

Detect Fuel Contamination



IPU Fuel Testing Service



IPU fuel testing service can preserve fuel quality and ensure the life of diesel powered applications

Stored diesel fuel can easily become contaminated by water and dirt, even airborne microbes. IPU Group provides a series of specialised testing services and products specifically designed to detect and measure fuel contamination.



IPU Group Fuel Testing Services are designed to give you piece of

The Problem...

We have found that the risks of fuel contamination can often be forgotten when companies consider their running costs and day to day reliability. Fuel contamination inside your storage tanks can pose a serious risk to your engines; factors such as bad housekeeping and fuel transfer could be increasing the threat of contamination and therefore the risk of complete engine failure.

A recent change to legislation regarding diesel now means the fuel in your tanks can contain up to 7% bio diesel. This move to low sulphur fuel, although ensuring lower emissions, equates to a higher risk of contamination by water and other solid particulate.

Bio-diesel is hygroscopic, absorbing water from the atmosphere in various states. Water contamination can be a significant concern for fuel tanks, accelerating diesel fuel oxidation which can lead to the formation of acid and gums in your fuel; high acid levels can corrode fuel tanks. If fuel is not managed correctly, water contamination will promote microbial growth, also known as diesel bug. This can cause an visible layer to build between the fuel/water interface, known as a "rag layer". This "rag layer" can block filters.

Fuel contamination of any measure can severely damage engines, resulting in costly break downs, down time and even complete engine failure. Leading fuel companies, hand in hand with engine manufactures, highly recommend a comprehensive Fuel Management Programme to cut the risk to engines caused by contaminated fuel.



IPU Group offer a range of fuel testing services to help you manage your fuel

Sampling and Testing Fuel Stores

Sampling and testing of stored fuel is key part of consistent fuel management.

Without fuel sampling you may be unaware of any fuel contamination issues already present in your storage units. Perhaps more importantly, sampling will help to identify the causes of fuel contamination. This is vital to solving the problem and preventing further damage.

IPU Group can provide accurate and reliable fuel sample results. Adhering to globally recognised standards and methods to achieve fast, exact reports, we can diagnose the contamination levels in your stored fuel. If required, IPU can also recommend the most appropriate course of action to treat your specific problem.

IPU Group offer a complete testing programme: it's quite simple. Fill a sterile container with 750ml of fuel from your storage facility and pop it in the post to us. We will supply everything you need, including the test sample bottles and a return addressed envelope.





Why IPU Group?

IPU Group can offer accredited laboratory testing for fuel contamination; testing for water, microbes, metals, particulate matter and more.

We are the experts in fuel conditioning, with years of experience IPU can not only identify the problems inside your fuel tank, but also offer the most effective remedial solutions. Initial 'tank side' testing can also be performed to give an indication of the levels of contamination with results in minutes.

Our accredited laboratory tests are fast and accurate, allowing IPU to directly diagnose the problem.

mind; be certain of running clean and dry fuel in vital applications

The table below lists the most common tests required for stored fuel

<p>Particle Assessment to ISO4406 or NAS code</p>	<p>The Worldwide Fuel Charter, the industry standard for fuel specifications, requires that clean diesel fuel is ISO code 18/16/13 or better. This test determines the number and size of particles within fuel, to help us understand the level of contamination in your fuel tank.</p>
<p>Karl Fischer Water Content Testing to IP438</p>	<p>This is a universally recognised method for measuring water content in all types of substances. This highly accurate and precise test will detect all levels of dissolved, emulsified and free water in fuel.</p>
<p>Total Viable Count Microbe Testing to IP385/99</p>	<p>This fuel test looks specifically for bacterial and fungal levels in fuel, also known as diesel bug.</p>
<p>Spectrographic Testing for Metals Content (based on ASTM D5185)</p>	<p>This test specifies particular metals and dirt within the fuel. We recommend this test if the particle count to ISO4406 exceeds the recommended levels. By identifying the types of fuel contamination in the fuel it becomes possible to diagnose the source of the problem.</p>
<p>Bio Diesel (FAME) Content in Diesel</p>	<p>Fuel test used to identify the percentage content of Fatty Acids of Methyl Esters (FAME) in any given fuel sample. This test measures then, the content of bio diesel, and can help identify the suitability of fuel used for applications where long term fuel storage is required.</p>



Depending on what tests you require, we can have the results back in as little as 24 hours from receipt of the sample...

IPU can also offer Environmental testing, such as groundwater and soil testing, for cases where the outside environment may have been compromised due to poor fuel management.

IPU Group has a range of solutions to manage fuel condition. From biocides to bespoke Diesel Defence fuel polishing systems. We can offer a complete, comprehensive Fuel Management Programme.



Case Study – UK Data Centre

The problem

IPU were called in to investigate issues related to fuel at a site for a critical data centre in a secure location. We recommended the stored fuel and surrounding environment should be tested without hesitation.

On the first visit it was established that the site had had a critical failure on their generators, after 4 minutes the generators had stopped working. This was during a power shut down and fortunately the mains power was restored after 10 minutes.

The Issues

After carrying out a thorough site survey, we established that the underground tank had a sheared dip cap. A high water table in the area and heavy rains meant the manhole of the underground tank was filled with water. The sump pump was unable to cope with the ingress of water and the ground water was entering the tank.



The Solution

After IPU issued a warning, immediate action was taken to isolate the underground fuel tanks, to ensure no water could enter the primary tanks. Without action, the free water ingress would have resulted with fuel entering the manhole and potentially the groundwater; this could be hazardous for the surrounding environment.

After a series of specialised tests, it was evident high volumes of groundwater had entered the tank and the facility now posed a potential environmental risk, with diesel fuel visibly in the manhole.

Why did this happen? The key to managing any fuel storage facility is a regular inspection and maintenance regime.

The IPU Testing service was not only able to diagnose the problem, but also provided key tests to diagnose the exact contaminants and the level of contamination inside the stored fuel. IPU provided tests such as groundwater samples at critical points; these tests can be vital in areas where the surrounding environment may be effected.

Prevention is always better than a cure. IPU strongly recommend a comprehensive fuel management programme to be in place with any company that relies on stored fuel. Testing is vital to understanding the root of the problem and to monitoring the condition of your fuel supply.

IPU have the solution to preventing and curing contaminated fuel. It's one less thing to worry about...



IPU GROUP Fuel Conditioning

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