Fobney

United Kingdom

Water Treatment

THE CLIENT

Thames Water Utilities is the largest water and wastewater company in the UK. It owns and operates 448 treatment plants located in the south-East of England, covering the area of London and its suburb.

THE WORKS

Fobney is located near Reading in Berkshire and supplies over 300,000 people in the greater South-West London area.

PILOT TRIALS

In order to provide confidence to the potential Client, Veolia Water Solutions & Technologies installed and operated a total of 16 weeks of pilot plant trials in 2004 and 2005 at the sites of Fobney and Hornsey WTW, treating up to 100 m^3/hr. The pilot plant provided data for Actiflo® performance and subsequent sand filtration. Based on these results Thames Water recognised the ability of Actiflo to cope effectively with the flashy water characteristics of the river Kennet.

PROJECT OVERVIEW

Veolia Water Solutions & Technologies provided the process design, construction, installation, testing and commissioning of 2 Actiflo® High Rate Clarifiers. The project included the sand storage, transfer and recovery system, polymer make up and dosing system, coagulation and pH correction system, MCC and software for the process.

The purpose of the project is to increase the treatment capacity of the works while reducing the turbidity loading on the primary filtration stream.

THE ACTIFLO® PROCESS

Actiflo® is a very compact process that utilises microsand as a seed for floc formation. The microsand provides surface area that enhances flocculation and also acts as a ballast or weight.
The resulting microsand ballasted floc display unique settling characteristics, which allow for clarifier designs with high overflow rates and short retention times. These designs result in system footprints that are between 5 times smaller than classic lamella clarifier or dissolved air flotation and up to 20 times smaller than conventional clarification systems of similar capacity, with an ability to start up from a “standby” mode of operation to a steady state operating mode within minutes.

VEOLIA WATER
Solutions & Technologies

CONSTRUCTION

Thames Water Utilities awarded the construction contract to Gleeson. The Actiflo® clarification was awarded to Veolia Water Solutions & Technologies as part of an upgrade of the solids removal facility at Fobney WTW.

All two Actiflo® streams are nominally in operation at the same time but one can handle the peak flow to treatment of 57.75 Ml/d.

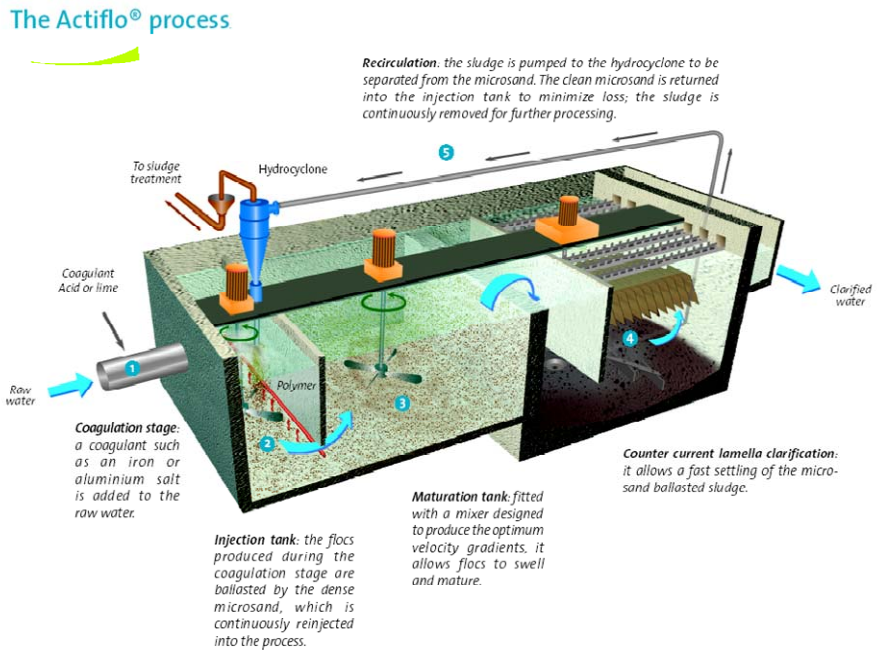
Programme: 74 weeks
Completion: Sept. 2007

FLOW DATA

Minimum flow:
28,800 m^3/d
Average flow:
56,500 m^3/d
Maximum flow:
77,000 m^3/d

ACTIFLO® CLARIFIER CHARACTERISTICS

Number stream	2
Lamella surface area per stream	51 m^2
Max rise rate	48 m/h



DESCRIPTION OF ACTIFLO® PROCESS PLANT

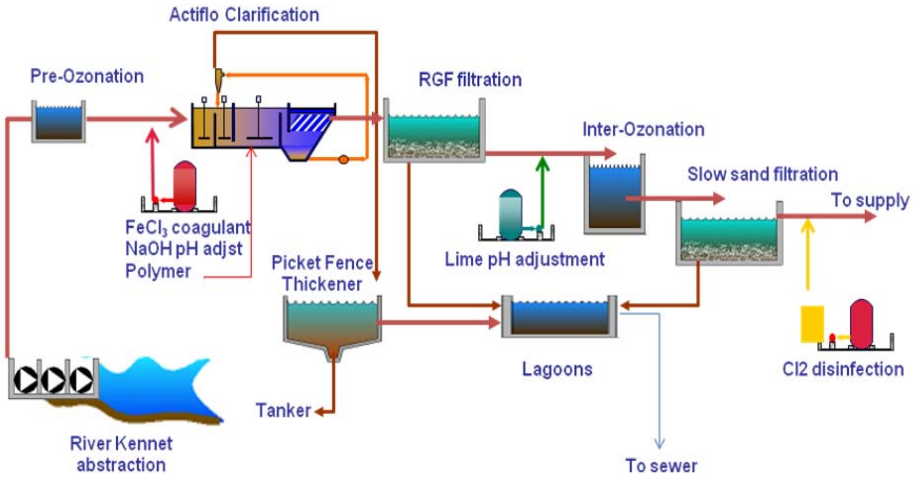
Influent Criteria (from river Kenett) :

	Min	Av	Max	
Turbidity	1	10	150	NTU
T.Colour	1	8	45	mg/l Pt/Co

Treated Effluent Consents : (95%ile spot samples)

Turbidity < 2 NTU

FOBNEY WATER TREATMENT WORKS PROCESS FLOW DIAGRAM



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