Microbial Monitoring with Bell Fuel-Pulse ATP

Among the world's largest petroleum producers and handlers in the upstream Oil & Gas industry, ATP (Adenosine Tri-Phosphate) microbial testing is the standard best practice for managing microbial contamination and related problems. In addition to operational benefits including protecting capital equipment and reducing maintenance costs, these upstream players demand the most effective and accurate protocols because of the simple fact that it is legally required that their fuel be within proper specification before it can be sold; that is where their duty ends and fuel maintenance responsibilities shift to distributors, service companies and end users.

For the first time, Bell Performance has brought ATP technology to the downstream petroleum & fuel market with Bell Fuel-Pulse ATP (ASTM D7687). Fuel-Pulse ATP is a rapid test method that provides an objective quantification of microbial presence in any fuel system. Our goal, through our Fuel & Tank Services Division (FTS), is to deliver the ability for fuel owners/managers to make data driven decisions vs. assumptions when it comes to sound fuel management practice and to evolve traditional fuel PM protocols from a õPreventativeö to a õPredictiveö approach.

Fuel-Pulse ATP provides a more accurate and advantageous assessment than the standard laboratory ASTM microbial count and/or in-field pass/fail indicator tests that are common in the marketplace. Fuel-Pulse ATP testing provides a real-time, quantitative report of microbial contamination levels within a given fuel/tank environment. It allows for an initial õfingerprintingö (baseline) specific to each tank as well as the ability to develop ongoing data-trend curves that, based on deviation from baseline, will indicate when to execute treatment as well as what chemical to fuel ratios are required to avoid problems such as filter plugging and tank corrosion. It eliminates chemical under or over-treatment and in turn delivers the best results and greatest cost effectiveness for customers.

It All Starts with Proper Sampling & Handling

Itøs crucial to know the best practice methods that ensure the most viable samples and guarantee the most accurate results from ATP microbial count testing conducted on those samples. Based on the recommendations listed in ASTM D7464, we provide all the process, protocols & materials required to take good, reliable samples and how to handle and transport them properly so that Fuel-Pulse ATP testing and analysis may be conducted as accurately as possible.

The Importance of Good Sampling Practices

Good sampling is extremely important because it is impossible to have viable/accurate test results without a good sample. The test results are only as reliable as the quality of the sample. Remember that Fuel-Pulse ATP testing (or any kind of testing, really) is done on the sample itself, under the assumption that whatever results are generated are reflective of whatøs actually going on in the storage tank itself and the fuel therein. So, the object is to obtain samples that best reflect the state of the tank and its fuel in reality.

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Sampling & Testing Interval Recommendations:

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Establishing Baseline and Control Limits	*On-going, Routine Monitoring*
Optimal: Monthly for 12 months	Optimal: Quarterly
Satisfactory: Monthly for 6 months	Minimal: Semi-Annualy
Minimal: Quarterly for 24 months	

We provide a turnkey approach that encompasses all components of implementation and execution of an ATP microbial testing/monitoring program including:

- Test Kits with sampling & handling protocols/materials per ASTM D7464
- Bell Fuel-Pulse ATP (ASTM D7687) Lab Analysis & Full Reporting of Individual Test Results
- On-going, Cumulative Data Monitoring & Reporting

Sample Data & Trigger Reports
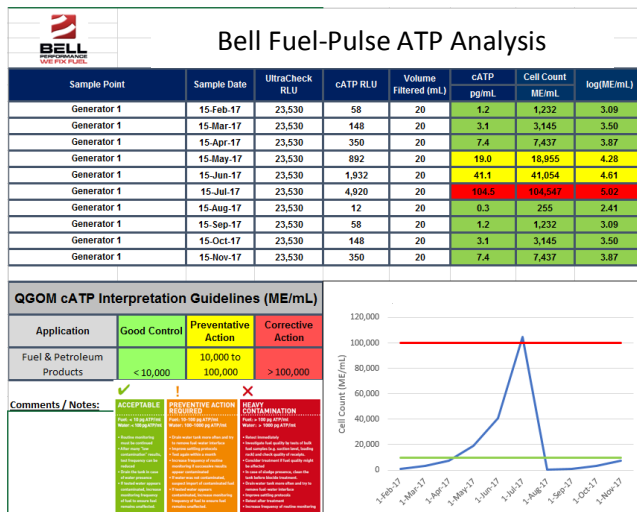
Microbial contamination control is an on-going process.

It requires attention, both to fix existing problems and develop trending data to prevent them from happening again

ATP evolves the idea to a predictive microbial monitoring approach!

Summary

Microbial growth poses a significant risk to product quality, equipment operation, infrastructure and operating budget (without proper measurement, it cannot be controlled effectively). Microbial threats are best managed and mitigated in the earliest possible stage of growth and 2nd Generation Fuel-Pulse ATP is the most rapid, accurate and complete measurement of total microorganisms. Relative spot comparisons from point to point are a reliable means to assess a process, while for routine monitoring it is critical to establish a baseline trend before being able to accurately make control decisions.

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Bell Fuel-Pulse ATP…If you don't measure it, you can't control it!

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