

## BIOREMEDIATION BULLETIN 2.1

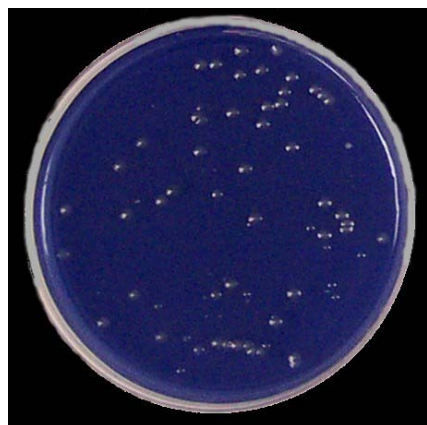
Successful aerobic bioremediation depends on the proper mix of microbes, nutrients and oxygen. Most often, the limiting factor in the aerobic degradation of contaminants is oxygen availability. Laboratory tests were conducted to evaluate the ability of different oxygen-generating formulations to enhance the degradation of TPH contaminated water.

Water contaminated with a mixture of diesel fuel and gasoline (17,376µg/l BTEX) was divided into three sample sets and studies were run in triplicate within each set. One set was dosed with 1200 mg/kg of PermeOx<sup>®</sup> Plus, one with 1500 mg/kg of a magnesium-based product, and one served as a control. Initially a baseline Total Aerobic Plate Count (TAPC) was performed before dosing the water. The baseline TAPC was 238,000 colony forming units (CFU)/ml. Four weeks after dosing the samples, a 0.1ml and 1ml sample were taken from the water in each sample and controls and serial dilutions were made and plated for TAPC. The resulting microbial plate count results are as follows:

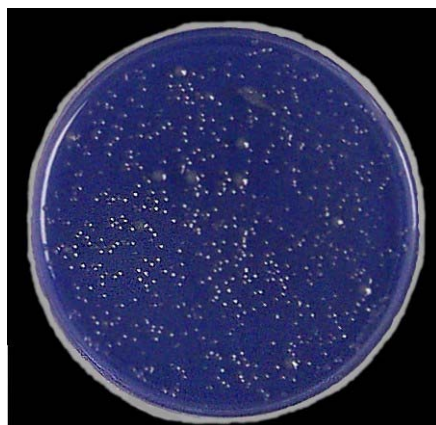
**Table 1**  
**Total Aerobic Plate Counts**

<b>PermeOx<sup>®</sup> Plus</b>	1,021,000 CFU/ml	<i>(428% increase from baseline)</i>
<b>Control</b>	91,000 CFU/ml	<i>(62% decrease from baseline)</i>
<b>Magnesium-Based Product</b>	602,000 CFU/ml	<i>(252% increase from baseline)</i>

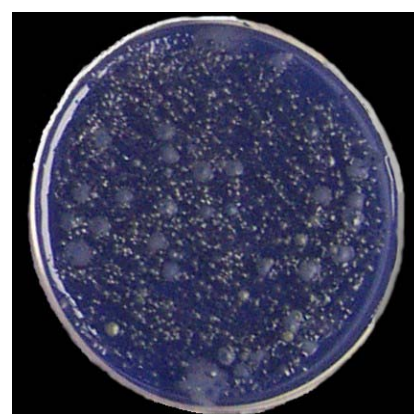
The plate counts clearly show that the water treated with PermeOx<sup>®</sup> Plus supports more rapid growth of petroleum-degrading microbes than either the control or the water treated with a magnesium-based product.



**Control**



**Magnesium-Based Product**



**PermeOx<sup>®</sup> Plus**

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