



TDG/18/T-HIM/MJ/23.09.08

Date: 23rd September, 2008

Attention : Mr. Maarten Bessem, Managing Director
Hilthom FZCO
P O Box 333746
Dubai, UAE

Subject : Trial of Aquasonic ultrasound algae control by M/s. Hilthom FZCO

Dear Mr. Bessem,

Greetings!

Following the proposal of M/S. Hilthom, two demonstration trials were conducted at Jumeirah Islands irrigation pool no.1 for control of algae in open water bodies. The details are as follows:

Objective

To validate that control of algae by Aquasonic ultrasound from Hilthom (non-chemical) in open irrigation water storage bodies at Jumeirah Islands is effective and practical to replace chemical treatment by algaecides.

Trials Description

Two trials were conducted on irrigation pools 1 & 2. Both pools function as buffer storage for irrigation and the inflow is from the same source, Dubain Municipality treated sewage effluent (TSE). Pool #1 has capacity of 12,000 m³; Pool #2 has capacity of 8,000 m³. Both pools were emptied and cleaned before the start of the trials.

Trial #1

Duration from 21.2.2008 till 14.5.2008

Pool #1 receives algae treatment by ultrasound (Aquasonic 180° unit fixed at one end), aeration fountains removed

Pool #2 receives copper based (ionic) algaecide treatment; three aeration fountains

Trial #2

Duration from 1.7.2008 till 1.8.2008

Pool #1 receives algae treatment by ultrasound (Aquasonic 360° unit floating in the middle), one aeration fountain

Pool #2 receives copper based (ionic) algaecide treatment; three aeration fountains

Tested Parameters

In addition to visual observations, lab analysis was conducted to test two groups of parameters:

1. Parameters characterizing TSE in each pool; such as, TDS, TSS, BOD, Turbidity, etc.
2. Parameters relevant to conditions favoring algae bloom and the degree of algae growth; such as, Chlorophyll a, TP, TN, SAP, etc.

Analysis

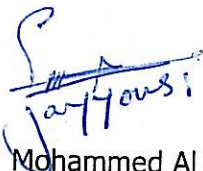
Based on visual observation, lab testing and in-situ physical parameter testing, no significance difference in degree of algae control was found between the irrigation pool treated with ultrasound (IP1) and the irrigation pool treated with chemical algaecide (IP2). In addition, it is noted that the dissolved oxygen level in IP1 is significantly higher than that of IP2 in most of the tests. There are no significant differences between Pool #1 and Pool #2 in aesthetic aspects (odor, insects, clarity). In addition, Pool #1 (ultrasound) seems to have healthier environment because of much higher density of fish.

Conclusion

Based on the above, Aquasonic ultrasound demonstrated to be effective and practical in replacing control by chemical algaecide at this scale of trials.

This letter is prepared upon your request as acknowledgment of the success of the two trials in irrigation pool no.1 at Jumeirah Islands, under specific conditions. However, this letter does not constitute any obligation or recommendation for use, and we do not accept any liabilities.

Regards,



Mohammed Al Jayyousi
Head of Landscape & Irrigation

Cc: James Linton; Marcel Khoury