

HYBACS®



A BLUEWATER BIO TECHNOLOGY

Upgrading of Secondary Treatment Using HYBACS at Tubli WPCC

Project Description

The existing activated sludge plant at Tubli Water Pollution Control Centre (WPCC) was designed to treat a daily flow rate of 200,000m³/d. However, due to the continuing rapid growth of Bahrain, the flow rate into the works was in excess of 300,000m³/d and this is only expected to increase in the future.

The Ministry of Works requested Bluewater Bio to provide a solution that, in the first instance, alleviated the overloading problems and met the stringent TN standards required of TSE production, all within the confines of existing site boundary.

The **HYBACS®** upgrade comprises the conversion of 2 of the 10 aeration lanes and 4 of the 12 clarifiers into a **HYBACS®** plant, by installing 42 **SMART™** units upstream of the aeration lanes. The upgraded **HYBACS®** plant now treats 100,000m³/d meaning that the two aeration lanes, originally designed for 40,000 m³/d, have a 150% uplift in capacity.

Scope of Works

Design, procurement, construction, installation, testing, commissioning, operation and maintenance of: a new grit removal plant, new feed pump station, **SMART™** plant, conversion of aeration lanes from surface aerators to FBDA, new blower building, new sludge pump station, conversion of existing clarifiers into **HYBACS®** plant, 2 x new substations, associated SCADA control system, HV power distribution system. Following successful completion Bluewater Bio were appointed to operate and maintain the HYBACS plant at Tubli.

Project Duration

24 months, completed October 2013

Client Contact

Client organisation: **Bahrain Ministry of Works**

Contact person: **Musab Al-Sayed** (Project Manager)

Contact Info: +973 (0)3994 3882

musabskq@works.gov.bh

Performance Test Results

Parameter	Guaranteed	Expected	Actual
Flow (ML/d)	100	100	101
COD (mg/l)	-	60	27
SS (mg/l)	20	15	9.5
Ammonia (mg/l)	35	3	0.58
Total nitrogen (mg/l)	-	15	9.0
SSVI (ml/g)	-	80	46
Power usage (MWh/d)	29.7	25	21



Project Name:	Tubli WPCC (Phase 1)
Client:	MoW - Bahrain
Capacity:	100 MLD / 500,000 P/E
Project Driver:	Overloaded plant and environmental concerns
Main Contractor:	BluewaterBio Zero Waste
Contract Conditions:	MoW standard contract (based on FIDIC)
Project Scope:	D&B Contract

Project Highlights

- No lost time accidents in c.1 million man hours worked
- 2.5 fold increase in treatment capacity
- Full treatment maintained throughout
- Surpassed performance criteria (see table)
- Substantial power savings (30%)
- Greatly enhanced sludge settlement

BLUEWATER BIO



Winchester House, 259-269 Old Marylebone Road, London, NW1 5RA.

UK: +44 (0)845 519 5800
Int: +44 (0)20 7908 9500

@ enquiries@bluewaterbio.com

www.bluewaterbio.com