

5. CONCLUSIONS

5.1 Domestic Use

The main water quality problems throughout the country for domestic use relate to the widespread elevated salt levels (high TDS values) and elevated fluoride levels in certain locations.

Water with elevated TDS levels tastes salty and does not slake thirst. The elevated salt levels (as expressed by TDS concentrations) also decrease the aesthetic value of water. Consumption of the water may not produce adverse health effects in the short-term, but there is a slight possibility of salt overload in sensitive individuals in the long term. TDS levels were especially elevated in the Lower Orange, Fish to Tsitsikamma and Gouritz WMAs. It would appear that these elevated levels are due to natural reasons. The Breede and Berg WMAs have elevated TDS levels when considering the individual WMA sample sites.

High fluoride (F) levels were evident in the lower Olifants WMA. Health effects and tooth staining can be expected at the concentrations evident at selected sample sites.

At a WMA scale, pH values were also seen to deviate in various parts of the country. The pH was low in the Klip Spruit (of the Olifants WMA) and would likely result in irritation of the mucous membranes of water users in this area. It is likely that the source of the low pH is the acid mine drainage from the coalmines and mine dumps in the area. A notable effect of the low pH would be “burning eyes” with the use of the water for recreational purposes.

Magnesium (Mg), sulphate (SO₄), chloride (Cl), sodium (Na) and potassium (K) were also elevated in various parts of the country.

5.2 Irrigation Use

From an irrigated agriculture use perspective, the sodium adsorption ratio (SAR), electrical conductivity (EC), pH and chloride (Cl) were elevated in various regions of the country.

There were high pH levels in the Luvuvhu and Letaba, Crocodile (West) and Marico, Olifants, Usutu to Mhlatuze, Mzimvubu to Keiskamma, Upper Orange and Lower Orange WMAs.

The Fish to Tsitsikamma and Gouritz WMAs had low pH values and high sodium adsorption ratio, electrical conductivity and chloride values; making irrigated agriculture in these WMAs more challenging, and limiting crop selection to more salt tolerant crops.

The Thukela WMA had high pH values, with the Upper and Middle Vaal WMAs having high electrical conductivity values.

The South Western Cape (Breede and Berg WMAs) had low pH values evident in some cases and elevated sodium adsorption ratio, electrical conductivity and chloride values, again limiting the potential for growing salt sensitive crops.

5.3 Trophic Status of Selected Impoundments

South Africa has disturbing levels of nutrient enrichment at many of its impoundments. This is something that requires urgent attention. The most enriched impoundments are often those that have the greatest concentration of humans in their catchment areas. The top ten impoundments in need of nutrient management are:

- Rietvlei Dam (in the Crocodile (West) and Marico WMA),
- Klipvoor Dam (in the Crocodile (West) and Marico WMA),
- Cooke's Lake (in the Upper and Lower Orange WMAs),
- Roodeplaat Dam (in the Crocodile (West) and Marico WMA),
- Bon Accord Dam (in the Crocodile (West) and Marico WMA),
- Hartbeespoort Dam (in the Crocodile (West) and Marico WMA),
- Erfenis Dam (in the Upper, Middle and Lower Vaal WMAs),
- Lotlamoreng Dam (in the Upper and Lower Orange WMAs),
- Bloemhof Dam (in the Upper, Middle and Lower Vaal WMAs), and
- Shongweni Dam (in the Mvoti to Umzimkulu WMA).

Apart from the aesthetic aspects of water with a “pea-soup” appearance, eutrophication leads to the frequent occurrence of toxic algal blooms, with the danger of fish and cattle deaths, and the induction of gastro-enteritis in humans.

6. RECOMMENDATIONS

The following recommendations are proposed:

- Revision of the existing monitoring network is necessary to terminate sampling at unnecessary sites and expand the network to cover more adequately the sensitive problem areas or those areas with insufficient sampling sites.
- Role players must be informed of the impact of land uses that result in deterioration in the water quality. This is especially important for mining and agriculture.
- Ways to improve the water quality at those negatively impacted sites must be investigated.
- Water users at sites where there is water that could be detrimental to their health should be informed to take appropriate precautions. Safe water should be provided to those domestic users who have no access to a safe and healthy water supply.
- Water resources should be protected, in particular the more pristine water sources, in order that their quality does not deteriorate as a result of a change in land use or management practice.
- The trophic status monitoring and assessment programme should be expanded to include more of the impoundments throughout the country and appropriate land-use management practises should be encouraged to prevent or minimise large nutrient loads entering the aquatic environment.

7. REFERENCES

- DWAF (1996a) *South African Water Quality Guidelines, Volume 1: Domestic Water Use*. Second Edition 1996. Department of Water Affairs and Forestry, South Africa.
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8. APPENDICES

8.1 Appendix A: Basic Statistics for the National Sampling Site Set

8.2 Appendix B: Land cover types and extent of areal cover across South Africa per WMA (after Fairbanks *et al.*, 2000)

8.3 Appendix C: Barcode Graphs for the National Sampling Sites that Exceed the *Very Good* and *Good* (or TWQR) Categories

[Click here to browse the Barcode graphs \(if files present in same directory\)](#)

8.1 Appendix A: Basic Statistics for the National Sampling Site Set

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
90167	A2H019Q01	Number of Elements	145	145	145	145	145	145	145	145	145	145	145	145	143	130
90167	A2H019Q01	Median	8.26	0.594	0.17	0.37	46.8	24.37	71	57.9	6.43	38	61.4	429.3	1.456	1
90167	A2H019Q01	95% Percentile	8.494	2.036	0.4048	0.48	60.98	29.94	88.12	74.13	7.649	46.98	71.88	495	1.809	9.924
90168	A2H021Q01	Number of Elements	145	145	145	145	145	145	145	145	145	145	145	145	140	128
90168	A2H021Q01	Median	8.31	0.3	0.051	0.45	50.3	17.87	51.1	48.6	8.58	35.5	56.2	420	1.7	2
90168	A2H021Q01	95% Percentile	8.94	0.8738	0.2874	0.538	71.18	22.18	66.46	67.28	10.57	41.28	70.46	511.8	2.443	13.95
90203	A2H059Q01	Number of Elements	279	279	279	279	279	279	279	279	279	279	279	279	271	
90203	A2H059Q01	Median	8.283	0.74	0.035	0.42	54.3	27	76.9	69.1	6.04	43.3	68.1	481	1.61	
90203	A2H059Q01	95% Percentile	8.496	1.826	0.0931	0.551	79.01	35.22	100.4	112.4	7.261	54.99	89.16	618.1	2.07	
90220	A2H094Q01	Number of Elements	46	46	46	46	46	46	46	46	46	46	46	46	46	
90220	A2H094Q01	Median	8.42	0.152	0.02	0.169	39.05	22.15	76.1	65.05	6.4	45.35	61.3	414.5	1.2	
90220	A2H094Q01	95% Percentile	8.835	1.861	0.2413	0.2053	48.55	31.65	94.08	95.42	8.698	57.35	77.68	531.6	1.505	
90230	A2H111Q01	Number of Elements	138	138	138	138	138	138	138	138	138	138	138	138	137	135
90230	A2H111Q01	Median	8.33	0.098	0.06	0.469	28.8	16.85	43.57	34.25	4.657	28.4	43.65	302.5	1.049	1
90230	A2H111Q01	95% Percentile	8.594	0.7838	0.1378	0.5904	39.6	21.64	56.68	53.1	6.227	33.87	54.75	365.6	1.347	27.3
90233	A2H116Q01	Number of Elements	139	139	139	139	139	139	139	139	139	139	139	139	133	
90233	A2H116Q01	Median	8.353	0.523	0.034	0.46	57	26.6	73	70.5	6.917	45.5	69.7	497	1.68	
90233	A2H116Q01	95% Percentile	8.64	1.472	0.0771	0.55	81.44	38.42	103	115.4	8.47	60.17	92.97	667.1	2.191	
90325	A3R003Q01	Number of Elements	37	37	37	37	37	37	37	37	37	37	37	37	36	
90325	A3R003Q01	Median	8.117	0.137	0.031	0.26	5.4	7.1	13.6	5	2.346	14.81	17.4	126.6	0.28	
90325	A3R003Q01	95% Percentile	8.34	0.4828	0.1036	0.3632	7.13	9.807	18.75	6.14	3.086	20.03	22.26	159.6	0.445	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
90326	A3R003Q01	Number of Elements	55	55	55	55	55	55	55	55	55	55	55	55	53	
90326	A3R003Q01	Median	8.29	0.092	0.024	0.26	5.9	13.35	8.9	4.9	4.183	16.3	23.1	179	0.27	
90326	A3R003Q01	95% Percentile	8.5	0.2327	0.0657	0.34	8.284	18.36	16.05	5.5	4.823	24.99	31.41	234.1	0.344	
90334	A4H013Q01	Number of Elements	98	98	98	98	98	98	98	98	98	98	98	98	95	61
90334	A4H013Q01	Median	7.45	0.022	0.02	0.128	6.4	2.4	4.353	7	0.855	4.5	8.09	56	0.59	3.25
90334	A4H013Q01	95% Percentile	7.732	0.08315	0.0782	0.1781	8.303	3.071	9.26	11.68	2.561	6.845	10.3	74.15	0.7825	52
90340	A5H006Q01	Number of Elements	50	50	50	50	50	50	50	50	50	50	50	50	50	10
90340	A5H006Q01	Median	8.19	0.081	0.02	0.304	22.9	10.95	27.41	29.08	4.35	20.35	33.45	215.1	1.015	15.35
90340	A5H006Q01	95% Percentile	8.627	0.5817	0.0682	0.4355	50.87	26.42	67.78	70.75	6.803	40.25	61.23	438.5	1.586	106.8
90341	A5H008Q01	Number of Elements	67	67	67	67	67	67	67	67	67	67	67	67	66	33
90341	A5H008Q01	Median	7.75	0.178	0.02	0.16	8.3	2.812	7.2	10.9	1.04	7.2	11	74	0.675	2
90341	A5H008Q01	75% Percentile	7.971	0.3735	0.029	0.194	15.68	5.306	10.4	20.95	1.398	10.4	19.7	115.7	1.014	12
90370	A7H001Q01	Number of Elements	61	61	61	61	61	61	61	61	61	61	61	61	57	
90370	A7H001Q01	Median	7.88	0.131	0.029	0.12	5.3	4.6	5.6	8.2	0.98	10.2	12.5	91	0.39	
90370	A7H001Q01	95% Percentile	8.491	0.762	0.064	0.21	63.84	22.25	33.9	119.1	4.25	31.77	70.8	437.5	2.108	
90398	A9H011Q01	Number of Elements	109	109	109	109	109	109	109	109	109	109	109	109	109	63
90398	A9H011Q01	Median	7.94	0.085	0.02	0.125	9.4	5.6	5.9	11.7	0.78	7.445	14.3	101.2	0.62	6
90398	A9H011Q01	95% Percentile	8.234	0.5334	0.063	0.302	40.73	16.23	12.3	48.91	2.348	14.16	41.06	278.4	1.729	111.8
90399	A9H012Q01	Number of Elements	139	139	139	139	139	139	139	139	139	139	139	139	138	5
90399	A9H012Q01	Median	7.95	0.258	0.029	0.11	7.2	5.2	4.788	6.8	0.78	8.4	12.7	95.25	0.47	6.46
90399	A9H012Q01	95% Percentile	8.201	0.6501	0.0701	0.1664	8.807	7.182	10.91	11.58	1.316	11.5	16.43	118.4	0.54	39.22
90412	B1H010Q01	Number of Elements	267	267	267	267	267	267	267	267	267	267	267	267	266	
90412	B1H010Q01	Median	8.27	0.06	0.024	0.4	26.2	25	155.8	14.94	5.728	40.4	55.3	378	0.81	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
90412	B1H010Q01	95% Percentile	8.985	0.4874	0.0747	0.4697	34.07	37.77	265	22.26	6.739	66.2	72.1	509.7	1.019	
90414	B1H015Q01	Number of Elements	265	265	265	265	265	265	265	265	265	265	265	265	264	
90414	B1H015Q01	Median	8.023	0.083	0.02	0.316	19.7	22	133.3	14.02	6.58	33.6	46.2	314.2	0.629	
90414	B1H015Q01	95% Percentile	8.25	0.3824	0.0626	0.39	23.24	29.58	190.6	17.63	7.898	44.74	57.06	389.8	0.7487	
90442	B2H015Q01	Number of Elements	221	221	221	221	221	221	220	221	221	221	221	221	214	121
90442	B2H015Q01	Median	7.956	0.111	0.026	0.23	10	8	38.8	7.4	2.85	18.2	23.2	158	0.479	1.04
90442	B2H015Q01	95% Percentile	8.23	0.313	0.075	0.31	13.73	10.9	88.15	11.8	4.13	35.47	32.4	215	0.6422	16
90444	B3H001Q01	Number of Elements	214	214	214	214	214	214	214	214	214	214	214	214	205	150
90444	B3H001Q01	Median	8.218	0.4165	0.03	0.5	37.55	17.5	101.5	25.15	4.689	30.7	47.85	334	1.32	1
90444	B3H001Q01	95% Percentile	8.551	1.03	0.0784	1.207	140.2	36.92	175.1	139.3	6.308	48.71	109.5	820.7	3.654	14.55
90458	B3H021Q01	Number of Elements	135	135	135	135	135	135	135	135	135	135	135	135	127	136
90458	B3H021Q01	Median	8.298	0.467	0.024	1.27	106.5	32.8	126	144.6	7.95	54.48	100.4	682.7	2.741	2.945
90458	B3H021Q01	95% Percentile	8.656	1.357	0.076	1.733	192.8	58.51	193.7	255.1	9.941	74.78	166.8	1071	3.9	29.5
90473	B4H011Q01	Number of Elements	95	95	95	95	95	95	95	95	95	95	95	95	95	69
90473	B4H011Q01	Median	8.55	1.153	0.03	0.16	31.4	26.2	27.1	25.8	1.13	30.9	48.8	370	1.02	7
90473	B4H011Q01	95% Percentile	8.83	2.317	0.0665	0.273	88.57	72.68	81.19	86.05	1.761	39.85	108.7	874.7	2.019	168.8
90491	B6H004Q01	Number of Elements	134	134	134	134	134	134	134	134	134	134	134	134	134	71
90491	B6H004Q01	Median	8.1	0.169	0.0215	0.12	4.5	8.461	10.37	4.6	0.515	14.6	17.15	127.5	0.23	0.5
90491	B6H004Q01	95% Percentile	8.417	0.3284	0.0574	0.1987	6.135	11.74	14.94	5.735	1.677	19.59	22.34	168.7	0.2835	2.06
90506	B7H009Q01	Number of Elements	98	98	98	98	98	98	98	98	98	98	98	98	97	29
90506	B7H009Q01	Median	8.52	0.3095	0.0255	0.33	37.95	22.65	52.75	40.4	3.095	32.7	51.5	366	1.22	1
90506	B7H009Q01	95% Percentile	8.732	0.6291	0.057	0.4115	65.65	39.23	92.83	91.29	4.565	40.01	76.49	533.4	1.824	611

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
90524	B8H008Q01	Number of Elements	120	120	120	120	120	120	119	120	120	120	120	120	118	44
90524	B8H008Q01	Median	8.125	0.1155	0.029	0.184	24.3	9.25	10.9	28.95	2.265	15.4	28.45	194.5	1.21	1
90524	B8H008Q01	95% Percentile	8.415	0.4997	0.0643	0.273	55.88	17.21	25.83	74.62	3.595	27.31	54.08	366.7	1.947	31.75
90583	B9H003Q01	Number of Elements	113	113	113	113	113	113	113	113	113	113	113	113	108	38
90583	B9H003Q01	Median	8.44	0.097	0.042	0.21	35.7	17.6	10.4	19.1	5.692	31.4	44	379	1.28	9
90583	B9H003Q01	95% Percentile	8.762	2.954	0.9248	0.28	207.3	55.23	50.2	252.2	17.57	46.52	160.4	1105	5.048	235.9
90585	C1H002Q01	Number of Elements	277	277	277	277	277	277	277	277	277	277	277	277	265	
90585	C1H002Q01	Median	8.21	0.048	0.021	0.21	15.8	13.27	18.34	8.7	1.873	24.12	30.2	235.9	0.64	
90585	C1H002Q01	95% Percentile	8.492	0.167	0.0732	0.29	26.84	22.62	30.76	14.9	3.508	36.82	46.9	377.2	0.87	
90597	C1H017Q01	Number of Elements	277	277	277	277	277	277	277	277	277	277	277	277	265	
90597	C1H017Q01	Median	8.271	0.113	0.026	0.24	20.2	14.25	29.1	13.55	3.073	23.43	33.4	255	0.809	
90597	C1H017Q01	95% Percentile	8.64	0.787	0.0944	0.34	39.12	27	45.37	28.54	4.301	41.36	55.12	444	1.226	
90615	C2H004Q01	Number of Elements	369	359	361	361	354	353	354	359	354	353	1374	322	350	96
90615	C2H004Q01	Median	8.2	0.257	0.025	0.26	119.7	49.9	447.2	110	10.44	130	140	1052	2.205	2
90615	C2H004Q01	95% Percentile	8.536	0.9697	0.26	0.34	226.6	91.88	1061	199.4	18.85	267.2	263.3	2015	3.19	19
90616	C2H005Q01	Number of Elements	337	322	327	329	320	320	316	326	320	320	1255	283	316	115
90616	C2H005Q01	Median	7.89	4.707	1	0.59	58.4	25.6	214.2	94	11	90.45	98.3	641.2	1.382	4
90616	C2H005Q01	95% Percentile	8.28	9.58	7.923	0.956	82.14	31.02	287.1	150	18.85	110	120	815.2	1.848	21.9
90618	C2H007Q01	Number of Elements	265	265	265	265	265	265	265	265	265	265	265	265	261	117
90618	C2H007Q01	Median	8.33	0.494	0.02	0.288	42.9	22.16	141.8	43.4	7.55	50.8	66.3	451	1.28	7
90618	C2H007Q01	95% Percentile	9.078	1.589	0.089	0.3956	81.85	34.78	248.5	86.34	12.69	82.71	101.6	716.7	2.01	60
90654	C2H071Q01	Number of Elements	319	309	311	311	303	302	304	310	304	302	1325	273	288	87
90654	C2H071Q01	Median	7.98	4.868	0.151	0.28	64.15	25	177.4	68.85	13.9	64.05	87	589	1.63	4

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
90654	C2H071Q01	95% Percentile	8.341	7.209	0.999	0.34	77	33	256.1	87	18	86.79	105	703.2	2.206	15.7
90656	C2H073Q01	Number of Elements	267	267	267	267	267	267	267	267	267	267	288	267	260	128
90656	C2H073Q01	Median	8.1	3.062	0.336	0.274	57.09	37	147.4	71.13	10.39	68.06	88.15	644.2	1.37	1.1
90656	C2H073Q01	95% Percentile	8.563	13.49	8.533	0.37	130.5	55.57	347.7	165	23.11	110.9	164.6	1129	2.621	12.13
90668	C2H085Q01	Number of Elements	1047	312	312	312	312	312	312	312	312	312	1706	312	305	120
90668	C2H085Q01	Median	8.32	0.549	0.022	0.24	35.36	43.25	101.3	38	5.12	55.58	73.85	574.3	0.85	1
90668	C2H085Q01	95% Percentile	8.67	1.6	0.2558	0.4036	53.07	52.65	126.6	61.75	8.537	66.24	89.43	691.3	1.246	7.145
90795	C4H004Q01	Number of Elements	145	148	148	148	148	148	148	148	148	148	148	148	145	62
90795	C4H004Q01	Median	8.3	0.036	0.0205	0.28	54	15.97	52.85	70.77	6.805	35.15	60.7	407	1.809	31
90795	C4H004Q01	95% Percentile	8.689	0.8733	0.08	0.3347	106.3	32.83	125.1	173.9	8.976	60.67	105	707.6	2.778	214.5
90809	C4R001Q01	Number of Elements	72	72	72	72	72	72	72	72	72	72	72	72	72	
90809	C4R001Q01	Median	8.18	0.3775	0.035	0.295	15.2	5.1	16.2	7.1	5.11	11.85	18.6	155	0.94	
90809	C4R001Q01	95% Percentile	8.365	0.7326	0.1349	0.3727	18.7	6.39	34.41	10.47	5.685	15.59	23.15	191.6	1.106	
90810	C4R002Q01	Number of Elements	93	93	93	93	93	93	93	93	93	93	93	93	90	
90810	C4R002Q01	Median	8.183	0.236	0.022	0.27	13.6	6.5	15.15	7.1	4.799	14.7	21.4	165	0.7545	
90810	C4R002Q01	95% Percentile	8.359	0.4806	0.111	0.3564	23.53	18.87	22.93	10.69	5.896	39.4	46.34	370.2	0.96	
90847	C6H003Q01	Number of Elements	159	159	159	159	159	159	159	159	159	159	159	159	157	108
90847	C6H003Q01	Median	8.33	0.191	0.02	0.252	29.6	12.77	31.43	18.4	5.941	28.14	38.7	296	1.19	9
90847	C6H003Q01	95% Percentile	9.055	1.39	0.9846	0.3355	72.11	29.34	79.8	62.66	8.853	45.15	74.03	577.1	2.108	157.2
90853	C7H006Q01	Number of Elements	415	275	275	275	275	275	275	275	275	275	474	275	263	75
90853	C7H006Q01	Median	8.24	0.051	0.024	0.24	28	12.45	27.9	20.6	5.54	25.1	36.55	277.5	1.12	18.6
90853	C7H006Q01	95% Percentile	8.63	0.3791	0.0879	0.31	36.43	17.13	39.66	30.63	6.541	34.3	46.47	356.3	1.468	122.4

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
90859	C8H001Q01	Number of Elements	281	281	281	281	281	281	281	281	281	281	281	281	271	
90859	C8H001Q01	Median	8.088	0.236	0.038	0.171	10.2	6.1	15.3	5.6	2.27	15.7	18.6	144	0.57	
90859	C8H001Q01	95% Percentile	8.38	0.506	0.094	0.25	23.9	16.3	25.04	14.2	4.111	32.1	40	315	0.955	
90884	C8H027Q01	Number of Elements	276	276	276	276	276	276	275	276	276	276	276	276	274	123
90884	C8H027Q01	Median	8.238	0.1895	0.02	0.2	16.54	9.35	18.4	8.8	2.653	21.1	26.45	202.5	0.77	10
90884	C8H027Q01	95% Percentile	8.534	0.465	0.0735	0.2833	28.82	19.97	25.14	16.63	4.126	34.92	46.03	357.4	1.07	157.7
101788	D1H001Q01	Number of Elements	155	155	155	155	155	155	155	155	155	155	155	155	145	1
101788	D1H001Q01	Median	8.42	0.783	0.026	0.34	51.6	28	44.2	30.1	5.17	48	66.5	517	1.41	857
101788	D1H001Q01	95% Percentile	9.022	9.193	0.2289	0.4206	93.37	45.32	90.03	89.31	11.21	69.38	98.96	795.9	2.486	857
101789	D1H003Q01	Number of Elements	253	253	253	253	253	253	253	253	253	253	253	253	249	102
101789	D1H003Q01	Median	8.11	0.187	0.026	0.14	4.9	6.556	9.5	3.9	0.81	19	17.4	140	0.24	32
101789	D1H003Q01	95% Percentile	8.406	0.5082	0.0604	0.2094	7.279	11.1	14.94	5.3	2.104	28.74	26.74	207	0.376	355
101790	D1H005Q01	Number of Elements	17	17	17	17	17	17	17	17	17	17	17	17	17	1
101790	D1H005Q01	Median	8.079	0.334	0.02	0.11	4.3	6.61	9	3.9	0.58	19.1	17.5	138	0.2	119
101790	D1H005Q01	95% Percentile	8.474	0.85	0.0358	0.2216	14.13	11.3	25.48	14.12	0.9516	28.88	29.94	219.4	0.702	119
101791	D1H006Q01	Number of Elements	147	147	147	147	147	147	147	147	147	147	147	147	139	131
101791	D1H006Q01	Median	8.1	0.234	0.022	0.14	5.6	6.6	11.07	4.2	0.95	20.4	18.5	148	0.27	19.1
101791	D1H006Q01	95% Percentile	8.377	0.7821	0.0754	0.2463	8.077	9.9	16.25	5	2.165	27.64	26.06	201	0.392	914.5
101793	D1H009Q01	Number of Elements	148	148	148	148	148	148	148	148	148	148	148	148	144	129
101793	D1H009Q01	Median	8.05	0.2065	0.02	0.1325	4.428	5.898	8.679	3.8	0.754	17.62	15.9	128	0.2275	11.35
101793	D1H009Q01	95% Percentile	8.366	0.5508	0.0607	0.19	6.056	9.93	14.19	5	1.86	27.17	24.69	191	0.34	693.4
101795	D1H011Q01	Number of Elements	120	120	120	120	120	120	120	120	120	120	120	120	116	102
101795	D1H011Q01	Median	8.24	0.0315	0.022	0.13	6.128	9.45	9.6	4.2	0.866	24.6	22.55	181.5	0.26	4.065

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
101795	D1H011Q01	95% Percentile	8.441	0.1192	0.0492	0.1962	8.729	16.77	14.71	5.9	1.981	36.26	35.03	272.4	0.354	133.8
101808	D2H012Q01	Number of Elements	65	63	65	63	63	63	63	63	63	63	65	63	62	7
101808	D2H012Q01	Median	8.314	0.053	0.02	0.15	10.7	13	14.9	5	1.41	33.4	32.1	256	0.395	5.04
101808	D2H012Q01	95% Percentile	8.514	0.181	0.065	0.21	16.57	20.3	20.57	9.09	3.135	47.61	42.76	370.9	0.5296	90.54
101816	D2H036Q01	Number of Elements	112	112	112	112	112	112	111	112	112	112	112	112	104	95
101816	D2H036Q01	Median	8.074	0.386	0.028	0.21	8.29	6.118	13	5	1.812	17.62	19.05	145.7	0.43	140
101816	D2H036Q01	95% Percentile	8.451	0.8933	0.0854	0.33	13.46	12.85	23.11	7.045	3.05	32.97	31.88	257.8	0.5785	1823
101820	D2R004Q01	Number of Elements	61	61	61	61	61	61	61	61	61	61	61	61	60	15
101820	D2R004Q01	Median	8.104	0.402	0.045	0.21	8.093	6	12.6	5	1.76	16.7	18.5	142	0.418	11.1
101820	D2R004Q01	95% Percentile	8.46	0.831	0.103	0.27	15	15.6	29.5	9.4	3.21	37.2	38.5	302	0.5806	436
101824	D3H008Q01	Number of Elements	265	265	265	265	265	265	265	265	265	265	265	265	257	116
101824	D3H008Q01	Median	8.18	0.48	0.03	0.17	7.712	7	12.09	5.1	1.337	19.57	20	151.1	0.38	7
101824	D3H008Q01	95% Percentile	8.361	0.7918	0.073	0.22	11.26	8.2	16.64	9.78	2.848	22.48	23.88	174	0.5272	51.5
101828	D3H013Q01	Number of Elements	147	147	147	147	147	147	147	147	147	147	147	147	141	123
101828	D3H013Q01	Median	8.122	0.494	0.036	0.16	5.2	5.8	9.5	4.1	1.15	16.79	16.1	129	0.276	17.9
101828	D3H013Q01	95% Percentile	8.394	0.8415	0.0924	0.22	7.139	6.594	13.65	5	2.695	19.15	18.4	141.8	0.4	100.9
101837	D3R003Q01	Number of Elements	37	36	37	36	36	36	36	36	36	36	37	36	36	
101837	D3R003Q01	Median	8.17	0.509	0.03	0.157	5.15	6	9.35	3.85	1.305	17.1	17	130	0.27	
101837	D3R003Q01	95% Percentile	8.366	0.781	0.0674	0.2118	6.725	7.1	13.43	5.025	2.805	19.67	19.32	147.3	0.3375	
101869	D5H021Q01	Number of Elements	35	35	35	35	35	35	35	35	35	35	35	35	34	
101869	D5H021Q01	Median	8.63	0.031	0.031	0.79	692.3	88.4	624.1	588	5.93	52.8	371	2660	12.89	
101869	D5H021Q01	95% Percentile	8.773	0.1047	0.1237	1.073	1110	164.4	1097	1090	12.01	68.46	568.5	4130	18.24	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
101878	D7H008Q01	Number of Elements	239	239	239	239	239	239	239	239	239	239	239	239	235	2
101878	D7H008Q01	Median	8.268	0.347	0.036	0.19	14.2	9.1	22.8	13.14	2.218	23.4	27.1	194	0.64	28.25
101878	D7H008Q01	95% Percentile	8.561	0.7073	0.0943	0.28	31.29	15.71	69.91	33.37	5.367	34.2	45.43	314.7	1.186	38.11
101884	D7H015Q01	Number of Elements	216	216	216	216	216	216	216	216	216	216	216	216	204	
101884	D7H015Q01	Median	8.29	0.076	0.02	0.23	19.55	11.65	28.55	16.26	2.17	26.95	33.55	240	0.8	
101884	D7H015Q01	95% Percentile	8.484	0.566	0.0613	0.3048	37.2	16.7	72.13	36.65	5.411	35.43	50.93	338	1.319	
101888	D8H003Q01	Number of Elements	244	244	244	244	244	244	244	244	244	244	244	244	239	12
101888	D8H003Q01	Median	8.368	0.0255	0.02	0.27	25.05	12.9	33.85	20.85	2.9	30.7	38.6	279.2	0.955	27
101888	D8H003Q01	95% Percentile	8.569	0.4788	0.0627	0.36	40.28	18.3	77.34	39.1	5.509	37.55	52.55	374.8	1.361	101.8
101893	D8H008Q01	Number of Elements	254	254	254	254	254	254	254	254	254	254	254	254	250	
101893	D8H008Q01	Median	8.362	0.042	0.023	0.26	23.85	12.49	31.55	19.35	2.649	28.88	36.9	265.3	0.922	
101893	D8H008Q01	95% Percentile	8.54	0.5767	0.0747	0.34	38.78	17.34	67.87	39.34	5.476	36.81	50.5	360.1	1.383	
101900	E1R001Q01	Number of Elements	154	154	154	154	154	154	154	154	154	154	154	154	154	
101900	E1R001Q01	Median	7.09	0.1245	0.02	0.1	14.42	3	8.05	27.71	0.9225	3.2	14	68.26	1.367	
101900	E1R001Q01	95% Percentile	7.44	0.3842	0.0791	0.1304	29.57	5.318	14.92	55.24	1.528	5.542	25.84	120.6	2.217	
101902	E2H002Q01	Number of Elements	56	56	56	56	56	56	56	56	56	56	56	56	55	
101902	E2H002Q01	Median	7.094	0.025	0.02	0.109	8.841	2.25	7.273	16.07	0.827	3.159	9.25	51	0.94	
101902	E2H002Q01	95% Percentile	7.635	0.1753	0.0508	0.1483	22.02	5.082	14.8	43.57	2.705	9.8	23.73	128.1	1.516	
101903	E2H003Q01	Number of Elements	172	172	172	172	172	172	172	172	172	172	172	172	163	
101903	E2H003Q01	Median	7.62	0.034	0.02	0.13	34.13	7.05	20.4	62.85	1.79	10.33	31.95	173.1	2.06	
101903	E2H003Q01	95% Percentile	8.115	0.3632	0.0585	0.24	168.4	19.55	89.8	271.7	5.375	36.11	119.9	723.9	5.83	
101935	G1H031Q01	Number of Elements	221	221	221	221	221	221	221	221	221	221	221	221	217	
101935	G1H031Q01	Median	7.67	0.402	0.026	0.139	33.4	6.7	16.1	57.7	2.5	8.2	30.1	164	2.13	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
101935	G1H031Q01	95% Percentile	7.95	1.69	0.125	0.24	87.7	14.5	40.4	151.6	5.41	14.2	65.9	381	3.96	
101939	G1H036Q01	Number of Elements	231	231	231	231	231	231	231	231	231	231	231	231	227	
101939	G1H036Q01	Median	7.53	0.942	0.025	0.12	23.3	3.4	12.1	29.3	2.94	7.2	20.5	124.4	1.72	
101939	G1H036Q01	95% Percentile	7.885	2.487	0.119	0.1645	36.95	5.6	17.65	49.45	5.785	10.9	30.95	191	2.467	
101975	G2H015Q01	Number of Elements	220	220	220	220	220	220	220	220	220	220	220	220	212	
101975	G2H015Q01	Median	7.7	2.294	0.0315	0.207	55.7	8.064	20.8	86.87	8.035	16.6	47.65	285.5	2.782	
101975	G2H015Q01	95% Percentile	8.012	5.783	0.4104	0.2801	90.2	10.61	29	126	15.54	22.64	67.42	424.1	4.039	
101998	G4H007Q01	Number of Elements	230	230	230	230	230	230	230	230	230	230	230	230	224	
101998	G4H007Q01	Median	6.83	0.285	0.02	0.09	14.52	2.7	14.63	25.75	0.98	3.6	13.55	77.96	1.422	
101998	G4H007Q01	95% Percentile	7.276	0.7769	0.0804	0.14	23.9	4.855	25.08	45.26	2.617	5.813	21.71	121.1	1.958	
102088	H4H024Q01	Number of Elements	210	210	210	210	210	210	210	210	210	210	210	210	204	
102088	H4H024Q01	Median	7.53	0.223	0.024	0.13	32.04	6.2	19.3	54.22	1.41	7	27.25	151	2.108	
102088	H4H024Q01	95% Percentile	7.83	1.118	0.0657	0.1896	58.21	11.96	38.21	97.11	3.21	12.33	48.87	271.6	3.006	
102099	H5H005Q01	Number of Elements	181	181	181	181	181	181	181	181	181	181	181	181	178	
102099	H5H005Q01	Median	8.07	0.107	0.022	0.26	144	23.6	63	220	3.72	21.1	98.7	596	4.96	
102099	H5H005Q01	95% Percentile	8.55	0.993	0.081	0.46	277.2	49.79	121.5	430	6.27	37.63	198	1134	7.112	
102107	H6H009Q01	Number of Elements	57	57	57	57	57	57	57	57	57	57	57	57	54	
102107	H6H009Q01	Median	7.16	0.136	0.02	0.11	29	4.4	15.8	50.5	1.15	3.7	23.9	127	2.449	
102107	H6H009Q01	95% Percentile	7.59	0.3428	0.0728	0.1552	120.2	14.76	39.34	197.1	2.904	8.52	72.3	448.2	5.326	
102119	H7H006Q01	Number of Elements	55	55	55	55	55	55	55	55	55	55	55	55	53	
102119	H7H006Q01	Median	7.74	0.143	0.02	0.16	78.8	12.7	37.2	128.9	2.61	12.5	58.5	336	3.829	
102119	H7H006Q01	95% Percentile	8.161	0.7368	0.0652	0.3192	189.7	31.57	73.42	287.6	4.353	23.11	125.5	747.7	6.023	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102123	H8H001Q01	Number of Elements	64	64	64	64	64	64	64	64	64	64	64	64	62	1
102123	H8H001Q01	Median	7.36	0.179	0.0265	0.1275	59.7	8.435	37.3	98.35	1.55	5.9	42.05	254	3.645	4
102123	H8H001Q01	95% Percentile	7.916	0.4929	0.0766	0.17	145.4	21.69	61.97	236.7	3.269	13.44	93.23	561.4	5.785	4
102130	H9H005Q01	Number of Elements	87	87	87	87	87	87	87	87	87	87	87	87	84	
102130	H9H005Q01	Median	7.47	0.022	0.02	0.15	80.1	11.5	28.5	137.6	1.86	7.8	54.8	311	4.58	
102130	H9H005Q01	95% Percentile	8.394	0.1357	0.0658	0.6996	565.4	51.35	139	796.2	13.25	34.35	329.2	1981	14.09	
102148	J1H019Q01	Number of Elements	88	88	88	88	88	88	88	88	88	88	88	88	87	
102148	J1H019Q01	Median	8.213	0.0205	0.033	0.5355	1002	146.9	566.3	1541	9.785	142.3	610	3916	14.24	
102148	J1H019Q01	95% Percentile	8.474	0.1538	0.0737	0.6665	2212	346.5	1401	3530	34.37	261.9	1217	8461	21.9	
102168	J2H010Q01	Number of Elements	95	95	95	95	95	95	95	95	95	95	95	95	94	
102168	J2H010Q01	Median	8.36	0.029	0.02	0.36	87	22.4	64.6	108.3	5.19	53.4	86.6	599	2.576	
102168	J2H010Q01	95% Percentile	8.592	0.4773	0.0718	0.4291	368.3	52.07	341.8	562.9	10.29	112.4	269.6	1658	7.098	
102173	J2H016Q01	Number of Elements	37	37	37	37	37	37	37	37	37	37	37	37	34	
102173	J2H016Q01	Median	8.37	0.505	0.035	0.29	60.4	9.5	53.7	64	6.03	35.71	57.9	396	2.345	
102173	J2H016Q01	95% Percentile	8.754	0.757	0.1426	0.384	77.56	13.74	68.24	85.22	7.092	44.6	67.9	475.6	2.71	
102179	J2R004Q01	Number of Elements	53	53	53	53	53	53	53	53	53	53	53	53	51	
102179	J2R004Q01	Median	8.19	0.032	0.02	0.23	15.3	10.04	21.93	9.7	1.742	28.2	30.3	226	0.634	
102179	J2R004Q01	95% Percentile	8.81	0.2004	0.236	0.294	19.26	14.14	29.46	15.01	3.2	35.63	37.04	283.3	0.74	
102183	J3H011Q01	Number of Elements	190	190	190	190	190	190	190	190	190	190	190	190	187	
102183	J3H011Q01	Median	8.15	0.024	0.047	0.48	2423	249.2	1841	3612	10.91	422.6	1282	9059	22.88	
102183	J3H011Q01	95% Percentile	8.348	0.1343	0.1147	0.61	3795	353.9	2834	6073	60.26	716.8	1931	1.40E+04	29.83	
102207	K1H005Q01	Number of Elements	70	70	70	70	70	70	70	70	70	70	70	70	68	
102207	K1H005Q01	Median	7.285	0.043	0.02	0.14	43.35	5.7	16.7	72.3	0.9065	5.211	31.45	173.3	3.107	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102207	K1H005Q01	95% Percentile	7.712	0.2075	0.1036	0.19	65.71	8.155	34.88	110.9	2.367	7.855	47.96	260.4	4.024	
102243	K2H004Q01	Number of Elements	62	62	62	62	62	62	62	62	62	62	62	62	61	
102243	K2H004Q01	Median	7.985	0.0365	0.0505	0.44	8353	969.6	2057	1.47E+04	298.4	329.4	3575	2.69E+04	52.48	
102243	K2H004Q01	95% Percentile	8.339	0.1536	0.2449	0.5709	1.08E+04	1257	2623	1.90E+04	386.9	417.2	4490	3.45E+04	60.01	
102248	K3H001Q01	Number of Elements	73	73	73	73	73	73	73	73	73	73	73	73	73	
102248	K3H001Q01	Median	5.58	0.054	0.022	0.09	20.4	3.1	16.37	38.2	0.84	2.476	16.8	96	2.041	
102248	K3H001Q01	95% Percentile	7.374	0.2008	0.0826	0.144	38.3	6.6	36.46	67.68	2.984	10.26	32	183.8	2.736	
102250	K3H003Q01	Number of Elements	66	66	66	66	66	66	66	66	66	66	66	66	64	
102250	K3H003Q01	Median	6.74	0.109	0.027	0.12	66.6	7.691	29.31	129.2	1.56	7.55	47.45	274.5	4.05	
102250	K3H003Q01	95% Percentile	7.72	0.3505	0.1288	0.18	203.1	23.98	63.7	375.6	3.808	23.25	142.5	684.3	7.272	
102283	K4R002Q01	Number of Elements	67	67	67	67	67	67	67	67	67	67	67	67	67	
102283	K4R002Q01	Median	7.79	0.024	0.042	0.24	2633	286.5	583.5	4674	91.42	134.2	1340	8522	28.76	
102283	K4R002Q01	95% Percentile	8.205	0.1205	0.1547	0.28	3685	423.9	903.2	6715	144.8	175.2	1856	1.21E+04	34.99	
102312	K7H001Q01	Number of Elements	152	152	152	152	152	152	152	152	152	152	152	152	145	14
102312	K7H001Q01	Median	4.73	0.031	0.0255	0.07	9.6	1.8	14.95	16.4	0.41	1.7	9	53.86	1.24	3
102312	K7H001Q01	95% Percentile	6.164	0.07245	0.0585	0.1345	13.09	2.367	29.72	22.39	1.556	3.145	11.54	71.9	1.624	17.9
102313	K8H001Q01	Number of Elements	31	31	31	31	31	31	31	31	31	31	31	31	29	17
102313	K8H001Q01	Median	4.81	0.029	0.02	0.1	8.4	1.7	13.9	14.1	0.79	1.8	7.7	52	1.08	3
102313	K8H001Q01	95% Percentile	6.57	0.0885	0.0615	0.145	16.55	3.1	39.85	24.15	2.58	3.55	12	80.5	1.798	23.2
102314	K8H002Q01	Number of Elements	35	35	35	35	35	35	35	35	35	35	35	35	33	16
102314	K8H002Q01	Median	5.07	0.03	0.011	0.09	11.2	2	10.8	19.3	0.64	1.5	10	54	1.39	3.5
102314	K8H002Q01	95% Percentile	6.563	0.0842	0.0462	0.123	17.37	2.9	19.21	28.73	2.462	2.59	14.33	75.4	1.958	7.25

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102329	L3R001Q01	Number of Elements	71	71	71	71	71	71	71	71	71	71	71	71	71	
102329	L3R001Q01	Median	8.23	0.071	0.035	0.26	109	17.2	91.7	149	8.731	39	91	574	3.55	
102329	L3R001Q01	95% Percentile	8.78	0.5985	0.35	0.465	505.5	76.05	461.6	801.1	13.16	134.6	356	2128	8.52	
102349	L6H001Q01	Number of Elements	34	34	34	34	34	34	34	34	34	34	34	34	34	26
102349	L6H001Q01	Median	8.385	0.035	0.0315	0.425	611.9	118.2	527.4	939.8	15.04	123.7	422.5	2728	9.876	1.015
102349	L6H001Q01	95% Percentile	8.849	0.7242	0.1007	0.527	1227	257	1182	2043	24.24	234.1	776.1	5216	13.37	51.75
102353	L7H006Q01	Number of Elements	158	158	158	158	158	158	158	158	158	158	158	158	152	29
102353	L7H006Q01	Median	8.005	0.02	0.02	0.194	112.2	19.75	68.39	177.9	3.435	26.28	85.85	492.1	4.135	4
102353	L7H006Q01	95% Percentile	8.315	0.1351	0.0682	0.3412	974.1	189.1	631.8	1670	12.2	149.3	614.9	3805	12.32	210.6
102358	L8H005Q01	Number of Elements	88	88	88	88	88	88	88	88	88	88	88	88	83	18
102358	L8H005Q01	Median	7.33	0.034	0.02	0.11	18.85	3.2	8.5	31.46	0.95	3.9	16.15	86.39	1.663	6
102358	L8H005Q01	95% Percentile	7.632	0.2714	0.0592	0.183	24.82	4.365	16.13	39.86	2.467	5.525	19.6	113	2.097	55.55
102386	N1H013Q01	Number of Elements	61	61	61	61	61	61	61	61	61	61	61	61	60	
102386	N1H013Q01	Median	8.069	0.086	0.094	0.703	775.4	134.3	634.1	909.2	4.989	171.6	485	3490	10.73	
102386	N1H013Q01	95% Percentile	8.232	0.333	0.178	0.786	819	149.5	693.9	973.5	16.58	187.3	519	3646	12.25	
102392	N2H007Q01	Number of Elements	64	64	64	64	64	64	64	64	64	64	64	64	64	18
102392	N2H007Q01	Median	8.314	0.035	0.0255	0.3515	369.7	70.22	258.7	659.1	9.047	108.8	291	1678	6.28	1
102392	N2H007Q01	95% Percentile	8.686	0.588	0.185	0.517	692.9	153.6	544.1	1357	14.32	230	495.9	3223	9.248	147.1
102422	N3H002Q01	Number of Elements	78	78	78	78	78	78	78	78	78	78	78	78	72	19
102422	N3H002Q01	Median	8.31	0.0445	0.0295	0.52	181.1	39.2	86.15	289.5	5.83	70.75	155.3	983	4.15	15
102422	N3H002Q01	95% Percentile	8.583	1.019	0.1201	0.7215	279.5	65.59	142.1	545.5	8.586	117.7	245.8	1467	5.203	1201
102425	N4H003Q01	Number of Elements	77	77	77	77	77	77	77	77	77	77	77	77	72	21
102425	N4H003Q01	Median	8.39	1.004	0.041	0.77	747.2	89.1	368.1	872.9	7.31	71.2	416	2844	13.66	9

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102425	N4H003Q01	95% Percentile	8.61	2.332	0.32	1.02	3113	349.8	1369	4713	19.36	186.4	1522	1.05E+04	31.77	52
102430	P1H003Q01	Number of Elements	116	116	116	116	116	116	116	116	116	116	116	116	110	20
102430	P1H003Q01	Median	8.529	0.0475	0.0255	0.781	664.6	108.3	216.6	1018	5.99	55.47	396.5	2580	11.29	5
102430	P1H003Q01	95% Percentile	8.758	0.776	0.1125	0.952	906.6	159	333.7	1396	14.21	76.66	529.8	3487	14.88	20.35
102435	P3H001Q01	Number of Elements	105	105	105	105	105	105	105	105	105	105	105	105	102	14
102435	P3H001Q01	Median	8.146	0.045	0.033	0.23	790.8	141.9	126.7	1649	9.01	149.7	559	3260	11.14	5
102435	P3H001Q01	95% Percentile	8.418	0.3968	0.2064	0.2948	1099	195.6	192.1	2291	24.99	206.1	724.8	4298	13.71	15.9
102438	P4H001Q01	Number of Elements	83	83	83	83	83	83	83	83	83	83	83	83	83	3
102438	P4H001Q01	Median	8.36	0.035	0.02	0.29	474.9	80.6	103.9	867.6	7.22	69	328	1896	9	3
102438	P4H001Q01	95% Percentile	8.623	1.565	0.1219	0.3594	780	142.3	173.3	1553	12.63	109.7	522.5	3042	11.8	15.6
102440	Q1H012Q01	Number of Elements	140	140	140	140	140	140	140	140	140	140	140	140	133	21
102440	Q1H012Q01	Median	8.185	0.5055	0.034	0.188	9.175	7.041	13.7	6	1.257	18.2	20.15	153	0.47	114
102440	Q1H012Q01	95% Percentile	8.411	0.7852	0.1131	0.331	37.03	14.7	35.36	29.57	2.739	23.8	51.47	290.5	1.631	389
102443	Q1H017Q01	Number of Elements	129	129	129	129	129	129	129	129	129	129	129	129	125	
102443	Q1H017Q01	Median	8.28	0.473	0.034	0.22	18	8.9	18.2	10.3	1.438	20.71	27	202	0.854	
102443	Q1H017Q01	95% Percentile	8.561	1.563	0.1182	0.699	130.7	26.6	38.8	38.18	2.738	39.77	84.54	732.5	4.031	
102445	Q1H022Q01	Number of Elements	114	114	114	114	114	114	114	114	114	114	114	114	112	
102445	Q1H022Q01	Median	8.27	0.428	0.036	0.201	13.25	8.15	16.05	8	1.35	19.9	23.7	178	0.635	
102445	Q1H022Q01	95% Percentile	8.461	0.7354	0.0994	0.2992	25.18	12.14	25.87	16.59	2.675	23.02	32	243.7	1.103	
102448	Q2H002Q01	Number of Elements	193	193	193	193	193	193	193	193	193	193	193	193	188	41
102448	Q2H002Q01	Median	8.516	1.601	0.05	0.9	178.9	30.99	39.11	29	1.78	40.1	106.9	968.5	5.101	3.22
102448	Q2H002Q01	95% Percentile	8.7	2.917	0.1468	1.051	197	35.84	50.04	39.19	3.347	48.06	115.2	1040	5.716	42.1

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102455	Q4H013Q01	Number of Elements	143	143	143	143	143	143	143	143	143	143	143	143	141	
102455	Q4H013Q01	Median	8.45	3.112	0.042	1.79	498.6	65.3	335.1	362.8	3.031	58	284	2112	10.57	
102455	Q4H013Q01	95% Percentile	8.637	3.839	0.1077	2.019	561.7	76.7	383.5	409.9	9.36	65.92	310.9	2298	11.88	
102457	Q4R002Q01	Number of Elements	62	62	62	62	62	62	62	62	62	62	62	62	57	
102457	Q4R002Q01	Median	8.389	0.1135	0.0435	0.3675	27.2	11.8	17.25	16.66	4.464	26.68	36.45	283.4	1.15	
102457	Q4R002Q01	95% Percentile	8.72	0.5977	0.1766	0.5475	67.61	24.55	30.76	47.39	6.202	34.9	66.58	514.5	2.134	
102463	Q6H003Q01	Number of Elements	239	239	239	239	239	239	239	239	239	239	239	239	235	22
102463	Q6H003Q01	Median	8.52	0.045	0.023	0.46	120.7	31.9	26.5	103.1	3.12	46.7	97	745.4	2.972	9.5
102463	Q6H003Q01	95% Percentile	8.873	0.4692	0.0952	0.6	166.4	43.12	40.45	154.2	4.276	71.4	123.7	962.9	4.54	163.6
102464	Q7H003Q01	Number of Elements	131	131	131	131	131	131	131	131	131	131	131	131	130	
102464	Q7H003Q01	Median	8.527	1.167	0.023	0.654	162.2	30.2	103	118.9	2.28	37.87	108.2	815	4.787	
102464	Q7H003Q01	95% Percentile	8.769	1.904	0.1	1.123	289.7	48.81	172.5	246.3	3.85	58.8	190.5	1334	7.136	
102475	Q8H011Q01	Number of Elements	143	143	143	143	142	143	143	143	143	143	143	143	138	
102475	Q8H011Q01	Median	8.523	0.668	0.037	0.852	246	34.5	138	227.3	3.856	43.8	162	1090	6.649	
102475	Q8H011Q01	95% Percentile	8.74	1.082	0.1853	1.497	562.5	58.41	278.4	607.7	12.47	70.19	323.5	2127	12.54	
102478	Q9H001Q01	Number of Elements	136	136	136	136	136	136	136	136	136	136	136	136	134	
102478	Q9H001Q01	Median	8.68	0.569	0.0265	0.817	285.5	41.98	163.9	250.4	3.788	36.82	179.5	1246	7.395	
102478	Q9H001Q01	95% Percentile	8.923	1.614	0.1945	1.136	419.9	57.3	234.7	405.6	6.16	55.75	240	1632	10.3	
102479	Q9H002Q01	Number of Elements	101	101	101	101	101	101	101	101	101	101	101	101	96	19
102479	Q9H002Q01	Median	8.3	0.035	0.021	0.327	57.2	19.8	16.9	47.96	2.333	36.8	59.3	454.2	1.79	6
102479	Q9H002Q01	95% Percentile	8.56	0.2	0.1	0.55	118.8	37	33	117.5	3.56	59.1	100.9	807	3.012	237.1
102487	Q9H018Q01	Number of Elements	149	149	149	149	149	149	149	149	149	149	149	149	144	26
102487	Q9H018Q01	Median	8.68	0.307	0.027	0.763	250.3	38.1	142.6	249.7	3.72	35.5	166	1112	6.83	64

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102487	Q9H018Q01	95% Percentile	8.882	1.321	0.1818	1.05	426.8	58.28	235.3	397.9	5.26	50.98	242.8	1686	9.948	282
102496	Q9H029Q01	Number of Elements	96	96	96	96	96	96	96	96	96	96	96	96	95	10
102496	Q9H029Q01	Median	8.15	0.6155	0.0425	0.26	37.26	10.35	18.5	37.9	2.043	20.48	37.75	260.5	1.63	33
102496	Q9H029Q01	95% Percentile	8.444	1.563	0.2243	0.5175	84.53	24.15	36.93	117.7	3.403	41.06	79.95	552.7	2.728	152.8
102504	R1H015Q01	Number of Elements	84	84	84	84	84	84	84	84	84	84	84	84	82	20
102504	R1H015Q01	Median	8.173	0.217	0.028	0.23	35.94	9.6	15	45.87	2.15	17.1	36.65	236	1.744	54
102504	R1H015Q01	95% Percentile	8.402	0.7952	0.0899	0.3471	69.53	17.79	26.37	102.8	3.252	29.76	64.12	416.8	2.435	526.8
102525	R2R003Q01	Number of Elements	75	75	75	75	75	75	75	75	75	75	75	75	75	75
102525	R2R003Q01	Median	8.13	0.669	0.032	0.2	53	10.1	21.4	68.5	3.36	15	42.8	276	2.57	
102525	R2R003Q01	95% Percentile	8.406	1.69	0.1186	0.289	59.32	11	26.19	73.93	4.239	17.4	46.33	303.3	2.788	
102526	R3H001Q01	Number of Elements	39	39	39	39	39	39	39	39	39	39	39	39	39	23
102526	R3H001Q01	Median	8.1	0.141	0.025	0.2	43.9	10.17	16.35	55.5	2.639	16.6	38.7	267	2.092	24
102526	R3H001Q01	95% Percentile	8.292	0.4605	0.1056	0.251	82.09	18.06	50.21	113.3	3.759	28.7	67.39	456.1	2.779	72.7
102527	R3H003Q01	Number of Elements	28	28	28	28	28	28	28	28	28	28	28	28	28	14
102527	R3H003Q01	Median	8.026	0.3345	0.021	0.22	45.75	8.286	19.15	59.2	2.697	13.03	37.35	241.6	2.398	58
102527	R3H003Q01	95% Percentile	8.262	0.557	0.1105	0.24	55.67	10.87	30.18	74.42	3.79	17.18	46.52	291.2	2.627	107.8
102528	R3H004Q01	Number of Elements	53	53	53	53	53	53	53	53	53	53	53	53	52	
102528	R3H004Q01	Median	8.04	0.499	0.032	0.23	43.3	7.9	15.5	55.2	3.21	12.3	35.9	233	2.365	
102528	R3H004Q01	95% Percentile	8.21	0.6314	0.092	0.2752	50.62	9.14	34.15	62.82	4.02	15.34	41.9	255.6	2.6	
102534	S1R001Q01	Number of Elements	17	17	17	17	17	17	17	17	17	17	17	17	16	
102534	S1R001Q01	Median	8.4	0.146	0.035	0.48	19.1	13	8.3	11.4	1.52	24.2	32.6	247	0.785	
102534	S1R001Q01	95% Percentile	8.644	0.3172	0.061	0.5552	27.42	14.04	16.7	22.21	1.915	25.52	37.1	279.6	1.198	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102545	S3H006Q01	Number of Elements	61	61	61	61	61	61	61	61	61	61	61	61	61	
102545	S3H006Q01	Median	8.46	0.068	0.02	0.348	31.7	19	19.89	22.53	3.02	29.2	44.5	348	1.18	
102545	S3H006Q01	95% Percentile	8.69	0.7	0.271	0.57	69.08	50.36	47.3	61.57	4.768	51.48	83	643.5	1.705	
102553	S5H002Q01	Number of Elements	57	57	57	57	57	57	57	57	57	57	57	57	54	
102553	S5H002Q01	Median	8.21	0.386	0.033	0.17	17.3	8.3	9	15.3	1.11	15.4	24.3	172	0.96	
102553	S5H002Q01	95% Percentile	8.468	0.6794	0.1078	0.24	28.65	12.33	16.96	25.76	1.714	21.77	35.24	253.1	1.248	
102565	S7H001Q01	Number of Elements	48	48	48	48	48	48	48	48	48	48	48	48	48	
102565	S7H001Q01	Median	8.349	0.9295	0.0265	0.25	63.67	19.5	19.63	75.55	1.849	32.22	62.15	439	2.26	
102565	S7H001Q01	95% Percentile	8.73	5.632	0.1101	0.2865	107.3	35.61	27.88	135.2	3.377	49.65	95.76	691.7	2.914	
102568	S7H004Q01	Number of Elements	64	64	64	64	64	64	64	64	64	64	64	64	62	12
102568	S7H004Q01	Median	8.385	0.14	0.0205	0.28	34.79	13.91	12.51	35.73	1.959	23.25	40.05	289.1	1.382	28
102568	S7H004Q01	95% Percentile	8.739	0.4932	0.09	0.437	82.33	31.53	21.35	87.22	2.917	30.59	75.3	541.7	2.492	225.5
102573	T1H004Q01	Number of Elements	35	35	35	35	35	35	35	35	35	35	35	35	34	
102573	T1H004Q01	Median	8.08	0.262	0.038	0.154	11.1	5.7	8.825	11	1.13	10.2	16.5	121	0.77	
102573	T1H004Q01	95% Percentile	8.366	0.4831	0.0788	0.2729	21.2	9.766	14.62	22.66	1.442	16.2	27.29	190.2	1.071	
102586	T3H004Q01	Number of Elements	63	63	63	63	63	63	63	63	63	63	63	63	62	
102586	T3H004Q01	Median	8.078	0.099	0.026	0.135	7.7	5.3	5.8	5.3	1.32	9.904	14.1	108	0.4785	
102586	T3H004Q01	95% Percentile	8.289	0.1913	0.0883	0.189	12.22	9.28	11.59	8.87	3.193	18.16	22.7	176	0.6095	
102587	T3H005Q01	Number of Elements	49	49	49	49	49	49	49	49	49	49	49	49	48	
102587	T3H005Q01	Median	7.99	0.344	0.027	0.14	6.6	4.4	5.2	5	0.89	9.861	12.14	98.79	0.46	
102587	T3H005Q01	95% Percentile	8.35	0.5236	0.0752	0.1812	9.4	7.36	12.34	6.26	1.786	15.21	18.5	142.7	0.5565	
102588	T3H006Q01	Number of Elements	50	50	50	50	50	50	50	50	50	50	50	50	47	
102588	T3H006Q01	Median	7.906	0.2005	0.0205	0.13	8.005	3.925	5.85	5.15	0.9955	8.15	11.55	90.11	0.578	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102588	T3H006Q01	95% Percentile	8.368	0.4539	0.1043	0.1822	14.28	9.621	10.65	12.76	1.59	18.67	26.37	189.8	0.7922	
102590	T3H008Q01	Number of Elements	66	66	66	66	66	66	66	66	66	66	66	66	63	1
102590	T3H008Q01	Median	7.984	0.055	0.0215	0.148	7.7	5.1	6.408	5	1.473	10.7	14.55	115.5	0.5	62.3
102590	T3H008Q01	95% Percentile	8.315	0.1953	0.123	0.1995	12.87	9.915	15.5	7.25	3.458	20.57	25.58	198.7	0.749	62.3
102606	T5H007Q01	Number of Elements	41	41	41	41	41	41	41	41	41	41	41	41	39	
102606	T5H007Q01	Median	7.92	0.216	0.024	0.136	7.002	3.502	6.607	5	0.75	6.896	10.65	84	0.52	
102606	T5H007Q01	95% Percentile	8.23	0.393	0.066	0.18	15.1	6.1	11.2	9.2	1.469	11	18.7	135	0.9713	
102615	T7H001Q01	Number of Elements	43	43	43	43	43	43	43	43	43	43	43	43	42	
102615	T7H001Q01	Median	8.236	0.412	0.027	0.16	22.9	9.7	7.2	22.9	1.072	13.6	25.4	187.5	1.2	
102615	T7H001Q01	95% Percentile	8.575	0.8895	0.0789	0.2189	31.31	13.88	29.8	35.01	1.891	19.74	35.97	250.5	1.359	
102620	U1H006Q01	Number of Elements	58	58	58	58	58	58	58	58	58	58	58	58	57	
102620	U1H006Q01	Median	7.935	0.1705	0.027	0.15	12.49	4.25	9.65	10.95	0.817	9	15.2	103.2	0.86	
102620	U1H006Q01	95% Percentile	8.255	0.4284	0.0762	0.2109	28.5	8.16	20.52	31.27	1.546	16.55	31	197.3	1.442	
102679	U4H008Q01	Number of Elements	208	208	208	208	208	208	208	208	208	208	208	208	203	
102679	U4H008Q01	Median	7.995	0.4905	0.022	0.2	25.1	6.3	10.6	26.2	1.89	9.6	23.6	154	1.57	
102679	U4H008Q01	95% Percentile	8.31	0.8893	0.0677	0.2979	44.8	9.61	19.33	49.4	3.196	14.23	39.7	250.7	2.35	
102693	U8H003Q01	Number of Elements	64	64	64	64	64	64	64	64	64	64	64	64	64	2
102693	U8H003Q01	Median	8.365	0.546	0.0225	0.459	77.03	14.55	22.17	92.72	2.123	20.34	58.55	389.7	3.165	20.5
102693	U8H003Q01	95% Percentile	8.666	1.085	0.0936	0.58	110.8	19.52	32.19	157.3	3.381	27.11	85	534.2	4.049	20.95
102695	V1H001Q01	Number of Elements	90	90	90	90	90	90	90	90	90	90	90	90	88	
102695	V1H001Q01	Median	7.96	0.2345	0.034	0.13	5.6	3.7	8.05	4.35	1.031	8.969	10.5	87.5	0.39	
102695	V1H001Q01	95% Percentile	8.253	0.4119	0.0727	0.1855	9.71	6.965	14.02	6.155	1.724	15.21	18.87	144.9	0.5795	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102704	V1H010Q01	Number of Elements	63	63	63	63	63	63	63	63	63	63	63	63	61	
102704	V1H010Q01	Median	7.82	0.214	0.055	0.121	4.269	3	5.348	4.9	0.79	8.7	9.43	80	0.31	
102704	V1H010Q01	95% Percentile	8.199	0.5148	0.1657	0.1696	6.67	5.3	11.25	5.38	2.453	13.77	15.59	119	0.465	
102718	V1H038Q01	Number of Elements	78	78	78	78	78	78	78	78	78	78	78	78	78	2
102718	V1H038Q01	Median	8.137	0.0735	0.02	0.19	7.714	5.71	9.942	5	1.48	13.38	16.15	131	0.4535	152.8
102718	V1H038Q01	95% Percentile	8.499	0.2926	0.0813	0.2645	14.19	12.93	18.55	7.115	2.875	26.87	30.02	234	0.649	289.8
102740	V2H008Q01	Number of Elements	68	68	68	68	68	68	68	68	68	68	68	68	66	
102740	V2H008Q01	Median	8.03	0.1845	0.0205	0.16	9.8	6.591	8.7	6.95	1.325	11.38	17.15	131.5	0.58	
102740	V2H008Q01	95% Percentile	8.636	0.4199	0.0656	0.3734	34.49	21.1	16.38	20.16	2.623	29.74	46.06	355.7	1.212	
102755	V3H010Q01	Number of Elements	205	205	205	205	205	205	205	205	205	205	205	205	197	
102755	V3H010Q01	Median	8.17	0.855	0.024	0.19	19.6	11.2	43.5	9.4	3.12	20.9	30.4	218	0.9	
102755	V3H010Q01	95% Percentile	8.908	3.11	0.0868	0.3	54.3	19.2	114.3	29.4	5.744	35.38	59.2	409.5	1.902	
102779	V5H002Q01	Number of Elements	85	85	85	85	85	85	85	85	85	85	85	85	82	2
102779	V5H002Q01	Median	8.17	0.11	0.021	0.21	15.3	7.8	16	9.5	1.81	17.8	24	172	0.7675	12.75
102779	V5H002Q01	95% Percentile	8.54	0.484	0.0954	0.332	35.13	15.7	31.01	25.53	2.928	25.4	40.54	293.4	1.4	13.79
102781	V6H002Q01	Number of Elements	78	78	78	78	78	78	78	78	78	78	78	78	75	
102781	V6H002Q01	Median	8.155	0.314	0.0215	0.22	18.55	7.85	15.75	9.75	1.511	17.3	25.4	188	0.91	
102781	V6H002Q01	95% Percentile	8.512	0.7806	0.0806	0.292	40.41	15.82	29.38	25.16	2.954	25.73	41.85	316.2	1.583	
102797	V7H012Q01	Number of Elements	62	62	62	62	62	62	62	62	62	62	62	62	62	
102797	V7H012Q01	Median	7.882	0.5055	0.039	0.15	9.65	5.496	11.6	5.8	1.685	12.8	17.05	130.5	0.5505	
102797	V7H012Q01	95% Percentile	8.209	1.227	0.225	0.19	17.69	8.731	20.05	12.58	3.016	20.24	26.1	205.3	0.9672	
102832	W1R004Q01	Number of Elements	68	68	68	68	68	68	68	68	68	68	68	68	66	
102832	W1R004Q01	Median	7.795	0.038	0.031	0.282	48.65	10.1	39.3	82.55	2.205	24.75	47.85	277.5	2.08	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102832	W1R004Q01	95% Percentile	8.116	0.1203	0.0896	0.3486	59.17	13.55	71.18	99.02	3.58	31.89	57.92	348	2.278	
102834	W2H005Q01	Number of Elements	186	186	186	186	186	186	186	186	186	186	186	186	183	
102834	W2H005Q01	Median	8.371	0.109	0.025	0.31	24.9	13.9	21.65	14.8	1.59	20	32.6	246	1.03	
102834	W2H005Q01	95% Percentile	8.578	0.291	0.0665	0.41	36.2	20.8	39.78	24.19	2.758	27.6	45.58	342.5	1.32	
102871	W3H015Q01	Number of Elements	156	156	156	156	156	156	156	156	156	156	156	156	151	
102871	W3H015Q01	Median	8.218	0.1215	0.031	0.33	198.3	40.45	31.05	297.5	3.274	52.3	146	959	4.96	
102871	W3H015Q01	95% Percentile	8.633	0.6245	0.068	0.4	303.9	54.32	46.05	484.4	4.342	67.95	219	1342	6.338	
102897	W4H004Q01	Number of Elements	60	60	60	60	60	60	60	60	60	60	60	60	60	
102897	W4H004Q01	Median	7.76	0.2815	0.0235	0.113	4.65	3.557	8.331	5	0.844	6.5	9.55	71.2	0.365	
102897	W4H004Q01	95% Percentile	8.056	0.5648	0.0811	0.1751	7.027	5.215	13.42	5.305	2.02	9.943	13.71	99.82	0.493	
102898	W4H006Q01	Number of Elements	55	55	55	55	55	55	55	55	55	55	55	55	54	1
102898	W4H006Q01	Median	8.403	0.702	0.023	0.296	55.9	20.28	19.7	41.6	1.25	22	51.7	371.1	2.1	52
102898	W4H006Q01	95% Percentile	8.795	1.213	0.142	0.6709	163.8	42.71	38.02	95.46	2.49	31.5	110.7	903.9	4.54	52
102901	W4H009Q01	Number of Elements	30	30	30	30	30	30	30	30	30	30	30	30	30	
102901	W4H009Q01	Median	8.151	0.2445	0.0405	0.26	46.7	14.7	19.75	57.75	2.055	23.55	44.2	305.5	1.955	
102901	W4H009Q01	95% Percentile	8.336	0.5787	0.0868	0.3283	68.29	19.45	25.23	100.9	3.181	29.39	65.18	418.7	2.413	
102914	W5H022Q01	Number of Elements	99	99	99	99	99	99	99	99	99	99	99	99	94	20
102914	W5H022Q01	Median	7.88	0.184	0.026	0.13	6.739	4.6	9.4	5	1.59	9.1	12.7	94	0.4885	4
102914	W5H022Q01	95% Percentile	8.13	0.45	0.1272	0.1702	13.02	6.21	14.34	9.63	3.295	11.71	18.19	135	0.8	25.15
102933	X1H003Q01	Number of Elements	237	237	237	237	237	237	237	237	237	237	237	237	232	
102933	X1H003Q01	Median	8.09	0.175	0.023	0.18	16.3	8.206	8.4	15.6	1.183	9.8	20.7	144.9	0.9455	
102933	X1H003Q01	95% Percentile	8.452	0.5504	0.0714	0.28	66.42	20.22	16.62	81.16	2.952	21.98	56.8	373.5	2.612	

WMS No.	Feature Name	Type of Statistics	pH	NO ₃ +NO ₂ -N	NH ₄ -N	F	Na	Mg	SO ₄	Cl	K	Ca	EC	DMS	SAR	TURB (NTU)
102935	X1H014Q01	Number of Elements	90	90	90	90	90	90	90	90	90	90	90	90	89	
102935	X1H014Q01	Median	7.803	0.324	0.0405	0.122	7.016	4.6	6.233	6.4	0.9785	6.764	11.44	82.72	0.52	
102935	X1H014Q01	95% Percentile	8.115	1.025	0.0766	0.1711	15.16	10.36	12.36	21.54	2.053	13.71	24.32	168	0.788	
102958	X2H013Q01	Number of Elements	106	106	106	106	106	106	106	106	106	106	106	106	105	72
102958	X2H013Q01	Median	7.972	0.0915	0.0205	0.1325	3.9	6.876	5	5	0.773	8.652	12.27	98	0.24	1
102958	X2H013Q01	95% Percentile	8.252	0.1965	0.0665	0.1875	4.851	8.4	8.5	5.6	1.515	10.55	14.68	117	0.3124	13.85
102963	X2H016Q01	Number of Elements	319	319	319	319	319	319	319	319	319	319	319	319	308	101
102963	X2H016Q01	Median	8.209	0.52	0.02	0.23	28.29	17.8	25.1	22.7	1.406	20.5	37.8	279	1.09	2.2
102963	X2H016Q01	95% Percentile	8.53	0.9227	0.0811	0.34	52.96	29.01	36.82	43.81	2.887	31.46	60.44	453.4	1.63	22
102965	X2H022Q01	Number of Elements	103	103	103	103	103	103	102	103	103	103	103	103	101	1
102965	X2H022Q01	Median	8.32	0.541	0.02	0.24	26.66	25.76	40.59	16.5	1.13	25.3	44.8	338.4	0.87	4
102965	X2H022Q01	95% Percentile	8.587	1.008	0.0842	0.4616	70.5	49.25	77.74	35.99	3.127	39.02	77.61	646	1.84	4
102975	X2H032Q01	Number of Elements	205	205	205	205	205	205	205	205	205	205	205	205	198	71
102975	X2H032Q01	Median	7.86	0.489	0.028	0.15	8.665	7.875	14.09	11	1.102	12.82	18.7	132	0.481	2
102975	X2H032Q01	95% Percentile	8.145	1.092	0.0938	0.2196	12.48	10.5	25.61	18.31	2.728	17.94	24.68	166.8	0.6016	32
103014	X3H008Q01	Number of Elements	49	49	49	49	49	49	49	49	49	49	49	49	49	34
103014	X3H008Q01	Median	7.65	0.04	0.02	0.16	15	3.272	6.635	11.81	1.12	6.6	14.5	104.4	1.2	2
103014	X3H008Q01	95% Percentile	8.047	0.2232	0.0654	0.22	20.8	4.7	13.48	17.67	2.66	9.395	20.26	137.2	1.522	16.8

8.2 Appendix B: Land cover types and extent of areal cover across South Africa per WMA (after Fairbanks *et al.*, 2000)

WMA	Total surface area (km ²)	1 st Largest Areal Cover Type Extent (and %)	2 nd Largest Areal Cover Type Extent (and %)	3 rd Largest Areal Cover Type Extent (and %)	4 th Largest Areal Cover Type Extent (and %)
Limpopo	60 390	Thicket; Bushland; Bush clumps; High Fynbos 31 274 (52 %)	Forest and Woodland (Woodland and Wooded Grassland) 15 005 (25 %)	Degraded land (Thicket; Bushland; Bush clumps; High Fynbos) 4 428 (7 %)	Cultivated land (temp crops commercial dryland) 2 980 (5 %)
Luvuvhu and Letaba	25 014	Forest and Woodland (Woodland and Wooded Grassland) 11 426 (46 %)	Thicket; Bushland; Bush clumps; High Fynbos 6 609 (26 %)	Cultivated land (temp crops commercial dryland) 3 457 (14 %)	Forest Plantations (Exotic) 778 (3 %)
Crocodile (West) and Marico	47 517	Thicket; Bushland; Bush clumps; High Fynbos 18 819 (40 %)	Forest and Woodland (Woodland and Wooded Grassland) 10 791 (23 %)	Unimproved Grassland 4 308 (9 %)	Cultivated land (temp crops commercial dryland) 3 499 (7 %)
Olifants	54 504	Forest and Woodland (Woodland and Wooded Grassland) 14 186 (26 %)	Unimproved Grassland 12 109 (22 %)	Thicket; Bushland; Bush clumps; High Fynbos 8 998 (17 %)	Cultivated land (temp crops commercial dryland) 8 121 (15 %)
Inkomati	28 670	Forest and Woodland (Woodland and Wooded Grassland) 9 233 (32 %)	Unimproved Grassland 6 440 (22 %)	Thicket; Bushland; Bush clumps; High Fynbos 4 783 (17 %)	Forest Plantations (Exotic) 3 776 (13 %)
Usutu to Mhlathuze	45 055	Unimproved Grassland 15 804 (35 %)	Thicket; Bushland; Bush clumps; High Fynbos 6 164 (14 %)	Forest and Woodland (Woodland and Wooded Grassland) 5 865 (13 %)	Forest Plantations (Exotic) 5 001 (11 %)
Thukela	29 035	Unimproved Grassland 15 405 (53 %)	Thicket; Bushland; Bush clumps; High Fynbos 5 698 (20 %)	Cultivated land (temporary subsistence dryland) 2 064 (7 %)	Degraded land (Unimproved Grassland) 1 365 (5 %)
Upper Vaal	55 463	Unimproved Grassland 33 231	Cultivated land (temp crops commercial dryland) 17 650	Urban/ Built up land 1 086	Thicket; Bushland; Bush clumps; High Fynbos 651

WMA	Total surface area (km²)	1st Largest Areal Cover Type Extent (and %)	2nd Largest Areal Cover Type Extent (and %)	3rd Largest Areal Cover Type Extent (and %)	4th Largest Areal Cover Type Extent (and %)
		(60 %)	(32 %)	(2 %)	(1 %)
Middle Vaal	52 549	Unimproved Grassland	Cultivated land (temp crops commercial dryland)	Thicket; Bushland; Bush clumps; High Fynbos	Wetlands
		26 043 (50 %)	22 212 (42 %)	2 139 (4 %)	435 (1 %)
Lower Vaal	134 543	Thicket; Bushland; Bush clumps; High Fynbos	Unimproved Grassland	Degraded land (Thicket; Bushland; Bush clumps; High Fynbos)	Cultivated land (temp crops commercial dryland)
		71 387 (53 %)	25 700 (19 %)	11 433 (8 %)	10 359 (8 %)
Mvoti to Umzimkulu	27 221	Unimproved Grassland	Thicket; Bushland; Bush clumps; High Fynbos	Forest Plantations (Exotic)	Cultivated land (permanent commercial sugar cane)
		8 815 (32 %)	4 649 (17 %)	3 425 (13 %)	2 902 (11 %)
Mzimvubu to Keiskamma	66 182	Unimproved Grassland	Degraded land (Unimproved Grassland)	Thicket; Bushland; Bush clumps; High Fynbos	Cultivated land (temporary subsistence dryland)
		29 804 (45 %)	11 150 (17 %)	9 585 (14 %)	8 001 (12 %)
Upper Orange	94 014	Unimproved Grassland	Shrubland and Low Fynbos	Cultivated land (temp crops commercial dryland)	Thicket; Bushland; Bush clumps; High Fynbos
		41 990 (45 %)	32 037 (34 %)	8 050 (9 %)	7 331 (8 %)
Lower Orange	260 917	Shrubland and Low Fynbos	Unimproved Grassland	Thicket; Bushland; Bush clumps; High Fynbos	Wetlands
		208 975 (80 %)	28 500 (11 %)	12 805 (5 %)	2 695 (1 %)
Fish to Tsitsikamma	96 950	Shrubland and Low Fynbos	Thicket; Bushland; Bush clumps; High Fynbos	Unimproved Grassland	Degraded lands (Shrubland and Low Fynbos)
		61 766 (64 %)	17 156 (18 %)	8 348 (9 %)	3 193 (3 %)
Gouritz	52 590	Shrubland and Low Fynbos	Cultivated land (temp crops commercial dryland)	Thicket; Bushland; Bush clumps; High Fynbos	Degraded lands (Shrubland and Low Fynbos)
		44 004 (84 %)	2 655 (5 %)	2 109 (4 %)	724 (1 %)
Olifants/Doorn	56 748	Shrubland and Low Fynbos	Cultivated land (temp crops commercial dryland)	Thicket; Bushland; Bush clumps; High Fynbos	Unimproved Grassland

WMA	Total surface area (km²)	1st Largest Areal Cover Type Extent (and %)	2nd Largest Areal Cover Type Extent (and %)	3rd Largest Areal Cover Type Extent (and %)	4th Largest Areal Cover Type Extent (and %)
		45 735 (81 %)	3499 (6 %)	3 400 (6 %)	1 489 (3 %)
Breede	19 663	Shrubland and Low Fynbos 10 571 (54 %)	Cultivated land (temp crops commercial dryland) 5 565 (28 %)	Cultivated land (permanent crops commercial irrigated) 1 265 (6 %)	Thicket; Bushland; Bush clumps; High Fynbos 695 (1 %)
Berg	13 296	Cultivated land (temp crops commercial dryland) 5 995 (45 %)	Shrubland and Low Fynbos 3 552 (25 %)	Cultivated land (permanent crops commercial irrigated) 1 043 (8 %)	Thicket; Bushland; Bush clumps; High Fynbos 695 (5 %)

8.3 Appendix C: Barcode Graphs for the National Sampling Sites that Exceed the *Very Good* and *Good* (or TWQR) Categories

Click here if this file is on CD-ROM
(wma.htm)

Click here if the other link fails
(http://www.dwaf.gov.za/iwqs/water_quality/NCMP/wma.htm)