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(57) Abstract :

The present invention is a composition and method for hydrogen production from hydrocarbon-rich reservoirs. The composition comprises an anaerobic basal media (ABM) solution along with specific nutrients, vitamins, trace elements, surfactants, and an oxygen scavenger, formulated to optimize microbial growth and hydrogen production within the reservoir. The method of hydrogen extraction from hydrocarbon-rich reservoirs involves several key steps; a suitable hydrocarbon reservoir with an oil-containing zone and mobile water phase is selected, typically accessed through boreholes extending from the surface to the oil-bearing zone; a composition containing anaerobic basal media (ABM) and additional nutrients is injected into the reservoir through these boreholes, maintaining specific liquid temperature and pressure conditions between 60°C to less than 120°C and 150 to 300 bar, respectively.

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