Optimizing Remediation Process of Contaminated Soils by Controlling Nutrient Injection Rate.

Yasushi Mori[1]

[1] Life&Environ.Sci., Shimane Univ.

Bio remediation is one of the ways to recover the contaminated soils. It activates the microbes in soils and enhances bio-degradation processes by injecting air or nutrient solution. In this paper, oil contaminated soils were remediated by injecting nutrient solution into the soils. Effluent solution was

analyzed and residual oil was extracted after the experiment, to see the remediation efficiency. Two injection rates, one was saturation and the other was unsaturation, were tested to observe the

structure induced differences in flow regime. The resultant residual oil concentration showed that unsaturated remediation process was more effective than saturation, which was opposite to the insitu

application by the companies. Probably because dispersion process was dominant than

convection which gave effective distribution of the nutrient solution. In all, the proposed remediation process, slow injection rate, has advantages over the fast injection for its low cost and less impact to the envronment. It showed better remediation results, needed small amount of nutrient, thus small leakage to the ground water.