

Sutton Hall, Wirral WTW – major upgrade safe, high quality drinking water for 483,900 customers

Sutton Hall WTW at Great Sutton in the Wirral supplies up to 127 million litres of drinking water per day to a population of 483,900, spread over 15 zones within the Ellesmere Port/Wirral areas. New standards, particularly those requiring specific limits to the level of cryptosporidium in drinking water and the reduction in levels of certain minerals, have required the provision of additional treatment processes to meet requirements of the DWI. Consequently, some of the existing processes at the United Utilities plant are being replaced.



Upgrade work ongoing at Sutton Hall WTW.(courtesy Degremont)

Cryptosporidium

Prime purpose of this work has been to reduce the risk of Cryptosporidium breakthrough and to reduce levels of manganese in the final water. However, it was also considered necessary to improve the concentration/time disinfection in line with DWI recommendations.

In order to achieve these improvements, the works undertaken involved replacement of the existing mixing and clarification processes, addition of new granular first stage activated carbon filters and conversion of the existing filters to second stage manganese filters.

Main consultant for the client was *Montgomery Watson Harza*, with *Galliford Costain JV* as the overall contractor. *Degremont* carried out process design, including the system hydraulics and the development of conceptual design into a working system, in house. *Livingstone Gunn* is undertaking the mechanical sub-contract and *Blackburn Starling* is electrical contractor.

Continuous operation

Chief challenge facing all the companies working on the project is that the existing plant must continue in operation while construction of the new works is underway. No unscheduled interruptions of flow are permitted, therefore critical programming has been an essential element of the contract.

With this as a prime objective, it was decided to construct and commission the new first stage GAC filters off-line. Once the work has been completed the new filters will be brought into service to maintain supplies while the existing filters are refurbished. These will then be commissioned as second stage filters for manganese removal.

As part of the overall upgrading, more of the process operations are being automated and additional control and monitoring systems are being installed to improve efficiency.

Upgrading of Sutton Hall works is being carried out at the same time as work at other sites, which supply the network. Since major

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reductions in flow cannot be allowed, any outages have to be carefully scheduled in conjunction with these other projects. Close cooperation and flexibility on the part of the various contractors is therefore essential.

Once completed, however, the client will have the immediate benefit of a water supply which complies with the new requirements of the Drinking Water Inspectorate. For the foreseeable future United Utilities will be protected against any financial penalties for non-compliance.

For the customers of Sutton Hall, the new plant will provide consistently higher quality of drinking water, with reduced levels of turbidity and manganese, and with the risk of Cryptosporidium infection virtually eliminated. ■

Note: *The Editor and publishers thank Degremont Ltd for supplying the above article for publication.*



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