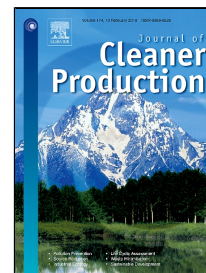


Accepted Manuscript

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PII: S0959-6526(17)33232-8
DOI: 10.1016/j.jclepro.2017.12.238
Reference: JCLP 11633
To appear in: *Journal of Cleaner Production*

Received Date: 19 August 2017
Revised Date: 10 December 2017
Accepted Date: 28 December 2017

Please cite this article as: Jihong Chen, Weipan Zhang, Sifan Li, Fangwei Zhang, Yuhua Zhu, Xiaoling Huang, Identifying Critical Factors of Oil Spill in the Tanker Shipping Industry Worldwide, *Journal of Cleaner Production* (2017), doi: 10.1016/j.jclepro.2017.12.238

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Identifying Critical Factors of Oil Spill in the Tanker Shipping Industry Worldwide

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Abstract

The uneven petroleum distribution in the world and various countries' dependence on the petroleum for economic development make maritime oil shipping an extremely important way for various countries to launch oil trade. Marine oil shipping, while bringing economic benefits to various countries, witnesses oil spill accidents by oil tankers, which led to losses to oil trading and shipping countries and seriously polluted the marine ecological environment. The tanker shipping pollution and oil spills' damages to the marine environment have drawn much attention. This paper sets up an entropy weighted grey relation analysis method to analyze key contributors to oil spills, and evaluates the extent of impacts of each factor in different ship operations. Based on actual conditions of global oil tankers, we chose seven dominant contributors to global tanker oil spills for evaluation, and established an analytic framework of global tanker oil spill factors based on the combined method, with specific analysis steps and methods provided. Finally, we conducted a model empirical study based on history data of global tanker oil spills in the past 46 years from 1970 to 2015 to verify the practicability and effectiveness of the model

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