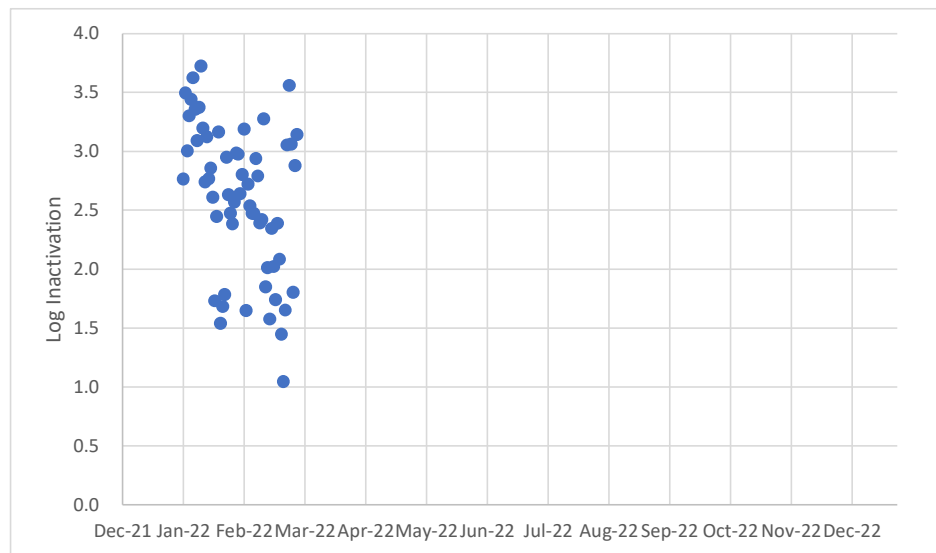


Benton Harbor C*T Calculation

Plant Name	Benton Harbor
Giardia Inactivation Target (log)	0.5
Segment 1 Name	Intake (1)
Segment 1 Volume (gal)	208742
Segment 1 Factor	1
Segment 2 Name	Flocculation (2)
Segment 2 Volume (gal)	336600
Segment 2 Factor	0.7
Segment 3 Name	Sedimentation (2)
Segment 3 Volume (gal)	269280
Segment 3 Factor	0.3
Segment 4 Name	
Segment 4 Volume (gal)	
Segment 4 Factor	
Segment 5 Name	Reservoir (1)
Segment 5 Volume (gal/ft)	149600
Segment 5 Factor	0.5



Benton Harbor C*T Calculation

Date	Peak	Segment 2 - Flocculation (2)				Segment 3 - Sedimentation (2)			
	Low Service Flow	In Use	Residual	pH	Temp.	In Use	Residual	pH	Temp.
	gpm	%	mg/L		C	%	mg/L		C
1/1/2022	2358	100	1.53	7.8	6	100	1.19	7.8	6
1/2/2022	2433	100	2.02	7.7	6	100	1.53	7.7	6
1/3/2022	2439	100	1.75	7.9	5.5	100	1.92	7.9	5.5
1/4/2022	2363	100	1.95	7.7	4.7	100	1.76	7.7	4.7
1/5/2022	2444	100	2.11	8	7	100	1.47	8	7
1/6/2022	2449	100	2.21	7.9	6	100	2.01	7.9	6
1/7/2022	2453	100	2.25	7.9	5	100	1.84	7.9	5
1/8/2022	2413	100	2.24	8	4	100	1.91	8	4
1/9/2022	2393	100	2.47	8	4	100	2.06	8	4
1/10/2022	2441	100	2.09	7.4	4.2	100	2.09	7.4	4.2
1/11/2022	2545	100	2.04	7.5	3.7	100	1.86	7.5	3.7
1/12/2022	2430	100	1.75	7.55	3	100	1.57	7.55	3
1/13/2022	2745	100	2.17	7.49	4	100	1.75	7.49	4
1/14/2022	2619	100	1.9	7.5	3.5	100	1.4	7.5	3.5
1/15/2022	2399	100	2.14	8	3	100	2.05	8	3
1/16/2022	2417	100	2.05	8.1	3	100	1.85	8.1	3
1/17/2022	3512	100	2.08	8.1	3	100	1.44	8.1	3
1/18/2022	2737	100	2.21	8	3	100	1.63	8	3
1/19/2022	2376	100	1.86	7.6	4	100	1.82	7.6	4
1/20/2022	3349	100	1.56	8.1	4	100	1.14	8.1	4
1/21/2022	3461	100	1.95	8.1	3	100	1.44	8.1	3
1/22/2022	3447	100	2.05	8	3	100	1.34	8	3
1/23/2022	2430	100	2.34	8	3	100	1.92	8	3
1/24/2022	2677	100	2.25	8	3	100	2	8	3
1/25/2022	2727	100	2.19	8	3	100	1.76	8	3
1/26/2022	2811	100	2.02	7.9	3	100	1.87	7.9	3
1/27/2022	2536	100	2.02	8	3	100	1.92	8	3
1/28/2022	2439	100	2.34	7.9	3	100	1.74	7.9	3
1/29/2022	2421	100	2.04	7.7	2.7	100	2.03	7.7	2.7
1/30/2022	2412	100	1.81	7.7	2.5	100	1.74	7.7	2.5
1/31/2022	2450	100	2.01	7.7	3	100	1.51	7.7	3

Benton Harbor C*T Calculation

Date	Seg2 CT-M	Seg2 CT-R	Seg2 Ratio	Seg3 CT-M	Seg3 CT-R	Seg3 Ratio	Total Ratio	Total Inact.
	mg/L-min	mg/L-min	M/R	mg/L-min	mg/L-min	M/R	M/R	Log
1/1/2022	153	35	4.3	41	34	1.2	5.5	2.8
1/2/2022	196	36	5.5	51	34	1.5	7.0	3.5
1/3/2022	169	39	4.4	64	39	1.6	6.0	3.0
1/4/2022	194	39	5.0	60	38	1.6	6.6	3.3
1/5/2022	203	37	5.5	49	35	1.4	6.9	3.4
1/6/2022	213	39	5.5	66	38	1.7	7.3	3.6
1/7/2022	216	41	5.2	61	40	1.5	6.7	3.4
1/8/2022	219	46	4.8	64	45	1.4	6.2	3.1
1/9/2022	243	47	5.2	70	45	1.5	6.7	3.4
1/10/2022	202	36	5.5	69	36	1.9	7.4	3.7
1/11/2022	189	39	4.9	59	38	1.5	6.4	3.2
1/12/2022	170	41	4.2	52	40	1.3	5.5	2.7
1/13/2022	186	38	4.9	52	37	1.4	6.2	3.1
1/14/2022	171	39	4.4	43	37	1.2	5.5	2.8
1/15/2022	210	49	4.3	69	49	1.4	5.7	2.9
1/16/2022	200	50	4.0	62	49	1.2	5.2	2.6
1/17/2022	140	50	2.8	33	48	0.7	3.5	1.7
1/18/2022	190	49	3.9	48	47	1.0	4.9	2.4
1/19/2022	184	39	4.7	62	39	1.6	6.3	3.2
1/20/2022	110	45	2.4	27	43	0.6	3.1	1.5
1/21/2022	133	50	2.7	34	48	0.7	3.4	1.7
1/22/2022	140	49	2.9	31	46	0.7	3.6	1.8
1/23/2022	227	50	4.6	64	48	1.3	5.9	3.0
1/24/2022	198	49	4.0	60	48	1.2	5.3	2.6
1/25/2022	189	49	3.9	52	48	1.1	5.0	2.5
1/26/2022	169	47	3.6	54	46	1.2	4.8	2.4
1/27/2022	188	49	3.9	61	48	1.3	5.1	2.6
1/28/2022	226	48	4.7	58	46	1.3	6.0	3.0
1/29/2022	199	45	4.4	68	45	1.5	6.0	3.0
1/30/2022	177	45	4.0	58	44	1.3	5.3	2.6
1/31/2022	193	44	4.4	50	42	1.2	5.6	2.8

Benton Harbor C*T Calculation

Date	Peak	Segment 2 - Flocculation (2)				Segment 3 - Sedimentation (2)			
	Low Service Flow	In Use	Residual	pH	Temp.	In Use	Residual	pH	Temp.
	gpm	%	mg/L		C	%	mg/L		C
2/1/2022	2397	100	2.1	7.7	3.3	100	2.02	7.7	3.3
2/2/2022	3540	100	1.91	8.2	3	100	1.77	8.1	3
2/3/2022	2480	100	2.24	7.9	2.5	100	1.63	7.9	2.5
2/4/2022	2408	100	1.99	8	2.5	100	1.74	8	2.5
2/5/2022	2394	100	1.97	8	2	100	1.83	8	2
2/6/2022	2390	100	1.94	8	2	100	1.9	8	2
2/7/2022	2423	100	1.88	7.4	2.8	100	1.41	7.4	2.8
2/8/2022	2398	100	2.1	7.8	2.5	100	1.63	7.8	2.5
2/9/2022	2503	100	1.81	7.7	2	100	1.52	7.7	2
2/10/2022	2518	100	1.67	7.63	2.5	100	1.6	7.63	2.5
2/11/2022	2477	100	2.31	7.6	2.8	100	2	7.6	2.8
2/12/2022	3593	100	2.1	8	3	100	1.87	8	3
2/13/2022	2749	100	1.91	8.1	2	100	1.7	8.1	2
2/14/2022	3532	100	1.89	8	2	100	1.53	8	2
2/15/2022	2531	100	1.54	7.6	3	100	1.46	7.6	3
2/16/2022	2884	100	1.81	7.8	2.2	100	1.48	7.8	2.2
2/17/2022	3924	100	1.98	7.7	2.5	100	1.84	7.7	2.5
2/18/2022	2729	100	2.01	7.9	2.5	100	1.96	7.9	2.5
2/19/2022	2805	100	1.5	7.6	2.2	100	1.87	7.6	2.2
2/20/2022	2632	100	0.85	7.6	2.2	100	1.3	7.6	2.2
2/21/2022	3452	100	0.98	8	3	100	1.04	8	3
2/22/2022	3748	100	1.95	8	3	100	1.68	8	3
2/23/2022	2574	100	2.52	7.7	3	100	1.32	7.7	3
2/24/2022	2286	100	2.66	8.1	4	100	1.98	8.1	4
2/25/2022	2619	100	2.76	8.1	3	100	2.14	8.1	4
2/26/2022	2957	100	1.57	8.1	3	100	1.84	8.1	3
2/27/2022	2446	100	2.22	7.9	4	100	1.14	7.9	4
2/28/2022	2441	100	2.1	7.74	3.5	100	2.06	7.74	3.5

Benton Harbor C*T Calculation

Date	Seg2 CT-M	Seg2 CT-R	Seg2 Ratio	Seg3 CT-M	Seg3 CT-R	Seg3 Ratio	Total Ratio	Total Inact.
	mg/L-min	mg/L-min	M/R	mg/L-min	mg/L-min	M/R	M/R	Log
2/1/2022	206	43	4.8	68	43	1.6	6.4	3.2
2/2/2022	127	51	2.5	40	49	0.8	3.3	1.6
2/3/2022	213	49	4.3	53	47	1.1	5.4	2.7
2/4/2022	195	50	3.9	58	49	1.2	5.1	2.5
2/5/2022	194	52	3.7	62	51	1.2	4.9	2.5
2/6/2022	191	52	3.7	64	52	1.2	4.9	2.5
2/7/2022	183	39	4.6	47	38	1.2	5.9	2.9
2/8/2022	206	47	4.4	55	45	1.2	5.6	2.8
2/9/2022	170	46	3.7	49	45	1.1	4.8	2.4
2/10/2022	156	43	3.6	51	43	1.2	4.8	2.4
2/11/2022	220	44	5.0	65	43	1.5	6.6	3.3
2/12/2022	138	49	2.8	42	48	0.9	3.7	1.8
2/13/2022	164	53	3.1	50	52	1.0	4.0	2.0
2/14/2022	126	51	2.4	35	50	0.7	3.2	1.6
2/15/2022	143	41	3.5	47	40	1.2	4.7	2.3
2/16/2022	148	47	3.1	41	46	0.9	4.0	2.0
2/17/2022	119	45	2.6	38	45	0.8	3.5	1.7
2/18/2022	174	49	3.6	58	48	1.2	4.8	2.4
2/19/2022	126	43	2.9	54	44	1.2	4.2	2.1
2/20/2022	76	39	1.9	40	42	1.0	2.9	1.4
2/21/2022	67	44	1.5	24	44	0.6	2.1	1.0
2/22/2022	123	48	2.5	36	47	0.8	3.3	1.7
2/23/2022	231	45	5.1	41	41	1.0	6.1	3.1
2/24/2022	274	49	5.6	70	47	1.5	7.1	3.6
2/25/2022	248	53	4.7	66	47	1.4	6.1	3.1
2/26/2022	125	48	2.6	50	49	1.0	3.6	1.8
2/27/2022	214	44	4.8	38	40	0.9	5.8	2.9
2/28/2022	203	43	4.7	68	43	1.6	6.3	3.1