# In-situ Oxygen Sensors for Use in Biotreatment of Fuel Oxygenates in Groundwater. (A05-xu155713-Poster)

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## Abstract:

MTBE is produced in large volumes the United States. The contamination of soil and groundwater by MTBE is widespread. Cumulative information from recent studies suggest that under aerobic conditions (>~5mg/L dissolved O2) MTBE biodegradation is likely. The objective of this study was to develop an on-site, economical, scientifically dedensible method for aerobic treatment of small gasoline spills. A pilot scale system was designed to biodegrade BTEX and fuel oxygenates commonly found in groundwater near service stations. Loading rates of contaminated groundwater to soil columns was controlled at adjustable pre-set oxygen thresholds. Oxygen sensors placed in the unsaturated zone continuously monitor soil oxygen levels and maintain column loading until soil oxygen falls below the threshold. Using the pilot scale system with oxygen thresholds set at seventy-five percent, fifty percent, and twenty-five percent of air saturation, the biodegradation of MTBE or ethanol with co-occurring BTEX was examined.

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