

Oil Spill Response Atlas – Segment 92

The default guideline values (DGVs) for aquatic ecosystems presented herein have been derived from site specific information in accordance with the National Water Quality Management Strategy (NWQMS).



Water Body Name: D'Entrecasteaux Channel

OSRA Segment: 92

IMCRA Mesoscale Region: Bruny

IMCRA Provincial Region: Tasmanian Shelf

Ecosystem Classification: Slightly to Moderately Disturbed Ecosystem

Data Provider: Aquenal

BEMP Sites: M1, M2, M3, and M4

Period of record: 17/03/2009 to 11/10/2018.

Default Guideline Values

Data from 4 locations (BEMP-HEDC1 (M1), BEMP-HEDC2 (M2), BEMP-HEDC3 (M3), and BEMP-HEDC4 (M4)) have been used in the derivation of the DGVs presented here in. For each site field measurements were taken at the surface, 5 metres and approximately one metre from the bottom. Nutrient samples for laboratory analysis were taken at the surface, and near the bottom of the water column. Chlorophyll a data was collected for laboratory analysis from a 12 metre integrated sample (surface to a depth of 12 metres).

The following tables display the combined data as percentiles for the surface, 5 metre depth and near the bottom of the water column. The laboratory data from the surface or bottom can be considered for nutrient DGVs for the 5 metre depth. The shaded values represent the default guideline values (DGVs) for aquatic ecosystems for the depth indicated on an annual or seasonal basis. These can be applied as DGVs for aquatic ecosystems of waters encompassed within OSRA segment 92 (as highlighted above). The DGVs are summarised in Appendix A. The following links provide Information on the [IMCRA spatial network](#) and the Interim [Default guideline values for Coastal and Marine waters](#) of Tasmania.

Annual DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.9	7.0	7.3	8.0	8.5	8.9	9.2	575
Dissolved Oxygen (%)	86.6	88.4	90.9	95.8	101.7	105.4	107.9	579
Salinity (PPT)	31.8	32.7	33.5	34.6	35.3	35.9	36.2	567
Field Cond@TRef25 (mS/cm)	49.1	50.5	51.7	52.9	54.1	54.7	55.9	335
pH field - sensor TC	7.6	7.8	7.9	8.0	8.2	8.2	8.3	511
Temperature (Celsius)	9.9	10.4	11.3	15.0	17.8	18.6	19.0	575
Turbidity (NTU)	0.4	0.5	1.1	4.1	10.7	15.6	17.0	172
Redox (mV)	-824	19	112	404	448	463	471	351
Chlorophyll a (µg/L)*	0.5	0.6	0.8	1.2	1.8	2.2	2.6	576
TAN as N (mg/L)	0.002	0.003	0.003	0.006	0.009	0.011	0.013	539
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.051	0.059	0.062	212
Nitrate as N mg/L	0.001	0.001	0.001	0.002	0.037	0.053	0.057	543
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.003	0.006	0.011	159
Nitrogen (Total) as N mg/L	0.15	0.17	0.21	0.26	0.32	0.34	0.37	584
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.05	584
DRP as P mg/L	0.003	0.004	0.005	0.007	0.011	0.012	0.014	388
Silica as Si mg/L	0.1	0.1	0.1	0.3	0.4	0.5	0.6	388

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Summer DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.9	7.0	7.4	7.7	8.0	8.3	8.4	144
Dissolved Oxygen (%)	90.1	92.4	96.0	99.5	104.0	106.0	107.7	144
Salinity (PPT)	33.4	33.8	34.4	34.7	35.5	35.8	35.9	136
Field Cond@TRef25 (mS/cm)	51.4	51.9	52.3	53.3	54.2	54.5	55.6	80
pH field - sensor TC	7.5	7.7	7.8	8.0	8.2	8.2	8.2	112
Temperature (Celsius)	15.8	16.2	16.7	18.0	18.9	19.3	19.9	140
Turbidity (NTU)	0.6	1.0	1.8	7.4	13.4	17.1	26.9	52
Redox (mV)	-27	7	34	327	434	445	451	84
Chlorophyll a (µg/L)*	0.6	0.7	0.8	1.1	1.5	1.9	2.3	144
TAN as N (mg/L)	0.001	0.002	0.003	0.004	0.006	0.007	0.008	127
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.001	0.002	0.003	40
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.001	0.002	0.003	127
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	35
Nitrogen (Total) as N mg/L	0.13	0.15	0.18	0.24	0.28	0.30	0.32	144
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.04	144
DRP as P mg/L	0.002	0.004	0.004	0.006	0.007	0.008	0.008	92
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.3	0.3	0.4	92

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Autumn DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.8	6.9	7.0	7.5	8.0	8.2	8.2	200
Dissolved Oxygen (%)	85.7	86.7	89.2	92.1	95.8	97.9	102.0	200
Salinity (PPT)	32.5	33.9	34.5	34.9	35.9	36.2	37.0	200
Field Cond@TRef25 (mS/cm)	51.9	52.3	52.7	53.5	54.7	55.4	56.2	116
pH field - sensor TC	7.6	7.8	7.9	8.0	8.2	8.2	8.3	180
Temperature (Celsius)	11.9	12.5	13.7	15.9	17.7	18.3	18.9	200
Turbidity (NTU)	0.6	0.6	1.5	8.3	9.1	10.9	11.5	31
Redox (mV)	-999	-970	102	407	450	464	469	128
Chlorophyll a (µg/L)*	0.5	0.7	0.9	1.4	2.0	2.5	2.9	196
TAN as N (mg/L)	0.003	0.003	0.003	0.007	0.010	0.012	0.014	180
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.015	0.027	0.043	76
Nitrate as N mg/L	0.001	0.001	0.001	0.003	0.011	0.020	0.030	184
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.003	0.006	0.008	56
Nitrogen (Total) as N mg/L	0.18	0.20	0.22	0.28	0.31	0.34	0.35	200
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.04	200
DRP as P mg/L	0.005	0.005	0.006	0.008	0.010	0.011	0.012	128
Silica as Si mg/L	0.1	0.2	0.2	0.3	0.4	0.5	0.5	128

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Winter DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5 th %ile	10 th %ile	20 th %ile	Median	80 th %ile	90 th %ile	95 th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.6	7.9	8.0	8.4	8.9	9.2	9.5	115
Dissolved Oxygen (%)	85.9	87.4	89.8	93.4	97.5	98.9	100.8	119
Salinity (PPT)	30.9	31.4	32.3	33.7	34.5	35.2	35.4	115
Field Cond@TRef25 (mS/cm)	46.8	48.2	50.3	52.0	53.2	53.6	53.6	67
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.2	8.6	115
Temperature (Celsius)	8.5	9.0	9.6	10.5	11.2	11.9	12.1	119
Turbidity (NTU)	0.5	0.5	1.0	8.3	13.7	16.1	17.2	44
Redox (mV)	117	140	160	438	467	487	502	71
Chlorophyll a (µg/L)*	0.3	0.5	0.6	0.8	1.2	1.5	2.0	120
TAN as N (mg/L)	0.003	0.003	0.005	0.007	0.010	0.012	0.013	120
Nitrite and Nitrate as N mg/L	0.028	0.044	0.048	0.058	0.062	0.064	0.066	52
Nitrate as N mg/L	0.029	0.033	0.039	0.052	0.058	0.062	0.064	120
Nitrite as N mg/L	0.001	0.001	0.003	0.004	0.011	0.012	0.012	36
Nitrogen (Total) as N mg/L	0.17	0.21	0.25	0.33	0.36	0.39	0.40	124
Phosphorus (Total) as P mg/L	0.02	0.03	0.03	0.03	0.04	0.04	0.05	124
DRP as P mg/L	0.008	0.010	0.010	0.012	0.014	0.015	0.015	88
Silica as Si mg/L	0.3	0.4	0.4	0.4	0.5	0.6	0.7	88

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Spring DGVs for Aquatic Ecosystems for Surface waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.8	8.0	8.1	8.5	9.0	9.3	9.5	116
Dissolved Oxygen (%)	91.1	93.5	97.0	100.8	106.3	109.8	110.8	116
Salinity (PPT)	31.5	32.4	33.0	34.1	34.8	35.1	35.3	116
Field Cond@TRef25 (mS/cm)	48.7	49.5	50.5	52.6	53.0	53.4	54.7	72
pH field - sensor TC	7.5	7.7	7.8	8.0	8.2	8.3	8.3	104
Temperature (Celsius)	10.6	11.0	11.9	13.4	15.4	16.1	16.4	116
Turbidity (NTU)	0.3	0.4	0.6	1.7	4.0	9.8	11.0	45
Redox (mV)	-3	71	131	428	445	459	463	68
Chlorophyll a (µg/L)*	0.6	0.8	1.0	1.4	2.0	2.5	3.0	116
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.008	0.009	0.010	112
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.028	0.041	0.055	44
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.004	0.023	0.043	112
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.004	0.004	32
Nitrogen (Total) as N mg/L	0.13	0.16	0.20	0.24	0.28	0.33	0.35	116
Phosphorus (Total) as P mg/L	0.01	0.02	0.02	0.03	0.03	0.04	0.04	116
DRP as P mg/L	0.002	0.003	0.004	0.005	0.006	0.007	0.009	80
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.3	0.4	0.5	80

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Annual DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.9	7.1	7.4	7.9	8.4	8.8	9.0	576
Dissolved Oxygen (%)	86.9	88.3	90.9	95.0	101.1	104.5	106.3	580
Salinity (PPT)	32.8	33.2	33.8	34.7	35.4	35.9	36.3	568
Field Cond@TRef25 (mS/cm)	50.7	51.4	52.2	53.1	54.2	54.8	55.9	335
pH field - sensor TC	7.7	7.8	7.9	8.0	8.2	8.2	8.3	504
Temperature (Celsius)	10.0	10.5	11.4	15.0	17.6	18.3	18.9	576
Turbidity (NTU)	0.2	0.5	0.9	6.1	9.3	14.0	17.3	162
Redox (mV)	-850	20	110	404	449	463	472	351
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Summer DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.9	7.0	7.4	7.7	8.0	8.2	8.4	144
Dissolved Oxygen (%)	90.4	92.3	96.7	99.4	104.0	105.6	107.6	144
Salinity (PPT)	33.6	34.2	34.4	34.7	35.5	35.8	36.0	136
Field Cond@TRef25 (mS/cm)	52.0	52.2	52.4	53.4	54.2	54.6	55.8	80
pH field - sensor TC	7.5	7.7	7.9	8.0	8.2	8.2	8.2	112
Temperature (Celsius)	15.6	15.8	16.4	17.8	18.7	19.1	19.6	140
Turbidity (NTU)	0.5	0.8	1.8	7.8	14.4	18.0	31.8	49
Redox (mV)	-26	9	34	323	434	445	451	84
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Autumn DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.8	6.9	7.0	7.4	7.9	8.1	8.2	200
Dissolved Oxygen (%)	85.0	87.3	89.2	92.5	95.4	97.4	100.2	200
Salinity (PPT)	33.1	34.2	34.5	35.0	36.0	36.3	37.0	200
Field Cond@TRef25 (mS/cm)	52.3	52.5	52.8	53.7	54.8	55.4	56.4	116
pH field - sensor TC	7.7	7.8	7.9	8.0	8.2	8.2	8.2	172
Temperature (Celsius)	11.9	12.7	13.8	15.9	17.7	18.2	18.7	200
Turbidity (NTU)	0.2	0.4	3.2	8.0	8.9	9.2	9.4	28
Redox (mV)	-999	-995	102	409	452	467	470	128
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Winter DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.7	7.8	8.0	8.3	8.7	8.8	8.9	116
Dissolved Oxygen (%)	86.2	87.7	89.6	93.1	95.0	97.0	97.5	120
Salinity (PPT)	32.4	32.7	33.2	33.9	34.9	35.3	35.5	116
Field Cond@TRef25 (mS/cm)	50.2	50.6	51.3	52.5	53.5	53.6	53.9	67
pH field - sensor TC	7.8	7.8	7.9	8.0	8.2	8.2	8.6	116
Temperature (Celsius)	9.1	9.3	9.8	10.7	11.5	12.0	12.1	120
Turbidity (NTU)	0.4	0.5	0.8	8.6	11.8	14.0	17.3	41
Redox (mV)	117	141	159	305	466	481	502	71
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Spring DGVs for Aquatic Ecosystems for mid water 5 m (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.7	7.9	8.1	8.6	9.0	9.2	9.3	116
Dissolved Oxygen (%)	90.7	93.1	95.9	100.6	105.2	108.6	111.3	116
Salinity (PPT)	32.8	33.1	33.4	34.3	34.9	35.2	35.5	116
Field Cond@TRef25 (mS/cm)	50.5	50.6	51.3	52.8	53.1	53.7	54.9	72
pH field - sensor TC	7.7	7.7	7.8	8.0	8.2	8.3	8.3	104
Temperature (Celsius)	10.3	11.0	11.6	13.1	15.0	15.7	16.1	116
Turbidity (NTU)	0.2	0.4	0.6	1.4	4.1	8.9	11.2	44
Redox (mV)	-3	71	133	431	445	459	463	68
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)					ND			
Nitrite and Nitrate as N mg/L					ND			
Nitrate as N mg/L					ND			
Nitrite as N mg/L					ND			
Nitrogen (Total) as N mg/L					ND			
Phosphorus (Total) as P mg/L					ND			
DRP as P mg/L					ND			
Silica as Si mg/L					ND			

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Annual DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.5	6.7	7.0	7.6	8.1	8.3	8.5	576
Dissolved Oxygen (%)	81.8	85.1	87.3	91.3	95.6	98.7	101.1	580
Salinity (PPT)	34.0	34.2	34.5	35.0	35.8	36.2	36.7	568
Field Cond@TRef25 (mS/cm)	52.2	52.5	52.9	53.7	54.6	55.3	56.1	335
pH field - sensor TC	7.7	7.8	7.9	8.0	8.2	8.2	8.3	504
Temperature (Celsius)	10.5	11.0	11.8	14.5	17.0	17.8	18.3	576
Turbidity (NTU)	0.4	0.6	1.0	3.6	9.8	12.1	16.9	168
Redox (mV)	-816	18	105	409	450	465	475	351
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.006	0.009	0.013	0.015	0.017	540
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.008	0.049	0.058	0.062	212
Nitrate as N mg/L	0.001	0.001	0.001	0.005	0.038	0.053	0.057	544
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.003	0.004	0.010	160
Nitrogen (Total) as N mg/L	0.16	0.18	0.21	0.26	0.32	0.34	0.37	584
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	584
DRP as P mg/L	0.005	0.006	0.007	0.009	0.012	0.013	0.014	388
Silica as Si mg/L	0.1	0.1	0.2	0.3	0.4	0.4	0.5	388

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Summer DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.5	6.7	6.9	7.4	7.8	8.1	8.3	144
Dissolved Oxygen (%)	85.5	87.7	90.0	94.5	98.6	101.1	104.0	144
Salinity (PPT)	34.1	34.4	34.6	35.0	35.8	36.0	36.2	136
Field Cond@TRef25 (mS/cm)	52.4	52.6	52.7	53.7	54.5	55.2	56.2	80
pH field - sensor TC	7.6	7.7	7.9	8.0	8.2	8.2	8.3	112
Temperature (Celsius)	14.3	14.7	15.6	16.9	18.1	18.5	19.0	140
Turbidity (NTU)	0.6	0.9	1.1	6.0	11.7	18.4	32.6	51
Redox (mV)	-30	6	31	339	436	449	458	84
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.002	0.003	0.004	0.006	0.009	0.011	0.013	128
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.003	0.003	0.005	40
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.003	0.003	0.004	128
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	36
Nitrogen (Total) as N mg/L	0.13	0.16	0.19	0.24	0.28	0.30	0.33	144
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	144
DRP as P mg/L	0.004	0.005	0.006	0.007	0.008	0.009	0.009	92
Silica as Si mg/L	0.1	0.2	0.2	0.2	0.3	0.3	0.4	92

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Autumn DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.4	6.6	6.8	7.2	7.5	7.8	7.9	200
Dissolved Oxygen (%)	80.2	83.3	86.5	89.8	92.4	93.9	95.4	200
Salinity (PPT)	34.2	34.4	34.7	35.1	36.2	36.6	37.2	200
Field Cond@TRef25 (mS/cm)	52.7	52.9	53.1	54.2	55.0	55.9	56.5	116
pH field - sensor TC	7.7	7.8	7.9	8.0	8.2	8.2	8.3	172
Temperature (Celsius)	12.8	13.2	13.9	16.1	17.4	17.9	18.1	200
Turbidity (NTU)	0.4	0.8	2.8	8.1	10.0	10.6	10.6	29
Redox (mV)	-999	-999	99	410	452	466	471	128
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.005	0.006	0.010	0.014	0.016	0.017	180
Nitrite and Nitrate as N mg/L	0.001	0.001	0.002	0.006	0.013	0.018	0.036	76
Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.011	0.019	0.024	184
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.003	0.004	0.006	56
Nitrogen (Total) as N mg/L	0.17	0.19	0.22	0.27	0.31	0.32	0.34	200
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.04	200
DRP as P mg/L	0.005	0.006	0.007	0.009	0.011	0.012	0.013	128
Silica as Si mg/L	0.1	0.2	0.2	0.3	0.4	0.4	0.5	128

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Winter DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.1	7.5	7.6	7.9	8.2	8.4	8.6	116
Dissolved Oxygen (%)	83.8	85.1	87.3	90.1	92.7	94.0	94.8	120
Salinity (PPT)	33.6	34.0	34.1	34.6	35.5	35.8	36.0	116
Field Cond@TRef25 (mS/cm)	51.8	52.0	52.5	53.5	54.0	54.3	55.0	67
pH field - sensor TC	7.8	7.8	7.9	8.0	8.1	8.2	8.6	116
Temperature (Celsius)	9.6	9.9	10.4	11.3	12.0	12.6	13.1	120
Turbidity (NTU)	0.3	0.5	1.0	8.2	9.8	13.3	16.0	42
Redox (mV)	116	141	158	303	466	481	502	71
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.005	0.006	0.009	0.012	0.013	0.014	120
Nitrite and Nitrate as N mg/L	0.037	0.042	0.048	0.055	0.062	0.064	0.065	52
Nitrate as N mg/L	0.031	0.036	0.041	0.052	0.058	0.062	0.063	120
Nitrite as N mg/L	0.001	0.001	0.002	0.003	0.009	0.011	0.012	36
Nitrogen (Total) as N mg/L	0.17	0.19	0.24	0.32	0.35	0.38	0.39	124
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.05	0.05	124
DRP as P mg/L	0.010	0.010	0.011	0.013	0.014	0.015	0.016	88
Silica as Si mg/L	0.2	0.3	0.3	0.4	0.4	0.5	0.5	88

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Spring DGVs for Aquatic Ecosystems for bottom waters (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	6.7	7.1	7.5	8.0	8.4	8.6	8.9	116
Dissolved Oxygen (%)	79.4	83.8	87.2	93.9	99.0	101.3	103.9	116
Salinity (PPT)	34.0	34.1	34.4	35.0	35.7	35.9	36.5	116
Field Cond@TRef25 (mS/cm)	52.2	52.5	52.9	53.7	54.2	54.7	56.1	72
pH field - sensor TC	7.6	7.7	7.8	8.0	8.2	8.3	8.3	104
Temperature (Celsius)	10.8	11.0	11.8	12.4	14.0	14.4	14.8	116
Turbidity (NTU)	0.5	0.7	0.9	1.9	4.2	6.9	10.2	46
Redox (mV)	-8	70	131	431	446	459	464	68
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.004	0.006	0.011	0.014	0.016	0.017	112
Nitrite and Nitrate as N mg/L	0.001	0.002	0.004	0.009	0.036	0.047	0.058	44
Nitrate as N mg/L	0.001	0.001	0.003	0.008	0.026	0.034	0.046	112
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.004	0.004	32
Nitrogen (Total) as N mg/L	0.16	0.19	0.23	0.26	0.30	0.34	0.38	116
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.04	116
DRP as P mg/L	0.005	0.006	0.007	0.008	0.010	0.012	0.013	80
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.3	0.3	0.4	80

*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH₃ and NH₄⁺), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

Appendix A

Surface	Physico-chemical indicators and default guideline values for aquatic ecosystems																				
	DO (mg/L)		DO (% sat)		Salinity	Cond	pH		Temp (°C)		Turb	Redox	Chl a	TAN as N	NO _x as N	NO ₃ as N	NO ₂ as N	Total N as N	Total P as P	DRP as P	SiO ₂ as Si
	lower	upper	lower	upper	(PPT)	(mS/cm)	lower	upper	lower	upper	NTU	(mV)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)
Annual	7.3	8.5	90.9	101.7	35.3	54.1	7.9	8.2	11.3	17.8	10.7	448	1.8	9.0	51.0	37.0	3.0	0.32	0.04	11.0	0.4
Summer	7.4	8.0	96.0	104.0	35.5	54.2	7.8	8.2	16.7	18.9	13.4	434	1.5	6.0	1.0	1.0	1.0	0.28	0.04	7.0	0.3
Autumn	7.0	8.0	89.2	95.8	35.9	54.7	7.9	8.2	13.7	17.7	9.1	450	2.0	10.0	15.0	11.0	3.0	0.31	0.04	10.0	0.4
Winter	8.0	8.9	89.8	97.5	34.5	53.2	7.9	8.2	9.6	11.2	13.7	467	1.2	10.0	62.0	58.0	11.0	0.36	0.04	14.0	0.5
Spring	8.1	9.0	97.0	106.3	34.8	53.0	7.8	8.2	11.9	15.4	4.0	445	2.0	8.0	28.0	4.0	1.0	0.28	0.03	6.0	0.3

NB: DO (dissolved oxygen), Turb (turbidity), Chl a (Chlorophyll a – Lab analysis), TAN (Total Ammonia Nitrogen (NH₃ and NH₄⁺)), NO_x (Nitrite and Nitrate), NO₃ (Nitrate), NO₂ (Nitrite), DRP (Dissolved reactive phosphorous), SiO₂ (Silica). Figures shown above are based on data collected from 17/03/2009 to 11/10/2018.

5 metres	Physico-chemical indicators and default guideline values for aquatic ecosystems																					
	DO (mg/L)		DO (% sat)		Salinity	Cond	pH		Temp (°C)		Turb	Redox	Chl a	TAN as N	NO _x as N	NO ₃ as N	NO ₂ as N	Total N as N	Total P as P	DRP as P	SiO ₂ as Si	
	lower	upper	lower	upper	(PPT)	(mS/cm)	lower	upper	lower	upper	NTU	(mV)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)	
Annual	7.4	8.4	90.9	101.1	35.4	54.2	7.9	8.2	11.4	17.6	9.3	449	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Summer	7.4	8.0	96.7	104.0	35.5	54.2	7.9	8.2	16.4	18.7	14.4	434	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Autumn	7.0	7.9	89.2	95.4	36.0	54.8	7.9	8.2	13.8	17.7	8.9	452	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Winter	8.0	8.7	89.6	95.0	34.9	53.5	7.9	8.2	9.8	11.5	11.8	466	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Spring	8.1	9.0	95.9	105.2	34.9	53.1	7.8	8.2	11.6	15.0	4.1	445	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NB: DO (dissolved oxygen), Turb (turbidity), Chl a (Chlorophyll a – Lab analysis), TAN (Total Ammonia Nitrogen (NH₃ and NH₄⁺)), NO_x (Nitrite and Nitrate), NO₃ (Nitrate), NO₂ (Nitrite), DRP (Dissolved reactive phosphorous), SiO₂ (Silica), ND = No Data. Figures shown above are based on data collected from 17/03/2009 to 11/10/2018.

Bottom	Physico-chemical indicators and default guideline values for aquatic ecosystems																				
	DO (mg/L)		DO (% sat)		Salinity	Cond	pH		Temp (°C)		Turb	Redox	Chl a	TAN as N	NO _x as N	NO ₃ as N	NO ₂ as N	Total N as N	Total P as P	DRP as P	SiO ₂ as Si
	lower	upper	lower	upper	(PPT)	(mS/cm)	lower	upper	lower	upper	NTU	(mV)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)
Annual	7.0	8.1	87.3	95.6	35.8	54.6	7.9	8.2	11.8	17.0	9.8	450	ND	13.0	49.0	38.0	3.0	0.32	0.04	12.0	0.4
Summer	6.9	7.8	90.0	98.6	35.8	54.5	7.9	8.2	15.6	18.1	11.7	436	ND	9.0	3.0	3.0	1.0	0.28	0.04	8.0	0.3
Autumn	6.8	7.5	86.5	92.4	36.2	55.0	7.9	8.2	13.9	17.4	10.0	452	ND	14.0	13.0	11.0	3.0	0.31	0.04	11.0	0.4
Winter	7.6	8.2	87.3	92.7	35.5	54.0	7.9	8.1	10.4	12.0	9.8	466	ND	12.0	62.0	58.0	9.0	0.35	0.04	14.0	0.4
Spring	7.5	8.4	87.2	99.0	35.7	54.2	7.8	8.2	11.8	14.0	4.2	446	ND	14.0	36.0	26.0	1.0	0.30	0.04	10.0	0.3

NB: DO (dissolved oxygen), Turb (turbidity), Chl a (Chlorophyll a – Lab analysis), TAN (Total Ammonia Nitrogen (NH₃ and NH₄⁺)), NO_x (Nitrite and Nitrate), NO₃ (Nitrate), NO₂ (Nitrite), DRP (Dissolved reactive phosphorous), SiO₂ (Silica), ND = No Data. Figures shown above are based on data collected from 17/03/2009 to 11/10/2018.

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