

ENVIRONMENTAL BIO-SYSTEMS, INC.

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EBS Anaerobic Enhancer 60H

EBS formulates a variety of fermentable edible oils for reduction and enhanced anaerobic biodegradation of the following compounds:

TARGET CHEMICALS

Chlorinated Solvents: PCE, TCE, TCA, CT, other solvents

Oxidized (and frequently soluble) Transition Metals: chromium, arsenic, lead, cadmium, others

Reduction of nitrate, perchlorate, TNT and other contaminants: please call

PROCESS

EBS has developed a 2-stage process to enhance the reducing process and contribute to the anaerobic biological process:

- 1) Edible Oil Fermentation
- 2) Optional: Hydrogen Gas Infusion

EDIBLE OIL FERMENTATION

Soybean oil and other non-toxic, edible vegetable oils ferment slowly under anaerobic conditions to produce volatile fatty acids and ultimately molecular hydrogen. *EBS Anaerobic Enhancer 60H™* is 60% edible soybean oil with smaller amounts of the following food-grade or pharmaceutical grade compounds: emulsifiers, sodium lactate, lactic acid, yeasts, extracts and vitamins, preservatives and the balance is water. The EBS fermentable oil has a droplet size of 0.1 to less than 1 micron, which is much smaller than even clay pore throat openings. The *EBS Anaerobic Enhancer 60H™* flows by gravity and can be pumped without heating. EBS performs bench tests and feasibility studies as needed for project support. Custom mixtures are available.

HYDROGEN INFUSION

Hydrogen infusion can accelerate the anaerobic process, contributing to increases in degradation rates of up to about 50% compared to oil alone.

When appropriate, EBS offers two methods for hydrogen infusion into groundwater. EBS is an official representative with inVentures Technologies, Inc. of Canada.

- A) The gPRO low flow system can flush the *EBS Anaerobic Enhancer 60H™* oil product with up to 2 to 20 gallons per minute of water containing up to 1 to 2 mg/L hydrogen.
- B) The HiSOC hydrogen gas diffusion tools to be placed in 2-inch diameter wells.

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