4.36	PASS	0.029	4.91	PASS	0.021	
2/7/2023	4.19	PASS	0.019	4.36	PASS	0.023	4.25	PASS	0.020	4.32	PASS	0.015		5.34	PASS	0.021	4.40	PASS	0.026	4.37	PASS	0.029	4.99	PASS	0.021	
2/8/2023	4.17	PASS	0.019	4.35	PASS	0.023	4.23	PASS	0.020	4.36	PASS	0.014		5.49	PASS	0.021	4.39	PASS	0.026	4.38	PASS	0.029	5.04	PASS	0.021	
2/9/2023	4.53	PASS	0.019	4.39	PASS	0.023	4.28	PASS	0.021	4.32	PASS	0.014		5.45	PASS	0.021	4.40	PASS	0.026	4.38	PASS	0.029	4.97	PASS	0.021	
2/10/2023	4.47	PASS	0.019	4.38	PASS	0.023	4.23	PASS	0.020	4.33	PASS	0.015		5.48	PASS	0.021	4.40	PASS	0.024	4.39	PASS	0.028	5.16	PASS	0.021	
2/11/2023	4.40	PASS	0.019	4.41	PASS	0.023	4.22	PASS	0.020	4.36	PASS	0.014	5.48	PASS	0.021	4.41	PASS	0.025	4.44	PASS	0.029	5.26	PASS	0.021		
2/12/2023	4.42	PASS	0.019	4.30	PASS	0.024	4.22	PASS	0.020	4.40	PASS	0.015	5.49	PASS	0.021	4.42	PASS	0.030	4.37	PASS	0.029	5.08	PASS	0.021		
2/13/2023	4.39	PASS	0.019	4.32	PASS	0.023	4.23	PASS	0.020	4.38	PASS	0.016	5.49	PASS	0.020	4.44	PASS	0.025	4.37	PASS	0.029	5.03	PASS	0.020		
2/14/2023	4.34	PASS	0.019	4.35	PASS	0.023	4.24	PASS	0.020	4.39	PASS	0.016	5.47	PASS	0.020	4.45	PASS	0.029	4.38	PASS	0.028	5.09	PASS	0.020		
2/15/2023	4.35	PASS	0.019	4.38	PASS	0.024	4.25	PASS	0.020	4.41	PASS	0.015	5.49	PASS	0.021	4.50	PASS	0.028	4.42	PASS	0.028	5.03	PASS	0.020		
2/16/2023	4.40	PASS	0.019	4.30	PASS	0.024	4.25	PASS	0.020	4.42	PASS	0.016	5.49	PASS	0.021	4.45	PASS	0.025	4.37	PASS	0.029	5.10	PASS	0.020		
2/17/2023	4.40	PASS	0.019	4.31	PASS	0.023	4.28	PASS	0.019	4.71	PASS	0.015	5.48	PASS	0.020	4.42	PASS	0.024	4.41	PASS	0.029	4.95	PASS	0.021		
2/18/2023	4.35	PASS	0.019	4.33	PASS	0.023	4.31	PASS	0.020	4.60	PASS	0.016	5.47	PASS	0.021	4.41	PASS	0.025	4.42	PASS	0.029	4.91	PASS	0.022		
2/19/2023	4.28	PASS	0.019	4.33	PASS	0.023	4.27	PASS	0.020	4.53	PASS	0.016	5.48	PASS	0.020	4.42	PASS	0.025	4.39	PASS	0.029	5.04	PASS	0.022		
2/20/2023	4.27	PASS	0.019	4.29	PASS	0.023	4.29	PASS	0.019	4.49	PASS	0.016	5.48	PASS	0.020	4.38	PASS	0.024	4.35	PASS	0.029	4.99	PASS	0.021		
2/21/2023	4.30	PASS	0.019	4.32	PASS	0.023	4.32	PASS	0.019	4.46	PASS	0.016	5.50	PASS	0.021	4.38	PASS	0.024	4.35	PASS	0.029	5.03	PASS	0.022		
2/22/2023	4.31	PASS	0.021	4.34	PASS	0.024	4.26	PASS	0.030	4.48	PASS	0.016	5.54	PASS	0.022	4.41	PASS	0.024	4.34	PASS	0.029	4.97	PASS	0.021		
2/23/2023	4.34	PASS	0.021	4.28	PASS	0.023	4.30	PASS	0.021	4.49	PASS	0.017	5.52	PASS	0.023	4.44	PASS	0.024	4.38	PASS	0.027	4.94	PASS	0.021		
2/24/2023	4.31	PASS	0.020	4.29	PASS	0.024	4.35	PASS	0.019	4.48	PASS	0.018	5.50	PASS	0.024	4.41	PASS	0.028	4.37	PASS	0.029	5.05	PASS	0.021		
2/25/2023	4.33	PASS	0.021	4.30	PASS	0.023	4.26	PASS	0.020	4.48	PASS	0.019	5.50	PASS	0.021	4.38	PASS	0.025	4.35	PASS	0.029	4.98	PASS	0.022		
2/26/2023	4.29	PASS	0.022	4.28	PASS	0.024	4.35	PASS	0.020	4.50	PASS	0.019	5.49	PASS	0.022	4.35	PASS	0.026	4.36	PASS	0.028	5.11	PASS	0.032		
2/27/2023	4.33	PASS	0.020	4.24	PASS	0.026	4.24	PASS	0.020	4.46	PASS	0.019	5.48	PASS	0.024	4.36	PASS	0.025	4.53	PASS	0.029	5.05	PASS	0.033		
2/28/2023	4.26	PASS	0.020	4.22	PASS	0.025	4.25	PASS	0.021	4.45	PASS	0.017	5.49	PASS	0.023	4.44	PASS	0.024	4.60	PASS	0.029	5.09	PASS	0.032		
Avg	4.30		0.020	4.32		0.023	4.27		0.020	4.43		0.016	5.46		0.021	4.42		0.026	4.39		0.029	5.01		0.022		
Min	4.15		0.019	4.22		0.023	4.16		0.019	4.32		0.014	4.87		0.020	4.35		0.023	4.34		0.027	4.85		0.020		
Max	4.53		0.022	4.49		0.026	4.39		0.030	4.71		0.019	5.54		0.024	4.50		0.031	4.60		0.029	5.26		0.033		

\*LRV must remain above Upper Control Limit of 3.32 psi/min



Treatment Chemical Dosages											
Date	Treated Water	Sodium Hypochlorite					Phosphoric Acid		Hydroflourosilicic Acid		
		Raw Water	Membrane Feed Water	Dose pre-FW Tanks	Treated Water	Post FW Tanks	Dose pre-FW Tanks	Post FW Tanks	Raw Water	Dose pre-FW Tanks	Post FW Tanks
	Volume	Free Cl <sub>2</sub>					PO4		F		
	MG	mg/L					mg/L		mg/L		
	FIT-4000-1	AIT-1035-2	AIT-1035-4	Added	AIT-4030-1	AIT-4050-1	Added	AIT-4040-5	Lab	Added	Lab
2/1/2023	7.0	0.50	0.40	0.65	1.06	1.01	3.20	3.37	0.10	0.60	0.97
2/2/2023	6.7	0.47	0.40	0.65	1.05	1.01	3.20	3.38	0.08	0.60	0.76
2/3/2023	6.9	0.45	0.40	0.65	1.04	1.00	3.20	3.37	0.08	0.61	0.76
2/4/2023	7.1	0.47	0.40	0.66	1.05	1.00	3.20	3.37	0.08	0.61	0.80
2/5/2023	7.1	0.50	0.42	0.66	1.06	1.02	3.20	3.38	0.08	0.61	0.76
2/6/2023	7.1	0.50	0.43	0.62	1.04	1.01	3.20	3.37	0.08	0.61	0.77
2/7/2023	6.6	0.40	0.40	0.69	1.03	0.98	3.20	3.37	0.09	0.61	0.79
2/8/2023	7.0	0.41	0.36	0.72	1.05	0.99	3.20	3.37	0.08	0.61	0.79
2/9/2023	6.9	0.49	0.37	0.68	1.07	1.01	3.20	3.37	0.09	0.61	0.79
2/10/2023	6.6	0.50	0.41	0.66	1.06	1.01	3.20	3.37	0.08	0.61	0.78
2/11/2023	6.5	0.50	0.42	0.66	1.06	1.01	3.20	3.37	0.09	0.61	0.78
2/12/2023	6.7	0.54	0.43	0.62	1.06	1.01	3.20	3.37	0.08	0.61	0.80
2/13/2023	6.7	0.53	0.44	0.62	1.06	1.01	3.20	3.37	0.09	0.61	0.80
2/14/2023	6.4	0.50	0.43	0.66	1.06	1.01	3.20	3.37	0.08	0.61	0.78
2/15/2023	6.5	0.51	0.43	0.66	1.06	1.01	3.20	3.37	0.08	0.61	0.79
2/16/2023	6.4	0.46	0.42	0.66	1.05	1.01	3.20	3.36	0.09	0.61	0.79
2/17/2023	6.5	0.40	0.38	0.71	1.04	0.99	3.20	3.36	0.08	0.61	0.79
2/18/2023	6.6	0.31	0.34	0.80	1.04	1.00	3.20	3.37	0.08	0.61	0.78
2/19/2023	6.3	0.43	0.30	0.80	1.07	1.00	3.20	3.37	0.08	0.61	0.81
2/20/2023	6.6	0.50	0.35	0.74	1.07	1.01	3.20	3.36	0.08	0.59	0.80
2/21/2023	6.5	0.42	0.36	0.75	1.05	1.00	3.20	3.37	0.08	0.59	0.79
2/22/2023	6.5	0.41	0.35	0.73	1.05	1.00	3.20	3.36	0.08	0.59	0.77
2/23/2023	6.2	0.40	0.34	0.79	1.06	0.99	3.20	3.37	0.08	0.59	0.77
2/24/2023	7.1	0.27	0.31	0.88	1.06	1.02	3.20	3.35	0.08	0.59	0.77
2/25/2023	6.1	0.30	0.21	0.92	1.07	1.01	3.20	3.35	0.08	0.59	0.78
2/26/2023	6.7	0.52	0.30	0.78	1.07	1.02	3.20	3.35	0.08	0.59	0.78
2/27/2023	6.5	0.52	0.36	0.74	1.07	1.02	3.20	3.34	0.08	0.59	0.77
2/28/2023	6.6	0.51	0.40	0.70	1.06	1.01	3.20	3.34	0.09	0.59	0.79
Avg	6.7	0.45	0.38	0.71	1.06	1.01	3.20	3.36	0.08	0.60	0.79
Min	6.1	0.27	0.21	0.62	1.03	0.98	3.20	3.34	0.08	0.59	0.76
Max	7.1	0.54	0.44	0.92	1.07	1.02	3.20	3.38	0.10	0.61	0.97





Disinfection CT														
Date	Pipeline CT				FW Tank CT						Compliance			
	Whitestone	Travel Time	Residual	CT	FW Tank 1	FW Tank 2	Plant	Contact Time	Free Cl <sub>2</sub>	CT	Total CT	Temp	CT	CT
	Flow	Min	RW	Achieved	Min Level	Min Level	Flow	Min	Min	Achieved	Achieved	Avg	Required	Met
	MGD	Minutes	mg/L	mg-min/L	ft	ft	MGD	Minutes	mg/L	mg-min/L	mg-min/L	°C	mg-min/L	Y/N
Entry	Calculated	AIT-1035-2	Calculated	LIT-4005-1	LIT-4005-2	Calculated	Calculated	Calculated	Calculated	Calculated	Calculated	TIT-1000	Calculated	Calculated
2/1/2023	41.0	3,052	0.50	1522	28.7	25.3	6.7	553	0.99	548	2071	4.3	12.00	Y
2/2/2023	39.6	3,160	0.47	1478	28.7	24.4	6.5	560	0.98	548	2026	4.2	12.00	Y
2/3/2023	41.7	3,000	0.45	1337	28.7	23.9	6.7	538	0.96	515	1852	4.0	12.00	Y
2/4/2023	54.5	2,297	0.47	1089	28.7	23.0	6.9	514	0.96	496	1584	3.9	12.00	Y
2/5/2023	52.0	2,404	0.50	1206	28.7	22.7	6.9	511	0.98	503	1709	3.8	12.00	Y
2/6/2023	45.8	2,730	0.50	1371	28.7	22.5	6.7	523	0.96	500	1872	3.5	12.00	Y
2/7/2023	41.8	2,994	0.40	1202	28.7	23.9	6.4	563	0.93	523	1725	3.5	12.00	Y
2/8/2023	41.1	3,040	0.41	1243	28.7	24.5	6.8	538	0.96	519	1761	3.5	12.00	Y
2/9/2023	40.2	3,110	0.49	1525	28.7	25.0	6.6	556	0.98	548	2073	3.6	12.00	Y
2/10/2023	41.0	3,052	0.50	1528	28.7	24.9	6.3	584	0.98	571	2099	3.5	12.00	Y
2/11/2023	49.3	2,537	0.50	1259	28.7	25.2	6.2	598	0.98	585	1844	3.5	12.00	Y
2/12/2023	49.4	2,532	0.54	1364	28.6	24.9	6.5	562	0.98	549	1913	3.4	12.00	Y
2/13/2023	43.4	2,880	0.53	1515	28.7	24.9	6.4	572	0.96	551	2066	3.5	12.00	Y
2/14/2023	39.6	3,157	0.50	1580	28.7	25.6	6.1	605	0.98	596	2176	3.5	12.00	Y
2/15/2023	37.8	3,305	0.51	1682	28.7	25.3	6.2	597	0.98	584	2266	3.8	12.00	Y
2/16/2023	35.4	3,530	0.46	1639	28.7	24.1	6.2	583	0.98	570	2209	3.6	12.00	Y
2/17/2023	38.3	3,265	0.40	1292	28.7	24.0	6.3	577	0.96	556	1848	3.7	12.00	Y
2/18/2023	43.2	2,897	0.31	904	28.7	24.1	6.2	585	0.97	568	1473	3.8	12.00	Y
2/19/2023	43.7	2,863	0.43	1221	28.6	26.2	6.0	625	0.96	598	1819	3.8	12.00	Y
2/20/2023	43.7	2,863	0.50	1432	28.7	24.5	6.5	560	0.98	551	1983	3.7	12.00	Y
2/21/2023	38.7	3,232	0.42	1364	28.7	24.4	6.2	590	0.97	573	1936	3.7	12.00	Y
2/22/2023	38.7	3,232	0.41	1312	28.7	25.3	6.2	593	0.96	568	1880	3.7	12.00	Y
2/23/2023	35.0	3,577	0.40	1448	28.7	24.2	6.0	606	0.95	576	2024	3.5	12.00	Y
2/24/2023	39.5	3,163	0.27	844	28.7	24.1	6.7	537	1.00	536	1380	3.6	12.00	Y
2/25/2023	54.5	2,297	0.30	684	28.7	22.8	5.9	601	0.98	587	1272	3.8	12.00	Y
2/26/2023	41.3	3,028	0.52	1584	28.7	22.8	6.3	557	1.00	556	2140	3.7	12.00	Y
2/27/2023	45.9	2,727	0.52	1415	28.7	24.4	6.2	584	0.99	579	1994	3.5	12.00	Y
2/28/2023	28.1	4,455	0.51	2294	28.7	24.4	6.3	580	1.00	579	2873	3.4	12.00	Y
Avg	42.3	3,014	0.45	1369	28.7	24.3	6.4	570	0.97	555	1924	3.7	12.00	NA
Min	28.1	2,297	0.27	684	28.6	22.5	5.9	511	0.93	496	1272	3.4	12.00	NA
Max	54.5	4,455	0.54	2294	28.7	26.2	6.9	625	1.00	598	2873	4.3	12.00	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 Cl <sub>2</sub> )																									
WSSN:	0072	0390				0400			0470							0485					0517	0518		2180	
	Akron	Bangor Twp.				Bangor Monitor Dist.			Bay City							Bay County					Beaver Rd	Beaver Twp		Essexville	
Date	1	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	23	24	26	29	30	32	
2/1/2023									0.86	0.43	0.71	0.81	0.41	1.04	0.80										
2/2/2023	0.40	0.36	0.42			0.90	0.94									0.85	0.74	0.84	0.78	0.57				0.92	
2/3/2023																									
2/4/2023																									
2/5/2023																									
2/6/2023																								0.92	
2/7/2023										0.75	0.72	0.79	0.78	0.66	0.99	0.82									
2/8/2023																									
2/9/2023								1.00	0.78	0.64	0.60	0.72	0.46	0.96	0.74							0.54			
2/10/2023																									
2/11/2023																									
2/12/2023																									
2/13/2023																									0.95
2/14/2023		0.53	0.56	0.51	0.55				0.76	0.61	0.70	0.83	0.44	0.97	0.71						0.91				
2/15/2023																									
2/16/2023																0.67	0.86	0.79	0.71	0.57			0.57		
2/17/2023																									
2/18/2023																									
2/19/2023																									
2/20/2023																									
2/21/2023		0.62	0.47	0.71	0.83				0.84	0.54	0.69	0.78	0.41	0.93	0.79										0.98
2/22/2023																									
2/23/2023											0.65	0.79			0.71										
2/24/2023																									
2/25/2023																									
2/26/2023																									
2/27/2023																									
2/28/2023																									
Average	0.40	0.56				0.95			0.73							0.74					0.91	0.56		0.94	
Min	0.40	0.36				0.90			0.41							0.57					0.91	0.54		0.92	
Max	0.40	0.83				1.00			1.04							0.86					0.91	0.57		0.98	



MONITORING STATION ADDRESSES

- |  |   |   |
|--|---|---|
| 1. Sample station at corner of 5758 M-25 & R | 11. Number 1 Fire Station, 1401 Center Ave        | 19. Dore's M-84 Party Store, 6183 WS Saginaw Rd |
| 3. Bangor Fire Station, 3921 Wheeler         | 12. Number 2 Fire Station, 1000 Fremont Ave       | 20. Pump Station #13, 6000 WS Saginaw Rd        |
| 4. BCDWS Admin. Bldg. 3933 Patterson Rd.     | 13. Jack's Fruit Market, 1000 Salzburg Ave        | 23. Rail Trail Pump Station, 366 N. Tuscola Rd. |
| 5. 7-11, 3543 S. Old Kawkawlin Rd.           | 14. Number 4 Fire Station, 212 S. Dean St         | 24. Little Learners Daycare, 1694 Cass Ave.     |
| 6. Admiral Petroleum, 314 S Euclid Ave.      | 15. Number 5 Fire Station, 1209 Smith St          | 26. Wieland Contracting, 2443 S Mackinaw Rd     |
| 7. Sequin Lumber, 3881 Euclid Ave            | 16. Bay City Hall, 301 Washington Ave             | 29. Sample Station, 2515 S. 11 Mile Rd          |
| 9. B's Boutique, 2981 Midland Rd             | 17. Skipper Buds Marina, 1809 S Water St          | 30. Sample Station, 340 W. Beaver Rd            |
| 10. Little Caesars, 3475 E North Union Rd    | 18. Bay Valley Animal Hospital 6015 WS Saginaw Rd | 32. Essexville City Hall, 1107 Woodside Ave     |

Distribution System Monitoring																								
Chlorine Residual at Bacteriological Monitoring Stations (mg/L Free Cl <sub>2</sub> )																								
WSSN:	2465		2960			3565			3570		4280		4440			5330		5335		5540	7125			7134
Date	Fraser Twp.		Hampton Twp.			Kawkawlin Twp.			Kawkawlin Met.		Merritt Twp.		Monitor Twp.			City Pinconning		Pinconning Twp.		Portsmouth	Williams Twp.			Wisner
	34	35	37	38	39	40	41	42	43	45	46	48	49	52	55	58	59	61	63	65	68	69	70	72
2/1/2023											0.49		0.90	0.74	0.77					0.23				0.54
2/2/2023																								
2/3/2023																								
2/4/2023																								
2/5/2023																								
2/6/2023																								
2/7/2023		0.82	0.52	0.66	0.70	0.95	0.75									0.43		0.71						
2/8/2023																								
2/9/2023													0.81	0.71	0.73						0.65	0.62	0.78	
2/10/2023																								
2/11/2023																								
2/12/2023																								
2/13/2023																								
2/14/2023	0.62							0.83								0.67		0.57						
2/15/2023																								
2/16/2023									0.81		0.53										0.51	0.58	0.68	
2/17/2023																								
2/18/2023																								
2/19/2023																								
2/20/2023																								
2/21/2023			0.44	0.73	0.54				0.71															
2/22/2023																								
2/23/2023																								
2/24/2023			0.65																					
2/25/2023																								
2/26/2023																								
2/27/2023			0.62	0.67	0.60																			
2/28/2023																								
Average	0.72		0.61			0.84			0.76		0.51		0.78			0.55		0.64		0.23		0.64		0.54
Min	0.62		0.44			0.75			0.71		0.49		0.71			0.43		0.57		0.23		0.51		0.54
Max	0.82		0.73			0.95			0.81		0.53		0.90			0.67		0.71		0.23		0.78		0.54



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 Commisison, 2600 E Beaver Rd
- 41. Parish Rd. Elevated Tank, 1770 E. Parish Rd
- 42. Linwood Tile, 205 S Huron Rd

- 43. Speedway, 106 S. Huron Rd
- 45. Kawkawlin Restaurant, 103 S Huron Rd
- 46. John's Bar, 1476 S Tuscola Rd
- 48. Tool Shed Bar, 12 W Munger 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

February, 2023

COUNTY	COMMUNITY	WSSN NUMBER	DISTRIBUTION SYSTEM SAMPLES				
			avg free cl2 mg/L	NUMBER REQUIRED	NUMBER COLLECTED	NUMBER POSITIVE	NUMBER REPEAT SAMPLES
Tuscola	Akron	0072	0.40	1	1	0	0
BAY	Bangor Township	0390	0.56	10	10	0	0
BAY	Bangor-Monitor Dist.	0400	0.95	3	3	0	0
BAY	Bay City	0470	0.73	30	38	0	0
BAY	Bay County (Frankl./Monitor/Portsm.)	0485	0.74	9	10	0	0
BAY	Beaver Road Area	0517	0.91	1	1	0	0
BAY	Beaver Township	0518	0.56	2	2	0	0
BAY	Essexville	2180	0.94	4	4	0	0
BAY	Fraser Township	2465	0.72	2	2	0	0
BAY	Hampton Township	2960	0.61	10	10	0	0
BAY	Kawkawlin Township	3565	0.84	3	3	0	0
BAY	Kawkawlin Metro Dist.	3570	0.76	2	2	0	0
BAY	Merritt Township	4280	0.51	2	2	0	0
BAY	Monitor Township	4440	0.78	6	6	0	0
BAY	City of Pinconning	5330	0.55	2	2	0	0
BAY	Pinconning Township	5335	0.64	2	2	0	0
BAY	Portsmouth Township	5540	0.23	1	1	0	0
BAY	Williams Township	7125	0.64	6	6	0	0
Tuscola	Wisner	7134	0.54	1	1	0	0
Average Free Cl2 Residual of All Distribution Sites			0.66	mg/L			
1. Total distribution samples			106				
2. Total distribution samples with detectable free cl2 residual			106				
3. Total distribution samples with no detectable free cl2 residual			0				
4. Total distribution samples with no detectable free cl2 residual and HPC was <500			0				
5. Total distribution samples with no detectable free cl2 residual and HPC was >500			0				
6. Percent of distribution samples with no detectable free cl2 residual			0.00%				
7. Percent shown line #6 in previous monthly report			0.00%				

