



## High Pressure Dual Contained Dosing Lines Offered a Cost Effective Solution



Our client, Leada Engineering, contacted us to help find a solution when a high pressure, WRAS approved, dual contained dosing line was required for a project they were working on with Yorkshire Water.

### Overview

In developing a disinfection dosing solution at two borehole abstraction sites in Yorkshire, Leada Engineering found that the discharge mains were operating at pressures in excess of 16 bar. Historically, chlorine gas dosing was facilitated using motive water eductors that dosed the chlorine gas into motive under vacuum, the motive water for the eductors was operated at a pressure sufficient to allow the gas to be dosed directly into the main. Dosing sodium hypochlorite into the mains at these pressures posed a number of difficulties / challenges.

Yorkshire Water's nominated standard product dosing system is rated to a maximum pressure of 8 bar. The material selection to dose at pressures in excess of this would have been costly and time consuming due to the material compatibility with chemicals like sodium hypochlorite.

### The Approach

As the client nominated solution was not feasible, the Leada engineers, in conjunction with FT Pipeline Systems, developed a bespoke pressure solution compatible with water softeners. The flow rates required to inject sodium hypochlorite would have been excessive in terms of flow and power; more importantly the increase in throughput of the water softeners (as a result of increased pressure and flow) would have imposed significant operational costs on the client as a result of increased waste brine generation and subsequent removal.

### The Solution

The solution involved taking water from the main (at mains pressure) for use as carrier water. The pressure in the carrier water feed lines to the softeners was reduced. The softened water then feeds



the standard product dosing cabinet where the 14% sodium hypochlorite is dosed into the softened carrier water, at the compatible 4 bar pressure. The diluted solution of sodium hypochlorite is then boosted (in terms of pressure) with flow controlled variable speed high pressure carrier pumps, allowing connection onto the high pressure mains.

As a consequence of the high pressure dosing system, high pressure dual contained, WRAS approved dosing lines were required; these didn't exist in the market. This was where FT Pipeline Systems was able to help. A dual contained hose, suitable for pressures up to 30 bar was developed and then integrated with Leada's own point of application injection points rated to 30 bar.

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