



## Septech Captox Sewage Treatment Package Plant

## SHL Global Investments

SHL Global Investments is a leading investor operating in the global growth markets across Asia, Africa, Latin America and the Middle East. Since inception, it completed the acquisition of industry recognised brands including Septech, New Water Corporation and a number of specialised engineering, manufacturing and technology companies across the G.C.C., thereby creating the deepest bench of engineering experience across global growth markets. Employing over 400 people, the Group has 10 country offices and 7 manufacturing facilities spread across 3 regional hubs in Australia, Spain and the United Arab Emirates.

Local presence across these markets provides the group with unmatched expertise, know-how, proprietary transactional access and the ability to grow partner businesses across borders. SHL Global Investments shareholders and management currently manage sector and in-country value (ICV) specific investments for these subsidiary group companies, encompassing full-service Asset Management, Investment Banking, Private Equity and Finance.

Investments managed by the group have holdings in sectors including manufacturing, water infrastructure, engineering and oil and gas. The group's current portfolio of shareholders include industry leaders and private long-standing investors.

The group has set the standard for infrastructure related investments through its investment into a regionally built infrastructure wastewater business which started in 1997 and has 18 years of proven track records for delivering projects on time and budget, the highest corporate governance and transparency and a wealth of capabilities to take on projects of almost any calibre from an engineering or financial standpoint. Expanding on this investment, SHL Global Investments further invested into New Water Corporation (NWC) and its world class recognised team to cement its position as one of the most advanced integrated water and wastewater engineering companies globally which currently holds some of the most advanced Intellectual Property available in the market. Through this investment, the formation of New Water Corporation was integrated into the portfolio of SHL and a globally recognised team has emerged today capable of handling a wider range of the world's challenges in the water industry globally.

SHL Global Investments is committed to the highest environmental, stakeholder engagement and corporate governance standards. The group's subsidiaries have leading industry recognised certifications and registrations which are all fully compliant to the highest standards available in the industry. The group has supported best in class organizations focused on entrepreneurship and job creation, community engagement and impact on the economic landscape of the markets in which it operates.

## Septech Capitox Sewage Treatment Package

The Capitox range of compact, packaged sewage treatment plants for small communities is designed to extended aeration parameters. This well proven activated sludge principle of sewage treatment is accepted as one of the most reliable methods of requiring a minimum of attention or maintenance and is ideally suitable for small villages, hotel developments, housing estates, universities and any other location that is separated from local municipal sewerage facilities.

A consistent high quality effluent is produced for discharge to rivers or for use in irrigation systems without further treatment. As with all treatment systems, a certain amount of sludge is produced which must be removed periodically. However, an important benefit of the Capitox system that is sludge is retained in the system and no separate sludge storage units, with attendant problems of septicity, are necessary.

## Treatment Process

The activated sludge process is based on the fact that organic pollution contained within an effluent can be utilised in conjunction with atmospheric oxygen as a source of food by particular groups of microorganisms. This process normally takes place when polluted water are discharged to clean rivers or streams, but in this case, the number of microorganisms present is relatively low and the process takes place at a relatively slow rate.

In activated sludge systems, the microorganisms concentration is kept high and the rate of reaction is therefore very fast. This high concentration is achieved by separating the microorganisms or activated sludge from the effluent in a settling tank, and recirculating to the reaction or aeration tank where it will effect further biological oxidation of freshly introduced effluent. The polluting substances in the effluent are utilised by the microorganisms for two purposes. Firstly, for the production of energy to enable them to move and secondly, for the production of new cell matter, i.e. the growth of the organism.



Sharjah Municipality Capitox STP, Sharjah, UAE

## Construction

Capitox plants are supplied with steel tanks as a standard but concrete tanks may be used if so desired. The standard steel tanks are manufactured in prefabricated sections and protected with a vitreous enamel coating. The tank sections forming the tanks are grouted into a simple concrete base slab. A tripod support is provided for the surface aerator and drive assembly and a common steel access bridge provides access to the center of the aeration and settling tanks. The aeration equipment includes a medium speed surface aerator and an adjustable weir for mixed liquor off-take to the settling tank(s). Circular settling tanks are provided with a mechanical scraping mechanism fitted rubber edged 'echeleon' type scraper blades. The settled sludge in the center well of the settling tank is returned to the aeration tank by dry mounted return activated sludge pumps arranged in duty/standby configuration. Waste sludge is drawn from the system via a valve on the discharge pipework of the return activated sludge pumps.

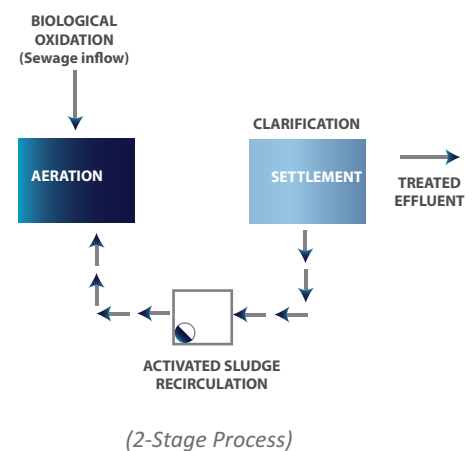
In situations where gravity feed is not available, the raw sewage flow to the system may be collected in a lump and fed to the aeration tank by submersible electric macerator type pumps. On larger Capitox units, a separate macerator unit is provided. Level probes or switches normally control the level in the sump, and the provision of a standby pump unit is generally advisable.

Where the discharge consent criteria necessitates tertiary treatment stages, chlorination and/or filtration add-on packages can be provided. Chlorination can be either a liquid drip type feed or a gas type and can be supplied with a contact tank as preferred. Filtration units, to provide an effluent quality of better than 10mg/l BOD and 10mg/l SS, are of the continuous sand filter type complete with feed pumps and compressor units. The washwater from the filters is returned to the head of the plant for re-treatment.

**The utilisation of polluting substance for the production of energy is accompanied by the production of carbon dioxide and water, the former being lost from the system as a harmless gas. The use of polluting substances for the synthesis of new cells results in an accumulation of an excessive number of cells and hence gives rise to the production of surplus activated sludge. This must be taken from the system at regular intervals once the required concentration of activated sludge has accumulated.**

## Key Features and Benefits

<b>MODULAR CONSTRUCTION</b>	Easy assembly - low cost erection. Flexibility of design for future expansion
<b>TWO STAGE PROCESS</b>	No primary setting tanks or sludge
<b>INLET SCREENS NOT REQUIRED</b>	No hand raking of screens or disposal of screenings
<b>SIMPLICITY OF CONTROL</b>	Easy operation
<b>MINIMAL MAINTENANCE</b>	Requires only occasional attention
<b>QUIET RUNNING</b>	Location adjacent of residential areas is practical
<b>EXTENDED AERATION PROCESS</b>	Copes with daily and seasonal variations in flow/ capacity loading and varying peak flows. Maintains effluent quality.
<b>PROCESS EMPLOYS LIQUID BORNE ORGANISM</b>	Absence of unpleasant odours and fly breeding conditions
<b>SLUDGE IS RETAINED IN SYSTEM</b>	Separate sludge storage not needed until disposal
<b>ADD-ON PACKS AVAILABLE</b>	Superior quality effluent standards to 10mg/l BOD, 10mg/l SS or even better



## Why Septech?

- A world-class diverse management team, consisting of water infrastructure specialists with local and global expertise
- A mature and solid financial base
- A prestigious shareholder profile
- A symbiotic business unit structure, allowing the tailoring of complete project solutions: from design through to execution and maintenance
- Exclusive regional manufacturing and license agreements with global leaders
- A regional home base with presence in neighbouring Middle Eastern countries
- Specialised design-build-operate management capabilities
- Purpose built manufacturing facilities throughout the UAE
- Dedication to adhering to the most stringent global standards for manufacturing and environmental awareness
- ISO 9001:2008 Accreditation
- Compliance with IFRS Accounting Standards

## SEPTTECH WASTEWATER SIGNATURE PROJECTS



### Sharjah Municipality, Kalba

**Project Name:** Sharjah Municipality Capitox extended aeration sewage treatment plant  
**Client/Operator:** Sharjah Municipality  
**Location:** Kalba, Sharjah, UAE  
**Project Size:** STP processing 1,100m<sup>3</sup>/day  
**Services Provided:** Design and installation of Extended Aeration Treatment Plant  
**Products Provided:** Capitox Extended Aeration Sewage Treatment Plant



### Yas Island, Abu Dhabi

**Project Name:** Yas Island Worker Camp Sewerage Treat Plant (STP)  
**Client/Operator:** Aldar  
**Location:** Yas Island Worker Camp Sewerage Treat Plant (STP), Abu Dhabi, UAE  
**Project Size:** STP processing 3,000m<sup>3</sup>/day  
**Services Provided:** Concept, design and installation of STP for Yas Island construction worker camp  
**Products Provided:** STP with Moving Bed Biological Reactor (MBBR) producing water suitable for irrigation purposes



### Al Reef Villas, Abu Dhabi

**Project Name:** Al Reef Villas  
**Client/Operator:** Manazel Real Estate  
**Location:** Al Reef Villas, Abu Dhabi, UAE  
**Project Size:** STP processing 1,000m<sup>3</sup>/day  
**Services Provided:** Concept, design and installation of STP for Al Reef Villas (1100 villa complex)  
**Products Provided:** STP with Moving Bed Biological Reactor (MBBR) producing water for irrigation purposes



### Sir Bani Yas, Abu Dhabi

**Project Name:** Sir Bani Yas Hotel Development (3 STP Plants)  
**Client/Operator:** Hilalco  
**Location:** Sir Bani Yas Hotel, Abu Dhabi, UAE  
**Project Size:** STP processing 120m<sup>3</sup>/day, 20m<sup>3</sup>/day and 15m<sup>3</sup>/day  
**Services Provided:** Supply, installation & commissioning of UTB STP plants  
**Products Provided:** Underground Trickling Biofilter and pumping stations



### Wadi Al Helo, Sharjah

**Project Name:** 30 Nos. and 50 Nos. Villas Compound at Wadi Al Helo  
**Client/Operator:** Sharjah Municipality  
**Location:** Wadi Al Helo, Sharjah, UAE  
**Project Size:** STP processing 70m<sup>3</sup>/day  
**Services Provided:** Supply and installation of Sewage Treatment Plant  
**Products Provided:** Underground Trickling Biofilter (UTB)



### Al Maha Desert Resort, Dubai

**Project Name:** Al Maha Desert Resort (3 STP Plants)  
**Client/Operator:** Al Maha Desert Resort  
**Location:** Dubai, UAE  
**Project Size:** STP processing 80m<sup>3</sup>/day, 25m<sup>3</sup>/day and 15m<sup>3</sup>/day  
**Services Provided:** Supply and installation of Sewage Treatment Plant  
**Products Provided:** Underground Trickling Biofilter (UTB)



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