

Case study

CS01

Client: BNG Project Services

Project: Low flow groundwater sampling

Location: Low level waste repository (LLWR) located at Drigg

Date: October 2007

Project Background

The Drigg low level nuclear waste facility has a network of more than 50 groundwater monitoring boreholes for which BNG Project Services wished to update their sampling equipment and protocols. Following a consultation with one of Watterra's groundwater specialists, new objectives for groundwater equipment and sampling programmes were defined with the following key criteria:-

- Low flow sampling to reduce the volume of purged water sent for disposal
- Simple operation and economical to maintain
- Controllable low flow rates to minimise on-site spillage
- Ability to automatically log water quality measurements while purging through an in-line flow through cell.

The Watterra Solution

Watterra recommended the use of Solinst Integra™ bladder pumps as the best method to achieve low flow sampling and high quality groundwater samples. The project included the installation of 25 dedicated Integra pumps to primary monitoring boreholes and a separate portable 25mm diameter system for secondary monitoring locations. Watterra also recommended using a WQMP multiparameter meter, complete with flow-through cell, which allows simultaneous measurement of up to 13 different water quality parameters.

Initial installation, on-site training and dedicated technical support to meet the very high operational standards demanded by the BNG Project Services team were all part of the package provided by Watterra.

The Benefits for BNG Project Services

The total groundwater monitoring solution supplied by Watterra has allowed BNG Project Services to meet all their technical, disposal and safety criteria for groundwater sampling. The new system saves time and has significantly improved quality control for sampling by the introduction of a low flow protocol including monitoring of chemical parameters during purging. This in turn has provided greater confidence that the samples being collected for laboratory analysis are more closely representative of in-situ groundwater quality than had been achieved previously using "three well volume" purging.



"Watterra has provided an ideal solution. We have changed our sampling regime to low flow which significantly reduces both the volume of purge water we have to dispose of as a nuclear licensed site, and the time required to obtain each sample".

Bethan Short
BNG Project Services



Above: Key equipment employed at Drigg. Solinst Integra™ Bladder Pumps and WQMP Multiparameter Water Quality Meter.