



‘Magnetic Environmental Services’

Operational Profile

Golf Course & Amenity Water Resource Enhancement

including

Lakes, Ponds, Rivers, Streams, Khours, Canals and Reservoirs

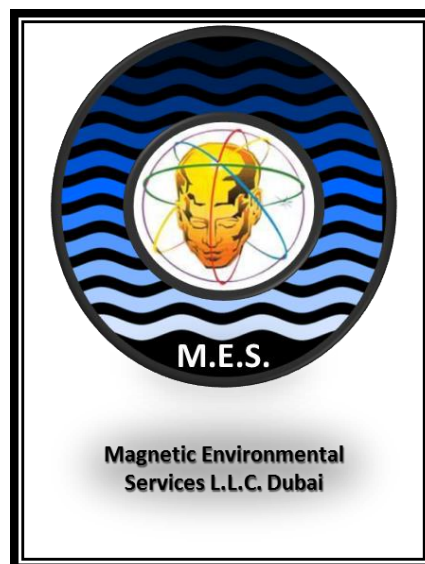
plus

Lakes Maintenance & Ground Water Management

&

RO Systems Enhancement Systems

[V15]





Amenity and Irrigation Lakes Enhancement and Maintenance



Water Resource Enhancement

- Amenity Lakes
- Khours and streams
- TSE Water supplies
- Filtration systems
- Supply infrastructure
- Swimming pools

Including
Lake Analysis
Services
within GCC

Significant Reduction of:

- Turbidity
- Algae
- Odours
- Mosquito's
- Chemicals

Conversion of brackish surfacing ground waters for magnetically enhanced irrigation use directly for adjacent desert landscape trees and border planting off fairways and safely diluted within irrigation lakes

- Enhancing irrigated vegetation growth
- Maximising resilience to season climate changes and to disease and blight
- Improving the ecology and visual appearance of water facilities

A major contribution to preserving & managing water resources & improving cost efficiency meeting members and the publics' expectations

"I was the biggest skeptic when going down this road but have to admit that the results have converted me"

Craig Haldane

Emirates Golf Club **Director - Golf Course Maintenance 2013**

Magnetic devices & infrastructure equipment leasing or supplied within maintenance contracts existing infrastructure can be easily adapted for magnetic enhancement

We offer separate Monthly Water Analysis and Maintenance contracts including:

- Laboratory Water analysis
- Onsite multiple sample mobile analysis
- Contract Cleaning & Technical support services

We offer analysis services within GCC, with laboratories based in Dubai offering comparative reports for management and formal test analysis reports. We can receive samples to our lab or visit site using mobile test facilities for basics immediate analysis in multiple locations on a lake.

We review the whole Lake Environment, including its surroundings influencing the lakes ecology plus the aquaculture management and the infrastructure mechanisms



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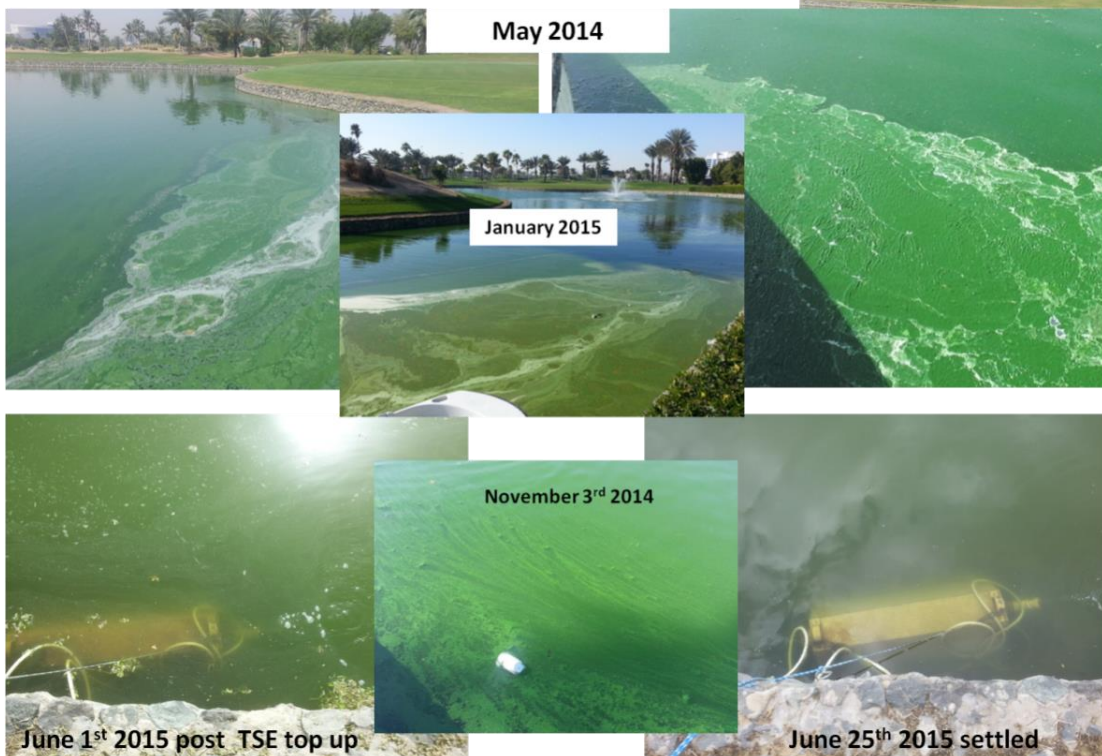


By re-energising the waters molecular structure, we reduce the viscosity of the water surface this is the first stage of allowing water to re-oxygenate itself and start the process of recovery

Creek Golf Course 13th Hole Lake Recovery



Creek Golf Course No 13 Hole





Municipality Zabeel Park Lake Recovery - Dubai 'Garden Glo' Location



During the recovery of a lake, the water will visually go through a process of change.

The viscosity is changed; natural oxygenation occurs; algae fails to regenerate; the lake may look brown; lake floor dead organic matter is released to surface; the water rebuilds its ecology; sedimentation improves; turbidity improves; the surface becomes uninviting to midges and mosquito; odours disappear; the water begins to look natural and builds its own immune system. Job done. But this requires regular maintenance of discarded debris and embankment growth.



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Creek Golf Course Par 3 Lake Recovery

Collage of treatment methods

Magnetic Technologies LLC Dubai, U.A.E. Water Treatment



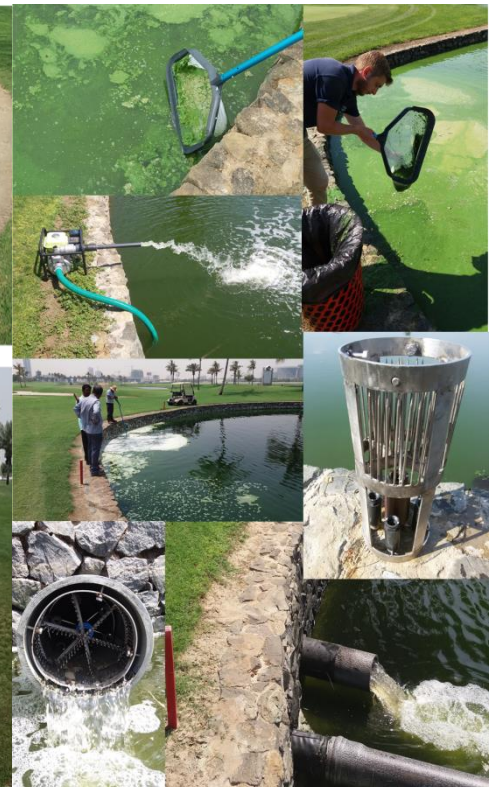
Dubai Creek Golf Club Par 3 Course Lake 2016 Recovery



Stationary Lake - 1500m3 TSE Water - 8 days recovery

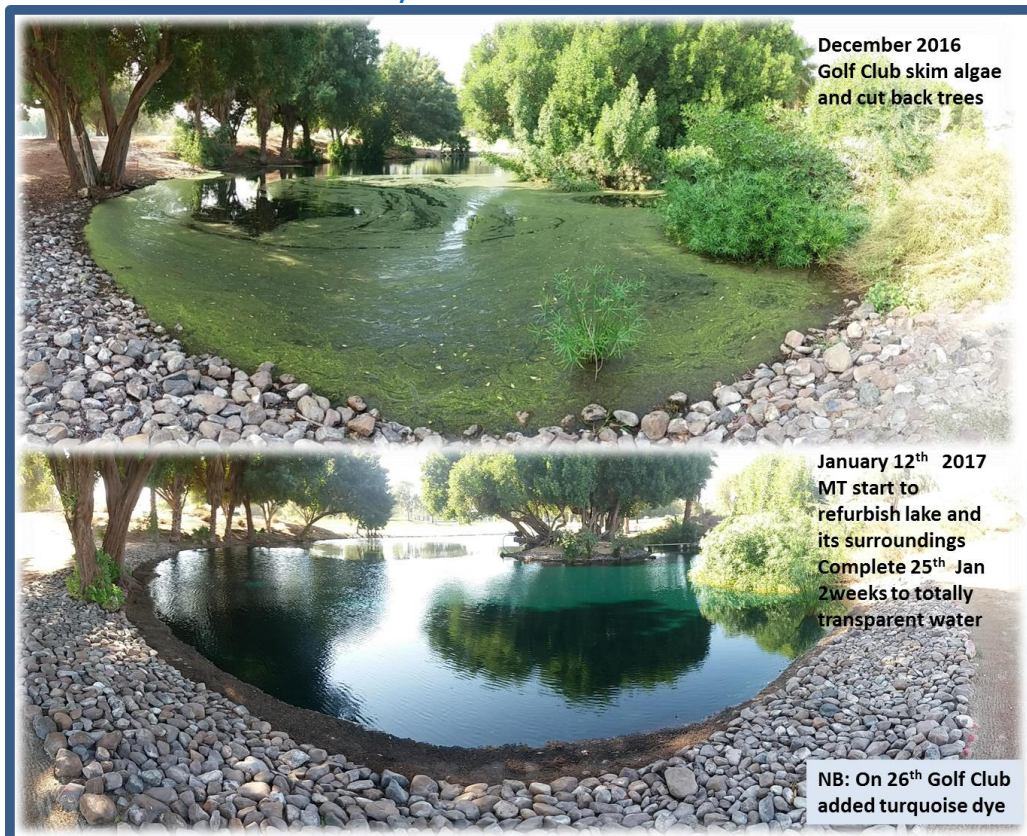


April 13th 2016



Transformation within one week 1500m3 Combination of techniques Skimming, magnetic circulation and inlet

Emirates Golf Club small lake recovery



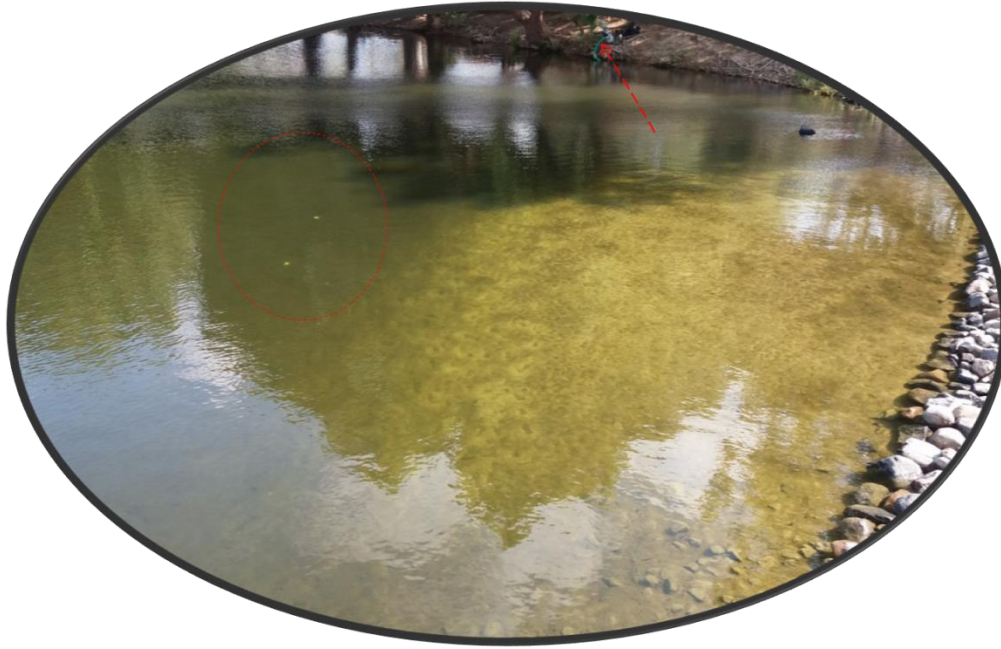
A small 2,500m3 lake at the Emirates Golf Club, recovered and presented by MES for the Dubai Desert Classic Tournament 2017



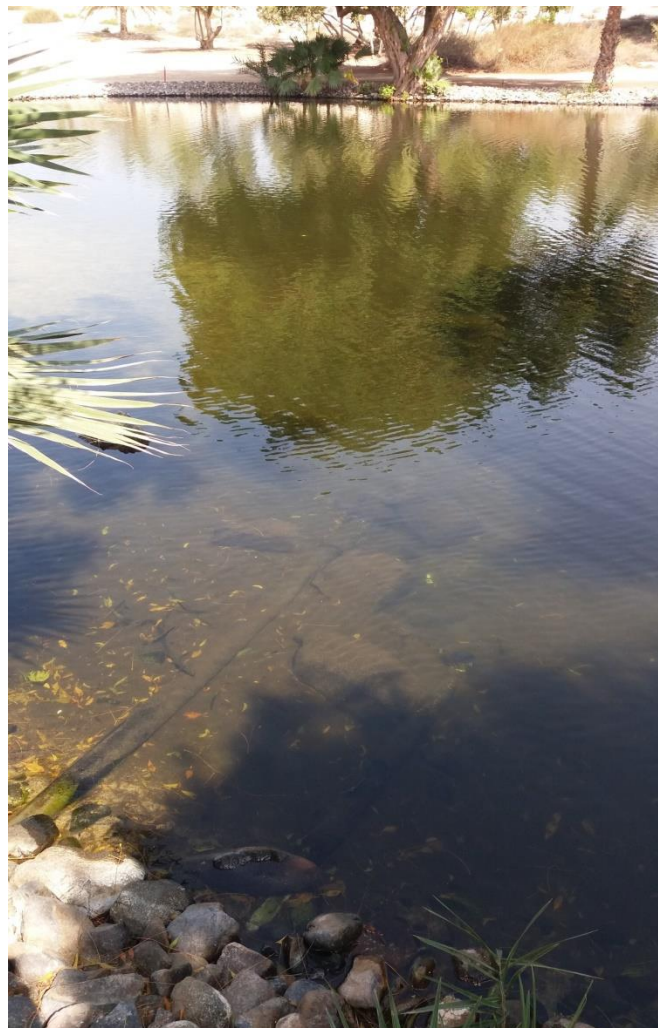
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Emirates Golf Club Small Lake transparent



**Magnetised TSE water becomes totally transparent enabling visual of lake floor
Golf balls by further magnetised recycling pumps**





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Regardless of size MES can create a recovery strategy for all water bodies



Dubai Desert

Bore Well Water Conservation Lakes now remain transparent when magnetised recovered from turbid algae infestation

High Salinity which emulsifies in summer heat can be transformed back to transparent



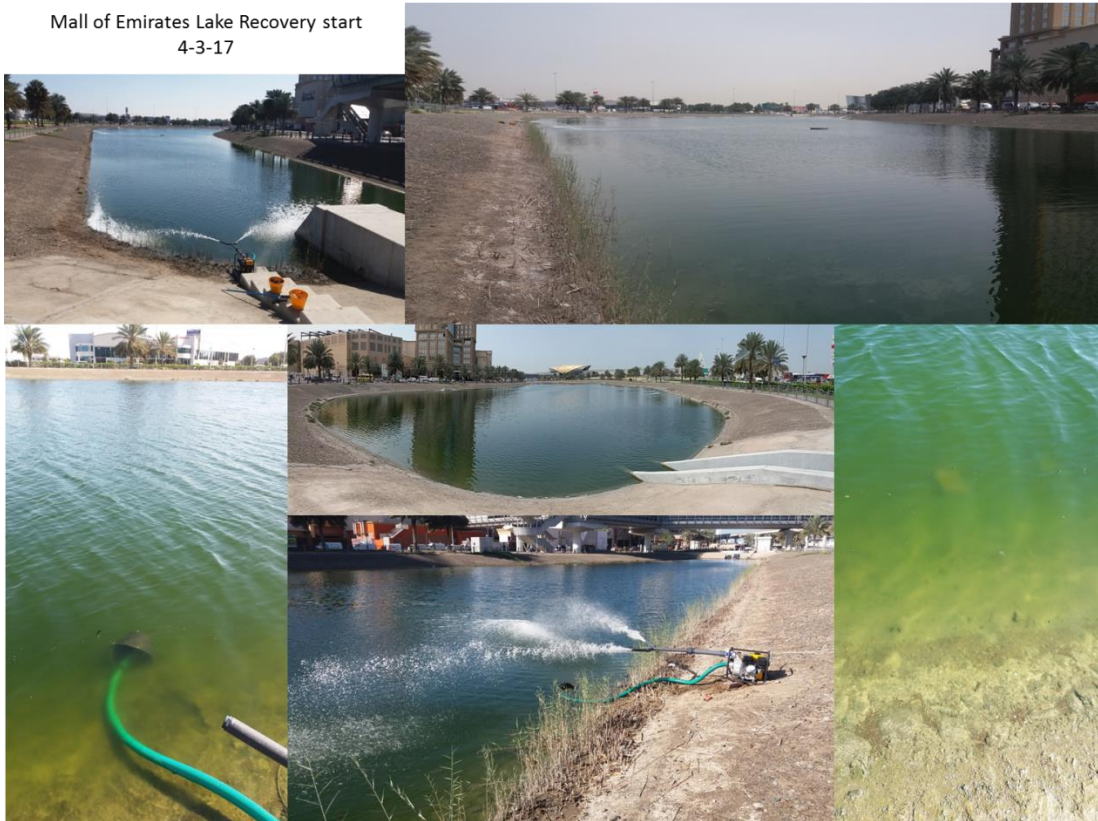
In May 2017 the salinity reaches so high that the electrical sockets and cables begin to float





Recovery of the Mall of the Emirates Lake. Dubai

Mall of Emirates Lake Recovery start
4-3-17



Odour is eliminated from the water. Turbidity is transparent. Shore side mud and plants being removed

Mall of Emirates Lake Recovery 1-5-17





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Creek Golf Course waterfall defoaming



Zabeel Stream recovery and aesthetics enhancement

PDO Lake Ras Al Hamra Oman



The PDO lake was a challenge different to others. Originally a potable water designed lake, client wishing no broken water surface such as fountains. Originally we designed a system for x5 lake floor magnetized circulation pumps to be installed. Objectives were no surface algae, no odour. This was maintained with good turbidity.

The lake gradually became contaminated with TSE irrigation, but still we retained the required parameters. Then the strategy changed requiring the lake water to be supplied solely by TSE. We then recommended to add two fountains for aeration. We still maintain the parameters of no surface algae and zero odour.

Magnetic Tools [some] **[We like electrical supply but don't rely upon it]**

Examples of magnetic treatment for medium lakes



Magnetising via small boat for medium lakes

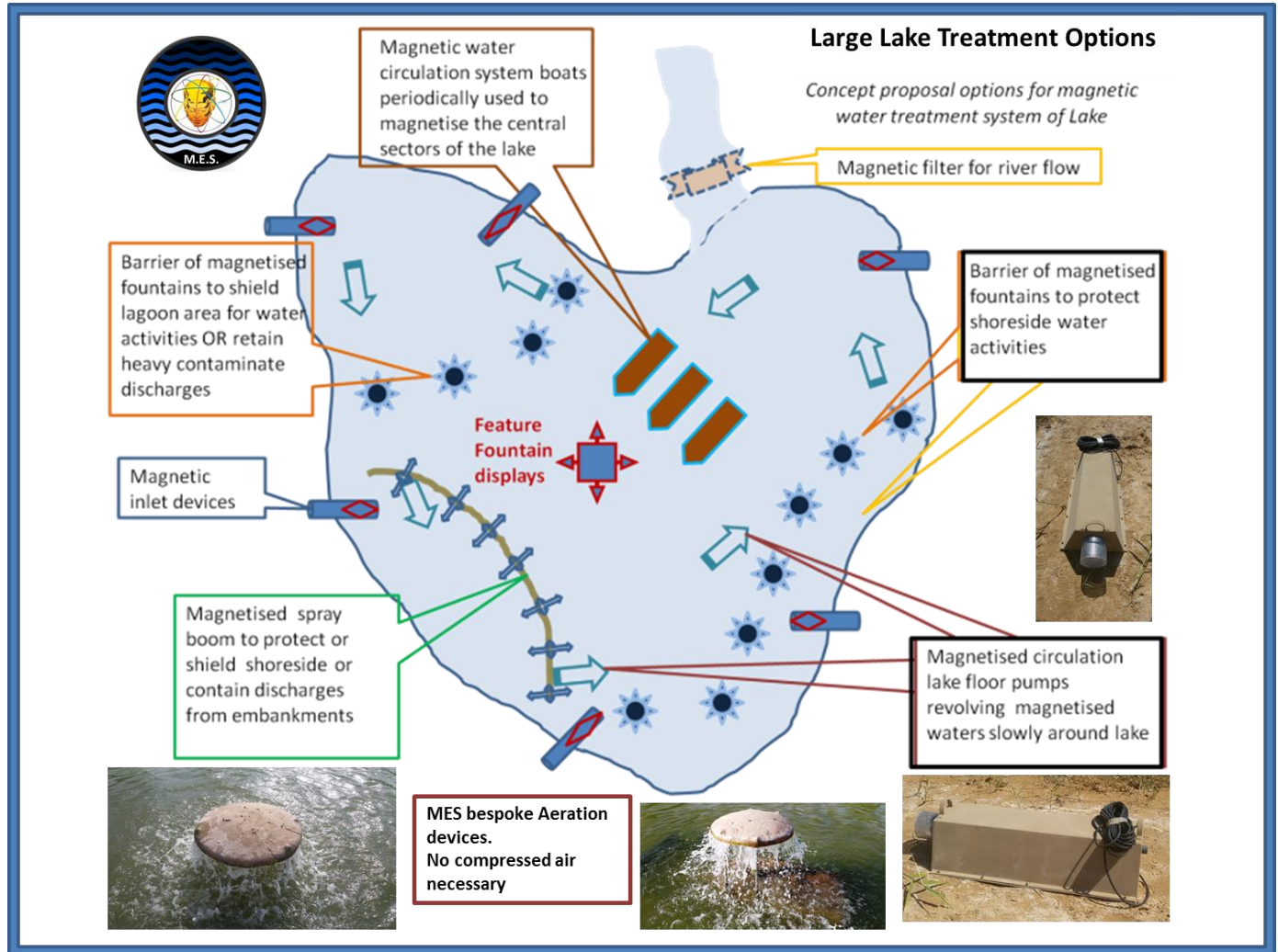


Embankment Magnetised circulation pumps

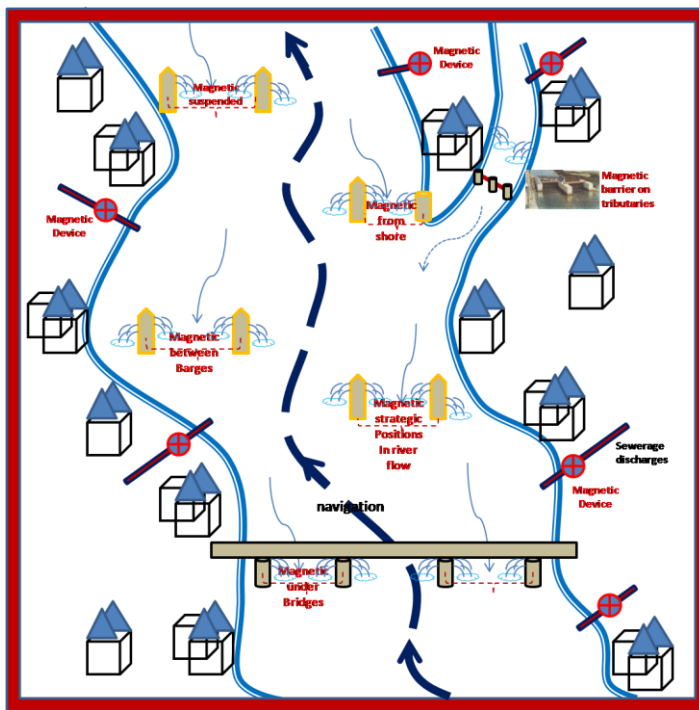
If you have a piped flow of water we can magnetise it or we will use other methods



Large Lakes and Reservoirs



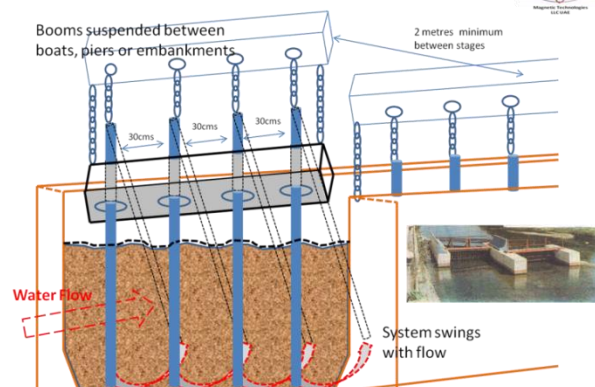
RIVERS & CANALS & TRIBUTORIES



The larger River strategy



River Channel Magnetising System - Magnetic Technologies LLC UAE



Smaller Tributaries



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For the larger rivers such as the Ganga and Canal systems, a combination of scaled up applications would be used, including platform boats housing the 'below water' MT system plus deck mounted large MT circulation pumps. These boats would patrol the river/ canal, not only magnetising but additionally removing floating debris and snagged items.

The barges that enable the MT spanned system, housing large Magnetic circulation pumps. This process design will provide three essentials:

1. MT energised water which improves the sedimentation and removal of odour and
2. Oxygenation which combined with MT benefits the ecology, which also in turn aids the recovery and sustainable maintenance of the river system.

The River / Canal remains navigable and indeed the barges offer additional platform benefits for display functions. In addition, all tributaries and river bank discharges must be addressed, the source tackled and the discharge magnetised.



Fountains Enhancement

Magnetic system instalment does not interfere with the already existing technical construction.

Magnetic system is installed as a cover/"hat" in front of the water filter.



Advantages:

1. Increase of power coefficient of engine output, which occurs due to the increase of water's fluidity and sorting out of clusters. This results in the increase of a fountain's height by 15-20%.
2. Magnetic water, which flows into the water-pipes and water pumps, destroys incrustation (salt deposition) in these systems and prevents its future formation.
3. Water changes its physical, chemical and biological properties, that can be seen very clearly if we are to compare lab result of before and after installation of magnetic systems. Also, water becomes visually transparent and its flora increases. These changes are due to a large decrease of pathogenic bacteria in the water and coagulation of weighed particles and other various chemical compounds (their deposition on the lake's bottom).

Therefore, the choice of a magnetic system depends on the diameter of water pipe-line that supplies water to the pump.

Ionised Fountain waters vapours significantly contribute to air quality improvements and by the dissolution of air pollution within the immediate vicinity, providing an environmentally friendly by product to water treatment.

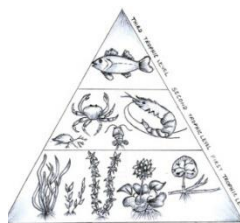


With all large scale water enhancement projects, a feasibility study is essential

Understanding Water and its Environment

- **Water needs help.** For it to naturally maintain its balance and purity it requires oxygenation, movement and circulation within fixed bodies of water such as lakes and ponds. Allow it to lay dormant and it will stagnate; algae takes hold, the turbidity deteriorates, infestations of mosquito larvae take hold and odours become repugnant.
- **Water is complex yet dynamic.** It withstands being mistreated and polluted. It manifests itself in the most unlikely of locations and also survives in the most harsh of environments.
- **Understanding the natural mechanics of water.** Consequently along with any recommendations of magnetic device installations, Magnetic Technologies will equally review the natural mechanics of the water body and will identify deficiencies and make suggestions to enhance the overall water body environment and its functionality.
- **Failure to recognise waters basic requirements** by not containing or reducing adverse actions upon the water, means expectations will be lower or indeed results will take longer.
- **Re-booting the structure of water** and its environment is a 'process' and not an overnight event. This 'process' goes through a cycle of visual and materialist events, often looking worse for periods whilst factors realign, algae dies off and good bacteria re-establish.

Magnetised water enriches the
balanced water environment for
healthy planned plant and marine life

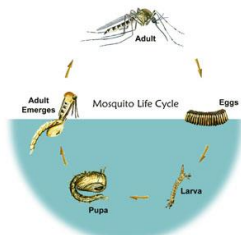


Insect infestation [especially mosquitoes]

General insects:

Ponds are housing grounds for myriads of insects like mayflies, water bugs, water scorpions, etc. Scores of insects enter into this world through ponds and some of them even live all their lives in ponds (adapted to living in water), whereas others live their larval and nymph stages in these ponds until and leave the pond on reaching adult stage. Pond insects feed on larvae of other insects found in the pond, decaying vegetation and algae. Each insect species is well-adapted to surviving in the aquatic environment, and the characteristics of each species is unique.

The Mosquito life cycle:



Mosquito larvae consume microorganisms and organic matter in water. Mosquitoes prefer stagnant water within which to lay their eggs. They most commonly infest ponds, marshes, swamps and other wetland habitats. Water that has been stagnant for three days is a prime habitat for mosquitoes. Hot, humid environments are most amenable to mosquito growth and survival. The *Anopheles*, *Culex*, *Culiseta*, *Coquillettidia* and *Uranotaenia* species breed in permanent bodies of water and can survive in polluted water as well as freshwater, acid water and brackish water swamps.



With most mosquito species, adult females lay their eggs in stagnant water upon the strong viscous surface



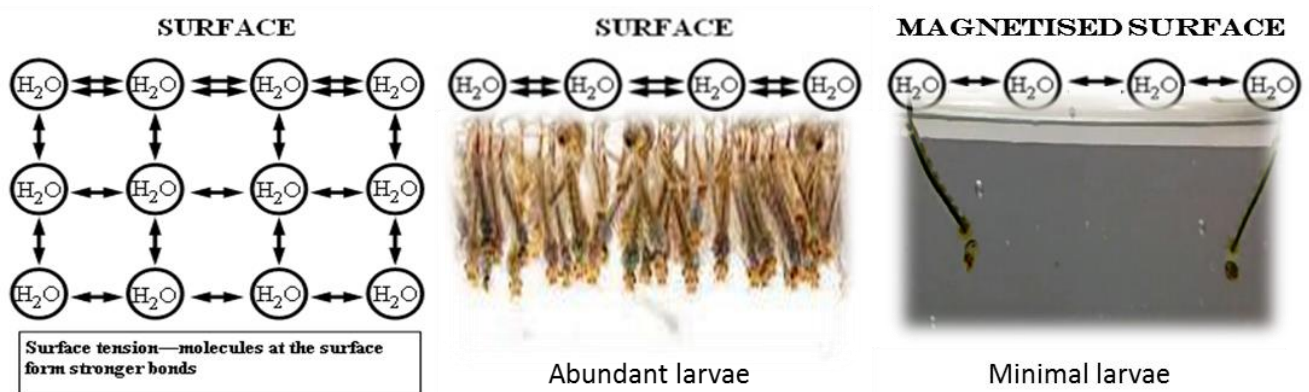
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Source reduction means elimination of breeding places of mosquitoes. It includes engineering measures such as filling, leveling and drainage of breeding places, and water management (such as intermittent irrigation). Source reduction can also be done by making water unsuitable for mosquitoes to breed, for example, by changing salinity of water.

By Magnetising water, especially within lakes, pond, water courses and TSE storage prevents the abundant larvae survival and transforms its necessary habitat, making it an unsuitable environment for the manifestation of the mosquito, but enhances the water for positive balance of insects such as mayflies.

- Viscosity is reduced by 3-4%
 - **Viscosity** is a measure of a fluid's resistance to flow. It describes the internal friction of a moving fluid
- Surface Tension is decreased by 10-13%



By successfully breaking the hydrogen bonds between the molecules, the viscosity is reduced enabling more wind action across the surface to move water from a stagnant mode and simultaneously reducing the surface tension from which the mosquito larvae are suspended. The change in molecular structure creates a un-hospitable environment for mosquito to survive.

Enabling MT to undertake Environmental restorations such as Khours



Creating water circulation, periodic aeration, plant growth control with open water

Water bodies that are neglected are 1st a wasted water resource and 2nd a liability encouraging infestations, mosquito and society abuse such as dumping waste and toxicity



The Technology

- Russian Scientific development from 60s to 90's, with 50 institutes and 500 scientists in the 80's headed by Prof Yuri Tkatchenko who since relocated and created Magnetic Technologies LLC UAE in UAE in 1995 with Sheikh Junaid Khoory
- Proven highly effective and cost efficient within numerous sectors
- Based on using permanent magnetic fields in order to influence charged water particles by a Lorentz force.
- A change occurs in the structure of the water without altering its physical state, acquiring significant enhancement in its properties in addition to it becoming structured.
- No Chemicals are required.....No additional power source needed

Water Property Expectations

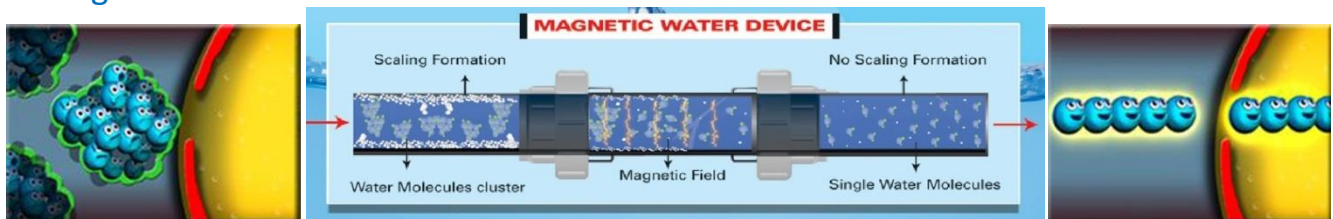
Some changes of water properties as a result of treatment are acceleration of:

- Viscosity by 3-4%
- Surface Tension by 10-13%
- Electric Conductivity by 7-26%
- Specific Heat Capacity by 3-4%
- Latent Heat by 10-40%
- Magnetic Susceptibility by 200-400%

Some changes in operational requirements:

- reduced and potential elimination of chemical reliance
- reduced maintenance and deterioration of filtration systems

The Magnetic Process



The Magnetic Process within water treatment breaking the restrictive molecular clusters into individual molecules capable of easy absorption by plants carry more nutrient for healthier growth needing less water

Ground Water 'surfacing' & Local Rising Water Table solutions





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We offer

- Investigation coordination
- Design for temporary and permanent systems
- Construction of sump tanks and discharge manifold systems
- Magnetic Enhancement of water discharge to satisfy end use
- *Enable Recycling of ground water to irrigation supplies

Our own construction contract team; experienced; efficient; quick turnaround for Temporary and Permanent Solutions

"Within Magnetic Technologies LLC we understand water, the challenges for client water resource facilities and the necessary management & maintenance needs with 20 years experience in the UAE"

Magnetised Water infrastructure system design and installation

- Circulation & Extraction systems
- Aeration
- Fountains
- Existing infrastructure enhancement

Continued installation Maintenance and Water Analysis:

- Laboratory Water analysis
- Onsite multiple sample mobile analysis
- Pump and manifold supervision

Understanding the challenges

The continued development of residential and commercial high rise buildings combined with vast estates of villas with their gardens, increasing pressure for water resources, is growing rapidly especially since the announcement of the Expo2020 coming to Dubai. With a population of 2.2million living within Dubai plus an additional influx of about 1million each week coming in to work, the need for water is growing and the cost of providing this water is ever escalating.

It's not just drinking water that is the challenge. Irrigation to amenity areas including parks, golf courses and along the embankments of the vast road networks is altering the water tables. This is becoming evident within especially the Golf Courses, where their topography produces mini hills and low valleys. It's within these low valleys that the changing water tables are becoming evident, with increased water surfacing each month, demonstrating this is a challenge which is not diminishing.

The reams of new villas with their postage stamp gardens all have automatic irrigation systems, dumping thousands of litres of unused water, delivered from afar, into the immediate ground where before there was minimal watershed. This is creating several challenges including flushing salts from the subsurface terrain. The ground water used from wells is becoming saline contaminated, and where the water table is rising and now breaking the surface, the salinity is increasing also, preventing much of the ground water from being used within irrigation.

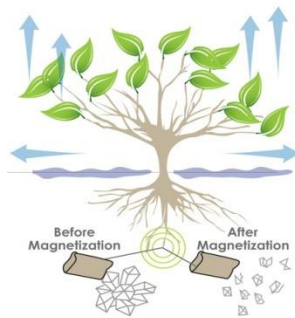
That is until now. Magnetic Technologies LLC employ a variety of solutions to counter these ever increasing challenges.

We can design and build catchment sumps, retaining the rising water tables below ground

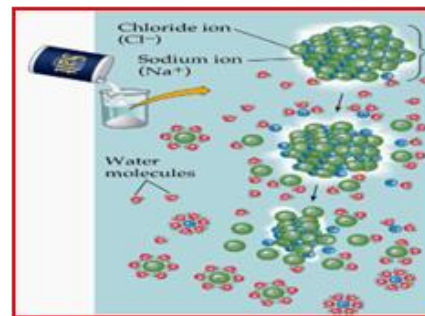
We can convert the brackish water enabling it to be recycled into the irrigation systems or back into water treatment facilities through the sewerage pipes, all without adverse affects upon filtration membranes. We prevent the crystallization of the salts within the brackish water.



Converting Brackish Water / Ground Water as usable for irrigation



Benefits to Plants



Magnetic water molecules dismantling salt

We can offer a complete solution; from basic local investigation analysis, to ground water containment and ability for diluted redistribution ideally back into the TSE irrigation lakes.

The containment sumps that we design and build include multiple pumps with sophisticated control panels, incorporating several safety systems such as alternating pumps, local visual warning lights and SMS alarms if a system fails or become inundated for technical or unforeseen reasons.

Our core water solution is 'magnetism' which transforms brackish water from up to 7000ppm to useable irrigation water direct to plants or if exceeding 7000ppm, then to be recycled and diluted into the irrigation TSE lakes with zero adverse affects upon the plants and grass and ecology.

We also integrate a variety of additional techniques and technologies where and if necessary to create a complete solution for any anticipated water challenges, combating algae and bacteria.

The critical time to incorporate our technologies and solution concepts is at the design stage of your new venture.

Creating dual irrigation systems minimising the agronomist headaches, proactively building in lowland water sumps and creating realistic infrastructure for the irrigation lakes to thrive within this hostile desert environment, maximising the potential of the water resources, enabling management to minimise the intense water requirements and costs involved.

Golf Course and Parkland lake facilities will during these next years have enormous pressure upon them to minimise their water requirements because the cost of their water will continue to increase.

We are pioneering the use of ground water for the 'desert landscape' beyond the Fairways & Greens
By directly magnetising the ground water into a separate irrigation feed system, we are proving that the landscaping bushes and trees can flourish with up to 6 to 7000ppm



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An example of using ground water directly for landscape irrigation

Els Golf Club Brackish Water Irrigation Project 2016 4.5-6000ppm	
Ground water irrigation with 4.5 to 6000ppm salinity. This is achieved By installing Magnetic Technologies 3inch device inline	April
This now enables Golf Clubs with ground water penetration, previously a problem, to now use this water to their advantage to irrigate their off Grass desert landscape trees and bushes	May
	June
Saving enormous sums by supplementing the purchased TSE water, with free ground water	July
	Aug
The MagTech team have been developing this concept for several years and have now implemented at Els GC DSC during 2016	Sept
Plants not only survive; they flourish plus the ground remains leached of surface salt build up	

INDIVIDUAL Plant Development

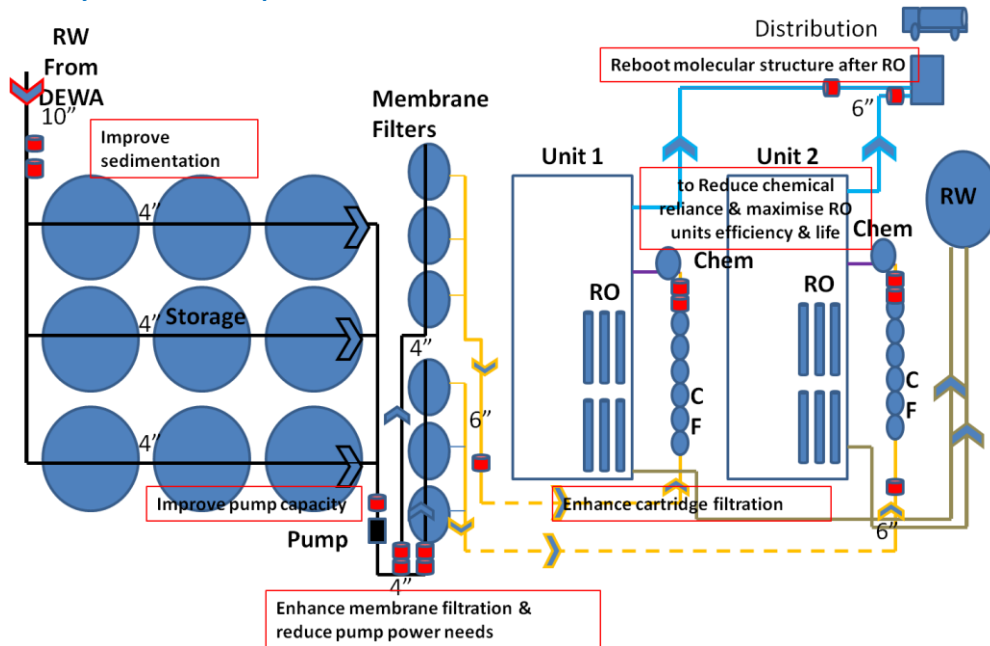


This use of ground water within Golf Courses will: save on water supply bills; contain the ground water challenge predominantly onsite; and provide a comprehensive solution to the growing problem within the fast developing urban environment of Dubai and other GCC countries; where every new villa garden irrigation system contributes to a rising water table. By magnetising the ground water directly we can create a comprehensive variety of uses including desert landscape irrigation, dilution into irrigation lakes and a non-aggressive direct discharge feed into STP systems.

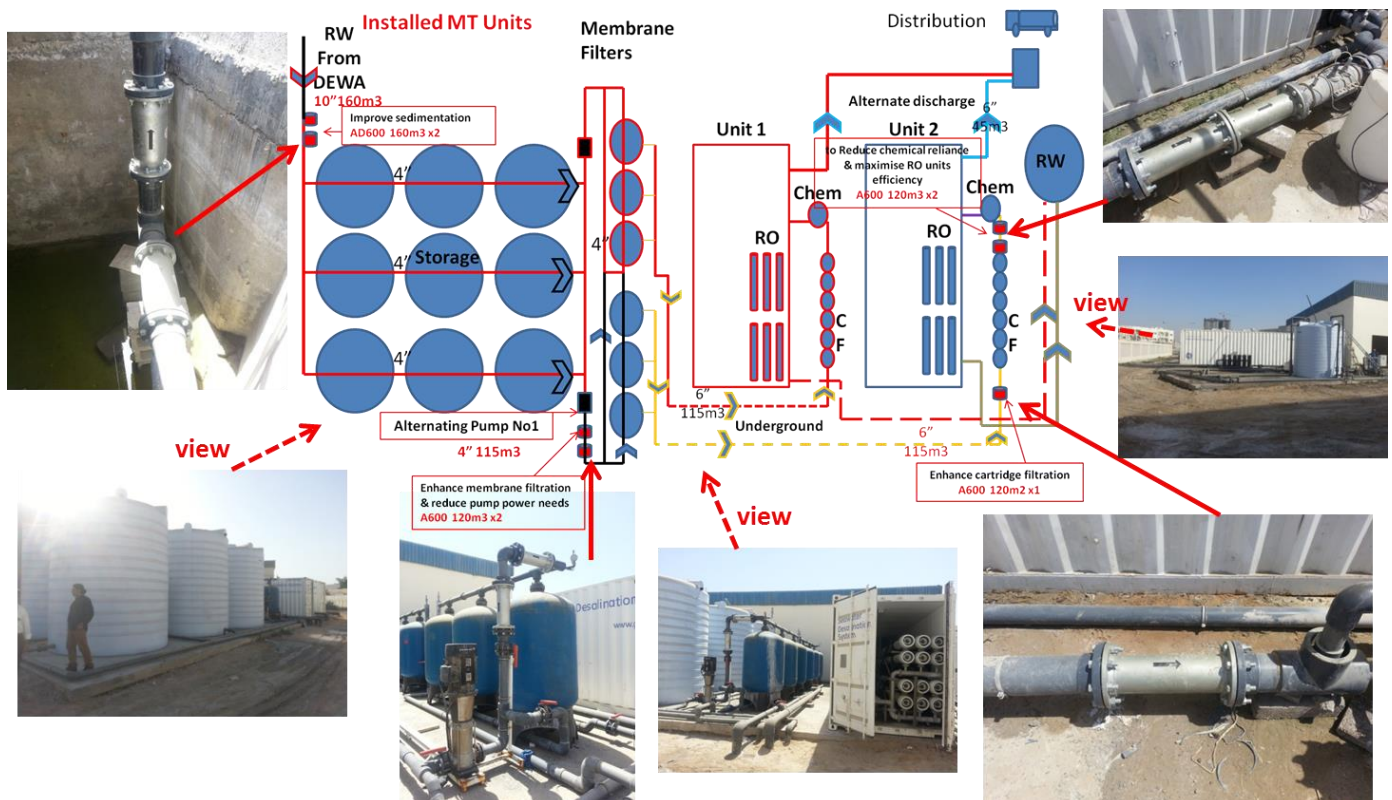
We believe within Magnetic Technologies LLC that we can collaborate to make a significant contribution to your water resource management from ground to sprinkler, from RO to tap.



An RO layout example and MT installations



AJMAN RO UNIT MT INSTALLATION JULY 2014





Notes For Setting Water Analysis Parameters

FOR TREATING TSE / RIVER INUNDATION WATERS CONTAINING TREATED EFFLUENT DISCHARGE

- Water quality parameters assured by MT is highly dependent on the quality of TSE
- Total Nitrogen and Total Phosphorous are the key elements for creating Algae. Their levels along with the COD are dependent upon the TSE levels.
- The TSE will be analysed by MT and we recommend that the quality of TSE complies with the guidelines/laws set by local governing bodies.

BRACKISH WATER/GROUND WATER/FRESH WATER

- Total Nitrogen and Total Phosphorous remain the key elements for creating Algae.
- Salinity of the water will not be altered by MT. However water property is changed so that it does not affect the aquatic life.
- Any drainage of irrigation water that may contain fertilizers can increase the source of Total Nitrogen and Total Phosphorous content in water.
- Challenges with hard water scaling where eliminated by use of MT will create no change in the chemical analysis of hardness, as the components creating hardness are transformed to a non-scaling state rather than being decreased, although existing scale will slowly dissolve.

GENERAL PARRAMETERS

- Magnetising the water whilst eliminating the algae, will not necessarily reduce the actual chemical properties for analysis, consequently the achieved physical and visual results will not necessarily reflect the parameter limits of chemical components of water.
- It will be noted that our MT treatment process increases the DO which replaces other unwanted dissolved gases, including nitrogen and ammonia.
- We work on the principle of improving water quality structurally rather than altering the chemical components of the water.
- Within Total Nitrogen by magnetising the waters we can reduce the Organic Ammonia, which is the major component of Total Nitrogen that energises algae growth and is the primary base for initiating unpleasant odours.
- **CONSEQUENTLY:** Quantifying our results primarily relies upon observations of us improving the visual amenity, eliminating odours, reducing chemical needs, eliminating algae growth, eliminating mosquito infestation, increasing fish stock, improving the health of the ecological environment, improving the water quality structurally without any significant change to the chemical components. We will however continue to support all of these achievements with detailed water analysis reports.

The following tables and reports demonstrate the various presentations for data for technical staff and for ease of management understanding. The fees are purely for indication and normal ranges.

Monthly & Annual Analysis content and fees & Maintenance Contracts fees are Negotiable



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Basic & Multiple Auto Test Report formats

Technical Reports



اتقنيات المغناطيسية MAGNETIC TECHNOLOGIES LLC

SAMPLE No.		Date	
Client			
Address		Telephone/Fax	
Contact Person		E-mail	
Sampling Method		Sampling time/date	
Sample location		Sample temperature	
Sample Description		Sampled by	

Lake water onsite analysis report

Parameter	Unit	Result	Limit	Comment
pH	--		6.5 - 8.5	
Salinity	mg/L		NDL*	
Electrical conductivity	mS/cm		NDL*	
Total Dissolved Solids	mg/L		NDL*	
Dissolved Oxygen	mg/L		>5.0	
Turbidity	NTU		<10.0	
Nitrogen, Total	mg/L		<5.0	
Ammonia	mg/L		<10.0	
Phosphorus, Total	mg/L		<5.0	
Chlorine, Total	mg/L		<10.0	
Chemical Oxygen Demand	mg/L		<150.0	

* No definite limit. For amenity lakes these parameters do not largely influence the quality of the lake. But if the client wishes/has fish in the lake limit will be determined depending on the fish.

****End of Report****

For MAGNETIC TECHNOLOGIES LLC
Dubai | date

Form: QSP/035-b

Issue: 01-18/10/14

Rev.: 00-18/10/14

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اتقنيات المغناطيسية MAGNETIC TECHNOLOGIES LLC



Site photo



Location map

Parameters	Locations				
	1	2	3	4	5
pH					
Salinity					
Electrical conductivity					
Total Dissolved Solids					
Dissolved Oxygen					
Turbidity					
Nitrogen, Total					
Ammonia					
Phosphorus, Total					
Chlorine, Total					
Chemical Oxygen Demand					
Average					

Note: 1. The results listed refer only to items tested. Endorsement of product is neither inferred nor implied. 2. The report in full or part shall not be used for any promotional or publicity purpose without written consent by us. 3. Under no circumstances, lab accepts any liability or loss/damage caused by use or misuse of test report. Liability is limited to proven willful negligence and will in no case be more than invoiced amount.

Form: QSP/035-b

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Comprehensive Report Formats



التقنيات المغناطيسية (ش.ذ.م.م.) MAGNETIC TECHNOLOGIES LLC

WATER ANALYSIS REPORT

Sample No.		Client	
Test Report No.			
Received Date			
Report Date			
Sample location		Sampled by	
Sample Description		Sampling date/time	
Sample Quantity		Sample container	

Water Quality			Limits*
pH		8.00	5.5 to 8.5
Salinity	mg/L		< 1500
Specific conductivity	mS/cm	2.29	< 3.0
Salt concentration (TDS)	mg/L	1465.60	< 1900
Hardness	mg/L	267.52	100 to 500
Total Alkalinity (CaCO ₃)	mg/L	120.36	< 100
Turbidity	mg/L		
Sodium Adsorption Ratio (SAR)	mg/L	9.19	< 9.0
Adjusted SAR	mg/L	14.33	< 8.0
pHc	mg/L	7.04	< 8.4
Residual Sodium Carbonate (%SC)	mg/L	2.00	< 2.5
Cation/Anion Ratio			

Ions	mg/L	mg/L	Limits (mg/L)*
Calcium (Ca)	53.71	2.68	20 to 120
Magnesium (Mg)	32.36	2.66	10 to 35
Potassium (K)	28.61	0.73	5 to 30
Sodium (Na)	345.60	15.03	< 200
Iron (Fe)	0.12	0.00	2 to 5
Carbonate (CO ₃)	0.00		< 50
Bicarbonate (HCO ₃)	146.86	2.41	< 120
Hydroxide (OH)	0.00		Nil
Chloride (Cl)	626.36	17.66	< 140
Sulfur as (SO ₄)	191.67	3.99	< 400
Boron (B)	0.47		0.2 to 1.0

Reviewed by

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Irrigation Water Guidelines

Parameter	Effect on plants
pH	5.5 - 8.5 (ideal) provides the best conditions for irrigation & tank mixing.
Specific Conductivity	> 8.5 can cause reducing micro-nutrient availability due to precipitation.
	< 1.5 desired range.
	> 1.5 potential problem.
	> 3.0 will burn under certain conditions.
Total Alkalinity	< 100 ppm. High alkalinity can cause an increase in the pH of the soil.
Salt concentration (TDS)	< 900 ppm. desired range.
	> 1900 ppm. causes increased burn potential.
Sodium Adsorption	< 6.0 desired range (will add Ca to the soil).
Ratio (SAR)	> 9.0 (will strip Ca from the soil); will burn under certain conditions.
Calcium	> 20 ppm. Deficiency affects plant growth.
	< 120 ppm. Excess causes reduced intake of K and Mg.
Magnesium	> 10 ppm. Causes small, dark, yellow, leaf tips on leaves; withered drooping leaf tips.
	< 35 ppm. Excess causes yellowing in leaves; yellow areas around them.
Potassium	> 5 ppm. Causes small, dark, yellow, leaf tips; yellowing, affecting leaves and fruit development.
	< 30 ppm. Excess can aggravate soil salt levels. Coarse, poor colored fruit. Reduced absorption of Mg and Ca.
Sodium	> 200 ppm. Excess causes salinity hazard, by decreasing the intake of Ca, Mg and K.
Iron	> 2 ppm. Yellow and brown colour development in leaves, curling and early fall.
	< 5 ppm. Causes soil acidification, loss of essential macronutrients.
Carbonate	< 50 ppm. Raises alkalinity of the soil.
Bicarbonate	< 120 ppm. Causes loss of free calcium in soil, increases SAR.
Chloride	< 140 ppm. Increases salinity of water.
Sulphate	< 400 ppm. Excess reduces phosphorus availability, acidifies the soil.
Boron	> 0.2 ppm. Causes slow growth, pale green tips, bronze tint.
	< 1.8 ppm. Excess causes leaves turn yellowish red.

*Limits are taken from USEPA and APHA standards.

Note: 1. The results listed refer only to items tested. Endorsement of product is neither inferred nor implied. 2. The report in full or part shall not be used for any promotional or publicity purpose without written consent by us. 3. Samples are not drawn by us unless otherwise mentioned. 4. Unless specifically requested by the customer, the test results will not be returned more than 10 days from the date of test report. 5. Under no circumstances, lab accepts any liability or loss/damage caused by use or misuse of test report. Liability is limited to proven willful negligence and will in no case be more than invoiced amount. 6. While every effort is made to ensure the information provided is accurate, Weather, pH, SAR and other biological conditions may vary and Magnetic Technologies LLC takes NO liability or any loss, expense or implied concerning the use of this Report. The User assumes all risk of use and handling whether or not in accordance with Directions, Guidelines or Suggestions.



MAGNETIC ENVIRONMENTAL SERVICES

Management Reports:

Visual formats highlighting trends and spikes



MAGNETIC TECHNOLOGIES LLC

WATER ANALYSIS REPORT

Site : Zabeel lake Date : 8-Oct-13

General
Name of Site : Zabeel lake
Type of Site : Artificial lake
Date : 8-Oct-13

Physical properties
Turbidity factor : 8
Ocular : 15 days
Salinity (ppt) : 10000-12000
Foreign matter : None
Urgent : 100 water
Natural habitats : None
Comments : Abundant fish found
Increase in Turbidity observed
No odor
Found that birds were roosting with clustering deleterious in the lake water

Geography
Location : Dubai, UAE
Latitude : 25°19'N 55°17'E
Length : 100 meters
Area : 12000 m²
Volume : 12000 m³

Water treatment with MT
Period : 2 times per month
Interval : 15 days
Treatment time : 4 hours
Type of MT : Magnetic device and air compressors in the pump that feeds into
Pumping : Pumping, circulating water treated with magnetic device

Climate
Air temp : 32 °C
Humidity : 65 %

Sampling
Date of sampling : 8-Oct-13
Time of sampling : 10:00:00 AM
Sample by : PO
Sample Code : MT1310401

Table 2: Turbidity levels

Water Type	Turbidity	Sample Turbidity
1. Fresh water	< 10 NTU	10-20 NTU
2. Brackish water	10-20 NTU	20-30 NTU
3. Saline water	20-30 NTU	30-40 NTU
4. Very Turbid	> 40 NTU	> 40 NTU
5. Dirty	> 100 NTU	> 100 NTU
6. Dead	> 200 NTU	> 200 NTU

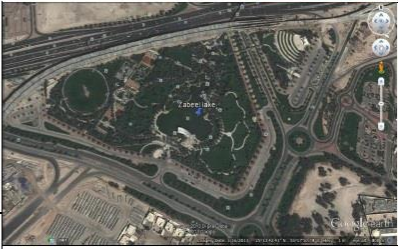
Table 3: Chlorine

Water Type	Chlorine	Sample Chlorine
1. Fresh water	< 0.5 ppm	0.5-1.0 ppm
2. Brackish water	0.5-1.0 ppm	1.0-2.0 ppm
3. Saline water	1.0-2.0 ppm	2.0-3.0 ppm
4. Very Turbid	> 3.0 ppm	> 3.0 ppm
5. Dirty	> 5.0 ppm	> 5.0 ppm
6. Dead	> 10.0 ppm	> 10.0 ppm

Table 4: Water types based on Salinity

Water Type	Salinity	Sample Salinity
1. Fresh water	< 1000 ppm	1000-2000 ppm
2. Brackish water	1000-2000 ppm	2000-3000 ppm
3. Saline water	2000-3000 ppm	3000-4000 ppm
4. Very Turbid	> 4000 ppm	> 4000 ppm
5. Dirty	> 6000 ppm	> 6000 ppm
6. Dead	> 10000 ppm	> 10000 ppm

Previous other water treatments
Under magnetic treatment since April 2013



MAGNETIC TECHNOLOGIES LLC

WATER ANALYSIS REPORT

Sample code	pH	EC	Turbidity	D.O.	TDS	Salinity	Temp	TN	NH ₄	NO ₂	NO ₃	P	Ca	Mg	Cl	Fl	Chlorine	COD	BOD	TBC	TCC	TC	TTC
MT1301401-01	6.38	12.60	0.62	5.84	6.3	7.23	31.35	31.167	72.8601			1.8	48	31.833	4001.2927			55					
Average	6.38	12.60	0.62	5.84	6.3	7.23	31.35	31.167	72.8601			1.8	48	31.833	4001.2927			55					
Previous sample	8.24	15.95	0.54	6.47	8.12	9.13	21.87	24.68	96.88			2.39	701.2	254.9	5854			60					
Comparison	▼1.86	▲2.35	ND	▼0.63	▼1.82	▼1.9	▼4.52	▼5.51	▼20.82			▼0.4	▼652.2	▼223.1	▼1852			ND					

General Parameter : Limit : Result : pH : 6.0 and 8.5 : 6.38 Turbidity : <10 NTU : N/A Temperature : 30 : 31.35 Dissolved Oxygen : > 5 ppm : 5.84	Salinity Parameter : Limit : Result : Salinity (ppt) : 2000 : 7230 EC : <0.75 mS/cm : 12.60 TDS : <500 mg/L : 6300	Minerals Parameter : Limit (mg/L) : Result : Total Nitrogen : <1.0 : 17.33 NH ₄ : <0.5 : 21.17 NO ₂ : <0.5 : 76.88 NO ₃ : <1.0 : 1.86 P : <0.1 : 1.86 Ca : <20.0 : 48 Mg : <10.0 : 31.833	Oxygen Parameter : Limit (mg/L) : Result : DO : > 5.0 mg/L : 5.84 COD : < 150 mg/L : 55 BOD : < 5.0 mg/L : 60	Microbiology Parameter : Limit : Result : TBC (25 °C) : Per 1 ml : 5854 TCC (25 °C) : Per 1 ml : 60 TTC (25 °C) : Per 100 ml : 60 TTC : Per 100 ml : 60	Abbreviation/Key : EC : Electrical conductivity D.O. : Dissolved Oxygen TDS : Total Dissolved Solids NH ₄ : Ammonia NO ₂ : Nitrite NO ₃ : Nitrate P : Phosphorus Ca : Calcium Mg : Magnesium Na : Sodium Cl : Chloride COD : Chemical Oxygen Demand BOD : Total Bacteria Count TBC : Total Bacteria Count TCC : Total Coliform TTC : Total thermotolerant coliform
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Comments

General Higher alkalinity levels will buffer acid rain and other acid rains and prevent pH changes that are harmful to aquatic life.	Oxygen content High Nitrogen and elevated Phosphorus Higher TN and P content stimulate algal growth, causing algal blooms and upsurge of lake water with bad look and unpleasant food.	General Comments	Microbiology
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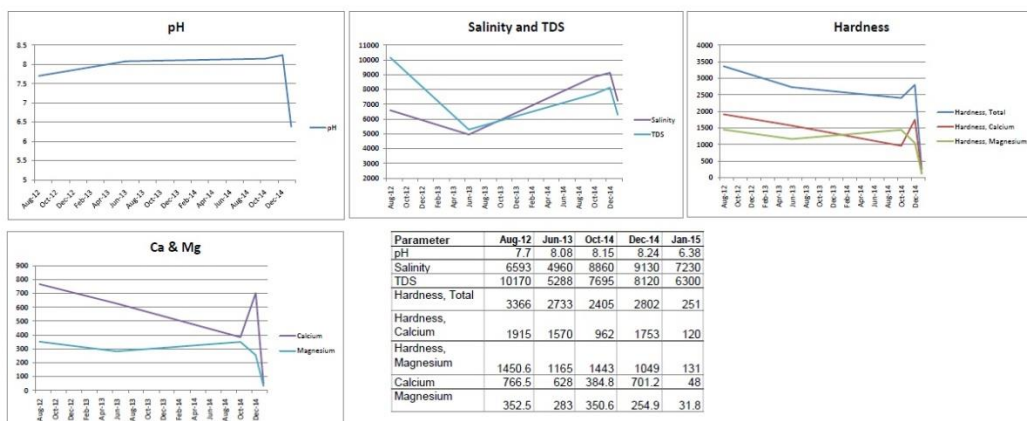
Parameter condition

Very good	Good	Average/medium	Poor	Bad	Critical
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Odor

1. No odor	Normal water
2. Early, misty or grassy	Produced by microorganisms, blue-green algae, and green algae
3. Fruity odor	Produced by blue-green algae
4. Chloramines, or medicinal	Addition of chlorine to a disinfectant
5. Fruity odor	Odorization of water for disinfection
6. Turbidity odor	Produced by massive microorganisms in surface water or by sediments in the ground

Graphical comparison of parameters





About the Company

Introducing the Scientists & Technology background:

Russian technology developed through 50 institutes with over 500 scientists during the 70's and 80's latterly under the leadership of Prof Yuri Tkatchenko. During the early 90's the Professor relocated a small science management R&D team to the UAE and created a long term partnership and the Magnetic Technologies Company with Sheikh Junaid Khoory. During the past 20 years further research and development continued along with expansion into the global market place, with over 50 different applications into various industries and sectors of the environment.

The technology spectrum not only addresses land based solutions but also weather modification and atmospheric influencing technologies, dissipating air pollution over cities, enhancing rainfall in to catchment zones, shielding critical communities from sand storms, protecting transport infrastructure from fog and reducing humidity within cities.

Magnetology is the earth's oldest technology, which it uses to protect itself from the extremes of the sun and for realignment of the waters molecular structure and much more; it is the life force of everything living. The scientists within Magnetic Technologies carry forward the understanding that magnetism is a natural resource, that upon being understood and applied correctly can create enormous benefits and contributions to many of the earth's environmental, water and food resource and health challenges.



Further Enquiries:

Science Reference Documents and IP source may be obtained from:

Web: www.magneticeast.com

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Magnetic Technologies LLC Dubai, U.A.E. Water Treatment
Dubai Creek Golf Club Par 3 Course Lake 2016 Recovery



Stationary Lake - 1500m3 TSE Water - 8 days recovery



Dubai Desert
Bore Well Water Conservation Lakes now remain transparent when magnetised recovered from turbid algae infestation



December 2016
Golf Club skimming algae and cut back trees

January 12th 2017
MFT start to refurbish lake and its surroundings
Complete 25th Jan
Lake is totally transparent water

NB: On 26th Golf Club added turquoise dye