The Potential Impact of Activated Carbon Grain Size on Bioremediation

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Background/Objectives. The particle size (grind) of activated carbon-based remediation products affects remedial performance. It is proffered that particle size is a mere convenience and a benefit that allows low-flow injection techniques to be utilized for subsurface installation. While activated carbon particle size does dictate installation techniques and equipment, it is critical to understand that particle size impacts the ability of microbial populations to thrive and sustain biodegradation.

The purpose of an activated carbon emplacement in the subsurface is not simply to absorb contaminants from groundwater. Activated carbon is also a platform for microbial growth. Activated carbon grind affects activated carbon's value as a platform for microbial growth. Grind influences activated carbon's effectiveness in initiating biofilm formation, its capacity to act as a resource, and biodegradation performance.

Approach/Activities. The presentation explains the centrality of particle size in activated carbon remediation when biodegradation is the expected, supported treatment mechanism. The presentation demonstrates the centrality of grind to initiate and sustain bioremediation on activated carbon by presenting key elements from the peer-reviewed literature and laboratory experiments with illustrates from field data. The presentation will show biofilms, microbial structural matrices, and microbial population parameters from genome sequencing. The presentation is highly visual, and the collected data will be systematically presented from the question proposed to the published data, experiment, or field observation.

Results/Lessons Learned. The collected data illustrates the impact of activated carbon particle size on bioremediation. The data will demonstrates the effects on microbial populations due to activated carbon particle size.