

SAC Scientific Ltd

November 1990

Performance Validation of Water Treatment units

Model: FW1000 system

Procedure

The local Bedford mains water, a river derived hard water supply, was fortified continuously with an aqueous methanolic mixture. containing known levels of a range of contaminants. These contaminants were chosen because they are of direct concern as potential contaminants and are routinely monitored in mains drinking water.

By way of pre-treatment, the mains water was pass through a bed of activated carbon (15kg) and then through a bank of ceramic filter elements. The concentrated mixture was added, using a high performance liquid chromatography pump with electronic does control. After this stage, the mixture was passed into a 2 litres stainless steel mixing chamber and from there pass through the filter under test.

The line was fitted with a flow meter and flow adjustment valve.

Two filters were tested in parallel so that each filter was fed from the influent stream. The flow to both filter was interrupted every five minutes and then recommenced five minutes later. The cycle of five minutes running and five minutes resting was maintained throughout the experiment for the volumes shown on the result sheets hereto attached.

Samples were taken of the influent stream and the filtrate or effluent stream and the results are given in results section. these data apply to the performance of the water treatment units once they had been tested for the full extent of their stated volumetric capacity.

Analyst responsible: Mr David Meek.

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PERFORMANCE OF THE FW1000

DATE: 12th November 1990

FLOW REGIME: 5 mins flow at 1.5/2 litres/min
5 mins resting

Determinand {microgrammes/litre}	Influent	Filtrate after 30001	Efficiency of Removal
<u>METALS</u>			
Lead	74	2	97%
Silver release	-	<10	-
<u>POLYNUCLEAR AROMATIC HYDROCARBONS</u>			
Fluoranthene	0.052	0.004	92%
Benzo[b]fluoranthene	0.009	<0.001	>90%
Benzo[k]fluoranthene	0.009	<0.001	>90%
Benzo[a]pyrene	0.009	<0.001	>90%
Indeno[123cd]pyrene	0.009	<0.001	>90%
Benzo[ghi]perylene	0.009	<0.001	>90%
<u>PESTICIDES</u>			
Simazine	0.34	0.01	97%
Atrazine	0.27	<0.01	>97%
Lindane	0.21	0.001	>99%
Dieldrin	0.15	0.01	93%
Malathion	0.22	0.003	98%
<u>TRIHALOMETHANES AND CHLORINTED HYDROCARBON SOLVENTS</u>			
Chloroform	48	5	90%
Bromodichloromethane	24	1.1	95%
Chlorodibromoethane	36	<0.2	>99%
Bromoform	60	1.0	98%
Carbon Tetrachloride	6	0.4	90%
Trichloroethylene	24	<0.5	>97%
Tetrachloroethylene	6.5	<0.2	96%
<u>PHENOLS</u>			
Phenol	1.6	<0.5	>97%
2,4,6 - Trichlorophenol	1.1	0.03	97%