

Penggunaan bioremediasi dan zeolit pada tanah tercemar minyak (studi di Desa Sedari, Kecamatan Cibuaya, Kabupaten Karawang) = The use of bioremediation and zeolite on oil-contaminated soil (a study in Sedari Village, Cibuaya Sub-District, Karawang District)

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Abstrak

ABSTRAK

Kegiatan usaha minyak dimulai dari eksplorasi sampai ke proses pengilangan memiliki potensi menghasilkan tumpahan minyak bumi. Pencemaran lingkungan akibat tumpahan minyak terus terjadi karena Indonesia sebagai negara penghasil minyak dalam jumlah yang cukup besar. Masalah dalam penelitian ini adalah tumpahan minyak mencemari tanah dan air yang merusak lingkungan hingga menimbulkan kerugian ekonomi nelayan. Tujuan penelitian adalah menganalisis tingkat pencemaran tanah dan pencemaran air, menganalisis tingkat efektivitas penurunan TPH dengan penggunaan bioremediasi dan penambahan zeolit, mengevaluasi kerugian ekonomi nelayan, dan mengevaluasi kelayakan bioremediasi dan zeolit. Metode yang digunakan adalah metode campuran yaitu gabungan antara metode kuantitatif dan kualitatif. Hasil penelitian ini adalah tanah dan air di lokasi penelitian tercemar minyak bumi. Penggunaan bioremediasi dan penambahan zeolit mampu untuk menurunkan kandungan hidrokarbon. Penurunan pendapatan dirasakan nelayan akibat terjadinya tumpahan minyak. Kesimpulan penelitian ini penggunaan bioremediasi dan zeolit mampu menurunkan kandungan

TPH sebesar 99% namun memerlukan pengurangan dosis dan kuantitas serta diperlukan pengendalian tumpahan minyak dari pihak industri agar bioremediasi dan zeolit dapat efektif untuk diterapkan di Desa Sedari, Kecamatan Cibuaya, Kabupaten Karawang. Selain itu, rata-rata kerugian nelayan pada sektor perikanan akibat tumpahan minyak sebesar 76%.

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ABSTRACT

The oil business activities begin from the process of exploration until oil refining which has a potential of producing oil spills. The environmental pollution due to oil spills remain to exist as Indonesia is an oil-producing country with significant oil production volumes. This research focuses on the issue of oil spills contaminating soil and water that pollute the environment which causes detrimental economic effects to fishermen. The purpose of this research is to analyze the level of soil and water contamination, analyze the total petroleum hydrocarbon (TPH) by using bioremediation and adding zeolite, evaluate the economic loss for the fishermen, and evaluate the feasibility of bioremediation and zeolite. The method utilized is a mixed method of quantitative and qualitative method. The outcome of this research is that the soil and the water at the research site have been polluted with oil contamination. The use of bioremediation and zeolite may decrease the hydrocarbon content. The decline of income due to the oil spills affected the fishermen. The conclusion of this research on the use of bioremediation and zeolite could decrease the TPH content amounting to 99% however it requires a reduction in dosage and quantity as well as oil spill control from the industry so that bioremediation and zeolites can be effective in Sedari Village, Cibuaya District, Karawang Regency. In the addition, the average of the fishermen economic loss on the fishery sector due to the oil

spills were amounting to 76%.