

South Wraxall Wastewater Treatment Works



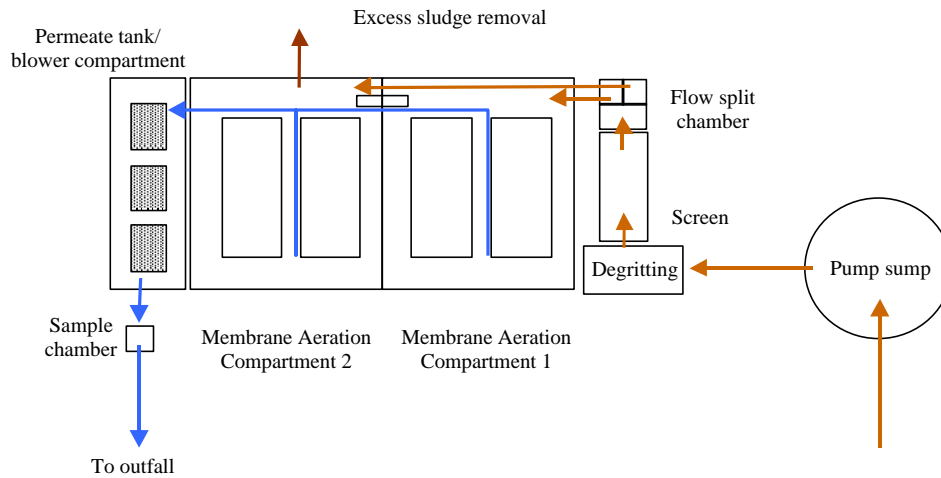
- **South Wraxall is a rural village in the south of England**
- **Plant has a small footprint and a proportion is installed underground**
- **Environmentally sensitive location**
- **Effluent produced is of a very high quality with no adverse impact on the sensitive receiving stream**
- **Modular nature of the plant means the treatment capacity can be reviewed over time, in line with the number of properties connected**

Current Status:	Commissioned March 2001
Client:	Wessex Water Services Limited
Population served:	300
Consent:	20:30:10 BOD:SS:Ammonia
Performance:	5:5:5 BOD:SS:Ammonia
Brief Description:	Design, supply, installation and commissioning of mechanical and electrical equipment for package

Project need

To comply with applications made by West Wiltshire District Council to the client for provisions of rural sewerage under Section 98 of the Water Industry Act 1991.

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Process Description

The membrane bioreactor plant receives raw effluent, into degritting sump, from an inlet pumping station.

Two pipes from the individual pumps located within the pumping station deliver raw effluent to the degritting sump.

The raw effluent gravitates from the degritting sump passing through a 3mm perforated screen to a splitter box, which equalises the flow into the two bioreactor tanks.

Submerged membrane filtration process within the activated sludge in the membrane tanks carries out the compact secondary treatment. The aeration provided serves to oxidise BOD and ammonia and also produces a cross-flow effect across the membrane surfaces to minimise membrane fouling.

The permeate passes through the membranes via a collecting manifold to a permeate wash water tank.

The final effluent leaves the permeate tank into local ditch via a sampling chamber which houses the flow measuring device.

Surplus sludge is periodically removed from the bioreactor tanks by a tanker which takes away a measured volume of mixed liquor.

Over-flows are provided on the screening unit and within each of the bioreactor tanks, the overflows combing and returning to the pumping station.

Design Data

Design horizon	2018
Population Equivalent	300
Flow to full treatment	250m ³ /d

Plant Data

No. of membrane units	4 x 100 panel
Membrane Surface Area	160m ² (320m ²)

