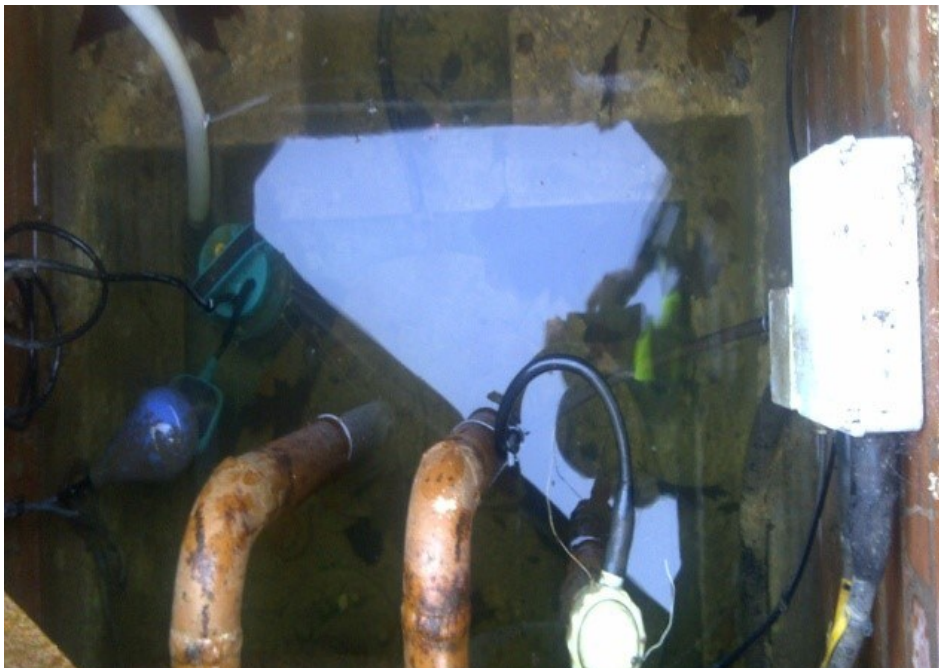


When Power is Critical



FACILITIES MANAGEMENT



LOCATION

Chester, UK

BUSINESS SECTOR

Data Centre

EQUIPMENT

Underground storage tank

“ Water can easily get into stored diesel without anyone noticing. When you come to use your generator it coughs, splutters and stops running as it did here. The data centre in this case also had environmental risks to consider. Thankfully we got there in time as the costs associated with a fuel spillage can be enormous. ”

Ian Grant

Fuel Conditioning Technical Support Manager, IPU Group

CHALLENGES FACED

1. A high water table and heavy rainfall meant the tank manhole was full of water (as you can see above).
2. An overwhelmed sump pump and a sheared dip cap allowed water to enter the tank.
3. High levels of groundwater were detected which posed a serious environmental risk.

SOLUTIONS DELIVERED

1. IPU's ClearTank service removed 9,000 litres of water and a recovered 13,000 litres of diesel fuel.
2. IPU's Fuel Engineers repaired the dip cap and pressure-tested the tank to ensure it was secure.
3. IPU tested nearby groundwater sites to ensure the environmental risk was averted.
4. IPU Diesel Defence fuel polishing units now ensure the fuel stays within EN590 and ISO 4406 standards.



A sample of fuel before (left) and after (right) IPU's ClearTank service.

BACKGROUND

IPU were called to a critical data centre near Chester after a critical power failure. During a power cut its generators stopped running after just 4 minutes. After investigation the client discovered water in their fuel tanks.

WATER IS THE ENEMY OF CLEAN FUEL

Water is a contaminant in its own right and it promotes microbial growth. It also accelerates the damage caused to tank surfaces which leads to solids (such as rust) falling into the fuel.

In this case, a high water table and heavy rainfall meant the fuel tank manhole was full of water. This overwhelmed the sump pump and allowed water to enter the tank via a sheared dip cap.



ENVIRONMENTAL DANGERS

During testing, high levels of groundwater were identified in the tank. Diesel fuel was also visible in the flooded manhole. This meant the facility posed a serious environmental risk.

If fuel is allowed to enter the groundwater system it is classed as a criminal offence and can result in an unlimited fine if it goes to the UK Crown Court. The Data Centre knew it had to act immediately.

CLEANING THE FUEL AND SECURING THE TANK

IPU's Fuel Team removed 9,000 litres of water and restored 13,000 litres of diesel to EN 590 and ISO 4406 clean fuel standards.

IPU also repaired the dip cap, sealed the tank and carried out a pressure test to ensure it was secure.

As a final test, the team took groundwater samples at various points around the site. This included the manhole, adjacent water drains, the interceptor tank, the separator tanks and natural water points near the site.

9,000 litres

of water removed from the fuel storage tank

200ppm

is the maximum amount of water permitted by EN 590. This equates to just 0.02% of the fuel.

www.ipu.co.uk/fuel

IPU DIESELCHECK FUEL TESTING

Using globally recognised methods and standards, IPU's [DieselCheck](#) Diesel Testing Service provides accurate, reliable fuel quality reports. We test for the three main forms of fuel contamination: water, solid particulates and microbial growth.

IPU CLEARTANK TANK CLEANING SERVICE

IPU's [ClearTank](#) service cleans both the fuel and the tanks simultaneously. It ensures that:

- water is removed to a maximum level of 200ppm (parts per million) as specified in EN590
- solid particulates are removed
- microbial growth ("diesel bug") is removed
- any sludge that may have settled at the bottom of the tank is broken down and filtered out
- biofilms are removed from tank surfaces
- fuel meets international cleanliness standards such as 18/16/13 (ISO 4406) and EN590 (Directive 2009/30/EC)

IPU DIESEL DEFENCE FUEL POLISHING

Once fuel is cleaned, IPU's [Diesel Defence](#) fuel polishing systems keep it clean. The polishers circulate the diesel to prevent pockets of dirty fuel or water collecting in stagnant parts of the tank. Diesel Defence circulates stored fuel up to seven times before it passes to the day tank or back up gensets.

The Data Centre near Chester chose to install IPU's Diesel Defence Fuel Polishers on their tank. This provided it with a 'fit and forget' solution – it could simply setup the polisher and it would run unassisted, month after month.

ABOUT IPU

IPU's Fuel Conditioning experts can identify precise causes of fuel contamination and, drawing on their extensive experience in the field, recommend a fuel management programme suitable for any application.

IPU's Fuel Conditioning division is capable of providing a complete 4-step fuel conditioning programme: [DieselCheck](#), [ClearTank](#), [Diesel Defence](#) and [Fuel Stabilisation](#).

For more information please visit www.ipu.co.uk/fuel.

13,000 litres

**of diesel recovered during the
ClearTank service**



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