

Treating & Preventing Stored Fuel Microbe Problems For Non-Retail Fuel Users

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THE SERIOUSNESS OF THE PROBLEM FOR NON-RETAIL FUEL USERS

Fuel microbe problems have been around for about as long as fuel's been in use. That means plenty of "non-retail fuel users" (fleets, industrial users, basically anyone who doesn't primarily get their fuel from a retail gas station) have experienced the headaches that fuel microbial contamination brings. Sometimes they'll talk about "fuel algae" or "fuel fungus". Neither of these terms is entirely correct, but to the point, they're talking about microbial contamination in stored fuel - a complicated situation that can involve hundreds of different kinds of microbes, working together to destroy fuel quality, damage storage tanks, and stunt essential equipment operation.

WHY MICROBE PREVENTION IS IMPORTANT

These consequences speak both to the seriousness of microbe problems for fuel users, wherever they are, and the importance of knowing how to solve them when they occur. And they certainly speak to the importance of knowing the best practices for preventing these critical problems from manifesting themselves in the first place.

For non-retail fuel users, solving these problems is of an even more critical nature than for other people. If you're in this category, more than likely you're a business user. That means microbe fuel problems have a direct line on affecting your business. You have enough pressures competing in a tough marketplace without the unexpected headaches of a microbial problem in the fuel you're using. Your business functions on the assumption of 100% fuel reliability and 0% problems at all times. But that's not always what you get. So what can or should you do about it?

RECOMMENDATIONS FOR PREVENTING FUEL MICROBES FOR FUEL USERS

Given the importance of fuel reliability, prevention is always the best medicine. Preventing microbe problems so they don't interfere with essential functions centers on two things:

Monitoring levels of moisture in the storage tank and tracking microbial contamination in the fuel and tank.

Check tanks for water levels at regular intervals. Microbes need free water to live and thrive, and water buildup is one of those inevitable things that's virtually impossible to completely eliminate from a storage tank.

Fuel users should ensure that monitoring water levels in their fuel storage tanks is part of their routine housekeeping protocols. Use water paste and a tank stick or sounding tape to detect the depth of water phase in the tank. It's easy, quick, and can be done by just about anyone.

Once a detectable amount of water phase shows up during monitoring, remove as much as it as you can. Microbes don't need much water at all to multiply to problematic levels within a short period of time. It is not uncommon to see microbe problems develop within just 3 months after a storage tank has been completely cleaned.

Pay attention to filter life and operational signs. As microbes grow in fuel and storage tanks, they produce acids and biomass that destroy fuel quality and plug filters. Without looking in the tank and seeing the actual fuel, paying attention to how filters and equipment are performing on that fuel can give you a view as to how the fuel quality is. A change in filter change intervals or downgrade in engine performance can be a sign that something microbial is going on with the fuel.

Microbial monitoring is key. Microbial presence and fuel health is something that should be monitored on an ongoing basis, not just when you think a problem is arising. Better yet, regular monitoring of microbe levels in stored fuel can help fuel users predict when a problem is getting ready to happen. Which means they can take quick action in real time.



TREATING MICROBE PROBLEMS IN THE FUEL YOU GET

There are best practice solutions available today that make solving microbe problems in stored fuels a much easier proposition than in the past. They just have to be implemented.

Remove the water. Checking for water was an essential first step. Now it has to be removed. Most tanks have the ability to drain off water without unduly disturbing the stored fuel phase. If yours does not, contract with a fuel service provider to pump off as much of the water as possible. The best providers will also utilize water scavenging chemical treatments to effectively get what they cannot drain off mechanically. It's important to get as much of the water out of the tank as possible. And if the tank contains a fuel-water emulsion, they'll need to use a demulsifier to break that and allow the water to separate.

Use biocides to kill the microbes. Regardless of whether they have fuel storage tanks, non-retail fuel users may have to worry about having microbes passed along in the fuel they get from other sources. Should this unfortunate event occur, there is no way to get rid of a microbe problem without using a biocide to kill the microbes. Some water treatments imply they can solve microbe problems by removing water, but this is short-sighted and dishonest. Living microbes can only be eliminated by killing them through administration of a biocide to the fuel.

Use biomass dispersants in conjunction with biocides. For those with storage tanks, many times the living microbes in the storage tank will have produced significant amounts of biomass (biological secretions) that, in themselves, will plug filters. Biomass will also shield microbes from biocide action and prevent a complete microbe kill. If there is evidence of substantial biomass presence in the fuel or sticking to the surfaces of the tank, a fuel manager should administer a biomass dispersant treatment alongside the biocide. This will break up and disperse the biomass and allow for a more full and effective microbial kill by the biocide.

Test...test...test for microbes. Both before and after. It's not enough to simply apply biocide and hope for the best. Given what's riding on the health of their fuel, fuel users should do simple microbial testing, both before and after treatment, to ensure the problem is resolved.

A second generation ATP test is a simple in-field test that's cost-effective and gives a specific microbe count for the fuel sample tested. ATP testing should be conducted on both a fuel sample (taken about 18 inches from the tank bottom) and a water bottom sample from the stored fuel tank. These should be done before and after treatment. If the after test shows a significant microbe presence still remaining, that can usually be fixed by a second application of biocide.

Remember, microbial presence in a stored fuel tank environment is a complex biome, almost an ecosystem of sorts for microbes. One size treatment does not always fit all. Use ATP microbial testing to confirm the problem is eradicated, for peace of mind. This is the best chance for stored fuel users to ensure microbe problems don't cost them or disrupt their business.

These are the best practice recommendations for non-retail fuel users to give the greatest chance of problem-free fuel operation over the long term.

If you don't feel confident handling these steps yourselves, consider partnering with a professional like Bell Fuel & Tank Services. To make sure you stay Fuel Ready.



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