

Bay Area WTP

Monthly Operations Report



June, 2022

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

June, 2022
 Month, Year

F-1
 Water Plant Classification

Bay
 County

Ryan Goebel
 Operator-in-charge

F-1
 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	11.1	Millions of Gallons per Day
Maximum Approved Transmembrane Pressure	22	PSI
Maximum Operating Transmembrane Pressure	14.91	PSI
Maximum Approved Flux Rate	36.25	gpd/sq.ft.
Maximum Operating Flux Rate	27.89	gpd/sq.ft.

Chemical Data

Sodium Hypochlorite on hand:	2,975	Gallons	Estimated Supply:	34.1	days
Caustic Soda on hand:	1,927	Gallons	Estimated Supply:	132.0	days
Corrosion Inhibitor on hand:	837	Gallons	Estimated Supply:	27.9	days
Hydrofluosilicic Acid on hand:	863	Gallons	Estimated Supply:	33.8	days
Aluminum Chlorohydrate on hand:	921	Gallons	Estimated Supply:	69.5	days
Sulfuric Acid on hand:	645	Gallons	Estimated Supply:	322.5	days
Sodium Bisulfite on hand:	973	Gallons	Estimated Supply:	335.5	days
Citric Acid on hand:	1,040	Gallons	Estimated Supply:	83.2	days
Cost of All Chemicals per Million Gallons:	82.51	Dollars			
Estimated Electrical Cost per Million Gallons:	80.93	Dollars			
Estimated Natural Gas Cost per Million Gallons:	4.03	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%
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

Filter #8 out for maintenance from 4:00pm on 6/17 to 3:45pm on 6/20
 Please see "Dist. Bacti" page 12 for Bacti Testing note.

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
6/1/2022	0.00	8.16	8.16	0.35	0.08	9.35	4.43	4.22	8.65
6/2/2022	0.00	9.48	9.48	0.34	0.08	9.41	4.56	4.32	8.88
6/3/2022	0.00	9.05	9.05	0.33	0.08	8.93	4.31	4.14	8.45
6/4/2022	0.00	9.19	9.19	0.37	0.08	9.55	4.58	4.33	8.91
6/5/2022	0.00	8.32	8.32	0.32	0.08	8.27	4.02	3.75	7.76
6/6/2022	0.00	8.92	8.92	0.34	0.08	8.93	4.41	4.12	8.53
6/7/2022	0.00	9.76	9.76	0.34	0.08	8.68	4.22	3.93	8.15
6/8/2022	0.00	7.45	7.45	0.31	0.09	8.39	4.03	3.81	7.84
6/9/2022	0.00	8.18	8.18	0.30	0.08	8.03	3.86	3.65	7.51
6/10/2022	0.00	7.79	7.79	0.30	0.09	8.11	3.87	3.71	7.58
6/11/2022	0.00	7.86	7.86	0.25	0.09	7.69	3.65	3.55	7.20
6/12/2022	0.00	7.54	7.54	0.31	0.10	8.07	3.79	3.70	7.49
6/13/2022	0.00	8.45	8.45	0.34	0.08	8.46	4.06	3.87	7.94
6/14/2022	0.00	8.81	8.81	0.38	0.08	9.29	4.46	4.26	8.72
6/15/2022	0.12	10.44	10.56	0.40	0.08	10.64	5.08	4.81	9.89
6/16/2022	0.20	9.91	10.10	0.30	0.08	8.82	4.27	4.07	8.34
6/17/2022	0.20	9.14	9.35	0.34	0.08	9.26	4.44	4.27	8.71
6/18/2022	0.22	8.59	8.82	0.33	0.08	9.06	4.21	4.05	8.26
6/19/2022	0.22	8.05	8.27	0.32	0.08	9.02	4.30	4.18	8.49
6/20/2022	0.20	8.53	8.74	0.34	0.08	8.89	4.19	4.06	8.25
6/21/2022	0.19	10.54	10.73	0.37	0.08	9.76	4.62	4.51	9.14
6/22/2022	0.21	11.15	11.35	0.37	0.11	11.06	5.09	4.98	10.07
6/23/2022	0.21	9.04	9.25	0.38	0.09	9.98	4.68	4.65	9.34
6/24/2022	0.21	9.44	9.65	0.37	0.08	10.81	4.98	4.99	9.97
6/25/2022	1.45	9.01	10.46	0.36	0.08	9.86	4.48	4.54	9.02
6/26/2022	2.19	8.08	10.27	0.35	0.10	10.47	4.71	4.82	9.53
6/27/2022	2.28	7.95	10.23	0.38	0.08	10.26	4.61	4.74	9.35
6/28/2022	2.60	8.48	11.08	0.40	0.08	10.41	4.59	4.78	9.37
6/29/2022	2.69	7.33	10.01	0.36	0.08	9.38	4.37	4.23	8.60
6/30/2022	2.75	6.03	8.78	0.34	0.08	10.47	5.17	4.84	10.01
Total	15.94	260.69	276.63	10.27	2.45	279.30	132.05	127.88	259.93
Avg	0.53	8.69	9.22	0.34	0.08	9.31	4.40	4.26	8.66
Min	0.00	6.03	7.45	0.25	0.08	7.69	3.65	3.55	7.20
Max	2.75	11.15	11.35	0.40	0.11	11.06	5.17	4.99	10.07



Raw Water Analysis								
Date	Temp	pH	Turbidity		F ⁻	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	
6/1/2022	13.6	8.00	0.58	1.31	0.10	0.48	Negative	Negative
6/2/2022	13.4	7.99	0.45	0.88	0.08	0.58	Negative	Negative
6/3/2022	13.6	8.02	0.51	0.64	0.09	0.42	Negative	Negative
6/4/2022	14.0	8.02	0.60	0.98	0.09	0.47	Negative	Negative
6/5/2022	14.0	8.01	0.55	1.04	0.09	0.52	Negative	Negative
6/6/2022	14.3	7.99	0.48	1.02	0.09	0.56	Negative	Negative
6/7/2022	14.0	7.94	0.61	9.26	0.08	0.65	Negative	Negative
6/8/2022	13.7	7.97	0.44	0.68	0.09	0.56	Negative	Negative
6/9/2022	14.0	7.97	0.44	1.17	0.10	0.50	Negative	Negative
6/10/2022	14.2	7.99	0.42	1.19	0.10	0.45	Negative	Negative
6/11/2022	14.4	7.97	0.44	0.90	0.11	0.54	Negative	Negative
6/12/2022	14.5	7.99	0.52	1.64	0.09	0.53	Negative	Negative
6/13/2022	14.9	7.98	0.53	3.97	0.10	0.48	Negative	Negative
6/14/2022	15.6	7.95	0.55	3.69	0.10	0.52	Negative	Negative
6/15/2022	16.3	7.96	0.52	2.13	0.10	0.41	Negative	Negative
6/16/2022	16.6	7.99	0.54	2.77	0.10	0.35	Negative	Negative
6/17/2022	16.0	8.00	0.60	3.96	0.08	0.43	Negative	Negative
6/18/2022	15.2	8.02	0.56	0.74	0.09	0.43	Negative	Negative
6/19/2022	15.2	8.03	0.58	1.01	0.08	0.42	Negative	Negative
6/20/2022	15.7	8.03	0.60	0.75	0.09	0.33	Negative	Negative
6/21/2022	16.2	8.01	0.69	4.23	0.09	0.34	Negative	Negative
6/22/2022	16.1	7.99	0.49	2.43	0.09	0.37	Negative	Negative
6/23/2022	15.4	7.93	0.47	1.32	0.10	0.56	Negative	Negative
6/24/2022	15.5	8.01	0.42	1.58	0.11	0.47	Negative	Negative
6/25/2022	16.0	8.01	0.63	1.50	0.12	0.46	Negative	Negative
6/26/2022	16.2	8.00	0.47	0.85	0.09	0.52	Negative	Negative
6/27/2022	16.1	8.01	0.41	0.76	0.08	0.50	Negative	Negative
6/28/2022	16.1	8.01	0.40	2.19	0.10	0.50	Negative	Negative
6/29/2022	16.6	7.99	0.30	0.67	0.09	0.46	Negative	Negative
6/30/2022	16.6	7.98	0.35	2.48	0.09	0.44	Negative	Negative
Avg	15.1	7.99	0.50	1.92	0.09	0.47	NA	NA
Min	13.4	7.93	0.30	0.64	0.08	0.33	NA	NA
Max	16.6	8.03	0.69	9.26	0.12	0.65	NA	NA



Finished Water Analysis																		
Date	Temp	pH	Phosphate	Fluoride		Free Cl ₂	Alkalinity (as CaCO ₃)		Chloride	Sulfate	Calcium (as CaCO ₃)	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	Calculated	Calculated	Lab	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					
6/1/2022	13.5	7.64	3.42	0.78		1.09	0	87	12	14	78	10.7	277	-0.65	0.86	0.44	Negative	Negative
6/2/2022	13.2	7.63	3.41	0.78		1.13	0	81	12	12	78	10.1	268	-0.70	1.00	0.45	Negative	Negative
6/3/2022	13.2	7.63	3.41	0.79		1.15	0	85	14	9	78	10.5	272	-0.68	1.56	0.42	Negative	Negative
6/4/2022	13.5	7.63	3.42	0.78		1.12	0	85	14	9	78	10.5	271	-0.67	1.56	0.42	Negative	Negative
6/5/2022	13.8	7.62	3.41	0.77		1.13	0	85	13	11	76	10.0	270	-0.69	1.18	0.43	Negative	Negative
6/6/2022	14.0	7.61	3.44	0.78	0.78	1.13	0	85	12	11	76	10.0	268	-0.69	1.09	0.41	Negative	Negative
6/7/2022	13.7	7.60	3.46	0.77		1.15	0	84	13	10	76	10.7	264	-0.71	1.30	0.42	Negative	Negative
6/8/2022	13.1	7.61	3.45	0.78		1.13	0	84	12	8	86	9.5	263	-0.66	1.50	0.37	Negative	Negative
6/9/2022	13.5	7.61	3.42	0.78		1.11	0	84	12	10	82	11.2	263	-0.67	1.20	0.40	Negative	Negative
6/10/2022	13.8	7.60	3.42	0.77		1.12	0	84	13	10	76	9.7	266	-0.70	1.30	0.42	Negative	Negative
6/11/2022	14.1	7.60	3.42	0.79		1.11	0	84	13	11	78	9.6	265	-0.69	1.18	0.44	Negative	Negative
6/12/2022	14.3	7.60	3.42	0.75		1.12	0	82	12	11	74	9.7	264	-0.72	1.11	0.43	Negative	Negative
6/13/2022	14.5	7.60	3.42	0.78	0.78	1.11	0	84	11	11	76	9.7	264	-0.69	1.00	0.39	Negative	Negative
6/14/2022	15.1	7.59	3.42	0.79		1.12	0	84	12	9	76	9.7	263	-0.69	1.33	0.39	Negative	Negative
6/15/2022	15.8	7.56	3.42	0.78		1.17	0	84	13	12	82	9.7	265	-0.66	1.08	0.45	Negative	Negative
6/16/2022	16.3	7.57	3.44	0.79		1.22	0	84	14	10	76	9.6	267	-0.68	1.35	0.43	Negative	Negative
6/17/2022	15.8	7.60	3.44	0.78		1.21	0	82	13	10	74	10.0	259	-0.68	1.26	0.42	Negative	Negative
6/18/2022	14.7	7.63	3.43	0.78		1.23	0	82	12	8	74	10.2	255	-0.68	1.44	0.37	Negative	Negative
6/19/2022	14.5	7.62	3.42	0.78		1.22	0	82	12	8	74	10.2	255	-0.69	1.44	0.37	Negative	Negative
6/20/2022	14.8	7.61	3.42	0.79		1.22	0	82	12	9	76	10.0	258	-0.68	1.33	0.39	Negative	Negative
6/21/2022	15.4	7.60	3.42	0.78	0.76	1.22	0	82	12	10	74	10.0	259	-0.69	1.22	0.41	Negative	Negative
6/22/2022	15.4	7.59	3.43	0.77		1.22	0	84	12	10	78	10.1	257	-0.66	1.20	0.40	Negative	Negative
6/23/2022	14.7	7.59	3.41	0.78		1.24	0	82	11	9	80	10.1	251	-0.68	1.17	0.36	Negative	Negative
6/24/2022	14.1	7.60	3.40	0.81		1.22	0	82	11	13	72	10.2	246	-0.73	0.84	0.43	Negative	Negative
6/25/2022	14.7	7.59	3.41	0.79		1.20	0	82	10	11	78	10.1	251	-0.69	0.95	0.39	Negative	Negative
6/26/2022	15.1	7.59	3.41	0.79		1.22	0	82	10	9	72	9.9	249	-0.72	1.10	0.35	Negative	Negative
6/27/2022	15.1	7.60	3.41	0.79	0.79	1.19	0	80	10	10	72	9.9	247	-0.72	1.02	0.38	Negative	Negative
6/28/2022	15.1	7.59	3.41	0.81		1.20	0	78	12	9	68	10.0	245	-0.76	1.30	0.41	Negative	Negative
6/29/2022	15.4	7.58	3.41	0.81		1.19	0	78	10	10	74	10.1	247	-0.73	1.04	0.40	Negative	Negative
6/30/2022	15.6	7.58	3.41	0.79		1.24	0	79	10	9	76	9.3	247	-0.71	1.14	0.37	Negative	Negative
Avg	14.5	7.60	3.42	0.78	0.78	1.17	0	83	12	10	76	10.0	260	-0.69	1.20	0.41	NA	NA
Min	13.1	7.56	3.40	0.75	0.76	1.09	0	78	10	8	68	9.3	245	-0.76	0.84	0.35	NA	NA
Max	16.3	7.64	3.46	0.81	0.79	1.24	0	87	14	14	86	11.2	277	-0.65	1.56	0.45	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
6/1/2022	0.58	1.31	2.58	0.67	0.023	0.023	96	0	0.0	0.019
6/2/2022	0.45	0.88	3.14	0.48	0.023	0.023	96	0	0.0	0.019
6/3/2022	0.51	0.64	3.02	0.45	0.023	0.023	96	0	0.0	0.019
6/4/2022	0.60	0.98	4.61	0.48	0.023	0.023	96	0	0.0	0.019
6/5/2022	0.55	1.04	4.05	0.51	0.023	0.023	96	0	0.0	0.019
6/6/2022	0.48	1.02	4.14	0.44	0.023	0.023	96	0	0.0	0.019
6/7/2022	0.61	9.26	4.31	0.41	0.023	0.023	96	0	0.0	0.019
6/8/2022	0.44	0.68	4.22	0.40	0.023	0.023	96	0	0.0	0.019
6/9/2022	0.44	1.17	2.72	0.35	0.023	0.023	96	0	0.0	0.019
6/10/2022	0.42	1.19	3.31	0.35	0.023	0.023	96	0	0.0	0.019
6/11/2022	0.44	0.90	2.94	0.35	0.023	0.023	96	0	0.0	0.019
6/12/2022	0.52	1.64	3.42	0.42	0.023	0.023	96	0	0.0	0.019
6/13/2022	0.53	3.97	2.50	0.38	0.023	0.023	96	0	0.0	0.019
6/14/2022	0.55	3.69	2.55	0.35	0.023	0.023	96	0	0.0	0.019
6/15/2022	0.52	2.13	3.21	0.32	0.023	0.023	96	0	0.0	0.019
6/16/2022	0.54	2.77	3.04	0.36	0.023	0.023	96	0	0.0	0.019
6/17/2022	0.60	3.96	2.76	0.36	0.023	0.023	96	0	0.0	0.019
6/18/2022	0.56	0.74	2.64	0.38	0.023	0.023	96	0	0.0	0.019
6/19/2022	0.58	1.01	3.04	0.40	0.023	0.023	96	0	0.0	0.019
6/20/2022	0.60	0.75	2.90	0.40	0.023	0.023	96	0	0.0	0.019
6/21/2022	0.69	4.23	4.20	0.45	0.022	0.023	96	0	0.0	0.018
6/22/2022	0.49	2.43	4.32	0.45	0.020	0.021	96	0	0.0	0.018
6/23/2022	0.47	1.32	3.89	0.43	0.021	0.021	96	0	0.0	0.017
6/24/2022	0.42	1.58	2.46	0.42	0.021	0.021	96	0	0.0	0.018
6/25/2022	0.63	1.50	2.58	0.49	0.021	0.021	96	0	0.0	0.018
6/26/2022	0.47	0.85	2.31	0.53	0.021	0.021	96	0	0.0	0.018
6/27/2022	0.41	0.76	2.11	0.44	0.021	0.021	96	0	0.0	0.018
6/28/2022	0.40	2.19	2.16	0.39	0.021	0.021	96	0	0.0	0.018
6/29/2022	0.30	0.67	2.10	0.36	0.021	0.021	96	0	0.0	0.018
6/30/2022	0.35	2.48	2.45	0.32	0.021	0.021	96	0	0.0	0.018
Avg	0.50	1.92	3.12	0.42	0.022	0.022	96	0	0.0	0.018
Min	0.30	0.64	2.10	0.32	0.020	0.021	96	0	0.0	0.017
Max	0.69	9.26	4.61	0.67	0.023	0.023	96	0	0.0	0.019

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	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max	Average	Pass/Fail	Max
psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	psi/min		NTU	
6/1/2022	4.29	PASS	0.018	4.00	PASS	0.026	4.20	PASS	0.019	4.45	PASS	0.016	4.16	PASS	0.021	4.36	PASS	0.019	4.27	PASS	0.027	4.14	PASS	0.022
6/2/2022	4.29	PASS	0.017	4.00	PASS	0.026	4.20	PASS	0.018	4.46	PASS	0.016	4.18	PASS	0.021	4.43	PASS	0.019	4.30	PASS	0.027	4.15	PASS	0.022
6/3/2022	4.28	PASS	0.017	4.13	PASS	0.025	4.22	PASS	0.019	4.39	PASS	0.016	4.16	PASS	0.021	4.39	PASS	0.019	4.34	PASS	0.027	4.17	PASS	0.021
6/4/2022	4.30	PASS	0.018	4.08	PASS	0.026	4.25	PASS	0.018	4.42	PASS	0.016	4.20	PASS	0.021	4.38	PASS	0.019	4.28	PASS	0.027	4.16	PASS	0.021
6/5/2022	4.28	PASS	0.017	4.03	PASS	0.026	4.44	PASS	0.018	4.50	PASS	0.016	4.19	PASS	0.020	4.40	PASS	0.019	4.27	PASS	0.027	4.16	PASS	0.019
6/6/2022	4.28	PASS	0.018	4.02	PASS	0.026	4.67	PASS	0.019	4.47	PASS	0.016	4.18	PASS	0.020	4.42	PASS	0.019	4.35	PASS	0.027	4.15	PASS	0.012
6/7/2022	4.33	PASS	0.018	4.04	PASS	0.025	4.38	PASS	0.018	4.44	PASS	0.016	4.16	PASS	0.020	4.38	PASS	0.018	4.51	PASS	0.027	4.18	PASS	0.018
6/8/2022	4.30	PASS	0.018	4.06	PASS	0.026	4.31	PASS	0.019	4.44	PASS	0.016	4.18	PASS	0.020	4.41	PASS	0.019	4.45	PASS	0.027	4.17	PASS	0.012
6/9/2022	4.30	PASS	0.018	4.04	PASS	0.026	4.35	PASS	0.019	4.50	PASS	0.016	4.17	PASS	0.020	4.44	PASS	0.019	4.47	PASS	0.027	4.16	PASS	0.012
6/10/2022	4.29	PASS	0.017	4.04	PASS	0.028	4.35	PASS	0.019	4.49	PASS	0.016	4.34	PASS	0.022	4.44	PASS	0.019	4.43	PASS	0.027	4.14	PASS	0.012
6/11/2022	4.31	PASS	0.018	4.01	PASS	0.026	4.33	PASS	0.018	4.49	PASS	0.016	4.29	PASS	0.020	4.45	PASS	0.021	4.44	PASS	0.027	4.14	PASS	0.012
6/12/2022	4.34	PASS	0.018	4.04	PASS	0.026	4.32	PASS	0.018	4.50	PASS	0.016	4.32	PASS	0.020	4.40	PASS	0.019	4.44	PASS	0.027	4.19	PASS	0.012
6/13/2022	4.30	PASS	0.017	4.02	PASS	0.026	4.35	PASS	0.018	4.55	PASS	0.016	4.28	PASS	0.020	4.39	PASS	0.020	4.45	PASS	0.027	4.19	PASS	0.012
6/14/2022	4.29	PASS	0.018	4.03	PASS	0.028	4.33	PASS	0.018	4.59	PASS	0.016	4.25	PASS	0.022	4.47	PASS	0.020	4.43	PASS	0.027	4.18	PASS	0.012
6/15/2022	4.41	PASS	0.018	3.97	PASS	0.027	4.31	PASS	0.018	4.53	PASS	0.016	4.22	PASS	0.020	4.38	PASS	0.019	4.42	PASS	0.027	4.16	PASS	0.012
6/16/2022	4.39	PASS	0.018	3.97	PASS	0.026	4.30	PASS	0.018	4.50	PASS	0.016	4.18	PASS	0.020	4.44	PASS	0.020	4.48	PASS	0.027	4.13	PASS	0.011
6/17/2022	4.33	PASS	0.018	3.98	PASS	0.026	4.30	PASS	0.018	4.54	PASS	0.016	4.16	PASS	0.020	4.43	PASS	0.020	4.39	PASS	0.027	4.13	PASS	0.012
6/18/2022	4.33	PASS	0.019	3.98	PASS	0.026	4.37	PASS	0.018	4.52	PASS	0.016	4.19	PASS	0.025	4.37	PASS	0.020	4.37	PASS	0.027		Maint	
6/19/2022	4.32	PASS	0.019	3.97	PASS	0.027	4.28	PASS	0.018	4.50	PASS	0.016	4.20	PASS	0.020	4.39	PASS	0.019	4.43	PASS	0.027		Maint	
6/20/2022	4.31	PASS	0.019	4.00	PASS	0.026	4.29	PASS	0.018	4.49	PASS	0.016	4.20	PASS	0.020	4.38	PASS	0.020	4.37	PASS	0.028	4.19	PASS	0.022
6/21/2022	4.35	PASS	0.020	3.99	PASS	0.026	4.28	PASS	0.021	4.48	PASS	0.016	4.19	PASS	0.023	4.40	PASS	0.021	4.37	PASS	0.028	4.16	PASS	0.022
6/22/2022	4.31	PASS	0.021	3.98	PASS	0.027	4.25	PASS	0.024	4.42	PASS	0.018	4.16	PASS	0.021	4.39	PASS	0.020	4.38	PASS	0.029	4.15	PASS	0.023
6/23/2022	4.34	PASS	0.019	3.98	PASS	0.025	4.25	PASS	0.023	4.64	PASS	0.016	4.17	PASS	0.022	4.38	PASS	0.020	4.36	PASS	0.028	4.17	PASS	0.021
6/24/2022	4.31	PASS	0.020	4.01	PASS	0.025	4.26	PASS	0.021	4.59	PASS	0.017	4.16	PASS	0.021	4.34	PASS	0.020	4.34	PASS	0.028	4.15	PASS	0.022
6/25/2022	4.29	PASS	0.019	3.98	PASS	0.026	4.25	PASS	0.020	4.49	PASS	0.017	4.19	PASS	0.024	4.34	PASS	0.020	4.33	PASS	0.029	4.13	PASS	0.021
6/26/2022	4.27	PASS	0.019	3.97	PASS	0.027	4.28	PASS	0.021	4.60	PASS	0.017	4.15	PASS	0.024	4.56	PASS	0.020	4.33	PASS	0.028	4.21	PASS	0.021
6/27/2022	4.31	PASS	0.019	3.97	PASS	0.028	4.27	PASS	0.020	4.61	PASS	0.017	4.14	PASS	0.024	4.49	PASS	0.021	4.35	PASS	0.027	4.38	PASS	0.022
6/28/2022	4.31	PASS	0.019	4.01	PASS	0.029	4.28	PASS	0.020	4.61	PASS	0.018	4.16	PASS	0.025	4.45	PASS	0.020	4.35	PASS	0.028	4.40	PASS	0.021
6/29/2022	4.29	PASS	0.019	4.09	PASS	0.026	4.25	PASS	0.020	4.56	PASS	0.017	4.15	PASS	0.021	4.48	PASS	0.020	4.36	PASS	0.028	4.29	PASS	0.021
6/30/2022	4.32	PASS	0.019	4.02	PASS	0.025	4.23	PASS	0.020	4.59	PASS	0.017	4.13	PASS	0.024	4.43	PASS	0.020	4.33	PASS	0.028	4.28	PASS	0.021
Avg	4.31		0.018	4.01		0.026	4.31		0.019	4.51		0.016	4.19		0.021	4.41		0.020	4.38		0.027	4.19		0.017
Min	4.27		0.017	3.97		0.025	4.20		0.018	4.39		0.016	4.13		0.020	4.34		0.018	4.27		0.027	4.13		0.011
Max	4.41		0.021	4.13		0.029	4.67		0.024	4.64		0.018	4.34		0.025	4.56		0.021	4.51		0.029	4.40		0.023

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



Treatment Chemical Dosages											
Date	Treated Water	Sodium Hypochlorite					Phosphoric Acid		Hydrofluorosilicic 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 ₂					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
6/1/2022	9.3	0.48	0.27	0.67	1.25	1.09	3.35	3.42	0.10	0.63	0.78
6/2/2022	9.4	0.58	0.33	0.62	1.27	1.13	3.35	3.41	0.08	0.63	0.78
6/3/2022	8.9	0.42	0.33	0.61	1.26	1.15	3.35	3.41	0.09	0.63	0.79
6/4/2022	9.5	0.47	0.31	0.68	1.27	1.12	3.35	3.42	0.09	0.63	0.78
6/5/2022	8.3	0.52	0.34	0.64	1.27	1.13	3.35	3.41	0.09	0.63	0.77
6/6/2022	8.9	0.56	0.36	0.72	1.27	1.13	3.32	3.44	0.09	0.63	0.78
6/7/2022	8.7	0.65	0.43	0.70	1.28	1.15	3.26	3.46	0.08	0.63	0.77
6/8/2022	8.4	0.56	0.42	0.72	1.22	1.13	3.24	3.45	0.09	0.63	0.78
6/9/2022	8.0	0.50	0.39	0.75	1.25	1.11	3.22	3.42	0.10	0.63	0.78
6/10/2022	8.1	0.45	0.35	0.77	1.23	1.12	3.22	3.42	0.10	0.63	0.77
6/11/2022	7.7	0.54	0.35	0.78	1.23	1.11	3.22	3.42	0.11	0.63	0.79
6/12/2022	8.1	0.53	0.36	0.77	1.26	1.12	3.22	3.42	0.09	0.63	0.75
6/13/2022	8.5	0.48	0.35	0.79	1.23	1.11	3.22	3.42	0.10	0.63	0.78
6/14/2022	9.3	0.52	0.36	0.73	1.25	1.12	3.21	3.42	0.10	0.63	0.79
6/15/2022	10.6	0.41	0.34	0.84	1.31	1.17	3.21	3.42	0.10	0.63	0.78
6/16/2022	8.8	0.35	0.27	0.92	1.37	1.22	3.21	3.44	0.10	0.63	0.79
6/17/2022	9.3	0.43	0.26	0.95	1.35	1.21	3.21	3.44	0.08	0.63	0.78
6/18/2022	9.1	0.43	0.28	0.90	1.35	1.23	3.21	3.43	0.09	0.63	0.78
6/19/2022	9.0	0.42	0.29	0.92	1.36	1.22	3.21	3.42	0.08	0.63	0.78
6/20/2022	8.9	0.33	0.26	0.96	1.36	1.22	3.21	3.42	0.09	0.63	0.79
6/21/2022	9.8	0.34	0.23	0.97	1.36	1.22	3.21	3.42	0.09	0.63	0.78
6/22/2022	11.1	0.37	0.25	0.94	1.36	1.22	3.21	3.43	0.09	0.63	0.77
6/23/2022	10.0	0.56	0.34	0.83	1.35	1.24	3.20	3.41	0.10	0.63	0.78
6/24/2022	10.8	0.47	0.37	0.79	1.32	1.22	3.20	3.40	0.11	0.63	0.81
6/25/2022	9.9	0.46	0.35	0.75	1.33	1.20	3.20	3.41	0.12	0.63	0.79
6/26/2022	10.5	0.52	0.38	0.71	1.34	1.22	3.20	3.41	0.09	0.63	0.79
6/27/2022	10.3	0.50	0.39	0.85	1.30	1.19	3.20	3.41	0.08	0.63	0.79
6/28/2022	10.4	0.50	0.39	0.86	1.32	1.20	3.20	3.41	0.10	0.63	0.81
6/29/2022	9.4	0.46	0.37	0.94	1.32	1.19	3.20	3.41	0.09	0.63	0.81
6/30/2022	10.5	0.44	0.35	0.90	1.36	1.24	3.20	3.41	0.09	0.63	0.79
Avg	9.3	0.47	0.34	0.80	1.30	1.17	3.24	3.42	0.09	0.63	0.78
Min	7.7	0.33	0.23	0.61	1.22	1.09	3.20	3.40	0.08	0.63	0.75
Max	11.1	0.65	0.43	0.97	1.37	1.24	3.35	3.46	0.12	0.63	0.81



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 ₂	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	TIT-1000	Calculated	Calculated	
6/1/2022	60.7	2,061	0.48	984	28.7	23.0	8.7	409	1.02	417	1401	13.6	6.00	Y
6/2/2022	51.2	2,444	0.58	1415	28.7	25.0	8.9	414	1.09	451	1866	13.4	6.00	Y
6/3/2022	58.0	2,155	0.42	909	28.7	23.4	8.5	422	1.10	463	1371	13.6	6.00	Y
6/4/2022	67.2	1,862	0.47	874	28.8	24.6	8.9	411	1.08	445	1318	14.0	6.00	Y
6/5/2022	67.6	1,850	0.52	961	28.7	24.7	7.8	472	1.10	517	1478	14.0	6.00	Y
6/6/2022	57.6	2,173	0.56	1211	28.8	24.0	8.5	424	1.09	461	1672	14.3	6.00	Y
6/7/2022	50.9	2,455	0.65	1605	28.9	24.0	8.1	445	1.11	493	2099	14.0	6.00	Y
6/8/2022	50.2	2,493	0.56	1399	28.7	24.4	7.8	465	1.06	493	1893	13.7	6.00	Y
6/9/2022	47.6	2,626	0.50	1326	28.8	24.3	7.5	485	1.02	494	1820	14.0	6.00	Y
6/10/2022	48.1	2,600	0.45	1166	28.8	24.4	7.6	481	1.08	520	1686	14.2	6.00	Y
6/11/2022	58.6	2,135	0.54	1148	28.7	24.3	7.2	505	1.06	535	1683	14.4	6.00	Y
6/12/2022	59.0	2,120	0.53	1118	28.7	24.0	7.5	482	1.07	519	1637	14.5	6.00	Y
6/13/2022	57.7	2,166	0.48	1039	28.8	24.3	7.9	458	1.08	493	1532	14.9	6.00	Y
6/14/2022	58.2	2,149	0.52	1108	28.8	23.9	8.7	414	1.03	425	1533	15.6	4.00	Y
6/15/2022	58.1	2,153	0.41	877	28.9	24.5	9.9	370	1.08	398	1275	16.3	4.00	Y
6/16/2022	58.6	2,136	0.35	746	28.9	24.9	8.3	442	1.20	530	1276	16.6	4.00	Y
6/17/2022	57.5	2,177	0.43	936	28.9	23.3	8.7	411	1.17	482	1417	16.0	4.00	Y
6/18/2022	65.3	1,916	0.43	825	28.9	23.4	8.3	434	1.19	515	1340	15.2	4.00	Y
6/19/2022	65.9	1,898	0.42	788	28.9	24.0	8.5	427	1.16	495	1283	15.2	4.00	Y
6/20/2022	66.4	1,884	0.33	629	28.8	23.7	8.3	436	1.16	505	1134	15.7	4.00	Y
6/21/2022	58.3	2,144	0.34	719	28.9	22.3	9.1	385	1.19	456	1175	16.2	4.00	Y
6/22/2022	64.6	1,937	0.37	715	29.0	22.4	10.1	350	1.19	415	1130	16.1	4.00	Y
6/23/2022	65.0	1,924	0.56	1083	28.8	25.2	9.3	396	1.21	481	1563	15.4	4.00	Y
6/24/2022	63.5	1,969	0.47	923	28.9	24.2	10.0	365	1.19	432	1356	15.5	4.00	Y
6/25/2022	74.8	1,672	0.46	771	28.8	22.6	9.0	391	1.12	436	1207	16.0	4.00	Y
6/26/2022	75.4	1,658	0.52	856	28.9	23.6	9.5	378	1.16	440	1296	16.2	4.00	Y
6/27/2022	71.0	1,763	0.50	885	28.9	22.7	9.4	378	1.14	430	1315	16.1	4.00	Y
6/28/2022	68.8	1,818	0.50	906	29.0	23.4	9.4	383	1.17	449	1354	16.1	4.00	Y
6/29/2022	62.4	2,004	0.46	928	28.8	23.6	8.6	418	1.14	475	1403	16.6	4.00	Y
6/30/2022	57.1	2,190	0.44	963	28.9	24.7	10.0	367	1.21	445	1408	16.6	4.00	Y
Avg	60.8	2,084	0.47	994	28.8	23.9	8.7	421	1.12	470	1464	15.1	4.87	NA
Min	47.6	1,658	0.33	629	28.7	22.3	7.2	350	1.02	398	1130	13.4	4.00	NA
Max	75.4	2,626	0.65	1605	29.0	25.2	10.1	505	1.21	535	2099	16.6	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 Cl ₂)																								
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
6/1/2022																								
6/2/2022		0.30	0.38			0.75	0.85		0.74	0.59	0.71	0.39	0.79	0.87	0.70									
6/3/2022																								
6/4/2022																								
6/5/2022																								
6/6/2022																								0.98
6/7/2022	0.21															0.78	0.82	0.67	0.72	0.54				
6/8/2022									0.87	0.37	0.52	0.69	0.29	1.01	0.79						0.91	0.28		
6/9/2022		0.42	0.45	0.45	0.94			0.97					0.30											
6/10/2022																								
6/11/2022																								
6/12/2022																								
6/13/2022																								0.92
6/14/2022									0.54	0.42	0.42	0.71	0.30	1.00	0.72	0.88	0.83	0.82	0.73	0.64		0.42		
6/15/2022																								
6/16/2022		0.75	0.71	0.45	1.01				0.66	0.50	0.50	0.59	0.24	0.99	0.77									
6/17/2022																								
6/18/2022																								
6/19/2022																								
6/20/2022																								0.92
6/21/2022																								
6/22/2022									0.91	0.52	0.60	0.82	0.80	1.15	0.83									
6/23/2022																								
6/24/2022																								
6/25/2022																								
6/26/2022																								
6/27/2022																								
6/28/2022									1.04	0.52	0.71	0.85	0.41	1.05	0.78									
6/29/2022																								0.98
6/30/2022									0.84	0.49	0.71	0.76	0.34	1.07	0.75									
Average	0.21		0.59				0.86					0.68					0.74				0.91	0.35		0.95
Min	0.21		0.30				0.75					0.24					0.54				0.91	0.28		0.92
Max	0.21		1.01				0.97					1.15					0.88				0.91	0.42		0.98



MONITORING STATION ADDRESSES

- | | | |
|--|---|---|
| 1. Sample station at corner of 5758 M-25 & F | 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. Skizak's Sport Shop, 807 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 ₂)																								
WSSN:	2465		2960			3565			3570		4280		4440			5330		5335		5540	7125			7134
	Fraser Twp.		Hampton Twp.			Kawkawlin Twp.			Kawkawlin Met.		Merritt Twp.		Monitor Twp.			City Pinconning		Pinconning Twp.		Portsmouth	Williams Twp.			Wisner
Date	34	35	37	38	39	40	41	42	43	45	46	48	49	52	55	58	59	61	63	65	68	69	70	72
6/1/2022			0.46	0.55	0.36																			
6/2/2022	0.38	0.72				0.95	0.47		0.69				0.85	0.48	0.58	0.40		0.74	0.44					
6/3/2022																								
6/4/2022																								
6/5/2022																								
6/6/2022																								
6/7/2022			0.58	0.55	0.50				0.34											0.52				0.42
6/8/2022																								
6/9/2022								0.90	0.75				0.93	0.65	0.74	0.37					0.34	0.69	0.39	
6/10/2022																								
6/11/2022																								
6/12/2022																								
6/13/2022																								
6/14/2022												0.43									0.65	0.62	0.49	
6/15/2022			0.42	0.56	0.63																			
6/16/2022																								
6/17/2022																								
6/18/2022																								
6/19/2022																								
6/20/2022																								
6/21/2022																								
6/22/2022																								
6/23/2022																								
6/24/2022																								
6/25/2022																								
6/26/2022																								
6/27/2022																								
6/28/2022																								
6/29/2022			0.46																					
6/30/2022																								
Average	0.55		0.51			0.77			0.72		0.39		0.71			0.39		0.59		0.52	0.53			0.42
Min	0.38		0.36			0.47			0.69		0.34		0.48			0.37		0.44		0.52	0.34			0.42
Max	0.72		0.63			0.95			0.75		0.43		0.93			0.40		0.74		0.52	0.69			0.42




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. 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 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							
MICHIGAN DEPARTMENT OF PUBLIC HEALTH Bureau of Environmental Health Water Supplier Bacteriological Analysis Report				Name of Water Supply Bay Area Water Treatment Plant June, 2022			
COUNTY	COMMUNITY	WSSN NUMBER	DISTRIBUTION SYSTEM SAMPLES				
			avg free cl2 mg/L	NUMBER REQUIRED	NUMBER COLLECTED	NUMBER POSITIVE	NUMBER REPEAT SAMPLES
Tuscola	Akron	0072	0.21	1	1	0	0
BAY	Bangor Township	0390	0.59	10	10	0	0
BAY	Bangor-Monitor Dist.	0400	0.86	3	3	0	0
BAY	Bay City	0470	0.68	30	50	1	3
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	0.35	2	2	0	0
BAY	Essexville	2180	0.95	4	4	0	0
BAY	Fraser Township	2465	0.55	2	2	0	0
BAY	Hampton Township	2960	0.51	10	10	0	0
BAY	Kawkawlin Township	3565	0.77	3	3	0	0
BAY	Kawkawlin Metro Dist.	3570	0.72	2	2	0	0
BAY	Merritt Township	4280	0.39	2	2	0	0
BAY	Monitor Township	4440	0.71	6	6	0	0
BAY	City of Pinconning	5330	0.39	2	2	0	0
BAY	Pinconning Township	5335	0.59	2	2	0	0
BAY	Portsmouth Township	5540	0.52	1	1	0	0
BAY	Williams Township	7125	0.53	6	6	0	0
Tuscola	Wisner	7134	0.42	1	1	0	0
Average Free Cl2 Residual of All Distribution Sites			0.60	mg/L			
1. Total distribution samples			118				
2. Total distribution samples with detectable free cl2 residual			118				
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%				
							
-6/8/2022, Bay City sample #15 (1205 E Smith St.) was total coliform positive, E.coli negative							
-6/9/2022, Repeat samples #15, #15A (1204 E. Smith) & #15B (1304 E. Smith) were all total coliform negative, E.coli negative							
-6/9/2022, Free chlorine at #15A was 0.35. Free chlorine at #15B was 0.24.							