

**Water quality objectives to protect the aquatic ecosystem environmental values for Basal GAB groundwater aquifer zones in the Queensland Murray-Darling Basin.**

Zone	Percentile	Notes: 1. The ANZECC Guidelines (ANZECC/ARMCANZ, 2000) recommend that the highest level of protection should be provided to underground aquatic ecosystems, given their high conservation value. The management intent is to maintain the existing water quality distribution (20th, 50th and 80th percentiles). 2. ID: Insufficient data.																											
		Na		Ca		Mg		HCO <sub>3</sub>		Cl		SO <sub>4</sub>		NO <sub>3</sub>		Electrical Conductivity (µS/cm)	Hardness (mg/L)	pH	Alkalinity (mg/L)	SiO <sub>2</sub> (mg/L)	F (mg/L)	Fe (mg/L)	Mn (mg/L)	Zn (mg/L)	Cu (mg/L)	SAR (meq/L)	Total Nitrogen (mg/L)	Total Phosphorous (mg/L)	
		mg/L	%	mg/L	%	mg/L	%	mg/L	%	mg/L	%	mg/L	%	mg/L	%														
<b>s8. Basal GAB</b>																													
1. Precipice Outcrop	20th	16	27	14	19	6	17	101	64	16	15	4.3	3	0.00	0	247	75	7.0	89.4	11.0	0.10	0.000	0.010	0.000	0.000	0.70	0.000	0.000	
	50th	23	34	24	35	12	28	136	71	25	22	9.7	6	0.00	0	340	110	7.5	133.0	13.0	0.10	0.010	0.040	0.005	0.015	0.88	0.000	0.000	
	80th	34	63	38	40	18	36	194	81	35	27	14.0	8	0.50	0	440	157	8.1	189.2	21.2	0.15	0.020	0.070	0.034	0.020	1.88	0.109	0.016	
2. Eastern Central Area	20th	87	92	2	1	0	0	150	57	36	17	0.0	0	0.00	0	185	6	7.5	162.2	14.0	0.15	0.000	0.000	ID	ID	8.48	0.000	0.000	
	50th	255	97	3	2	1	1	420	72	99	26	5.0	2	0.25	0	1040	11	8.2	347.0	19.0	0.53	0.008	0.010	ID	ID	27.56	0.054	0.000	
	80th	342	99	8	5	5	4	674	82	165	37	29.6	5	1.00	0	1463	33	8.6	569.6	26.0	2.20	0.180	0.030	ID	ID	48.45	0.217	0.016	
3. North-eastern Evergreen Outcrop	20th	299	76	8	1	2	1	175	8	201	28	0.5	0	0.00	0	1295	33	7.3	169.9	14.0	0.30	0.020	0.010	ID	ID	10.93	0.000	ID	
	50th	700	90	20	5	7	2	421	33	656	67	12.0	0	0.80	0	2975	85	7.8	357.0	17.0	0.70	0.070	0.025	ID	ID	20.54	0.174	ID	
	80th	1489	98	113	14	98	9	623	63	1743	89	32.9	3	3.00	0	5505	595	8.3	523.5	20.0	1.55	0.755	0.051	ID	ID	60.35	0.652	ID	
4. South-eastern Evergreen	20th	157	60	10	3	5	3	200	14	161	36	1.3	0	0.00	0	920	42	7.4	172.2	14.0	0.20	0.000	0.000	0.005	0.000	5.62	0.000	ID	
	50th	380	76	40	11	29	13	452	34	480	62	21.0	3	0.50	0	2300	230	7.9	380.0	26.0	0.30	0.010	0.020	0.020	0.008	10.29	0.109	ID	

**Draft Water Quality Objectives for Queensland Murray-Darling Basin – Basal GAB Aquifer Zones**

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		1. The ANZECC Guidelines (ANZECC/ARMCANZ, 2000) recommend that the highest level of protection should be provided to underground aquatic ecosystems, given their high conservation value. The management intent is to maintain the existing water quality distribution (20th, 50th and 80th percentiles). 2. ID: Insufficient data.																										
		Na		Ca		Mg		HCO <sub>3</sub>		Cl		SO <sub>4</sub>		NO <sub>3</sub>		Electrical Conductivity (µS/cm)	Hardness (mg/L)	pH	Alkalinity (mg/L)	SiO <sub>2</sub> (mg/L)	F (mg/L)	Fe (mg/L)	Mn (mg/L)	Zn (mg/L)	Cu (mg/L)	SAR (meq/L)	Total Nitrogen (mg/L)	Total Phosphorous (mg/L)
mg/L	%	mg/L	%	mg/L	%	mg/L	%	mg/L	%	mg/L	%	mg/L	%															
<b>s8. Basal GAB</b>																												
	80th	724	94	123	17	89	23	605	62	964	82	70.2	5	3.00	0	3634	675	8.2	532.5	42.0	0.95	0.072	0.187	0.100	0.020	25.88	0.652	ID
5. North-eastern Evergreen Outcrop	20th	16	31	7	23	6	26	20	27	22	28	6.9	5	0.00	0	149	43	6.3	38.0	11.0	0.09	0.000	0.020	ID	ID	0.85	0.000	ID
	50th	22	41	13	28	10	31	68	41	35	40	13.0	11	0.05	0	247	81	7.1	65.0	12.0	0.10	0.010	0.040	ID	ID	1.18	0.011	ID
	80th	53	48	64	41	22	34	177	57	146	54	50.0	22	0.50	0	889	228	7.9	148.7	13.0	0.27	0.038	0.090	ID	ID	1.63	0.109	ID
6. Western Evergreen Only	20th	32	86	2	3	0	0	81	59	16	24	5.0	5	0.00	0	278	8	7.9	83.2	27.0	0.21	0.000	0.005	0.000	0.000	3.10	0.000	ID
	50th	104	91	7	7	1	1	177	63	53	29	18.7	8	0.00	0	520	22	8.2	158.0	28.0	0.30	0.030	0.040	0.005	0.010	9.60	0.000	ID
	80th	118	97	8	11	2	4	192	67	57	32	21.0	9	0.05	0	543	38	8.5	165.3	32.7	0.53	0.065	0.040	0.017	0.015	19.40	0.011	ID

**References:**

McNeil, V.H., Raymond, M.A.A., Bennett, L. & McGregor, G.B. (2018), *Regional groundwater chemistry zones: Queensland Murray-Darling Basin*, Department of Environment and Science, Queensland Government.