

Oil Spill Response Atlas – Segment 102

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: 102

IMCRA Mesoscale Region: Bruny

IMCRA Provincial Region: Tasmanian Shelf

Ecosystem Classification: Slightly to Moderately Disturbed Ecosystem

Data Provider: Aquenal

BEMP Sites: M9

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

Default Guideline Values

Data from one location (BEMP-HEDC9 (M9)) has been used in the derivation of the DGVs presented here in. The site is located 200 metres beyond OSRA segment 102 but is deemed suitable for the derivation of DGVs. 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 102 (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	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)	7.2	7.5	7.7	8.2	8.7	9.0	9.2	143
Dissolved Oxygen (%)	89.5	92.4	94.6	99.9	105.2	107.7	111.3	144
Salinity (PPT)	33.5	33.9	34.5	35.1	35.8	36.2	36.5	141
Field Cond@TRef25 (mS/cm)	51.5	52.0	52.7	53.7	54.6	55.1	55.9	84
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	127
Temperature (Celsius)	10.9	11.6	12.2	14.8	17.0	17.8	18.2	143
Turbidity (NTU)	0.4	0.5	1.3	4.3	10.3	15.7	23.2	45
Redox (mV)	-640	24	105	399	445	457	463	88
Chlorophyll a (µg/L)*	0.3	0.3	0.5	1.0	1.8	2.3	2.9	144
TAN as N (mg/L)	0.002	0.003	0.003	0.005	0.007	0.008	0.009	133
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.049	0.055	0.062	51
Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.038	0.049	0.054	134
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.005	0.009	0.012	38
Nitrogen (Total) as N mg/L	0.16	0.18	0.21	0.26	0.32	0.35	0.36	144
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	144
DRP as P mg/L	0.002	0.003	0.004	0.006	0.010	0.011	0.013	96
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.3	96

*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	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)	7.4	7.6	7.8	8.1	8.5	8.6	8.8	35
Dissolved Oxygen (%)	96.1	97.8	100.6	103.6	107.6	109.6	113.0	35
Salinity (PPT)	33.7	33.8	34.6	35.1	35.8	36.1	36.2	33
Field Cond@TRef25 (mS/cm)	51.5	52.4	52.9	53.9	54.6	54.9	56.1	20
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	27
Temperature (Celsius)	15.4	15.6	16.0	17.0	17.9	18.8	19.0	34
Turbidity (NTU)	0.9	1.2	2.3	7.4	19.6	29.1	35.3	14
Redox (mV)	-28	28	36	344	435	439	453	21
Chlorophyll a (µg/L)*	0.3	0.3	0.5	1.1	1.5	2.0	2.1	36
TAN as N (mg/L)	0.001	0.002	0.003	0.005	0.006	0.007	0.007	31
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.002	9
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.001	0.003	0.003	31
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	8
Nitrogen (Total) as N mg/L	0.12	0.14	0.17	0.23	0.29	0.31	0.33	36
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	36
DRP as P mg/L	0.002	0.003	0.004	0.005	0.006	0.006	0.007	23
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.2	0.3	23

*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	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)	6.9	6.9	7.4	7.9	8.2	8.3	8.5	50
Dissolved Oxygen (%)	85.8	89.3	93.3	97.3	102.0	104.1	107.6	50
Salinity (PPT)	34.1	34.6	34.8	35.2	36.1	36.5	37.1	50
Field Cond@TRef25 (mS/cm)	52.5	52.6	53.0	53.9	55.0	55.8	56.3	29
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	45
Temperature (Celsius)	12.8	13.6	14.1	15.6	17.0	17.5	18.2	50
Turbidity (NTU)	1.2	2.2	3.7	8.3	8.9	9.1	9.2	7
Redox (mV)	-999	-955	97	382	440	447	454	32
Chlorophyll a (µg/L)*	0.3	0.6	0.7	1.2	1.9	2.6	3.2	50
TAN as N (mg/L)	0.002	0.003	0.003	0.005	0.007	0.009	0.013	45
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.030	0.040	0.043	19
Nitrate as N mg/L	0.001	0.001	0.001	0.007	0.020	0.028	0.032	46
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.009	0.011	0.012	14
Nitrogen (Total) as N mg/L	0.18	0.20	0.22	0.25	0.31	0.33	0.35	50
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	50
DRP as P mg/L	0.004	0.005	0.005	0.007	0.009	0.010	0.010	32
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.2	0.3	32

*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	7.8	8.0	8.3	8.7	9.0	9.2	29
Dissolved Oxygen (%)	88.4	91.6	92.9	96.0	99.2	100.0	101.6	30
Salinity (PPT)	33.4	33.6	34.1	34.8	35.7	36.1	36.2	29
Field Cond@TRef25 (mS/cm)	52.0	52.2	52.5	53.6	54.4	54.7	54.8	17
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.2	8.4	29
Temperature (Celsius)	9.8	10.2	10.9	11.8	12.4	12.8	13.0	30
Turbidity (NTU)	0.5	0.6	0.9	8.6	9.9	12.7	16.3	11
Redox (mV)	111	127	148	364	460	466	469	18
Chlorophyll a (µg/L)*	0.3	0.3	0.3	0.5	0.7	0.9	1.0	30
TAN as N (mg/L)	0.003	0.003	0.003	0.003	0.005	0.006	0.007	29
Nitrite and Nitrate as N mg/L	0.046	0.048	0.048	0.053	0.062	0.063	0.063	12
Nitrate as N mg/L	0.035	0.037	0.041	0.047	0.055	0.058	0.060	29
Nitrite as N mg/L	0.002	0.002	0.003	0.004	0.006	0.008	0.011	8
Nitrogen (Total) as N mg/L	0.18	0.22	0.25	0.33	0.35	0.36	0.37	30
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.05	0.05	30
DRP as P mg/L	0.009	0.009	0.009	0.010	0.013	0.013	0.014	21
Silica as Si mg/L	0.2	0.2	0.2	0.2	0.3	0.3	0.4	21

*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	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)	8.2	8.3	8.5	8.8	9.1	9.4	9.5	29
Dissolved Oxygen (%)	98.3	98.9	100.1	102.8	107.4	111.0	115.3	29
Salinity (PPT)	33.3	33.7	34.1	34.9	35.5	35.7	35.8	29
Field Cond@TRef25 (mS/cm)	46.7	51.6	51.9	53.7	53.9	54.1	54.7	18
pH field - sensor TC	7.7	7.7	7.8	8.1	8.2	8.3	8.4	26
Temperature (Celsius)	11.3	11.5	12.1	13.4	14.6	15.3	16.6	29
Turbidity (NTU)	0.3	0.5	1.0	2.4	8.8	12.1	13.0	13
Redox (mV)	35	94	120	426	443	452	460	17
Chlorophyll a (µg/L)*	0.1	0.4	0.6	1.5	2.3	2.9	3.1	28
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.006	0.008	0.009	28
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.003	0.028	0.034	0.042	11
Nitrate as N mg/L	0.001	0.001	0.001	0.002	0.013	0.025	0.039	28
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	8
Nitrogen (Total) as N mg/L	0.17	0.18	0.21	0.25	0.31	0.34	0.36	28
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	28
DRP as P mg/L	0.002	0.002	0.003	0.005	0.006	0.007	0.008	20
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.2	0.2	20

*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	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)	7.2	7.4	7.7	8.2	8.6	8.9	9.3	143
Dissolved Oxygen (%)	88.4	91.8	93.8	99.0	105.0	107.5	108.6	144
Salinity (PPT)	34.1	34.3	34.6	35.2	36.0	36.4	36.6	141
Field Cond@TRef25 (mS/cm)	52.4	52.7	53.1	53.9	54.8	55.3	56.6	84
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.3	8.3	125
Temperature (Celsius)	11.0	11.7	12.2	14.6	16.7	17.4	17.7	143
Turbidity (NTU)	0.2	0.3	0.9	4.6	8.9	14.5	21.8	44
Redox (mV)	-657	26	105	414	447	461	464	88
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	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)	7.3	7.3	7.8	8.3	8.4	8.6	8.9	35
Dissolved Oxygen (%)	92.7	95.4	99.2	103.5	106.8	107.7	111.8	35
Salinity (PPT)	34.2	34.5	34.7	35.1	35.8	36.1	36.2	33
Field Cond@TRef25 (mS/cm)	52.4	52.6	53.0	54.0	54.6	54.9	56.1	20
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	27
Temperature (Celsius)	14.5	14.8	15.8	16.7	17.6	18.2	18.5	34
Turbidity (NTU)	0.2	0.3	0.8	6.9	16.2	24.3	26.1	15
Redox (mV)	-26	30	38	348	435	439	454	21
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	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)	6.8	7.3	7.5	7.9	8.2	8.3	8.3	50
Dissolved Oxygen (%)	86.0	90.8	93.1	97.1	101.0	104.0	105.4	50
Salinity (PPT)	34.5	34.6	35.0	35.3	36.2	36.6	37.5	50
Field Cond@TRef25 (mS/cm)	52.8	53.1	53.6	54.4	55.1	56.4	57.0	29
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.3	8.3	43
Temperature (Celsius)	13.1	13.7	14.1	15.5	16.9	17.4	17.6	50
Turbidity (NTU)	0.9	1.8	3.1	8.1	8.9	9.0	9.1	7
Redox (mV)	-999	-972	98	401	446	449	461	32
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	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)	7.4	7.7	7.9	8.2	8.6	8.9	8.9	29
Dissolved Oxygen (%)	85.5	90.6	92.1	94.5	97.6	98.6	99.1	30
Salinity (PPT)	34.0	34.2	34.6	34.9	36.1	36.4	36.4	29
Field Cond@TRef25 (mS/cm)	52.7	52.8	53.1	53.8	54.9	54.9	55.0	17
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.2	8.4	29
Temperature (Celsius)	10.0	10.4	11.2	12.0	12.7	13.0	13.2	30
Turbidity (NTU)	0.4	0.5	0.8	8.5	10.0	14.5	16.3	10
Redox (mV)	112	127	148	364	460	466	469	18
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	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)	8.3	8.3	8.5	8.8	9.2	9.3	9.6	29
Dissolved Oxygen (%)	97.6	98.5	99.8	104.1	108.0	109.4	113.3	29
Salinity (PPT)	34.0	34.1	34.2	35.1	35.6	35.9	36.3	29
Field Cond@TRef25 (mS/cm)	51.9	52.0	52.9	53.8	54.2	54.6	55.7	18
pH field - sensor TC	7.7	7.8	7.8	8.1	8.3	8.3	8.4	26
Temperature (Celsius)	11.1	11.5	11.9	13.1	14.1	15.0	15.2	29
Turbidity (NTU)	0.4	0.5	1.6	2.5	5.4	5.6	7.0	12
Redox (mV)	37	95	121	426	444	453	461	17
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	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)	6.9	7.1	7.4	8.0	8.4	8.6	8.7	144
Dissolved Oxygen (%)	84.1	88.2	92.0	95.5	99.7	101.5	104.7	145
Salinity (PPT)	34.7	34.8	34.9	35.4	36.4	36.7	37.6	142
Field Cond@TRef25 (mS/cm)	53.2	53.3	53.7	54.7	55.3	56.3	57.2	85
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	126
Temperature (Celsius)	11.5	11.9	12.4	14.1	15.6	16.2	16.8	144
Turbidity (NTU)	0.4	0.6	1.1	4.2	8.5	9.5	10.8	37
Redox (mV)	-995	9	91	415	448	460	464	89
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.003	0.008	0.015	0.022	0.027	133
Nitrite and Nitrate as N mg/L	0.012	0.018	0.024	0.040	0.050	0.053	0.056	51
Nitrate as N mg/L	0.008	0.010	0.016	0.033	0.048	0.056	0.062	134
Nitrite as N mg/L	0.001	0.001	0.001	0.004	0.007	0.008	0.009	38
Nitrogen (Total) as N mg/L	0.16	0.18	0.23	0.27	0.34	0.36	0.38	143
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	0.006	0.007	0.008	0.010	0.012	0.013	0.015	96
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.2	0.2	96

*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	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)	7.0	7.1	7.3	8.0	8.4	8.5	8.6	35
Dissolved Oxygen (%)	87.2	88.1	91.3	99.2	102.9	105.3	106.4	35
Salinity (PPT)	34.8	34.8	35.0	35.3	36.2	36.5	36.5	33
Field Cond@TRef25 (mS/cm)	53.1	53.2	53.4	54.6	55.0	55.4	57.0	20
pH field - sensor TC	7.8	7.8	7.9	8.2	8.3	8.3	8.3	27
Temperature (Celsius)	13.4	13.6	14.1	15.3	15.7	16.4	16.9	34
Turbidity (NTU)	0.8	0.9	1.3	4.0	8.5	9.0	9.2	11
Redox (mV)	-25	32	37	296	432	438	440	21
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.005	0.006	0.009	0.014	0.022	0.029	0.029	31
Nitrite and Nitrate as N mg/L	0.006	0.007	0.009	0.021	0.048	0.058	0.067	9
Nitrate as N mg/L	0.004	0.006	0.009	0.016	0.049	0.064	0.075	31
Nitrite as N mg/L	0.001	0.001	0.001	0.004	0.007	0.009	0.010	8
Nitrogen (Total) as N mg/L	0.14	0.17	0.21	0.27	0.33	0.34	0.38	35
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	36
DRP as P mg/L	0.006	0.007	0.008	0.011	0.014	0.015	0.016	23
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.2	0.2	23

*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	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)	6.5	6.9	7.2	7.7	7.9	8.2	8.3	51
Dissolved Oxygen (%)	80.6	88.0	90.3	94.3	97.9	99.1	100.0	51
Salinity (PPT)	34.8	34.9	35.1	35.4	36.6	37.1	37.8	51
Field Cond@TRef25 (mS/cm)	53.2	53.4	54.0	54.9	55.6	56.8	57.1	30
pH field - sensor TC	7.8	7.9	8.0	8.1	8.2	8.3	8.3	44
Temperature (Celsius)	13.8	14.0	14.1	15.2	16.2	16.8	16.9	51
Turbidity (NTU)	1.9	2.0	2.4	7.5	8.1	9.0	9.6	7
Redox (mV)	-999	-999	44	415	448	459	480	33
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.006	0.008	0.013	0.014	0.020	45
Nitrite and Nitrate as N mg/L	0.018	0.022	0.025	0.035	0.044	0.047	0.049	19
Nitrate as N mg/L	0.008	0.011	0.015	0.025	0.037	0.044	0.067	46
Nitrite as N mg/L	0.001	0.001	0.003	0.007	0.008	0.009	0.010	14
Nitrogen (Total) as N mg/L	0.16	0.20	0.23	0.27	0.33	0.34	0.37	50
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	50
DRP as P mg/L	0.006	0.006	0.007	0.009	0.011	0.011	0.013	32
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.2	0.2	32

*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	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)	7.2	7.5	7.9	8.1	8.3	8.5	8.7	29
Dissolved Oxygen (%)	84.9	88.1	92.6	94.0	96.1	98.1	99.6	30
Salinity (PPT)	34.5	34.7	34.7	35.3	36.3	36.8	37.0	29
Field Cond@TRef25 (mS/cm)	53.4	53.5	53.7	54.6	55.4	55.7	56.2	17
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.2	8.5	29
Temperature (Celsius)	10.7	11.1	11.8	12.4	13.1	13.6	13.8	30
Turbidity (NTU)	0.6	0.8	3.7	8.5	11.7	13.2	13.5	8
Redox (mV)	113	126	148	365	460	466	469	18
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.001	0.002	0.003	0.003	0.005	0.006	0.007	29
Nitrite and Nitrate as N mg/L	0.039	0.041	0.043	0.046	0.052	0.055	0.055	12
Nitrate as N mg/L	0.033	0.036	0.038	0.043	0.048	0.051	0.054	29
Nitrite as N mg/L	0.001	0.001	0.001	0.003	0.005	0.005	0.006	8
Nitrogen (Total) as N mg/L	0.16	0.18	0.20	0.33	0.34	0.36	0.38	30
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.05	30
DRP as P mg/L	0.008	0.008	0.009	0.010	0.011	0.011	0.011	21
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.2	0.2	21

*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	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	8.1	8.5	8.7	8.8	9.2	29
Dissolved Oxygen (%)	91.4	93.3	95.2	98.1	101.0	103.8	105.4	29
Salinity (PPT)	34.7	34.8	34.9	35.7	36.3	36.4	37.2	29
Field Cond@TRef25 (mS/cm)	53.6	53.7	54.0	54.7	55.0	55.6	56.8	18
pH field - sensor TC	7.7	7.8	7.8	8.1	8.3	8.3	8.3	26
Temperature (Celsius)	11.4	11.5	12.0	12.4	13.1	13.4	13.5	29
Turbidity (NTU)	0.2	0.2	0.5	2.1	5.9	6.2	6.9	11
Redox (mV)	37	95	124	427	446	453	460	17
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.004	0.005	0.010	0.019	0.024	0.028	28
Nitrite and Nitrate as N mg/L	0.022	0.023	0.024	0.043	0.050	0.052	0.055	11
Nitrate as N mg/L	0.014	0.019	0.021	0.034	0.050	0.057	0.058	28
Nitrite as N mg/L	0.001	0.001	0.001	0.002	0.004	0.006	0.006	8
Nitrogen (Total) as N mg/L	0.19	0.22	0.24	0.27	0.34	0.36	0.37	28
Phosphorus (Total) as P mg/L	0.02	0.03	0.03	0.03	0.04	0.04	0.04	28
DRP as P mg/L	0.007	0.007	0.008	0.010	0.012	0.013	0.013	20
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.1	0.2	0.2	20

*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	7.7	8.7	94.6	15.2	35.8	54.6	7.9	8.2	12.2	17.0	10.3	445	1.8	7.0	49.0	38.0	5.0	0.32	0.03	10.0	0.2
Summer	7.8	8.5	100.6	107.6	35.8	54.6	7.9	8.2	16.0	17.9	19.6	435	1.5	6.0	1.0~	1.0	1.0~	0.29	0.03	6.0	0.2
Autumn	7.4	8.2	93.3	102.0	36.1	55.0	7.9	8.2	14.1	17.0	8.9~	440	1.9	7.0	30.0	20.0	9.0	0.31	0.03	9.0	0.2
Winter	8.0	8.7	92.9	99.2	35.7	54.4	7.9	8.2	10.9	12.4	9.9~	460	0.7	5.0	62.0~	55.0	6.0~	0.35	0.04	13.0	0.3
Spring	8.5	9.1	100.1	107.4	35.5	53.9	7.8	8.2	12.1	14.6	8.8~	443	2.3	6.0	28.0~	13.0	1.0~	0.31	0.03	6.0	0.2

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), ~ <95% confidence. 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	7.7	8.6	93.8	105.0	36.0	54.8	7.9	8.2	12.2	16.7	8.9	447	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Summer	7.8	8.4	99.2	106.8	35.8	54.6	7.9	8.2	15.8	17.6	16.2	435	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Autumn	7.5	8.2	93.1	101.0	36.2	55.1	7.9	8.2	14.1	16.9	8.9~	446	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Winter	7.9	8.6	92.1	97.6	36.1	54.9	7.9	8.2	11.2	12.7	10.0~	460	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Spring	8.5	9.2	99.8	108.0	35.6	54.2	7.8	8.3	11.9	14.1	5.4~	444	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, ~ <95% confidence. 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	7.4	8.4	92.0	99.7	36.4	55.3	7.9	8.2	12.4	15.6	8.5	448	ND	15.0	50.0	48.0	7.0	0.34	0.04	12.0	0.2	
Summer	7.3	8.4	91.3	102.9	36.2	55.0	7.9	8.3	14.1	15.7	8.5~	432	ND	12.0	48.0~	49.0	7.0~	0.33	0.04	14.0	0.2	
Autumn	7.2	7.9	90.3	97.9	36.6	55.6	8.0	8.2	14.1	16.2	8.1~	448	ND	13.0	44.0	37.0	8.0	0.33	0.03	11.0	0.2	
Winter	7.9	8.3	92.6	96.1	36.3	55.4	7.9	8.2	11.8	13.1	11.7~	460	ND	5.0	52.0~	48.0	5.0~	0.34	0.04	11.0	0.2	
Spring	8.1	8.7	95.2	101.0	36.3	55.0	7.8	8.3	12.0	13.1	5.9~	446	ND	19.0	50.0~	50.0	4.0~	0.34	0.04	12.0	0.1	

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, ~ <95% confidence. Figures shown above are based on data collected from 17/03/2009 to 11/10/2018.

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