Instructions

1. **Save a copy of this tool for each new permit**

2	**Select State:**	**NH**		
3	**Design Flow:**	13.0	MGD	Note: 1 cfs = 0.646 MGD
4	**Upstream 7Q10 Flow:**	339.2	MGD	*For freshwater discharges only
5	**Dilution Factor**			*Update manually for marine discharges (Note: Dilution ratio of 10:1 = DF of 11)
6	**Salinity (ppt)**			*Marine discharges only (downstream)
7	**Salmonids?**	**Present**		*Freshwater discharges only
8	**Early life stages?**	**Present**		*Freshwater discharges only (impacts 1999 chronic criteria for MA)
9	**Discharge to:**	**Stream/River**		*Freshwater discharges only (impacts Gold Book TP criteria)

9. **Insert Current Effluent Limits (use mg/L); leave blank if no limit**
10. **Insert Effluent and Ambient data (use mg/L, no dates necessary)**
11. **Change any cells with non-detects (i.e., < #.##) to "0"**
12. **Delete any text within the data (i.e., "NODI" or similar)**
13. **Do NOT drag and drop data within the tables below!**
14. **Move on to next Tab (Freshwater or Marine)**

For entering total phosphorus data, use average monthly data from April 1st thru October 31st

For entering Ammonia data, seasons are as follows:

For MA: Warm weather (April 1 - October 31); Cold weather (November 1 - March 31)

For NH: Warm weather (May 1 - October 31); Cold weather (November 1 - April 30)

Downstream Hardness: #NUM! **mg/L** Note: if below 20 mg/L in NH, spreadsheet will use default of 20 mg/L

Current Effluent Limits

	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc	Ammonia (Warm)	Ammonia (Cold)	Phosphorus
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Acute									
Chronic									

Effluent Data

	Hardness	Arsenic	Mercury	Selenium	Chlorides	Aluminum	Zinc	Iron	Arsenic	Mercury
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1		0.00162	0.0000036	0.0006	21.	0.11				
2		0.0019	0.0000054	0.0015	13.	0.65				
3		0.0017	0.0000019	0.0009	27.	0.15				
4		0.0015	0.0000024	0.0005	27.	0.21				
5		0.0012	0.0000029	0.0005	16.	0.58				
6		0.0016	0.0000061	0.0005	20.	0.32				
7										
8										
9										

Ambient Data

	Hardness	pH	Arsenic	Mercury	Selenium	Chlorides	Aluminum	Zinc	Iron
	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1			0.000364	0.000001	0.00052	17.	0.04536		
2									
3									
4									
5									
6									
7									
8									
9									

Instructions

1. **If any pollutants have applicable "site-specific" criteria, update columns K and/or L accordingly.**
2. **If any limit is based on Backsliding or Anti-Backsliding, permit writer to confirm case-by-case whether exceptions apply**
3. **Remove highlighting after any backsliding issues have been resolved (i.e., clear conditional formatting)**
4. **Select entire table with footnotes, copy into "Appendix B Template" (posted on SharePoint)**
5. **Use Explanation of Limits table to briefly describe each limit in the Fact Sheet (incorporate limits into Draft Permit)**

Pollutant	Q_s	C_s [1]	Q_e	C_e [2]		Q_d	C_d		Criteria * 0.9		Reasonable Potential		Limits		Explanation of Limits	
	cfs	mg/L	cfs	Acute (mg/L)	Chronic (mg/L)	cfs	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	C_e & C_d > Acute Criteria	C_e & C_d > Chronic Criteria	Acute (mg/L)	Chronic (mg/L)	Acute	Chronic
Iron		0.0		0.0	0.0		0.0	0.0	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Arsenic		0.0		0.0	0.0		0.0	0.0	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Mercury		0.00		N/A	0.00		N/A	0.00	N/A	0.090	N/A	N	N/A	N/A	N/A	No Limit
		µg/L		µg/L	µg/L		µg/L	µg/L	µg/L	µg/L			µg/L	µg/L	--	--
Arsenic	525.08	0.4	20.12	1.9	1.9	545.20	0.4	0.4	306	135	N	N	N/A	N/A	No Limit	No Limit
Mercury		0.0		0.0	0.0		0.0	0.0	1.1	0.6	N	N	N/A	N/A	No Limit	No Limit
Selenium		0.5		1.5	1.5		0.6	0.6	2.8	2.8	N	N	N/A	N/A	No Limit	No Limit
Chlorides		17000.0		27000.0	27000.0		17369.1	17369.1	774000.0	207000.0	N	N	N/A	N/A	No Limit	No Limit
Aluminum		45.4		650.0	650.0		67.7	67.7	675.0	78.3	N	N	N/A	N/A	No Limit	No Limit
Zinc		0.0		0.0	0.0		0.0	0.0	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!

[1] Median concentration for the receiving water just upstream of the facility's discharge taken from the WET testing data during the review period (see Appendix A).

[2] Values represent the 95th percentile (for n ≥ 10) or maximum (for n < 10) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A). If the metal already has a limit (for either acute or chronic conditions), the value represents the existing limit.

Freshwater Ammonia Criteria		MA		NH	
		1999 Criteria		2013 Criteria	
Season	Temp	Acute	Chronic	Acute	Chronic
	°C	mg/L	mg/L	mg/L	mg/L
Warm Weather	25	#NUM!	#NUM!	#NUM!	#NUM!
Cold Weather	5	#NUM!	#NUM!	#NUM!	#NUM!

Update if not using default temps

No Limit: No existing limit and no RP for a new limit
New Limit: Limit established in this permit issuance
Same Limit: Limit carried forward from previous permit (either no change to criteria or no change to WQS calc)
More Stringent: limit must be more stringent than before to meet WQS
Anti-backsliding Applies: Less stringent limit meets WQS but discharge is achieving existing limit so existing limit carried forward
Backsliding Allowed: Less stringent limit meets WQS and discharge is not achieving existing limit so limit able to be less stringent [See exception E @ 40 CFR § 122.44(l)(2)(i)(E)]

Note: If backsliding is allowed, new limit is **most stringent** of either recent performance (95th) or new WQS calc. To determine which one it is, you can compare the limit to the 95th at bottom of 1st tab.

Deriving the Equations used in building the 1989 tables from the values in the tables.
No need to touch anything here.
Maintain for reference.

Criteria (Acute/Chronic)	Salinity	pH/Temp (C)	0	5	10	15	20	25	30	35
Acute	**10**	7	270	191	131	92	62	44	29	21
Acute	**10**	7.1	222.5	156	107	75	51	35.5	24	17
Acute	**10**	**7.2**	175	121	83	58	40	27	19	13
Acute	**10**	7.3	142.5	99	67.5	46.5	32.5	22	15.5	10.65
Acute	**10**	**7.4**	110	77	52	35	25	17	12	8.3
Acute	**10**	7.5	89.5	62.5	42.5	29	20.5	14	9.85	6.95
Acute	**10**	**7.6**	69	48	33	23	16	11	7.7	5.6
Acute	**10**	7.7	56.5	39.5	27	19	13	9.05	6.35	4.55
Acute	**10**	**7.8**	44	31	21	15	10	7.1	5	3.5
Acute	**10**	7.9	35.5	25	17	12.2	8.2	5.85	4.05	2.9
Acute	**10**	**8**	27	19	13	9.4	6.4	4.6	3.1	2.3
Acute	10	8.1	22.5	15.5	10.75	7.6	5.3	3.75	2.6	1.9
Acute	10	**8.2**	18	12	8.5	5.8	4.2	2.9	2.1	1.5
Acute	10	8.3	14.5	9.95	6.95	4.75	3.45	2.4	1.75	1.25
Acute	10	**8.4**	11	7.9	5.4	3.7	2.7	1.9	1.4	1
Acute	10	8.5	9.15	6.45	4.45	3.1	2.25	1.6	1.19	0.875
Acute	10	**8.6**	7.3	5	3.5	2.5	1.8	1.3	0.98	0.75
Acute	10	8.7	5.95	4.15	2.9	2.1	1.5	1.11	0.845	0.655
Acute	10	**8.8**	4.6	3.3	2.3	1.7	1.2	0.92	0.71	0.56
Acute	10	8.9	3.75	2.7	1.9	1.4	1.025	0.795	0.615	0.5
Acute	10	**9**	2.9	2.1	1.5	1.1	0.85	0.67	0.52	0.44
Acute	**20**	7	291	200	137	96	64	44	31	21
Acute	**20**	7.1	237	162.5	112	78	53	36.5	25.5	17.5
Acute	**20**	**7.2**	183	125	87	60	42	29	20	14
Acute	**20**	7.3	149.5	102	70.5	48.5	34.5	23.5	16	11.35
Acute	**20**	**7.4**	116	79	54	37	27	18	12	8.7
Acute	**20**	7.5	94.5	64.5	44.5	30	22	14.5	9.95	7.15
Acute	**20**	**7.6**	73	50	35	23	17	11	7.9	5.6
Acute	**20**	7.7	59.5	40.5	29	19	14	9.25	6.55	4.55
Acute	**20**	**7.8**	46	31	23	15	11	7.5	5.2	3.5
Acute	**20**	7.9	37.5	25.5	18.5	12.4	8.85	6.15	4.25	2.9
Acute	**20**	**8**	29	20	14	9.8	6.7	4.8	3.3	2.3
Acute	20	8.1	24	16.5	11.45	8	5.55	3.95	2.7	1.95
Acute	20	**8.2**	19	13	8.9	6.2	4.4	3.1	2.1	1.6
Acute	20	8.3	15.5	10.55	7.25	5.1	3.65	2.55	1.8	1.35
Acute	20	**8.4**	12	8.1	5.6	4	2.9	2	1.5	1.1
Acute	20	8.5	9.75	6.65	4.65	3.35	2.4	1.7	1.25	0.935
Acute	20	**8.6**	7.5	5.2	3.7	2.7	1.9	1.4	1	0.77
Acute	20	8.7	6.15	4.25	3.1	2.2	1.6	1.17	0.865	0.665
Acute	20	**8.8**	4.8	3.3	2.5	1.7	1.3	0.94	0.73	0.56
Acute	20	8.9	3.95	2.8	2.05	1.45	1.085	0.815	0.635	0.5
Acute	20	**9**	3.1	2.3	1.6	1.2	0.87	0.69	0.54	0.44
Acute	**30**	7	312	208	148	102	71	48	33	23
Acute	**30**	7.1	254	171.5	121	83	57.5	39.5	27	19
Acute	**30**	**7.2**	196	135	94	64	44	31	21	15
Acute	**30**	7.3	160.5	110	76	52	35.5	25	17	12.2
Acute	**30**	**7.4**	125	85	58	40	27	19	13	9.4
Acute	**30**	7.5	102	69.5	47.5	32.5	24	15.5	10.75	7.7
Acute	**30**	**7.6**	79	54	37	25	21	12	8.5	6
Acute	**30**	7.7	64.5	43.5	30	20.5	16	9.95	6.95	4.85
Acute	**30**	**7.8**	50	33	23	16	11	7.9	5.4	3.7
Acute	**30**	7.9	40.5	27	19	13	9.15	6.45	4.45	3.1
Acute	**30**	**8**	31	21	15	10	7.3	5	3.5	2.5
Acute	30	8.1	25.5	17.5	12.3	8.35	5.95	4.15	2.9	2.1
Acute	30	**8.2**	20	14	9.6	6.7	4.6	3.3	2.3	1.7
Acute	30	8.3	16.35	11.35	7.8	5.45	3.75	2.7	1.95	1.4
Acute	30	**8.4**	12.7	8.7	6	4.2	2.9	2.1	1.6	1.1

Acute	30	8.5	10.4	7.15	5	3.45	2.45	1.75	1.35	0.955
Acute	30	**8.6**	8.1	5.6	4	2.7	2	1.4	1.1	0.81
Acute	30	8.7	6.65	4.55	3.25	2.25	1.65	1.2	0.925	0.695
Acute	30	**8.8**	5.2	3.5	2.5	1.8	1.3	1	0.75	0.58
Acute	30	8.9	4.25	2.9	2.1	1.5	1.12	0.855	0.655	0.52
Acute	30	**9**	3.3	2.3	1.7	1.2	0.94	0.71	0.56	0.46
Chronic	**10**	7	41	29	20	14	9.4	6.6	4.4	3.1
Chronic	**10**	7.1	33.5	23.5	16	11.35	7.65	5.35	3.6	2.55
Chronic	**10**	**7.2**	26	18	12	8.7	5.9	4.1	2.8	2
Chronic	**10**	7.3	21.5	15	9.9	7	4.8	3.35	2.3	1.6
Chronic	**10**	**7.4**	17	12	7.8	5.3	3.7	2.6	1.8	1.2
Chronic	**10**	7.5	13.5	9.6	6.4	4.35	3.05	2.15	1.5	1.02
Chronic	**10**	**7.6**	10	7.2	5	3.4	2.4	1.7	1.2	0.84
Chronic	**10**	7.7	8.3	5.95	4.05	2.8	1.95	1.4	0.975	0.685
Chronic	**10**	**7.8**	6.6	4.7	3.1	2.2	1.5	1.1	0.75	0.53
Chronic	**10**	7.9	5.35	3.8	2.55	1.8	1.235	0.895	0.61	0.435
Chronic	**10**	**8**	4.1	2.9	2	1.4	0.97	0.69	0.47	0.34
Chronic	10	8.1	3.4	2.35	1.65	1.135	0.795	0.565	0.39	0.285
Chronic	10	**8.2**	2.7	1.8	1.3	0.87	0.62	0.44	0.31	0.23
Chronic	10	8.3	2.2	1.5	1.055	0.715	0.515	0.365	0.26	0.195
Chronic	10	**8.4**	1.7	1.2	0.81	0.56	0.41	0.29	0.21	0.16
Chronic	10	8.5	1.4	0.975	0.67	0.465	0.34	0.245	0.18	0.135
Chronic	10	**8.6**	1.1	0.75	0.53	0.37	0.27	0.2	0.15	0.11
Chronic	10	8.7	0.895	0.625	0.435	0.31	0.225	0.17	0.13	0.095
Chronic	10	**8.8**	0.69	0.5	0.34	0.25	0.18	0.14	0.11	0.08
Chronic	10	8.9	0.565	0.405	0.285	0.21	0.155	0.12	0.095	0.075
Chronic	10	**9**	0.44	0.31	0.23	0.17	0.13	0.1	0.08	0.07
Chronic	**20**	7	44	30	21	14	9.7	6.6	4.7	3.1
Chronic	**20**	7.1	35.5	24.5	17	11.5	7.95	5.5	3.85	2.6
Chronic	**20**	**7.2**	27	19	13	9	6.2	4.4	3	2.1
Chronic	**20**	7.3	22.5	15.5	10.55	7.3	5.15	3.55	2.45	1.7
Chronic	**20**	**7.4**	18	12	8.1	5.6	4.1	2.7	1.9	1.3
Chronic	**20**	7.5	14.5	9.75	6.7	4.5	3.3	2.2	1.55	1.07
Chronic	**20**	**7.6**	11	7.5	5.3	3.4	2.5	1.7	1.2	0.84
Chronic	**20**	7.7	8.95	6.1	4.35	2.85	2.05	1.4	0.99	0.685
Chronic	**20**	**7.8**	6.9	4.7	3.4	2.3	1.6	1.1	0.78	0.53
Chronic	**20**	7.9	5.65	3.85	2.75	1.9	1.3	0.91	0.64	0.435
Chronic	**20**	**8**	4.4	3	2.1	1.5	1	0.72	0.5	0.34
Chronic	20	8.1	3.6	2.45	1.7	1.22	0.83	0.595	0.405	0.29
Chronic	20	**8.2**	2.8	1.9	1.3	0.94	0.66	0.47	0.31	0.24
Chronic	20	8.3	2.3	1.55	1.07	0.765	0.55	0.385	0.265	0.2
Chronic	20	**8.4**	1.8	1.2	0.84	0.59	0.44	0.3	0.22	0.16

Chronic	20	8.5	1.45	0.99	0.7	0.5	0.36	0.25	0.185	0.14
Chronic	20	**8.6**	1.1	0.78	0.56	0.41	0.28	0.2	0.15	0.12
Chronic	20	8.7	0.91	0.64	0.465	0.335	0.235	0.17	0.13	0.1
Chronic	20	**8.8**	0.72	0.5	0.37	0.26	0.19	0.14	0.11	0.08
Chronic	20	8.9	0.595	0.42	0.305	0.22	0.16	0.12	0.095	0.075
Chronic	20	**9**	0.47	0.34	0.24	0.18	0.13	0.1	0.08	0.07
Chronic	**30**	7	47	31	22	15	11	7.2	5	3.4
Chronic	**30**	7.1	38	25.5	18	12.35	8.8	5.95	4.05	2.8
Chronic	**30**	**7.2**	29	20	14	9.7	6.6	4.7	3.1	2.2
Chronic	**30**	7.3	24	16.5	11.35	7.8	5.35	3.8	2.55	1.8
Chronic	**30**	**7.4**	19	13	8.7	5.9	4.1	2.9	2	1.4
Chronic	**30**	7.5	15.5	10.55	7.15	4.8	3.6	2.35	1.65	1.15
Chronic	**30**	**7.6**	12	8.1	5.6	3.7	3.1	1.8	1.3	0.9
Chronic	**30**	7.7	9.75	6.55	4.5	3.05	2.4	1.5	1.055	0.73
Chronic	**30**	**7.8**	7.5	5	3.4	2.4	1.7	1.2	0.81	0.56
Chronic	**30**	7.9	6.1	4.05	2.8	2	1.4	0.975	0.67	0.465
Chronic	**30**	**8**	4.7	3.1	2.2	1.6	1.1	0.75	0.53	0.37
Chronic	30	8.1	3.85	2.6	1.8	1.3	0.895	0.625	0.435	0.31
Chronic	30	**8.2**	3	2.1	1.4	1	0.69	0.5	0.34	0.25
Chronic	30	8.3	2.45	1.7	1.15	0.81	0.565	0.405	0.285	0.21
Chronic	30	**8.4**	1.9	1.3	0.9	0.62	0.44	0.31	0.23	0.17
Chronic	30	8.5	1.55	1.07	0.745	0.515	0.37	0.265	0.195	0.145
Chronic	30	**8.6**	1.2	0.84	0.59	0.41	0.3	0.22	0.16	0.12
Chronic	30	8.7	0.99	0.685	0.48	0.34	0.25	0.185	0.135	0.105
Chronic	30	**8.8**	0.78	0.53	0.37	0.27	0.2	0.15	0.11	0.09
Chronic	30	8.9	0.64	0.435	0.315	0.23	0.17	0.13	0.095	0.08
Chronic	30	**9**	0.5	0.34	0.26	0.19	0.14	0.11	0.08	0.07