

WATER TREATMENT WORKS

St Helier, Trinity & St Lawrence



All of the water supplied by the company is treated at one of its two water treatment works located at Handois and Augrès. Both sites are situated at approximately the same height above sea level so as to facilitate the movement of water into the distribution system.

The treatment works at Handois are supplied with blended water from Handois Reservoir and pumped raw water from any of the company's other impounding reservoirs Reservoir. Augrès Treatment Works are supplied directly with blended water from the raw water transfer main via Beechfield Raw Water Storage Tank which acts as a header tank for the works.

Both treatment works use the same two-stage method of water treatment comprising chemically assisted clarification and sedimentation and rapid gravity filtration followed by disinfection using UV (ultra violet) treatment and chloramination.

UV treatment was installed at Handois in 2013 and at Augrès in 2014.

Each treatment works is individually capable of supplying at least the average daily demand and both are capable of supplying all areas within the treated water network.

The treatment works operators use telemetry systems to select the best quality raw water for treatment. This reduces the amount of treatment required and ensures that the water produced is of a consistently high standard.

Output from the treatment works can vary dramatically throughout the time of day and time of year. Treated water flow readings and service reservoir levels are monitored remotely at the treatment works and water flows are adjusted to meet the various demand profiles.

The treatment works are equipped with on-line monitoring equipment which measures the quality of the water at all stages of treatment. In addition, samples are regularly taken by the Company's laboratory staff for analysis to ensure water quality is maintained at a high level and also to ensure regulatory compliance.

TECHNICAL FACTS

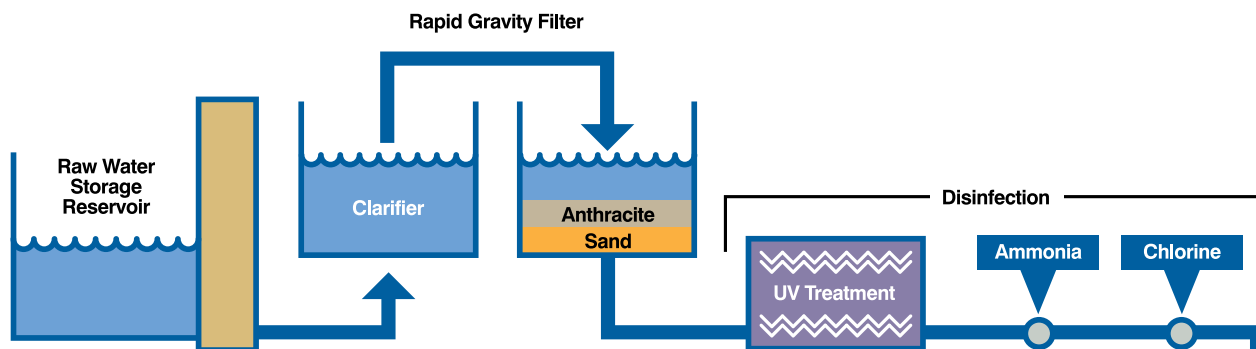
	Year constructed	Location	Maximum daily capacity (mega litres per day)	Water feeds into
Augres WTW	1964	Trinity	20	Treated water service reservoirs
Handois WTW	1931	St Lawrence	28	Treated water service reservoirs

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THE TREATMENT PROCESS OVERVIEW



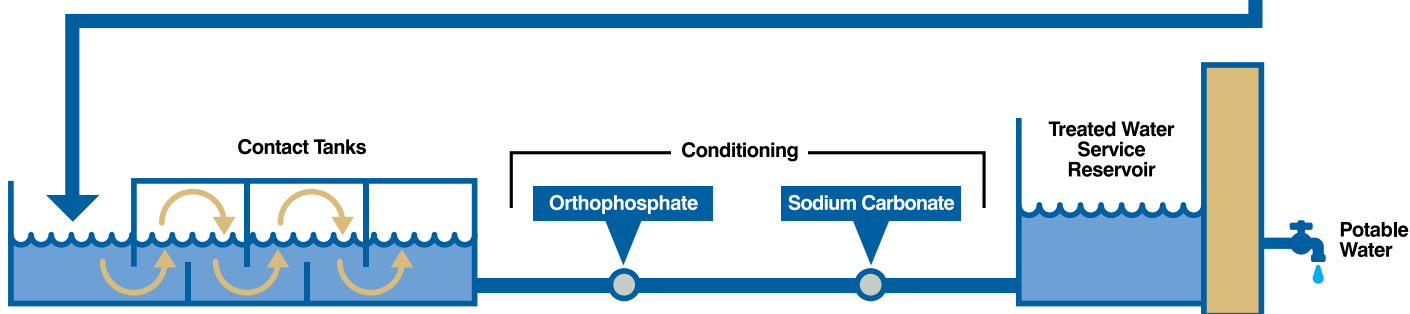
Untreated water is selected so as to obtain the best quality of water available.

Aluminium Sulphate and Polyelectrolyte are added to the untreated water. This is an upward flow process. These chemicals form a "flocculation" blanket in the clarifier. The blanket strips out particulate matter and suspended solids from the water as it travels up through it. This stage of the process removes around 80% of suspended solids.

Water passes from the clarifiers into the Rapid Gravity Filters. These use a layer of Sand and Anthracite to filter out those particles that were not removed in the Clarifiers (in a downward flow process). Once the water has passed through the filters it will not contain any particles bigger than around 20 microns - by comparison a human hair is around 70 microns thick.

UV treatment occurs prior to chemical treatment. UV is used to kill viral contaminants such as cryptosporidium used in conjunction with chloroammoniation to give more effective kill rate and comply with UK OFWAT best practice

Once filtered, the water will be clean but still needs disinfecting to ensure that any remaining bacteria are removed and to protect the water from bacteria as it travels through the pipe network. At this stage measured doses of Ammonia and Chlorine are added to disinfect the water. Sodium Carbonate is also added to the water to raise the pH, reducing the acidity of the water.



The contact tanks are designed to ensure that the ammonia and chlorine are thoroughly mixed with the water and to give the chemicals sufficient time to remove any remaining bacteria before the water passes into the distribution system.

The Ammonia and Chlorine remain in the water, slowly decreasing with time.