

Laboratory Report

Water Analysis

Business

**Sample nickname:**

Sample number: 173
Sample received: 06.07.16
Customer: Mike Zuliani
Local specialist: Exotic Reef (Darren Bugeja)

Diagnostic comments:

Hi Mike Thanks for your watertest. Actual you see there your waterparameters. The Basic Parameters are mainly ok, the salinity should be raised up to 34,5. This will stabilize the Macroelements better and bring them to right relation. Please do not add seasalt to raise the salinity made this over 3 – 4 waterchanges with more seasalt. The Macroelements has normal values the elements which need to increse I write in the comment. Mainly Flourine , Strontium and Bordon should be controlled regulary. Pottasium is also a very important Element. Its related to the salinity in a low but normal level, Better results you will have if you raise it up to 440 at 35 Salinity. Your nutrition Levels are very low, also the Depotfactor is perfect. Maybe depending on the high PH. The Trace Elements seemed bit low but quite ok. Please contact us for further questions Best regards Claude

Basic parameters

	measured	recommended	comments
Electric conductivity (mS/cm)	50,7	48 – 53	bit to low
Density (kg/liter, calculated 25°C)	1,021	1.022 - 1.023	bit to low
Salinity (calculated, in psu)	33,2	34 - 35	bit to low
pH	8,05	7.9 – 8.3	ok high level
Carbonate hardness (in dKH)	7,5	6.5 – 8.5	ok
Acid neutralizing capacity pH 4,3 (mmol/l)	2,7	2.32 – 3.03	ok
Odor	none	none	ok
Color	clear	clear	ok

Macroelements

in mg/ liter (1 mg = 0.001 g)

		measured	recommended	comments
Chloride	Cl ⁻	15260	18000 - 20500	related to salinity bit less
Magnesium	Mg	1390	1200 - 1450	related to salinity bit high
Calcium	Ca	416	400 - 440	related to salinity bit high
Potassium	K	353	380 - 420	bit to low
Bromide	Br ⁻	83,7	55 - 65	to high
Strontium	Sr	8,72	6.0 - 9.0	related to salinity bit high
Boron	B	5,57	4.0 - 5.0	ok
Fluoride	F ⁻	0,65	0.9 - 1.8	to low
Iodine	I	0,054	0.06 - 0.08	ok

Nutrients

in mg/liter (1 mg = 0.001 g)

		measured	recommended	comments
Nitrate	NO ₃ ⁻	< 0.02	1.0 - 5.0	very low
Nitrite	NO ₂ ⁻	0,02	< 0.2	ok
Phosphorus (total)	P	0,016	< 0.06	ok
Orthophosphate (calculated)	PO ₄ ³⁻	0,048	0.02 - 0.10	ok depotfactor perfect
Orthophosphate (photometric)	PO ₄ ³⁻	< 0.03	0.02 - 0.10	ok related to PH ok
Sulfur	S	810	850 - 900	ok
Sulfate	SO ₄ ²⁻	2.001	2300 - 2700	ok
Silicon	Si	0,018	0.1 - 0.2	ok

Coloration- and growth-relevant elements
in µg/liter (1 µg = 0.000001 g)

		measured	recommended	comments
Zinc	Zn	1,97	4.5 - 6.5	ok
Vanadium	V	< 2.0	1.2 - 1.8	ok
Copper	Cu	< 2.0	0.03 - 4.5	ok
Antimony	Sb	< 9	0.02 - 2.5	ok
Manganese	Mn	0,19	0.10 - 0.25	ok
Lithium	Li	> 720	180 -350	ok
Iron	Fe	5,07	0.05 - 2.5	ok
Chromium	Cr	< 1.5	0.05 - 2.3	ok
Beryllium	Be	< 0.1	0.05 - 1.4	ok
Cobalt	Co	< 1.6	0.02 - 1.9	ok
Molybdenum	Mo	7,2	8.0 - 12.0	bit low but ok

Other trace elements
in µg/liter (1 µg = 0.000001 g)

		measured	recommended	comments
Barium	Ba	81,4	20 - 50	ok normal in relation to other parameters
Nickel	Ni	2,69	3.5 - 4.5	ok
Aluminium	Al	33,6	5.0 - 30	ok normal parameter
Tin	Sn	6,1	1.2 - 2.0	ok
Selenium	Se	< 5.0	0.9 - 5.5	ok
Silver	Ag	1,6	< 10	ok
Tungsten	W	< 5.0	< 50	ok
Titanium	Ti	< 1.0	0.5 - 3.5	ok
Scandium	Sc	< 0.8	0.1 - 1.0	ok
Zirconium	Zr	< 1.0	1.0 - 2.2	ok
Arsenic	As	3,8	< 1.0	ok normal
Cadmium	Cd	< 0.3	< 1.0	ok

Macroelement ratios

	calculated	recommended	comments
magnesium : salinity ratio (in mg/psu)	42	35 - 40	
calcium : salinity ratio (in mg/psu)	13	12 - 13	
potassium : salinity ratio (in mg/psu)	11	11 - 12	
calcium : strontium ratio (in mg/mg)	48	49 - 55	
fluoride : iodine ratio (in mg/mg)	12	23 - 27	

Measured values like “< 1.0” or “> 24” designate concentrations below or above the calibrated range, respectively, that cannot be determined exactly. In these cases we specify, how much the sample contains at most (e.g., 1 µg/l) or at least (e.g., 24 µg/l).