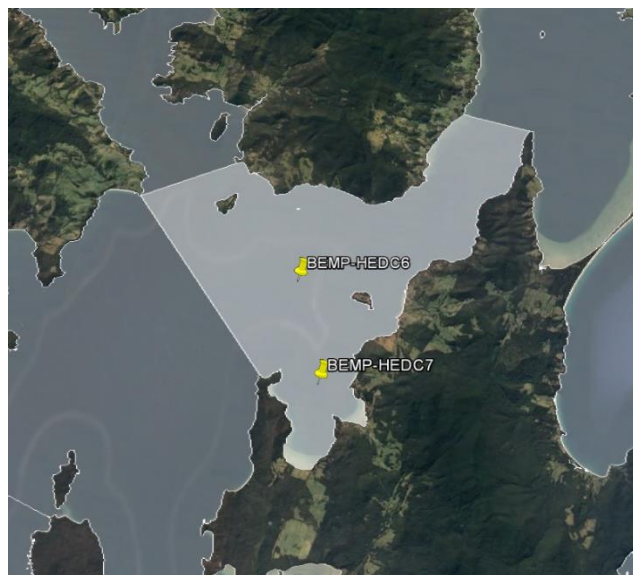


Oil Spill Response Atlas – Segment 96

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: 96

IMCRA Mesoscale Region: Bruny

IMCRA Provincial Region: Tasmanian Shelf

Ecosystem Classification: Slightly to Moderately Disturbed Ecosystem

Data Provider: Aquenal

BEMP Sites: M6 and M7

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

Default Guideline Values

Data from two locations (BEMP-HEDC6 (M6) and BEMP-HEDC7 (M7)) 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 1 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 96 (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	7.4	7.7	8.2	8.7	9.0	9.3	289
Dissolved Oxygen (%)	89.7	91.5	94.5	98.6	103.5	106.5	109.8	291
Salinity (PPT)	31.0	32.2	33.4	34.6	35.3	35.9	36.1	284
Field Cond@TRef25 (mS/cm)	48.6	50.1	51.3	52.9	54.1	54.6	54.9	168
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	255
Temperature (Celsius)	10.4	11.0	11.5	14.7	17.1	18.1	18.4	289
Turbidity (NTU)	0.4	0.7	1.3	6.1	11.2	15.8	20.1	86
Redox (mV)	-987	-2	88	392	444	454	464	177
Chlorophyll a (µg/L)*	0.3	0.3	0.5	1.1	1.9	2.6	3.3	290
TAN as N (mg/L)	0.002	0.003	0.003	0.005	0.007	0.009	0.011	268
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.010	0.054	0.058	0.063	104
Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.039	0.052	0.056	270
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.007	0.010	0.014	78
Nitrogen (Total) as N mg/L	0.16	0.17	0.20	0.26	0.32	0.35	0.37	290
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.04	290
DRP as P mg/L	0.003	0.004	0.005	0.007	0.010	0.011	0.012	192
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.4	0.6	0.7	192

*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)	6.9	7.2	7.5	7.8	8.2	8.3	8.8	72
Dissolved Oxygen (%)	89.4	92.0	96.3	100.8	105.5	107.6	112.4	72
Salinity (PPT)	33.4	33.7	34.4	34.8	35.6	36.0	36.2	68
Field Cond@TRef25 (mS/cm)	51.5	52.0	52.6	53.6	54.5	55.0	56.0	40
pH field - sensor TC	7.7	7.7	7.8	8.1	8.2	8.2	8.3	54
Temperature (Celsius)	15.3	15.8	16.3	17.1	18.2	18.7	19.7	70
Turbidity (NTU)	0.4	0.8	1.7	7.6	11.1	26.0	41.5	24
Redox (mV)	-31	29	34	346	435	438	442	42
Chlorophyll a (µg/L)*	0.3	0.3	0.5	1.0	1.5	1.9	2.2	72
TAN as N (mg/L)	0.001	0.001	0.003	0.004	0.006	0.007	0.009	64
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.003	0.003	0.004	20
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.001	0.003	0.003	64
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	18
Nitrogen (Total) as N mg/L	0.13	0.14	0.17	0.24	0.29	0.30	0.31	72
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	72
DRP as P mg/L	0.003	0.004	0.004	0.005	0.007	0.008	0.009	46
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.3	0.3	46

*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)	7.1	7.3	7.5	7.9	8.2	8.5	8.9	101
Dissolved Oxygen (%)	88.3	90.9	93.2	96.4	99.9	102.0	109.8	101
Salinity (PPT)	31.6	33.1	34.2	34.8	35.5	36.0	36.2	100
Field Cond@TRef25 (mS/cm)	49.4	51.5	52.3	53.4	54.4	54.6	54.8	58
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.3	8.3	91
Temperature (Celsius)	11.9	13.1	13.5	15.5	17.0	17.7	18.4	101
Turbidity (NTU)	1.0	2.3	6.6	8.9	10.4	11.3	12.1	14
Redox (mV)	-999	-999	15	403	444	451	462	65
Chlorophyll a (µg/L)*	0.3	0.5	0.9	1.4	2.1	3.3	3.7	100
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.008	0.010	0.014	90
Nitrite and Nitrate as N mg/L	0.001	0.001	0.003	0.011	0.032	0.041	0.045	38
Nitrate as N mg/L	0.001	0.001	0.001	0.006	0.019	0.026	0.030	92
Nitrite as N mg/L	0.001	0.001	0.001	0.003	0.010	0.013	0.015	28
Nitrogen (Total) as N mg/L	0.17	0.19	0.22	0.26	0.32	0.34	0.35	100
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.04	0.04	0.04	100
DRP as P mg/L	0.005	0.005	0.006	0.008	0.010	0.011	0.012	64
Silica as Si mg/L	0.1	0.1	0.2	0.3	0.3	0.5	0.5	64

*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)	8.0	8.1	8.2	8.5	9.0	9.2	9.3	58
Dissolved Oxygen (%)	90.5	91.4	93.3	95.7	98.8	100.1	101.8	60
Salinity (PPT)	27.4	29.7	31.4	33.3	34.7	35.1	35.8	58
Field Cond@TRef25 (mS/cm)	45.7	47.8	49.1	51.6	53.0	53.9	54.3	34
pH field - sensor TC	7.8	7.8	7.9	8.0	8.2	8.3	8.5	58
Temperature (Celsius)	9.4	9.8	10.4	11.1	11.6	12.3	12.5	60
Turbidity (NTU)	0.5	0.8	1.2	5.7	11.4	15.7	18.6	24
Redox (mV)	113	132	149	371	463	471	474	36
Chlorophyll a (µg/L)*	0.3	0.3	0.3	0.6	0.8	1.1	1.2	60
TAN as N (mg/L)	0.003	0.003	0.003	0.005	0.006	0.007	0.009	58
Nitrite and Nitrate as N mg/L	0.050	0.050	0.053	0.056	0.063	0.065	0.068	24
Nitrate as N mg/L	0.037	0.038	0.044	0.051	0.056	0.060	0.062	58
Nitrite as N mg/L	0.003	0.004	0.004	0.004	0.010	0.013	0.014	16
Nitrogen (Total) as N mg/L	0.19	0.23	0.25	0.32	0.35	0.37	0.38	60
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.04	60
DRP as P mg/L	0.009	0.009	0.010	0.011	0.012	0.013	0.014	42
Silica as Si mg/L	0.2	0.3	0.3	0.5	0.6	0.7	0.9	42

*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)	8.0	8.1	8.3	8.7	9.0	9.3	9.5	58
Dissolved Oxygen (%)	95.8	98.1	99.1	101.8	106.5	109.8	111.6	58
Salinity (PPT)	32.1	32.5	33.4	34.5	35.0	35.3	35.5	58
Field Cond@TRef25 (mS/cm)	49.3	50.2	51.1	52.6	53.4	53.8	53.9	36
pH field - sensor TC	7.7	7.7	7.9	8.0	8.2	8.3	8.3	52
Temperature (Celsius)	11.0	11.2	12.1	13.5	14.9	15.5	15.6	58
Turbidity (NTU)	0.3	0.6	1.3	2.9	10.4	15.3	16.0	24
Redox (mV)	23	82	124	426	437	453	460	34
Chlorophyll a (µg/L)*	0.3	0.5	0.8	1.5	2.5	3.0	3.1	58
TAN as N (mg/L)	0.002	0.003	0.003	0.004	0.006	0.008	0.009	56
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.004	0.027	0.045	0.055	22
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.010	0.022	0.044	56
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.001	0.003	0.003	16
Nitrogen (Total) as N mg/L	0.16	0.17	0.20	0.24	0.30	0.33	0.36	58
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.03	0.04	0.04	58
DRP as P mg/L	0.002	0.003	0.004	0.005	0.006	0.006	0.009	40
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.4	0.4	40

*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	8.1	8.6	8.9	9.2	288
Dissolved Oxygen (%)	89.9	91.3	93.0	97.3	102.8	105.9	108.5	290
Salinity (PPT)	32.8	33.2	33.9	34.7	35.4	35.9	36.3	284
Field Cond@TRef25 (mS/cm)	50.6	51.3	52.2	53.1	54.2	54.8	55.3	168
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	250
Temperature (Celsius)	10.7	11.0	11.7	14.4	16.8	17.5	18.2	288
Turbidity (NTU)	0.2	0.5	0.8	5.1	9.6	13.2	18.4	86
Redox (mV)	-998	15	91	395	444	455	464	176
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)	6.9	7.1	7.4	7.8	8.3	8.4	9.0	72
Dissolved Oxygen (%)	90.1	91.8	96.0	99.8	105.8	107.3	112.2	72
Salinity (PPT)	33.8	34.0	34.4	34.9	35.6	36.0	36.2	68
Field Cond@TRef25 (mS/cm)	51.8	52.2	52.5	53.7	54.5	55.1	56.0	40
pH field - sensor TC	7.7	7.7	7.9	8.1	8.2	8.2	8.3	54
Temperature (Celsius)	14.8	15.2	16.0	16.8	18.1	18.3	18.9	70
Turbidity (NTU)	0.5	0.6	1.4	7.5	10.9	26.2	35.1	26
Redox (mV)	-29	31	35	355	434	438	441	42
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)	7.2	7.3	7.5	7.8	8.1	8.4	8.5	100
Dissolved Oxygen (%)	87.2	90.2	92.2	95.8	99.1	100.8	105.3	100
Salinity (PPT)	33.1	33.9	34.4	34.9	35.7	36.2	36.3	100
Field Cond@TRef25 (mS/cm)	51.7	52.4	52.6	53.5	54.6	54.9	55.1	58
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.3	8.3	86
Temperature (Celsius)	12.0	13.1	13.5	15.3	16.9	17.5	17.9	100
Turbidity (NTU)	0.5	1.3	4.2	8.1	9.1	9.7	10.0	14
Redox (mV)	-999	-999	56	410	444	451	462	64
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)	7.9	8.0	8.1	8.4	8.7	8.9	9.2	58
Dissolved Oxygen (%)	90.2	91.3	91.9	94.8	97.2	98.2	99.3	60
Salinity (PPT)	32.5	32.7	33.2	34.0	34.9	35.3	35.7	58
Field Cond@TRef25 (mS/cm)	50.5	50.7	51.1	52.6	53.4	53.9	54.3	34
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.2	8.6	58
Temperature (Celsius)	9.4	9.6	10.6	11.1	11.7	12.3	12.5	60
Turbidity (NTU)	0.2	0.4	0.8	7.6	9.8	14.4	14.9	22
Redox (mV)	116	131	149	371	464	471	474	36
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)	8.0	8.2	8.4	8.6	9.0	9.2	9.4	58
Dissolved Oxygen (%)	93.6	98.0	99.0	101.7	106.1	107.7	109.4	58
Salinity (PPT)	32.9	33.1	33.7	34.6	35.2	35.6	35.8	58
Field Cond@TRef25 (mS/cm)	50.5	51.0	51.7	53.0	53.7	54.1	54.9	36
pH field - sensor TC	7.7	7.7	7.9	8.1	8.2	8.3	8.3	52
Temperature (Celsius)	10.9	11.1	11.9	13.0	14.4	15.3	15.5	58
Turbidity (NTU)	0.2	0.4	0.7	2.5	6.3	10.9	11.7	24
Redox (mV)	23	81	127	425	438	454	461	34
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)	6.6	6.9	7.2	7.7	8.2	8.5	8.7	288
Dissolved Oxygen (%)	83.2	84.8	88.3	92.7	97.5	100.7	103.1	290
Salinity (PPT)	34.1	34.4	34.7	35.1	36.0	36.3	36.6	284
Field Cond@TRef25 (mS/cm)	52.6	52.8	53.1	54.0	54.8	55.1	56.5	168
pH field - sensor TC	7.7	7.8	7.9	8.1	8.2	8.3	8.3	250
Temperature (Celsius)	10.7	11.2	11.9	14.0	16.1	16.9	17.4	288
Turbidity (NTU)	0.2	0.6	0.9	4.4	9.3	11.5	16.2	87
Redox (mV)	-999	21	94	418	447	462	471	176
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.003	0.006	0.010	0.014	0.018	267
Nitrite and Nitrate as N mg/L	0.001	0.001	0.005	0.025	0.056	0.059	0.062	104
Nitrate as N mg/L	0.001	0.001	0.003	0.014	0.044	0.053	0.056	269
Nitrite as N mg/L	0.001	0.001	0.001	0.004	0.009	0.012	0.015	77
Nitrogen (Total) as N mg/L	0.16	0.18	0.21	0.27	0.33	0.35	0.38	290
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	290
DRP as P mg/L	0.004	0.005	0.007	0.009	0.012	0.013	0.014	192
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.3	0.3	0.4	192

*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)	6.3	6.6	7.0	7.4	8.0	8.2	8.2	72
Dissolved Oxygen (%)	81.2	83.8	86.6	92.3	100.1	101.8	103.2	72
Salinity (PPT)	34.4	34.6	34.7	35.2	36.0	36.3	36.4	68
Field Cond@TRef25 (mS/cm)	52.7	52.8	53.1	54.0	54.9	55.3	56.7	40
pH field - sensor TC	7.7	7.7	7.9	8.1	8.2	8.3	8.3	54
Temperature (Celsius)	13.8	14.2	14.5	16.1	17.0	17.5	18.3	70
Turbidity (NTU)	0.6	0.9	1.9	8.0	13.2	19.1	33.0	24
Redox (mV)	-29	28	33	397	437	442	453	42
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.004	0.007	0.013	0.019	0.024	63
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.006	0.012	0.022	0.024	20
Nitrate as N mg/L	0.001	0.001	0.001	0.003	0.010	0.011	0.014	63
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.003	0.007	0.011	17
Nitrogen (Total) as N mg/L	0.14	0.14	0.18	0.25	0.29	0.32	0.33	72
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	72
DRP as P mg/L	0.004	0.004	0.006	0.007	0.010	0.012	0.014	46
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.3	46

*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)	6.6	6.7	7.1	7.4	7.9	8.1	8.2	100
Dissolved Oxygen (%)	83.2	84.1	86.7	91.7	95.5	98.8	101.9	100
Salinity (PPT)	34.4	34.6	34.7	35.2	36.1	36.4	36.7	100
Field Cond@TRef25 (mS/cm)	52.6	52.9	53.2	54.4	54.9	55.3	55.8	58
pH field - sensor TC	7.8	7.8	7.9	8.1	8.2	8.3	8.3	86
Temperature (Celsius)	13.2	13.4	13.8	15.4	16.6	16.9	17.8	100
Turbidity (NTU)	0.2	0.8	1.7	8.0	9.0	9.7	10.6	15
Redox (mV)	-999	-999	88	418	449	458	465	64
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.002	0.003	0.003	0.007	0.010	0.013	0.020	90
Nitrite and Nitrate as N mg/L	0.001	0.004	0.007	0.018	0.037	0.046	0.056	38
Nitrate as N mg/L	0.001	0.001	0.003	0.013	0.025	0.032	0.038	92
Nitrite as N mg/L	0.001	0.001	0.001	0.006	0.012	0.014	0.016	28
Nitrogen (Total) as N mg/L	0.19	0.20	0.22	0.29	0.33	0.35	0.36	100
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.04	100
DRP as P mg/L	0.005	0.005	0.007	0.009	0.011	0.013	0.014	64
Silica as Si mg/L	0.1	0.1	0.2	0.2	0.3	0.3	0.3	64

*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)	7.3	7.4	7.7	8.2	8.5	8.7	8.7	58
Dissolved Oxygen (%)	84.8	86.1	89.2	92.8	95.3	96.6	97.9	60
Salinity (PPT)	33.5	33.7	34.1	34.9	35.7	36.0	36.4	58
Field Cond@TRef25 (mS/cm)	52.1	52.6	52.8	53.5	54.3	54.8	55.6	34
pH field - sensor TC	7.8	7.8	7.9	8.1	8.1	8.2	8.6	58
Temperature (Celsius)	9.9	10.3	10.8	11.5	12.4	12.8	13.2	60
Turbidity (NTU)	0.2	0.3	0.7	7.1	10.1	12.9	13.5	23
Redox (mV)	116	131	148	371	464	472	474	36
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.002	0.003	0.003	0.004	0.006	0.007	0.007	58
Nitrite and Nitrate as N mg/L	0.050	0.052	0.053	0.058	0.062	0.065	0.065	24
Nitrate as N mg/L	0.037	0.040	0.044	0.052	0.057	0.061	0.061	58
Nitrite as N mg/L	0.003	0.004	0.004	0.005	0.010	0.013	0.015	16
Nitrogen (Total) as N mg/L	0.17	0.19	0.24	0.33	0.36	0.38	0.39	60
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.05	60
DRP as P mg/L	0.010	0.010	0.010	0.012	0.013	0.014	0.015	42
Silica as Si mg/L	0.2	0.2	0.2	0.3	0.4	0.4	0.4	42

*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)	7.4	7.6	7.7	8.1	8.5	8.9	9.1	58
Dissolved Oxygen (%)	88.1	89.4	90.1	95.3	100.6	105.0	105.5	58
Salinity (PPT)	34.5	34.6	34.8	35.3	36.0	36.1	36.5	58
Field Cond@TRef25 (mS/cm)	53.2	53.3	53.4	54.2	54.5	54.9	56.5	36
pH field - sensor TC	7.7	7.7	7.8	8.1	8.2	8.3	8.3	52
Temperature (Celsius)	10.8	11.3	11.9	12.4	13.2	13.9	14.3	58
Turbidity (NTU)	0.7	0.7	0.9	2.5	5.0	5.8	6.5	25
Redox (mV)	21	80	128	427	439	455	461	34
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.004	0.007	0.010	0.014	0.015	56
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.026	0.046	0.050	0.056	22
Nitrate as N mg/L	0.001	0.001	0.003	0.019	0.037	0.047	0.051	56
Nitrite as N mg/L	0.001	0.001	0.001	0.003	0.004	0.006	0.007	16
Nitrogen (Total) as N mg/L	0.17	0.19	0.23	0.26	0.34	0.36	0.38	58
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.04	0.04	58
DRP as P mg/L	0.004	0.005	0.006	0.009	0.011	0.013	0.014	40
Silica as Si mg/L	0.1	0.1	0.1	0.1	0.2	0.2	0.2	40

*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	94.5	103.5	35.3	54.1	7.9	8.2	11.5	17.1	11.2	444	1.9	7.0	54.0	39.0	7.0	0.32	0.04	10.0	0.4
Summer	7.5	8.2	96.3	105.5	35.6	54.5	7.8	8.2	16.3	18.2	11.1	435	1.5	6.0	3.0	1.0	1.0	0.29	0.03	7.0	0.2
Autumn	7.5	8.2	93.2	99.9	35.5	54.5	7.9	8.2	13.5	17.0	10.4	444	2.1	8.0	32.0	19.0	10.0	0.32	0.04	10.0	0.3
Winter	8.2	9.0	93.3	98.8	34.7	53.0	7.9	8.2	10.4	11.6	11.4	463	0.8	6.0	63.0	56.0	10.0	0.35	0.04	12.0	0.6
Spring	8.3	9.0	99.1	106.5	35.0	53.4	7.9	8.2	12.1	14.9	10.4	437	2.5	6.0	27.0	10.0	1.0	0.30	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). 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	93.0	102.8	35.4	54.2	7.9	8.2	11.7	16.8	9.6	444	ND	ND	ND	ND	ND	ND	ND	ND	ND
Summer	7.4	8.3	96.0	105.8	35.6	54.5	7.9	8.2	16.0	18.1	10.9	434	ND	ND	ND	ND	ND	ND	ND	ND	ND
Autumn	7.5	8.1	92.2	99.1	35.7	54.6	7.9	8.2	13.5	16.9	9.1	444	ND	ND	ND	ND	ND	ND	ND	ND	ND
Winter	8.1	8.7	91.9	97.2	34.9	53.4	7.9	8.2	10.6	11.7	9.8	464	ND	ND	ND	ND	ND	ND	ND	ND	ND
Spring	8.4	9.0	99.0	106.1	35.2	53.7	7.9	8.2	11.9	14.4	6.3	438	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	7.2	8.2	88.3	97.5	36.0	54.8	7.9	8.2	11.9	16.1	9.3	447	ND	10.0	56.0	44.0	9.0	0.33	0.04	12.0	0.3
Summer	7.0	8.0	86.6	100.1	36.0	54.9	7.9	8.2	14.5	17.0	13.2	437	ND	13.0	12.0	10.0	3.0	0.29	0.04	10.0	0.2
Autumn	7.1	7.9	86.7	95.5	36.1	54.9	7.9	8.2	13.8	16.6	9.0	449	ND	10.0	37.0	25.0	12.0	0.33	0.04	11.0	0.3
Winter	7.7	8.5	89.2	95.3	35.7	54.3	7.9	8.1	10.8	12.4	10.1	464	ND	6.0	62.0	57.0	10.0	0.36	0.04	13.0	0.4
Spring	7.7	8.5	90.1	100.6	36.0	54.5	7.8	8.2	11.9	13.2	5.0	439	ND	10.0	46.0	37.0	4.0	0.34	0.04	11.0	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), ND = No Data. Figures shown above are based on data collected from 17/03/2009 to 11/10/2018.

Environment Protection Authority

GPO Box 1550 Hobart 7001

T (03) 6165 4599

E enquiries@epa.tas.gov.au

W www.epa.tas.gov.au



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