Pumice stones as potential in-situ burning enhancer

Small-scale and mid-scale experiments were conducted in order to evaluate pumice stones as a potential enhancement for in-situ burning (ISB). Four oil types, several emulsification degrees of one crude oil were studied. In general, it was observed that the pumice stones did not improve the burning efficiency (BE). In fact, for large pumice coverage ratios, the BE was affected negatively, especially for the emulsified crude oil, which is the most likely condition of the oil that may be subjected to ISB. Furthermore, it was observed that a relatively large amount of the pumice stones were sinking during and after the burn, thus bringing the oil into the water column. Finally, the species production of CO and CO₂ was not reduced. Based on the presented results, pumice stones have a negative impact on the efficiency of ISB, and they are ruled out as an ISB enhancer and should not be used in relation to ISB.

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