

REDOX TECH, LLC



"Providing Innovative In Situ Soil and Groundwater Treatment"

In Situ Soil Blending

Redox Tech, an *in situ* soil and groundwater remediation firm, announces their improved amendment delivery method. The new method, in situ soil blending, will revolutionize the remediation market place. Redox Tech is already a recognized leader for development of soil and groundwater remediation amendments. The new delivery method complements Redox Tech formulation expertise and overcomes one of the major obstacles for in situ remediation, namely effective and uniform delivery of the reagents. In situ soil blending has numerous advantages over conventional dig-and-haul and in situ injection approaches:

- Efficient and uniform delivery of remediation amendments, such as oxidants, reductants, and biostimulants
- Production rates comparable to dig, haul and backfill
- No long term liability associated with disposal at a landfill – no future PRP liability
- No liability associated with transport of hazardous waste
- Costs that are 2 to 10 times less expensive than dig and haul, depending upon the type and level of contamination
- No RCRA TSD permits are required because remediation is completed within the “area of contamination”
- Can treat a wide range of compounds, such as chlorinated solvents, pesticides, PCBs, PAHs, among others



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In situ soil blending involves using an in situ blender to effectively distribute chemical amendments throughout the soil medium to treat contaminants of concern. The chemical amendments can range from oxidants, reductants, biostimulants, or soil stabilizers. The in situ blender is mounted on a large excavator with a modified diesel engine and hydraulic power system. The mixer is capable of mixing dry soil as well as sludge material to depths of 20 feet below ground surface. Utilizing hydraulic pressures of 5,000 psi, a 28-inch diameter mixing drum with specially designed “teeth” is rotated at speeds up to 100 rpm with torque of 20,300 foot-pounds. This rugged durability allows the mixing drum to penetrate all soil types, even with the presence of backfill materials such as bricks, boulders, and rebar.

Since many chemical remediation alternatives require direct contact with the target contaminants, the effectiveness of the remediation strategy is often limited by the ability to distribute the chemical amendments throughout the soil medium. We believe the in situ blender is the most effective and efficient method to achieve mixing at shallow depths (less than 18 feet). In addition, the production rate of this equipment is comparable to excavating, and is a much cheaper alternative to dig and haul.

For large treatment areas, the in situ blending process is performed systematically by subdividing the treatment area into smaller cells. The cell dimensions and chemical loading requirements are determined prior to mobilization. Each cell is mixed with the designated chemical amendments ensuring that site wide distribution is achieved. In some instances, where the target zones are thicker than 5 feet or where site conditions warrant it, each cell is subdivided into lifts of 5 feet. Each lift is mixed separately with predetermined quantities of chemical amendments. Then the entire soil column is mixed ensuring that proper vertical distribution is achieved.

