BorderpHine inline dosing and mixing equipment for MEL Limited

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Case Study

BorderValley

MEL Environmental Solutions Ltd, a land and groundwater remediation company in Wakefield, required a piece of containerised equipment to replace the existing effluent treatment works at the site of a former dye manufacturing plant in Huddersfield.

As part of a full site remediation project involving specialised bioremediation and groundwater treatment carried out by MEL Environmental Solutions Ltd, the site is to be cleared to allow a new distribution warehouse to be built. As there are issues with possible contamination of rainwater leaving the site and thus affecting the pH and solids content of surface water discharged to drain, a temporary portable treatment system was needed. BorderValley was called in to help.

Yorkshire-based BorderValley Ltd offers a wide range of services, from the treatment of industrial effluents and other environmental contaminants to the design, supply and installation of industrial process heating and cooling systems. BorderValley's BorderpHine system was decided upon, as it treats effluent inline, eliminating the need for buffer tanks and mixers etc. Experienced in the application of Endress+Hauser instrumentation, BorderValley's Steve Blackburn chose to use Liquisys M pH transmitters, FlowFit W inline assemblies and Orbisint pH electrodes to provide accurate and reliable pH control in this critical application.

The entire system is fitted inside a standard 6m container. Endress+Hauser's Promag 53 electromagnetic flowmeter was also installed to control the flow of water to the pH system. Accurate and reliable, Promag 53 is simple to set up via its Touch Control operating concept. This non-intrusive method of flow measurement minimises build-up and blockages to reduce maintenance requirements and unscheduled downtime.

The pH system can handle a flow of up to 50m^3 per hour of surface water from an adjacent lagoon installed by MEL as part of the water treatment system. The water passes through the BorderpHine system, where the incoming pH is measured. If the pH is outside of the discharge consent, then the Liquisys M feeds information to the controller. Acid or alkali is then dosed into the flow in order to meet the consent parameters. Polyelectrolyte can also be dosed into the flow to reduce the final discharge level of settled solids. The final outgoing pH is measured as is the total flow volume and the data stored for remote recovery by GMS telemetry.

Steve Blackburn, Director of BorderValley Ltd commented: "The Endress+Hauser pH instrumentation was reliable, robust and user-friendly. The tried and trusted Promag flowmeter was simple to install and commission and provided the high level of accuracy that the project required."

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