Staff Report Appendix 2 to Appendix 6

Proposed Amendment to the Los Angeles Water Quality Control Plan (Basin Plan) – To incorporate 2013 United States Environmental Protection Agency “Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater” in the Los Angeles Region

Appendix 2. Ranked Genus Mean Acute Values in the 2013 U.S. EPA Freshwater Ammonia Criteria. Note that different species of the same genus have the same rank and the same Genus Mean Acute Value (GMAV).

Rank	GMAV* (mg TAN/L)	Species	SMAV (mg TAN/L)
69	2515	Insect, *Erythromma najas*	2515
68	994.5	Caddisfly, *Philarctus quaeris*	994.5
67	735.9	Beetle, *Stenelmis sexlineata*	735.9
66	686.2	Crayfish, *Orconectes immunis*	1550
66	686.2	Crayfish, *Orconectes nais*	303.8
65	681.8	Midge, *Chironomus riparius*	1029
65	681.8	Midge, *Chironomus tentans*	451.8
64	442.4	Mayfly, *Drunella grandis*	442.4
63	387.0	Aquatic sowbug, *Caecidotea racovitzai*	387.0
62	378.2	Isopod, *Asellus aquaticus*	378.2
61	281.5	Threespine stickleback, *Gasterosteus aculeatus*	281.5
60	246.5	Mayfly, *Callibaetis skokianus*	364.6
60	246.5	Mayfly, *Callibaetis* sp.	166.7
59	233.0	Dragonfly, *Pachydiplax longipennis*	233.0
58	222.2	Mottled sculpin, *Cottus bairdii*	222.2
57	219.3	Western mosquitofish, *Gambusia affinis*	219.3
56	218.7	Oligochaete worm, *Lumbriculus variegatus*	218.7
55	216.5	Tubificid worm, *Tubifex tubifex*	216.5
54	211.6	Marsh ramshorn snail, *Planorbella trivolvis*	211.6
53	192.6	Scud, *Hyalella azteca*	192.6

Rank	GMAV* (mg TAN/L)	Species	SMAV (mg TAN/L)
52	192.4	Stonefly, *Skwala americana*	192.4
51	185.2	Mozambique tilapia, *Oreochromis mossambicus*	185.2
50	181.8	Amphipod, *Crangonyx pseudogracilis*	270.5
50	181.8	Amphipod, *Crangonyx* sp.	122.2
49	170.2	Tubificid worm, *Limnodrilus hoffmeisteri*	170.2
48	164.5	Pouch snail, *Physa gyrina*	164.5
47	164.0	Damselfly, *Enallagma* sp.	164.0
46	162.6	Water flea, *Chydorus sphaericus*	162.6
45	159.2	Fathead minnow, *Pimephales promelas*	159.2
44	157.8	Brook trout, *Salvelinus fontinalis*	156.3
44	157.8	Lake trout, *Salvelinus namaycush*	159.3
43	156.7	Shortnose sturgeon, *Acipenser brevirostrum (LS)*	156.7
42	146.5	White sucker, *Catostomus commersonii*	157.5
42	146.5	Mountain sucker, *Catostomus platyrhynchus*	136.2
41	143.9	Water flea, *Ceriodaphnia acanthine*	154.3
41	143.9	Water flea, *Ceriodaphnia dubia*	134.2
40	142.9	Water flea, *Simocephalus vetulus*	142.9
39	142.4	Channel catfish, *Ictalurus punctatus*	142.4
38	138.0	Red swamp crayfish, *Procambarus clarkii*	138.0
37	136.7	Atlantic salmon, *Salmo salar (LS)*	183.3
37	136.7	Brown trout, *Salmo trutta*	102.0
36	134.8	White perch, *Morone americana*	132.7
36	134.8	White bass, *Morone chrysops*	144.0
36	134.8	Striped bass, *Morone saxatilis*	246.2

Rank	GMAV* (mg TAN/L)	Species	SMAV (mg TAN/L)
36	134.8	Sunshine bass, *Morone saxatilis x chrysops*	70.22
35	125.0	Water flea, *Daphnia magna*	157.7
35	125.0	Water flea, *Daphnia pulicaria*	99.03
34	122.5	Clawed toad, *Xenopus laevis*	122.5
33	119.5	Flatworm, *Dendrocoelum lacteum*	119.5
32	117.1	Walleye, *Sander vitreus*	117.1
31	115.9	Central stoneroller, *Campostoma anomalum*	115.9
30	110.0	Rainbow dace, *Cyprinella lutrensis*	196.1
30	110.0	Spotfin shiner, *Cyprinella spiloptera*	83.80
30	110.0	Steelcolor shiner, *Cyprinella whipplei*	80.94
29	109.0	Dwarf wedgemussel, *Alasmidonta heterodon (LS)*	109.0
28	109.0	Pink papershell, *Potamilus ohiensis*	109.0
27	106.9	Green sunfish, *Lepomis cyanellus*	150.8
27	106.9	Pumpkinseed, *Lepomis gibbosus*	77.53
27	106.9	Bluegill, *Lepomis macrochirus*	104.5
26	106.3	Common carp, *Cyprinus carpio*	106.3
25	99.15	Golden trout, *Oncorhynchus aguabonita*	112.1
25	99.15	Cutthroat trout, *Oncorhynchus clarkii*	78.92
25	99.15	Pink salmon, *Oncorhynchus gorbuscha*	180.7
25	99.15	Coho salmon, *Oncorhynchus kisutch (LS)*	87.05
25	99.15	Rainbow trout, *Oncorhynchus mykiss (LS)*	82.88
25	99.15	Chinook salmon, *Oncorhynchus tshawytscha (LS)*	82.39
24	96.72	Topeka shiner, *Notropis topeka (LS)*	96.72

Rank	GMAV* (mg TAN/L)	Species	SMAV (mg TAN/L)
23	96.38	Leopard frog, *Rana pipiens*	96.38
22	89.36	Long fingernailclam, *Musculium transversum*	89.36
21	89.06	Smallmouth bass, *Micropterus dolomieu*	150.6
21	89.06	Largemouth bass, *Micropterus salmoides*	86.02
21	89.06	Guadalupe bass, *Micropterus treculii*	54.52
20	88.62	Great pond snail, *Lymnaea stagnalis*	88.62
19	74.66	Guppy, *Poecilia reticulata*	74.66
18	74.25	Johnny darter, *Etheostoma nigrum*	71.45
18	74.25	Orangethroat darter, *Etheostoma spectabile*	77.17
17	72.55	Rio Grande silvery minnow, *Hybognathus amarus*	72.55
16	71.56	Spring peeper, *Pseudacris crucifer*	61.18
16	71.56	Pacific tree frog, *Pseudacris regilla*	83.71
15	71.25	Mucket, *Actinonaias ligamentina*	63.89
15	71.25	Pheasantshell, *Actinonaias pectorosa*	79.46
14	70.73	Giant floater mussel, *Pyganodon grandis*	70.73
13	69.36	Shortnose sucker, *Chasmistes brevirostris*	69.36
12	68.54	Pagoda hornsnail, *Pleurocera uncialis*	68.54
11	63.02	Golden shiner, *Notemigonus crysoleucas*	63.02
10	62.15	Pebblesnail, *Fluminicola* sp	62.15
9	56.62	Lost River sucker, *Deltistes luxatus(LS)*	56.62
8	51.93	Mountain whitefish, *Prosopium williamsoni*	51.93
7	47.40	Atlantic pigtoe, *Fusconaia masoni*	47.40
6	46.93	Pondshell mussel, *Utterbackia imbecillis*	46.93
5	46.63	Pink mucket, *Lampsilis abrupta (LS)*	26.03

Rank	GMAV* (mg TAN/L)	Species	SMAV (mg TAN/L)
5	46.63	Plain pocketbook, *Lampsilis cardium*	50.51
5	46.63	Wavy-rayed lampmussel, *Lampsilis fasciola*	48.11
5	46.63	Higgin's eye, *Lampsilis higginsii (LS)*	41.90
5	46.63	Neosho mucket, *Lampsilis rafinesqueana (LS)*	69.97
5	46.63	Fatmucket, *Lampsilis siliquoidea*	55.42
4	34.23	Rainbow mussel, *Villosa iris*	34.23
3	31.14	Oyster mussel, *Epioblasma capsaeformis (LS)*	31.14
2	23.41	Green floater, *Lasmigona subviridis*	23.41
1	23.12	Ellipse, *Venustaconcha ellipsiformis*	23.12
FAV = 33.52		*GMAV is calculated using all SMAVs within a given genus	
CMC = 17			

LS = federally listed as threatened or endangered species

Appendix 3. Final Acute Criterion (CMC) Magnitude when mussels absent and *Oncorhynchus* (Salmonids) absent in the 2013 U.S. EPA Freshwater Ammonia Criteria

Species	**GMAV pH 7.0, T=20°C (mg TAN/L)**
Golden shiner, *Notemigonus crysoleucas*	63.02
Pebblesnail, *Fluminicola* sp.	62.15
Lost River sucker, *Deltistes luxatus**	56.62
Mountain whitefish, *Prosopium williamsoni*	51.93
FAV	76
CMC	**38****

**CMC Excluding mussels, with Oncorhynchus present is 24 mg TAN/L to protect the recreationally and commercially important species Rainbow Trout. When Oncorhynchus is absent, the CMC is based on the mountain whitefish and is calculated by the ratio of the CMC to the lowest GMAV in the complete acute dataset (0.7249) times the lowest GMAV in the dataset excluding mussels (51.93 mg TAN/L for mountain whitefish) which results in a CMC of 37.65 mg TAN/L at pH 7 and 20°C.

Appendix 4. Final Chronic Criterion (CCC) Magnitude when mussels are absent in the 2013 U.S. EPA Freshwater Ammonia Criteria

Species	**GMCV pH 7.0, T=20°C (mg TAN/L)**
Fathead minnow, *Pimephales promelas*	9.187
Pebblesnail, *Fluminicola* sp.	7.828
Long fingernail clam, *Musculium transversum*	7.547
Lepomis sp. (Centrarchidae), includes: Bluegill, *L. macrochirus* and Green sunfish, *L. cyanellus*	6.920
CCC	**6.5**

Appendix 5. Ranked Genus Mean Chronic Values in the 2013 U.S. EPA Freshwater Ammonia Criteria. Note that different species of the same genus have the same rank and the same Genus Mean Chronic Value (GMCV).

Rank	GMCV (mg TAN/L)	Species	SMCV (mg TAN/L)
16	73.74	Stonefly, *Pteronarcella badia*	73.74
15	53.75	Water flea, *Ceriodaphnia acanthina*	64.10
15	53.75	Water flea, *Ceriodaphnia dubia*	45.08
14	41.46	Water flea, *Daphnia magna*	41.46
13	29.17	Amphipod, *Hyalella azteca*	29.17
12	21.36	Channel catfish, *Ictalurus punctatus*	21.36
11	20.38	Northern pike, *Esox lucius*	20.38
10	16.53	Common carp, *Cyprinus carpio*	16.53
9	12.02	Lahontan cutthroat trout, *Oncorhynchus clarkii henshawi (LS)**	25.83
9	12.02	Rainbow trout, *Oncorhynchus mykiss (LS)*	6.663
9	12.02	Sockeye salmon, *Oncorhynchus nerka (LS)*	10.09
8	11.62	White sucker, *Catostomus commersonii*	11.62
7	11.07	Smallmouth bass, *Micropterus dolomieu*	11.07
6	9.187	Fathead minnow, *Pimephales promelas*	9.187
5	7.828	Pebblesnail, *Fluminicola* sp.	7.828
4	7.547	Long fingernailclam, *Musculium transversum*	7.547
3	6.920	Green sunfish, *Lepomis cyanellus*	14.63
3	6.920	Bluegill, *Lepomis macrochirus*	3.273
2	3.501	Rainbow mussel, *Villosa iris*	3.501
1	2.126	Fatmucket,	3.211

		Lampsilis siliquoidea	
1	2.126	Wavy-rayed lamp mussel, *Lampsilis fasciola*	1.408
FCV = 1.887 mg TAN/L			
CCC = 1.9 mg TAN/L			

Appendix 6. Acute and chronic ammonia objectives based on the current (1999 criteria) and proposed update (2013 criteria)

1. Acute ammonia objectives

Table 1. Comparison between 1999 in waters designated as COLD and/or MIGR and 2013 acute (one-hour average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to mussels absent and *Oncorhynchus* (salmonids) present condition. Note that changes in acute ammonia objectives with temperature are only recognized in 2013 criteria. The 1999 acute ammonia objectives are independent of temperature.

pH	1999 objectives	0-14°C	15°C	16°C	17°C°	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	32.6	32.61	32.61	32.61	32.61	32.61	32.61	32.61	32.61	32.61	32.61	32.61	32.61	32.61	32.61	31.40	28.91	26.21
6.6	31.3	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28	31.28	30.13	27.73	25.52
6.7	29.8	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	29.76	28.66	26.38	24.28
6.8	28.1	28.05	28.05	28.05	28.05	28.05	28.05	28.05	28.05	28.05	28.05	28.05	28.05	28.05	28.05	27.01	24.86	22.88
6.9	26.2	26.15	26.15	26.15	26.15	26.15	26.15	26.15	26.15	26.15	26.15	26.15	26.15	26.15	26.15	25.18	23.18	21.34
7.0	24.1	24.10	24.10	24.10	24.10	24.10	24.10	24.10	24.10	24.10	24.10	24.10	24.10	24.10	24.10	23.21	21.37	19.67
7.1	22.0	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.94	21.13	19.45	17.91
7.2	19.7	19.73	19.73	19.73	19.73	19.73	19.73	19.73	19.73	19.73	19.73	19.73	19.73	19.73	19.73	19.00	17.49	16.10
7.3	17.5	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	17.51	16.86	15.52	14.28
7.4	15.4	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	15.34	14.77	13.60	12.52
7.5	13.3	13.28	13.28	13.28	13.28	13.28	13.28	13.28	13.28	13.28	13.28	13.28	13.28	13.28	13.28	12.79	11.77	10.84
7.6	11.4	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37	11.37	10.95	10.08	9.28
7.7	9.65	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.64	9.29	8.55	7.87
7.8	8.11	8.11	8.11	8.11	8.11	8.11	8.11	8.11	8.11	8.11	8.11	8.11	8.11	8.11	8.11	7.81	7.19	6.61
7.9	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.77	6.52	6.00	5.52
8.0	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.41	4.98	4.58
8.1	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.47	4.11	3.79
8.2	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.68	3.39	3.12
8.3	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.03	2.79	2.57
8.4	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.50	2.30	2.12
8.5	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.06	1.90	1.75
8.6	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.71	1.57	1.44
8.7	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.42	1.31	1.20
8.8	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.19	1.09	1.01
8.9	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.00	0.92	0.85
9.0	0.885	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.85	0.78	0.72

Temperature marked in red (28 – 30°C) indicates proposed acute ammonia objectives that are lower (more stringent) than the current objectives

Table 2. Comparison between 1999 in waters NOT designated as COLD and/or MIGR and 2013 acute (one-hour average) objectives for Ammonia (mg TAN/L) for Freshwaters Applicable to Waters Subject to mussels absent and *Oncorhynchus* (salmonids) absent condition. Note that changes in acute ammonia objectives with temperature are only recognized in 2013 criteria. The 1999 acute ammonia objectives are independent of temperature.

pH	1999 objectives	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	48.8	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	50.93	47.53	43.75	40.27	37.07	34.12	31.40	28.91	26.61
6.6	46.8	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	48.86	45.60	41.97	38.63	35.56	32.73	30.13	27.73	25.52
6.7	44.6	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	46.48	43.38	39.93	36.75	33.83	31.14	28.66	26.38	24.28
6.8	42.0	43.80	43.80	43.80	43.80	43.80	43.80	43.80	43.80	43.80	40.88	37.63	34.64	31.88	29.34	27.01	24.86	22.88
6.9	39.1	40.84	40.84	40.84	40.84	40.84	40.84	40.84	40.84	40.84	38.12	35.09	32.30	29.73	27.36	25.18	23.18	21.34
7.0	36.1	37.65	37.65	37.65	37.65	37.65	37.65	37.65	37.65	37.65	35.13	32.34	29.77	27.40	25.22	23.21	21.37	19.67
7.1	32.8	34.27	34.27	34.27	34.27	34.27	34.27	34.27	34.27	34.27	31.99	29.44	27.10	24.95	22.96	21.13	19.45	17.91
7.2	29.5	30.81	30.81	30.81	30.81	30.81	30.81	30.81	30.81	30.81	28.75	26.47	24.36	22.42	20.64	19.00	17.49	16.10
7.3	26.2	27.34	27.34	27.34	27.34	27.34	27.34	27.34	27.34	27.34	25.52	23.49	21.62	19.90	18.32	16.86	15.52	14.28
7.4	23.0	23.96	23.96	23.96	23.96	23.96	23.96	23.96	23.96	23.96	22.36	20.58	18.95	17.44	16.05	14.77	13.60	12.52
7.5	19.9	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	20.75	19.36	17.82	16.40	15.10	13.90	12.79	11.77	10.84
7.6	17.0	17.77	17.77	17.77	17.77	17.77	17.77	17.77	17.77	17.77	16.92	15.26	14.05	12.93	11.90	10.95	10.08	9.28
7.7	14.4	15.06	15.06	15.06	15.06	15.06	15.06	15.06	15.06	15.06	14.06	12.94	11.91	10.96	10.09	9.29	8.55	7.87
7.8	12.1	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.66	11.82	10.88	10.01	9.22	8.48	7.81	7.19	6.61
7.9	10.1	10.57	10.57	10.57	10.57	10.57	10.57	10.57	10.57	10.57	9.86	9.08	8.36	7.69	7.08	6.52	6.00	5.52
8.0	8.40	8.77	8.77	8.77	8.77	8.77	8.77	8.77	8.77	8.77	8.18	7.53	6.93	6.38	5.87	5.41	4.98	4.58
8.1	6.95	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	6.76	6.23	5.73	5.27	4.86	4.47	4.11	3.79
8.2	5.72	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.81	5.13	4.72	4.35	4.00	3.68	3.39	3.12
8.3	4.71	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.59	4.22	3.89	3.58	3.29	3.03	2.79	2.57
8.4	3.88	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	3.78	3.48	3.20	2.95	2.71	2.50	2.30	2.12
8.5	3.20	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.12	2.87	2.64	2.43	2.24	2.06	1.90	1.75
8.6	2.65	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.58	2.38	2.19	2.01	1.85	1.71	1.57	1.44
8.7	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.15	1.98	1.82	1.67	1.54	1.42	1.31	1.20
8.8	1.84	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.65	1.52	1.40	1.29	1.19	1.09	1.01
8.9	1.56	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.62	1.51	1.39	1.28	1.18	1.09	1.00	0.92	0.85
9.0	1.32	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.29	1.19	1.09	1.01	0.93	0.85	0.78	0.72

Temperature marked in red (23 – 30°C) indicates proposed acute ammonia objectives that are lower (more stringent) than the current objectives

Table 3. Comparison between 1999 in waters designated as COLD and/or MIGR and 2013 acute (one-hour average) objectives for Ammonia (mg TAN/L) for Freshwaters Applicable to Waters Subject to mussels present and *Oncorhynchus* (salmonids) present condition. Note that changes in acute ammonia objectives with temperature are only recognized in 2013 criteria. The 1999 acute ammonia objectives are independent of temperature.

pH	1999 objectives	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	32.6	32.61	32.61	31.59	29.08	26.76	24.63	22.67	20.87	19.21	17.68	16.28	14.98	13.79	12.69	11.68	10.75	9.90
6.6	31.3	31.28	31.28	30.30	27.89	25.67	23.63	21.75	20.02	18.43	16.96	15.61	14.37	13.23	12.18	11.21	10.32	9.50
6.7	29.8	29.76	29.76	28.83	26.54	24.43	22.48	20.69	19.05	17.53	16.14	14.85	13.67	12.59	11.58	10.66	9.81	9.03
6.8	28.1	28.05	28.05	27.17	25.01	23.02	21.19	19.50	17.95	16.52	15.21	14.00	12.88	11.86	10.92	10.05	9.25	8.51
6.9	26.2	26.15	26.15	25.33	23.32	21.46	19.76	18.18	16.74	15.41	14.18	13.05	12.01	11.06	10.18	9.37	8.62	7.94
7.0	24.1	24.10	24.10	23.35	21.49	19.78	18.21	16.76	15.43	14.20	13.07	12.03	11.07	10.19	9.38	8.64	7.95	7.32
7.1	22.0	21.94	21.94	21.26	19.57	18.01	16.58	15.26	14.05	12.93	11.90	10.95	10.08	9.28	8.54	7.86	7.24	6.66
7.2	19.7	19.73	19.73	19.11	17.59	16.19	14.90	13.72	12.63	11.62	10.70	9.85	9.06	8.34	7.68	7.07	6.51	5.99
7.3	17.5	17.51	17.51	16.96	15.61	14.37	13.22	12.17	11.20	10.31	9.49	8.74	8.04	7.40	6.81	6.27	5.77	5.31
7.4	15.4	15.34	15.34	14.86	13.68	12.59	11.59	10.67	9.82	9.04	8.32	7.66	7.05	6.49	5.97	5.50	5.06	4.66
7.5	13.3	13.28	13.28	12.87	11.84	10.90	10.03	9.24	8.50	7.83	7.20	6.63	6.10	5.62	5.17	4.76	4.38	4.03
7.6	11.4	11.37	11.37	11.02	10.14	9.34	8.59	7.91	7.28	6.70	6.17	5.68	5.23	4.81	4.43	4.08	3.75	3.45
7.7	9.65	9.64	9.64	9.34	8.60	7.92	7.29	6.71	6.17	5.68	5.23	4.81	4.43	4.08	3.75	3.46	3.18	2.93
7.8	8.11	8.11	8.11	7.85	7.23	6.65	6.12	5.64	5.19	4.78	4.40	4.05	3.72	3.43	3.16	2.90	2.67	2.46
7.9	-6.77	6.77	6.77	6.55	6.03	5.55	5.11	4.70	4.33	3.99	3.67	3.38	3.11	2.86	2.63	2.42	2.23	2.05
8.0	5.62	5.62	5.62	5.44	5.01	4.61	4.24	3.90	3.59	3.31	3.04	2.80	2.58	2.37	2.19	2.01	1.85	1.70
8.1	4.64	4.64	4.64	4.50	4.14	3.81	3.51	3.23	2.97	2.73	2.52	2.32	2.13	1.96	1.81	1.66	1.53	1.41
8.2	3.83	3.83	3.83	3.71	3.41	3.14	2.89	2.66	2.45	2.25	2.07	1.91	1.76	1.62	1.49	1.37	1.26	1.16
8.3	3.15	3.15	3.15	3.05	2.81	2.58	2.38	2.19	2.02	1.86	1.71	1.57	1.45	1.33	1.23	1.13	1.04	0.96
8.4	2.59	2.59	2.59	2.51	2.31	2.13	1.96	1.80	1.66	1.53	1.41	1.29	1.19	1.10	1.01	0.93	0.86	0.79
8.5	2.14	2.14	2.14	2.07	1.91	1.76	1.62	1.49	1.37	1.26	1.16	1.07	0.98	0.90	0.83	0.77	0.71	0.65
8.6	1.77	1.77	1.77	1.72	1.58	1.45	1.34	1.23	1.13	1.04	0.96	0.88	0.81	0.75	0.69	0.63	0.58	0.54
8.7	1.47	1.47	1.47	1.43	1.31	1.21	1.11	1.02	0.94	0.87	0.80	0.73	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.23	1.23	1.23	1.19	1.10	1.01	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.04	1.04	1.04	1.01	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32
9.0	0.885	0.88	0.88	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

Temperature marked in red (16 – 30°C) indicates proposed acute ammonia objectives that are lower (more stringent) than the current objectives

Table 4. Comparison between 1999 in waters NOT designated as COLD and/or MIGR and 2013 acute (one-hour average) objectives for Ammonia (mg TAN/L) for Freshwaters Applicable to Waters Subject to mussels present and *Oncorhynchus* (salmonids) absent condition. Note that changes in acute ammonia objectives with temperature are only recognized in 2013 criteria. The 1999 acute ammonia objectives are independent of temperature.

pH	1999 objectives	0-10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	48.8	50.93	47.81	44.01	40.51	37.28	34.32	31.59	29.08	26.76	24.63	22.67	20.87	19.21	17.68	16.28	14.98	13.79	12.69	11.68	10.75	9.90
6.6	46.8	48.86	45.87	42.22	38.86	35.77	32.92	30.30	27.89	25.67	23.63	21.75	20.02	18.43	16.96	15.61	14.37	13.23	12.18	11.21	10.32	9.50
6.7	44.6	46.48	43.64	40.17	36.97	34.03	31.32	28.83	26.54	24.43	22.48	20.69	19.05	17.53	16.14	14.85	13.67	12.59	11.58	10.66	9.81	9.03
6.8	42.0	43.80	41.12	37.85	34.84	32.07	29.52	27.17	25.01	23.02	21.19	19.50	17.95	16.52	15.21	14.00	12.88	11.86	10.92	10.05	9.25	8.51
6.9	39.1	40.84	38.34	35.29	32.49	29.90	27.52	25.33	23.32	21.46	19.76	18.18	16.74	15.41	14.18	13.05	12.01	11.06	10.18	9.37	8.62	7.94
7.0	36.1	37.65	35.34	32.53	29.94	27.56	25.37	23.35	21.49	19.78	18.21	16.76	15.43	14.20	13.07	12.03	11.07	10.19	9.38	8.64	7.95	7.32
7.1	32.8	34.27	32.18	29.62	27.26	25.09	23.10	21.26	19.57	18.01	16.58	15.26	14.05	12.93	11.90	10.95	10.08	9.28	8.54	7.86	7.24	6.66
7.2	29.5	30.81	28.92	26.62	24.51	22.56	20.76	19.11	17.59	16.19	14.90	13.72	12.63	11.62	10.70	9.85	9.06	8.34	7.68	7.07	6.51	5.99
7.3	26.2	27.34	25.67	23.63	21.75	20.02	18.42	16.96	15.61	14.37	13.22	12.17	11.20	10.31	9.49	8.74	8.04	7.40	6.81	6.27	5.77	5.31
7.4	23.0	23.96	22.49	20.70	19.06	17.54	16.15	14.86	13.68	12.59	11.59	10.67	9.82	9.04	8.32	7.66	7.05	6.49	5.97	5.50	5.06	4.66
7.5	19.9	20.75	19.48	17.93	16.50	15.19	13.98	12.87	11.84	10.90	10.03	9.24	8.50	7.83	7.20	6.63	6.10	5.62	5.17	4.76	4.38	4.03
7.6	17.0	17.77	16.68	15.35	14.13	13.01	11.97	11.02	10.14	9.34	8.59	7.91	7.28	6.70	6.17	5.68	5.23	4.81	4.43	4.08	3.75	3.45
7.7	14.4	15.06	14.14	13.02	11.98	11.03	10.15	9.34	8.60	7.92	7.29	6.71	6.17	5.68	5.23	4.81	4.43	4.08	3.75	3.46	3.18	2.93
7.8	12.1	12.66	11.89	10.94	10.07	9.27	8.53	7.85	7.23	6.65	6.12	5.64	5.19	4.78	4.40	4.05	3.72	3.43	3.16	2.90	2.67	2.46
7.9	10.1	10.57	9.92	9.13	8.40	7.74	7.12	6.55	6.03	5.55	5.11	4.70	4.33	3.99	3.67	3.38	3.11	2.86	2.63	2.42	2.23	2.05
8.0	8.40	8.77	8.23	7.58	6.98	6.42	5.91	5.44	5.01	4.61	4.24	3.90	3.59	3.31	3.04	2.80	2.58	2.37	2.19	2.01	1.85	1.70
8.1	6.95	7.25	6.80	6.26	5.76	5.31	4.88	4.50	4.14	3.81	3.51	3.23	2.97	2.73	2.52	2.32	2.13	1.96	1.81	1.66	1.53	1.41
8.2	5.72	5.97	5.61	5.16	4.75	4.37	4.03	3.71	3.41	3.14	2.89	2.66	2.45	2.25	2.07	1.91	1.76	1.62	1.49	1.37	1.26	1.16
8.3	4.71	4.92	4.62	4.25	3.91	3.60	3.31	3.05	2.81	2.58	2.38	2.19	2.02	1.86	1.71	1.57	1.45	1.33	1.23	1.13	1.04	0.96
8.4	3.88	4.05	3.80	3.50	3.22	2.97	2.73	2.51	2.31	2.13	1.96	1.80	1.66	1.53	1.41	1.29	1.19	1.10	1.01	0.93	0.86	0.79
8.5	3.20	3.34	3.14	2.89	2.66	2.45	2.25	2.07	1.91	1.76	1.62	1.49	1.37	1.26	1.16	1.07	0.98	0.90	0.83	0.77	0.71	0.65
8.6	2.65	2.77	2.60	2.39	2.20	2.02	1.86	1.72	1.58	1.45	1.34	1.23	1.13	1.04	0.96	0.88	0.81	0.75	0.69	0.63	0.58	0.54
8.7	2.20	2.30	2.16	1.99	1.83	1.68	1.55	1.43	1.31	1.21	1.11	1.02	0.94	0.87	0.80	0.73	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.84	1.92	1.81	1.66	1.53	1.41	1.30	1.19	1.10	1.01	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.56	1.62	1.52	1.40	1.29	1.19	1.09	1.01	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32
9.0	1.32	1.38	1.30	1.19	1.10	1.01	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

Temperature marked in red (11 – 30°C) indicates proposed acute ammonia objectives that are lower (more stringent) than the current objectives

2. Chronic ammonia objectives

2.1. Chronic ammonia objectives in waterbodies that do not have SSO

Table 5. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on 1999 criteria. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C*
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641
8.9	0.917	0.86	0.806	0.756	0.709	0.664	0.623	0.584	0.548
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471

* At temperature 15°C and above, the 30-day average objectives for waters subject to the "ELS Absent" condition are the same as that for waters subject to the "ELS Present" condition

Table 6. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "Mussel absent and ELS Absent" condition based on 2013 update. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C*	23°C
6.5	18.51	17.36	16.27	15.26	14.30	13.41	12.57	11.79	11.05	10.36	9.72	9.11	8.54	8.01	7.51	7.04	6.60
6.6	18.23	17.09	16.03	15.03	14.09	13.21	12.38	11.61	10.88	10.21	9.57	8.97	8.41	7.89	7.39	6.93	6.50
6.7	17.89	16.77	15.73	14.74	13.82	12.96	12.15	11.39	10.68	10.01	9.39	8.80	8.25	7.74	7.25	6.80	6.38
6.8	17.48	16.39	15.37	14.41	13.51	12.66	11.87	11.13	10.44	9.78	9.17	8.60	8.06	7.56	7.09	6.65	6.23
6.9	16.99	15.93	14.93	14.00	13.13	12.31	11.54	10.82	10.14	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
7.0	16.41	15.39	14.43	13.52	12.68	11.89	11.15	10.45	9.80	9.19	8.61	8.07	7.57	7.10	6.65	6.24	5.85
7.1	15.74	14.75	13.83	12.97	12.16	11.40	10.69	10.02	9.40	8.81	8.26	7.74	7.26	6.81	6.38	5.98	5.61
7.2	14.97	14.03	13.16	12.33	11.56	10.84	10.17	9.53	8.94	8.38	7.85	7.36	6.90	6.47	6.07	5.69	5.33
7.3	14.10	13.22	12.39	11.62	10.89	10.21	9.58	8.98	8.42	7.89	7.40	6.94	6.50	6.10	5.72	5.36	5.03
7.4	13.15	12.32	11.56	10.83	10.16	9.52	8.93	8.37	7.85	7.36	6.90	6.47	6.06	5.69	5.33	5.00	4.69
7.5	12.12	11.36	10.65	9.99	9.36	8.78	8.23	7.72	7.24	6.78	6.36	5.96	5.59	5.24	4.91	4.61	4.32
7.6	11.04	10.35	9.70	9.10	8.53	8.00	7.50	7.03	6.59	6.18	5.79	5.43	5.09	4.78	4.48	4.20	3.94
7.7	9.94	9.32	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56	5.21	4.89	4.58	4.30	4.03	3.78	3.54
7.8	8.84	8.29	7.77	7.28	6.83	6.40	6.00	5.63	5.28	4.95	4.64	4.35	4.08	3.82	3.58	3.36	3.15
7.9	7.77	7.28	6.83	6.40	6.00	5.63	5.28	4.95	4.64	4.35	4.08	3.82	3.58	3.36	3.15	2.95	2.77
8.0	6.76	6.34	5.94	5.57	5.22	4.90	4.59	4.30	4.03	3.78	3.55	3.33	3.12	2.92	2.74	2.57	2.41
8.1	5.82	5.46	5.12	4.80	4.50	4.22	3.96	3.71	3.48	3.26	3.06	2.87	2.69	2.52	2.36	2.21	2.08
8.2	4.98	4.67	4.38	4.10	3.85	3.61	3.38	3.17	2.97	2.79	2.61	2.45	2.30	2.15	2.02	1.89	1.77
8.3	4.23	3.97	3.72	3.49	3.27	3.07	2.87	2.69	2.53	2.37	2.22	2.08	1.95	1.83	1.72	1.61	1.51
8.4	3.58	3.36	3.15	2.95	2.77	2.59	2.43	2.28	2.14	2.00	1.88	1.76	1.65	1.55	1.45	1.36	1.28
8.5	3.02	2.84	2.66	2.49	2.34	2.19	2.05	1.93	1.81	1.69	1.59	1.49	1.40	1.31	1.23	1.15	1.08
8.6	2.55	2.39	2.24	2.10	1.97	1.85	1.73	1.63	1.52	1.43	1.34	1.26	1.18	1.10	1.04	0.97	0.91
8.7	2.16	2.03	1.90	1.78	1.67	1.57	1.47	1.38	1.29	1.21	1.13	1.06	1.00	0.93	0.88	0.82	0.77
8.8	1.84	1.72	1.61	1.51	1.42	1.33	1.25	1.17	1.10	1.03	0.96	0.90	0.85	0.79	0.74	0.70	0.65
8.9	1.57	1.47	1.38	1.29	1.21	1.14	1.07	1.00	0.94	0.88	0.82	0.77	0.72	0.68	0.64	0.60	0.56
9.0	1.35	1.27	1.19	1.11	1.04	0.98	0.92	0.86	0.81	0.76	0.71	0.66	0.62	0.58	0.55	0.51	0.48

* At temperature 22°C and above, the 30-day average objectives for waters subject to the "ELS Absent" condition are the same as that for waters subject to the "ELS Present" condition

Table 7. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Present" condition based on 1999 criteria. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	6.67	6.46	6.06	5.68	5.33	4.99	4.68	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46
6.6	6.57	6.36	5.97	5.59	5.25	4.92	4.61	4.32	4.05	3.80	3.56	3.34	3.13	2.94	2.75	2.58	2.42
6.7	6.44	6.25	5.86	5.49	5.15	4.83	4.52	4.24	3.98	3.73	3.50	3.28	3.07	2.88	2.70	2.53	2.37
6.8	6.29	6.10	5.72	5.36	5.03	4.72	4.42	4.14	3.89	3.64	3.42	3.20	3.00	2.82	2.64	2.47	2.32
6.9	6.12	5.93	5.56	5.21	4.89	4.58	4.30	4.03	3.78	3.54	3.32	3.11	2.92	2.74	2.57	2.41	2.25
7.0	5.91	5.73	5.37	5.04	4.72	4.43	4.15	3.89	3.65	3.42	3.21	3.01	2.82	2.64	2.48	2.32	2.18
7.1	5.67	5.49	5.15	4.83	4.53	4.25	3.98	3.73	3.50	3.28	3.08	2.88	2.70	2.53	2.38	2.23	2.09
7.2	5.39	5.22	4.90	4.59	4.31	4.04	3.78	3.55	3.33	3.12	2.92	2.74	2.57	2.41	2.26	2.12	1.99
7.3	5.08	4.92	4.61	4.33	4.06	3.80	3.57	3.34	3.13	2.94	2.76	2.58	2.42	2.27	2.13	2.00	1.87
7.4	4.73	4.59	4.30	4.03	3.78	3.55	3.32	3.12	2.92	2.74	2.57	2.41	2.26	2.12	1.98	1.86	1.74
7.5	4.36	4.23	3.97	3.72	3.49	3.27	3.06	2.87	2.69	2.53	2.37	2.22	2.08	1.95	1.83	1.72	1.61
7.6	3.98	3.85	3.61	3.39	3.18	2.98	2.79	2.62	2.45	2.30	2.16	2.02	1.90	1.78	1.67	1.56	1.47
7.7	3.58	3.47	3.25	3.05	2.86	2.68	2.51	2.36	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32
7.8	3.18	3.09	2.89	2.71	2.54	2.38	2.23	2.10	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
7.9	2.80	2.71	2.54	2.38	2.24	2.10	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17	1.10	1.03
8.0	2.43	2.36	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.957	0.897
8.1	2.10	2.03	1.91	1.79	1.68	1.57	1.47	1.38	1.29	1.21	1.14	1.07	1.00	0.938	0.879	0.824	0.773
8.2	1.79	1.74	1.63	1.53	1.43	1.34	1.26	1.18	1.11	1.04	0.973	0.912	0.855	0.802	0.752	0.705	0.661
8.3	1.52	1.48	1.39	1.30	1.22	1.14	1.07	1.00	0.941	0.882	0.827	0.775	0.727	0.682	0.639	0.599	0.562
8.4	1.29	1.25	1.17	1.10	1.03	0.966	0.906	0.849	0.796	0.747	0.700	0.656	0.615	0.577	0.541	0.507	0.475
8.5	1.09	1.06	0.990	0.928	0.870	0.816	0.765	0.717	0.672	0.630	0.591	0.554	0.520	0.487	0.457	0.428	0.401
8.6	0.920	0.892	0.836	0.784	0.735	0.689	0.646	0.606	0.568	0.532	0.499	0.468	0.439	0.411	0.386	0.362	0.339
8.7	0.778	0.754	0.707	0.663	0.622	0.583	0.547	0.512	0.480	0.450	0.422	0.396	0.371	0.348	0.326	0.306	0.287
8.8	0.661	0.641	0.601	0.563	0.528	0.495	0.464	0.435	0.408	0.383	0.359	0.336	0.315	0.296	0.277	0.260	0.244
8.9	0.565	0.548	0.513	0.481	0.451	0.423	0.397	0.372	0.349	0.327	0.306	0.287	0.269	0.253	0.237	0.222	0.208
9.0	0.486	0.471	0.442	0.414	0.389	0.364	0.342	0.320	0.300	0.281	0.264	0.247	0.232	0.217	0.204	0.191	0.179

Table 8. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "Mussels absent and ELS Present" condition based on 2013 update. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.04	6.60	6.19	5.80	5.44	5.10	4.78	4.48	4.20
6.6	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	6.93	6.50	6.09	5.71	5.36	5.02	4.71	4.41	4.14
6.7	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	6.80	6.38	5.98	5.61	5.26	4.93	4.62	4.33	4.06
6.8	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.65	6.23	5.84	5.48	5.14	4.81	4.51	4.23	3.97
6.9	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.46	6.06	5.68	5.32	4.99	4.68	4.39	4.11	3.86
7.0	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.24	5.85	5.48	5.14	4.82	4.52	4.24	3.97	3.73
7.1	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	5.98	5.61	5.26	4.93	4.62	4.33	4.06	3.81	3.57
7.2	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.69	5.33	5.00	4.69	4.40	4.12	3.86	3.62	3.40
7.3	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.36	5.03	4.71	4.42	4.14	3.88	3.64	3.41	3.20
7.4	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98
7.5	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.61	4.32	4.05	3.80	3.56	3.34	3.13	2.93	2.75
7.6	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.20	3.94	3.69	3.46	3.24	3.04	2.85	2.67	2.51
7.7	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.78	3.54	3.32	3.11	2.92	2.74	2.57	2.41	2.26
7.8	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.36	3.15	2.95	2.77	2.60	2.43	2.28	2.14	2.01
7.9	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	2.95	2.77	2.60	2.43	2.28	2.14	2.01	1.88	1.76
8.0	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.57	2.41	2.26	2.12	1.99	1.86	1.75	1.64	1.53
8.1	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.21	2.08	1.95	1.82	1.71	1.60	1.50	1.41	1.32
8.2	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.89	1.77	1.66	1.56	1.46	1.37	1.29	1.21	1.13
8.3	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.61	1.51	1.41	1.33	1.24	1.17	1.09	1.02	0.96
8.4	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.36	1.28	1.20	1.12	1.05	0.99	0.92	0.87	0.81
8.5	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69
8.6	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58
8.7	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.82	0.77	0.72	0.68	0.63	0.60	0.56	0.52	0.49
8.8	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.70	0.65	0.61	0.58	0.54	0.51	0.47	0.44	0.42
8.9	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.60	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.36
9.0	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31

Table 9. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "Mussels Present" condition based on 2013 update. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	4.92	4.61	4.33	4.06	3.80	3.57	3.34	3.13	2.94	2.75	2.58	2.42	2.27	2.13	2.00	1.87	1.75	1.64	1.54	1.45	1.36	1.27	1.19	1.12
6.6	4.85	4.54	4.26	3.99	3.75	3.51	3.29	3.09	2.89	2.71	2.54	2.38	2.24	2.10	1.97	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17	1.10
6.7	4.76	4.46	4.18	3.92	3.68	3.45	3.23	3.03	2.84	2.66	2.50	2.34	2.19	2.06	1.93	1.81	1.70	1.59	1.49	1.40	1.31	1.23	1.15	1.08
6.8	4.65	4.36	4.08	3.83	3.59	3.37	3.16	2.96	2.77	2.60	2.44	2.29	2.14	2.01	1.88	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.05
6.9	4.52	4.23	3.97	3.72	3.49	3.27	3.07	2.88	2.70	2.53	2.37	2.22	2.08	1.95	1.83	1.72	1.61	1.51	1.42	1.33	1.24	1.17	1.09	1.03
7.0	4.36	4.09	3.84	3.60	3.37	3.16	2.96	2.78	2.60	2.44	2.29	2.15	2.01	1.89	1.77	1.66	1.56	1.46	1.37	1.28	1.20	1.13	1.06	0.99
7.1	4.18	3.92	3.68	3.45	3.23	3.03	2.84	2.66	2.50	2.34	2.20	2.06	1.93	1.81	1.70	1.59	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.95
7.2	3.98	3.73	3.50	3.28	3.07	2.88	2.70	2.53	2.38	2.23	2.09	1.96	1.84	1.72	1.61	1.51	1.42	1.33	1.25	1.17	1.10	1.03	0.96	0.90
7.3	3.75	3.51	3.29	3.09	2.90	2.72	2.55	2.39	2.24	2.10	1.97	1.84	1.73	1.62	1.52	1.43	1.34	1.25	1.17	1.10	1.03	0.97	0.91	0.85
7.4	3.49	3.28	3.07	2.88	2.70	2.53	2.37	2.23	2.09	1.96	1.83	1.72	1.61	1.51	1.42	1.33	1.25	1.17	1.10	1.03	0.96	0.90	0.85	0.79
7.5	3.22	3.02	2.83	2.66	2.49	2.33	2.19	2.05	1.92	1.80	1.69	1.59	1.49	1.39	1.31	1.22	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73
7.6	2.94	2.75	2.58	2.42	2.27	2.13	1.99	1.87	1.75	1.64	1.54	1.44	1.35	1.27	1.19	1.12	1.05	0.98	0.92	0.86	0.81	0.76	0.71	0.67
7.7	2.64	2.48	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39	1.30	1.22	1.14	1.07	1.00	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60
7.8	2.35	2.20	2.07	1.94	1.82	1.70	1.60	1.50	1.40	1.32	1.23	1.16	1.08	1.02	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53
7.9	2.07	1.94	1.82	1.70	1.60	1.50	1.40	1.32	1.23	1.16	1.08	1.02	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47
8.0	1.80	1.68	1.58	1.48	1.39	1.30	1.22	1.14	1.07	1.01	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60	0.56	0.53	0.49	0.46	0.43	0.41
8.1	1.55	1.45	1.36	1.28	1.20	1.12	1.05	0.99	0.92	0.87	0.81	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.49	0.45	0.43	0.40	0.37	0.35
8.2	1.32	1.24	1.16	1.09	1.02	0.96	0.90	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.54	0.50	0.47	0.44	0.41	0.39	0.36	0.34	0.32	0.30
8.3	1.13	1.05	0.99	0.93	0.87	0.82	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26
8.4	0.95	0.89	0.84	0.78	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47	0.44	0.41	0.39	0.36	0.34	0.32	0.30	0.28	0.26	0.25	0.23	0.22
8.5	0.80	0.75	0.71	0.66	0.62	0.58	0.55	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.24	0.22	0.21	0.19	0.18
8.6	0.68	0.64	0.60	0.56	0.52	0.49	0.46	0.43	0.41	0.38	0.36	0.33	0.31	0.29	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.16	0.15
8.7	0.57	0.54	0.50	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.30	0.28	0.27	0.25	0.23	0.22	0.20	0.19	0.18	0.17	0.16	0.15	0.14	0.13
8.8	0.49	0.46	0.43	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26	0.24	0.23	0.21	0.20	0.19	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.11
8.9	0.42	0.39	0.37	0.34	0.32	0.30	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.09
9.0	0.36	0.34	0.32	0.30	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.09	0.09	0.08

Temperature marked in red (0 – 30°C) indicates proposed chronic ammonia objectives that are lower (more stringent) than the current objectives

2.2. Chronic ammonia objectives in waterbodies that have SSO

Table 10. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in Los Angeles River Reaches 3, 4, and 5. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	21.27	19.95	18.70	17.53	16.44	15.41	14.45	13.55	12.70	11.91	11.16	10.47	9.81	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15	4.83
6.6	20.95	19.64	18.42	17.27	16.19	15.18	14.23	13.34	12.51	11.73	11.00	10.31	9.67	9.06	8.50	7.97	7.47	7.00	6.56	6.15	5.77	5.41	5.07	4.76
6.7	20.56	19.28	18.07	16.94	15.89	14.89	13.96	13.09	12.28	11.51	10.79	10.12	9.48	8.89	8.34	7.82	7.33	6.87	6.44	6.04	5.66	5.31	4.98	4.67
6.8	20.09	18.83	17.66	16.56	15.52	14.55	13.64	12.79	11.99	11.24	10.54	9.88	9.27	8.69	8.15	7.64	7.16	6.71	6.29	5.90	5.53	5.19	4.86	4.56
6.9	19.52	18.31	17.16	16.09	15.09	14.14	13.26	12.43	11.66	10.93	10.25	9.61	9.01	8.44	7.92	7.42	6.96	6.52	6.12	5.74	5.38	5.04	4.73	4.43
7.0	18.86	17.68	16.58	15.54	14.57	13.66	12.81	12.01	11.26	10.56	9.90	9.28	8.70	8.16	7.65	7.17	6.72	6.30	5.91	5.54	5.19	4.87	4.57	4.28
7.1	18.09	16.96	15.90	14.90	13.97	13.10	12.28	11.52	10.80	10.12	9.49	8.90	8.34	7.82	7.33	6.88	6.45	6.04	5.67	5.31	4.98	4.67	4.38	4.11
7.2	17.20	16.13	15.12	14.17	13.29	12.46	11.68	10.95	10.27	9.63	9.03	8.46	7.93	7.44	6.97	6.54	6.13	5.75	5.39	5.05	4.74	4.44	4.16	3.90
7.3	16.20	15.19	14.24	13.35	12.52	11.74	11.01	10.32	9.67	9.07	8.50	7.97	7.47	7.01	6.57	6.16	5.78	5.42	5.08	4.76	4.46	4.18	3.92	3.68
7.4	15.11	14.16	13.28	12.45	11.67	10.94	10.26	9.62	9.02	8.46	7.93	7.43	6.97	6.53	6.13	5.74	5.38	5.05	4.73	4.44	4.16	3.90	3.66	3.43
7.5	13.93	13.06	12.24	11.48	10.76	10.09	9.46	8.87	8.31	7.80	7.31	6.85	6.42	6.02	5.65	5.29	4.96	4.65	4.36	4.09	3.84	3.60	3.37	3.16
7.6	12.69	11.90	11.15	10.46	9.80	9.19	8.62	8.08	7.58	7.10	6.66	6.24	5.85	5.49	5.15	4.82	4.52	4.24	3.98	3.73	3.49	3.28	3.07	2.88
7.7	11.42	10.71	10.04	9.41	8.82	8.27	7.76	7.27	6.82	6.39	5.99	5.62	5.27	4.94	4.63	4.34	4.07	3.82	3.58	3.35	3.15	2.95	2.76	2.59
7.8	10.16	9.52	8.93	8.37	7.85	7.36	6.90	6.47	6.06	5.68	5.33	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46	2.31
7.9	8.93	8.37	7.85	7.36	6.90	6.47	6.06	5.69	5.33	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46	2.31	2.16	2.03
8.0	7.77	7.28	6.83	6.40	6.00	5.63	5.28	4.95	4.64	4.35	4.08	3.82	3.58	3.36	3.15	2.95	2.77	2.60	2.43	2.28	2.14	2.01	1.88	1.76
8.1	6.69	6.28	5.88	5.52	5.17	4.85	4.55	4.26	4.00	3.75	3.51	3.29	3.09	2.89	2.71	2.54	2.39	2.24	2.10	1.97	1.84	1.73	1.62	1.52
8.2	5.72	5.37	5.03	4.72	4.42	4.15	3.89	3.64	3.42	3.20	3.00	2.82	2.64	2.48	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39	1.30
8.3	4.86	4.56	4.28	4.01	3.76	3.52	3.30	3.10	2.90	2.72	2.55	2.39	2.24	2.10	1.97	1.85	1.73	1.63	1.52	1.43	1.34	1.26	1.18	1.10
8.4	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46	2.30	2.16	2.03	1.90	1.78	1.67	1.57	1.47	1.38	1.29	1.21	1.13	1.06	1.00	0.93
8.5	3.48	3.26	3.06	2.87	2.69	2.52	2.36	2.21	2.08	1.95	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.96	0.90	0.84	0.79
8.6	2.94	2.75	2.58	2.42	2.27	2.13	1.99	1.87	1.75	1.64	1.54	1.44	1.35	1.27	1.19	1.12	1.05	0.98	0.92	0.86	0.81	0.76	0.71	0.67
8.7	2.48	2.33	2.18	2.05	1.92	1.80	1.69	1.58	1.48	1.39	1.30	1.22	1.15	1.07	1.01	0.94	0.89	0.83	0.78	0.73	0.68	0.64	0.60	0.56
8.8	2.11	1.98	1.85	1.74	1.63	1.53	1.43	1.34	1.26	1.18	1.11	1.04	0.97	0.91	0.86	0.80	0.75	0.71	0.66	0.62	0.58	0.54	0.51	0.48
8.9	1.80	1.69	1.58	1.49	1.39	1.31	1.22	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69	0.64	0.60	0.56	0.53	0.50	0.47	0.44	0.41
9.0	1.55	1.46	1.36	1.28	1.20	1.12	1.05	0.99	0.93	0.87	0.81	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38	0.35

Temperature marked in red (0 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS absent objectives

Table 11. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Present" condition based on the current SSO in Los Angeles River Reaches 3 and 5. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.25	5.86	5.49	5.15	4.83
6.6	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.15	5.77	5.41	5.07	4.76
6.7	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.04	5.66	5.31	4.98	4.67
6.8	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	5.90	5.53	5.19	4.86	4.56
6.9	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	5.74	5.38	5.04	4.73	4.43
7.0	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.54	5.19	4.87	4.57	4.28
7.1	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.31	4.98	4.67	4.38	4.11
7.2	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.05	4.74	4.44	4.16	3.90
7.3	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	4.76	4.46	4.18	3.92	3.68
7.4	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.44	4.16	3.90	3.66	3.43
7.5	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.09	3.84	3.60	3.37	3.16
7.6	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.73	3.49	3.28	3.07	2.88
7.7	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.35	3.15	2.95	2.76	2.59
7.8	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	2.98	2.80	2.62	2.46	2.31
7.9	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.62	2.46	2.31	2.16	2.03
8.0	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.28	2.14	2.01	1.88	1.76
8.1	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	1.97	1.84	1.73	1.62	1.52
8.2	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.68	1.58	1.48	1.39	1.30
8.3	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.43	1.34	1.26	1.18	1.10
8.4	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.21	1.13	1.06	1.00	0.93
8.5	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.02	0.96	0.90	0.84	0.79
8.6	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.81	0.76	0.71	0.67
8.7	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.73	0.68	0.64	0.60	0.56
8.8	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.62	0.58	0.54	0.51	0.48
8.9	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.53	0.50	0.47	0.44	0.41
9.0	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.46	0.43	0.40	0.38	0.35

Temperature marked in red (23 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS present objectives

Table 12. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters when “ELS Present” condition based on 2013 ammonia criteria is introduced to Los Angeles River Reach 4. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.04	6.60	6.19	5.80	5.44	5.10	4.78	4.48	4.20
6.6	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	6.93	6.50	6.09	5.71	5.36	5.02	4.71	4.41	4.14
6.7	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	6.80	6.38	5.98	5.61	5.26	4.93	4.62	4.33	4.06
6.8	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.65	6.23	5.84	5.48	5.14	4.81	4.51	4.23	3.97
6.9	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.46	6.06	5.68	5.32	4.99	4.68	4.39	4.11	3.86
7.0	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.24	5.85	5.48	5.14	4.82	4.52	4.24	3.97	3.73
7.1	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	5.98	5.61	5.26	4.93	4.62	4.33	4.06	3.81	3.57
7.2	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.69	5.33	5.00	4.69	4.40	4.12	3.86	3.62	3.40
7.3	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.36	5.03	4.71	4.42	4.14	3.88	3.64	3.41	3.20
7.4	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98
7.5	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.61	4.32	4.05	3.80	3.56	3.34	3.13	2.93	2.75
7.6	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.20	3.94	3.69	3.46	3.24	3.04	2.85	2.67	2.51
7.7	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.78	3.54	3.32	3.11	2.92	2.74	2.57	2.41	2.26
7.8	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.36	3.15	2.95	2.77	2.60	2.43	2.28	2.14	2.01
7.9	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	2.95	2.77	2.60	2.43	2.28	2.14	2.01	1.88	1.76
8.0	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.57	2.41	2.26	2.12	1.99	1.86	1.75	1.64	1.53
8.1	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.21	2.08	1.95	1.82	1.71	1.60	1.50	1.41	1.32
8.2	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.89	1.77	1.66	1.56	1.46	1.37	1.29	1.21	1.13
8.3	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.61	1.51	1.41	1.33	1.24	1.17	1.09	1.02	0.96
8.4	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.36	1.28	1.20	1.12	1.05	0.99	0.92	0.87	0.81
8.5	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69
8.6	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58
8.7	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.82	0.77	0.72	0.68	0.63	0.60	0.56	0.52	0.49
8.8	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.70	0.65	0.61	0.58	0.54	0.51	0.47	0.44	0.42
8.9	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.60	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.36
9.0	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31

Temperature marked in red (0 – 30 °C) indicates proposed chronic ammonia objectives that are lower (more stringent) than the current ELS absent objectives

Table 13. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in Burbank Western Channel. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	16.32	15.31	14.35	13.45	12.61	11.83	11.09	10.40	9.75	9.14	8.57	8.03	7.53	7.06	6.62	6.21	5.82	5.46	5.11	4.80	4.50	4.22	3.95	3.71
6.6	16.08	15.07	14.13	13.25	12.42	11.65	10.92	10.24	9.60	9.00	8.44	7.91	7.42	6.95	6.52	6.11	5.73	5.37	5.04	4.72	4.43	4.15	3.89	3.65
6.7	15.78	14.79	13.87	13.00	12.19	11.43	10.72	10.05	9.42	8.83	8.28	7.76	7.28	6.82	6.40	6.00	5.62	5.27	4.94	4.63	4.35	4.07	3.82	3.58
6.8	15.41	14.45	13.55	12.70	11.91	11.17	10.47	9.82	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15	4.83	4.53	4.25	3.98	3.73	3.50
6.9	14.98	14.05	13.17	12.35	11.58	10.85	10.18	9.54	8.94	8.39	7.86	7.37	6.91	6.48	6.08	5.70	5.34	5.01	4.69	4.40	4.13	3.87	3.63	3.40
7.0	14.47	13.57	12.72	11.93	11.18	10.48	9.83	9.22	8.64	8.10	7.59	7.12	6.68	6.26	5.87	5.50	5.16	4.84	4.53	4.25	3.99	3.74	3.50	3.28
7.1	13.88	13.01	12.20	11.44	10.72	10.05	9.43	8.84	8.29	7.77	7.28	6.83	6.40	6.00	5.63	5.28	4.95	4.64	4.35	4.08	3.82	3.58	3.36	3.15
7.2	13.20	12.37	11.60	10.88	10.20	9.56	8.96	8.40	7.88	7.39	6.93	6.49	6.09	5.71	5.35	5.02	4.70	4.41	4.14	3.88	3.63	3.41	3.20	3.00
7.3	12.43	11.66	10.93	10.25	9.61	9.01	8.44	7.92	7.42	6.96	6.53	6.12	5.74	5.38	5.04	4.73	4.43	4.16	3.90	3.65	3.42	3.21	3.01	2.82
7.4	11.59	10.87	10.19	9.55	8.96	8.40	7.87	7.38	6.92	6.49	6.08	5.70	5.35	5.01	4.70	4.41	4.13	3.87	3.63	3.41	3.19	2.99	2.81	2.63
7.5	10.69	10.02	9.39	8.81	8.26	7.74	7.26	6.81	6.38	5.98	5.61	5.26	4.93	4.62	4.33	4.06	3.81	3.57	3.35	3.14	2.94	2.76	2.59	2.43
7.6	9.74	9.13	8.56	8.02	7.52	7.05	6.61	6.20	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25	3.05	2.86	2.68	2.51	2.36	2.21
7.7	8.76	8.22	7.70	7.22	6.77	6.35	5.95	5.58	5.23	4.91	4.60	4.31	4.04	3.79	3.55	3.33	3.12	2.93	2.75	2.57	2.41	2.26	2.12	1.99
7.8	7.79	7.31	6.85	6.42	6.02	5.65	5.29	4.96	4.65	4.36	4.09	3.83	3.60	3.37	3.16	2.96	2.78	2.60	2.44	2.29	2.15	2.01	1.89	1.77
7.9	6.85	6.42	6.02	5.65	5.29	4.96	4.65	4.36	4.09	3.83	3.60	3.37	3.16	2.96	2.78	2.60	2.44	2.29	2.15	2.01	1.89	1.77	1.66	1.56
8.0	5.96	5.59	5.24	4.91	4.60	4.32	4.05	3.80	3.56	3.34	3.13	2.93	2.75	2.58	2.42	2.27	2.12	1.99	1.87	1.75	1.64	1.54	1.44	1.35
8.1	5.14	4.82	4.51	4.23	3.97	3.72	3.49	3.27	3.07	2.87	2.70	2.53	2.37	2.22	2.08	1.95	1.83	1.72	1.61	1.51	1.41	1.33	1.24	1.17
8.2	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46	2.30	2.16	2.03	1.90	1.78	1.67	1.57	1.47	1.38	1.29	1.21	1.13	1.06	1.00
8.3	3.73	3.50	3.28	3.08	2.88	2.70	2.53	2.38	2.23	2.09	1.96	1.84	1.72	1.61	1.51	1.42	1.33	1.25	1.17	1.10	1.03	0.96	0.90	0.85
8.4	3.16	2.96	2.78	2.60	2.44	2.29	2.15	2.01	1.89	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.99	0.93	0.87	0.82	0.76	0.72
8.5	2.67	2.50	2.34	2.20	2.06	1.93	1.81	1.70	1.59	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.95	0.89	0.84	0.78	0.73	0.69	0.65	0.61
8.6	2.25	2.11	1.98	1.86	1.74	1.63	1.53	1.43	1.34	1.26	1.18	1.11	1.04	0.97	0.91	0.86	0.80	0.75	0.71	0.66	0.62	0.58	0.55	0.51
8.7	1.91	1.79	1.68	1.57	1.47	1.38	1.29	1.21	1.14	1.07	1.00	0.94	0.88	0.82	0.77	0.72	0.68	0.64	0.60	0.56	0.52	0.49	0.46	0.43
8.8	1.62	1.52	1.42	1.33	1.25	1.17	1.10	1.03	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58	0.54	0.51	0.48	0.45	0.42	0.39	0.37
8.9	1.38	1.30	1.22	1.14	1.07	1.00	0.94	0.88	0.83	0.77	0.73	0.68	0.64	0.60	0.56	0.53	0.49	0.46	0.43	0.41	0.38	0.36	0.33	0.31
9.0	1.19	1.12	1.05	0.98	0.92	0.86	0.81	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31	0.29	0.27

Table 14. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters when “ELS Present” condition based on 2013 ammonia criteria is introduced to Burbank Western Channel. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.04	6.60	6.19	5.80	5.44	5.10	4.78	4.48	4.20
6.6	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	6.93	6.50	6.09	5.71	5.36	5.02	4.71	4.41	4.14
6.7	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	6.80	6.38	5.98	5.61	5.26	4.93	4.62	4.33	4.06
6.8	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.65	6.23	5.84	5.48	5.14	4.81	4.51	4.23	3.97
6.9	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.46	6.06	5.68	5.32	4.99	4.68	4.39	4.11	3.86
7.0	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.24	5.85	5.48	5.14	4.82	4.52	4.24	3.97	3.73
7.1	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	5.98	5.61	5.26	4.93	4.62	4.33	4.06	3.81	3.57
7.2	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.69	5.33	5.00	4.69	4.40	4.12	3.86	3.62	3.40
7.3	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.36	5.03	4.71	4.42	4.14	3.88	3.64	3.41	3.20
7.4	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98
7.5	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.61	4.32	4.05	3.80	3.56	3.34	3.13	2.93	2.75
7.6	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.20	3.94	3.69	3.46	3.24	3.04	2.85	2.67	2.51
7.7	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.78	3.54	3.32	3.11	2.92	2.74	2.57	2.41	2.26
7.8	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.36	3.15	2.95	2.77	2.60	2.43	2.28	2.14	2.01
7.9	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	2.95	2.77	2.60	2.43	2.28	2.14	2.01	1.88	1.76
8.0	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.57	2.41	2.26	2.12	1.99	1.86	1.75	1.64	1.53
8.1	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.21	2.08	1.95	1.82	1.71	1.60	1.50	1.41	1.32
8.2	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.89	1.77	1.66	1.56	1.46	1.37	1.29	1.21	1.13
8.3	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.61	1.51	1.41	1.33	1.24	1.17	1.09	1.02	0.96
8.4	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.36	1.28	1.20	1.12	1.05	0.99	0.92	0.87	0.81
8.5	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69
8.6	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58
8.7	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.82	0.77	0.72	0.68	0.63	0.60	0.56	0.52	0.49
8.8	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.70	0.65	0.61	0.58	0.54	0.51	0.47	0.44	0.42
8.9	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.60	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.36
9.0	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31

Temperature marked in red (0 – 19 °C) indicates proposed chronic ammonia objectives that are lower (more stringent) than the current ELS absent objectives

Table 15. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in Rio Hondo. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	22.69	21.28	19.95	18.70	17.53	16.44	15.41	14.45	13.55	12.70	11.91	11.17	10.47	9.81	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
6.6	22.35	20.95	19.65	18.42	17.27	16.19	15.18	14.23	13.34	12.51	11.73	11.00	10.31	9.67	9.06	8.50	7.97	7.47	7.00	6.57	6.16	5.77	5.41	5.07
6.7	21.93	20.56	19.28	18.07	16.95	15.89	14.90	13.97	13.09	12.28	11.51	10.79	10.12	9.49	8.89	8.34	7.82	7.33	6.87	6.44	6.04	5.66	5.31	4.98
6.8	21.43	20.09	18.84	17.66	16.56	15.52	14.55	13.64	12.79	11.99	11.25	10.54	9.88	9.27	8.69	8.15	7.64	7.16	6.71	6.29	5.90	5.53	5.19	4.86
6.9	20.83	19.53	18.31	17.16	16.09	15.09	14.15	13.26	12.43	11.66	10.93	10.25	9.61	9.01	8.45	7.92	7.42	6.96	6.53	6.12	5.74	5.38	5.04	4.73
7.0	20.12	18.86	17.68	16.58	15.54	14.57	13.66	12.81	12.01	11.26	10.56	9.90	9.28	8.70	8.16	7.65	7.17	6.72	6.30	5.91	5.54	5.19	4.87	4.57
7.1	19.29	18.09	16.96	15.90	14.91	13.98	13.10	12.28	11.52	10.80	10.12	9.49	8.90	8.34	7.82	7.33	6.88	6.45	6.04	5.67	5.31	4.98	4.67	4.38
7.2	18.35	17.20	16.13	15.12	14.18	13.29	12.46	11.68	10.95	10.27	9.63	9.03	8.46	7.93	7.44	6.97	6.54	6.13	5.75	5.39	5.05	4.74	4.44	4.16
7.3	17.28	16.20	15.19	14.24	13.35	12.52	11.74	11.01	10.32	9.67	9.07	8.50	7.97	7.48	7.01	6.57	6.16	5.78	5.42	5.08	4.76	4.46	4.18	3.92
7.4	16.11	15.11	14.16	13.28	12.45	11.67	10.94	10.26	9.62	9.02	8.46	7.93	7.43	6.97	6.53	6.13	5.74	5.39	5.05	4.73	4.44	4.16	3.90	3.66
7.5	14.86	13.93	13.06	12.24	11.48	10.76	10.09	9.46	8.87	8.32	7.80	7.31	6.85	6.43	6.02	5.65	5.30	4.96	4.65	4.36	4.09	3.84	3.60	3.37
7.6	13.53	12.69	11.90	11.15	10.46	9.80	9.19	8.62	8.08	7.58	7.10	6.66	6.24	5.85	5.49	5.15	4.82	4.52	4.24	3.98	3.73	3.49	3.28	3.07
7.7	12.18	11.42	10.71	10.04	9.41	8.82	8.27	7.76	7.27	6.82	6.39	5.99	5.62	5.27	4.94	4.63	4.34	4.07	3.82	3.58	3.36	3.15	2.95	2.76
7.8	10.83	10.16	9.52	8.93	8.37	7.85	7.36	6.90	6.47	6.06	5.69	5.33	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46
7.9	9.52	8.93	8.37	7.85	7.36	6.90	6.47	6.06	5.69	5.33	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46	2.31	2.16
8.0	8.28	7.77	7.28	6.83	6.40	6.00	5.63	5.28	4.95	4.64	4.35	4.08	3.82	3.58	3.36	3.15	2.95	2.77	2.60	2.43	2.28	2.14	2.01	1.88
8.1	7.14	6.69	6.28	5.88	5.52	5.17	4.85	4.55	4.26	4.00	3.75	3.51	3.29	3.09	2.90	2.71	2.54	2.39	2.24	2.10	1.97	1.84	1.73	1.62
8.2	6.10	5.72	5.37	5.03	4.72	4.42	4.15	3.89	3.64	3.42	3.20	3.00	2.82	2.64	2.48	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.3	5.19	4.86	4.56	4.28	4.01	3.76	3.52	3.30	3.10	2.90	2.72	2.55	2.39	2.24	2.10	1.97	1.85	1.73	1.63	1.52	1.43	1.34	1.26	1.18
8.4	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46	2.30	2.16	2.03	1.90	1.78	1.67	1.57	1.47	1.38	1.29	1.21	1.13	1.06	1.00
8.5	3.71	3.48	3.26	3.06	2.87	2.69	2.52	2.36	2.21	2.08	1.95	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.96	0.90	0.84
8.6	3.13	2.94	2.75	2.58	2.42	2.27	2.13	1.99	1.87	1.75	1.64	1.54	1.44	1.35	1.27	1.19	1.12	1.05	0.98	0.92	0.86	0.81	0.76	0.71
8.7	2.65	2.48	2.33	2.18	2.05	1.92	1.80	1.69	1.58	1.48	1.39	1.30	1.22	1.15	1.07	1.01	0.94	0.89	0.83	0.78	0.73	0.68	0.64	0.60
8.8	2.25	2.11	1.98	1.85	1.74	1.63	1.53	1.43	1.34	1.26	1.18	1.11	1.04	0.97	0.91	0.86	0.80	0.75	0.71	0.66	0.62	0.58	0.54	0.51
8.9	1.92	1.80	1.69	1.58	1.49	1.39	1.31	1.22	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69	0.64	0.60	0.56	0.53	0.50	0.47	0.44
9.0	1.66	1.55	1.46	1.36	1.28	1.20	1.12	1.05	0.99	0.93	0.87	0.81	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38

Temperature marked in red (0 – 30°C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS absent objectives

Table 16. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Present" condition based on the current SSO in Rio Hondo. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.25	5.86	5.49	5.15
6.6	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.16	5.77	5.41	5.07
6.7	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.04	5.66	5.31	4.98
6.8	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	5.90	5.53	5.19	4.86
6.9	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	5.74	5.38	5.04	4.73
7.0	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.54	5.19	4.87	4.57
7.1	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.31	4.98	4.67	4.38
7.2	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.05	4.74	4.44	4.16
7.3	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	4.76	4.46	4.18	3.92
7.4	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.44	4.16	3.90	3.66
7.5	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.09	3.84	3.60	3.37
7.6	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.73	3.49	3.28	3.07
7.7	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.36	3.15	2.95	2.76
7.8	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	2.98	2.80	2.62	2.46
7.9	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.62	2.46	2.31	2.16
8.0	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.28	2.14	2.01	1.88
8.1	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	1.97	1.84	1.73	1.62
8.2	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.68	1.58	1.48	1.39
8.3	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.43	1.34	1.26	1.18
8.4	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.21	1.13	1.06	1.00
8.5	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.02	0.96	0.90	0.84
8.6	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.81	0.76	0.71
8.7	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.73	0.68	0.64	0.60
8.8	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.62	0.58	0.54	0.51
8.9	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.53	0.50	0.47	0.44
9.0	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.46	0.43	0.40	0.38

Temperature marked in red (23 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS present objectives

Table 17. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in San Jose Creek. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	16.24	15.23	14.28	13.39	12.55	11.77	11.03	10.34	9.70	9.09	8.52	7.99	7.49	7.03	6.59	6.18	5.79	5.43	5.09	4.77	4.47	4.19	3.93	3.69
6.6	16.00	15.00	14.06	13.18	12.36	11.59	10.87	10.19	9.55	8.95	8.40	7.87	7.38	6.92	6.49	6.08	5.70	5.35	5.01	4.70	4.41	4.13	3.87	3.63
6.7	15.70	14.72	13.80	12.94	12.13	11.37	10.66	10.00	9.37	8.79	8.24	7.72	7.24	6.79	6.37	5.97	5.60	5.25	4.92	4.61	4.32	4.05	3.80	3.56
6.8	15.34	14.38	13.48	12.64	11.85	11.11	10.42	9.77	9.16	8.59	8.05	7.55	7.08	6.63	6.22	5.83	5.47	5.13	4.81	4.51	4.22	3.96	3.71	3.48
6.9	14.91	13.98	13.10	12.29	11.52	10.80	10.13	9.49	8.90	8.34	7.82	7.34	6.88	6.45	6.05	5.67	5.31	4.98	4.67	4.38	4.11	3.85	3.61	3.38
7.0	14.40	13.50	12.66	11.87	11.13	10.43	9.78	9.17	8.60	8.06	7.56	7.09	6.64	6.23	5.84	5.47	5.13	4.81	4.51	4.23	3.97	3.72	3.49	3.27
7.1	13.81	12.95	12.14	11.38	10.67	10.00	9.38	8.79	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61	4.33	4.06	3.80	3.57	3.34	3.13
7.2	13.13	12.31	11.54	10.82	10.15	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06	5.68	5.33	4.99	4.68	4.39	4.11	3.86	3.62	3.39	3.18	2.98
7.3	12.37	11.60	10.88	10.20	9.56	8.96	8.40	7.88	7.39	6.93	6.49	6.09	5.71	5.35	5.02	4.70	4.41	4.13	3.88	3.63	3.41	3.19	3.00	2.81
7.4	11.53	10.81	10.14	9.51	8.91	8.36	7.83	7.35	6.89	6.46	6.05	5.68	5.32	4.99	4.68	4.39	4.11	3.85	3.61	3.39	3.18	2.98	2.79	2.62
7.5	10.63	9.97	9.35	8.76	8.22	7.70	7.22	6.77	6.35	5.95	5.58	5.23	4.91	4.60	4.31	4.04	3.79	3.55	3.33	3.12	2.93	2.75	2.57	2.41
7.6	9.69	9.08	8.52	7.98	7.49	7.02	6.58	6.17	5.78	5.42	5.08	4.77	4.47	4.19	3.93	3.68	3.45	3.24	3.04	2.85	2.67	2.50	2.35	2.20
7.7	8.72	8.18	7.66	7.19	6.74	6.32	5.92	5.55	5.21	4.88	4.58	4.29	4.02	3.77	3.54	3.32	3.11	2.91	2.73	2.56	2.40	2.25	2.11	1.98
7.8	7.75	7.27	6.82	6.39	5.99	5.62	5.27	4.94	4.63	4.34	4.07	3.82	3.58	3.35	3.14	2.95	2.76	2.59	2.43	2.28	2.14	2.00	1.88	1.76
7.9	6.82	6.39	5.99	5.62	5.27	4.94	4.63	4.34	4.07	3.82	3.58	3.35	3.14	2.95	2.76	2.59	2.43	2.28	2.14	2.00	1.88	1.76	1.65	1.55
8.0	5.93	5.56	5.21	4.89	4.58	4.30	4.03	3.78	3.54	3.32	3.11	2.92	2.74	2.56	2.40	2.25	2.11	1.98	1.86	1.74	1.63	1.53	1.44	1.35
8.1	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25	3.05	2.86	2.68	2.51	2.36	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16
8.2	4.37	4.10	3.84	3.60	3.38	3.17	2.97	2.78	2.61	2.45	2.29	2.15	2.02	1.89	1.77	1.66	1.56	1.46	1.37	1.28	1.20	1.13	1.06	0.99
8.3	3.71	3.48	3.26	3.06	2.87	2.69	2.52	2.36	2.22	2.08	1.95	1.83	1.71	1.61	1.51	1.41	1.32	1.24	1.16	1.09	1.02	0.96	0.90	0.84
8.4	3.14	2.95	2.76	2.59	2.43	2.28	2.13	2.00	1.88	1.76	1.65	1.55	1.45	1.36	1.27	1.19	1.12	1.05	0.98	0.92	0.87	0.81	0.76	0.71
8.5	2.65	2.49	2.33	2.19	2.05	1.92	1.80	1.69	1.58	1.49	1.39	1.31	1.22	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69	0.64	0.60
8.6	2.24	2.10	1.97	1.85	1.73	1.62	1.52	1.43	1.34	1.25	1.18	1.10	1.03	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58	0.54	0.51
8.7	1.90	1.78	1.67	1.56	1.47	1.37	1.29	1.21	1.13	1.06	1.00	0.93	0.87	0.82	0.77	0.72	0.68	0.63	0.59	0.56	0.52	0.49	0.46	0.43
8.8	1.61	1.51	1.42	1.33	1.24	1.17	1.09	1.03	0.96	0.90	0.85	0.79	0.74	0.70	0.65	0.61	0.57	0.54	0.50	0.47	0.44	0.42	0.39	0.37
8.9	1.38	1.29	1.21	1.13	1.06	1.00	0.93	0.88	0.82	0.77	0.72	0.68	0.64	0.60	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.36	0.33	0.31
9.0	1.19	1.11	1.04	0.98	0.92	0.86	0.80	0.75	0.71	0.66	0.62	0.58	0.55	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31	0.29	0.27

Table 18. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Present" condition based on the current SSO in San Jose Creek. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	7.18	7.18	7.18	7.18	7.18	7.18	7.03	6.59	6.18	5.79	5.43	5.09	4.77	4.47	4.19	3.93	3.69
6.6	7.07	7.07	7.07	7.07	7.07	7.07	6.92	6.49	6.08	5.70	5.35	5.01	4.70	4.41	4.13	3.87	3.63
6.7	6.94	6.94	6.94	6.94	6.94	6.94	6.79	6.37	5.97	5.60	5.25	4.92	4.61	4.32	4.05	3.80	3.56
6.8	6.78	6.78	6.78	6.78	6.78	6.78	6.63	6.22	5.83	5.47	5.13	4.81	4.51	4.22	3.96	3.71	3.48
6.9	6.59	6.59	6.59	6.59	6.59	6.59	6.45	6.05	5.67	5.31	4.98	4.67	4.38	4.11	3.85	3.61	3.38
7.0	6.37	6.37	6.37	6.37	6.37	6.37	6.23	5.84	5.47	5.13	4.81	4.51	4.23	3.97	3.72	3.49	3.27
7.1	6.10	6.10	6.10	6.10	6.10	6.10	5.97	5.60	5.25	4.92	4.61	4.33	4.06	3.80	3.57	3.34	3.13
7.2	5.81	5.81	5.81	5.81	5.81	5.81	5.68	5.33	4.99	4.68	4.39	4.11	3.86	3.62	3.39	3.18	2.98
7.3	5.47	5.47	5.47	5.47	5.47	5.47	5.35	5.02	4.70	4.41	4.13	3.88	3.63	3.41	3.19	3.00	2.81
7.4	5.10	5.10	5.10	5.10	5.10	5.10	4.99	4.68	4.39	4.11	3.85	3.61	3.39	3.18	2.98	2.79	2.62
7.5	4.70	4.70	4.70	4.70	4.70	4.70	4.60	4.31	4.04	3.79	3.55	3.33	3.12	2.93	2.75	2.57	2.41
7.6	4.28	4.28	4.28	4.28	4.28	4.28	4.19	3.93	3.68	3.45	3.24	3.04	2.85	2.67	2.50	2.35	2.20
7.7	3.85	3.85	3.85	3.85	3.85	3.85	3.77	3.54	3.32	3.11	2.91	2.73	2.56	2.40	2.25	2.11	1.98
7.8	3.43	3.43	3.43	3.43	3.43	3.43	3.35	3.14	2.95	2.76	2.59	2.43	2.28	2.14	2.00	1.88	1.76
7.9	3.01	3.01	3.01	3.01	3.01	3.01	2.95	2.76	2.59	2.43	2.28	2.14	2.00	1.88	1.76	1.65	1.55
8.0	2.62	2.62	2.62	2.62	2.62	2.62	2.56	2.40	2.25	2.11	1.98	1.86	1.74	1.63	1.53	1.44	1.35
8.1	2.26	2.26	2.26	2.26	2.26	2.26	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16
8.2	1.93	1.93	1.93	1.93	1.93	1.93	1.89	1.77	1.66	1.56	1.46	1.37	1.28	1.20	1.13	1.06	0.99
8.3	1.64	1.64	1.64	1.64	1.64	1.64	1.61	1.51	1.41	1.32	1.24	1.16	1.09	1.02	0.96	0.90	0.84
8.4	1.39	1.39	1.39	1.39	1.39	1.39	1.36	1.27	1.19	1.12	1.05	0.98	0.92	0.87	0.81	0.76	0.71
8.5	1.17	1.17	1.17	1.17	1.17	1.17	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69	0.64	0.60
8.6	0.99	0.99	0.99	0.99	0.99	0.99	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58	0.54	0.51
8.7	0.84	0.84	0.84	0.84	0.84	0.84	0.82	0.77	0.72	0.68	0.63	0.59	0.56	0.52	0.49	0.46	0.43
8.8	0.71	0.71	0.71	0.71	0.71	0.71	0.70	0.65	0.61	0.57	0.54	0.50	0.47	0.44	0.42	0.39	0.37
8.9	0.61	0.61	0.61	0.61	0.61	0.61	0.60	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.36	0.33	0.31
9.0	0.52	0.52	0.52	0.52	0.52	0.52	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31	0.29	0.27

Table 19. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in San Gabriel River Reaches 2 and 3. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	18.44	17.29	16.21	15.19	14.25	13.36	12.52	11.74	11.01	10.32	9.68	9.07	8.51	7.97	7.48	7.01	6.57	6.16	5.78	5.42	5.08	4.76	4.46	4.18
6.6	18.16	17.02	15.96	14.96	14.03	13.15	12.33	11.56	10.84	10.16	9.53	8.93	8.38	7.85	7.36	6.90	6.47	6.07	5.69	5.33	5.00	4.69	4.40	4.12
6.7	17.82	16.71	15.66	14.68	13.77	12.91	12.10	11.35	10.64	9.97	9.35	8.77	8.22	7.71	7.23	6.77	6.35	5.95	5.58	5.23	4.91	4.60	4.31	4.04
6.8	17.41	16.32	15.30	14.35	13.45	12.61	11.82	11.09	10.39	9.74	9.14	8.57	8.03	7.53	7.06	6.62	6.21	5.82	5.45	5.11	4.79	4.50	4.21	3.95
6.9	16.92	15.86	14.87	13.94	13.07	12.26	11.49	10.77	10.10	9.47	8.88	8.33	7.81	7.32	6.86	6.43	6.03	5.65	5.30	4.97	4.66	4.37	4.10	3.84
7.0	16.34	15.32	14.37	13.47	12.63	11.84	11.10	10.41	9.76	9.15	8.58	8.04	7.54	7.07	6.63	6.21	5.83	5.46	5.12	4.80	4.50	4.22	3.96	3.71
7.1	15.67	14.69	13.78	12.92	12.11	11.35	10.65	9.98	9.36	8.77	8.23	7.71	7.23	6.78	6.36	5.96	5.59	5.24	4.91	4.60	4.32	4.05	3.79	3.56
7.2	14.91	13.97	13.10	12.28	11.52	10.80	10.12	9.49	8.90	8.34	7.82	7.33	6.88	6.45	6.04	5.67	5.31	4.98	4.67	4.38	4.11	3.85	3.61	3.38
7.3	14.04	13.17	12.34	11.57	10.85	10.17	9.54	8.94	8.38	7.86	7.37	6.91	6.48	6.07	5.69	5.34	5.01	4.69	4.40	4.13	3.87	3.63	3.40	3.19
7.4	13.09	12.27	11.51	10.79	10.12	9.48	8.89	8.34	7.82	7.33	6.87	6.44	6.04	5.66	5.31	4.98	4.67	4.38	4.10	3.85	3.61	3.38	3.17	2.97
7.5	12.07	11.32	10.61	9.95	9.33	8.74	8.20	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30	4.03	3.78	3.55	3.32	3.12	2.92	2.74
7.6	11.00	10.31	9.67	9.06	8.50	7.97	7.47	7.00	6.56	6.16	5.77	5.41	5.07	4.76	4.46	4.18	3.92	3.67	3.45	3.23	3.03	2.84	2.66	2.50
7.7	9.90	9.28	8.70	8.16	7.65	7.17	6.72	6.30	5.91	5.54	5.19	4.87	4.57	4.28	4.01	3.76	3.53	3.31	3.10	2.91	2.73	2.56	2.40	2.25
7.8	8.80	8.25	7.74	7.25	6.80	6.38	5.98	5.60	5.25	4.93	4.62	4.33	4.06	3.81	3.57	3.35	3.14	2.94	2.76	2.59	2.42	2.27	2.13	2.00
7.9	7.74	7.25	6.80	6.38	5.98	5.61	5.26	4.93	4.62	4.33	4.06	3.81	3.57	3.35	3.14	2.94	2.76	2.59	2.42	2.27	2.13	2.00	1.87	1.76
8.0	6.73	6.31	5.92	5.55	5.20	4.88	4.57	4.29	4.02	3.77	3.53	3.31	3.11	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63	1.53
8.1	5.80	5.44	5.10	4.78	4.48	4.20	3.94	3.69	3.46	3.25	3.04	2.85	2.68	2.51	2.35	2.21	2.07	1.94	1.82	1.70	1.60	1.50	1.40	1.32
8.2	4.96	4.65	4.36	4.09	3.83	3.59	3.37	3.16	2.96	2.78	2.60	2.44	2.29	2.15	2.01	1.89	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13
8.3	4.22	3.95	3.71	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.96
8.4	3.57	3.34	3.14	2.94	2.76	2.58	2.42	2.27	2.13	2.00	1.87	1.76	1.65	1.54	1.45	1.36	1.27	1.19	1.12	1.05	0.98	0.92	0.86	0.81
8.5	3.01	2.82	2.65	2.48	2.33	2.18	2.05	1.92	1.80	1.69	1.58	1.48	1.39	1.30	1.22	1.15	1.07	1.01	0.94	0.89	0.83	0.78	0.73	0.68
8.6	2.54	2.39	2.24	2.10	1.97	1.84	1.73	1.62	1.52	1.42	1.34	1.25	1.17	1.10	1.03	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58
8.7	2.15	2.02	1.89	1.77	1.66	1.56	1.46	1.37	1.29	1.20	1.13	1.06	0.99	0.93	0.87	0.82	0.77	0.72	0.67	0.63	0.59	0.56	0.52	0.49
8.8	1.83	1.71	1.61	1.51	1.41	1.32	1.24	1.16	1.09	1.02	0.96	0.90	0.84	0.79	0.74	0.70	0.65	0.61	0.57	0.54	0.50	0.47	0.44	0.42
8.9	1.56	1.46	1.37	1.29	1.21	1.13	1.06	0.99	0.93	0.87	0.82	0.77	0.72	0.68	0.63	0.59	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.35
9.0	1.35	1.26	1.18	1.11	1.04	0.97	0.91	0.86	0.80	0.75	0.71	0.66	0.62	0.58	0.55	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31

Table 20. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Present" condition based on the current SSO in San Gabriel River Reaches 2 and 3. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.95	6.57	6.16	5.78	5.42	5.08	4.76	4.46	4.18
6.6	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.84	6.47	6.07	5.69	5.33	5.00	4.69	4.40	4.12
6.7	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.71	6.35	5.95	5.58	5.23	4.91	4.60	4.31	4.04
6.8	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.21	5.82	5.45	5.11	4.79	4.50	4.21	3.95
6.9	6.38	6.38	6.38	6.38	6.38	6.38	6.38	6.38	6.38	6.03	5.65	5.30	4.97	4.66	4.37	4.10	3.84
7.0	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6.16	5.83	5.46	5.12	4.80	4.50	4.22	3.96	3.71
7.1	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.59	5.24	4.91	4.60	4.32	4.05	3.79	3.56
7.2	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.31	4.98	4.67	4.38	4.11	3.85	3.61	3.38
7.3	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.01	4.69	4.40	4.13	3.87	3.63	3.40	3.19
7.4	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.67	4.38	4.10	3.85	3.61	3.38	3.17	2.97
7.5	4.55	4.55	4.55	4.55	4.55	4.55	4.55	4.55	4.55	4.30	4.03	3.78	3.55	3.32	3.12	2.92	2.74
7.6	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14	3.92	3.67	3.45	3.23	3.03	2.84	2.66	2.50
7.7	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.53	3.31	3.10	2.91	2.73	2.56	2.40	2.25
7.8	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.14	2.94	2.76	2.59	2.42	2.27	2.13	2.00
7.9	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.92	2.76	2.59	2.42	2.27	2.13	2.00	1.87	1.76
8.0	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.40	2.25	2.11	1.98	1.85	1.74	1.63	1.53
8.1	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.07	1.94	1.82	1.70	1.60	1.50	1.40	1.32
8.2	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13
8.3	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.96
8.4	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.27	1.19	1.12	1.05	0.98	0.92	0.86	0.81
8.5	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.07	1.01	0.94	0.89	0.83	0.78	0.73	0.68
8.6	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58
8.7	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.77	0.72	0.67	0.63	0.59	0.56	0.52	0.49
8.8	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.65	0.61	0.57	0.54	0.50	0.47	0.44	0.42
8.9	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.35
9.0	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31

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Table 21. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in San Gabriel River Reach 1. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	24.93	23.38	21.92	20.55	19.26	18.06	16.93	15.88	14.89	13.96	13.08	12.27	11.50	10.78	10.11	9.48	8.89	8.33	7.81	7.32	6.87	6.44	6.04	5.66
6.6	24.55	23.02	21.58	20.24	18.97	17.79	16.68	15.64	14.66	13.74	12.89	12.08	11.33	10.62	9.96	9.34	8.75	8.21	7.69	7.21	6.76	6.34	5.94	5.57
6.7	24.10	22.59	21.18	19.86	18.62	17.46	16.37	15.34	14.39	13.49	12.65	11.86	11.12	10.42	9.77	9.16	8.59	8.05	7.55	7.08	6.64	6.22	5.83	5.47
6.8	23.54	22.07	20.69	19.40	18.19	17.05	15.99	14.99	14.06	13.18	12.36	11.58	10.86	10.18	9.55	8.95	8.39	7.87	7.38	6.92	6.48	6.08	5.70	5.34
6.9	22.88	21.45	20.11	18.86	17.68	16.58	15.54	14.57	13.66	12.81	12.01	11.26	10.56	9.90	9.28	8.70	8.16	7.65	7.17	6.72	6.30	5.91	5.54	5.19
7.0	22.10	20.72	19.43	18.22	17.08	16.01	15.01	14.07	13.20	12.37	11.60	10.88	10.20	9.56	8.96	8.40	7.88	7.39	6.93	6.49	6.09	5.71	5.35	5.02
7.1	21.19	19.87	18.63	17.47	16.38	15.35	14.40	13.50	12.65	11.86	11.12	10.43	9.78	9.17	8.59	8.06	7.55	7.08	6.64	6.23	5.84	5.47	5.13	4.81
7.2	20.16	18.90	17.72	16.61	15.57	14.60	13.69	12.84	12.03	11.28	10.58	9.92	9.30	8.72	8.17	7.66	7.18	6.74	6.32	5.92	5.55	5.20	4.88	4.58
7.3	18.99	17.80	16.69	15.65	14.67	13.76	12.90	12.09	11.34	10.63	9.97	9.34	8.76	8.21	7.70	7.22	6.77	6.35	5.95	5.58	5.23	4.90	4.60	4.31
7.4	17.70	16.60	15.56	14.59	13.68	12.83	12.02	11.27	10.57	9.91	9.29	8.71	8.17	7.66	7.18	6.73	6.31	5.92	5.55	5.20	4.88	4.57	4.29	4.02
7.5	16.32	15.30	14.35	13.45	12.61	11.82	11.09	10.39	9.74	9.14	8.57	8.03	7.53	7.06	6.62	6.21	5.82	5.45	5.11	4.79	4.50	4.21	3.95	3.70
7.6	14.87	13.94	13.07	12.25	11.49	10.77	10.10	9.47	8.88	8.32	7.80	7.32	6.86	6.43	6.03	5.65	5.30	4.97	4.66	4.37	4.10	3.84	3.60	3.38
7.7	13.38	12.55	11.76	11.03	10.34	9.70	9.09	8.52	7.99	7.49	7.02	6.59	6.17	5.79	5.43	5.09	4.77	4.47	4.19	3.93	3.69	3.46	3.24	3.04
7.8	11.90	11.16	10.46	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86	5.49	5.15	4.83	4.53	4.24	3.98	3.73	3.50	3.28	3.07	2.88	2.70
7.9	10.46	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86	5.49	5.15	4.83	4.53	4.24	3.98	3.73	3.50	3.28	3.07	2.88	2.70	2.53	2.38
8.0	9.10	8.53	8.00	7.50	7.03	6.59	6.18	5.80	5.43	5.09	4.78	4.48	4.20	3.94	3.69	3.46	3.24	3.04	2.85	2.67	2.51	2.35	2.20	2.07
8.1	7.84	7.35	6.89	6.46	6.06	5.68	5.33	4.99	4.68	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46	2.30	2.16	2.03	1.90	1.78
8.2	6.71	6.29	5.90	5.53	5.18	4.86	4.56	4.27	4.00	3.75	3.52	3.30	3.09	2.90	2.72	2.55	2.39	2.24	2.10	1.97	1.85	1.73	1.62	1.52
8.3	5.70	5.34	5.01	4.70	4.40	4.13	3.87	3.63	3.40	3.19	2.99	2.80	2.63	2.47	2.31	2.17	2.03	1.90	1.79	1.67	1.57	1.47	1.38	1.29
8.4	4.82	4.52	4.24	3.98	3.73	3.49	3.28	3.07	2.88	2.70	2.53	2.37	2.23	2.09	1.96	1.83	1.72	1.61	1.51	1.42	1.33	1.25	1.17	1.10
8.5	4.07	3.82	3.58	3.36	3.15	2.95	2.77	2.59	2.43	2.28	2.14	2.00	1.88	1.76	1.65	1.55	1.45	1.36	1.28	1.20	1.12	1.05	0.99	0.92
8.6	3.44	3.23	3.02	2.84	2.66	2.49	2.34	2.19	2.05	1.93	1.81	1.69	1.59	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.95	0.89	0.83	0.78
8.7	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63	1.53	1.43	1.34	1.26	1.18	1.11	1.04	0.97	0.91	0.86	0.80	0.75	0.70	0.66
8.8	2.47	2.32	2.17	2.04	1.91	1.79	1.68	1.57	1.48	1.38	1.30	1.22	1.14	1.07	1.00	0.94	0.88	0.83	0.77	0.73	0.68	0.64	0.60	0.56
8.9	2.11	1.98	1.86	1.74	1.63	1.53	1.43	1.35	1.26	1.18	1.11	1.04	0.97	0.91	0.86	0.80	0.75	0.71	0.66	0.62	0.58	0.55	0.51	0.48
9.0	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.95	0.90	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47	0.44	0.41

Temperature marked in red (0 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS absent objectives

Table 22. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters when “ELS present” condition based on 2013 ammonia criteria is introduced to San Gabriel River Reach 1. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.04	6.60	6.19	5.80	5.44	5.10	4.78	4.48	4.20
6.6	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	6.93	6.50	6.09	5.71	5.36	5.02	4.71	4.41	4.14
6.7	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	6.80	6.38	5.98	5.61	5.26	4.93	4.62	4.33	4.06
6.8	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.65	6.23	5.84	5.48	5.14	4.81	4.51	4.23	3.97
6.9	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.46	6.06	5.68	5.32	4.99	4.68	4.39	4.11	3.86
7.0	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.24	5.85	5.48	5.14	4.82	4.52	4.24	3.97	3.73
7.1	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	5.98	5.61	5.26	4.93	4.62	4.33	4.06	3.81	3.57
7.2	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.69	5.33	5.00	4.69	4.40	4.12	3.86	3.62	3.40
7.3	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.36	5.03	4.71	4.42	4.14	3.88	3.64	3.41	3.20
7.4	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98
7.5	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.61	4.32	4.05	3.80	3.56	3.34	3.13	2.93	2.75
7.6	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.20	3.94	3.69	3.46	3.24	3.04	2.85	2.67	2.51
7.7	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.78	3.54	3.32	3.11	2.92	2.74	2.57	2.41	2.26
7.8	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.36	3.15	2.95	2.77	2.60	2.43	2.28	2.14	2.01
7.9	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	2.95	2.77	2.60	2.43	2.28	2.14	2.01	1.88	1.76
8.0	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.57	2.41	2.26	2.12	1.99	1.86	1.75	1.64	1.53
8.1	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.21	2.08	1.95	1.82	1.71	1.60	1.50	1.41	1.32
8.2	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.89	1.77	1.66	1.56	1.46	1.37	1.29	1.21	1.13
8.3	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.61	1.51	1.41	1.33	1.24	1.17	1.09	1.02	0.96
8.4	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.36	1.28	1.20	1.12	1.05	0.99	0.92	0.87	0.81
8.5	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69
8.6	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58
8.7	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.82	0.77	0.72	0.68	0.63	0.60	0.56	0.52	0.49
8.8	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.70	0.65	0.61	0.58	0.54	0.51	0.47	0.44	0.42
8.9	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.60	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.36
9.0	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31

Temperature marked in red (0 – 30 °C) indicates proposed chronic ammonia objectives that are lower (more stringent) than the current ELS absent objectives

Table 23. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in Coyote Creek. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	22.10	20.72	19.42	18.21	17.07	16.01	15.01	14.07	13.19	12.37	11.60	10.87	10.19	9.56	8.96	8.40	7.88	7.38	6.92	6.49	6.09	5.71	5.35	5.02
6.6	21.76	20.40	19.13	17.93	16.81	15.76	14.78	13.86	12.99	12.18	11.42	10.71	10.04	9.41	8.82	8.27	7.76	7.27	6.82	6.39	5.99	5.62	5.27	4.94
6.7	21.35	20.02	18.77	17.60	16.50	15.47	14.50	13.60	12.75	11.95	11.21	10.51	9.85	9.24	8.66	8.12	7.61	7.14	6.69	6.27	5.88	5.51	5.17	4.85
6.8	20.86	19.56	18.34	17.19	16.12	15.11	14.17	13.29	12.46	11.68	10.95	10.27	9.62	9.02	8.46	7.93	7.44	6.97	6.54	6.13	5.75	5.39	5.05	4.74
6.9	20.28	19.01	17.82	16.71	15.67	14.69	13.77	12.91	12.11	11.35	10.64	9.98	9.35	8.77	8.22	7.71	7.23	6.78	6.35	5.96	5.59	5.24	4.91	4.60
7.0	19.59	18.36	17.22	16.14	15.13	14.19	13.30	12.47	11.69	10.96	10.28	9.64	9.04	8.47	7.94	7.45	6.98	6.55	6.14	5.75	5.39	5.06	4.74	4.45
7.1	18.78	17.61	16.51	15.48	14.51	13.61	12.76	11.96	11.21	10.51	9.86	9.24	8.67	8.12	7.62	7.14	6.70	6.28	5.89	5.52	5.17	4.85	4.55	4.26
7.2	17.86	16.75	15.70	14.72	13.80	12.94	12.13	11.38	10.67	10.00	9.37	8.79	8.24	7.73	7.24	6.79	6.37	5.97	5.60	5.25	4.92	4.61	4.32	4.05
7.3	16.83	15.78	14.79	13.87	13.00	12.19	11.43	10.72	10.05	9.42	8.83	8.28	7.76	7.28	6.82	6.40	6.00	5.62	5.27	4.94	4.64	4.35	4.07	3.82
7.4	15.69	14.71	13.79	12.93	12.12	11.37	10.66	9.99	9.37	8.78	8.23	7.72	7.24	6.79	6.36	5.97	5.59	5.24	4.92	4.61	4.32	4.05	3.80	3.56
7.5	14.46	13.56	12.71	11.92	11.18	10.48	9.82	9.21	8.64	8.10	7.59	7.12	6.67	6.26	5.87	5.50	5.16	4.83	4.53	4.25	3.98	3.74	3.50	3.28
7.6	13.18	12.35	11.58	10.86	10.18	9.55	8.95	8.39	7.87	7.38	6.92	6.48	6.08	5.70	5.34	5.01	4.70	4.40	4.13	3.87	3.63	3.40	3.19	2.99
7.7	11.86	11.12	10.43	9.77	9.16	8.59	8.06	7.55	7.08	6.64	6.22	5.84	5.47	5.13	4.81	4.51	4.23	3.96	3.72	3.48	3.27	3.06	2.87	2.69
7.8	10.55	9.89	9.27	8.69	8.15	7.64	7.16	6.72	6.30	5.90	5.54	5.19	4.87	4.56	4.28	4.01	3.76	3.53	3.30	3.10	2.91	2.72	2.55	2.39
7.9	9.27	8.69	8.15	7.64	7.17	6.72	6.30	5.91	5.54	5.19	4.87	4.56	4.28	4.01	3.76	3.53	3.31	3.10	2.91	2.72	2.55	2.39	2.25	2.10
8.0	8.07	7.56	7.09	6.65	6.23	5.84	5.48	5.14	4.82	4.52	4.23	3.97	3.72	3.49	3.27	3.07	2.88	2.70	2.53	2.37	2.22	2.08	1.95	1.83
8.1	6.95	6.52	6.11	5.73	5.37	5.04	4.72	4.43	4.15	3.89	3.65	3.42	3.21	3.01	2.82	2.64	2.48	2.32	2.18	2.04	1.91	1.80	1.68	1.58
8.2	5.94	5.57	5.22	4.90	4.59	4.31	4.04	3.78	3.55	3.33	3.12	2.92	2.74	2.57	2.41	2.26	2.12	1.99	1.86	1.75	1.64	1.53	1.44	1.35
8.3	5.05	4.74	4.44	4.16	3.90	3.66	3.43	3.22	3.02	2.83	2.65	2.49	2.33	2.18	2.05	1.92	1.80	1.69	1.58	1.48	1.39	1.30	1.22	1.15
8.4	4.28	4.01	3.76	3.52	3.30	3.10	2.90	2.72	2.55	2.39	2.24	2.10	1.97	1.85	1.73	1.63	1.52	1.43	1.34	1.26	1.18	1.10	1.04	0.97
8.5	3.61	3.39	3.17	2.98	2.79	2.62	2.45	2.30	2.16	2.02	1.89	1.78	1.67	1.56	1.46	1.37	1.29	1.21	1.13	1.06	0.99	0.93	0.87	0.82
8.6	3.05	2.86	2.68	2.51	2.36	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.96	0.90	0.84	0.79	0.74	0.69
8.7	2.58	2.42	2.27	2.13	1.99	1.87	1.75	1.64	1.54	1.44	1.35	1.27	1.19	1.12	1.05	0.98	0.92	0.86	0.81	0.76	0.71	0.67	0.62	0.59
8.8	2.19	2.05	1.93	1.81	1.69	1.59	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69	0.64	0.60	0.57	0.53	0.50
8.9	1.87	1.76	1.65	1.54	1.45	1.36	1.27	1.19	1.12	1.05	0.98	0.92	0.86	0.81	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.48	0.45	0.43
9.0	1.61	1.51	1.42	1.33	1.25	1.17	1.09	1.03	0.96	0.90	0.85	0.79	0.74	0.70	0.65	0.61	0.57	0.54	0.51	0.47	0.44	0.42	0.39	0.37

Temperature marked in red (0 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS absent objectives

Table 24. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters when “ELS Present” condition based on 2013 ammonia criteria is introduced to Coyote Creek. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.34	7.04	6.60	6.19	5.80	5.44	5.10	4.78	4.48	4.20
6.6	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.23	6.93	6.50	6.09	5.71	5.36	5.02	4.71	4.41	4.14
6.7	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	6.80	6.38	5.98	5.61	5.26	4.93	4.62	4.33	4.06
6.8	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.93	6.65	6.23	5.84	5.48	5.14	4.81	4.51	4.23	3.97
6.9	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.74	6.46	6.06	5.68	5.32	4.99	4.68	4.39	4.11	3.86
7.0	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.24	5.85	5.48	5.14	4.82	4.52	4.24	3.97	3.73
7.1	6.24	6.24	6.24	6.24	6.24	6.24	6.24	6.24	5.98	5.61	5.26	4.93	4.62	4.33	4.06	3.81	3.57
7.2	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.69	5.33	5.00	4.69	4.40	4.12	3.86	3.62	3.40
7.3	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.36	5.03	4.71	4.42	4.14	3.88	3.64	3.41	3.20
7.4	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.21	5.00	4.69	4.39	4.12	3.86	3.62	3.39	3.18	2.98
7.5	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.81	4.61	4.32	4.05	3.80	3.56	3.34	3.13	2.93	2.75
7.6	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.20	3.94	3.69	3.46	3.24	3.04	2.85	2.67	2.51
7.7	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.78	3.54	3.32	3.11	2.92	2.74	2.57	2.41	2.26
7.8	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.36	3.15	2.95	2.77	2.60	2.43	2.28	2.14	2.01
7.9	3.08	3.08	3.08	3.08	3.08	3.08	3.08	3.08	2.95	2.77	2.60	2.43	2.28	2.14	2.01	1.88	1.76
8.0	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.57	2.41	2.26	2.12	1.99	1.86	1.75	1.64	1.53
8.1	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.31	2.21	2.08	1.95	1.82	1.71	1.60	1.50	1.41	1.32
8.2	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.89	1.77	1.66	1.56	1.46	1.37	1.29	1.21	1.13
8.3	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.61	1.51	1.41	1.33	1.24	1.17	1.09	1.02	0.96
8.4	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.36	1.28	1.20	1.12	1.05	0.99	0.92	0.87	0.81
8.5	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.69
8.6	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58
8.7	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.82	0.77	0.72	0.68	0.63	0.60	0.56	0.52	0.49
8.8	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.70	0.65	0.61	0.58	0.54	0.51	0.47	0.44	0.42
8.9	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.60	0.56	0.52	0.49	0.46	0.43	0.40	0.38	0.36
9.0	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31

Temperature marked in red (0 – 30 °C) indicates proposed chronic ammonia objectives that are lower (more stringent) than the current ELS absent objectives

Table 25. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in Santa Clara River Reach 6. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	24.19	22.68	21.26	19.93	18.69	17.52	16.43	15.40	14.44	13.54	12.69	11.90	11.16	10.46	9.81	9.20	8.62	8.08	7.58	7.10	6.66	6.25	5.86	5.49
6.6	23.82	22.33	20.94	19.63	18.40	17.26	16.18	15.17	14.22	13.33	12.50	11.72	10.99	10.30	9.66	9.06	8.49	7.96	7.46	7.00	6.56	6.15	5.77	5.41
6.7	23.37	21.91	20.55	19.26	18.06	16.93	15.88	14.88	13.96	13.08	12.27	11.50	10.78	10.11	9.48	8.89	8.33	7.81	7.32	6.87	6.44	6.04	5.66	5.31
6.8	22.84	21.41	20.07	18.82	17.65	16.54	15.51	14.54	13.63	12.78	11.99	11.24	10.54	9.88	9.26	8.68	8.14	7.63	7.16	6.71	6.29	5.90	5.53	5.18
6.9	22.20	20.81	19.51	18.29	17.15	16.08	15.08	14.13	13.25	12.42	11.65	10.92	10.24	9.60	9.00	8.44	7.91	7.42	6.95	6.52	6.11	5.73	5.37	5.04
7.0	21.44	20.10	18.85	17.67	16.57g	15.53	14.56	13.65	12.80	12.00	11.25	10.55	9.89	9.27	8.69	8.15	7.64	7.17	6.72	6.30	5.91	5.54	5.19	4.87
7.1	20.56	19.28	18.07	16.94	15.89	14.89	13.96	13.09	12.28	11.51	10.79	10.12	9.48	8.89	8.34	7.82	7.33	6.87	6.44	6.04	5.66	5.31	4.98	4.67
7.2	19.55	18.33	17.19	16.11	15.11	14.16	13.28	12.45	11.67	10.94	10.26	9.62	9.02	8.46	7.93	7.43	6.97	6.53	6.13	5.74	5.39	5.05	4.73	4.44
7.3	18.42	17.27	16.19	15.18	14.23	13.34	12.51	11.73	11.00	10.31	9.67	9.06	8.50	7.97	7.47	7.00	6.57	6.16	5.77	5.41	5.07	4.76	4.46	4.18
7.4	17.17	16.10	15.10	14.15	13.27	12.44	11.66	10.94	10.25	9.61	9.01	8.45	7.92	7.43	6.96	6.53	6.12	5.74	5.38	5.05	4.73	4.43	4.16	3.90
7.5	15.83	14.84	13.92	13.05	12.23	11.47	10.75	10.08	9.45	8.86	8.31	7.79	7.30	6.85	6.42	6.02	5.64	5.29	4.96	4.65	4.36	4.09	3.83	3.59
7.6	14.42	13.52	12.68	11.89	11.15	10.45	9.80	9.19	8.61	8.07	7.57	7.10	6.65	6.24	5.85	5.48	5.14	4.82	4.52	4.24	3.97	3.72	3.49	3.27
7.7	12.98	12.17	11.41	10.70	10.03	9.41	8.82	8.27	7.75	7.27	6.81	6.39	5.99	5.62	5.26	4.94	4.63	4.34	4.07	3.81	3.58	3.35	3.14	2.95
7.8	11.55	10.82	10.15	9.52	8.92	8.36	7.84	7.35	6.89	6.46	6.06	5.68	5.33	4.99	4.68	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62
7.9	10.15	9.52	8.92	8.37	7.84	7.35	6.89	6.46	6.06	5.68	5.33	4.99	4.68	4.39	4.12	3.86	3.62	3.39	3.18	2.98	2.80	2.62	2.46	2.30
8.0	8.83	8.28	7.76	7.28	6.82	6.40	6.00	5.62	5.27	4.94	4.63	4.34	4.07	3.82	3.58	3.36	3.15	2.95	2.77	2.59	2.43	2.28	2.14	2.00
8.1	7.61	7.13	6.69	6.27	5.88	5.51	5.17	4.85	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54	2.38	2.24	2.10	1.96	1.84	1.73
8.2	6.51	6.10	5.72	5.36	5.03	4.71	4.42	4.14	3.88	3.64	3.41	3.20	3.00	2.81	2.64	2.47	2.32	2.17	2.04	1.91	1.79	1.68	1.58	1.48
8.3	5.53	5.18	4.86	4.56	4.27	4.01	3.76	3.52	3.30	3.10	2.90	2.72	2.55	2.39	2.24	2.10	1.97	1.85	1.73	1.62	1.52	1.43	1.34	1.26
8.4	4.68	4.39	4.11	3.86	3.62	3.39	3.18	2.98	2.79	2.62	2.46	2.30	2.16	2.02	1.90	1.78	1.67	1.56	1.47	1.37	1.29	1.21	1.13	1.06
8.5	3.95	3.71	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21	2.07	1.94	1.82	1.71	1.60	1.50	1.41	1.32	1.24	1.16	1.09	1.02	0.96	0.90
8.6	3.34	3.13	2.93	2.75	2.58	2.42	2.27	2.13	1.99	1.87	1.75	1.64	1.54	1.44	1.35	1.27	1.19	1.12	1.05	0.98	0.92	0.86	0.81	0.76
8.7	2.82	2.65	2.48	2.33	2.18	2.05	1.92	1.80	1.69	1.58	1.48	1.39	1.30	1.22	1.15	1.07	1.01	0.94	0.88	0.83	0.78	0.73	0.68	0.64
8.8	2.40	2.25	2.11	1.98	1.85	1.74	1.63	1.53	1.43	1.34	1.26	1.18	1.11	1.04	0.97	0.91	0.85	0.80	0.75	0.70	0.66	0.62	0.58	0.54
8.9	2.05	1.92	1.80	1.69	1.58	1.48	1.39	1.31	1.22	1.15	1.08	1.01	0.95	0.89	0.83	0.78	0.73	0.68	0.64	0.60	0.56	0.53	0.50	0.47
9.0	1.76	1.65	1.55	1.45	1.36	1.28	1.20	1.12	1.05	0.99	0.93	0.87	0.81	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40

Temperature marked in red (0 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS absent objectives

Table 26. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Present" condition based on the current SSO in Santa Clara River Reach 6. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.66	6.25	5.86	5.49
6.6	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.15	5.77	5.41
6.7	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.04	5.66	5.31
6.8	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	5.90	5.53	5.18
6.9	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.11	5.73	5.37	5.04
7.0	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.54	5.19	4.87
7.1	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.66	5.31	4.98	4.67
7.2	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.05	4.73	4.44
7.3	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.07	4.76	4.46	4.18
7.4	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.43	4.16	3.90
7.5	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.09	3.83	3.59
7.6	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.97	3.72	3.49	3.27
7.7	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.35	3.14	2.95
7.8	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	2.98	2.80	2.62
7.9	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.62	2.46	2.30
8.0	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.28	2.14	2.00
8.1	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	1.96	1.84	1.73
8.2	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.68	1.58	1.48
8.3	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.43	1.34	1.26
8.4	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.21	1.13	1.06
8.5	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.02	0.96	0.90
8.6	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.81	0.76
8.7	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.73	0.68	0.64
8.8	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.62	0.58	0.54
8.9	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.53	0.50	0.47
9.0	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.46	0.43	0.40

Temperature marked in red (23 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS present objectives

Table 27. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Absent" condition based on the current SSO in Santa Clara River Reach 5. Temperature is expressed in degree Celsius.

pH	0-7°C	8°C	9°C	10°C	11°C	12°C	13°C	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	23.89	22.40	21.00	19.69	18.46	17.30	16.22	15.21	14.26	13.37	12.54	11.75	11.02	10.33	9.69	9.08	8.51	7.98	7.48	7.02	6.58	6.17	5.78	5.42
6.6	23.53	22.06	20.68	19.39	18.18	17.04	15.98	14.98	14.05	13.17	12.35	11.58	10.85	10.17	9.54	8.94	8.39	7.86	7.37	6.91	6.48	6.07	5.70	5.34
6.7	23.09	21.64	20.29	19.03	17.84	16.72	15.68	14.70	13.78	12.92	12.12	11.36	10.65	9.98	9.36	8.78	8.23	7.72	7.23	6.78	6.36	5.96	5.59	5.24
6.8	22.56	21.15	19.83	18.59	17.43	16.34	15.32	14.36	13.47	12.63	11.84	11.10	10.41	9.76	9.15	8.58	8.04	7.54	7.07	6.63	6.21	5.82	5.46	5.12
6.9	21.92	20.55	19.27	18.07	16.94	15.88	14.89	13.96	13.09	12.27	11.50	10.79	10.11	9.48	8.89	8.33	7.81	7.33	6.87	6.44	6.04	5.66	5.31	4.98
7.0	21.18	19.85	18.61	17.45	16.36	15.34	14.38	13.48	12.64	11.85	11.11	10.42	9.77	9.16	8.59	8.05	7.55	7.08	6.63	6.22	5.83	5.47	5.13	4.81
7.1	20.31	19.04	17.85	16.74	15.69	14.71	13.79	12.93	12.12	11.37	10.66	9.99	9.37	8.78	8.23	7.72	7.24	6.79	6.36	5.97	5.59	5.24	4.92	4.61
7.2	19.31	18.11	16.98	15.92	14.92	13.99	13.12	12.30	11.53	10.81	10.13	9.50	8.91	8.35	7.83	7.34	6.88	6.45	6.05	5.67	5.32	4.99	4.68	4.38
7.3	18.19	17.06	15.99	14.99	14.06	13.18	12.36	11.59	10.86	10.18	9.55	8.95	8.39	7.87	7.38	6.92	6.49	6.08	5.70	5.34	5.01	4.70	4.40	4.13
7.4	16.96	15.90	14.91	13.98	13.11	12.29	11.52	10.80	10.13	9.49	8.90	8.35	7.83	7.34	6.88	6.45	6.05	5.67	5.31	4.98	4.67	4.38	4.11	3.85
7.5	15.64	14.66	13.75	12.89	12.08	11.33	10.62	9.96	9.34	8.75	8.21	7.69	7.21	6.76	6.34	5.95	5.57	5.23	4.90	4.59	4.31	4.04	3.79	3.55
7.6	14.25	13.36	12.52	11.74	11.01	10.32	9.68	9.07	8.51	7.97	7.48	7.01	6.57	6.16	5.78	5.42	5.08	4.76	4.46	4.19	3.92	3.68	3.45	3.23
7.7	12.82	12.02	11.27	10.57	9.91	9.29	8.71	8.17	7.66	7.18	6.73	6.31	5.92	5.55	5.20	4.87	4.57	4.29	4.02	3.77	3.53	3.31	3.10	2.91
7.8	11.40	10.69	10.02	9.40	8.81	8.26	7.75	7.26	6.81	6.38	5.98	5.61	5.26	4.93	4.62	4.34	4.06	3.81	3.57	3.35	3.14	2.94	2.76	2.59
7.9	10.02	9.40	8.81	8.26	7.75	7.26	6.81	6.38	5.99	5.61	5.26	4.93	4.62	4.34	4.07	3.81	3.57	3.35	3.14	2.94	2.76	2.59	2.43	2.28
8.0	8.72	8.18	7.67	7.19	6.74	6.32	5.92	5.55	5.21	4.88	4.58	4.29	4.02	3.77	3.54	3.32	3.11	2.91	2.73	2.56	2.40	2.25	2.11	1.98
8.1	7.51	7.05	6.61	6.19	5.81	5.44	5.10	4.79	4.49	4.21	3.94	3.70	3.47	3.25	3.05	2.86	2.68	2.51	2.35	2.21	2.07	1.94	1.82	1.71
8.2	6.43	6.02	5.65	5.30	4.96	4.65	4.36	4.09	3.84	3.60	3.37	3.16	2.96	2.78	2.61	2.44	2.29	2.15	2.01	1.89	1.77	1.66	1.56	1.46
8.3	5.46	5.12	4.80	4.50	4.22	3.96	3.71	3.48	3.26	3.06	2.87	2.69	2.52	2.36	2.21	2.08	1.95	1.83	1.71	1.60	1.50	1.41	1.32	1.24
8.4	4.62	4.33	4.06	3.81	3.57	3.35	3.14	2.94	2.76	2.59	2.43	2.27	2.13	2.00	1.87	1.76	1.65	1.54	1.45	1.36	1.27	1.19	1.12	1.05
8.5	3.90	3.66	3.43	3.22	3.02	2.83	2.65	2.49	2.33	2.18	2.05	1.92	1.80	1.69	1.58	1.48	1.39	1.30	1.22	1.15	1.08	1.01	0.95	0.89
8.6	3.30	3.09	2.90	2.72	2.55	2.39	2.24	2.10	1.97	1.85	1.73	1.62	1.52	1.43	1.34	1.25	1.17	1.10	1.03	0.97	0.91	0.85	0.80	0.75
8.7	2.79	2.61	2.45	2.30	2.15	2.02	1.89	1.78	1.67	1.56	1.46	1.37	1.29	1.21	1.13	1.06	0.99	0.93	0.87	0.82	0.77	0.72	0.68	0.63
8.8	2.37	2.22	2.08	1.95	1.83	1.72	1.61	1.51	1.41	1.33	1.24	1.17	1.09	1.02	0.96	0.90	0.84	0.79	0.74	0.70	0.65	0.61	0.57	0.54
8.9	2.02	1.90	1.78	1.67	1.56	1.47	1.37	1.29	1.21	1.13	1.06	1.00	0.93	0.88	0.82	0.77	0.72	0.68	0.63	0.59	0.56	0.52	0.49	0.46
9.0	1.74	1.63	1.53	1.44	1.35	1.26	1.18	1.11	1.04	0.98	0.91	0.86	0.80	0.75	0.71	0.66	0.62	0.58	0.55	0.51	0.48	0.45	0.42	0.40

Temperature marked in red (0 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS absent objectives

Table 28. Chronic (30-day Average) objectives for ammonia (mg TAN/L) for freshwaters applicable to waters subject to the "ELS Present" condition based on the current SSO in Santa Clara River Reach 5. Temperature is expressed in degree Celsius.

pH	0-14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C	27°C	28°C	29°C	30°C
6.5	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.67	6.58	6.17	5.78	5.42
6.6	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.48	6.07	5.70	5.34
6.7	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.36	5.96	5.59	5.24
6.8	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.29	6.21	5.82	5.46	5.12
6.9	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.04	5.66	5.31	4.98
7.0	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.91	5.83	5.47	5.13	4.81
7.1	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.67	5.59	5.24	4.92	4.61
7.2	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.39	5.32	4.99	4.68	4.38
7.3	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.01	4.70	4.40	4.13
7.4	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.73	4.67	4.38	4.11	3.85
7.5	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.31	4.04	3.79	3.55
7.6	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.92	3.68	3.45	3.23
7.7	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.53	3.31	3.10	2.91
7.8	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.18	3.14	2.94	2.76	2.59
7.9	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.76	2.59	2.43	2.28
8.0	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.40	2.25	2.11	1.98
8.1	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.07	1.94	1.82	1.71
8.2	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.77	1.66	1.56	1.46
8.3	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.50	1.41	1.32	1.24
8.4	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.27	1.19	1.12	1.05
8.5	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.08	1.01	0.95	0.89
8.6	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.91	0.85	0.80	0.75
8.7	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.77	0.72	0.68	0.63
8.8	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.65	0.61	0.57	0.54
8.9	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.52	0.49	0.46
9.0	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.48	0.45	0.42	0.40

Temperature marked in red (23 – 30 °C) indicates current chronic ammonia objectives that are higher (less stringent) than the proposed mussel absent and ELS present objectives