

ELIQUO | HYDROK

Casestudy

*Raw Water Intake Screens
Huntington*



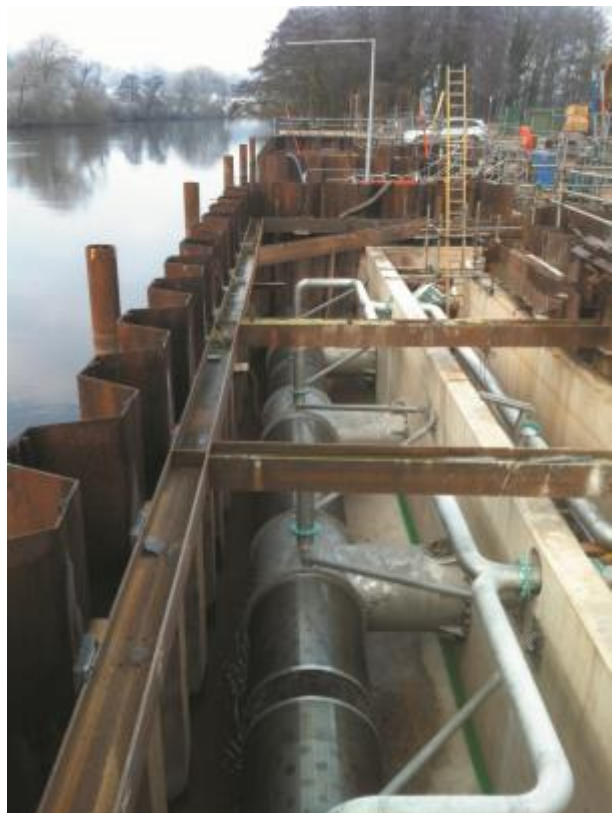
River Dee, Huntington

Client: United Utilities (GCA JV)

Date: May 2016

Eliquo Hydrok, working as a subcontractor to GCA JV (GallifordTry, Costain, Atkins) designed, manufactured, installed and commissioned a new Raw Water Intake Screening (RWIS) system for use by the Client, United Utilities, on the River Dee at Huntington near Chester. The River Dee is environmentally important and is designated as a Special Area of Conservation (SAC) under the European Union's Habitats Directive. The Eliquo Hydrok RWIS installation was required to extract and screen from the river to feed drinking water to the Huntington Water Treatment Works. Installation of fish screens at Huntington Intake has been included in the final National Environmental Programme (NEP). This is supported by the Environment Agency (EA) and must be implemented by 31st March 2015 for compliance with the Habitats Directive.

During a 15-month long entrainment study at Huntington Intake the entrained species comprised of salmon parr, salmon pre-smolts, salmon smolts, sea lamprey ammocoetes, river/brook lamprey ammocoetes, river lamprey transformers, river lamprey adults and a sea lamprey adult. Of these, it was determined within the final report of the River Dee Fish Entrainment Study - APEM 2007, that salmon smolts, pre-smolts and river lamprey adult populations were at greatest risk from losses through entrainment into the Huntington intake. The agreed solution with both the EA and Natural England (NE) is to install Passive Wedge Wire Cylinder screens with 8mm slot apertures.




The scope of this project included the manufacture of 8 RWIS within the Eliquo Hydrok UK factory, each 1.2 metre diameter by 4.0 metres long, utilising 8mm aperture 316 stainless steel wedge wire to protect ingress of aquatic life into the treatment works. The existing system utilised coarse bar intake screens on the riverbank, however, the new regulations requiring a maximum velocity through the screen of 0.15m/sec to comply with the EU Habitats Directive and the Eel Directive for England & Wales meant the new Eliquo Hydrok installation was required.

The Eliquo Hydrok RWIS solution incorporates an inner purging system which, at pre-determined intervals, backwashes the intake screen through an innovative “Progressive Velocity Flow Distributor” (PVFD) that maintains the flow rate within the intake screen from the source whilst ensuring optimum screen performance. This system creates a dual action screen purge with a calculated volume of compressed air to purge the screen creating a 2-stage backwash, firstly with the displaced water within the pipe and secondly by high pressure compressed air blowing through the PVFD and removing any accumulated materials from the face of the screen whilst still protecting the ingress of aquatic life. The designed screening flow rate across the combined 8 Hydrok RWIS is 31,680m³ per hour.

Eliquo Hydrok manufactured and installed the complete system which included the 8 screens plus Duty/Standby 75Kw Hydrovane rotary vane compressors supplying a 9,800 litres air receiver.





Clean water screening for extraction from rivers and
reservoirs for use as drinking water

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