

2023 TRWA Sampling Results for Nitrate (mg/l)			TARGET FOR CONCERN - GREATER THAN 0.4 MG/L								
Sample	Site No.	River & Location Description	April	May	June	July	August	Sept.	Oct.	AVG**	
1	TNT-01	Taunton R. Br, Center St., Berkley	0.45	0.37	0.51	0.49	0.63	0.51	0.40	0.49	
2	TNT-02	Taunton R. Br, Plain St., Taunton	0.31	0.33	0.78	0.37	0.48	0.39	0.47	0.47	
3	BED-01/TNT-03	Taunton R., Rt 18, Bedford St., Bridgewater	0.30	0.38	0.52	0.48	0.63	0.33	0.35	0.45	
4	CHE-01/TNT-04	Taunton R. Br, Cherry St., Bridgewater	0.76	0.54	0.48	0.57	1.13	0.54	0.79	0.67	
5	ASO-01	Assonet R. Bridge, Rt 79	0.06	0.05	0.05	0.07	0.06	0.05	0.09	0.06	
6	SEG	Segregansett R. Br, Brook St. Dighton	0.27	0.14	0.31	0.13	0.34	0.06	0.23	0.20	
7	BER-01	Chuckamucksett Brk. Br, Berkley St.	0.86	0.69	1.19	0.37	1.37	0.12	0.85	0.77	
8	TMR-01	Three Mile R. Br, Rt 138, Somerset Ave.	0.43	0.24	0.51	0.34	0.47	0.40	0.35	0.38	
9	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	0.39	0.22	0.50	0.35	0.54	0.26	0.32	0.36	
10	TMR-03	Three Mile R. Br, Crane St., Norton	0.33	0.15	0.24	0.17	0.23	0.12	0.21	0.19	
11	MIL-01	Mill R., Ingell St., Taunton	0.23	0.07	NR	0.15	0.16	0.12	0.17	0.13	
12	MIL-02	Mill R., Washington St., Taunton	0.23	0.07	NR	0.13	0.14	0.08	0.15	0.11	
13	MIL-03	Mill R., Whittendon St., Taunton	0.19	0.05	NR	0.09	0.08	0.05	0.12	0.08	
14	FORGE	Forge R. Br, Rt 44, Raynham	0.31	0.20	0.32	0.16	0.41	0.23	0.25	0.26	
15	COT-01	Cotley R., Middleboro Ave, Taunton	0.21	0.13	0.30	0.11	0.47	0.05	0.17	0.20	
16	FBR-01	Furnace Brk., River St., E. Taunton	0.22	0.22	0.26	0.21	0.29	0.13	0.17	0.21	
17	CHU-01	Taunton River Br, Church St., Raynham	0.36	0.34	1.00	0.38	0.59	0.40	0.47	0.53	
18	TWH-01	Town R., Br, Hayward St., Bridgewater	0.32	0.17	0.54	0.34	0.47	0.23	0.27	0.34	
19	MAT-01	Matfield R., Br, High St., Bridgewater	0.79	0.81	0.98	0.58	1.31	0.45	0.79	0.82	
20	NEM-01	Nemasket R., Murdock St., Middleboro	0.09	0.17	0.16	0.10	0.20	0.12	0.12	0.14	
Month	Site No.	Duplicate and Blank Locations by Month	DUP #	Duplicate Results	BL #	Blank Results	** Avg is for the water quality months				
April	COT-01	Cotley R., Middleboro Ave, Taunton	DUP 1	0.21	BL 1	<0.05	of May through October used in				
	BER-01	Chuckamucksett Brk. Br, Berkley St.	DUP 2	0.87	BL 2	<0.05	NPDES permit TN limitation averaging.				
May	FBR-01	Furnace Brk., River St., E. Taunton	DUP 1	0.22	BL 1	<0.05					
	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	DUP 2	0.22	BL 2	<0.05	NR = Not Reported, no sample				
June	TNT-02	Taunton R. Br, Plain St., Taunton	DUP 1	0.78	BL 1	<0.05					
	ASO-01	Assonet R. Bridge, Rt 79	DUP 2	<0.05	BL 2	<0.05					
July	BED-01/TNT-03	Taunton R., Rt 18, Bedford St., Bridgewater	DUP 1	0.47	BL 1	0.06					
	SEG	Segregansett R. Br, Brook St. Dighton	DUP 2	0.47	BL 2	0.13					
August	TNT-02	Taunton R. Br, Plain St., Taunton	DUP 1	0.48	BL 1	<0.05					
	MAT-01	Matfield R., Br, High St., Bridgewater	DUP 2	1.32	BL 2	<0.05					
Sept.	COT-01	Cotley R., Middleboro Ave, Taunton	DUP 1	0.05	BL 1	<0.05					
	MIL-01	Mill R., Ingell St., Taunton	DUP 2	0.11	BL 2	<0.05					
Oct.	NEM-01	Nemasket R., Murdock St., Middleboro	DUP 1	0.12	BL 1	0.12					
	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	DUP 2	0.32	BL 2	0.08					

2023 TRWA Sampling Results for Total Phosphorus (mg/l)			TARGET FOR CONCERN - GREATER THAN 0.100 mg/l							AVG**
Sample	Site No.	River & Location Description	April	May	June	July	August	Sept.	Oct.	AVG**
1	TNT-01	Taunton R. Br, Center St., Berkley	0.079	0.080	0.084	0.125	0.150	0.094	0.078	0.102
2	TNT-02	Taunton R. Br, Plain St., Taunton	0.030	0.047	0.108	0.096	0.082	0.087	0.134	0.092
3	BED-01/TNT-03	Taunton R., Rt 18, Bedford St., Bridgewater	0.030	0.058	0.101	0.011	0.090	0.094	0.074	0.071
4	CHE-01/TNT-04	Taunton R. Br, Cherry St., Bridgewater	0.044	0.068	0.069	0.117	0.092	0.132	0.086	0.094
5	ASO-01	Assonet R. Bridge, Rt 79	0.014	0.037	0.040	0.070	0.104	0.061	0.054	0.061
6	SEG	Segregansett R. Br, Brook St. Dighton	0.019	0.038	0.043	0.064	0.064	0.073	0.051	0.055
7	BER-01	Chuckamucksett Brk. Br, Berkley St.	0.014	0.022	0.031	0.072	0.018	0.062	0.026	0.038
8	TMR-01	Three Mile R. Br, Rt 138, Somerset Ave.	0.018	0.035	0.034	0.060	0.044	0.053	0.036	0.044
9	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	0.021	0.037	0.044	0.070	0.047	0.067	0.038	0.050
10	TMR-03	Three Mile R. Br, Crane St., Norton	0.016	0.036	0.027	0.058	0.041	0.068	0.028	0.043
11	MIL-01	Mill R., Ingell St., Taunton	0.028	0.040	NR	0.041	0.056	0.060	0.035	0.047
12	MIL-02	Mill R., Washington St., Taunton	0.019	0.031	NR	0.037	0.039	0.054	0.030	0.038
13	MIL-03	Mill R., Whittendon St., Taunton	0.018	0.030	NR	0.033	0.036	0.050	0.033	0.036
14	FORGE	Forge R. Br, Rt 44, Raynham	0.032	0.052	0.087	0.128	0.145	0.136	0.097	0.107
15	COT-01	Cotley R., Middleboro Ave, Taunton	0.013	0.032	0.020	0.045	0.022	0.053	0.019	0.032
16	FBR-01	Furnace Brk., River St., E. Taunton	0.024	0.040	0.029	0.045	0.032	0.045	0.026	0.036
17	CHU-01	Taunton River Br, Church St., Raynham	0.031	0.075	0.077	0.102	0.073	0.098	0.068	0.082
18	TWH-01	Town R., Br, Hayward St., Bridgewater	0.057	0.060	0.095	0.151	0.120	0.158	0.096	0.113
19	MAT-01	Matfield R., Br, High St., Bridgewater	0.039	0.070	0.084	0.114	0.074	0.223	0.058	0.104
20	NEM-01	Nemasket R., Murdock St., Middleboro	0.130	0.036	0.038	0.101	0.046	0.077	0.037	0.056
		<b>Duplicate and Blank Locations by Month</b>		<b>Duplicate Results</b>	<b>Blank Results</b>		** Avg is for the water quality months of May through October (season AVG). NPDES permits use TP mo. avg. limits. Based on observations TRWA considers a season AVG $\geq$ 0.05 mg/l is concern.			
April	COT-01	Cotley R., Middleboro Ave, Taunton	DUP 1	0.012	BL 1	<0.0106				
	BER-01	Chuckamucksett Brk. Br, Berkley St.	DUP 2	<0.0106	BL 2	<0.0106				
May	FBR-01	Furnace Brk., River St., E. Taunton	DUP 1	0.068	BL 1	0.0191				
	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	DUP 2	0.033	BL 2	<0.0191				
June	TNT-02	Taunton R. Br, Plain St., Taunton	DUP 1	0.125	BL 1	<0.0106				
	ASO-01	Assonet R. Bridge, Rt 79	DUP 2	0.050	BL 2	<0.0106				
July	BED-01/TNT-03	Taunton R., Rt 18, Bedford St., Bridgewater	DUP 1	0.109	BL 1	<0.0106				
	SEG	Segregansett R. Br, Brook St. Dighton	DUP 2	0.271	BL 2	0.0723				
August	TNT-02	Taunton R. Br, Plain St., Taunton	DUP 1	0.089	BL 1	<0.0106				
	MAT-01	Matfield R., Br, High St., Bridgewater	DUP 2	0.078	BL 2	<0.0500				
Sept.	COT-01	Cotley R., Middleboro Ave, Taunton	DUP 1	0.06	BL 1	0.0165				
	MIL-01	Mill R., Ingell St., Taunton	DUP 2	0.06	BL 2	0.0149				
Oct.	NEM-01	Nemasket R., Murdock St., Middleboro	DUP 1	0.0372	BL 1	<0.0106				
	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	DUP 2	0.0329	BL 2	<0.0106				

2023 TRWA Sampling Results for Enterococci (colonies/100 ml)			TARGET FOR CONCERN - GREATER THAN 35 CFU/100 ML (Class B & SB waters)							
Sample	Site No.	River & Location Description	April	May	June	July	August	Sept.	Oct.	90 Day Geo Mean July to Sept
1	TNT-01	Taunton R. Br, Center St., Berkley (SB Cr. 104)	10	70	30	1420	190	2000	50	814
2	TNT-02	Taunton R. Br, Plain St., Taunton (SB Cr. 104)	10	20	140	1580	110	2000	50	703
3	BED-01/TNT-03	Taunton R., Rt 18, Bedford St., Bridgewater	10	20	10	830	10	790	50	187
4	CHE-01/TNT-04	Taunton R. Br, Cherry St., Bridgewater	10	20	20	2000	110	2000	50	761
5	ASO-01	Assonet R. Bridge, Rt 79	10	50	80	1140	170	1620	200	680
6	SEG	Segregansett R. Br, Brook St. Dighton	10	20	300	1100	120	1340	150	561
7	BER-01	Chuckamucksett Brk. Br, Berkley St.	50	310	240	870	480	1540	100	863
8	TMR-01	Three Mile R. Br, Rt 138, Somerset Ave.	10	40	100	810	190	1480	50	611
9	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	10	10	160	890	90	1940	200	538
10	TMR-03	Three Mile R. Br, Crane St., Norton	10	10	60	1460	260	1520	50	833
11	MIL-01	Mill R., Ingell St., Taunton	10	50	NR	520	200	1630	50	553
12	MIL-02	Mill R., Washington St., Taunton	10	20	NR	470	170	1360	50	477
13	MIL-03	Mill R., Whittendon St., Taunton	20	10	NR	230	80	630	50	226
14	FORGE	Forge R. Br, Rt 44, Raynham	20	30	190	900	360	1080	200	705
15	COT-01	Cotley R., Middleboro Ave, Taunton	50	10	200	1060	270	1830	50	806
16	FBR-01	Furnace Brk., River St., E. Taunton	10	50	90	250	120	530	250	251
17	CHU-01	Taunton River Br, Church St., Raynham	10	30	60	1170	40	1660	100	427
18	TWH-01	Town R., Br, Hayward St., Bridgewater	20	50	50	1740	290	2000	50	1003
19	MAT-01	Matfield R., Br, High St., Bridgewater	10	30	80	2000	110	2000	50	761
20	NEM-01	Nemasket R., Murdock St., Middleboro	10	10	30	260	20	1450	50	196
		<b>Duplicate and Blank Locations by Month</b>		<b>Duplicate Results</b>		<b>Blank Results</b>		** Geometric Mean for any 90 days		
April	COT-01	Cotley R., Middleboro Ave, Taunton	DUP 1	30		BL 1	<10		shall not exceed 35 CFU/100ml.	
	BER-01	Chuckamucksett Brk. Br, Berkley St.	DUP 2	<10		BL 2	<10		No more than 10% of all samples	
May	FBR-01	Furnace Brk., River St., E. Taunton	DUP 1	10		BL 1	<10		collected shall exceed 130 CFU/100ml.	
	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	DUP 2	10		BL 2	<10		Standard effective 11/12/2021.	
June	TNT-02	Taunton R. Br, Plain St., Taunton	DUP 1	80		BL 1	10			
	ASO-01	Assonet R. Bridge, Rt 79	DUP 2	50		BL 2	<10		Results reported as 2000 were	
July	BED-01/TNT-03	Taunton R., Rt 18, Bedford St., Bridgewater	DUP 1	10		BL 1	<10		reported as > 2000 colonies by	
	SEG	Segregansett R. Br, Brook St. Dighton	DUP 2	10		BL 2	1290		Microbac Lab (max that could be	
August	TNT-02	Taunton R. Br, Plain St., Taunton	DUP 1	170		BL 1	<10		measured). 2000 used to calculate	
	MAT-01	Matfield R., Br, High St., Bridgewater	DUP 2	170		BL 2	<10		the geometric mean.	
Sept.	COT-01	Cotley R., Middleboro Ave, Taunton	DUP 1	1950		BL 1	<10			
	MIL-01	Mill R., Ingell St., Taunton	DUP 2	1610		BL 2	<10			
Oct.	NEM-01	Nemasket R., Murdock St., Middleboro	DUP 1	<50		BL 1	<1			
	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	DUP 2	50		BL 2	<1			

2023 TRWA Sampling - Date and Time of Sample Collection, AM										
Sampling Date			4/11/2023	5/9/2023	6/13/2023	7/11/2023	8/8/2023	9/12/2023	10/10/2023	
Flow Taunton River USGS Guage Near Bridgewater MA - 01108000			469	474	202	473	168	944	327	cubic feet per second (CFS)
Trend of Previous Days River Flow (falling or rising)			Falling	Falling	Falling	Rising	Falling	Rising	Falling	
Sample	Site No.	River & Location Description	April	May	June	July	August	Sept.	Oct.	
1	TNT-01	Taunton R. Br, Center St., Berkley	6:30	6:30	6:30	6:30	6:30	6:30	6:30	
2	TNT-02	Taunton R. Br, Plain St., Taunton	6:55	6:55	6:55	6:55	6:55	6:55	6:55	
3	BED-01/TNT-03	Taunton R., Rt 18, Bedford St., Bridgewater	6:30	6:30	6:30	6:30	6:30	6:30	6:30	
4	CHE-01/TNT-04	Taunton R. Br, Cherry St., Bridgewater	6:15	6:00	6:00	6:00	6:15	6:00	6:15	
5	ASO-01	Assonet R. Bridge, Rt 79	6:30	6:30	6:30	6:59	6:30	6:30	7:00	
6	SEG	Segregansett R. Br, Brook St. Dighton	7:06	7:02	7:02	6:38	7:07	6:51	6:54	
7	BER-01	Chuckamucksett Brk. Br, Berkley St.	7:45	7:20	7:16	7:27	7:19	7:07	7:07	
8	TMR-01	Three Mile R. Br, Rt 138, Somerset Ave.	6:45	6:45	6:45	6:45	6:45	6:45	6:45	
9	TMR-02	Three Mile R. Br, Rt 44, Cohannet St.	6:50	7:45	7:20	6:50	7:10	7:15	7:20	
10	TMR-03	Three Mile R. Br, Crane St., Norton	7:15	7:05	6:55	7:10	6:50	6:50	7:00	
11	MIL-01	Mill R., Ingell St., Taunton	7:48	7:52	NR	7:40	7:37	7:43	7:46	
12	MIL-02	Mill R., Washington St., Taunton	7:37	7:42	NR	7:28	7:25	7:33	7:37	
13	MIL-03	Mill R., Whittendon St., Taunton	7:20	7:28	NR	7:14	7:12	7:19	7:20	
14	FORGE	Forge R. Br, Rt 44, Raynham	7:12	7:05	7:14	7:38	7:45	7:35	7:35	
15	COT-01	Cotley R., Middleboro Ave, Taunton	7:36	7:35	7:45	8:00	8:10	8:00	7:57	
16	FBR-01	Furnace Brk., River St., E. Taunton	6:35	7:00	7:00	7:00	6:51	7:00	7:00	
17	CHU-01	Taunton River Br, Church St., Raynham	6:56	6:40	7:18	7:15	7:06	7:10	7:10	
18	TWH-01	Town R., Br, Hayward St., Bridgewater	6:35	6:30	6:30	6:30	6:30	6:30	7:00	
19	MAT-01	Matfield R., Br, High St., Bridgewater	7:00	6:45	7:00	7:00	6:45	6:45	7:15	
20	NEM-01	Nemasket R., Murdock St., Middleboro	5:30	6:00	5:30	5:30	5:30	5:30	7:48	
Duplicate Sample Location			DUP #	DUP Results Not Applicable to Time Reporting						
				Same as Sample Collection Date and Time for Site						
NR - Not Reported, no sample										
See Below for Sample Analysis, Collection Method - Standard Operating Procedures (SOP) and Instream Target Values Basis										

Sample Analysis, Collection Method - Standard Operating Procedures (SOP) and Instream Target Values									
Samples Are Analyzed by:									
Microbac, Dayville, CT					A MassDEP Certified Laboratory				
<a href="https://www.microbac.com/our-laboratories/dayville-connecticut/#services">https://www.microbac.com/our-laboratories/dayville-connecticut/#services</a>									
Samples Are Collected by Trained TRWA Volunteers Using An SOP Jointly Developed by TRWA and Veolia North America:									
<a href="https://savethetaunton.org/wp-content/uploads/2023/05/TRWA-Sampling-SOP-2023v3.pdf">https://savethetaunton.org/wp-content/uploads/2023/05/TRWA-Sampling-SOP-2023v3.pdf</a>									
Sampling Locations Map May Be Found At:									
<a href="https://www.google.com/maps/d/edit?mid=zhnIdTn8bGeU.kyo7mjqZ3YFQ&amp;usp=sharing">https://www.google.com/maps/d/edit?mid=zhnIdTn8bGeU.kyo7mjqZ3YFQ&amp;usp=sharing</a>									
Water Quality Protection <b>Instream Target Values:</b>									
<b>Nitrate</b>									
Water Quality Target Values for Nitrogen are expressed as <u>Total</u> Nitrogen = <b>Nitrate</b> + Organic Nitrogen + Ammonia + Nitrite									
Like most environmental groups TRWA measures only <b>Nitrate</b> because of its low cost (\$12 / sample) and low reporting level (0.05 mg/l). The MassDEP in a large number of TMDLs for estuaries has recommended <u>TN</u> values between 0.39 to 0.5 mg/l for estuaries <u>without eel grass</u> in good to fair condition. The Cape Cod Commission recommends values 0.34 to 0.39 while the Buzzards Bay Project/ Massachusetts Coastal Zone Management recommends 0.39 to 0.44 mg/l. After consultation with MassDEP and Rhode Island DEM (downstream state) EPA selected a TN target estuary value of 0.45 mg/l as a medium target for the Taunton River.									
Because Nitrate is <u>only a portion of Total Nitrogen</u> we consider <b>Nitrate values &gt; 0.4 mg/l high for both the tidal portion of the estuary below Route 24 at the Raynham/Taunton Bridge and above because of transport concerns to the salt waters of the estuary.</b>									
<b>Total Phosphorus</b>									
The Water Quality Target Values for <b>Total Phosphorus</b> are <b>0.100 mg/l for freshwaters</b> in free flowing streams and 0.050 mg/l in lakes, ponds, impoundments and streams tributary to them. These Targets are from the EPA Suggested Criteria for Water sometimes called the Gold Book.									
Based on obseration and photos of the shallow effluent dominated freshwaters of the watershed TRWA considers <b>average TP greater than 0.05 mg/l</b> a value for concern in addition to <b>single month samples &gt; 0.100 mg/l.</b>									
<b>Bacteria - Enterococci</b>									
The Water Quality Target Value used for <b>enterococci</b> is <b>35 colony-forming units (CFU) per 100 ml as a geometric mean for any 90 day</b> or smaller interval and no more than 10% of all samples collected within that interval shall exceed the statistical threshold value of 130 CFU/100ml. (Standard effective 11/12/2021).									
These targets are from the MA Water Quality Standards 314 CMR for Class B and SB waters.									