AQUA ANALYTIC

AIR&WATER EMIRATES

Technical proposal for water treatment in swimming pools

Technical Proposal

1. Replacement of sand filters with Defender Evoqua (USA) regenerative filter

The Defender regenerative filter is the basis of the pool water treatment system. Thanks to innovative solutions, Defender significantly saves costs in construction, installation and operation.

REGENERATIVE FILTRATION

Sand and regenerative filters work on the principle of mechanical filtration. Sand filters trap particles in the water throughout the entire depth of their layer. If the sand filter becomes contaminated, it is cleaned by backwashing, a process that results in a significant amount of water (treated, heated, chlorinated) being discharged into the sewer system.

Regenerative filters (RMF) trap particles on the surface of flexible tubes coated with perlite material. If the perlite becomes contaminated, RMF technology automatically regenerates the filter using a “bumping,” a process that uses no water. A small amount of water, equal to the volume of the filter, is lost only when the filter media (perlite) is replaced once a month.

ADVANTAGES OF RMF TECHNOLOGY

- Excellent water purity with 1 micron filtration
- 90% water saving
- 75% space saving
- 50% energy saving
- 30% chemical savings

Technical Proposal

2. Use of Herborner (Germany) pumping equipment

Herborner pool circulation pump with anti-corrosion coating, maximum efficiency and integrated pre-filter. The new generation of pumps offers maximum energy and cost savings at any operating point at which they can be used. This is made possible by combining the pump with an IE5 permanent magnet motor and a specially adapted frequency converter. Herborner pumps, which have a completely smooth internal coating, guarantee maximum protection against wear, corrosion and scale formation.

ADVANTAGES

- Compact design
- Available in stainless steel
- Particularly high efficiency
- Integrated pre-filter
- Rust protection
- Variable nozzle positions
- Seal Guard system can be installed
- Double mechanical sealing possible

Technical Proposal

3. Use of ULTRAAQUA UV system (Denmark)

MULTIRAY is based on years of research and development and is optimized for disinfection, chloramine reduction and Crypto/Giardia (Cryptosporidium/Lamblia) safety in swimming pools. The result is much lower combined chlorine levels, better ambient air quality and simply cleaner and safer water.

ADVANTAGES

- UV lamps scientifically optimized for swimming pools - control of chloramine, cryptosporidium and giardia
- Energy saving thanks to electronic ballast capable of adjusting lamp brightness according to sensor value, combined chlorine level or timer
- Reactor/flange size suitable for swimming pool applications to minimize head loss.
- High quality electropolished AISI 316L stainless steel construction
- Up to 30% energy savings due to internal reflection
- Double overheating protection, full control with ULTRATOUCH customizable control cabinets. Arbitration protocol for disinfection
- Measurement sensor directly in the water with valve for maintenance during operation
- Optional automated ULTRAWIPER quartz sleeve and sensor window wiping system

Technical Proposal

4. Use of a chlorination system and Wallace & Tiernan Evoqua (Germany) analyzer-dosing system

The combined use of a sodium hypochlorite generator and controller analyzer allows you to control pool disinfection directly from your computer or smartphone/tablet. All that is needed is salt, water and electricity. OSEC generators safely produce sodium hypochlorite right in the pool tech room, and the Rivo/Depolox controller will automatically measure the chlorine level in the water and automatically add the safe required amount of hypochlorite.

ADVANTAGES

- Real-time dosing control
- Remote monitoring and proactive alerts for multi-site control
- Intuitive, high-resolution touchscreen display
- Data logging stored in device memory
- CE UK CE, RCM, CSA certified
- Integration into any water treatment system
- Easy setup and data management for complete water quality control
- Optimize chemical usage
- Regulatory compliance to meet disinfection regulations
- Minimal maintenance requirements
- Proven safety measures for reliable and safe operation. Maintain disinfection protocols.

Technical Proposal

5. Conclusion

Safety in water amusement rides is a calling card for customers. This applies to pool water as well. Using Evoqua's comprehensive pool water treatment system brings world-class filtration and disinfection, significantly reduces operating costs and ensures consistently high water quality. Full automation and control of all processes, maintaining absolute accuracy of applied settings, maintaining arbitration protocols of disinfection and filtration will ensure the safety of guests and staff of public water engineering facilities.