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Reasons Why Microbes Outperform Chemicals in Saltwater Disposals and Waterfloods

Microbes are a powerful solution in fighting corrosion, enhancing oil recovery and more. Here are five reasons why they outperform traditional chemical solutions:

1



Microbes Naturally Remove Oxygen in the System

- Facultative anaerobic, meaning they grow/survive in both presence/absence of oxygen
- Oxygen scavengers used by chemical companies are worse, man-made versions of natural microbe properties
- Oxygen is a catalyst for corrosion, so the goal is to remove as much as possible

2



Removes and Prevents Under Deposit Corrosion

- Natural microbe byproducts remove scale, iron sulfide, hydrocarbons and more
- Chemicals cannot do this on their own – it requires acidizing or mechanical removal
- Microbes produce a polysaccharide film on surfaces, preventing corrosion and leaks and extending equipment life

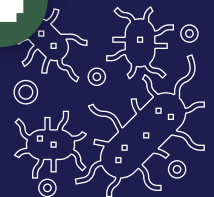
3



Promotes Separation of Oil and Water

- Separate solids from oil and reduce interfacial tension
- Reduces oil carryover, provides more sellable oil and boosts well injectivity
- Microbes strip hydrocarbons off solids and then dissolve the solids allowing the oil to separate

4



Colonizing vs. Parts Per Million (ppm)

- Microbes set up a colony throughout the system by reproduction
- Chemicals work in ppm, and operators must set up a pump to maintain the correct ppm and strength
- Microbes are always at full strength and evenly dispersed

5



Microbial Enhanced Oil Recovery (MEOR)

- Chemicals are restricted to where water flows and cannot move independently
- Microbes move on their own, reaching places chemicals can't
- They break tension there and release residual oil in an extremely cost-effective process

All of our microbial solutions are 100% safe for land, water, air and life. We hope to play our role effectively in leading the industry in sustainable development and environmental stewardship efforts.

To learn more, visit jglsolutions.com/