



High Accuracy Waste Oil Level Monitoring Application



 **Cleansing Service Group**
Waste Solution Specialists



Hycontrol keep things on the level for Cleansing Service Group

A multi-point TDR level measuring system supplied by Hycontrol is providing essential inventory information for leading waste management specialists Cleansing Service Group (CSG) at their waste oil facility in Middlesbrough.



Waste oil is constantly being transferred to and from the tanks and therefore it is vitally important

for CSG to have an accurate and reliable level measuring system, together with high level alarms to avoid over-filling. The new Hycontrol system, based on their latest microwave-based Time Domain Reflectometry (TDR) technology, is monitoring seven tanks ranging in capacity from 50,000 litres up to 120,000 litres and has replaced the existing pressure transmitters, which had become unstable and unreliable. The new Reflex VF03 TDR sensors provide individual tank level readings within an accuracy of ± 5 mm and these levels are continuously shown on a large custom-built display panel, mounted adjacent to the fill points.



Hycontrol's Reflex VF Series range of TDR products is ideal for this application and can be used for the measurement of liquids, powders and granules. The technology, originally used to detect breaks in subsea cables, uses pulses of low power microwaves sent along the conducting probes. At the point where the waves meet the air-product interface, they are reflected by the product back along the probe.

The measured time between emission and reception back at the sensor head is proportional to the distance. This information is then converted to the level in the tank.

The measuring principle is unaffected by pressure, temperature, viscosity, vacuum, foam, dust, product build-up or changes in dielectric constant. The probes, which are durable and highly reliable, allow a very narrow measuring profile up to a maximum range of 24 metres. This is particularly useful for measurements in tanks which have internal structural supports.

Any spillages caused by tank overfilling can be very expensive and potentially cause major environmental problems. Although the TDR system is set up to provide an early warning high level alarm (HLA), there is also an independent high level alarm system based on Hycontrol's TF series of tuning fork sensors mounted at the top of each tank. Both sets of sensors are



connected to a designated Hycontrol alarm panel, activating visual and audible alarm should levels in any tank rise above a pre-determined level. This duality provides a 'belt and braces' approach should anything affect the reading from the TDR system. The

robust TF sensors are very easy to install and are available in a range of flanges and fittings. For this application the wetted parts are from 316 stainless steel, but special versions are available for corrosive environments.

Cleansing Service Group's Site Manager Craig Dufferwiel is very pleased with the installation: "The aging pressure sensors had become unstable and were giving very unreliable results. The Hycontrol system has been installed with minimum disruption to our operation and we now have full confidence in the level measurement results. The overfill alarm system gives us added peace of mind. To meet increased demand for our services we are currently looking to expand the Middlesbrough facility by adding up to ten further tanks. We expect these will also be fitted with Hycontrol instrumentation."

Cleansing Service Group is a leading and award winning force within the waste management sector. As waste solution specialists, CSG offers a complete variety of services ranging from collection to the final disposal of countless waste streams.

The Group services customers from a wide range of sectors throughout the UK including the Ministry of Defence, the Vehicle and Operator Services Agency (VOSA), major local authorities, utility companies, leading supermarket groups and multi-national forecourt chains.

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