

## Oil Spill Response Atlas – Segment 93

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:** Storm Bay

**OSRA Segment:** 93

**IMCRA Mesoscale Region:** Bruny

**IMCRA Provincial Region:** Tasmanian Shelf

**Ecosystem Classification:** Slightly to Moderately Disturbed Ecosystem

**Data Provider:** Water Section, EPA (Tasmania)

**EPA Sites:** EPA-SB1, EPA-SB3 and EPA-SB6

**Period of record:** 10/01/2018 to 1/05/2019.

### Default Guideline Values

Data from three locations (EPA-SB1, EPA-SB3 and EPA-SB6) have been used in the derivation of the DGVs presented here in. For each site field measurements were taken at the surface and every 5 metres to approximately one metre from the bottom. Nutrient samples for laboratory analysis were taken at the surface, 10 metres 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, 10 metre depth and near the bottom of the water column. The shaded values represent the annual default guideline values (DGVs) for aquatic ecosystems for the depth indicated. These can be applied as DGVs for aquatic ecosystems of waters encompassed within OSRA segment 93 (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)	7.6	7.6	7.7	7.9	8.6	9.0	9.1	26
Dissolved Oxygen (%)	95.9	96.8	97.5	100.2	102.7	104.1	105.6	24
Salinity (PPT)	31.8	32.8	33.1	33.9	34.4	34.6	34.7	28
pH field - sensor TC	8.0	8.0	8.0	8.1	8.1	8.1	8.1	29
Temperature (Celsius)	10.6	11.5	12.2	15.1	17.5	17.9	18.0	29
Turbidity (NTU)	0.2	0.2	0.3	0.4	0.7	0.8	1.3	14
Chlorophyll a (µg/L)*	0.3	0.4	0.7	1.1	1.5	3.0	3.3	27
TAN as N (mg/L)	0.003	0.003	0.003	0.003	0.006	0.008	0.013	27
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.039	0.043	0.048	27
Nitrate as N mg/L	0.001	0.001	0.001	0.001	0.035	0.041	0.044	27
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.003	0.004	0.004	27
Nitrogen (Total) as N mg/L	0.22	0.23	0.24	0.29	0.31	0.32	0.34	27
Phosphorus (Total) as P mg/L	0.02	0.02	0.02	0.03	0.05	0.05	0.05	27
DRP as P mg/L	0.003	0.004	0.006	0.009	0.013	0.013	0.014	27
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.3	0.5	0.5	27

\*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH<sub>3</sub> and NH<sub>4</sub><sup>+</sup>), DRP= Dissolved Reactive Phosphorous.

## Annual DGVs for Aquatic Ecosystems for mid water 10 m (Shaded)

Parameter	5th %ile	10th %ile	20th %ile	Median	80th %ile	90th %ile	95th %ile	Sample Number
Dissolved Oxygen (mg/L)	7.3	7.4	7.5	8.0	8.4	8.7	9.1	28
Dissolved Oxygen (%)	93.0	93.6	94.1	97.5	102.6	105.0	106.7	26
Salinity (PPT)	33.1	33.3	33.6	34.4	34.7	34.8	34.9	28
pH field - sensor TC	8.0	8.0	8.0	8.1	8.1	8.1	8.1	29
Temperature (Celsius)	11.9	11.9	12.3	15.1	17.5	17.8	17.9	29
Turbidity (NTU)	0.1	0.2	0.3	0.3	0.5	0.7	0.8	15
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.003	0.003	0.007	0.008	0.011	27
Nitrite and Nitrate as N mg/L	0.001	0.001	0.001	0.002	0.036	0.042	0.045	27
Nitrate as N mg/L	0.001	0.001	0.001	0.002	0.033	0.040	0.042	27
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.003	0.003	0.004	27
Nitrogen (Total) as N mg/L	0.23	0.25	0.26	0.29	0.30	0.31	0.33	27
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.03	0.04	0.05	0.05	27
DRP as P mg/L	0.003	0.004	0.005	0.008	0.012	0.014	0.014	27
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.3	0.3	27

\*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH<sub>3</sub> and NH<sub>4</sub><sup>+</sup>), 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)	6.8	6.8	7.0	7.7	8.3	8.4	8.6	28
Dissolved Oxygen (%)	86.9	87.3	88.7	93.8	97.5	99.5	101.3	26
Salinity (PPT)	33.3	33.5	34.2	34.7	34.9	35.0	35.0	28
pH field - sensor TC	8.0	8.0	8.0	8.1	8.1	8.1	8.1	29
Temperature (Celsius)	11.9	12.0	12.3	15.1	17.0	17.4	17.5	29
Turbidity (NTU)	0.1	0.2	0.2	0.5	1.0	1.4	2.1	14
Chlorophyll a (µg/L)*					ND			
TAN as N (mg/L)	0.003	0.003	0.003	0.006	0.010	0.014	0.016	27
Nitrite and Nitrate as N mg/L	0.001	0.001	0.003	0.008	0.042	0.047	0.052	27
Nitrate as N mg/L	0.001	0.001	0.002	0.007	0.039	0.044	0.045	27
Nitrite as N mg/L	0.001	0.001	0.001	0.001	0.003	0.004	0.008	27
Nitrogen (Total) as N mg/L	0.22	0.24	0.28	0.31	0.33	0.34	0.35	27
Phosphorus (Total) as P mg/L	0.02	0.02	0.03	0.04	0.04	0.05	0.05	27
DRP as P mg/L	0.005	0.006	0.006	0.010	0.014	0.014	0.015	27
Silica as Si mg/L	0.1	0.1	0.1	0.2	0.2	0.2	0.3	27

\*Integrated sample 0 to 12 metres, TAN=Total Ammonia Nitrogen (NH<sub>3</sub> and NH<sub>4</sub><sup>+</sup>), DRP= Dissolved Reactive Phosphorous. ND = No data collected.

## Appendix A

Annual	Physico-chemical indicators and default guideline values for aquatic ecosystems																		
	DO (mg/L)		DO (% sat)		Salinity	pH		Temp (°C)		Turb	Chl a	TAN as N	NO <sub>x</sub> as N	NO <sub>3</sub> as N	NO <sub>2</sub> as N	Total N as N	Total P as P	DRP as P	SiO <sub>2</sub> as Si
	lower	upper	lower	upper	(PPT)	lower	upper	lower	upper	NTU	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(µg/L)	(mg/L)
Surface	7.7	8.6	97.5	102.7	34.4	8.0	8.1	12.2	17.5	0.7	1.5	6.0	39.0	35.0	3.0	0.31	0.05	13.0	0.3
10 metres	7.5	8.4	94.1	102.6	34.7	8.0	8.1	12.3	17.5	0.5	ND	7.0	36.0	33.0	3.0	0.30	0.04	12.0	0.2
Bottom	7.0	8.3	88.7	97.5	34.9	8.0	8.1	12.3	17.0	1.0	ND	10.0	42.0	39.0	3.0	0.33	0.04	14.0	0.2

NB: DO (dissolved oxygen), Turb (turbidity), Chl a (Chlorophyll a – Lab analysis), TAN (Total Ammonia Nitrogen (NH<sub>3</sub> and NH<sub>4</sub><sup>+</sup>)), NO<sub>x</sub> (Nitrite and Nitrate), NO<sub>3</sub> (Nitrate), NO<sub>2</sub> (Nitrite), DRP (Dissolved reactive phosphorous), SiO<sub>2</sub> (Silica), ND = No Data. Figures shown above are based on data collected from 10/01/2018 to 1/05/2019.

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