

Analysis Report

Date of Analysis: 07.10.2021
Analysis No: OC185403
Date of Sampling: 04.09.2021 – 14:20

Customer: Gregory Coe
Customer ID: 3962
Tank: Reef tank 650l

Main Parameters

Parameter	Measured Value	Ideal Value	Rating
Salinity	32,3 psu	35,0 psu	⬇️
Alkalinity (KH)	7,94 dKH	7,50 dKH	✅

Main Elements

Parameter	Measured Value	Ideal Value	Rating
Calcium	505 mg/l	406 mg/l	⬆️
Boron	5,5 mg/l	4,2 mg/l	⬆️
Bromide	40 mg/l	61,8 mg/l	⬇️
Chloride	17905 mg/l	17903 mg/l	✅
Potassium	437 mg/l	369 mg/l	✅
Magnesium	1298 mg/l	1292 mg/l	✅
Sodium	9920 mg/l	9967 mg/l	✅
Strontium	6,9 mg/l	7,4 mg/l	✅
Sulfate	2187 mg/l	2492 mg/l	✅

Trace Elements

Parameter	Measured Value	Ideal Value	Rating
Barium	63,9 µg/l	10–100 µg/l	✅
Chromium	n.n.	0,5 µg/l	✅
Cobalt	0,8 µg/l	0,5 µg/l	✅
Iron	2,2 µg/l	1–3 µg/l	✅
Fluoride	0,20 mg/l	1,3 mg/l	⬇️
Iodine	n.n.	50–70 µg/l	⬇️
Copper	0,6 µg/l	1–3 µg/l	✅
Lithium	64 µg/l	50–150 µg/l	✅
Manganese	0,6 µg/l	1,0 µg/l	✅
Molybdenum	24,6 µg/l	10–15 µg/l	✅

Nickel	n.n.	1,0 µg/l	✓
Rubidium	51 µg/l	90–150 µg/l	⚠
Selenium	n.n.	0,5 µg/l	✓
Vanadium	0,8 µg/l	2–3 µg/l	✓
Zinc	1,7 µg/l	1,0 µg/l	✓
Tin	n.n.	< 1 µg/l	✓

Pollutants

Parameter	Measured Value	Ideal Value	Rating
Aluminium	169,1 µg/l	< 40 µg/l	⬆
Bismuth	n.n.	< 3 µg/l	✓
Lead	n.n.	< 3 µg/l	✓
Mercury	n.n.	< 3 µg/l	✓
Antimony	n.n.	< 3 µg/l	✓
Titan	n.n.	< 1 µg/l	✓
Cadmium	n.n.	< 3 µg/l	✓
Uranium	n.n.	< 10 µg/l	✓
Beryllium	n.n.	< 1 µg/l	✓
Arsenic	n.n.	< 3 µg/l	✓
Lanthanum	n.n.	< 3 µg/l	✓
Thallium	n.n.	< 3 µg/l	✓

Nutrients

Parameter	Measured Value	Ideal Value	Rating
Phosphate (photometric)	0,011 mg/l	0,03–0,1 mg/l	⚠
Total Phosphorous (ICP)	4 µg/l	10–50 µg/l	⬇
Nitrate	8,70 mg/l	2–15 mg/l	✓
Nitrite	0,113 mg/l	< 0,1 mg/l	✓
Silicon	104 µg/l	50–250 µg/l	✓

Osmose

Parameter	Measured Value	Ideal Value	Rating
Copper	n.b.	n.n. µg/l	—
Zinc	n.b.	n.n. µg/l	—
Silicon	n.b.	n.n. µg/l	—

- ✓ No action required
- ⚠ Need for action
- ⬆⬇ Urgent need for action

n.n Not found
n.b Not measured

Interpretation

Dear Gregory!

Sorry for the long wait, but your sample arrived in our lab a short time ago. We are working on drastically reducing waiting times in the future.

Salinity in your tank is low: We recommend to increase salinity slowly (max 0,5 psu per day) to 33–35 psu. Also it is recommended to check your measurement device, if it reads correctly.

Calcium is elevated. Dosing should be paused, until calcium declined back to optimum levels (control via home testkit, e.g. Salifert) – it is important to also monitor alkalinity (KH) closely, because it might rise with unchanged dosing amounts: In this case the dosing amount of alkalinity should be reduced aswell.

Boron is elevated, and should not be dosed at the moment.

Bromide is lower compared to natural seawater. The reason for low bromide is usually the used salt brand. Bromide is mainly used by macroalgae, but a role for coral can also not be ruled out. We recommend dosing bromide slowly into the target range.

Regarding trace elements there is a deficiency in iodine: The consumption rate of this important trace element can vary from tank to tank, in your case its suggested to dose regularly, and see after the next ICP analysis if the dosing amount should be adopted.

Fluoride is below the optimum level: Fluoride is incorporated into the coral skeleton, and should be slowly (!) dosed into the optimum concentration range.

Rubidium is lower as in natural seawater. Rubidium is one of the higher concentrated trace elements in NSW, but its biological role has not been yet described scientifically. Because a function can not be ruled out (and there are many anecdotal reports of positive effects following Rb dosing), we recommend increasing Rubidium to NSW levels.

Aluminium is elevated, which might lead to problems with coral. Typical sources are alumina based adsorber media (silicate/phosphate), reef cement, artificial rocks/ceramics and some fish feeds. We recommend water changes to lower aluminium.

In case of questions, i am happy to help!

Best regards, Christoph